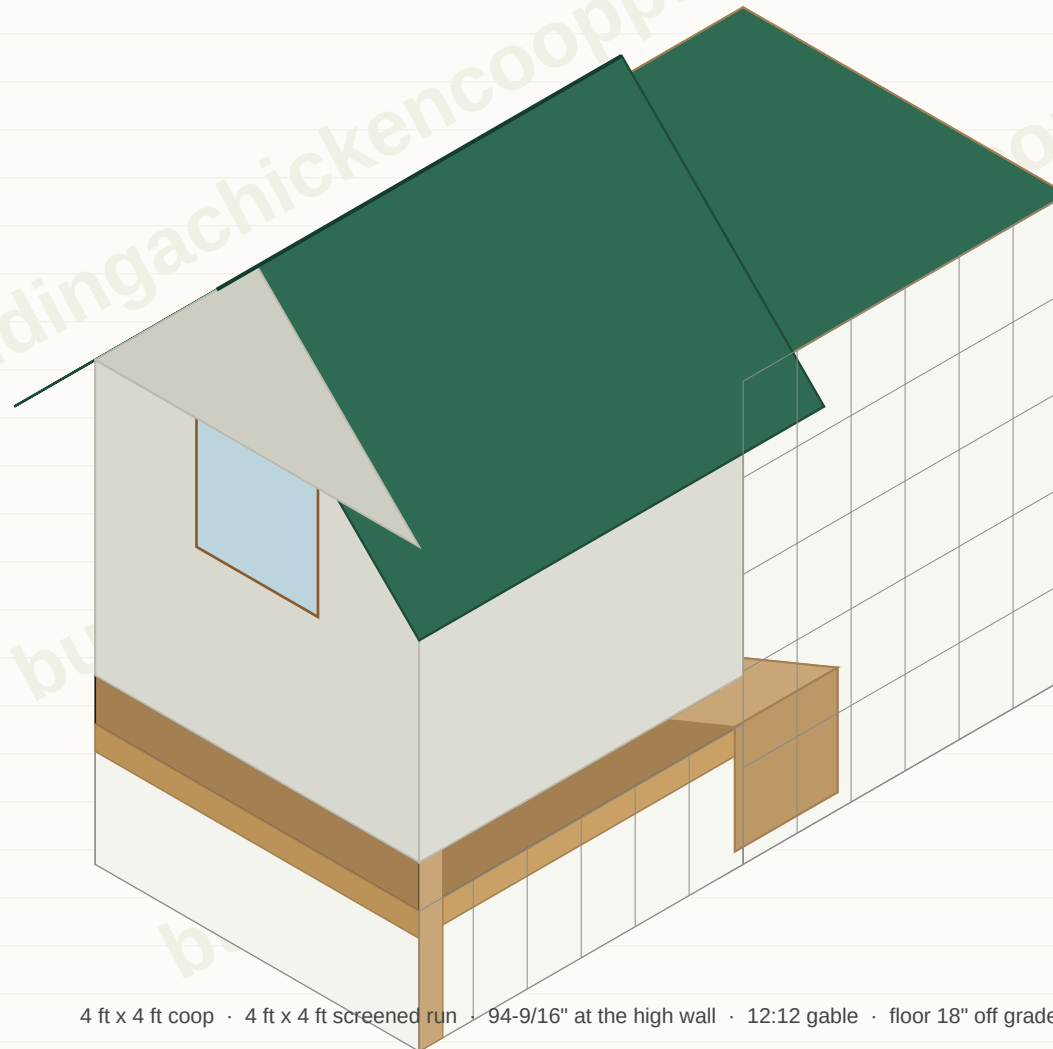


4X4 STARTER CHICKEN COOP WITH RUN

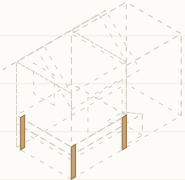
10 sq ft coop · 16 sq ft run · 2-3 hens



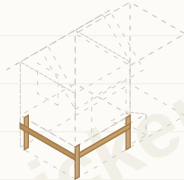
4 ft x 4 ft coop · 4 ft x 4 ft screened run · 94-9/16" at the high wall · 12:12 gable · floor 18" off grade

THE BUILD, STAGE BY STAGE

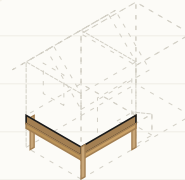
13 stages, in order. Solid is what you have built by the end of that step; the dotted outline is what is still to come. Check your work against the matching picture before you move on — it is much cheaper to notice a wall in the wrong place here than three steps later.



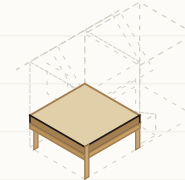
1. Posts



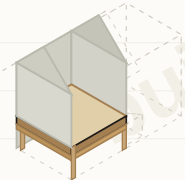
2. Base supports



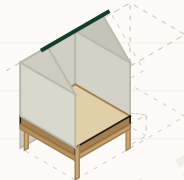
3. Floor joists



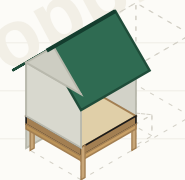
4. Floor deck



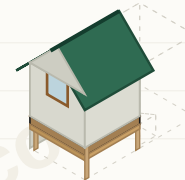
5. Wall framing — the method



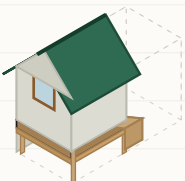
6. Gable ends, rafters and rafters



7. Roof deck and metal



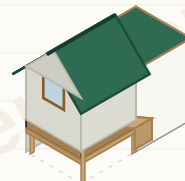
8. Siding



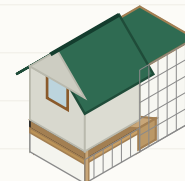
9. Nest bank



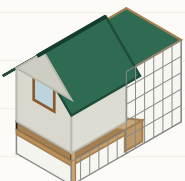
10. Pop door and ramp



11. Run frame



12. Hardware cloth



13. Roosts and droppings board

CONTENTS

1	4x4 Starter Chicken Coop with Run	33	Step 10: Pop door and ramp
2	The build, stage by stage	34	Step 11: Run frame
3	Contents	35	Step 12: Hardware cloth
4	Before you begin	36	Step 13: Roosts and droppings board
5	Tools you will need	37	Important — please read before building
6	Notes on lumber dimensions	38	Important — please read (continued)
7	Material list	39	Plans complete
8	Master cut list		
9	Master cut list (continued)		
10	Master cut list (continued)		
11	Master cut list (continued)		
12	What to buy - board count		
13	Main dimensions: plan view		
14	Main dimensions: front		
15	Main dimensions: gable end		
16	Floor framing layout		
17	What the words mean		
18	Cut plan — what to cut from each board		
19	Step 1: Posts		
20	Step 2: Base supports		
21	Step 3: Floor joists		
22	Step 4: Floor deck		
23	Step 5: Wall framing — the method		
24	Step 5a: Front wall		
25	Step 5b: Back wall		
26	Step 5c: Left end wall (run end)		
27	Step 5d: Right end wall		
28	Step 6: Gable ends, rafters and rafter ties		
29	Step 7: Roof deck and metal		
30	Step 8: Siding		
31	Step 8b: Doors, hatches and lids		
32	Step 9: Nest bank		

39 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 BUILDING FOOTPRINT: 16 sq ft for the coop, or 32 sq ft if your jurisdiction counts the covered run. That is NOT the same as the capacity figure on the cover. 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

Set the four posts plumb and the base ring level. Every error here compounds through the walls and the roof.

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.

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.

ONLY IF YOU ARE DOING THE OPTIONAL EXTRAS

Angle grinder / metal blade	Trimming corrugated roof panels to length.
Post-hole digger	Only if you set the posts in the ground rather than on pier blocks.

