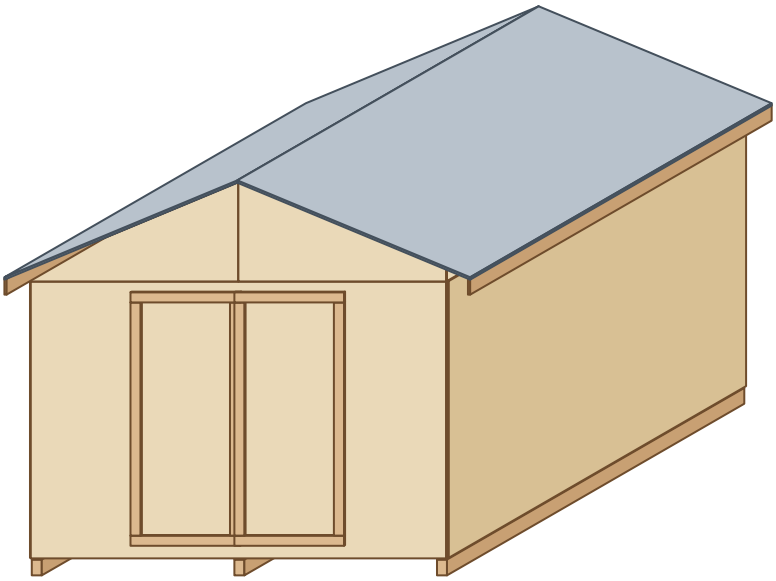
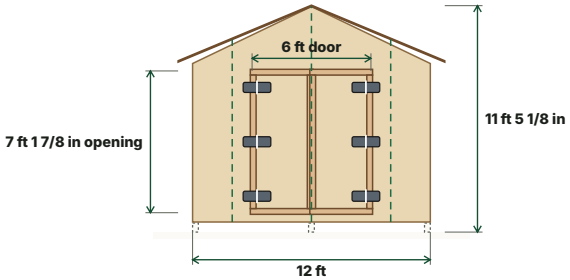
Shed Plans

A 12×16 shed with wide doors · Width: 12 ft · Length: 16 ft · Door: Double doors, 6 ft wide · Roof pitch: 5 in 12

Your shed: **192 sq ft of floor**
Outside size: **12 ft wide, 16 ft long, 11 ft 5 1/8 in to the peak**
Door opening: **6 ft wide, 7 ft 1 7/8 in high**
Roofing: **8 bundles of shingles (2.37 squares)**



From the front



This is one size of a free plan from FigureYard. For your own size, open https://figureyard.com/plans/shed-plans/ and enter your measurements; the shopping list, cuts and drawings change with them. Check local building codes before you build.

Shopping list

Item	Qty
4×6 timber, ground-contact treated (UC4B), 16 ft long	3 boards
2×6 lumber, ground-contact treated, 16 ft long	2 boards
2×6 lumber, ground-contact treated, 12 ft long	13 boards
2×4 lumber, 16 ft long	26 boards
2×4 lumber, 14 ft long	1 board
2×4 lumber, 12 ft long	1 board
2×4 lumber, 8 ft long	34 boards
2×6 lumber, 8 ft long	18 boards
2×8 lumber, 16 ft long	1 board
1×6 board, 10 ft long	4 boards
1×4 board, 10 ft long	4 boards
1×4 board, 8 ft long	12 boards
23/32 in tongue-and-groove subfloor panel, rated 24 oc, 4 ft × 8 ft sheet	7 sheets
19/32 in T1-11 plywood siding, 4 ft × 8 ft sheet	18 sheets
7/16 in OSB roof sheathing, rated 24/16, 4 ft × 8 ft sheet	10 sheets
16d common nails, 3 1/2 in, hot-dip galvanized (582 needed plus spares; framing)	641 nails
10d common nails, 3 in, hot-dip galvanized (rafters to the plates and the ridge)	119 nails
8d common nails, 2 1/2 in, hot-dip galvanized (floor and roof sheathing, joists to skids, ties and blocks to plates)	1182 nails
8d galvanized box or siding nails (every 6 in on panel edges, 12 in on studs between)	1072 nails
Hurricane ties (rafter ties) for 2×6 rafters, galvanized (one where each rafter crosses a wall)	18 ties
Connector nails listed on the tie package (fill every hole of each tie)	180 pieces
Exterior wood screws, 1 5/8 in, for the door (door frame and trims, from the inside)	80 screws
Heavy T-hinges or strap hinges, galvanized, about 8 in (3 on each leaf)	6 hinges
Hasp and padlock	1 set
Barrel bolts, galvanized (hold the left leaf shut, top and bottom)	2 bolts
Crushed gravel for the pad (a pad 4 in deep and 1 ft wider than the shed all round)	4.5 tons
Asphalt shingles (2.37 squares plus 10% for waste)	8 bundles

Item	Qty
Starter strip shingles (along the eaves and up the rakes)	1 bundle
Hip and ridge cap shingles (along the ridge)	1 bundle
Galvanized roofing nails, long enough to go through the sheathing (4 in each shingle)	667 nails
Roofing underlayment, No. 15 felt (ASTM D226 Type I) (one layer, lapped 2 in)	1 roll
Metal drip edge (along the eaves and up the rakes; pieces lap 2 in)	62 ft
Z-flashing for 19/32 in siding (over the joint between the gable walls and the gable tops)	24 ft
Insect screen or a perforated vent strip for the eaves (covers the 1 in air gap above the eave blocks)	32 ft

Tools

- Tape measure, pencil, a speed square and a framing square
- Circular saw, and a handsaw or jigsaw to finish cuts
- Framing hammer (or a rented nail gun), and a drill/driver for the door
- Four-foot level, a string line and a chalk line
- Ladder or two, and sawhorses
- Shovel, rake and a hand tamper for the pad
- Utility knife and a hammer tacker for the underlayment
- Safety glasses, hearing protection, work gloves and a dust mask

Cut list

Part	What it is	Lumber	Size	Cut
A	Skid (stands on edge on the gravel)	4×6 timber, ground-contact treated (UC4B)	192 in	3
B	Rim joist (along each long side)	2×6 lumber, ground-contact treated	192 in	2
C	Floor joist (the two end joists close the frame)	2×6 lumber, ground-contact treated	141 in	13
D1a	Floor sheet	23/32 in tongue-and-groove subfloor panel, rated 24 oc	96 × 48 in	1
D1b	Floor sheet	23/32 in tongue-and-groove subfloor panel, rated 24 oc	96 × 48 in	1
D2a	Floor sheet	23/32 in tongue-and-groove subfloor panel, rated 24 oc	48 × 48 in	1
D2b	Floor sheet	23/32 in tongue-and-groove subfloor panel, rated 24 oc	96 × 48 in	1
D2c	Floor sheet	23/32 in tongue-and-groove subfloor panel, rated 24 oc	48 × 48 in	1
D3a	Floor sheet	23/32 in tongue-and-groove subfloor panel, rated 24 oc	96 × 48 in	1
D3b	Floor sheet	23/32 in tongue-and-groove subfloor panel, rated 24 oc	96 × 48 in	1
E	Side wall bottom plate	2×4 lumber	192 in	2
F	Side wall top plate (the lower of the two)	2×4 lumber	192 in	2
F2	Side wall cap plate (the upper plate, stopping short of the corners)	2×4 lumber	185 in	2
G	Stud	2×4 lumber	85 7/8 in	45
H	Gable wall bottom plate (the front one is cut out at the door later)	2×4 lumber	137 in	2
J	Gable wall top plate (the lower of the two)	2×4 lumber	137 in	2

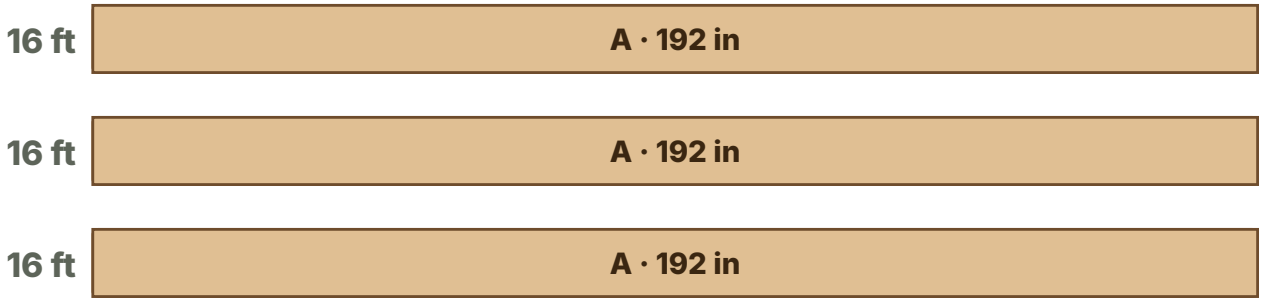
Part	What it is	Lumber	Size	Cut
J2	Gable wall cap plate (laps over the side walls at the corners)	2×4 lumber	144 in	2
K	Door header (laid flat under the top plate)	2×4 lumber	72 in	1
P	Rafter (plumb cut at both ends, notched over the wall)	2×6 lumber	85 7/8 in	18
Q	Ridge board	2×8 lumber	192 in	1
R	Rafter tie (one beside each rafter pair, on the top plates)	2×4 lumber	144 in	9
N1	Gable stud (under the ridge) (square cut)	2×4 lumber	26 15/16 in	2
N2	Gable stud (top cut to the roof slope; length to the long point)	2×4 lumber	22 3/16 in	4
N3	Gable stud (top cut to the roof slope; length to the long point)	2×4 lumber	15 1/2 in	4
N4	Gable stud (top cut to the roof slope; length to the long point)	2×4 lumber	8 7/8 in	4
N5	Gable stud (top cut to the roof slope; length to the long point)	2×4 lumber	4 in	4
S1	Eave block (on edge between rafters, over the side walls)	2×4 lumber	21 in	12
S2	Eave block (on edge between rafters, over the side walls)	2×4 lumber	20 1/4 in	2
S3	Eave block (on edge between rafters, over the side walls)	2×4 lumber	18 3/4 in	2
T1	Fascia (across the rafter tails, joined on a rafter)	1×6 board	97 3/8 in	4
U	Rake board (up each gable edge, under the roof sheathing)	1×4 board	87 1/2 in	4
V	Corner trim (two on each corner)	1×4 board	96 in	8
X1	Side wall siding	19/32 in T1-11 plywood siding	96 × 48 in	8
Y1	Gable wall siding (the door is cut from the front ones)	19/32 in T1-11 plywood siding	96 × 48 in	4
Y2	Gable wall siding	19/32 in T1-11 plywood siding	96 × 24 in	4
Z1	Gable top siding, cut as a pair (one cut gives both sides of a gable)	19/32 in T1-11 plywood siding	19 × 24 in	2

