



ICON™ ScrewJoist

ICON combines the strength of steel with the workability of wood to create the ultimate deck structure.

- **Speed of Installation**
Projects are often reduced by 1–2 days
- **Lightweight**
Half the weight of standard PT joists
- **Flatter Surface**
Deck surface is flat for easier installation and a better final product
- **No Joist Hangers and Ties**
No additional hardware is needed to attach the screwjoists
- **Wider Joists**
Nearly double the surface area makes the structure safer during construction
- **Code-Compliant**
Fully tested and engineered to meet load requirements



Changing the way decks are built!



FM23085 (0923)



ICON™ ScrewJoist Installation Guide



Engineered floor joists designed and manufactured to replace exterior treated dimensional wood joists in deck construction



FastenMaster.com 800-518-3569

OMG, Inc. FastenMaster is a division of OMG Inc., 153 Bowles Road, Agawam, MA 01001

Product Description and Material Properties

ICON ScrewJoists are engineered floor joists designed and manufactured to replace exterior treated dimensional wood joists in deck construction.

The benefits of ICON over traditional deck joists are:

- Straighter and dimensionally stable for a more consistent, level deck surface
- Significantly lighter for easier, safer handling and movement during construction
- Quicker to install as they fit over the ledger and beam without the need for hangers or straps.
- Continuous blocking can be slid into place saving time over cutting and installing multiple blocks

The ICON ScrewJoists are manufactured, labeled, and packaged based on the dimensions and design of each specific deck. Plans are provided detailing the placement of each joist, critical connections and any additional structural details needed to complete the project.

Side View of Joist with Measurements:

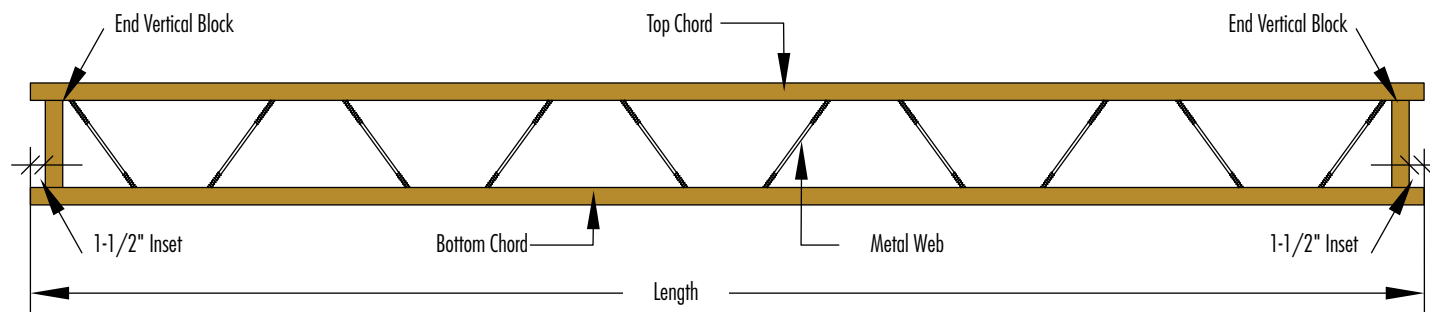
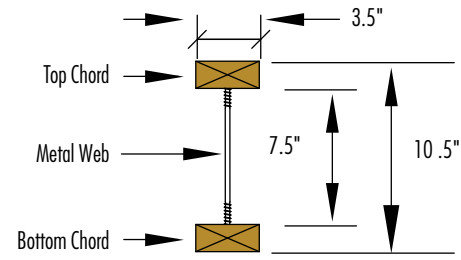


Figure 1

A code-compliant Product Listing Report (CBI CL-2301-01) with design strengths, maximum spans and other performance characteristics of the ICON ScrewJoists can be found at FastenMaster.com. The allowable spans for decks with or without a cantilevered portion are shown below.

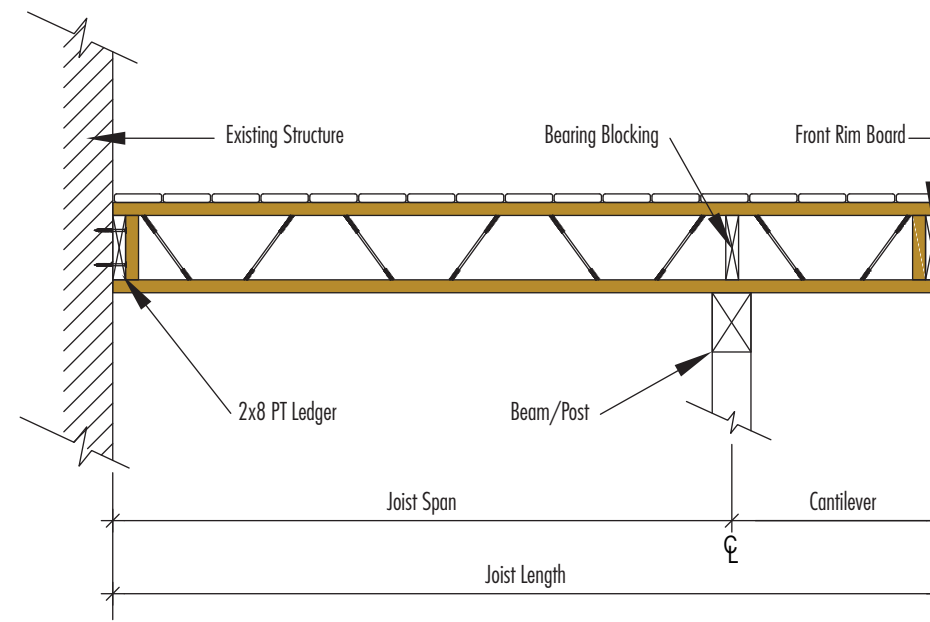


Figure 2

Maximum Allowable Joist Span for ICON ScrewJoist with 2 Ft. Max Cantilever				
Live Load (PSF)	16" oc Joists		12" oc Joists	
	Max Joist Span ²	Max Joist Length ³	Max Joist Span ²	Max Joist Length ³
40	14	16	14	16
50	12	14	14	16
60	12	14	14	16
70	10	12	12	14
80	8	10	12	14
90	8	10	10	12
100	8	10	10	12

1. Spans based on additional 10 psf dead loads of deck materials and L/360 deflection limit.
2. Max Joist Span refers to distance between ledger and bearing ("Joist Span" in Fig. 2)
3. Max Joist Length refers to overall joist length including cantilever up to 2' ("Joist Length" in Fig.2)

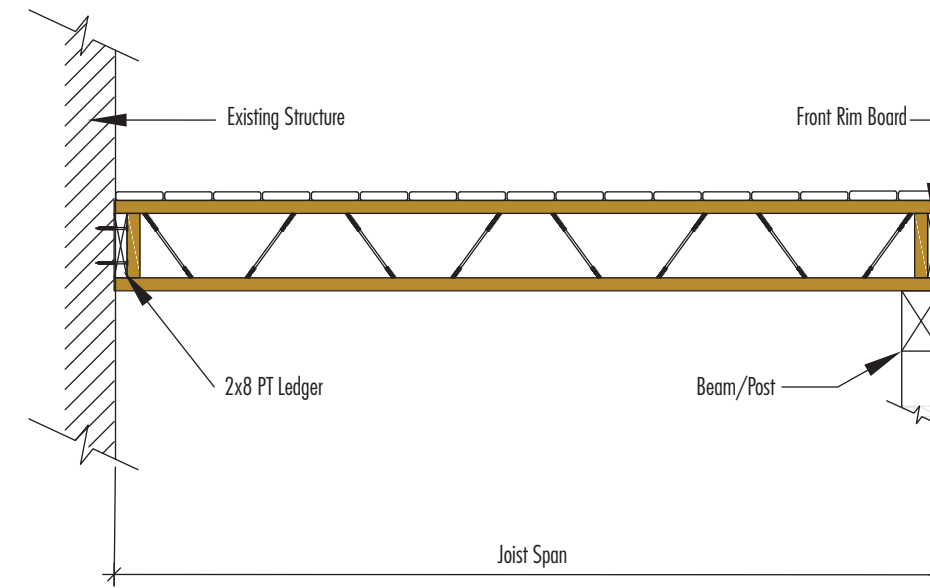


Figure 3

Maximum Allowable Joist Span for ICON ScrewJoist with No Cantilever				
Live Load (PSF)	16" oc Joists		12" oc Joists	
	Max Joist Span ²	Max Joist Length ³	Max Joist Span ²	Max Joist Length ³
40	12		12	
50	12		12	
60	10		12	
70	8		12	
80	8		10	
90	8		10	
100	8		8	

1. Spans based on additional 10 psf dead loads of deck materials and L/360 deflection limit.
2. Max Joist Span refers to distance between ledger and bearing ("Joist Span" in Fig. 3)
3. Max Joist Length refers to overall joist length including cantilever up to 2' ("Joist Length" in Fig.3)

Note: This deck has two sections: The first is 12'-3/4"x16'-0" (J1) on two 3-ply 2x10 dropped carrying beams (DBO) that step down to the second, which is 23'-8-1/2"x12'-0" (J2) cantilevered 2'-0" over a 3-ply 2x10 dropped carrying beam (DBO). Both sections are attached to house with ledger. The deck also includes rail posts designed by others. All code compliant deck boards are acceptable for use with FastenMaster Project Baseball Joists. All support posts, beams, and all other appurtenances associated with the roof design are to be DBO and FastenMaster takes no responsibility in structure above deck.

DBO = Designed by Others

FastenMaster PRO Driven
Deck Sub-Structure

Owner
Joe Smith

Project Address
1 Main Street Agawam, MA 01001

Building Code
9th Edition of Massachusetts Building Code (CMR 780), Base Code is 2015 IRC

Architect / Architectural Plan
N/A

Project Contact Info
Name: MD
Phone: 413-789-0252 x1088
Email: xxx

Dr J ENGINEERING LLC
6300 Enterprise Lane
Madison, WI 53719

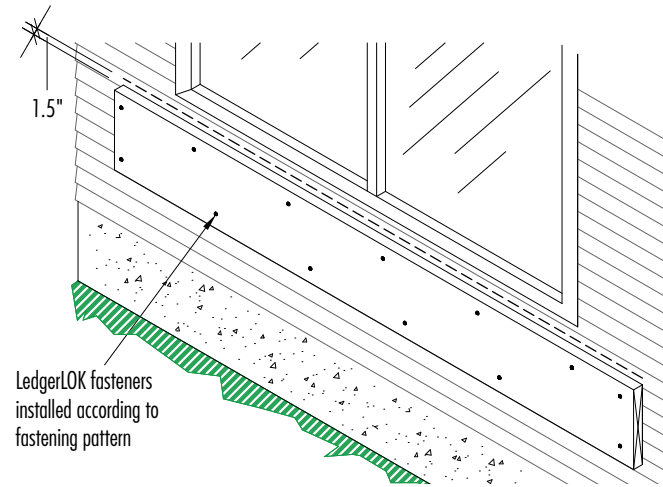
© Copyright 2022 Dr J Engineering LLC. All rights reserved. This Design Drawing is valid for six (6) months from the date on the professional engineer's seal. PMS0001_v4_220903 - Page 1 of 8

ICON ScrewJoist Installation Instructions

Step 1: Attach Ledger

Install 2x8 Pressure Treated (PT) ledger to structure using FastenMaster LedgerLOK fasteners or another code-compliant method.

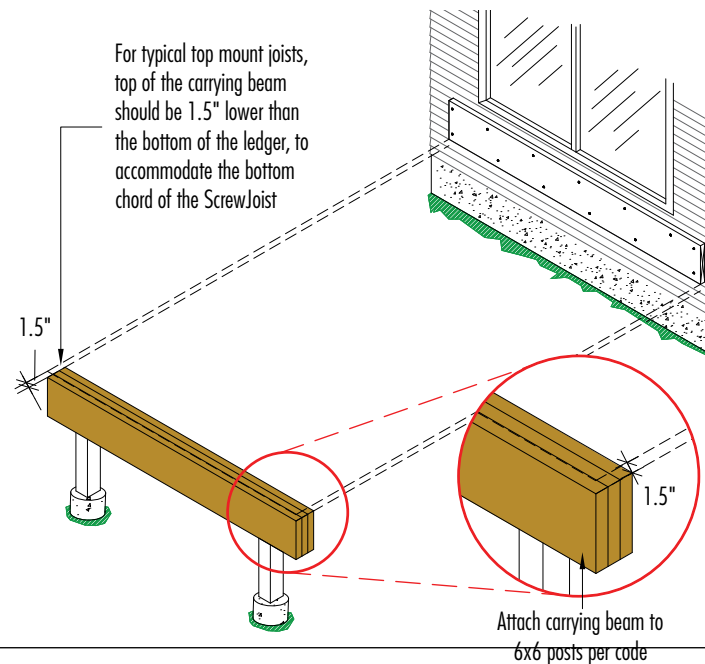
Note: Top of FastenMaster ICON ScrewJoists, once installed, will be 1.5" higher than the top of the ledger. This must be accounted for, typically by dropping the ledger by 1.5".



Step 2: Install Carrying Beam

Install carrying beam and support posts per code.

Note: Where ICON ScrewJoists will rest on top of beam, beam height should be 9" lower than top of ledger (10.5" joist depth minus 1.5" top chord). Where beams are flush mounted into joists, these 2x8 beams should be at same height as ledger.