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
1x2 lumber	8 feet	2 pcs	search Home Depot ■
1x4 lumber	8 feet	1 pcs	search Home Depot ■
2x2 lumber	8 feet	1 pcs	search Home Depot ■
2x4 lumber	8 feet	38 pcs	search Home Depot ■
2x6 lumber	8 feet	4 pcs	search Home Depot ■
4x4 post (ground contact)	8 feet	6 pcs	search Home Depot ■
3/4" plywood	4' x 8'	5 pcs	search Home Depot ■
1/2" plywood (partition + header spacers)	4' x 8'	1 pcs	search Home Depot ■
Lap siding	12 ft, 8-1/4in exposure	10 pcs (~64 sq ft of wa	search Home Depot ■
Corrugated metal roofing	26" x 4 ft	3 panels	search Home Depot ■
Roof screws, neoprene washer	1-1/2"	120 pcs	search Home Depot ■
Drip edge / eave closure strip	10 ft	3 pcs	search Home Depot ■
1/4" hardware cloth, 19 ga	36" roll	50 ft + 25 ft (52 ft ne	search Home Depot ■
Fender washers + screws for cloth	1" washer	208 pcs	search Home Depot ■
Heavy-duty staples	1/2"	1 box (1000)	search Home Depot ■
Coop windows	18" x 23"	1	search Home Depot ■
Pier blocks	solid concrete deck block	8 pcs	search Home Depot ■
Gravel, compacted under each block	3/4" clean	8 cu ft	search Home Depot ■
Coarse sand or 3/8in drain rock (run floor)	3-4in deep	1 cu yd	search Home Depot ■
2-1/2" exterior screws	5 lb box	3 boxes	search Home Depot ■
1-1/2" exterior screws	5 lb box	2 boxes	search Home Depot ■
4" structural screws	—	24 pcs	search Home Depot ■
3/8" x 4" lag bolts (run to coop)	—	8 pcs	search Home Depot ■
Siding nails or screws	5 lb box	2 boxes	search Home Depot ■
Exterior caulk	10 oz tube	3 tubes	search Home Depot ■
Exterior primer + paint	1 gal each	1 + 1	search Home Depot ■
Hinges	—	9 (4 openable parts, bu	search Home Depot ■
4x4 Two-action latches	—	5	search Home Depot ■

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
Run post	11	4	62"	
Ridge board	6	1	60"	
Run door stile	11	2	52"	
Run top rail	11	2	48"	
Run mid rail	11	2	48"	
C Cap plate (upper top plate)	5c	1	44"	laps the corner — hold back 1-1/2in one end, run 1-1
C Cap plate (upper top plate)	5d	1	44"	laps the corner — hold back 1-1/2in one end, run 1-1
A Bottom plate	5a	1	41"	sits flat on the deck — cut out at the doors AFTER s
B Top plate	5a	1	41"	first plate over the studs
A Bottom plate	5b	1	41"	sits flat on the deck — cut out at the doors AFTER s
B Top plate	5b	1	41"	first plate over the studs
A Bottom plate	5c	1	41"	sits flat on the deck — cut out at the doors AFTER s
B Top plate	5c	1	41"	first plate over the studs
A Bottom plate	5d	1	41"	sits flat on the deck — cut out at the doors AFTER s
B Top plate	5d	1	41"	first plate over the studs
Rafter tie	6	3	41"	one per rafter pair, at top-plate level
Run end rail	11	3	41"	
Rafter	6	6	39-15/16"	45 deg plumb cut, 6" tail
C Cap plate (upper top plate)	5a	1	38"	laps the corner — hold back 1-1/2in one end, run 1-1
C Cap plate (upper top plate)	5b	1	38"	laps the corner — hold back 1-1/2in one end, run 1-1
D Common stud	5a	2	36"	16in OC, crown out
E King stud (full height, beside the openin	5a	2	36"	full height, outside the jack
D Common stud	5b	2	36"	16in OC, crown out
E King stud (full height, beside the openin	5b	2	36"	full height, outside the jack
D Common stud	5c	3	36"	16in OC, crown out
E King stud (full height, beside the openin	5c	2	36"	full height, outside the jack
D Common stud	5d	2	36"	16in OC, crown out
E King stud (full height, beside the openin	5d	2	36"	full height, outside the jack
G Header	5b	2	33-1/4"	two pieces + a 1/2in plywood spacer = 3-1/2in thick,
H Rough sill	5b	1	33-1/4"	rough sill under the window
G Header	5a	2	33"	two pieces + a 1/2in plywood spacer = 3-1/2in thick,
Run brace	11	4	33"	45° corner braces
F Jack stud (carries the header)	5a	2	32-1/2"	carries the header, sits ON the bottom plate
F Jack stud (carries the header)	5d	2	32-1/2"	carries the header, sits ON the bottom plate

MASTER CUT LIST (CONTINUED)

2X4 (CONTINUED)

Part	Step	Qty	Length	Note
Nest bank frame	9	4	30-1/4"	
F Jack stud (carries the header)	5b	2	27-1/2"	carries the header, sits ON the bottom plate
Run door rail	11	3	26"	
Roost bar	13	2	25"	MOUNT ON EDGE — 1-1/2in face up, top corners eased r
G Header	5d	2	21"	two pieces + a 1/2in plywood spacer = 3-1/2in thick,
H Rough sill	5d	1	21"	rough sill under the window
Base blocking	2	8	20-1/2"	
F Jack stud (carries the header)	5c	2	16-1/2"	carries the header, sits ON the bottom plate
I Cripple over the header	5c	2	16"	between header and top plate
G Header	5c	2	15"	two pieces + a 1/2in plywood spacer = 3-1/2in thick,
H Rough sill	5c	1	15"	rough sill under the window
Gable stud (varies)	6	8	14-3/8"	cut to fit under the rafter
Roost support	13	4	14"	wall cleats
I Cripple under the sill	5b	3	13"	between bottom plate and rough sill
I Cripple under the sill	5d	3	8"	between bottom plate and rough sill
J Cripple over the header	5b	3	5"	between header and top plate

3/4" PLYWOOD

Part	Step	Qty	Length	Note
Ramp	10	1	56-7/16" x 10"	trim to your measured drop
Nest bank floor	9	1	30-1/4" x 17"	
Nest lid	9	1	30-1/4" x 18"	hinged
Nest divider	9	1	17" x 14"	
Floor panel	4	1	48" x 48"	notch corners
Roof deck panel	7	2	4' x 8' sheet	lay the 8-ft dimension UP the slope; seams land on a
Access panel slab	8b	1	29-1/2" x 33-1/2"	hinges, opens out
Pop door slab	8b	1	11-1/2" x 13-1/2"	hinges, opens out
Droppings board	13	1	27" x 24"	removable, sealed or lined

1/4" HARDWARE CLOTH

Part	Step	Qty	Length	Note
Run walls	12	1	21 lin ft	
Run roof	12	1	6 lin ft	
Buried apron, 12in down and 12in out	12	1	11 lin ft	
Window screens	12	1	2 lin ft	

MASTER CUT LIST (CONTINUED)

1/4" HARDWARE CLOTH (CONTINUED)

Part	Step	Qty	Length	Note
Continuous eave vent strip	12	1	1 lin ft	
Nest opening and pop-door surround	12	1	3 lin ft	
Under-floor skirt	12	1	8 lin ft	

4X4

Part	Step	Qty	Length	Note
Post A	1	4	64-3/4"	
Base support A (front/back)	2	2	41"	
Base support B (sides)	2	2	41"	

1X4

Part	Step	Qty	Length	Note
Access panel batten diagonal	8b	1	35-3/8"	BOTTOM HINGE corner up to TOP LATCH corner; mitre bo
Access panel batten rail	8b	2	28"	top and bottom, 1in in from each edge

2X6

Part	Step	Qty	Length	Note
Rim joist (long sides)	3	4	48"	doubled
Floor joist	3	4	42"	16" OC, last bay short

1X2

Part	Step	Qty	Length	Note
Ramp cleat	10	14	10"	every 4in, so a hen has grip

2X2

Part	Step	Qty	Length	Note
Droppings board rail	13	2	27"	slides out on these

9 FT LAP SIDING

Part	Step	Qty	Length	Note
Lap siding board	8	25	9 ft	5in wide, ~1in lap

MASTER CUT LIST (CONTINUED)

CORRUGATED STEEL

Part	Step	Qty	Length	Note
Metal roof panel	7	3	4 ft x 26"	26in wide, 24in coverage; one piece eave to ridge, n

