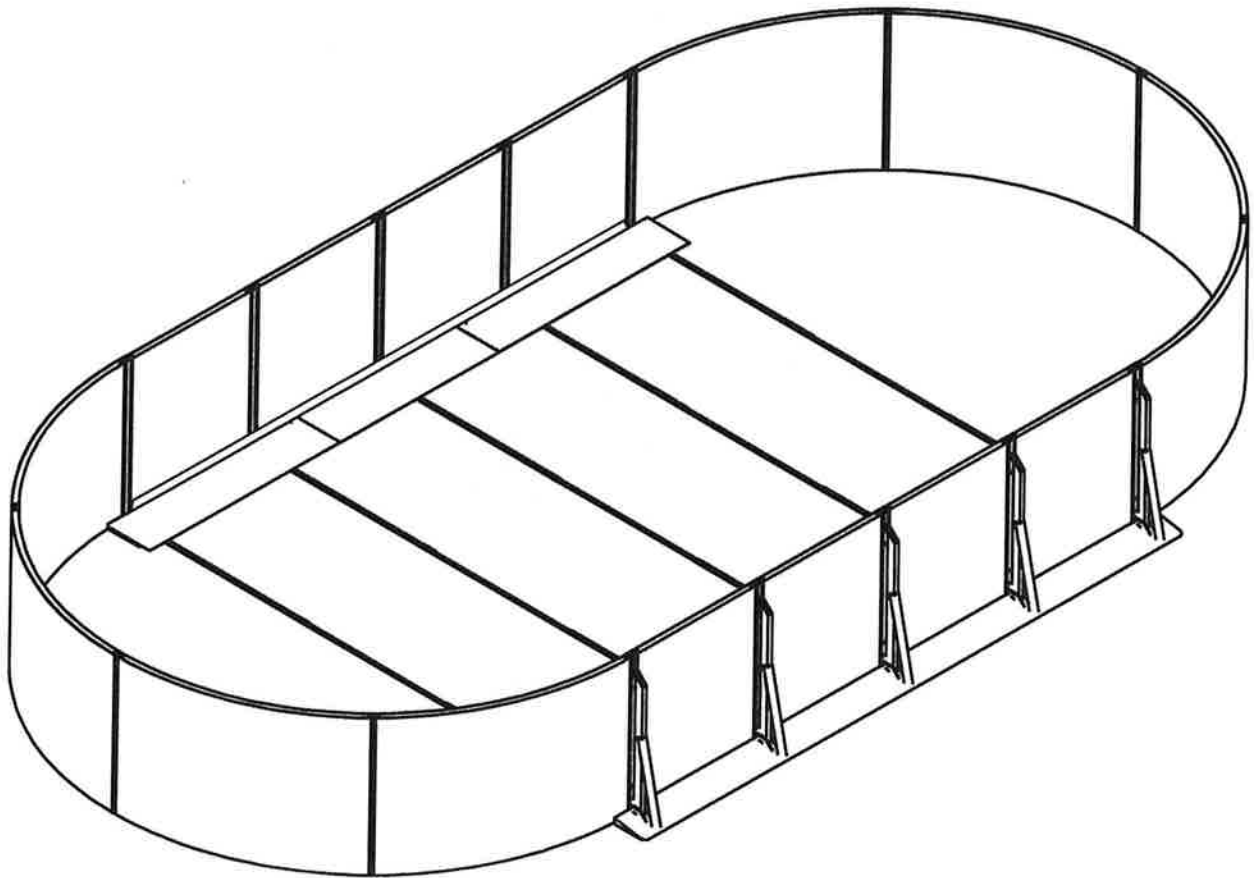


The Metric Series Oval

Installation Manual



Radiant
POOLS™



INTRODUCTION

The Installation of the Radiant Mainstay Series Onground 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.

Even though all Radiant pools are designed to meet or exceed industry recommended safety standards, special attention must be paid to all installation procedures that the installer performs and controls. Spend time to assure that the entire pool framework is **perfectly level**. 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

	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 Mainstay Series Onground 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

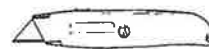
Tape measure, 100ft.



Pool trowel



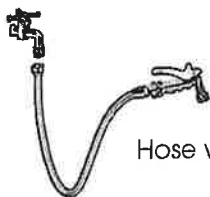
Flint File



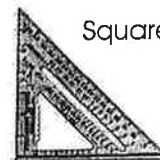
Utility Knife



Transit/Laser Level



Hose with spray nozzle



Square

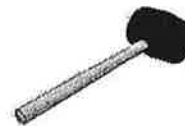
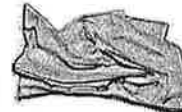


