RioOutdoors.com

Installation Instructions

6S Lean To 24 ft. x 12 ft.

6x6 Surface Mounted Lean-To Kit

WARNING: If the information in these instructions is not followed exactly, weakening or failure of the erected structure may result causing property damage, or personal injury.

Figure 1: 24 ft. x 12 ft. Concrete Mounted Lean-To

Customized and prepared for: ***Emil Thomas***

- Thoughtfully engineered Brackets eliminate all wood-joinery skills requirements.
- Skills required: drilling pilot holes and driving screws into lumber, miter saw cutting.
- Easy lift and place U-channels eliminate need for lifting equipment. Super-easy assembly work.
- Self-aligning design squares up structure automatically.
- Estimated Assembly Time is less than 5 hours, not including polycarbonate panels.

MADE IN AMERICA

A properly sized 3/32” diameter pilot hole must be drilled before you attempt to drive lag screws into this pergola’s lumber members. See Table, below. Driving lag screws into lumber, without first drilling a pilot hole, can prevent the lag screw from driving fully into the wood or can lead to crack formation while driving the lag screw in, or later, as the wood dries naturally. This can result in a weakened pergola structure.

Proper pilot hole diameter and hole depth for various lag screws and wood types		
Lag Screw Type	**Wood Type**	**Pilot hole drill diameter and hole depth**
¼” X 1-1/2” Lag Screw **McMasterCarr.com SKU 92351A546**	Soft Wood	3/32” drill bit diam., 1-1/4” depth
	Hard Wood	3/16” drill bit diam., 1-1/4” depth
3/8” X 3” Lag Screw **McMasterCarr.com SKU 92351A636**	Soft Wood	11/64” drill bit diam., 3” depth
	Hard Wood	¼” drill bit diam., 3” depth

Table of Contents

1 GENERAL INFORMATION

1.1 SAFETY AND WARNING INFORMATION

1.1.1 Building Permit & Inspection Requirements

We recommend that you consult with your local building permit office and obtain advice and any required building permits and inspection approvals from the local building inspection department or authority over building codes.

1.1.2 Other Cautions

CAUTION: Adhere to all safety requirements. Wear safety glasses/goggles when working. Wear safety gloves when handling brackets, hardware, and lumber. Wear hearing protection when using a circular saw, miter saw, table saw, or hammer drill.

INSTALLER: Leave this manual with the consumer. **CONSUMER**: Retain this manual for future reference.

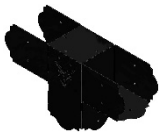
1.2 TOOLS REQUIRED

Listed below, are common tools required for pergola projects. These tools are not included in this kit. Your pergola project may not require all tools. Select and acquire the tools for your project from the "Required for" column in this table.

Description	Tool Purpose	Required for	Reference Image
Tape Measure	Measure and verify lengths.	All structures	
4ft. Framing Level	Verify Level/Plumb	All structures	
Hammer Drill Gun	Drill pilot holes for lag screws. Drive lag screws. Drill holes in Concrete.	All structures	
Ratchet Socket Driver	Drive lag screws into Pergola lumber members.	All structures	
7/16" Hex Socket	Drive ¼" X 1-1/4" Hex Hd. lag screws.	All structures	
3/32" Drill Bit	Drill pilot holes for ¼" lag screws in soft wood.	All structures	
1/8" Drill Bit	Drill pilot holes for #10D nails	All structures	
11/64" Drill Bit	Drill pilot holes for 3/8" x 2" Screws	All structures	
½" Masonry Drill Bit	Drill ½" Holes in Concrete for Anchors	Concrete Mounted Structures	
10" Compound Miter Saw	Cut pots and headers to length	All structures	
Crescent Wrench	Tighten down nut on concrete anchors.	Concrete Mounted Structures	Image not available.
Hammer	Various.	All structures	

1.3 CONTENTS OF KIT # 6S-LT-2412

The contents of this kit are shown in the table below. Before you begin your project, take an inventory of all items that you received from us. If any items are missing, contact us directly via email at info@RioOutdoors.com. Include your name and shipping address and your order number, if available. We will respond within 24 hours with a resolution to your problem.

Item SKU #, Description	Item Qty	Item Image
6x6 Post-Top/Floor 1-way Elbow Bracket SKU# 6C1L	**4**	
6X6 Tee/ Straight Extension Bracket SKU # 6SE	**2**	
6x6 Post Anchor Bracket SKU# 6FA	**6**	
4x4 Cross Support Bracket SKU #4CSB	**6**	
Post Top Rafter Tie Bracket SKU# PTRT	**34**	
Open End Rafter Tie Bracket SKU# OE-RT	**4**	
¼ x 1-1/2" Black Lag Screw	**268**	
¼ x 2" Black Lag Screw To attach #OE-RT & PTRT to Post Tops	**24**	
3/8" X 2" Black Lag Screws	**80**	

1.4 BUY LIST

This is the list of required materials which are not included in this kit. You will acquire these items locally for your project. Use this table to help you calculate your total project budget.

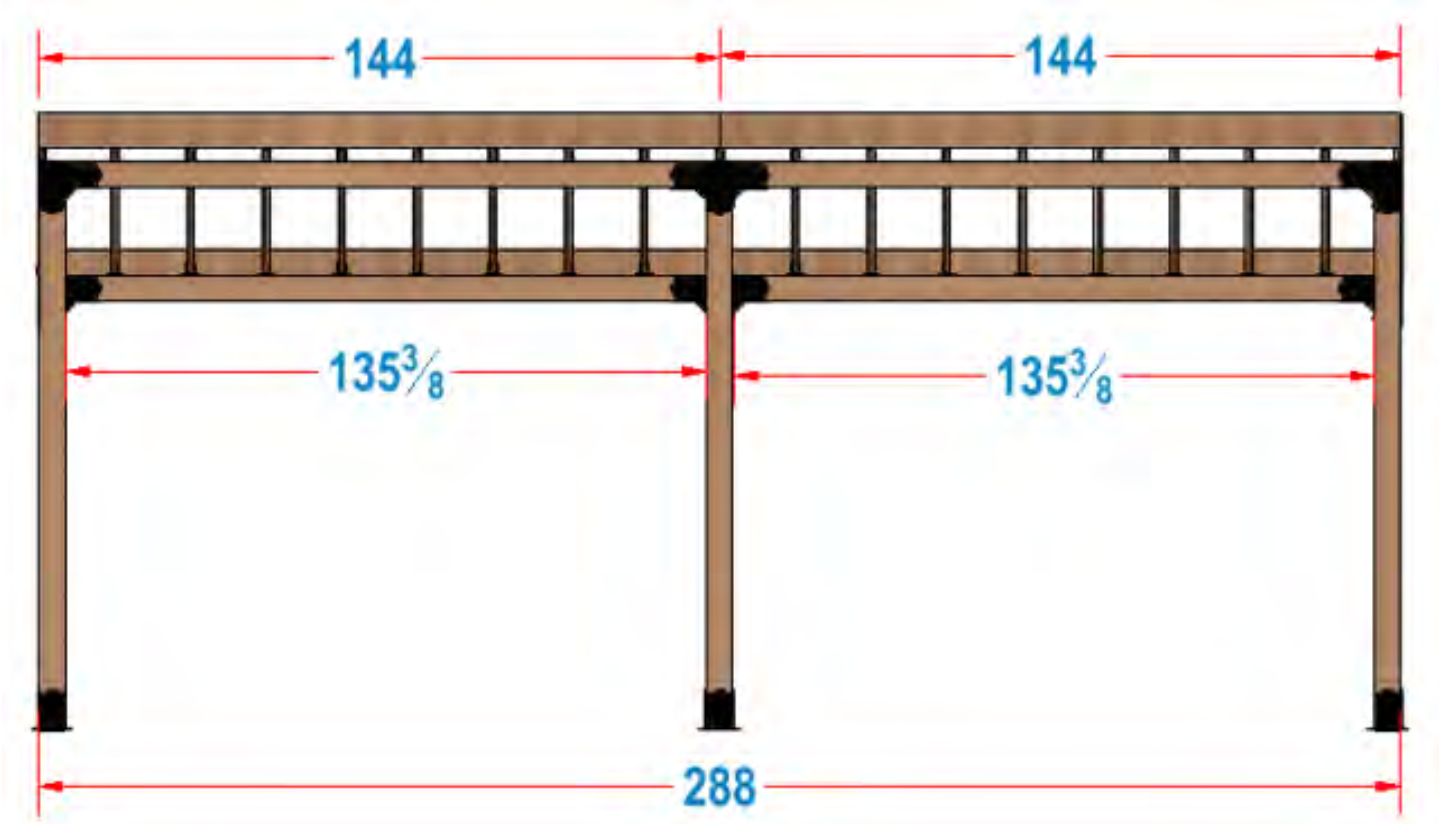
***NOTE**: When selecting 6x6s for post applications, it is critical that you measure the girth of the 6x6 before buying. Measure the girth of the 6x6 in both directions and select pieces that measure exactly 5.50" x 5.50". Most 6x6s will measure 5.50" x 5.50", however, due to manufacturing errors, some 6x6s can be a lot larger than specification. 6x6s that are too wide may prevent the elbow tubes from sliding over the post.*

Item Description	Item Qty	Plain Pressure Treated	Extend Price
6x6 Post Short Side Lumber PT (8 ft.) Posts' girth measurements must be 5.50" x 5.50". Verify measurements before using as posts.	3	33.75	101.25
6x6 Post Tall Side Lumber PT (10 ft.) Posts' girth measurements must be 5.50" x 5.50". Verify measurements before using as posts.	3	45.31	135.93
6x6 Header Lumber PT (12 ft.)	4	53.43	213.72
4x4 Cross Support Lumber PT (12 ft.)	3	17.88	53.64
2x8 Rafter Lumber KD (16 ft.)	19	12.78	242.82
2x8 Roof Skirt Lumber PT (12 ft.)	4	9.58	38.32
		Price Total	$785.68

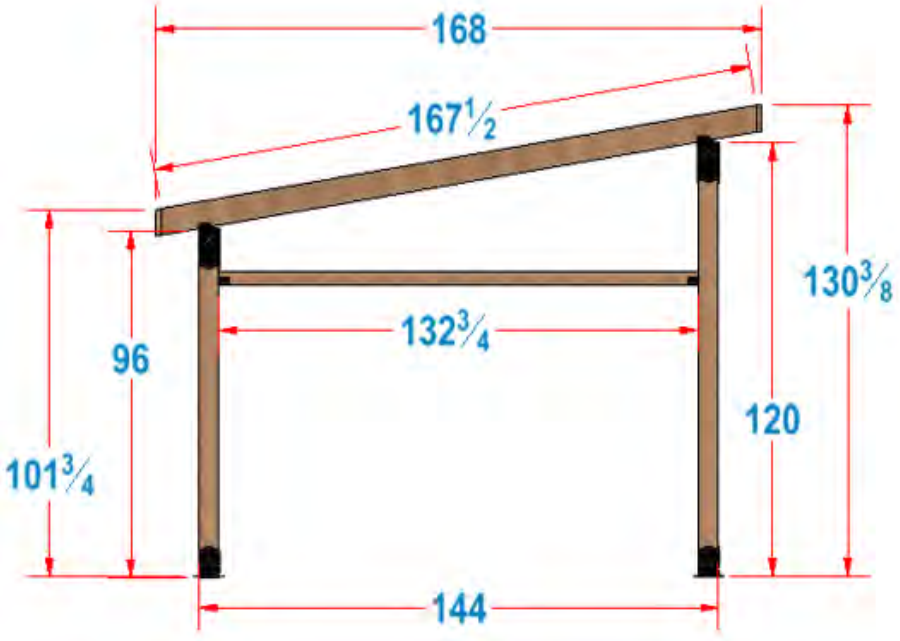
1.5 6X6 LEAN-TO DIMENSIONS

The diagrams below provide the elevation profiles for this Lean-To structure.

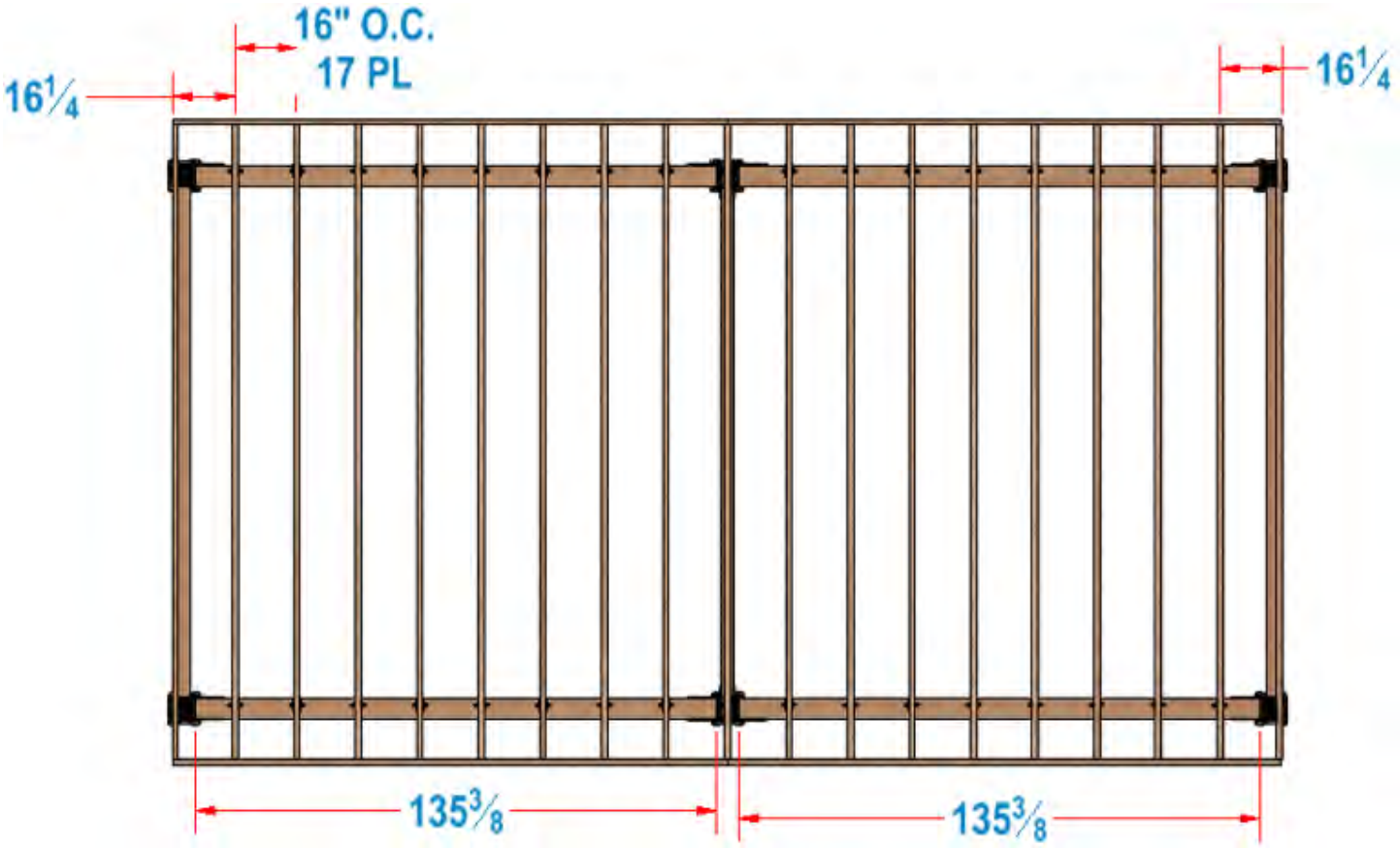
FRONT ELEVATION DIAGRAM



SIDE ELEVATION DIAGRAM



TOP VIEW DIAGRAM



1.6 GENERAL LUMBER REQUIREMENTS AND INFORMATION

We have designed the post top brackets to provide easy alignment of the headers. Use pressure treated lumber or kiln dried cedar, redwood, etc. for the structure. Verify that the lumber members are not warped, and their girth measurements are to specifications.

1.6.1 Dimensional lumber size requirement

For this surface mounted rectangle lean to, 6x6 lumber is required for the posts and the headers. The rafters shall be 2x8 pressure treated lumber.

1.6.2 Selecting Lumber members at the lumberyard

Due to intolerances in manufacturing processes, variations do occur in the 6x6 lumber lengths and girth. Measure the width of the lumber in both directions. Use only exactly 5-1/2" x 5-1/2" sized lumber for posts and headers.

The length of lumber delivered to stores can be longer than the labeled length but will never be less than the labeled length dimension. To gain more flexibility, we suggest that you measure each lumber member before adding to your cart at the store. Select lumber members which are slightly longer than the labeled length. Example: if buying 96" length 6x6s. Measure and select members which exceed 96". Some pieces can have lengths as long as 96-3/8". The extra length will provide flexibility if you need to trim the ends for squaring or cleaning purposes.

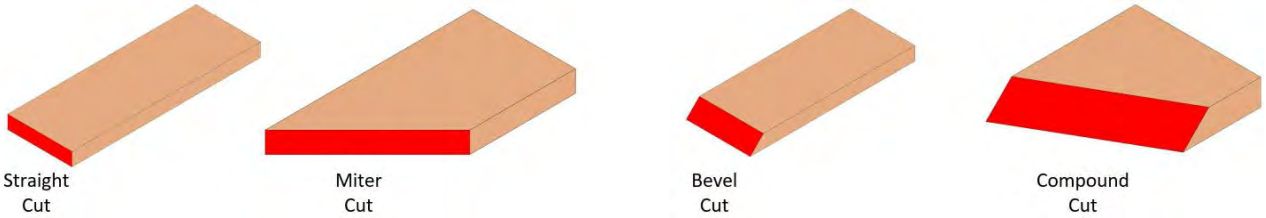
1.6.3 Plan ahead to save money and to minimize wood waste.

We provide all the detailed information related to lumber materials for your project. A complete lumber materials list and a detailed cut list are provided. Use the information wisely and make wise judgements about the lengths of raw lumber you purchase.

1.6.4 Lumber Cut Types

Four lumber cut types are encountered during construction of RioOutdoors Pergola Structures. Making precise lumber end cuts is not difficult if the cut miter angle and/or bevel angle for each cut is known, and you employ a compound miter saw. All contruction instructions provided by RioOutdoors contain the exact angle parameters required for every lumber end cut.

Four common lumber end cuts are defined, below.



1.6.4.1 Straight Cut

A straight cut is a cut that is perpendicular to the length edge and parallel to the width edge of the lumber board. To make a straight cut, employ a chop saw or miter saw set at zero miter and zero bevel angle position.

1.6.4.2 Miter Cut

A miter cut is a cut that is at an angle (less than or greater than 90°) to the length edge of the lumber board. To make a miter cut, set the horizontal rotation angle (miter angle) to the left or right of center in a miter saw, then cut through the thickness of the lumber board.

