



How to Install UnderDeck The Original®

TOOLS:

- ☐ Chalk Line
- ☐ Caulk Gun
- ☐ Garden hose or water bucket
- ☐ Gloves
- ☐ Hammer or Screw Gun
- ☐ Power Mitre Saw with OSB Blade
- ☐ Pencil
- ☐ Pliers
- ☐ Safety Glasses
- ☐ Straight Edge / Carpenter's Square
- ☐ Tape Measure
- ☐ Tin Snips
- ☐ Two Step Ladders
- ☐ Utility Knife

SUPPLIES:

- ☐ 1 in. or 1-1/2 in. Hot-dipped galvanized roofing nails or pan head screws (4 per joist rail)
- ☐ Exterior Grade Caulking
- ☐ Weatherproofing Tape (4-6 in. width)

FOR CLEANUP:

- ☐ Mild Spray Cleaner
- ☐ Paper Towels or Cleaning Rags

IF USING LEDGER WRAP:

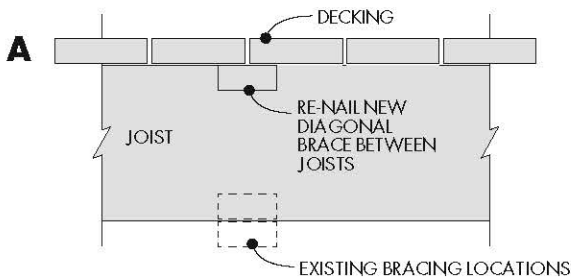
- ☐ 1-1/4 in. Galvanized or Stainless Steel Color-Matched Trim Nails

IF USING RAIN GUTTERS:

- ☐ Rain Gutter
- ☐ Downspout
- ☐ Installation Tools and Installation Supplies per Manufacturer.

DECK PREPARATION

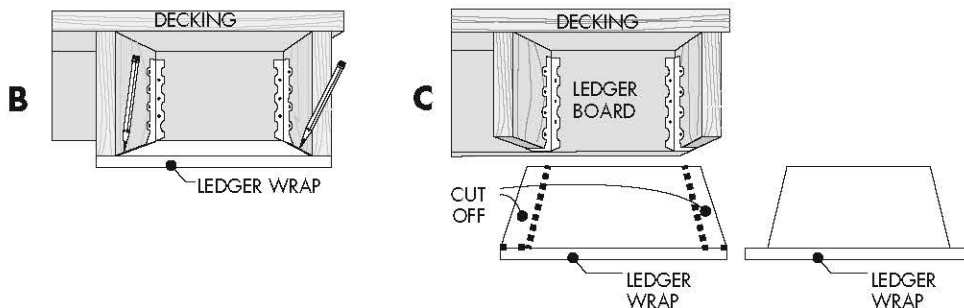
- A. Before installing UnderDeck confirm that your deck is level. This will allow you to correctly set the pitch lines ensuring that water will drain away from the building.
- B. **IMPORTANT:** If your deck has a cantilever area beyond a support beam perpendicular to the main joists, select the desired UnderDeck installation you prefer from the 3 options featured on pages 9-13 of this installation guide.
- C. Remove any bracing located on lower edges of the joists and move bracing to the top of the joists just below the decking. If diagonal bracing is required on a new deck, install metal "T" Wind Bracing on top of joists before decking is installed. (see illus. A) Be sure to conform to local building codes.
- D. Paint the ledger board to match the color of the UnderDeck, or install UnderDeck Ledger Wrap.



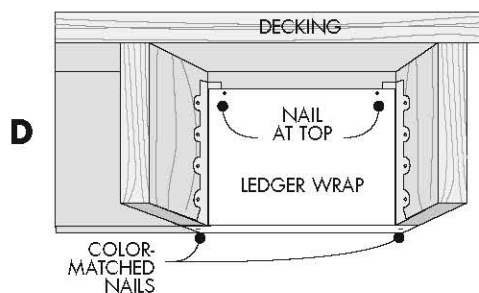
OPTIONAL LEDGER WRAP

UnderDeck Ledger Wrap is a convenient way of matching your ledger board to the color of your UnderDeck system without ever having to paint.

Ledger Wrap should be installed before the Water Diverters. Start Ledger Wrap at one end of the deck, working toward the opposite end. Always begin installation from the far left or right side of the deck and continue to the opposite end. Hold a Ledger Wrap up against the bottom of the joists, flush with the outside edges of the joists, and draw a pencil line on the Ledger Wrap along the inside edges of both joists. (see illus. B) Cut out sections to fit around the joists with tin snips and a utility knife. (see illus. C)



Slide the Ledger Wrap up between the joists and fasten at the top edge using 1-1/4" galvanized or color-matched exterior trim nails. Nail the Ledger Wrap flanges into the bottom of the joists using color-matched exterior trim nails. (see illus D)

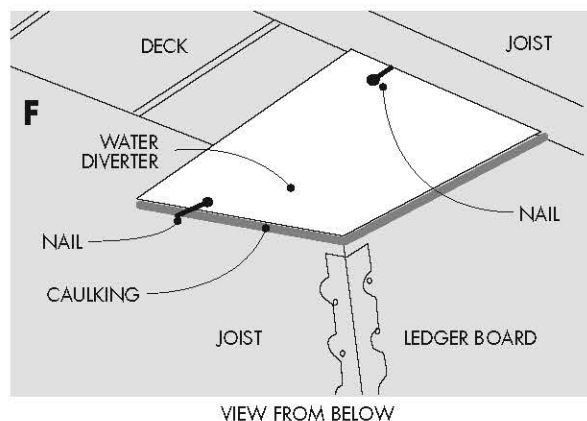
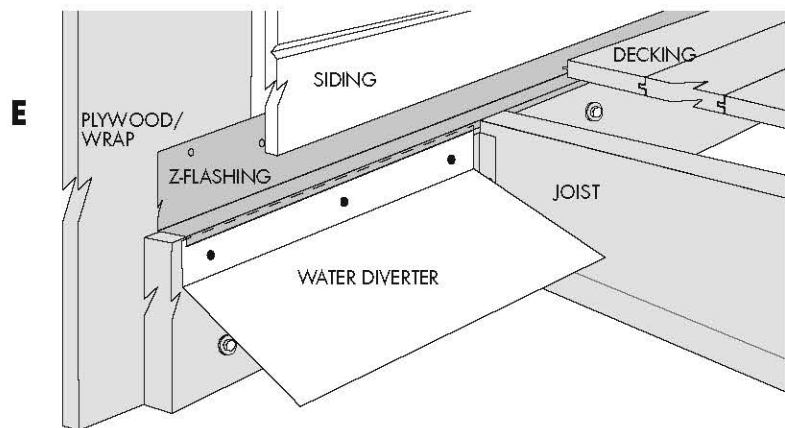


Continue adding Ledger Wrap between subsequent joists following the previous instructions. The Ledger Wrap flanges will overlap.

STEP 1. INSTALL WATER DIVERTERS*

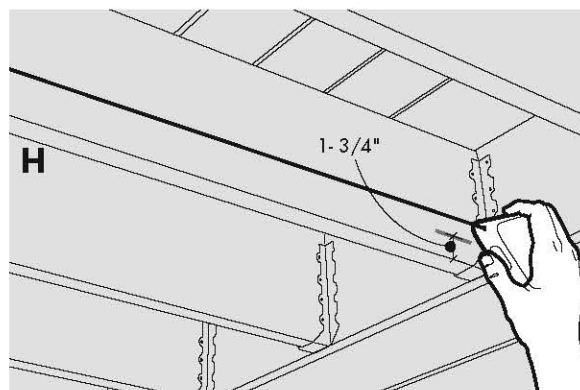
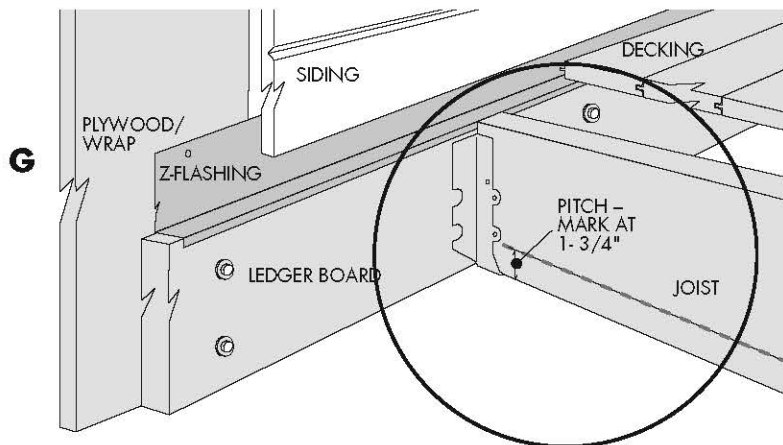
Water Diverters move the water from the building away from the ledger board onto the UnderDeck system. Measure the space between joists and transfer the measurements to the Water Diverters. Cut the Water Diverters using a straight edge and a sharp utility knife. A small amount of the top edge of the Diverter Panel may need to be trimmed using a tin snips to fit around the metal joist hangers. If Z-flashing exists, insert the Water Diverter under the Z-Flashing (see Illus. E). Secure in place using three 1-1/4" galvanized nails. Then hammer a nail into both joists under the Water Diverter to hold it into place. (see Illus F) Apply a bead of exterior-grade caulking along the bottom edge of the Water Diverter where it meets the joists. (see Illus. F)

*NOTE: Do not nail or caulk under the water diverters on the outside edge joists until the Joist Rails are installed and Weatherproof Tape has been adhered. (see STEP 3 on page 3)



STEP 2. SETTING PITCH LINE AND POSITIONING JOIST RAILS

Begin where deck joists connect to the building at the ledger board (see Illus. G). Place a mark on side of joist 1-3/4" up from the bottom edge of the joist. Move to the far end of the same joist and place a mark at the bottom of the joist where it meets the rim joist. Snap a chalk line from the mark at the rim joist up to the mark nearest to the ledger board (see Illus. H). This chalk line establishes the drainage pitch for the UnderDeck System. Repeat the process of making marks and snapping chalk lines on both sides of the remaining center joists. Note that only the inside of the outer edge joists need to be marked and chalk-lined.

