



Gutter/Filter & Miscellaneous Operation & Maintenance Manual

spear
connersville
83025555665

ATTENTION!

This Instruction Manual includes important safety information that should be read by the Engineer, Contractor, Owner, Operator, and Maintenance Personnel.

Paddock Recommends That A Copy of The Filter Operation Instructions Be Posted In The Filter Room.



Designing the future of stainless steel perimeters

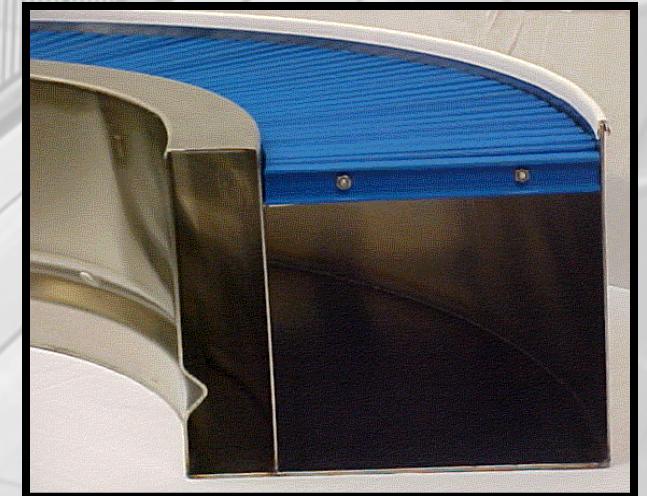
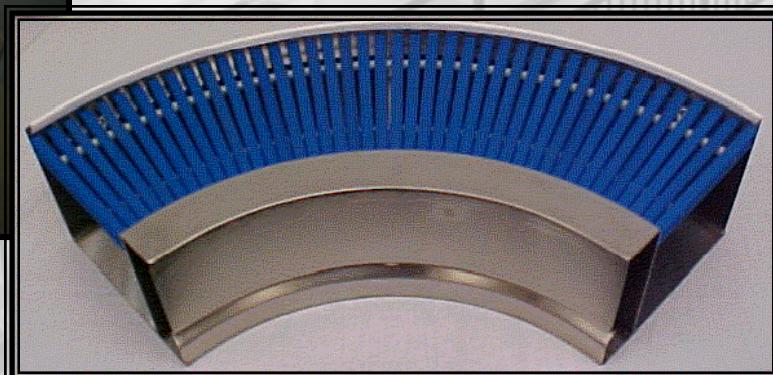


PADDOCK
POOL EQUIPMENT COMPANY

The best stainless steel perimeter just got better!

The Radius Section

- Increased Channel Efficiency and Flow
 - Safer Configuration for the User
 - Corner Maintenance Eliminated
 - Aesthetic Free Form Design



MAIN DRAIN INSTALLATION - SIGNOFF FORM

Job Name, City, State: _____ Job No.: _____

The following information is required to validate the expressed warranty. Complete this form upon start-up of pool and return via email (subject: Main Drain Installation) or mail to the address below.
info@paddockindustries.com

PLEASE NOTE: Warranty **DOES NOT** go into effect until completed installation form has been received by Paddock Pool Equipment Company.

Date of Main Drain Installation: _____

Service Life of Cover/Grate: > 20 years -- This SOFA is UNBLOCKABLE

Select Installed P/N & Model	Qty	Location (comp., therapy, warm-up, lifestyle)	Mounting Position	Suction Outlet P/N & Model #	Maximum Flow per IAPMO R&T
<input type="checkbox"/>			Floor Use	P/N 9300046 Model # 2424PCFC - 1818ESMD (sump), 6" Connection	915 GPM
<input type="checkbox"/>			Wall Use		
<input type="checkbox"/>			Floor Use	P/N 9300044 Model # 2424PCFC - 1818ESMD (sump), 8" Connection	920 GPM
<input type="checkbox"/>			Wall Use		
<input type="checkbox"/>			Floor Use	P/N 9300006 Model # 2424PCFC - 2424ESMD (sump), 8" Connection	920 GPM
<input type="checkbox"/>			Wall Use		
<input type="checkbox"/>			Floor Use	P/N 9300007 Model # 2424PCFC-AVRD - 2424ESMD (sump), 10" Connection	920 GPM
<input type="checkbox"/>			Wall Use		
<input type="checkbox"/>			Floor Use	P/N 9300011 Model # 2448PCFC-AVRD - 2448ESMD (sump), 12" Connection	3500 GPM
<input type="checkbox"/>			Wall Use		3000 GPM
<input type="checkbox"/>			Floor Use	P/N 9300013 Model # 2448PCFC-AVRD - 2448ESMD (sump), (2) 12" Conn's	3500 GPM
<input type="checkbox"/>			Wall Use		3000 GPM
<input type="checkbox"/>			Floor Use	P/N 9300056 Model # 2448PCFC-AVRD - 2448ESMD (sump), 14" Connection	3500 GPM
<input type="checkbox"/>			Wall Use		3000 GPM

Signature: _____

Contractor/ Installer:

Contractor/Installer: (Print name)

Signature: _____

Owner/Owner Representative:

Owner: (Print name)

Date: _____

Date: _____

I have instructed customer proper maintenance of main drains.

I have read and understand instructions as instructed by contractor/installer as to proper operations.

THE INSTALLATION SIGNOFF FORM TO BE PERMANENTLY POSTED NEAR THE PUMP CONTROLS, & A COPY GIVEN TO THE POOL OWNER & A COPY KEPT WITH OTHER POOL RELATED DOCUMENTS

SAFETY INFORMATION

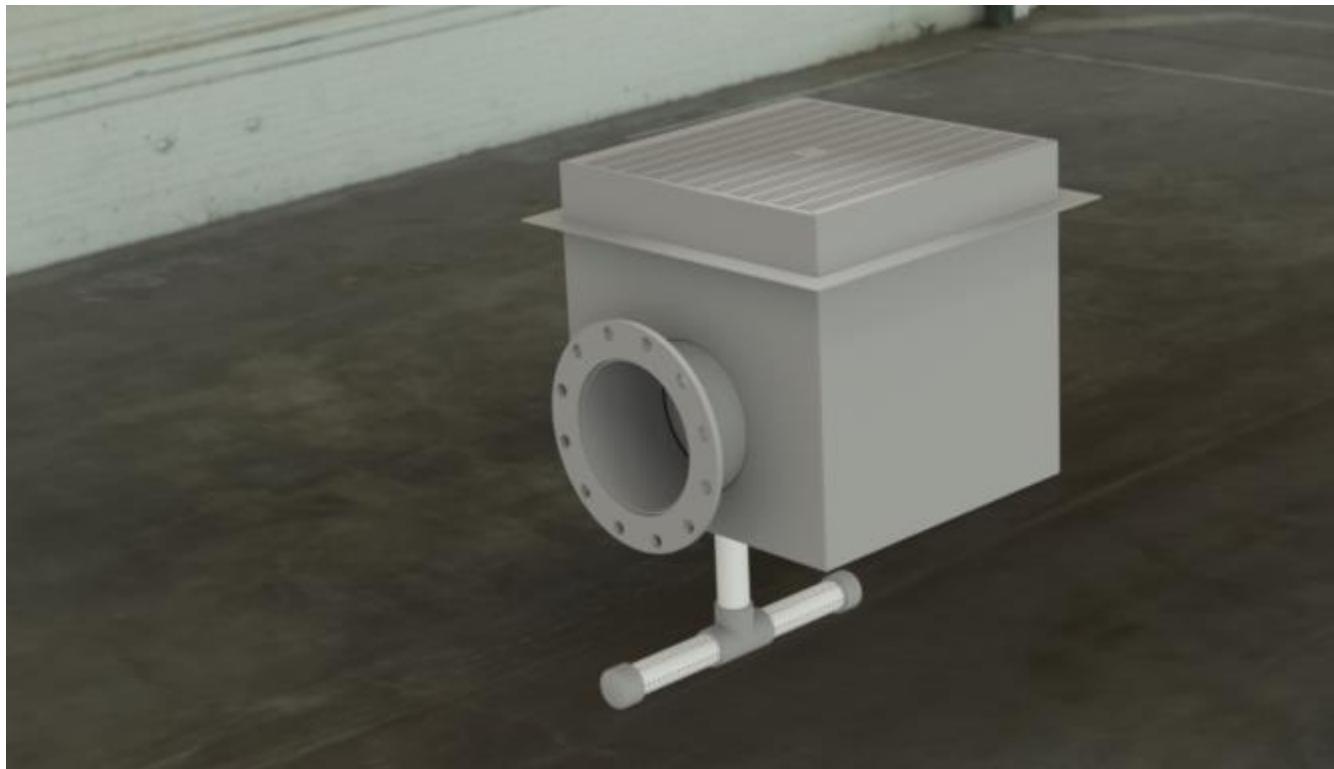
This bulletin includes important safety information that should be read by owners, managers, service personnel, and anyone in charge of the pool or pool area. Also, we suggest a copy be posted for quick reference.

1. Only personnel trained and familiar with the proper use of pool chemicals should handle acid, liquid chlorine or chlorine compounds. Chemicals should never be used when swimmers are in the pool. Acid and liquid chlorine should always be stored, carried, or handled in plastic containers.
2. If grating is a part of the perimeter system, it should be kept firmly clamped down and in good repair at all times. When a section of grating become loose or damaged that particular area must be immediately covered and a replacement of grating ordered. Under no circumstances should swimmers be allowed to use any portion of the perimeter that contains loose or damaged grating. Perimeter grating is not intended for foot traffic. Swimmers should be advised not to walk, stand, or jump on perimeter grates.
3. Ladders and grab rails are intended for the use of one swimmer at a time; they are not designed for handstands or other gymnastic stunts and they should not be used for this purpose. Ladder treads should be inspected regularly. If a tread becomes loose or damaged, the ladder should be taken out of service until repairs are made.
4. Lifeguard Chairs are intended for the individual use of trained "on duty" lifeguards, one (1) guard per chair. Lifeguard chairs are not to be used by swimmers, spectators, or by more than one (1) person at a time. There should be no diving from portable lifeguard chairs. Umbrellas should be closed or removed from portable lifeguard chairs during windy conditions. All frame connections are to be checked for tightness. The seat is bolted to the frame assembly. It is important to advise all users to periodically check to determine that the studs are firmly fastened to the seat and the nuts are tight. If they become loose or detached, it could result in serious injury. On outdoor installations or usage, it is suggested that the seat be removed and stored inside during the winter.
5. Starting Platforms should only be used by trained competitive swimmers or under the direct supervision of an instructor. Swimmers should execute shallow racing dives only. Impact with the pool bottom can cause severe injury. Starting platforms have warning labels and inform the purchaser of the need to remove the platforms during non usage. If your starting platforms do not have warning labels, please contact the manufacturer immediately.
6. Bulkheads are designed and built for strength and safety. Any grating should be kept fully secured to avoid injury. **NO swimming under bulkhead. Never use bulkhead as a support or staging for equipment.** The bulkhead includes a compressor; please refer to owner's manual provided with the unit.

For questions concerning the usage of our equipment, please contact Paddock Pool Equipment Co., customer service.



Main Drain Installation & Operation Manual



© Paddock Pool Equipment Co. | 555 Paddock Parkway, Rock Hill, SC 29730

Phone (803)324-1111 | www.paddockpoolequipment.com | 800-849-2729 Email:info@paddockindustries.com
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Table of Contents

1.0 REVISIONS.....	3
2.0 GENERAL INFORMATION	4
3.0 SERVICE LIFE OF PRODUCTS & COMPONENTS	8
4.0 INSTALLATION INSTRUCTIONS.....	10
5.0 USER MAINTENANCE	13
6.0 DRAWINGS.....	14
7.0 APPENDIX.....	15



1.0 REVISIONS

REVISION	DATE	DESCRIPTION	BY	CHECK
0	04/23/2024	Submission	VCC	
1	5/01/2024	Revised IAPMO R&T filing & content	VCC	

2.0 GENERAL INFORMATION

Introduction

For over fifty-five years, professionals of the most distinctive aquatic centers have come to rely on Paddock Pool Equipment Company to provide total project solutions. Far from just a pool equipment manufacturer, Paddock offers innovative high-performance products, and construction expertise to builders — all tailored to meet the unique demands of each individual project.

Paddock Suction Outlet Fitting Assemblies (SOFA) are certified by IAPMO R&T to comply with ANSI/APSP/ICC-16 2017 (PA 2021). These SOFAs shall not be installed in seating or backrest areas. There shall be no less than a 3-foot separation between suction fittings installed on a common line. These fittings are designed for installation with concrete, vinyl or composite lined pools.

Paddock's SOFA's have passed all required tests for body entrapment and hair entanglement. They have been approved to the maximum flow indicated on the SOFA flow rate chart.

THIS DOCUMENT CONTAINS IMPORTANT SAFETY INSTRUCTIONS. READ, UNDERSTAND, AND FOLLOW ALL WARNINGS AND INSTRUCTIONS.

SAVE THESE INSTRUCTIONS!

Disclaimer: The information in this document is subject to change by Paddock Pool Equipment Company, Inc. ("Paddock") without notice. Paddock assumes no responsibility for inaccuracies or omissions and specifically disclaims any liabilities, losses or risks, personal, business or otherwise, incurred as a consequence, directly or indirectly, of the use or application of any or all of the contents of this document. For the latest or updated documentation, if available, contact Paddock at 555 Paddock Parkway, Rock Hill, SC 29730 T: (803) 324-1111 or visit us online at www.paddockpoolequipment.com.

Intended Use: Use of this document or the Paddock product(s) depicted herein are only for the purpose it/they were designed for; refer to the appropriate specifications sheet. For the latest or updated documentation, if available, contact Paddock at 555 Paddock Parkway, Rock Hill, SC 29730 t: (803) 324-1111, email to info@paddockindustries.com or visit us online at www.paddockpoolequipment.com.

EXCEPT AS EXPRESSLY STATED HEREIN, PADDOCK POOL EQUIPMENT COMPANY INC. MAKES NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS OF THE PRODUCT FOR ANY PARTICULAR PURPOSE, EVEN IF THAT PURPOSE IS KNOWN OR SHOULD HAVE BEEN KNOWN TO PADDOCK.

Patents: Paddock has patents pending on the product(s) which it manufactures depicted in this document.

VGBA Compliant Sump and Cover Key Terminology



ESMD - Entrapment Safe Main Drain (Sump Unit)
AVRD - Anti-Vortex Reduction Device (Stainless Steel)
PCFC - Paddock Certified Flat Cover (Flat Cover)
SOFA – Suction Outlet Fitting Assembly

ANSI/APSP/ICC-16 2007 (PA 2021)

Paddock VGBA Compliant SOFA models available

Model #	Description
9300046	18" X 18" ESMD W/6" Connection, 6" AVRD, Relief Valve and 24" X 24" PCFC, Floor and Wall Flow Rating at 915 GPM
9300044	18" X 18" ESMD W/8" Connection, 8" AVRD, Relief Valve and 24" X 24" PCFC, Floor and Wall Flow Rating at 920 GPM
9300006	24" X 24" ESMD W/8" Connection, 8" AVRD, Relief Valve and 24" X 24" PCFC, Floor and Wall Flow Rating at 920 GPM
9300007	24 X 24 ESMD W/10" Connection, 10" AVRD, Relief Valve and 24" X 24" PCFC, Floor and Wall Flow Rating at 920 GPM
9300011	24" X 48" ESMD W/12" Connection, 12" AVRD, Relief Valve And (2) 24" X 24" PCFC, Floor Flow Rating at 3500 GPM and Wall Flow Rating at 3000 GPM
9300013	24" X 48" ESMD W/ (2)-12" Connection, (2)-12" AVRD, Relief Valve And (2) 24" X 24" PCFC, Floor Flow Rating at 3500 GPM and Wall Flow Rating at 3000 GPM
9300056	24" X 48" ESMD W/14" Connection, 14" AVRD, Relief Valve And (2) 24" X 24" PCFC, Floor Flow Rating at 3500 GPM and Wall Flow Rating at 3000 GPM

Specifications:

Paddock ANSI/APSP/ICC-16 2017 (PA 2021)

Compliant and IAPMO R&T Certified Swimming Pool Suction Outlet Fitting Assemblies

- The Swimming Pool Suction Outlet Fitting Assemblies (SOFA) shall include a velocity, vacuum entrapment, hair entanglement **ANTI-VORTEX REDUCTION DEVICE (AVRD)** which has been submitted under ANSI/APSP/ICC-16 2017 (PA 2021) for testing by IAPMO R&T and found to be in compliance with this standard.
- The SOFA both cover/grate and sump, shall be fabricated from 304L stainless steel. The outlet and outlet piping assembly shall be fabricated with stainless steel piping and designed for compliance with the testing requirements ANSI/APSP/ICC-16 2017 (PA 2021).
- The open area of the SOFA shall be equal to or exceeds the open area of the outlet pipe of the SOFA.
- All grating fasteners in the assembly shall be 316L stainless steel Pan Head Phillips fasteners. All exposed security fasteners shall be inserted or removed with #2 Phillips Screwdriver with a maximum torque of 19.8-inch pounds. All fasteners shall be engaged by a minimum of three (3) threads.
- The velocity of water entering any orifice on the cover/grate of the SOFA during normal operation shall not exceed 1.5 feet per second.
- Blockable SOFAs in existing pools with single SOFA systems shall be installed with an additional anti-entrapment device or system (listed in section 9.4 of ANSI/APSP/ICC-16 2017).
- Paddock's SOFAs must be installed as a multiple SOFA system.
- SOFAs shall be chosen so that the individual flow rate is great than the pumping system's MAX system flow rate (not including secondary circulation systems - skimmer, gutters, etc.)
- Paddock SOFAs are not designed to use any pool surface as a portion of the flow path.

Paddock Suction Outlet Fittings Flow Rates

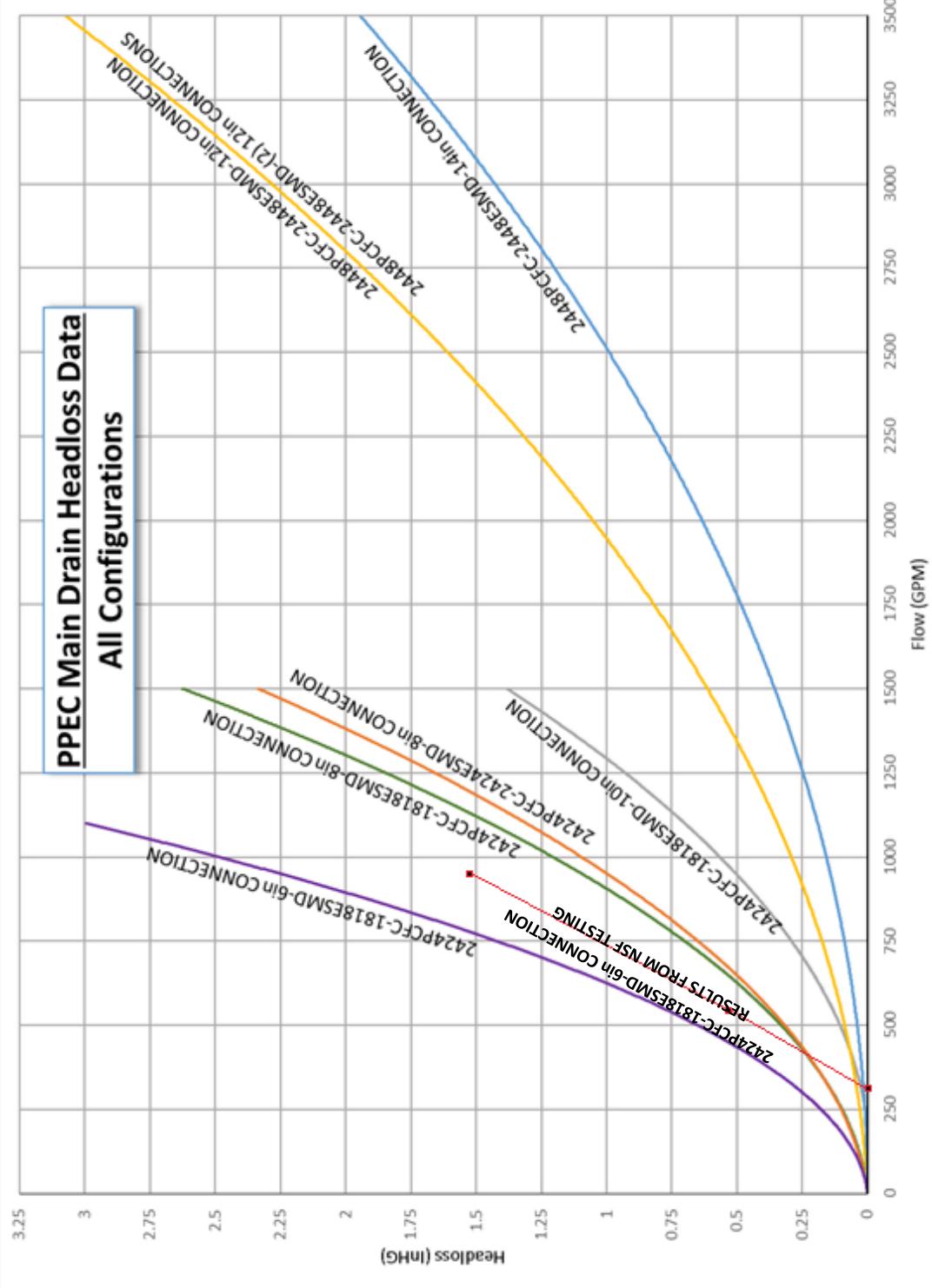
Suction Outlet P/N & Model #	Mounting Position	Total Open Area	Recommended Flow	Maximum Flow per NSF	Blockable or Unblockable
P/N 9300046 Model # 2424PCFC 1818ESMD (sump), 6" Connection	Floor or Wall Use	219.6 sq. inches	915 GPM @ 1.38 fps	915 GPM	Unblockable
P/N 9300044 Model # 2424PCFC 1818ESMD (sump), 8" Connection	Floor or Wall Use	219.6 sq. inches	920 GPM @ 1.38 fps	920 GPM	Unblockable
P/N 9300006 Model # 2424PCFC 2424ESMD (sump), 8" Connection	Floor or Wall Use	219.6 sq. inches	920 GPM @ 1.38 fps	920 GPM	Unblockable
P/N 9300007 Model # 2424PCFC-AVRD 2424ESMD (sump), 10" Connection	Floor or Wall Use	219.6 sq. inches	920 GPM @ 1.38 fps	920 GPM	Unblockable
P/N 9300011 Model # 2448PCFC-AVRD 2448ESMD (sump), 12" Connection	Floor Use	439.2 sq. inches	1996 GPM @ 1.5 fps	3500 GPM	Unblockable
	Wall Use	439.2 sq. inches	1996 GPM @ 1.5 fps	3000 GPM	Unblockable
P/N 9300013 Model # 2448PCFC-AVRD 2448ESMD (sump), (2) 12" Connections	Floor Use	439.2 sq. inches	1996 GPM @ 1.5 fps	3500 GPM	Unblockable
	Wall Use	439.2 sq. inches	1996 GPM @ 1.5 fps	3000 GPM	Unblockable
P/N 9300056 Model # 2448PCFC-AVRD 2448ESMD (sump), 14" Connection	Floor Use	439.2 sq. inches	1996 GPM @ 1.5 fps	3500 GPM	Unblockable
	Wall Use	439.2 sq. inches	1996 GPM @ 1.5 fps	3000 GPM	Unblockable

ONLY INSTALL ON SOFA CONFIGURATIONS LISTED.

CAUTIONARY NOTES:

- Do not exceed maximum allowable flow rate as stated above.
- If pump needs to be changed, a replacement must be the same as the original pump. If a different pump is required, a Registered Design Professional must be contracted to assure original flow rate is not exceeded.

Paddock Suction Outlet Fittings Head Loss Data (from CFD Study)



HEADLOSS MEASUREMENT TAKEN AS CLOSE AS PRACTICAL TO THE SUMP CONNECTION.

3.0 SERVICE LIFE OF PRODUCTS & COMPONENTS

Paddock Main Drain Cover Lifespan

- **Component Lifespans** – The SOFA cover and sump have a lifespan greater than 20 years. The screws should be replaced every 7 years.
- **Requirement** – Inspect cover at 10 years minimum for any signs of damage and replace if needed. (Covers older than 10 years must be inspected yearly by facility operators and documented, then every year thereafter for any damage compromising unit which would necessitate replacement.)
- **Requirement** – Replace screws every 7 years at minimum and document information for records (use only the size and grade of stainless-steel screws 8/32 x 1/2" SS 316 recommended by Paddock).
- **Recommendation** – Establish a yearly checklist for facility operators to document inspection of covers and screws for damage – replace any covers or screws immediately that are compromised, damaged or broken in any way. If threaded holes become damaged contact PPEC immediately to determine the best means of repair (brittle/missing pieces, cracks, non-superficial changes to color).
- The 2424ESMD and 2448ESMD Stainless Steel Sump Box and their components are permanently mounted in the pool shell and will not require replacement. This includes all integral parts listed on ESMD Parts List Breakdown.
- Paddock Main Drain Covers do not need to be replaced unless they are compromised, damaged or broken and all above requirements are met. These are stainless steel covers and should last life of facility if properly maintained. Ultraviolet light test which establishes life expectancy is for degradation of resin products such as PVC or plastics.
- SOFA(s) should be chosen so that the individual suction system flow rate is greater than the pumping system's **MAXIMUM** system flow rate.
- The capacity of the secondary circulation systems should not be included when evaluating an individual suction system flow rating.
- To determine the flow rating for pools with multiple blockable SOFAs in one body of water without isolation valves combine all SOFAs minus the flow rate of one. If not, all SOFAs flow rates are equal subtract the largest flow rate. The flow rating for existing pools with a single blockable SOFA is the flow rating of the SOFA when also installed w/an additional device to prevent suction entrapment. The flow rating of a single blockable SOFA without an additional device is zero.
- The flow rating for pools with single or multiple unblockable SOFAs shall be the combined flow rate of al SOFAs pipe together on one body of water.
- SOFAs shall not be located on backrests or seats.
- When installing and using this equipment basic safety precautions shall always be followed including the "**Important Safety Instructions**" included in Section 4 Installation Instructions.
- Service life begins when the SOFA is installed (with or without water).

4.0 INSTALLATION INSTRUCTIONS

SAVE THESE INSTRUCTIONS!

IMPORTANT SAFETY INSTRUCTIONS READ, UNDERSTAND, AND FOLLOW ALL WARNINGS AND INSTRUCTIONS

IMPORTANT: READ AND STORE THESE INSTRUCTIONS FOR FUTURE REFERENCE.

WARNING! Install this equipment in accordance with the instructions provided. FAILURE TO FOLLOW INSTRUCTION AND/OR USE WITH COMPONENTS NOT PROVIDED BY PADDOCK AND INTENDED TO BE USED WITH THIS PRODUCT MAY RESULT IN IMPROPER POSITIONING OR FUNCTIONING OF SUCTION OUTLET AND MAY CAUSE SEVERE PERSONAL INJURY OR DEATH.

CAUTION LABEL: REMOVE AND INSTALL ALL EXPOSED SCREWS WITH A PHILLIP #2 SCREWDRIVER. APPLY A MAXIMUM TORQUE OF 19.8 INCH POUNDS. DO NOT USE POWER TOOLS TO INSTALL FASTENERS.

NOTE: GRATE ALIGNMENT & ELEVATION IS CRUCIAL. IF NOT PROPERLY ALIGNED, HOLES WILL NOT MATCH. MARK GRATE LOCATION ON FRAME TO MATCH FOR REINSTALLATION LATER. THE GRATE MUST BE SET FLUSH WITH POOL FLOOR, IF NOT THE EDGES POSE A HAZARD FOR POOL OCCUPANTS. FIELD MODIFICATIONS NOT AUTHORIZED BY PADDOCK POOL EQUIPMENT COMPANY OR THESE INSTALLATION INSTRUCTIONS SHALL VOID THE SOFA CERTIFICATION. ANY MODIFICATION THAT INCREASES THE FLOW RATE OF THE CIRCULATION SYSTEM SHALL REQUIRE RE-EVALUATION OF THE COVER/GRADE AND SUMP TO ENSURE THAT THE FLOW RATING OF THE SUCTION OUTLET FITTING ASSEMBLY (SOFA) IS NOT EXCEEDED.

NO CONFIGURATION CHANGES TO THE STRUCTURE OR FLOW PATH OF THIS DRAIN ASSEMBLY ARE ALLOWED UNLESS THE NEW CONFIGURATION HAS BEEN CERTIFIED.

ADHESIVES AND PERMANENT ATTACHMENT METHODS ARE PROHIBITED. THE COVER IS TO REMAIN REMOVABLE.

INSPECT FOR MISSING, BROKEN OR CRACKED SUCTION FITTINGS, THESE SHALL BE REPLACED BEFORE BATHERS ARE ALLOWED TO USE THE POOL.

ANY LOOSE COVER/GRAVES AND ASSOCIATED COMPONENTS SHALL BE REATTACHED BEFORE BATHERS ARE ALLOWED TO USE THE POOL.

*** **Make** sure product is properly cleaned with Sheila Shine or similar after installation. Carbon contamination could show up as surface rust in a couple of months from dissimilar materials coming in contact with stainless steel. Example: carbon drill bits or saw blades.

Installation: RENOVATION

1. Bonding SOFAs (Electrical Inspection may be required).
 - a. Chip to find rebar in structural frame of pool, which is grounded.
 - b. Attach grounding lug to existing structural rebar. (reference National Electric Code Article 680)
 - c. Attach grounding lug and 8-gauge grounding wire to structural frame of pool.



2. Drain Assembly for Testing
 - a. The Paddock SOFA includes a blanking plate to allow for plumbing pressure testing.
 - b. The supplied hardware will allow for installation of the blanking plate and the AVR. Ensure the blank plate is removed prior to putting the pool in operation.

3. Completing installation

- a. Confirm all suction outlet fitting components and fastener receptacles are clean and free of debris or obstructions during installation of cover/grate and fasteners.
- b. Start all fasteners by hand to ensure proper thread engagement and prevent cross threading then tighten to a maximum torque of 19.8-inch pounds. **Do not use power tools to install fasteners.**
- c. Make sure that cover is flush to the existing pool finish and confirm snugness of the cover/grate to the sump/frame by a hand check after installation.
- d. Marcite voids around frame if needed.
- e. Give owner certificate of compliance and extra screw pack for cover.
- f. **Log date of installation once work is completed.**

Contact Paddock Pool Equipment Company, Customer Service for assistance.

5.0 USER MAINTENANCE

Inspection Schedule

Daily (or before each use of the facility):

- a. Inspect the cover/grate, including fasteners, for damage or tampering each operation day.
- b. Missing, broken or cracked covers/grates, including fasteners, shall be replaced before bathers are allowed to use the pool.

Important Notes

- Before removing the cover/grate(s), mark the cover/grate that matches the screw hole(s) and make sure the smooth side is facing up. This will insure placement of cover/grate(s) will line-up correctly. Improper install of the cover/grate(s) will cause the screws to not fit the sump and a hazard to the bathers.
- Any loose cover/grates and associated components shall be reattached before bathers are allowed to use the pool.
- All exposed fasteners on Paddock Main Drain Cover/Grate require a Phillip #2 Screwdriver for insertion and removal. Start all fasteners by hand to ensure proper thread engagement and prevent cross threading then tighten to a maximum torque of 19.8-inch pounds. DO NOT USE POWER TOOLS TO INSTALL FASTENERS.
 - a. Confirm all SOFA components and fastener receptacles are clean and free of debris or obstructions during installation of cover/grate and fasteners.
 - b. Make sure that cover is flush to the existing pool finish and confirm snugness of the cover/grate to the sump/frame by a hand check after installation.
- Paddock Pool Equipment Company must be contacted in the event a fastener fails to engage (stripped or cross threaded hold) the stainless sump/frame prior to allowing bathers to return to the pool.

Winterization

The **winterization procedure** is to inspect drain(s) for cracks and damages.

- Replace grate if damaged. Also, inspect screws and make sure grate(s) is secure. Replace any missing screws. If required, remove grate(s) and associated hardware to allow for a sump pump to be utilized to prevent water from freezing in the sump.
- Store removed components in a well-marked box and store in a location that allows for easy retrieval for installation prior to putting the pool back into service. See above Important Notes.



Main Drain Operation Manual

6.0 DRAWINGS

Main Drain Assembly Drawing(s) (In Drawing Folder)



Main Drain Operation Manual

7.0 APPENDIX

Appendix



MAIN DRAIN INSTALLATION - SIGNOFF FORM

Job Name, City, State: _____ Job No.: _____

The following information is required to validate the expressed warranty. Complete this form upon start-up of pool and return via email (subject: Main Drain Installation) or mail to the address below.

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Date of Main Drain Installation: _____

Service Life of Cover/Grate: **> 20 years -- This SOFA is UNBLOCKABLE**

Select Installed P/N & Model	Qty	Location (comp., therapy, warm-up,lifestyle)	Mounting Position	Suction Outlet P/N & Model #	Maximum Flow per IAPMO R&T
<input type="checkbox"/>			Floor Use	P/N 9300046 Model # 2424PCFC - 1818ESMD (sump),6" Connection	915 GPM
<input type="checkbox"/>			Wall Use		
<input type="checkbox"/>			Floor Use	P/N 9300044 Model # 2424PCFC - 1818ESMD (sump),8" Connection	920 GPM
<input type="checkbox"/>			Wall Use		
<input type="checkbox"/>			Floor Use	P/N 9300006 Model # 2424PCFC - 2424ESMD (sump), 8" Connection	920 GPM
<input type="checkbox"/>			Wall Use		
<input type="checkbox"/>			Floor Use	P/N 9300007 Model # 2424PCFC-AVRD - 2424ESMD (sump), 10" Connection	920 GPM
<input type="checkbox"/>			Wall Use		
<input type="checkbox"/>			Floor Use	P/N 9300011 Model # 2448PCFC-AVRD - 2448ESMD (sump), 12" Connection	3500 GPM
<input type="checkbox"/>			Wall Use		
<input type="checkbox"/>			Floor Use	P/N 9300013 Model # 2448PCFC-AVRD - 2448ESMD (sump), (2) 12" Conn's	3000 GPM
<input type="checkbox"/>			Wall Use		
<input type="checkbox"/>			Floor Use	P/N 9300056 Model # 2448PCFC-AVRD - 2448ESMD (sump), 14" Connection	3500 GPM
<input type="checkbox"/>			Wall Use		

Contractor/ Installer:

Signature: _____

Owner/Owner Representative:

Signature: _____

Contractor/Installer: _____

(Print name)

Owner: _____

(Print name)

Date: _____

Date: _____

I have instructed customer on proper maintenance of drains.

I have read and understand instructions as instructed by contractor/installer as to proper operations.

THE INSTALLATION SIGNOFF FORM TO BE PERMANENTLY POSTED NEAR THE PUMP CONTROLS, A COPY GIVEN TO THE POOL OWNER & A COPY KEPT WITH OTHER POOL RELATED DOCUMENTS



HDPE Grating

Sample colors of Paddock Pool Equipment Company



WHITE

LIGHT GREY



Gutter Depth Marker/ Target - Vinyl Decal Installation

Your graphics will come in three layers, a backing paper layer on the bottom to keep the adhesive from being exposed, the vinyl layer (this is your graphic), and a masking layer on top. The masking layer makes the vinyl easier to handle and keeps everything pre-spaced for you to apply your graphic as one piece.

You will need:

- Clean rags
- Denatured alcohol
- Microfiber towel
- Vinyl applicator

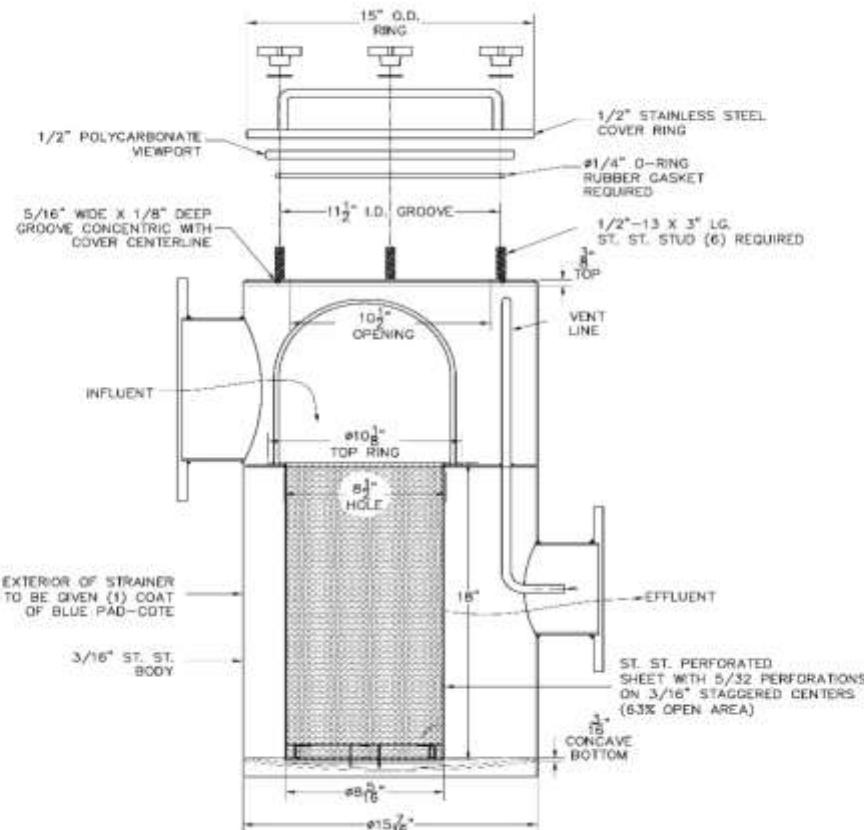
It is best to do this process when the pool is not in use.

1. Lower Water Level
 - a. Water level should be lowered at least an inch below the bottom level of the decal.
 - b. Make sure to turn off any auto-fill devices to keep water from rising while applying decals.
2. Clean Gutter Thoroughly
 - a. Wipe away any moisture.
 - b. Clean the entire area where the decals will be applied using denatured alcohol and a clean rag.
 - c. Wipe dry with a clean microfiber cloth.
3. Apply Decal
 - a. Peel the backing from the decal making sure they stay attached to the protective paper on the front.
 - b. Take care to make sure the decal is level and spaced correctly.
 - c. Apply the decal sticking the top part first to the cleaned gutter surface and using your hand or applicator, slowly starting from the top, slide down the decal gently pressing it onto the gutter until the decal is fully applied.
 - d. Using the applicator, firmly press the decal from the center out to push any air bubbles to the edge.
 - e. Carefully peel the protective paper off making sure the decal sticks to the gutter (If decal starts to come off with the protective paper, stop, put the protective paper back as far as needed, and use applicator to press decal to gutter surface).
4. Cure
 - a. Wait at least 12 hours before introducing water to decals.
5. You can use a SEALITPEN to seal the edges of the graphic for longer durability. Follow directions on the pen.

If you have any question(s) contact customer service see below for our information.

Paddock Industries Pump Strainer Installation, Start-Up, Shut-Down

The Pump Strainer is a high-quality stainless-steel vessel incorporating a perforated stainless-steel basket designed to strain hair, lint, and other large particles from the fluid stream that might clog or damage the pump's impeller. A typical design is shown in the cross-sectional view below.



Installation

Support the strainer, pump, and plumbing independently using standard concrete pedestals to mount the pump and standard pipe supports for the plumbing. Typically, the strainer sits on the floor, but a pedestal can be constructed for it, if necessary. Attach the strainer flange to the pump flange using standard flange gaskets and hardware. Likewise, attach the influent plumbing to the strainer. Install an isolation valve in the influent line upstream of the strainer, and another in the effluent line downstream of the pump.

Start-Up

Close both isolation valves, remove the strainer lid, and fill the strainer and pump volute with water through the lid opening if pump is installed above water level. In a flooded-suction situation, crack open the influent isolation valve to allow the strainer and volute to fill with water, then close influent isolation valve. Re-install the strainer lid, making sure it is secured and sealed tightly. Open the influent isolation valve and start the pump. After about five seconds, slowly open the effluent isolation valve, taking 5-10 seconds to open the valve. This slow opening of the effluent isolation valve after pump is started eliminates the possibility of creating a water hammer (also known as hydraulic shock).

555 Paddock Parkway, Rock Hill, SC 29730

Telephone: 803 324 1111 * Facsimile: 803 324 1116 * Email: info@paddockindustries.com
www.paddockindustries.com



Shut-Down....

Gradually close the effluent isolation valve, taking 5-10 seconds, before turning pump off. This slow closing of the effluent isolation valve prior to turning the pump off prevents water hammer. This “dead-heading” of the pump for a few seconds will in no way damage it. If the strainer is to be opened at this time for cleaning, close the influent isolation valve before removing the lid. Upon replacement of a clean basket, re-install the lid and secure it tightly, and open the influent isolation valve. Do not open the effluent isolation valve until after the pump is started so as to prevent water hammer.

A Word About Water Hammer....

