BEST BARNS USA
Quality Do-it-yourself Barn Kits

Assembly Book

revised November 7, 2016

the Cambridge II   10' x 12'

Manufactured by Reynolds Building Systems, Inc.

205 Arlington Drive, Greenville, PA   16125

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 and tie plates 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.

LAP Edge

Tongue Edge

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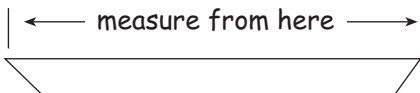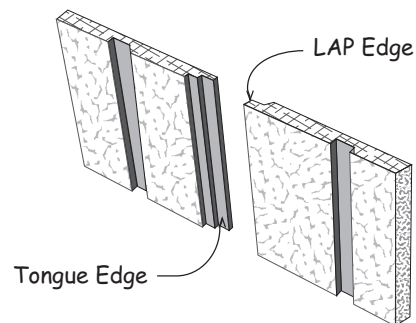
When measurements are given for a board length, it is from the longest side.

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!

Construction Details for Deluxe Floor System

Deluxe floors include 4x4 runners, standard floors do not

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. Treated lumber is not cut to exact length. Cut (2) two 2x4-12' joist headers to 12'-0". Layout for 16" on center joist spacing. 'X' marks where floor joist will be placed.

Joist Header

X		X		X		X
X		X		X		X

|← 15-1/4" →|← 16" →|← 16" →|
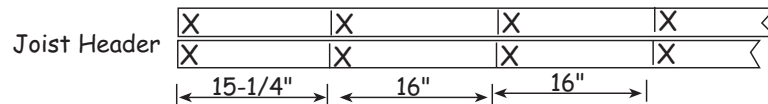
2. Cut 2x4-10' floor joist to 9'-9". *Treated lumber may be thicker than 1-1/2". Take this into account when cutting the length of floor joists. Shorten joist measurements if necessary to obtain 12'-0" building width.*

10' - 0" Building Width

12' - 0" Building Length

4x4-12' Treated Runners

2x4-12' Joist Header

Joist 9' - 9" Long
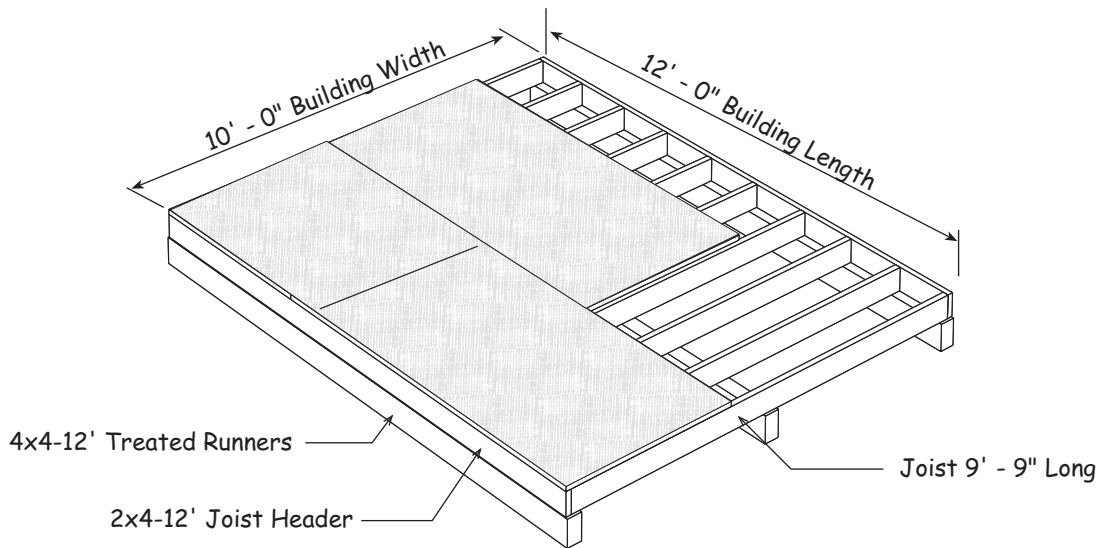
It is important that the floor be level and square. Before nailing the flooring, measure the floor diagonally (corner to corner). Then measure the opposite corners. These measurements will be the same if the floor is square.

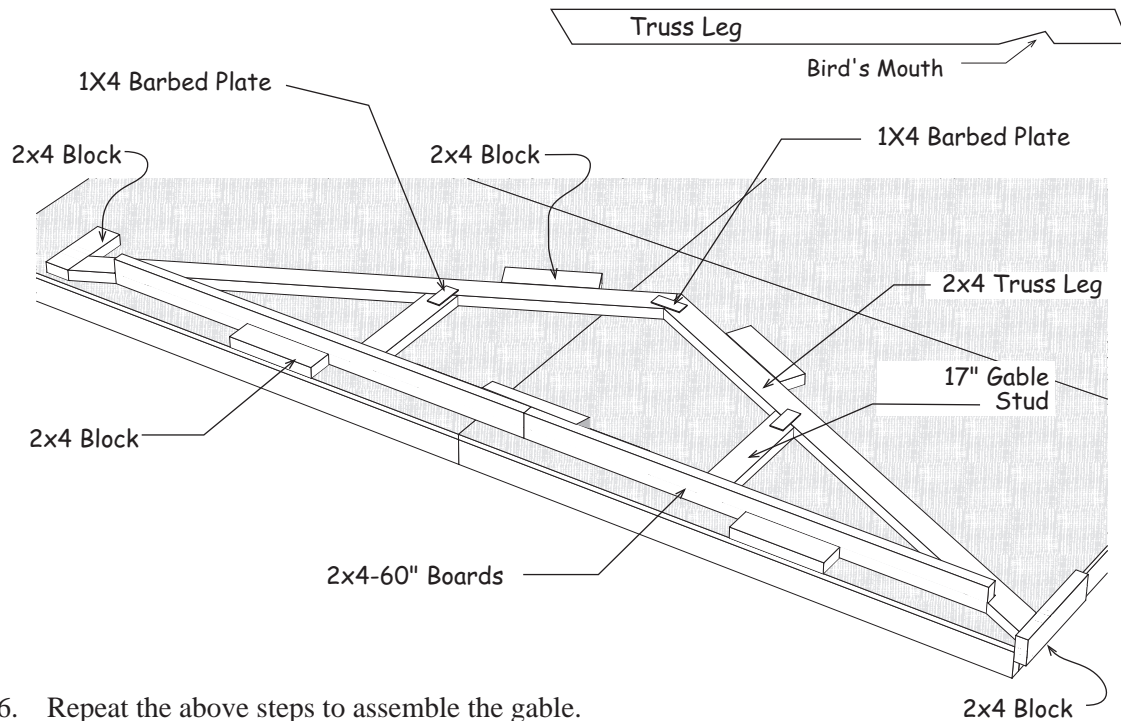| Material Description	10' x 12' shed	
2x4 Joist Headers	2 pcs.	12'
2x4 Floor Joist	10 pcs.	10'
4x4 Treated Runners	3 pcs.	12'
Flooring 5/8" or 3/4"	4 pcs.	4x8
Screw Floor Nails	1 lb.	8d
Galv. Box Nails	1 lb.	16d

