Assembly Book

Revised October 10, 2023

BEST BARNS
Quality Do-it-yourself Barn Kits

Greenbriar II

Building Size 12'x24'

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)	Phillips Screwdriver
Pencil		Framing Square

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

Required: 8' x 7' Garage Door, Vinyl Siding

Shingles or metal roofing, Drip Edge, Roofing Nails or Screws, Paint

Optional: Windows, Walk-in Door, Caulk, Ridge Vent

Terminology:

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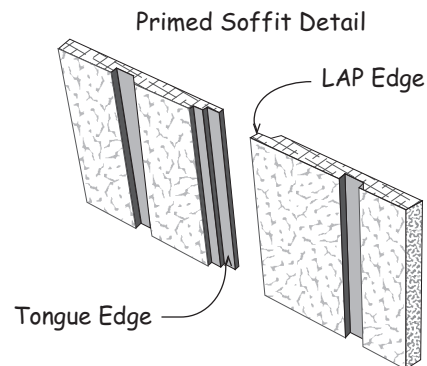Wall Plate - Top and bottom 2x4s used to frame walls
Tie Plate - 2x4s connecting wall sections together
Header - Spans top of door opening
OSB - Oriented Strand Board
LAP - Edge of siding that overlaps Tongue
Tongue - Edge of siding that is overlapped

Primed Soffit 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:
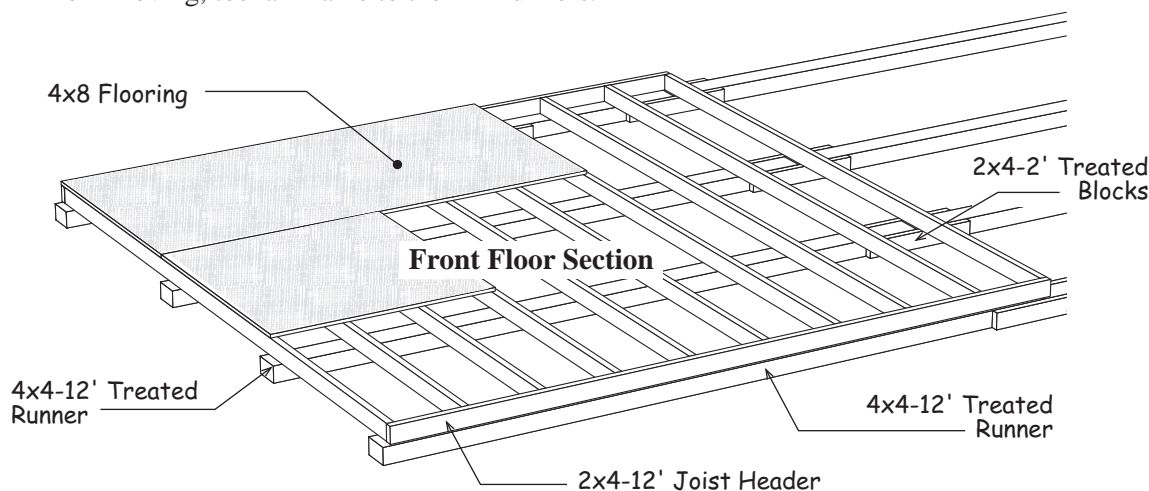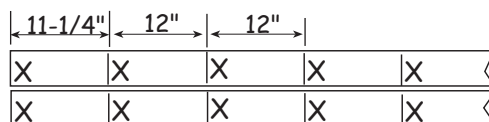
800-245-1577 - Mon - Fri 8AM - 5PM EST

724-866-4357 - After hours and weekends

Email - questions@barnkits.com

Details for Optional Sturdy-Built Floor System

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

1. Cut (2) two 2x4-12' to a length of 12' -0". They will be used for the joist headers. Layout, from the left, for 12" on center joist spacing. The 'X' marks where floor joist will be placed.

2. Cut (13) thirteen 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 the joist measurements if necessary to obtain 12'-0" building width.*

3. Place 4x4-12' treated timbers on the ground. Cut (2) two 2x4-8' boards into 2' long blocks to secure the 4x4s where they butt together.

4. Install the floor joists cut above between the 12' joist headers. Secure with 16d galv. deck nails.

5. Place floor sections over the 4x4s. Square floor. Measure the floor diagonally (corner to corner). These measurements will be the same if the floor is square (203-5/8"). To keep the 2x4 frame from moving, toenail frame to the 4x4 runners.

4x8 Flooring

Front Floor Section

2x4-2' Treated Blocks

4x4-12' Treated Runner

4x4-12' Treated Runner

2x4-12' Joist Header
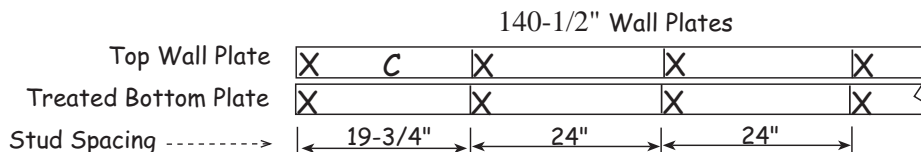
Assembly Instructions for Rear Floor Section

6. Repeat step number 1 and 2 above and assemble another floor section.

7. Install this section against the front floor section. Nail together with 16d galv. deck nails.

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

| Material Description	12' x 24'
2x4 Blocks	2 pcs. 8'
2x4 Joist Headers	4 pcs. 12'
2x4 Floor Joist	26 pcs. 12'
4x4 Treated Runners	8 pcs. 12'
Flooring 3/4"	9 pcs. 4x8
Screw Floor Nails	5 lb. 8d
Galv. Box Nails	5 lb. 16d

Step 1   Assemble Side Walls

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

1.   Cut (2) two 2x4-12' to a length of 140-1/2". Position the boards together and indicate with 'X' marks where the wall studs will be located.

140-1/2" Wall Plates

Top Wall Plate	X C X		X	X
Treated Bottom Plate	X X		X	X
Stud Spacing -------->	19-3/4"	24"	24"	

2.   Mark a 'C' anywhere left of first stud mark. This is referenced in a later step.

3.   Install (7) seven 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 the what part of the county you are located.

