EVOLUTION

STEEL DECK FRAMING

FORTRESS™ FRAMING

Installation Instructions for Fortress Framing Evolution Steel Deck Framing System

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About Evolution Steel Deck Framing

Evolution Steel Framing is uniform and straight, so pieces are simple to square and won't twist, warp, rot, crack or burn like wood. The interlocking joist and ledger system lets you build sturdy, safe decks with less labor. Our powder-coating offers increased corrosion resistance and a more finished look. If you can build with wood, you can build with Evolution Steel Framing!

FAQ's

How do I start planning to build with Evolution Steel Deck Framing?
Evolution Steel Deck Framing contains all the parts you need to install a basic deck, including the fasteners. Similar to wood at a hardware store, the system also contains many beam and joist length choices. You design an Evolution Frame the exact same way you design a traditional wood framed deck. The span capabilities of the Evolution system are greater than wood, however, so you need to reference the Evolution span charts to determine your member spacing.

How do I cut Evolution Steel Framing?
Evolution Steel Framing cuts like wood, the only difference being that you'll need a saw capable of cutting steel as well as a steel cutting blade. Reference the Preparation and Planning section for more specific information.

Can the Evolution Steel Framing be used when angles and curves are involved?
Yes. There are parts to address many different instances when angles are involved. 45 degree brackets are available for joists, and there's a curved rim joist option for decks with a radius.

Are there different color options for Evolution Steel Deck Framing?
No. All the Evolution Framing parts come with a Black Sand powder coating finish. There is also a non-powder coated galvanized version (joist parts only) that is a lighter gauge material designed for ground-level applications.

What tools are needed to install Evolution Framing?
Reference the Tools needed in Tools section.

Can Evolution Framing be installed around salt water?
Evolution Steel Deck Framing cannot come into direct contact with salt water, nor be installed within 1 mile of a body of salt-water. Doing so will void the warranty.

Can Evolution Framing be installed around fresh water?
Evolution Steel Deck Framing products can not be installed under the surface of, within the flood zone of, or exposed to the constant spraying of any body of water. Doing so will void the warranty.

Are there any special Maintenance Requirements when using Evolution Framing?
When installed properly, Evolution Framing is very low maintenance. It's galvanized as well as powder coated which protects it extremely well from the outdoor elements. Reference the Maintenance Requirements of this manual.

If I run into problems or have questions is there somebody I can call?
Yes, if you purchased from a dealer you can always contact them. Or, you can contact Fortress Framing directly during normal business hours at 866-323-4766 or email sales@fortressframing.com.

Are there any special fasteners or brackets required?
Fortress Framing offers all the parts you'll need to build a basic deck with the Evolution Steel Framing System.

If the Evolution Framing System is scratched or scuffed, can I touch it up myself?
Yes, the Fortress Black Sand Touch-Up Paint can be used to spray cut ends and any scratches or scuffs on the framing. Reference the Maintenance Requirements section.

IMPORTANT INFORMATION

It is the responsibility of the installer to meet all code and safety requirements, and to obtain all required building permits. The framing, deck and railing installer should determine and implement appropriate installation techniques for each installation situation. Neither The Fortress Company nor its distributors shall not be held liable for improper or unsafe installations.

Personal Protection Equipment (PPE) must be worn anytime you're using power tools and working with Evolution Steel Deck Framing. Eye protection, hearing protection, closed-toe shoes, gloves, long sleeves, and pants must be worn to keep yourself safe.

As the steel framing parts are cut, all metal shavings and/or chips must be removed from inside the Evolution Framing parts. At the end of a work period, all steel shavings and/or chips must be cleaned off the jobsite. Not doing so could result in the staining of surrounding surfaces.

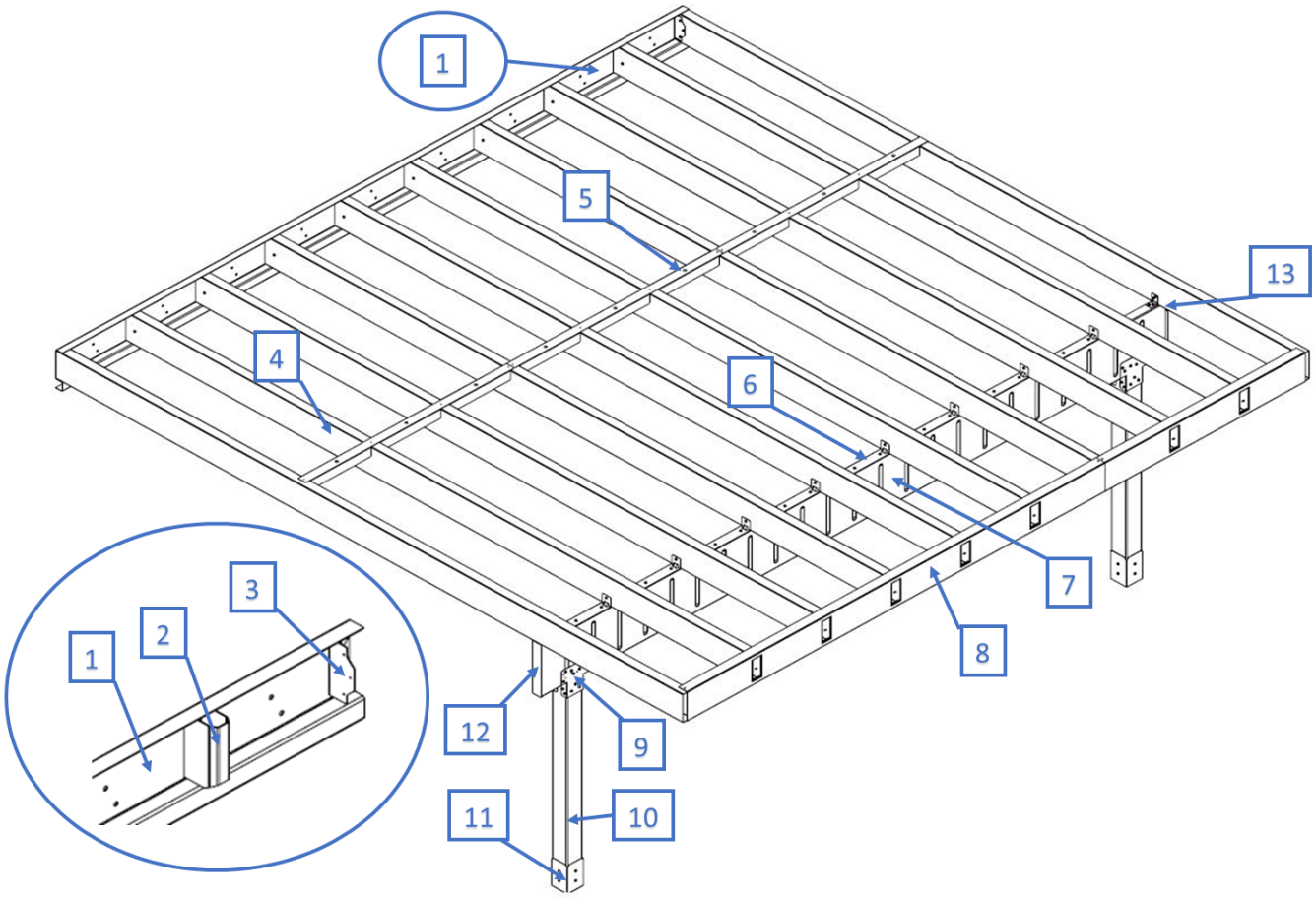
As the steel framing parts are cut, DO NOT allow metal shavings and/or chips to get dropped or blown into a pool, hot tub, or any other body of water. Staining could occur if this were to happen.

Fortress Framing does not cover all possible installation scenarios within these instructions. In some cases, it may be necessary for you to consult a professional engineer, building code official, or local dealer. In addition, it may become necessary to use brackets other than Fortress' when more complex installations take place.

Fortress Framing includes span charts within these instructions. Never exceed the limits outlined within the span charts. Doing so may void the manufacturer's warranty. If there are questions, consult a professional engineer, building code official, your local dealer, or Fortress Faming.

Fortress Framing includes a fastening schedule within these instructions. Reference the Table of Contents. In most cases, Evolution parts are manufactured with pre-drilled holes in the brackets. ALL of these holes must be filled with the Evolution #10 3/4" Black Self-Tapping Screw (NOT including the Ledger, reference the S-Ledger section for fastening instructions).

Deck Overview / Definitions



1) Evolution S-Ledger
2) Evolution Ledger Bracket
3) Evolution F50 Bracket
4) Evolution 2X6 Joist
5) Evolution 12 OC or 16OC Strap
6) Evolution 12 OC or 16 OC Blocking
7) Evolution 2x11 Beam
8) Evolution U-Rim Joist
9) Evolution Beam/Post Bracket
10) Evolution Post
11) Evolution Post/Pier Bracket
12) Evolution Beam Cap
13) F10 Bracket

Deck Overview / Definitions

1) Evolution S-Ledger: The part of a deck that attaches to the structure. Evolution's S-Ledger is an engineered interlocking design with the Ledger Bracket that eliminates the need for excessive fasteners and drastically speeds up installation. The "S" shape provides a sturdy, safe deck connection that will provide peace of mind for decades. The S-Ledger is available with pre-punched, standard spacing options that drastically simplify deck construction.

2) Evolution Ledger Bracket: Used to attach the Joist to the S-Ledger. Can also be used to attach the joist to the beam in flush beam installations.

3) Evolution F50 Bracket: Used with S-ledger, joist, and blocking as well as many other applications.

4) Evolution 2X6 Joist: Evolution Joists are familiar shapes that install quickly and easily with minimal fasteners. The steel joist will hold their shape providing a perfectly flat deck surface that will not sag or warp over the life of your deck.

5) Evolution 12 O.C. or 16 O.C. Strap: Manufactured to match the same spacing as the S-ledger for easy mid-span blocking applications. Straps must be installed when joist spans are greater than 8'.

6) Evolution 12 O.C. or 16 O.C. Blocking: Manufactured to match the same spacing as the S-ledger for the easy blocking of joist on a dropped beam.

7) Evolution 2X11 Beam: Evolution's Beam has been engineered to achieve longer spans between supports than wood eliminating excessive post and obstructed views.

8) Evolution U-Rim Joist: Evolution's U-Rim Joist incorporates the same pre-punched and non-punched system as the S-Ledger for consistent, quicker installation without the hassle. The U-Rim Joist attaches to the Joist with minimal fasteners and provides a perfectly flat surface to attach trim or fascia.

9) Evolution Beam/Post Brackets: These brackets are designed to attach the beam to the post. There are two options; a single beam/post bracket and a double beam/post bracket.

10) Evolution 3.5X3.5 Post: Evolution's steel post and brackets provide the perfect solution to support your deck. The black powder coated post look great on their own or can be dressed up with the trim of your choice.

11) Evolution Post/Pier Bracket: Secures post to concrete landing or pier.

12) Evolution Beam Cap: Covers open beams to provides clean, finished look and deter pest and animals.

13) F10 Bracket: Used to secure joist to a drop beam when non-standard spacing is required and as a cap on the bottom of the S-ledger.

Deck Overview / Definitions

Joist Cap (Not Pictured): Covers open joist to provides clean, finished look and deter pest and animals.

Rim Joist Brackets (Not Pictured): Inserts into joist at the end of the deck for attaching the Curved Rim Joist. Designed to be bendable as needed to accommodate nearly any curved radius.

45 Degree Bracket (Not pictured): Used with the Blank S-ledger when joist extend at an angle to keep standard spacing.

Single Hanger Bracket (Not pictured): Used to secure joist to flush beams.

Double Hanger Bracket (Not Pictured): Used to secure double joist or create a double (2"x6") carry beam.

Preparation & Planning

WARNING!

Personal Protection Equipment (PPE) must be worn anytime you're using power tools and working with Evolution Steel Deck Framing. At a minimum, eye protection, hearing protection, gloves, closed-toe shoes, long sleeves, and pants must be worn for safety.

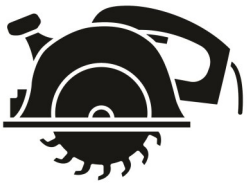
Personal Protective Equipment






Recommended Tools

Metal-Cutting Saw - Circular Saw (7 1/4 or larger)



Drill or Impact Driver

Saw Horses

Tape Measure

Metal-Cutting Blade

Pencil or Black Permanent

Level

Speed Square

Preparation & Planning

Recommended Tools

5/16 MAGNETIC
Nut Driver

Mallet or Hammer

Quick Clamps

Fortress Black Sand
Touch-Up Paint

Closed-Toe Shoes

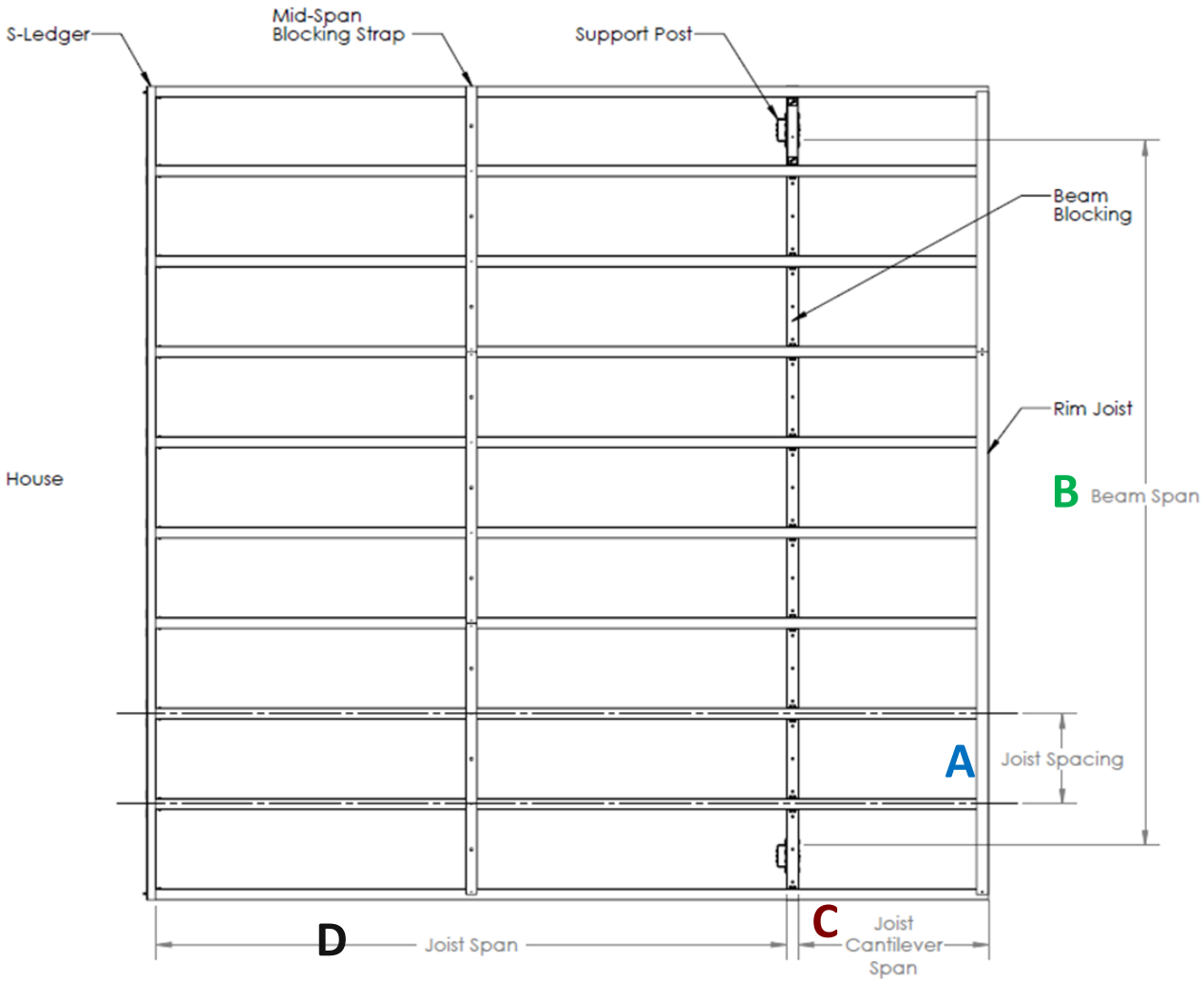
WARNING!

Evolution Steel Framing is an engineered framing system and each part is designed with load limitations. The Span Charts are necessary for you to know and understand so you can ensure you framing system is structurally sound. Designing a deck frame outside the limits of the Span Charts may void the manufacturer's warranty.

A very important step in planning your deck job is understanding the span capabilities of the Evolution Steel Framing system.

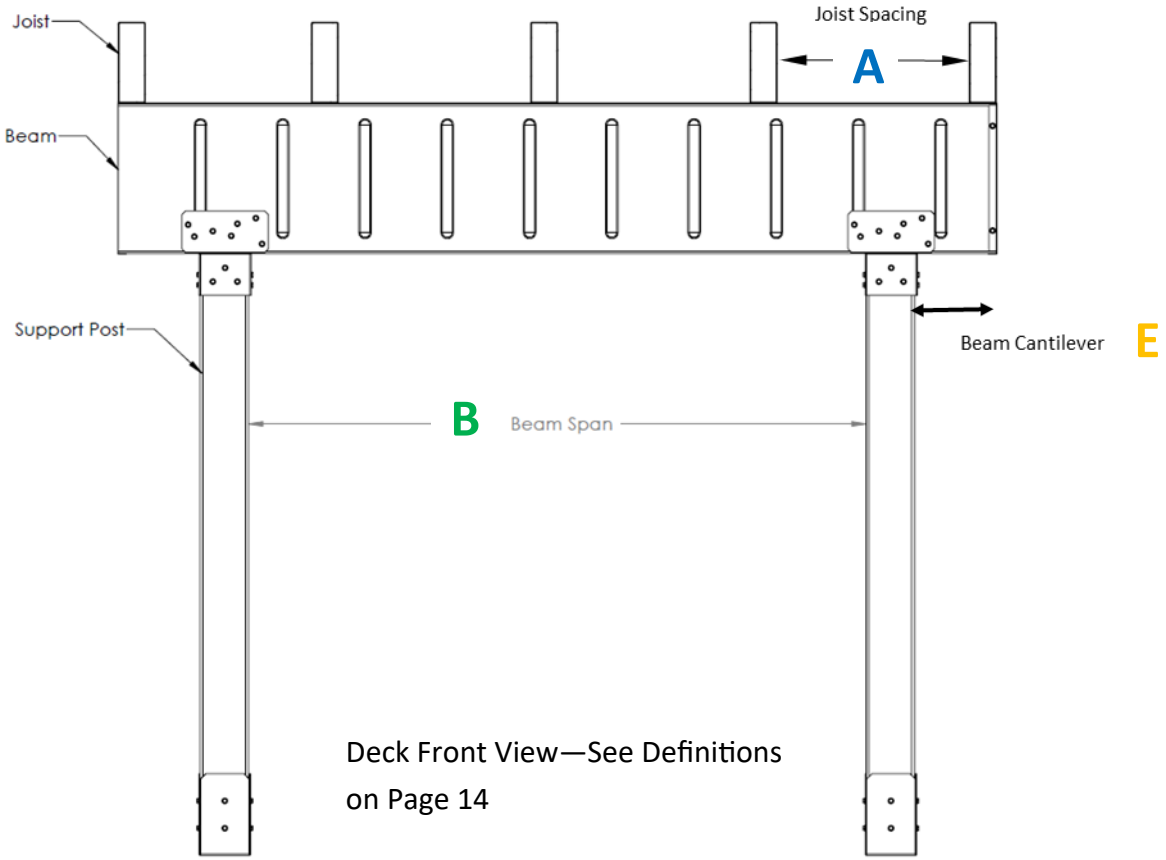
This section Includes an example of how to calculate spans. To understand how to use the span charts and plan a deck, reference the “Sample Deck” portion of this section.

