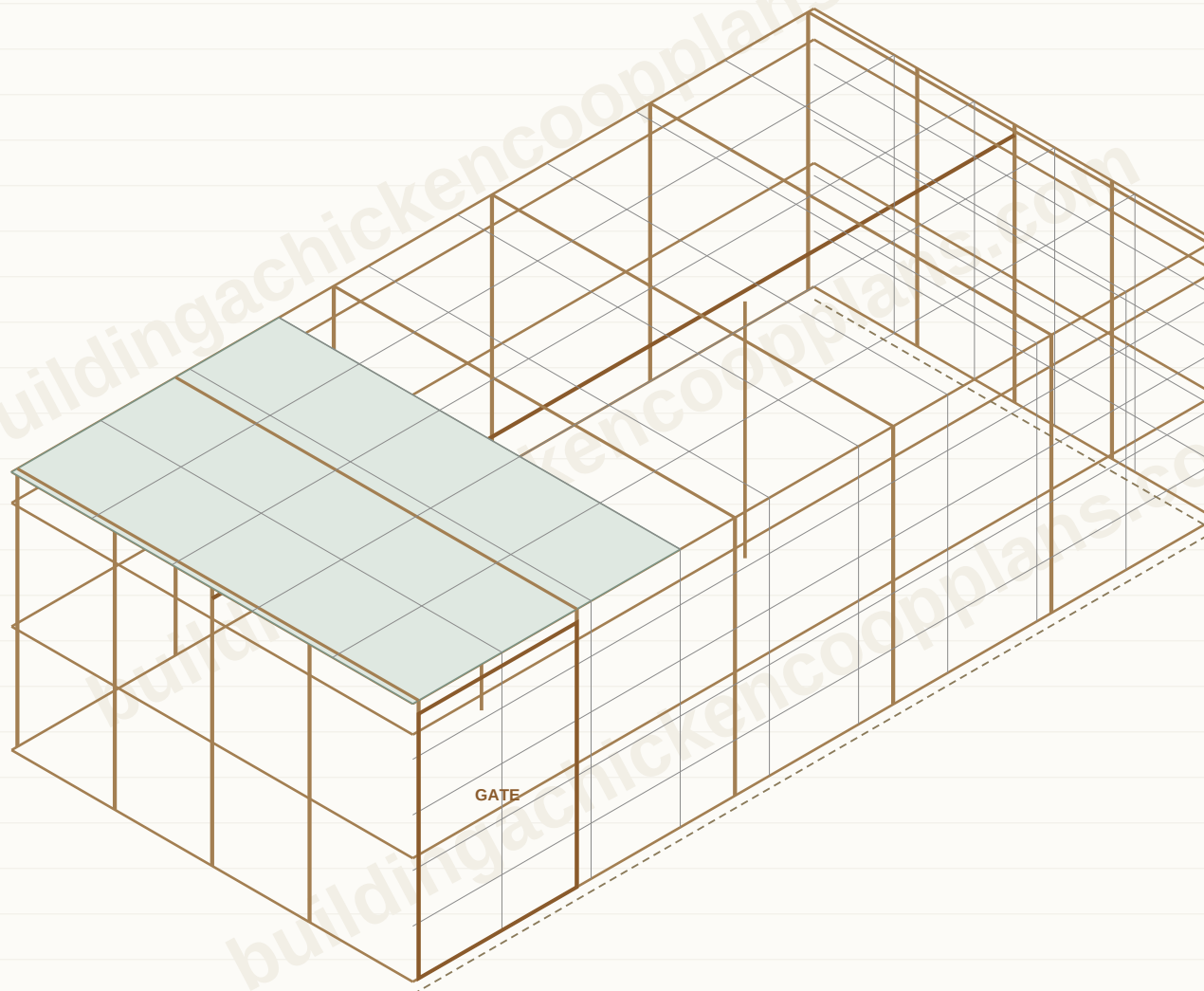


10X20 STANDALONE CHICKEN RUN

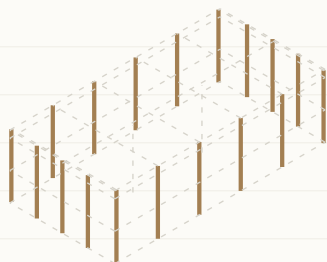
200 sq ft of run · no coop · outdoor space for 25-40 hens



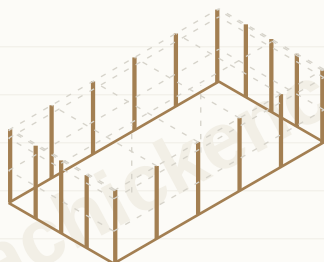
Revision 1.0 · July 2026 · corrections and updates: buildingachickencoopplans.com/errata
Check the revision before you cut. If yours is older than the one on that page, something in it has been corrected.

THE BUILD, STAGE BY STAGE

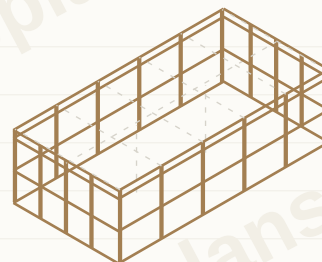
11 stages, in order. Solid is what you have built by the end of that step; the dotted outline is what is still to come. Check your work against the matching picture before you move on — it is much cheaper to notice a wall in the wrong place here than three steps later.



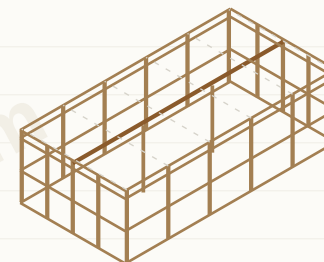
1. Set the posts



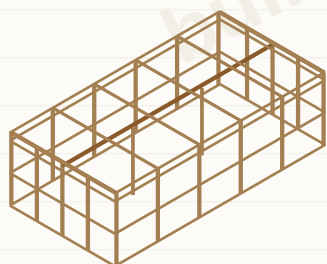
2. Bottom rail and the gate thr...



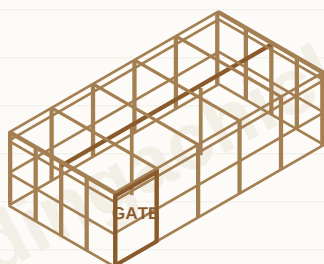
3. Mid rails and top rails



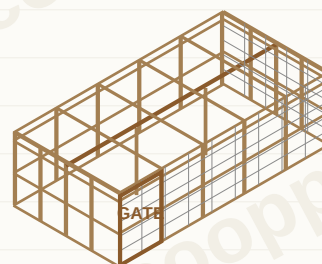
4. Centre beam



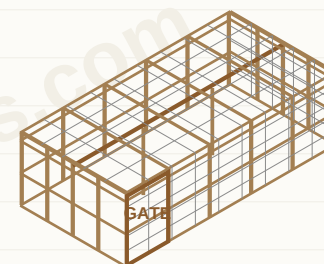
5. Purlins



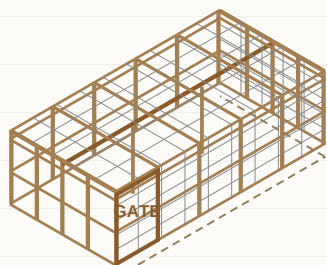
6. Gate



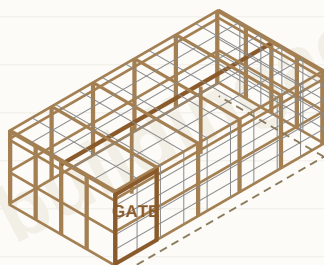
7. Hardware cloth — walls



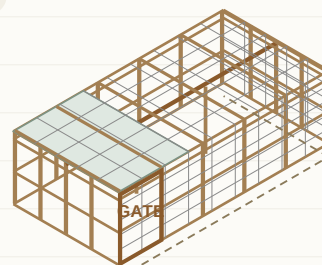
8. Hardware cloth — roof



9. Buried apron



10. Grade, drain and surface



11. Shade

CONTENTS

- 1 10x20 Standalone Chicken Run
- 2 The build, stage by stage
- 3 Contents
- 4 Before you begin
- 5 Tools you will need
- 6 Notes on lumber dimensions
- 7 Material list
- 8 Master cut list
- 9 Master cut list (continued)
- 10 What to buy - board count
- 11 Main dimensions: plan view
- 12 Main dimensions: gate elevation
- 13 Main dimensions: cross section
- 14 Post, apron and cloth details
- 15 What the words mean
- 16 Cut plan — what to cut from each board
- 17 Step 1: Set the posts
- 18 Step 2: Bottom rail and the gate threshold
- 19 Step 3: Mid rails and top rails
- 20 Step 4: Centre beam
- 21 Step 5: Purlins
- 22 Step 6: Gate
- 23 Step 7: Hardware cloth — walls
- 24 Step 8: Hardware cloth — roof
- 25 Step 9: Buried apron
- 26 Step 10: Grade, drain and surface
- 27 Step 11: Shade
- 28 Important — please read before building
- 29 Important — please read (continued)
- 30 Plans complete

30 pages. Read the whole set once before the first cut.

