



The following documentation is an electronically-submitted vendor response to an advertised solicitation from the *West Virginia Purchasing Bulletin* within the Vendor Self-Service portal at wvOASIS.gov. As part of the State of West Virginia's procurement process, and to maintain the transparency of the bid-opening process, this documentation submitted online is publicly posted by the West Virginia Purchasing Division at WVPurchasing.gov with any other vendor responses to this solicitation submitted to the Purchasing Division in hard copy format.

Header 1

List View

General Information | Contact | Default Values | Discount | Document Information | Clarification Request

Procurement Folder: 1012711

Procurement Type: Central Purchase Order

Vendor ID:

Legal Name: Technology International Inc

Alias/DBA:

Total Bid: \$138,600.00

Response Date:

Response Time:

Responded By User ID:

First Name:

Last Name:

Email:

Phone:

SO Doc Code: CRFQ

SO Dept: 0803

SO Doc ID: DOT2200000149

Published Date: 3/16/22

Close Date: 3/31/22

Close Time: 13:30

Status: Closed

Solicitation Description:

Total of Header Attachments: 1

Total of All Attachments: 1



Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

**State of West Virginia
Solicitation Response**

Proc Folder: 1012711
Solicitation Description: Open Top Drain with Black Grate 10-22-B460
Proc Type: Central Purchase Order

Solicitation Closes	Solicitation Response	Version
2022-03-31 13:30	SR 0803 ESR03312200000006029	1

VENDOR
VS0000002427
Technology International Inc

Solicitation Number: CRFQ 0803 DOT2200000149

Total Bid: 138600

Response Date: 2022-03-31

Response Time: 12:28:34

Comments:

FOR INFORMATION CONTACT THE BUYER

John W Estep
304-558-2566
john.w.estep@wv.gov

Vendor Signature X **FEIN#** **DATE**

All offers subject to all terms and conditions contained in this solicitation

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
1	10' sections of Open Top Culvert with Black Grate (560')	56.00000	EA	2475.000000	138600.00

Comm Code	Manufacturer	Specification	Model #
95121633			

Commodity Line Comments: Please see attached proposal. We are offering a quantity of 70 pieces.

Extended Description:

10' sections of Open Top Culvert with Black Grate (560')



Department of Administration
 Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

State of West Virginia
 Centralized Request for Quote
 Highways

Proc Folder: 1012711			Reason for Modification:
Doc Description: Open Top Drain with Black Grate 10-22-B460			
Proc Type: Central Purchase Order			Version
Date Issued	Solicitation Closes	Solicitation No	
2022-03-16	2022-03-31 13:30	CRFQ 0803 DOT2200000149	1

BID RECEIVING LOCATION

BID CLERK
 DEPARTMENT OF ADMINISTRATION
 PURCHASING DIVISION
 2019 WASHINGTON ST E
 CHARLESTON WV 25305
 US

VENDOR

Vendor Customer Code:

Vendor Name : Technology International, Inc.

Address :

Street : 1349 South International Pkwy, Suite 2411,

City : Lake Mary,

State : Florida **Country :** USA **Zip :** 32746

Principal Contact : Rifat Habib

Vendor Contact Phone: 407-359-2373 **Extension:**

FOR INFORMATION CONTACT THE BUYER

John W Estep
 304-558-2566
 john.w.estep@wv.gov

Vendor Signature X  **FEIN#** 650342335 **DATE** 03/30/2022

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION**REQUEST FOR QUOTATION:**

The West Virginia Purchasing Division is soliciting bids on behalf of West Virginia Division of Highways 270 Hardwood Lane Princeton WV 24740 to establish a one-time purchase of 56 pieces of 10' sections of Open Top Drain with Black Grate (560' Total.) Per the Bid Requirements, Specifications, Terms and Conditions attached to this Solicitation.

INVOICE TO		SHIP TO	
DIVISION OF HIGHWAYS		DIVISION OF HIGHWAYS	
DISTRICT TEN		DISTRICT TEN	
270 HARDWOOD LN		270 HARDWOOD LN	
PRINCETON	WV	PRINCETON	WV
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	10' sections of Open Top Culvert with Black Grate (560')	56.00000 70.00000	EA	\$2,475.00	\$173,250.00

Comm Code	Manufacturer	Specification	Model #
95121633	Trench Drain Systems		FP1200

Extended Description:
10' sections of Open Top Culvert with Black Grate (560')

SCHEDULE OF EVENTS

Line	Event	Event Date
1	Tech Questions due by 10:00am	2022-03-24

***Please see our Equipment Proposal TII/WV/0322/21661 attached.

Per Mfg a quantity of 70 is required based on the measurements of their proposed items

	Document Phase	Document Description	Page
DOT2200000149	Final	Open Top Drain with Black Grate 10-22-B460	3

ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions

West Virginia Ethics Commission



Disclosure of Interested Parties to Contracts

Pursuant to *W. Va. Code* § 6D-1-2, a state agency may not enter into a contract, or a series of related contracts, that has/have an actual or estimated value of \$1 million or more until the business entity submits to the contracting state agency a Disclosure of Interested Parties to the applicable contract. In addition, the business entity awarded a contract is obligated to submit a supplemental Disclosure of Interested Parties reflecting any new or differing interested parties to the contract within 30 days following the completion or termination of the applicable contract.

For purposes of complying with these requirements, the following definitions apply:

"Business entity" means any entity recognized by law through which business is conducted, including a sole proprietorship, partnership or corporation, but does not include publicly traded companies listed on a national or international stock exchange.

"Interested party" or "Interested parties" means:

- (1) A business entity performing work or service pursuant to, or in furtherance of, the applicable contract, including specifically sub-contractors;
- (2) the person(s) who have an ownership interest equal to or greater than 25% in the business entity performing work or service pursuant to, or in furtherance of, the applicable contract. (This subdivision does not apply to a publicly traded company); and
- (3) the person or business entity, if any, that served as a compensated broker or intermediary to actively facilitate the applicable contract or negotiated the terms of the applicable contract with the state agency. (This subdivision does not apply to persons or business entities performing legal services related to the negotiation or drafting of the applicable contract.)

"State agency" means a board, commission, office, department or other agency in the executive, judicial or legislative branch of state government, including publicly funded institutions of higher education: Provided, that for purposes of *W. Va. Code* § 6D-1-2, the West Virginia Investment Management Board shall not be deemed a state agency nor subject to the requirements of that provision.

The contracting business entity must complete this form and submit it to the contracting state agency prior to contract award and to complete another form within 30 days of contract completion or termination.

This form was created by the State of West Virginia Ethics Commission, 210 Brooks Street, Suite 300, Charleston, WV 25301-1804. Telephone: (304)558-0664; fax: (304)558-2169; e-mail: ethics@wv.gov; website: www.ethics.wv.gov.

West Virginia Ethics Commission
Disclosure of Interested Parties to Contracts

(Required by W. Va. Code § 6D-1-2)

Name of Contracting Business Entity: Technology International, Inc. Address: 1349 South International Pkwy, Suite 2411,
Lake Mary, Florida 32746

Name of Authorized Agent: Rifat Habib Address: Same as above

Contract Number: CRFQ 0803 DOT22o0000249 Contract Description: Open Top Drain with Black Grate

Governmental agency awarding contract: State of West Virginia Purchasing Department

Check here if this is a Supplemental Disclosure

List the Names of Interested Parties to the contract which are known or reasonably anticipated by the contracting business entity for each category below (*attach additional pages if necessary*):

1. **Subcontractors or other entities performing work or service under the Contract**

Check here if none, otherwise list entity/individual names below.