Preparation & Planning

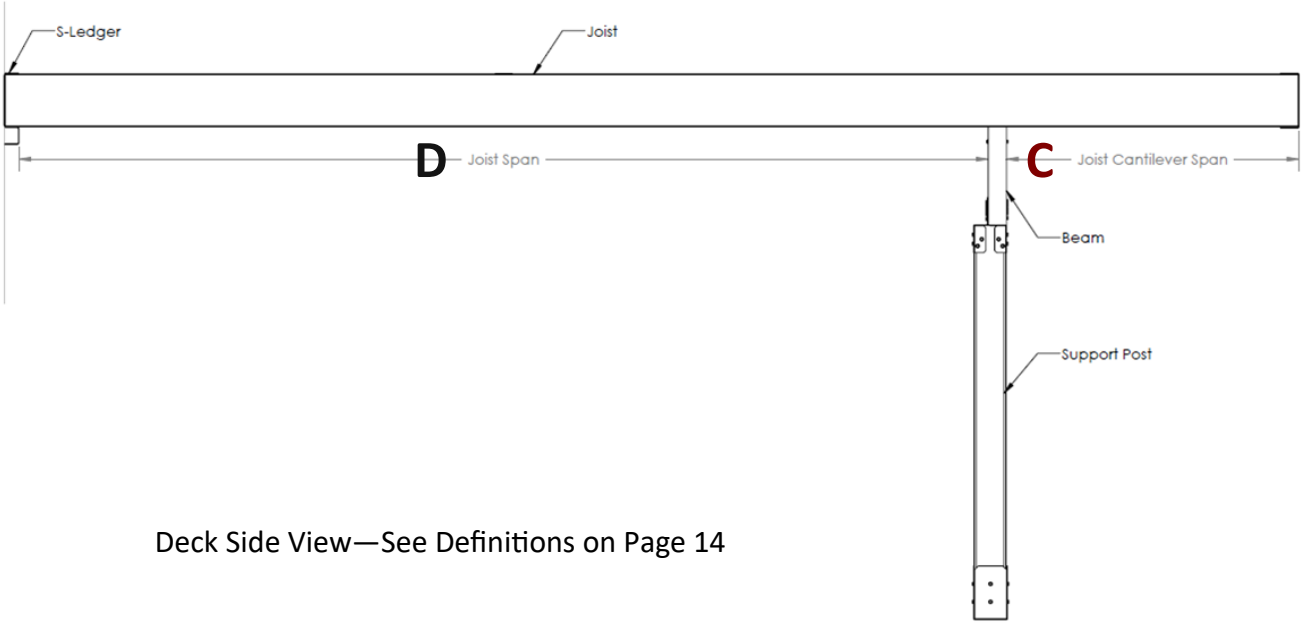


Deck Top View—See Definitions on Page 14

Preparation & Planning

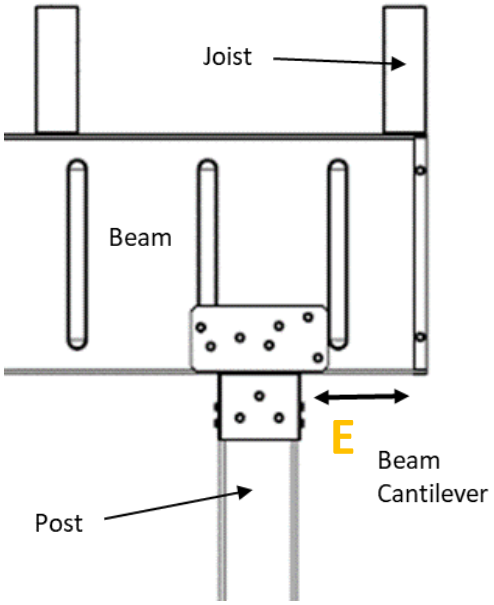


Deck Front View—See Definitions on Page 14



Deck Side View—See Definitions on Page 14

Preparation & Planning



Special Note: The maximum beam cantilever allowed with Evolution Steel Framing is 24”

A Joist Spacing: On-Center (O.C.) spacing typically 12" O.C. or 16" O.C. from center of one joist to center of the next joist. This spacing is determined based on desired overall joist spans. Reference the Joist Span charts contained within this instruction manual.

B Beam Span: Distance between support posts. This span varies based on the overall joist span as well as the joist cantilever. Reference the Beam Span Charts contained within this instruction manual.

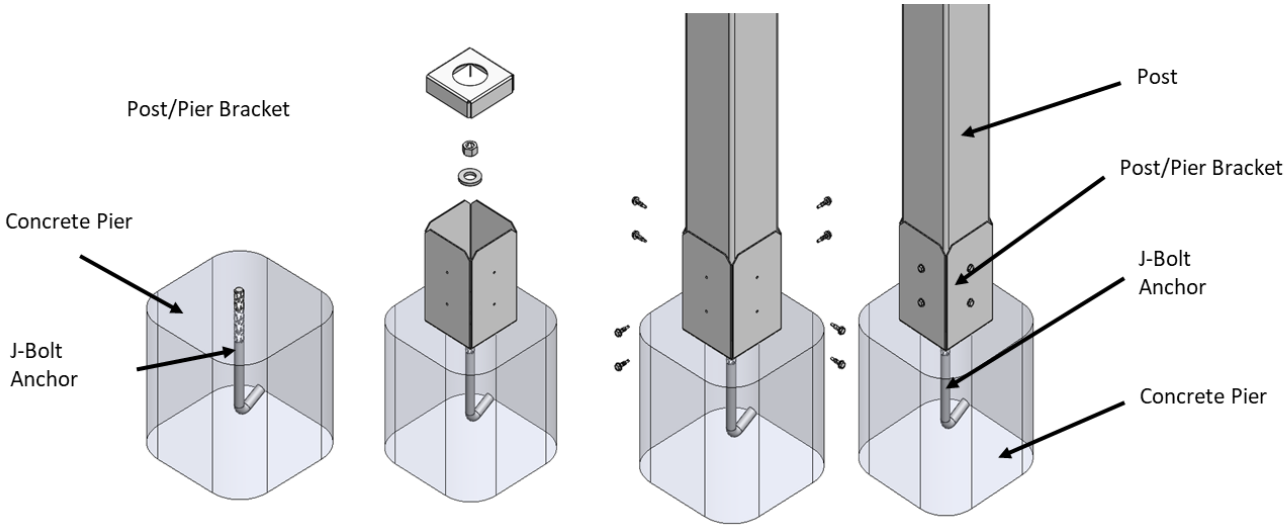
C Joist Cantilever Span: Distance the Joist spans overhang out past the beam. Note that this distance impacts beam and joist spans and is referenced in the Span Charts.

D Joist Span: Distance the joist spans from the S-Ledger to the beam, or from beam to beam.

E Beam Cantilever: Distance the beam overhangs out past the support post. The maximum beam cantilever allowed with Evolution Steel Framing is 24".

Post Installation

NOTE: Below is an example of a typical post installation. Post installation requirements will vary in different geographical regions. Consult with your local building code officials for requirements.

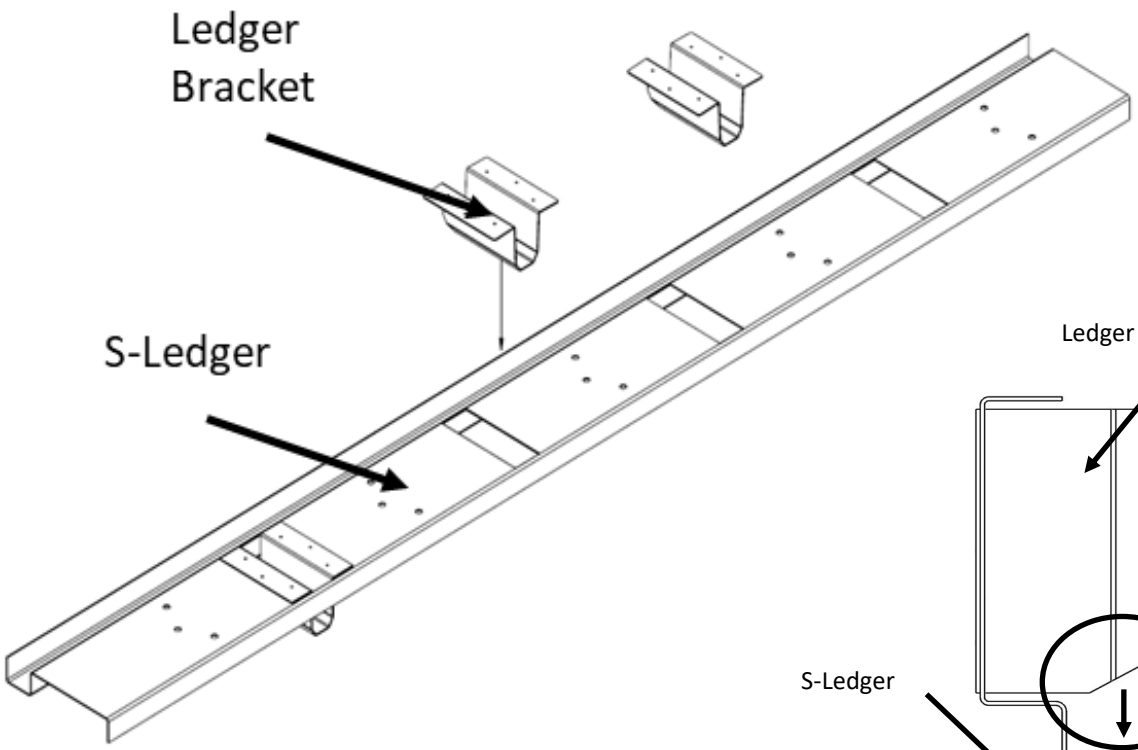


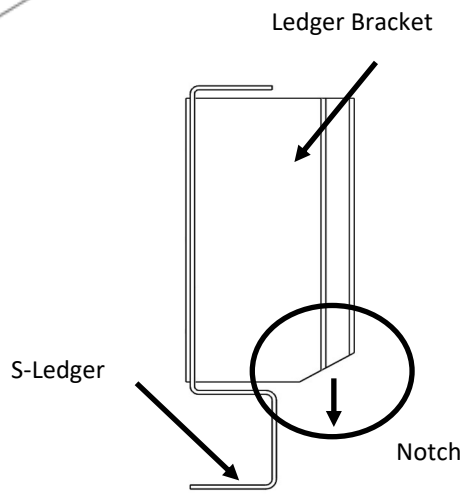
Example of a typical Post/Pier installation

WARNING!

DO NOT bury post underground directly into footing or pier. Evolution Steel posts must be installed on top of ground and not be exposed to constant moisture.

S-Ledger Installation





Note: Ledger Bracket has a notch that makes joist installation easier. This notch should point down towards the ground

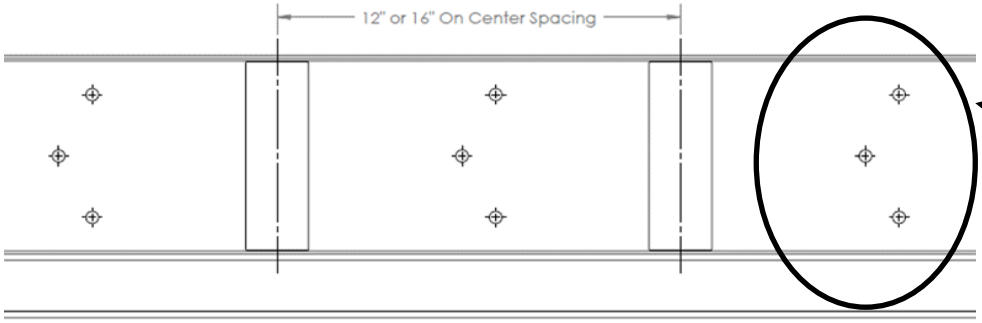
Insert a Ledger Bracket through the back side of the S-Ledger at every 12" O.C. or 16" O.C. interval depending on your joist spacing requirements.

Place all the Ledger Brackets in the pre-punched slots in the S-Ledger.

No fasteners are required to hold the Ledger Brackets into the S-Ledger. Once the S-Ledger is attached to the structure, the Ledger Brackets will be held solidly in place.

INSTALLATION ALERT: ALL ledger brackets MUST be inserted into the S-Ledger prior to attaching it to the structure.

S-Ledger Installation



All pre-drilled holes should be used when securing the S-Ledger to the structure.

The S-Ledger has (3) 3/8” pre-drilled hole pattern spaced evenly across the length of the S-Ledger. This is an engineered hole pattern designed for optimal performance when securing to the structure.

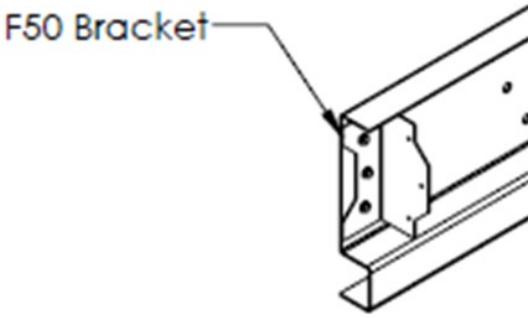
If local building code requires connectors larger than 3/8", the factory sized holes can be drilled out using a metal cutting drill bit.

WARNING!

Attachment to the structure will vary depending on the attachment material and geographical region. Consult your local building code official or structural engineer to determine the proper size and type of bolt/screw to use to attach the S-ledger to the structure.

WARNING!

Flashing/Water Management requirements will vary from region to region. Consult your local building code official or structural engineer for proper flashing/water management treatment.

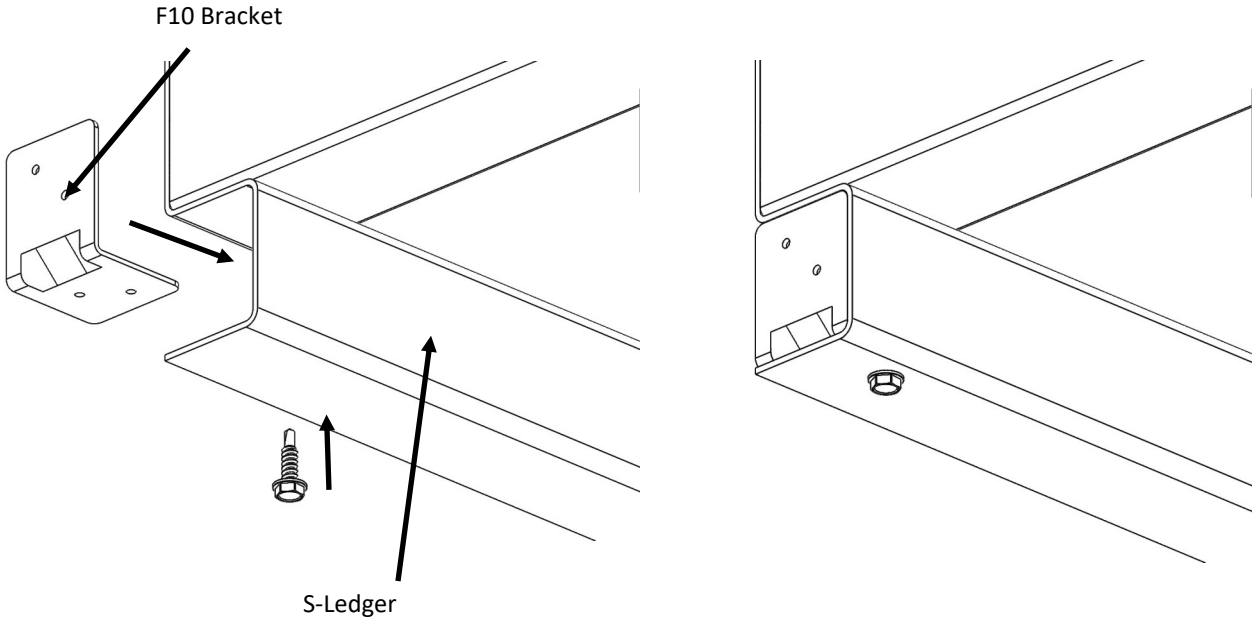


Once the Ledger Brackets are in place and the S-Ledger is attached to the structure, the F50 Brackets are used as the joist attachments on both ends of the S-Ledger.

Attach F-50 Bracket to the outside edges of the S-Ledger with Evolution self-drilling screws.

NOTE: The F50 Bracket is also used anytime there’s a joist attachment to the S-Ledger that requires non-standard spacing. This could occur if you’re adding joists for blocking or adding additional support.

S-Ledger Installation

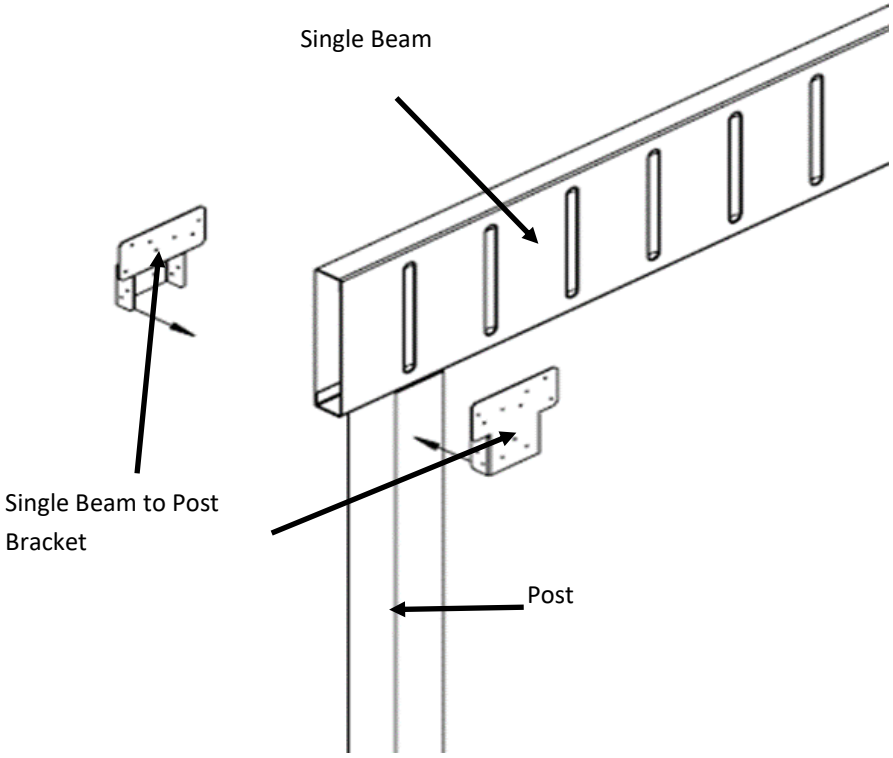


Anytime after the S-Ledger is attached to the structure, use an F10 bracket to cover both ends of the S-Ledger. Fasten with Evolution self-drilling screws.

This is necessary to prevent pests from nesting within the hollow section of the S-Ledger.

Beam to Post Connections

Single Beam to Post



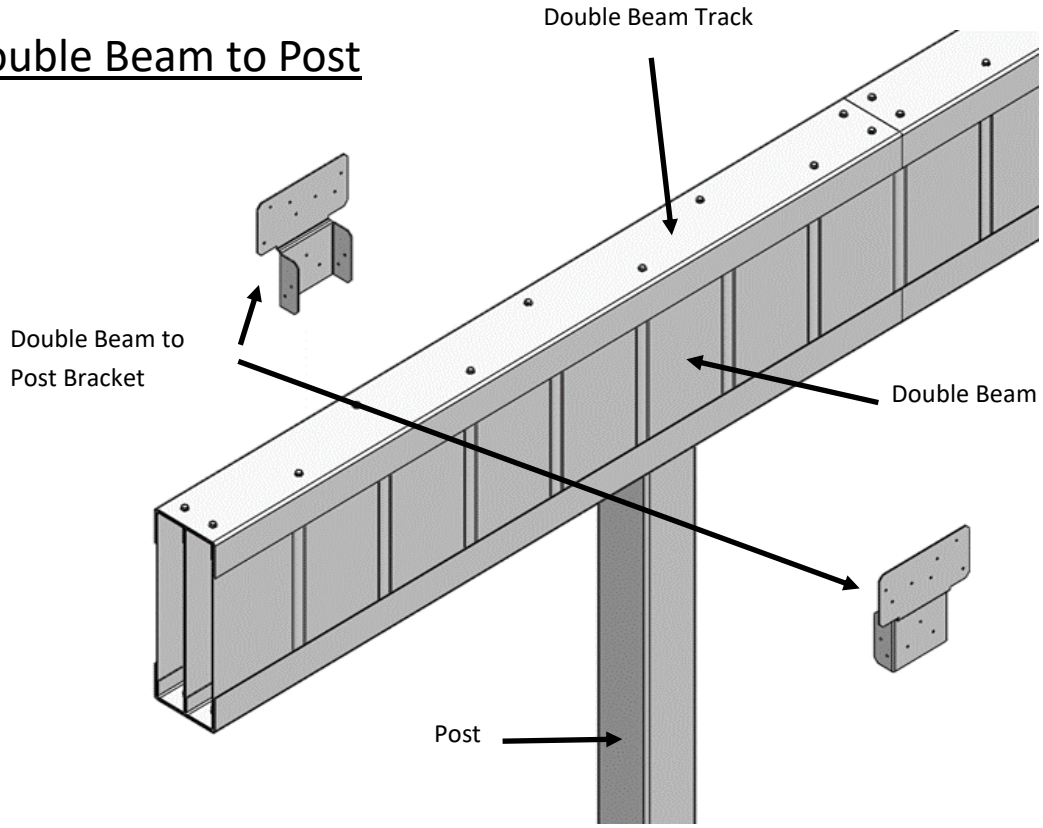
Once posts are set and the beam is cut to length and ready to install, position on top of posts.

It's very important during this step to make sure the beam is supported properly until it is fastened to the support posts.

Once beam is set, attach the Single Beam to Post Bracket using Evolution self-drilling screws.

