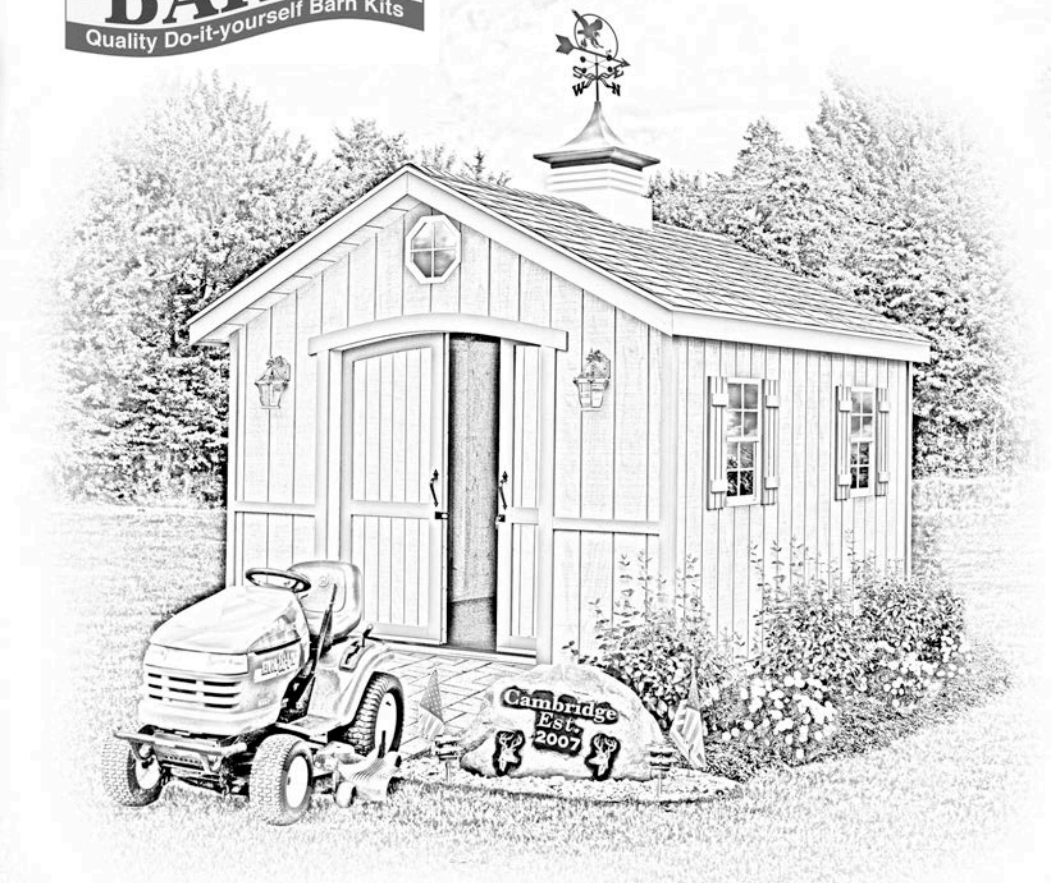
BEST BARNS
Quality Do-it-yourself Barn Kits

Assembly Book

revised July 14, 2014



the Cambridge II 10' x 20'

Manufactured by Reynolds Building Systems, Inc.

205 Arlington Drive Greenville, PA 16125 724-646-3775

This manual is copyrighted. Under the copyright laws, this manual may not be copied, in whole or in part, without consent from Reynolds Building Systems, Inc. © Copyright 2007

Important Information About Your Shed Kit

Thank you for purchasing our Cambridge shed kit. **If you received two books, use the one with the latest revision date.**

See back page for the breakdown of material that is included in our kit. Our component kit does not include the shingles, giving you a choice of color and quality. The breakdown of the material you need to supply is listed on the last page.

IMPORTANT: Some of the 2x4s needed for wall bracing was used to make the shipping pallet. Unpack the material from the pallet, then disassemble the pallet. The bit for the screws is packed in the hardware bag.

Stacking the boards, according to size, will make them easier to find when needed. Some boards have colored ends. All the 72" long 2x4s have black ends, stack these boards together**. Do Not** discard any material until your building is complete.

If you have any questions about assembling the kit, call 800-245-1577. If you are calling after normal business hours, call 724-866-HELP (4357) or email to help@barnkits.com.

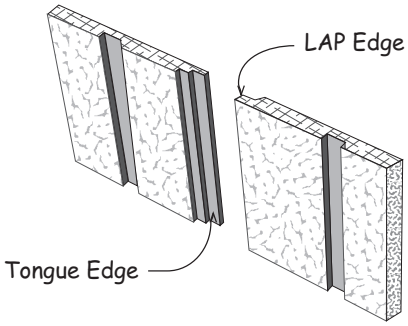
Before you begin construction, be sure to study this assembly manual. Also, obtain a building permit and check all pertinent building code regulations.

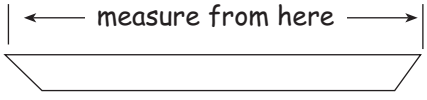
Thank you for your purchase.

Bill & Linda Rinella, owners

The siding is made in 4x8 sheets with grooves cut into the face, the long edge is beveled so that the siding overlays where they butt.

To identify which edge we want you to use, we will refer to the edge as either the 'LAP' Edge or the Tongue Edge. Nail siding with 8d galv. nails, spaced 12" apart.





When measurements are given for a board length, it is from the longest side.

Tool List

- ❑ Hammer & Phillips Screwdriver
- ❑ Framing Square & Level
- ❑ Hand Saw
- ❑ Power Drill/Screwdriver
- ❑ Measuring Tape
- ❑ 2-6' Step Ladders

Always wear safety glasses when cutting or nailing!

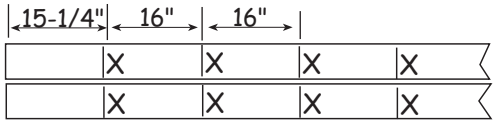
Constructing Details for Deluxe Floor System

Deluxe floors include 4x4 runners, standard floors do not

Foundation size is 10'-0" x 20'-0". Check local building codes in your area, the construction may have to change. For a concrete slab, install sill sealer as a moisture barrier between the concrete and the wall plates. Foam sill sealer can be purchased at home centers in rolls 3-1/2" or wider.

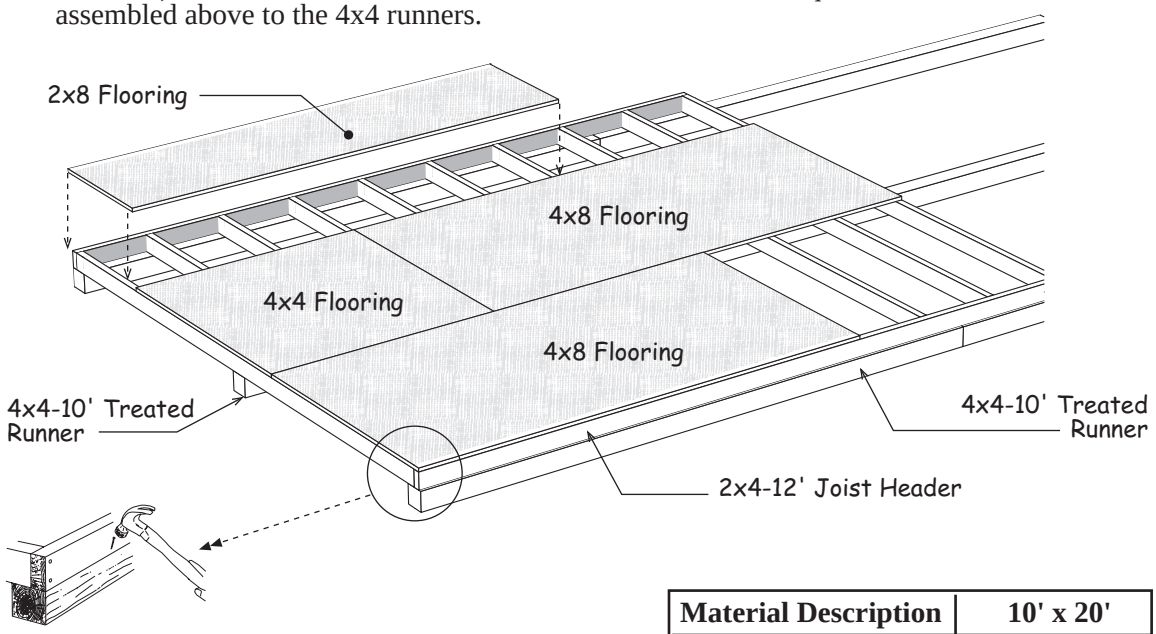
1. Cut (17) seventeen 2x4-10' treated boards to 9' -9". These will be the floor joists. *Treated lumber may be thicker than 1-1/2". Take this into account when cutting the length of floor joists. Shorten joist measurements if necessary to obtain 10'-0" building width.*

2. Cut (2) two 2x4-12' to a length of 12' -0". They will be used for the joist headers. Layout, from left, for 16" on center joist spacing. 'X' marks where floor joist will be placed.