1.6.4.3 Bevel Cut

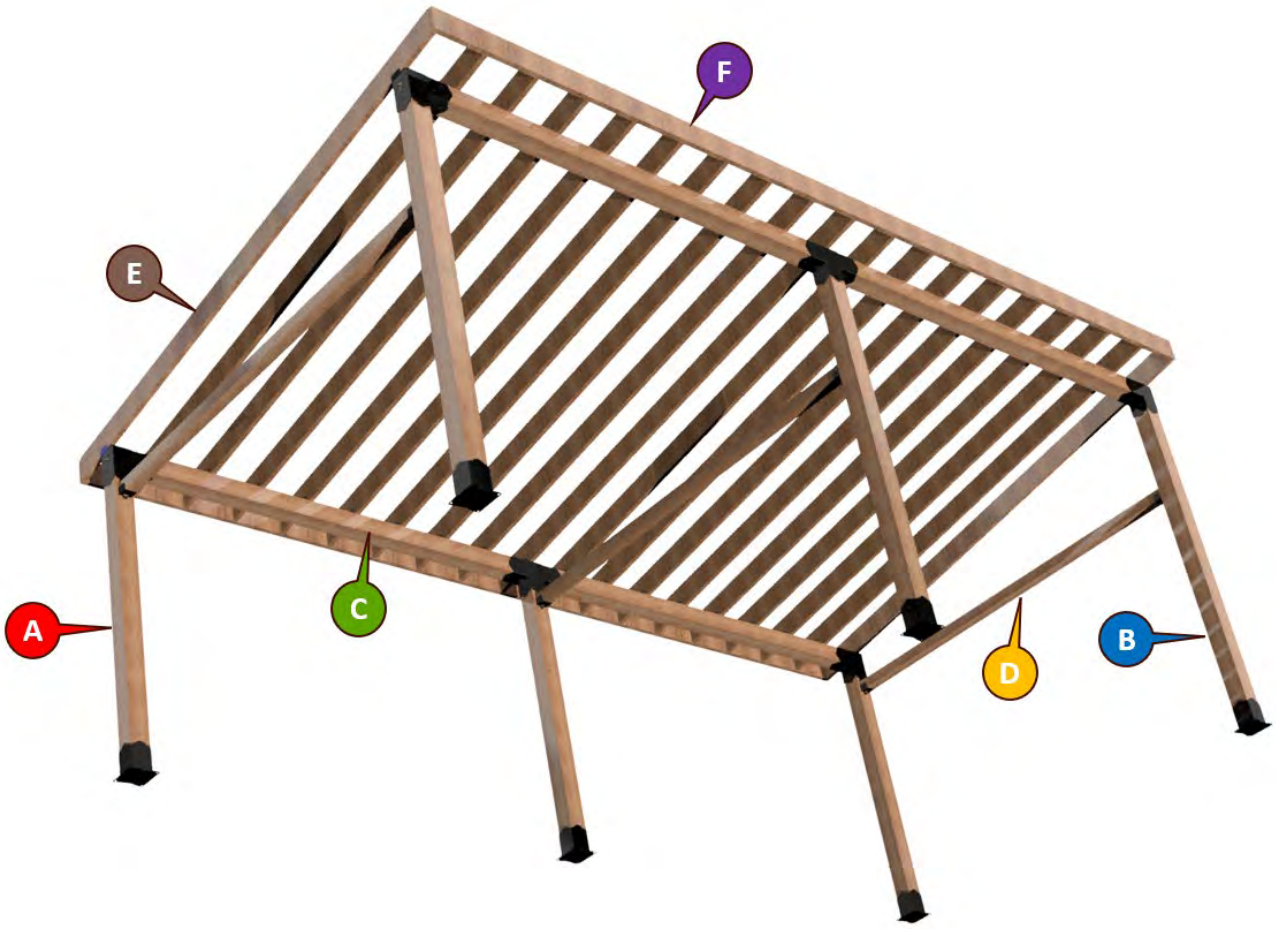
A bevel cut is a cut that is at an angle (less than or greaer than 90°) to the top surface of the lumber board. To make a bevel cut, tilt the miter saw blade to the left or right to a particular angle, then cut through the thickness of the lumber board.

1.6.4.4 Compound Cut

A compound cut is created using a compound miter saw and combines a miter cut and a bevel cut in a single cut. A compound cut by setting a miter angle (less than or greater than 90°) to the length edge of the lumber board and, at the same time, setting a bevel angle (less than or greaer than 90°) to the top surface of the lumber board. To make a compound cut, set a particular horizontal rotation angle (miter angle) and vertical tilt angle (bevel angle) in a miter saw, then cut through the thickness of the lumber board.

1.7 24 X 12 LEAN-TO STRUCTURE LUMBER

1.7.1 Applications Depictions: Lumber



1.7.2 Main Cut List

Study this table. The "Source Lumber (in.) is defined as the lumber to use to cut these items from. Follow the detailed instructions to cut and prepare all lumber members. Use a 10" power compound miter saw to make all end cuts.

12 ft. x 24 ft. Lean-To Structure Cut List

ID	Description	QTY	Source Material [Length (in)./Qty]	Lumber Size	Cut Length (in.)	End 1 Cut	End 2 Cut
A	6x6 Posts, Short	3	96/3	6x6	96	Straight	Straight
B	6x6 Posts, Long	3	120/3	6x6	120	Straight	Straight
C	6x6 Headers	4	144/4	6x6	135-3/8	Straight	Straight
D	4X4 Cross Supports	3	144/3	4x4	132-3/4	Straight	Straight
E	2x8 Rafters	19	192/19	2x8	168-3/4	Miter 10°	Miter 10°
F	2x8 Roof Skirts	4	144/4	2x8	144	Straight	Straight

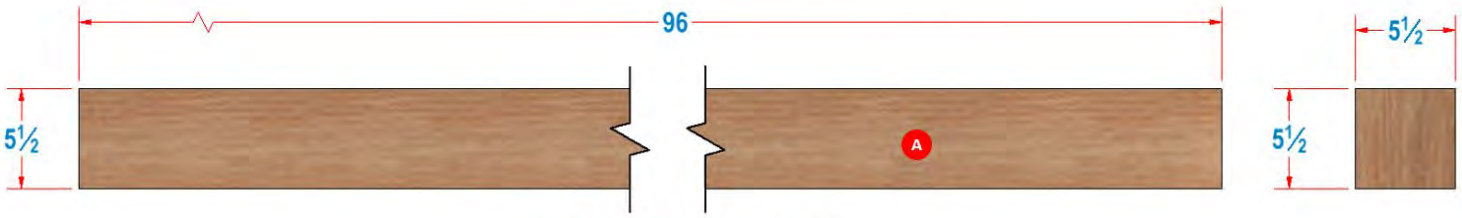
1.8 LUMBER MEMBERS PREPARATION

1.8.1 Posts, Item A

Three (3) Short Posts of identical lengths are required. Both ends of the posts must have straight cuts. Measure each post member. If length of post member is longer than required, cut down to 96” length.

Short Posts Preparation A

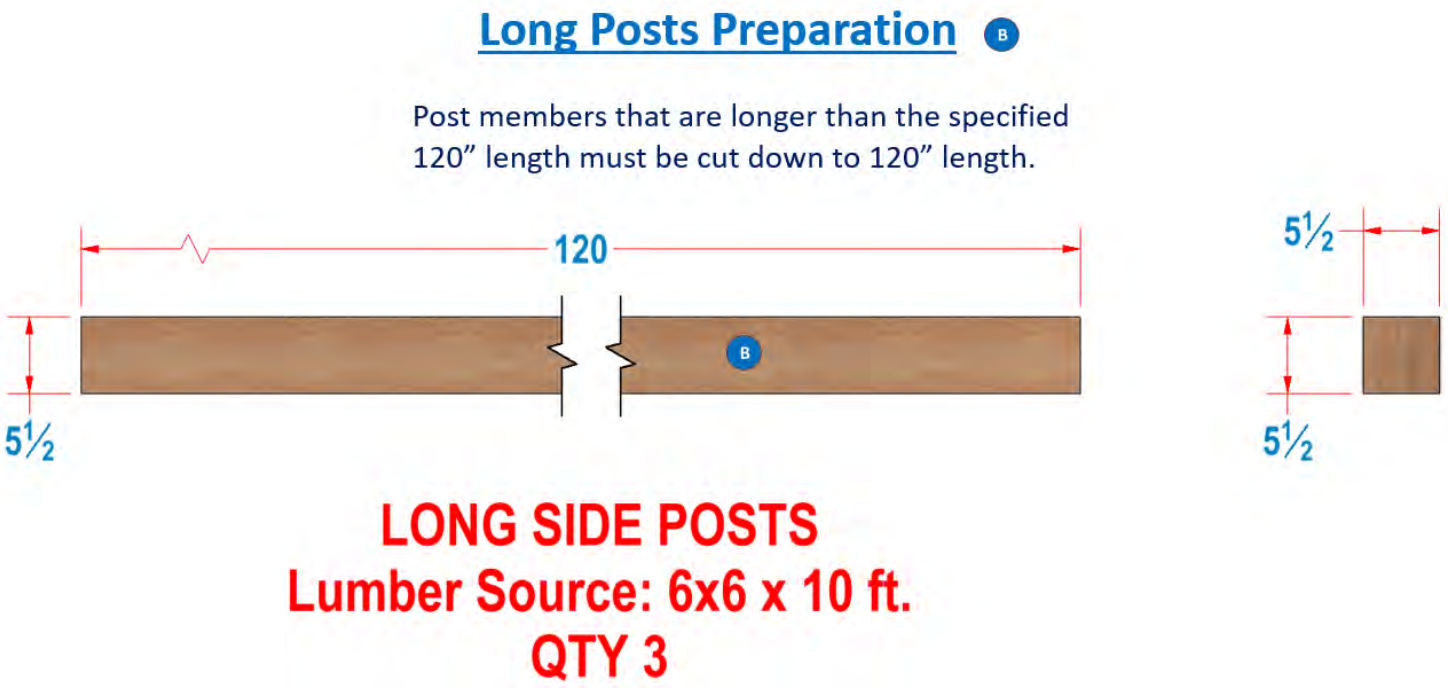
Post members that are longer than the specified 96” length must be cut down to 96” length.



SHORT SIDE POSTS
Lumber Source: 6x6 x 8 ft.
QTY 3

1.8.2 Long Posts, Item B

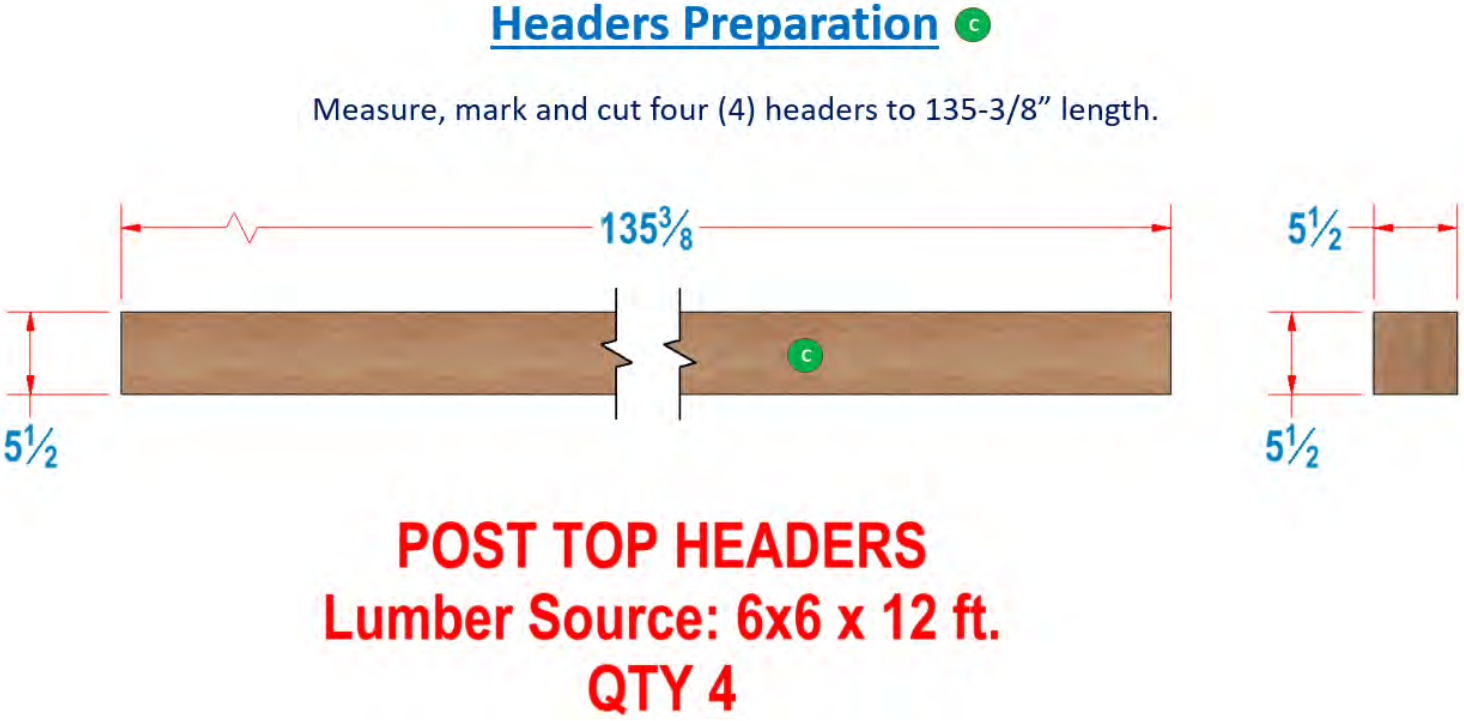
Three (3) Identical Long Post members are required. Both ends of the Long Posts must have straight cuts. Measure and cut to length two pieces to 120” length, if necessary.



1.8.3 6x6 Headers, Item C

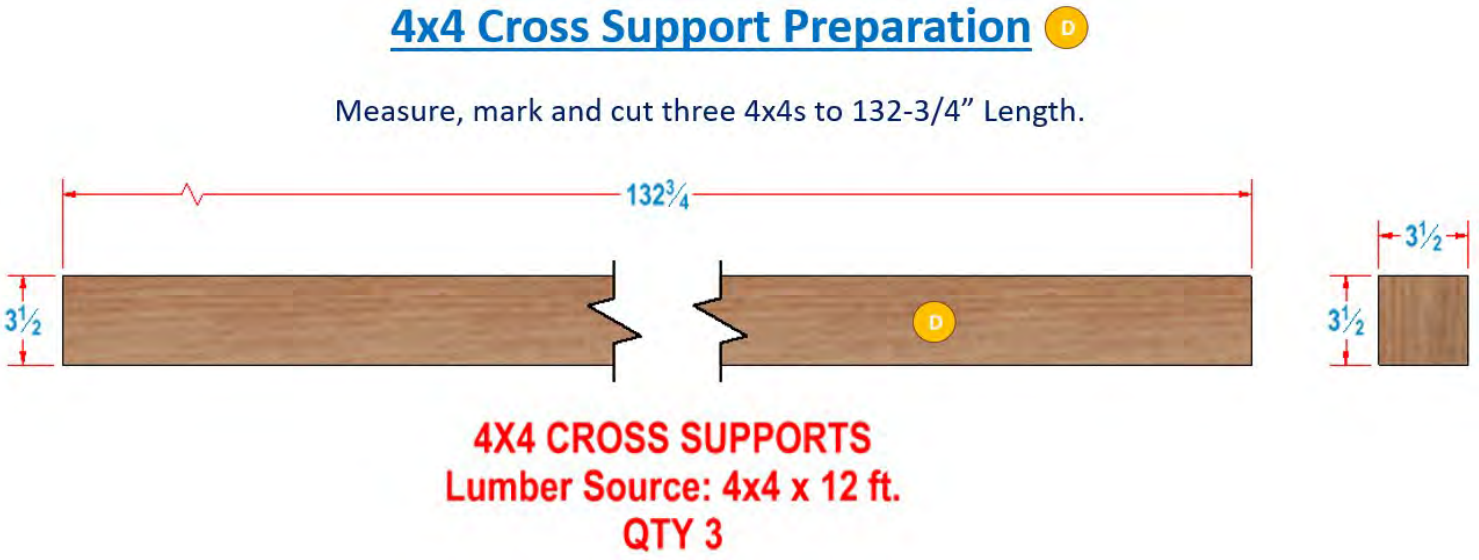
Four (4) 6X6 Header members are required. Both ends of the 6X6 Headers must have straight cuts.

1. Measure and cut four pieces to the required 135-3/8” length.



1.8.4 4x4 Cross Supports, Item D

Three (3) 4x4 Cross Support members are required. Both ends of the Cross Supports must have straight cuts. Measure and cut two pieces to the required 132-3/4" length.



1.8.5 2x8 Rafters, Item E

Nineteen (19) identical Rafter members are required. First, measure, mark, and cut all nineteen rafter members to the required length of 168-3/4". Next, add 10° miter cuts to both ends of all rafters, as shown below.

Hint: Before cutting the miter cuts on the two ends, draw the cut line using the measurements provided below. Then set the saw blade miter angle to 10 degrees, align the saw blade with the cut line, and cut directly on top of the cut line.

NOTE: Do not forget that you will be adding a roof skirt on both ends of these rafters which increase the roof length by 3".

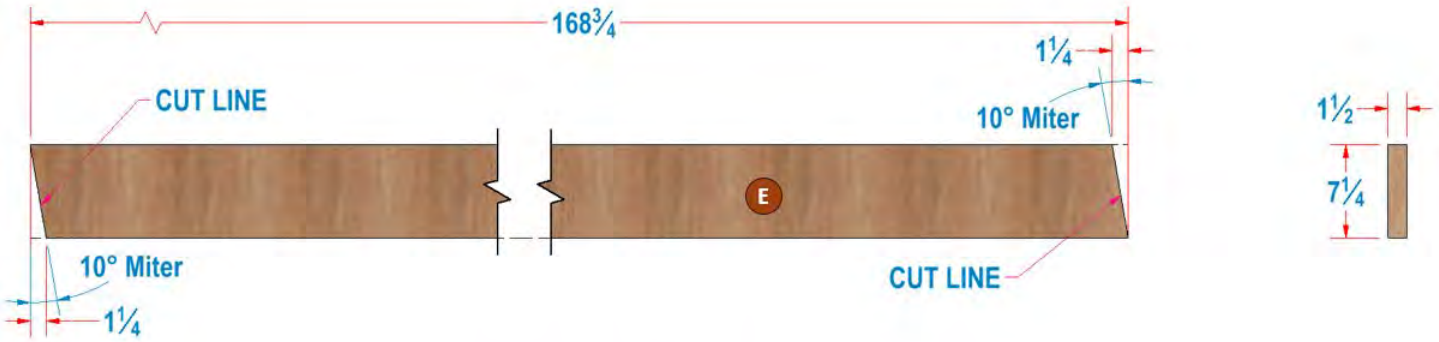
2x8 Rafters Preparation E

STEP 1

Measure, mark and cut 19 pieces to 168-3/4" length with straight cuts on both ends.

STEP 2

On both ends of the nineteen rafter members, add a 10° miter cut.

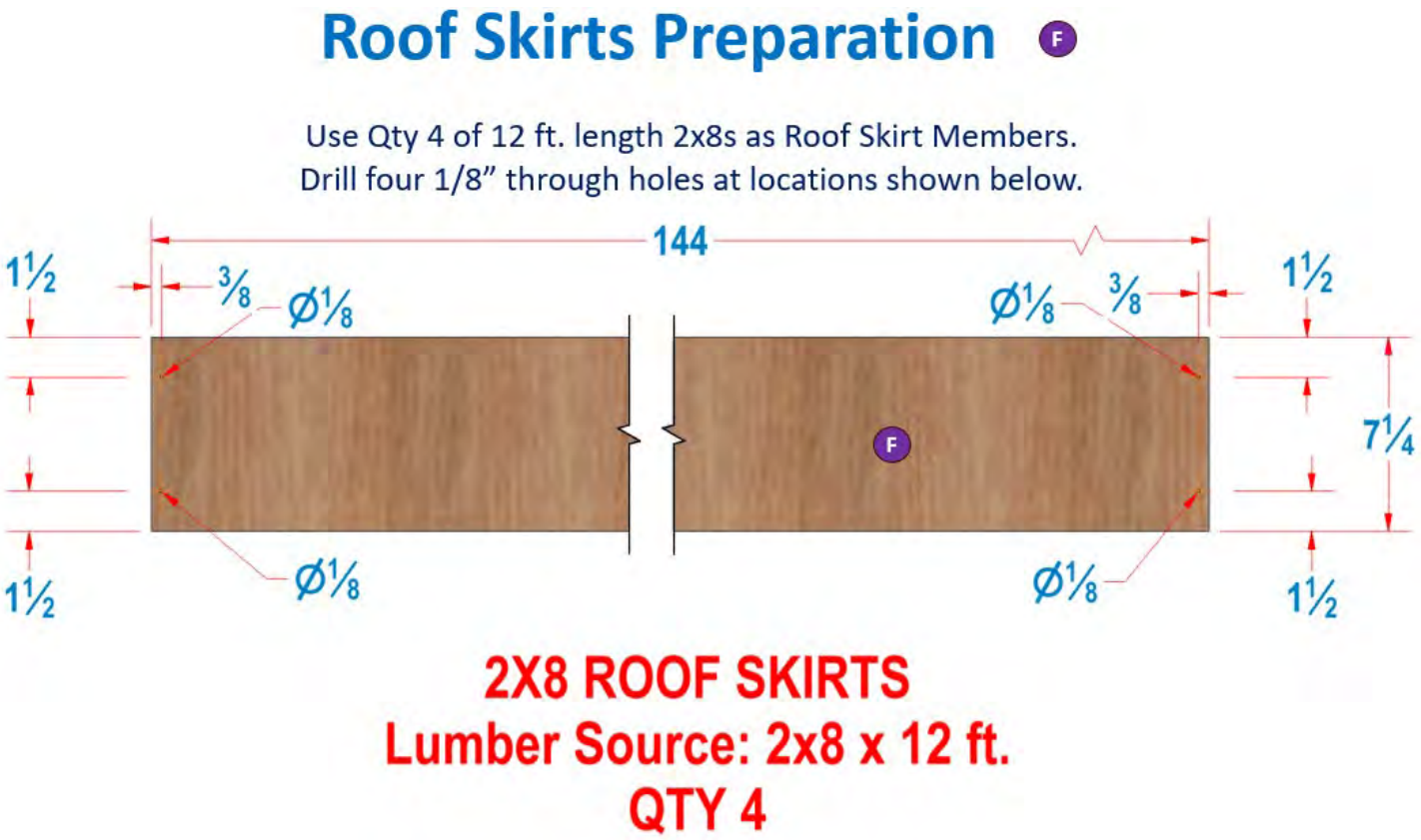


2X8 RAFTERS
Lumber Source: 2x8 x 16 ft.
QTY 19

1.8.6 Roof Skirts Preparation, Item F

Measure and cut four (4) Roof Skirt members to the required 144” length. Both ends must have straight cuts.

