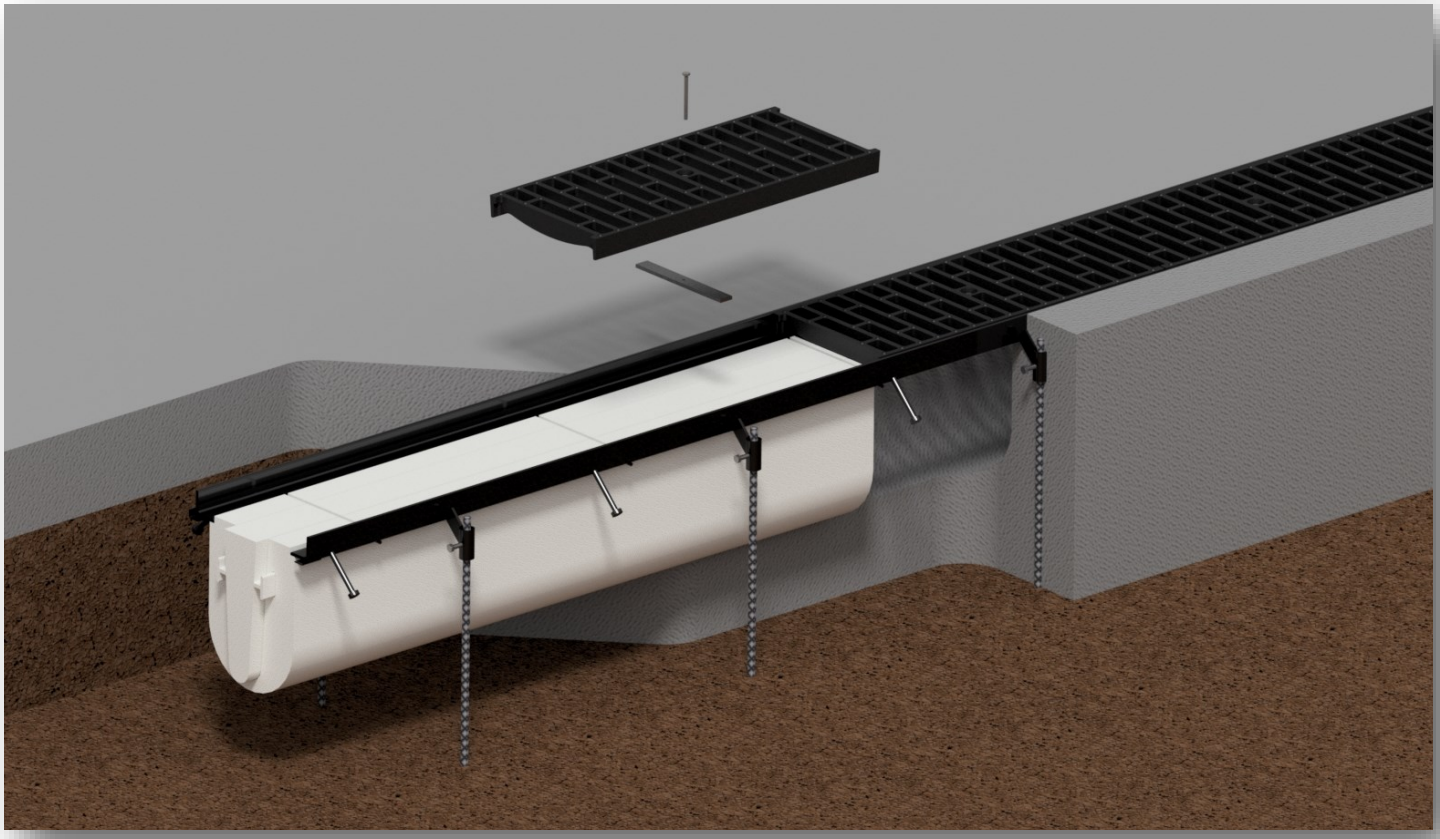
MultiDrain Systems, Inc.

Manufacturers of Pre-engineered Trench Drain Systems

INSTALLATION INSTRUCTIONS

EconoDrain® & EconoDrain PT-2™



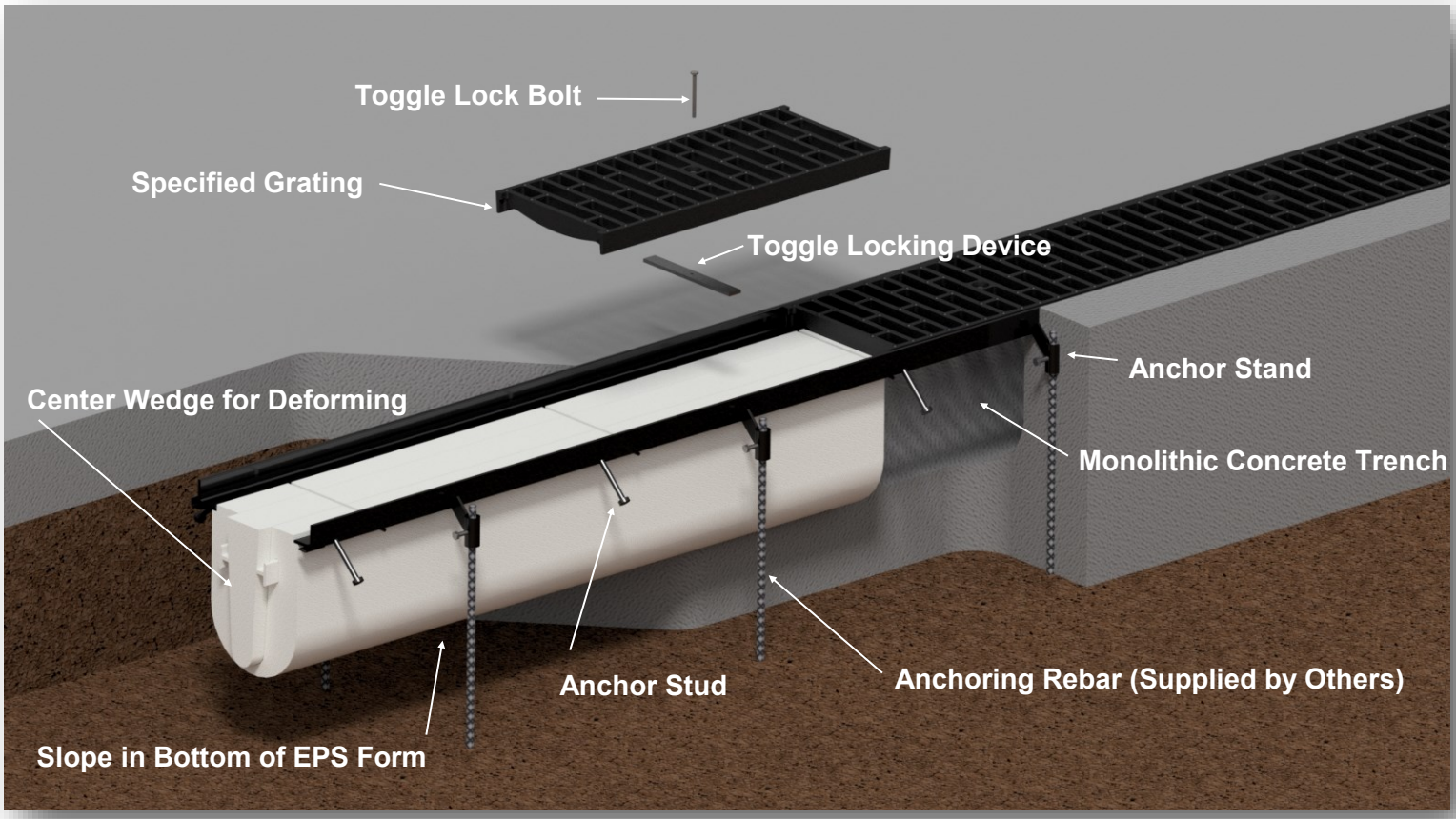
Surface Drainage Technology & Solutions

EconoDrain® ● EconoDrain PT-2™ ● Alfa Channel® ● Alfa Slot® ● MultiDrain®

MultiDrain®
We Drain Your Site, Not Your Budget!

