



# Best Barns USA Assembly Book Revised November 1, 2018



## *the Mansfield - R*

**12' x 12'**

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**Manufactured by Reynolds Building Systems, Inc.**

205 Arlington Drive

Greenville, PA 16125

724-646-3775

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## IMPORTANT INFORMATION ABOUT YOUR SHED KIT

Thank you for purchasing our shed kit. Read the instructions before starting the assembly of the building. If you have any questions about assembling the kit, call 800-245-1577. Business hours (8:00-5:00 ET) Monday thru Friday. After business hours call 724-866-HELP (4357).

The foundation size should measure 12'-0" wide by 12' long. The siding should project beyond the foundation for water to expel properly from the side walls.

The material that is included in our kit is listed on the back page. The optional floor package, if purchased, will be supplied by a local lumber supplier. Our kit does not include the shingles, the quantity needed is listed on the back page. The siding and trim is primed. You will need to apply a finish coat using latex acrylic paint.

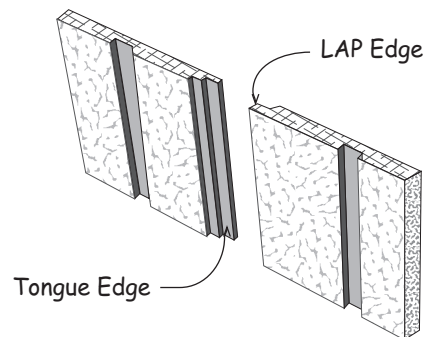
Most buildings are installed on a wood floor and the siding was designed to extend over the wood flooring. If the foundation is a concrete floor cut the siding flush with the bottom of the wall plate to prevent the concrete from contacting the siding.

Stacking the boards, according to size, will make them easier to find when needed. **Do Not** discard any material until your building is complete.

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

*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 galvanized box nails spaced 8" apart.*



### Tool List

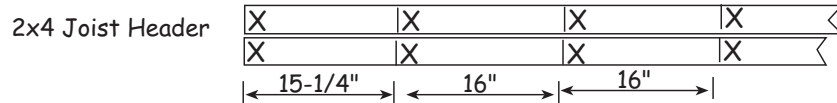
- |                                                        |                                                     |
|--------------------------------------------------------|-----------------------------------------------------|
| <input type="checkbox"/> Hammer & Phillips Screwdriver | <input type="checkbox"/> Power Drill/Screwdriver    |
| <input type="checkbox"/> Framing Square & Level        | <input type="checkbox"/> Measuring Tape             |
| <input type="checkbox"/> Hand or Circular Saw          | <input type="checkbox"/> <b>2 - 8' Step Ladders</b> |

**Always wear safety glasses when cutting or nailing!**

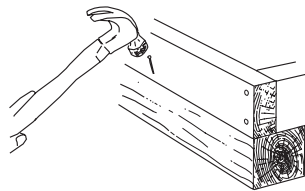
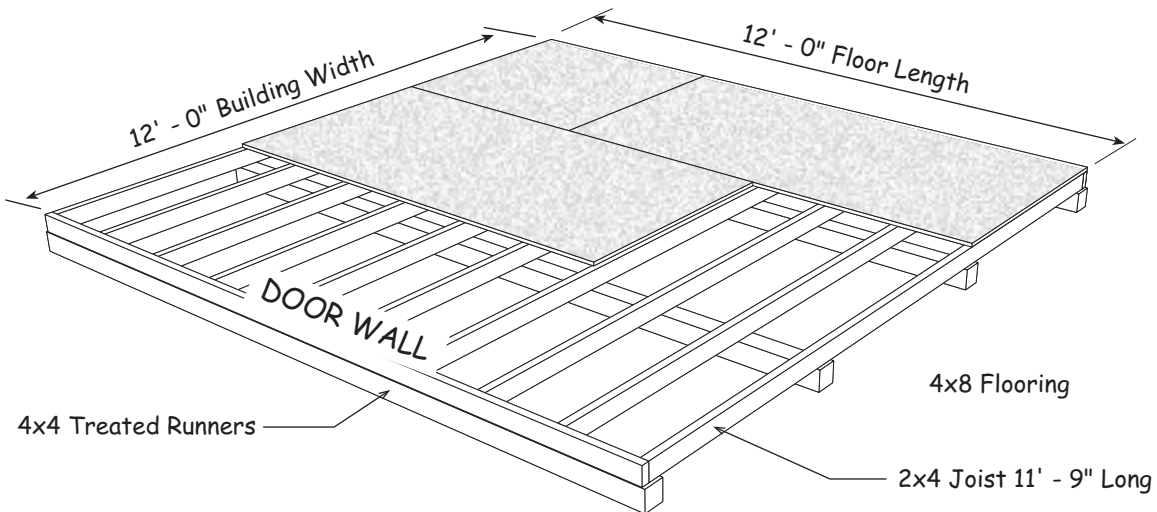
## Constructing Details for Deluxe Floor System

Shown below is a typical wood floor. Depending on your area, the construction may have to be changed to meet local codes. When using a concrete slab, use the same overall foundation measurements. Install foam 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 (2) two 2x4-12' joist headers to a length of 12' - 0". Layout for 16" on center spacing. 'X' marks where floor joist will be placed.



2. Cut 2x4-12' floor joist to 11'-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.



To keep 2x4 frame from moving, toe nail to 4x4.

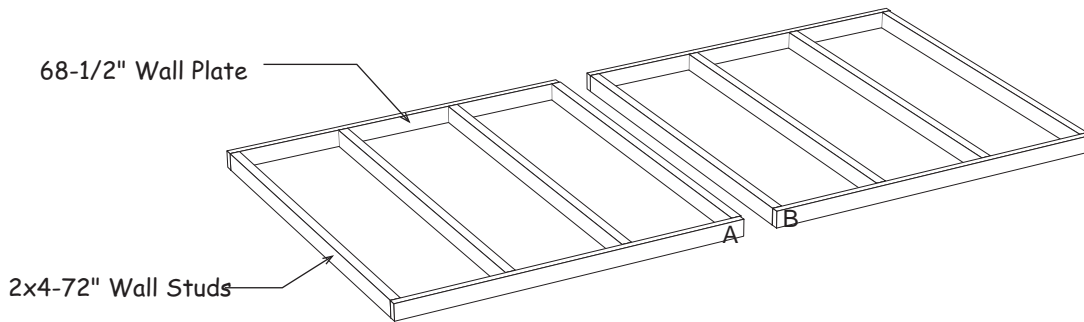
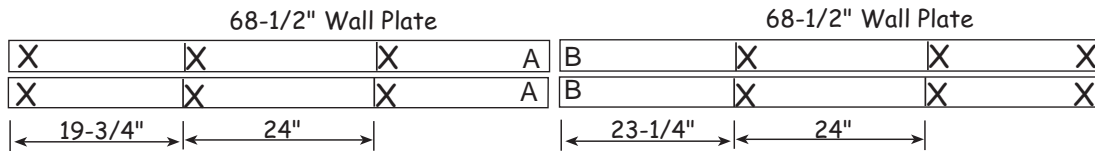
Material Description	12' x 12' shed
2x4 Joist Headers	2 pcs. 12'
2x4 Floor Joist	10 pcs. 12'
4x4 Treated Runners	4 pcs. 12'
Flooring 5/8" or 3/4"	5 pcs. 4x8
Screw Floor Nails	2 lbs. 8d
Galv. Box Nails	1 lb. 16d

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.

