



BAILEY TRUEDECK™ INSTALLATION MANUAL

INTRODUCTION

BAILEY TRUEDECK™ is a steel joist and track system designed for constructing residential and commercial deck frames. Steel is much more flat, strong and rot resistant than pressure treated wood. BAILEY TRUEDECK™ can be used with a variety of decking materials such as composite, PVC, cedar and pressure treated wood. For benefits of BAILEY TRUEDECK™ over pressure treated wood, please refer to BAILEY TRUEDECK™ consumer brochure available on Bailey Metal Product's webpage.

This manual is intended to serve as an aide and basic guide of recommended techniques for the safe and proper installation of the BAILEY TRUEDECK™ System. It is not intended to supersede local building codes and project specific design. Installation must be performed in compliance with local code requirements and safety standards. Every actual installation must be done in accordance with contract documents, specifications and appropriate installation drawings. Therefore, while the information in this manual has been prepared in accordance with generally recognized engineering principles and accepted construction practices, the guidelines are intended as recommended techniques to be followed and can only be used to the extent that they do not conflict with applicable codes, contract documents and direction of the engineer of record. In the event of any conflict between this manual and any legal regulations, such regulations shall apply and this manual shall only supplement as applicable.

Safety

This installation manual is intended to serve as an aide and basic guide of recommended techniques for the proper sequence and placement of BAILEY TRUEDECK™ components. This manual is not intended to prescribe safety procedures.

Safe erection practices may be defined and made mandatory by federal, provincial, state and/or local regulations as well as good construction practices. Serious injury can result from failure to familiarize and comply with all applicable safety requirements. Maintaining a clean, tidy and organized project site is recognized as being an important factor towards safety and successful project completion.

When working on any construction project, you should wear protective clothing and safety equipment. Wear face shield, hearing protection, gloves, and long sleeves, particularly when cutting in confined spaces. Refer to Figure 1 for a list of safety equipment needed to facilitate safe construction of BAILEY TRUEDECK™ system.

Safety Glasses



Safety Gloves



Ear protection



Figure 1

Warning

1. BAILEY TRUEDECK™ does not provide direction on making all types of connections. Please consult a professional engineer and/or building code official for any specific connections not shown in this guide.
2. For all non-BAILEY TRUEDECK™ components, please refer to respective component's manufacturers for installation instructions.
3. The National Building Code of Canada establishes guidelines for the construction of buildings and various structures, including decks. However, these standards can vary depending on the local building requirements in effect in a particular province or municipality.
4. Metal is an excellent electrical conductor. One potential cause for injury is the contact of metal components with power lines during handling and erection. The location of all power lines must be noted and, if possible, flagged. The erection process must be routed to avoid accidental contact with all power lines and high voltage services and equipment. All tools and power chords must be properly insulated and grounded and the use of approved ground fault circuit breakers is recommended.
5. Some edges of the BAILEY TRUEDECK™ components can be razor sharp and can cause serious injuries if protective hand gear is not worn. Proper care should be taken so others are not injured when moving BAILEY TRUEDECK™ components.
6. Although Bailey TRUEDECK™ is coated with G90 galvanized coating; proximity to water body may still impact the effectiveness of the coating. Due to increased risk of corrosion, we recommend not to install BAILEY TRUEDECK™ within 3000 ft. of any salt water body or under the surface or within the splash zone of any body of fresh water.

Basics of BAILEY TRUEDECK™

Figure 2 provides a brief overview of the deck layout. BAILEY TRUEDECK™ uses steel joists and track system for creating a deck frame. Decking material (composite, pressure treated wood, cedar etc.) can be placed on top of the BAILEY TRUEDECK™ frame.

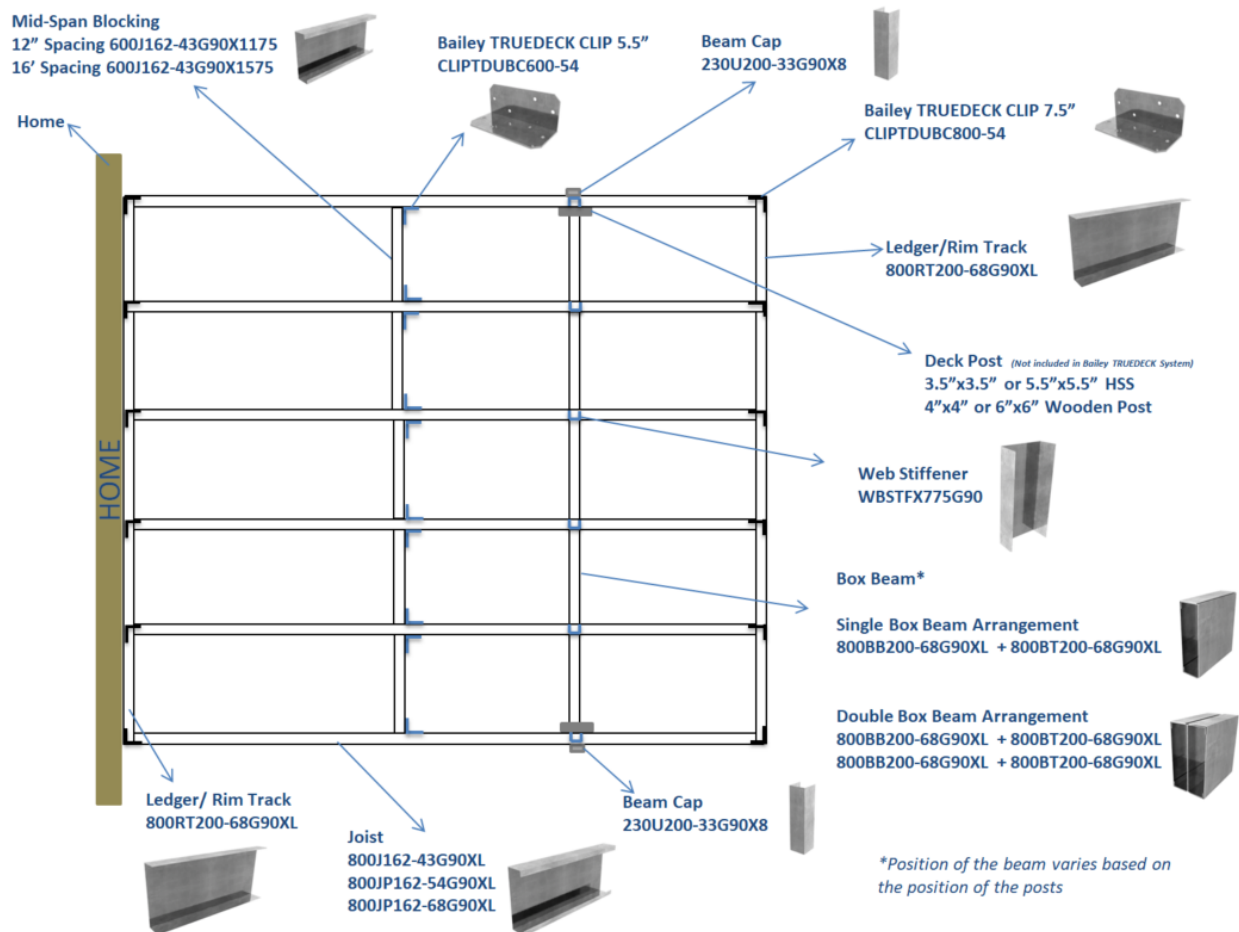
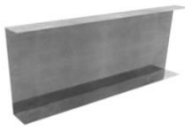











Figure 2

BAILEY TRUEDECK™ Components

A detailed explanation of the individual components is provided below.

Framing Component		Description	Part Number
Ledger/ Rim Track		8" BAILEY TRUEDECK™ Ledger/Rim Track with 2" leg can be used as the ledger board and as the outside rim track. Ledger/Rim track is a variable length product and can be fabricated to exact sizes according to your deck dimensions.	800RT200-68G90XL
Joist		8" BAILEY TRUEDECK Joist with 1-5/8" Flange and 1/2" Lip can be used as deck joist to create the frame. Joist is a variable length product and can be fabricated to exact sizes according to your deck dimensions.	800J162-43G90XL 800JP162-54G90XL 800JP162-68G90XL
Box Beam Joist		8" BAILEY TRUEDECK Box Beam Joist with 2" flange and 5/8" lip can be used to make the box beam along with box beam track. Box beam joist is a variable length product and can be fabricated to exact sizes according to your deck dimensions.	800BB200-68G90XL
Box Beam Track		8" BAILEY TRUEDECK™ Box Beam Track with 2" flange can be used to make the box beam along with the Box Beam Joist. Box beam Track is a variable length product and can be fabricated to exact sizes according to your deck dimensions.	800BT200-68G90XL
Web Stiffener		3-5/8" Track in .043" thickness and 7-3/4" in length. Web Stiffener to be placed at every interaction of the joists and the beam to avoid web crippling.	WBSTFX775G90
Mid-Span Blocking		Mid-Span blocking for 12" spacing. Helps in keeping deck joists secured in place. Mid-span blocking has 6" web, 1-5/8" flange and 1/2" lip.	600J162-43G90X1175
		Mid-Span blocking for 16" spacing. Helps in keeping deck joists secured in place. Mid-span blocking has 6" web, 1-5/8" flange and 1/2" lip.	600J162-43G90X1575

Beam Cap		Channel with 2.3" web and 2" flanges. Available in 8" length. Used for capping the open ends of the beam.	230U200-33G90X8
BAILEY TRUEDECK CLIP 5.5"		5-1/2" BAILEY TRUEDECK Clip is used to connect 6" wide Mid-span blocking to 8" wide joist. Available in packs of 25 pc.	CLIPTDUBC600-54
BAILEY TRUEDECK CLIP 7.5"		7-1/2" BAILEY TRUEDECK Clip is used to connect 8" wide Ledger/Rim Track to 8" wide Joist. Available in packs of 25 pc.	CLIPTDUBC800-54
Fasteners		3/4" Hex Head #10 Drill Point	SCREWHX10X075P

Tools Required

Refer to Figure 3 for an overview of the tools required for constructing BAILEY TRUEDECK™ system. Please note, in most cases, BAILEY TRUEDECK™ components are pre-cut to the exact sizes thereby eliminating any need of cutting on job site.

Tape Measure



Permanent Marker



Metal Cutting Saw Blade



Metal Cutting Saw



Drill



Step Drill Bit



Zinc Spray



Note:

- In majority of cases, Bailey TrueDeck™ components come **pre-cut to exact size** and hence there may be little to no need of cutting steel.
- Bailey Metal Products does not endorse any of the above brands. Please feel free to use a brand of your choice.

Figure 3

Planning Your Deck

BAILEY TRUEDECK™ system can be designed using the technical data provided in this guide. Refer to Figure 4 and 5 for understanding the basics of BAILEY TRUEDECK™ component and terminologies.

