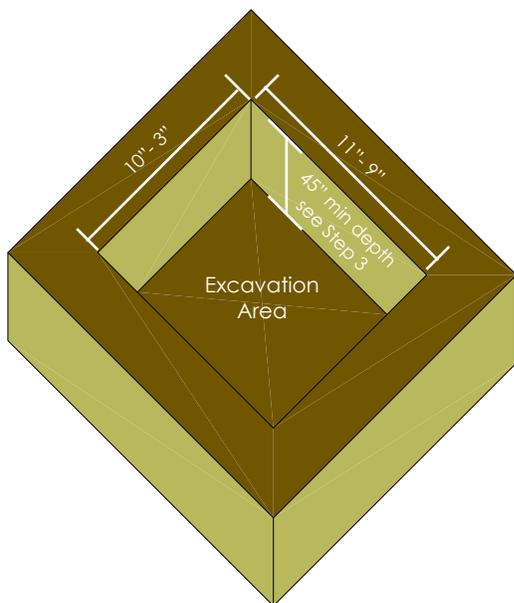


# SpaVault™ Installation Guide for Bullfrog Spas (7'-10" x 7'-10" x 38")

**WARNING** - When unpacking SpaVault, DO NOT discard styrofoam pieces, these are not packaging materials.

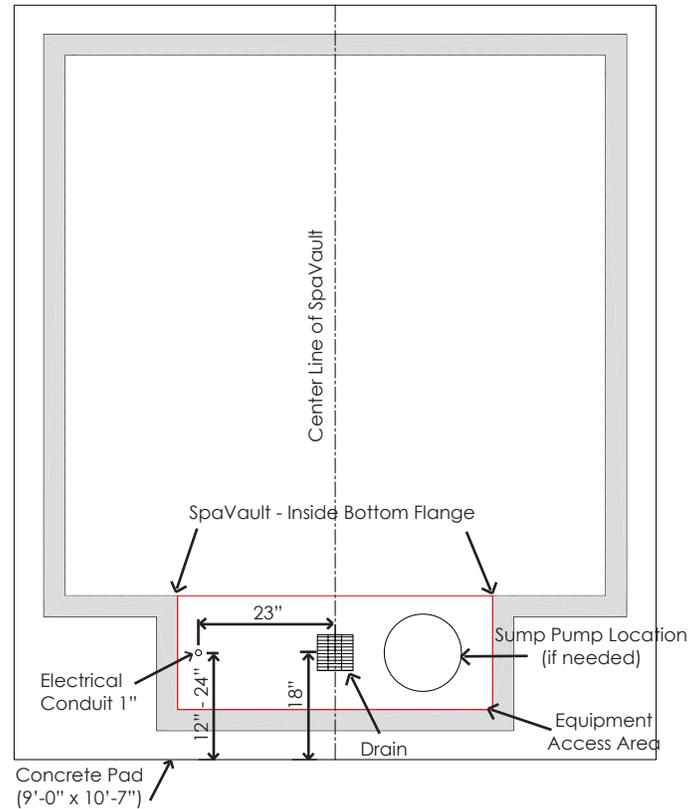
## Step 1 – Excavation

- **Important:** Prior to excavation, schedule with local utility companies to mark any buried utility lines.
- A. Select spa site, determine finished elevation, and the direction the spa equipment will be facing. Ensure that surrounding surfaces slope away from the SpaVault.
- B. Excavation to accommodate SpaVault. Minimum excavation to be 10'-3" x 11'-9" x 46" deep from finished patio elevation (if a 10" bed of gravel is determined NOT to be a sufficient drain sump, excavation depth may need to be deeper depending on the soils ability to drain – see Step 3).



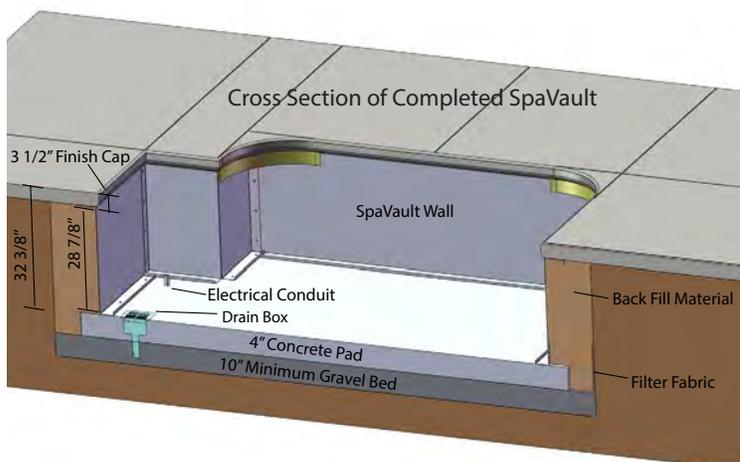
## Step 2 – Rough Electrical

Install rough electrical conduit into equipment access area. When facing the front of the spa, the conduit should be 23" to the left of the center line of the SpaVault and in the Equipment Access Area.