String

Level



Cloth rag



Rubber Mallet

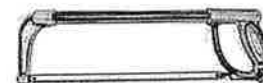
Long handled pointed shovel



Short handle square shovel



Socket Set



Coping Saw

Pick or Mattock



9/16" Open End Wrench



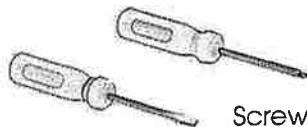
Power Drill



5/16" Hex nut driver bit



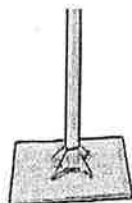
Screwdrivers, Flathead and Phillips



3/8" Drill bit



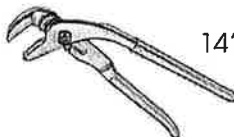
Tamper, 10 or 12 in. Square



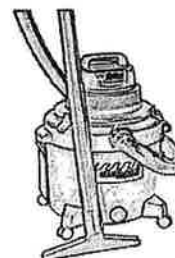
Extension Cord



14" Channel Locks



Shop Vac



Rake



PVC Pipe Cutter



Hand Broom



4 Yards of Masonry Sand



2" Patio Block



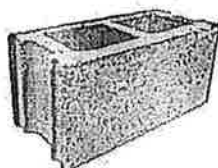
Wheelbarrow



Soft bristle broom



8" Cinder Block



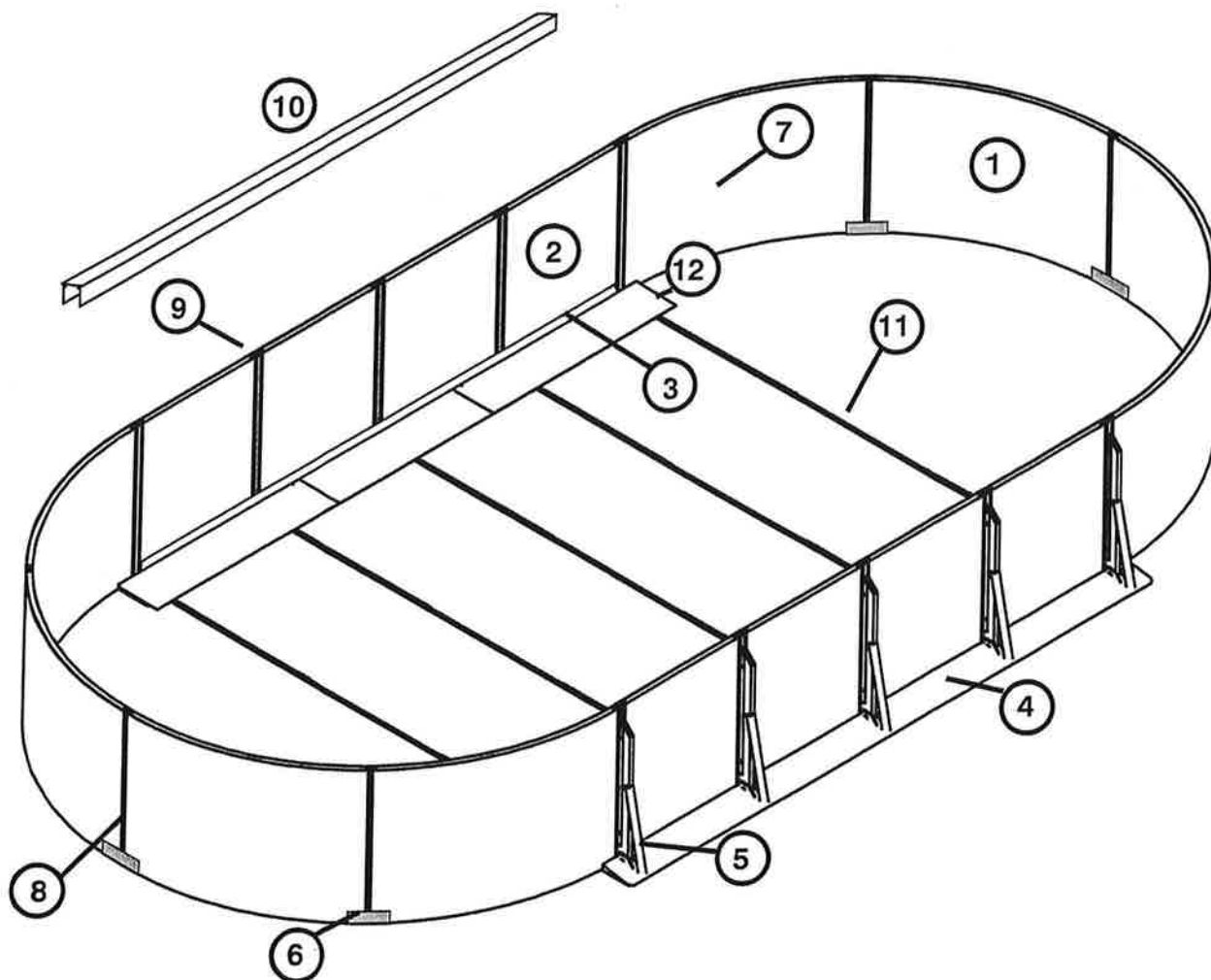
POOL COMPONENTS CHECKLIST

PART DESCRIPTION	12 X 16	12 X 20	12 X 24	16 X 24	16 X 28	16 X 32
PANELS RADIUS	6	6	6	8	8	8
PANELS STRAIGHT	2	4	6	4	6	8
STRAIGHT PANEL CONNECTORS	4	6	8	6	8	10
A FRAMES	4	6	8	6	8	10
CHANNEL	2 (4'6")	2 (5'6")	4 (6'3")	2 (5'6")	4 (6'3")	6 (5'6")
		2 (3')		2 (3')		
OVAL HARDWARE PACKAGE	1	1	1	1	1	1
ROUND HARDWARE PACKAGE	1	1	1	1	1	1
52" SPLINES	16	20	24	24	28	32
42" EXTENDED SPLINES	8	12	16	12	16	20
SHORT SPLINES 5 3/4"	16	24	32	24	32	40
STRAP KIT	2 (12')	3 (12')	4 (12')	3 (16')	4 (16')	5 (16')
HOLD DOWN PLATES	2	4	5	4	5	6
SKIMMER KIT	1	1	1	1	1	1
COPING SET-STRAIGHT	1	1	1	1	1	1
- RADIUS	1	1	1	1	1	1
LINER	1	1	1	1	1	1
8" BLOCKS	4	6	8	6	8	12
2" PATIO BLOCKS	4	4	4	6	6	6
2500# CONCRETE COLLAR MIX	1 yds	1.5 yds	2.25 yds	1.5 yds	2.2 yds	3 yds
CLEAN SAND FOR UNDER LINER	2 yds	2.25 yds	2.5 yds	3 yds	3.5 yds	4 yds

IMPORTANT NOTE:

Do not allow splines or compressions seams to come in contact with sand or other debris as this will casue 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 OVAL POOL COMPONENTS



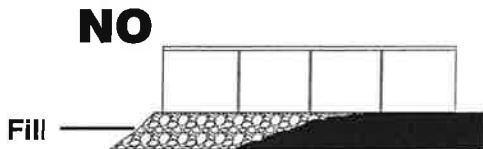
Drawings are for illustrative purposes and are not to scale.

#	COMPONENT
1	Curved 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	A-Frames & Extended Splines - imbedded in concrete for stability.
6	Anchor Plates - Bolt to walls & imbedded in concrete for additional strength.
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 White Metric Coping - Secures liner & gives finished appearance.
11	Bottom Strap and Base Support Assembly - reinforces structural stability
12	Hold Down Plates - reinforces structural stability

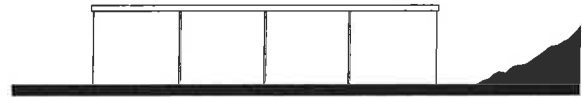
SELECTING POOL LOCATION

The selection and preparation of the pool site is your responsibility. The manufacturer can only suggest the proper techniques, indicate the important considerations 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.

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



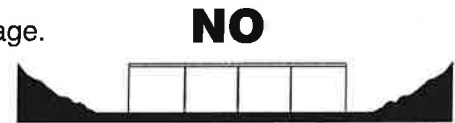
CORRECT



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.

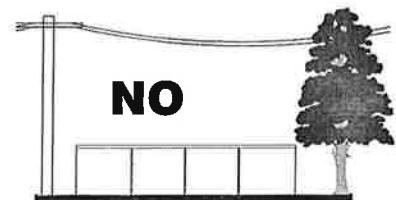
**For Semi-Inground and Inground Installations:
The site of installation must accommodate an efficient drainage system to minimize the impact of heavy rain and high ground water conditions.**



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.

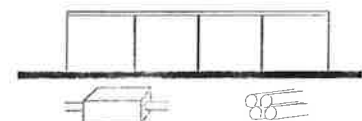
5. If ants or termites are prevalent in your area, have soil treated with insecticides and allow sufficient time for them to dissipate before continuing with pool installation.

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.

TRENCH LAYOUT

	A-B C-D	A-D B-C	Diagonal A-C or B-D	End of Pool Arc	Trench Width	Trench Length	Trench Depth
12'x16'	4'	12'	12' 7 3/4'	7'R	27"	5'	8"
12'x20'	8'	12'	14' 5"	7'R	27"	9'	8"
12'x24'	12'	12'	16' 11 5/8"	7'R	27"	13'	8"
16'x24'	8'	16'	17' 10 3/4"	9'R	27"	9'	8"
16'x28'	12'	16'	20'	9'R	27"	13'	8"
16'x32'	16'	16'	22' 7 1/2"	9'R	27"	17'	8"

Outline the Area for Digging the A-Frame Trenches:

1. Measure outside the pool 14" from Line A-B.
2. Measure inside the pool 13" 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.

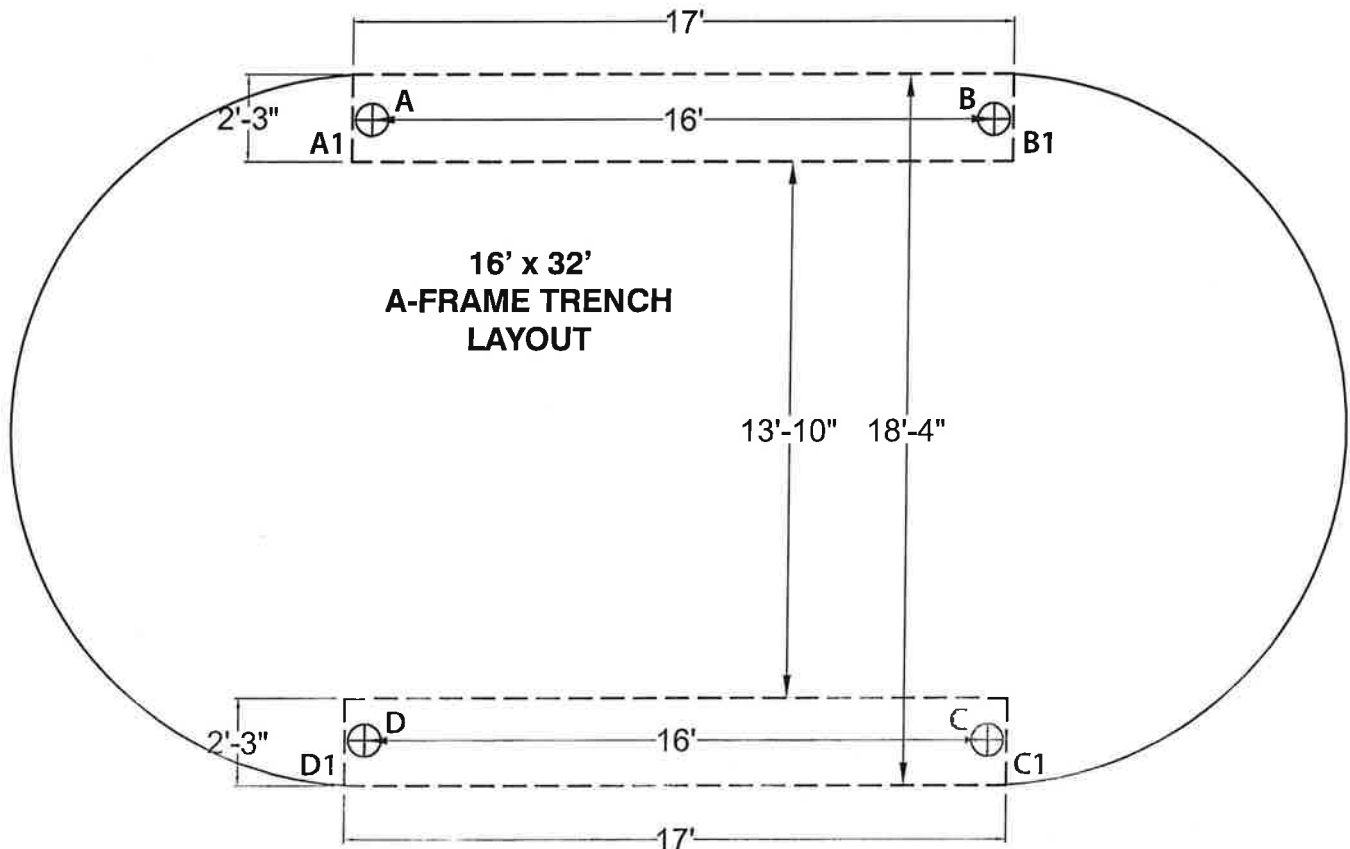
Example 16'x32'

