![Best Barns - USA - Quality Do-it-yourself Barn Kits]

Best Barns
Assembly Book
revised February 19, 2016

the Elm R

10' x 16'

Manufactured by Reynolds Building Systems, Inc.

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

IMPORTANT INFORMATION - Read This First

Thank you for your purchase. I want you to be completely satisfied with your building. The 2x4s are imported from Europe because they grade lumber four sides. If you are dissatisfied with lumber you receive we will replace it.

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 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. This will be a separate delivery.

Our kit does not include shingles, the quantity needed is listed on the back page. The siding is primed. You will need to apply a finish coat using latex acrylic paint.

Some of the framing lumber was used in the shipping pallet. Unpack the material from the pallets, then unscrew the top 2x4s. The bit for the screws is packed in the hardware bag. The 2x4s will be used for wall bracing and tie plates.

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.

Before building, 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 galv. nails, spaced 12" apart.

LAP Edge

Tongue Edge

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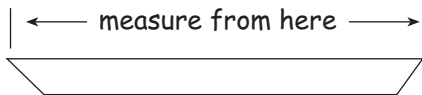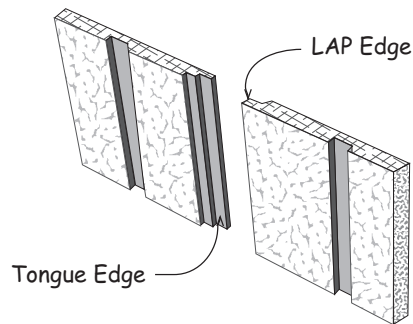
When measurements are given for a board length, it is from the longest side.

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 Optional Floor System

Check local building codes, 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. **DO NOT** make floor larger than shown below!

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

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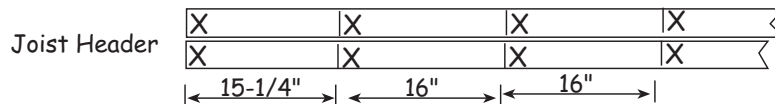
2. Cut the 2x4-10' floor joist to 9'-9". *Treated lumber may be thicker than 1-1/2". Take this into account when cutting the length of floor joists. Shorten joist measurements if necessary to obtain 10'-0" building width.*

3. Install the floor joist, *over the 'X' marks*, between the 16' long joist headers. Use 16d galv. deck nails.
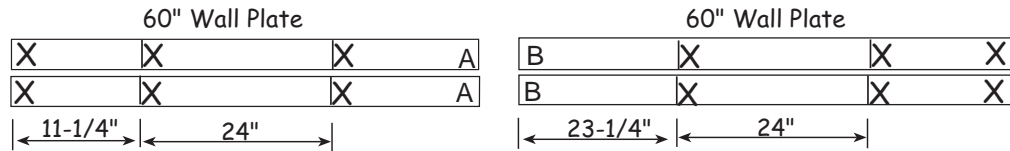

✳ Leveling Blocks
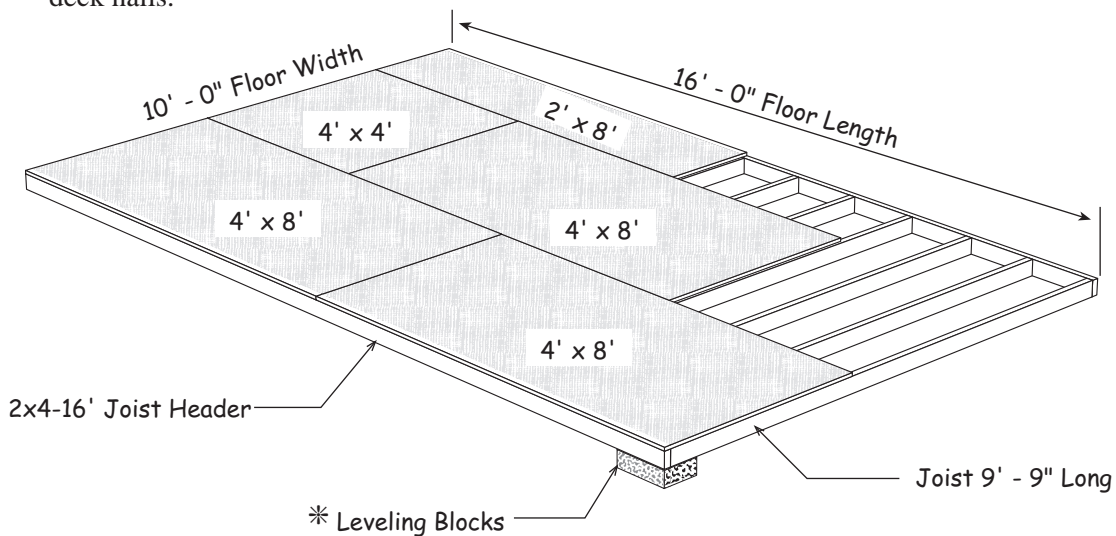
✳ *If necessary use bricks, patio stones or similar material to level or provide additional support to the floor. If your ground has low areas consider adding gravel and or 4x4 treated timbers to rest the floor on. If you use 4x4 timbers you will need (3) three pieces 16' long.*

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 (226-1/2").

| Material Description	10' x 16' Floor	
2x4 Treated Headers	2 pcs.	16'
2x4 Treated Floor Joist	13 pcs.	10'
Flooring 5/8" 4x8	5 pcs.	4x8
8d Screw Floor Nails	2 lb.	8d
16d Galv. Box Nails	2 lb.	16d

Step 1   Assemble Backwall

1. Position (4) four 60" 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'.

60" Wall Plate   60" Wall Plate

| X | X | X | A | | B | X | X | X |
| X | X | X | A | | B | X | X | X |

11-1/4"   24"   23-1/4"   24"