Water hammer is a destructive pressure spike caused by the sudden deceleration of water flow. The pressure spike potential can be easily calculated by multiplying the water velocity at normal flow in feet per second by 65. This gives the pressure spike potential in pounds per square inch. For example, water flowing at 6 ft/s will cause a 390 psi water hammer if the water flow is suddenly stopped. This can occur upon starting a pump with air in the plumbing every time the water flow encounters an elbow or tee, or upon closing a valve suddenly, or even upon simply turning off a pump without first slowing the water flow down. **Failure to prevent water hammer constitutes abuse and will render any warranties void.**

GRATING

High Density Polyethylene (HDPE)

ADJUSTMENTS & CHARACTERISTICS with CARE & CLEANING MAINTENANCE

HDPE Grating Adjustments & Characteristics

HPDE grating is highly durable and will give years of good service in the pool environment. The grating is held in place by either a front capture strip and a rear HDPE camlock or by a HDPE camlock front and back. A 1/4" x 1 1/2" x 3/16" allen head screw is used to tighten the camlock.

- Grating can be gapped up to 3/8" (three-eighths of inch), however at normal operating temperatures, the gap for indoor pool is 1/8" (one-eighth of inch) and outdoor pool is 1/4" (one-fourth of inch). An outdoor pool grating will contract and expand with sizeable temperature swings. Larger gaps can be expected in cold temperatures. At initial startup grating may need to be adjusted when pool reaches operating temperature.
- Grating fasteners needs to be inspected at the start of the swim season and periodically throughout the year. Adjust as needed, by hand loosening cam-locks with a 3/16" allen wrench, re-adjust gaps as listed above and re-tighten.

Care and Maintenance

- Paddock's HDPE grating is marine-grade polymer sheeting which is resistant to most chemicals and requires little maintenance to keep it looking new.
- Keep harsh solvents, acids, wood stains and wood preservatives away from Paddock HDPE finish. They may cause permanent staining and damage.
- Staining from rust is very difficult to remove so keep uncoated non stainless metals away from HDPE material.
- Shoes with marking soles can leave scuff marks that can be difficult to remove

Cleaning

- For daily cleaning of everyday dirt and stains, use a non-abrasive cleaner such as "Zud" or "Soft Scrub" and a nylon brush to scrub lightly. Excessively hard scrubbing can mar the finish.
- Hard to remove stains will usually go away if you soak the area with bleach. **When using this method, you must remove the grating from the stainless steel so it will not cause corrosion.** Do not use 100% granular or tablet chlorine as a bleach alternate.
- Pressure washing can mar the finish.
- Petroleum based stains can be difficult to remove, soak the area with WD-40®. Then use acetone or toluene with a white nylon scrub pad (color-based pads can transfer dye color to finish when combined with acetone)
- Do not use MEK, turpentine or naphtha solvent.
- Do not use polishes such as Armor-All ® to non-skid areas, this will reduce the slip coefficient and cause a fall/slip hazard.



STAINLESS STEEL PRODUCTS

Care & Maintenance Guide

General Precautions:

Scratching can occur on a bright finish by cleaners that contain hard abrasives or even by "grit" in wash water. The best preventive measure is to avoid using abrasive cleaners unless absolutely necessary. When abrasives are needed first experiment on an inconspicuous area. A "soft abrasive", such as Zud liquid or Bon Ami should be tried first to see initial test results. While cleaning with products mentioned be sure to observe direction of grain in material. Following grain while cleaning material will limit scratching. Many cleaners contain corrosive ingredients which require thorough cleaning and rinsing with clean water and is recommended for all cleaning procedures.

General Maintenance Procedures:

Stainless steel equipment will need to be cleaned on a regular basis for aesthetic considerations and to preserve corrosion resistance against evaporated chloramines or spotting. Stainless steel is protected from corrosion by a thin layer of chromium oxide. Oxygen from the atmosphere combines with chromium in stainless steel to form this passive chromium oxide film that helps protect against corrosion. Any contamination of surface by dirt, chlorides, greases, or other material will hinder this passivation process, and traps corrosive agents thus reducing corrosion protection. Chlorine and bromine used for sanitation are highly caustic chemicals to stainless steel, while heat and humidity enhance corrosiveness of these chemicals especially in natatoriums. Thus, some form of routine maintenance is necessary to preserve appearance and integrity of surface. Stainless steel is easily cleaned by many different methods. They actually thrive with frequent cleaning, and unlike some other materials it is impossible to "wear out" stainless steel by excessive cleaning. Your goal should be a robust cleaning and maintenance program to keep stainless steels protective chromium oxide layer intact which helps prevent corrosion.

To increase longevity of your stainless steel equipment, follow these steps:

1. Establish a proper grounding of all equipment being installed at aquatic facilities. Make it a point that dissimilar metals are not in direct contact of one another. Taking this precaution will minimize risk of forming an electrolytic cell between equipment, pool water and atmosphere at facility.



2. Once all equipment has been installed at facility, apply a coat of paste wax (automotive or marine wax) and buff equipment with soft cloth to assist in extended corrosion protection. Redo this process with waxing after using cleaners or at six-month intervals on stainless equipment. This wax will form a protective barrier between stainless steel and environmental elements left behind by evaporating pool water on equipment.
3. As stated previously rinse all equipment frequently with fresh water and dry with soft clean cloth. This should wash away any accumulated halogen salts such as chlorine or bromine. **DO NOT** use pool water, salt water, high PH or iron in water to clean your stainless steel products.
4. Pool equipment should be inspected regularly. Look for any tarnish, discoloration, stubborn stains, grease build up, blemishes or water spotting of stainless equipment. If apparent, then take appropriate steps to remove corrosive elements with a non-chlorinated stainless steel cleaner and water rinse.

NEVER use steel wool, sandpaper, hydrochloric acid, muriatic acid, mineral acids or harsh abrasive cleaners on stainless steel equipment. Steel wool will add to corrosion due to dissimilar metal materials coming into contact with equipment. Discoloration should be removed at first sign with a cleaner or polisher recommended for stainless steel equipment.

Note: Avoid adding chlorine in close proximity to stainless steel equipment. Dilute chlorine in 5-gallon bucket and pour as far from stainless equipment as possible. Also avoid cleaning masonry and pool decks with strong acid solutions that come in contact with stainless steel products. Do not pour straight muriac acid directly into pool for PH control. This method increases corrosion to stainless steel around application area.

Effective Cleaning Methods:

There are many choices available for cleaning stainless steel in market that consumers may utilize. Depending upon cleaning needed and degree of contamination, some products may be better than others. Although some products are listed as stainless steel cleaners, they may scratch surface and may contain chloride bleach which will discolor, tarnish or dull finish if not removed completely.

There are many industry associations that have listed available product that can be utilized in cleaning stainless steel products. Use of these proprietary names is intended only to indicate a type of product available and does not constitute an endorsement. Omission of any proprietary product does not imply inadequacy. Review each product being utilized in strict accordance with instructions on packaging. No one product is best for every form of cleaning, since there are many levels of corrosion.



The simplest, safest and least costly method that will adequately do the job is always best. The longer a stain is on surface of stainless equipment, the higher chance of permanent discoloration or damage. Stainless steel surfaces thrive with frequent cleaning because there is no surface coating to wear off material. A soft cloth and clean warm water should always be first choice for mild stains and loose dirt and soils. A final rinse with clean water and a dry wipe will complete process and eliminate possibility of water stains. **DO NOT** use pool water, salt water, and water with high PH or iron content to clean your stainless steel products.

Dealing with stubborn stains, discolored or tarnished stainless steel product try and utilize recommended merchandise per various manufacturers. Some recommended product: CitiSurf product such as 77 plus or 2310, Sta-clean, Zud liquid, Samae, Bon Ami, Allchem concentrated cleaner, Twinkle, 3M stainless steel cleaner and polish, Sheila Shine, Perfect Sink, Liquid Nu Steel, Lumin cleaner, Gade FFF or Grade F Italian pumice, Highlite and many others.

Surface restoration may be needed when stainless steel is scratched or pitted due to heavy corrosion. This can be accomplished by mechanically polishing as opposed to chemical cleaning above. A professional familiar with process should be contacted to handle.



SUBMITTAL TRANSMITTAL RECORD

TO: **The Skillman Corporation**
Attn:
3834 S. Emerson Ave., Bldg. A
Indianapolis, IN 46203

DATE: November 27, 2024
TSC#: 222140
A/E #:
RE: **Connersville HS & Frazee Elem Renovation**

NOTE: ONLY ONE SPECIFICATION SECTION IS TO BE SUBMITTED PER TRANSMITTAL.

CONTRACTOR NAME:	RLTurner		SUBMITTED BY:	Chris Roys
BID CATEGORY NUMBER AND NAME:	BC NUMBER: BC NAME:	#7 - Aquatic Package		
SPECIFICATIONS SECTION NO:	13 11 13-1	IS THIS A RE-SUBMITTAL? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		
SECTION NAME & DESCRIPTION:	Main Drains & Reducers PD			
MANUFACTURER/ SUPPLIER:	Spear Aquatics, LLC			
TYPE OF SUBMITTAL & NUMBER OF COPIES:				
<input type="checkbox"/> SHOP DRAWINGS <input checked="" type="checkbox"/> PRODUCT DATA <input type="checkbox"/> SAMPLES <input type="checkbox"/> COLOR SELECTIONS <input type="checkbox"/> CLOSE-OUT DOCUMENTS			ARCHITECT STAMP:	
REMARKS: Connersville HS				



R.L. Turner Corporation
1000 West Oak St
Zionsville, Indiana 46077
Phone: +13178732712

Submittal #13 11 13-1.0

13 11 13 - Pool General

Project: 24-17 - CONNERSVILLE HIGH SCHOOL & FRAZEE ELEMENTARY
1100 SPARTAN DRIVE
CONNERSVILLE, Indiana 47331
Phone: 317-873-2712
Fax: 317-873-1262

Main Drains & Reducers PD

SPEC SECTION:	13 11 13 - Pool General	SUBMITTAL MANAGER:	Chris Roys (RLTurner Corporation)
STATUS:	Emailed	DATE CREATED:	11/27/2024
ISSUE DATE:	11/27/2024	REVISION:	0
RESPONSIBLE CONTRACTOR:	SPEAR AQUATICS, LLC	RECEIVED FROM:	Daniel Grundlock
RECEIVED DATE:	//	SUBMIT BY:	//
FINAL DUE DATE:	12/11/2024	LOCATION:	
TYPE:	Product Information	COST CODE:	
APPROVERS:	David Foster (The Skillman Corporation)		
BALL IN COURT:			
David Foster (The Skillman Corporation)			
DISTRIBUTION:			
DESCRIPTION:			
ATTACHMENTS:			

SUBMITTAL WORKFLOW

#	NAME	SUBMITTER/ APPROVER	SENT DATE	DU DATE	RETURNED DATE	RESPONSE	ATTACHMENTS	COMMENTS
1	David Foster	Approver		12/11/2024		Pending		

"APPROVED TO BE IN ACCORDANCE WITH
THE CONTRACT DOCUMENTS, EXCEPT AS
NOTED:"

SIGNED: DATED:

Youssef Mahfouz, PE 11-27-2024

BY

DATE

COPIES TO



Paddock Pool Equipment Co. LLC 555 Paddock Pkwy
Rock Hill SC 29730 United States

Submittal

#SO24747 11/22/24

Main Drains & Reducer

Bill To	To	Project Manager
Lindsey	Spear Corporation	Sam
Spear Corporation 12966 N	Blake sblake@spearcorp.com	Daniel
CR 50 W	Grundlock dgrundlock@spearcorp.com	
Roachdale IN 46172		Virginia Collins
United States		virginia.collins@paddockindustries.com
		803-372-6067

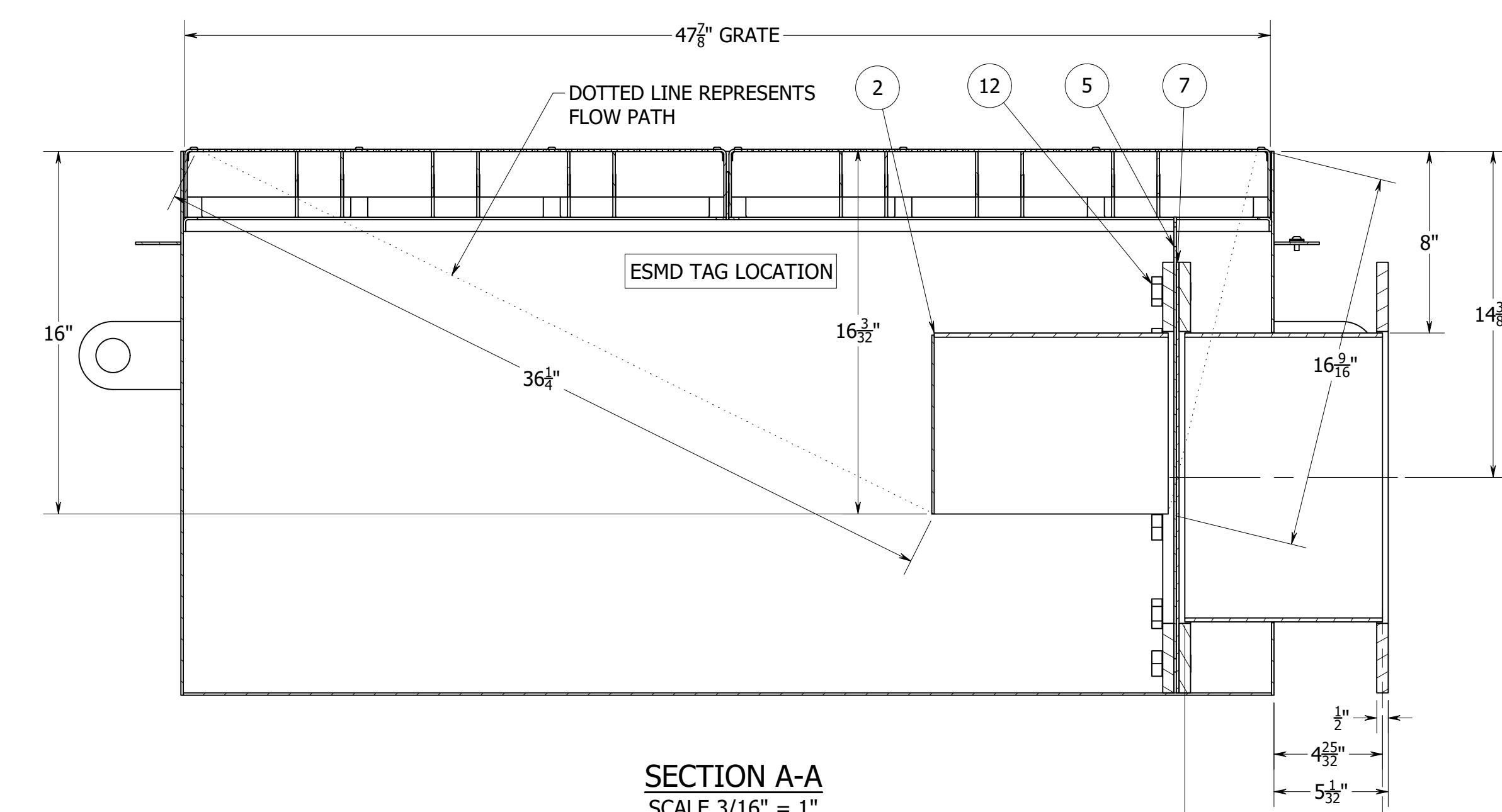
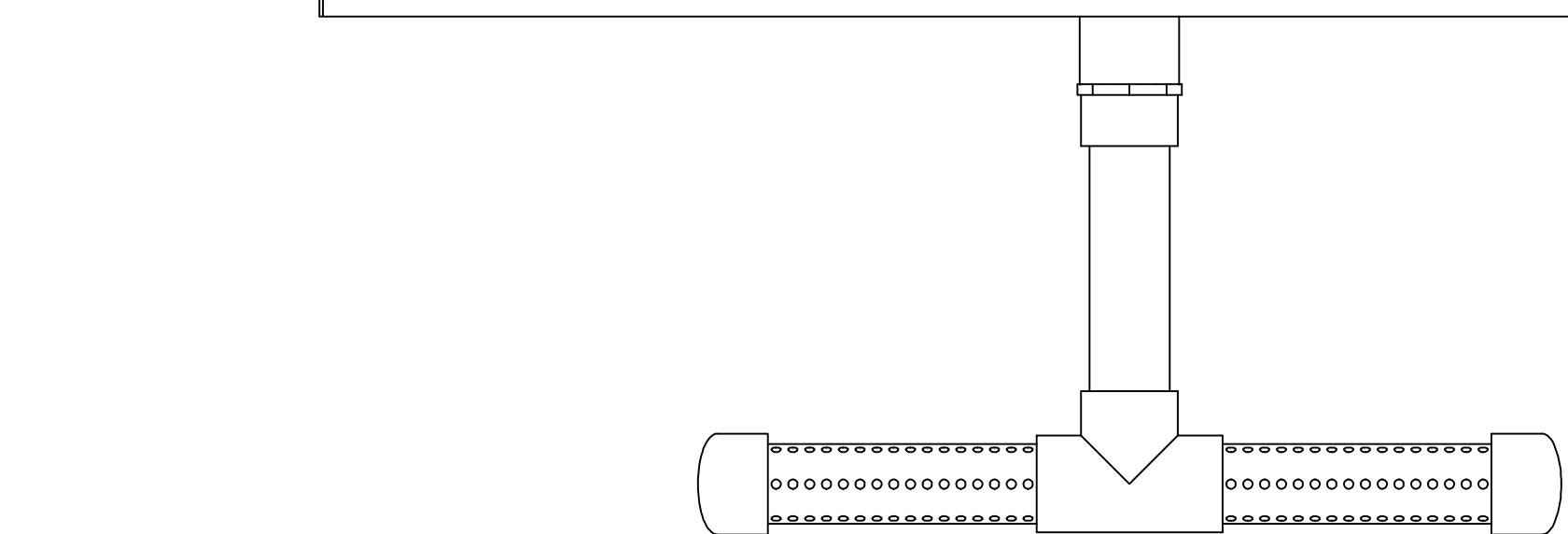
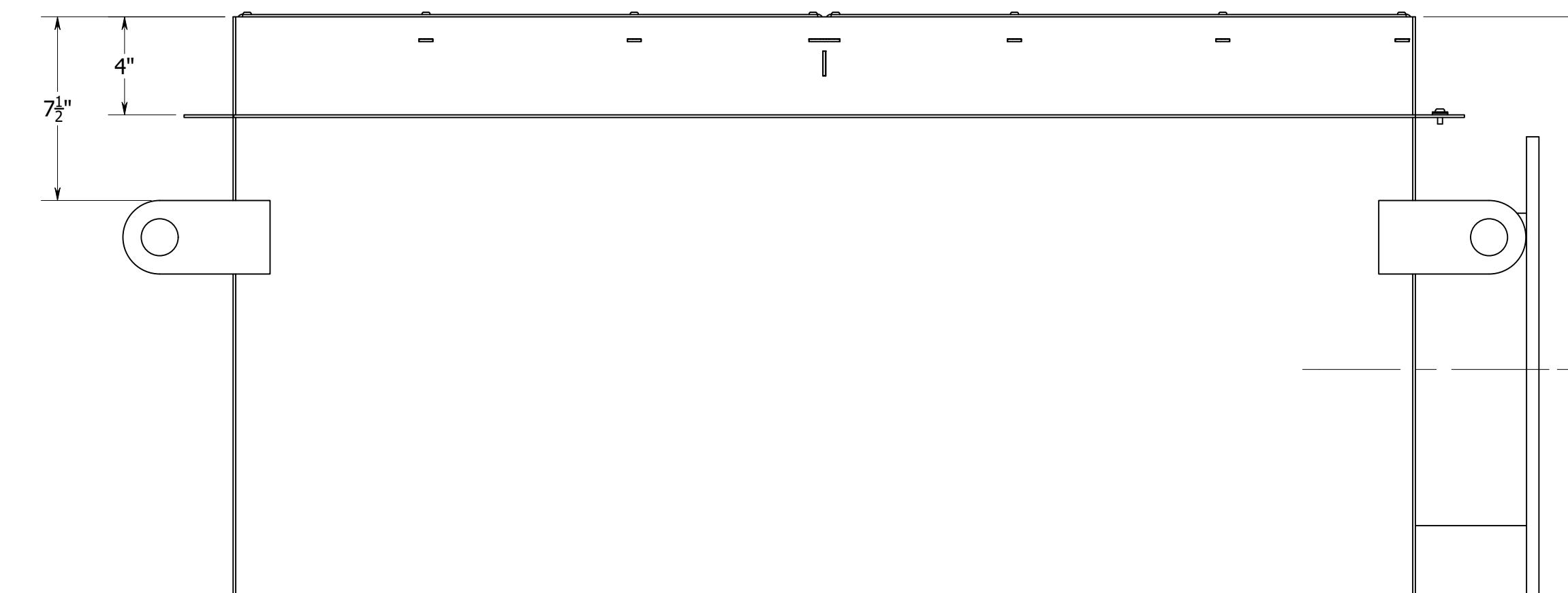
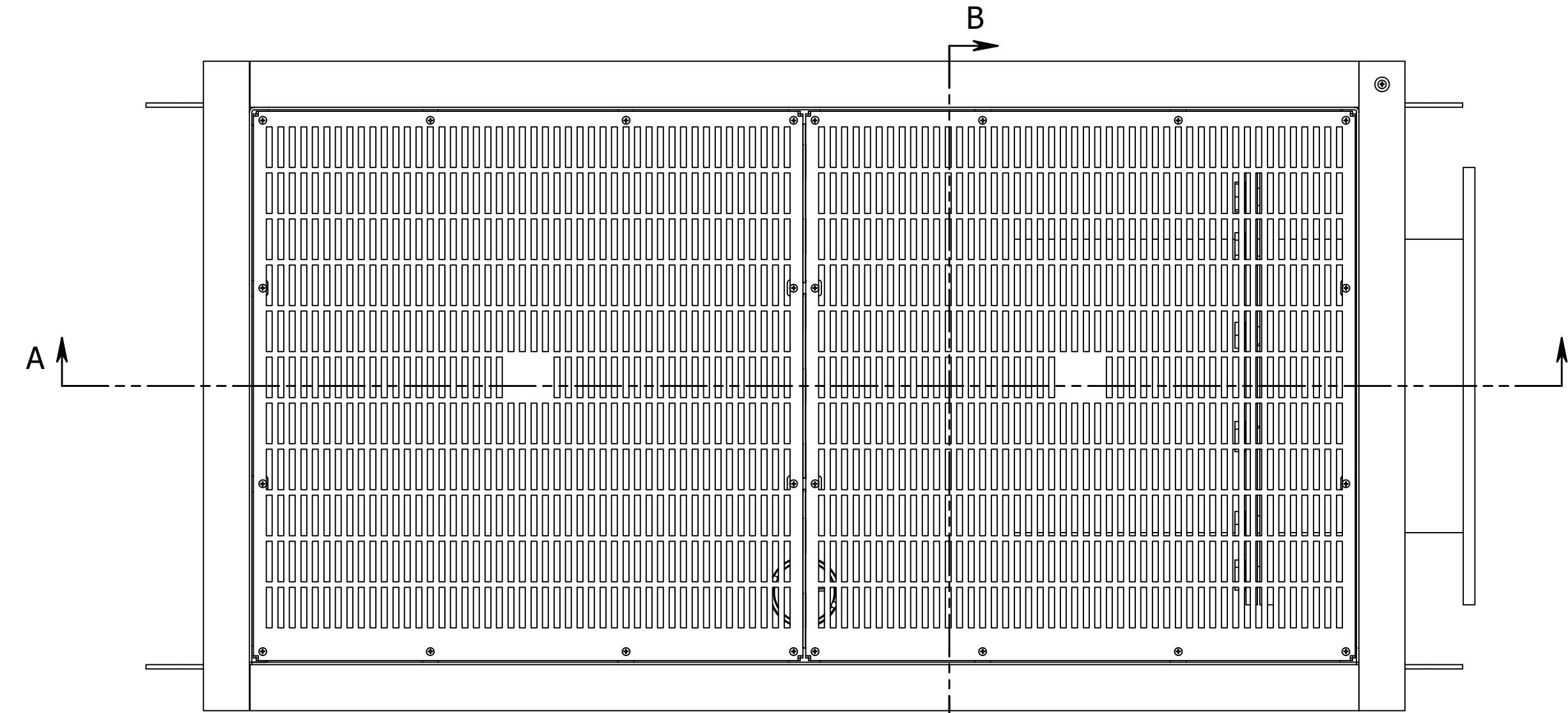
PO #
Connersville HS PO36545

Line Number	Quantity	Item	Drawing	Approval
3	2	MD-304-2448FC-2448-12/1 MainDrain 304L 2448FlatCover 24X48Sump 12"Conn MainDrain 304L 2448FlatCover 24X48Sump 12"Conn	MD 2448FC 2448	
4	2	CR-304-12-08 Reducer C 304L 12"X8"		

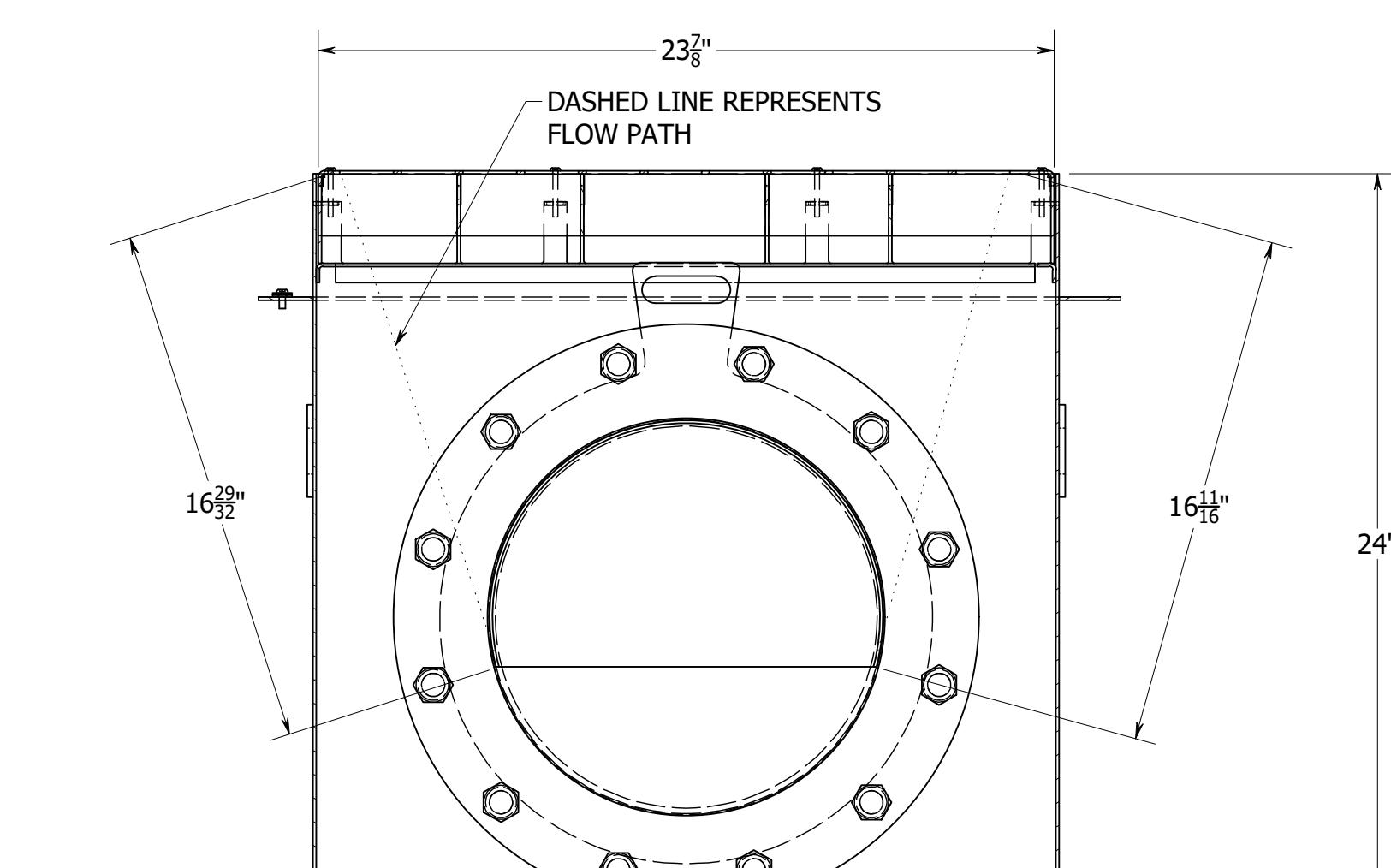
Exceptions as Noted: Contractor to coordinate alternate main drain and associated piping connections.

Water Technology Inc.
Submit Review
Project Name: Connersville IN High School
Project Number: 02249
Submittal ID: 131113-1
Received On:
Reviewed On:
Reviewed By: Jim Breternitz
Action: Exceptions As Noted

WTS review is for general conformance with the design concept of the project and the information given in the contract documents. The contractor is solely responsible for, and this review does not indicate, confirming and verifying all construction details, including but not limited to, the quality of materials used, methods of construction, coordinating the work with that of other trades and performing all work in a safe and satisfactory manner. Corrections or comments made on this submittal during this review do not relieve contractor from compliance with the requirements of the contract documents or with its responsibilities listed above.

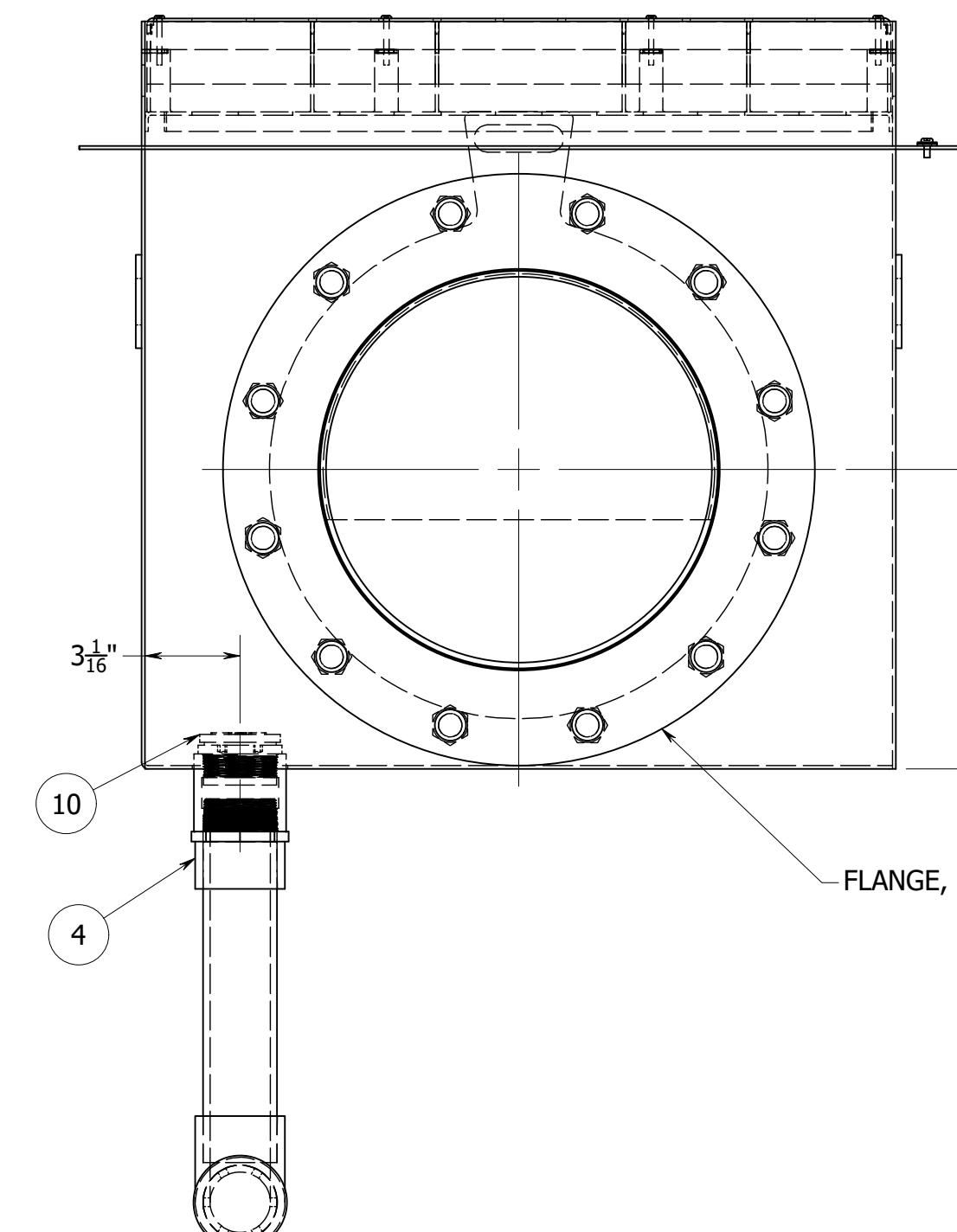
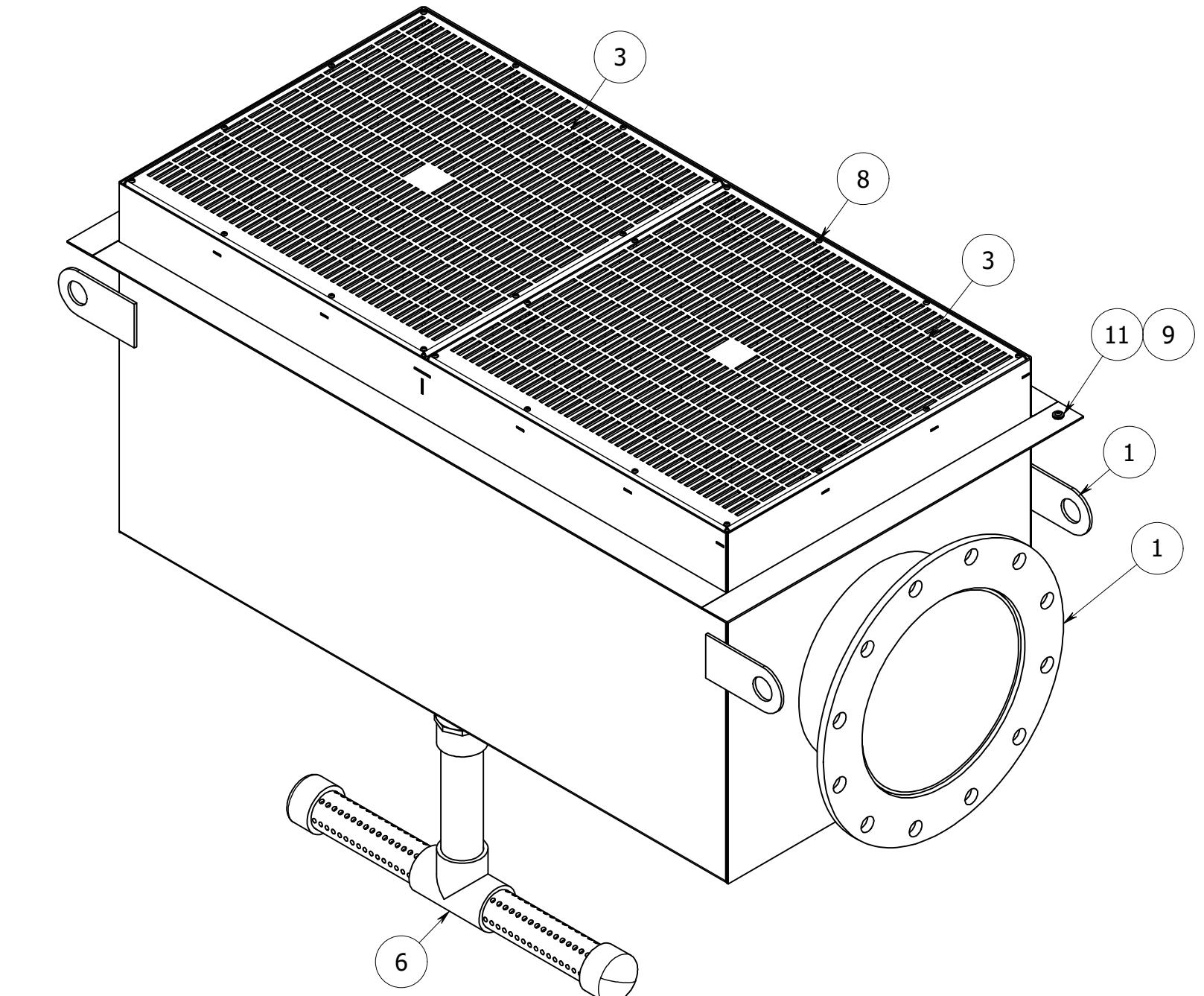


SECTION A-A
SCALE 3/16" = 1"



SECTION B-B
SCALE 3/16" = 1"

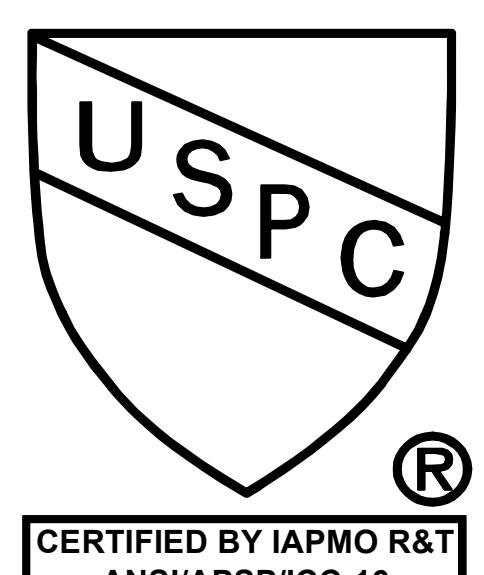
ITEM	QTY	PART NUMBER	DESCRIPTION	COMMENTS
1	1	ESMD-2448-12L.01-R0	WELDMENT, 24" X 48" ESMD, (1) 12" LEFT CONNECTION	304L SS
2	1	AVRD-12.01-R0	WELDMENT, 12" AVRD	304L SS
3	2	FC-2424.01-R1	WELDMENT, 24" X 24" FLAT MD COVER	304L SS
4	1	ADPTR-0200MPTx0200SOC.08-R0	ADAPTER, 2" MALE	PVC
5	1	BP12-304	BLANKING PLATE, PL12GA x 19 1/2" x 16"	304L SS
6	1	HSRL-01	SHOP ASSEMBLY, HYDROSTATIC RELIEF FOR MAIN DRAIN BOXES	PVC
7	1	P2104-120x02.11-R0	GASKET, Ø12", 150# PATTERN, PL 1/8" x Ø19"	NEO
8	24	PHMP-#08Cx0108-316	PAN HEAD PHILLIPS SCREW, TORQUE RATING 19.8 INCH LBS, #8-32 X 1 1/2"	316 SS
9	1	PHMP-#10Fx0008-304	PAN HEAD PHILLIPS SCREW, #10-32 X 1/2"	304 SS
10	1	SP1056	CYC HYDRO RELIEF VALVE, 1.5IN/2IN - ABS WHITE	CYCOLAC/HAYWARD
11	2	FV-025-BR	FLAT WASHER, Ø1/4"	BRONZE
12	12	HHMB-075Cx0104-316	HEX HEAD BOLT, 3/4"-10 X 1 1/4"	316 SS



2424 PCFC STAINLESS STEEL FRAME AND GRATE IN 24x48 SUMP					
VELOCITY (FT/SEC)	OPEN AREA (IN ²)	MAX FLOW (GPM)	TOTAL QTY	TOTAL OPEN AREA (IN ²)	TOTAL MAX FLOW (GPM)
1.5	212.89	995.33	2	425.78	1990.66
1.0	212.89	663.55	2	425.78	1327.1
0.5	212.89	331.78	2	425.78	663.56

NSF MAXIMUM SAFE FLOW RATE OF TWO (2) 2424PCFC'S EQUALS 3000 GPM (WALL ONLY) or 3500 GPM (FLOOR ONLY)

* THE NSF SAFETY FLOW IS THE MAXIMUM FLOW MEETING THE ANSI/APSP/ICC-16 REQUIREMENTS. THE RECOMMENDED MAXIMUM DESIGN FLOW IS BASED ON A VELOCITY THAT DOES NOT EXCEED 1.5 FT/SEC. PADDOCK CERTIFIED COVERS & GRATES COMPLY WITH BODY BLOCKING ELEMENT TEST PER ANSI/APSP/ICC-16 2017



CERTIFIED BY IAPMO R&T
ANSI/APSP/ICC-16

QTY 2

PART NUMBER: 9300011

3	05/03/24	CDR	REVISED TO IAPMO CERTIFIED
2	07/12/23	BDJ	UPDATED GRATE HEIGHT
1	11/17/22	PTT	ADDED FLOW DATA
0	02/28/22	PTT	ORIGINAL ISSUE
REV	DATE	BY	DESCRIPTION

REVISION HISTORY

DO NOT SCALE DRAWING	TOLERANCE UNLESS OTHERWISE NOTED:		
X ± 1/16"	X ± 0.020"		
1/8 ± 1/32"	XX ± 0.010"		
X' ± 1/4"	XXX ± 0.005"		
DESCRIPTION: 24" X 48" MAIN DRAIN W/ (2) 24" X 24" FLAT COVERS & (1) Ø12" LEFT CONNECTION			
DRAWN	BY	DATE	PREC JOB NUMBER:
PTT		2/25/2022	
CHECKED			
APPROVED			

DWG. NO. MD-304-2448FC-2448-12L-R0 SHEET # 1 OF 1

X ± 1/16"	X ± 0.020"		
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QTY:			
DRAWN	BY	DATE	PREC JOB NUMBER:
PTT		2/25/2022	
CHECKED			
APPROVED			



Paddock Pool Equipment Co. LLC 555 Paddock Pkwy
Rock Hill SC 29730 United States

Submittal

#SO24747 11/22/24

Main Drains & Reducer

Bill To	To	Project Manager
Lindsey	Spear Corporation	Sam
Spear Corporation 12966 N	Blake sblake@spearcorp.com	Daniel
CR 50 W	Grundlock dgrundlock@spearcorp.com	
Roachdale IN 46172		Virginia Collins
United States		virginia.collins@paddockindustries.com
		803-372-6067

PO #
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Exceptions as Noted: Contractor to coordinate alternate main drain and associated piping connections.