BEFORE YOU BEGIN

Wear safety gear

Safety glasses, gloves and ear protection. A circular saw and a framing nailer both throw debris.

Read the whole plan first

Understand every step and have the full material list on hand before the first cut.

Check your local rules

The number a building department measures is the FOOTPRINT: 200 sq ft. A covered run is a structure in most jurisdictions even though nothing lives in it, and several count it against the same threshold as the coop — so if you already have a coop, check the pair together, not this on its own. Many jurisdictions require a permit past 100, 120 or 144 sq ft of footprint, and most require a setback from property lines. Confirm both before you buy lumber.

Work on a level base

Lay the run out and check the diagonals against each other BEFORE a hole is dug. Every post is buried and none of them moves afterwards, so a frame set out of square stays out of square, and every rail and the gate are cut to what the bays actually measure.

Use hardware cloth, never chicken wire

Chicken wire keeps chickens in. It does not keep raccoons, weasels or foxes out. Quarter-inch 19-gauge hardware cloth, stapled and then screwed through fender washers. Quarter-inch, not half: a least weasel gets through a half-inch opening and does not get through a quarter-inch one.

Cut one, test-fit, then batch

Cut a single instance of each part, fit it, confirm it against the drawing, and only then cut the rest.

TOOLS YOU WILL NEED

Nothing in this plan needs a table saw, a compound mitre saw, or pocket-hole joinery.

ESSENTIAL

Circular saw	Every cut in this plan. A sharp 24-tooth framing blade is enough.
Drill / driver	Two is better than one - one drilling pilot holes, one driving.
Tape measure	25 ft. Check it against a second tape before you start.
Speed square	Marking square cuts and the 45-degree rafter cuts.
4 ft level	The base ring and the first wall decide everything after them.
Hammer	Staples, adjustments, persuasion.
Tin snips	Cutting hardware cloth. Wear gloves - the cut edges are vicious.
Staple gun	Tacking hardware cloth before you screw the washers.
Safety glasses, gloves, ear protection	Non-negotiable with a circular saw.
Post-hole digger or auger	Every one of the 18 posts is buried 24". This is the tool the job lives on.
Hog-ring pliers	Lapping cloth to cloth. A lap that is only adjacent is not a lap.
Tamping bar	Backfill goes in in layers and each one gets tamped hard.

MAKES IT MUCH EASIER

Mitre saw	The repetitive stud and rafter cuts go 3x faster and squarer.
Impact driver	Driving several hundred screws by drill is punishing.
Sawhorses (pair)	Cutting on the ground is slow and inaccurate.
Clamps (4+)	Holding a wall square while you fasten it.
Chalk line	Siding courses and deck fastening lines.
Carpenter's pencil + marking knife	A pencil line is 1/32 wide; that adds up.
Wheelbarrow	Gravel to the holes and 3-4in of sand over the whole floor.

NOTES ON LUMBER DIMENSIONS

Nominal vs actual

The material list uses nominal sizes (2x4, 4x4). The drawings use actual finished sizes: a 2x4 really measures 1-1/2" x 3-1/2", and a 4x4 measures 3-1/2" x 3-1/2".

Measure your own stock

Mills vary. Check the lumber you actually bought against the drawings before cutting; a sixteenth of an inch compounds fast across an 8-foot wall.

Buy a little extra

The material list has no waste allowance. Add two or three 2x4s if you are new to framing.

Crown matters

Sight down every joist and rafter and mark the crown. Install them all crown-up.

MATERIAL LIST

Material	Size	Quantity	Find it
2x4 lumber	12 feet	6 pcs	search Home Depot ■
2x4 lumber	8 feet	34 pcs	search Home Depot ■
2x6 lumber	8 feet	6 pcs	search Home Depot ■
4x4 post (GROUND CONTACT rated — these are buried)	10 feet	18 pcs	search Home Depot ■
4x4 post (GROUND CONTACT rated — these are buried)	8 feet	2 pcs	search Home Depot ■
1/4" hardware cloth, 19 ga	36" roll	100 ft + 100 ft + 50 ft	search Home Depot ■
Fender washers + screws for cloth	1" washer	1032 pcs	search Home Depot ■
Heavy-duty staples	1/2"	1 box (1000)	search Home Depot ■
Hog rings + pliers (lapping cloth to cloth)	—	1 bag (100)	
Gravel for the post holes	3/4" clean	35 cu ft	search Home Depot ■
Coarse sand or 3/8in drain rock (run floor)	3-4in deep	3 cu yd	search Home Depot ■
Shade cloth, 70-80% block	~67 sq ft	1 panel + zip ties	
3/4" plywood (beam gussets)	4' x 8'	1 pc	search Home Depot ■
2-1/2" exterior screws	5 lb box	2 boxes	search Home Depot ■
1-1/2" exterior screws	5 lb box	2 boxes	search Home Depot ■
3" structural screws (rails to posts)	—	216 pcs	search Home Depot ■
Exterior primer + paint	1 gal each	1 + 1	search Home Depot ■
Hinges, heavy strap or T	—	3 (one gate)	search Home Depot ■
Two-action latch	—	1	
Barrel bolt, gate bottom to threshold	—	1	

Estimated materials cost at 2026 big-box prices: \$1,900-\$2,450. This is priced off THIS list — every line above, including piers, gravel, run surface, fasteners, caulk and paint. Every line links to a Home Depot SEARCH, not to a product page — item numbers change and a dead link is worse than none, but the search terms keep working. Two specs are worth knowing about before you go: 1/4in hardware cloth is widely stocked in 23 gauge and you want 19, which is usually a special order or online; and corrugated panels are sold 26in wide (24in of coverage) in even foot lengths, not in 4x8 sheets.

MASTER CUT LIST

Every cut in the build, grouped by stock. Take this to the saw. The board-count buy list follows it.

2X4

Part	Step	Qty	Length	Note
Purlin	5	6	120"	ON EDGE — clear span 55"
Gate stile	6	2	68-1/2"	
Gate brace	6	2	46-1/16"	ends cut at 39 deg; BOTH rise from the hinge side
Bottom rail	2	7	43-13/16"	GROUND CONTACT — this course lies on soil
Gate threshold	2	1	43-13/16"	GROUND CONTACT, laid FLAT, bedded into the soil
Rail	3	22	43-13/16"	
Bottom rail	2	2	43-3/4"	GROUND CONTACT — this course lies on soil
Rail	3	6	43-3/4"	
Gate rail	6	3	35-13/16"	top, middle, bottom
Bottom rail	2	8	25-5/8"	GROUND CONTACT — this course lies on soil
Rail	3	24	25-5/8"	

1/4" HARDWARE CLOTH

Part	Step	Qty	Length	Note
Run walls, all four sides	7	1	135 lin ft	
Gate leaf	7	1	8 lin ft	
Run roof	8	1	75 lin ft	
Buried apron, 12" down and 12" out	9	1	40 lin ft	

2X6

Part	Step	Qty	Length	Note
Beam ply	4	2	78-7/8"	two plies, joints over a post
Beam ply	4	4	78-13/16"	two plies, joints over a post

4X4

Part	Step	Qty	Length	Note
Post	1	18	96"	ground contact; 24" buried, 72" above grade
Centre post	4	2	90-1/2"	ground contact; 24" buried

3/4" PLYWOOD

Part	Step	Qty	Length	Note
Beam gusset	4	4	12" x 11"	one each side of every joint

MASTER CUT LIST (CONTINUED)

COARSE SAND

Part	Step	Qty	Length	Note
Coarse sand or 3/8in drain rock	10	1	3 cu yd	3-4in deep over the whole floor, raked level then cr

SHADE CLOTH

Part	Step	Qty	Length	Note
Shade cloth panel	11	1	~67 sq ft	70-80% block, zip-tied to the purlins on the afterno

22 part lines in total — if your copy shows fewer, a page is missing.