140-1/2" Top Plate

C

Pre-Cut
Wall Studs

140-1/2" Treated
Bottom Plate
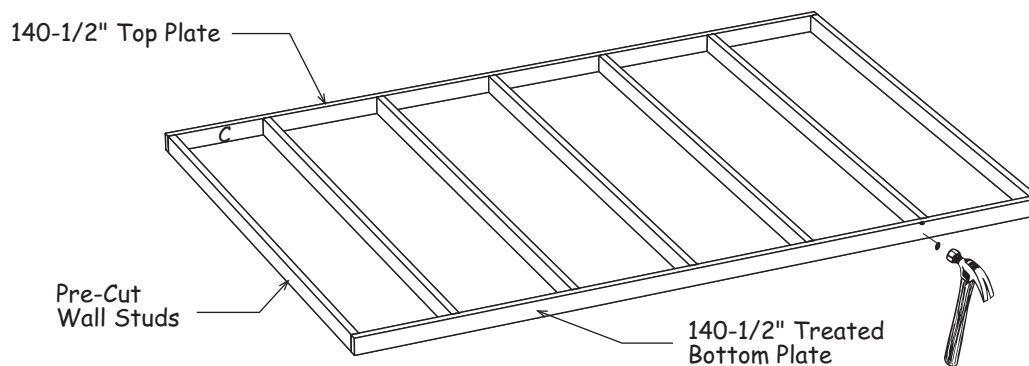
4.   Repeat to assemble (3) three more 140-1/2" long wall frames.
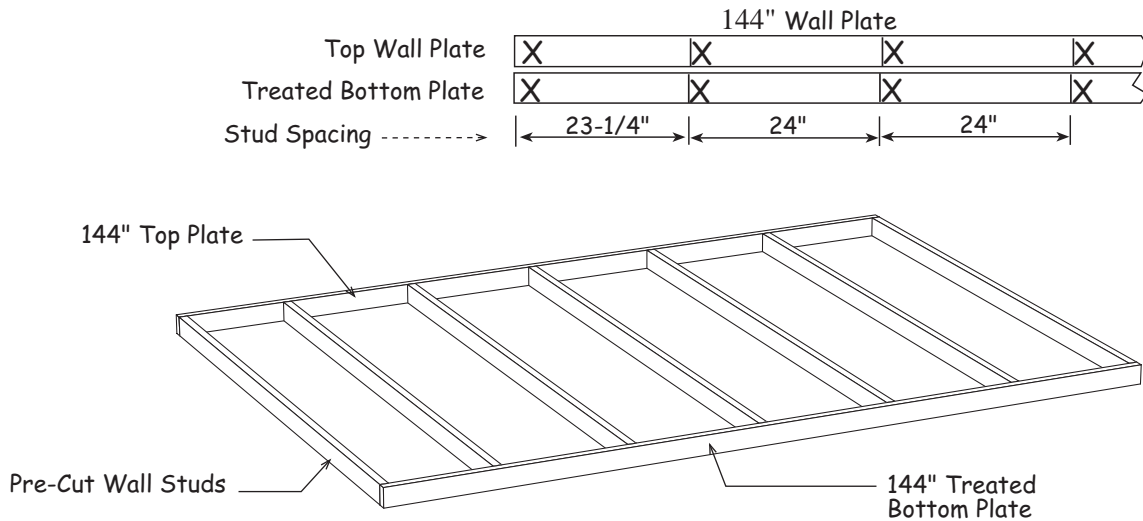
5.   Set frames aside.

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. Apply wood glue to both sides of of OSB. 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

OSB Filler

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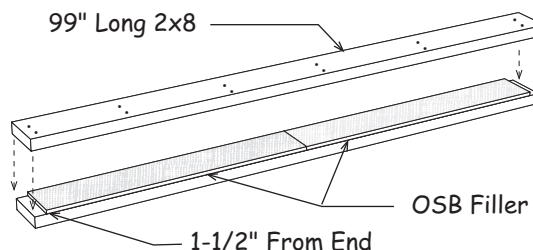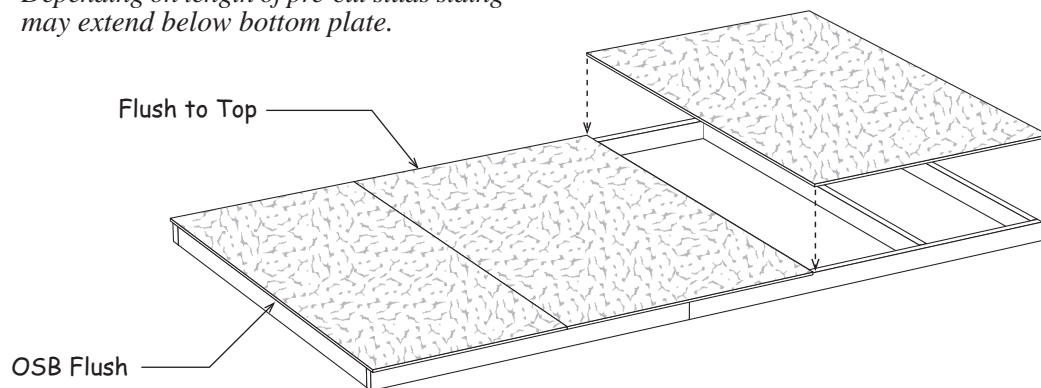
Step 3   Assemble 12' Back Wall

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 Oriented Strand Board (OSB) panel flush with the side of the wall stud and flush with the top 2x4 plate. Nail siding with 6d common nails, spaced 8" apart. Cut the OSB flush with the 2x4 bottom plate if you are installing the building on a concrete slab.
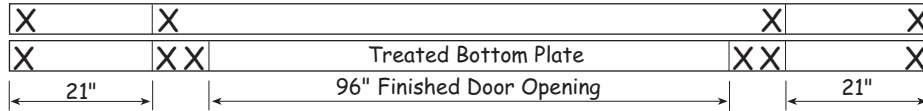
5. Install (2) two more OSB panels.

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

Flush to Top

OSB 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		Treated Bottom Plate		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.
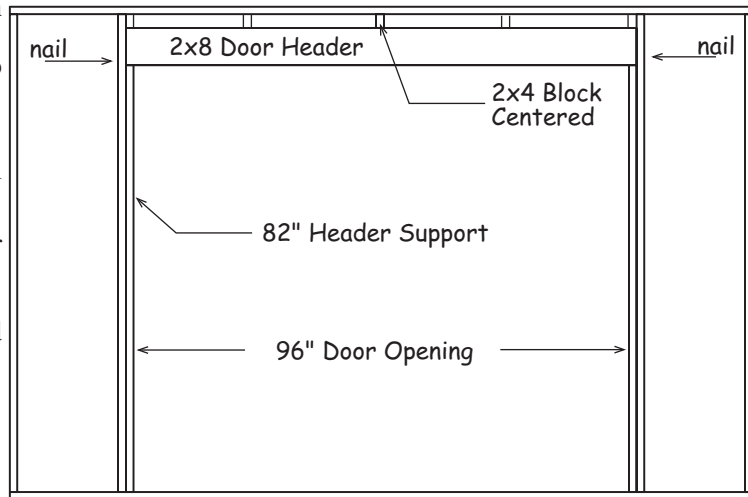
←   96" Door Opening   →

6. Cut a 4'x8' OSB panel in half creating (2) two 2'x8' panels. Install one panel flush with the side of the door opening and flush with the 2x4 top plate. Use 6d common nails.

7. Locate (2) two 20"x 48" OSB panels and install above the door opening. Install flush with top plate. Cut the siding flush with bottom of header.

8. Install 2'x8' siding panel on the right side of the wall panel.

Flush

OSB Flush
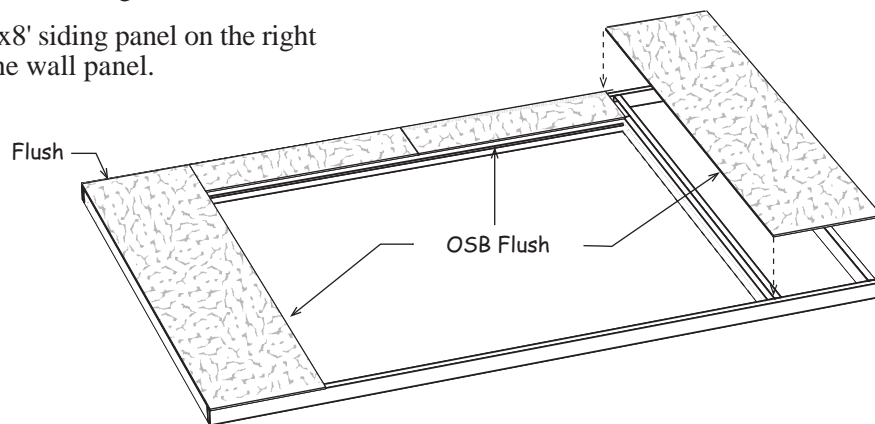
Step 5   Set Wall Panels

1. Erect back wall and side walls. **IMPORTANT**: Install the side walls with the 'C' marks oriented against the back and front wall panels. Secure walls together at the corners. Use (4) four 10d sinkers per corner. Temporarily install (2) two pre-cut studs at both sides of the door opening to hold the wall straight. These boards will be used in a later step.