A-B, C-D: 16'

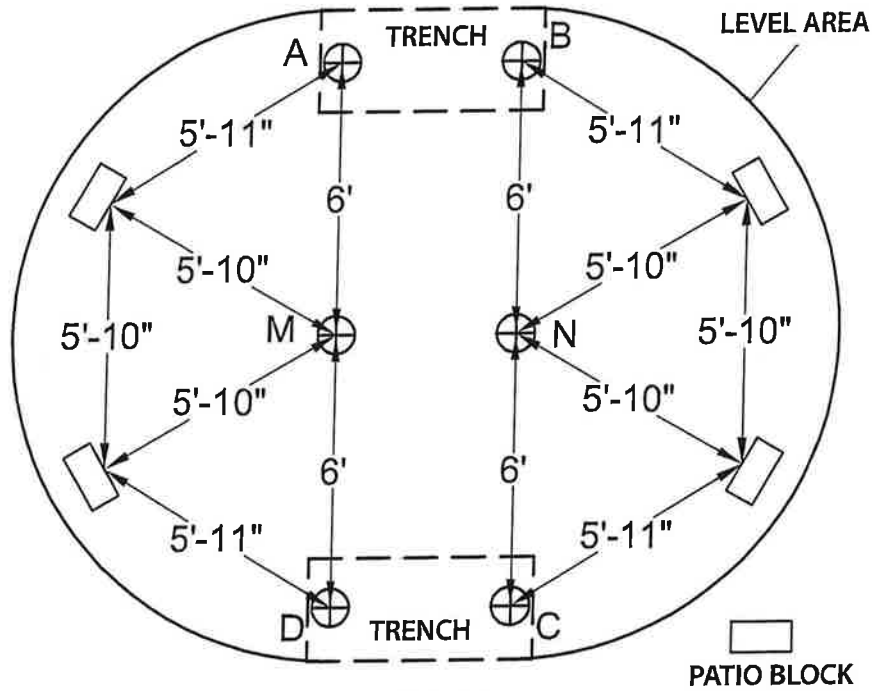
Trench Length A1-B1, C1-D1: 17'

Trench Width: 27"

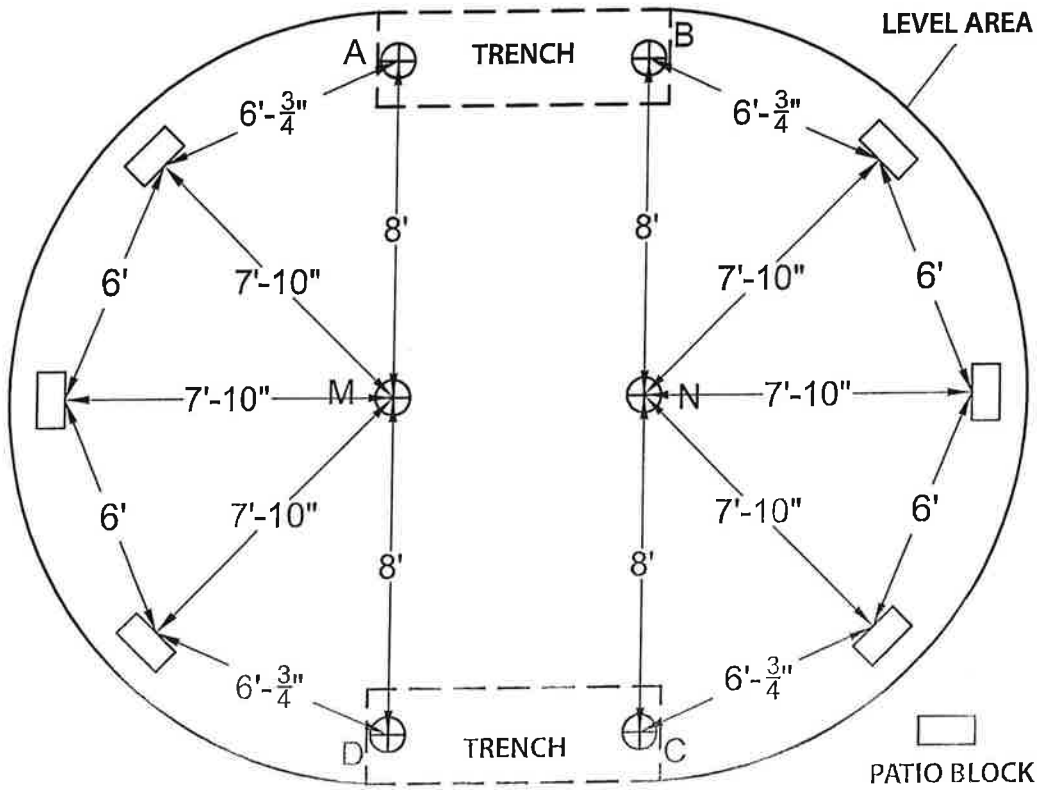
Parallel Distance Between Trenches: 13' 10"



PATIO BLOCK LAYOUTS



12' POOLS



16' POOLS

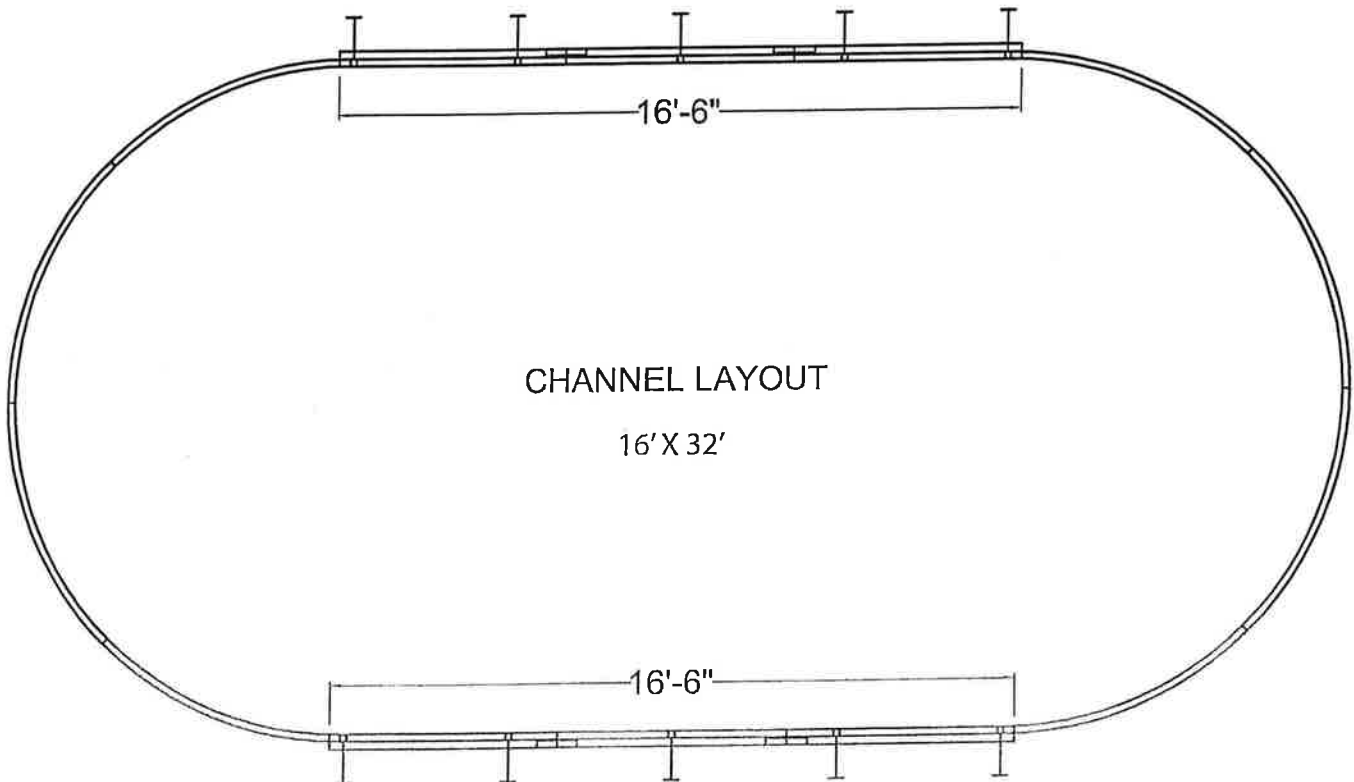
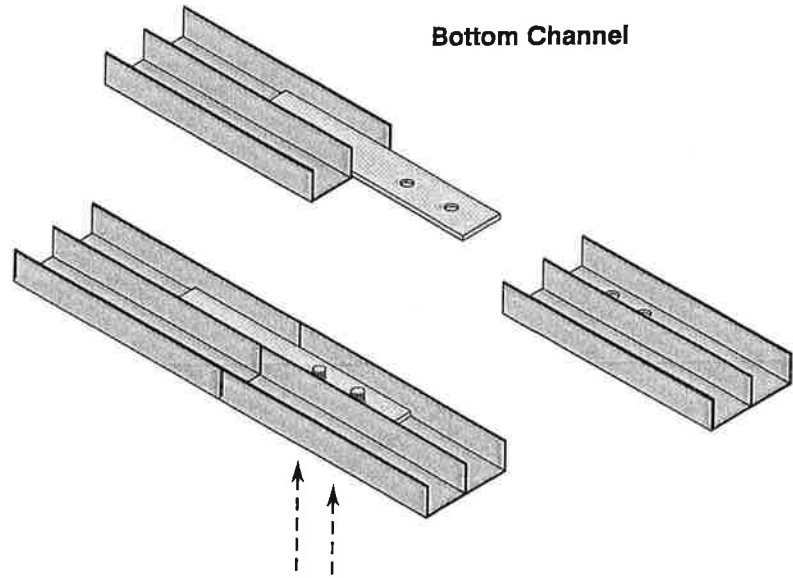
CHANNEL ASSEMBLY AND LAYOUT

The bottom channel, once assembled, creates the framework for all remaining assembly and must be done next. Bottom channels come with welded extensions at one end to connect tracks together.

