

3000 SERIES™

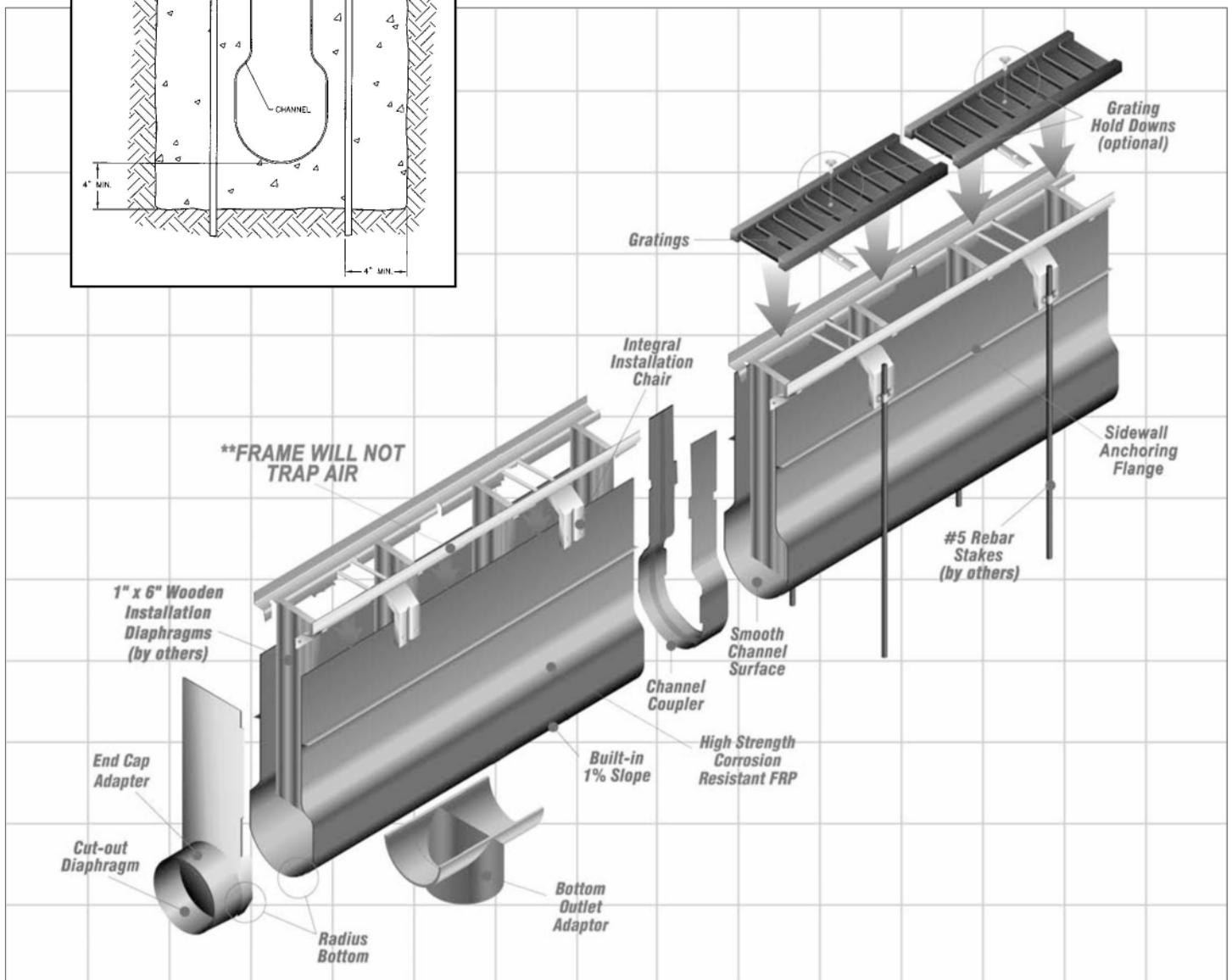
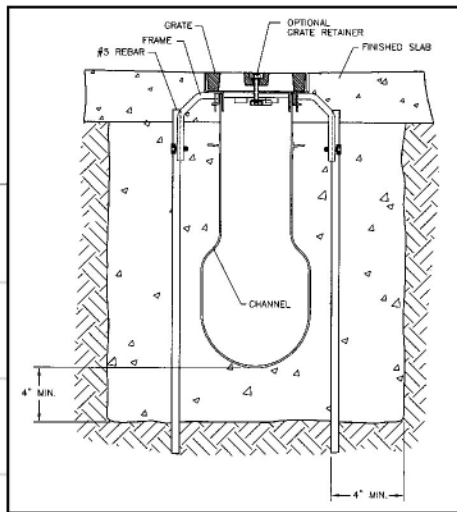
INSTALLATION GUIDE



Concrete encasement can be placed in a single lift!

Installation Benefits

- **3000 SERIES** installs quickly and easily without pre-assembly or hardware. A two person crew can easily install this drain using simple materials available at most job sites.
- Integral installation chair designed into the frame system holds the rebar to allow the entire assembly to be easily adjusted to grade.
- Installation rates of 100 linear feet per hour and more are possible. Quicker set-up and installation reduces overall costs.



Installation Tips

General Installation Tips

- Lubricate installation chair bolt threads with WD-40® before loosening.
- Ensure channel sidewalls do not hang up on the installation chair grooves during frame to channel fastening. If this occurs apply inward pressure against the channel body and "pop" the channel into the grooves. Check each frame as you go 4 places.
- During frame installation run dry wall screw heads in close but do not tighten. Tightening screws will cause frames to misalign.
- When cutting channel couplers to fit various channel sizes, cut off the coupler ends below the bottom most lip of the channel frame (channel sidewall height minus approx. 1 1/2") and then secure each end of the coupler to the channel with sheet rock screws.
- When installing end caps onto small channel sizes, remove the female (inside) portion that interferes with the frame. This can be done using the tools recommended in the **Tools Needed** list. Cut the end caps flush with the top of the frame to prevent wet concrete from entering the channel.
- Wrapping the gratings with one wrap of clear 4 mil plastic wrap keeps the channel and grate clean during concreting and allows the wood diaphragms to be easily installed. Clear, thin plastic wrap allows the installer to see through the grate openings to find the frame guide slots and also to drive the wooden boards through the plastic without cutting.

Parts Needed Per Channel

(Available from TDS)

- 1 Channel
- Channel coupler (1 per channel joint)
- End cap adapters (2 per run)
- 2 Frames
- 4 Grates

(Supplied by Others)

- 8 #5 Rebar stakes
- #6 x 1 1/4" long dry wall screws with fine threads (approx. 8)
- Clear 4 mil plastic wrap to wrap grates
- 8 standard 1" x 6" (3/4" x 5 1/2") planks x 24" long

Tools Needed *(Supplied by Others)*

- Grounding rod driver or sledge hammer
- Cordless drill
- Dry wall screw bits
- 1/2" nut driver bit
- WD-40® lubricating fluid
- 1/2" wrench
- One 6' lg. 2" x 4" or two 12' lg. 4" x 4" boards
- Small hack saw or straight blade fine tooth saw with spare blades



Recommended Installation Procedure

NOTE: BEGIN INSTALLATION AT OUTLET (DEEPEST) END

Step 1. Preparation

Adjust rebar straps on frames so the bolts are attached to the frame by only the first few threads. Straps should remain loose and able to easily move back and forth on the bolts. Build two reusable lumber spacers by cutting a 2" x 4" x 6' long piece of lumber into six equal 12" pieces. Nail pieces together to make two 4" x 4" x 12" units. Cut 1" x 6" lumber planks to appropriate lengths as needed for diaphragms (can trim for shorter channels or let stick through grates - See Step 19).