EconoDrain®

ECONODRAIN PRE-ENGINEERED TRENCH DRAIN FORMING SYSTEM

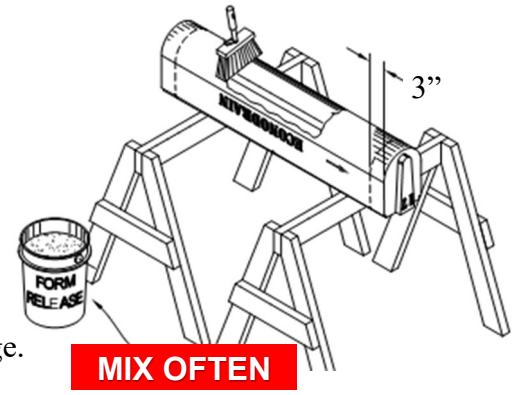


In preparation to install EconoDrain, please make sure you have the following tools and equipment available.

- #4 or #5 Anchoring Rebar (Supplied by others)
- Hammer to drive rebar & flat stakes into Sub-base
- String-line & flat stakes
- Bubble level
- Transit
- Duct tape
- EPS foam form release (Supplied by MultiDrain Systems, Inc.)
- Applicator brush
- Tie wire
- Concrete Finger (Probe) Vibrator
- Pipe for trench outlet
- 4” Hand grinder with metal cut-off blade
- 1/2” Socket wrench

STEP 1: APPLY FORM REPLEASE TO EPS FORMS

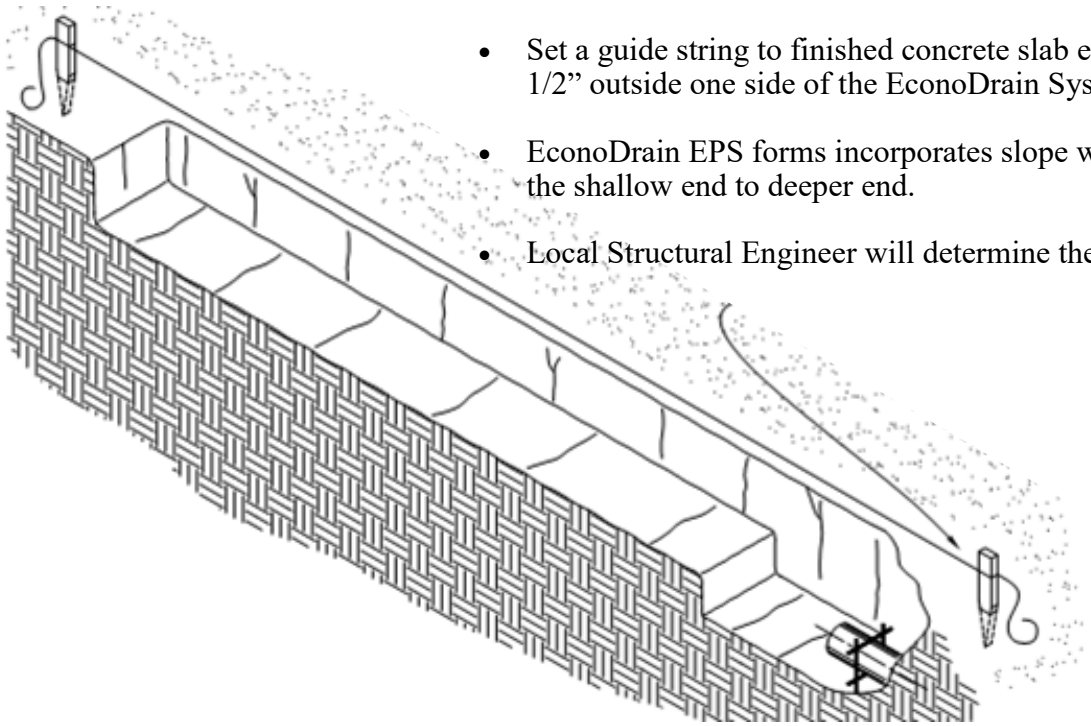
- Use Form Release provided by MultiDrain Systems, Inc.
- Must apply form release to EPS forms prior to installing in frame.
- Apply form release with a Brush or hand sprayer.
- Do not coat the first three inches (3”) on either end of the EPS forms; since joint duct tape will be placed here (see detail)
- Storing form release in freezing conditions can cause irreversible damage.



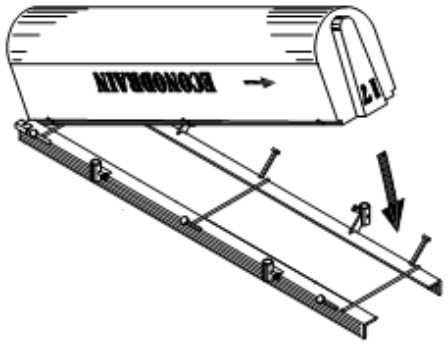
CAUTION: DO NOT USE PETROLEUM BASE FORM RELEASE

STEP 2: PREPARE EXCAVATION AND SET ALIGNMENT GUIDE

- Excavate trench a minimum 12” wider than the overall width of the steel frame (6” minimum on each side) and a minimum of 6” deeper than the overall depth of the EconoDrain EPS Form.
- Set a guide string to finished concrete slab elevation and approximately 1/2” outside one side of the EconoDrain System frame assembly.
- EconoDrain EPS forms incorporates slope within trench run flowing from the shallow end to deeper end.
- Local Structural Engineer will determine the concrete’s overall thickness.