2. **Any person or entity who owns 25% or more of contracting entity (not applicable to publicly traded entities)**

Check here if none, otherwise list entity/individual names below.

Mohammed Ziaullah - 100%

3. **Any person or entity that facilitated, or negotiated the terms of, the applicable contract (excluding legal services related to the negotiation or drafting of the applicable contract)**

Check here if none, otherwise list entity/individual names below.

Signature: 

Date Signed: 03/30/2022

Notary Verification

State of Florida, County of Seminole:

I, Rifat Habib, the authorized agent of the contracting business entity listed above, being duly sworn, acknowledge that the Disclosure herein is being made under oath and under the penalty of perjury.

Taken, sworn to and subscribed before me this 30 day of March, 2022.

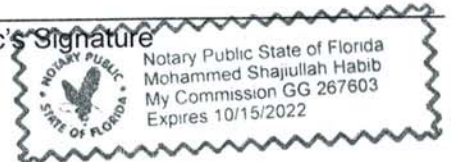

Notary Public's Signature

To be completed by State Agency:

Date Received by State Agency: _____

Date submitted to Ethics Commission: _____

Governmental agency submitting Disclosure: _____



STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

CONSTRUCTION CONTRACTS: Under W. Va. Code § 5-22-1(i), the contracting public entity shall not award a construction contract to any bidder that is known to be in default on any monetary obligation owed to the state or a political subdivision of the state, including, but not limited to, obligations related to payroll taxes, property taxes, sales and use taxes, fire service fees, or other fines or fees.

ALL CONTRACTS: Under W. Va. Code §5A-3-10a, no contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

EXCEPTION: The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. Code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Employer default" means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

"Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceeds five percent of the total contract amount.

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (*W. Va. Code §61-5-3*) that: (1) for construction contracts, the vendor is not in default on any monetary obligation owed to the state or a political subdivision of the state, and (2) for all other contracts, that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: Technology International, Inc.

Authorized Signature:  Date: 03/30/2022

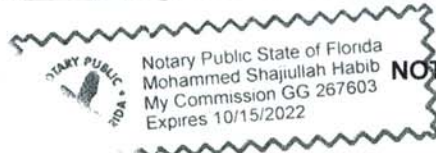
State of Florida

County of Seminole, to-wit:

Taken, subscribed, and sworn to before me this 30 day of March, 2022.

My Commission expires 10/15, 2022.

AFFIX SEAL HERE



NOTARY PUBLIC 



Technology International, Inc.
 1349 South International Pkwy, Suite 2411
 Lake Mary, FL 32746
 Tel: (407) 359-2373
 Fax: (407) 359-2372
 E-mail: tii@tii-usa.com
 Website: www.tii-usa.com

Equipment Proposal

Description: Open Top Drain with Black Grate 10-22-B460

Solicitation #: CRFQ 0803 DOT2200000149

Agency: State of West Virginia

TII Ref: TII/WV/0322/21661

Date: 03/30/2022

In response to your quote request for Open Top Drain with Black Grate 10-22-B460, Technology International, Inc. is pleased to submit the following for consideration:

ITEM NO.	QTY	DESCRIPTION/ MODEL NO.	UNIT PRICE	EXTD. PRICE
1	70	FP1200 8' Section of Channel/Frame assembly – Galvanized (Qty 70) <u>Includes:</u> <ul style="list-style-type: none"> • FP1200 - 24" Ductile Iron Slotted Grate (Class C) (Qty 280) • FP1200 - Galvanized Frame End Plate (Qty 2) • FP1200 Locking Hardware for Ductile Iron and Galv Bar Grate (Qty 560) • Seamer Mate Joint Sealant (11 oz. tube) (Qty 24) • FP1200 - End Cap - 6 - 10" Inlet/Outlet (Qty 2) 	\$2,475.00	\$173,250.00
See attached data sheets				
Total.....			<u>\$173,250.00</u>	

Option (not included in above):

- TDS FP1200 Trench Drain System with FP1200 - 24" Ductile Iron Slotted Grate (Class C)....\$
- It is not a pre-cast item. It will need to be set within an excavation and concrete poured around it to establish the channel. The form stays in place.

- The channel width of this system is 12" (as opposed to 10 inches). The grating width is 14" (as opposed to 12").

Warranty: Manufacturer's standard warranty applies.

Delivery:

- Estimated delivery is **18 Weeks** after receipt of order and approved submittal.
- Please note, due to COVID-19 there may be unanticipated disruptions and delays in the supply chains globally, for parts, components, equipment and internal manufacturing services such as engineering, production allocation, and logistics. This may result in manufacturing & delivery delays out of our control. We will do our best to communicate all such impacts and reduce the effects of any such delays.
- All delivery dates quoted are subject to manufacturer's confirmation at time of order.
- Submittal data will be provided for approval after receipt of order (if applicable)
- Customer to provide equipment and personnel to unload
- TII will provide MSO at time of payment confirmation. Customer is responsible for all titling and registration of trailer (If Applicable)

Freight: Included to Princeton, WV.

Payment Terms: NET 30

Prompt Payment discount: 1/4 % 10 days

Quote Validity: 30 days.

***** Notes:**

- Quoted price is an offer for a lump sum contract.

Technology International, Inc. Corporate data:

We are a small business and our Tax Payer Identification Number (TIN): 650342335. The price quoted does not include any sales, excise or similar taxes.

We trust that this proposal will meet your requirements and we look forward to hearing from you.

If you have any questions or need more information, please contact us by phone at 407-359-2373, fax at 407-359-2372 or email us at tii@tii-usa.com

Respectfully submitted,



Rifat Habib
Business Development Exec.
Technology International, Inc.



FP 1200™

FAST DRAINAGE • QUICK SOLUTIONS

HIGH VOLUME TRENCH DRAIN SYSTEM



The FP1200 Series™ trench drain system is the ideal solution for high volume flow situations such as airports, roadways and seaports. Designed with the installer in mind, this revolutionary design incorporates full 360° interlocks and prefabricated turns and tees to minimize installation time.