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

3. Nail both wall frames together using 10d sinkers.

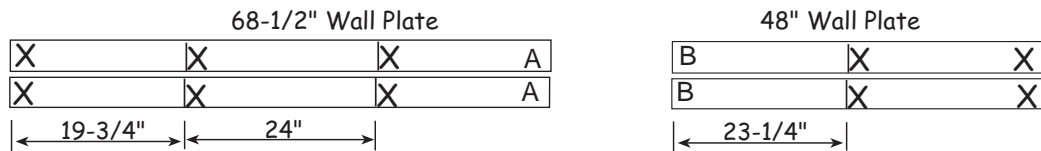72" Wall Studs

A B

60" Wall Plate
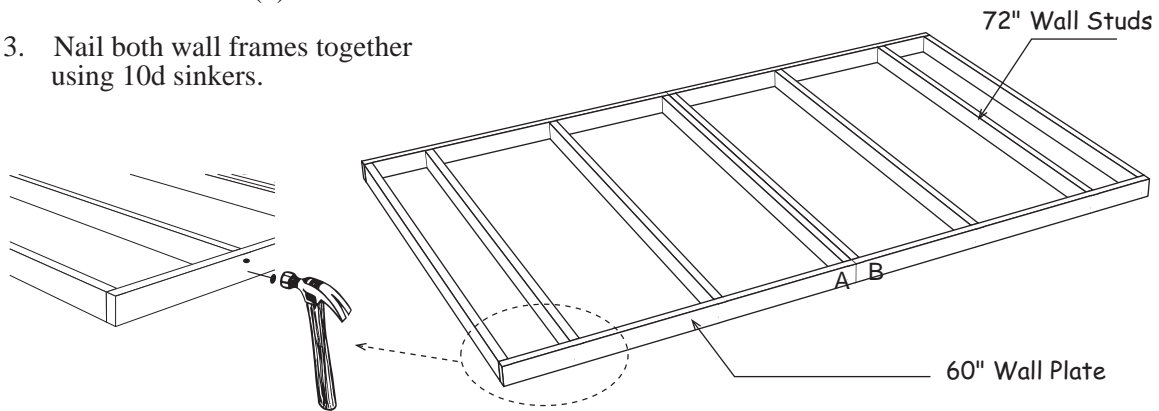
4. Square wall frame, *measure diagonally (corner to corner)*. The measurement should be 141-1/2".

5. Select a 36-3/4" wide siding panel with a 'tongue' edge. Install this panel with the 'Cut' edge flush with the end of the wall frame. Install siding flush with the 2x4 top plate.

6. Install a full width x 75-3/4" long siding panel next.

7. Install a 36" x 75-3/4" siding panel last.

Tongue Edge

LAP Edge

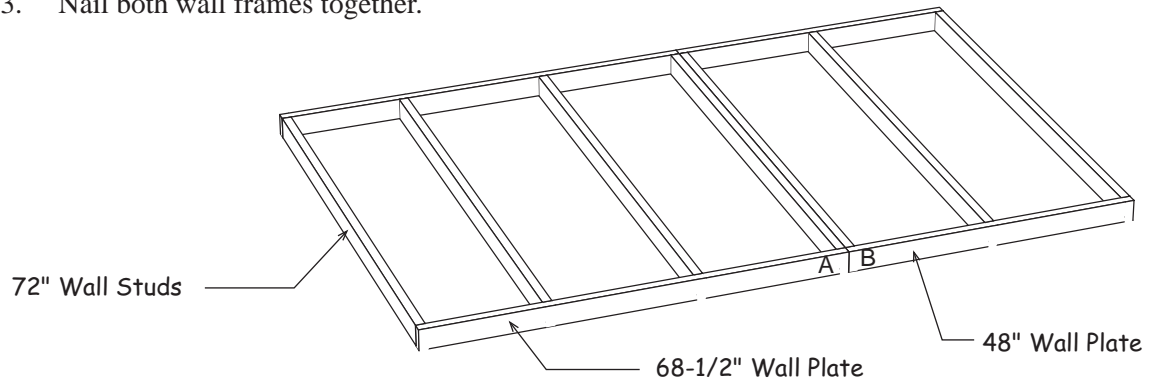Cut Edge

Siding Extends 3/4" Below Plate
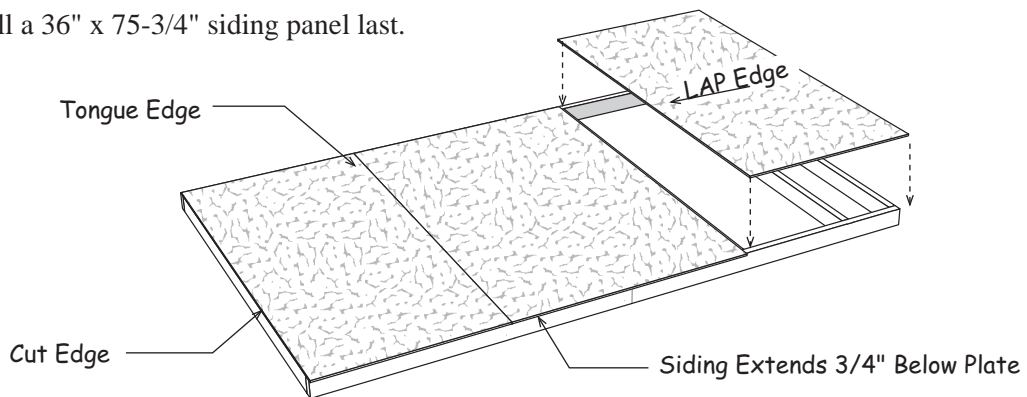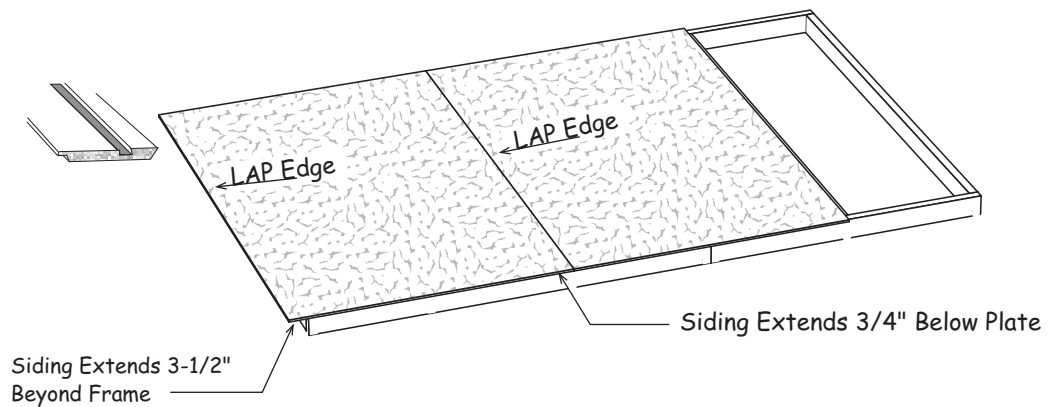
Step 2   Assemble Sidewalls

1. Position (2) two 68-1/2" and (2) two 48" long 2x4s 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'.

68-1/2" Wall Plate

| X | | X | | X | | A |
| X | | X | | X | | A |

19-3/4"   24"

48" Wall Plate

| B | | X | | X |
| B | | X | | X |

23-1/4"

2. Install 72" wall studs between the top and bottom plates. Assemble wall frames with 10d sinkers.

3. Nail both wall frames together.

72" Wall Studs

A | B

68-1/2" Wall Plate

48" Wall Plate

4. Square wall frame. The measurement should be 138-1/2". Install (2) two full width siding panels. Install the first siding panel with the 'LAP' edge extending 3-1/2" past the end of the wall frame. The siding should extend 3/4" below the bottom plate and flush with the top plate.

