BEST BARNS
Quality Do-it-yourself Barn Kits

Assembly Book

Revised January 27, 2012

the Hanover 12' x 24'

Manufactured by Reynolds Building Systems, Inc.

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

Important Information About Your Shed Kit

Thank you for purchasing our Hanover kit. These instructions will construct a 12'x24' building. **If you received two books, use the one with the latest revision date.**

The material that is included in our kit is listed on the back page. The OSB siding, roof sheathing and the optional floor package, *if ordered,* will be supplied by a local supplier.

Our component kit does not include the shingles or vinyl siding, giving you a choice of color and quality. Install vinyl siding according to the manufacturer's instructions.

Our framing lumber is imported to provide you the highest quality available. However, if you need to replace any lumber for any reason please do so and we will reimburse you.

Because this kit is prepped for vinyl siding, there are some 16" wide siding panels and trim boards that will not be used in the constructions of this model.

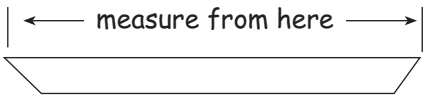
IMPORTANT: Unpack the material from the pallet, then unscrew the bottom 2x4s from the pallet runners. The bit for the screws is packed in the hardware bag.

Stacking the boards, according to size, will make them easier to find when needed. Some boards have colored ends. All the wall studs 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



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

Tool List

- ❑ Hammer & Hand Saw
- ❑ Framing Square & Level
- ❑ Power Circular Saw
- ❑ Power Drill/screwdriver
- ❑ Measuring Tape
- ❑ 2 - 8' Step Ladders

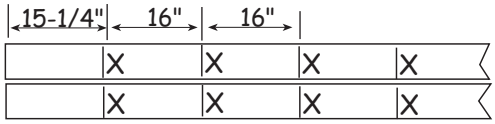
Always wear safety glasses when cutting or nailing!

Constructing Details for Deluxe Floor System

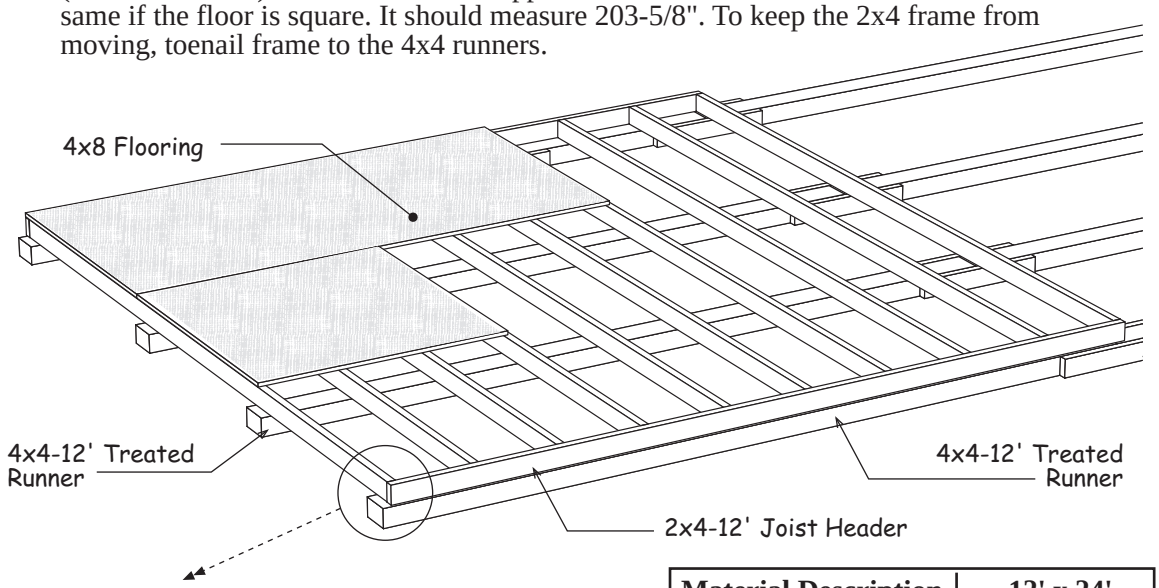
Deluxe floors include 4x4 runners, standard floors do not

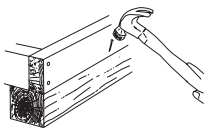
Foundation size is 12'-0" x 24'-0". Check local building codes in your area, the construction may have to change. For a concrete slab, install sill sealer as a moisture barrier between the concrete and the wall plates. Foam sill sealer can be purchased at home centers in rolls 3-1/2" or wider.

1. Cut (20) twenty 2x4-12' treated boards to 11' 8-7/8". These will be the floor joists.
2. Place 4x4-12' treated timbers on the ground. Cut (2) two 2x4-8' boards into 2' long blocks to secure the 4x4s where they butt together.
3. Cut (4) four 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.



4. Install the floor joists cut above between the 12' joist headers. Build (2) two sections measuring 12' x 12'. Secure joist with 16d galv. deck nails.
5. Place floor sections over the 4x4s. Square floor assembly. Measure the floor diagonally (corner to corner). Then measure the opposite corners. These measurements will be the same if the floor is square. It should measure 203-5/8". To keep the 2x4 frame from moving, toenail frame to the 4x4 runners.





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

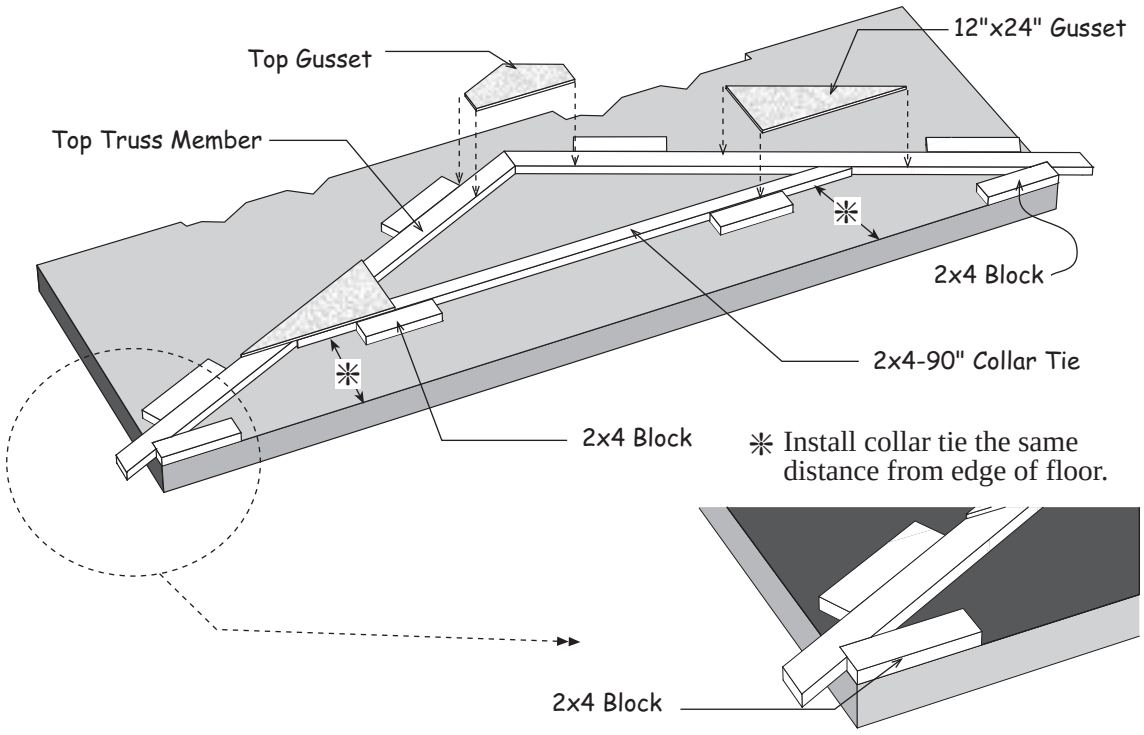
Material Description	12' x 24'
2x4 Blocks	2 pcs. 8'
2x4 Joist Headers	4 pcs. 12'
2x4 Floor Joist	20 pcs. 12'
4x4 Treated Runners	8 pcs. 12'
Flooring 5/8" or 3/4"	9 pcs. 4x8
Screw Floor Nails	4 lb. 8d
Galv. Box Nails	5 lb. 16d

Step 1 Assemble Trusses

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 kit. This will insure that all the trusses are assembled the same.