3. Install the floor joists cut above between the 12' joist headers. Secure with 16d galv. deck nails.

4. Place floor assembly over the 4x4s. Square floor assembly. Measure the floor diagonally (corner to corner). These measurements will be the same if the floor is square. Toenail the frame assembled above to the 4x4 runners.



6. Cut (2) two 2x4-8' to a length of 8' -0". Layout for 16" joist spacing, *see above*.

7. Install floor joists between the joist headers. Square floor section. Install this section against the 12' long section assembled above.

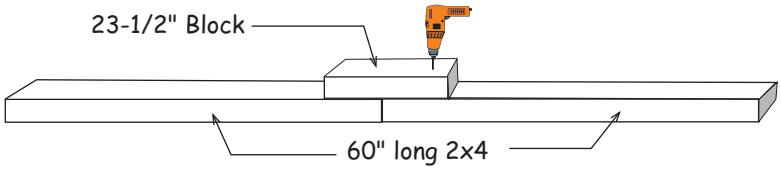
8. Install 4x8 flooring over the 2x4s. Use 8d galv. spiral nails.

Material Description	**10' x 20'**
2x4 Joist Headers	2 pcs. 8'
2x4 Joist Headers	2 pcs. 12'
2x4 Floor Joist	17 pcs. 10'
4x4 Treated Runners	6 pcs. 10'
Flooring 5/8" or 3/4"	7 pcs. 4x8
Screw Floor Nails	2 lb. 8d
Galv. Box Nails	2 lb. 16d

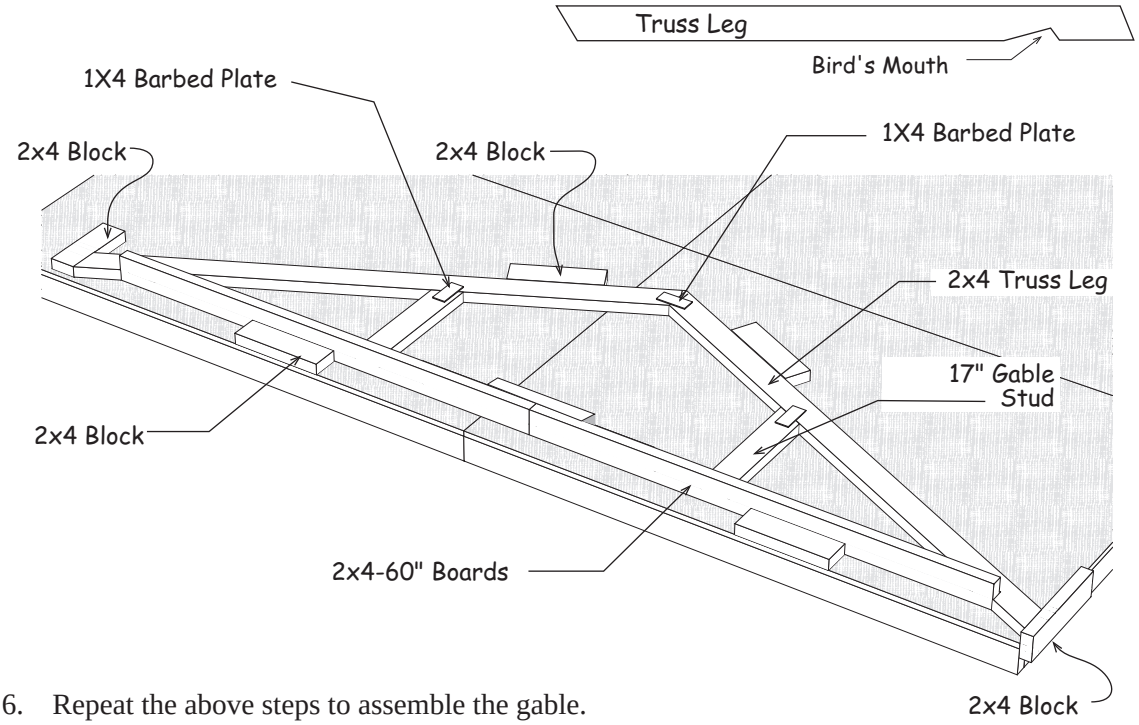
Step 1 Assemble Front & Rear Gables

Building Tip: To aid in the assembly of the trusses, temporarily screw 2x4 blocks to the floor. There are short 2x4s, *that may have an angle on one end*, supplied in the kit for this purpose. This will trap the truss parts and insure that all the trusses will be assembled the same. Use the 2-1/2" deck screws packed in the kit.

1. Butt (2) two 60" long 2x4s together and secure by screwing a 23-1/2" long 2x4 across the top where they butt together. Use (4) four 2-1/2" deck screws.



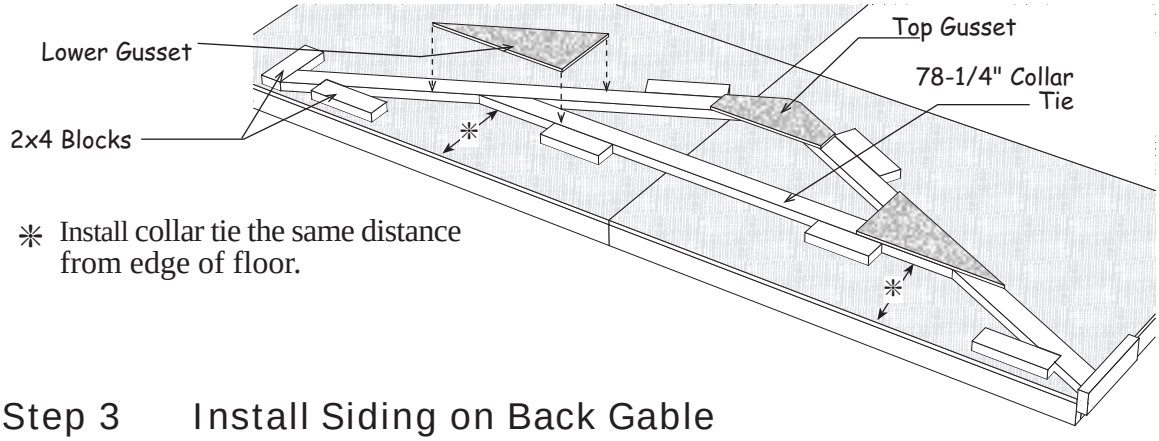
2. Repeat to assemble another gable plate
3. Place (2) two 72-3/8" long truss legs (with bird's mouth) and a gable plate assembled above as shown below. Screw 2x4 blocks, *to the floor*, to hold the 2x4 members in place.
4. Secure the tops together with a 1x4 metal barbed plate.
5. Install (2) two 2x4x17" gable studs. Nail through the bottom plate into the 2x4 studs. Secure the top using 1x4 metal barbed plates.



6. Repeat the above steps to assemble the gable.

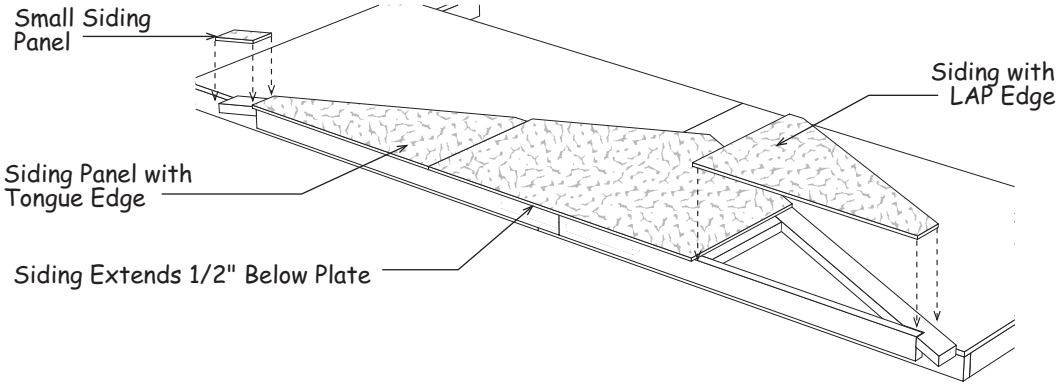
Step 2 Assemble Roof Trusses

1. Place (2) two truss legs together as shown below. Screw 2x4 blocks, *into the floor*, in the bird's mouth to hold the truss members in place.
2. Secure the tops together with a wood gusset. Apply wood glue between the 2x4 boards and the gusset. Nail the gusset to the 2x4s with 6d common nails. Use 14 nails per gusset. Angle nail slightly so nails do not protrude through the 2x4 boards.
3. Install a 2x4x78-1/4" collar tie between the 2x4 boards. Add 2x4 blocks to hold the collar tie in place. Use wood glue and 14 nails per gusset. Use 6d common nails.
4. Turn this truss over and apply wood gussets to the opposite side.
5. Repeat above steps to assemble (8) eight more trusses.