Drill four 1/8” through holes at the locations shown in the image below.

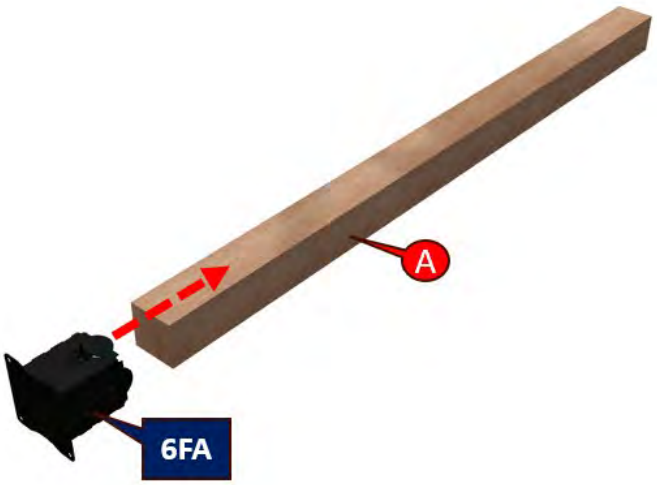


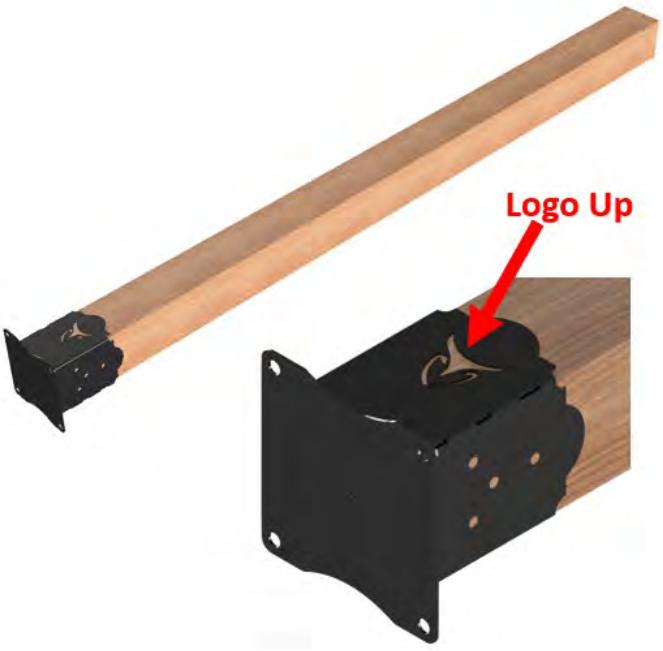
1.9 CREATING THE POST ASSEMBLIES

1.9.1 Adding Floor Anchor Bracket to all 6 posts

1. Lay a post on the ground.
2. Lift one end of the post up and slide a floor anchor bracket, as shown below, all the way over the post end. Make sure the logo cutout is facing up when you slide the post achor over the post.

Slide #6FA over the post end.

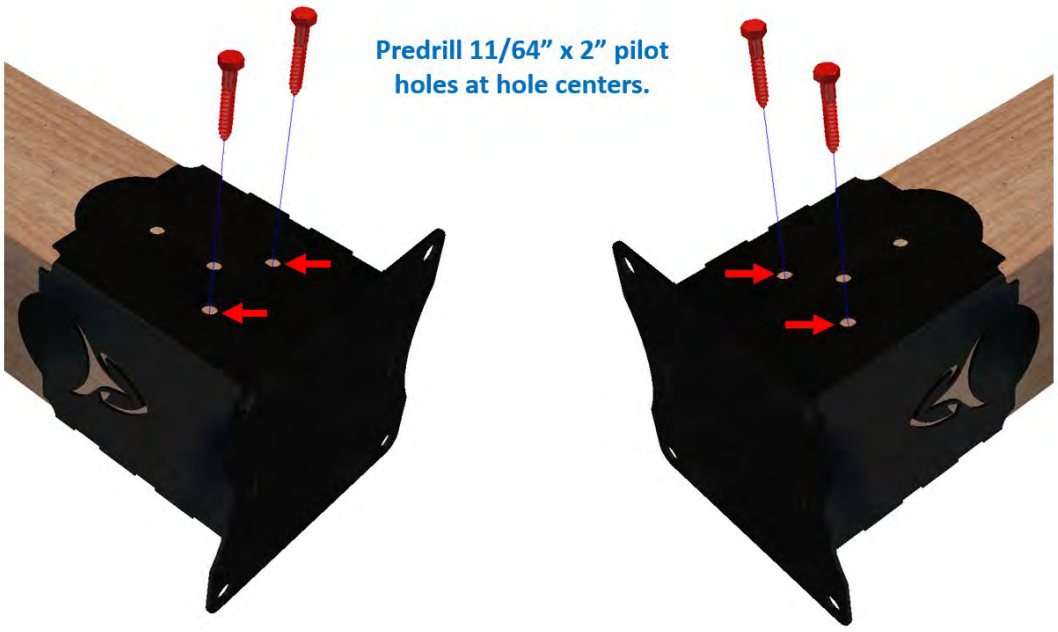




3. Insert a 11/64” drill bit in the drill chuck. The drill bit should extend out 2” from the drill chuck tip. When drilling pilot holes, drill in until the tip of the chuck touches the wood surface. This will provide the 2” required pilot hole depth.

4. Rotate the post 90 degrees (left and right). Locate two 7/16” diameter holes, two holes in each opposing face of the floor anchor’s side faces (identified by red arrows).

5. While holding the floor anchor tightly against the post end, drill 11/64” X 2” pilot holes through the center of the 7/16” holes.

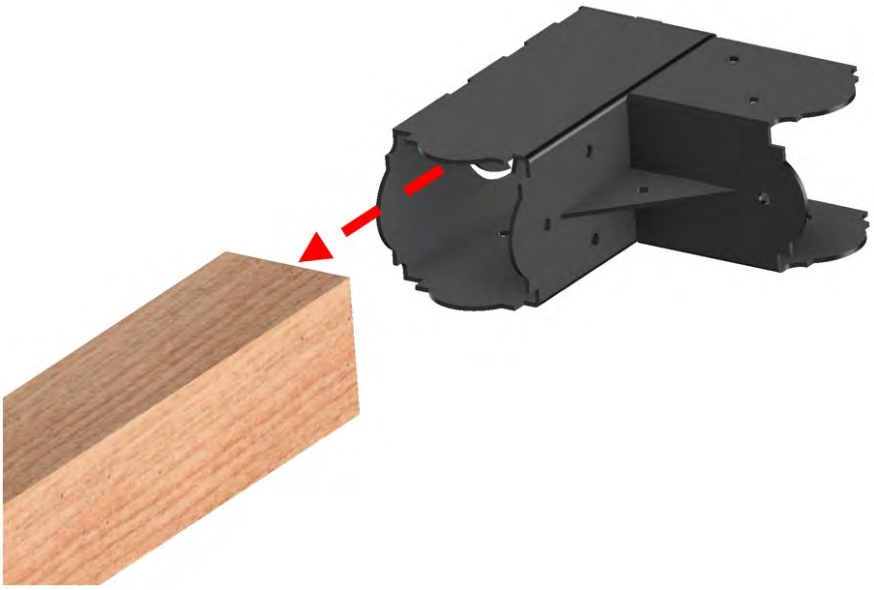


6. Using a ratchet driver and a 9/16” socket or a drill gun with a 9/16” drive bit, drive one 3/8” x 2” Lag Screw each through the four pilot holes you drilled. If using a drill gun, be careful. Test drive one screw to set the proper drill torque setting to prevent screw heads from breaking off when you tighten the lag screw.
7. Tighten all lag screws.
8. Repeat steps 1-7 and add a floor anchor bracket to all remaining posts.

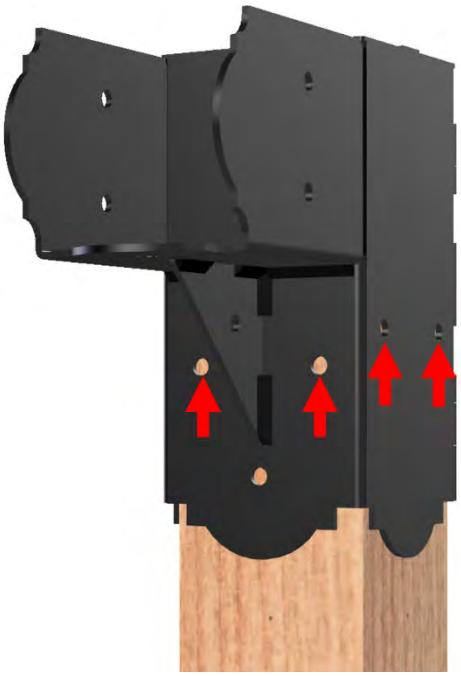
1.9.2 Post Top #6C1L Bracket Installation

Four end posts with the #6C1L, 6X6 90 Degree Elbow Brackets are required. Two Long Posts and Two Short Posts require the #6C1L bracket to be installed on their top ends.

1. Slide a #6C1L bracket's tube on the 6x6 post tops after aligning the header receiver U-channels in the proper direction. Slide the bracket all the way. If you feel resistance, tap lightly on top of the elbow bracket with a mallet until it slides all the way.

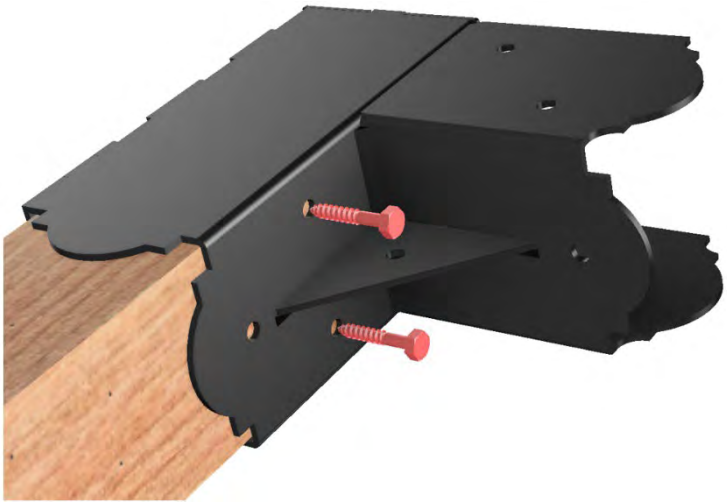


2. Identify the four 7/16" holes which are on two sides of the square tube.



3. Drill 11/64” X 2” deep pilot holes at the center of four 7/16” Holes. Locate pilot holes at the center of each 7/16” hole.

4. Drive one 3/8 x 2” Lag Screw through each 7/16” hole into the pilot holes you drilled in step 4, using a 9/16” Socket and Rachet driver. Tighten down each screw.

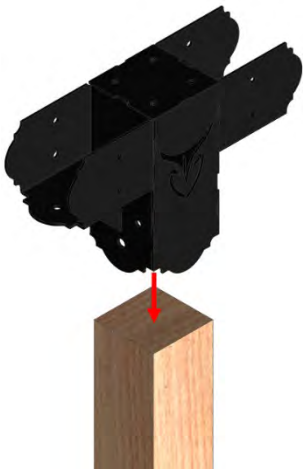


5. Repeat the same procedures to install one #6C1L on the top ends of two Short Posts and two Long Posts.

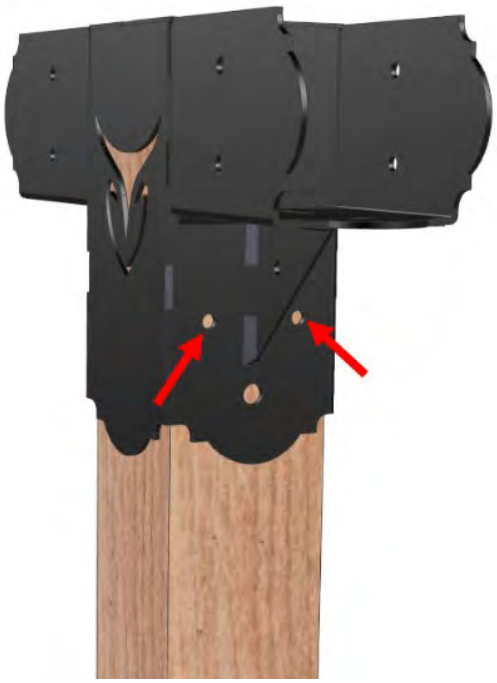
1.9.3 Post Top #6SE Bracket Installation

One #6SE Tee/ Straight extension bracket is needed at the top end of one Short Post and one Long Post.

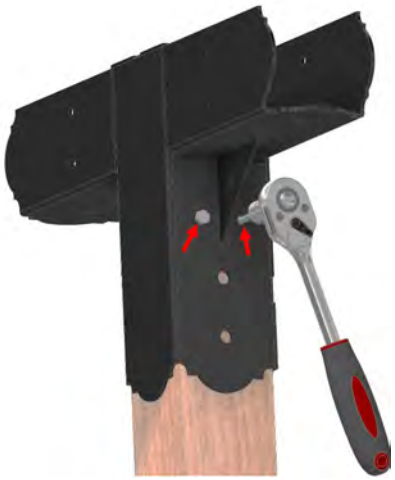
1. Orient the post top 2-way extension bracket's U-channels in the desired direction and slide the square tube over the top of the post. Let gravity pull it down. If it resists, tap the bracket top lightly with a mallet.



2. Locate two 7/16" holes, each, on two opposing sides of the tube, adjacent to the gussets (4 holes total). Drill 11/64" x 2" deep pilot holes in the center of the 7/16" holes (four holes total, 2 on each side of the bracket).

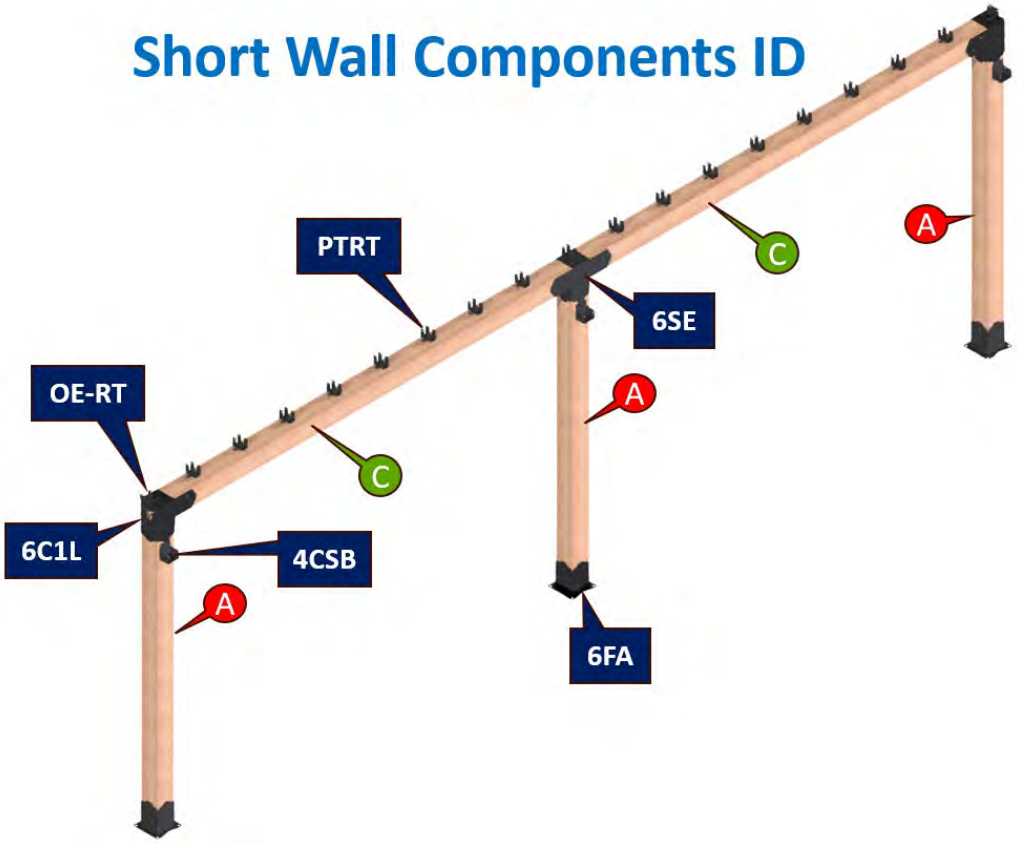


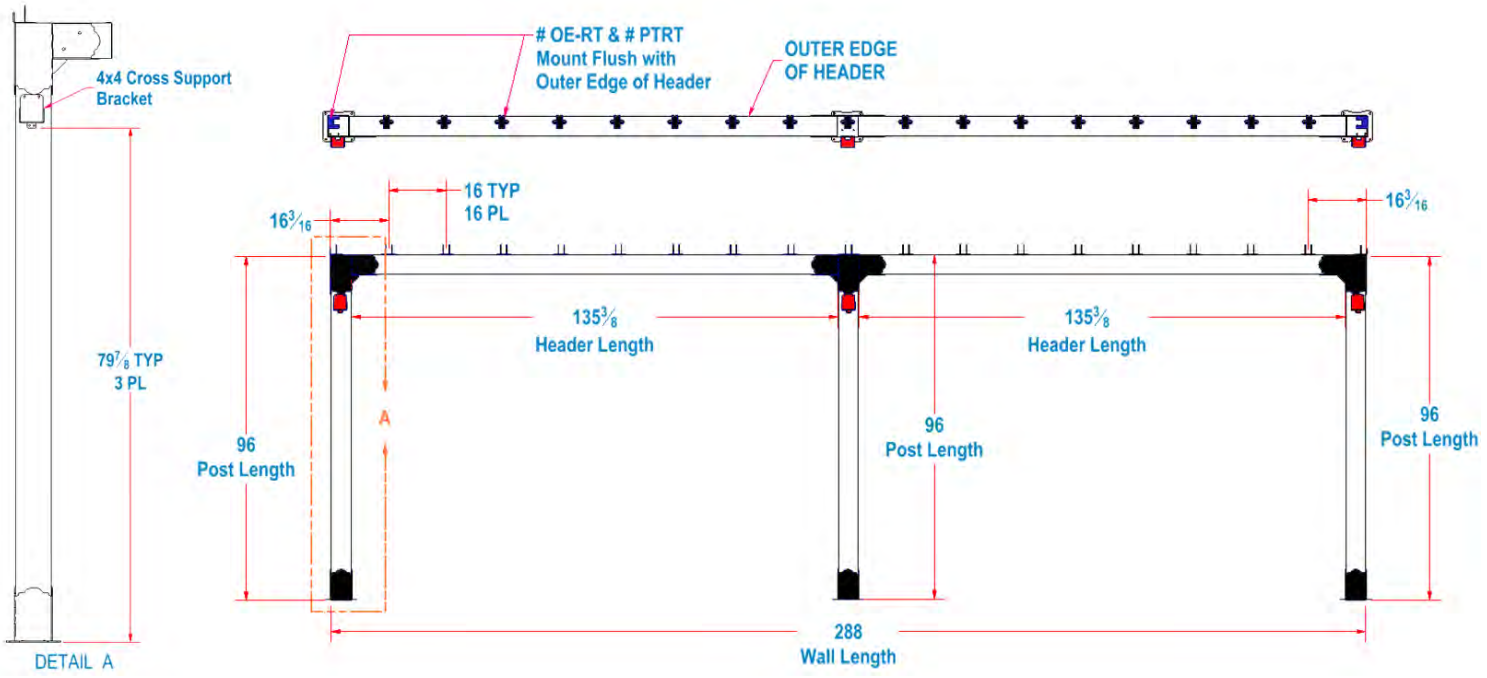
3. Using a 9/16” socket and ratchet driver, drive a 3/8” x 2” Lag Screw through each pilot hole you drilled.



