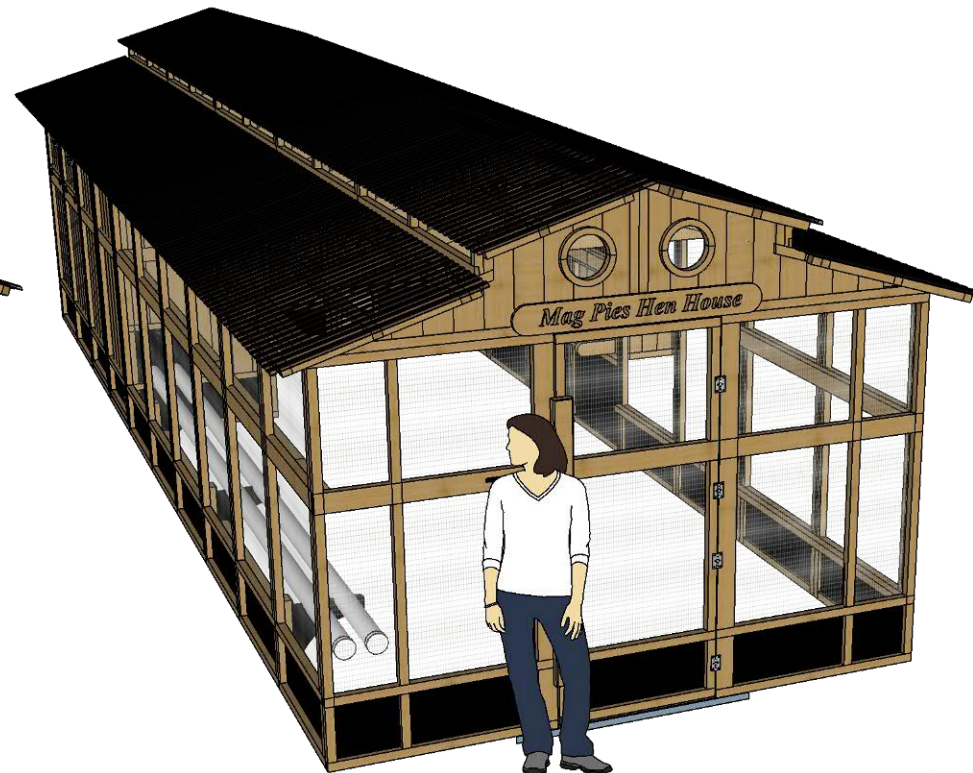
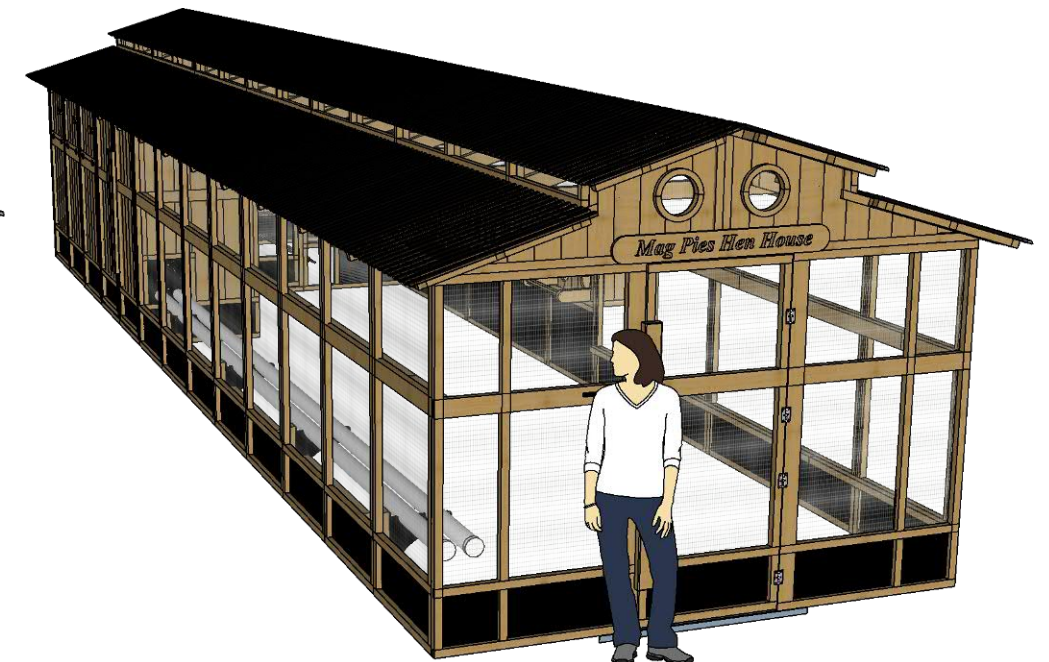




Model 20



Model 30



Model 40



Help Text-line: 512-596-5200
EMAIL: support@roostandroot.com

VOICE: 877-741-COOP
Assembly Support ext 3



**Watch the YouTube
Assembly Overview Video**

It will be pretty much impossible for you or your contractor to assemble your new coop without (1) pre-reading these instructions to create familiarity, (2) watching our assembly overview video, and (3) following instructions on each page. Concepts on one page are built upon in the next pages and we often don't repeat in hopes of saving complexity. Any time taken up front going through everything will save you many hours (and grief) in the end :-)

- Your new coop won't gain full strength until completed. It must be protected from high winds until completed and properly anchored.
- Having a very level very flat area is required for the coop to assemble properly. It's impossible to overstate how much easier and better assembly will go with things square and level. A properly prepared concrete footer is preferred.
- We estimate about 60, 75, and 90 man hours to asseble the model 20, 30 and 40 Heritage Coops, respectively. Two people are required for the build and three can be helpful.
- You will need a chuck type drill (preferably cordless, preferably two) and a hammer and a tape measure. Everything else is provided.
- We think we put extra screws and other fasteners in the kit. If you run out, one of us goofed up :-)
- Using the instructions is part reading, part illustrations, part photos and part watching videos. Please know that we value your input to an ongoing process. We try hard but writing good instructions on complex objects for a variety of learning styles is an imperfect science. We're genuinely sorry for any confusion our instructions cause.
- We indicate in the instructions where all screws go. All of the screws in the kit are aggressive enough to self drive. If concerned, we also include a pilot bit. Position, count and direction of screws are indicated by various colored arrows.
- When we build your coop the cedar wood has about 12% moisture. If you wait a long time to assemble your coop it may dry out and shrink by up to 1/8". When it get rained on, it will swell back. Human error, machine error and believe it or not computer error can cause parts to be off by as much as 1/8th inch. Most of the design can tolerate small errors. Where it cannot we give you a measurement that must be adhered to. Like doors, for instance.
- Panels are not marked and we omit a section in the instructions for parts ID to save complexity. All wire sides face inward and the 3D renderings will allow you to identify panels as you go. Spacing them out for easy ID is advised.



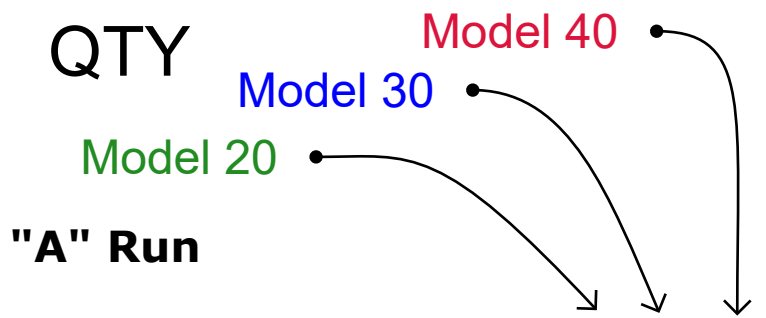
We include a gallon of Eco Sealer and a sprayer to treat the bottom rails of ground contact panels if you desire. Even panels that sit on concrete footer will benefit. Cedar is proven to last 10-15 years outdoors even when in ground contact. Sealing bottom rails will extend this time. This product allows re-sealing and even color staining after application. In our opinion it is a premium grade product. We do not recommend painting cedar but you can. Whatever you decide to do, a product that allows the wood to breathe is best. Keep toxicity in mind too. With modest care, we expect your coop to last 20 - 25 years.



Best practice would be to pour a concrete footer. Guidance is found in the following pages. You can most certainly build this coop directly on the ground. Ours is. In either case, great care must be taken to make the surface both level and square. A concrete footer will simplify proper anchoring which is required to prevent high wind damage both during and after construction.



Green box indicates to which model that page applies...



