

CITY OF HIGH POINT

AGENDA ITEM



Title: Eastside WWTP, PTF Effluent Control Gates

From: Terry Houk – Public Services Director
Derrick Boone – Public Services Asst. Director
Nawfal Shujaa – Public Services Projects Engineer

Meeting Date: May 3, 2021

Public Hearing: N/A

Advertising Date: March 26, 2021
Advertised By: Purchasing

Attachments: Attachment A – Bid Tabulation and Award Recommendation
Attachment B – Hydrogate Stop Log Brochure

PURPOSE:

The Public Services Department has budgeted to demolish the existing primary sluice gates at the Eastside Wastewater Treatment Plant and to replace with stop logs that will allow the ability to control flow coming from the primary treatment facility (PTF).

BACKGROUND:

The existing primary sluice gates were installed in a previous upgrade and are no longer functional due to the deterioration of the stems, stem guides and stem brackets for the gates. The scope of the project will be to demolish the existing gates and to install frame guides for the installation of stainless steel stop logs. The stop logs will be stored on site and installed as needed to control flow.

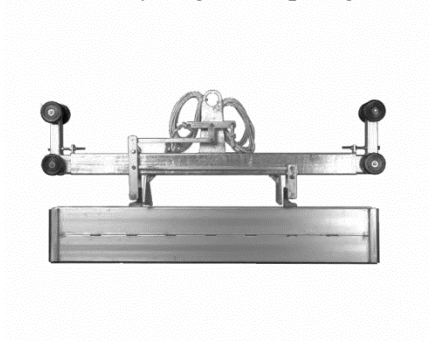
BUDGET IMPACT:

Funds for this project are available in the FY 2020-2021 budget.

RECOMMENDATION / ACTION REQUESTED:

The Public Services Department recommends approval and asks for City Council to award the contract to Brushy Mountain Builders, in the amount of \$299,000.

Picture of Hydrogate Stop Log with Lifter



Location of proposed stop logs at PTF upstream of the primary clarifies



April 22, 2021

Re: City of High Point, NC
Eastside WWTP
PTF Effluent Flow Control
Bid No. 12-042221
DMP Project No. 210017 (BF)

Mr. Derrick Boone, Assistant Director
Public Services Department
City of High Point
PO Box 230
High Point, NC 27261

Dear Derrick:

Informal bids were received by the Purchasing Department on April 22, 2021 for the above referenced project. A total of two (2) bids were submitted and read, as summarized below.

Bidder	Total Base Bid
Brushy Mountain Builders, Inc. Lenoir, NC	\$ 299,000.00
J.S. Haren Company Athens, TN	\$ 437,000.00

A detailed tabulation of all bids received is attached.

Bids were advertised by the Purchasing Department and at least six (6) general contractors ordered plans. The low level of interest in this project, and bid price difference, may be attributed to the complex scope of the project and area contractor's current workload/resource availability.

Brushy Mountain Builders is currently licensed by the NC Contractor's Board (Unlimited; Building, PU(Water Lines & Sewer Lines), PU(Water Purification & Sewage Disposal). They have performed several similar projects in North Carolina and are capable of performing the work called for in this project.

It is our recommendation that the City Council award the contract to Brushy Mountain Builders, Inc. for the Base Bid amount of \$ 299,000.00.

Please feel free to contact me if you have questions or require additional information.

Sincerely,

DAVIS • MARTIN • POWELL & ASSOCIATES



Ben Palmer, PE

c: Nawfal Shujaa (enc) - email
File (enc)

P:\2021\210017\Doc\210017 Award Recommendation.docx

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6415 Old Plank Road, High Point, NC 27265 • www.dmp-inc.com

BID TABULATION

		Brushy Mountain Builders, Inc. 3390 Gaither Walker Circle Lenoir, NC 28645	J.S. Haren Compnay 1175 Highway 11 N Athens, TN 37303
ITEM	DESCRIPTION	LUMP SUM AMOUNT	LUMP SUM AMOUNT
PART A - BASE BID			
1	Lump Sum Base Bid		
	All work complete but not including the base bid items listed below.	\$284,000.00	\$427,000.00
2	Stop Log Lifting Device		
	Furnish mobile gantry crane, including hoist, trolley, stop log lifter and necessary appurtenances	\$10,000.00	\$6,500.00
3	Storage Rack		
	Furnish mobile storage rack(s) and necessary appurtenances for storage of the supplied stop logs	\$5,000.00	\$3,500.00
Total Bid Amount		\$299,000.00	\$437,000.00
4	Base Bid Equipment & Material Manufacturers		
	SECTION EQUIPMENT/MATERIALS	MANUFACTURER	MANUFACTURER
	40 05 25 Stop Logs	HydroGate	Waterman

THIS IS TO CERTIFY THAT THIS TABULATION IS CORRECT AND A TRUE AND ACCURATE COPY OF THE BIDS SUBMITTED. THIS
 APRIL, 2021.