Water Technology Inc.
Submit Review

Project Name: Connersville IN High School

Project Number: 22349

Submitted ID: 131113-1

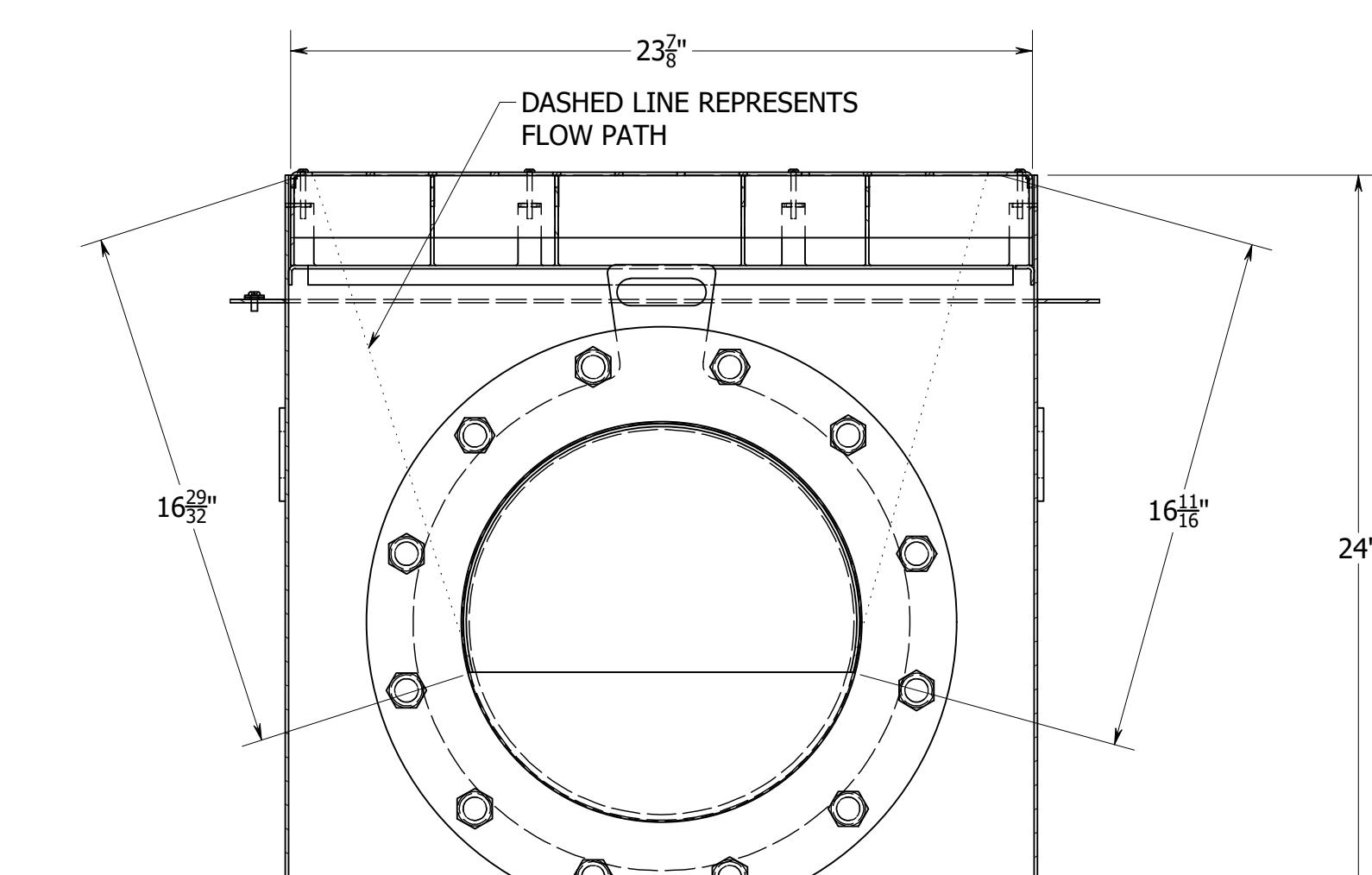
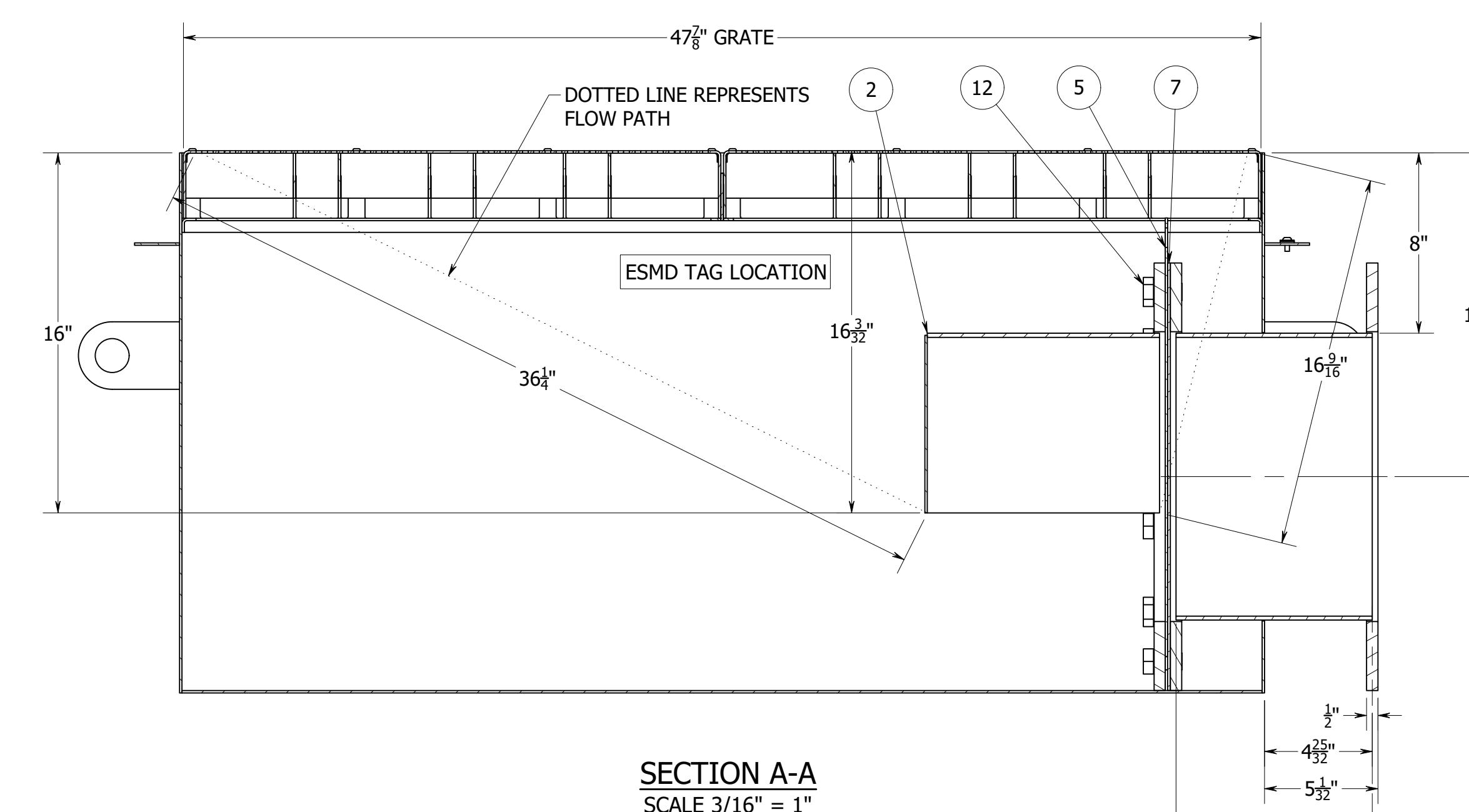
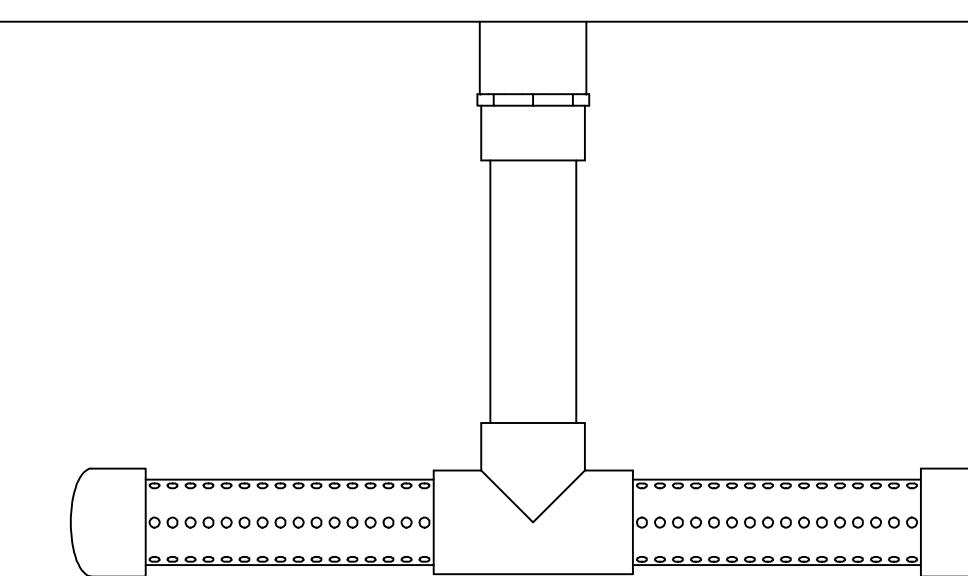
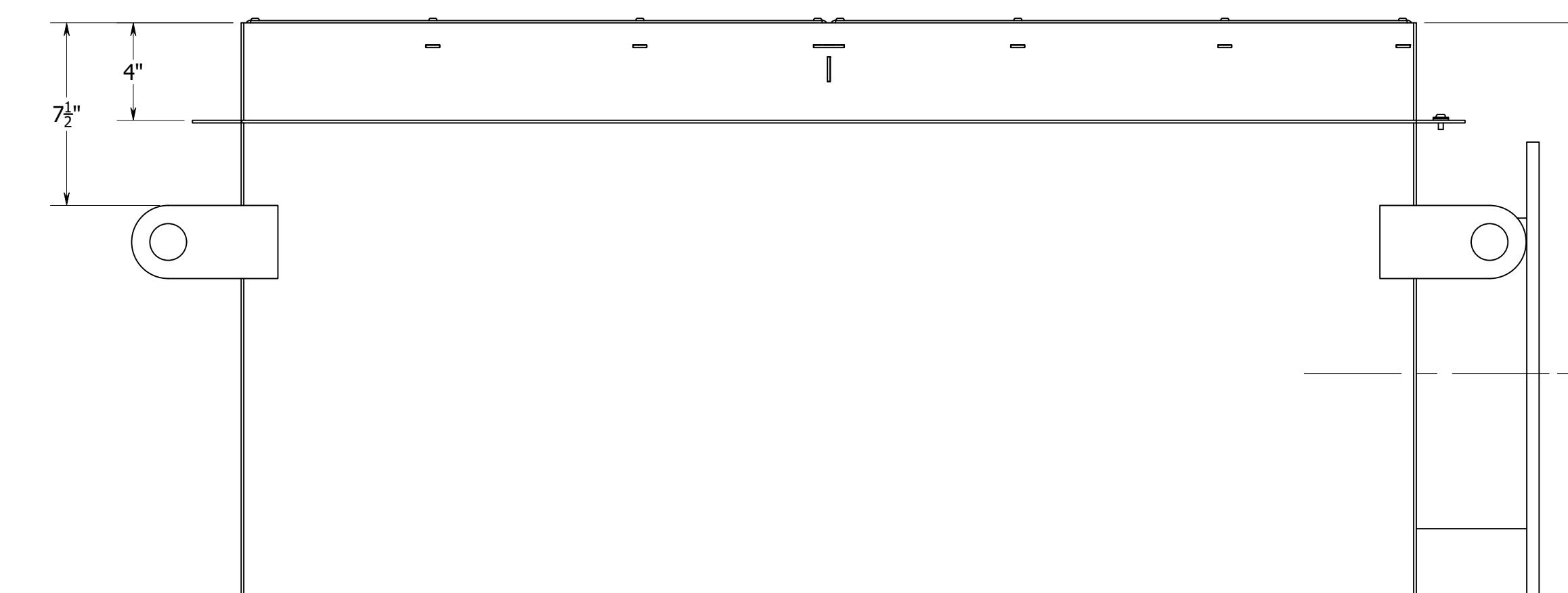
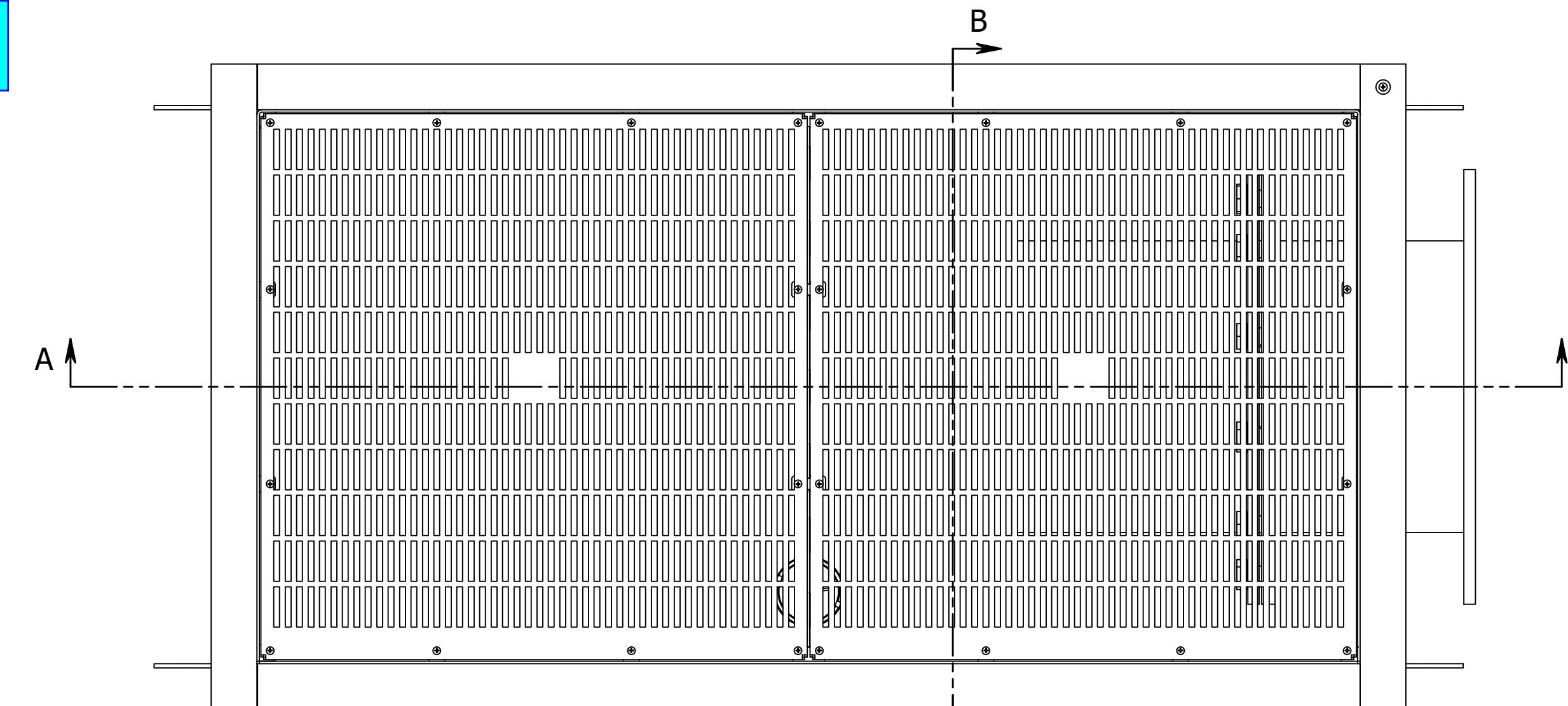
Received On:

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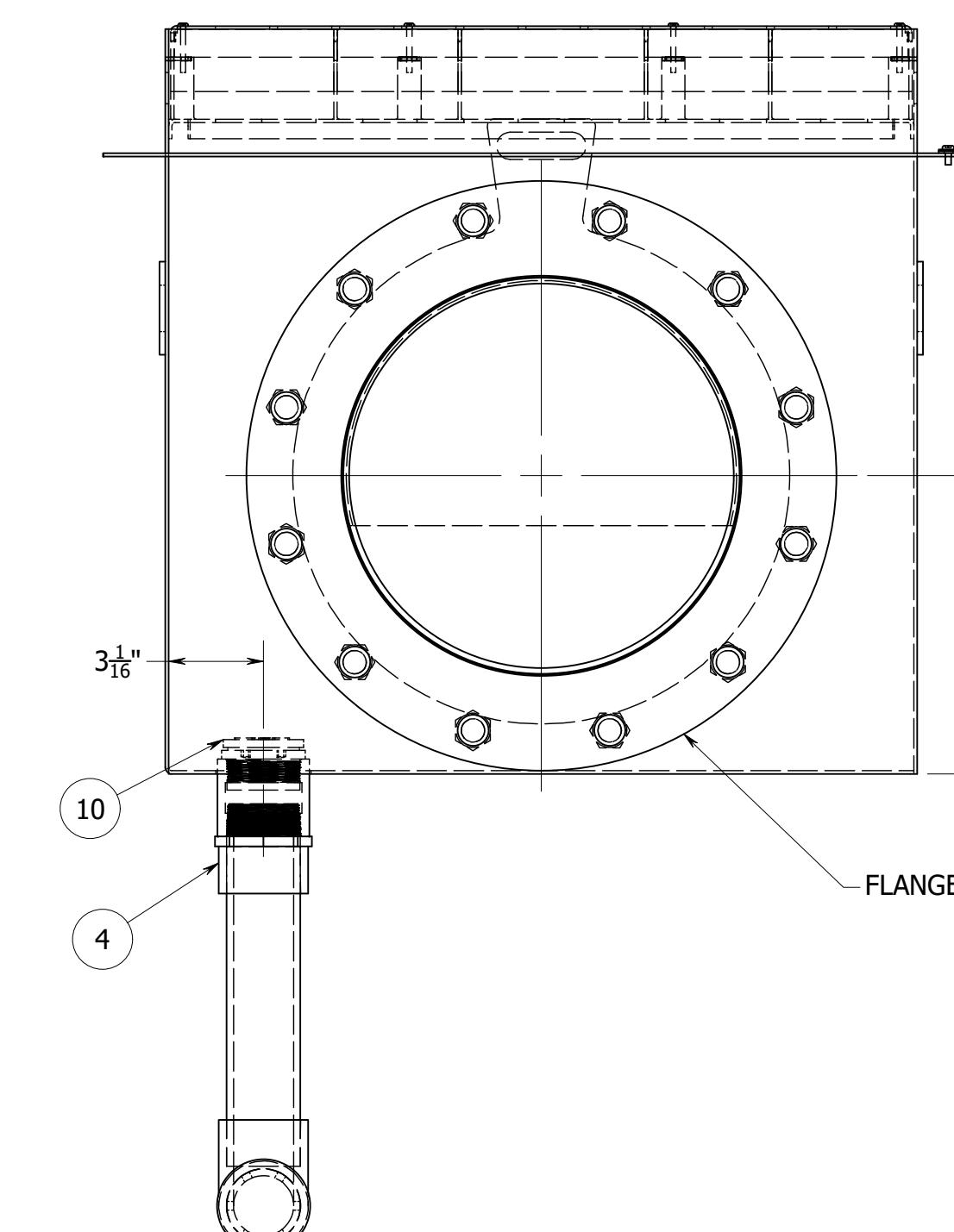
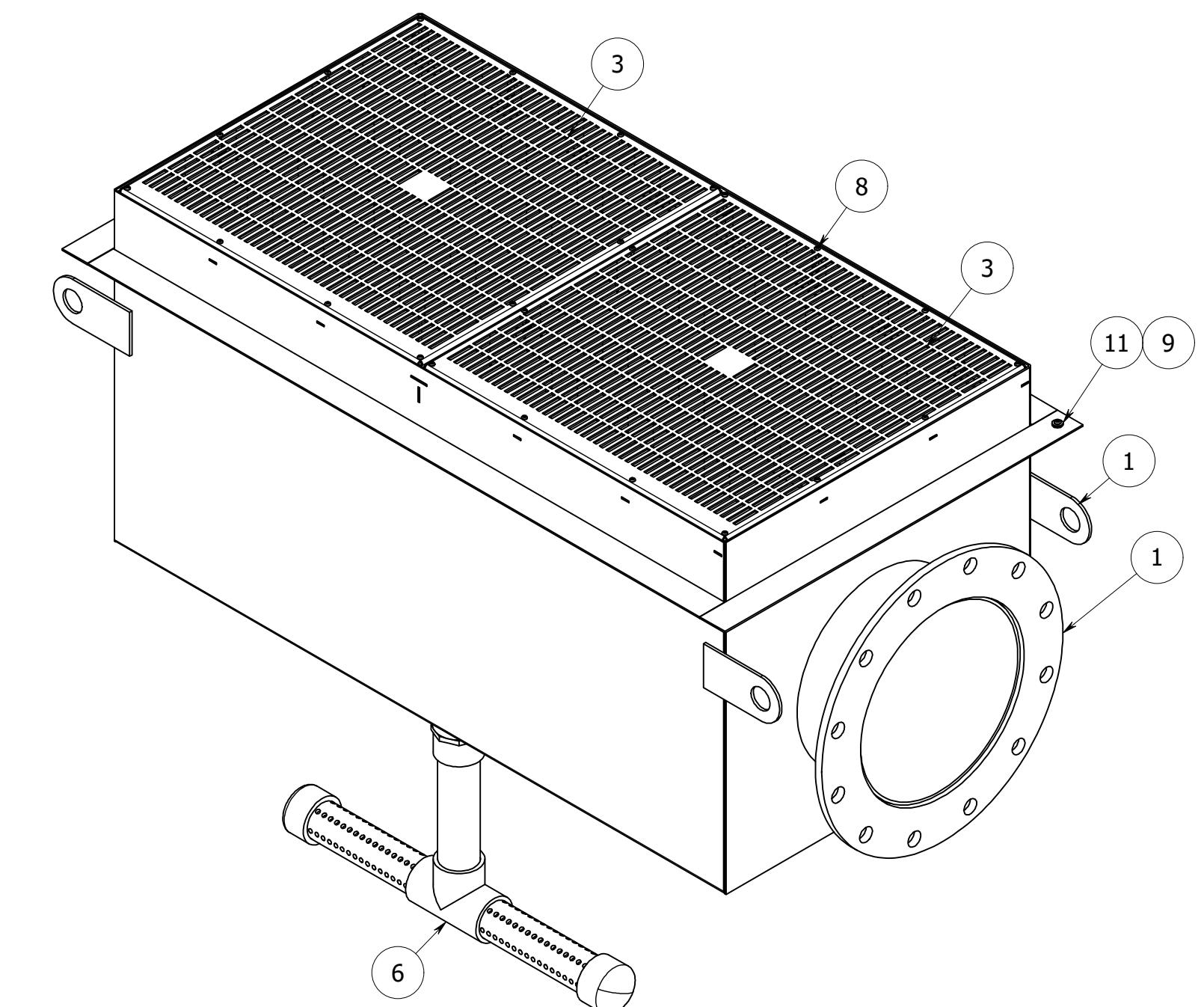
Reviewed By: Jim Bremeritz

Action: Exceptions As Noted

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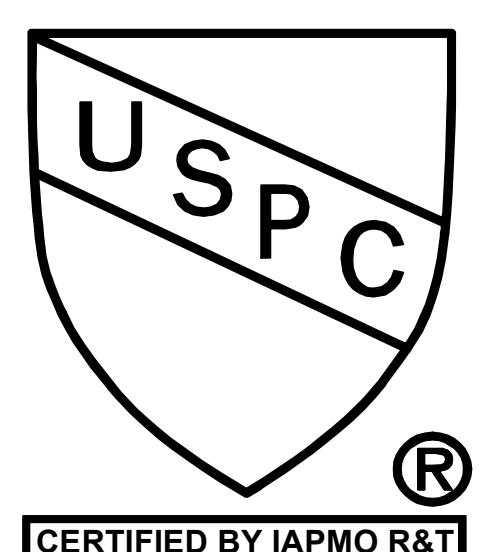
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QTY 2

PART NUMBER: 9300011

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2	07/12/23	BDJ	UPDATED GRATE HEIGHT
1	11/07/22	PTT	ADDED FLOW DATA
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REV	DATE	BY	DESCRIPTION

REVISION HISTORY

DO NOT SCALE DRAWING

TOLERANCE UNLESS OTHERWISE NOTED:
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X ± 1/4" XXX ± 0.005"

DESCRIPTION: 24" X 48" MAIN DRAIN W/ (2) 24" X 24" FLAT COVERS & (1) Ø12" LEFT CONNECTION

QTY: 2

DRAWN BY DATE: PTT 2/25/2022

CHECKED BY DATE: PTT 2/25/2022

DWG. NO. MD-304-2448FC-2448-12L-R0

SHEET # 1 OF 1

PADDOCK
POOL EQUIPMENT COMPANY

555 Paddock Parkway
Rock Hill, SC 29730
info@paddockindustries.com

X ± 1/16" X ± 0.020"
1/8 ± 1/32" XX ± 0.010"
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QTY: 2

DRAWN BY DATE: PTT 2/25/2022

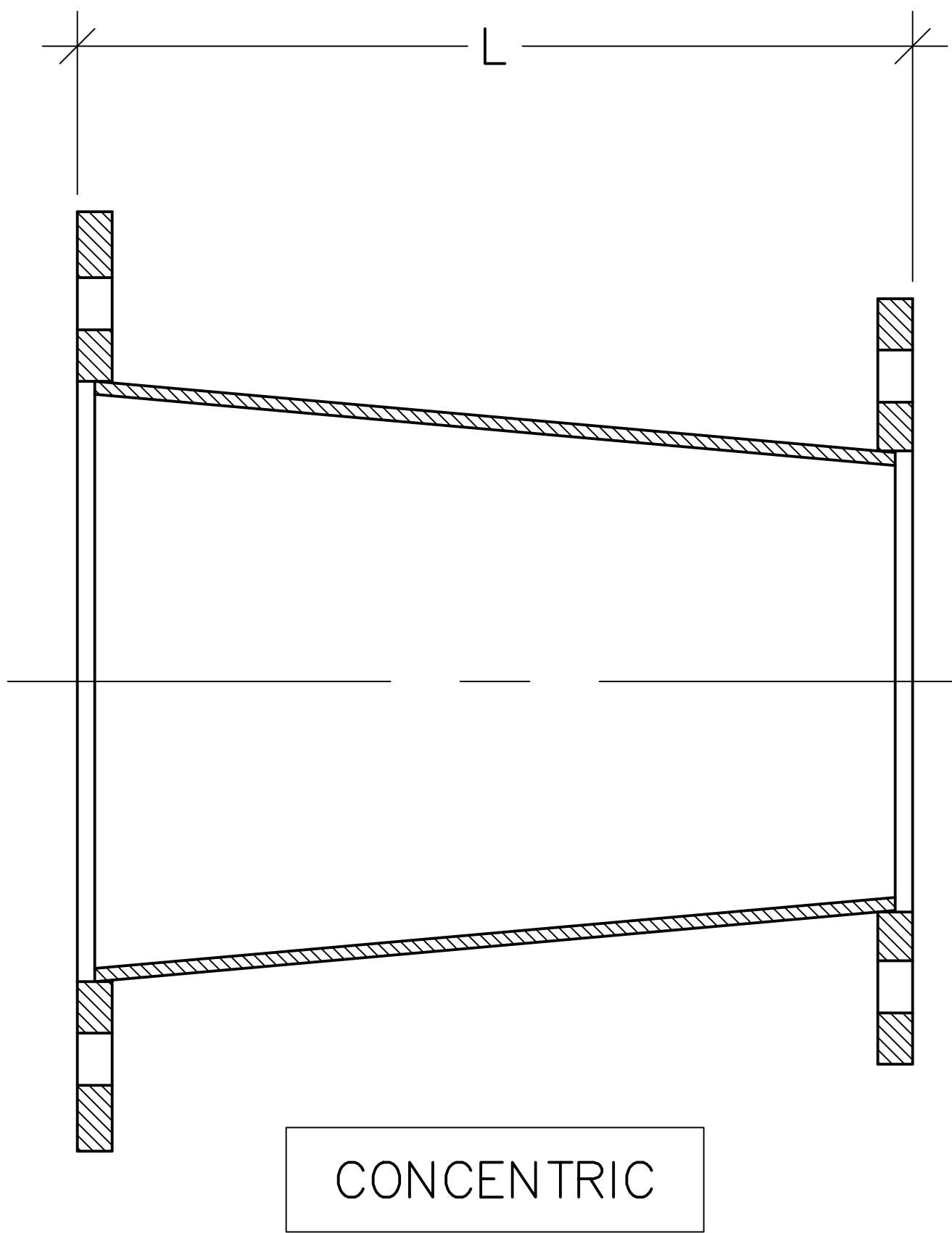
CHECKED BY DATE: PTT 2/25/2022

DWG. NO. MD-304-2448FC-2448-12L-R0

SHEET # 1 OF 1

STAINLESS STEEL FLANGED REDUCERS
REDUCER FLANGES MEET ANSI STANDARD 125# FLANGE DRILLING

Paddock Pool Equipment Co.
555 Paddock Parkway
Rock Hill SC 29730



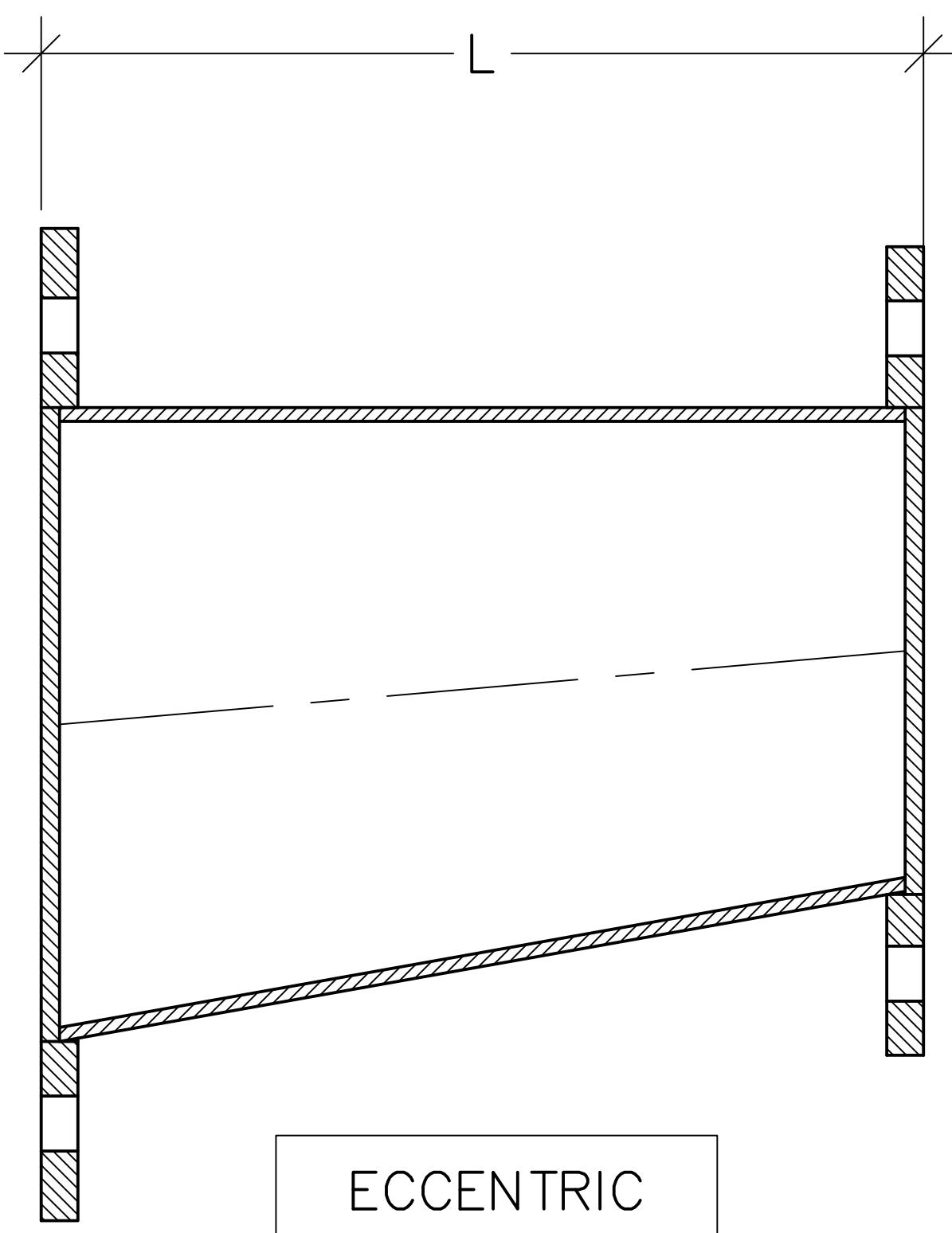
Exceptions as Noted:
This strainer size seems too large, connection between strainer and pump is 8" to 4".
Contractor to verify size is correct.

Water Technology Inc.
Submittal Review
Project Name: Connersville IN High School
Project Number: 22349
Submittal ID: 131113-1
Received On:
Reviewed On:
Reviewed By: Jim Breternitz
Action: Exceptions As Noted
WTI's review is for general conformance with the design concept of the project and the information given in the contract documents. The contractor is solely responsible for, and this review does not include, inspecting and controlling all documents, processes, selecting fabrication processes and methods, and construction; coordinating the work with that of other trades and performing all work in a safe and satisfactory manner. Corrections or comments made on this submittal during this review do not relieve contractor from compliance with the requirements of the contract documents or with its responsibilities listed above.

CONCENTRIC REDUCERS

SIZE	"L"	PART NUMBER	SIZE	"L"	PART NUMBER
3" X 2"	12"	9500146	8" X 5"	12"	9500077
3" X 2½"	12"	9500044	8" X 6"	12"	9500075
4" X 2"	12"	9500102	10" X 5"	12"	9500113
4" X 2½"	12"	9500079	10" X 6"	12"	9500074
4" X 3"	12"	9500100	10" X 8"	12"	9500115
5" X 4"	12"	9500106	12" X 6"	12"	9500117
6" X 2½"	12"	9500104	12" X 8"	12"	9500118
6" X 3"	12"	9500071	12" X 10"	12"	9500120
6" X 4"	12"	9500078	14" X 8"	12"	9500122
6" X 5"	12"	9500138	14" X 10"	12"	9500124
8" X 4"	12"	9500111	14" X 12"	12"	9500126

QTY 2



***NOTE:** INSTALL ECCENTRIC REDUCERS WITH FLAT UP, AS SHOWN..

ECCENTRIC REDUCERS

SIZE	"L"	PART NUMBER	SIZE	"L"	PART NUMBER
3" X 2"	12"	9500103	10" X 5"	12"	9500114
3" X 2½"	12"	9500098	10" X 6"	12"	9500073
4" X 2"	12"	9500105	10" X 8"	12"	9500116
4" X 2½"	12"	9500099	12" X 6"	12"	9500072
4" X 3"	12"	9500101	12" X 8"	12"	9500119
5" X 4"	12"	9500107	12" X 10"	12"	9500121
6" X 3"	12"	9500108	14" X 8"	12"	9500123
6" X 4"	12"	9500070	14" X 10"	12"	9500125
6" X 5"	12"	9500110	14" X 12"	12"	9500127
8" X 4"	12"	9500112			
8" X 5"	12"	9500076			
8" X 6"	12"	9500085			



SUBMITTAL TRANSMITTAL RECORD

TO: **The Skillman Corporation**
Attn:
3834 S. Emerson Ave., Bldg. A
Indianapolis, IN 46203

DATE: December 6, 2024
TSC#: 222140
A/E #:
RE: **Connersville HS & Frazee Elem Renovation**

NOTE: ONLY ONE SPECIFICATION SECTION IS TO BE SUBMITTED PER TRANSMITTAL.

CONTRACTOR NAME:	RLTurner		SUBMITTED BY:	Chris Roys
BID CATEGORY NUMBER AND NAME:	BC NUMBER: BC NAME:	#7 - Aquatic Package		
SPECIFICATIONS SECTION NO:	13 11 43-1	IS THIS A RE-SUBMITTAL? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		
SECTION NAME & DESCRIPTION:	Pool Stainless Steel Gutter			
MANUFACTURER/ SUPPLIER:	Spear Aquatics, LLC			
TYPE OF SUBMITTAL & NUMBER OF COPIES:				
<input checked="" type="checkbox"/> SHOP DRAWINGS <input checked="" type="checkbox"/> PRODUCT DATA <input type="checkbox"/> SAMPLES <input type="checkbox"/> COLOR SELECTIONS <input type="checkbox"/> CLOSE-OUT DOCUMENTS			ARCHITECT STAMP:	
REMARKS: Connersville HS				



R.L. Turner Corporation
1000 West Oak St
Zionsville, Indiana 46077
Phone: +13178732712

Submittal #13 11 43-1.0

13 11 43 - Pool Stainless Steel Gutters

Project: 24-17 - CONNERSVILLE HIGH SCHOOL & FRAZEE ELEMENTARY
1100 SPARTAN DRIVE
CONNERSVILLE, Indiana 47331
Phone: 317-873-2712
Fax: 317-873-1262

Pool Stainless Steel Gutter

SPEC SECTION:	13 11 43 - Pool Stainless Steel Gutters	SUBMITTAL MANAGER:	Chris Roys (RLTurner Corporation)
STATUS:	Emailed	DATE CREATED:	10/31/2024
ISSUE DATE:	12/06/2024	REVISION:	0
RESPONSIBLE CONTRACTOR:	SPEAR AQUATICS, LLC	RECEIVED FROM:	Daniel Grundlock
RECEIVED DATE:	//	SUBMIT BY:	//
FINAL DUE DATE:	12/20/2024	LOCATION:	
TYPE:	Product Information	COST CODE:	
APPROVERS:	David Foster (The Skillman Corporation)		
BALL IN COURT:	David Foster (The Skillman Corporation)		
DISTRIBUTION:			
DESCRIPTION:			
ATTACHMENTS:			

SUBMITTAL WORKFLOW

#	NAME	SUBMITTER/ APPROVER	SENT DATE	DU DATE	RETURNED DATE	RESPONSE	ATTACHMENTS	COMMENTS
1	David Foster	Approver		12/20/2024		Pending		

"APPROVED TO BE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, EXCEPT AS NOTED."

SIGNED: DATED:

Youssef Mahfouz, PE 12-06-2024

BY

DATE

COPIES TO



Submittal #2

Gutter

#SO24747

11/27/2024

Paddock Pool Equipment Co. LLC 555 Paddock Pkwy
Rock Hill SC 29730 United States

Bill To	To	Project Mgr
Lindsey	Spear Corporation	Sam Virginia Collins
Spear Corporation 12966 N	Blake sblake@spearcorp.com	Daniel virginia.collins@paddockindustries.com
CR 50 W	Grundlock dgrundlock@spearcorp.com	803-372-6067
Roachdale IN 46172		
United States		

PO

Connersville HS PO36545

Line Number	Quantity	Item	Drawing	Approval
1	~229	R300-316-TGDD Gutter R300 316L TGDD 11-3/4"x1", 1/2"Slope Gutter R300 316L Top Grate with Deck Drain, 11-3/4"x1" (16) Cup Anchors, 2-8" PO, 1-6" Return	24747.01	

Water Technology Inc.

