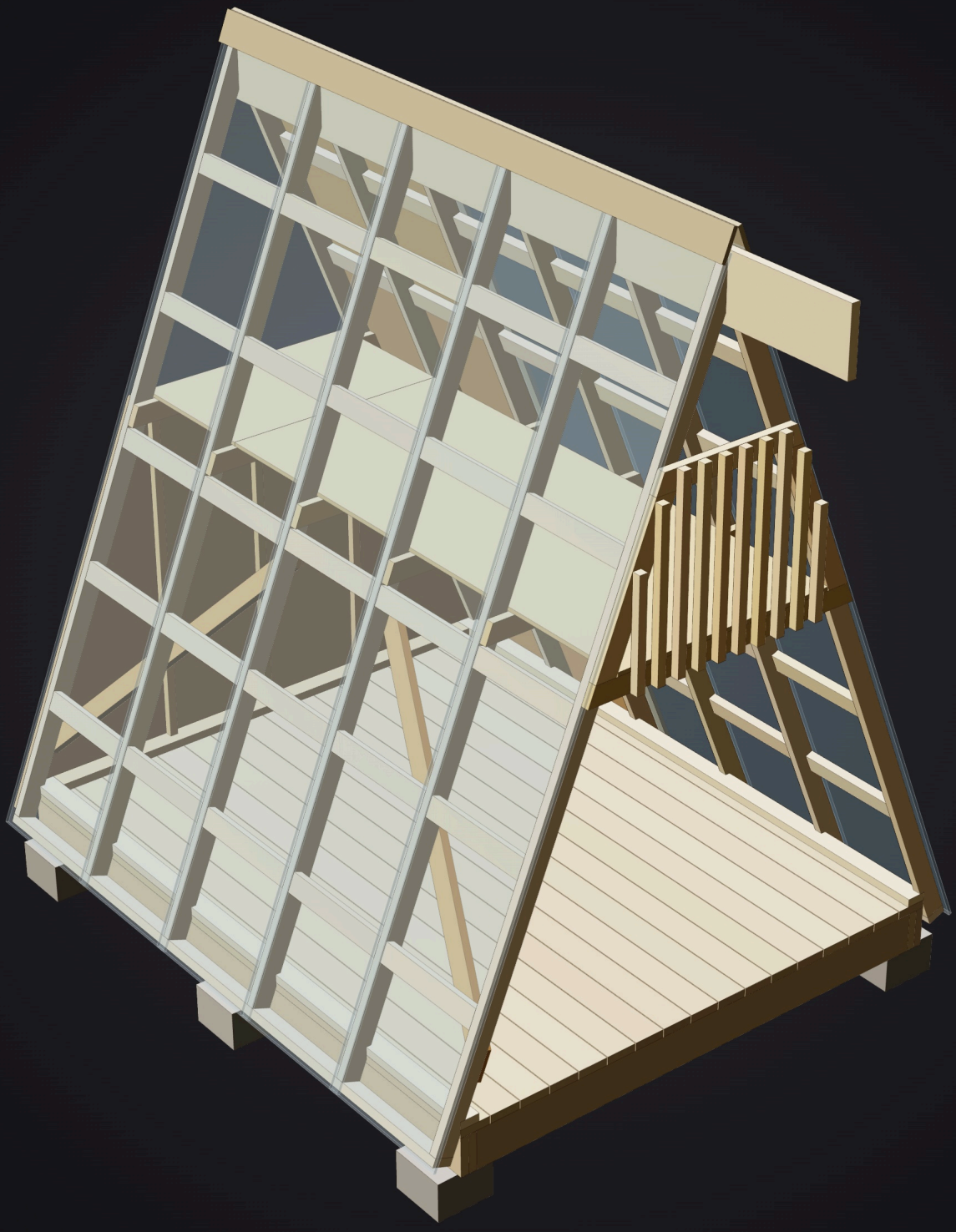
Kids' A-Frame Playhouse

A bright, see-through hideout with a loft up top and a climbing wall to reach it.



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Read this first

Same floor and 30:12 frame as Version A, with PolyCarb sides, a full-depth loft and a climbing wall at the back. Every length, count and screw comes from one 3D model, so the drawings, lists and steps agree with each other. Work through the stages in order and tick the boxes as you go.

What's decided, what's proposed

	Item
You decided	PolyCarb on the left side and the front of the right side; plywood behind. Loft 5'-4" clear, full 10' deep, built from untreated 2×4s on the rafters with a plywood floor. Banister at the front: vertical slats with a rail across. Back of the loft open. Plywood back wall with climbing holds. No ladder or trap door.
Proposed here	Right side switches to plywood on the centre of **RR4** (6' poly, 4' plywood; there's no rafter at the exact middle). 2×2 slats and a 2×4 rail at 29". Two 2×4 braces inside the left side. ¾" plywood for the climbing wall and loft floor. 1×6 ridge cap. Grab handles at the loft entry.
Still open	Engineer review of the whole frame. Safety surfacing behind the climbing wall (priced separately). Pulley on the ridge overhang (not designed: hang nothing there).

Before you dig

1 ☐ **Call Dig Safe at 811** (or 888-344-7233) at least 72 business hours before digging. Massachusetts law requires it even on your own property.

2 ☐ **Ask the Pembroke Building Department** whether a permit is needed and what setbacks apply. Not verified for Pembroke.

3 ☐ **Plan the fall zone.** The loft entry is 6'-8¼" above the ground. Keep 6' clear behind and beside the climbing wall and fill it with loose-fill surfacing (CPSC: at least 9" of wood chips once packed down, so about 12" to start).

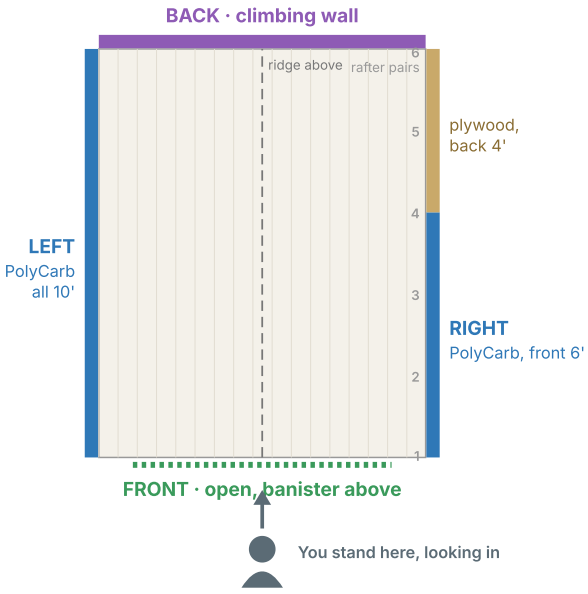
How long it takes

Roughly **four weekends for two people** with ordinary DIY experience: one for the foundation, floor and decking, one for the ridge and both wall frames, one for the braces, loft, banister and climbing wall, and one for the PolyCarb, cap, paint and checks. Each stage lists its own time and helpers. These are estimates; the first stage usually takes longest.

Safety Wear safety glasses and hearing protection when cutting, and a dust mask for pressure-treated wood. Keep kids off the frame until the banister and the back wall are finished. Setting the ridge takes two adults on ladders. Cut PolyCarb with a fine-tooth blade, and wear gloves: cut edges are sharp.

How to read this booklet

Which way is which

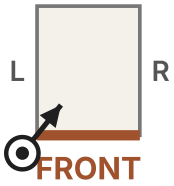


Left and **right** are always as you stand at the open front, looking in. The **front** is the open end with the banister up top; the **back** is the climbing wall.

The left side is PolyCarb all the way. The right side is PolyCarb for its front 6' and plywood for its back 4'.

Drawings of a side **seen from outside** flip things: on the left side the front is on your right, on the right side the front is on your left. Those drawings say so in their titles.

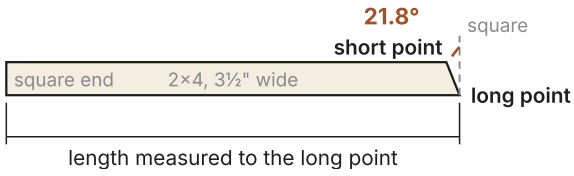
Every 3D view has a small plan in its top corner like the one below: the eye shows where you're looking from.



Reading the 3D views

Each stage opens with a 3D view of the build at the end of that stage. **Grey** parts are already done. **Coloured** parts are what you add in this stage, and each colour matches its label. Later parts aren't shown.

Terms used for cuts



Square: a cut at 90° to the edge. Most cuts are square.

21.8° off square: the cut is tilted 21.8° from a square cut. That's the angle of the walls (30:12). On a miter saw, set the **miter** to 21.8°; the 22½° stop is close enough (within 1/16" across a 2×4). With a speed square, use the 22° mark.

Long point / short point: an angled cut makes one edge longer. Lengths in this booklet are measured on the edge named, from a square end or from long point to long point.

Rip: cut along the length (making a board narrower). **Cross-cut:** cut across it (making it shorter).

Lumber sizes are nominal

Called	Actually
2×2	1½" × 1½"
2×4	1½" × 3½"
2×6	1½" × 5½"
2×8	1½" × 7¼"
2×12	1½" × 11¼"
1×4 / 1×6	¾" × 3½" / ¾" × 5½"
15/32" and 23/32" plywood	sold as ½" and ¾"

Part key

Every piece has an ID, and the drawings, cut list and steps all use the same IDs. Numbers run front to back (1 is the front) and, for blocks, row then bay: **BK32** is the 3rd row up, 2nd bay from the front.

IDs	Part	Qty	Material	Stage
DB1–DB6	Deck blocks (bought, not cut)	6	Concrete deck block	1
SB-L1, **SB-L2**, **SB-R1**, **SB-R2**	Side beam plies	4	2×8 PT ground contact	2
ER-B, **ER-F**	End rims	2	2×8 PT ground contact	2
J1–J4	Floor joists	4	2×8 PT ground contact	2
D01–D17	Deck boards	17	2×6 PT above ground	3
BP-L, **BP-R**	Bottom plates	2	2×4 PT ground contact	4
RG	Ridge	1	2×12 untreated	4
RL1–RL6, **RR1–RR6**	Rafters	12	2×4 untreated	6
FS-L, **FS-R**	Fascia boards	2	2×4 PT ground contact	6
BK11–BK15, **BK21–BK25**, **BK31–BK35**, **BK41–BK45**, **BK51–BK55**, **BR11–BR15**, **BR21–BR25**, **BR31–BR35**, **BR41–BR45**, **BR51–BR55**	Blocks	50	2×4 untreated, flat	6
SB1–SB6	Right-side plywood (15/32")	6	15/32" plywood	8
BRC-1, **BRC-2**	Left-side braces	2	2×4 untreated, flat	8
LJ1–LJ6	Loft joists	6	2×4 untreated	9
FL1, **FL2**	Loft floor (¾" plywood)	2	23/32" plywood	9
ST-L, **ST-R**	Banister stringers	2	2×4 (reused kicker)	10
BS1–BS10	Banister slats	10	2×2 untreated	10
HR	Banister rail	1	2×4 (reused kicker)	10
BP-B	Back plate	1	2×4 PT ground contact	11
BW1–BW3	Back-wall studs	3	2×4 (reused kicker)	11
BH	Back-wall header	1	2×4 (reused ridge post)	11
BWP-C, **BWP-L**, **BWP-R**	Climbing-wall plywood (¾")	3	23/32" plywood	11
PL1–PL5, **PR1–PR3**	PolyCarb panels (smoke)	8	Tuftex PolyCarb 26" × 12', smoke	12
BT	Joint batten	1	1×4 PT	12
CP-L, **CP-R**	Ridge cap boards	2	1×6 PT	12
TP1, **TP2**	Temporary ridge posts (removed in stage 8)	2	2×4 untreated	4
TK1–TK6	Temporary kickers (removed in stage 8)	6	2×4 untreated	4

IDs	Part	Qty	Material	Stage
TC1–TC4	Ridge cradle cleats (removed in stage 8)	4	2×4 untreated	4

Tip **Label every piece as you cut it.** Write the ID on a strip of painter's tape on a face that ends up hidden, and stack the pieces by stage. With 154 pieces, this saves more time than anything else in the booklet.

Glossary

Birdsmouth	The notch near the bottom of each rafter that hooks over the bottom plate.
Block	A short 2×4 laid flat between two rafters. The rows stiffen the wall and back the PolyCarb and plywood screws.
Closure strip	A wavy foam or wood strip that fills the corrugations under PolyCarb at the eave and ridge.
Counterbore	A shallow, wider hole so a screw head sits below the surface.
Crown	The slight arch you see when you sight down a board. Install it facing up.
Fascia	The 2×4 across the bottom ends of the rafters (**FS-L**, **FS-R**).
Ground contact	The heavier grade of pressure-treated lumber, for parts near the ground.
Joist / rim	Floor framing members running side to side. The rims are at the very front and back.
Kicker	A temporary diagonal brace from a post down to the deck.
Pilot hole	A small hole drilled first so a screw doesn't split the wood.
Plumb / level	Exactly vertical / exactly horizontal.
Pressure-treated (PT)	Lumber treated against rot. Used for everything near the ground and for trim that sees rain.
Ridge	The board along the peak that the rafters lean against (**RG**).
T-nut	A threaded insert hammered into the back of the climbing wall. The hold bolts screw into it.
Toe-screw	A screw driven at an angle through the side of one board into another.

The build at a glance

1
Site and foundation
Deck blocks on paver base
2 people · 1 day · p. 30

2
Floor frame
Beams, rims, joists, anchors
2 people · ½–1 day · p. 33

3
Decking
17 boards
1–2 people · ½ day · p. 36

4
Plates and ridge
Ridge on temporary posts
2 people · ½ day · p. 38

5
Cut the rafters
One pattern, 12 copies
1 people · ½ day · p. 41

6
Left wall frame
Rafters, fascia, blocks
2 people · ½–1 day · p. 43

7
Right wall frame
Mirror of the left
2 people · ½ day · p. 46

8
Brace and plywood
Braces, right-back plywood, posts out
2 people · ½ day · p. 48

9
Loft
Joists and floor
2 people · ½ day · p. 50

10
Banister
Stringers, slats, rail
1 people · ½ day · p. 52

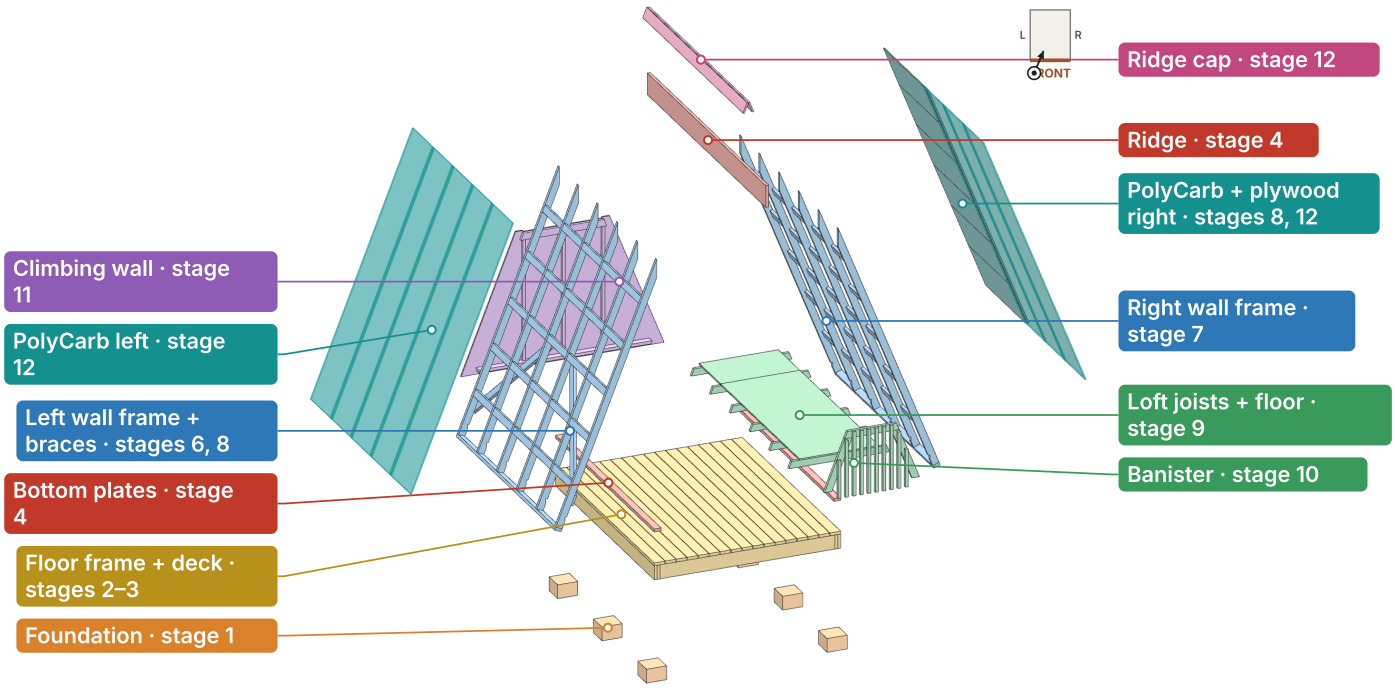
11
Climbing wall
Plate, studs, header, plywood
2 people · 1 day · p. 54

12
PolyCarb and cap
Panels, batten, ridge cap
2 people · 1 day · p. 57

13
Finish
Holds, handles, paint, checks
1–2 people · ½–1 day · p. 60

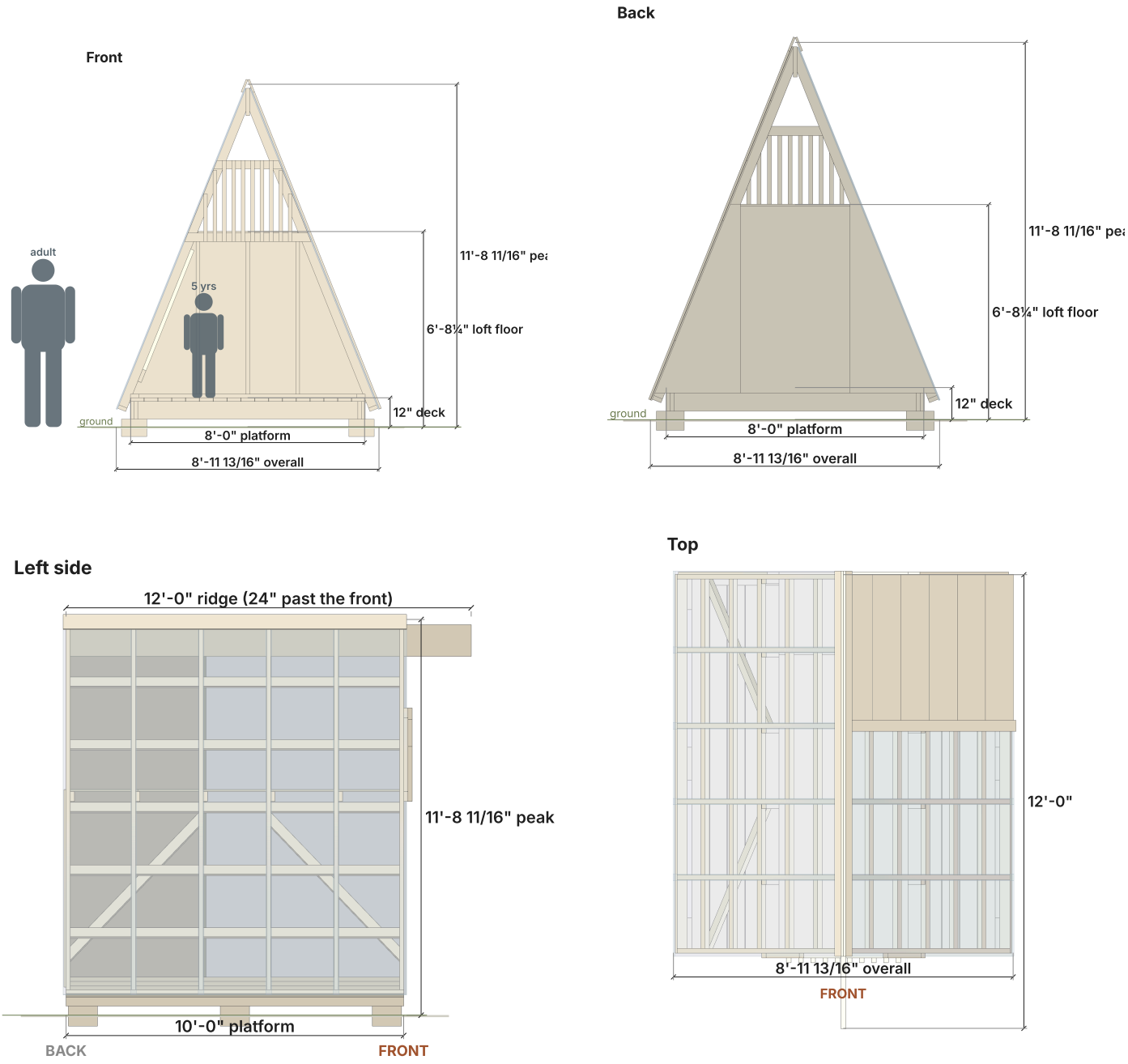
How it goes together

The exploded view pulls the playhouse apart by stage. Each colour is one stage or group of stages.