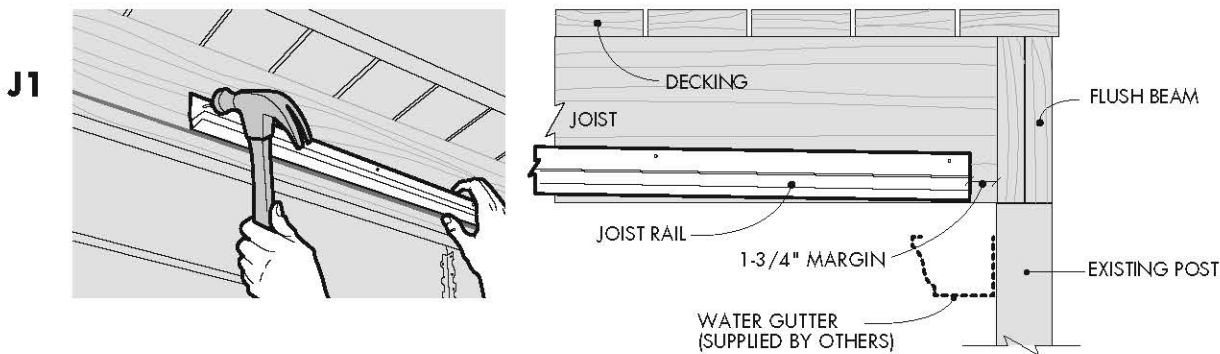
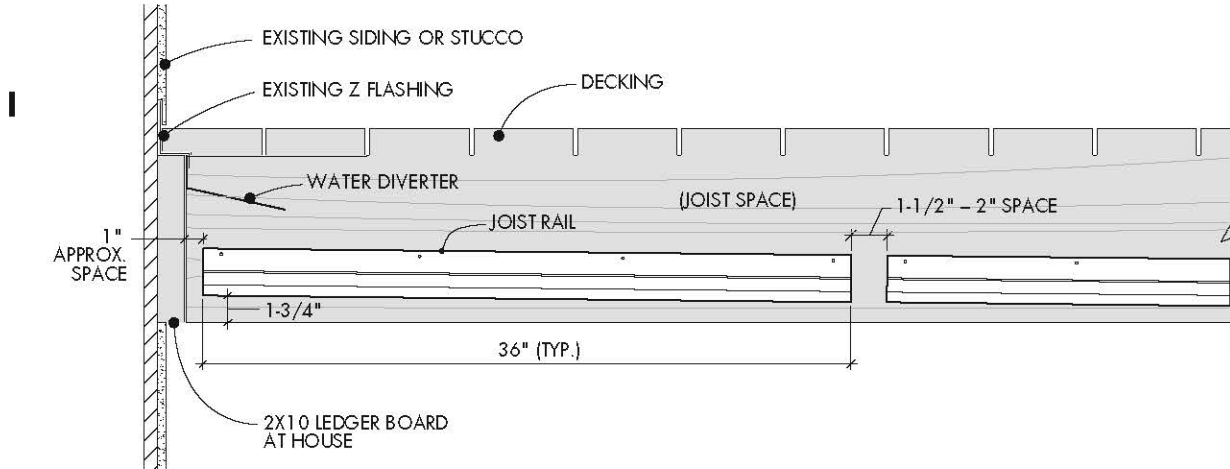


STEP 3. LOCATING AND ATTACHING JOIST RAILS

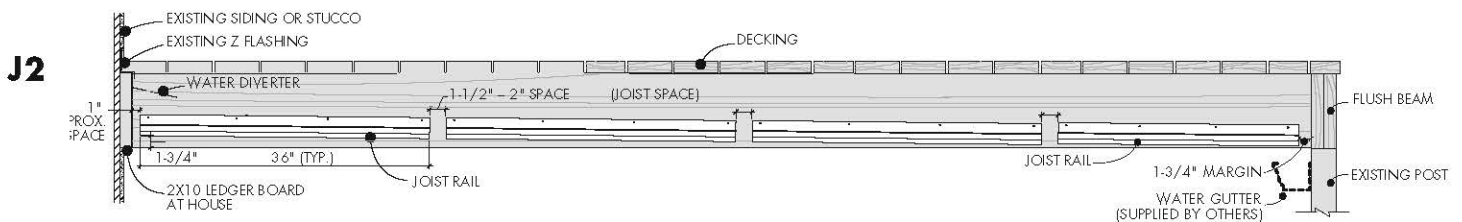
Start 1" from ledger board and position the bottom of the Joist Rail along the chalk line. Fasten the Joist Rail in place using stainless or galvanized steel fasteners. Each joist rail requires four fasteners (do not over drive the head of the fastener – leave a little room for expansion). Fasten each successive Joist Rail along the same chalk line, maintaining a 1-1/2" minimum to 2" maximum space between the Joist Rails for drainage. (see Illus. I) If using rain gutters, the last section of Joist Rails should be cut 1-3/4" from the end of the joist to maintain the appropriate drainage spacing. (see Illus. J)

Cut the Joist Rails using a mitre saw with an OSB blade. Be sure to follow safety instructions provided by the saw manufacturer.

Note: We suggest that rain gutters and downspouts be used to divert the water away from the building. Continue installing Joist Rails on both sides of all main joists, but only on the inside of the edge joists for the boundary gutters.



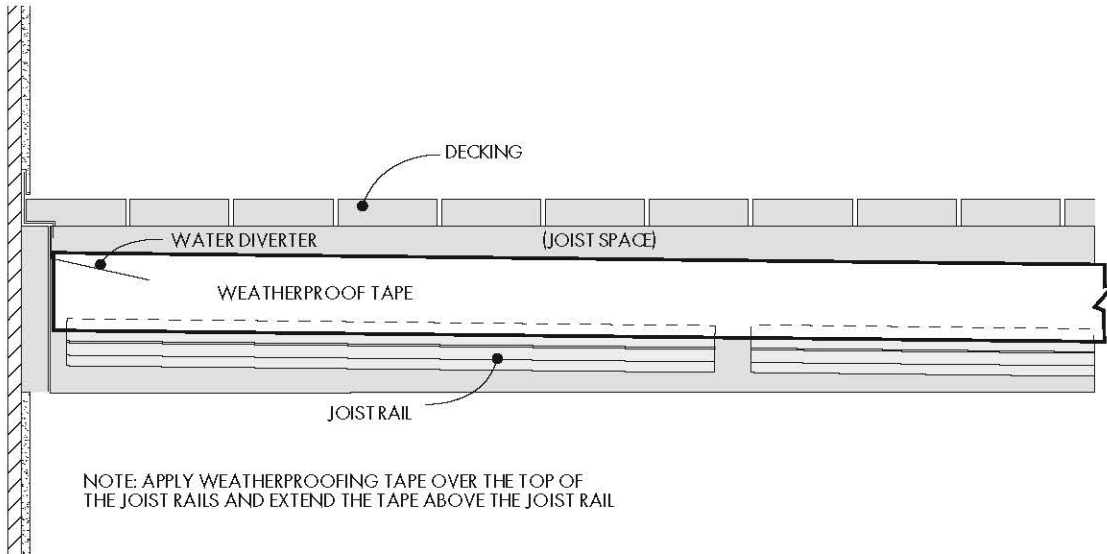
EXAMPLE OF COMPLETED INSTALLATION VIEW



Adding Weatherproof Tape to Boundary Joist Rails.