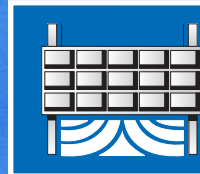
DAVIS • MARTIN • POWELL & ASSOCIATES

By: _____

Benjamin A. Palmer, PE



Stop Logs



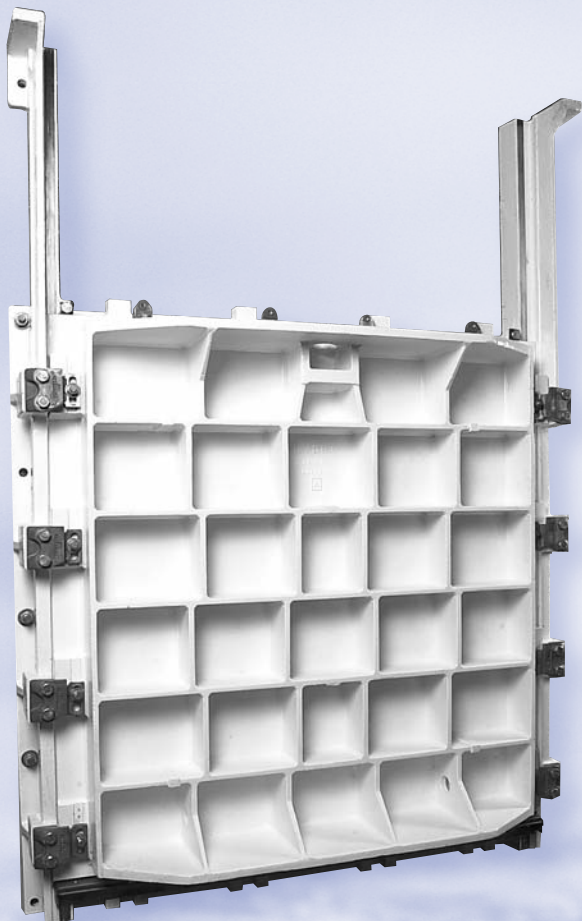
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#120
Denver, CO 80216



With more than 100 years of experience in gate design, Hydro Gate has built a long-standing reputation of providing superior quality water control gates for a variety of industries. Our manufacturing expertise revolves around making big, heavy-duty gates that are 100% custom-built to match specific applications.

Commitment to You... Our Customer

At Hydro Gate, customer satisfaction is our top priority. Bring your special requirements to our engineers who have years of experience in gate design. Our dedicated customer service staff is accustomed to custom requests, because that is what we do best. From your first contact through final delivery, our team of engineers and service experts are here to make sure you have the right gates to suit your needs.

Your Source for Water Control Gates

No matter what type of gates your project demands, chances are excellent Hydro Gate has the right gates for your specific application. Our product offering is vast and can suit applications for a wide variety of industries. Choose from cast iron slide or flap gates, fabricated slide or flap gates, rectangular butterfly gates, stop logs, wall thimbles, lifts and accessories.

Industries We Serve

Whether you need gates for flood control, wastewater treatment, environmental water treatment, irrigation, dam projects or hydroelectric plants, we can help. From standard configurations to custom designs, Hydro Gate offers a wide variety of water control gates as well as a full complement of actuators to meet your specific application.

Service Well Beyond Shipment

Our services extend beyond manufacturing. Hydro Gate's experienced field service technicians can help you with repair and refurbishment projects. If you have existing, yet serviceable gates, we can perform a retrofit that will extend their life and durability.

Focus on Quality

Hydro Gates expansive 90,000 square foot manufacturing facility utilizes precision equipment that allows us to merge time-tested gate design with cutting edge technology. We offer large scale manufacturing capabilities with the ability to produce cast iron gates up to 14' x 16' in size, and fabricated gates up to and over 20' in width or height.