Part	What it is	Lumber	Size	Cut
Z2	Gable top siding, cut as a pair (one cut gives both sides of a gable)	19/32 in T1-11 plywood siding	49 × 48 in	2
W1a	Roof sheathing (one for each side of the roof)	7/16 in OSB roof sheathing, rated 24/16	73 3/8 × 48 in	2
W1b	Roof sheathing (one for each side of the roof)	7/16 in OSB roof sheathing, rated 24/16	96 × 48 in	2
W1c	Roof sheathing (one for each side of the roof)	7/16 in OSB roof sheathing, rated 24/16	25 3/8 × 48 in	2
W2a	Roof sheathing (one for each side of the roof)	7/16 in OSB roof sheathing, rated 24/16	25 3/8 × 39 1/2 in	2
W2b	Roof sheathing (one for each side of the roof)	7/16 in OSB roof sheathing, rated 24/16	96 × 39 1/2 in	2
W2c	Roof sheathing (one for each side of the roof)	7/16 in OSB roof sheathing, rated 24/16	73 3/8 × 39 1/2 in	2
M1	Door rail (top and bottom of each leaf, on the inside)	2×4 lumber	35 in	4
M2	Door brace (cut to fit between the rails, on the diagonal)	2×4 lumber	86 1/8 in	2
M3	Door trim, top and bottom	1×4 board	38 in	4
M4	Door trim, sides	1×4 board	80 7/8 in	4

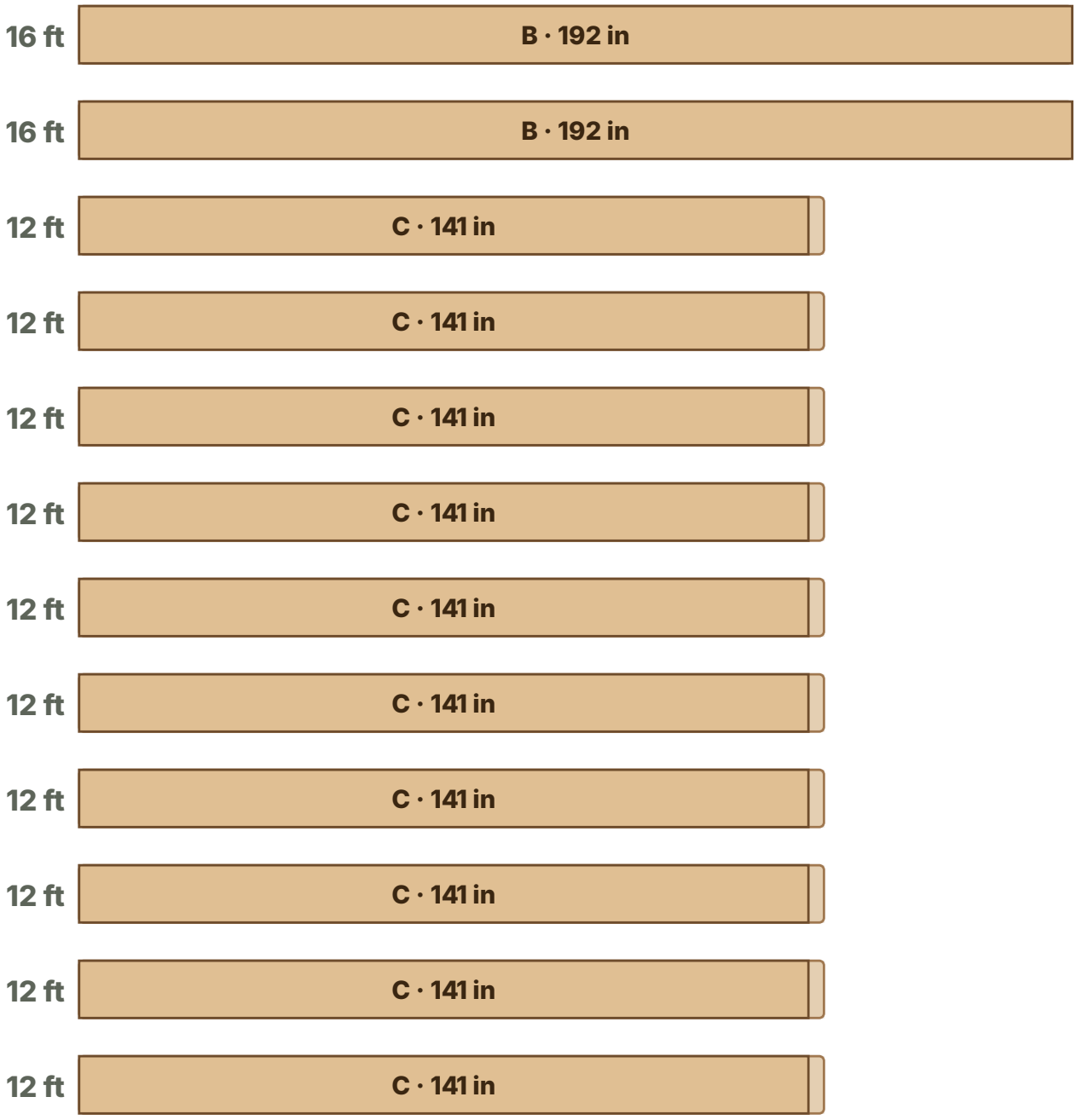
Where to cut each board

Each bar is one board you buy, drawn to scale. Measure from the left end, cut, then measure the next piece from the fresh cut; the saw blade takes about 3/32 in each time. Hatched ends are offcuts.

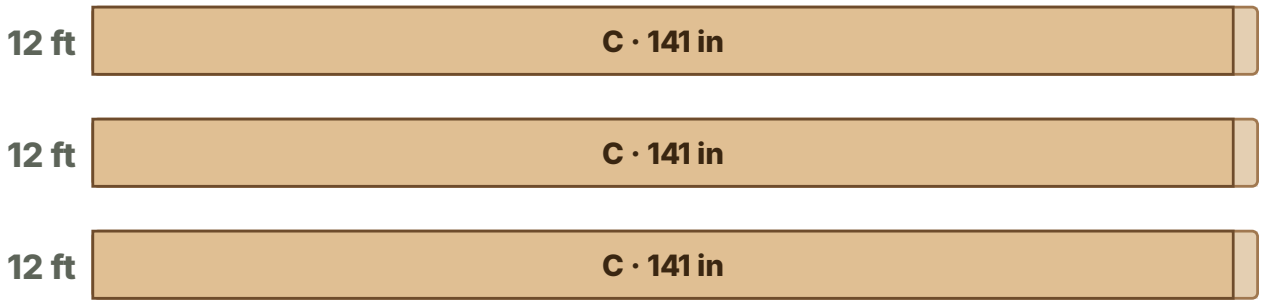
4×6 timber, ground-contact treated (UC4B)



2×6 lumber, ground-contact treated (boards 1–12 of 15)



2×6 lumber, ground-contact treated (boards 13–15 of 15)



