BEST BARNS
USA
Quality Do-it-yourself Barn Kits

Best Barns USA
Assembly Book
Revised July 27, 2012

the North Dakota
with pocket doors

Building Size
12'x12' or 12'x16'

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 kit. These instructions will construct a 12'x12' or a 12'x16' North Dakota. **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, siding, roof sheathing and longer 1x6 fascia trim 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 is primed. You will need to apply a finish coat using latex acrylic paint.

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.

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

Exterior Siding

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
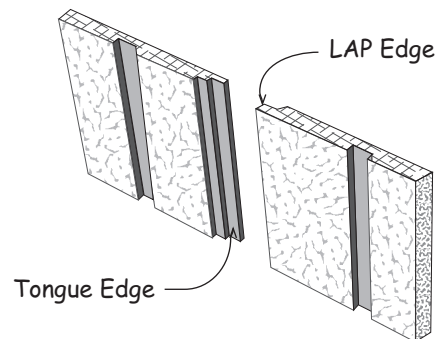
Tool List

☐ Hammer & Phillips Screwdriver	☐ Power Drill/Screwdriver
☐ Framing Square & Level	☐ Measuring Tape
☐ Hand or Circular Saw	☐ **2-8' Step Ladders**

**Always wear safety glasses when cutting or nailing!**
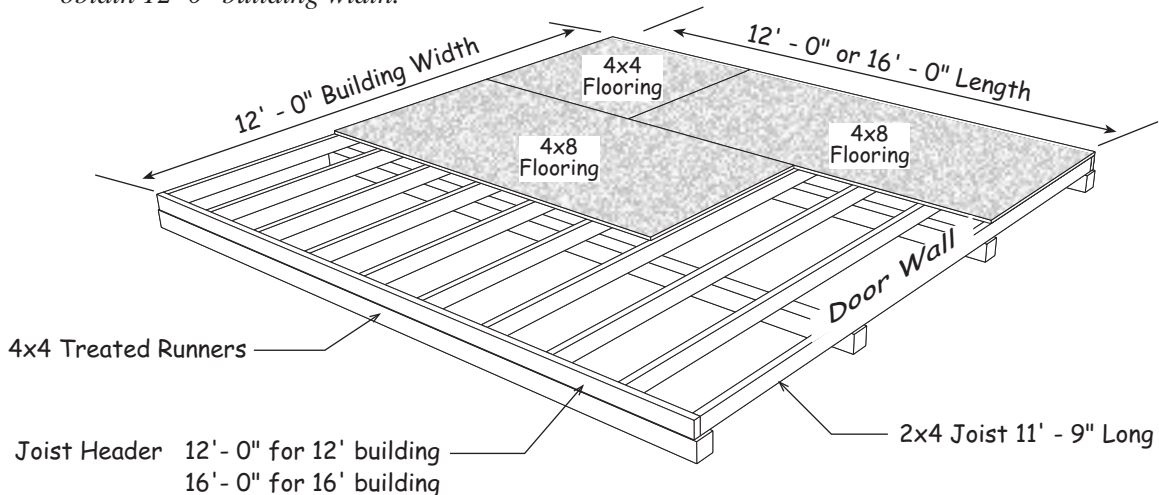
Constructing Details for Deluxe Floor System

Deluxe floors include 4x4 runners, standard floors do not

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 (2) two 2x4 joist headers to length. Cut 2x4s to 12'-0" for a 12' long building, 16'-0" for a 16' long building. Layout for 16" on center joist spacing. 'X' marks where floor joist will be placed.

    2x4 Joist Header


    | 15-1/4" | 16" | 16" |
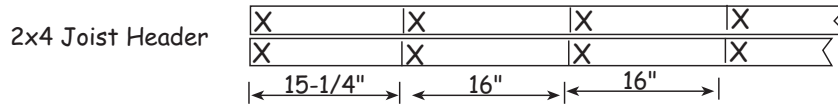
2. Cut 2x4-12' floor joist to 11'-9". *Treated lumber may be thicker than 1-1/2". Take this into account when cutting the length of floor joists. Shorten joist measurements if necessary to obtain 12'-0" building width.*

12' - 0" Building Width

12' - 0" or 16' - 0" Length

4x4 Flooring

4x8 Flooring

4x8 Flooring

Door Wall

4x4 Treated Runners

Joist Header   12'- 0" for 12' building
16'- 0" for 16' building

2x4 Joist 11' - 9" Long

It is important that the floor be level and square. Square the floor as follows: 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.

When using a concrete slab for a floor, 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.

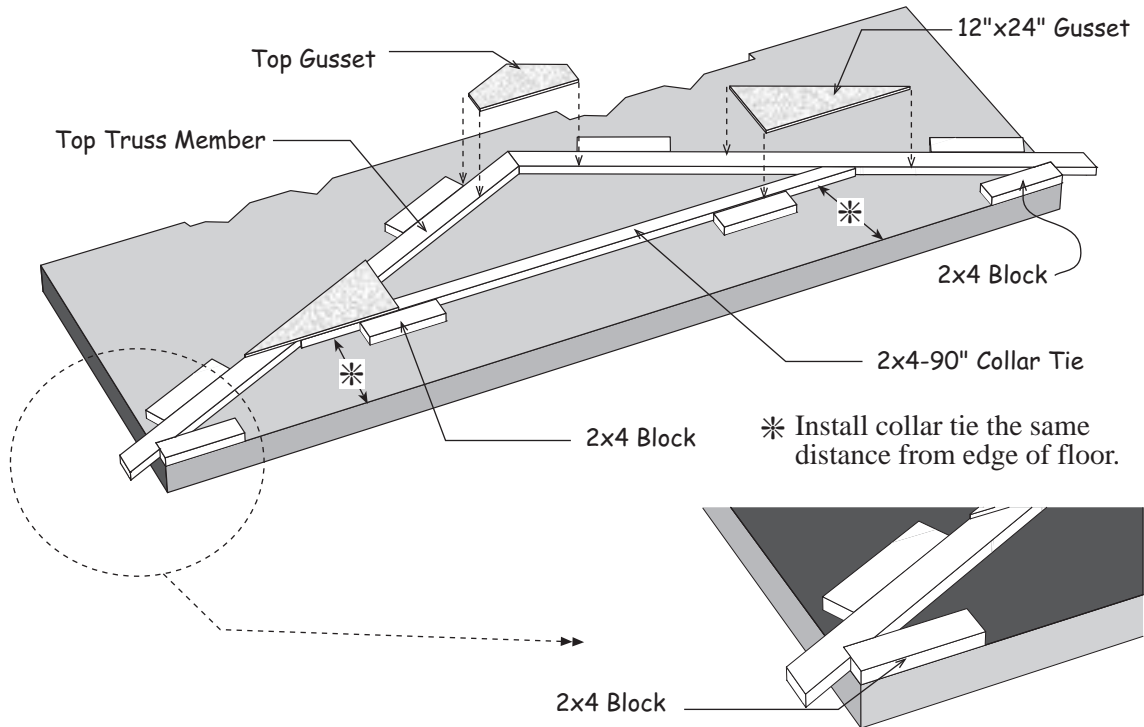| Material Description	12' x 12' shed		12' x 16' shed	
2x4 Joist Headers	2 pcs.	12'	2 pcs.	16'
2x4 Floor Joist	10 pcs.	12'	13 pcs.	12'
4x4 Treated Runners	4 pcs.	12'	8 pcs.	8'
Flooring 5/8" or 3/4"	5 pcs.	4x8	6 pcs.	4x8
Screw Floor Nails	2 lbs.	8d	2 lbs.	8d
Galv. Box Nails	1 lb.	16d	2 lbs.	16d
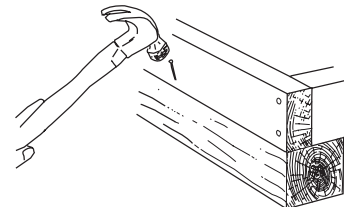
To keep 2x4 frame from moving, toe nail to 4x4.