- A1 36" Wired Side Panels 6|10|13
- A2 Left Front Panel
- A3 Right Front Panel
- A4 Door

"B" Roost

- B1 36" Roost Side Panels 4|4|6
- B2 L&R Roost Back Panels
- B3 Back Middle Roost Panel
- B4 Roost Entry Door
- B5 Roost Side Door Panel
- B6 Model Roost Bunk Set 2|2|4
- B8 Bunk Ramp

"C" Egg Box

- C1 36" Egg Box Panels 3|4|5
- C2 Egg Box Assemblies 3|4|5
- C3 Egg Box Roof Panels 22" 6|8|10

"D" Roof

- D1 Left Front Gable
- D2 Right Front Gable
- D3 Left Back Gable
- D4 Right Back Gable
- D5 Left Mid Gable
- D6 Right Mid Gable

- D7 Left Notched Rafter Assembly 3|5|6
- D8 Right Notched Rafter Assembly 3|5|6
- D9 Left No Notch Rafter Assembly 2|3|5
- D10 Right No Notch Rafter Assembly 2|3|5
- D11 Collar Tie 5|8|11

- D15 Left Front Upper Purlin Panel
- D16 Right Front Upper Purlin Panel
- D17 Left Back Upper Purlin Panel
- D18 Right Back Upper Purlin Panel
- D19 L&R Mid Upper Purlin Panel 4|6|10
- D20 Left Front Lower Purlin Panel
- D21 Right Front Lower Purlin Panel
- D22 Left Back Lower Purlin Panel
- D23 Right Back Lower Purlin Panel
- D24 L&R Mid Lower Purlin Panel 4|6|10

- D30 Left Front Transom Panel
- D31 Right Front Transom Panel
- D32 Mid Transom Panels 4|6|10
- D33 Left Back Transom Panel
- D34 Right Back Transom Panel

- D40 Upper Roof Panels 32" 26|36|44
- D41 Lower Roof Panels 40" 26|36|44
- D42 Ridge Cap 7|9|11

"E" Trim

- E1 Upper 2x4 Wall Stiffener Set 6|9|11
- E2 Lower 2x2 Wall Stiffener Set 4|5|6
- E3 Optional Name Board
- E4 Bird Stop Trim Package 14|20|26

"F" Storage Room

- F1 Left Exterior Door Panel
- F2 Right Exterior Door Panel 0|1|1
- F3 Ceiling Panel
- F4 Roost Wall Panel
- F5 Run Wall Panel
- F6 Interior Door Panel
- F7 Interior Side Door Panel 0|1|1
- F8 Bottom Wall Stiffener 0|1|1

"G" Misc

- G1 FeedWorx Feeders 1|2|2
- G2 Easy Fill Waterer Parts Set
- G3 Water Door Slide Set
- G4 Egg Box Liners 6|8|10



Parts that are obvious to identify in illustrations are not labeled.
Parts that could be confusing are both labeled and dimensions are provided for proper ID.

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Find your inner farmer.

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Coop Parts Listing

20
30
40

Page
02

Model 20 "Toolkit" List

- (12) Standard **OR** Freeze Guard Drinkers
- (1) Eco Sealer 1Gal
- (1) Eco Sealer Sprayer
- (1) Small Bottle of Gorilla Glue
- (1) Ratchet Strap
- (1) 4' Level
- (1) Automatic Door Kit
- (1) Roll of String
- (1) Countersink Bit
- (1) 5/32 Drill Bit
- (3) 5lb Boxes 3" T-25 Screws
- (1) 1lb Box T-20 1 1/4" Screws
- (1) 1lb Box T-20 1 5/8" Screws
- (24) 4 1/2" T25 GRK Screws
- (2) 400 count 1½ #9 Roof Screws
- (10) 3/4" Bolt - Nut - 2 Washer Sets
- (3) Bolt Style Gate Latches & Hardware
- (16) Stainless Steel Hinge Screws
- (1) 3" Hook & Eye Door Catch
- (7) Gravity Gate Latches & Screw Sets
- (12) D-Ring Anchors & Bolt Sets
- (1) Small SOCKiT Box & Screws
- (10) Spring Snap "Clips"
- (2) Bit Holders
- (2) T25 Bits
- (1) T20 Bit
- (1) Phillips Bit
- (1) PVC Glue

Model 30 "Toolkit" List

- (15) Standard **OR** Freeze Guard Drinkers
- (1) Eco Sealer 1Gal
- (1) Eco Sealer Sprayer
- (1) Small Bottle of Gorilla Glue
- (1) Ratchet Strap
- (1) 4' Level
- (1) Automatic Door Kit
- (1) Roll of String
- (1) Countersink Bit
- (1) 5/32 Drill Bit
- (4) 5lb Boxes 3" T-25 Screws
- (1) 1lb Box T-20 1 1/4" Screws
- (1) 1lb Box T-20 1 5/8" Screws
- (36) 4 1/2" T25 GRK Screws
- (3) 400 count 1½ #9 Roof Screws
- (16) 3/4" Bolt - Nut - 2 Washer Sets
- (2) Bolt Style Gate Latches & Hardware
- (1) Dual Gate Style Latch & Hardware
- (16) Stainless Steel Hinge Screws
- (1) 3" Hook & Eye Door Catch
- (7) Gravity Gate Latches & Screw Sets
- (16) D-Ring Anchors & Bolt Sets
- (1) Small SOCKiT Box & Screws
- (10) Spring Snap "Clips"
- (3) Bit Holders
- (3) T25 Bits
- (1) T20 Bit
- (1) Phillips Bit
- (1) PVC Glue

Model 40 "Toolkit" List

- (21) Standard **OR** Freeze Guard Drinkers
- (1) Eco Sealer 1Gal
- (1) Eco Sealer Sprayer
- (1) Small Bottle of Gorilla Glue
- (1) Ratchet Strap
- (1) 4' Level
- (1) Automatic Door Kit
- (1) Roll of String
- (1) Countersink Bit
- (1) 5/32 Drill Bit
- (5) 5lb Boxes 3" T-25 Screws
- (1) 1lb Box T-20 1 1/4" Screws
- (1) 1lb Box T-20 1 5/8" Screws
- (48) 4 1/2" T25 GRK Screws
- (4) 400 count 1½ #9 Roof Screws
- (22) 3/4" Bolt - Nut - 2 Washer Sets
- (2) Bolt Style Gate Latches & Hardware
- (1) Dual Gate Style Latch & Hardware
- (16) Stainless Steel Hinge Screws
- (1) 3" Hook & Eye Door Catch
- (9) Gravity Gate Latches & Screw Sets
- (20) D-Ring Anchors & Bolt Sets
- (1) Small SOCKiT Box & Screws
- (12) Spring Snap "Clips"
- (3) Bit Holders
- (3) T25 Bits
- (1) T20 Bit
- (1) Phillips Bit
- (1) PVC Glue