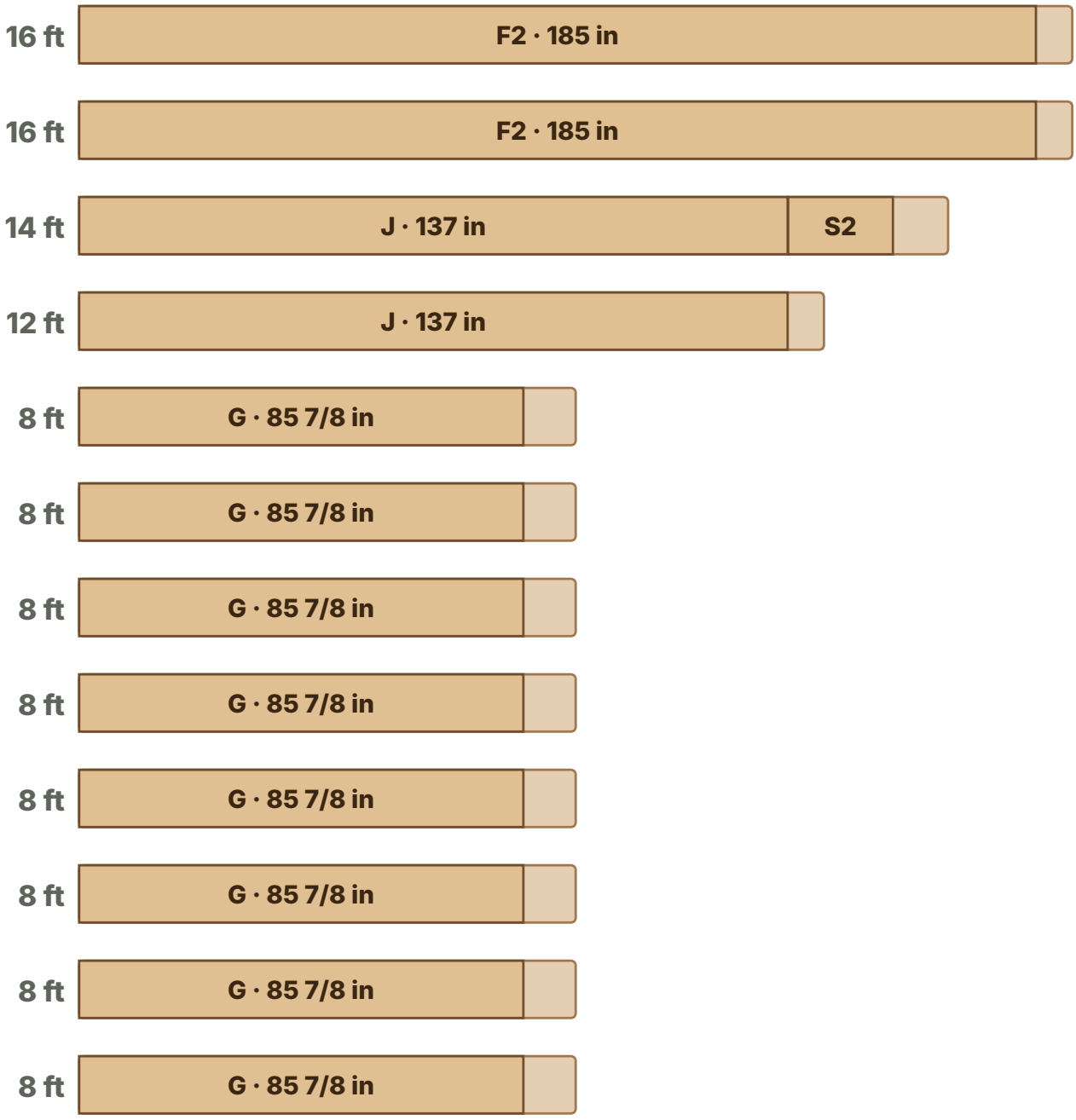
2×4 lumber (boards 1–12 of 62)



2×4 lumber (boards 13–24 of 62)



2×4 lumber (boards 25–36 of 62)



2×4 lumber (boards 37–48 of 62)



2×4 lumber (boards 49–60 of 62)



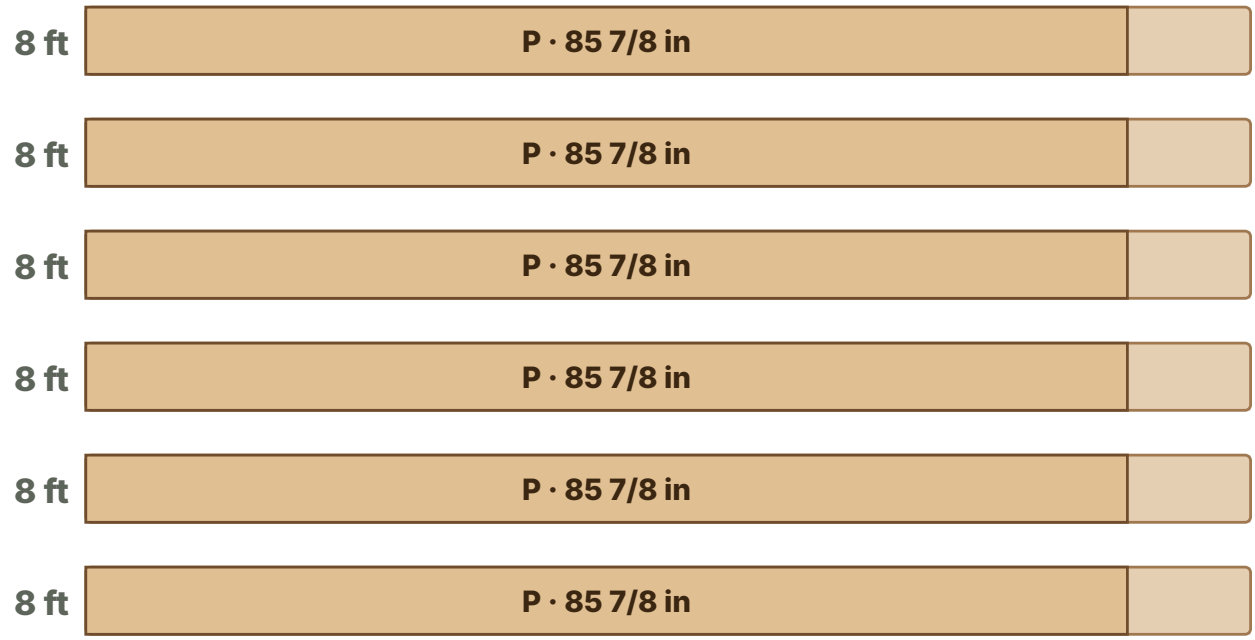
2×4 lumber (boards 61–62 of 62)



2×6 lumber (boards 1–12 of 18)



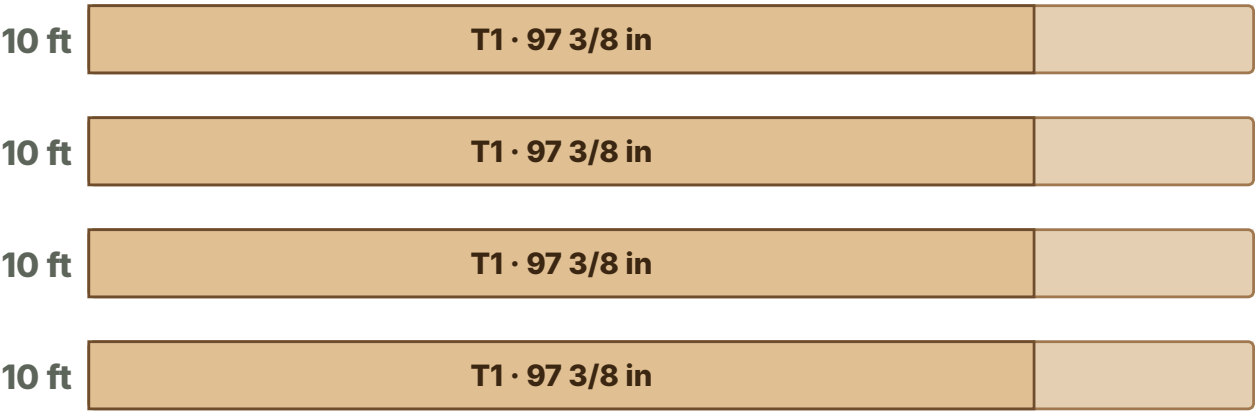
2×6 lumber (boards 13–18 of 18)



