



Installation Manual

Metric Oval Residential Swimming Pool

Radiant
A Latham Pool Company

IMPORTANT SAFETY INFORMATION

WARNING: DO NOT DIVE OR JUMP. IT IS NOT DESIGNED FOR DIVING OR JUMPING. YOUR POOL IS APPROXIMATELY 4' DEEP. IF YOU DIVE OR JUMP INTO YOUR POOL YOU RUN THE RISK OF PERMANENT INJURY OR DEATH.

Enclosed in the liner box is the safety envelope. The safety stickers must be installed as per instructions. Failure to properly install warning labels will void warranty. Alert all visitors and family of the risks associated with jumping and/or diving and point out all warning labels supplied. Failure to mount these safety labels may subject you to substantial liability in case of injury.

Your pool is designed for years of pleasurable, safe family fun. However, when used incorrectly, a swimming pool can be dangerous. To insure your pool is used safely you must observe the following safety precautions:

1. Do not dive, do not jump, no rough play, no running or pushing.
2. Do not walk on the top rail without deck and fence. It can be slippery and is not a walkway.
3. Be sure to install all safety labels provided with your pool according to the safety instructions.
4. Keep a 50' safety rope with a flotation buoy with an outside diameter of 15" accessible in a prominent area by your pool.
5. Post near all entrances to the pool area a list of telephone numbers for the following:
 - a. Local police
 - b. Local fire department
 - c. Local rescue unit
 - d. Local ambulance service
 - e. Local hospital
 - f. 911 emergency number, if available
6. Provide fencing or an enclosure which is independent of the house as a closure around the entire pool area. The fencing must be made of durable material, a minimum of 4' high from ground level and with closures with self-latching locks to make the pool inaccessible to toddlers and uninvited guests. Make sure the gate is always closed. Be sure to follow local building code requirements for load capacity and fencing if using an aftermarket or home built deck.
7. Check with your local town or municipality in regard to obtaining a building permit and/or an electrical permit. The installer shall follow the regulations for set backs, barriers, devices and other conditions.
8. All electrical outlet connections should be a minimum of 5' from the outside perimeter of the wall of the pool. From 5'-10' there should be either a fixed connection (outlet box) or twist lock connection with a GFCI. Connect power cords to a 3-wire grounding-type outlet only.
9. Severe electrical shock could result if you install your pump or filter on a deck. They could fall into the water causing severe shock or electrocution. Do not install on a deck or other surface at, above or slightly below the top ledge of the pool.
10. Do not sit, stand or climb on the pump and filter or any part of the pool structure. Components such as the filtration system, pumps and heater must be positioned so as to prevent their being used as a means of access to the pool by young children.
11. Never drink alcoholic beverages or use any intoxicants which could hinder your judgment and reflexes.
12. Never use the pool alone. All children must be supervised continuously.
13. Do not use pool if bottom is not clearly visible. At night, sufficient lighting must be available. It is the pool owners' sole responsibility to provide adequate lighting for the pool bottom, safety signs and walkways, which exceeds minimum standards of the IES of North America.
14. Be sure that all toys, chairs and tables or similar objects that a young child could climb on be at least 4' from the pool.
15. Do not use pool during electrical or rain storms.
16. See available Association of Spa and Pool Professionals (APSP) publications for more tips on pool safety.

INTRODUCTION

The Installation of the Radiant Metric Series Oval pool is not hard, nor complicated. Although, installation conditions might differ from this guide, it is important to consult with the manufacturer before making any changes that might disturb the integrity of the pool. Failure to follow these instructions will void all warranties. Read and follow all manufacturers' instructions including accessories such as pumps, filters, skimmers prior to starting.

Before you start, check your packing list to confirm that you have the correct number of parts and components. The manufacturer reserves the right to revise, change or modify construction of its pools. See packing list for pool components included for your pool. If there are any missing or damaged components, please contact your retailer for replacement.

While all Radiant pools are designed to meet or exceed industry recommended safety standards (*ANSI/APSP-4 and 5 American National Standards for Residential Inground Swimming Pools*), special attention must be paid to all installation procedures that the installer performs and controls. Spend time to ensure that the entire pool framework is **perfectly level and square**. Uneven pools place extreme pressures on the pool walls. An earth mound or pool cove must also be installed. This keeps the pool liner from creeping out from under the pool wall. Be sure to follow these instructions. Improperly installed pools can rupture, allowing thousands of gallons of water to rush out, causing extensive property damage and injury to anyone in its path. As with any major home project, a homeowner is responsible for following all local laws, ordinances and codes. Electrical grounding of swimming pool is required. National and local codes must be followed. A checklist is provided below as a guide for these considerations.

✓ HOMEOWNER CHECKLIST	
	Obtain building permit if required.
	Local building and zoning requirements
	Electrical and grounding requirements
	Have ground tested for stray electricity
	Proper backfill and drainage
	Fencing requirements
	Backwash (waste water) requirements
	Check availability of utilities.
	Call before you dig (www.digsafe.com)

With proper installation, care and maintenance, this Radiant Metric Series Oval Residential Swimming Pool from Radiant Pools will provide a lifetime of fun and relaxation for the homeowner.

Radiant Pools offers a non-prorated, lifetime guarantee on the entire pool against manufacturing defects. Walls, structural supports and channels are guaranteed against defects due to faulty workmanship or defects due to manufacturing for as long as you own your home. Compare our warranty with any other pool. Engineering, innovation and efficiency make the difference.

IMPORTANT: BEFORE YOU BEGIN

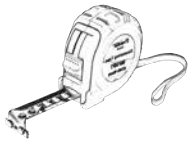
The selection and preparation of the pool site is your responsibility. The manufacturer can only suggest the proper techniques, indicate the important considerations and emphasize the precautions and cannot be held responsible for damages to your pool that may result from failure to carefully follow all pool specifications.

All Radiant Pool components are engineered to provide a precise fit. It is very important to handle all components with care. Prior to assembly, all pool components should be free of sand, mud, dirt and debris of any kind.

We recommend a small broom or shop-vac to maintain a clean track system throughout the installation process. In addition we recommend a damp cloth be available in the event that any dirt or debris finds its way to the panel surface.

TOOLS NEEDED

Tape measure, 100ft.



Orange Marking
Spray Paint

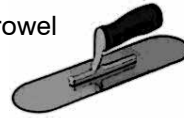


Metal File



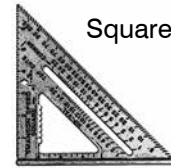
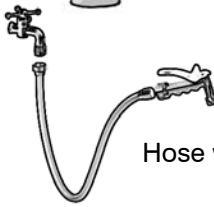
Transit/Laser Level

Pool trowel



Utility Knife

Hose with spray nozzle



Square



String

Level



Duct Tape



Step Drill Bit



Cloth rag



Cooking Spray



Rubber Mallet

Long handled
pointed shovel



Short handle
square shovel

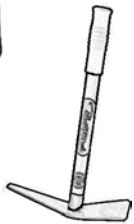


Socket Set



Hacksaw

Pick or
Mattock



9/16" Open End Wrench



Power Drill



5/16" Hex nut
driver bit



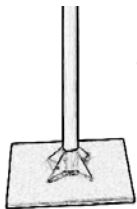
Screwdrivers,
Flathead and Phillips



7/16" and 1/8" Drill bits



Tamper,
10 or 12 in. Square



14" Channel Locks



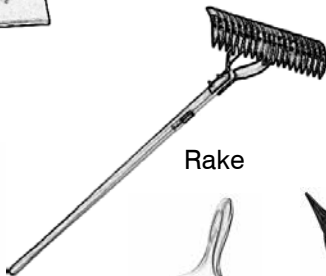
Extension Cord



PVC Pipe Cutter



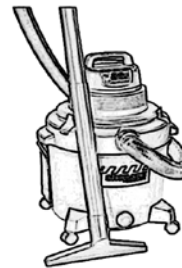
Rake



Foam
Sealant
(Great Stuff)



Shop Vac



Masonry Sand



Hand Broom



Wheelbarrow



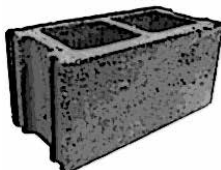
Rebar



2" Patio Block



8" Concrete Block



Soft bristle broom



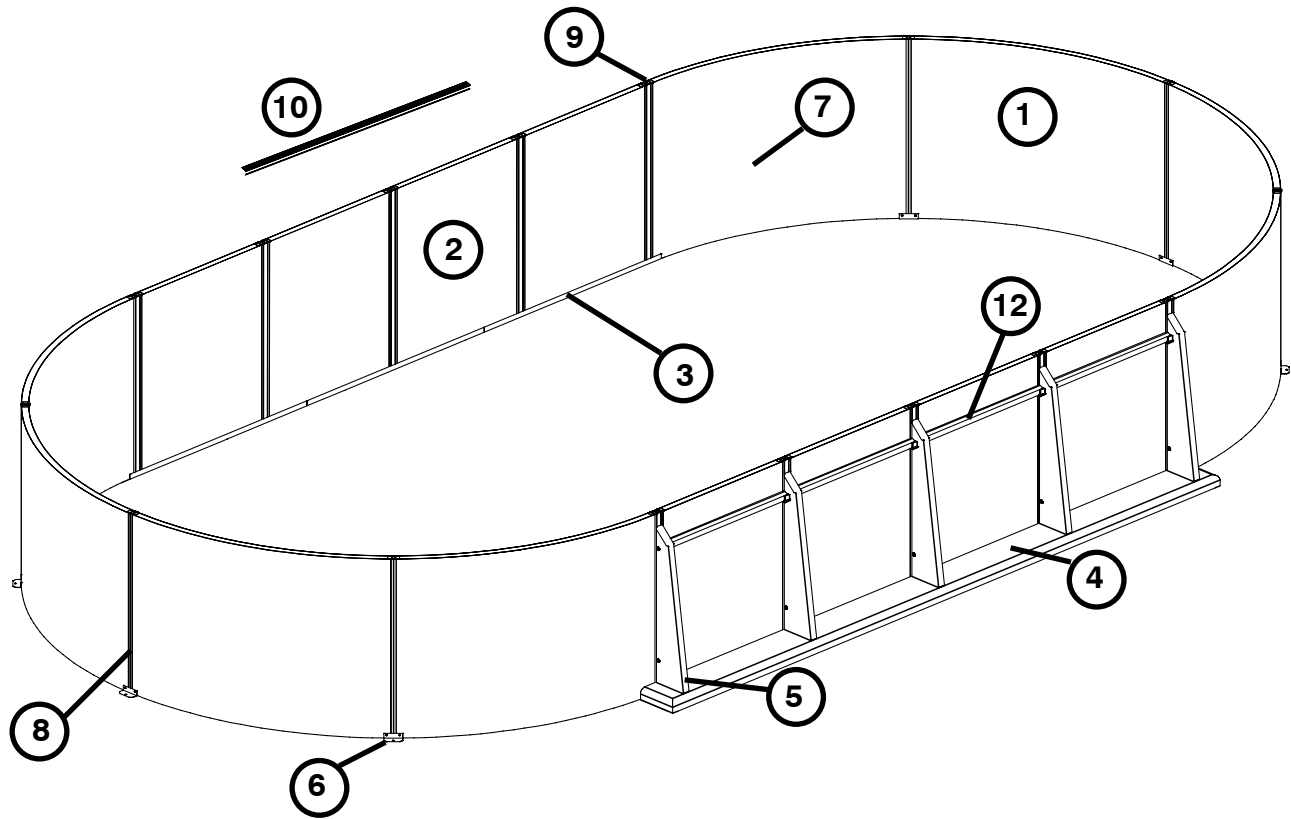
POOL COMPONENTS CHECKLIST

PART DESCRIPTION	12 x 16	12 x 20	12 x 24	16 x 24	16 x 28	16 x 32	18 x 34
WALL PANELS: RADIUS (6' 3-3/8")	6	6	6	8	8	8	8 (7' 0-7/8")
WALL PANELS: STRAIGHT (3' 9-7/8")	2	4	6	4	6	8	8
BUTTRESS A-FRAMES	4	6	8	6	8	10	10
CHANNEL	2 (4' 6")	2 (5' 6")	4 (6' 3")	2 (5' 6")	4 (6' 3")	6 (5' 6")	6 (5' 6")
		2 (3')		2 (3')			
OVAL METRIC HARDWARE BUNDLE							
HB-PMOV-C04	1						
HB-PMOV-C06		1		1			
HB-PMOV-C08			1		1		
HB-PMOV-C10						1	1
STANDARD METRIC HARDWARE BUNDLE							
HB-PM52J06	1	1	1				
HB-PM52J08				1	1	1	1
OVAL PANEL BRACE KIT	DEPENDENT ON TYPE OF INSTALL (AG, SEMI, OR IG)						
A-FRAME COVER	4	6	8	6	8	10	10
COPING KIT - STRAIGHT	1	1	1	1	1	1	1
COPING KIT - RADIUS	1	1	1	1	1	1	1
SKIMMER AND ADAPTER KIT	1	1	1	1	1	1	1
LINER	1	1	1	1	1	1	1
REQUIRED COMPONENTS NOT INCLUDED IN POOL KIT:							
2" x 8" x 16" PATIO BLOCK	4	4	4	6	6	6	6
8" x 8" x 16" CONCRETE BLOCK	8	16	16	16	16	24	24
CLEAN SAND FOR UNDER LINER	2 yds	2.25 yds	2.5 yds	3 yds	3.5 yds	4 yds	4.5 yds
CONCRETE FOOTER MIX (AG INSTALL)	2 yds	2.75 yds	3.5 yds	2.75 yds	3.5 yds	4.5 yds	4.5 yds
CONCRETE COLLAR MIX (26"+ SEMI-IG INSTALL)	3 yds	3.5 yds	4 yds	3.75 yds	4.25 yds	4.75 yds	5 yds
CONCRETE COLLAR MIX (IG INSTALL)	3.5 yds	4 yds	4.25 yds	4.5 yds	5 yds	5.25 yds	5.5 yds

Note: If any portion of your Radiant Metric Series Pool is more than 26" inground please refer to the inground installation instructions starting on page 24.

IMPORTANT: DO NOT ALLOW SPLINES OR COMPRESSION SEAMS TO COME IN CONTACT WITH SAND OR OTHER DEBRIS AS THIS WILL CAUSE DIFFICULTY IN INSTALLATION.

METRIC SERIES OVAL POOL COMPONENTS



Drawings are for illustrative purposes and are not to scale.

#	COMPONENT
1	Radius Wall Panel - Form curved ends of pool.
2	Straight Wall Panel - Form straight sides of pool.
3	Channel - Support bottom of straight walls.
4	Concrete - A-Frame footer
5	Shroud Covers, A-Frames & Extended Splines - imbedded in concrete for stability.
6	Anchor Plates - Add stability and alignment to radius wall panels
7	Liner - Fits inside of pool to form a watertight skin.
8	Standard Splines - Used at curved panel joints to join walls together.
9	Straight Panel Spline Connector - Join straight panels together.
10	Standard Metric Coping - Secures liner & gives finished appearance.
12	Structural Bracing - for Straight Wall Panels

SELECTING POOL LOCATION

The selection and preparation of the pool site is your responsibility. The manufacturer can only suggest the proper techniques, indicate the important considerations, emphasize the precautions, and cannot be held responsible for damages to your pool that may result from failure to carefully follow all pool specifications.

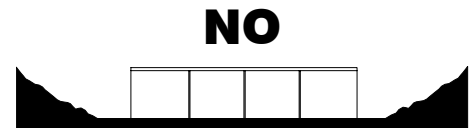
1. The surface on which your pool will stand must be absolutely level and solid. This condition should extend 2' beyond the actual pool area all around. The best surface is bare solid earth free from stones, roots and other sharp objects.



2. Allow plenty of play area around the pool. Fit the location into your landscaping plans.
3. The pool site must be accessible to electrical and water supply and should allow for disposal of great quantities of water when the pool is drained. All electric outlets within 10' must be GFI protected.

4. Do not set up your pool in hilly areas or areas with poor drainage.

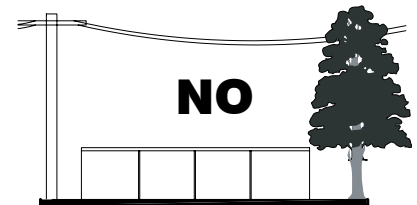
For Semi-Inground Installations: The site of installation must accommodate an efficient drainage system to minimize the impact of heavy rain and high ground water conditions.



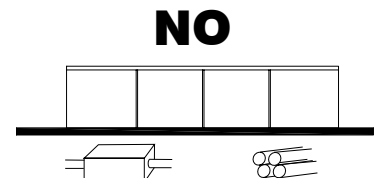
5. When installing your pool on a solid level surface, it is imperative that you protect your pool and liner from chemicals and other foreign matter contained in the surface. Do not install your pool on peat moss, tar paper, roots, sticks, gravel or chemically treated or contaminated soil not approved for pool use. Any or all of these surfaces can ruin your pool and liner and will void your warranty. To prevent stones or other foreign material from damaging the liner it is recommended to build a 2" to 3" base of clean washed masonry sand or other suitable base material inside the entire pool.

6. If ants or termites are prevalent in your area, have soil treated with insecticides and allow sufficient time for them to dissipate before continuing with pool installation.

7. Do not set up your pool under trees or under overhead wires.



8. Do not set up your pool near any existing structure such as your house, garage, etc., as this condition may compel diving or jumping into your pool which could result in permanent injury or death. You must check with your local municipality for all appropriate ordinances and regulations.

