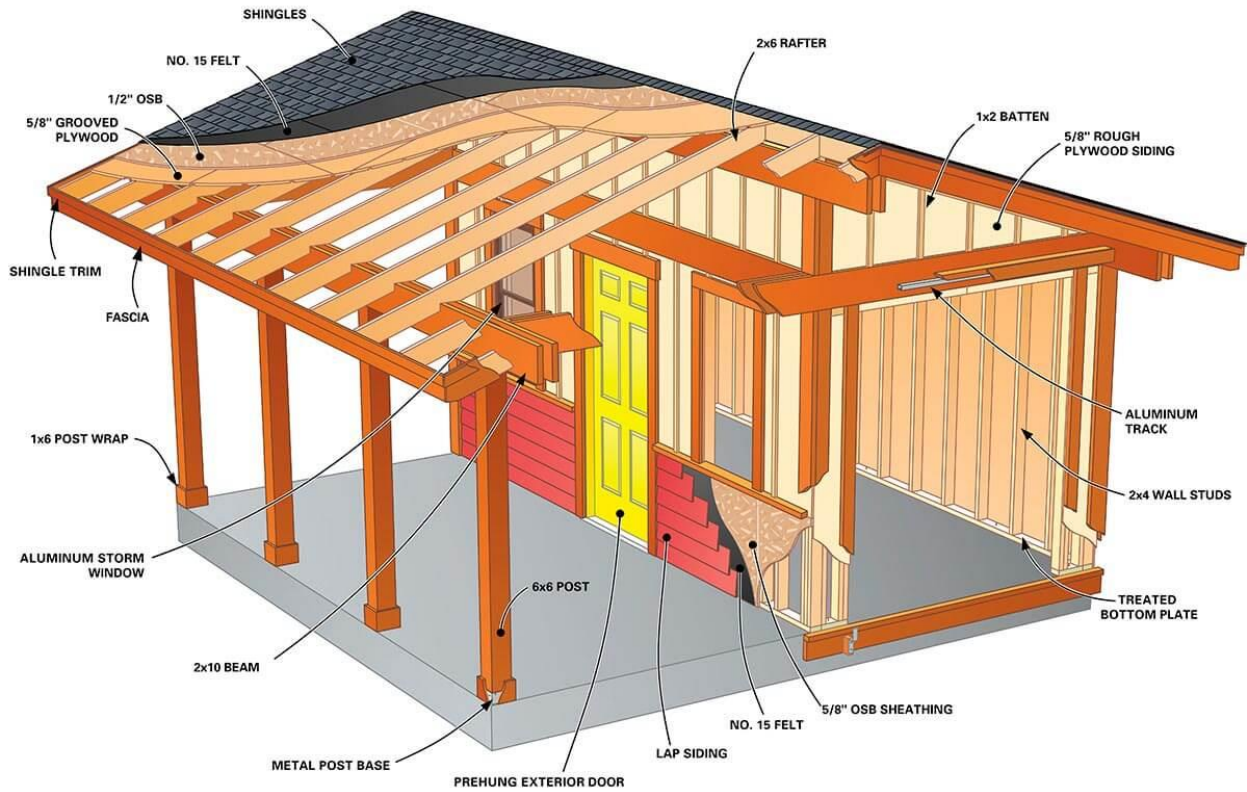# RUSTIC SCHOOL HOUSE SHED

10x 16

Shed Plus Shelter

Note: Shed drawings and materials list are located at the end of this PDF

This shed has a large sliding door on one end to access the 8 x 16-ft. storage area, three windows for lots of light and a front entry door for extra convenience. But the best feature is the large covered porch where you can work on projects or just hang out in the shade with friends.

The front half of the roof is supported by 6x6 posts and 2x10 beams. We continued the post-and-beam look on the rest of the shed, using the 2x10 beams to support the wide roof overhangs. We used inexpensive standard framing lumber for the beams and corner boards, and coated it with a super-durable finish to give it a rich, rustic appearance. The windows are aluminum storm windows. The front door is a steel entry door purchased at a home center.

SHINGLES

NO. 15 FELT

1/2" OSB

5/8" GROOVED PLYWOOD

2x6 RAFTER

1x2 BATTEN

5/8" ROUGH PLYWOOD SIDING

SHINGLE TRIM

FASCIA

1x6 POST WRAP

ALUMINUM STORM WINDOW

ALUMINUM TRACK

2x4 WALL STUDS

2x10 BEAM

6x6 POST

TREATED BOTTOM PLATE

METAL POST BASE

PREHUNG EXTERIOR DOOR

LAP SIDING

NO. 15 FELT

5/8" OSB SHEATHING

Building Tech Art

Follow this illustration as you build the shed. Read on and we'll walk you through each step along the way.

Construct the Walls

Taut string

Diagonal brace

Start by measuring 3-1/2 in. from the outside edge of the slab on the back and sides and snapping chalk lines to mark the interior edge of the bottom plate. Then measure from the back line to mark the location of the front bottom plate and snap a line. Now measure between the pairs of opposite lines to make sure

they're parallel, and measure diagonally from corner to corner (where the chalk lines intersect).

The diagonal measurements should be equal. If not, the slab is not square and you should cheat the lines as needed until the diagonal measurements are equal. If you skip this step, you risk fighting with an out-of-square building for the entire project. With chalk lines snapped, you can cut the 2x4 plates to length and mark the stud and window and door openings on them according to the plans. Drill holes in the treated bottom plates for the anchor bolts. Then build the walls.

Build the walls flat on the slab and then stand them up. Plumb the corners with a level and nail diagonal braces to the walls. Straighten the top plate by stretching a string over spacer blocks at each end. Gauge the straightness with a third block. When the top plate is straight, nail the brace.

Stand Front Posts and Beams

The front half of the roof is supported by four 6x6 cedar posts that are notched to accept both 2x10 beams. This photo shows how we set them up for marking the location of the notches. Rest the bottom of the posts on the metal post brackets and temporarily brace them. We used screws for all the temporary bracing because they're easy to put in and take out. Use one of the 2x10 beams to mark the end post as shown in the photo. Do the same thing on the opposite end, and then snap a chalk line between the marks to mark the center for notching. Number the posts so you get them back in the right spot.

Cut the Notches

Notch for beam

Take the posts down and cut the notches. Mark 1-1/2-in.-deep notches on both sides of the posts. Cut as much as you can with a circular saw. Complete the notches with a handsaw.

Set the Beams

2x10 beam

Finish up by putting the posts back in place. Use a level to plumb the posts and brace them with pairs of 2x4s. Then cut the front 2x10 beams to length and mark the post locations on them. Line the posts up with the marks and screw the posts and beams together.

Frame the Roof

Cut the 2x6 rafters according to the dimensions. Mark the 2x6 ridge, the top plate of the back wall and the top of the front beam with the rafter locations. The rafters are 2-ft. on center. Nail or screw the ridge to the top of the front wall. Check the plans for the exact position of the ridge. Also cut and attach the 2x10 beam that runs along the top of the back wall, making sure it protrudes 2 ft. on each end. Now you're ready to install the rafters. We used 3-in. screws to attach the rafters, but 16d framing nails will also work.

Finish the Walls and Add Plywood Siding

With the roof frame in place, you can fill in the short studs on each end wall. Start by cutting angles on the ends of the top plate and screwing or nailing it to the underside of the rafter. Then mark the location of the studs. Measure and cut the studs and nail them in. Finish the walls by nailing the cedar plywood siding to the top of the front and side walls. You can cut the window and door openings before or after installing the plywood siding.

Complete the Beams

Grooved plywood

The remaining beams are decorative. One snugs to the underside of the rafters on the front wall. Two more run between the front and the back beams. After these are in place, add the 2-1/2-in. spacers and the decorative second half of all the beams. Finally cut a 2x10 to fit horizontally between the side beams, above the door and windows, and nail it to the front wall.

Sheathe the Roof

SLIDING
DOOR
HANGER

3/8" ROUGH
PLYWOOD

3/4" x 3"
TRIM

1x2
BATTEN

2x2
FRAME
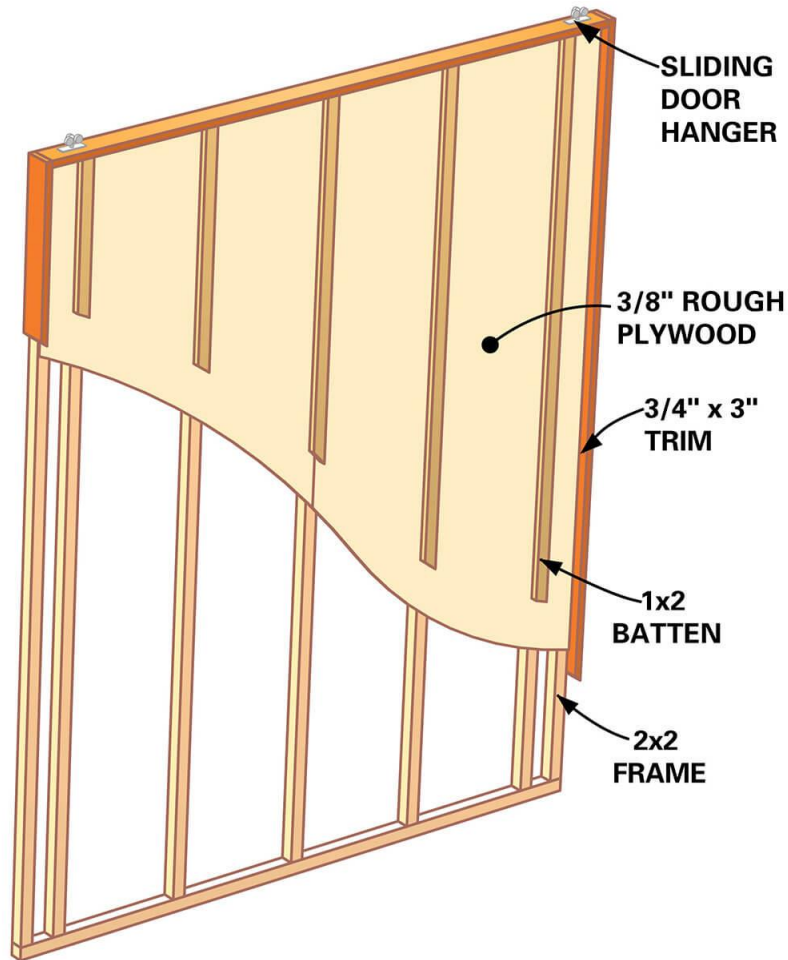
For a more finished-looking ceiling, we installed 4 x 8-ft. sheets of 8-in.-on-center grooved pine siding, face side down, over the rafters. Then we covered this with a layer of 1/2-in. OSB so the roofing nails wouldn't poke through.