## Step 3 – Gravel Base

- **It is the installer's responsibility to determine and install the necessary equipment and materials to prevent the SpaVault from filling and holding water.**
- If it is unclear how to prevent the SpaVault from filling with and/or holding water, consult a local Geotechnical Engineer to design a system adequate to prevent water from entering into the SpaVault.
- Sump Pump: If it is determined a sump pump is required, you can purchase the "Little Giant 14940655 Pre-Packaged Crawl Space Sump System 1/3 HP 50 GPM" on-line or at your local hardware store. It is the installer's responsibility to ensure the sump pump selected is adequate for the site.
- A. Backfill the bottom of excavated hole with a minimum of 10" of gravel to create a drainage sump and prevent the SpaVault from filling with water. If conditions are such



that a 10" bed of gravel is not sufficient to prevent the SpaVault from flooding, the depth of the gravel should be increased to a sufficient depth.

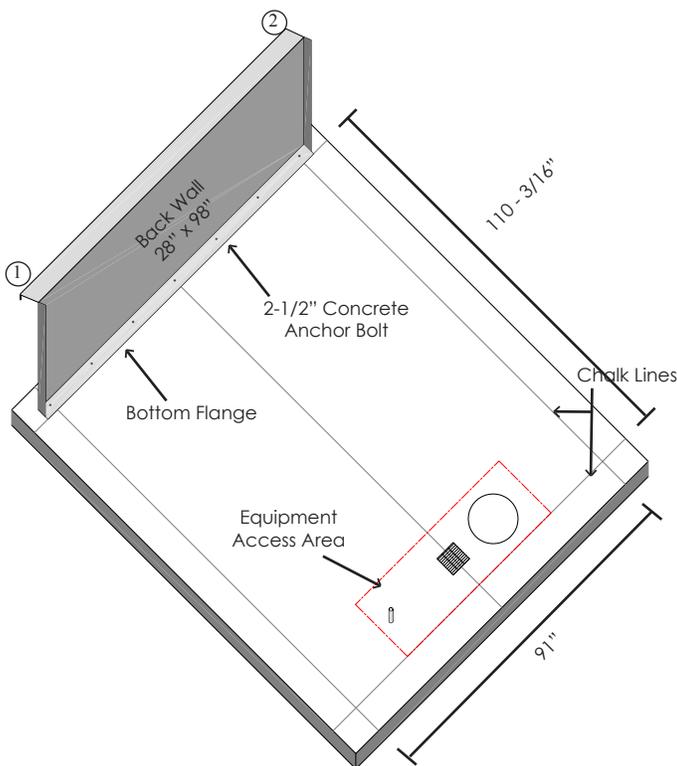
- B. If it is determined to increase the gravel depth over 10", the excavation depth will also need to be increased by the same amount.

## Step 4 – Concrete Pad

- A. Install concrete forms (on top of gravel) for a 4" thick concrete pad. Set top of concrete pad elevation to 32 3/8" below finished patio elevation. Concrete pad should be a **minimum** of 9'-0" x 10'-7" (10'7" dimension includes space to accommodate equipment access area). **Important:** the concrete pad must be poured level in all directions.
- B. Pre-set floor drain that is included in kit (if it is determined a sump pump is necessary, pre-set sump pump box). Drain (and sump pump box) should be located in the equipment access area of the SpaVault (see Step 2 image). The top of the drain should be set level with the top of the concrete pad.
- C. Pour and finish a 4" thick concrete pad.
- D. Remove concrete forms and allow concrete to cure.

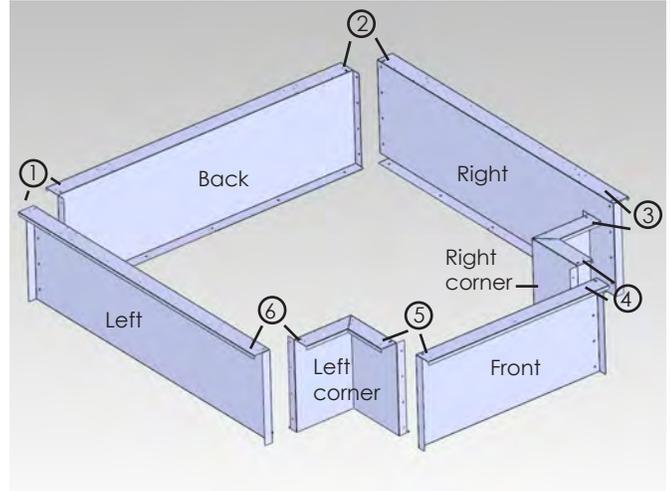
## Step 5 – Install SpaVault Walls

- A. Using a chalk line, mark a rectangle 91" X 110-3/16" on the concrete pad. Note: The 110-3/16" dimension accommodates the equipment area.
- B. Place the Back Wall (wall labeled with corners 1 and



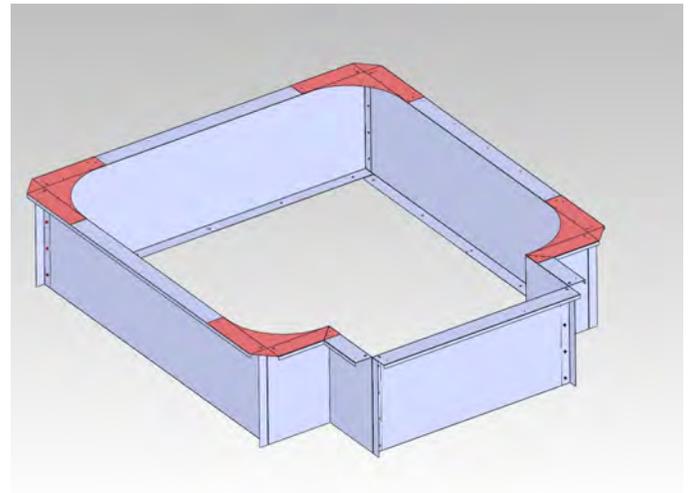
2) centered along the back chalk line (opposite of spa equipment end) with the bottom flange facing in toward the center of the SpaVault.