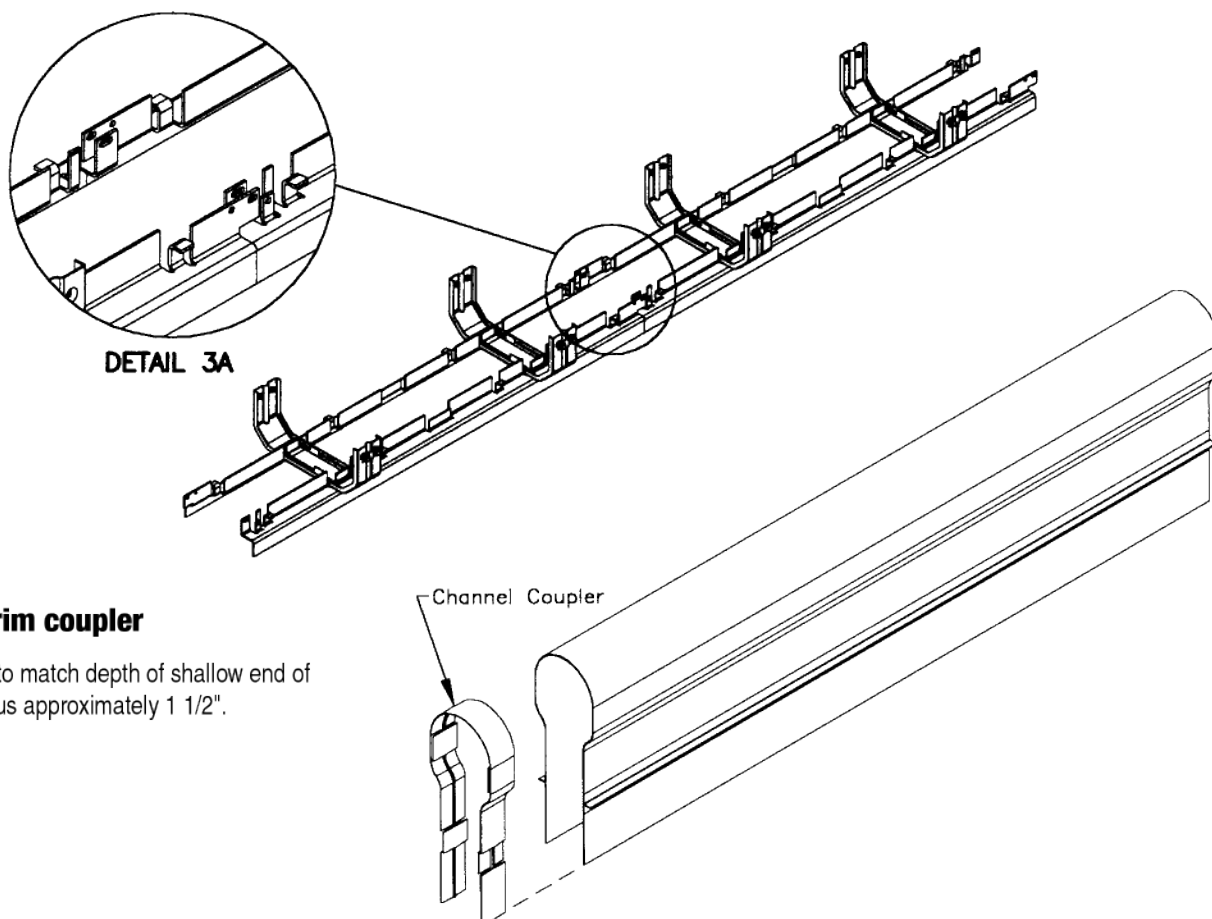
NOTE: 8 diaphragms are needed per channel.

Step 2. Excavation and System Layout

Excavate sub-base to allow a minimum of 4" of concrete underneath and on both sides of the finished drain system. For ease of installation, a 24" wide excavation is recommended. Slope the bottom of the excavation to approximately follow the slope of the **3000 SERIES** channels. It is often helpful at this point to set an alignment "string line" over the proposed trench run to indicate the top of slab elevation. Lay channels, frames, gratings, couplers and other accessories next to the excavation, lined up as they are to be put in the trench.

Step 3. Align & Assemble Frames

Lay two prepared frames end to end and face down. Align tongue of first frame with slot on second frame (see Detail 3A).



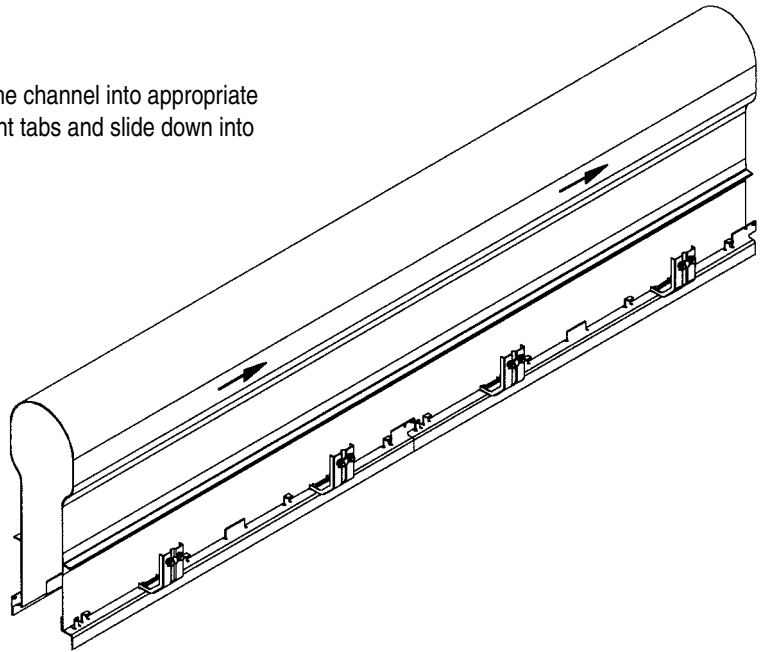
Step 4. Trim coupler

Trim coupler to match depth of shallow end of channel, minus approximately 1 1/2".

Recommended Installation Procedure

Step 5. Secure Channel to Frame

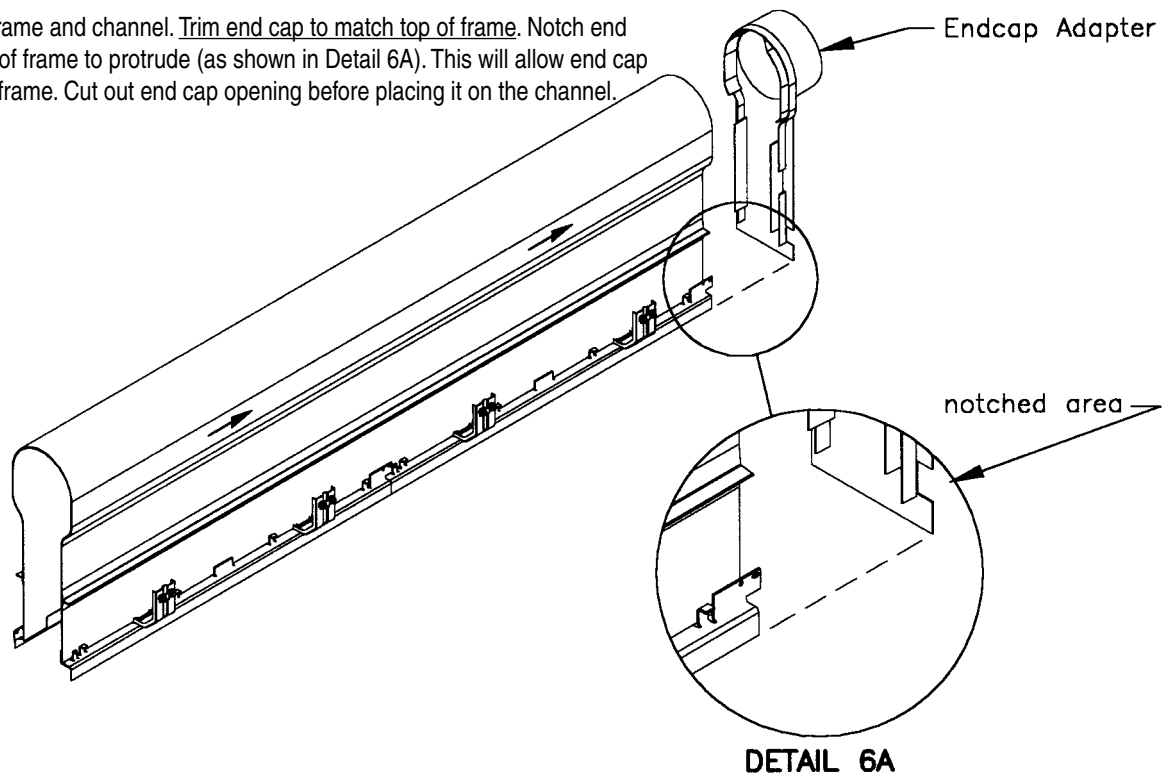
To attach frame to channel, align and place one wall of the channel into appropriate slot by allowing the wall to lay against the inner placement tabs and slide down into slot. Repeat procedure with other side of channel.