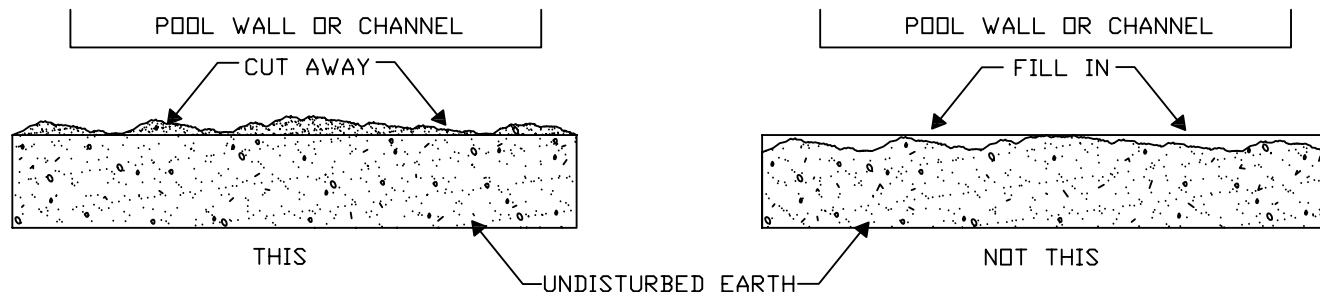


9. Do not set up your pool on or near any septic system or underground utilities.

LEVELING AND LAYOUT

GROUND PREPARATION

Establish ground level (benchmark) of the pool. A sturdier pool will result when the pool rests on undisturbed earth. It is better to have to remove an inch or two by hand than to have to build up after the excavator had gone too deep. Any voids beneath the wall panels caused by large rock removal, etc., must be filled and properly compacted.



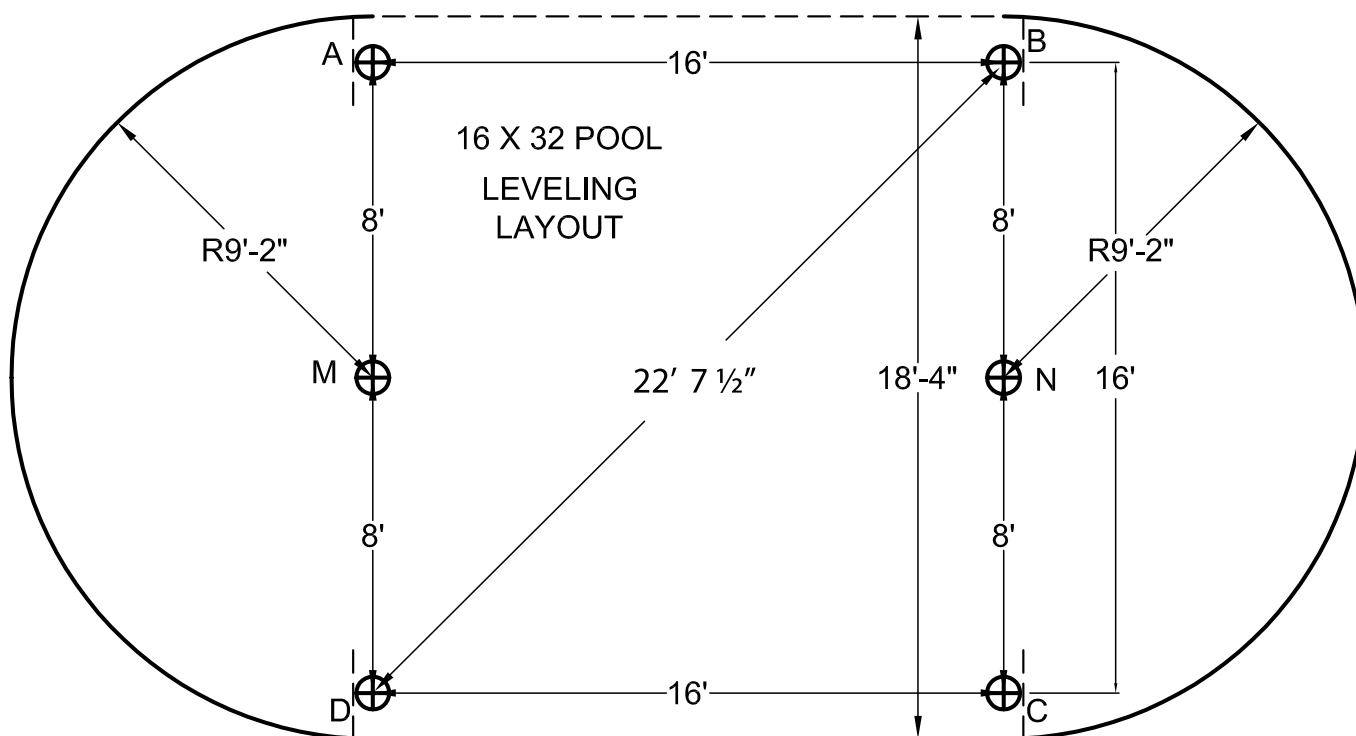
The excavation area will be larger than the pool area to accommodate leveling blocks, A-Frames and supports.

Choose the location of your pool using Line A-B as the long side of the pool.

1. Locate and mark points A, B, C, D, M and N.
2. Square the area: The Diagonals A-C and B-D should be equal.
3. Swing a half circle arc from M and N. (9' 2" for 16' wide pool; 7' 2" for 12' wide pool)*
This will give you the area to be leveled for your pool.

**Stake M and N for patio block placement at radius ends of pool after leveling.*

Leveling Example: 16' x 32' Pool



TRENCH LAYOUT

	A-D	A-C or B-D	Diagonal A-Cor B-D	End of Pool Arc	Trench Width	Trench Length	Trench Depth
12' X 16'	4'	12'	12' 7 3/4'	7' R	28"	5'	14"
12' X 20'	8'	12'	14' 5"	7' R	28"	9'	14"
12' X 24'	12'	12'	16' 11 5/8"	7' R	28"	13'	14"
16' X 24'	8'	16'	17' 10 3/4"	9' R	28"	9'	14"
16' X 28'	12'	16'	20'	9' R	28"	13'	14"
16' X 32'	16'	16'	22' 7 1/2"	9' R	28"	17'	14"
18' X 34'	16'	16'	24' 7/8"	10' R	28"	17'	14"

Outline the Area for Digging the A-Frame Trenches:

1. Measure outside the pool 14" from Line A-B.
2. Measure inside the pool 14" from Line A-B.
3. Extend length of Line A-B 6" at both ends, making Line A1-B1 12" longer than A-B.

Repeat the Procedure with Line C-D for the C1-D1 trench.

Example: 12' x 24' Pool

A-B, C-D: 12'
Trench Length A1-B1, C1-D1: 13'
Trench Width: 28"
Parallel Distance Between Trenches: 9' 8"

(See page 17 for completed trench diagram)

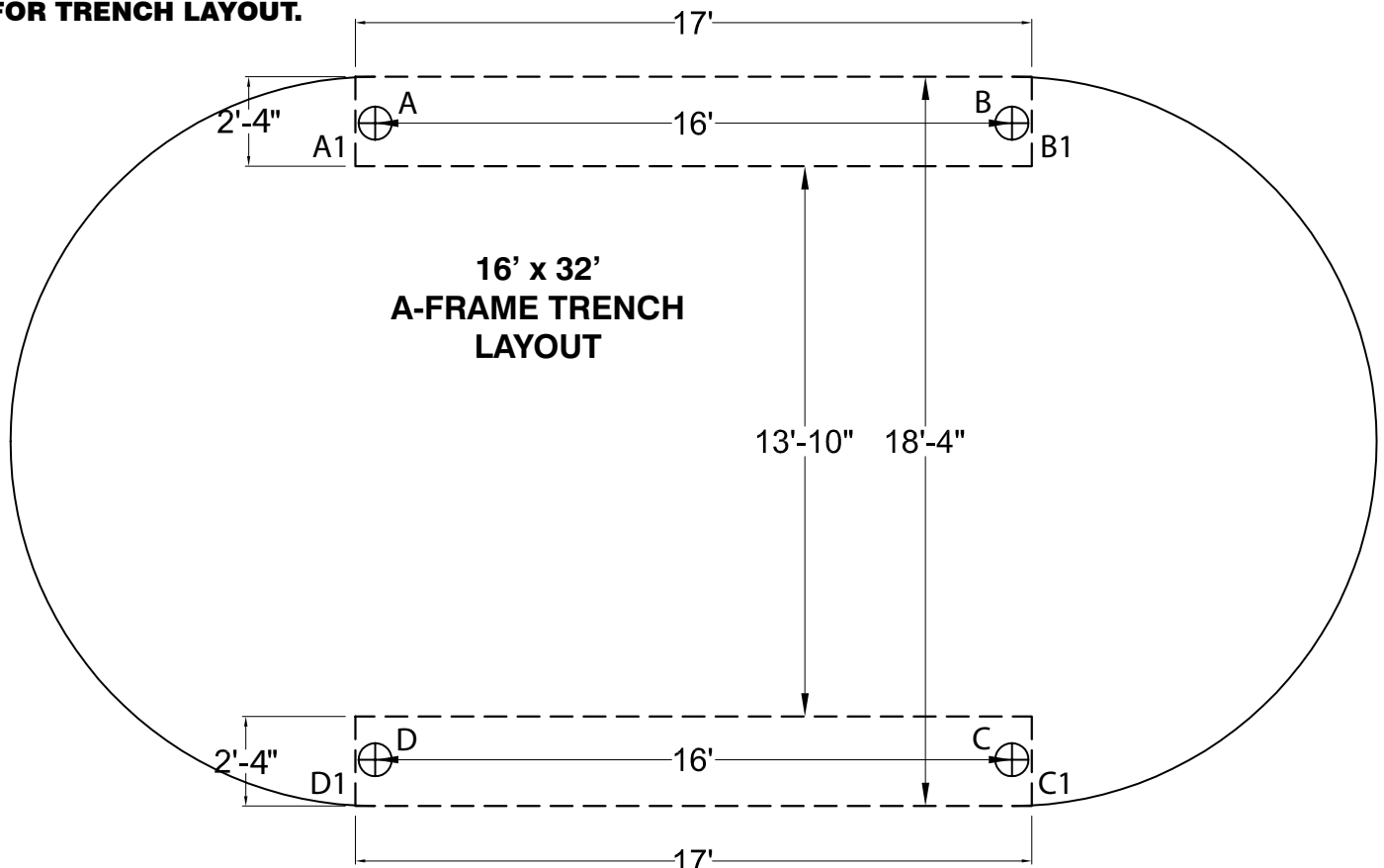
Example: 16' x 32' Pool (drawing below)

A-B, C-D: 16'
Trench Length A1-B1, C1-D1: 17'
Trench Width: 28"
Parallel Distance Between Trenches: 13' 8"

(See page 18 for completed trench diagram)

Dig trenches 14" deep for all pool sizes. Level the bottom of the trench so that the top of the 2 stacked 8" concrete blocks are level with benchmark.

NOTE: IF INSTALLING METRIC OVAL WITH HOPPER, PLEASE REFER TO SEPARATE INSTRUCTIONS FOR TRENCH LAYOUT.

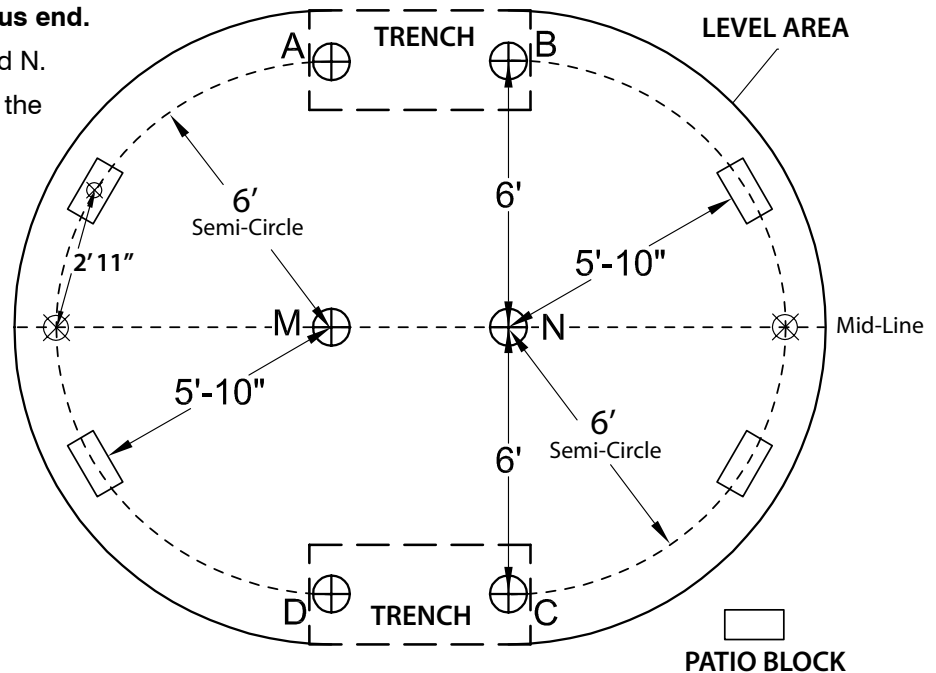


PATIO BLOCK LAYOUTS

12' POOLS:

There will be 2 patio blocks set at each radius end.

1. Mark a 6 foot semi-circle from points M and N.
2. Mark a Mid-line through M and N crossing the 6' semi-circles.
3. From the intersection of the mid-line and the semi-circle, measure 2' 11" in both directions on the 6' semi-circle. Repeat on opposite side. This will be the center of the patio blocks for the radius ends of the pool.
4. Set patio blocks centered to above measurements with front of block 5' 10" from points M and N.
5. Level the tops of the blocks to the benchmark of the pool.

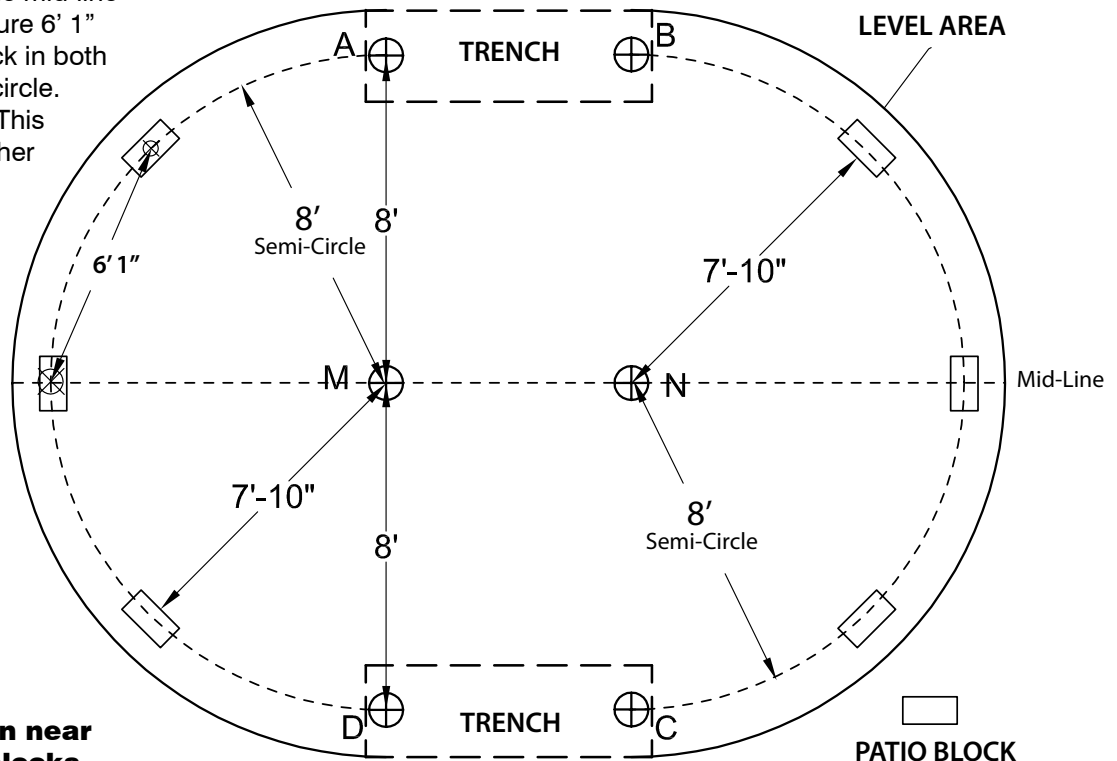


12' POOLS

16' POOLS:

There will be 3 patio blocks set at each radius end.

1. Mark an 8 foot semi-circle from points M and N.
2. Mark a Mid-line through M and N crossing the 8' semi-circles.
3. From the intersection of the mid-line and the semi-circle, measure 6' 1" from the center of the block in both directions on the 8' semi-circle. Repeat on opposite side. This will be the center of the other 2 blocks for the ends of the pool.
4. Set patio blocks centered to above measurements with front of block 7' 10" from points M and N.
5. Level the tops of the blocks to the benchmark of the pool.