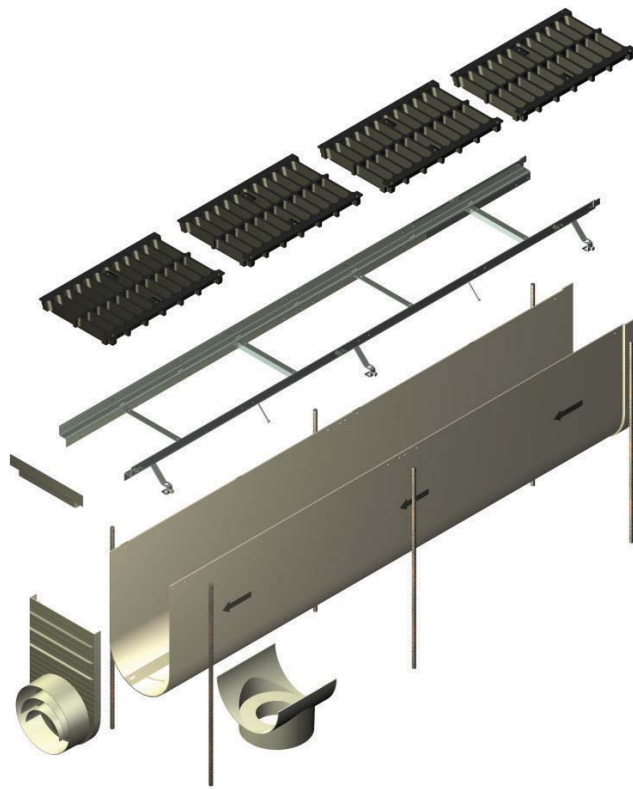
TDS

TRENCH DRAIN SYSTEMS



FP 1200™

FAST DRAINAGE • QUICK SOLUTIONS



Installation Manual

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INSTALLATION TIPS

Safety and General Installation Tips

- **IMPORTANT** – Read all instructions before you begin the installation.
- The dust created when cutting fiberglass can cause serious health issues. When modifying channels, gloves, eye protection, and a respirator should be worn at all times.
- Cutting metal grates and frames creates sparks. All operations should be conducted away from combustible materials and potential explosion hazards.
- **Channels should be installed beginning with the discharge end and working upstream.**
- Class A-E installations require a minimum of 3000 psi concrete.
- Class F installations require a minimum of 4000 psi concrete.
- Good concrete practices should be followed when installing drain.
- Do not design the concrete slab where channels are used as expansion joints.
- If concrete shrinks away from the channel or frame, the channel strength will be compromised.

.....
: We strive to ensure that your order is
: complete but suggest checking your pack slip
: against the layout sheet to ensure you have
: all the parts necessary for installation prior to
: the start of your project.
:

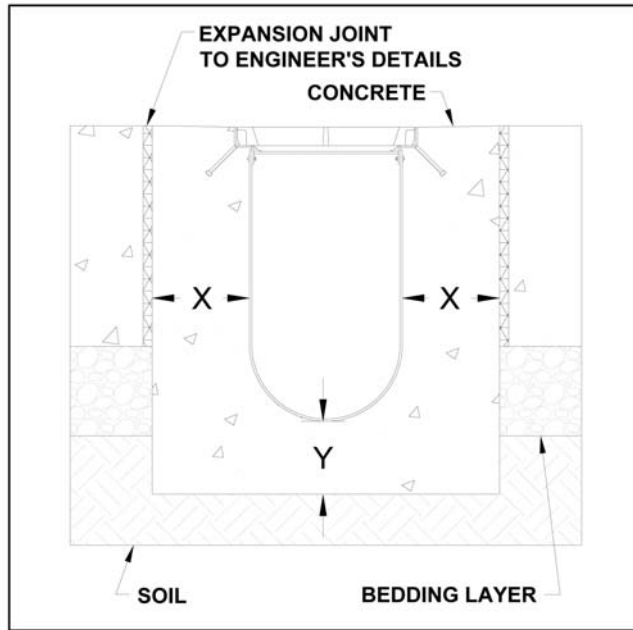
: If any parts are missing, call TDS as soon as
: possible at 610-638-1221.
:

Tools Needed

- String-line
- Level
- Rebar
- Rebar driver
- Drill
- Hacksaw or reciprocating saw
- Hammer
- Drywall screws
- Plywood
- Square
- 1/2" and 9/16 wrenches or sockets
- Caulking gun
- Professional Grade SeamerMate™ Sealant or equivalent
- Vibrator (finger type)

1 SITE EVACUATION

- To ensure proper strength, the slab site should be excavated to allow minimum concrete surround the following table



- Excavate trench base to roughly follow the slope of the drain.
- Remove loose material from the trench and ensure the base is compacted.
- Set an alignment string line or laser level to indicate the proposed slab grade.
- When installing the drain in concrete slabs, there should be an allowance for expansion and/or isolation joints.

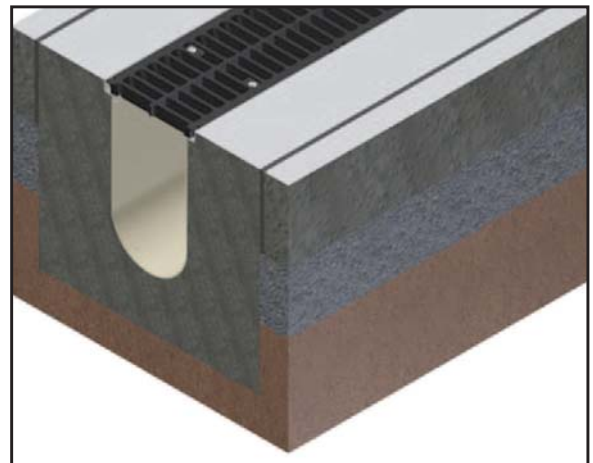
(A slab designer must approve the installation. The channel should never be used as an expansion joint.)

- Check the product literature for actual product dimensions.

Concrete Surround Dimensions

DIN Load Class	A	B	C	D	E	F
FP1200	6"	6"	6"	8"	8"	10"
12" Channel	6"	6"	6"	8"	8"	10"

These are minimum recommended dimensions only. Specific site conditions may affect the actual requirements and engineering advice should be sought. The final installation details are the responsibility of the slab designer.



For specific questions contact a TDS product specialist or our engineering department at: 610-638-1221.

2 SYSTEM LAYOUT

- Drain system should be laid out per the engineer’s recommended drawing.
- Begin the drain layout with collection points such as catch basins and pipe outlets.
- Lay out the channels in sequence next to the excavation.
- Plan the location of expansion and/or isolation joints.
- Locate perpendicular expansion joints crossing the channels at the channel joints when possible.
- Each channel displays a number on its sidewall indicating its numerical sequence as well as an arrow indicating the direction of flow.

FP1200 SERIES Depth Chart

Channel #	Inlet Depth	Outlet Depth
1201	9.70	10.66
1202	10.66	11.62
1203	11.62	12.58
1204	12.58	13.54
1205	13.54	14.50
1206	14.50	15.46
1207	15.46	16.42
1208	16.42	17.38
1209	17.38	18.34
1210	18.34	19.30
1211	19.30	20.26
1212	20.26	21.22
1213	21.22	22.18
1214	22.18	23.14
1215	23.14	24.10

3 CHANNEL ASSEMBLY

- The male end will extend past the end of the frame approximately 2”.
- If the channels discharge through a pipe outlet, 2” should be cut off the discharge end of the channel at this time. This only applies to the outlet channel. See Fig. 3.2