- C. Assemble the remaining wall panels by aligning the numbers on the top rails to the same number on the



adjoining wall. Secure the wall panels together using four 1/2" bolts per corner. **DO NOT** drill and fasten to concrete at this time.

- D. Align the walls so that the bottom flanges align with the chalk lines and are square to one another.
- E. Using the #10 X 3/4" self-tapping screws, install the

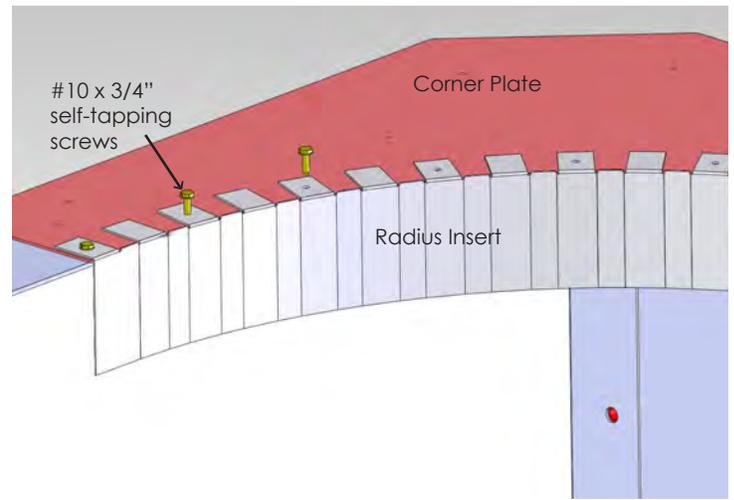


four Corner Plates on the outside 4 corners, aligning the four (4) attachment holes over the pilot holes in the top wall flanges.

F. Anchoring SpaVault Walls to concrete Pad.

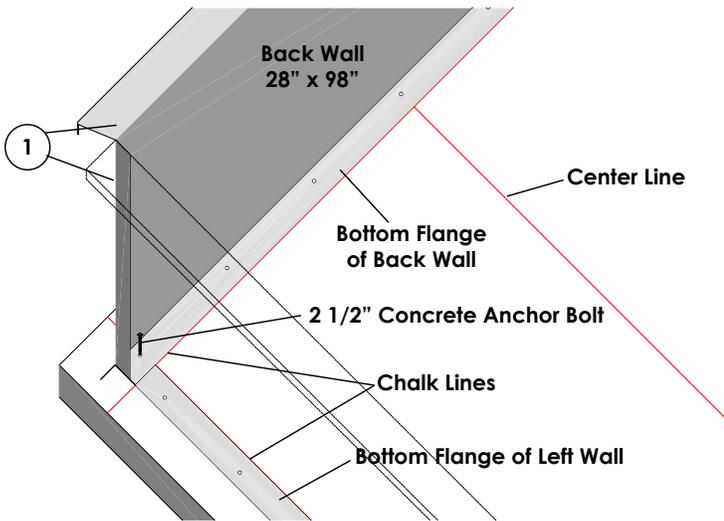
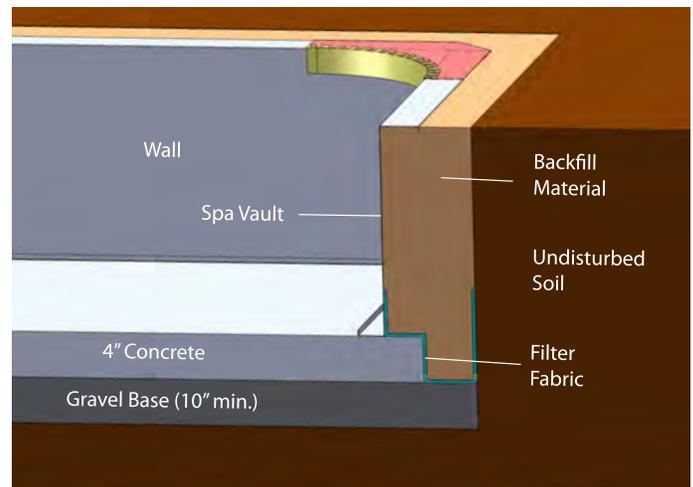
1. **Corner 1** - Starting with the Back Wall Panel in “Corner 1” (Back Left Corner), on the Back Wall Panel locate the anchor hole closest to the Left Wall. With the wall panels square to the Chalk Lines, using the special sized concrete drill bit (included in the kit) drill a 3-1/2” deep hole. Using a shop vacuum, clear the dust from hole and attach the first 2-1/2” concrete bolt. Before securing firmly, ensure Back Wall is aligned with Chalk Line.

2. **Corner 2** - Moving to “Corner 2” (Back Right Corner), on the Back Wall Panel locate the anchor hole closest to the Right Wall. Repeat the steps in “1.” above to drill and anchor Back Wall securely to concrete.



**Step 6 – Backfill Perimeter of SpaVault**

- It is the installer’s responsibility to ensure both the materials and methods for backfill and compaction around the exterior of the SpaVault is acceptable for installing Finished Cap and surrounding decks.
  - Most common backfill materials are pea gravel, sand, road-base, and flow-able fill.
  - If backfill material requires mechanical compaction, take caution not to damage or put undue pressure on SpaVault walls.
- A. Place filter fabric over all exposed gravel overlapping the concrete pad and 6” up the back side of the SpaVault walls and 12” up the excavated wall.



