BEST BARNS USA
Quality Do-it-yourself Barn Kits

Best Barns USA
Assembly Book
Revised June 19, 2017

the Mansfield   *12' x 12'*

Manufactured by Reynolds Building Systems, Inc.

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

IMPORTANT INFORMATION ABOUT YOUR SHED KIT

These instructions will construct a 12'x12' Mansfield 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 optional floor package, *if ordered*, will be supplied by a local lumber supplier. Our kit does not include the shingles, the quantity needed is listed on the back page.

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.

Our '*Deluxe Mansfield*' includes pre-built barn doors, pre-cut siding and roof sheathing for EZ assembly.

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. Remove the 4x7 OSB panel from the sheet goods pallet, it will be used for roof sheathing.

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

The siding is made with grooves cut into the face, the long edge is beveled so that the siding overlays where they butt. The siding is primed. You will need to apply a finish coat using latex acrylic paint.

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
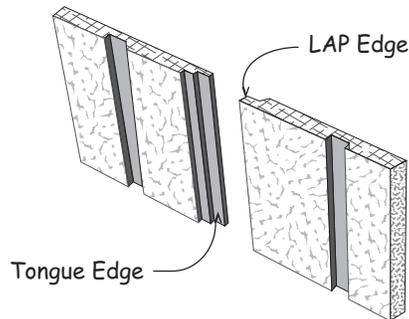
Tool List

☐ Hammer & Hand Saw   ☐ Power Drill/screwdriver
☐ Framing Square & Level   ☐ Measuring Tape
☐ Power Circular Saw   ☐ 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

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.

2x4 Joist Header
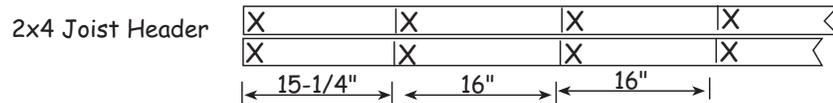
2. Cut 2x4-12' floor joist to 11'-9". *Treated lumber may be thicker than 1-1/2". Take this into account when cutting the length of floor joists. Shorten joist measurements if necessary to obtain 12'-0" building width.*
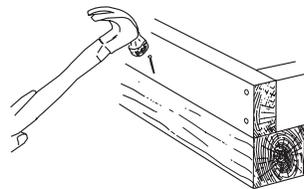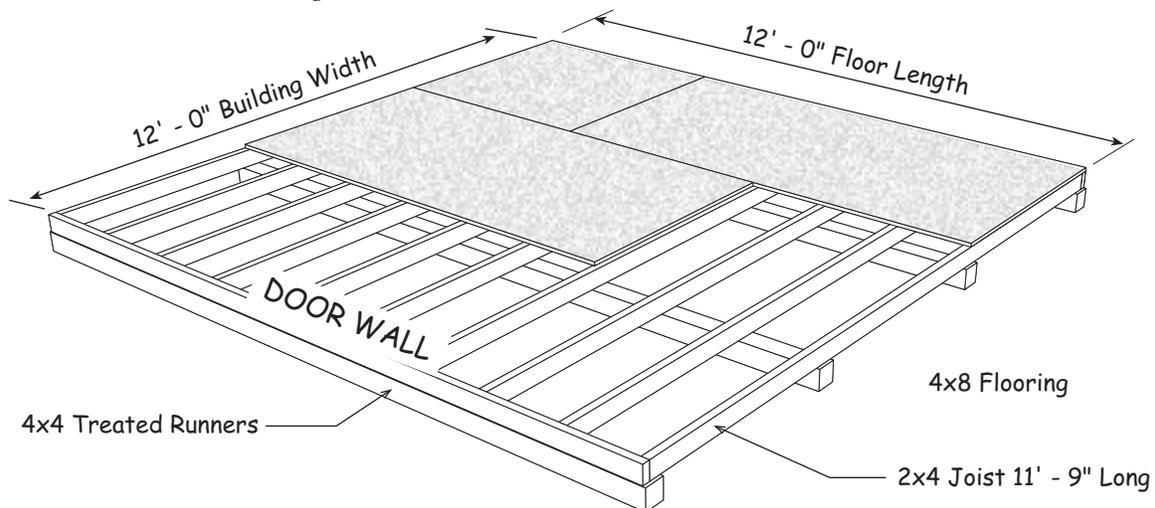
To keep 2x4 frame from moving, toe nail to 4x4.

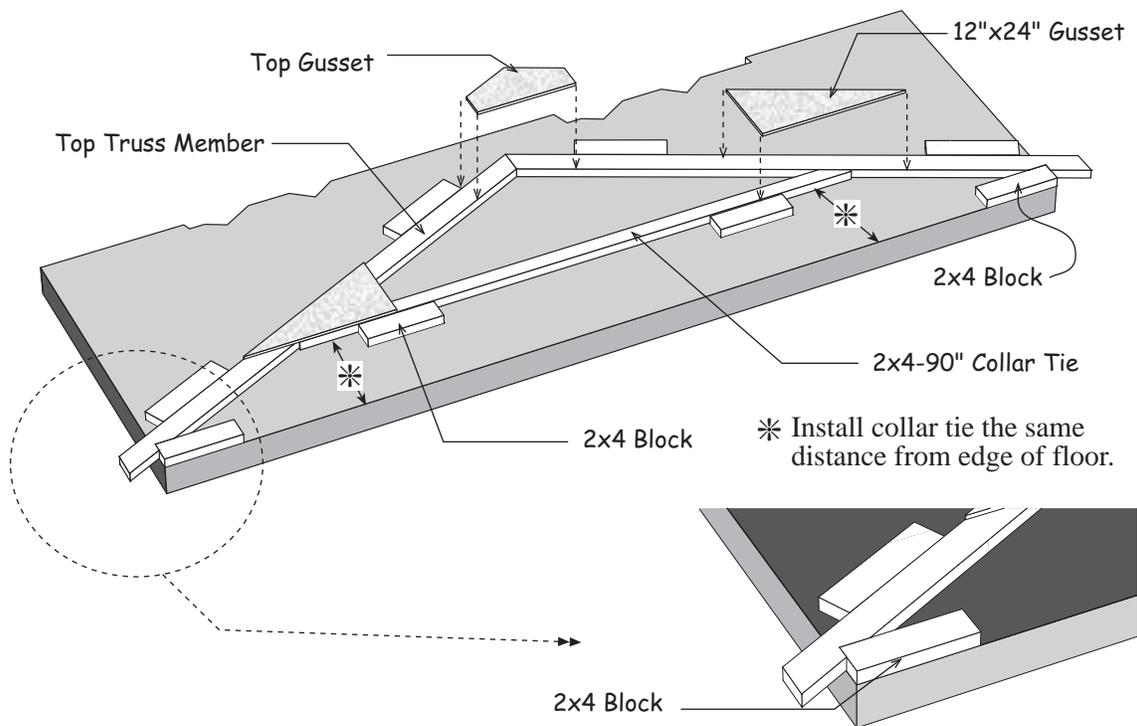| Material Description	12' x 12' shed
2x4 Joist Headers	2 pcs. 12'
2x4 Floor Joist	10 pcs. 12'
4x4 Treated Runners	4 pcs. 12'
Flooring 5/8" or 3/4"	5 pcs. 4x8
Screw Floor Nails	2 lbs. 8d
Galv. Box Nails	1 lb. 16d

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 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.

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 (4) four more trusses.