Overall views and sizes

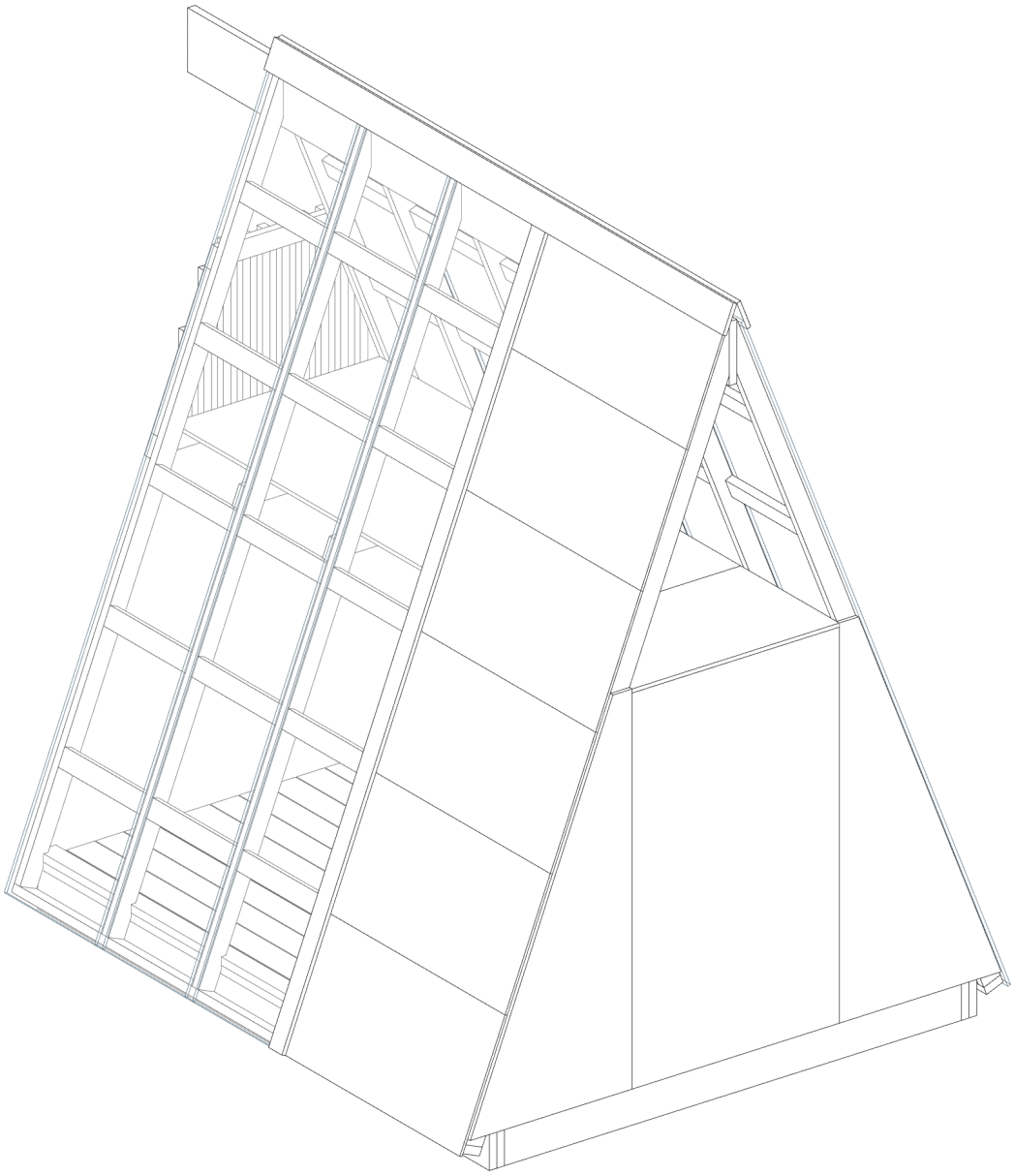
Finished playhouse with every part, seen square-on. Heights are from the ground, with the deck top 12" up. The figures are a 5-year-old (about 3'-7") and an adult (5'-9").



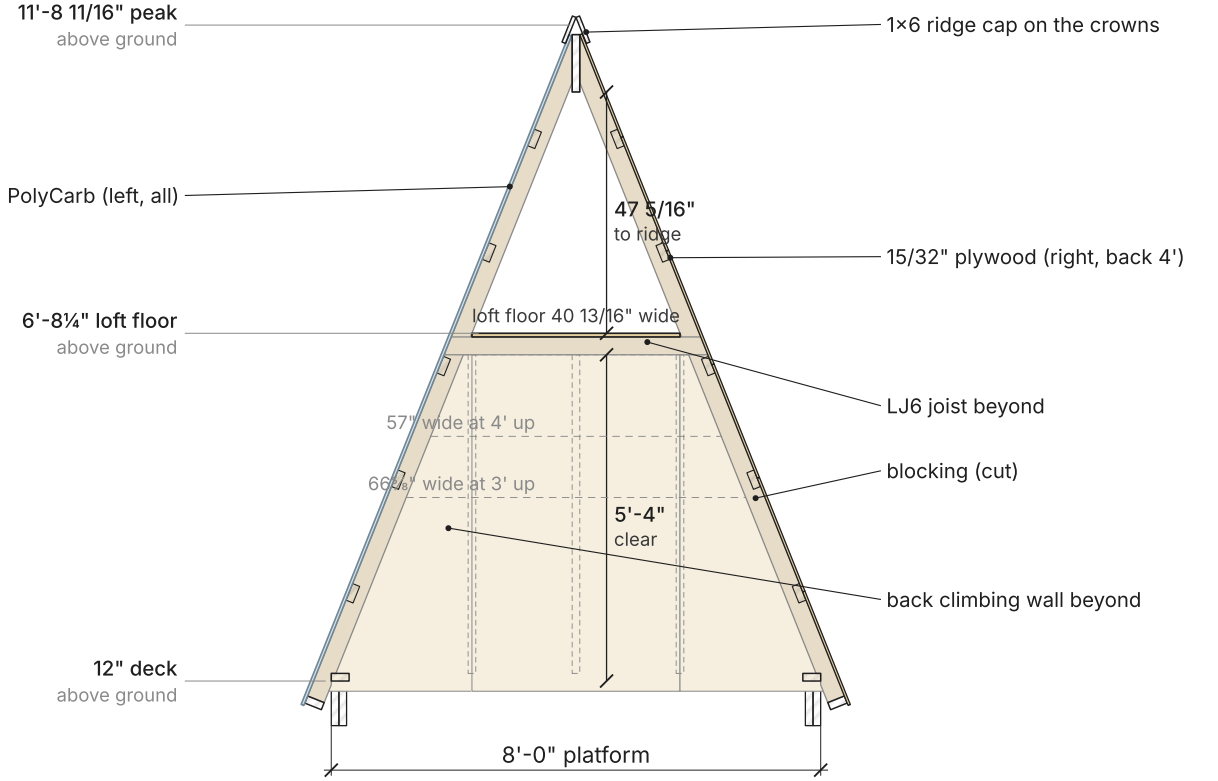
The right side looks like the left side mirrored, with plywood on its back 4'. All drawings to the same scale except the top view.

From the back

The climbing wall, the open loft entry above it, and the plywood on the back 4' of the right side.



Section just behind RL5 / RR5 looking toward the back



Version B — section through the loft	Ver B · proposed	Sheet B1

Section through the loft. Heights above the ground assume the deck top 12 inches up.

Tools

Check these off before you start. Each stage also lists the tools it needs.

Cutting

Stages 1–12

- [ ] Circular saw with a sharp framing blade
- [ ] Miter saw (optional; makes the 21.8° cuts easy)
- [ ] Handsaw (finishing the rafter notches)
- [ ] Fine-tooth plywood blade (for PolyCarb, mounted backwards) or snips
- [ ] Straightedge guide for rips, or a table saw

Drilling and driving

Stages 2–13

- [ ] Drill and impact driver
- [ ] T25 bit, ¼" hex bit, the bit in the TimberLOK box, hex socket for Tuftex screws
- [ ] Drill bits: 5/32", 5/16", ½" × 6" or longer, 1" spade bit, the T-nut size from the hold kit

Measuring and layout

Stages 1–12

- [ ] 25' tape, pencil, speed square, framing square
- [ ] 4' level, torpedo level, a long straight 2×4
- [ ] Chalk line, string line, stakes
- [ ] Story pole (a marked scrap 2×4) for the loft height

Holding and reaching

Stages 2–12

- [ ] 2 bar clamps (24" or longer)
- [ ] 2 sawhorses
- [ ] Two 6' stepladders

Site work

Stages 1, 13

- [ ] Shovel, flat spade, hand tamper, loppers, wheelbarrow, rake

Finishing

Stages 11–13

- [ ] Caulk gun
- [ ] Sander or sandpaper, router with roundover bit (optional)
- [ ] Brushes and rollers

Safety

Stages every stage

- [ ] Safety glasses, hearing protection, dust mask, work gloves

Treated or untreated?

	Parts	Why
Pressure-treated, ground contact	Side beams SB, end rims ER, joists **J1–J4**, bottom plates **BP-L**/**BP-R** and **BP-B**, fascia FS	Near the ground or on the deck where water sits, and hard to replace later.
Pressure-treated, above ground or better	Deck boards **D01–D17**, batten **BT**, ridge cap CP	Rained on but never touching the ground.
Untreated is fine	Rafters, blocks, ridge, loft, banister, back-wall framing, braces, plywood, temporary supports	Off the ground. Prime and paint every face, cut end and notch.

Cost estimate

Everything in the shopping list, priced from lowes.com on October 16, 2026. The website showed prices for other Lowe's stores, not Pembroke, so each line uses the lowest and highest price seen. Check Pembroke prices in the app before you buy.

	Low–high
Lumber	$726.44–$1,111.32
Sheet goods	$186.86–$203.68
Roofing	$358.74–$374.74
Hardware	$327.28
Foundation	$145.70
Play	$71.37–$130.97
Subtotal	**$1,816.39–$2,293.69**
MA sales tax 6.25%	$113.52–$143.36
Total, paying normally	**$1,929.91–$2,437.05**
Lowe's card: 5% off	–$90.82–$114.68
MA sales tax on the discounted price	$107.85–$136.19
Total with your Lowe's card	**$1,833.42–$2,315.19**

Your Lowe's card

The MyLowe's Rewards credit card (and the older Lowe's Advantage Card) takes 5% off eligible purchases, applied after any other discount. For each purchase you choose either the 5% off or special financing (6 months on $299 or more), not both. Massachusetts tax is charged on the price after the discount. On this build the 5% is worth about $90.82–$114.68. Items sold by marketplace sellers on lowes.com (the climbing holds and handles here) may not count as eligible.

Recommended, priced separately

Qty	Item	Why	Cost
62	Playground mulch, 2 cu ft bag	About 124 sq ft behind and beside the climbing wall, 12" deep (CPSC loose-fill guidance)	$246.76

Not included anywhere: paint and primer, a fine-tooth blade for the PolyCarb, tools you don't own, and delivery. Lines marked as allowances are estimates, not Lowe's prices.

Shopping list

Quantities are counted from the model. Prices are per item, low–high as seen on lowes.com. Ask for straight boards and sight down each one.

Lumber and sheet goods

Qty	What	Lowe's listing	Used for	Each	Line
4	2×8×10 PT ground contact	Severe Weather #2 Prime SYP, Item #286392	1 side beam ply each (120")	$18.48–$25.49	$73.92–$101.96
6	2×8×8 PT ground contact	Severe Weather #2 Prime SYP, Model OG2P20808-AG	1 end rim or joist each (90")	$13.68–$25.08	$82.08–$150.48
17	2×6×10 PT above ground	Severe Weather #2 Prime SYP, Item #197849	1 deck board each (120")	$12.78–$24.58	$217.26–$417.86
5	2×4×10 PT ground contact	Severe Weather 2×4×10 #2 Prime SYP, ground contact	1 bottom plate or fascia each (120"); 1 more for **BP-B** (89")	$8.08–$9.98	$40.40–$49.90
12	2×4×12 untreated	Top Choice fir, kiln-dried, Item #432481	1 rafter each	$8.92–$12.52	$107.04–$150.24
13	2×4×10 untreated	Top Choice fir, kiln-dried, Item #432480	1 row of 5 blocks each (10); 2 loft joists each (3)	$7.72	$100.36
1	2×12×14 untreated	#2 Prime SYP, kiln-dried, Item #86155	Ridge (144")	$11.98–$47.12	$11.98–$47.12
2	2×4×10 untreated (temporary, then reused)	Top Choice fir, kiln-dried, Item #432480	Ridge posts first. Then header **BH** from one	$7.72	$15.44
6	2×4×8 untreated (temporary, then reused)	2×4×96" kiln-dried #2 stud, Item #6005	Kickers first. Then studs **BW1**–3 (one each), **ST-L** + **ST-R** (one), **HR** (one); one spare	$4.25	$25.50
2	2×4×8 untreated	2×4×96" kiln-dried #2 stud, Item #6005	1 brace each (**BRC-1**, **BRC-2**)	$4.25	$8.50
4	2×2×8 untreated	not recorded: search the size in the app	**BS3**–8 × 2 + **BS1** (×2 boards); **BS3**–8 × 2; **BS2** + **BS9**	$3.48	$13.92
1	1×4×12 PT	not recorded: search the size in the app	Joint batten **BT**	$7.68	$7.68
2	1×6×12 PT	not recorded: search the size in the app	Ridge cap **CP-L**, **CP-R**	$11.18	$22.36
3	23/32" (¾") × 4×8 plywood sheathing	not recorded: search the size in the app	Loft floor **FL1**, **FL2**; back wall BWP	$43.70–$45.24	$131.10–$135.72
2	15/32" × 4×8 plywood sheathing	Plytanium 15/32" rated pine sheathing	Right side, back 4' (**SB1–SB6**)	$27.88–$33.98	$55.76–$67.96

Roofing

Qty	What	Used for	Each	Line
8	Tuftex PolyCarb 2.17' × 12' corrugated, smoke	Left side **PL1–PL5**, right front **PR1–PR3**	$37.98–$39.98	$303.84–$319.84
9	Tuftex 48" wood closure strip (fits PolyCarb)	Eave and under the ridge cap, paint white	$2.24	$20.16

Roofing (continued)

Qty	What	Used for	Each	Line
3	Clear exterior silicone, 10.1 oz (GE Advanced Silicone 2)	PolyCarb side laps and the batten joint	$11.58	$34.74

Hardware

Qty	What	Listing / count	Each	Line
1	FastenMaster TimberLOK 6" structural screws, 50-pack	Model FMTLOK06-50. **44** needed	$49.98	$49.98
8	Simpson LUS28Z ZMAX joist hanger, 2×8	Model LUS28Z. **8** needed	$3.16	$25.28
1	Simpson Strong-Drive SD #9 × 1½", 100-pack	Model SD9112R100. **48** needed	$18.32	$18.32
1	Simpson Strong-Drive SD #9 × 2½", 100-pack	Model SD9212R100-R. **32** needed	$29.56	$29.56
1	Deck Plus #10 × 2½" deck screws, 365-pack (5 lb)	Deck Plus 5 lb. **166** needed	$29.98	$29.98
2	Deck Plus #10 × 3" deck screws, 310-pack (5 lb)	Model 48419. **440** needed	$29.98	$59.96
1	Deck Plus #10 × 3½" deck screws, 275-pack (5 lb)	Model 48422. **124** needed	$29.98	$29.98
1	Deck Plus #8 × 2" deck screws, 625-pack (5 lb)	Model 48400 / 48414. **308** needed	$32.98	$32.98
7	Tuftex #10 × 2" hex-head screws with EPDM washer, 50-count	Item #749967, Model 849. **280** needed	$7.32	$51.24

Foundation and play

Qty	What	Used for	Each	Line
6	Concrete deck block (Model 403216)	Foundation	$8.78	$52.68
7	Paver base, 0.5 cu ft bag (Item #384156)	4" tamped pad under each block	$3.92	$27.44
1	Arrow AK4 auger anchor kit	Corner tie-downs	$65.58	$65.58
1	Climbing-hold kit, 25–32 holds with T-nuts and bolts	Back wall (needs ¾" plywood)	$41.37–$44.99	$41.37–$44.99
1	Playset safety handles, pair (allowance)	Loft entry, on **RL6** / **RR6**	$30.00–$85.98	$30.00–$85.98

Screw boxes include about 10% spare. The two temporary ridge posts and six kickers are reused: after the frame is up they become the back-wall studs and header, the banister stringers and the rail. The climbing-hold kit must include T-nuts and bolts (or be screw-on holds rated for ¾" plywood). Both hold kits and the handles were out of stock online on October 16: check before you plan around them.

Cut list

Finished lengths, measured from a square end. Square one factory end first. Write each piece's ID on it as you cut.

Floor and frame

IDs	Part	Qty	From	Length	Notes
SB-L1, SB-L2, SB-R1, SB-R2	Side beam plies	4	2×8 PT ground contact	**10'-0"**	Square both ends
ER-F, ER-B	End rims	2	2×8 PT ground contact	**7'-6"**	Square both ends
J1–J4	Joists	4	2×8 PT ground contact	**7'-6"**	Square both ends
D01–D17	Deck boards	17	2×6 PT above ground	**10'-0"**	Square both ends
RL1–RL6 / RR1–RR6	Rafters	12	2×4 untreated	**11'-7¾"**	Birdsmouth + top plumb cut (see Cut Sheet)
BP-L, BP-R	Bottom plates	2	2×4 PT ground contact	**10'-0"**	Square both ends
FS-L, FS-R	Fascia (tail boards)	2	2×4 PT ground contact	**10'-0"**	Square both ends
BK/BR x1, x5	Blocks, end bays	20	2×4 untreated	**1'-9¾"**	Square both ends
BK/BR x2–x4	Blocks, middle bays	30	2×4 untreated	**1'-10½"**	Square both ends
RG	Ridge board	1	2×12 untreated	**12'-0"**	Square both ends
TP1, TP2	Temporary ridge posts	2	2×4 untreated	**9'-7 9/16"**	Square both ends
TK1–TK6	Temporary kickers	6	2×4 untreated	**7'-1½"**	Cut long, trim to fit
TC1–TC4	Ridge cradle cleats	4	2×4 untreated	**9¾"**	From kicker offcuts

Loft and banister

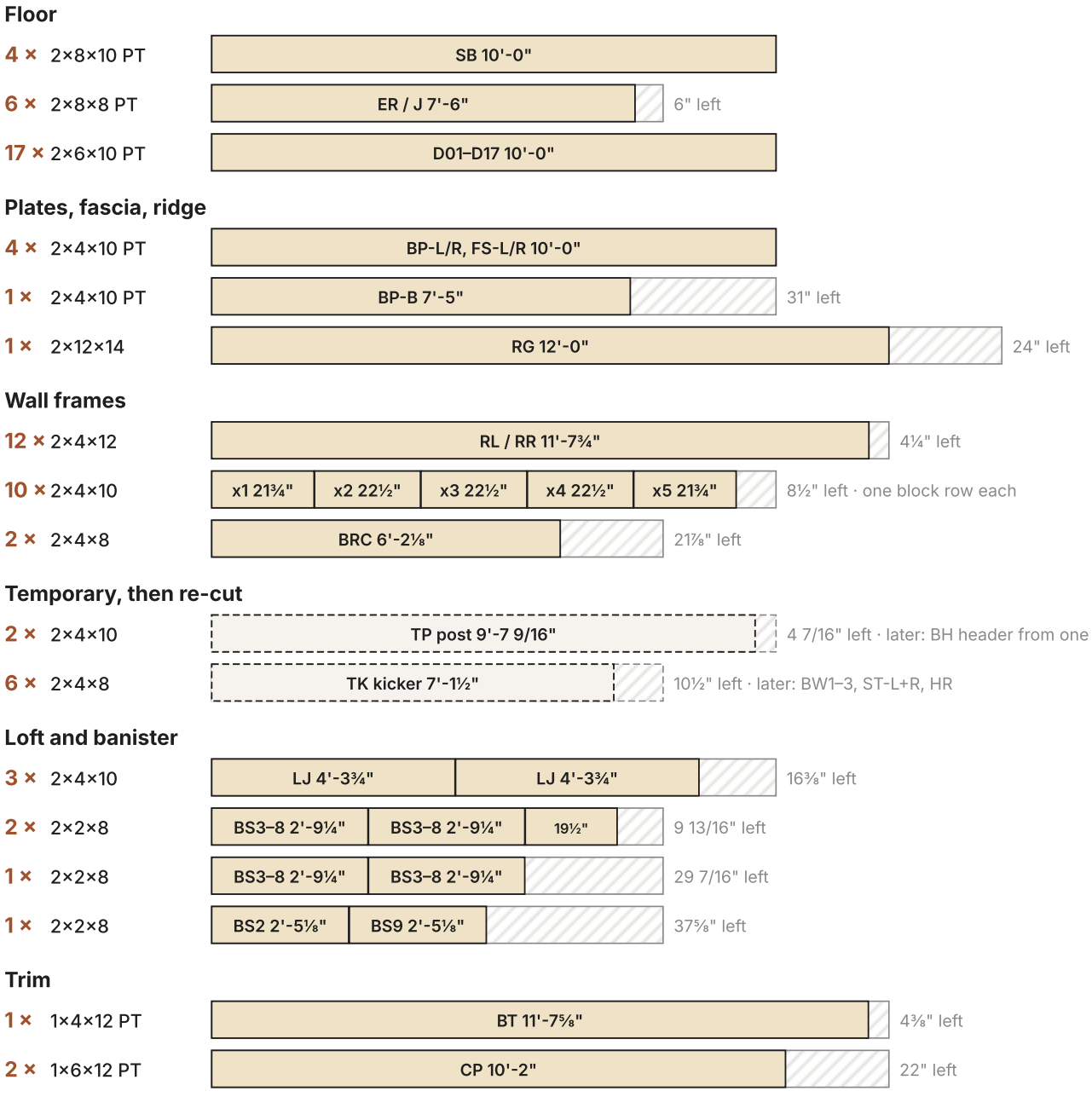
IDs	Part	Qty	From	Length	Notes
LJ1–LJ6	Loft joists	6	2×4 untreated	**4'-3¾"**	Both ends 21.8° off square (long point at the bottom edge)
ST-L, ST-R	Barrier stringers	2	2×4 (reused kicker)	**2'-4¼"**	Both ends 21.8° off square, parallel
BS1, BS10	Barrier slats	2	2×2 untreated	**1'-7½"**	Square both ends
BS2, BS9	Barrier slats	2	2×2 untreated	**2'-5⅛"**	Square both ends
BS3–BS8	Barrier slats	6	2×2 untreated	**2'-9¼"**	Square both ends
HR	Banister rail	1	2×4 (reused kicker)	**2'-3 15/16"**	Both ends 21.8° off square, like **LJ1** (long point at the bottom edge)

Back wall, cladding, braces

IDs	Part	Qty	From	Length	Notes
BP-B	Back plate	1	2×4 PT ground contact	**7'-5"**	Square both ends
BW1–BW3	Back-wall studs	3	2×4 (reused kickers)	**5'-2½"**	Square both ends
BH	Back-wall header	1	2×4 (reused ridge post)	**3'-8 3/16"**	Both ends 21.8° off square, long point at the bottom
PL1–PL5, PR1–PR3	PolyCarb panels	8	Tuftex PolyCarb 12' smoke	**11'-9 7/16"**	Cut the top end; **PR3** also ripped to 25" wide
BT	Joint batten	1	1×4 PT	**11'-7⅝"**	Square both ends
CP-L, CP-R	Ridge cap boards	2	1×6 PT	**10'-2"**	Square both ends; bevel the top edges to meet (about 22°)
BRC-1, BRC-2	Left-side braces	2	2×4 untreated	**6'-2⅛"**	Both ends 41.7° off square, parallel

What to cut from each board

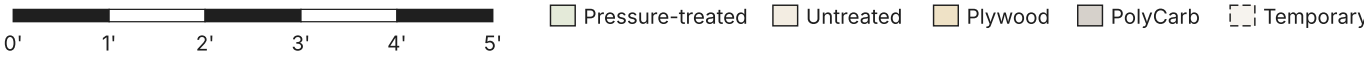
Each bar is one board you buy, drawn to scale. The number on the left is how many boards get that same pattern. Hatched ends are offcuts. Dashed boards are temporary supports that get re-cut later.