It is important to install 4"-6" wide weatherproofing tape over the Joist Rail top edge and on the joist above the Joist Rail all along the edge joist. This will divert water onto the collector panel and prevent water from dripping behind the Joist Rail and the Boundary Gutter. As an extra precaution, also run a bead of exterior grade caulking along the top edge of the weatherproofing tape. (see Illus. K) To install the weatherproofing tape near the ledger board and under the water diverter, lift up on the water diverter and adhere the tape along the Joist Rail and above it onto the joist. Then hammer a nail into both joists under the Water Diverter to hold it into place. (see Illus F) Apply a bead of exterior-grade caulking along the bottom edge of the Water Diverter where it meets the joists. (see Illus. F)

J3



STEP 4. INSTALLING COLLECTOR PANELS

Note: Collector Panels are installed with the textured side exposed.

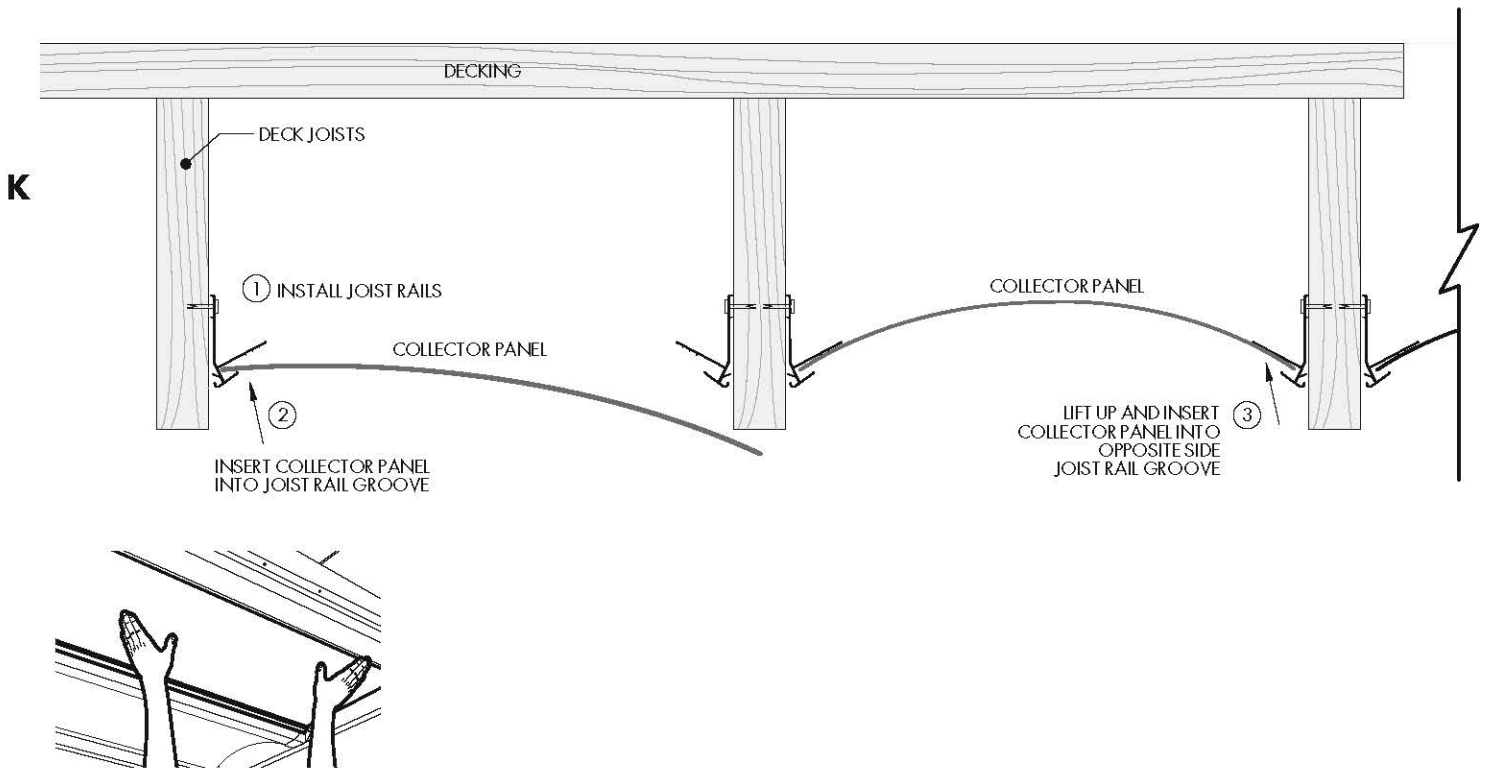
Panel Width: The width of Collector Panels is critical. For joist space widths other than 16" on center, see chart below. If a Collector Panel must be cut lengthwise, follow the suggested dimensions in the chart below, and as a safeguard, measure along each joist space at several intervals to guarantee correct width. If the width varies, transfer the inside joist measurements to a Collector Panel and add the appropriate dimension shown in the chart below. Note: A consistent arch is necessary for strength, drainage and aesthetics.

COLLECTOR PANEL WIDTH CHART	
Joist Space	Collector Panel Width
0" to 12"	Same size as joist space
12-1/8" to 14-1/2"	1/2" Wider than joist space
14-5/8" to 18"	1" Wider than joist space
18-1/8" to 22-1/2"	1-1/2" Wider than joist space
22-5/8" or Wider	Call FehrMark, Inc. for Special Conditions: 888.353.3347

Collector Panel Length: Measure the joist length between the ledger board and the inside edge of the rim joist. The Collector Panels must be 1/4" shorter than the full length of the joist to allow for expansion. Mark the length on the Collector Panel and cut it using a carpenter's square and a sharp utility knife.

STEP 5. INSTALLING THE COLLECTOR PANELS

TIP: Installing the Collector Panels is easier with two installers. With the textured side of the collector panel facing down, start close to the building near the ledger board, and insert one long edge of the collector panel between upper and lower flanges of the Joist Rails. (see Illus. K). Continue until the first side is inserted completely. Then, starting at the building near the ledger board, gently push up lightly in center of the Collector Panel until the other long edge slips into the Joist Rails flanges on the opposite side of joist space. Work your way to other end of joist space.

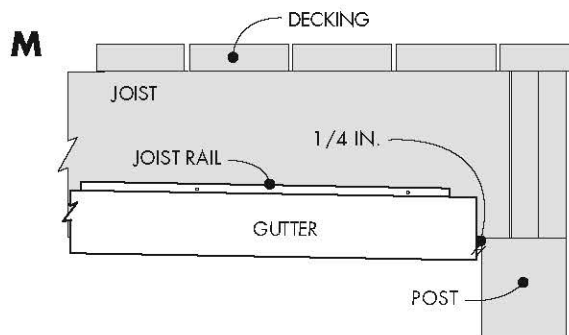
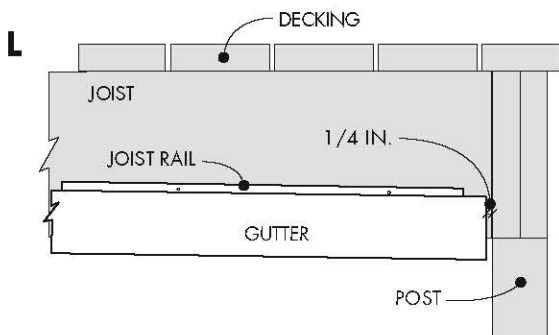


STEP 6. MEASURING JOIST AND BOUNDARY GUTTERS

If NOT using water gutters, measure the joist length and cut the Joist and Boundary Gutters $\frac{1}{4}$ " shorter than the measurement to allow for expansion. (see Illus. L)

If joists rest on a support post, cut the Gutters $\frac{1}{4}$ " shorter than the distance from ledger board to the post. (see Illus. M)

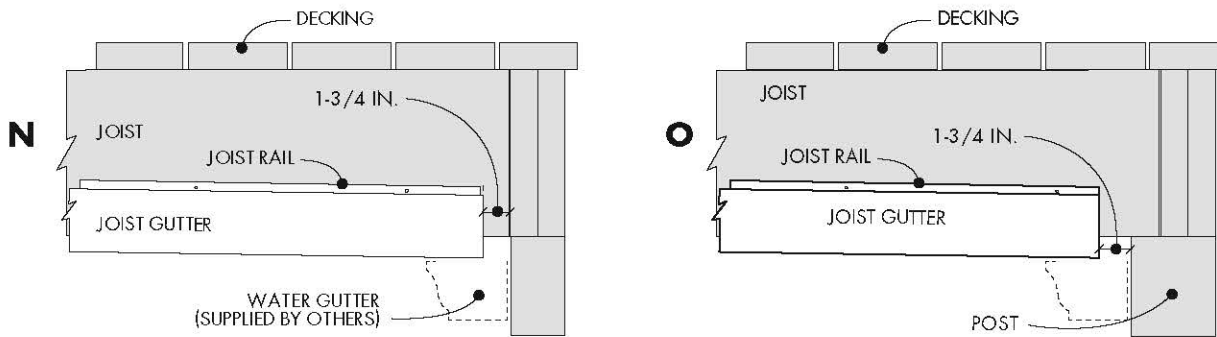
Cut the Gutter using a mitre saw with an OSB blade. While cutting the Gutter with a mitre saw, carefully hold the gutter open to approximate the shape it would be when installed. Be sure to follow safety instructions provided by the saw manufacturer.