Submittal Review

Project Name: Connersville IN High School

Project Number: 22349

Submittal ID: 131143-1

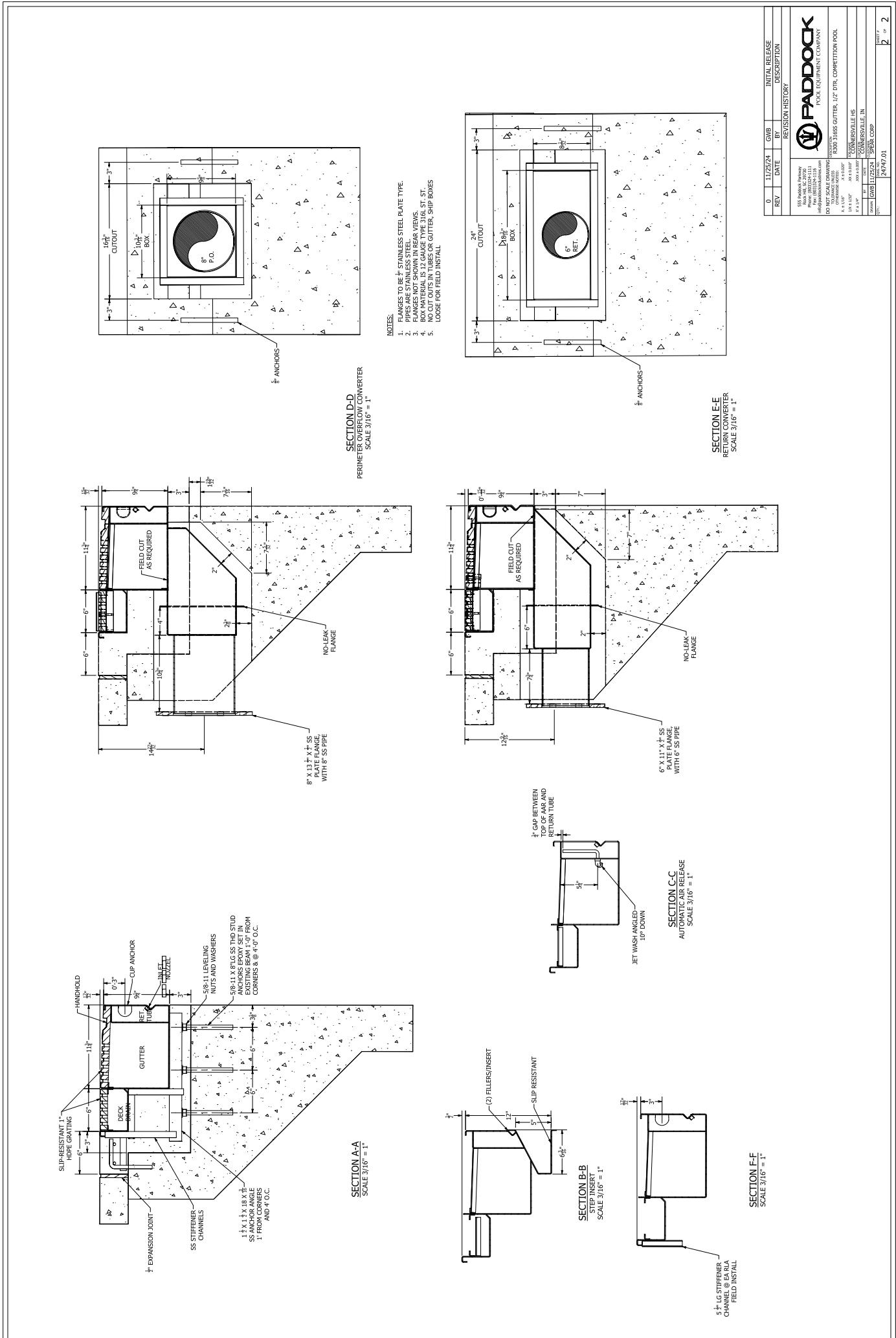
Received On:

Reviewed On: 12/16/2024

Reviewed By: Jim Breternitz

Action: Exceptions As Noted

WTI's review is for general conformance with the design concept of the project and the information given in the contract documents. The contractor is solely responsible for, and this review does not include: confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating the work with that of other trades and performing all work in a safe and satisfactory manner. Corrections or comments made on this submittal during this review do not relieve contractor from compliance with the requirements of the contract documents or with its responsibilities listed above.



Paddock Pool Equipment Company

Gutter Flow Calculations

Project

Connersville HS

Total Recirculation Rate, gpm

454

Pool Perimeter, feet

228

Average Gutter Width, inches

9.19

Usable Gutter Depth, inches

7.81

Number of 90-degree corners

4

Number of 45-degree corners

0

Number of radiused corners

0

Number of PO Converters

2

Number of Return Converters

1

Supply tube area, square inches

18.1

Number of inlet nozzles

100

Max. tube pressure allowed, psi

7.5

Density of Fluid, lb_m/ft³

62.217 (Water at 80°F)

Local Gravity, ft/sec²

32.17

Absolute Viscosity (μ), lb_fsec/ft²

1.791E-05 (Water at 80°F)

Click on **Tools > Solver**, then press **Enter** twice

Total gutter system flow capacity is

2923.04 gpm

Gutter collection rate is

362.26 gpm

Design for surge weirs is:

Adequate

Design for rimflow conditions is:

Superior

Flow rate per nozzle

4.54 gpm

Nozzle Size

6

Nozzle Velocity

13.19 ft/sec

Supply Tube Velocity

4.02 ft/sec

Supply Tube Pressure

4.23 psi

Surge Capacity in Flow Channel

771.03 gallons

Navier-Stokes Continuity Equation:

$$\left[1 - \left(\frac{\rho}{m} \right)^2 W^5 g \eta^3 \right] \partial \eta = \frac{f}{8} \partial \left(\frac{x}{W} \right)$$

Solving this equation for turbulent flow conditions with m as the unknown variable yields

$$D_1 m^2 + D_2 \sqrt[4]{m^7} + D_3 = 0$$

where ρ = density of the fluid, lb_m/ft²

m = mass flow rate, lb_m/sec

g = acceleration due to local gravity, ft/sec²

L = length of channel, ft

W = width of channel, ft

η = fluid height to width ratio

f = Darcy friction factor, $\frac{0.316}{\sqrt{R_e}}$

x = distance along centerline of channel

μ = absolute viscosity, lb_fsec/ft²

y = depth of fluid, ft

R_e = Reynold's Number, $\frac{4m}{\mu(2y+W)}$

Francis Weir Formula:

$$Q = 3.33 L \sqrt{H^3}$$

where

Q = flow rate, ft³/sec

L = length of weir, ft

H = height of water above crest of weir, ft



R.L. Turner Corporation
1000 West Oak St
Zionsville, Indiana 46077
Phone: +13178732712

Project: 24-17 - CONNERSVILLE HIGH SCHOOL & FRAZEE ELEMENTARY
1100 SPARTAN DRIVE
CONNERSVILLE, Indiana 47331
Phone: 317-873-2712
Fax: 317-873-1262

TO: **Nick Holman**
David Foster (The Skillman Corporation)
3834 S. Emerson Avenue, Bldg A
Indianapolis, Indiana 46203

FROM: **Shirlene Manley** (RLTurner Corporation)
1000 West Oak Street
Zionsville, 46077

CREATED DATE: 03/03/2025

SHIPPING METHOD: Shirlene Dropped off

COPIES TO:

TRANSMIT:	VIA:	FOR:	ACTION:
Attached	Attached	Approval	

Transmittal Items

DESCRIPTION	FORMAT	DATE	COPIES
131142-1 Perimeter Overflow Gutter Grating Sample	Samples	03/03/ 2025	1

Comments

See enclosed for your review, thank you.

Youssef Mahfouz PE

03-03-2025

BY

DATE

COPIES TO



SUBMITTAL TRANSMITTAL RECORD

TO: The Skillman Corporation
Attn:
3834 S. Emerson Ave., Bldg. A
Indianapolis, IN 46203

DATE: 03-03-2025
TSC#: 222140
A/E #:
RE: Connorsville HS & Frazee Elem Renovation

NOTE: ONLY ONE SPECIFICATION SECTION IS TO BE SUBMITTED PER TRANSMITTAL.

CONTRACTOR NAME:	RLTurner		SUBMITTED BY:	Chris Roys
BID CATEGORY NUMBER AND NAME:	BC NUMBER:	07 - Aquatics		
BC NAME:				
SPECIFICATIONS SECTION NO:		IS THIS A RE-SUBMITTAL? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		
SECTION NAME & DESCRIPTION:				
MANUFACTURER/ SUPPLIER:	131142-1 Perimeter Overflow Gutter Grating Samp			

TYPE OF SUBMITTAL & NUMBER OF COPIES:

- SHOP DRAWINGS
 PRODUCT DATA
 SAMPLES
 COLOR SELECTIONS
 CLOSE-OUT DOCUMENTS

ARCHITECT STAMP:

Reviewing is only for conformance with the design concept of the project and compliance with the information given in the contract documents. The contractor, not the Architect, is responsible for quantities; dimensions to be confirmed and correlated at the site; for information that pertains solely to the fabrication processes or to the means, methods, techniques, sequences and procedures of construction; and for the coordination of the work of all trades. The Architect's review of a specific item does not indicate approval of an assembly of which this item is a component.

REMARKS: Connorsville HS

GDI Comments:
Color Selection "Dolphin Gray"

Reviewed
 Reviewed, Exceptions as Noted
If checked above, fabrication MAY be undertaken. Review does not authorize changes to Contract Sum unless stated in separate letter of Change Order.

Revise and Resubmit
If checked above, fabrication MAY NOT be undertaken. Resubmit corrected copies for final review. Corrections/changes shall be limited to items marked.

For Record Only/ Not Reviewed
Submittal for project record only/ review not required/ or covered in previous submittals.

Gibraltar Design
By: JKF Date: 03/10/25



Submittal #13 11 42-1.0

13 11 42 - Perimeter Overflow Gutter Grating

R.L. Turner Corporation
 1000 West Oak St
 Zionsville, Indiana 46077
 Phone: +13178732712

Project: 24-17 - CONNERSVILLE HIGH SCHOOL & FRAZEE ELEMENTARY SCHOOL
 1100 SPARTAN DRIVE
 CONNERSVILLE, Indiana 47331
 Phone: 317-873-2712
 Fax: 317-873-1262

Perimeter Overflow Gutter Grating Sample

SPEC SECTION:	13 11 42 - Perimeter Overflow Gutter Grating			SUBMITTAL MANAGER: Chris Roys (RLTurner Corporation)			
STATUS:	Emailed			DATE CREATED: 10/31/2024			
ISSUE DATE:	10/31/2024			REVISION: 0			
RESPONSIBLE CONTRACTOR:	SPEAR AQUATICS, LLC			RECEIVED FROM: Daniel Grundlock			
RECEIVED DATE:	//			SUBMIT BY: //			
FINAL DUE DATE:	03/17/2025			LOCATION:			
TYPE:	Sample			COST CODE:			
APPROVERS:	David Foster (The Skillman Corporation)						
BALL IN COURT:	David Foster (The Skillman Corporation)						
DISTRIBUTION:							
DESCRIPTION:							
ATTACHMENTS:							

SUBMITTAL WORKFLOW

#	NAME	SUBMITTER/ APPROVER	SENT DATE	DU DATE	RETURNED DATE	RESPONSE	ATTACHMENTS	COMMENTS
1	David Foster	Approver		3/17/2025		Pending		

"APPROVED TO BE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, EXCEPT AS NOTED."

SIGNED: DATED:

Youssef Mahfouz PE 03-03-2025

BY

DATE

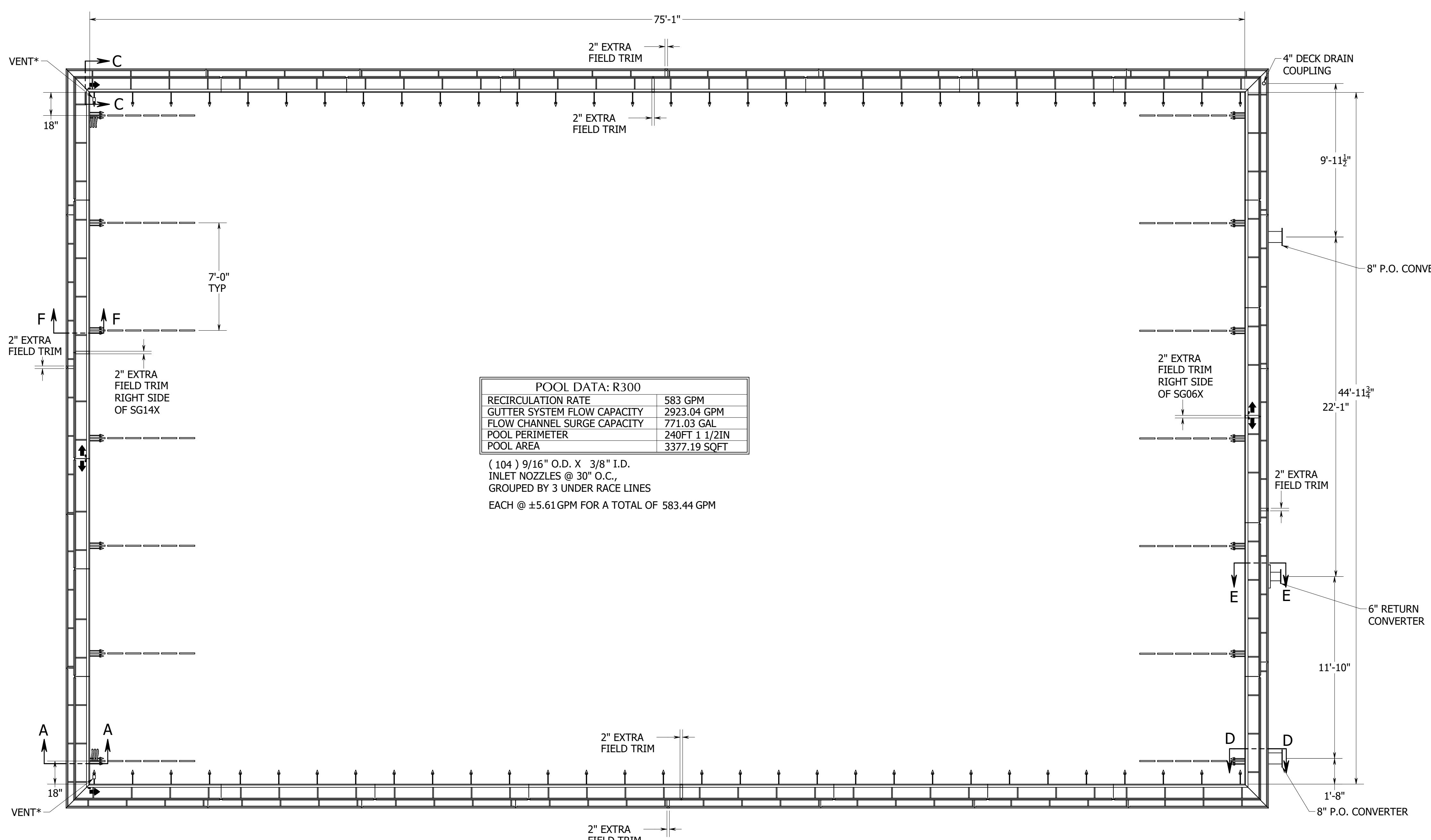
COPIES TO

**KING
STARBOARD® ST**

WHITE/WHITE

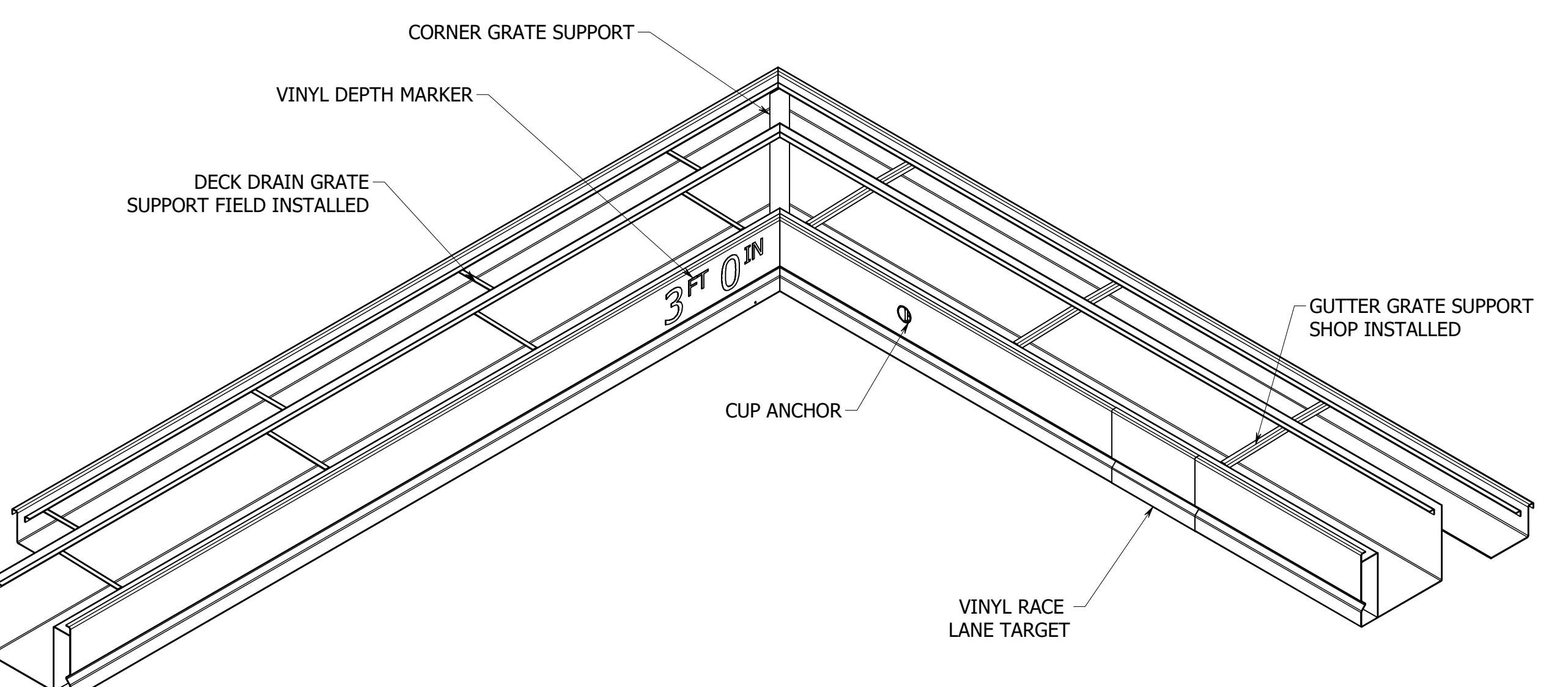
**KING
STARBOARD® ST**

DOLPHIN GRAY



PARTS LIST				
PART NUMBER	QTY	DESCRIPTION	COMMENTS	
24747.01-SG01	8	WELDMENT, R300, 120"	316L SS	
24747.01-SG02	2	WELDMENT, R300, 98"	316L SS	
REMAKE-> 24747.01-SG03	1	WELDMENT, R300, 102 1/2", CORNER, JETWASH (R), AAR, VENT	316L SS	
REMAKE-> 24747.01-SG04	1	WELDMENT, R300, 102 1/2", CORNER	316L SS	
24747.01-SG05	2	WELDMENT, R300, 84", CORNER, CUP ANCHOR	316L SS	
REMAKE-> 24747.01-SG06X	1	WELDMENT, R300, 86", CUP ANCHOR, 2" EXTRA, (L) JETWASH	316L SS	
REMAKE-> 24747.01-SG07	1	WELDMENT, R300, 62", CUP ANCHOR, JET WASHES (L&R)	316L SS	
REMAKE-> 24747.01-SG08	2	WELDMENT, R300, 120", (2) CUP ANCHORS	316L SS	
24747.01-SG09	2	WELDMENT, R300, 84", CORNER, CUP ANCHOR	316L SS	
REMAKE-> 24747.01-SG10	1	WELDMENT, R300, 102 1/2", CORNER	316L SS	
REMAKE-> 24747.01-SG11	1	WELDMENT, R300, 102 1/2", CORNER, JETWASH (L), AAR, VENT	316L SS	
24747.01-SG12X	2	WELDMENT, R300, 120", 2" EXTRA FOR TRIM	316L SS	
REMAKE-> 24747.01-SG13	2	WELDMENT, R300, 84", CUP ANCHOR	316L SS	
REMAKE-> 24747.01-SG14X	1	WELDMENT, R300, 83 3/4", CUP ANCHOR, (R) JETWASH, 2" EXTRA	316L SS	
REMAKE-> 24747.01-SG015	1	WELDMENT, R300, 86", CUP ANCHOR, (L) JETWASH	316L SS	
24747.01-DD01	1	WELDMENT, DECK DRAIN, 107 9/32", CORNER, DRAIN COUPLING	316L SS	
24747.01-DD02	14	WELDMENT, DECK DRAIN, 120"	316L SS	
24747.01-DD03	2	WELDMENT, DECK DRAIN, 107 9/32", CORNER	316L SS	
REMAKE-> 24747.01-DD04X	1	WELDMENT, DECK DRAIN, 39", 2" EXTRA FOR TRIM	316L SS	
24747.01-DD05	3	WELDMENT, DECK DRAIN, 102 1/2", CORNER	316L SS	
24747.01-DD06	2	WELDMENT, DECK DRAIN, 104", CORNER	316L SS	
REMAKE-> 24747.01-DD07X	1	WELDMENT, DECK DRAIN, 43 23/32", 2" EXTRA FOR TRIM	316L SS	
24747.01-DD08X	2	WELDMENT, DECK DRAIN, 120", 2" EXTRA FOR TRIM	316L SS	
24747.01-H	1	228' 2" GUTTER AND DECK DRAIN GRATING	HDPE, GREY	
P0813-R300-6RET-8IN-R2	1	R300 6" RETURN CONVERTER	316L SS	
P0813-R300-8PO-R2	2	R300 8" PERIMETER OVERFLOW CONVERTER	316L SS	
P0801.01-1800-R1	64	ANCHOR ANGLE, SLOTTED, L1 3/4" x 1 3/4" x 3/16" x 18"	316L SS	
P2104-00506.01-R0	94	ANCHOR ANGLE, PL12GA x 1 5/32" x 5 3/8"	316L SS	
FW-063-304	384	FLAT WASHER, Ø5/8"	316L SS	
HNUT-063C-304	384	HEX NUT, 5/8"-11	316L SS	
STUD-063Cx0800-304	192	STUD, 5/8"-11 X 8"	316L SS	
P2103-00516.01-R0	64	STIFFENER CHANNEL, C7/8" x 9/16" x 12GA x 5 1/2"	316L SS	
P2103-00700.04-R0	64	STIFFENER CHANNEL, C7/8" x 9/16" x 12GA x 7"	316L SS	
P2103-00724.01-R0	64	STIFFENER CHANNEL, C7/8" x 9/16" x 12GA x 7 3/4"	316L SS	
P2103-01000.01-R0	64	STIFFENER CHANNEL, C7/8" x 9/16" x 3/32" x 10"	316L SS	
P2103-00563.01-R0	1	STIFFENER CHANNEL, C7/8" x 9/16" x 12GA x 5 5/8"	316L SS	
P0899-XTRA-ANGL	1	EXTRA GRATING SUPPORT ANGLE, PL12GA x 1 9/32" x 120"	316L SS	
P0899-XTRA-ANGL-88	1	EXTRA GRATING SUPPORT ANGLE, PL12GA x 1 9/32" x 120"	316L SS	
P0806-F08218.02	4	CORNER GRATE SUPPORT, p12GA x 2" x 8 7/32"	316L SS	
P0806-F14000.02	4	CORNER GRATE SUPPORT, p12GA x 2" x 14"	316L SS	
P0802-3750	114	INLET NOZZLE, 9/16" O.D. X 3/8" I.D.	NYLON	
P0802-0-PLUG	116	TEST PLUG, 0	RUBBER	
P0802-0000	2	INLET NOZZLE, BLIND, Ø9/16" O.D.	NYLON	
P0899-DEPTH MARKER_2	1	VINYL DEPTH MARKER SET	VINYL	
R300 VINYL TARGET	12	12" WIDE BLK, SELF ADHSV RACE LANE TARGET	VINYL	
200863	1	VINYL EDGE SEALER PEN	SEAL IT PEN	
P0899-APPO	1	ACCESSORY PACK OF PUNCH OUTS	PPEC	
SBP-001	6	SCOTCH BRITE PAD	SCOTCH BRITE	
ZSSC-001	1	ZUD SS CLEANER	ZUD	

<u>DEPTH MARKERS</u>	
DEPTH	
3FT 6IN	5
4FT 0IN	2
4FT 6IN	2
6FT 6IN	2
8FT 6IN	2
10FT 6IN	2
11FT 0IN	2
11FT 6IN	4

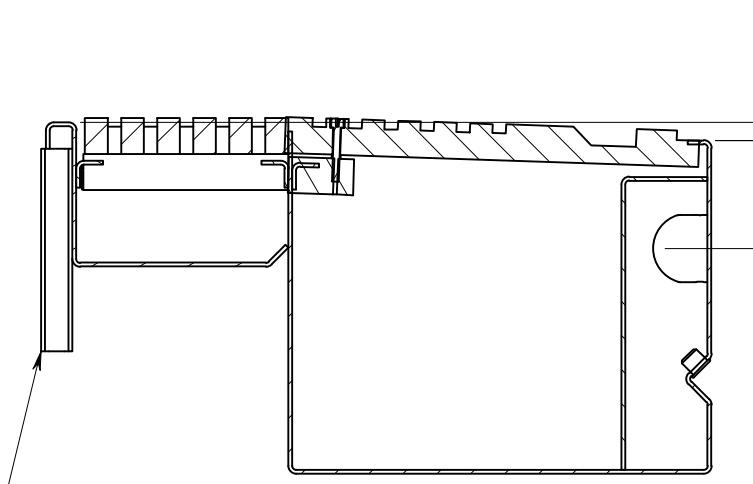
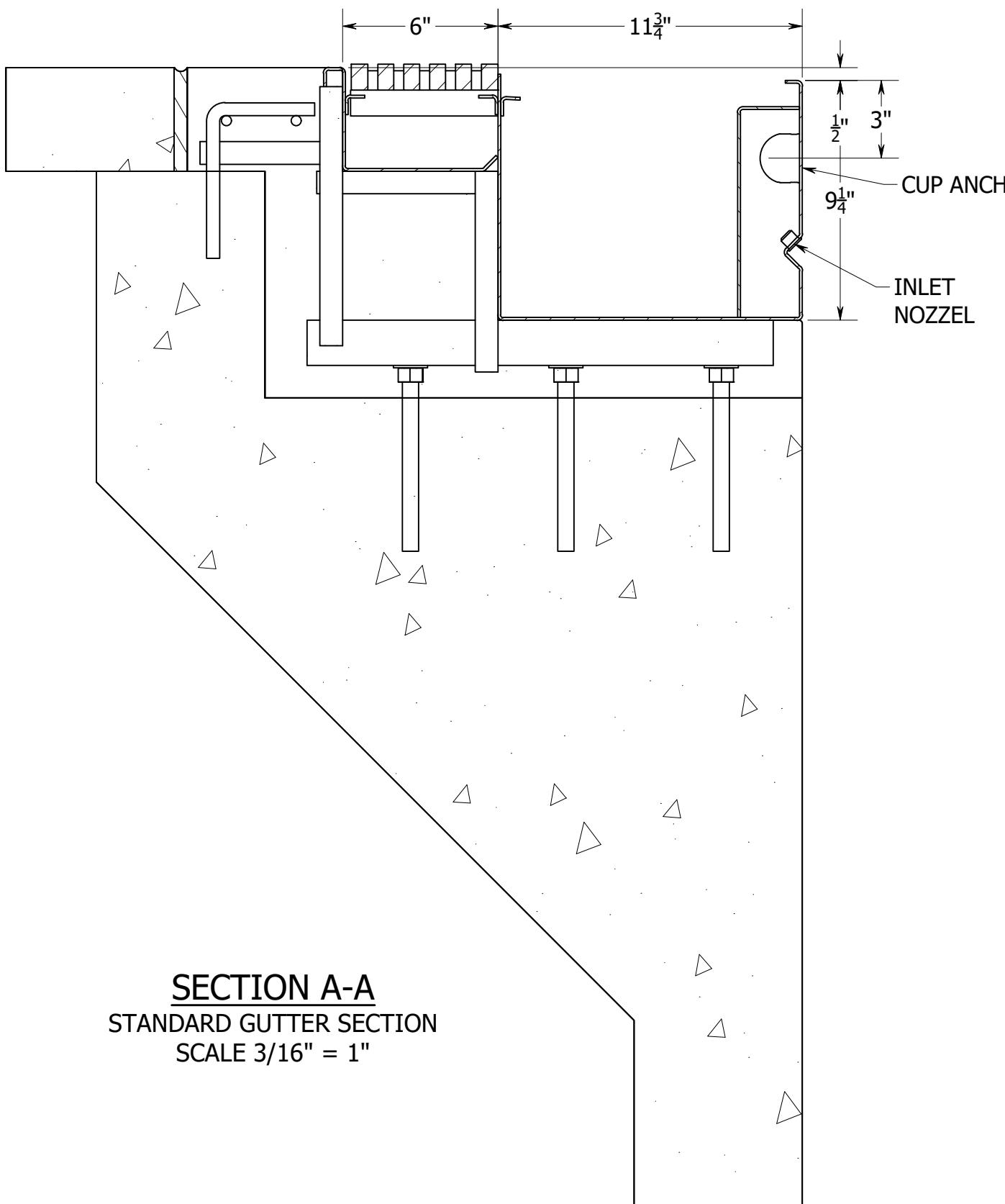


ISOMETRIC VIEW
SCALE 1" = 12"

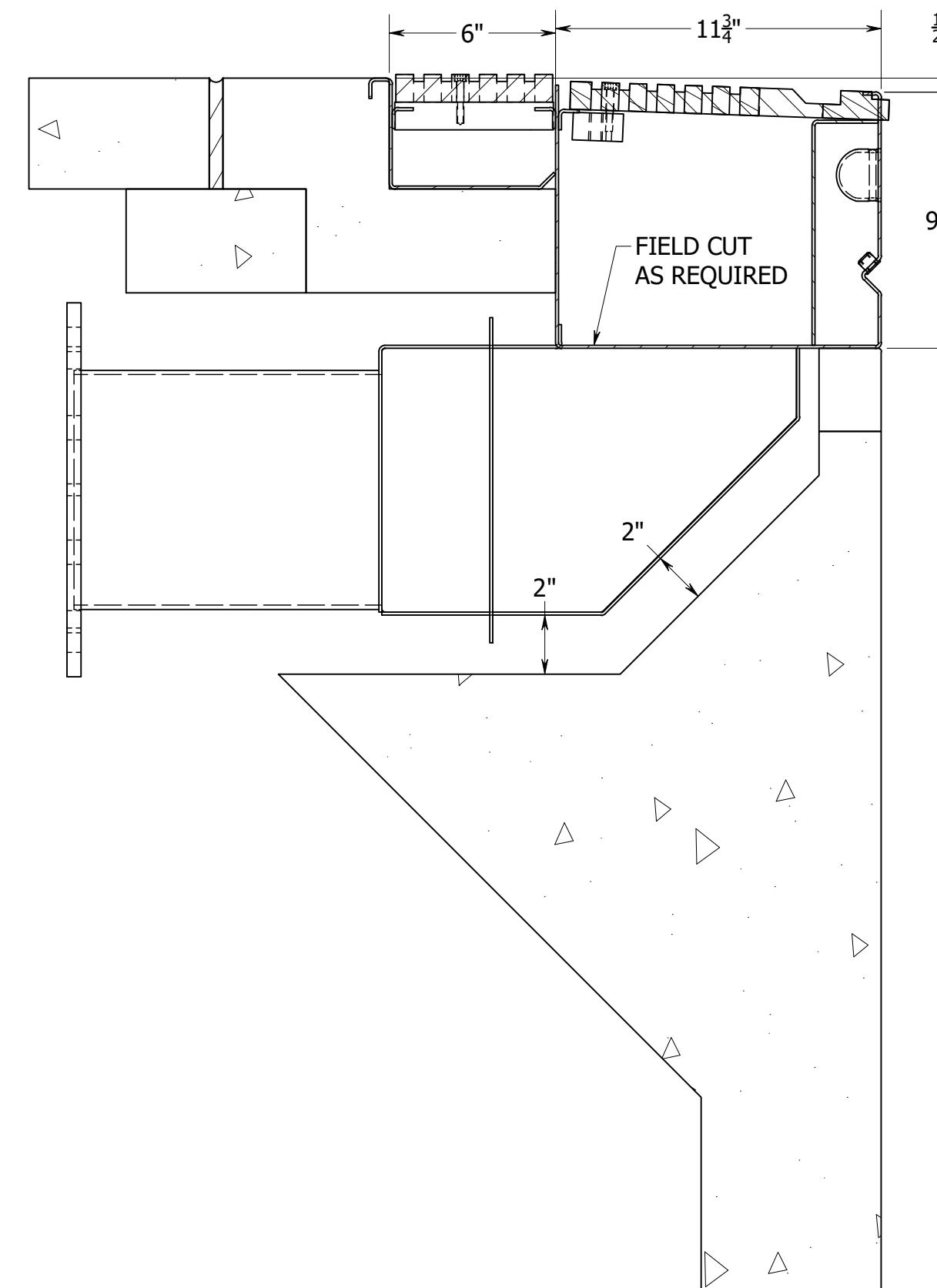
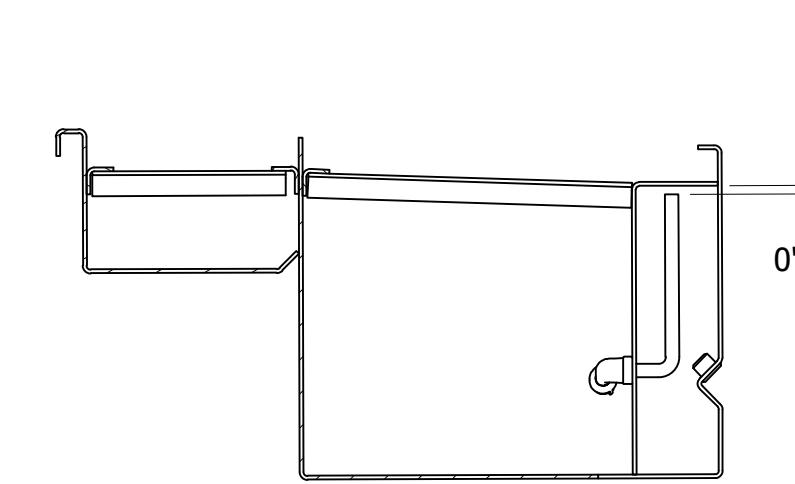
REV	DATE	BY	DESCRIPTION
4	05/28/25	GWB	REMOVED STEP INSERTS AND UPDATED GPM
3	05/27/25	GWB	ADJUSTED WALL LENGTH
2	03/12/25	GWB	CHANGED GRATING COLOR TO GREY
1	01/14/25	GWB	RELEASED FOR FAB
0	11/25/24	GWB	INITAL RELEASE
REVISION HISTORY			
555 Paddock Parkway Rock Hill, SC 29730 Phone: (803)324-1111 Fax: (803)324-1116 info@paddockindustries.com		 PADDOCK POOL EQUIPMENT COMPANY	
O NOT SCALE DRAWING TOLERANCE UNLESS OTHERWISE NOTED: K. ± 1/16" .X ± 0.020" L/X ± 1/32" .XX ± 0.010" K' ± 1/4" .XXX ± 0.005"		DESCRIPTION R300 316SS GUTTER, 1/2" DTR, COMPETITION POOL	
		JOB NAME CONNERSVILLE HS	
		LOCATION CONNERSVILLE, IN	
DRAWN	BY	DATE	CUSTOMER SPEAR CORP
T.Y.:		DWG. NO. 24747.01	
		SHEET # 1 OF 3	