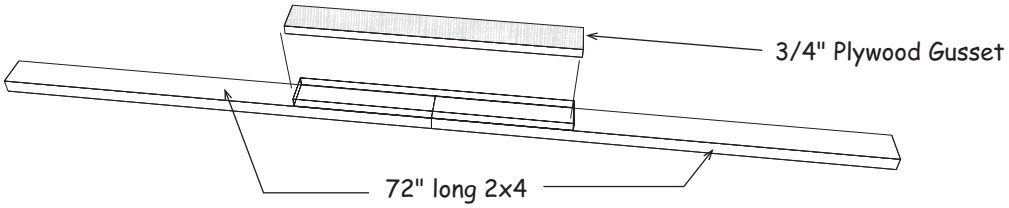
1. Screw (2) two 2x4 blocks to the 12' wide end of the floor at the top corner, *see below.*
2. Place two truss legs together. Position the notch in the 2x4s (called a bird's mouth) into the 2x4 blocks. **Important:** You must have 12'-0" between the bird's mouth. Affix more 2x4 blocks above the truss legs to hold the truss members in place.
3. 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.
4. Install a 2x4-90" collar tie between the 2x4 boards. Hold in place with 2x4 blocks. Install 12"x24" gussets to the ends of the collar tie. Glue and nail using 14 nails per gusset.
5. Turn this truss over and apply wood gussets to the opposite side.
6. Repeat 2 through 5 to assemble (10) ten more trusses.

Do Not remove blocks from floor until completing **Step 2**.

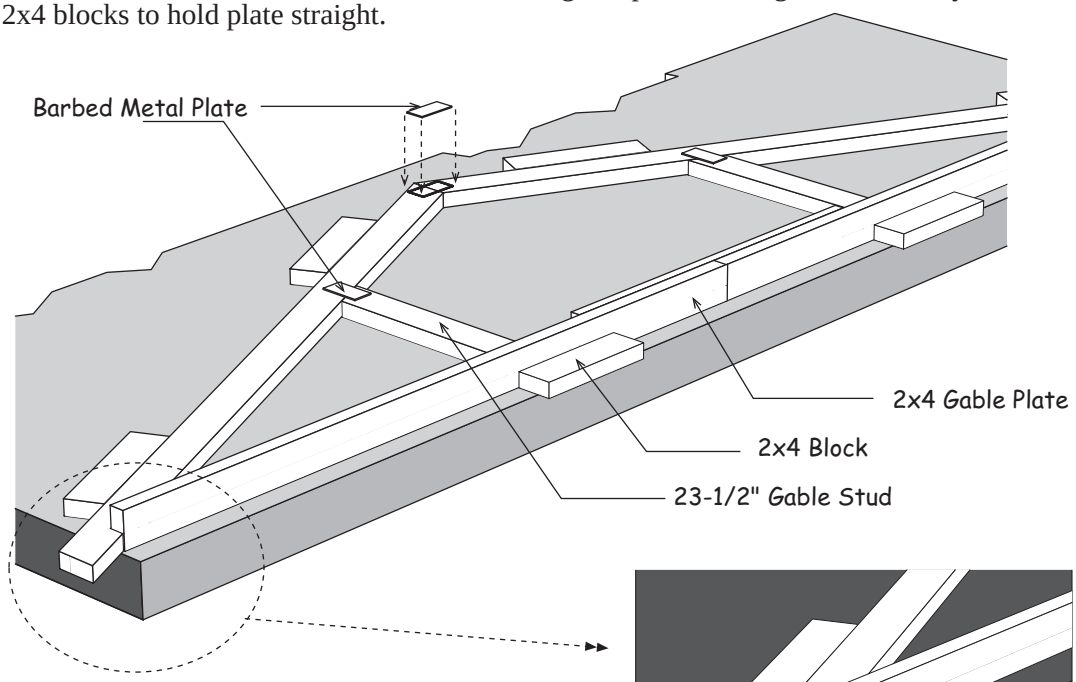


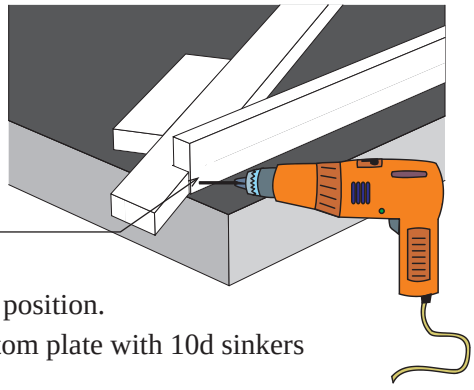
Step 2 Assemble Roof Gables

1. Butt (2) two 72" long 2x4s together and secure by nailing a 3-1/2" x 31-3/4" long plywood gusset across the top where they butt together. Use glue and 6d common nails.



2. Place (2) two truss members in the jig. Secure the top together with a barbed metal plate.
3. Remove the 2x4 blocks at the corners of the floor and insert the gable plate assembled above into the bird's month. Make sure the 2x4 gable plate is straight. If necessary, tack 2x4 blocks to hold plate straight.



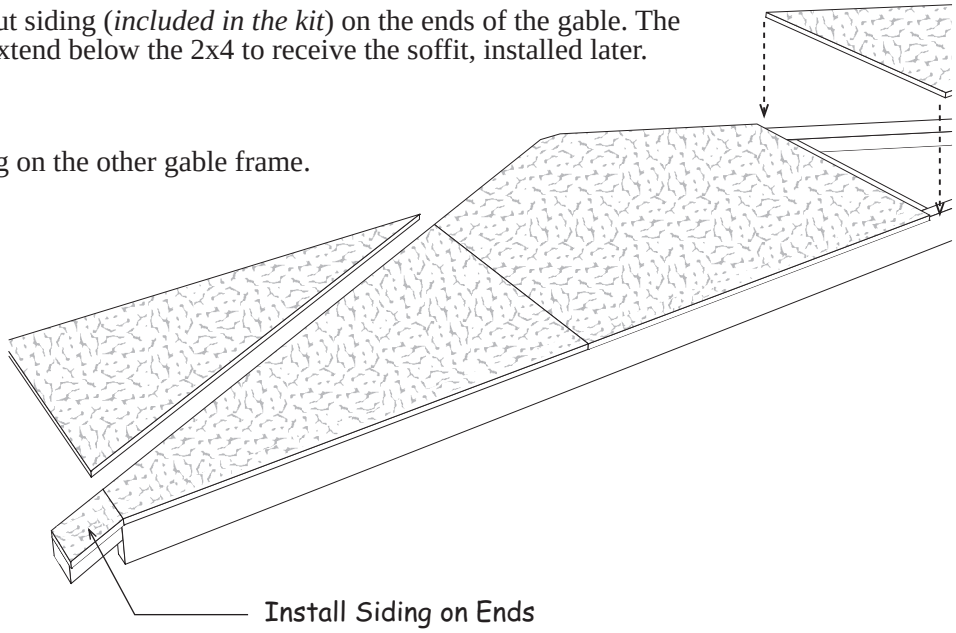


4. Remove the two 2x4 blocks that held the collar tie in position.
5. Install 2x4x23-1/2" gable studs. Nail through the bottom plate with 10d sinkers and secure the top with barbed metal drive-on plates.

7. Repeat to assemble another gable. Remove 2x4 blocks.

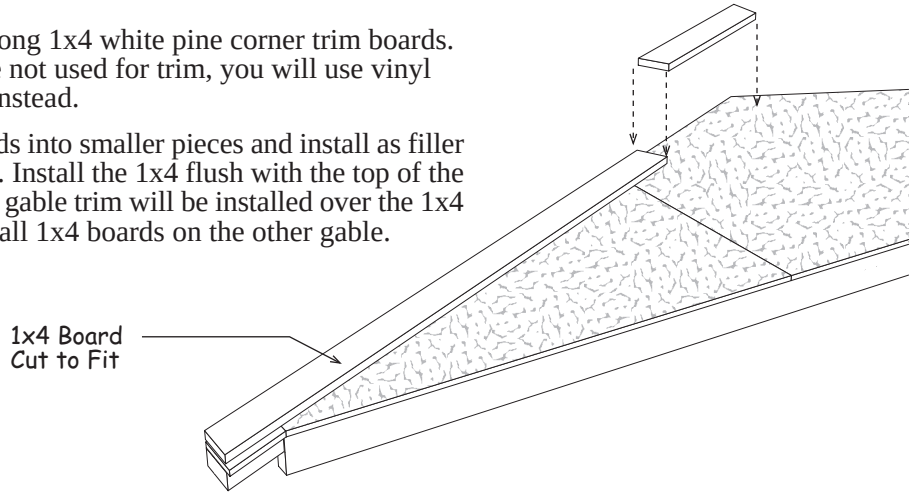
Step 3A Install Siding on Gables

1. Select one of the gable frames, Turn the gable over letting the bottom plate overhang the floor so the gable lays flat.
2. Cut a siding panel to a length of 40". This will be used for the center of the gable. Cut the remaining siding panel in half for the ends of the gable.
3. Cut siding flush with the gable frame. Install siding using 6d galv. nails.
4. Install pre-cut siding (*included in the kit*) on the ends of the gable. The siding will extend below the 2x4 to receive the soffit, installed later.
5. Install siding on the other gable frame.