If you DO use rain gutters, measure the full joist length and cut the Joist and Boundary Gutters 1-3/4" shorter than that measurement to allow for drainage. (see Illus. N)

If joists rest on a support post, cut the Gutters 1-3/4" shorter than the distance from ledger board to the post. (see Illus. O)

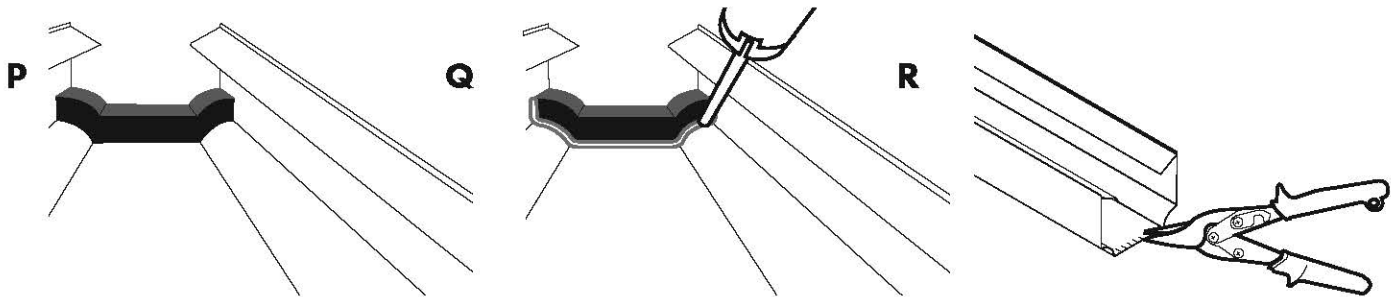
Cut the Gutter using a mitre saw with an OSB blade. While cutting the Gutter with a mitre saw, carefully hold the gutter open to approximate the shape it would be when installed. Be sure to follow safety instructions provided by the saw manufacturer.



STEP 7. JOIST AND BOUNDARY GUTTER PREP

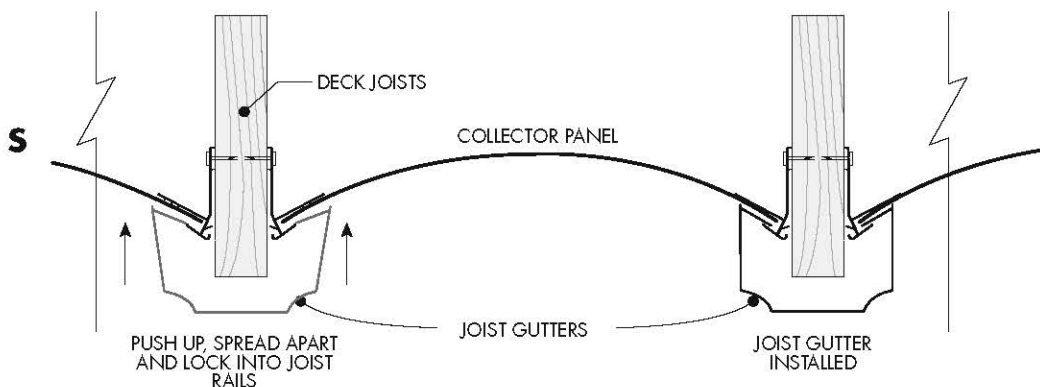
Before installing the Joist Gutters and Boundary Gutters, apply the supplied 5" pieces of UnderDeck adhesive-backed foam weatherstripping to the gutter end that will be installed nearest to the ledger board. (see Illus. P) Place a bead of exterior grade caulk on the inside of the gutter where the foam rubber and gutter meet. (see Illus. Q)

On the opposite ends of the Joist Gutters, cut four to five 1/4 inch slits along the bottom edge, and bend the cut sections downward. This will channel water off of the Joist Gutter. (see Illus. R)



STEP 8. ATTACHING THE JOIST GUTTERS

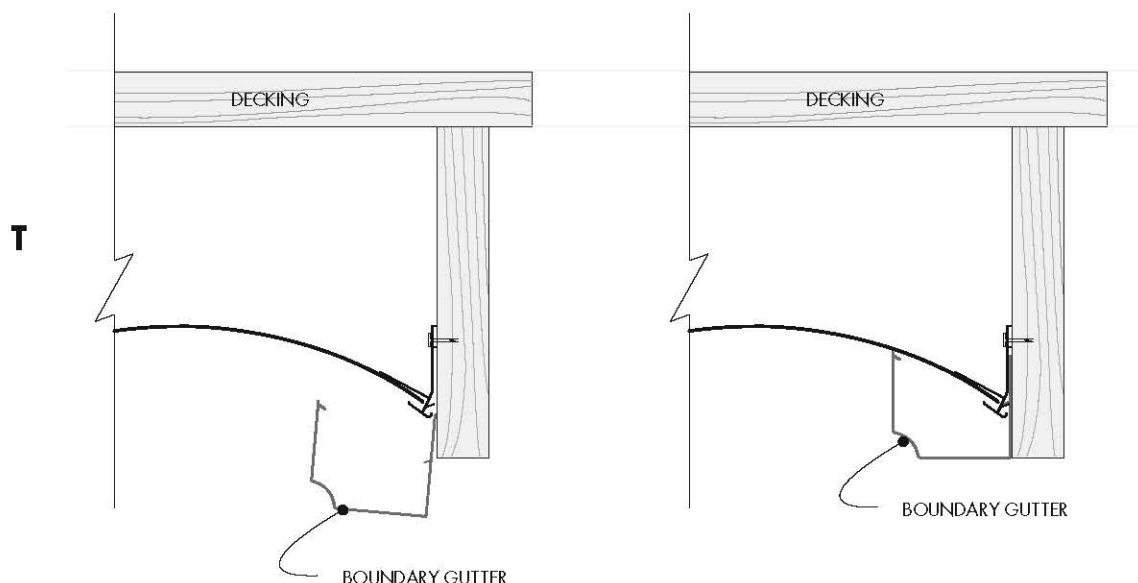
Starting near the ledger board, push up the Joist Gutter on both sides of the joist firmly until the Joist Gutter spreads open slightly and hooks into the Joist Rails, and also fits tightly against the collector panel. Squeeze the sides of Joist Gutter to ensure a tight fit in the joist rail slots. Work your way to the rim joists at end of deck. (see Illus. S)



STEP 9. ATTACHING BOUNDARY GUTTERS

Installing Boundary Gutter to end joist

The Boundary Gutter is installed by sliding the back wall of the Boundary Gutter behind the Joist Rails, pushing up gently, but firmly until the Boundary Gutter rib locks into the rib on the back of the Joist Rails. Work your way to the end of the deck. (see Illus. T)

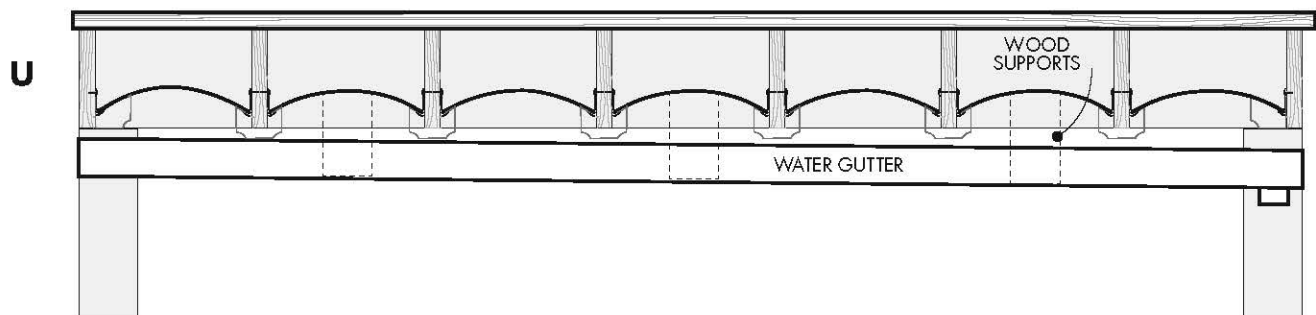


STEP 10. TEST SYSTEM AND CLEAN UP

Use a garden hose and run water on top of the deck to test your installed UnderDeck system. Finish your UnderDeck installation by using a mild cleaner and clean white cloth, wipe over all gutters and panels to remove any marks or dirt from the installation process.

