

# Onground Pool Planning / Installation

Congratulations on your decision to build a Champlain Onground Pool. The first step in creating your own backyard vacation area. This manual will guide you through each stage of the installation of your pool. Feel free to contact Propools.com if you require additional information or assistance. For pictures of swimming pool construction please view our "Photographic Journey of Pool Construction" Online @ [www.propools.com](http://www.propools.com) .

## POOL LOCATION:

The next step is to consider the following:

Distances from existing structures such as your home, fences, patios, etc...

- Presence of overhead power lines which pose a safety threat.
- Presence of underground electrical cables, gas pipes, phone lines, sewer, water, etc...\*
- Exposure to yard sunlight.
- Location of filter and pump to electrical supply.
- Location of in-pool steps or ladders.

Consult your local utilities for assistance.

**Note:** Your local municipality may require a Building Permit before construction begins. Inquire at your local Building Department. Always check with and adhere to any of the local/state building department codes.

## LET'S BEGIN

The Champlain On-Ground line of pools are specifically designed to be erected above ground, partially inground or entirely inground. The panel structure and bracing are designed to give the additional structural support required to replace the supporting backfill and concrete footing necessary for the inground pool.

Champlain On-Ground pool walls are structurally reinforced to resist movement due to filling the pool and associated stresses. This allows us to use a variable depth liner, which will give you a contoured deep end. The standard liner will accommodate either flat bottoms or bottoms dished as much as 8', as shown in our standard layout and dig drawings. Liners sent out with these onground pools are manufactured to specifically fit the dig dimensions agreed upon by the customer and Propools.com.

## GROUND PREPARATIONS



Pink String = Wall Placement  
White Paint = Over dig for 'Shelf'

Drive stakes around the perimeter of the pool at each panel connection as shown on the panel layout and dig drawing chosen. Use a transit when driving the stakes into the ground so that they are all level with one another.

Now, rough out the middle portion of the pool to fit your choice of bottom contour, and level a two-foot wide construction ledge around the rim of the pool, using the stakes as a guide.

Note: When forming dished bottoms, you must shape all the depth transitions as evenly flowing curves to avoid abrupt changes in depth, which can cause wrinkles in the liner. When forming hopper bottoms, you must shape all the depth transitions as indicated in the dig specifications, which helps eliminate wrinkles in the liner.

Picture to the left shows both wall placement and the over dig, which allows space for bracing, plumbing, etc. Picture to the right shows completed dig, showing where the deep end walls will sit and the over dig area.



### SETTING THE PANEL WALLS

Erect the pool walls on the leveled construction ledge using the stakes as a guide. Recheck your measurements with the panel layout drawing for each panel as you install it. It is a good idea to use only two bolts per connection at first. If your measurements are accurate, the last panel should slide into place with very little adjustment necessary. If too much adjustment is required, you have not measured carefully enough, or a panel has moved. If you find yourself in



this situation, do not try to reset the panels while they are joined together. Re-check all your measurements, unbolt the panels and reset them more accurately. Note: Don't forget to install the remaining bolts before final leveling. Each bolt hole, where the panels join, should have a bolt securely installed.

#### INSTALLING THE OPTIONAL STEP

Place the step upright and install the step braces into the step. Place the panel flush with front of step at the desired height. Using the wall panel or angle brace as a template, drill holes into the step. Attach the steel angle braces and panel to the wall panel and step. (See Figure 1 Below)



Figure 1

#### FINAL LEVELING

The construction ledge upon which the panels rest may not be perfectly level. Using the transit again, level all the panel joints of the pool by shaving down soil where possible, or using shims where necessary. Where shims exceed 1/2" thickness, consideration should be given to reworking ledge to achieve a more level surface. Note: Do not use backfill to level panels, as the pools must be supported on a firm, undisturbed base. After the pool wall has been leveled completely, and each panel properly supported, any voids left between the bottom of the pool wall and the ground must be hard-packed with soil. Now is a good time to tape all panel joints with two-inch gray duct tape.

#### SETTING THE BUTTRESSES

Using the buttress as a guide, locate positions for concrete pillars as shown in the diagram below and on the dig drawing.