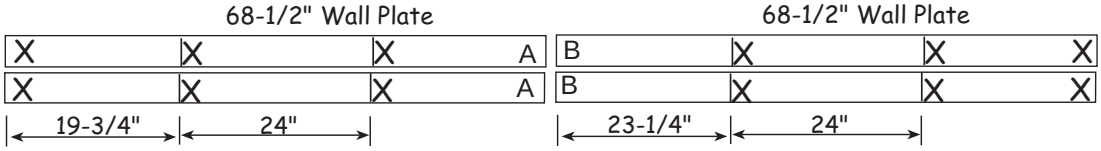
Step 3B Install 1x4 Filler on Rear Gable

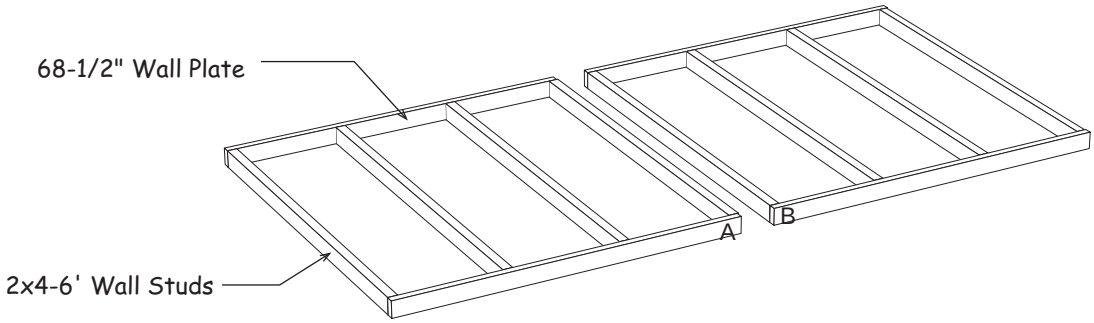
1. Locate 75-3/4" long 1x4 white pine corner trim boards. These boards are not used for trim, you will use vinyl outside corners instead.
2. Cut several boards into smaller pieces and install as filler on the rear gable. Install the 1x4 flush with the top of the gable frame. 1x6 gable trim will be installed over the 1x4 later. Do not install 1x4 boards on the other gable.



Step 4 Assemble 12' Back Wall

1. Position 2x4-68-1/2" boards (green ends) 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'.



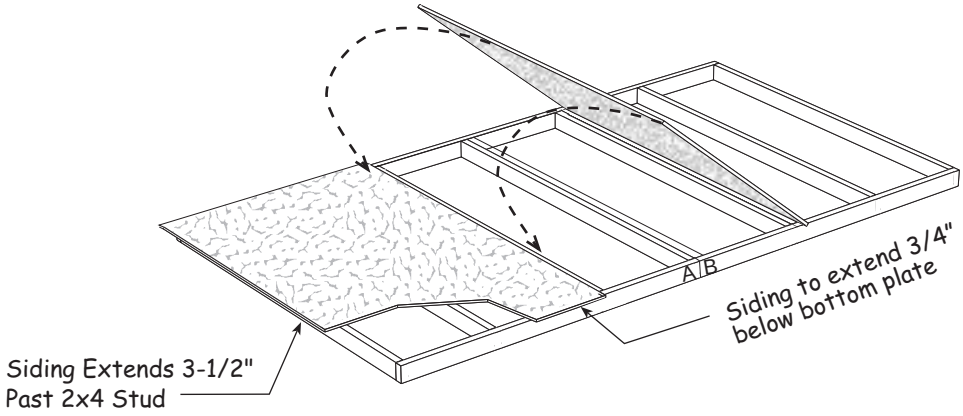


2. Install 72" wall studs between the top and bottom plates. Assemble wall frames with 10d sinkers, two (2) nails at each stud end. Nail both wall frames together with 10d sinkers.

3. Square wall frame. *Measure diagonally (corner to corner). The measurements will be the same when the wall is square.*

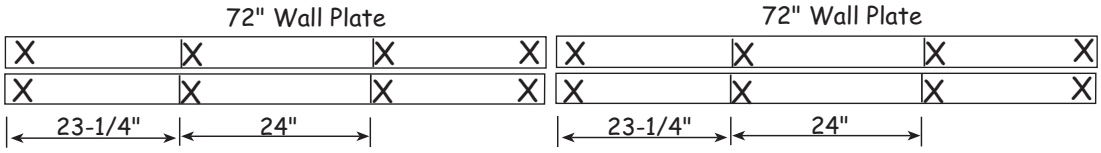
4. Cut (3) three siding panels to a length of 75-3/4". Install the 1st siding panel extending 3-1/2" past the wall frame. The bottom will extend 3/4" below the bottom plate.

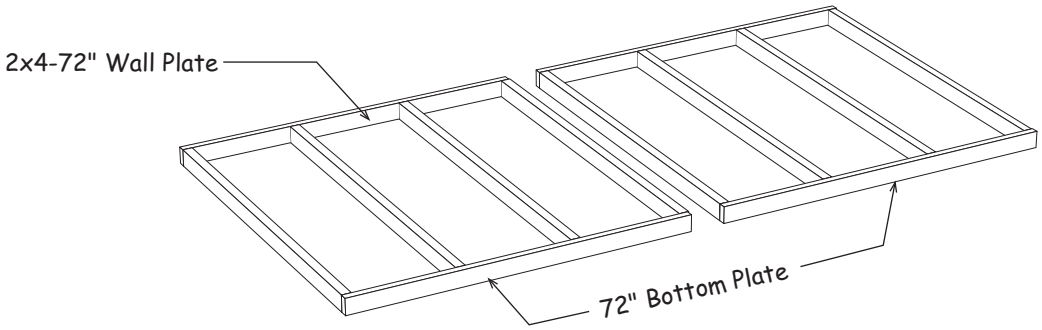
5. Install the other siding panels. The last panel will extend 3-1/2" beyond the wall frame.



Step 5 Assemble 12' Sidewalls Frames

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

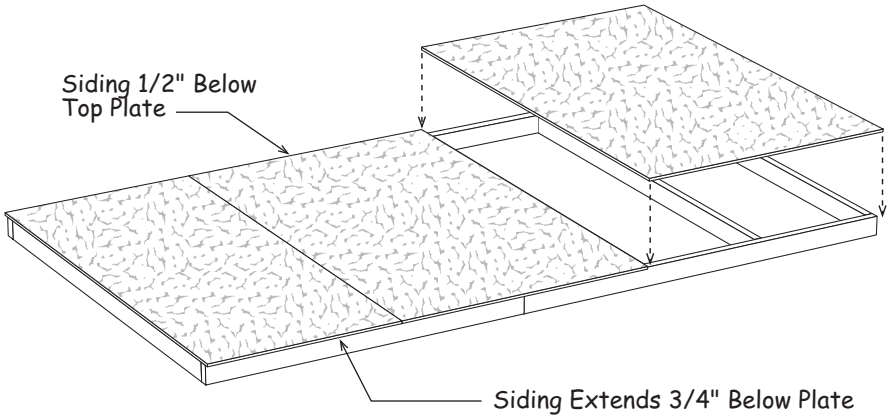




2. Install 2x4-6' wall studs between the top and bottom plates. Nail both wall frames together.
3. Assemble (3) three more 12' long sidewall frames.