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

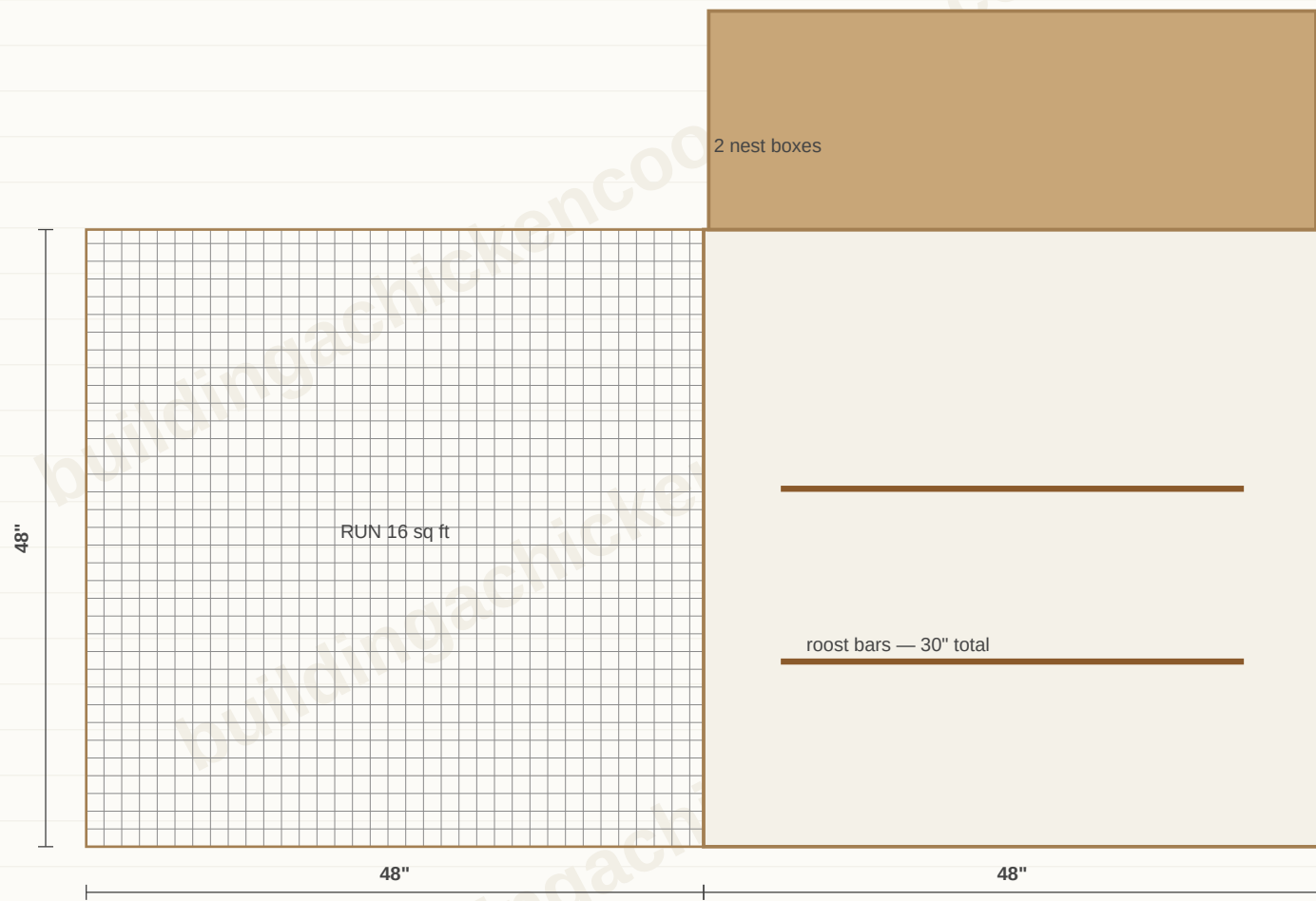
WHAT TO BUY - BOARD COUNT

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
1x2	8 ft	2	10"	general framing
1x4	8 ft	1	35-3/8"	general framing
2x2	8 ft	1	27"	general framing
2x4	8 ft	38	62"	general framing
2x6	8 ft	4	48"	general framing
4x4	8 ft	6	64-3/4"	general framing

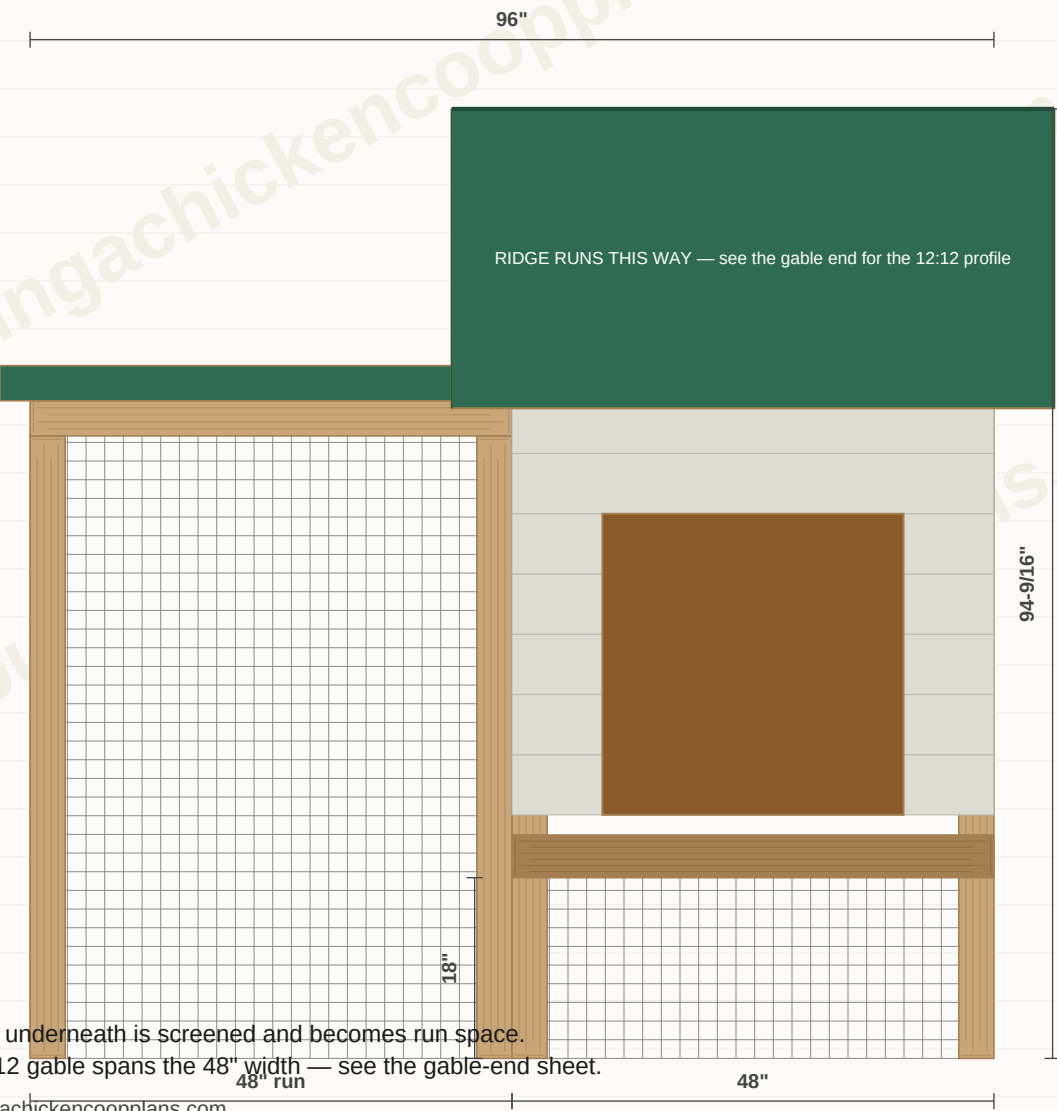
Buy two or three extra 2x4s beyond this count if you are new to framing — one bad cut costs less than a second trip to the yard. Sheet goods, mesh, fasteners and hardware are all on the material list and already carry their allowances.

MAIN DIMENSIONS: PLAN VIEW



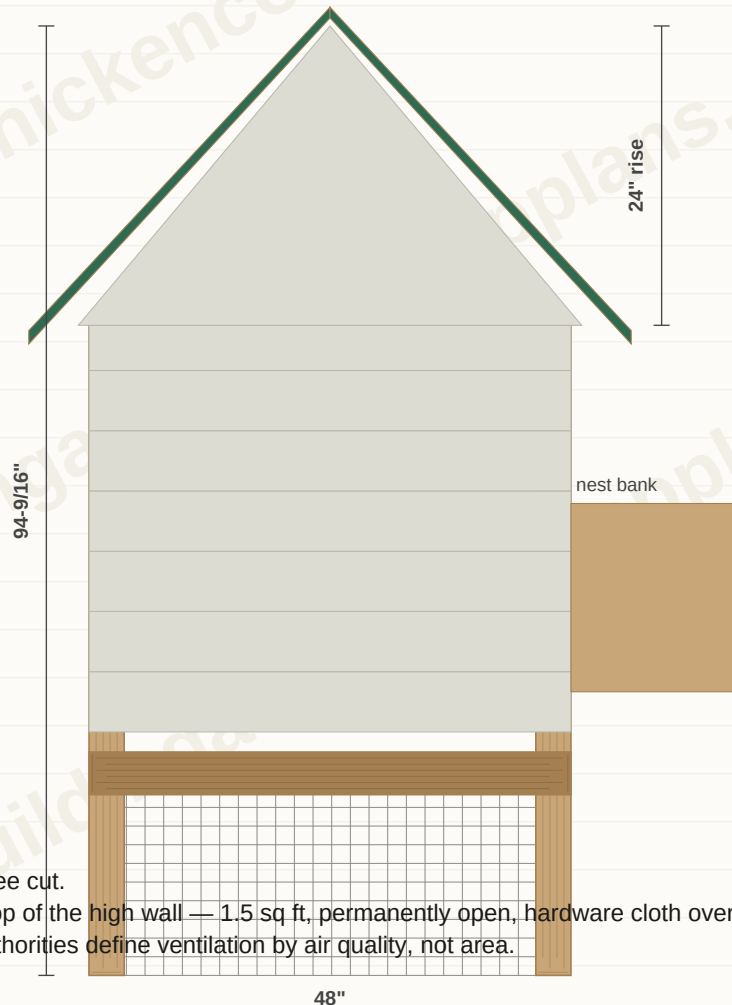
Coop 10 sq ft (3 birds at 4 sq ft each) plus 16 sq ft of screened run.
Add the 10 sq ft of shaded bay under the raised floor and the flock has 36 sq ft in total.