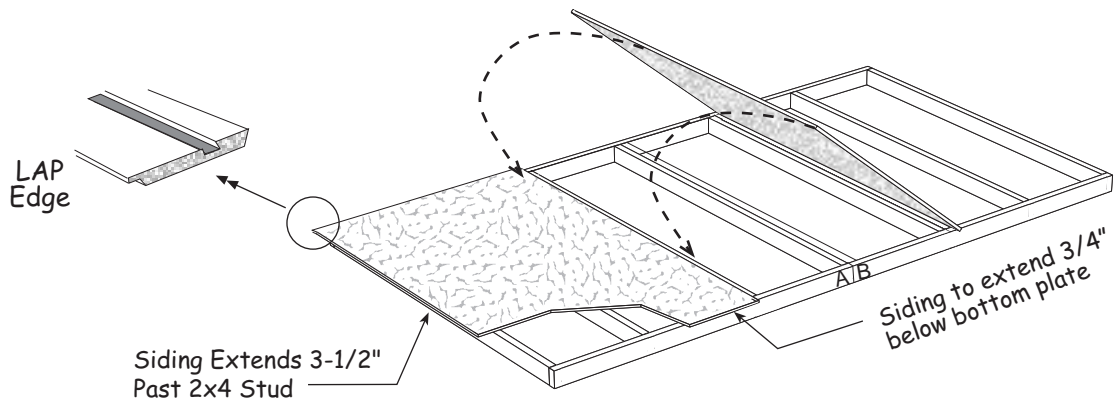
## Step 1 Assemble 12' Back Wall

 **Do not discard any material until construction is complete. Including short blocks of 2x4s.**

1. Position 2x4-68-1/2" boards together and indicate with 'X' marks, where the wall studs will be located. Mark the ends that will butt together with the letters 'A' and 'B'.

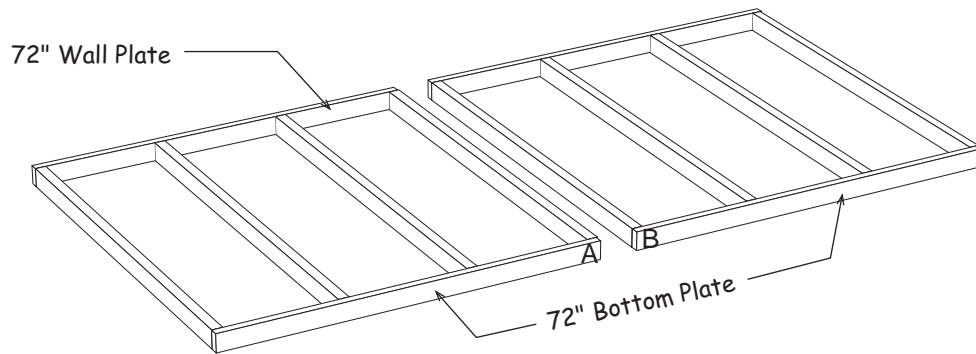
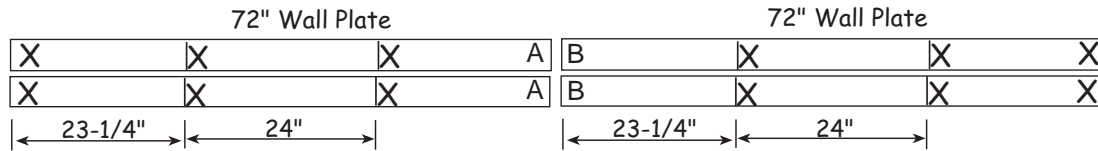


2. Install (8) eight 72" wall studs between the top and bottom plates. Use 10d sinkers, (2) two nails at each stud end. Nail both wall frames together with 10d sinkers.
3. Square wall frame. *Measure diagonally (corner to corner). The measurements will be the same when the wall is square.*
4. Install the first siding panel with the 'LAP' edge extending 3-1/2" past the wall frame and 3/4" below bottom plate. Use 8d galv. nails spaced 8" apart. Tip: Use 3/4" trim board as a gauge.
5. Install (2) two more siding panels. Cut the last panel to extend 3-1/2" beyond the wall frame.

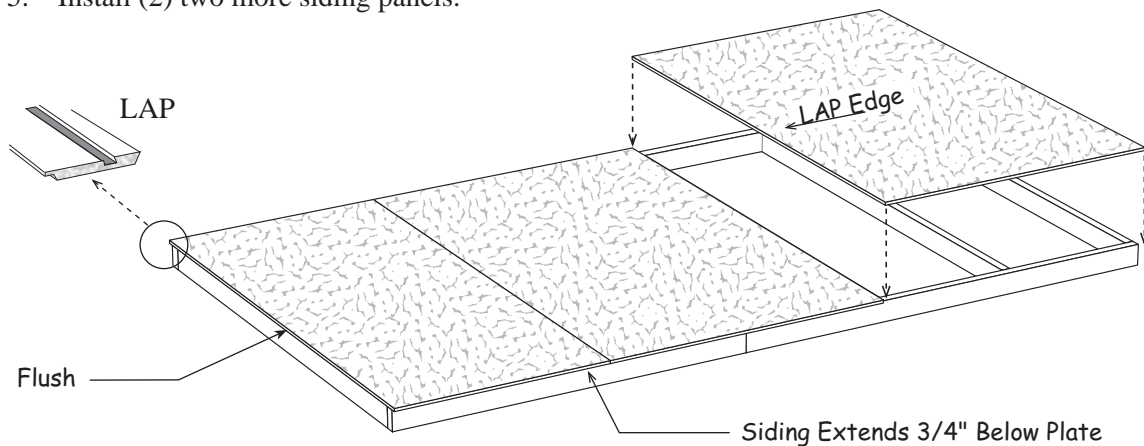


## Step 2 Assemble 12' Long Sidewalls

1. Gather (4) four 2x4-72" boards and position together then indicate with 'X' mark where the wall studs will be located. Mark the ends that will butt together with the letters 'A' and 'B'.




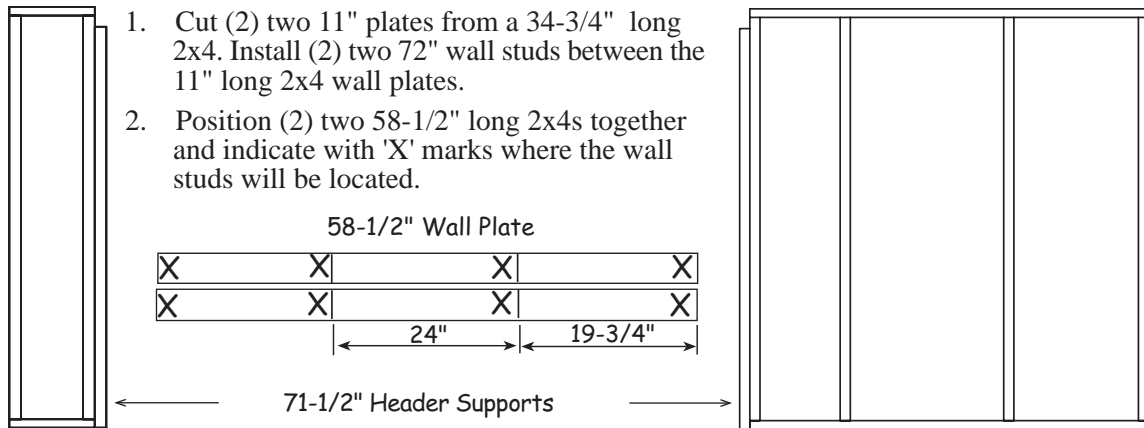
2. Install (8) eight 72" wall studs between the top and bottom plates. Nail both wall frames together. Use 10d sinkers.
3. Square wall frame.
4. Install the first siding panel with the 'LAP' edge flush with the end of the wall and extending 3/4" below the bottom plate.
5. Install (2) two more siding panels.



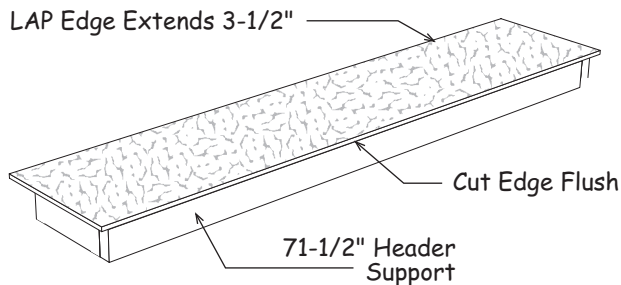
6. Repeat to assemble another sidewall.