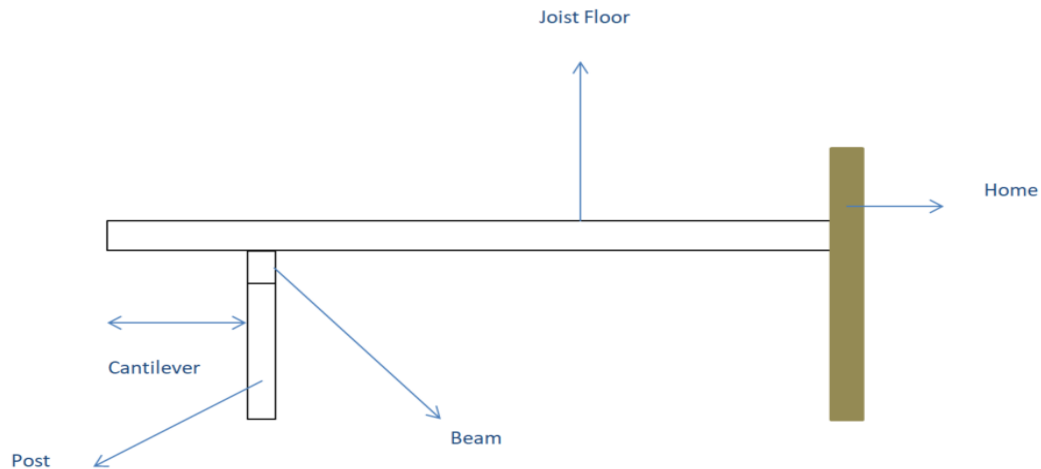


Figure 4

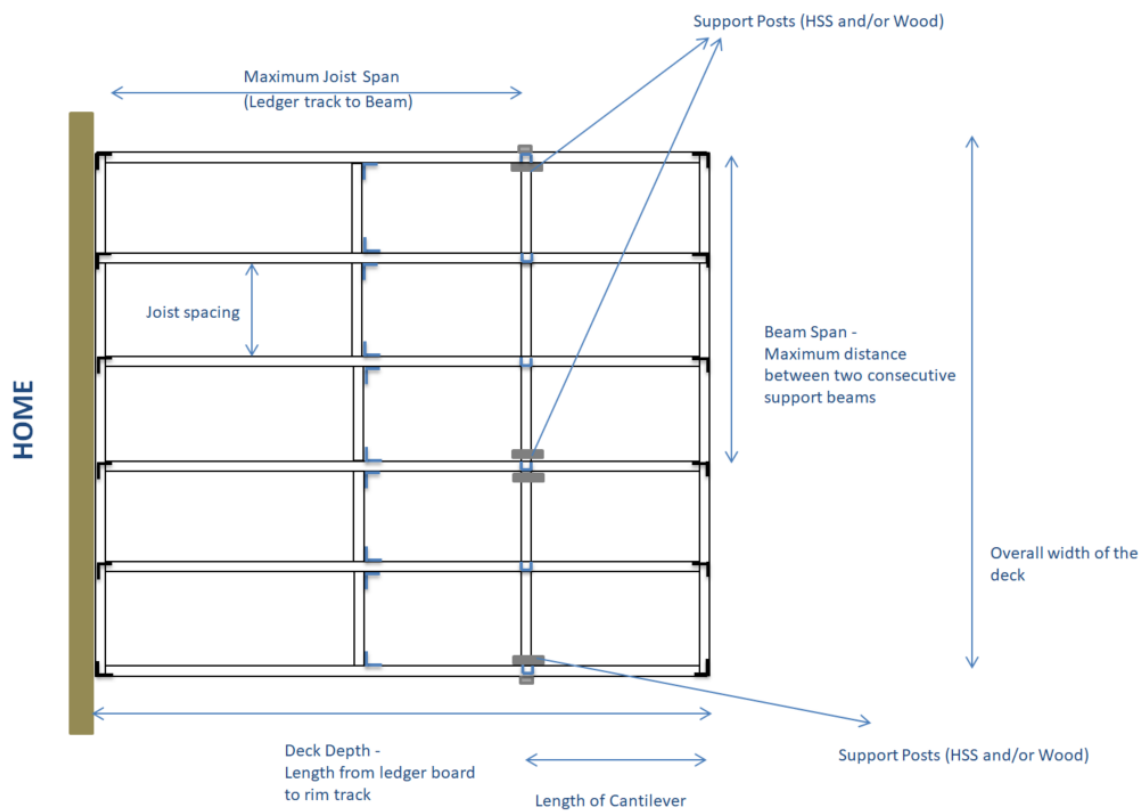


Figure 5

Refer to Figure 5 to gain an understanding of spacing and arrangement between different BAILEY TRUEDECK™ components.

1. **Maximum Joist Span:** This is the maximum distance that the joist can span from the ledger track to the support beam. Please note, a joist can physically be much longer than its span but would need support posts in between.
2. **Beam Span:** This is the maximum distance that the beam can span between two consecutive support posts. Please note, a beam can physically be much longer than its span but would need support posts in between.
3. **Overall width of the deck:** This is the distance between two end joists.
4. **Deck Depth:** This is the distance between ledger track and outside rim track.
5. **Length of the Cantilever:** This is the length of the overhanging joist. Distance is measured between the support post and the outside rim track.
6. **Joist Spacing:** Refer to decking manufacturer's instructions for understanding the allowed joist spacing. Joists are commonly spaced at 12" or 16" On Center (O.C.)

General Design Steps

As a rule of thumb, position of support posts (or columns) is dependent on the following:

1. Joist spans influence the distance of the support posts from the ledger track or the home.
2. Beam spans influence the location of the posts along the beam and the number of support posts required.
3. Site conditions need to be taken in to consideration while placing the posts.

In order to aid the design process, please refer to the following example on how to plan and design a deck.

Example: 22' deep x 23' wide deck

Step 1: Determine deck's load bearing capacity

A deck is exposed to a variety of loads such as human traffic, furniture, hot tubs, etc. Based on your anticipated loads and usage, consult a design engineer for determining the load bearing capacity of your deck. Most local building codes require the residential deck to be designed to minimum 50 PSF (pounds per square foot) load bearing capacity and commercial decks to be designed for 100 PSF load bearing capacity.

For this example, we have considered 50 PSF as the load bearing capacity of the deck.

Step 2: Determine Joist Spacing

Refer to your decking manufacturer's guide to understand the allowable joist spacing. Most decking manufacturers allows for 12" and/or 16" spacing. For this example, we have considered 12" O.C. as the joist spacing.

Step 3: Determine Joist Spans and need of a cantilever

Selecting the joist for deck applications requires reading the span tables. Generally, the overall depth of the deck is achieved by summing up the span between ledger track to support beam, and the cantilever length. Refer to highlighted section in Figure 6. For 12" joist spacing and 50 PSF load, a depth of 22' can be achieved using the following options:

.043" (18 GA) Joist: Cannot achieve a 22' deck depth since the maximum sum of cantilever length and joist span is always less than 22'.

BAILEY TrueDeck Joist Span Table							
Total Load (psf)	Cantilever Length (FT)	.043" Thick Joist (Joist Span)		.054" Thick Joist (Joist Span)		.068" Thick Joist (Joist Span)	
		33 KSI		50 KSI		50 KSI	
		Joist Spacing (in.)		Joist Spacing (in.)		Joist Spacing (in.)	
		12	16	12	16	12	16
50							
	0	15' 7"	13' 6"	20' 9"	18' 0"	22' 7"	20' 6"
	2	15' 10"	13' 9"	20' 10"	18' 2"	22' 7"	20' 6"
	3	16' 2"	14' 1"	20' 10"	18' 6"	22' 7"	20' 6"
	4	16' 7"	14' 7"	20' 10"	18' 10"	22' 7"	20' 6"

Figure 6

.054" (16 GA) Joist: Refer to Figure 7, deck depth of 22' can be achieved using either a 2', 3' or 4' cantilever. E.g. with 2' cantilever, a .054" (16 GA) joist can span 20'10" thereby achieving an overall deck length of 22'10". (20'10" joist span plus 2' of the cantilever length). All potential combinations have been marked in light red color.

BAILEY TrueDeck Joist Span Table							
Total Load (psf)	Cantilever Length (FT)	.043" Thick Joist (Joist Span)		.054" Thick Joist (Joist Span)		.068" Thick Joist (Joist Span)	
		33 KSI		50 KSI		50 KSI	
		Joist Spacing (in.)		Joist Spacing (in.)		Joist Spacing (in.)	
		12	16	12	16	12	16
50							
	0	15' 7"	13' 6"	20' 9"	18' 0"	22' 7"	20' 6"
	2	15' 10"	13' 9"	20' 10"	18' 2"	22' 7"	20' 6"
	3	16' 2"	14' 1"	20' 10"	18' 6"	22' 7"	20' 6"
	4	16' 7"	14' 7"	20' 10"	18' 10"	22' 7"	20' 6"

Figure 7

.068" (14 GA) Joist: Refer to Figure 8, deck depth of 22' can be achieved using either no cantilever (joist can span entire 22') or with 2', 3' or a 4' cantilever option. All potential combinations have been marked in light red color. As an example, with 2' cantilever, a .068" (14 GA) joist can technically span 22'7" thereby achieving an overall deck length of 24'7". (~2' more than the deck depth required for this example)

BAILEY TrueDeck Joist Span Table							
Total Load (psf)	Cantilever Length (FT)	.043" Thick Joist (Joist Span)		.054" Thick Joist (Joist Span)		.068" Thick Joist (Joist Span)	
		33 KSI		50 KSI		50 KSI	
		Joist Spacing (in.)		Joist Spacing (in.)		Joist Spacing (in.)	
		12	16	12	16	12	16
50							
	0	15' 7"	13' 6"	20' 9"	18' 0"	22' 7"	20' 6"
	2	15' 10"	13' 9"	20' 10"	18' 2"	22' 7"	20' 6"
	3	16' 2"	14' 1"	20' 10"	18' 6"	22' 7"	20' 6"
	4	16' 7"	14' 7"	20' 10"	18' 10"	22' 7"	20' 6"

Figure 8

For this example, we have considered moving forward with a .054" (16GA) joist with 4' cantilever (as shown in Figure 9). So our maximum joist span in this case can be 20'10".

We can use a cantilever of 1' 2" to achieve an overall depth of 22'. (20'10" joist span and 1' 2" cantilever = 22')

We could also use a 20' joist and a 2' long cantilever to achieve a 22' long deck depth. Another option available is using 18' joist span and 4' cantilever to achieve an overall deck depth of 22'. Please note, the physical length of the joist will be 22'. Moving the support post away (or towards) the ledger will result in a different cantilever length. If you have a desired cantilever length in mind, refer back to span tables to pick a joist thickness that could span the required distance.

BAILEY TrueDeck Joist Span Table							
Total Load (psf)	Cantilever Length (FT)	.043" Thick Joist (Joist Span)		.054" Thick Joist (Joist Span)		.068" Thick Joist (Joist Span)	
		33 KSI		50 KSI		50 KSI	
		Joist Spacing (in.)		Joist Spacing (in.)		Joist Spacing (in.)	
		12	16	12	16	12	16
50							
	0	15' 7"	13' 6"	20' 9"	18' 0"	22' 7"	20' 6"
	2	15' 10"	13' 9"	20' 10"	18' 2"	22' 7"	20' 6"
	3	16' 2"	14' 1"	20' 10"	18' 6"	22' 7"	20' 6"
	4	16' 7"	14' 7"	20' 10"	18' 10"	22' 7"	20' 6"

Figure 9

Step 4: Determine Beam Span

After determining the joist spans, next step involves calculating the beam span. There are two options for beam arrangements that you can use for designing your deck.