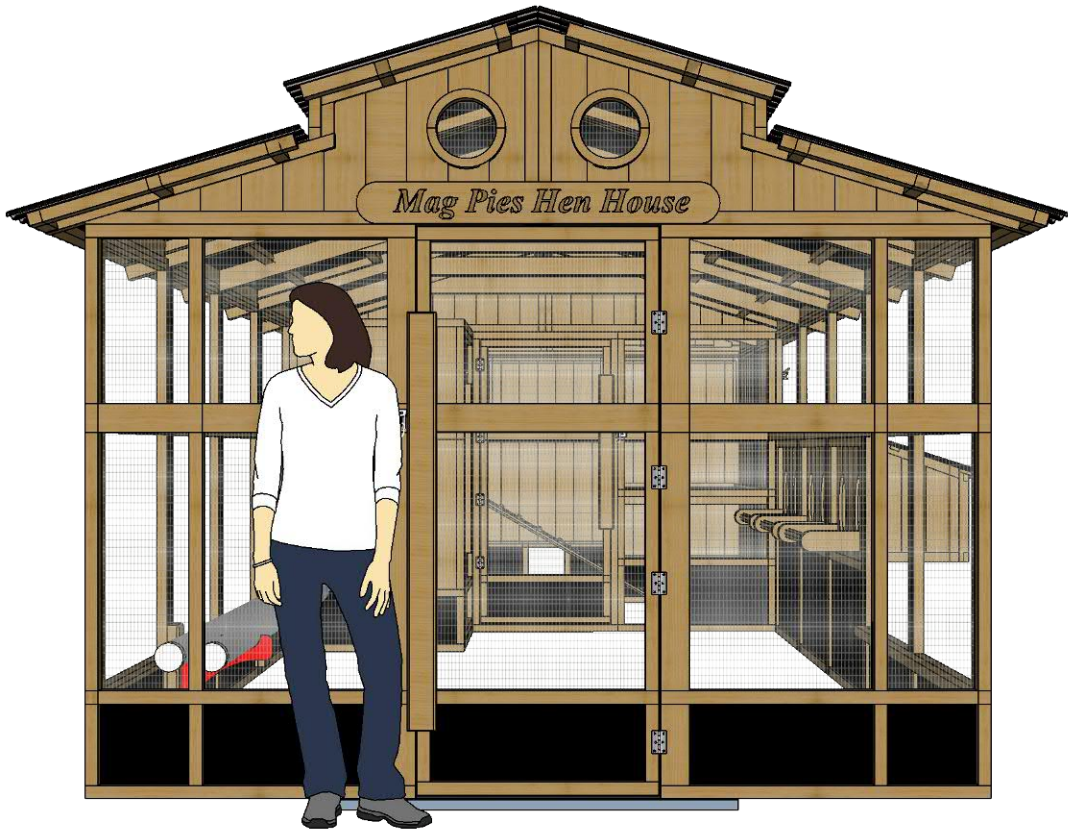


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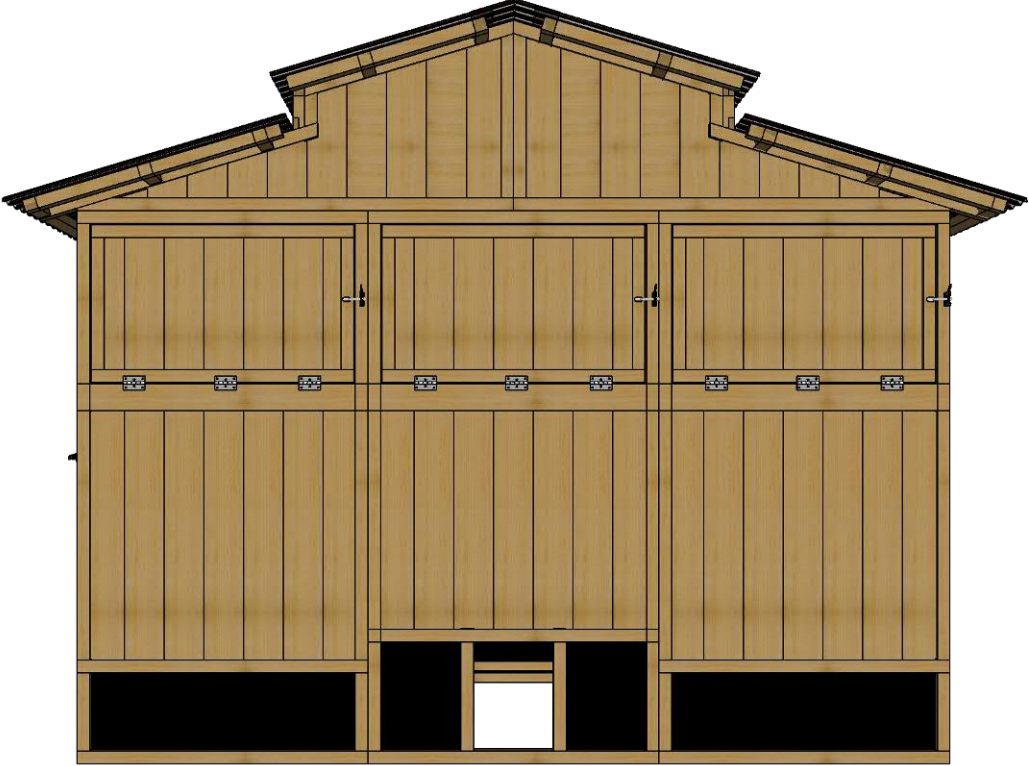
"Tool Kit" Contents

20
30
40

Front



Back



Left



Right




Model 20 coop shown...



<https://mtcopeland.com/blog/plumb-level-square-and-true-what-they-mean-and-how-to-measure/>

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Top Courses

- How to Read Blueprints
- Introduction to Cabinetry
- Construction Math
- How to Build Shaker Cabinets
- Commercial Blueprints




Good resource for squaring and leveling...



<https://www.wikihow.com/Level-Ground>

wikiHowto do anything...PROEDIT

Part 1Marking Your Area



Another great article on preparing level ground...

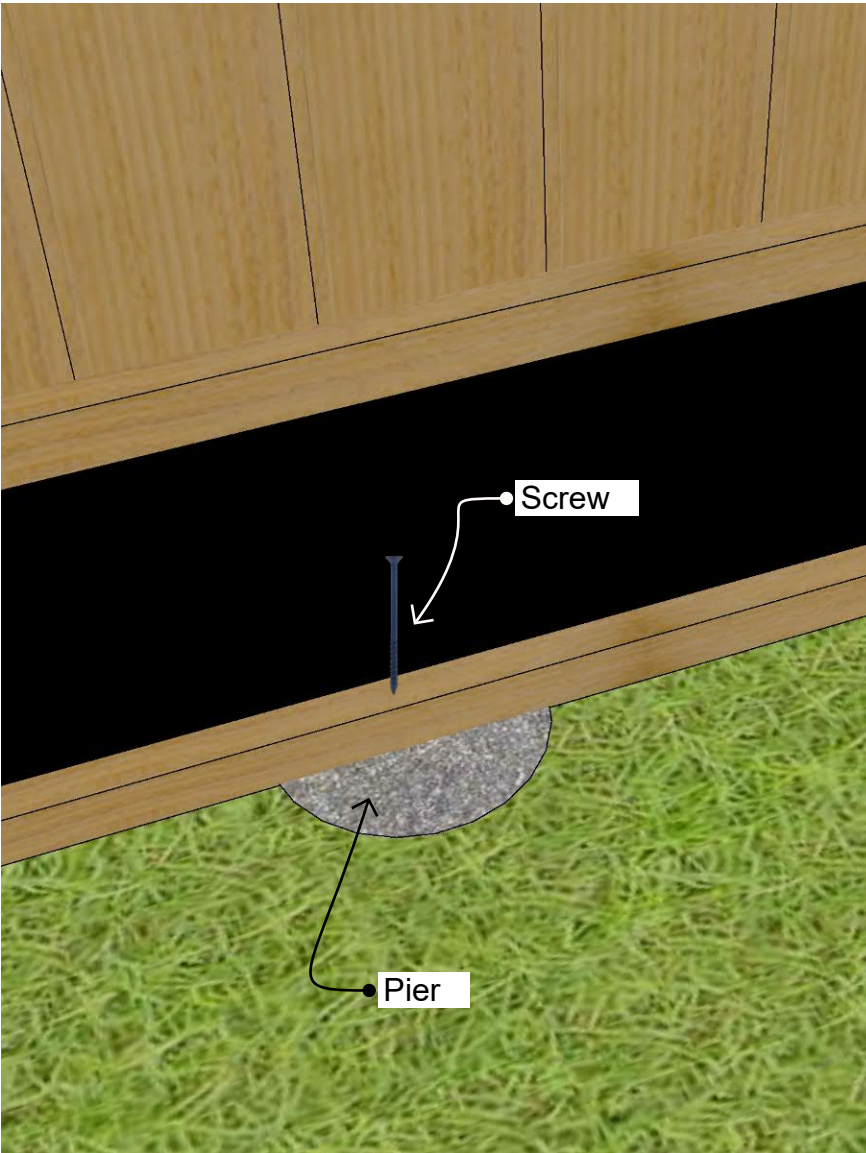


3 Possible ways to anchor your coop... there are more, here are three.

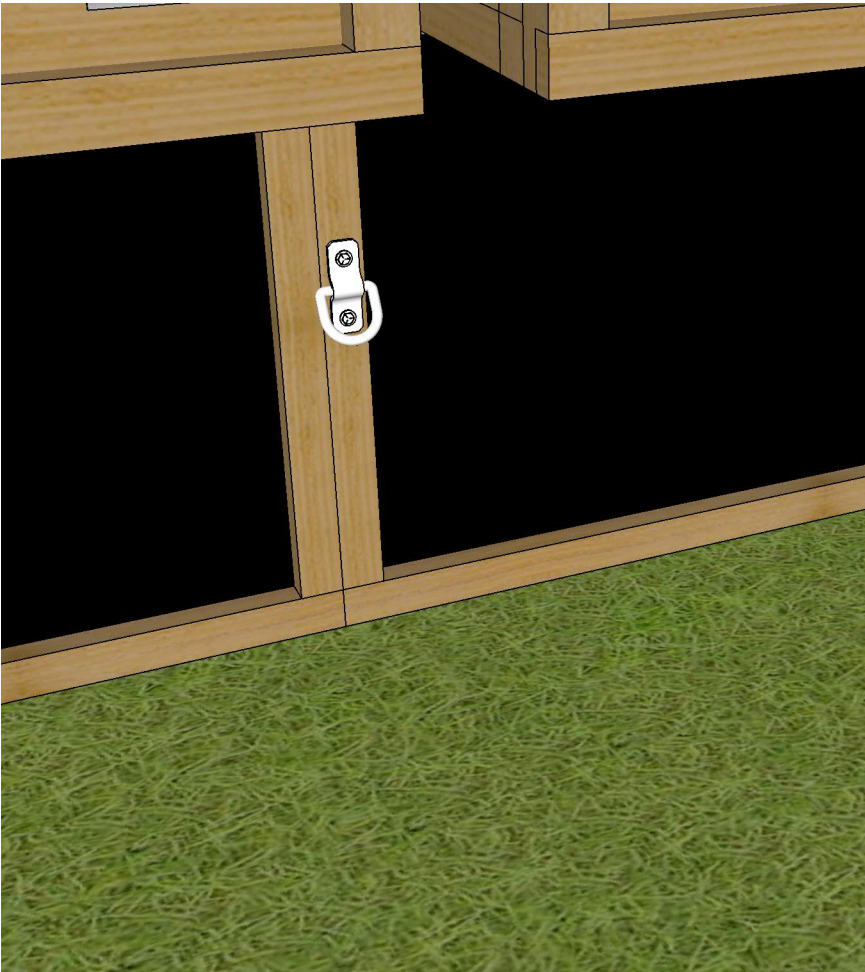
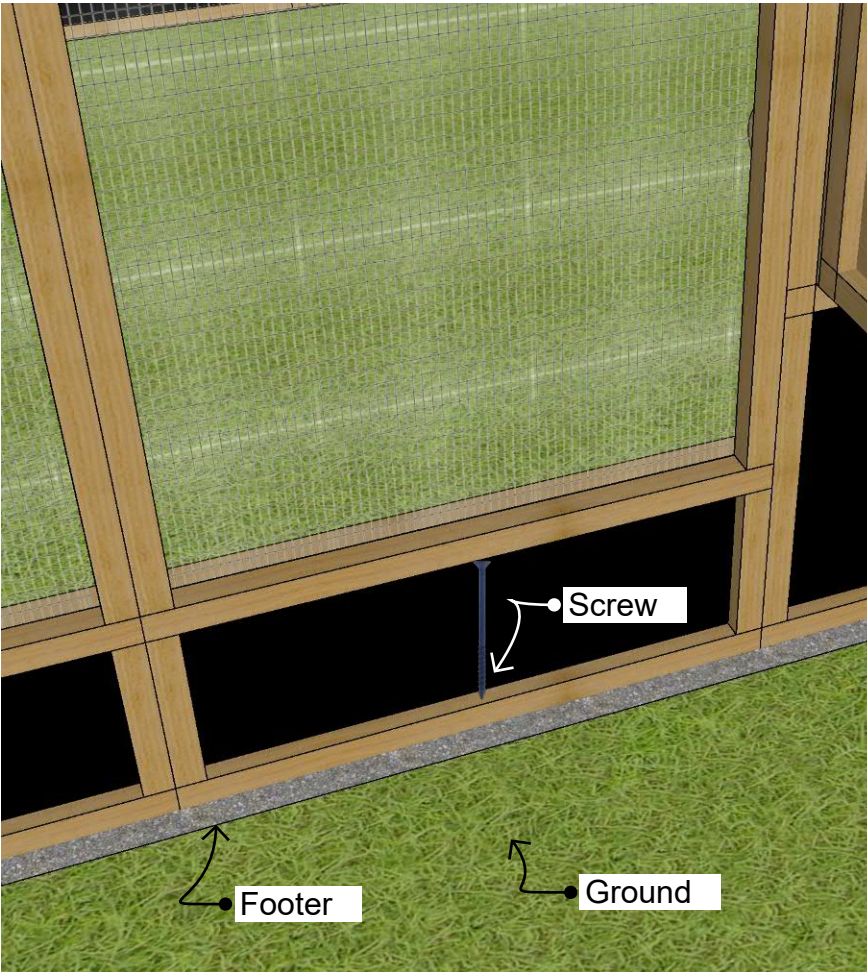
Screw in one or two Tapcon screws into the bottom rails of panels and into your concrete footer. This is done after you're absolutely sure walls are set and won't be moved. A percussion style drill is best. Let your footer dry for at least 2-3 weeks or you'll risk fracturing. Center screw in bottom rail.



