USA BEST BARNS
Quality Do-it-yourself Barn Kits

Assembly Book
Revised August 21, 2024

the Dover

Building Size 12'x16'

IMPORTANT INFORMATION ABOUT YOUR KIT

Thank you for purchasing our kit. Please read the following information before beginning construction. Always check with your local HOA or building code office for any requirements or restrictions.

Floor: Wood flooring is sold optionally. You may choose to build your own or pour a cement pad.

Always wear safety glasses when cutting or nailing!

Tools Required:
Hand or Circular Saw	Level	Safety Glasses
Cordless Drill	Measuring Tape	Dust Mask
Hammer	6'-8' Ladder(s)	Screwdriver with Bits
Pencil		Framing Square

Additional Materials - **Not included in kit:**

Windows are purchased separately

Required: Shingles or metal roofing, Drip Edge, Roofing Nails or Screws, Paint, Class 25 Sealant

Optional: Caulk, Ridge Vent

Terminology:

Square - Confirm corners are at 90 degrees
Plumb - Confirm walls and trusses are straight vertically
Wall Plate - Top and bottom 2x4s used to frame walls
Tie Plate - 2x4s connecting wall sections together
Header - Spans top of door opening
OSB - Oriented Strand Board
LAP - Edge of siding that overlaps Tongue
Tongue - Edge of siding that is overlapped

Primed Siding Detail

LAP Edge

Tongue Edge
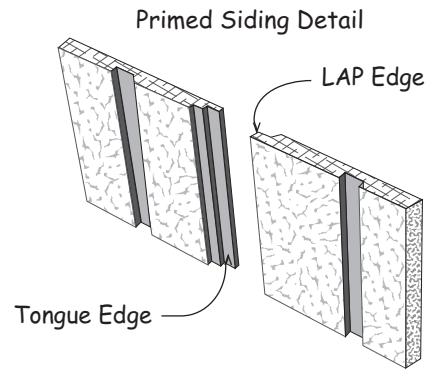
Organize:

Unpack all items & organize according to size and type. This will make items easier to find when instructed.

Review the parts list on the back page. Should there be missing items or sub-par material contact Best Barns Customer Service.

DO NOT discard any material including the pallet until your project is complete.

Assembly:

Review all instructions before you begin. Please follow steps carefully and in sequence for successful results.

If you have any questions we are happy to assist you. Please contact us at:

800-245-1577 - Mon - Fri 8AM - 5PM EST

724-866-4357 - After hours and weekends

Email - questions@barnkits.com

Optional Wood Floor System

Foundation size is 12'-0" x 16'-0". Shown below is a typical wood floor. Depending on your area, the construction may have to be changed to meet local codes.

1. Cut (2) two treated 2x4-8' boards in half.

2. Butt 4x4-8' treated runners together. Use one of the 4' long 2x4s to secure them together. Note: Use 16d galv. nails to secure all treated framing together.

3. Repeat to join the other 4x4 runners.

4' Long 2x4

4x4 Treated Runners
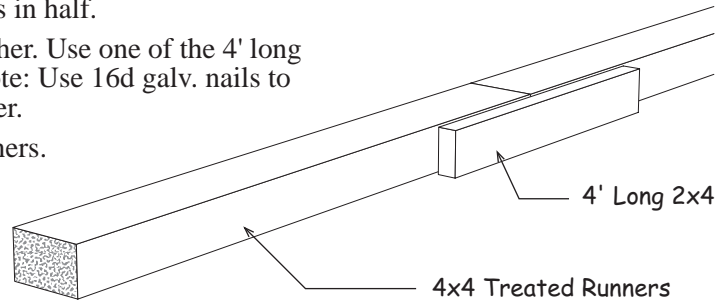
4. Cut (2) two 2x4-16' joist headers to 16' - 0".

5. Layout for 12" on center joist spacing. 'X' marks where floor joist will be placed.

Detail 1 2x4 - 16 0"
Joist Header

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

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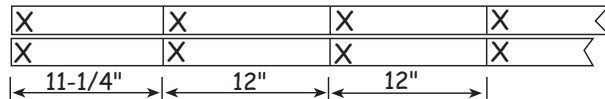
6. Cut all the 2x4-12' boards to 11'-9". These boards will be the floor joist. *Treated lumber may be thicker than 1-1/2". Take this into account when cutting the length of floor joists. Shorten joist measurements if necessary to obtain 12'-0" building width.*

7. Install floor joist boards between the joist headers. Use 16d galv. nails. Install this section over 4x4s.

2x4-16' Joist Header

2x4-11' 9" Floor Joist

4x4 Runners
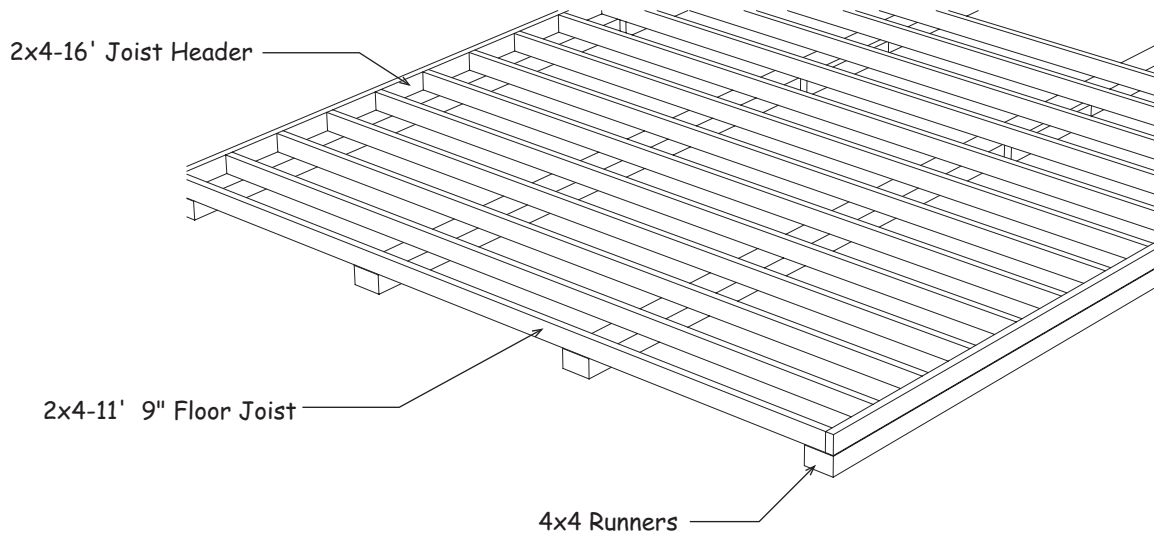
Optional Wood Floor System

8. 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. The diagonal measurement should be 20' - 0". Nail several floor joist to the 4x4 runners to hold the floor frame in place.

4x8

4x8

4x8

4x4
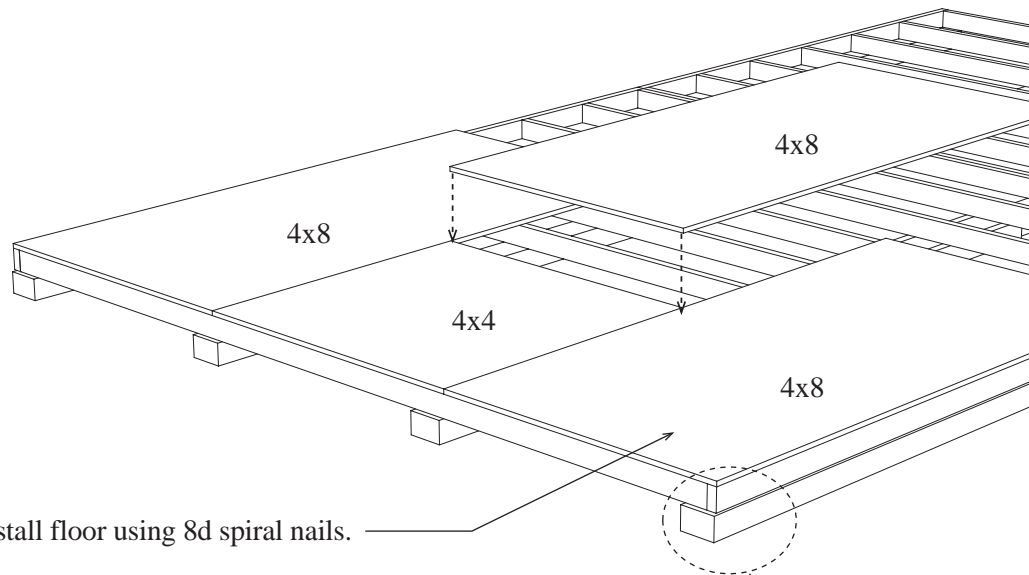
9. Install floor using 8d spiral nails.
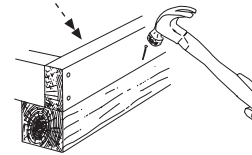
| Material Description	12' x 16' shed
2x4 Treated	2 pcs. 8'
2x4 Treated	17 pcs. 12'
2x4 Treated	2 pcs. 16'
4x4 Treated Runners	8 pcs. 8'
Flooring - 3/4"	6 pcs. 4x8
Screw Floor Nails	3 lb. 8d
Galv. Box Nails	4 lb. 16d

Step 1   Assemble Side Walls

☞ *Do not discard any material until construction is complete, including short 2x4 blocks.*

1. Cut (2) two 2x4-16' (one will be treated) to a length of 185". Position the boards together and indicate with 'X' marks where the wall studs will be located.