1.10 BUILDING THE SHORT WALL

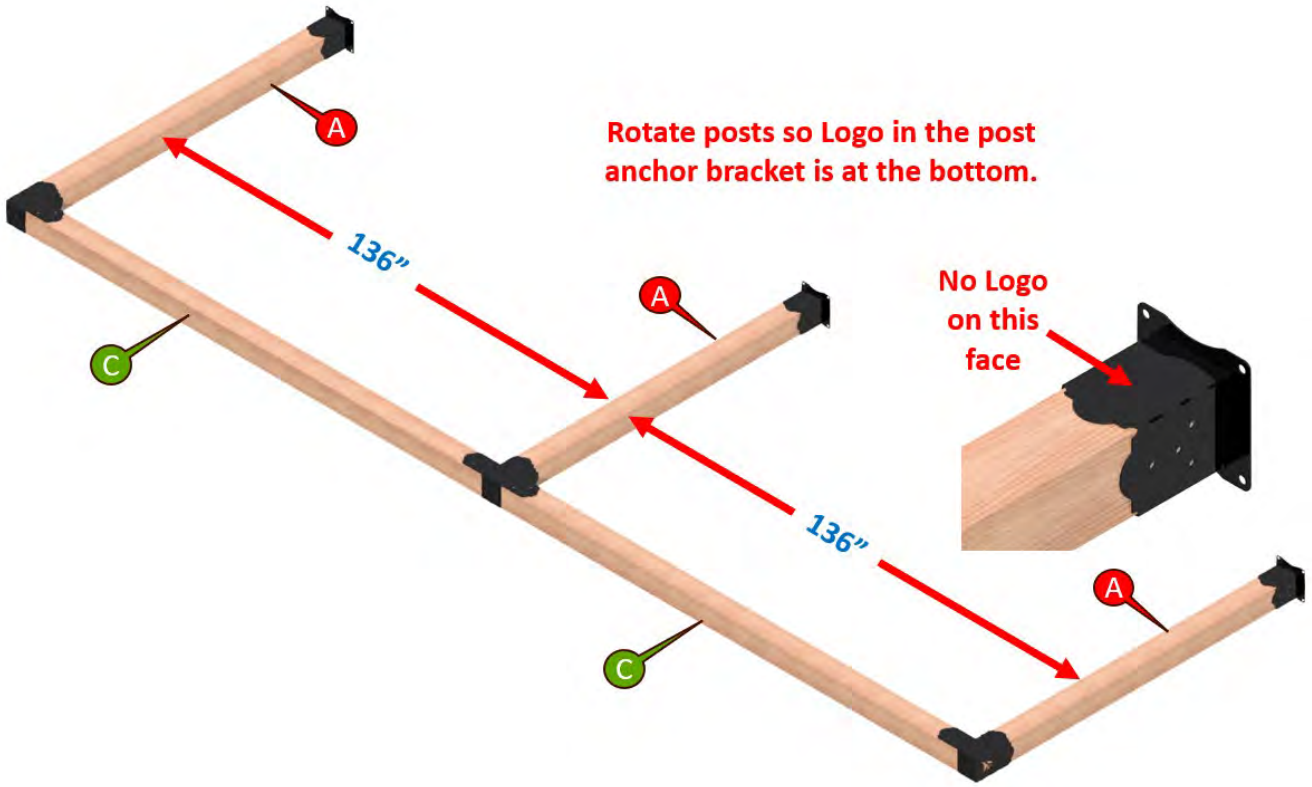
Build the Short Wall and Tall Wall on the floor first. It is easier to add the headers to the post top elbows and rafter tie brackets to the top of the headers while the two walls lay on the floor.





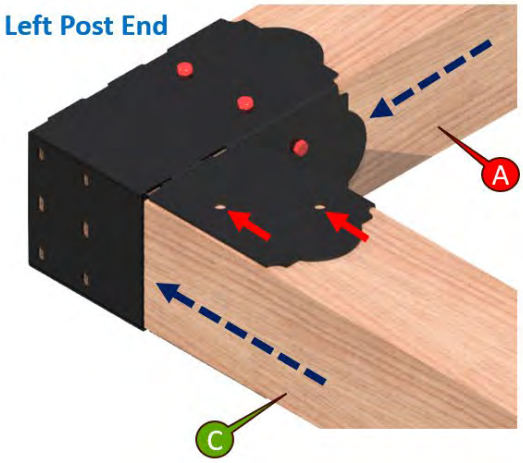
1.10.1 Adding the 6x6 Headers to the Short Wall

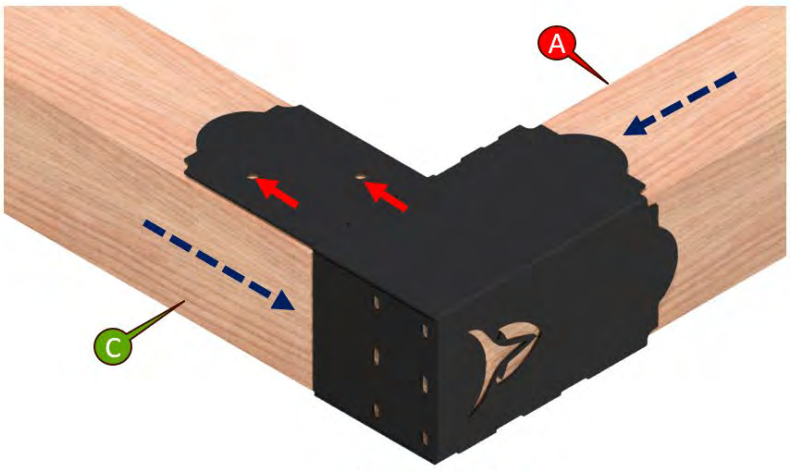
1. Lay down the short left post, short right post, and short center post on a level ground, with 136” gap between the posts, as shown below. The logo in the post anchor shall be on the bottom surface and not visible.



2. Slide the headers inside the end post top elbow’s U-channels and the middle tee’s U-channels.
3. Push the posts towards the middle of the header to pinch the headers between the end post top bracket and middle post tee bracket.
4. At the left post and right post, while pulling the post towards the header and pulling the header tight against the post top elbow bracket, sideways, drill 11/64” x 2” deep pilot holes at the center of two holes located on the top face of the U-channels.

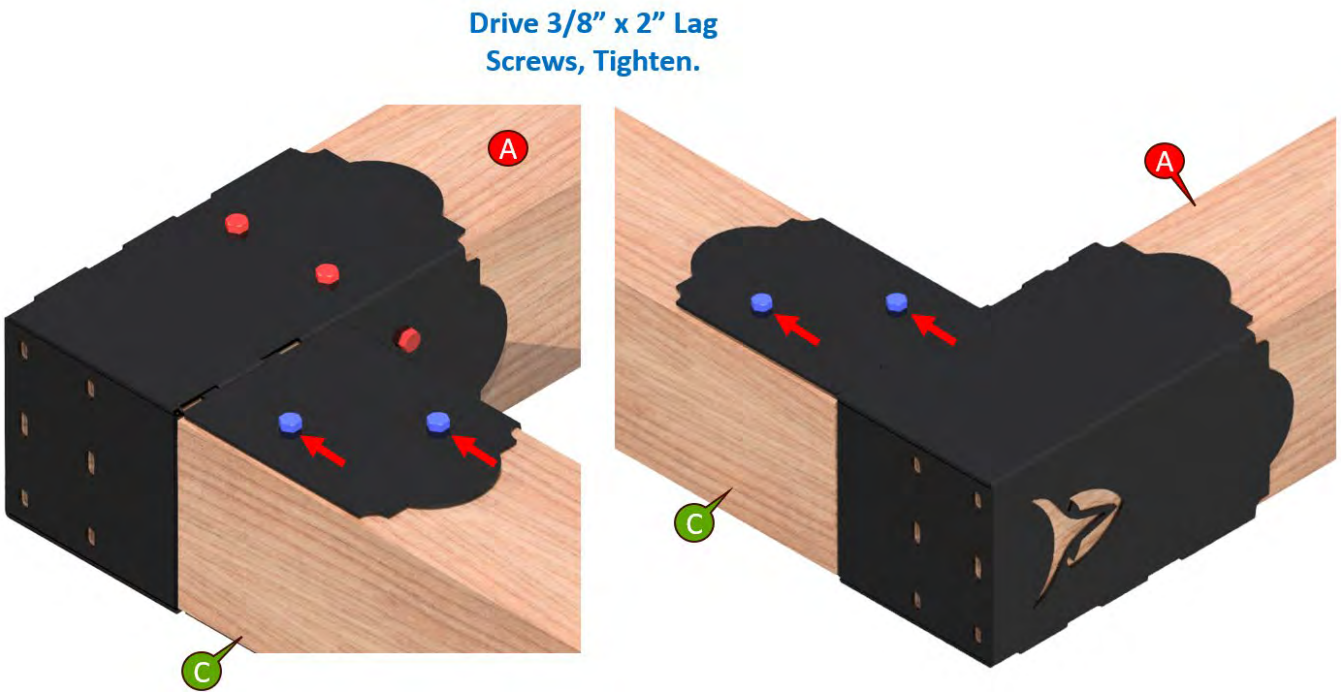
Drill 11/64˝ x 2” Pilot holes



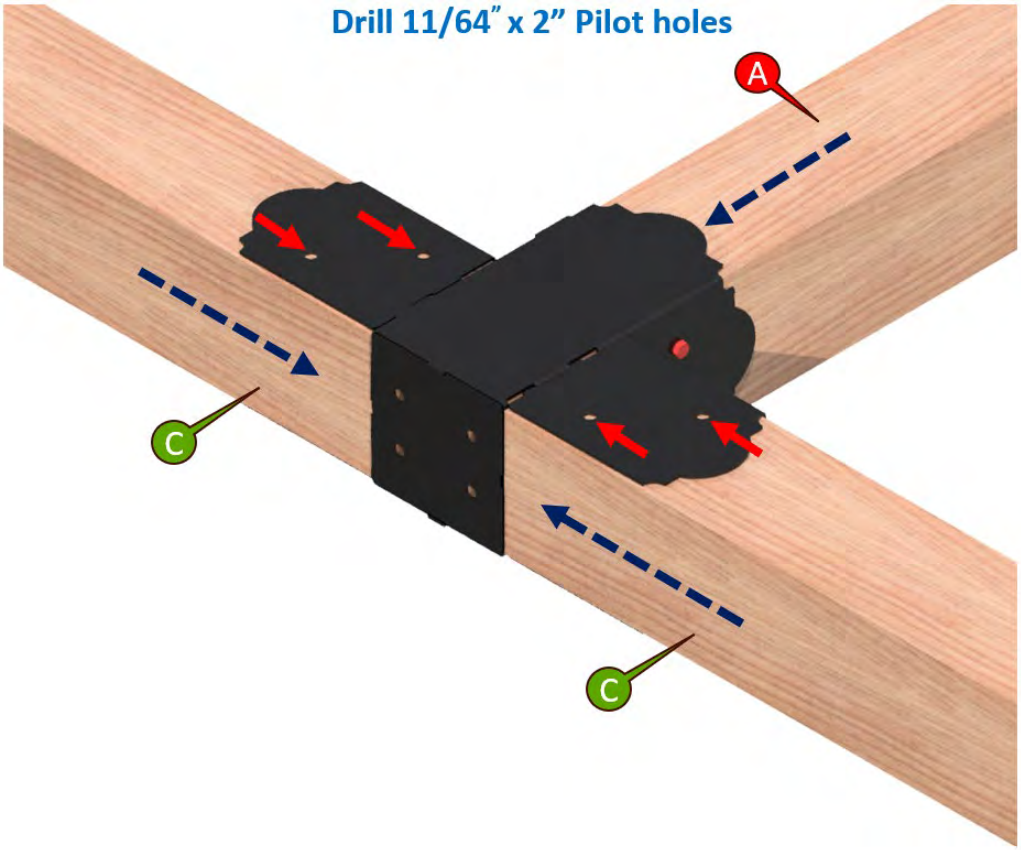


Right Post End

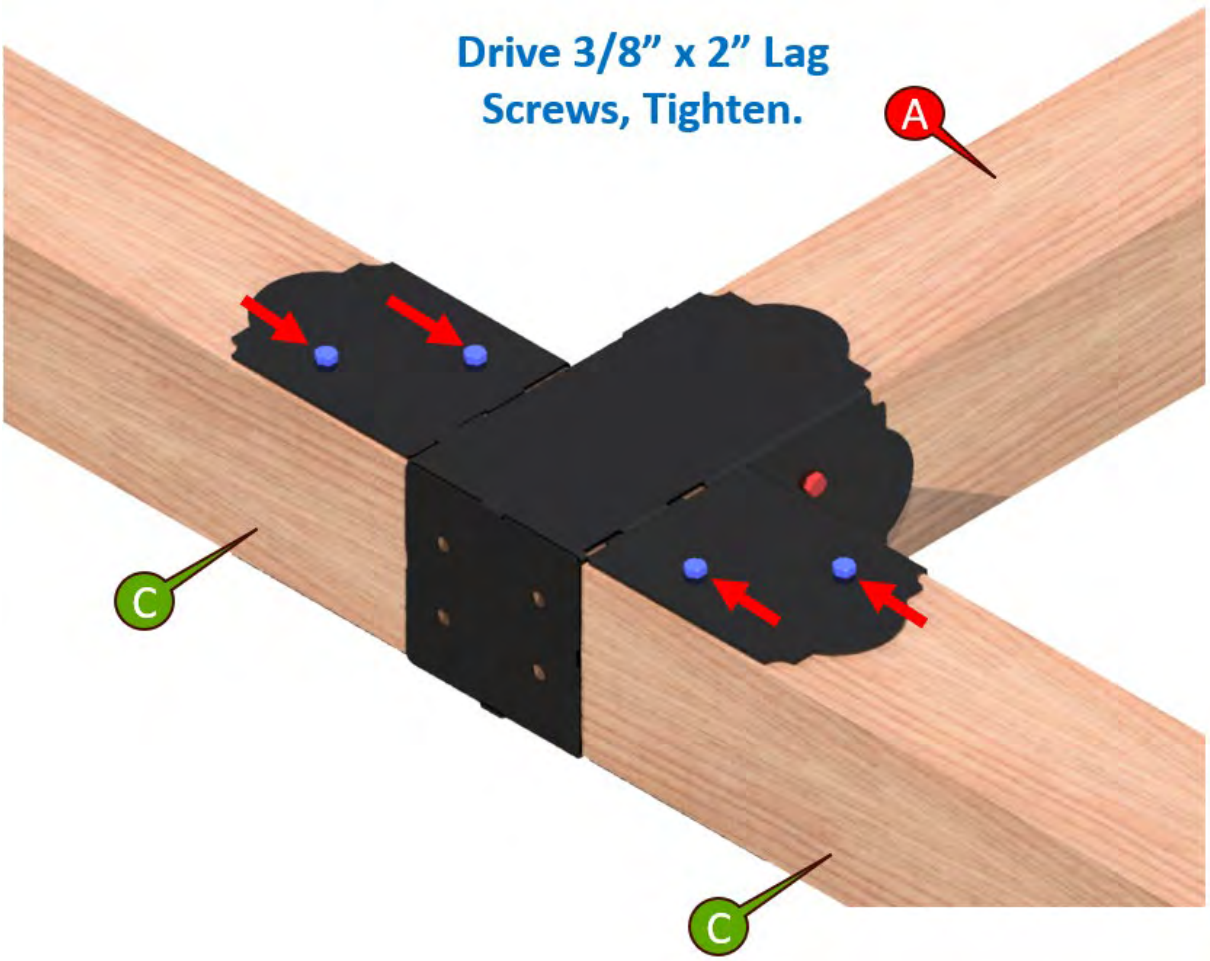
5. While holding the header tight against the elbow bracket, drive 3/8” x 2” lag screws into the pilot holes and tighten.



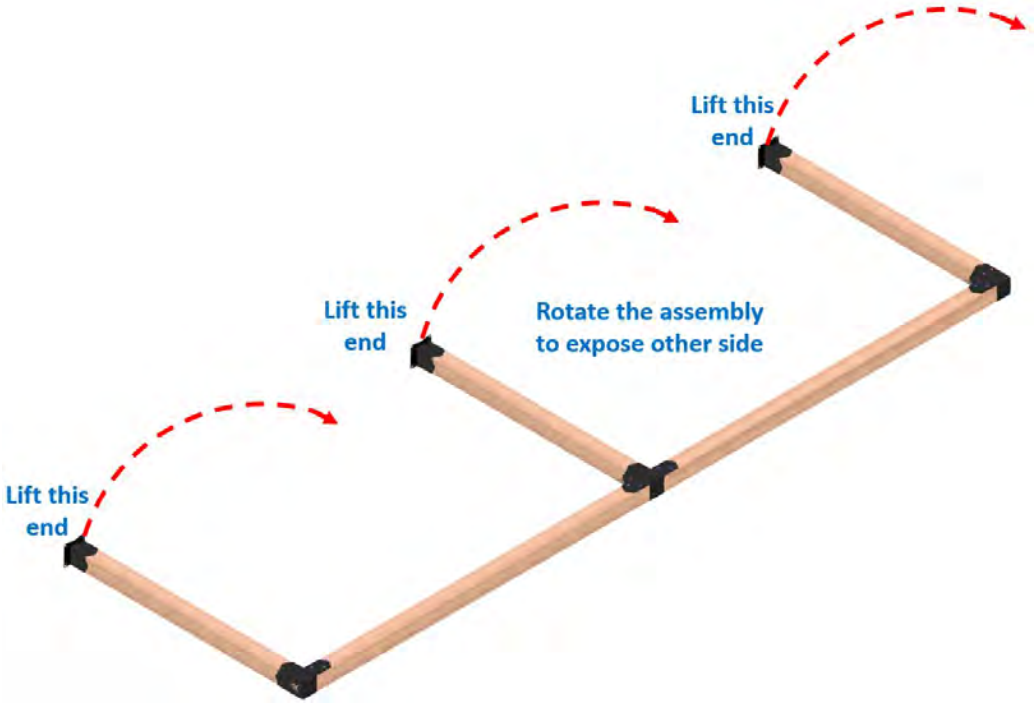
6. At the center post top, pull both headers tight against the tee bracket. Drill 11/64” x 2” deep pilot at the center of four holes in the top face, identified with red arrow.



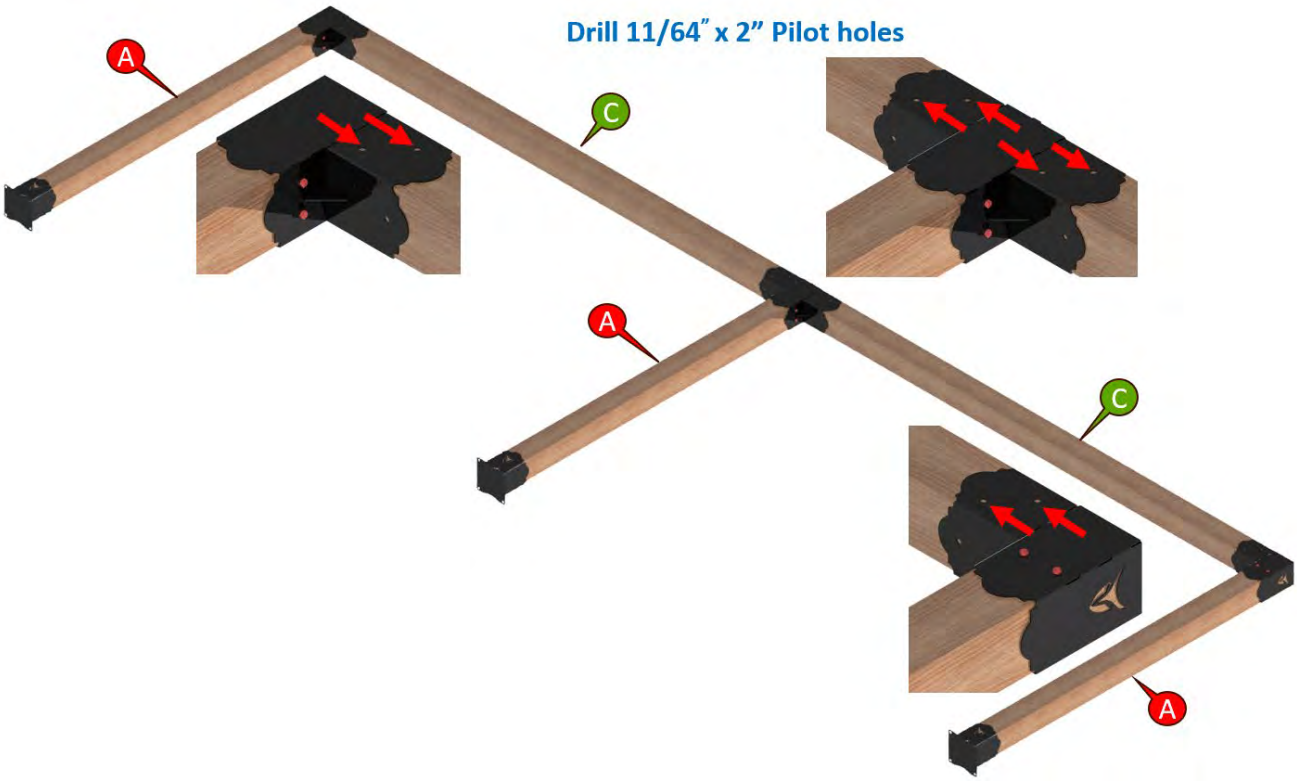
7. Drive 3/8” x 2” Lag Screws into the pilot holes and tighten down.