5. Repeat steps 1-4 to make another wall frame.

LAP Edge

LAP Edge

Siding Extends 3/4" Below Plate
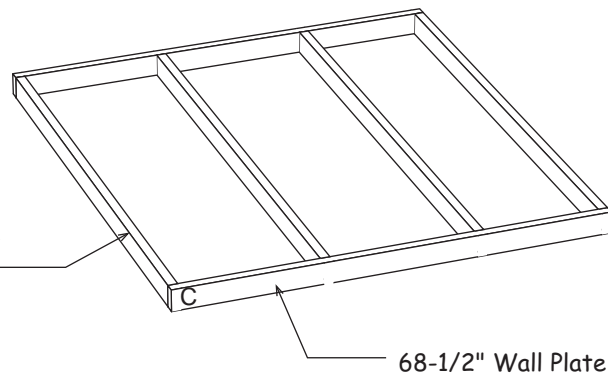
Siding Extends 3-1/2" Beyond Frame

Step 2   Assemble Sidewalls Continued

6. Position (2) two 68-1/2" long 2x4s together and indicate with 'X' marks, where the wall studs will be located. Mark the left ends with the letters 'C'.

68-1/2" Wall Plate

| C | X | X | X |
| C | X | X | X |

23-1/4" | 24"
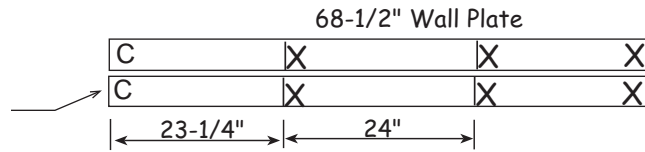
7. Install 72" wall studs between the top and bottom plates.
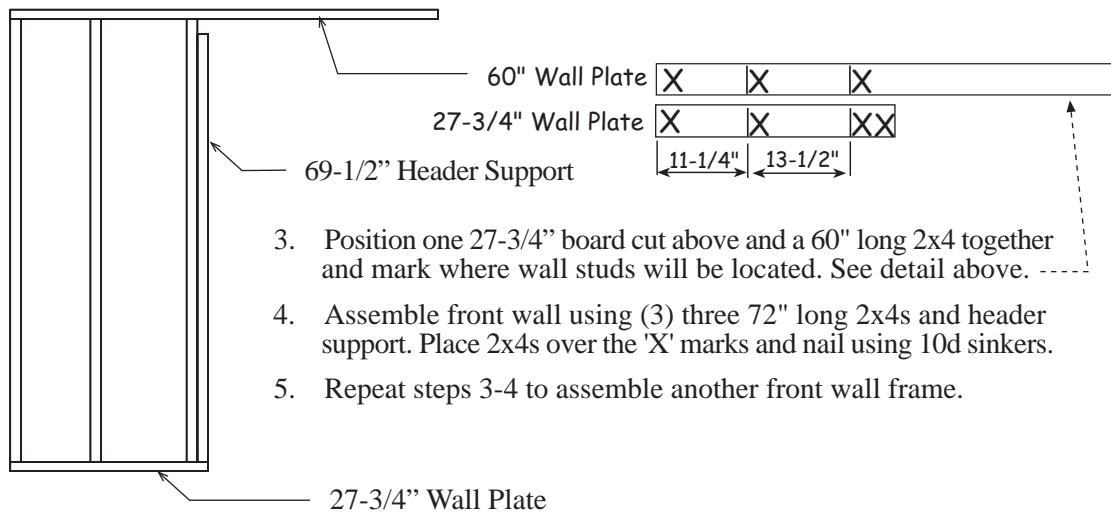
C

68-1/2" Wall Plate

8. Select one 116-1/2" wall frame. Nail, with 10d sinkers, the 68-1/2" frame assembled above to the end of the wall panel.

9. Install a full width siding panel. The last siding panel will be installed after the wall are erected on the floor.

LAP Edge

A | B

C
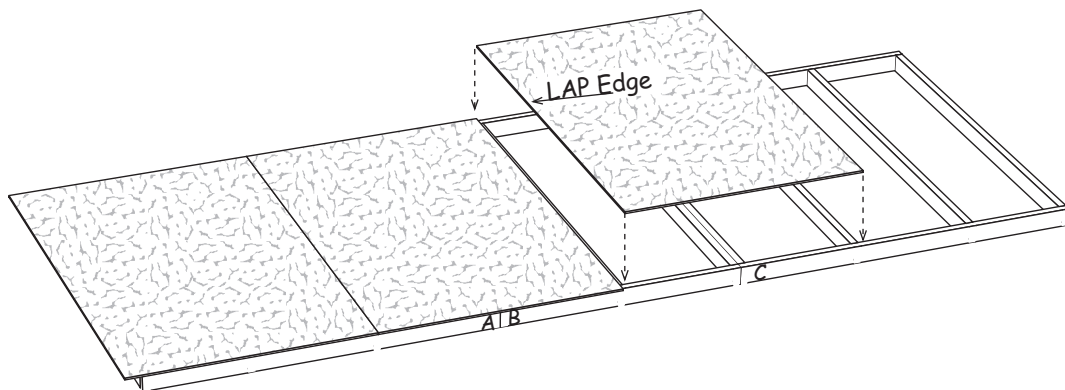
9. Repeat steps 6-9 to assemble the other sidewall panel.

Step 3   Assemble Front Wall Frames

1. Cut (2) two 27-3/4" long boards from (1) one 60" long 2x4 board.

2. Cut (2) two 72" 2x4s to a length of 69-1/2" used for header supports.

60" Wall Plate

27-3/4" Wall Plate

69-1/2" Header Support

11-1/4"   13-1/2"

3. Position one 27-3/4" board cut above and a 60" long 2x4 together and mark where wall studs will be located. See detail above.

4. Assemble front wall using (3) three 72" long 2x4s and header support. Place 2x4s over the 'X' marks and nail using 10d sinkers.

5. Repeat steps 3-4 to assemble another front wall frame.

27-3/4" Wall Plate

Step 4   Assemble Roof Trusses

Building Tip: 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 secure the truss boards in position so all the trusses will be assembled the same. Use the 2-1/2" deck screws packed in the kit.

1. Place (2) two 62" long 2x4 boards with angled ends together as shown below. Hold in place with 2x4 blocks as shown.

2. Secure the tops together with a wood gusset. Nail the gusset to the 2x4s with (14) fourteen 6d common nails. Angle nail slightly so nails do not protrude through the 2x4 boards.