16' POOLS

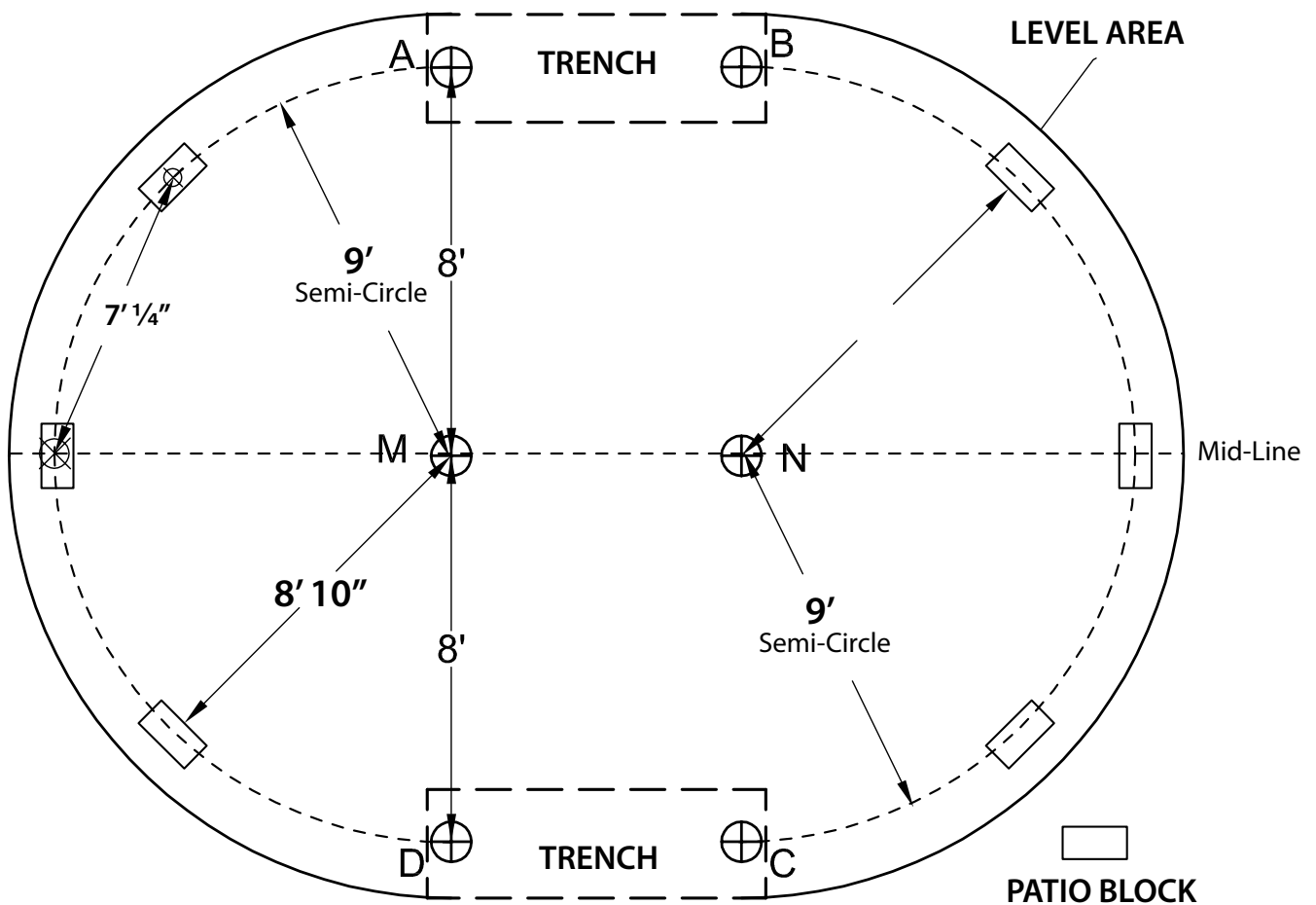
All radius panels will join near the center of the patio blocks.

PATIO BLOCK LAYOUTS

18' POOLS:

There will be 3 patio blocks set at each radius end.

1. Mark an 9 foot semi-circle from points M and N.
2. Mark a Mid-line through M and N crossing the 9' semi- circles
3. From the intersection of the mid-line and the semi-circle, measure 7' 1/4" from the center of the block in both directions on the 9' semi-circle. Repeat on opposite side. This will be the center of the other 2 blocks for the ends of the pool.
4. Set patio blocks centered to above measurements with front of block 8' 10" from points M and N.
5. Level the tops of the blocks to the benchmark of the pool.



All radius panels will join near the center of the patio blocks.

CHANNEL ASSEMBLY AND LAYOUT

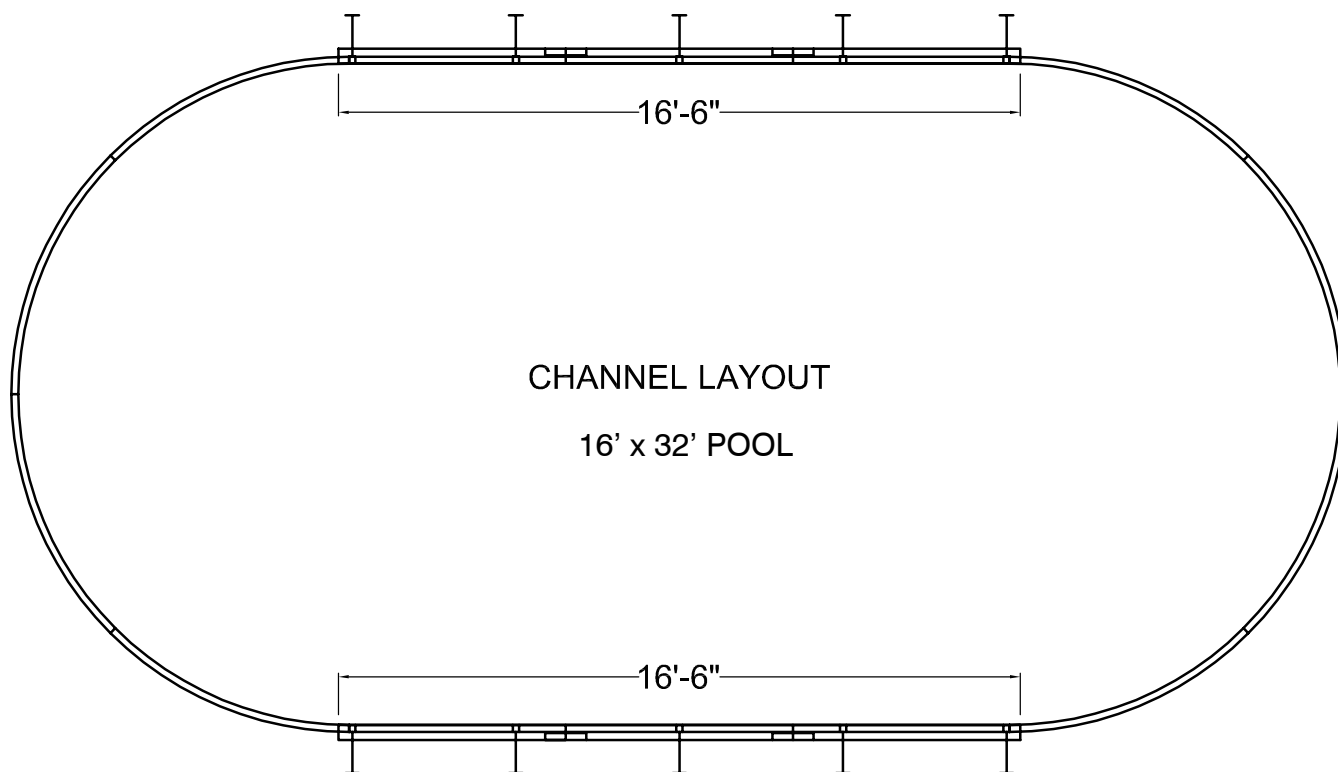
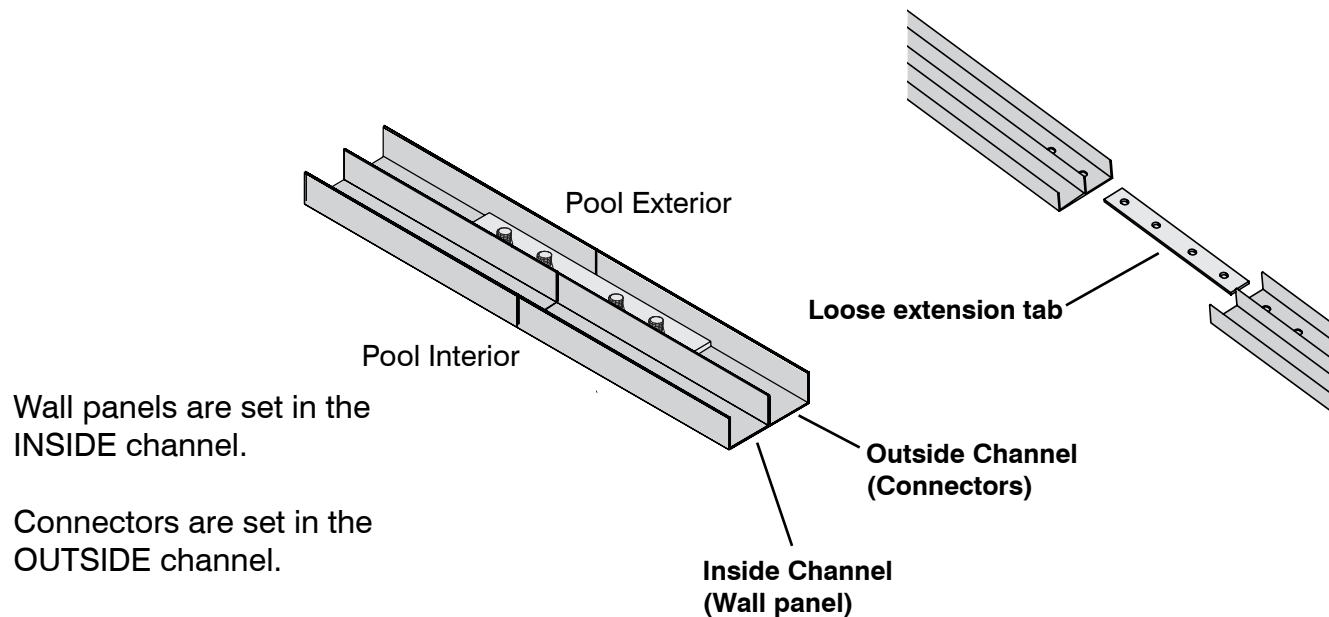
The bottom channel, once assembled, creates the framework for all remaining assembly and must be done next. The channel will be assembled using a loose extension tab.

To assemble, align the holes on one side of the extension tab over holes in channel track. Insert 3/8" x 3/4" bolts with 9/16" head with washers from beneath the bottom track using open end wrench. Continue by aligning the next bottom channel piece with the holes on the other side of the tab. Again insert included bolts and attach with head and washers. Repeat this until your bottom track is assembled.

DO NOT OVERTIGHTEN!

Check bottom track for cleanliness.

Track should be free of all dirt and debris.

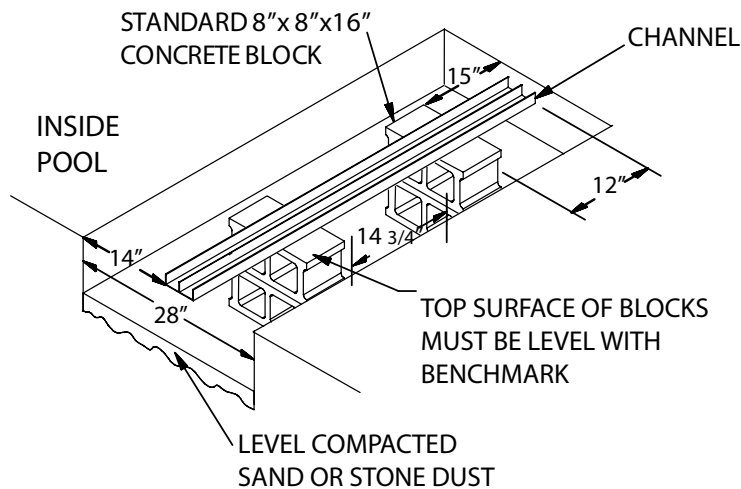


CONCRETE BLOCK AND CHANNEL LAYOUTS

1. Top of concrete blocks must be adjusted to the benchmark of the pool.

Using sand or stone dust, blocks must be level as well as the proper height to allow the channel to lay flat.

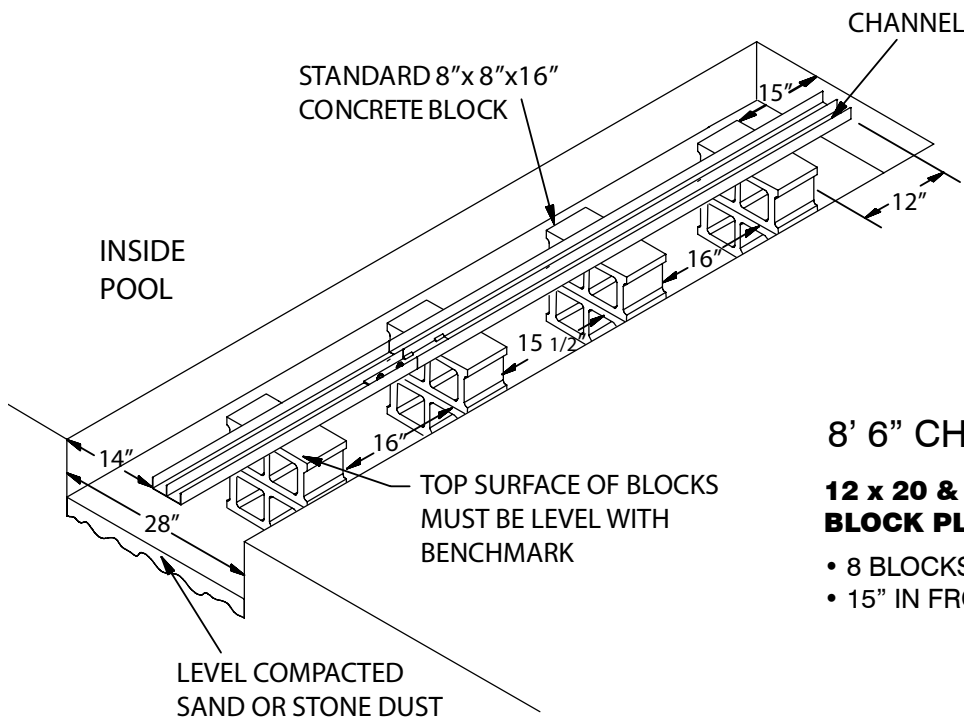
2. Place channel over trench supported by concrete blocks. Lay first channel along Line A-B and the second along Line C-D.
3. The channel will extend 3" beyond the A, B, C and D points and will be a total of 6" longer than straight portion of pool.
4. Channel should be parallel 12', 16' or 18' apart depending on pool size. Check that diagonals are equal ($AC = BD$).
5. The distance between blocks may vary slightly, but keep away from A-Frames and channel joints.