Build the Sliding Door

Screw 2x2s together to form the frame for the sliding door according to the plan details. Then nail 3/8-in.-thick cedar plywood to the 2x2s and wrap the perimeter with 1x4s ripped to 3 in. Nail the 1x4s flush with the back of the 2x2s so they protrude past the siding. The 1x4s will cover the ends of the battens.

Install the Sliding Door Track

We used Johnson Hardware's heavy-duty bypass door hardware to support the exterior sliding door. The parts are easy to order online (see the Materials List), and the three-wheel hangers operate smoothly. Attach the 2x4 track support to the 2x10 beam with 1/4-in. x 5-in. lag screws. Then screw the tracks to the underside of the 2x4, spacing them about 1/4 in. from the beam.

Mount Door Hangers

Mount the hanger brackets to the top of the door. Slide the wheel assemblies into the track and screw a block of wood into the open end of the track to prevent the door from rolling off the end. Then hang the door on the track by clipping the wheel assemblies into the hanger brackets.

Add a Sill

We bought a standard 3-ft.-wide steel entry door from a home center, removed the molding and installed it in the front wall. Install the front door and windowsill before mounting the windows. Nail 1-in. x 4-in. trim boards to the sides of the front door and use a 2x6 for the top trim. We cut the window and door trim from 1-in.-thick cedar decking.

Make the angled sill piece by ripping a 10-degree bevel on the front and back edge of a 2x4. Notch the sill pieces to protrude 1 in. into the window openings. Then mark where they intersect at the outside corner and cut the miters. Be sure to tilt the sill at a 10-degree angle in your miter saw when you're cutting the miters. Do this by pressing the beveled side tight to the fence.

Install Windows
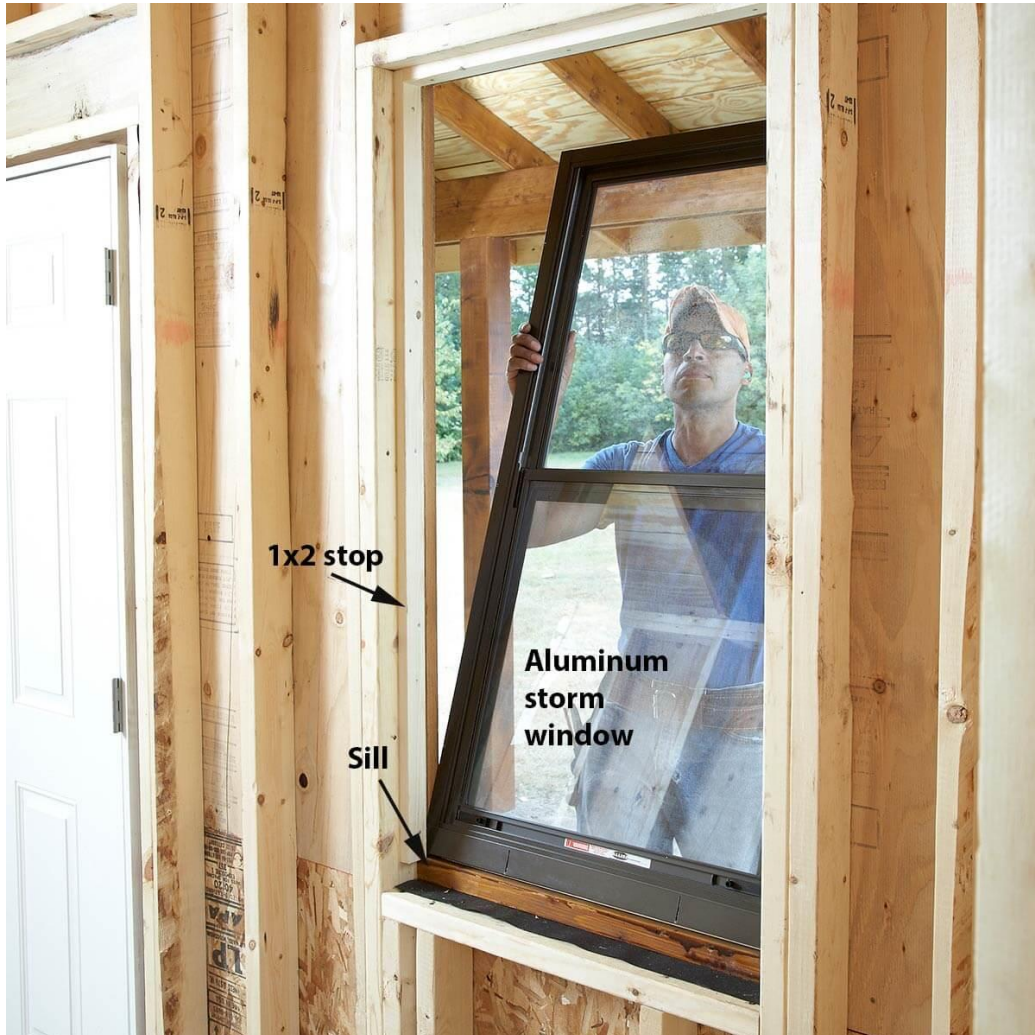
The custom-size aluminum storm windows we used have 1-in.-thick expandable U-shaped channels around the perimeter for mounting. We nailed 1x2s to the sides and top of the framed openings, 1 in. back from the face of the siding and screwed the windows to these. If you use storm windows with thin mounting flanges, relocate these nailing strips to 1/8 in. behind the face of the siding. See the Materials List online for window-ordering details.

Trim the Roof

Install the 1x8 fascia boards and the 1x3 shingle molding. Make sure the 1x3 shingle molding is lined up with the roof surface.

Add Shingles

Staple roofing felt over the sheathing, overlapping the seams about 3 in. Then nail on the shingles according to the manufacturer's instructions. Cover the ridge with ridge shingles.

Install Lap Siding

The corners of the shed are covered with 2x6 SPF lumber to look like posts. The front corners are a little tricky because the 2x6s have to be cut to fit onto the angled sill. The easiest solution is to rip the 2x6s to form a 45-degree bevel on one long edge. Then cut the 10-degree angle on the bottom (where they sit on the sill) and join the bevels to form the corner.

We installed 1/2-in. x 7-1/4-in. rough-cedar lap siding under the windows and finished the cedar plywood siding with 1x2 bat-tens nailed to the studs every 16 in. Cover the OSB with No. 15 building paper before you install the siding. If you use the same size siding, you'll have six courses with 5-1/2 in. of the siding exposed on each course. Start by ripping the top piece of siding to 5-1/2 in. and using the leftover strip as a starter under the first course. Align it with the bottom edge of the bottom plate and nail it on. Then nail the first course of siding over this. Continue with the remaining pieces, overlapping them to leave 5-1/2 in. of the previous course exposed.

Finishing Touches

Touch up the paint and stain and install the door hardware and you're ready to pull up some chairs to enjoy your new hangout.

Shed Materials List

Description	Qty.	Item
WALL FRAMING		
Bottom plates	2	2x4 x 16' treated lumber
Bottom plates	2	2x4 x 8' treated lumber
Top plates	3	2x4 x 16' SPF (spruce, pine, fir) lumber
Top plates	6	2x4 x 8' SPF lumber
Studs	30	2x4 x 12' SPF lumber
Studs	50	2x4 x 92-5/8" SPF lumber
Header	2	2x8 x 10' SPF lumber
Bracing	6	2x4 x 16' SPF lumber
Wall sheathing	2	4' x 8' x 5/8" OSB
Siding	12	4' x 8' x 5/8" rough-sawn plywood
Posts	4	6x6 x 8' cedar or treated lumber
Beams	4	2x10 x 20' SPF lumber
Beams	3	2x10 x 16' SPF lumber
Beams	3	2x10 x 8' SPF lumber
ROOF FRAMING		
Ridge	1	2x6 x 20' SPF lumber
Rafters	22	2x6 x 12' SPF lumber
Blocking	2	2x4 x 8' SPF lumber
Fascia	2	2x6 x 20' SPF lumber
Roof sheathing	15	4' x 8' x 5/8", 8"-O.C. grooved plywood
Roof sheathing	15	4' x 8' x 1/2" OSB
EXTERIOR SIDING AND TRIM		
Post base wrap	1	1x6 x 12' cedar
Window sill	3	2x4 x 8' SPF lumber
Corners	4	2x6 x 8' SPF lumber
Corners	4	2x6 x 10' SPF lumber
Battens	35	1x2 x 8' cedar or SPF
Fascia	4	1x8 x 12' cedar or pine
Shingle trim	8	1x3 x 12' cedar or pine
Window stops	3	1x2 x 12' pine
Window trim	3	1" x 5-1/2" x 12' decking (rip to 4")
Door trim	1	1" x 5-1/2" x 14' decking (rip to 4")
Siding	6	½" x 7-1/4" x 8' lap siding
Siding	6	½" x 7-1/4" x 12' lap siding