3. Repeat above steps to assemble (8) eight more trusses.

2x4 Block

2x4-62" Boards

2x4 Blocks
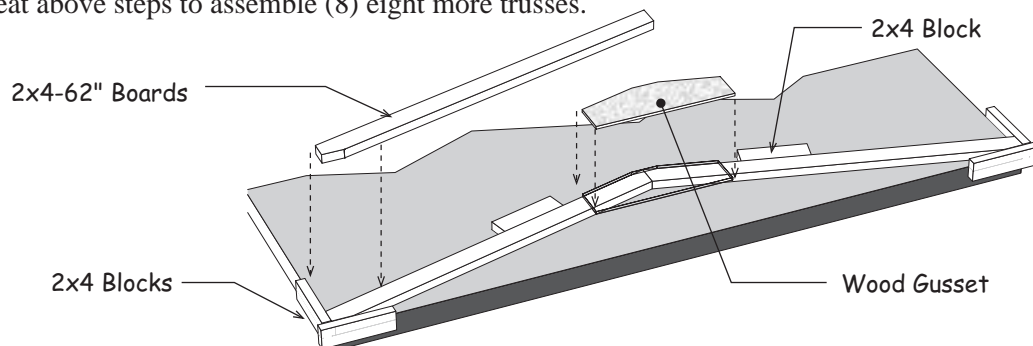
Wood Gusset

4. **Select (7) seven trusses** and apply wood gussets to the opposite side. (2) two are used later.

Step 5   Install Collar Ties

1. Select (5) five trusses that have gussets installed on both sides and install a 1x4-72" long board as shown. Use 6d common nails.

2. Remove 2x4 blocks. Save blocks, some will be used when setting gables.

1x4 Collar Tie on
(5) five trusses
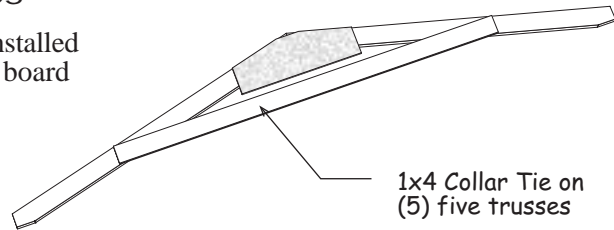
Step 6   Set Walls

1. Secure wall panels together at the corners. Use (4) four 10d sinkers per corner. Nail wall panels to the floor. Nail through the bottom plate. Space 10d sinkers 24" apart.

2. Disassemble the shipping pallets and remove the (4) four 2x4s from each pallet. The bit for the screws is in the hardware bag. Use (2) two to brace the door walls to hold them straight. Save the other 2x4s, they will be used in a later step.

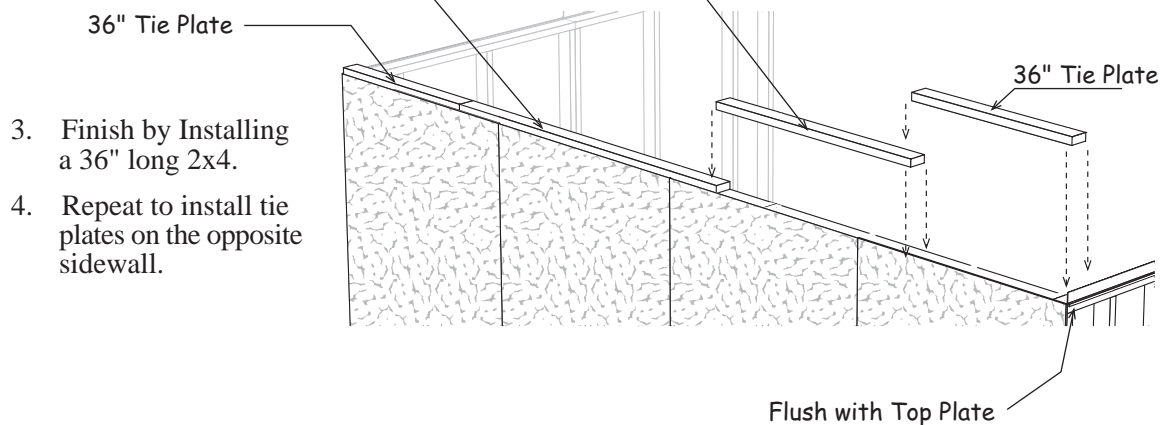3. Install the remaining (2) two full width siding panels.

48"x76"
Siding

48"x76" Siding

2x4 Wall Brace
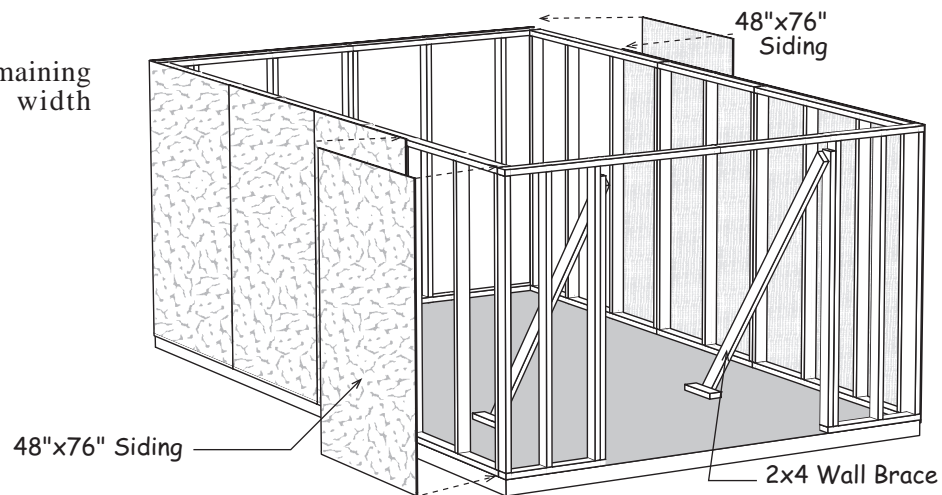
4. Install a 67-1/2" door header between the front wall panels. Secure with 10d sinkers. Nail through the top 2x4 plate and the wall stud.

67-1/2" Door Header
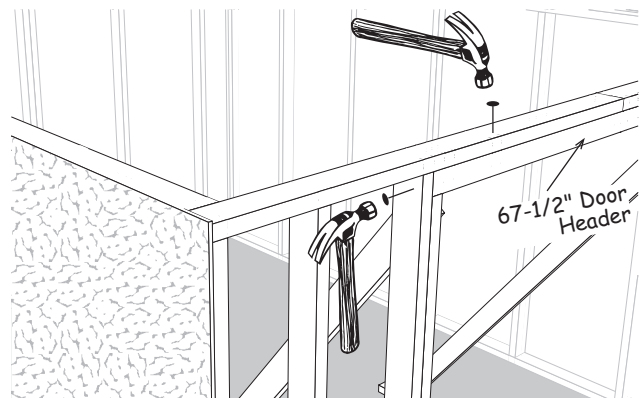
## Step 7   Install Tie Plates on Sidewalls

☞ **IMPORTANT: Make sure walls are plum and straight before applying tie plates. Use a level or weighted string to check for plum.**

1.   Cut a 2x4-6' board in half and install one of the boards over the sidewall. Install the 2x4 flush with the 2x4 wall plate on the back wall.