Single Box Beam:

Single box beam arrangement comprises of a box beam joist and a box beam track fastened together. (See Figure 10)



Figure 10

Double box beam:

Double box beam arrangement comprises of two single box beams fastened together (See Figure 11). Double box beam arrangements have a larger span compared to a single box beam arrangement. (Primarily because there is twice as much material in the beam)



Figure 11

Once you have decided on the type of box beam arrangement (either single beam or double beam), refer to the box beam span table noted in Figure 12. Refer to row containing 4' cantilever and 18' joist span.

One Box Beam Joist and one Box Beam Track												
One .068" joist and one .068" track. (50 ksi)												
Total Load (psf)	Cantilever Length (FT)	Joist Spans (ft)										
		8	9	10	11	12	13	14	15	16	17	18
50												
	0	18' 8"	17' 10"	17' 3"	16' 9"	16' 3"	15' 10"	15' 4"	14' 10"	14' 4"	14' 0"	13' 7"
	2	16' 3"	15' 10"	15' 4"	14' 10"	14' 4"	14' 0"	13' 7"	13' 2"	12' 10"	12' 7"	12' 3"
	3	15' 4"	14' 10"	14' 4"	14' 0"	13' 7"	13' 2"	12' 10"	12' 7"	12' 3"	12' 0"	11' 8"
	4	14' 4"	14' 0"	13' 7"	13' 2"	12' 10"	12' 7"	12' 3"	12' 0"	11' 8"	11' 6"	11' 3"

Figure 12

A single box beam arrangement can span 11'3" without any support posts. With a deck width of 23', we will need support posts to support the beam in between. Refer to the formula given below for calculating the number of support posts required.

Overall width of the deck \div Beam Span = # support posts (round up) + 1

In this scenario, $23' \div 11'3" = 3 + 1 = 4$ support posts.

You can place the 4 support posts anywhere along the beam as long as the distance between any two consecutive support posts is less than the beam span. In this scenario, maximum beam distance between the two support posts cannot exceed 11'3".

Note: Generally from an aesthetics perspective, it is recommended to place the support posts at equal distance from each other as long as the distance between two consecutive posts does not exceed the beam span. Often site conditions (irregular landscape, rocks etc.) and individual preference could result in a non-equidistant support post placement.

Installation Instructions and Connection Drawings

- 1. Install ledger track/rim track:** The first step in installing BAILEY TRUEDECK™ is to install ledger track. The ledger track/rim track can be installed either directly to the house or through a wooden ledger board if needed. The connections are usually achieved using the following fasteners:

Foundation Material	Screw Used
Concrete	Wedge Anchors – 3/4" x 5 1/2"
Wood	Lag Screw – 3/8" x 2 1/2"

We recommend pre-drilling the ledger/rim track for ease of installation. Refer to Figure 13 and 14 for a list connection details on concrete foundation and wooden foundation respectively.

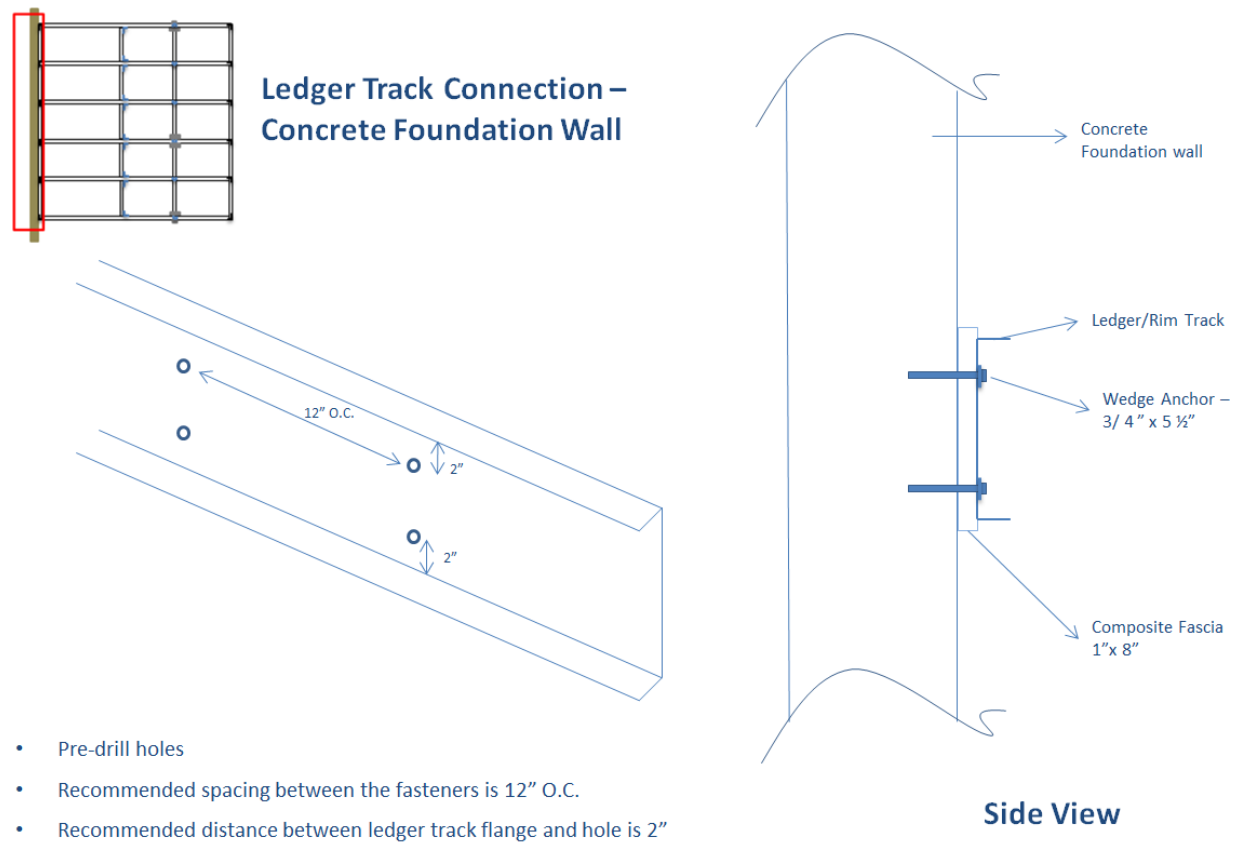


Figure 13

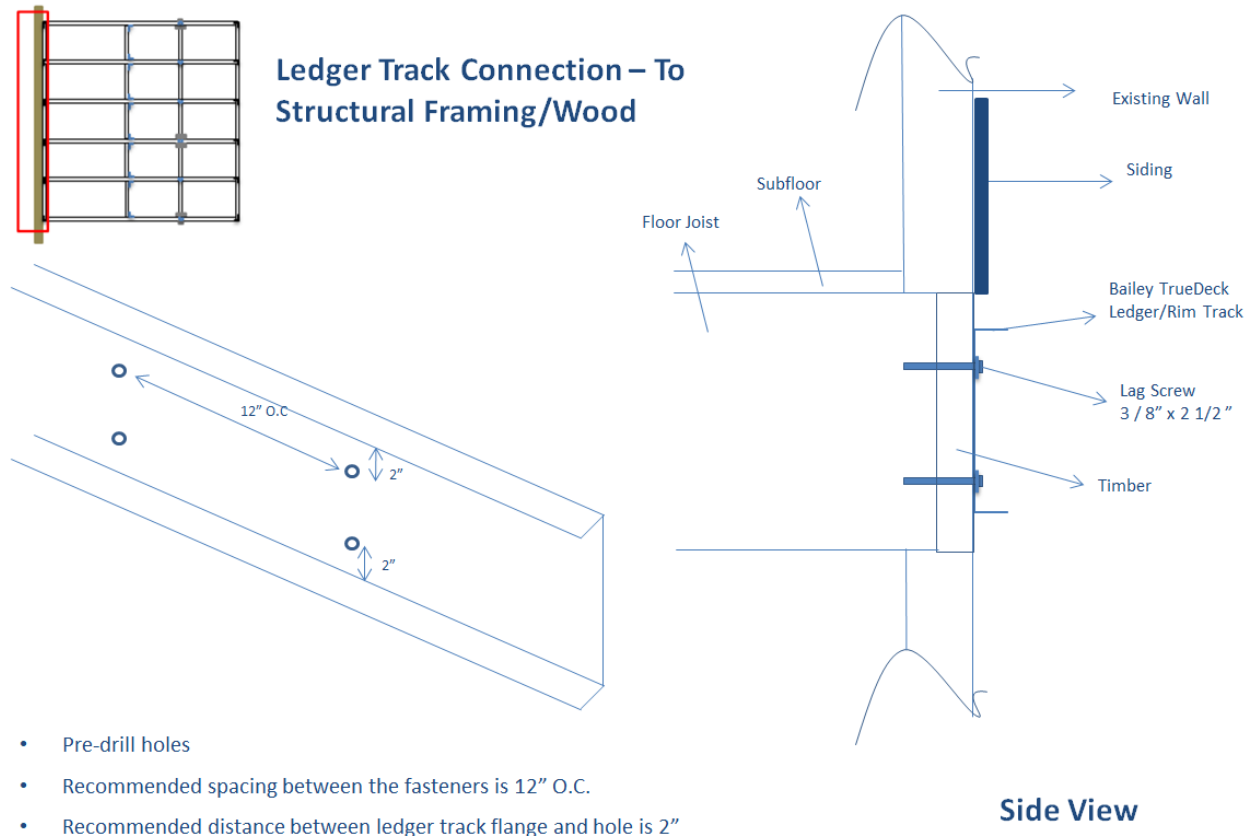


Figure 14

2. **Build Box Beam:** Based on your preferred design, build a single box beam or a double box beam by using #10 x 3/4" hex head self-drilling screws. Once again as a refresher, a single box beam comprises of one box beam joist and one box beam track fastened together. A double box beam track consists of 2 box beam track and 2 box beam joists fastened together. Refer to Figure 15 for box beam connection details.