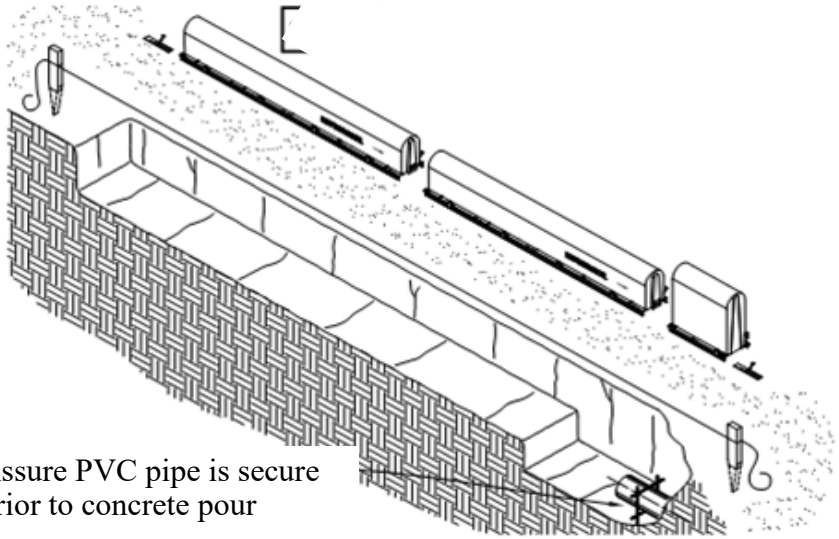


STEP 3: ASSEMBLE THE EPS FORMS TO THE WELDED FRAME ASSEMBLY



- Frame Rails and Bolt-In-Place Spacer Bar assembly (See Page 5).
- EPS forms with deforming Center Wedge are shipped assembled.
- Align the EPS forms outer section slots with the frame spacers.
- Center Wedge protrudes 1" on the downstream end of EPS forms (deeper end).
- Arrows show direction of slope.
- Numbers show EPS form corresponding with shop drawing.
- Carefully press the EPS forms into the Frame assembly until the Spacer Rods or Bolt-In-Place spacers are seated in the EPS forms.

STEP 4: BEGINNING THE INSTALLATION & LAYOUT SEQUENCE

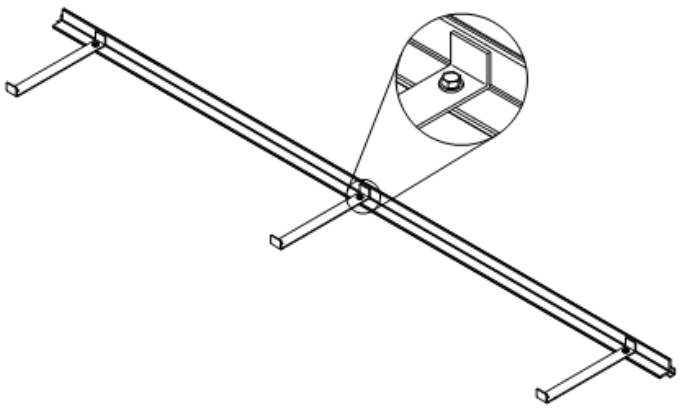


Assure PVC pipe is secure prior to concrete pour

- Prior to installation, layout EconoDrain assemblies in numerical sequence with the highest number (deepest) section at the discharge point.
- EPS form arrows pointing toward the discharge point.
- Begin installation at the trench outlet or downstream end and work backward.
- Set catch Basin first (if used. Refer Page 6, Typical Catch Basin Installation.)
- Deeper EPS forms (greater than 15" deep), require stabilization of the form during concreting (Page 9).

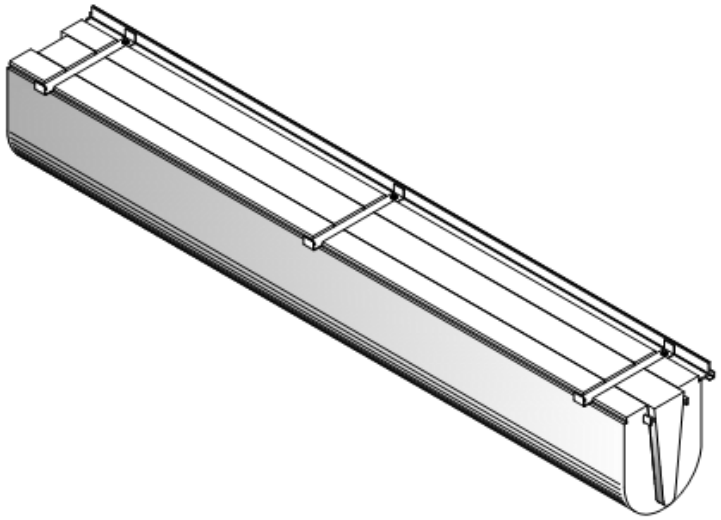
STEP 3A: OPTIONAL BOLT-IN-PLACE SPACER BAR & FRAME ASSEBMLY

NOTE: FIELD ASSEMBLED



STEP 1

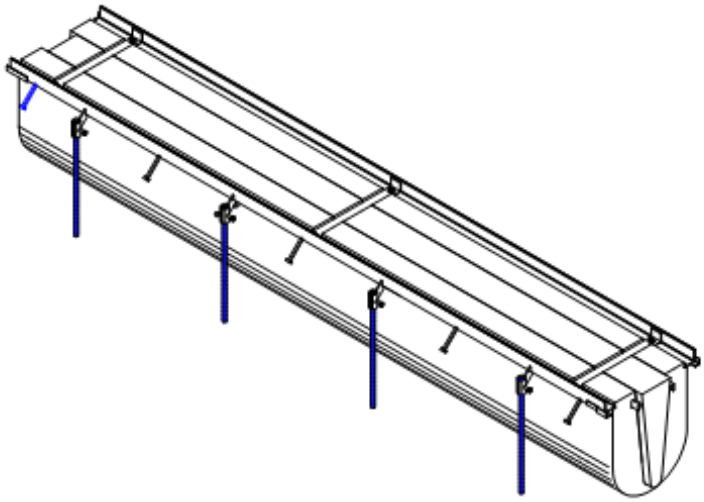
- Bolt 3 Rail Spacer Bars to one side of the Frame Rail.
- Spacer Bar Bolts; 5/16” - #18 x 3/4”
- Socket Size: 1/2”



STEP 2

- Place the EPS Foam Form against the Frame Rail aligning the slots in the EPS Form and the Rail Spacers.

MUST APPLY FORM RELEASE TO EPS FORMS PRIOR TO INSTALLING IN FRAME RAIL.



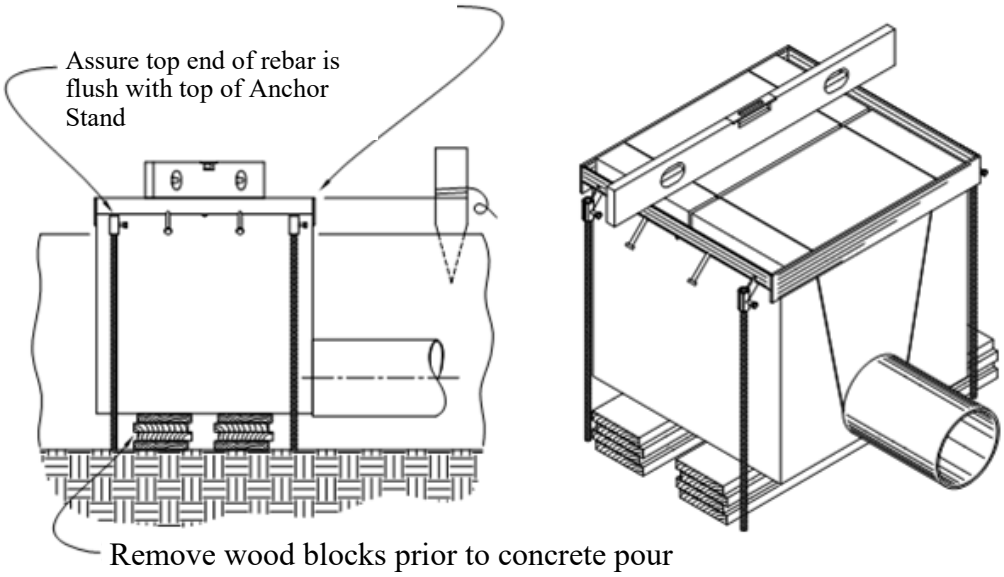
STEP 3

- Place parallel Rail against the EPS Foam Form aligning the bolt hole in the Frame Rail with the hole in the Spacer Bar and bolt-in-place.
- Left and right Rail shall be affixed together with Bolt-In-Place Rail Spacer Bars to assure proper symmetry and planar accuracy.