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 for a 12' long building or (6) six more for a 16' long building.

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

Top Gusset

12"x24" 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 plywood gusset across the top where they butt together. Use glue and 6d common nails.


3/4" Plywood Gusset

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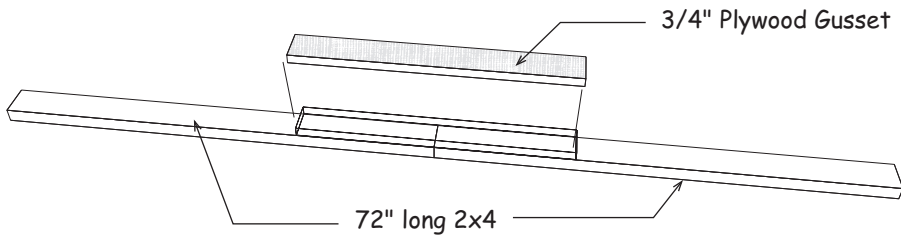
2. Place (2) two truss members in the jig. Secure the top together with a barbed metal plate.

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.
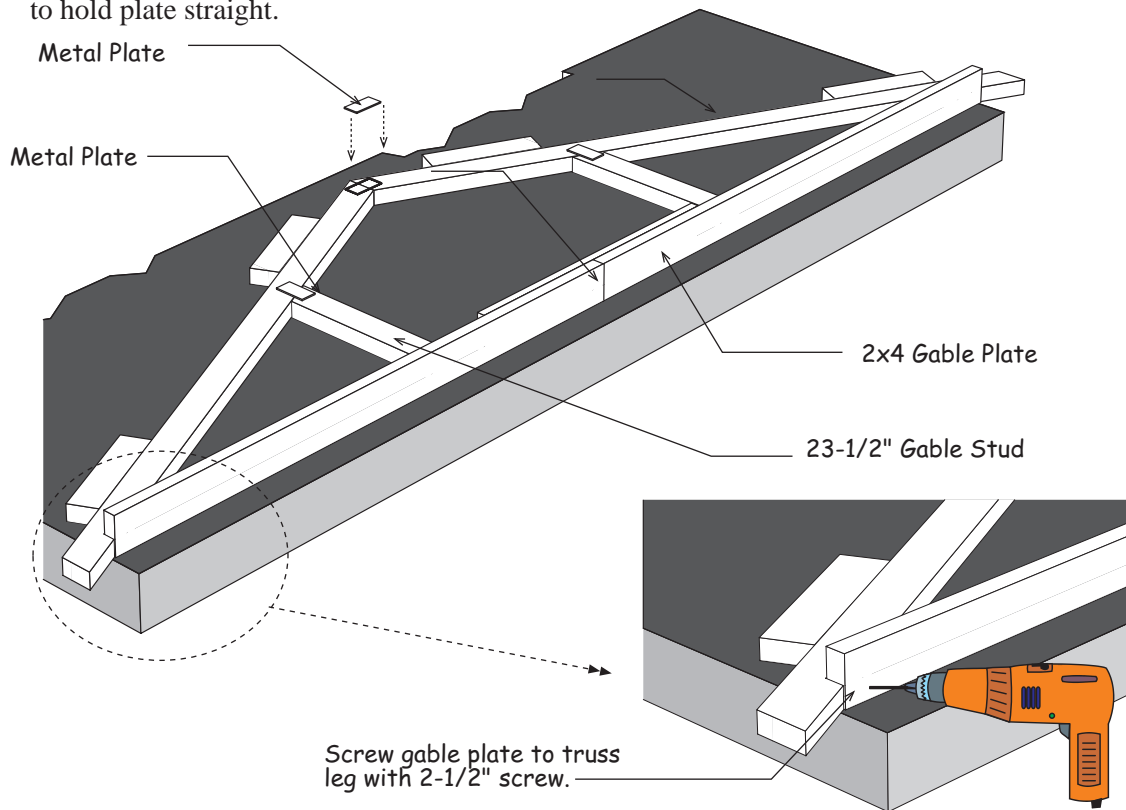
4. Remove the two 2x4 blocks that held the collar tie in position.

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. Cut a siding panel 40" in length. This will be used for the center of the gable. Cut the remaining siding panel in half for the ends of the gable.

3. Temporarily position all three siding panels on gable frame starting at left working right. Insure bottom of panels extend 3/4" below bottom plate. Mark siding flush with top of gable frame and cut along mark. Install siding using 6d galv. nails.

4. Install pre-cut siding (*included in the kit*) on the ends of the gable. These pieces should extend 1/2" below bottom of 2x4 to receive soffit when installed later.