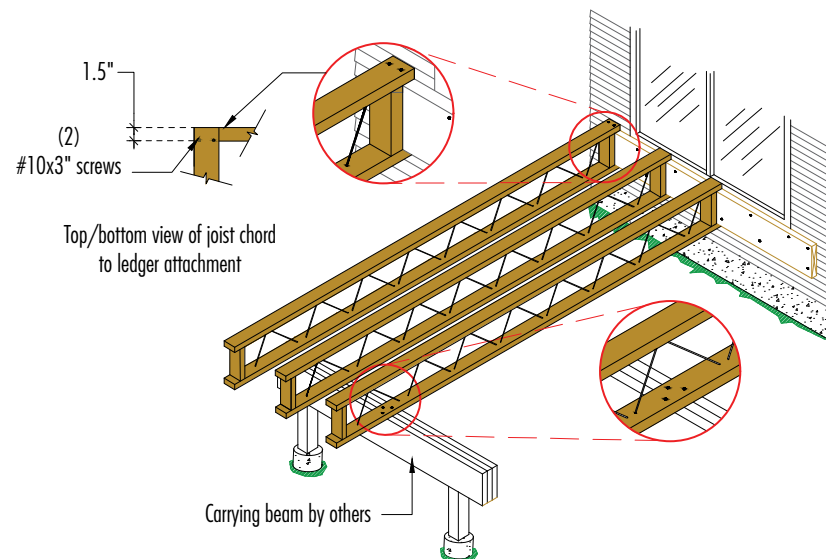


Step 3: Install ICON ScrewJoist

Set ICON ScrewJoists into ledger at one end and rest the other end on top of beam as shown below. Refer to the provided ICON ScrewJoist Layout Plan (SJLP) for proper placement.

Attach ScrewJoists to ledger using (2) FastenMaster MVP #10x3" screws driven at a slight angle through the top and bottom chord into the ledger.

Attach bottom chord of ICON ScrewJoist to beam using (3) MVP #10x3" screws.

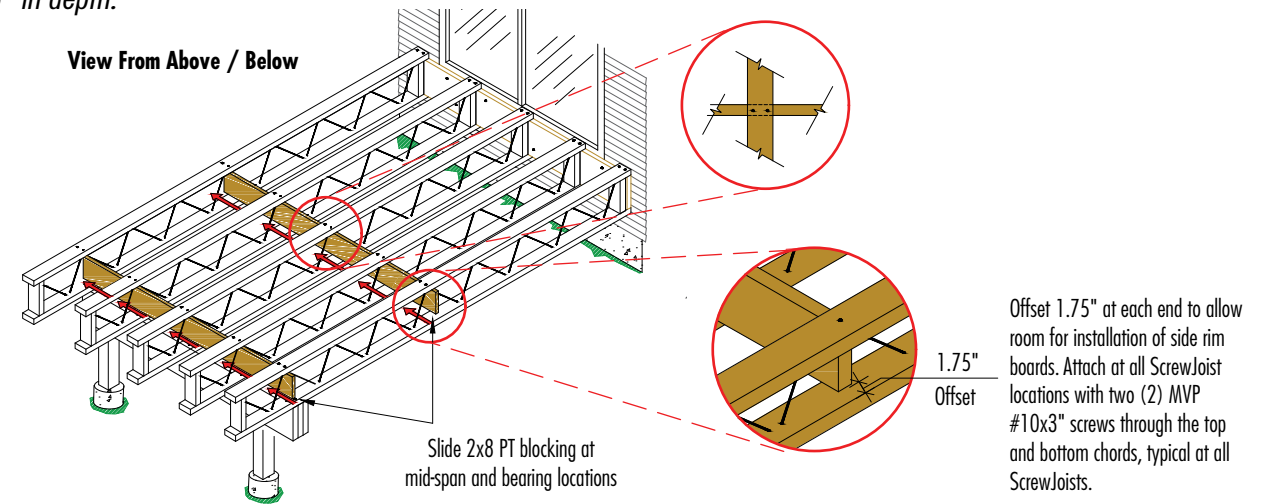


ICON ScrewJoist Installation Instructions

Step 4: Install Blocking

Install blocking over the beam by sliding full depth 2x8 PT, cut to length, between screw webs. Where required in SJLP, install mid-span blocking using the same method. Attach blocking at all top and bottom chords using two (2) #10x3" MVP screws.

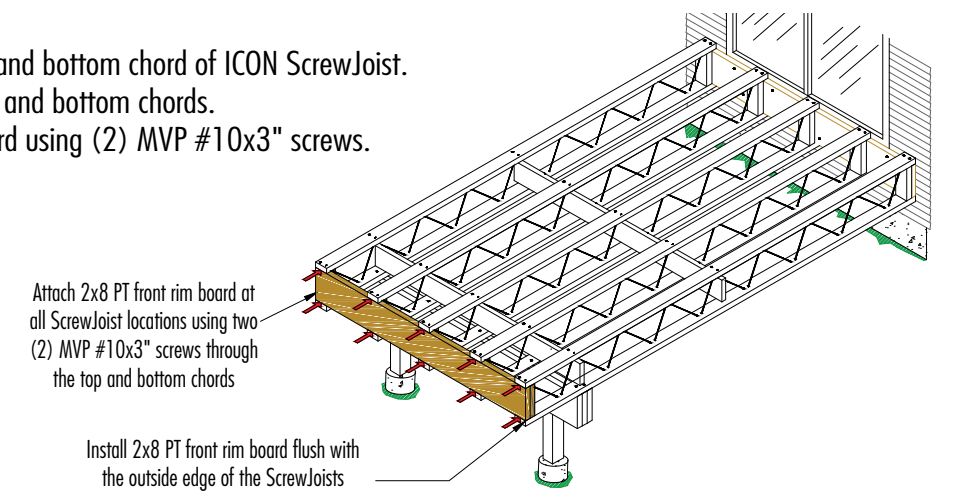
Note: For best results, all blocking should be 7-3/8" in depth.



Step 5: Install Front Rim Board

Insert 2x8 PT front rim board between top and bottom chord of ICON ScrewJoist. Rim should sit flush to outside edges of top and bottom chords. Affix rim board to each top and bottom chord using (2) MVP #10x3" screws.

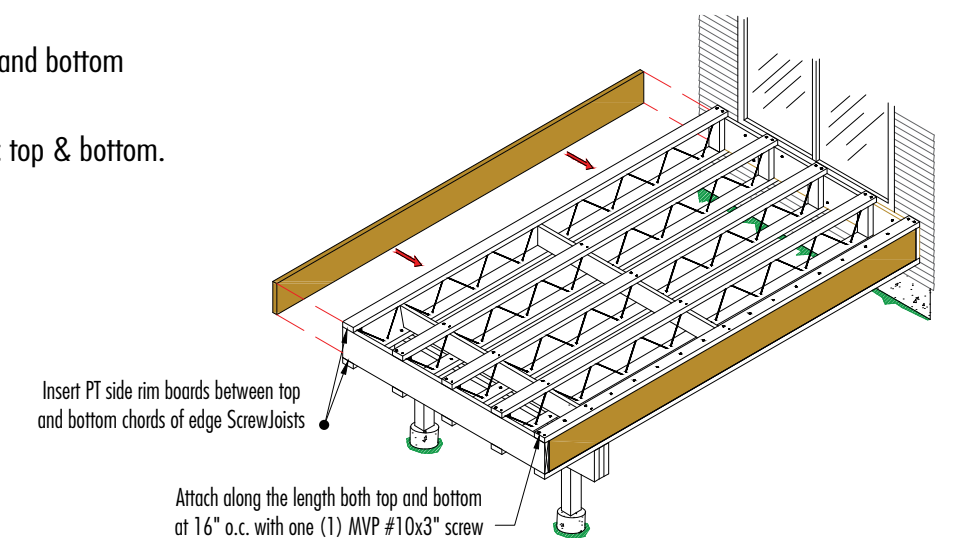
Note: For best results, all rim boards should be 7-3/8" in depth.



Step 6: Install Side Rim Boards

Insert 2x8 PT side rim boards between top and bottom chord of outermost ICON ScrewJoists.

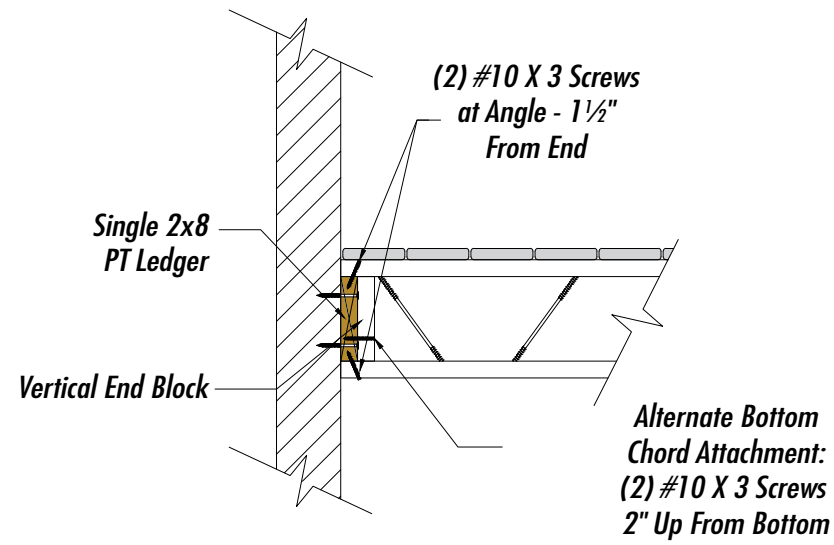
Affix using (1) #10x3" screw every 16" oc top & bottom.



ICON ScrewJoist Bearing Details

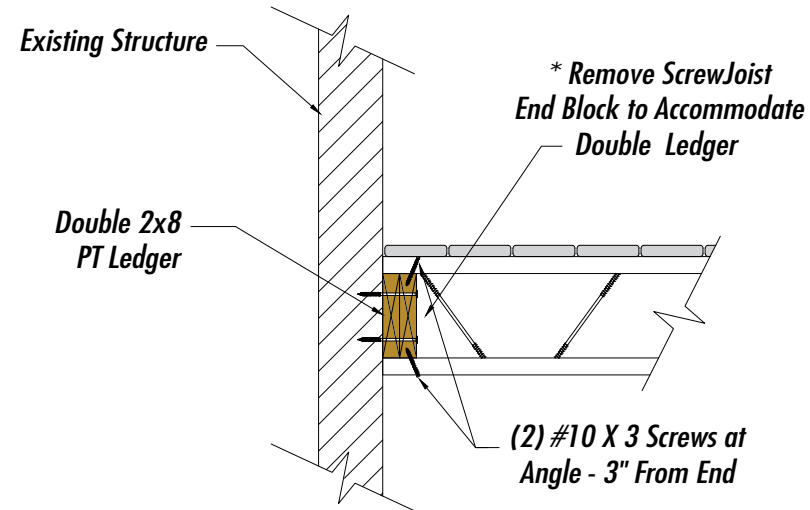
Single Ledger

ScrewJoists can be attached by simply resting the top chord atop the 2x8 ledger and installing #10 screws at an angle into the top and bottom of the ledger. For decks that are close to the ground, the lower screws can be installed into the face of the vertical block and into the ledger.



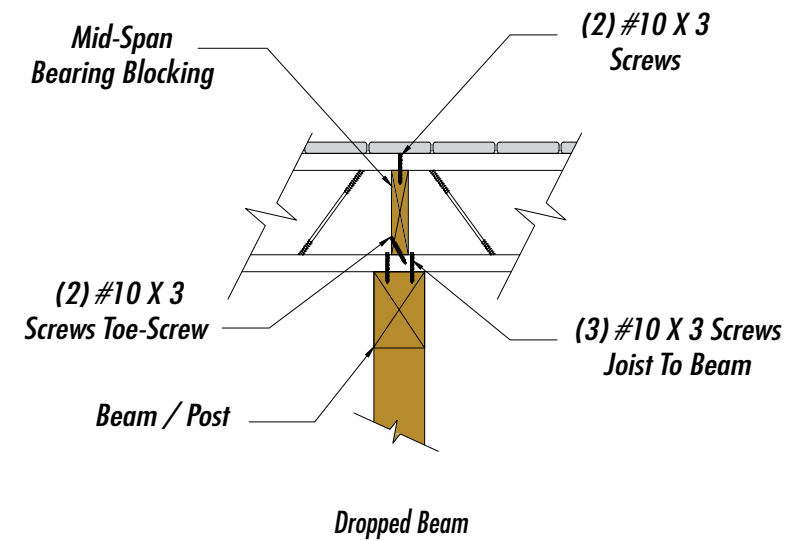
Double Ledger

To install over a double ledger, the vertical block must first be removed. Fasten the top and bottom chords to the outermost ledger using #10 screws. For decks that are close to the ground, the lower screws can be toe nailed through the bottom of the ledger and into the bottom chord.



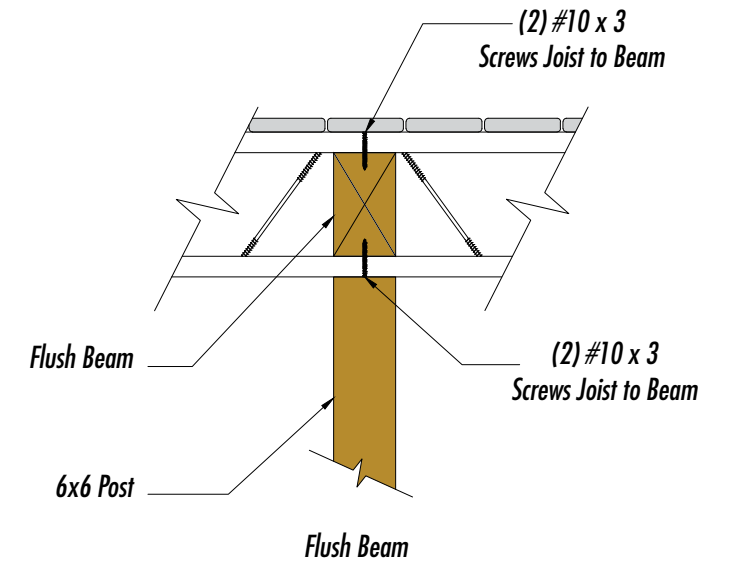
Dropped Beam at Midspan

Where ScrewJoists are supported at the midspan of the deck or at a cantilever by a dropped beam, blocking shall be placed in line over the beam. The blocking must be fastened to the top joist using #10 screws. The bottom chord must also be attached to the beam using #10 screws.