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.
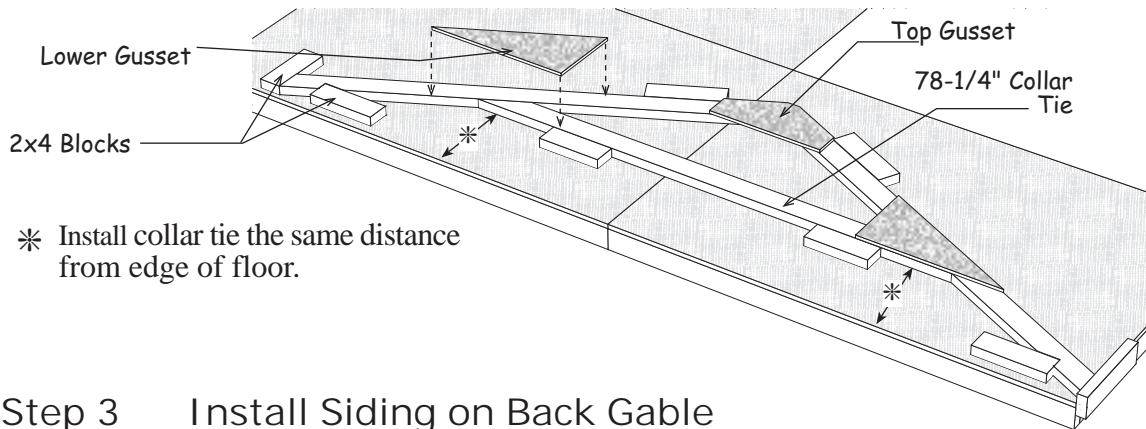
23-31/2" Block

60" long 2x4
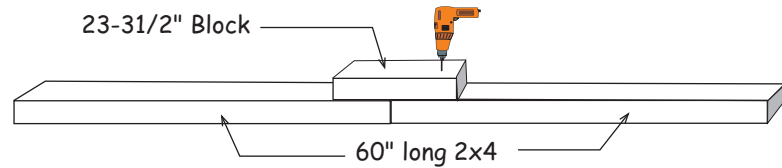
2. Repeat to assemble another gable plate

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.

Truss Leg

Bird's Mouth

1X4 Barbed Plate

2x4 Block

2x4 Block

1X4 Barbed Plate

2x4 Truss Leg

17" Gable Stud

2x4 Block

2x4-60" Boards

6. Repeat the above steps to assemble the gable.

2x4 Block

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 (4) four more trusses.

Lower Gusset

Top Gusset

78-1/4" Collar Tie

2x4 Blocks

✳ Install collar tie the same distance from edge of floor.

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.
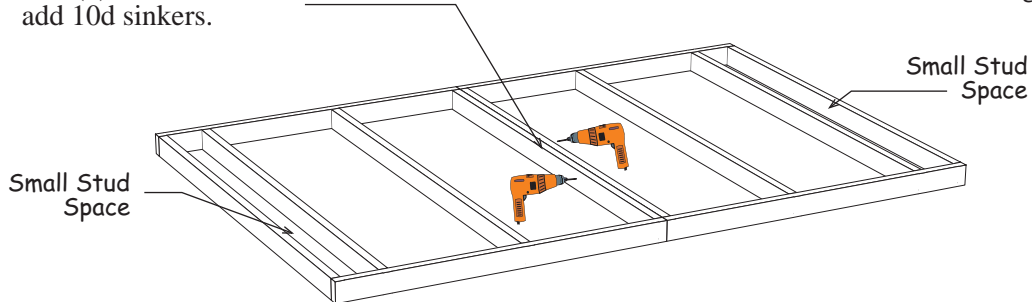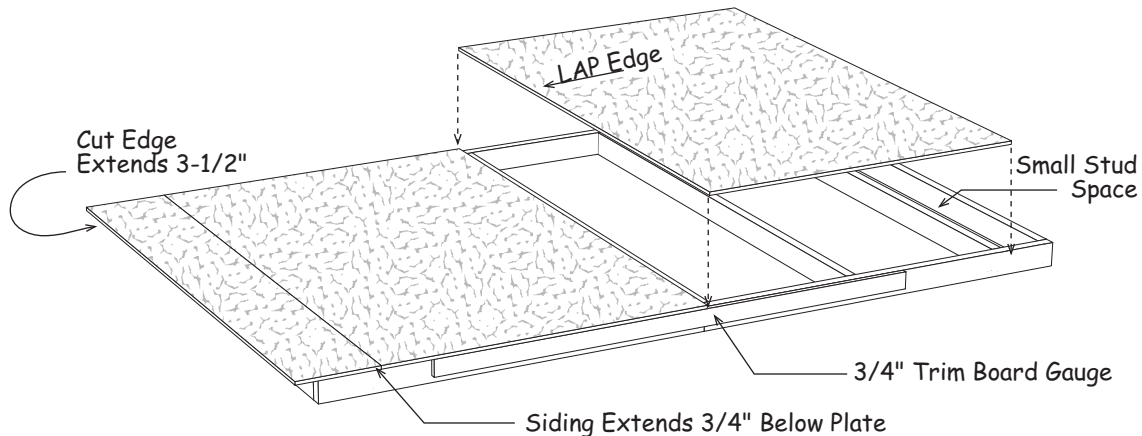
Small Siding Panel

Siding with LAP Edge

Siding Panel with Tongue Edge

Siding Extends 1/2" Below Plate
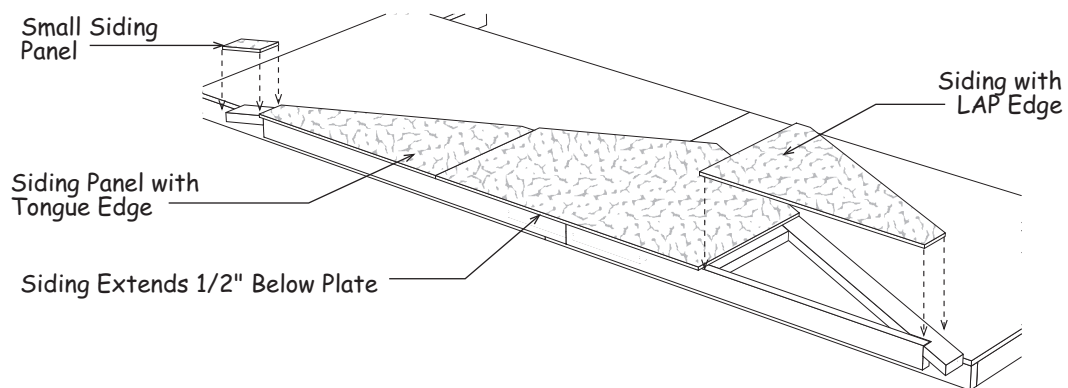
Step 4   Assemble Back Wall

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

56-1/2" Wall Plate

| X | X | X |
| X | X | X |

|← 23-1/4" →|← 24" →|
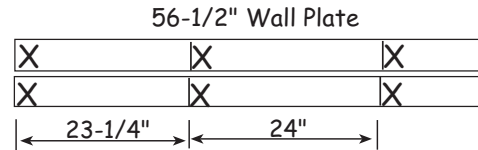
2. Install 72" long wall studs between the wall plates, over the 'X' marks. Use 10d sinkers, two nails on the end of each 2x4.

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.

Small Stud Space

Small Stud Space

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 a 12-1/2" wide siding panel to finish. It will extend 3-1/2" past the end of the wall.