Dig out postholes minimum eight inches in diameter by minimum three feet deep. Use of a post hole digger is recommended. In areas where frost is a factor it is advisable to dig postholes to a minimum depth of four feet, and to use a containment tube for the concrete to avoid a mushroom cap effect on the top of the pillar.

Bolt buttresses to panels, and drop threaded rods through holes in the buttresses as shown in the diagram below. These rods should be approximately in the center of the posthole. If not, then you must enlarge the posthole to allow for a minimum of three inches of concrete all around the threaded rod. Before pouring the concrete, check to insure that wall panels are perfectly vertical, level and properly positioned and supported.

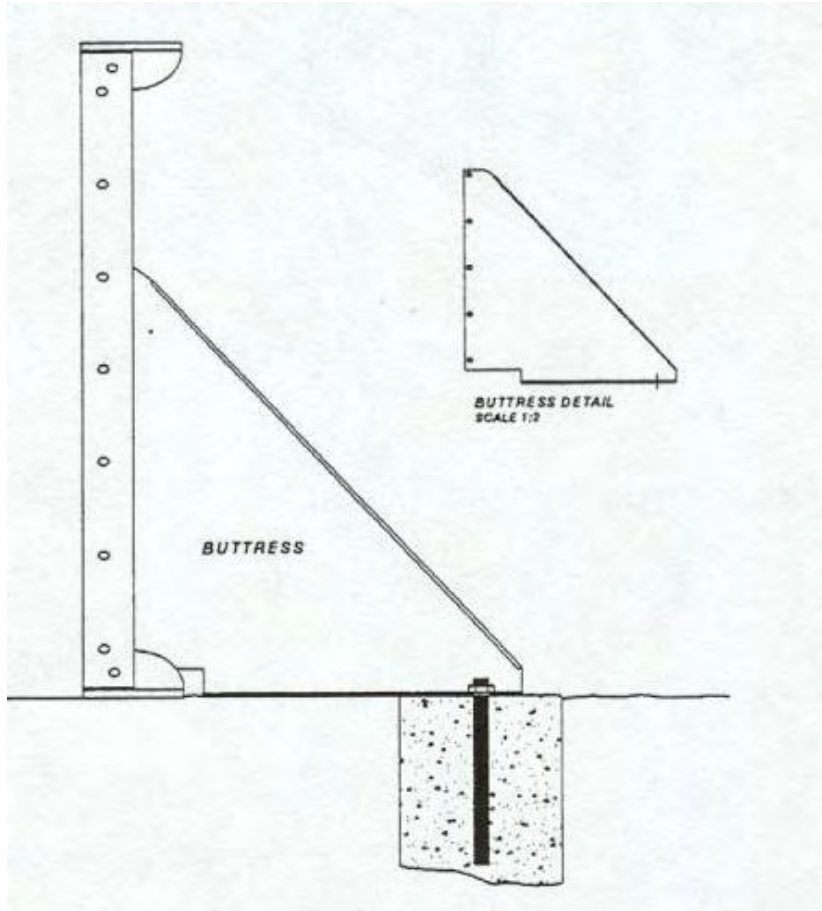


Figure 2 - Buttress Detail



Concreting the Buttress

#### CEMENT MIXTURE FOR POST HOLES

You can either mix your own, buy premixed concrete in bags, have ready to use concrete delivered in a concrete truck. The choice is a matter of convenience. If you have some sand and gravel around, it is less expensive to buy a bag of cement and mix your own. A good formula for the mix would be one shovel of cement, threes shovels of sand and one shovel of gravel. An eight-inch diameter by three feet deep posthole requires approximately one cubic foot of concrete.

#### FINISHING THE BOTTOM

The easiest way to prepare the bottom to accept the liner is to finish it with "FINE WASHED BRICK SAND". It may be shoveled and spread over the rough bottom, dampened, and tamped, and troweled into the desired finished shape. Use

a minimum finished thickness of two inches. Where the bottom meets the wall it should be rounded up for a smooth curve, approximately two inches up the wall as illustrated in Figure 3.