MAIN DIMENSIONS: FRONT



Overall 96" long x 94-9/16" to the ridge.
Coop floor sits 18" above grade; the bay underneath is screened and becomes run space.
Ridge runs along the 48" length; the 12:12 gable spans the 48" width — see the gable-end sheet.

MAIN DIMENSIONS: GABLE END



12:12 gable - rise equals run, so every rafter is a 45-degree cut.

Ventilation is the 5-1/2" x 38" continuous strip along the top of the high wall — 1.5 sq ft, permanently open, hardware cloth over it. The 1 windows are light, not vent: a closed window vents not

That 1-sq-ft-per-10 ratio is our own design default; the authorities define ventilation by air quality, not area.

FLOOR FRAMING LAYOUT



4 joists at 16" on centre, running the short direction. Rim doubled all four sides.
Clear span 42" — no intermediate support needed.

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.

Bird's mouth

The notch cut in the underside of a rafter so it sits flat on the wall plate instead of on one corner. Two cuts: a flat SEAT that lands on the plate, and a vertical HEEL against its outside face.

Cap plate

The third plate, laid over the top plate. It is there to LAP the corner and tie the four walls into one ring — not for extra strength.

Cripple

A short stud filling the gap above a header or below a window sill. Same spacing as the common studs it lines up with.

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.

Header

The beam over a door or window that carries the load the missing studs would have carried. Doubled, with a 1/2in plywood spacer to make it 3-1/2in thick.

Jack stud (trimmer)

The short stud under each end of a header. It is what actually holds the header up, and it defines the width of the opening.

Kerf

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

King stud

The full-height stud beside each jack, running plate to plate. It stops the opening racking.

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.

Pier block

A precast concrete block the posts stand on, so no wood touches soil. Set on 6in of compacted gravel.

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.

Rake

The sloping top edge of a wall that follows the roof. RAKE STUDS are the short studs that fill the triangle; the RAKE PLATE caps them.

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.

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.

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.

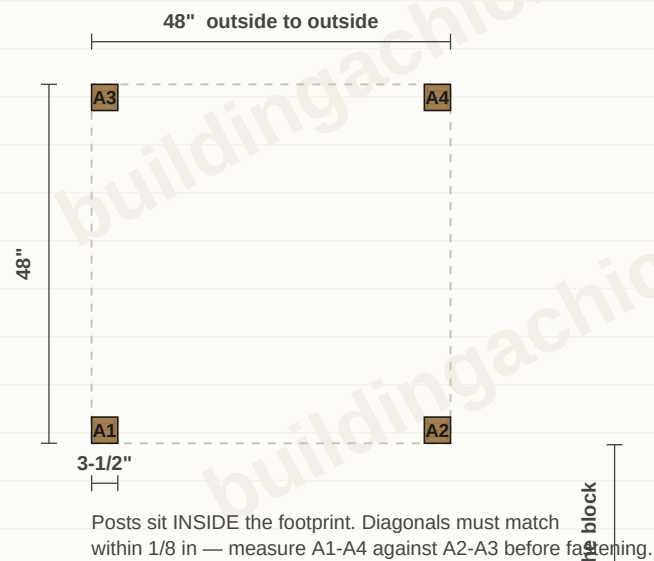
1x2 8ft #1	10"	10"	10"	10"	10"	10"	4-1/8" left	2x6 8ft #3	48"	42"	5-3/4" left
1x2 8ft #2	10"	10"	10"	10"	10"		45-3/8" left	2x6 8ft #4	48"	42"	5-3/4" left
1x4 8ft #1	35-3/8"	28"	28"				4-1/4" left	4x4 8ft #1	64-3/4"		31-1/8" left
2x2 8ft #1	27"	27"					41-3/4" left	4x4 8ft #2	64-3/4"		31-1/8" left
2x4 8ft #1	62"	33-1/4"					1/2" left	4x4 8ft #3	64-3/4"		31-1/8" left
2x4 8ft #2	62"	33-1/4"					1/2" left	4x4 8ft #4	64-3/4"		31-1/8" left
2x4 8ft #3	62"	33-1/4"					1/2" left	4x4 8ft #5	41"	41"	13-3/4" left
2x4 8ft #4	62"	33"					3/4" left	4x4 8ft #6	41"	41"	13-3/4" left
2x4 8ft #5	60"	33"					2-3/4" left				
2x4 8ft #6	52"	41"					2-3/4" left				
2x4 8ft #7	52"	41"					2-3/4" left				
2x4 8ft #8	48"	44"					3-3/4" left				
2x4 8ft #9	48"	44"					3-3/4" left				
2x4 8ft #10	48"	41"	5"				1-5/8" left				
2x4 8ft #11	48"	41"	5"				1-5/8" left				
2x4 8ft #12	41"	41"	13"				5/8" left				
2x4 8ft #13	41"	41"	13"				5/8" left				
2x4 8ft #14	41"	41"	13"				5/8" left				
2x4 8ft #15	41"	41"	8"	5"			1/2" left				
2x4 8ft #16	41"	41"	8"				5-5/8" left				
2x4 8ft #17	39-15/16"	39-15/16"	15"				3/4" left				
2x4 8ft #18	39-15/16"	39-15/16"	15"				3/4" left				
2x4 8ft #19	39-15/16"	39-15/16"	15"				3/4" left				
2x4 8ft #20	38"	38"	16-1/2"				3-1/8" left				
2x4 8ft #21	36"	36"	21"				2-5/8" left				
2x4 8ft #22	36"	36"	21"				2-5/8" left				
2x4 8ft #23	36"	36"	21"				2-5/8" left				
2x4 8ft #24	36"	36"	20-1/2"				3-1/8" left				
2x4 8ft #25	36"	36"	20-1/2"				3-1/8" left				
2x4 8ft #26	36"	36"	20-1/2"				3-1/8" left				
2x4 8ft #27	36"	36"	20-1/2"				3-1/8" left				
2x4 8ft #28	36"	36"	20-1/2"				3-1/8" left				
2x4 8ft #29	36"	33"	26"				5/8" left				
2x4 8ft #30	33"	33"	27-1/2"				2-1/8" left				
2x4 8ft #31	33"	32-1/2"	27-1/2"				2-5/8" left				
2x4 8ft #32	32-1/2"	32-1/2"	30-1/4"				3/8" left				
2x4 8ft #33	32-1/2"	30-1/4"	30-1/4"				2-5/8" left				
2x4 8ft #34	30-1/4"	26"	26"	8"			5-1/4" left				
2x4 8ft #35	25"	25"	20-1/2"	20-1/2"			4-1/2" left				
2x4 8ft #36	20-1/2"	16-1/2"	16"	16"	14-3/8"		14-3/8" left				
2x4 8ft #37	14-3/8"	14-3/8"	14-3/8"	14-3/8"	14-3/8"		25" left				
2x4 8ft #38	14-3/8"	14"	14"	14"	14"						
2x6 8ft #1	48"	42"					5-3/4" left				
2x6 8ft #2	48"	42"					5-3/4" left				

STEP 1: POSTS

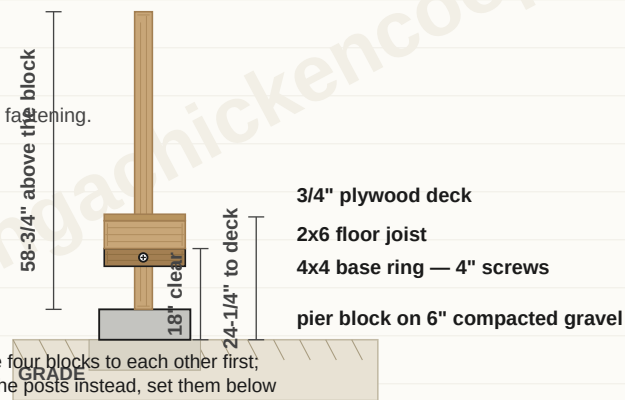
Four 4x4 posts cut to 64-3/4" carry the structure from grade to the top plate. Setting the floor 18" up keeps the frame out of ground moisture and hands the flock the shaded space underneath.

Part	Qty	Length	Stock	Note
Post A	4	64-3/4"	4x4	

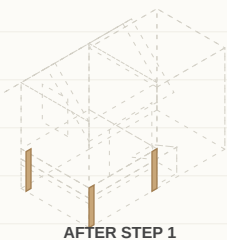
1 / POST LAYOUT (plan view, looking down)



2 / HOW EACH POST IS SET (section)



NOT buried — each post bears on a pier block on 6 in of compacted gravel. Level the four blocks to each other first; everything above inherits whatever error you leave here. In a frost region, or to bury the posts instead, set them below your local frost line (ask your building department) and use ground-contact rated 4x4 with a galvanized anchor.



