



Installation Manual

Metric Freeform Residential Swimming Pool

Radiant
POOLS™

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. But when used incorrectly, a swimming pool can be dangerous. To ensure 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 homebuilt 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 Freeform 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**. Unlevel 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	
<input type="checkbox"/>	Obtain building permit if required.
<input type="checkbox"/>	Local building and zoning requirements
<input type="checkbox"/>	Electrical and Grounding requirements
<input type="checkbox"/>	Have Ground Tested for Stray Electricity
<input type="checkbox"/>	Proper Backfill and Drainage
<input type="checkbox"/>	Fencing requirements
<input type="checkbox"/>	Backwash (waste water) requirements
<input type="checkbox"/>	Check availability of utilities.
<input type="checkbox"/>	Call before you dig (www.digsafe.com)

With proper installation, care and maintenance, this Radiant Metric Series Freeform 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, coping, 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. It's simply brilliant.

IMPORTANT: BEFORE YOU BEGIN

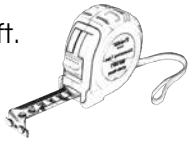
The selection and preparation of the pool site is your responsibility. The manufacturer can only suggest the proper techniques, indicate the important considerations and emphasize the precautions and cannot be held responsible for damages to your pool that may result from failure to carefully follow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

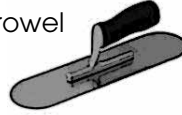


Metal File

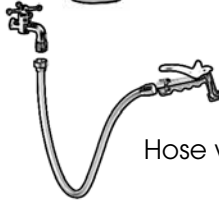


Transit/Laser Level

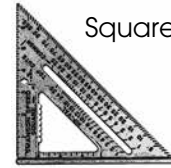
Pool trowel



Utility Knife



Hose with spray nozzle



Square



String

Level



Duct Tape



Cloth rag

Cooking Spray



Rubber Mallet

Step Drill Bit



Socket Set



Hacksaw

Long handled pointed shovel



Short handle square shovel

Pick or Mattock



9/16" Open End Wrench



Power Drill



5/16" Hex nut driver bit



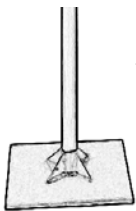
Screwdrivers, Flathead and Phillips



7/16" and 1/8" Drill bits



Tamper, 10 or 12 in. Square



Extension Cord



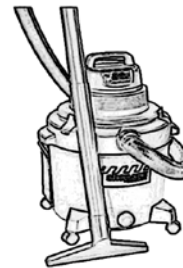
14" Channel Locks



PVC Pipe Cutter



Shop Vac



Rake



Foam Sealant (Great Stuff)



Masonry Sand



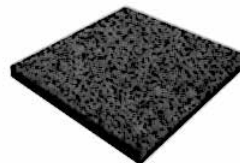
Hand Broom



Tin Snips



2" Patio Block



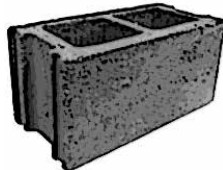
Wheelbarrow



Soft bristle broom



8" Concrete Block



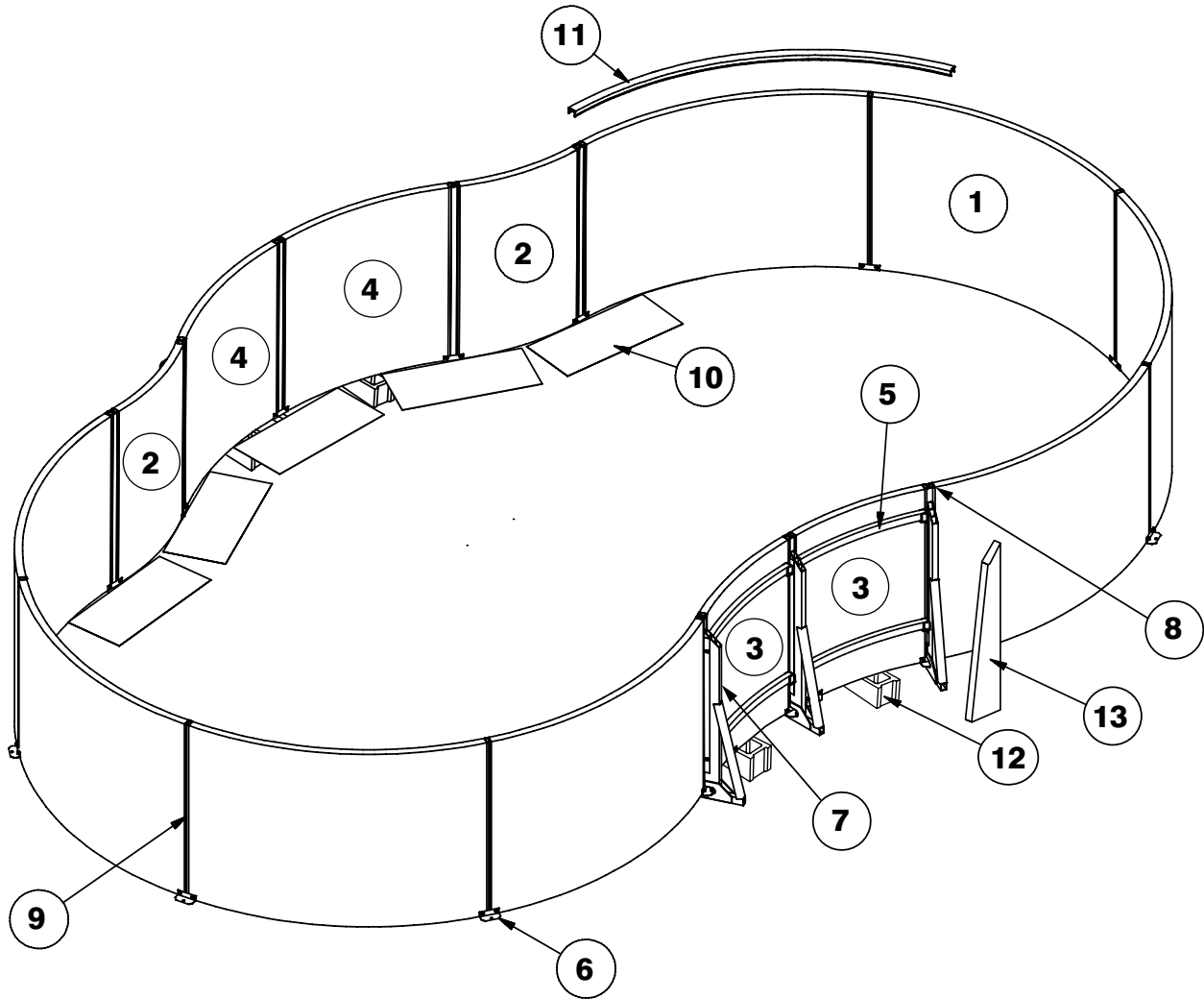
POOL COMPONENTS CHECKLIST

PART DESCRIPTION	14 x 22	16 x 27	18 x 32
WALL PANELS: STANDARD END PANELS:	(6) 7' 2"	(8) 6' 5"	(8) 7' 5 ¹ / ₈ "
WALL PANELS: SPECIAL RADIUS-BUMP:	(2) 3' 1 ¹ / ₄ "	(2) 4' 1 ¹ / ₄ "	(2) 4' 9 ³ / ₈ "
WALL PANELS: REVERSE RADIUS-INDENT:	(2) 2' 5 ⁵ / ₈ "	(2) 3' 3 ¹ / ₄ "	(2) 4' 1"
WALL PANELS: REVERSE RADIUS-BUMP:	(2) 2' 3 ¹ / ₂ "	(2) 2' 9 ³ / ₈ "	(2) 3' 6 ³ / ₄ "
BUTTRESS AFRAMES	8	8	8
HOLD DOWN PLATE: 16" X 36" STEEL	8	8	8
FREEFORM METRIC HARDWARE BUNDLE:	1	1	1
SHORT SPLINES 5 3/4"	32	32	32
40 ¹ / ₂ " EXTENDED (T) SPLINES	16	16	16
ST. PANEL CONNECTOR	8	8	8
ANCHOR PLATE- REV. PANELS	8	8	8
SECOND INLET FITTING	1	1	1
STANDARD METRIC HARDWARE BUNDLE:			
HB-PM52J12	1		
HB-PM52J14		1	1
FREEFORM STURCTURAL BRACE KIT	DEPENDENT ON TYPE OF INSTALL (AG, SEMI, OR IG)		
A-FRAME COVER KIT (set of 8)	1	1	1
COPING KIT	1	1	1
SKIMMER AND ADAPTER KIT	1	1	1
LINER	1	1	1
REQUIRED COMPONENTS NOT INCLUDED IN POOL KIT:			
2" x 8" x 16" PATIO BLOCK	4	6	6
8" x 8" x 16" CONCRETE BLOCK	8	8	8
CONCRETE FOOTER MIX	2.5 yds	3 yds	4 yds
CLEAN SAND FOR UNDER LINER	2.5 yds	3.5 yds	4.5 yds
CONCRETE COLLAR MIX (FOR SEMI & IG INSTALL)	6 yds	7 yds	9 yds

IMPORTANT NOTE:

Do not allow splines or compressions seams to come in contact with sand or other debris as this will cause difficulty with installation. We recommend a small dust broom or damp cloth be available in the event that any dirt or debris finds its way to these parts.

METRIC SERIES FREEFORM POOL COMPONENTS



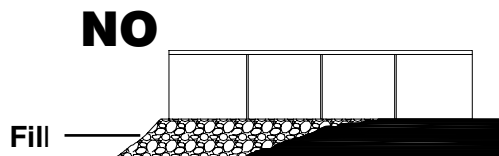
Drawings are for illustrative purposes and are not to scale.

#	COMPONENT
1	Radius Wall Panel
2	Reverse Radius Wall Panel - Bump
3	Reverse Radius Wall Panel - Indent
4	Special Radius Wall Panel - Bump
5	Structural Bracing - for Reverse Radius Wall Panels
6	Anchor Plates - Add stability and alignment to radius wall panels
7	A-Frames & Extended Splines - imbedded in concrete for stability
8	Panel Connector
9	Standard Splines - Used at curved panel joints to join walls together
10	Hold Down Plates - reinforces structural stability
11	Standard Metric Coping - Secures liner & gives finished appearance
12	8"x8"x16" Concrete Block
13	A-Frame Shroud Cover

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.



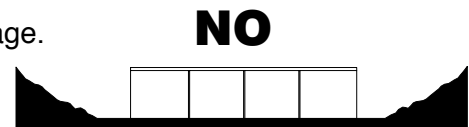
CORRECT



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.

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

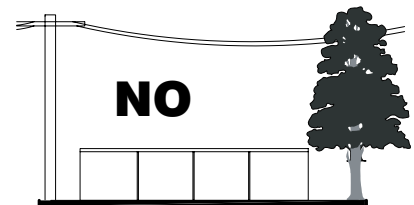
For Semi-Inground Installations: The site of installation must accommodate an efficient drainage system to minimize the impact of heavy rain and high ground water conditions.



4. 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.

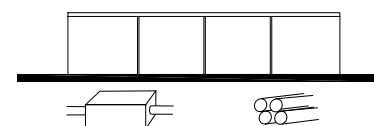
5. If ants or termites are prevalent in your area, have soil treated with insecticides and allow sufficient time for them to dissipate before continuing with pool installation.

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



7. 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.

NO



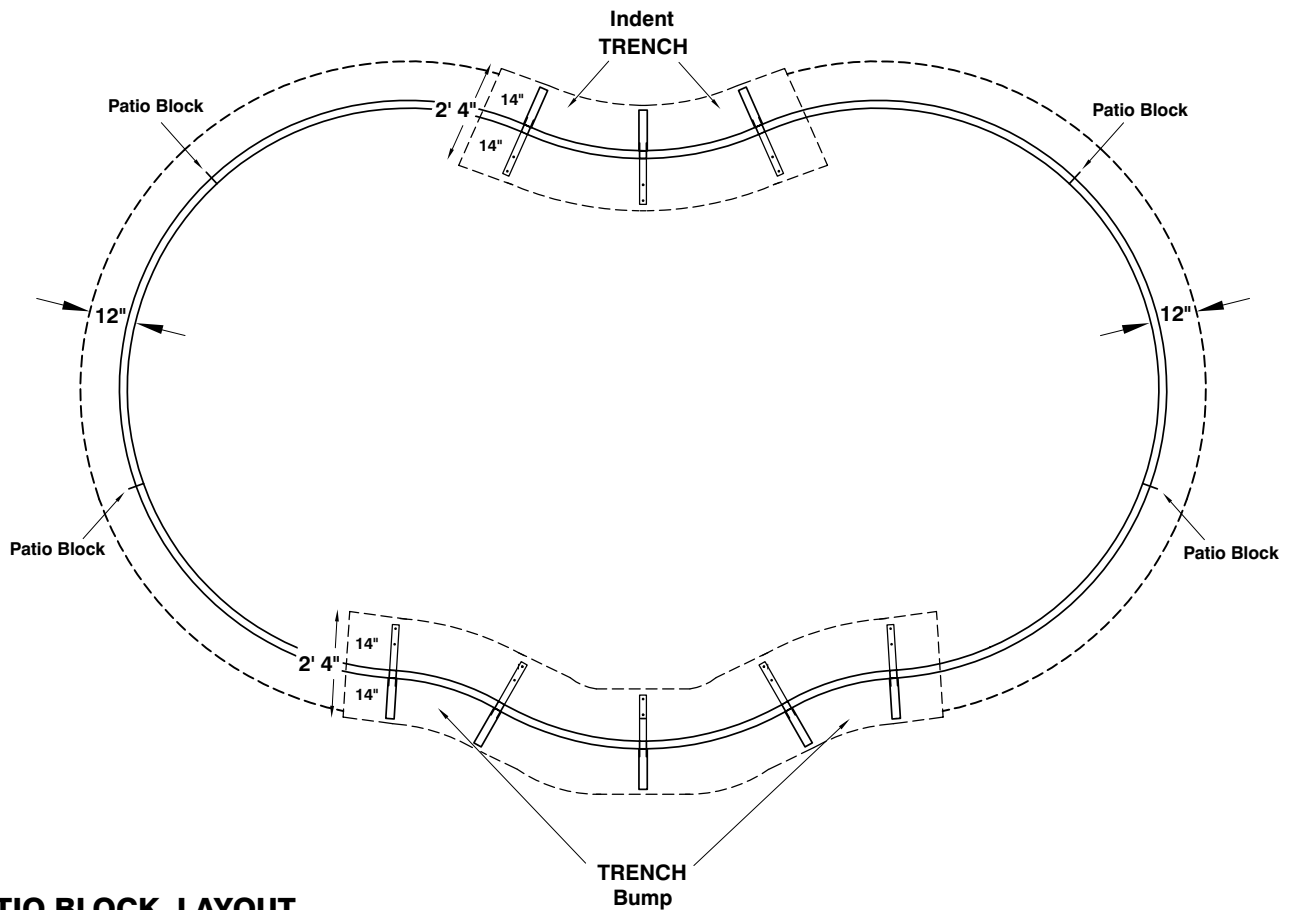
8. Do not set up your pool on or near any septic system or underground utilities.

LAYOUT WITH LAWN TEMPLATE

1. Open and stretch Lawn template over area where pool is to be installed.
2. Draw or paint outline of pool.
3. Mark trench beginning and ending points.
4. Mark patio block locations for pool ends. 2 each end 14x22, 3 each end 16x27, 18x32.
5. Remove lawn template
6. Mark a line 14" inside and outside of the pool outline from trench end to trench end.
7. Level ground of pool outline, include over dig of 12" at ends of pool.
8. Dig trench areas 12" below grade of pool (Benchmark).