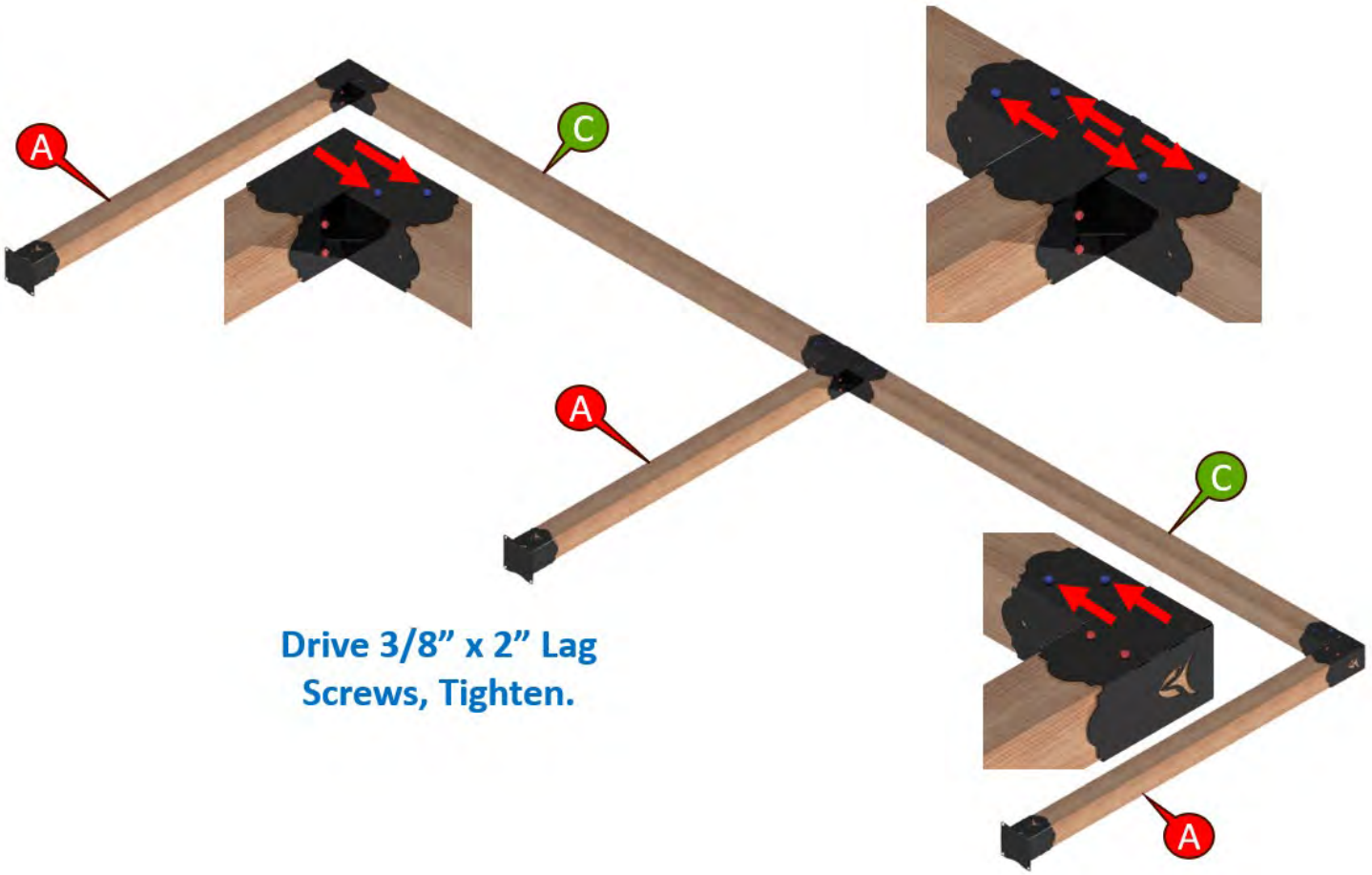
8. Get help from two other individuals. Lift the bottom ends of the posts upward, slowly. Flip the wall assembly over to expose the underside.



9. Once rotated to expose the opposite side, drill 11/64” x 2” pilot holes at the center of 7/16” holes in the U-channel faces.

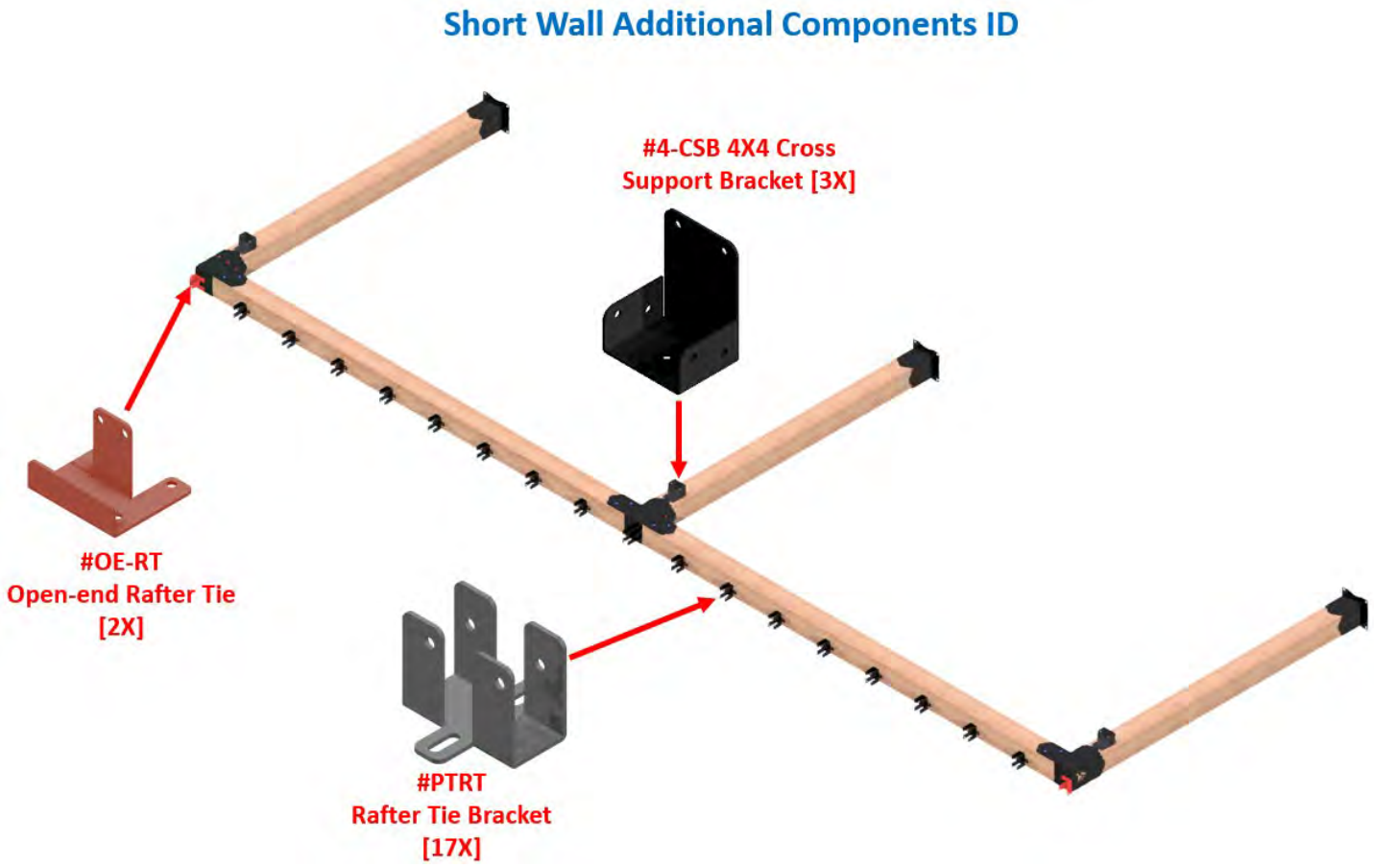


10. Drive 3/8” x 2” lag screws into the pilot holes and tighten.



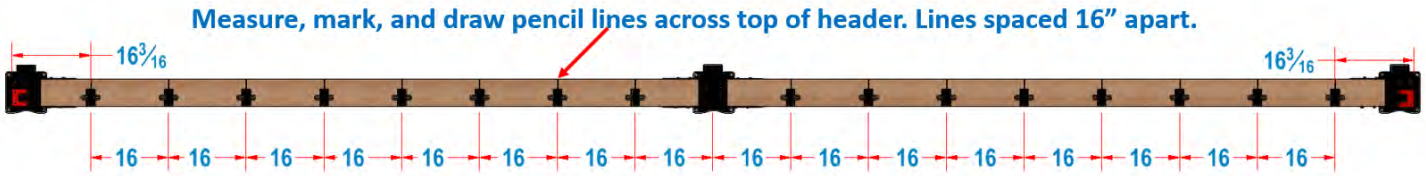
1.10.2 Adding Additional Components to Short Wall

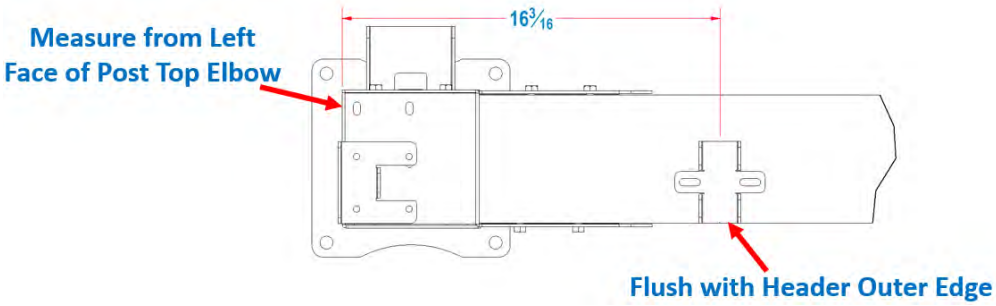
Three additional components must be added to the short wall before lifting it up. They are #OE-RT, Open End Rafter Tie Brackets, #PTRT, Rafter Tie Brackets, and #4-CSB 4x4 Cross Support Brackets.



1.10.2.1 Adding #PTRT Rafter Tie Brackets to Short Wall Top

1. On the top face of the 6x6 headers in the Short Wall, measure 16-3/16” from left end and make a pencil mark. From the first pencil mark, measure in every 16” all the way to the right end and make pencil marks. The pencil marks will be the center locations for the rafter tie brackets.Draw solid pencil lines across the width of the headers at each pencil mark.

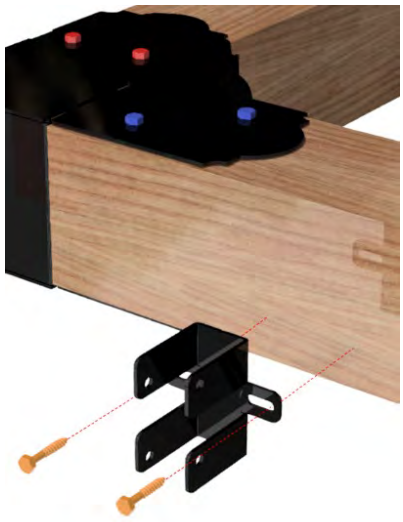


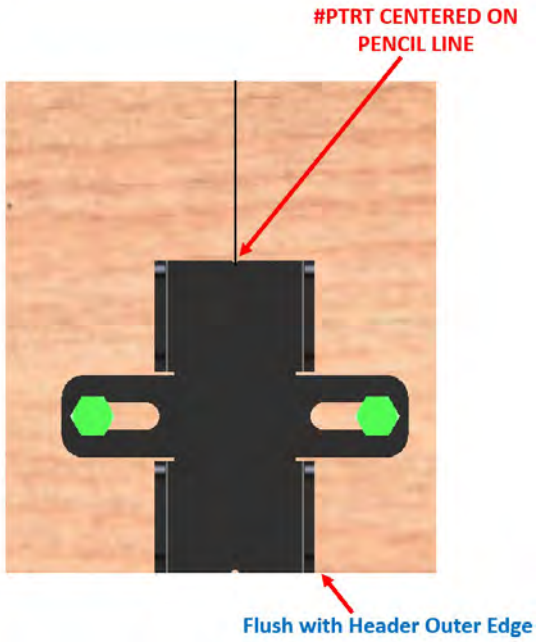


2. The #PTRT brackets’ centers align with the pencil lines you made. Position the #PTRT brackets flush with the outer edge of the 6x6 Headers.

   Note: At the center of the short wall, the #PTRT bracket aligns with holes provided on the top surface of the tee/straight extension bracket.

3. Drill 3/32” x 1-1/2” Pilot holes at the center of the slot ends in the #PTRT brackets. Drive ¼” x 1-1/2” Lag Screws into pilot holes and tighten down.





4. Repeat steps 1 to 3 to add the 17 #PTRT brackets to the short wall top.

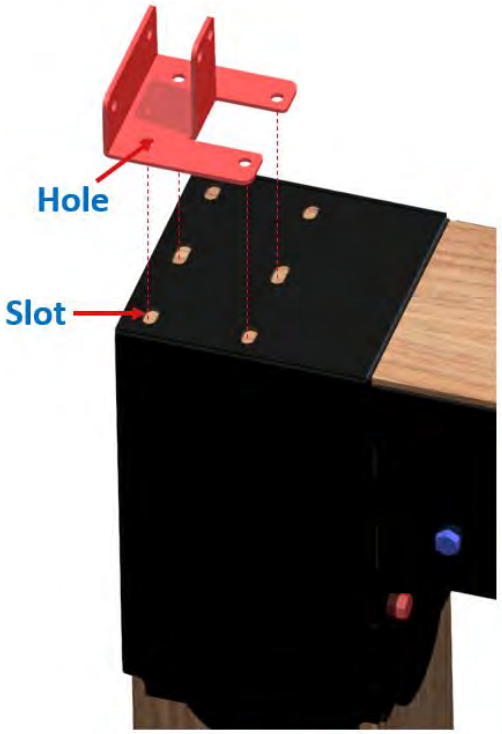
1.10.2.2 Adding #OE-RT, Open End Rafter Tie Brackets

At the left and right ends of the short wall, two #OE-RT Open End Rafter Tie brackets will attach with 2” long lag screws through holes in the post top elbow brackets.

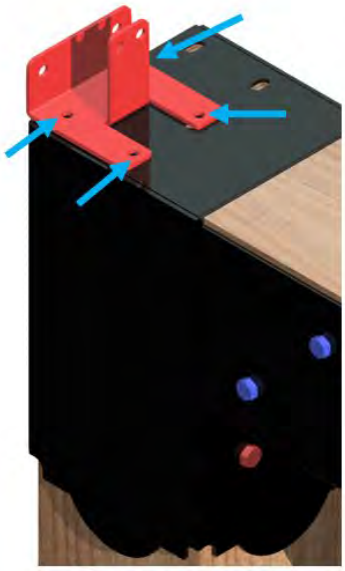
1. At left end, align the four holes in #OE-RT with holes slots on top of the Elbow Bracket.

2. Drill 3/32” x 2” deep pilot holes at the center of four holes in #OE-RT bracket.

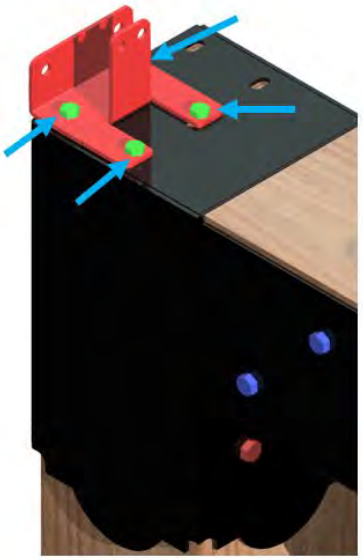
3. Drive ¼” x 2” Lag Screws into pilot holes and tighten.



Place #OE-RT on Elbow Top Face. Align holes in #OE-RT with slots on top of Elbow.



Drill 3/32” x 2” pilot holes at the center of 4 holes in #OE-RT Bracket.

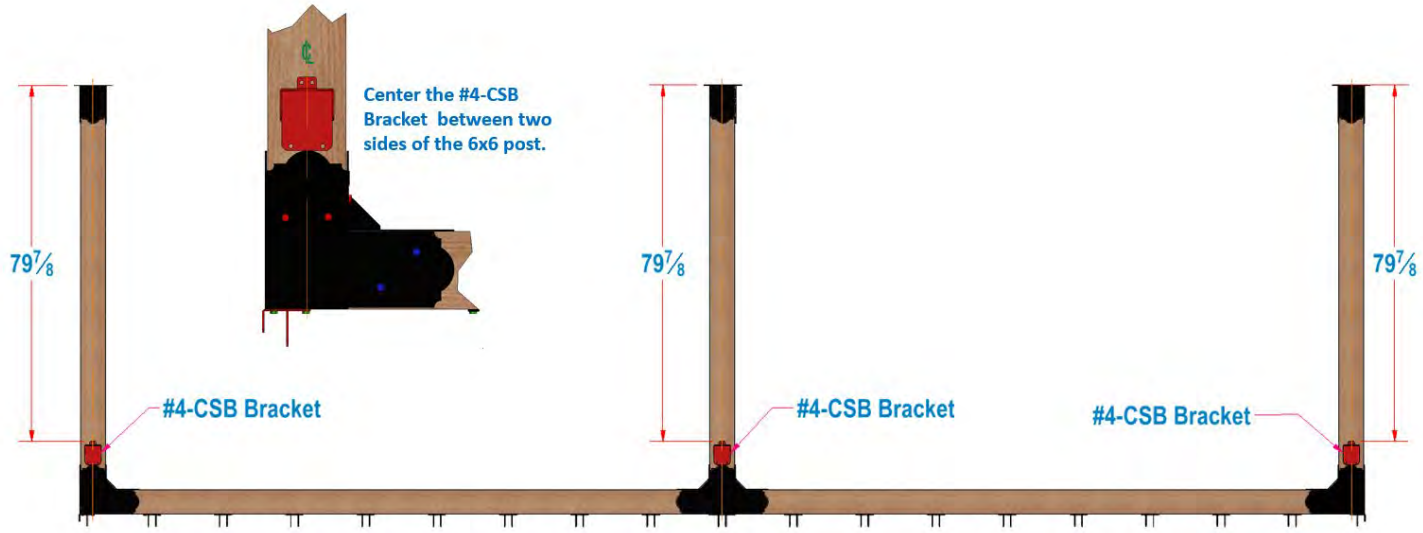


Drive ¼” x 2” Lag Screws through holes in #OE-RT and Tighten.