Instead of pouring a complete perimeter footer, concrete "piers" can be poured every 3 to 6 feet and near corners. The same 3/16 3-1/4 Tapcon screw can be used to screw down rails into piers. If you have bedrock near the surface, pour piers where they can reach into the bedrock. You can also drive 3/8 rebar down into the pier hole and leave rebar below grade but into pier hole... so that when concrete is poured the rebar "connects" the pier into the bedrock. Same wait time applies as to footer.



There's nothing wrong with building your coop directly on the ground and securing with the included D-Ring Anchoring Kit. D-Rings are comprised of the ring, the holder, 2 bolts and 2 t-nuts each. They are placed along the sides and near the corners. Different styles of anchors are then used to "anchor" to the ground. Our video we use for our greenhouse anchoring is a good primer. You will need to choose and purchase the proper types of anchors and tie devices for your area and your preference.



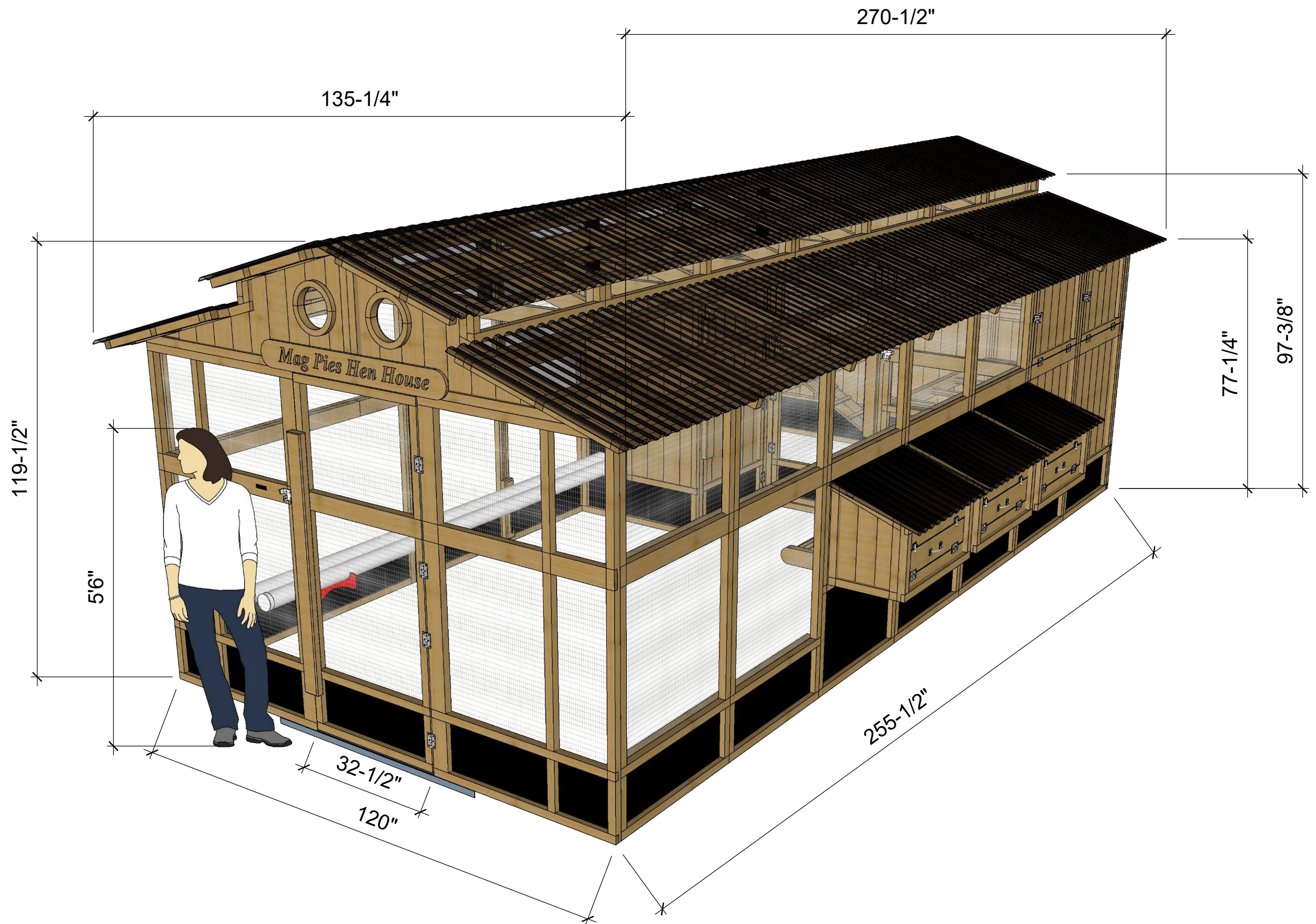
1. Concrete Screws To Concrete Footer

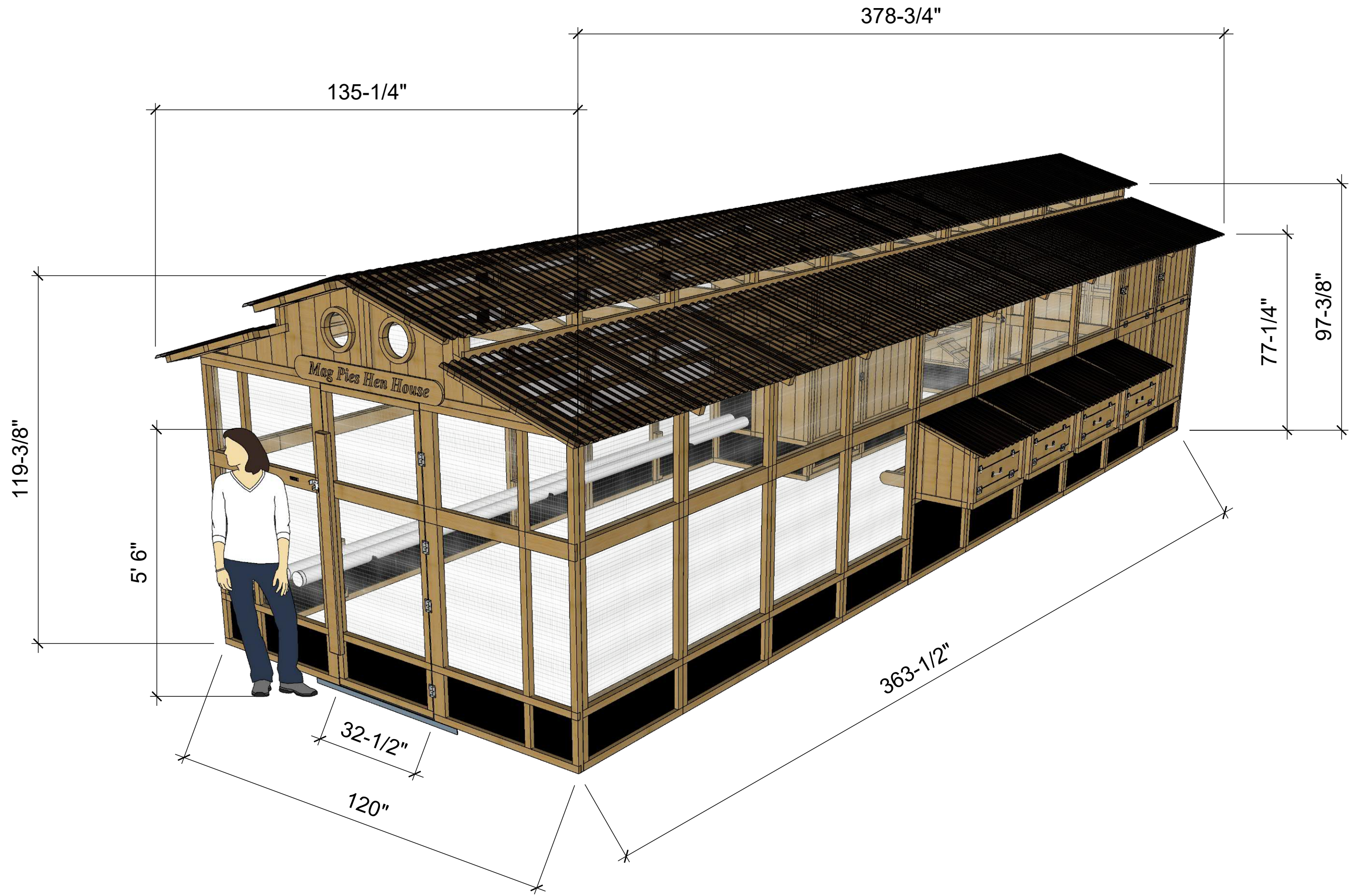
2. Concrete Screws To Concrete Pier

3. D-Rings & Stakes



Be careful. Coop must be anchored to avoid damage from excessive winds during and after construction. We do not know your ground conditions or your locale and whether you live in an area subject to excessive winds. Please seek local guidance if you