Step 6 Apply Siding to Sidewall Frames

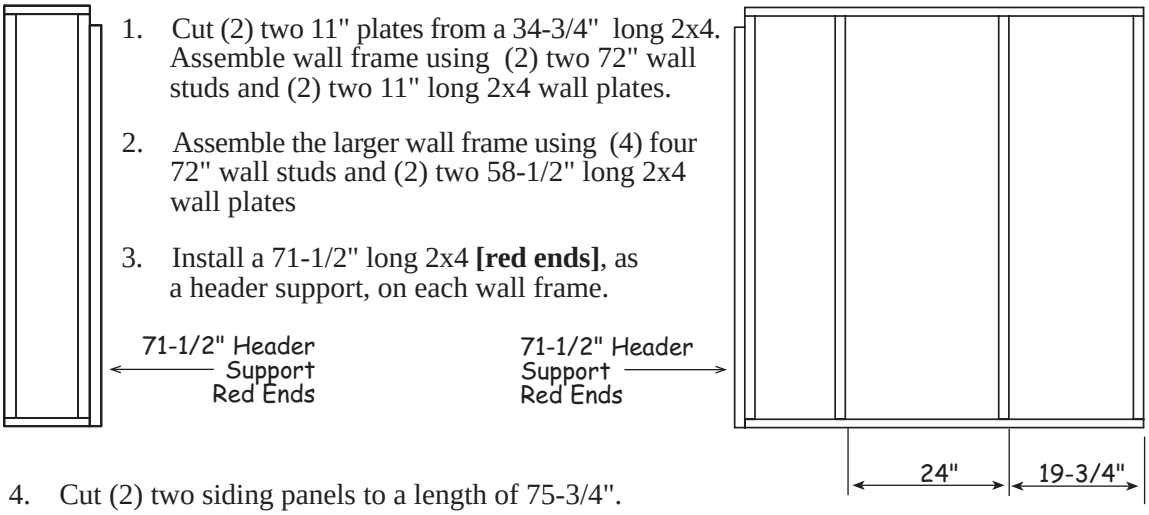
1. Square wall frame.
2. Cut (12) twelve siding panels to a length of 75-1/4". Install the 1st siding panel flush the side of the wall frame. The bottom will extend 3/4" below the bottom plate.
3. Install (2) two more siding panels.



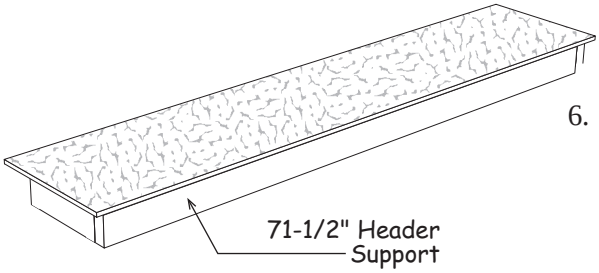
4. Repeat to apply siding to the other sidewall frames.

Step 7 Assemble Door Wall - Offset Doors

☞ ***To position the door opening in the center of the wall, go to Step 8. 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.***



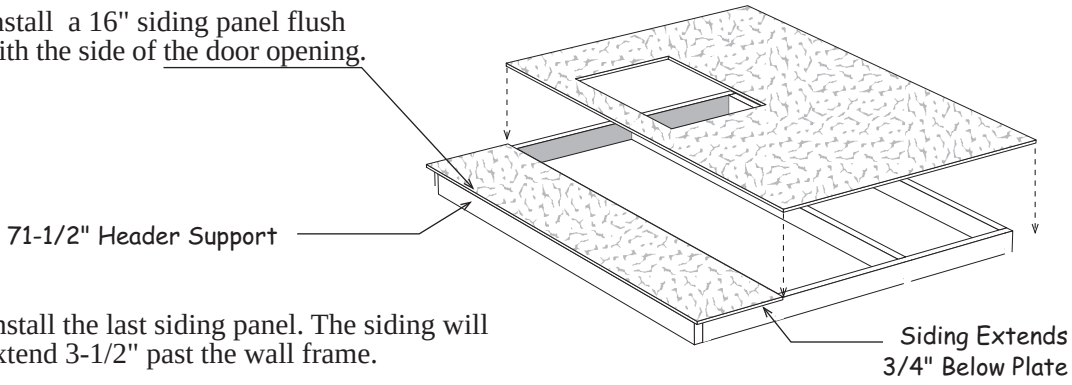
1. Cut (2) two 11" plates from a 34-3/4" long 2x4. Assemble wall frame using (2) two 72" wall studs and (2) two 11" long 2x4 wall plates.
2. Assemble the larger wall frame using (4) four 72" wall studs and (2) two 58-1/2" long 2x4 wall plates
3. Install a 71-1/2" long 2x4 **[red ends]**, as a header support, on each wall frame.
4. Cut (2) two siding panels to a length of 75-3/4".
5. Select one of the panels and cut (2) two panels to a width of 16".



6. Install a 16" wide siding panel flush with the door opening. The siding will extend 3-1/2" beyond the wall frame and extending 3/4" below the bottom plate.

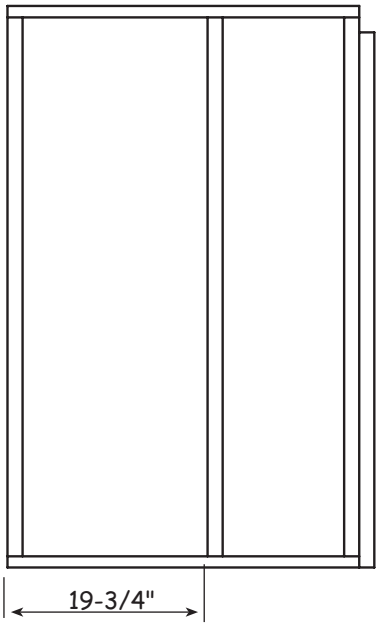
If installing the optional window you can cut the opening in the siding.

7. Install a 16" siding panel flush with the side of the door opening.



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

Step 8 Assemble Door Wall - Doors Centered

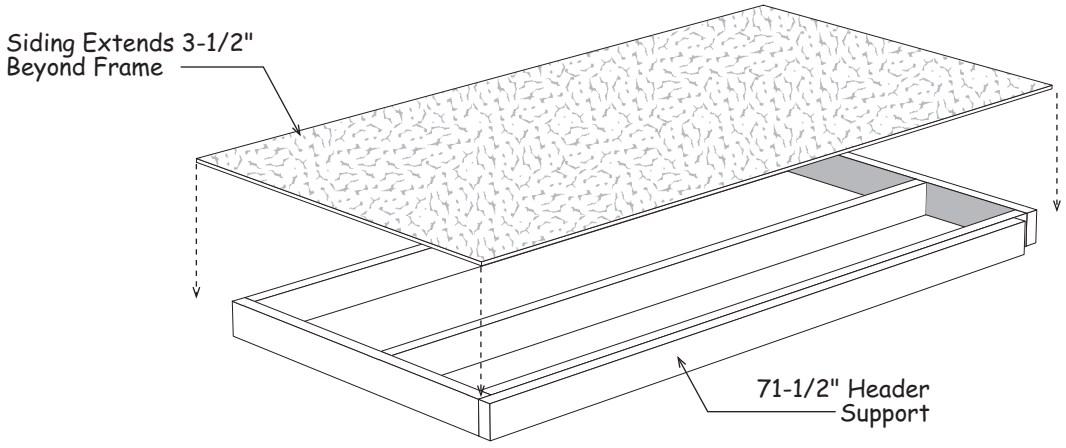


1. Assemble a wall frame using (3) three 72" wall studs and (2) two 34-3/4" long 2x4 wall plates. Use 10d sinkers.
2. Install a 71-1/2" long 2x4 **[red end]**, as a header support, on each wall frame.

3. Cut (2) two more 34-3/4" plates from 58-1/2" long 2x4s and assemble another wall frame.

4. Cut (2) two siding panels to a length of 75-3/4" and the width to 36-1/4".

5. Install a siding panel flush with the header support. The siding will edge extend 3-1/2" beyond the end of the frame. The siding should extend 3/4' below the bottom plate.

