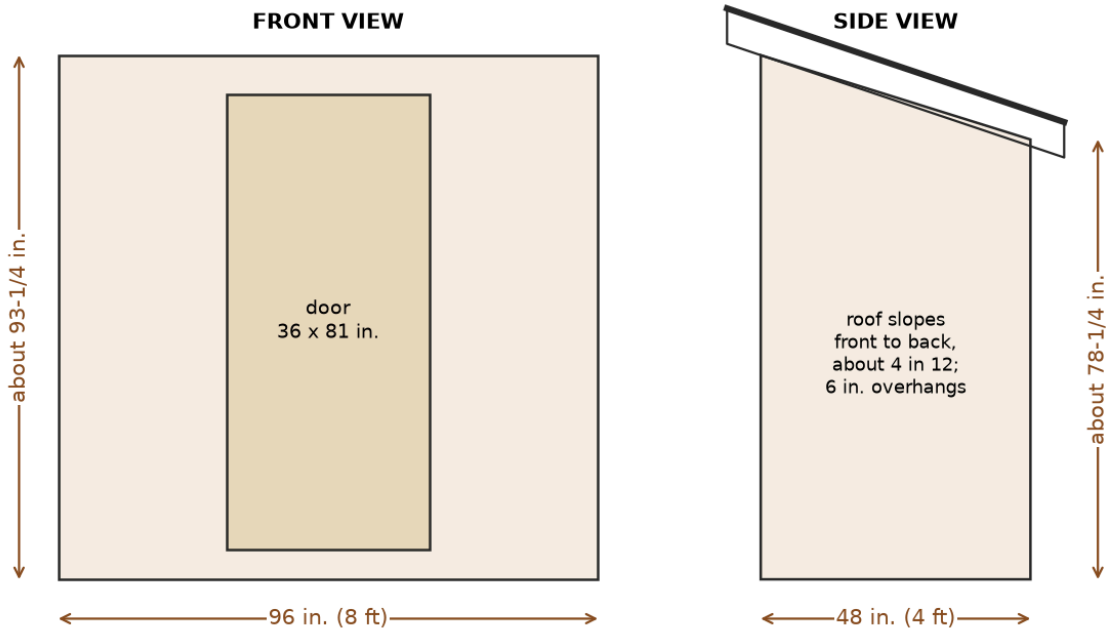
4x8 Lean-To Tool Shed: Printable Plan

Materials list, cut list, key steps, and diagrams. Free to print and use.

Not engineered. Check your local code first. No engineer has reviewed this plan. Rafter, header, and fastener choices come from published tables (AWC 2024 span tables, 2024 IRC) using the design conditions shown on the web page: up to 50 psf roof snow load for the rafters and up to 70 psf ground snow load for the header. Your building department sets the permit rules, snow and wind loads, frost depth, and setbacks where you live. Confirm them before you build, and resize the framing if your loads are higher.

At a glance: 48 x 96 in. floor; front wall 87 in., back wall 72 in. (plates included); 2x6 rafters at 16 in. on center, about 4-in-12 slope, 6 in. overhangs front and back; 34 x 78-1/2 in. door opening with a 36 x 81 in. Z-frame door. All sizes are actual lumber sizes. Full instructions and sources: shedandbench.com/lean-to-shed-plans/

Overall dimensions



Heights are siding heights, from the bottom of the floor rim to the top of each wall. Add skids, blocks, and roof thickness for total height.

Overall dimensions

Materials list

Foundation and floor

- 2 – 4x4 x 8 ft treated lumber, rated for ground contact (skids)
- Solid concrete blocks to raise the skids (see "Site and foundation")
- 6 – 2x6 x 8 ft treated lumber (2 rim joists and 7 floor joists)
- 1 – 23/32 in. APA Rated Sturd-I-Floor panel, span rating 24 oc, 4 ft x 8 ft (floor deck)
- Crushed gravel and landscape fabric for the pad
- 4 (minimum) ground anchors with cable and clamps, sized for your soil by the anchor maker

Wall framing

- 31 – 2x4 x 8 ft (plates, studs, jack studs, side-wall plates)
- 1 – 2x6 x 8 ft (door header, 2 pieces)
- Scrap of 1/2 in. plywood for the header spacer (from the roof sheathing offcut)