SLIDING DOOR

Frame	9	2x2 x 8' SPF lumber
Cover	2	4' x 8' x 3/8" rough-sawn plywood
Trim	4	1x4 x 8' cedar or pine (rip to 3")
Sill	2	2x4 x 10' treated lumber
Track support	1	2x4 x 16' treated lumber
Track cover trim	1	1x4 x 16' cedar or pine
Opening trim	2	2x4 x 8' SPF lumber

ENTRY DOOR

Prehung exterior	1	36" x 80" exterior door and frame

CUSTOM WINDOWS

Allied Model 210	3	26" x 48-3/4" opening size

ROOFING

Roof paper	2 rolls No. 15 roofing paper
Starter shingles	42 lin. ft.
Shingles	480 sq. ft.
Cap shingles	22 lin. ft.
Roofing nails	10 lbs. 1-1/4" roofing nails
Drip edge	10 10' lengths

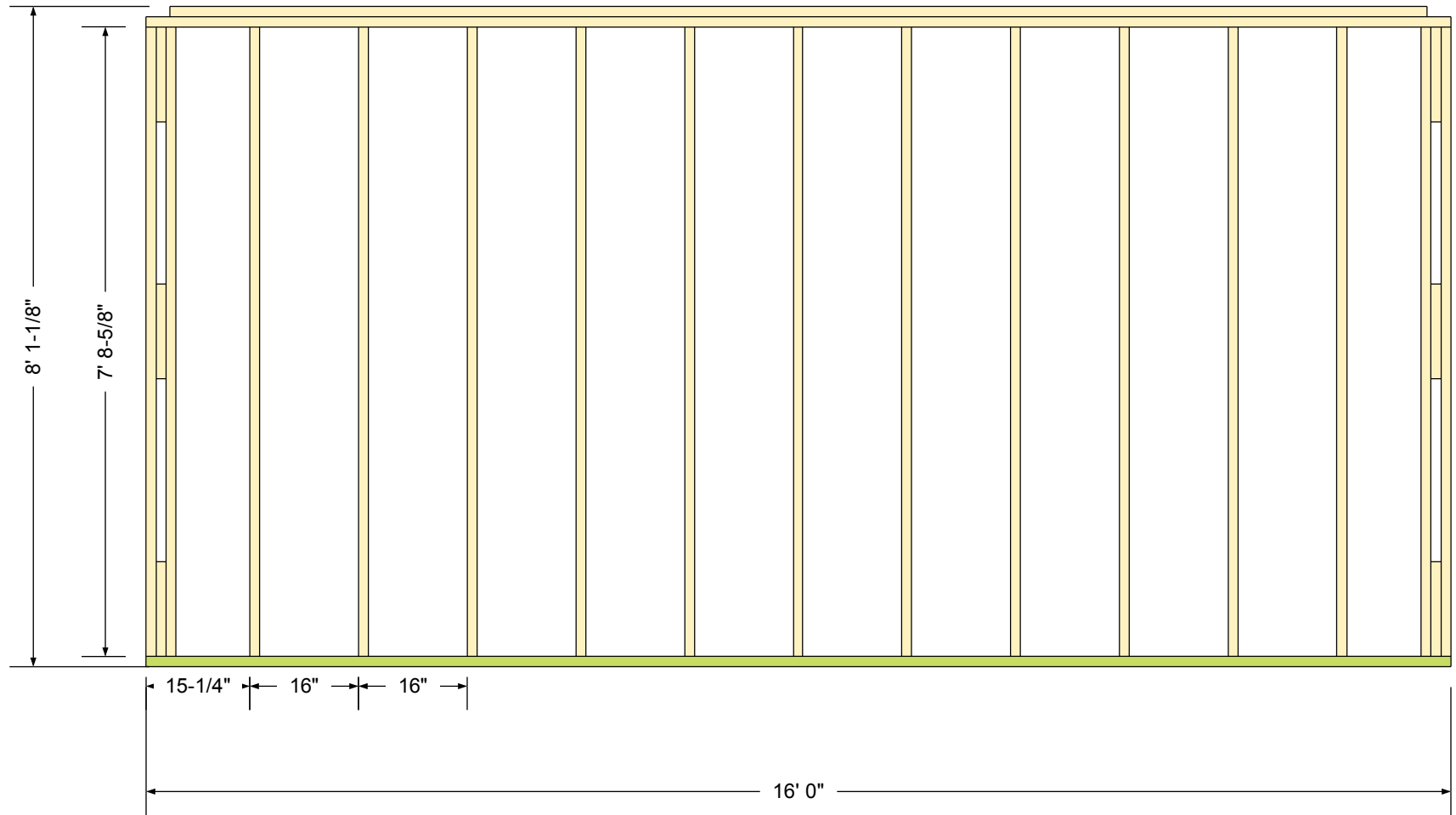|		
HARDWARE	48 lin. ft. sill sealer	
	4	galvanized post base anchors
	22	rafter ties
	1 lb.	joist hanger nails
	2 lb.	16d galvanized box nails
	15 lbs.	16d sinkers (framing nails)
	15 lbs.	8d sinkers (framing nails)
	5 lbs.	2" ring shank siding nails
	5 lbs.	2-1/2" ring shank siding nails
	2 lbs.	1-1/4" ring shank siding nails
	1 lb.	3" deck screws
Sliding door	2	72" Johnson #100 Bypass tracks
	2	1120 Johnson standard hangers
	2	1121 Johnson hanger plates
Door retainer	1	zinc open bar bracket
Front door	1	doorknob and deadbolt
Sliding door	1	gate handle and padlock hasp

Figure A
Floor Plan

16' 0"

8' 0"

6' 0"

2X4 STUDS 16" O.C.

3' 2-1/2"

16' 0"

5' 4-3/8"

5' 1-3/4"

5' 4-3/8"

3/4"

3/4"

6X6 POST

Figure B
Front Wall

10' 7-1/4"

2' 2"

4' 2-1/2"

6' 10-1/2"

2' 8"

2' 1-1/2"

2' 2"

3' 2-1/2"

2' 2"

2' 1-1/2"

16' 0"

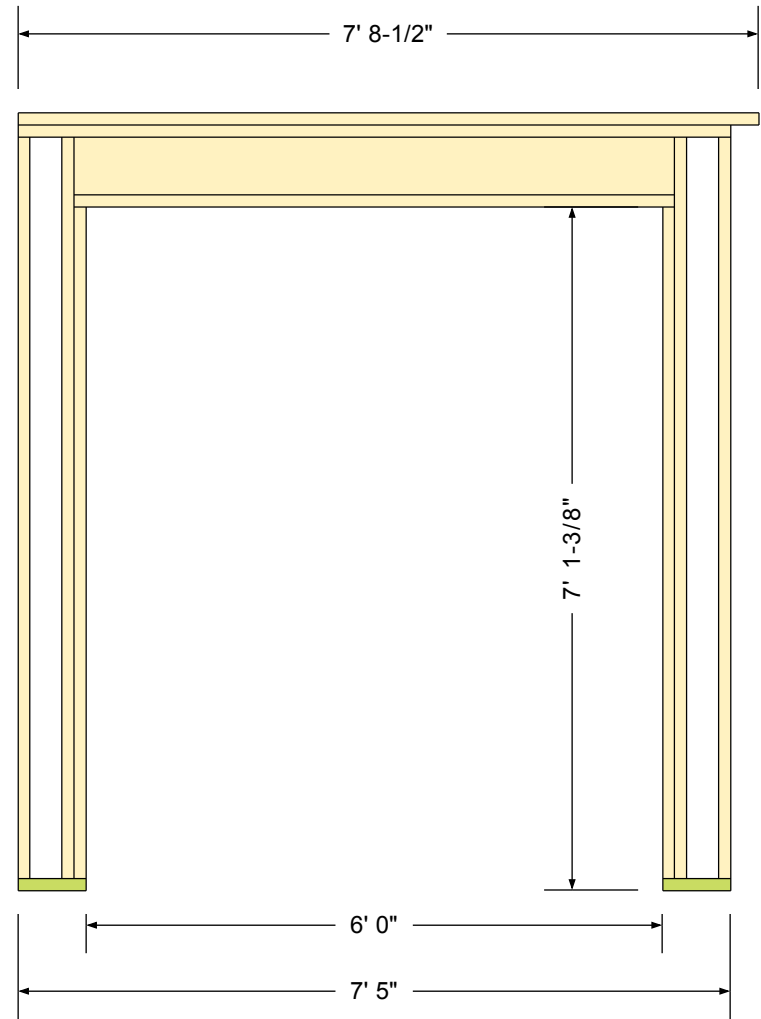**Figure C**
Back Wall

8' 1-1/8"

7' 8-5/8"

15-1/4" 16" 16"