TRENCH LAYOUT

POOL SIZE	FOOTPRINT A-B B-C	RADIUS POOL ENDS	TRENCH WIDTH	TRENCH LENGTHS	TRENCH DEPTH
14' x 22'	22' x 13'6"	6'R	28"	Bump: 13'6" Indent: 7'6"	8"
16' x 27'	27' x 16'	7'R	28"	Bump: 16'6" Indent: 9'	8"
18' x 32'	32' x 18'6"	8'R	28"	Bump: 19'4" Indent: 10'8"	8"



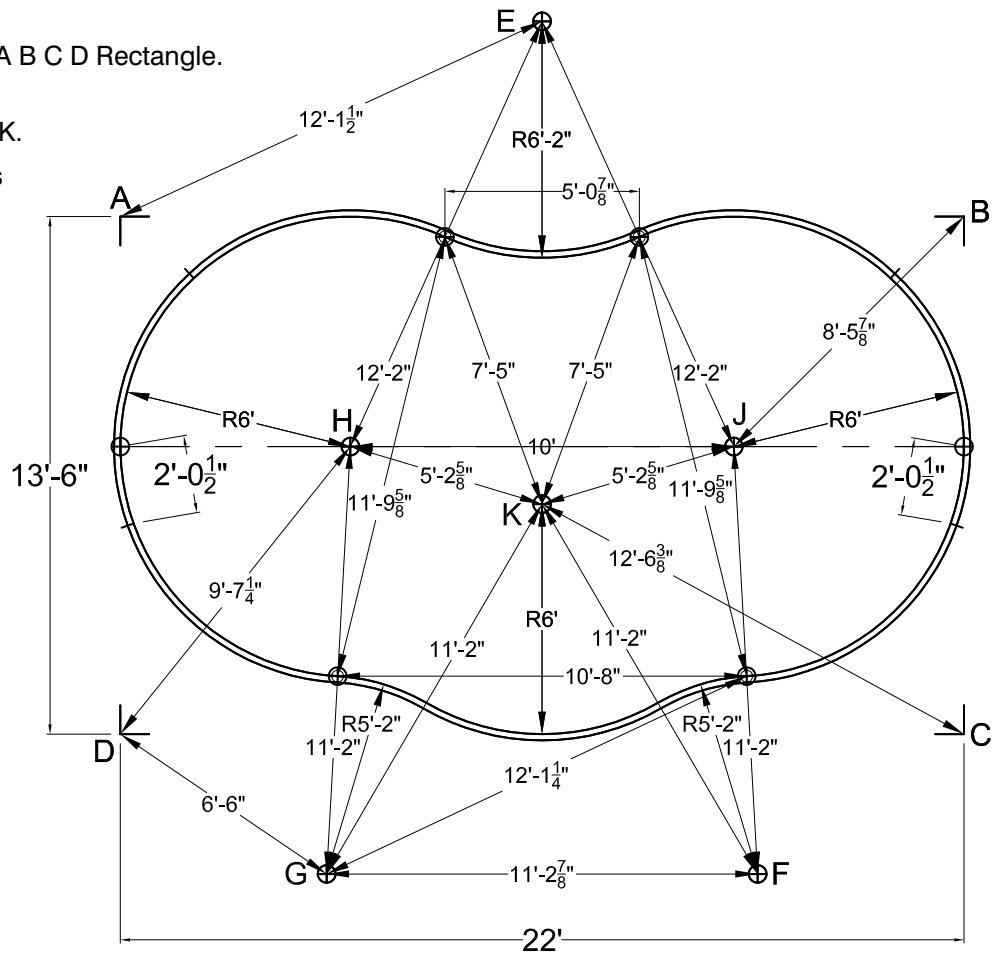
PATIO BLOCK LAYOUT WITH LAWN TEMPLATE

1. Locate marks made for patio block locations with template.
(2 each end for the 14x22 and 3 at each end for the 16x27 and the 18x32.)
2. Center a block over each of the marks, half in and half out of the pool outline.
3. Top of blocks should be even and level with your pool benchmark.

ALTERNATE LAYOUT (NO TEMPLATE)

POOL LAYOUT

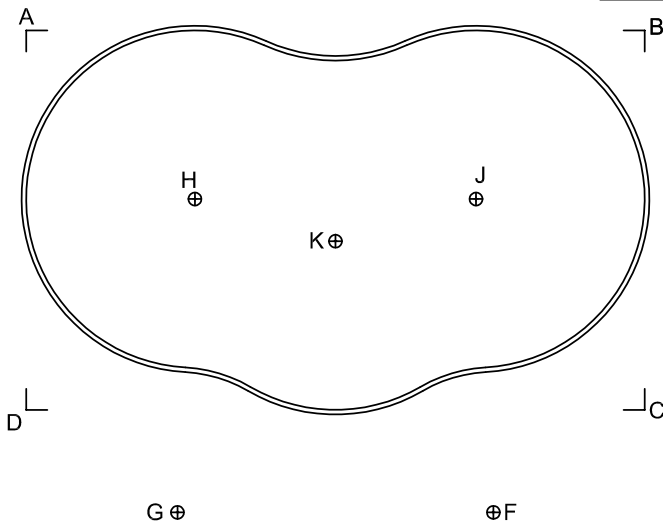
1. Establish pool footprint with A B C D Rectangle.
(example: 14' x 22')
2. Find points E, F, G, H, J and K.
3. Swing arcs from these points to create and paint an outline of the pool.



14' X 22' LAYOUT

E ⊕

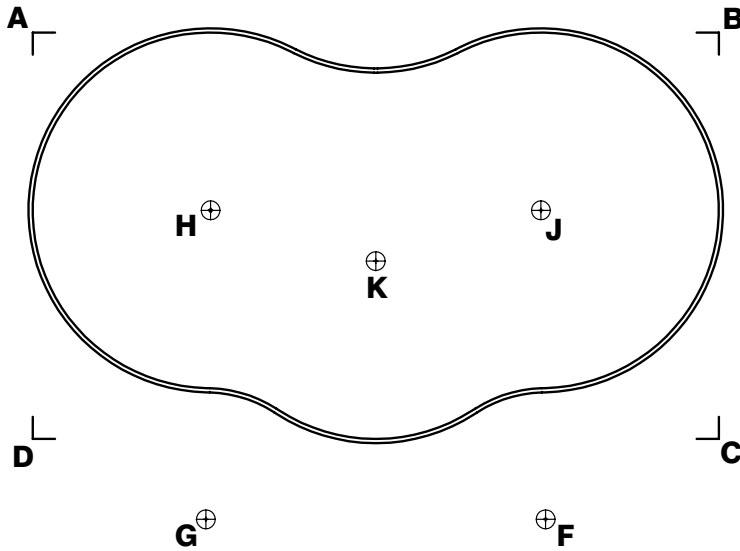
	A	B	C	D	E	F	G	H	J	K
A		22'-0"	25'-9 ³ / ₈ "	13'-6"	12'-1 ¹ / ₂ "	23'-10 ⁵ / ₈ "	17'-11 ⁵ / ₈ "	8'-5 ⁷ / ₈ "	17'-1"	13'-3 ³ / ₄ "
B			13'-6"	25'-9 ³ / ₈ "	12'-1 ¹ / ₂ "	17'-11 ⁵ / ₈ "	23'-10 ⁵ / ₈ "	17'-1"	8'-5 ⁷ / ₈ "	13'-3 ³ / ₄ "
C				22'-0"	21'-7 ¹ / ₄ "	6'-6"	17'-0 ¹ / ₄ "	17'-8"	9'-7 ¹ / ₄ "	12'-6 ³ / ₈ "
D					21'-7 ¹ / ₄ "	17'-0 ¹ / ₄ "	6'-6"	9'-7 ¹ / ₄ "	17'-8"	12'-6 ³ / ₈ "
E						22'-11 ¹ / ₄ "	22'-11 ¹ / ₄ "	12'-2"	12'-2"	12'-7 ¹ / ₈ "
F							11'-2 ⁷ / ₈ "	15'-4 ³ / ₄ "	11'-2"	11'-2"
G								11'-2"	15'-4 ³ / ₄ "	11'-2"
H									10'-0"	5'-2 ⁵ / ₈ "
J										5'-2 ⁵ / ₈ "



ALTERNATE LAYOUT (NO TEMPLATE)

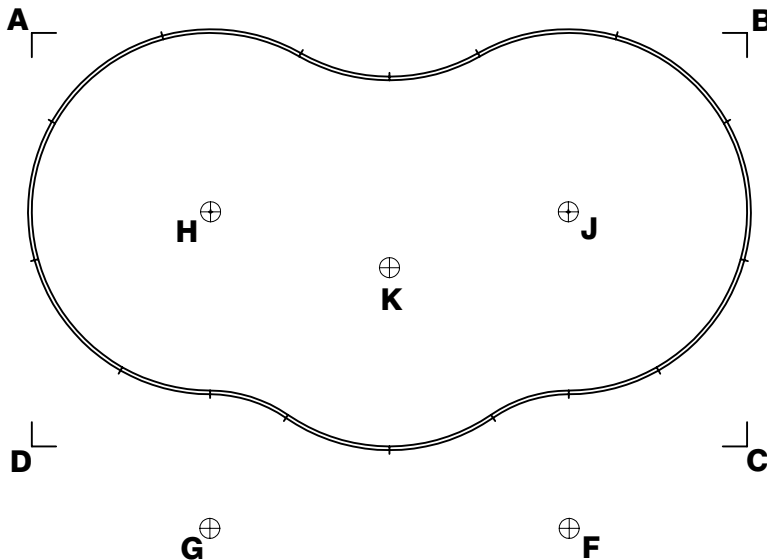
16' x 27'

	A	B	C	D	E	F	G	H	J	K
A		27'-0"	31'-4 ⁵ / ₈ "	16'-0"	14'-7 ³ / ₈ "	27'-10"	20'-4 ¹ / ₈ "	9'-10 ³ / ₄ "	21'-2 ¹ / ₄ "	16'-2 ³ / ₄ "
B			16'-0"	31'-4 ⁵ / ₈ "	14'-7 ³ / ₈ "	20'-4 ¹ / ₈ "	27'-10"	21'-2 ¹ / ₄ "	9'-10 ³ / ₄ "	16'-2 ³ / ₄ "
C				27'-0"	25'-5 ¹ / ₂ "	7'-6 ¹ / ₈ "	20'-5 ¹ / ₈ "	21'-11 ¹ / ₈ "	11'-4 ⁷ / ₈ "	15'-2 ¹ / ₂ "
D					25'-5 ¹ / ₂ "	20'-5 ¹ / ₈ "	7'-6 ¹ / ₈ "	11'-4 ⁷ / ₈ "	21'-11 ¹ / ₈ "	15'-2 ¹ / ₂ "
E						25'-5 ⁷ / ₈ "	25'-5 ⁷ / ₈ "	14'-2"	14'-2"	14'-7"
F							13'-4 ¹ / ₂ "	17'-11 ¹ / ₄ "	12'-2"	12'-2"
G								12'-2"	17'-11 ¹ / ₄ "	12'-2"
H									13'-0"	6'-9 ⁵ / ₈ "
J										6'-9 ⁵ / ₈ "



16' X 27' LAYOUT

	A	B	C	D	E	F	G	H	J	K
A		32'-0"	36'-11 ¹ / ₂ "	18'-6"	17'-1 ¹ / ₄ "	32'-8 ³ / ₈ "	23'-6 ⁵ / ₈ "	11'-3 ³ / ₄ "	25'-3 ⁵ / ₈ "	19'-1 ⁵ / ₈ "
B			18'-6"	36'-11 ¹ / ₂ "	17'-1 ¹ / ₄ "	23'-6 ⁵ / ₈ "	32'-8 ³ / ₈ "	25'-3 ⁵ / ₈ "	11'-3 ³ / ₄ "	19'-1 ⁵ / ₈ "
C				32'-0"	29'-3 ⁵ / ₈ "	8'-9 ¹ / ₄ "	24'-3 ³ / ₄ "	26'-2 ³ / ₈ "	13'-2 ³ / ₈ "	17'-10 ⁵ / ₈ "
D					29'-3 ⁵ / ₈ "	24'-3 ³ / ₄ "	8'-9 ¹ / ₄ "	13'-2 ³ / ₈ "	26'-2 ³ / ₈ "	17'-10 ⁵ / ₈ "
E						29'-4"	29'-4"	16'-2"	16'-2"	16'-6 ⁵ / ₈ "
F							16'-0 ⁷ / ₈ "	21'-4 ³ / ₄ "	14'-2"	14'-2"
G								14'-2"	21'-4 ³ / ₄ "	14'-2"
H									16'-0"	8'-4 ⁵ / ₈ "
J										8'-4 ⁵ / ₈ "



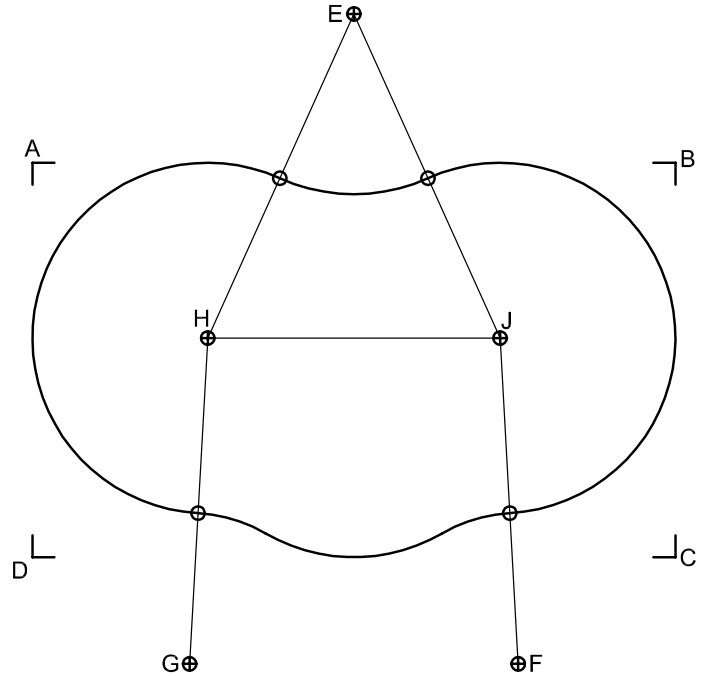
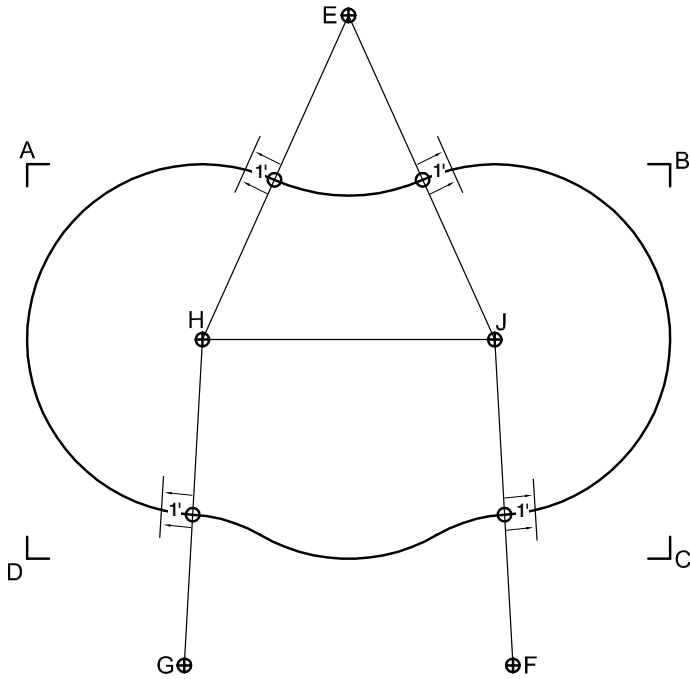
18' X 32' LAYOUT

ALTERNATE LAYOUT (NO TEMPLATE)

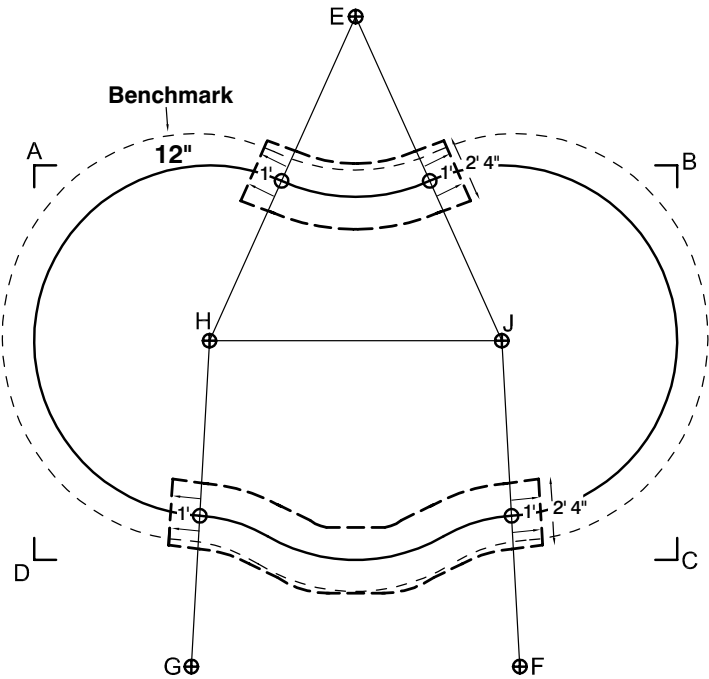
4. Outline the trenches to be dug.

a. Mark points where G-H and F-J cross the pool outline. Mark points where E-H and E-J cross the pool outline.

b. Starting from where lines of above points intersect the pool outline, measure 1' towards ends of pool, along outline to establish trench endpoints.



c. Mark a line 14" inside and outside of the pool outline from trench end to trench end. Trenches are 28" wide.