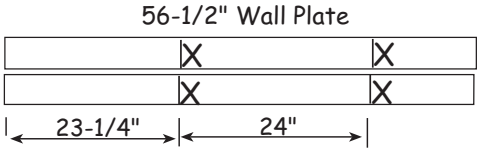
Step 3 Install Siding on Back Gable

Select a gable assembled in **Step 1**. Before installing, lay the gable siding on the frame as shown below. Position the siding so it extends 1/2" below the bottom plate. The top edge of the siding may be below the top of the gable frame. The trim, installed later, will cover and hide this. If necessary, shift the siding so the small siding panels on the ends are flush with the 2x4s. Install gable siding using 6d galv. nails across the top of the frame where the 2x4s are flat. Use 8d galv. nails along the bottom. Siding will be applied to the other gable in a later step.

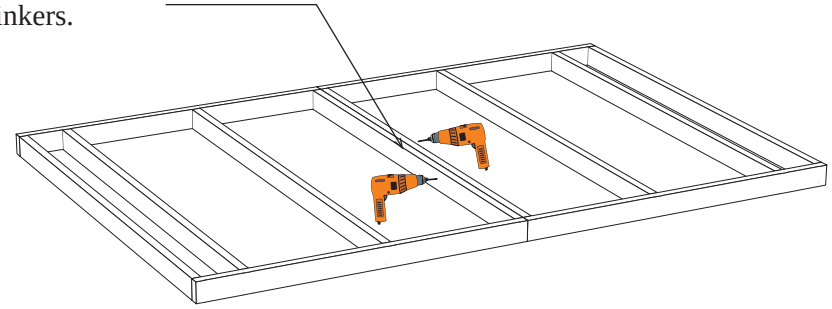


Step 4 Assemble Back Wall

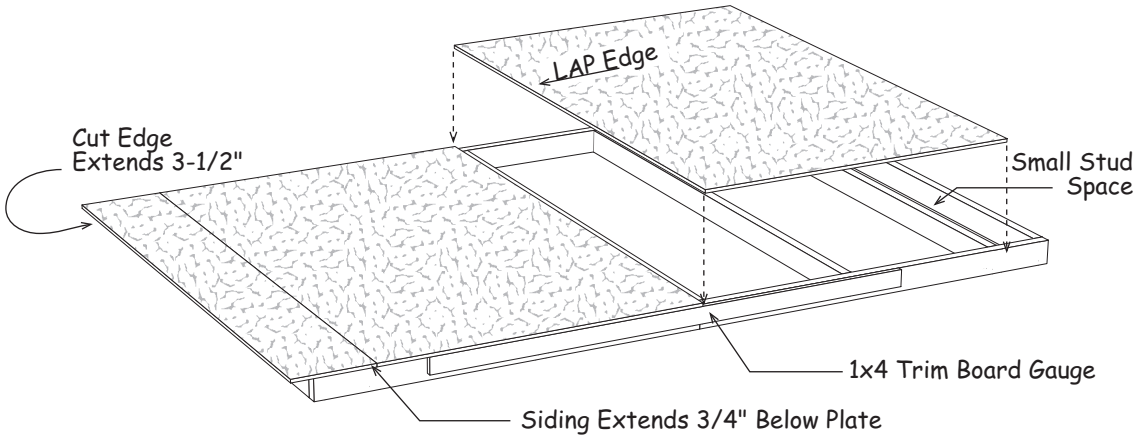
1. Position 56-1/2" long 2x4s together and indicate with 'X' marks where the wall studs will be located.



2. Install 72" long wall studs between the wall plates, over the 'X' marks. Use 10d sinkers, two nails on the end of each 2x4.
3. Repeat above steps to assemble another wall frame.
4. Screw both wall frames together with the small stud space towards the ends of the wall. Use (4) four 2-1/2" deck screws on each side of the double studs. For additional strength add 10d sinkers.

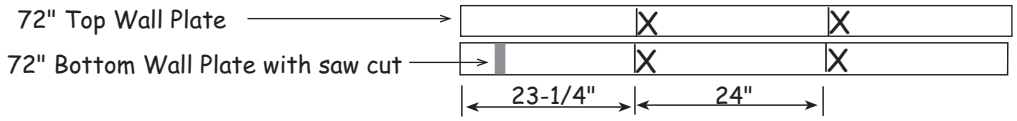


5. Square wall frame before installing siding. *Measure diagonally (corner to corner). The measurements will be the same when the wall is square.* Install a 12" wide siding panel, *with the 'tongue edge'*, at the left end of the wall frame. The siding should extend 3-1/2" beyond the end of the wall and extend 3/4" below the bottom plate. Tip; use a 1x4 trim board as a gauge. Use 8d galv. nails spaced 12" apart.
6. Install (2) two full width siding panels.
7. Install the 12-1/2" wide siding panel. It will extend 3-1/2" past the end of the wall.



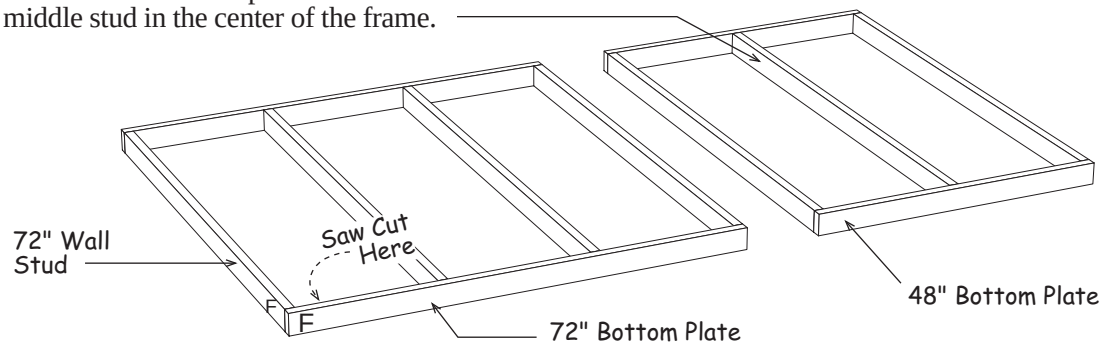
Step 5A Assemble Right Sidewall Panels

1. Position 2x4-72" boards together (**<u>one 2x4 has a saw cut</u>**) and indicate with 'X' marks, where the wall studs will be located.

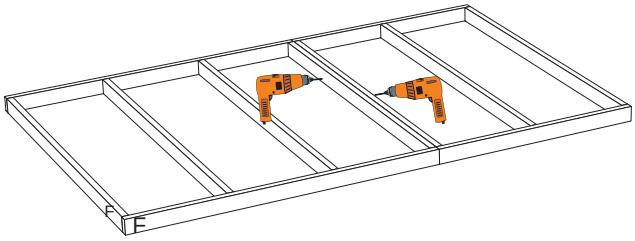


2. Assemble a wall frame using a bottom plate, *with a saw cut*, and a 72" long top plate. Install 72" long wall studs between the wall plates. Use 10d sinkers, two nails each end Mark the end of the wall with the letter 'F'.

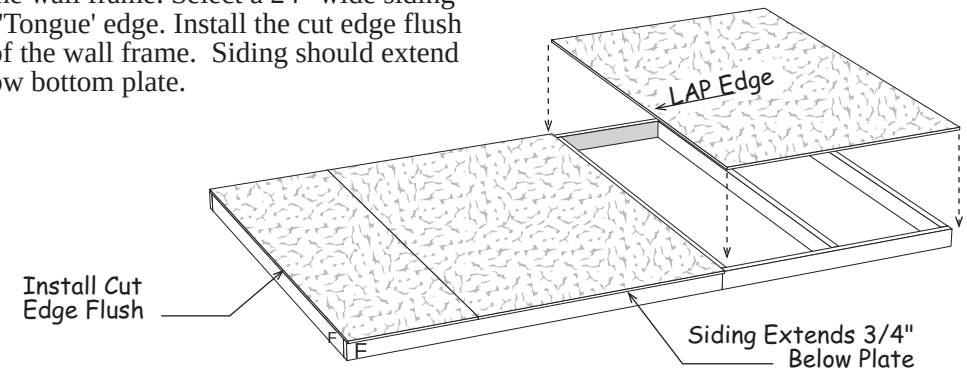
3. Assemble a 48" wall panel. Install the middle stud in the center of the frame.



4. Screw both wall frames together. Use (4) four 2-1/2" deck screws on each side of the double studs. For additional strength add 10d sinkers.



5. Square the wall frame. Select a 24" wide siding with the 'Tongue' edge. Install the cut edge flush the end of the wall frame. Siding should extend 3/4" below bottom plate.

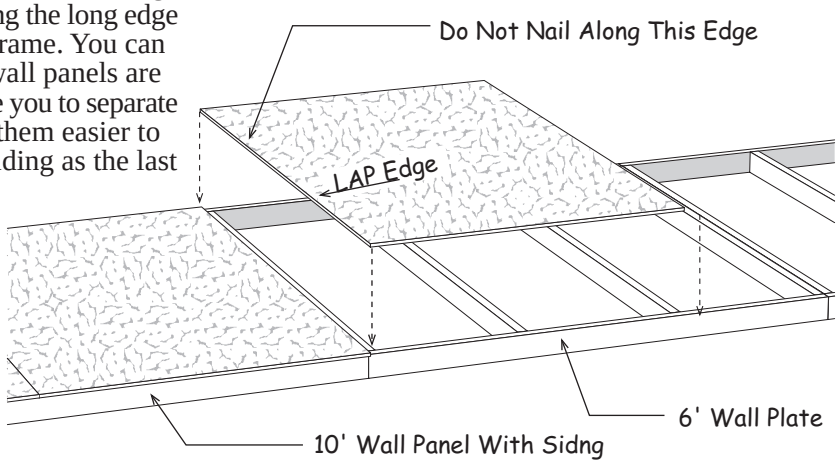


6. Repeat numbers 1 thru 4 to assemble another set of wall frames.
Important: Do Not use the 2x4 with a saw cut, it will be used in **Step 6**.