4' 6" CHANNEL

12 X 16 POOL: BLOCK PLACEMENT

- 4 BLOCKS ON EACH SIDE
- 15" IN FROM BOTH ENDS OF THE TRENCH

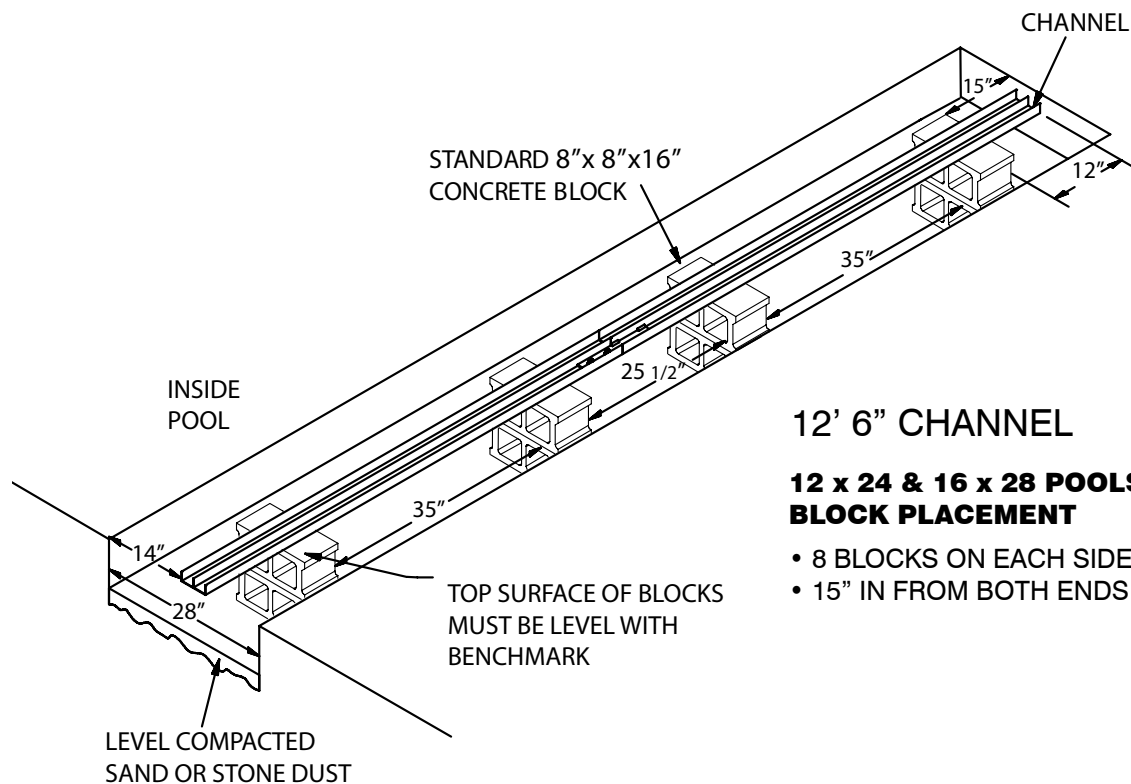


8' 6" CHANNEL

12 x 20 & 16 x 24 POOLS: BLOCK PLACEMENT

- 8 BLOCKS ON EACH SIDE
- 15" IN FROM BOTH ENDS OF THE TRENCH

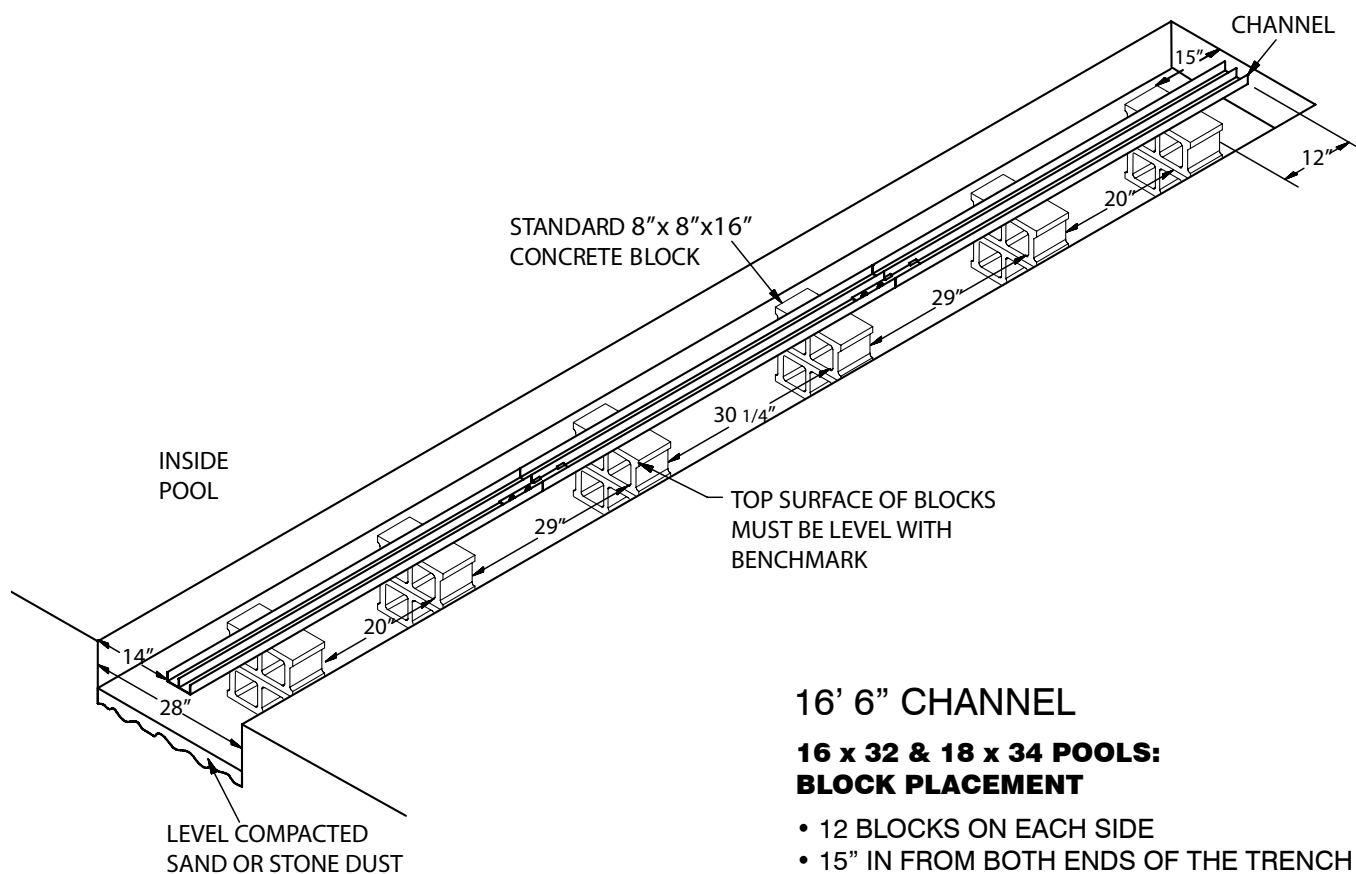
CONCRETE BLOCK AND CHANNEL LAYOUTS



12' 6" CHANNEL

12 x 24 & 16 x 28 POOLS: BLOCK PLACEMENT

- 8 BLOCKS ON EACH SIDE
- 15" IN FROM BOTH ENDS OF THE TRENCH



16' 6" CHANNEL

16 x 32 & 18 x 34 POOLS: BLOCK PLACEMENT

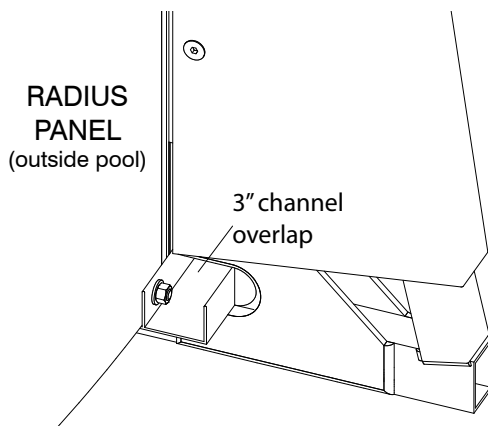
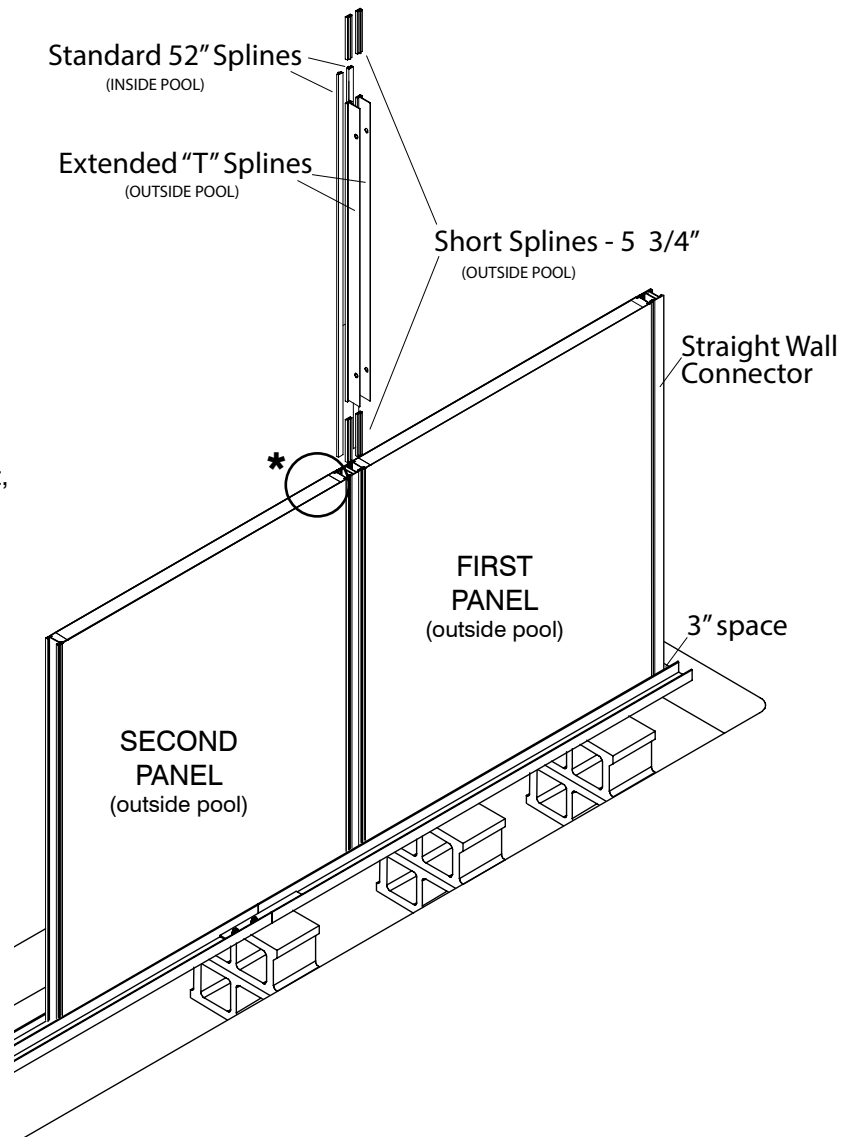
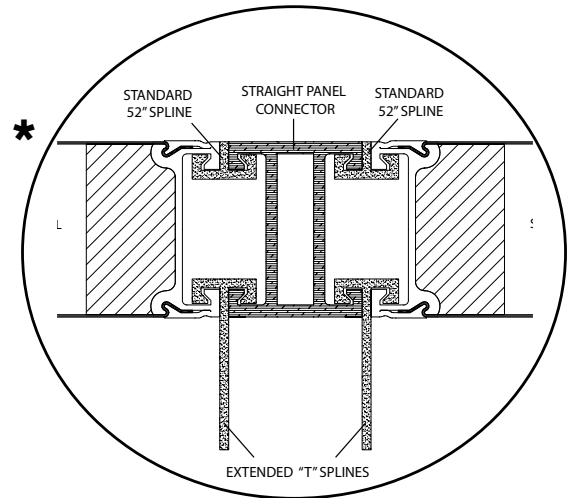
- 12 BLOCKS ON EACH SIDE
- 15" IN FROM BOTH ENDS OF THE TRENCH

STRAIGHT WALL PANEL AND CONNECTOR ASSEMBLY

Note: Use of cooking spray is recommended on the first few inches of the splines to ease assembly. DO NOT use petroleum based lubricants (WD-40). Ease of spline installation depends on level and parallel wall joints.

Once bottom track is assembled, begin installing wall panels

1. Place a straight panel connector 3" from the end of a channel.
2. Stand a straight panel next to the connector in the channel. Install a 52" spline to join the panel and connector on the inside of the pool.
3. Slide short spline (5 3/4") into the outside of the pool wall and connector.
4. Slide extended "T" spline down on top of the short spline.
5. Slide a 2nd short spline down on top of the extended spline.
6. Place the 2nd oval straight panel connector into the channel.
7. Place the 2nd panel into the channel and install splines as in steps 2-6. (52" splines on inside of pool; short and extended "T" splines on the outside of pool). Continue assembling down the channel until an oval straight panel connector is 3" from the other end of the channel.
8. Install first radius panel at each end of the channel to add stability to the assembled straight panels. The first radius panels will overlap 3" into the channel. Using a 7/16" bit, drill through the inner bottom channel and wall panel, where the radius panel overlaps the channel. Then install included 2 1/2" bolt and nut.
9. Install the straight panels on the other side of the pool.



Drawings are for illustrative purposes and are not to scale.

RADIUS PANEL ASSEMBLY

Locate the wall panel that is cut for the skimmer and return fitting. The location for the panel should be adjacent to the electrical supply and provide ease of access once the pool is installed.

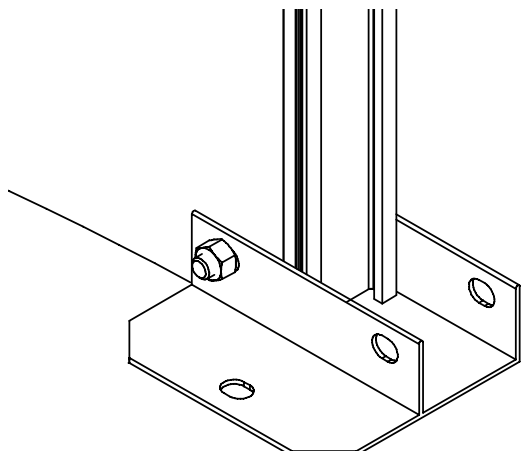
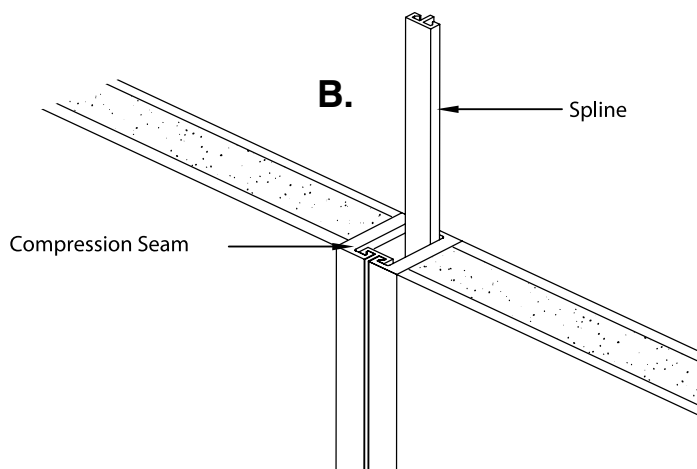
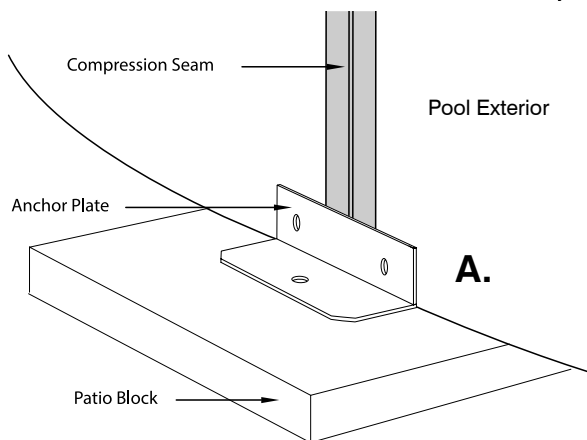
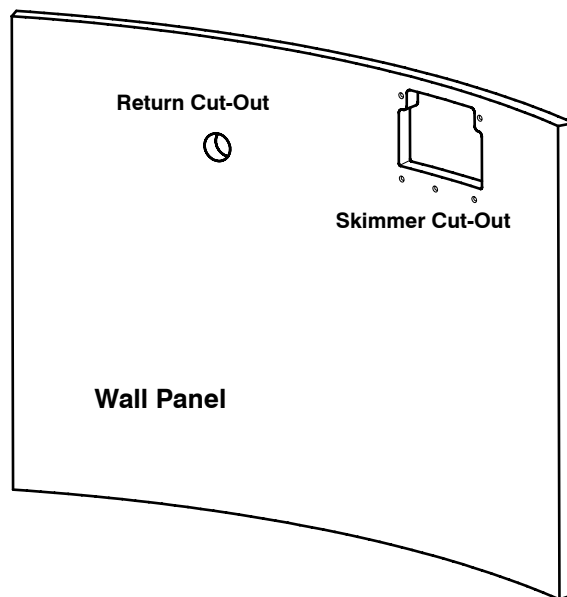
Place an anchor plate centered on a patio block. Place 2 wall panels so they meet on the center of the anchor plate. **(fig. A)** Please be aware that each compression seam should be flush before attempting to insert the splines. **(fig. B)** Splines are designed to slide freely into place when inserted properly into level panels. Gently shaking panels can help ease insertion of some splines.

Note: Use of cooking oil or food spray as lubricant on the first 4-6" of the splines. DO NOT use petroleum based lubricants (WD-40).

Hard downward pressure or hammering causes metal burrs and jams the spline into the compression seam. If a spline does not install easily, leave it and go to the next one or next panel. Aligning the next panel will most frequently align the previous one as well.

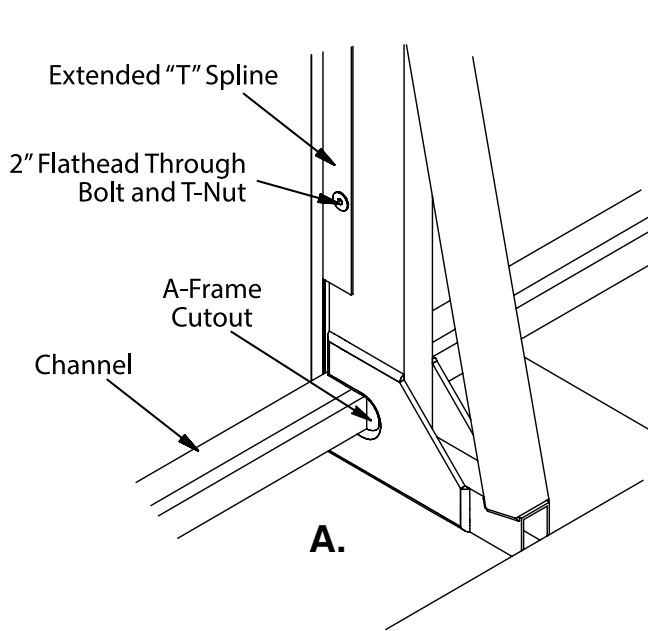
Duplicate this process with the remaining wall panels stopping before installing the final wall panel. At this time you need to bring in the sand through this opening to prepare the bottom of the pool.

With the anchor plate centered under the seam, drill 7/16" holes through the bottom of the pool panels using the predrilled holes in the anchor plates as a guide. Secure with 2 1/2" bolts and nuts. Make sure the panels are securely in the anchor plates and even at the top before drilling. This will create a bolted pool frame for bonding, if needed. Check with local codes for requirements.



Note: Do not install final radius panel until after installing a-frames and sand has been brought inside pool.

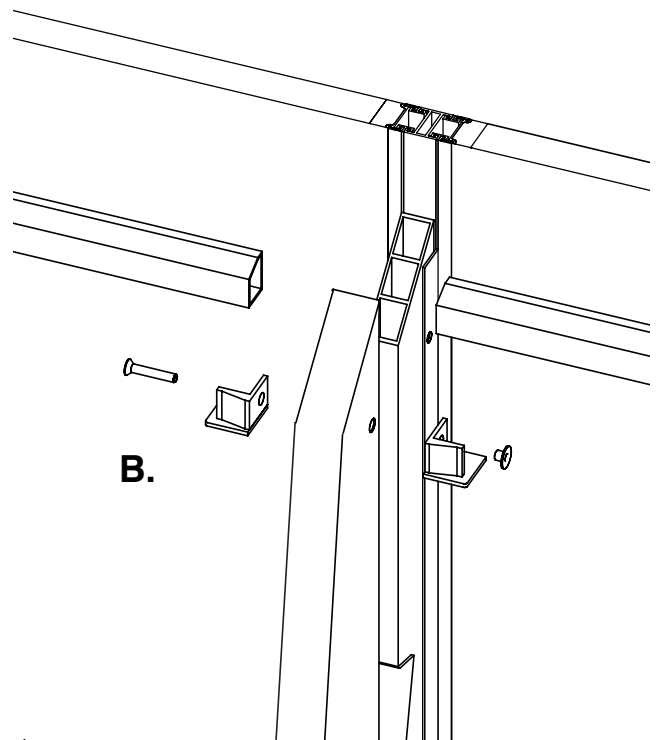
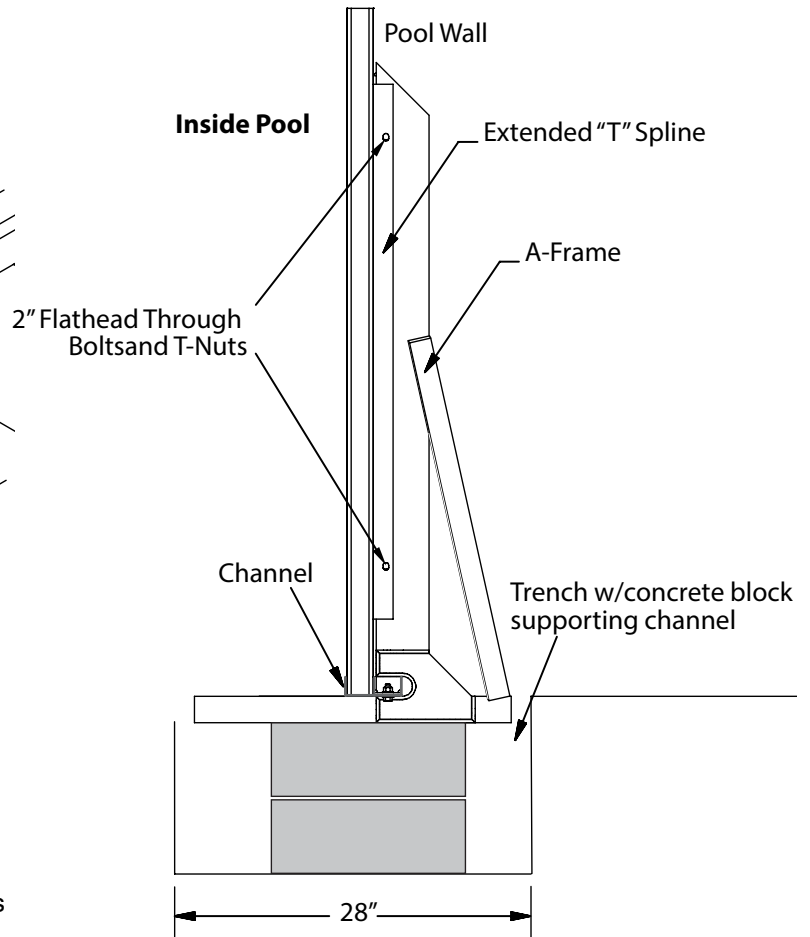
A-FRAME AND STRUCTURAL BRACE INSTALLATION



There are as many A-Frames on a side as straight panel joints.