Every piece, laid out

All 154 cut pieces, grouped by part and drawn to the same scale, so you can lay out and check off each board after cutting. Shapes match the cut list.

Drawn to scale: ½" = 1 ft when printed at 100% (Actual size / 24). Every piece is shown, not just one of each.



Side beam plies · 4 pieces · 2×8 PT ground contact

10'-0"



☐ SB-L1



☐ SB-L2



☐ SB-R1



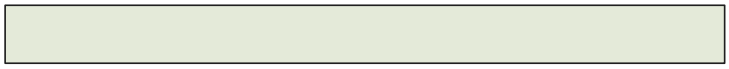
☐ SB-R2

End rims · 2 pieces · 2×8 PT ground contact

7'-6"



☐ ER-B



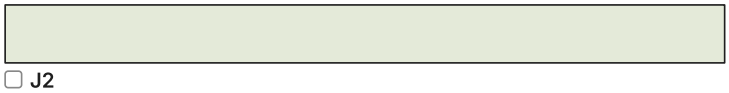
☐ ER-F

Floor joists · 4 pieces · 2×8 PT ground contact

7'-6"



☐ J1



☐ J2



☐ J3



☐ J4

Deck boards · 17 pieces · 2×6 PT above ground

10'-0"



- [ ] D01



- [ ] D02



- [ ] D03



- [ ] D04



- [ ] D05



- [ ] D06



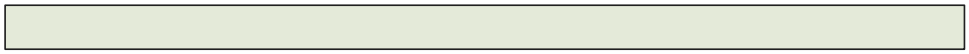
- [ ] D07



- [ ] D08



- [ ] D09



- [ ] D10



- [ ] D11



- [ ] D12



- [ ] D13



- [ ] D14



- [ ] D15



- [ ] D16



- [ ] D17

Bottom plates · 2 pieces · 2×4 PT ground contact

10'-0"



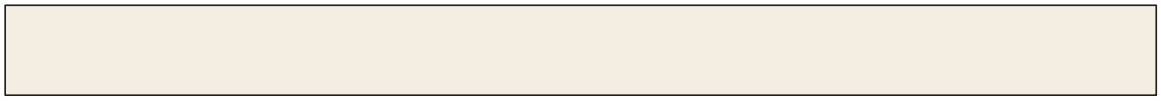
- [ ] BP-L



- [ ] BP-R

Ridge · 1 piece · 2×12 untreated

12'-0"



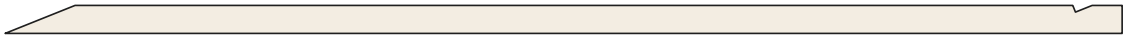
- [ ] RG

Rafters · 12 pieces · 2×4 untreated

11'-7¾" long point, birdsmouth



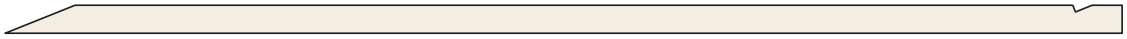
- [ ] RL1



- [ ] RL2



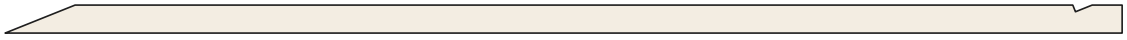
- [ ] RL3



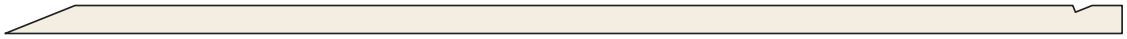
- [ ] RL4



- [ ] RL5



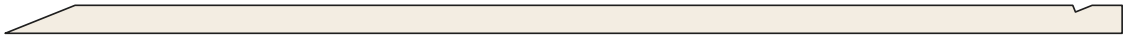
- [ ] RL6



- [ ] RR1



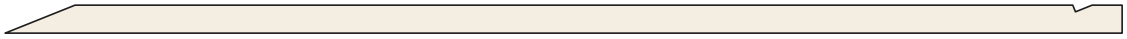
- [ ] RR2



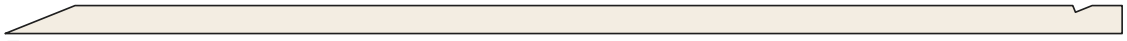
- [ ] RR3



- [ ] RR4



- [ ] RR5



- [ ] RR6

Fascia boards · 2 pieces · 2×4 PT ground contact

10'-0"



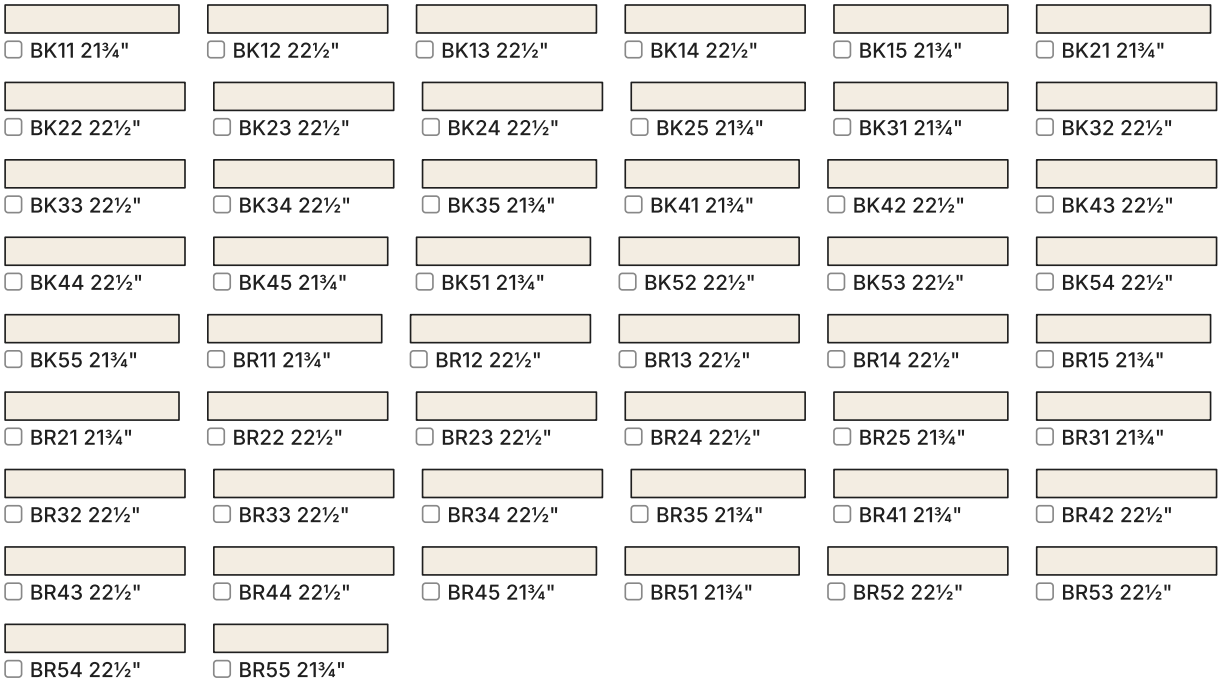
- [ ] FS-L



- [ ] FS-R

Blocks · 50 pieces · 2×4 untreated, flat

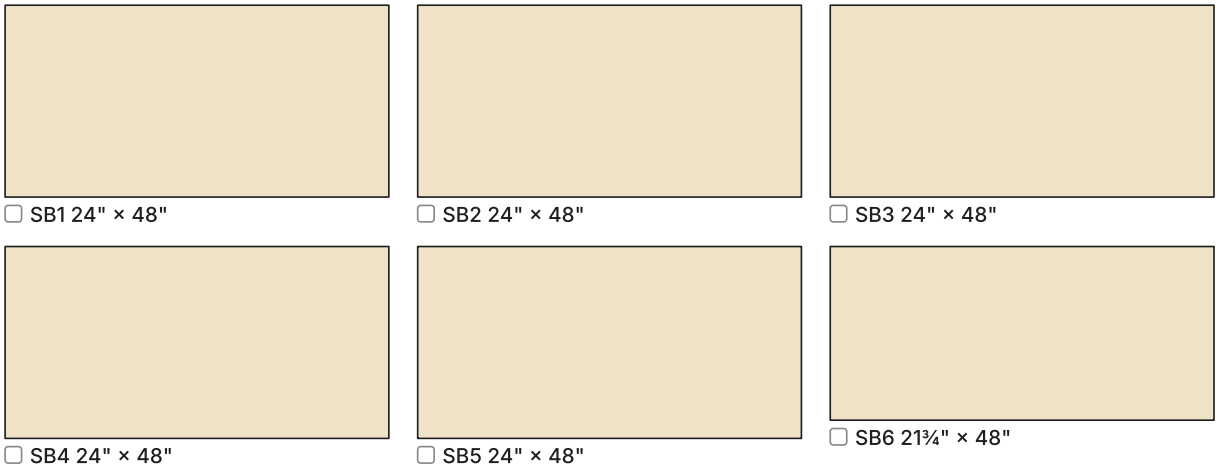
21¾" (20) · 22½" (30)



- [ ] BK11 21¾"
- [ ] BK12 22½"
- [ ] BK13 22½"
- [ ] BK14 22½"
- [ ] BK15 21¾"
- [ ] BK21 21¾"
- [ ] BK22 22½"
- [ ] BK23 22½"
- [ ] BK24 22½"
- [ ] BK25 21¾"
- [ ] BK31 21¾"
- [ ] BK32 22½"
- [ ] BK33 22½"
- [ ] BK34 22½"
- [ ] BK35 21¾"
- [ ] BK41 21¾"
- [ ] BK42 22½"
- [ ] BK43 22½"
- [ ] BK44 22½"
- [ ] BK45 21¾"
- [ ] BK51 21¾"
- [ ] BK52 22½"
- [ ] BK53 22½"
- [ ] BK54 22½"
- [ ] BK55 21¾"
- [ ] BR11 21¾"
- [ ] BR12 22½"
- [ ] BR13 22½"
- [ ] BR14 22½"
- [ ] BR15 21¾"
- [ ] BR21 21¾"
- [ ] BR22 22½"
- [ ] BR23 22½"
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- [ ] BR25 21¾"
- [ ] BR31 21¾"
- [ ] BR32 22½"
- [ ] BR33 22½"
- [ ] BR34 22½"
- [ ] BR35 21¾"
- [ ] BR41 21¾"
- [ ] BR42 22½"
- [ ] BR43 22½"
- [ ] BR44 22½"
- [ ] BR45 21¾"
- [ ] BR51 21¾"
- [ ] BR52 22½"
- [ ] BR53 22½"
- [ ] BR54 22½"
- [ ] BR55 21¾"

Right-side plywood (15/32") · 6 pieces · 15/32" plywood

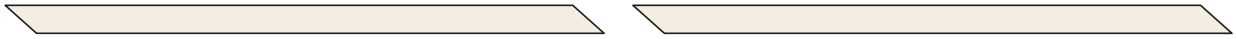
24" × 48" (5) · 21¾" × 48" (1)



- [ ] SB1 24" × 48"
- [ ] SB2 24" × 48"
- [ ] SB3 24" × 48"
- [ ] SB4 24" × 48"
- [ ] SB5 24" × 48"
- [ ] SB6 21¾" × 48"

Left-side braces · 2 pieces · 2×4 untreated, flat

6'-2⅛" long point, ends 41.7°



- ☐ BRC-1
- ☐ BRC-2

Loft joists · 6 pieces · 2×4 untreated

4'-3¾" long point, ends 21.8°



- ☐ LJ1
- ☐ LJ2
- ☐ LJ3
- ☐ LJ4
- ☐ LJ5
- ☐ LJ6

Loft floor (¾" plywood) · 2 pieces · 23/32" plywood

40 13/16" × 8'-0" (1) · 40 13/16" × 2'-2¼" (1)



- ☐ FL2 40 13/16" × 2'-2¼"
- ☐ FL1 40 13/16" × 8'-0"

Banister stringers · 2 pieces · 2×4 (reused kicker)

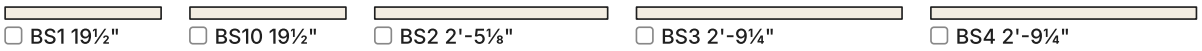
2'-4¼", ends 21.8°



- ☐ ST-L
- ☐ ST-R

Banister slats · 10 pieces · 2×2 untreated

19½" (2) · 2'-5⅛" (2) · 2'-9¼" (6)



- ☐ BS1 19½"
- ☐ BS10 19½"
- ☐ BS2 2'-5⅛"
- ☐ BS3 2'-9¼"
- ☐ BS4 2'-9¼"
- ☐ BS5 2'-9¼"
- ☐ BS6 2'-9¼"
- ☐ BS7 2'-9¼"
- ☐ BS8 2'-9¼"
- ☐ BS9 2'-5⅛"

Banister rail · 1 piece · 2×4 (reused kicker)

2'-3 15/16" long point, ends 21.8°



- ☐ HR

Back plate · 1 piece · 2×4 PT ground contact

7'-5"



☐ BP-B

Back-wall studs · 3 pieces · 2×4 (reused kicker)

5'-2½"

☐ BW1

☐ BW2

☐ BW3

Back-wall header · 1 piece · 2×4 (reused ridge post)

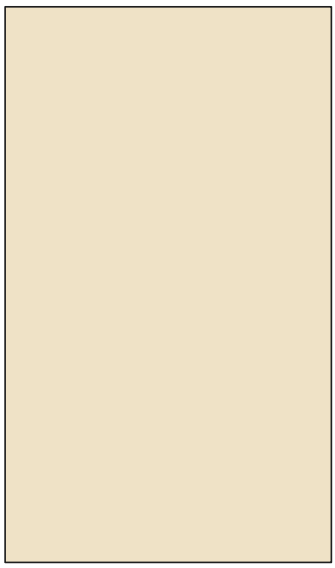
3'-8 3/16" long point, ends 21.8°



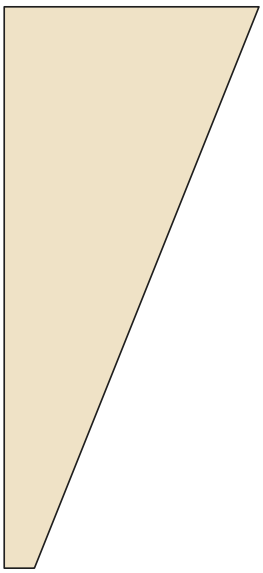
☐ BH

Climbing-wall plywood (¾") · 3 pieces · 23/32" plywood

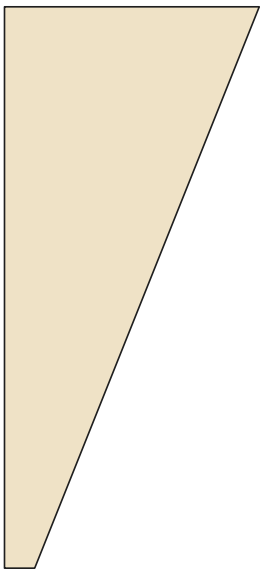
40 13/16" × 69½" (1) · 31⅞" → 3¾" × 70¼" (2)



☐ BWP-C 40 13/16" × 69½"



☐ BWP-L 31⅞" → 3¾" × 70¼"



☐ BWP-R 31⅞" → 3¾" × 70¼"

PolyCarb panels (smoke) · 8 pieces · Tuftex PolyCarb 26" × 12', smoke

26" wide × 141 7/16" (7) · 25" wide × 141 7/16" (1)



- [ ] PL1 26" wide × 141 7/16"



- [ ] PL2 26" wide × 141 7/16"



- [ ] PL3 26" wide × 141 7/16"



- [ ] PL4 26" wide × 141 7/16"



- [ ] PL5 26" wide × 141 7/16"



- [ ] PR1 26" wide × 141 7/16"

PolyCarb panels (smoke) · 8 pieces · Tuftex PolyCarb 26" × 12', smoke (continued)



☐ PR2 26" wide × 141 7/16"



☐ PR3 25" wide × 141 7/16"

Joint batten · 1 piece · 1×4 PT

11'-7⅝"



☐ BT

Ridge cap boards · 2 pieces · 1×6 PT

10'-2"



☐ CP-L



☐ CP-R

Temporary ridge posts (temporary, cut in Stage 4) · 2 pieces · 2×4 untreated

9'-7 9/16"



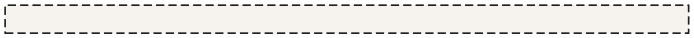
☐ TP1



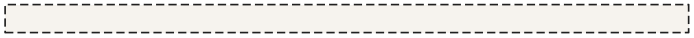
☐ TP2

Temporary kickers (temporary, cut in Stage 4) · 6 pieces · 2×4 untreated

7'-1½"



☐ TK1



☐ TK2



☐ TK3



☐ TK4



☐ TK5



☐ TK6

Ridge cradle cleats (temporary, cut in Stage 4) · 4 pieces · 2×4 untreated

9¾"



☐ TC1



☐ TC2



☐ TC3



☐ TC4

Not shown: the 6 concrete deck blocks (bought, not cut) and the hardware. Temporary supports are dashed: they come out after Stage 8 and are re-cut into the studs, header, banister stringers and rail.

Plywood and panel cutting plan

¾" (23/32") plywood: 3 sheets

Sheet	Cut	Gives
1	Rip to 40 13/16" wide (full 96" length)	**FL1**, loft floor front piece
2	Cross-cut 26¼", then rip that piece to 40 13/16". From the big offcut (48" × 69⅝") cut 40 13/16" × 69½"	**FL2** and **BWP-C**, centre of the climbing wall
3	Mark both side pieces head to toe: each is 31⅞" wide at one end, 3¾" at the other, 70¼" long. Cut the long sloped edge once to split them	**BWP-L** and **BWP-R**

Tip Mark the side pieces from the frame, not just from the numbers: hold the sheet against the back rafters and trace the outer edge. Lowe's can make the long rips so the pieces fit in the car.

15/32" plywood: 2 sheets

Rip each sheet into two 24" strips, then cut each strip in half (48"). That gives 8 pieces for 6 rows.

Piece	Height (up the slope)	Length (front to back)	Note
SB1	24"	48"	full 24" strip
SB2	24"	48"	full 24" strip
SB3	24"	48"	full 24" strip
SB4	24"	48"	full 24" strip
SB5	24"	48"	full 24" strip
SB6	21¾"	48"	rip to fit last

PolyCarb: 8 panels

Cut every panel to **141 7/16"** by trimming the top end (the end that goes under the ridge cap). Rip **PR3** down to 25" wide so it ends on the centre of **RR4**. Use a fine-tooth plywood blade mounted backwards, or snips, and support the panel close to the cut.

1 Site and foundation

Six deck blocks, each on a 4" pad of tamped paver base, all tops at exactly the same height.