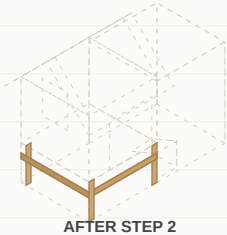
STEP 2: BASE SUPPORTS

The base ring ties the four posts into a rigid square at grade. Use the 4-inch screws here — this joint carries the racking load for the life of the coop.

Part	Qty	Length	Stock	Note
Base support A (front/back)	2	41"	4x4	
Base support B (sides)	2	41"	4x4	
Base blocking	8	20 - 1/2"	2x4	



Base ring: 41" front and back, 41" on the sides, between the posts.
Fasten with the 4-inch screws — this is the joint that resists racking.

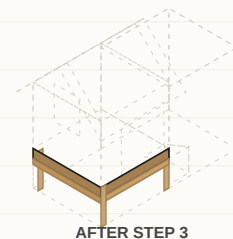
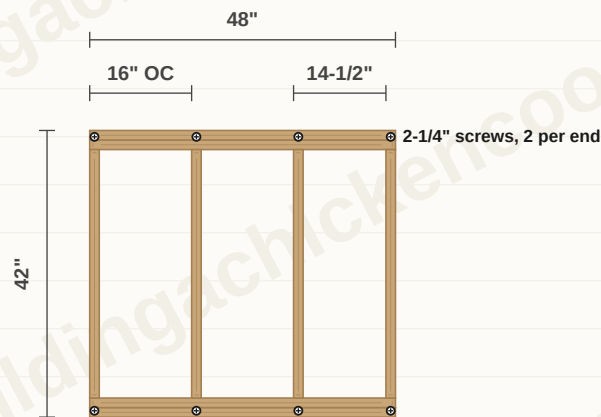


STEP 3: FLOOR JOISTS

Joists sit 18" above grade on 16" centres, running the short direction across 42" in 2x6, with the rim doubled on all four sides. At 42" the 2x6 joists span well inside the 8 ft 4 in that AWC DCA6 Table 2 allows at 16-inch centres, so no intermediate girder is needed. Crown every joist up before you fasten it.

Fixing the floor frame to the posts. This is the joint everything above stands on and it is the one most plans leave to guesswork. Build the rim rectangle first, square it to the diagonals, then drop it over the four posts so the rim sits ON the base ring and CLOSES the outside face of each post. Fasten each corner with **two 4in structural screws driven through the rim into the post, one 1-1/2in down from the top of the rim and one 1-1/2in up from the bottom, offset from each other so they are not in the same grain line.** Eight screws in total, four corners. Predrill — a 4in screw close to the end of a 2x6 will split it otherwise.

Part	Qty	Length	Stock	Note
Rim joist (long sides)	4	48"	2x6	doubled
Floor joist	4	42"	2x6	16" OC, last bay short



WATCH OUT

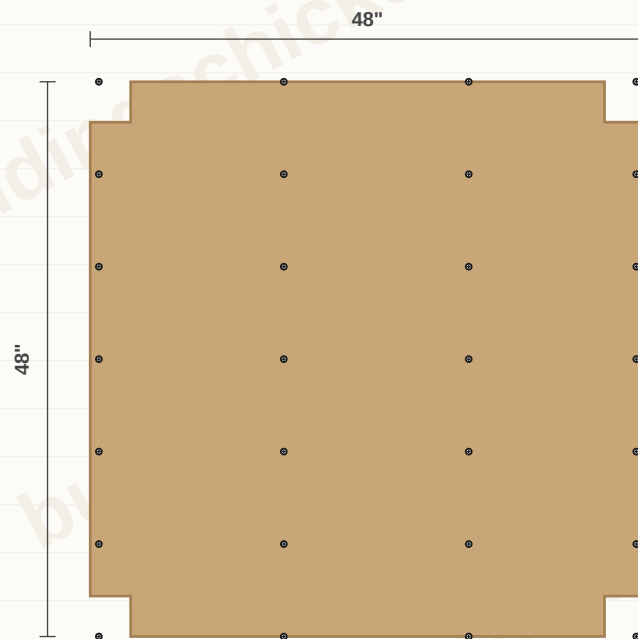
- ! Square the rim rectangle by its diagonals BEFORE it goes on the posts. Once the corners are screwed off it is not coming square again without taking it apart.
- ! Predrill every 4in screw. A split rim at a corner is a structural repair, not a cosmetic one.
- ! Two heights get quoted for this coop and they are not the same number: 18" is the CLEAR space under the joists, 24-1/4" is the walking surface of the deck above grade. Set your pier blocks to the first, not the second.

4 joists at 16" on centre, running the short direction. Rim doubled all four sides.
Clear span 42" — no intermediate support needed.

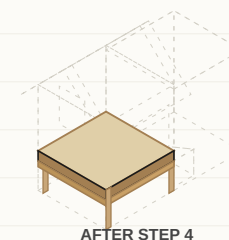
STEP 4: FLOOR DECK

Deck the floor in 3/4" plywood, notched 3-1/2" square at each corner so it drops cleanly around the posts. Fasten with 1-1/2 inch screws every 8 inches on the joists.

Part	Qty	Length	Stock	Note
Floor panel	1	48" x 48"	3/4" plywood	notch corners



3/4" plywood deck, 48" x 48", notched 3-1/2" square at each corner.
Marks show the fastening pattern: 1-1/2" screws every 8 inches along every joist line.



STEP 5: WALL FRAMING — THE METHOD

Every wall is framed FLAT ON THE DECK and then stood up. That is the whole trick: you are working on a level surface, gravity holds the parts where you put them, and you can push the frame square before a single screw goes in. Studs run 16" on centre so 4-foot sheet goods break on a stud.

Build order matters. Front wall, back wall, then the two end walls. The long walls go up first and get braced to the deck; the end walls then drop between them and lock the box square. If you stand a short wall first it has nothing to brace against.

Every wall gets three plates : a bottom plate, a top plate, and a cap plate over the top. The cap plate is not a second top plate for strength — it is there to LAP the corner. Hold the cap plate back 1-1/2" at one end of each long wall and run it 1-1/2" long at the other, so when the end walls go in the caps interlock and tie the four walls into one ring. A butt joint at all four corners is a box that racks.

Cut the bottom plate CONTINUOUS through every door opening. Frame it, stand it, brace it, and only then saw the plate out of the doorway with a handsaw. It is what keeps the wall square while you move it.

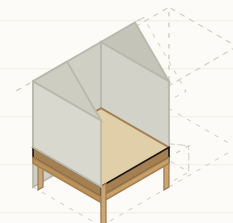
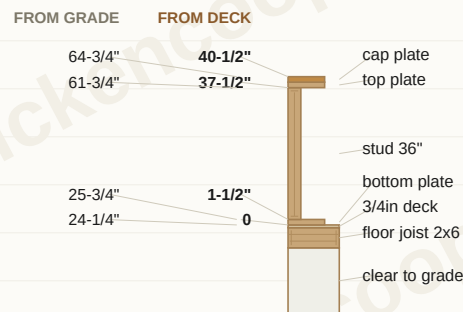
THE TWO PLATE RINGS — reverse the lap between them

SECTION — every height, and where it is measured from

TOP PLATE ring



CAP PLATE ring



AFTER STEP 5

Same four walls, both layers. Because the layers run opposite ways the caps interlock and the box cannot rack. Deck surface is 24-1/4" above grade; the clear space under the joists is 18". On the long walls that means the cap plate is cut 3" SHORT (38") and on the end walls 3" LONG (44"). Every wall dimension in this set is measured from the DECK.

WATCH OUT

- ! Square each wall to its diagonals BEFORE fastening the sheathing or siding — measure corner to corner both ways and push until the two numbers match.
- ! Crown every stud the same way. Sight down it, mark the high edge, and put all crowns to the outside.
- ! Do not stand a wall alone. A 12-foot framed wall is heavy and it will get away from you.

STEP 5A: FRONT WALL

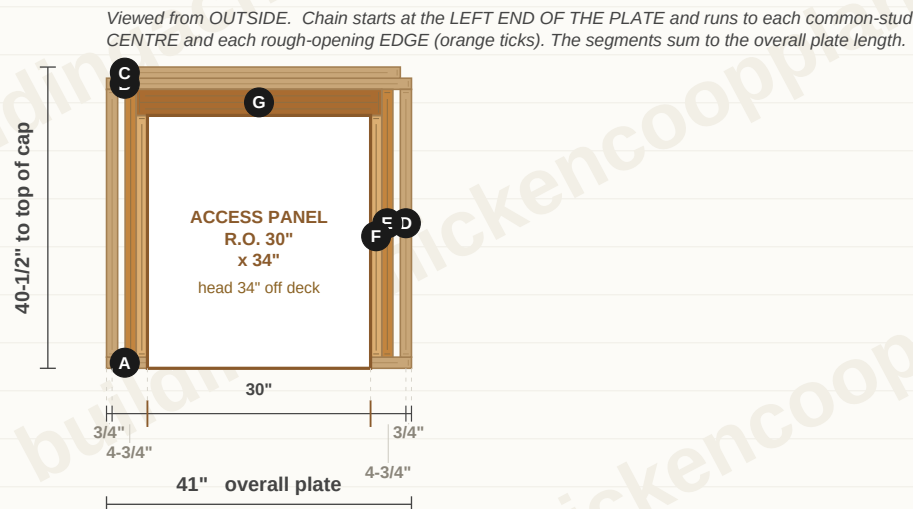
The low side. It carries the door and most of the glazing.