RECOMMENDED: INSTALL RAIN GUTTERS AND DOWNSPOUTS

Install rain gutters by determining the ideal location where water will drain away from the building. Allow for a 1/8" per ft. pitch to drain water from the gutter. Fasten the rain gutter following the manufacturer's instructions. Measure, cut and install downspouts using the manufacturer's instructions. Wooden supports, at a minimum of 3 ft. apart should be added to hang the water gutter. (see Illus. U)

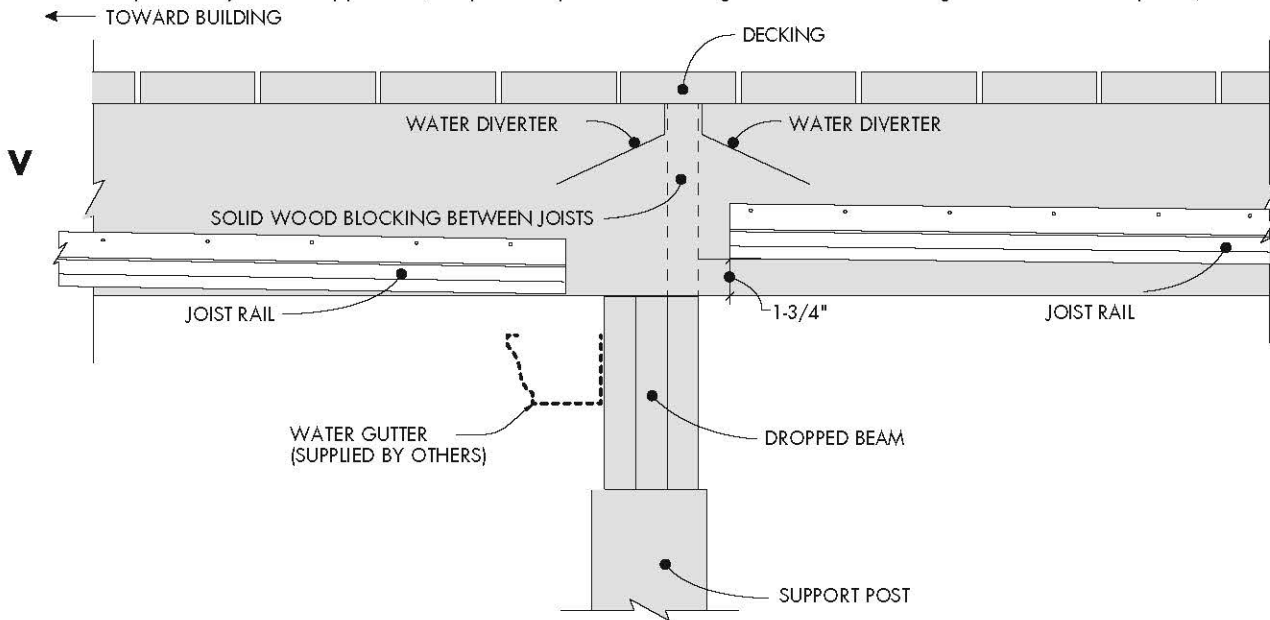


SPECIAL CONDITION 1.

WORKING AROUND A SUPPORT BEAM LOCATED NEAR THE CENTERPOINT OF THE JOISTS.

Some decks have a support beam running perpendicular to the joists at a distance from the building. In such cases the UnderDeck System can be used, however, the UnderDeck System stops at the support beam and then begins on the other side of the beam to the end of the deck. Stop the gutters 1-3/4" short of support beam to allow for drainage. Mount a rain gutter (supplied by others) along the full length of the support beam to catch water emerging from the UnderDeck Joist and Boundary Gutters. The rain gutter should be pitched for drainage and a downspout should be installed at an outside corner post.

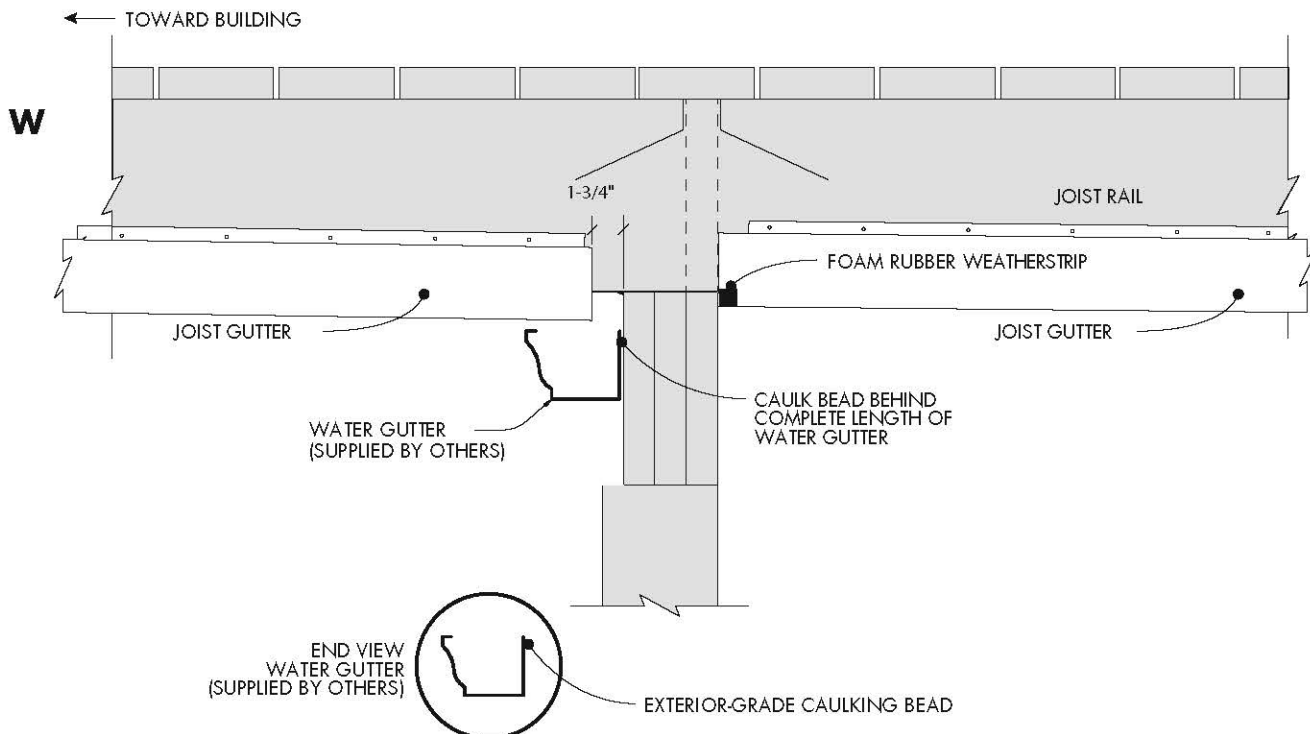
On the other side of the support beam, begin with a Water Diverter and a new set of Joist Gutters following the same procedure as outlined previously. Allow approx. 1/8" per foot pitch for drainage. Continue installing to the end of the joist. (see Illus. V)



Measure, cut and install Joist/Boundary Gutters. NOTE: Before installing the Gutter, adhere the Foam Seal and apply a bead of exterior caulk to the Gutter as shown in Step 7 on page 6 where illustrated below. (see Illus. Z).

NOTE: Boundary Joist areas install similar to the Main Joists.

After all Joist and Boundary Gutters have been installed, install water gutter as described in Step 10 on page 7.



CANTILEVER OVERHANG - OPTION 1.

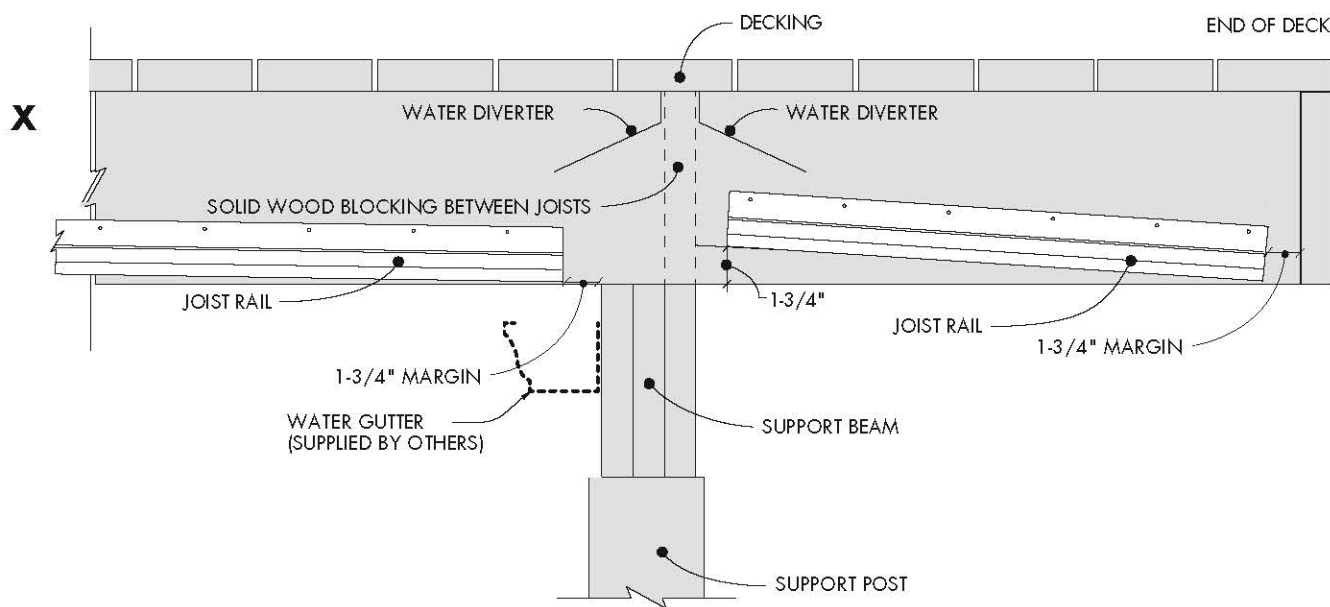
AREA BEYOND SUPPORT BEAM DRAINS WATER AT END OF DECK.