5. Install siding on the other gable frame.

Siding Extends 3/4"
Below Bottom Plate

Install Siding on Ends
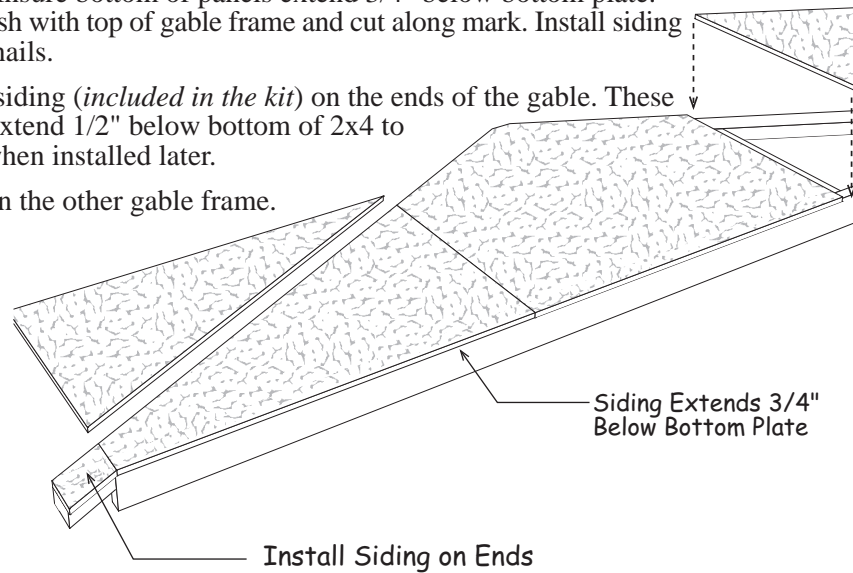
Step 4 Assemble Front Door Walls
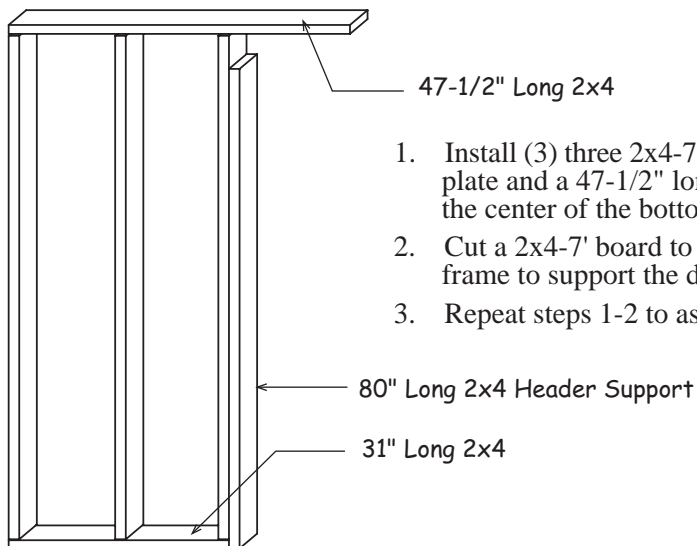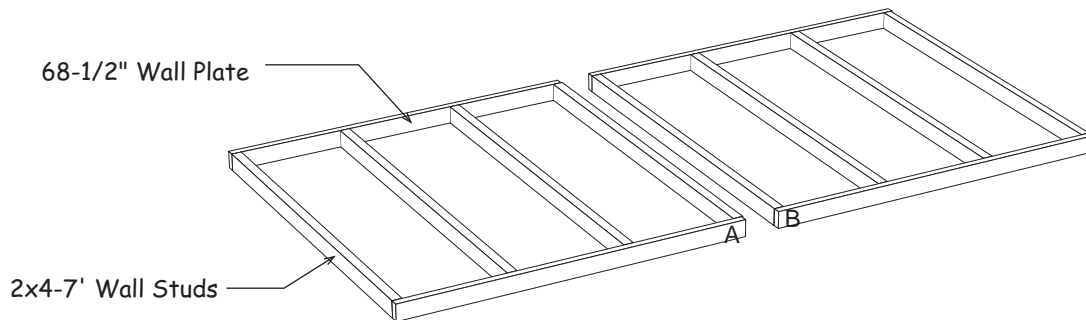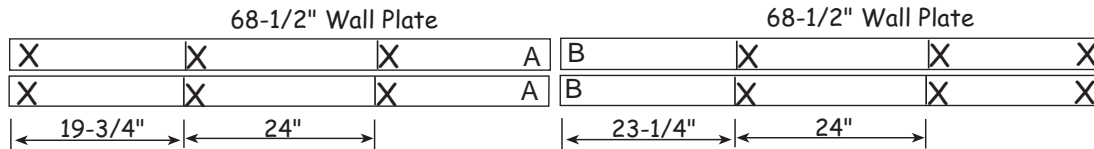
47-1/2" Long 2x4

1. Install (3) three 2x4-7' wall studs between a 31" long bottom plate and a 47-1/2" long top plate. Install the middle stud in the center of the bottom plate. Use 10d sinkers.

2. Cut a 2x4-7' board to 80" and install on the end of the wall frame to support the door header.

3. Repeat steps 1-2 to assemble another wall frame.

80" Long 2x4 Header Support

31" Long 2x4

Step 5   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"

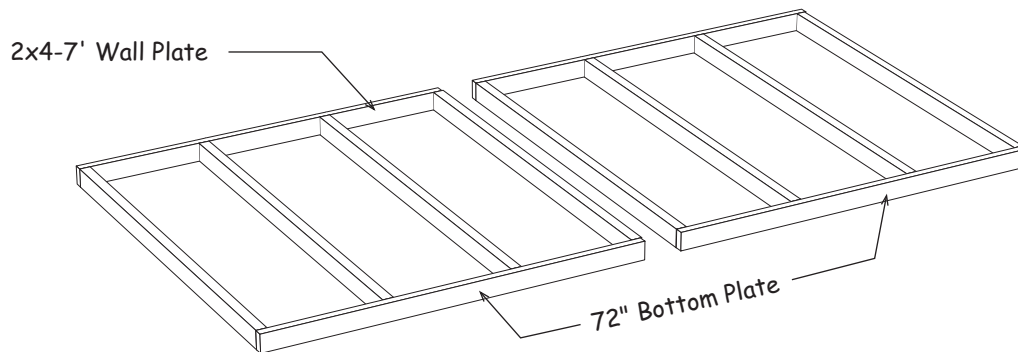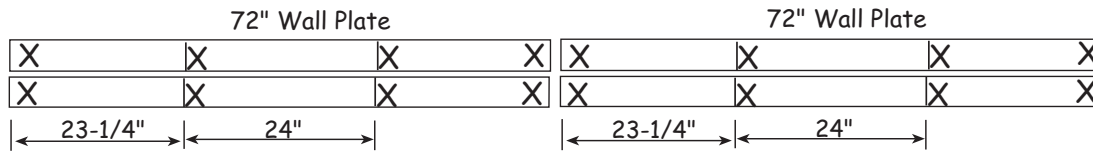68-1/2" Wall Plate

2x4-7' Wall Studs

2. Install 2x4-7' 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. Cut (3) three siding panels to a length of 87-3/4". 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. <u>Cut the last panel to extend 3-1/2" beyond the wall frame.</u>

LAP
Edge

Siding to extend 3/4"
below bottom plate

Siding Extends 3-1/2"
Past 2x4 Stud
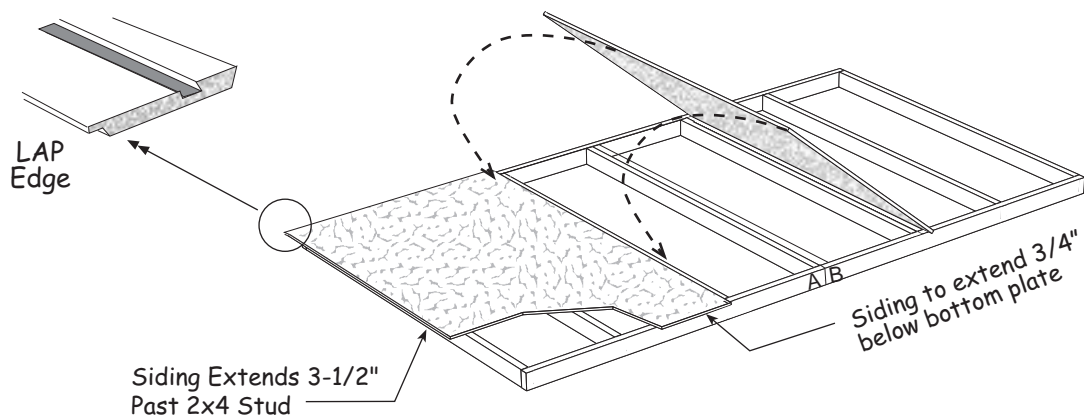
Step 6   Assemble 12' Long Sidewalls

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"

2x4-7' Wall Plate

72" Bottom Plate

2. Install 2x4-7' wall studs between the top and bottom plates. Nail both wall frames together.

☞ If you are installing optional windows or walk-in door, see the instructions at the back of the book.

3. Square wall frame. Cut (3) three siding panels to a length of 87-1/4".

4. Install the first siding panel with the 'LAP edge' flush the end of the wall and extending 3/4" below the bottom plate.