LAP Edge

Cut Edge Extends 3-1/2"

Small Stud Space

3/4" Trim Board Gauge

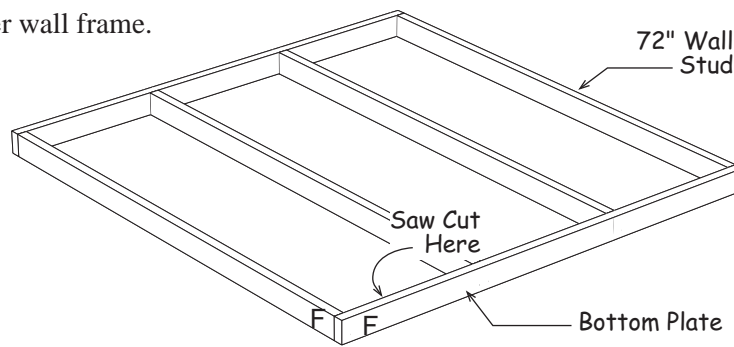Siding Extends 3/4" Below Plate

Step 5A   Assemble Front Sidewall Panels

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

72" Top Wall Plate ⟶

72" Bottom Wall Plate with saw cut ⟶

|← 23-1/4" →|← 24" →|
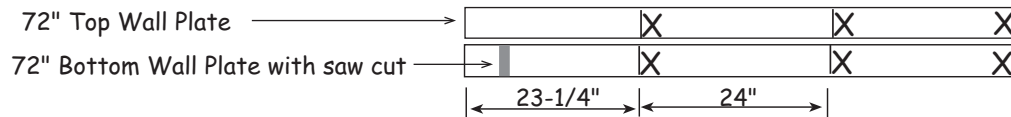
2. Assemble a wall frame using a bottom plate, *with a saw cut*, and a 72" long top plate. Install 72" long wall studs between the wall plates, mark the end of the wall with the letter 'F'. Use 10d sinkers. Two nails per stud.

3. Repeat to assemble another wall frame.

72" Wall Stud

Saw Cut Here

F F

Bottom Plate

Step 5B   Assemble Rear Sidewall Panels

1. Position 2x4-72" boards together and indicate with 'X' marks, where the wall studs will be located. Mark the bottom with the letter 'B'.

72" Top Wall Plate

72" Bottom Wall Plate   B

|← 23-1/4" →|← 24" →|
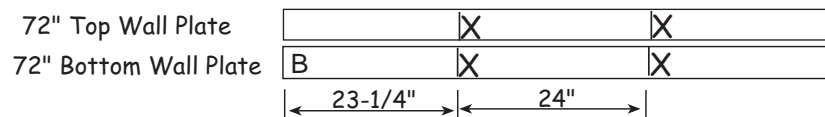
2. Install 72" long wall studs between the wall plates, over the 'X' marks, and at the ends of the boards.

3. Repeat steps to assemble another wall frame.
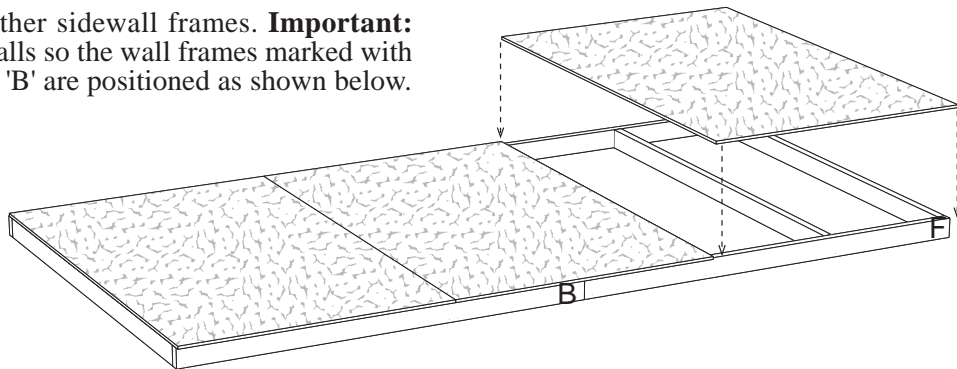
72" Wall Stud

B

Bottom Plate
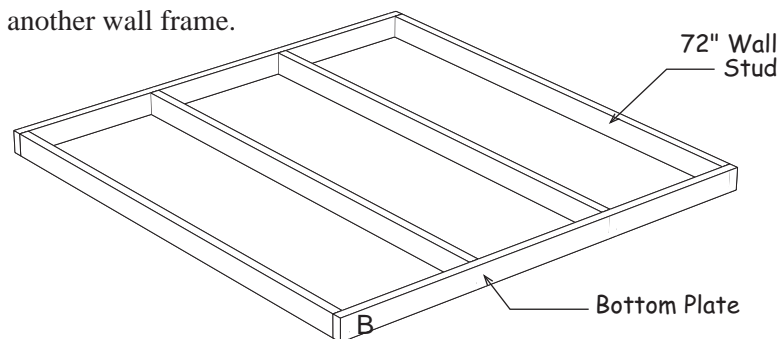
Step 6A   Apply Siding to The Right Sidewall

1. Nail one of the front sidewall frames together with a back sidewall frame. See drawing below noting location of 'F' and 'B' marks. Nail the frames together with 10d sinkers.

2. Install the first siding panel with the LAP edge flush with the wall stud. The siding should extend 3/4" below the bottom plate. Tip: Use a 1x3 trim board as a gauge.

3. Install (2) two more siding panels. Insure last panel is flush with the end of the wall frame.

LAP Edge

F   F

B

Siding Extends 3/4" Below Plate
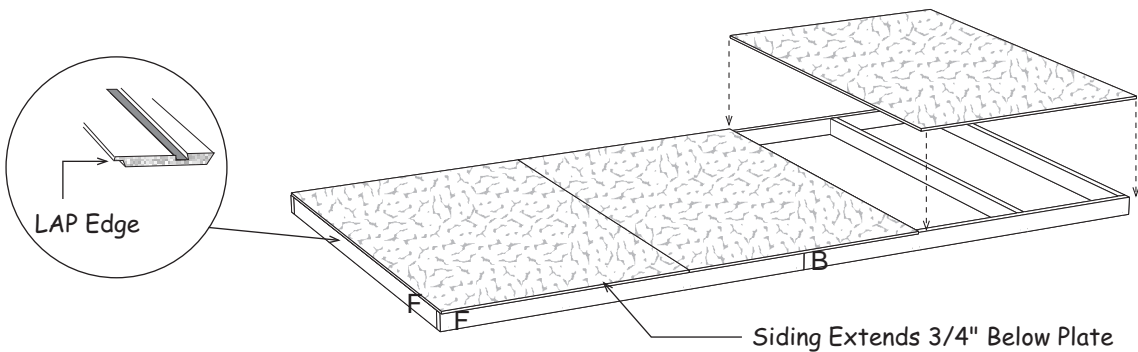
Step 6B   Apply Siding to The Left Sidewall

Assemble the other sidewall frames. **Important:** Assemble the walls so the wall frames marked with the letter 'F' and 'B' are positioned as shown below.

F

B

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. Measure 32" from outside of bottom 2x4 plate.
3. Repeat to assemble another wall frame.

32"

Siding Backer

26-1/2" Long Bottom Plate
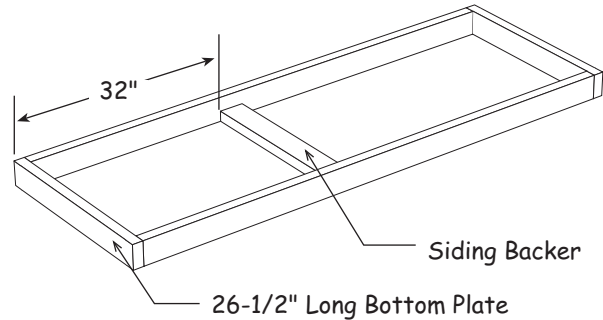
Step 8   Set Wall Panels

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 (2) two 2x4 boards attached to the shipping pallet.Install 2x4s 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.