185" Wall Plates

Top Wall Plate X   X   X   X
Treated Bottom Plate X   X   X   X
Stud Spacing --------> |← 19-3/4" →|← 24" →|← 24" →|
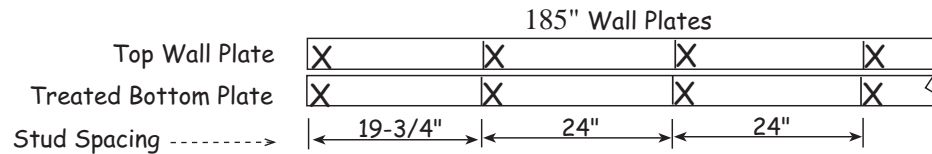
2. Install (9) nine pre-cut wall studs between the top & bottom plates. Nail top plate to studs using (2) two 10d sinkers per stud. Nail bottom plate to studs using (2) two 16d galv. nails per stud.

☞ *The length of pre-cut studs will vary from 92-1/4" to 93" depending on you locality.*

Pre-cut Wall Studs

185" Top Plate

185" Treated Bottom Plate
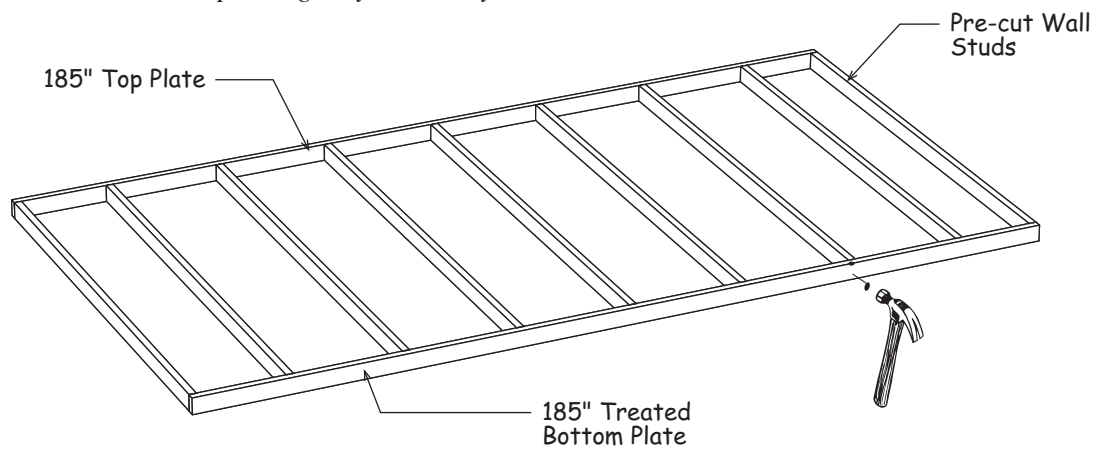
3. Repeat to assemble another 185" long wall frame.

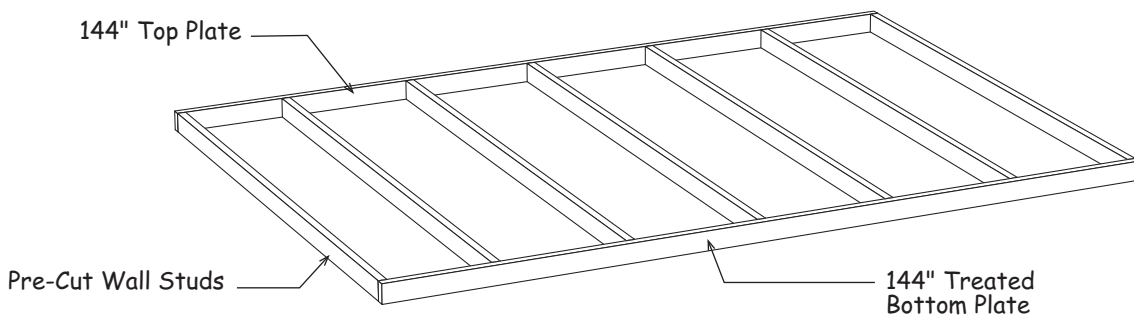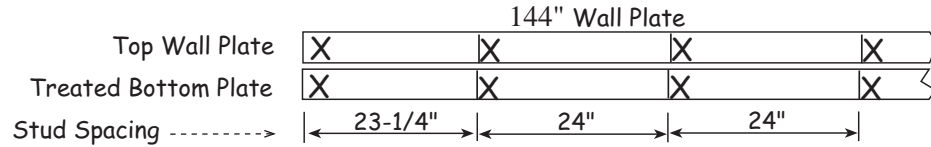4. Set frames aside.

Step 2   Assemble Door Header

1. Locate (2) two 2x8-10' boards. Cut these boards to a length of 99".

2. Assemble the door header using 2x8 boards and (2) two 7-1/4" x 48" OSB filler included in our kit. Position OSB fillers 1-1/2" from either end of 2x8s. Nail together with (12) twelve 10d sinkers spaced evenly on each side.

99" Long 2x8
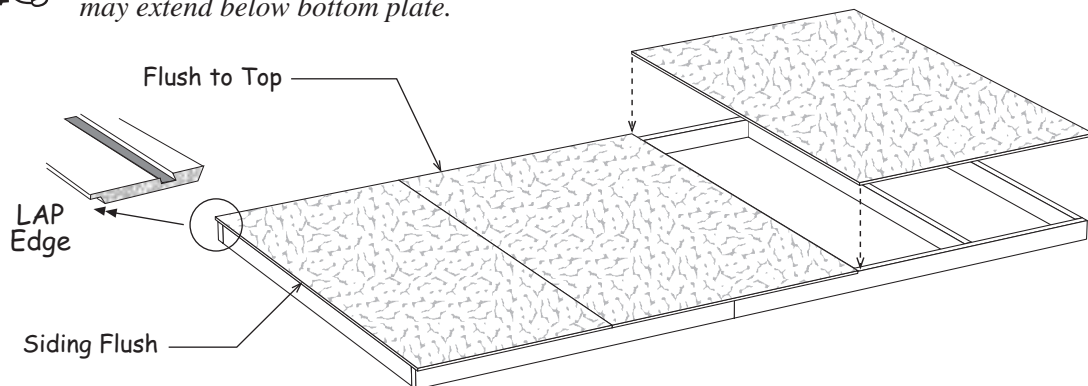
Siding Filler

1-1/2" From End
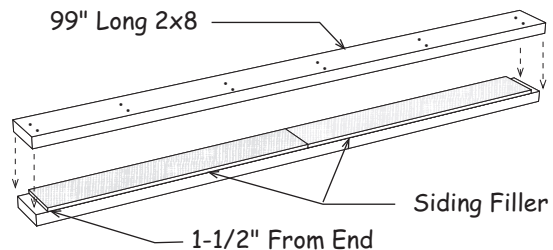
Step 3   Assemble 12' Back Wall

1. Cut (2) two 2x4-12' (one will be treated) to a length of 144". Position the boards together and indicate with 'X' marks where the wall studs will be located.

144" Wall Plate

Top Wall Plate

Treated Bottom Plate

Stud Spacing - - - - - - - - ->

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

144" Top Plate

Pre-Cut Wall Studs

144" Treated
Bottom Plate

2. Install (7) seven pre-cut wall studs between the top & bottom plates. Nail top plate to studs using 10d sinkers. Nail bottom plate to studs using 16d galv. nails.

3. Square wall frame. Measure the wall diagonally (corner to corner). Then measure the opposite corners. These measurements will be the same if the wall is square.

4. Install the first siding panel with the 'LAP' edge flush with the side of the wall stud and flush with the top 2x4 plate. Nail siding with 6d galv. nails, spaced 8" apart. Cut the siding flush with the 2x4 bottom plate if you are installing the building on a concrete slab.

5. Install (2) two more siding panels. Cut the last panel flush with the end of the frame.

*Depending on length of pre-cut studs siding
may extend below bottom plate.*

Flush to Top

LAP
Edge

Siding Flush

Step 4   Assemble Front Wall Frame

1. Cut (2) two 2x4-12' boards (one will be treated) to a length of 144" for wall plates. Position the boards together and indicate with 'X' Marks where the wall studs will be located.
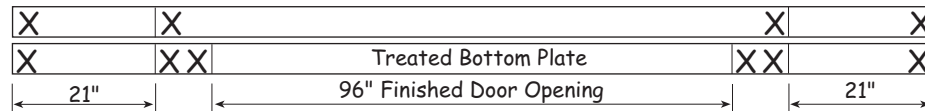
X	X				X	X
X	X X		Treated Bottom Plate		X X	X
← 21" →			← 96" Finished Door Opening →			← 21" →

2. Install (4) four pre-cut wall studs between the wall plates where shown. Nail top plate to studs using 10d sinkers. Nail bottom plate to studs using 16d galv. nails.