are unsure. Coop is heavy and very wind resistant. But for extreme conditions anchoring is necessary. Many of our products have survived hurricane force winds. Panel or roof strength isn't the main worry... securing prevents the coop from "toppling" or walls moving in high winds.



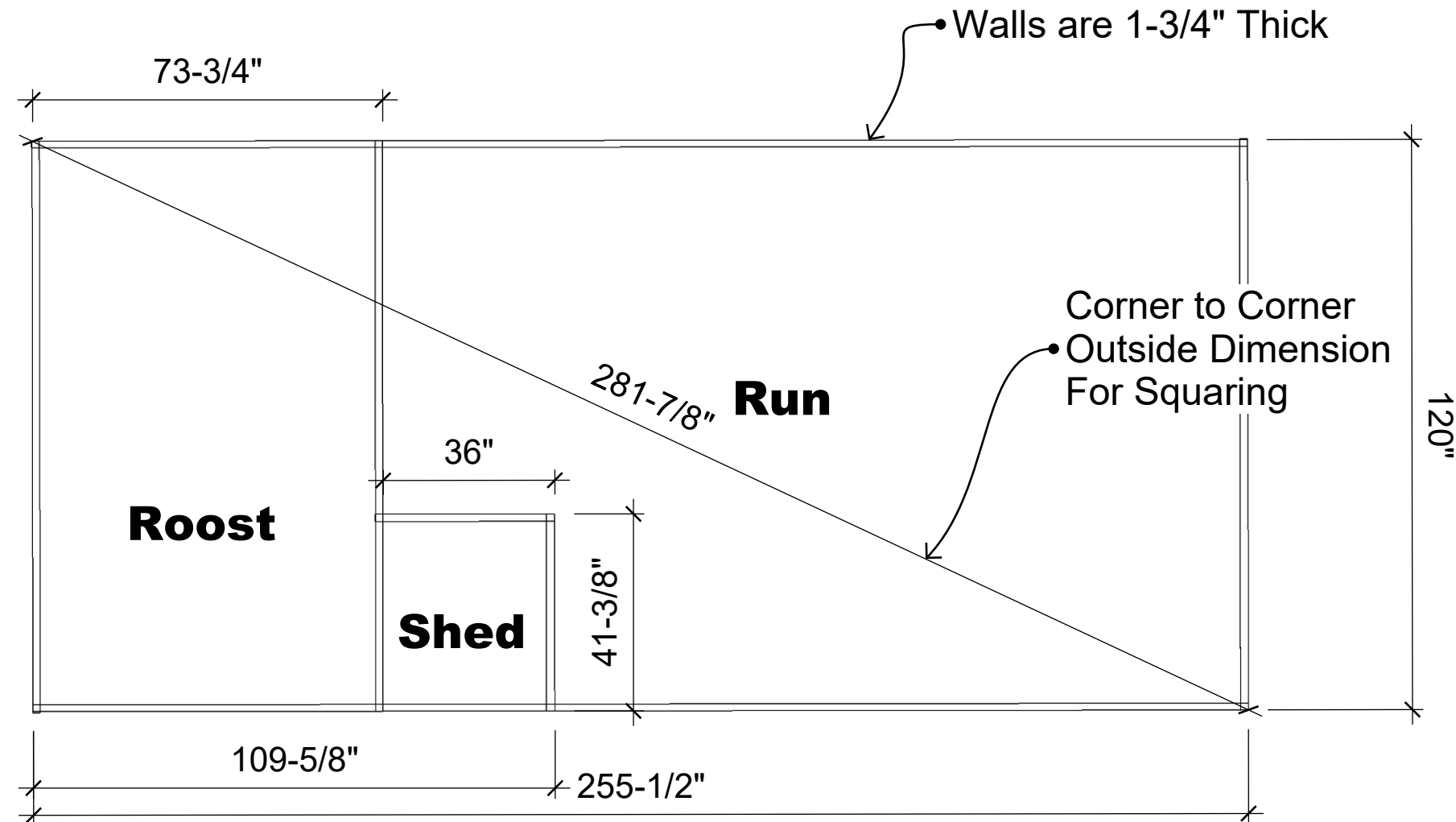
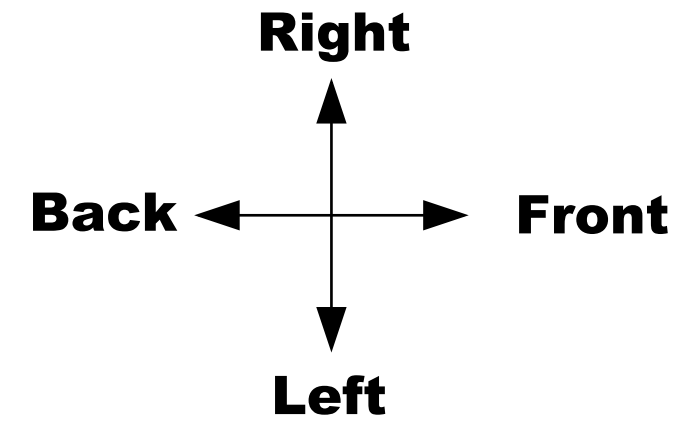


Dimensions | Model
30

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Note: If a concrete footer is poured and it is flush with ground level, you can omit pouring footer for interior roost and shed walls. If it is elevated any above ground level, you should pour footer under interior walls too for support. Pouring a concrete footer will simplify leveling and squaring and provide the best way to anchor.



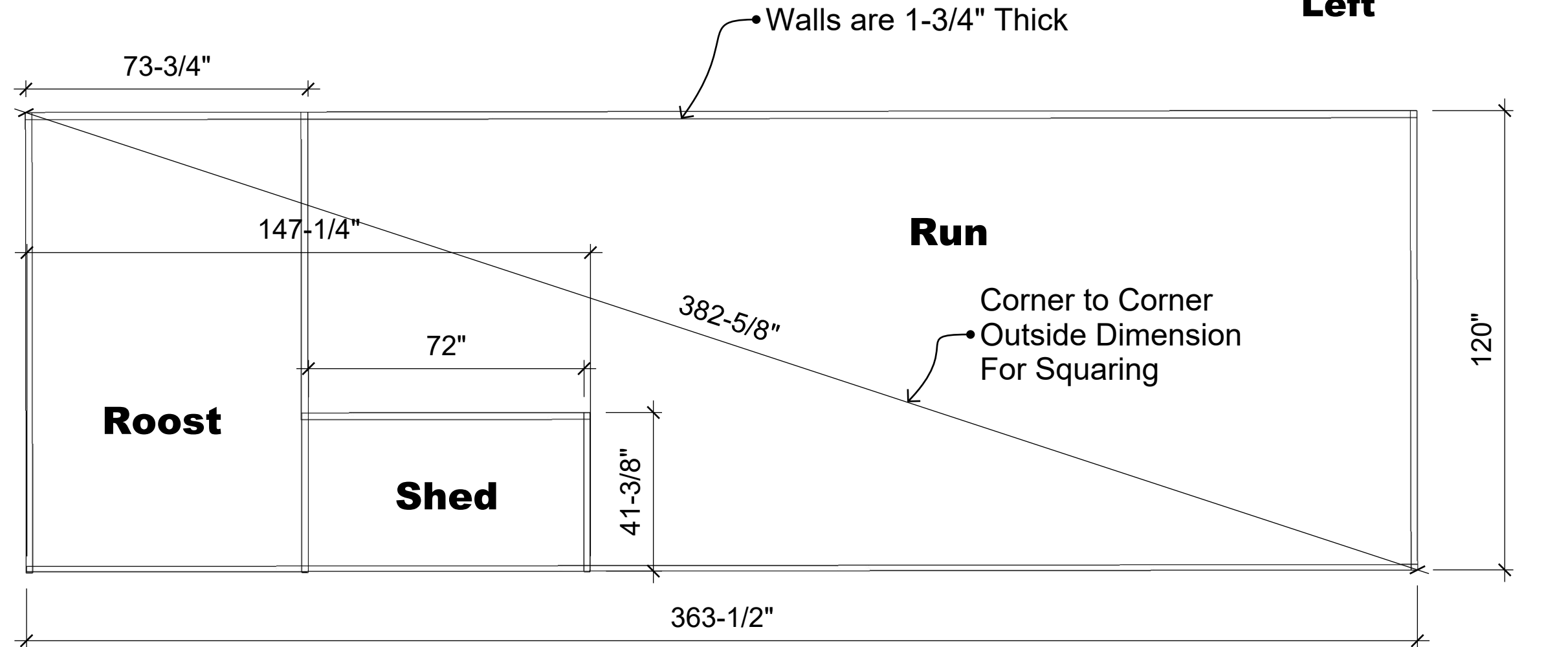
* Measurements can vary by up to 1/8" and rough cedar and shop variations can add up to an inch over long distances. A 6" wide or greater footer with walls centered will provide margin for error. If your footer is on slope, backfill inside of coop to the level of the footer with sandy loam dirt. Footer depth is a matter of preference and ground conditions. Set footer into rocky soil or at least 12" deep for anchoring purposes. Use of 1 or 2 Tapcon 3/16 (3-1/4") concrete screws in the bottom rail of each wall panel will provide good anchoring from wind. Make sure coop is level and square before anchoring.