2. Cut a OSB panel in half lengthways. Install a 24" wide panel at the back corner, flush with the back wall 2x4 frame and flush with top plate. Nail OSB to back wall and all 2x4s using 6d common nails spaced 8" apart

3. Install (5) five more OSB panels. The last 24" wide panel will extend 3-1/2" past wall to receive front wall panel.

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

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

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

7. Nail walls to floor through bottom plate. Use 16d galv nails or, if erecting on a concrete slab, concrete anchor bolts (not included) spaced 24" apart

End Marked 'C'

Back Wall

End Marked 'C'

24" Wide Panel

**End Marked 'C'**

Cut 2x4 Plate from Opening
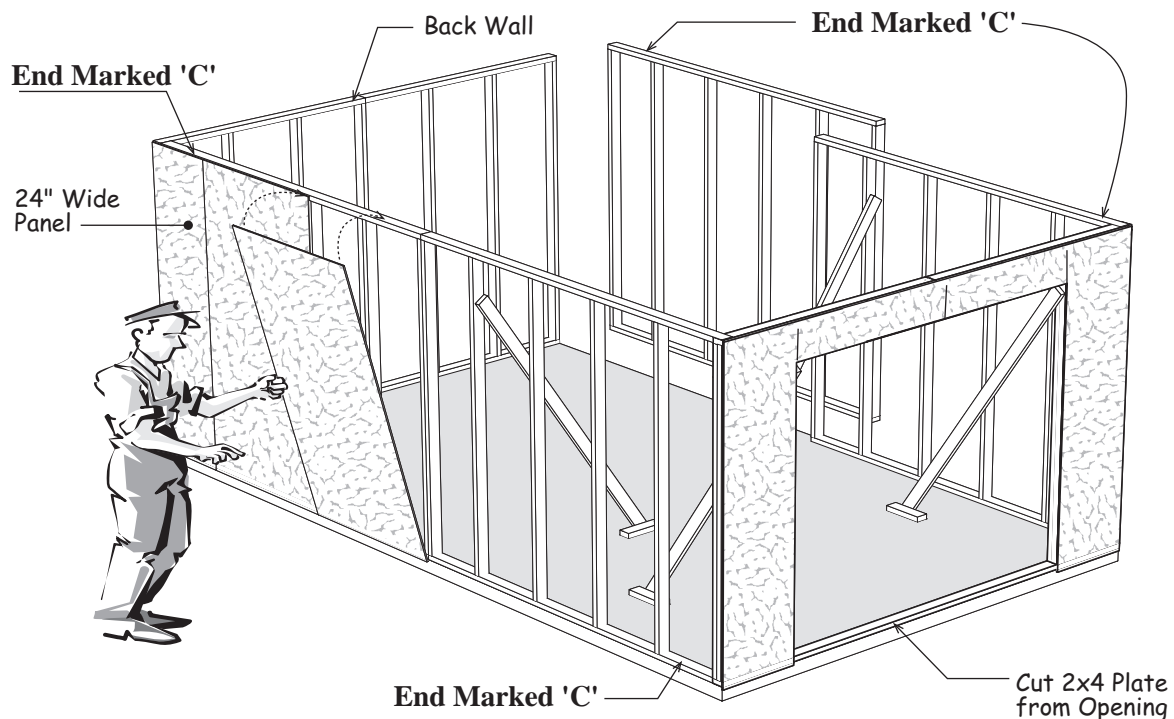
Step 6   Assemble Roof Gables

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

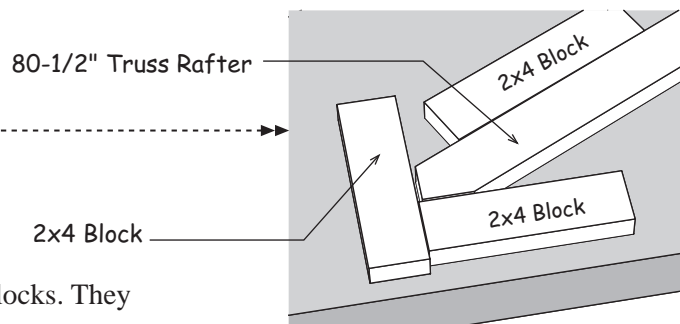Bottom Gable Plate

23-1/2" Gable Stud

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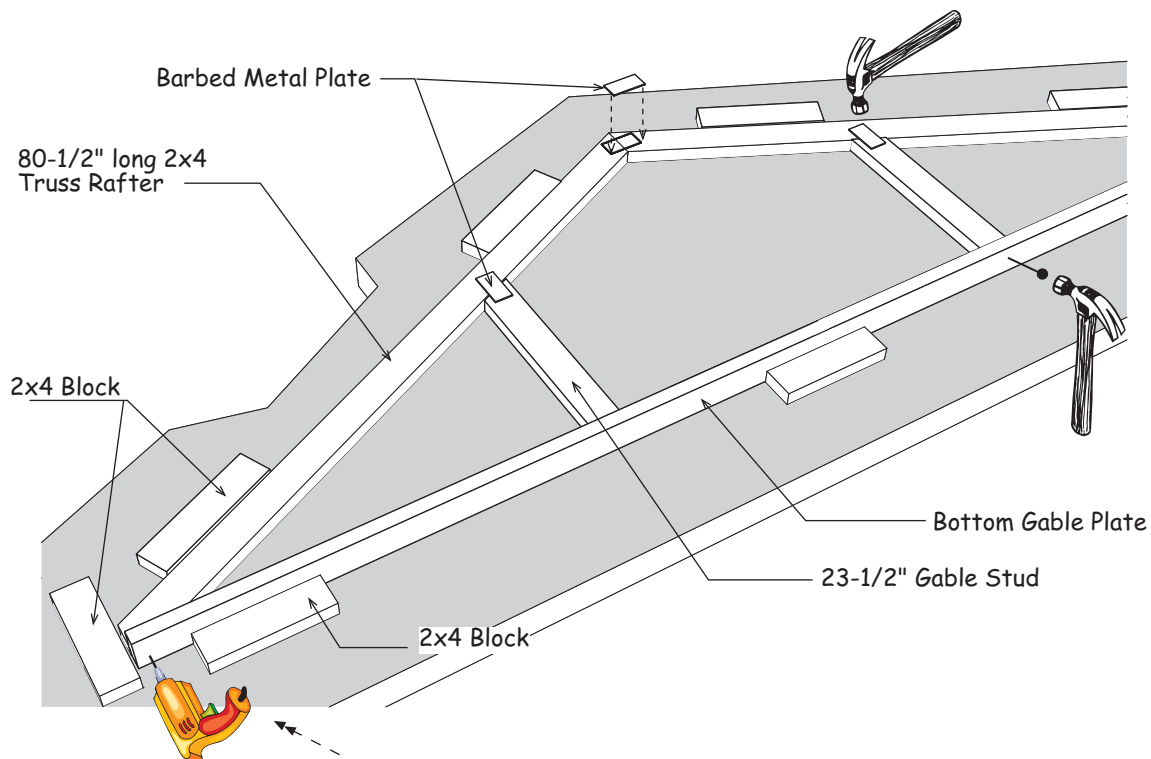
6. Secure the 2x4 bottom plate to the truss rafter with a 2-1/2" wood screw on both ends. Set gable aside.