3. Cut (2) pre-cut studs to a length of 82" and install as header supports where shown. Nail to stud using 10d sinkers.

nail →   2x8 Door Header   ← nail
                      2x4 Block Centered

4. Install the door header on the header supports. Nail to the wall stud with 10d sinkers.

82" Header Support

5. Measure space between header and top plate. Cut from a pre-cut stud (5) five pieces to this length. Evenly space pieces and nail through top plate and toenail to header. Use 10d sinkers.

← 96" Door Opening →

6. Cut a siding panel in half length-ways. Select the panel with the 'Tongue' Edge. Save the other panel for step 9 below.

7. Install panel with the 'Tongue' edge flush with door opening and cut edge flush with end of wall. Top of siding should be flush with top plate. Use 6d galv. nails.

8. Install (2) two 20"x48" siding panels above the door opening flush with top of plate. Cut siding 3/4" below the bottom of the 2x8 header.

9. Install remaining panel with LAP edge flush with door opening.

Siding 3/4" Below Header

Tongue Edge Flush

Cut Edge Flush
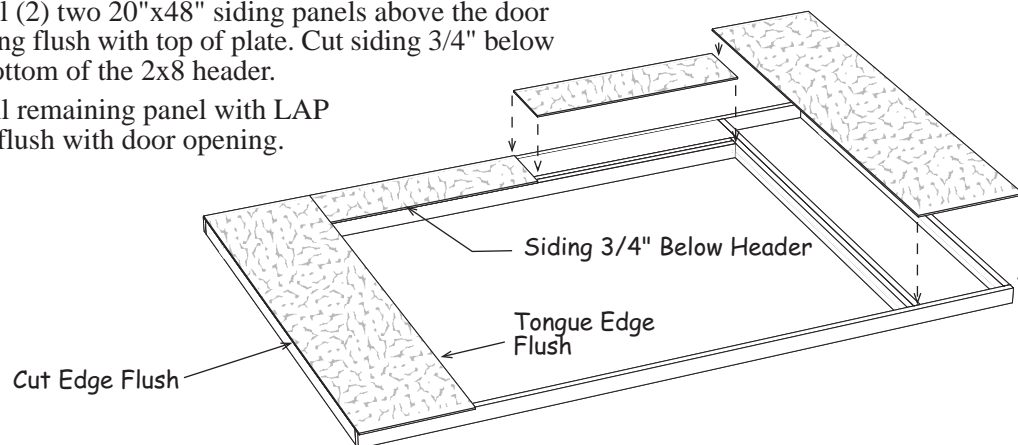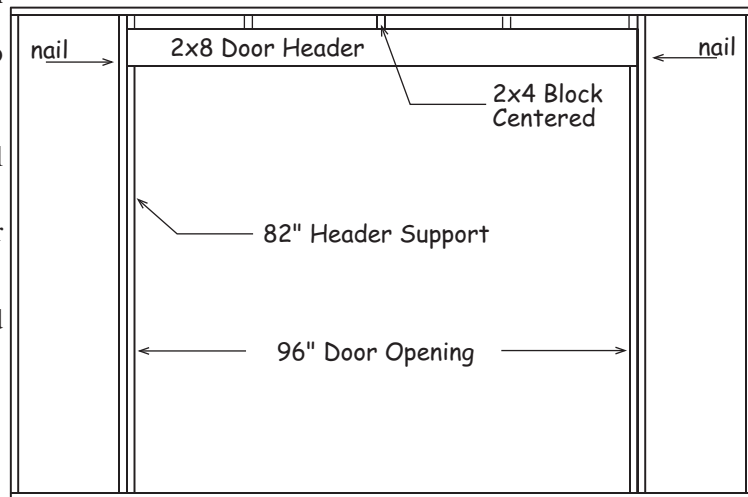
Step 5   Set Wall Panels

1.   Erect back wall and side walls. Secure walls together at the corners. Use (4) four 10d sinkers per corner. Brace side walls with pre-cut wall studs to hold walls secure and plumb.

2.   Starting at back corner install a full width siding panel with the 'LAP' edge flush with the siding on back wall and flush with top plate. Nail siding to back wall and all 2x4s using 6d galv. nails spaced 8" apart

3.   Install (3) three more siding panels. Last panel will extend 3-1/2" past wall to receive front wall panel.

4.   Start at back wall and apply siding to opposite wall.

5.   Erect front wall panel and secure corners with 10d sinkers. Nail siding to front wall.

6.   Cut and remove bottom 2x4 from door opening.

7.   Nail walls to floor through bottom plate. Space 16d galv. nails 24" apart.

185" Long Wall

Cut 2x4 Plate from Opening
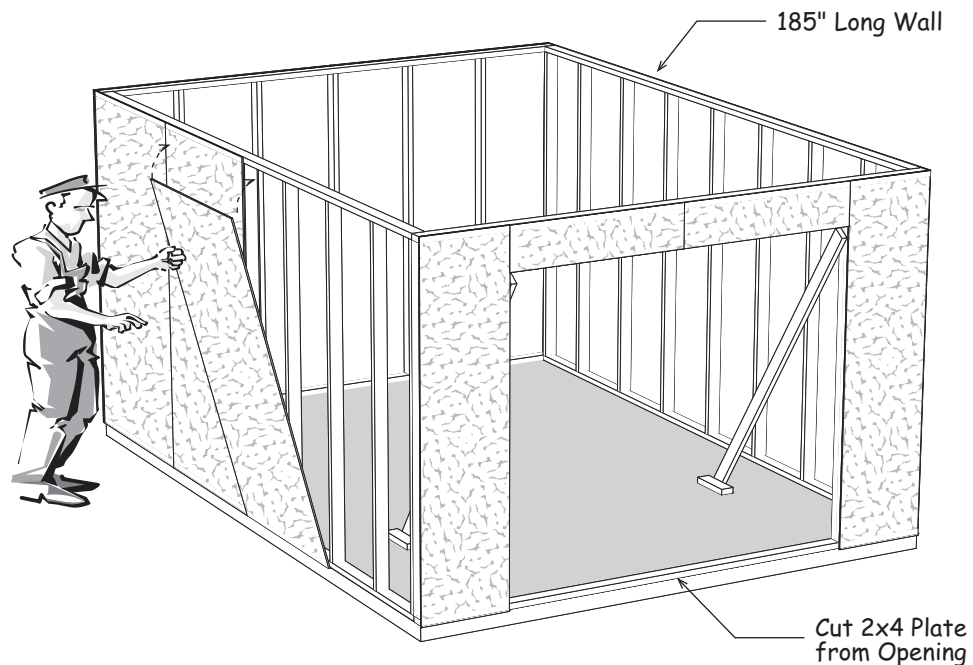
Step 6   Assemble Roof Gables

1. Cut (2) two 2x4-12' boards to a length of 144".

2. Place one of the 144" boards on the floor along with (2) two 80-1/2" long 2x4 rafters as shown below. Bottom 144" plate will be on edge. Rafters will lay flat.

☞ There are short 2x4s, *that may have an angle on one end*, supplied in the kit. Use these to hold the rafters and bottom gable plate together by temporarily screwing the blocks to the floor using 2-1/2" screws. This will ensure that the gable frames and the trusses are identical.

3. Secure the top of the rafters together with a 1"x4" barbed metal drive-on plate.

4. Install (2) two 23-1/2" gable studs with angle cut at one end. Nail through the bottom plate with 10d sinkers and secure the top with barbed metal drive-on plates.