F

F
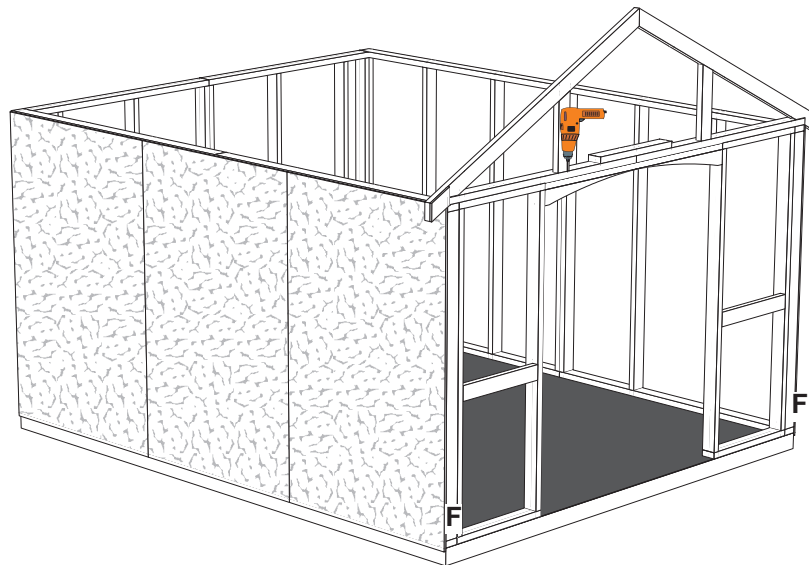
Step 8   Set Wall Panels Continued
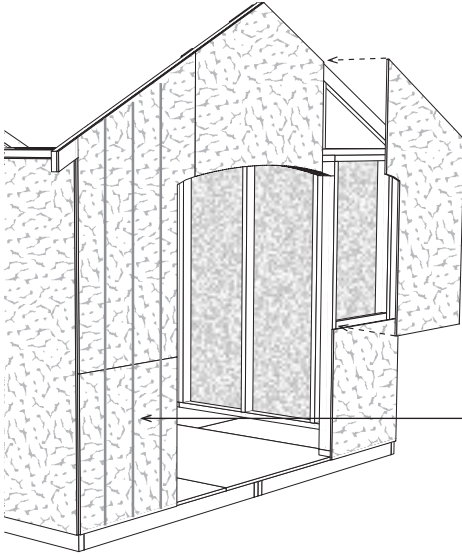
### Install Front Wall Siding

5. Install the front wall siding on the wall frame and gable. Begin with lower panels extending 3/4" below bottom plate. Siding should be flush with door opening.

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 1x3x72-1/4" trim boards on the rear wall. Install the trim flush with siding on the sidewalls. Use 8d galv. nails.

Sidewall

flush

Back Wall

60-3/8" Trim Board

1x3x72-1/4" Trim Board
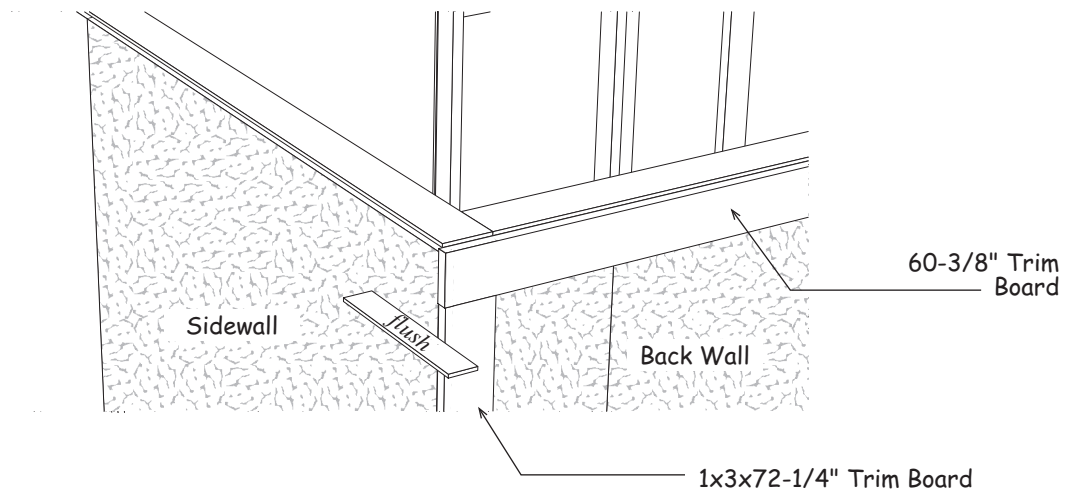
Step 10   Install Treated Door Sill

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

Treated Door Sill
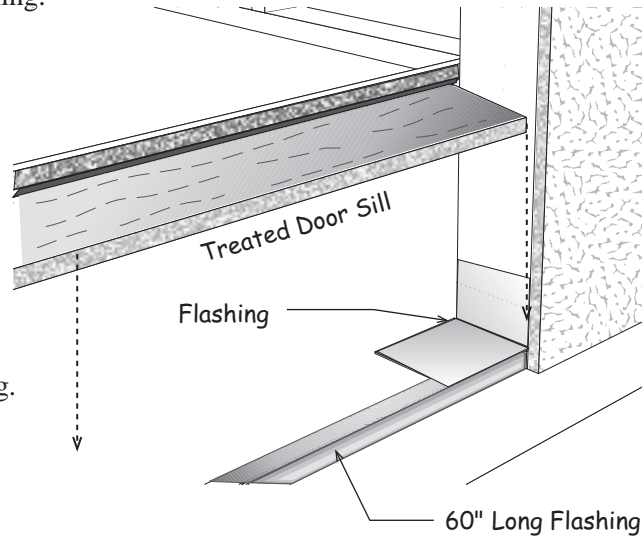
Flashing

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

60" Long Flashing

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
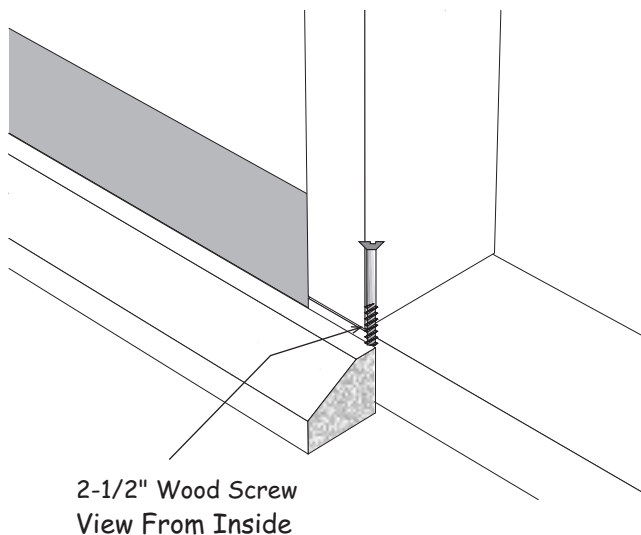
Step 11 Install Rear Gable & Tie Plates

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.