Roof

- 4 – 2x6 x 12 ft, No. 2 grade, SPF, SPF (South), or Southern Pine (8 rafters; 7 needed, 1 spare)
- 2 – 15/32 in. or 1/2 in. APA Rated Sheathing, span rating 32/16, 4 ft x 8 ft
- Roofing underlayment for about 45 sq ft plus laps (double that if your finished slope measures under 4 in 12)
- Drip edge, 3 pieces x 10 ft
- Roofing, either: architectural asphalt shingles, 2 bundles (GAF says 3 bundles of Timberline HDZ cover 98.4 sq ft; this roof is about 42 sq ft) plus starter strip shingles for the low eave and both rakes, and roofing nails (zinc-coated steel or aluminum, 10 to 12 gauge, 3/8 to 7/16 in. heads, long enough to go through the sheathing); **or** exposed-fastener metal roof panels rated by their maker for 3-in-12 or lower, with matching trim and screws
- 14 – Simpson Strong-Tie H2.5A hurricane ties, plus 140 – 0.131 x 2-1/2 in. nails (or Simpson SD9212 screws)

Siding, trim, and door

- 7 – 4 ft x 8 ft panel siding sheets (this plan follows LP SmartSide Strand Substrate 38 or 76 Series panel instructions, which call for studs at 16 in. on center maximum)
- 10 – 1x4 x 8 ft exterior trim (8 corner boards, 2 for the door Z-frame)
- 4 – 1x6 x 8 ft exterior trim (fascia and rake boards)
- 3 – heavy-duty exterior T-hinges or strap hinges, a hasp or gate latch, and a door pull
- 1/4 in. hardware cloth, small roll (optional, for the open rafter bays)

Fasteners and finishing

(nail sizes from IRC Table R602.3(1); IRC R304.3.1 requires hot-dipped zinc-coated galvanized, stainless, silicon bronze, or copper fasteners in preservative-treated wood)

- 16d common nails (3-1/2 x 0.162 in.), hot-dip galvanized, for framing
- 10d common nails (3 x 0.148 in.) for toenailing rafters to plates
- 8d common nails (2-1/2 x 0.131 in.) for the floor deck and roof sheathing (see Step 6 for a ring-shank option)
- 8d common nails (2-1/2 x 0.131 in.), hot-dip galvanized, for toenailing joists to skids
- Siding nails: 6d (0.113 in. shank) hot-dipped galvanized, long enough to go at least 1-1/2 in. into framing (LP's minimum for 38 and 76 Series panels; not electroplated)
- 1-5/8 in. exterior screws (trim, door frame)
- Exterior sealant (LP calls for ASTM C920, Class 25 minimum), exterior primer and paint

Cost: prices change often and vary by region, so price this list at your local store on the day you buy.

Cut list

Part	Material	Qty	Length / size	Notes
Skids	4x4 treated (ground contact)	2	96 in.	Full length
Rim joists	2x6 treated	2	96 in.	Front and back of floor frame
Floor joists	2x6 treated	7	45 in.	48 in. minus two 1-1/2 in. rims; 2 per 8-ft board
Floor deck	23/32 in. panel	1	48 x 96 in.	Full sheet
Front wall plates	2x4	3	96 in.	1 bottom, 2 top
Front wall studs	2x4	6	82-1/2 in.	2 end, 2 common, 2 king
Jack studs	2x4	2	77 in.	Support the header
Header	2x6	2	37 in.	Plus a 1/2 in. plywood spacer, 5-1/2 x 37 in.
Back wall plates	2x4	3	96 in.	1 bottom, 2 top
Back wall studs	2x4	7	67-1/2 in.	16 in. on center
Side wall bottom plates	2x4	2	41 in.	Fit between front and back walls
Side wall sloped top plates	2x4	2	about 43-1/4 in.	Cut to fit under the end rafter, angled ends
Side wall studs	2x4	8	about 69-1/2, 73-1/2, 78-3/4, and 82-3/4 in. (2 of each)	Long-point lengths; cut to fit after the end rafters are set
Rafters	2x6 x 12 ft	7 (+1 spare)	63-5/16 in. along each edge	Parallel plumb cuts at both ends; 2 birdsmouth notches
Roof sheathing	1/2 in. rated sheathing	2	48 x 96 in. and 15-5/16 x 96 in.	Total 63-5/16 in. down the slope
Front siding	Panel siding	2	48 x 93-1/4 in.	Cut the door opening after hanging
Back siding	Panel siding	2	48 x 78-1/4 in.	
Side siding	Panel siding	2	48 in. wide; 78-1/4 in. back edge, 93-1/4 in. front edge	Straight sloped top edge
Door	Panel siding	1	36 x 81 in.	Hangs outside the opening
Door rails	1x4	2	33 in.	Top and bottom of the Z-frame
Door brace	1x4	1	Cut to fit (diagonal)	Low end at the hinge side
Corner trim	1x4	8	4 at 93-1/4 in., 4 at 78-1/4 in.	Front and back corners
Fascia	1x6	2	96 in.	Front and back rafter tails
Rake trim	1x6	2	Cut to fit (about 64 in.)	Covers the end rafters