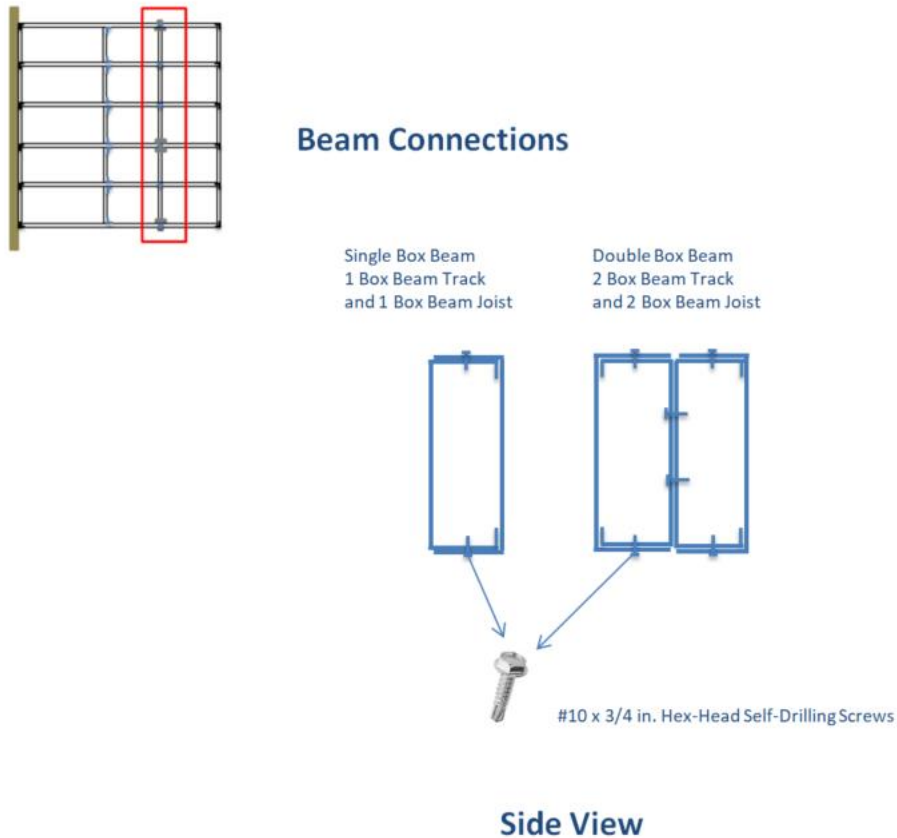
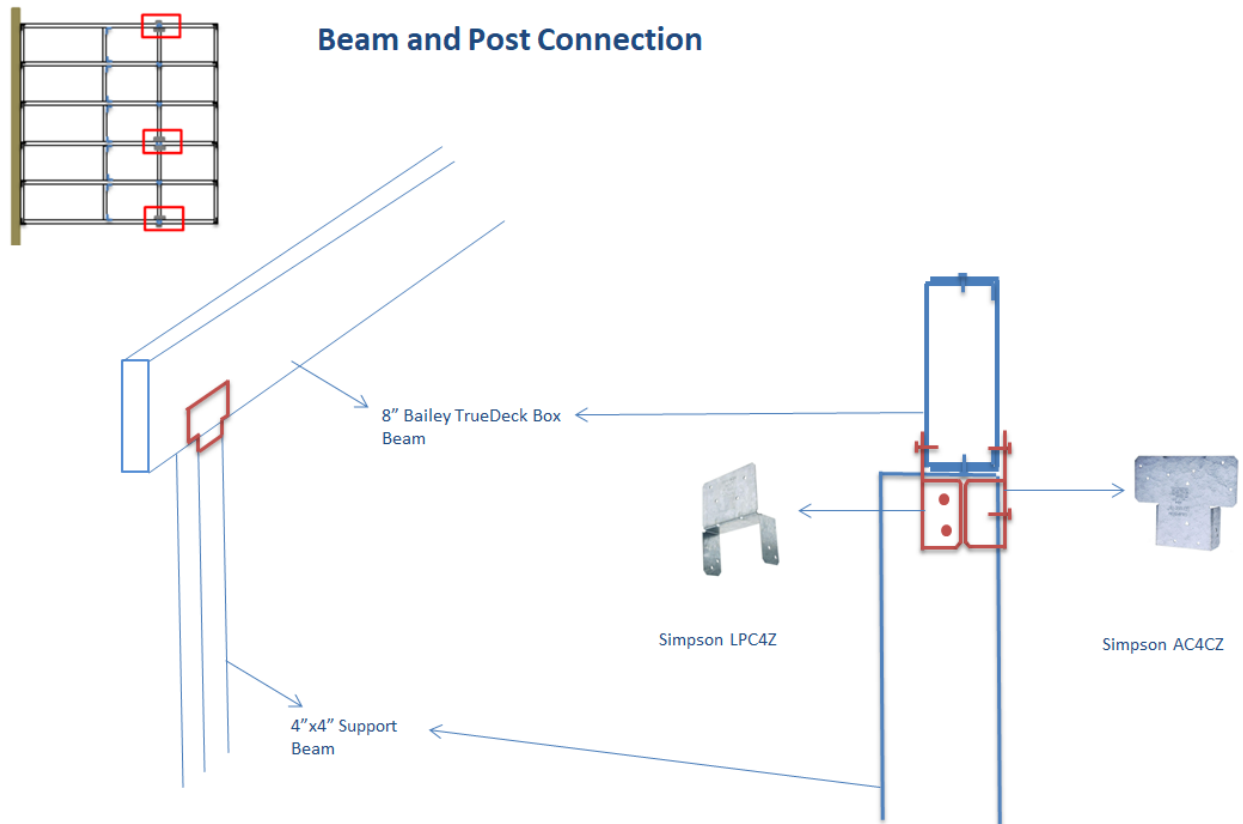


Figure 15

3. **Install Box Beam on the Post:** Box beam can be installed on the post using standard post to beam attachment clips available from Simpson Strong Tie. Refer to Simpson Strong Tie catalog for connection details. Figure 16 has a recommended beam and post connection details included.



Note: Bailey Metal Products Limited does not manufacture , resell Simpson LPC4Z AND SIMPSON AC4CZ. These clips can be purchased directly from building products distributor.

Figure 16

4. **Connect BAILEY TRUEDECK Joist to Ledger/Rim Track:** After connecting the beam to the post, next step involves connecting the BAILEY TRUEDECK joists to the ledger/rim track. The connection is achieved using a standard 7.5" BAILEY Joist Angle Clip or using a TRUEDECK 7.5" clip. We recommend using #10 x 3/4 in. Hex-Head Self-Drilling Screws for achieving the connections. Continue to place the other joist at the desired joist spacing (12 O.C. or 16 O.C). Refer to Figure 17 for connection details.

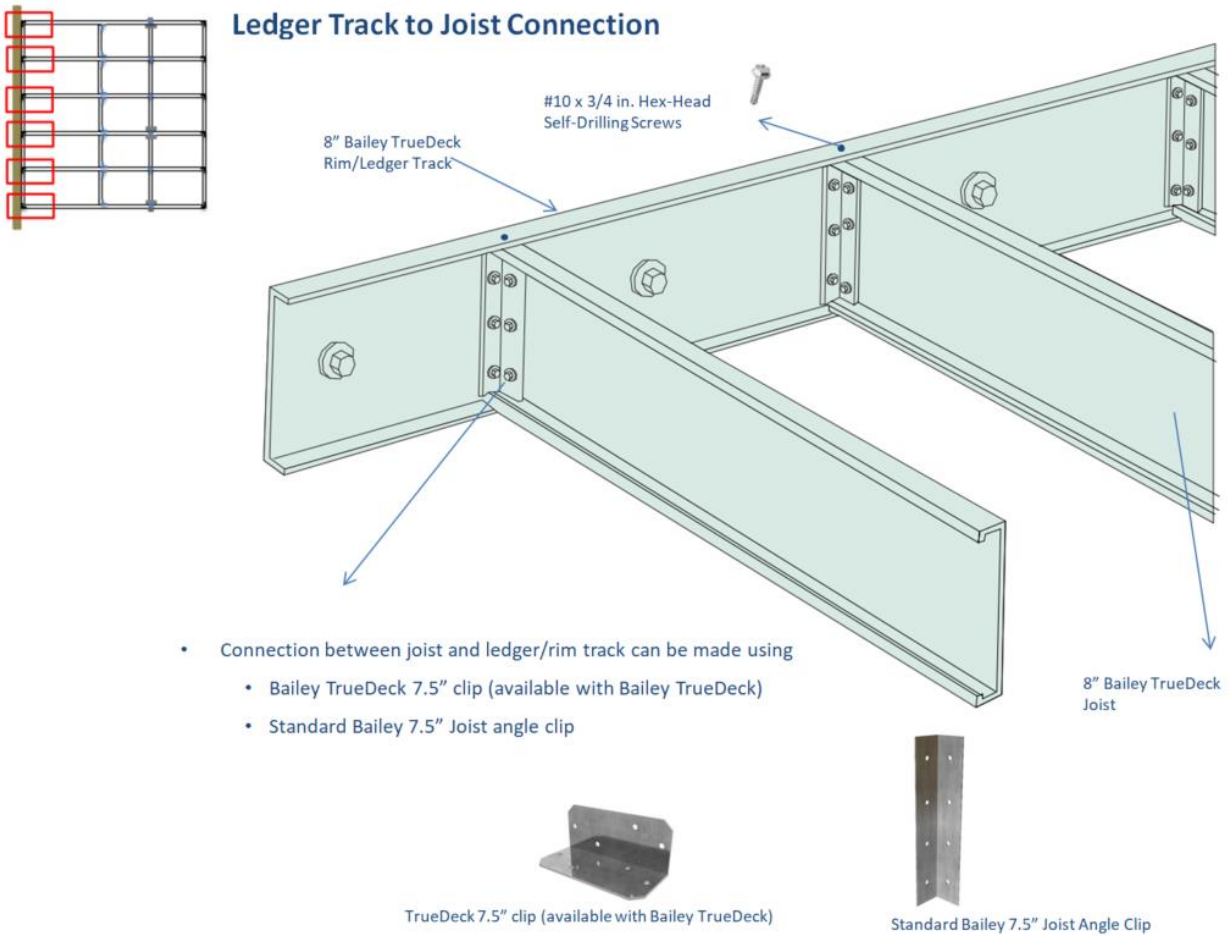


Figure 17

Please note, we recommend flipping the last piece of joist inside out so that you can obtain a flat surface facing outwards. (This helps in achieving in aesthetically pleasing flat surface all across the perimeter of the deck). Please refer to Figure 18 for joist arrangement details.

Joist and Ledger Arrangement

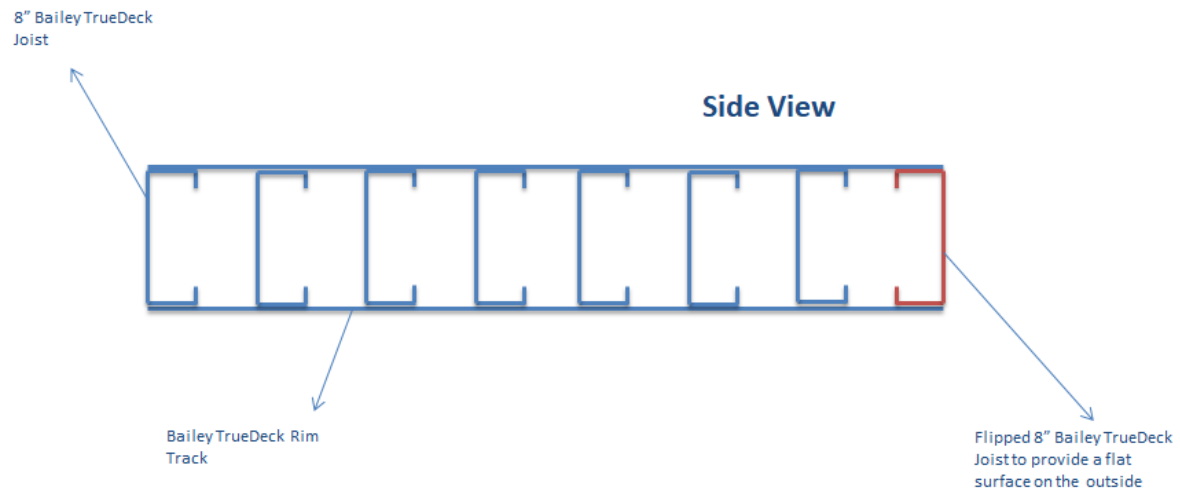


Figure 18

5. **Joist and Box Beam Connection:** After connecting joist to ledger/rim track, the next steps requires the connection between joist and the box beam. This is achieved by fastening the joist and beam using #10 x 3/4 in. Hex-Head Self-Drilling Screws at the point of interaction. Refer to Figure 19 for connection details.