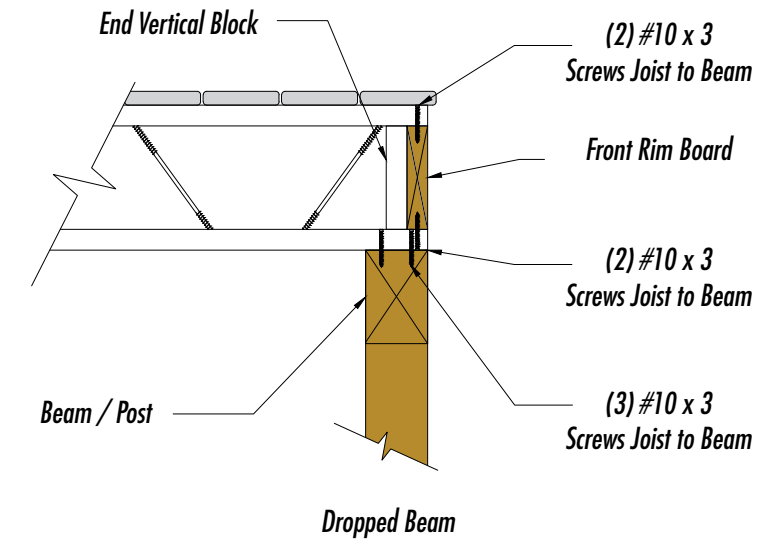
Flush Mount Beam At Midspan

Where ScrewJoists are supported at the midspan of the deck or at a cantilever by an inset or flush 2x8 beam, fasten the top chord and bottom chord to the beam using #10 screws.



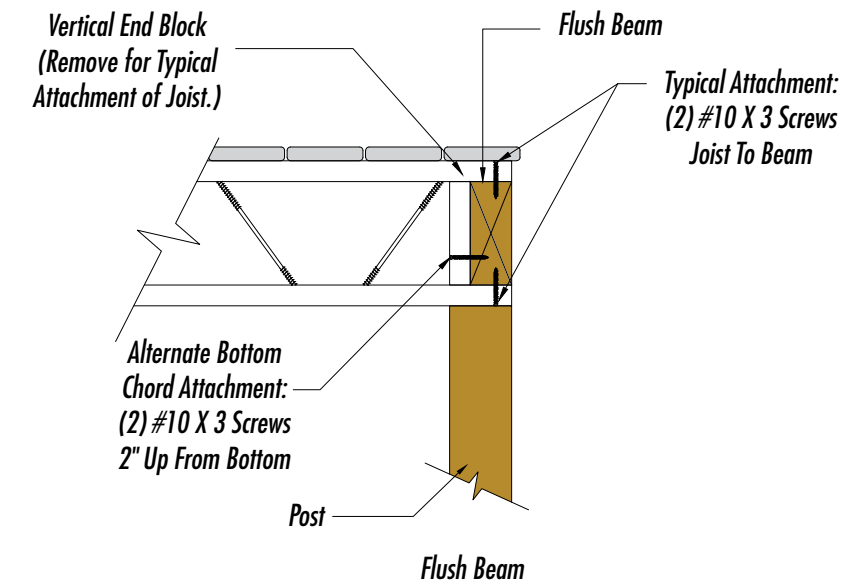
Dropped Beam At End

Where ScrewJoists are supported at the end of the span by a dropped beam, the bottom chord shall be fastened to the beam using #10 screws prior to installation of the front rim board.



Flush Beam At End

Where ScrewJoists are supported at the end of the span by a flush beam, the vertical blocking can be removed to accommodate the beam. Attach the bottom and top chord of the ScrewJoist to the beam using #10 screws.



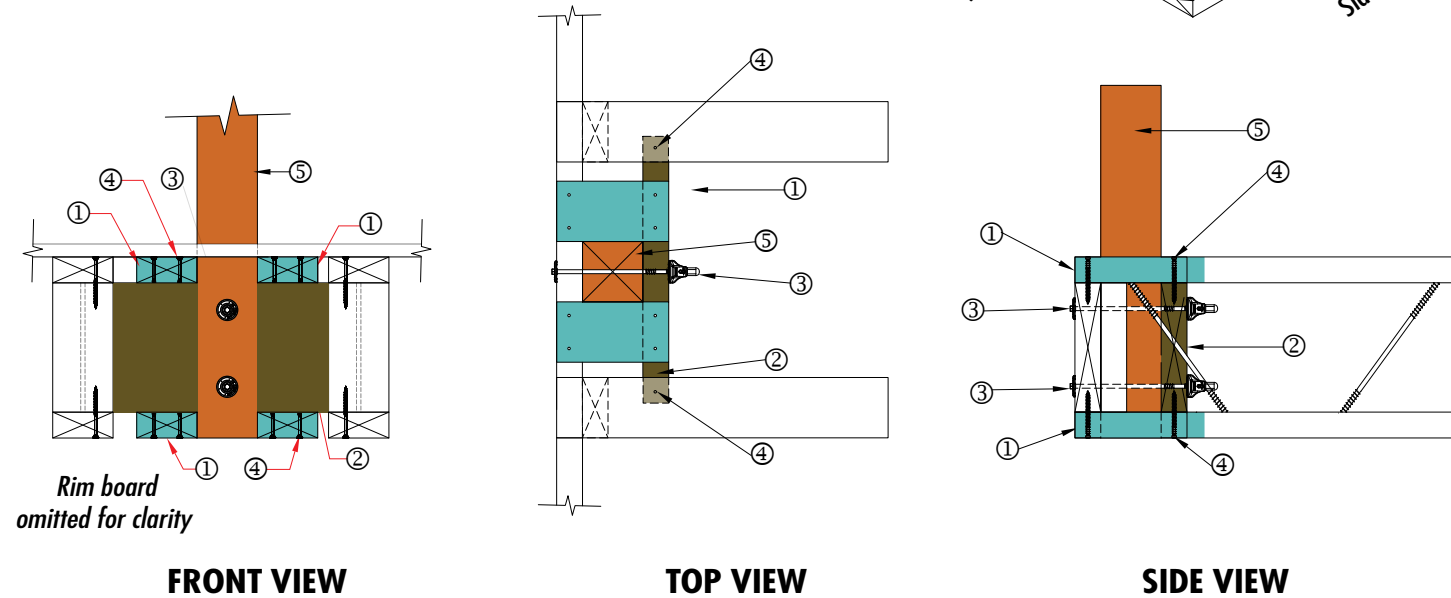
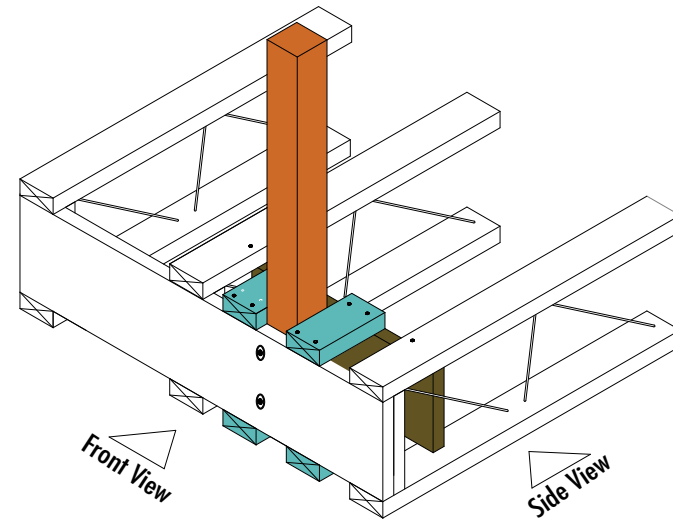
Interior Mounted 4x4 at Front Rim

MATERIAL LIST

<p>① Horizontal Blocking Qty. = 4 2 x 4 X 8 PT</p>	<p>② Vertical Blocking Qty. = 1 2 x 8 x 15.75 PT</p>	<p>③ 8" ThruLOK Qty. = 2</p>	<p>④ #10 x 3" screw Qty. = 20</p>	<p>⑤ Guard Post Qty = 1 4 x 4 x 4'-5"</p> <p>36" finish post height</p>
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INSTALLATION INSTRUCTIONS

- Position guard post behind front rim and tack into place.
- Insert 15.75" long 2x8 vertical block directly behind post between top and bottom chords of the joists and attach at all 4 corners using #10x3" screws.
- Install (2) 8" ThruLOKs through front rim, guard post and blocking. ThruLOKs should be installed centered on post and 1.5" from top and bottom of rim.
- Affix (2) 8" long 2x4 horizontal blocks snug along both sides of post, joining at front rim and vertical blocking using (2) #10x3" screws at each end. Repeat the same process on the bottom of the deck.



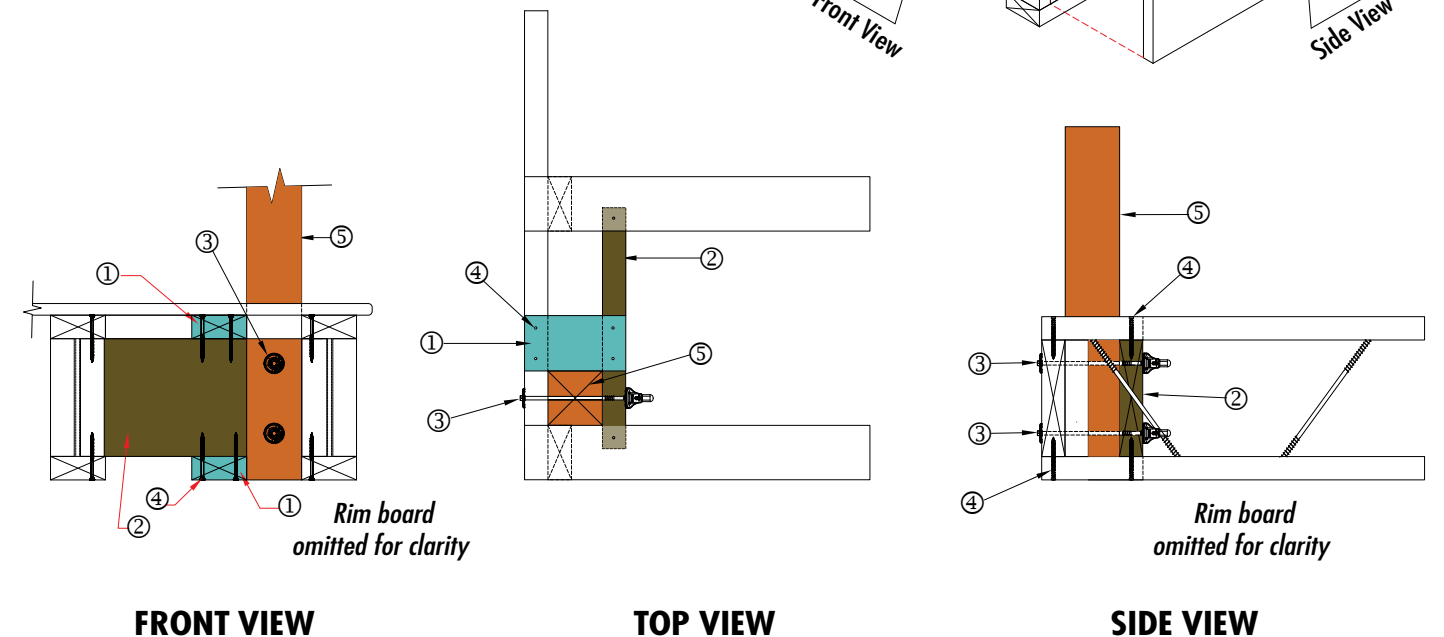
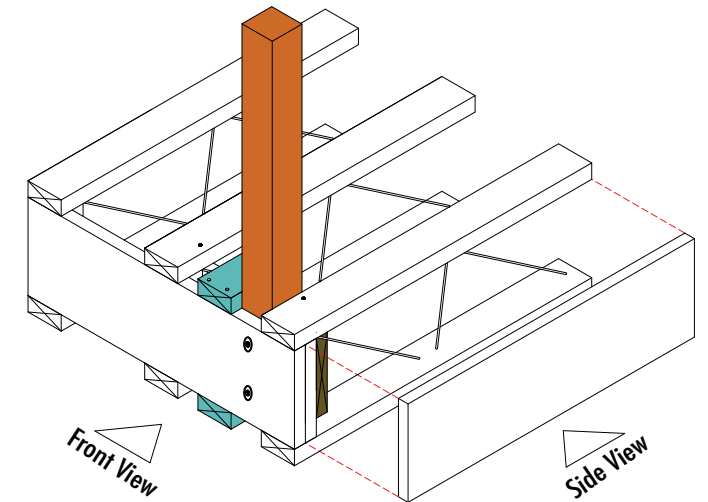
Interior Mounted 4x4 at Corner

MATERIAL LIST

<p>① Horizontal Blocking Qty. = 2 2 x 4 X 8 PT</p>	<p>② Vertical Blocking Qty. = 1 2 x 8 x 15.75 PT</p>	<p>③ 8" ThruLOK Qty. = 2</p>	<p>④ #10 x 3" screw Qty. = 12</p>	<p>⑤ Guard Post Qty = 1 4 x 4 x 4'-5"</p> <p>36" finish post height</p>
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INSTALLATION INSTRUCTIONS

- Position guard post behind front rim, tight to outermost joist and tack into place.
- Insert 15.75" long 2x8 vertical block directly behind post between top and bottom chords of the joists and attach at all 4 corners using #10x3" screws.
- Install (2) 8" ThruLOKs through front rim, guard post and blocking. ThruLOKs should be installed centered on post and 1.5" from top and bottom of rim.
- Affix (1) 8" long 2x4 horizontal block snug along inner side of post, joining at front rim and vertical blocking using (2) #10x3" screws at each end. Repeat the same process on the bottom of the deck.