Step 6. Install End Cap (for connection to 8" PVC only)

NOTE: Skip this step if channel opens directly into a catch basin.

Align end cap with frame and channel. Trim end cap to match top of frame. Notch end cap to allow tongue of frame to protrude (as shown in Detail 6A). This will allow end cap to fit snugly against frame. Cut out end cap opening before placing it on the channel.

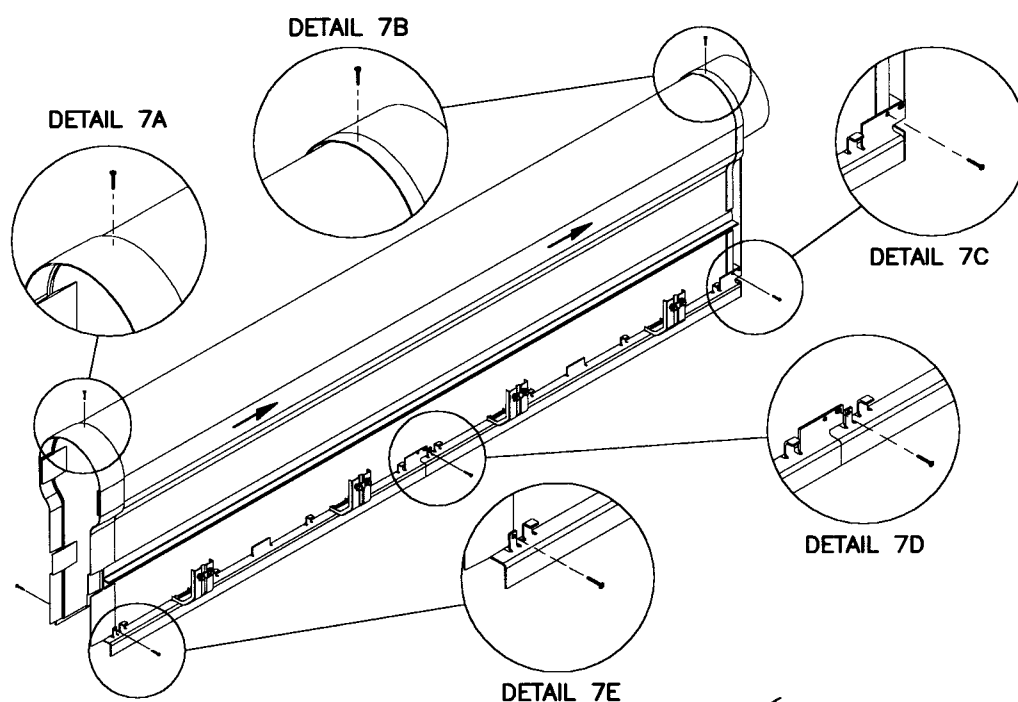


Recommended Installation Procedure

Step 7. Fasten End Cap and Coupler to Channel

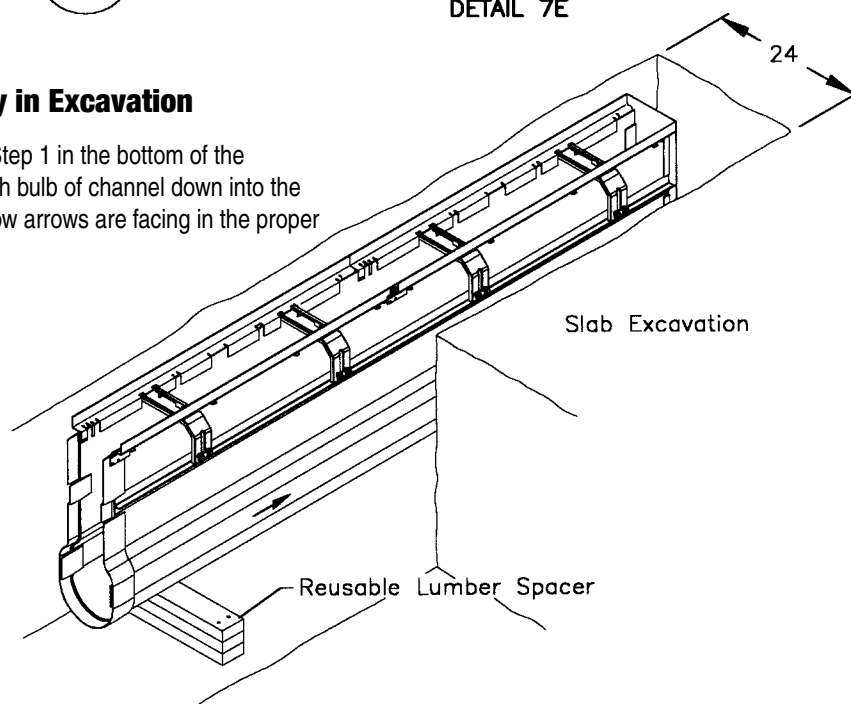
Press end cap and coupler on matching ends of channel. Fasten end cap and coupler to channel with three #6 x 1-1/4" long dry wall screws as shown (see Detail 7A and 7B).

Next, fasten frames to channel, end cap and coupler with six #6 dry wall screws (see Detail 7C, 7D and 7E). **Important Note:** Install sheet rock screws with heads close to frame. Do not tighten (frame installation only).



Step 8. Place Channel Assembly in Excavation

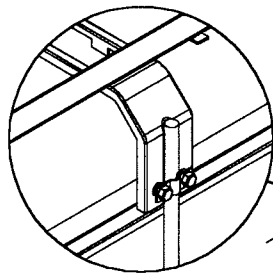
Lay the two reusable lumber spacers from Step 1 in the bottom of the excavation. Lower the channel assembly with bulb of channel down into the ditch on top of the wood. Be sure marked flow arrows are facing in the proper direction.



Recommended Installation Procedure

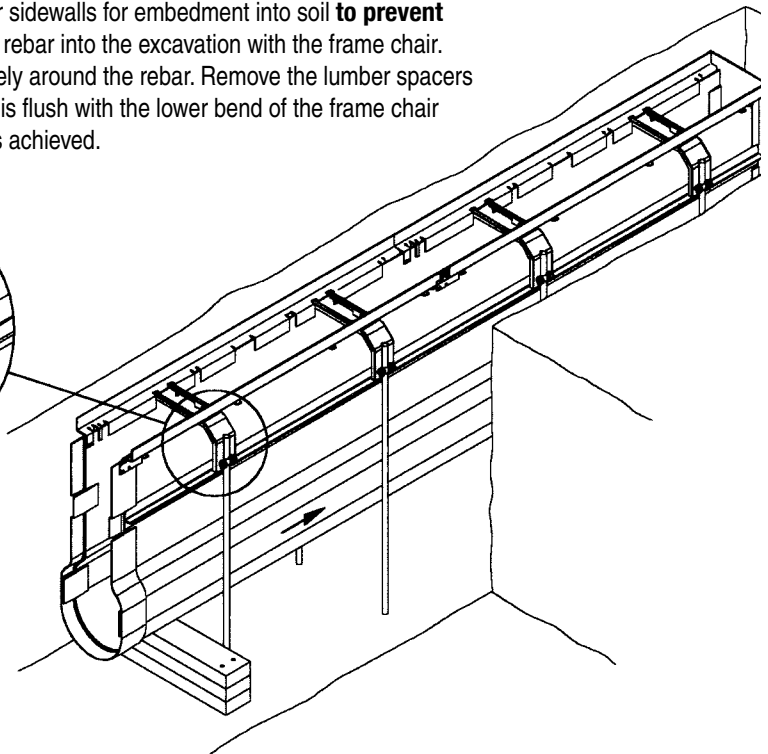
Step 9. Adjust to Top of Slab

Slide pre-cut #5 rebar between the straps and the frame chair sidewalls for embedment into soil **to prevent floating of channel as concrete is poured**. Align and drive rebar into the excavation with the frame chair. Adjust the channel to top of slab and tighten the straps securely around the rebar. Remove the lumber spacers and place the next channel. Be sure that the top of the rebar is flush with the lower bend of the frame chair (below the slab as shown in Detail 9A) when the final grade is achieved.