WHAT TO BUY - BOARD COUNT

These counts come from actually packing the cut list onto real stock, allowing 1/8 inch per saw kerf and 4 inches of margin on any cut over 8 feet. **The material list on page 7 is generated from this same packing**, so the two pages cannot disagree — they used to, by sixteen boards on the 2x4 line and by a three-board shortfall on the 4x4.

Stock	Buy this length	How many	Longest cut on it	Note
2x4	12 ft	6	120"	cut from full-length stock
2x4	8 ft	34	68-1/2"	general framing
2x6	8 ft	6	78-7/8"	general framing
4x4	10 ft	18	96"	cut from full-length stock
4x4	8 ft	2	90-1/2"	general framing

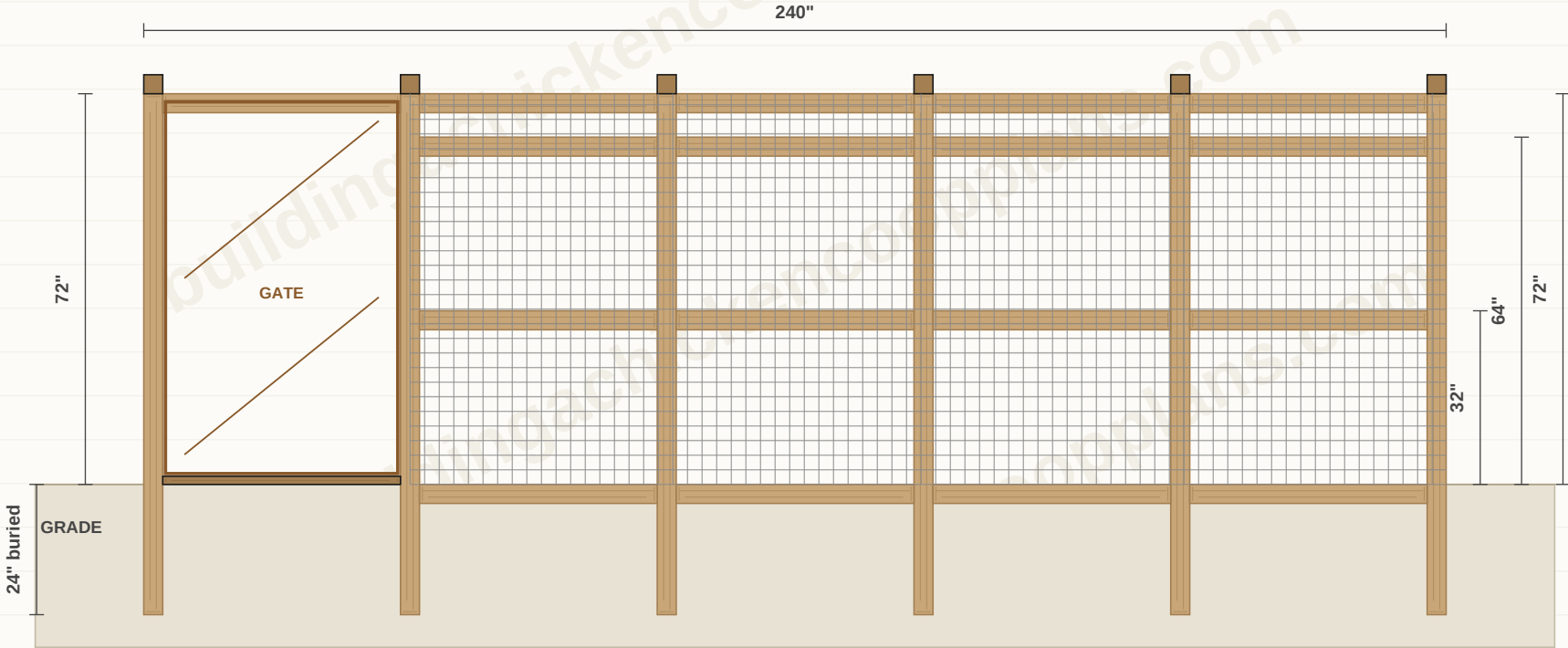
Buy two or three extra 2x4s beyond this count if you are new to framing — one bad cut costs less than a second trip to the yard. Sheet goods, mesh, fasteners and hardware are all on the material list and already carry their allowances.

MAIN DIMENSIONS: PLAN VIEW



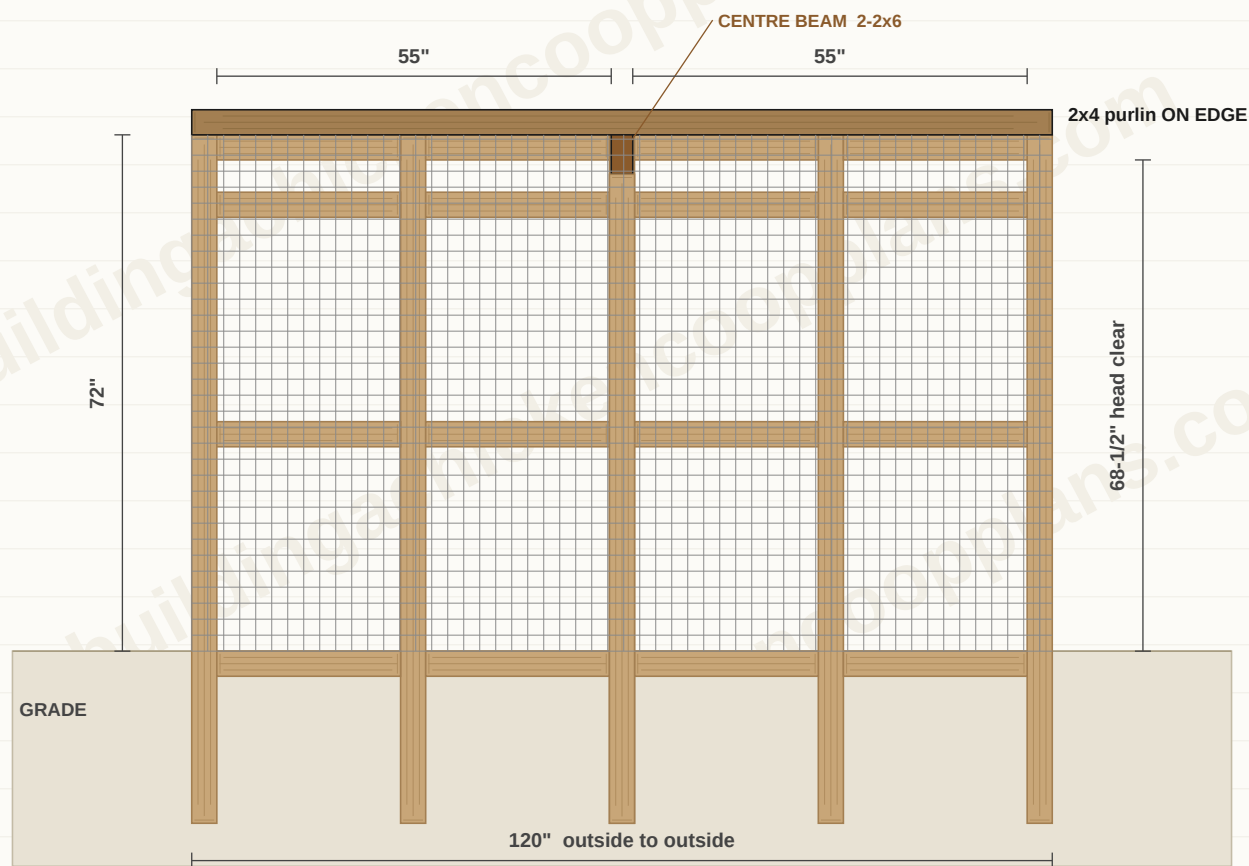
Post centrelines. Outside faces of the posts are FLUSH with the 10 ft x 20 ft footprint, so the run is the size on the cover.
Bays are not an even division — an even division of this frame lands on a number you cannot mark. Each lands on a sixteenth; the last takes the rounding.

MAIN DIMENSIONS: GATE ELEVATION



Rails at 0", 32", 64", 72" above grade. A 36" course of cloth started at any rail reaches the next with 4" of lap.
Post is one 8-ft 4x4: 72" above grade, 24" below.