16' 0"
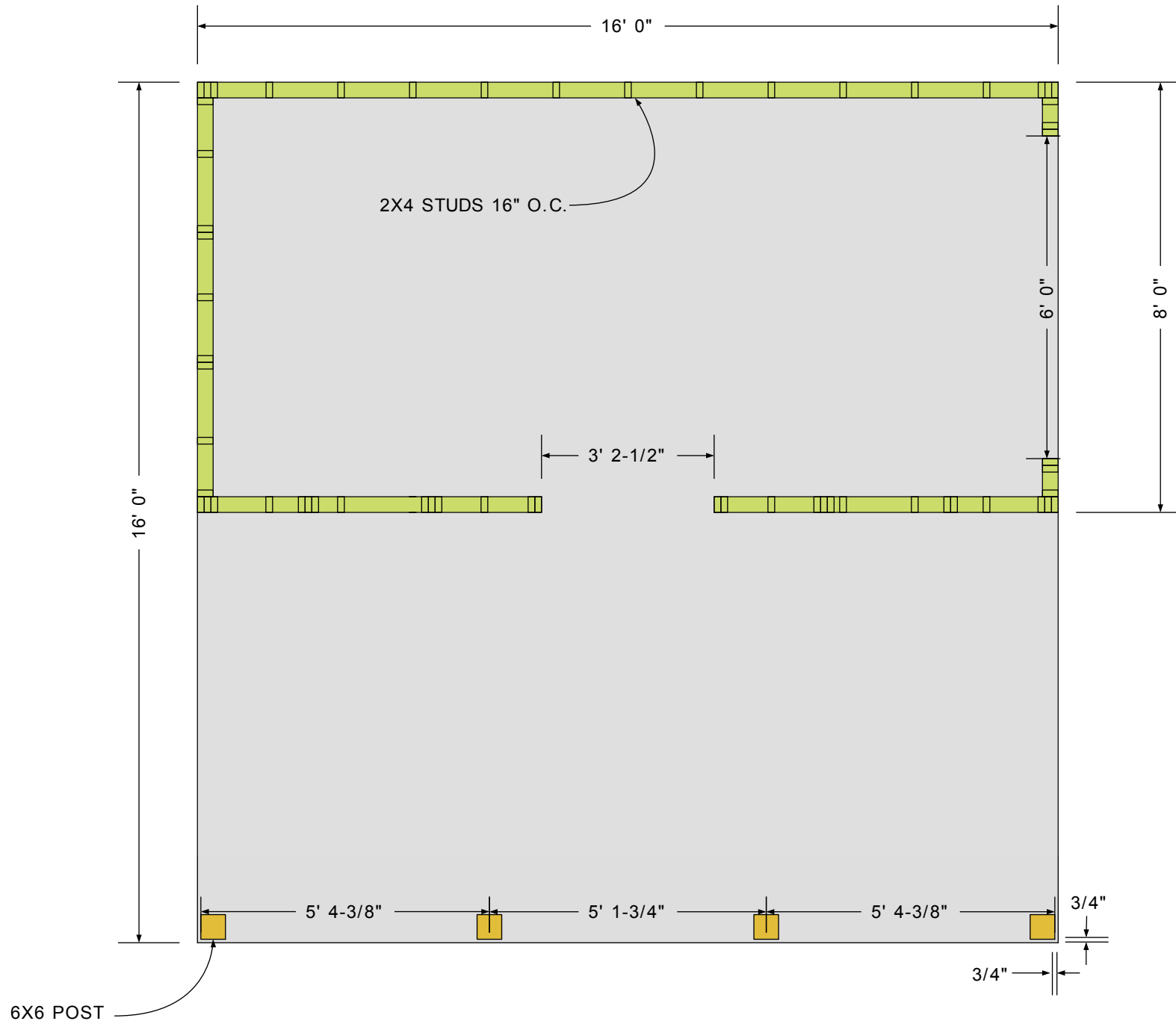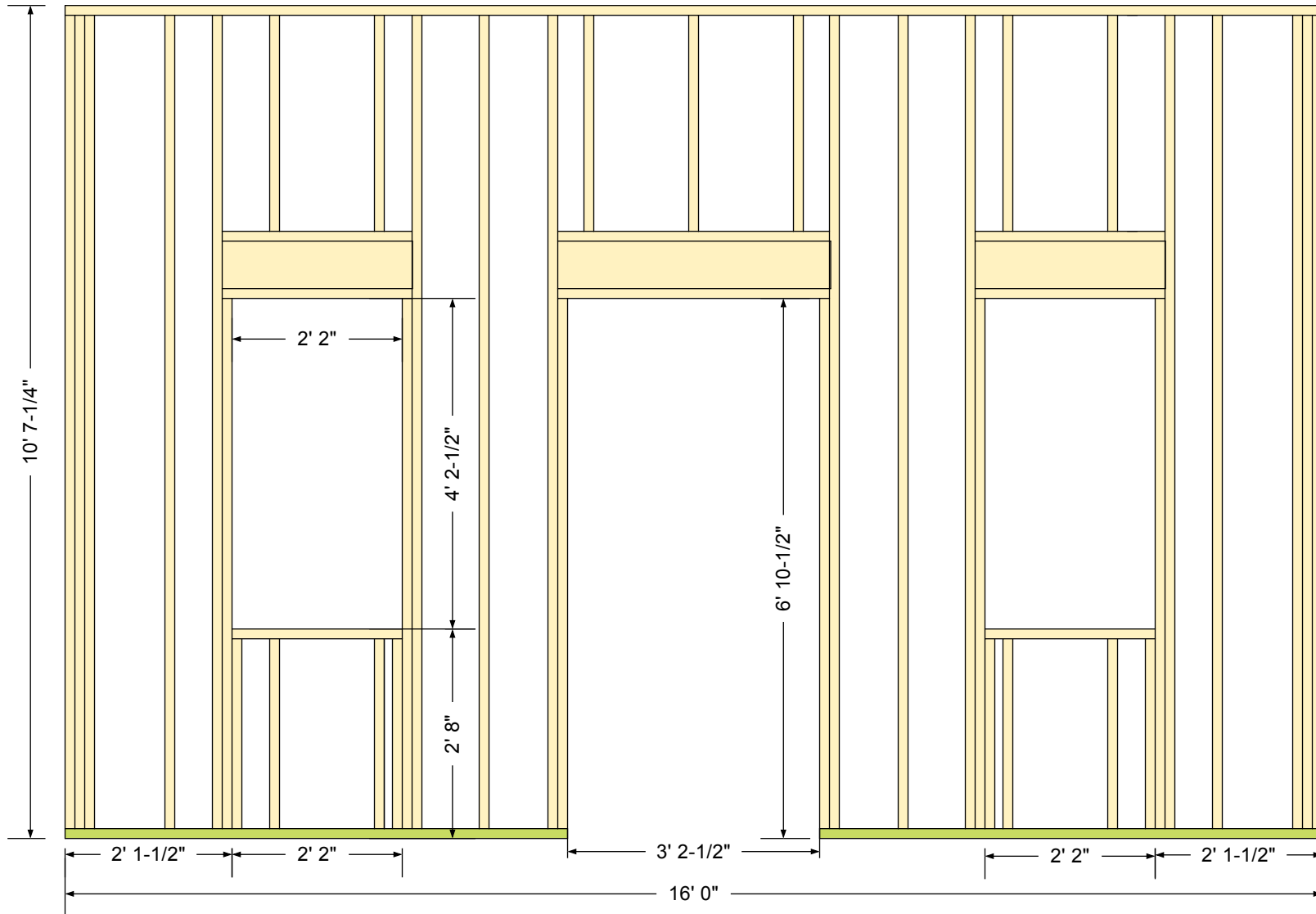
Figure D
Side Walls

Left Side Wall

Right Side Wall

7' 8-1/2"

7' 8-1/2"

8' 1-1/8"
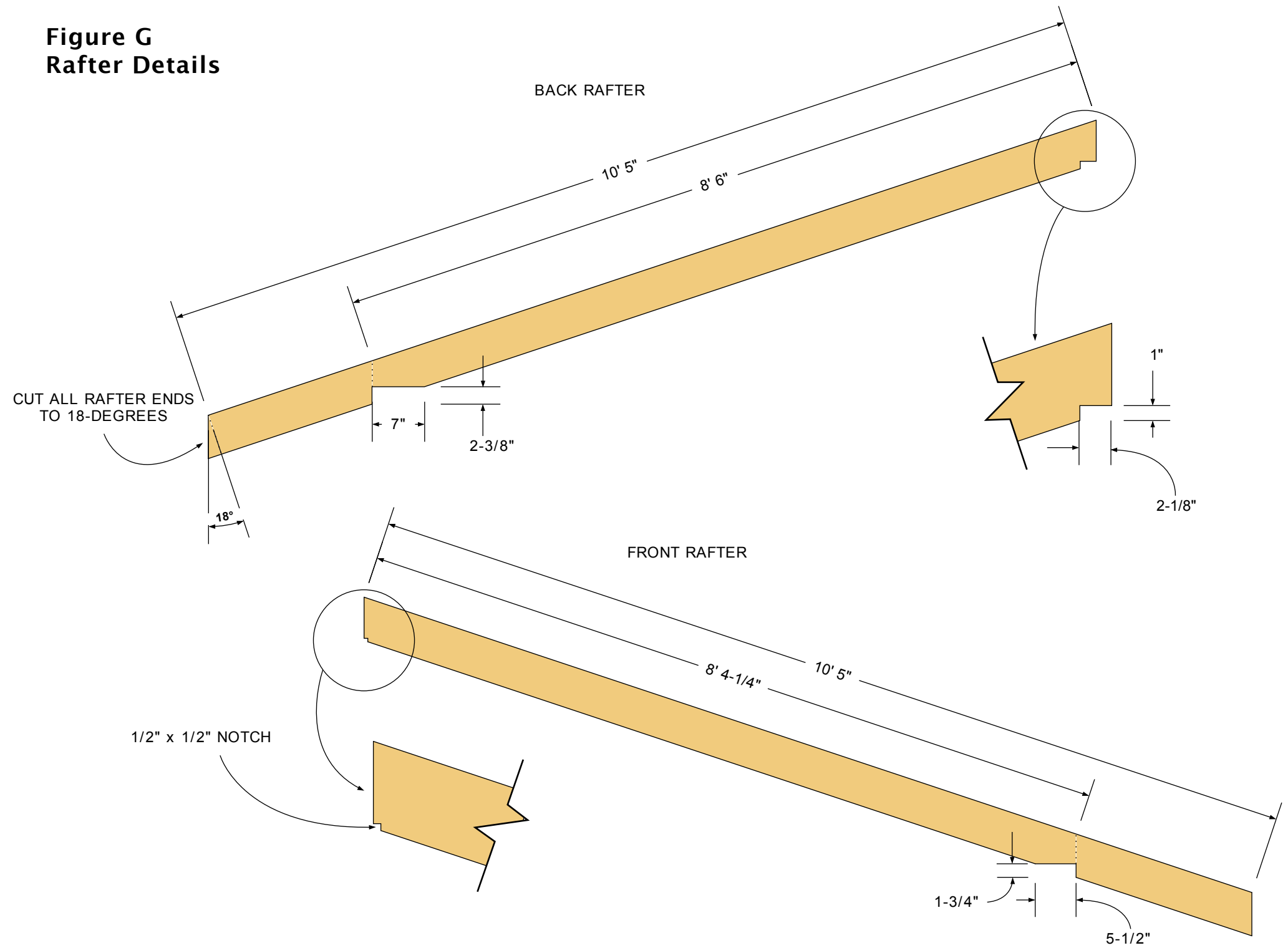
4' 2-3/8"