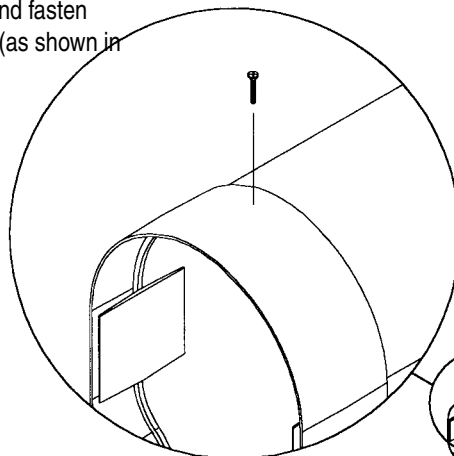
DETAIL 9A

CAUTION: Channel lifting forces created by placement of wet concrete are substantial. It is important the #5 rebar stakes penetrate the substrate deep enough to ensure channel anchorage. If uncompacted soil conditions exist, channel encasement should be accomplished in a 2-lift pour. The first lift should just cover the top of the bulb section.

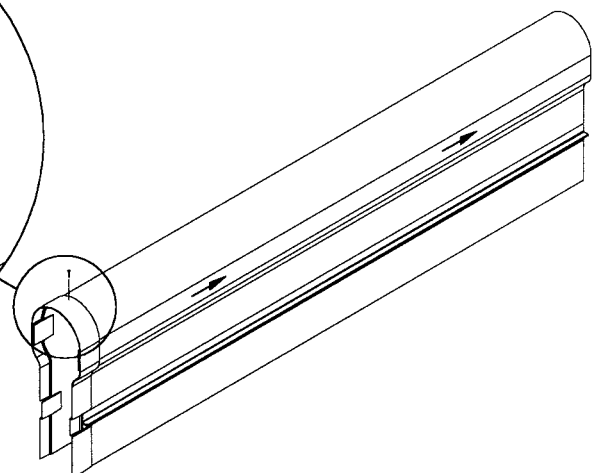


Step 10. Prepare Additional Channels

Trim coupler to match depth of shallow end of next channel. Press coupler onto channel and fasten with a #6 x 1-1/4" long dry wall screw (as shown in Detail 10A).



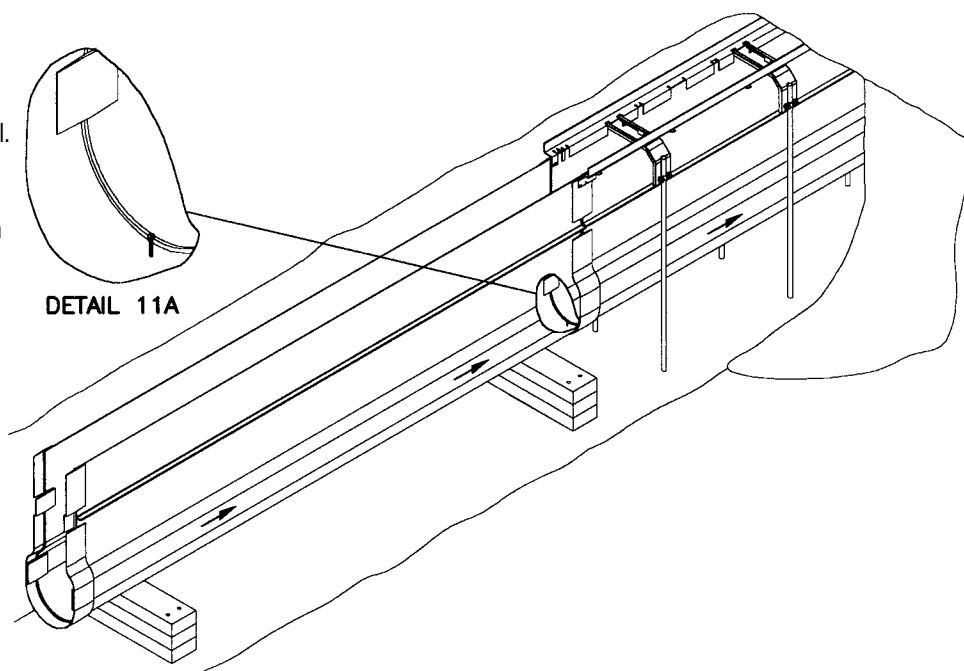
DETAIL 10A



Recommended Installation Procedure

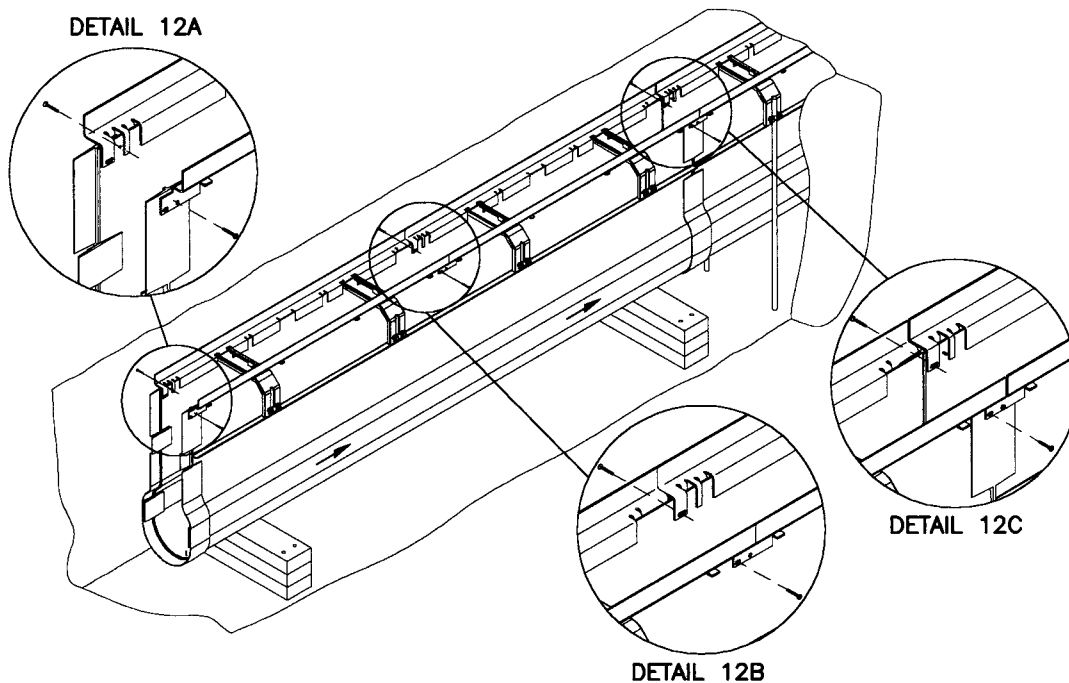
Step 11. Adding Next Channel

Move lumber from under previous channel and into position for placement of this channel. Place this channel into excavation with bulb down and marked flow arrows facing the outlet direction. Align end of new channel with channel coupler of previous channel. Insert next channel into coupler of previous channel and attach with dry wall screw.



Step 12. Place Frame Onto Channels

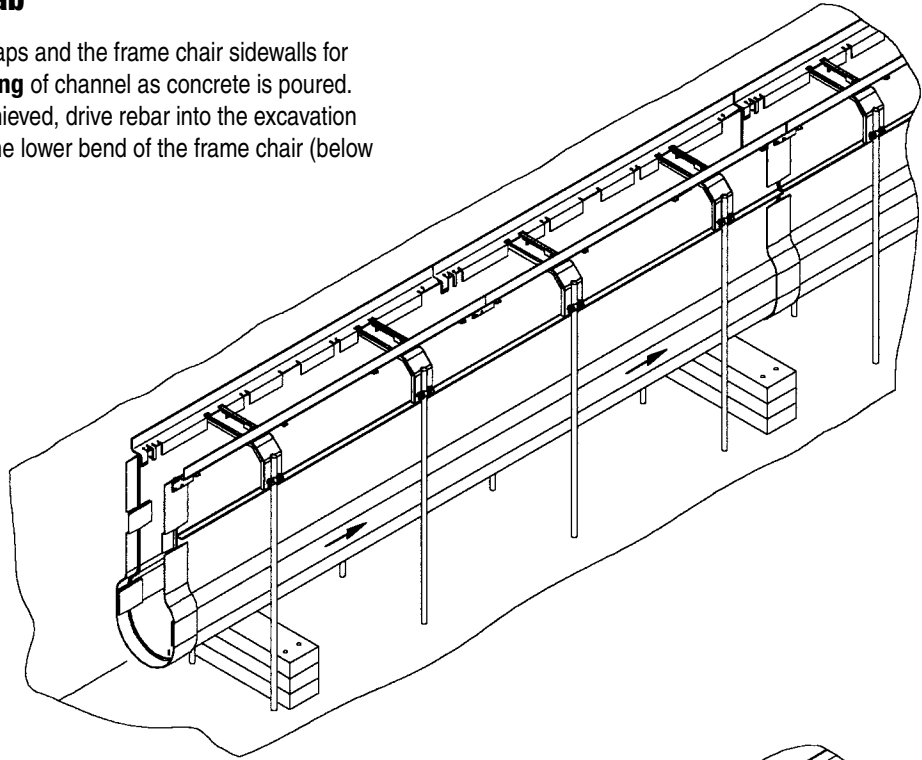
While holding channel steady, place frames onto channel ensuring channel is placed properly between frame tabs. Make sure mating tongues of the frame are able to be interlocked with new frame. Fasten frames to channel, couplers and previous channel's frame with six dry wall screws as shown in details. Do not tighten screws as this can cause misalignment of frames.