1. The bottom of the A-frame will be under the channel, and the notched cutout at the bottom will interlock with the channel at wall connections between (2) extended "T" splines. **(fig. A)**
2. Identify structural brace kit and shroud covers. One of each cup and one brace will be used for each straight panel.
3. Slip shroud cover over the entire A-frame assembly, including T-splines. Position mounting cups on either side of shroud so that all holes punched in materials (A-frame, t-splines, shroud cover and mounting cups) line up accurately. Now secure using the included capscrew and t-nut. **(fig. B)** *Brace kits not needed when using Premium above ground Coping.
4. Slide the brace into the mounting cups. Ensure a snug fit at bottom of cup.

Check level plumb and square of pool.



Bracing kit will include a longer capscrew where braces are used on two adjacent straight panels. *Brace kits not needed with Premium above ground Coping.

CONCRETE REQUIREMENTS

Follow Table Below For Concrete Requirements. Use Standard Swimming Pool Collar Mix Concrete.

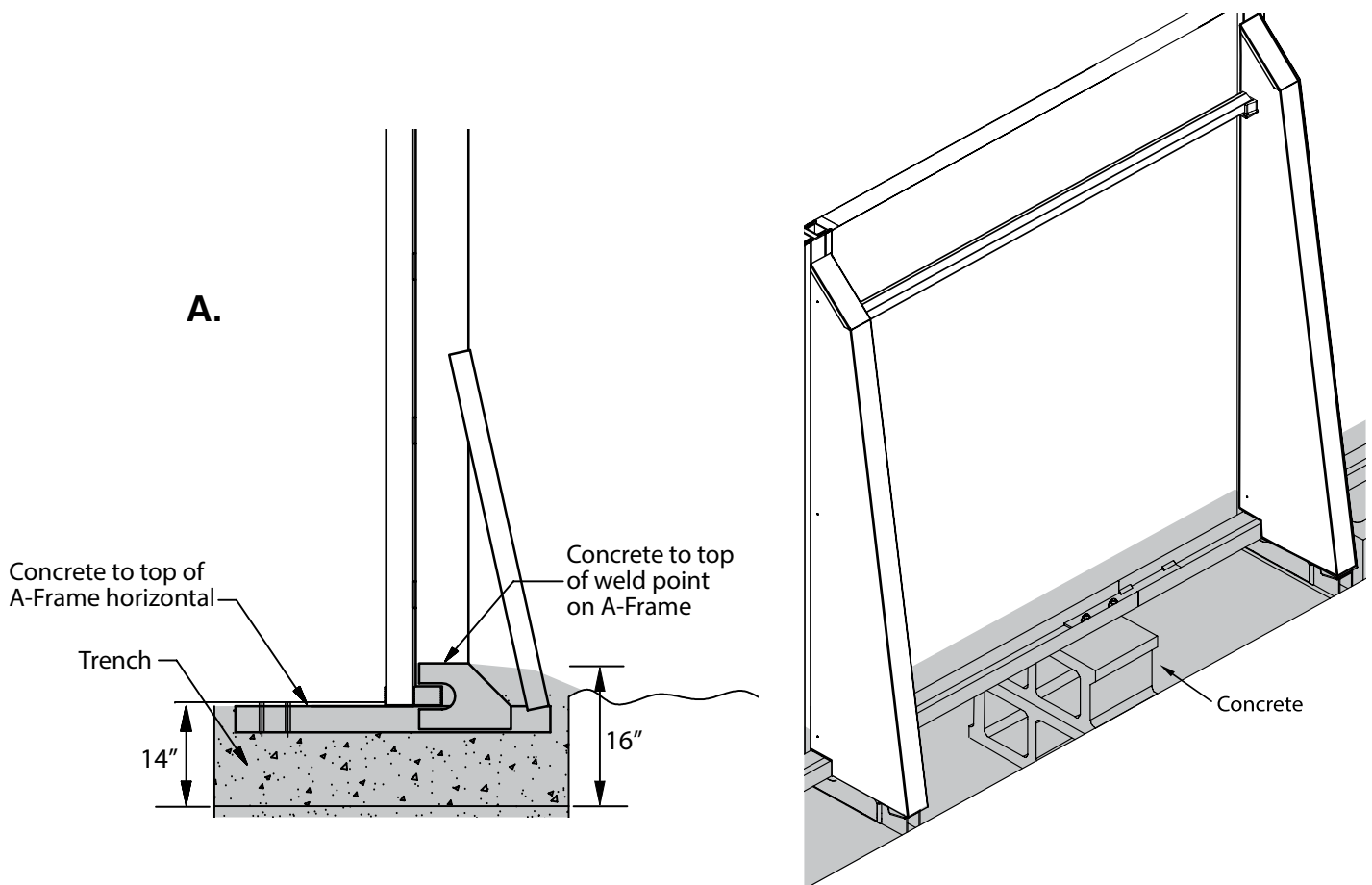
CHECK LEVEL PLUMB AND SQUARE OF POOL ONE FINAL TIME BEFORE POURING CONCRETE

Fill trench to top of the A-Frame horizontal inside of the pool and to top of weld point on A-Frame on the outside of the pool (**fig. A**). Allow 24 hours to set before filling pool completely.

Size	12X16	12X20	12X24	16X24	16X28	16X32	18X34
25" Backfill or less	2 yds	2.75 yds	3.5 yds	2.75 yds	3.5 yds	4.5 yds	4.5 yds
26" or more Backfill (Concrete Collar)	3 yds	3.5 yds	4 yds	3.75 yds	4.25 yds	4.75 yds	5 yds
Fully Inground (Concrete Collar)	3.5 yds	4 yds	4.25 yds	4.5 yds	5 yds	5.25 yds	5.5 yds

When pouring concrete trenches, concrete should cover all exposed A-frames and bottom of shrouds. It is important to use a gentle, even pour in order to ensure shroud covers are not damaged. Any concrete splatter or rebound on the walls or shrouds can be cleaned off with a damp cloth before it has a chance to set.

If choosing to install shrouds after concrete has been poured, the bottom of the shroud may need to be cut away above the concrete. Do so by scoring with a knife until the aluminum cuts away, or using tin snips to cut to the desired height.



Drawings are for illustrative purposes and are not to scale.

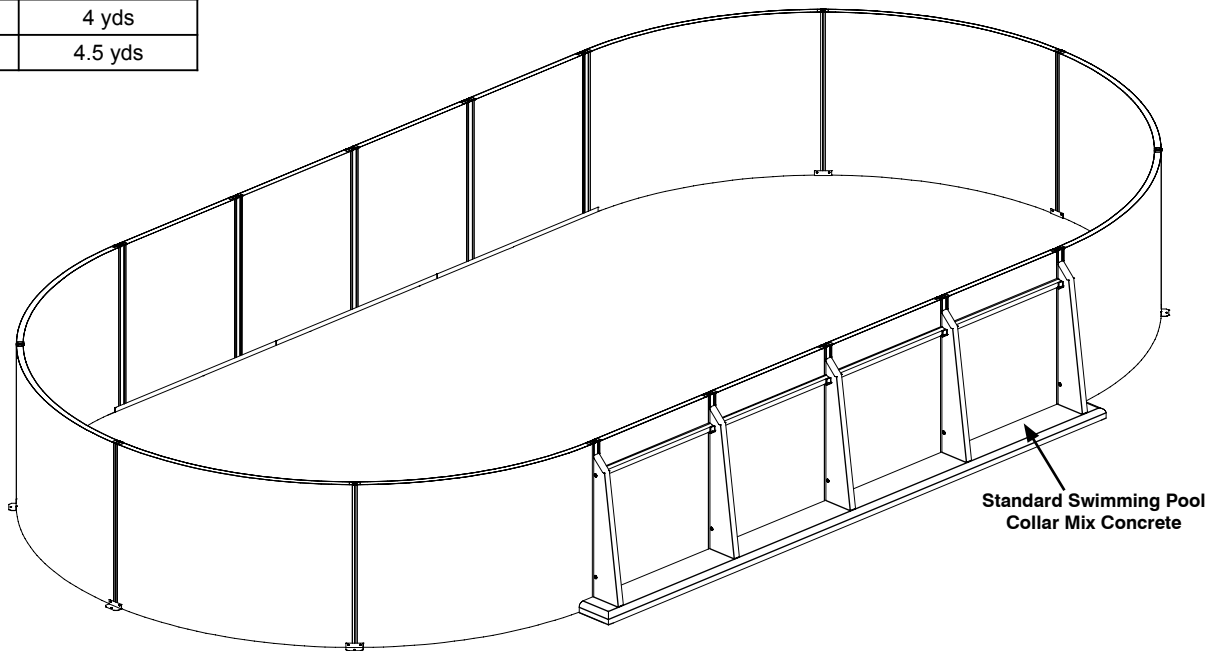
PREPARING POOL FLOOR

The pool interior must be prepared to provide a smooth surface and protection for the vinyl liner. Check inside of pool area for debris, stones, sharp objects, etc. Using the prescribed amount of masonry sand per pool (as shown in the chart below) will provide a 2" layer across the pool floor and a 4" cove up the wall of the pool.

Masonry Sand Requirements	
Pool Size	Amount of Sand
12' x 16'	2 yds
12' x 20'	2.25 yds
12' x 24'	2.5 yds
16' x 24'	3 yds
16' x 28'	3.5 yds
16' x 32'	4 yds
18' x 34'	4.5 yds

Fill in and tamp soil to top of concrete around the horizontal base support. Place the sand inside the pool area before the last panel is installed.

Once the sand has been placed inside the pool, install the remaining wall panel.

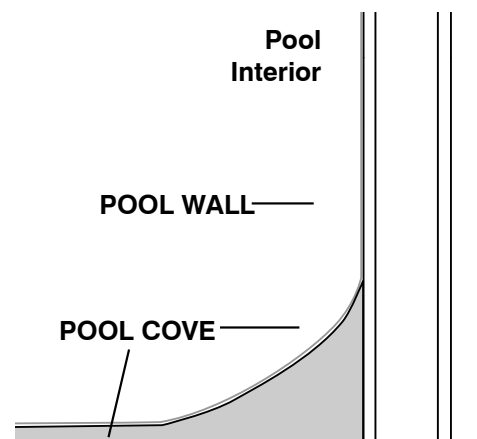


Drawings are for illustrative purposes and are not to scale.

PREPARING POOL COVE

Using the masonry sand, build a pool cove 3" to 4" high inside the wall along the entire circumference of the pool. This will prevent the liner from creeping under the wall. **This step is not optional and must be done.**

Spread the remaining sand equally across the bottom of the pool. This will give you a 2" sand base. After the cove and base are in place, rake and tamp the entire pool area. Make sure that no sand is allowed to remain on the wall above the cove. This could cause pinholes in your liner.



SKIMMER ASSEMBLY

Patent Nos: 9,890,547/D837,471/D830,012/10,138,645. Other Patents Pending.

Install the rubber sandwich gasket on the gray mounting plate, making sure the gasket straddles both sides of the mounting plate. **(fig. I)**

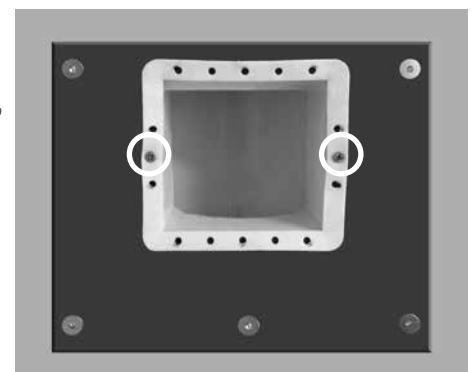
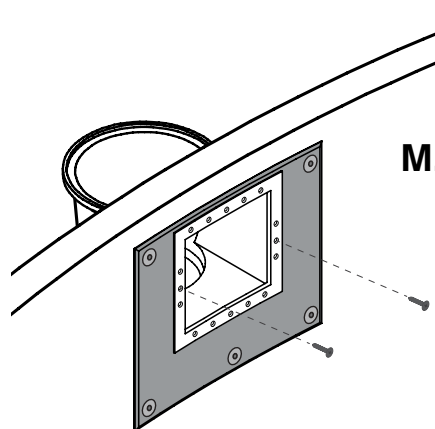
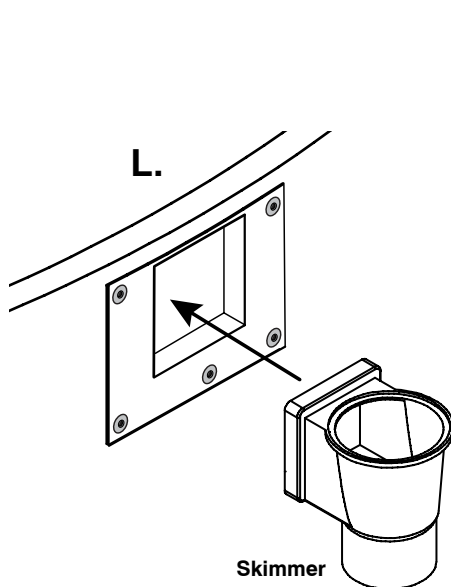
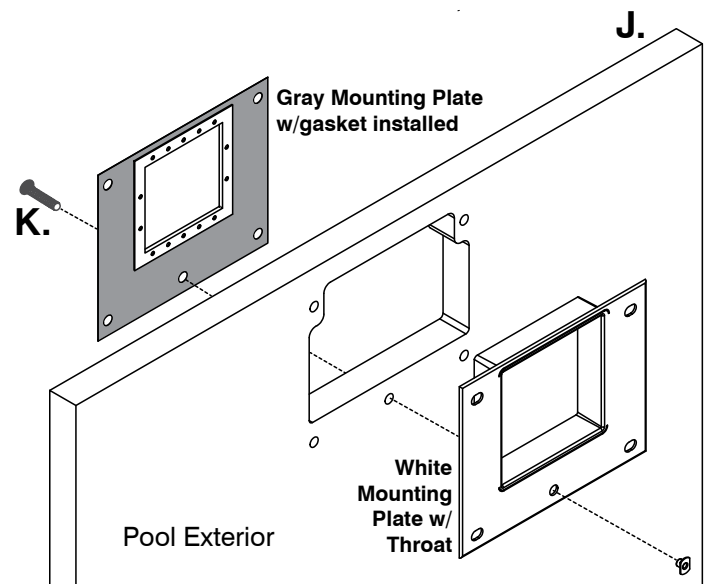
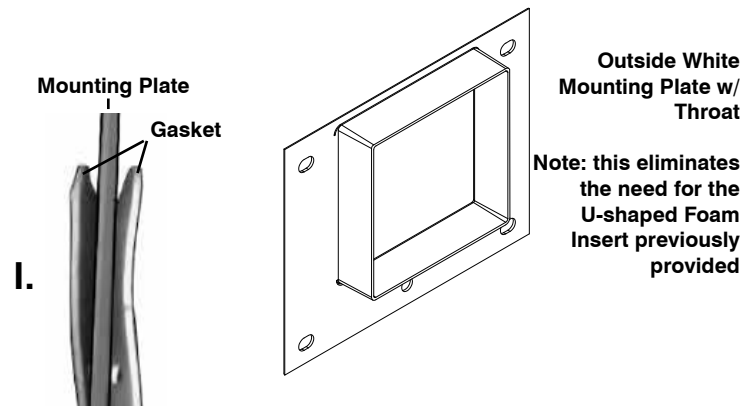
Place the gray mounting plate with gaskets on the pool interior side of the panel cut-out. Insert the white plate with throat on the exterior of the panel, through the pool wall. Secure the assembly with 2 1/4" countersink bolts and T-nuts loosely through four pre drilled corner holes in the gray mounting plate, the wall panel and the white mounting plate. **(fig. J)**

Use the fifth bolt and T-nut at the bottom center hole in the mounting assembly and tighten firmly. Do not over tighten. **(fig. K)**

Slip skimmer body through the white plate to the gasket on the gray plate. **(fig. L)** Secure tightly with two pan head screws (different style screws in the skimmer hardware bag) from the water side through the gaskets and gray plate into the skimmer body center hole on each side. **(fig. M)**

Tighten the four corner bolts, firm, do not over tighten. The skimmer faceplate is attached after the liner is installed.