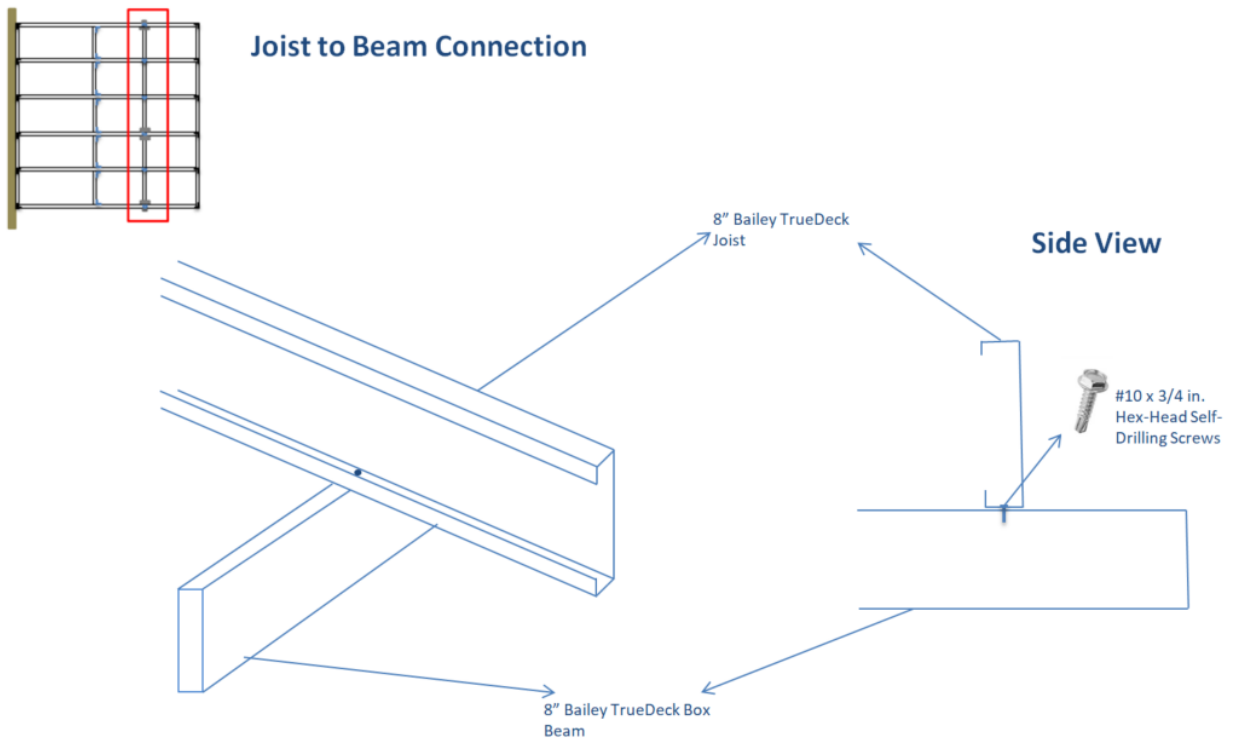


Figure 19

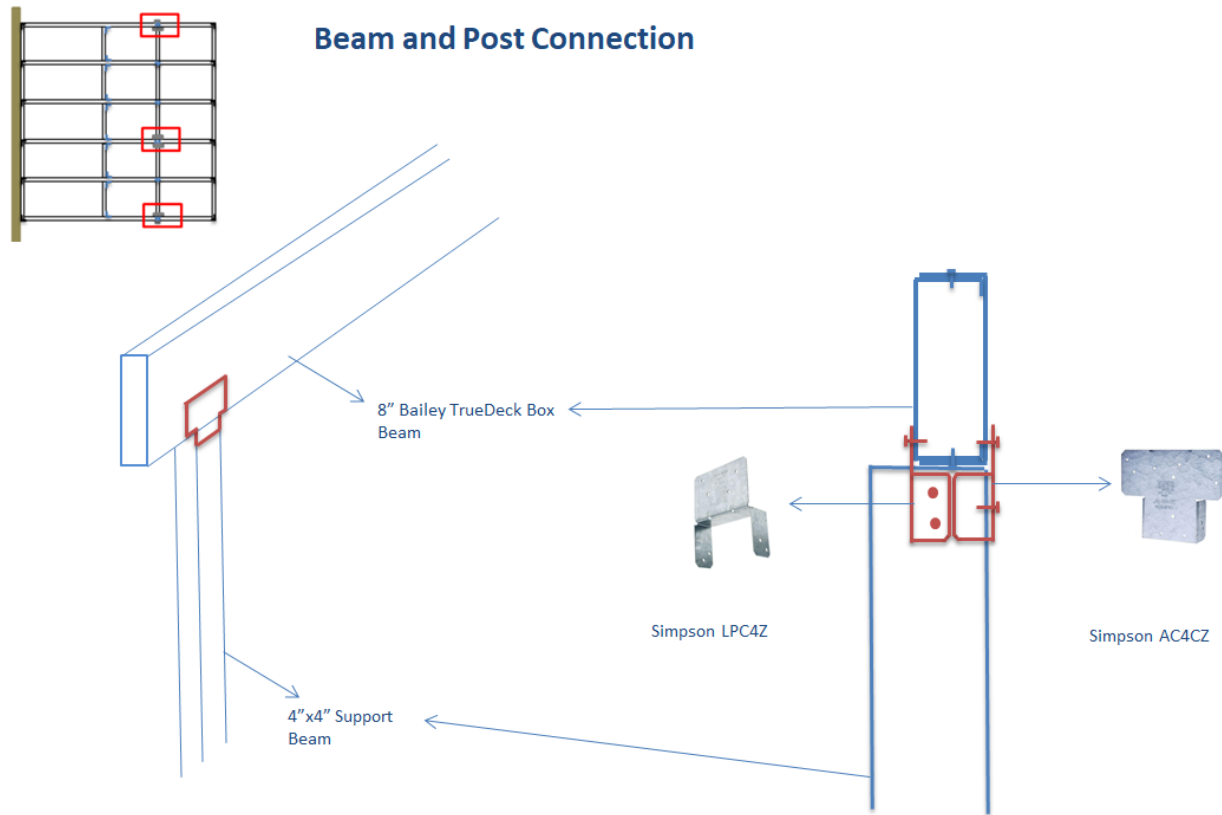


Figure 20

6. **Install Web Stiffener:** At every interaction of beam and joist, a web stiffener needs to be installed (within the flanges of the joist) to avoid web crippling (buckling of joist due to forces exerted on the joist).

Warning: Do not attach the outside rim track before attaching the web stiffener. One end of the joist needs remain open (uncapped) to slide the web stiffener through. Web stiffener has to be slide into every joist from the open end of the joist. Refer to Figure 21 for connection details.

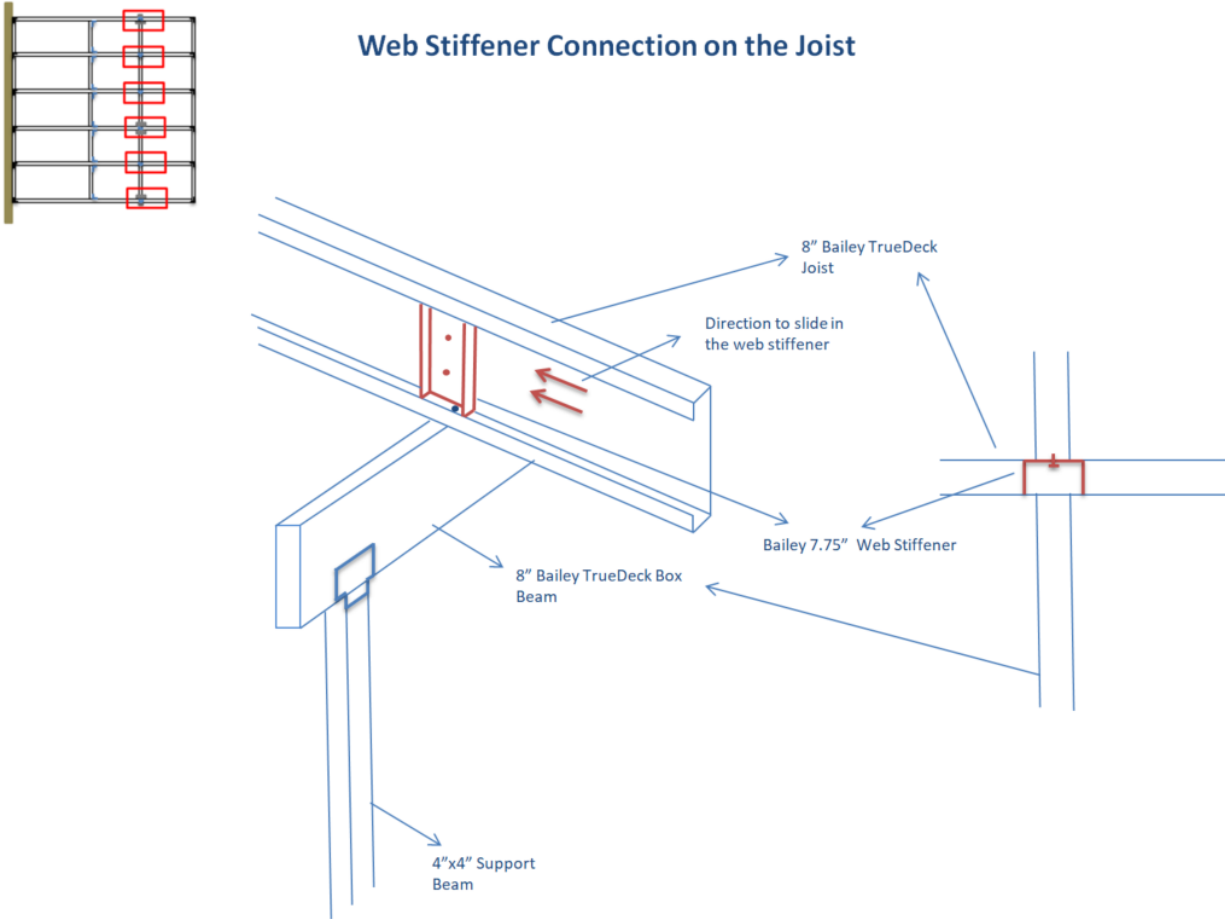


Figure 21

7. **Install Rim Track:** We recommend using BAILEY 7.5" TRUEDECK clip to attach the rim track to the joist. The connection details are very similar to that of the ledger track/joist connection. Refer to Figure 22 for connection details.