Recommended Installation Procedure

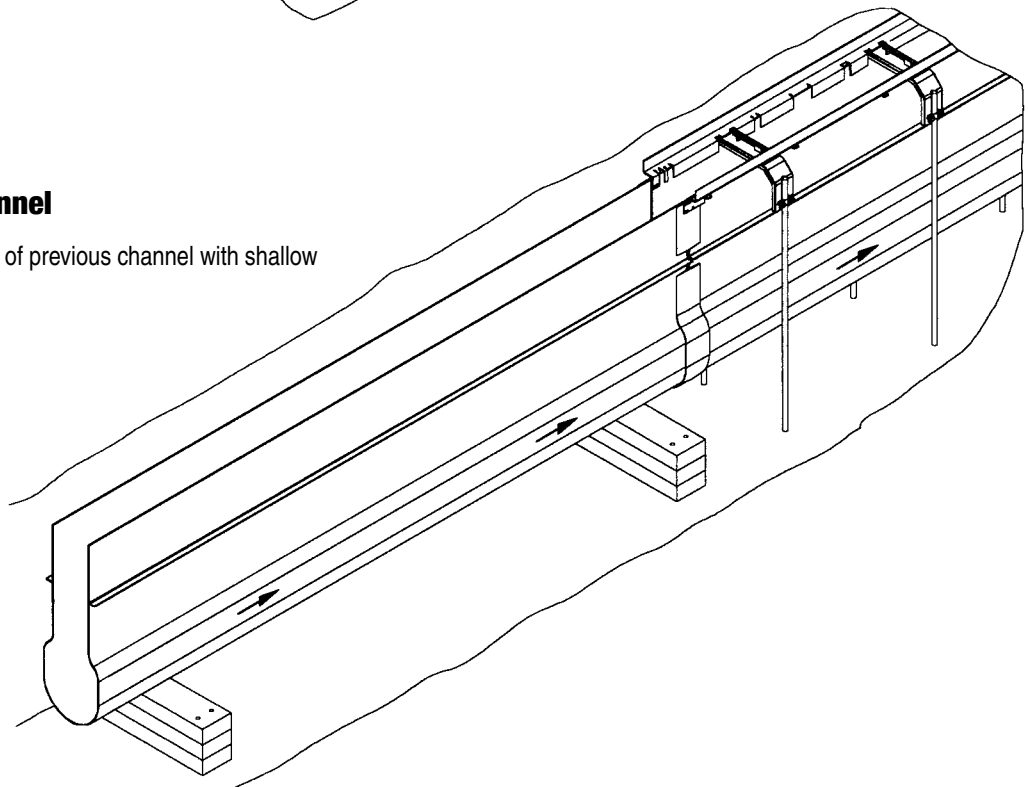
Step 13. Adjust to Top of Slab

Slide pre-cut #5 rebar between the straps and the frame chair sidewalls for embedment into soil **to prevent floating** of channel as concrete is poured. When proper positioning has been achieved, drive rebar into the excavation bottom until top of rebar is flush with the lower bend of the frame chair (below slab as shown in Step 9).



Step 14. The Last Channel

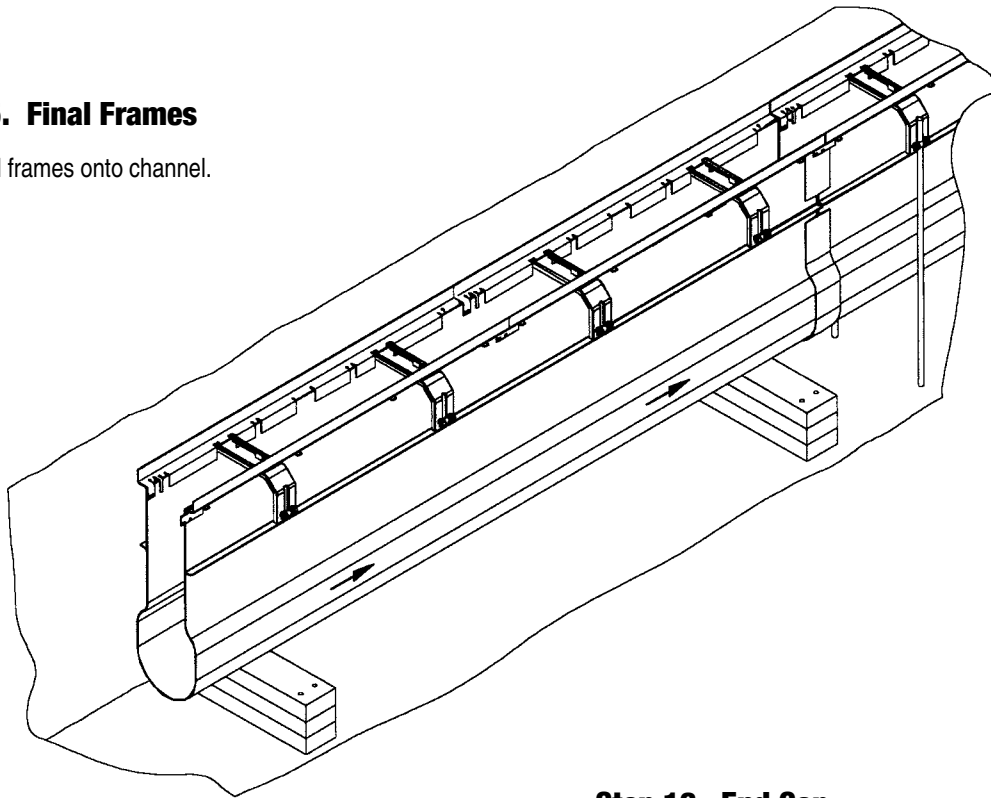
Insert last channel into coupler of previous channel with shallow end exposed.



Recommended Installation Procedure

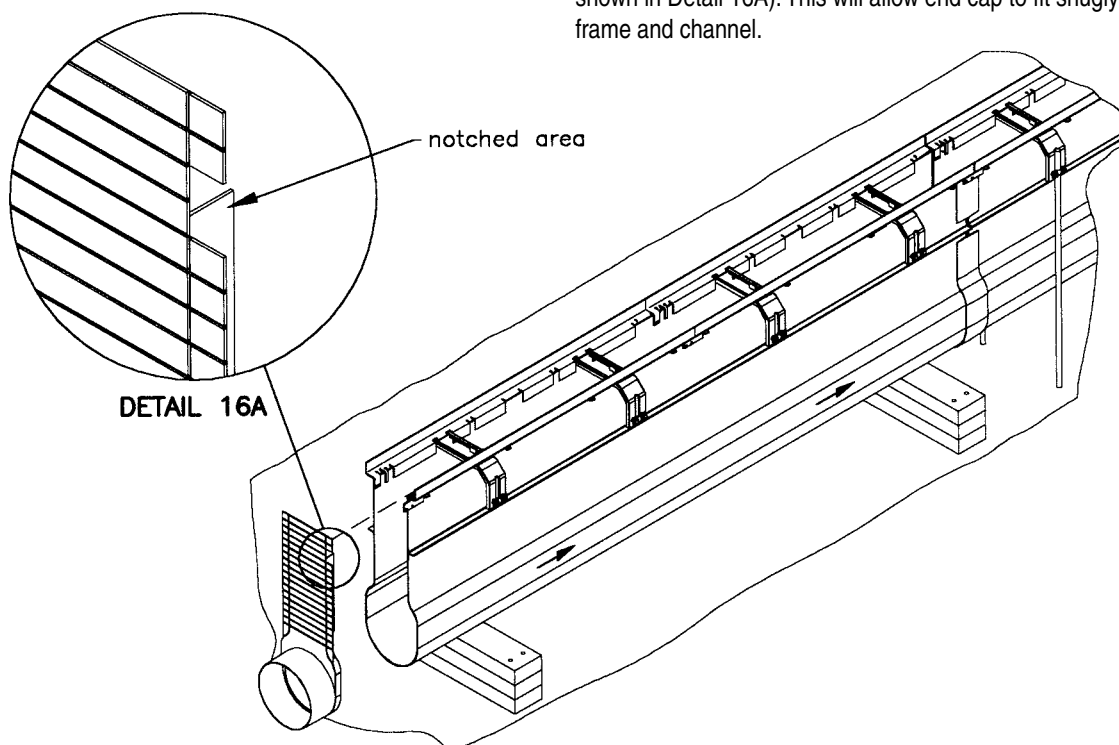
Step 15. Final Frames

Place final frames onto channel.