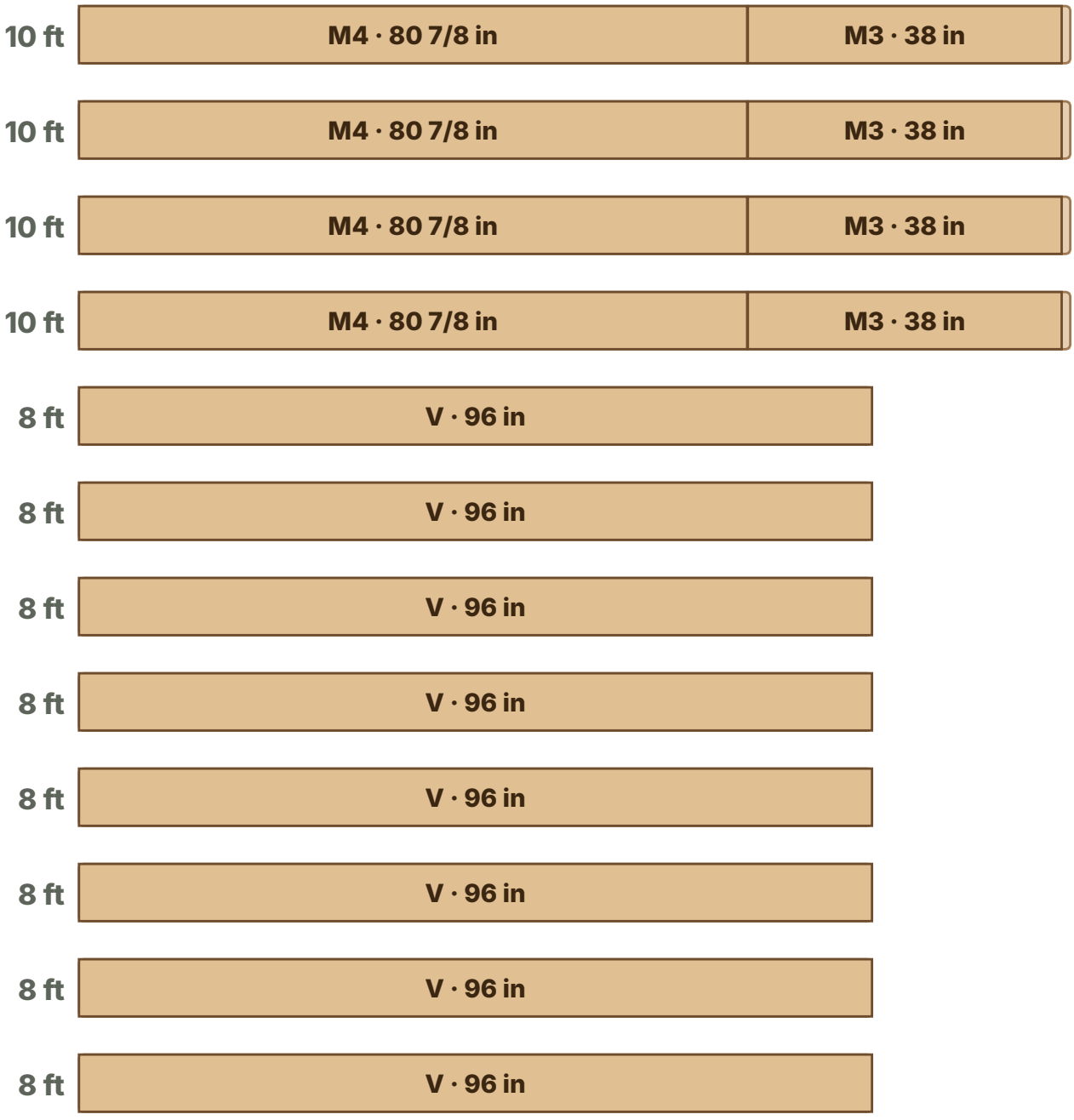
2×8 lumber



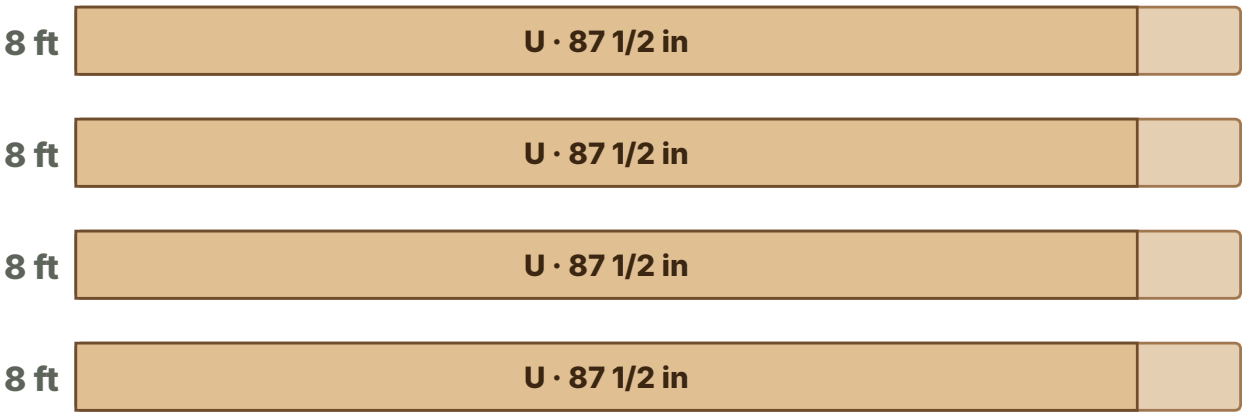
1×6 board



1×4 board (boards 1–12 of 16)



1×4 board (boards 13–16 of 16)



23/32 in tongue-and-groove subfloor panel, rated 24 oc, sheet 1 of 7



23/32 in tongue-and-groove subfloor panel, rated 24 oc, sheet 2 of 7



23/32 in tongue-and-groove subfloor panel, rated 24 oc, sheet 3 of 7



23/32 in tongue-and-groove subfloor panel, rated 24 oc, sheet 4 of 7



23/32 in tongue-and-groove subfloor panel, rated 24 oc, sheet 5 of 7



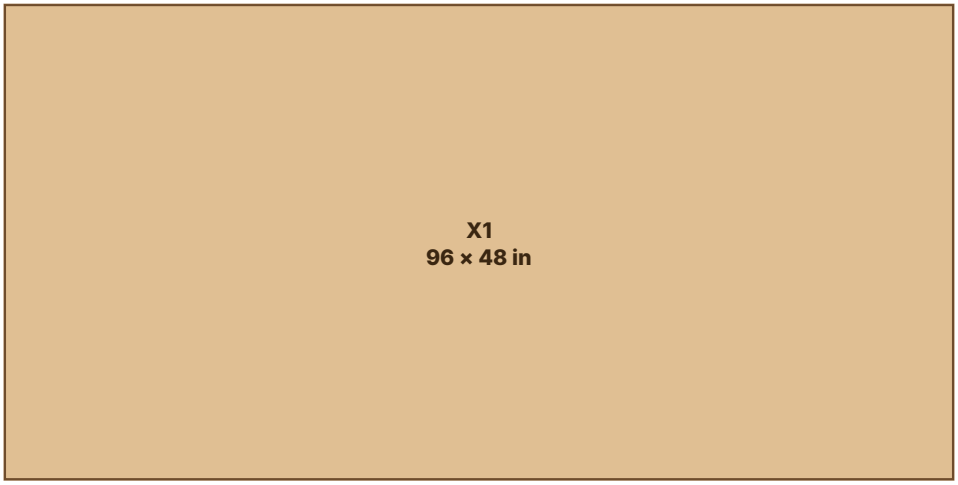
23/32 in tongue-and-groove subfloor panel, rated 24 oc, sheet 6 of 7



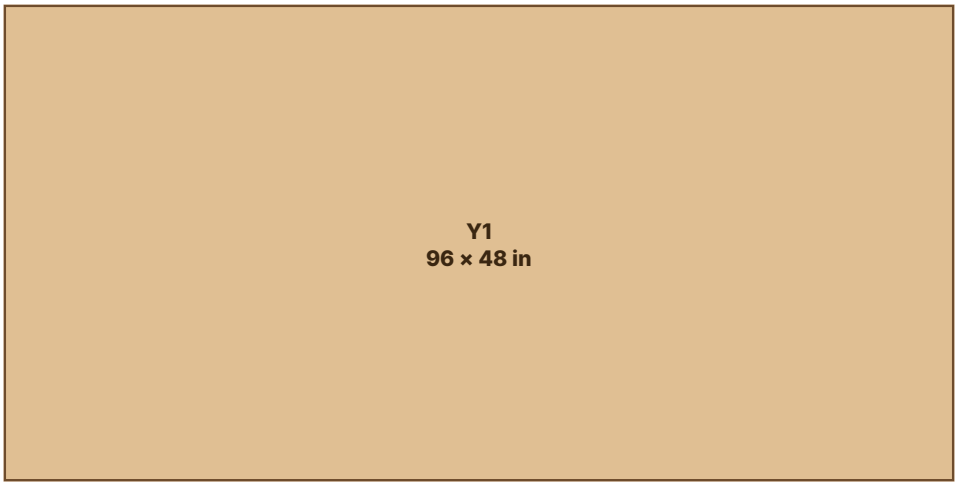
23/32 in tongue-and-groove subfloor panel, rated 24 oc, sheet 7 of 7



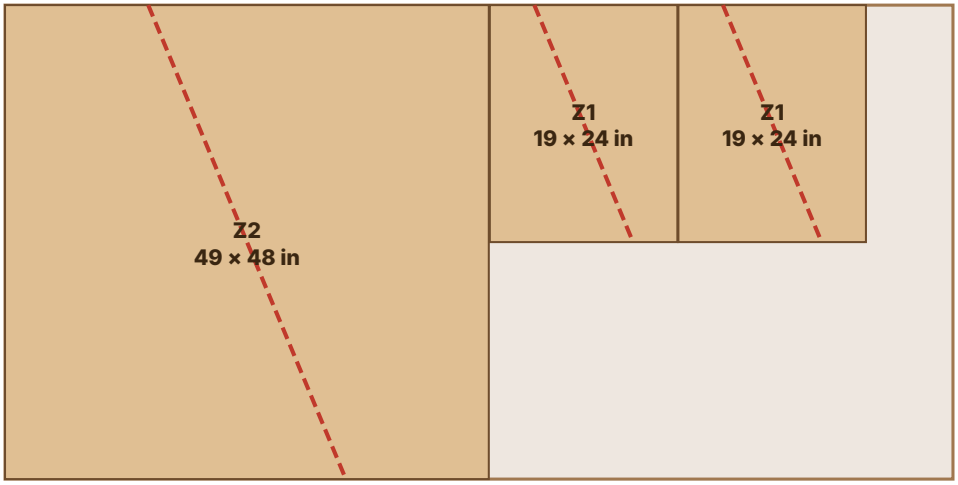
19/32 in T1-11 plywood siding, 8 sheets cut the same way (sheets 1, 2, 3, 4, 5, 6, 7, 8 of 18)



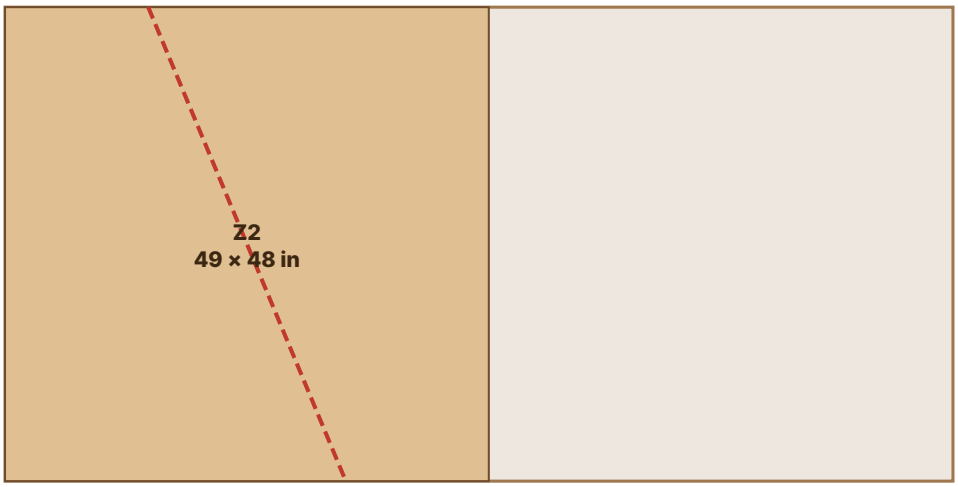
19/32 in T1-11 plywood siding, 4 sheets cut the same way (sheets 9, 10, 11, 12 of 18)



