

# Deck System

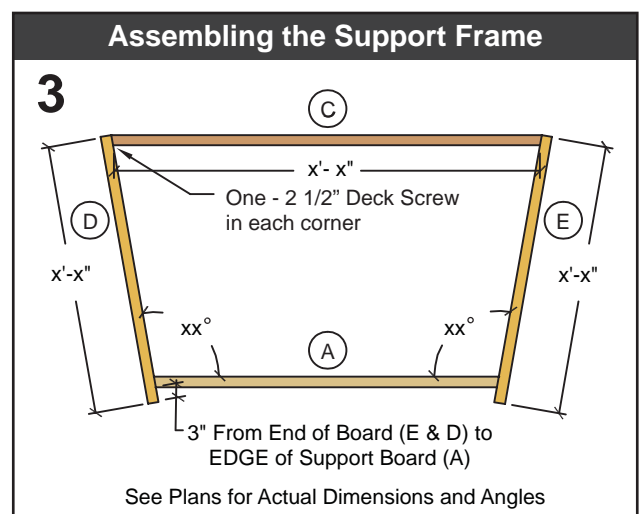
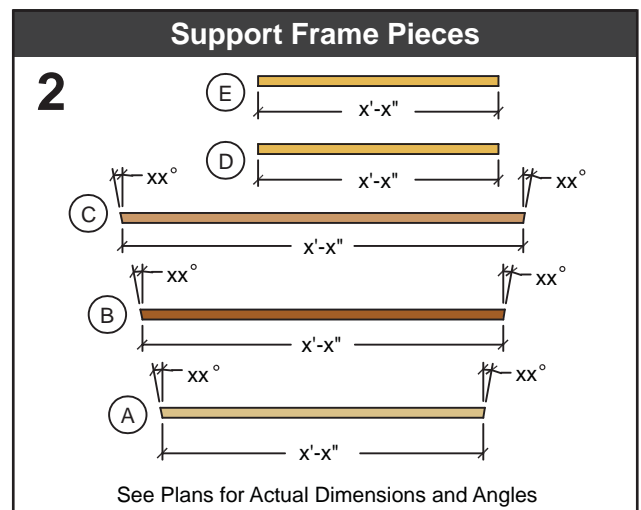
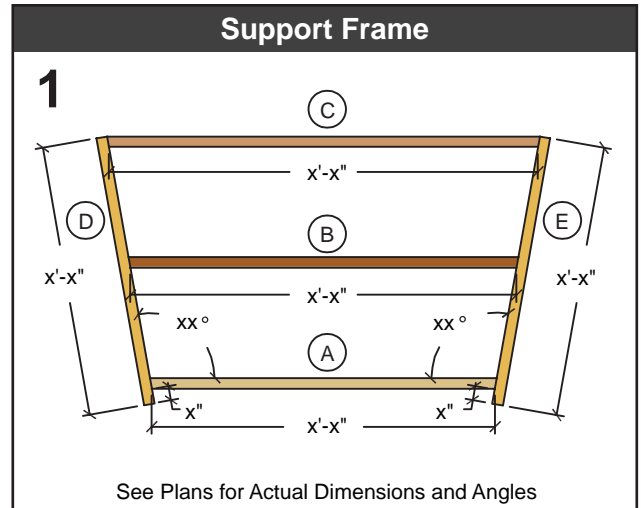
## Step 1: Build Support Frames and Attaching Metal Brackets

Using 2"x6" treated lumber, begin by cutting Support Frame pieces (A, B, C, D, and E) to length, as shown in **Diagram 1 & 2**. Cut enough pieces to assemble all but one Support Frame. Most plans require 18, 24, or 36 support frames, depending on the size of the pool and decks depth.

*For example: If the entire deck requires 18 Support Frames, pre-cut lumber for 17 Support Frames. The last frame will be cut-to-fit due to irregularities of pool sizes and construction methods. For some pools, the filters will affect the framing of the deck. This is great location for the last custom support frame.*

Cut an angle on each end of pieces A, B, and C, as shown in **Diagram 2**. The required degree can be found the plan. Pieces D and E will be cut with a square 90 degree angle on each end.

Attach the four outside pieces of the Support Frame, as shown in **Diagram 3**. Center and secure two - 2 1/2" deck screws at each connection. Pieces D and E will extend past the EDGE of support board A by 3 inches.