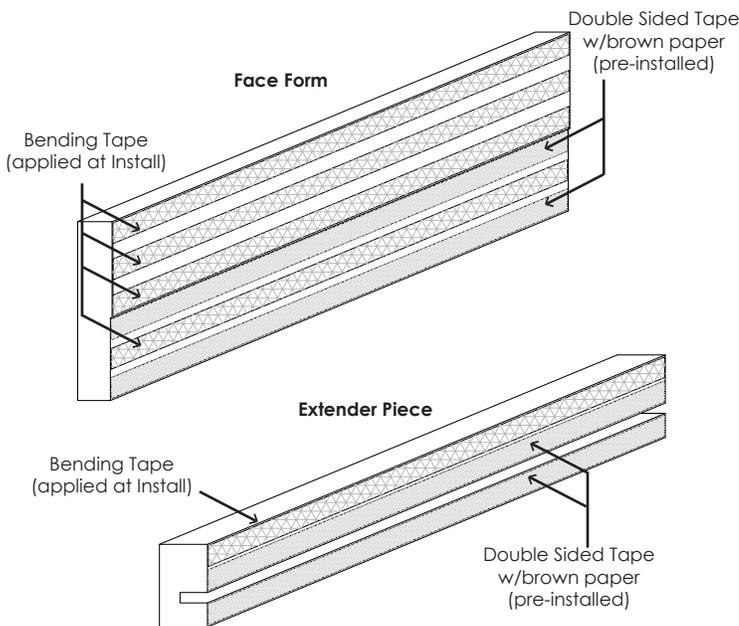
- G. Repeat the previous steps with the Right and Left Walls (Corners 1, 2, 3 & 6) anchoring the corners only.
- H. Repeat the same steps with the Front Wall starting at “Corner 4” and then “Corner 5”.
- I. After all the corners are secured, continue to drill and anchor walls until all anchor holes have been used.
- J. Install the Radius Inserts onto the Corner Plates, starting at one end, align the hole in the first tab of the Radius Insert over the pilot hole in the Corner Plate and attach it using a #10 X 3/4” self-tapping screw. While bending the Radius Insert along the Corner Plate as shown above, align each tab with a hole over the corresponding pilot hole in the Corner Plate and secure with the #10 X 3/4” self-tapping screw.

- B. If using sand, use water from a hose to wash the sand tightly around the SpaVault. As sand is placed into the void around the SpaVault, a continuous flow of water should be used to wash the sand down into all voids. Continue this process until sand has entirely filled all voids and is level with the top of the SpaVault walls.

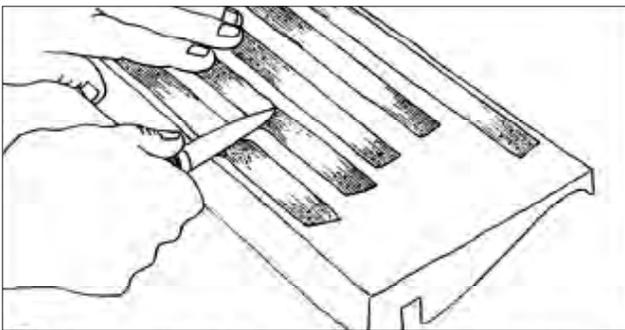
## Step 7 – Installing Finished Cap on SpaVault

**Option 1: Finished Concrete Cap** - Installing the “Stegmeier Contilever Forms: that are included in the kit.

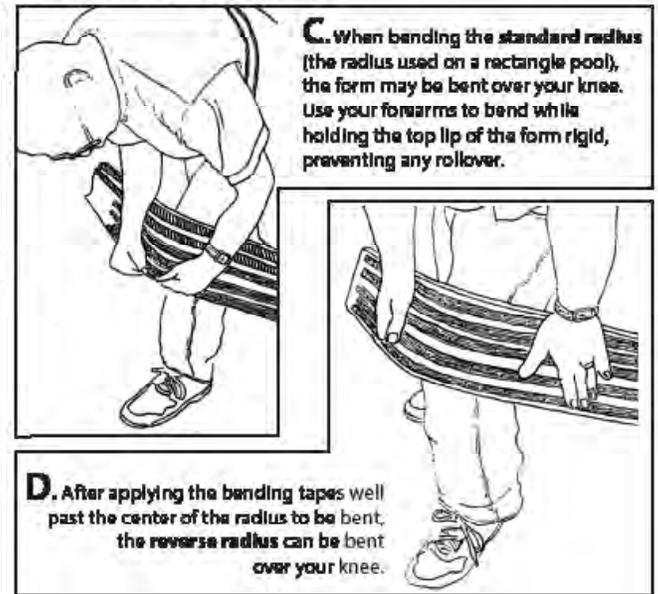
- Finished cap must be 3 1/2” Thick.
  - **DO NOT** set forms until the day of the pour.
  - Metal surfaces must be clean and dry.
  - On cold weather days the metal surfaces should be warmed up. To do this, heat the metal with a heat gun one foot in front of the form you are about to attach.
- A. Pre-Bending the Forms: It is necessary to pre-bend the forms for the corner radius.
1. Place strips of bending tape on the forms as shown. Bending tape should extend past bend by 24”.