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

12"x24" Gusset

Top Gusset

Top Truss Member

2x4 Block

2x4-90" Collar Tie

2x4 Block

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

2x4 Block

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 ply-
   wood gusset across the top where they butt together. Use glue and 6d common nails.
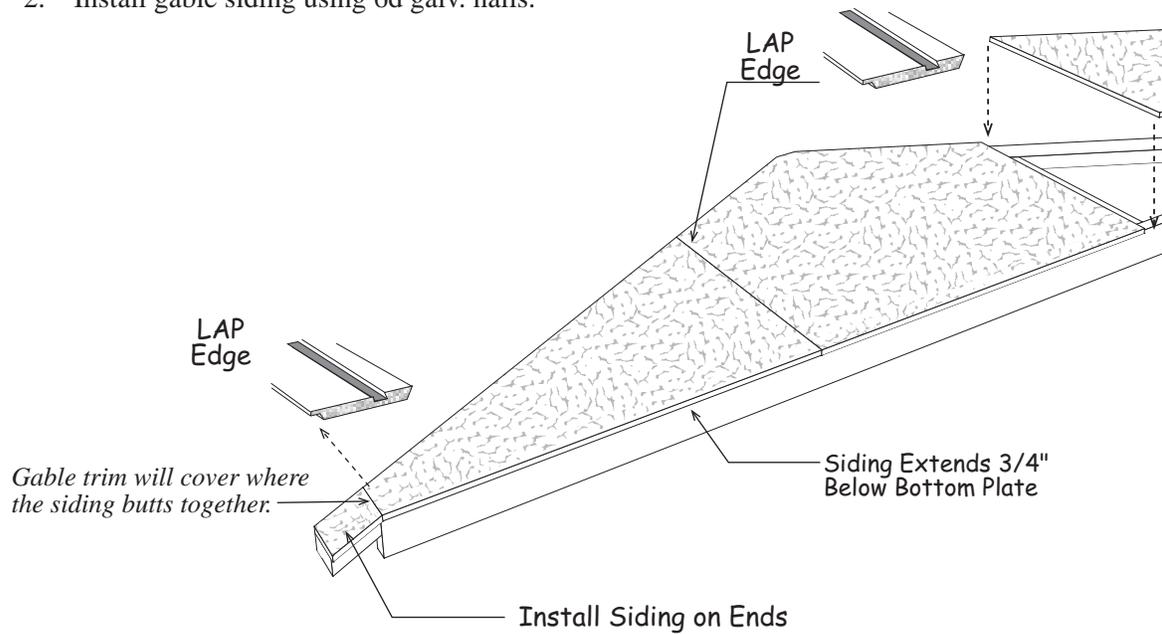
3/4" Plywood Gusset

72" long 2x4
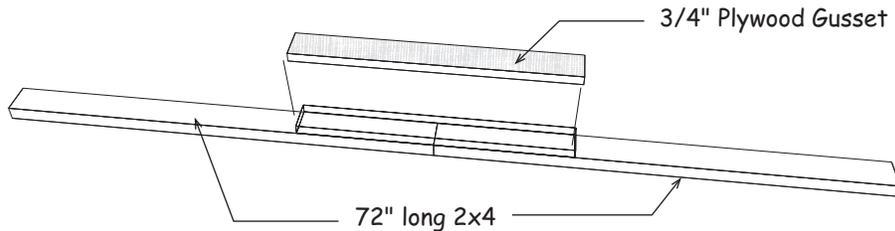
2. Place (2) two truss members in the jig. Secure the top together with a barbed metal plate.

3. Remove the 2x4 blocks at the corners of the floor and insert the gable plate assembled above
   into the bird's mouth. Make sure the 2x4 gable plate is straight. If necessary, tack 2x4 blocks
   to hold plate straight.

Metal Plate

Metal Plate

2x4 Gable Plate

23-1/2" Gable Stud

Screw gable plate to truss
leg with 2-1/2" screw.
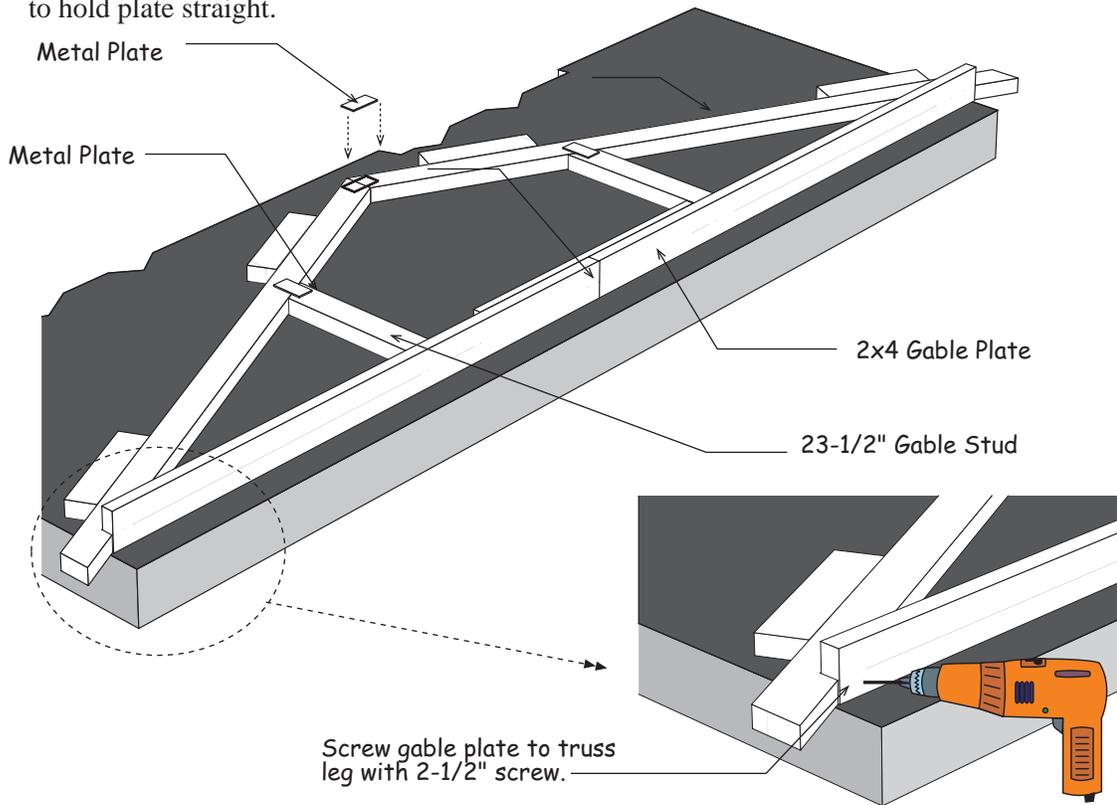
4. Remove the two 2x4 blocks that held the collar tie in position.

5. Install 2x4x23-1/2" gable studs. Nail through the bottom plate with 10d sinkers and secure
   the top with metal drive-on plates.

6. Repeat steps 1-5 to assemble another gable. Remove 2x4 blocks.

Step 3   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. Install gable siding using 6d galv. nails.

LAP
Edge

LAP
Edge

Gable trim will cover where the siding butts together.

Siding Extends 3/4"
Below Bottom Plate
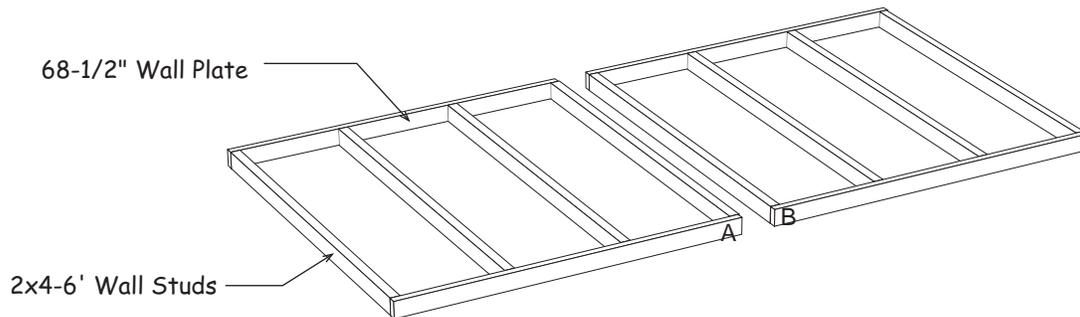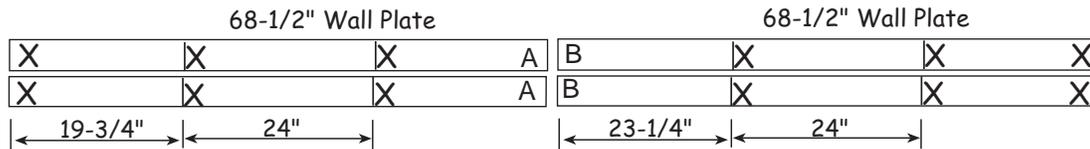
Install Siding on Ends