Gable Siding

1x4 Trim
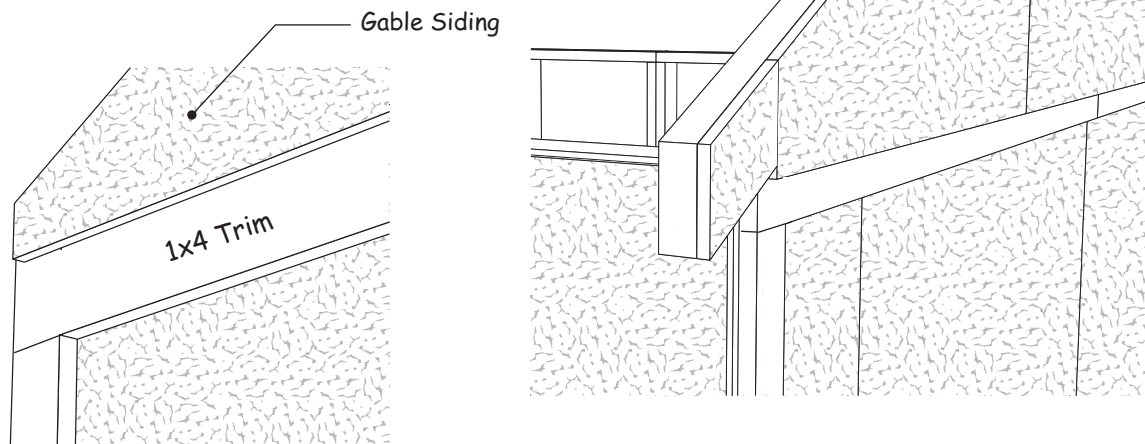
2. Cut a 2x4-6' board in half. Starting at the front of the building, install a 36" long 2x4
    as a tie plate, on top of the sidewall panels. Use 10d sinkers.

3. Remove one of the 2x4s from the pallet and install next.

4. Cut to fit and install the 36" long 2x4 cutoff to finish.

5. Install 2x4s on the opposite sidewall the same way.

2x4-36" Tie Plate

2x4 from Pallet
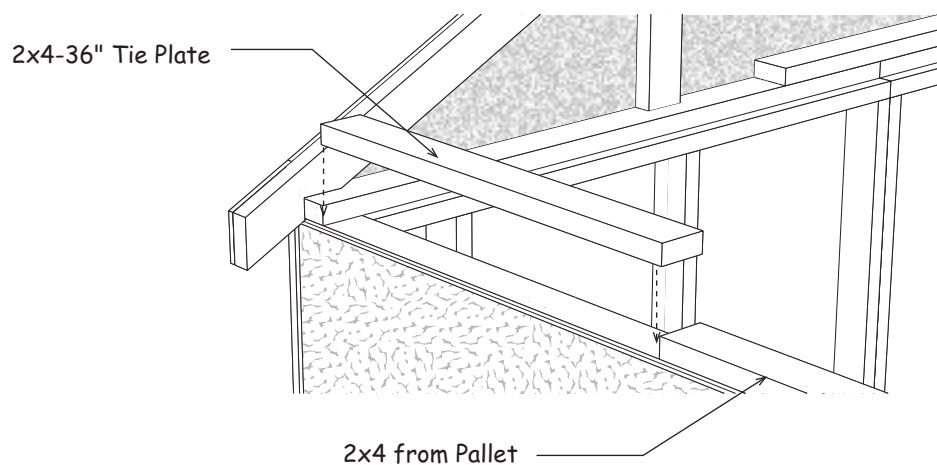
Step 12   Install Trusses

1. Layout the truss spacing. Start at the back gable. Measure from the <u>outside face of the gable siding</u> 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 6d common 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'**.

Back
Gable

2x4 Tie Plate

23-1/4"

24"

Inside of Building

Detail 'D'
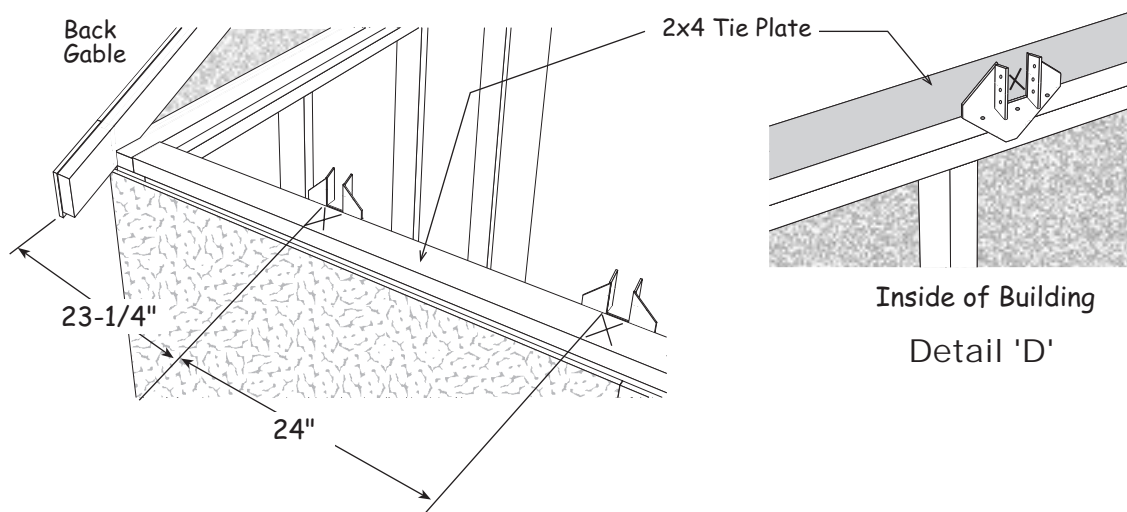
3. Install trusses over the 'X' marks. Nail the metal hanger to the truss using 6d common nails.

4. Install a 22-1/2" long 2x4 with beveled edge between the 3rd and 4th trusses. The beveled edge will be flush with bottom of trusses.

1

2

3

4

2x4 Block with Beveled Edge
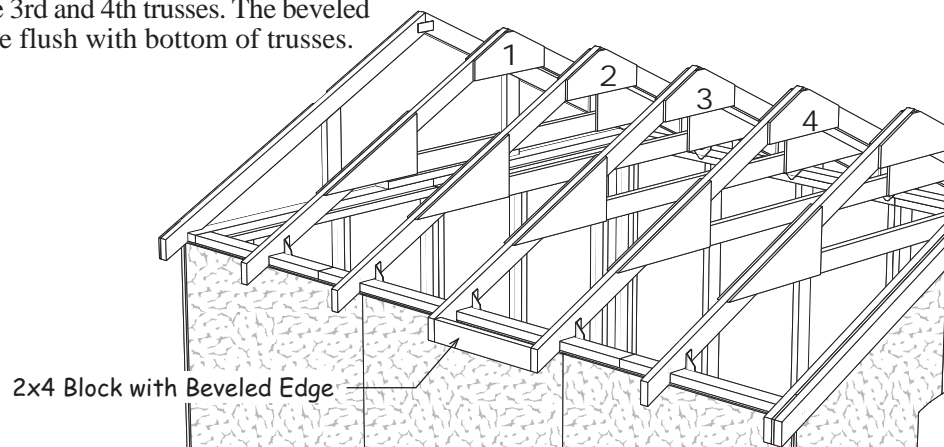
Step 13 Install Roof Sheathing & 1x6 Fascia

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 1x6x78" fascia at the front of the building. It will extend past the front gable.