ICON™ ScrewJoist

Post Applications

Post Applications

FastenMaster ICON ScrewJoists are manufactured specific to the dimensions and design of your deck.

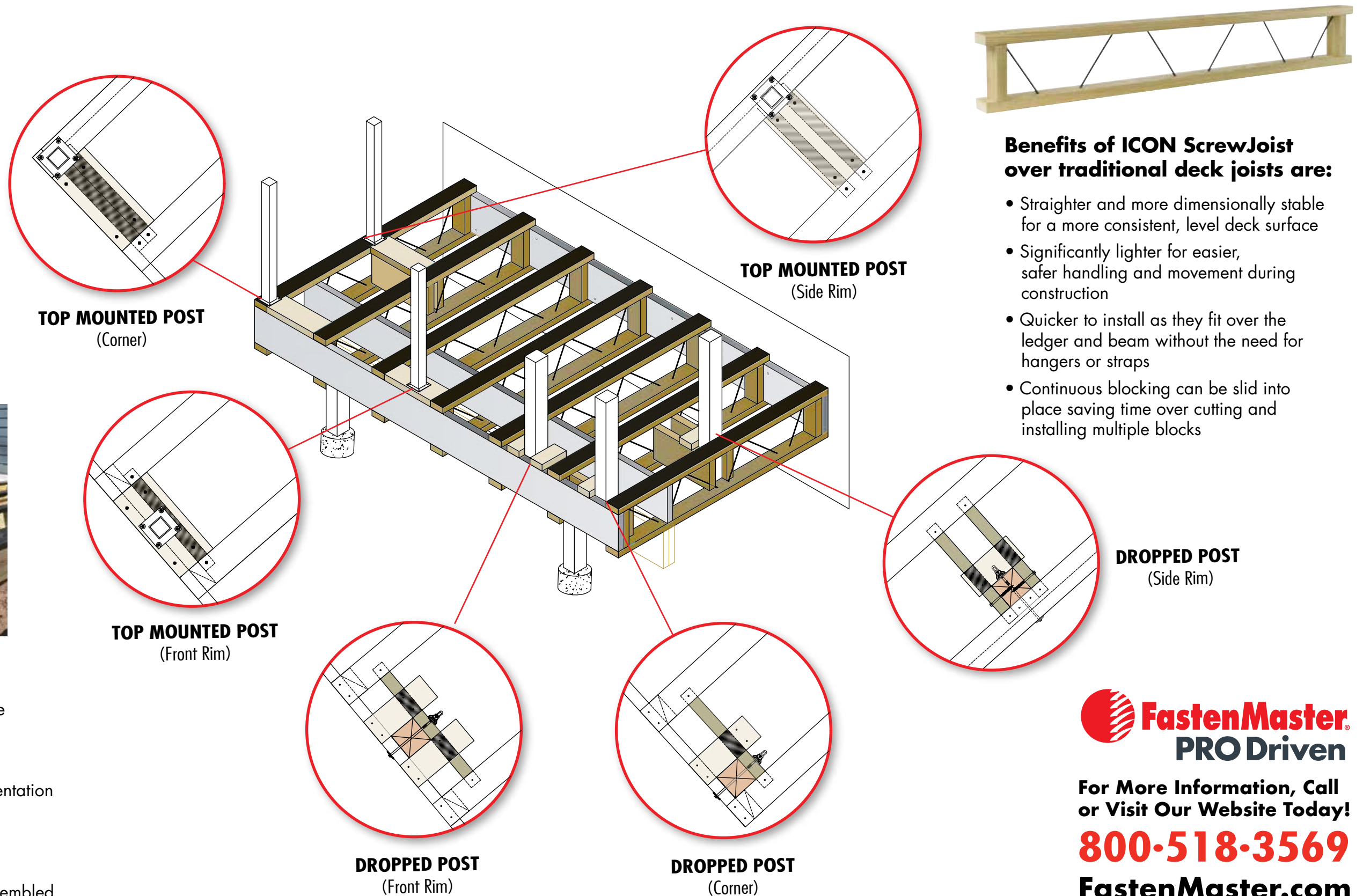
A ScrewJoist Layout Plan is provided showing the placement of each ICON ScrewJoist, critical connections and any additional structural details needed to complete the project.

ICON ScrewJoists are engineered floor joists designed and manufactured to replace exterior treated dimensional wood joists in deck construction.



Quick & Easy Installation

- Take a full day off your installation time
- Half the weight of normal joists
- No warping, crowning, or bowing
- Comes with engineer stamped documentation and step by step instructions
- Code-Compliant
- Full Length Slide in blocking
- All materials arrive to your job fully assembled



Benefits of ICON ScrewJoist over traditional deck joists are:

- Straighter and more dimensionally stable for a more consistent, level deck surface
- Significantly lighter for easier, safer handling and movement during construction
- Quicker to install as they fit over the ledger and beam without the need for hangers or straps
- Continuous blocking can be slid into place saving time over cutting and installing multiple blocks



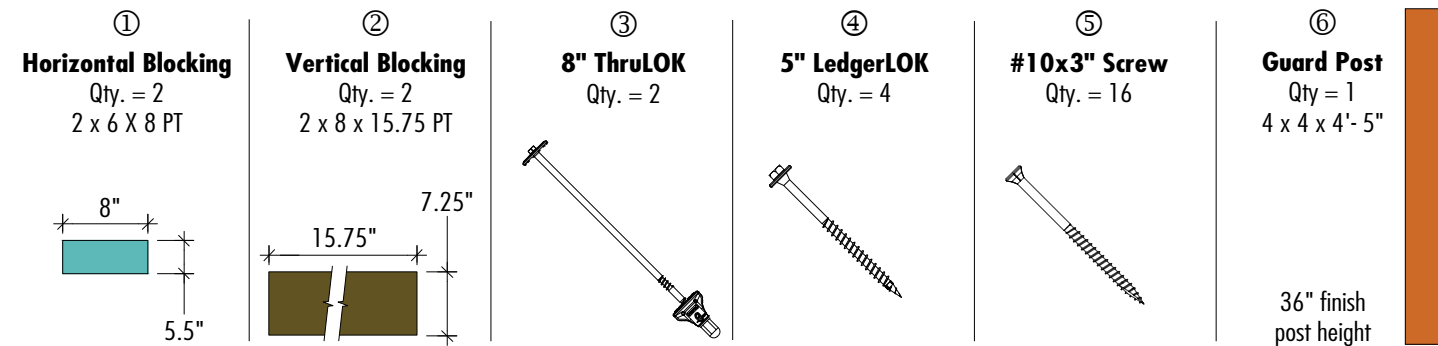
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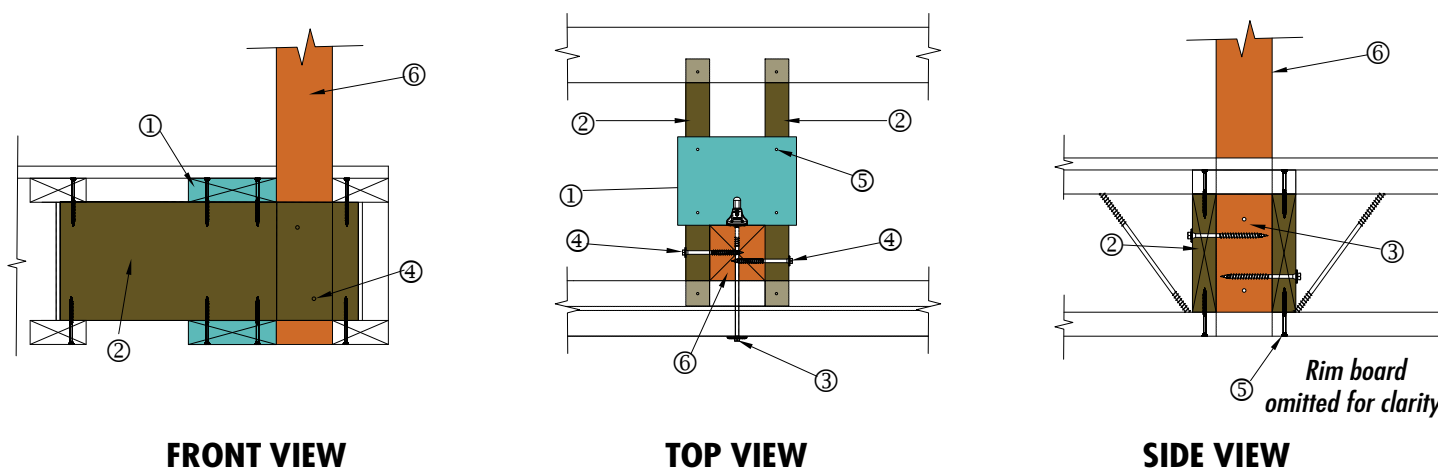
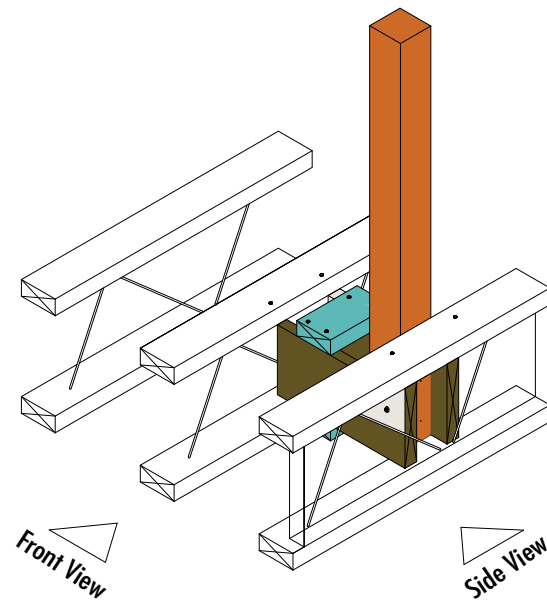
Interior Mounted 4x4 at Side Rim

MATERIAL LIST



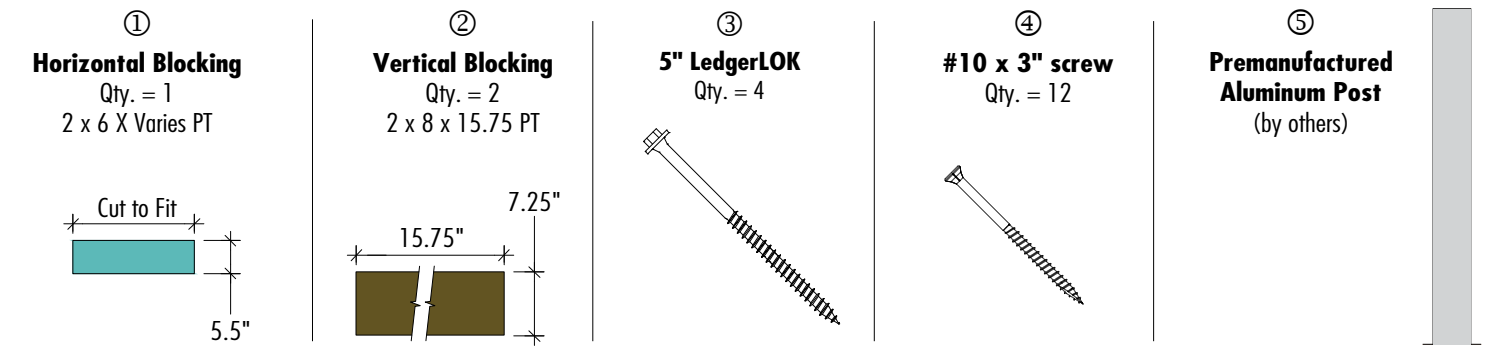
INSTALLATION INSTRUCTIONS

- Position guard post behind outermost joist and tack into place.
- Insert (2) 15.75" long 2x8 vertical blocks directly along both sides of post, between top and bottom chords of the joists and attach at all 4 corners using #10x3" screws.
- Install (2) 8" ThruLOKs through side rim into guard post. ThruLOKs should be installed centered on post and 1.5" from top and bottom of rim.
- Affix (1) 8" long 2x6 horizontal block snug along back of post, joining both vertical blocks using (2) #10x3" screws at each end. Repeat the same process on the bottom of the deck.
- Install (1) 5" LedgerLOK from each side of blocking and into post, on one side 2" from top of blocking, on the other side 2" from bottom.