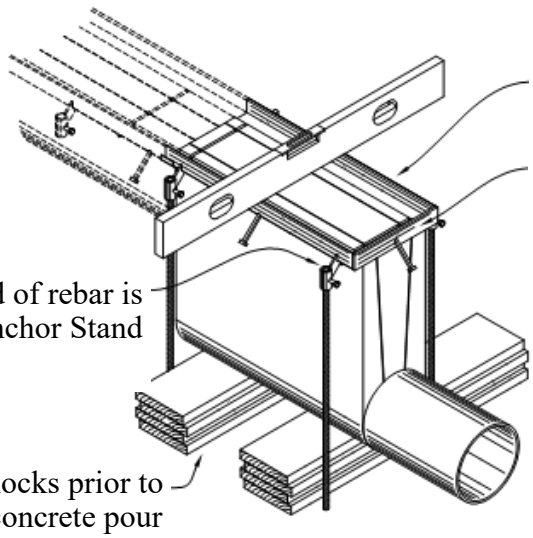
To Proceed See Page 4 Step 4

STEP 5: TYPICAL INSTALLATION OF CATCH BASIN - 24" X 24"

Assure top is level with finished slab elevation



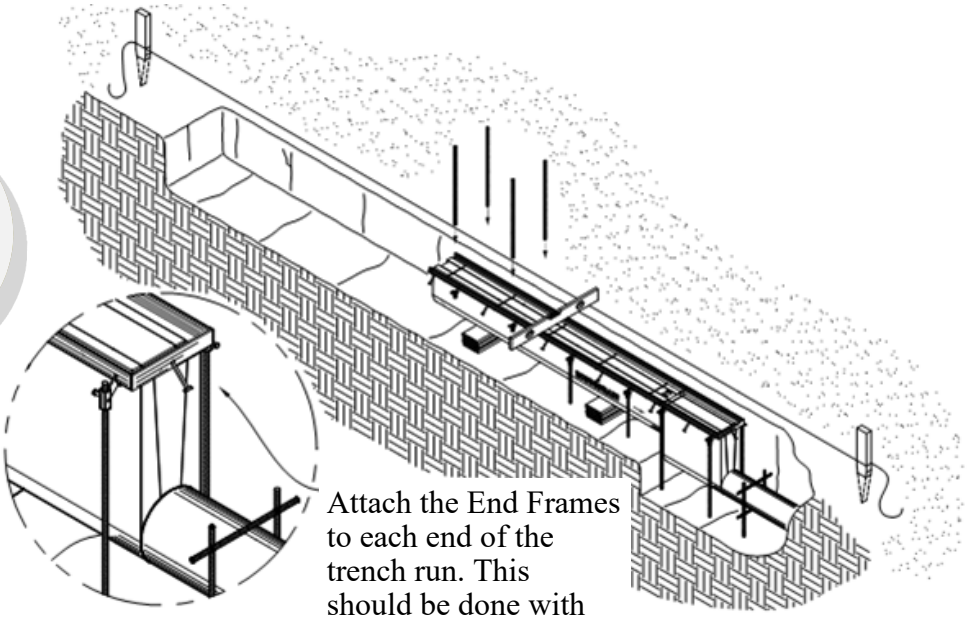
STEP 6: TYPICAL INSTALLATION OF IN-LINE CATCH BASIN



STEP 7: INSTALLATION OF ECONODRAIN TRENCH FORMING ASSEMBLY

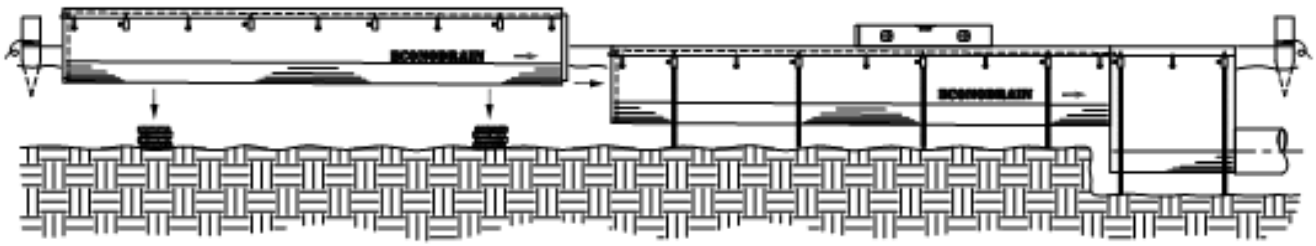
- Install the outlet Trench Form or Catch Basin component first.
- Use wooden blocks to support the EconoDrain assembly above the floor of the trench excavation and approximately 1” below the desired finished elevation.
- Insert #4 or #5 Anchoring Rebar thru all Anchor Stands,
- Hammer rebar straight into sub-base 12” or more depending on soil or sub-base conditions.
- The rebar tip should be left 1-1/2” to 2” above the top of the Anchor Stand.
- Sung the Hex Bolt enough to hold the assembly on the rebar but do not tighten at this time.

HEPFUL HINT: Duct tape or equal may be used to temporarily secure the End Frame while wire tying in place.



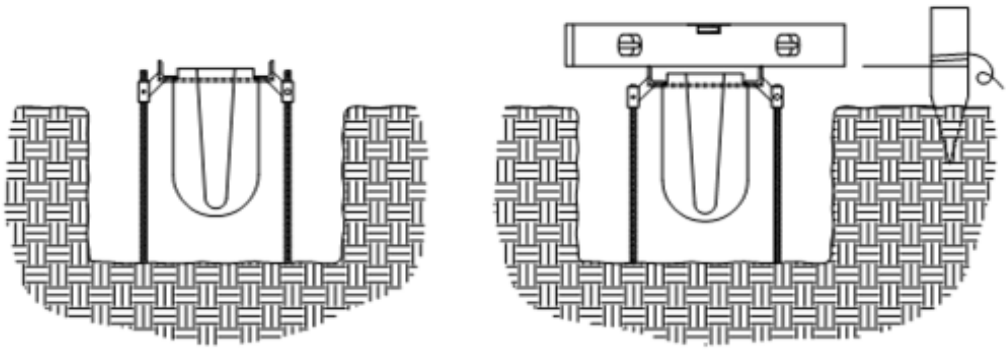
Attach the End Frames to each end of the trench run. This should be done with tack weld or duct tape or equal then tie wire.