MAIN DIMENSIONS: CROSS SECTION

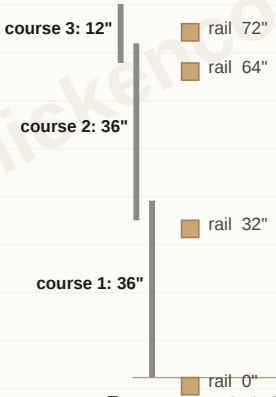
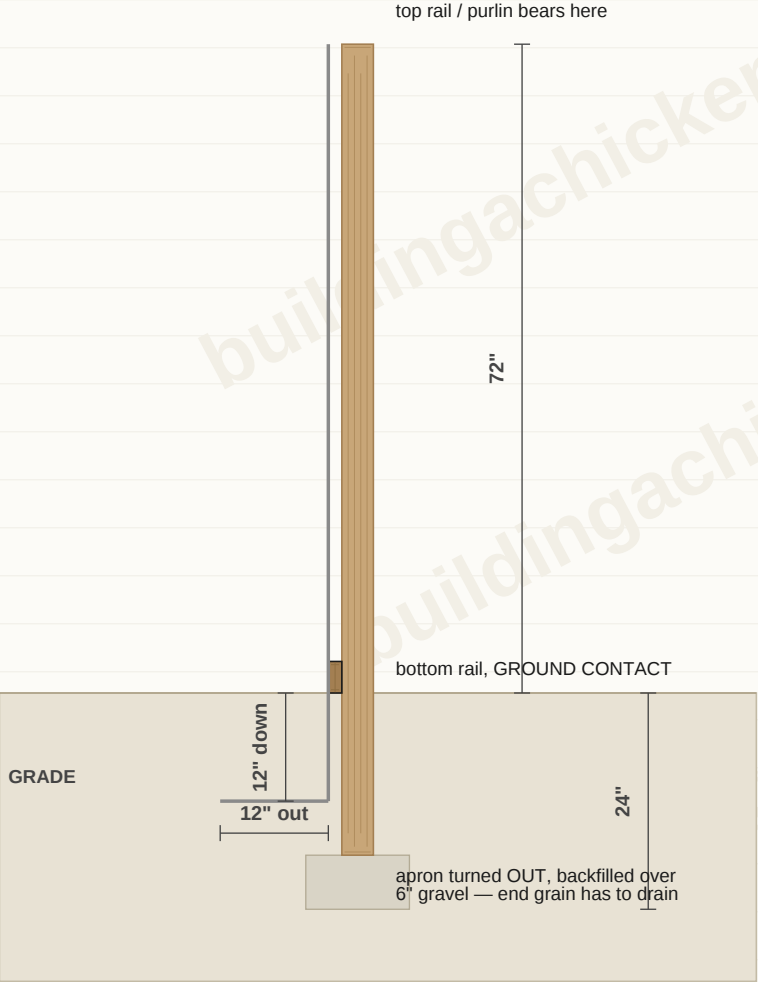


Head clearance under the purlins is 68-1/2". Tall people duck — that is the trade for a run built out of 8-ft posts.
At 10 ft wide the purlin would clear 113" unsupported, past what it carries, so the centre beam halves it to 55".

POST, APRON AND CLOTH DETAILS

1 / POST, APRON AND BOTTOM RAIL (section)

2 / HOW THE CLOTH COURSES LAND (wall section)



Every course starts ON a rail and laps 4" onto the next one up. That is why the rails are at 32" and not at 36": a course that ends between rails has a free top edge, and a free edge is what a raccoon works until it gives. The top course is cut 12" for 8" of wall — the surplus folds over the top rail and the roof cloth laps onto the fold, so there is no seam at the corner.

WHAT THE WORDS MEAN

Every term this plan uses that is not ordinary English. If a step says something you do not recognise, it is on this page — you should not have to leave the document to understand it.

Apron

A skirt of hardware cloth turned OUTWARD at the base of the wall, buried a few inches down. It works by being in the way rather than by being deep: a digging animal starts where it meets the wall, and that is exactly where the apron is.

Bay

The space between two adjacent posts. This run is described bay by bay because every rail, and the gate, is cut to a bay.

Crown

The natural bow along a board's edge. Sight down it, mark the high side, and install every piece with the crown the same way.

Eave

The lower edge of a roof, where it meets the wall. On a shed roof one long wall is the LOW eave and the other is the HIGH eave.

Kerf

The width of material a saw blade removes — about 1/8in. It matters when you cut several pieces from one board.

Lap

Where one piece runs past another and they overlap, rather than meeting end to end.

On centre (OC)

Spacing measured from the CENTRE of one stud to the centre of the next, not the gap between them. 16in OC means centres 16in apart.

Plumb / level / square

Plumb is vertical, level is horizontal, square is a true 90 degrees. Check square by measuring both diagonals of a rectangle — equal diagonals means square.

Proud

Standing out past the surface beside it, deliberately, to be trimmed later.

Purlin

A member across the top of the run, post row to post row, that the roof cloth fastens to. It is a roof member, not a tie: it carries snow and the weight of an animal standing on it.

Rail

A horizontal member between two posts. Rails do two jobs here — they stiffen the frame and they give every course of cloth an edge to be fastened to.

Rough opening (R.O.)

The framed hole, measured between the jack studs and from the sill to the underside of the header. Always bigger than the door or window that goes in it.

Scribe

To mark a piece by holding it in place and tracing the thing it must fit, rather than measuring.

Threshold

The ground-contact board laid flat across the gate opening. The buried apron cannot run under a gate that swings, so the threshold is what closes the one gap in the perimeter.

Toe-screw

To drive a screw at an angle through the end of one piece into the face of another, where you cannot get at it straight on.

Two-action latch

A latch needing two different motions to open — lift and slide, or squeeze and turn. Raccoons defeat anything that needs only one.

CUT PLAN — WHAT TO CUT FROM EACH BOARD

Label every board as you pick it up, then cut it in the order shown. This is the same packing the buy list is counted from, so if you follow it you will not run out and you will not be left holding offcuts you needed. Waste is what is left after the last cut on that board.

2x4 8ft #1	68-1/2"	25-5/8"	1-5/8" left
2x4 8ft #2	68-1/2"	25-5/8"	1-5/8" left
2x4 8ft #3	46-1/16"	46-1/16"	3-5/8" left
2x4 8ft #4	43-13/16"	43-13/16"	8-1/8" left
2x4 8ft #5	43-13/16"	43-13/16"	8-1/8" left
2x4 8ft #6	43-13/16"	43-13/16"	8-1/8" left
2x4 8ft #7	43-13/16"	43-13/16"	8-1/8" left
2x4 8ft #8	43-13/16"	43-13/16"	8-1/8" left
2x4 8ft #9	43-13/16"	43-13/16"	8-1/8" left
2x4 8ft #10	43-13/16"	43-13/16"	8-1/8" left
2x4 8ft #11	43-13/16"	43-13/16"	8-1/8" left
2x4 8ft #12	43-13/16"	43-13/16"	8-1/8" left
2x4 8ft #13	43-13/16"	43-13/16"	8-1/8" left
2x4 8ft #14	43-13/16"	43-13/16"	8-1/8" left
2x4 8ft #15	43-13/16"	43-13/16"	8-1/8" left
2x4 8ft #16	43-13/16"	43-13/16"	8-1/8" left
2x4 8ft #17	43-13/16"	43-13/16"	8-1/8" left
2x4 8ft #18	43-13/16"	43-13/16"	8-1/8" left
2x4 8ft #19	43-3/4"	43-3/4"	8-1/4" left
2x4 8ft #20	43-3/4"	43-3/4"	8-1/4" left
2x4 8ft #21	43-3/4"	43-3/4"	8-1/4" left
2x4 8ft #22	43-3/4"	43-3/4"	8-1/4" left
2x4 8ft #23	35-13/16"	35-13/16"	24-1/8" left
2x4 8ft #24	35-13/16"	25-5/8"	25-5/8" 8-9/16" left
2x4 8ft #25	25-5/8"	25-5/8"	25-5/8" 18-3/4" left
2x4 8ft #26	25-5/8"	25-5/8"	25-5/8" 18-3/4" left
2x4 8ft #27	25-5/8"	25-5/8"	25-5/8" 18-3/4" left
2x4 8ft #28	25-5/8"	25-5/8"	25-5/8" 18-3/4" left
2x4 8ft #29	25-5/8"	25-5/8"	25-5/8" 18-3/4" left
2x4 8ft #30	25-5/8"	25-5/8"	25-5/8" 18-3/4" left
2x4 8ft #31	25-5/8"	25-5/8"	25-5/8" 18-3/4" left
2x4 8ft #32	25-5/8"	25-5/8"	25-5/8" 18-3/4" left
2x4 8ft #33	25-5/8"	25-5/8"	25-5/8" 18-3/4" left
2x4 8ft #34	25-5/8"		70-1/4" left
2x6 8ft #1	78-7/8"		17" left
2x6 8ft #2	78-7/8"		17" left
2x6 8ft #3	78-13/16"		17-1/16" left
2x6 8ft #4	78-13/16"		17-1/16" left
2x6 8ft #5	78-13/16"		17-1/16" left
2x6 8ft #6	78-13/16"		17-1/16" left
4x4 8ft #1	90-1/2"		5-3/8" left
4x4 8ft #2	90-1/2"		5-3/8" left

STEP 1: SET THE POSTS

Lay the run out 120" by 240", outside face to outside face, and check the diagonals against each other before a single hole is dug. They must match within 1/8". Everything after this inherits whatever error you leave here.