Beam to Post Connections

Double Beam to Post



Couple two beams together using the Evolution Double Beam Track. Snap a double beam track on the top and the bottom of the double beam.

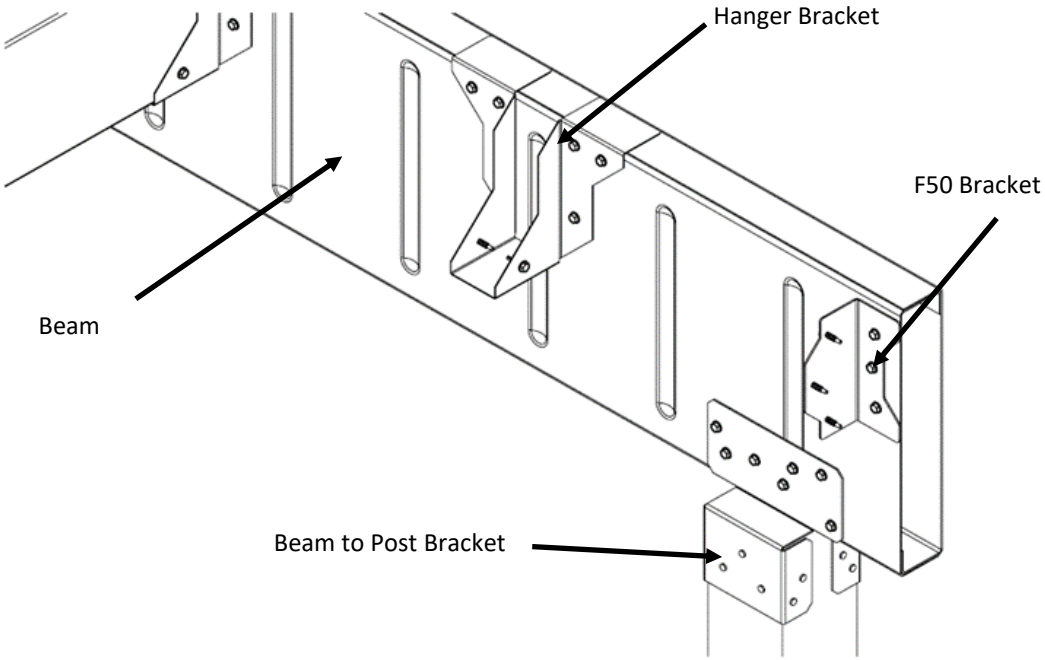
Fasten the double beam track to the double beam using Evolution self-drilling screws.

Position the Double Beam with Double Beam Track to the top of posts and secure with the Double Beam to Post Bracket. Attach with Evolution self-drilling screws.

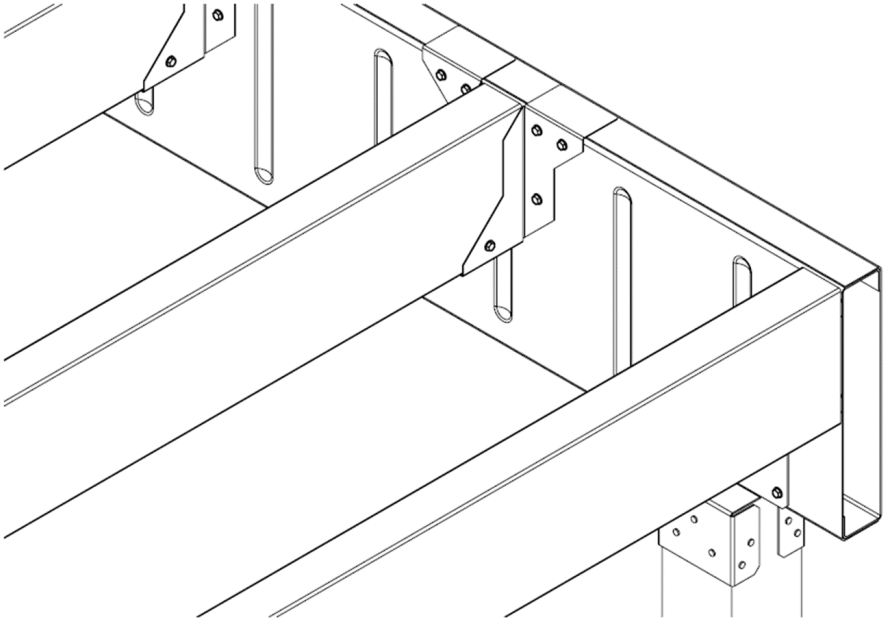
Note: The Double Beam Tracks are packaged in pairs and come in 4' sections. They must be installed continuously across the length of the double beam.

Example: For a 20' Double Beam, it would require 10 Double Beam Tracks (5 on top, 5 on bottom). Since they're packaged in pairs, you'd need to buy 5 each of the Double Beam Track.

Flush Beam



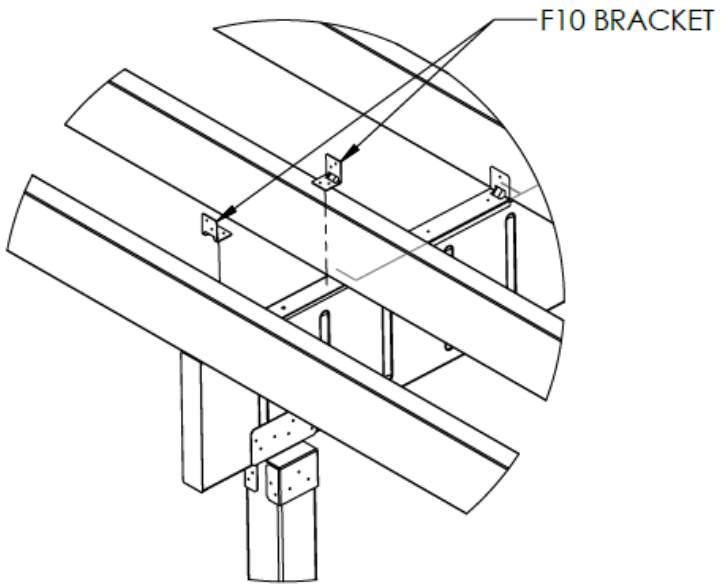
Position F50 Brackets and Hanger Brackets to the beam at their desired locations. Attached with Evolution self-drilling screws.



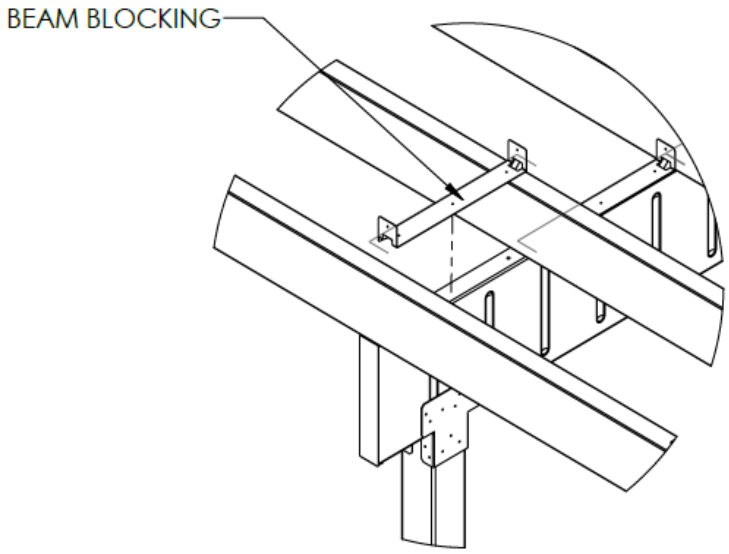
Flush Beam Installation with Joists attached.

Drop Beam & Blocking

Blocking is required between each joist throughout the entire length of a drop beam. The F10 bracket is used anywhere the joist spacing is non-standard. The 12" O.C. or 16" O.C. Blocking is required anywhere there is standard spacing. Attach with Evolution self-drilling screws.



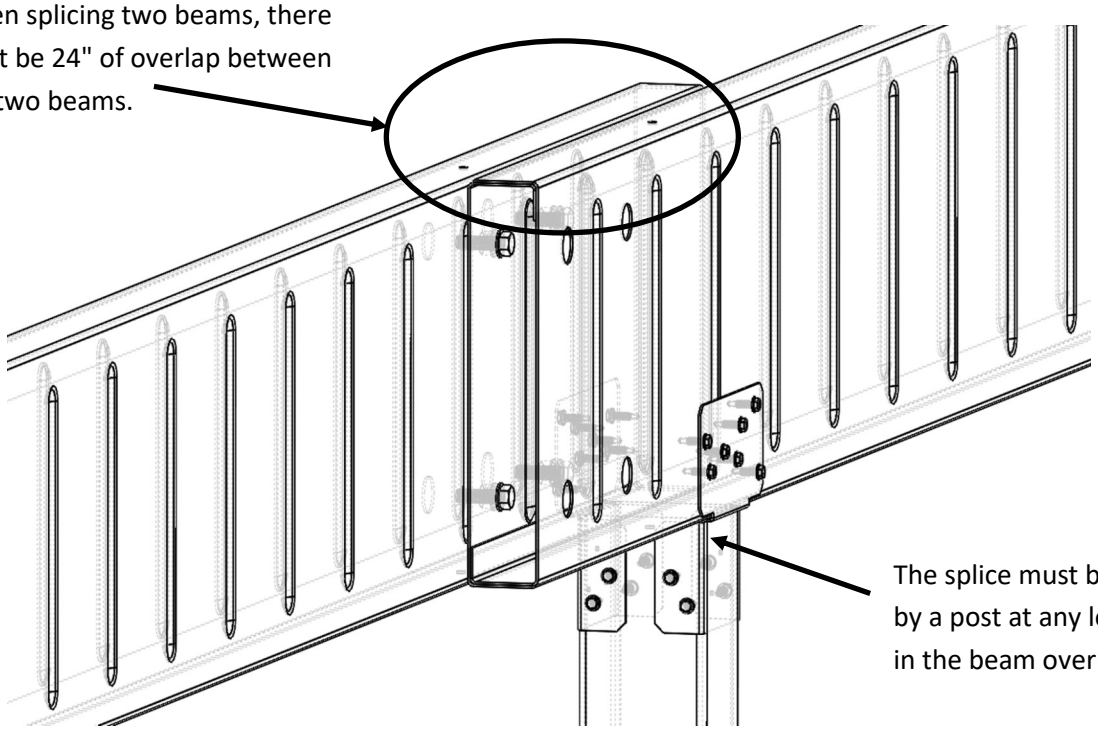
Use F10 Brackets as blocking anywhere there is non-standard joist spacing.



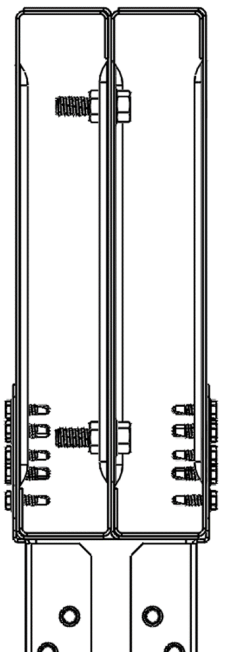
Use either 12" OC or 16" OC Blocking anywhere there is standard spacing.

Beam Splicing

When splicing two beams, there must be 24" of overlap between the two beams.



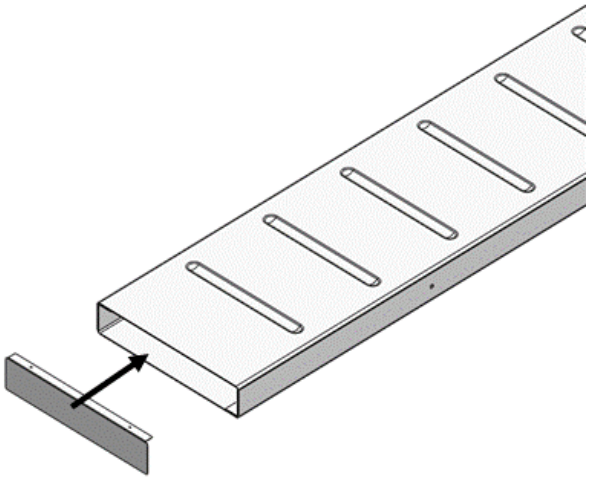
The splice must be supported by a post at any location within the beam overlap.

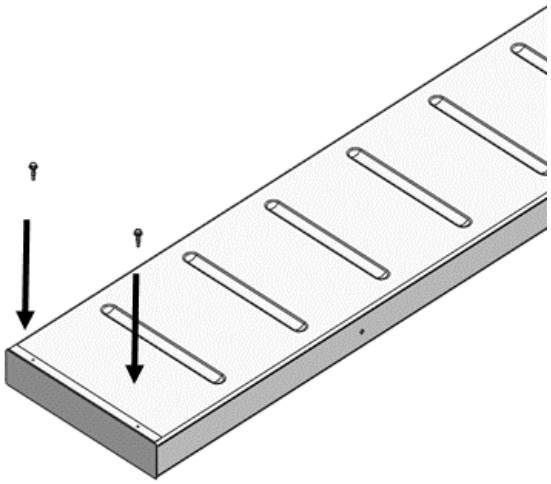


The beam splice is connected with (4) 3/8” diameter thru bolts, nuts, and washers.

Beam & Joist Caps

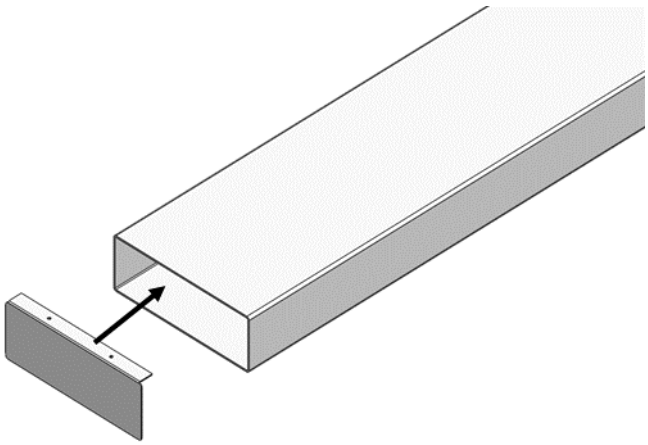
Beam Caps

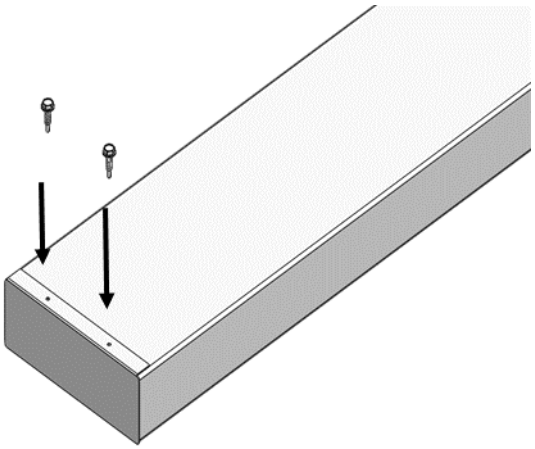




Use the Evolution Beam Cap to cover the open ends of the beams. Not doing so will leave exposed openings for pests to make nests.

Joist Caps





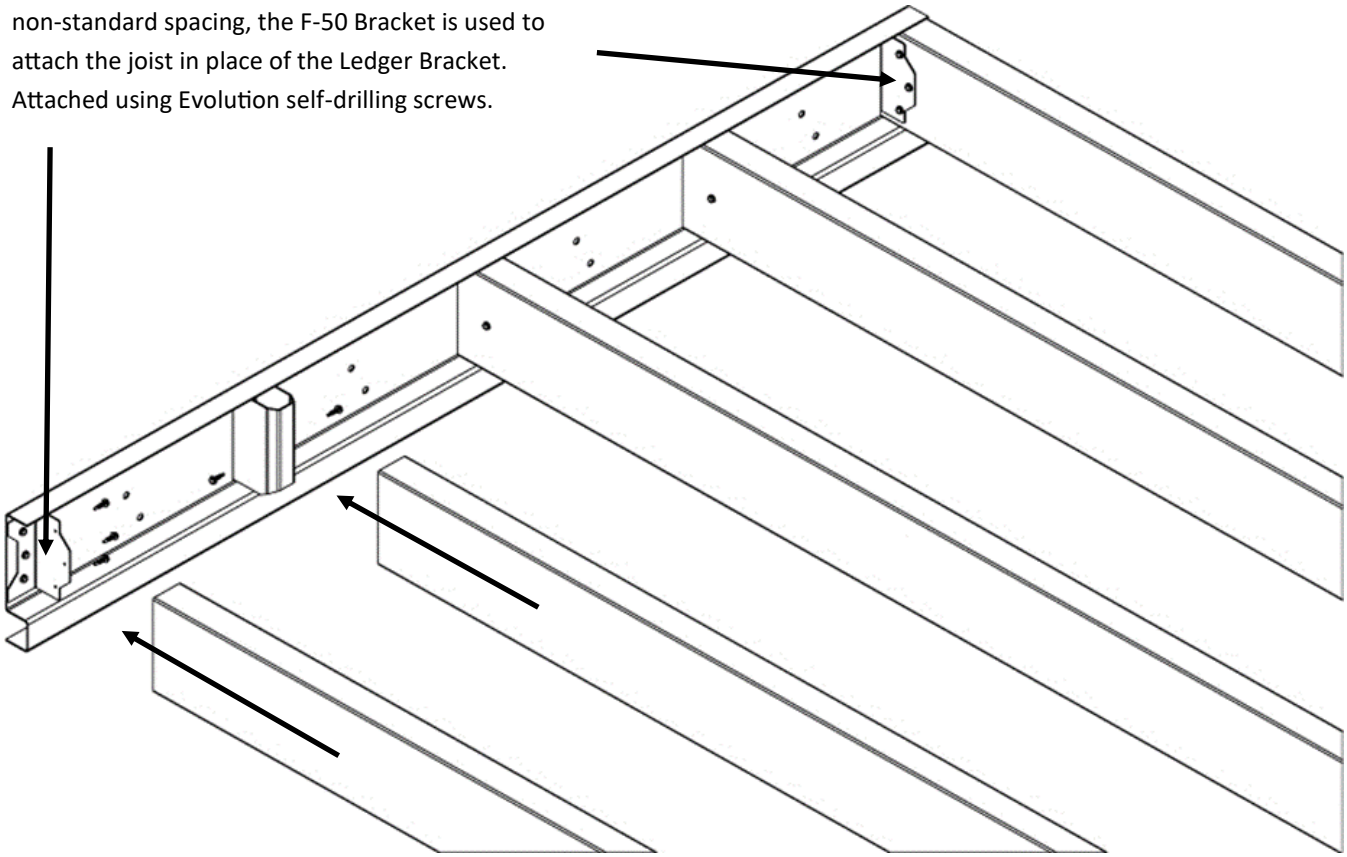
Use the Evolution Joist Cap to cover the open ends of the joists. Not doing so will leave exposed openings for wasps and other pests to make nests.

Joists

WARNING!

Evolution Framing System has two versions of joists. See Table of Contents and reference the Product Overview section for specifics on the different joists. It's important be aware of your job requirements as they have different span limitations. See Table of Contents and reference the Span Charts for span limitations.

On both ends of the S-Ledger, and anywhere there's non-standard spacing, the F-50 Bracket is used to attach the joist in place of the Ledger Bracket. Attached using Evolution self-drilling screws.



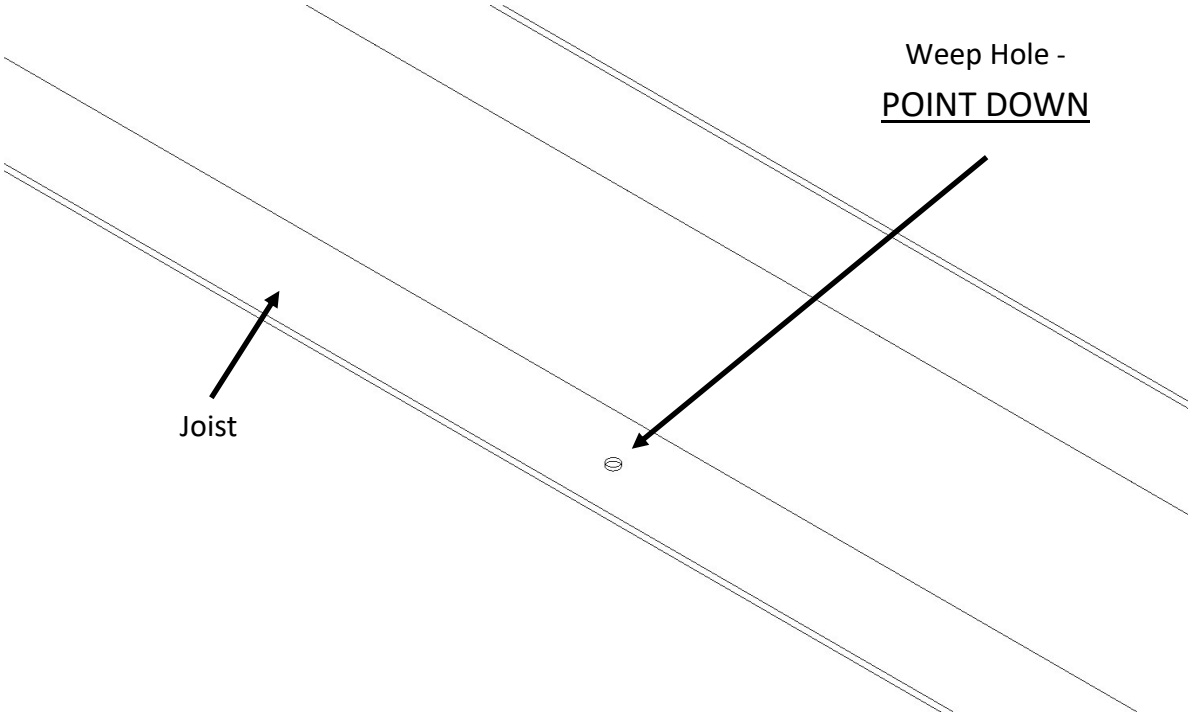
Slide Joist onto the Ledger Bracket and secure with (1) Evolution Self-Drilling Screw on each side.