For Skimmer Assembly instructions for Inground installation, see page 31.



RETURN FITTING ASSEMBLY

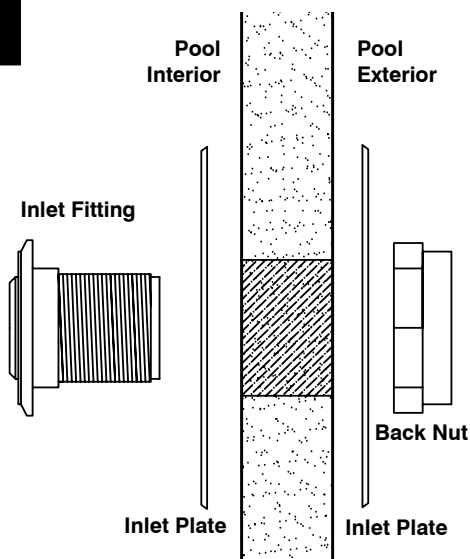
The return fitting kit includes four parts: inlet fitting, 2 inlet plate and back nut.

Install the inlet fitting into the pre-cut hole, slide the inlet plate over the exposed threads on the pool interior and exterior and then thread the back nut onto the fitting. **DO NOT OVERTIGHTEN.**

For additional return fittings, drill 3" hole (with 3" hole saw) 12" down from top of panel. Edges will be sharp but not in contact with liner or hands once wall fitting has been installed. Install return wall fitting per directions. **Do not over tighten.**

Note: For the Radiant LED light, drill hole 14" down from top of panel. Installation is identical to return fitting.

The return faceplates are attached after the liner is installed.



INSTALLING PLASTIC COPING

The plastic coping is installed by simply placing coping lengths over the pool wall and securing with screws on the exterior of the pool.

Place all coping lengths around pool, leaving a 1" gap between each length. The coping gap may be offset from a compression seam.

Once all of the coping has been placed, secure the coping to the pool wall with sheet metal screws provided. **THIS STEP CANNOT BE SKIPPED.**

Included are 5 sheet metal screws for each full size coping length. For Premium 4" coping, 2 additional screws per coping length are included to be placed on the inside of the coping and covered by duct tape. The screws, placed at the appropriate intervals, are essential to the secure installation and long term durability of the coping. The screw spacing should be as follows:

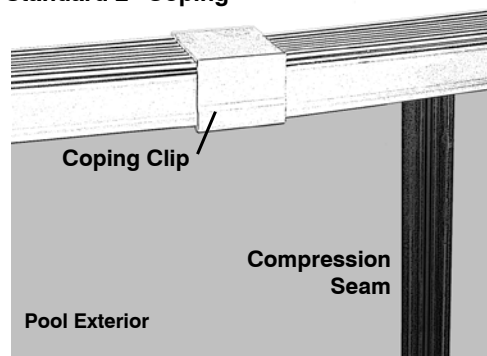
- One screw approximately 2-3" from each end.
- One screw in the middle of the coping length.
- One screw half way between center and each end screw.

Using a 1/8" drill bit, drill through the plastic coping and exterior pool wall while pressing down firmly on the coping on top of pool wall. Using a Phillips screwdriver, hand tighten each screw. **DO NOT OVERTIGHTEN.**

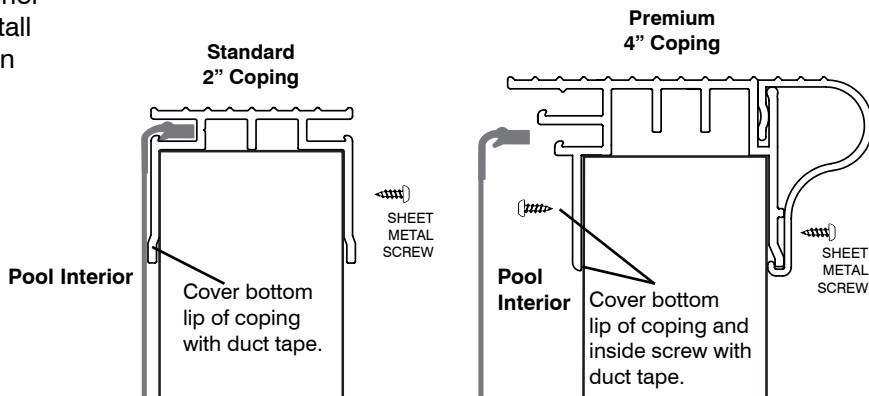
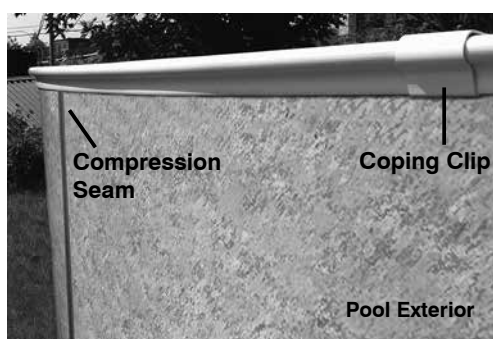
The beaded vinyl liner with the weight of the water will draw coping into place and level on the interior of the pool wall. Before installing liner, run duct tape along the bottom lip of the coping on the pool interior to protect liner. After the liner is in place, install coping clips by snapping over gaps between coping lengths. **DO NOT SCREW IN COPING CLIPS.**

For RCR and Paver inground coping installation instructions see page 29.

Standard 2" Coping



Premium 4" Coping



INSTALLING LINER

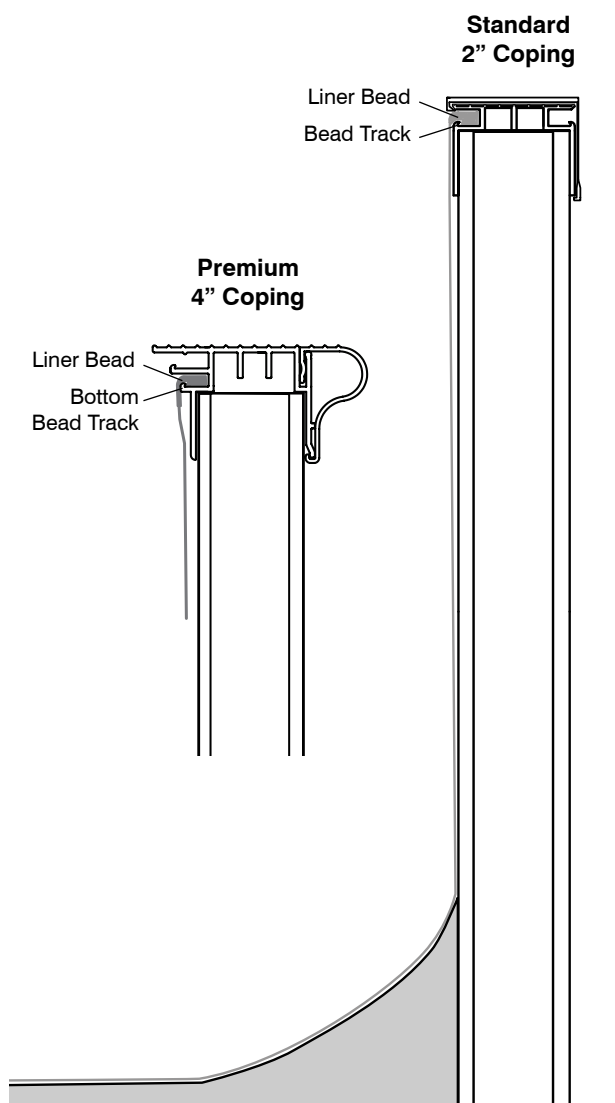
Clear all sticks and sharp objects from an area near the pool that is as large as the pool itself. Remove the liner from its carton in the area you have prepared. Unfold and open the liner. Refold the liner so that it can easily be carried to the pool and unfold from the outside of the pool. Check to make sure the sand in the pool is level and that there are no sharp objects in the pool.

Place the liner into the pool while holding onto the top of the wall section of the liner. Snap the bead of the liner into the bead receiver track around the entire pool.

(Be sure to insert liner bead in bottom track of Premium 4" coping as shown at right)

Gently pull on the liner and use a soft bristle broom to remove as many wrinkles as possible on the bottom of the pool. Start filling the pool slowly with water. Continue pulling gently and working the liner with a broom as needed. Some wrinkling of the liner may be evident and in no way affects the structural strength of your pool. You can continue to work out the wrinkles as needed by pulling gently on the liner or by using a broom.

TIP: To help in removing stubborn wrinkles, a shop vacuum may be used to suck the air out from behind the liner. Attach shop vac to skimmer outlet and seal with duct tape. Seal all other openings with duct tape as well. Turn on vac and run till wrinkles are removed. Once the wrinkles are gone, begin filling with water. After 6" of water is in the pool, turn off and remove the shop vac.



FILLING YOUR POOL

Pool Size	Gallage*
12' x 16'	4,419
12' x 20'	5,735
12' x 24'	7,052
16' x 24'	9,028
16' x 28'	10,781
16' x 32'	12,537
18' x 34'	14,874

*Assuming 44" water level in pool

Water Gallage per Size

Whether you are filling the pool with your own home water source or through a water-fill service, please use the chart at right to determine the water volume requirements for your particular size pool.

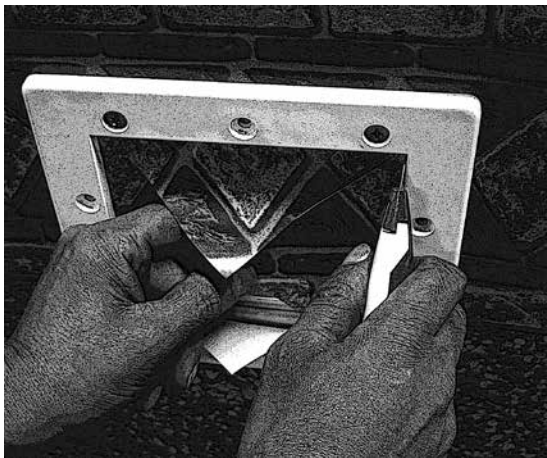
Please see your pool professional for instructions on proper water testing and balancing.

INSTALLING FACEPLATES

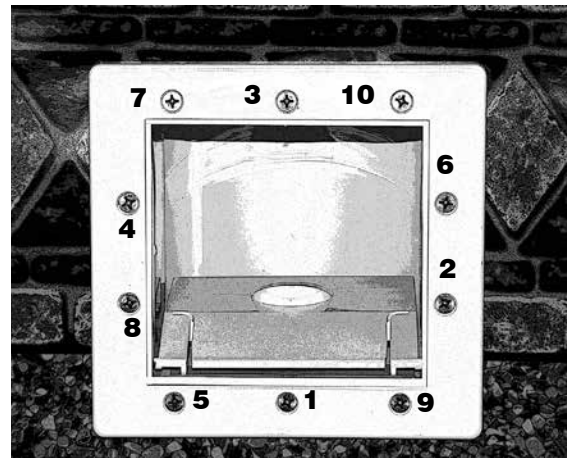
Once the water level reaches 2"-3" from the return and skimmer, install the faceplates. Carefully locate the screw holes for each opening. Once located, carefully puncture the liner with an ice pick or nail. Attach skimmer faceplate with 1" screws and hand tighten evenly in order as shown in skimmer faceplate image below. When installing return faceplate, hand tighten each screw by a half turn, alternating between each, until all are tightened evenly. This ensures uniform compression of sealing gaskets. Using a razor knife, carefully trim the liner from inside of the openings for the skimmer and return. When done, install the eyeball into the return.



Locate screw holes.



Trim liner from skimmer opening.



Skimmer faceplate installed
w/screw tightening sequence.



Trim liner from return opening.



Return faceplate installed.

Note: Follow Step manufacturer's instructions for installation of step faceplate and gasket after the liner is installed and water level reaches 6-8" depth.

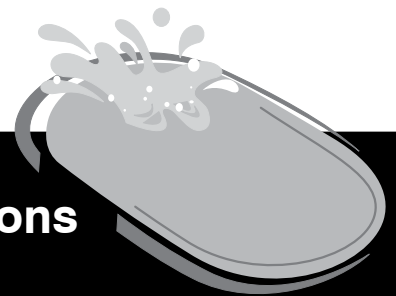
COMPLETING INSTALLATION

Please refer to the manufacturers' installation instructions for all other installation components. These include pump, filter, lights, and all other equipment and accessories.



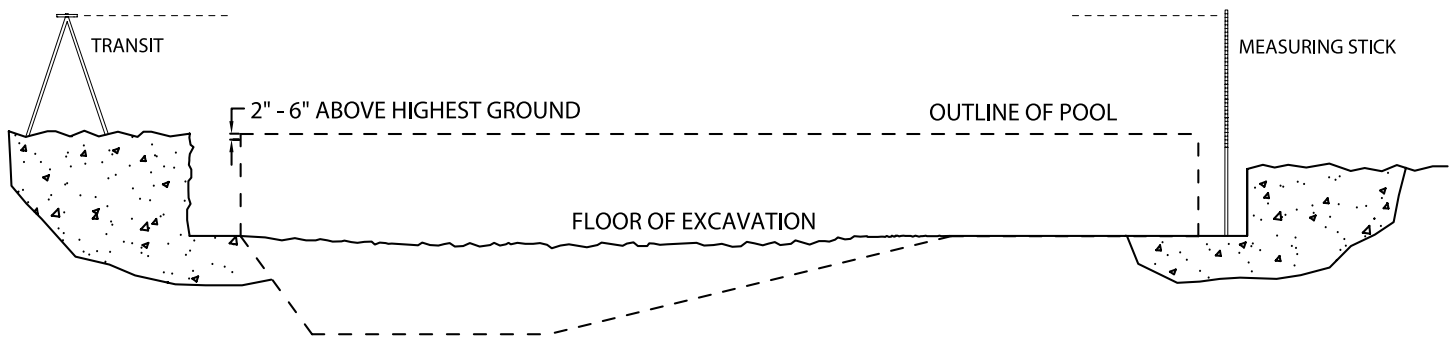
Metric Oval Inground Installation Instructions

Metric Oval Inground Installation Instructions



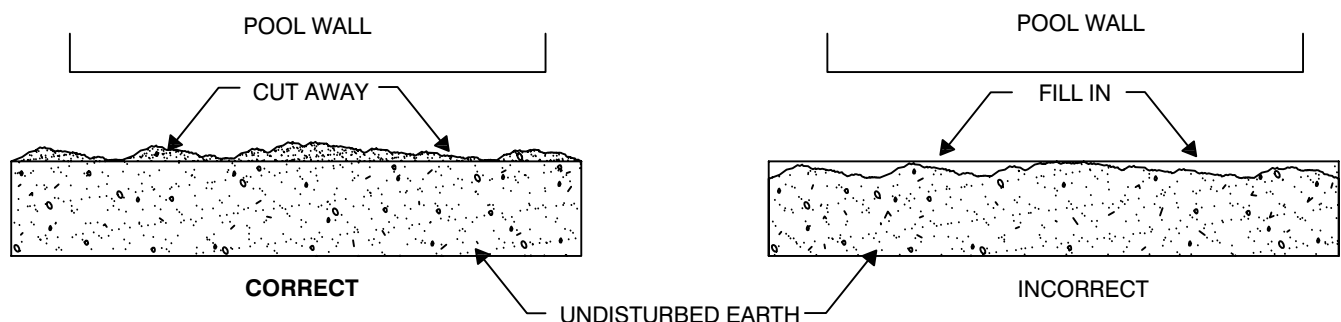
INGROUND: LEVELING THE EXCAVATION

Establish the Benchmark of the pool. The finished height of the pool includes the wall height, coping and the decking (pavers, wood deck etc.). The Benchmark will determine the depth of the excavation where the panels will rest. With the shape of the pool excavation marked out, its height relative to the ground must be determined. The pool should be set at a height so that rain and splash will drain away, rather than towards the pools. It is best to use a building level, transit and a measuring stick to determine the required depth of the excavation. It is best to set up the transit in a location so that you can leave it in the same place for the entire pool excavation. It is best to keep the top of the pool 2-6" above the ground at the highest point so that you are able to place your deck on undisturbed soil.



SIDE VIEW OF EXCAVATION SITE

Since the excavation will be 2 feet wider than the actual pool dimension, it is important that the excavator does not dig the 2 ft ledge around the hopper too deep. (*NOTE: A 2 ft excavation is recommended for first time installations. Experienced installers may choose to use a 1 ft excavation at their discretion.*) A sturdier pool will result when the pool rests on undisturbed earth. It is better to have to remove an inch or two by hand than to have to build up after the excavator has gone too deep. Any voids beneath the wall panels caused by large rock removal, etc., must be filled and properly compacted.



PREPARING FOR WALK-IN STEP

If steps are going to be installed, excavate a 6 foot by 10 foot area where they are to be located on the pool. Please see the dig specifications for locations of steps.

INGROUND: WALK-IN STEP INSTALLATION

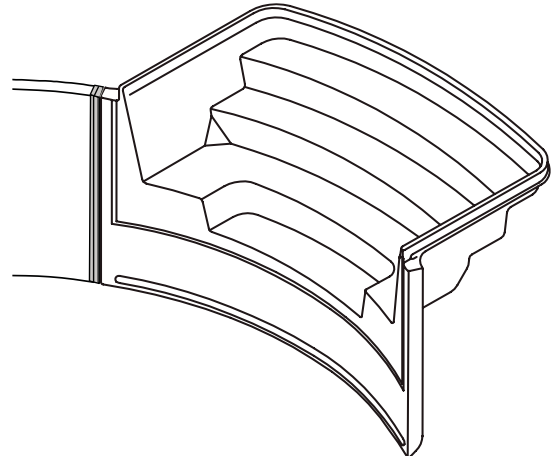
Prepare and Position Step

Each pool will have two radius panels that are shorter in length to accommodate the step. The step can be moved around on the radius ends of the pool by reconfiguring the panels. Do not connect your step to two different panel types. The entire step must either be in the radius portion of the pool, or on the straight wall of the pool. Contact Radiant Pools for drawings for your specific step location.