Make sure the Pipe Outlets fit snugly against the EPS Form at the trench outlet. Cover the pipe end with duct tape to prevent concrete infiltration and secure the pipe to prevent movement during concreting.

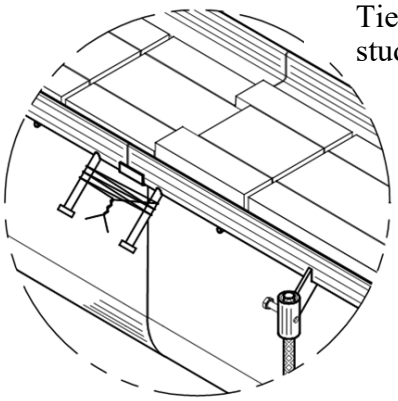


STEP 8: FINAL INSTALLATION

- Loosen the Hex Bolt and set the EconoDrain assemblies slightly higher than the finished elevation by sliding the unit upward until the tip of the rebar is 1/8" to 1/4" above the top of the Anchor Stand.
- Tighten the Hex Bolts securely.
- Remove the wood blocks from beneath the EPS Form.
- When all the units are set in this manner, tap the top of the rebar with a hammer to lower the unit assembly to the precise elevation. Use a level and string-line to assure correct alignment lengthwise as well as side to side.

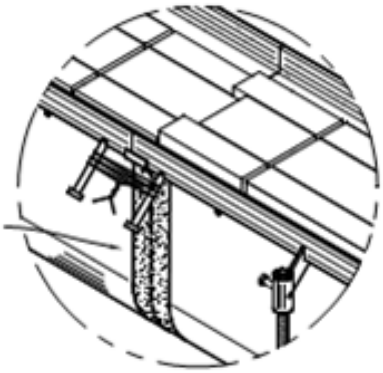


Final Adjustments - Wire Tie the Sections Together



Tie Wire sections together, loosely, using the anchor studs at each end of the frame assembly as shown.

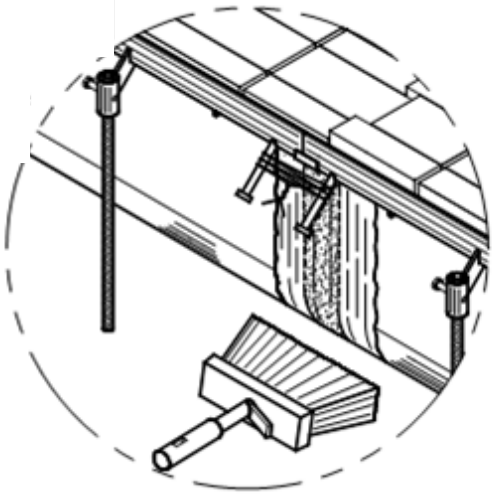
Duct Tape the EPS Form Joints



Apply duct tape to form joints. Apply tape smoothly avoiding wrinkles and press to assure adhesion to EPS Form.

Finish Applying Form Release at EPS Form Joints

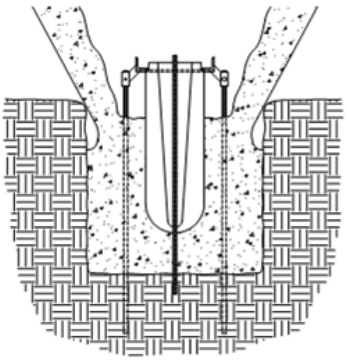
- A brush or sprayer may be used to apply form release around the joint areas left uncoated in Step 1.



THE FORM RELEASE MUST BE DRY PRIOR TO POURING CONCRETE!

Installing EconoDrain Form in the Deeper Portion of the System

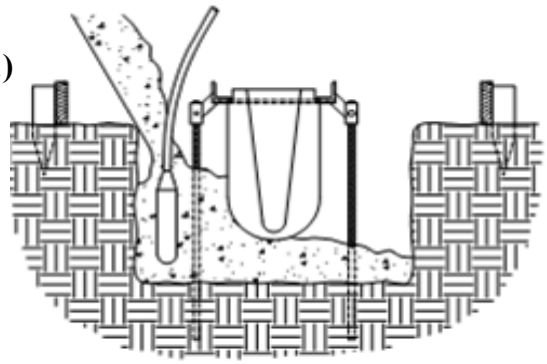
- Holes are provided through the center of the deeper EPS Forms for insertion of rebar. These holes maintain vertical alignment during initial concrete placement.
- The rebar is driven only a few inches into the ground or sub-base.
- Concrete must be filled on both sides of the form as evenly as possible. Multiple passes on either side are preferable while avoiding filling the trench from one side.
- See Page 10: How to Pour Concrete Around EconoDrain Trench Forming System.
- The rebar MUST be removed once the concrete/form pressure equalizes but prior to the concrete setting up.



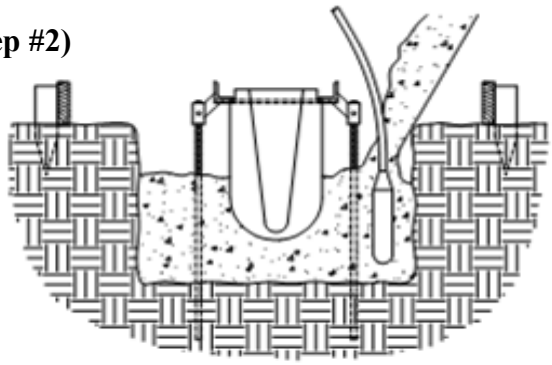
STEP 9: POUR CONCRETE AROUND ECONODRAIN SYSTEM

- Alternate pouring and consolidation on either side of the EconoDrain System Form until the desired elevation is reached as shown. Avoid concrete lift cold joints.
- All shipments include 1-1/2" x 1-1/2" x 48" long EPS Foam Grate Frame Inserts. Tape in steel frame rail to keep The rail clean from concrete during pour.

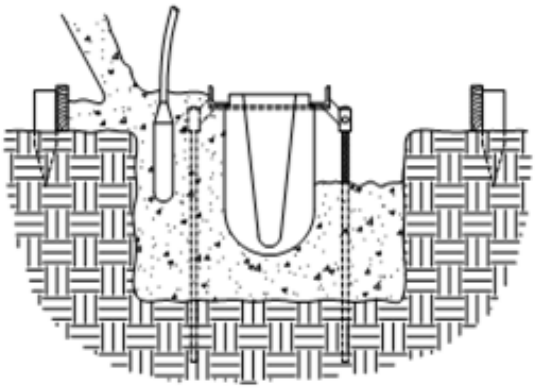
(Step #1)



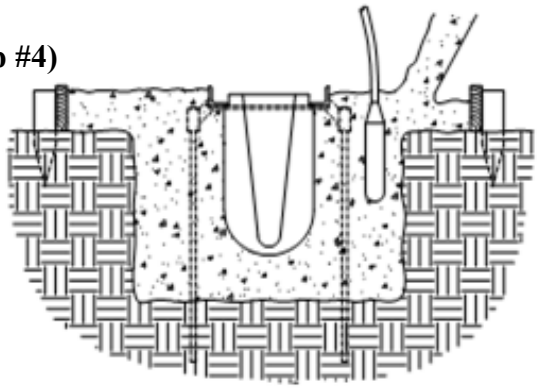
(Step #2)