5. Install (2) two more siding panels.

☞ *Save the siding cutoffs, they will be used on the front gable overhang.*

LAP

Siding 1/2" Below Top Plate

LAP Edge

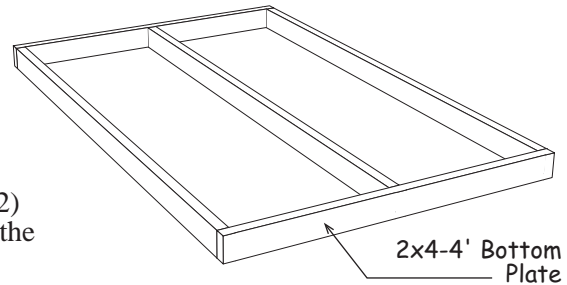Siding Extends 3/4" Below Plate
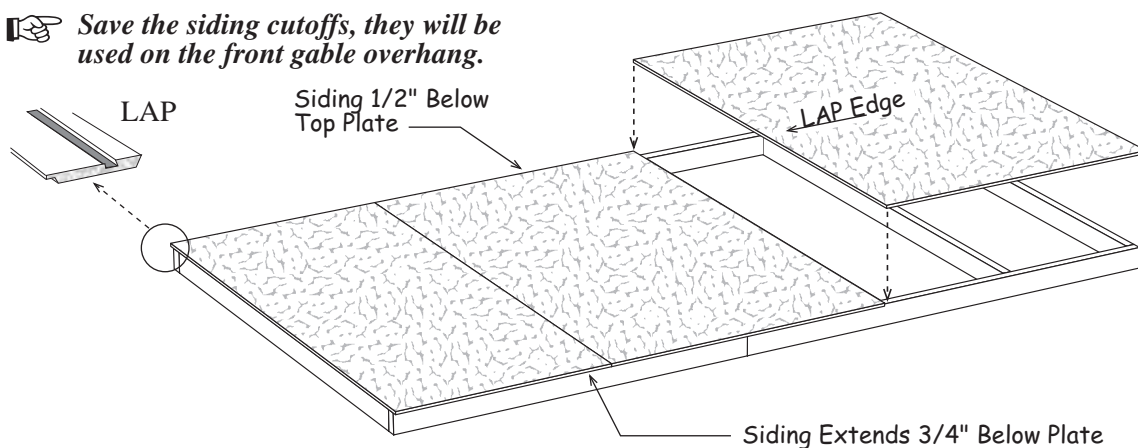
6. Repeat steps 1-5 to assemble the another sidewall.

Step 7   Assemble Sidewalls for 16' Building Length

☞ **If you are constructing a 12' x 12' building, go to Step 8.**

1. Install (3) three 2x4-7' wall studs between (2) two 48" long 2x4s boards. Install the stud in the center of the wall frame.

2. Repeat to assemble another 4' wall section.

2x4-4' Bottom Plate

3. Select one of the 12' sidewalls assembled in **Step 6**. Butt the 48" wall frame against the wall with siding. DO NOT nail these frames together so they can be separated later.

4. Cut a siding panel to a length of 87-1/4". Install on 4' wall panel but do not nail along the long edge that overlaps the 12' wall frame. You can nail this edge after the wall panels are installed. This will enable you to separate the wall panels making them easier to handle.

Do Not Nail Along This Edge

4' Wall Panel

12' Wall Panel from Step 6
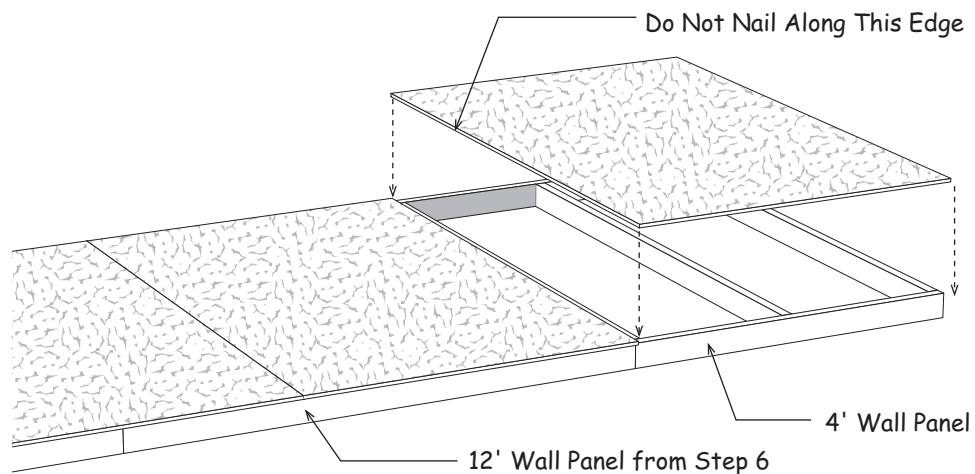
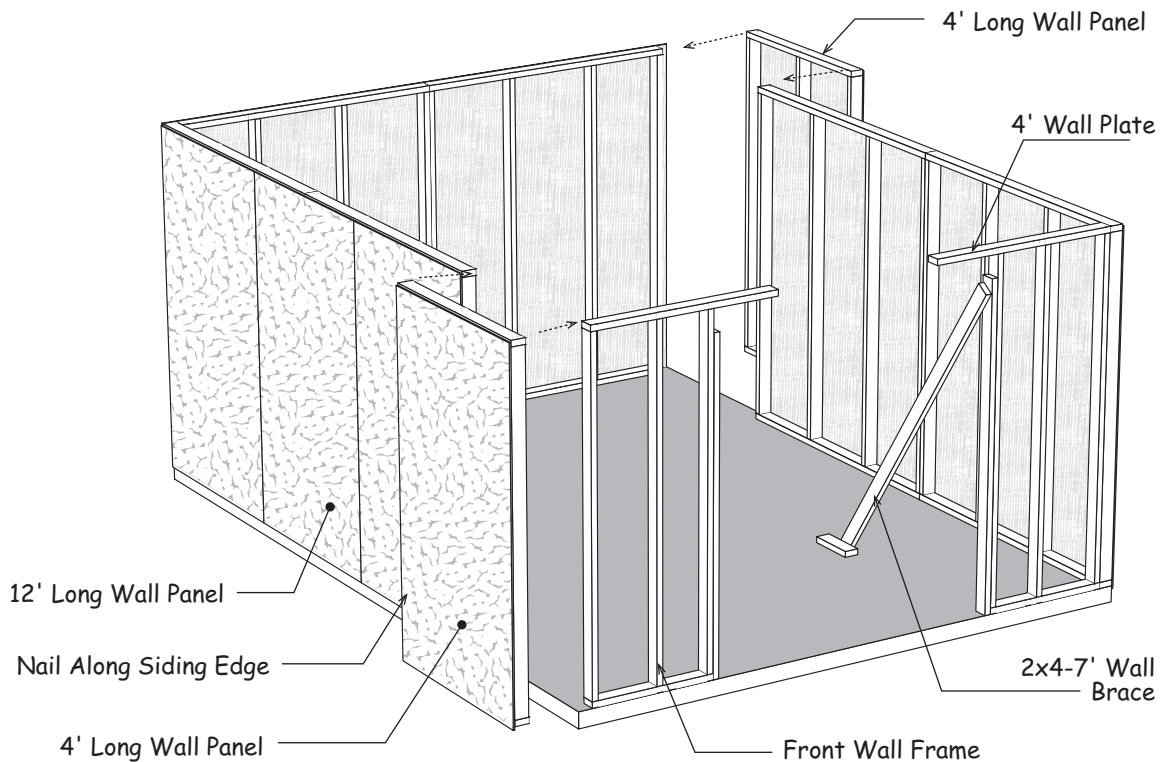5. Repeat steps 3-4 to apply siding to the other 4' wall frame.