7. 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. Apply wood glue between the 2x4s and the 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 (10) ten 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
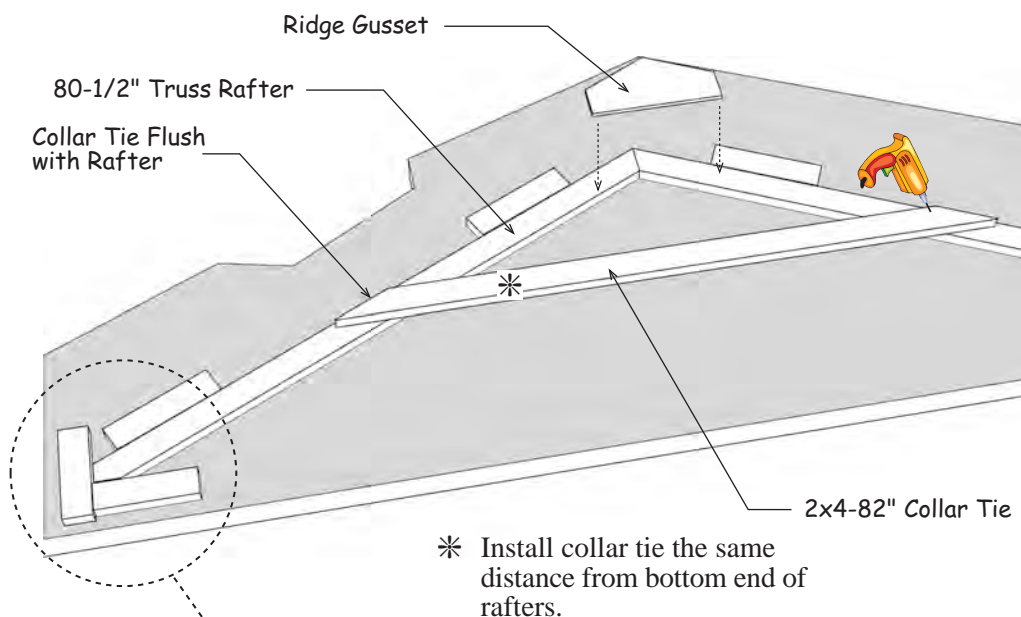
2x4 Block

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 OSB. Tack the soffit with a couple 6d common nails. Installing 2x4 tie plates in a later step will provide more nailing.

2. Install (4) four 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
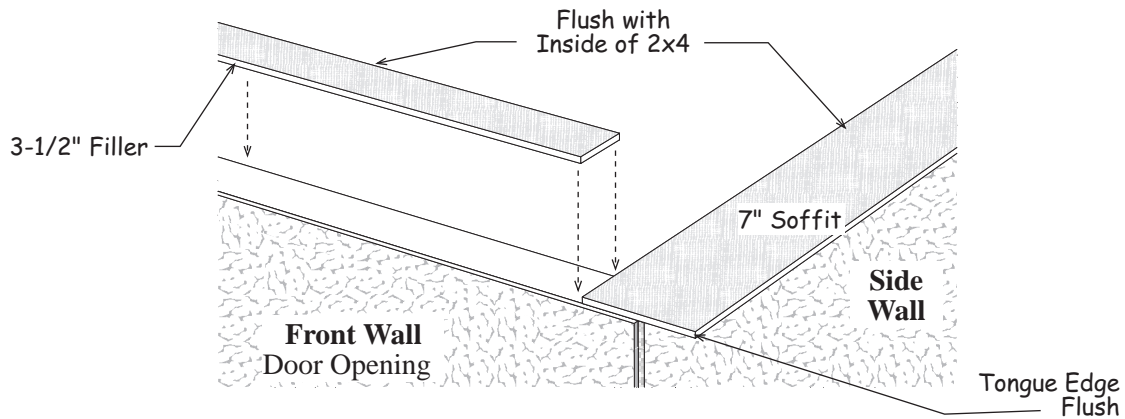
4. Repeat to install soffit on the opposite side wall.

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 OSB. Secure with 10d sinkers.

2. Install the gable frame on the front wall.

Gable Flush
with Filler
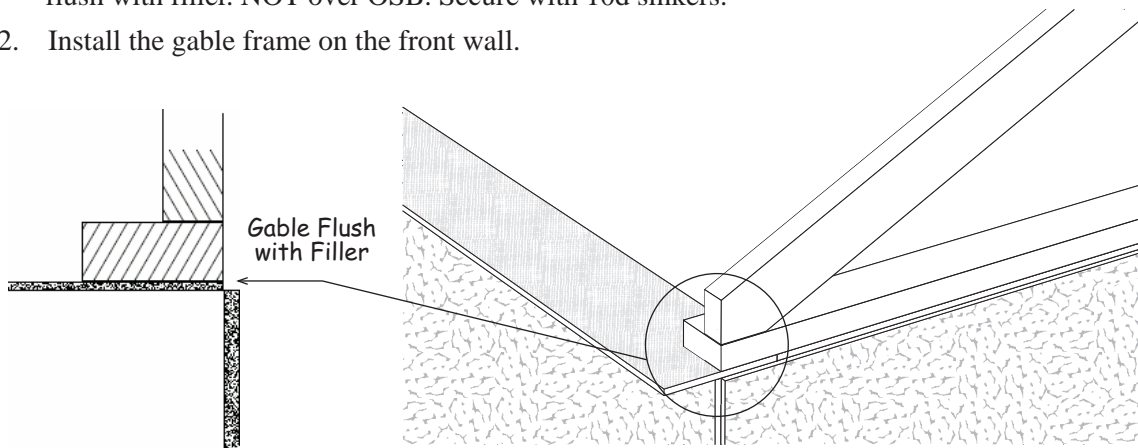
Step 10   Install Siding on Gables

1. Locate pre-cut gable OSB. Install OSB above the lower OSB wall panels and flush with ends of gable frame. Use 6d common nails.

2. Repeat to install siding on the other gable frame.
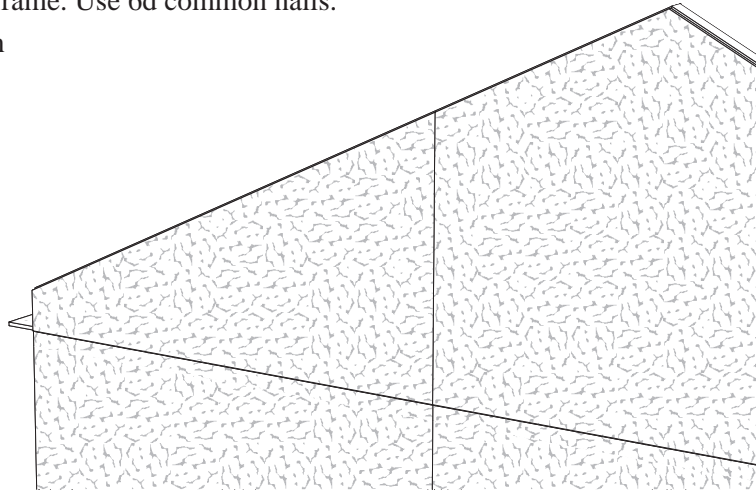
Step 11   Install 2x4 Tie Plates on Side Walls

1. Install a 2x4-12' on a side wall against the gable on the back wall. Install another 2x4x12'. Cut length to fit against gable on front wall. Use 10d sinkers.