To assemble, align holes on extension over holes in channel track. Insert 3/8" bolts with 9/16" head with washers from beneath the bottom track using open end wrench.

DO NOT OVERTIGHTEN!

Check bottom track for cleanliness.
Track should be free of all dirt and debris.



Drawings are for illustrative purposes and are not to scale.

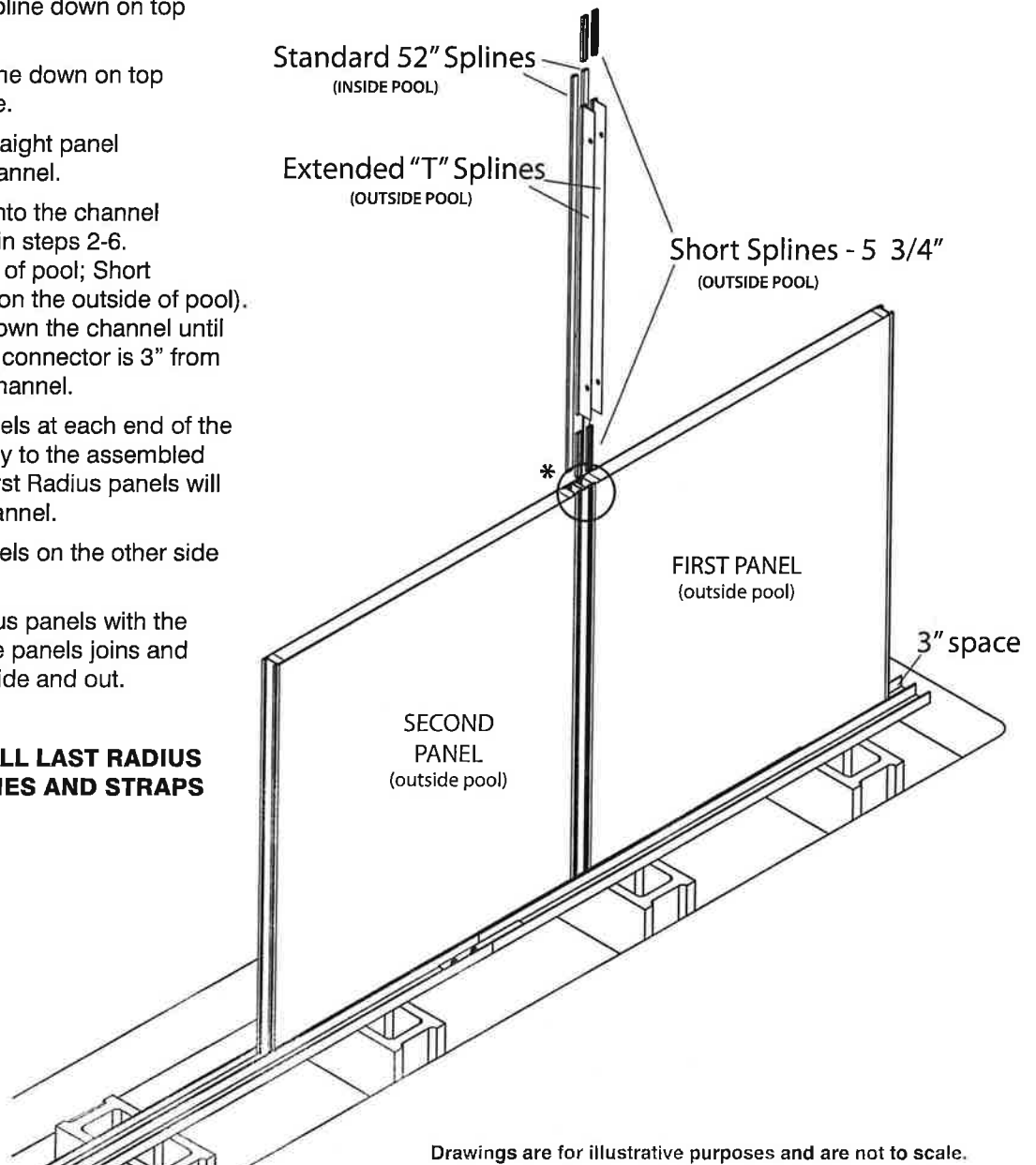
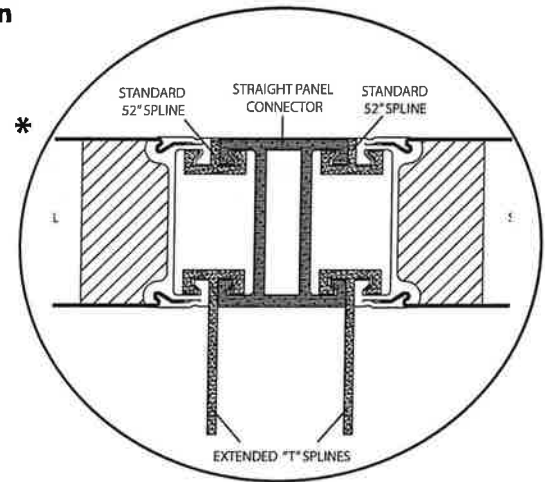
STRAIGHT WALL PANEL AND CONNECTOR ASSEMBLY

NOTE: Skimmer Panel is Radius - Locate for proper installation placement. Use of cooking spray is recommended on the first few inches of the splines to ease assembly. Ease of spline installation depends on level and parallel wall joints.

Once bottom track is assembled, begin assembling wall panels

1. Place an oval 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 Extended "T" splines on the outside of pool). Continue assemble down the channel until an oval straight panel connector is 3" from the other end of the channel.
8. Install first Radius panels at each end of the channel to add stability to the assembled straight panels. The first Radius panels will overlap 3" into the channel.
9. Install the straight panels on the other side of the pool.
10. Install remaining Radius panels with the anchor plate under the panels joins and use the 52" splines inside and out.

NOTE: DO NOT INSTALL LAST RADIUS PANEL UNTIL A-FRAMES AND STRAPS ARE INSTALLED.



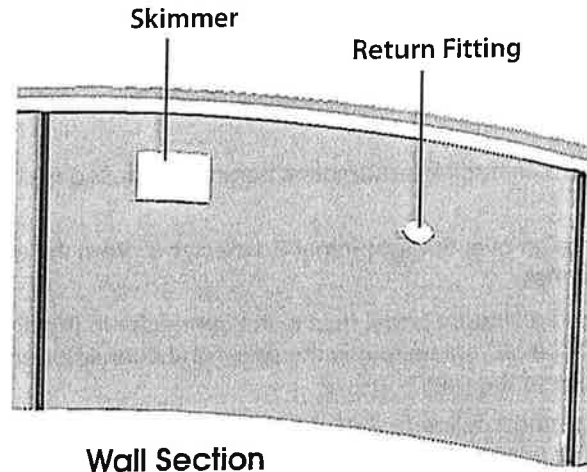
Drawings are for illustrative purposes and are not to scale.