Step 8   Assemble Door Header

1. Locate (2) two 2x6 boards and an OSB filler 75" in length.

2. Assemble the door header using 10d sinkers.


2x6 Board

OSB Filler
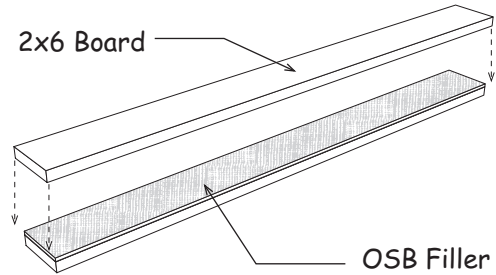
Step 9   Set Walls

1. Set the back wall panel between the sidewalls. 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. If you are constructing a 16' long building, install the 4' wall panels where shown below. Nail along the siding edge where it overlaps the 12' long panel.

3. Install the front wall frames between the sidewalls.

4. Install a 2x4-7' board at the door opening to hold the wall straight.

4' Long Wall Panel

4' Wall Plate

12' Long Wall Panel

Nail Along Siding Edge

4' Long Wall Panel

2x4-7' Wall Brace

Front Wall Frame

Step 10   Install Siding on Front Wall

1.   Install the 2x6 door header between the front wall panels. Nail through the wall stud into the ends of the header. Nail into the header through the top wall plates.

2.   Install a 42" long 2x4 over the door header.
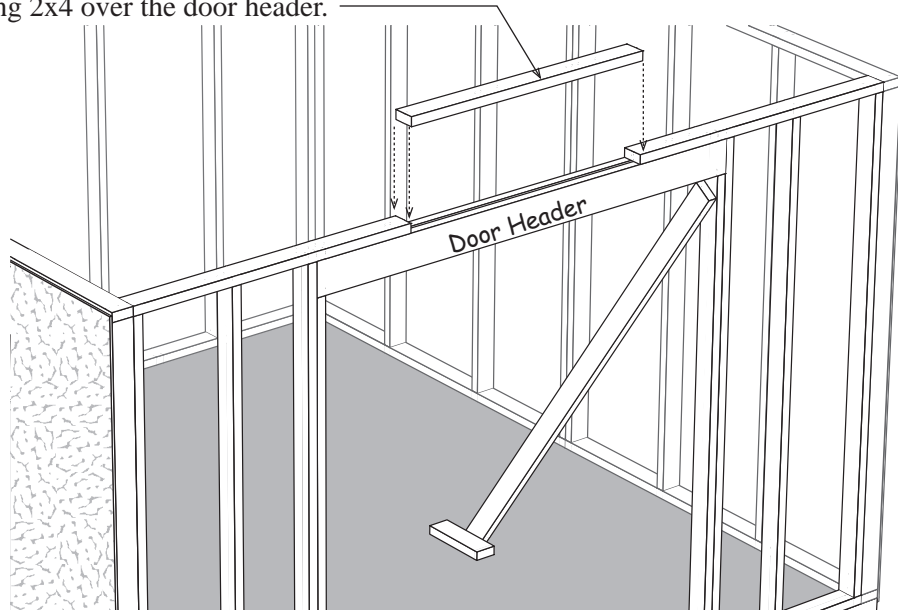
3.   Cut (2) two siding panels to a length of 87-3/4". Install the 'left' siding panel with the 'LAP' edge flush with the sidewall siding and extending 3/4" below the bottom plate. Cut siding flush with the door opening.

4.   Install a 7" siding panel, *included in the kit*, over the door header.

5.   Cut the 'right' siding panel flush with the sidewall siding and flush with door opening.
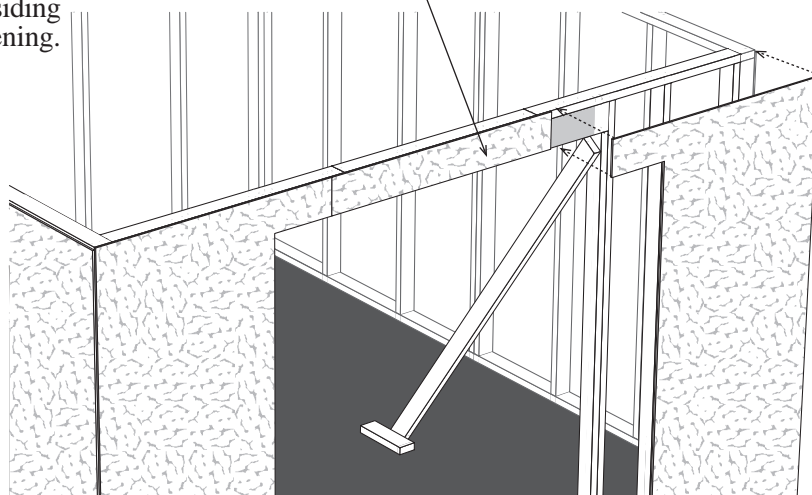
Step 11   Install Rear Trim

1. Install 1x4-87- 3/4" corner trim boards to the rear wall. Install trim flush with the 2x4 top plate and flush with the siding on the sidewalls. 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

Side Wall

Rear Wall

flush

1x4 - 87-3/4" Corner Trim
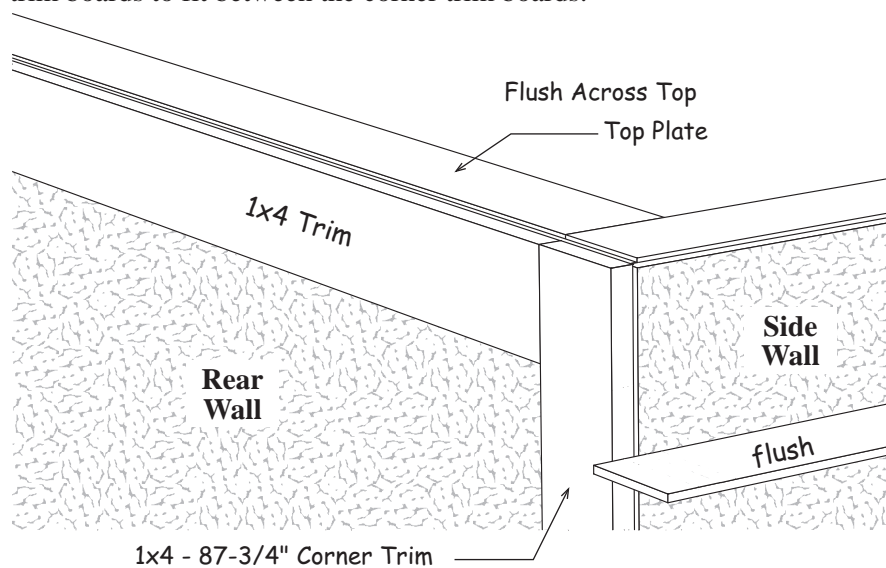
3. Install trim on the front wall of the building.

Step 12   Install Gables

1. Install a gable on the rear wall. 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 front wall.

*Important: Bottom edge of siding extends over 1x4 trim. Paint this edge.*
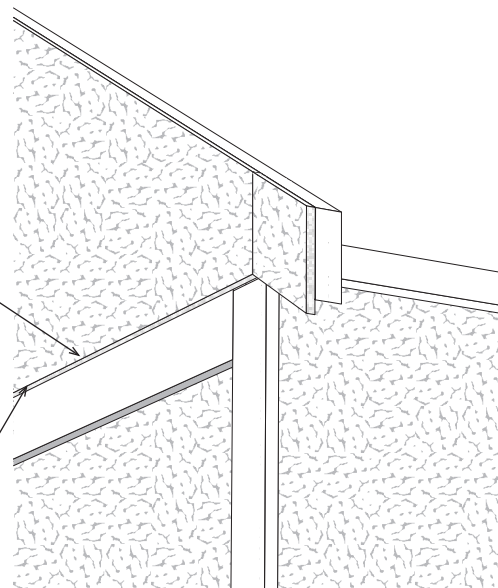
Step 13   Install 2x4 Tie Plates

☞   *For a 16' Building Length, Skip to Number 4*

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, cut the 3' piece to finish.