3. Install siding on the other gable frame.

4. Install 86-1/4" long 2x4s flush with the top of the gable frame. Use 10d sinkers.
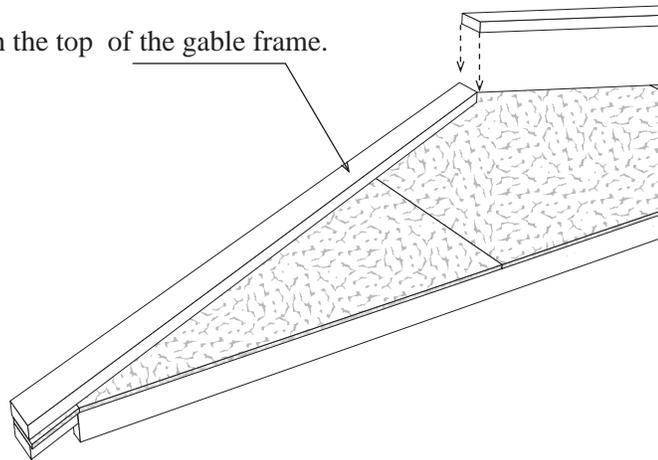
5. Install siding and 2x4son the other gable frame.

Step 4   Assemble 12' Back Wall

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'.

68-1/2" Wall Plate   68-1/2" Wall Plate

X	X	X	A	B	X	X	X
X	X	X	A	B	X	X	X

19-3/4"   24"   23-1/4"   24"

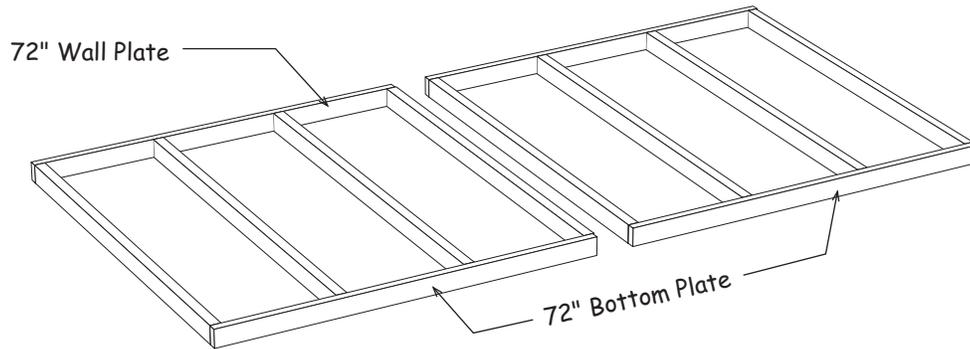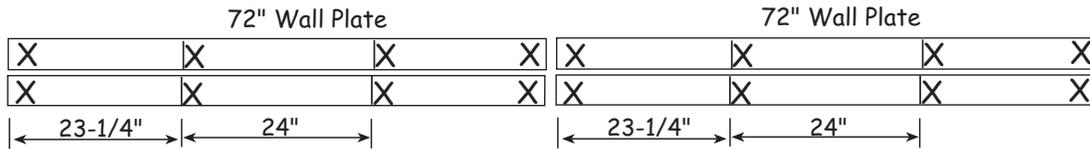68-1/2" Wall Plate

2x4-6' Wall Studs

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.

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

4. Install the 1st siding panel with the 'LAP' edge extending 3-1/2" past the wall frame. The bottom will extend 3/4" below the bottom plate. Tip: Use 3/4" trim board as a gauge.

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

☞ *The siding will be 1/2" below the top of the wall frame <u>on all walls</u>.*

LAP
Edge

Siding Extends 3-1/2"
Past 2x4 Stud

A/B

Siding to extend 3/4"
below bottom plate
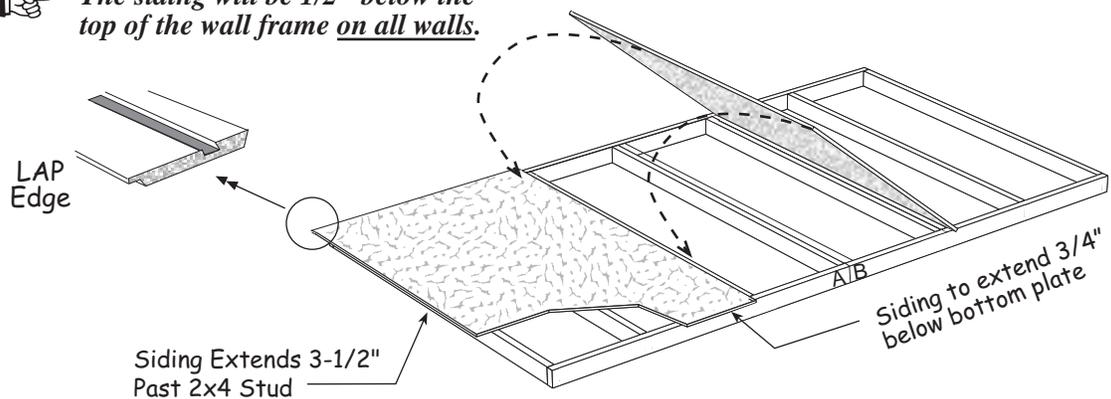
Step 5   Assemble 12' Long Sidewalls

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

72" Wall Plate   72" Wall Plate

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

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

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

72" Wall Plate

72" Bottom Plate

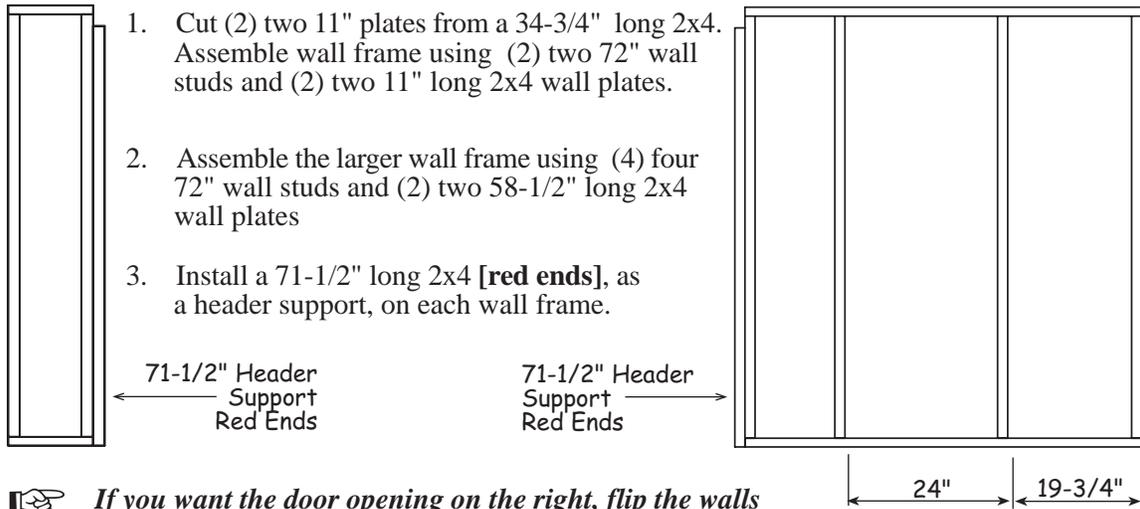2. Install 72" wall studs between the top and bottom plates. Nail both wall frames together.

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.