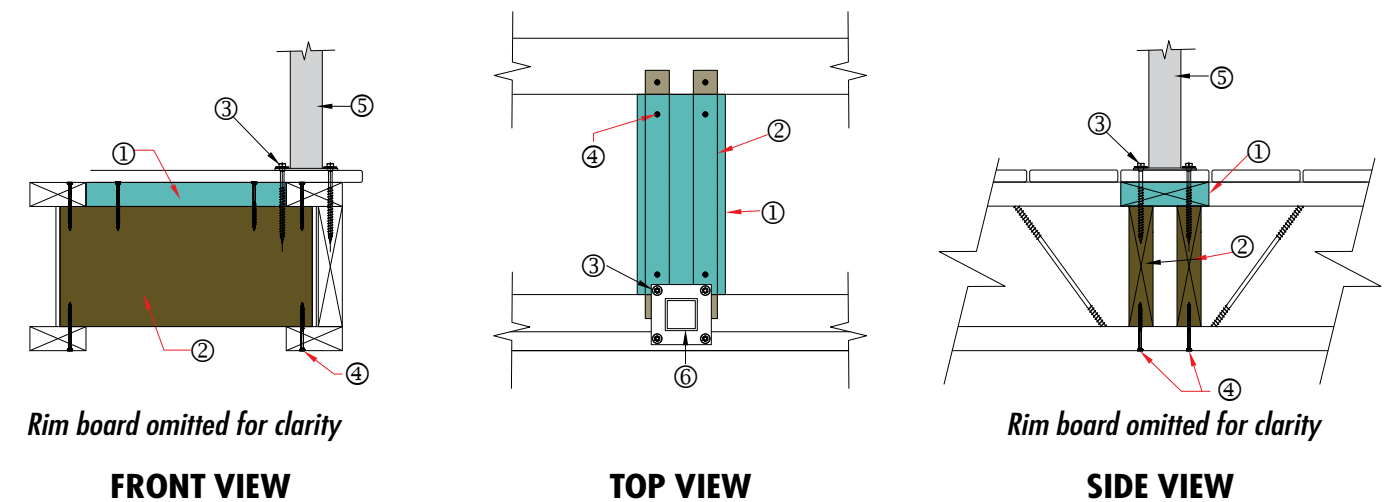
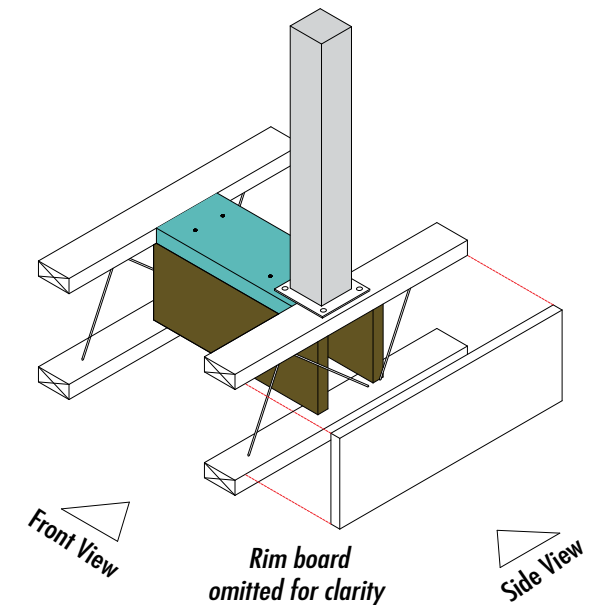
Top Mount Side Rim Details 3 3/4" Top Mounted Post - Single End Joist

MATERIAL LIST



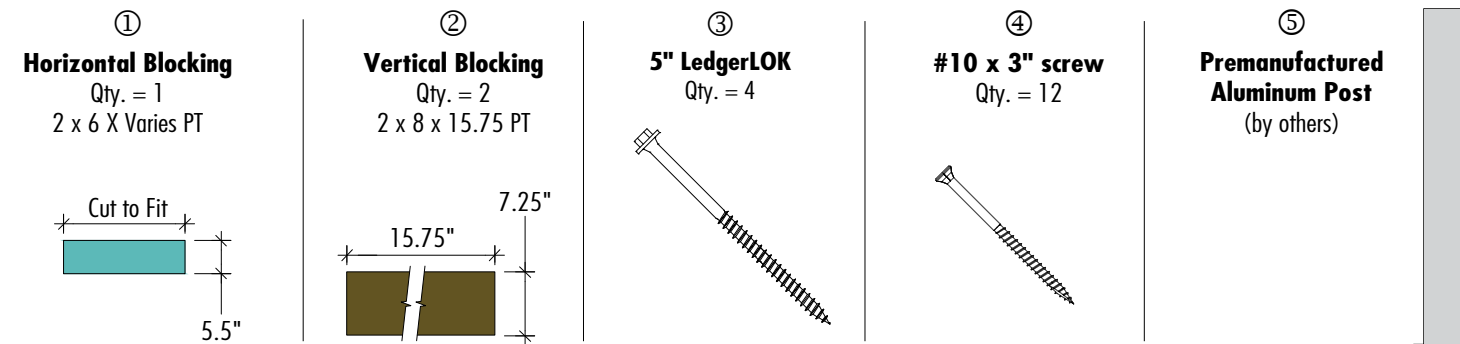
INSTALLATION INSTRUCTIONS

- Insert 15.75" long 2x8 vertical block 1-1/2" behind the front rim. Attach to top and bottom chords of the joists at all 4 corners using #10x3" screws.
- Install 12" long 2x6 horizontal filler block between top chords of the joists and attach using (4) #10x3" screws into the rim and the vertical blocking.
- After decking is applied, mount the manufactured rail base to the top of blocking and into rim and blocking using (4) LedgerLOKs. Pre-drill a 3/16" pilot hole prior to installation.



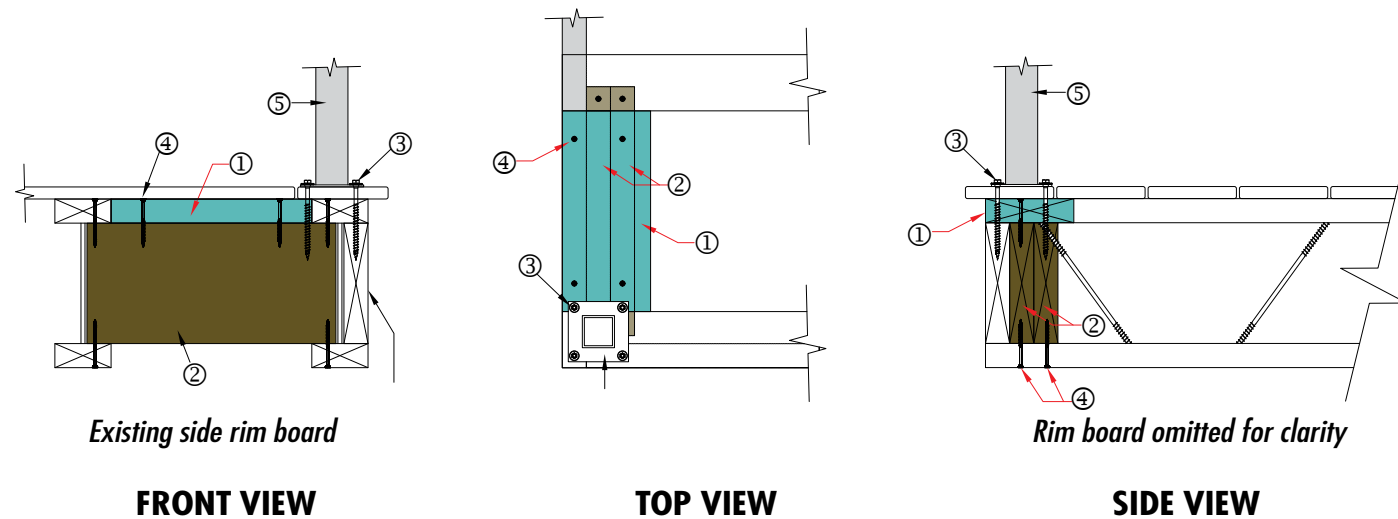
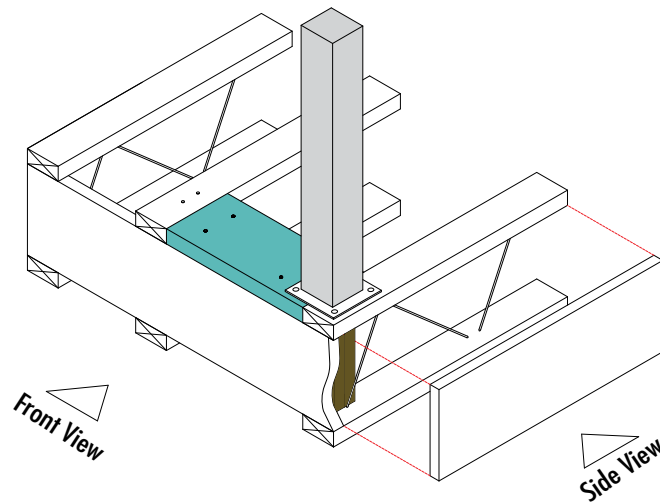
Top Mounted 3³/₄" Base at Corner w/Single End Joist

MATERIAL LIST



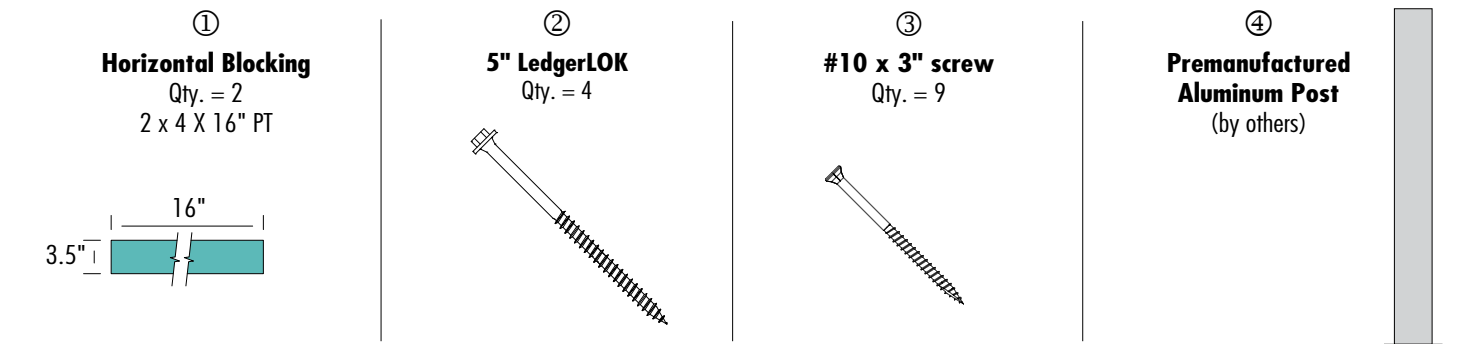
INSTALLATION INSTRUCTIONS

- Insert 15.75" long 2x8 vertical block 1-1/2" behind the front rim. Attach to top and bottom chords of the joists at all 4 corners using #10x3" screws.
- Install 12" long 2x6 horizontal filler block between top chords of the joists and attach using (4) #10x3" screws into the rim and the vertical blocking.
- After decking is applied, mount the manufactured rail base to the top of blocking and into rim and blocking using (4) LedgerLOKs. Pre-drill a 3/16" pilot hole prior to installation.



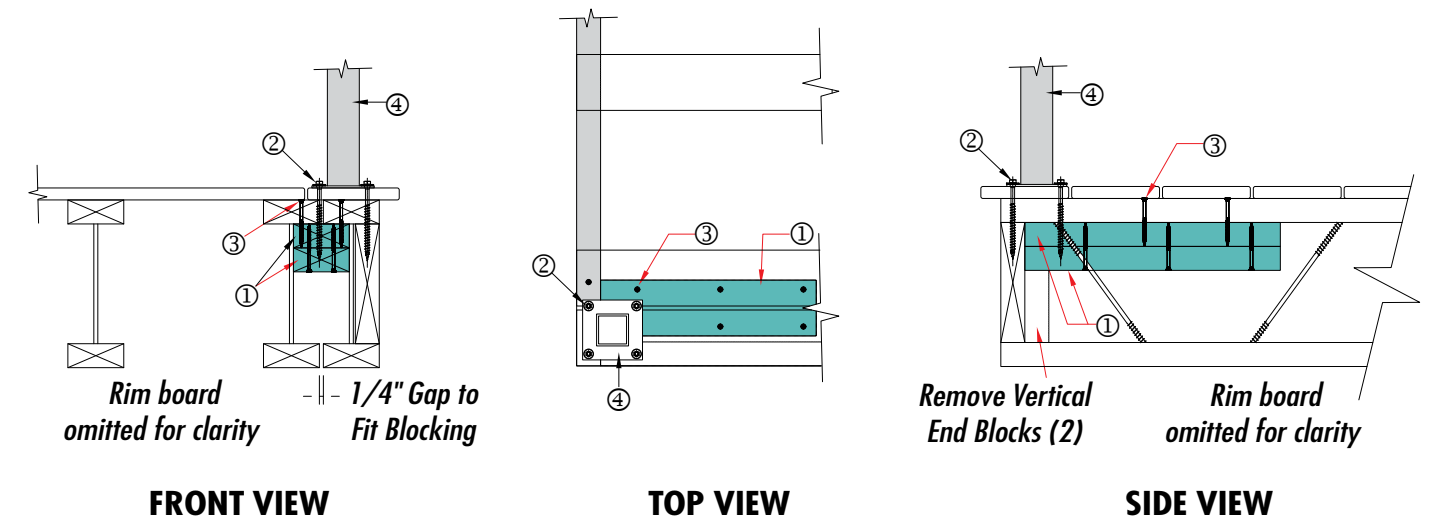
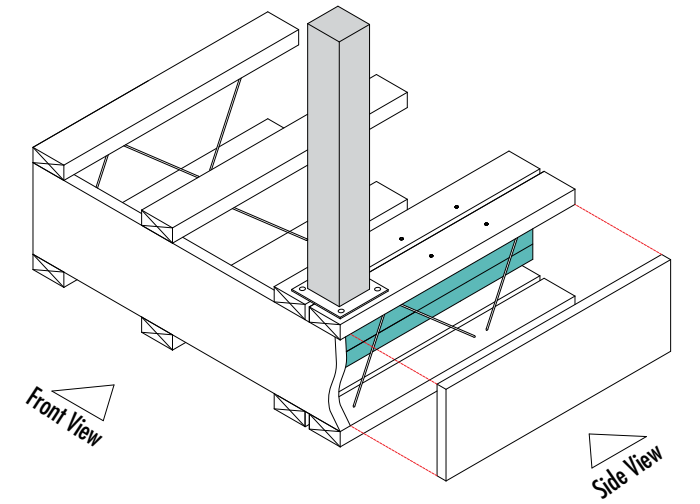
Top Mounted 3³/₄" Base at Corner w/Double End Joist