18 posts, every one 96" long, 24" of it in the ground. Ground-contact rated, not merely 'treated' — these are buried.

Buy 10-foot 4x4s for these, not 8-foot. A 96" post cannot come out of a board that is 96" long: you need a square cut at both ends and a saw kerf, and the ends of yard stock are usually split or dented. The buy list orders 10-footers and you will have a 24" offcut from each. That waste is real and it is on the material list — it is not hidden in a fudge factor.

The posts are BURIED, not stood on pier blocks, and that is the one real difference between this and the run attached to a coop. An attached run is lag-bolted into the coop's corner posts and the coop box is what stops the whole thing racking. Nothing here is bolted to anything. A standalone screened box 72" tall is a sail, and the only thing resisting a side load on it is the posts in the ground. Set them the way you would set a fence: hole about 10 inches across, 6" of compacted gravel in the bottom so the end grain drains, post plumbed, backfilled in layers and tamped hard every 6".

In a freezing climate go below your local frost line, which is very likely deeper than 24". Ask your building department for the number; frost heave will lift a shallow post and rack the frame out of square in one winter.

Posts along the length go at 47-5/16", 47-1/4" centres, across the width at 29-1/8". Those spacings are not an even division of the run — an even division of this frame lands on a number you cannot mark on a tape. Each one lands on a sixteenth and the last bay takes up the rounding, so the frame still closes on 120" by 240" exactly.

Part	Qty	Length	Stock	Note
Post	18	96"	4x4	ground contact; 24" buried, 72" above grade

STOP AND MEASURE BEFORE THE NEXT STEP

Diagonal corner to corner, both ways, must match within

1/8"

WATCH OUT

- ! Plumb every post in TWO directions and brace it until the backfill is tamped. A post that leans a degree puts the top rail an inch out of line over a bay.
- ! Run a string line along each face at the top and set every post to the string, not to the post next to it. Errors set post-to-post accumulate down the run.

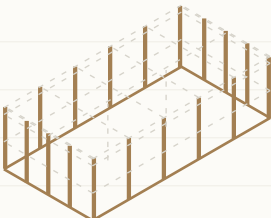
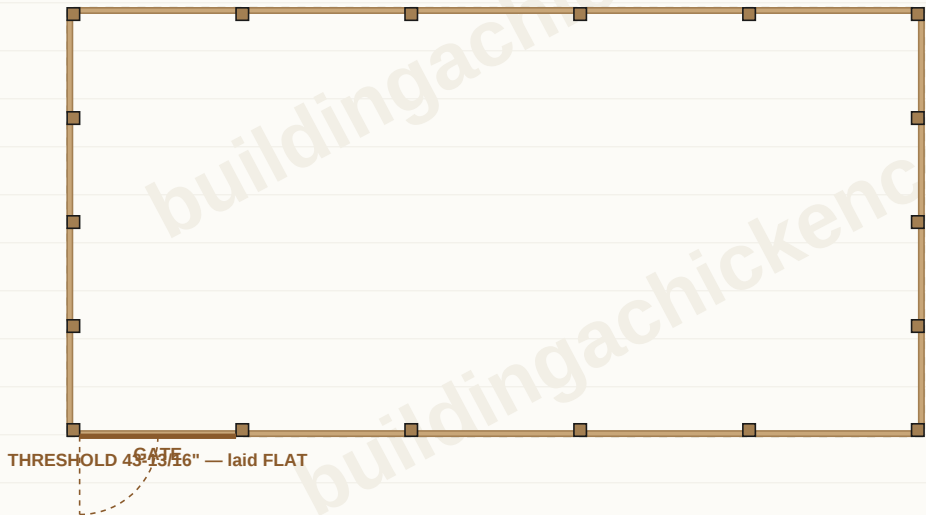
STEP 2: BOTTOM RAIL AND THE GATE THRESHOLD

The bottom rail closes the gap between the cloth and the ground and gives the buried apron something to screw to. It sits with its bottom edge ON grade, flush with the outside faces of the posts, so the posts and rails make one flat plane and there is no gap anywhere behind the cloth for a predator to work at.

Ground-contact stock for this course only. It is lying on soil.

The gate bay gets a threshold instead of a rail. This is the detail that most run plans miss and it is the one that loses birds: the buried apron cannot run under a gate that swings, so the gate opening is the one place on the whole perimeter where nothing stops a fox digging. So a ground-contact 2x4 is laid FLAT across the gate opening, bedded into the soil, the apron passes underneath it and is screwed to its outer edge, and the gate closes down onto it. Without this the run has a 43-13/16" wide hole in its predator barrier that the drawings do not show.

Part	Qty	Length	Stock	Note
Bottom rail	7	43-13/16"	2x4	GROUND CONTACT — this course lies on soil
Bottom rail	2	43-3/4"	2x4	GROUND CONTACT — this course lies on soil
Bottom rail	8	25-5/8"	2x4	GROUND CONTACT — this course lies on soil
Gate threshold	1	43-13/16"	2x4	GROUND CONTACT, laid FLAT, bedded into the soil



AFTER STEP 2

Bottom rail all the way round, bottom edge ON grade, flush with the outside faces.
The gate bay gets a ground-contact threshold instead. The apron cannot run under a gate that swings — this is what closes that hole.

STEP 3: MID RAILS AND TOP RAILS

3 more courses of rail, at 32", 64", 72" above grade.

Why there are this many. Hardware cloth comes off a 36" roll. A course started at any rail has to reach the next rail with a lap to spare, or its top edge is floating and a raccoon peels it. 32" spacing gives every course 4" of lap onto solid wood. The run attached to a coop in our other plans has rails only at grade and at 32", which carries cloth to 68" and no further — one reason this frame is not simply that one with a fourth wall added.

Rails butt between the posts and are fastened with two 3-inch structural screws driven through the post into the end of the rail at each end. The top rail is what the purlins land on, so get it level all the way round before you go up.

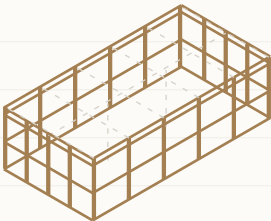
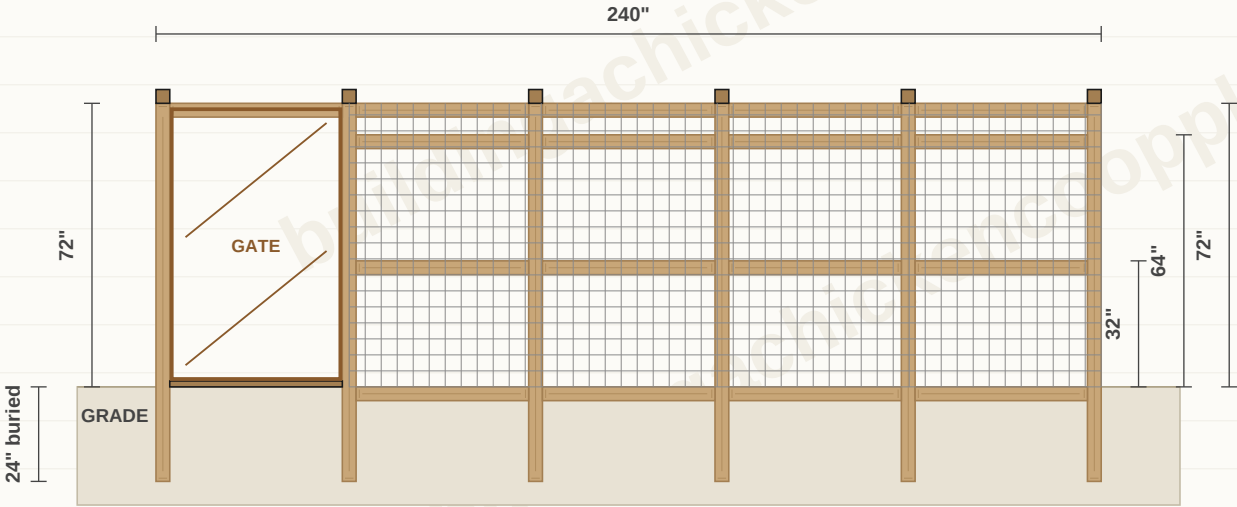
The gate bay gets its top rail — that is the gate header — and no mid rails.