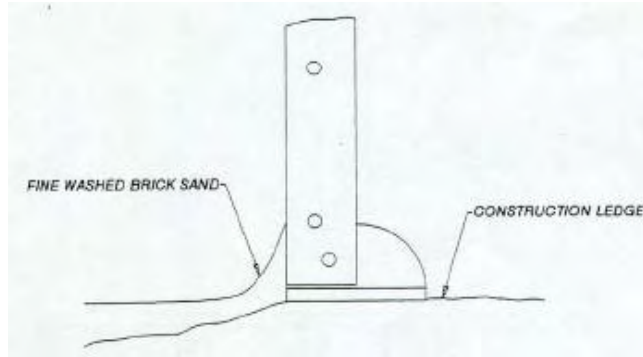


Figure 3 - Bottom Finish

The most common method of preparing the bottom to accept the liner is the finish it with a "sand-cement" mix. This material can be mixed on the construction site. Masonary sand and grey portland cement are needed for the proper "sand-cement" mix. The normal mixture of sand and cement is 7 shovels of sand to 1 shovel of portland cement. It is easiest to mix this in a paddle mixer which may be available to rent at a local equipment rental location. It is possible to mix 2 or 3 batches of "sand-cement" mix at a time. The consistency of the mix should be such that when formed into a ball, then squeezed in your hand will not squeeze between your fingers and when you open your hand it does not fall apart.

Click on an image to enlarge







Pictures Showing Concrete Bottom Finish

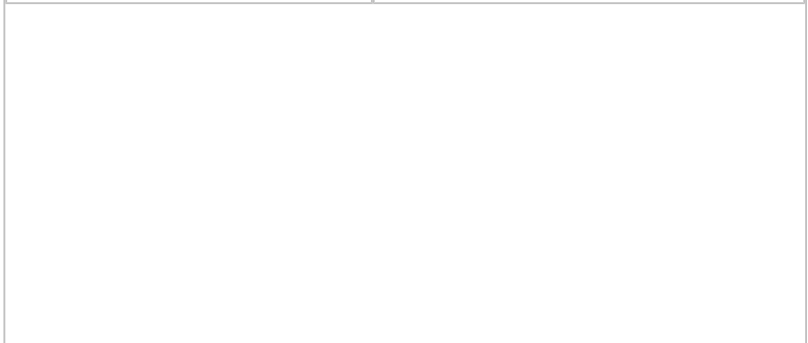
The bottom configurations described as "HOPPER" require hard surfaced bottoms. Liners are designed to form-fit these pools exactly as shown in the dig drawings. Consult Propools.com for assistance in determining products available in your area, and advice on proper mixes, pouring and finishing methods.

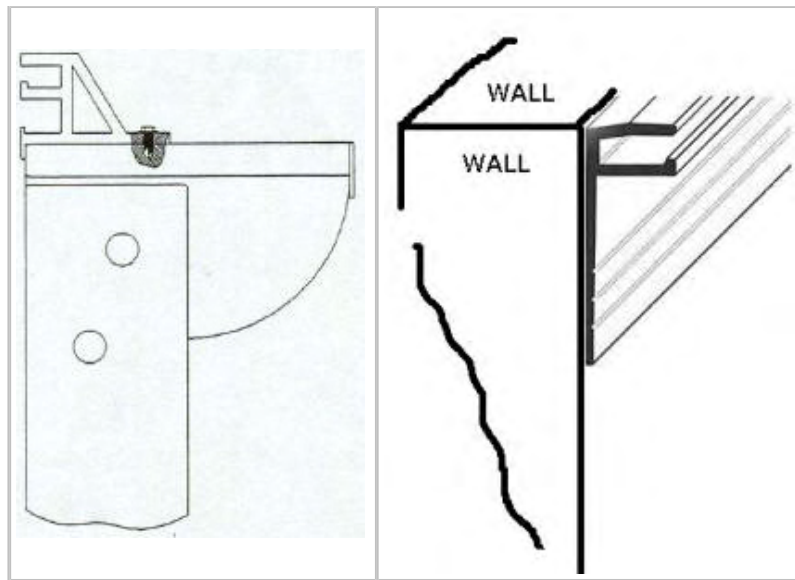
INSTALLATION OF ON-GROUND LINER TRACK (HANGER STRIP)

Liner Track or Coping should be attached to the edge of the wall using the self drill/tap screws provided, spaced about twelve inches apart. See Figure 4 & Figure 4-a below. Use Duct Tape to cover the screw heads when installing as per figure 4-a.