Siding heights run from the bottom of the floor rim to the top of each wall: 6-1/4 + 87 = 93-1/4 in. at the front, 6-1/4 + 72 = 78-1/4 in. at the back. Measure your boards; small differences add up.

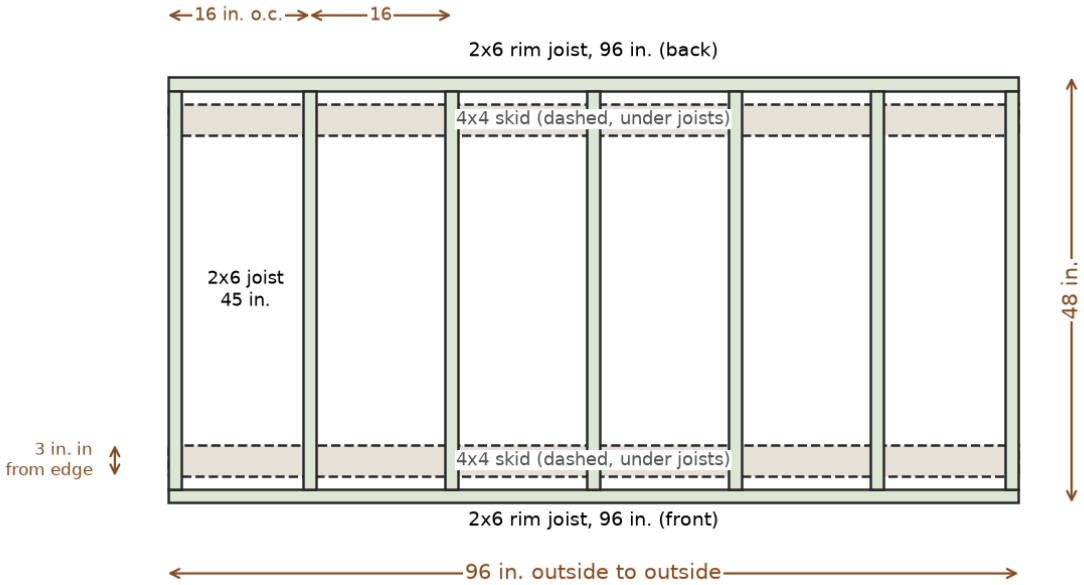
Key steps

1. **Site and foundation.** Clear and level a pad at least 12 in. larger than the shed on all sides; excavate (usually 4 to 6 in., per Suncast and local code), fill with crushed gravel, and compact. Set two treated 4x4 skids on solid concrete blocks so their tops are at least 6 in. above the gravel. The model 2024 IRC doesn't require frost protection for a free-standing light-frame accessory structure of 600 sq ft or less with an eave height of 10 ft or less (R403.1.4.1, Exception 1), but local rules can require frost footings; ask your building department.
2. **Floor.** Build the 48 x 96 in. frame: two rims, seven 45-in. joists at 16 in. on center (3-16d common end nails per joist). Square it, toenail joists to skids (3-8d common), attach at least 4 ground anchors, and nail the 23/32 in. deck 6 in. o.c. at edges, 12 in. in the field (8d common).
3. **Back wall.** 72 in. tall: seven 67-1/2 in. studs at 16 in. on center, single bottom plate, double top plate. Raise flush with the back edge; nail the bottom plate 16 in. o.c. (16d common).
4. **Front wall.** 87 in. tall: 82-1/2 in. studs, king studs at 28 and 66-1/2 in., 77-in. jacks, two-2x6 header with 1/2 in. spacer (16d common 16 in. o.c. each edge). Opening 34 x 78-1/2 in. Leave the bottom plate in the opening until the siding is on.