CONFIDENTIAL

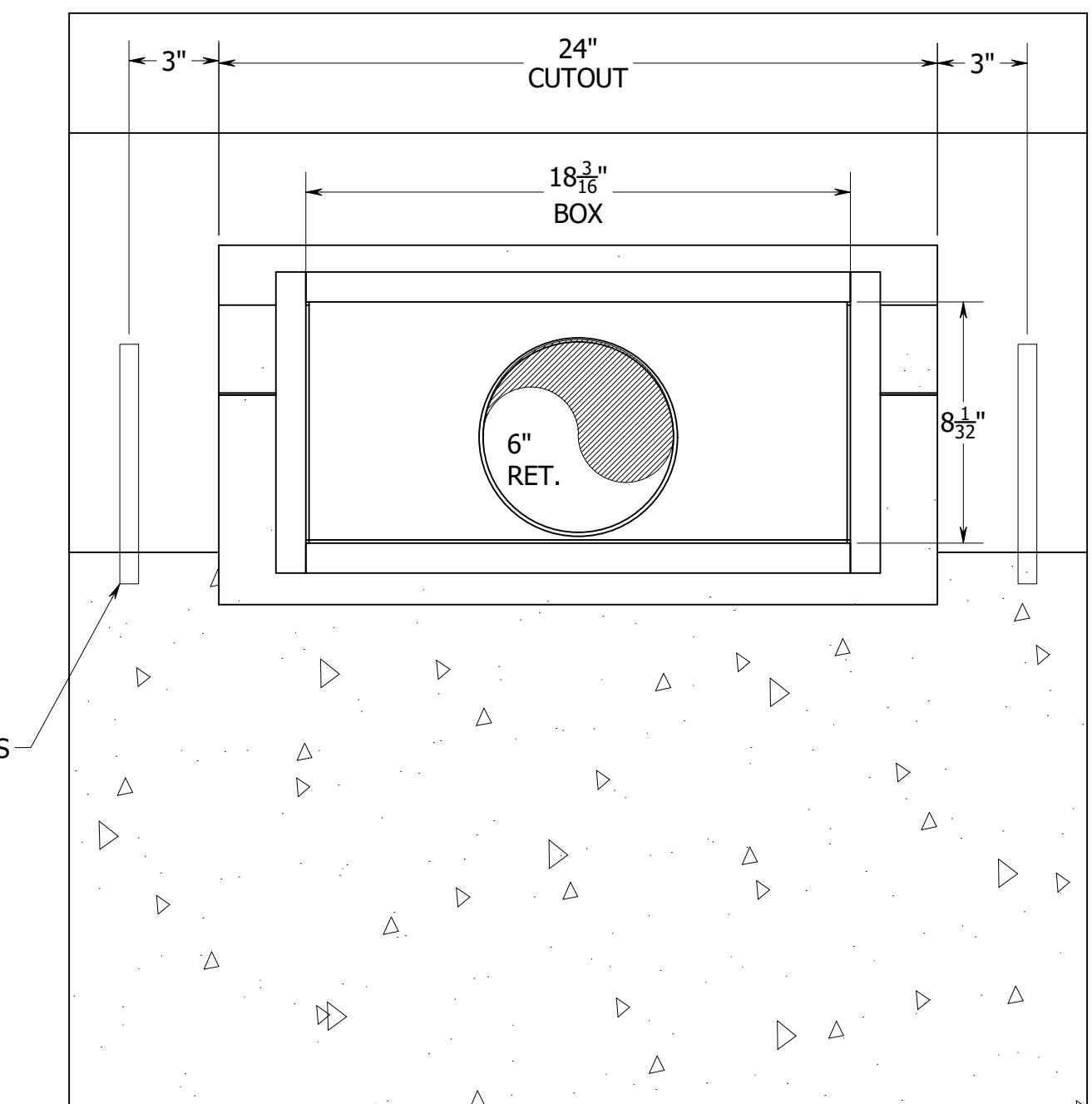
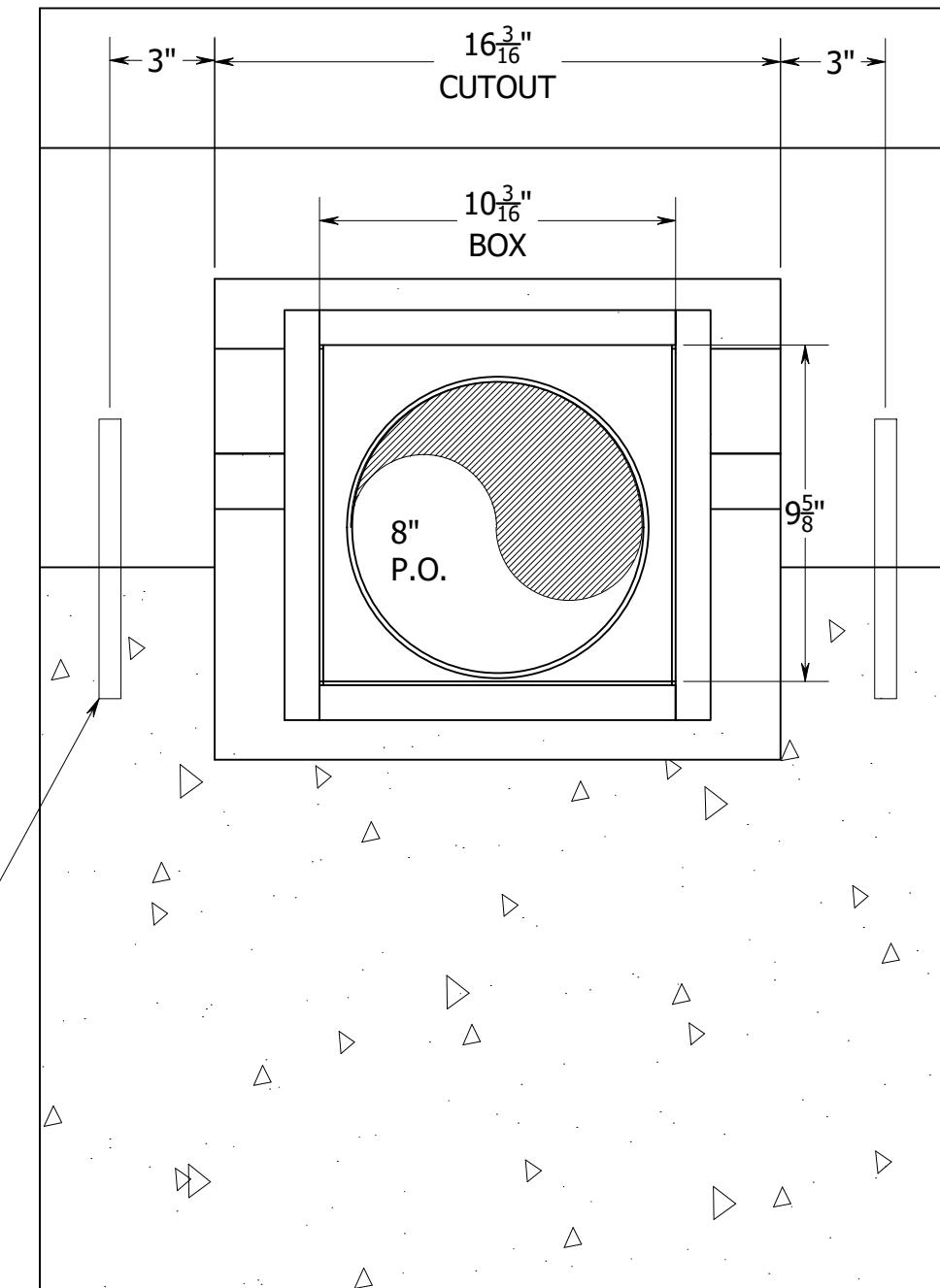
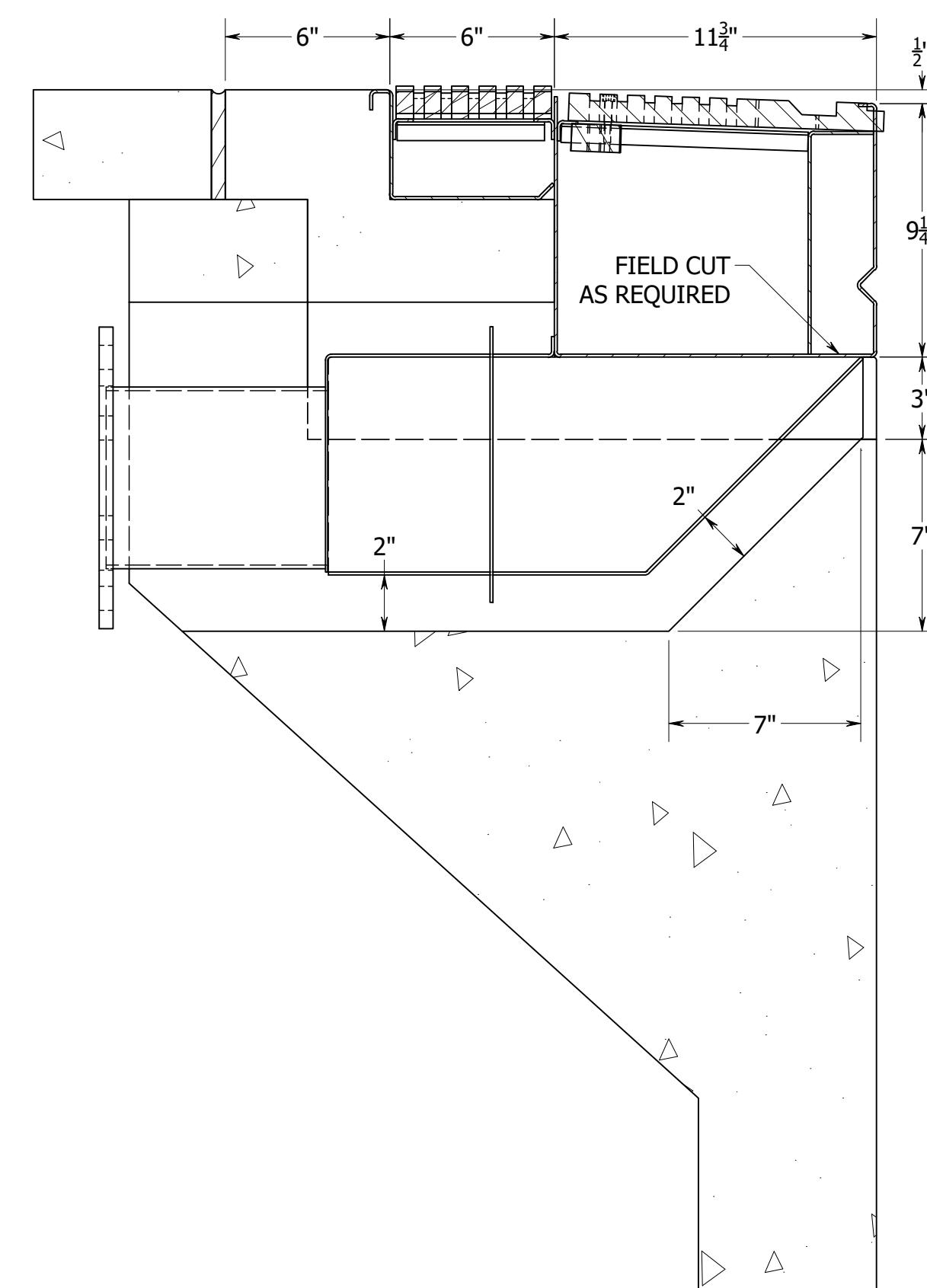
PROPRIETARY INFORMATION OF
PADDOCK POOL EQUIPMENT CO.
DO NOT COPY OR DISSEMINATE.
© PADDOCK POOL EQUIP. CO.
(UNPUBLISHED)



5 1/2" LG STIFFENER
CHANNEL @ EA RLA
FIELD INSTALL



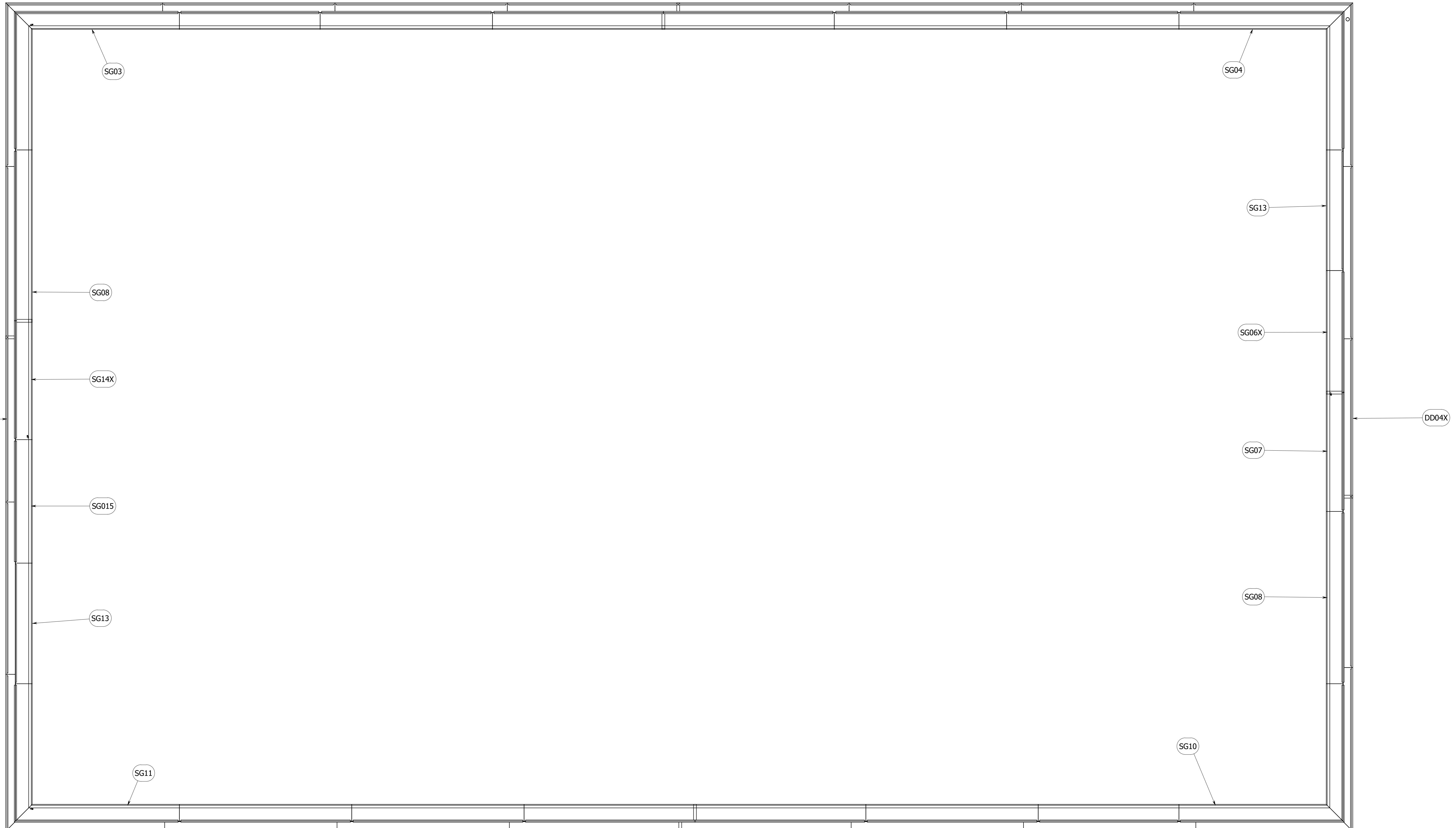
SECTION E-E
RETURN CONVERTER
SCALE 3/16" = 1"



- NOTES:**
1. FLANGES TO BE $\frac{1}{2}$ " STAINLESS STEEL PLATE TYPE.
 2. PIPES ARE STAINLESS STEEL.
 3. FLANGES NOT SHOWN IN REAR VIEWS.
 4. BOX MATERIAL IS 12 GAUGE TYPE 316L ST. ST.
 5. NO CUT OUTS IN TUBES OR GUTTER, SHIP BOXES LOOSE FOR FIELD INSTALL

REV	DATE	BY	DESCRIPTION
REVISION HISTORY			
4	05/28/25	GWb	REMOVED STEP INSERTS AND UPDATED GPM
3	05/27/25	GWb	ADJUSTED WALL LENGTH
2	03/12/25	GWb	CHANGED GRATING COLOR TO GREY
1	01/14/25	GWb	RELEASED FOR FAB
0	11/25/24	GWb	INITIAL RELEASE
REV	DATE	BY	DESCRIPTION
DO NOT SCALE DRAWING TOLERANCE UNLESS OTHERWISE NOTED $X \pm 1/16"$ $X \pm 0.020"$			
$1/8X \pm 1/32"$ $XX \pm 0.0010"$			
$X \pm 1/4"$ $XXX \pm 0.005$			
JOB NAME: CONNERSVILLE HS LOCATION: CONNERSVILLE, IN CNC SPEAR CORP			
DRAWN BY: GWB	DATE: 11/25/24	DWG. NO.: 24747.01	SHEET # 2 OF 3
DESCRIPTION: R300 316SS GUTTER, 1/2" DTR, COMPETITION POOL			
555 Paddock Parkway Rock Hill, SC 29730 Phone: (803)324-1111 Fax: (803)324-1116 info@paddockindustries.com			

 **PADDOCK**
POOL EQUIPMENT COMPANY



REV	DATE	BY	DESCRIPTION
REVISION HISTORY			
4	05/28/25	GWB	REMOVED STEP INSERTS AND UPDATED GPM
3	05/27/25	GWB	ADJUSTED WALL LENGTH
2	03/12/25	GWB	CHANGED GRATING COLOR TO GREY
1	01/14/25	GWB	RELEASED FOR FAB
0	11/25/24	GWB	INITIAL RELEASE

555 Paddock Parkway Rock Hill, SC 29730 Phone: (803)324-1111 Fax: (803)324-1116 info@paddockindustries.com	DESCRIPTION R300 316SS GUTTER, 1/2" DTR, COMPETITION POOL
X ± 1/16" X ± 0.020"	DO NOT SCALE DRAWING TOLERANCE UNLESS OTHERWISE NOTED
1/8" ± 1/32" .0XX ± 0.001"	JOB NAME CONNERSVILLE HS
X ± 1/4" XXX ± 0.005"	LOCATION CONNERSVILLE, IN
DRAWN BY DATE GWB 11/25/24	C- SPEAR CORP
QTY: 24747.01	DWG. NO. 24747.01
SHEET # 3 OF 3	



Submittal #2

Gutter

#SO24747

11/27/2024

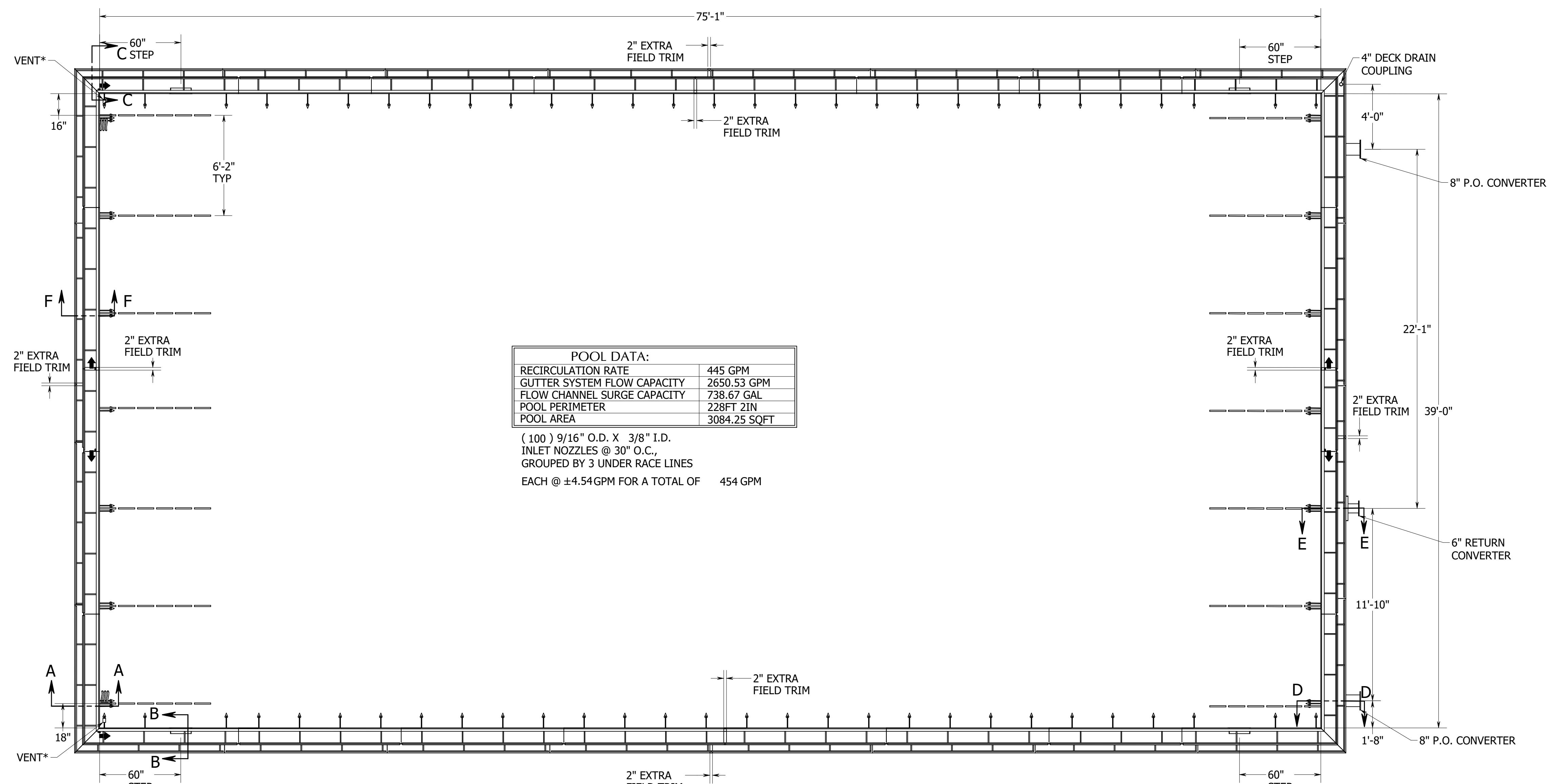
Paddock Pool Equipment Co. LLC 555 Paddock Pkwy
Rock Hill SC 29730 United States

Bill To	To	Project Mgr
Lindsey Spear Corporation 12966 N CR 50 W Roachdale IN 46172 United States	Spear Corporation Blake sblake@spearcorp.com Grundlock dgrundlock@spearcorp.com	Sam Virginia Collins Daniel virginia.collins@paddockindustries.com 803-372-6067

PO #

Connersville HS PO36545

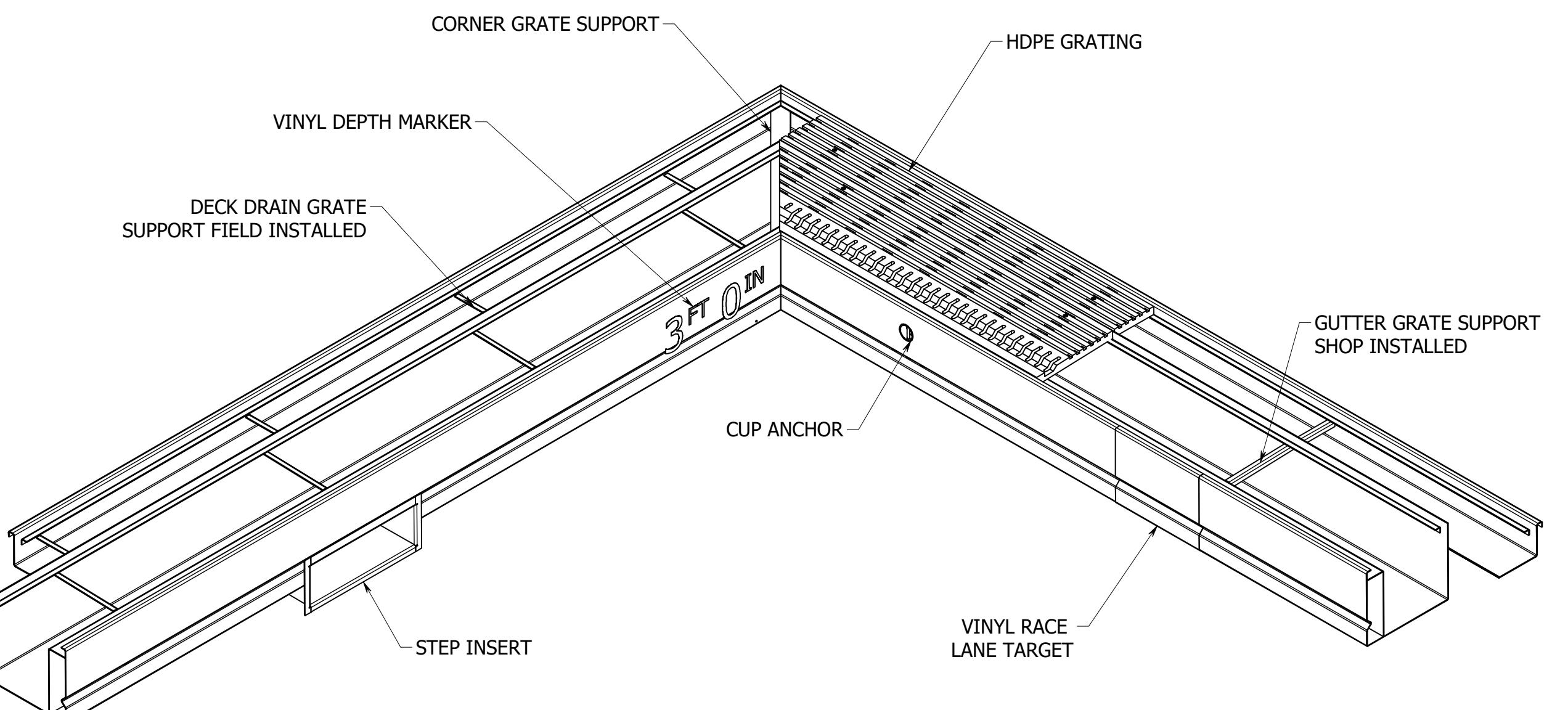
Line Number	Quantity	Item	Drawing	Approval
1	~229	R300-316-TGDD Gutter R300 316L TGDD 11-3/4"x1", 1/2"Slope Gutter R300 316L Top Grate with Deck Drain, 11-3/4"x1" (16) Cup Anchors, 2-8" PO, 1-6" Return	24747.01	



PART NUMBER	QTY	DESCRIPTION	COMMENTS
24747.01-SG01	10	WELDMENT, R300, 120"	316L SS
24747.01-SG02X	2	WELDMENT, R300, 98"	316L SS
24747.01-SG03	1	WELDMENT, R300, 102.5", STEP, CORNER, JETWASH (R), AAR, VENT	316L SS
24747.01-SG04	1	WELDMENT, R300, 102.5", STEP, CORNER	316L SS
24747.01-SG05	2	WELDMENT, R300, 84", CORNER, CUP ANCHOR	316L SS
24747.01-SG06	2	WELDMENT, R300, 120", CUP ANCHORS(2)	316L SS
24747.01-SG07	2	WELDMENT, R300, 60", CUP ANCHOR, JET WASHES (L&R)	316L SS
24747.01-SG08	2	WELDMENT, R300, 120", CUP ANCHORS (2)	316L SS
24747.01-SG09X	2	WELDMENT, R300, 86", CORNER, CUP ANCHOR	316L SS
24747.01-SG10	1	WELDMENT, R300, 102.5", STEP, CORNER	316L SS
24747.01-SG11	1	WELDMENT, R300, 102.5", STEP, CORNER, JETWASH (L), AAR, VENT	316L SS
24747.01-DD01	1	WELDMENT, R300, 108", CORNER, DRAIN COUPLING	316L SS
24747.01-DD02	16	WELDMENT, R300, 120"	316L SS
24747.01-DD03	2	WELDMENT, R300, 108", CORNER	316L SS
24747.01-DD04X	1	WELDMENT, R300, 39"	316L SS
24747.01-DD05	3	WELDMENT, R300, 102.5", CORNER	316L SS
24747.01-DD06X	2	WELDMENT, R300, 104", CORNER	316L SS
24747.01-DD07X	1	WELDMENT, R300, 43.7"	316L SS
P0813-R300-6RET-8IN-R2	1	R300 6" RETURN CONVERTER	316L SS
P0813-R300-8PO-R2	2	R300 8" PERIMETER OVERFLOW CONVERTER	316L SS
14747.01-H	1	1" THICK HDPE GRATING	HDPE, GRAY
P0801.01-1800-R1	64	ANCHOR ANGLE, SLOTTED, L1 3/4" x 1 3/4" x 3/16" x 18"	316L SS
P2104-00506.01-R0	94	ANCHOR ANGLE, PL12GA x 1 5/32" x 5 3/8"	316L SS
FW-063-304	384	FLAT WASHER, Ø5/8"	316L SS
HNUT-063C-304	384	HEX NUT, 5/8"-11	316L SS
STUD-063CX0800-304	192	STUD, 5/8"-11 X 8"	316L SS
P2103-00516.01-R0	64	STIFFENER CHANNEL, C7/8" x 9/16" x 12GA x 5 1/2"	316L SS
P2103-00700.04-R0	64	STIFFENER CHANNEL, C7/8" x 9/16" x 12GA x 7"	316L SS
P2103-00724.01-R0	64	STIFFENER CHANNEL, C7/8" x 9/16" x 12GA x 7 3/4"	316L SS
P2103-01000.01-R0	64	STIFFENER CHANNEL, C7/8" x 9/16" x 3/32" x 10"	316L SS
P0899-XTRA-ANGL	1	EXTRA GRATING SUPPORT ANGLE, PL12GA x 1 9/32" x 120"	316L SS
P0899-XTRA-ANGL-88	1	EXTRA GRATING SUPPORT ANGLE, PL12GA x 1 9/32" x 120"	316L SS
P0806-F08218.02	4	CORNER GRATE SUPPORT, p12GA x 2" x 8 7/32"	316L SS
P0806-F14000.02	4	CORNER GRATE SUPPORT, p12GA x 2" x 14"	316L SS
P0802-3750	110	INLET NOZZLE, 9/16" O.D. X 3/8" I.D.	NYLON
P0802-0000	2	INLET NOZZLE, BLIND, Ø9/16" O.D.	NYLON
P0802-0-PLUG	112	TEST PLUG, 0	RUBBER
P0899-DEPTH-MARKER_2	1	VINYL DEPTH MARKER SET	VINYL
R300 VINYL TARGET	12	12" WIDE BLK, SELF ADHESIVE RACE LANE TARGET	VINYL
200863	1	VINYL EDGE SEALER PEN	SEAL IT PEN
P0899-APPO	1	ACCESSORY PACK OF PUNCH OUTS	PPEC
SBP-001	6	SCOTCH BRITE PAD	SCOTCH BRITE
ZSSC-001	1	ZUD SS CLEANER	ZUD
P2103-00563.01-R0	1	STIFFENER CHANNEL, C7/8" x 9/16" x 12GA x 5 5/8"	304L SS

CONFIRM DEPTHS BEFORE FABRICATION

DEPTH MARKERS	
DEPTH	
3FT 6IN	5
4FT 0IN	2
4FT 6IN	2
6FT 6IN	2
8FT 6IN	2
10FT 6IN	2
11FT 0IN	2
11FT 6IN	4

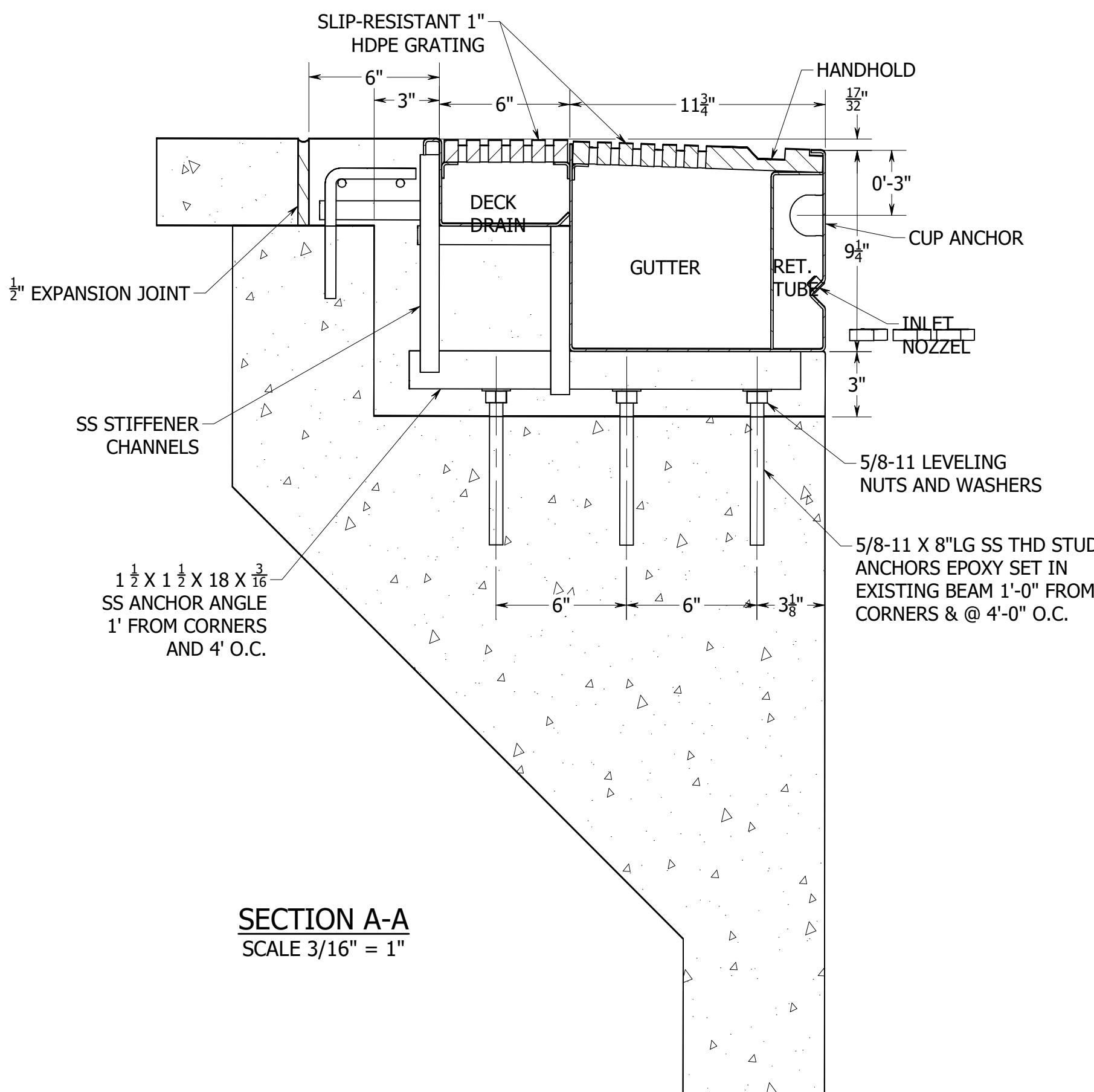


ISOMETRIC VIEW
SCALE 1" = 12"

0	11/25/24	GWB	INITIAL RELEASE
REV	DATE	BY	DESCRIPTION
REVISION HISTORY			
555 Paddock Parkway Rock Hill, SC 29730 Phone: (803)324-1111 Fax: (803)324-1116 info@paddockindustries.com			
DO NOT SCALE DRAWING	TOLERANCE UNLESS NOTED OTHERWISE NO. X ± 1/16" X ± 0.020" 1/8" ± 1/32" XX ± 0.010" XXX ± 0.005"	JO/PN:	CONNERSVILLE HS
CONTRACTOR:	X ± 1/4"	LOC:	CONNERSVILLE, IN
DRAWN BY:	DATE:	FOR:	SPEAR CORP
GWB	11/25/24	DWG. NO.:	24747.01
QTY:		SHEET #:	1 OF 2

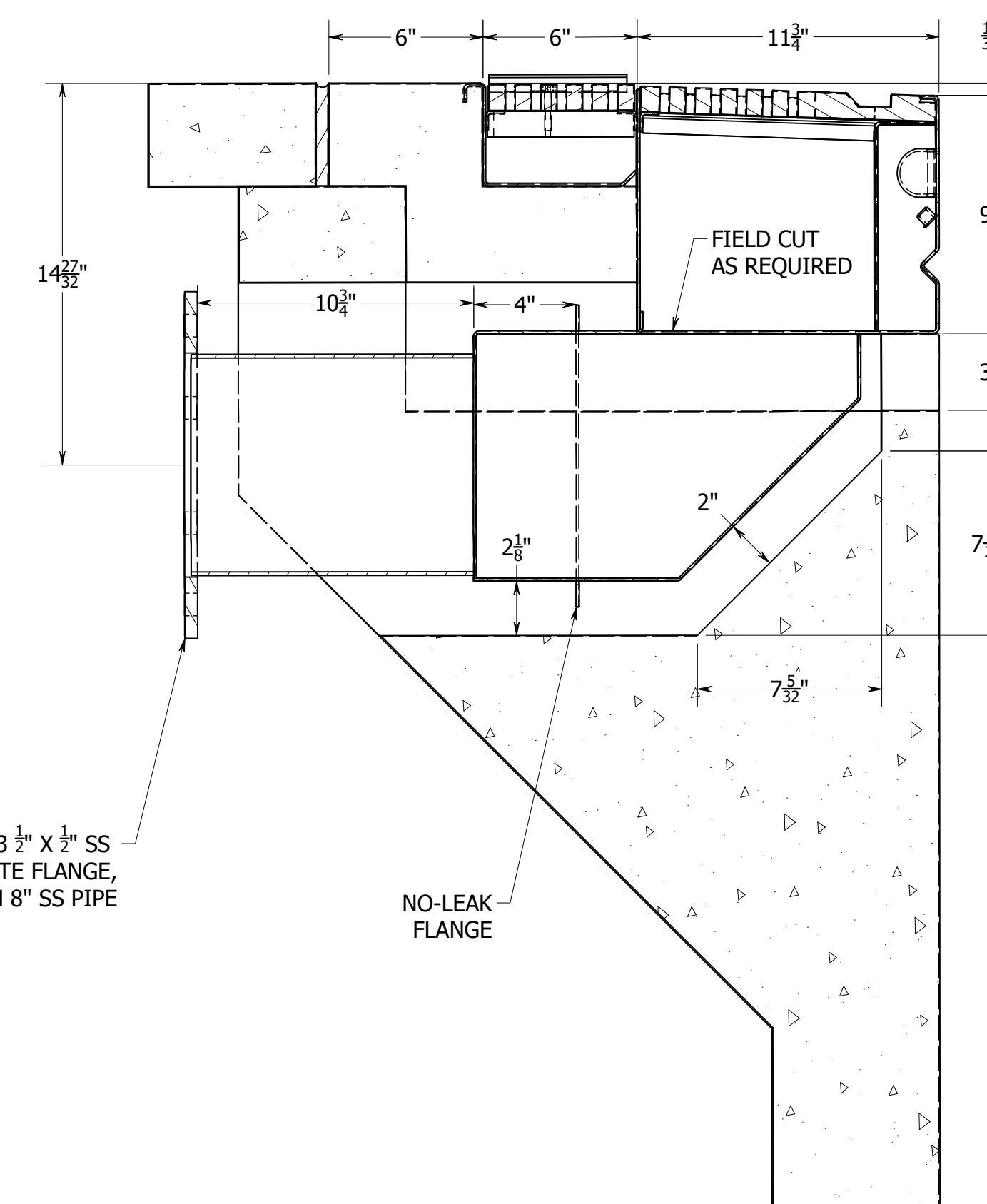
CONFIDENTIAL

PROPRIETARY INFORMATION OF
PADDOCK POOL EQUIPMENT CO.
DO NOT COPY OR DISSEMINATE.
© PADDOCK POOL EQUIP. CO.
(UNPUBLISHED)



SECTION A-A

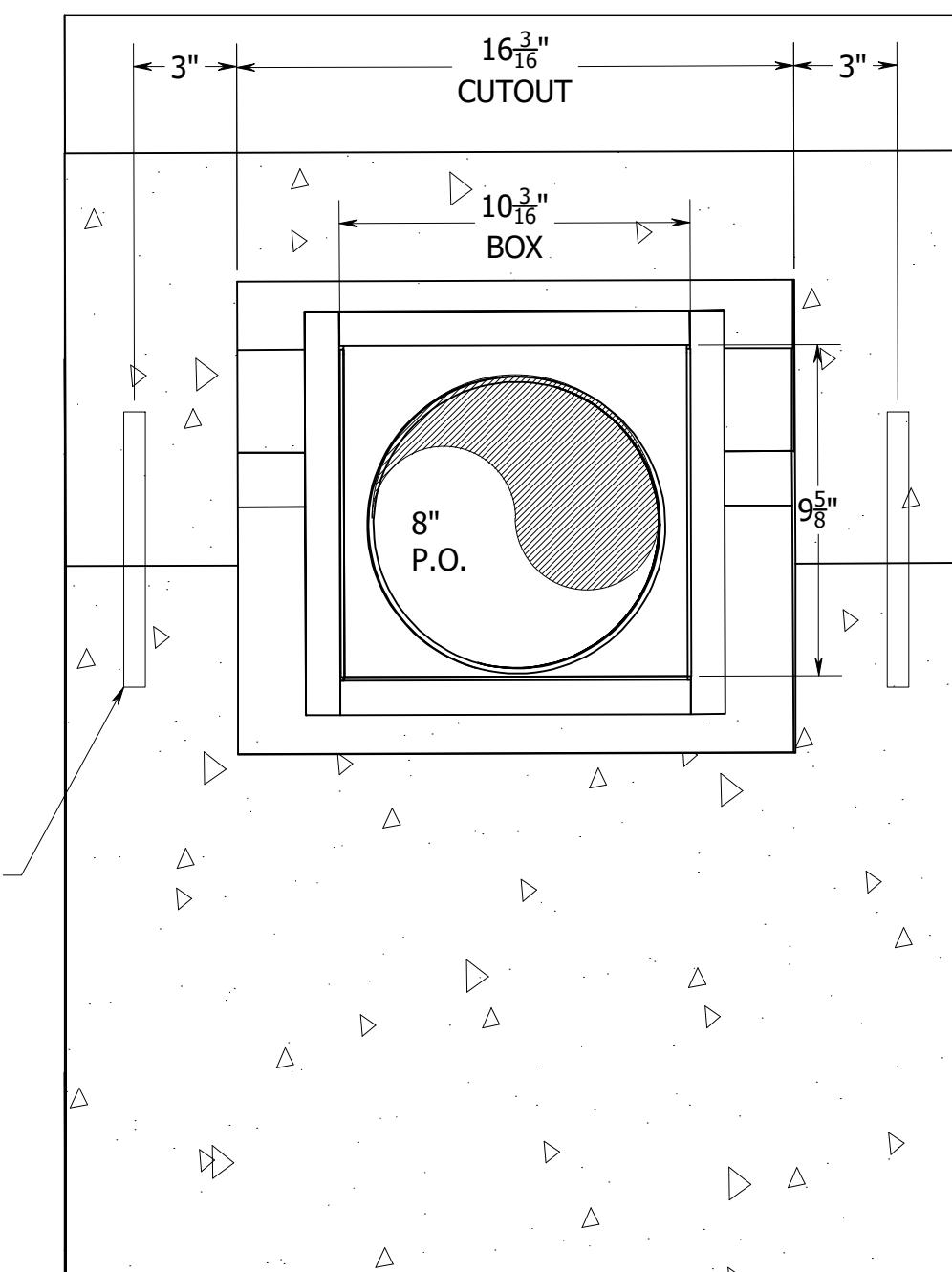
SCALE 3/16" = 1"



SECTION D-D

PERIMETER OVERFLOW CONVERTER SCALE 3/16" = 1"

PERIMETER OVERFLOW CONVERTER SCALE 3/16" = 1"

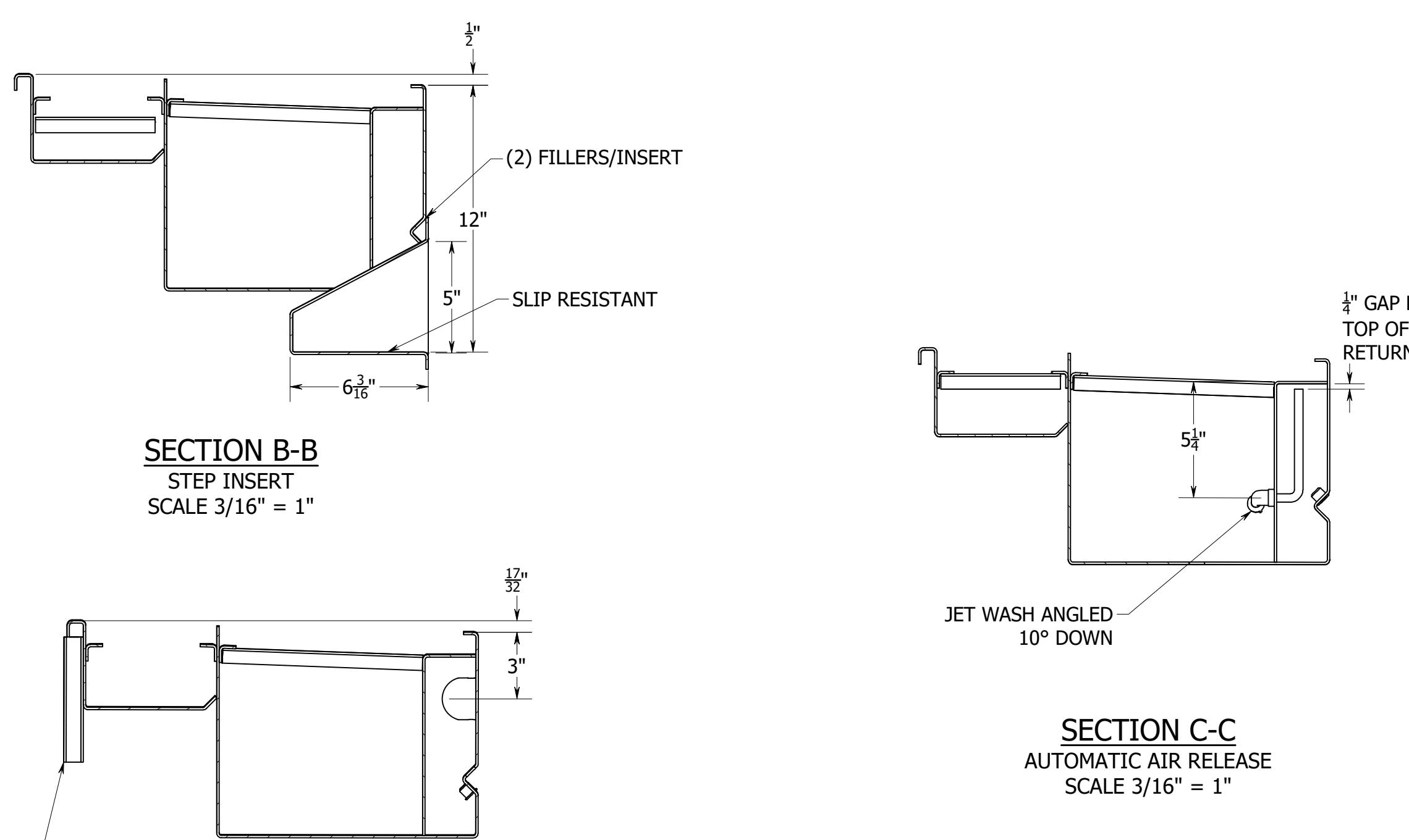


5
c" ANC

8 ANO

NOTES:

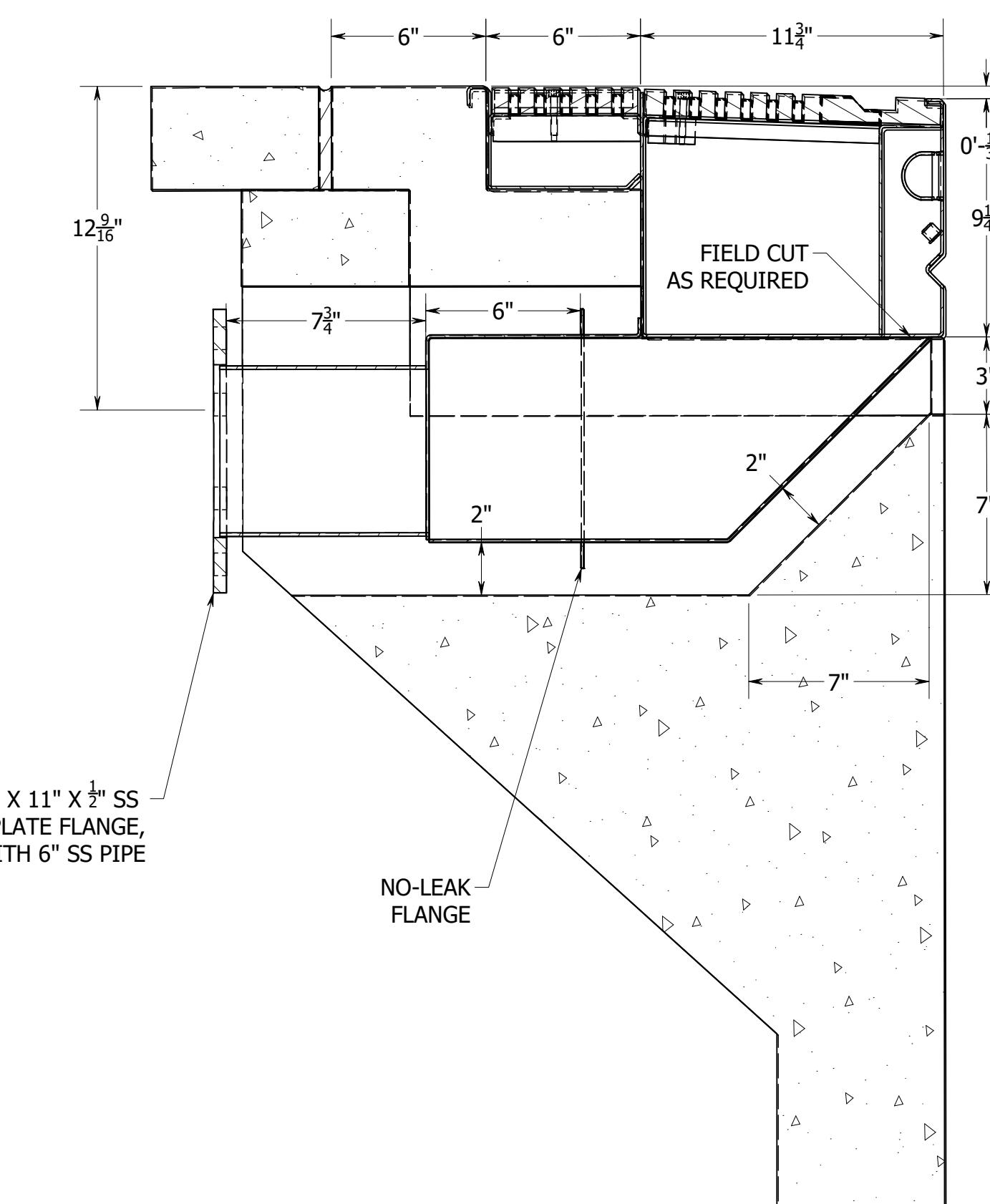
1. FLANGES TO BE $\frac{1}{2}$ " STAINLESS STEEL PLATE TYPE.
2. PIPES ARE STAINLESS STEEL.
3. FLANGES NOT SHOWN IN REAR VIEWS.
4. BOX MATERIAL IS 12 GAUGE TYPE 316L ST. ST.
5. NO CUT OUTS IN TUBES OR GUTTER, SHIP BOXES LOOSE FOR FIELD INSTALL.