Be careful. Coop must be anchored to avoid damage from excessive winds during and after construction. We do not know your ground conditions or your locale and whether you live in an area subject to excessive winds. Please seek local guidance if you are unsure. Coop is heavy and very wind resistant. But for extreme conditions anchoring is necessary. Many of our products have survived hurricane force winds. Panel or roof strength isn't the main worry... securing prevents the coop from "toppling" or walls moving in high winds.



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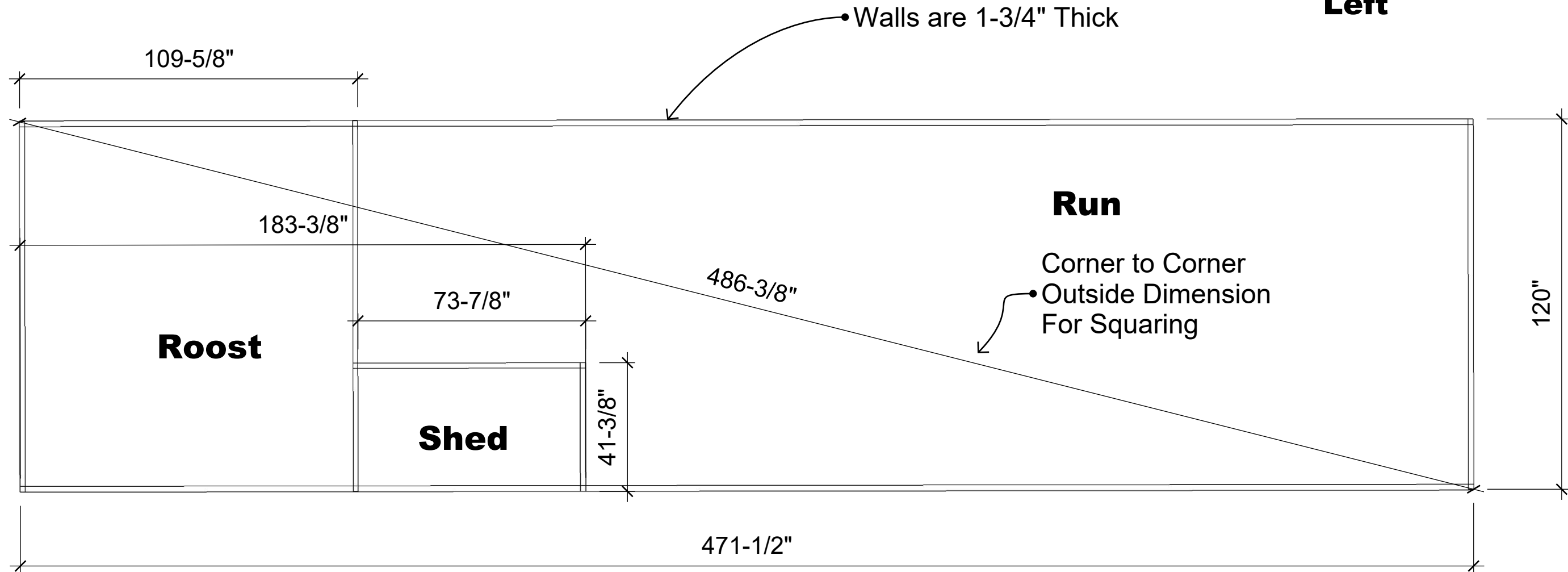
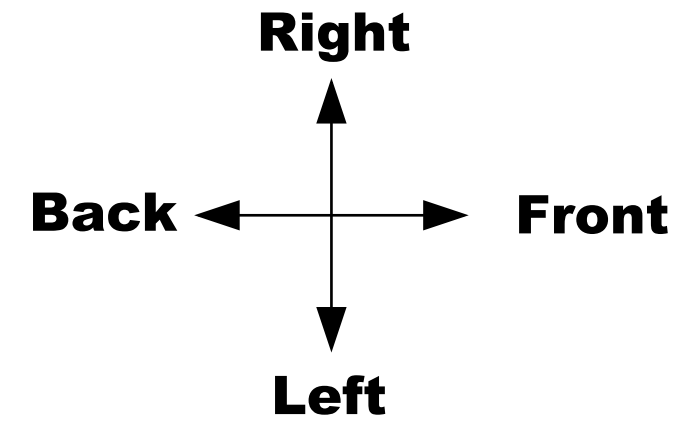
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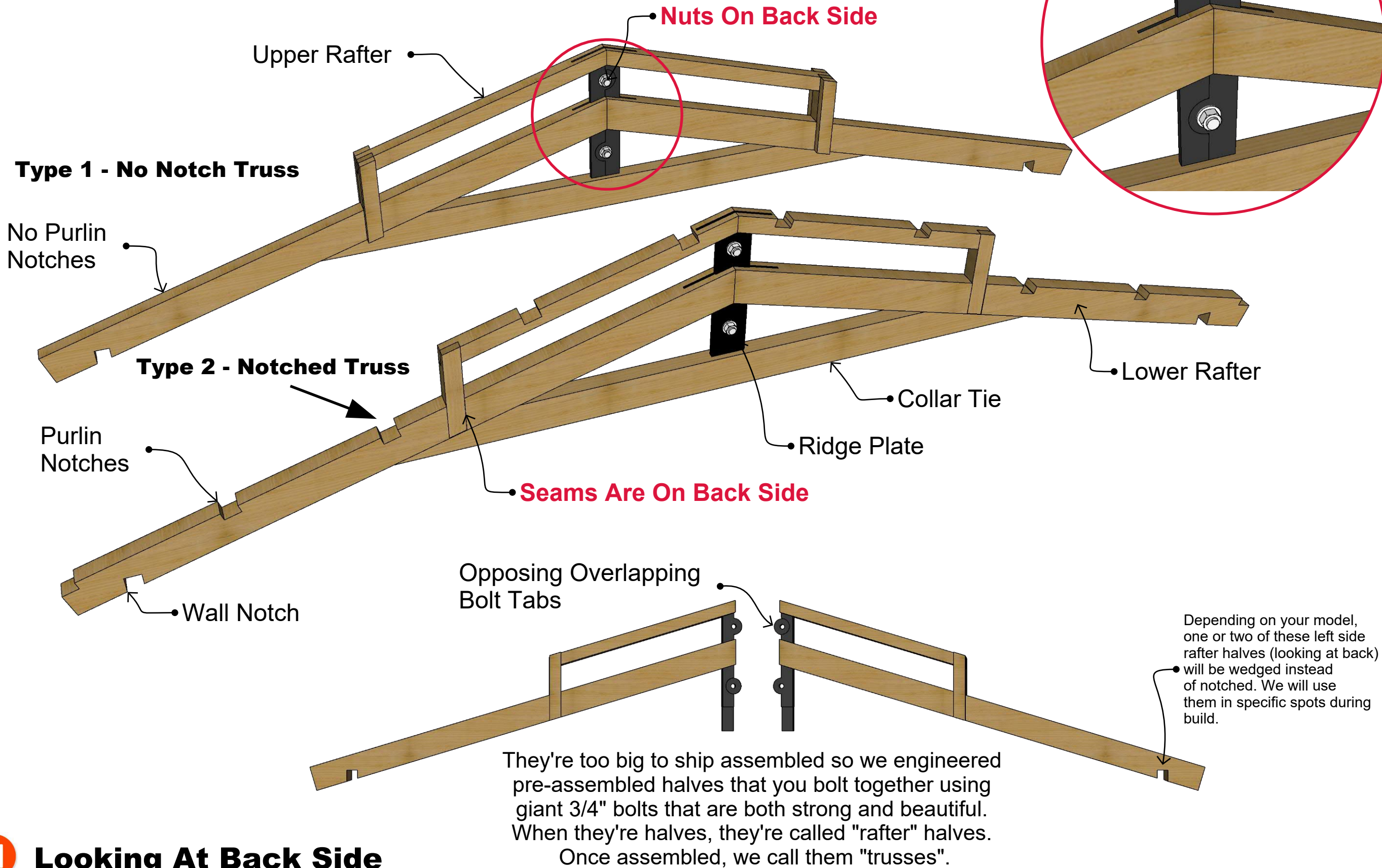
* Measurements can vary by up to 1/8" and rough cedar and shop variations can add up to an inch over long distances. A 6" wide or greater footer with walls centered will provide margin for error. If your footer is on slope, backfill inside of coop to the level of the footer with sandy loam dirt. Footer depth is a matter of preference and ground conditions. Set footer into rocky soil or at least 12" deep for anchoring purposes. Use of 1 or 2 Tapcon 3/16 (3-1/4") concrete screws in the bottom rail of each wall panel will provide good anchoring from wind. Make sure coop is level and square before anchoring.