5. **Rafters.** Cut a pattern rafter (63-5/16 in. along each edge, 3-1/2 in. seat, about 1-3/16 in. plumb cut, plumb tails), test it, and copy it 6 times. Set 7 rafters at 16 in. on center; toenail each with 3-10d common, then add a Simpson H2.5A tie at each wall (5 + 5 nails, 0.131 x 2-1/2 in.; tie capacity is Simpson's manufacturer rating, not a code value).
6. **Side walls.** 41-in. bottom plates, sloped top plates under the end rafters (about 43-1/4 in.), four studs per side cut to fit (about 69-1/2 to 82-3/4 in.).
7. **Roof.** 15/32 or 1/2 in. sheathing rated 32/16, 8d common nails 6 in. at edges and 6 in. at every rafter (IRC Table R602.3(1), item 31). Drip edge under the underlayment at the low eave, over it at the rakes and high edge. If the finished slope measures under 4 in 12, use double underlayment. Shingles or metal per the maker's instructions.
8. **Siding.** Panel siding 6 in. o.c. at edges, 12 in. at intermediate studs, at least 1-1/2 in. into framing; 1/8 in. gap at vertical joints, 3/16 in. at trim; 6 in. minimum above grade. Notch the top of the back panels around the rafter tails (about 1-5/8 in. wide, 1-3/8 in. deep; the tails hang about 1-3/16 in. below the wall top at its outside face). Cut out the door opening and the bottom plate inside it.
9. **Door and trim.** 36 x 81 in. Z-frame door: two 33-in. rails, diagonal brace with its low end on the hinge side, three hinges. Add corner boards, fascia, rake trim; prime and paint all cut edges.

Wear eye and hearing protection, and get a helper to raise walls and set rafters. Call 811 before you dig or drive anchors.

Diagrams

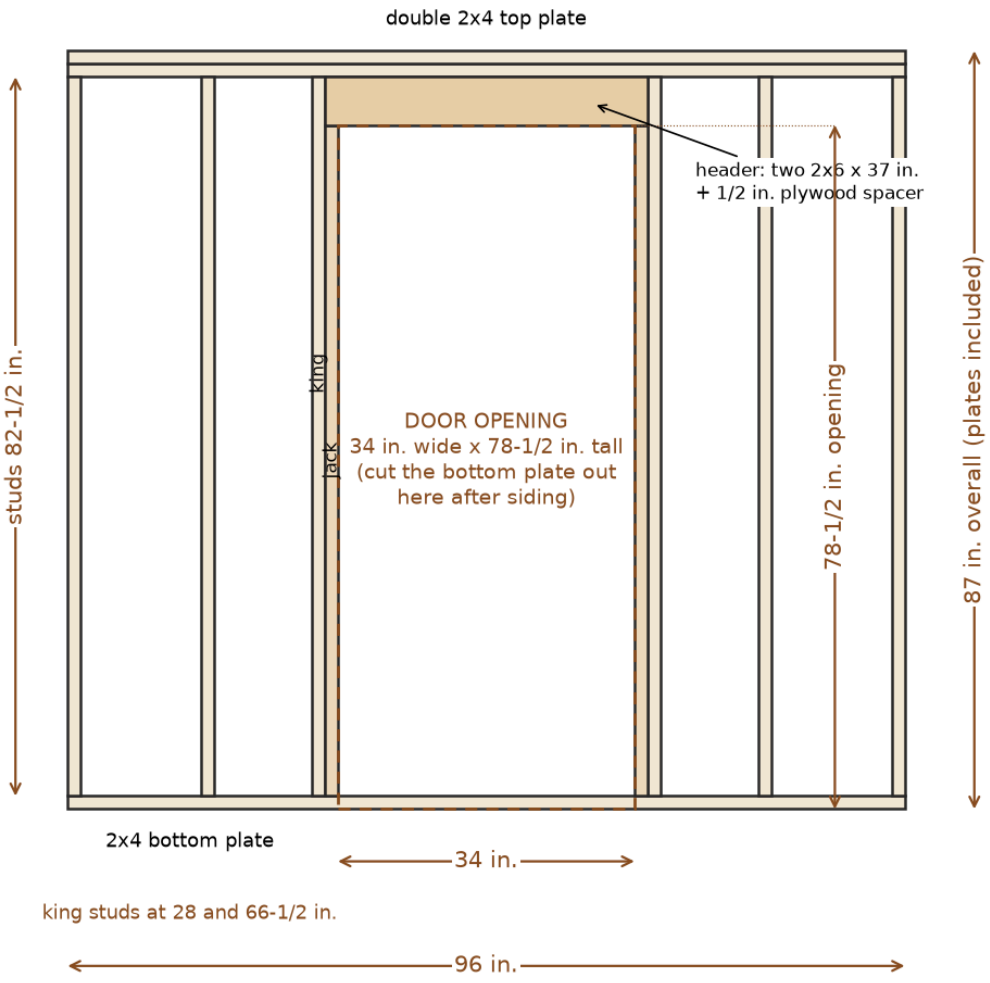
Floor frame (top view)