Parts

DB1–DB6 deck block (6), Concrete deck block: 10⅜" × 10⅜" × 7⅛"

6 deck blocks

7 bags paver base

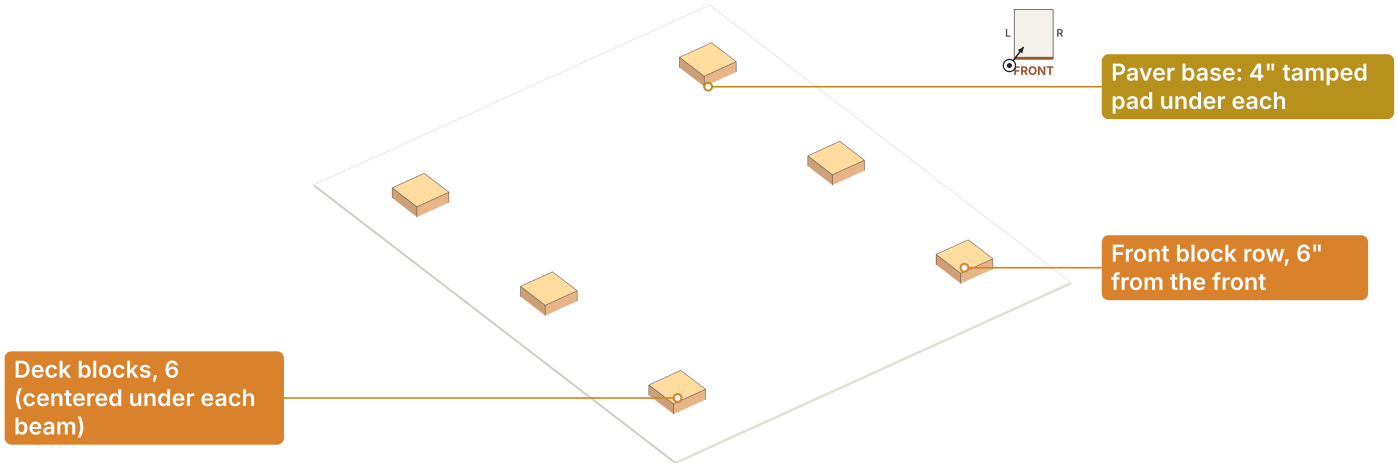
Fasteners

None

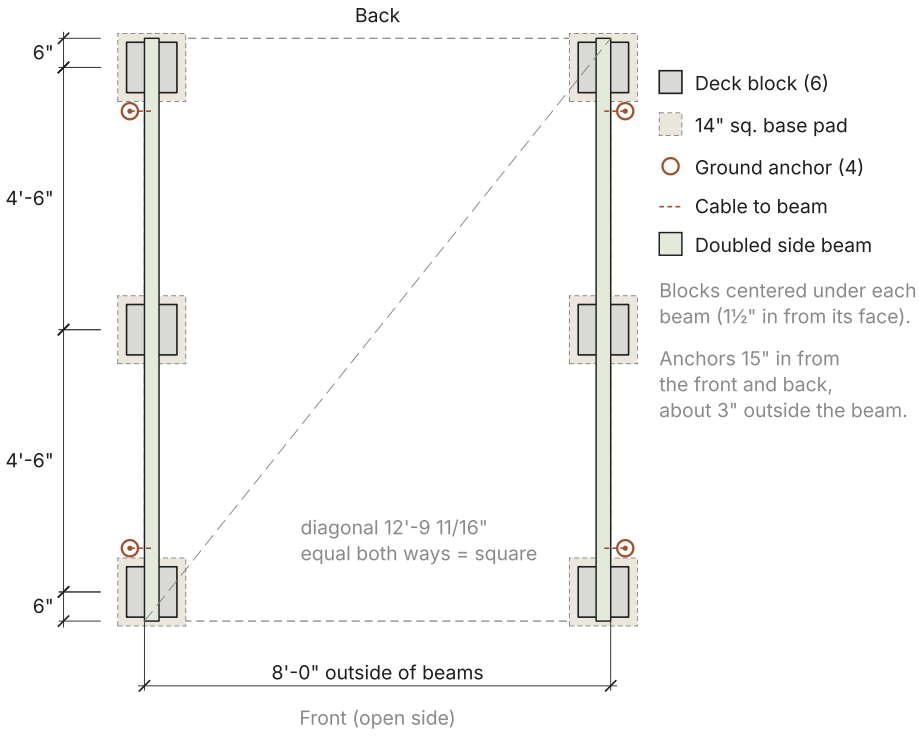
Tools

Shovel, flat spade, hand tamper, loppers, wheelbarrow, stakes and string, 25' tape, 4' level, a straight 2×4

2 people | about 1 day



Foundation plan deck blocks and ground anchors



1 ☐ **Pick the spot.** Fairly flat, not where puddles sit after rain, no stumps in the footprint, and no dead limbs overhead. Rake the leaves and sticks off the whole area.

2 ☐ **Lay out the rectangle.** Drive stakes and run string lines for the outside of the beams: 8'-0" wide by 10'-0" deep. Measure both diagonals and adjust until they match (12'-9 11/16" each).

3 ☐ **Mark the six block centers** on the strings: 1½" in from each side line, at 6", 60", 114" back from the front line.

4 ☐ **Find the high mark.** Check the ground at the six marks with a straight 2×4 and a level. The block on the highest ground goes in first and sets the height for the rest. If the ground drops more than 3" across the footprint, rake the high side down or pick a flatter spot.

5 ☐ **Dig a 14" square hole at each mark.** At the high mark go 7⅞" deep; at lower marks go shallower by as much as the ground drops. Every hole must get through the leaves, roots and dark, spongy topsoil to firm soil. If that's deeper, dig deeper and make it up with more base.

6 ☐ **Roots:** cut ones thinner than a broom handle with loppers. If you hit a thicker one, slide that hole up to 6" along the beam line rather than cutting it.

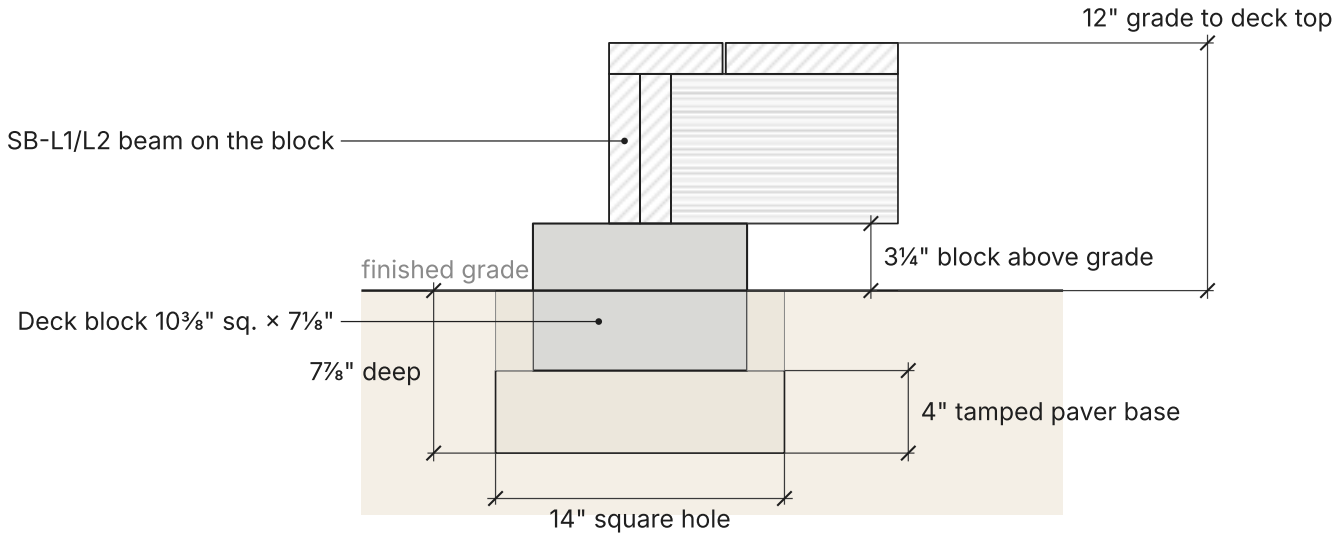
7 ☐ **Fill and tamp the base in two layers.** About 2½" loose, wet it lightly, tamp hard with the end of a 4×4 or a 2×4 scrap, then repeat until you have 4" of firm base.

8 ☐ **Set the high block first,** top 3¼" above the ground. That puts the deck top at 12" there.

9 ☐ **Set the other five level with it.** Lay a straight 2×4 with a level from block to block, front to back and side to side. Add or scrape base under a block to adjust: no wood shims or stones under a block. Lower-ground blocks stick up more; each still needs at least 2" of block below the ground.

Check All six block tops within ⅛" of each other, and the diagonals match. This is the foundation for everything above it, so take your time here.

Section through one deck block



Heads up Deck blocks sit above the frost line, so the platform can move a little in a hard winter. Check it's level each spring. If a corner has dropped, slip a pressure-treated shim between that block and the beam.

2 Floor frame

Two doubled side beams, two end rims and four joists, plus the ground anchors.

Parts

SB-L1, **SB-L2**, **SB-R1**, **SB-R2** side beam plies (4), 2×8 PT ground contact: 10'-0"

ER-B, **ER-F** end rims (2), 2×8 PT ground contact: 7'-6"

J1–J4 floor joists (4), 2×8 PT ground contact: 7'-6"

1 Arrow AK4 anchor kit (4 anchors, cable, clamps)

Fasteners

40 × #10 × 2½"

8 × LUS28Z hangers

48 × SD #9 × 1½"

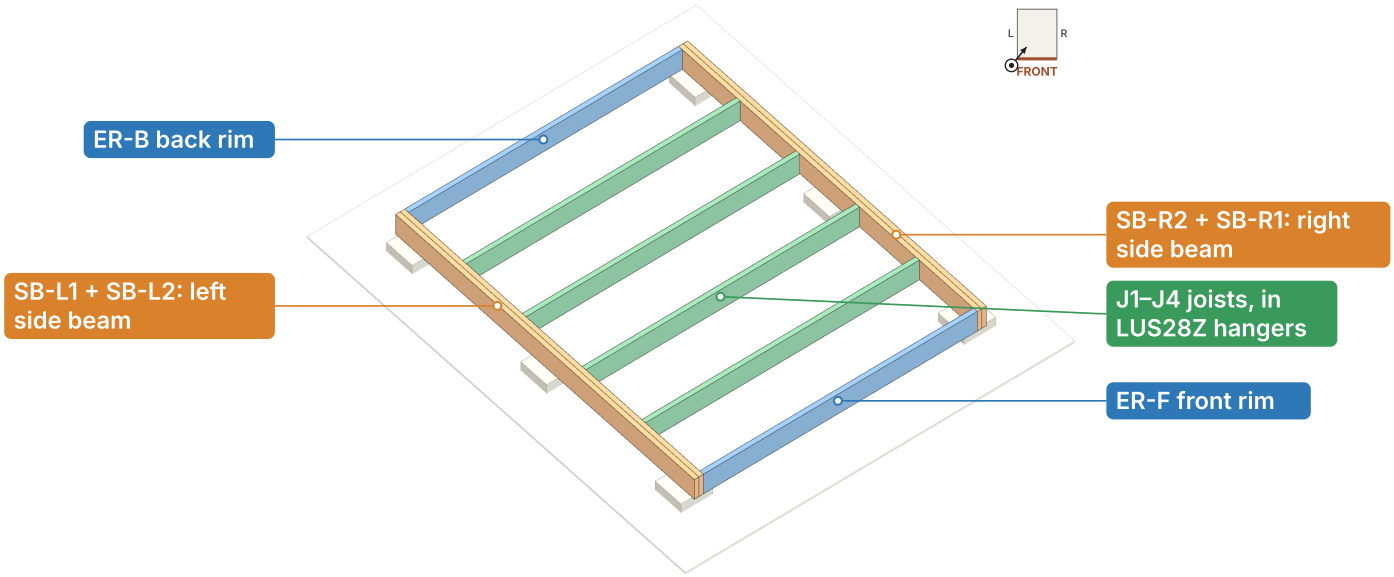
32 × SD #9 × 2½"

12 × TimberLOK 6"

Tools

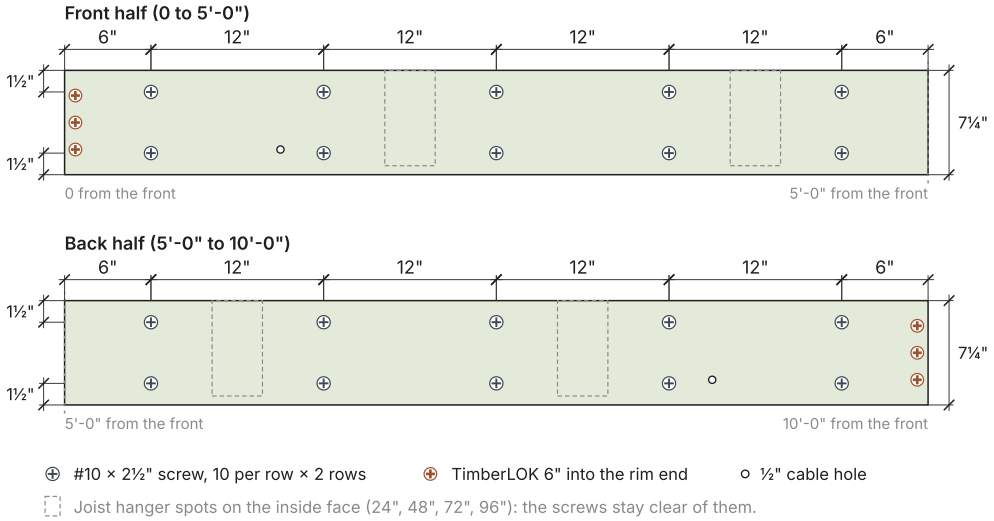
Circular saw, drill and impact driver, T25 and TimberLOK bits, ⅛" × 6" bit, 2 bar clamps, framing square, tape, level

2 people · about ½–1 day

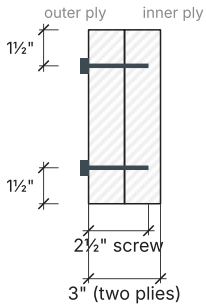


1 ☐ **Make the two side beams.** Clamp two 120" 2×8s together with the ends and top edges flush. Working from the outside face, screw them together with #10 × 2½" screws in two rows, 1½" from the top and bottom edges, every 12" starting 6" from an end (10 per row). Both beams: 40 screws.

Side beam: where every screw goes outside face, front half above, back half below



End view of the beam



Drive every screw from the outside face. The 2½" screw goes through the outer ply and stops ½" short of the inside face, so no tips poke out where the joist hangers go.

Rim ends: 3 TimberLOK through both plies, about 1¾" down from the top, one in the middle and about 1¾" up from the bottom, ¾" in from the beam end (the centre of the rim).

Two 2×8s clamped flush. 20 screws per beam, #10 × 2½" in two rows, plus 3 TimberLOK 6" at each end into the rim.

2 ☐ **Set the beams on the blocks,** crown up. Space them so the outside faces are 8'-0" apart.

3 ☐ **Fit the end rims.** Set **ER-F** and **ER-B** (90") between the beams, flush with the beam ends and tops. Drive 3 TimberLOK 6" screws through the outside of each beam into each rim end: about 1¾" down from the top, one in the middle and about 1¾" up from the bottom (see the beam drawing).

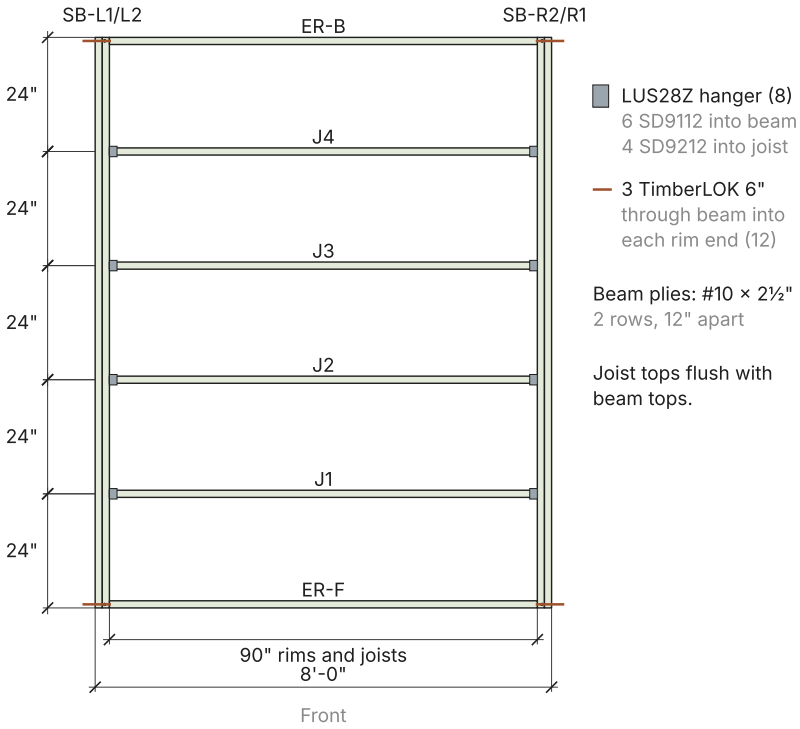
4 ☐ **Check square:** diagonals must both be 12'-9 11/16". Nudge the frame on the blocks until they match.

5 ☐ **Hang the joists.** Mark **J1–J4** centers at 24", 48", 72", 96" from the front on the inside of both beams. Fasten a LUS28Z hanger at each mark with 6 SD9112 screws into the beam, so the joist top will be flush with the beam top. Drop in the joist and fasten with 4 SD9212 screws.

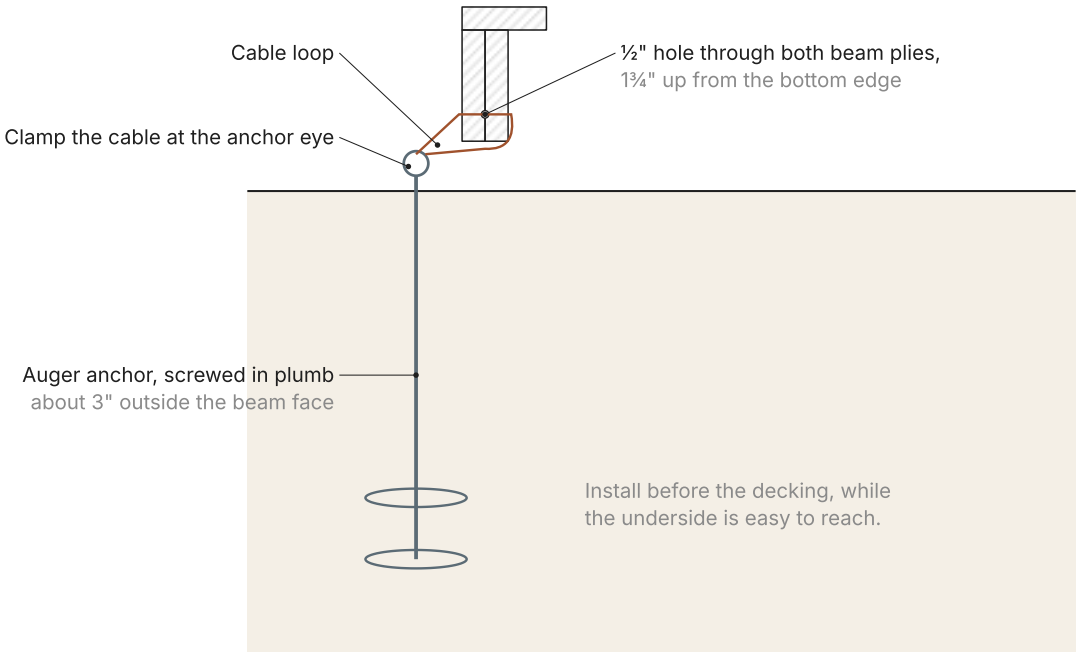
6 ☐ **Drill the cable holes.** 15" in from the front and the back on both beams, drill a ½" hole straight through both plies, 1¾" up from the bottom edge.

7 ☐ **Screw in the four ground anchors** about 3" outside each cable hole, plumb, until the eye sits just above grade. Thread the cable out through the hole, down around the bottom of the beam and back to the eye, pull it snug and clamp it. Follow the kit's instructions for the clamp.

Floor framing and hardware deck boards off



Ground anchor at a corner section at the cable hole



Check Frame square (diagonals equal), beam tops level, every joist top flush with the beam tops, and every hanger hole filled.

3 Decking

17 boards running front to back, ⅛" gaps.

Parts

D01–D17 deck boards (17), 2×6 PT above ground: 10'-0"

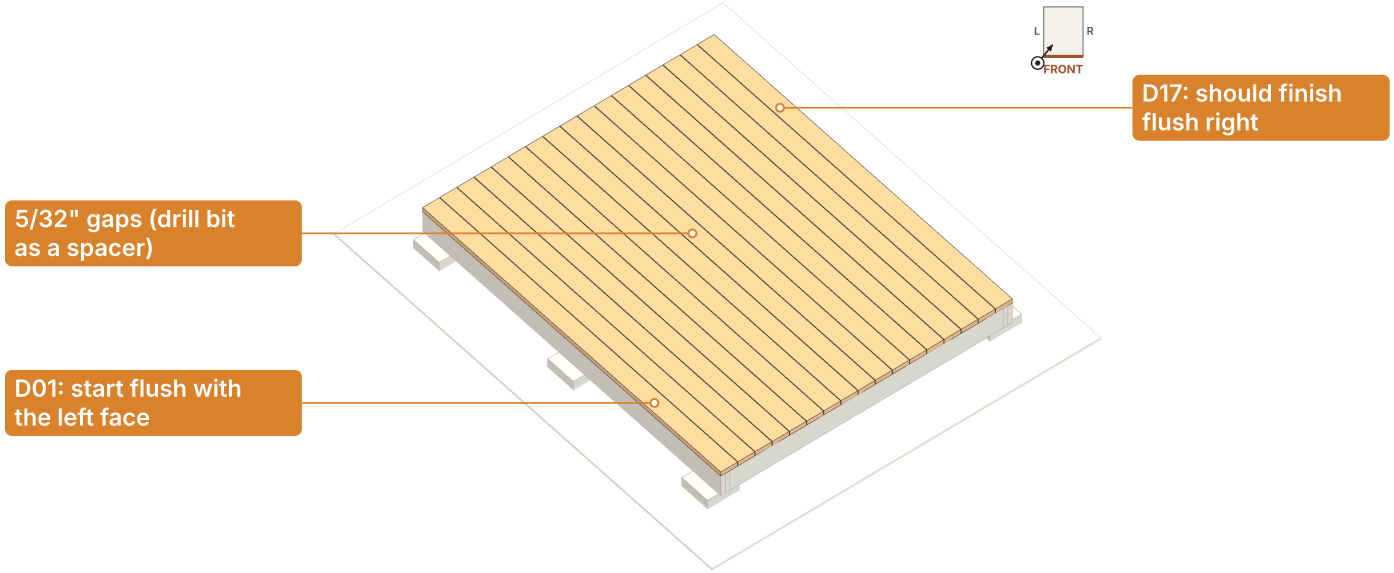
Fasteners

204 × #10 × 3"

Tools

Circular saw, impact driver, drill with a 5/32" bit (also the gap spacer), tape

1–2 people | about ½ day



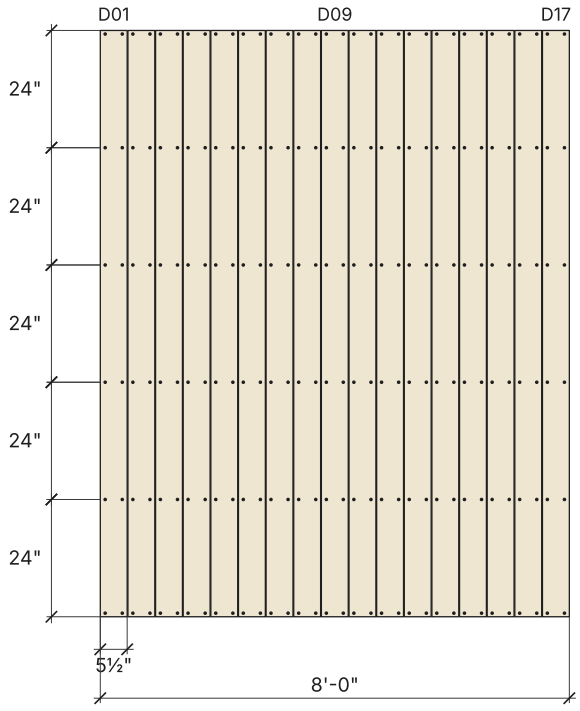
1 ☐ **Start at the left.** Lay **D01** flush with the outside face of the left beam and with the front and back rims.