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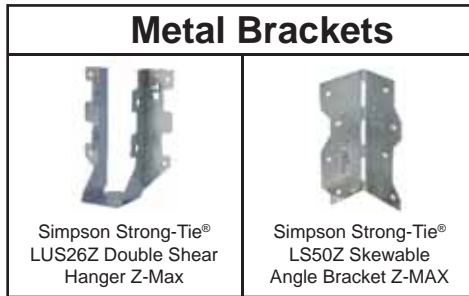
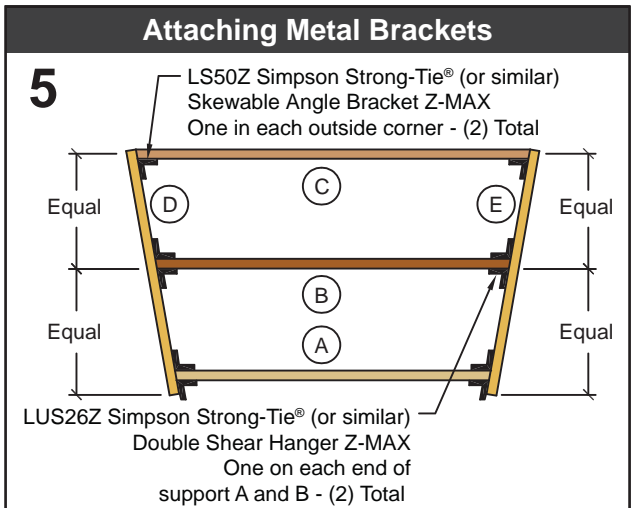
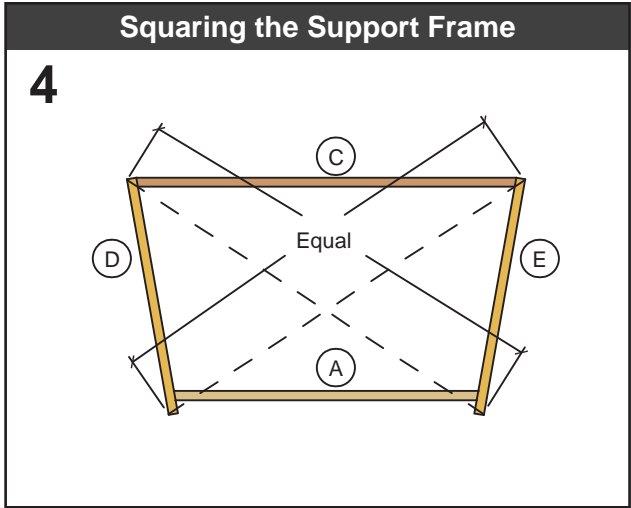
## Step 1: Build Support Frames and Attaching Metal Brackets - continued

“Square” the Support Frame by adjusting the outside members until the distance between opposite corners is equal, as shown in **Diagram 4**. After the Support Frame is “squared,” center and secure the remaining piece (B) with three - 2 1/2” deck screws, as shown in **Diagram 5**.

Secure two additional 2 1/2” deck screws at each of the four corners of the Support Frame.

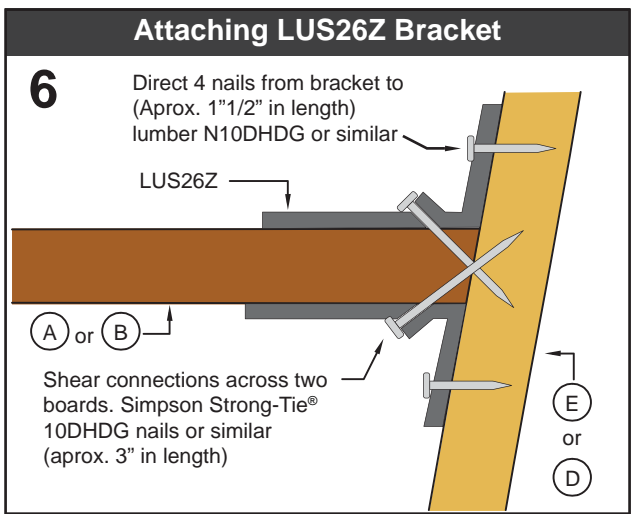
Attach a metal corner bracket (Simpson Strong-Tie® LS50Z or similar) in each of the outside corners of the Support Frames. Next, attach a metal joist hanger (Simpson Strong-Tie® LUS26Z or similar) to each end of the (A) and (B) 2”x6” support board. A slight bend in the corner brackets and joist hanger will be needed to fit the angles of the Support Frame, as shown in **Diagram 5**.