3. Go to number 6.

4. *Install a 4' long 2x4 over the sidewall, against the rear gable plate. Use 10d sinkers.*

5. *Install (2) two 2x4-6' to finish.*

6. Repeat to install tie plates on opposite wall.

2x4 Tie Plate
3' or 4' Length
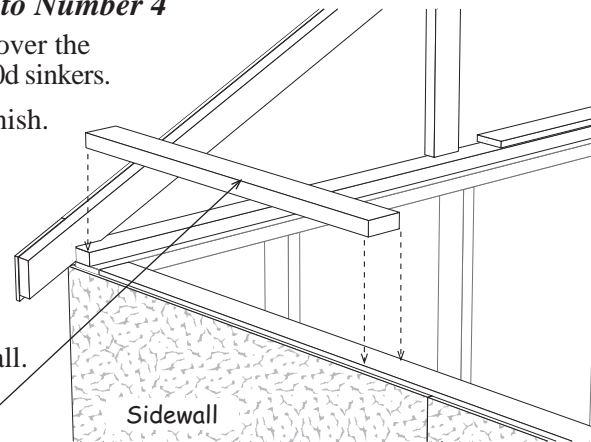
Sidewall

Step 14   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'**.
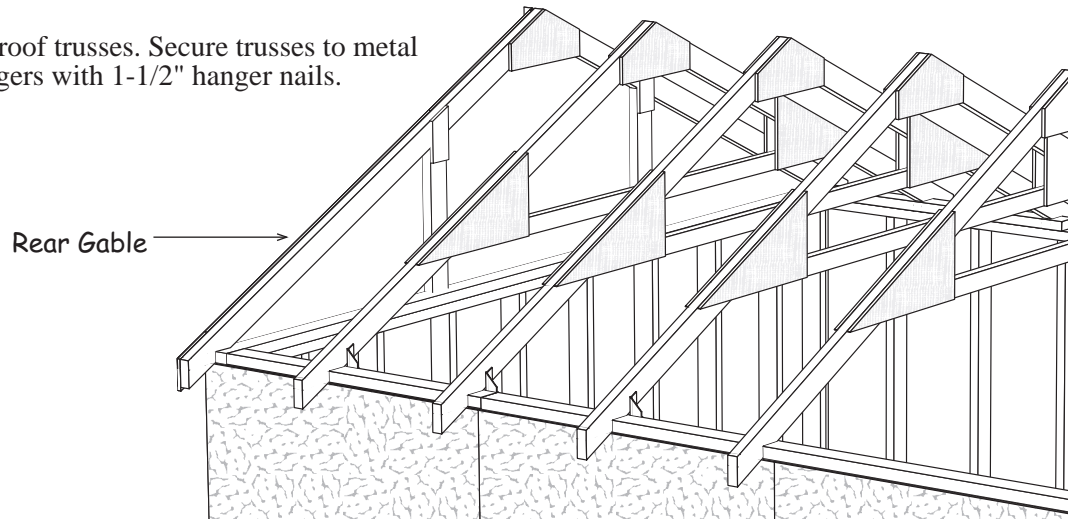
Detail 'D'

2x4 Tie Plate

Inside of Building

Measure From
Backside of 2x4

21-3/8"

24"
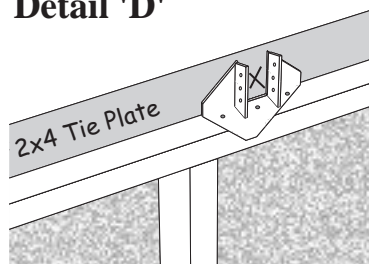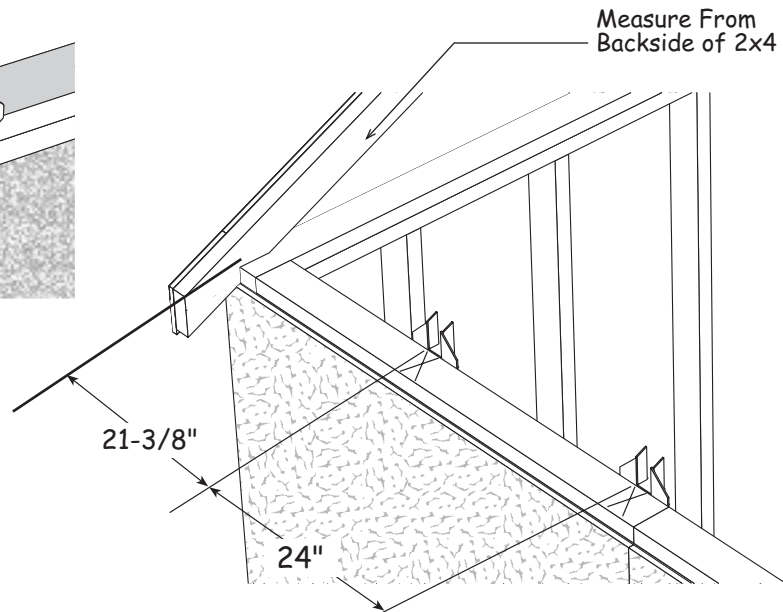
Step 15   Set Roof Trusses