2 ☐ **Screw each board** with two #10 × 3" deck screws at every rim and joist, 1" in from each board edge: 12 screws per board, 204 in all. Drill a 5/32" pilot hole for the screws at the board ends so they don't split.

3 ☐ **Space each next board** with a 5/32" drill bit or nail as a spacer.

4 ☐ **Every 4 boards, measure** from the board edge to the right beam face. If the gap is drifting, open or close the next few gaps slightly so **D17** finishes flush with the right beam face.

Deck boards 17 boards, 5/32" gaps, 2 screws at every support



Screws: #10 × 3" deck screws, 1" in from each board edge, over each rim and joist.

Board ends land on ER-F / ER-B: drill a pilot hole first so the end doesn't split.

Gap: use a 5/32" drill bit or nail as a spacer.

Start with D01 flush to the left beam face and work right. D17 should finish flush with the right face (check every 4 boards).

Tip Lay the boards bark side (the curved growth rings at the end) facing up. They cup less that way as they dry.

4 Plates and ridge

The bottom plates go down first, then the ridge goes up on temporary posts. The rafters will lean on it.

Parts

BP-L, **BP-R** bottom plates (2), 2×4 PT ground contact: 10'-0"

RG ridge (1), 2×12 untreated: 12'-0"

Temporary: **TP1**, **TP2** posts 115 9/16", **TK1–TK6** kickers ~86", **TC1–TC4** cleats 9¾"

Fasteners

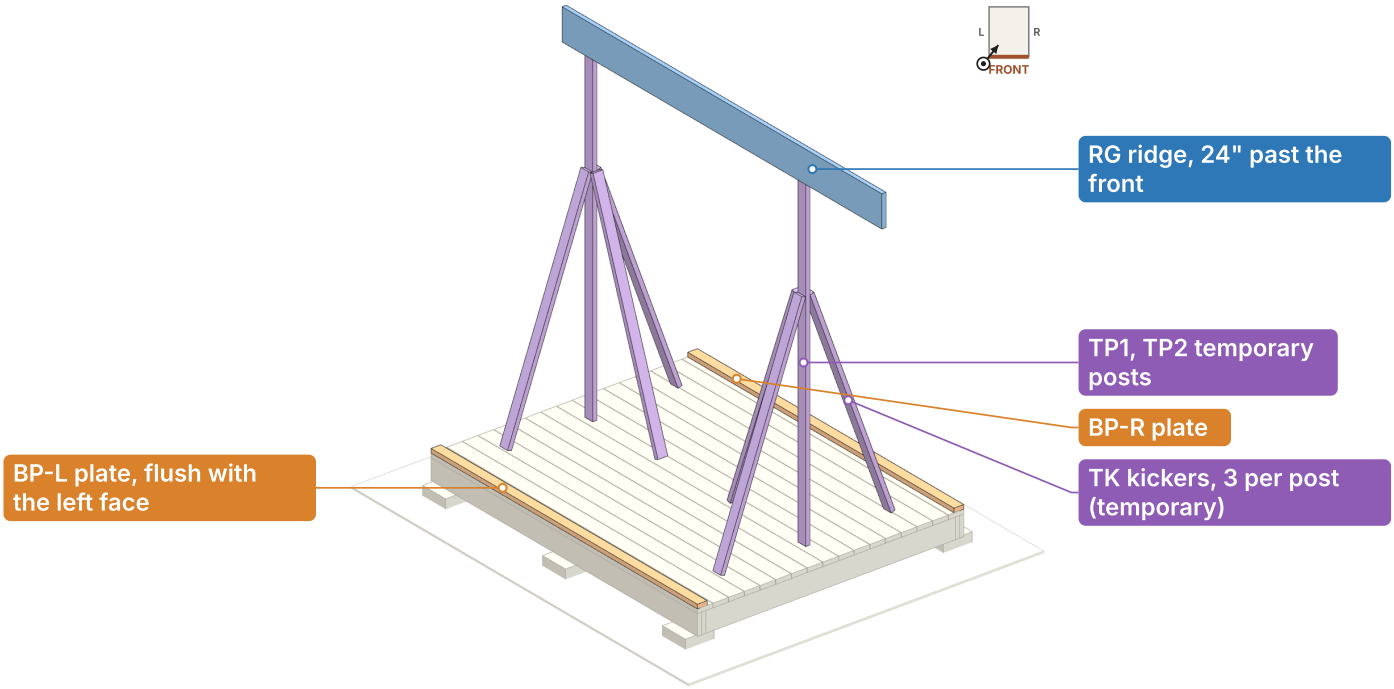
20 × TimberLOK 6"

36 × #10 × 3"

Tools

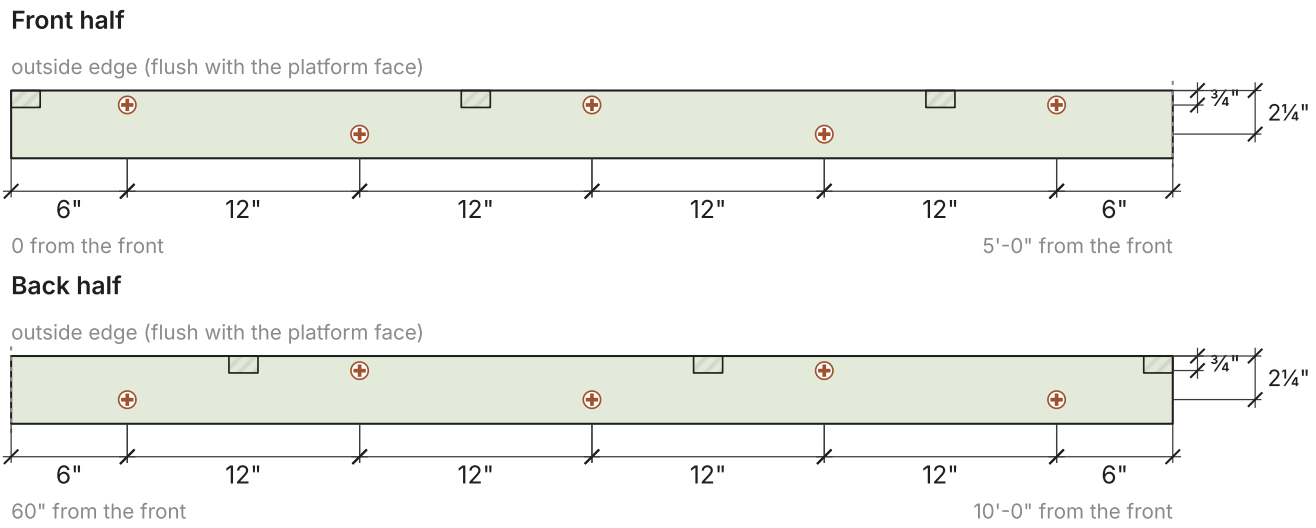
Impact driver, circular saw, 4' level, tape, two 6' stepladders

2 people | about ½ day



1 ☐ **Screw down the bottom plates.** Lay **BP-L** flat on **D01** with its outside edge flush with the platform's left face and its ends flush front and back. Drive 10 TimberLOK 6" screws down through it into the beam at 6", 18", 30", 42", 54", 66", 78", 90", 102", 114" from the front, alternating ¾" and 2¼" in from the outside edge. These spots stay clear of the rafters. Repeat with **BP-R** on the right.

Bottom plate BP-L from above: 10 TimberLOK 6" down into the beam



⊕ TimberLOK 6", alternating ¾" and 2¼" in from the outside edge

▨ Where each rafter's notch sits (the outer ⅞" of the plate), at 0, 24", 48", 72", 96", 10'

BP-R is the mirror image. The rafter notches land between the screws.

2 ☐ **Cut the temporary parts.** Two posts TP at exactly 115 9/16", six kickers TK at about 86" (trim to fit), and four cradle cleats TC at 9¾" from the kicker offcuts. Use straight boards: they're re-cut into the back-wall studs, header, stringers and rail later.

3 ☐ **Make the cradles.** Screw a cleat to each wide face of a post with 3 deck screws each, so the cleats stick up 4¾" above the post top. The gap between them is the ridge's 1½".

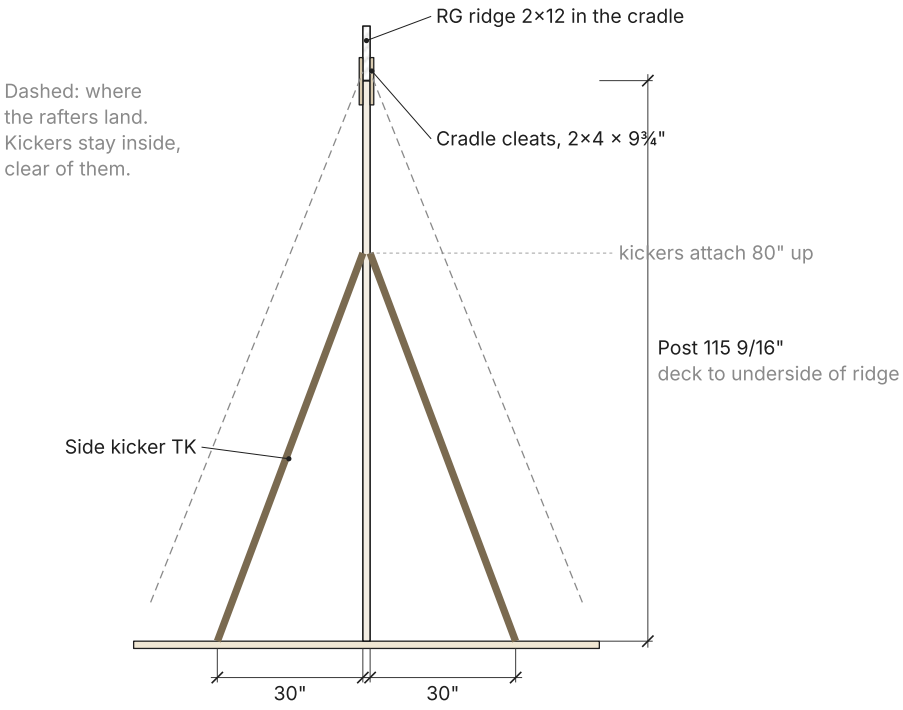
4 ☐ **Stand the posts** on the deck centerline, 12" in from the front and from the back. Plumb each one both ways with a level.

5 ☐ **Brace each post with three kickers:** one to the left, one to the right and one toward the middle of the deck. Each kicker's top screws to the post 80" above the deck. Its foot lands on the deck 30" out and is screwed down with 2 deck screws. The kickers sit at about 69°.

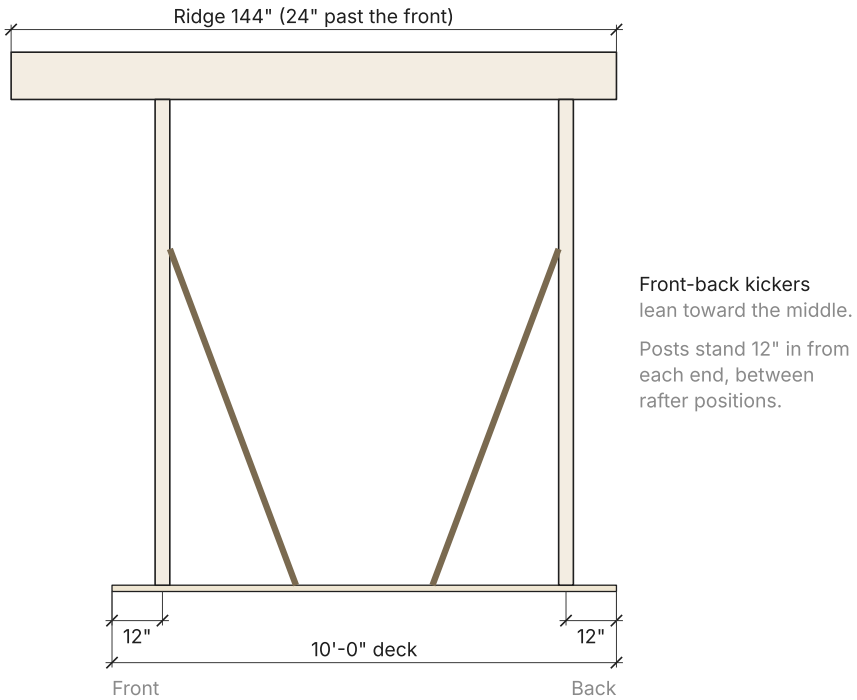
6 ☐ **Set the ridge.** With one person on each ladder, lift **RG** (144") into both cradles. Slide it so its back end is flush with the back of the platform and 24" hangs past the front. Screw each cleat to the ridge with 2 deck screws.

Check Ridge level end to end, centered left-right (measure 48" from each side face of the platform to the ridge center at both posts), and the top 10'-6 13/16" above the deck.

Temporary ridge supports view from the front



Temporary ridge supports view from the left side



5 Cut the rafters

All 12 rafters are identical. Make one, test it, then use it as the pattern.

Parts

12 × 2×4×12 untreated (the rafters **RL1–RL6**, **RR1–RR6**)

Primer and paint for all 12

Fasteners

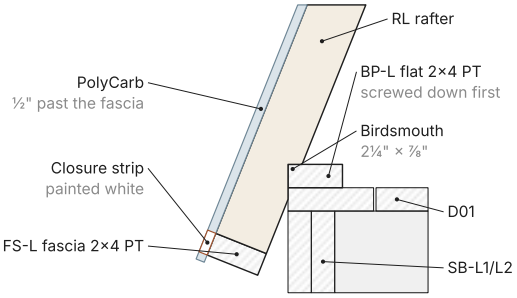
None

Tools

Circular saw, handsaw, speed square, tape, pencil, 2 sawhorses, a clamp and scrap block

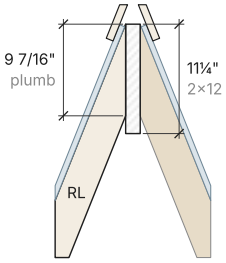
1 people · about ½ day

Detail A — base of the left side



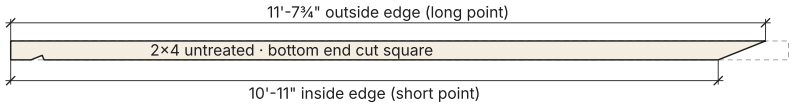
Right side: mirror image. Its back 4' has 15/32" plywood instead of PolyCarb, also ½" past the fascia.

Detail B — ridge



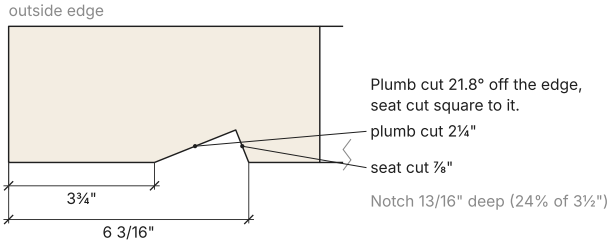
1×6 cap boards over the PolyCarb, meeting at the peak (stage 12). Ridge runs 24" past the front.

Rafter cut layout — all 12 rafters (RL1–RL6, RR1–RR6), one 2×4×12 each



Top: plumb cut joining the two marks (8¾" apart), 21.8° off square. stock 144"

Bottom end, enlarged — birdsmouth on the inside edge



Marks measured along the inside edge from the square bottom end.

Version B — rafter details and cuts	Ver B · Rev F frame · proposed	Sheet B6

1 ☐ **Pick the straightest 2×4×12** and square one end. That square end is the bottom of the rafter.

2 ☐ **Mark the notch (birdsmouth)** on the inside edge, measuring from the bottom end: 3¾" and 6 3/16". The notch's inside corner sits 5 13/16" from the end and 13/16" in from the edge. Connect the 3¾" mark to the corner (the plumb cut, 21.8° off the edge, 2¼" long), then the corner to the 6 3/16" mark (the seat, ⅞" long).

3 ☐ **Mark the top.** Measure from the bottom end along the outside edge to 11'-7¾", and along the inside edge to 10'-11". Draw a line between the two marks (8¾" apart along the board).

4 ☐ **Cut the top** on the line with the circular saw. Cut the notch with the circular saw just to the lines, then finish the corner with a handsaw. Don't over-cut past the corner: it weakens the rafter.

5 ☐ **Test-fit this first rafter** at a few spots along the left side. The seat should sit flat on **BP-L**, the notch's plumb cut should touch the plate's outside edge, and the top cut should sit flat against the ridge. Adjust the pattern if needed.

6 ☐ **Trace the pattern onto the other 11 boards** and cut them. Label them **RL1–RL6** and **RR1–RR6**. Prime and paint all 12, including the notch and both ends, before they go up.

Tip Clamp a scrap block to the pattern at the bottom end so every copy lines up exactly the same way.

6 Left wall frame

Six rafters, the fascia, then five rows of blocks.