Seven 2x6 joists: flush at each end, then centered at 16, 32, 48, 64 and 80 in. Deck: one 4x8 sheet, flush on all edges.

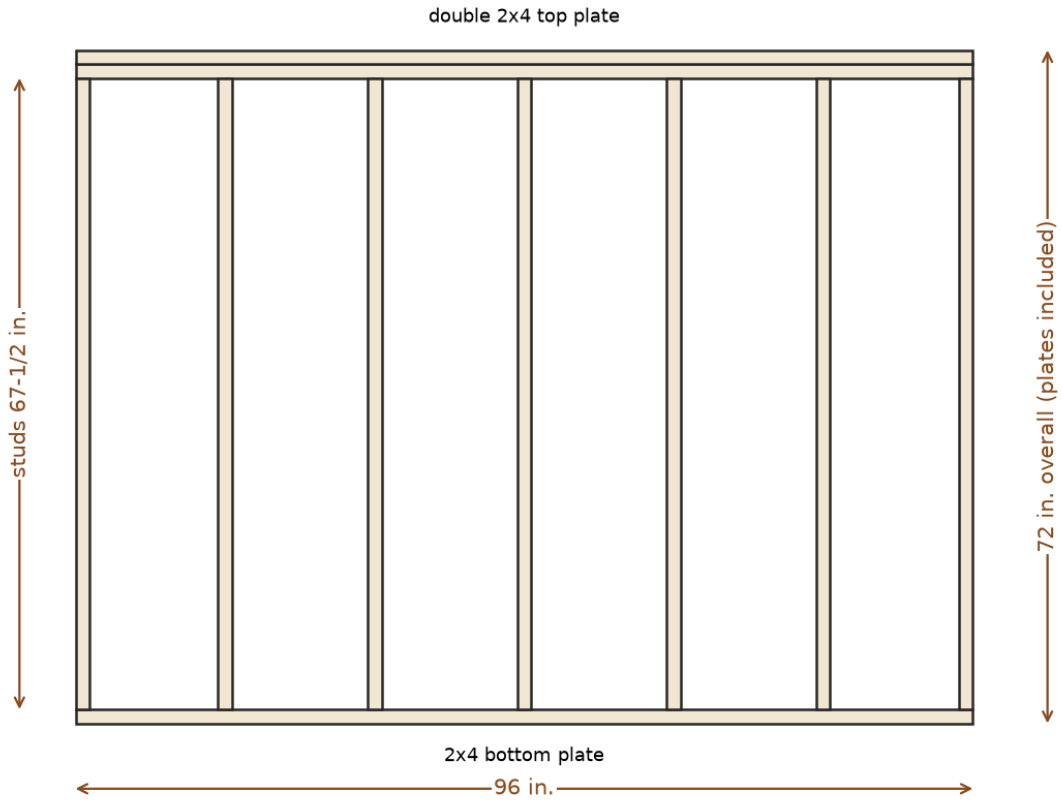
Floor frame

Front wall (tall, door side), outside face



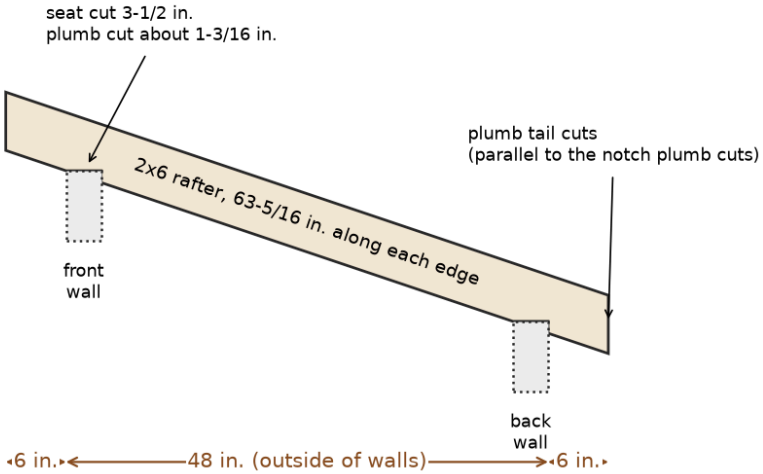
Front wall framing

Back wall (short), outside face