Step 16. End Cap

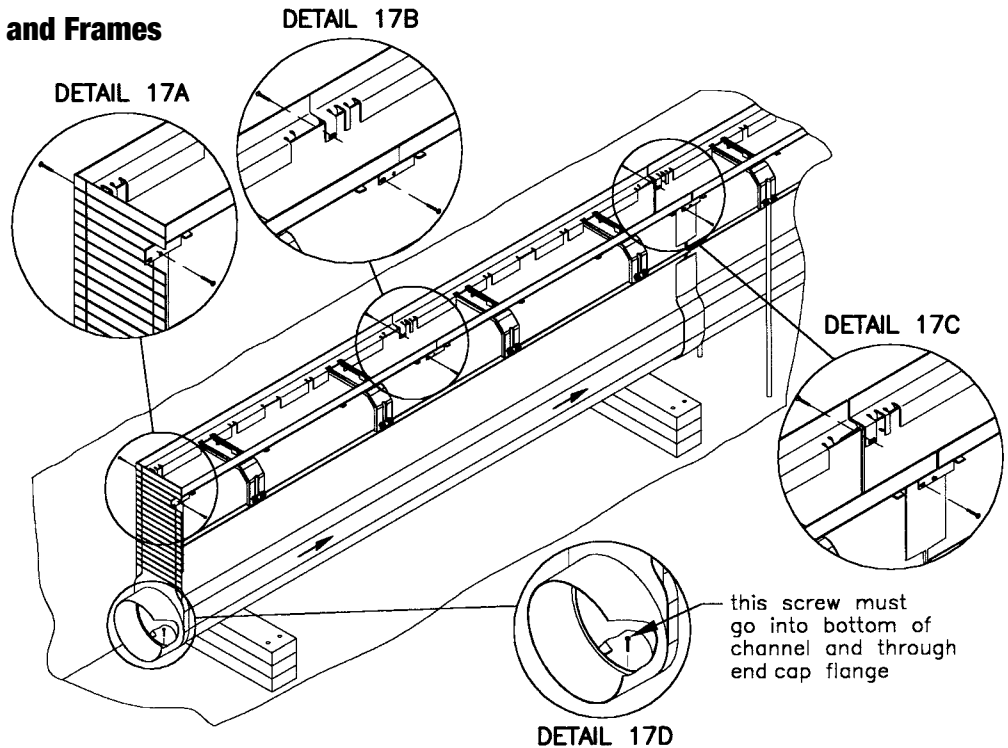
Align end cap with frame and channel. Trim end cap to match top of frame. Notch end cap to allow tongue of frame to protrude (as shown in Detail 16A). This will allow end cap to fit snugly against frame and channel.



Recommended Installation Procedure

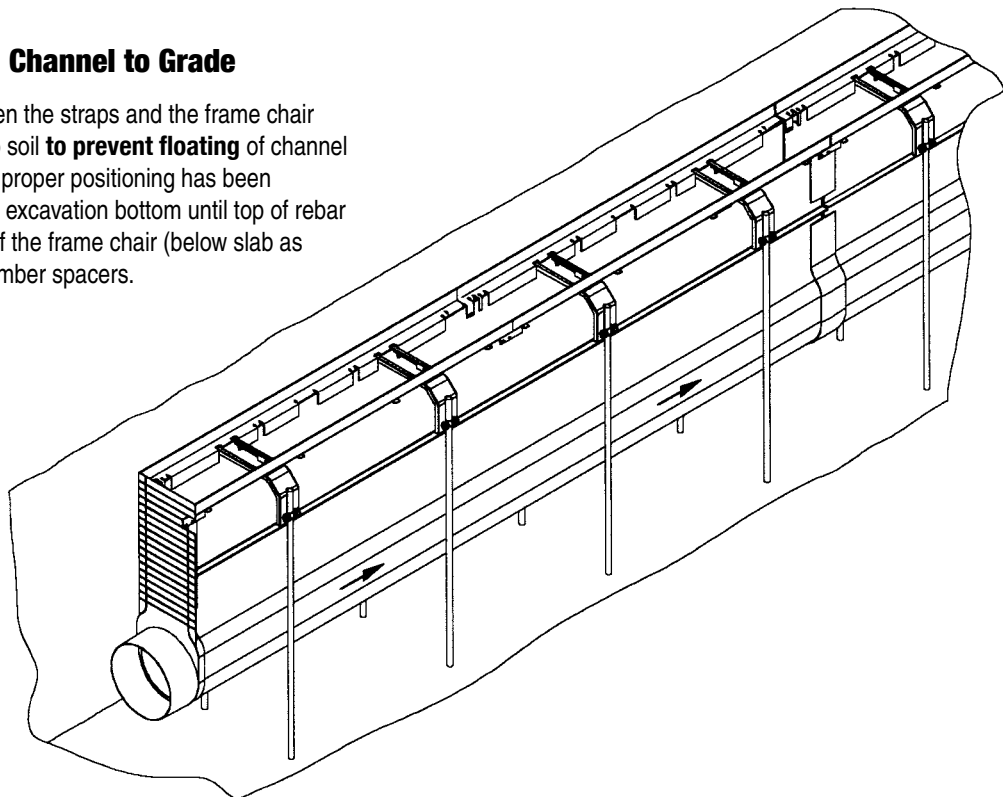
Step 17. Attach Final End Cap and Frames

While holding channel steady, press end cap snugly onto channel. Install #6 dry wall screws securing channel, frame and end cap. Also fasten the channel and end cap together by screwing a dry wall screw through the bottom of the channel and through the end cap flange.



Step 18. Adjust Final Channel to Grade

Slide pre-cut #5 rebar between the straps and the frame chair sidewalls for embedment into soil **to prevent floating** of channel as concrete is poured. When proper positioning has been achieved, drive rebar into the excavation bottom until top of rebar is flush with the lower bend of the frame chair (below slab as shown in Step 9). Remove lumber spacers.