Repeat until all Support Frames have been constructed.



*All brackets and hangers should either be Hot Dipped Galvanized, Z-MAX Galvanized products or similar products designed for exterior pressure treated lumber. Use the recommended nails or connectors for each product.*

### Attaching Metal Brackets to Support Frame



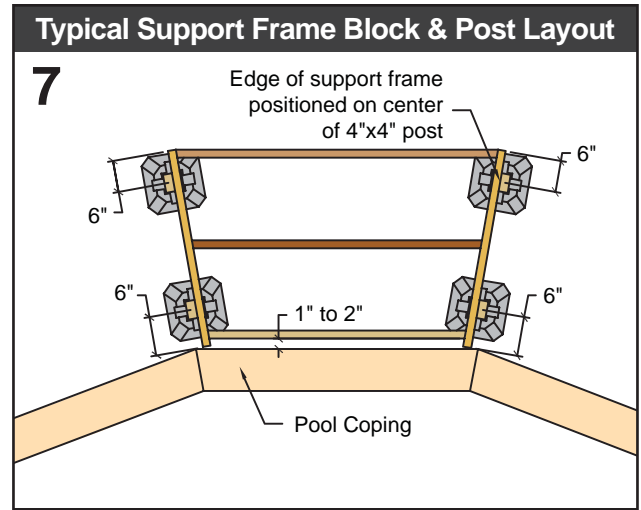
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## Step 2: Positioning Dek-Block® Piers and Leveling Posts

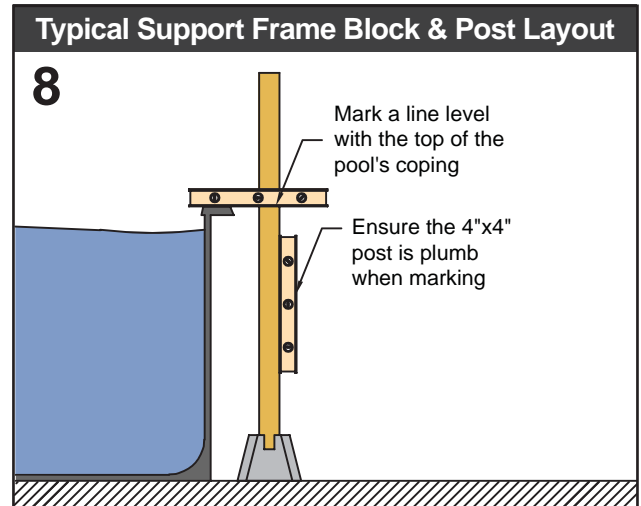
Since every pool is unique, the location of the first Dek-Block® pier will vary for your specific pool size and manufacturer. Determine where the first Support Frame will be located, then position the first four Dek-Block® piers for this Support Frame. The most convenient location to begin is a few feet to the left or right of the pool's filter or pump. The Support Frame should be positioned 1-2 inches back (out) from the pool's metal coping. (*The Support Frame needs to be away (out) from the pool's coping in order to attach the decking later.*) The Dek-Block® piers should be positioned in reference to its location along the Support Frame. Each Dek-Block® pier should be placed on level ground, six inches\* in from the end of each Support Frame piece D and E, as shown in **Diagram 7** (\* verify this dimension on the plan – some plans may vary slightly). Once the first four Dek-Block® piers are positioned, place a 4"x4" post in the post pocket of one of the Dek-Block® piers and hold plumb (vertically level).



Using a level and the pool's metal coping as a guide, mark a line level with the top of the pool's coping, as shown in **Diagram 8**. From this line, subtract the following 4 items:

1. The thickness of the pool's coping.
2. 1/2" for water drainage and air flow between the decking and the pool's coping.
3. The thickness of the surface boards. 1 1/2" for 2"x6" decking and 1" for 5/4"x6" or composite decking.
4. 5 1/2" for the thickness of the 2"x6" support frame.

Cut the 4"x4" post to length and repeat this step for all four - 4"x4" posts of the first Support Frame.