2.   Install a 72" long 2x4 and a then 48" long 2x4.

3.   Finish by Installing a 36" long 2x4.

4.   Repeat to install tie plates on the opposite sidewall.

36" Tie Plate

36" Tie Plate

Flush with Top Plate

Step 8   Install Tie Plates on Front Wall

1.   Cut (2) two 26-1/2" long 2x4s from a 2x4-5' board.

2.   Install a 26-1/2" long 2x4 over the front wall.

3.   Install a 60" long 2x4 next and finish with another 26-1/4" long 2x4.

4.   Repeat to install tie plates on the back wall.

60" Tie Plate

26-1/2" Tie Plate

26-1/2" Tie Plate
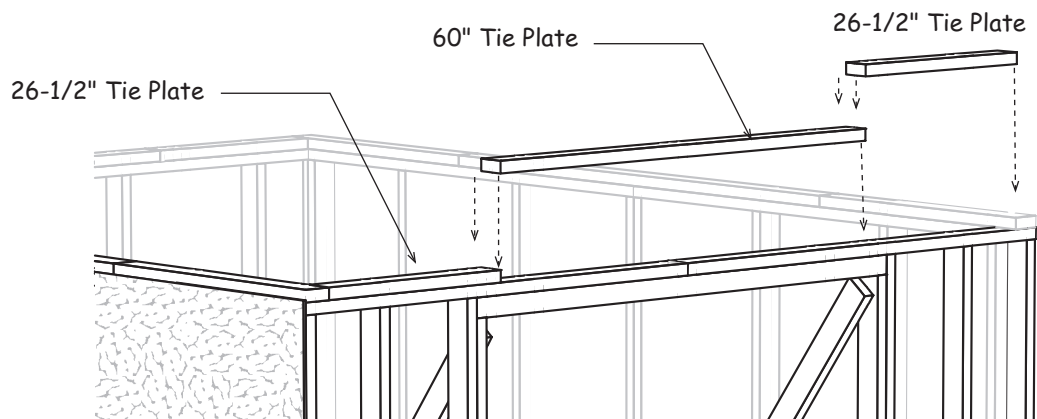
Step 9   Install Siding on Front Wall

1. Select a 12-1/2" siding panel with a 'Tongue' edge and install at the front left corner. Cut edge will be flush with sidewall siding.

2. Select and install a 15-3/4" siding panel with a 'LAP' edge next.

3. Install (2) two 4-3/4" x 32-1/4" siding panels over the door opening. Trim will cover where the siding panels butt together in the center.

4. Install the 16-1/2" panel with the 'cut' edge flush with the door opening.

5. Install last siding panel.

Cut Edge

Cut Edge

Cut Edge

12-1/2" Siding with 'Tongue' edge

15-3/4" Siding with 'LAP' edge
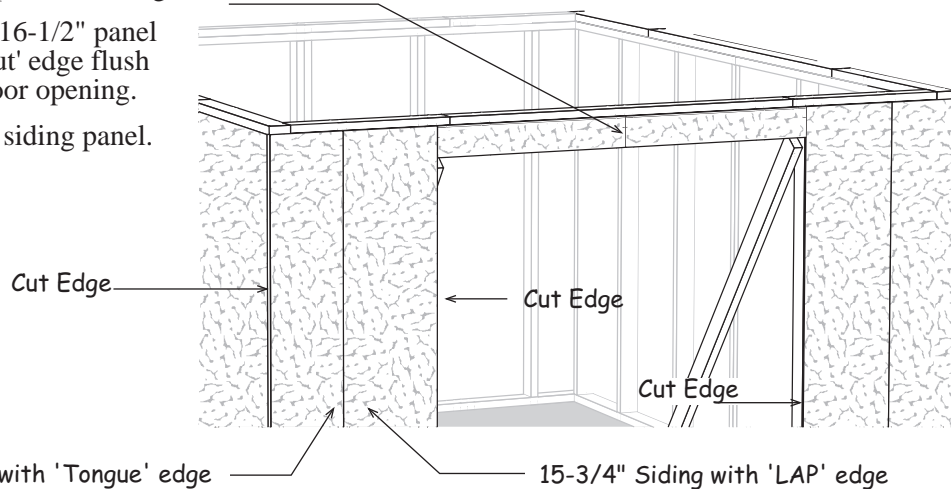
Step 10   Install Roof Gable

1. Select a truss with a gusset installed on one side. Position this truss with the gusset facing towards the inside of the building.

2. Install a 2x4 block to the sidewall, secure the truss to the 2x4 block.

3. Install a 2x4 block to the opposite corner and secure the truss.

Install 2x4 Block
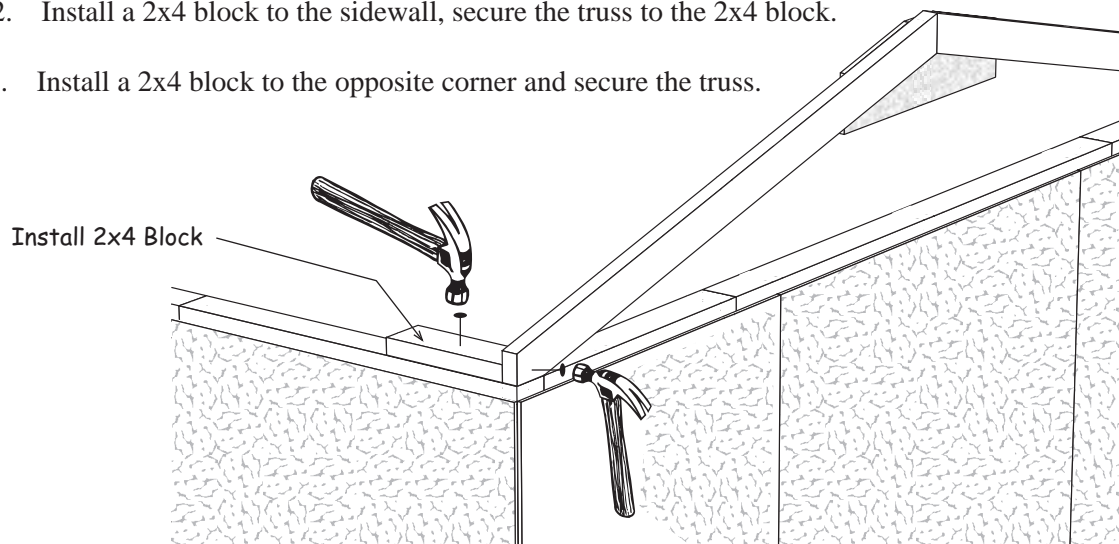
Step 11   Install 'Z' Flashing

Install (2) two 60" pieces of 'Z' flashing across the top of the siding on the end wall siding. Secure in place using 6d galv. nails spaced 12" apart. The ends will be covered by corner trim.