### Step 3 Assemble Door Wall - Offset Doors


 **To position the door opening in the center of the wall, go to Step 4. To position the door opening on the right side of the front wall, flip the walls and apply siding to the opposite side of the wall frames.**



3. Install (4) four 72" wall studs between (2) two 58-1/2" long 2x4 wall plates
4. Gather (2) two 2x4-72" 2x4s. Cut each board to 71-1/2" and install as a header support on each wall frame flush with bottom plate. Use 10d sinkers.

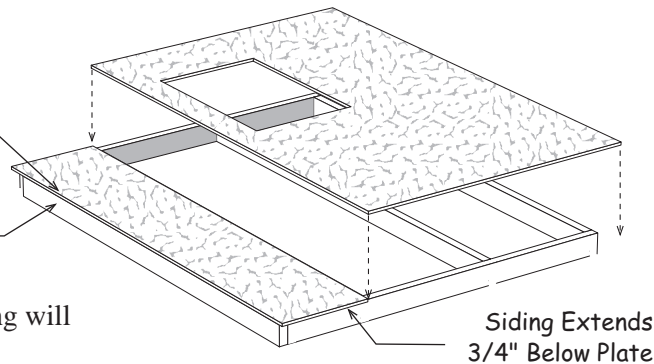


5. Select a 16" wide siding panel with a 'LAP' edge. Install cut edge flush with header support. The 'LAP' edge will extend 3-1/2" beyond the wall frame. Bottom edge will be 3/4" below the bottom plate.

 If installing the optional window you can cut the opening in the siding. Instructions are packed in window box.

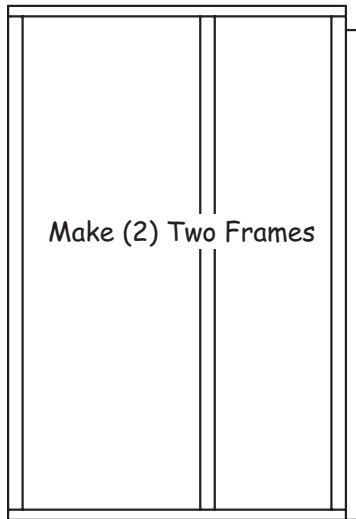
6. Install a 16" siding panel with a tongue edge. Cut edge will be flush with the header support.

71-1/2" Header Support

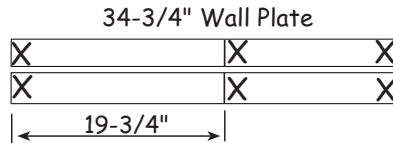


7. Install the last siding panel. The siding will extend 3-1/2" past the wall frame.

## Step 4 Assemble Door Wall - Doors Centered



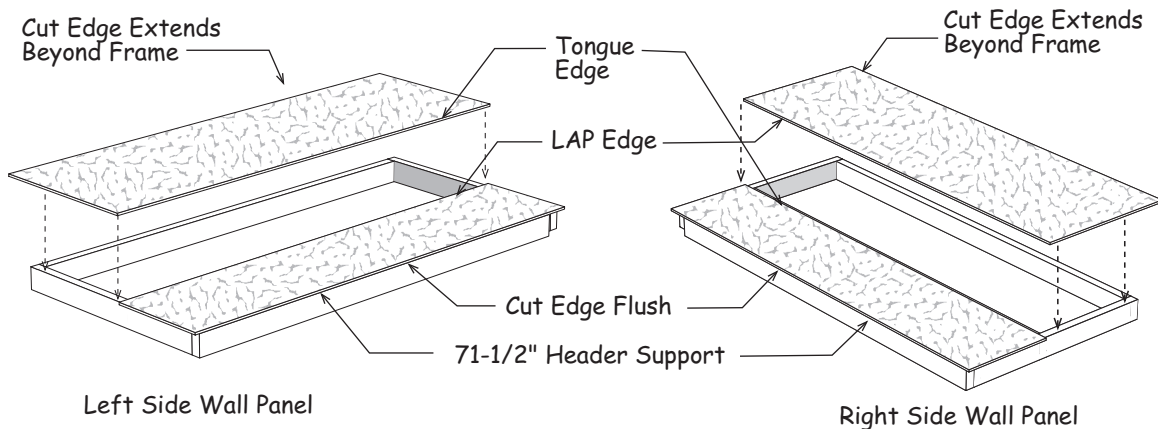
1. Locate (2) two 34-3/4" long 2x4s and position them together. Indicate with 'X' marks where studs will be located..



2. Install (3) three 72" wall studs between the 34-3/4" wall plates.
3. Locate (1) one 2x4-72" and cut to 71-1/2". Install as a header support on right side as shown and flush with bottom plate. Use 10d sinkers.
4. Locate (2) two 58-1/2" 2x4s and cut (1) one 34-3/4" plates from each. Repeat steps 2 and 3 to assemble another wall frame.

71-1/2" Header Support

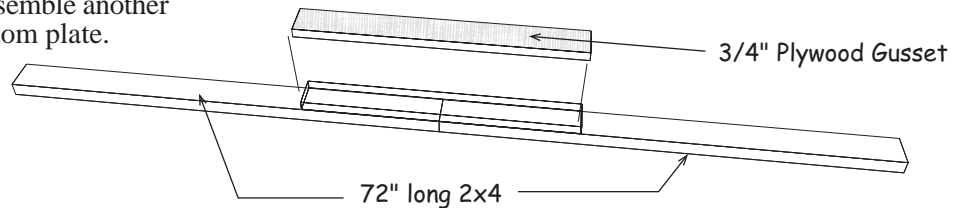
5. Select one frame and position so header support is on right.
6. Locate a 16" wide siding panel with a 'LAP' edge. Install this panel with the cut edge flush with the 2x4 header support. Bottom edge should be 3/4" below bottom plate. Only nail along cut edge until next panel is installed.
7. Cut a 48-3/4" wide siding panel in half lengthways.
8. Select cut panel with the 'Tongue' edge. Install this panel so cut edge extends 3-1/2" beyond the end of the frame and tongue edge under the 16" panel. The siding should extend 3/4" below the bottom plate. Nail both siding panels to frame.