Part	Qty	Length	Stock	Note
Rail	22	43-13/16"	2x4	
Rail	6	43-3/4"	2x4	
Rail	24	25-5/8"	2x4	

STOP AND MEASURE BEFORE THE NEXT STEP

Top rail level all the way round, measured from grade at every post

72"



AFTER STEP 3

Rails at 0", 32", 64", 72" above grade. A 36" course of cloth started at any rail reaches the next with 4" of lap.
Post is one 8-ft 4x4: 72" above grade, 24" below.

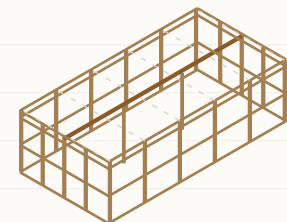
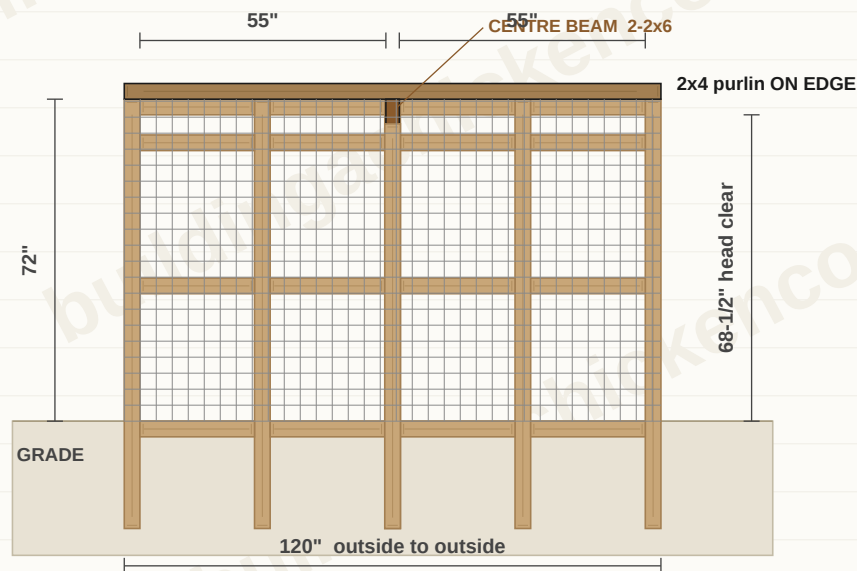
STEP 4: CENTRE BEAM

At 120" wide, a purlin would have to clear 113" between the side posts. That is past what a purlin at this spacing carries, so a beam goes down the centre line and halves it to 55".

The beam top finishes FLUSH with the top rails. That is why the centre posts are 90-1/2" and not 96" — they are shorter by the 5-1/2" depth of the beam that sits on top of them. Get this wrong and every purlin rocks on the beam instead of bearing on the rails.

Doubled 2x6, joints landing over a post, with a plywood gusset screwed to each side of every joint. 2 interior posts; the two ends of the beam bear on the end-wall top rails.

Part	Qty	Length	Stock	Note
Centre post	2	90-1/2"	4x4	ground contact; 24" buried
Beam ply	2	78-7/8"	2x6	two plies, joints over a post
Beam ply	4	78-13/16"	2x6	two plies, joints over a post
Beam gusset	4	12" x 11"	3/4" plywood	one each side of every joint



AFTER STEP 4

Head clearance under the purlins is 68-1/2". Tall people duck — that is the trade for a run built out of 8-ft posts. At 10 ft wide the purlin would clear 113" unsupported, past what it carries, so the centre beam halves it to 55".

STEP 5: PURLINS

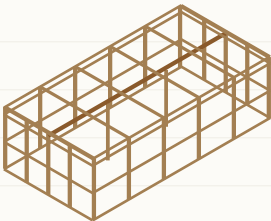
6 purlins across the width, one over every post row, 120" long — full width, flush with the outside faces.

2x4 on edge, not flat. These are roof members. They carry the roof cloth, whatever snow does not fall through it, and the weight of a raccoon standing on the middle of the span, which is the load that actually decides the size. A mesh roof spanning unsupported sags into a hammock, and a raccoon can bear a sagging roof down far enough to get a leg through.

Clear span here is 55". Toe-screw each purlin down into the top rail at both ends and into the centre beam where it crosses.

Head clearance under the purlins is 68-1/2" at a 2x4. Tall people will duck. That is the trade for a run you can buy 8-foot posts for.

Part	Qty	Length	Stock	Note
Purlin	6	120"	2x4	ON EDGE — clear span 55"



AFTER STEP 5

6 purlins, 120" each, 2x4 ON EDGE, one over every post row. Clear span 55".

A mesh roof spanning unsupported sags into a hammock, and a raccoon can bear a sagging roof down far enough to get a leg through.

STEP 6: GATE

The gate fills a whole bay — 42-13/16" of clear opening. Most run plans hang a 30" door in a jamb inside a bay, which needs an infill panel and gives you an opening you cannot get a wheelbarrow through. Sizing the leaf to the bay removes the jamb, removes the infill, and gives you a gate you can barrow bedding through.

Leaf is 42-13/16" by 68-1/2": two stiles, three rails, and two diagonal braces making a Z.

Both braces run from the bottom of the HINGE side upward to the latch side. A brace the other way round is in tension and does nothing; a gate this wide with cloth on it will drop its latch corner within a season without them. Each brace is 46-1/16" long with the ends cut at 39 degrees.

Three hinges, not two — the leaf is wide and the cloth adds real weight at the outer corner. **Two latches** : a two-action catch at hand height, which is the one a raccoon cannot work, and a barrel bolt at the bottom dropping into the threshold. The bolt is not redundancy — it is what stops the bottom corner being levered outward, which is how a gate that latches at the top still lets a dog in.

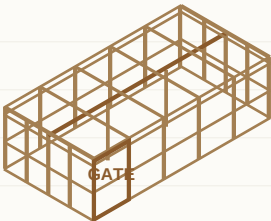
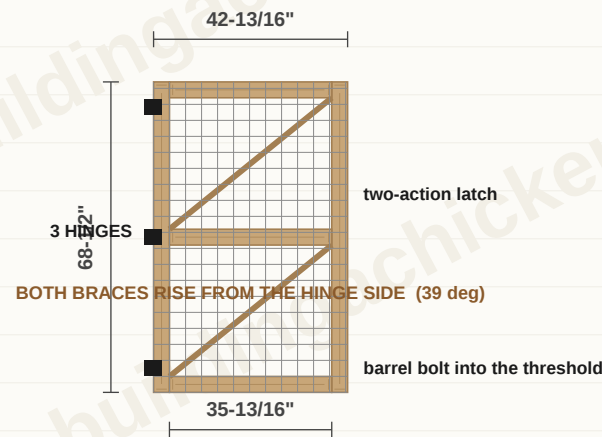
Hang the leaf with a 1/2" gap each side and 1/2" over the threshold. Cloth goes on the OUTSIDE face of the leaf, same as the walls.

Part	Qty	Length	Stock	Note
Gate stile	2	68-1/2"	2x4	
Gate rail	3	35-13/16"	2x4	top, middle, bottom
Gate brace	2	46-1/16"	2x4	ends cut at 39 deg; BOTH rise from the hinge side

STOP AND MEASURE BEFORE THE NEXT STEP

Gate leaf width, stile outside to stile outside

42-13/16"



AFTER STEP 6

Leaf 42-13/16" x 68-1/2" — it fills the whole bay, so there is no jamb and a wheelbarrow goes through. A brace running the other way is in tension and does nothing. This gate drops its latch corner within a season without them.