7' 1-3/8"

2' 8"

11-3/4"

16-3/4"

7' 5"

6' 0"

7' 5"
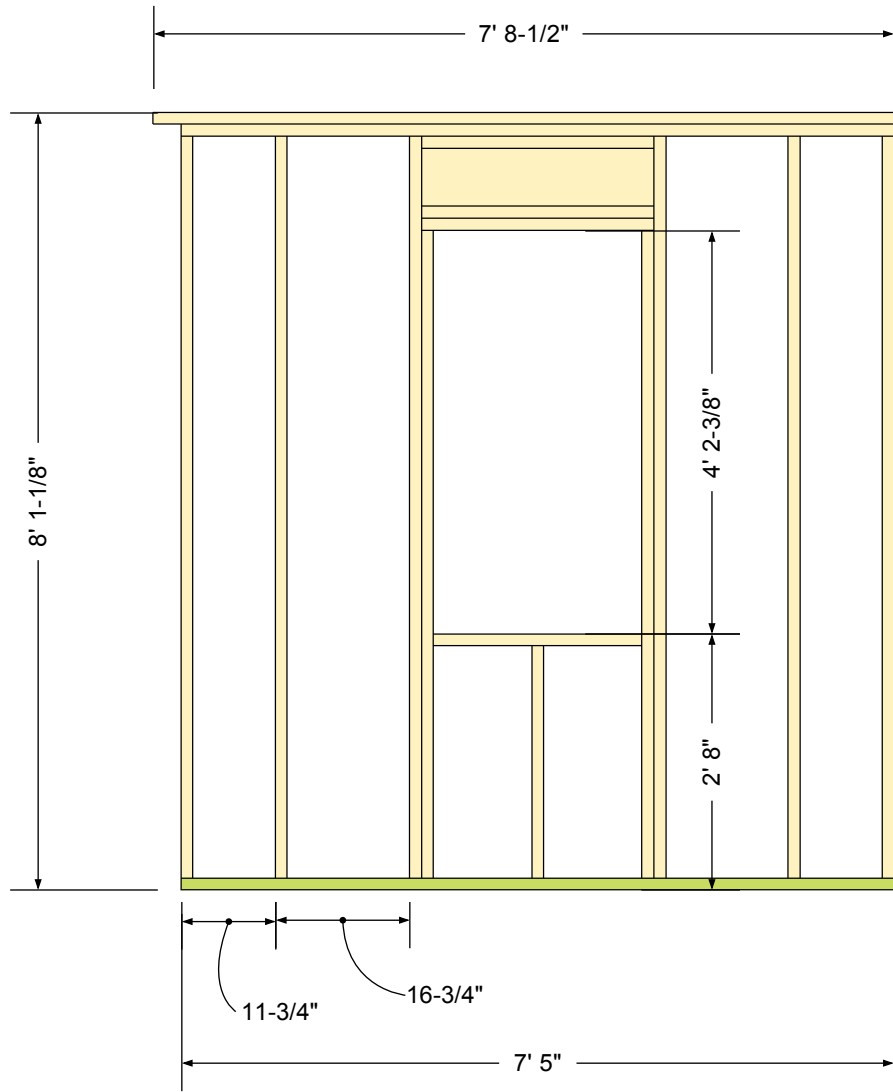
Figure E
Posts and Front Beam

20' 0"

ALIGN TOP OF BEAM
WITH TOP OF WALL
PLATE

2' 3/4"   5' 4-3/8"   5' 1-3/4"   5' 4-3/8"
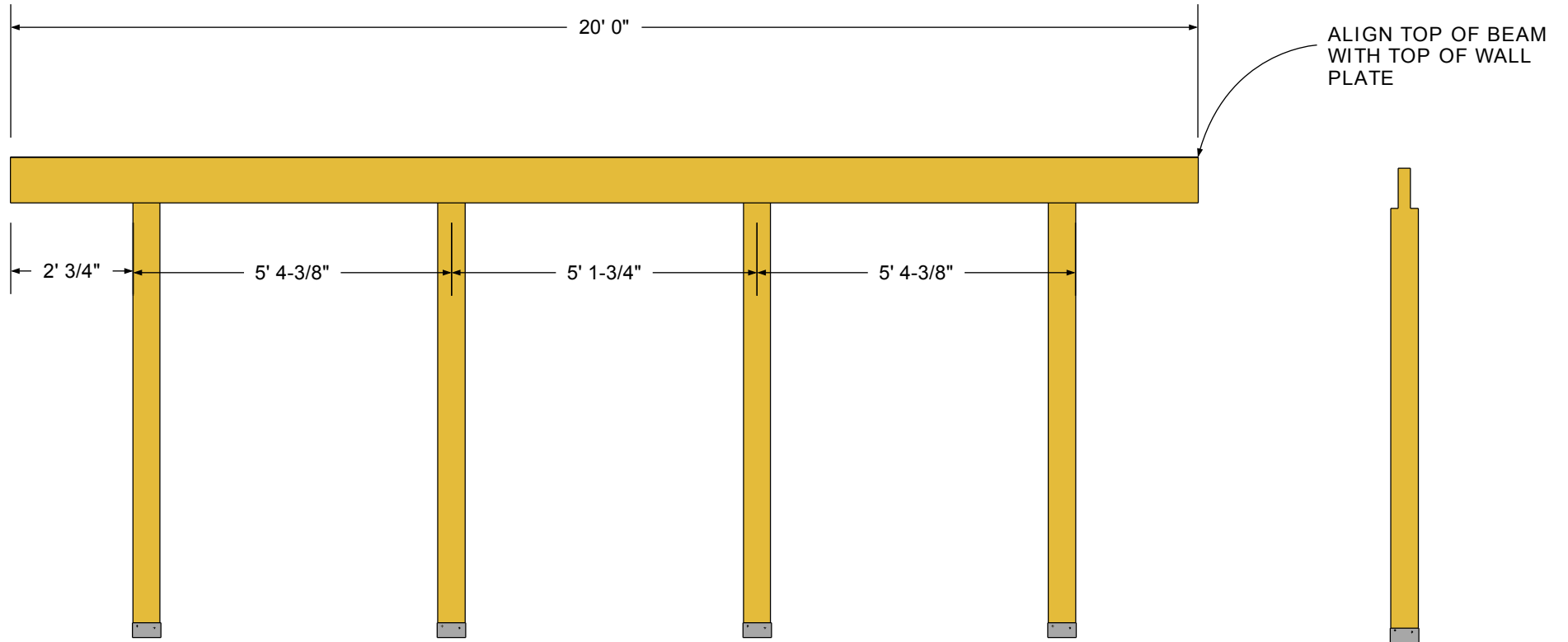
Figure F
Walls and Beams

ALIGN TOP OF BACK
BEAM WITH TOP OF WALL
PLATE

LEAVE END SIDING
PANELS OFF UNTIL AFTER
INSTALLING THE GABLE
END STUDS

Figure G
Rafter Details

BACK RAFTER

10' 5"

8' 6"

CUT ALL RAFTER ENDS
TO 18-DEGREES

7"

2-3/8"

18°

1"

2-1/8"

FRONT RAFTER

8' 4-1/4"

10' 5"

1/2" x 1/2" NOTCH

1-3/4"