A-FRAME AND STRAP INSTALLATION

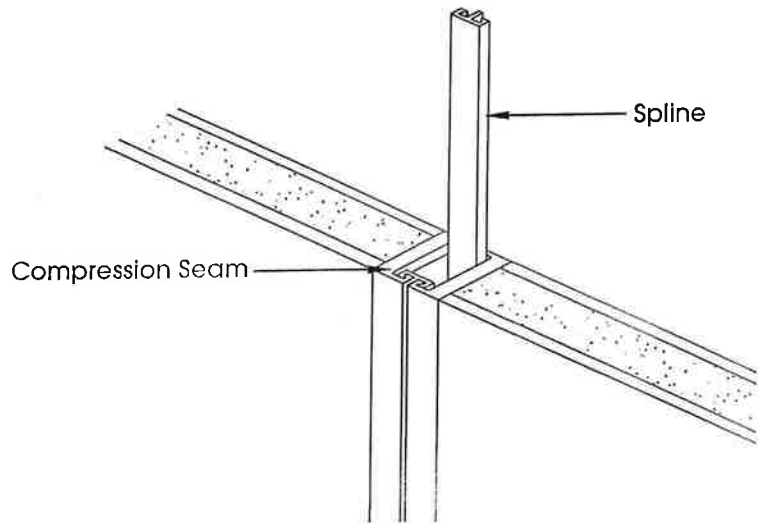
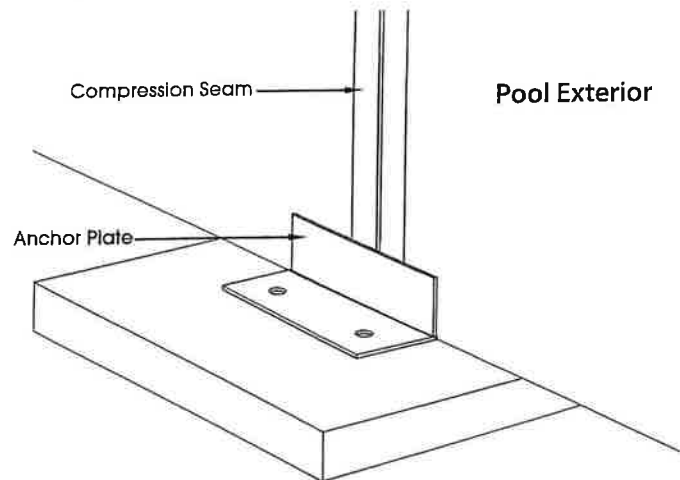
Locate the wall section that is cut for the installation of both the skimmer and return fitting. The location for this panel should be adjacent to the electrical supply and provide ease of access once the pool is installed.

Place the 2 wall sections so that the panels meet on center of a patio block. At the end of each wall panel is a compression seam for the spline assembly. Place an anchor plate on patio block, centered under compression seams of meeting panels. Attach wall sections using the provided splines. Please be aware that each compression seam should be flush before attempting to insert the splines. **(fig.G)** Splines are designed to slide freely into place when inserted properly into leveled panels.

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.