Installation Tip: At times, the joist may not slide right onto the Ledger Bracket. In this case, use a mallet or hammer to tap the joist into place. Be sure to use a barrier board between the hammer/mallet and the joist to prevent damage.

Joists

WARNING!

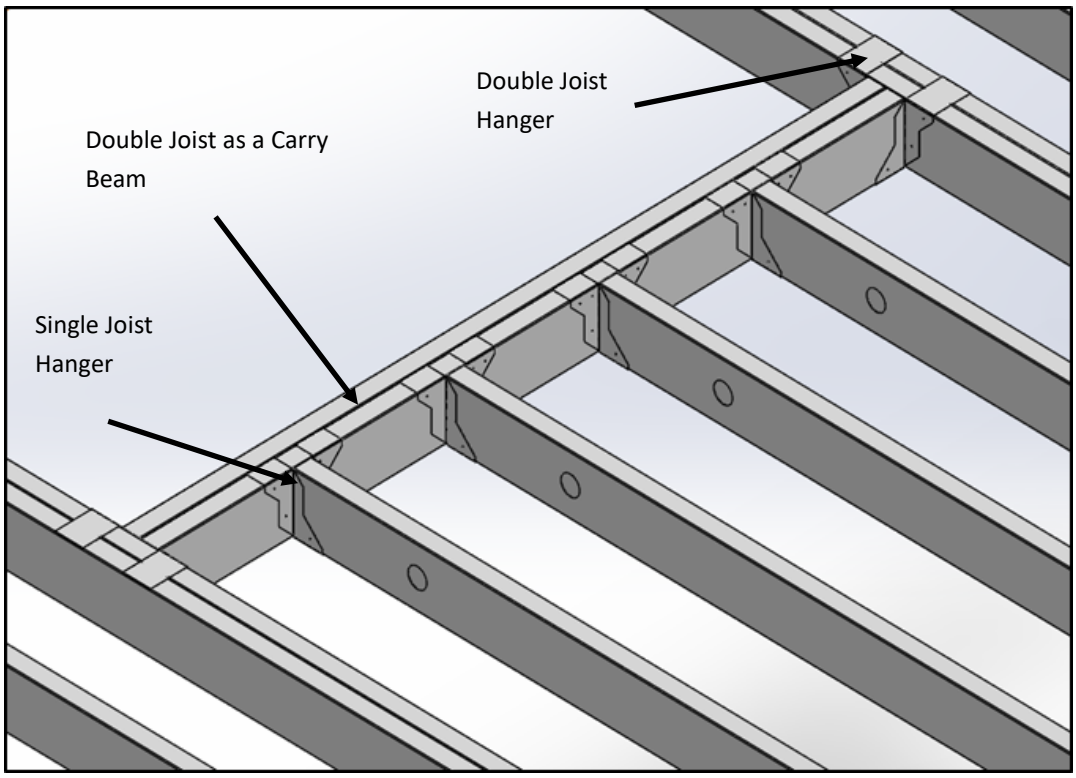
Evolution Framing System has two versions of joists. See Table of Contents and reference the Product Overview section for specifics on the different joists. It's important be aware of your job requirements as they have different span limitations. See Table of Contents and reference the Span Charts for span limitations.



All joists contain weep holes to allow for water drainage. When installing, it's important that the weep holes are pointed down.

Not pointing the weep holes down may cause water to collect and ultimately cause damage to the joists.

Joist as a Carry Beam



At times, it can be more cost effective or simpler to use a joist or a double joist as a beam. This can also be necessary when framing around bay windows or when extra support is needed for decking.

WARNING!!

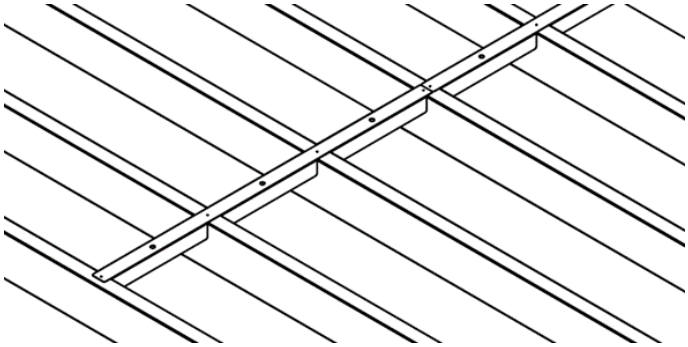
Reference the Joist as a Carry Beam Span Tables for span distances when using a joist as a carry beam. Never exceed the limits outlined within the span charts. Doing so will void the manufacturer's warranty. If there are questions, consult a professional engineer, building code official, your local dealer, or Fortress Framing.

Strapping (Mid-Span Blocking)

For Joist Spans greater than 8’, blocking is required midspan at every bay.

There are two different installation options for the 12" O.C. and 16" O.C. straps; one for ground level decks and one for elevated decks.

Ground Level Decks

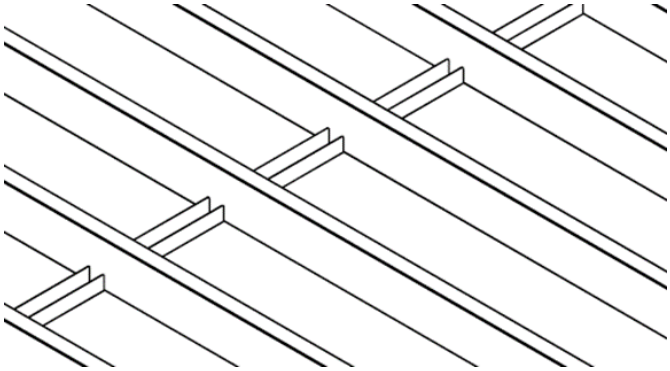


Using Evolution 12” or 16" O.C. Straps, Place on the TOPSIDE of the joist. The strap is 4’ long and will cover (4) Joist for the 12” O.C. version and (3) Joist on the 16” O.C. version.

This method should only be used when the deck is ground-level and not accessible from the bottom side.

No fasteners are required when installing Strap on the top-side

Elevated Decks



Using Evolution 12” or 16" O.C. Straps, place on the UNDERSIDE of the joist. The strap is 4’ long and will cover (4) Joist for the 12” O.C. version and (3) Joist on the 16” O.C. version.

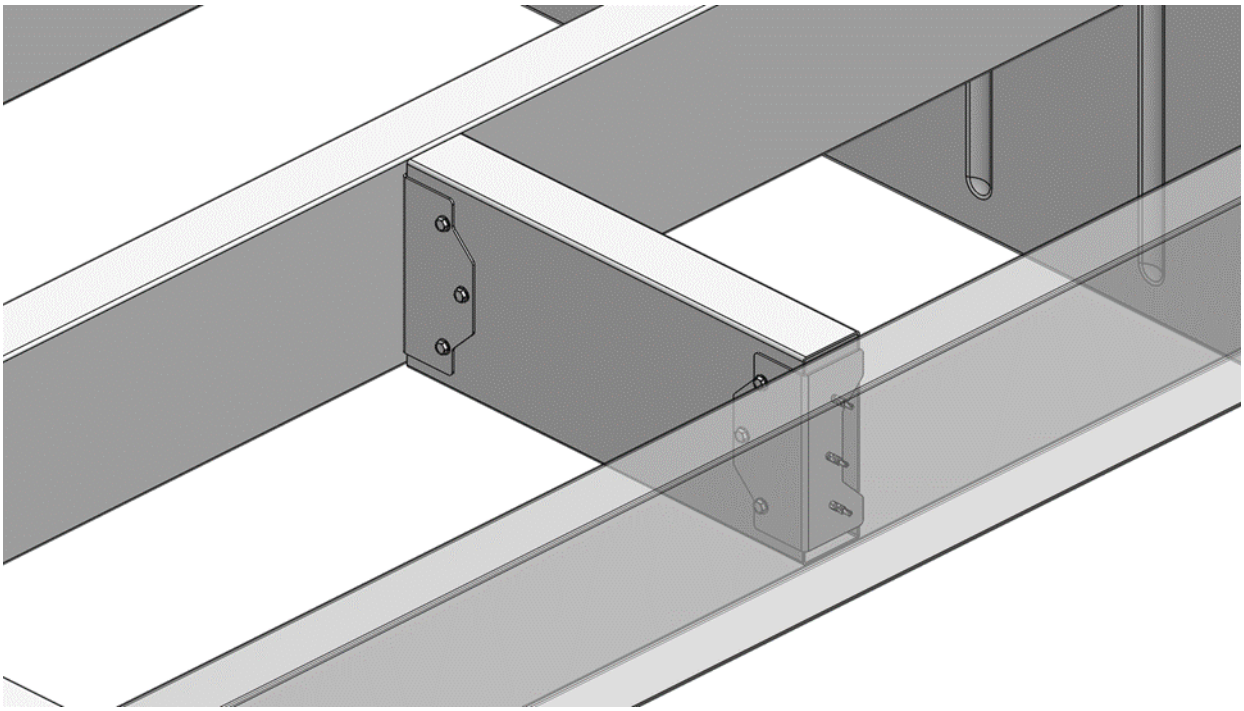
This is the preferred method for installation and should be used anytime there's access to the bottom of the deck.

NOTE: The larger diameter holes in the strap are to allow water to escape when it's installed on the underside of the joist.

Non-Standard Spacing at Mid-Span & General Blocking

This method can be used for blocking in cases when there's non-standard spacing and the pre-engineered mid-span strap and beam blocking cannot be used.

This method can be used in general applications when extra blocking is needed for more structure and support. This can be the case when railing or stairs are being installed, extra framing for deck board picture framing, etc.



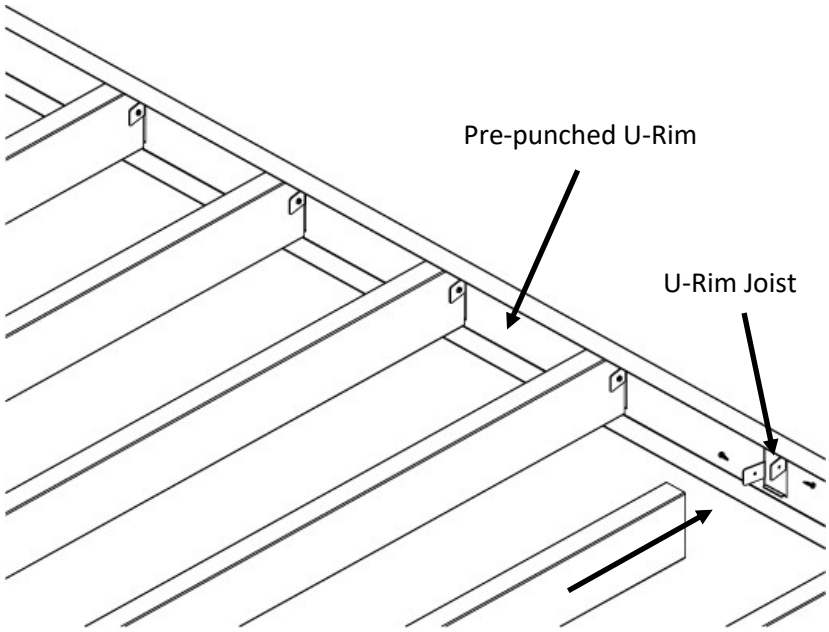
Cut Evolution Joists pieces to the appropriate length and secure them with (2) F50 brackets.

Rim Joist

There are 4 variations of Rim Joists: U-Rim Joist 12” O.C. & 16” O.C., U-Rim Joist Blank, Joist as a Rim Joist, and the Curved Rim Joist.

U-Rim Joist 12” O.C. and 16” O.C. Spacing

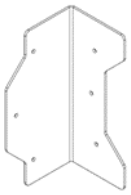
The pre-punched U-Rim joist should ONLY be used when fascia will mount on the Rim of the deck.



The pre-punched U-Rim joist is designed to provide a completely flat surface for fascia mounting.

Set the U-Rim Joist in place and secure it by fastening the tabs to the ends of the joists using Evolution self-drilling screws. There is one tab on each side of the joist.

Use the F50 Bracket to make any connections where there isn't a tab on the U-Rim Joist. This will occur on the ends and when there's a joist that has non- standard.



WARNING!!

This installation should ONLY be used when fascia will mount on the rim of the deck. Not having fascia will result in exposed openings that may be unsightly.

Rim Joist

Blank U-Rim Joist

The Blank U-Rim is used anytime there's non-standard joist spacing

The Blank U-Rim is used anytime no fascia will be used on the rim of the deck.

Position the Blank U-Rim Joist the same as the pre-punched U-Rim Joist and use the F50 brackets to fasten it to the joists.

Curved Rim Joist

The Curved Rim Joist is used anytime there's a radius on the rim of a deck.

Curved Rim Joist.

Rim Joist Bracket

There's no need to angle cut the joists at the rim when you use the Curved Rim Joist and the Rim Joist Bracket.

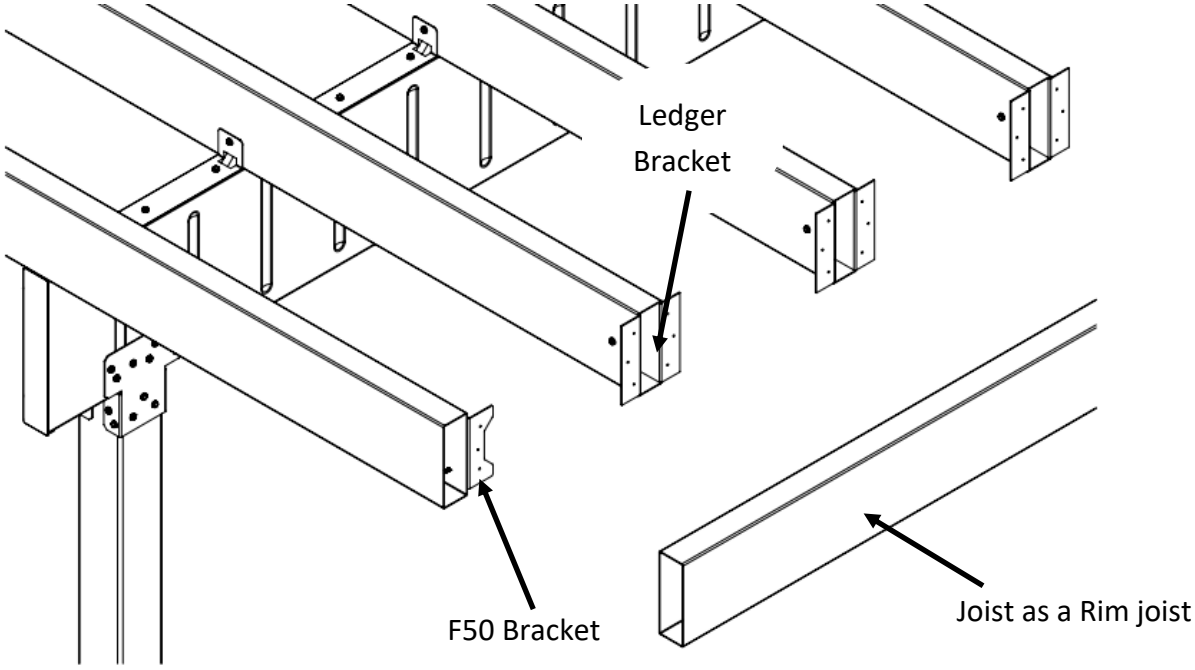
Pop the Rim Joist Brackets into the joists. Using Channel Locks or Locking Pliers, bend the tabs on the Rim Joist Bracket to the desired angle.

Bend the Curved Rim joist by hand and fit it to the angle on the Rim Joist Bracket and fasten it using Evolution self-drilling screws.

Rim Joist

Joist as a Rim Joist

The regular Evolution 2x6 Joist can also be used on the rim of a deck. This option can be used with or without fascia and leave a completely flat surface on the rim.



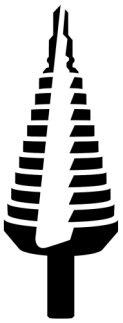
Insert Ledger Brackets into the ends of all the joists except the ends. Use F50 Brackets on the end joists.

Position the "Joist as a Rim Joist" into place and secure using the Evolution Self-Drilling Screw. Fill all holes on the brackets.

Post to Frame Connections

Additional Tools Required

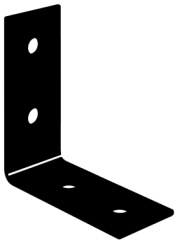
Step Bit for Metal Cutting



9/16” Wrench

3/8” x 8” Long Galvanized Drill Bit for Metal Cutting

5-7/8 in. x 5-7/8 in. x 1-1/2 in. 12 Gauge Angle Bracket



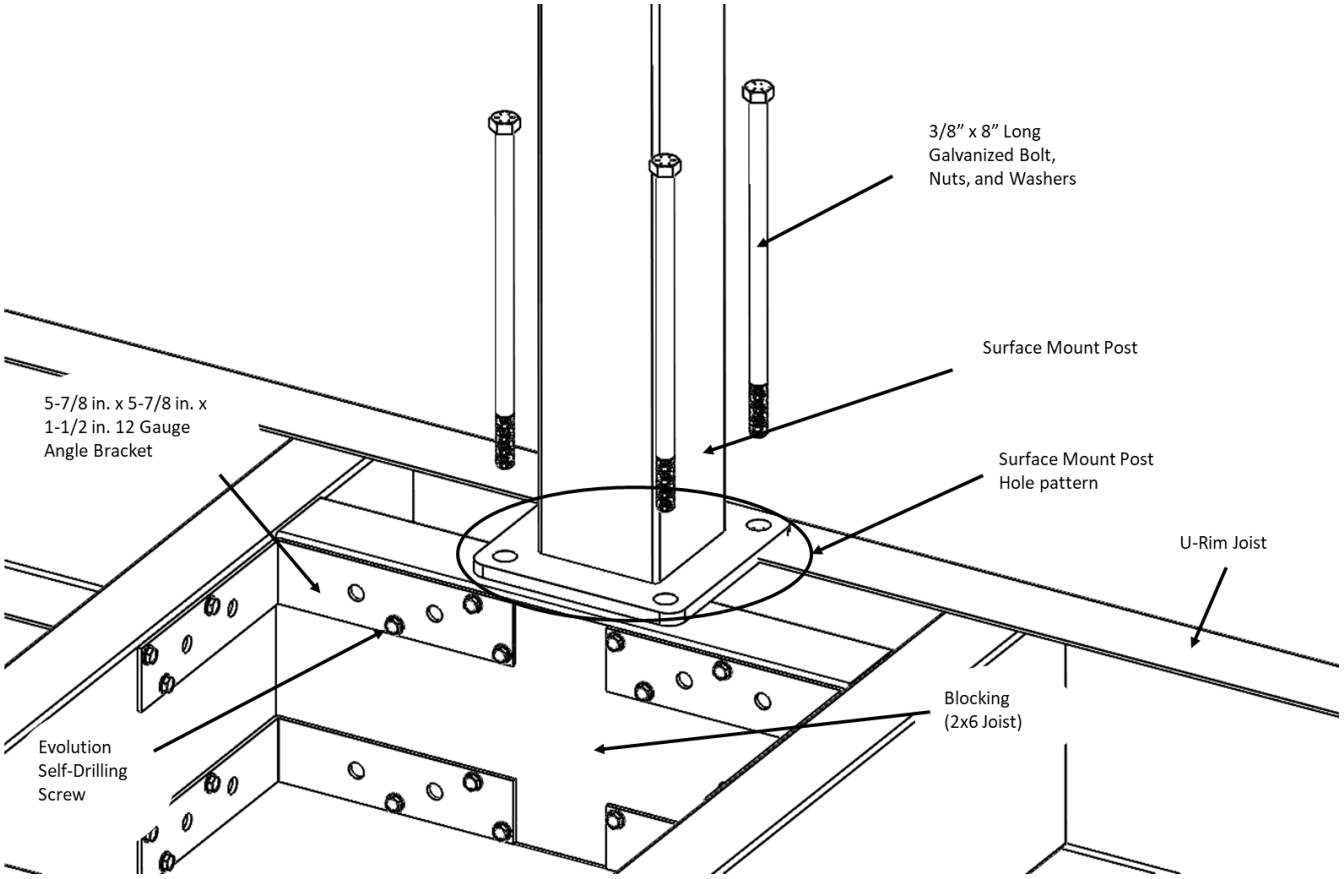
3/8” x 8” Long Galvanized Bolt, Nuts, and Washers

9/16” Socket, Ratchet, and Extension

Post to Frame Connections

Surface Mount Post—Deck Rim

TOP VIEW



Cut blocking using the Evolution 2x6 Joist. Position and install blocking according to the required hole spacing of the surface mount post. Install with 5-7/8 in. x 5-7/8 in. x 1-1/2 in. 12 Gauge Angle Bracket using the Evolution Self-Drilling Screw.