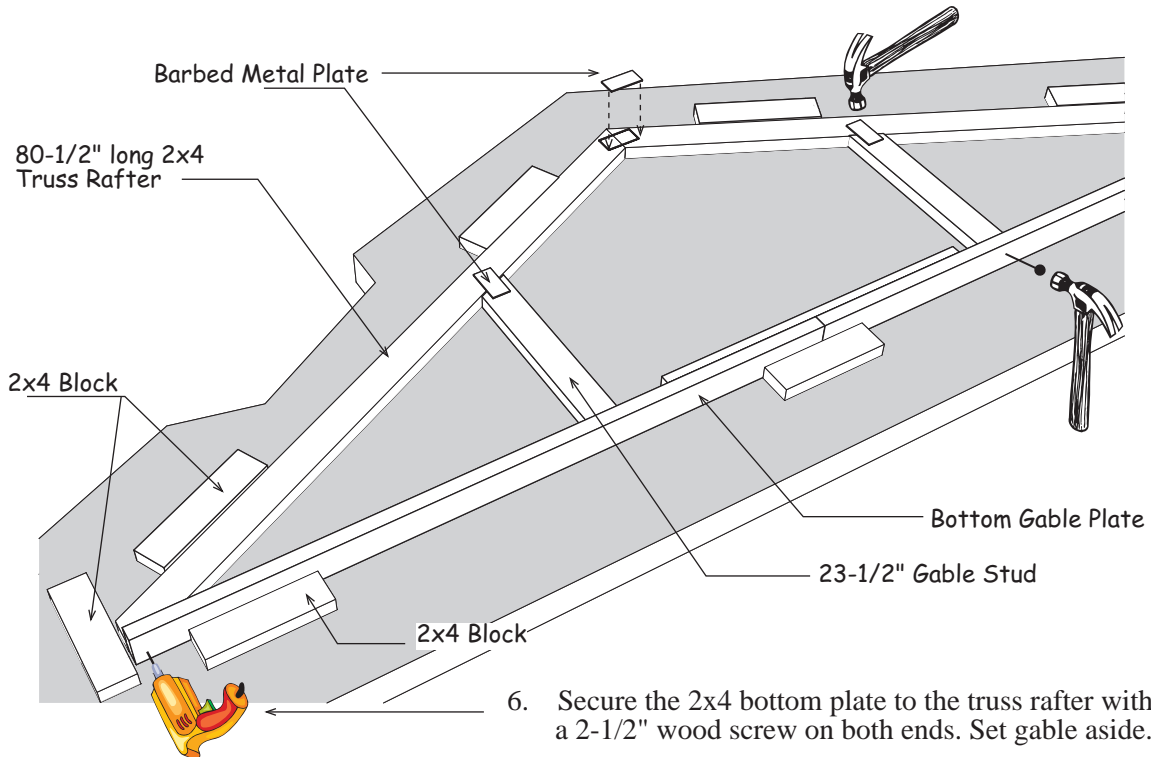
7. Locate a 16" wide siding panel with a 'Tongue' edge and the remaining 24" wide cut panel. Install these on remaining frame. **Make sure header support is oriented to the left.**

## Step 5 Assemble Roof Gables

1. Butt (2) two 72" long 2x4s together and secure them with a 3-1/2" x 31-3/4" long plywood gusset across the top where they butt together. Use glue and (12) twelve 6d common nails. This will be used as the bottom plate on the roof gables.
2. Repeat to assemble another 12' long bottom plate.



3. Place the bottom gable plate on the floor along with (2) two 80-1/2" long 2x4 truss rafters as shown below. Bottom plate will be on edge. There are short 2x4s, *that may have an angle on one end*, supplied in the kit. Use these to hold the truss rafter and bottom gable plate together by temporarily screwing the blocks to the floor using 2-1/2" screws. This will ensure that the gable frames and the trusses, *assembled next*, are identical.
4. Secure the top of the truss rafters together with a 1"x4" barbed metal drive-on plate.
5. Install (2) two 23-1/2" gable studs with angle cut at one end. Nail through the bottom plate with 10d sinkers and secure the top with barbed metal drive-on plates.

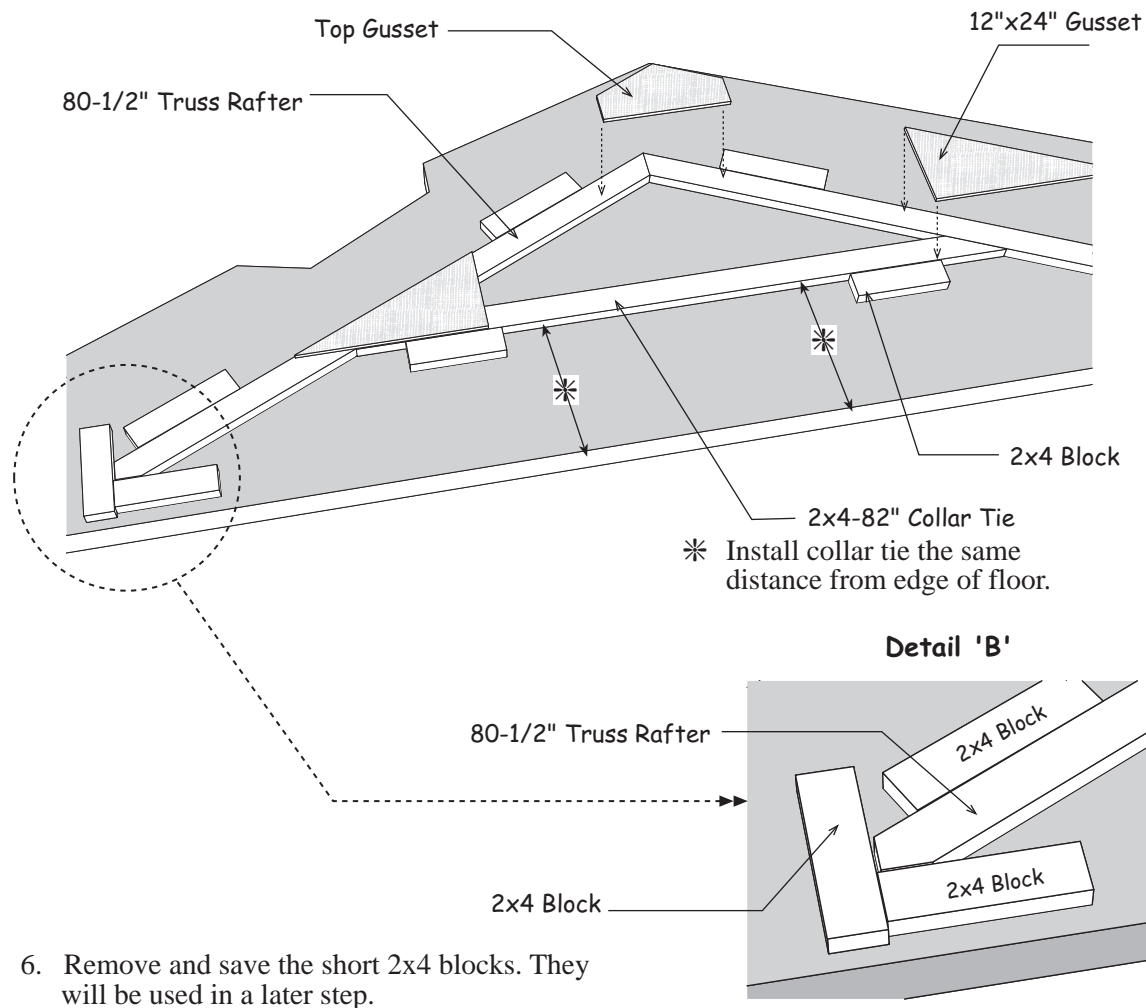


6. Secure the 2x4 bottom plate to the truss rafter with a 2-1/2" wood screw on both ends. Set gable aside.
7. Repeat steps 3-6 to assemble another gable.



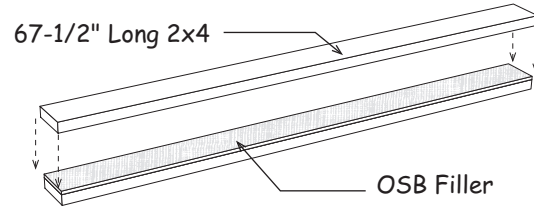
## Step 6 Assemble Roof Trusses

1. Place (2) two 80-1/2" long 2x4 truss rafters and a 82" long collar tie together as shown below. The collar tie has an angle cut on both ends. Reposition the lower 2x4 blocks to hold the truss rafter and collar tie in place. See **Detail B**.
2. Secure the 2x4 truss rafters at the top with a 8" x 20" wood gusset. Apply wood glue between the 2x4s and the gusset. Nail the gusset to the 2x4s with (14) fourteen 6d common nails,
3. Install (2) two 12"x24" gussets at ends of the collar tie. Glue and nail using 14 nails per gusset.
4. Turn this truss over and apply wood gussets to the opposite side.
5. Repeat to assemble (4) four more trusses.