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

Rear Gable →

Step 16   Install Eave Soffit

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. 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, for 12' building, or (4) four, for 16' building, 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
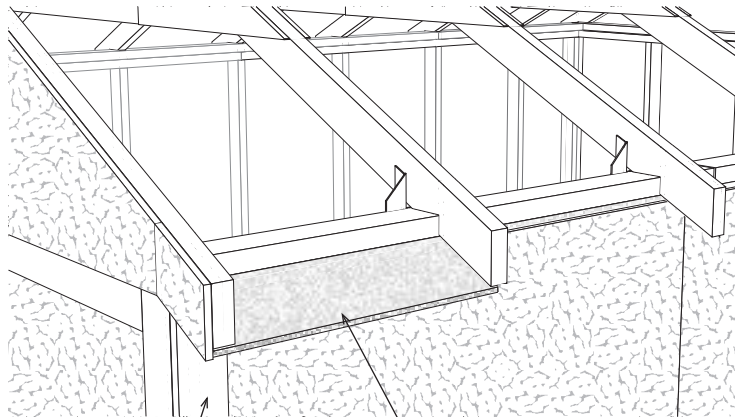
4.   Locate (4) four 87-3/4" 1x4 trim boards.
     Cut length flush with bottom of sidewall
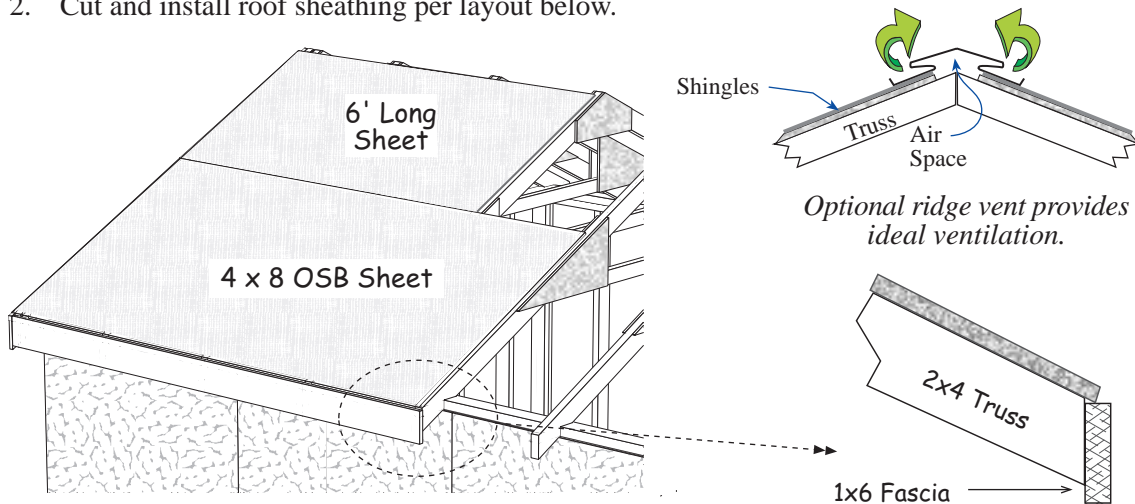   siding and install at corners.
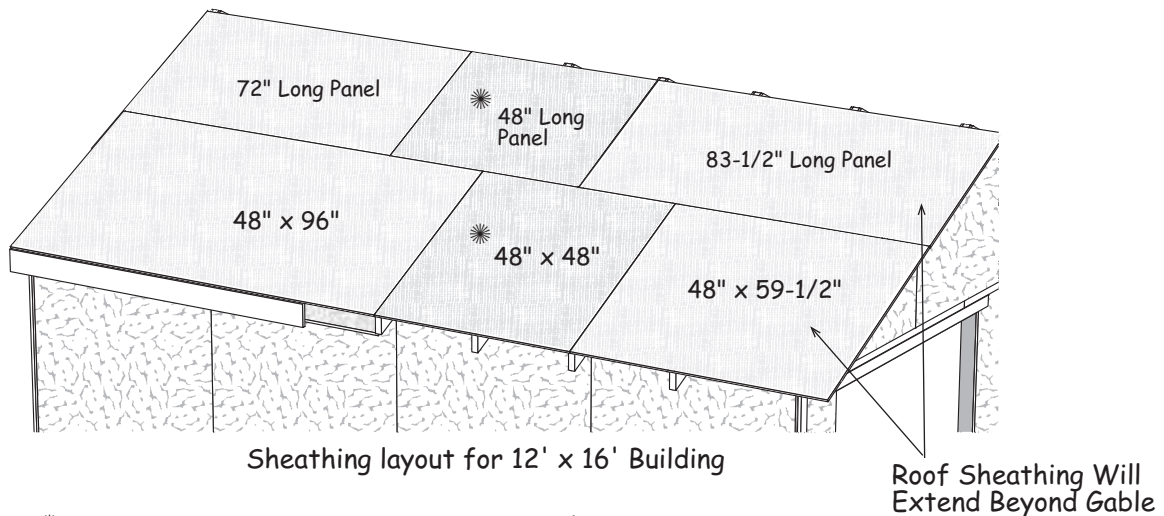
Step 17   Install Roof Sheathing

1. Starting at the rear of the building, install 4x8 OSB roof panels and 1x6-8' white pine fascia boards on each side. Install the roof sheathing and the 1x6 fascia boards flush with the face of the siding on the back gable. Install the fascia so the bottom edge of the roof sheathing will rest on the 1x6. See detail below.

    Make sure the trusses are plumb and the roof sheathing meets the center of the truss. Use 7d sinkers spaced 12" apart. Cut a 6' long sheet for the top row. If you are installing ridge vent, cut the roof sheathing about 1" below the ridge to allow for ventilation.

2. Cut and install roof sheathing per layout below.

6' Long Sheet

4 x 8 OSB Sheet

Shingles

Truss   Air Space

Optional ridge vent provides ideal ventilation.

2x4 Truss

1x6 Fascia

3. Install 1x6 fascia at the front of the building. For a 12' long building cut a 1x6-12' trim board in half and install at the front. If you are constructing a 16' long building install a 10' long trim board. Use 8d galv. nails.

72" Long Panel

✻ 48" Long Panel

83-1/2" Long Panel

48" x 96"

✻ 48" x 48"

48" x 59-1/2"

Sheathing layout for 12' x 16' Building

Roof Sheathing Will Extend Beyond Gable

✻ Roof sheathing panels not used for a 12' long building.

Step 18   Install Front Gable Soffit and Door Trim

1. Install 86-1/4" long 2x4s under the roof sheathing, against the front gable.

2. Install 86-1/4" long 2x4s under the front edge of the roof sheathing. Hold the 2x4s against the roof sheathing and screw through the sheathing into the 2x4 boards using 1-3/4" screws.

3. Install siding cutoffs under the gable overhang as the soffit. Use 6d galv. nails.

4. Install (2) two 87" long 1x6 trim boards over the 2x4 boards, flush with the top of the roof sheathing. Use 8d galv. nails.

5. Install gable trim on the rear gable.

2x4-86-1/4" Long 2x4s

1x6 Gable Trim

Soffit

3-7/8" Wide Jamb Material

1x4 Door Trim
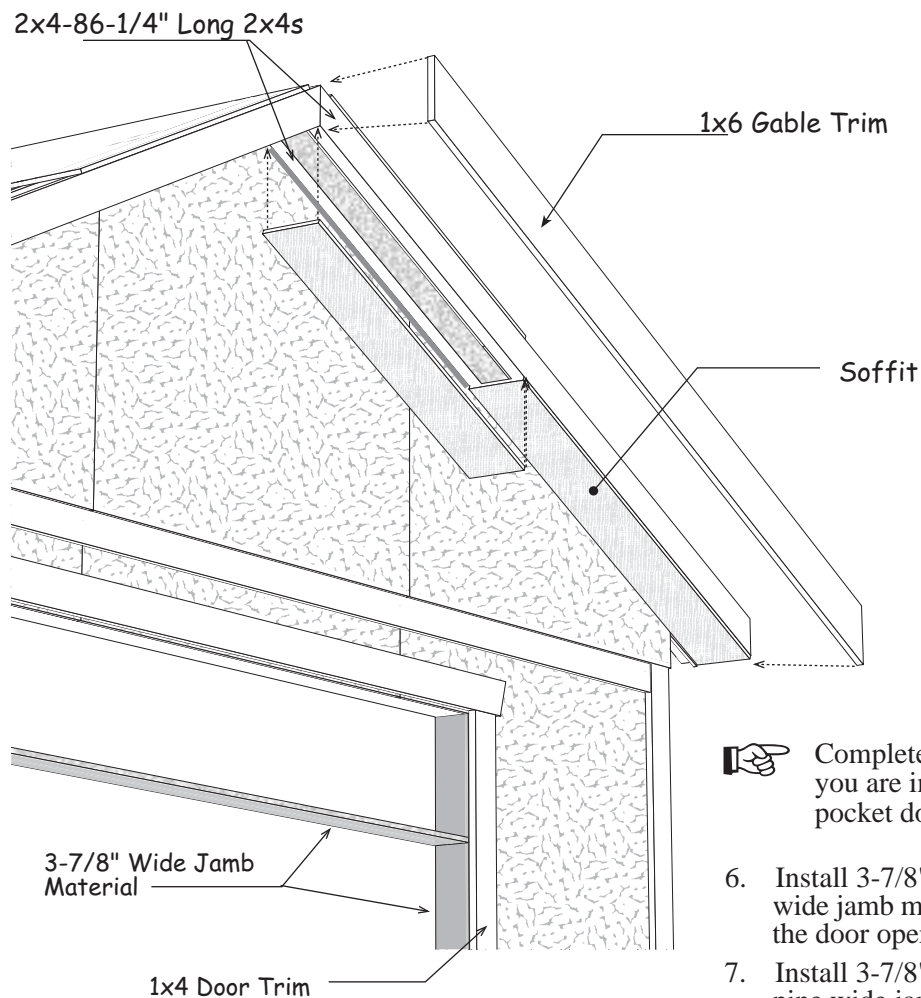
☞ Complete the steps below if you are installing wood pocket doors.