3. Install a 48" x 72" piece of roof sheathing on the lower left corner. Use 7d sinkers, spaced 12" apart.

4. Install a 24" x 48" roof panel at the top.

5. Install other roof panels per the layout below.

2'x4'

4'x6'

1x6 Fasica

1x6 Fasica

2x4 Block

Beveled Edge

1x6 Fasica

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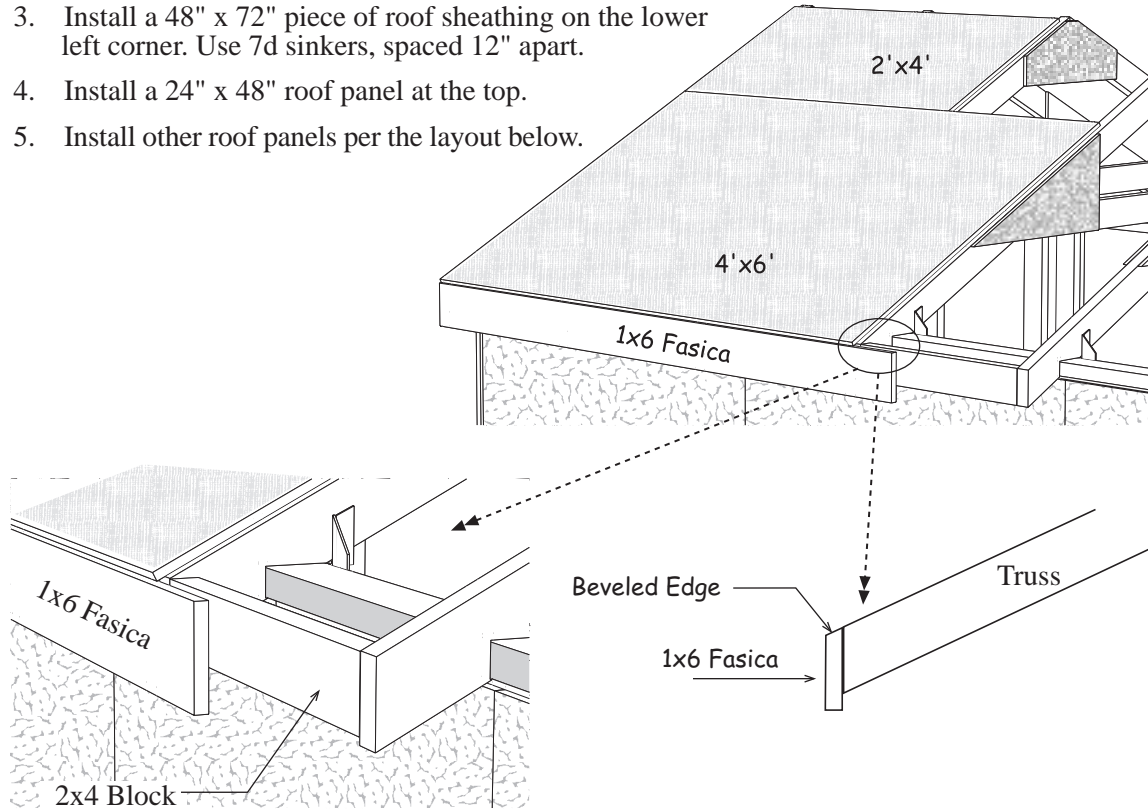
☞ The upper row of roof sheathing will not reach the peak to allow for ventilation if ridge vent is installed.

Roof Sheathing Layout

2'x4'	2'x4'	2'x5'
4'x6'	4'x4'	4'x3'
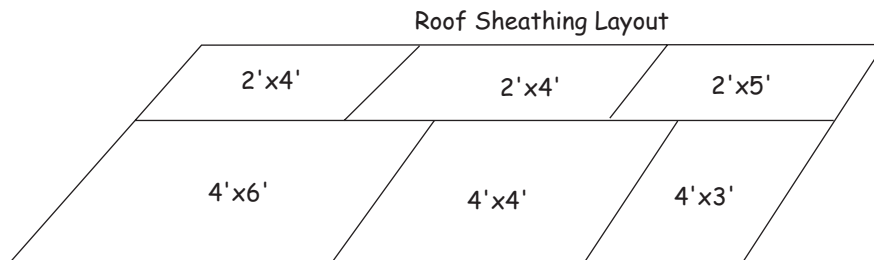
Step 14   Install Gable Overhang & Trim

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.

72-3/8" long 2x4

72-3/8" long 2x4
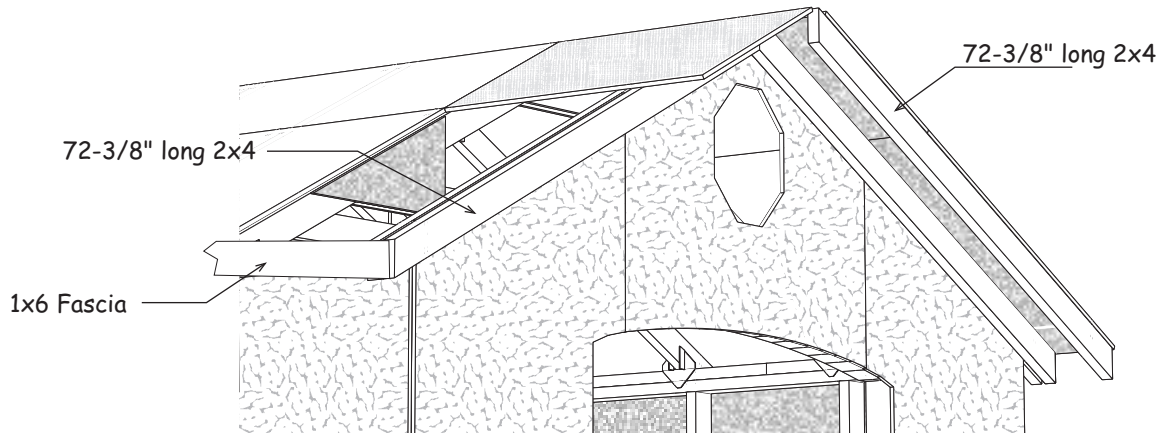
1x6 Fascia

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. Locate (4) four 10"x48" soffit panels. Install panels under the overhang. Cut to fit (2) two panels.

   Use 6d glav. nails.

10" Soffit Panels
Cut length to Fit
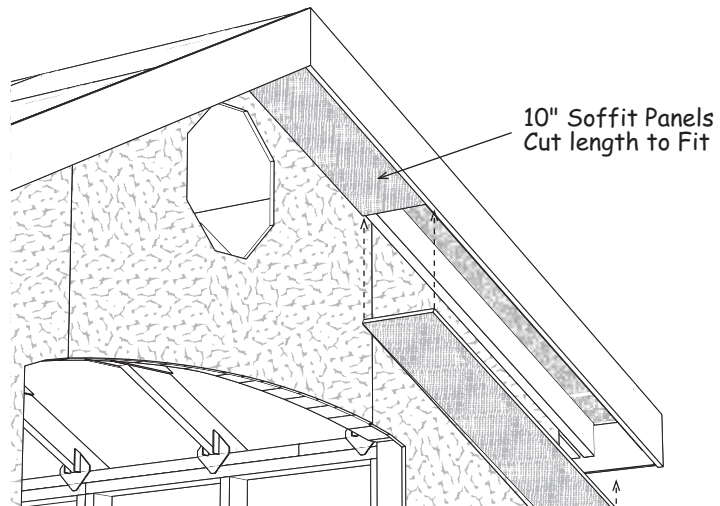
Step 15   Install Eave Soffit

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

Beveled Edge
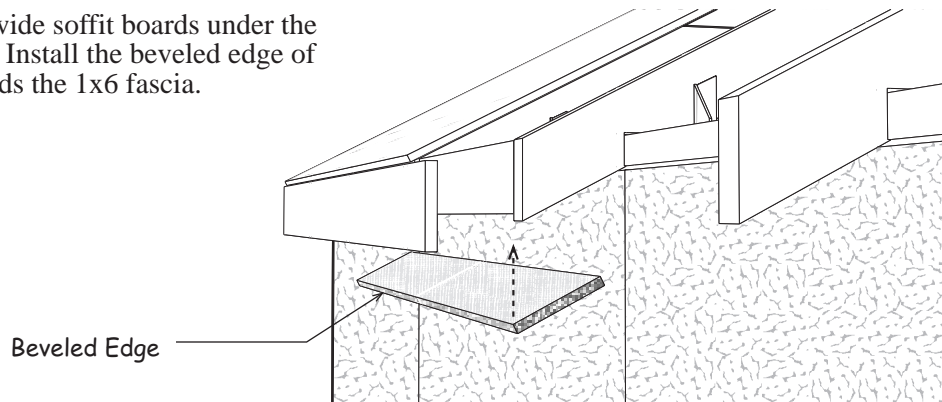
Step 16   Install 2x4 Blocks on Front Gable

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.