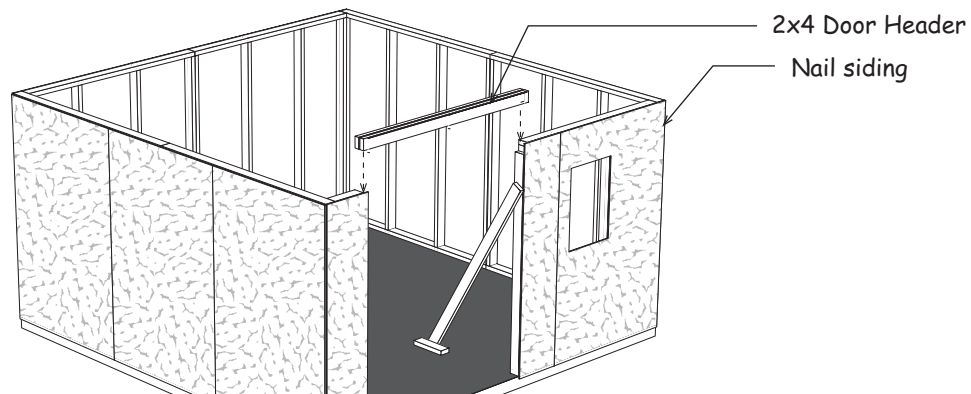


## Step 7 Set Walls

1. Gather (2) two 67-1/2" long 2x4 boards and a 3-1/4" x 67-1/4" OSB filler panel. Glue both sides of OSB. Nail header together from both sides with 10d sinkers staggered 6" apart.

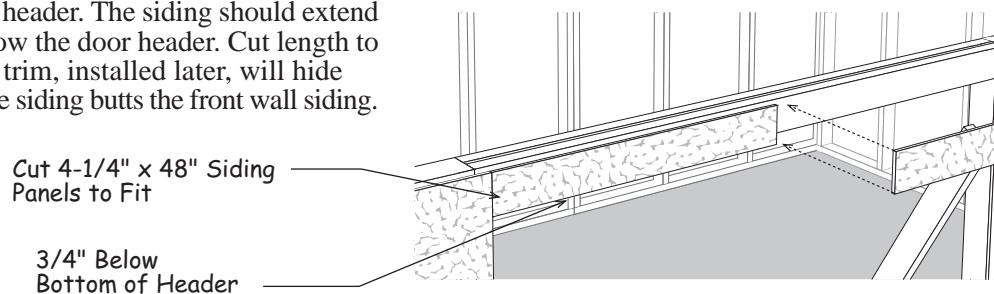


2. Erect wall panels. **IMPORTANT make sure walls are plumb and square.** Secure together at the corners using (4) four 10d sinkers per corner.
3. Nail along siding edge where it overlaps front and back walls at corners.
4. Install the 2x4 door header between the front wall panels. Nail through the wall stud into the ends of the header. Toenail into the top wall plates.
5. Remove the center (2) two 2x4-84" boards from pallet and temporarily install at both sides of the door opening to hold the wall straight. Alternatively you can use 2x4-72" boards that will be used later for tie plates.
6. Nail all wall panels to the floor through the bottom plate. Space 10d sinkers 24" apart.




*Drawing shows a building with the doors offset.*

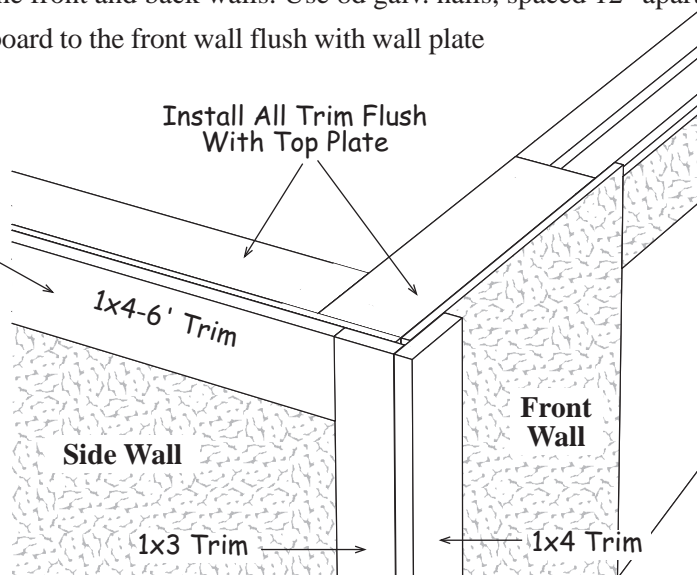
7. Install (2) two 4-1/4" siding panels over the door header. The siding should extend 3/4" below the door header. Cut length to fit. Wall trim, installed later, will hide where the siding butts the front wall siding.



## Step 8 Install White Pine Trim

 *Tip; Paint the siding and trim boards before installing the trim.*

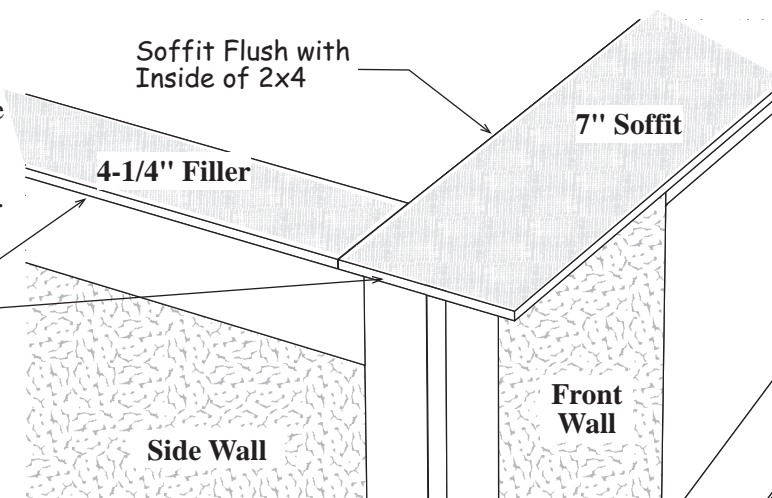
1. Install (2) two 75-3/4" long 1x3 corner trim boards to the side wall flush with the top 2x4 wall plate and flush with siding on the front and back walls. Use 8d galv. nails, spaced 12" apart.
2. Install a 75-3/4" long 1x4 trim board to the front wall flush with wall plate and with 1x3 trim.
3. Butt a 1x4-6' board against 1x3 corner trim and flush with top plate. Nail along top with 8d galv. nails.
4. Cut a second 1x4-6' trim board to finish at opposite corner.
5. Install trim on the opposite side wall and corner trim on front and back walls.



## Step 9 Install Primed Soffit and Filler

1. Locate (1) one 7" wide x 48-3/4" long siding panel and cut in half. Install one half over the front wall with the primed side facing down. Cut edges should be flush with the inside of the top 2x4 wall plate and flush with the trim on the side wall. Tack the soffit with a couple 6d common nails. Installing 2x4 tie plates in a later step will provide more nailing.
2. Install (3) three more soffit panels cutting the last panel flush with the side wall trim.
3. Repeat to install 7" soffit boards on the back wall.
4. Install (3) three 4-1/4" wide x 48-3/4" filler panels over the side walls. Install the filler flush with the 1x4 trim. Cut last filler to fit

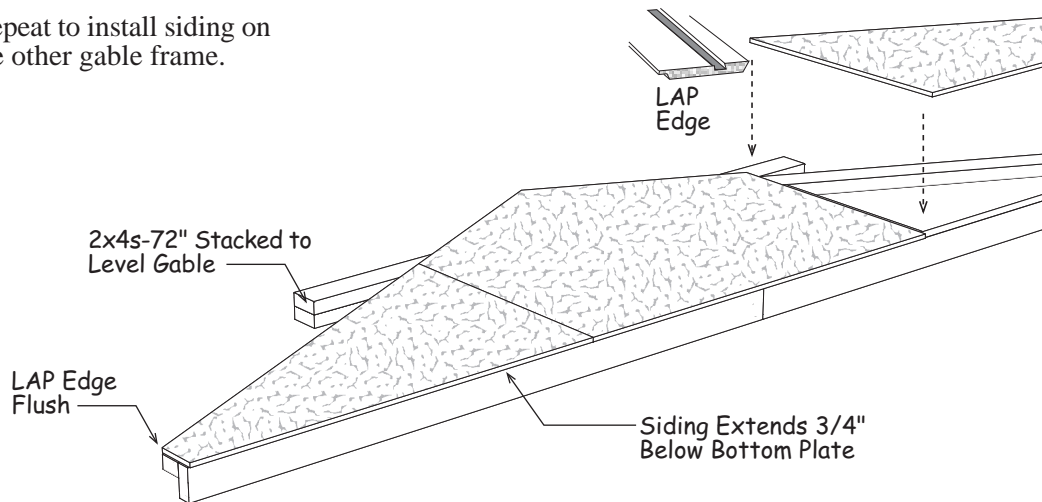
Soffit and Filler Flush with Side Wall Trim