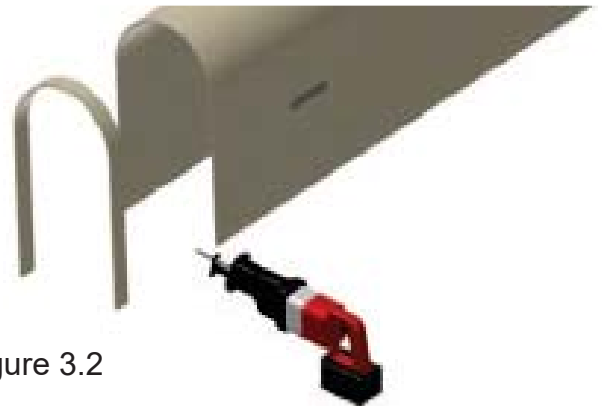
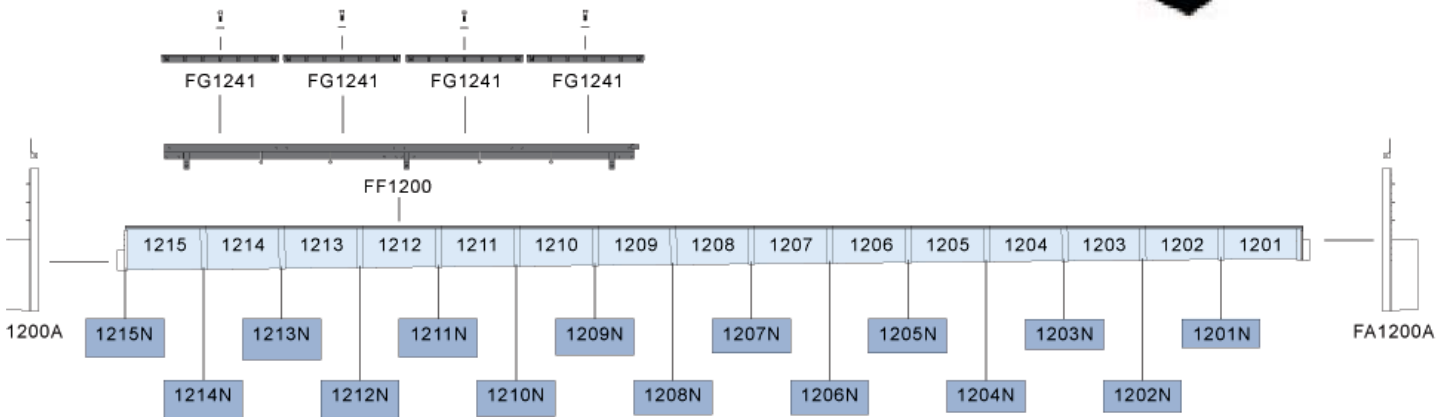


Figure 3.2

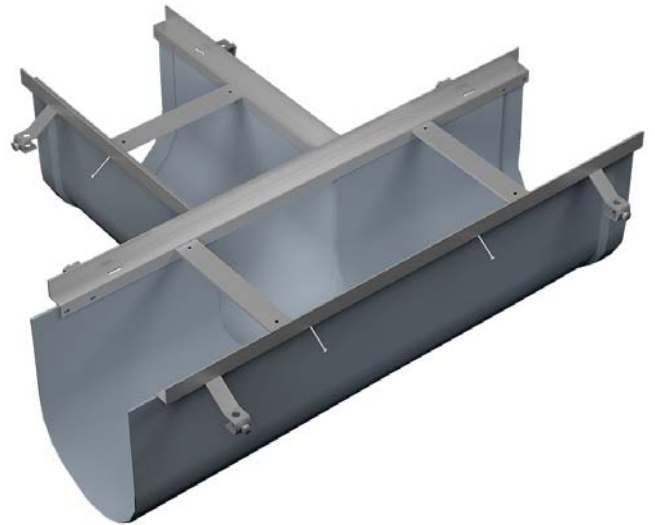


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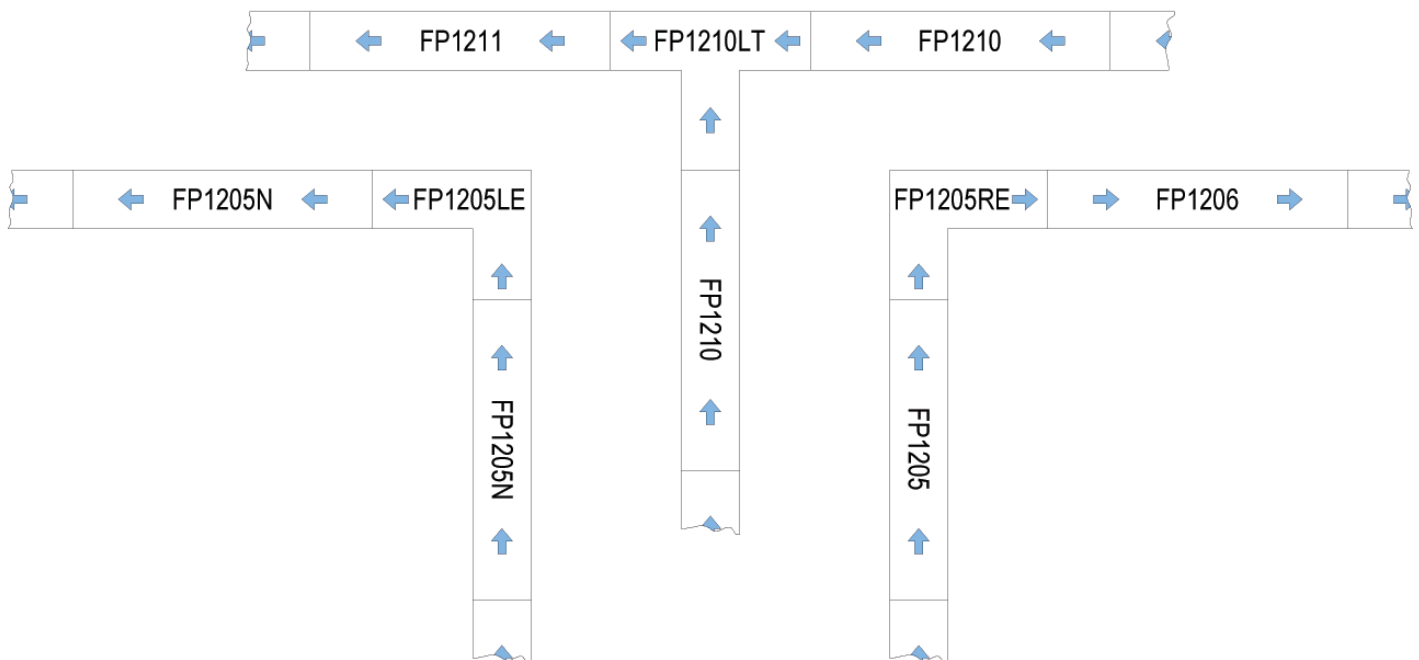
ELBOWS & TEES

Factory Supplied Adapters

- FP Series elbow and tee adapters are available to make field installations faster.
- These adapters are available at 5", 10" and 15" nominal depths.
- Require no field modification to install.



Elbow & Tee Example Layouts



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5 END CAPS & PIPE OUTLETS

FP Series channel end caps are designed to accept 6", 8" and 10" PVC pipe connections.