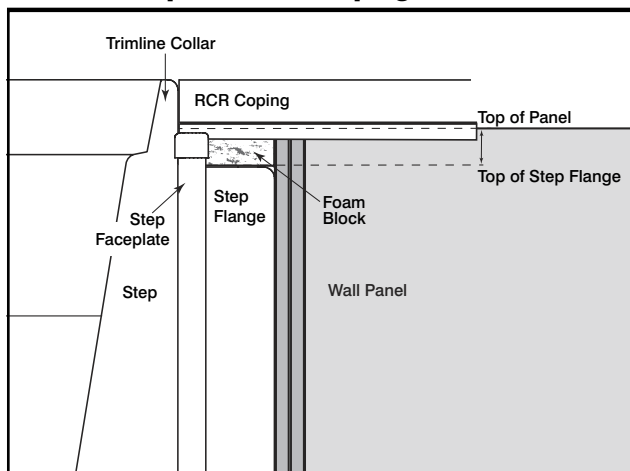
Install leg supports for the steps. For steps supplied by Radiant Pools, instruction will be provided. If steps are purchased separately through another provider, verify compatibility by talking with a Radiant Pools representative. Be sure to check step manufacturer's instructions as the step supports will vary by manufacturer.

Position the step in the desired location. Level step, establish benchmark. The benchmark (finished height of the pool) includes the wall height, the coping and the decking (concrete, pavers, etc). Adjust height of step by aligning top of coping with top of step and plumb by checking front face of step unit with adjoining panel. See images below to determine the proper benchmark for your installation.

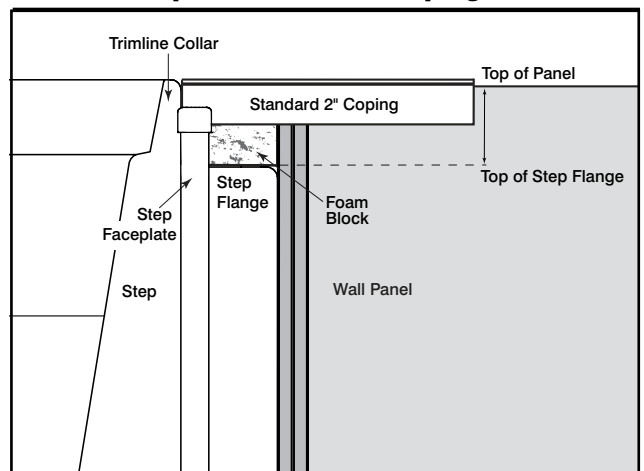
Once step is positioned, check levels from side to side and front to back.



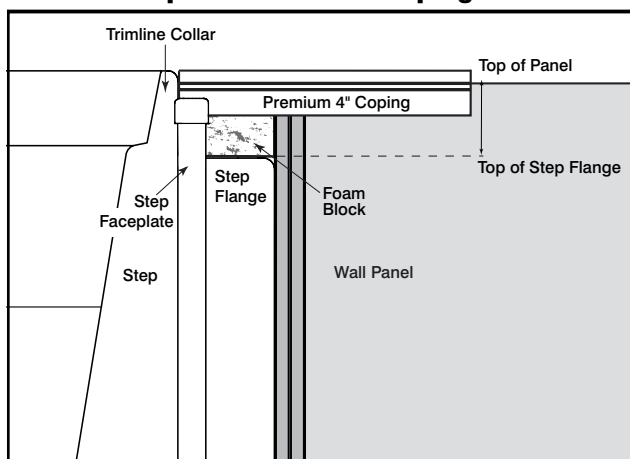
Trimline Step with RCR Coping



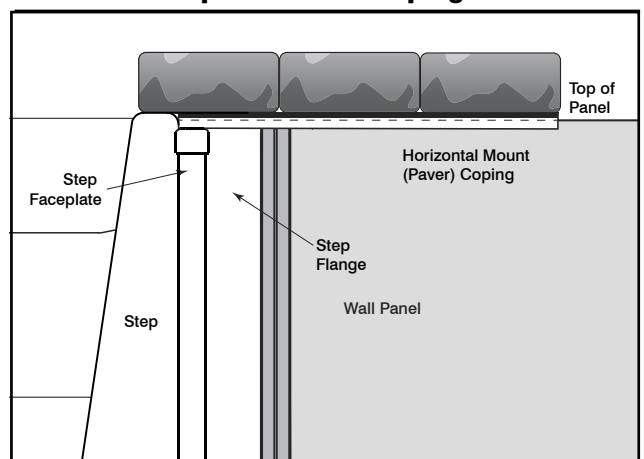
Trimline Step with Standard Coping



Trimline Step with Premium Coping



Cantilever Step with Paver Coping



INGROUND: WALK-IN STEP INSTALLATION

Radius Step to Radius Wall Panel

Installation Components (item # KS-52-RWSA):

- (2) Seam Connectors
- (2) 52" Standard splines for interior side of pool
- (2) each: 40 1/2" Extended T splines and 10" Standard Splines for exterior side of pool
- 3/8" Carriage Bolts and Nuts; Backer Washers
- (2) A-Frames for connection to T Splines on either side of step

Assemble the stair adapter kit to the first pool panel with the standard 52" spline on the interior side of pool and the extended T-spline on the exterior of the panel. Position the panel butting up to the step flange and mark the location of the spline stair adapter with a marker or piece of tape.

Disassemble the adapter kit and clamp the seam connector to the step flange in line with the marked outline with vise grips or C-clamps. Using a 7/16" drill bit, drill through the step flange at the holes in the seam connector. Bolt the seam connector on to the step flange using the backer washer and nut on the inside of the step flange.

Important: Keep nuts very loose until all panels are installed.

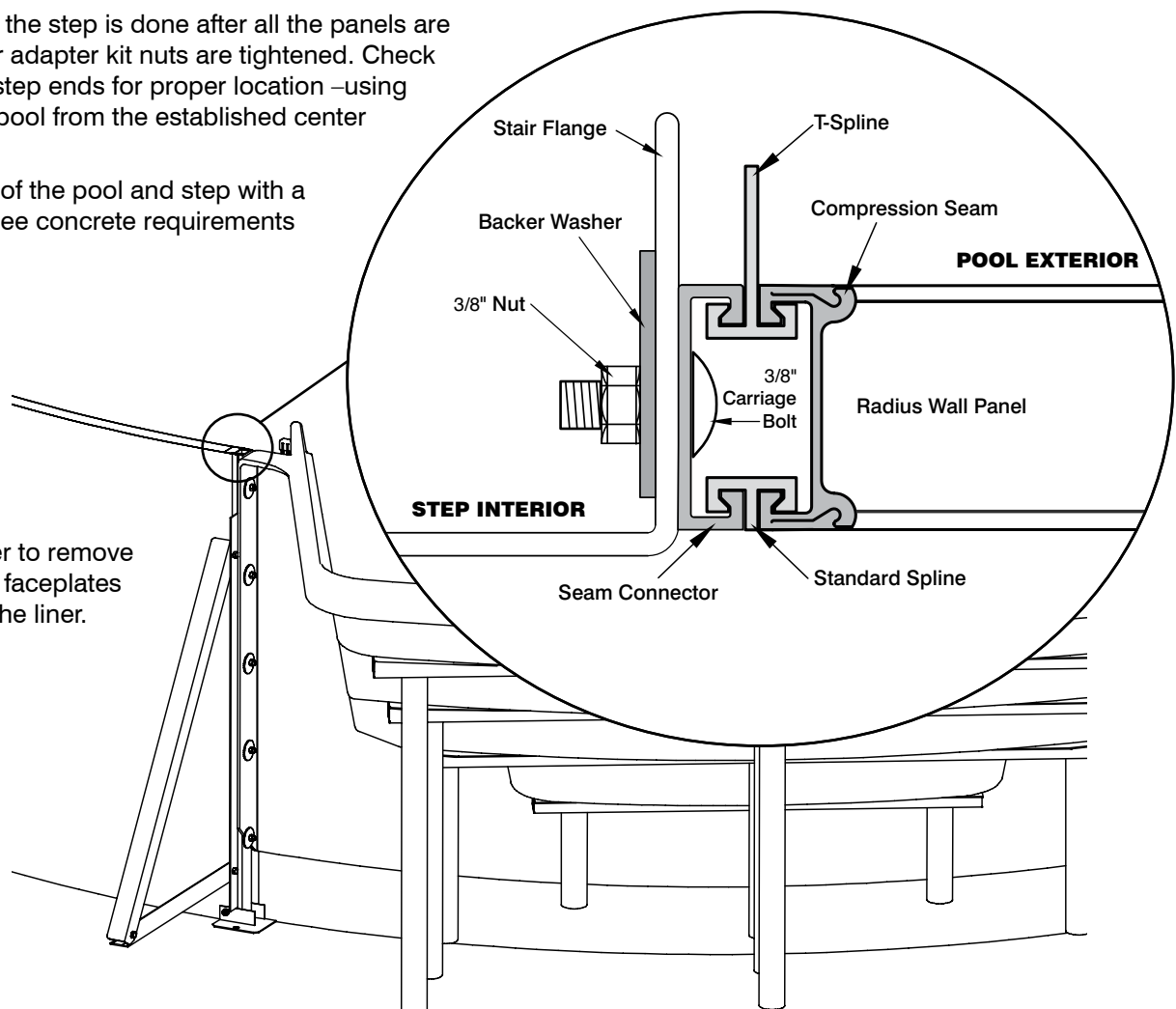
T-spline assembly / Final adjusting

The extended T-spline is installed on the exterior side of the pool, with holes to attach the A-frame components. The 10" standard spline is installed on top of the T-spline. The 52" standard spline is installed on the interior side of the pool.

Final adjusting of the step is done after all the panels are installed and stair adapter kit nuts are tightened. Check panel joints and step ends for proper location –using the radius of the pool from the established center point of the pool.

Encase the base of the pool and step with a concrete collar. See concrete requirements on page 32.

Note: Remember to remove stair gaskets and faceplates before installing the liner.



INGROUND: WALL INSTALLATION

See Page 15-16 for wall installation instructions.

INGROUND: PAVER COPING INSTALL

Wall Clips and Coping

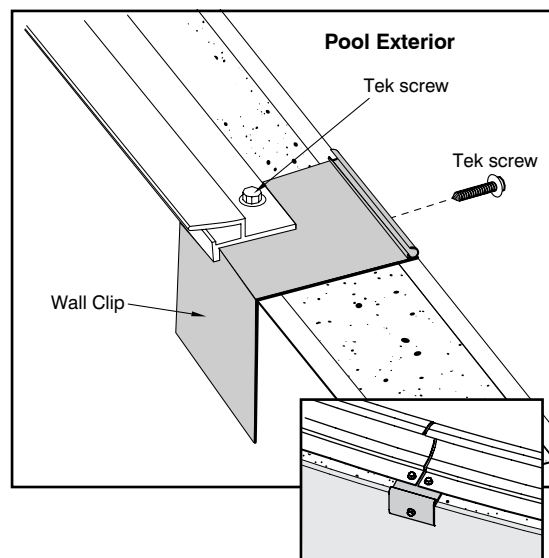
Paver coping installation must start with Radiant Nassau wall clips. They provide a hard surface on the top of the wall to attach the coping to. Paver coping is notched to accommodate standard radii.

Place Nassau clips on the wall every 12". Do not Tek screw to the wall yet as final placement will vary with coping length.

Place Paver coping lengths on wall panel with a Nassau wall clip centered at the beginning and end of the length. Secure the wall clips to the panels and the coping to the wall clips with Tek screws on the exterior side of pool.

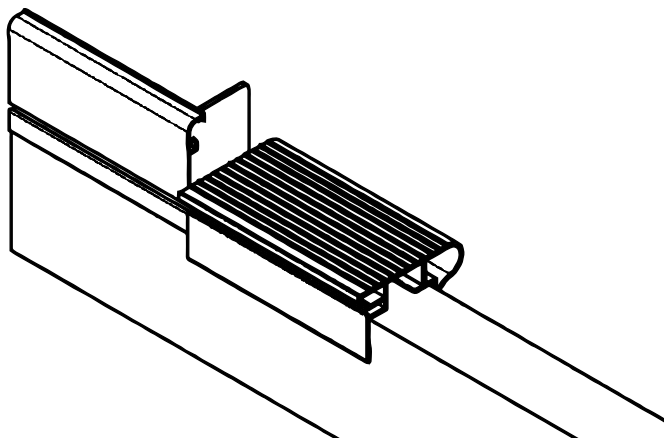
The next length is placed adjacent to the end of the first length, continuing around the pool. It is not necessary to leave spacing as with the white plastic coping. If you are installing a walk-in step, start at the step and continue around the pool, cutting the last length to fit.

Important: When all lengths are installed, apply a barrier between the bottom of the coping and the top of the pool wall to prevent sand and debris from getting in behind the liner. Silicone, foam sealant or duct tape can be used.



Transition with Mixed Coping

End caps are available for installation of Radiant Concrete Receptor (RCR) Coping and Metric plastic coping combination. The end cap provides a clean finish to the concrete and fits inside the RCR coping before the lower profile of the Standard 2" or Premium 4" coping starts.



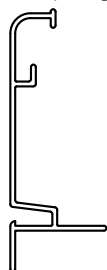
RADIANT CONCRETE RECEPTOR COPING

Radiant Concrete Receptor Coping (RCR) installation must start with Radiant Nassau Wall Clips. They provide a hard surface on the top of the wall on which to attach the coping. RCR Coping is notched to accommodate standard radii (Pre-formed 6" radius and Grecian Corners are available).

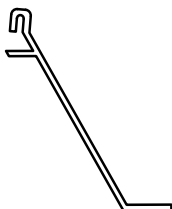
Place Nassau Clips on the wall every 12" to 18". Do not Tek screw to the wall yet as final placement will vary with coping length.

Place RCR Coping on wall panel with a Nassau wall clip centered at the beginning and end of the length. To bend notched coping, slowly pull the coping to the desired radius as you work your way down the bar. Begin securing one end of the coping with Tek screws, Nassau Wall Clips, Support Anchors and Coping Clips where needed. Use a white rubber mallet to aid in forming the coping to the final radius as you work your way down the bar. Once the desired final radius is met, secure Nassau wall clips to the pool wall and the coping to the wall clips every 12" and Support Anchors every 2 1/2'-3'.

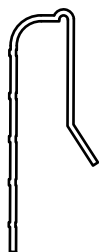
RCR Coping
Part # 3324-N (notched)
3324-S (straight)



Support Anchor
Part # 3324-A



Coping Clip
Part # 3324-C



Nassau Clip
Part # 1712



Figure A.

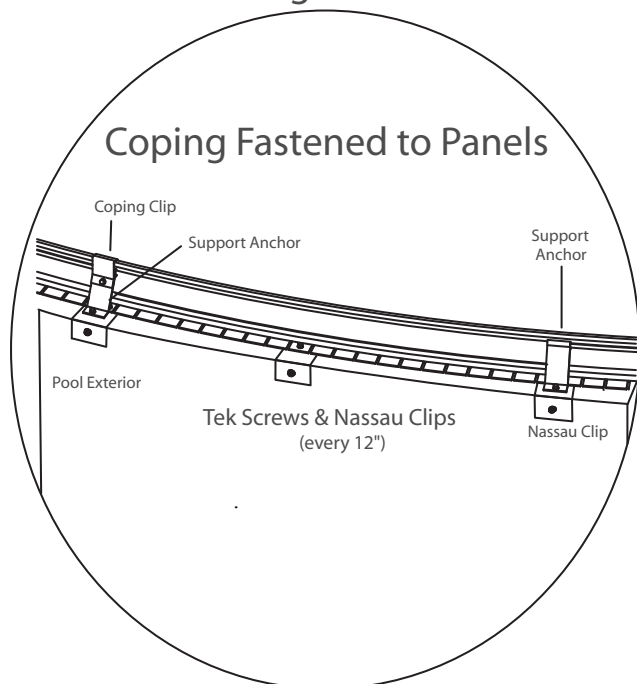


Figure B.