2. Be sure the tape is rubbed down tight for proper adhesion.

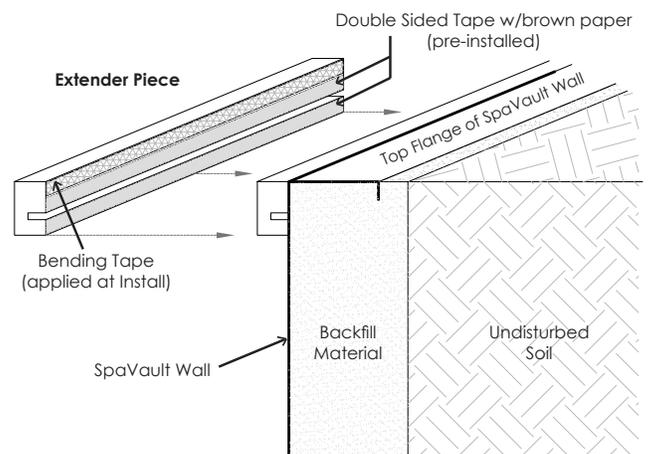


3. Pre-bend the forms across your knee applying pressure on either side of the form with your hands. **DO THIS SLOWLY!** (Do Not remove the brown paper from the double-faced tape prior to pre-bending).



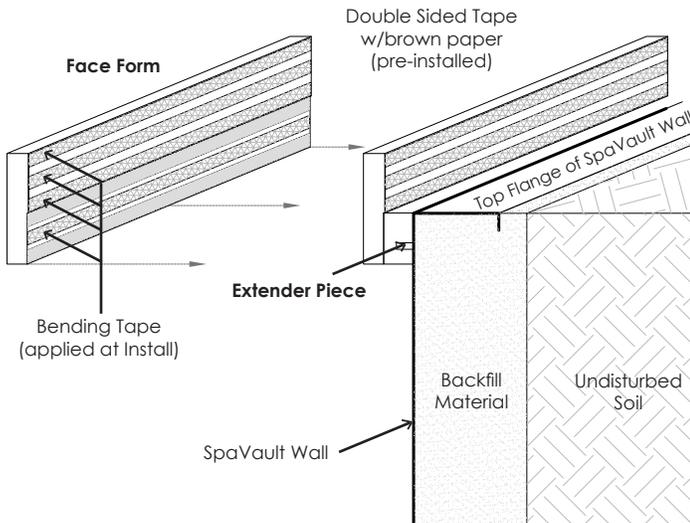
B. Extender Piece:

After pre-bending the Extender Piece, peel the brown paper on the double-faced tape (one foot at a time). Align the top of the extender piece with the top flange of the SpaVault walls and apply firm pressure along the length of the form to ensure double faced tape adheres to metal walls.



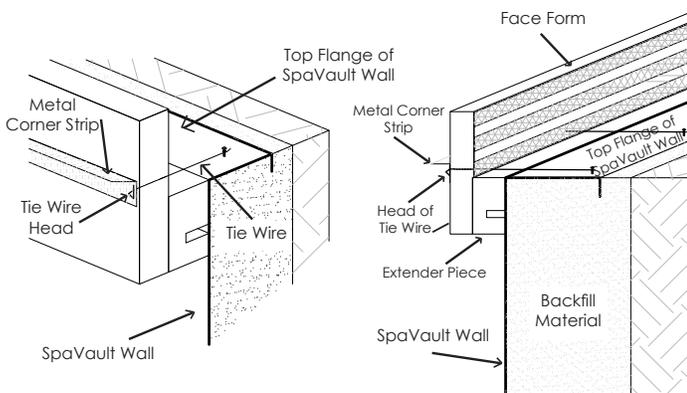
### C. Face Form:

2. After pre-bending the Face Form, peel the brown paper on the double-faced tape (one foot at a time). Then line the bottom of the Face Form to the bottom of the 1 3/4" thick Extender Piece. Stick the Face Form to the Extender Piece. Apply firm pressure along the length of the form to ensure double faced tape adheres to Extender Piece.



D. Install #10 X 3/4" screws half-way into each tie wire hole on the top of the wall flanges and corner plates.

E. To hold the straight sections true, use the 4' long metal corner strips (plaster board corner bead) on the 4 long walls and the 9" long strips on the short ends of the Equipment Access area. Push the tie-wires through both the metal corner strip and the Face Form (Note: The tie-wire should be 1" to 1-1/2" above the top of the Extender Piece). Hold the Face Form with slight pressure and tie the tail of the tie-wire around the screw.



F. Using the left over bending tape, secure the forms at each corner and joint to ensure forms are tight and properly aligned.

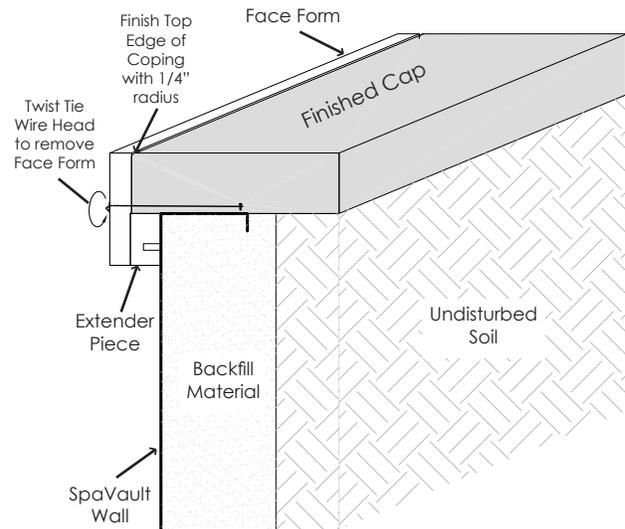
G. Ensure forms are straight and are not bowing as this will affect the finished look and fit of the spa into the SpaVault.