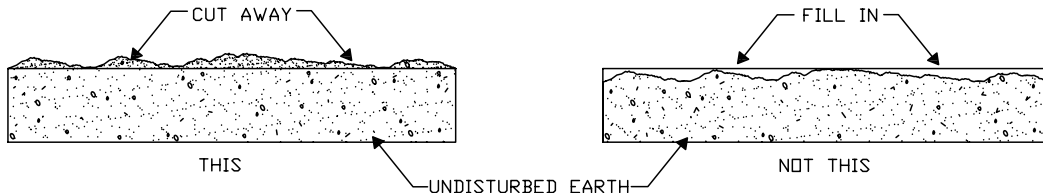


5. Level ground within pool outline, include overdig of 12" at both ends of pool. Keep points H, J and K secure.

6. Dig trench areas 8" (height of cinder block) below bottom of pool grade

LEVELING THE EXCAVATION

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, etc., must be filled and properly compacted.

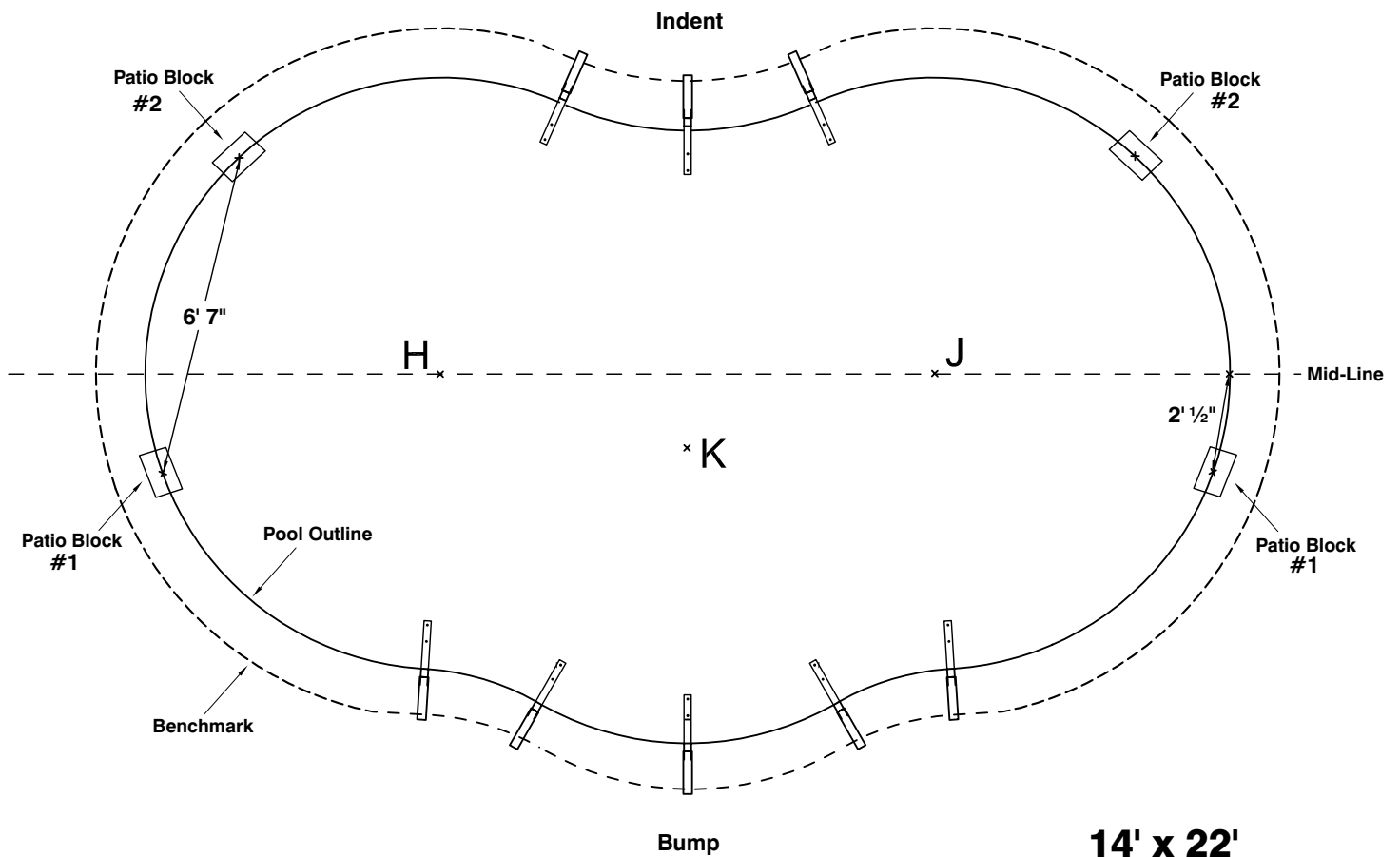


PATIO BLOCK LAYOUTS

14' X 22' LAYOUT

There will be 3 panels and 2 joints to position patio blocks for leveling at each end of pool.

1. Draw a line through H-J to pool outline and mark where they cross. This is the mid-line.
2. From the mid-line, measure and mark a point on the pool outline $2' \frac{1}{2}"$ toward the pool bump. Do this on both ends of the pool. This will be the center of patio blocks #1.
3. From the center of patio block #1, measure and mark a point on the pool outline $6' 7"$ toward pool indent. Do this on both ends of the pool. This will be the center of patio blocks #2.
4. Top of blocks should be even and level with your pool benchmark.



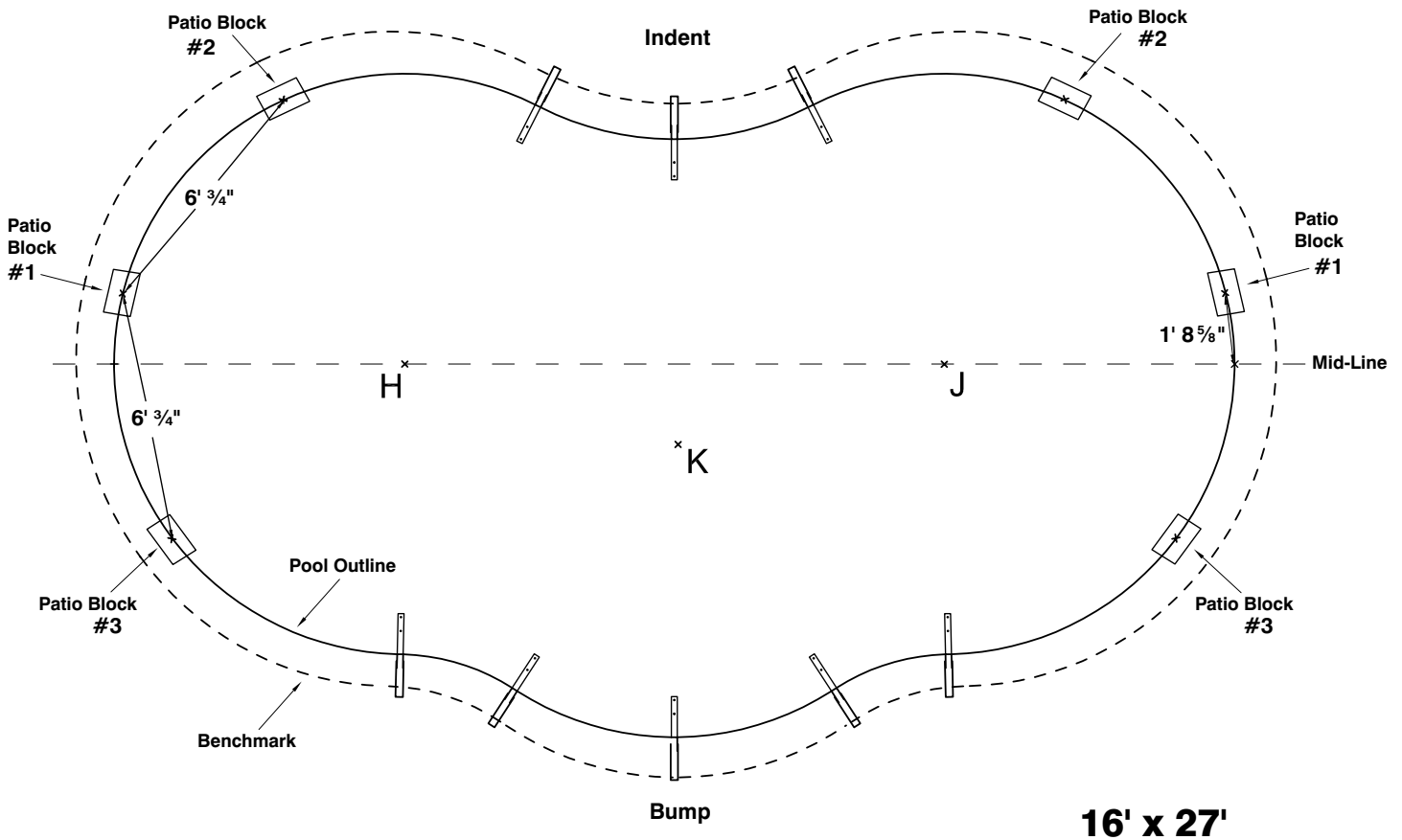
All end panels will join near the center of the patio blocks.

PATIO BLOCK LAYOUTS

16' X 27' LAYOUT

There will be 4 panels and 3 joints to position patio blocks for leveling at each end of pool.

1. Draw a line through H-J to pool outline and mark where they cross. This is the mid-line.
2. From the mid-line, measure and mark a point on the pool outline $1' 8 \frac{5}{8}"$ toward the pool indent. Do this on both ends of the pool. This will be the center of patio blocks #1.
3. From the center of patio block #1, measure and mark a point on the pool outline $6' \frac{3}{4}"$ toward pool indent. Do this on both ends of the pool. This will be the center of patio blocks #2.
4. From the center of patio block #1, measure and mark a point on the pool outline $6' \frac{3}{4}"$ toward pool bump. Do this on both ends of the pool. This will be the center of patio blocks #3.
5. Top of blocks should be even and level with your pool benchmark.



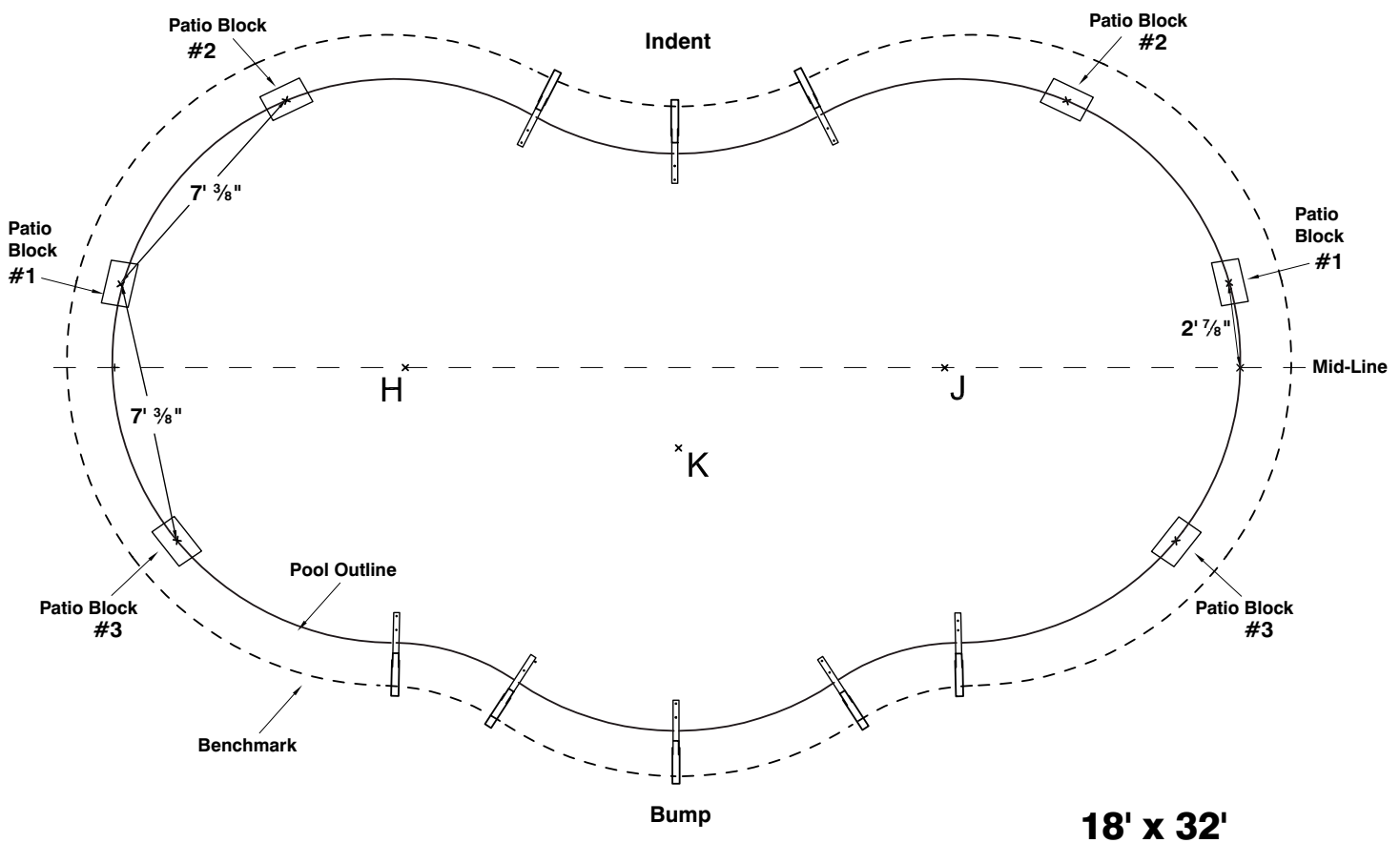
All end panels will join near the center of the patio blocks.

PATIO BLOCK LAYOUTS

18' X 32' LAYOUT

There will be 4 panels and 3 joints to position patio blocks for leveling at each end of pool.

1. Draw a line through H-J to pool outline and mark where they cross. This is the mid-line.
2. From the mid-line, measure and mark a point on the pool outline $2' 7/8''$ toward the pool indent. Do this on both ends of the pool. This will be the center of patio blocks #1.
3. From the center of patio block #1, measure and mark a point on the pool outline $7' 3/8''$ toward pool indent. Do this on both ends of the pool. This will be the center of patio blocks #2.
4. From the center of patio block #1, measure and mark a point on the pool outline $7' 3/8''$ toward pool bump. Do this on both ends of the pool. This will be the center of patio blocks #3.
5. Top of blocks should be even and level with your pool benchmark.



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

END 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.