5-1/2"
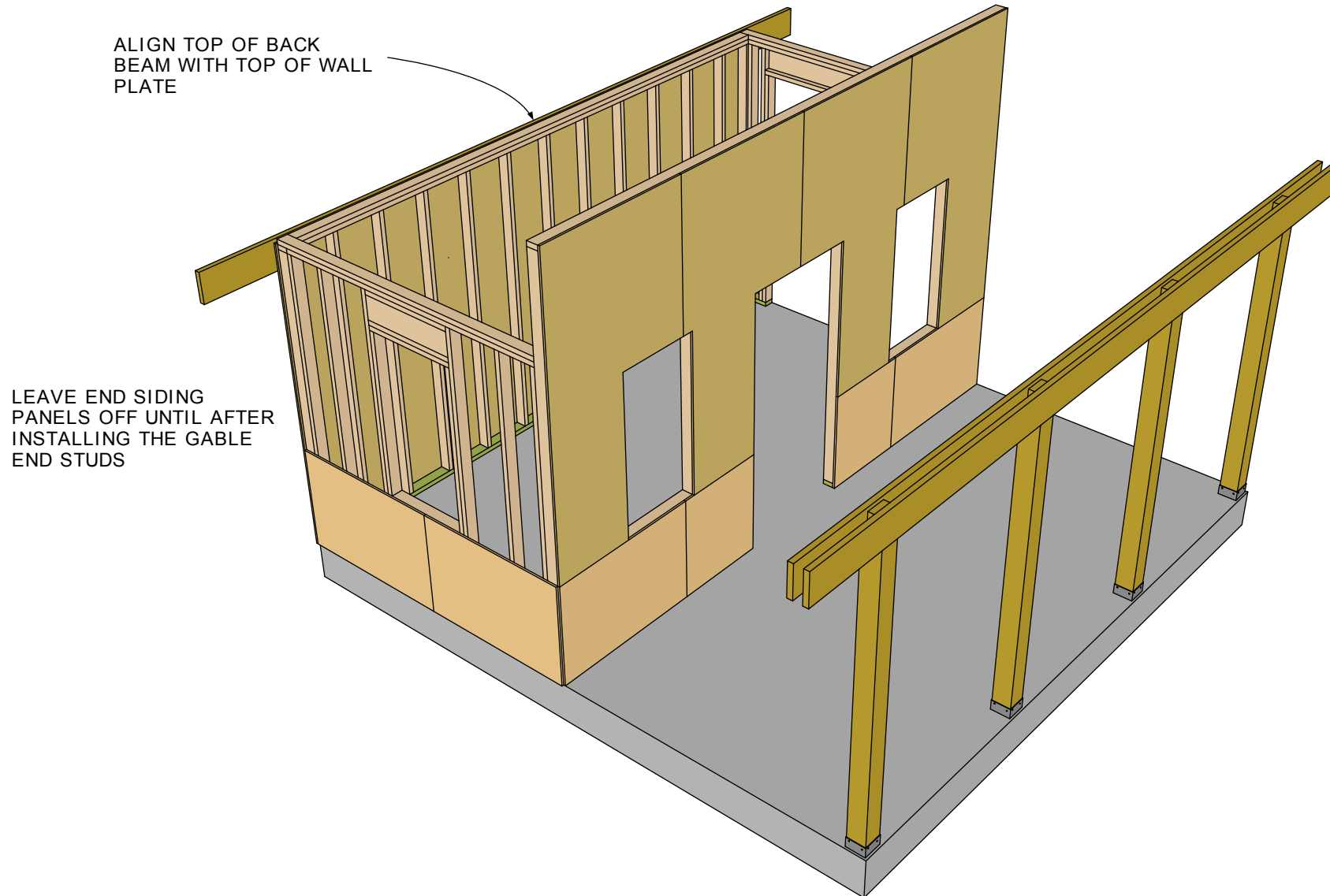
Figure H
Rafters – End View

2-1/8"

2x6 RIDGE

2x4 TOP PLATE

5/8" PLYWOOD SIDING

12
4
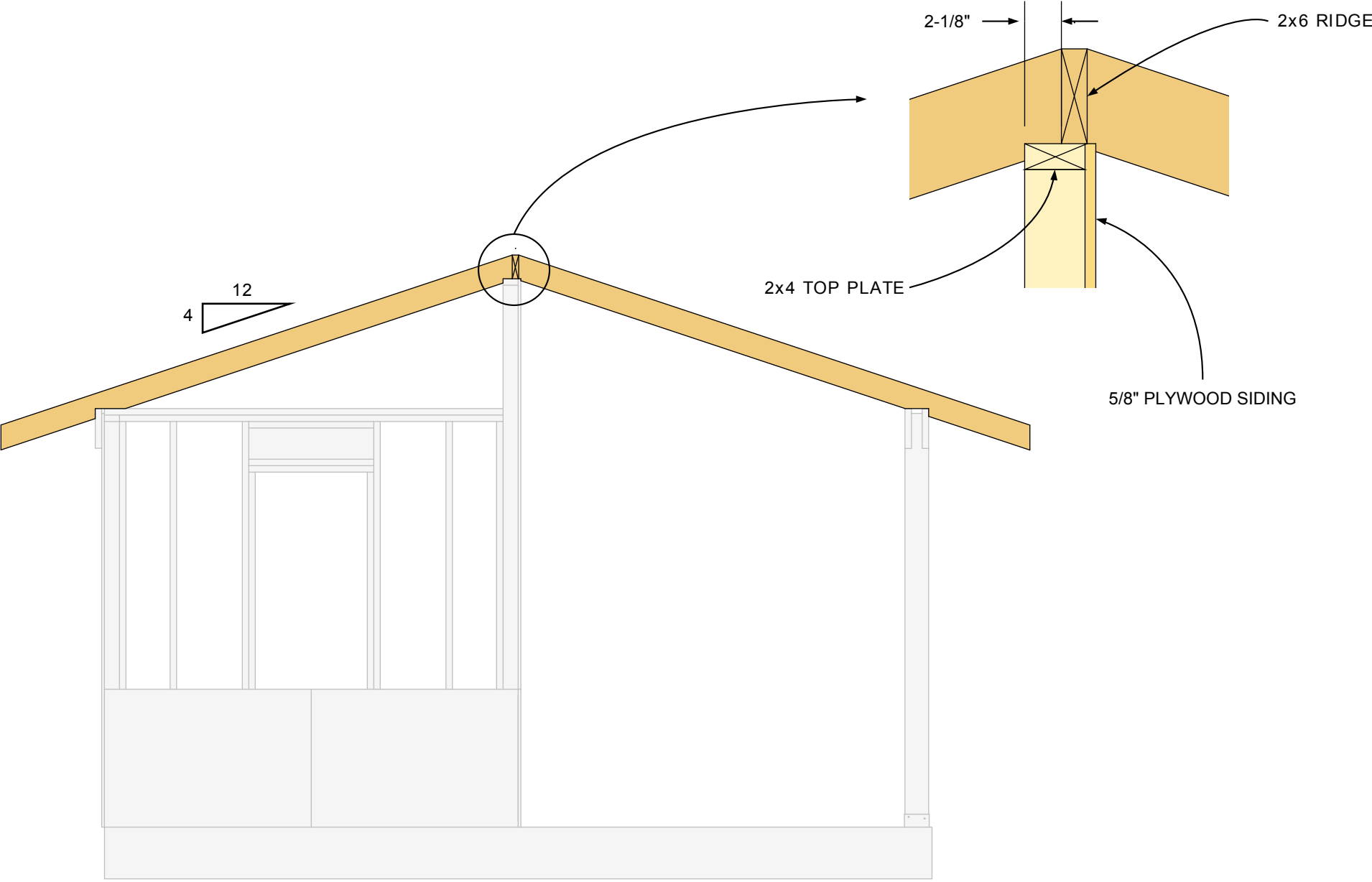
Figure J
Rafters –Front View

20' 0"

23-1/4" 24" 24"

Figure K
Gable End Studs

16"   16"   16"