Roof Gable

60" Long 'Z' Flashing

End Wall Siding
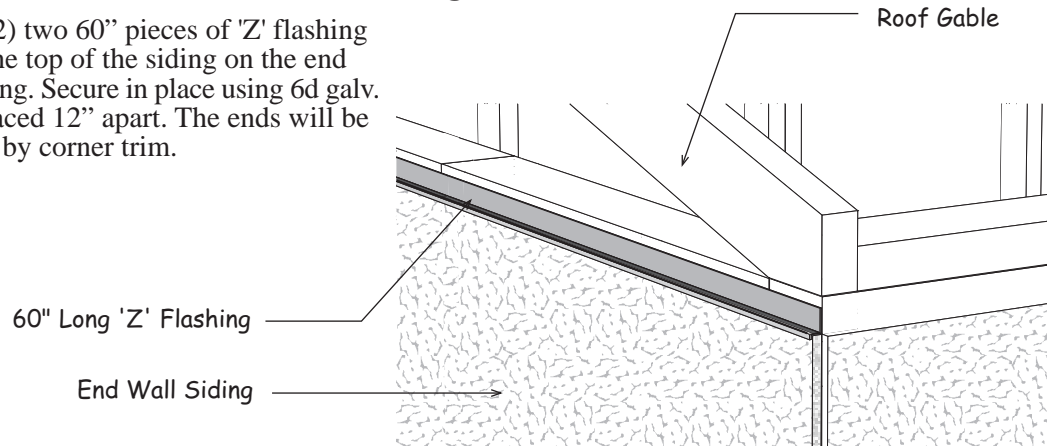
Step 12   Install Rear Gable Siding

1. Install gable siding on the back gable using 6d galv. nails along the top of the gable frames. Use 8d galv. across the bottom. The gable siding will extend 1/2" above the 2x4 frame to receive the roof sheathing installed later.

2. Repeat **Steps 10** thru **12** to install the gable on the front wall.
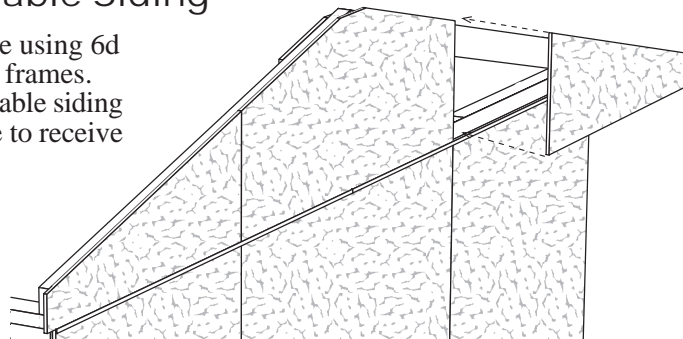
Step 13   Install 2x4 Truss Headers

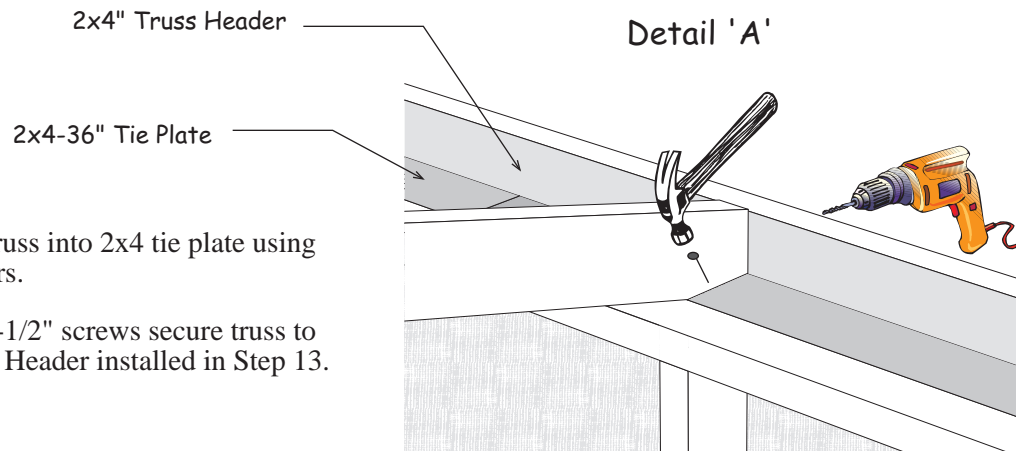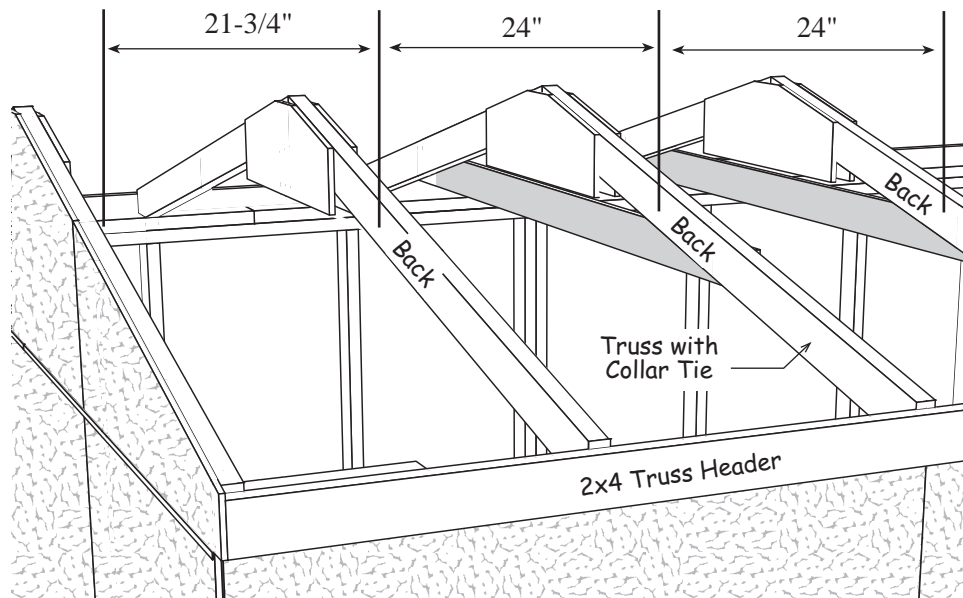1. Place a 72" long 2x4 on top of the siding on the sidewall. It will butt against the siding on the rear gable. Nail this 2x4 to the 2x4 tie plate with 10d sinkers.