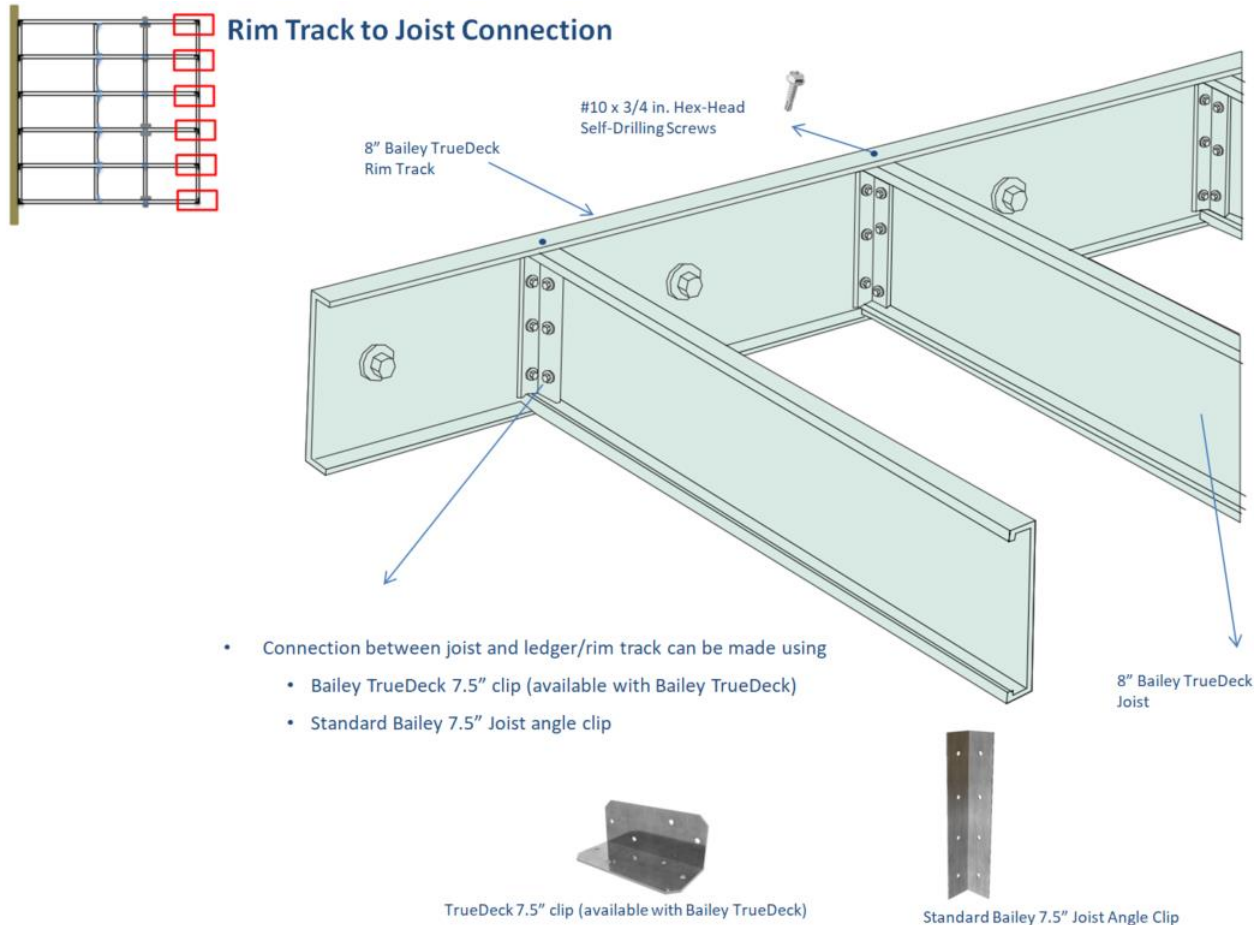
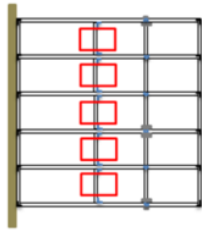


Figure 22

8. **Mid-span blocking Installation:** Blocking is installed to avoid the joists toppling /moving due to the torque. Blocking is essentially a smaller length piece of 6" wide joist. The blocking connections are achieved through a 5 1/2" BAILEY TRUEDECK clip and mid-span blocking joist. Blocking are available in 2 sizes – 11.75" long (for 12" O.C. spacing) and 15.75" long (for 16" O. C spacing). Refer to Figure 23 for connection details.



Blocking and Joist Connection

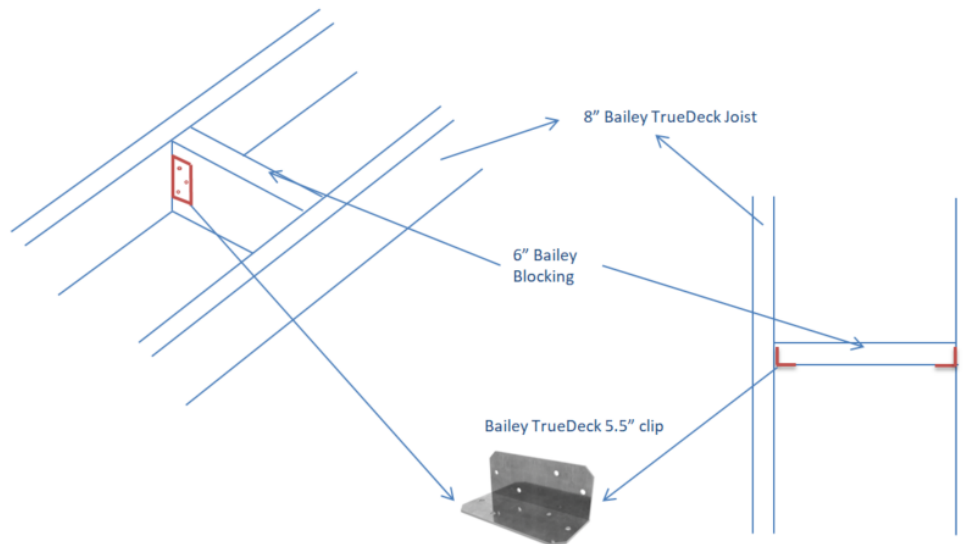


Figure 23

7. **Installing Decking Boards:** Follow decking board manufacturer's installation instructions. As one of the methods of installing decking boards, we recommend using a starter clip for the first deck board (close to the ledger) followed by a series of decking fasteners attached between deck boards. Although we don't endorse any specific brand of deck screw, we have seen good results with Cortex hidden fastening system for steel deck framing. Please refer to fastener manufacturer's instruction for connection details. Figure 24 provides an overview of laying out the decking material on BAILEY TRUEDECK™.

Decking to Frame Connection

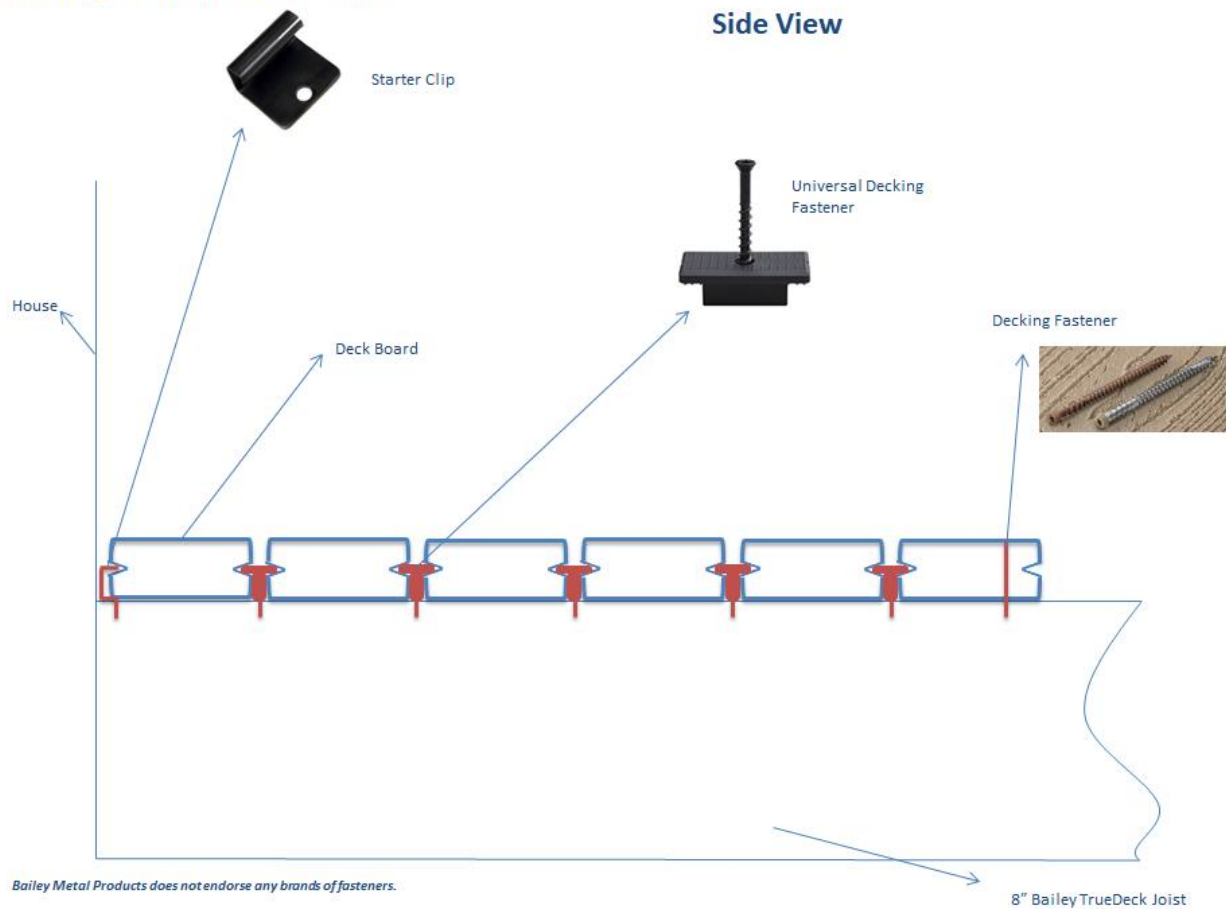


Figure 24

8. **Attaching beam caps:** Box beam are 8" long "U" shaped channels. Attach beam caps using screws to cover the ends of the box beam. This will help in keeping the insects out. Refer to Figure 25 for box beam cap connection details.