INSTALLATION ALERT: Install deck boards BEFORE positioning surface mount post and marking holes.

Position the surface mount post and mark the hole location

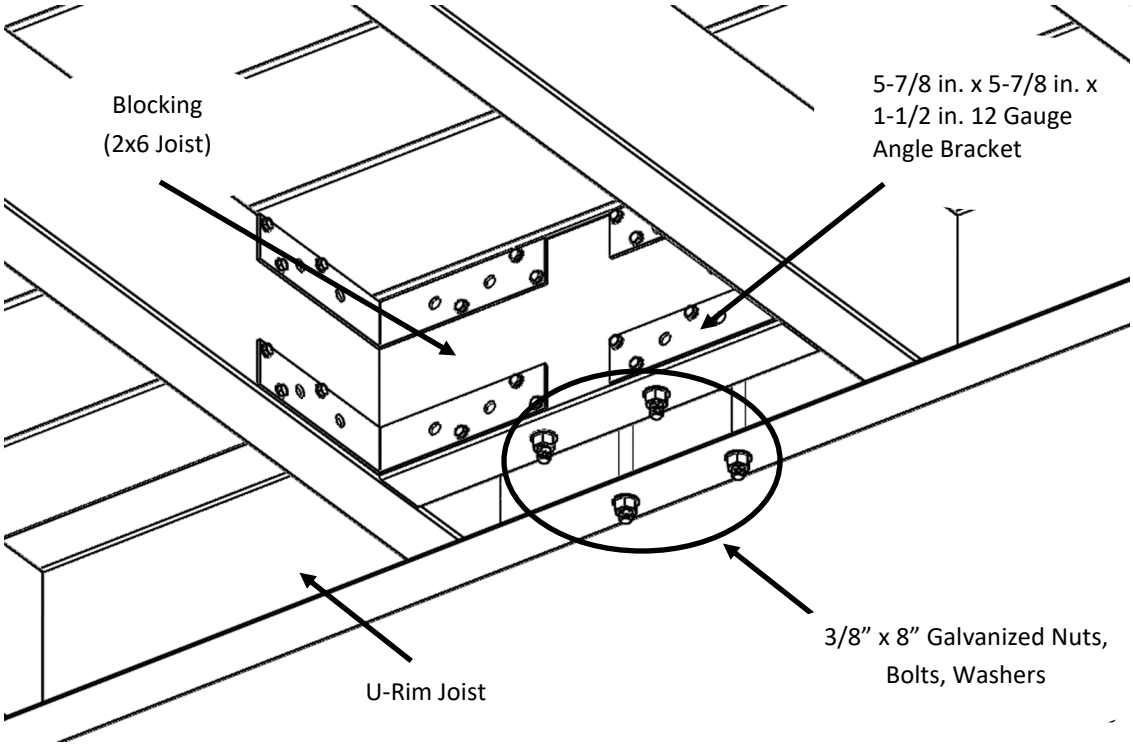
Drill out the holes using a drill and a 3/8" x 8" long drill bit.

Insert 3/8" x 8" bolt and washer thru the drilled hole

Post to Frame Connections

Surface Mount Post—Deck Rim Continued

BOTTOM VIEW



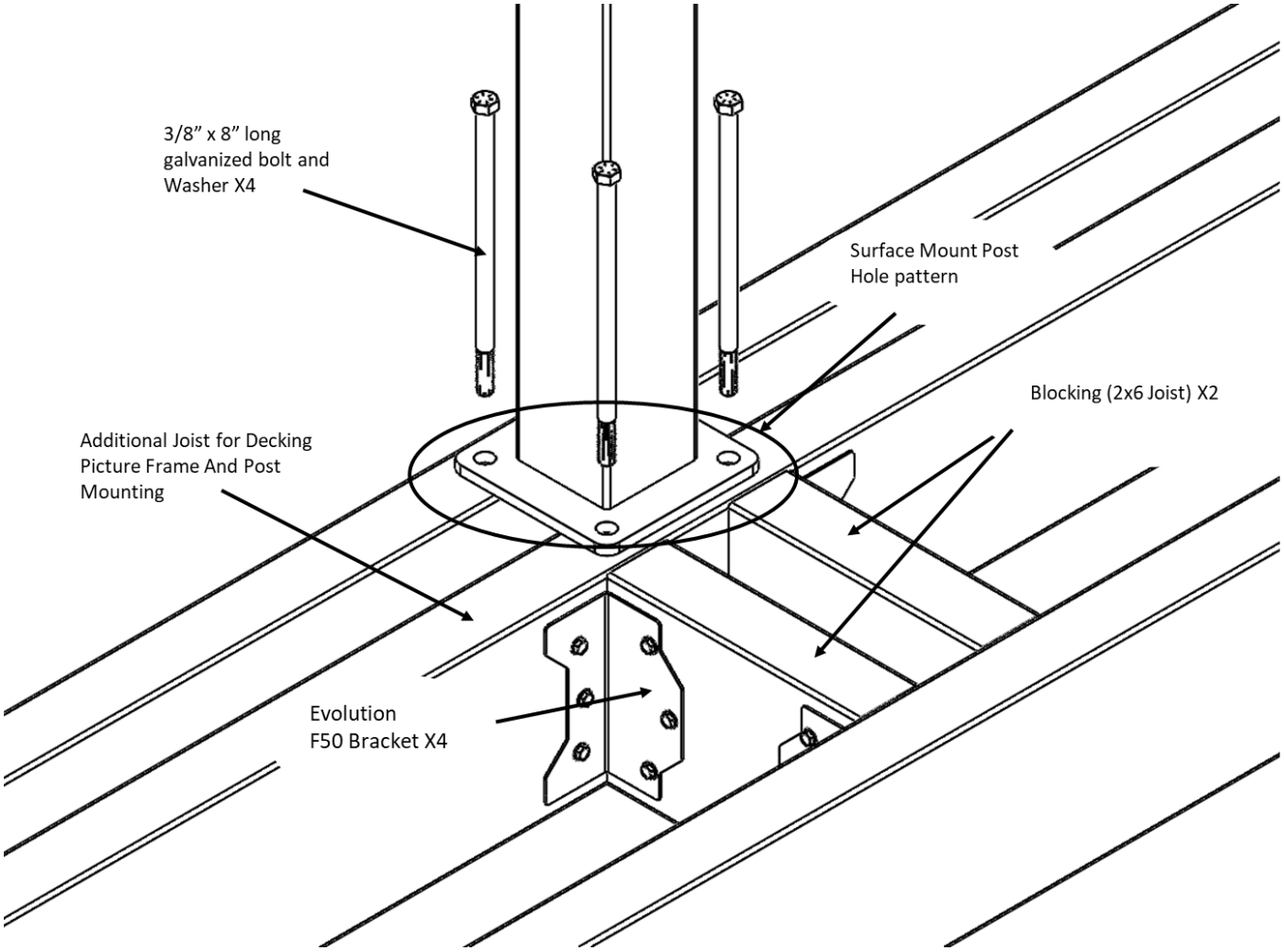
Finish installing bolts on the bottom side with 3/8" galvanized washers and nuts.

Hand tighten the bolts and nuts until snug. Some deformation of the framing member is normal to get a solid connection but DO NOT over-tighten.

Post to Frame Connections

Surface Mount Post—Side of Deck

TOP VIEW



Cut (2) pieces of blocking using the Evolution 2x6 Joist. Position and install using (4) F50 brackets according to the required hole spacing of the surface mount post. Install with Evolution F50 Brackets using the Evolution Self -Drilling Screw.

INSTALLATION ALERT: Install deck boards BEFORE positioning surface mount post and marking holes.

Position the surface mount post and mark the hole location

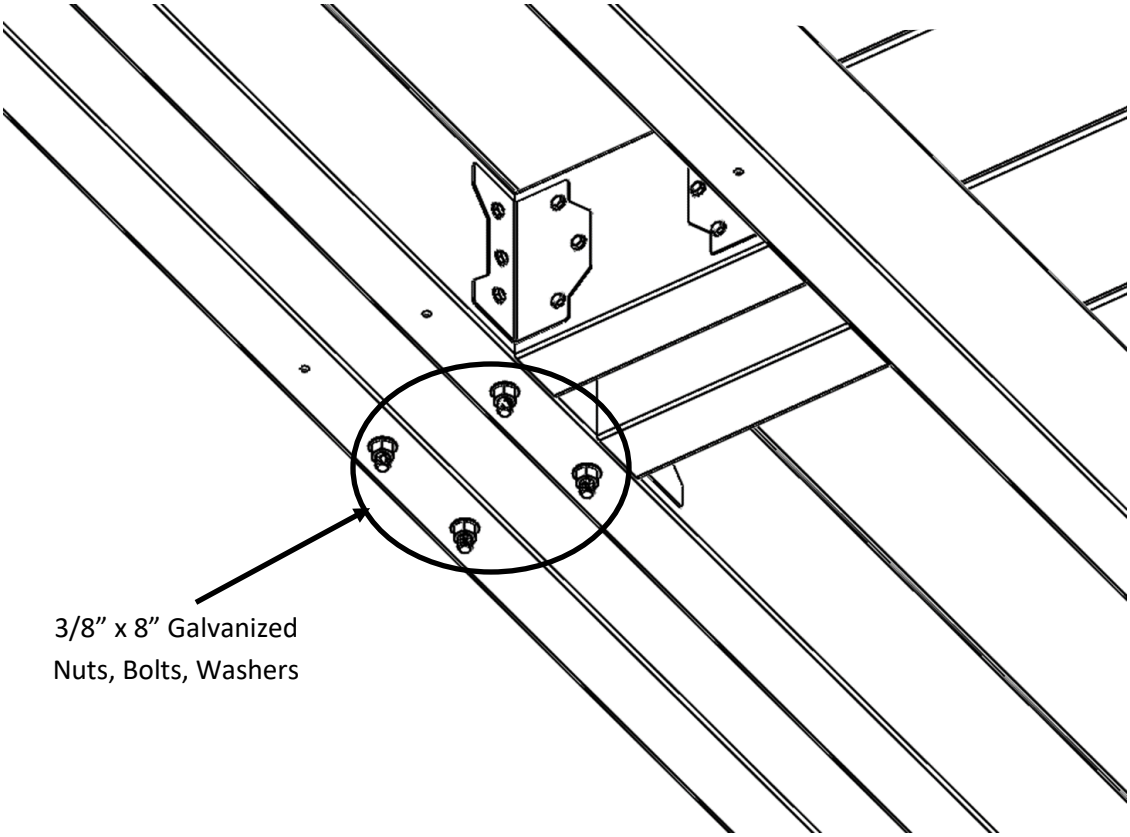
Drill out the holes using a drill and a 3/8" x 8" long drill bit.

Insert 3/8" x 8" bolt and washer thru the drilled hole

Post to Frame Connections

Surface Mount Post—Side of Deck Continued

BOTTOM VIEW



Finish installing bolts on the bottom side with 3/8” galvanized washers and nuts.

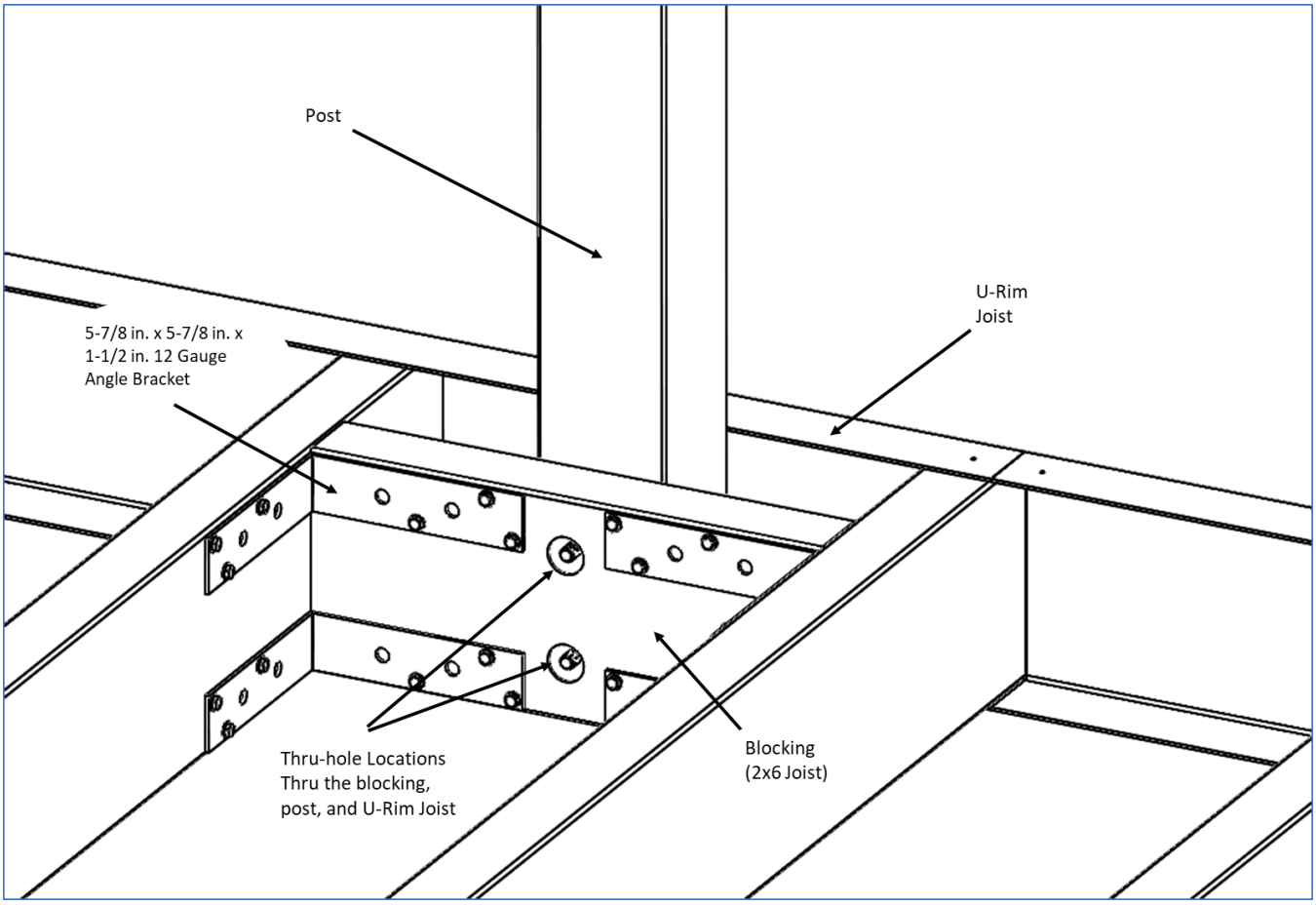
Hand tighten the bolts and nuts until snug. Some deformation of the framing member is normal to get a solid connection but DO NOT over-tighten.

Post to Frame Connections

Thru-Mount Post

This is the installation for a wood or steel thru post.

TOP VIEW



Cut blocking using the Evolution 2x6 Joist. Position and install blocking so the post will fit snug between the U-Rim Joist and the cut 2x6 blocking piece. Install with 5-7/8 in. x 5-7/8 in. x 1-1/2 in. 12 Gauge Angle Bracket using the Evolution Self-Drilling Screw.

Using a drill and a 3/8" x 8" long drill bit, drill thru-holes that go thru the blocking, post, and the U-Rim Joist.

Using a Step Bit and Drill, cut out 2 holes large enough to fit a 9/16" socket and extension. These will be used as access points to attached the thru-bolt.

Insert 3/8" x 4" bolt and washer thru the drilled holes. Hand tighten the washer and 3/6" nut to the 3/8" bolt.

Using the 9/16" socket and ratchet, attach to the bolt thru the hole opened up with the step bit.

Attached a 9/16" wrench to the nut on the opposite end and tighten. Hand tighten until snug.

Evolution Stairs—Coming Sept. 2019

EVOLUTION

STEEL DECK FRAMING

EASY-TO-USE STAIR BRACKET SYSTEM

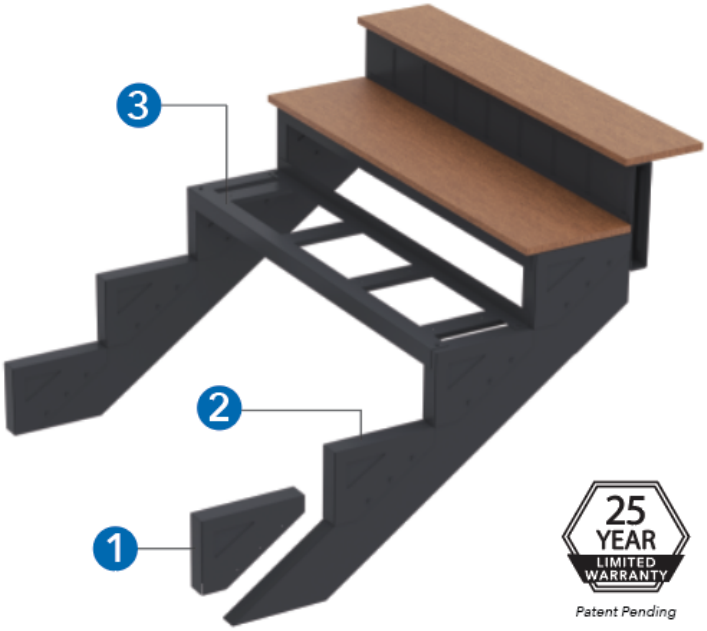
- Framing stairs is as easy as 1,2,3
- Evolution stairs reduce the number of fasteners, stringers and installation time
- Stair brackets available in two preset rise/run dimensions – 7"/11" & 7- ¾"/11"
- Stair brackets install easily with Evolution 2" x 6" joist to create stair stringers
- Evolution 48" trays attach easily to stringers for quick easy installation
- Evolution 48" trays provide blocking for 2" and 3" railing post

STEP 1

STEP 2

STEP 3

FortressFraming.com



25 YEAR LIMITED WARRANTY

Patent Pending

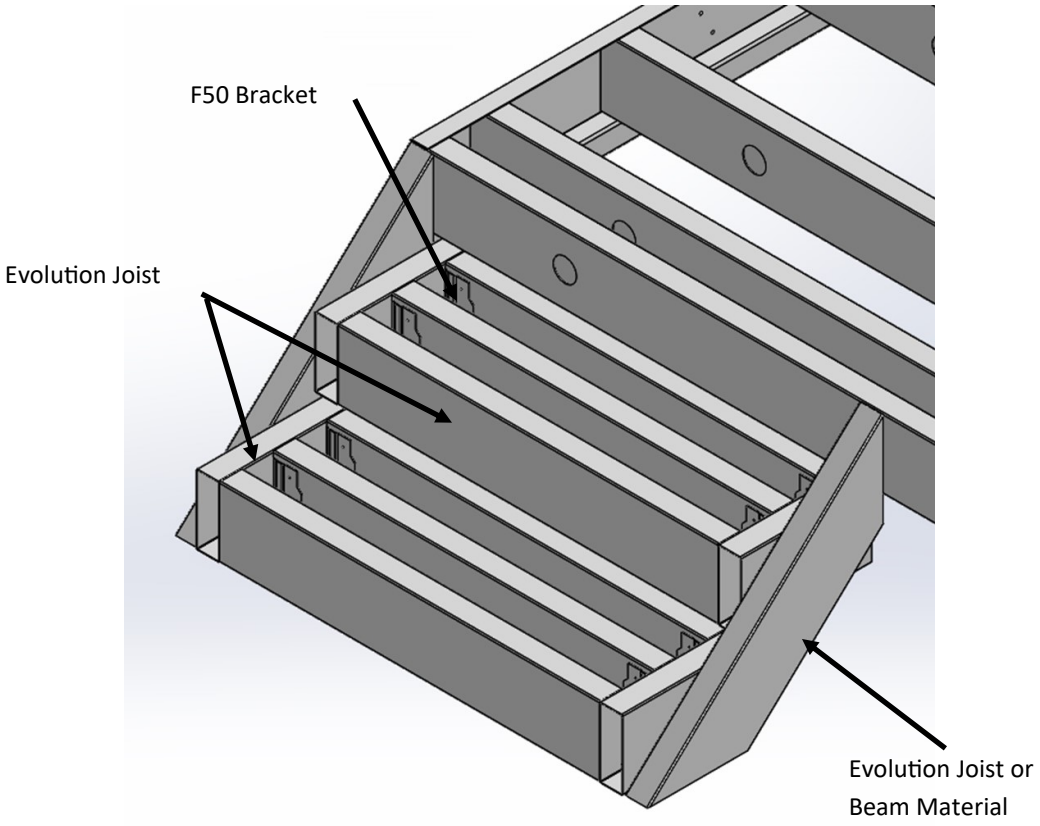
Evolution Stairs—Coming Sept. 2019

Stairs

Engineered Evolution Stair Solution Coming in Q3 2019!