Plate length 41". Openings: access panel 30" x 34". 11 pieces in this wall.

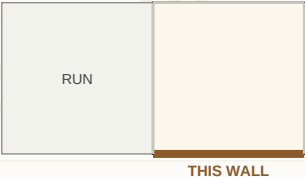
Every dimension on the drawing runs from the LEFT end of the plate to a stud CENTRE and each rough-opening EDGE (orange ticks). Mark the whole plate out before you cut anything — lay the bottom and top plate side by side, square across both at once, and you cannot get the two out of step.

Mk	Part	Qty	Cut length
A	Bottom plate	1	41"
B	Top plate	1	41"
C	Cap plate (upper top plate)	1	38"
D	Common stud	2	36"
E	King stud (full height, beside th	2	36"
F	Jack stud (carries the header)	2	32-1/2"
G	Header	2	33"

11 pieces in this wall



KEY PLAN



WATCH OUT

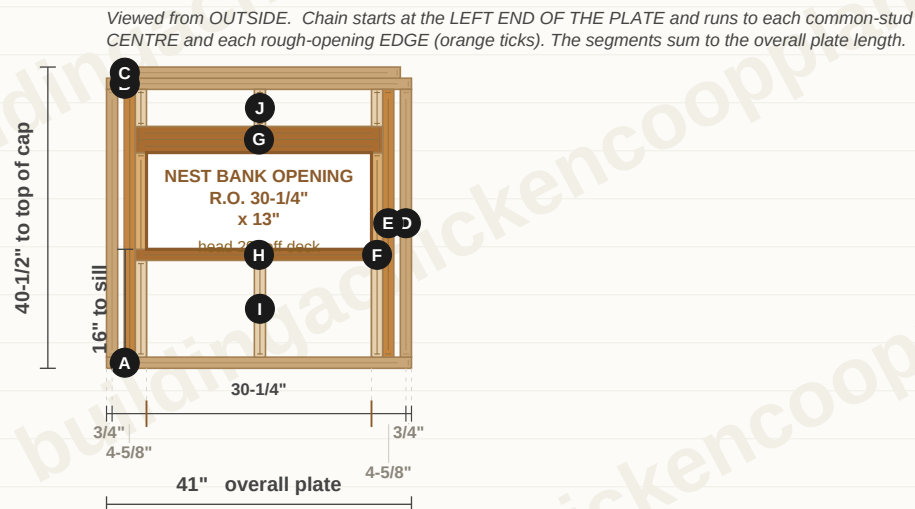
- ! Mark the bottom plate and the top plate TOGETHER, clamped side by side, so the studs cannot end up out of step between them.
- ! The bottom plate runs continuous through the door. Saw it out after the wall is standing and braced, not before.

STEP 5B: BACK WALL

The HIGH side — its studs are longer than the front wall's by the full rise of the roof. The nest bank hangs outside it and the vent strip runs along the top, so keep the top bay clear.

Plate length 41". Openings: nest bank opening 30-1/4" x 13". 18 pieces in this wall.

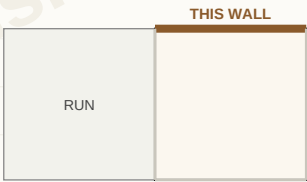
Every dimension on the drawing runs from the LEFT end of the plate to a stud CENTRE. Mark the whole plate out before you cut anything — lay the bottom and top plate side by side, square across both at once, and you cannot get the two out of step.



Mk	Part	Qty	Cut length
A	Bottom plate	1	41"
B	Top plate	1	41"
C	Cap plate (upper top plate)	1	38"
D	Common stud	2	36"
E	King stud (full height, beside th	2	36"
F	Jack stud (carries the header)	2	27 - 1/2"
G	Header	2	33 - 1/4"
H	Rough sill	1	33 - 1/4"
I	Cripple under the sill	3	13"
J	Cripple over the header	3	5"

18 pieces in this wall

KEY PLAN



WATCH OUT

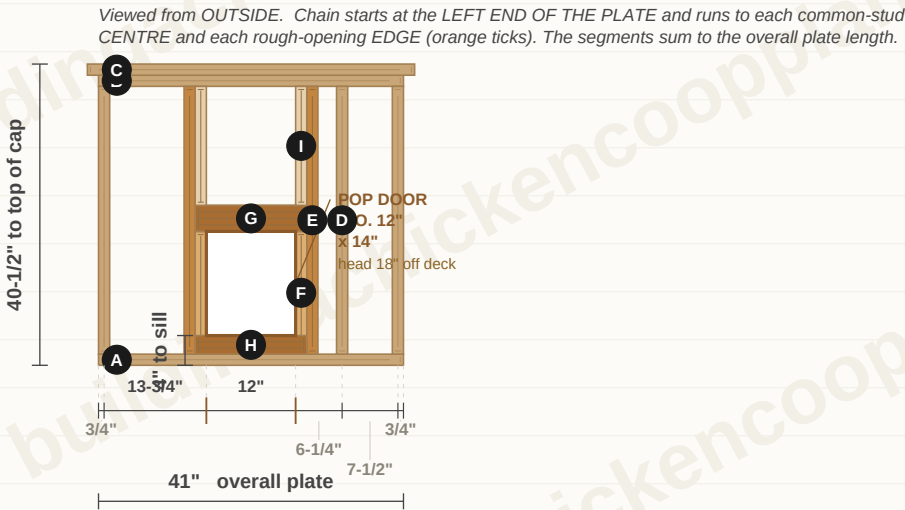
- ! Mark the bottom plate and the top plate TOGETHER, clamped side by side, so the studs cannot end up out of step between them.
- ! Leave the top bay clear of blocking — the continuous vent strip runs the length of this wall right under the plate.

STEP 5C: LEFT END WALL (RUN END)

The run attaches to this wall and the pop door passes through it. Seen from outside, the roof runs DOWNHILL left to right.

Plate length 41". Openings: pop door 12" x 14". 15 pieces in this wall.

Every dimension on the drawing runs from the LEFT end of the plate to a stud CENTRE. Mark the whole plate out before you cut anything — lay the bottom and top plate side by side, square across both at once, and you cannot get the two out of step.



Mk	Part	Qty	Cut length
A	Bottom plate	1	41"
B	Top plate	1	41"
C	Cap plate (upper top plate)	1	44"
D	Common stud	3	36"
E	King stud (full height, beside th	2	36"
F	Jack stud (carries the header)	2	16-1/2"
G	Header	2	15"
H	Rough sill	1	15"
I	Cripple over the header	2	16"

15 pieces in this wall

KEY PLAN



WATCH OUT

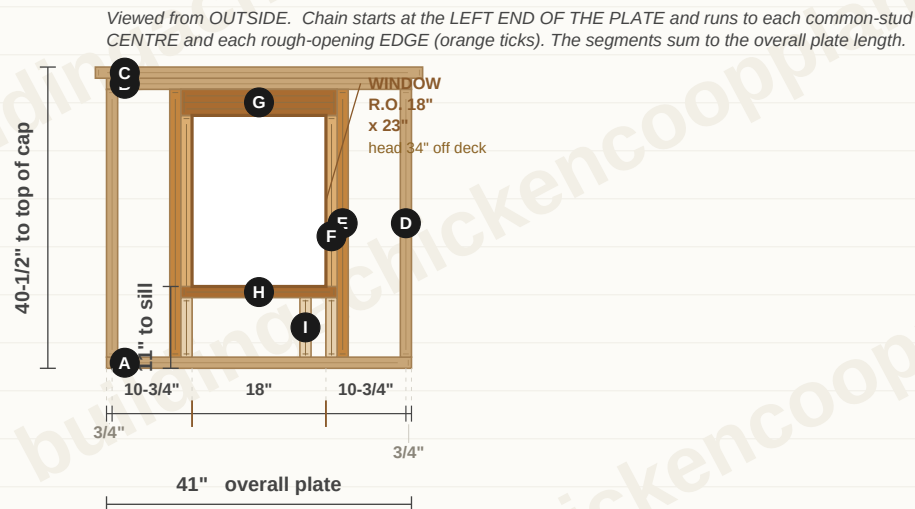
! Mark the bottom plate and the top plate TOGETHER, clamped side by side, so the studs cannot end up out of step between them.

STEP 5D: RIGHT END WALL

Fixed wall with a window. This wall MIRRORS the left end: seen from outside, the roof runs UPHILL left to right.

Plate length 41". Openings: window 18" x 23". 15 pieces in this wall.