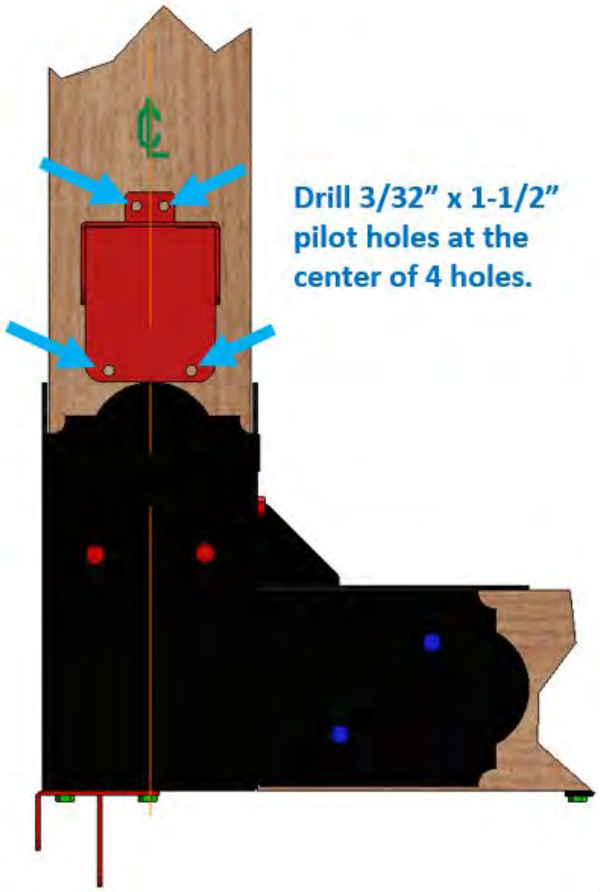
4. Repeat steps 1 to 3 to mount an #OE-RT bracket at the right end of the short wall.

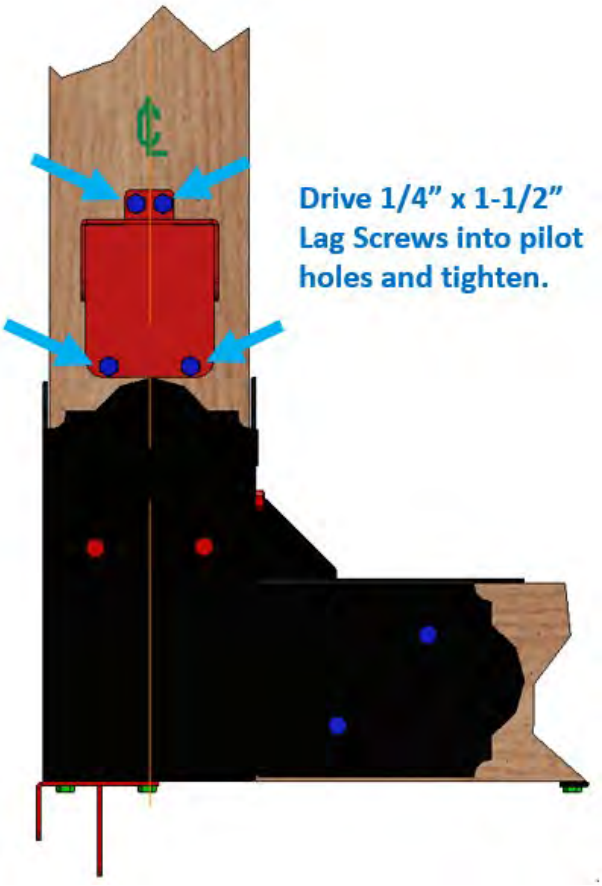
1.10.2.3 Adding #4-CSB Cross Support Brackets to the long wall

1. On the inside surface of the short posts, measure up 78-7/8” from the floor level of the floor anchor brackets. Draw a horizontal pencil line at this point across the 6x6 posts.
2. Place one 4x4 Cross Support Bracket with its bottom edge aligned with the line you drew on the 6x6 short posts.
3. Center the Cross Support Bracket between the two sides of the 6x6 posts.



4. Drill 3/32” x 1-1/2” pilot holes in the middle of four holes in the #4-CSB Bracket, identified below.
5. Drive ¼” x 1-1/2” Lag Screws into the pilot holes and tighten.





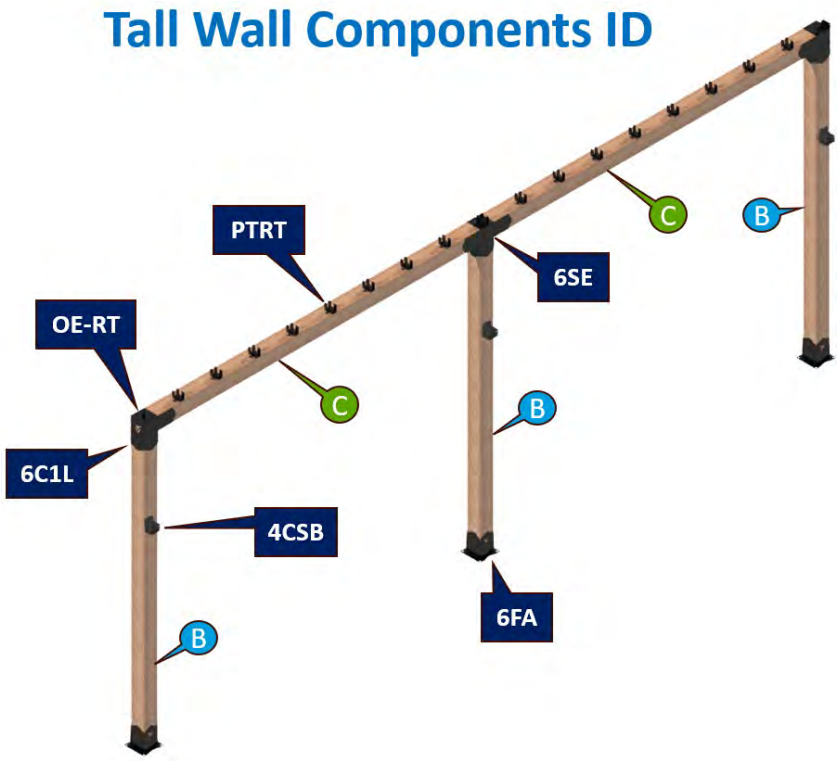
1.11 BUILDING THE TALL WALL

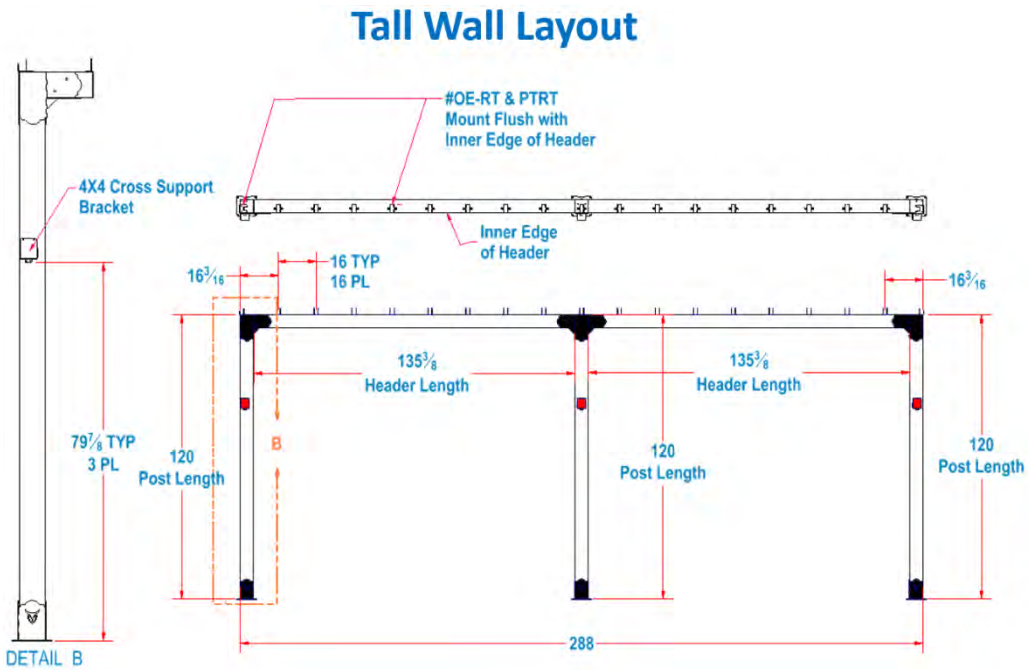
Build the Tall Wall on the floor first. It is much easier to add the headers to the post top elbows and rafter tie brackets to the top of the headers while the two walls lay on the floor.

Use the same procedures provided in section ***1.10 Build the Short Wall*** to build the Tall Wall.

Two specific details apply to the Tall Wall.

1. The Rafter Tie Brackets must be mounted flush with the inside surface of the 6x6 headers.
2. The #4-CSB brackets must be mounted to the inner surface of the 6x6 posts.





1.12 STANDING THE TALL WALL

Employ three 2x8 x 12 ft. pieces as temporary braces to help stabilize the wall once it is standing.

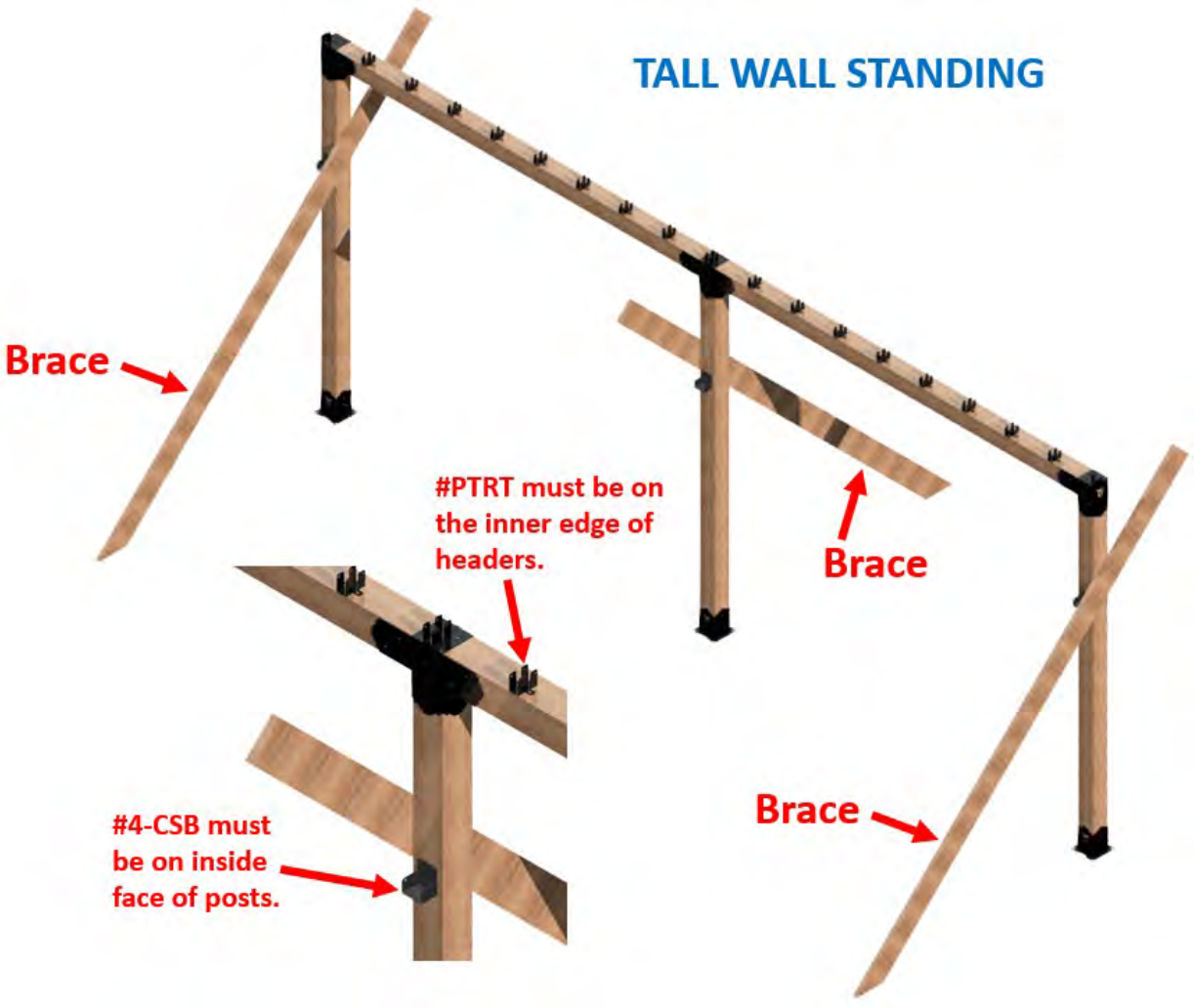
Three people should work to lift, rotate, and stand the Tall Wall upright.

1. Move the Tall Wall close to its final position on the concrete pad. Make certain that the 4x4 Cross Support bracket's open U-channel will be facing the short wall when the long wall is standing. The Rafter Ties on the headers must be toward the inside of the headers.

2. One person, each, should stand close to the post top.

3. Working together, begin lifting the headers and post top ends. Once the headers are at shoulder height, grab the posts firmly and continue lifting the wall as you walk towards the post bottom end.

4. When the wall is vertical, two people should hold the wall while the third person adds the three 2x8 braces to stabilize the wall. Add braces as shown in the image below. Nail the braces to the posts using two #10D x 3" nails per support brace. Add more braces if you deem it safer to do so.



1.13 STANDING THE SHORT WALL

Employ three 2x8 x 12 ft. pieces as temporary braces to help stabilize the wall once it is standing.

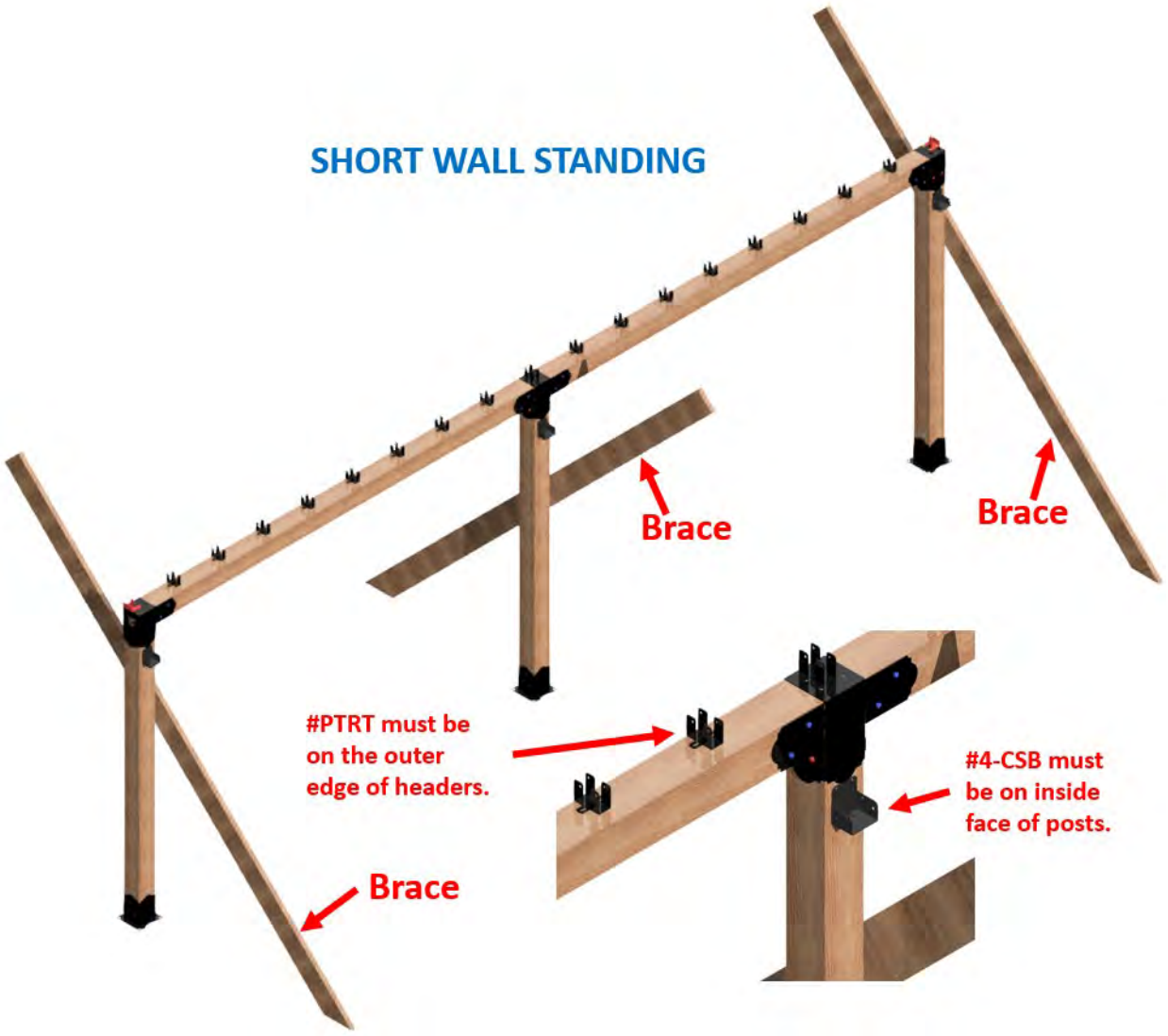
Three people should work to lift, rotate, and stand the Short Wall upright.

1. Move the Short Wall close to its final position on the concrete pad. Make certain that the 4x4 Cross Support bracket's open U-channel will be facing the Tall Wall when the short wall is standing. The #PTRT Rafter Tie Brackets must be on the outer edge of the headers.

2. One person, each, should stand close to the post top.

3. Working together, begin lifting the headers and post top ends. Once the headers are at shoulder height, grab the posts firmly and continue lifting the wall as you walk towards the post bottom end.

4. When the wall is vertical, two people should hold the wall while the third person adds the 2x8 braces to stabilize the wall. Add braces as shown in the image below. Nail the braces to the post using two #10D x 3" nails per support brace. Add more braces if you deem it safer to do so.

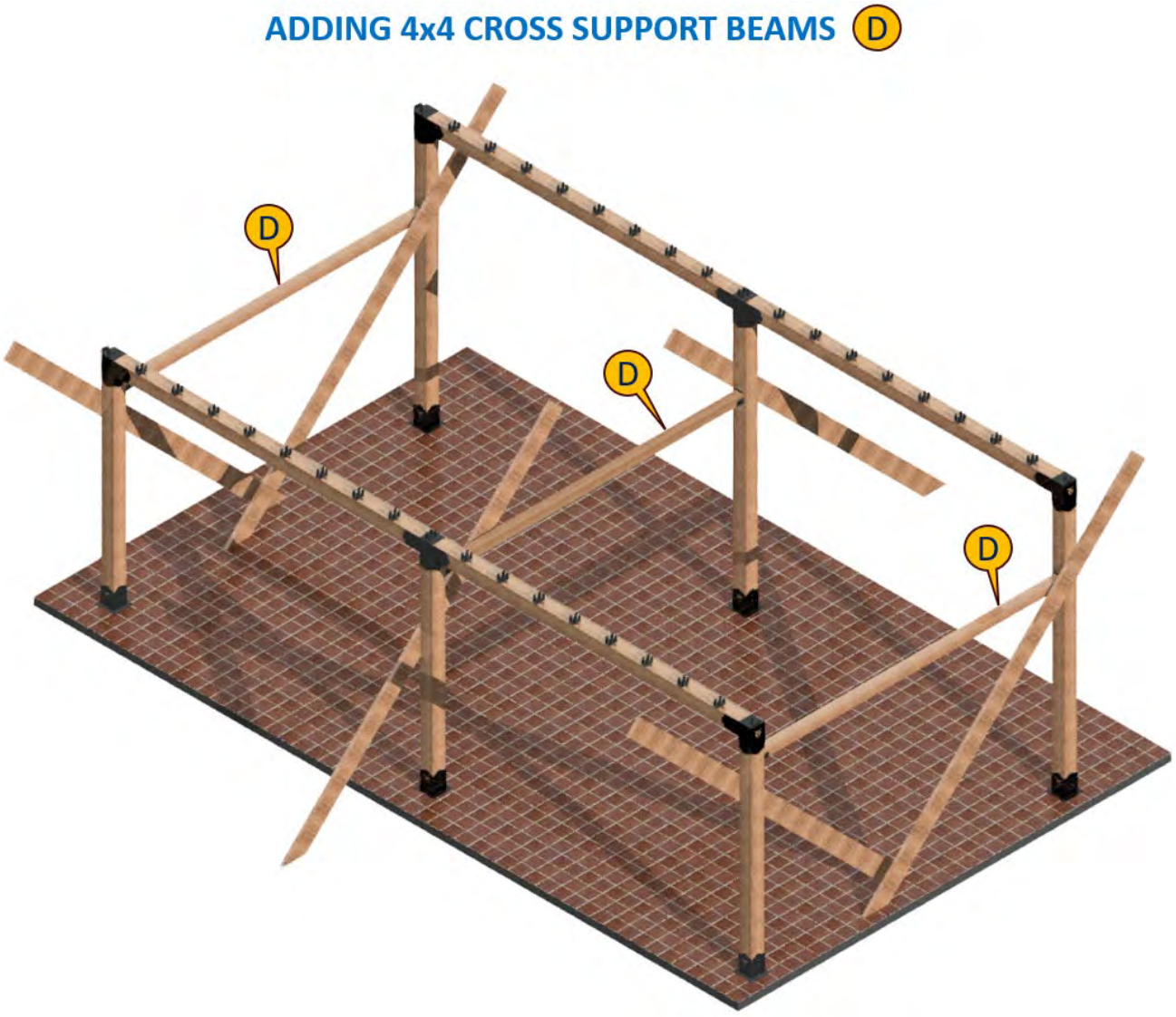


5. from the outside of the Long Wall to the outside of the short wall.