2. Remove wall brace from door opening and install next.

3. Gather a 2x4 removed from the pallet. Cut to fit and install next to the 2x4 installed above.

4. Repeat to install 2x4 on the opposite sidewall.

2x4-6' Board
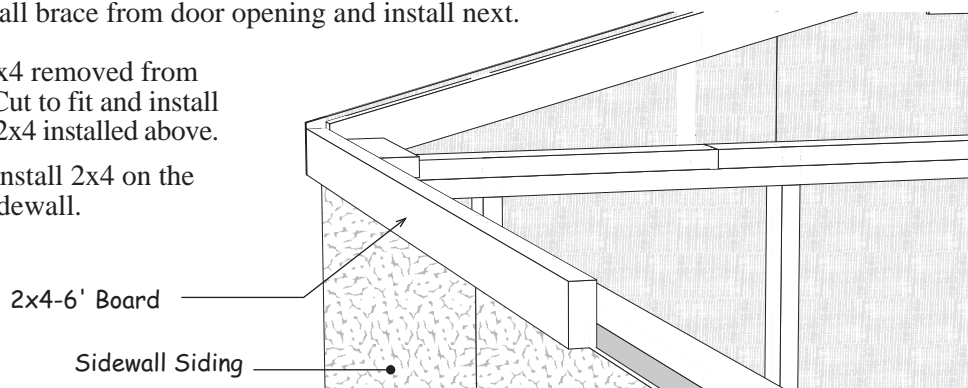
Sidewall Siding

Step 14   Install Trusses

☞ **Install trusses with a collar tie in the center of the building.**

1. Install trusses over the sidewalls. Install the first truss (without a collar tie) with a 21-3/4" space between the 2x4 face of the rear gable and the back of 2x4 truss. Secure the trusses using 2-1/2" screws and 10d sinkers, See Detail 'A' below.

2. Install the remaining trusses measuring 24" from back to back of each truss. Last truss will not have a collar tie.

Detail 'A'

Toe nail truss into 2x4 tie plate using 10d sinkers.

Using a 2-1/2" screws secure truss to 2x4 Truss Header installed in Step 13.

Step 15   Install 1x4 Fascia

1. Install 72" long 1x4 fascia trim over the 2x4 Truss Headers that were installed in **Step 13**. Install 1x4 trim boards flush with the bottom of the 2x4 and siding on the front gable.

2. Install a 48" long 1x4 next.

3. Cut a 74" long 1x4 to length and install flush with the siding on the rear gable.

4. Repeat to install 1x4 fascia on the opposite sidewall.

1x4 Fascia Trim
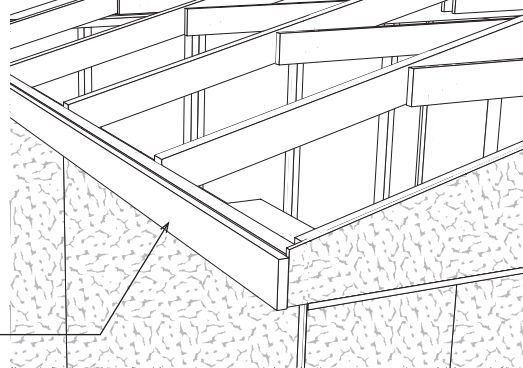
Step 16   Install Roof Sheathing

☞ Install roof sheathing with 7d sinkers, space nails 12" apart. When installing sheathing across the top, insert a plyclip into the roof sheathing between each truss. The top row of sheathing will be about 1" below the ridge to allow for optional ridge venting.

Shingles

Truss   Air
Space
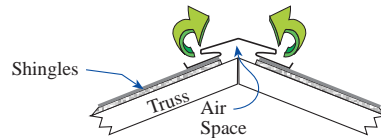
Optional ridge vent provides ideal ventilation.

1. Install the first 4x6 roof sheathing panel against the back of the siding. Note: Using a straight edge install the top edge of the roof sheathing flush with the face of the 1x4 fascia. See Detail 'B'.

2. Install a 15" x 48" sheathing panel at the top.

Plyclip

Detail 'B'

Straight Edge

Roof Sheathing

2x4 Truss Header

1x4 Fascia   Siding

4' x 6'
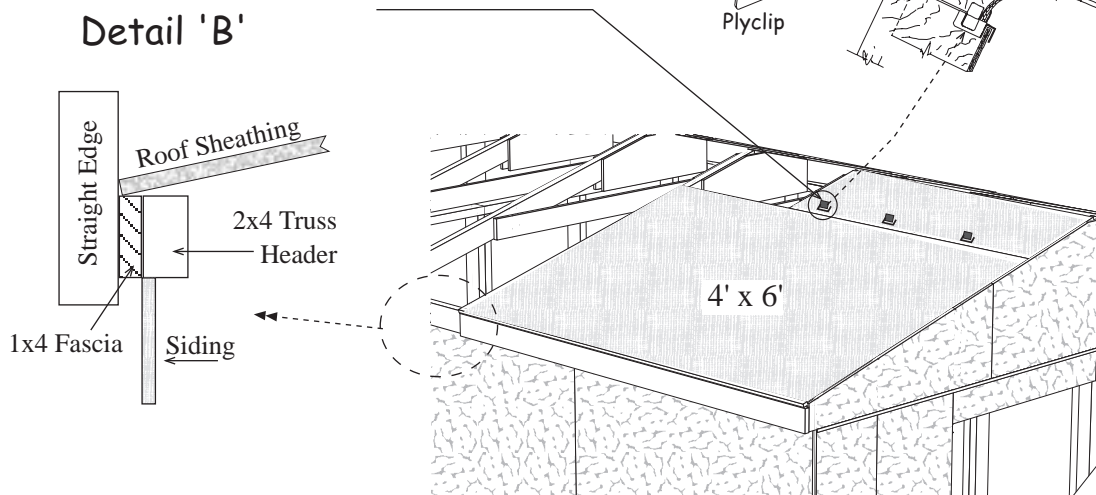
Step 16   Install Roof Sheathing Continued