5. Repeat to install filler on the opposite wall.

## Step 10 Install Siding on Gables

1. Select one of the gable frames. Turn the gable over so bottom plate is on edge on floor. Support gable studs and rafters with (2) two 2x4-72" boards stacked. This will give you a solid surface when nailing siding.
2. Install left gable siding panel with the 'LAP' edge flush with the end of of bottom plate. Use 6d galv. nails across the top of the 2x4 frame and gable studs. Use 8d galv. nails across the bottom plate. The siding will extend 3/4" below the bottom 2x4.
3. Install center and right panels. Cut last panel flush with end of bottom plate.
4. Repeat to install siding on the other gable frame.

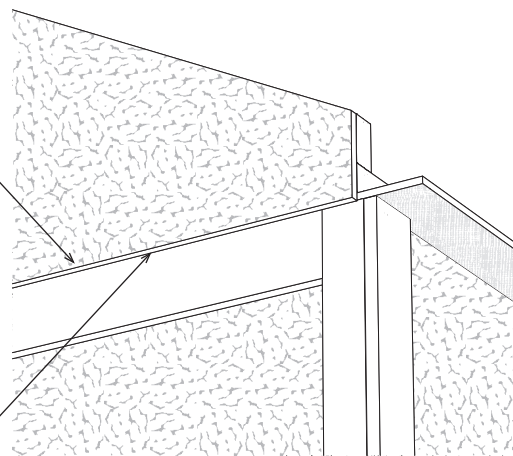


## Step 11 Install Gables

1. Install a gable on the left sidewall. The gable siding will extend over the 1x4 trim on the lower wall. Secure gable to wall by nailing through the gable plate with 10d sinkers. Nail siding along the 1x4 trim board with 8d galv. nails.

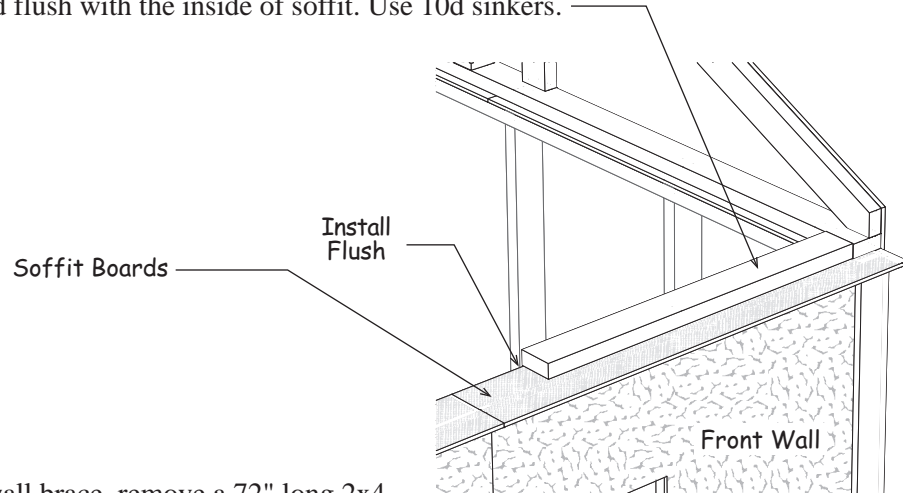
2. Install gable on the opposite sidewall.

**Important: Bottom edge of siding extends over 1x4 trim. Paint this edge.**

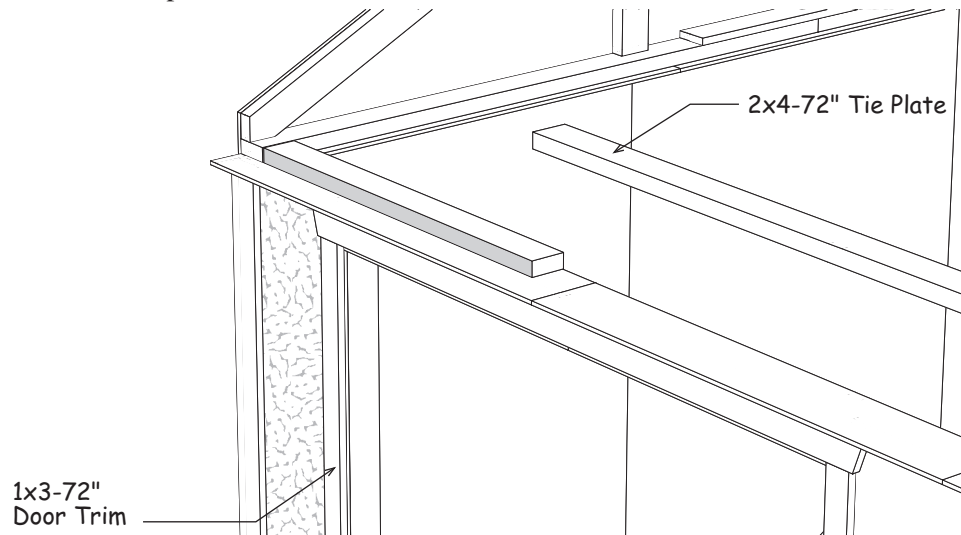


## Step 12 Install 2x4 Tie Plates and Door Trim

1. Cut a 2x4-72" in half and install one 3' piece over the front wall, against the gable plate and flush with the inside of soffit. Use 10d sinkers.



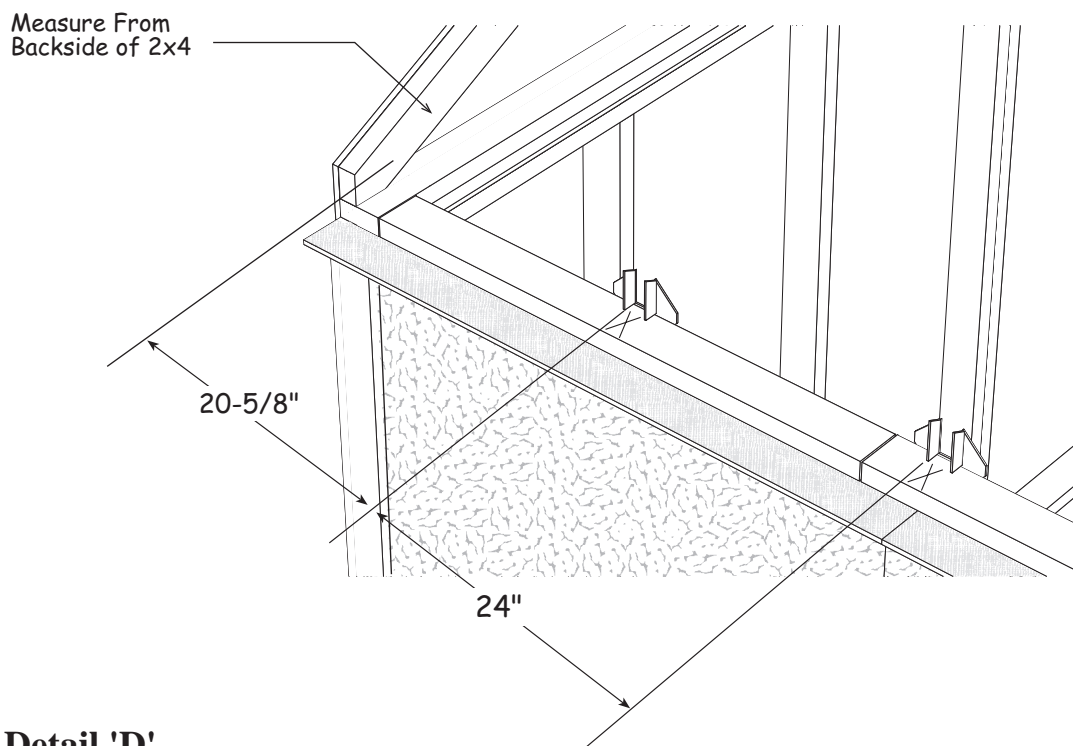
2. If used for a wall brace, remove a 72" long 2x4 and install this next to the 3' long 2x4. Cut a 3' piece to fit against opposite gable.
3. Repeat to install tie plates on the back wall.