Step 5B Apply Siding to The Right Sidewall

1. Butt the 10' wall frame, *without siding*, against the wall with siding. DO NOT nail these frames together so they can be separated later.

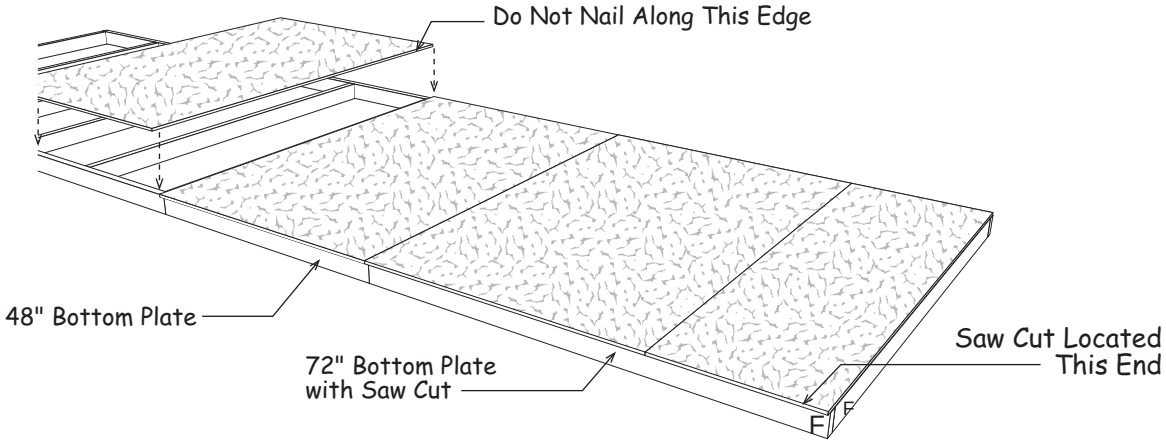
2. Square the wall frame. Install a siding panel but do not nail along the long edge that overlaps the sided frame. You can nail this edge after the wall panels are installed. This will enable you to separate the wall panels making them easier to handle. Install the 24" siding as the last panel.



Step 6 Assemble The Left Sidewall

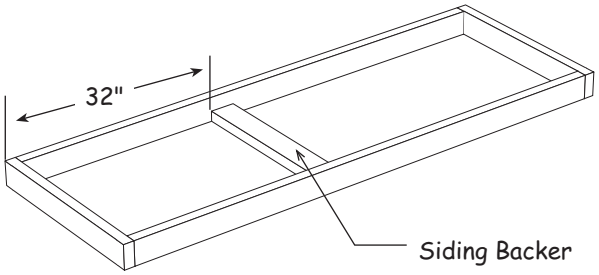
☞ When the sidewalls are installed on the floor the saw cut in the 2x4 bottom plate needs to be located at the front of the building. This will allow the doors to openi properly when installed in a later step. Follow the instructions below carefully.

1. Repeat **Step 5A** to assemble another set of 10' long sidewall frames.
2. Select the wall frame with the saw cut. **Important:** Position the wall with the saw cut at the end of the frame as shown below. Marked the corner with the letter 'F'.
3. Install siding using the same procedure as the right sidewall.



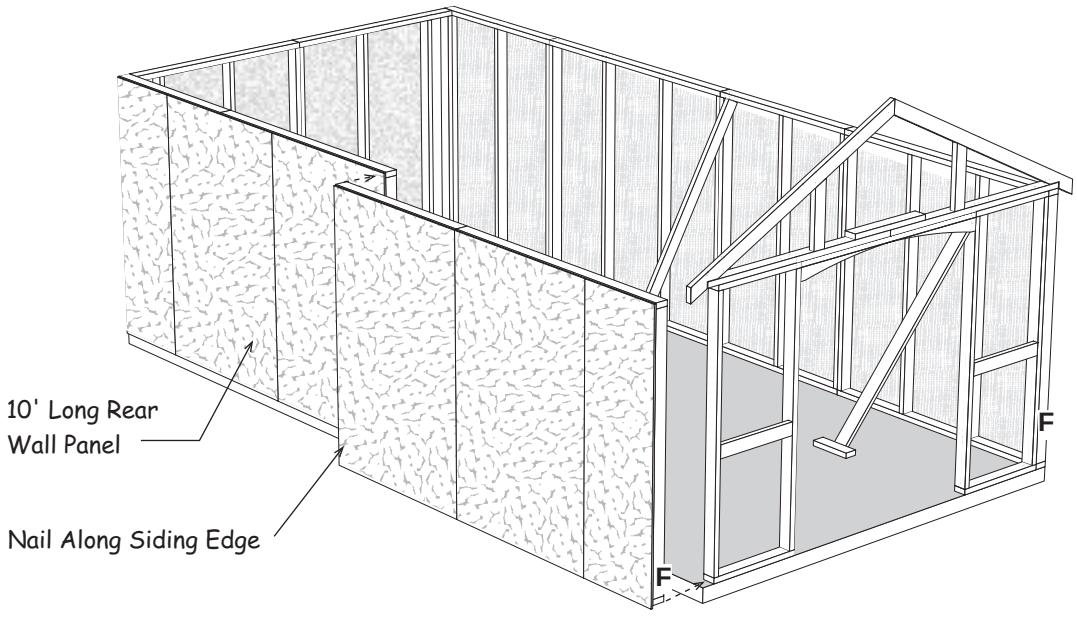
Step 7 Assemble Front Wall

1. Install (2) two 72" wall studs between 26-1/2" 2x4 plates.
2. Install a 23-1/2" long 2x4 as a siding backer between the wall studs.
3. Repeat to assemble another wall frame.

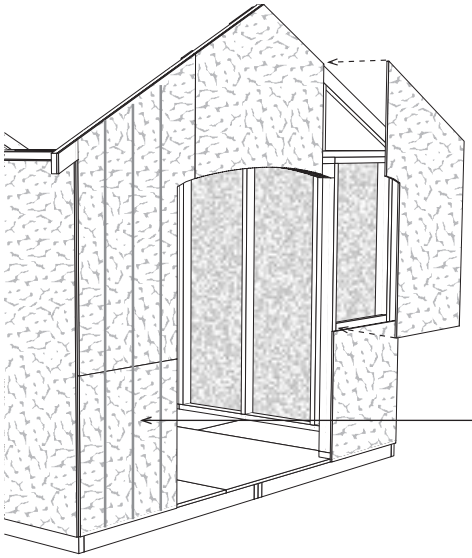


Step 8 Set Wall Panels

1. Secure wall panels together at the corners. Use (4) four 10d coated nails per corner. Nail wall panels to the floor. Nail through the bottom plate. Space 10d sinkers 24" apart.
   Important: The sidewall panels marked with the letter 'F' will be at the front of the floor. Nail the wall panels to the floor using 10d sinkers.
2. Install the front wall frames, assembled above, to the sidewalls. Set the front gable on lower wall frames. Secure with 2-1/2" wood screws.
3. Remove the 2x4 boards attached to the shipping pallet. Use one to brace the right sidewall where they join together. Install another 2x4 at the front wall to hold the wall straight.
4. Locate the arch door header and remove packing blocks from the ends. Install the header between the front wall frames. The siding on the bottom projects past the 2x4 frame on one side. This side needs to be towards the outside to receive the upper siding.
5. Nail along the siding edge where it overlaps the 10' long panel.



Step 8 Set Wall Panels Continued



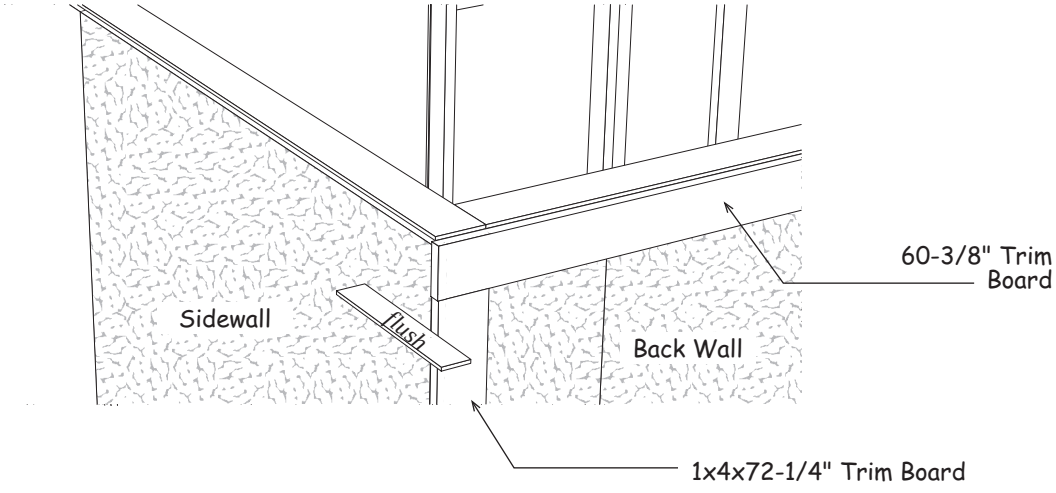
Install Front Wall Siding

6. Install the front wall siding on the wall frame.

Before you install the lower panels, select the one that the siding grooves will line up with the upper panel.