- Trim the end cap to match the desired channel depth using the depressed channel lines as a guide. See Fig. 5.1



Figure 5.1

- Trim the end cap pipe outlet to match the desired pipe. See Fig. 5.2

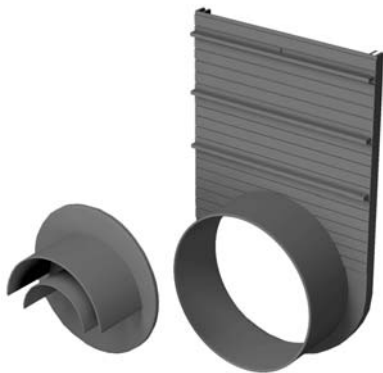


Figure 5.2

- Apply SeamerMate™ to the end cap. See Fig. 5.3



Figure 5.3

- Press the end cap onto the channel. Ensure the joint is properly sealed. See Fig. 5.4



Figure 5.4

- For added stability install drywall screws through the end cap flange and channel.
- Secure the steel frame cap by installing drywall screws through the alignment holes. See Fig. 5.5



Figure 5.5

- Remove excess sealant and place pipe into end cap. See Fig. 5.6

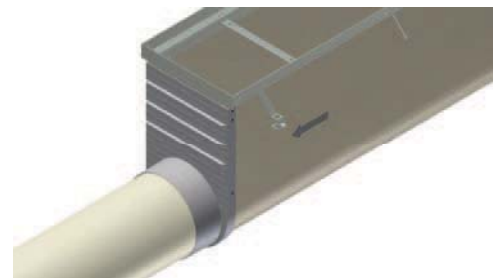


Figure 5.6

5 END CAPS & PIPE OUTLETS

FP Series channel bottom outlets are designed to accept 6", 8", and 10" PVC pipe connections. Bottom outlets should be installed a minimum of 12 inches on center away from the end of a channel run.

- Trim the bottom outlet to match the desired pipe. See Fig. 5.7



Figure 5.7

- Mark the mating channel with a marker using the bottom outlet as the guide. See Fig. 5.8



Figure 5.8

- Use a cut-off tool or reciprocating saw to remove the interfering material from the channel. See Fig. 5.9



Figure 5.9

- Apply SeamerMate™ to the bottom outlet. See Fig. 5.10



Figure 5.10

- Press the bottom outlet onto the channel. Ensure the joint is properly sealed. For added stability install at least 4 drywall screws through the bottom outlet and channel. See Fig. 5.11

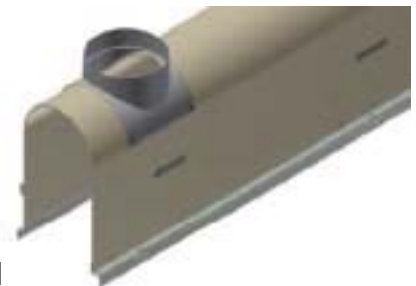


Figure 5.11

- Remove excess sealant and place pipe into bottom outlet. See Fig. 5.12



Figure 5.12

6 CATCH BASINS - OUTLETS

Catch Basins

TDS supplies channel adapters to create a support flange for creating custom tees, elbows, and for connecting channel runs to catch basins.

- Trim the catch basin inlet adapter to the desired height. Mark the catch basin inside the adapter with a marker. See Fig. 6.1



Figure 6.1

- Use a cut-off tool or reciprocating saw to remove the interfering material from the catch basin. See Fig. 6.2

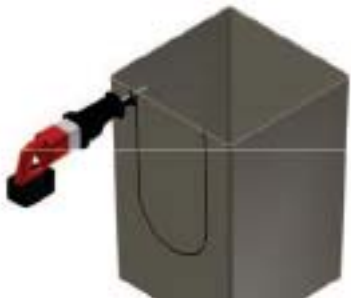


Figure 6.2

- Apply SeamerMate™ sealant to the catch basin inlet adapter. See Fig. 6.3



Figure 6.3

- Press fit the inlet adapter onto the catch basin and ensure the joint is properly sealed. See Fig. 6.4

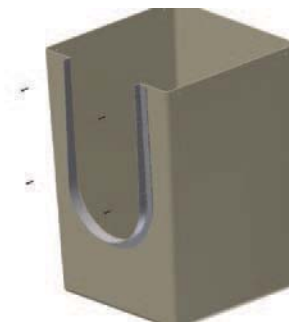


Figure 6.4

- For added stability install at least 4 drywall screws through the inlet adapter and catch basin.

6 CATCH BASIN - INLETS

Catch basin outlets are designed to accept 6", 8" and 10" PVC pipe connections.

- Trim the catch basin outlet to match the desired pipe. See Fig. 6.5



Figure 6.5

- Mark the catch basin and cut out the hole for the appropriate size pipe to be used. See Fig. 6.6



Figure 6.6

- Apply SeamerMate™ to the catch basin outlet. See Fig. 6.7



Figure 6.7

- Press the catch basin outlet onto the catch basin. Ensure the joint is properly sealed. See Fig 6.8

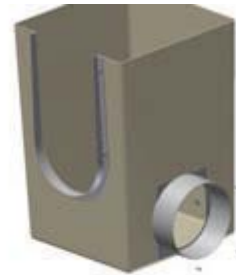


Figure 6.8

- For added stability install drywall screws through the end cap flange and channel.

- Remove excess sealant and place pipe into adapter. See Fig. 6.9

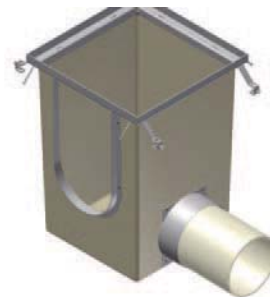


Figure 6.9

7 PLACING CHANNELS

Hanging Method

- Lay the drain channels in the excavated trench starting at the discharge end where the catch basin or pipe outlet is located.
- Cut 2x4 lumber to span the trench width or form boards.
- Attach 2x4's to channels using 3/8"-16 allthread rod or long bolts.



Figure 7.1

- Align the deepest channel with the catch basin or outlet pipe and secure the 2x4's to the surrounding slab. See Fig. 7.1
- Use high pull-out strength concrete anchors when installing in an existing slab to avoid the channels floating during concrete pour. See Fig. 7.1

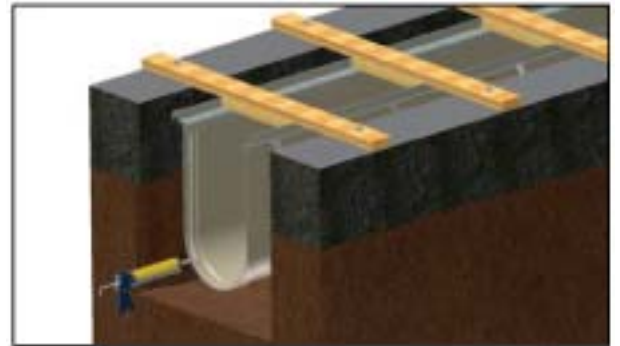


Figure 7.2

- If joints are to be sealed, apply a small bead of SeamerMate™ sealant to the joint coupler. See Fig. 7.2



Figure 7.3

- Position the next channel by sliding the male end into the coupler of the installed channel. Frame tabs will assure lateral alignment. See Fig. 7.3
- For add stability the joints should be secured with 4 drywall screws in the sidewalls. See Fig 7.3
- Fasten 2x4's to the slab identically to the previous channel. Check the channel with a level and adjust if necessary.
- Repeat this procedure until all channels are installed.

7 PLACING CHANNELS

Rebar Method

- Lay the drain channels in the excavated trench starting at the discharge end where the catch basin or pipe outlet is located.
- Place the deepest channel at the desired location. Place #4 or #5 rebar through the frame brackets and drive into the ground until secure. See Fig. 7.4
- The tops of the pieces of rebar should be at least 2" from the top of the frame.