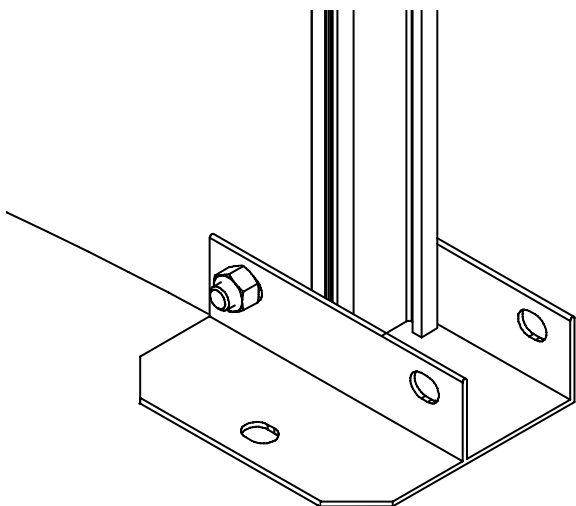
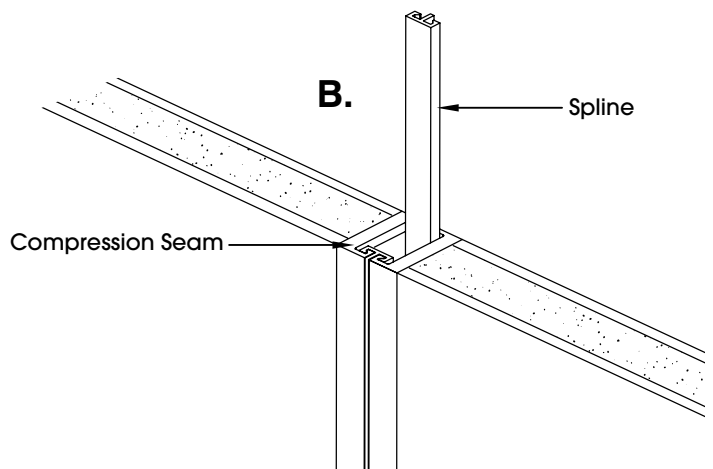
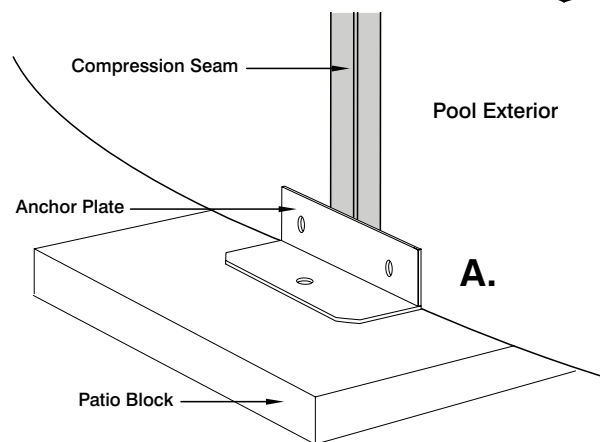
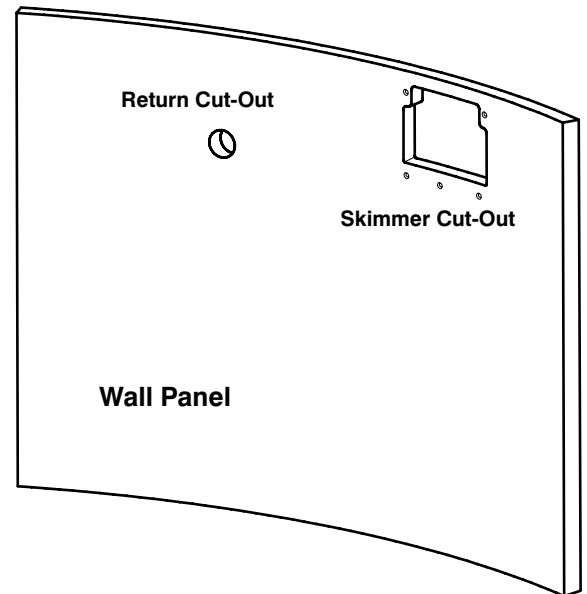
Place an anchor plate centered on a patio block. Place 2 wall panels so they meet on the center of the anchor plate. **(fig.A)** Please be aware that each compression seam should be flush before attempting to insert the splines. **(fig.B)** Splines are designed to slide freely into place when inserted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

NOTE: If wall panels are not level it will be hard to drop splines. Use 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 compression seam does not go easy, 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.

Drill 7/16" holes through the pool panels at the anchor plate predrilled holes. 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.



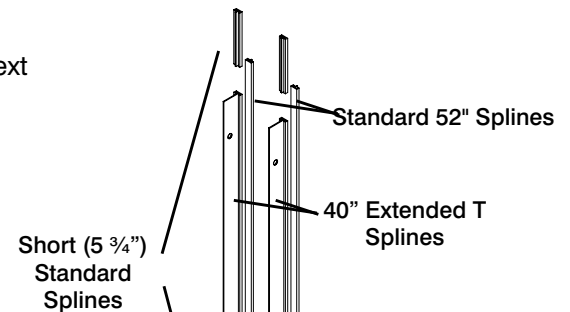
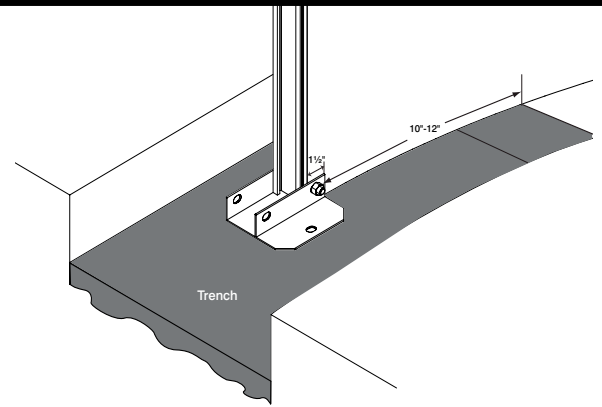
NOTE: Do not install final radius panel until after installing A-frames and straps and sand has been brought inside pool.

INSTALLATION OF PANELS OVER TRENCH AREAS

Panel Assembly:

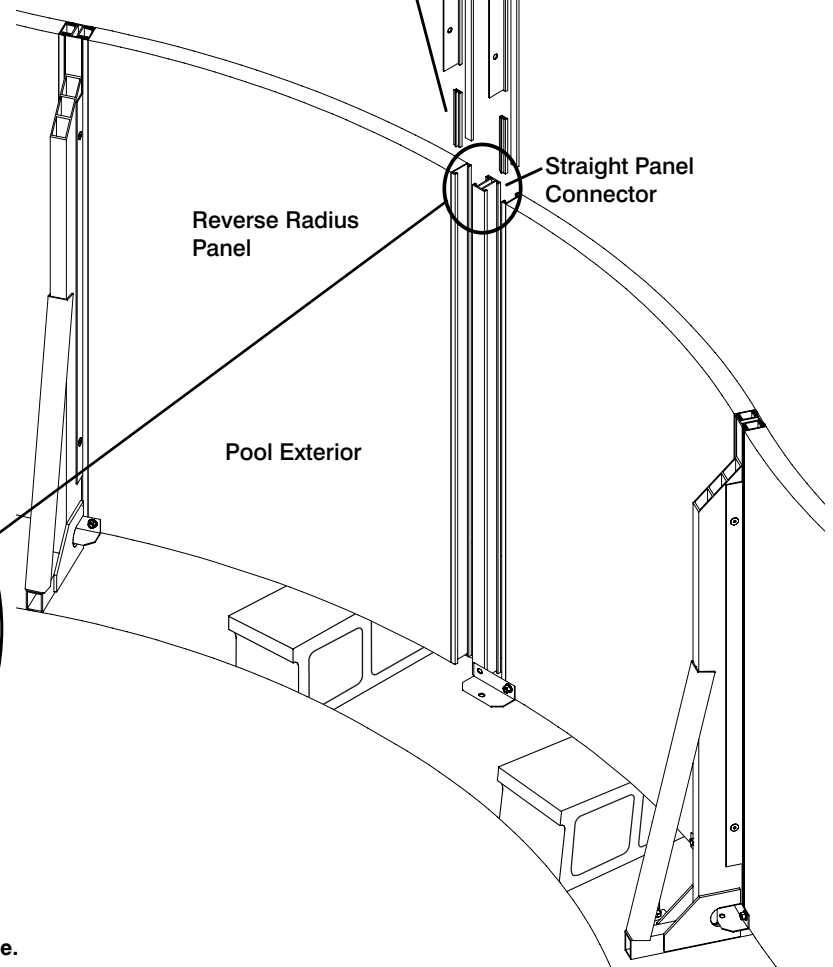
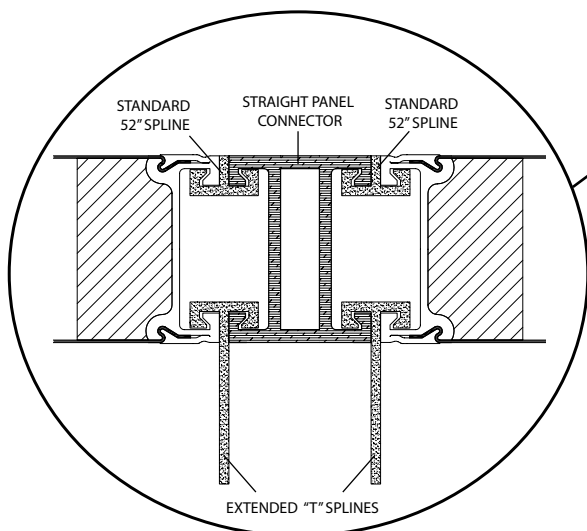
NOTE: Level the trench bottoms as close as possible to 8" below grade before starting. The panel assembly over trench may start on either bump or indent side. **Make sure panels are in correct locations, on correct side of the pool.**

1. Set end panel to overhang trench 10-12".
2. Place A-frame anchor plate under end of panel in 1 1/2". Drill 7/16" hole through panel at pre-drilled hole in anchor plate. Secure with 2 1/2" bolt and nut.
3. Place straight panel connector onto the anchor plate. Secure to panel with a 52" spline on the water side and a short 5 3/4" standard spline, 40 1/2" extended (T) spline, and topped with another short 5 3/4" standard spline in the outside groove.
4. Identify first reverse panel-bump or indent side and put in place next to straight panel connector just installed.
5. Repeat step 3 securing the first reverse panel to the straight panel connector.
6. Repeat step 2 securing the A-frame anchor plate to the first reverse panel.
7. In this step the panel will vary. The bump will use a standard radius panel. The indent will use a reverse radius panel. Repeat step 2, placing an A-frame anchor plate under the end of panel in 1 1/2". Drill bolt hole and secure anchor plate to panel.



The Indent side will have 2 reverse panels that join with standard end panel at each end of pool. The bump side will have a reverse panel, two special radius bump panels, and the second reverse panel to join with the other end of the pool.

Check level of panels.



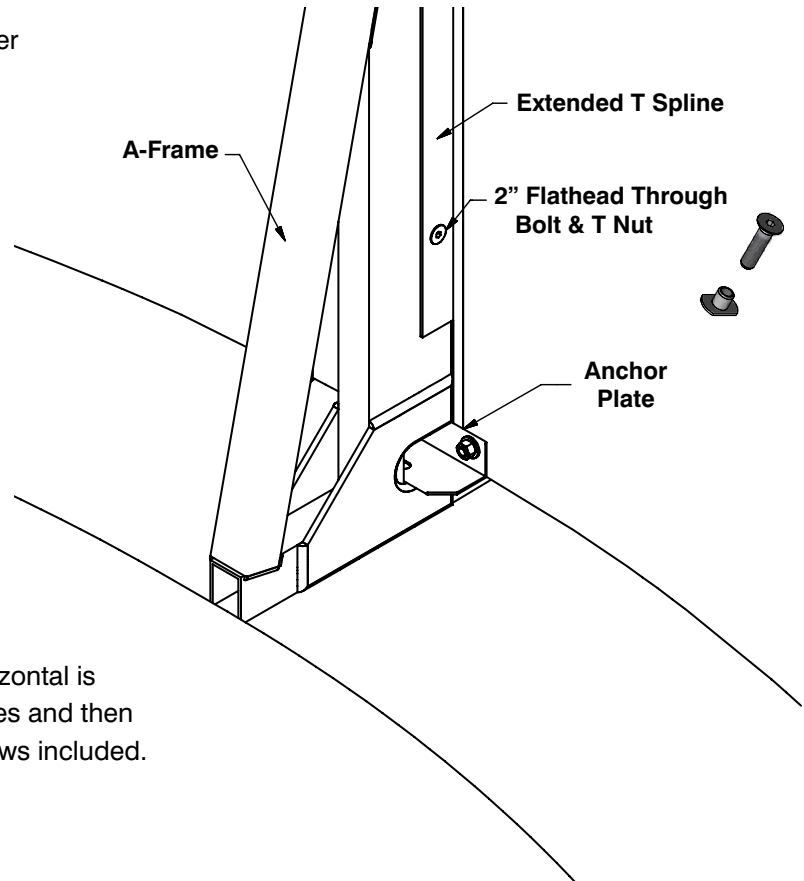
Drawings are for illustrative purposes and are not to scale.

A-FRAME INSTALLATION

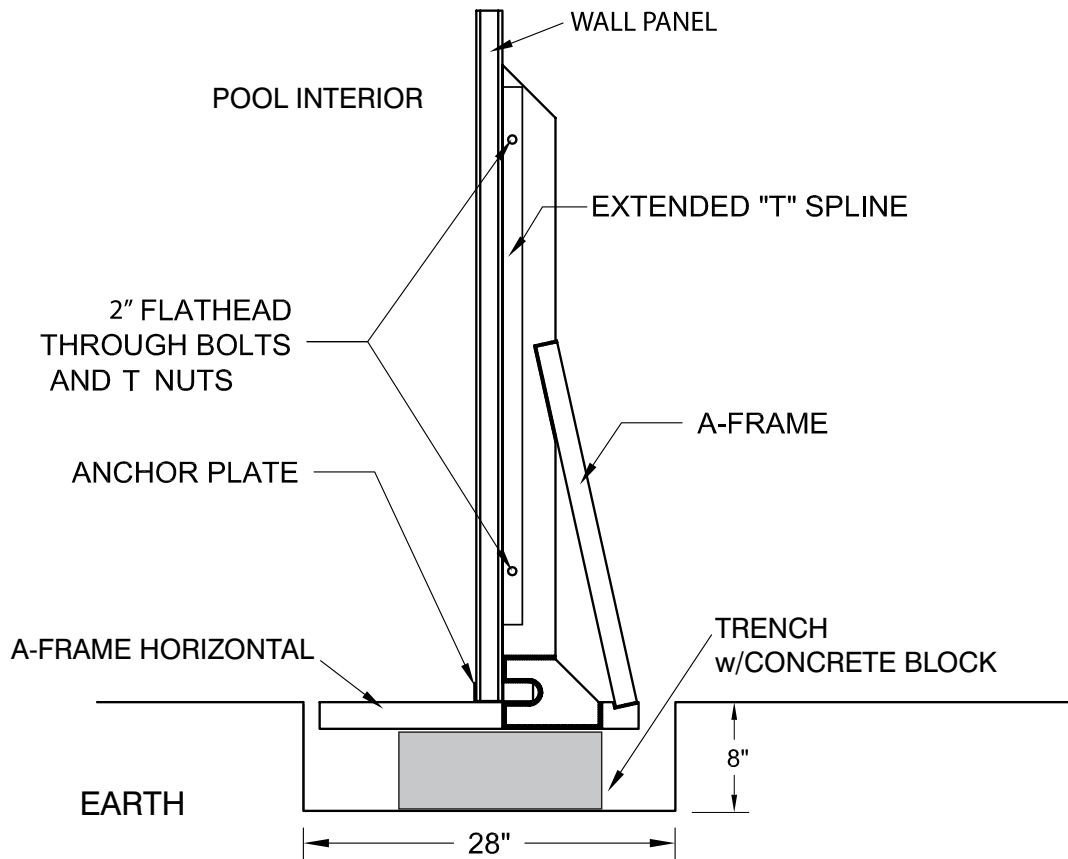
There are 8 A-frames per Freeform pool.
The horizontal base of the A-frame will be under the wall panel and the A-frame anchor plate.

The A-frame vertical will interlock inside the extended (T) splines at the wall connections. Secure A-frame to extended (T) splines with two (2) 2" flathead through bolts and T nuts.

Do not over tighten.



Position hold down plates so that A-frame horizontal is covered in the interior of the pool. Pre-drill holes and then attach to horizontal using the sheet metal screws included.