(Step #3)

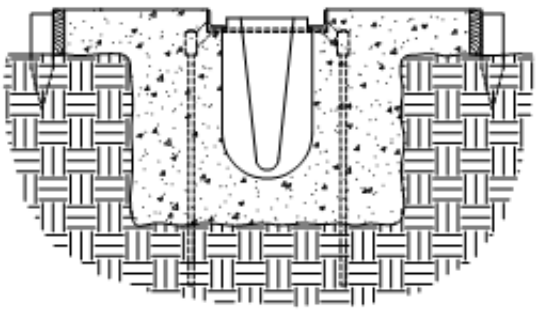


(Step #4)



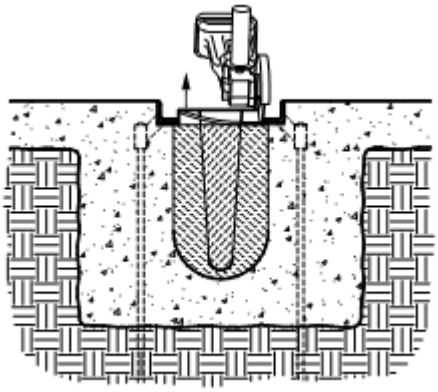
Finish Concrete

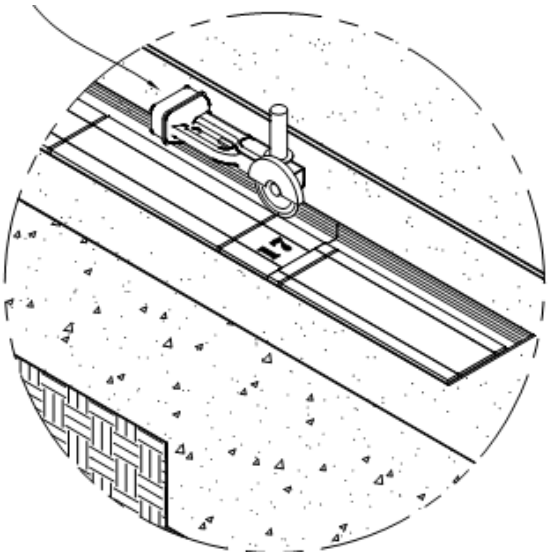
(Step #5)



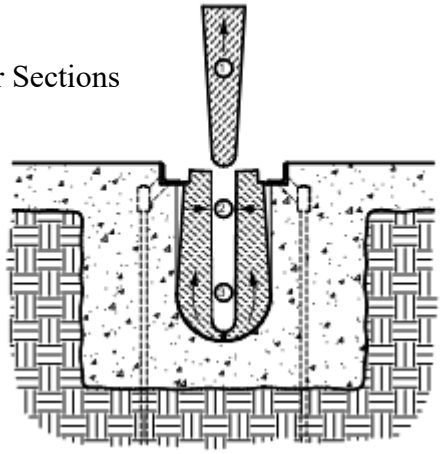
STEP 10: EPS FORM REMOVAL & CLEANUP

- Cut and remove spacer rods using a hand grinder or power saw equipped with a steel cutting abrasive blade.
- Cut the spacer rod adjacent to the frame angling the grinder / saw to avoid dulling the blade on the concrete wall
- For the Bolt-In-Place Spacer Bar Rail System, use a 1/2” socket to remove bolts.

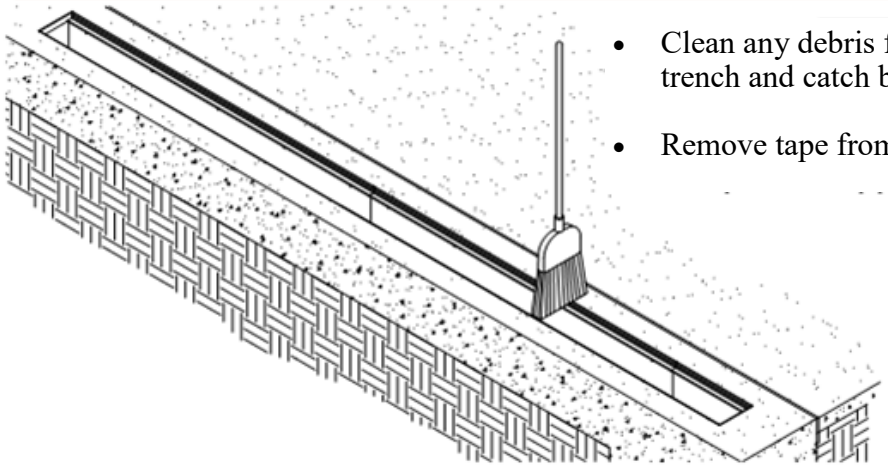




- Remove the EPS Form Center Wedge.
- Collapse the side walls.
- Remove the EPS Form Outer Sections from the trench.

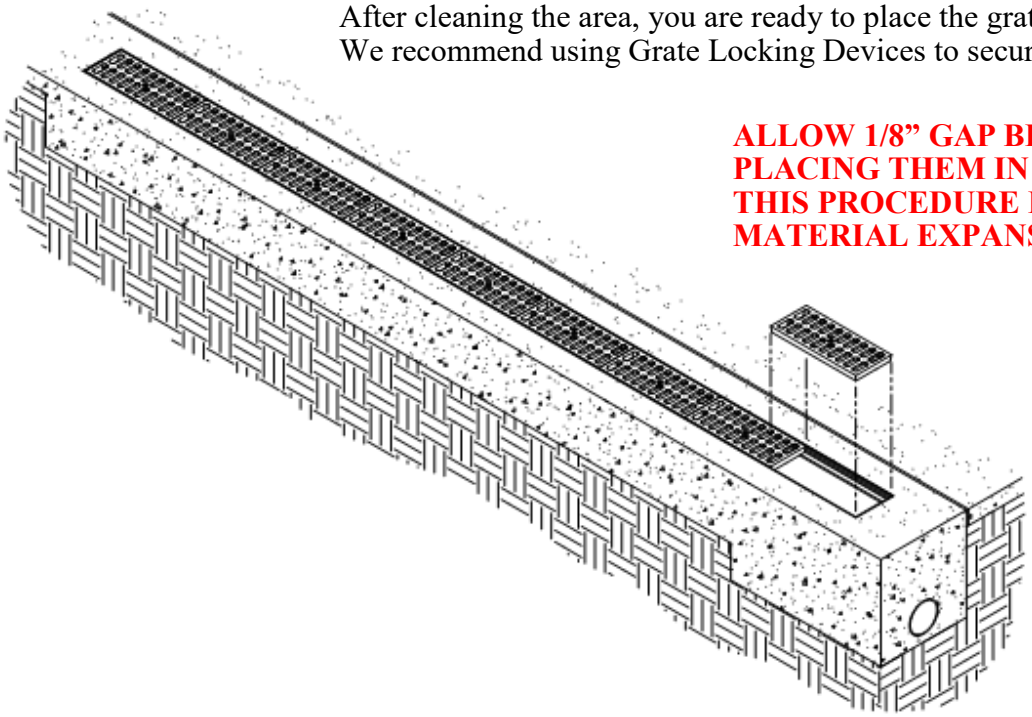


CAUTION: Do not use Gasoline to dissolve EPS. This violates EPA pollution policies and creates hazardous conditions due to fire and explosion potential.