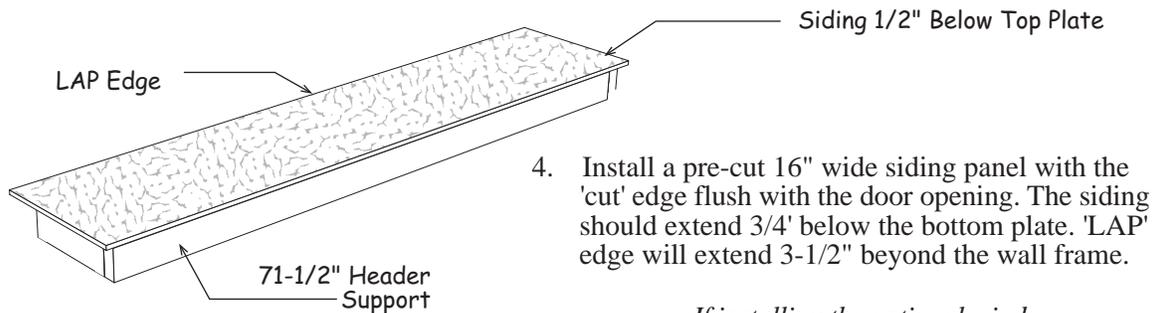5. Install (2) two more siding panels.

LAP

Siding 1/2" Below
Top Plate

LAP Edge

Siding Extends 3/4" Below Plate
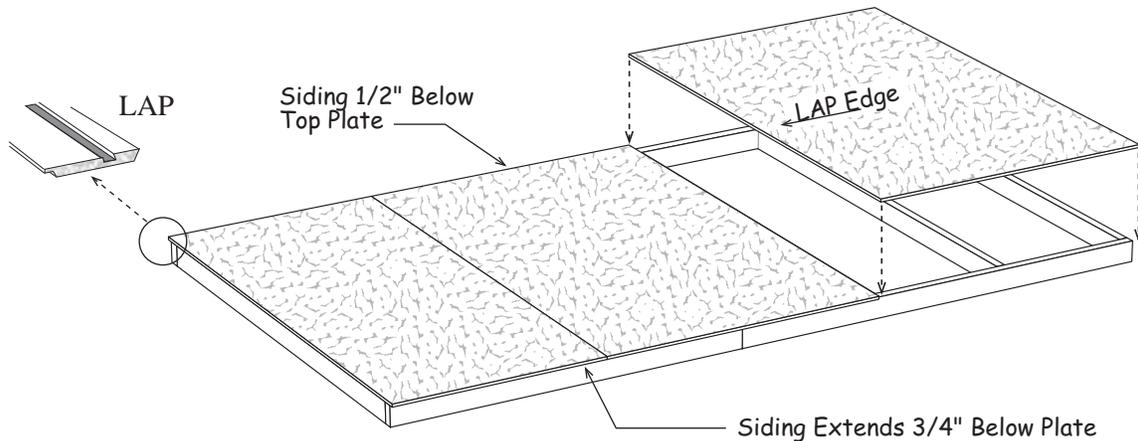
6. Repeat to assemble the another sidewall.

Step 6   Assemble Door Wall - Offset Doors

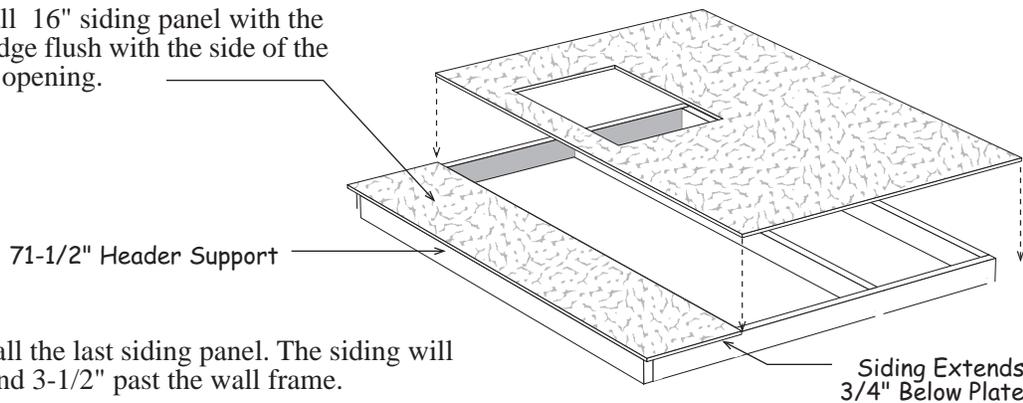☞ *If you want the door opening in the center of the wall, go to Step 7*

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.

71-1/2" Header
Support
Red Ends

71-1/2" Header
Support
Red Ends

☞ *If you want the door opening on the right, flip the walls
and apply siding to the opposite side of the wall frames.*

24"   19-3/4"

Siding 1/2" Below Top Plate

LAP Edge

71-1/2" Header
Support

4. Install a pre-cut 16" wide siding panel with the
    'cut' edge flush with the door opening. The siding
    should extend 3/4' below the bottom plate. 'LAP'
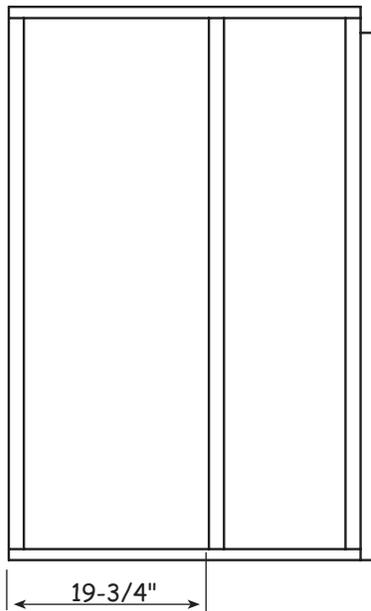   edge will extend 3-1/2" beyond the wall frame.

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

5. Install 16" siding panel with the
    cut edge flush with the side of the
    door opening.

71-1/2" Header Support

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

Siding Extends
3/4" Below Plate

Step 7   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.

71-1/2" Header
Support - Red Ends

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

19-3/4"

4. Cut a siding panel in half lengthways.

5   Select the panel with the 'tongue' edge'. Install this panel with the cut edge extending 3-1/2" beyond the end of the frame. The siding should extend 3/4' below the bottom plate.

6. Install a pre-cut 16" wide siding panel with the cut edge flush with the door opening.

7. Install the remaining siding on the other front wall frame. Cut the 24" wide siding panel to extend 3-1/2" past the end of the wall fame.

Siding 1/2" Below Top Plate

LAP Edge

Cut Edge Extends
3-1/2" Beyond Frame

71-1/2" Header
Support
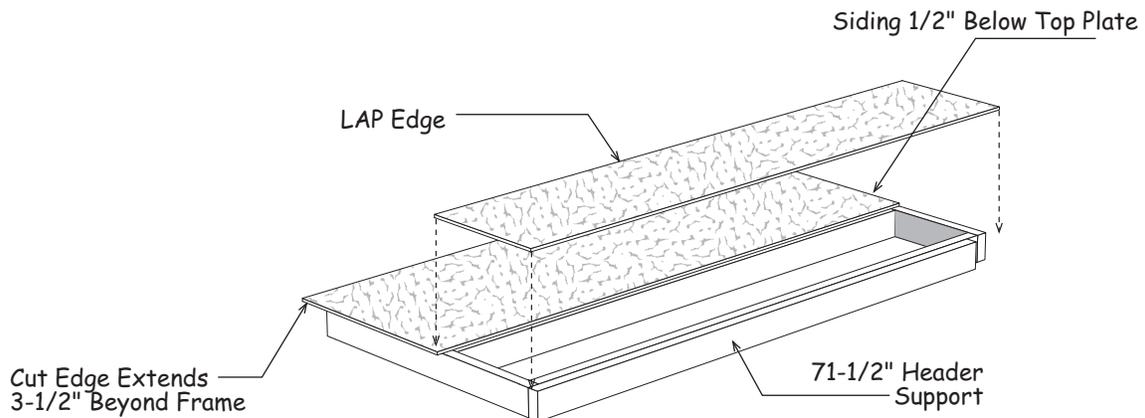
Step 9A   Set Walls - Doors Offset

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. Wall trim, installed later, will hide where the siding butts the front wall panels.