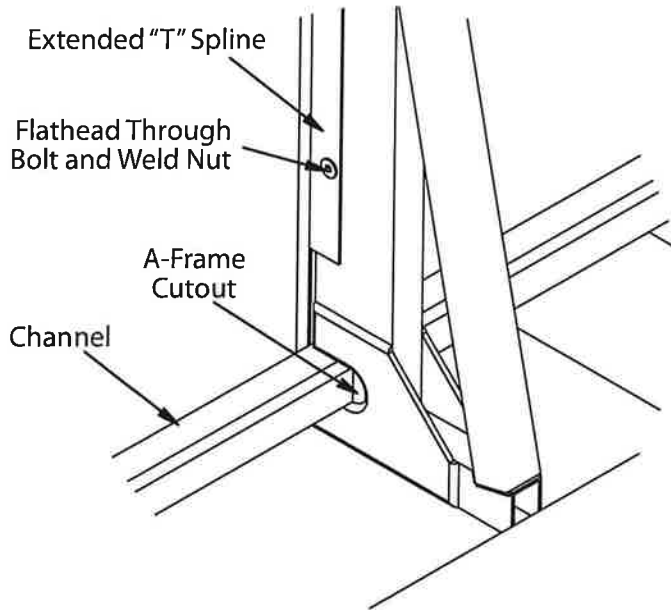


Wall Section



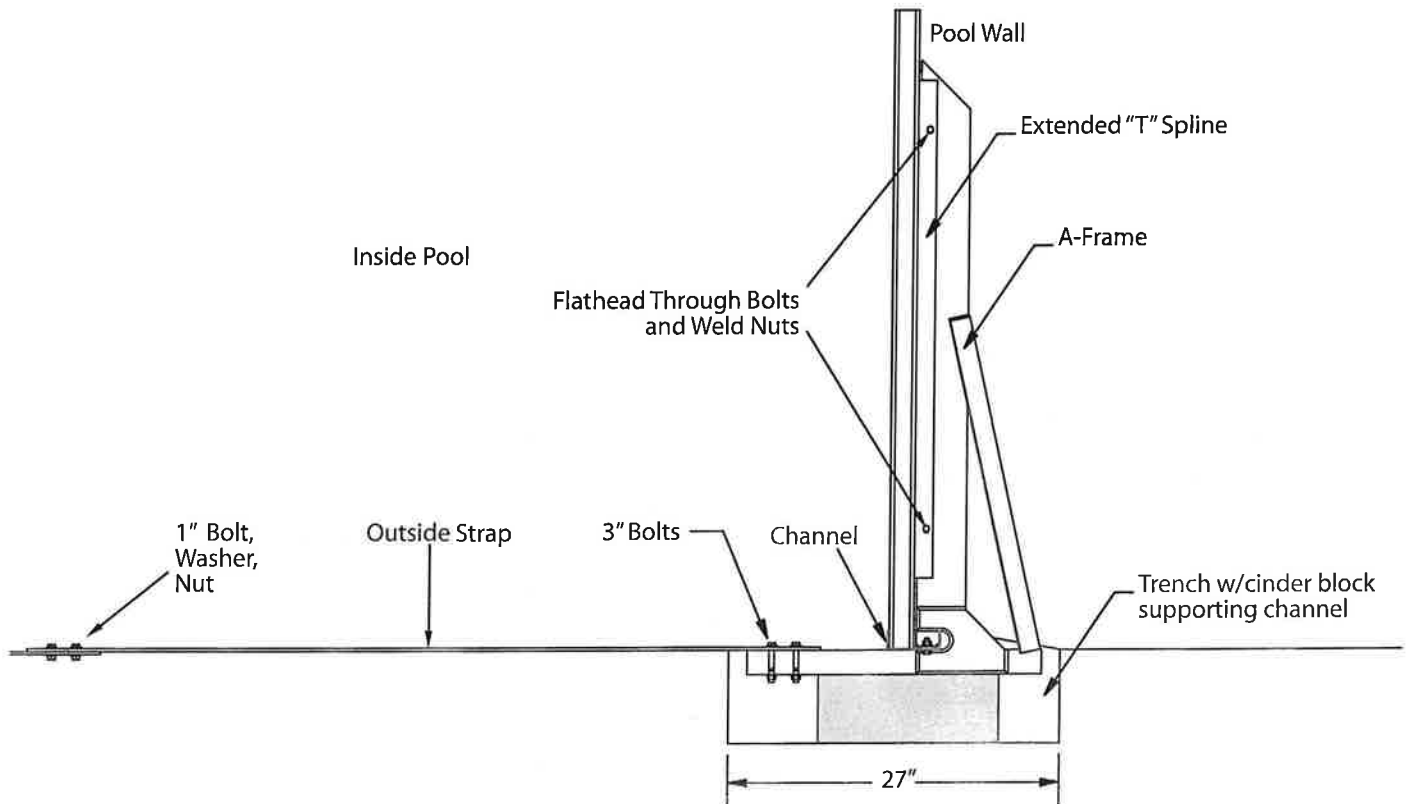
A-FRAME AND STRAP INSTALLATION

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



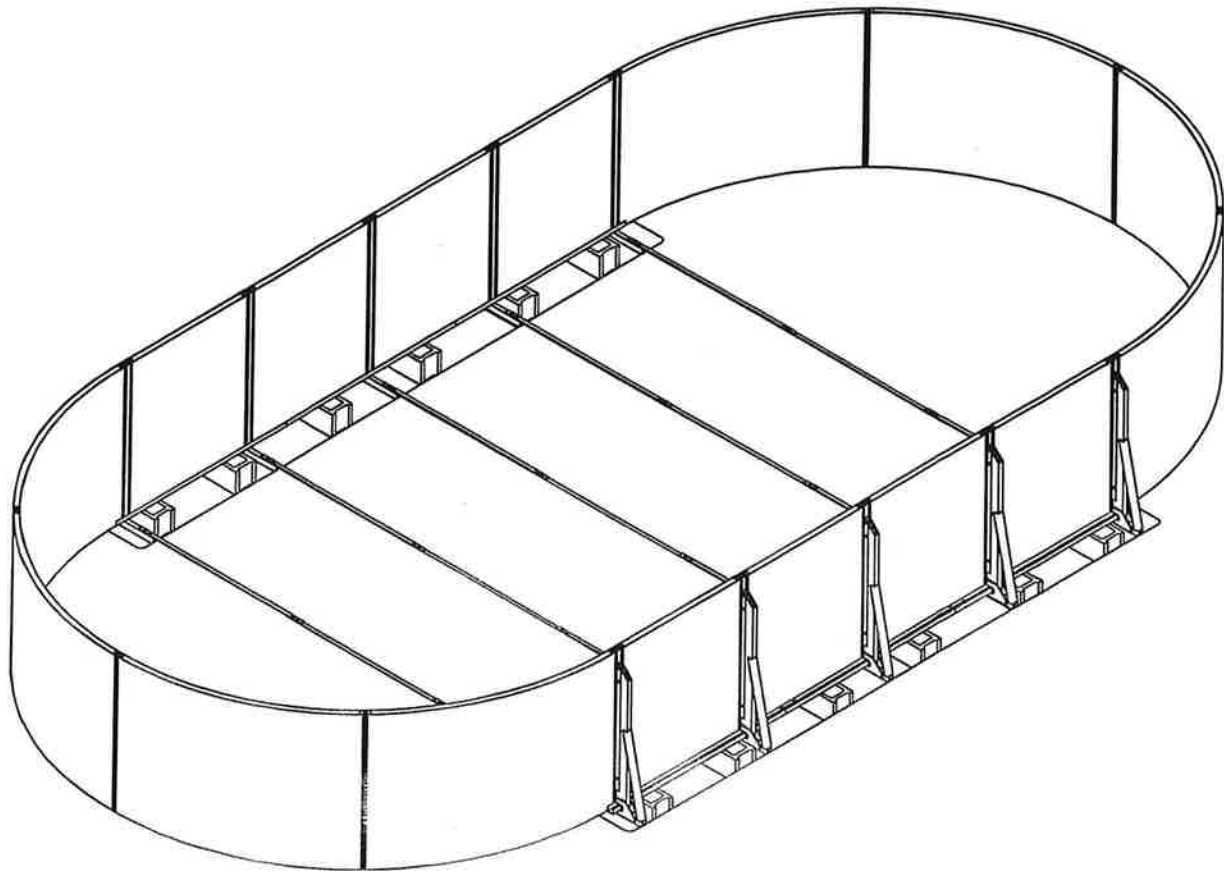
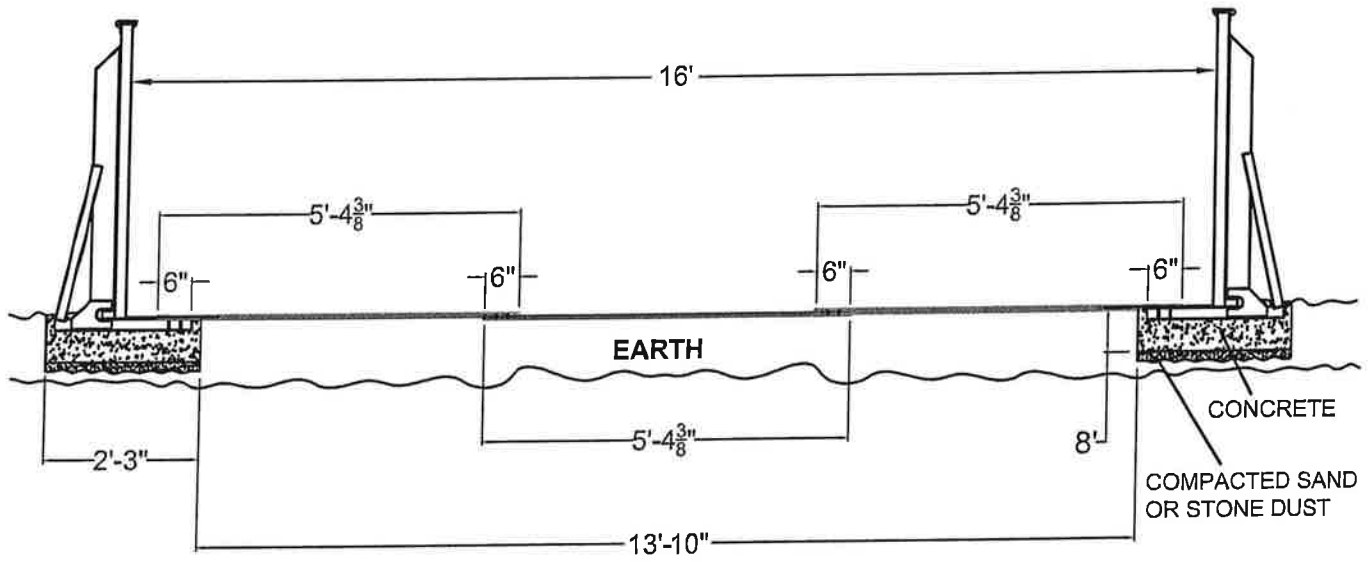
1. The bottom of the A-Frame will be under the channel and the notched cutout at the bottom will interlock with the channel at wall connections between (2) Extended "T" splines.
2. Secure A-Frame to Extended splines with (2) flathead through bolts and weld nuts.
3. Attach A-Frames on opposite sides of the pool with Strap kit. A set of (2) 3" bolts attach the straps to the A-Frames. 1" bolts will attach the middle strap below the outside straps.

Check level plumb and square of pool.



BOTTOM STRAP AND BASE SUPPORT ASSEMBLY

16' x 32'



Drawings are for illustrative purposes and are not to scale.

CONCRETE REQUIREMENTS

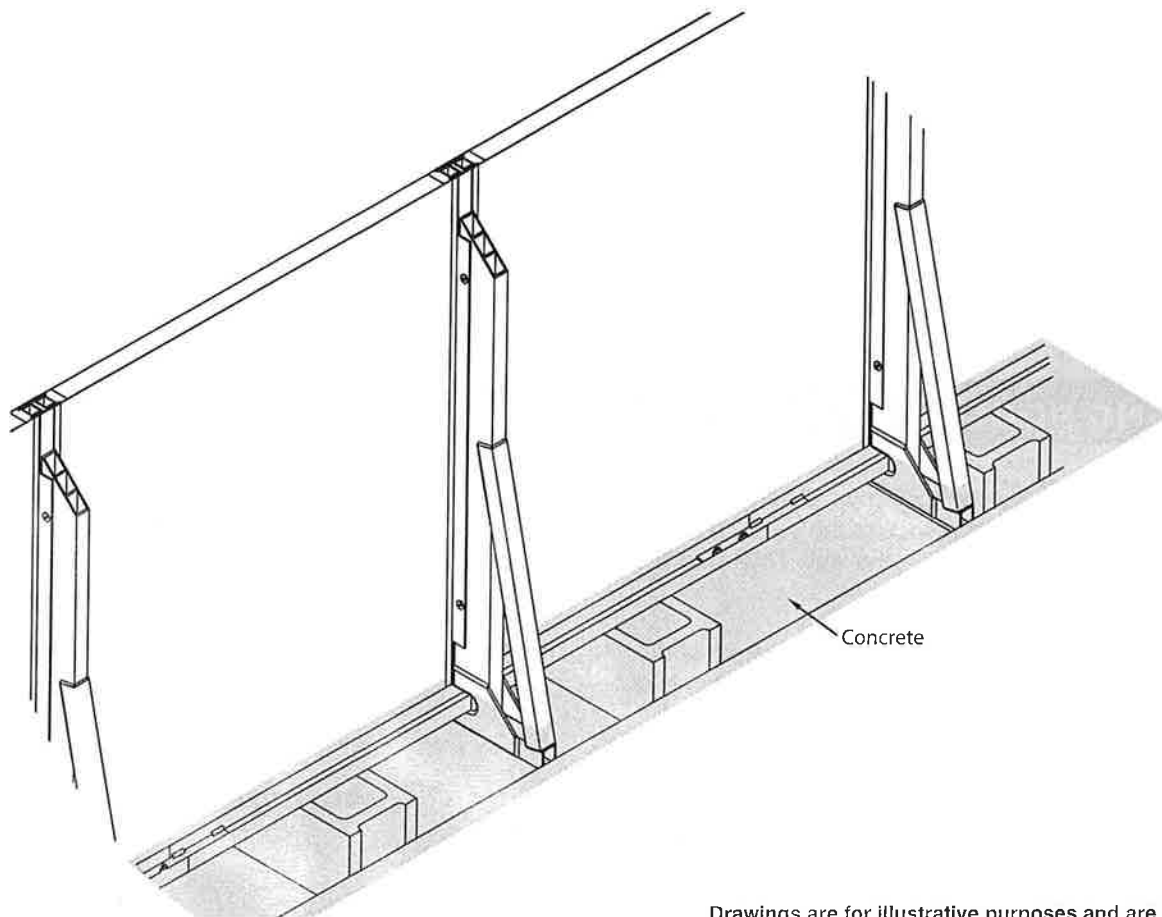
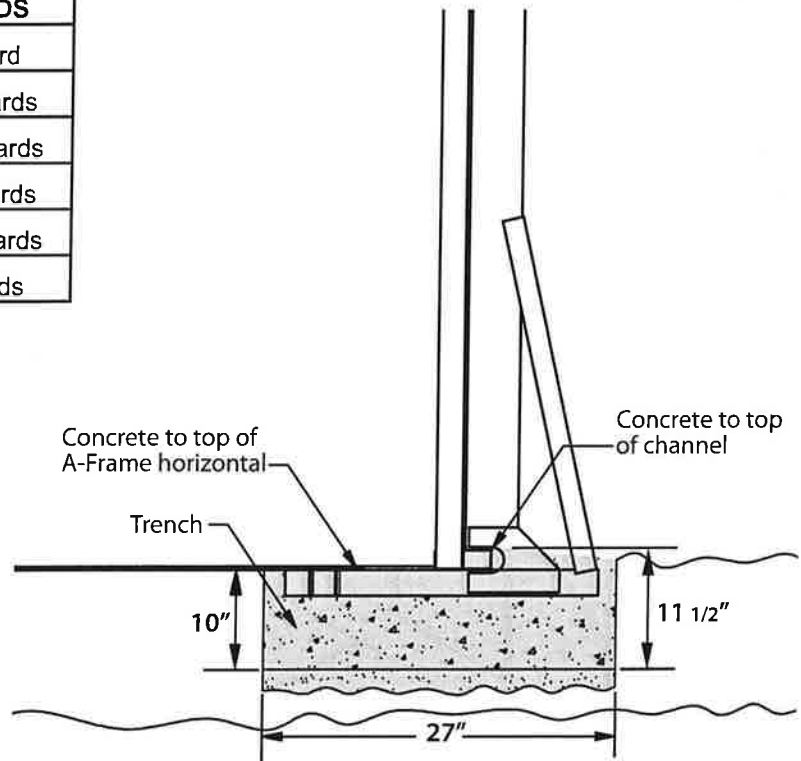
SIZE	AREA	VOLUME	YARDS
12'x16'	5'x10"x27"	21 cu ft	1 yard
12'x20'	9'x10"x27"	36 cu ft	1.5 yards
12'x24'	13'x10"x27"	52 cu ft	2.25 yards
16'x24'	9'x10"x27"	36 cu ft	1.5 yards
16'x28'	13'x10"x27"	52 cu ft	2.25 yards
16'x32'	17'x10"x27"	68 cu ft	3 yards