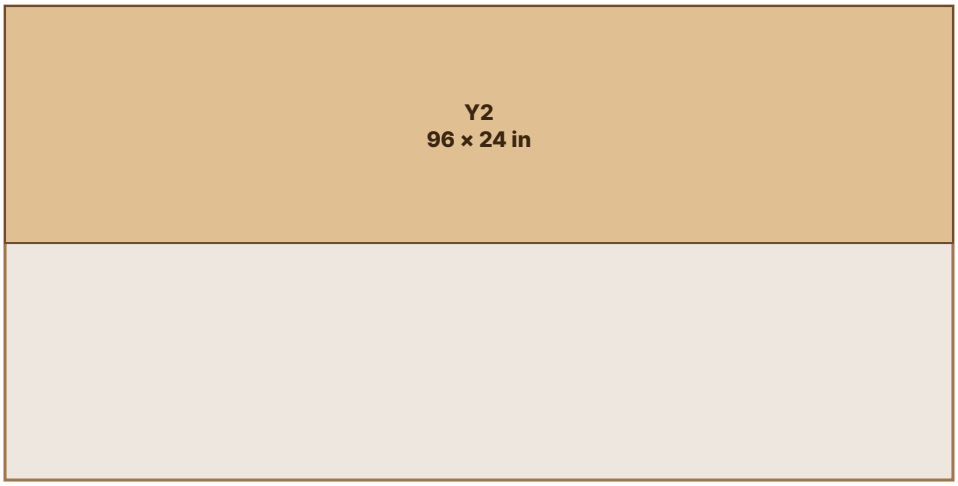
19/32 in T1-11 plywood siding, sheet 13 of 18



19/32 in T1-11 plywood siding, sheet 14 of 18



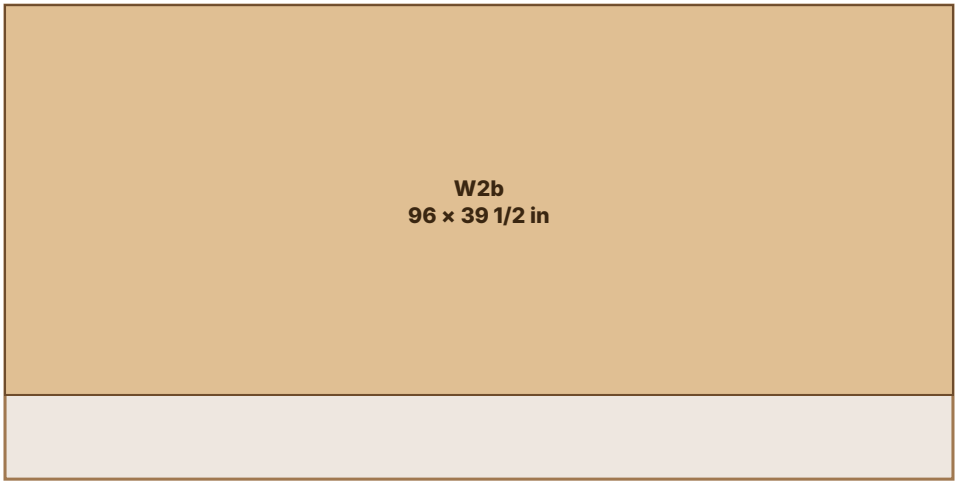
19/32 in T1-11 plywood siding, 4 sheets cut the same way (sheets 15, 16, 17, 18 of 18)



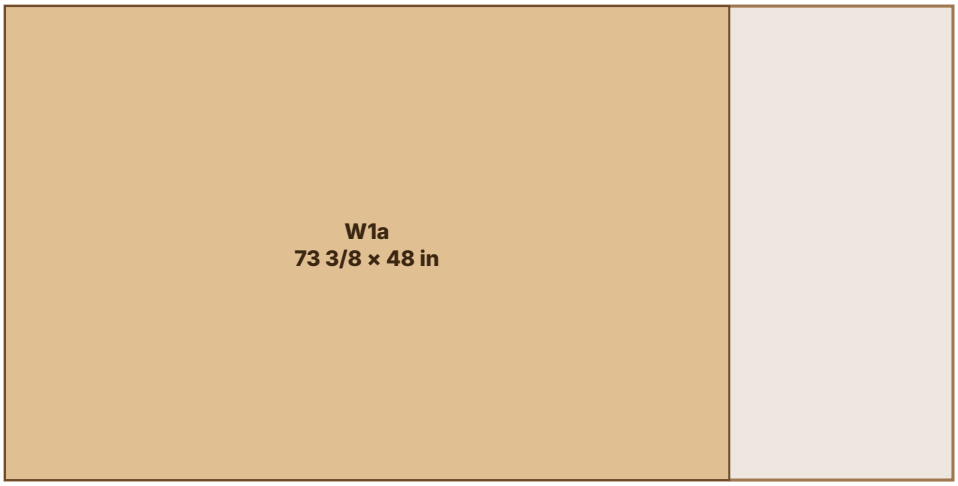
7/16 in OSB roof sheathing, rated 24/16, 2 sheets cut the same way (sheets 1, 2 of 10)



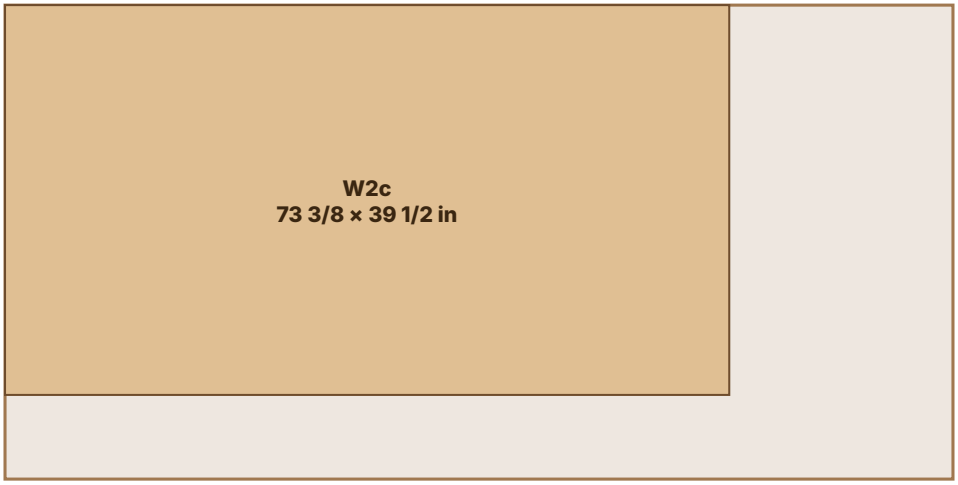
7/16 in OSB roof sheathing, rated 24/16, 2 sheets cut the same way (sheets 3, 4 of 10)



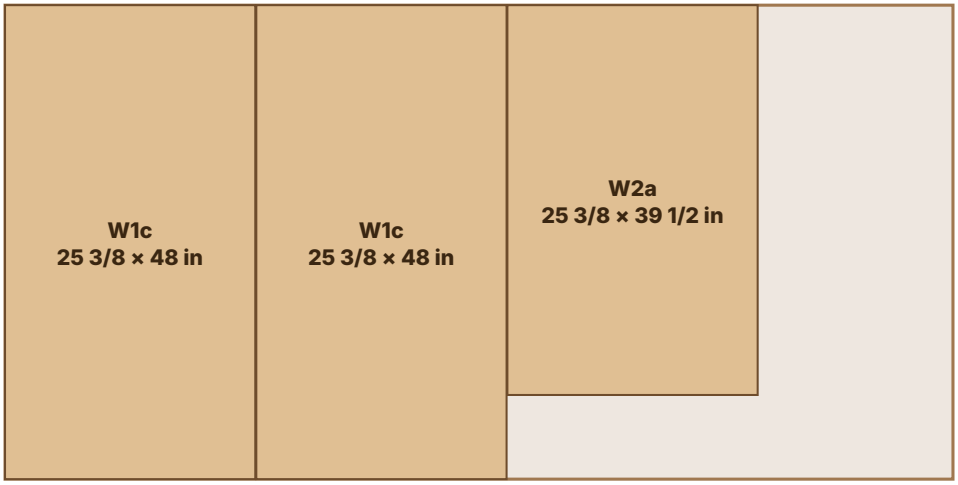
7/16 in OSB roof sheathing, rated 24/16, 2 sheets cut the same way (sheets 5, 6 of 10)



7/16 in OSB roof sheathing, rated 24/16, 2 sheets cut the same way (sheets 7, 8 of 10)



7/16 in OSB roof sheathing, rated 24/16, sheet 9 of 10



7/16 in OSB roof sheathing, rated 24/16, sheet 10 of 10



Step by step

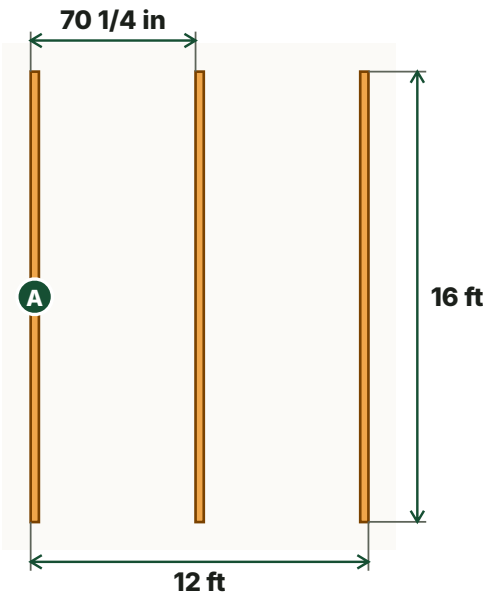
1. Prepare the pad and set the skids

Mark out a pad 1 ft bigger than the shed on every side, dig out the sod and spread 4 in of crushed gravel. Rake it level and tamp it firm.