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Familiarize yourself with these illustrations.

You'll need these trusses to support the exterior walls as you build them so lets get them out of the way. They're pretty cool and are a beautiful part of your new coop.



Looking At Back Side



Looking At Front Side

Repeat these procedures until all trusses are built.



Fig 1.2.1
"Wedge"

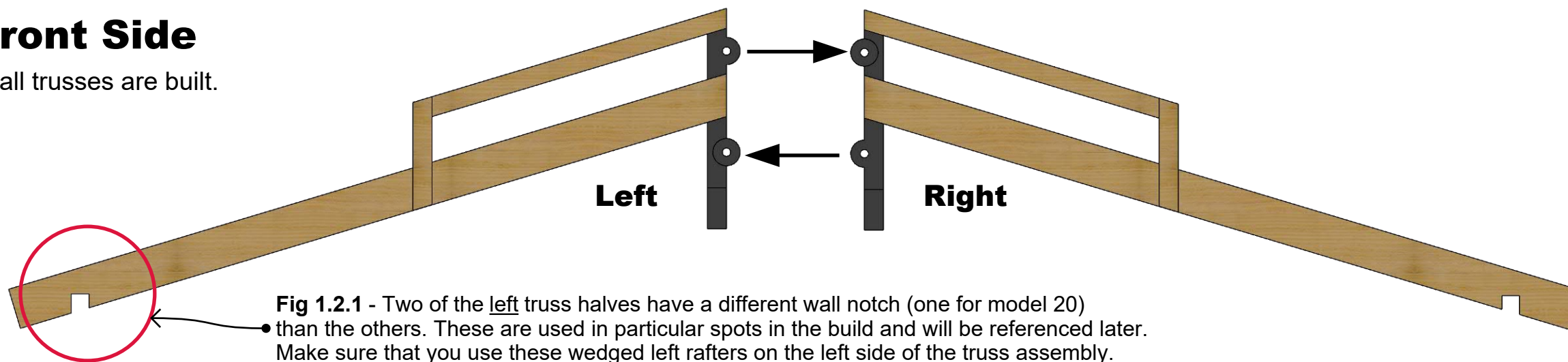
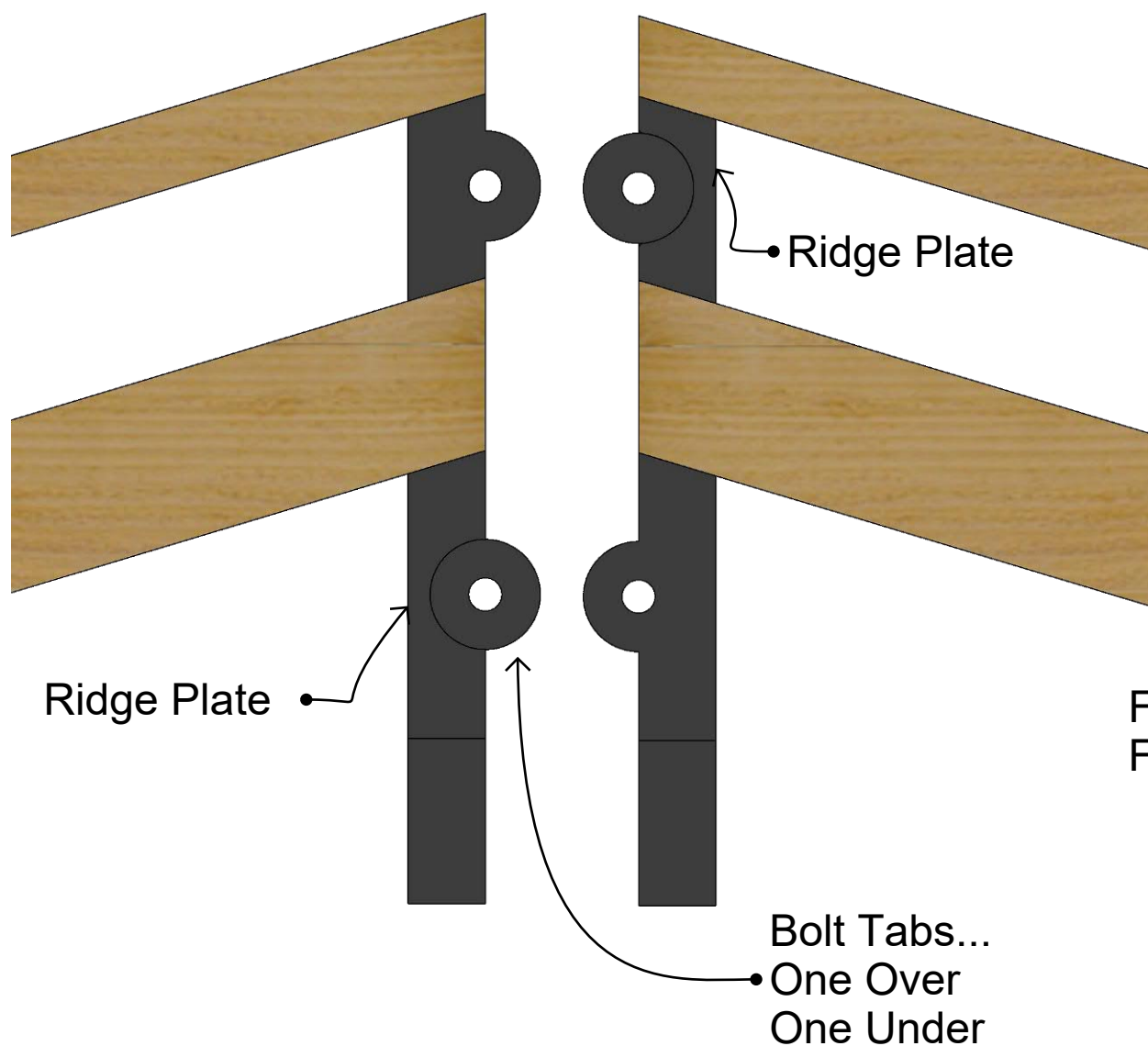


Fig 1.2.1 - Two of the left truss halves have a different wall notch (one for model 20) than the others. These are used in particular spots in the build and will be referenced later. Make sure that you use these wedged left rafters on the left side of the truss assembly.

1

Select a left and a right half of either a notched or not notched truss half and slide the ridge plate halves together so that the bolt holes line up. Insert the bolt with a washer on it through both bolt tabs from the front side, insert another washer on the back side, and hand tighten a nut onto the bolt to hold the assembly together. Flex the ridge plate halves a little if needed to make sure bolt hand tightens down on halves. Repeat for all truss halves until all the trusses in your kit are assembled.