3. Install a 2x4-6' boards at both sides of the door opening to hold the wall straight.

Drawing shows a building
with the doors offset.
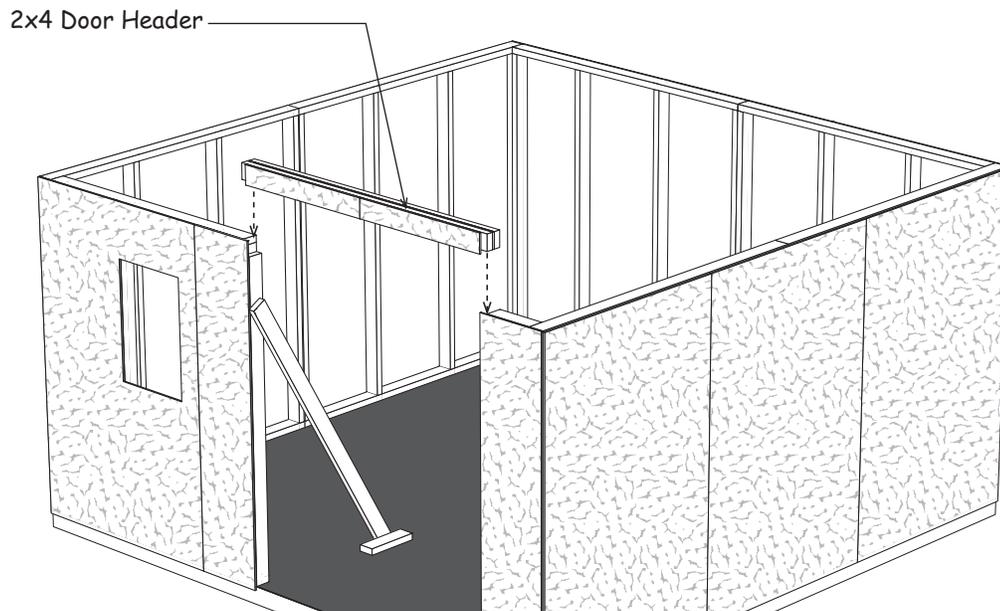
2x4 Door Header

Step 9B   Set Walls - Doors Centered

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. Wall trim, installed later, will hide where the siding butts the front wall panels.

3. Install a 2x4-6' boards at both sides of the door opening to hold the wall straight.

Drawing shows a building
 with the doors centered.

2x4 Door Header
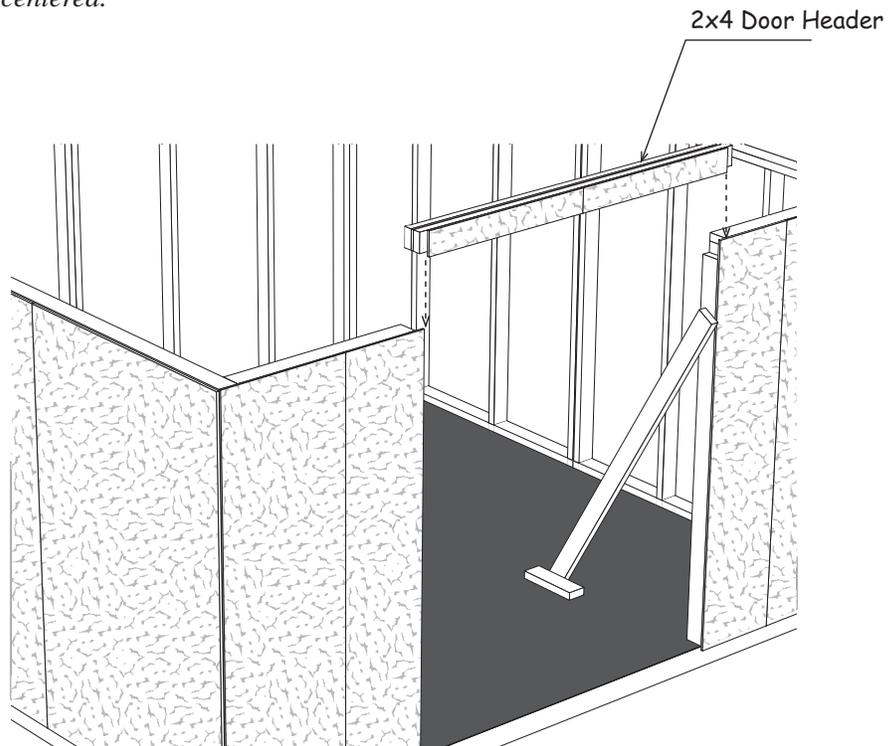
Step 10   Install Sidewall Trim

1. Install 1x4-75 3/4" corner trim boards to the sidewall. Install trim flush with the 2x4 top plate and flush with the siding on the rear & front walls. Use 8d galv. nails, spaced 12" apart.

2. Cut 1x4-6' trim boards to fit between the corner trim boards.

Flush Across Top

Top Plate

1x4 Trim

Rear Wall

Side Wall

flush

1x4 - 75 3/4" Corner Trim
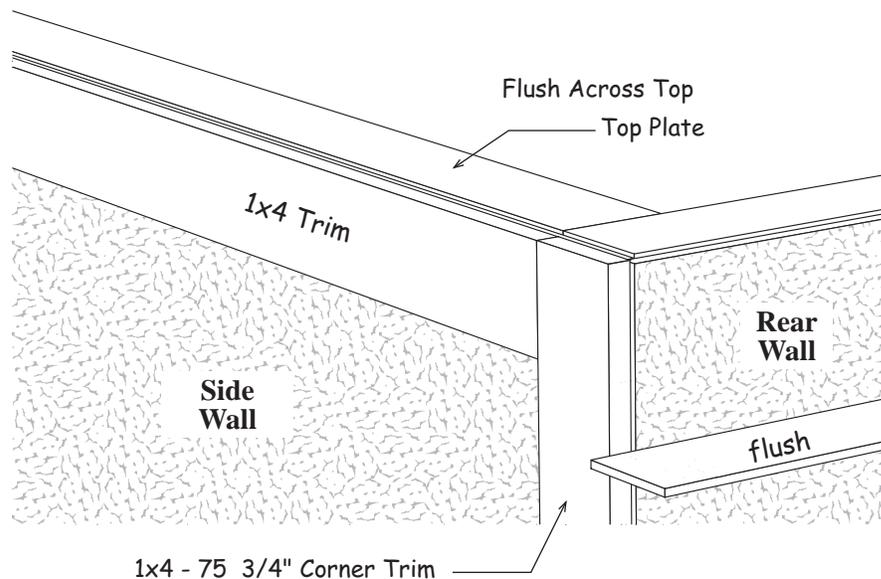
3. Install trim on the opposite end of the building.

Step 11   Install Gable

1. Install a gable on the left sidewall. The gable siding will extend over the 1x4 trim on the lower wall. **NOT behind the trim!**

    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.