Figure 4 - Top Mount Liner Track

Figure 4-a Side Mount Liner Track





## LINER INSTALLATION

### CLEANING THE POOL SHELL BEFORE INSTALLATION:

Carefully inspect all wall and floor surfaces for any loose or mounded debris. The interior surfaces of the pool must be **PERFECTLY CLEAN AND FREE FROM ANY DEBRIS**. Any unwanted material trapped behind the liner will not be covered by the liner warranty. Any bottom voids or depressions must also be filled in prior to placement of the liner.

### INSTALLING THE LINER:

Carefully place the liner in the shallow end of the pool and unroll toward the deeper end of the pool. Begin to insert the liner bead into the lower track of the liner track, after taking care to properly align and register the perimeter of the liner using the following reference points:

- All eight corners of the pool walls (Emeralds and Octagons)
- All ten corners of the pool walls (Kidneys)

Make sure the liner is properly distributed around the entire perimeter of the pool by realigning and reregistering it by eye.

Work the liner into place by smoothing it and pulling it using a soft bristle broom and your hands.

Note: Be sure to make all adjustments from outside the pool walls so as not to disturb the sand bottom, if used.

### LINERS IN POOLS WITH STAIRS:

Where the liner track meets the step unit, extra care must be taken to insure a good seal so that the vacuum will set the liner. Be sure the liner bead is wedged as closely as possible to the step unit. This may be done with a length of liner retention bead, coins or washers. **DO NOT USE A SCREWDRIVER OR ANY OTHER SHARP TOOL!!**

Where the liner bead enters the track, the same technique should be used.

Make certain the liner is well seated along the front of the step unit. It is desirable to pull the liner against the step unit and hold it in place with sandbags until the water weight holds the liner in place.

### FITTING THE LINER INTO PLACE:

When the liner is initially draped into the pool cavity, air is trapped between the liner and the pool structure. One "Shop



Vac" in the exhaust setting is used to vacate the trapped air from behind the liner. Position the vacuum through the skimmer as shown in Figure 5. Insure that all areas of intake, such as return fittings are taped with 2" gray duct tape or if the plumbing has already been done, be certain any possible vacuum leaks are sealed for this process.

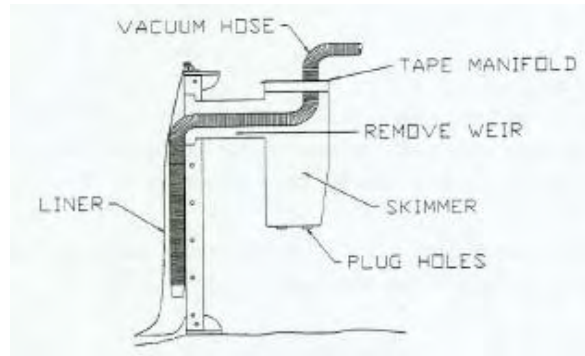


Figure 5 - Vacuum Placement

Turn vacuum on exhaust to remove trapped air. As the liner is pulled to the configuration of the pool shape, remove any wrinkles or folds by pulling the liner and gradually releasing it as the vacuum takes hold.

The liner should be free of wrinkles before water is placed in the pool.

Any packaging wrinkles or creases (NOT FOLDS), will eventually disappear by the sun's heat or the pool's water weight. When you are satisfied with the liner positioning, start adding water from a garden hose.

#### CUTTING THE LINER:

##### Steps:

When the water level has reached a level just below the faceplate channel, the faceplate may be attached. Be sure the floor-to-wall seam on the liner is properly placed to prevent any coving of the liner at this location. (If liner "seating" into place is not satisfactory, continue filling the pool and attach faceplates under water.)

Begin face plate attachment at one end of the vertical faceplate. By holding one side of the side plates exactly in place, align the bottom plate and start the first screw at the face plate end. Continue fastening the bottom faceplate with the screws provided.

As the pool fills, continue to attach the side faceplates. This allows full stretching and complete seating of the liner. With a normal fit, the last two screws to be affixed will probably be into well-tensioned liner material. To prevent any accidental tearing of the liner, reach over and slit the liner in the middle of the stair unit- this relieves the tension and allows easy attachment of the last screws on either side. The liner may now be cut around the inside of the faceplate. Be sure to use a very sharp razor knife.