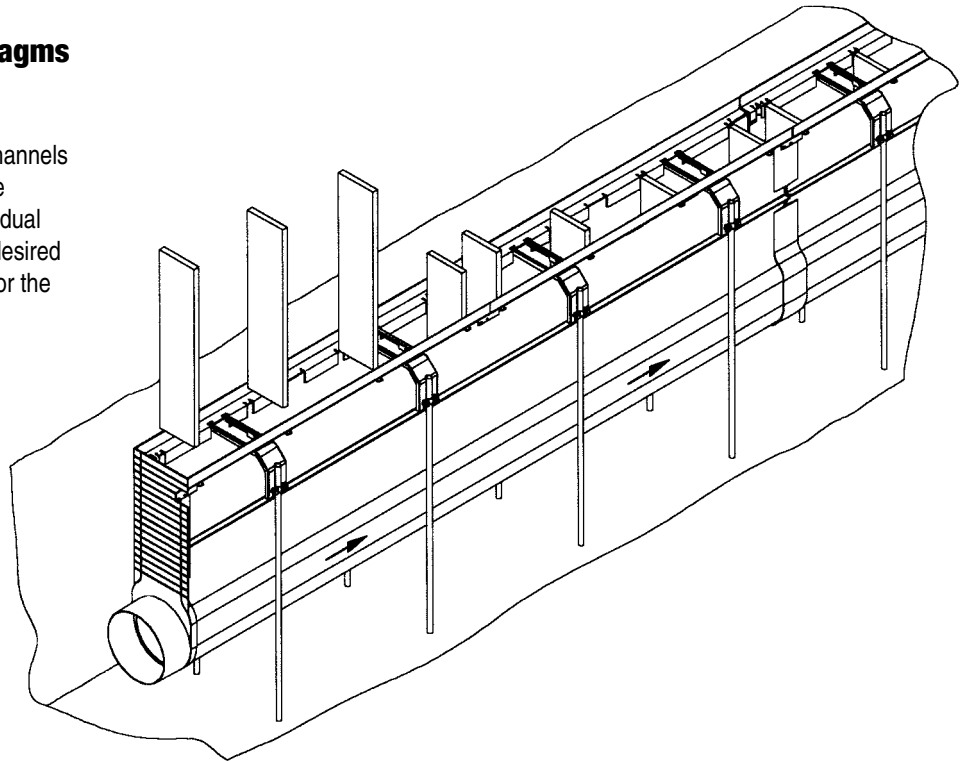


Recommended Installation Procedure

Step 19. Installing Wood Diaphragms

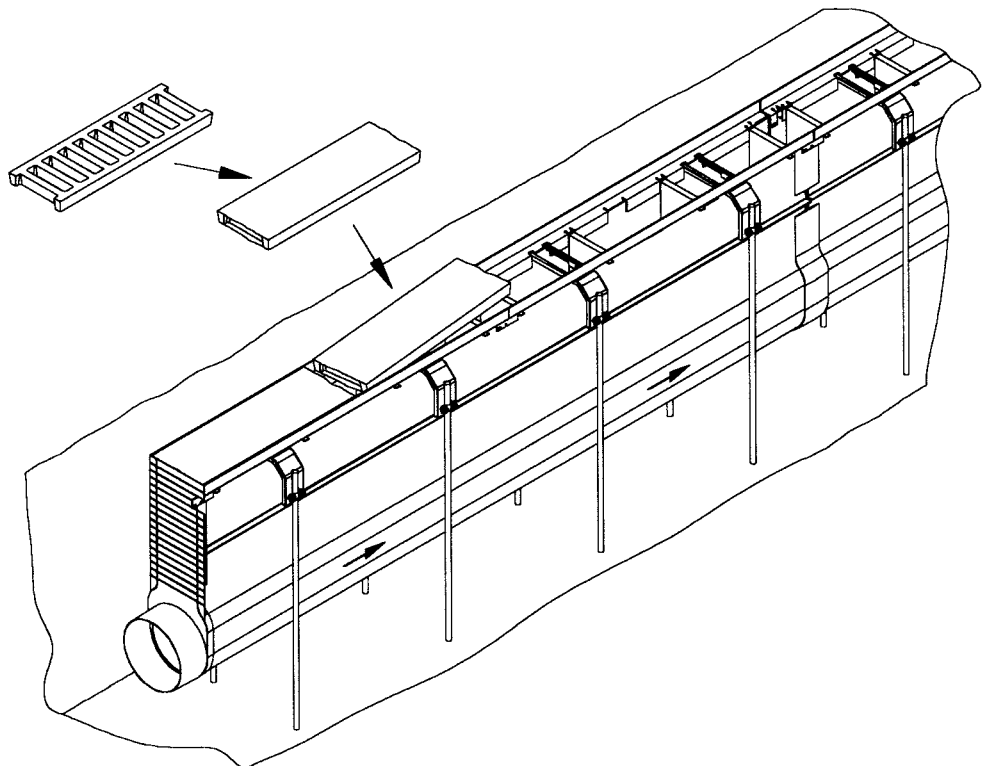
NOTE: *THIS IS REQUIRED!*

Slide lumber spacers (can trim for shorter channels or let extend through grates) into appropriate slots found in frame. All 4 slots in each individual frame must contain a diaphragm to ensure desired results. This procedure must be completed for the entire drain system.



Step 20. Wrap Grates

Wrap grates in plastic and place on frames of system before concrete is poured.



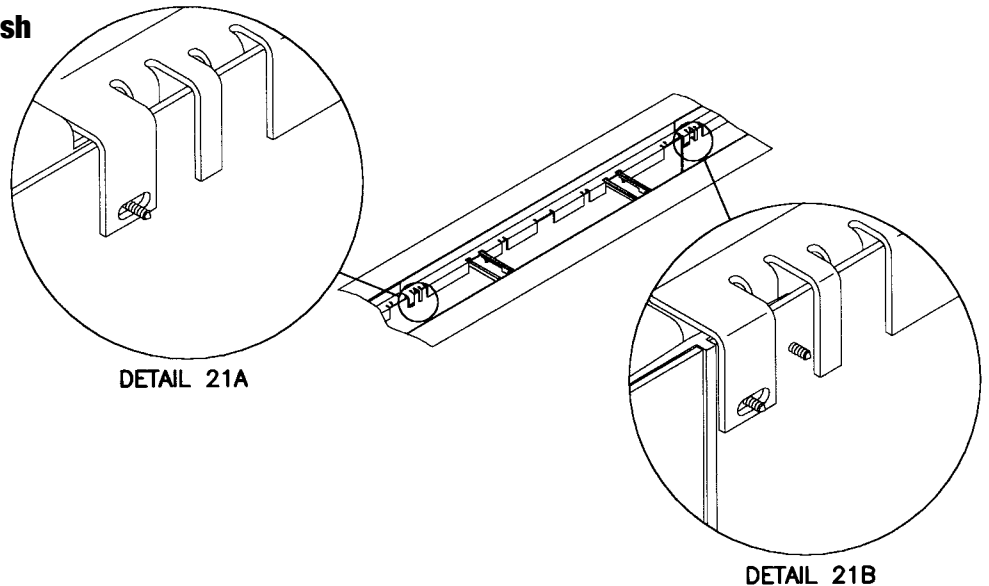
Recommended Installation Procedure

Step 21. Pour Concrete and Finish

Pour concrete and after the concrete has achieved sufficient cure, remove grates and diaphragms. Knock off protruding ends of dry wall screws (a hammer works well for this).

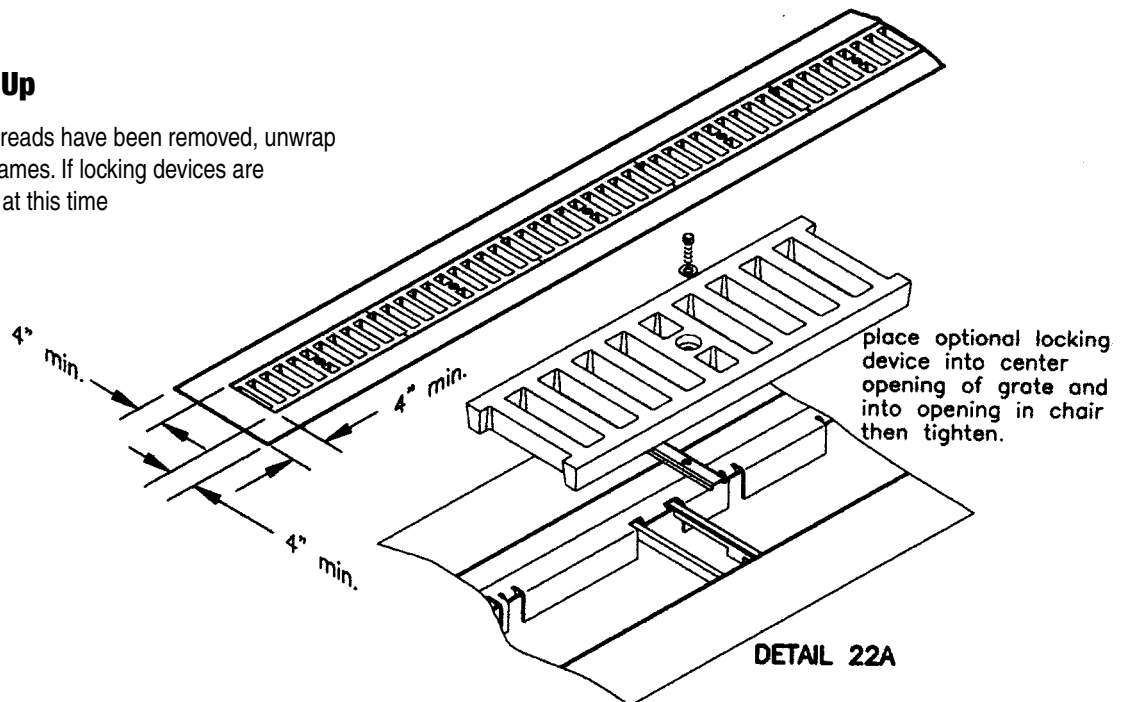
NOTE: Do not radius the edge of the concrete adjacent to the drain.