Lay the skids (A) on edge, 16 ft long, with the two outer skids flush with the sides of the shed and one more between them, evenly spaced. Level them along their length and against each other, adding or raking gravel under the low spots.

Measure both diagonals of the skid layout; when they match, it is square.

Skids on the gravel pad, from above (front at the bottom)

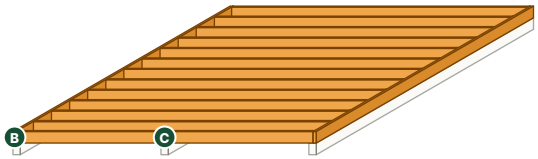


2. Build the floor frame

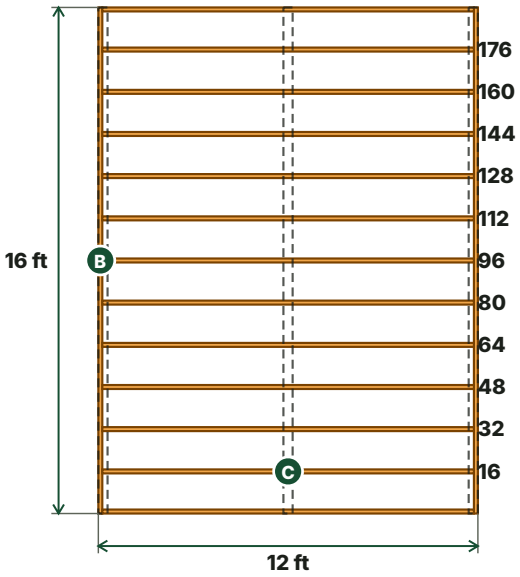
Stand the rim joists (B) on edge on the outer skids. Mark the joist centers on both rims from the front end: 16, 32, 48, 64, 80, 96, 112, 128, 144, 160, 176 in.

Set the end joists (C) flush with the ends and the rest on the marks, and drive 3 16d nails through each rim into every joist end. Measure the diagonals (about 20 ft) and push the frame square.

Toe nail each joist to every skid it crosses with 3 8d nails. The joists, rims and skids sit close to the ground, so they must be treated lumber, and every nail in them hot-dip galvanized.



Floor frame from above (front at the bottom)

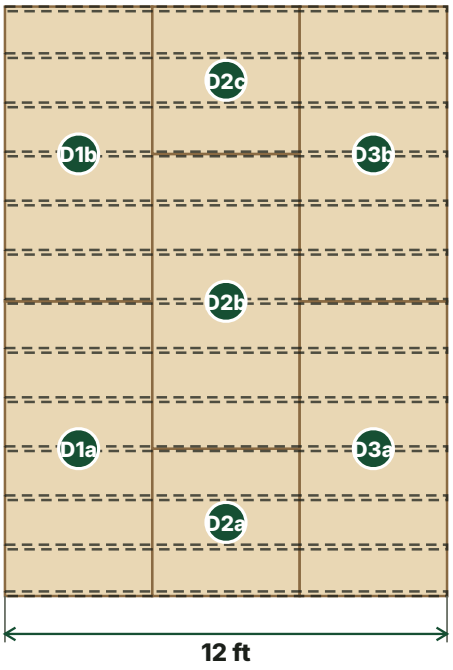


3. Lay the floor

Lay the subfloor sheets (D) with their long edges along the shed and the grooved edge toward the back, starting at the front left corner. End joints fall on the joist centers; start the second row with a half sheet so the joints do not line up.

Leave a 1/8 in gap at the ends of the sheets. Nail with 8d nails every 6 in along the edges and every 12 in along each joist.

Floor sheets from above: end joints on joists, staggered

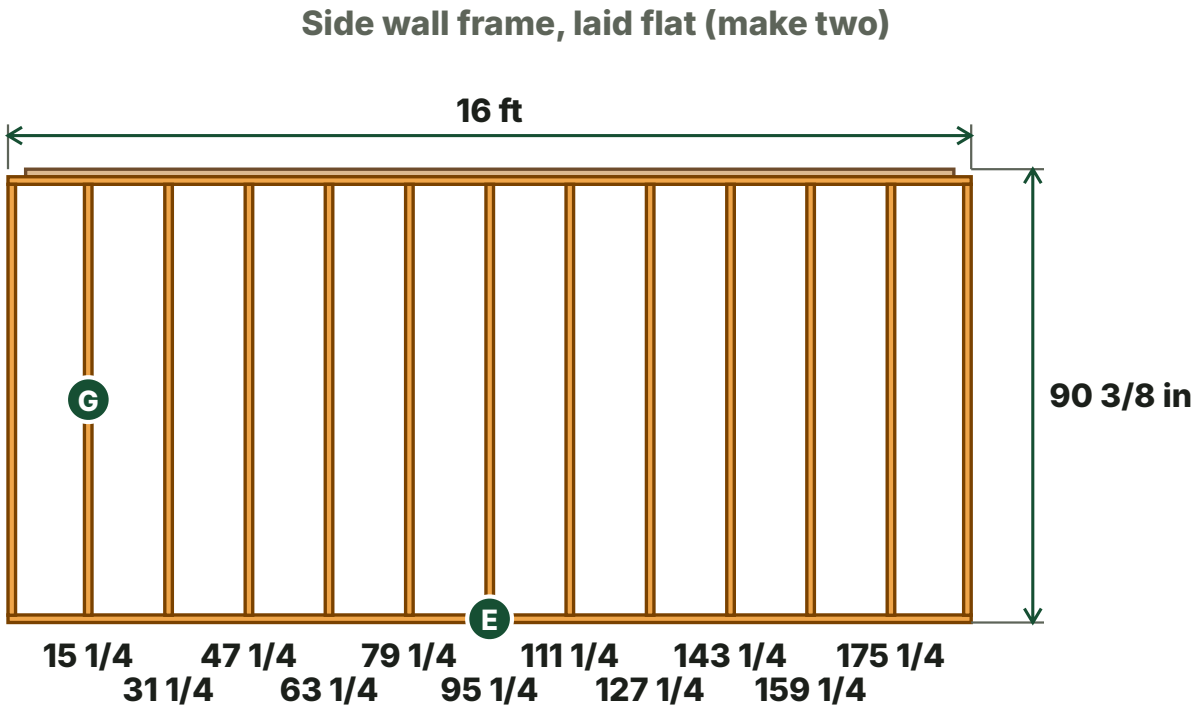


4. Build the side walls

Lay a bottom plate (E) and a top plate (F) side by side and mark the studs on both at once, from the front end to the left edge of each stud: 0, 15 1/4, 31 1/4, 47 1/4, 63 1/4, 79 1/4, 95 1/4, 111 1/4, 127 1/4, 143 1/4, 159 1/4, 175 1/4, 190 1/2 in.

Set the studs (G) between the plates and drive 2 16d nails through each plate into each stud end. Nail the cap plate (F2) on top, 3 1/2 in in from each end, with 16d nails every 16 in.

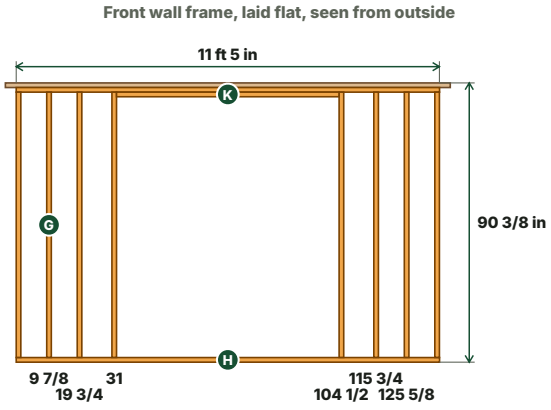
Build the second side wall the same way.



5. Build the front and back walls

The gable walls fit between the side walls. Mark the studs on the plates (H) and (J) from the left end: front 0, 9 7/8, 19 3/4, 31, 104 1/2, 115 3/4, 125 5/8, 135 1/2 in, back 0, 9 7/8, 19 3/4, 35 3/4, 51 3/4, 67 3/4, 83 3/4, 99 3/4, 115 3/4, 125 5/8, 135 1/2 in. Some studs sit where siding sheets meet, so do not move them.

In the front wall, the two studs in the middle frame the 6 ft door. Nail the flat header (K) under the top plate between them, with 3 16d nails through each stud into its ends. Leave the bottom plate whole for now.