MATERIAL LIST



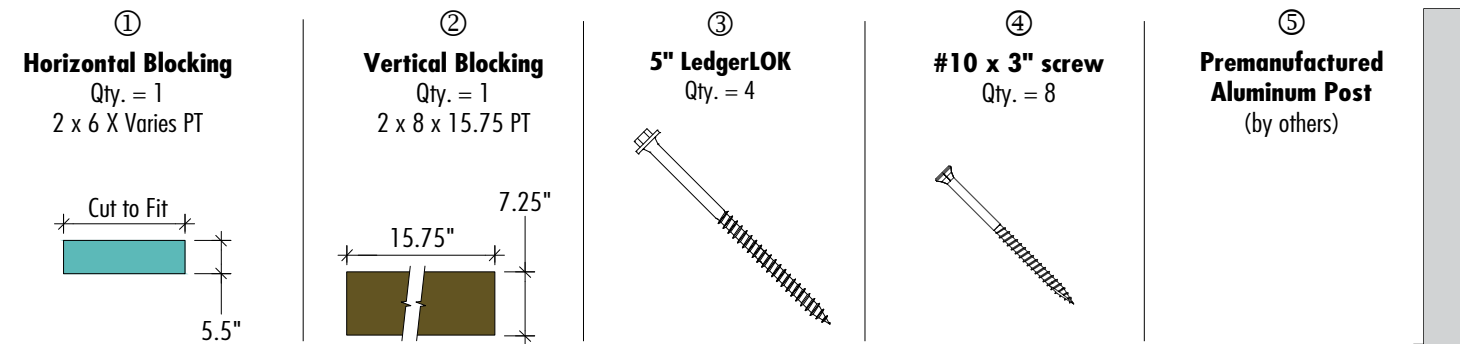
INSTALLATION INSTRUCTIONS

- Insert (2) 16" long 2x4 horizontal blocks to the underside of the top chords of the two ICON joists. Attach the first layer to top chords using (6) #10x3" screws and second layer to this block using (3) #10x3" screws.
NOTE: First two joists should be spaced 1/4" apart to allow for blocking to be inserted.
- After decking is applied, mount the manufactured rail base to the top of the joists and into the rim and blocking using (4) LedgerLOKs. Pre-drill a 3/16" pilot hole prior to installation.



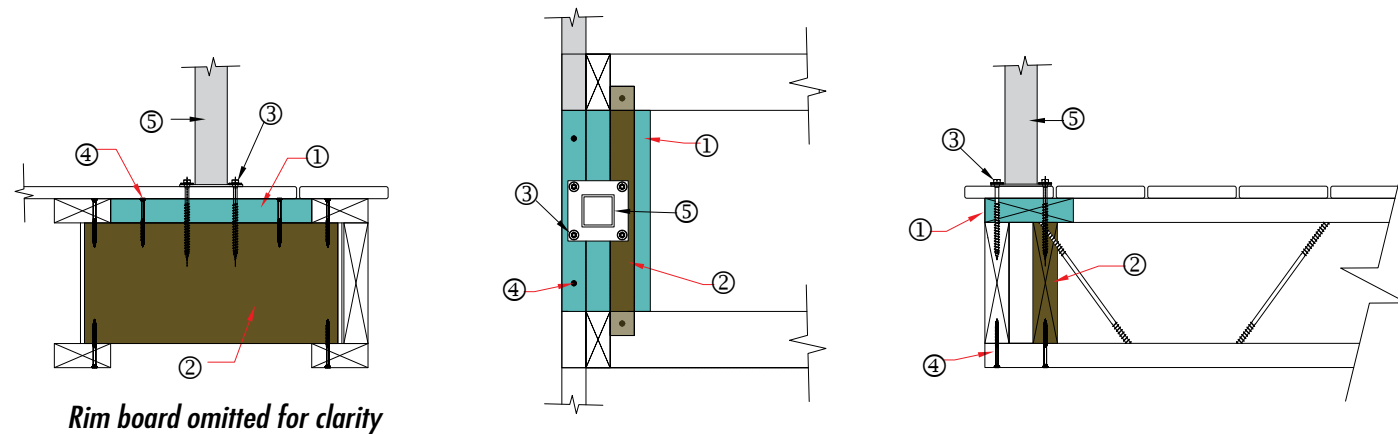
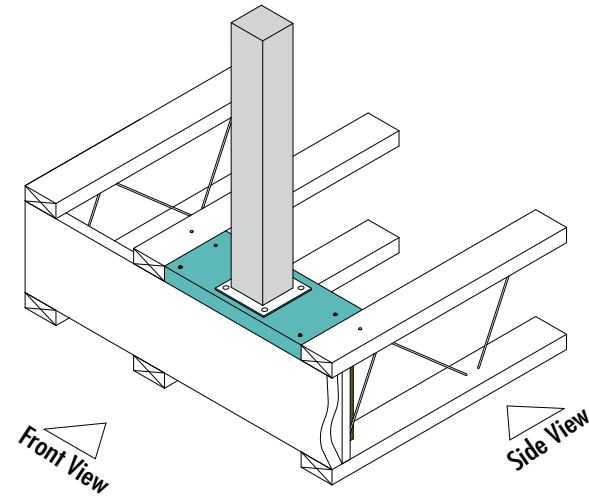
Top Mounted 3³/₄" Base at Side Rim w/Single End Joist

MATERIAL LIST



INSTALLATION INSTRUCTIONS

- Insert (2) 15.75" long 2x8 horizontal blocks, spaced 1-1/4" apart, between the top and bottom chords of the first two joists. Attach to top and bottom chords of the joists at all 4 corners using #10x3" screws.
- Install 12" long 2x6 horizontal filler block between top chords of the joists and on top of the vertical blocks. Attach using (4) #10x3" screws into the vertical blocking.
- After decking is applied, mount the manufactured rail base through the joist and horizontal block into the vertical blocking using (4) LedgerLOKs. Predrill a 3/16" pilot hole prior to installation.



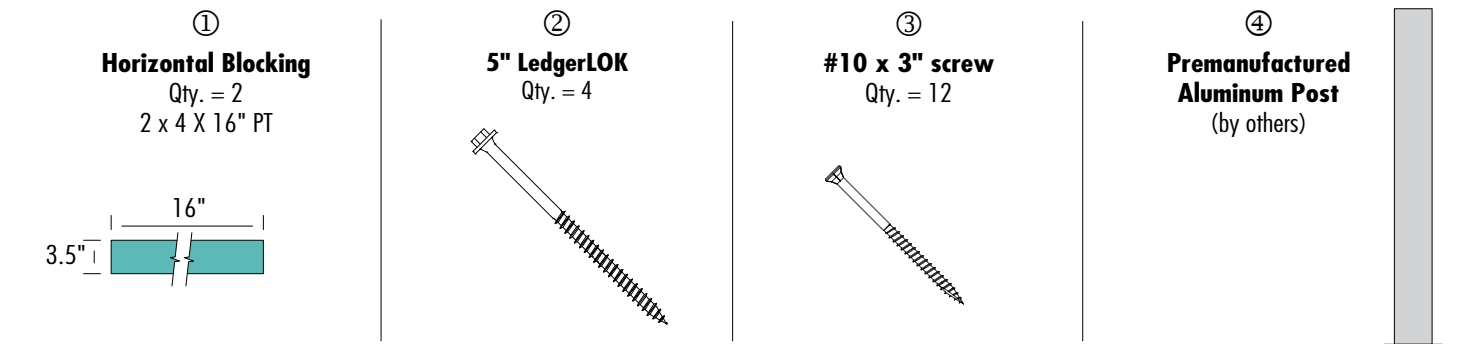
FRONT VIEW

TOP VIEW

SIDE VIEW

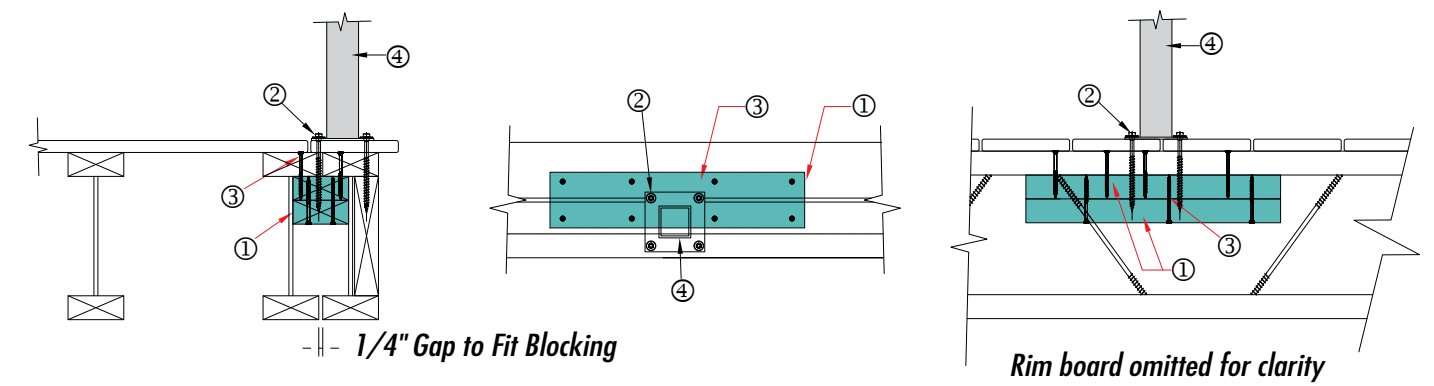
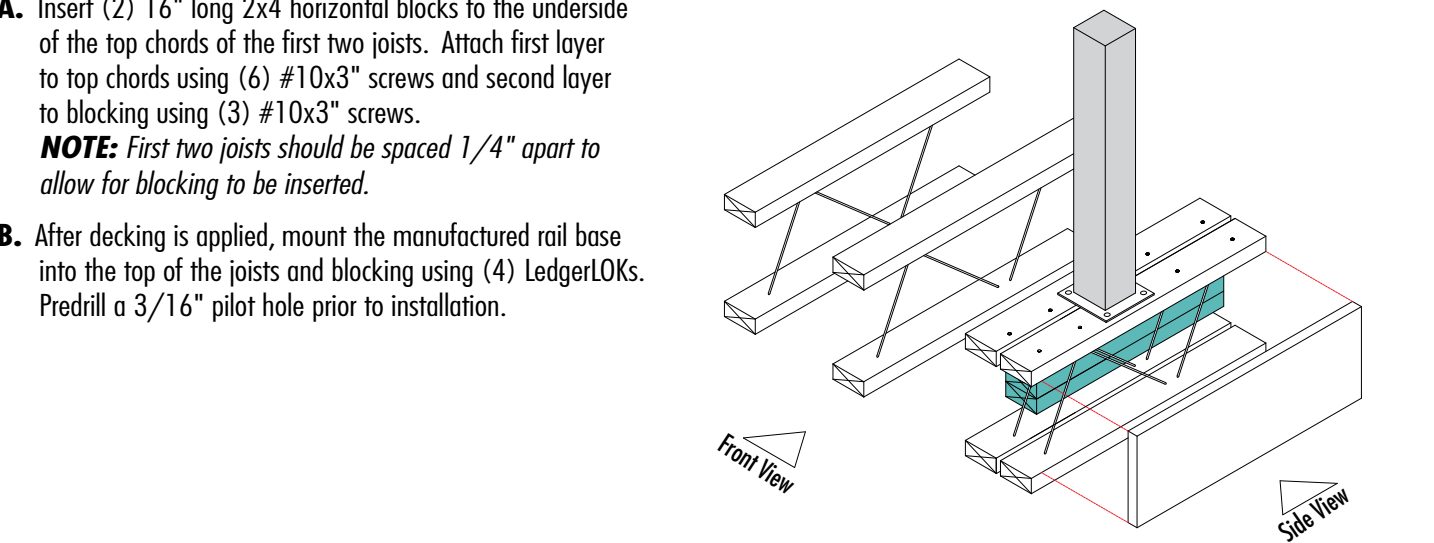
Top Mounted 3³/₄" Base at Side Rim w/ Double End Joist

MATERIAL LIST



INSTALLATION INSTRUCTIONS

- Insert (2) 16" long 2x4 horizontal blocks to the underside of the top chords of the first two joists. Attach first layer to top chords using (6) #10x3" screws and second layer to blocking using (3) #10x3" screws.
- After decking is applied, mount the manufactured rail base into the top of the joists and blocking using (4) LedgerLOKs. Predrill a 3/16" pilot hole prior to installation.