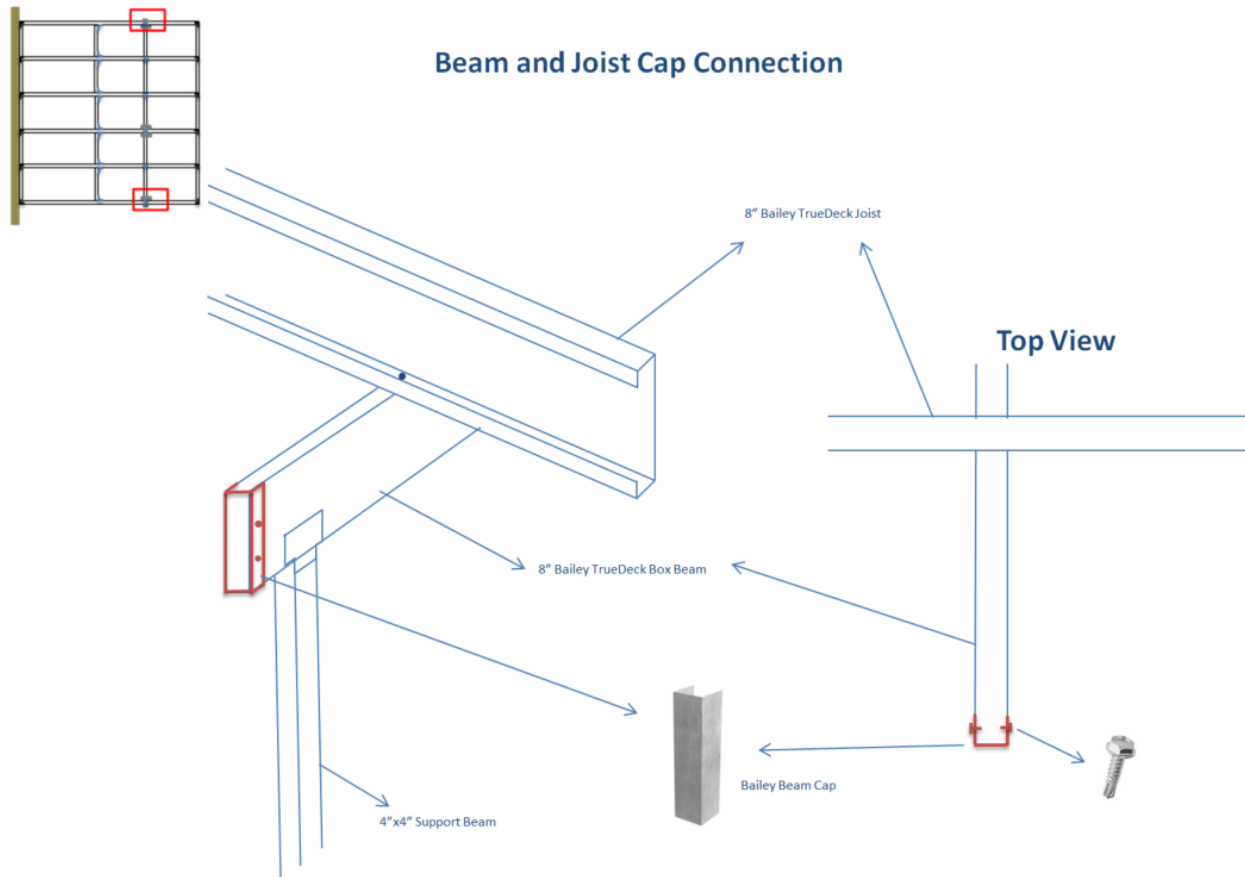


Figure 25

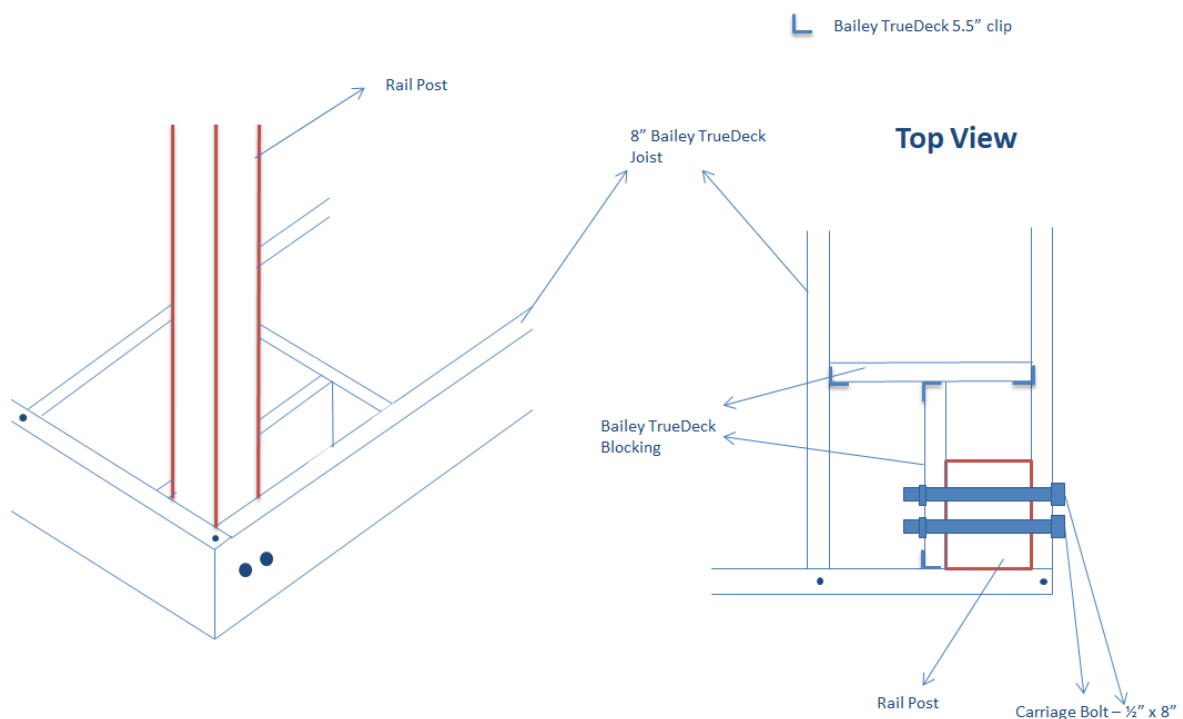
Additional Connection Details

We recommend spraying Zinc spray over any BAILEY TRUEDECK™ components that had holes drilled into. This will help in reducing any chances of rust formation on steel.

Rail Post Connections

Refer to railing manufacturer's installation instructions and local building codes for details on installing railing on a steel frame. While installing railings (either top mounted or fascia mounted), it is recommended to use screws/bolts that meet building code requirements. This information is generally available with Fastener and/or Railing systems manufacturer. Figure 26, 27 and 28 provide an overview of few of the railing install scenarios with connection details listed below. Detail connections mentioned in this document do not supersede building code or manufacturer's installation requirement.

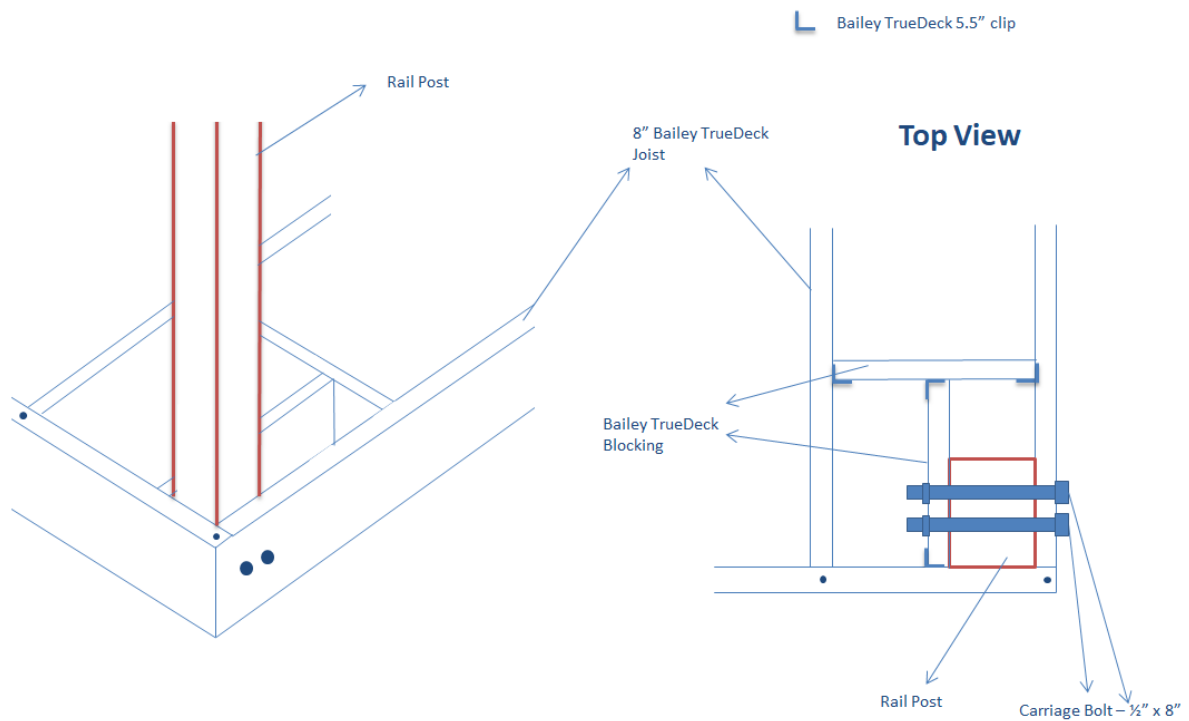
Inside Rail Post Connection at Corner



Note: Please refer to railing manufacturers installation guide, local building codes for more information.

Figure 26

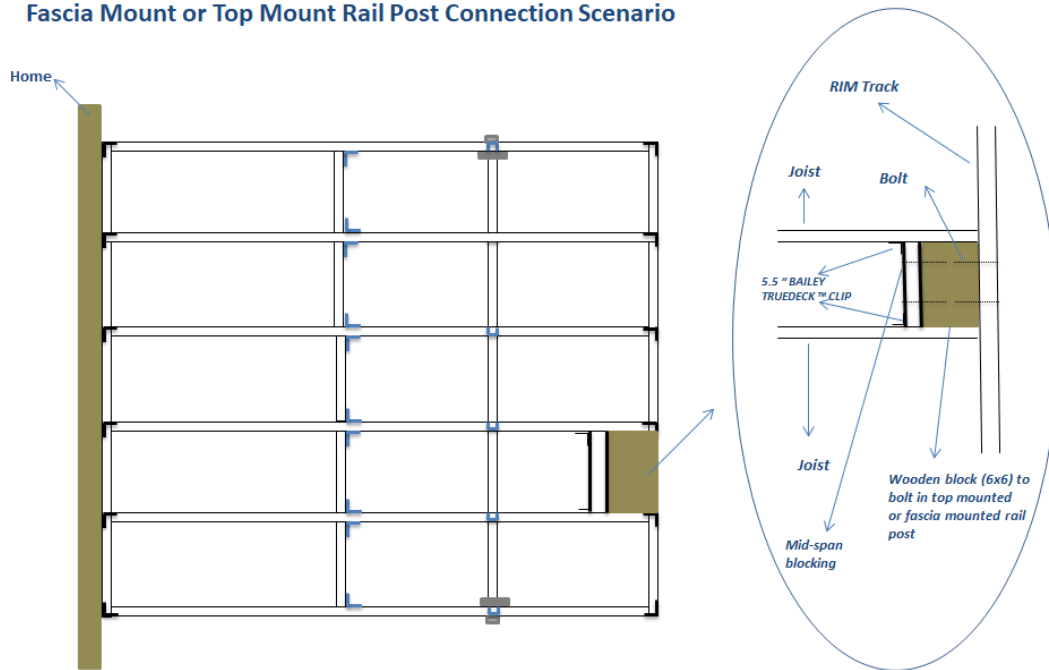
Inside Rail Post Connection at Corner



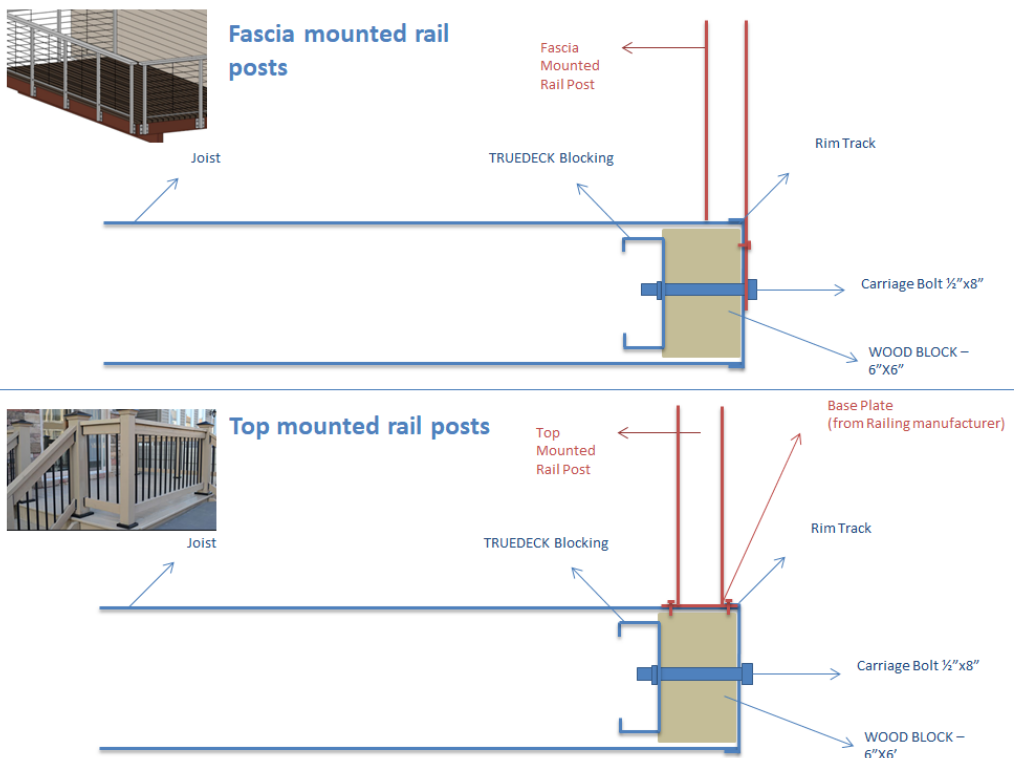
Note: Please refer to railing manufacturers installation guide, local building codes for more information.