Barbed Metal Plate

80-1/2" long 2x4
Truss Rafter

2x4 Block

2x4 Block

Bottom Gable Plate

23-1/2" Gable Stud
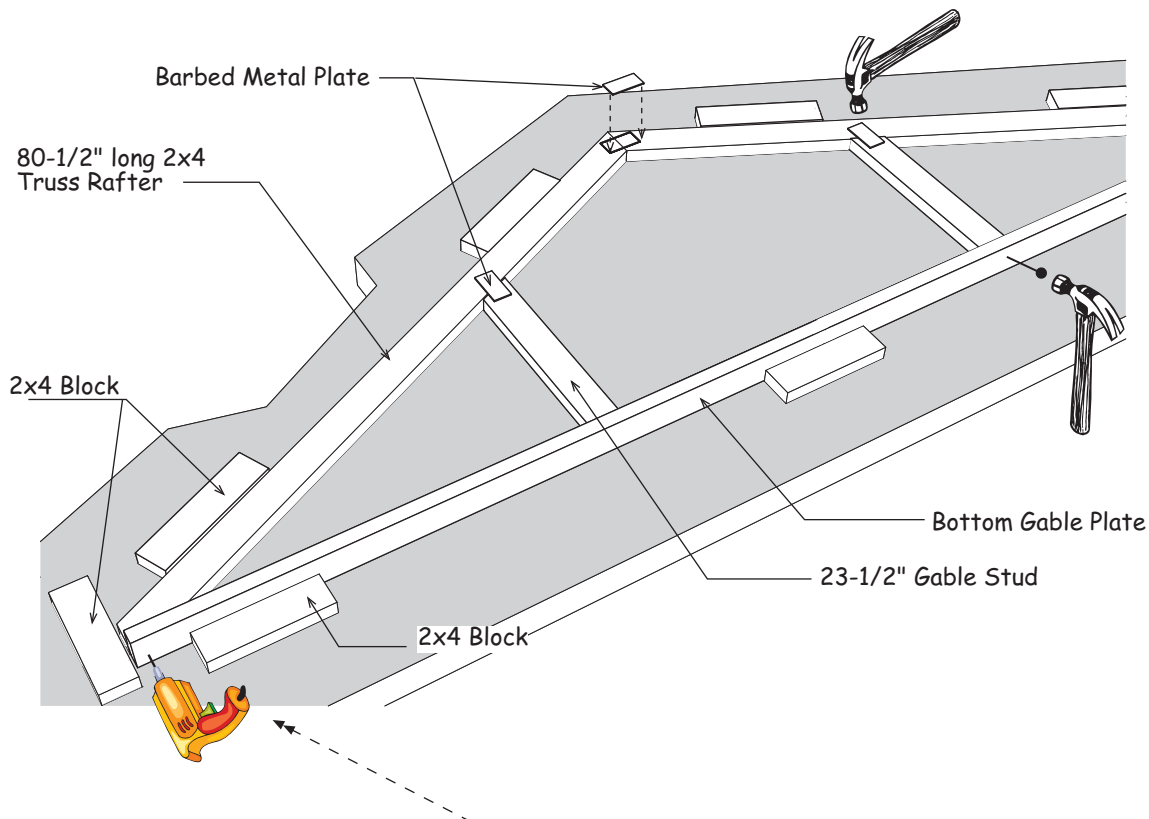
5. Secure the 2x4 bottom plate to the truss rafter with a 2-1/2" wood screw on both ends. Set gable aside.

6. Repeat steps to assemble another gable.

Step 7   Assemble Roof Trusses

1. Place (2) two 80-1/2" long 2x4 truss rafters and a 82" long collar tie together as shown below. The collar tie has an angle cut on both ends. Reposition the lower 2x4 blocks to hold the truss rafters in place. See '**Detail B**'.

2. Secure the 2x4 truss rafters at the top with a 8" x 16" wood gusset. Nail the gusset to the 2x4s with (14) fourteen 6d common nails,

3. Secure the 2x4 collar tie with (4) four 2-1/2" long wood screws at each end. Tip: Pre-drill holes with an 1/8" bit to prevent wood splitting at ends.

4. Turn this truss over and apply a wood gusset to the opposite side at the ridge.

5. Repeat to assemble (6) six more trusses.

Ridge Gusset

80-1/2" Truss Rafter

Collar Tie Flush
with Rafter

✳

2x4-82" Collar Tie

✳ Install collar tie the same
   distance from bottom end of
   rafters.

Detail 'B'

80-1/2" Truss Rafter

2x4 Block

2x4 Block

2x4 Block

6. Remove and save the short 2x4 blocks. They
    will be used in a later step.
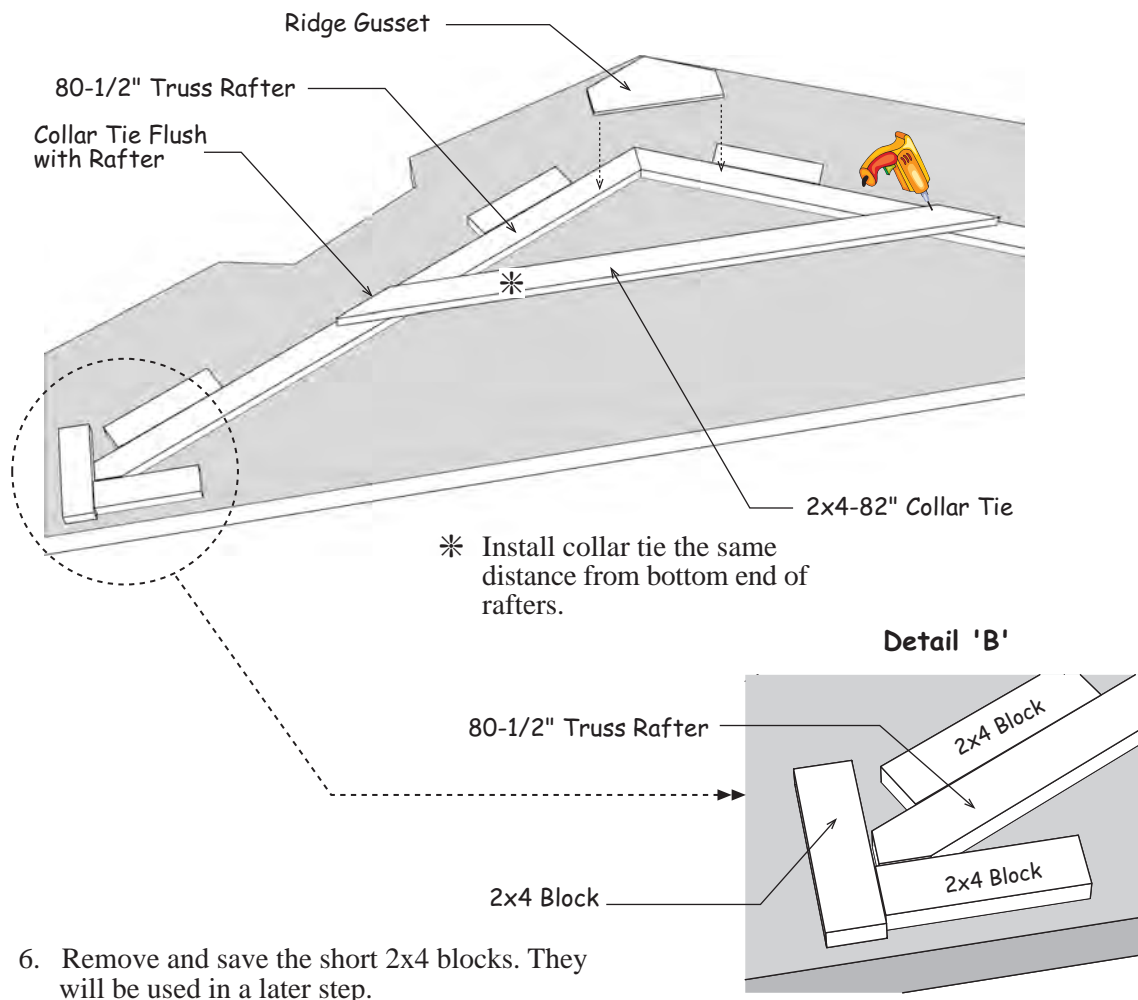
## Step 8   Install Primed Soffit and Fillers

1. Install a 7" wide x 48-3/4" siding panel over the side wall with the primed side facing down. The 'tongue' edge should be flush with <u>front wall plate</u>, NOT over siding. Tack the soffit with a couple 6d common nails. Installing 2x4 tie plates in a later step will provide more nailing.

2. Install (3) three more siding panels. Cut the last soffit flush with the 2x4 wall plate.

Flush with
Inside of 2x4

3-1/2" Filler

7" Soffit

**Side
Wall**

Front Wall
Door Opening

Tongue Edge
Flush
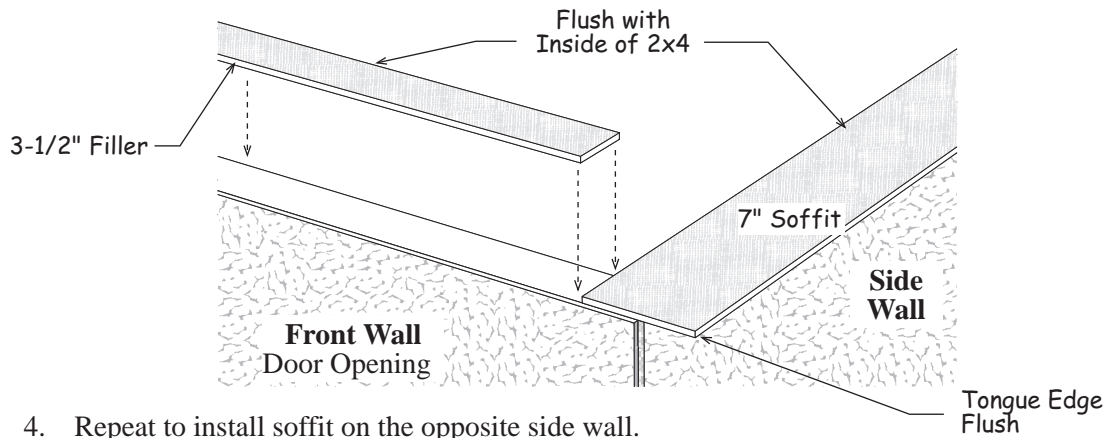
4. Repeat to install soffit on the opposite side wall.