#### LIGHT AND WALL FITTINGS:

As the water level approaches any light or wall fitting locations, the gaskets and faceplates must be securely attached. Once attached the liner may be cut around the inside of the respective faceplates.

#### SKIMMER:

When the water level is approximately five inches below the bottom of the skimmer opening, align the gasket and the skimmer faceplate with the skimmer panel and the gasket against the faceplate before mounting it. Use an awl or ice pick to install the faceplates, gasket, panel, and the skimmer body. After the faceplate and gasket have been installed, cut the liner along the UNDERSIDE EDGE of the skimmer faceplate as shown in Figure 6. **CUTTING/TRIMMING THE LINER IS DONE ALONG THE INSIDE OF THE SKIMMER FACEPLATE, RETURN FITTING FACEPLATE OR MAIN DRAIN FACEPLATE RESPECTIVELY.**

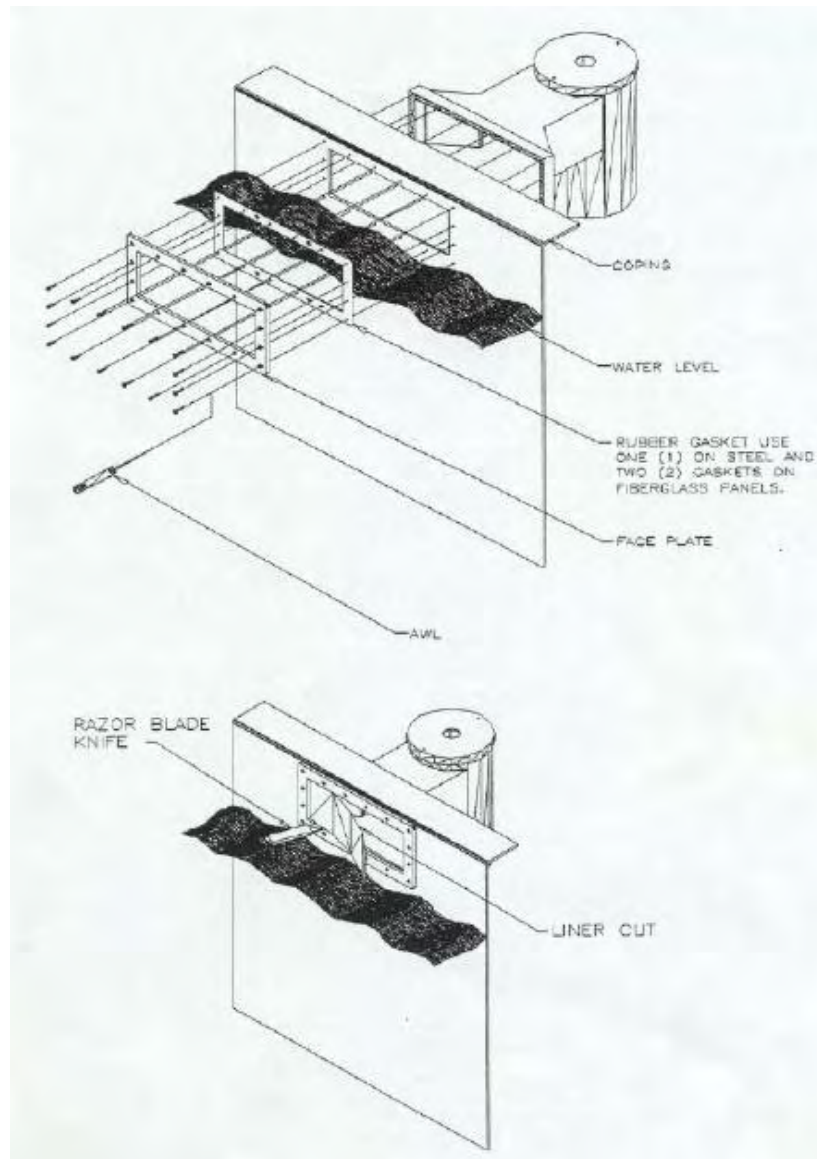


Figure 6 - Skimmer Detail

### PLUMBING AND FILTRATION

In Figure 7 below, we have supplied a very basic plumbing diagram to help you understand the flow of water from, and returning to the pool, via the filter.