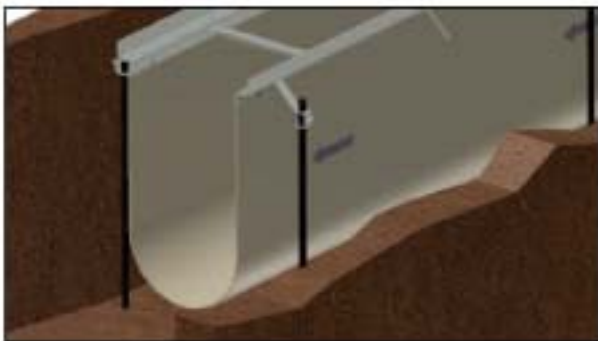


Figure 7.4

- Using a string line and level, align the channel vertically and tighten the 5/16" bracket bolts. See Fig. 7.5



Figure 7.5

- If joints are to be sealed, apply a small bead of SeamerMate™ sealant to the joint coupler.
- For added stability the joints should be secured with 4 drywall screws per joint in the sidewalls. See Fig. 7.6

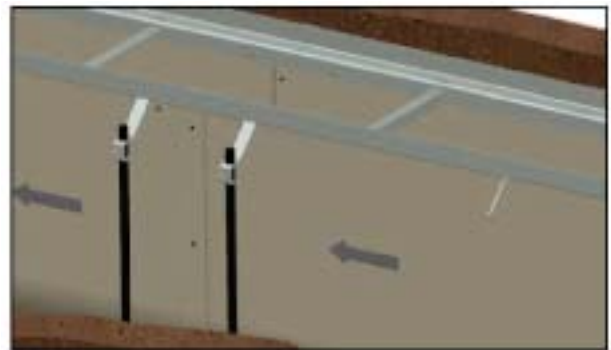


Figure 7.6

- Position the next channel by sliding the male end into the coupler of the installed channel. Frame tabs will assure lateral alignment. See Fig. 7.6
- Place rebar through the installation brackets and drive into the ground until secure. Check the channel with a level, adjust if necessary, and tighten the bracket bolts.
- Repeat this procedure until all channels are installed.

NOTE: Poor ground conditions and inadequate rebar security can allow channels to float during pour. Ensure that rebar is anchored sufficiently. See Section 9 for concrete pouring information.

8 BRACING CHANNELS

- Fiberglass channels require bracing to avoid bowing during the concrete pour.
See Fig. 8.1
- Foam bracing blocks should be used on:
FP1209 - FP1215
- Place foam bracing blocks in each channel:
FP1200 Series – 4 blocks

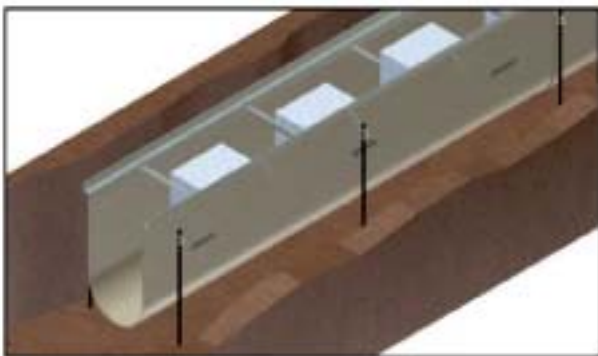


Figure 8.1

- Be sure to place a block at each channel joint. See Fig. 8.2



Figure 8.2

- Once the concrete pour is complete, foam blocks can be removed and reused.

- Plywood slats should be cut and placed in to the frames to avoid concrete spilling in during the pour. See Fig. 8.3
- Cut plywood slats to 14-1/2" x 96" for 12" drain and to 10-1/2" x 96" for 8" drain.

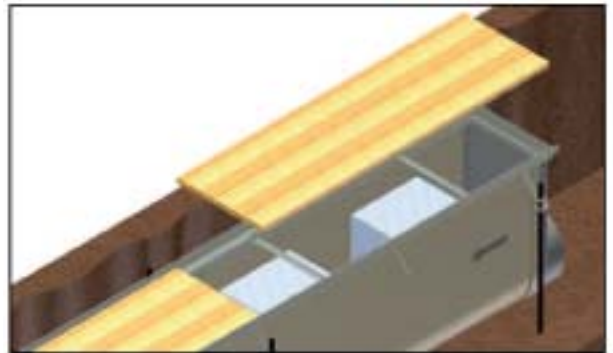


Figure 8.3

- For hanging method, cut the plywood slats shorter and place between 2x4's.
See Fig. 8.4

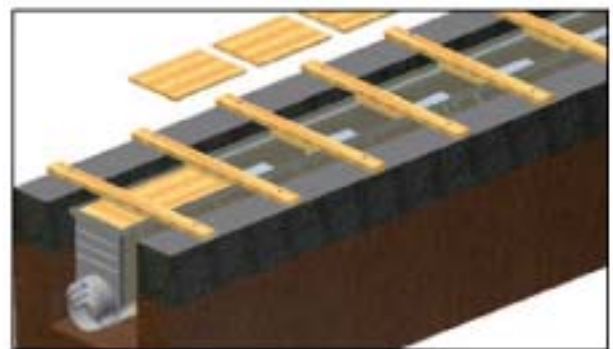


Figure 8.4

8 BRACING CATCH BASINS

Fiberglass catch basins must be braced to avoid bowing during the concrete pour.

FP1251

- FP1251 catch basins should be braced with 2x4's. See Fig. 9.1

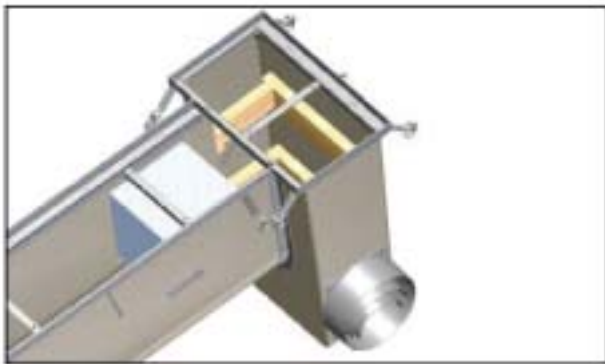


Figure 9.1

FP1255

- FP1255 catch basins should be braced with 2x4's. See Fig. 9.2

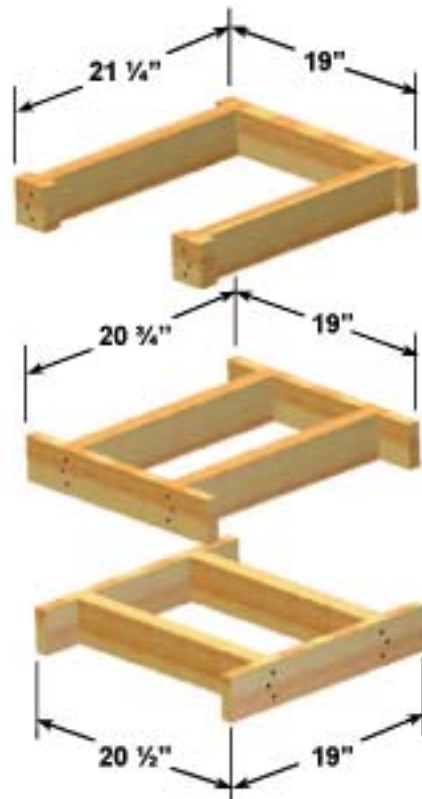


Figure 9.2

9 POURING CONCRETE

- Concrete strength and slab integrity are the responsibility of the slab designer. An Engineer should be consulted on slab specifics.
- TDS recommends a two part pour to ensure that channels do not float.
- Ensure that channels have been braced with foam blocks and that plywood is in place to prevent concrete from entering the channels.