NOTE: Concrete encasement can be placed in a single lift.

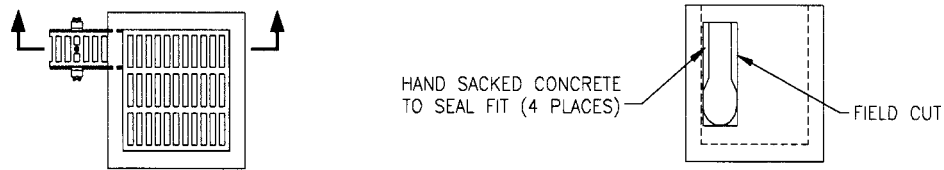


Step 22. Clean Up

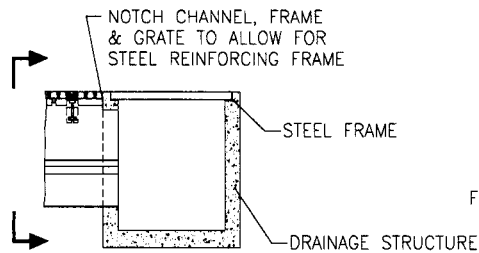
After excess screw threads have been removed, unwrap grates and place in frames. If locking devices are required, install them at this time (see Detail 22A).



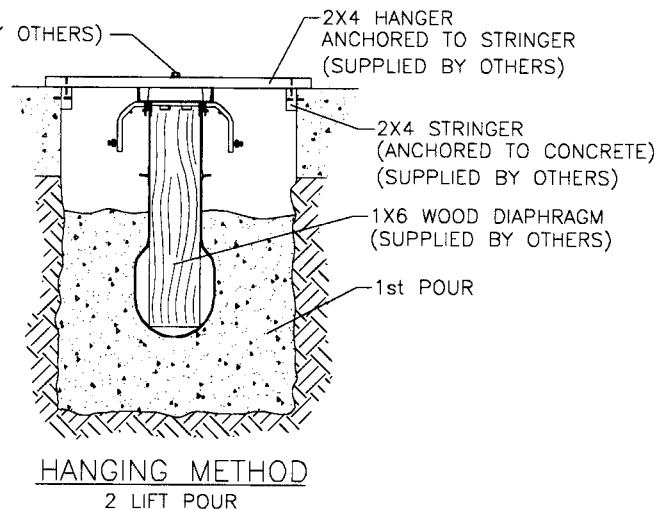
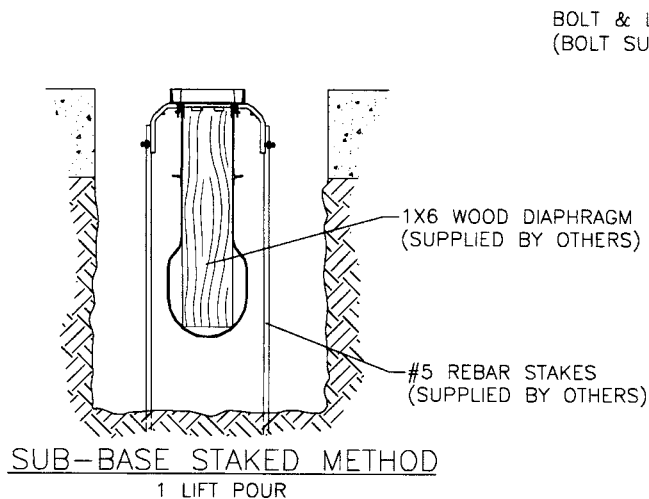
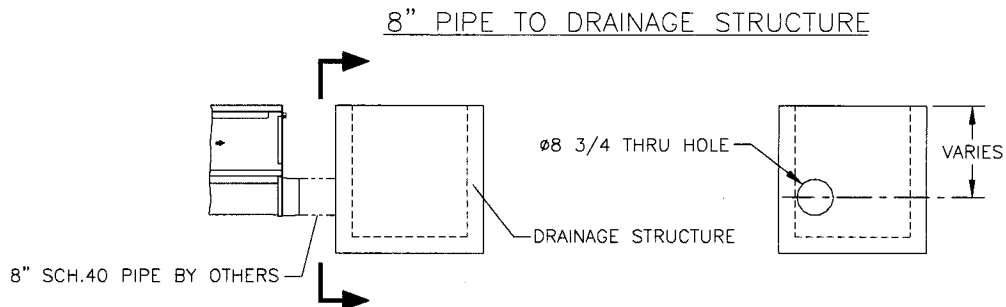
Typical Installation Details



RETRO FIT
CHANNEL NOT SHOWN FOR CLARITY

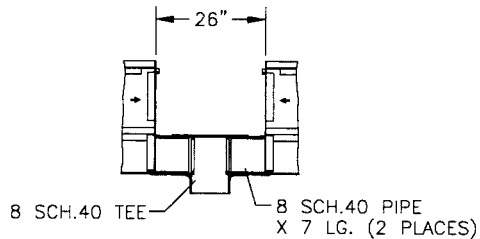


NEW CONSTRUCTION
CHANNEL NOT SHOWN FOR CLARITY



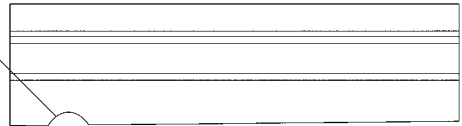
NOTE: GRATE WAS ASSEMBLED W/ 2X4, BOLT, WASHER & NUT PRIOR TO ATTACHING TO STRINGERS

Typical Installation Details



8" BOTTOM DRAIN DETAIL
PIPE & FITTINGS
SUPPLIED BY OTHERS

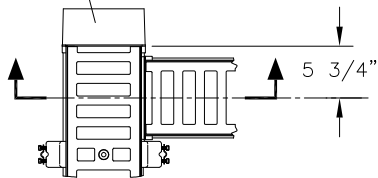
CUT OUT HOLE IN
CHANNEL USING
BOTTOM OUTLET
ADAPTER AS
A TEMPLATE



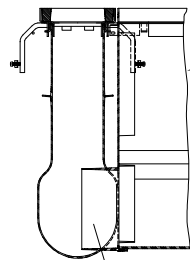
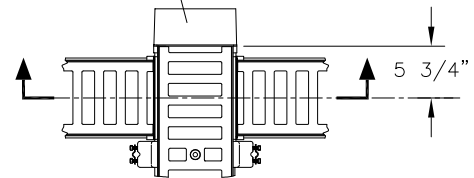
ATTACH BOTTOM OUTLET
ADAPTER TO CHANNEL WITH
SCREWS

**BOTTOM OUTLET
ADAPTER DETAIL**

TRIM INNER TAB OF
END CAP BACK TO 1"

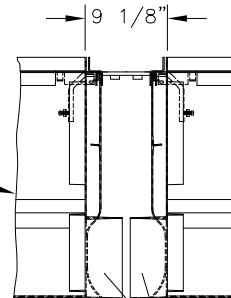


TRIM INNER TAB OF
END CAP BACK TO 1"



CHANNELS ENTERING THE SIDE
OF ANOTHER CHANNEL
MUST BE AT LEAST
2 CHANNEL SIZES SHORTER

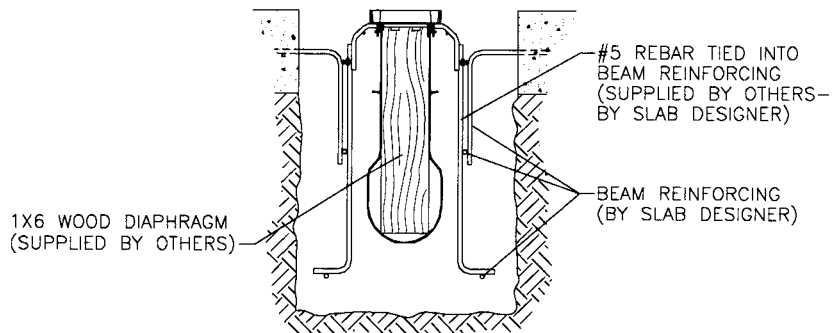
TRIM EXCESS PIPE
FROM END CAP
PRIOR TO INSTALLATION



TRIM EXCESS PIPE
FROM END CAPS
PRIOR TO INSTALLATION

CORNER CONNECTION DETAIL
SCALE: 3/4"=1'

"TEE" CONNECTION DETAIL
SCALE: 3/4"=1'



INTERNALLY SUPPORTED METHOD
1 LIFT POUR



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