Front Wall

Side Wall
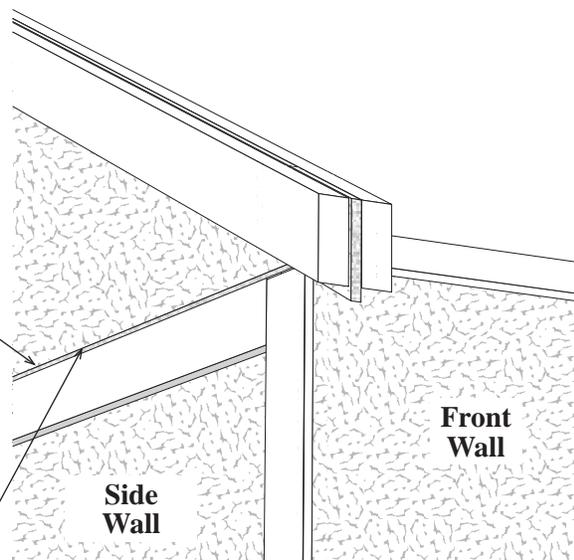
Step 12   Install 2x4 Tie Plates & Door Trim

1. Cut a 2x4-6' in half and install a 3' piece over the front
    wall, against the left gable plate. Use 10d sinkers.

2. Install a 6' long 2x4, cut the 3' piece to finish.

3. Install tie plates on the back wall.

Front Wall

2x4 Tie Plate

2x4-6' Tie Plate

1x3-72"
Door Trim
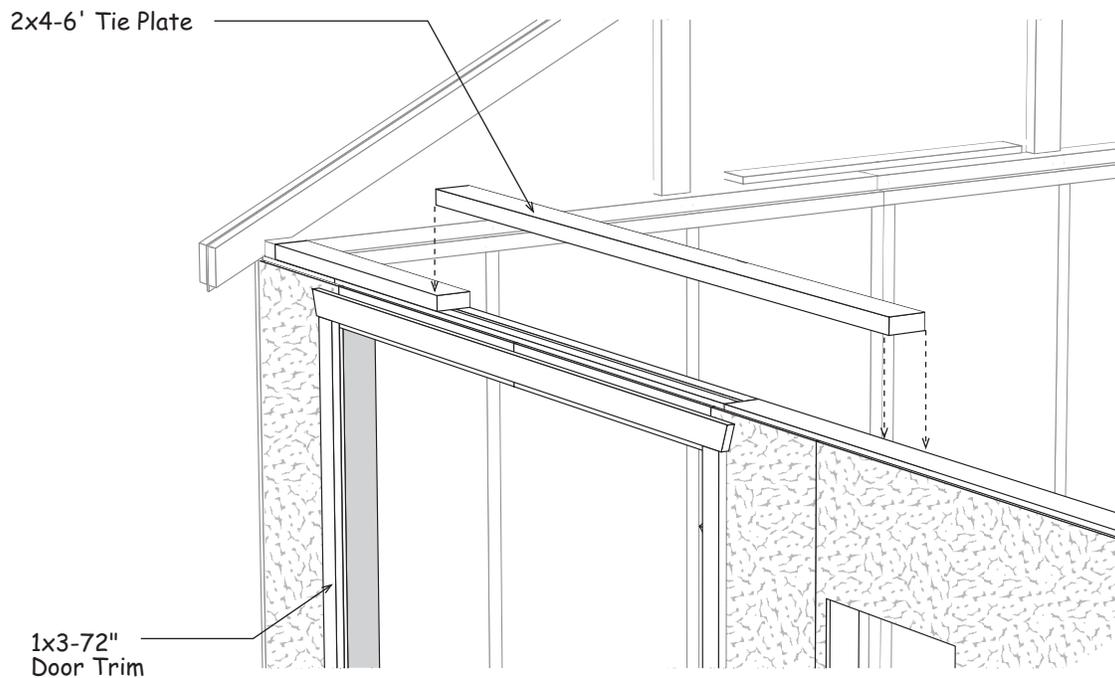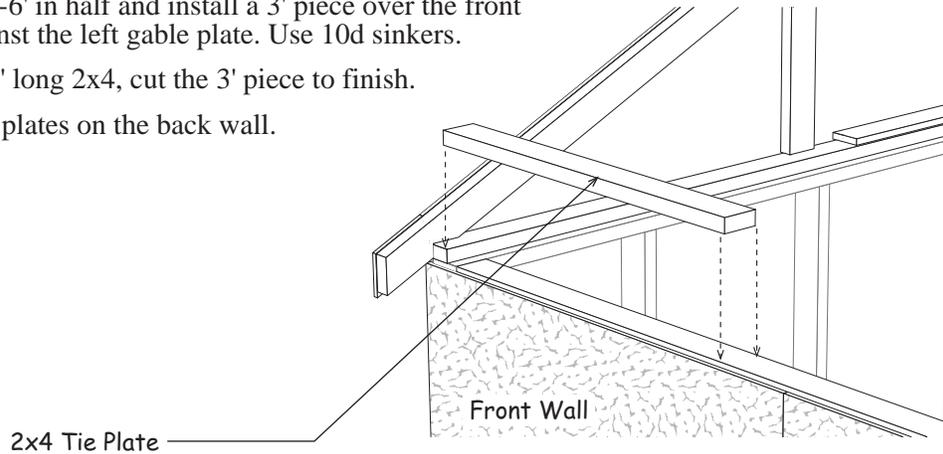
4. Install (2) two 1x3x72" boards along each side of the door opening, flush with the bottom
    edge of the siding. Tack these boards with a couple nails; you may want to move the trim
    later when you install the doors. Use 8d galv. nails.

5. Install a 1x3x71-3/4" board, that has angle cuts on both ends, across the top of the side trim.

Step 13   Layout Roof Trusses

1. Layout the truss spacing from the left 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'

2x4 Tie Plate

Inside of Building

Measure From
Backside of 2x4

19-7/8"

24"