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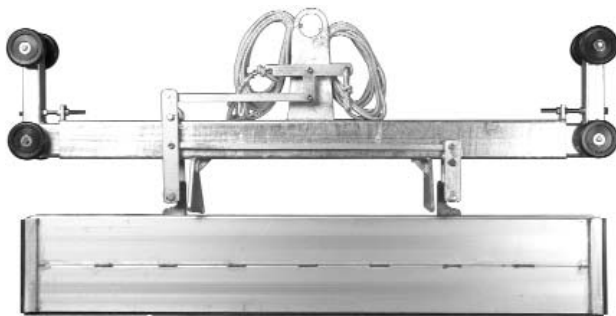
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Stop Logs



Aluminum Stop Log with Lifting Beam

Description

Stop logs are used for level control in open channels. Logs are beams inserted in grooves cast in a channel wall. Aluminum is now the material of choice for stop log and slot construction. Typical nominal height of a stop log is in 6 inch increments, i.e., the log can be 6, 12, 18 inches in height, etc. Hydro Gate aluminum stop logs have rubber lip type seals one each side (end) to seal at the wall and across the bottom to seal at the sill or with the next log. The preferred sill is an embedded metal sill. Aluminum is a strong lightweight material allowing some logs to be “manhandled”. The typical aluminum stop log is equipped with lifting lugs for use with a stop-lifting beam. The beam is a self-engaging log handling device for underwater retrieval and manual lanyard release of the log. The lifting beam is wheel guided by the stop log slot. An overhead crane, davit crane, or mobile crane is needed to lift and install/remove most stop logs.

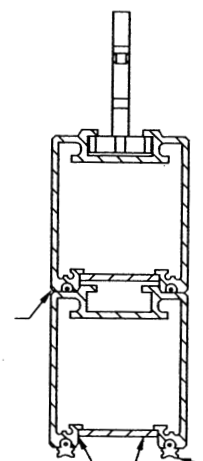
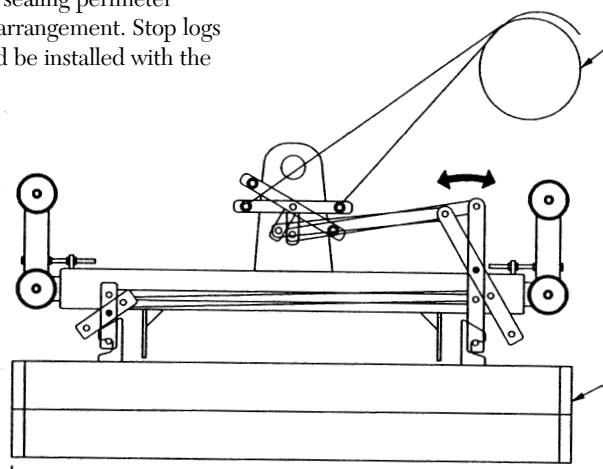
Stop logs cannot be installed in high flowing water. They can be removed against low flowing water and against very low heads (some over flow). Stop logs can be stacked and used for equipment isolation, however, there may be considerable leakage due to the greater amount of sealing perimeter compared to a single bulk head type arrangement. Stop logs are directional sealing. The log should be installed with the rubber seal downstream.

Aluminum Stop Logs – Product Features

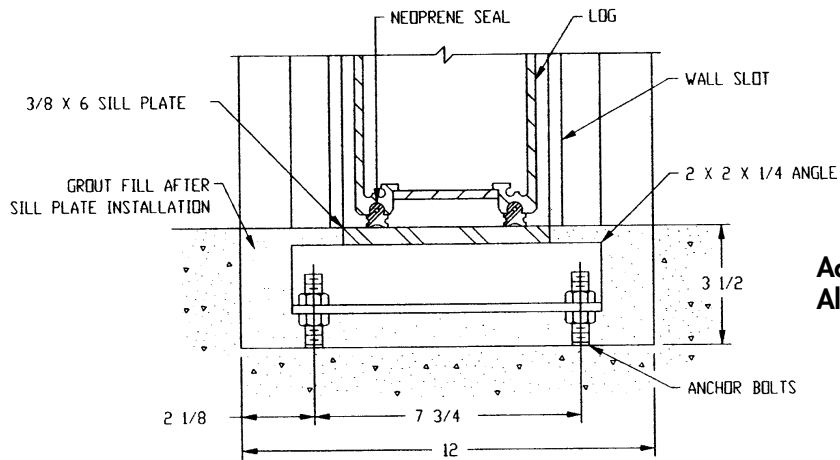
- Stackable: Log heights in 6” increments
- Practical widths up to 16 feet
- Alum slots, embedded or side wall surface mounted
- Flush bottom resilient seat
- Soft neoprene seals for practical water tightness (pumpable leakage)
- Directional pressure sealing. Bi-directional design is available to control flow in either direction.
- UHMW polyethylene wear and guide bars
- Slot guided lift beam, lanyard line release/gravity engage with lanyard assist
- Lift rods or hand rings for small lightweight logs
- Open channel service: equipment isolation, water level regulation, interchangeable locations (same width required)
- Insert and remove at zero or balanced head

Other materials of construction are available using similar design concepts with steel (painted or galvanized) or stainless steel.