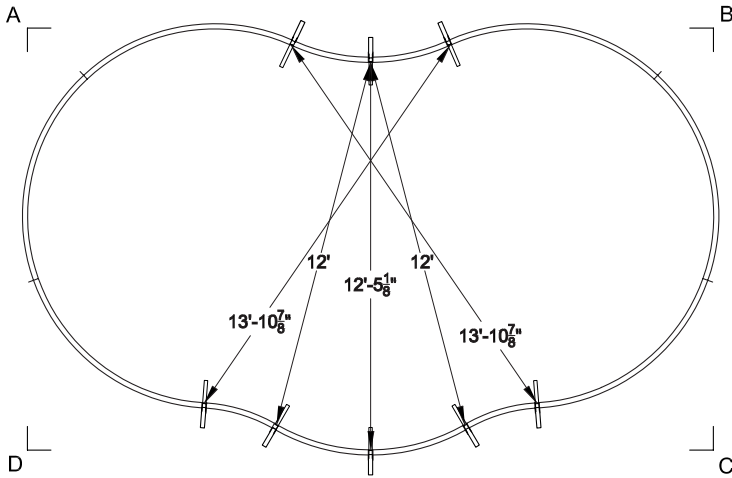


SQUARING THE POOL - CROSS MEASUREMENTS

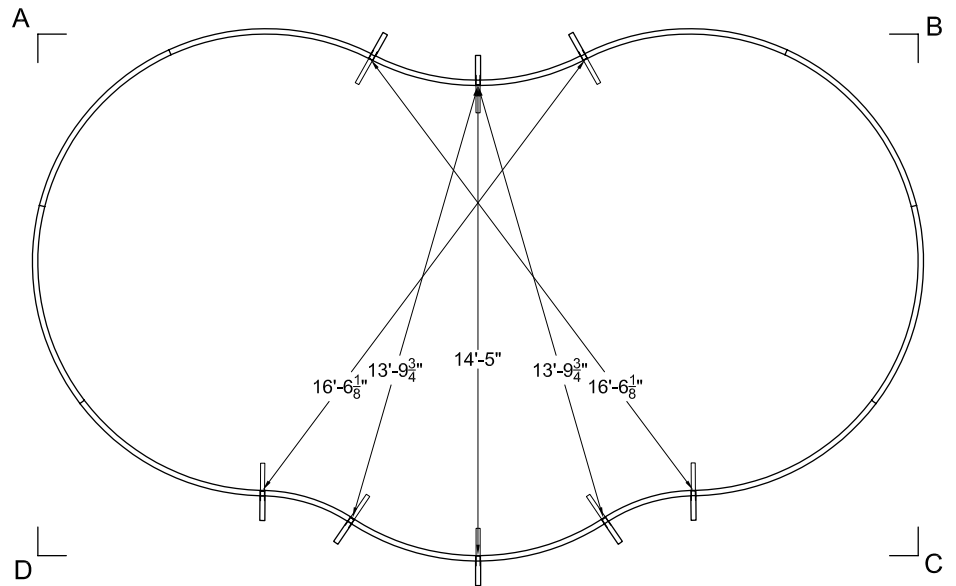
IMPORTANT:
Pool must be squared up
BEFORE concrete is poured.

Measurements are taken from the inside of the pool wall. When measuring to an A-frame location, hold tape at the middle of the panel connector. See full drawings included with pool kit for all cross measurements.

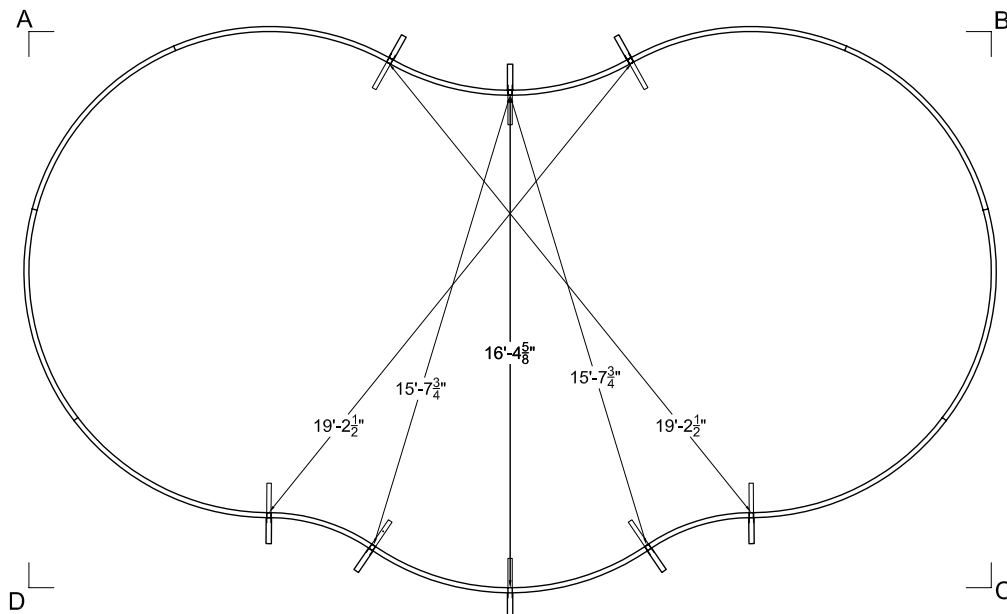
14' X 22'



16' X 27'



18' X 32'

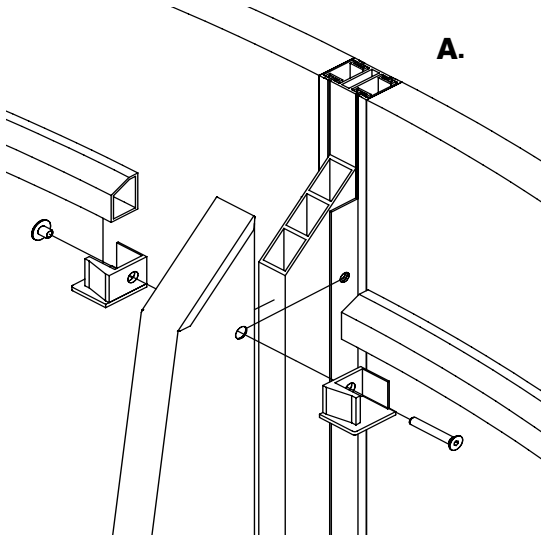
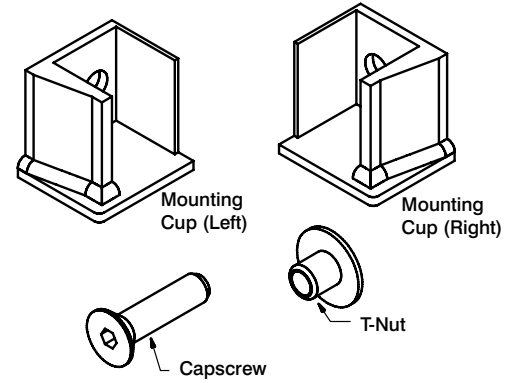


Drawings are for
illustrative purposes
and are not to scale.

Structural Bracing and Shroud A-Frame Covers

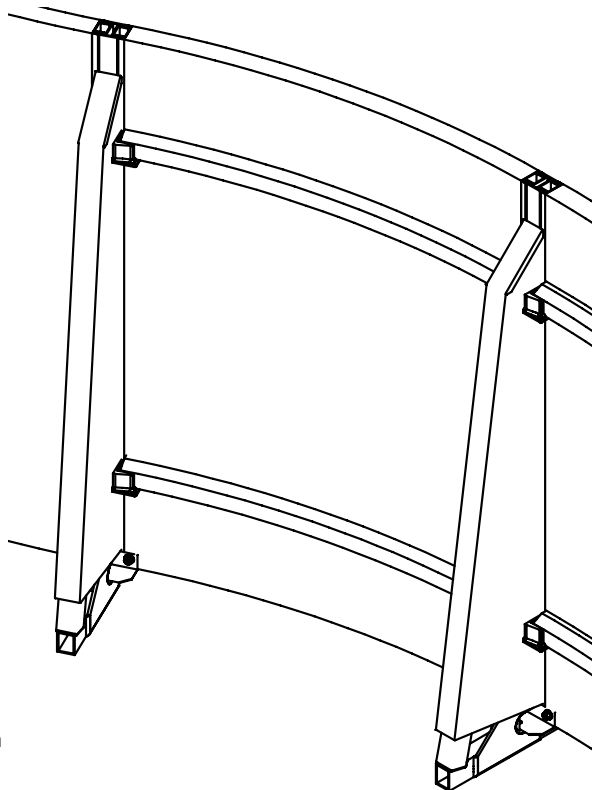
The Radiant Metric Freeform swimming pool includes structural bracing on reverse radius panels when the pool is installed mostly or fully aboveground (less than 3' in the ground).

1. Two of each cup and two braces will be used for each reverse radius panel. Identify the right and left mounting cups.



2. When installing A-frames, position A-frame between the two extended T-splines, and then slip shroud cover over the entire assembly, including T-splines. Position mounting cups on either side of shroud with the flat side of the cups resting against the pool wall, 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 A.)**

3. Slide the curved brace into mounting cups. Ensure a snug fit at bottom of cup.



4. When pouring concrete trenches, concrete should cover all exposed A-frames and very 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.

CONCRETE REQUIREMENTS

POOL SIZE	TRENCH AREA	VOLUME	YARDS
14 x 22	1' 2" x 2' 4" x 7' 4"	19.97 cu ft	2.25 yds
	1' 2" x 2' 4" x 11' 6"	31.31 cu ft	
		51.28 cu ft	
16 x 27	1' 2" x 2' 4" x 9'	24.5 cu ft	3 yds
	1' 2" x 2' 4" x 16' 10"	45.83 cu ft	
		70.33 cu ft	
18 x 32	1' 2" x 2' 4" x 10' 6"	28.6 cu ft	3.5 yds
	1' 2" x 2' 4" x 19' 2"	52.2 cu ft	
		81.8 cu ft	

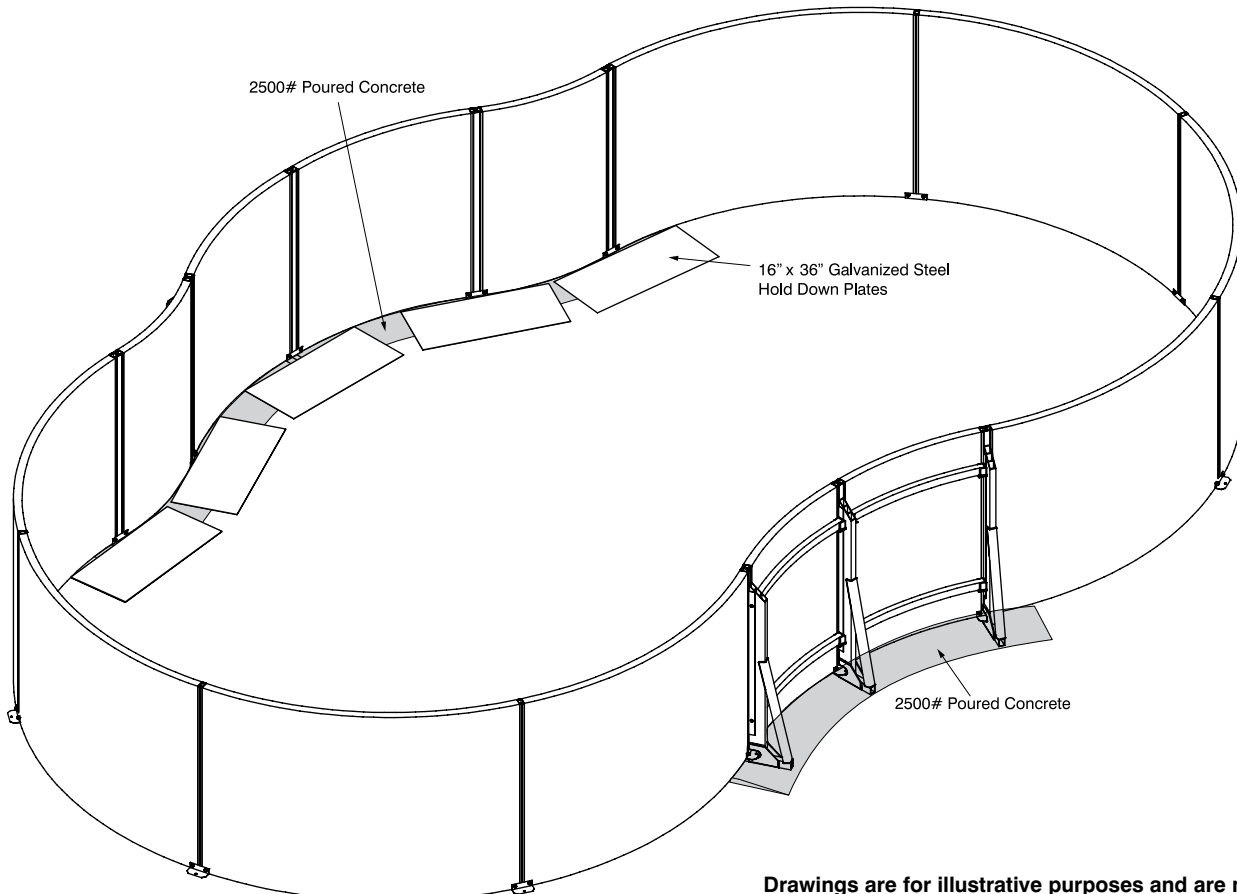
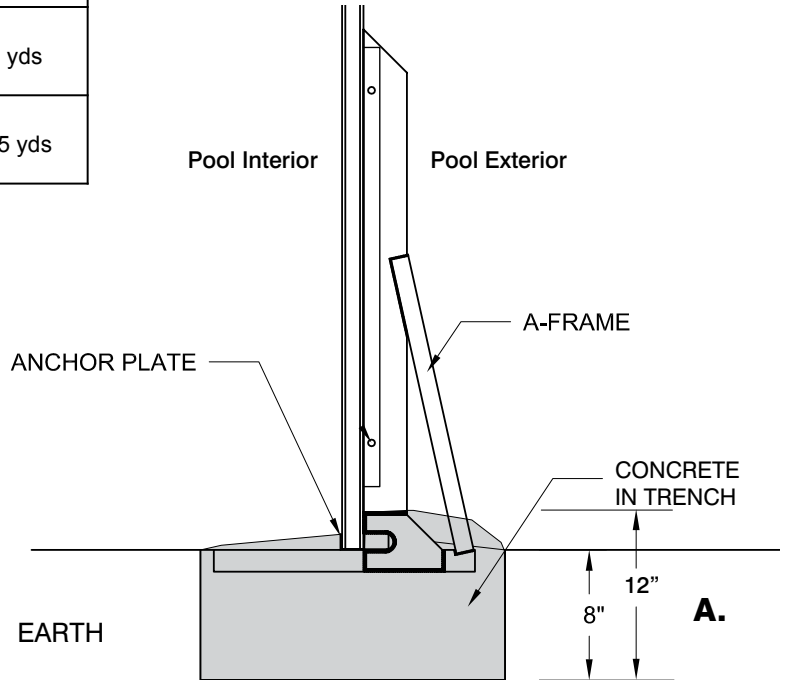
USE 2500# SWIM POOL COLLAR MIX.

Check level plumb and square of pool one final time before pouring concrete.

Check level plumb and square of pool one final time before pouring concrete.

Trench must be filled to cover A-frame horizontals and slope up to cover top of anchor plates on interior of the pool. Concrete should also slope up to cover the top weld of A-frame on the exterior of the pool as shown. (Fig A.)

Allow 24 hours to set before installing shrouds and filling pool completely.

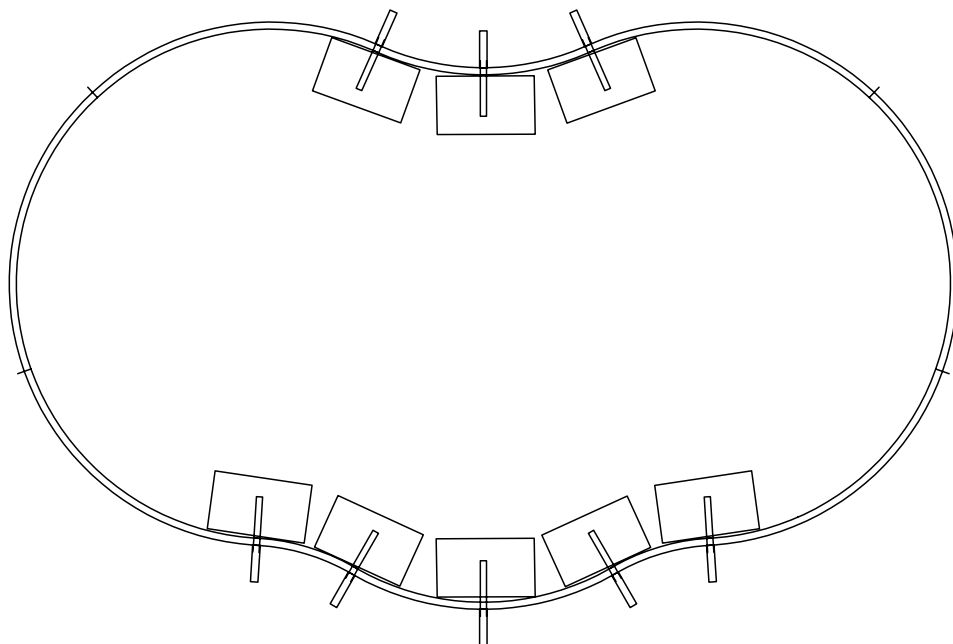


Drawings are for illustrative purposes and are not to scale.