6. Install 3-7/8" x 72" white pine wide jamb material on the top of the door opening.

7. Install 3-7/8" x 79-1/4" white pine wide jamb material on the sides of the door opening.

8. Install 80-3/4" long 1x4 trim boards on each side of the door opening. Install an 82" long 1x4 trim board, *this board has angle cuts on both ends*, across the top of the door opening.

Step 19   Install Roofing — Not Supplied in Kit

1. Install metal roof edging perimeter of the roof area. If you are not installing shingles at this time, you can purchase felt paper to protect the roof sheathing. Install the felt paper before you install the metal roof edge.

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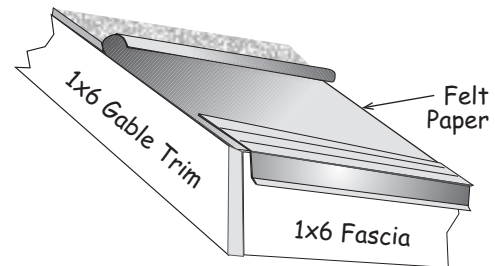
Building Tip: Install ridge vent in lieu of shingles caps. Ridge vent provides ideal ventilation, preventing heat and moisture from damaging your building or its contents.

Optional ridge vent provides ideal ventilation.
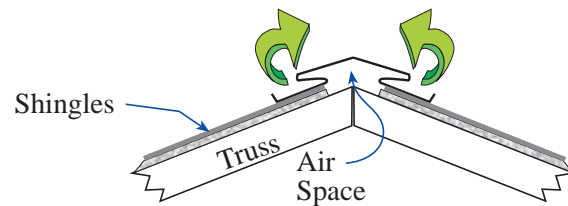
Supplement Details

Frame Walk-in Door Opening

1. Cut (2) two 80-1/2" long header supports from 84" wall studs.

2. Cut an 84" wall stud and build a 37-1/2" long 2x4 door header. Cut an OSB filler from the long edge of a piece of 4x8 roof sheathing. Install the filler between the 2x4 boards.

3. Install door header over header supports.

2x4 Header

80-1/2" Header Supports

door opening
34-1/2"
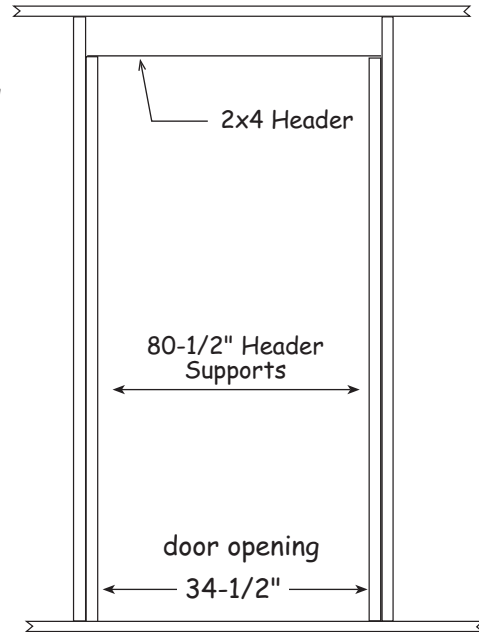
Frame Window Opening
for 18" x 36" Aluminum Window

1. Cut a wall stud where you want to place a window. Install 2x4 blocking between the wall studs, above and below the opening.

2. Cut a 18-3/8" x 35-3/4" opening in siding. Caulk along the top edge of the window. Secure window with screws provided.

3. Install vinyl shutters with square head screws.

Screw

Window Pane
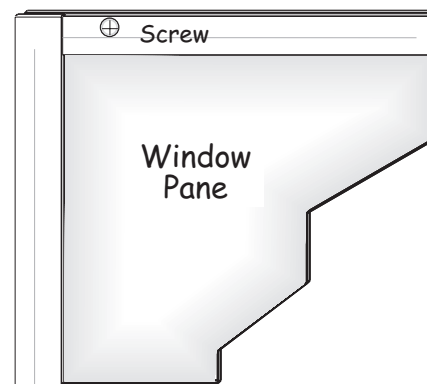
Material Packaged In Component Kit

Bld. Length 12'	16'	Item	Size	Dimension
5	7	Collar Ties	2x4	90"
18	22	Truss Rafters	2x4	86-1/4"
34	40	Wall Studs	2x4	84"
16	16	Wall Plates	2x4	72"
4	4	Wall Plates	2x4	68-1/2"
---	6	Wall Plates	2x4	48"
2	2	Wall Plates	2x4	47-1/2"
1	1	Tie Plate	2x4	42"
2	2	Wall Plates	2x4	31"
4	4	Gable Studs	2x4	23-1/2"
8	8	Truss Jig Blocks	2x4	10"
2	2	Door Header	2x6	75"
10	14	Truss Gussets	7/16"	8" x 20"
20	28	Truss Gussets	7/16"	12" x 24"
6	8	Soffit Boards	3/8"	5" x 48"
10	14	2x4 Metal Truss Hangers		

Qty	Unit	Size	Item	Dimension
3	1 lb. box	10d	Sinkers	
3	1 lb. box	8d	Galv.	
2	1 lb. box	7d	Sinkers	
1	1 lb. box	6d	Galv.	
3	1 lb. box	6d	Common	
1	1 lb. box	1-1/2"	Hanger Nails	
24	ea.	2-1/2"	Wood Screws	
36	ea.	1-3/4"	Wood Screws	
6	ea.	1x4	Metal Plates	
2	ea.		Bottle Glue	
4	ea.	1x6 Gable Trim		87"
8	ea.	1x4 Corner Trim		87-3/4"
4	ea.	1x4 Wall Trim		72"
1	ea.	Siding Panel		7" x 48"
2	ea.	Plywood Gusset		3-1/2" x 32"
1	ea.	OSB Filler		5-1/4" x 75"

Material Supplied by Local Supplier

Building Size 12 x 12	12 x 16	Material List	
13 pcs.	15 pcs.	Exterior Siding	4x8
8 pcs.	10 pcs.	OSB Sheathing	4x8
2 pcs.	2 pcs.	1x6 8' White Pine Fascia	
---	2 pcs.	1x6 10' White Pine Fascia	
1 pc.	---	1x6 12' White Pine Fascia	

Install Optional Shingles

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.

Building Size 12x12	12x16	Optional Shingles	
8 bdl.	10 bdl.	Roof Shingles	
7 pcs.	8 pcs.	Roof 'drip' Edge	10'