Aluminum Stop Logs & Lifting Beam

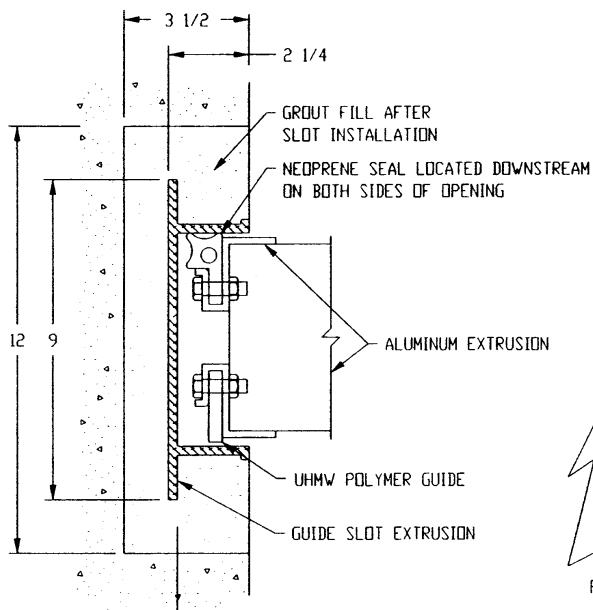
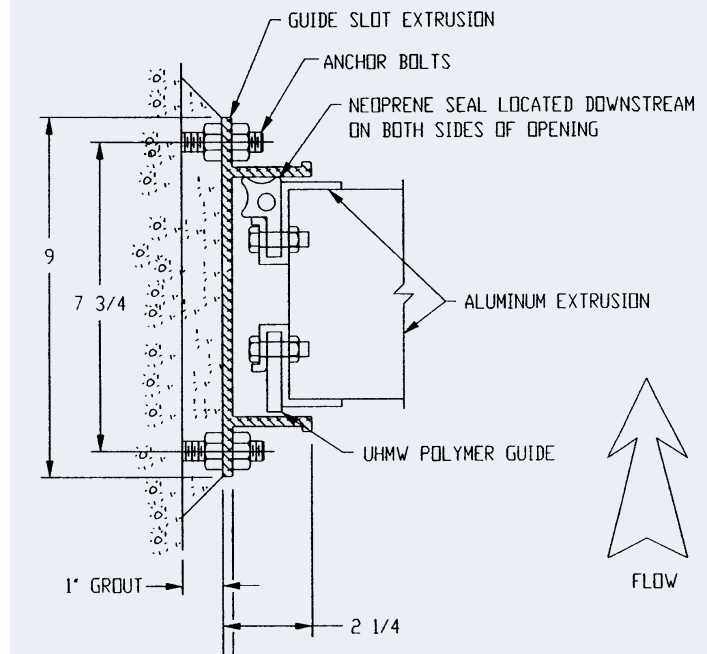


Stop Log Channel Mounting



**Adjustable embedded sill,
Alum stop log shown**

**Alum stop log, side wall
surface mounted slot**



**Alum stop log,
embedded slot**

Aluminum Stop Logs

Typical Specifications

Manufacturer

Hydro Gate or approved equal.

General

Aluminum stop logs including lifting beams shall be of the size and mounting type shown on the drawings and specified herein. Log and lifting beam design shall be such that the flexural stresses do not exceed 1/5 of ultimate strength or 1/3 of yield strength. Design flexural stress of aluminum shall not exceed 8,400 psi.

Materials of Construction

Stop Log and Slot Extrusions
Aluminum (6061-T6)

Lifting Beam

ASTM A36 Hot Dip Galvanized per ASTM A444

Seals

Neoprene D2000 grade 1BE625

Guide Bars

Ultra-High Molecular Weight (UHMW) Polyethylene

Hooks & Fasteners

Stainless steel, ASTM A276, Type 304

Guide Wheels

Phenolic or polyolefin

Stop Log Panels

Stop log panels shall be of height shown on the drawings and in height increments of 6 in. Panels made of two or more extrusions shall be securely welded together to form a unit and joints shall be made watertight with neoprene seals or seal welding. Each panel shall have two stainless steel hooks to engage the lifting beam. Panel surface shall be mill finish. Adequate drainage shall be provided for each log. Stop log panels shall be furnished with UHMW guide bars to eliminate metal-to-metal contact with slots during insertion and removal.

Seals

Seals shall be permanently attached to sides and bottom of each panel. Seal shall be formed all around the waterway channel and between each stop log panel.