5. Install (3) three 3-1/2" wide x 48-3/4" filler panels over the front and back wall. Cut the last filler to fit between the soffit on the side walls.

Step 9   Install Roof Gables

1. Install a gable frame centered on the back wall. Gable plate should be flush with filler. NOT over siding. Secure with 10d sinkers.

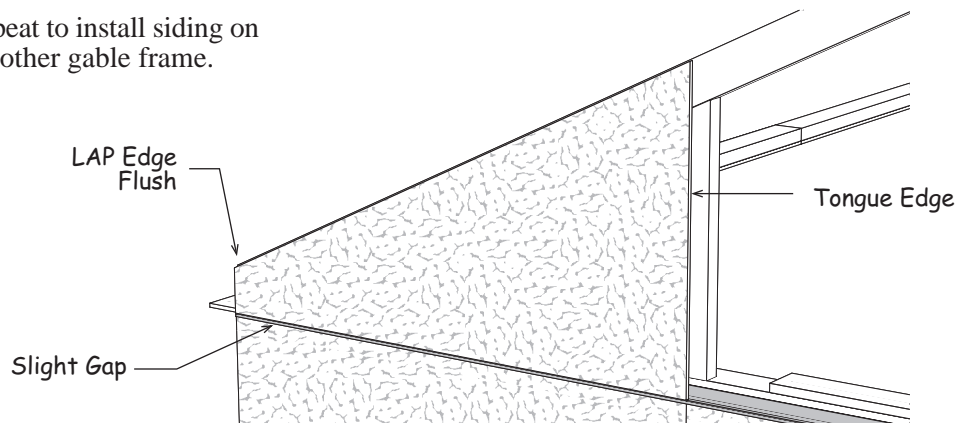2. Install the gable frame on the front wall.
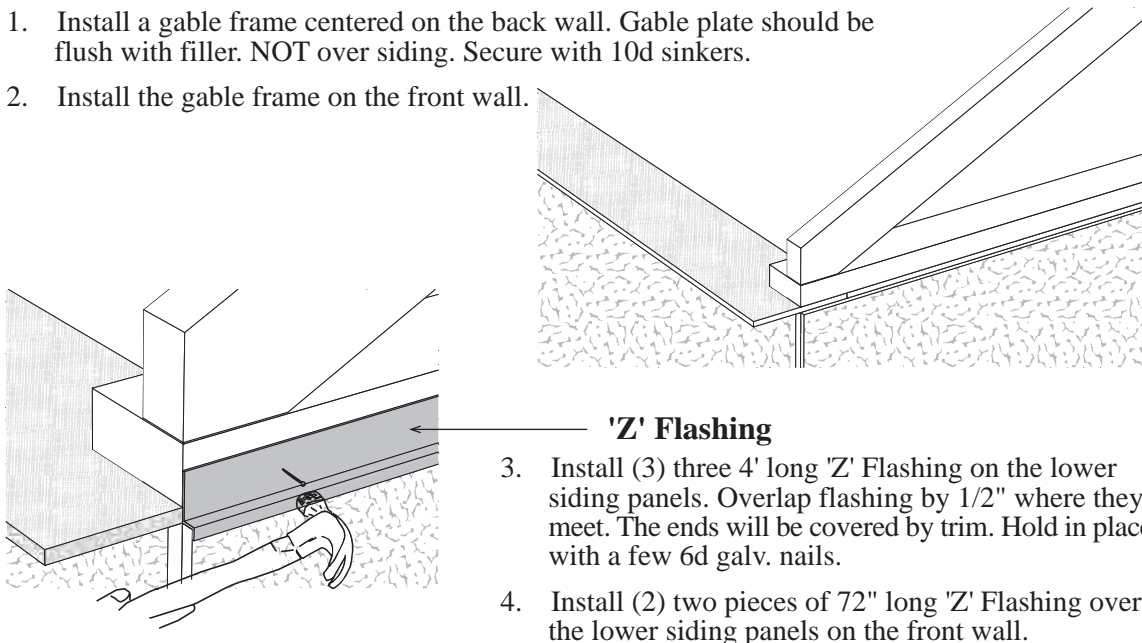
'Z' Flashing

3. Install (3) three 4' long 'Z' Flashing on the lower siding panels. Overlap flashing by 1/2" where they meet. The ends will be covered by trim. Hold in place with a few 6d galv. nails.

4. Install (2) two pieces of 72" long 'Z' Flashing over the lower siding panels on the front wall.

Step 10   Install Siding on Gables

☞ *Gable siding is factory cut to be installed either working from left to right or right to left.*
Regardless of the direction always begin with the 'LAP' Edge flush with end of the gable.

1. Locate pre-cut gable siding. Install with 'LAP' edge flush with end of gable frame. When properly set there will be a slight gap between the 'Z' flashing and bottom edge of siding. Use 6d galv. nails spaced 8" apart.

2. Install center gable siding. Cut last panel flush with end of gable frame.

3. Repeat to install siding on the other gable frame.

LAP Edge
Flush

Tongue Edge

Slight Gap

Step 11   Install 2x4 Tie Plates on Side Walls

1. Cut a 2x4-16' board to fit between the gables on the front and back wall. Install the 2x4s flush with the inside of soffit. Use 10d sinkers.

2. Repeat to install tie plates on the opposite side wall.

2x4-16' Cut to Fit

Install Flush

Side Wall
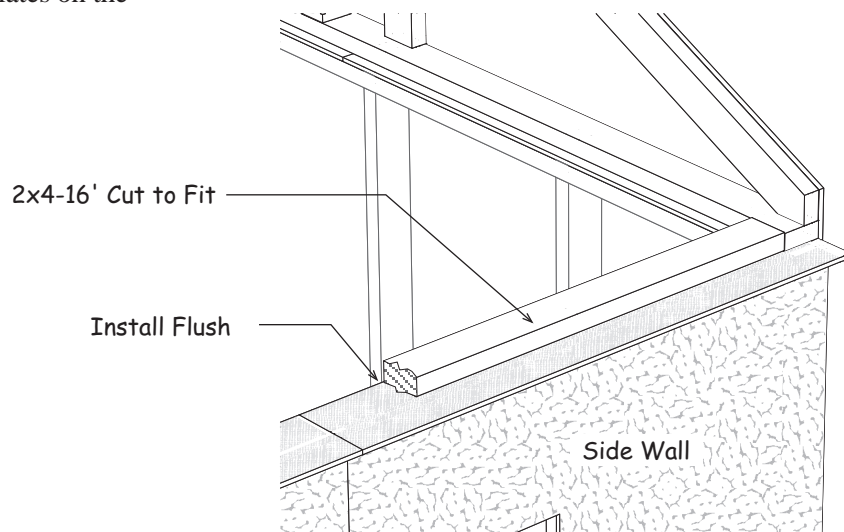
Step 12   Layout Roof Trusses & Install Soffit Blocks

1. Starting on back corner measure from the <u>backside</u> of the 2x4 gable frame when marking the location of the first truss. Continue 24" spacing to other gable. **Important:** When marking the opposite wall, place the 'X' mark on the same side of the line so your trusses are parallel when they are installed.

2. Install metal hangers to the tie plate with 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'**.

Measure from
Backside of 2x4

Detail 'D'

2x4 Tie Plate

20-5/8"

24"

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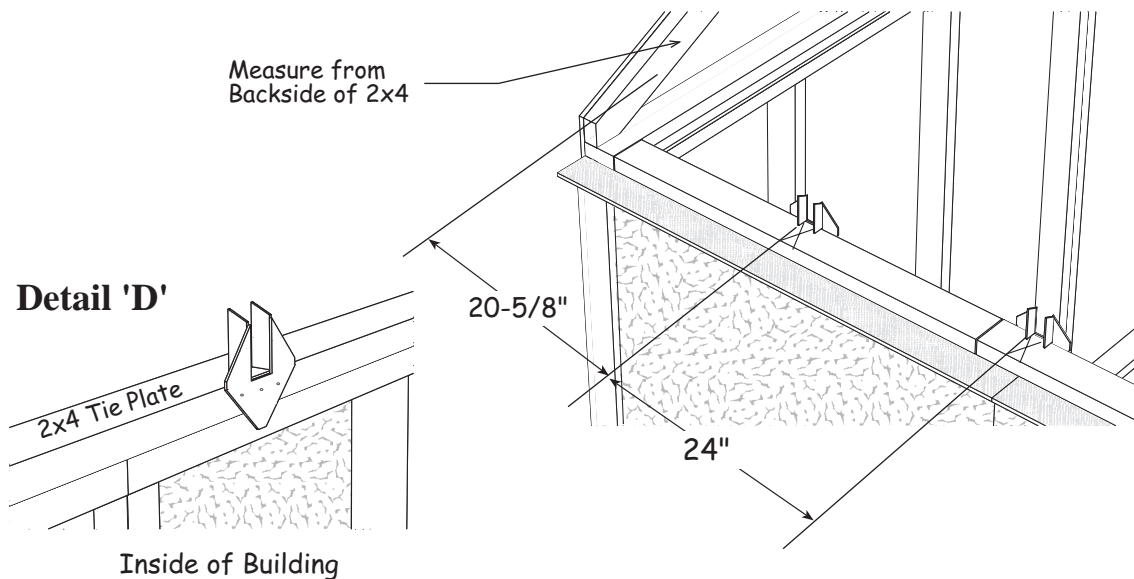
3. Set roof trusses. Secure trusses to metal hangers with 1-1/2" hanger nails.