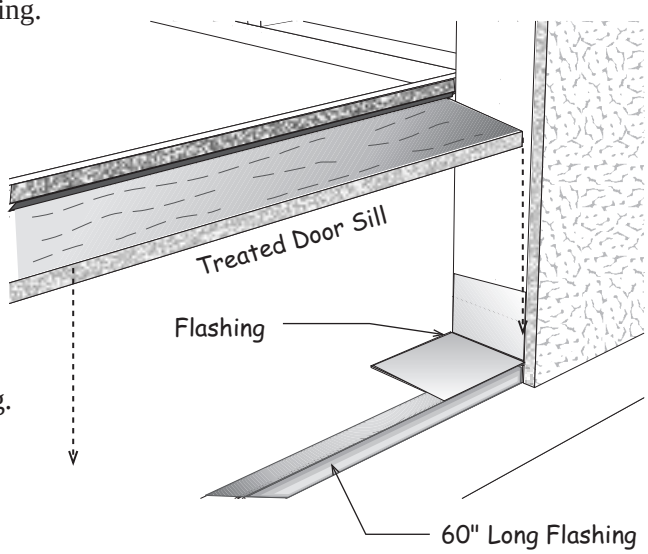
Step 9 Install Back Wall Trim

1. Install (2) two 60-3/8" long trim boards on the top of the back wall. Install this trim flush with the top of the 2x4 wall plate. Use 8d galv. nails.
2. Install 1x4x72-1/4" trim boards on the rear wall. Install the trim flush with siding on the sidewalls. Use 8d galv. nails.



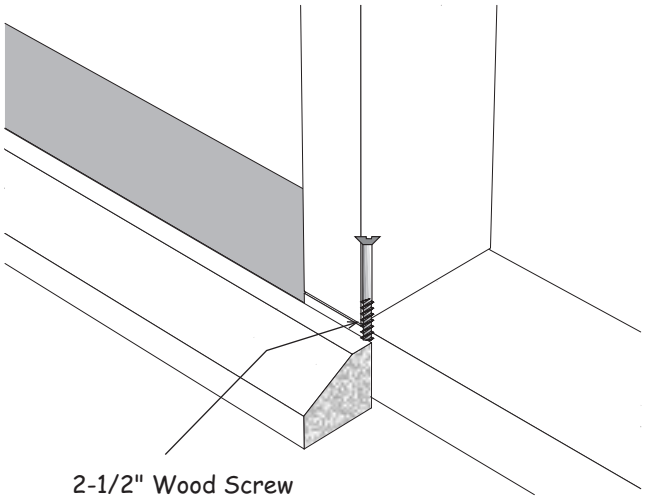
Step 10 Install Treated Door Sill

1. Protect the edge of the floor by installing 60"long x 3/4" flashing between the door opening.



2. Bend a 3-1/2" x 5" metal flashing and install at each corner of the door opening.

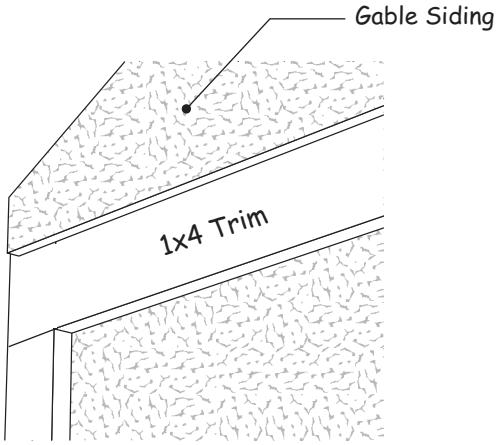
3. Install the treated door sill between the door opening. There needs to be a space between the treated sill and the inside wall. To position the sill, insert a 2-1/2" screws between the treated sill and the inside wall. Drill 1/8" holes and screw sill to the floor with 2-1/2" long screws. Remove the screw used as a spacer.

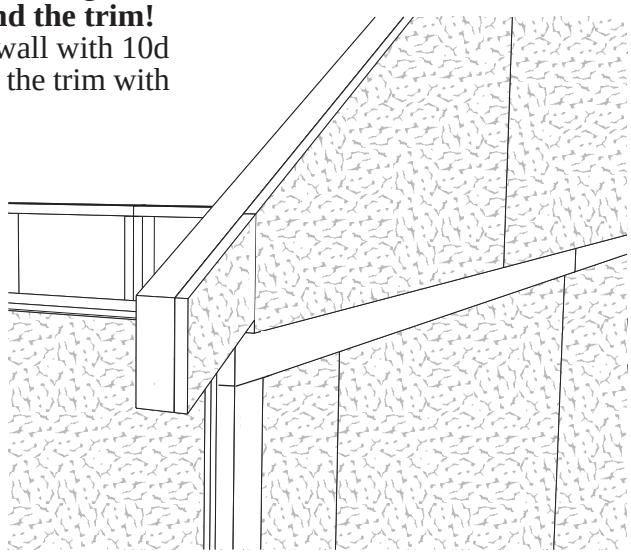


2-1/2" Wood Screw
View From Inside

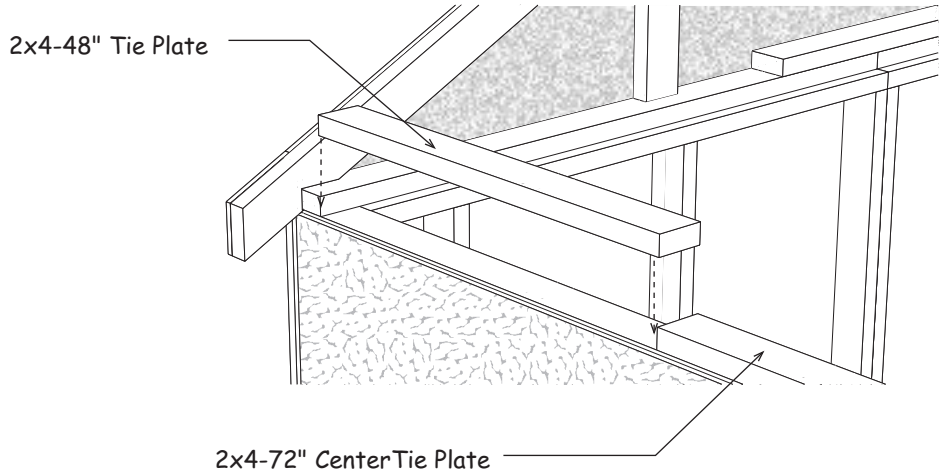
Step 11 Install Rear Gable & Tie Plates

1. Install rear gable on the rear wall. The siding will extend over the 1x4 trim. **NOT behind the trim!** Nail bottom gable plate to the lower wall with 10d sinkers. Nail bottom edge of siding to the trim with 7d galv. nails.



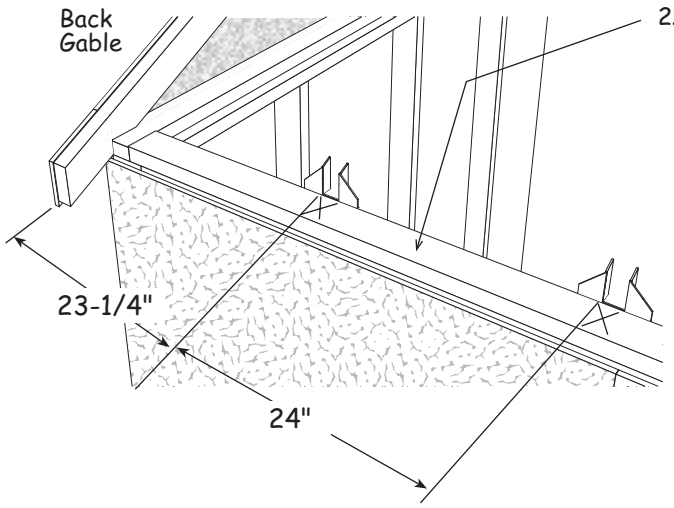


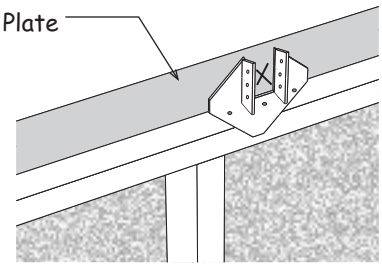
2. Starting at the front of the building, install a 48" long 2x4 as a tie plate, on top of the sidewall panels. Use 10d sinkers.
3. Install (2) two 6' long 2x4 next. Cut the last one to fit.
4. Cut and install a 4' long 2x4 to finish.
5. Install 2x4s on the opposite sidewall the same way.