Sill

Sill constructed from stainless steel plate shall be provided. It shall be adjustable-mounted to provide flat level seal surface prior to grouting. Finish will be mill finish. Alternatively, flat level concrete invert surface may be provided. Flatness shall be within 1/8 in. in 10 ft of length.

Slots

Slots shall be one-piece extrusion suitable for embedment or mounting on channel wall surfaces. Surface shall be mill finish.

Lifting Beam

Lifting beam shall be gravity-engage and lanyard-release type suitable for inserting, retrieving and handling stop log panels. The beam shall be furnished with non-metallic wheels to guide the beam in the stop log slot. The lifting beam may, at the manufacturer's option, be adjustable in widths to accommodate several widths of stop log openings. Beam shall be complete with large center lifting eye and polyethylene, lanyard-release rope.

Bulk Head Gates

Description

Bulk head gates are fabricated from steel or stainless steel. They are designed to be placed in slots or grooved channel walls and are lifted and lowered with overhead or mobile cranes. The gate has lifting lugs for handling. The slots or grooves are lined or fabricated from steel or stainless steel for ease of insertion and good fit with rubber seals on the bulkhead gate. The sill surface may be formed by flat and level concrete invert or with an embedded sill plate.

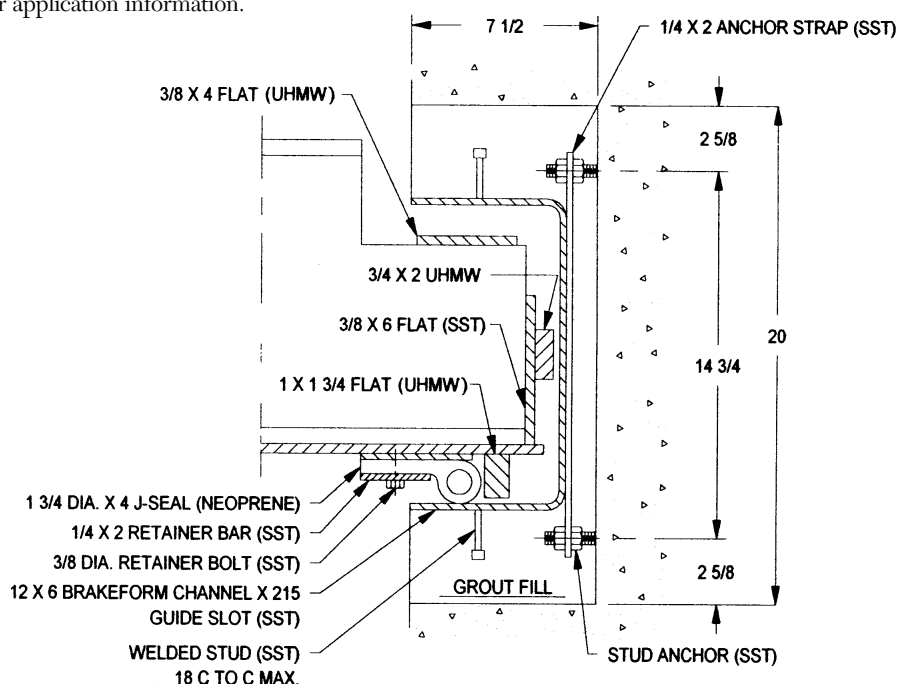
Bulk head gates are used for equipment isolation such as pumps, screens and service gates. When equipped with a lintel seal, the gate can seal off heads greater than the gate height. Rubber seals around the perimeter of the gate control leakage effectively and are hydrostatically energized. Bulk head gates seal in one direction.

Bulk head gates can be used in multiple locations (slots) and can be removed completely for storage. They cannot be inserted when significant flows or heads are present since the only closing force is gravity. Removal against high differential heads is not practical or possible. A small fill or balancing gate or valve can be installed on the bulk head gate to facilitate head balancing and gate removal.

Variations in mounting such as surface (face) mounting are possible. Bulk heads may also be stacked like stop logs. Specialized lifting beams can be designed for retrieval of under water bulk heads. Contact Hydro Gate Engineering/Sales Department for other application information.

Product Features

- Steel, stainless steel, or aluminum
- Large sizes and high heads: Contract Hydro Gate Engineering Department for information
- Embedded or face mounted guide slots
- Flush bottom, resilient seat
- Open channel or aperture design. Lintel (breast wall) seal for full perimeter sealing.
- Directional pressure sealing.
- Rubber seals: Neoprene or EDPM
- UHMW polyethylene wear and guide blocks
- Tight leakage control: near zero in most seating conditions. Pressure engaged sealing.
- Insert and remove at zero or balanced head. Head balancing gates or valves are available.



Fabricated stainless steel bulk head, embedded slot

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