Parts

RL1–RL6 rafters (6), 2×4 untreated: 11'-7¾" long point, birdsmouth

FS-L fascia (1), 2×4 PT ground contact: 10'-0"

BK11–BK15, **BK21–BK25**, **BK31–BK35**, **BK41–BK45**, **BK51–BK55** blocks (25), 2×4 untreated, flat

Fasteners

62 × #10 × 3½"

6 × TimberLOK 6"

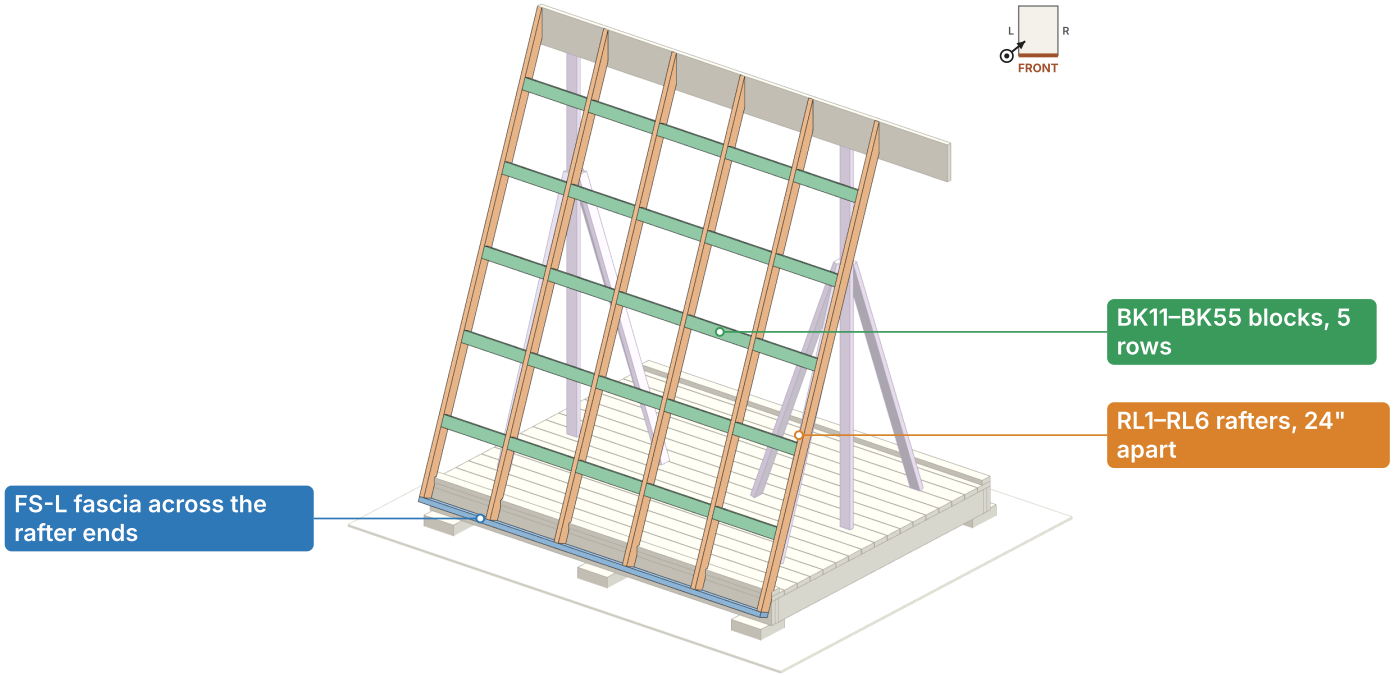
74 × #10 × 3"

Tools

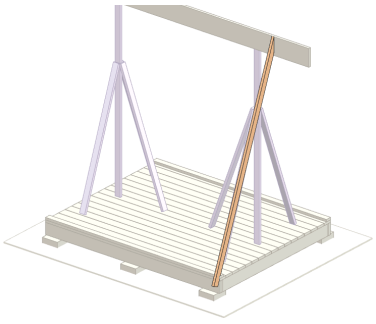
Impact driver, drill with 1" spade bit, tape, level, string line, stepladder

2 people

about ½–1 day

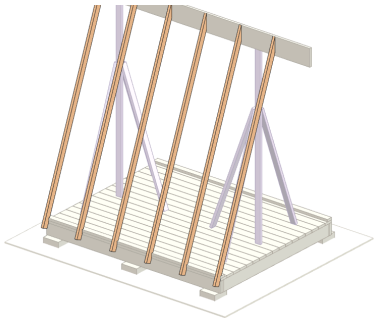


A



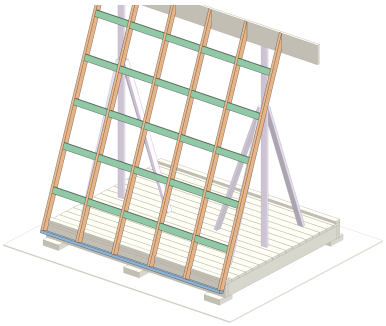
First rafter RL1, notch over BP-L, top on the ridge

B



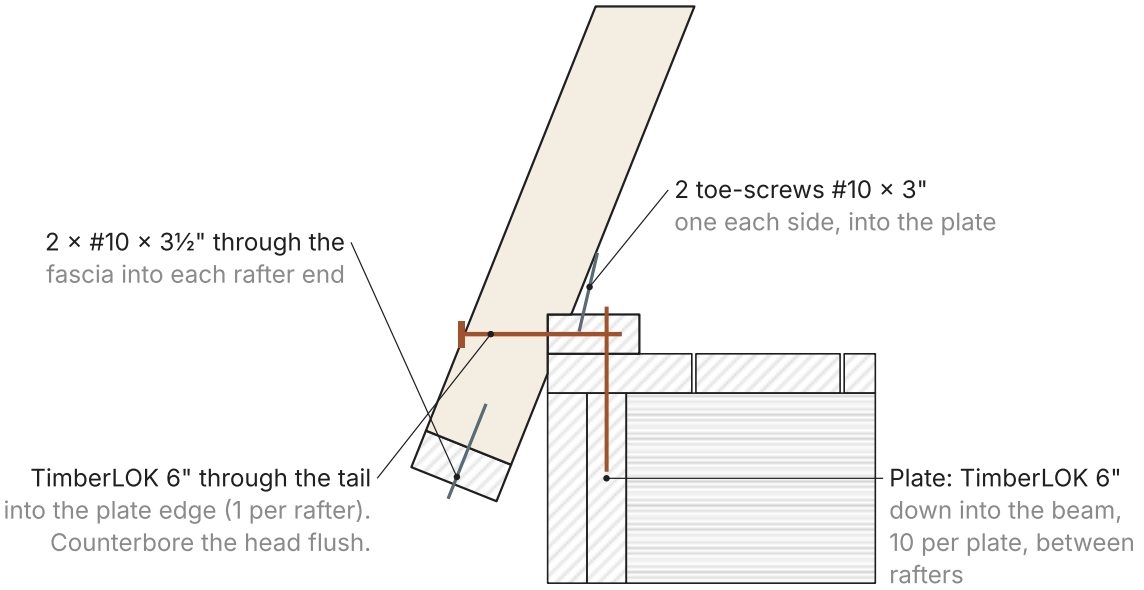
RL2–RL6 at 24" centres

C



Fascia, then blocks bottom row first

Rafter base: how it's fastened



1 ☐ **Set RL1 (front) first.** Stand it on **BP-L** with the notch hooked over the plate, the front face flush with the front of the platform, and the top cut against the ridge.

2 ☐ **Screw the tail to the plate.** On the rafter's outside face, 3 15/16" up from the bottom end and centered, drill a ¼"-deep counterbore with the 1" spade bit. Drive one TimberLOK 6" screw level, through the tail into the plate's outside edge, until the head sits in the counterbore below the surface.

3 ☐ **Toe-screw the seat:** one #10 × 3" screw through each side face of the rafter, angled down into the plate.

4 ☐ **Toe-screw the top:** one #10 × 3" screw through each side face of the rafter into the ridge.

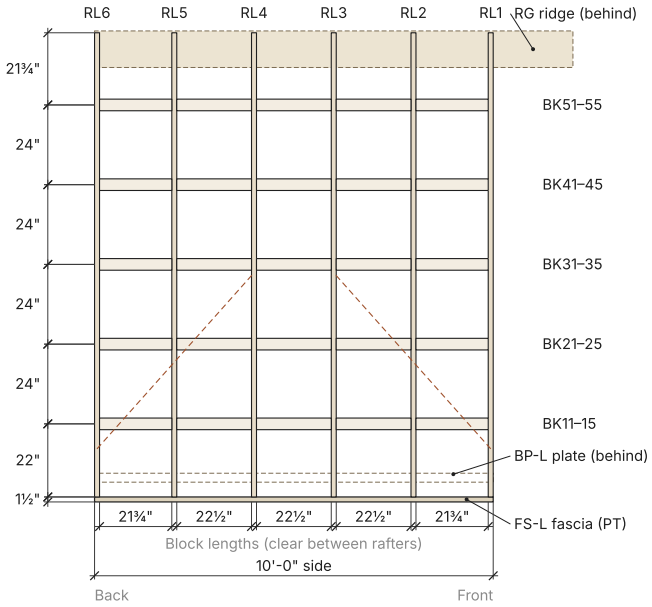
5 ☐ **Repeat for RL2–RL6** at 24" centers (¾", 24", 48", 72", 96", 119¼" from the front). **RL6**'s back face lands flush with the back of the platform. Each rafter sits right above a joist or rim.

6 ☐ **Add the fascia.** Hold **FS-L** across the bottom ends of all six rafters, ends flush with **RL1**'s front face and **RL6**'s back face. Screw it on with 2 #10 × 3½" screws into each rafter end.

7 ☐ **Mark the block rows** on the outside edge of each rafter, measured from the bottom end. The bottom edge of each row is at 20¼", 44¼", 68¼", 92¼", 116¼".

8 ☐ **Install the blocks, bottom row first,** lying flat with the outside face flush with the rafters' outside edges. Screw through the rafter into one end of each block with 2 #10 × 3½" screws, and toe-screw the other end with 2 #10 × 3" screws. End bays (1 and 5) take the 21¾" blocks, the middle three the 22½" blocks.

Left side framing seen from outside, cladding removed (true slope)



Rafters go up one at a time: birdsmouth on BP-L, top against the ridge (still on its temporary posts). Then the fascia, then the blocks, bottom row first. Each block row backs a PolyCarb screw line. Dashed diagonals: braces BRC-1 / BRC-2 on the inside face (stage 8). They stay below the loft joists.

Version B — left side framing	Ver B · Rev F frame · proposed	Sheet B7

Check Rafter tops all touching the ridge, every notch seated, and a string along the bottom ends straight. The ridge is still centered (the kickers should be holding it).

7 Right wall frame

The same steps as the left wall, mirrored.

Parts

RR1–RR6 rafters (6), 2×4 untreated: 11'-7¾" long point, birdsmouth

FS-R fascia (1), 2×4 PT ground contact: 10'-0"

BR11–BR15, **BR21–BR25**, **BR31–BR35**, **BR41–BR45**, **BR51–BR55** blocks (25), 2×4 untreated, flat

Fasteners

62 × #10 × 3½"

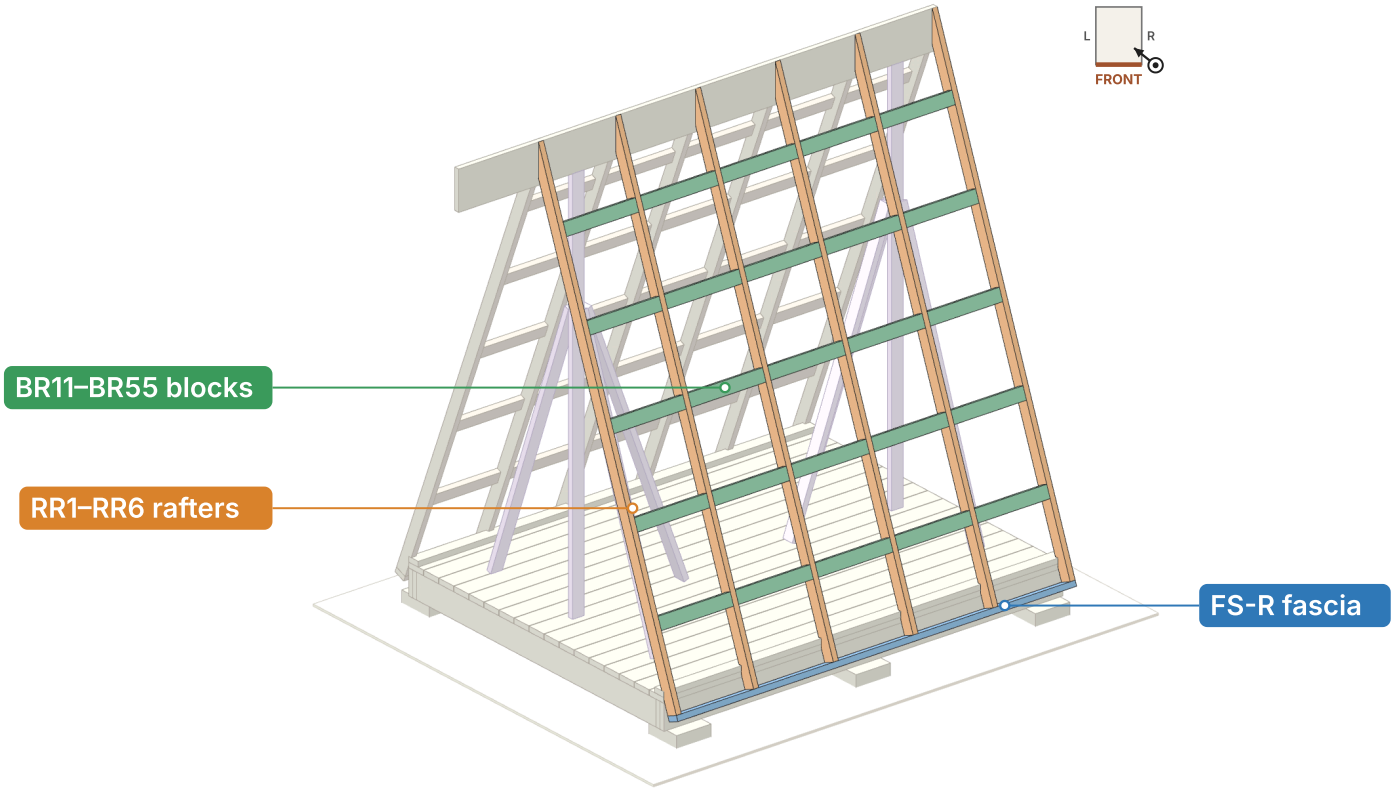
6 × TimberLOK 6"

74 × #10 × 3"

Tools

Same as stage 6

2 people · about ½ day

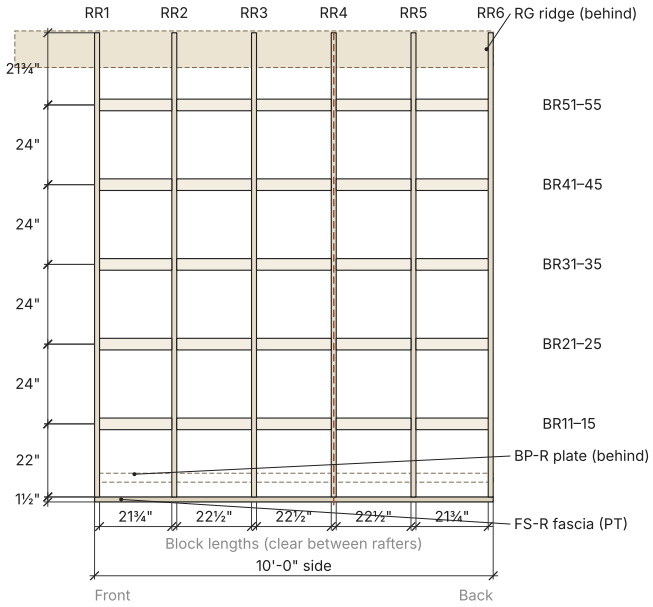


1 ☐ **Install RR1–RR6** on **BP-R** exactly as on the left: notch over the plate, top cut against the ridge, one TimberLOK through the tail into the plate, 2 toe-screws at the seat, 2 at the top. Each right rafter sits directly across from its left partner.

2 ☐ **Add FS-R** across the bottom ends with 2 #10 × 3½" screws per rafter.

3 ☐ **Install the five rows of blocks BR11–BR55** at the same marks as the left wall (20¼", 44¼", 68¼", 92¼", 116¼" from the bottom end).

Right side framing seen from outside, cladding removed (true slope)



Same parts and marks as the left side, mirrored: each RR sits directly across from its RL partner.
Dashed line on RR4: where the PolyCarb (front 6') meets the plywood (back 4') in stage 8 and 12.
Climbing holds go on the back wall only (stage 11), not on the sides.

Version B — right side framing	Ver B · Rev F frame · proposed	Sheet B8

Check Each pair of rafters meets the ridge at the same height. From the front, the frame should look like a symmetric triangle.

8 Braces and plywood

Brace the left side, sheathe the back of the right side, then the temporary supports come out.

Parts

SB1–SB6 right-side plywood (15/32") (6), 15/32" plywood

BRC-1, **BRC-2** left-side braces (2), 2×4 untreated, flat: 6'-2⅛" long point, ends 41.7°

Fasteners

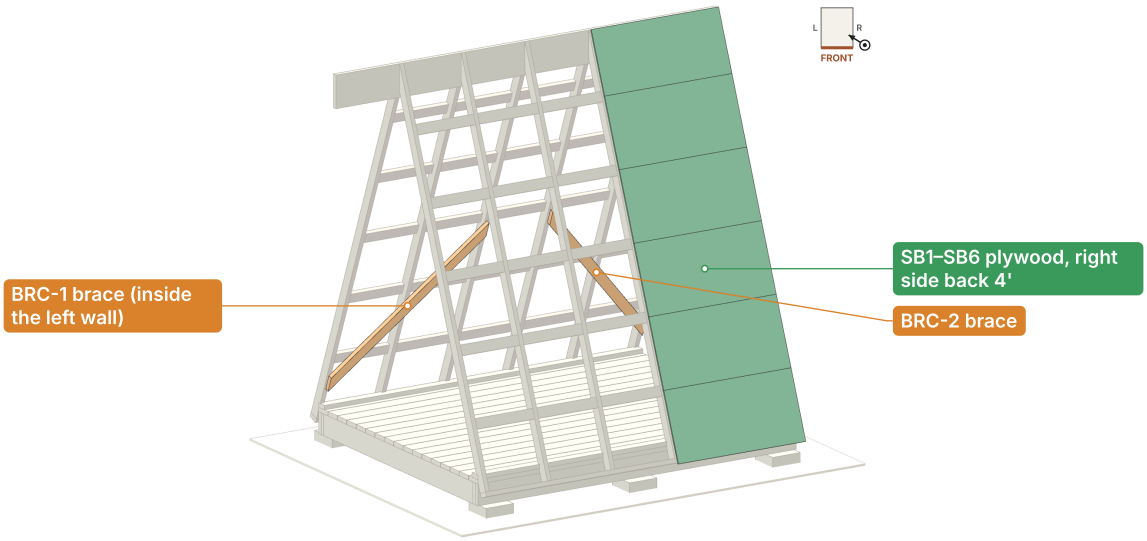
12 × #10 × 3"

155 × #8 × 2"

Tools

Circular saw (or miter saw), impact driver, tape, chalk line, stepladder

2 people · about ½ day



1 ☐ **Cut the two braces BRC-1** and **BRC-2** from 2×4×8s: 74⅛" long point to long point, both ends cut 41.7° off square and parallel to each other.

2 ☐ **Fit BRC-1** flat against the inside edges of **RL1**, **RL2** and **RL3**. Its low end sits on **RL1** about 2" up the rafter from the top of the plate notch, its high end on **RL3** about 55" up. Fit **BRC-2** the same way from **RL6** up to **RL4**. Both stay 6" below where the loft joists will go.

3 ☐ **Screw each brace** with 2 #10 × 3" screws at every rafter it crosses (6 per brace).

4 ☐ **Plywood on the back 4' of the right side.** Start **SB1** with its bottom edge ½" below the fascia, its front edge on the centre of **RR4** and its back edge flush with the back of **RR6**. Work up the rows (**SB1–SB6**); every row seam lands on a block row. Cut **SB6** to fit.

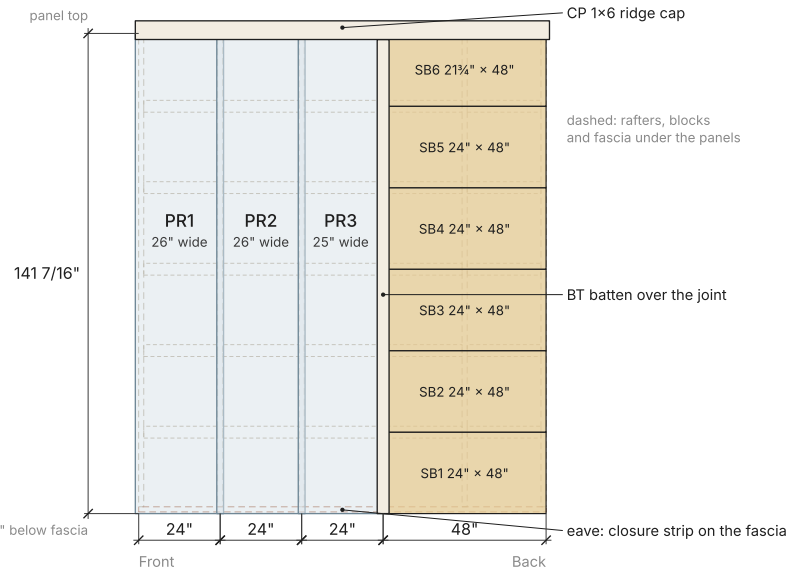
5 ☐ **Screw the plywood** with #8 × 2" screws ⅜" from the edges: every 6" on all edges and every 12" on **RR5**.

6 ☐ **Take out the temporary supports:** unscrew the cradle cleats from the ridge, unscrew the kickers from the deck, lift out the posts. **Keep the six kickers and one post**: they become the back-wall studs, the header, the banister stringers and the rail.

7 ☐ **Re-tighten the anchor cables.**

Check Frame square from the front, every rafter tight to the ridge, braces snug against every rafter edge.

Right side, outside face (true slope) cladding layout



PR1–PR3 lap one corrugation on RR2 and RR3. PR3 is ripped to 25" so it ends on the centre of RR4.
Plywood SB1–SB6 starts on the centre of RR4 and ends flush with the back of RR6. Seams on the block rows.
BT batten (1×4 PT) covers the poly/plywood joint: bed it in silicone and screw through both into RR4.
Plywood: #8 × 2" at 6" on edges, 12" on RR5. PolyCarb as the left side.

Version B — right side cladding	Ver B · proposed	Sheet B3

Right side: PolyCarb front 6' (stage 12), plywood back 4' (this stage).

9 Loft

Six joists at 5'-4" clear, then the plywood floor.

Parts

LJ1–LJ6 loft joists (6), 2×4 untreated: 4'-3¾" long point, ends 21.8°

FL1, **FL2** loft floor (¾" plywood) (2), 23/32" plywood

Fasteners

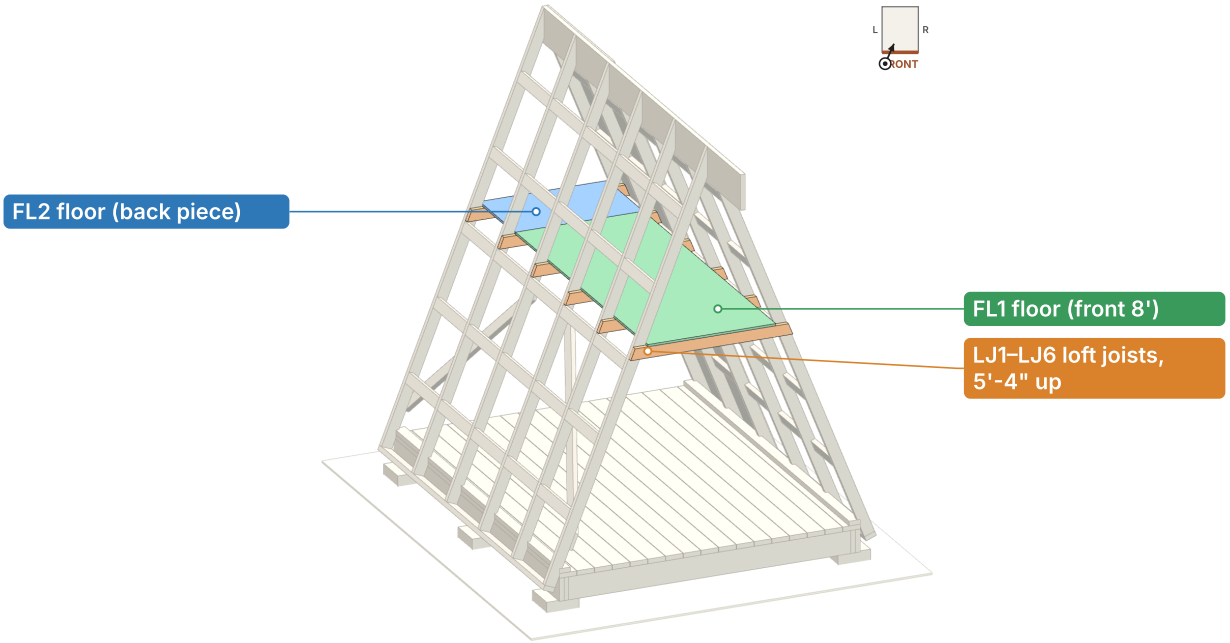
36 × #10 × 2½"

47 × #8 × 2"

Tools

Circular saw (or miter saw), drill, impact driver, long level, story pole, stepladder

2 people · about ½ day



1. ☐ **Cut the six joists LJ1–LJ6**: 51¾" on the long (bottom) edge, both ends 21.8° off square so the top edge is 48 15/16".