1.14 ADDING THE 4X4 CROSS SUPPORTS

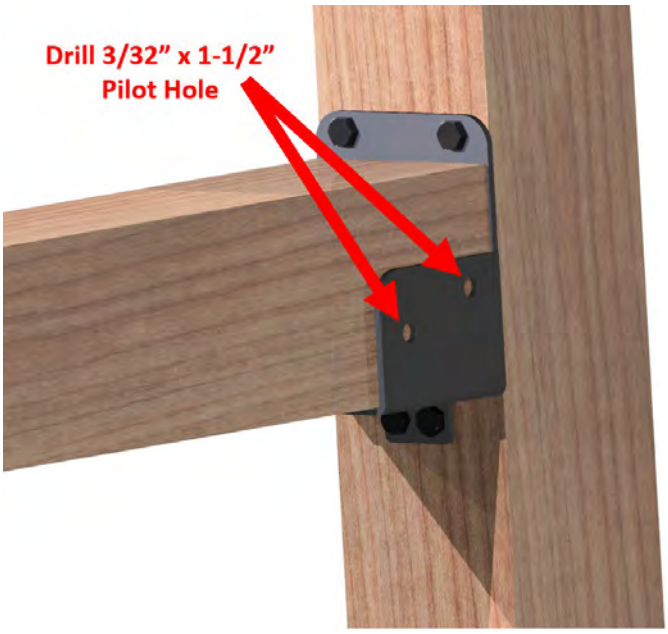
Two people should work together to lift and place the 4x4 cross support inside the cross support brackets' U-channel. Adjust the space between the two walls so the 4x4 cross support beams fit tightly between the two walls.

1. Place 4x4 cross support #D inside the U-channels.



2. Pinch the 4x4 cross support beams between the two walls tightly.

3. On two sides of the #4-CSB Cross Support Brackets, locate two holes.
4. Drill 3/32” x 1-1/2” pilot holes at the center of these holes and drive ¼” x 1-1/2” Lag Screw, tighten.
5. Repeat steps 3 & 4 to add lag screws to the other side of the Cross Support Bracket.
6. Attach all three 4x4 Cross Support beams to the #4-CSB brackets with lag screws.



1.15 LEVELING AND POSITIONING

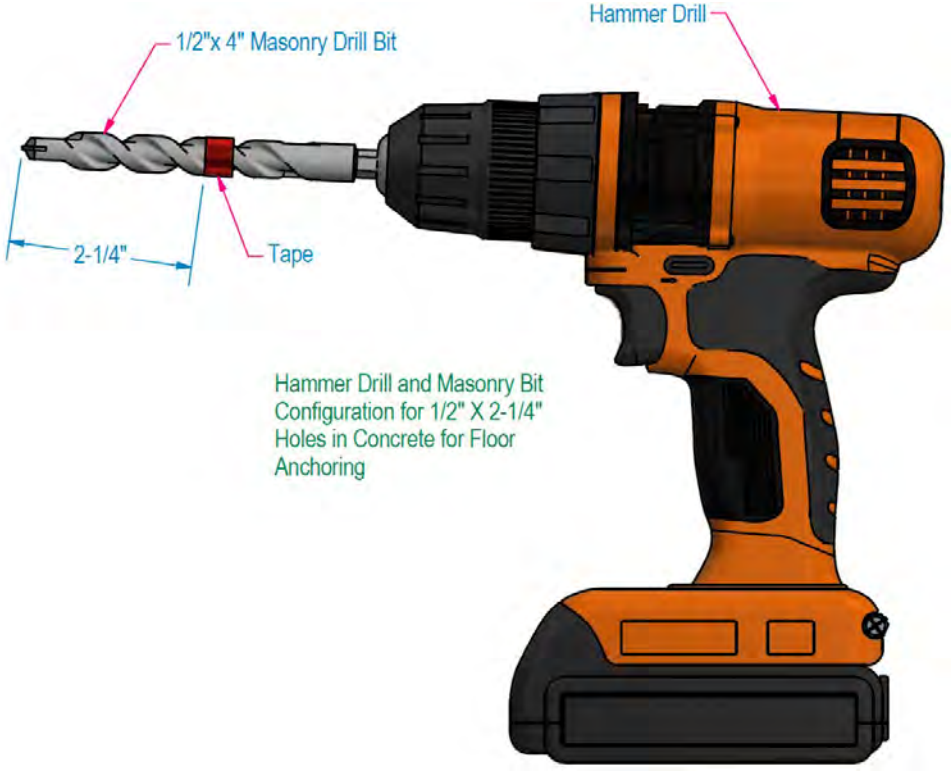
Remove the temporary braces at this time.

1. Check and plumb all posts. Verify the spacings between posts and the two walls.
2. Check the level of the Short Wall Headers. Place a 4 ft. level on top of the Short Wall Headers. If necessary, adjust the post heights by inserting plastic shims under the Post Anchor bracket.
3. Next, check the level of the 4x4 cross support beams. Add plastic shims under the front or rear wall posts to achieve level.
4. Finally, check the level of the long wall headers and adjust.
5. Double check the levels of all the headers again.
6. When satisfied with the level of all headers and the plumb of all posts, it is time to attach the floor anchors to the concrete pad.

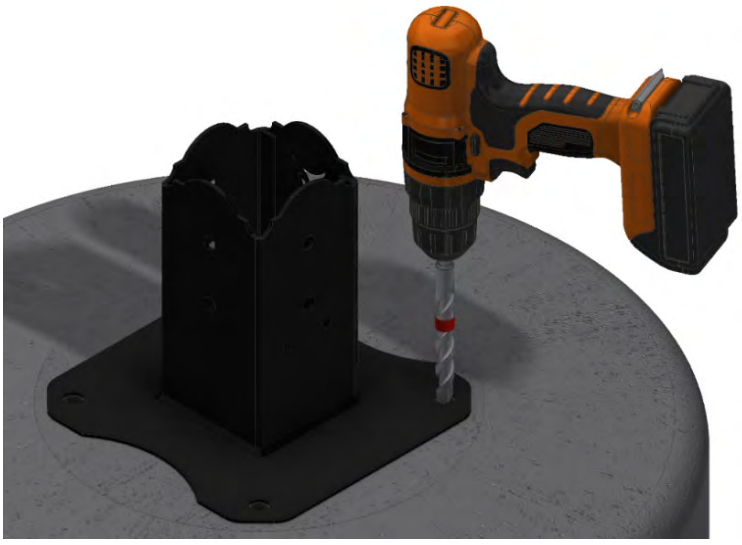
1.16 ATTACHING FLOOR ANCHOR BRACKETS TO CONCRETE

This section is provided as reference only. The customer is supplying the concrete wedge anchors. The masonry bit size and drill depth may vary depending on the concrete wedge size used.

1. Apply tape to the drill bit to mark the 2” depth required for the **2-3/4” Vibration Resistant Hammer-On Stud Anchor** you will be using to anchor the bracket to the concrete footing or pad.

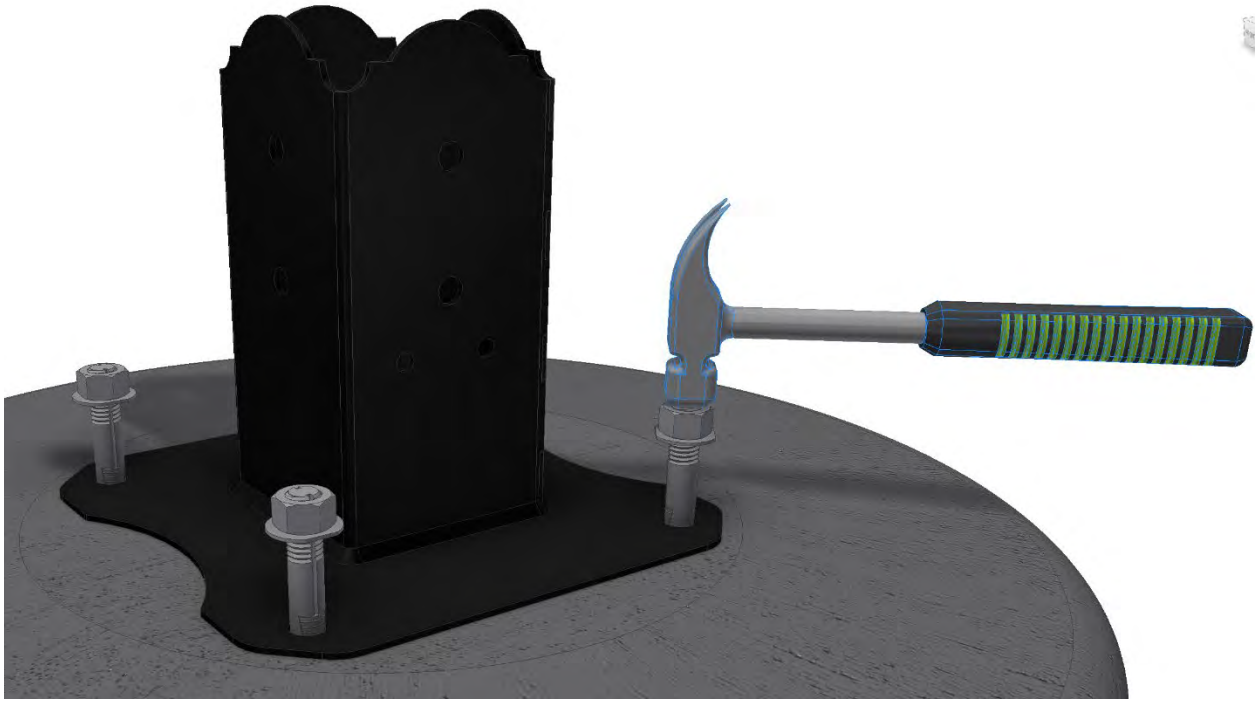


2. Drill into the concrete through the four holes in the bracket bottom plate and into the concrete using a hammer drill and ½” masonry drill bit. Drill minimum 2-1/4” deep and maximum 2-3/8” depth. Do not drill less than 2-1/4” depth as the anchor will not pinch the bracket down fully if the hole is less than 2” deep.



3. Using compressed air, blow out the drilling dust out of all holes.

4. Hammer in one concrete anchor (1/2” X 2-3/4”) into each hole you drilled through the hole in the Floor Anchor floor bracket until the washer below the hex nut is pinched between the nut and the bracket base.



5. Tighten down the nut using a crescent wrench.
6. Repeat steps 2-5 for all Floor Anchor Brackets.

1.17 ADDING RAFTERS

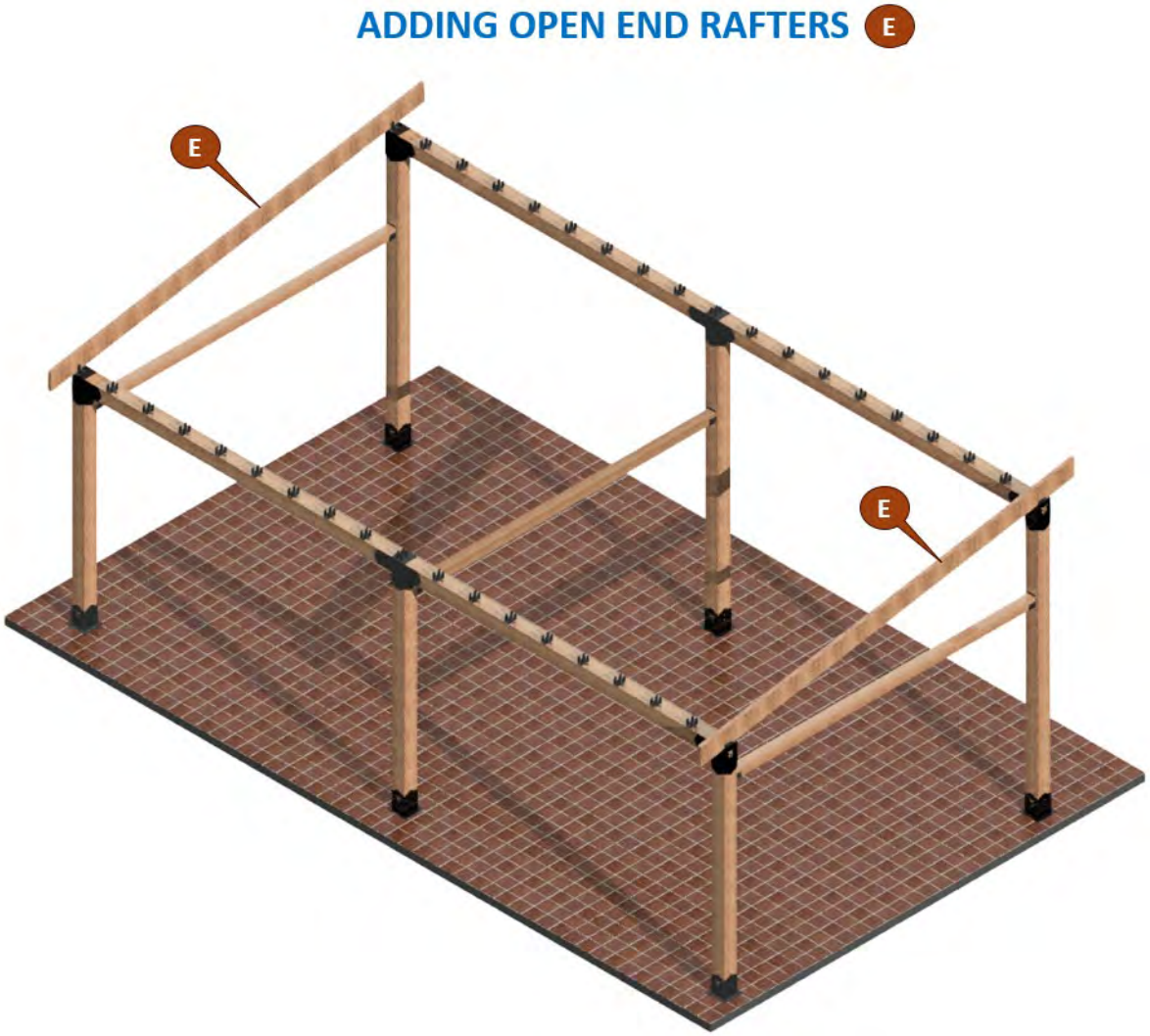
Lumber: Gather thirteen (13) Rafter Members #D.

Hardware: Gather ¼" x 1-1/2" lag screws.

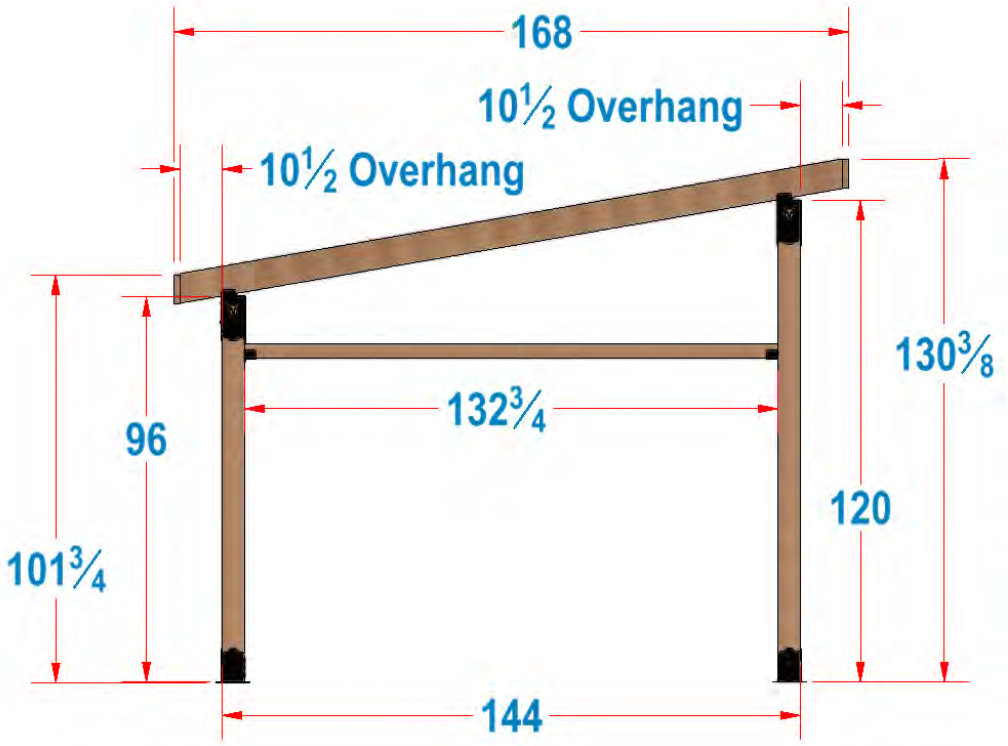
Tools: Gather a drill gun and 3/32" drill bit, a ratchet, and a 7/16" socket.

1.17.1 Installing the Open End Rafters

1. Lift and place rafters inside the U-channels of the #OE-RT brackets on both ends of the Lean To.

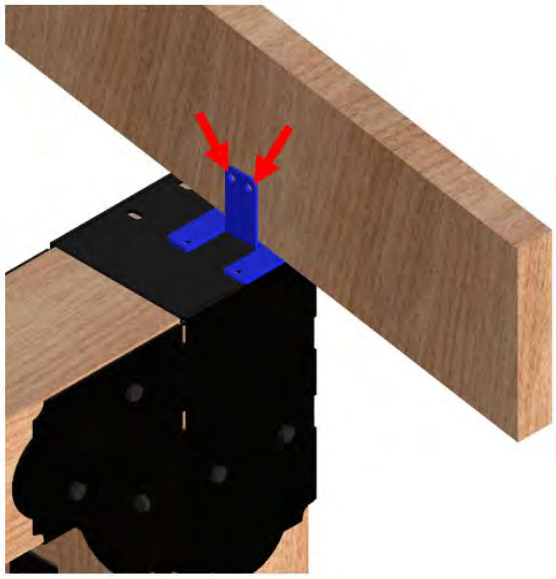


2. The rafter is 168-3/4” long. Adjust the rafter overhang to 10-1/2” on the low side. Doing this will leave a 10-1/2” overhang on the tall side. After adding the roof skirts which are 1-1/2” thick, the low side overhang will be 12” and the high side overhang will be 12”.

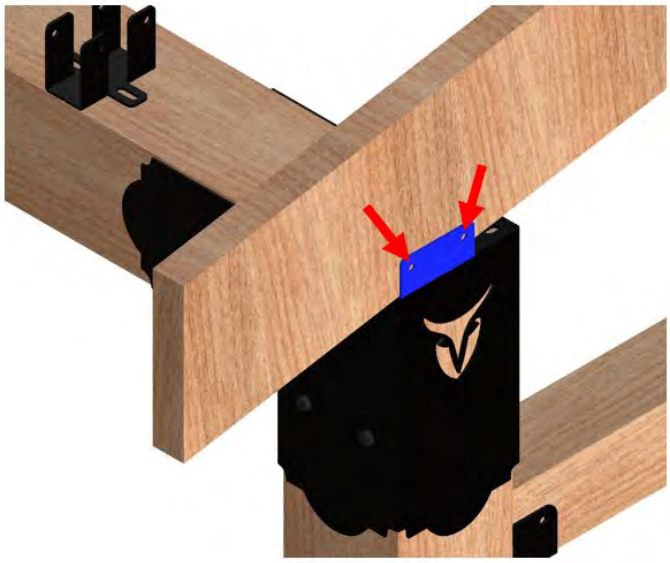


3. On both sides of the rafter, locate two holes in the #OE-RT Bracket.
4. Drill 3/32” x 1-1/2” pilot holes at the center of these holes.