2x4 Block

Step 17   Install Sliding Door Track

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

2x4 Center Block

2x3 Track Support

2x4 Gable Plate

2x4 Wall Plate

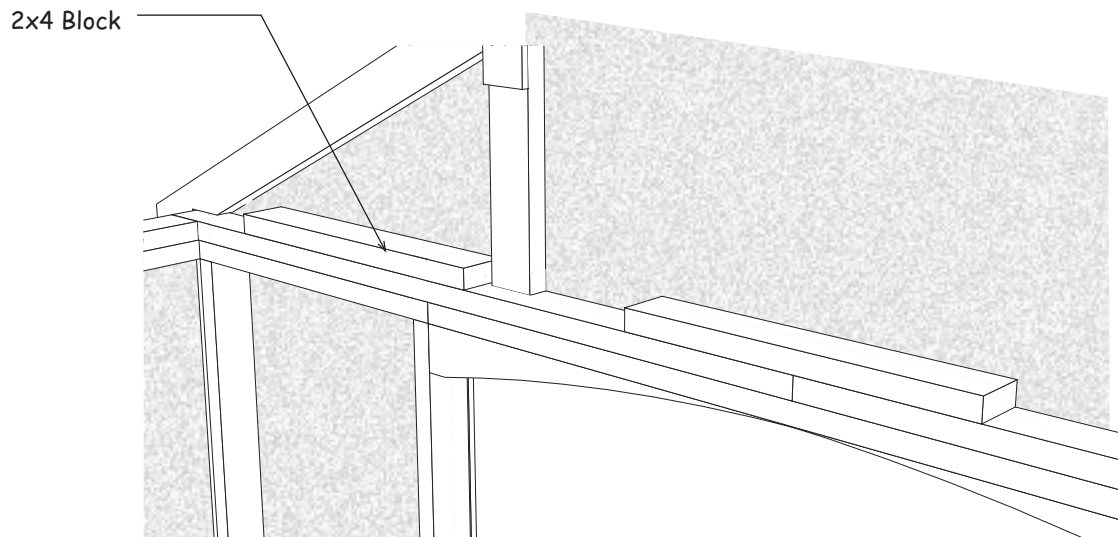View From Inside
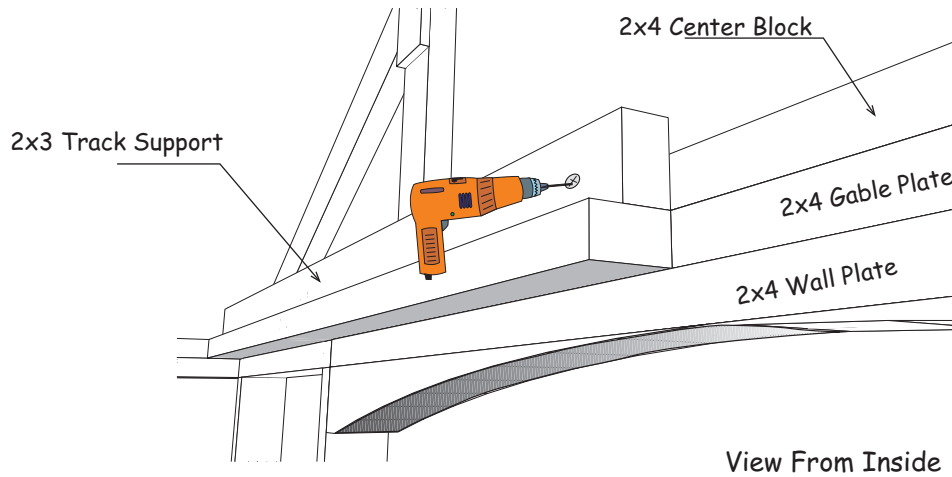
2. Install the other track support assembly.

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.
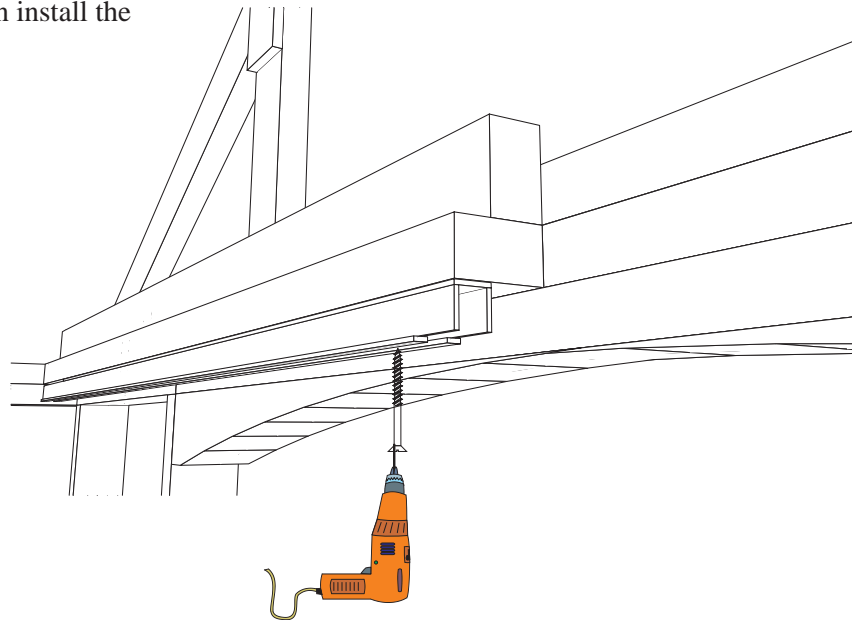
Step 18   Install Doors