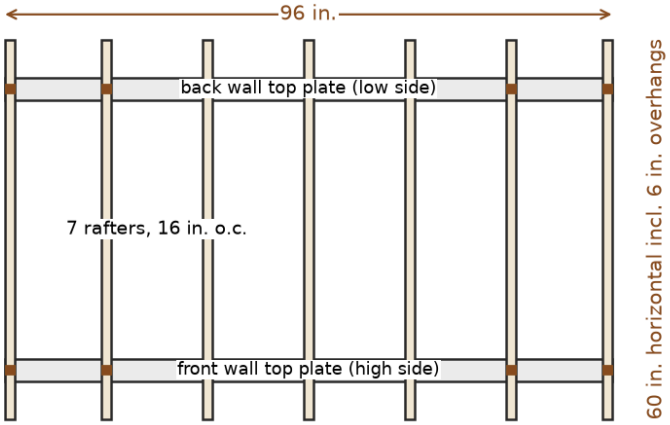
Back wall framing

Rafter layout: one rafter (side view)



about 46-15/16 in. along the bottom edge from the outer corner of the front notch to the inner corner of the back notch; tails about 6-5/16 in. along the bottom edge

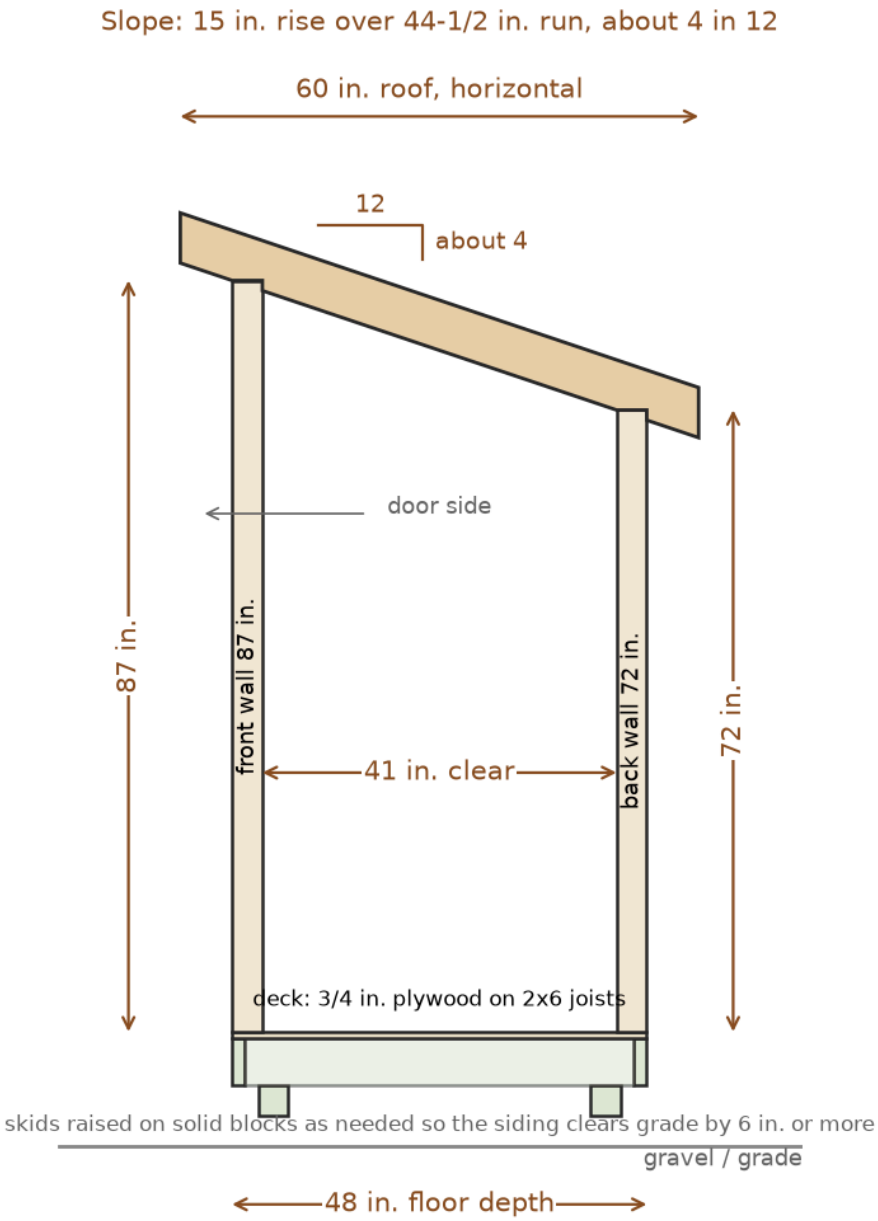
Roof framing plan (top view)