2. ☐ **Mark the joist height** on the front face of every rafter: the bottom of each joist sits 5'-4" above the deck. A story pole (a scrap 2×4 marked at 5'-4") makes this quick and the same every time.

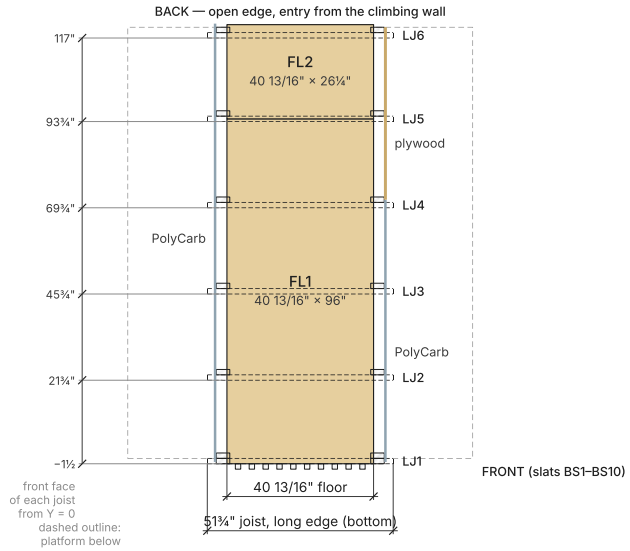
3. ☐ **Fit each joist** against the front face of its rafter pair (**LJ1** on **RL1**/**RR1**, through **LJ6** on **RL6**/**RR6**), bottom on the mark, ends flush with the rafters' outside edges.

4. ☐ **Screw each end** with 3 #10 × 2½" screws through the joist into the rafter, staggered, at least ¾" from the edges. Pre-drill the joist.

5. ☐ **Lay FL1** (40 13/16" × 96") with its front edge flush with the front of **LJ1**. Its back edge lands on the middle of **LJ5**. Lay **FL2** (40 13/16" × 26¼") behind it. Its back edge hangs ¾" past the back of the frame (use a scrap of the same plywood as a gauge): the climbing-wall plywood tucks up under it later.

6 ☐ **Screw the floor** with #8 × 2" screws: every 6" across **LJ1**, **LJ5** (both pieces) and **LJ6**, every 12" across **LJ2–LJ4**.

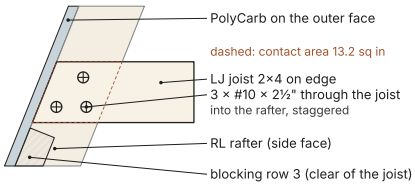
Loft plan cut 2" above the loft floor, looking down (front at the bottom)



Every joist sits on the front face of its rafter pair (LJ1 on RL1/RR1 … LJ6 on RL6/RR6).
FL1/FL2 joint centred on LJ5 (Y = 94½"), ¾" bearing each. FL2 runs ¾" past the back of the frame, over the climbing-wall plywood.
Hatched: rafters, stringers, slats cut by the plane. Dashed: joists under the floor.
Right side: PolyCarb front 6', plywood back 4' (proposed seam on RR4).
Clear spans between joists: 21¾", 22½", 22½", 22½", 21¾". Plywood 96" length runs front-to-back.

B-L loft — framing plan	Ver B · proposed	Sheet 2

Detail: loft joist end on a rafter left side; right side is the mirror



End cut 21.8° off square, flush with the rafter outer face. Long edge (bottom) 51¾", short edge (top) 48 15/16".
Screws ≥ ¾" from the contact edges (⅞" min) and 1 11/16" apart min. Predrill the joist.

Cut list

ID	Part	Stock	Qty	Size	Cuts
LJ1–LJ6	Loft joists	2×4	6	51¾" long pt	both ends 21.8° off square
ST-L, ST-R	Barrier stringers	2×4	2	28¼"	flat on RL1/RR1; ends 21.8° off square, parallel
BS1–BS10	Barrier slats	2×2	10	19½", 29⅛", 33¼"	square; see sheet 3
HR	Barrier rail	2×4	1	27 15/16" long pt	both ends 21.8° off square, like LJ1
FL1	Loft floor	23/32" ply	1	40 13/16" × 96"	rip one full sheet
FL2	Loft floor	23/32" ply	1	40 13/16" × 26¼"	from a 2nd sheet (rest → back wall)

Boards to buy (proposed)

Qty	Item	Use
3	2×4×10 fir	2 joists each (2 × 51¾" = 103½")
—	reused 2×4 kickers	stringers ST-L/R and rail HR, from the temporary kickers
4	2×2×8	33¼ ×2 + 19½ (×2 boards), 33¼ ×2, 29⅛ ×2
2	23/32" (¾") plywood 4×8	FL1, FL2; the FL2 sheet's offcut becomes the climbing-wall centre

Fasteners (proposed — engineer to confirm)

Where	Screw	Pattern	Count
Joist ends	#10 × 2½"	3 per end × 12 ends	36
Stringers to RL1/RR1	#10 × 2½"	3 each, staggered	6
Slats	#10 × 2½"	2 into LJ1 each; BS1/2/9/10: 2 into the stringer	28
Rail	#10 × 2½"	3 per end into RL1/RR1; 2 through each of BS3–BS8 into HR	18
Loft floor	#8 × 2"	6" on panel ends (LJ1, LJ5 ×2, LJ6), 12" on LJ2–LJ4	47

B-L loft — joist detail and schedule	Ver B · proposed	Sheet 4

Check Joists level side to side and front to back, floor flat, 5'-8¼" from the deck to the floor top.

10 Banister

A 2×4 rail in the plane of the front joist, 29" above the loft floor, with 2×2 slats on the outside of both.

Parts

ST-L, **ST-R** banister stringers (2), 2×4 (reused kicker): 2'-4¼", ends 21.8°

BS1–BS10 banister slats (10), 2×2 untreated

HR banister rail (1), 2×4 (reused kicker): 2'-3 15/16" long point, ends 21.8°

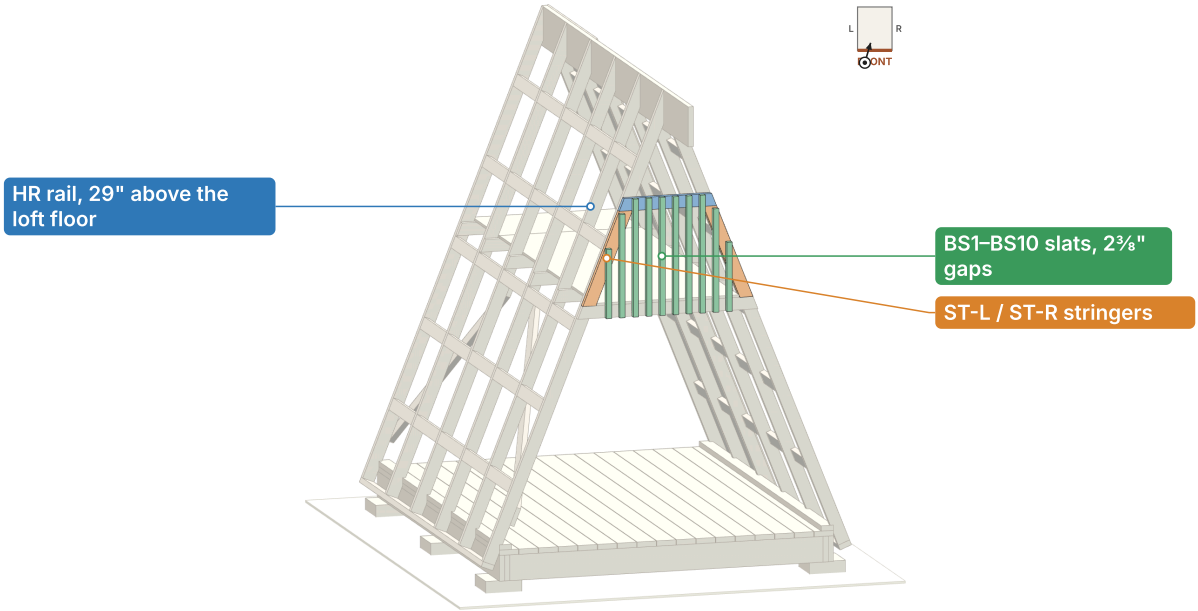
Fasteners

52 × #10 × 2½"

Tools

Saw, drill, impact driver, a 2⅜" spacer block, a 3½" test block, sandpaper

1 people · about ½ day



1 ☐ **Cut the rail and stringers** from two of the old kickers. **HR**: 27 15/16" on the bottom edge, 25 3/16" on top, both ends 21.8° off square, exactly like **LJ1**. **ST-L** and **ST-R**: 28¼" each, both ends 21.8° off square and parallel.

2 ☐ **Screw the stringers flat** on the front faces of **RL1** and **RR1**, sitting on top of **LJ1**, 3 #10 × 2½" each. Then set **HR** on top of them, in the same plane as **LJ1**, top 29" above the loft floor, ends flush with the rafters' outside edges. 3 #10 × 2½" through each end into the rafter, like the joist.

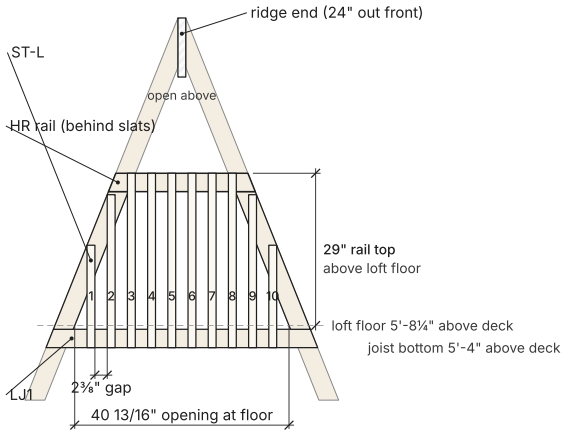
3 ☐ **Cut the slats: BS1** and **BS10** at 19½", **BS2** and **BS9** at 29⅛", **BS3–BS8** at 33¼". All square cuts. Sand the ends.

4 ☐ **Space the slats** 2⅜" apart across the opening, measured at loft-floor height between the stringers. A 2⅜" spacer block makes this fast. Every slat's bottom is flush with the bottom of **LJ1**.

5 ☐ **Screw each slat** with 2 #10 × 2½" into **LJ1**. **BS1**, **BS2**, **BS9** and **BS10** run up onto the stringers: 2 more screws into the stringer each. Pre-drill so the 2×2s don't split.

6 ☐ **BS3–BS8 go up to the rail:** 2 #10 × 2½" through each into **HR**, tops flush with the rail top.

Front barrier elevation from the front (upper part of the frame)



Barrier parts (slats cut square)

Part	Stock	Length	Qty	Note
BS1, BS10	2×2	19½"	2	top on the stringer
BS2, BS9	2×2	29⅛"	2	top on the stringer
BS3–BS8	2×2	33¼"	6	top flush with the rail
HR	2×4	27 15/16"	1	long point; ends 21.8°, like LJ1

10 vertical 2×2 slats with 2⅜" gaps (CPSC 325: no openings between 3½" and 9"). Vertical only, so nothing to climb.
Rail top 29" above the loft floor: the CPSC minimum barrier height for ages 2–5. The opening is 17⅝" wide there.
BS1, BS2, BS9, BS10 meet the sloped wall before rail height and screw to the stringer. BS3–BS8 stop at the rail.
HR sits in the same plane as LJ1, on RL1/RR1, ends cut like the joist. Slats are in front of both. Open above the rail.

B-L loft — front barrier	Ver B · proposed	Sheet 3

Safety No gap between slats should be wider than 3½" (CPSC guidance for ages 2–5); the design gap is 2⅜". Check with a 3½" block: it must not pass through anywhere.

11 Climbing wall

A PT plate, three studs, a header, then ¾" plywood with T-nuts for the holds.

Parts

BP-B back plate (1), 2×4 PT ground contact: 7'-5"

BW1–BW3 back-wall studs (3), 2×4 (reused kicker): 5'-2½"

BH back-wall header (1), 2×4 (reused ridge post): 3'-8 3/16" long point, ends 21.8°

BWP-C, **BWP-L**, **BWP-R** climbing-wall plywood (¾") (3), 23/32" plywood

Climbing-hold kit with T-nuts and bolts

Fasteners

25 × #10 × 2½"

16 × #10 × 3"

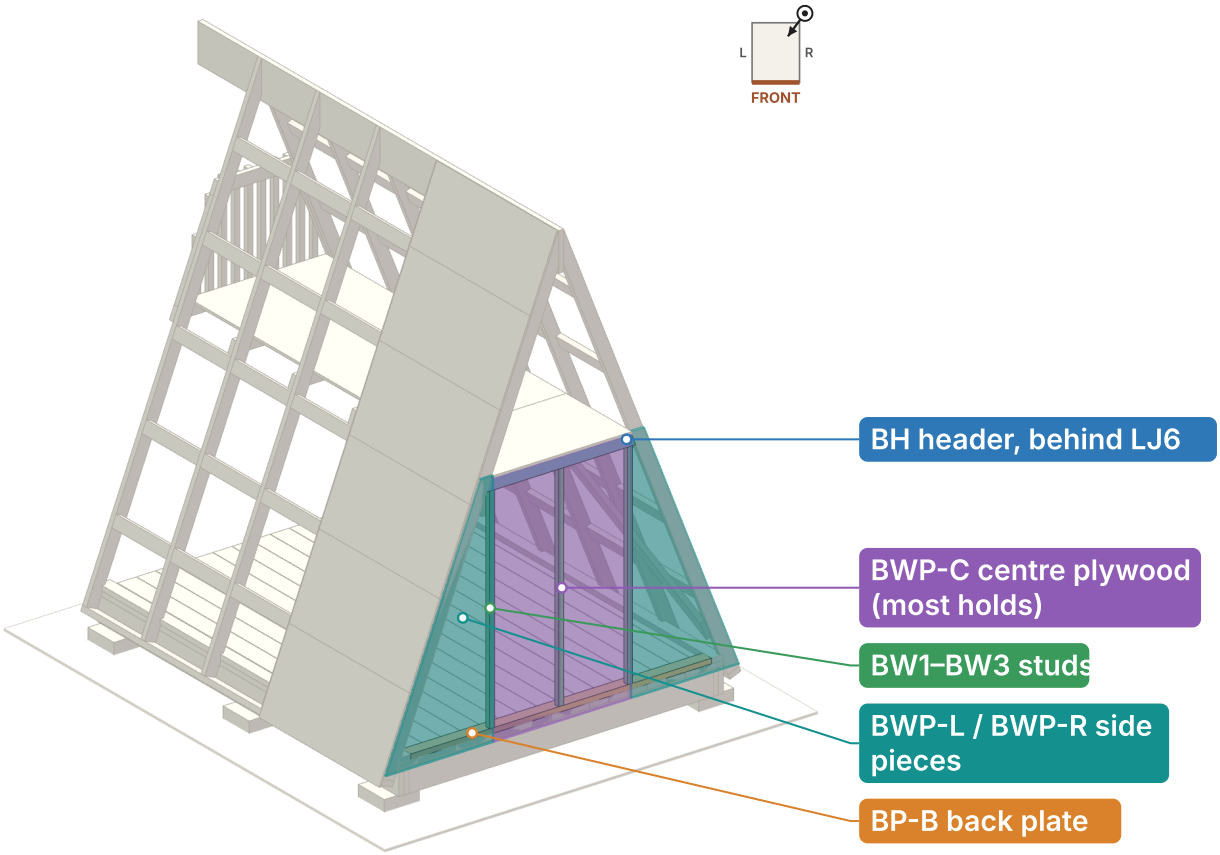
106 × #8 × 2"

Tools

Circular saw, drill with the bit the hold kit names, hammer, impact driver, sander or router

2 people

about 1 day

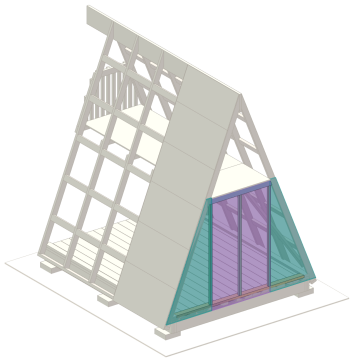


A



Plate, studs and header

B



T-nuts set, then the three plywood pieces

1 ☐ **Screw down the back plate BP-B** (89" PT 2×4) flat on the deck between **BP-L** and **BP-R**, back edge flush with the back of the platform. One #10 × 2½" into each deck board it crosses (15).

2 ☐ **Cut the header BH** from one old ridge post: 44 3/16" on the bottom edge, both ends 21.8° off square (41⅜" on top). Fit it between **RL6** and **RR6** in the same plane as the rafters, tight against the back of **LJ6**, top flush with **LJ6**. Face-screw it to **LJ6** with 10 #10 × 2½" and toe-screw each end into the rafter with 2 #10 × 3".

3 ☐ **Cut three studs BW1–BW3** from old kickers at 62½". Stand them on **BP-B** with their centres at 27⅝", 48" and 68⅜" from the left side of the platform (the outer two line up with the edges of the loft floor), under the header. Toe-screw each end with 2 #10 × 3".

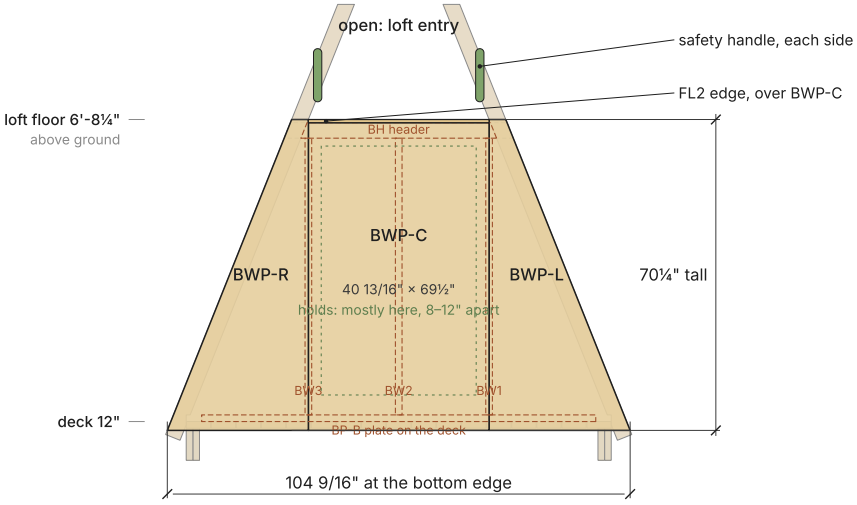
4 ☐ **Plan the holds.** Lay the three plywood pieces on the ground, back face up, and mark the holds: mostly on the centre piece, 8–12" apart, first row 6" above the deck, last row about 6" below the top. Keep every hole at least 2" from a stud or the edge.

5 ☐ **Drill and set the T-nuts** from the back face (the side that faces the inside), using the bit size the hold kit specifies. Tap each T-nut flush.

6 ☐ **Hang the plywood: BWP-C** first: edges on the centres of **BW1** and **BW3**, slid up until its top edge is tight under the **FL2** overhang, so the floor covers it. Its bottom edge then sits ½" below the underside of the deck boards, covering their ends so rain drips clear onto **ER-B**. **BWP-L** and **BWP-R** next: same bottom line, sloped edges flush with the rafters' outside faces, tops flush with the loft floor. #8 × 2" every 6" into the studs, header, rafters and the back plate **BP-B**, and every 12" on **BW2**.

7 ☐ **Round over and sand** the top edge where the kids climb in.

Back climbing wall seen from behind



¾" (23/32") plywood takes the T-nuts the holds bolt into. Joints on BW1 and BW3. 48⅜" wide at the top.
Bottom edge ½" below the deck boards, covering their ends. FL2 laps over the top of BWP-C; sides flush with the floor.
Before the plywood goes on: mark the holds (not over a stud), drill, and set the T-nuts from the back face.
Holds: start 6" above the deck, finish about 6" below the loft floor. Sand and round over the top edge.
Handles and the open triangle above: kids climb in here, 6'-8" up. Loose-fill surfacing behind the wall (see shopping list).

Version B — back climbing wall	Ver B · proposed	Sheet B4

Heads up The loft entry is 6'-8¼" above the ground. Put the loose-fill surfacing down before anyone climbs.

12 PolyCarb and ridge cap

Five panels on the left, three on the right front, a batten over the joint, then the cap.