USE 2500# SWIM POOL COLLAR MIX.

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 bottom channel on the outside of the pool.

Allow 24 hours to set before filling pool completely.



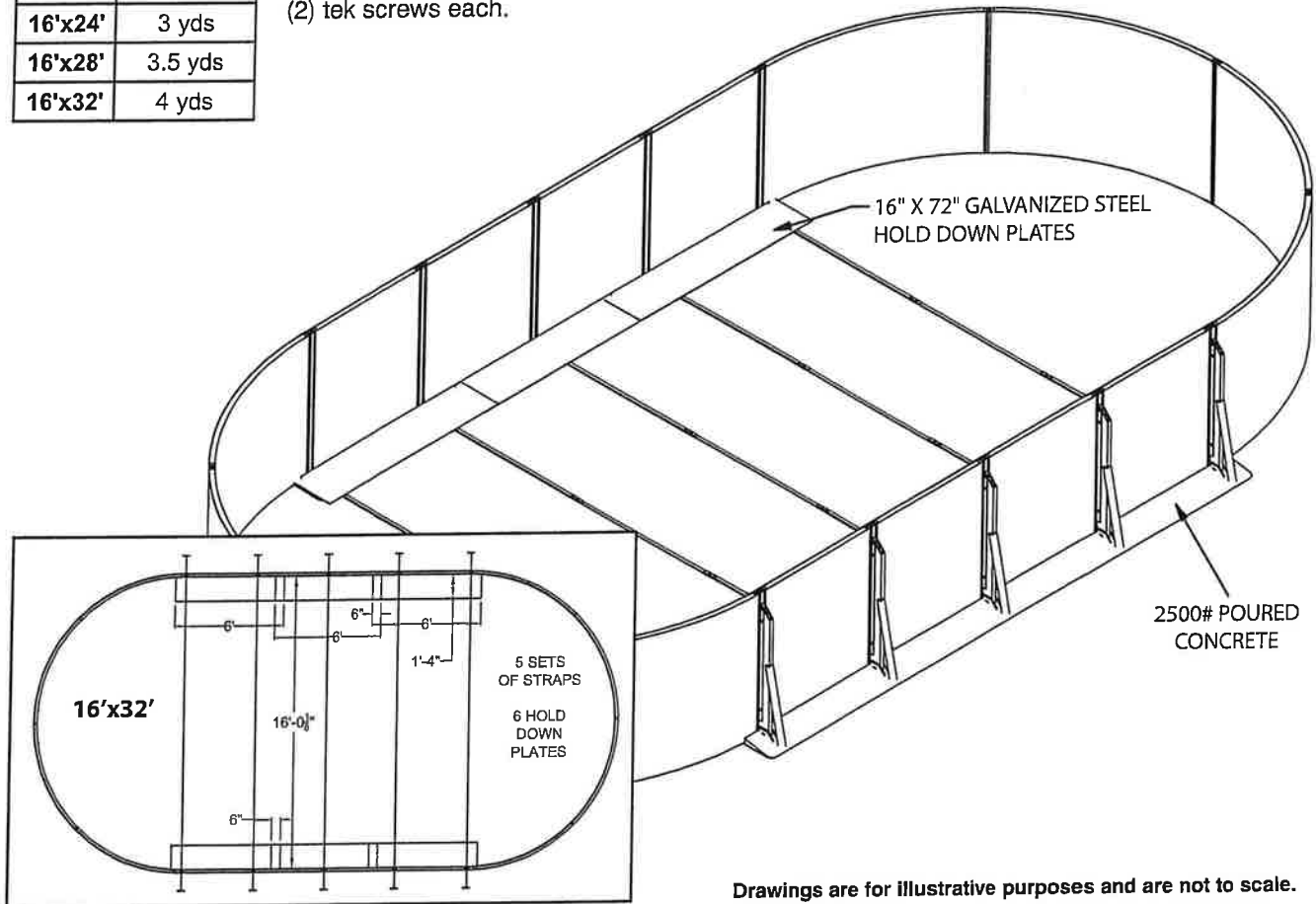
Drawings are for illustrative purposes and are not to scale.

PREPARING POOL FLOOR

Masonry Sand Requirements	
Pool Size	Amount of Sand
12'x16'	2 yds
12'x20'	2.25 yds
12'x24'	2.5 yds
16'x24'	3 yds
16'x28'	3.5 yds
16'x32'	4 yds

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 amount of masonry sand per pool as shown in the chart at right will provide a 2" layer across the pool floor and a 6" 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. Center the hold down plates over the horizontal base supports. the plates will overlap each. Secure plates with (2) tek screws each.



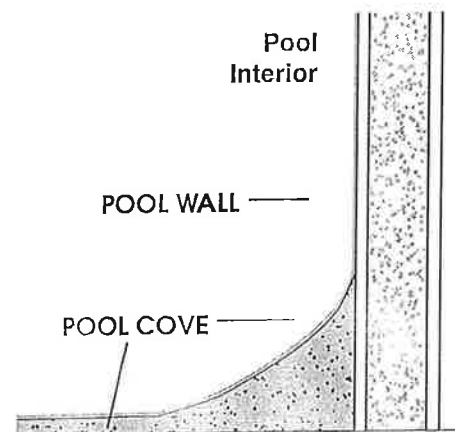
Drawings are for illustrative purposes and are not to scale.

PREPARING POOL COVE

Using the masonry sand, build a pool cove 3" to 5" 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.

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



SKIMMER ASSEMBLY

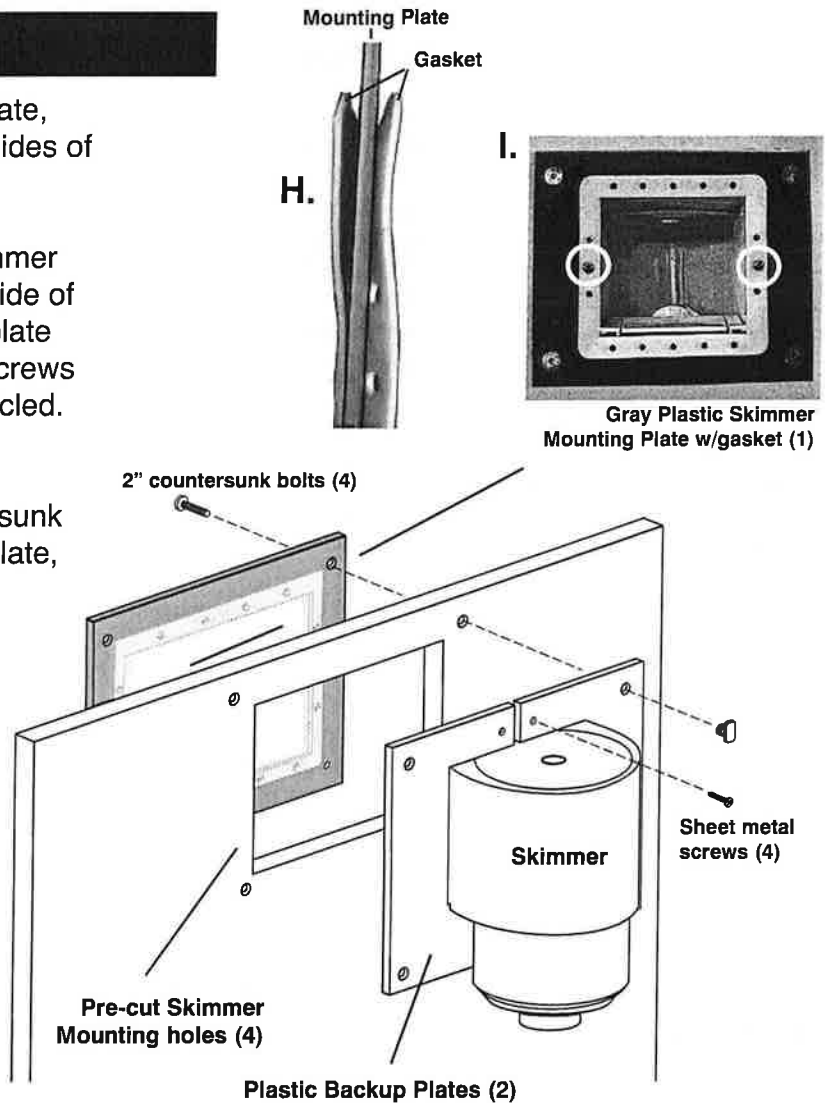
Install rubber gasket on the mounting plate, making sure the gasket straddles both sides of the mounting plate. (fig.H)