### H. Pour & Finish Concrete Finished Cap:

1. While pouring, make sure to tap the form to release air bubbles. This will prevent honeycombing.

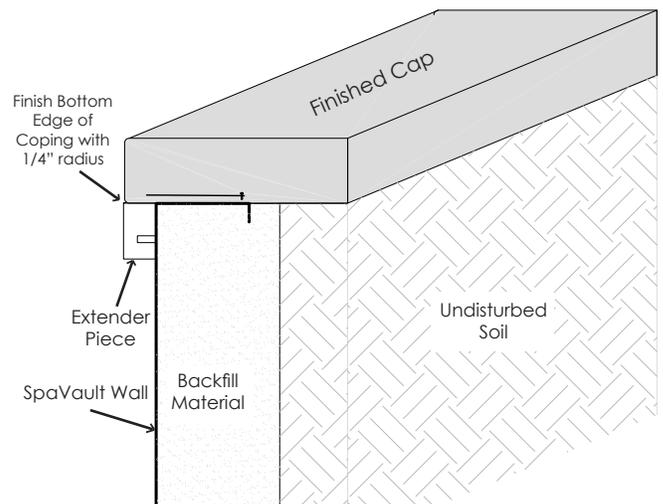
2. Edge the concrete between the Face Form and the concrete with a 1/4" radius.

3. Once the concrete is strong enough to support its own weight, the Face Form can be removed. To remove the Face Form, twist the tie wire head, it will break the neck of the tie wire inside the concrete. Cut tape at corners and joint. Then pull just the Face Forms off, leaving the extender piece in place. (Note: Removing one piece of form at a time will keep moisture in the concrete giving you adequate time for finishing).



4. Now that the face is exposed you can finish the face of the coping. Edge the bottom of the concrete in between the concrete and Extender Form.

5. Once the concrete is strong enough to hold its own weight, the extender can be removed. (Note: All forms must be removed on the day concrete is poured.)

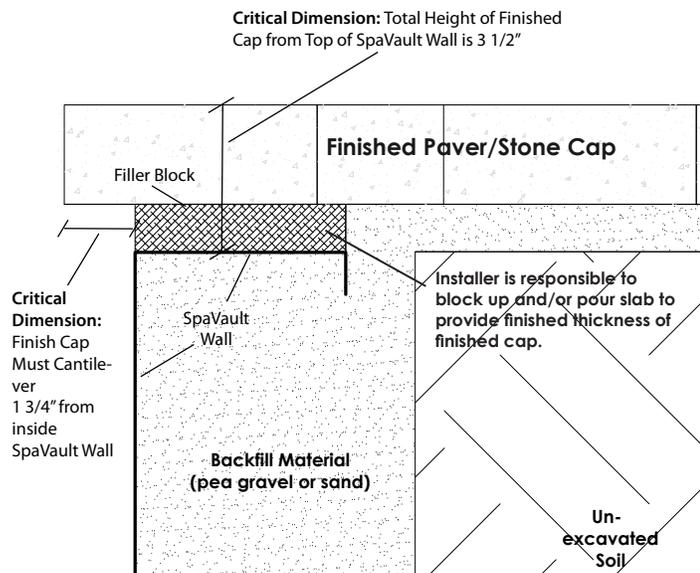


## Option 2: Pavers or Stone Finished Cap

- Pavers, Stone or other materials may be used for the Finished Cap, but it is the installer's responsibility to customize the Finished Cap materials to accommodate the following Requirements.
- If the Finished Cap is not poured concrete, it is recommended to place the spa into the SpaVault, centered and install the Access Door Supports (see Step 8) prior to installing the Finished Cap. This allows the installer to fine tune both the finished thickness and cantilever of the Finish Cap during installation minimizing the gap between the Finished Cap and the spa.

### Finished Cap Requirements

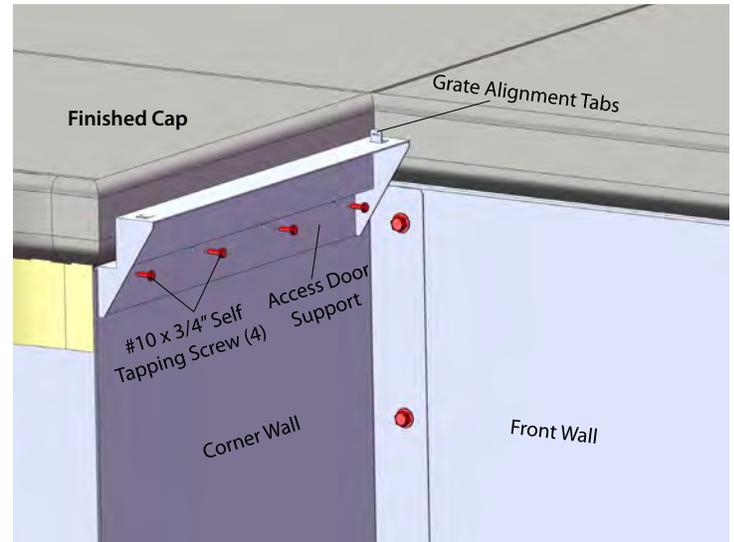
**A. Finished Cap must be 3-1/2" Thick.** The SpaVault is designed to have a 3-1/2" thick Finished Cap installed on top of the SpaVault walls in order for the finished depth of the SpaVault to accommodate the height of the spa. If using a material that is thinner than 3-1/2" thick, it is the Installer's responsibility to block up on top of the SpaVault walls with a material that will accommodate the thinner finished material.