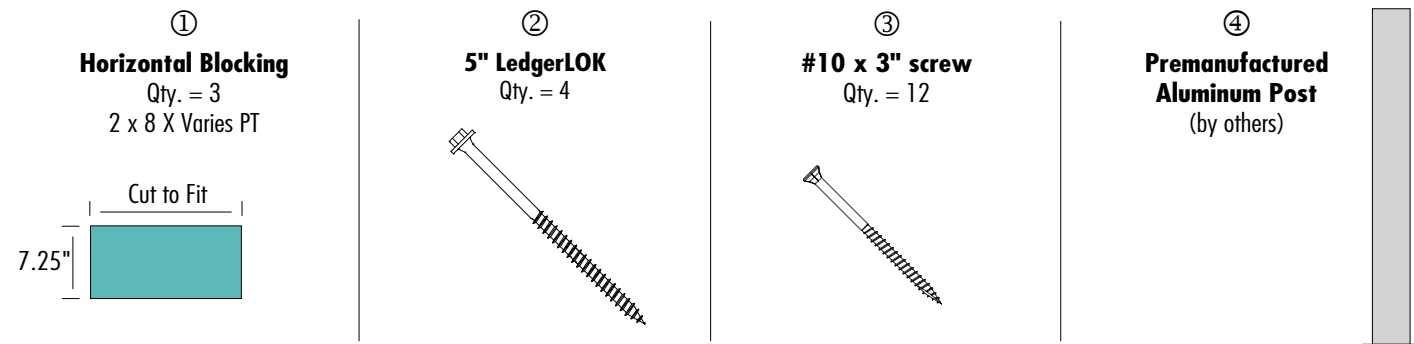
FRONT VIEW

TOP VIEW

SIDE VIEW

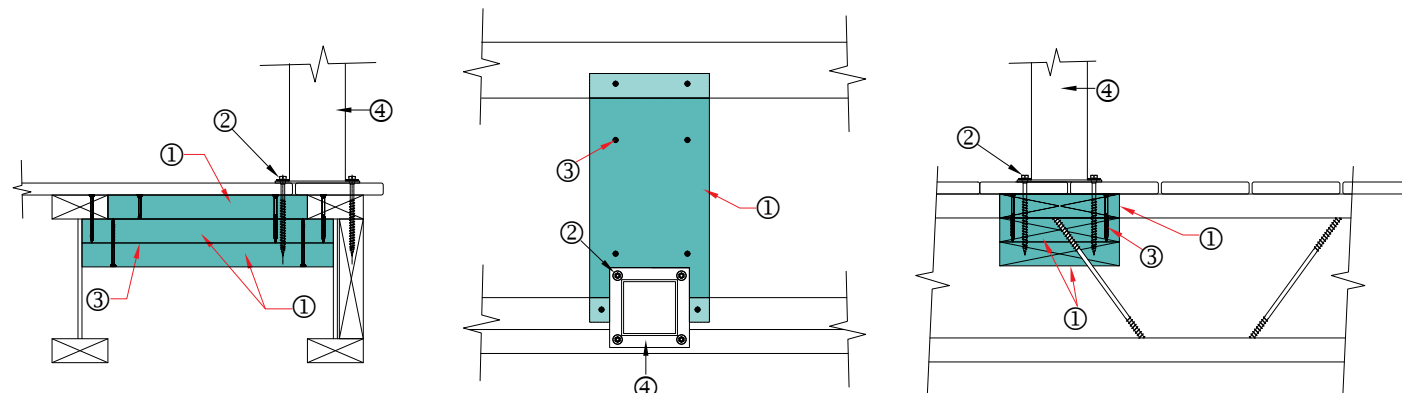
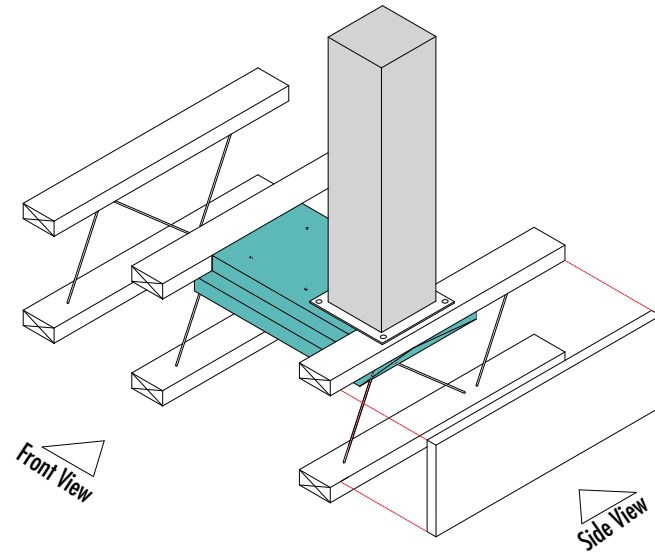
Top Mounted 5" Top Mounted Post-Single End Joist

MATERIAL LIST



INSTALLATION INSTRUCTIONS

- Insert 15.75" long 2x8 vertical block 2-1/2" behind the front rim. Attach to top and bottom chords of the joists at all 4 corners using #10x3" screws.
- Install 12" long 2x6 horizontal filler block between top chords of the joists and attach using (4) #10x3" screws into the rim and the vertical blocking.
- After decking is applied, mount the manufactured rail base to the top of blocking and into rim and vertical block using (4) LedgerLOKs. Pre-drill a 3/16" pilot hole prior to installation.



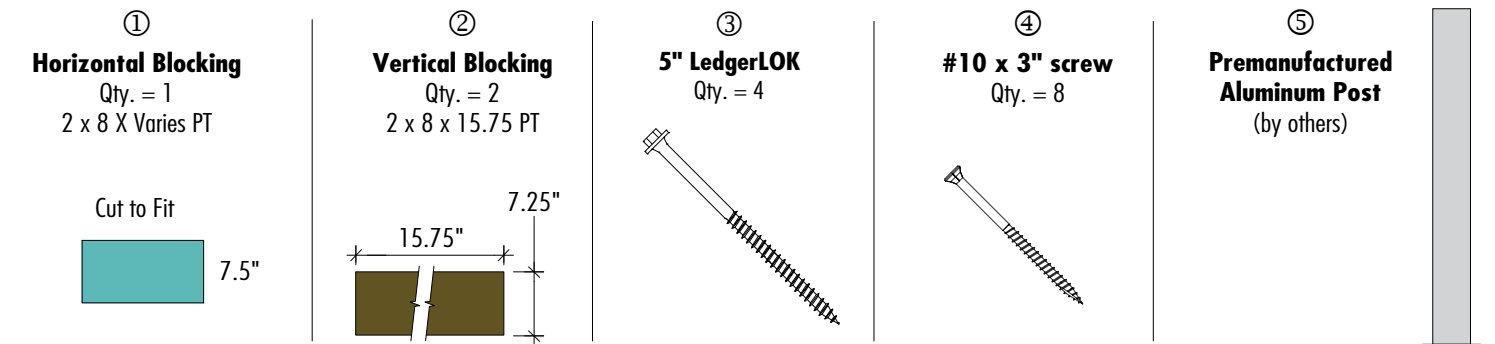
FRONT VIEW

TOP VIEW

SIDE VIEW

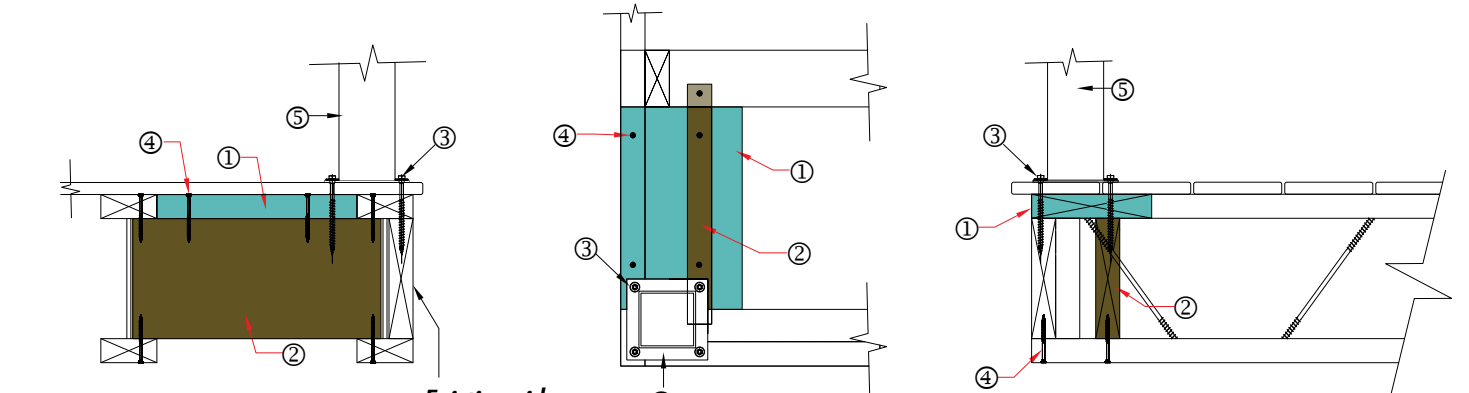
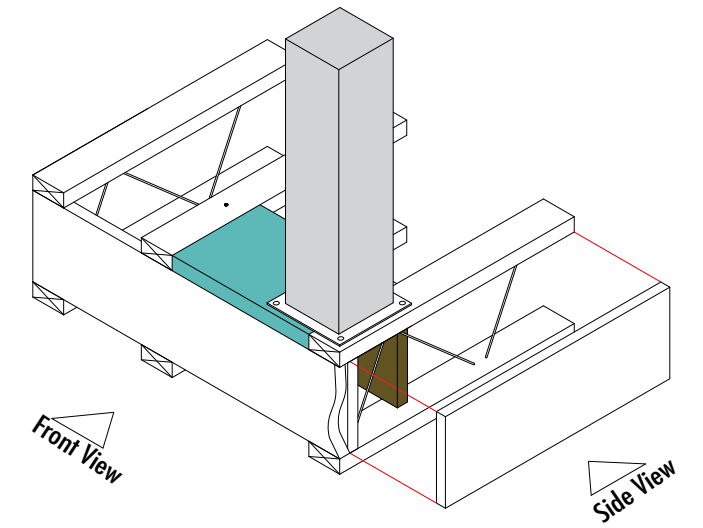
Top Mounted 5" Base at Corner w/ Single End Joist

MATERIAL LIST



INSTALLATION INSTRUCTIONS

- Insert 15.75" long 2x8 vertical block 2-1/2" behind the front rim. Attach to top and bottom chords of the ICON joists at all 4 corners using #10x3" screws.
- Install 12" long 2x6 horizontal filler block between top chords of the joists and attach using (4) #10x3" screws into the rim and the vertical blocking.
- After decking is applied, mount the manufactured rail base to the top of joist and blocking into rim and vertical block using (4) LedgerLOKs. Pre-drill a 3/16" pilot hole prior to installation.



Rim board omitted for clarity

Existing side rim board

FRONT VIEW

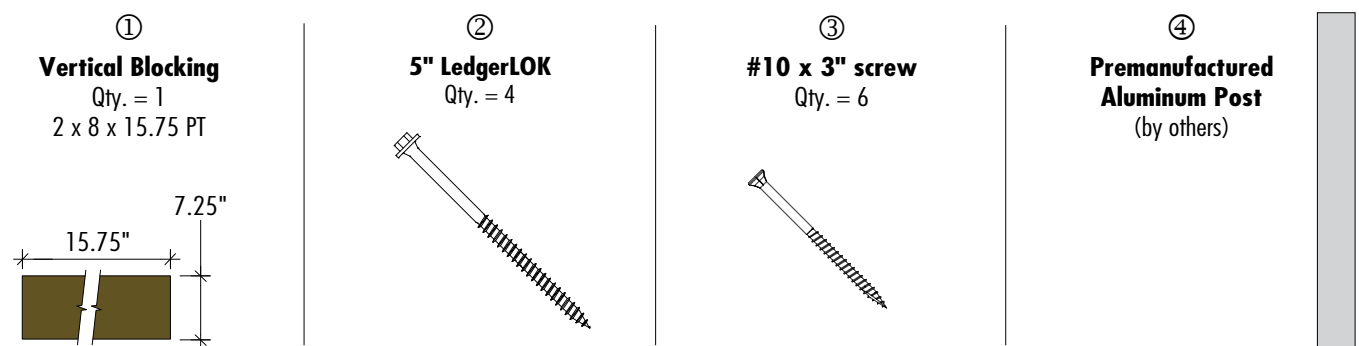
TOP VIEW

Rim board omitted for clarity

SIDE VIEW

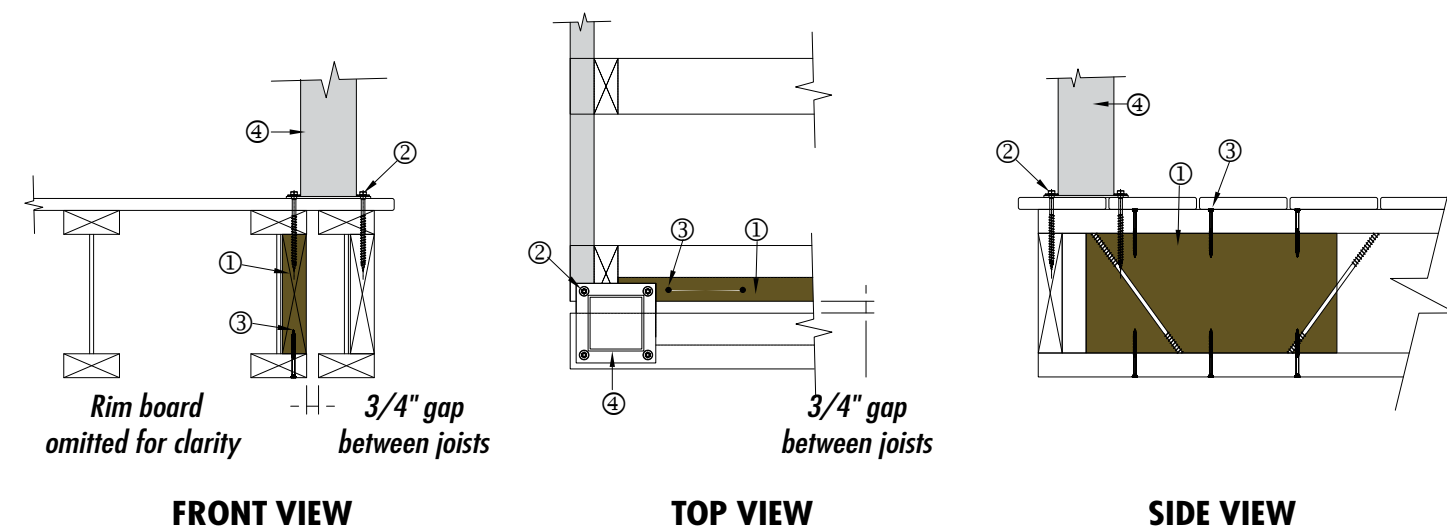
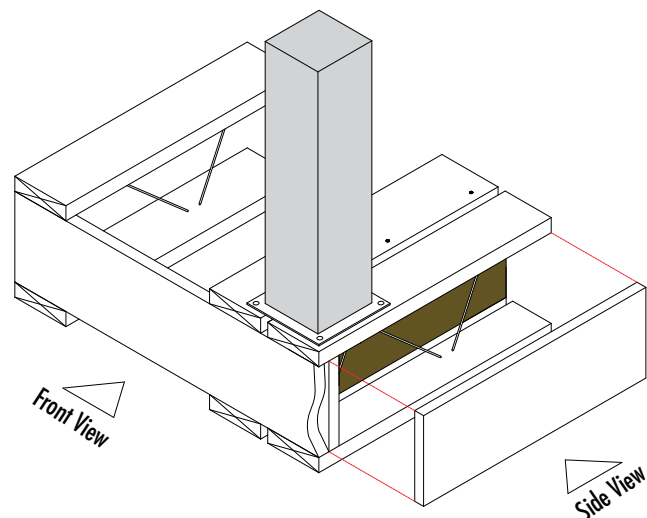
Top Mounted 5" Base at Corner w/Double End Joist