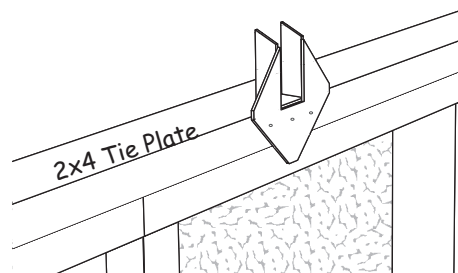
4. Install (2) two 1x3x72" boards along each side of the door opening, flush with the bottom edge of the siding. Tack these boards with a couple nails; you may want to move the trim later when you install the doors. Use 8d galv. nails.
5. Install a 1x3x72" board across the top of the side trim.

## Step 13 Layout Roof Trusses

1. Layout the truss spacing from the left sidewall of the building. Measure from the backside of the 2x4 gable frame when marking the location of the first truss. Continue 24" spacing to other gable. **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. Install metal hangers to the tie plate with 6d common nails . The opening should line up with the 'X' mark, the bottom of the opening, flush with the 2x4 tie plate. **Detail 'D'**.



### Detail 'D'



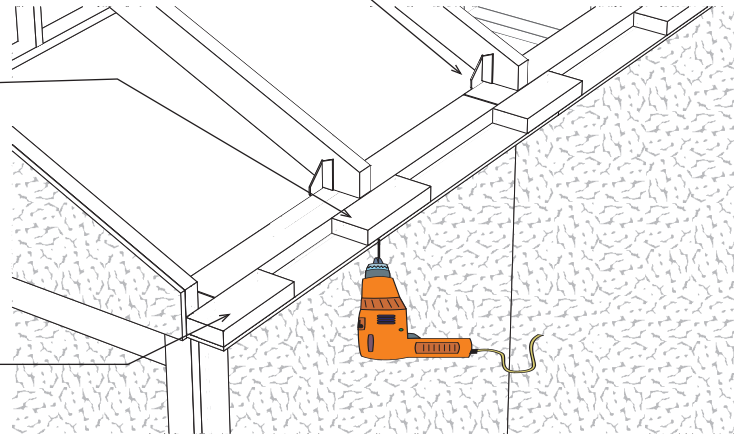
Inside of Building

## Step 14 Set Roof Trusses and Soffit Blocks

1. Set roof trusses. Secure trusses to metal hangers with 6d common nails.

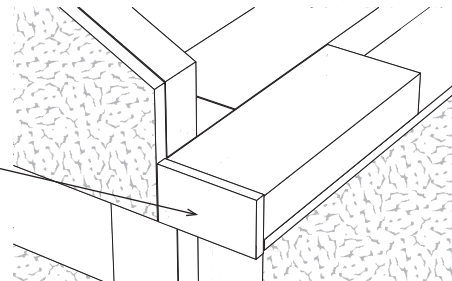
2. Install short 2x4 blocks in front of each truss. Secure 2x4 blocks to the soffit panel using (2) two 1-1/2" long exterior screws.

3. Install a 2x4 block at each end of the soffit, flush with the 2x4 gable frame.



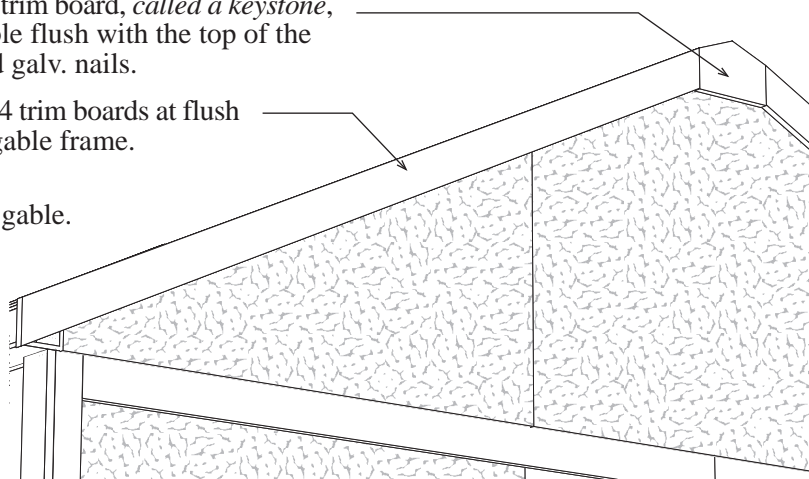
4. Install small primed siding fillers, *packed with the hardware*, over the 2x4 soffit blocks. Siding fillers will be flush with the gable siding. Use 6d galv. nails.

Siding Filler



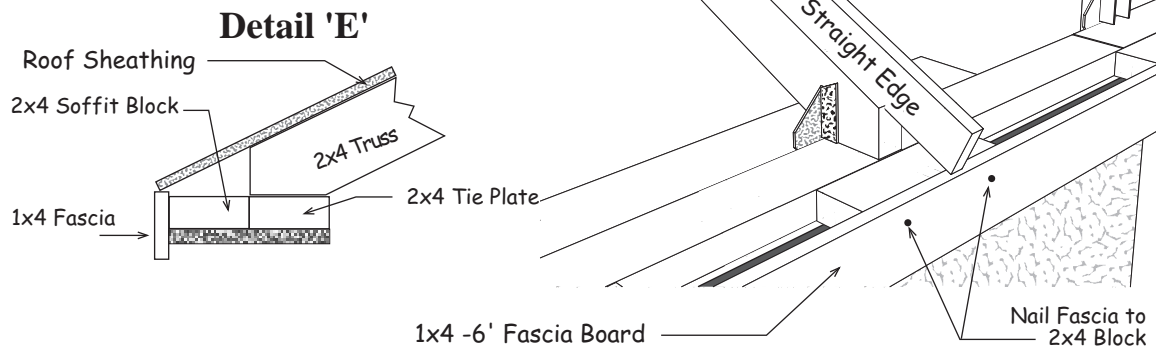
## Step 15 Install Gable Trim

1. Install a 8-1/2" long trim board, *called a keystone*, at the top of the gable flush with the top of the gable frame. Use 8d galv. nails.
2. Install a 81" long 1x4 trim boards at flush with the top of the gable frame. Use 8d galv. nails.
3. Repeat on opposite gable.