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## Step 3: Attaching Support Frames

Place the Support Frame directly onto the 4"x4" posts. The outside EDGE of the Support Frame should be positioned at the center of the 4"x4" posts. The front edge of the Support Frame should be 1-2 inches out from the edge of the pool's coping. Using a straight level on two sides or a post level, insure that the 4"x4" post is plumb (*vertically level*) in both directions before attaching support frame. Secure each Support Frame to the 4"x4" post using two - 2 1/2" deck screws at each post. After attaching, insure that there is an equal distant space between the top of the Support Frame and the bottom of the pool's coping. There should be a gap of the thickness of the decking plus 1/2 inch. The Support Frame may not be perfectly level if the pool is not level. It's better to align the deck with the line of the pool instead of making the deck level. Use the next Support Frame as a guide for the placement of the next row of Dek-Block® piers. Repeat cutting and leveling for the remaining 4"x4" posts, and continue placing Support Frames around the entire pool. Attach each frame to the next using eight - 2 1/2" deck screws from each side of the frame into the other frame. The last Support Frame will need to be cut-to-fit.

Securing Support Frame to 4"x4" Posts



Verify 4"x4" Posts are Plumb



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## Step 4: Attaching Diagonal Bracing

Place a 2"x4" board diagonally behind the 4"x4" posts. With a pencil, mark the angle at each end and cut. Attach the 2"x4" diagonal board by toe-screwing two - 2 1/2" deck screws from each side. Repeat the process, alternating angles from section to section. Bracing should be placed between the posts along the outside perimeter of the deck, and the 4"x4" posts perpendicular to the pool. The 2"x4" bracing boards along the outside perimeter of the deck will need a compound miter cut (*a cut angled in two directions - vertically and horizontally*).

See Splash Pool Deck Plan for locations of 2"x4" bracing boards.

Typical 2"x4" Diagonal Bracing Board Layout



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## Step 5: Attach Handrail Post Bracket

If a handrail will be installed on the “Splash” portion of the deck, a Splash Handrail Bracket will be needed. This bracket is installed prior to installing the decking material. At locations along the Splash Support Frame where a handrail post is needed, place and center the handrail bracket over the connection of the two Support Frames.

Before securing the handrail bracket to the frame, check the bracket with a level to verify it is plumb (vertical level) in both directions. Adjustments can be made using exterior composite wood shims. When the bracket is plumb, secure the top of the bracket flange with two hanger nails. Verify plumb again before securing all nails into the bottom flange under the Support Frame. Secure remaining nails into all open holes in the top flange of bracket.

Use Simpson Strong-Tie® N10DHDG Nails or similar for all flange connections. 24 fasteners per bracket.

Position & Plumb Splash Handrail Bracket



Securing Splash Handrail Bracket



Splash Handrail Bracket



The splash Handrail Bracket is symmetrical and can be easily installed in either direction.

Splash Handrail Bracket



The Splash Handrail Bracket can be purchased from the following locations:

DekBrands – [www.deckplans.com/SplashBracket](http://www.deckplans.com/SplashBracket)

DekBrands - 1-800-664-2705

DecksDirect – [www.decksdirect.com](http://www.decksdirect.com) (search: Splash)



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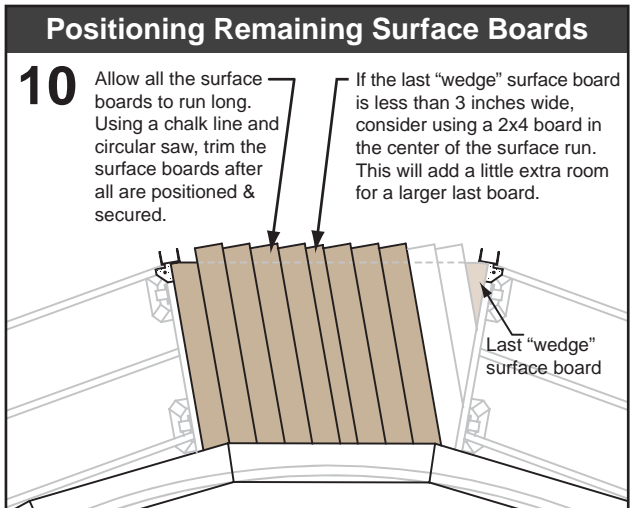
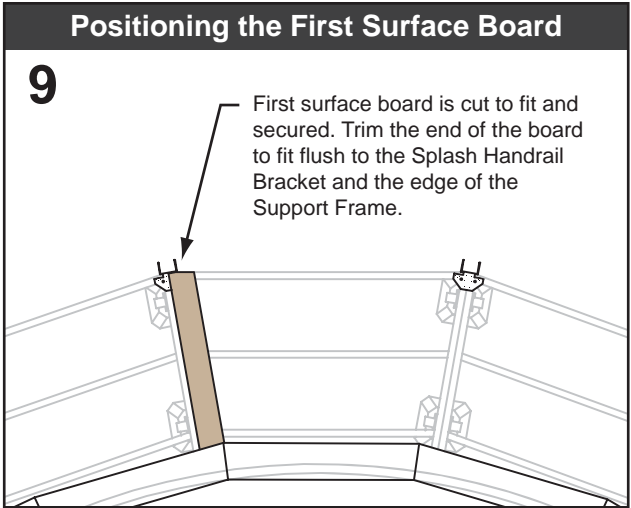
## Step 6: Attaching Deck Surface Boards