Every dimension on the drawing runs from the LEFT end of the plate to a stud CENTRE. Mark the whole plate out before you cut anything — lay the bottom and top plate side by side, square across both at once, and you cannot get the two out of step.



Mk	Part	Qty	Cut length
A	Bottom plate	1	41"
B	Top plate	1	41"
C	Cap plate (upper top plate)	1	44"
D	Common stud	2	36"
E	King stud (full height, beside th	2	36"
F	Jack stud (carries the header)	2	32-1/2"
G	Header	2	21"
H	Rough sill	1	21"
I	Cripple under the sill	3	8"

15 pieces in this wall

KEY PLAN



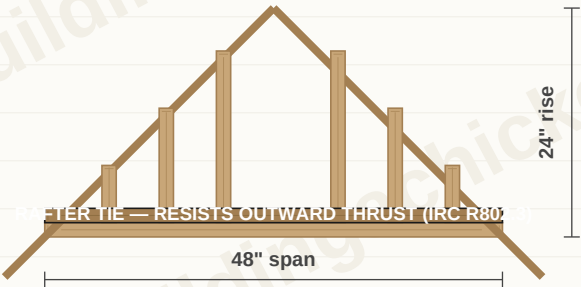
WATCH OUT

- ! Mark the bottom plate and the top plate TOGETHER, clamped side by side, so the studs cannot end up out of step between them.
- ! Rough openings are 1/2in bigger than the unit all round. Check YOUR window against the opening before you cut the studs, not after.

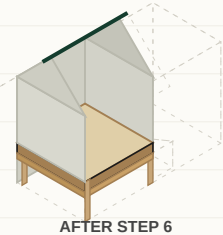
STEP 6: GABLE ENDS, RAFTERS AND RAFTER TIES

A 12:12 gable — the rise equals the run, so every rafter is cut at 45 degrees and the ridge lands 24" above the top plate. Cut one rafter, test-fit it, then use it as the template for the rest. **Every opposing rafter pair is tied.** A pitched roof pushes outward at the eaves, and without a tie resisting that thrust the walls slowly spread and the ridge drops — the code (IRC R802.3) requires either continuous rafter ties or an engineered ridge beam, and a plain ridge board on untied rafters is neither. The ties sit at top-plate level, so they double as the framing you hang a droppings board from.

Part	Qty	Length	Stock	Note
Rafter	6	39-15/16"	2x4	45 deg plumb cut, 6" tail
Ridge board	1	60"	2x4	
Rafter tie	3	41"	2x4	one per rafter pair, at top-plate level
Gable stud (varies)	8	14-3/8"	2x4	cut to fit under the rafter



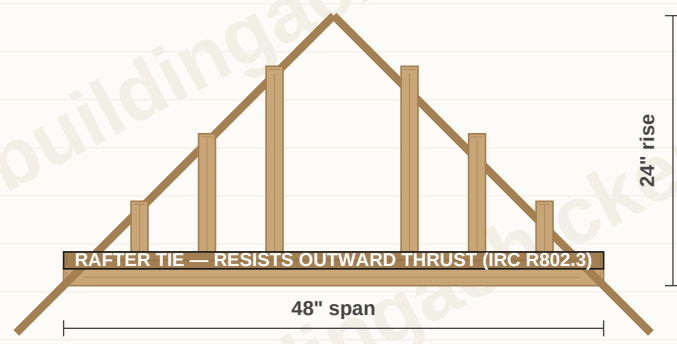
12:12 pitch: 24" of rise over 24" of run. Every rafter cut is 45 degrees.
Rafter length 39-15/16" including a 6" tail. Cut one, test-fit, then batch.



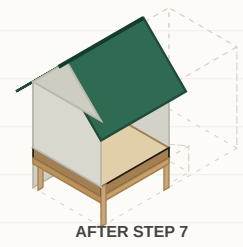
STEP 7: ROOF DECK AND METAL

3/4" plywood over the rafters, then corrugated metal sheets. Metal over shingles because it sheds snow, lasts decades and never needs a tear-off. Lap the sheets one full corrugation.

Part	Qty	Length	Stock	Note
Roof deck panel	2	4' x 8' sheet	3/4" plywood	lay the 8-ft dimension UP the slope; seams land on a rafter
Metal roof panel	3	4 ft x 26"	corrugated steel	26in wide, 24in coverage; one piece eave to ridge, no lap partway up



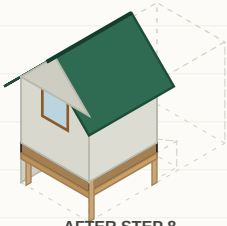
12:12 pitch: 24" of rise over 24" of run. Every rafter cut is 45 degrees.
Rafter length 39-15/16" including a 6" tail. Cut one, test-fit, then batch.



STEP 8: SIDING

Lap siding in 9-foot courses, starting from a level chalk line at the bottom and working up. Each course laps the one below by 1 inch. Leave the window and door openings proud and trim after.

Part	Qty	Length	Stock	Note
Lap siding board	25	9 ft	9 ft lap siding	5in wide, ~1in lap



AFTER STEP 8

STEP 8B: DOORS, HATCHES AND LIDS

Every opening you framed in step 5 now gets something to close it. Cut each slab **a quarter inch smaller than its rough opening on all four sides** — 3/4in plywood swells in the wet and a door cut to the exact opening size will bind by November.

Then close that gap with a stop. A quarter inch is the clearance the door needs and it is also, exactly, the gap this plan tells you a least weasel fits through. Run a 1x2 stop around the inside of every door opening so the slab closes against it and the gap is blocked, not open. On the pop door, staple a strip of hardware cloth behind the stop as well.

Access panel on the front wall: slab 29-1/2" x 33-1/2" in a 30" x 34" opening — a 1/4in gap all round. 2 hinges, out, hinged on the left as you face it from outside.

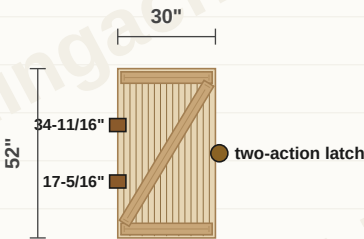
Pop door on the left end wall (run end): slab 11-1/2" x 13-1/2" in a 12" x 14" opening — a 1/4in gap all round. 2 hinges, out, hinged on the left as you face it from outside.

Every plywood door over 30in tall gets a **Z-brace on the back** : a rail top and bottom and one diagonal running from the bottom hinge corner up to the top latch corner. That diagonal is in compression and it is the only thing stopping the door sagging into a parallelogram. Run it the wrong way and it does nothing.

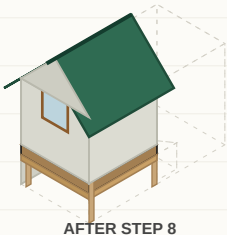
Hinge side and swing. All doors here swing OUT, hinged on the left as you face them from outside. Out, because a door that opens inward sweeps the bedding and gets blocked by it; left, so every latch on the coop is in the same place and you are not hunting for it in the dark with an armful of feed.

Part	Qty	Length	Stock	Note
Access panel slab	1	29-1/2" x 33-1/2"	3/4" plywood	2 hinges, opens out
Access panel batten rail	2	28"	1x4	top and bottom, 1in in from each edge
Access panel batten diagonal	1	35-3/8"	1x4	BOTTOM HINGE corner up to TOP LATCH corner; mitre both ends to
Pop door slab	1	11-1/2" x 13-1/2"	3/4" plywood	2 hinges, opens out

RUN DOOR — VIEWED FROM THE BACK



Diagonal runs UP from the hinge side. Hinge heights measured from the bottom of the slab.



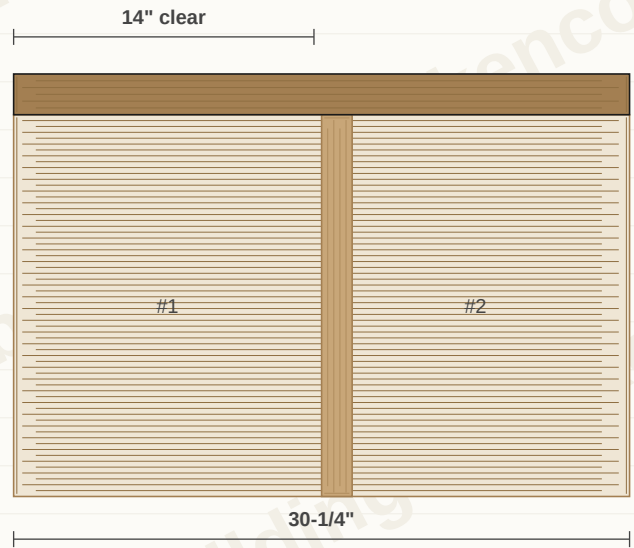
WATCH OUT

- ! Hang the door BEFORE you trim around the opening — the trim gets scribed to the hung door, not the other way round.
- ! Two-action latches on every door. A hook-and-eye is a raccoon's afternoon.
- ! Check the diagonal brace runs from the BOTTOM HINGE corner upward. Reversed, it is a decoration.