Step 12 Install Trusses

1. Layout the truss spacing. Start at the back gable. Measure from the outside face of the gable siding when marking the location of the first truss. **Important:** When marking the opposite wall, place the 'X' mark on the same side of the line so your trusses are parallel when they are installed.
2. Using 1-1/2" hanger nails, install metal hangers to the 2x4 tie plate. The opening should line up with the 'X' mark at the bottom of the opening, flush with the 2x4 tie plate. See **Detail 'D'**.

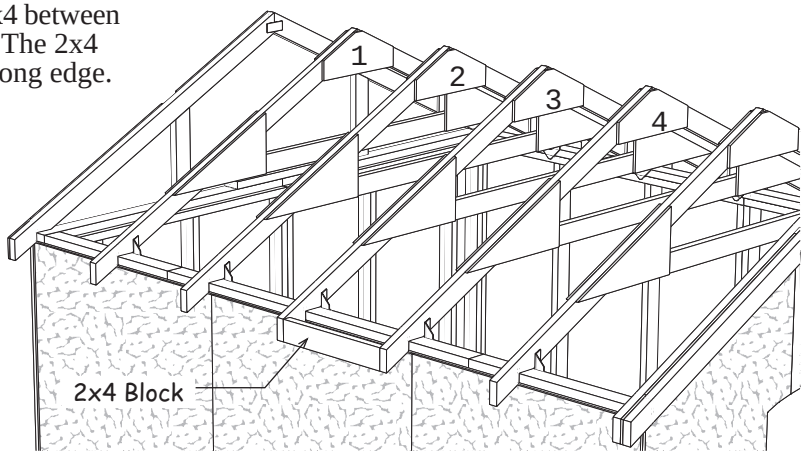




Detail 'D'

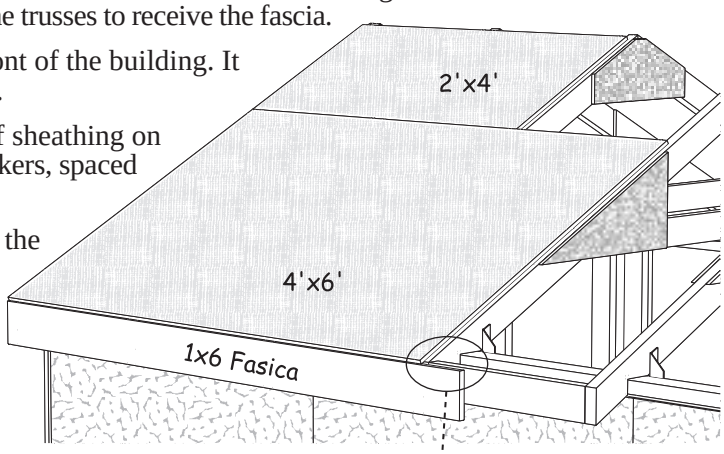
3. Install trusses over the 'X' marks. Nail the metal hanger to the truss using 1-1/2" hanger nails.

4. Install a 22-1/2" long 2x4 between the 3rd and 4th trusses. The 2x4 has a bevel cut on one long edge.

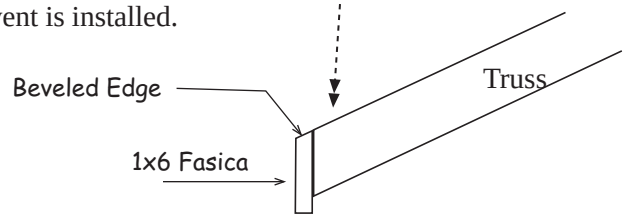


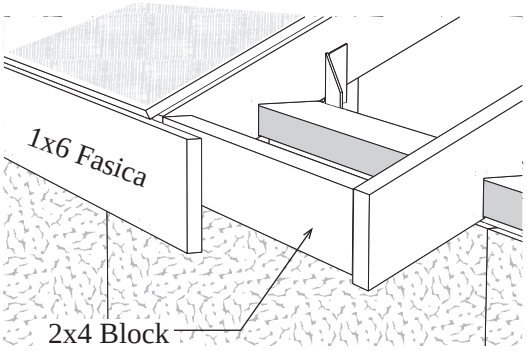
Step 13 Install Roof Sheathing & 1x6 Fascia

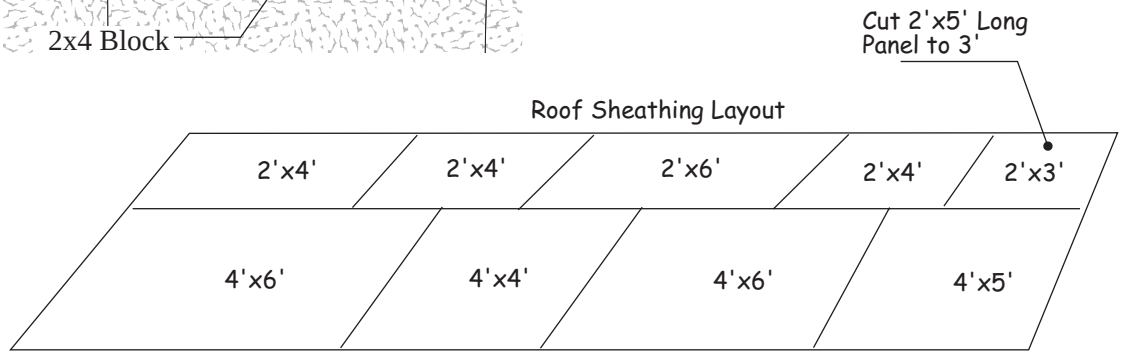
1. Install 1x6x78" fascia boards to the 2x4 trusses, flush with the siding on the rear of the building. Install the fascia so the bottom edge of the roof sheathing will rest on the beveled edge. See detail below. Use 8d galv. nails.
2. Install additional 48" long 1x6 fascia in the center of the building. You will need to install additional 2x4 blocks between the trusses to receive the fascia.
3. Install 1x6x78" fascia at the front of the building. It will extend past the front gable.
4. Install a 48" x 72" piece of roof sheathing on the lower left corner. Use 7d sinkers, spaced 12" apart.
5. Install a 24" x 48" roof panel at the top.
6. Install other roof panels per the layout below.



The upper row of roof sheathing will not reach the peak to allow for ventilation if ridge vent is installed.

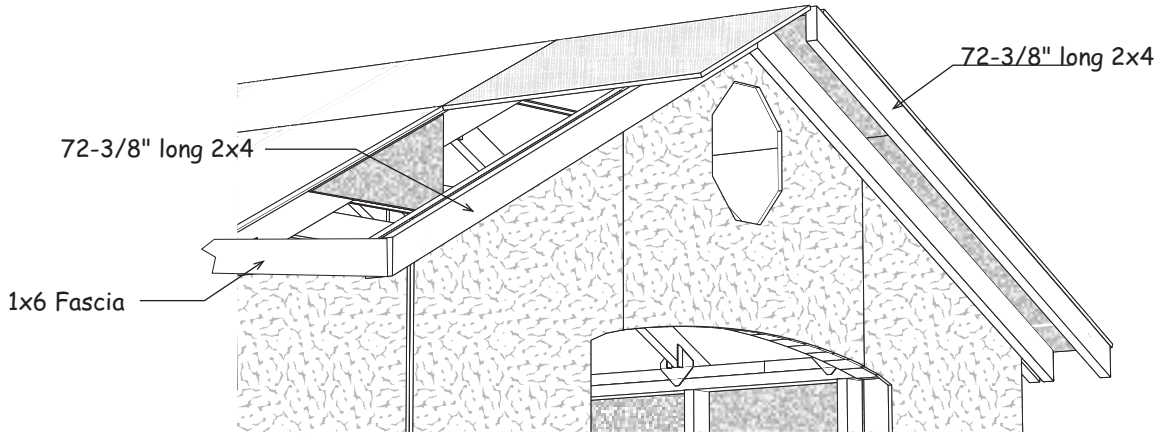






Step 14 Install Gable Overhang & Trim

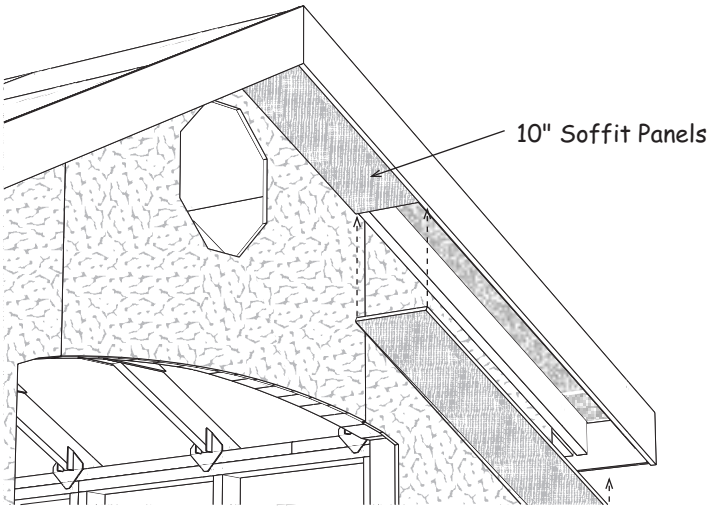
1. Install (2) two 72-3/8" long 2x4s on the front wall, under the roof sheathing. Use 10d sinkers.
2. Install two more 2x4s at the front edge of the roof sheathing. While a helper holds the 2x4 against the roof sheathing, screw the roof sheathing to the 2x4 with 1-5/8" long screws.