For a 3 ft Splash pool deck, cut the 12 ft. 2"x6" surface boards into three - 4 ft pieces.

For a 4 ft Splash pool deck, cut the 10 ft. 2"x6" surface boards into two - 5 ft pieces.

Align the first 2"x6" surface board with the edge of a Support frame at the connection of two Support Frames as shown in **Diagram 9**. One end of the 2"x6" surface board will tuck under the pool's coping. Cutting a 10 degree angle on at least one end of the surface boards will help align the decking with the pool. Leave a minimum of 1" spacing from the pool's wall and the end of the 2"x6" surface board. The first surface board will need to be cut-to-fit. Trim the end of the board to fit flush to the Splash Handrail Bracket and the edge of the Support Frame. To allow the first surface board to sit flat on the Splash Handrail Bracket, it is recommended to drill shallow holes into the surface of the board above the each nail head. Position the surface boards over the Splash Handrail Bracket, tap a hammer on top of the surface board a few times to indent the nail heads into the bottom of the surface board. Using a 3/8" – 1/2" drill bit, drill a shallow hole at each indented mark. The surface boards will now site flush to the Splash Handrail Bracket. Position and secure the first decking board using 2-1/2" deck screws.

Continue placing and securing 2"x6" surface boards until the boards overlap the next Support Frame. Allow the remaining "full" surface boards to overhang the Support Frame by at least 1" as shown in **Diagram 10**. Secure the 2"x6" surface boards with two 2 1/2" deck screws at the connection with each 2"x6" support board.



Surface Board Under the Pools Coping



Aligning Surface Boards with Edge of Support Frame



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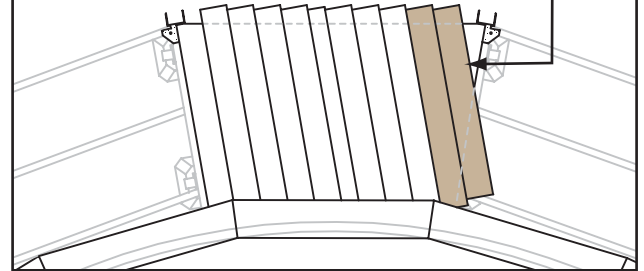
## Step 6: Attaching Deck Surface Boards - continued

Align surface boards over the connection of the two Supports Frames. Using straight edge or chalk line, mark the line of the intersection of the two Support Frames below as shown in **Diagram 11**. Trim the angled end of the surface boards to fit and secure to the Support Frames. The last “wedge” surface board should be cut to fit. Trim the end of the board to fit flush to the Splash Handrail Bracket and both edges of the Support Frame. Position the last surface board over the Splash Handrail Bracket, tap a hammer on top of the surface board a few times to indent the nail heads into the bottom of the surface board. Using a 3/8” – 1/2” drill bit, drill a shallow hole at each indented mark. The surface boards will now site flush to the Splash Handrail Bracket. Position and secure the first decking board using 2-1/2” deck screws.

After all 2”x6” surface boards are secured, use a chalk line to mark the edge of the decking flush to the outside edge of the Support Frames as shown in **Diagram 12**. Using the line as a guide, cut the overhanging edges of the 2”x6” surface boards with a circular saw.

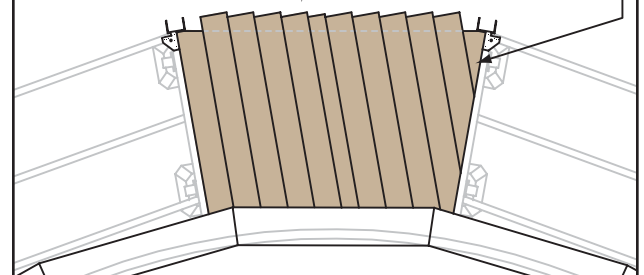
### Surface Board on Top of Splash Rail Bracket

**11** Align surface boards over the connection of the two Supports Frames. Using straight edge or chalk line, mark the line of the intersection of the two Support Frames below. Trim the surface boards to fit.