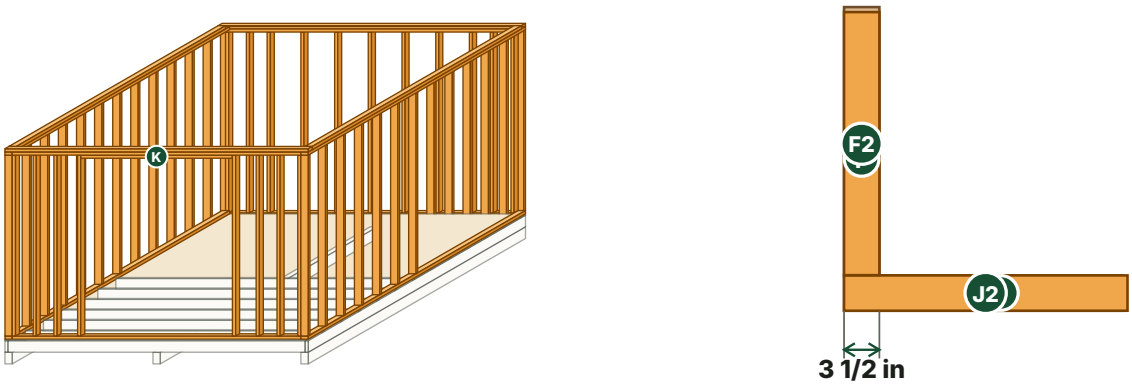
6. Stand the walls

Stand the side walls on the floor, flush with its edges, and brace them plumb with a scrap board nailed to the floor frame. Stand the front and back walls between them.

Nail the corner studs together with 16d nails every 24 in, and the bottom plates down into the floor frame every 16 in.

Nail the gable cap plates (J2) on top so they lap over the side walls at each corner, with 2 16d nails down into the corner. Cut the front bottom plate out of the door opening, flush with the studs.

Left front corner from above: the gable cap plate laps the side wall



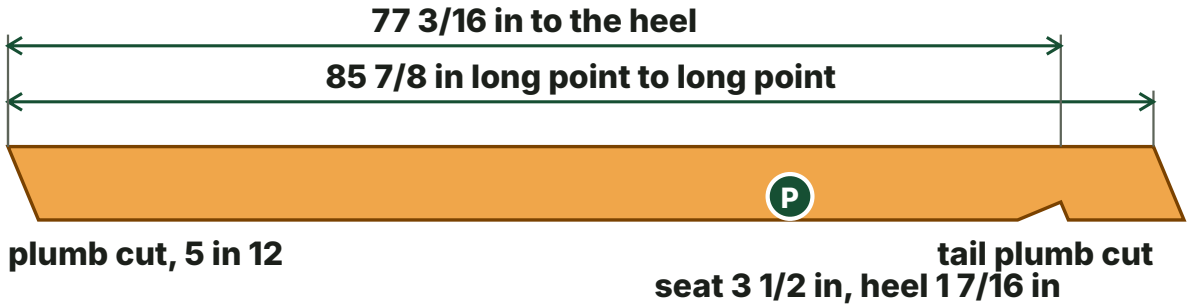
7. Cut the rafters

Mark the first rafter (P) on a straight 2×6, crown up. At the top end, mark a plumb cut at 5 in 12. From its long point, measure 77 3/16 in along the top edge to the heel line, and mark the seat cut, level and 3 1/2 in long, so the heel cut is 1 7/16 in deep.

Measure 8 11/16 in past the heel line along the top edge and mark the tail plumb cut. The rafter is 85 7/8 in from long point to long point.

Cut two, hold them on the walls with a scrap of 2×8 between them at the top, and check the fit. Then use one as the pattern for the other 16.

Rafter: mark it out like this, cut one pair and test it

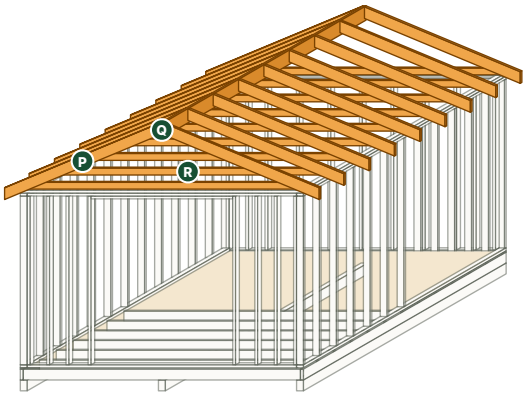


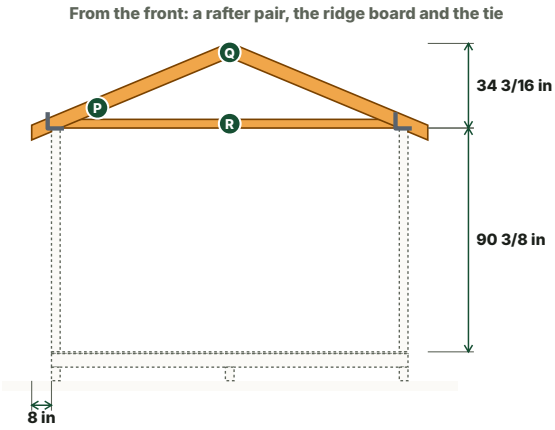
8. Raise the ridge and the rafters

Mark the rafter positions on both side wall cap plates and on the ridge board (Q), from the front end: 0, 23 1/4, 47 1/4, 71 1/4, 95 1/4, 119 1/4, 143 1/4, 167 1/4, 190 1/2 in.

Set the front pair first: hold the ridge up on a temporary post so its top is 34 3/16 in above the top plates, nail the first rafter to it with 2 16d nails through the ridge and toe nail the one opposite with 3 10d nails. Toe nail both to the plates with 3 10d nails each. Then set the back pair, and the rest, toe nailing each rafter to the ridge with 3 10d nails.

Lay a rafter tie (R) on the top plates beside each pair and nail it to both rafters with 3 16d nails at each end, and to the plates with 3 8d nails. Fit a hurricane tie where each rafter crosses a wall.



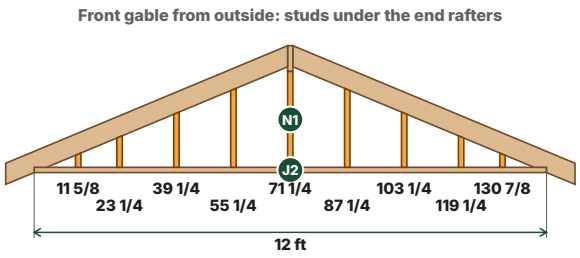


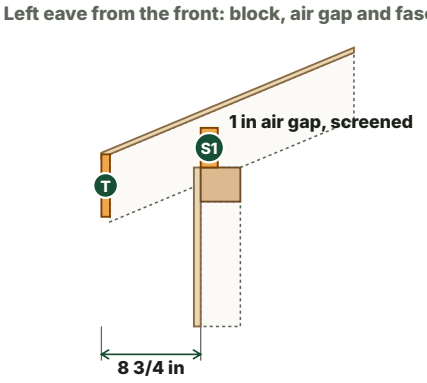
Hurricane tie

9. Frame the gables and close the eaves

In each gable, set the studs (N) on the cap plate under the end rafters, with the stud under the ridge first: 11 5/8, 23 1/4, 39 1/4, 55 1/4, 71 1/4, 87 1/4, 103 1/4, 119 1/4, 130 7/8 in from the left. Cut each top to the roof slope and toe nail it at both ends.

Over each side wall, nail a block (S) on edge between the rafters, flush with the outside of the plates. It leaves a 1 in gap under the roof sheathing for air; you screen it later.





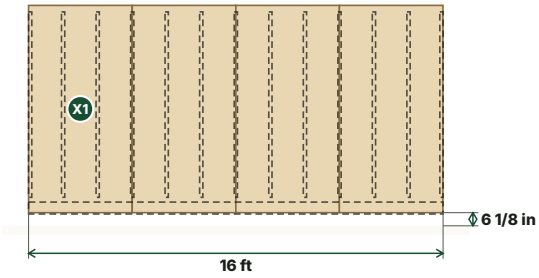
10. Put on the siding

Start at a corner. Hang the side wall sheets (X) with the grooves running up and down, the bottom edge 6 1/8 in above the gravel and the top flush with the top plates. Vertical joints land on studs.

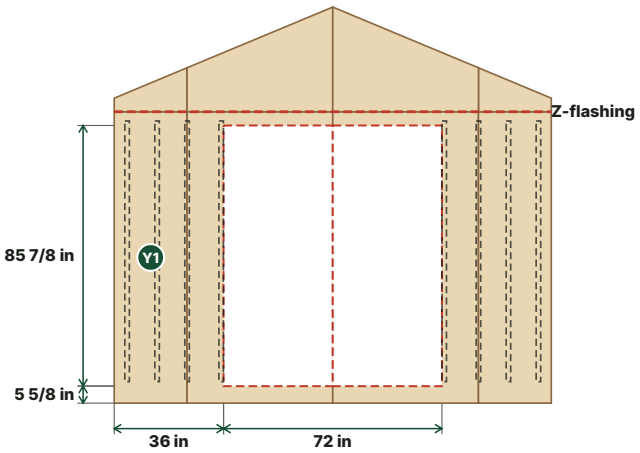
Hang the front and back sheets (Y) the same way, then set Z-flashing along the top of the walls and the gable tops (Z) above it. Nail every 6 in along the edges and every 12 in on the studs between, with a 1/8 in gap at joints.

Cut the door opening through the front siding along the inside of the door studs and the header, with a circular saw set to the siding's depth. Keep the pieces: they are the doors.