2x4 Block

4. Gather (14) fourteen short 2x4 blocks and install one at both ends of each truss. Secure 2x4 blocks to the soffit panel using (2) two 1-1/2" long exterior screws.

5. Gather (4) four more 2x4 blocks. Install one 2x4 block at each end of the soffit, flush with the 2x4 gable frame.

2x4 Block with
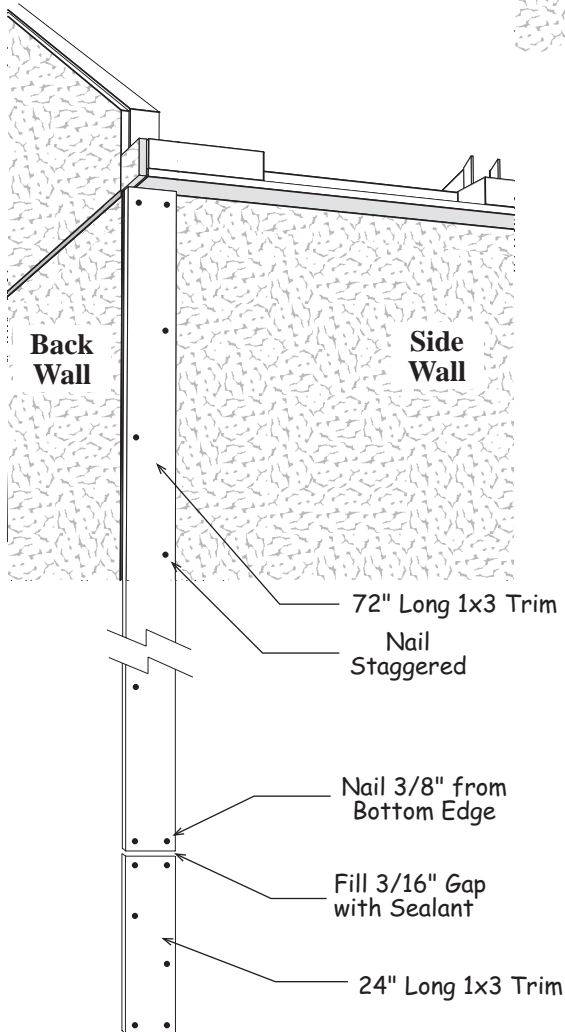Gable Frame
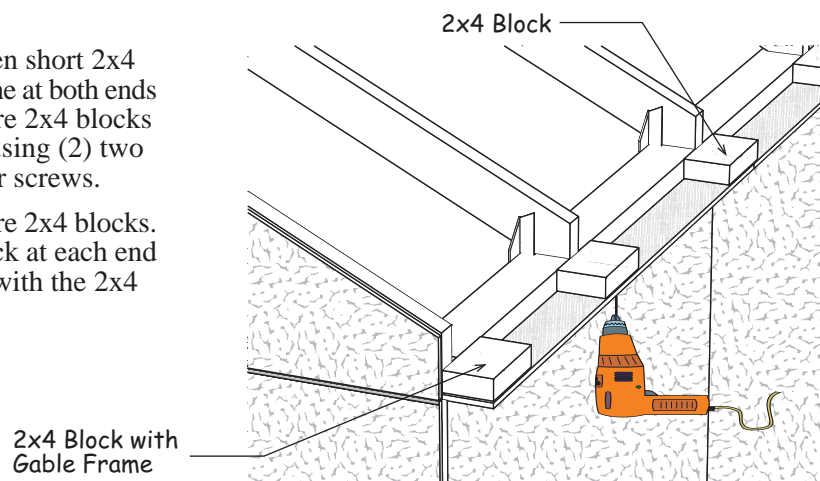
Step 13A Install Trim

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

Siding Filler
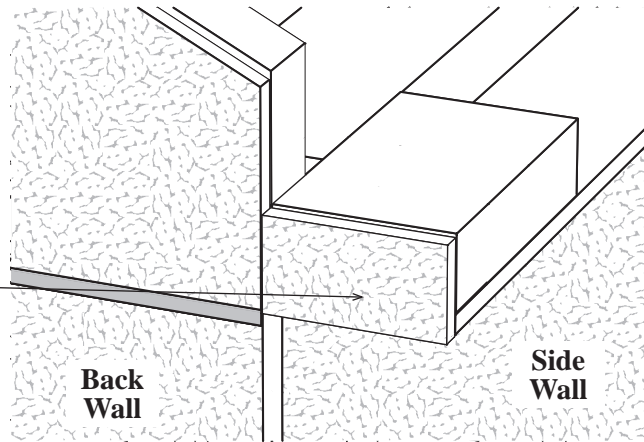
Back
Wall

Side
Wall

Back
Wall

Side
Wall

72" Long 1x3 Trim

Nail
Staggered

Nail 3/8" from
Bottom Edge

Fill 3/16" Gap
with Sealant

24" Long 1x3 Trim

☞ *When installing trim in later steps space nails and seal as described in this step.*

2. Locate (4) four 24" and (4) four 72" long 1x3 trim boards. Install 72"long boards on side walls at corners under soffit flush with siding on back wall. Nail with (2) two 6d galv. nails 3/8" from top and bottom of board.Then nail staggered along board 12" apart. *See diagram.*

3. Install 24" long boards under 72" long boards. Leave a gap of 3/16" to allow for sealant to fill gap. If necessary cut trim to be flush with bottom of siding. Fill gap with sealant.

4. Repeat on remaining side wall corners.

Step 13B Install Trim

5. Install a 8-1/2" long trim board, *called a keystone*, at the top of the gable flush with the top of the gable frame. Use 6d galv. nails.

6. Locate (2) two 82-1/2" long 1x4 trim boards. Butt each board against the keystone and flush with the top of the gable frame. Use 6d galv. nails.

Keystone

82-1/2" Long 1x4 Trim
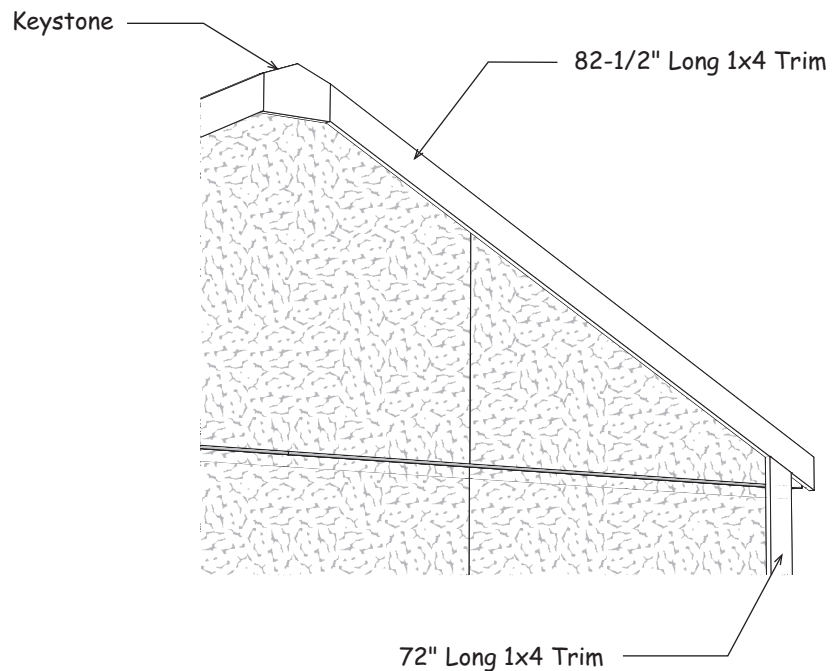
72" Long 1x4 Trim

7. Locate (2) two 72" long 1x4 trim boards with angle cut on one end. Install (1) one on each corner flush with the 1x3 corner trim on the side wall and under gable trim. Use 6d galv. nails.

8. Locate (2) two 27" long 1x4 trim boards and install under 72" long boards. Leave a gap of 3/16". If necessary cut trim to be flush with bottom of siding.