Slide skimmer face through pre-cut skimmer opening, keeping skimmer body on outside of pool wall. Attach gray plastic mounting plate tightly to skimmer face using panhead screws into each side center holes as shown circled. (fig.I)

Fasten assembly by inserting 2" countersunk bolts through corner holes in mounting plate, through pre-cut holes in pool wall and through corner holes in plastic backup plates securing with T-nuts. Hand tighten only.

Finish securing backup plates with 4 sheet metal screws per diagram. The skimmer faceplate is attached after the liner is installed.

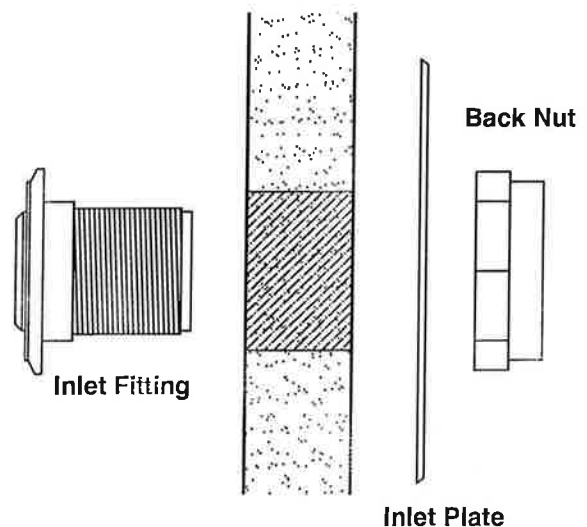
For Skimmer Assembly instructions for Inground installation, see page 15.



RETURN FITTING ASSEMBLY

The return fitting complete is comprised of 3 pieces: inlet fitting, inlet plate and back nut.

Install the return fitting by threading the adapter into the inlet fitting. Place the assembly into the pre-cut hole, slide the inlet plate over the exposed threads and then thread the back nut onto the fitting. All threaded connections should be prepared using a combination of Teflon tape and marine grade silicone. The return faceplate is attached after the liner is installed.



INSTALLING PLASTIC COPING

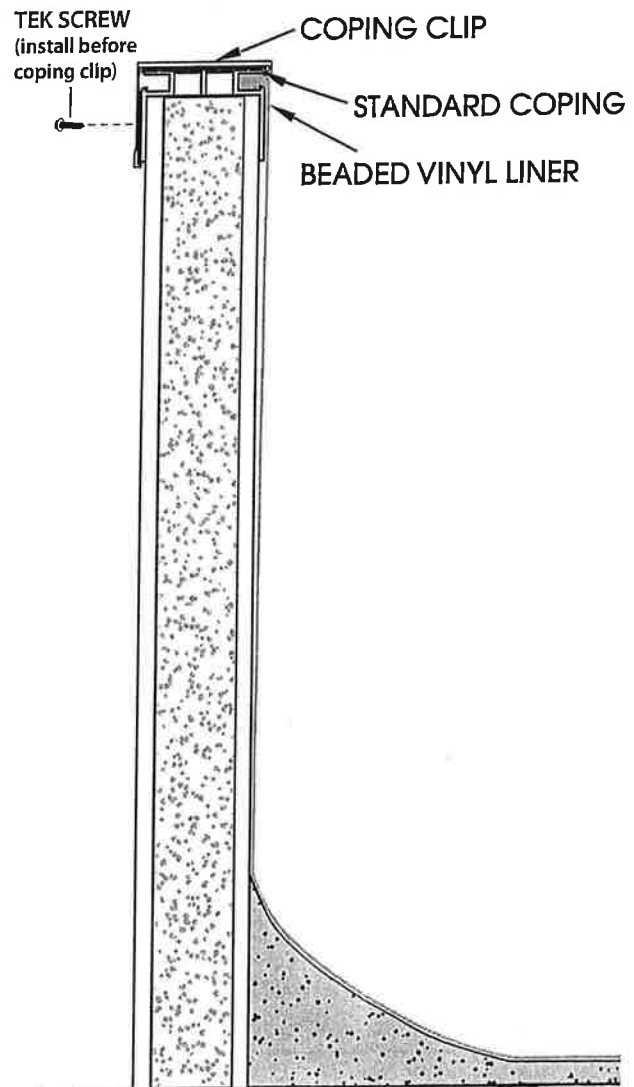
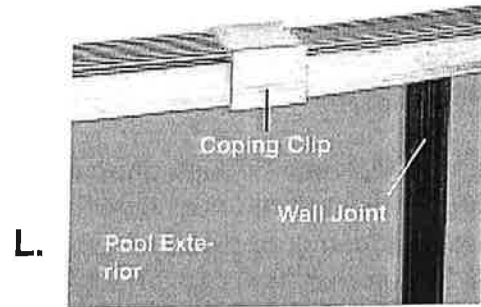
The plastic coping is attached by simply snapping over the pool wall. Each coping joint should be offset from a wall joint. (fig. L) You need to leave a 1" gap between lengths of coping. Once all of the coping has been placed, secure the coping to the pool wall with the white cap screws provided. Using a 3/32" 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.

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.

For the 18' pool, the screw spacing should be approximately 24" beginning with the first screw approximately 2"-3" over from a compression seam. For all other pool sizes, the screw spacing should be approximately 29" beginning with the first screw approximately 2"-3" over from a panel joint. The beaded vinyl liner with the weight of the pool water will draw coping into place and level on the interior of the pool wall.

Install coping clips by snapping over gaps between coping lengths.



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. 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.

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.

TIP: To remove 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

Water Gallonage per Size

Pool Size	52" Pool Wall (44" of water)
12'x16'	4,419
12'x20'	5,735
12'x24'	7,052
16'x24'	9,028
16'x28'	10,781
16'x32'	12,537

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



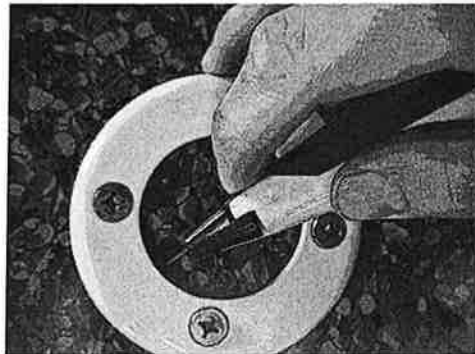
Locate screw holes for faceplate.

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

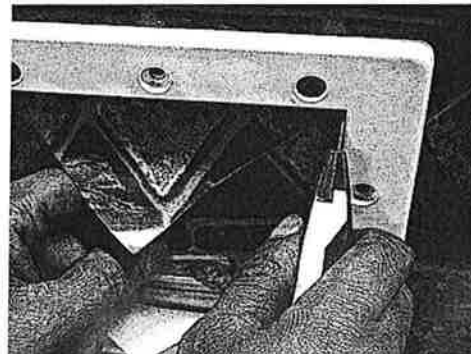
Locate the screw holes in the mounting plate beneath the liner for the skimmer and the return. Once located, carefully puncture the liner at the screw holes with an icepick or nail. Attach faceplate with 1" screws and hand tighten evenly till snug.

Using a razor knife, carefully trim the liner out of the openings for the skimmer and return. When done, install the directional eyeball into the return.

Trim liner from return opening.



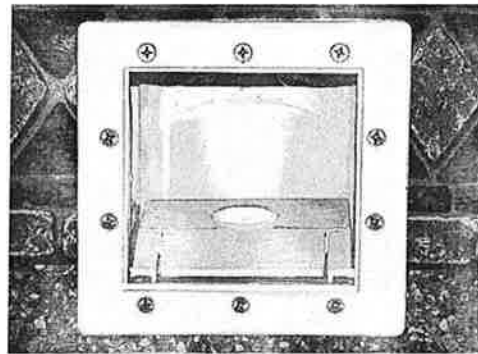
Trim liner from skimmer opening.



Return faceplate installed.



Skimmer faceplate installed.



COMPLETING INSTALLATION

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

NOTES

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 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 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.



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