### Cutting the Surface Boards Flush

**12** Allow all the surface boards to run long. Using a chalk line and circular saw, trim the surface boards after all are positioned and secured. The last surface board should be cut to fit and secured. Trim the end of the board to fit flush to the Splash Handrail Bracket and both edges of the Support Frame.



Trimming Surface Boards Flush with Support Frame



Aligning Decking to Support Boards



# Deck System

## Step 7: Attaching Handrail Post

Cut your 4"x4" handrail post to length. *(The length of 4"x4" handrail post will vary based on different handrail designs and construction. For this example, we will be using 8ft - 4"x4" lumber cut in half, 26" aluminum spindles and post caps. We also choose to cut a 1" chamfer (45 degree angle) at the bottom of each 48" - 4"x4" handrail post)*

Position the 4"x4" handrail post into the Splash Handrail Bracket. The top of the 4"x4" handrail post should be 38" above the top of the surface boards. Using a level, align the post vertical such that it is plumb on both sides. Composite shims can be used to plumb the posts. Secure the 4"x4" handrail post with (1) 1/4" x 3" Simpson Strong-Tie® structural lag screw and re-check plumb. Secure another lag screw on the opposite of 4"x4" handrail post and re-check plumb. Secure one additional lag screw on each side of post (4 total screws per post). The 2 lag screws on each side should be placed diagonal to each other and offsetting each other from side to side.



# Deck System

## Step 8: Attaching Handrail

Along the side of each 4"x4" handrail post where a rail will be installed, make a mark 3/4" back from the inside corner of the post 3 inches above the deck's surface. Measure from point to point between each 4"x4" handrail post. If you are using the Deckorators® Rail Connectors as we are in this example, subtract 1/2" from this measurement. Cut two 2"x4" treated boards at this dimension with the same degree angle used for the Support Frames (typically 5, 7.5 or 10 degrees). The angled cut should be "out" from this measurement.

Position the two 2"x4" rail boards together with the longest edge of the boards touching each other. Mark the center of the two boards. From the center point, mark a line every 4-1/2 inches. If the last mark is less than 2 inches from the end of the board, offset each line 2-1/4 inches. At each line, mark the center of the 2"x4" rail board. Position a baluster connector over each center mark and secure with the manufactures recommended or included hardware. Verify after balusters are installed that no openings are 4" or greater.

At each end of each 2"x4" rail board, secure a Deckorators® Rail Connector Bracket with the supplied hardware. The bracket should be flush to angled cut. (Depending upon the thickness and angle of the lumber, you may need to remove a small amount of material from the end of the 2"x4" rail board. We found a touch of a belt sander worked well. Remove material from the "sharp" point of the rail at a 90 degree angle to the angled end of the board.)



Installing Rail Connectors



Positioning Bottom Rail Board



Positioning Top Rail Board into Spindles



Deckorators® Rail Connector

\*Hardware is included from manufacturer.



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## Step 8: Attaching Handrail - continued

Position the bottom of the 2"x4" rail board 1-1/2" above the surface of the deck and secure into the 4"x4" handrail post with the hardware supplied with the rail connector. A scrap piece of 2"x4" or 2"x6" board laying flat can be used as guide for positioning the bottom rail board. Place a 26" aluminum baluster into each connector on the bottom 2"x4" rail board. Align the top 2"x4" rail board with connectors into all the aluminum baluster. Position and secure the 2"x4" top rail board to the 4"x4" handrail post with the hardware supplied with the rail connector.

For the top 2"x4" handrail board, rough cut a 2"x4" board slightly long than needed. Position the board over the two 4"x4" handrail posts. From the underside of the 2"x4" handrail board, scribe a line along the edge of both 4"x4" handrail posts. Cut the 2"x4" handrail board to length using the scribed lines. Position and secure the 2"x4" handrail board on top of the install rail board.

Place a 4"x4" post cap on top of each 4"x4" handrail posts and secure using a small amount of clear silicone caulk.

Place Top Handrail Board over 4"x4" Posts



Mark Top Handrail Board for Cuts



Finished Railings with Post Caps



Completed Splash Pool Deck