Step 14   Install Fascia on Side Walls

1. Install a 1x4-6' fascia board against the rear gable trim. Install the fascia so the bottom edge of the roof sheathing will rest on the edge of the 1x4. **See Detail 'E'**. Use a straight edge to align the 1x4 board with the top of the trusses. Use 6d galv. nails.

2. Install another 6' fascia board. Do not install the last fascia board. This will be applied after the front overhang is installed.
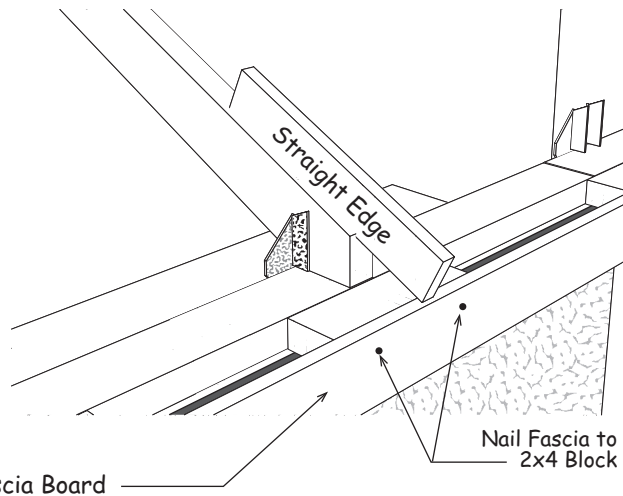
3. Repeat on opposite side wall.

Roof Sheathing

2x4 Truss

1x4 Fascia

2x4 Tie Plate

2x4 Soffit Block

Detail 'E'

Straight Edge

Nail Fascia to
2x4 Block

1x4 -6' Fascia Board
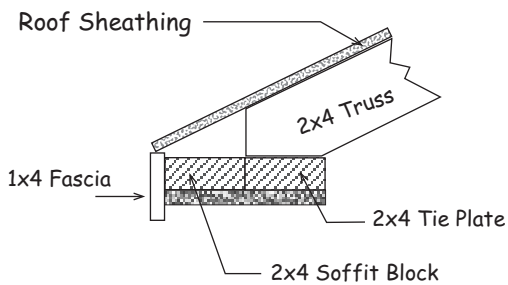
Step 15A Install Roof Sheathing

1. Install (4) four 42-3/8" long 2x3 boards on the front gable flush with the top of the gable frame. Use 10d sinkers

2. Plumb each truss and gables.

3. Refer to sheathing layout at the top of the next page. Install roof sheathing starting at the front gables lower corner. The roof sheathing should extend 6-1/4" beyond the 2x3s. Continue to back wall. Use 6d common nails spaced 8" apart. The top row of roof sheathing will be about 1" below the ridge to allow for optional ventilation.

6-1/4"

42-3/8" Long 2x3

Front Gable

Shingles

Truss

Air
Space
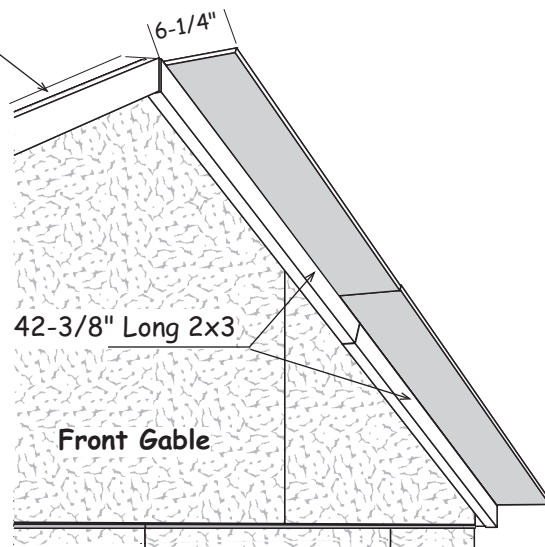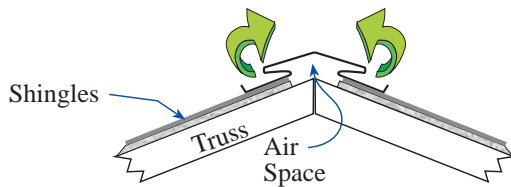
Step 15B Install Roof Sheathing continued

☞ *Sheets should meet at center of trusses when installed*

4.   From 4x8 sheets of OSB cut to the sizes indicated with an * below. Repeat for opposite side.

36-1/2" x 48"   * 36-1/2" x 48"   36-1/2" x 72"   36-1/2" x 33-1/4"

48" x 72"   * 48" x 48"   48" x 81-1/4"

1x4 -6'   1x4-6'
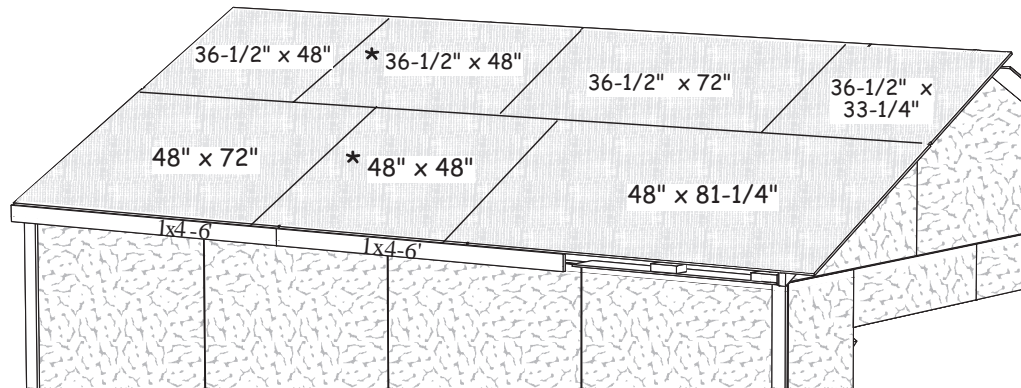
5.   Trim off any sheathing that extends over the rear gable trim.

Step 16   Install Front Soffit

1.   Gather (2) two 7" wide soffit panels. Install first panel flush with lower end of 2x3 and against siding. Install with 1-1/2" exterior screws . Cut upper panel to fit.

2.   Install (2) two 42-3/8" long 2x3s between the roof sheathing and the 7" soffit panels. Install with 1-1/2" exterior screws on soffit and 6d common through roof sheathing. Set these boards flush with soffit panels. The roof sheathing will extend 3/4" past the 2x3s to allow for trim.

3.   Repeat on other side.

42-3/8" Long 2x3

Upper Roof Sheathing

7" Wide Soffit Panels

Nail with 6d Common

42-3/8" Long 2x3

Sheathing Projects 3/4"
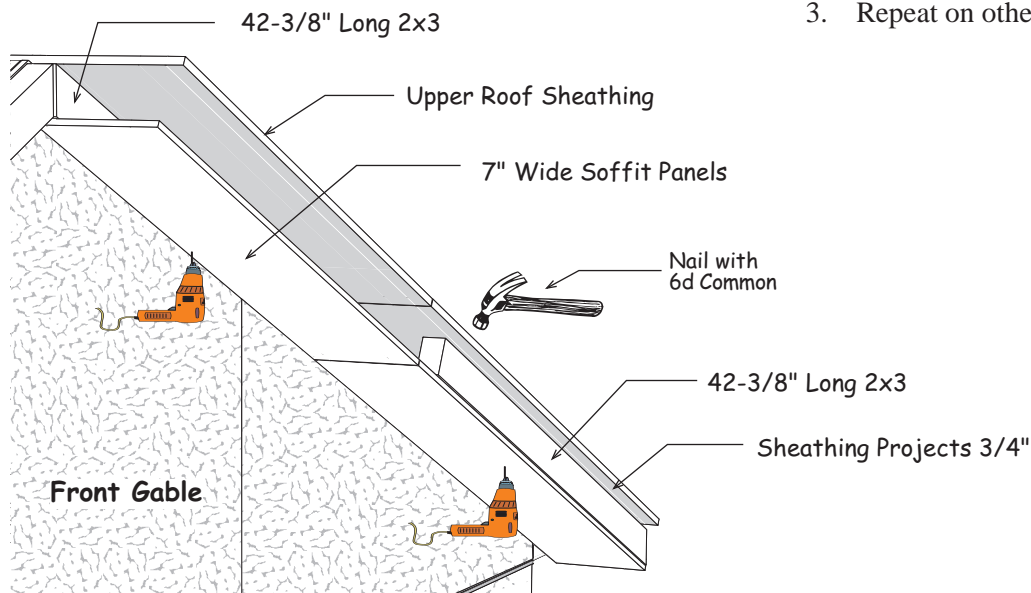
Front Gable

Step 17   Install Gable & Door Trim

1. Install a keystone and gable trim under the roof sheathing as done in **Step 13**.

1x4 Gable Trim

Trim 3/4" above door opening

Keystone Trim

2. Install a keystone trim board 3/4" above the center of the door opening. Use 6d galv. nails. The exposed siding will serve as a door stop when the doors are closed.