3. Cut the 1x6 fascia flush with the 2x4 gable overhang installed above.
4. Install 1x6 gable trim over the 2x4s. Install trim flush with the top of the roof sheathing.
5. Install 1x6 gable trim at the rear of the building.

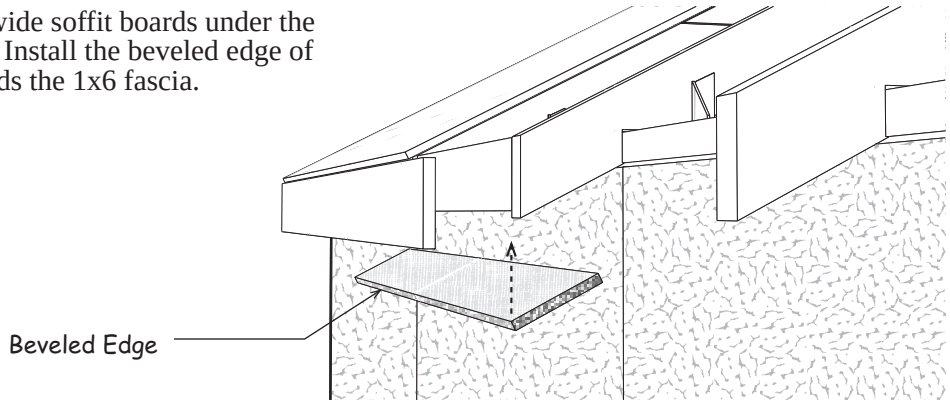
6. Install 10" soffit panels under the overhang.

   Use 6d glav. nails.



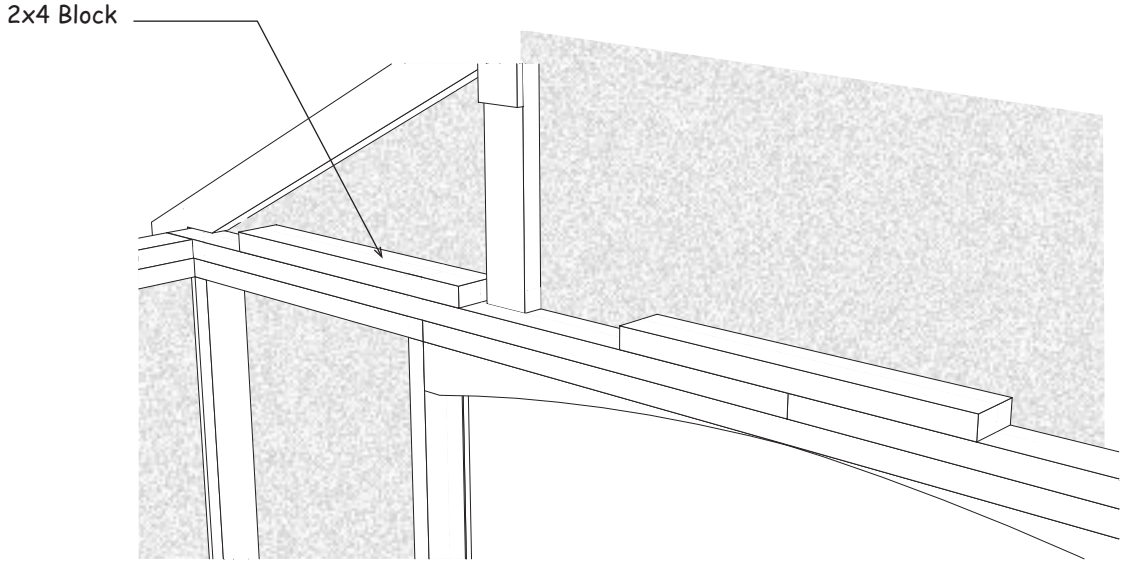
Step 15 Install Eave Soffit

Install 4-1/2" wide soffit boards under the truss overhang. Install the beveled edge of the soffit towards the 1x6 fascia.



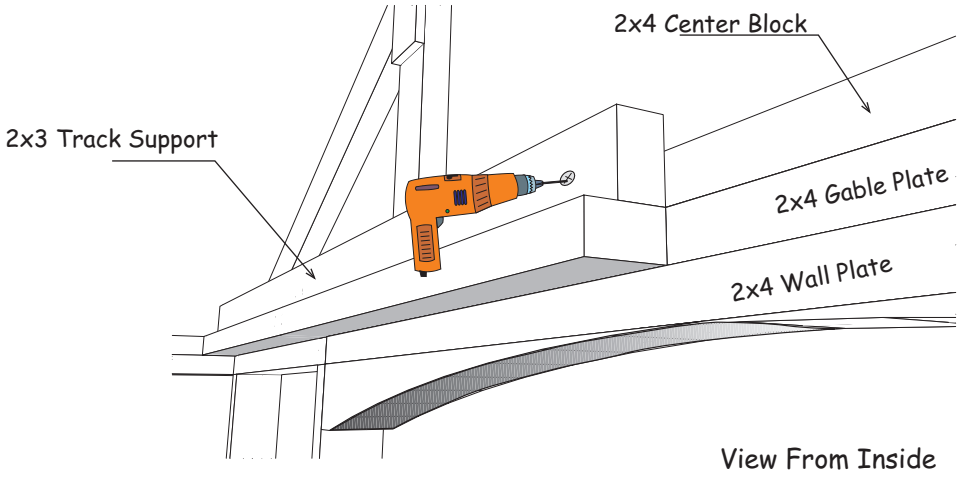
Step 16 Install 2x4 Blocks on Front Gable

Install a 23-1/2" long 2x4 block on each side of the front gable. This will support the door track assembly. Use 10d sinkers.



Step 17 Install Sliding Door Track

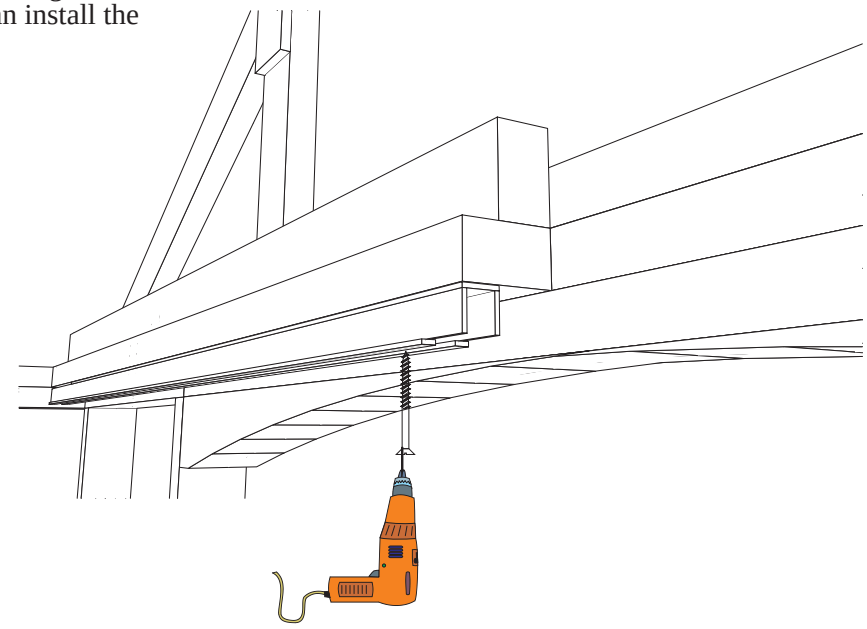
1. Install a 56-1/4" long track support assembly. Install the bottom of the 2x3 board at the bottom of the gable plate. Use 2-1/2" screws. The 2x3 boards will butt against the side-wall plates.



2. Install the other track support assembly.

3. Install a section of sliding door track under the track support boards. Install track flush with the face of the track support. Use 1-1/4" screws, with washers, supplied in the kit.

After you install the right door, in **Step 18**, you can install the opposite track.