INCLUDES SOLID WOOD BLOCKING ABOVE THE SUPPORT BEAM.

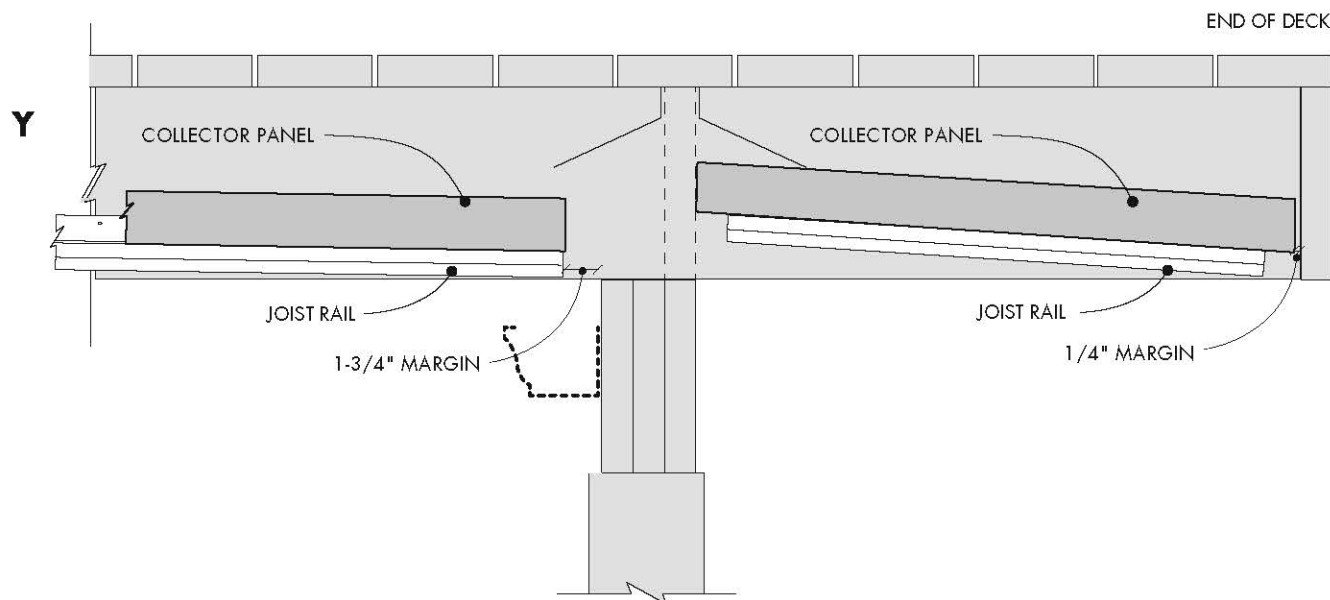
When a support beam support is located near the end of the deck, the main joist rails may taper from the ledger board down to the bottom edge of the joist inside the support beam. Allow 1-3/4 in. space to allow for water drainage. Measure the distance between the joists above the Support beam, cut and install solid wood blocking to fit the opening above the Support beam as shown below.

Install Water Diverters on each side of the Wood Blocking and seal with exterior grade caulking as shown in Step 1 on page 2.

On the cantilever area, measure, cut and place joist rails 1-3/4 in. up from the bottom of the joist nearest to the Support beam and taper the Joist Rails to the bottom edge of the joist, 1-3/4 in. from the end of the joist. (see Illus X)



Measure, cut and install Collector Panels on the cantilever end, allowing a 1/4 in. margin for expansion as shown below. (see Illus. Y)

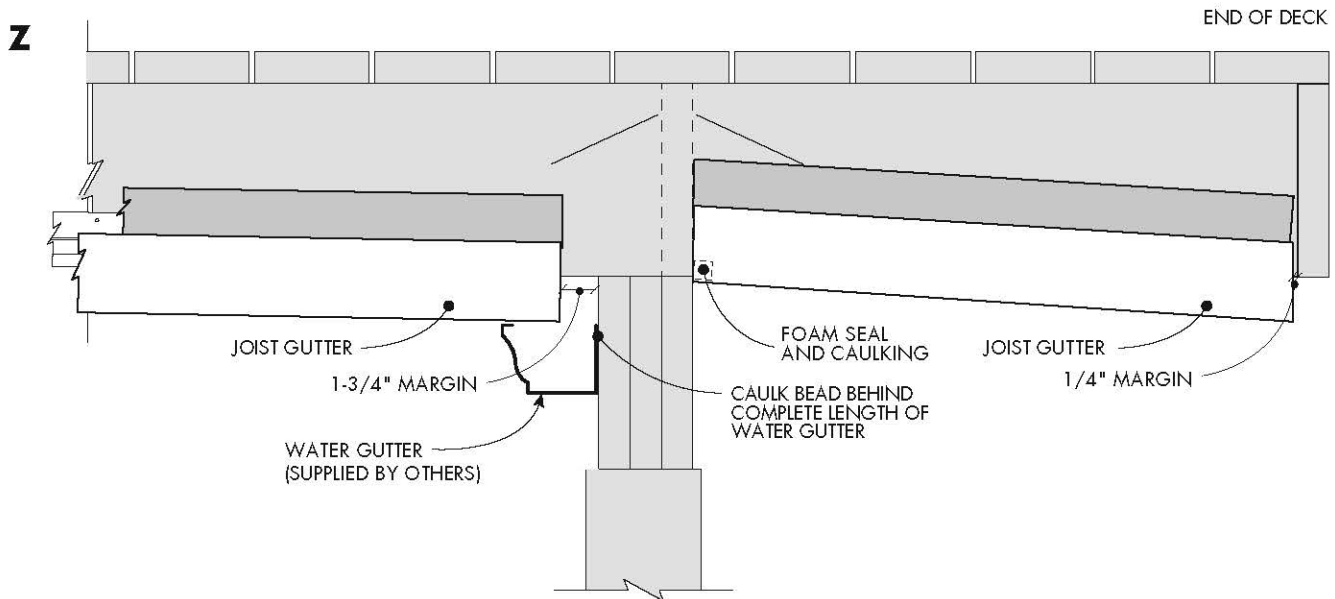


CANTILEVER OVERHANG - OPTION 1 (cont.)

Measure, cut and install Joist/Boundary Gutters. NOTE: Before installing the Gutter, adhere the Foam Seal and apply a bead of exterior caulk to the Gutter as shown in Step 7 on page 6 where illustrated below. (see Illus. Z).

NOTE: Boundary Joist areas install similar to the Main Joists.

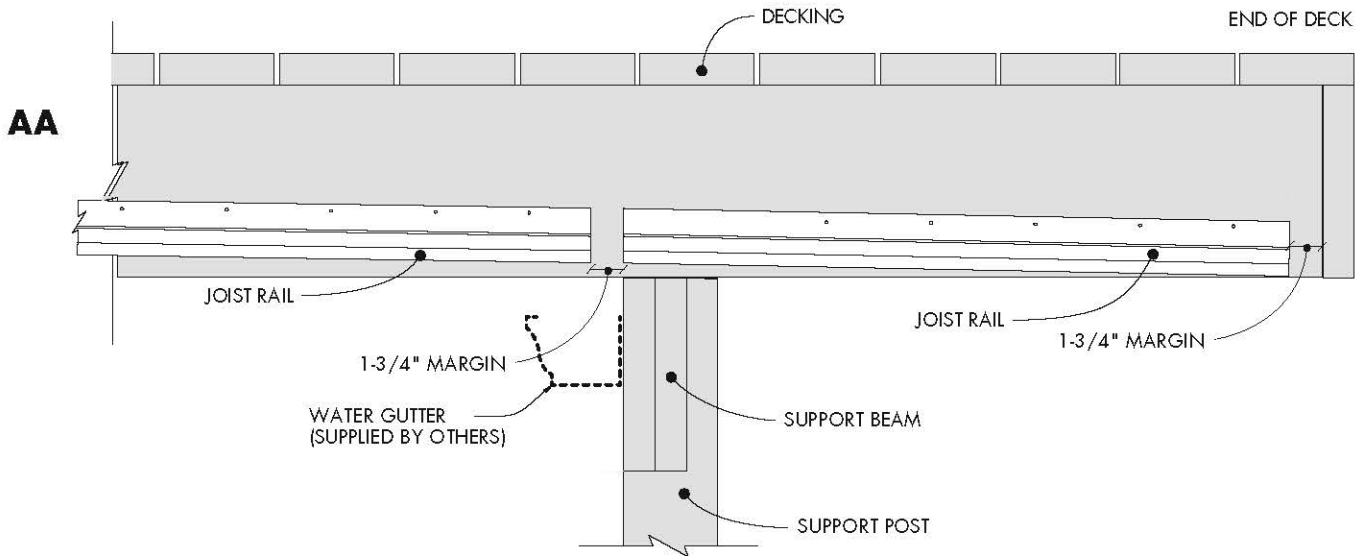
After all Joist and Boundary Gutters have been installed, install water gutter as described in Step 10 on page 7.