Until the Evolution Stair Solution arrives, the steel framing members and F50 brackets can be used to assemble a set of stairs.

Below is an example of a set of stairs that can be assembled using Evolution Joists and Evolution F50 Brackets.



Evolution Joists or Evolution Beams can be used as stringers.

Stringer attachment to the Deck will vary depending on specific site plans and/or builder preference.

Maintenance Requirements

When installed properly, Evolution Framing is very low maintenance. It's galvanized as well as powder coated which protects it extremely well from the outdoor elements.

Touch Up Paint: Fortress Black Sand Touch-Up Paint can be used to spray cut ends and any scratches or scuffs on the framing. If that is unavailable, any other rust-inhibiting spray paint can also be used. Be sure to choose a color that closely matches the Fortress Black Sand powder coating.

During the installation process, it's important to visually inspect all the framing parts and cover any exposed steel with the before-mentioned touch up paint. Not doing so could result in corrosion and void the manufacturer's warranty.

During installation, all cut ends of the framing parts must be covered with Fortress approved touch-up paint.

All scratches, dings, dents, etc. that expose raw steel must be covered with Touch-Up Paint to prevent rust from occurring. Simply apply enough paint to cover the exposed steel.

It's a good practice to periodically inspect your Evolution Steel Deck Framing. Fortress recommends an inspection 2 years after installation and then every 3-5 years thereafter. The inspection should be completed by a qualified building professional or qualified homeowner. If problems are noticed contact the original installers or contact Fortress Framing directly at the address below.

sales@fortressframing.com

or

Fortress Framing
1-866-323-4766

Reference the table of contents; the Evolution Inspection Checklist is contained within these installation instructions.

EVOLUTION
STEEL DECK FRAMING

FORTRESS™
FRAMING

Evolution Inspection Checklist

Date: ____/____/_____

Property Address: _____ **Contact Name: _____**

_____ _____

_____ **Contact Phone: _____**

Contact E-mail: _____

Footing Connection

Any visible signs of Corrosion on Post/Pier Bracket? _____ Yes _____ No
Any visible signs of Damage to Post/Pier or Connection? _____ Yes _____ No
Any missing, damaged or corroded fasteners? _____ Yes _____ No

If you answered "Yes" to any of the above questions, please explain below:

_____

_____

_____

_____

Ledger Connection to Structure

Any visible signs of Corrosion on Ledger or Ledger Brackets? _____ Yes _____ No
Any visible signs of Damage to Ledger or Ledger Brackets? _____ Yes _____ No
Is there any decay or rot behind the ledger? _____ Yes _____ No
Any missing, damaged or corroded fasteners? _____ Yes _____ No

If you answered "Yes" to any of the above questions, please explain below:

_____

_____

_____

_____

Beam to Post Connections

Any visible signs of Corrosion on Beam to Post Connection? _____ Yes _____ No
Any visible signs of Damage to Beam to Post Connection? _____ Yes _____ No
Any missing, damaged or corroded fasteners? _____ Yes _____ No

If you answered “Yes” to any of the above questions, please explain below:

_____

_____

_____

_____

Beams & Joists

Any visible signs of Corrosion on Beams, Joists or Brackets? _____ Yes _____ No
Any visible signs of Damage to Beams, Joists or Brackets? _____ Yes _____ No
Any missing, damaged or corroded fasteners? _____ Yes _____ No

If you answered “Yes” to any of the above questions, please explain below:

_____

_____

_____

_____

Blocking and Strapping

Any visible signs of Corrosion on Blocking or Strapping? _____ Yes _____ No
Any visible signs of Damage to Blocking or Strapping? _____ Yes _____ No
Any missing, damaged or corroded fasteners? _____ Yes _____ No

If you answered “Yes” to any of the above questions, please explain below:

_____

_____

_____

_____

Beam & Joists Splicing (If present)

Any visible signs of Corrosion on Beam or Joist Splicing? _____ Yes _____ No
Any visible signs of Damage to Beam or Joist Splicing? _____ Yes _____ No
Any missing, damaged or corroded fasteners? _____ Yes _____ No

If you answered “Yes” to any of the above questions, please explain below:

_____

_____

_____

_____

Joist/Rim Connection

Any visible signs of Corrosion on Joist/Rim Connection? _____ Yes _____ No
Any visible signs of Damage to Joist/Rim Connection? _____ Yes _____ No
Any missing, damaged or corroded fasteners? _____ Yes _____ No

If you answered "Yes" to any of the above questions, please explain below:

_____

_____

_____

_____

Miscellaneous

Are any Joist or Beam caps missing? _____ Yes _____ No
Are any weep holes on Joists and Beams clogged or blocked with debris? _____ Yes _____ No
Is there any other damage, corrosion or missing components on the framing system that wasn't mentioned above? _____Yes _____ No
Are there any signs of insect or animal infiltration in any of the steel framing components? _____ Yes _____ No
Are there any other areas of concern on the framing system that need to be addressed? _____ Yes ____ No

If you answered "Yes" to any of the above questions, please explain below:

_____

_____

_____

_____

If there are questions, contact Fortress Framing at warranties@fortressframing.com or 1-866-323-4766 .

TABLES BELOW ARE FOR REFERENCE ONLY AND MUST BE ACCOMPANIED BY THE COMPLETE SIGNED AND SEALED TER FOR CONSTRUCTION USE.

Table 1: 50 PSF Load Allowable Single Beam Spans – Residential

MAXIMUM J-CHANNEL BEAM SPAN (SINGLE BEAM BETWEEN POSTS)

50 PSF	JOIST SPAN (SUPPORT TO SUPPORT)															
JOIST CANTILEVER LENGTH	1'-0"	2'-0"	3'-0"	4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	13'-0"	14'-0"	15'-0"	16'-0"
0'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	19'-4"	18'-7"	17'-11"	17'-5"	16'-11"	16'-5"	16'-0" Δ	15'-8" •	15'-4" •Δ
0'-6"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	19'-4"	18'-7"	17'-11"	17'-5"	16'-11"	16'-5"	16'-0"	15'-8" Δ	15'-4" •	15'-0" •Δ
1'-0"		20'-0"	20'-0"	20'-0"	20'-0"	19'-4"	18'-7"	17'-11"	17'-5"	16'-11"	16'-5"	16'-0"	15'-8"	15'-4"	15'-0" Δ	14'-9" •Δ
1'-6"			20'-0"	20'-0"	19'-4"	18'-7"	17'-11"	17'-5"	16'-11"	16'-5"	16'-0"	15'-8"	15'-4"	15'-0"	14'-9" Δ	14'-6" •Δ
2'-0"				19'-4"	18'-7"	17'-11"	17'-5"	16'-11"	16'-5"	16'-0"	15'-8"	15'-4"	15'-0"	14'-9"	14'-6" Δ	14'-3" •Δ
2'-6"					17'-11"	17'-5"	16'-11"	16'-5"	16'-0"	15'-8"	15'-4"	15'-0"	14'-9"	14'-6"	14'-3" Δ	14'-0" •Δ
3'-0"						16'-11"	16'-5"	16'-0"	15'-8"	15'-4"	15'-0"	14'-9"	14'-6"	14'-3"	14'-0" Δ	13'-9" •Δ
3'-6"							16'-0"	15'-8"	15'-4"	15'-0"	14'-9"	14'-6"	14'-3"	14'-0"	13'-9" •	13'-7" •
4'-0"								15'-4"	15'-0"	14'-9"	14'-6" Δ	14'-3" Δ	14'-0" Δ	13'-9" •	13'-7" •Δ	13'-5" •Δ
4'-6"									14'-9" Δ	14'-6" •	14'-3" •Δ	14'-0" •Δ	13'-9" •Δ			
5'-0"										14'-3" •Δ						

No Symbol : Any option
Δ : Joist must be 12" o.c. or 16 ga.
• : Joist must be 12" o.c.
•Δ : Joist must be 12" o.c. & 16 ga.

Table 2: 50 PSF Load *Allowable* Double Beam Spans - Residential

MAXIMUM J-CHANNEL BEAM SPAN (DOUBLE BEAM BETWEEN POSTS)

50 PSF	JOIST SPAN (SUPPORT TO SUPPORT)															
JOIST CANTILEVER LENGTH	1'-0"	2'-0"	3'-0"	4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	13'-0"	14'-0"	15'-0"	16'-0"
0'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0" Δ	19'-9" •	19'-4" •Δ
0'-6"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	19'-9" Δ	19'-4" •	18'-11" •Δ
1'-0"		20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	19'-9"	19'-4"	18'-11" Δ	18'-7" •Δ
1'-6"			20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	19'-9"	19'-4"	18'-11"	18'-7" Δ	18'-3" •Δ
2'-0"				20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	19'-9"	19'-4"	18'-11"	18'-7"	18'-3" Δ	17'-11" •Δ
2'-6"					20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	19'-9"	19'-4"	18'-11"	18'-7"	18'-3"	17'-11" Δ	17'-8" •Δ
3'-0"						20'-0"	20'-0"	20'-0"	19'-9"	19'-4"	18'-11"	18'-7"	18'-3"	17'-11"	17'-8" Δ	17'-5" •Δ
3'-6"							20'-0"	19'-9"	19'-4"	18'-11"	18'-7"	18'-3"	17'-11"	17'-8"	17'-5" Δ	17'-2" •
4'-0"								19'-4"	18'-11"	18'-7"	18'-3" Δ	17'-11" Δ	17'-8" Δ	17'-5" •	17'-2" •Δ	16'-8" •Δ
4'-6"									18'-7" Δ	18'-3" •	17'-11" •Δ	17'-8" •Δ	17'-5" •Δ			
5'-0"										17'-11" •Δ						

No Symbol : Any option
Δ : Joist must be 12" o.c. or 16 ga.
• : Joist must be 12" o.c.
•Δ : Joist must be 12" o.c. & 16 ga.

GENERAL NOTES:

1. All loads and load combinations are determined using ASCE 7. DL = Dead Load, LL = Live Load, SL = Snow Load, WL_g = Wind Load, & WL_u = Uplift Wind Load.
2. Maximum total load (TL) determined from the governing case of the following:
   TL = DL + LL
   TL = DL + SL
   TL = DL + 0.75*LL+0.75*SL
   TL = 0.6*DL + 0.6*WL_u
3. Loads utilized for the above (2) tables are as follows: DL = 10 psf, LL = 40 psf, SL+WL_g = 0 psf, where absolute uplift wind load (WL_u) is not greater than WL_g.
4. Deflection limits for joists and beams are determined as follows:
   Joists – Live load deflection is limited to L/360, Snow and Wind Load deflection is limited to L/360, where L is the span length.
   Beams – Live load deflection is limited to L/360, Snow and Wind Load deflection is limited to L/360, where L is the span length.
5. Hatched areas in tables indicate instances where the joists span is less than four times the cantilever distance.
6. If a double beam is supported by more than two posts, then its span selected above should be multiplied by 0.90.
7. If a beam is provided as an intermediate joist support (Mid-Beam) then its span selected above, or modified by note 8, should be multiplied by 0.60 for a dropped beam and 0.70 for a flush beam.
8. Required wind pressure shall be verified by others.

Check local building codes for location specific load design requirements.

TABLES BELOW ARE FOR REFERENCE ONLY AND MUST BE ACCOMPANIED BY THE COMPLETE SIGNED AND SEALED TER FOR CONSTRUCTION USE.

Table 3: 75 PSF Load *Allowable* Single Beam Spans – Residential

MAXIMUM J-CHANNEL BEAM SPAN (SINGLE BEAM BETWEEN POSTS)

75 PSF		JOIST SPAN (SUPPORT TO SUPPORT)															
		1'-0"	2'-0"	3'-0"	4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	13'-0"	14'-0"	15'-0"	16'-0"
JOIST CANTILEVER LENGTH	0'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	19'-4"	18'-7"	17'-11"	17'-5"	16'-11"	16'-5"	16'-0" Δ	15'-8" •	15'-3" •Δ
	0'-6"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	19'-4"	18'-7"	17'-11"	17'-5"	16'-11"	16'-5"	16'-0"	15'-8" Δ	15'-3" •	14'-10" •Δ
	1'-0"		20'-0"	20'-0"	20'-0"	20'-0"	19'-4"	18'-7"	17'-11"	17'-5"	16'-11"	16'-5"	16'-0"	15'-8"	15'-3"	14'-10" •	14'-5" •Δ
	1'-6"			20'-0"	20'-0"	19'-4"	18'-7"	17'-11"	17'-5"	16'-11"	16'-5"	16'-0"	15'-8"	15'-3"	14'-10"	14'-5" Δ	14'-0" •Δ
	2'-0"				19'-4"	18'-7"	17'-11"	17'-5"	16'-11"	16'-5"	16'-0"	15'-8"	15'-3"	14'-10"	14'-5"	14'-0" Δ	13'-8" •Δ
	2'-6"					17'-11"	17'-5"	16'-11"	16'-5"	16'-0"	15'-8"	15'-3"	14'-10"	14'-5"	14'-0"	13'-8" Δ	13'-4" •Δ
	3'-0"						16'-11"	16'-5"	16'-0"	15'-8"	15'-3"	14'-10"	14'-5"	14'-0"	13'-8"	13'-4" Δ	13'-0" •Δ
	3'-6"							16'-0"	15'-8"	15'-3"	14'-10"	14'-5"	14'-0"	13'-8"	13'-4"	13'-0" Δ	12'-9" •
	4'-0"								15'-3"	14'-10"	14'-5"	14'-0" Δ	13'-8" Δ	13'-4" Δ	13'-0" •	12'-9" •Δ	12'-6" •Δ
	4'-6"									14'-5" Δ	14'-0" •	13'-8" •Δ	13'-4" •Δ	13'-0" •Δ			
	5'-0"										13'-8" •Δ						

No Symbol : Any option
Δ : Joist must be 12" o.c. or 16 ga.
• : Joist must be 12" o.c.
•Δ : Joist must be 12" o.c. & 16 ga.

Table 4: 75 PSF Load Allowable Double Beam Spans – Residential

MAXIMUM J-CHANNEL BEAM SPAN (DOUBLE BEAM BETWEEN POSTS)

75 PSF		JOIST SPAN (SUPPORT TO SUPPORT)															
		1'-0"	2'-0"	3'-0"	4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	13'-0"	14'-0"	15'-0"	16'-0"
JOIST CANTILEVER LENGTH	0'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0" Δ	19'-9" •	19'-4" •Δ
	0'-6"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	19'-9" Δ	19'-4" •	18'-11" •Δ
	1'-0"		20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	19'-9"	19'-4"	18'-11" •	18'-7" •Δ
	1'-6"			20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	19'-9"	19'-4"	18'-11"	18'-7" Δ	17'-11" •Δ
	2'-0"				20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	19'-9"	19'-4"	18'-11"	18'-7"	17'-11" Δ	17'-0" •Δ
	2'-6"					20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	19'-9"	19'-4"	18'-11"	18'-7"	17'-11"	17'-0" Δ	16'-2" •Δ
	3'-0"						20'-0"	20'-0"	20'-0"	19'-9"	19'-4"	18'-11"	18'-7"	17'-11"	17'-0"	16'-2" Δ	15'-5" •Δ
	3'-6"							20'-0"	19'-9"	19'-4"	18'-11"	18'-7"	17'-11"	17'-0"	16'-2"	15'-5" Δ	14'-9" •
	4'-0"								19'-4"	18'-11"	18'-7"	17'-11" Δ	17'-0" Δ	16'-2" Δ	15'-5" •	14'-9" •Δ	14'-2" •Δ
	4'-6"									18'-7" Δ	17'-11" •	17'-0" •Δ	16'-2" •Δ	15'-5" •Δ			
	5'-0"										17'-0" •Δ						

No Symbol : Any option
Δ : Joist must be 12" o.c. or 16 ga.
• : Joist must be 12" o.c.
•Δ : Joist must be 12" o.c. & 16 ga.

GENERAL NOTES:

1. All loads and load combinations are determined using ASCE 7. DL = Dead Load, LL = Live Load, SL = Snow Load, WL_g = Wind Load, & WL_u = Uplift Wind Load.
2. Maximum total load (TL) determined from the governing case of the following:
   TL = DL + LL
   TL = DL + SL
   TL = DL + 0.75*LL+0.75*SL
   TL = 0.6*DL + 0.6*WL_u
3. Loads utilized for the above (2) tables are as follows: DL = 10 psf, LL = 40 psf, SL+WL_g = 25 psf, where absolute uplift wind load (WL_u) is not greater than WL_g.
4. Deflection limits for joists and beams are determined as follows:
   Joists – Live load deflection is limited to L/360, Snow and Wind Load deflection is limited to L/360, where L is the span length.
   Beams – Live load deflection is limited to L/360, Snow and Wind Load deflection is limited to L/360, where L is the span length.
5. Hatched areas in tables indicate instances where the joists span is less than four times the cantilever distance.
6. If a double beam is supported by more than two posts, then its span selected above should be multiplied by 0.90.
7. If a beam is provided as an intermediate joist support (Mid-Beam) then its span selected above, or modified by note 8, should be multiplied by 0.60 for a dropped beam and 0.70 for a flush beam.
8. Required wind pressure shall be verified by others.

Check local building codes for location specific load design requirements.

TABLES BELOW ARE FOR REFERENCE ONLY AND MUST BE ACCOMPANIED BY THE COMPLETE SIGNED AND SEALED TER FOR CONSTRUCTION USE.

Table 5: 100 PSF Load Allowable *Single* Beam Spans - Residential

MAXIMUM J-CHANNEL BEAM SPAN (SINGLE BEAM BETWEEN POSTS)

100 PSF		JOIST SPAN (SUPPORT TO SUPPORT)															
		1'-0"	2'-0"	3'-0"	4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	13'-0"	14'-0"	15'-0"	16'-0"
JOIST CANTILEVER LENGTH	0'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	19'-7"	18'-7"	17'-9"	17'-1"	16'-6"	16'-0"	15'-4"	14'-9"	14'-3" Δ	13'-9" •	13'-4" •Δ
	0'-6"	20'-0"	20'-0"	20'-0"	20'-0"	19'-7"	18'-7"	17'-9"	17'-1"	16'-6"	16'-0"	15'-4"	14'-9"	14'-3"	13'-9" Δ	13'-4" •	12'-11" •Δ
	1'-0"		20'-0"	20'-0"	19'-7"	18'-7"	17'-9"	17'-1"	16'-6"	16'-0"	15'-4"	14'-9"	14'-3"	13'-9"	13'-4" Δ	12'-11" •	12'-6" •Δ
	1'-6"			19'-7"	18'-7"	17'-9"	17'-1"	16'-6"	16'-0"	15'-4"	14'-9"	14'-3"	13'-9"	13'-4"	12'-11" Δ	12'-6" Δ	12'-2" •Δ
	2'-0"				17'-9"	17'-1"	16'-6"	16'-0"	15'-4"	14'-9"	14'-3"	13'-9"	13'-4"	12'-11"	12'-6" Δ	12'-2" Δ	11'-11" •Δ
	2'-6"					16'-6"	16'-0"	15'-4"	14'-9"	14'-3"	13'-9"	13'-4"	12'-11"	12'-6"	12'-2" Δ	11'-11" Δ	11'-7" •Δ
	3'-0"						15'-4"	14'-9"	14'-3"	13'-9"	13'-4"	12'-11"	12'-6"	12'-2"	11'-11" Δ	11'-7" Δ	11'-4" •Δ
	3'-6"							14'-3"	13'-9"	13'-4"	12'-11"	12'-6"	12'-2"	11'-11"	11'-7" Δ	11'-4" Δ	11'-1" •Δ
	4'-0"								13'-4"	12'-11"	12'-6"	12'-2" Δ	11'-11" Δ	11'-7" Δ	11'-4" •	11'-1" •Δ	10'-9" •Δ
	4'-6"									12'-6" Δ	12'-2" •	11'-11" •Δ	11'-7" •Δ	11'-4" •Δ			
	5'-0"										11'-11" •Δ						

No Symbol : Any option
Δ : Joist must be 12" o.c. or 16 ga.
• : Joist must be 12" o.c.
•Δ : Joist must be 12" o.c. & 16 ga.