**B. Finished Cap must cantilever the SpaVault walls by 1.75" on all walls.** The SpaVault is sized to accommodate a 7'-10" X 7'-10" Spa only after the cantilevered Finished Cap is installed. The SpaVault is designed to have a small gap (approx. 3/4") between the Finished Cap and the Spa.

## Step 8 – Access Door Supports

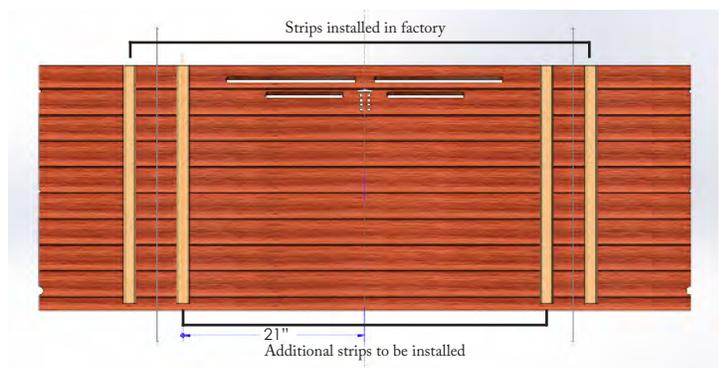
Install Access Grate Supports on each end of the spa equipment access area by aligning the holes in the brackets over the pilot holes of the Corner Walls and attaching with four #10 x 3/4" self-tapping screws.



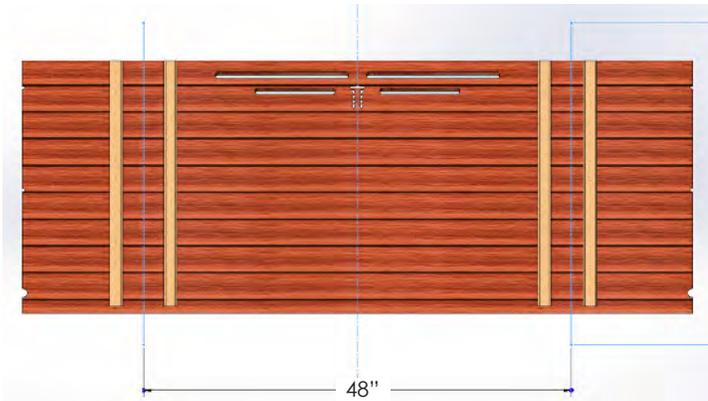
## Step 9 – Access Door Modification

In order to be removable after the spa is lowered into the spa vault, the spa equipment door will need to be modified. To create a smaller access door, follow these steps.

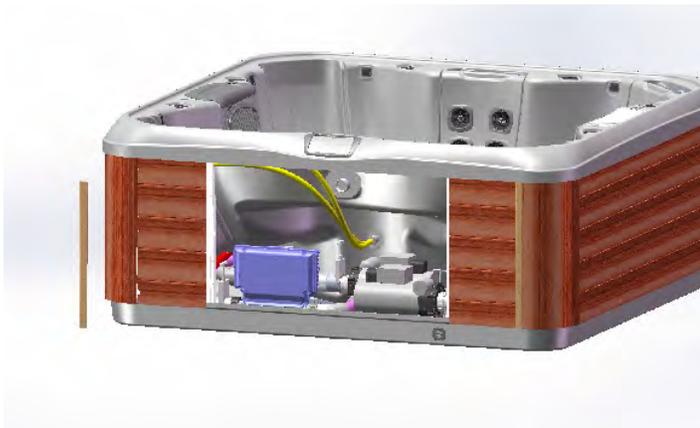
**A. Attach additional trim strips.** Remove the equipment door of the spa. Using the supplied adhesive, attach 2 of the included trim strips that **DO NOT** match the color of the spa cabinet to the backside of the equipment door. Locate these strips 21" from the center of the door and parallel to the existing trim strips.



**B. Cut the door.** Using a circular saw, cut the door to 48" wide centering the 2 cuts on the panel.



**C. Install the outside cabinet pieces.** Using grabber screws attach the outside pieces that were cut off of the door to the EnduraFrame of the spa. Replace the outside trim strips that were part of the original door installation.



**D. Install the new, smaller (48") door.** Using grabber screws attach the door to the EnduraFrame of the spa. Cover the door seam by attaching 2 of the included trim strips that match the cabinet color.