- Clean any debris from the frame grate seating surface, trench and catch basins.
- Remove tape from PVC pipe ends.

STEP 11: GRATING & GRATE LOCKING DEVICE INSTALLATION



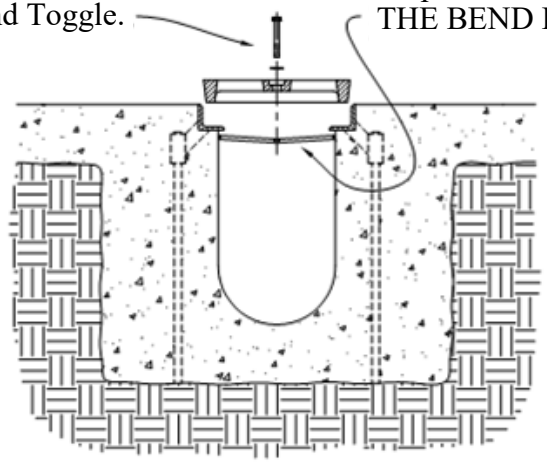
After cleaning the area, you are ready to place the grates in the trench.
We recommend using Grate Locking Devices to secure them to the rails.

ALLOW 1/8" GAP BETWEEN GRATES WHEN PLACING THEM IN THE FINISHED TRENCH. THIS PROCEDURE IS NECESSARY DUE TO MATERIAL EXPANSION AND CONTRACTION.

Grate Locking Device Installation

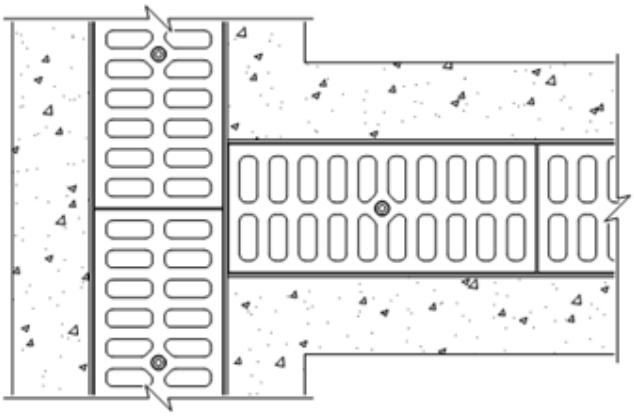
Bolt, Washer and Toggle.

Proper orientation of the Lock Toggle:
THE BEND FACED DOWNWARDS

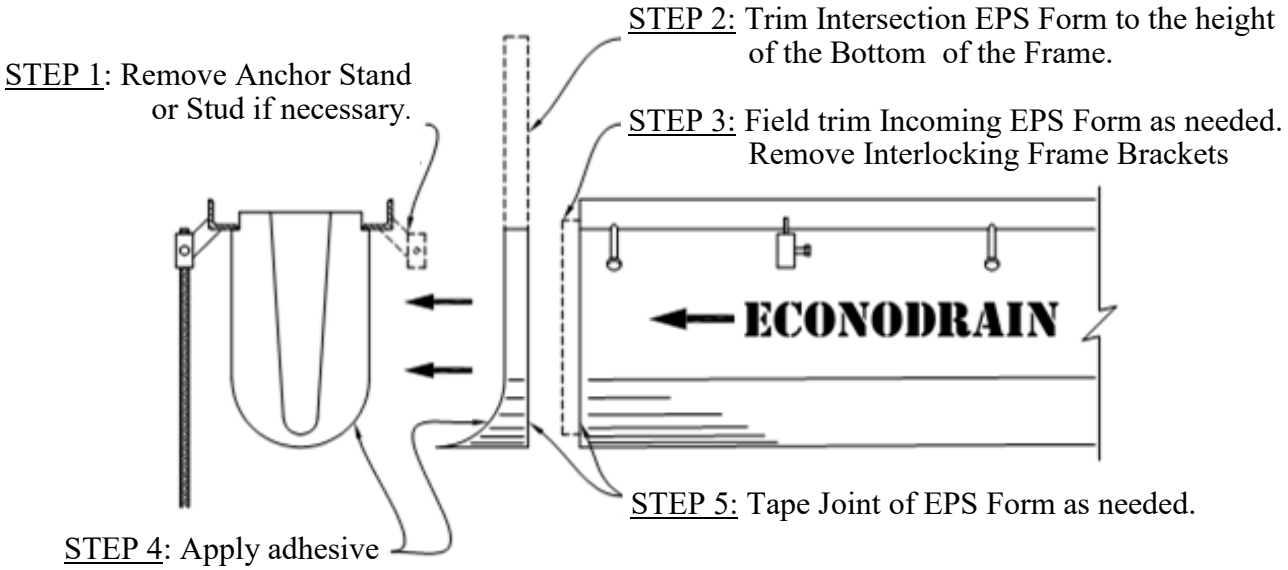


SPECIAL INSTALLATION: INTERSECTION KITS

- Intersection Kits are used for forming left, and right L's, T's and four-way trench intersections for all EconoDrain Series.