Front Wall
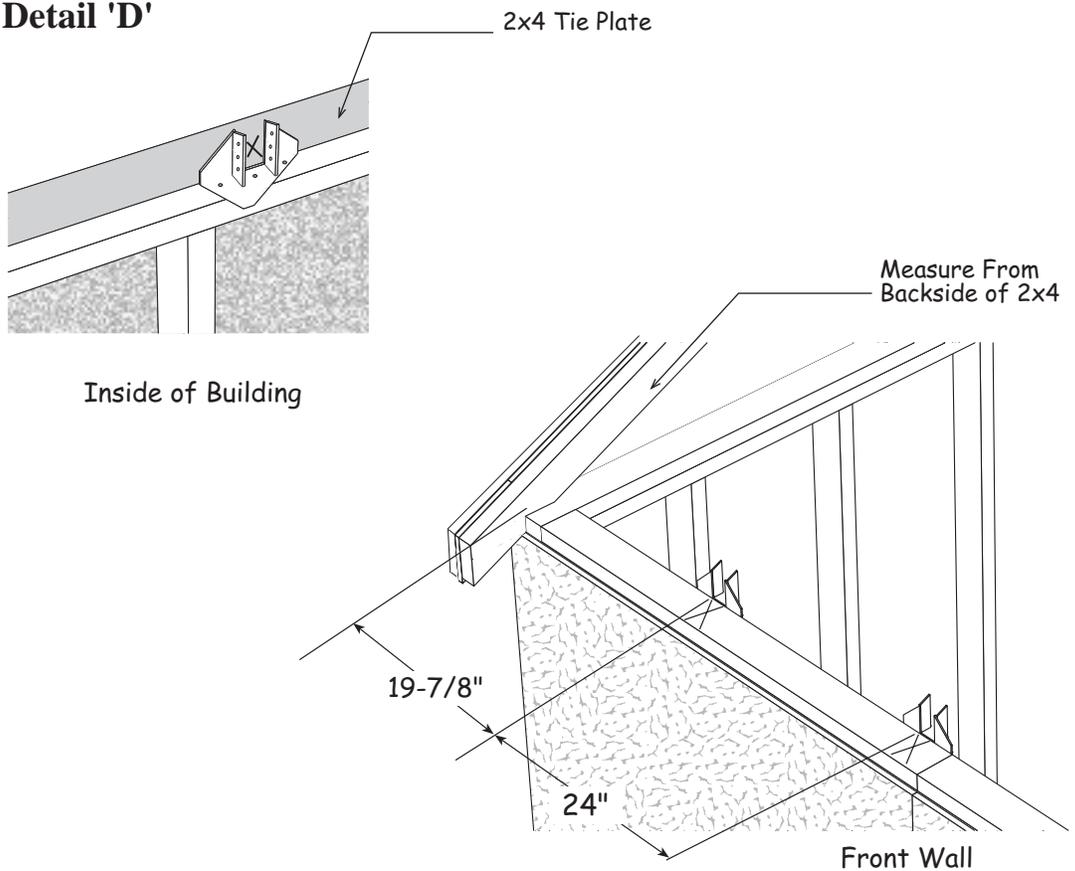
Step 14   Set Roof Trusses

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

Rear Gable
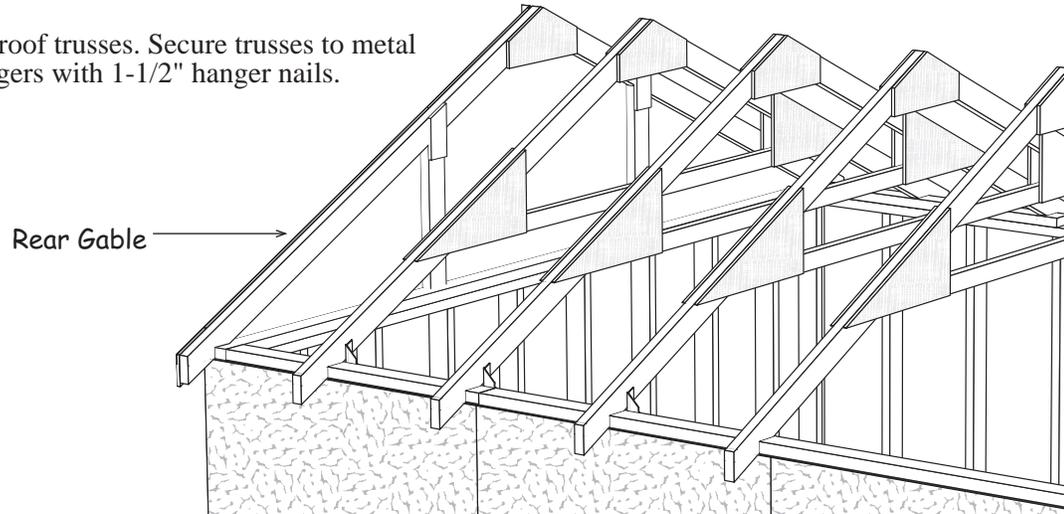
Step 15   Install Eave Soffit & Corner Trim

1. Locate a 5" wide x 24" siding panel that has a 'tongue' edge. Install this panel under the truss
    overhang at the rear of the building. Cut the length, the 'tongu'e edge should be flush with the
    end of the truss. Install the siding/soffit panel with the beveled edge flush with the end of the
    trusses and the cut edge against the gable siding. Use 6d galv. nails.

2. Install (3) three more full length siding panel under the trusses. Cut the last panel to fit.

3. Install soffit panels on the
    opposite side. Start with a
    24" long panel that has a
    'LAP' edge.

Soffit
Beveled Edge
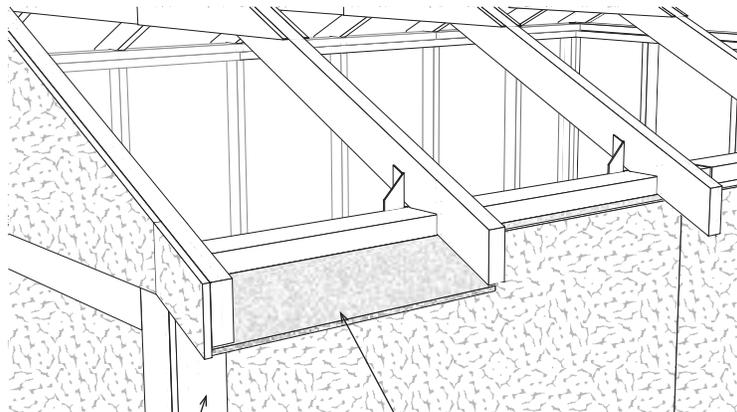
4. Cut 75-3/4" long 1x4 trim boards
    to length and install at the corners.
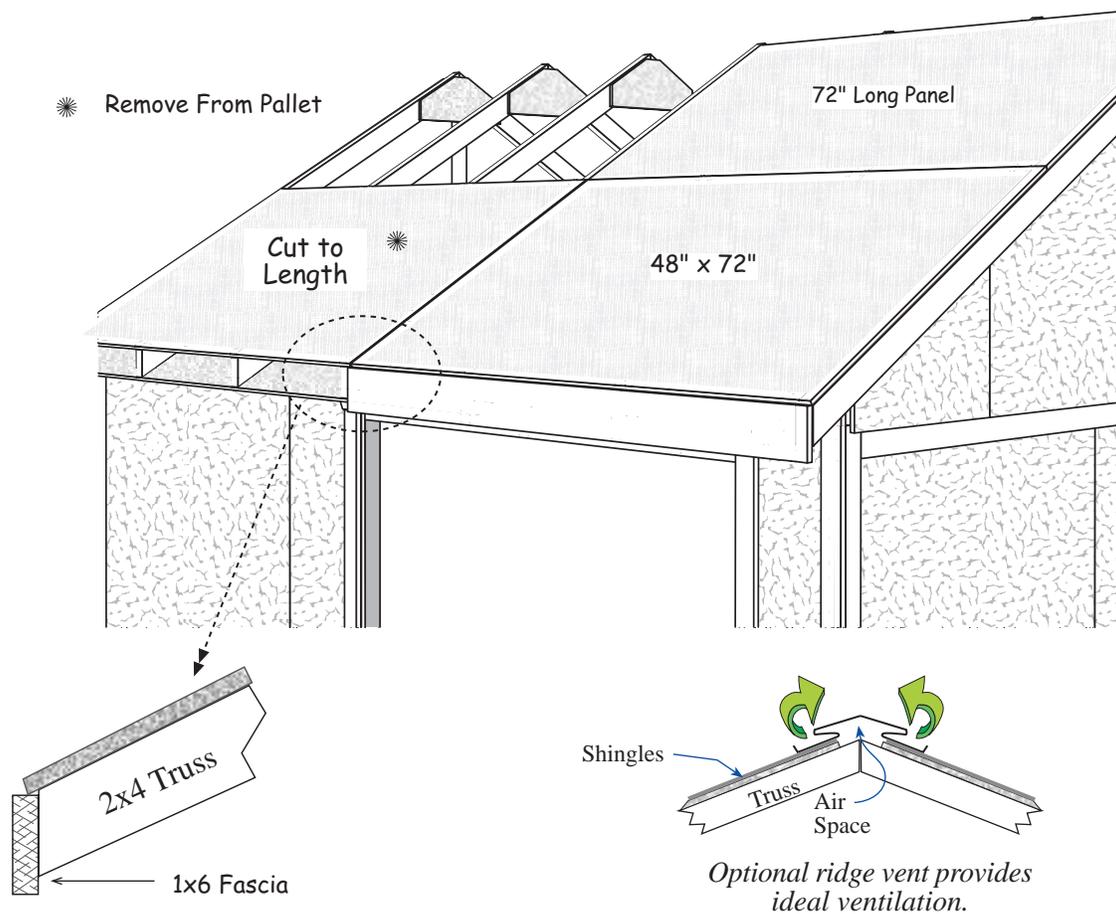
Step 16   Install Roof Sheathing

1. Starting at the right end of the building, install 4x6 OSB roof panels and 1x6-6' white pine fascia boards on each side. Install the roof sheathing and the 1x6 fascia boards flush with the 2x4 boards on the right gable. Install the fascia so the bottom edge of the roof sheathing will rest on the 1x6. *See detail below.* Use 8d galv. nails.

    Make sure the trusses are plumb and the roof sheathing meets the center of the truss. Use 7d sinkers spaced 12" apart. Install the top row of roof sheathing. The roof sheathing will be about 1" below the ridge to allow for ventilation.

2. Cut roof sheathing to length and install at the other end of the building.

✳   Remove From Pallet

72" Long Panel

Cut to Length

✳

48" x 72"

2x4 Truss

1x6 Fascia

Shingles

Truss   Air Space

Optional ridge vent provides ideal ventilation.