Drill 3/32” x 1-1/2” Pilot Holes at center of the holes identified in the #OE-RT Bracket



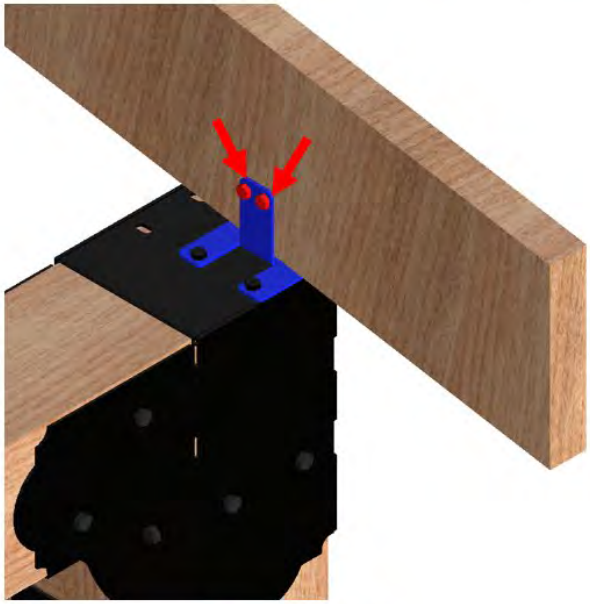
INSIDE VIEW



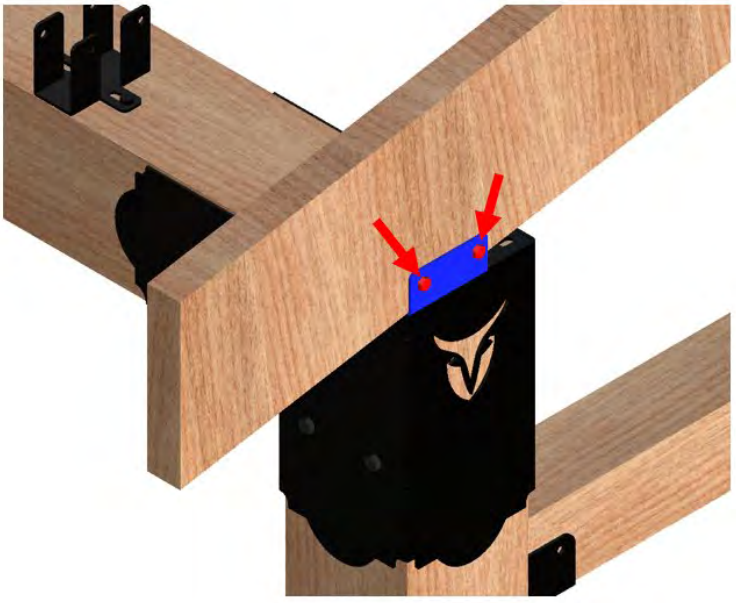
OUTSIDE VIEW

5. Drive ¼” x 1-1/2” Lag Screws into the pilot holes and tighten.

Drive ¼” x 1-1/2” Lag Screw and tighten.



INSIDE VIEW



OUTSIDE VIEW

6. Repeat steps 3 to 5 to attach the rafter to the Short Wall and Tall Wall and on both ends of the Lean To.

1.17.2 Installing the Middle Rafters

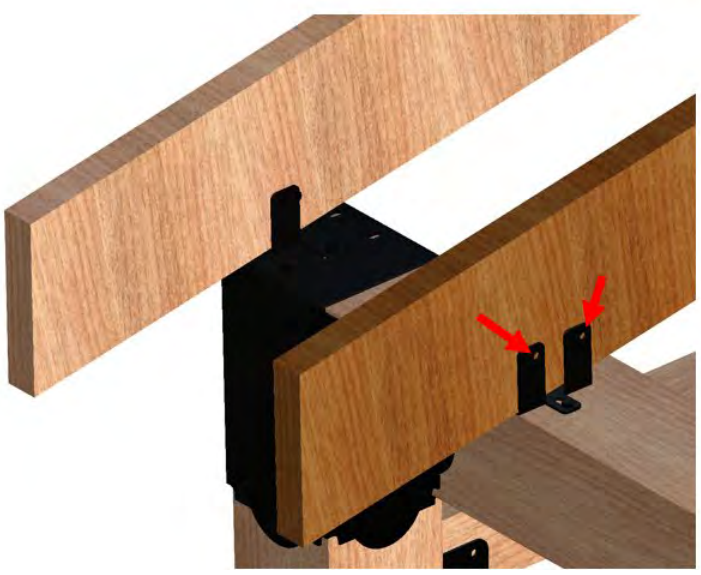
Hint: Attach string line to the lower end of one open end rafter. Extend this string line to the opposite end open end rafter. Stretch the string line and attach the loose end to the lower end of the opposite end open end rafter. This string will make it easy to accurately align the ends of all rafters.

Start adding rafters at one end of the lean to and work towards the other end.

1. Slide one rafter member #E inside the U-channels of the first #PTRT brackets.
2. Slide the rafter member until the lower end aligns with the string line.

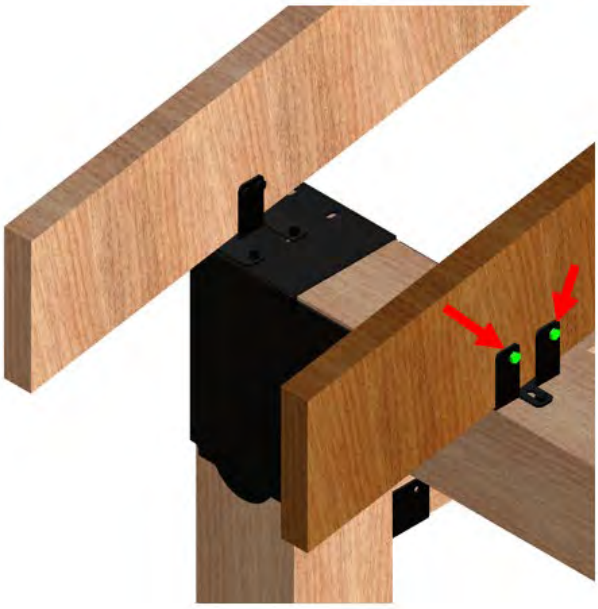
3. At the Short Wall end, on both sides of the rafter, locate two holes in the #PTRT bracket.
4. Drill 3/32” x 1-1/2” pilot holes at the center of these holes.

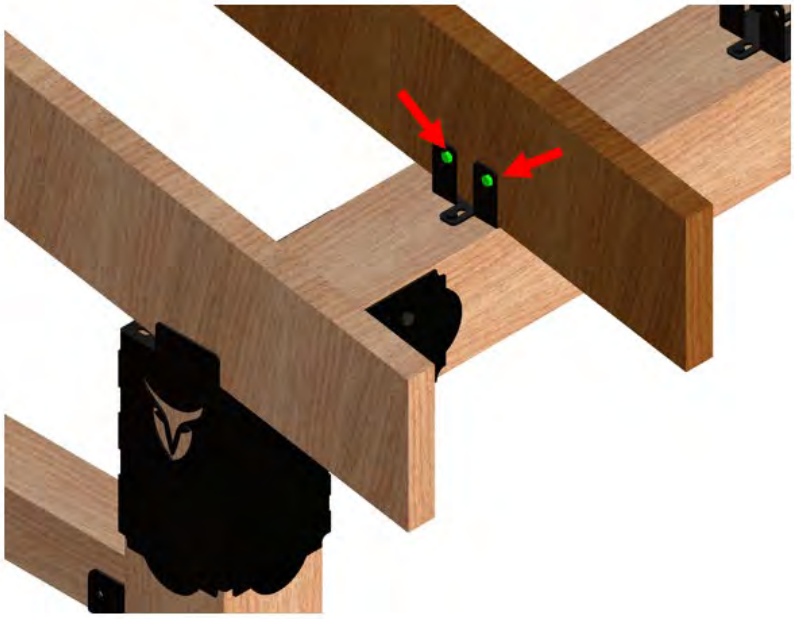
Drill 3/32” x 1-1/2” Pilot Holes at center of the holes identified in the #PTRT Bracket



5. Drive ¼” x 1-1/2” Lag Screws into the pilot holes at both sides of the rafter. Tighten lag screws.

Drive ¼” x 1-1/2” Lag Screw and tighten.

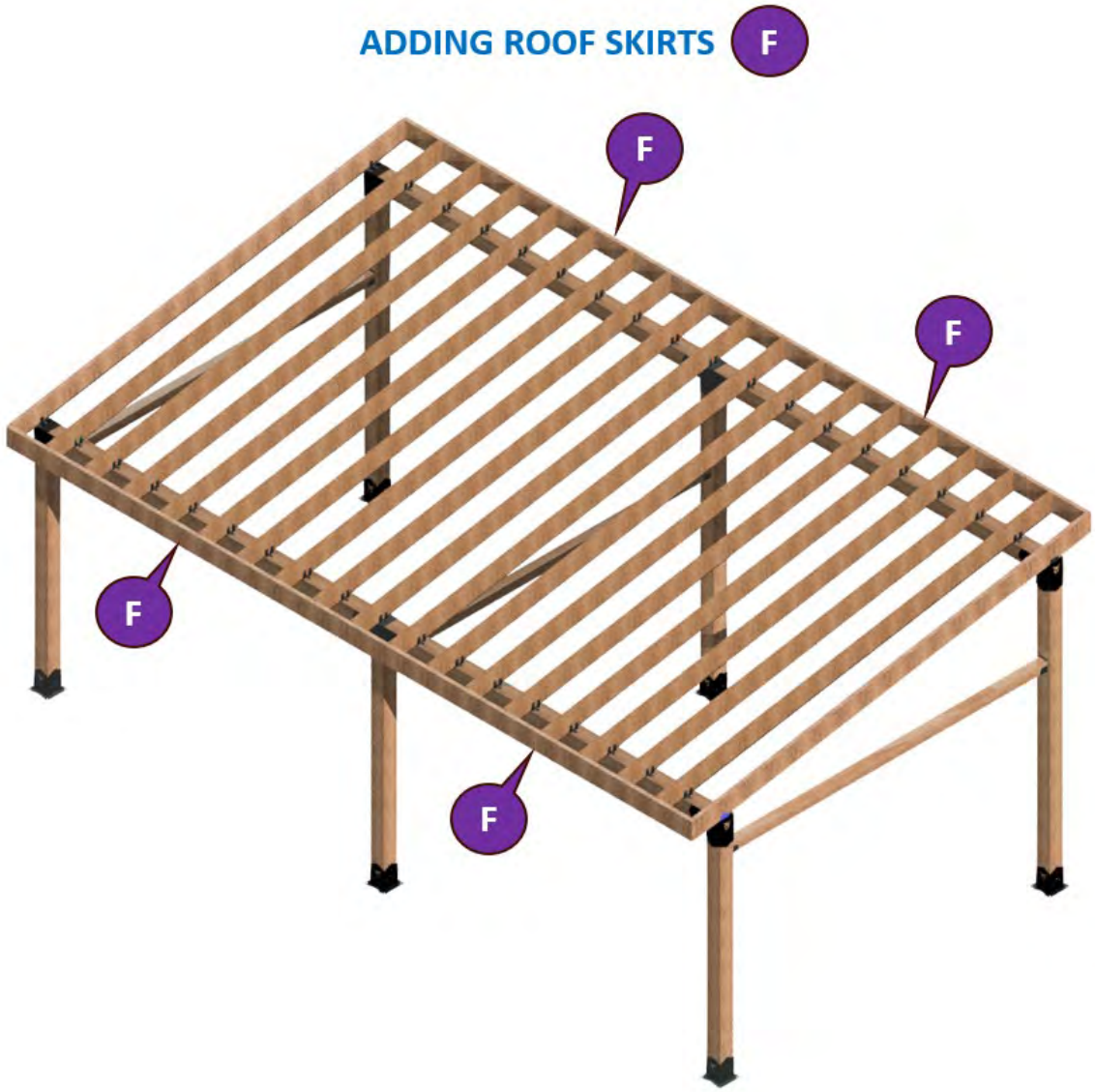




6. Repeat procedures 3 to 5 to drill pilot holes and drive lag screws at the Tall Wall end.
7. Repeat procedures 1 to 5 to add and secure the remaining rafters.

1.18 ADDING ROOF SKIRTS

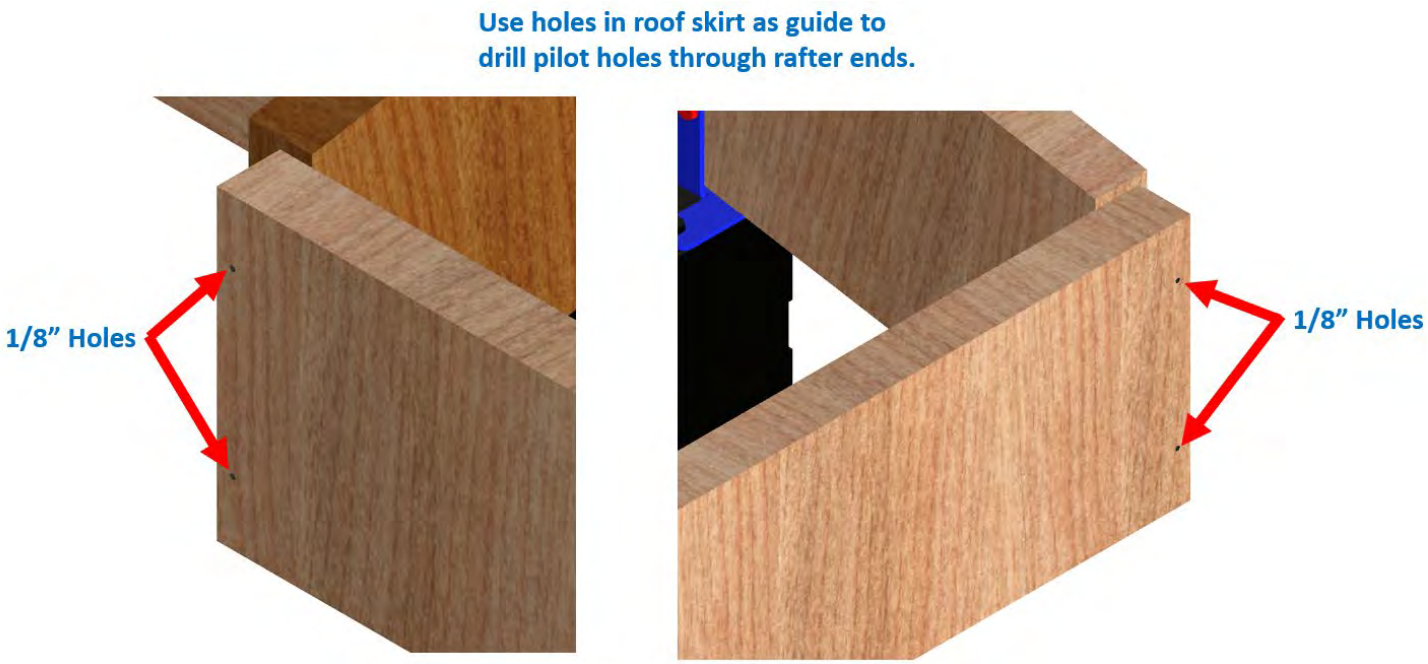
Four roof skirt members, #F, are required. Two mount on the low end of the rafters, and two mount on the high end of the rafters.



Two people should work together to install the roof skirts. One person shall be at each end of the roof skirt, equipped with a hammer, #10D X 3” nails, and a drill gun with an 1/8” drill bit.

Note: Do not drive nails into the rafter ends without drilling 1/8" pilot holes. Driving nails without pilot holes can result in the rafter ends cracking.

1. Hold the roof skirt against the rafter ends in its final position.
2. Using the predrilled holes in the roof skirt as a guide, drill through the roof skirt holes and into the ends of the rafters with a 1/8" drill bit. Drill into the rafters 2" deep.



3. Hammer in #10D x 3" nails through the holes in the roof skirt and into the rafters, on both ends of the roof skirt.
4. At the ends of other rafters between the two ends of the roof skirt member, predrill two 1/8" pilot holes through both the roof skirt and the rafter ends spaced 4" apart, vertically. Drive #10D x 3" nails through the pilot holes.
5. Repeat steps 1 to 4 to add all roof skirt members at the low side and high side.

2 WARRANTY POLICY STATEMENT

RioOutdoors.com extends this 3-Year Warranty to the original purchaser, automatically upon purchase from RioOutdoors.com. The items covered by this warranty and the period of such coverage are set forth in the table below.

Some conditions apply (see below).

The policy is not transferable, amendable, or negotiable under any circumstances.

Part	3 years	Labor Coverage
Welded Steel Brackets	✓	Not Included
Painted Finishes	✓	Not Included
All hardware	✓	Not Included

2.1 CONDITIONS

The warranty protects against defects in manufacture only, unless herein specified otherwise.

Any part(s) found to be defective during the warranty period as outlined above will be repaired or replaced at RioOutdoors.com's option provided that the defective part is returned, if requested by RioOutdoors.com. Alternatively, RioOutdoors.com may at its own discretion fully discharge all its obligations under the warranty by refunding the verified purchase price of the product to the original purchaser.

RioOutdoors.com is not responsible for results or costs of workmanship of installers in the negligence of their construction work.

At all times RioOutdoors.com reserves the right to inspect reported complaints on location in the field claimed to be defective prior to processing or authorizing any claim. Failure to allow this upon request will void the warranty.

All claims must be completed and must provide full details as requested by RioOutdoors.com to receive consideration for evaluation. Incomplete claims may be rejected.

All pergola brackets must be installed according to all manufacturers' instructions as per the installation instruction manual by RioOutdoors.com.

All the required Local and National codes must be met.

Repair/replacement parts purchased by the consumer from RioOutdoors.com after the original coverage has expired will carry a 90-day warranty, valid with a receipt only. Any item shown to be defective will be repaired or replaced at our discretion. No labor coverage is included with these parts.

2.2 EXCLUSIONS

This 3-Year Warranty does not extend to rust or corrosion of any kind due to corrosive chemicals (i.e., chlorine, salt, air, etc.), physical damage to painted surfaces during installation or later.

Malfunction, damage, or performance-based issues of all components as a result of environmental conditions, location, chemical damages, installation error, installation by an unqualified installer, abuse, misuse, use of improper tools, acts of God, weather related problems from hurricanes, tornados, earthquakes, floods, lightning strikes/bolts or acts of terrorism or war, which result in damage are not covered under the terms of this 3-Year Warranty.

RioOutdoors.com has no obligation to enhance or modify any part once manufactured (i.e., as products evolve, field modifications or upgrades will not be performed on existing pergolas).

Any parts showing signs of abuse or misuse will not be covered under the terms of this warranty policy and may void this warranty. This includes parts with rusted or corroded surface or welds which have not been reported as rusted or corroded within three (3) months of installation/purchase.

Parts which show evidence of being used while damaged, or with problems known to the purchaser and causing further damage will void this warranty.

Parts where the RioOutdoors.com logo has been altered, deleted, removed, or made illegible will void this warranty.

Minor movement, expansion, and contraction of the steel parts is normal and is not covered under the terms of this warranty.

Freight damages for parts are not covered under the terms of the warranty.

Products made or provided by other manufacturers and used in conjunction with the RioOutdoors.com parts without prior authorization from RioOutdoors.com may void this warranty.

2.3 LIMITATIONS OF LIABILITY

The original purchaser's exclusive remedy under this warranty, and RioOutdoors.com's sole obligation under this warranty, express or implied, in contract or in tort, shall be limited to replacement, repair, or refund, as outlined above. IN NO EVENT WILL RioOutdoors.com BE LIABLE UNDER THIS WARRANTY FOR ANY INCIDENTAL OR CONSEQUENTIAL COMMERCIAL DAMAGES OR DAMAGES TO PROPERTY. TO THE EXTENT PERMITTED BY APPLICABLE LAW, RioOutdoors.com MAKES NO EXPRESS WARRANTIES OTHER THAN THE WARRANTY SPECIFIED HEREIN. THE DURATION OF ANY IMPLIED WARRANTY IS LIMITED TO THE DURATION OF THE EXPRESSED WARRANTY SPECIFIED ABOVE. IF IMPLIED WARRANTIES CANNOT BE DISCLAIMED, THEN SUCH WARRANTIES ARE LIMITED IN DURATION TO THE DURATION OF THIS WARRANTY.

Some U.S. states do not allow limitations on how long an implied warranty lasts or allow exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

Customers located outside the U.S. should consult their local, provincial, or national legal codes for additional terms which may be applicable to this warranty.

2.4 HOW TO OBTAIN WARRANTY SERVICE

Customers should contact RioOutdoors.com by email at info@RioOutdoors.com . Please include a brief description of the problem and your address, email, and telephone contact information. A representative will contact you to make arrangements for a warranty service.

Warrantor:

RioOutdoors.com
United States

Thank you for choosing RioOutdoors.com.

RioOutdoors.com