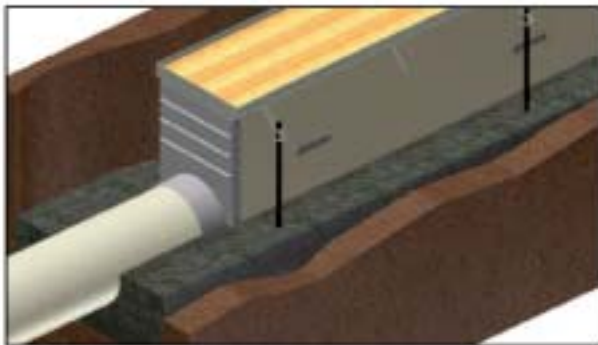


Figure 9.3

- Pour concrete around the bottom of the channel and rebar supports (if used) up to the top of the radius of the channels. See Fig. 9.3
- Take care to ensure that the channel position is not disturbed.
- Use a finger type vibrator to evenly distribute concrete around the bottom of the channels.

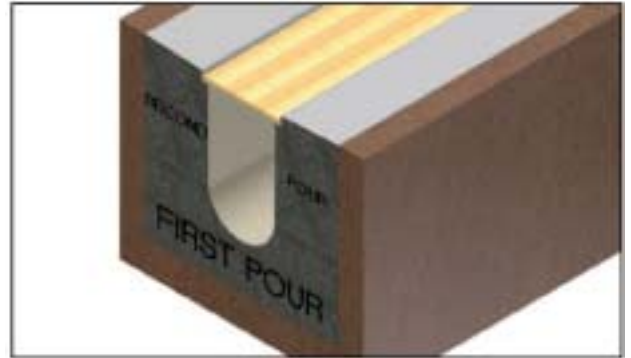


Figure 9.4

- Once the first pour has set the second pour can be placed and finished to level. See Fig. 9.4
- Place concrete evenly on both sides of the trench to avoid moving the channels. Too much concrete on one side can cause the channels to twist.
- Use a finger type vibrator to evenly distribute concrete around the frame rails.

NOTE: Take care not to over-vibrate the concrete as this can compromise the strength of the finished concrete.

NOTE: It is normal to witness concrete seeping through the air vents in the frame.

10 INSTALLING GRATES

- Once concrete has set for 24 hours, the grates can be installed on the finished product.
- If the Hanging Method was used, remove the 2x4's, threaded rods and anchors.
- Remove the plywood slats.
- Remove the foam blocks.
- Plywood and foam can be saved and reused on later installations.
See Fig. 10.1

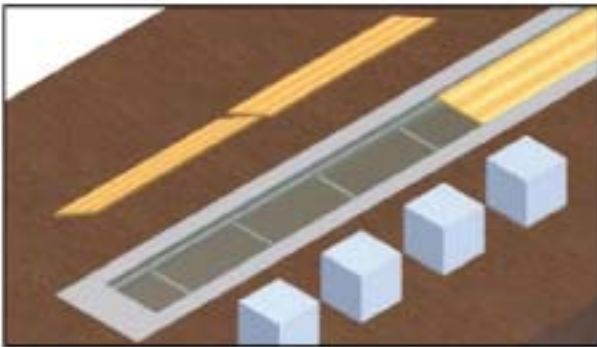


Figure 10.1

- All channels use 3/8"-16 bolts to secure grates. See Fig. 10.2
- Torque bolts to no more than 15 ft-lbs.

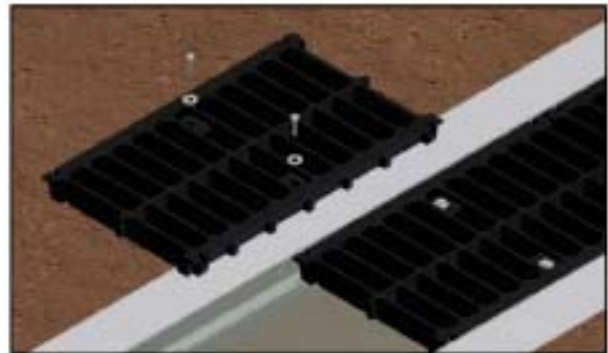


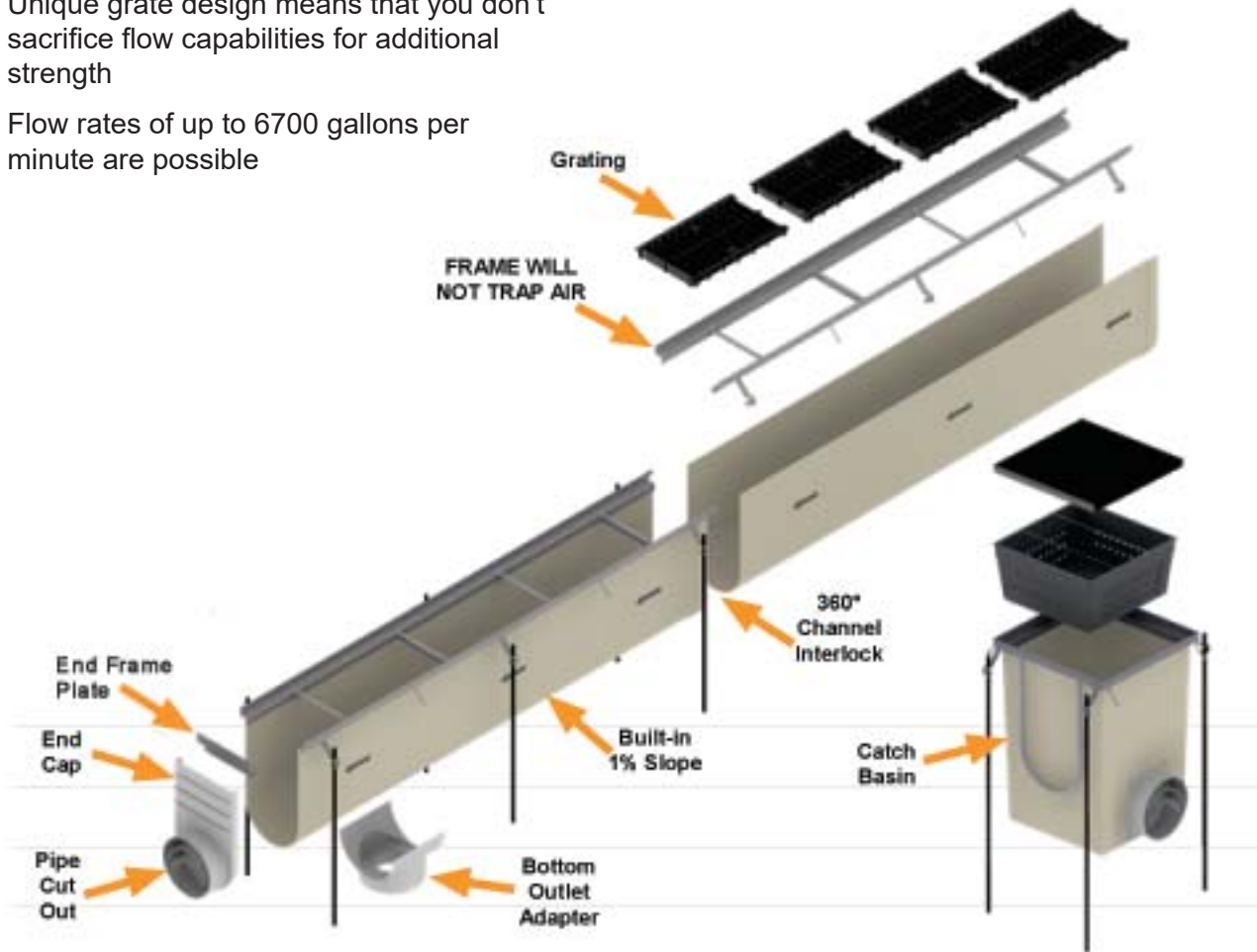
Figure 10.2

- To finalize the installation, remove any debris from the channels and ensure that pipe outlets are clear.
- Install catch basin debris baskets if required.
- Flush drain with water to ensure that there are no blockages.
- The new drainage system is complete.