STEP 7: HARDWARE CLOTH — WALLS

The step that decides whether you still have a flock in two years.

Quarter-inch, 19 gauge, not half-inch and never chicken wire. A least weasel goes through a half-inch opening and does not go through a quarter-inch one; a raccoon reaches straight through hexagonal chicken wire and pulls a bird apart against it. Sources: Univ. of Kentucky Cooperative Extension ID-245 and Virginia Cooperative Extension 2902-1092. Half-inch is genuinely raccoon-proof and is not weasel-, mink- or snake-proof.

Cloth goes on the OUTSIDE of the frame. A predator leaning on the wall then pushes the cloth against the wood instead of off it, and the fasteners are in shear rather than pull-out. This is the opposite of what looks tidy and it is the way round that holds.

Courses, bottom up, on all four sides:

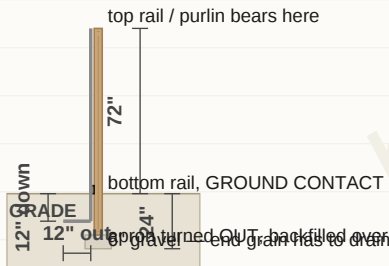
- course 1: 36" tall, bottom edge at 0" above grade - course 2: 36" tall, bottom edge at 32" above grade - course 3: 12" tall, bottom edge at 64" above grade

Each course laps 4" onto the rail above and is screwed through fender washers every 6" along every rail and post it crosses. Staples alone pull out — a raccoon works an edge until it finds one that gives. Lap cloth to cloth by 4" and hog-ring the laps every 6"; a lap that is only adjacent is not a lap.

The top course is deliberately over-height. It is cut 12" for 8" of wall, and the surplus folds over the top rail. The roof cloth laps onto that fold, so the wall-to-roof joint has no open seam at the top corner — which is the corner everything climbs to.

Part	Qty	Length	Stock	Note
Run walls, all four sides	1	135 lin ft	1/4" hardware cloth	
Gate leaf	1	8 lin ft	1/4" hardware cloth	

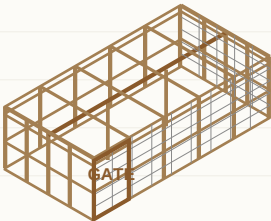
1 / POST, APRON AND BOTTOM RAIL (section)



2 / HOW THE CLOTH COURSES LAND (wall section)



Every course starts ON a rail and laps 4" onto the next one up. That is why the rails are at 32" and not at 36": a course that ends between rails has a free top edge, and a free edge is what a raccoon works until it gives.
The top course is cut 12" for 8" of wall — the surplus folds over the top rail and the roof cloth laps onto the fold, so there is no seam at the corner.



AFTER STEP 7

WATCH OUT

- ! Cut with tin snips and wear gloves. The cut edge is genuinely vicious.
- ! The material list allows 12% for laps. Cloth is about half the cost of this build, so measure before you cut rather than after.

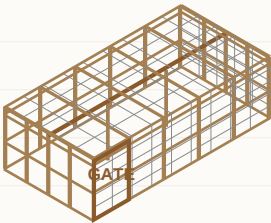
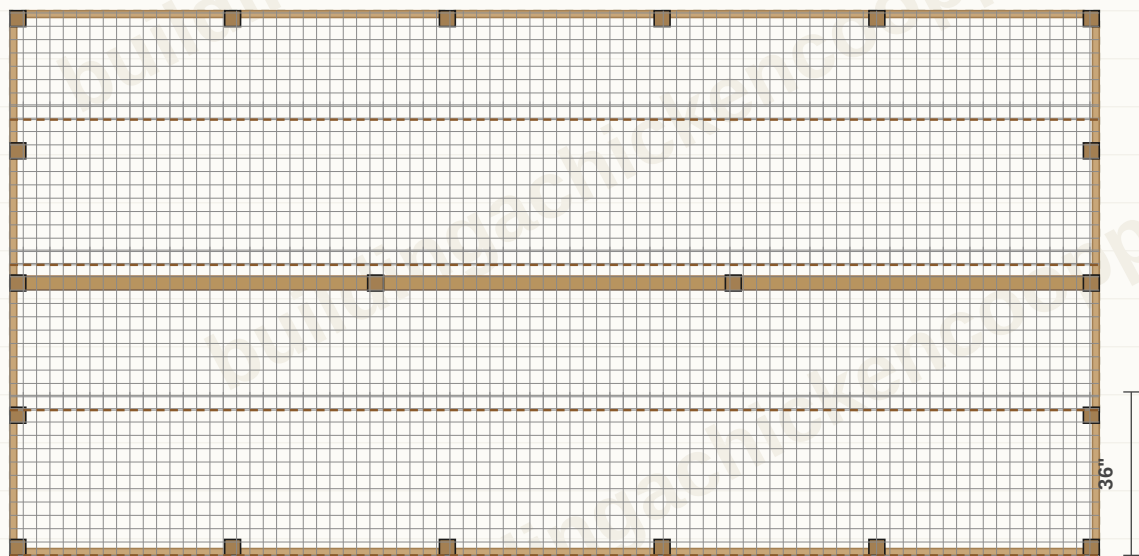
STEP 8: HARDWARE CLOTH — ROOF

A run without a roof is a bird feeder. Hawks and owls take hens out of open runs in daylight, and a raccoon climbs 72" of post in about two seconds. This is not the optional part of the build.

Courses run the length of the run over the purlins, lapping 4" at every seam, hog-ringed at the laps and screwed through fender washers to every purlin they cross. The bottom edge laps onto the fold of the top wall course from the previous step and gets hog-ringed to it all the way round.

120" by 240" of roof.

Part	Qty	Length	Stock	Note
Run roof	1	75 lin ft	1/4" hardware cloth	



AFTER STEP 8

Roof courses run the LENGTH of the run over the purlins, lapping 4" at every seam and hog-ringed at the laps.
The bottom edge laps onto the fold of the top wall course and is hog-ringed to it all the way round. A run without a roof is a bird feeder.

STEP 9: BURIED APRON

Everything that wants your birds digs. An apron is what stops it, and it works by being in the way rather than by being deep: a fox or a dog digs where it meets resistance, which is right at the wall, and an apron turned OUTWARD puts wire under the exact spot it starts.

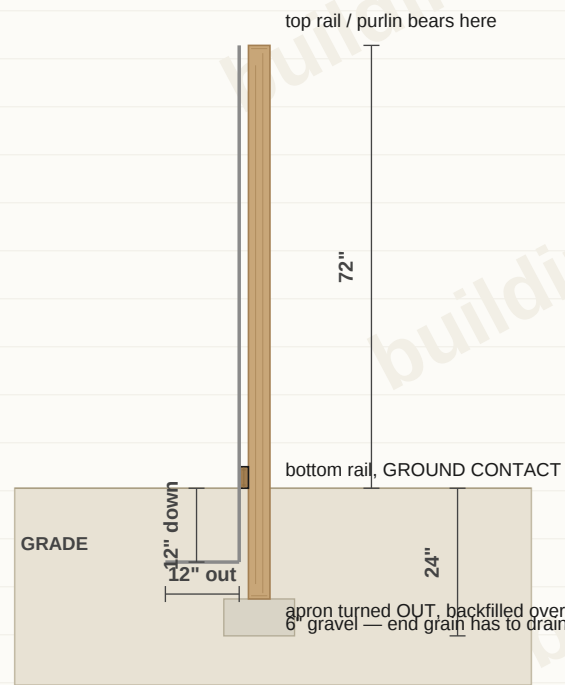
12" down against the outside of the bottom rail, then 12" turned outward, in an L. Screw the vertical leg to the outside of the bottom rail through fender washers, lap it 4" onto the bottom of the wall cloth and hog-ring that lap, then lay the foot outward and backfill over it. Grass grows through it in a season and you will never see it again.

It runs under the gate threshold too. Dig the threshold trench first, lay the apron through it, bed the threshold down onto the apron and screw it to the outer edge. The gate is the weakest point on the perimeter and it is the one people leave out.

Do this AFTER you have graded and surfaced the run, not before — you cannot regrade under a buried skirt.