Parts

PL1–PL5, **PR1–PR3** polycarb panels (smoke) (8), Tuftex PolyCarb 26" × 12', smoke

BT joint batten (1), 1×4 PT: 11'-7⅝"

CP-L, **CP-R** ridge cap boards (2), 1×6 PT: 10'-2"

9 closure strips, 3 tubes clear silicone

White exterior paint (under the panels)

Fasteners

13 × #10 × 2½"

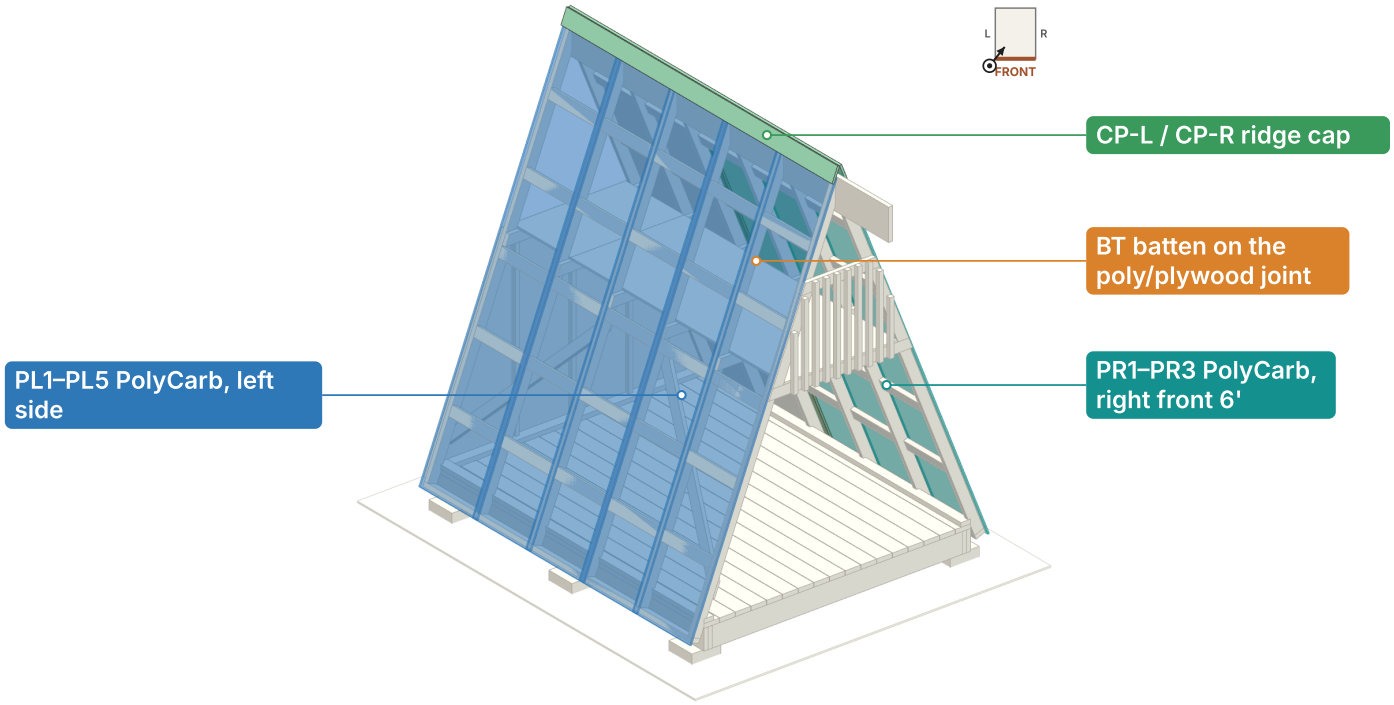
24 × #10 × 3"

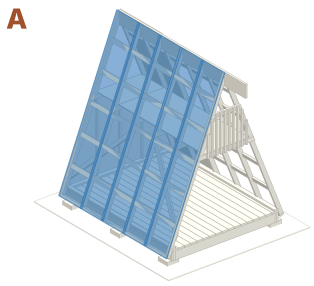
280 × Tuftex #10 × 2" washer screws

Tools

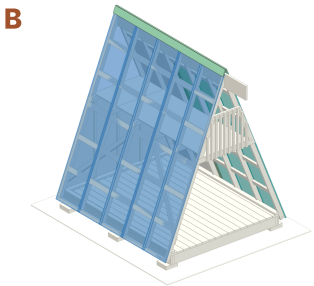
Fine-tooth blade, drill with 5/16" bit, impact driver with hex socket, caulk gun, brush, two ladders

2 people · about 1 day





Left side: PL1 at the front, lap toward the back



Right front, batten, then the ridge cap

1 ☐ **Paint first.** Prime and paint the top edges of the rafters, blocks and fascia that will sit under the panels. Tuftex asks for white under the panels: dark wood under PolyCarb gets very hot.

2 ☐ **Cut the panels** to 141 7/16", trimming the top end. Rip **PR3** to 25".

3 ☐ **Closure strips at the eave:** lay a wood closure strip along the top of the fascia under each panel's corrugations (paint them white).

4 ☐ **Start PL1 at the front of the left side:** bottom edge ½" below the fascia, front edge 1" past the front of **RL1**, panel square to the fascia. Pre-drill 5/16" holes (bigger than the screw so the panel can expand), then screw with Tuftex #10 × 2" washer-head screws in the valleys at the fascia and at every block row. Snug the washers, don't crush them.

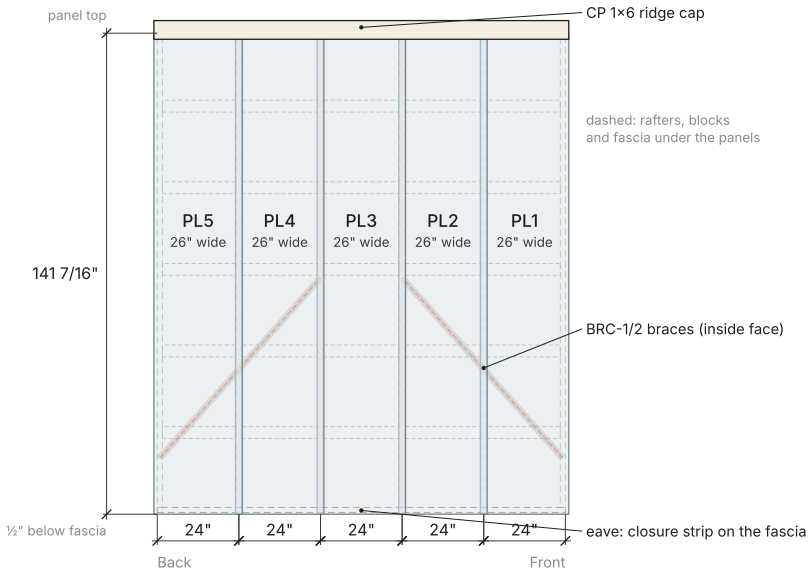
5 ☐ **Lap each next panel** one corrugation over the last, with a bead of clear silicone in the lap. Every lap lands on a rafter. **PL5** ends 1" past the back.

6 ☐ **Right side: PR1–PR3** the same way, from the front. **PR3**'s cut edge ends on the centre of **RR4**, against the plywood.

7 ☐ **Batten the joint:** bed **BT** (1×4 PT, 139⅝") in silicone over the poly/plywood joint and screw through it into **RR4** every 12" with #10 × 2½".

8 ☐ **Ridge cap:** closure strips along the top of the panels on both sides, then **CP-L** and **CP-R** (1×6 PT, 122"), meeting at the peak and running 1" past the front and back. Each laps 1 13/16" down over the panels. 2 #10 × 3" per board at every rafter. Silicone along the meeting line.

Left side, outside face (true slope) cladding layout

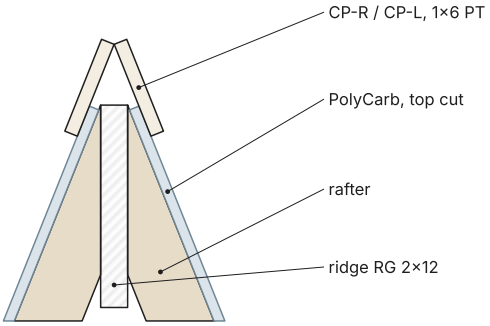


Panels lap one corrugation (2"); every lap lands on a rafter. 26" panel = 24" of cover.
Cut each 12' panel to 141 7/16" (trim the top). Pre-drill 5/16", screw in the valleys at the fascia and block rows.
Run a bead of clear silicone in each side lap. Paint the top edges of rafters, blocks and closures white (Tuftex).
Braces BRC-1/2 (2×4 on the inside face) go on before the panels: PolyCarb doesn't stiffen the wall.

Version B — left side cladding	Ver B · proposed	Sheet B2

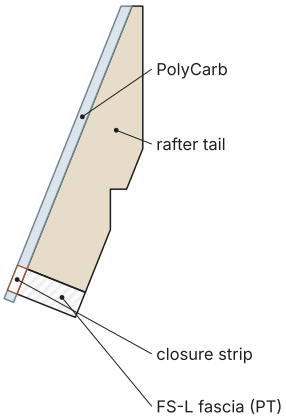
Details: ridge cap and eave closure left side shown

Ridge cap



Cap laps 1 13/16" down each side.
Closure strip under each board, painted white.
#10 × 3" through cap and crown into each rafter, 2 per board.
Silicone along the meeting line at the peak.

Eave



Panel ends ½" below the fascia.
Screw in the valleys through the closure into the fascia.

Version B — cap and eave details	Ver B · proposed	Sheet B5

13 Finish

Holds, handles, paint, surfacing and the last checks.

Parts

Hold bolts (from the kit), safety handles

About 62 bags playground mulch

Primer and paint

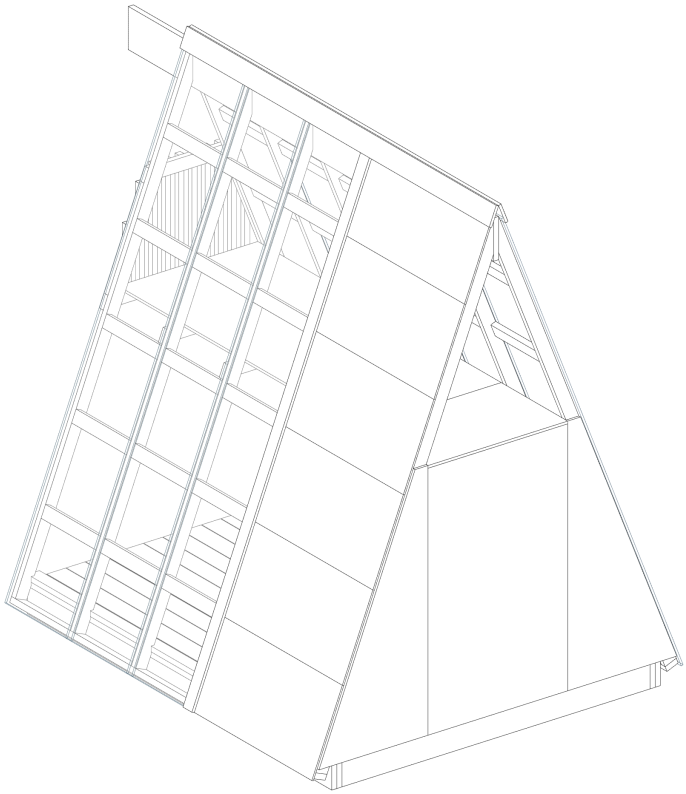
Fasteners

None

Tools

Hex key or wrench for the holds, drill, paint brushes, rake

1–2 people **about ½–1 day**



Finished, from the back-right. Holds go mostly on the centre plywood BWP-C; handles on the back faces of RL6 and RR6.

1 ☐ **Bolt on the holds** through the plywood into the T-nuts, following the kit. Tighten them so they can't spin. Re-check them every few weeks the first season.

2 ☐ **Mount the grab handles** on the back faces of **RL6** and **RR6**, upright, starting about 4" above the loft floor, with the screws the handles come with.

3 ☐ **Paint** every untreated surface: the frame, the loft, the banister, both faces and all edges of the plywood.

4 ☐ **Surfacing:** spread loose fill at least 6' out behind and beside the climbing wall, about 12" deep when new (it packs down to the 9" minimum). About 62 bags of 2 cu ft.

Before the kids move in

1. ☐ No screw tips anywhere: run a hand over the inside faces, the loft floor, the banister and the deck.
2. ☐ A 3½" block can't pass between any banister slats or between the outer slats and the stringers.
3. ☐ Rail solid: lean on it hard.
4. ☐ Holds tight, handles tight, top edge of the climbing wall smooth.
5. ☐ PolyCarb screws snug, no cracked panels, cut edges not exposed where kids can reach them.
6. ☐ Anchor cables snug. Surfacing in place. Nothing hanging from the ridge overhang.

Fastening schedule

Every fastener, where it goes and how many. These counts drive the hardware list and the stage boxes. Counts for the loft, back wall, braces and cap are proposed: confirm with the engineer.

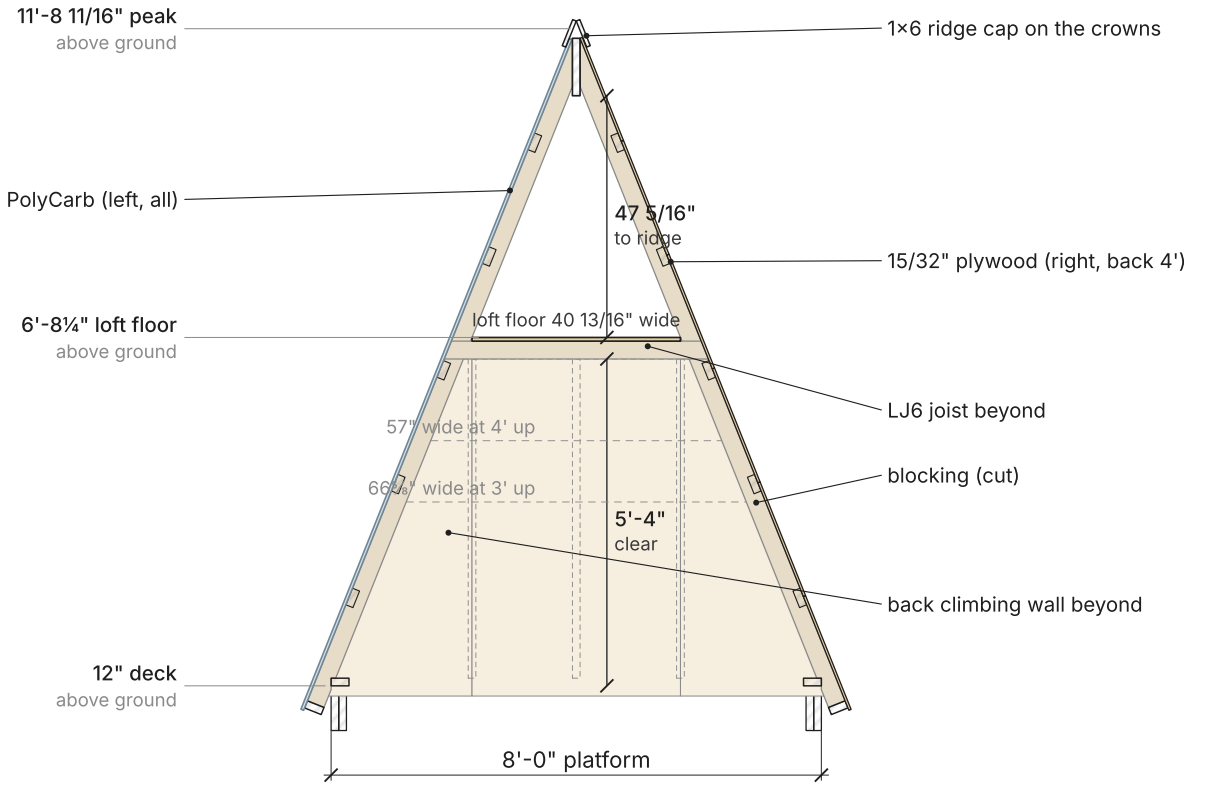
Fastener	Where	Count
#10 × 2½"	Beam plies together: 2 rows × 10 per beam, 12" apart, both beams	40
#10 × 2½"	Loft joists: 3 through each joist end into the rafter	36
#10 × 2½"	Stringers **ST-L** / **ST-R** to **RL1** / **RR1**: 3 each	6
#10 × 2½"	Slats: 2 into **LJ1** each	20
#10 × 2½"	Slats **BS1**, **BS2**, **BS9**, **BS10**: 2 into the stringer each	8
#10 × 2½"	Rail **HR** ends into **RL1** / **RR1**: 3 each	6
#10 × 2½"	Slats **BS3–BS8**: 2 into the rail **HR** each	12
#10 × 2½"	Header **BH** face-screwed to **LJ6**	10
#10 × 2½"	Back plate **BP-B** into the deck boards: 1 per board	15
#10 × 2½"	Batten **BT** into **RR4** through the poly and plywood: every 12"	13
#10 × 2½" total		**166**
TimberLOK 6"	End rims: 3 through each beam into each rim end	12
TimberLOK 6"	Bottom plates into beams: 10 per plate	20
TimberLOK 6"	Rafter tail into plate edge: 1 per rafter	12
TimberLOK 6" total		**44**
LUS28Z hanger	**J1–J4**, one each end	8
LUS28Z hanger total		**8**
SD #9 × 1½"	6 per hanger into the beam	48
SD #9 × 1½" total		**48**
SD #9 × 2½"	4 per hanger into the joist	32
SD #9 × 2½" total		**32**
#10 × 3"	Deck boards: 2 per board at each of 6 supports	204
#10 × 3"	Rafter seat toe-screws into plate: 2 per rafter	24
#10 × 3"	Rafter top toe-screws into ridge: 2 per rafter	24
#10 × 3"	Blocks: 2 toe-screws at the other end	100
#10 × 3"	Kickers: 2 at the post, 2 into the deck (temporary)	24
#10 × 3"	Cradle cleats to posts: 3 each (temporary)	12
#10 × 3"	Braces: 2 at each rafter they cross	12
#10 × 3"	Studs: 2 toe-screws each end	12
#10 × 3"	Header: 2 toe-screws each end into the rafter	4
#10 × 3"	Ridge cap: 2 per board at each rafter	24
#10 × 3" total		**440**
#10 × 3½"	Fascia into rafter ends: 2 per rafter	24
#10 × 3½"	Blocks: 2 face-screws through the rafter into one end	100
#10 × 3½" total		**124**
#8 × 2"	Loft floor **FL1**/**FL2**: 6" on panel ends, 12" on middle joists	47
#8 × 2"	Right-back plywood **SB1–SB6**	155

Fastening schedule

Fastener	Where	Count
#8 × 2"	Back-wall plywood: 6" around every edge, 12" on the middle stud	106
#8 × 2" total		**308**
Tuftex #10 × 2"	PolyCarb: Tuftex's count of 35 per 12' panel, in the valleys at every support	280
Tuftex #10 × 2" total		**280**

Reference drawings

Section just behind RL5 / RR5 looking toward the back

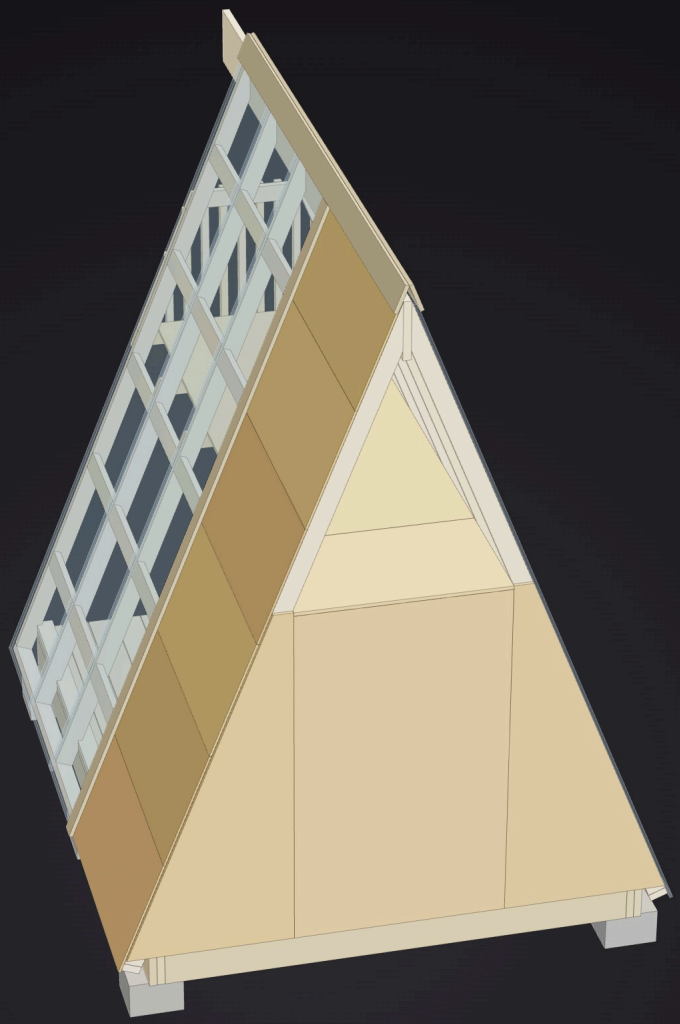


Version B — section through the loft	Ver B · proposed	Sheet B1

Section through the loft.

Kids' A-Frame Playhouse

Same floor and 30:12 frame as Version A, with PolyCarb sides, a full-depth loft and a climbing wall at the back. Every length, count and screw comes from one 3D model, so the drawings, lists and steps agree with each other.



13
stages, in order

154
cut pieces, each with an ID

About 4 weekends
for two people with ordinary DIY experience

8'-0" × 10'-0"
platform

11'-8 11/16"
peak above ground

6'-8¼"
ground to loft floor

Status. Proposed design, November 2026 (edition 2: same design as October, reorganised for first-time builders). Not yet reviewed by an engineer: have a qualified professional look it over before you build.

Keep kids off the frame until the banister and the back wall are finished.

Explore the 3D model
a-frame-playhouse-ten.vercel.app