## Step 16 Install 1x4 Fascia and Roof Sheathing

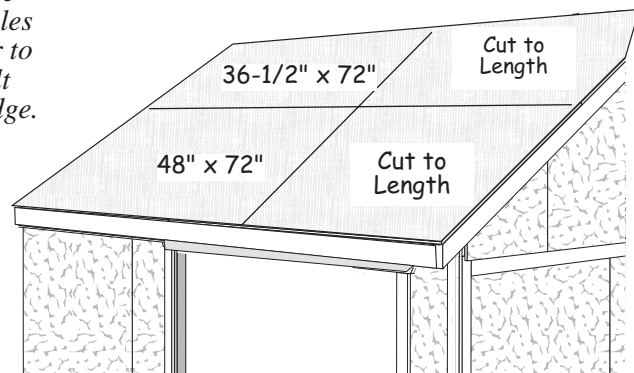
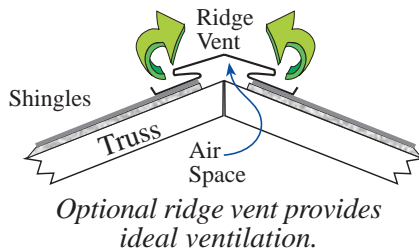
1. Starting at the front left of the building, install 1x4-6' white pine fascia board against the left gable trim. Install the fascia so the bottom edge of the roof sheathing will rest on the edge of the 1x4. **See Detail 'E'**. Use a straight edge to align the 1x4 boards with the top of the trusses. Install fascia with 8d galv. nails
2. Select a 1x4-7' white pine fascia board next. Cut this board to fit against right gable trim.
3. Repeat to install fascia on rear of building.



2. Make sure the trusses and gables are plumb and the roof sheathing meets at center of 3rd truss. Starting at the left end of the building, install a 48"x72" OSB roof panel flush with the 1x4 trim on the gable. See detail below. Use 7d sinkers spaced 12" apart.
3. Select a 48"x83-1/2" sheet and install next. Cut this panel to be flush with right gable trim.
4. Install the top row of roof sheathing. The roof sheathing will be about 1" below the ridge to allow for optional ventilation. Cut the 36-1/2"x83-1/2" sheet to fit.
5. Repeat to on opposite side.

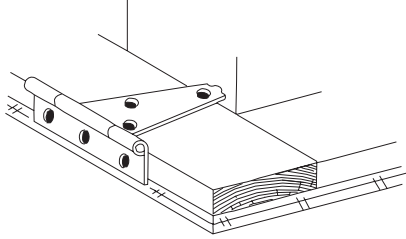
### Install Roofing — Not Supplied in Kit

*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.*

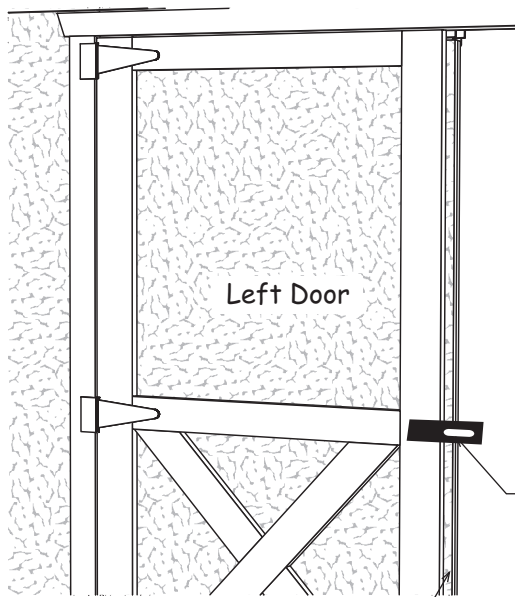




## Step 17 Install Doors & Hardware



1. Locate the door that has a 2x4 fastened, *on edge*, to the back side of the door. When doors are closed this 2x4 will be in the center where doors meet. Lay the door with the trim facing up and install (3) three 5" hinges to the right side. To position the hinge properly, hold the rectangular plate against the frame. Use 1-1/4" black screws.
2. Install hinges on the left side of the other door.

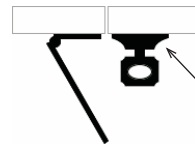


3. Before fastening the hinges to the side trim, temporarily prop the doors in the opening. Leave a space at the top and bottom of the doors and between the doors and the side trim to allow room for the doors to expand due to humidity.

If your door opening is out of square, the space around the doors will not be even. You can remove and re-position the side trim to make allowances for this. The side trim does not have to be flush with the frame of the door opening. You can move the trim in or out to make the door spacing equal.

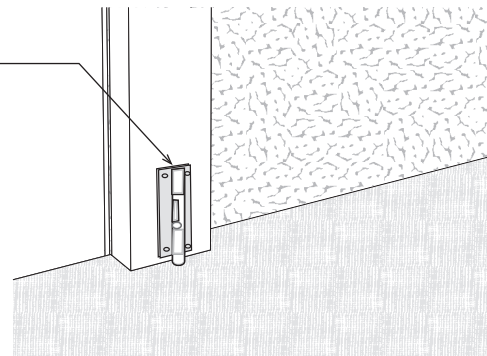
4. Determine position of hinges and install to side trim with 2" screws.
5. Install door hasp on double doors. When properly installed the hasp will fold in half to receive locking latch and the screw heads will be covered.

Siding Extends Past Trim



Barrel Bolt on the back of left door

6. Install a barrel bolt on the lower back of the door to secure this door in place when closed. You will need to drill a hole for the round shaft to drop into.
7. Install another barrel bolt at the top of the door.



**Material Packaged In Component Kit**

5	Collar Ties	2x4	82"	4	1 lb. box	10d	Sinkers
14	Truss Rafters	2x4	80-1/2"	4	1 lb. box	8d	Galv.
48	Wall Studs	2x4	72"	2	1 lb. box	7d	Sinkers
4	Wall Plates	2x4	68-1/2"	1	1 lb. box	6d	Galv.
2	Wall Plates	2x4	67-1/2"	4	1 lb. box	6d	Common
2	Wall Plates	2x4	58-1/2"	50	ea.	1-1/2"	Exterior Screws
2	Wall Plates	2x4	34-3/4"	25	ea.	2-1/2"	Deck Screws
4	Gable Studs	2x4	23-1/2"	6	ea.	5"	Door Hinges
10	Truss Gussets	7/16"	10" x 24"	1	ea.	4-1/2"	Door Latch
20	Truss Gussets	7/16"	12" x 24"	2	ea.	6"	Barrel Bolts
7	Soffit Panels	3/8"	7" x 48"	25	ea.	2"	Hinge Screws
8	Filler Panels	3/8"	4-1/4" x 48"	25	ea.	1-1/4"	Hinge Screws
2	Fascia Boards	1x4	x 84"	6	ea.	1x4	Metal Plates
2	Fascia Boards	1x4	x 72"	10	ea.	2x4	Metal Truss Hangers
10	Siding Panels	48"	x 75-3/4"	2	ea.		Bottle Glue
2	Siding Panels	16"	x 75-3/4"	2	ea.		Plywood Gussets 3-1/2" x 32"
2	Gable Siding Panels	48"	x 40"	1	ea.		OSB Filler 3-1/4" x 67-1/4"
4	Gable Siding Panels	48"	x 28"	18	ea.		2x4 Truss Jig Blocks 6" to 8"
2	Roof Sheathing	48"	x 72"	2	ea.	1x6	Keystone 8-1/2"
2	Roof Sheathing	48"	x 83-1/2"	4	ea.	1x4	Gable Trim 81"
2	Roof Sheathing	36-1/2"	x 72"	4	ea.	1x4	Corner Trim 75-3/4"
2	Roof Sheathing	36-1/2"	x 83-1/2"	4	ea.	1x3	Corner Trim 75-3/4"
<b>Material not used in this model</b>				4	ea.	1x4	Wall Trim 72"
8	<b>Boards</b>	<b>2x3</b>	<b>x 42-3/8"</b>	3	ea.	1x3	Door Trim 72"
4	<b>Soffit Boards</b>	<b>3/8"</b>	<b>x 7" x 48"</b>	2	ea.		Pre-built Door 32" x 71-1/2"
				4	ea.		Gable Siding Fillers 2"x3"

Qty.	Optional Shingles
7 bdl.	Roof Shingles
6 pcs.	Roof 'drip' Edge 10'

**Install Shingles. Purchased Separately**

Install metal roof edge the perimeter of the building. 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 online.