SECTION B-B

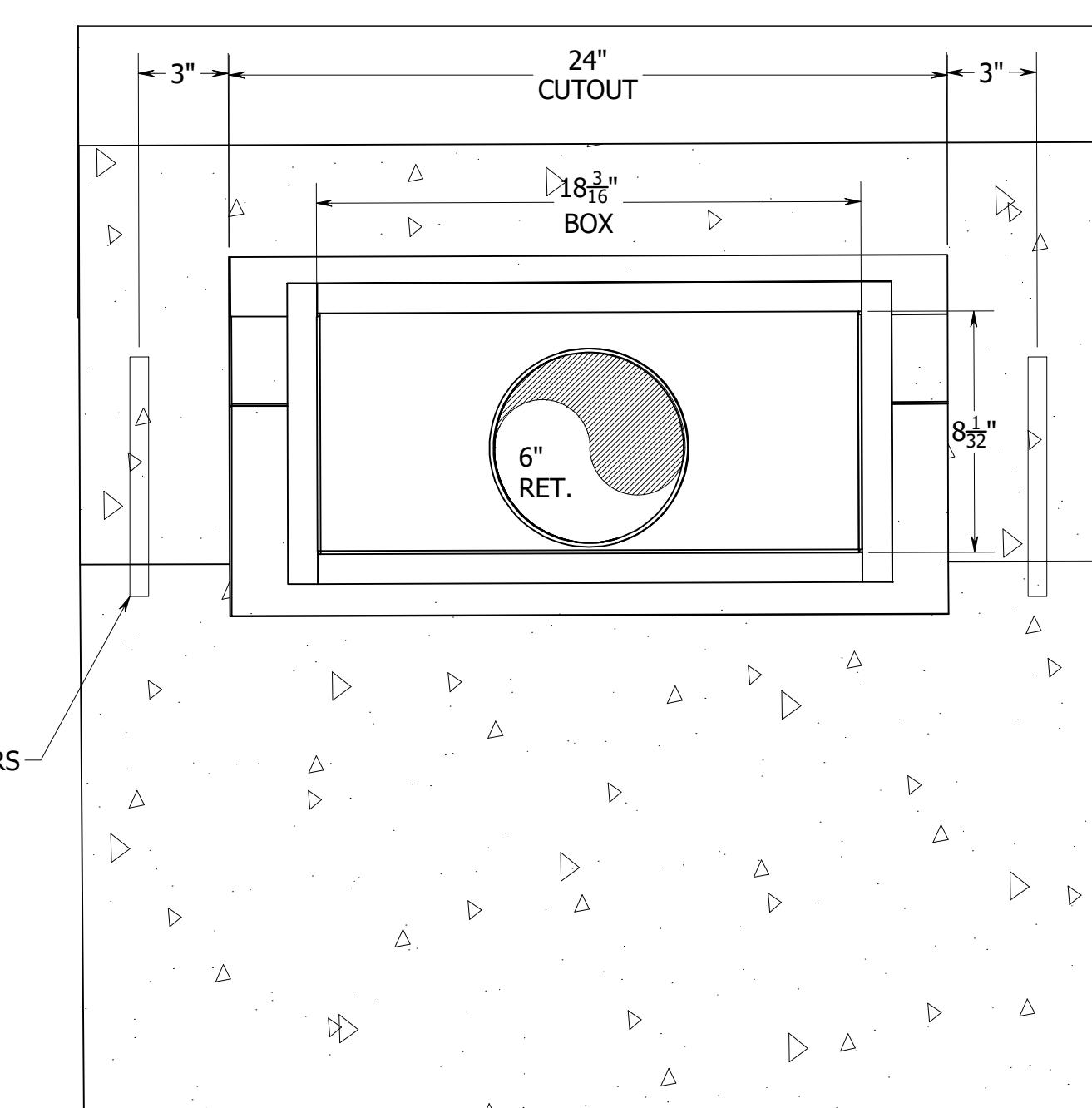
STEP INSERT

STEP INSERT



SECTION E-E
RETURN CONVERTER
SCALE 3/16" = 1"

RETURN CONVERTER SCALE 2 1/2" - 1"



SECTION F-F
SCALE 3/16" = 1"

SCALE 3/16" = 1"

0	11/25/24	GWB	INITAL RELEASE
REV	DATE	BY	DESCRIPTION
REVISION HISTORY			
555 Paddock Parkway Rock Hill, SC 29730 Phone: (803)324-1111 Fax: (803)324-1116 info@paddockindustries.com		 PADDOCK POOL EQUIPMENT COMPANY	
DO NOT SCALE DRAWING		DESCRIPTION	
TOLERANCE UNLESS OTHERWISE NOTED:		R300 316SS GUTTER, 1/2" DTR, COMPETITION POOL	
X. ± 1/16"	.X ± 0.020"		
1/X ± 1/32"	.XX ± 0.010"	JOB NAME	
X' ± 1/4"	.XXX ± 0.005"	CONNERSVILLE HS	
	BY	LOCATION	
DRAWN	GWB	CONNERSVILLE, IN	
DATE		CUSTOMER	
11/25/24		SPEAR CORP	
QTY.:		DWG. NO.	
		24747.01	
		SHEET # 2 OF 2	

Paddock Pool Equipment Company

Gutter Flow Calculations

Project

Connersville HS

Total Recirculation Rate, gpm

454

Pool Perimeter, feet

228

Average Gutter Width, inches

9.19

Usable Gutter Depth, inches

7.81

Number of 90-degree corners

4

Number of 45-degree corners

0

Number of radiused corners

0

Number of PO Converters

2

Number of Return Converters

1

Supply tube area, square inches

18.1

Number of inlet nozzles

100

Max. tube pressure allowed, psi

7.5

Density of Fluid, lb_m/ft³

62.217 (Water at 80°F)

Local Gravity, ft/sec²

32.17

Absolute Viscosity (μ), lb_fsec/ft²

1.791E-05 (Water at 80°F)

Click on **Tools > Solver**, then press **Enter** twice

Total gutter system flow capacity is

2923.04 gpm

Gutter collection rate is

362.26 gpm

Design for surge weirs is:

Adequate

Design for rimflow conditions is:

Superior

Flow rate per nozzle

4.54 gpm

Nozzle Size

6

Nozzle Velocity

13.19 ft/sec

Supply Tube Velocity

4.02 ft/sec

Supply Tube Pressure

4.23 psi

Surge Capacity in Flow Channel

771.03 gallons

Navier-Stokes Continuity Equation:

$$\left[1 - \left(\frac{\rho}{m} \right)^2 W^5 g \eta^3 \right] \partial \eta = \frac{f}{8} \partial \left(\frac{x}{W} \right)$$

Solving this equation for turbulent flow conditions with m as the unknown variable yields

$$D_1 m^2 + D_2 \sqrt[4]{m^7} + D_3 = 0$$

where ρ = density of the fluid, lb_m/ft²

m = mass flow rate, lb_m/sec

g = acceleration due to local gravity, ft/sec²

L = length of channel, ft

W = width of channel, ft

η = fluid height to width ratio

f = Darcy friction factor, $\frac{0.316}{\sqrt{R_e}}$

x = distance along centerline of channel

μ = absolute viscosity, lb_fsec/ft²

y = depth of fluid, ft

R_e = Reynold's Number, $\frac{4m}{\mu(2y+W)}$

Francis Weir Formula:

$$Q = 3.33 L \sqrt{H^3}$$

where

Q = flow rate, ft³/sec

L = length of weir, ft

H = height of water above crest of weir, ft



Submittal #2

Gutter

#SO24747

11/27/2024

Paddock Pool Equipment Co. LLC 555 Paddock Pkwy
Rock Hill SC 29730 United States

Bill To	To	Project Mgr
Lindsey Spear Corporation 12966 N CR 50 W Roachdale IN 46172 United States	Spear Corporation Blake sblake@spearcorp.com Grundlock dgrundlock@spearcorp.com	Sam Virginia Collins Daniel virginia.collins@paddockindustries.com 803-372-6067

PO #

Connersville HS PO36545

Line Number	Quantity	Item	Drawing	Approval
1	~229	R300-316-TGDD Gutter R300 316L TGDD 11-3/4"x1", 1/2"Slope Gutter R300 316L Top Grate with Deck Drain, 11-3/4"x1" (16) Cup Anchors, 2-8" PO, 1-6" Return	24747.01	



Paddock Pool Equipment Co. LLC 555 Paddock Pkwy
Rock Hill SC 29730 United States

Submittal

#SO24747 11/22/24

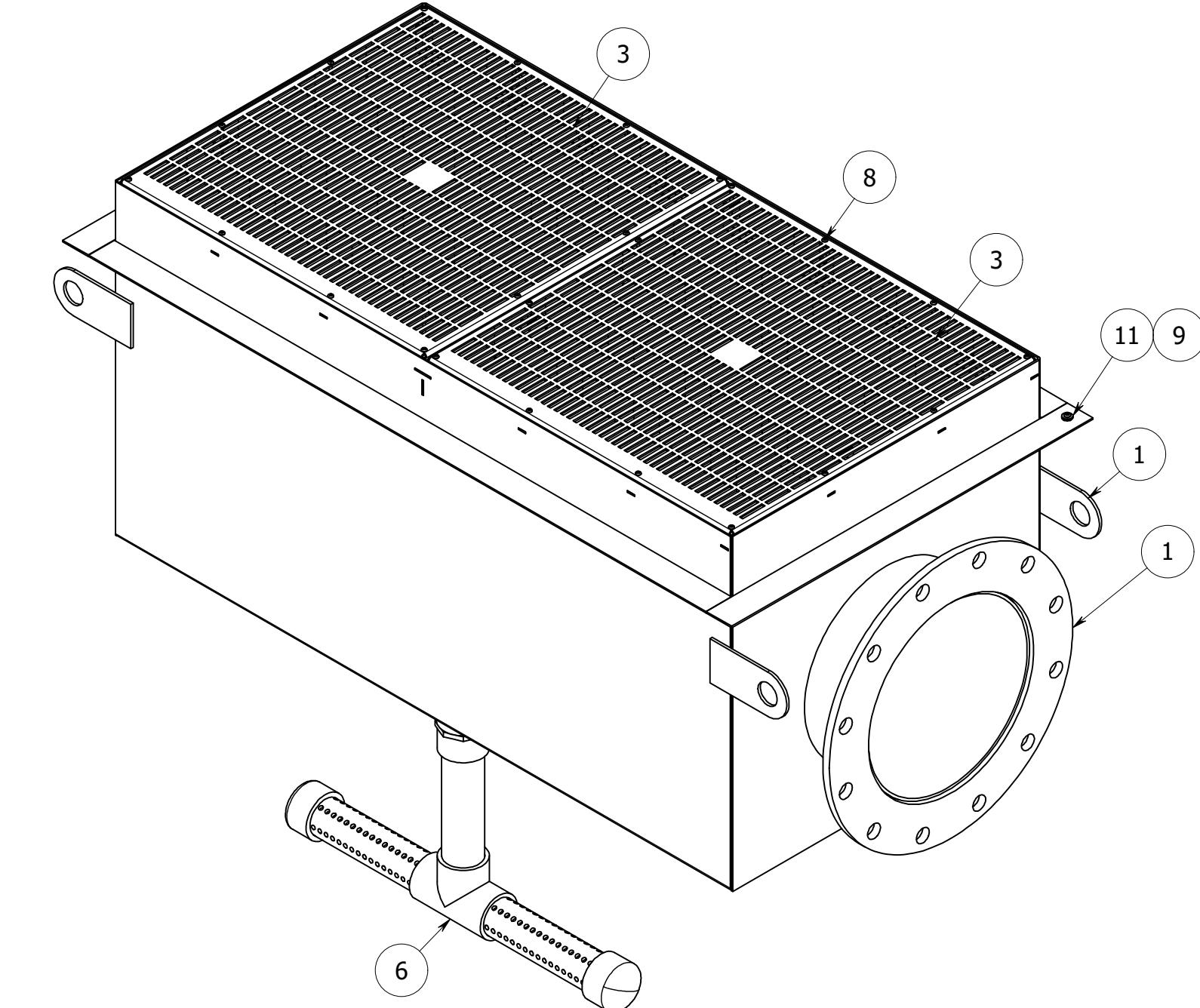
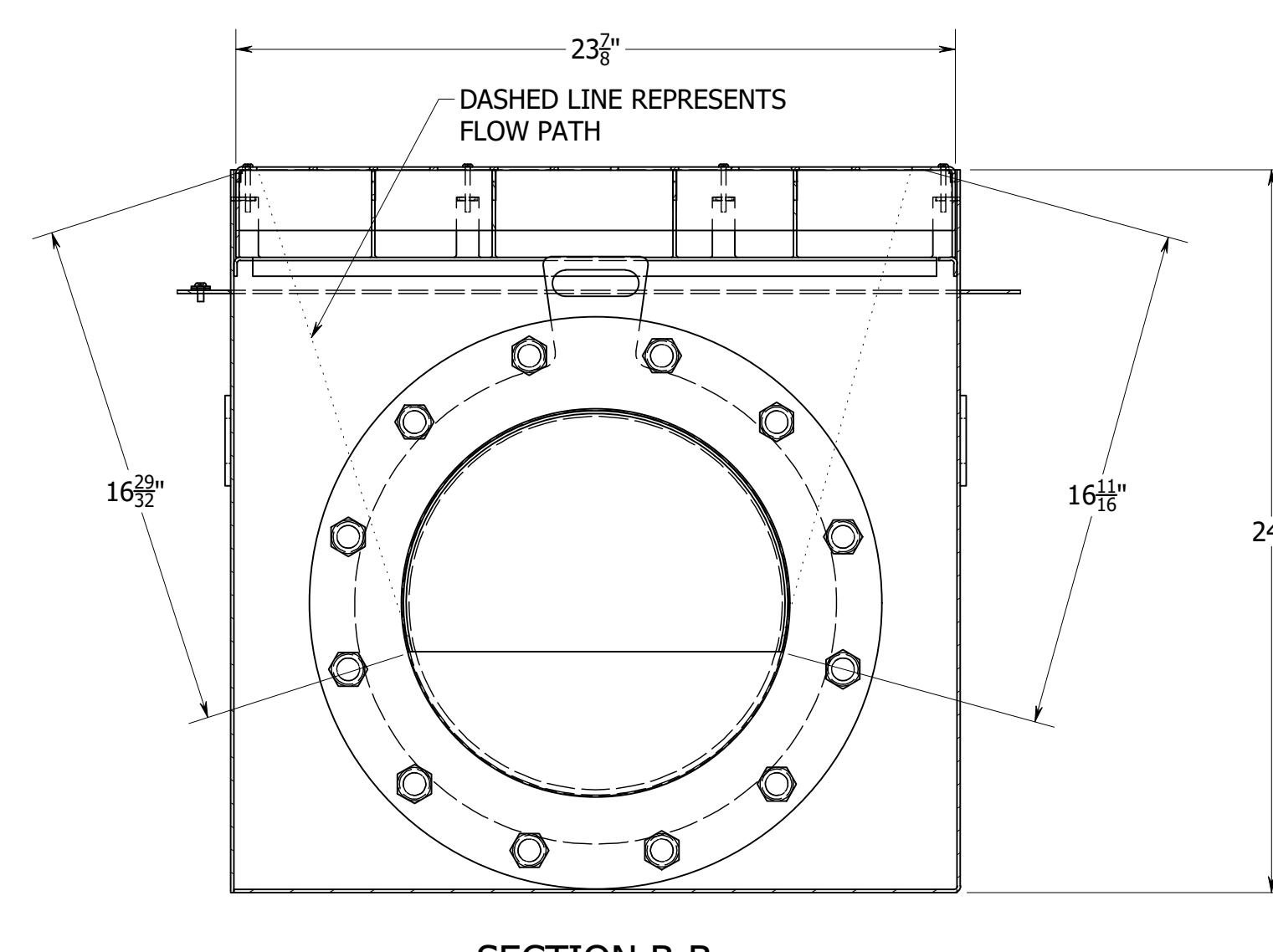
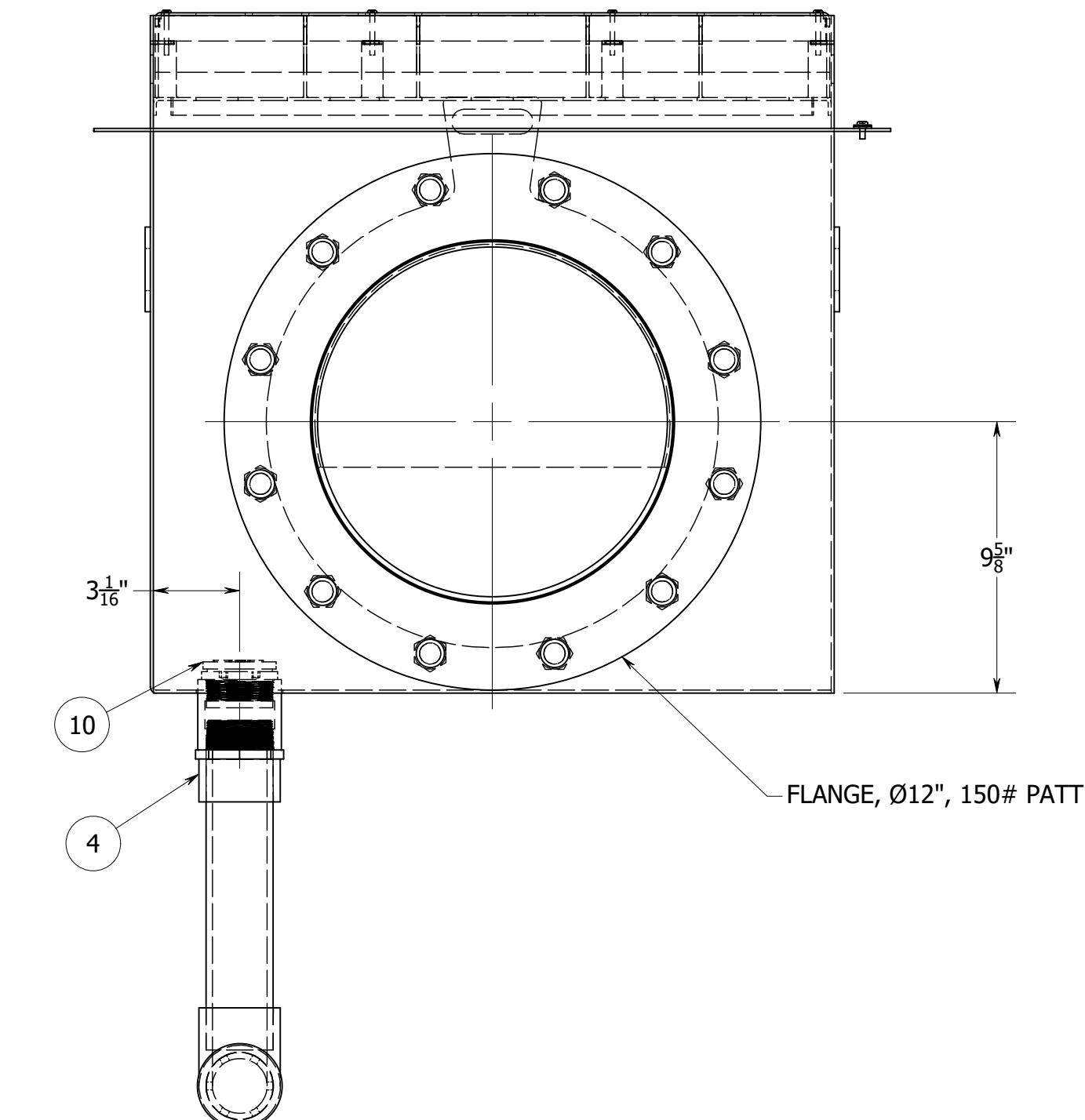
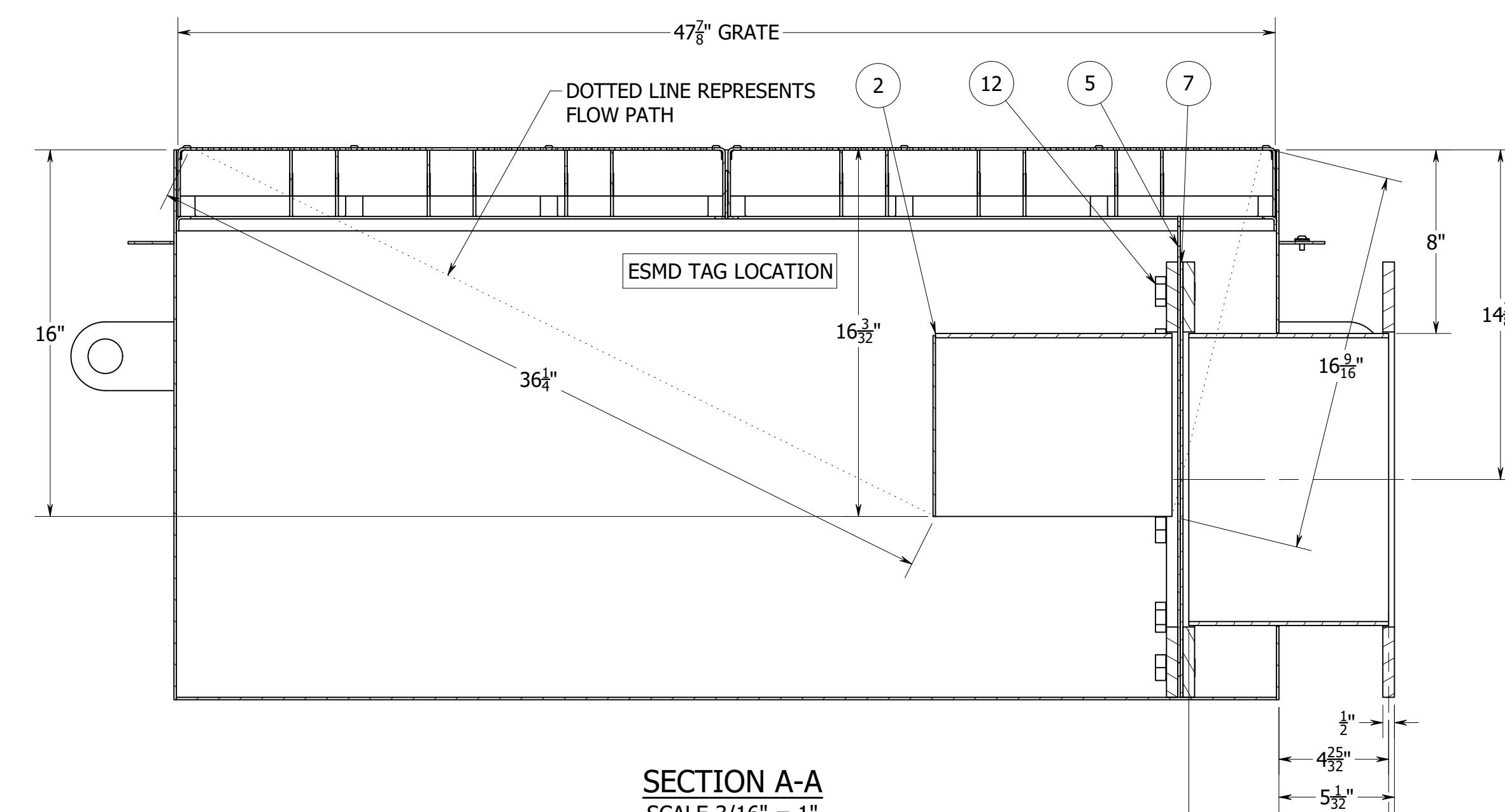
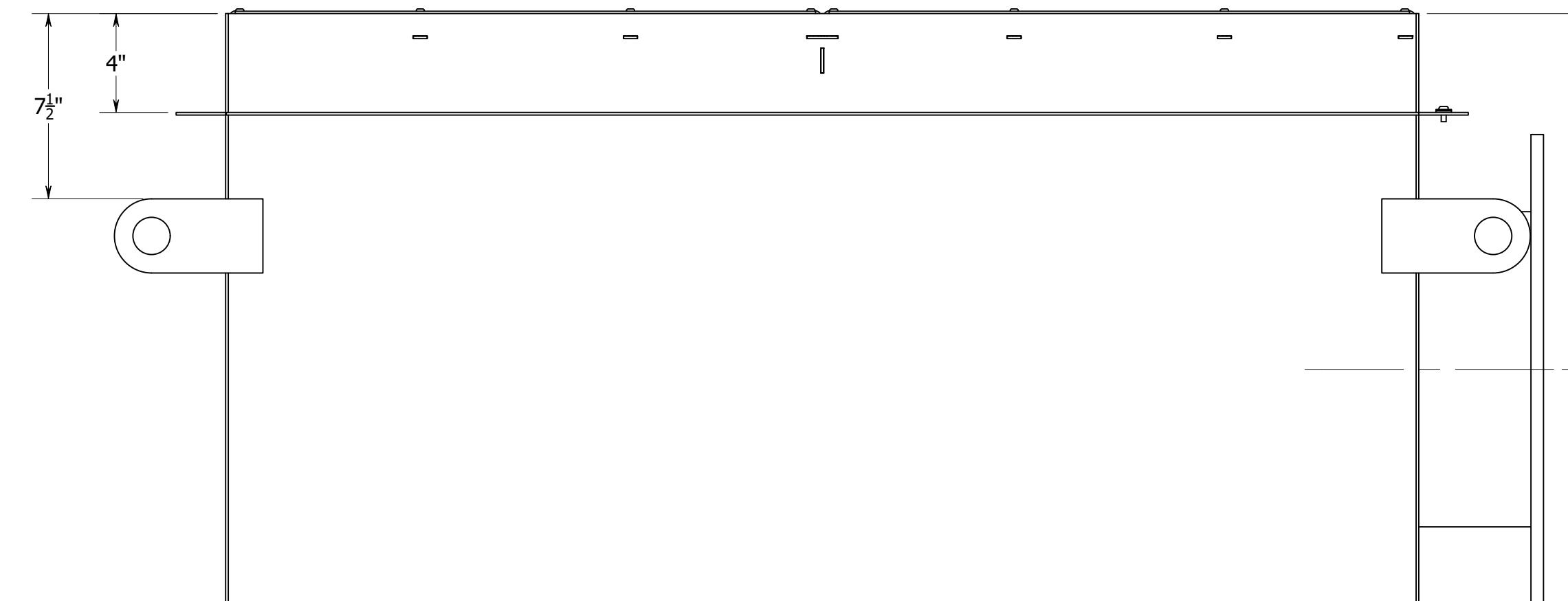
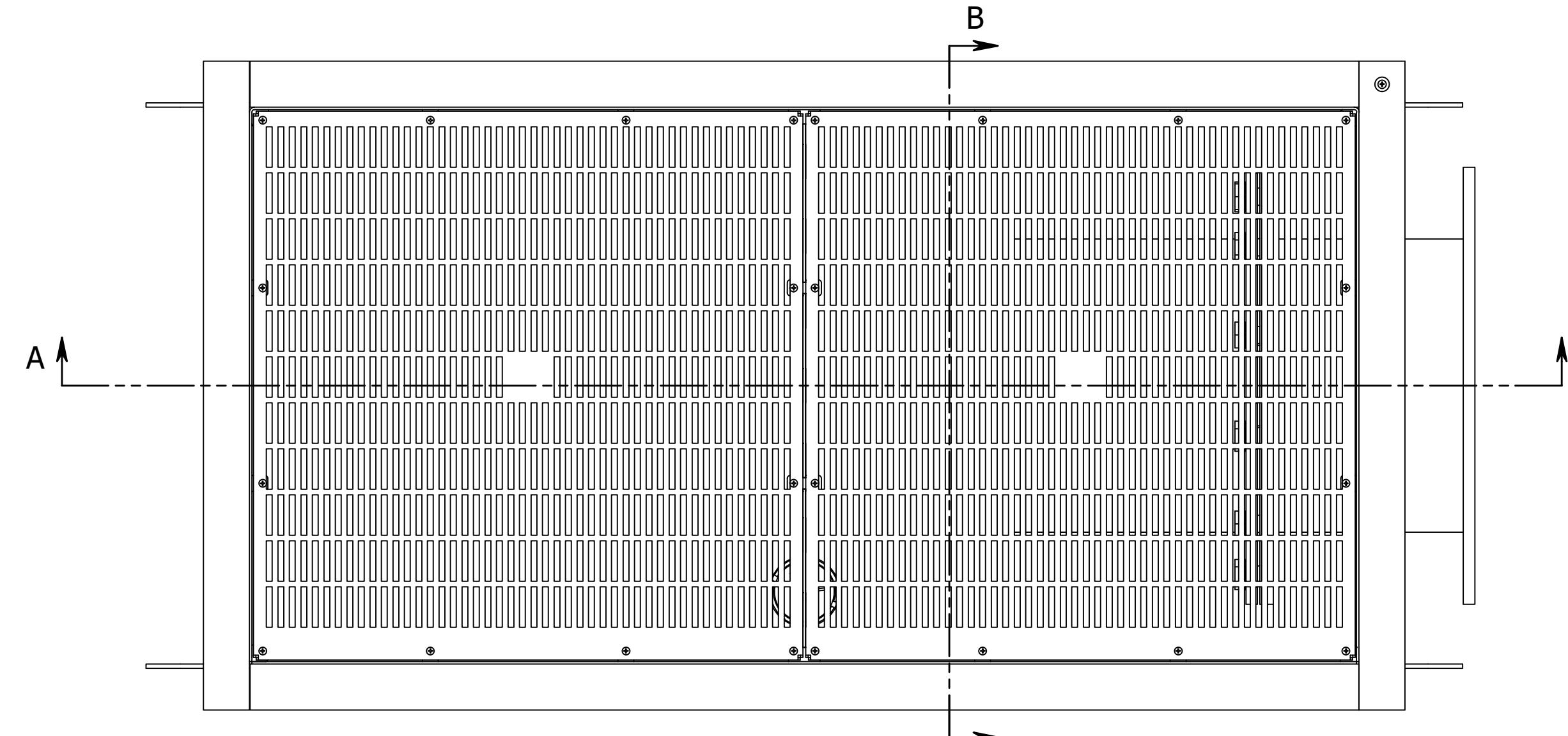
Main Drains & Reducer

Bill To	To	Project Manager
Lindsey	Spear Corporation	Sam
Spear Corporation 12966 N	Blake sblake@spearcorp.com	Daniel
CR 50 W	Grundlock dgrundlock@spearcorp.com	
Roachdale IN 46172		Virginia Collins
United States		virginia.collins@paddockindustries.com
		803-372-6067

PO #
Connersville HS PO36545

Line Number	Quantity	Item	Drawing	Approval
3	2	MD-304-2448FC-2448-12/1 MainDrain 304L 2448FlatCover 24X48Sump 12"Conn MainDrain 304L 2448FlatCover 24X48Sump 12"Conn	MD 2448FC 2448	
4	2	CR-304-12-08 Reducer C 304L 12"X8"		

PARTS LIST		
ITEM	QTY	PART NUMBER
1	1	ESMD-2448-12L.01-R0
2	1	AVRD-12.01-R0
3	2	FC-2424.01-R1
4	1	ADPTR-0200MPTx0200SOC.08-R0
5	1	BP12-304
6	1	HSRL-01
7	1	P2104-120x02.11-R0
8	24	PHMP-#08Cx0108-316
9	1	PHMP-#10Fx0008-304
10	1	SP1056
11	2	FV-025-BR
12	12	HHMB-075Cx0104-316



2424 PCFC STAINLESS STEEL FRAME AND GRATE IN 24x48 SUMP					
VELOCITY (FT/SEC)	OPEN AREA (IN ²)	MAX FLOW (GPM)	TOTAL QTY	TOTAL OPEN AREA (IN ²)	TOTAL MAX FLOW (GPM)
1.5	212.89	995.33	2	425.78	1990.66
1.0	212.89	663.55	2	425.78	1327.1
0.5	212.89	331.78	2	425.78	663.56

NSF MAXIMUM SAFE FLOW RATE OF TWO (2) 2424PCFC'S EQUALS 3000 GPM (WALL ONLY) or 3500 GPM (FLOOR ONLY)

* THE NSF SAFETY FLOW IS THE MAXIMUM FLOW MEETING THE ANSI/APSP/ICC-16 REQUIREMENTS. THE RECOMMENDED MAXIMUM DESIGN FLOW IS BASED ON A VELOCITY THAT DOES NOT EXCEED 1.5 FT/SEC. PADDOCK CERTIFIED COVERS & GRATES COMPLY WITH BODY BLOCKING ELEMENT TEST PER ANSI/APSP/ICC-16 2017



CERTIFIED BY IAPMO R&T
ANSI/APSP/ICC-16

QTY 2

PART NUMBER: 9300011

3	05/03/24	CDR	REVISED TO IAPMO CERTIFIED
2	07/12/23	BDJ	UPDATED GRATE HEIGHT
1	11/12/22	PTT	ADDED FLOW DATA
0	02/28/22	PTT	ORIGINAL ISSUE
REV	DATE	BY	DESCRIPTION

REVISION HISTORY

DO NOT SCALE DRAWING	TOLERANCE UNLESS OTHERWISE NOTED:		
X ± 1/16"	X ± 0.020"		
1/8 ± 1/32"	XX ± 0.010"		
X' ± 1/4"	XXX ± 0.005"		
DRAWN BY DATE		PREC JOB NUMBER:	
CHECKED BY DATE		DWG. NO. MD-304-2448FC-2448-12L-R0	
APPROVED BY DATE		SHEET # 1 OF 1	

TOLERANCE UNLESS OTHERWISE NOTED:
X ± 1/16" X ± 0.020"
1/8 ± 1/32" XX ± 0.010"
X' ± 1/4" XXX ± 0.005"
DRAWN BY DATE PREC JOB NUMBER:
CHECKED BY DATE DWG. NO. MD-304-2448FC-2448-12L-R0
APPROVED BY DATE SHEET # 1 OF 1

PADDOCK
POOL EQUIPMENT COMPANY

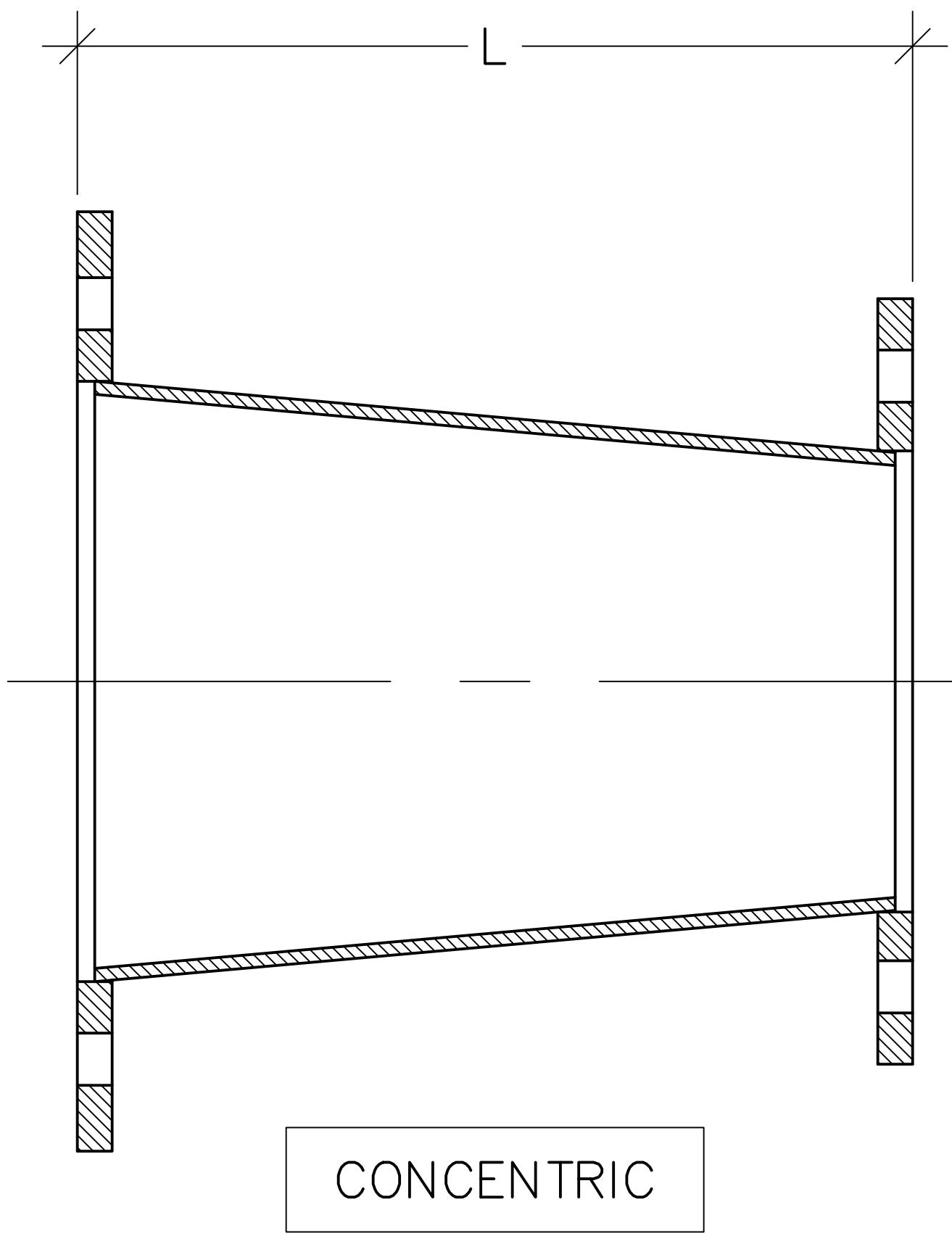
555 Paddock Parkway
Rock Hill, SC 29730
Phone: (803)324-1111
info@paddockindustries.com