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

2x4-12'

Install Flush

Side Wall
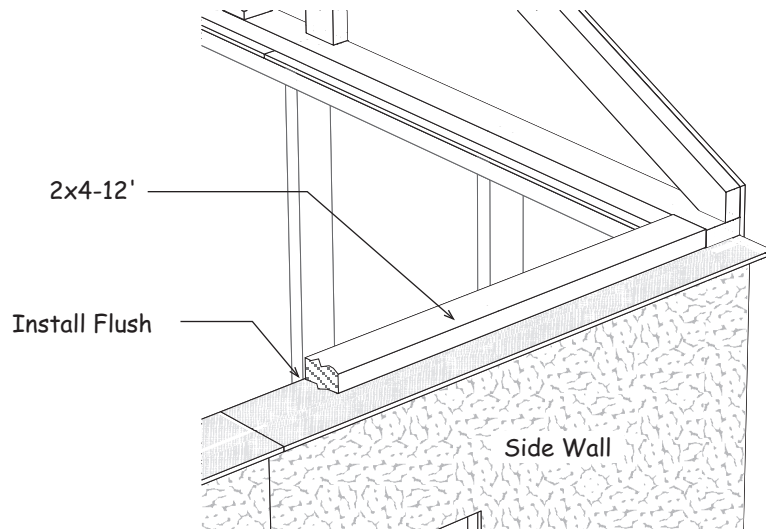
Step 12 Layout Roof Trusses & Install Soffit Blocks

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'

19"

2x4 Tie Plate

24"

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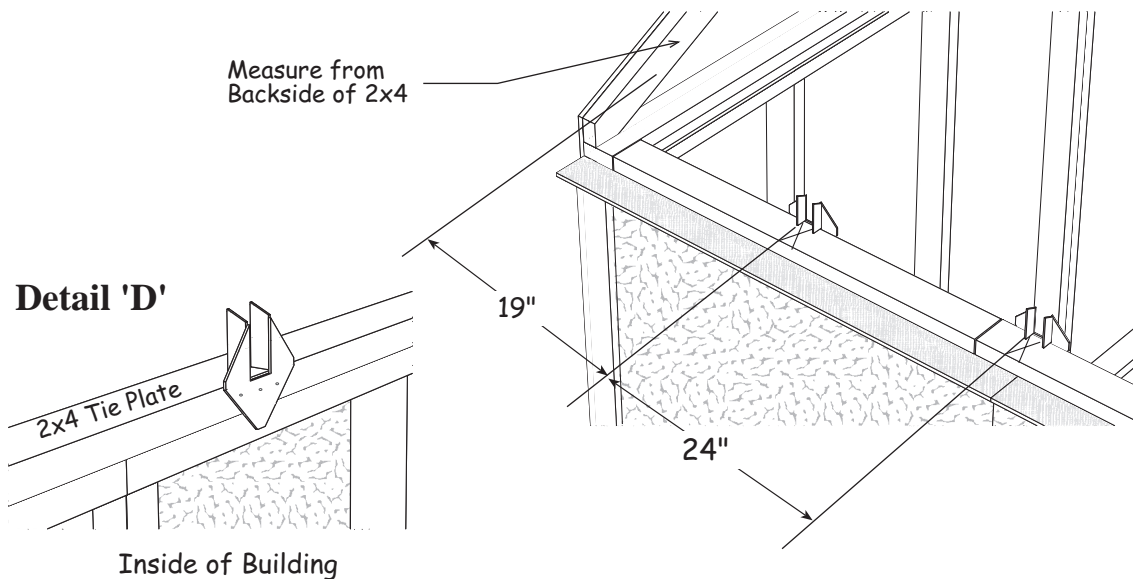
3. Set roof trusses. Secure trusses to metal hangers with 1-1/2" hanger nails.

4. Gather (22) twenty two 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.
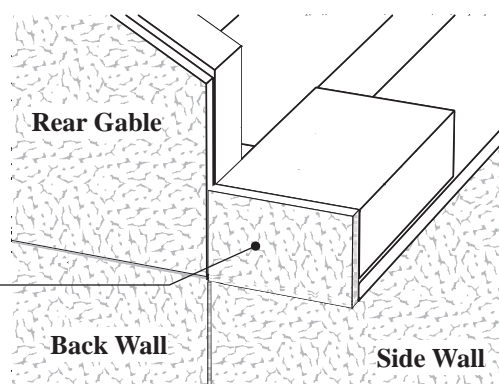
2x4 Block

2x4 Block with
Gable Frame
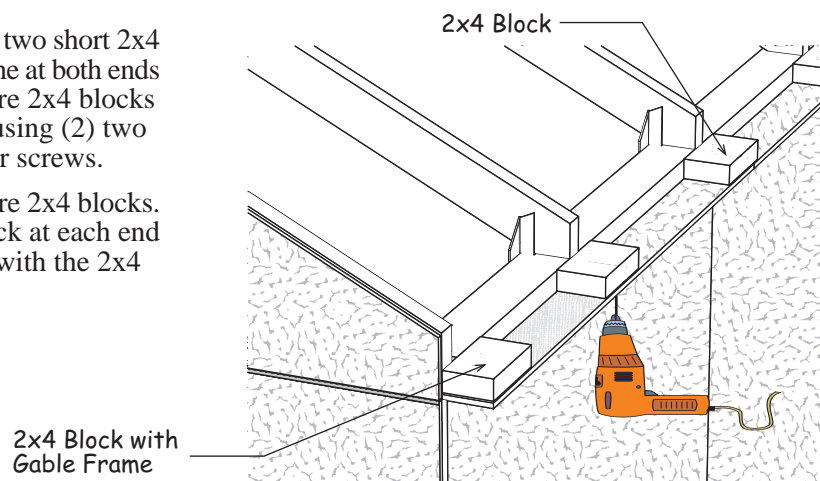
Step 13 Install Rear Gable Trim

☞ *The front able trim will be installed in a later step.*

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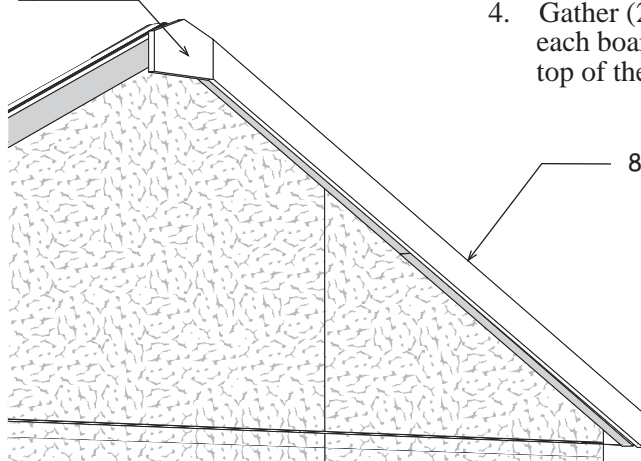

OSB Siding Filler

Rear Gable

Back Wall

Side Wall

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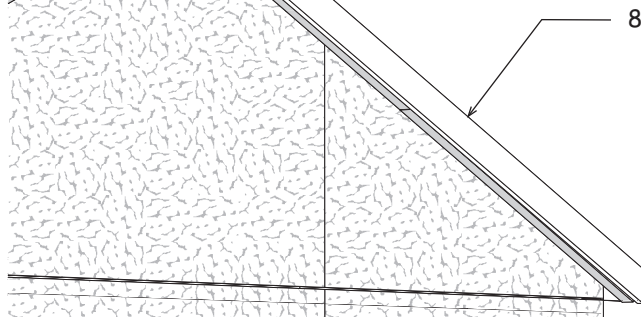