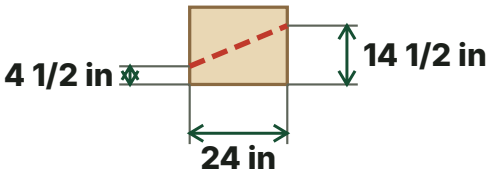
Left side wall siding from outside (front at the left)



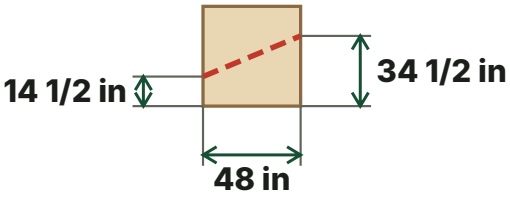
Front siding from outside: cut the door opening along the framing



Gable top pair Z1: one piece, cut corner to corner



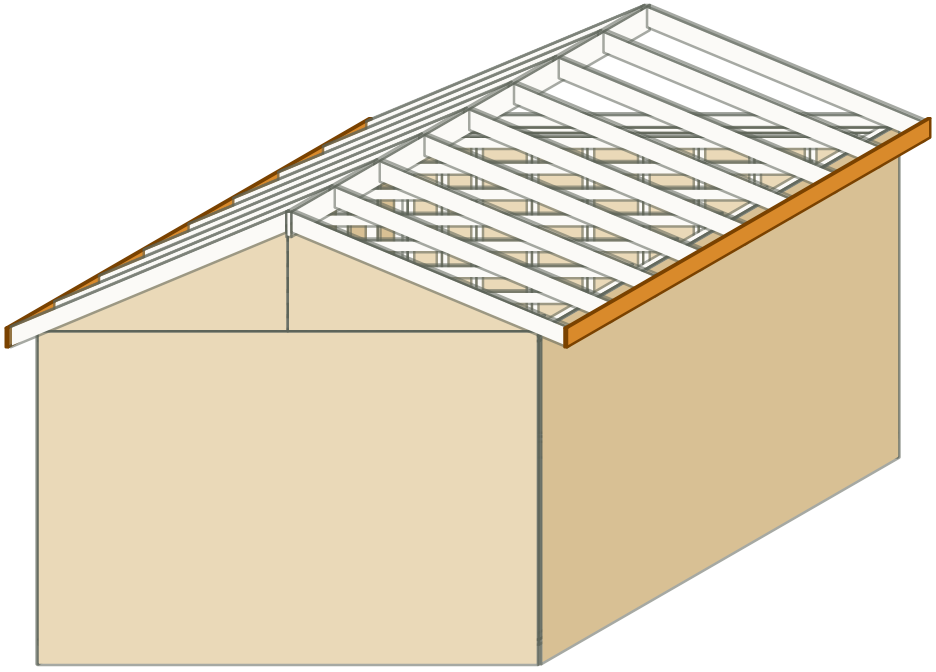
Gable top pair Z2: one piece, cut corner to corner



11. Fascia and rake boards

Nail the fascia (T) across the rafter tails, its top in line with the top of the rafters, letting it run 1 3/8 in past the gable siding at each end.

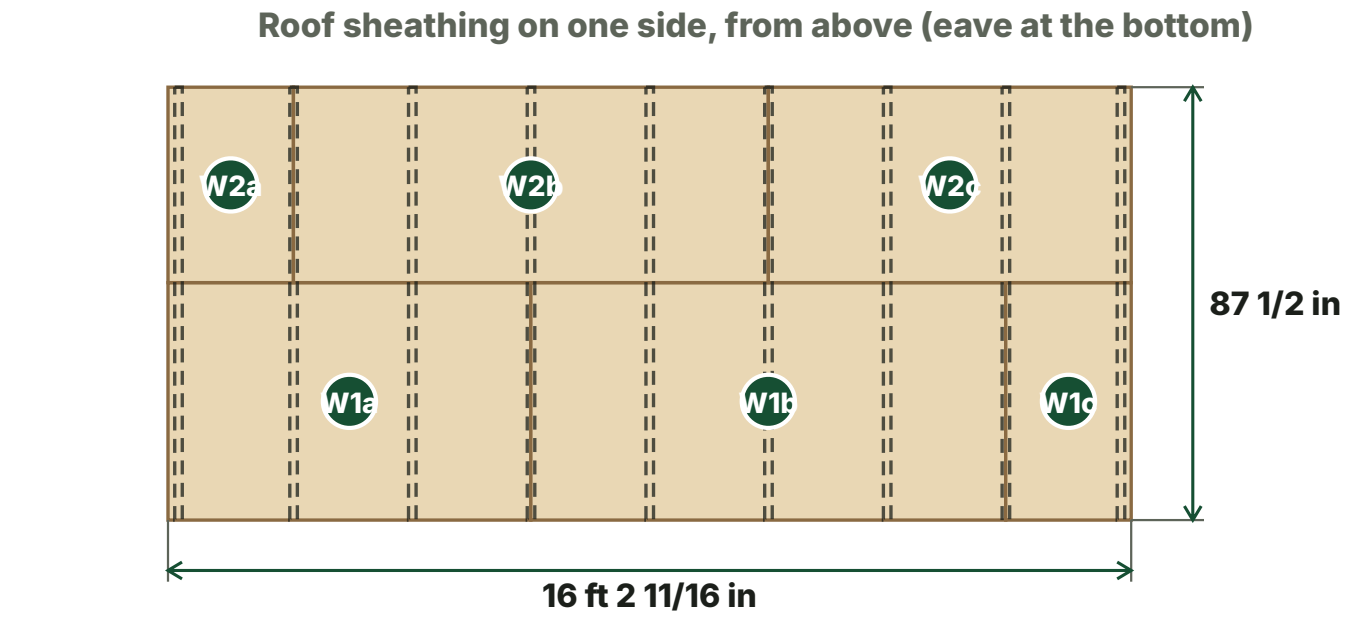
Nail a rake board (U) up each gable edge, tight under where the roof sheathing will overhang.



12. Sheath the roof

Lay the OSB (W) with its long edges across the rafters, starting at the eave with the edge flush with the fascia face. End joints fall on rafters; start the next row with a shorter piece so the joints stagger.

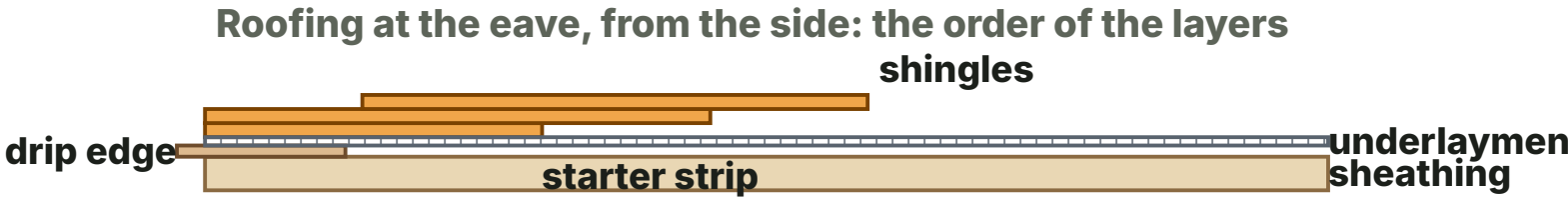
Let the sheets run 1 3/8 in past the gables, over the rake boards. Leave a 1/8 in gap at edges and ends, and nail with 8d nails every 6 in along the edges and every 6 in along each rafter.



13. Shingle the roof

Nail drip edge along both eaves every 12 in or closer, lapping pieces 2 in. At 5 in 12 one layer of underlayment is enough: roll it out from the eave up, over the eave drip edge, lapping each course 2 in. Then nail drip edge up the rakes, over the underlayment.

Lay starter strip along the eaves and up the rakes, then the shingles from the bottom up as the bundle wrapper shows, with 4 roofing nails in each shingle, long enough to go through the sheathing. Finish with ridge cap shingles.



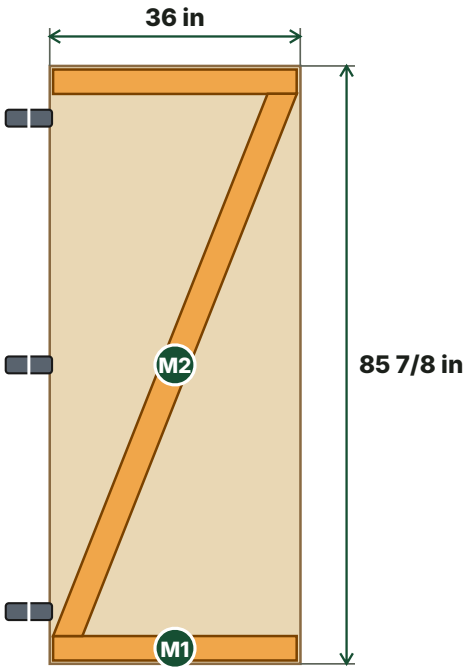
14. Hang the doors

On the inside of each door, screw a rail (M1) across the top and bottom, 1/2 in in from the edges, and cut the brace (M2) to fit between them, running up from the bottom on the hinge side.

Screw the trims (M3) and (M4) around the outside of each door, standing 1 in past its edges, so they close against the siding.

Hang each door with 3 hinges into the door studs. Fit barrel bolts to hold the left door shut at the top and bottom, and a hasp across the two.

A door leaf from the inside (the other is the mirror image)



hinge side at the left: the brace runs up from the bottom hinge

Hinge

15. Trim and finish

Nail two corner trims (V) on each corner, one on each face, and staple insect screen over the eave gaps.

Prime and paint or stain the siding and trim, the panel edges most of all, before the first rain.

Good to know

- The model code exempts one-story sheds of up to 200 sq ft from a building permit, but towns can set their own rules, and setbacks from property lines still apply. Ask your building department before you build.
- Skids, joists and rims must be ground-contact treated lumber, and every nail, screw and connector that touches them hot-dip galvanized or stainless.
- This plan is for a ground snow load of up to 20 psf. In high-wind areas, anchor the skids to the ground with anchors made for sheds.