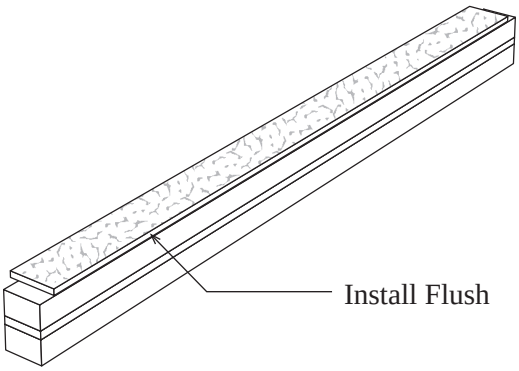


6. Install the remaining siding on the other front wall frame.

Step 9A Change Door Header Siding

1. Remove primed siding from door header.

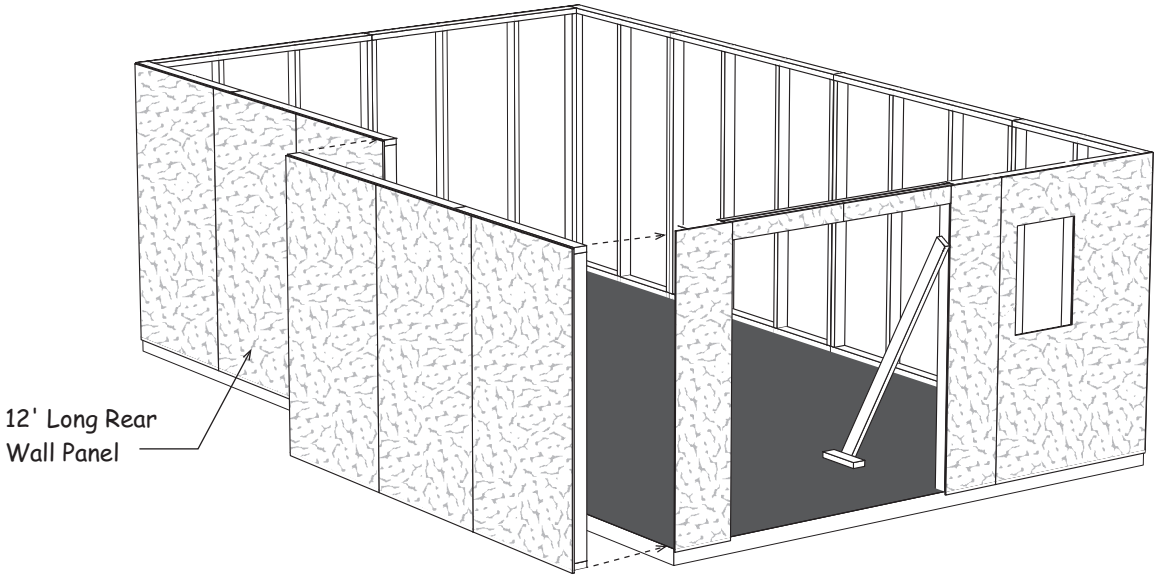
2. Using cutoff siding, cut and install a 4-1/4" x 64-1/2" panel to the door header. Install siding flush with the top edge and 1-1/2" from each end.



Step 9B Set Walls

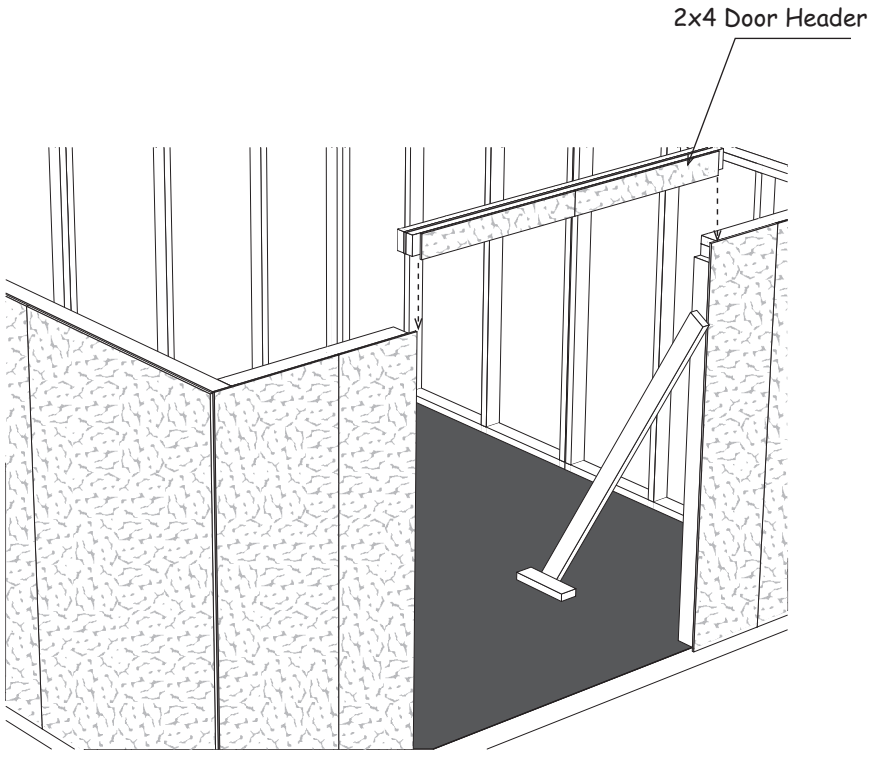
1. Secure wall panels together at the corners. Use (4) four 10d coated nails per corner. Nail wall panels to the floor. Nail through the bottom plate. Space 10d sinkers 24" apart.
2. Install the 2x4 door header between the front wall panels. Nail through the wall stud into the ends of the header. Toenail into the top wall plates.
3. Install a 2x4-6' boards at both sides of the door opening to hold the wall straight.

Drawing shows a 12'x24' building with the doors offset. See next page for drawing with doors centered in front wall.



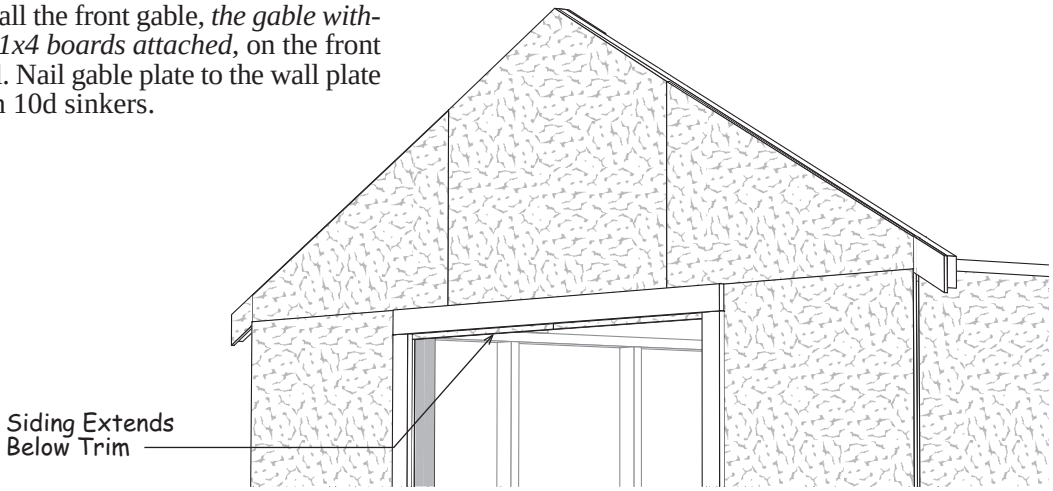
Step 9B Set Walls Continued

Drawing shows a building with the doors centered.

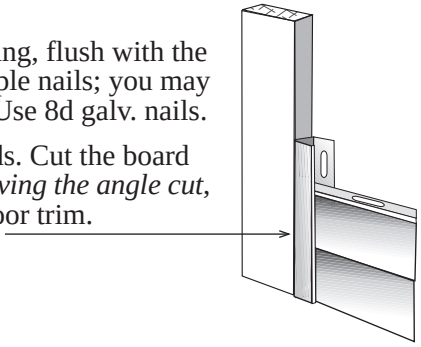


Step 10 Install Roof Gables

1. Install the front gable, *the gable without 1x4 boards attached*, on the front wall. Nail gable plate to the wall plate with 10d sinkers.

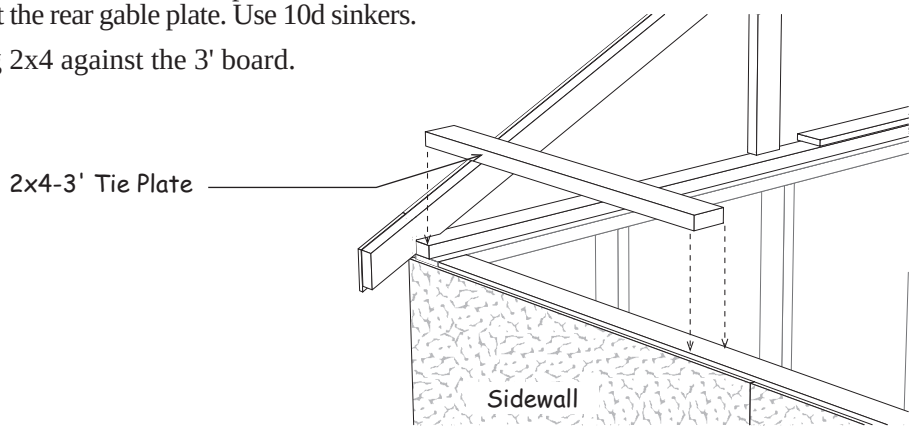


2. Install 1x3-72" boards along each side of the door opening, flush with the bottom edge of the siding. Tack these boards with a couple nails; you may want to move the trim later when you install the doors. Use 8d galv. nails.
3. Locate a 1x3x71-3/4" board with angle cuts on both ends. Cut the board length flush with the side door trim. Cut both ends, *removing the angle cut*, this will make it easier to apply J-Channel around the door trim.
4. Install the remaining gable on the back wall.