42-3/8" Long 2x3
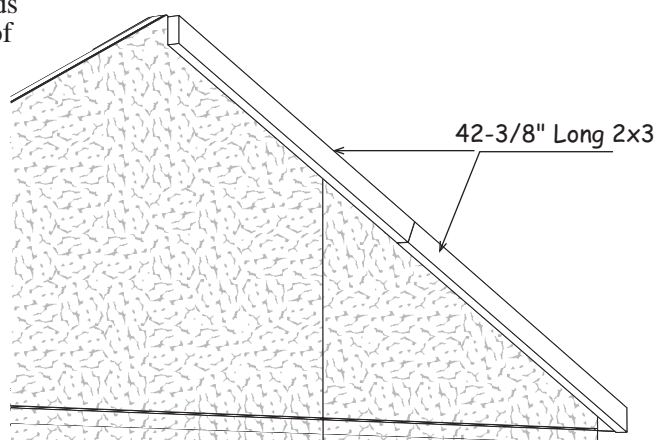
3. Install a 8-1/2" long trim board, *called a keystone*, at the top of the gable flush with the top of the gable frame. Use 6d galv. nails.
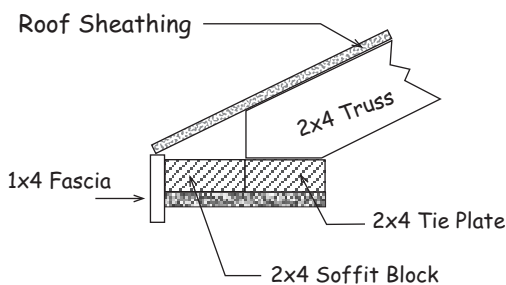
Keystone

4. Gather (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.
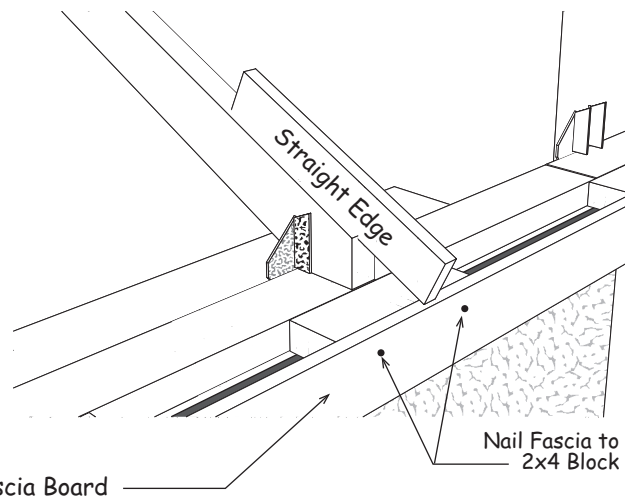
82-1/2" Long 1x4 Trim

Step 14   Install Fascia on Side Walls

1. Install a 1x4-4' 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 8d galv. nails.

2. Install (3) three more 6' fascia boards. 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

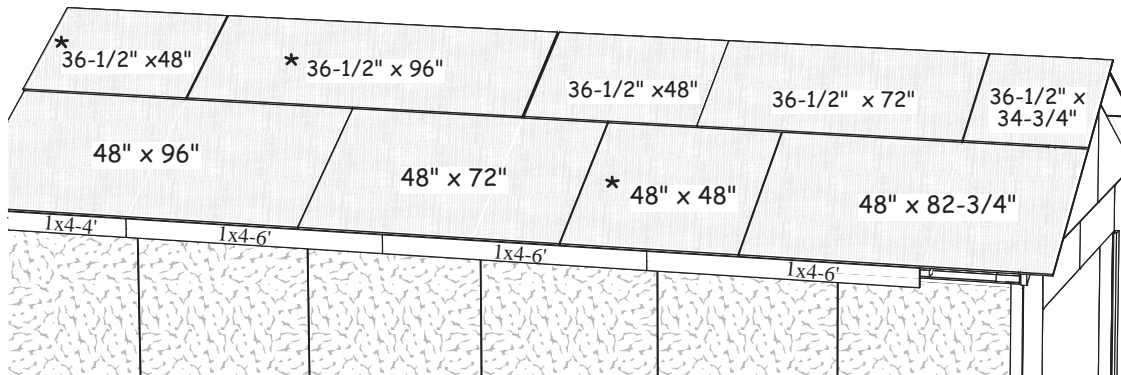1x4 -6' Fascia Board

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 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
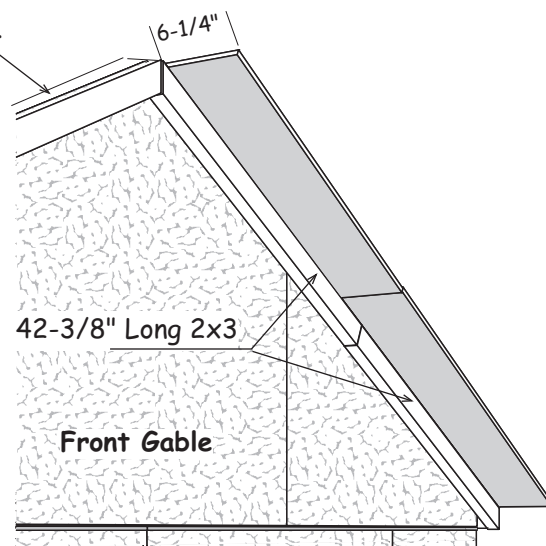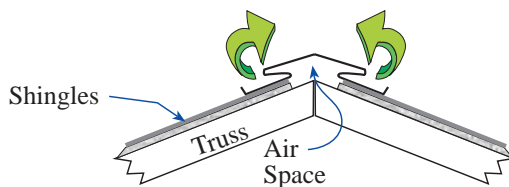
Step 15B Install Roof Sheathing continued

☞ *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.
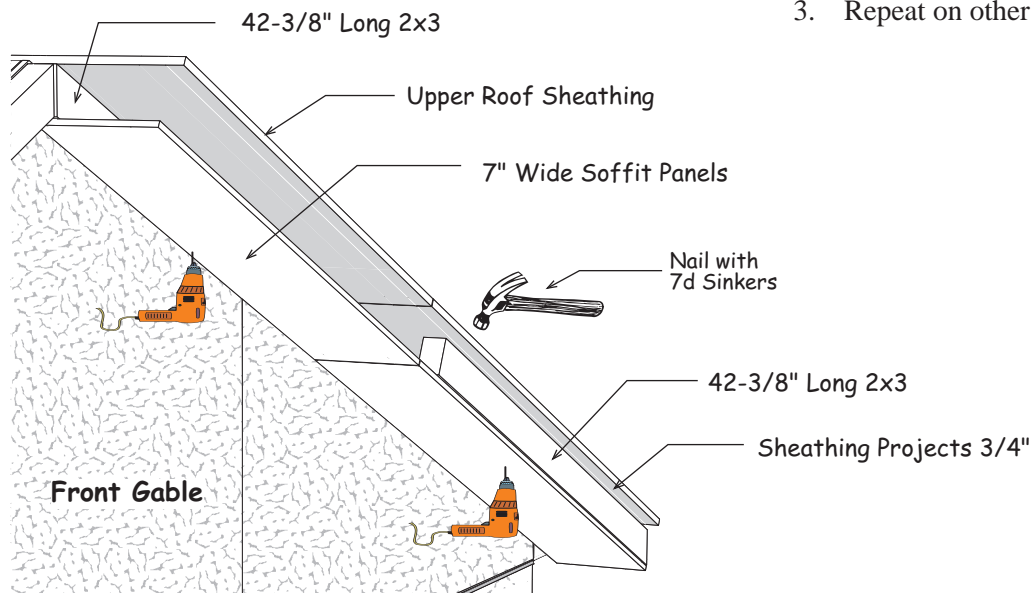