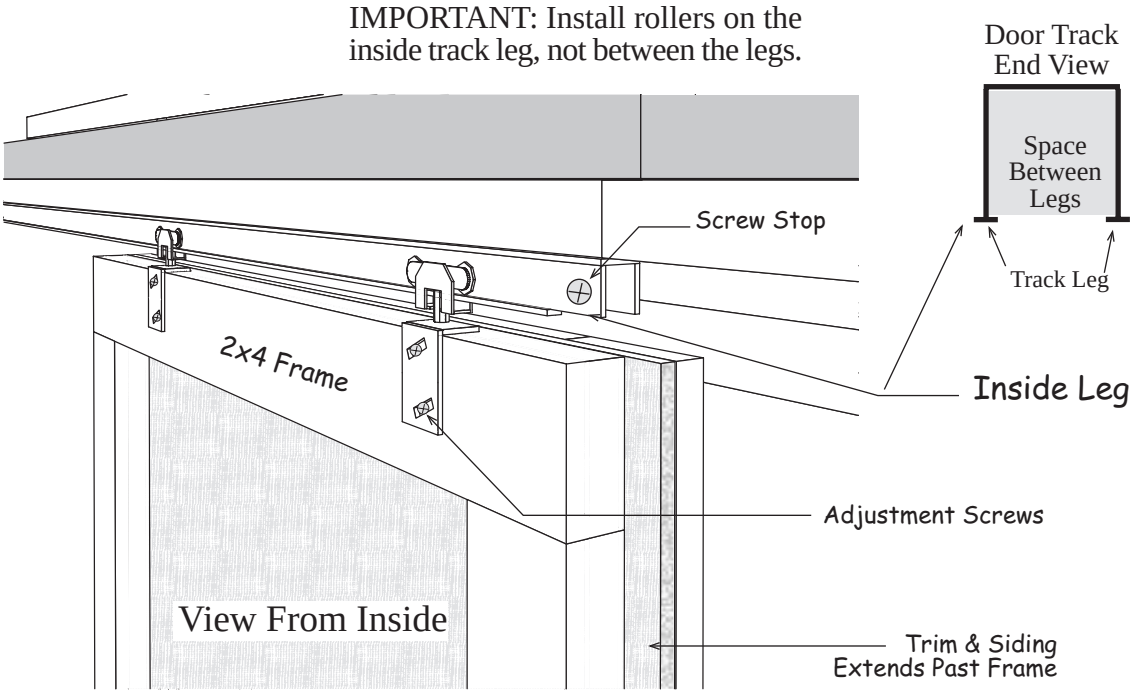


Step 18 Install Doors

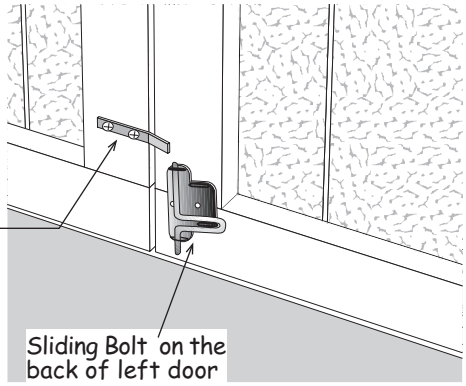
1. Locate the door that will be positioned on the right when facing the outside of the building. This will be the door with the siding and trim board extending past the 2x4 frame, *see detail below.* Hang this door first. Slide the rollers on the track as shown below.

   If it is necessary to adjust the door height, loosen two screws that secure the carrier to the door. Adjust door so the aluminum angle, on the bottom of the door, does not rub on the treated threshold. Tighten the two screws.

   Tip: Inserting a screw, *shown below,* will prevent the doors from falling through the opening between the track, if the door is opened too far.

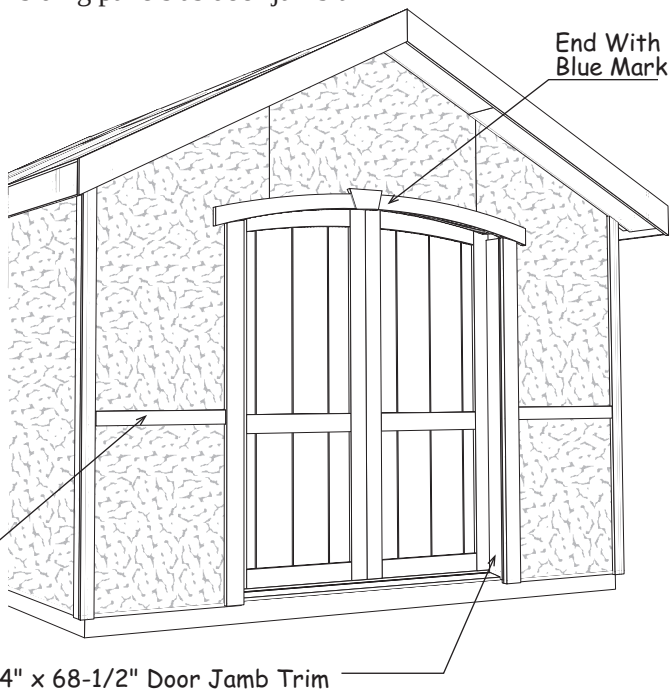


2. Hang the other door. On this door, install a sliding door latch, on the lower back of the door to secure this door in place when closed. You will need to drill a hole in the floor for the round shaft to drop into.
3. Install a metal plate to the bottom of the right door. The angle end will hold the bottom in-line with the left door when closed.
4. Install the door handles and door hasp on the outside of the doors.



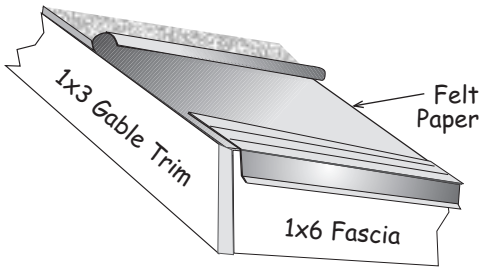
Step 19 Install Front Trim

1. Install (2) two pieces of 4" x 68-1/2" siding panels as door jamb trim on each side of the door opening.
2. Cut 1x4-75-1/2" long trim boards to length and install at the corners on the sidewall, flush with the siding on the front wall.
3. Install 1x3-76" trim boards, they have an angle cut on one end, on the front corners.
4. Install 1x4 door trim on each side of the door opening and the keystone and curved trim above the door. The ends with the blue mark butts the keystone.
5. Install 1x4-25" trim boards between the corner trim and door trim. Cut to length.



Step 20 Install Roofing — Not Supplied in Kit

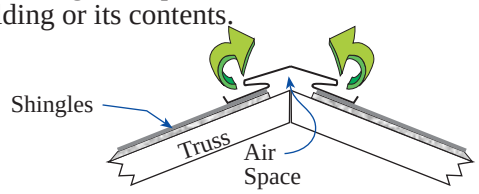
1. Install metal roof edging perimeter of the roof area. If you are not installing shingles at this time, you can purchase felt paper to protect the roof sheathing. Install the felt paper before you install the metal roof edge.



2. Install shingles according to the instructions on the wrapper. If you need more detailed instructions on installing shingles, there are good publications at book stores or newsstands.

Building Tip: Install a ridge vent in lieu of shingle caps. Ridge vent provides ideal ventilation, preventing heat or moisture from damaging your building or its contents.

Optional ridge vent provides ideal ventilation.



Cambridge 10'x 20' Barn kit — Packing List

07/14/14

Qty.	*2x4 Framing*	Size
22	Truss Top Cord w/ bird's mouth	72 3/8"
4	Front Gable Overhang Rafters	72 3/8"
9	Collar Tie	78 1/4"
50	Wall Studs and Plate Material	72 "
4	Gable Plate	60 "
4	Wall Plate Material	56 1/2"
12	Wall Plate Material	48 "
4	Wall Plate Material	26 1/2"
6	Fascia Backers	22 1/2"
6	Siding Backers & Gable Block	23 1/2"
4	Gable Studs	17 "
	7/16" Roof Sheathing	
4	48" x 72"	2 24' x 72"
2	48" x 60"	6 24' x 48"
2	48" x 48"	
	7/16" Wood Gussets	
18	8" x 16"	36 12" x 24"
	Primed Exterior Siding	
10	48" x 75-1/4"	2 36" x 62"
4	24" x 75-1/4"	2 30" x 34"
2	12" x 75-1/4"	
1	Full width x 39" for above door opening	
1	Full width x 34" for center rear gable	
2	36" x 20-1/2" Rear gable end panels	
12	4-1/2" x 48" Soffit Panels w/ beveled edge	
4	10" x 48" Soffit Panels for front gable	

Qty.	*Whie Pine Trim*	Size
4	1x6 Gable Trim	74 "
4	1x6 Fascia	78 "
4	1x6 Fascia	48 "
2	1x4 Corner Trim	76 "
4	1x4 Corner Trim	75 1/2"
2	1x4 Corner Trim	72 1/4"
2	1x4 Door Trim	70 3/4"
2	1x4 Lower Gable	60 3/8"
2	1x4 Front Trim	25 "
2	Curved Top Door Trim	33 3/4"
	Pre-built Components	
2	32" Barn Doors	71 3/4"
1	Arch Door Header	60"
2	Pre-built Track Support	56-1/4"
1	Treated Door Sill	60"
	Hardware	
3	lb. 10d Sinkers	18 H1-hangers
3	lb. 7d Sinkers	2 Door Handles
4	lb. 8d Galv.	2 Step Flashing
4	lb. 6d Common	1 Sliding Latch
1	lb. 6d Galv.	1 4" Door Latch
1	lb. Hanger Nails	6 Barbed Plates
1	Metal Flashing 60"	12 1-1/2" Screws
3	16 oz. Wood Glue	24 Drywall Screws
2	Sliding Door Track	50 2-1/2" Screws
4	4" x 5-1/2" Gable end pieces	
2	4" x 68-1/2" Door Jamb material	

Material Purchased By Owner					
11	bdl.	Roof Shingles	8	pcs.	Roof 'drip' edge