Squares = hurricane tie at each rafter on each wall (14 total). Rafters flush with wall ends; others centered at 16, 32, 48, 64 and 80 in.

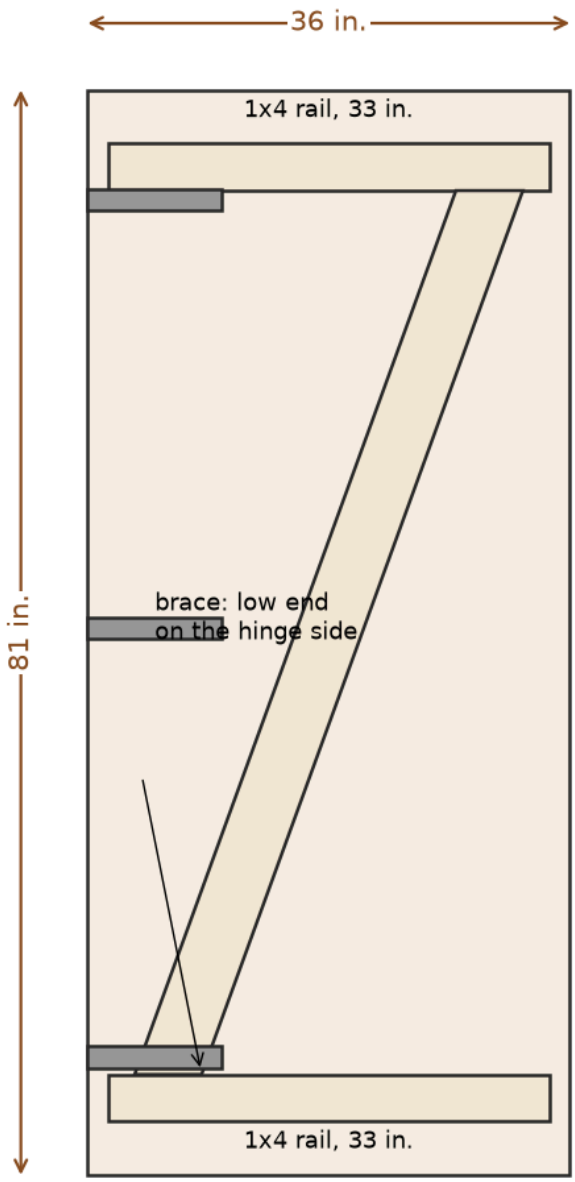
Rafter layout and roof framing plan

Side elevation (section through the shed)



Side elevation and slope

Z-frame door (inside face)



inside face; hinges (gray straps) on the left in this view