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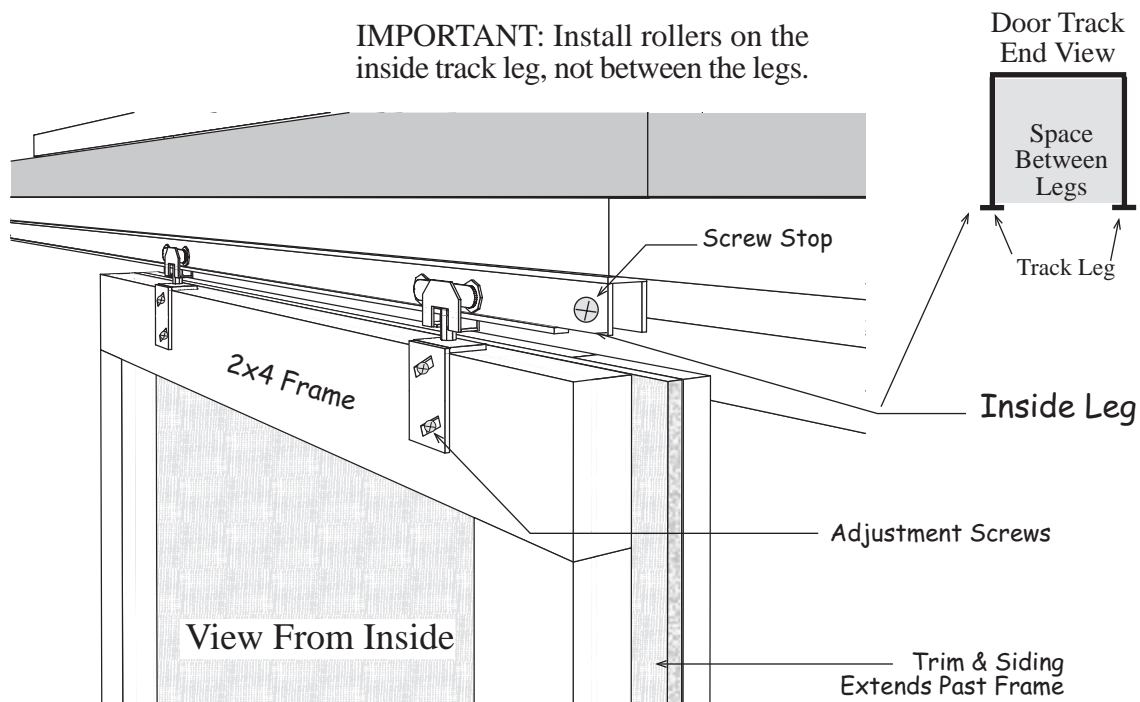
    Tip: Inserting a screw, *shown below*, will prevent the doors from falling through the opening between the track, if the door is opened too far.

IMPORTANT: Install rollers on the inside track leg, not between the legs.

Door Track End View

Space Between Legs

Track Leg

Screw Stop

2x4 Frame

Inside Leg

Adjustment Screws

View From Inside

Trim & Siding Extends Past Frame

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.

Sliding Bolt on the back of left door
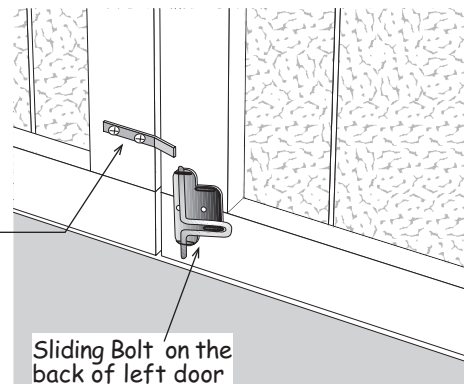
Step 19   Install Front Trim

1. Install (2) two pieces of 4" x 68-1/2" siding panels as door jamb trim over 2x4s on each side of the door opening.

2. Install (2) two 1x3-76-1/2" trim boards, they have an angle cut on one end, on the front corners flush with sidewall siding.

3. Cut (4) four 1x4-75-1/2" long trim boards to length and install at the corners on the sidewall, flush with trim on front and back walls.

4. Install (2) two 1x3 door trim on each side of the door opening flush with the door jam. Install the keystone and curved trim above the door. The ends with the blue mark butts against the keystone.

5. Install (2) two 1x3-26-1/4" trim boards between the corner trim and door trim. Cut to length.

End With
Blue Mark

4" x 68-1/2" Door Jamb Trim
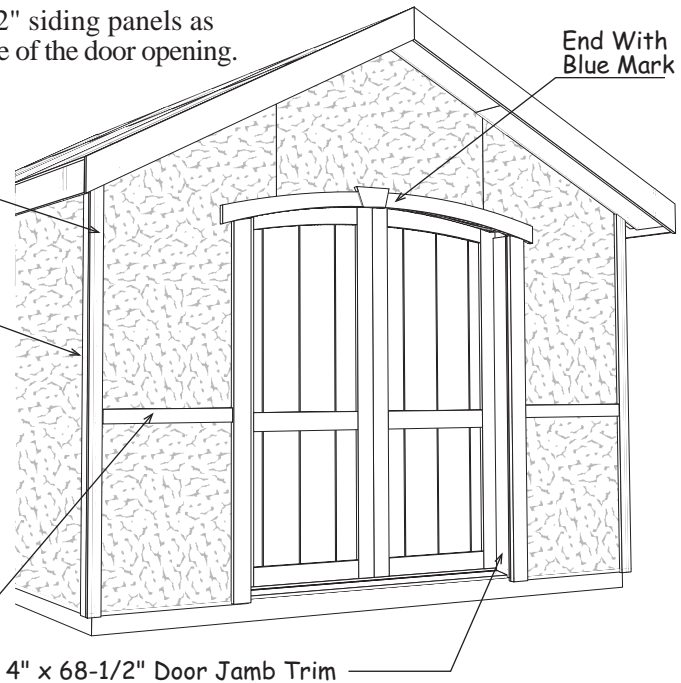
Step 20   Install Roofing — Not Supplied in Kit

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.

1x3 Gable Trim

Felt Paper

1x6 Fascia
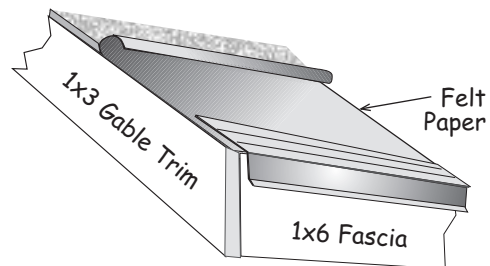
2. Install shingles according to the instructions on the wrapper. If you need more detailed instructions on installing shingles, there are good publications at book stores or newsstands.

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.*

Shingles

Truss

Air
Space
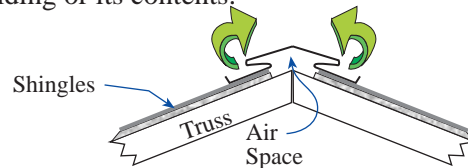
Cambridge 10'x 12' Barn kit — Packing List 11/07/14

Qty.	2x4 Framing		Size	
14	Truss Top Cord w/ bird's mouth		72	3/8"
4	Front Gable Overhang Rafters		72	3/8"
5	Collar Tie		78	1/4"
36	Wall Studs and Plate Material		72	"
4	Gable Plate		60	"
4	Wall Plate Material		56	1/2"
4	Wall Plate Material		26	1/2"
2	Siding Backers		23	1/2"
4	Blocks used in gables		23	1/2"
4	Fascia Backers		22	1/2"
4	Gable Studs		17	"

Qty.	7/16" Roof Sheathing			
2	48" x 72"	4	24' x 48"	
2	48" x 48"	2	24' x 60"	
2	48" x 36"			

	7/16" Wood Gussets			
10	8" x 16"	20	12" x 24"	

	Primed Exterior Siding			
8	48" x 75-1/4"	2	36" x 62"	
2	12" x 75-1/4"	2	30" x 34"	
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			
8	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	73	1/4"
4	1x6	Fascia	78	"
2	1x3	Corner Trim	76	1/2"
4	1x4	Corner Trim	75	1/2"
2	1x3	Corner Trim	72	1/4"
2	1x3	Door Trim	70	3/4"
2	1x4	Lower Gable	60	3/8"
2	1x3	Front Trim	26	1/4"
2	Curved Top Door Trim		33	3/4"

Qty.	Pre-built Components		Size	
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"	

Qty.	Hardware			
2	lb. 10d Sinkers	10	H1-hangers	
2	lb. 7d Sinkers	2	Door Handles	
3	lb. 8d Galv.	2	Step Flashing	
4	lb. 6d Common	1	Sliding Latch	
1	lb. 6d Galv.	1	4" Door Hasp	
		6	Barbed Plates	
1	Metal Flashing 60"	12	1-1/2" Screws	
2	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			
7 bdl. Roof Shingles	6	pcs.	Roof 'drip' edge