3. Install 1x6 fascia trim. Cut 84" long piece to fit.

Step 17   Install Gable Trim

1.   Install 1x6-87" long gable trim over the 2x4s on both gable. Install trim flush with the top of the roof sheathing.

1x6-87" Gable Trim

2x4 Boards
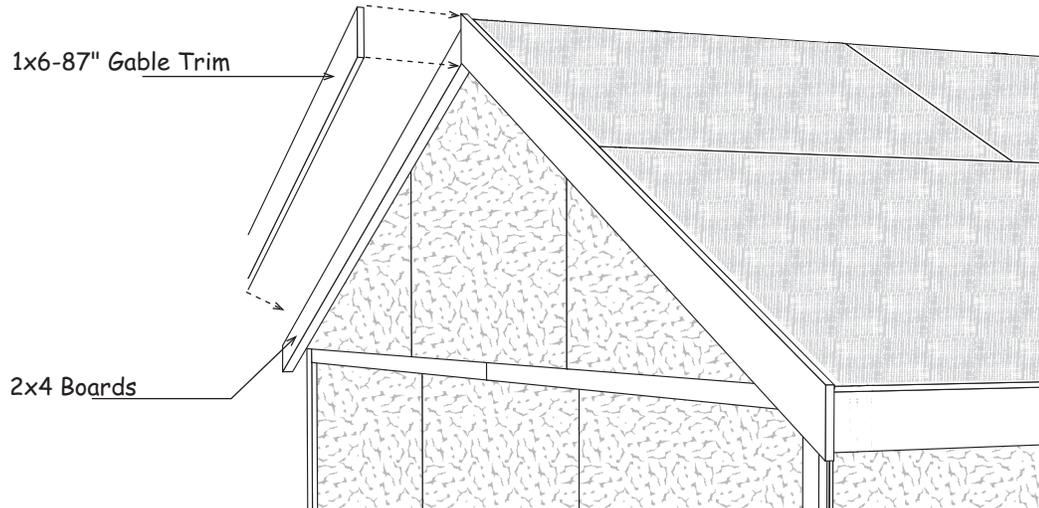
## Step 18   Install Roofing — Not Supplied in Kit

1. Install metal roof edging <u>perimeter of the roof area</u>. 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.

1x6 Gable Trim

Felt Paper

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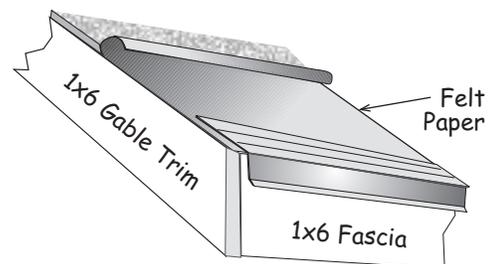
2. Install shingles according to the instructions on the wrapper. If you need more detailed instructions on installing shingles, there are good publications at book stores or newsstands.

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

Optional ridge vent provides ideal ventilation.

Shingles

Truss   Air Space
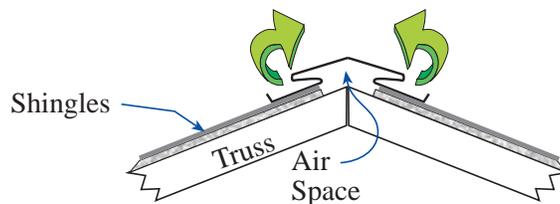
Step 18   Install Doors & Hardware
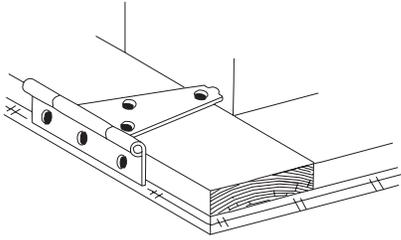
1. Lay the <u>left door</u> with the trim facing up. The siding on the left door <u>extends past the door trim</u>. See detail below.

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.

Left Door

Install Door Latch

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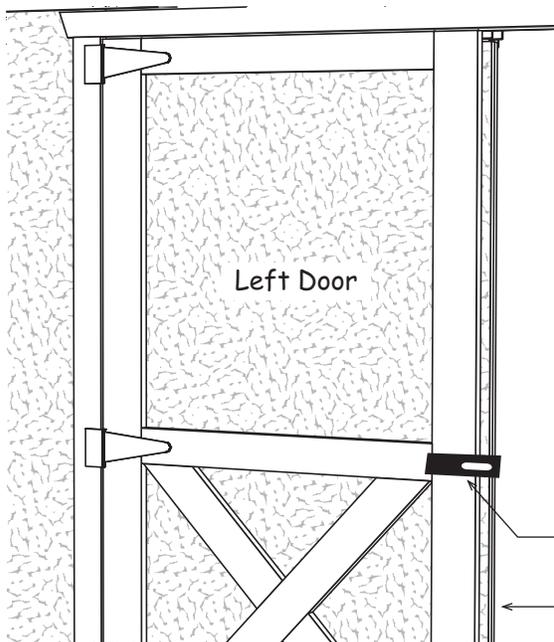
4. Before you fasten the hinges to the door trim, temporarily prop the doors in the opening. Leave a space at the top of the doors and between the doors and the side trim to allow room for the doors to expand when they absorb moisture.

   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.

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.
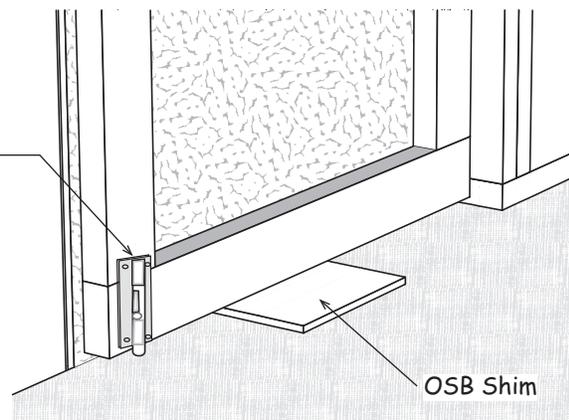
OSB Shim

Material Packaged In Component Kit

Qty	Item	Size	Dimension		Qty	Unit	Size	Item
5	Collar Ties	2x4	90"		3	1 lb. box	10d	Sinkers
18	Truss Rafters	2x4	86-1/4"		3	1 lb. box	8d	Galv.
48	Wall Studs	2x4	72"		2	1 lb. box	7d	Sinkers
2	Door Jacks	2x4	71-1/2"		1	1 lb. box	6d	Galv.
4	Wall Plates	2x4	68-1/2"		3	1 lb. box	6d	Common
2	Wall Plates	2x4	58-3/4"		1	1 lb. box		1-1/2" Hanger Nails
2	Wall Plates	2x4	34-3/4"		6	ea.	5"	Door Hinges
4	Gable Studs	2x4	23-1/2"		1	ea.	4.5"	Door Latch
8	Truss Jig Blocks	2x4	10"		2	ea.	6"	Barrel Bolts
10	Truss Gussets	7/16"	8" x 20"		48	ea.	2"	Hinge Screws
20	Truss Gussets	7/16"	12" x 24"		6	ea.	1x4	Metal Plates
2	Soffit Boards	3/8"	5" x 24"		2	ea.		Bottle Glue
6	Soffit Boards	3/8"	5" x 48"		4	ea.	1x6 Gable Trim	87"
2	Plywood Gusset	3/4"	3.5" x 32"		2	ea.	1x6 Fascia Trim	84"
10	2x4 Metal Truss Hangers				2	ea.	1x6 Fascia Trim	72"
10	Siding Panels		48" x 75-1/4"		8	ea.	1x4 Corner Trim	75-3/4"
2	Siding Panels		16" x 75-1/4"		4	ea.	1x4 Wall Trim	72"
2	Siding Panels-Gables		48" x 40"		2	ea.	1x3 Door Trim-*sides*	72"
4	Siding Panels-Gables		48" x 28"		1	ea.	1x3 Door Trim-*top*	71-3/4"
4	Roof Sheathing		83-1/2" Long			ea.	Pre-built Doors 32" x 71-3/4"	
4	Roof Sheathing		72" Long		1	ea.	Pre-built Door Header 67-1/2"	

Roof Shingles by Owner

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