Table 6: 100 PSF Load Allowable Double *Beam* Spans – Residential

MAXIMUM J-CHANNEL BEAM SPAN (DOUBLE BEAM BETWEEN POSTS)

100 PSF		JOIST SPAN (SUPPORT TO SUPPORT)															
		1'-0"	2'-0"	3'-0"	4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	13'-0"	14'-0"	15'-0"	16'-0"
JOIST CANTILEVER LENGTH	0'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	19'-7"	19'-0"	18'-5" Δ	17'-2" •	16'-1" •Δ
	0'-6"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	19'-7"	19'-0"	18'-5"	17'-2" Δ	16'-1" •	15'-2" •Δ
	1'-0"		20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	19'-7"	19'-0"	18'-5"	17'-2"	16'-1" Δ	15'-2" •	14'-4" •Δ
	1'-6"			20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	19'-7"	19'-0"	18'-5"	17'-2"	16'-1"	15'-2" Δ	14'-4" Δ	13'-6" •Δ
	2'-0"				20'-0"	20'-0"	20'-0"	20'-0"	19'-7"	19'-0"	18'-5"	17'-2"	16'-1"	15'-2"	14'-4" Δ	13'-6" Δ	12'-10" •Δ
	2'-6"					20'-0"	20'-0"	19'-7"	19'-0"	18'-5"	17'-2"	16'-1"	15'-2"	14'-4"	13'-6" Δ	12'-10" Δ	12'-3" •Δ
	3'-0"						19'-7"	19'-0"	18'-5"	17'-2"	16'-1"	15'-2"	14'-4"	13'-6"	12'-10" Δ	12'-3" Δ	11'-8" •Δ
	3'-6"							18'-5"	17'-2"	16'-1"	15'-2"	14'-4"	13'-6"	12'-10"	12'-3" Δ	11'-8" Δ	11'-2" •Δ
	4'-0"								16'-1"	15'-2"	14'-4"	13'-6" Δ	12'-10" Δ	12'-3" Δ	11'-8" •	11'-2" •Δ	10'-9" •Δ
	4'-6"									14'-4" Δ	13'-6" •	12'-10" •Δ	12'-3" •Δ	11'-8" •Δ			
	5'-0"										12'-10" •Δ						

No Symbol : Any option
Δ : Joist must be 12" o.c. or 16 ga.
• : Joist must be 12" o.c.
•Δ : Joist must be 12" o.c. & 16 ga.

GENERAL NOTES:

1. All loads and load combinations are determined using ASCE 7. DL = Dead Load, LL = Live Load, SL = Snow Load, WL_g = Wind Load, & WL_u = Uplift Wind Load.
2. Maximum total load (TL) determined from the governing case of the following:
   TL = DL + LL
   TL = DL + SL
   TL = DL + 0.75*LL+0.75*SL
   TL = 0.6*DL + 0.6*WL_u
3. Loads utilized for the above (2) tables are as follows: DL = 10 psf, LL = 40 psf, SL+WL_g = 50 psf, where absolute uplift wind load (WL_u) is not greater than WL_g.
4. Deflection limits for joists and beams are determined as follows:
   Joists – Live load deflection is limited to L/360, Snow and Wind Load deflection is limited to L/360, where L is the span length.
   Beams – Live load deflection is limited to L/360, Snow and Wind Load deflection is limited to L/360, where L is the span length.
5. Hatched areas in tables indicate instances where the joists span is less than four times the cantilever distance.
6. If a double beam is supported by more than two posts, then its span selected above should be multiplied by 0.90.
7. If a beam is provided as an intermediate joist support (Mid-Beam) then its span selected above, or modified by note 8, should be multiplied by 0.60 for a dropped beam and 0.70 for a flush beam.
8. Required wind pressure shall be verified by others.

Check local building codes for location specific load design requirements.

TABLES BELOW ARE FOR REFERENCE ONLY AND MUST BE ACCOMPANIED BY THE COMPLETE SIGNED AND SEALED TER FOR CONSTRUCTION USE.

Table 7: 125 PSF Load *Allowable* Single Beam Spans – Residential

MAXIMUM J-CHANNEL BEAM SPAN (SINGLE BEAM BETWEEN POSTS)

125 PSF		JOIST SPAN (SUPPORT TO SUPPORT)															
		1'-0"	2'-0"	3'-0"	4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	13'-0"	14'-0"	15'-0"	16'-0"
JOIST CANTILEVER LENGTH	0'-0"	20'-0"	20'-0"	20'-0"	20'-0"	19'-4"	18'-2"	17'-3"	16'-6"	15'-11"	15'-1"	14'-5"	13'-9" Δ	13'-3" Δ	12'-9" ●Δ	12'-4" ●Δ	
	0'-6"	20'-0"	20'-0"	20'-0"	19'-4"	18'-2"	17'-3"	16'-6"	15'-11"	15'-1"	14'-5"	13'-9"	13'-3" Δ	12'-9" Δ	12'-4" ●Δ	11'-11" ●Δ	
	1'-0"		20'-0"	19'-4"	18'-2"	17'-3"	16'-6"	15'-11"	15'-1"	14'-5"	13'-9"	13'-3"	12'-9" Δ	12'-4" Δ	11'-11" ●Δ	11'-7" ●Δ	
	1'-6"			18'-2"	17'-3"	16'-6"	15'-11"	15'-1"	14'-5"	13'-9"	13'-3"	12'-9"	12'-4" Δ	11'-11" Δ	11'-7" ●Δ	11'-3" ●Δ	
	2'-0"				16'-6"	15'-11"	15'-1"	14'-5"	13'-9"	13'-3"	12'-9"	12'-4"	11'-11"	11'-7" Δ	11'-3" ●Δ	10'-11" ●Δ	
	2'-6"					15'-1"	14'-5"	13'-9"	13'-3"	12'-9"	12'-4"	11'-11"	11'-7"	11'-3" Δ	10'-11" ●	10'-4" ●Δ	
	3'-0"						13'-9"	13'-3"	12'-9"	12'-4"	11'-11"	11'-7"	11'-3"	10'-11" Δ	10'-4" Δ	9'-10" ●Δ	9'-5" ●Δ
	3'-6"							12'-9"	12'-4"	11'-11"	11'-7"	11'-3"	10'-11"	10'-4" Δ	9'-10" Δ	9'-5" ●Δ	9'-0" ●Δ
	4'-0"								11'-11"	11'-7"	11'-3"	10'-11" Δ	10'-4" Δ	9'-10" Δ	9'-5" ●	9'-0" ●Δ	8'-7" ●Δ
	4'-6"									11'-3" Δ	10'-11" ●	10'-4" ●Δ	9'-10" ●Δ	9'-5" ●Δ			
	5'-0"										10'-4" ●Δ						

No Symbol : Any option
Δ : Joist must be 12" o.c. or 16 ga.
● : Joist must be 12" o.c.
●Δ : Joist must be 12" o.c. & 16 ga.

Table 8: 125 PSF Load Allowable *Double* Beam Spans – Residential

MAXIMUM J-CHANNEL BEAM SPAN (DOUBLE BEAM BETWEEN POSTS)

125 PSF		JOIST SPAN (SUPPORT TO SUPPORT)															
		1'-0"	2'-0"	3'-0"	4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	13'-0"	14'-0"	15'-0"	16'-0"
JOIST CANTILEVER LENGTH	0'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	19'-4"	18'-9"	17'-3" Δ	15'-11" Δ	14'-10" ●Δ	13'-10" ●Δ	
	0'-6"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	19'-4"	18'-9"	17'-3"	15'-11" Δ	14'-10" Δ	13'-10" ●Δ	12'-11" ●Δ	
	1'-0"		20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	19'-4"	18'-9"	17'-3"	15'-11"	14'-10" Δ	13'-10" Δ	12'-11" ●Δ	12'-2" ●Δ	
	1'-6"			20'-0"	20'-0"	20'-0"	20'-0"	19'-4"	18'-9"	17'-3"	15'-11"	14'-10"	13'-10" Δ	12'-11" Δ	12'-2" ●Δ	11'-6" ●Δ	
	2'-0"				20'-0"	20'-0"	19'-4"	18'-9"	17'-3"	15'-11"	14'-10"	13'-10"	12'-11"	12'-2" Δ	11'-6" ●Δ	10'-11" ●Δ	
	2'-6"					19'-4"	18'-9"	17'-3"	15'-11"	14'-10"	13'-10"	12'-11"	12'-2"	11'-6" Δ	10'-11" ●	10'-4" ●Δ	
	3'-0"						17'-3"	15'-11"	14'-10"	13'-10"	12'-11"	12'-2"	11'-6"	10'-11" Δ	10'-4" Δ	9'-10" ●Δ	9'-5" ●Δ
	3'-6"							14'-10"	13'-10"	12'-11"	12'-2"	11'-6"	10'-11"	10'-4" Δ	9'-10" Δ	9'-5" ●Δ	9'-0" ●Δ
	4'-0"								12'-11"	12'-2"	11'-6"	10'-11" Δ	10'-4" Δ	9'-10" Δ	9'-5" ●	9'-0" ●Δ	8'-7" ●Δ
	4'-6"									11'-6" Δ	10'-11" ●	10'-4" ●Δ	9'-10" ●Δ	9'-5" ●Δ			
	5'-0"										10'-4" ●Δ						

No Symbol : Any option
Δ : Joist must be 12" o.c. or 16 ga.
● : Joist must be 12" o.c.
●Δ : Joist must be 12" o.c. & 16 ga.

GENERAL NOTES:

1. All loads and load combinations are determined using ASCE 7. DL = Dead Load, LL = Live Load, SL = Snow Load, WL_g = Wind Load, & WL_u = Uplift Wind Load.
2. Maximum total load (TL) determined from the governing case of the following:
   TL = DL + LL
   TL = DL + SL
   TL = DL + 0.75*LL+0.75*SL
   TL = 0.6*DL + 0.6*WL_u
3. Loads utilized for the above (2) tables are as follows: DL = 10 psf, LL = 40 psf, SL+WL_g = 75 psf, where absolute uplift wind load (WL_u) is not greater than WL_g.
4. Deflection limits for joists and beams are determined as follows:
   Joists – Live load deflection is limited to L/360, Snow and Wind Load deflection is limited to L/360, where L is the span length.
   Beams – Live load deflection is limited to L/360, Snow and Wind Load deflection is limited to L/360, where L is the span length.
5. Hatched areas in tables indicate instances where the joists span is less than four times the cantilever distance.
6. If a double beam is supported by more than two posts, then its span selected above should be multiplied by 0.90.
7. If a beam is provided as an intermediate joist support (Mid-Beam) then its span selected above, or modified by note 8, should be multiplied by 0.60 for a dropped beam and 0.70 for a flush beam.
8. Required wind pressure shall be verified by others.

Check local building codes for location specific load design requirements.

TABLES BELOW ARE FOR REFERENCE ONLY AND MUST BE ACCOMPANIED BY THE COMPLETE SIGNED AND SEALED TER FOR CONSTRUCTION USE.

Table 9: 150 PSF Load Allowable Single Beam Spans – Residential

MAXIMUM J-CHANNEL BEAM SPAN (DOUBLE BEAM BETWEEN POSTS)

150 PSF		JOIST SPAN (SUPPORT TO SUPPORT)														
		1'-0"	2'-0"	3'-0"	4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	13'-0"	14'-0"	15'-0"
JOIST CANTILEVER LENGTH	0'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	19'-7"	18'-10"	17'-4"	15'-9" Δ	14'-5" Δ	13'-4" ●Δ	12'-5" ●Δ	
	0'-6"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	19'-7"	18'-10"	17'-4"	15'-9"	14'-5" Δ	13'-4" Δ	12'-5" ●Δ	11'-7" ●Δ	
	1'-0"		20'-0"	20'-0"	20'-0"	20'-0"	19'-7"	18'-10"	17'-4"	15'-9"	14'-5"	13'-4" Δ	12'-5" Δ	11'-7" ●Δ	10'-10" ●Δ	
	1'-6"			20'-0"	20'-0"	19'-7"	18'-10"	17'-4"	15'-9"	14'-5"	13'-4"	12'-5" Δ	11'-7" Δ	10'-10" ●Δ	10'-2" ●Δ	
	2'-0"				19'-7"	18'-10"	17'-4"	15'-9"	14'-5"	13'-4"	12'-5"	11'-7"	10'-10" Δ	10'-2" ●Δ	9'-7" ●Δ	
	2'-6"					17'-4"	15'-9"	14'-5"	13'-4"	12'-5"	11'-7"	10'-10"	10'-2" Δ	9'-7" ●Δ	9'-1" ●Δ	
	3'-0"						14'-5"	13'-4"	12'-5"	11'-7"	10'-10"	10'-2"	9'-7" Δ	9'-1" ●	8'-8" ●Δ	
	3'-6"							12'-5"	11'-7"	10'-10"	10'-2"	9'-7"	9'-1" Δ	8'-8" Δ	8'-3" ●Δ	
	4'-0"								10'-10"	10'-2"	9'-7"	9'-1" Δ	8'-8" Δ	8'-3" Δ	7'-10" ●Δ	7'-6" ●Δ
	4'-6"									9'-7" Δ	9'-1" ●	8'-8" ●Δ	8'-3" ●Δ	7'-10" ●Δ		
	5'-0"										8'-8" ●Δ					

No Symbol : Any option
Δ : Joist must be 12" o.c. or 16 ga.
● : Joist must be 12" o.c.
●Δ : Joist must be 12" o.c. & 16 ga.

Table 10: 150 PSF Load Allowable Double *Beam* Spans – Residential

MAXIMUM J-CHANNEL BEAM SPAN (DOUBLE BEAM BETWEEN POSTS)

150 PSF		JOIST SPAN (SUPPORT TO SUPPORT)														
		1'-0"	2'-0"	3'-0"	4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	13'-0"	14'-0"	15'-0"
JOIST CANTILEVER LENGTH	0'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	19'-7"	18'-10"	17'-4"	15'-9" Δ	14'-5" Δ	13'-4" ●Δ	12'-5" ●Δ	
	0'-6"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	19'-7"	18'-10"	17'-4"	15'-9"	14'-5" Δ	13'-4" Δ	12'-5" ●Δ	11'-7" ●Δ	
	1'-0"		20'-0"	20'-0"	20'-0"	20'-0"	19'-7"	18'-10"	17'-4"	15'-9"	14'-5"	13'-4" Δ	12'-5" Δ	11'-7" ●Δ	10'-10" ●Δ	
	1'-6"			20'-0"	20'-0"	19'-7"	18'-10"	17'-4"	15'-9"	14'-5"	13'-4"	12'-5" Δ	11'-7" Δ	10'-10" ●Δ	10'-2" ●Δ	
	2'-0"				19'-7"	18'-10"	17'-4"	15'-9"	14'-5"	13'-4"	12'-5"	11'-7"	10'-10" Δ	10'-2" ●Δ	9'-7" ●Δ	
	2'-6"					17'-4"	15'-9"	14'-5"	13'-4"	12'-5"	11'-7"	10'-10"	10'-2" Δ	9'-7" ●Δ	9'-1" ●Δ	
	3'-0"						14'-5"	13'-4"	12'-5"	11'-7"	10'-10"	10'-2"	9'-7" Δ	9'-1" ●	8'-8" ●Δ	
	3'-6"							12'-5"	11'-7"	10'-10"	10'-2"	9'-7"	9'-1" Δ	8'-8" Δ	8'-3" ●Δ	
	4'-0"								10'-10"	10'-2"	9'-7"	9'-1" Δ	8'-8" Δ	8'-3" Δ	7'-10" ●Δ	7'-6" ●Δ
	4'-6"									9'-7" Δ	9'-1" ●	8'-8" ●Δ	8'-3" ●Δ	7'-10" ●Δ		
	5'-0"										8'-8" ●Δ					

No Symbol : Any option
Δ : Joist must be 12" o.c. or 16 ga.
● : Joist must be 12" o.c.
●Δ : Joist must be 12" o.c. & 16 ga.

GENERAL NOTES:

1. All loads and load combinations are determined using ASCE 7. DL = Dead Load, LL = Live Load, SL = Snow Load, WL_g = Wind Load, & WL_u = Uplift Wind Load.
2. Maximum total load (TL) determined from the governing case of the following:
   TL = DL + LL
   TL = DL + SL
   TL = DL + 0.75*LL+0.75*SL
   TL = 0.6*DL + 0.6*WL_u
3. Loads utilized for the above (2) tables are as follows: DL = 10 psf, LL = 40 psf, SL+WL_g = 100 psf, where absolute uplift wind load (WL_u) is not greater than 90 psf.
4. Deflection limits for joists and beams are determined as follows:
   Joists – Live load deflection is limited to L/380, Snow and Load deflection is limited to L/360, where L is the span length.
   Beams – Live load deflection is limited to L/360 Snow and Load deflection is limited to L/360, where L is the span length.
5. Hatched areas in tables indicate instances where the joists span is less than four times the cantilever distance.
6. If a double beam is supported by more than two posts, then its span selected above should be multiplied by 0.90.
7. If a beam is provided as an intermediate joist support (Mid-Beam) then its span selected above, or modified by note 8, should be multiplied by 0.60 for a dropped beam and 0.70 for a flush beam.
8. Required wind pressure shall be verified by others.

Check local building codes for location specific load design requirements.

TABLES BELOW ARE FOR REFERENCE ONLY AND MUST BE ACCOMPANIED BY THE COMPLETE SIGNED AND SEALED TER FOR CONSTRUCTION USE.

Table *11*: 200 PSF Load Allowable Single Beam Spans – Residential

MAXIMUM J-CHANNEL BEAM SPAN (SINGLE BEAM BETWEEN POSTS)

200 PSF		JOIST SPAN (SUPPORT TO SUPPORT)											
		1'-0"	2'-0"	3'-0"	4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
JOIST CANTILEVER LENGTH	0'-0"	20'-0"	20'-0"	19'-4"	17'-7"	16'-4"	15'-1"	14'-0"	13'-1"	12'-4"	11'-8" ●	11'-2" ●Δ	
	0'-6"	20'-0"	19'-4"	17'-7"	16'-4"	15'-1"	14'-0"	13'-1"	12'-4"	11'-8"	11'-2" ●	10'-5" ●Δ	9'-7" ●Δ
	1'-0"		17'-7"	16'-4"	15'-1"	14'-0"	13'-1"	12'-4"	11'-8"	11'-2"	10'-5" ●	9'-7" ●Δ	8'-11" ●Δ
	1'-6"			15'-1"	14'-0"	13'-1"	12'-4"	11'-8"	11'-2"	10'-5"	9'-7" ●	8'-11" ●Δ	8'-4" ●Δ
	2'-0"				13'-1"	12'-4"	11'-8"	11'-2"	10'-5"	9'-7"	8'-11" ●	8'-4" ●Δ	7'-9" ●Δ
	2'-6"					11'-8"	11'-2"	10'-5"	9'-7"	8'-11"	8'-4" ●	7'-9" ●	7'-4" ●Δ
	3'-0"						10'-5"	9'-7"	8'-11"	8'-4"	7'-9" ●	7'-4" ●	6'-11" ●Δ
	3'-6"							8'-11"	8'-4"	7'-9"	7'-4" ●	6'-11" ●	6'-6" ●Δ
	4'-0"								7'-9"	7'-4"	6'-11" ●	6'-6" ●	6'-3" ●Δ
	4'-6"									6'-11" Δ	6'-6" ●	6'-3" ●Δ	5'-11" ●Δ
	5'-0"										6'-3" ●Δ		

No Symbol : Any option
Δ : Joist must be 12" o.c. or 16 ga.
● : Joist must be 12" o.c.
●Δ : Joist must be 12" o.c. & 16 ga.