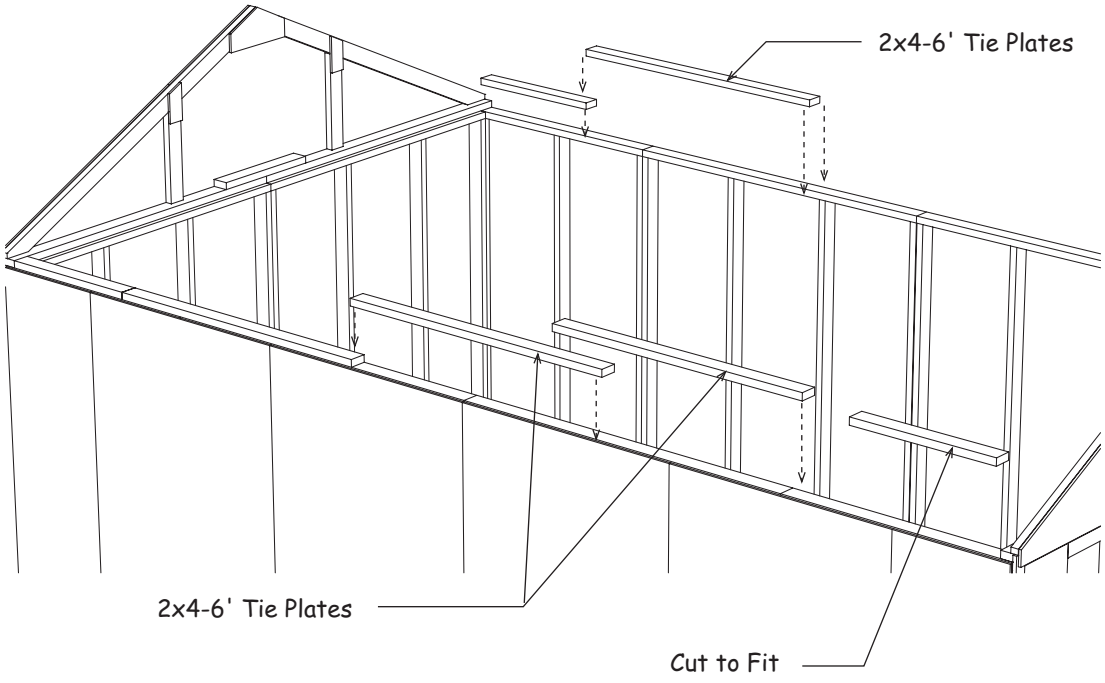


Step 11 Install 2x4 Tie Plates

1. Cut a 2x4-6' in half and install a 3' piece over the sidewall, against the rear gable plate. Use 10d sinkers.
2. Install a 6' long 2x4 against the 3' board.



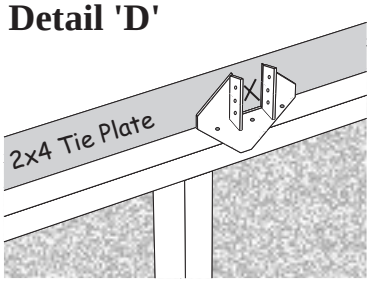
3. Install (2) two more 2x4-6' boards.
4 Cut the 3' long 2x4 cutoff from above to finish.
5. Install 2x4 tie plates on the opposite sidewall.

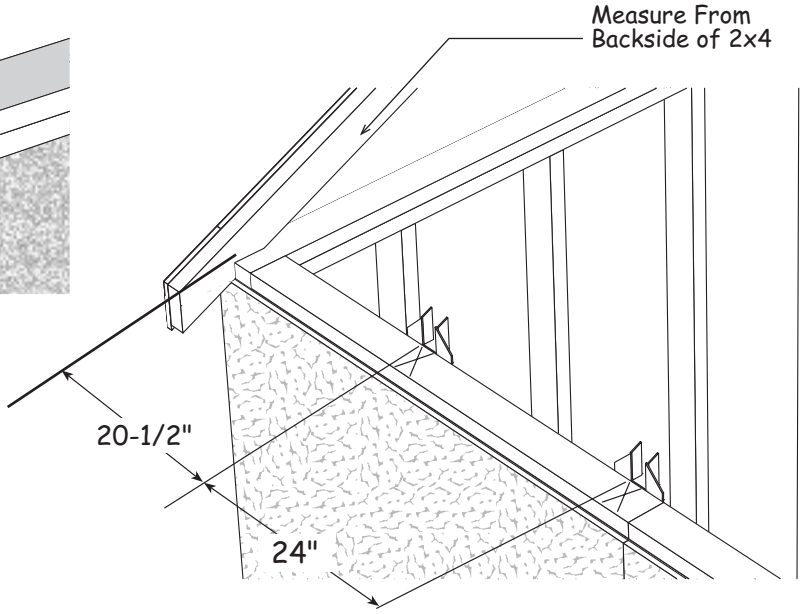


Step 12 Layout Roof Trusses

1. Layout the truss spacing from the rear of the building. Measure from the backside of the 2x4 gable frame 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. Install metal hangers to the tie plate with 1-1/2" hanger nails . The opening should line up with the 'X' mark, the bottom of the opening, flush with the 2x4 tie plate. **Detail 'D'**.

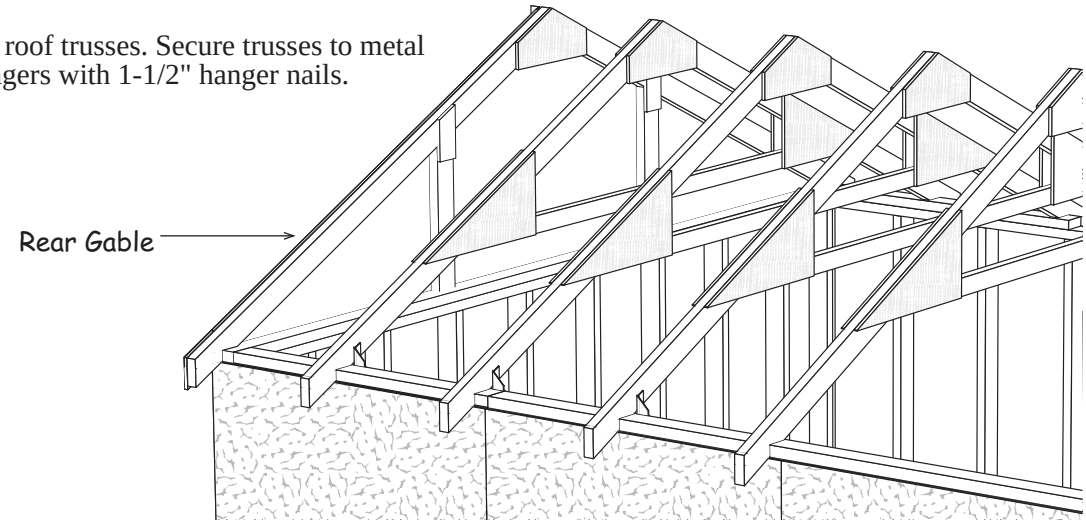
Detail 'D'





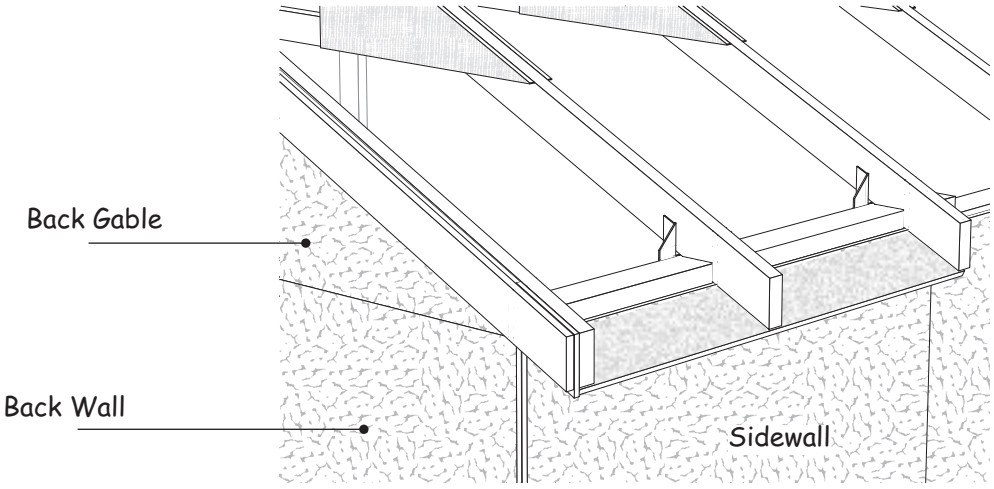
Step 13 Set Roof Trusses

Set roof trusses. Secure trusses to metal hangers with 1-1/2" hanger nails.