Covering Coping Seams

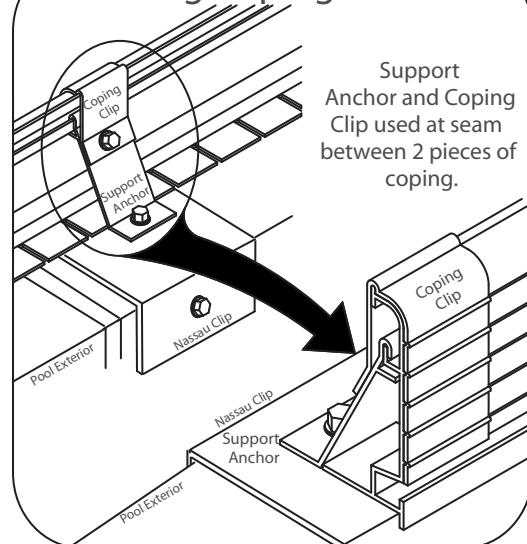
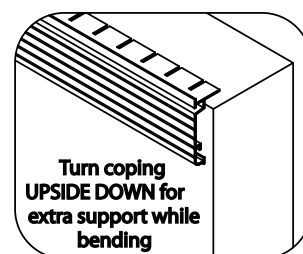
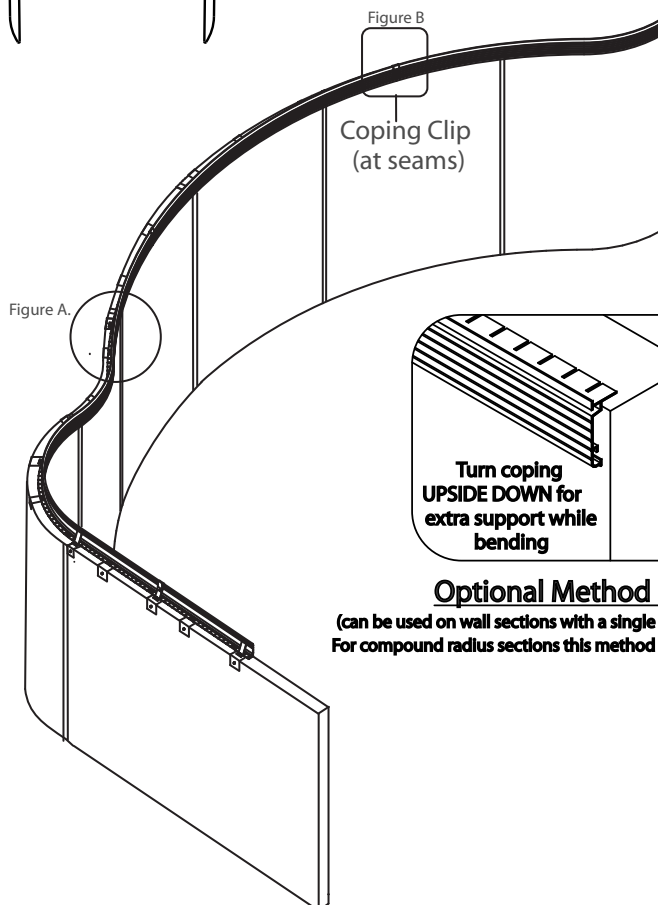


Figure B



Optional Method

(can be used on wall sections with a single radius to form. For compound radius sections this method may NOT work)

INGROUND: SKIMMER ASSEMBLY

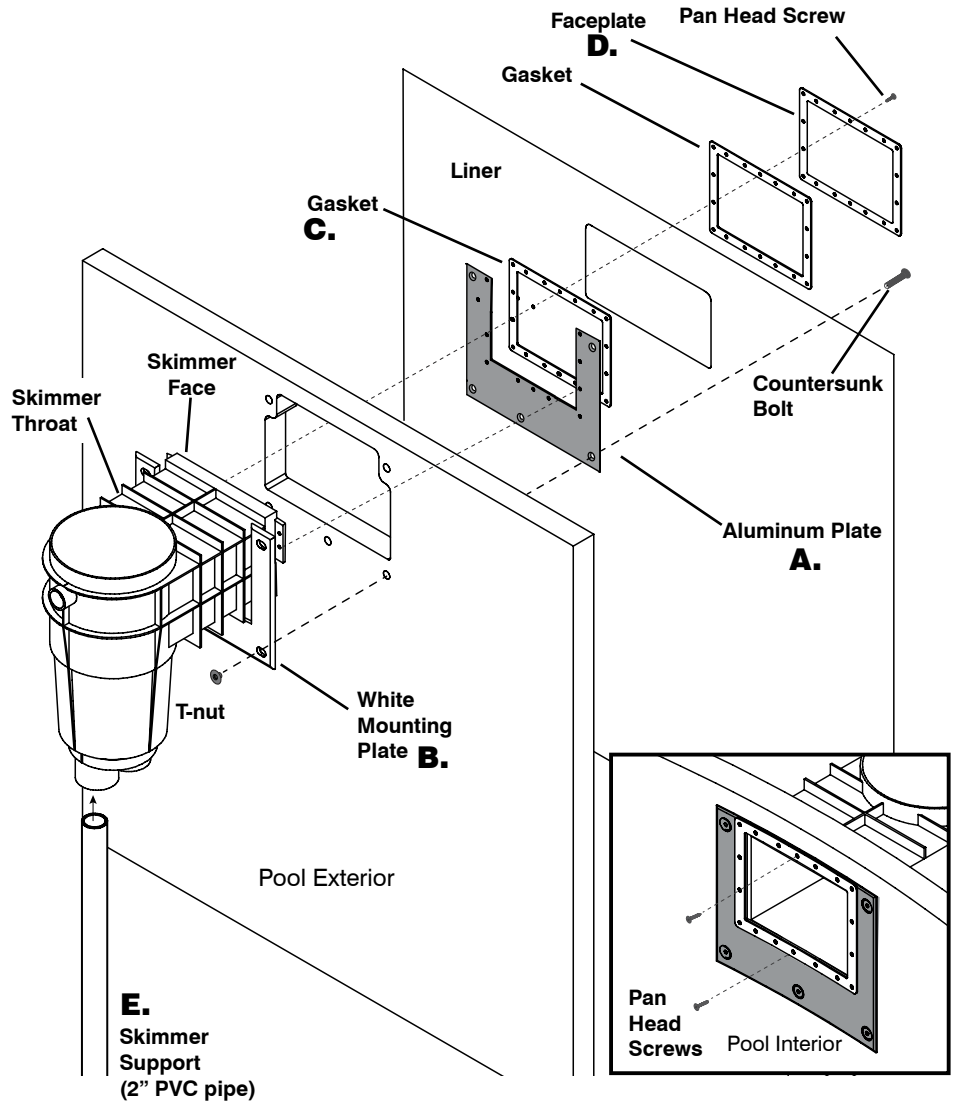
Mount the aluminum skimmer plate (**fig. A**) to the inside pool wall and the white plastic mounting plate (**fig. B**) to the outside pool wall using the included nuts and bolts. Keep all connections slightly loose to ensure correct skimmer placement.

Mount inground skimmer to the aluminum skimmer mounting plate using the included screws. Now securely tighten nuts and bolts on mounting kit and cover edges of aluminum plate with duct tape.

Position one gasket (**fig. C**) on the sealing surface of the skimmer and secure tightly with duct tape. When dropping the liner, you may want to install the liner bead around skimmer locations last, in order to avoid disturbing gasket placement.

After liner has been installed and water level approaches skimmer, prep skimmer faceplate (**fig. D**) by lining up faceplate and gasket, and then carefully drive screws through faceplate, gasket, liner, interior gasket and into skimmer throat.

Securing the corners first will help ensure correct placement. As water level approaches skimmer, carefully cut out liner from inside of skimmer faceplate with sharp blade, making sure to avoid nicking the gaskets.



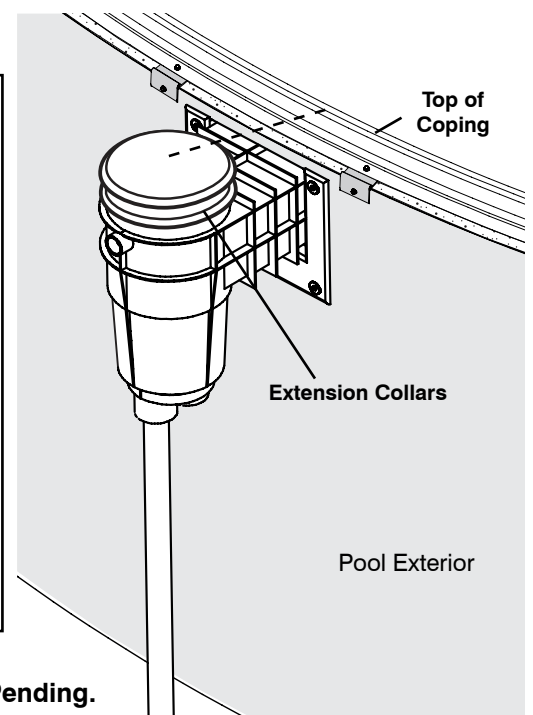
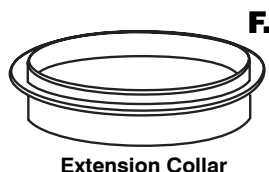
Notes:

It is recommended that 2" Schedule 40 PVC pipe be cut to size, depending on installation. Plug unused skimmer port. Place PVC pipe under skimmer body and adjust to make top of skimmer level. (**fig. E**)

Any gaps in the back of the white mounting plate should be covered using a spray foam filler such as "Great Stuff". After the concrete collar is poured, check level of skimmer top.

Extension Collars:

Extension Collars (not included) (**fig. F**) are used with most inground skimmers to raise the top of the skimmer to the height of decking. The number of extension collars needed is determined by benchmark established by top of coping.



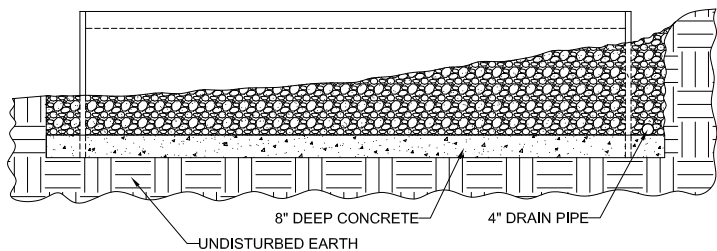
CONCRETE COLLAR GUIDE

Check with local building codes before installing your Radiant Metric Oval pool inground. Radiant Pools requires a minimum of 8" concrete collar around the entire pool if any point of the pool wall is 26" or greater in the ground (**fig. 2**). An example of a semi-inground pool requiring a concrete collar is shown below (**fig. 1**).

When installing an inground thermoplastic walk-in step, add 2.5 yards of concrete to the 'Concrete Requirements table' for the concrete around the step and A-frames (**fig. 4**).

Do not pour concrete directly on the pool walls. Pour concrete away from the wall and let it flow to the wall.

fig. 1



Note: Before pouring concrete collar, check with your electrician as they may want to bond the pool first.

fig. 2

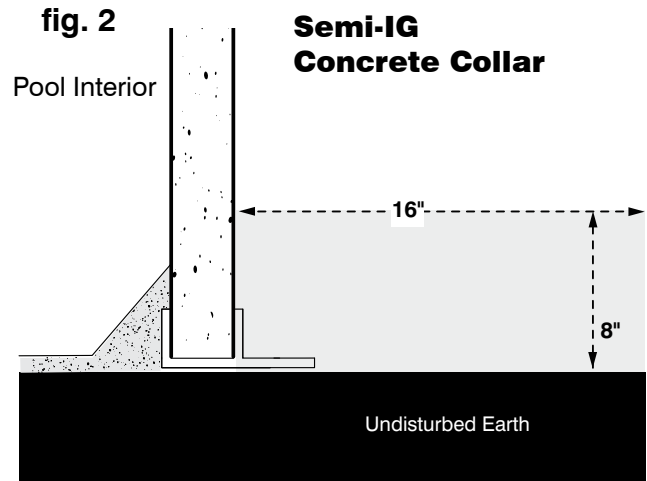
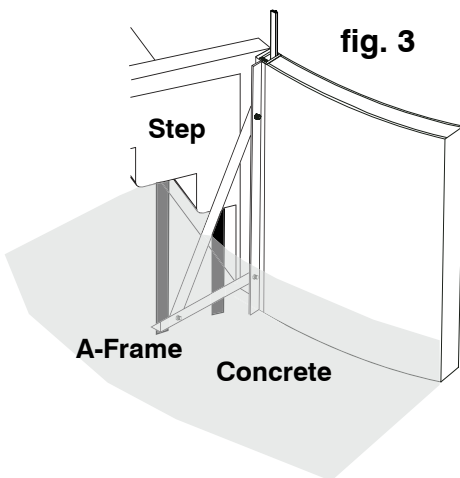
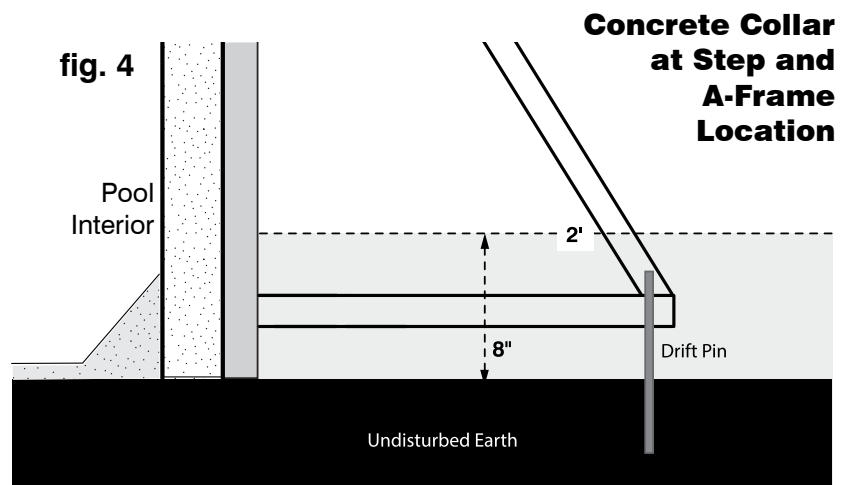


fig. 3



Note: Complete backfill is required around the step.

fig. 4



Concrete Requirements Table:

The following table describes the amount of concrete required in yards for Oval Metric Pools. Add an additional 2.5 yards if thermoplastic walk-in step is included.

Size	12X16	12X20	12X24	16X24	16X28	16X32	18X34
25" Backfill or less	2 yds	2.75 yds	3.5 yds	2.75 yds	3.5 yds	4.5 yds	4.5 yds
26" or more Backfill (Concrete Collar)	3 yds	3.5 yds	4 yds	3.75 yds	4.25 yds	4.75 yds	5 yds
Fully Inground (Concrete Collar)	3.5 yds	4 yds	4.25 yds	4.5 yds	5 yds	5.25 yds	5.5 yds

BACKFILL AND DRAINAGE

Before backfilling, check with electrician for pool bonding. Sonotubes are recommended to be installed at the time of collar pour to support the deck.

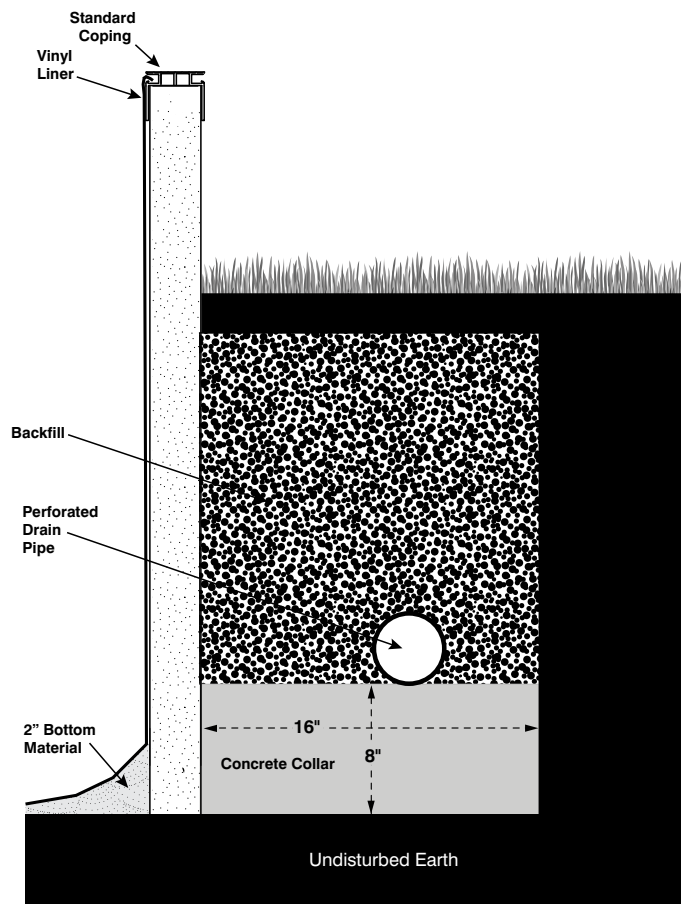
Backfill may go directly against a Radiant pool wall. Structural fill is required. Do not use expansive soil (e.g., clay).

For semi-inground or fully inground installations, the uphill run-off should be redirected around the pool incorporating a French drain concept using a perforated drain pipe and water relief area away from the pool and other structures.

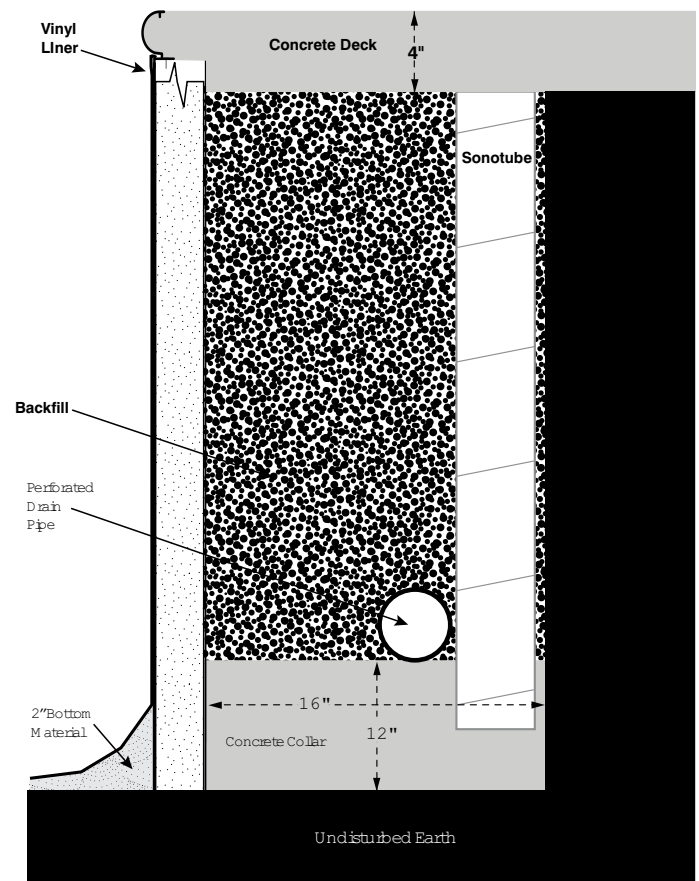
Backfill as the pool is filling with water, manually compacting every 8"-12" (Do not use compacting machinery.) Hand backfill around skimmers, lights and inlets. Be sure that piping is buried, but not crushed.

If backfilling completely before pool is filled, the straight walls must be cross braced at the top, inside the pool. This is not the recommended method of backfilling your Radiant Pool.

Semi-Inground



Full Inground



NOTES:

Radiant

A Latham Pool Company

**440 North Pearl Street
Albany, NY 12207**

1-800-RADIANT