Install roof sheathing on each side of the building as per pattern below

Roof Ridge

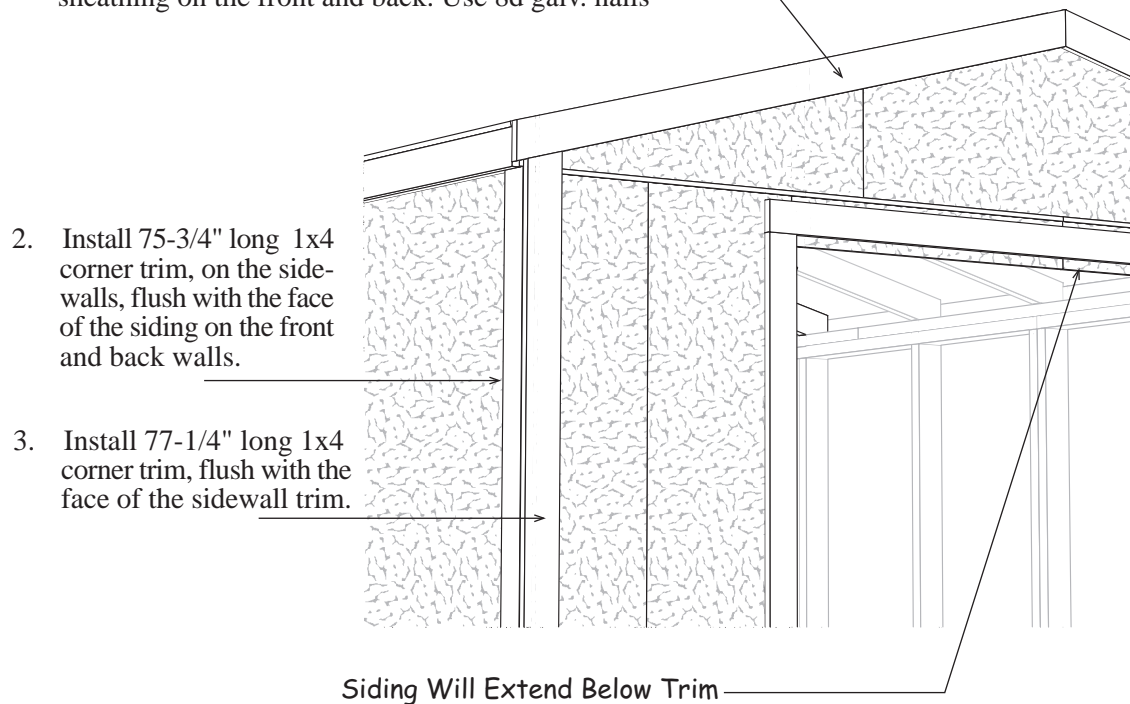| 15"x 48"	15"x 48"	15"x 48"	15"x 48"
48"x 48"	48"x 72"		48"x 72"

Step 17   Install Trim

1. Install 64-1/4" long 1x4 gable trim flush with the top of the roof sheathing on the front and back. Use 8d galv. nails

2. Install 75-3/4" long 1x4 corner trim, on the side-walls, flush with the face of the siding on the front and back walls.

3. Install 77-1/4" long 1x4 corner trim, flush with the face of the sidewall trim.

Siding Will Extend Below Trim

4. Install (2) two 72" long 1x4 trim boards, *flush with the bottom of the siding*, along each side of the door opening. Use 8d galv. nails. Tack these boards with a couple nails; you may want to move the trim later when you install the doors.
5. Install a 72" long 1x4 trim board across the top of the door opening

Step 18   Install Doors & Hardware

1.   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.
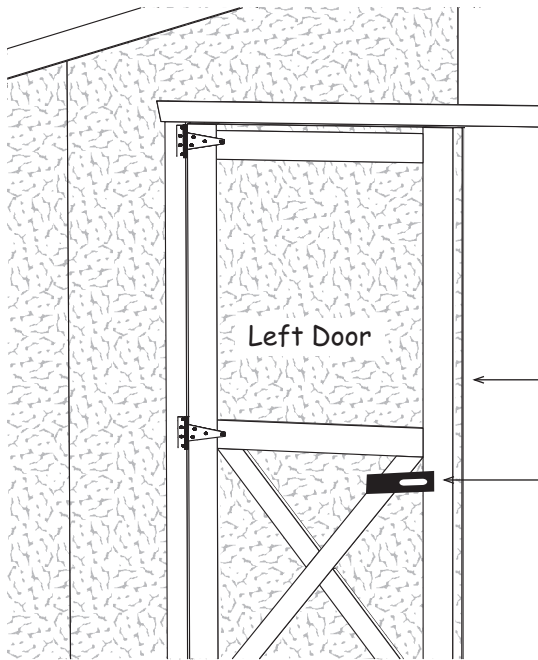
If your door opening is out of square, the space around the doors will not be even. You can remove and reposition the side trim to make allowances for this. The side trim does not have to be flush with the frame of the door opening. You can move the trim in or out to make the door spacing equal. Secure hinges to door trim with 2" screws.

Left Door

2x4 Door Stop

Install Door Latch

2x4 Door Stop

Barrel Bolt on the back of left door

2.   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.

3.   Install another barrel bolt at the top of the door.
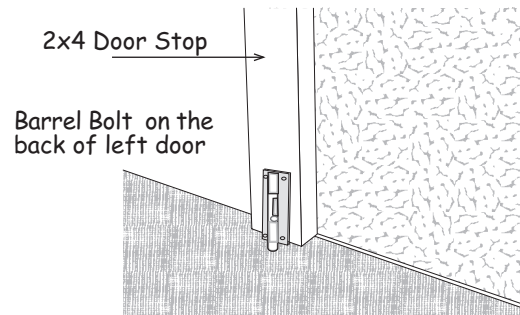
Install metal roof edging perimeter of the roof area. Install shingles according to the instructions on the wrapper. If you need more detailed instructions on installing shingles, there are good publications at book stores, newsstands or youtube.com.

Elm R

Packing List for 10' x 16'

Qty.	Description	Size		
	2x4 Framing			
4	Tie Plates (attached to pallet)	78 "		
18	Truss Rafters	62 "		
44	Wall Studs & Plate Material	72 "		
8	Plate Material	68 1/2"		
12	Plate Material	60 "		
6	Plate Material	48 "		
6	Blocks for truss jig	10" to 12"		
1	Pre-built Door Header	67 1/2"		
2	Pre-built Barn Doors	32" x 72"		
	LP Exterior Siding			
9	Pcs. 48" x 75-3/4" Sidewall Siding			
2	Pcs. 36" x 75-3/4" Sidewall Siding			
2	Pcs. 16" x 75-3/4" Sidewall Siding			
2	Pcs. 12" x 75-3/4" Sidewall Siding			
2	Pcs. 4-3/4" x 32-1/4"Siding Above Door			
2	Pcs. 48"x 19-3/4" Gable Siding - angle cut			
4	Pcs. 38" x 14-1/2" Gable Siding - angle cut			

Qty.	*Whie Pine Trim*	Size		
4	1x4 Gable Trim	64 3/8"		
4	1x4 Corner Trim	77 1/4"		
4	1x4 Corner Trim	75 3/4"		
3	1x4 Door Side Trim	72 "		
5	1x4 Collar Ties	72 "		
2	1x4 Fascia Trim	72 "		
2	1x4 Fascia Trim	74 "		
2	1x4 Fascia Trim	48 "		
	Hardware			
3	lb. 10d Sinkers	6	4" Hinges
3	lb. 7d Sinkers	1	4" Door Hasp
3	lb. 8d Galv.	2	Barrel Bolts
1	lb. 6d Galv.	18	7/16" Plyclips
1	lb. 6d Common	50	Hinge Screws
4	'Z' Flashing - 60"	50	2-1/2" Screws
	7/16" Roof Sheathing			
4	48" x 72"	8	15" x 48"
2	48" x 48"		
16	8" x 24" Wood Gussets		

Material Purchased By Owner	
7 bdl. Roof Shingles	7 pcs. Roof 'drip' edge