Step 14 Install Eave Soffit

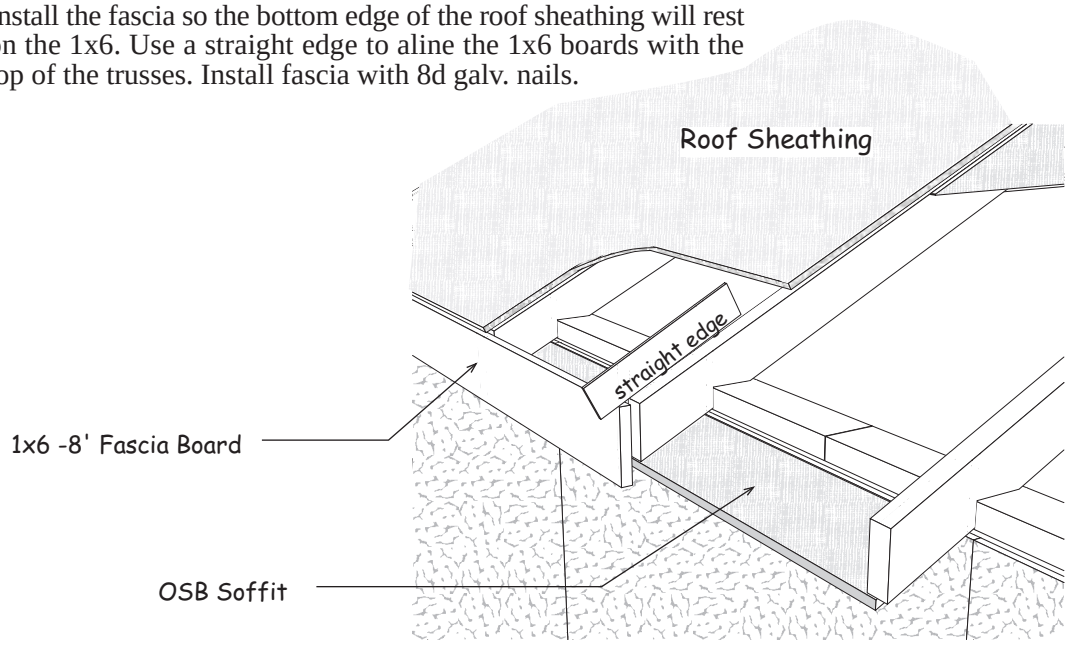
Cut leftover siding and install as soffit under the truss overhang. Use 8d galv. nails.



Step 15 Install Fascia Trim & Roof Sheathing

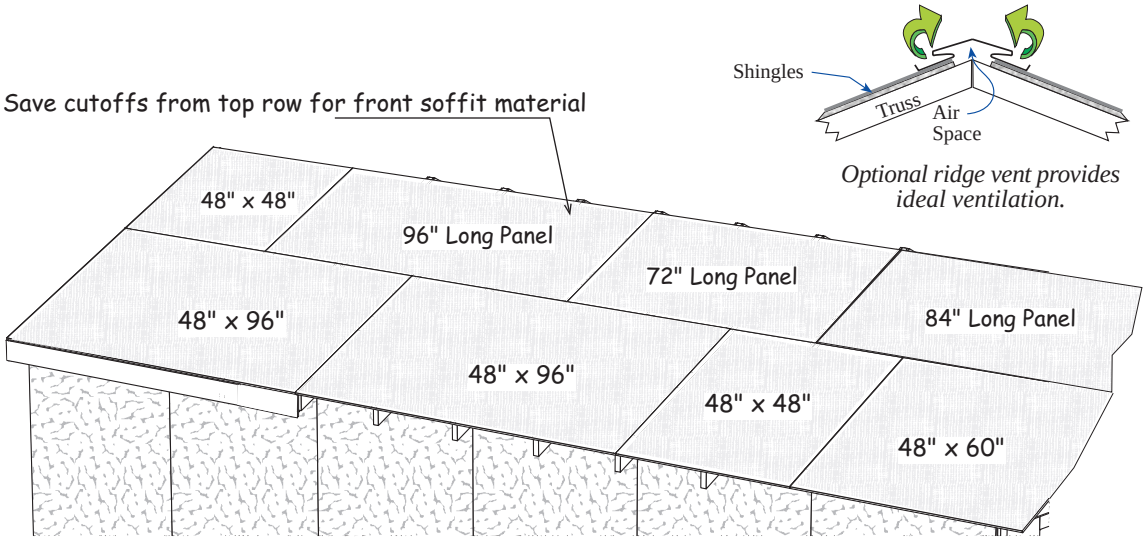
1. Starting at the rear of the building, install 1x6-8' white pine fascia boards on each side, flush with the face of the 1x4 filler trim on the back gable.

   Install the fascia so the bottom edge of the roof sheathing will rest on the 1x6. Use a straight edge to aline the 1x6 boards with the top of the trusses. Install fascia with 8d galv. nails.



Step 15 Install Fascia Trim & Roof Sheathing Continued

2. Make sure the trusses are plumb and the roof sheathing meets the center of the truss. Cut and install roof sheathing per layout below. Use 7d sinkers spaced 12" apart. Cut top row of roof sheathing to a width 37-3/4" to allow for ventilation.

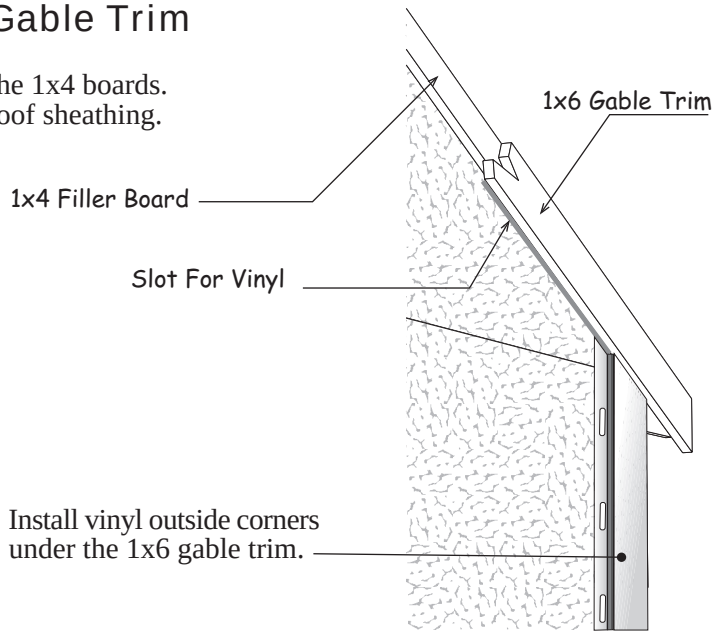


3. Install 1x6-8' fascia in the center of the building. Cut a 1x6-10' trim board and install at the front.

Make sure the front gable is plumb and the roof sheathing extends 10-1/4" past the siding along the face of the gable.