DESCRIPTION: 24" X 48" MAIN DRAIN W/ (2) 24" X 24" FLAT COVERS & (1) 012" LEFT CONNECTION

QTY: 2

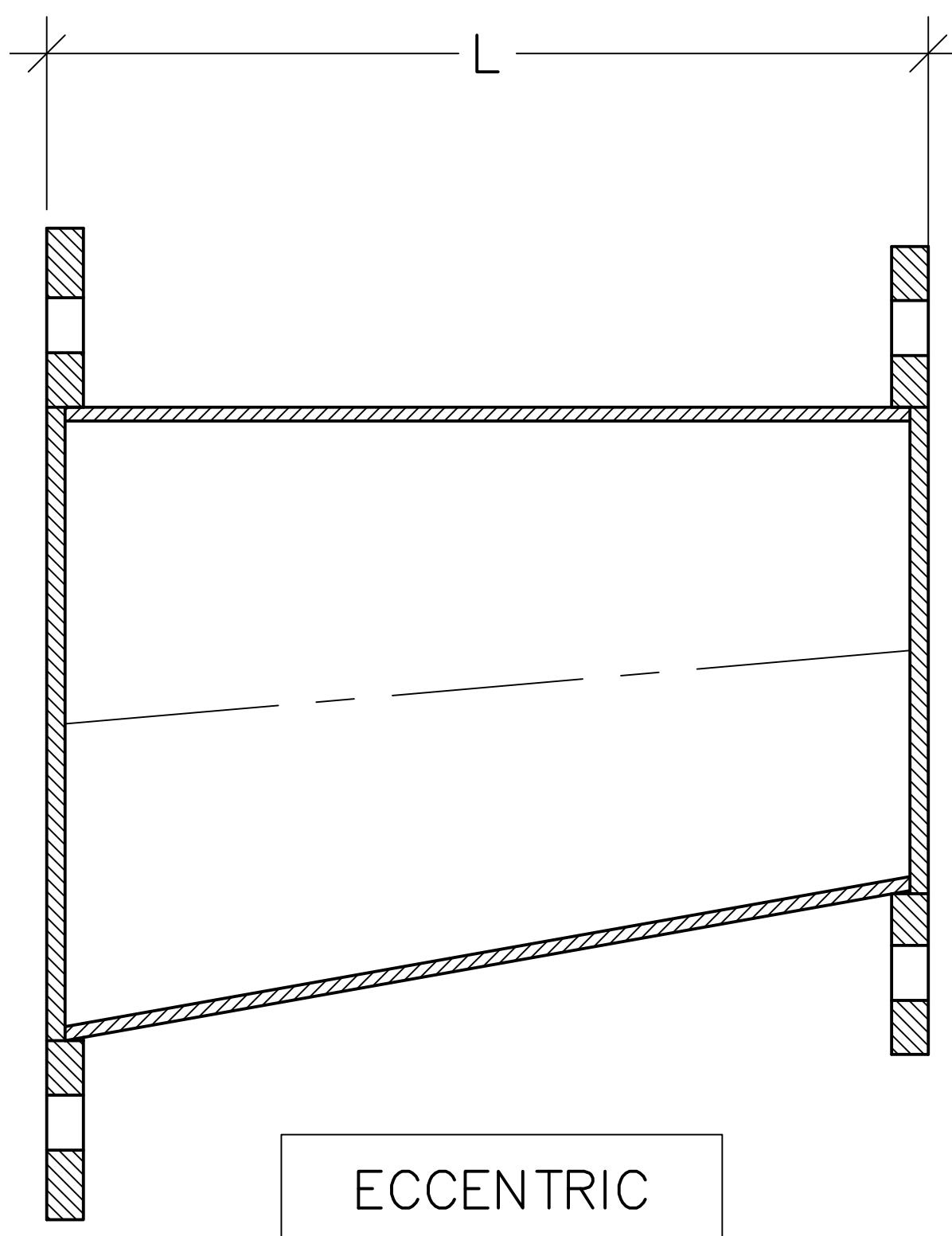
STAINLESS STEEL FLANGED REDUCERS
REDUCER FLANGES MEET ANSI STANDARD 125# FLANGE DRILLING

Paddock Pool Equipment Co.
555 Paddock Parkway
Rock Hill SC 29730



CONCENTRIC REDUCERS

SIZE	"L"	PART NUMBER	SIZE	"L"	PART NUMBER	QTY
3" X 2"	12"	9500146	8" X 5"	12"	9500077	
3" X 2½"	12"	9500044	8" X 6"	12"	9500075	
4" X 2"	12"	9500102	10" X 5"	12"	9500113	
4" X 2½"	12"	9500079	10" X 6"	12"	9500074	
4" X 3"	12"	9500100	10" X 8"	12"	9500115	
5" X 4"	12"	9500106	12" X 6"	12"	9500117	
6" X 2½"	12"	9500104	12" X 8"	12"	9500118	QTY 2
6" X 3"	12"	9500071	12" X 10"	12"	9500120	
6" X 4"	12"	9500078	14" X 8"	12"	9500122	
6" X 5"	12"	9500138	14" X 10"	12"	9500124	
8" X 4"	12"	9500111	14" X 12"	12"	9500126	



*NOTE: INSTALL ECCENTRIC REDUCERS
WITH FLAT UP, AS SHOWN..

ECCENTRIC REDUCERS

SIZE	"L"	PART NUMBER	SIZE	"L"	PART NUMBER
3" X 2"	12"	9500103	10" X 5"	12"	9500114
3" X 2½"	12"	9500098	10" X 6"	12"	9500073
4" X 2"	12"	9500105	10" X 8"	12"	9500116
4" X 2½"	12"	9500099	12" X 6"	12"	9500072
4" X 3"	12"	9500101	12" X 8"	12"	9500119
5" X 4"	12"	9500107	12" X 10"	12"	9500121
6" X 3"	12"	9500108	14" X 8"	12"	9500123
6" X 4"	12"	9500070	14" X 10"	12"	9500125
6" X 5"	12"	9500110	14" X 12"	12"	9500127
8" X 4"	12"	9500112			
8" X 5"	12"	9500076			
8" X 6"	12"	9500085			



Paddock Pool Equipment Co. LLC 555 Paddock Pkwy
Rock Hill SC 29730 United States

Submittal

#SO24747 11/22/24
Main Drains & Reducer

Bill To	To	Project Manager
Lindsey	Spear Corporation	Sam
Spear Corporation 12966 N	Blake sblake@spearcorp.com	Daniel
CR 50 W	Grundlock dgrundlock@spearcorp.com	
Roachdale IN 46172		Virginia Collins
United States		virginia.collins@paddockindustries.com
		803-372-6067

PO #
Connersville HS PO36545

Line Number	Quantity	Item	Drawing	Approval
3	2	MD-304-2448FC-2448-12/1 MainDrain 304L 2448FlatCover 24X48Sump 12"Conn MainDrain 304L 2448FlatCover 24X48Sump 12"Conn	MD 2448FC 2448	
4	2	CR-304-12-08 Reducer C 304L 12"X8"		



Request for Drafting Services

Gutter

Requested By: _____

Requested Date: _____

Designer/Builder: _____

Project Name and Location: _____

Project Folder: _____ In NetSuite

Need by Date: _____

Documents Provided: CAD File of Pool Layout CAD File of Pool Wall Section Pool Hydraulic Data

Gutter Model: C100 C200 C300 M100 M200 R100 R300 Other/Custom

Grate Style: Top Grate Drop-in Grate

Features: Extra Chamber Deck Drain Surge Weirs Bartlett Walls Liner Flange

Deck to Rim (DTR) Dimension: _____

Gutter Model: Deck Level Straight Back Semi-Recessed Fully Recessed

Gutter Material: 304L Stainless Steel 316L Stainless Steel

Requested Details:

- Gutter Layout
(Including Inlets and Converters)
- Gutter Sections

Requested Engineering:

- Inlet Quantity and Sizing
- Converter Quantity and Sizing
- Hydraulic Calculations

Additional Notes:



Request for Drafting Services

Gutter

Requested By: _____

Requested Date: _____

Designer/Builder: _____

Project Name and Location: _____

Project Folder: _____ In NetSuite

Need by Date: _____

Documents Provided: CAD File of Pool Layout CAD File of Pool Wall Section Pool Hydraulic Data

Gutter Model: C100 C200 C300 M100 M200 R100 R300 Other/Custom

Grate Style: Top Grate Drop-in Grate

Features: Extra Chamber Deck Drain Surge Weirs Bartlett Walls Liner Flange

Deck to Rim (DTR) Dimension: _____

Gutter Model: Deck Level Straight Back Semi-Recessed Fully Recessed

Gutter Material: 304L Stainless Steel 316L Stainless Steel

Requested Details:

- Gutter Layout
(Including Inlets and Converters)
- Gutter Sections

Requested Engineering:

- Inlet Quantity and Sizing
- Converter Quantity and Sizing
- Hydraulic Calculations

Additional Notes:

Paddock Pool Equipment Company

Gutter Flow Calculations

Project

Connersville HS

Total Recirculation Rate, gpm

454

Pool Perimeter, feet

228

Average Gutter Width, inches

9.19

Usable Gutter Depth, inches

7.81

Number of 90-degree corners

4

Number of 45-degree corners

0

Number of radiused corners

0

Number of PO Converters

2

Number of Return Converters

1

Supply tube area, square inches

18.1

Number of inlet nozzles

100

Max. tube pressure allowed, psi

7.5

Density of Fluid, lb_m/ft³

62.217 (Water at 80°F)

Local Gravity, ft/sec²

32.17

Absolute Viscosity (μ), lb_fsec/ft²

1.791E-05 (Water at 80°F)

Click on **Tools > Solver**, then press **Enter** twice

Total gutter system flow capacity is

2923.04 gpm

Gutter collection rate is

362.26 gpm

Design for surge weirs is:

Adequate

Design for rimflow conditions is:

Superior

Flow rate per nozzle

4.54 gpm

Nozzle Size

6

Nozzle Velocity

13.19 ft/sec

Supply Tube Velocity

4.02 ft/sec

Supply Tube Pressure

4.23 psi

Surge Capacity in Flow Channel

771.03 gallons

Navier-Stokes Continuity Equation:

$$\left[1 - \left(\frac{\rho}{m} \right)^2 W^5 g \eta^3 \right] \partial \eta = \frac{f}{8} \partial \left(\frac{x}{W} \right)$$

Solving this equation for turbulent flow conditions with m as the unknown variable yields

$$D_1 m^2 + D_2 \sqrt[4]{m^7} + D_3 = 0$$

where ρ = density of the fluid, lb_m/ft²

m = mass flow rate, lb_m/sec

g = acceleration due to local gravity, ft/sec²

L = length of channel, ft

W = width of channel, ft

η = fluid height to width ratio

f = Darcy friction factor, $\frac{0.316}{\sqrt{R_e}}$

x = distance along centerline of channel

μ = absolute viscosity, lb_fsec/ft²

y = depth of fluid, ft

R_e = Reynold's Number, $\frac{4m}{\mu(2y+W)}$

Francis Weir Formula:

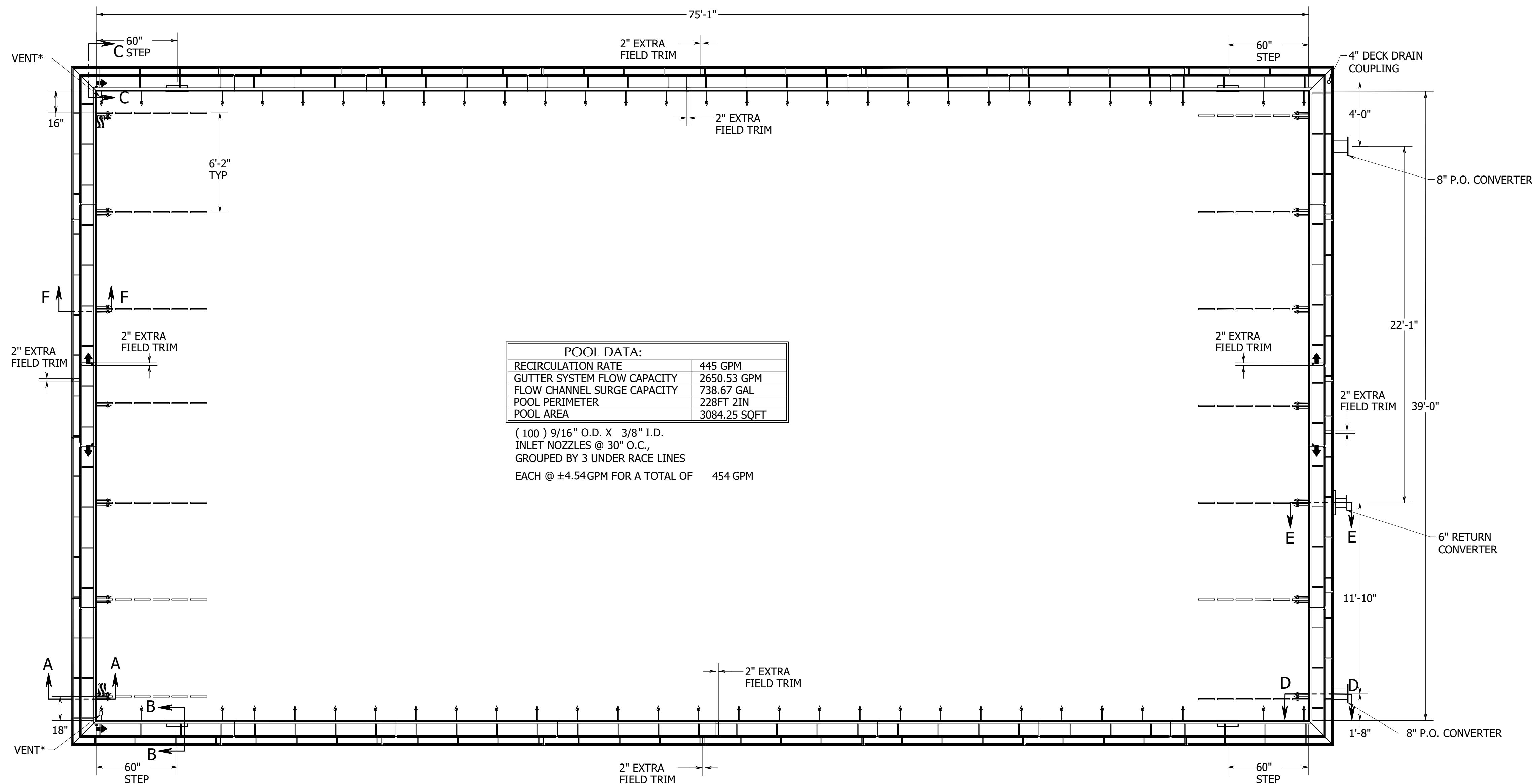
$$Q = 3.33 L \sqrt{H^3}$$

where

Q = flow rate, ft³/sec

L = length of weir, ft

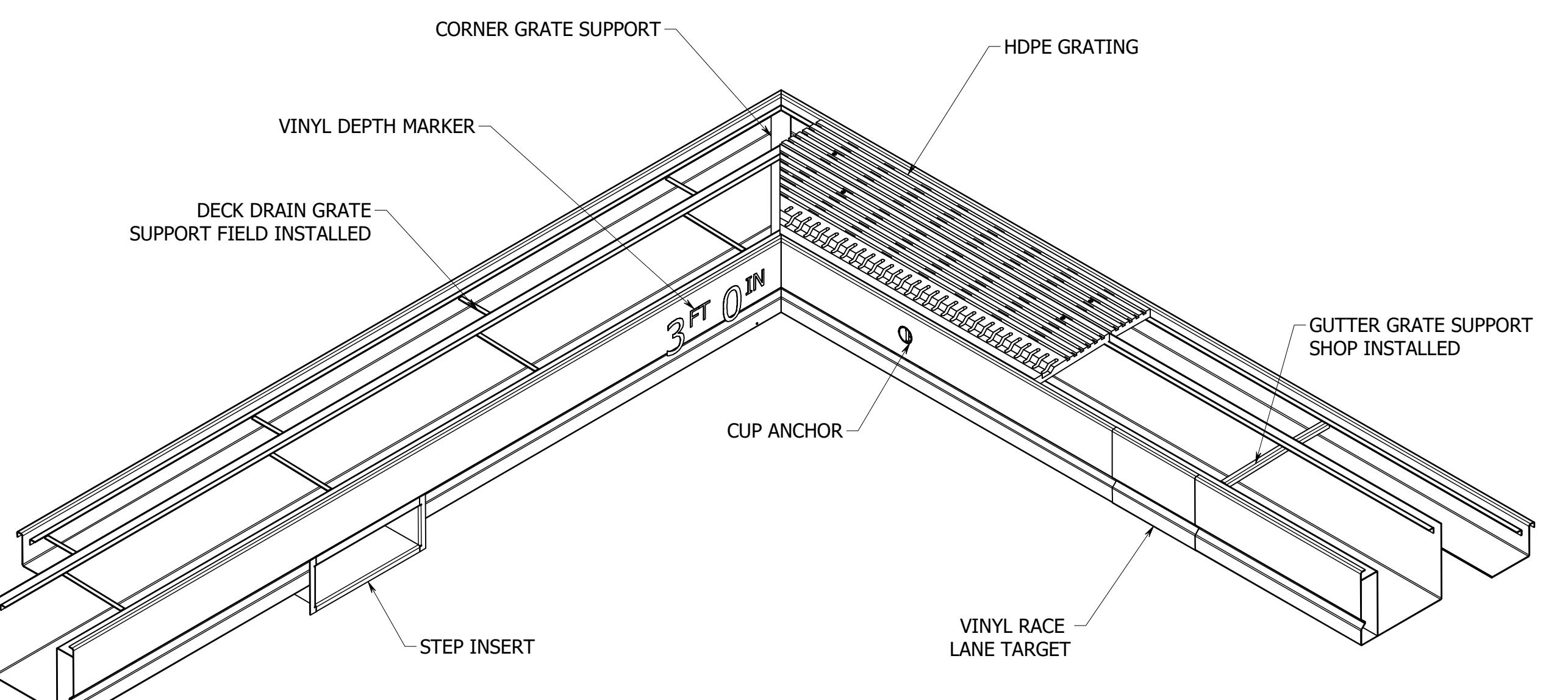
H = height of water above crest of weir, ft



PARTS LIST			
PART NUMBER	QTY	DESCRIPTION	COMMENTS
24747.01-SG01	10	WELDMENT, R300, 120"	316L SS
24747.01-SG02X	2	WELDMENT, R300, 98"	316L SS
24747.01-SG03	1	WELDMENT, R300, 102.5", STEP, CORNER, JETWASH (R), AAR, VENT	316L SS
24747.01-SG04	1	WELDMENT, R300, 102.5", STEP, CORNER	316L SS
24747.01-SG05	2	WELDMENT, R300, 84", CORNER, CUP ANCHOR	316L SS
24747.01-SG06	2	WELDMENT, R300, 120", CUP ANCHORS(2)	316L SS
24747.01-SG07	2	WELDMENT, R300, 60", CUP ANCHOR, JET WASHES (L&R)	316L SS
24747.01-SG08	2	WELDMENT, R300, 120", CUP ANCHORS (2)	316L SS
24747.01-SG09X	2	WELDMENT, R300, 86", CORNER, CUP ANCHOR	316L SS
24747.01-SG10	1	WELDMENT, R300, 102.5", STEP, CORNER	316L SS
24747.01-SG11	1	WELDMENT, R300, 102.5", STEP, CORNER, JETWASH (L), AAR, VENT	316L SS
24747.01-DD01	1	WELDMENT, R300, 108", CORNER, DRAIN COUPLING	316L SS
24747.01-DD02	16	WELDMENT, R300, 120"	316L SS
24747.01-DD03	2	WELDMENT, R300, 108", CORNER	316L SS
24747.01-DD04X	1	WELDMENT, R300, 39"	316L SS
24747.01-DD05	3	WELDMENT, R300, 102.5", CORNER	316L SS
24747.01-DD06X	2	WELDMENT, R300, 104", CORNER	316L SS
24747.01-DD07X	1	WELDMENT, R300, 43.7"	316L SS
P0813-R300-6RET-8IN-R2	1	R300 6" RETURN CONVERTER	316L SS
P0813-R300-8PO-R2	2	R300 8" PERIMETER OVERFLOW CONVERTER	316L SS
14747.01-H	1	1" THICK HDPE GRATING	HDPE, GRAY
P0801.01-1800-R1	64	ANCHOR ANGLE, SLOTTED, L1 3/4" x 1 3/4" x 3/16" x 18"	316L SS
P2104-00506.01-R0	94	ANCHOR ANGLE, PL12GA x 1 5/32" x 5 3/8"	316L SS
FW-063-304	384	FLAT WASHER, Ø5/8"	316L SS
HNUT-063C-304	384	HEX NUT, 5/8"-11	316L SS
STUD-063Cx0800-304	192	STUD, 5/8"-11 X 8"	316L SS
P2103-00516.01-R0	64	STIFFENER CHANNEL, C7/8" x 9/16" x 12GA x 5 1/2"	316L SS
P2103-00700.04-R0	64	STIFFENER CHANNEL, C7/8" x 9/16" x 12GA x 7"	316L SS
P2103-00724.01-R0	64	STIFFENER CHANNEL, C7/8" x 9/16" x 12GA x 7 3/4"	316L SS
P2103-01000.01-R0	64	STIFFENER CHANNEL, C7/8" x 9/16" x 3/32" x 10"	316L SS
P0899-XTRA-ANGL	1	EXTRA GRATING SUPPORT ANGLE, PL12GA x 1 9/32" x 120"	316L SS
P0899-XTRA-ANGL-88	1	EXTRA GRATING SUPPORT ANGLE, PL12GA x 1 9/32" x 120"	316L SS
P0806-F08218.02	4	CORNER GRATE SUPPORT, p12GA x 2" x 8 7/32"	316L SS
P0806-F14000.02	4	CORNER GRATE SUPPORT, p12GA x 2" x 14"	316L SS
P0802-3750	110	INLET NOZZLE, 9/16" O.D. X 3/8" I.D.	NYLON
P0802-0000	2	INLET NOZZLE, BLIND, Ø9/16" O.D.	NYLON
P0802-0-PLUG	112	TEST PLUG, 0	RUBBER
P0899-DEPTH MARKER_2	1	VINYL DEPTH MARKER SET	VINYL
R300 VINYL TARGET	12	12" WIDE BLK, SELF ADHSV RACE LANE TARGET	VINYL
200863	1	VINYL EDGE SEALER PEN	SEAL IT PEN
P0899-APPO	1	ACCESSORY PACK OF PUNCH OUTS	PPEC
SBP-001	6	SCOTCH BRITE PAD	SCOTCH BRITE
ZSSC-001	1	ZUD SS CLEANER	ZUD
P2103-00563.01-R0	1	STIFFENER CHANNEL, C7/8" x 9/16" x 12GA x 5 5/8"	304L SS

CONFIRM DEPTHS BEFORE FABRICATION

<u>DEPTH MARKERS</u>	
DEPTH	
3FT 6IN	5
4FT 0IN	2
4FT 6IN	2
6FT 6IN	2
8FT 6IN	2
10FT 6IN	2
11FT 0IN	2
11FT 6IN	4



ISOMETRIC VIEW

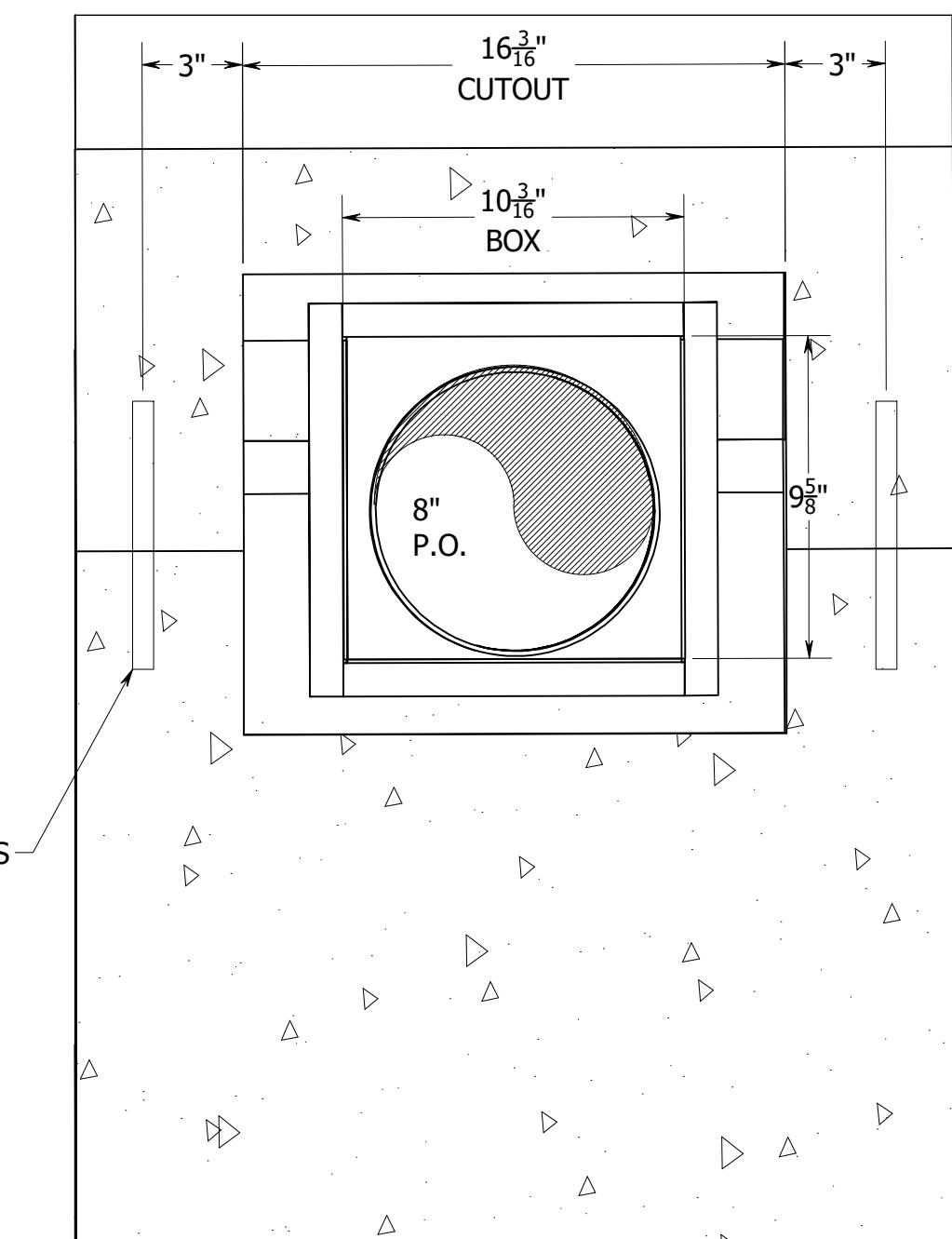
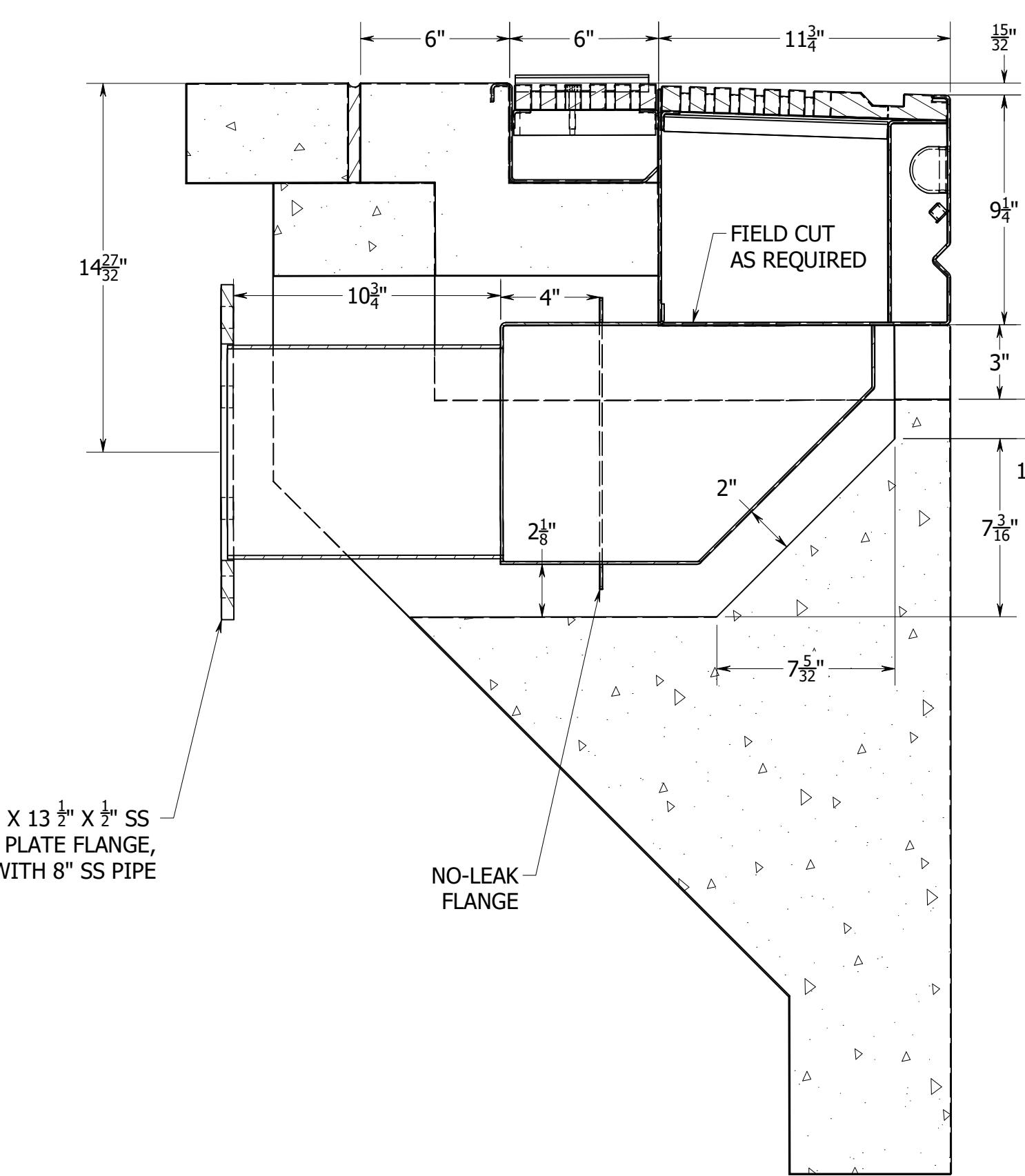
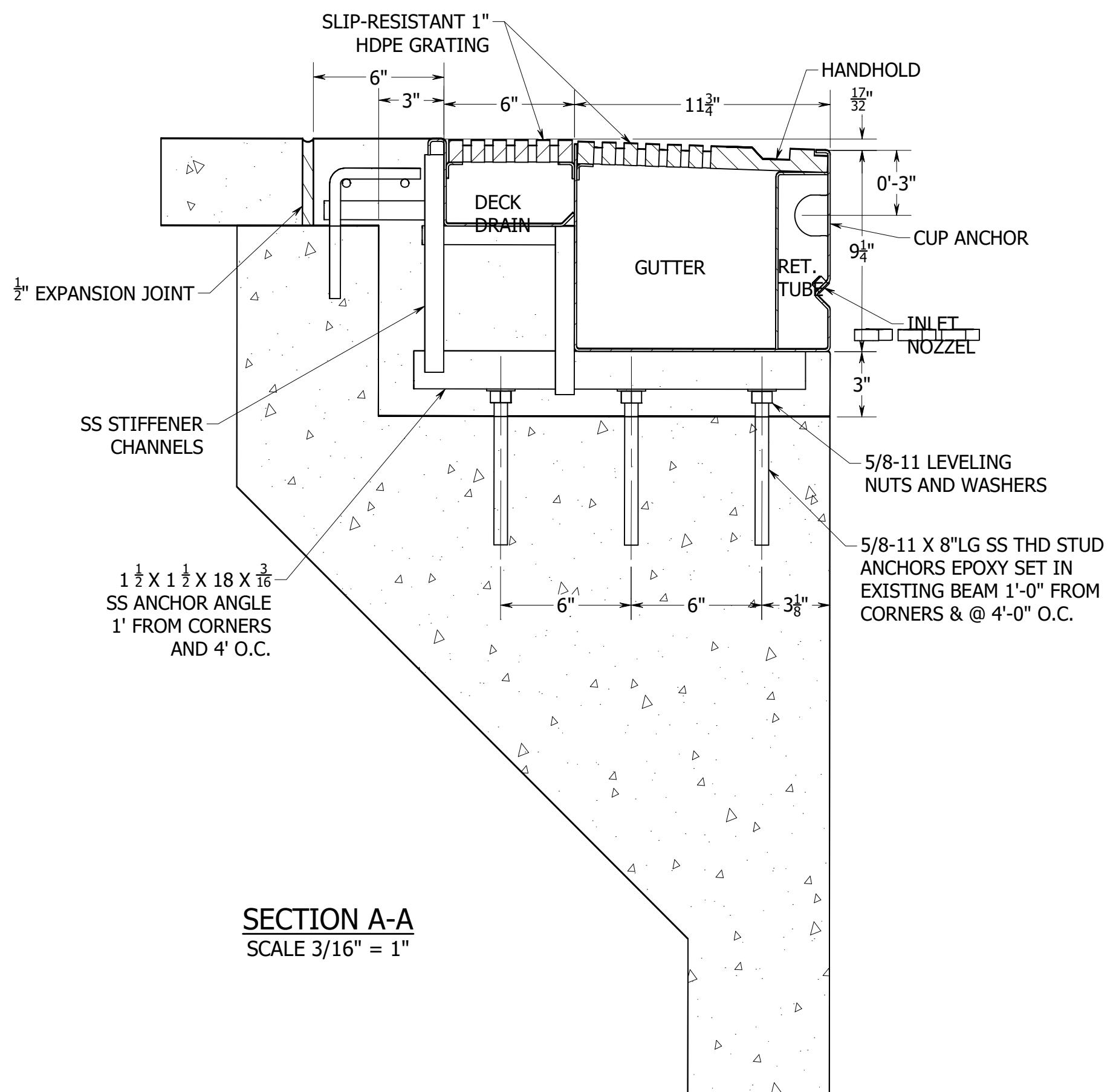
SCALE 1" = 12"

*SHOP DRILL $\frac{35}{64}$ " RET.
TUBE VENT HOLE. LEAVE
UNPLUGGED FOR AT LEAST
TWO WEEKS TO ALLOW DEBRIS
TO EXIT THE TUBE THEN PLUG
WITH $\frac{9}{16}$ " DIA PLUG