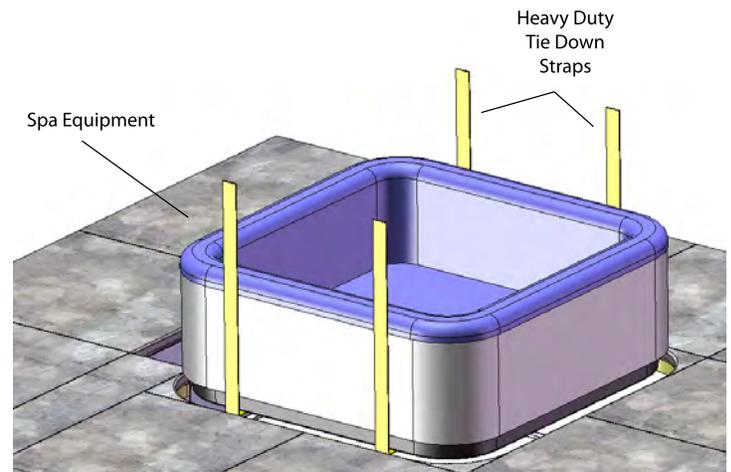


## Step 10 – Lowering Spa into SpaVault

**Note:** If desired, the spa can be raised to an elevation different than the standard installation, this is done by adding a layer of gravel (inside SpaVault) on top of the concrete pad until it meets the desired elevation.

- The SpaVault is designed with a small gap between the finished concrete edge and the spa. The gap provides room to lower the spa into the SpaVault and remove straps.

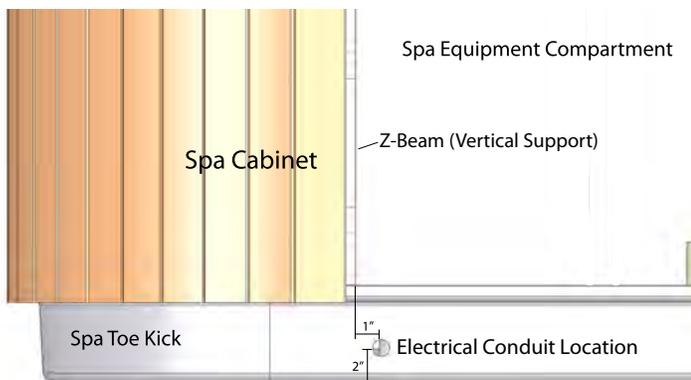
**A. Lower Bullfrog Spa into the SpaVault using heavy-duty straps.** It is recommended to use a crane or a lift system to help ensure the spa is lowered evenly. Installer may choose to abandon these straps under the spa for use in the event that the spa needs to be removed in the future.



## Step 11 – Electrical Connection

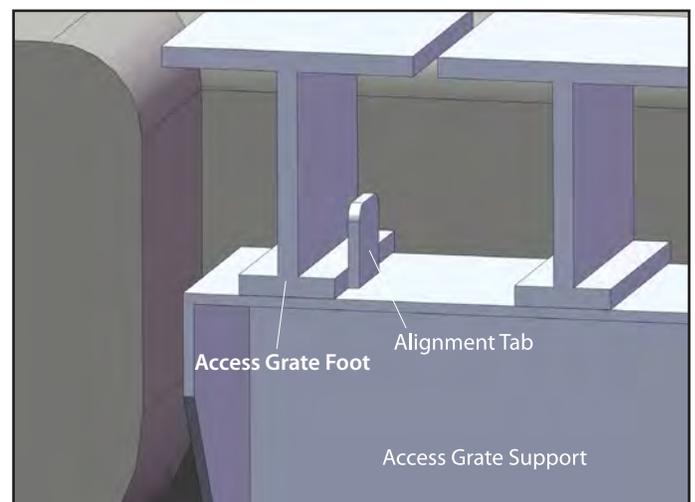
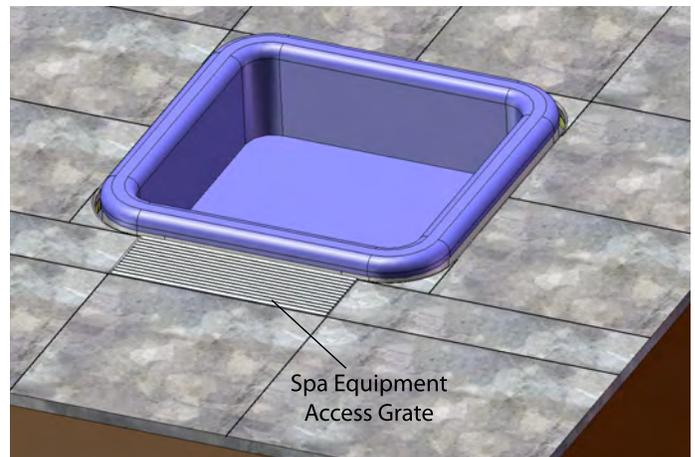
A. A licensed electrician is required to complete the electrical service and proper ground bonding of the Spa Vault to the Electrical Service in the spa equipment compartment. Consult the Spa Owner's Manual and follow all National and Local Electrical Codes.

B. Drill electrical conduit hole in spa toe kick. With the Spa Equipment door off, locate the "Z-Beam" (vertical spa support) located on the left side of the spa equipment compartment. Measure off of the edge of the Z-Beam 1" and up from the bottom of the spa base 2" and drill adequate sized hole for electrical conduit. Note: Be careful not to drill through Z-Beam, spa equipment or plumbing.



## Step 12 – Access Gate

A. Install the Access Gate by resting it on the Access Gate Supports. Ensuring the foot of the grate rest against an alignment tab on each support.



## Questions? Contact Us

For questions or more information on SpaVault installation, SpaVault, or any other of our fine products contact Bullfrog International at 801.565.8111 or [info@bullfrogspas.com](mailto:info@bullfrogspas.com).

**Bullfrog**<sup>™</sup>  
INTERNATIONAL, LC