*36-1/2" x48"   * 36-1/2" x 96"   36-1/2" x48"   36-1/2" x 72"   36-1/2" x 34-3/4"

48" x 96"   48" x 72"   * 48" x 48"   48" x 82-3/4"

1x4-4'   1x4-6'   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 7d sinkers 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
7d Sinkers

42-3/8" Long 2x3

Sheathing Projects 3/4"

Front Gable

Step 17   Install Door Jamb

1.   Install (2) two 48" long x 5-3/8" wide primed siding on the top of the door opening, flush with the front wall OSB. Cut 2nd piece to fit. Use 6d galv. nails.

2.   Locate (2) two 84" long x 5-3/8" wide primed siding. Cut to fit and install on the sides of the door opening, flush with the front wall OSB.
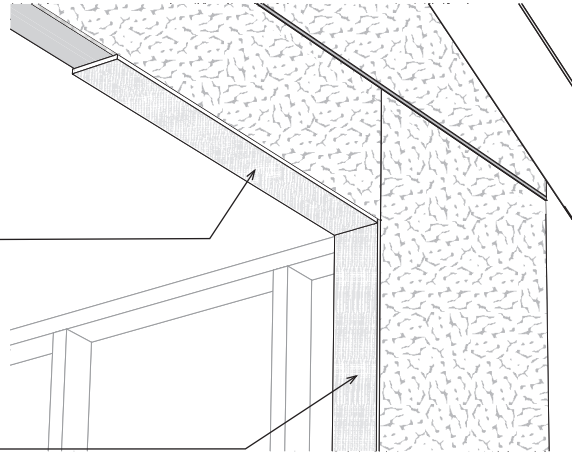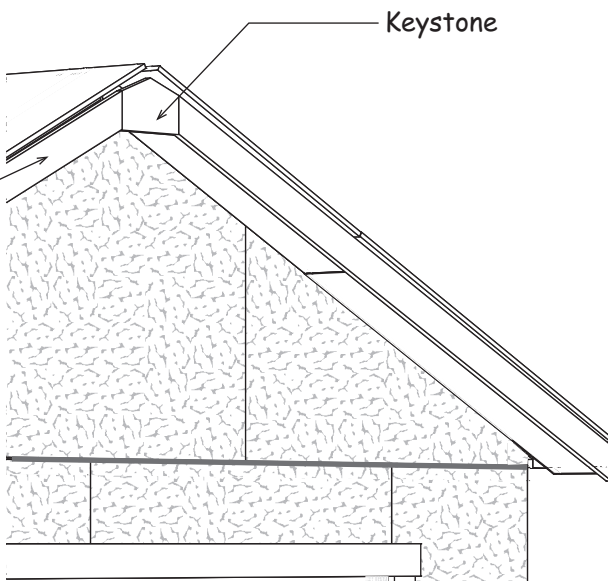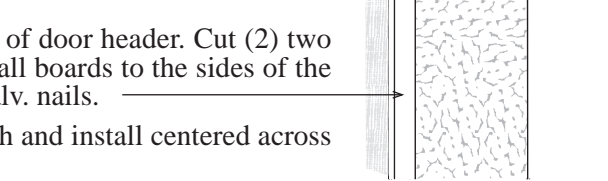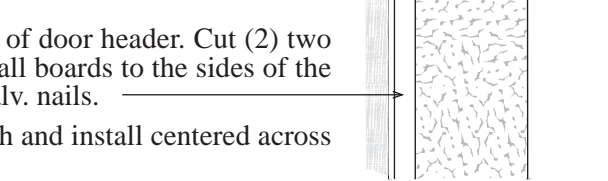
Step 18   Install 2x4s Around Door Jamb

☞ *Remove 2x4s used for bracing walls*

1.   Select (2) two 2x4s. Cut each to fit on either side of door opening against back of jamb. Secure to stud with 10d sinkers.

2.   Select (2) two 2x4s and cut each to 51-1/2" long. Install across top jamb and 2x4s. Secure to header with 10d sinkers.

51-1/2" Long 2x4

2x4 Cut to Fit

VIEW FROM INSIDE

Prime Door Jamb
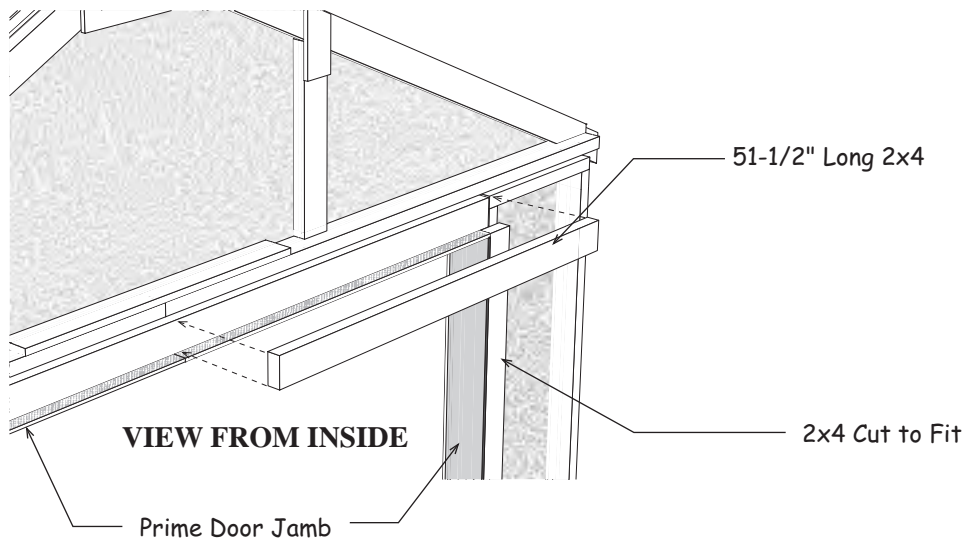
Step 19   Install Gable & Door Trim

Keystone

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

2. Measure from bottom of OSB to bottom of door header. Cut (2) two 1x4-8' trim boards to this length and install boards to the sides of the door opening, flush with jamb. Use 6d galv. nails.