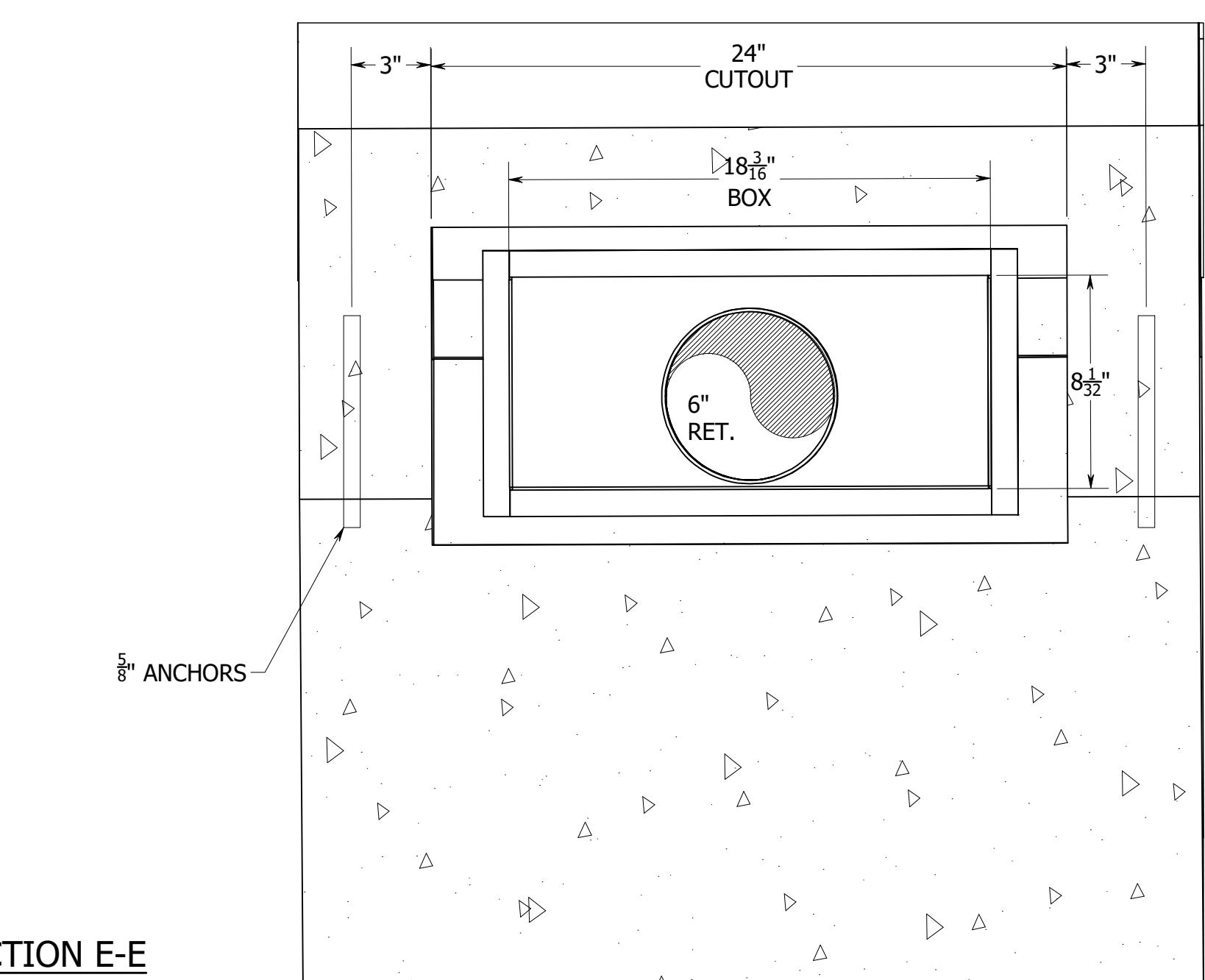
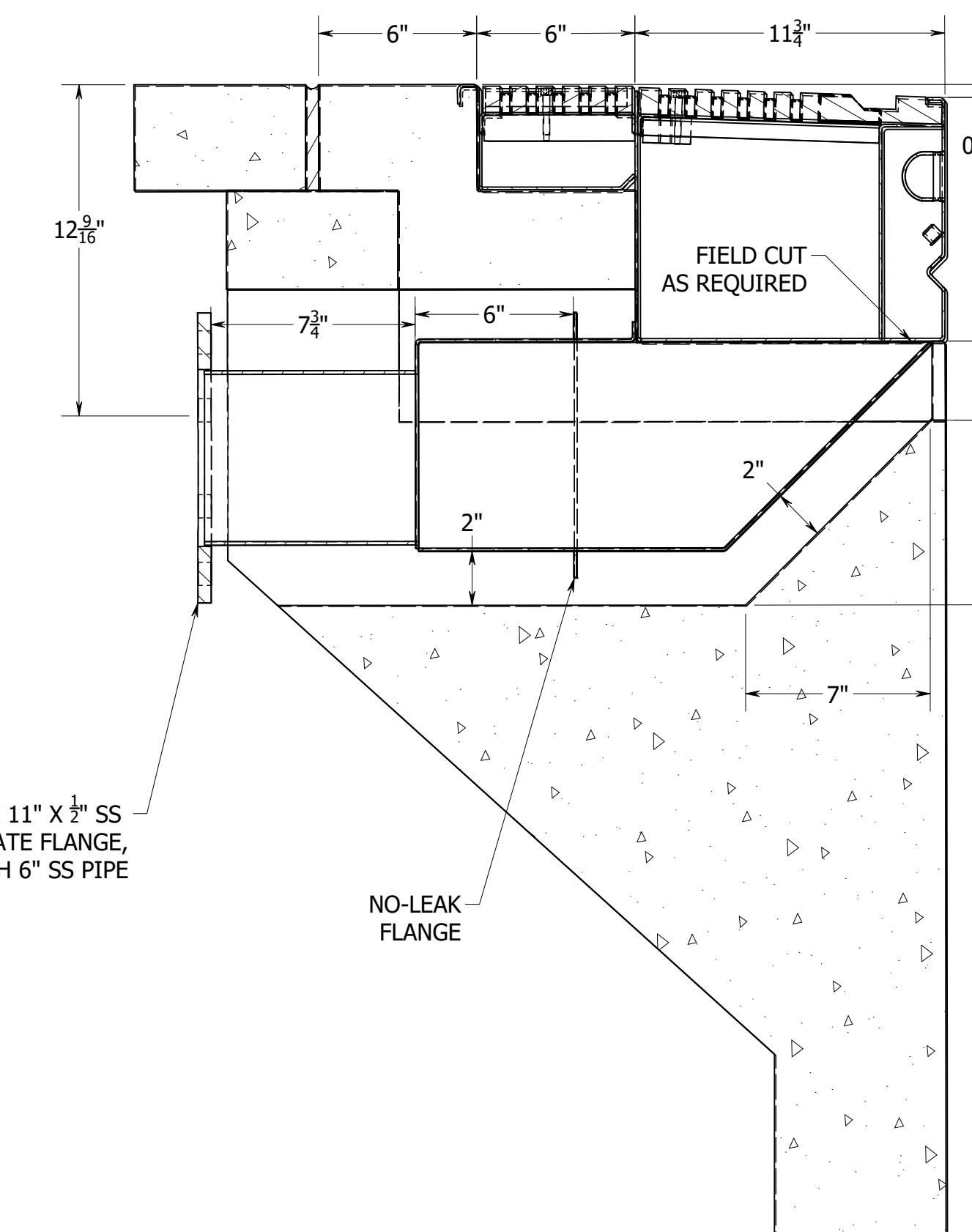
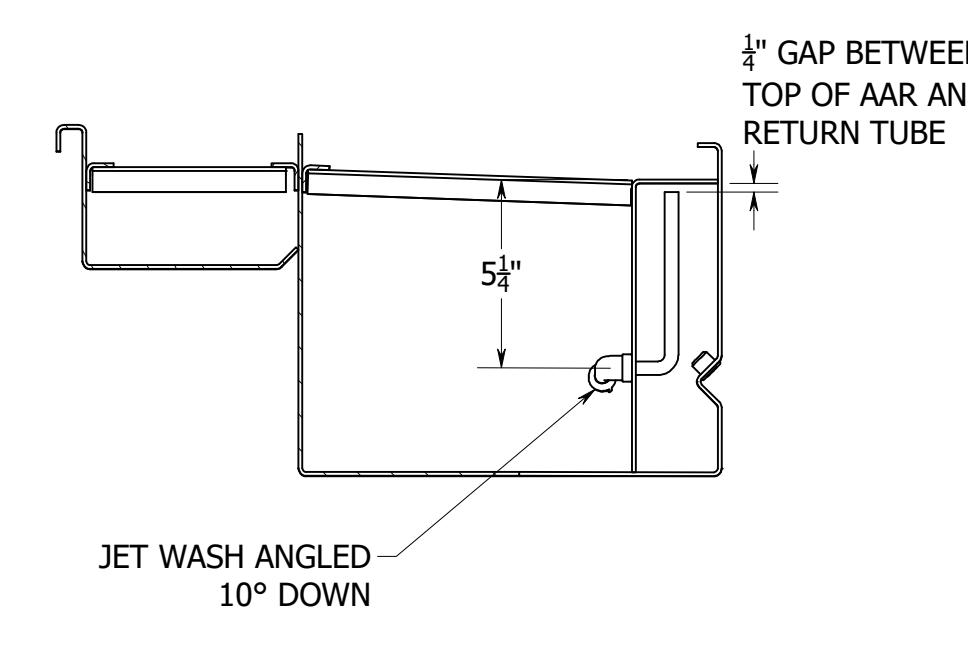
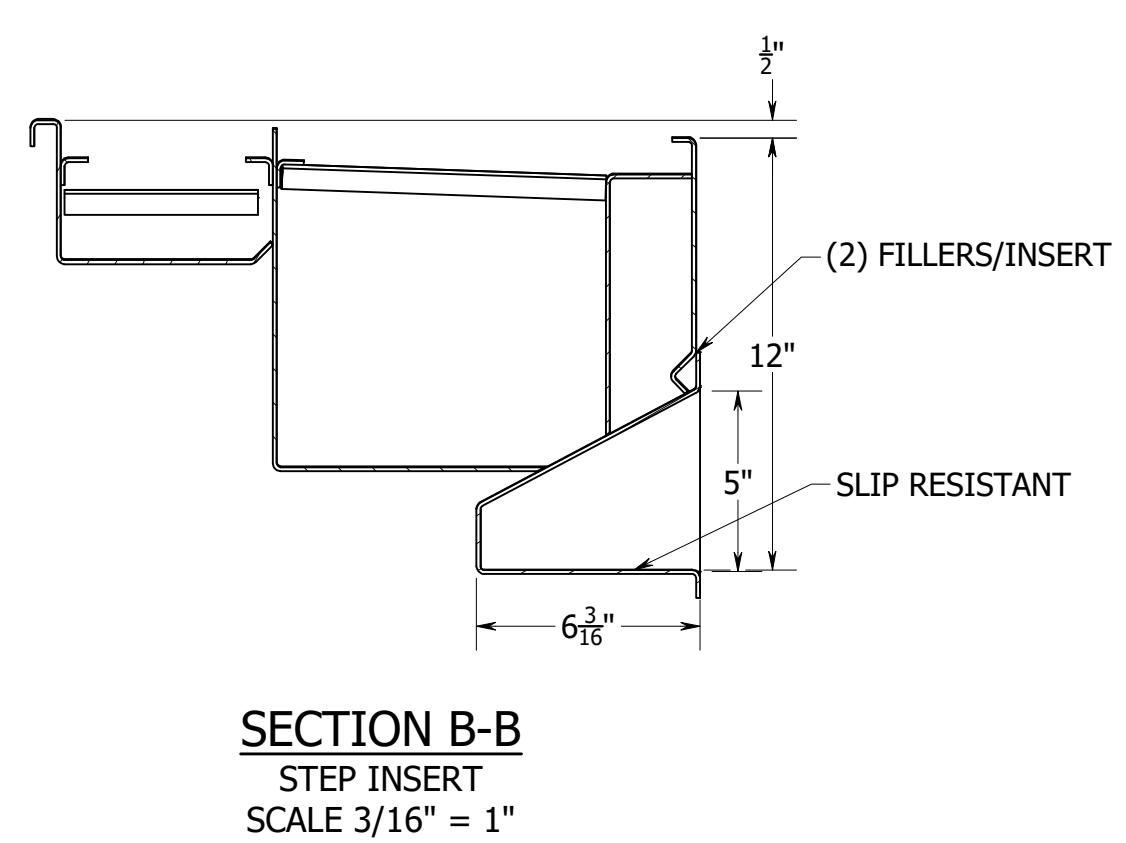
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PROPRIETARY INFORMATION OF
PADDOCK POOL EQUIPMENT CO.
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(UNPUBLISHED)

0	11/25/24	GWB	INITAL RELEASE
REV	DATE	BY	DESCRIPTION
REVISION HISTORY			
555 Paddock Parkway Rock Hill, SC 29730 Phone: (803)324-1111 Fax: (803)324-1116 info@paddockindustries.com		 PADDOCK POOL EQUIPMENT COMPANY	
O NOT SCALE DRAWING		DESCRIPTION	
TOLERANCE UNLESS OTHERWISE NOTED:		R300 316SS GUTTER, 1/2" DTR, COMPETITION POOL	
K. ± 1/16"	.X ± 0.020"		
L/X ± 1/32"	.XX ± 0.010"	JOB NAME	
K' ± 1/4"	.XXX ± 0.005"	CONNERSVILLE HS	
	BY	LOCATION	
DRAWN	GWB	CONNERSVILLE, IN	
	DATE	CUSTOMER	
	11/25/24	SPEAR CORP	
DWG. NO.		SHEET #	
24747.01		1 OF 2	

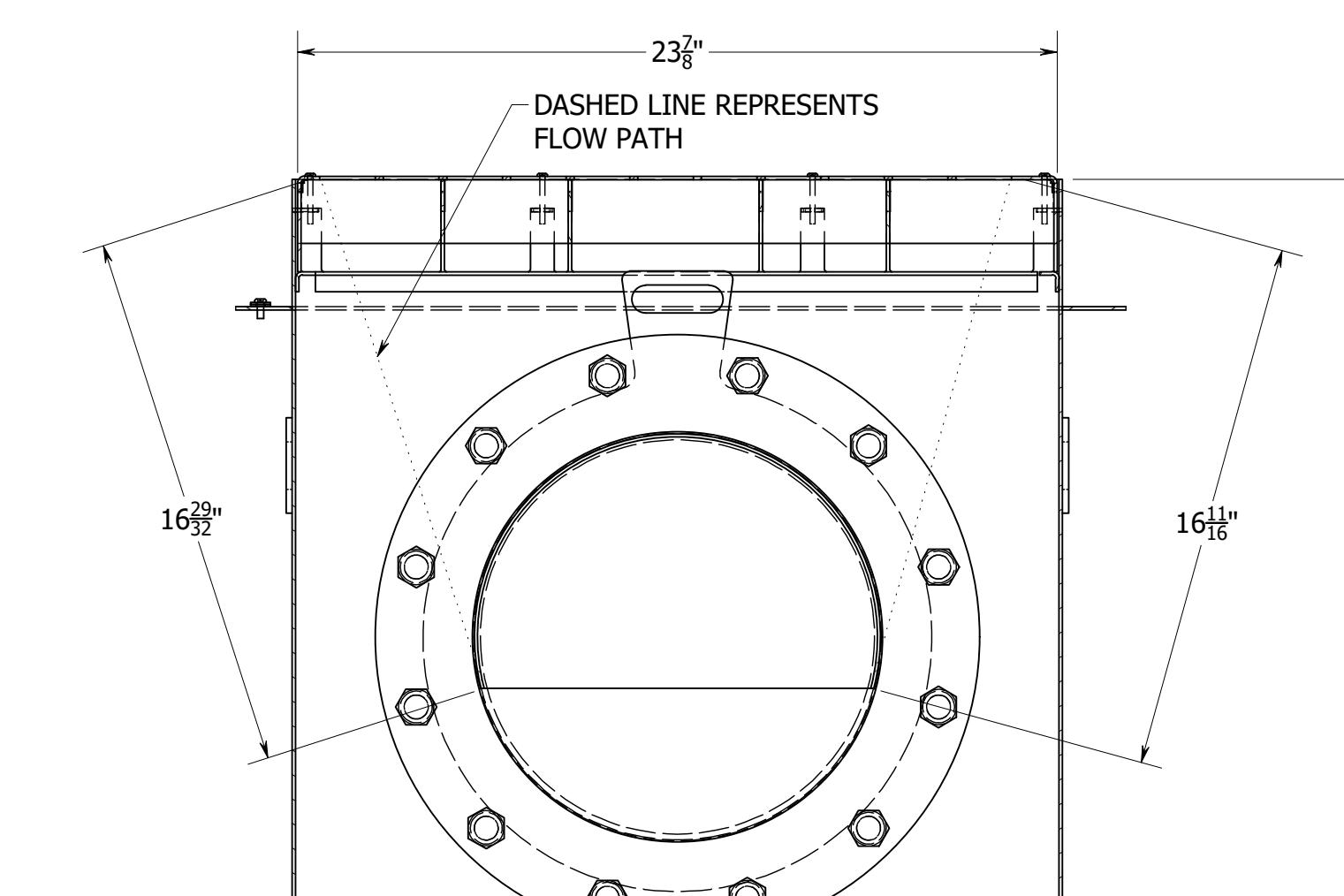
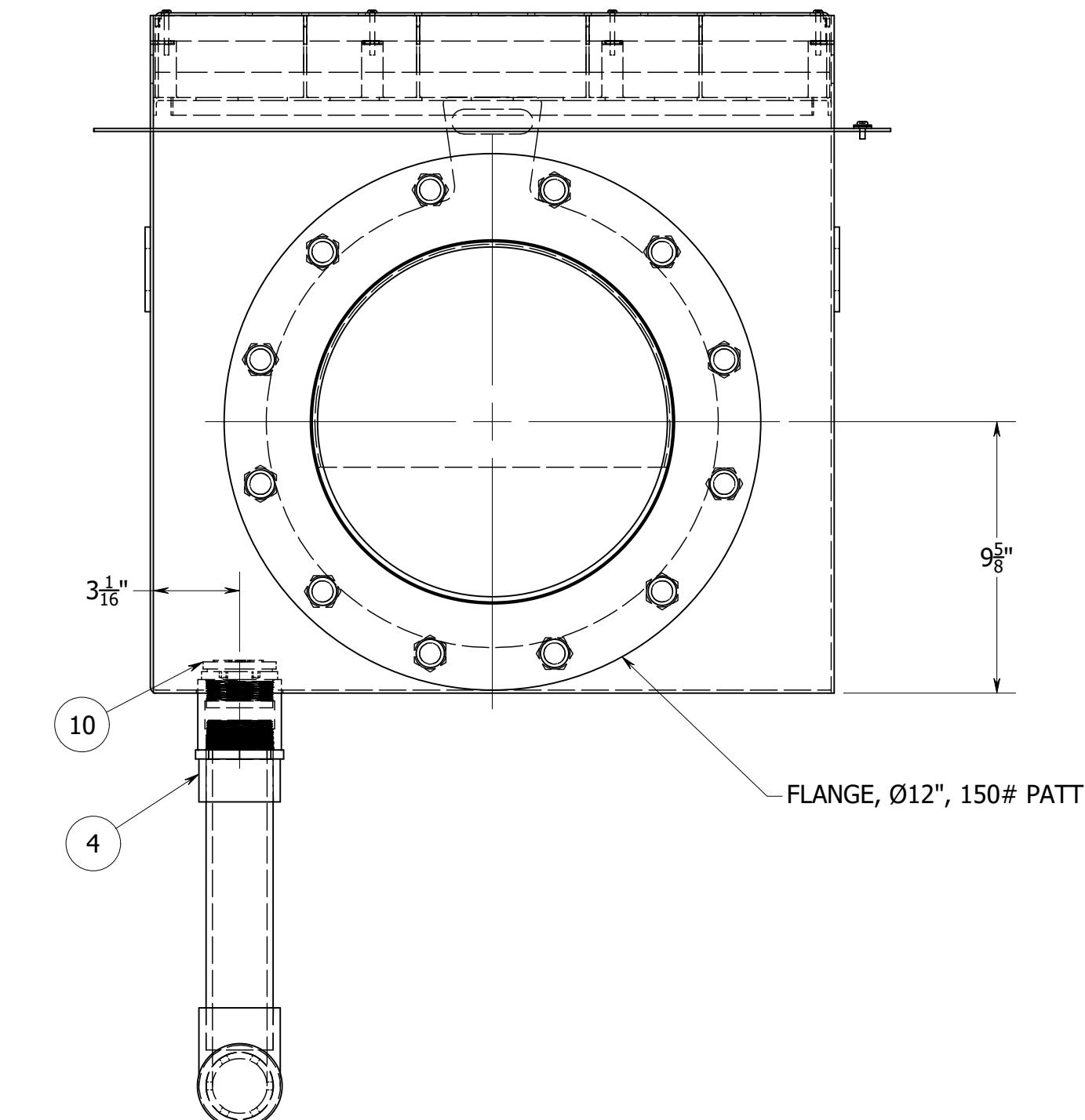
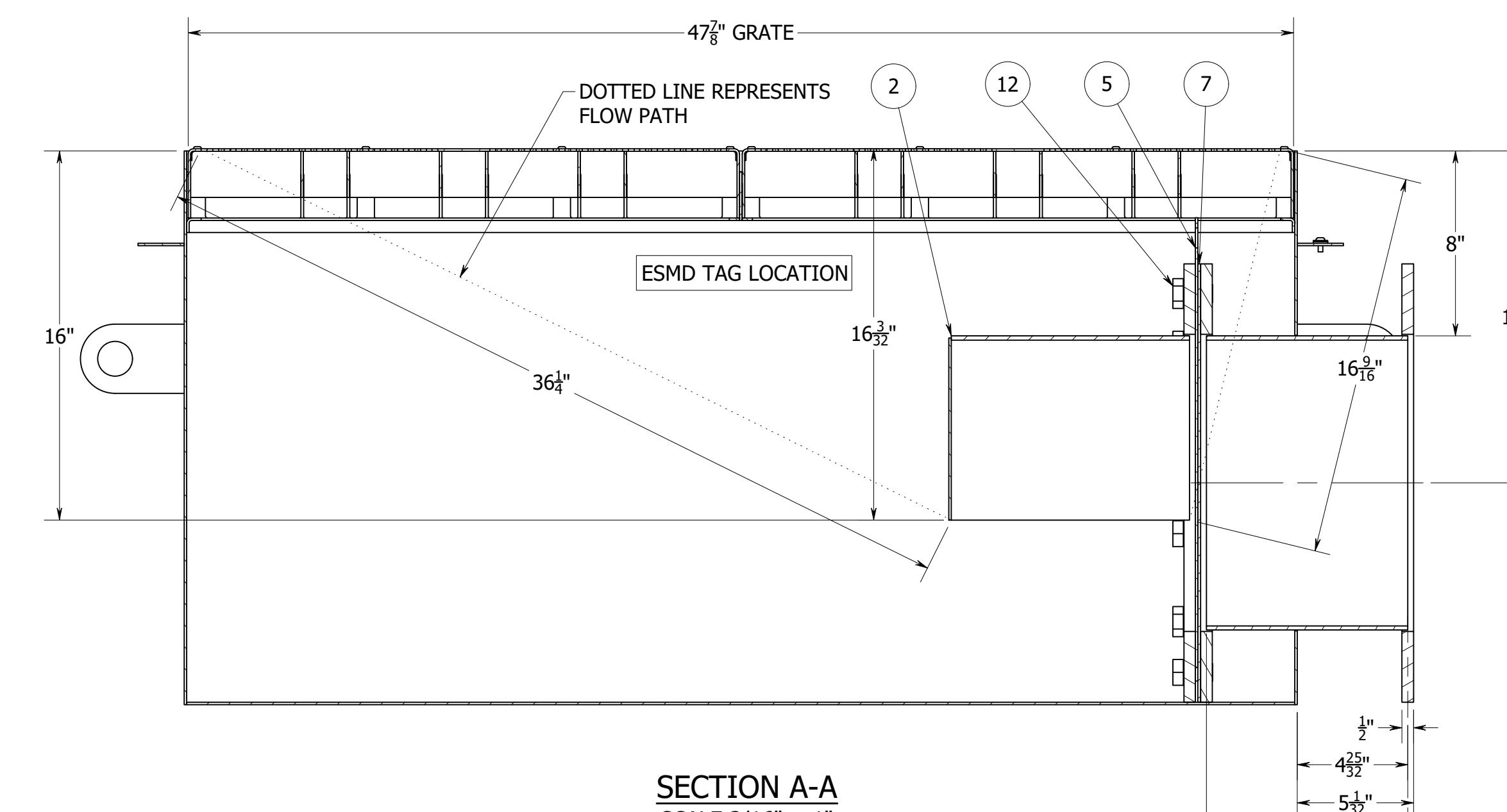
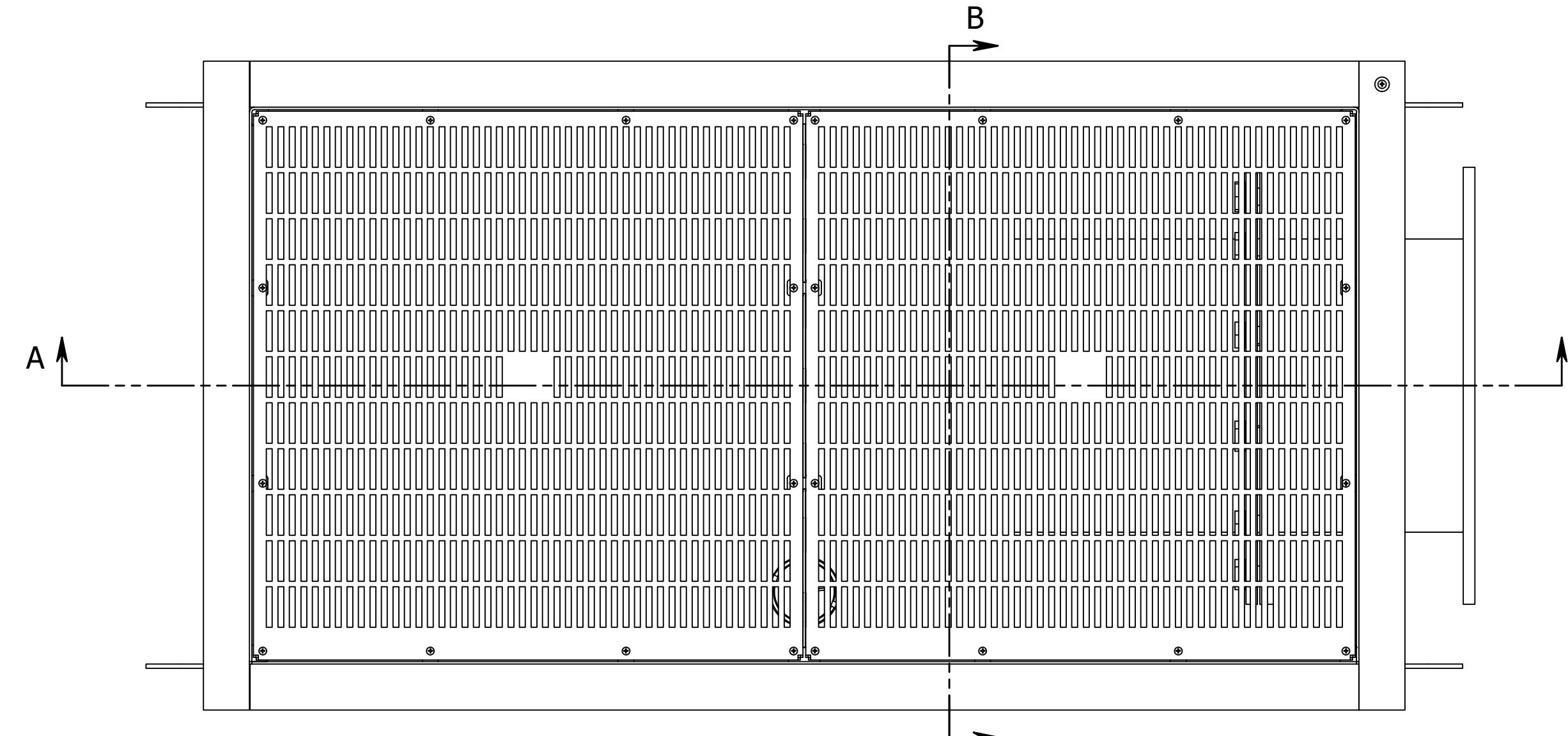


- NOTES:**
1. FLANGES TO BE $\frac{1}{4}$ " STAINLESS STEEL PLATE TYPE.
 2. PIPES ARE STAINLESS STEEL.
 3. FLANGES NOT SHOWN IN REAR VIEWS.
 4. BOX MATERIAL IS 12 GAUGE TYPE 316L ST. ST.
 5. NO CUT OUTS IN TUBES OR GUTTER, SHIP BOXES LOOSE FOR FIELD INSTALL

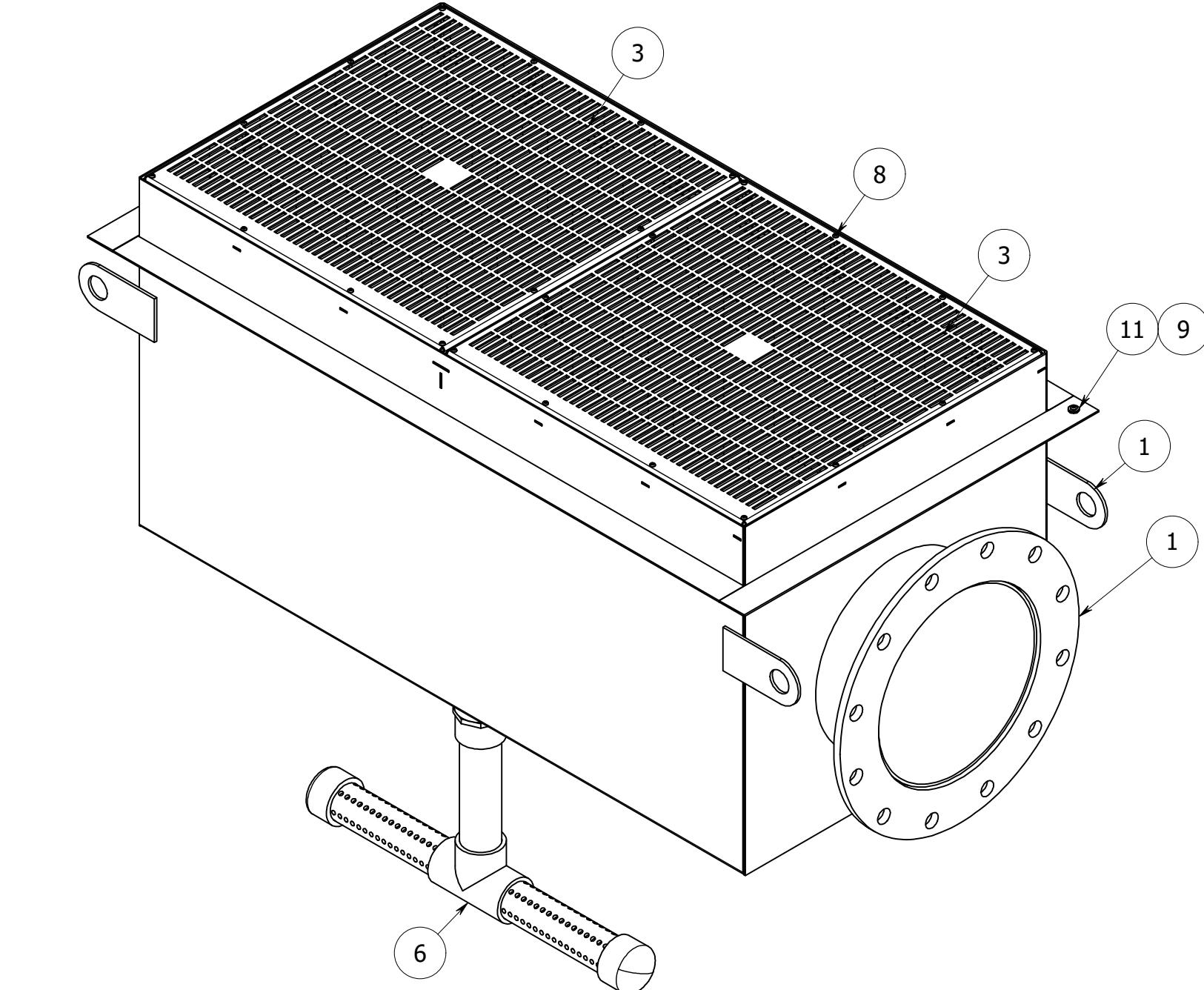


0	11/25/24	GWB	INITIAL RELEASE
REV	DATE	BY	DESCRIPTION
REVISION HISTORY			
555 Paddock Parkway Rock Hill, SC 29730 Phone: (803)324-1111 Fax: (803)324-1116 info@paddockindustries.com	X ± 1/16"	X ± 0.020"	
DO NOT SCALE DRAWING TOLERANCE UNLESS OTHERWISE NOTED	1/8" ± 1/32"	XX ± 0.010"	
X ± 1/4"	XXX ± 0.005"		
DRAWN BY DATE GWB 11/25/24	REV'D BY DATE CONNSVILLE HS LOCATION CONNSVILLE, IN C/SPEAR CORP	QC'D BY DATE SHEET # 24747.01	2 OF 2

PARTS LIST		
ITEM	QTY	PART NUMBER
1	1	ESMD-2448-12L.01-R0
2	1	AVRD-12.01-R0
3	2	FC-2424.01-R1
4	1	ADPTR-0200MPTx0200SOC.08-R0
5	1	BP12-304
6	1	HSRL-01
7	1	P2104-120x02.11-R0
8	24	PHMP-#08Cx0108-316
9	1	PHMP-#10Fx0008-304
10	1	SP1056
11	2	FV-025-BR
12	12	HHMB-075Cx0104-316



SECTION B-B
SCALE 3/16" = 1"



2424 PCFC STAINLESS STEEL FRAME AND GRATE IN 24x48 SUMP					
VELOCITY (FT/SEC)	OPEN AREA (IN ²)	MAX FLOW (GPM)	TOTAL QTY	TOTAL OPEN AREA (IN ²)	TOTAL MAX FLOW (GPM)
1.5	212.89	995.33	2	425.78	1990.66
1.0	212.89	663.55	2	425.78	1327.1
0.5	212.89	331.78	2	425.78	663.56

NSF MAXIMUM SAFE FLOW RATE OF TWO (2) 2424PCFC'S EQUALS 3000 GPM (WALL ONLY) or 3500 GPM (FLOOR ONLY)

* THE NSF SAFETY FLOW IS THE MAXIMUM FLOW MEETING THE ANSI/APSP/ICC-16 REQUIREMENTS. THE RECOMMENDED MAXIMUM DESIGN FLOW IS BASED ON A VELOCITY THAT DOES NOT EXCEED 1.5 FT/SEC. PADDOCK CERTIFIED COVERS & GRATES COMPLY WITH BODY BLOCKING ELEMENT TEST PER ANSI/APSP/ICC-16 2017



CERTIFIED BY IAPMO R&T
ANSI/APSP/ICC-16

QTY 2

PART NUMBER: 9300011

3	05/03/24	CDR	REVISED TO IAPMO CERTIFIED
2	07/12/23	BDJ	UPDATED GRATE HEIGHT
1	11/12/22	PTT	ADDED FLOW DATA
0	02/28/22	PTT	ORIGINAL ISSUE
REV	DATE	BY	DESCRIPTION

REVISION HISTORY

DO NOT SCALE DRAWING
TOLERANCE UNLESS OTHERWISE NOTED:
X ± 1/16" X ± 0.020"
1/8 ± 1/32" XX ± 0.010"
X ± 1/4" XXX ± 0.005"

DESCRIPTION: 24" X 48" MAIN DRAIN W/ (2) 24" X 24" FLAT COVERS & (1)
Ø12" LEFT CONNECTION

QTY: 2
PREC JOB NUMBER:

DRAWN BY DATE 2/25/2022
CHECKED BY DATE
APPROVED BY

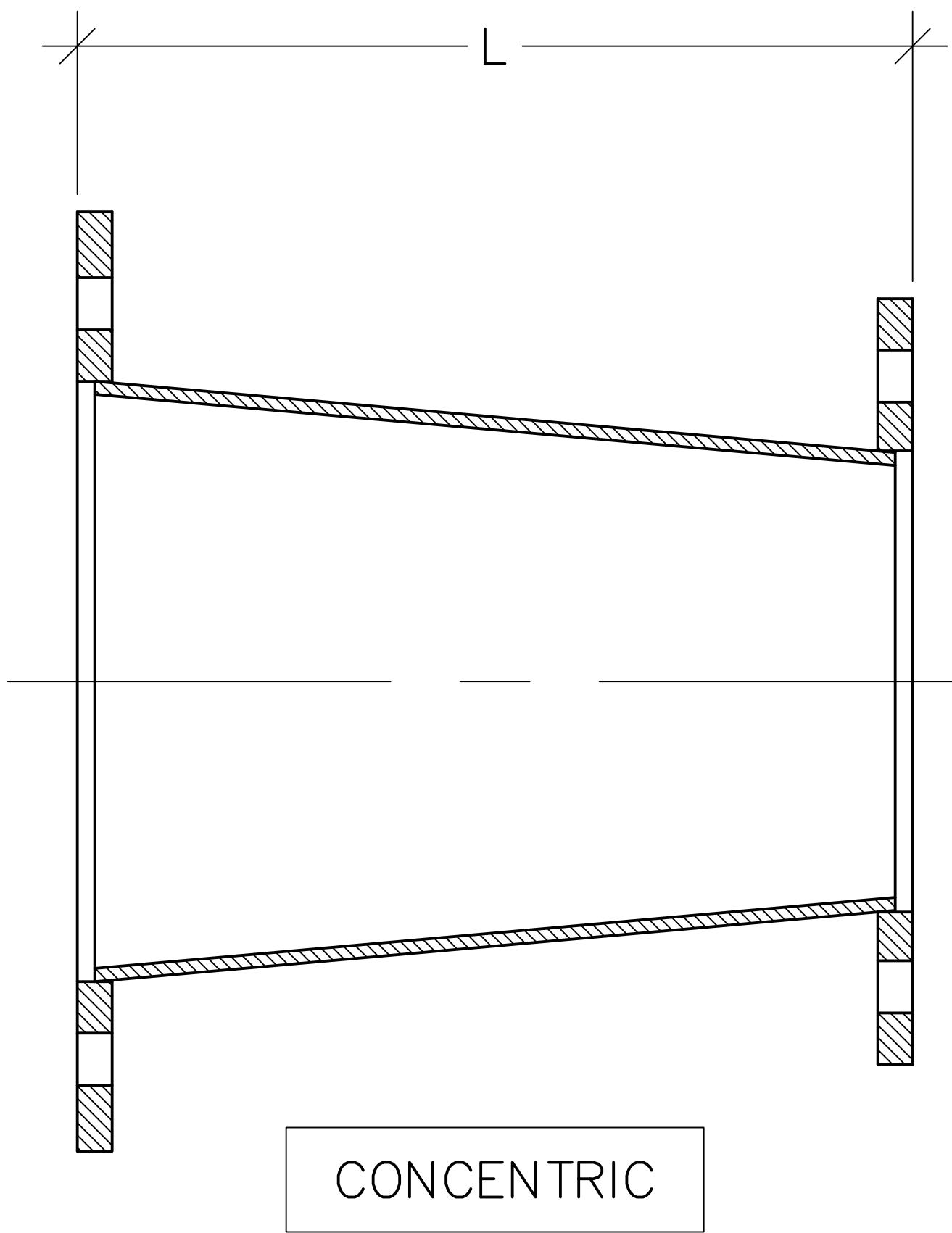
DWG. NO. MD-304-2448FC-2448-12L-R0
SHEET # 1 OF 1



555 Paddock Parkway
Rock Hill, SC 29730
Phone: (803)324-1111
info@paddockindustries.com

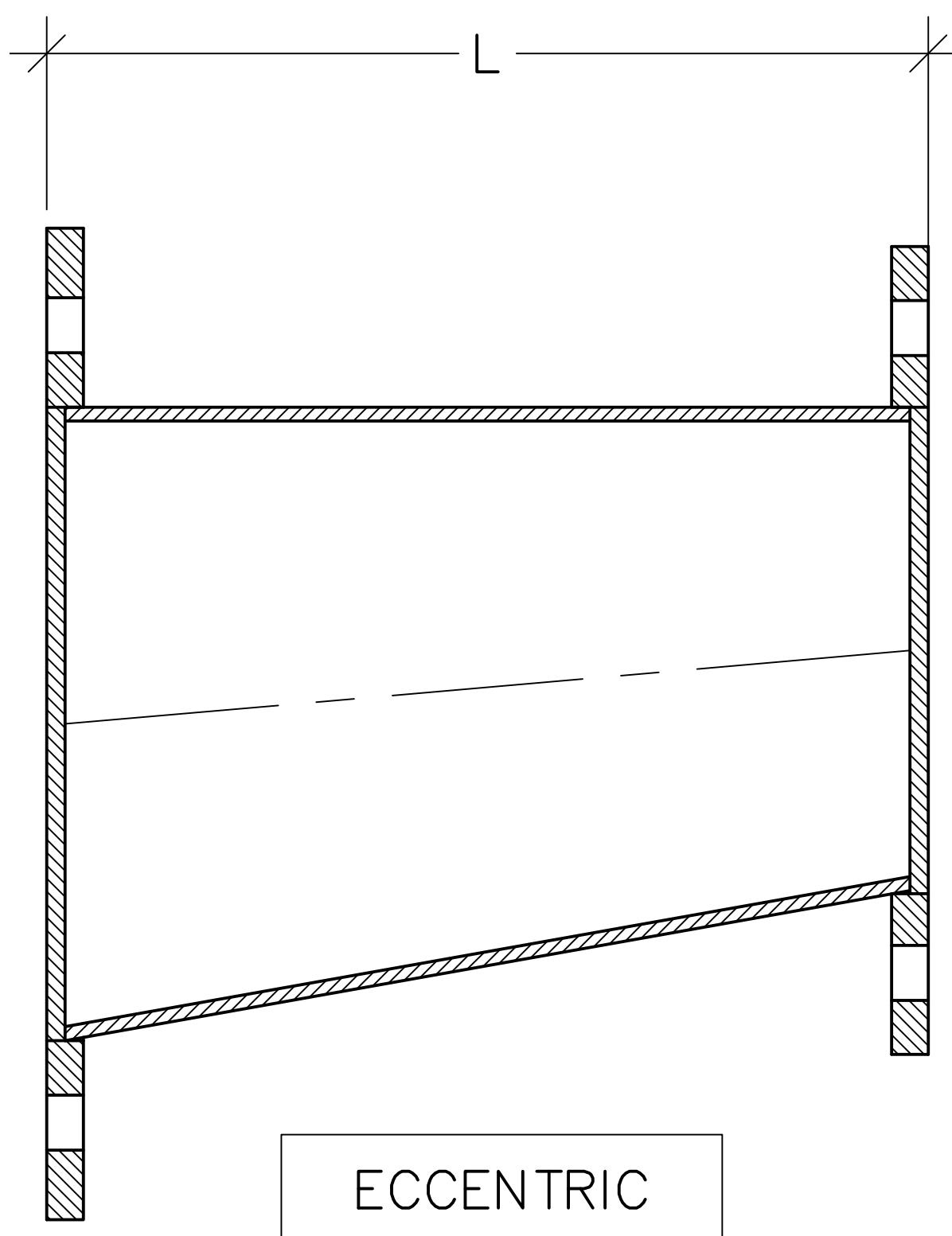
STAINLESS STEEL FLANGED REDUCERS
REDUCER FLANGES MEET ANSI STANDARD 125# FLANGE DRILLING

Paddock Pool Equipment Co.
555 Paddock Parkway
Rock Hill SC 29730



CONCENTRIC REDUCERS

SIZE	"L"	PART NUMBER	SIZE	"L"	PART NUMBER	QTY
3" X 2"	12"	9500146	8" X 5"	12"	9500077	
3" X 2½"	12"	9500044	8" X 6"	12"	9500075	
4" X 2"	12"	9500102	10" X 5"	12"	9500113	
4" X 2½"	12"	9500079	10" X 6"	12"	9500074	
4" X 3"	12"	9500100	10" X 8"	12"	9500115	
5" X 4"	12"	9500106	12" X 6"	12"	9500117	
6" X 2½"	12"	9500104	12" X 8"	12"	9500118	QTY 2
6" X 3"	12"	9500071	12" X 10"	12"	9500120	
6" X 4"	12"	9500078	14" X 8"	12"	9500122	
6" X 5"	12"	9500138	14" X 10"	12"	9500124	
8" X 4"	12"	9500111	14" X 12"	12"	9500126	



*NOTE: INSTALL ECCENTRIC REDUCERS
WITH FLAT UP, AS SHOWN..

ECCENTRIC REDUCERS

SIZE	"L"	PART NUMBER	SIZE	"L"	PART NUMBER
3" X 2"	12"	9500103	10" X 5"	12"	9500114
3" X 2½"	12"	9500098	10" X 6"	12"	9500073
4" X 2"	12"	9500105	10" X 8"	12"	9500116
4" X 2½"	12"	9500099	12" X 6"	12"	9500072
4" X 3"	12"	9500101	12" X 8"	12"	9500119
5" X 4"	12"	9500107	12" X 10"	12"	9500121
6" X 3"	12"	9500108	14" X 8"	12"	9500123
6" X 4"	12"	9500070	14" X 10"	12"	9500125
6" X 5"	12"	9500110	14" X 12"	12"	9500127
8" X 4"	12"	9500112			
8" X 5"	12"	9500076			
8" X 6"	12"	9500085			