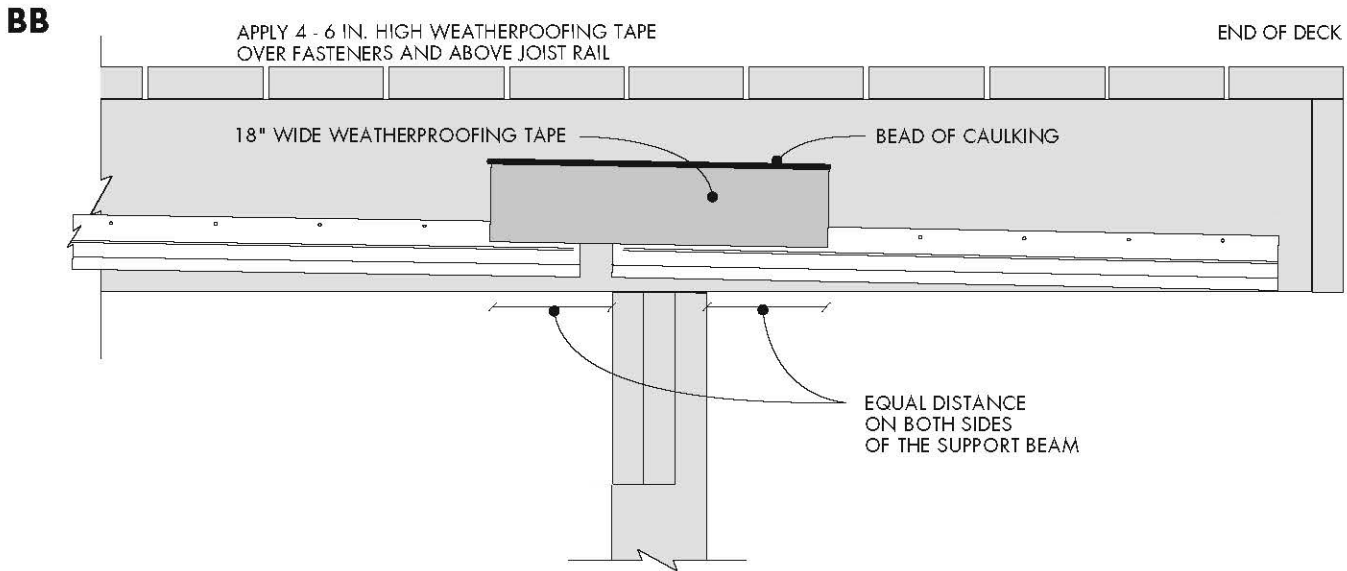
CANTILEVER OVERHANG - OPTION 2.

AREA BEYOND SUPPORT BEAM DRAINS WATER AT END OF DECK.

When a support beam support is located near the end of the deck, the joist rails may taper from the ledger board down to the bottom edge of the joist at the end of the deck. Allow 1-3/4 in. space to allow for water drainage. (see Illus AA)

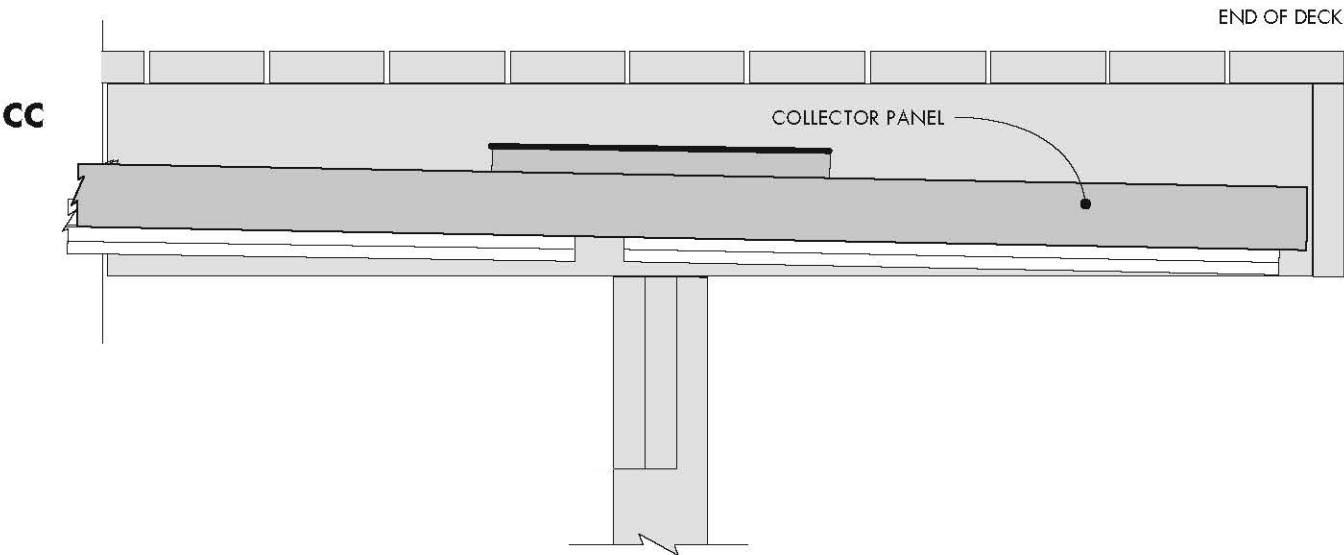


Install an 18" wide piece of weatherproof tape over the joist rails, its fasteners, and onto the joist, keeping an equal amount of tape on both sides of the support beam as shown below. Add a bead of exterior caulking on the top edge of the tape to ensure a good seal. (see Illus BB)



CANTILEVER OVERHANG – OPTION 2. (CONT.)

Measure, cut and install a one piece Collector Panel from the Ledger Board to the end of the deck. Allow a 1/4 in. margin at the end of the joist for expansion. (see Illus CC)

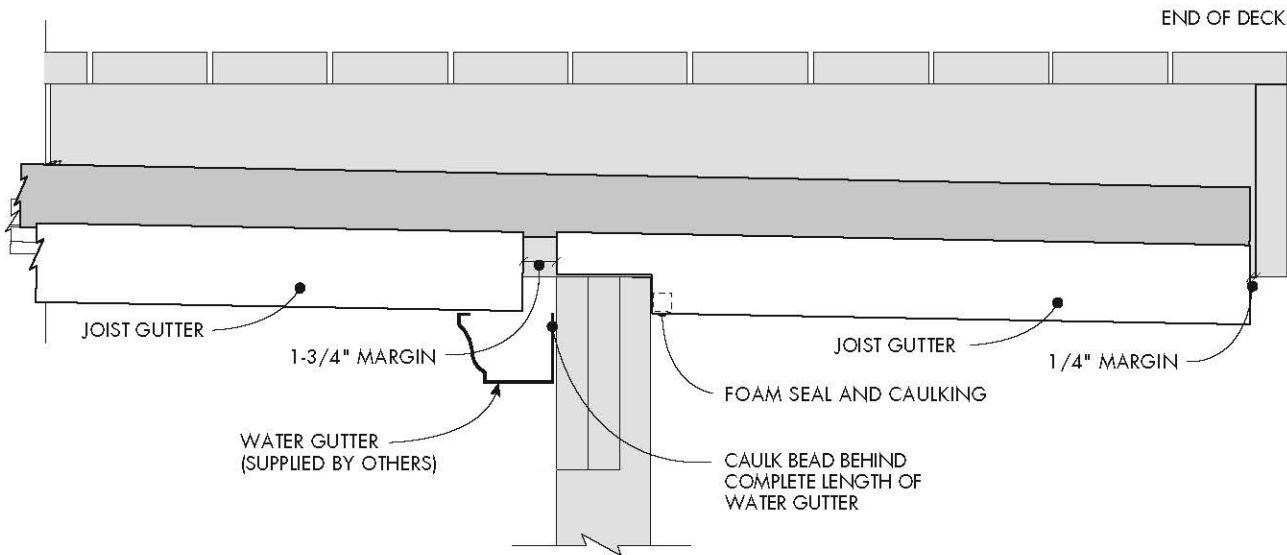


Measure, cut and install the Joist/Boundary Gutters on the cantilever end. Allow a 1/4" margin at the end of the joist for expansion. The notched area of the Gutter above the support beam is not required, but creates a nicer visual. Hint: Use a scrap piece of Joist Gutter to create a template for the notch. NOTE: Before installing the Gutter, adhere the Foam Seal and apply a bead of exterior caulk to the Gutter as shown in Step 7 on page 6 where illustrated below. (see Illus. DD).