3. Cut a 1x4-10' trim board to 105" in length and install centered across the top of the side door trim.

Step 20   Finish Side Wall Trim

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

1x4 Gable Trim

1x4 Fascia
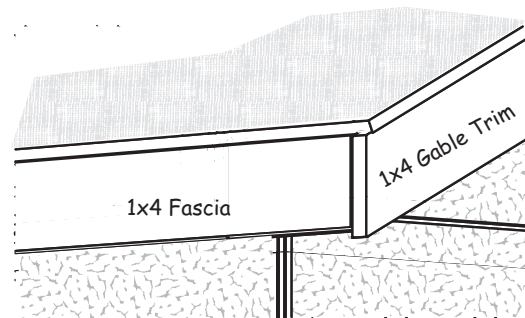
Step 21   Install Roofing — Not Supplied in Kit

1. Install metal roof edging along the end walls and the front edge of the roof sheathing.

2. Install felt paper and shingles according
    to manufacture's instructions.

Optional Roof Covering	
14 bdl.	Roof Shingles
10 pcs.	Roof 'drip' Edge-10'

Metal Roof Edge

Roof Sheathing

1x4 Trim
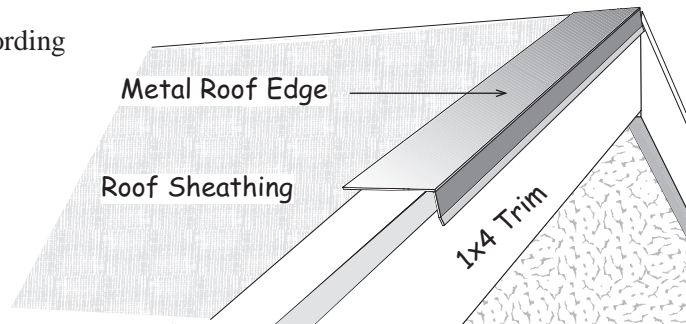
Install Optional Door Sill

If you ordered the optional floor, install the galvanized door sill. Secure sill
with pan head screws.

Galv. Door Sill
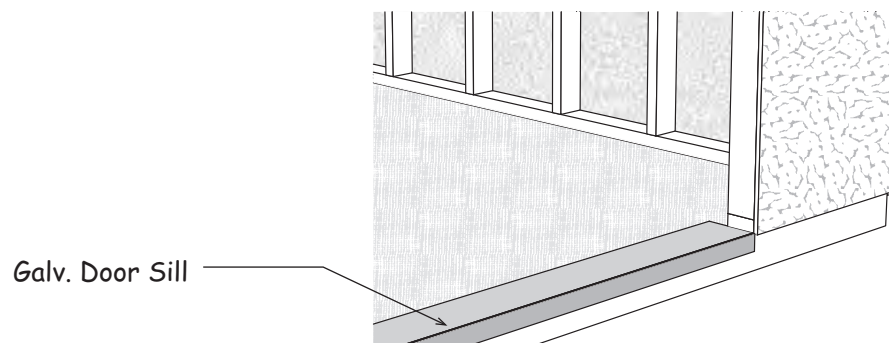
Vinyl Siding — Not Supplied in Kit

Install the siding according to the manufacturer's instructions.

Material List for Vinyl Siding			
5-1/2	sq.	Vinyl Siding	*double 4" standard profile*
4	ea.	Outside Corners	
5	ea.	J-Channel	
5	ea.	Under Sill Trim	
6	ea.	Starter Strips	
3	lb.	Nails	

Starter Strip

Under Sill Trim

1x4 Door Trim

J-Channel

Outside Corner
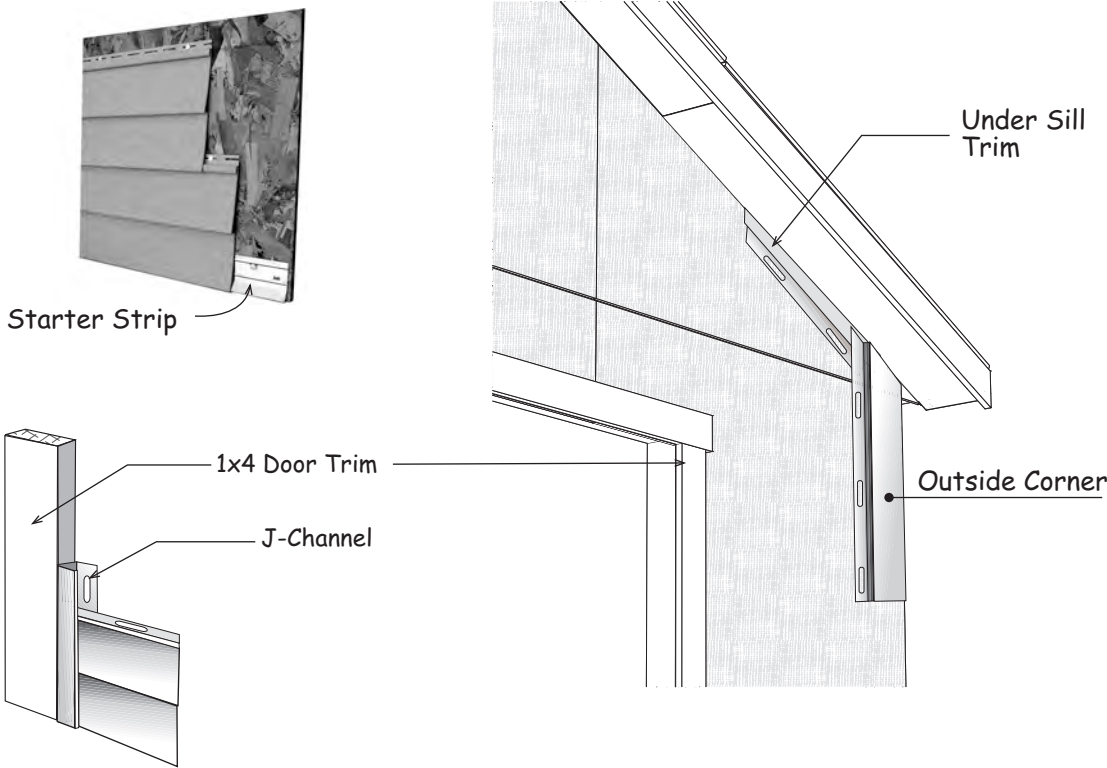
Greenbriar 12x24 Material List

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"
12	2x3 for Gable Overhang		42-3/8"
16	ea.	Soffit Panels	48" x 7"
6	ea.	Soffit Fillers	48" x 3-1/2"
4	lbs.	10d Sinkers	
1	lbs.	6d Galv. Nails	
10	lbs.	6d Common Nails	
2	lbs.	Hanger Nails	
100	ea.	1-1/2" Exterior Screws	
125	ea.	2-1/2" Deck Screws	
6	ea.	1"x4" Metal Plates	
14	ea.	H1 Metal Truss Hangers	
1	ea.	Bottle Glue	
2	ea.	1x6 Keystone 8-1/2"	

22 ea.	Gussets	7/16"	8" x 16"	
2	ea.	Sheathing 7/16"	20" x 48"	
2	ea.	Sheathing 7/16"	48" x 40"	*angled*
4	ea.	Sheathing 7/16"	48" x 28"	*angled*
2	ea.	Sheathing 7/16"	48" x 82-3/4"	
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 34-3/4"	
4	ea.	OSB Fillers 7/16"	2" x 3-1/2"	
2	ea.	Header Filler 7/16"	7-1/4" x 48"	
2	ea.	Door Jamb	3/8" 5-3/8" x 48"	
2	ea.	Door Jamb	3/8" 5-3/8" x 84"	

Qty.	*Material Shipped in 4' Extension Kit*	
2	2x4 Collar Ties	82"
4	2x4 Truss Rafters	80-1/2"
2	1x4 Side Wall Fascia	48"
4	2x4 Soffit Blocks	5" or longer
4	H1 Metal Truss Hangers	

Qty.	*Material Supplied by Local Supplier*	
46 pcs.	2x4	Pre-cut Wall Studs
12 pcs.	2x4 - 12'	Wall & Tie Plates
6 pcs.	2x4 - 12'	Treated Wall Plates
2 pcs.	2x8 - 10'	Door Header
1 pcs.	1x4 - 10'	Top Door Trim
2 pcs.	1x4 - 8'	Side Door Trim
22 pcs.	OSB Sheathing	4x8