For questions or clarification on any items discussed here, contact our engineering department by calling 610-638-1221.

BENEFITS OF FP SERIES

- 360° interlock for up to 20% faster assembly
- 120' of 1% continuous slope
- Fiberglass walls are up to 80% thicker than the competition
- Grates have inlet flow of up to 80% more than the competition
- Unique grate design means that you don't sacrifice flow capabilities for additional strength
- Flow rates of up to 6700 gallons per minute are possible
- Direction arrows and channel numbers ensure correct installation
- Marine grade gel coat provides UV stability
- Vented frame rails prevent air entrapment which can cause weakening of the slab and premature failure

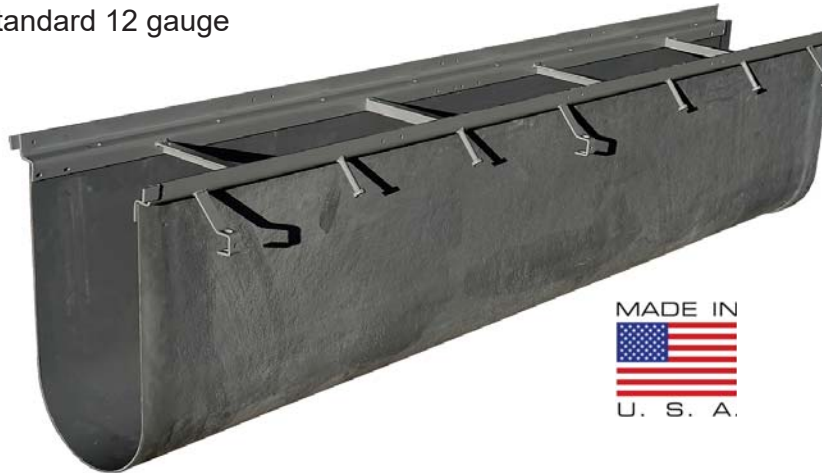


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NOTE: Trench Drain Systems has a policy of continuous product improvement, we reserve the right to change design and specifications without notice.

HIGH VOLUME DRAINAGE SYSTEM

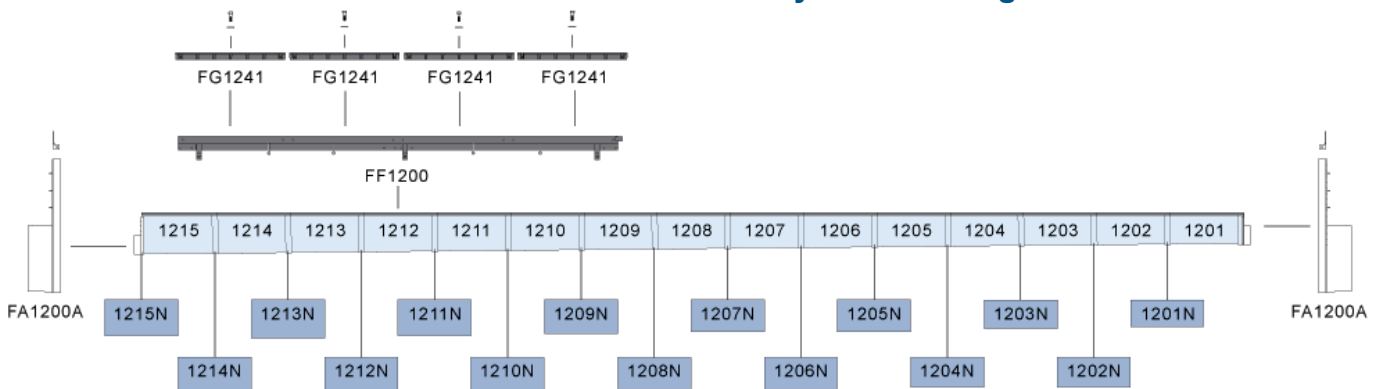
The FP1200 Series™ channels are 96" long, 12.19" wide with a 11.9" throat. Channel bodies are made of fiberglass with a smooth round bottom profile. Frames are made from your choice of standard 12 gauge galvanized steel, optional stainless steel or painted sloped to a standard 1.0%. Channels interconnect with a flanged bell connection. End & bottom outlets can be sized at 6", 8" or 10". Catch basins and debris strainers are available.



Typical Applications

- Highways
- Ports & Shipyards
- Fire Stations
- Rail Terminals
- Airports
- Refineries
- Military Bases

System Configuration Chart



CHANNEL DETAILS

- Up to 6700 GPM flow rate
- Up to 120' of continuous slope at 1%
- 8-foot channel sections
- Tee sections and 90° elbows
- Neutral and half channels
- Eight grating options
- Lightweight for rapid installation
- Galvanized or stainless steel frames
- Two catch basin size choices

FP1200 SERIES™ Depth Chart

Channel #	Inlet Depth	Outlet Depth
1201	9.70	10.66
1202	10.66	11.62
1203	11.62	12.58
1204	12.58	13.54
1205	13.54	14.50
1206	14.50	15.46
1207	15.46	16.42
1208	16.42	17.38
1209	17.38	18.34
1210	18.34	19.30
1211	19.30	20.26
1212	20.26	21.22
1213	21.22	22.18
1214	22.18	23.14
1215	23.14	24.10

GRATE OPTIONS

Grates are available to meet DIN load classes C through F. Made in the USA

FG1241



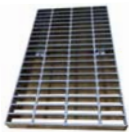
FG1242



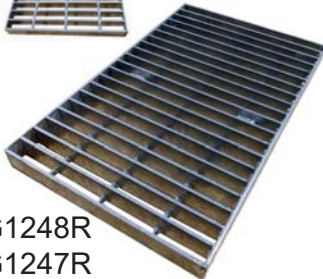
FG1246



Reversible



FG1248R
FG1247R



FG1275



Fiberglass
Options



ACCESSORIES

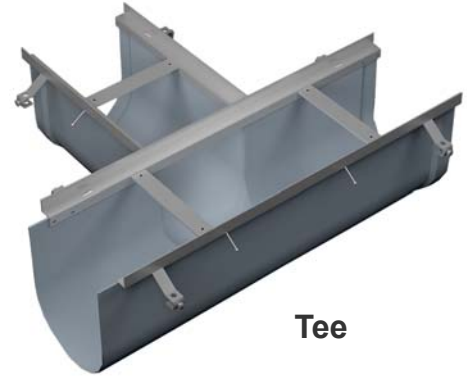
90° Elbow



End Frame Plate



Bottom Outlet



Tee

Splice Adapter



End Cap / End Outlet

CATCH BASINS



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