PREPARING POOL FLOOR AND POOL COVE

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.

Fill in and tamp soil to top of concrete around the horizontal base support. Place the sand inside the pool area and away from the straps before the last panel is installed. Place the hold down plates over the horizontal base supports. Cover with 2" of sand and cove. Once the sand has been placed inside the pool, install the remaining wall panel.

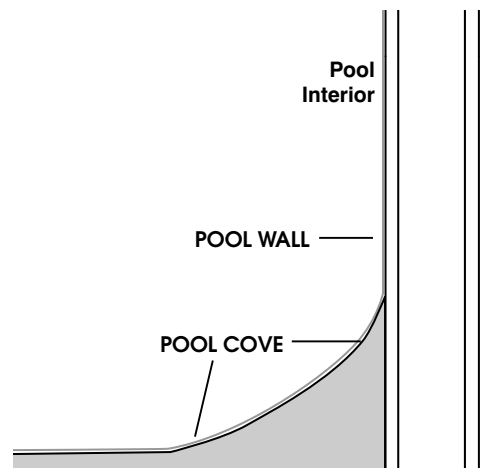


Masonry Sand Requirements	
Pool Size	Amount of Sand
14' x 22'	2.5 yds
16' x 27'	3.5 yds
18' x 32'	4.5 yds

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" to 3" 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

Place the U shaped foam insert into the panel cut out with open side up. **Fig. C**

Install the rubber sandwich gasket on the gray mounting plate, making sure the gasket straddles both sides of the mounting plate. **Fig. D**

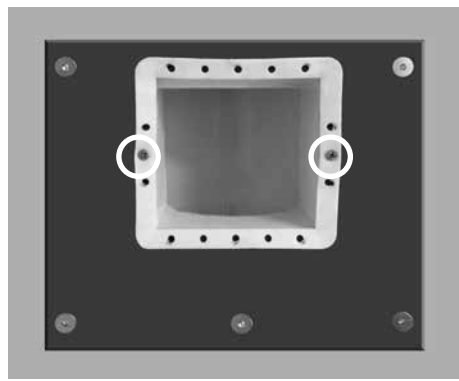
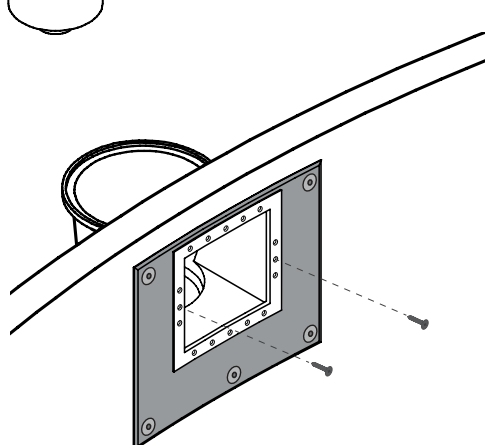
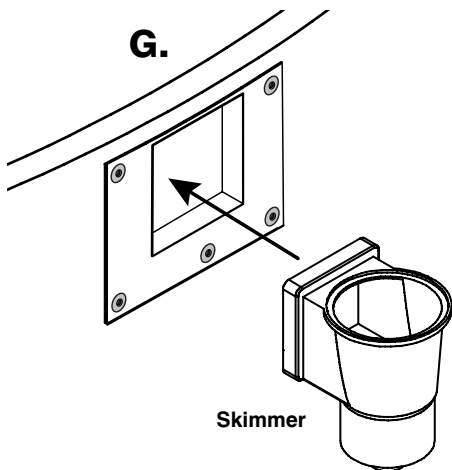
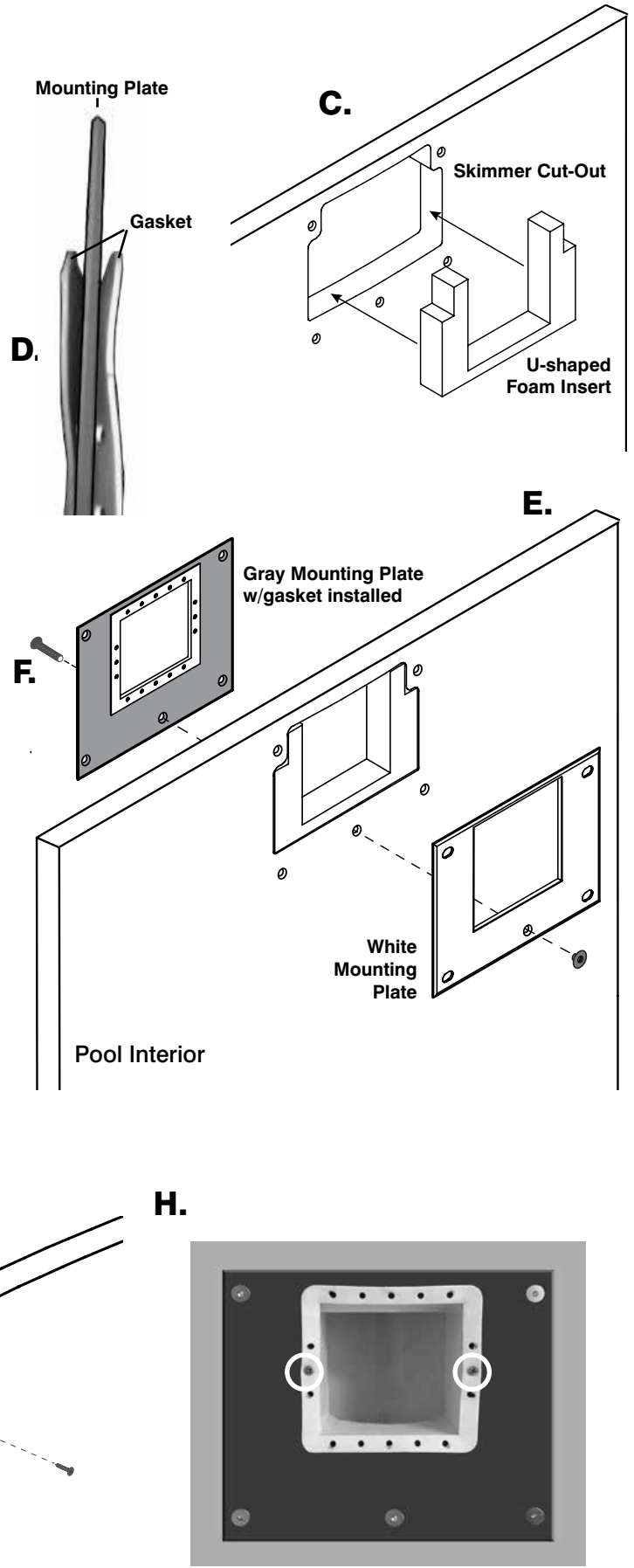
Place the gray mounting plate with gaskets on the pool interior side of the panel cut-out, with the white plate on the exterior of the panel. Secure the assembly with 2 1/4" countersink bolts and T-nuts loosely through 4 pre drilled corner holes in the gray mounting plate, the wall panel and the white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

Use the fifth bolt and T-nut at the bottom center hole in the mounting assembly and tighten firmly. Do not over tighten. **Fig. F**

Slip skimmer body through the white plate to the gasket on the gray plate. **Fig. G** Secure tightly with 2 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. H**

Tighten the 4 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 32.



RETURN FITTING ASSEMBLY

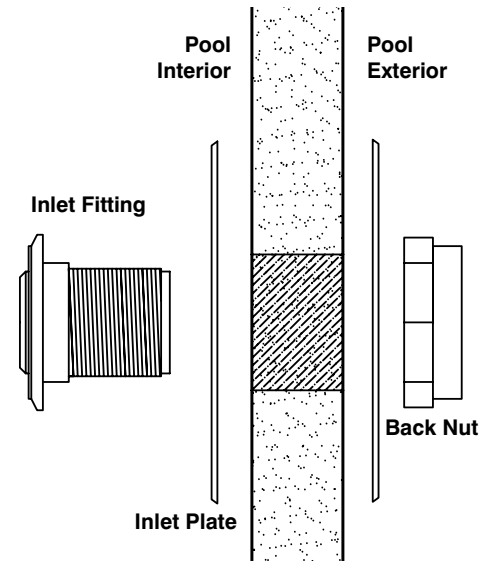
The return fitting kit includes 3 parts: inlet fitting, inlet plate and back nut.

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

For additional return fittings, drill 3" (with 3" hole saw) hole 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, firmly. **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 STANDARD PLASTIC COPING

IMPORTANT:

There are special instructions in the Metric freeform 2" PVC coping box. There are some cut to fit procedures to be followed. All measurements for coping are taken from the outside or larger radius length.

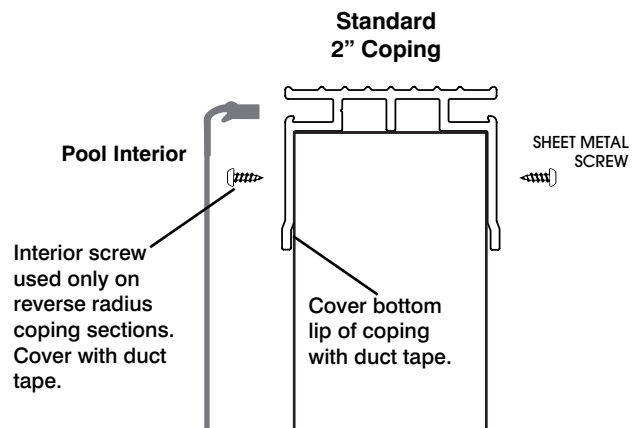
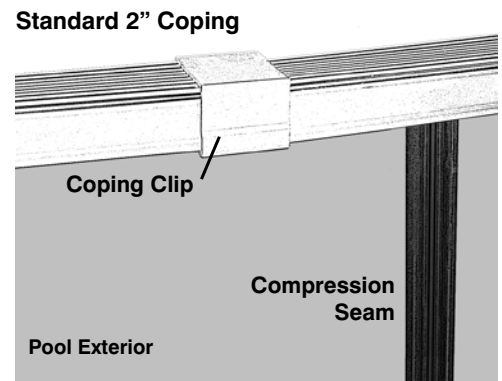
The plastic coping is attached by simply placing over the pool wall. Each coping joint may be offset from a compression seam. You need to leave a 1" gap between lengths of coping.

Once all of the coping has been placed, secure the coping to the pool wall with the sheet metal screws provided. **THIS STEP CANNOT BE SKIPPED!** 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 screw driver, hand tighten each screw. **DO NOT OVERTIGHTEN.**

On reverse radius, bump and indent coping sections, you must also secure coping to pool wall INTERIOR with sheet metal screws using the same method as above. See special instructions included in coping box for specific quantities and locations of screws.

Note: Plastic coping on the interior side of the pool wall will be held in place by the weight of the water on the beaded vinyl liner. Before installing liner, run duct tape along the bottom lip of the coping on the pool interior to protect liner.

For CP2 and Paver inground coping installation instructions see page 31.



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 and unfold and open the liner.

Identify the bump and the indent sides of 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 all bottom supports are sufficiently covered.

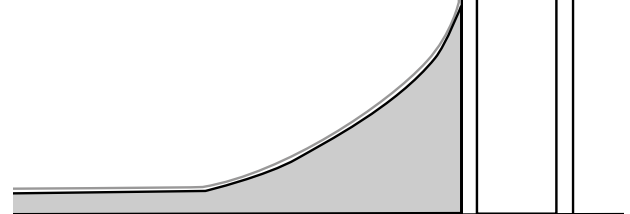
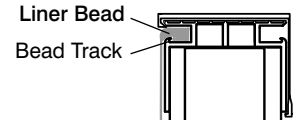
Note: Refer to specific pool size drawing for check points to square up liner with pool. See Coping and Liner Guides on next page.

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 in the coping around the entire pool. 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. 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.

You can now install coping clips by snapping over gaps between coping lengths.

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.

Standard
2" Coping



FILLING YOUR POOL

Water Gallonage per Size

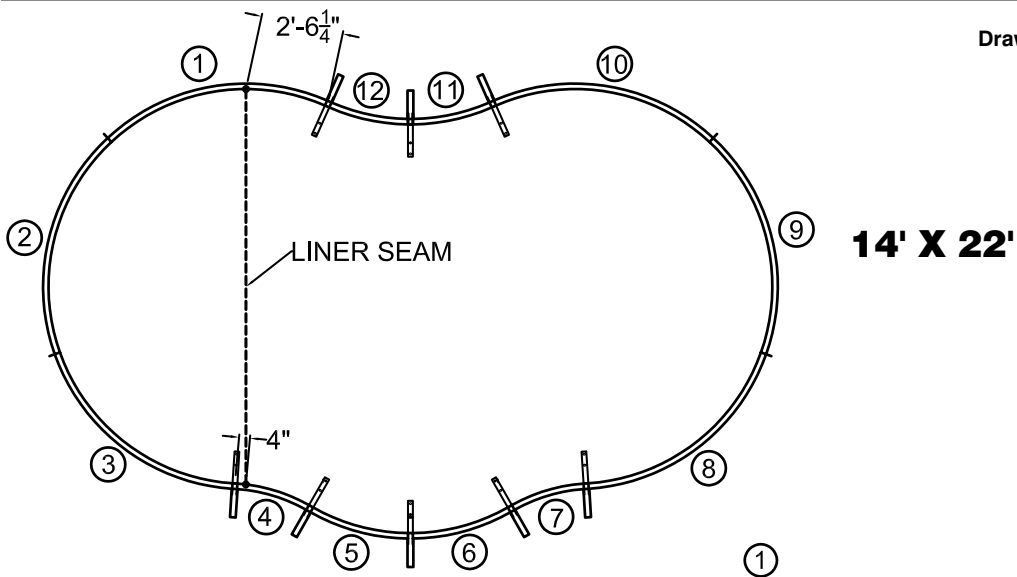
Whether you are filling the pool with your own home water source or through a water-fill service, please use the chart at right to determine the water volume requirements for your particular size pool.

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

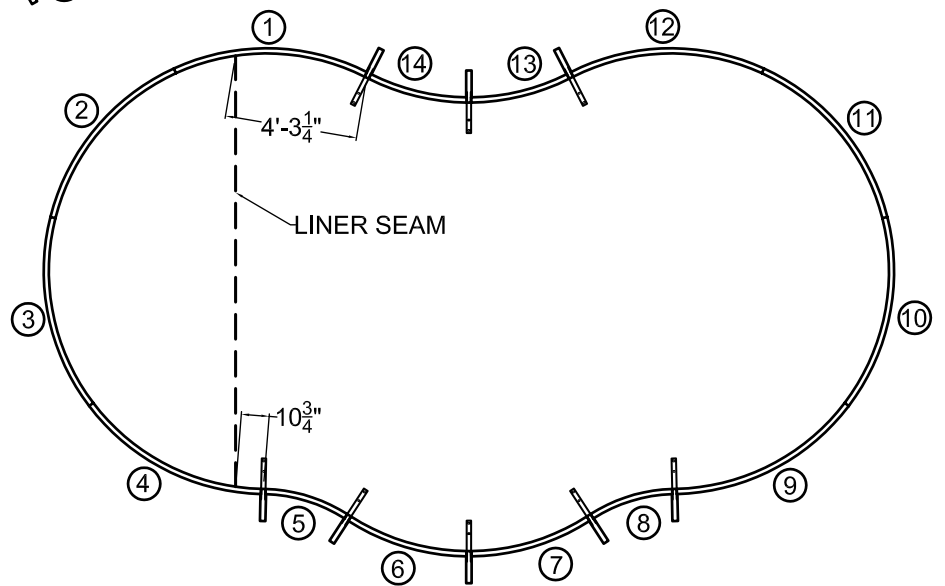
Pool Size	52" Pool Wall (44" of water)
14' x 22'	6480 gal.
16' x 27'	9318 gal.
18' x 32'	12,647 gal.