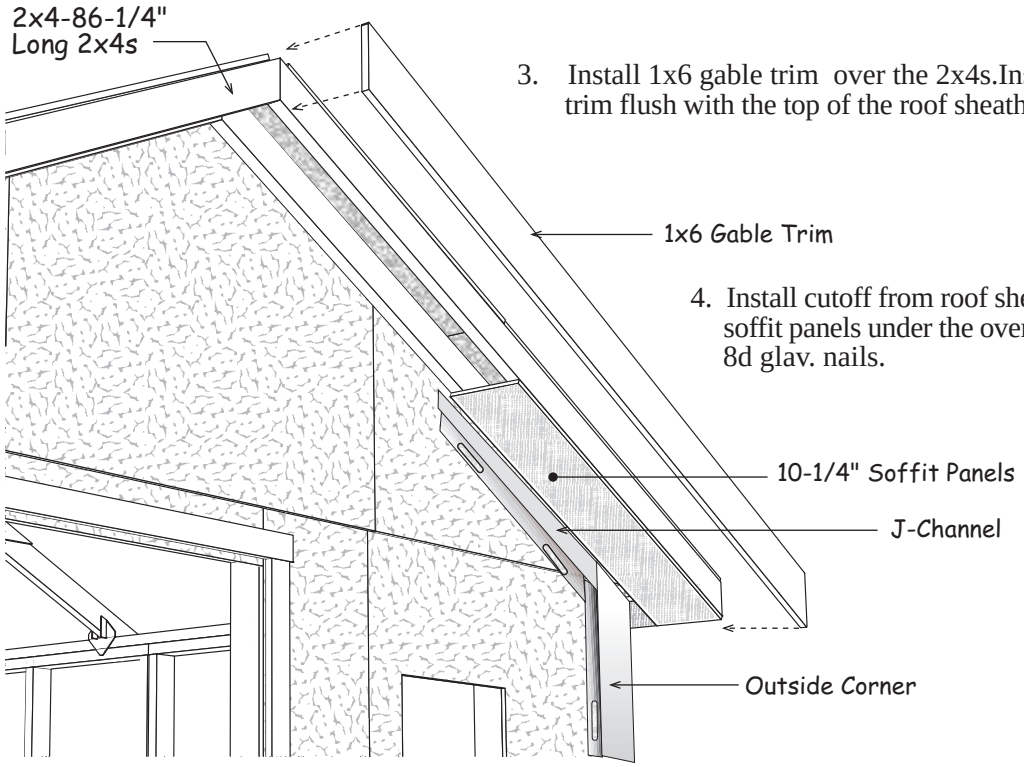
Step 16 Install Rear Gable Trim

Install 87" long 1x6 gable trim over the 1x4 boards. Install trim flush with the top of the roof sheathing.



Step 17 Install Front Gable Soffit and Door Trim

1. Install (2) two 86-1/4" long 2x4s, *against the siding*, on the front gable.
2. While a helper holds another 86-1/4" long 2x4 against the roof sheathing, screw the sheathing to the 2x4 with 1-12" long screws.



3. Install 1x6 gable trim over the 2x4s.Install trim flush with the top of the roof sheathing.
4. Install cutoff from roof sheathing for soffit panels under the overhang. Use 8d glav. nails.

Vinyl Siding Overview

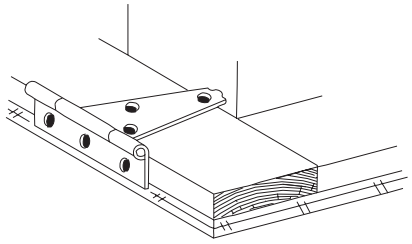
Install the siding according to the manufacturer's instructions.

Starter Strip is installed along the bottom of the building.

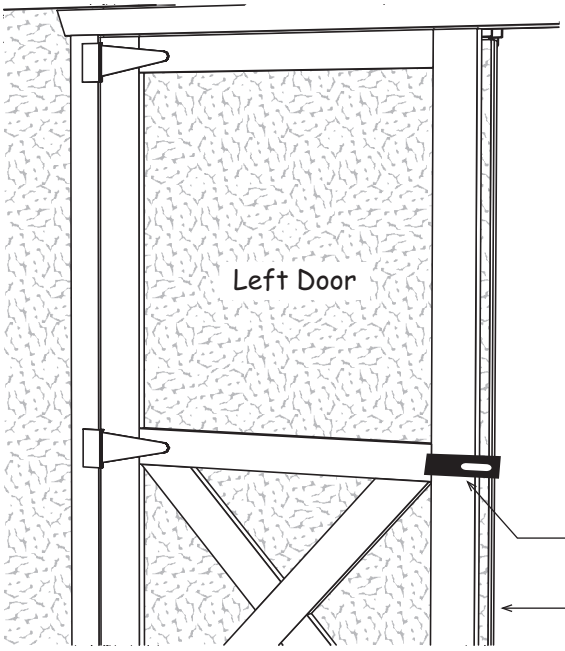
Center the nail in the nailing slots. DO NOT nail the siding tight. The panels should float on the nails to provide for expansion and contraction. Nail into wall studs wherever possible. If it is necessary to nail between the studs, cutoff the tips of nails that protrude through the siding.

When installed, the siding panels should have 1/4" free space at each end of the siding panel. This will allow the panel to expand with changes in temperature.

Step 18 Install Doors & Hardware

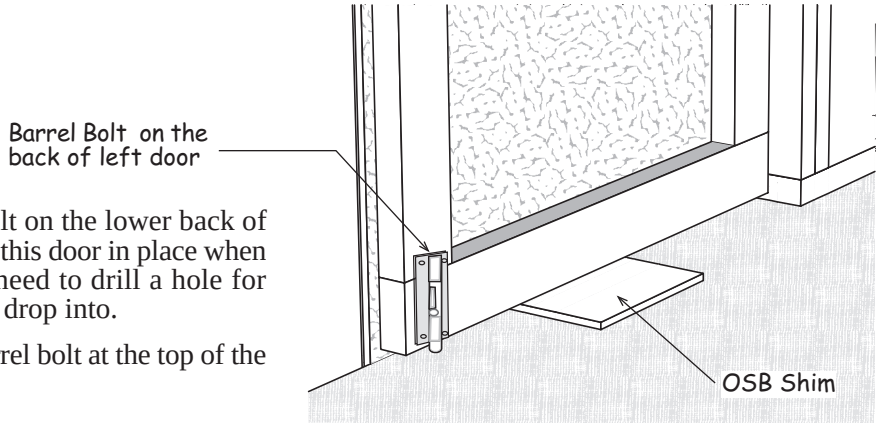


1. Lay the left door with the trim facing up. The siding on the left door extends past the door trim. See detail below.
2. Install 5" hinges to the left side of the door frame. To position the hinge properly, hold the rectangular plate against the frame. Use 1-3/4" black screws.
3. Install hinges to the right side of the other door.



4. Before you fasten the hinges to the door trim, temporarily prop the doors in the opening. Leave a space at the top of the doors and between the doors and the side trim to allow room for the doors to expand when they absorb moisture.

   If your door opening is out of square, the space around the doors will not be even. You can remove and reposition 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.
5. Install hinges to trim with 2" screws.



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

11	Collar Ties	2x4	90"
30	Truss Rafters	2x4	86-1/4"
76	Wall Studs	2x4	72"
2	Door Jacks	2x4	71-1/2"
4	Wall Plates	2x4	68-1/2"
2	Wall Plates	2x4	58-1/2"
2	Wall Plates	2x4	34-3/4"
4	Gable Studs	2x4	23-1/2"
8	Truss Jig Blocks	2x4	10"
22	Truss Gussets	7/16"	8" x 20"
44	Truss Gussets	7/16"	12" x 24"
12	Soffit Boards	3/8"	5" x 48"
2	Plywood Gusset	3/4"	3.5" x 32"
2	Siding Panels	16" x 75-1/4"	
2	Pre-built Barn Doors	32" x 71/3/4"	
1	Pre-built Door Header	67-1/2"	

5	1 lb. box	10d	Sinkers
5	1 lb. box	8d	Galv.
4	1 lb. box	7d	Sinkers
1	1 lb. box	6d	Galv.
5	1 lb. box	6d	Common
4	1 lb. box	1-1/2"	Hanger Nails
6	ea.	5"	Door Hinges
1	ea.	4.5"	Door Latch
2	ea.	6"	Barrel Bolts
48	ea.	2"	Hinge Screws
6	ea.	1x4	Metal Plates
18	ea.	2x4	Metal Truss Hangers
2	ea.	Bottle Glue	
4	ea.	1x6 Gable Trim	87"
8	ea.	1x4 Corner Trim	75-3/4"
4	ea.	1x4 Wall Trim	72"
2	ea.	1x3 Door Trim-*sides*	72"
1	ea.	1x3 Door Trim-*top*	71-3/4"

Material Supplied by Local Supplier

19 pcs.	Exterior Siding	4x8	7/16"
14 pcs.	OSB Sheathing	4x8	7/16"
4 pcs.	1x6 - 8'	White Pine Fascia	
2 pcs.	1x6- 10'	White Pine Fascia	

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 newsstands.

Purchase Optional Shingles

Roof Covering - not supplied in kit		
14 bdl.	Roof Shingles	
10 pcs.	Roof 'drip' Edge	10'