DD

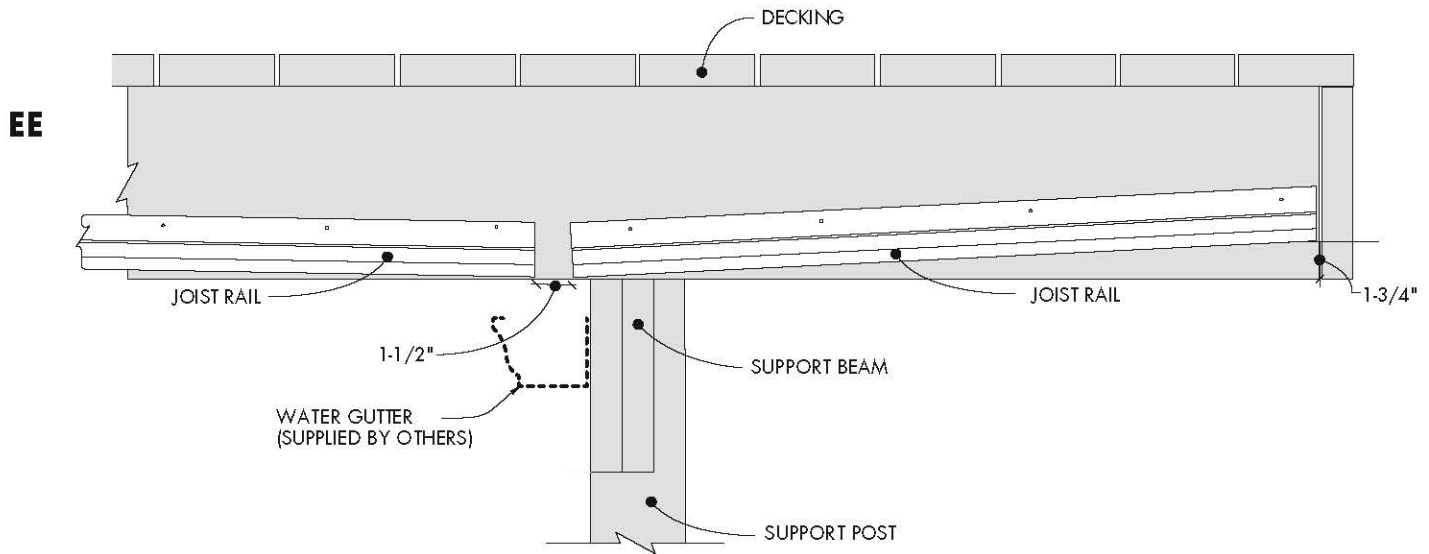
NOTE: Boundary Joist areas install similar to the Main Joists.

After all Joist and Boundary Gutters have been installed, install water gutter as described in Step 10 on page 7.

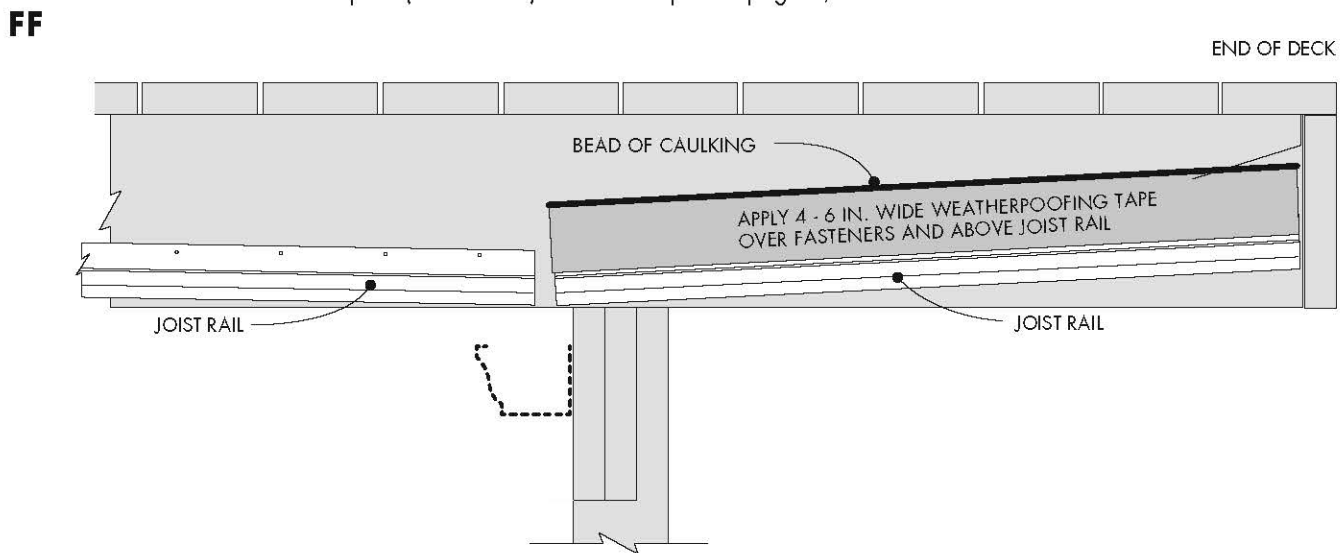


CANTILEVER OVERHANG - OPTION 3. WATER DRAINS BACK INTO WATER GUTTER.

When a support beam support is located near the end of the deck, the main joist rails may taper from the ledger board down to the bottom edge of the joist inside the support beam. On the cantilever end, place the joist rail 1-3/4" up from the bottom of the joist, and taper it back toward the main joist rails, and align the bottom edges of the Joist Rails. (see Illus EE)



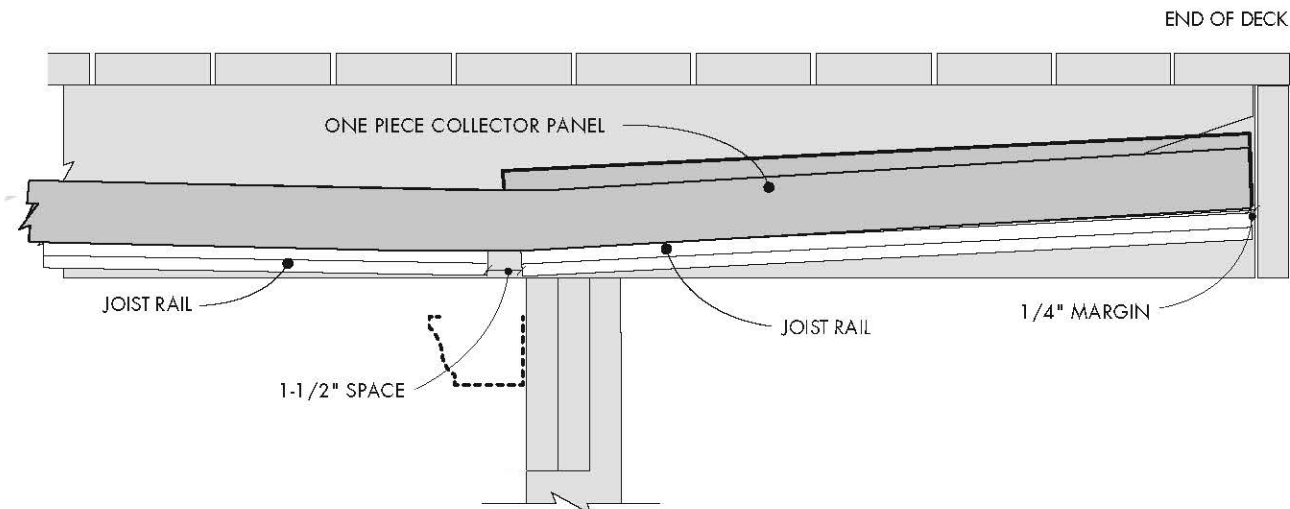
On the cantilever end only, apply a 4-6" weatherproofing tape over the joist rails, its fasteners and the joist. Then apply a bead of exterior grade caulking at the top edge of the weatherproofing tape to ensure a good seal. Measure, cut and fasten a Water Diverter onto the deck rim joist. (see Illus. FF). Refer to Step 1 on page 2, to install the Water Diverter.



CANTILEVER OVERHANG - OPTION 3. (CONT.)

Measure, cut and install a one piece Collector Panel from the Ledger Board to the end of the deck. Allow a 1/4 in. margin at the end of the joist for expansion. (see Illus. HH)

GG



Measure, cut and install Joist/Boundary Gutters. The notched area of the Gutter above the support beam is not required, but creates a nicer visual. Hint: Use a scrap piece of Joist Gutter to create a template for the notch. NOTE: Before installing the Gutter, adhere the Foam Seal and apply a bead of exterior caulk to the Gutter as shown in Step 7 on page 6, where illustrated below. (see Illus. II).

HH

NOTE: Boundary Joist areas install similar to the Main Joists.

After all Joist and Boundary Gutters have been installed, install water gutter as described in Step 10 on page 7.