Part	Qty	Length	Stock	Note
Buried apron, 12" down and 12" out	1	40 lin ft	1/4" hardware cloth	

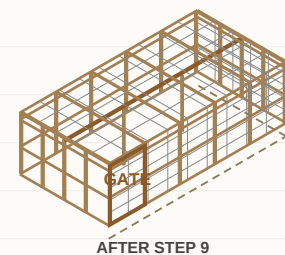
1 / POST, APRON AND BOTTOM RAIL (section)



2 / HOW THE CLOTH COURSES LAND (wall section)



Every course starts ON a rail and laps 4" onto the next one up. That is why the rails are at 32" and not at 36": a course that ends between rails has a free top edge, and a free edge is what a raccoon works until it gives. The top course is cut 12" for 8" of wall — the surplus folds over the top rail and the roof cloth laps onto the fold, so there is no seam at the corner.



STEP 10: GRADE, DRAIN AND SURFACE

A run that ponds turns into mud, mud turns into the coccidiosis and bumblefoot problems that cost people their flock, and no amount of hardware cloth fixes it. This step matters more than any single piece of framing above it.

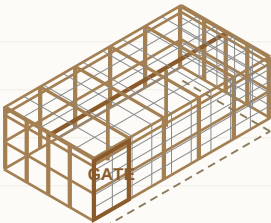
Three things, in the order they matter:

Grade the run to fall. An inch of drop over eight feet is enough and it costs you nothing but a rake.

Keep the run surface ABOVE the surrounding grade , not level with it, so it sheds instead of collecting. A run dug into a low spot cannot be fixed later without taking the apron up.

Top it with 3 to 4 inches of coarse sand or 3/8in drain rock — not topsoil, not straw. Coarse sand drains, dries fast, and rakes clean like a litter box. 3 cubic yards for this footprint.

Part	Qty	Length	Stock	Note
Coarse sand or 3/8in drain rock	1	3 cu yd	Coarse sand	3-4in deep over the whole floor, raked level then crowned



AFTER STEP 10

STEP 11: SHADE

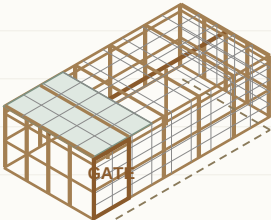
This run has a mesh roof, which casts no shade at all. That is the honest statement and it is why this is a step rather than a footnote. Hens have no sweat glands and begin to suffer above about 85F. A wire-roofed run in open sun is the most common way a flock gets hurt in a run that is otherwise built correctly.

At least a third of the run has to be shaded at midday, and the coop does not count unless the birds can reach it without crossing open sun. Fasten a panel of 70-80% shade cloth over roughly 67 sq ft of the roof — about a third — zip-tied to the purlins, on the side that takes the afternoon sun. Shade cloth rather than a solid panel: it does not hold snow, it does not need a fall to shed rain, and it lets the run stay a run.

Put the waterers under it, and a second one at the far end, so a bird at the bottom of the pecking order is never cut off from water by a bird at the top.

This run houses nobody overnight. Site it against the coop's pop door if you can; if it is detached, the birds still have to be shut into a coop at dusk.

Part	Qty	Length	Stock	Note
Shade cloth panel	1	~67 sq ft	Shade cloth	70-80% block, zip-tied to the purlins on the afternoon-sun...



AFTER STEP 11

WATCH OUT

! 200 sq ft of run. 40 hens is what that supports at the extension minimum of 5 sq ft a bird; at the 8 sq ft we actually recommend it is 25. The coop floor is a separate limit and usually the tighter one.

IMPORTANT — PLEASE READ BEFORE BUILDING

What these plans are

posts are set the way a fence is set, the purlins are sized as roof members at their own spacing against the IRC rafter tables, and the predator, shade and space figures are taken from published extension guidance rather than estimated. There is no floor, no stud wall and no rafter in this structure

What these plans are NOT

They are not stamped engineered drawings. No licensed professional engineer has reviewed, sealed or certified this design, and it is not site-specific. Prescriptive tables are conservative by design, but they are not a substitute for an engineer's analysis of your particular soil, snow load, wind exposure and seismic conditions.

You are responsible for local code and permits

Building codes, permit thresholds, setbacks, frost depth, snow load and livestock ordinances vary by state, county, city and HOA, and they change. The IRC exempts detached accessory structures under 200 sq ft from a building permit, but many jurisdictions tighten that to 100, 120 or 144 sq ft, and zoning setbacks are entirely local. Confirm with your building department and zoning office BEFORE you buy materials.

Heat is a design load too

An uninsulated metal roof in desert or deep-south sun is the most common way a flock gets hurt in a coop that is otherwise built correctly. Hens have no sweat glands and start to suffer above about 85F. If that is your summer: use a light-coloured or reflective roof panel rather than a dark one, add a radiant barrier or rigid foam under the deck, shade the run with cloth or a vine, put the waterers in the shade and add a second one, and consider leaving the top of one gable-end bay permanently open as extra cross-ventilation. None of this is in the framing above because it is climate-specific — but in the wrong climate it matters more than anything that is.

Snow, wind and seismic loads are your call

The rafter sizing here assumes a moderate roof load. If your ground snow load exceeds 30 psf, or you are in a high-wind or seismic zone, have the roof and anchorage reviewed locally — upsizing rafters is cheap; a collapsed roof in February is not.

Build safely

Power tools cause serious injury. Wear eye, ear and hand protection, use tools only as the manufacturer intends, and get help lifting walls and roof panels. If a step is beyond your skill or equipment, hire it out.

Verify before you cut

Check every dimension against your own materials before cutting. Lumber varies between mills and nominal sizes are not actual sizes. We have checked these numbers carefully, but you are the last line of defence against an error.

Limitation of liability

These plans are provided "as is," without warranty of any kind, express or implied, including any implied warranty of merchantability or fitness for a particular purpose. To the fullest extent permitted by law, buildingachickencoopplans.com and its authors accept no liability for any loss, injury, property damage, animal loss, code violation or cost arising from the use of these plans. By building from them you accept full responsibility for the finished structure and for compliance with all applicable laws.

IMPORTANT — PLEASE READ (CONTINUED)

Animal welfare

Capacity assumes 4 sq ft of coop floor per standard-breed hen — comfortably inside the 3-4 sq ft that Virginia Cooperative Extension and Oregon State give for birds WITH run access. This coop gives 0 sq ft of bird floor for 40 hens.

Outdoors, the run is 200 sq ft, or 5.0 sq ft per bird. Extension services genuinely disagree here: Cornell says 4-5 sq ft is enough, Virginia says 10. We are comfortably over the first and under the second. If you want to meet the stricter figure, either build the run longer or keep 20 birds rather than 40.

The number that actually bites is winter. Where birds are shut in for days at a time, Oregon State escalates to 8-10 sq ft of INDOOR floor per bird — for 40 hens that is 320-400 sq ft, and this coop has 0. In a climate with long confinement, size the flock off the indoor figure, not the summer one: 0 hens, not 40. Crowding causes feather-pecking, disease and ammonia problems. Fewer birds is always safe; more is not.

PLANS COMPLETE

You're done. A few things worth doing before the birds move in.

- Feeder and waterer: hang or stand them so the lip is at the birds' back height (about 8in off the floor for standard breeds) — it stops them scratching bedding into the feed. Allow 4in of feeder edge and 1in of drinker edge per bird: for 40 hens that is one 30in tube feeder and two 3-gallon founts, sited AWAY from under the roosts.
- Bedding: 4 to 6 inches of pine shavings or chopped straw, never cedar. Stir it weekly, top it up rather than replacing it, and strip it out when it stops smelling of nothing.
- Give them a dust bath — a shallow box of dry soil with a little wood ash or sand, kept under cover so it stays dry. It is how a hen treats her own mites, and there is nowhere in this coop to do it unless you build one.
- Keep one spare crate or a corner of the feed room free. You will need somewhere to isolate a sick bird or a new one, and working that out on the day is too late.
- Run a bead of exterior caulk anywhere siding meets trim, and prime every cut end.
- Fit two-action latches on the pop door and every people-door. Raccoons are dextrous and keepers widely report them working simple hooks and slide bolts open, so a latch that needs two different motions is cheap insurance.
- Bury the hardware-cloth apron 12 inches down and 12 inches out before you add bedding.
- Confirm the vents are above roosting height so moisture leaves without drafting the birds.
- Give the flock a week to learn the coop before you let them into the run unsupervised.

More free plans and build guides at buildingachickencoopplans.com