Table 12: *200* PSF Load Allowable Double Beam Spans - Residential

MAXIMUM J-CHANNEL BEAM SPAN (DOUBLE BEAM BETWEEN POSTS)

200 PSF		JOIST SPAN (SUPPORT TO SUPPORT)											
		1'-0"	2'-0"	3'-0"	4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
JOIST CANTILEVER LENGTH	0'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	19'-4"	17'-10"	15'-7"	13'-10"	12'-6" ●	11'-4" ●Δ	
	0'-6"	20'-0"	20'-0"	20'-0"	20'-0"	19'-4"	17'-10"	15'-7"	13'-10"	12'-6"	11'-4" ●	10'-5" ●Δ	9'-7" ●Δ
	1'-0"		20'-0"	20'-0"	19'-4"	17'-10"	15'-7"	13'-10"	12'-6"	11'-4"	10'-5" ●	9'-7" ●Δ	8'-11" ●Δ
	1'-6"			19'-4"	17'-10"	15'-7"	13'-10"	12'-6"	11'-4"	10'-5"	9'-7" ●	8'-11" ●Δ	8'-4" ●Δ
	2'-0"				15'-7"	13'-10"	12'-6"	11'-4"	10'-5"	9'-7"	8'-11" ●	8'-4" ●Δ	7'-9" ●Δ
	2'-6"					12'-6"	11'-4"	10'-5"	9'-7"	8'-11"	8'-4" ●	7'-9" ●	7'-4" ●Δ
	3'-0"						10'-5"	9'-7"	8'-11"	8'-4"	7'-9" ●	7'-4" ●	6'-11" ●Δ
	3'-6"							8'-11"	8'-4"	7'-9"	7'-4" ●	6'-11" ●	6'-6" ●Δ
	4'-0"								7'-9"	7'-4"	6'-11" ●	6'-6" ●	6'-3" ●Δ
	4'-6"									6'-11" Δ	6'-6" ●	6'-3" ●Δ	5'-11" ●Δ
	5'-0"										6'-3" ●Δ		

No Symbol : Any option
Δ : Joist must be 12" o.c. or 16 ga.
● : Joist must be 12" o.c.
●Δ : Joist must be 12" o.c. & 16 ga.

GENERAL NOTES:

1. All loads and load combinations are determined using ASCE 7. DL = Dead Load, LL = Live Load, SL = Snow Load, WL_g = Wind Load, & WL_u = Uplift Wind Load.
2. Maximum total load (TL) determined from the governing case of the following: TL = DL + LL
   TL = DL + SL
   TL = DL + 0.75*LL+0.75*SL
   TL = 0.6*DL + 0.6*WL_u
3. Loads utilized for the above (2) tables are as follows: DL = 10 psf, LL = 40 psf, SL+WL_g = 150 psf, where absolute uplift wind load (WL_u) is not greater than 90 psf.
4. Deflection limits for joists and beams are determined as follows:
   Joists – Live load deflection is limited to L/380, Snow and Load deflection is limited to L/360, where L is the span length.
   Beams – Live load deflection is limited to L/360 Snow and Load deflection is limited to L/360, where L is the span length.
5. Hatched areas in tables indicate instances where the joists span is less than four times the cantilever distance.
6. If a double beam is supported by more than two posts, then its span selected above should be multiplied by 0.90.
7. If a beam is provided as an intermediate joist support (Mid-Beam) then its span selected above, or modified by note 8, should be multiplied by 0.60 for a dropped beam and 0.70 for a flush beam.
8. Required wind pressure shall be verified by others.

Check local building codes for location specific load design requirements.

TABLES BELOW ARE FOR REFERENCE ONLY AND MUST BE ACCOMPANIED BY THE COMPLETE SIGNED AND SEALED TER FOR CONSTRUCTION USE.

Table 13: Allowable Single or Double Joist Carry Beam Spans (16 Gauge & 18 Gauge)

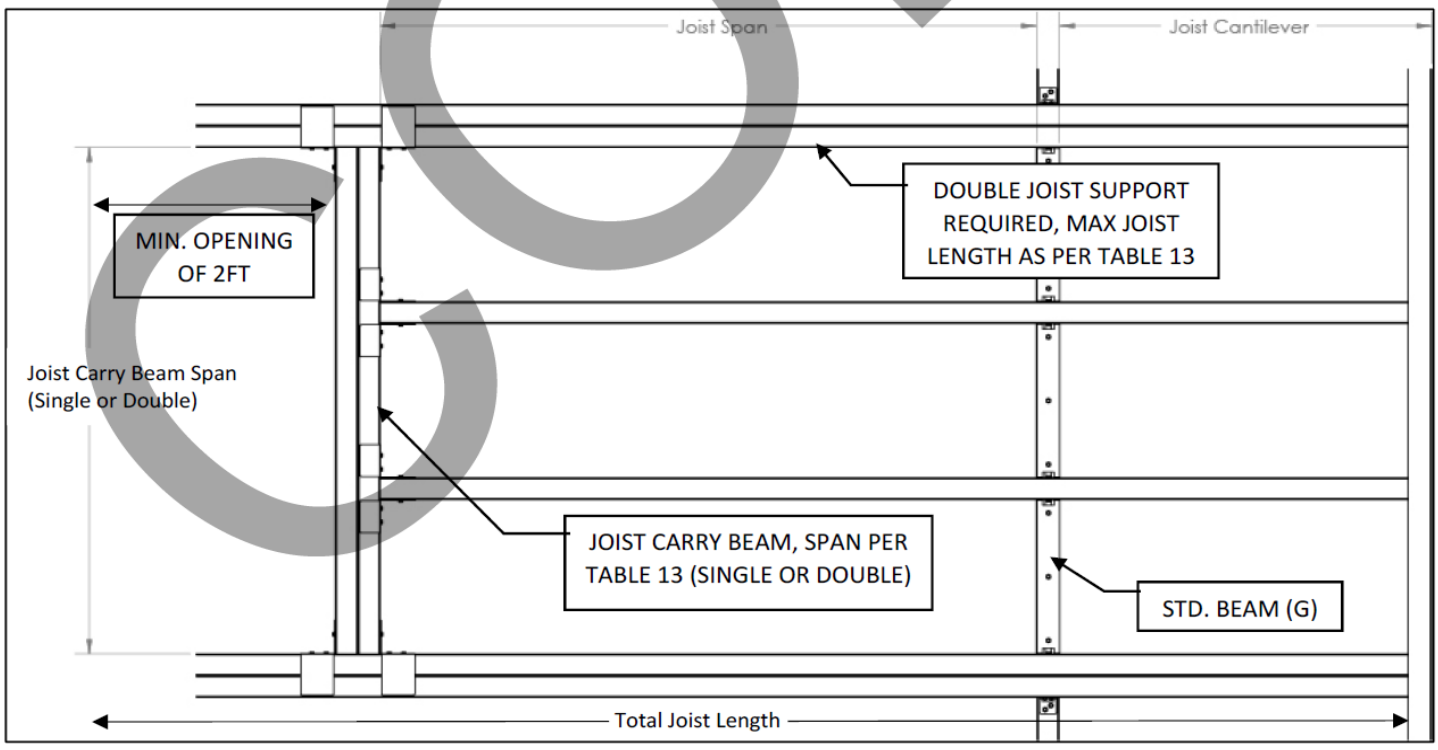
MAXIMUM 16-GA SINGLE JOIST CARRY BEAM SPAN

SINGLE JOIST		JOIST SPAN (STD. BEAM TO CARRY BEAM)					
		2'-0"	3'-0"	4'-0"	6'-0"	8'-0"	10'-0"
LOAD	50 PSF	15'-4"	9'-6"	6'-5"	3'-9"	2'-8"	2'-0"
	75 PSF	10'-10"	6'-0"	4'-1"	2'-5"	1'-8"	
	100 PSF	10'-4" ●	5'-9" ●	3'-10" ●	2'-3" ●	1'-7" ●	
	125 PSF	5'-5" ●	3'-0" ●	2'-0" ●			
	150 PSF	1'-10" ●					
	200 PSF						

	Max Joist Length of 12ft
●	Max Joist Length of 8ft

GENERAL NOTES:

1. All loads and load combinations are determined using ASCE 7 as per general notes from beam span tables.
2. Deflection limits for joists and beams are determined as follows:
   Joists – Live load deflection is limited to L/380, Snow and Load deflection is limited to L/360, where L is the span length.
   Beams – Live load deflection is limited to L/360 Snow and Load deflection is limited to L/360, where L is the span length.
3. Hatched areas in tables indicate instances where the carry beam span is less 18 inches.
4. Double Joist capacity is based on the following, any other configuration shall be verified by others:
   a. The connection from S-Ledger to Beam
   b. One (single or double) carry beam attached to double joist
   c. Max Double Joist length of 12 ft for loads up to 75 psf
   d. Max Double Joist length of 8 ft for loads 100 psf or greater
   e. Minimum opening of 2ft.
5. Required wind pressure shall be verified by others.



Check local building codes for location specific load design requirements.

TABLES BELOW ARE FOR REFERENCE ONLY AND MUST BE ACCOMPANIED BY THE COMPLETE SIGNED AND SEALED TER FOR CONSTRUCTION USE.

Table 14: Ledger *Joist* Anchorage Loads - 12" Anchor Spacing

S-LEDGER ANCHORAGE											
12" SPACING		JOIST SPAN (BEAM TO LEDGER)									
		2'-0"	4'-0"	6'-8"	8'-10"	10'-7"	12'-0"	13'-0"	17'-4"	18'-0"	18'-6"
LOAD	50 PSF	APPROVED									
	75 PSF	APPROVED									
	100 PSF	APPROVED									
	125 PSF	APPROVED									
	150 PSF	APPROVED									
	200 PSF	APPROVED									

▒▒▒ INDICATES SPANS THAT REQUIRE ANCHORAGE BEYOND THIS EVALUATION REPORT

Table 15: Ledger *Joist* Anchorage Loads - 16" Anchor Spacing

S-LEDGER ANCHORAGE											
16" SPACING		JOIST SPAN (BEAM TO LEDGER)									
		2'-0"	5'-0"	6'-8"	8'-0"	9'-9"	12'-0"	13'-0"	15'-4"	18'-0"	18'-6"
LOAD	50 PSF	APPROVED									
	75 PSF	APPROVED									
	100 PSF	APPROVED									
	125 PSF	APPROVED									
	150 PSF	APPROVED									
	200 PSF	APPROVED									

▒▒▒ INDICATES SPANS THAT REQUIRE ANCHORAGE BEYOND THIS EVALUATION REPORT

Ledger joist anchors shall be galvanized ¼" diameter x 2.5" long wood lag screws conforming to ASTM A307, with minimum 2" edge and end distance, and full thread penetration into a supporting Southern Yellow Pine structure (integrity by others). The holder of this report shall check with local building codes for any additional requirements that may be applied.

Check local building codes for location specific load design requirements.

Component Fastening Schedule

Connection	Fasteners
F50 Bracket to Ledger	(3) #10 screws – fill all holes in bracket
Ledger bracket to backside of Ledger (typical installation)	No fasteners required
Ledger bracket to frontside of Ledger	(6) #10 screws – fill all holes in bracket
F50 bracket to Joist	(3) #10 screws – fill all holes in bracket
Ledger bracket to Joist	(2) #10 screws – one per side
Joist to Beam (flush mount) with Joist Hanger	(8) #10 screws – fill all holes in bracket
Joist to Beam (dropped beam) with 12" or 16" OC Blocking	(5) #10 screws – fill all holes in bracket
Joist to Beam (dropped beam) with F10 Bracket	(4) #10 screws – fill all holes in bracket
Joist to Joist Blocking with 12" or 16" OC Strap installed on top of joists	No fasteners required
Joist to Joist Blocking with 12" or 16" OC Strap installed on bottom of joists	(1) #10 screw per joist – fill all holes in strap
Joist to Joist Blocking non-12" or 16" OC spacing	(2) F50 brackets, (12) #10 screws with joist material cut to length
Rim bracket to Joist	(2) #10 screws
Curved Rim Joist to Rim bracket / Joist	(1) #10 screw
Rim Joist-12" or 16" OC Spacing	(2) #10 screws per joist – fill all holes
Post to beam bracket	(28) #10 screws – fill all holes
Post to Pier bracket	(8) #10 screws – fill all holes

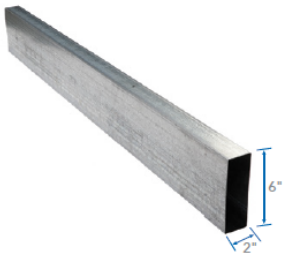
Beam Connection Schedule

Single beam to top of Column	(1) Single Beam/Post Bracket, (28) #10 screws – fill all holes in brackets
Single beam to notched Column	(2) ½" diam. carriage bolts (410 stainless steel)
Double beam to top of Column	(1) Double Beam/Post Bracket, (28) #10 screws – fill all holes in brackets

Product Overview

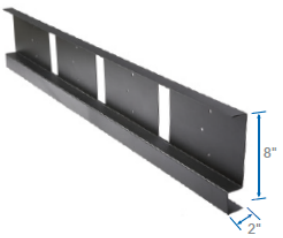
JOIST - 16 GAUGE

ITEM #	DESCRIPTION	UPC #
181112161	FF-EVOLUTION-2X6 JOIST-12'-16GA-PC	811397030170
181114161	FF-EVOLUTION-2X6 JOIST-14'-16GA-PC	811397030163
181116161	FF-EVOLUTION-2X6 JOIST-16'-16GA-PC	811397030156
181118161	FF-EVOLUTION-2X6 JOIST-18'-16GA-PC	811397030149
181120161	FF-EVOLUTION-2X6 JOIST-20'-16GA-PC	811397030132



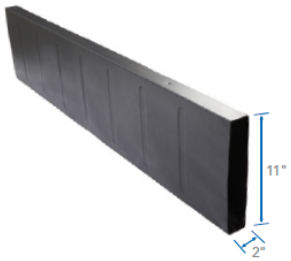
JOIST - 18 GAUGE

ITEM #	DESCRIPTION	UPC #
181112180	FF-EVOLUTION-2X6 JOIST-12'-18GA	811397030224
181114180	FF-EVOLUTION-2X6 JOIST-14'-18GA	811397030217
181116180	FF-EVOLUTION-2X6 JOIST-16'-18GA	811397030200
181118180	FF-EVOLUTION-2X6 JOIST-18'-18GA	811397030194
181120180	FF-EVOLUTION-2X6 JOIST-20'-18GA	811397030187



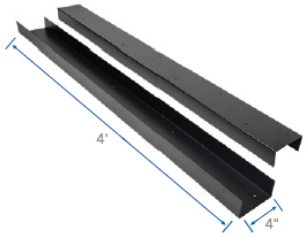
S-LEDGER

ITEM #	DESCRIPTION	UPC #
182012141	FF-EVOLUTION-S-LEDGER-12'	811397030293
182020141	FF-EVOLUTION-S-LEDGER-20'	811397030309
182112141	FF-EVOLUTION-12OC-S-LEDGER-12'	811397030316
182120141	FF-EVOLUTION-12OC-S-LEDGER-20'	811397030354
182212141	FF-EVOLUTION-16OC-S-LEDGER-12'	811397030330
182220141	FF-EVOLUTION-16OC-S-LEDGER-20'	811397030347



BEAM

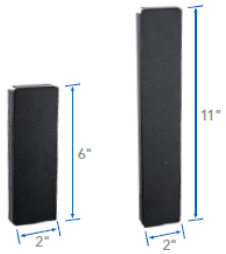
ITEM #	DESCRIPTION	UPC #
184108161	FF-EVOLUTION-BEAM 2X11-8'	811397030361
184112161	FF-EVOLUTION-BEAM 2X11-12'	811397030378
184116161	FF-EVOLUTION-BEAM 2X11-16'	811397030385
184120161	FF-EVOLUTION-BEAM 2X11-20'	811397030392



DOUBLE BEAM TRACK

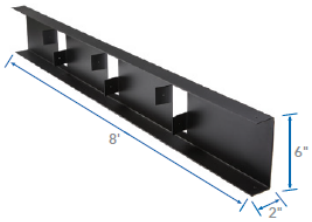
ITEM #	DESCRIPTION	UPC #
184204161	FF-EVOLUTION-DBL BEAM TRACK-4' (2 PACK)	811397030408

Product Overview



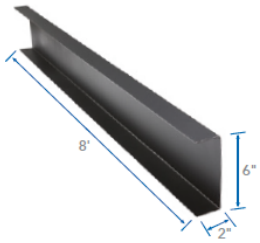
CAPS

ITEM #	DESCRIPTION	UPC #
183062001	FF-EVOLUTION-JOIST CAP	811397030262
183112001	FF-EVOLUTION-BEAM CAP	811397030279



RIM JOIST

ITEM #	DESCRIPTION	UPC #
185108141	FF-EVOLUTION-12OC U-RIM JOIST-2X6-8'	811397030422
185208141	FF-EVOLUTION-16OC U-RIM JOIST-2X6-8'	811397030439



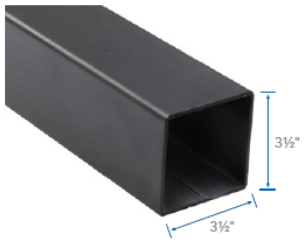
RIM JOIST - BLANK

ITEM #	DESCRIPTION	UPC #
185008141	FF-EVOLUTION-U-RIM JOIST-2X6-8'	811397030415

RIM JOIST - CURVED

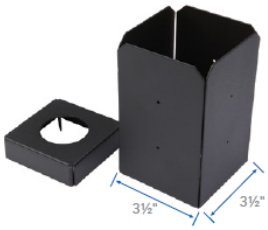
ITEM #	DESCRIPTION	UPC #
185308161	FF-EVOLUTION-CURVE-RIM JOIST-2X6-8'	811397030446

Product Overview



POST

ITEM #	DESCRIPTION	UPC #
186110111	FF-EVOLUTION-POST 3.5X3.5-10'	811397030248



POST TO PIER BRACKET

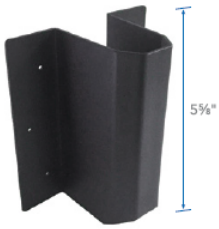
ITEM #	DESCRIPTION	UPC #
183351601	FF-EVOLUTION-3.5" POST/PIER BRACKET	811397030286

SINGLE BEAM TO POST BRACKET

ITEM #	DESCRIPTION	UPC #
183161601	FF-EVOLUTION-SNGL BEAM/POST BRACKET	811397030057

DOUBLE BEAM TO POST BRACKET

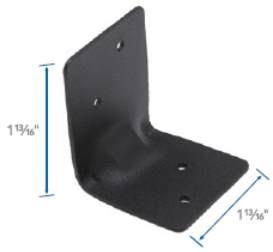
ITEM #	DESCRIPTION	UPC #
183261601	FF-EVOLUTION-DBL BEAM/POST BRACKET	811397030040



LEDGER BRACKET

ITEM #	DESCRIPTION	UPC #
183011401	FF-EVOLUTION-LEDGER BRACKET	811397030125

Product Overview

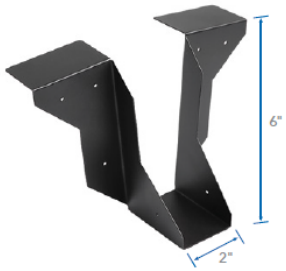


F10 BRACKET

ITEM #	DESCRIPTION	UPC #
183041601	FF-EVOLUTION-F10 BRACKET (BOX 10)	811397030453

F50 BRACKET

ITEM #	DESCRIPTION	UPC #
183021601	FF-EVOLUTION-F50 BRACKET	811397030118



SINGLE HANGER BRACKET

ITEM #	DESCRIPTION	UPC #
183102001	FF-EVOLUTION-SNGL HANGER BRACKET	811397030071

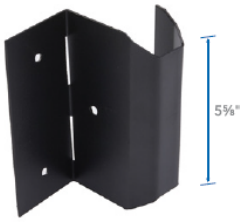
DOUBLE HANGER BRACKET

ITEM #	DESCRIPTION	UPC #
183202001	FF-EVOLUTION-DBL HANGER BRACKET	811397030064

45° BRACKET

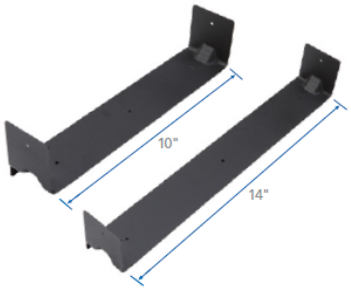
ITEM #	DESCRIPTION	UPC #
183451401	FF-EVOLUTION-45 DEG BRACKET	811397030101

Product Overview



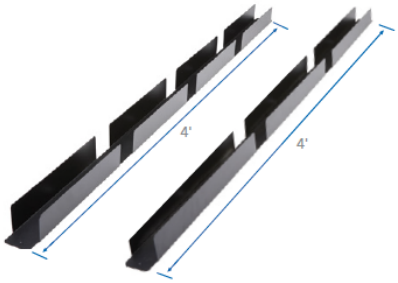
RIM JOIST BRACKET

ITEM #	DESCRIPTION	UPC #
183031801	FF-EVOLUTION-RIM JOIST BRACKET	811397030095



BLOCKING

ITEM #	DESCRIPTION	UPC #
188122001	FF-EVOLUTION-12OC BLOCKING	811397030033
188162001	FF-EVOLUTION-16OC BLOCKING	811397030026



STRAP

ITEM #	DESCRIPTION	UPC #
187104201	FF-EVOLUTION-12OC STRAP	811397030002
187204201	FF-EVOLUTION-16OC STRAP	811397030019

SELF-DRILLING SCREW

ITEM #	DESCRIPTION	UPC #
183990341	FF-EVOLUTION 3/4" BLACK SELF-DRILLING SCREW (BAG 250)	811397030255

ITEM #	DESCRIPTION	UPC #
183280601	FF-BLACK SAND (BKSND) AEROSOL TOUCH UP PAINT	811397030736