Figure 27

Fascia Mount or Top Mount Rail Post Connection Scenario



A wooden block can be used to provide a substrate for top mount or fascia mount rail post



TRUEDECK™ blocking to be connected to joist at both ends. For simplicity, connection not shown in above diagram

Figure 28

Span Tables

Joist Span Tables

Figure 29 contains technical data (span properties) for BAILEY TRUEDECK™ joist options. Figure 30 and 31 contain span tables for BAILEY Box Beam joist (single and double). These span tables can be used to design your dream deck using BAILEY TRUEDECK™.

BAILEY TrueDeck Joist Span Table							
Total Load (psf)	Cantilever Length (FT)	.043" Thick Joist (Joist Span)		.054" Thick Joist (Joist Span)		.068" Thick Joist (Joist Span)	
		33 KSI		50 KSI		50 KSI	
		Joist Spacing (in.)		Joist Spacing (in.)		Joist Spacing (in.)	
		12	16	12	16	12	16
50							
	0	15' 7"	13' 6"	20' 9"	18' 0"	22' 7"	20' 6"
	2	15' 10"	13' 9"	20' 10"	18' 2"	22' 7"	20' 6"
	3	16' 2"	14' 1"	20' 10"	18' 6"	22' 7"	20' 6"
	4	16' 7"	14' 7"	20' 10"	18' 10"	22' 7"	20' 6"
65							
	0	13' 7"	11' 9"	18' 2"	15' 8"	20' 3"	18' 4"
	2	13' 10"	12' 1"	18' 4"	16' 0"	20' 3"	18' 6"
	3	14' 3"	12' 6"	18' 8"	16' 3"	20' 3"	18' 6"
	4	14' 8"	13' 0"	18' 9"	16' 8"	20' 3"	18' 6"
80							
	0	12' 3"	10' 7"	16' 3"	14' 2"	18' 8"	16' 7"
	2	12' 7"	11' 0"	16' 7"	14' 4"	18' 8"	16' 9"
	3	13' 0"	11' 4"	16' 10"	14' 9"	18' 8"	17' 0"
	4	13' 4"	12' 0"	17' 3"	15' 2"	18' 8"	17' 0"
100							
	0	10' 10"	9' 6"	14' 7"	12' 7"	17' 1"	14' 9"
	2	11' 3"	9' 10"	14' 10"	12' 10"	17' 2"	15' 1"
	3	11' 8"	10' 3"	15' 2"	13' 3"	17' 2"	15' 4"
	4	12' 2"	10' 10"	15' 7"	13' 9"	17' 2"	15' 8"

Figure 29



BAILEY TRUEDECK™ Single Box Beam Spans (FT)
One Box Beam Joist and one Box Beam Track
One .068" joist and one .068" track. (50 ksi)

Total Load (psf)	Cantilever Length (FT)	Joist Spans (FT)										
		8	9	10	11	12	13	14	15	16	17	18
50												
	0	18' 8"	17' 10"	17' 3"	16' 9"	16' 3"	15' 10"	15' 4"	14' 10"	14' 4"	14' 0"	13' 7"
	2	16' 3"	15' 10"	15' 4"	14' 10"	14' 4"	14' 0"	13' 7"	13' 2"	12' 10"	12' 7"	12' 3"
	3	15' 4"	14' 10"	14' 4"	14' 0"	13' 7"	13' 2"	12' 10"	12' 7"	12' 3"	12' 0"	11' 8"
	4	14' 4"	14' 0"	13' 7"	13' 2"	12' 10"	12' 7"	12' 3"	12' 0"	11' 8"	11' 6"	11' 3"
65												
	0	16' 9"	16' 1"	15' 7"	15' 1"	14' 6"	13' 10"	13' 4"	13' 0"	12' 7"	12' 2"	11' 9"
	2	14' 6"	13' 10"	13' 4"	13' 0"	12' 7"	12' 2"	11' 9"	11' 6"	11' 2"	11' 0"	10' 8"
	3	13' 4"	13' 0"	12' 7"	12' 2"	11' 9"	11' 6"	11' 2"	11' 0"	10' 8"	10' 6"	10' 3"
	4	12' 7"	12' 2"	11' 9"	11' 6"	11' 2"	11' 0"	10' 8"	10' 6"	10' 3"	10' 1"	9' 10"
80												
	0	15' 6"	14' 10"	14' 3"	13' 7"	13' 0"	12' 6"	12' 1"	11' 8"	11' 3"	11' 0"	10' 8"
	2	13' 0"	12' 6"	12' 1"	11' 8"	11' 3"	11' 0"	10' 8"	10' 4"	10' 1"	9' 10"	9' 7"
	3	12' 1"	11' 8"	11' 3"	11' 0"	10' 8"	10' 4"	10' 1"	9' 10"	9' 7"	9' 4"	9' 2"
	4	11' 3"	11' 0"	10' 8"	10' 4"	10' 1"	9' 10"	9' 7"	9' 4"	9' 2"	9' 0"	8' 10"
100												
	0	14' 2"	13' 4"	12' 9"	12' 2"	11' 7"	11' 2"	10' 9"	10' 4"	10' 1"	9' 9"	9' 6"

	2	11' 7"	11' 2"	10' 9"	10' 4"	10' 1"	9' 9"	9' 6"	9' 3"	9' 0"	8' 9"	8' 7"
	3	10' 9"	10' 4"	10' 1"	9' 9"	9' 6"	9' 3"	9' 0"	8' 9"	8' 7"	8' 4"	8' 2"
	4	10' 1"	9' 9"	9' 6"	9' 3"	9' 0"	8' 9"	8' 7"	8' 4"	8' 2"	8' 1"	7' 10"

Figure 30



BAILEY TRUEDECK™ Single Box Beam Spans (FT)
Two Box Beam Joist and Two Box Beam Track
Two .068" joist and Two .068" track. (50 ksi)

Total Load (psf)	Cantilever Length (FT)											
		8	9	10	11	12	13	14	15	16	17	18
50												
	0	23' 6"	22' 7"	21' 9"	21' 1"	20' 6"	20' 0"	19' 6"	19' 1"	18' 8"	18' 3"	17' 10"
	2	20' 6"	20' 0"	19' 6"	19' 1"	18' 8"	18' 3"	17' 10"	17' 7"	17' 3"	17' 0"	16' 9"
	3	19' 6"	19' 1"	18' 8"	18' 3"	17' 10"	17' 7"	17' 3"	17' 0"	16' 9"	16' 6"	16' 3"
	4	18' 8"	18' 3"	17' 10"	17' 7"	17' 3"	17' 0"	16' 9"	16' 6"	16' 3"	16' 1"	15' 10"
65												
	0	21' 1"	20' 3"	19' 7"	19' 0"	18' 6"	18' 0"	17' 6"	17' 1"	16' 9"	16' 4"	16' 1"
	2	18' 6"	18' 0"	17' 6"	17' 1"	16' 9"	16' 4"	16' 1"	15' 10"	15' 7"	15' 3"	15' 1"
	3	17' 6"	17' 1"	16' 9"	16' 4"	16' 1"	15' 10"	15' 7"	15' 3"	15' 1"	14' 9"	14' 6"
	4	16' 9"	16' 4"	16' 1"	15' 10"	15' 7"	15' 3"	15' 1"	14' 9"	14' 6"	14' 2"	13' 10"
80												
	0	19' 6"	18' 9"	18' 1"	17' 6"	17' 0"	16' 7"	16' 2"	15' 9"	15' 6"	15' 2"	14' 10"
	2	17' 0"	16' 7"	16' 2"	15' 9"	15' 6"	15' 2"	14' 10"	14' 7"	14' 3"	13' 10"	13' 7"
	3	16' 2"	15' 9"	15' 6"	15' 2"	14' 10"	14' 7"	14' 3"	13' 10"	13' 7"	13' 3"	13' 0"
	4	15' 6"	15' 2"	14' 10"	14' 7"	14' 3"	13' 10"	13' 7"	13' 3"	13' 0"	12' 9"	12' 6"
100												

	0	17' 10"	17' 3"	16' 8"	16' 1"	15' 8"	15' 3"	14' 10"	14' 7"	14' 2"	13' 9"	13' 4"
	2	15' 8"	15' 3"	14' 10"	14' 7"	14' 2"	13' 9"	13' 4"	13' 1"	12' 9"	12' 4"	12' 2"
	3	14' 10"	14' 7"	14' 2"	13' 9"	13' 4"	13' 1"	12' 9"	12' 4"	12' 2"	11' 10"	11' 7"
	4	14' 2"	13' 9"	13' 4"	13' 1"	12' 9"	12' 4"	12' 2"	11' 10"	11' 7"	11' 4"	11' 2"

Figure 31

NOTES:

- 1) Values in table are the least of strength and deflection L/240 (Part 9 of NBCC).
- 2) All relevant section properties were based on CSA S136-2016.
- 3) Full depth web stiffeners are required at box beam reactions to avoid web crippling.
- 4) Prepared by Prof. R.M. Schuster, P. Eng. Distinguished Professor Emeritus, University of Waterloo.

Fastener Options for Installing Decking on Steel Frame

Refer to decking manufacturer for information for screws recommended for fastening deck boards to steel frame. Some of the fasteners available for connecting deck boards to steel frame are listed below. ***Bailey Metal Products does not supply or distribute these fasteners.***

- Cortex Driller Hidden Fastening System
 - <https://www.fastenmaster.com/products/cortex-driller-hidden-system-for-steel-deck-framing.html>
- TREX HIDEAWAY® Hidden Fastening System
 - <https://www.trex.com/products/accessory-hardware/#connectorclip>
- Starborn Industries - Deckfast Metal
 - <http://starbornindustries.com/deckfast-metal-product>



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Build a deck that lasts a lifetime