INTERSECTION FINISHED PLAN VIEW

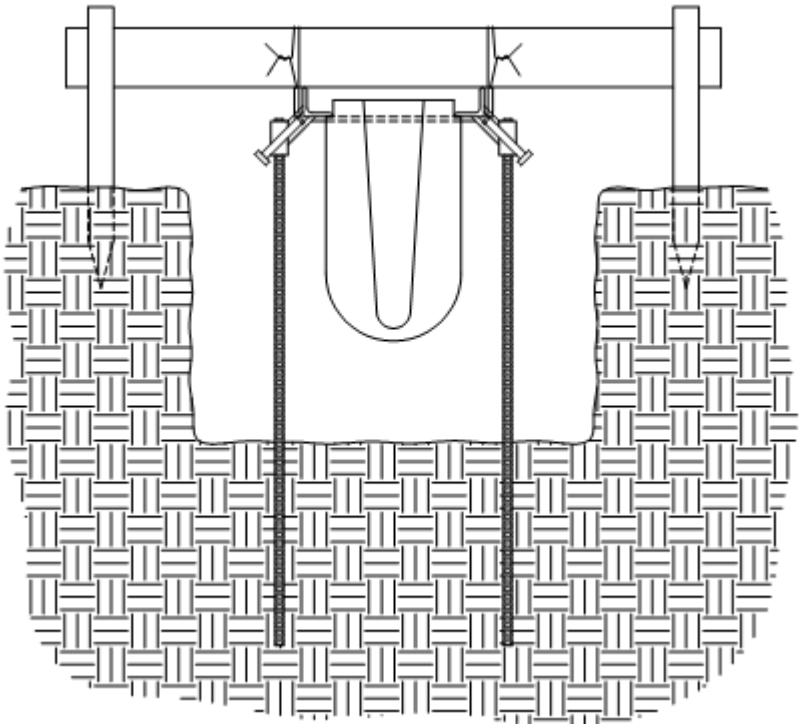


ELEVATION

INSTALLING ECONODRAIN IN POOR SUBGRADE CONDITIONS

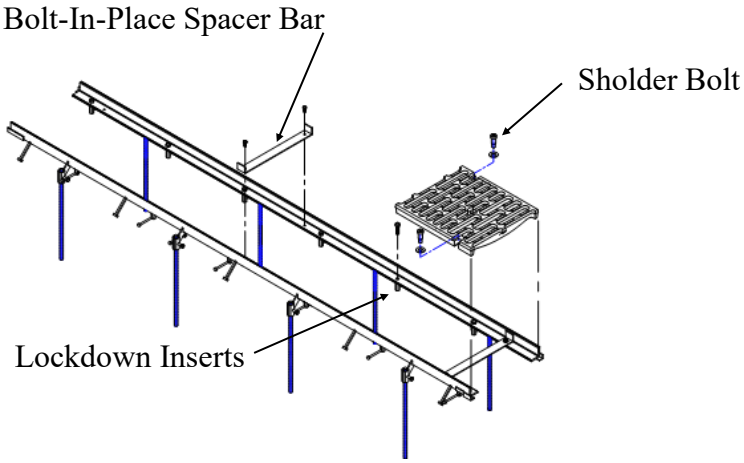
To further assure the EPS forms will not float in loose or very poor sub-surface conditions, concrete should be placed as follows:

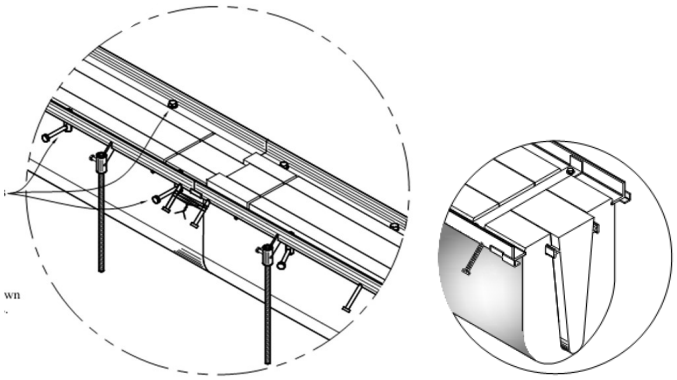
- Complete Steps 1 through 6 in the EconoDrain Installation Instructions. Then proceed as follows:
- Wire 2x4's across the top of the metal Frame Rail, as shown below.
- The 2x4 should be firmly anchored prior to concreting. Rebar, metal, or wooden stakes.
- Threaded concrete anchor bolts such as Tapcon™ brand or similar can be used to secure the free end of the 2x4 into adjacent concrete slab.
- A minimum of two (2) additional 2x4 reinforcement cross bars should be used per 8' EconoDrain Form Section in conjunction with previously driven rebar.



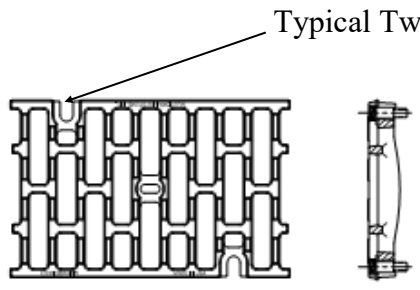
INSTALLING ECONODRAIN PT-2 TWO-POINT GRATE LOCKDOWN SYSTEM

- The EconoDrain PT-2 System is available in #8 and #12 Series.
- Two Point Lockdown or Center Locking Device with Bolt, Washer and Toggle
- Optional center Toggle Locking Device
- Follow the same installation instructions for standard EconoDrain
- Bolt-In-Place Spacer Bar Frame Assembly. See Page 5 for Assembly Instructions
- After the system is installed and concrete cured, remove temporary spacer bar, the EPS foam form and temporary Hex Bolt, then attach the grate with the permanent Shoulder Bolt and Washer.
- Two Point Lockdown Shoulder Bolt - 5/8” x 1-1/2” x 1/2-13 UNC Two (2) Bolts per Grate.
- Install the PT-2 Gratings and secure them, 5/8” x 1” Socket Shoulder Bolt and Washer.

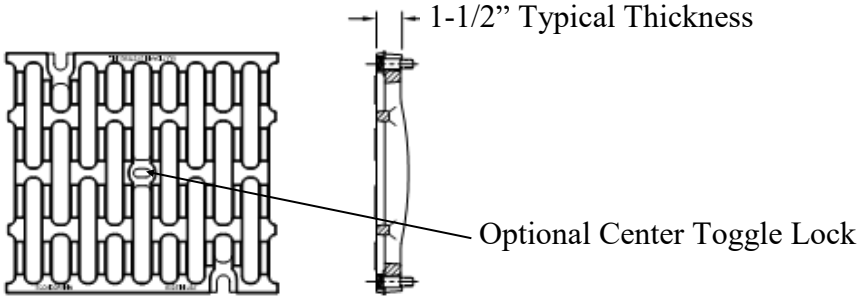




End View



Series #8 (Part# EG-1016-2DI-A
PT-2 Heavy Duty Grate
Two Point Bolt Down
Optional Center Toggle Lock



Series #12 (Part# EG-1-1416-2DI-A
PT-2 Heavy Duty Grate
Two Point Bolt Down
Optional Center Toggle Lock

EXAMINE GOODS BEFORE FREIGHT COMPANY LEAVES!

LOST OR DAMAGED GOODS

YOU MUST THOROUGHLY INSPECT THIS SHIPMENT AT THE TIME IT IS RECEIVED!!!!!!!!!!

This material was carefully counted, packaged, and properly loaded for shipment when accepted by the carrier.

In the event of any loss or damage, **the delivery receipt** MUST BE SIGNED AND NOTED AS SUCH.

You must notify your freight agent at once and request him/her to make an inspection report. This is absolutely necessary. If not done, the transportation company will not entertain any claim for loss or damage. Your acceptance of a shipment that is short or in damaged condition without proper notation is done at your own risk.

After an inspection report and claim have been submitted to the carrier, you **MUST RETAIN the material for possible carrier pick up, prior to the payment of the claim.**

This material was shipped **FOB** Shipping Point. Contrary to popular belief, **FOB (FREE on Board)** does not determine who pays the freight. **FOB** is the point where the title of the goods passes from seller to buyer. The carrier now acts as an agent for the buyer. In accordance with common law, the responsibility of the seller ceases at the time the carrier picks up the freight.

It is the legal duty of the consignee or the owner to accept damaged freight. Common law is quite clear on this subject. The fact that goods are damaged during transportation through causes for which the carrier is responsible does not justify the consignee in refusing to receive them; but he must accept the good, effect repairs and hold the carrier liable for the actual extent of the damage.

NOTES: Claims for loss or damage must not be deducted from our invoice, nor payment withheld while awaiting adjustment of such claim.

WE ARE WILLING TO ASSIST YOU IN EVERY POSSIBLE MANNER IN COLLECTING CLAIMS FOR LOSS OR DAMAGE IN TRANSIT, BUT THS DOES NOT MAKE US RESPONSIBLE FOR COLLECTION OF CLAIMS OR REPLACEMENT OF THE MATERIAL.

@AECDAILY

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