COPING AND LINER GUIDES

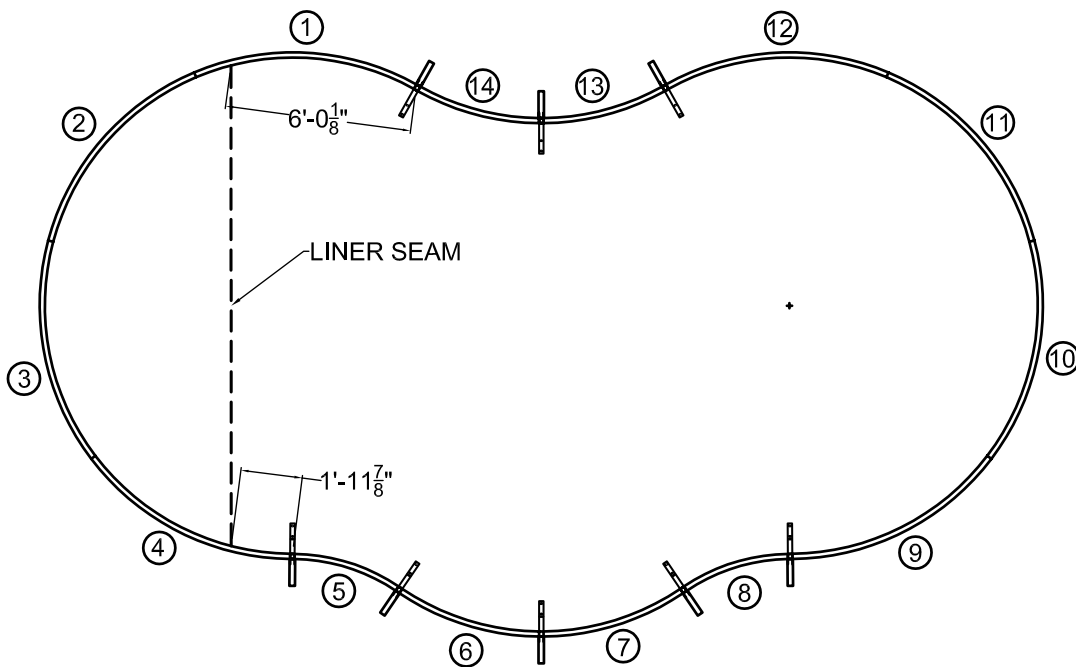
Drawings are for illustrative purposes and are not to scale.



16' X 27'



18' X 32'



INSTALLING FACEPLATES



Locate screw holes for faceplate.

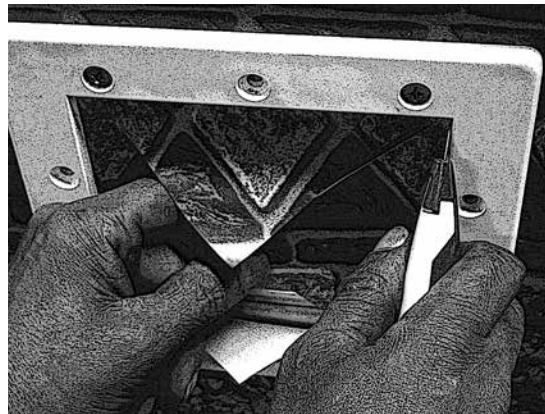
Once the liner is installed and the water level reaches 2"-3" from the return and skimmer, install the faceplates.

Locate the screw holes in the mounting plate beneath the liner for the skimmer and the return. Once located, carefully puncture the liner at the screw holes with an icepick 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 directional eyeball into the return.



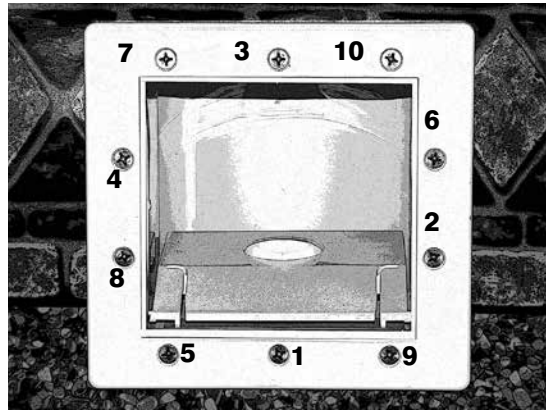
Trim liner from return opening.



Trim liner from skimmer opening.



Return faceplate installed.



Skimmer faceplate installed
w/ screw tightening sequence

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

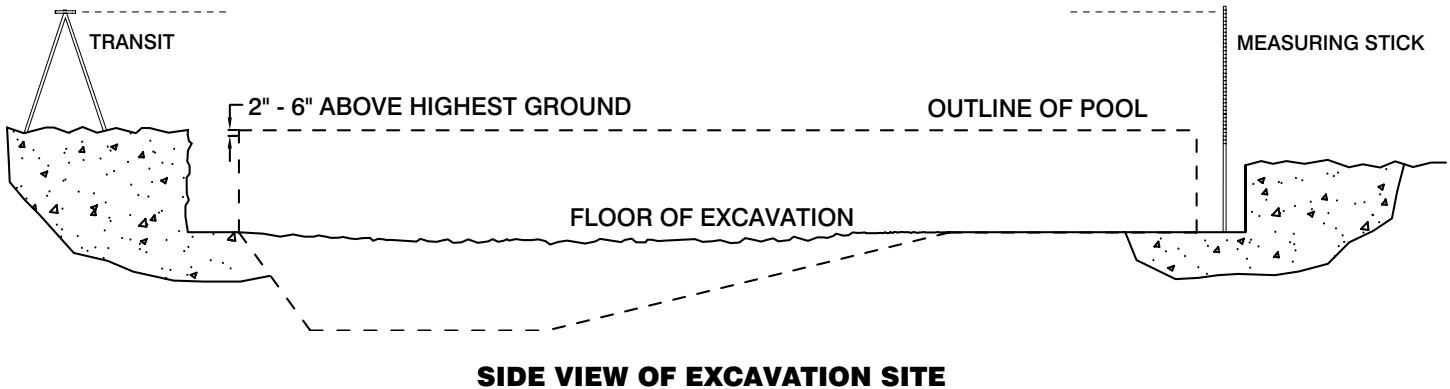
Please refer to the manufacturers' installation instructions for all other installation components. These include pump, filter, lights, and all other equipment and accessories.



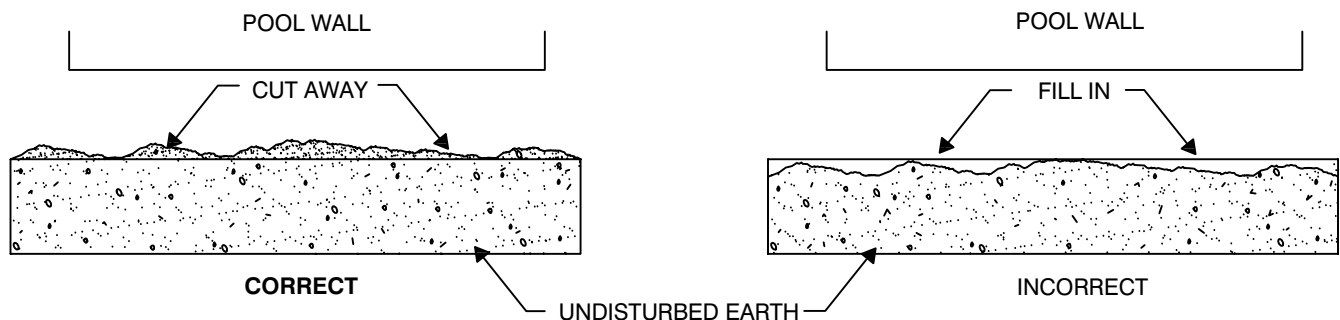
Metric Freeform Inground Installation Instructions

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.



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 the first time installations, after that, a 1 ft excavation is acceptable*) 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.

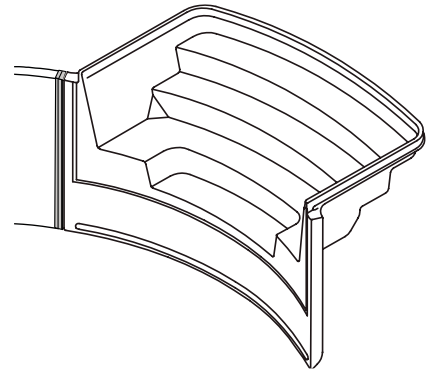
INGROUND: WALK-IN STEP INSTALLATION

Prepare and Position Step

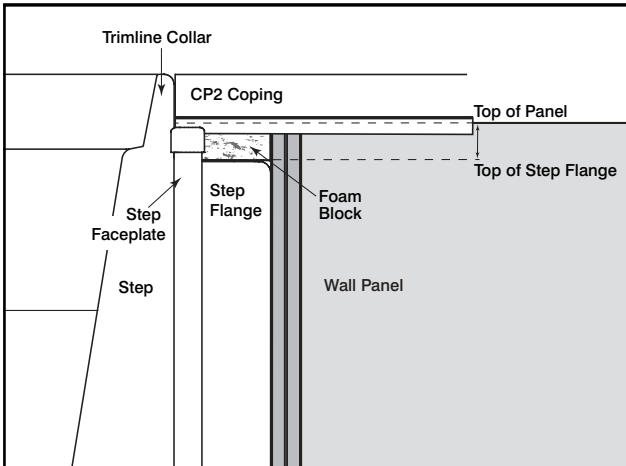
Install leg supports for the steps. For steps supplied by Radiant Pools, instructions will be provided. If steps are purchased separately through another provider, verify compatibility by talking with a Radiant Pools representative. Be sure to check step manufacturer's instructions as the step supports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

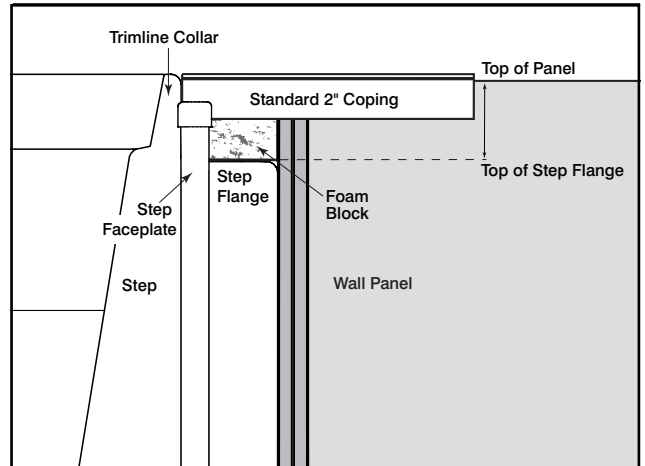
Once step is positioned, check levels from side to side and front to back.



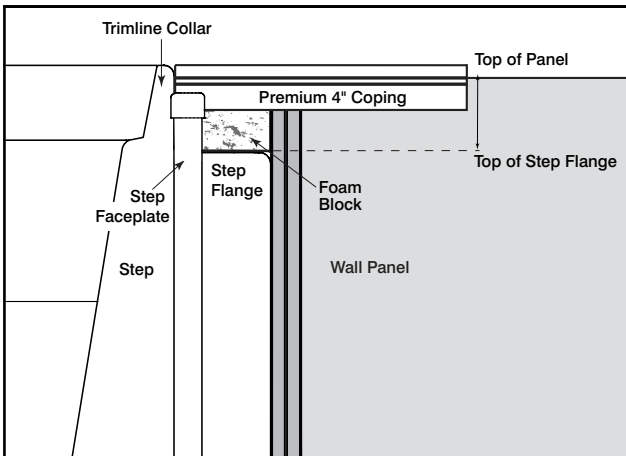
Trimline Step with CP2 Coping



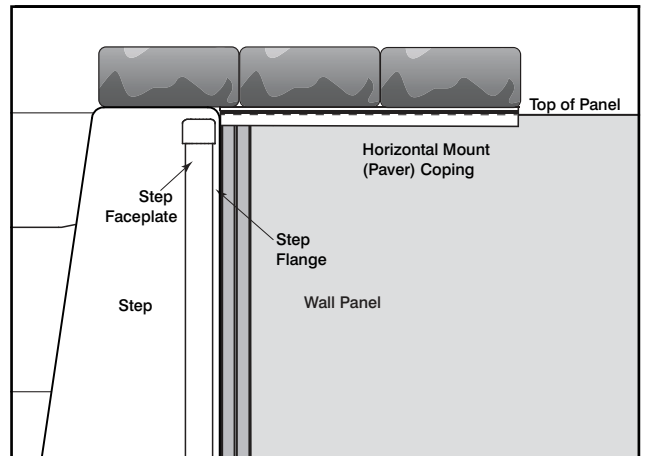
Trimline Step with Standard Coping



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.

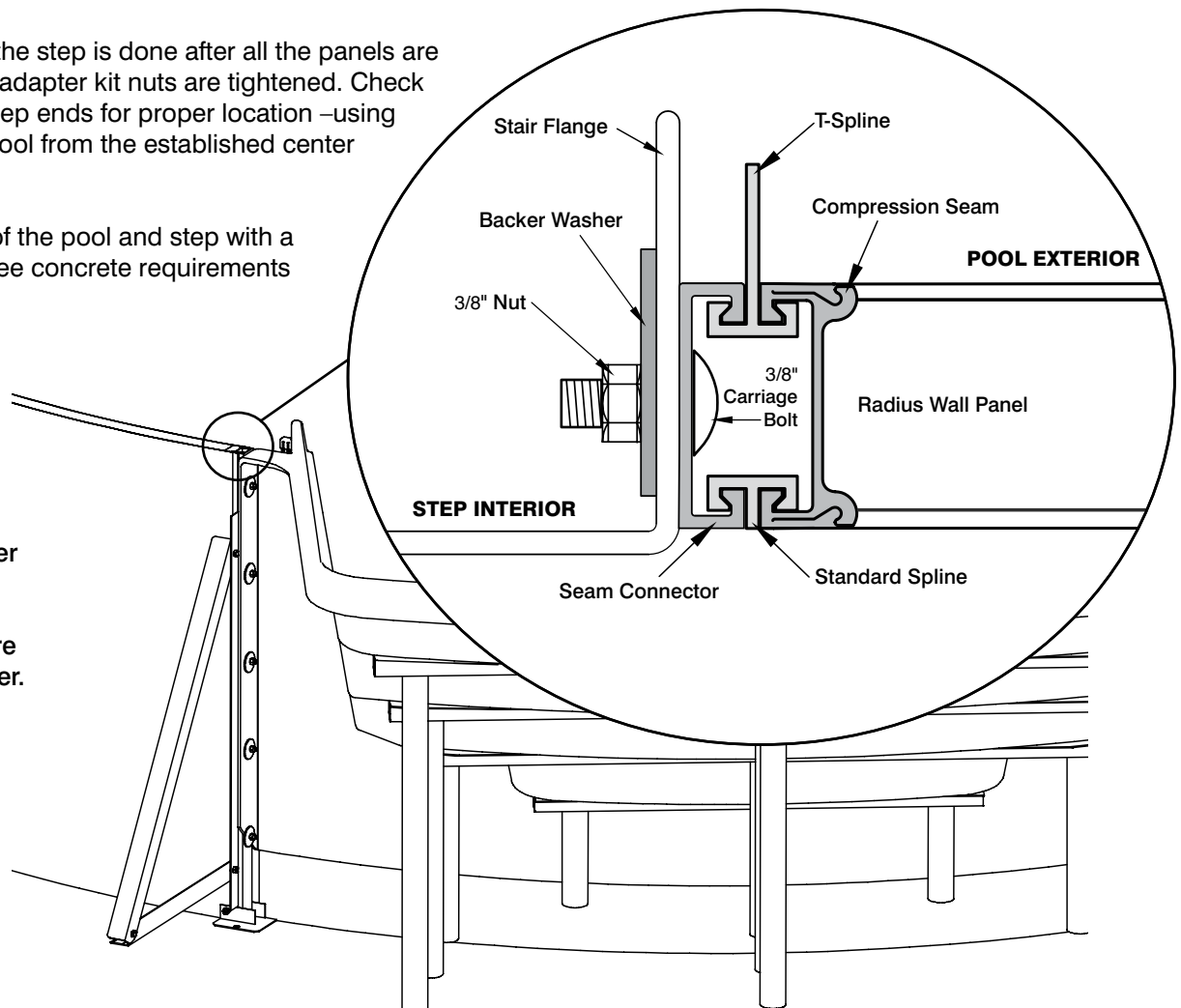
Important: Keep nuts very loose until all panels are installed.

T-spline assembly / Final adjusting

The extended T-spline is installed on the exterior side of the pool, with holes to attach the 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 33.



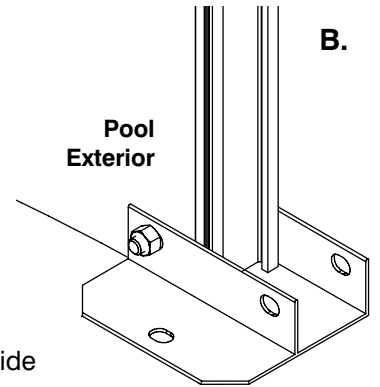
Note: Remember to remove stair gaskets and faceplates before installing the liner.