3. Install 1x4 top trim boards with angled end on each side of the keystone. Install 3/4" above door opening.

4. Locate (2) two 84" long x 3-7/8" wide primed siding. Cut to fit and install on the sides of the door opening flush with front wall siding. Use 6d galv. nails.

5   Install (2) two 1x4-84" long trim boards flush to the sides of the door opening flush with jamb. Tack these boards with a couple nails, you may want to reposition the trim when you install the doors.

6. Install (2) two 72" long 1x4 and (2) two 27" trim boards flush with the 1x3 corner trim on the side walls. Use 6d galv. nails.

Step 18   Finish Side Wall Trim

1. Locate (2) two 1x4-6' trim boards. Cut each to fit against back of front gable trim and install on the side walls.

1x4 Gable Trim

1x4 Fascia
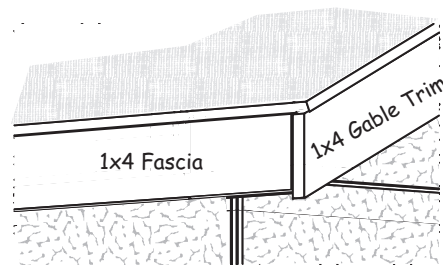
Step 21   Install Door Stop on Left Door

| Qty.		Material Shipped in 48" Door Kit
2	ea.	48" x 84" Pre-built Doors
2	ea.	12" x 42" Transom Windows
2	ea.	1x4" x 84" Door Trim
2	ea.	1x4" x 48-3/4" Door Trim
1	ea.	1x6" x 10" Keystone
2	ea.	3-7/8" x 84" LP 3/8" Primed Door Jamb
6	ea.	6" Door Hinges
1	ea.	Door Handle & Latch
1	ea.	6" Barrel Bolt
52	ea.	2" Hinge Screws
16	ea.	3/4" Pan Head Screws
10	ea.	1-1/2" Exterior Screws
32	ea.	White Window Screws

Install a 4-1/4" x 83" long board as a door stop to the right side of one of the doors. This will be the left door when installed. The door stop should extend 3/4" beyond the frame of the door. Install with 1-1-2" exterior screws packed in the main component kit. Space screws 12" apart.

Door Stop

Door Stop Extends 3/4"
Beyond Frame
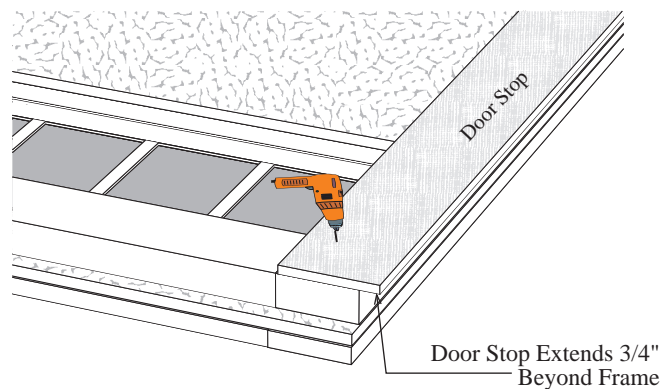
Step 22   Install Doors

If your door opening is out of square, the space around the doors will not be even. You can remove and re-position the side trim to make allowances for this. The side trim does not have to be flush with the frame of the door opening. You can move the trim in or out to make the door spacing equal.
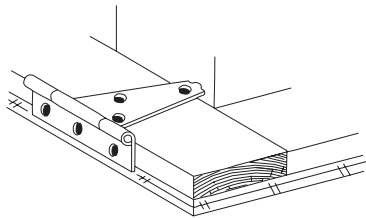
1. Install (3) three 6" hinges to sides of the doors. To position the hinge properly, hold the rectangular plate against the frame. Use 2" black screws.

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

3 Determine position of hinges and install to side trim with 2" screws.

4. Install the window using the short white screws.

5. Install door handle using 2" black screws into the pre-drilled hole on right side door. When the handle is turned the inside latch will hold doors closed. Tighten set screw to finish.

Left Door

Inside Door Latch

Door Stop

1x4 Trim

2x4 Frame

Siidng

Door Handle
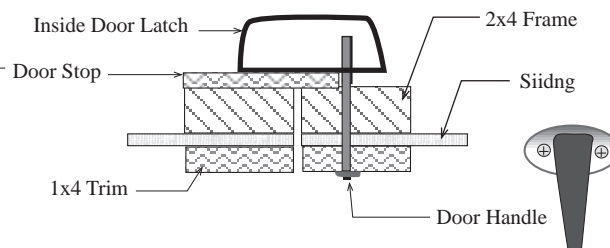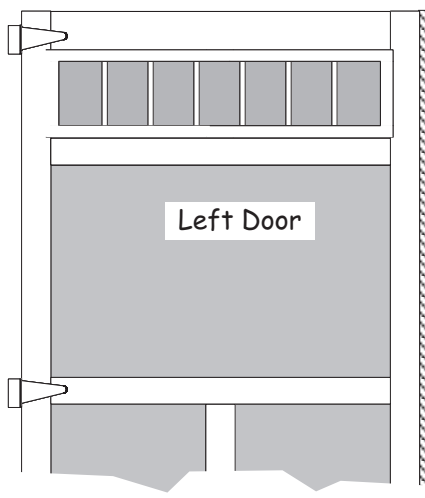
6. Install a barrel bolt using 3/4" pan head screws on the lower back of the door to secure this door in place when closed. You will need to drill a hole for the round shaft to drop into.

7. Install another barrel bolt at the top of the door.
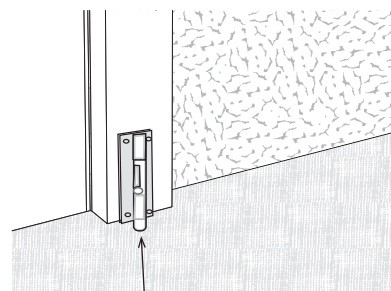
Barrel Bolt on the back of left door

Dover 12x16 Material List

7	2x4 for Collar Ties		82"
18	2x4 for Truss Rafters		80-1/2"
4	2x4 for Gable Studs		23-1/2"
18	2x4 for Soffit Blocks		5" or longer
6	1x4 for Side Wall Fascia		72"
4	1x4 for Gable Trim		82-1/2"
4	1x4 for Corner Trim		72"
4	1x4 for Corner Trim		27"
4	1x3 for Corner Trim		72"
4	1x3 for Corner Trim		24"
8	2x3 for Gable Overhang		42-3/8"
14	Truss Gussets	7/16"	8" x 16"
2	ea	Siding Panels	20" x 48-3/4"
2	ea	Gable Siding	48" x 40" *angle cut*
4	ea	Gable Siding	48" x 28" *angle cut*
12	ea	Soffit Panels	48" x 7"
6	ea	Soffit Fillers	48" x 3-1/2"
4	ea	Siding Fillers	2" x 3-1/2"

Qty.	*Material Supplied by Local Supplier*		
34 pcs.	2x4	Pre-cut Wall Studs	
4 pcs.	2x4 - 12'	Wall & Tie Plates	
2 pcs.	2x4 - 12'	Treated Wall Plates	
4 pcs.	2x4 - 16'	Wall & Tie Plates	
2 pcs.	2x4 - 16'	Treated Wall Plates	
2 pcs.	2x8 - 10'	Door Header	
12 pcs.	Exterior Siding		4x8
2 pcs.	OSB Sheathing		4x8
2 lbs.	16d Galv. Nails		

4	lbs.		10d	Sinkers
5	lbs.		6d	Galv.
5	lbs.		6d	Common
2	lbs.		Hanger Nails	
100 ea.		1-1/2"	Exterior Screws	
125 ea.		2-1/2"	Deck Screws	
6	ea.	1"x4"	Metal Plates	
2	ea.	72"	'Z' Flashing	
3	ea.	48"	'Z' Flashing	
14	ea.	H1	Metal Truss Hangers	
2	ea.	1x6 Keystone	8-1/2"	
2	ea.	Sheathing 7/16"	48" x 81-1/4"	
2	ea.	Sheathing 7/16"	48" x 72"	
2	ea.	Sheathing 7/16"	36-1/2" x 72"	
2	ea.	Sheathing 7/16"	36-1/2" x 48"	
2	ea.	Sheathing 7/16"	36-1/2" x 33-1/4"	
2	ea.	Header Filler 7/16"	7-1/4" x 48"	
Additional material not used in this model				
2	ea.	Door Jamb	3/8"	5-3/8" x 48"
2	ea.	Door Jamb	3/8"	5-3/8" x 84"
4	ea.	Soffit Panels	3/8"	48" x 7"
8	ea.	Gussets	7/16"	8" x 16"

Roof Covering (*not included*)	
10 bdl.	Roof Shingles
8 pcs.	Roof 'drip' Edge-10'