MATERIAL LIST



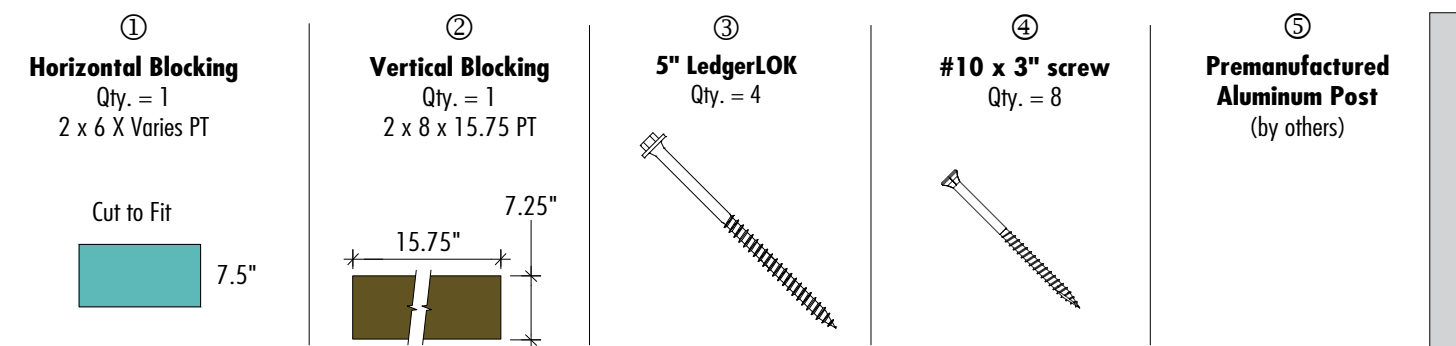
INSTALLATION INSTRUCTIONS

- Insert 12" long 2x8 vertical filler block between top and bottom chords of the second inner joist. Attach to top and bottom chords using (3) #10x3" screws from each side.
- After decking is applied, mount the manufactured rail base to the top joist, blocking and into rim and using (4) LedgerLOKs. Predrill a 3/16" pilot hole prior to installation.



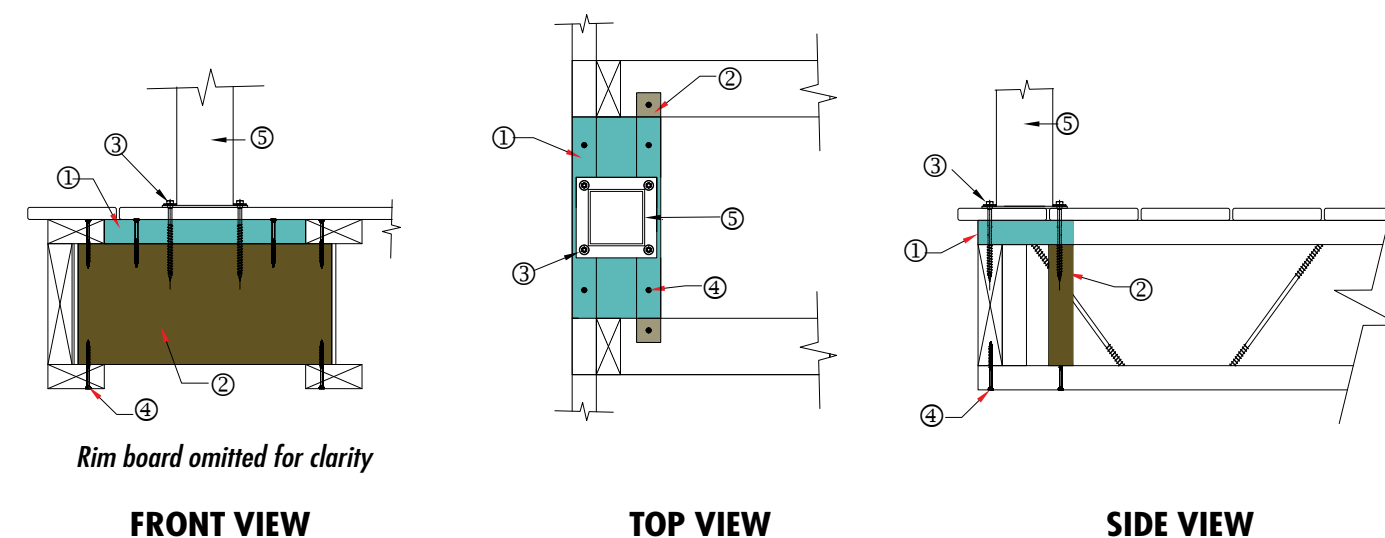
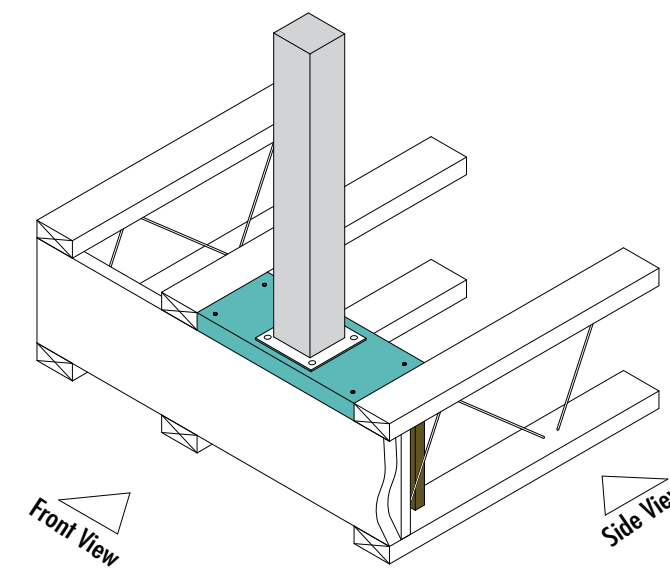
Top Mounted 5" Base at Side Rim w/Single End Joist

MATERIAL LIST



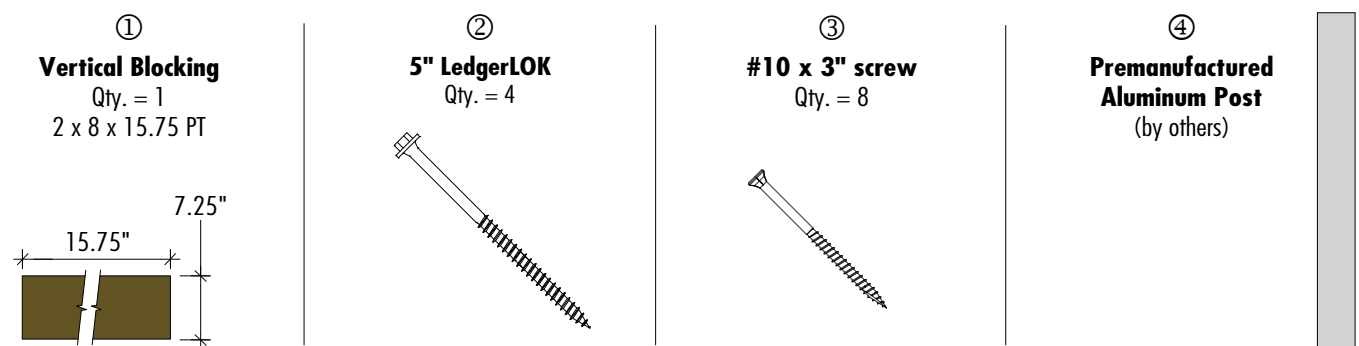
INSTALLATION INSTRUCTIONS

- Insert 15.75" long 2x8 horizontal block under the top chord of the first two trusses. Attach to underside of top chords of the joists at all 4 corners using #10x3" screws.
- Install a second 15.75" long 2x8 horizontal block beneath the first one, attaching using (4) #10x3" screws.
- Install 12" long 2x6 horizontal filler block between top chords of the joists and attach using (2) #10x3" screws into the rim and the vertical blocking.
- After decking is applied, mount the manufactured rail base to the top of blocking and into rim and using (4) LedgerLOKs. Predrill a 3/16" pilot hole prior to installation.



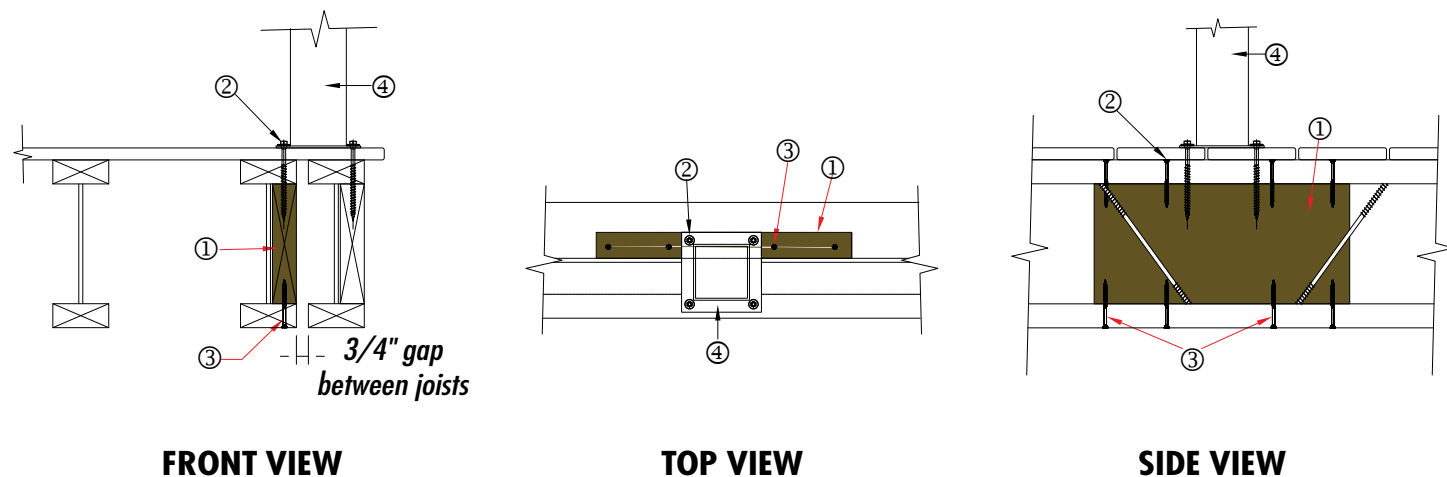
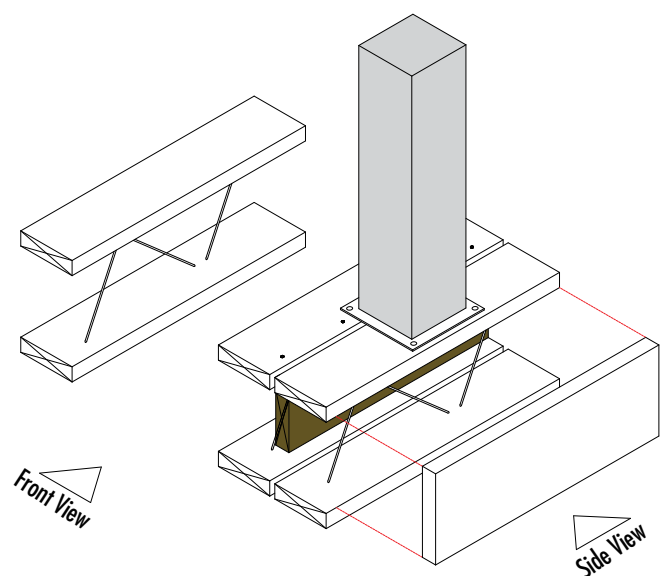
Top Mounted 5" Base at Side Rim w/ Double End Joist

MATERIAL LIST



INSTALLATION INSTRUCTIONS

- Mount a piece of 2x6 horizontal blocking joining undersides of the double outer joists and the next joist using (2) #9x3" screws at each end.
- Tack a second 2x6 to the underside of this block using (1) #9x3" screws per end.
- Install a filler 2x8 block between the top chords of the joists and centered on the post location. Attach to the top of the blocking below using (3) #9x3" screws.
- After decking is applied, mount the manufactured rail base to the top of blocking and rim using (4) LedgerLOKs. Pre-drill a 3/16" pilot hole prior to installation.



CAUTION



Do not step on or load ICON Joists prior to fastening

Lack of proper bracing during construction can result in serious accidents. Observe the following guidelines:

- All blocking, hangers, rim boards, and rim joists at the end supports of the ICON ScrewJoists must be completely installed and properly fastened with approved fasteners.
- Do not walk on the joists until properly braced.
- Do not walk on or load joists that are lying flat.

Contact FastenMaster at 800-518-3569 with any questions before starting project

ICON ScrewJoist Handling and Storage Instructions

- Joists should remain covered and strapped or banded until ready to install. For ongoing projects, re-strap and cover unused joists between days of installation.
- Store joists in an area that is relatively flat and free from standing moisture.
- Elevate joists so that they are not in direct contact with the ground and upright so that the webs are vertical.