INGROUND: ANCHORS PLATES AND CP2/PAVER COPING INSTALL

Anchor Plates

Wall anchors are located at each compression seam. With a high speed metal drill bit, drill two 7/16" holes on each side of the compression seam in each wall anchor as shown. Insert a provided nut and 2 1/2" bolt through each drilled hole as illustrated, with the nut on the outside of the pool (fig.B). Drive drift pin (rebar) through the bottom hole to secure in proper location.

Duplicate this process with the remaining anchor plates.



Wall Clips and Coping

CP2 and 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. CP2 coping is pre-bent to a particular radius, Paver coping is notched to accommodate standard radii.

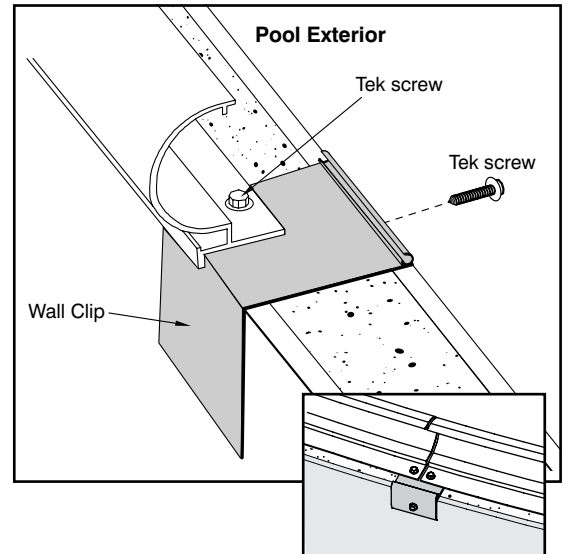
Place Nassau clips on the wall every 12" for paver coping and 18" for CP2 coping, with the clip ridge on the pool exterior side. Do not Tek screw to the wall yet as final placement will vary with coping length.

Place CP2 or 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.

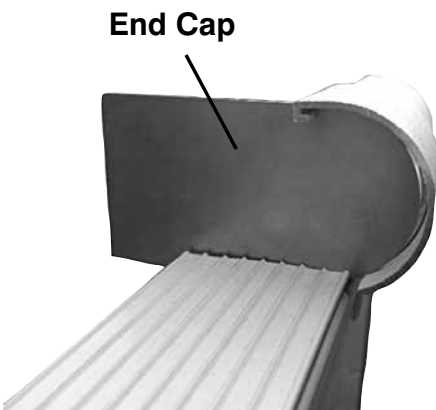
Important: When all lengths are installed, apply a barrier between the bottom of the coping and the top of the pool wall to prevent sand and debris from getting in behind the liner. Silicone, foam sealant or duct tape can be used.

For CP2 coping, install coping clips to cover the ends of the lengths.



Transition with Mixed Coping

End caps are available for installation of CP2 and Metric plastic coping combination. The end cap provides a clean finish to the concrete and fits inside the CP2 coping before the lower profile of the Standard 2" or Premium 4" coping starts.



INGROUND: SKIMMER ASSEMBLY

Place a gasket on both sides of the gray mounting plate. Be sure to align all holes. **(fig.C)**

Position the gray mounting plate over the panel cutout on the interior side of the pool. Slide skimmer face through the panel cut out to the gray mounting plate. Attach the gray plate to the skimmer face with pan head screws at the top and bottom center holes **(fig.D)**. Tighten screws firmly.

Slip the white U-shaped mounting plate up from under the skimmer throat on the exterior side of the pool so that the top holes of the plate match the top holes in the panel. Assemble the skimmer with the gray and white mounting plates by inserting 2 ¼" countersunk bolts and T-nuts through pre-drilled holes in the gray mounting plate, the wall panel and the white mounting plate. Once all bolts are in place, screw in securely.

Do not over tighten.

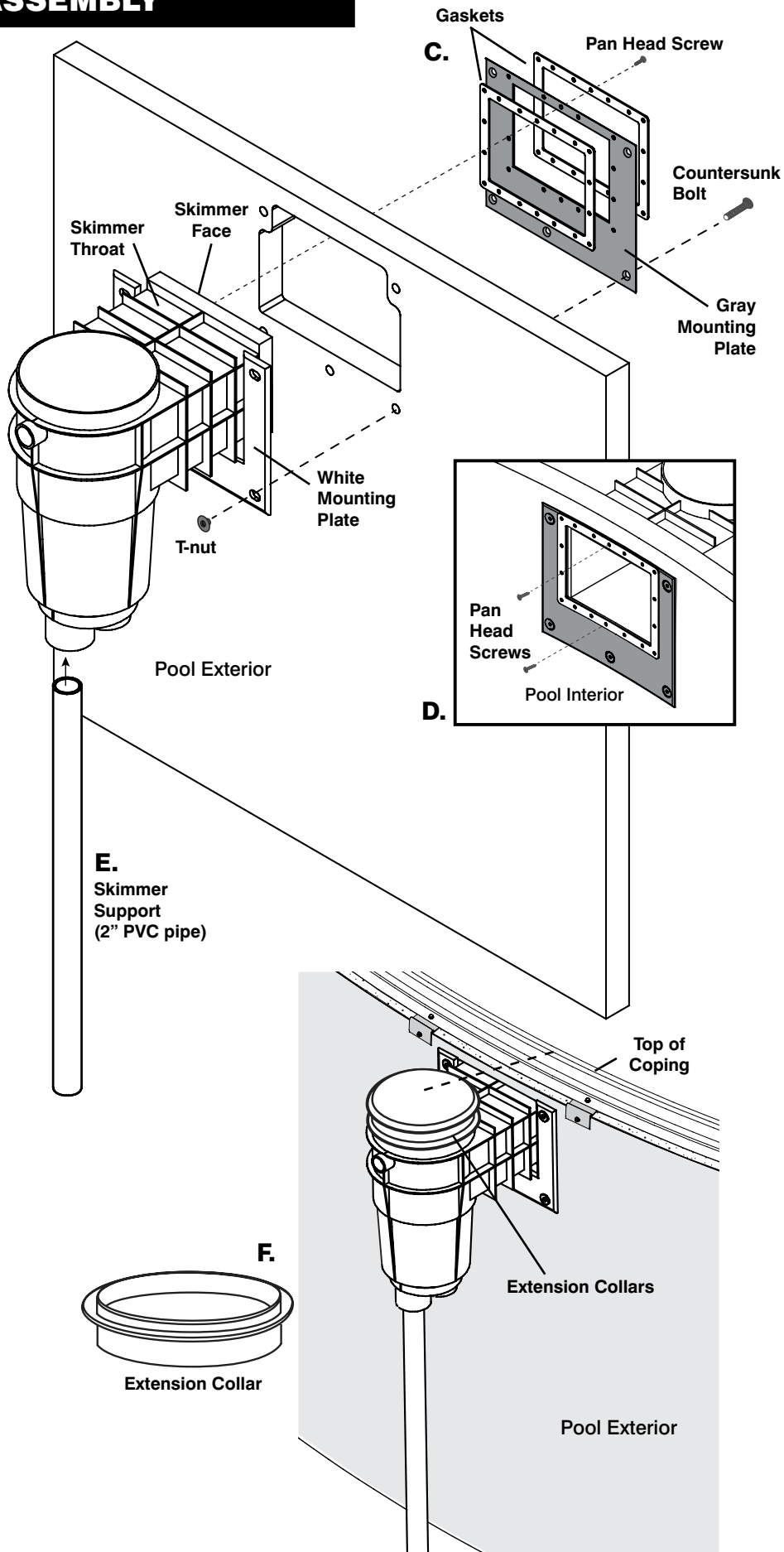
Install Skimmer Support

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.

The skimmer faceplate is attached after the liner is installed.

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.

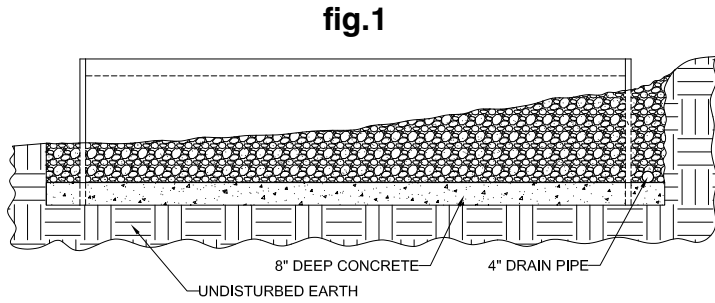


CONCRETE COLLAR GUIDE

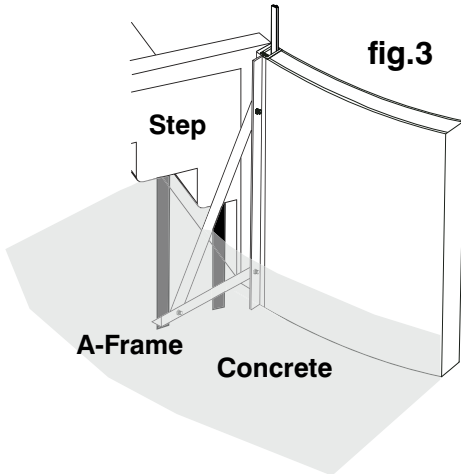
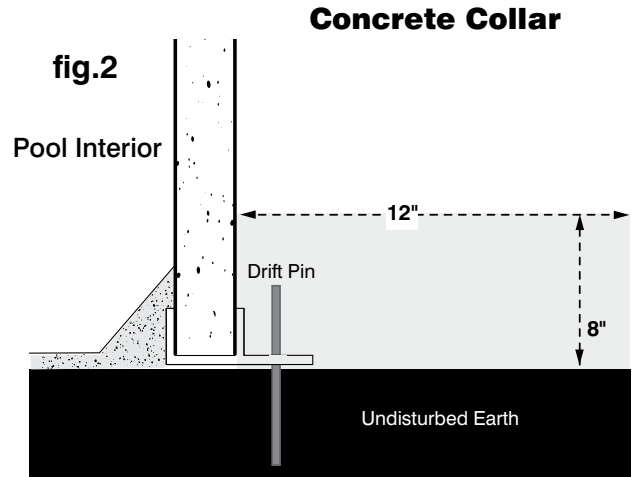
Check with local building codes before installing your Radiant Metric Freeform pool inground. Radiant Pools requires a minimum of 8" concrete collar around the entire pool if any point of the pool wall is 26" or greater in the ground (fig. 2). An example of a semi-inground pool requiring a concrete collar 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.3).

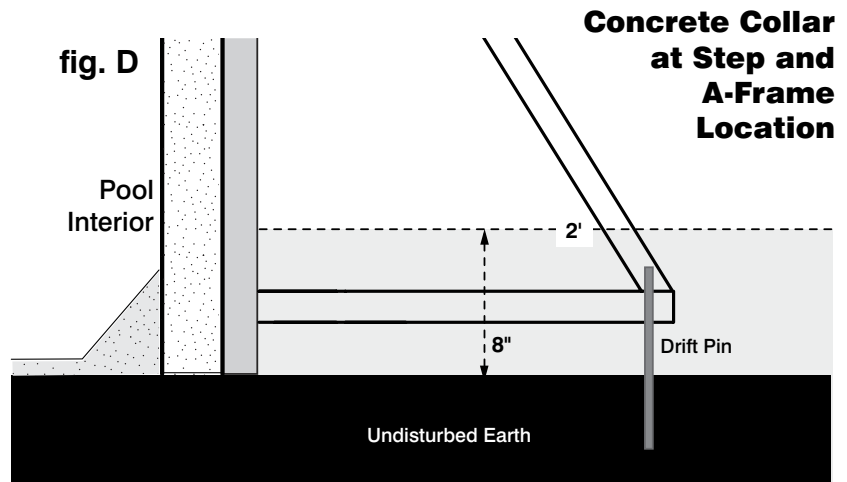
Do not pour concrete directly on the pool walls. Pour concrete away from the wall and let it flow to the wall.



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



NOTE: Complete backfill is required around the step.



Concrete Requirements Table:

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

Size	14x22	16x27	18x32
25" Backfill or less	2.5	3	4
26" or more Backfill (Concrete Collar)	6	7	9

BACKFILL AND DRAINAGE

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

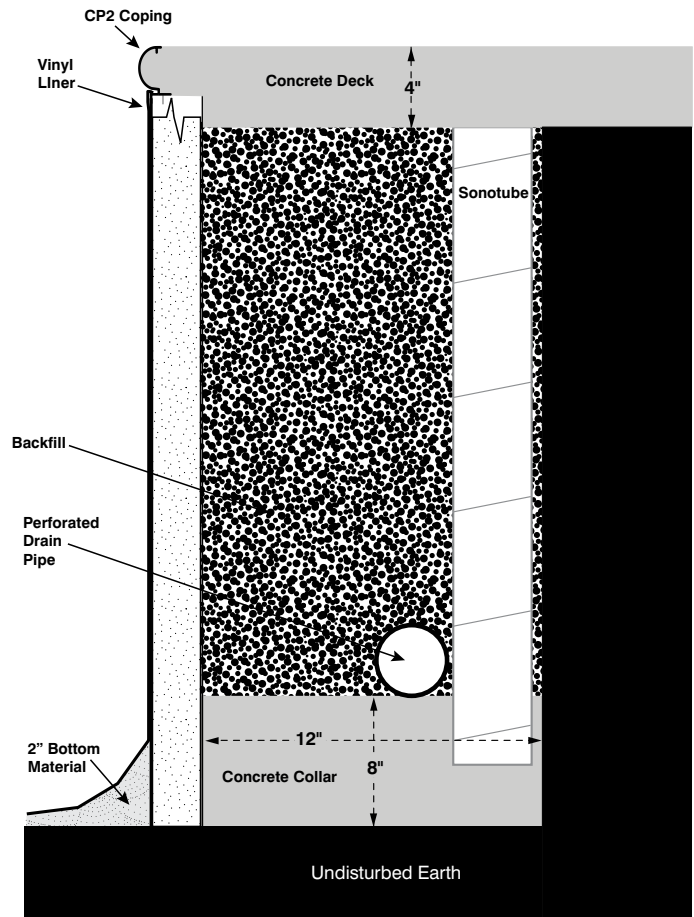
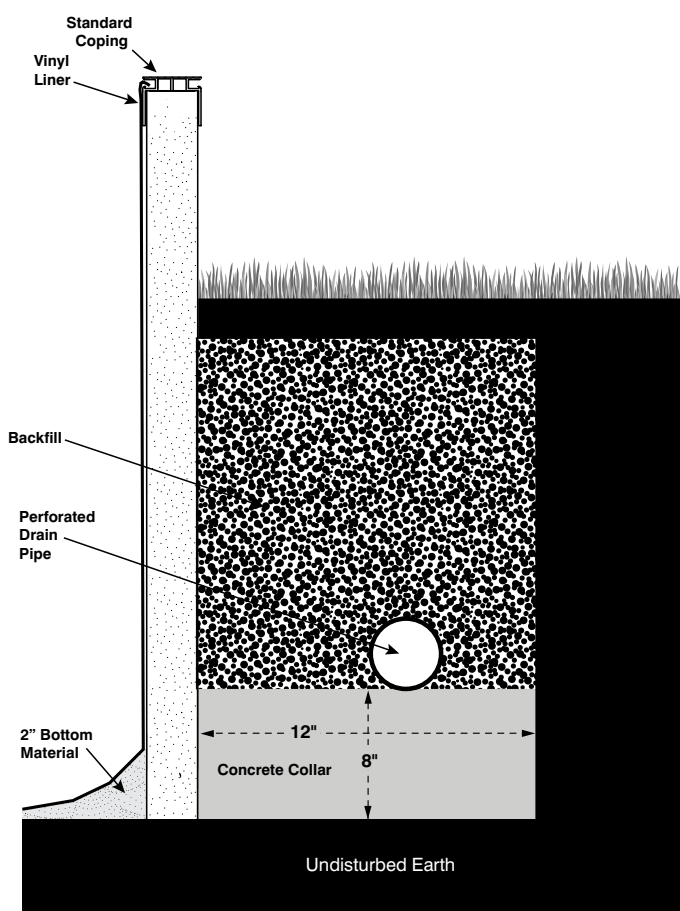
Backfill may go directly against a Radiant pool wall. Crushed stone/gravel 3/8" - 3/4" in diameter is recommended. Do not use expansive soil (clay).

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.

Semi-Inground

Full Inground



NOTES



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3/2016