ALIGN GABLE END STUDS
WITH WALLS STUDS BELOW
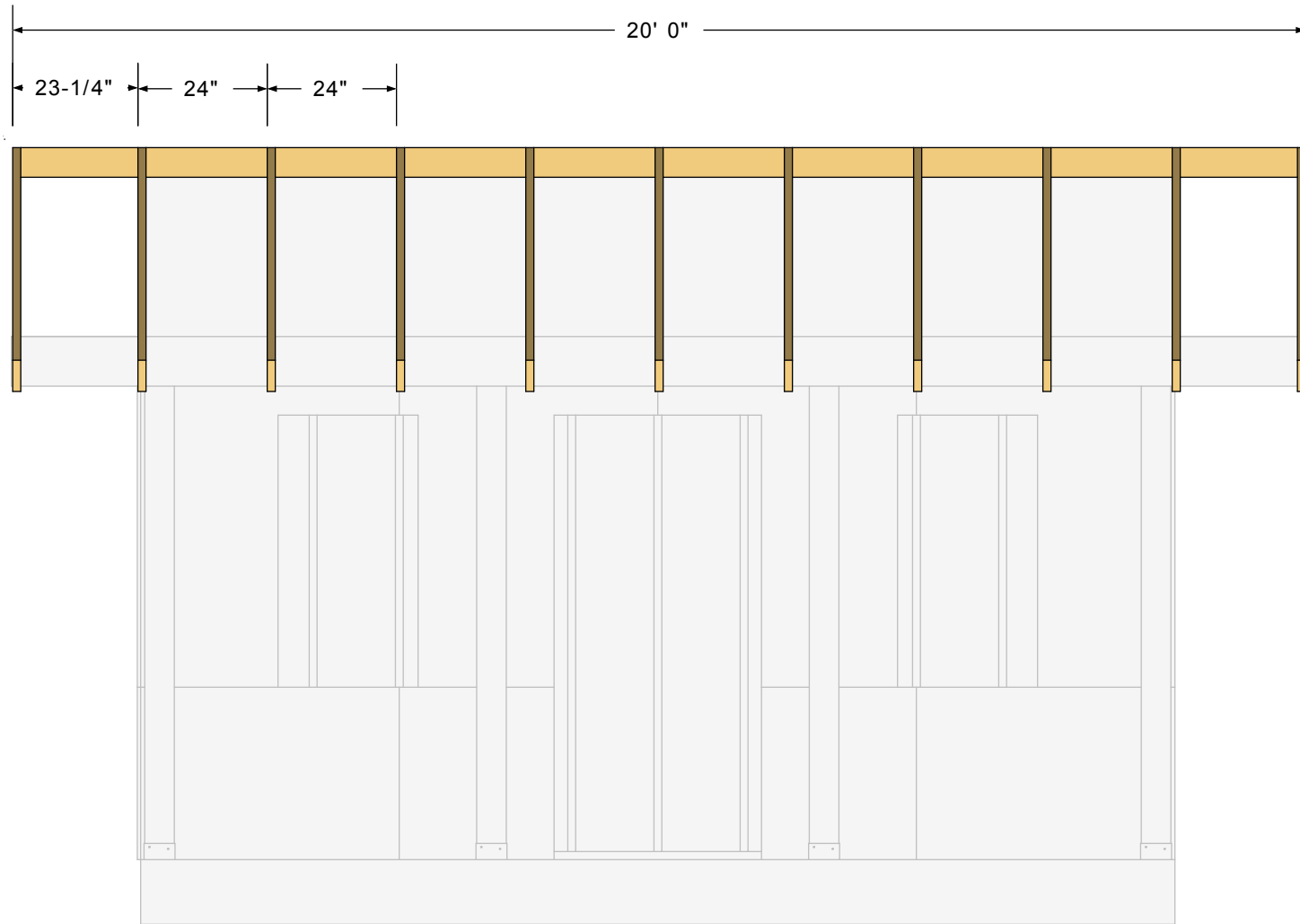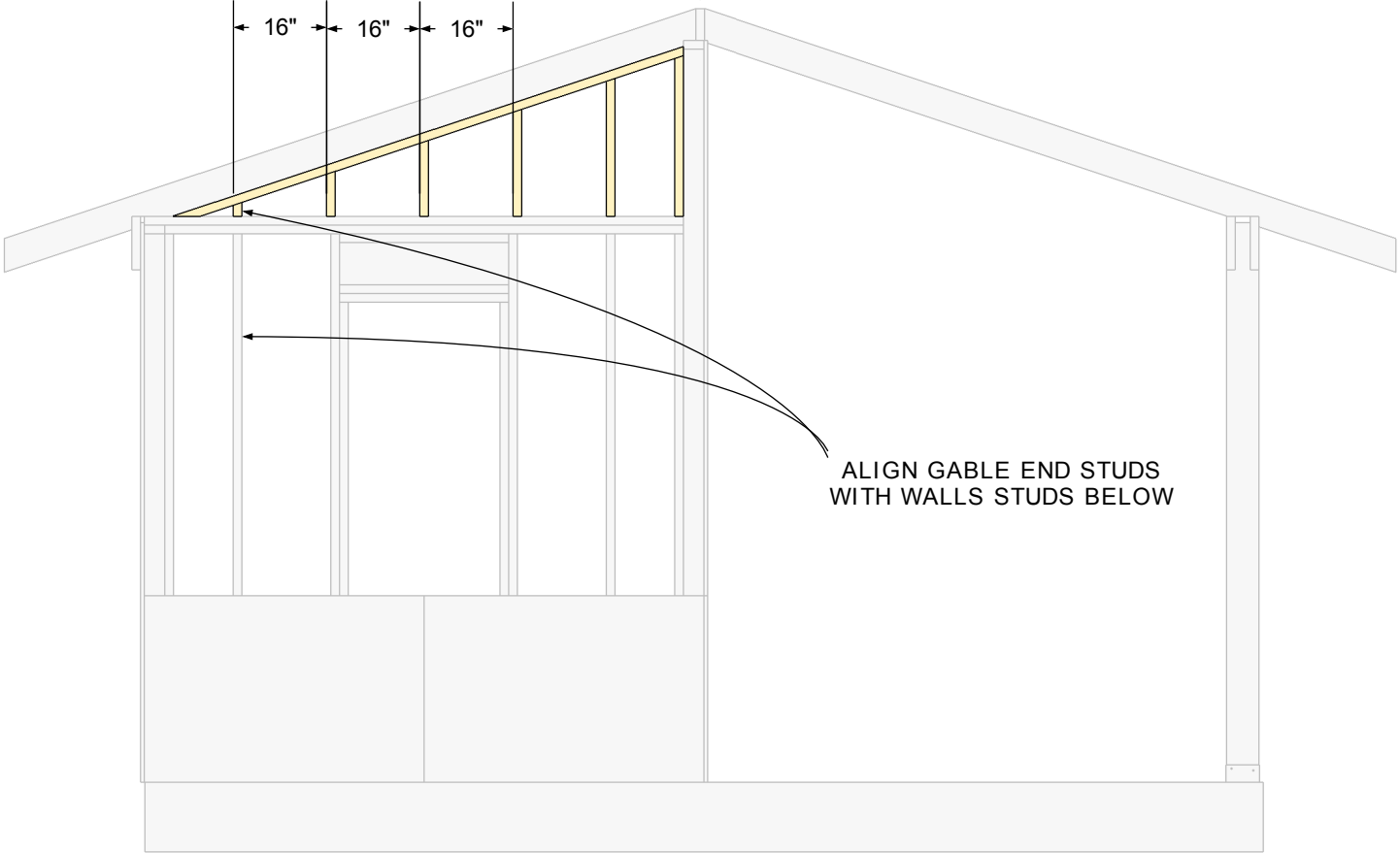
Figure L
Beams–Top View

20' 0"

2-1/2"
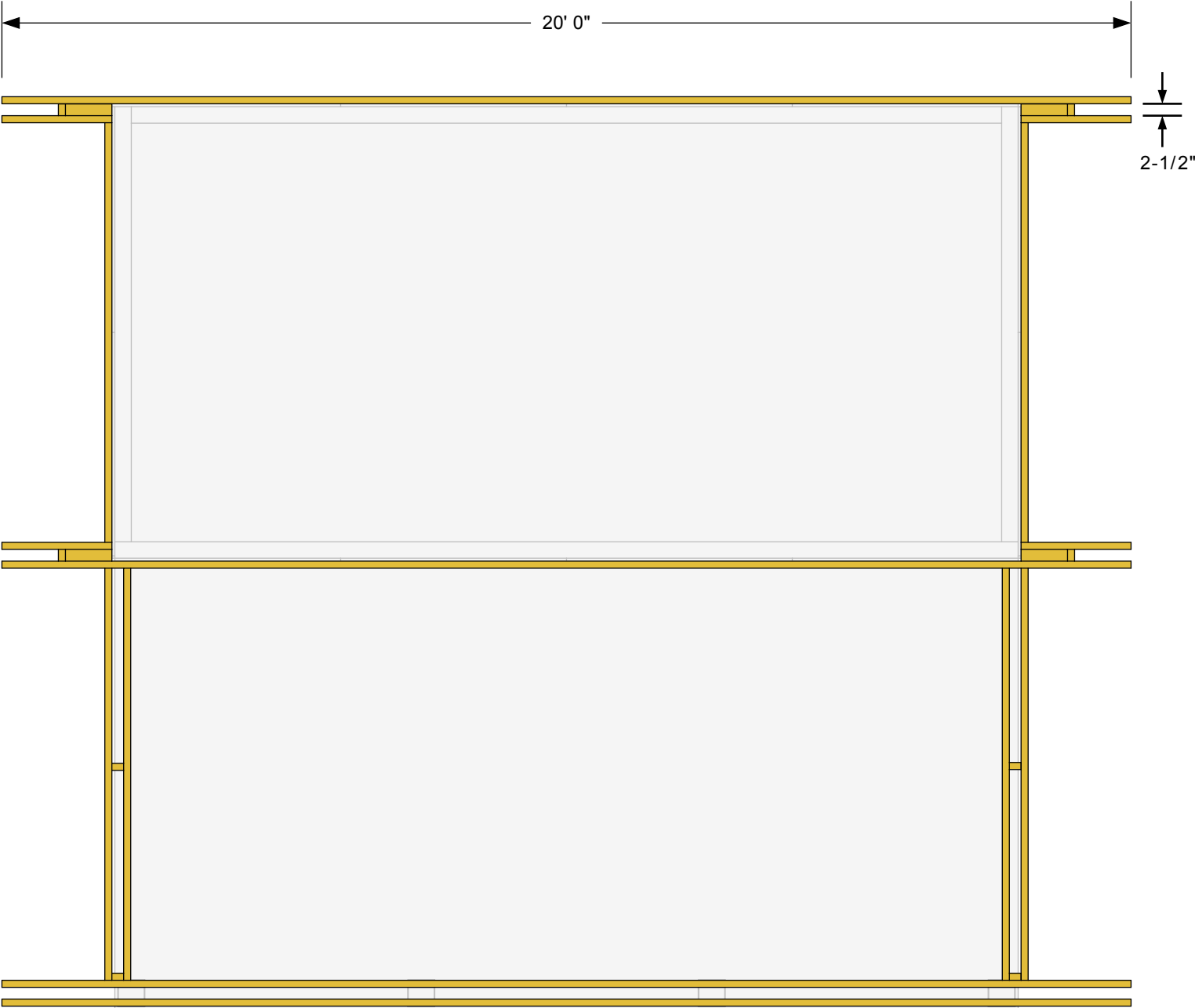
Figure M
Beams-3d View
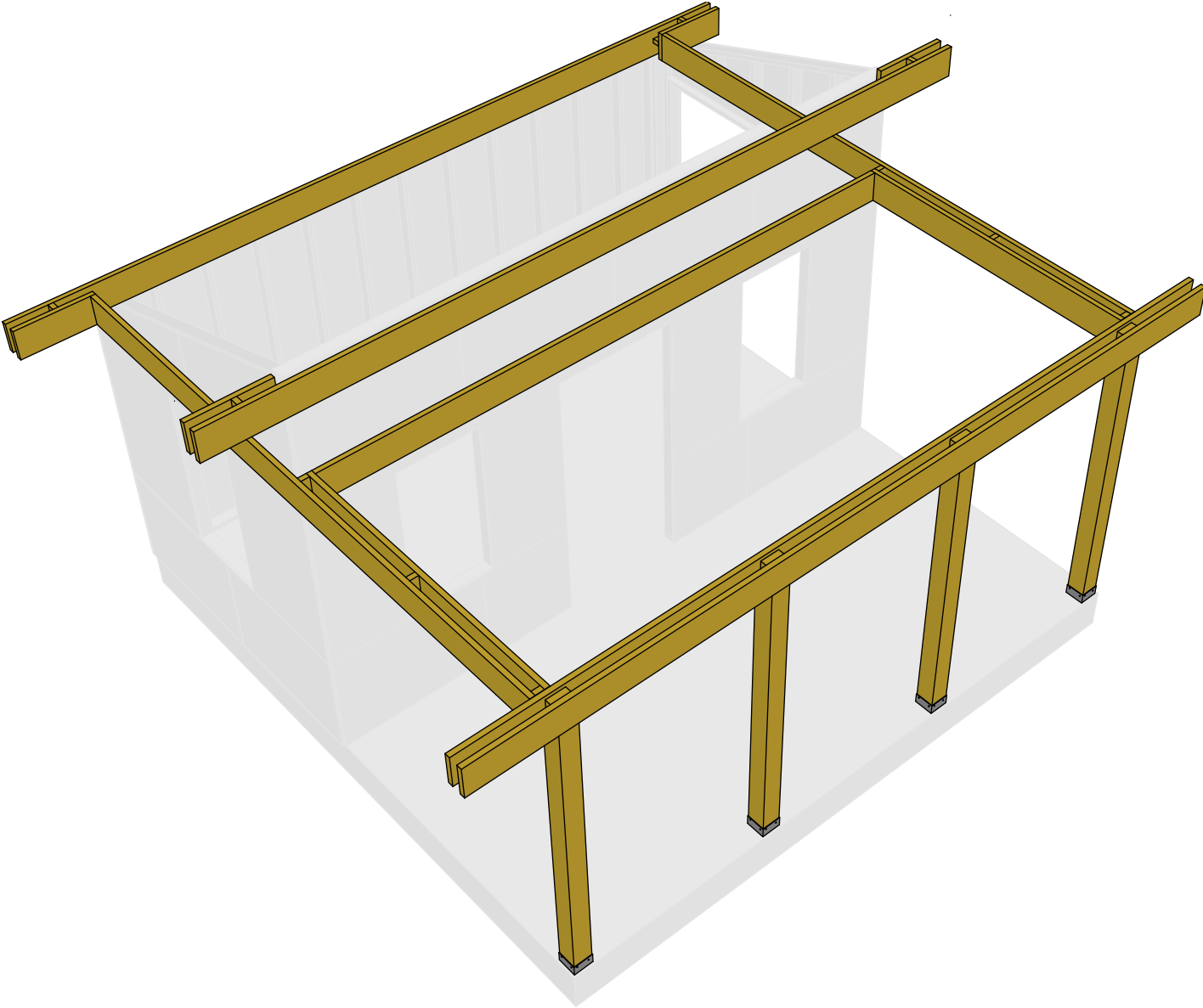
Figure N
Sliding Door Details