NOTE: Consult your Filter/Pump and Motor installation Instructions for specific methods of plumbing your particular make and model of filtration system.

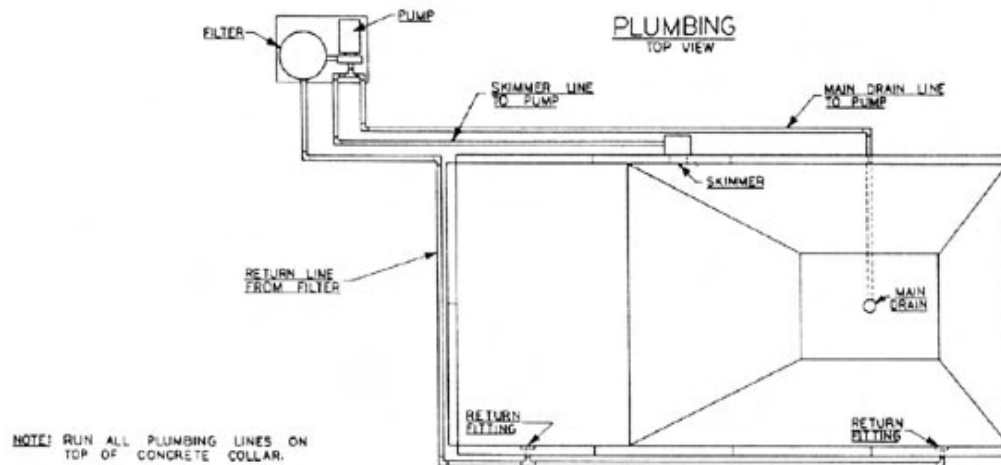


Figure 7 - Basic Plumbing and Filtration

### DECKING

The diagram below details one example of how a wooden deck can be constructed around the Champlain Onground Pool.

Obviously, each back yard requires a unique deck, either installed by you, or a local carpenter. Please keep safety in mind as far as access to the pool when it is not in use. Self-closing gates and other safety factors apply. Consult your local codes while planning the project.

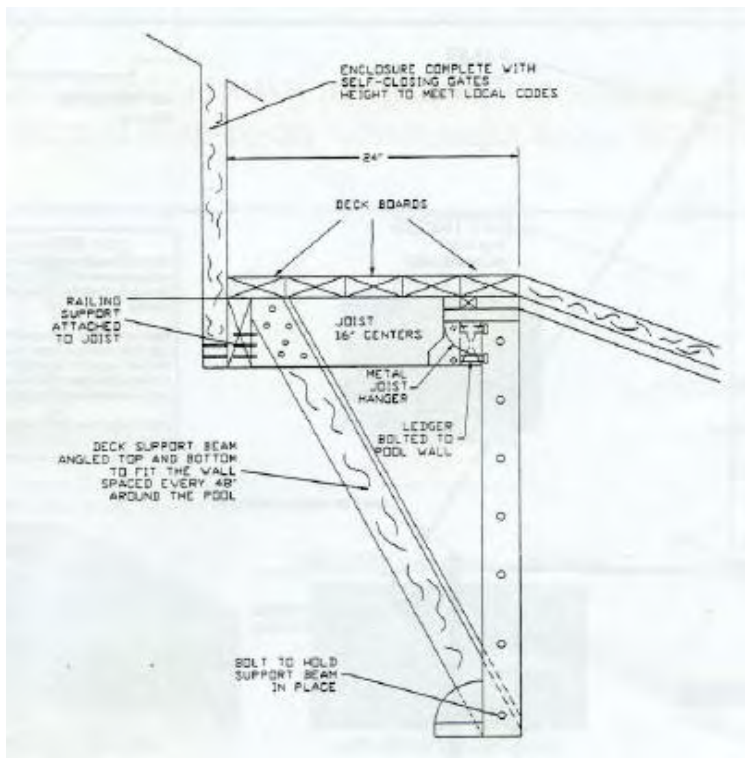


Figure 8 - Wood Deck Example



Wood Deck Framing