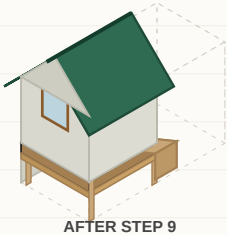
STEP 9: NEST BANK

An exterior nest bank 30-1/4" long and 17 inches deep, hung off the side wall with a hinged lid. 2 compartments — one per three to four hens. Collecting eggs from outside means you never disturb a sitting bird.

Part	Qty	Length	Stock	Note
Nest bank floor	1	30-1/4" x 17"	3/4" plywood	
Nest divider	1	17" x 14"	3/4" plywood	
Nest lid	1	30-1/4" x 18"	3/4" plywood	hinged
Nest bank frame	4	30-1/4"	2x4	



2 compartments across 30-1/4" — 14" clear each, with 3 dividers at 3/4". Bank length is the sum of both, not the length divided by the box count. Mount it lower than the roosts or the birds will sleep in it and foul the eggs.

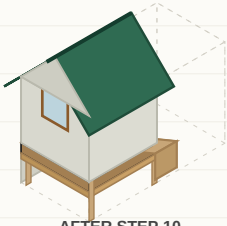


STEP 10: POP DOOR AND RAMP

The pop-door slab was already cut in step 8b to fit the opening you framed in step 5c — do not cut another one. This step hangs it and builds the ramp.

Measure the ramp drop on site. It runs from the pop-door sill, 28-1/4" above grade, down to the FINISHED run surface — which is the sand or drain rock you placed in step 11, not bare ground. On a level site that is about 56-7/16" of ramp at a comfortable angle, but cut it to what you measure, not to what is printed here.

Part	Qty	Length	Stock	Note
Ramp	1	56-7/16" x 10"	3/4" plywood	trim to your measured drop
Ramp cleat	14	10"	1x2	every 4in, so a hen has grip



AFTER STEP 10

STEP 11: RUN FRAME

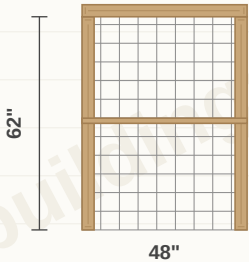
The 4 ft x 4 ft screened run frames off the coop wall, 62" tall. 2 posts a side on roughly 4-foot centres, with a top rail and a mid rail so the hardware cloth has something to fasten to at every course. **The mid rail goes at 32 inches, not higher** — the cloth comes off a 36-inch roll, so a course run up from the ground reaches 36 inches and has to land ON a rail with a lap to spare.

Set the run posts the same way you set the coop posts in step 1 — on the same pier blocks, at the same height, checked with the same string line. A run on a different footing system than the coop it hangs off will move against it and open a gap at the joint, which is exactly where a predator starts.

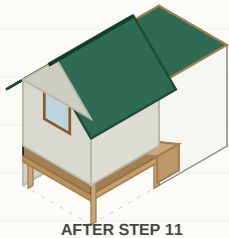
Fixing the run to the coop: the two run rails that meet the coop are lag-bolted into the corner posts of the run-end wall, not screwed into siding. Two 3/8in x 4in lag bolts per rail, drilled with a 1/4in pilot, one 3in above the rail's bottom edge and one 3in below its top. Siding is a skin; it holds nothing.

Get the water out before you put the birds in. 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. Three things, in order of how much they matter: **grade the run to fall away from the coop** — an inch of drop for every 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 collects; and **top it with 3 to 4 inches of coarse sand or 3/8in drain rock** , not topsoil and not straw. Coarse sand drains, dries fast and can be raked clean like a litter box. Do this before the apron goes in — you cannot regrade under a buried mesh skirt.

Part	Qty	Length	Stock	Note
Run post	4	62"	2x4	
Run top rail	2	48"	2x4	
Run mid rail	2	48"	2x4	
Run end rail	3	41"	2x4	
Run brace	4	33"	2x4	45° corner braces
Run door stile	2	52"	2x4	
Run door rail	3	26"	2x4	



2 posts a side, mid rail at 32in so a 36in course of cloth laps onto it.
Bury a 12-inch hardware-cloth apron down and out around the whole perimeter.

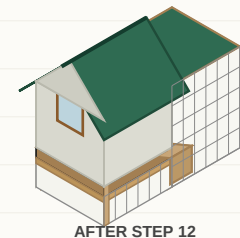


STEP 12: HARDWARE CLOTH

The step that decides whether you still have a flock in two years. Quarter-inch hardware cloth over every opening, screwed through fender washers rather than only stapled. **Quarter-inch, not half-inch.** A least weasel squeezes through a half-inch opening; quarter-inch mesh stops it. That is the whole reason for the spec (Univ. of Kentucky Extension ID-245), and half-inch mesh — while genuinely raccoon-proof — does not stop weasels, mink or snakes. Chicken wire stops nothing: a raccoon reaches straight through the hexagonal gaps. Bury a 12-inch apron down and out around the whole run perimeter, turned outward at the bottom into an L. Sources for both numbers: Univ. of Kentucky Cooperative Extension ID-245 and Virginia Cooperative Extension 2902-1092.

The windows get cloth too. An open 18 x 23 window is a hole a raccoon walks through, and it is the ventilation you rely on in summer, so it has to stay open at night. Staple a panel of cloth to the **INSIDE** of every window opening before the unit goes in — behind the glazing, not over it, so the window still shuts on a clean frame. Same for the continuous vent strip along the top of the back wall and the nest-bank opening.

Part	Qty	Length	Stock	Note
Run walls	1	21 lin ft	1/4" hardware cloth	
Run roof	1	6 lin ft	1/4" hardware cloth	
Buried apron, 12in down and 12in out	1	11 lin ft	1/4" hardware cloth	
Window screens	1	2 lin ft	1/4" hardware cloth	
Continuous eave vent strip	1	1 lin ft	1/4" hardware cloth	
Nest opening and pop-door surround	1	3 lin ft	1/4" hardware cloth	
Under-floor skirt	1	8 lin ft	1/4" hardware cloth	



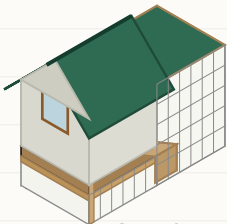
WATCH OUT

- ! Screw through fender washers every 6in around every edge. Staples alone pull out — a raccoon works an edge until it finds one that gives.
- ! Cut cloth with tin snips and wear gloves. The cut edge is genuinely vicious.
- ! Total on the material list is 52 lin ft of 36in roll — that is the sum of every line in this table, apron included.

STEP 13: ROOSTS AND DROPPINGS BOARD

3 birds NEED 30 inches of perch at 10 inches each, comfortably above the 6-inch minimum the extension services set. The cut list below BUILDS 50 inches — 2 bars at 25". Those are two different numbers and this plan states both, because a plan that prints the requirement and calls it the built total is contradicting its own cut table. Use a rounded or slightly flattened bearing surface 1 to 2 inches across rather than a thin dowel or a full 3-1/2 inch flat face: it spreads footpad pressure and lowers bumblefoot risk. **So mount the 2x4 ON EDGE, 1-1/2 inch face up, and ease the top corners round.** Laid flat it presents a 3-1/2 inch face, which is the thing the sentence above tells you to avoid — the bar is the same board either way and the plan has to say which. (One exception, and it is not yours unless you are in hard-freeze country: keepers in deep-winter climates deliberately lay the bar flat so a hen can cover her toes with her breast feathers against frostbite. Below about zone 5 that trade is not worth the footpad pressure.) Set the bars 18 to 24 inches off the floor, 10 to 12 inches apart, and at least 8 inches off the wall. Stagger them like stair treads rather than stacking them, so the birds underneath do not get rained on. **No bar sits over a nest box.** Directly beneath the bars goes a removable droppings board — birds put out most of a night's manure while roosting, and catching it on a board you slide out and scrape turns the daily clean into a two-minute job. Never use wire for this: droppings stick to mesh and it becomes impossible to clean.

Part	Qty	Length	Stock	Note
Roost bar	2	25"	2x4	MOUNT ON EDGE — 1-1/2in face up, top corners eased round
Roost support	4	14"	2x4	wall cleats
Droppings board	1	27" x 24"	3/4" plywood	removable, sealed or lined
Droppings board rail	2	27"	2x2	slides out on these



AFTER STEP 13

IMPORTANT — PLEASE READ BEFORE BUILDING

What these plans are

This design is framed to published prescriptive span tables — the American Wood Council's DCA6 deck guide and the International Residential Code joist and rafter tables. Floor joists, girders, rafters, studs and top plates are all sized against those published tables rather than estimated.

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

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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 10 sq ft of bird floor for 3 hens.

Outdoors, the run is 16 sq ft, or 5.3 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 1 birds rather than 3.

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 3 hens that is 24-30 sq ft, and this coop has 10. In a climate with long confinement, size the flock off the indoor figure, not the summer one: 1 hens, not 3. 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 3 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.

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