DOOR HANGERS

4-1/4"

5-3/4"

16" 16" 16" 16"

91"

89-1/2"

74"

2x2 FRAME

3/4" x 3" TRIM

Slice Through Door

2x4 TRACK SUPPORT

1x4 TRACK COVER

ALUMINUM TRACK

3/4" x 3" TRIM

3/8" ROUGH PLYWOOD

3"

2x2 FRAMING

TREATED SILL

OPEN BAR HOLDER

TREATED 2X4

SPACER BLOCK
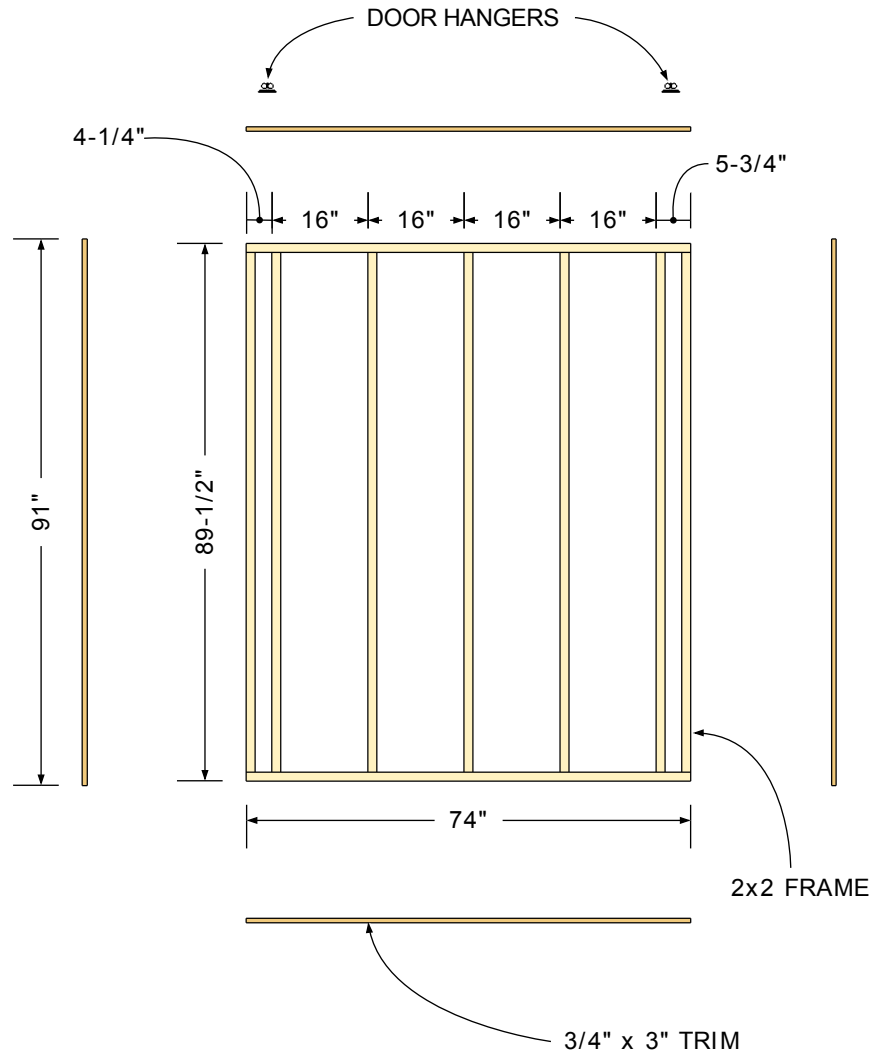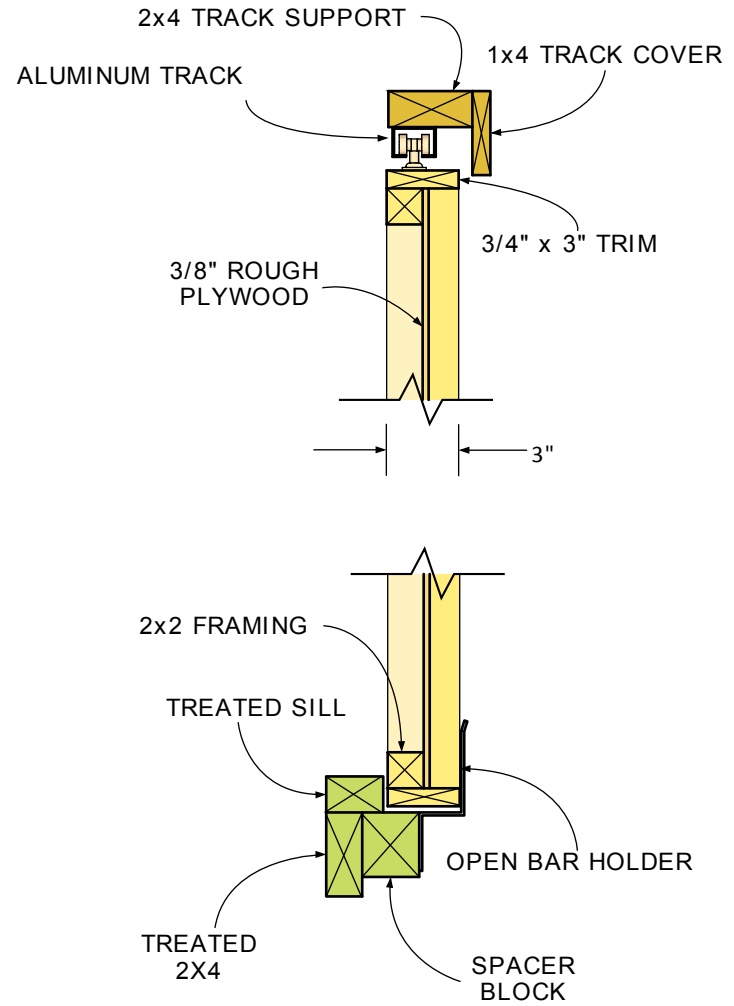
Figure P
Front Siding and Trim

2X6 TOP TRIM

SLICE THROUGH WINDOW

2x10 BEAM

2x8 HEADER

1x2 STOP

STORM WINDOW

1x3 SHINGLE MOLDING

1x8 FASCIA

6x6 POST

10-DEGREE ANGLED SILL

1/2x8 LAP SIDING

1x6 POST WRAP

STORM WINDOW

1" x 4" WINDOW AND DOOR TRIM

1/2x8 LAP SIDING

Figure Q
End Wall Siding and Trim

2x10 BEAM

2x6 CORNER

2x10 BEAM

1x3 SHINGLE MOLDING

1x8 FASCIA

1" x 4" WINDOW TRIM

1X2 BATTEN

6x6 POST

2x6 CORNER

STORM WINDOW

1/2x8 LAP SIDING

10-DEGREE BEVEL SILL

1X6 POST WRAP