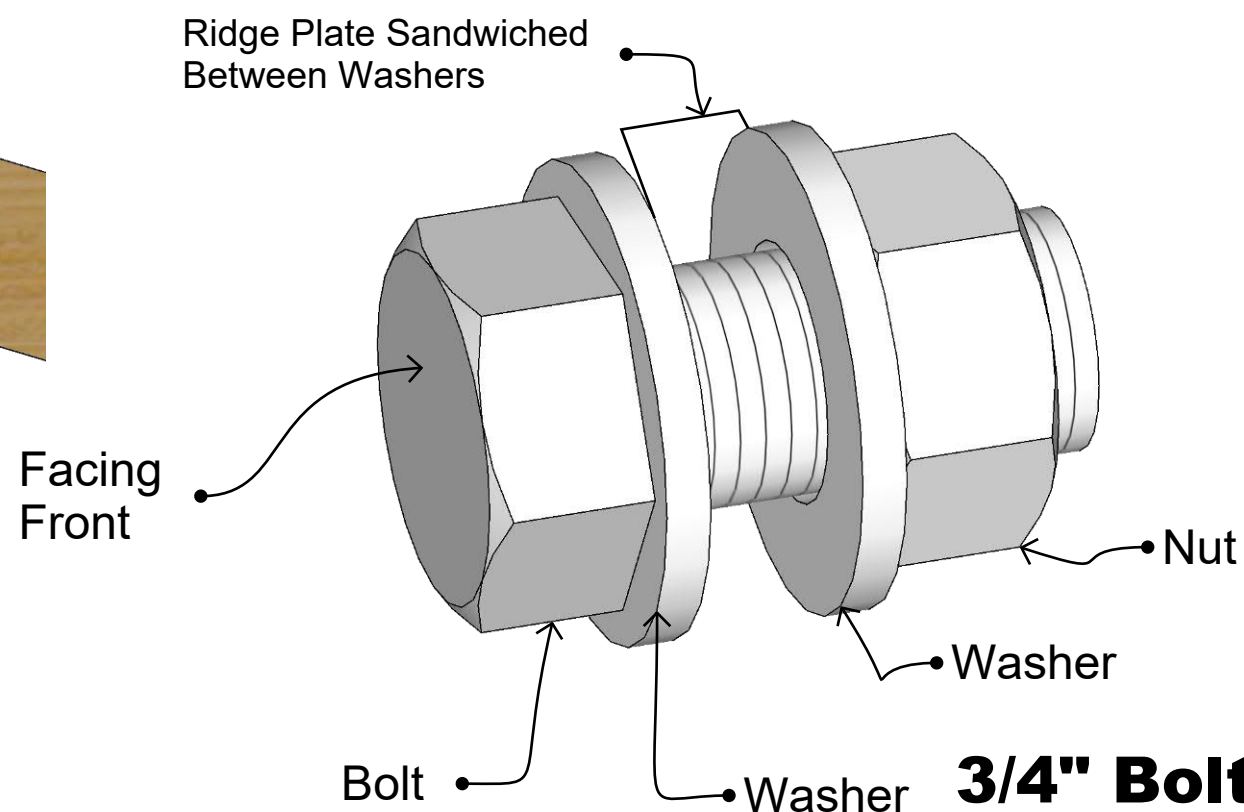


Notched Truss Assemblies

Model 20 (3) Model 30 (5) Model 40 (6)

No Notch Truss Assemblies

Model 20 (2) Model 30 (3) Model 40 (5)





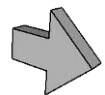
Looking At Front Side

Repeat these procedures until all trusses are built.



= **3 Inch T25 Screw**

(color may vary due to supply)



= **4-1/2" Inch GRK T25 Screw**



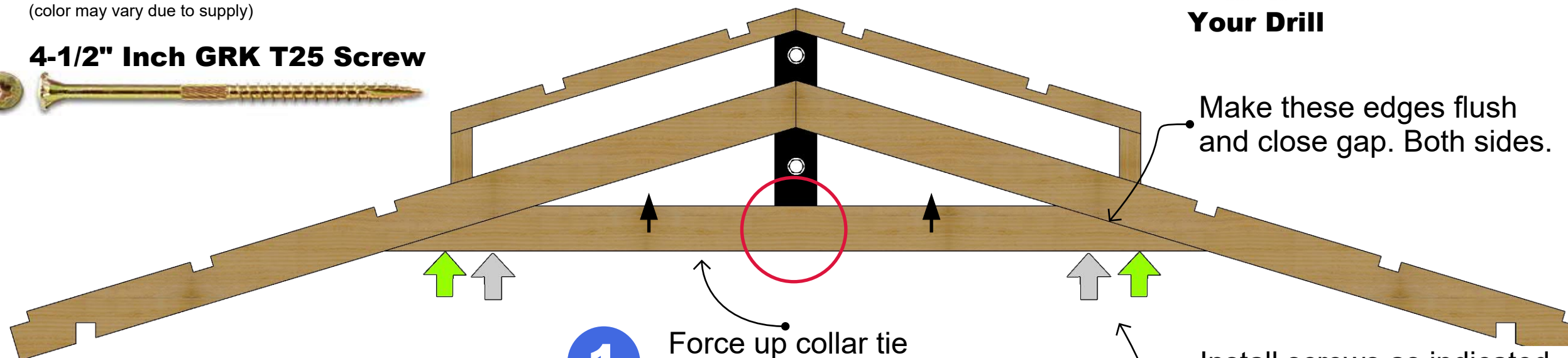
**Provided
T25 Bit**



Provided Bit Holder



Your Drill



Make these edges flush
and close gap. Both sides.

1

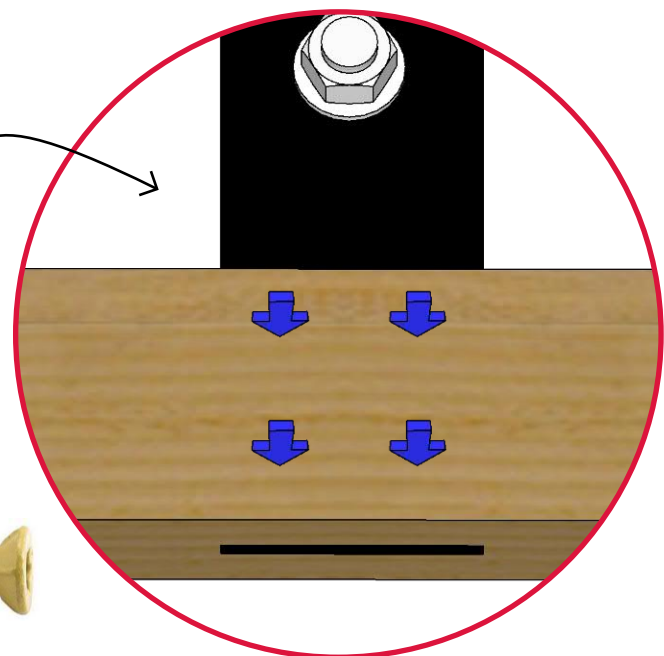
Force up collar tie
slot onto tail of
ridge plate to
position collar
tie properly.

2

Install screws as indicated
on both sides to affix collar
tie onto rafters.

From the backside
install 4 T20 screws
as indicated to hold
middle of collar tie
to the ridge plate.

3



= **1-1/4" T20 Screw**

(shorter so it does not go through front)



Collar Ties

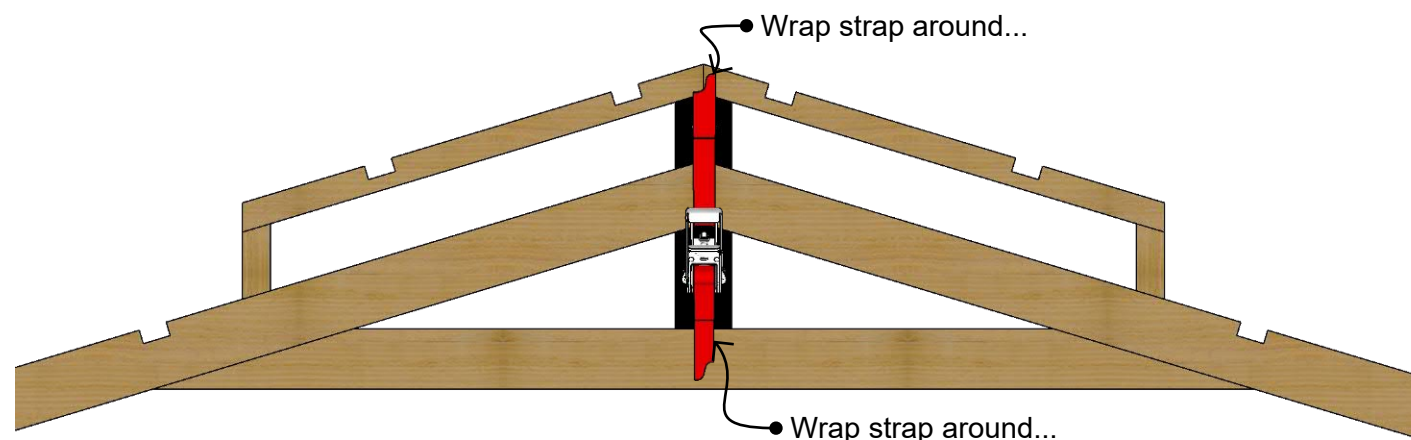
Model 20 (5) Model 30 (8) Model 40 (11)



Drive screw heads only deep enough to pull parts firmly together. Use the slower speed on your drill or if your drill has a clutch feature, adjust it to not drive screws too deeply. We try to "hide" heads of screws from facing up whenever possible so that the heads of the screws don't hold water. Driven too deeply, the divot they make can hold moisture.



If necessary use provided ratchet strap to help apply force to fully position the collar tie slot over the tail of the ridge plate while driving in screws.



Wrap strap around...

Wrap strap around...

roost&root
Find your inner farmer.


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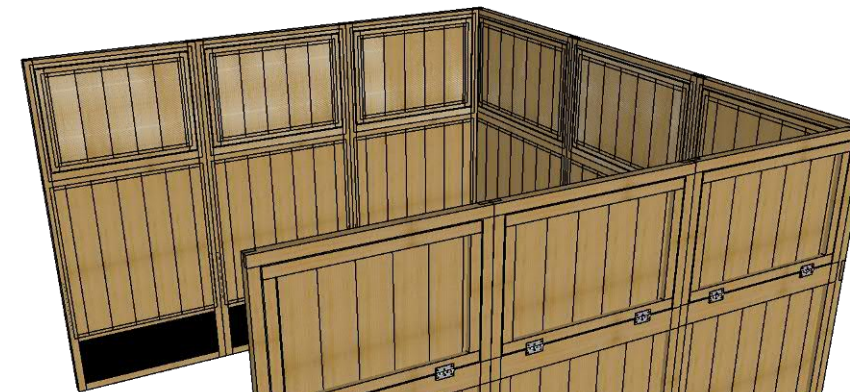
**1.3 - Truss
(Collar Tie)**

**20
30
40**

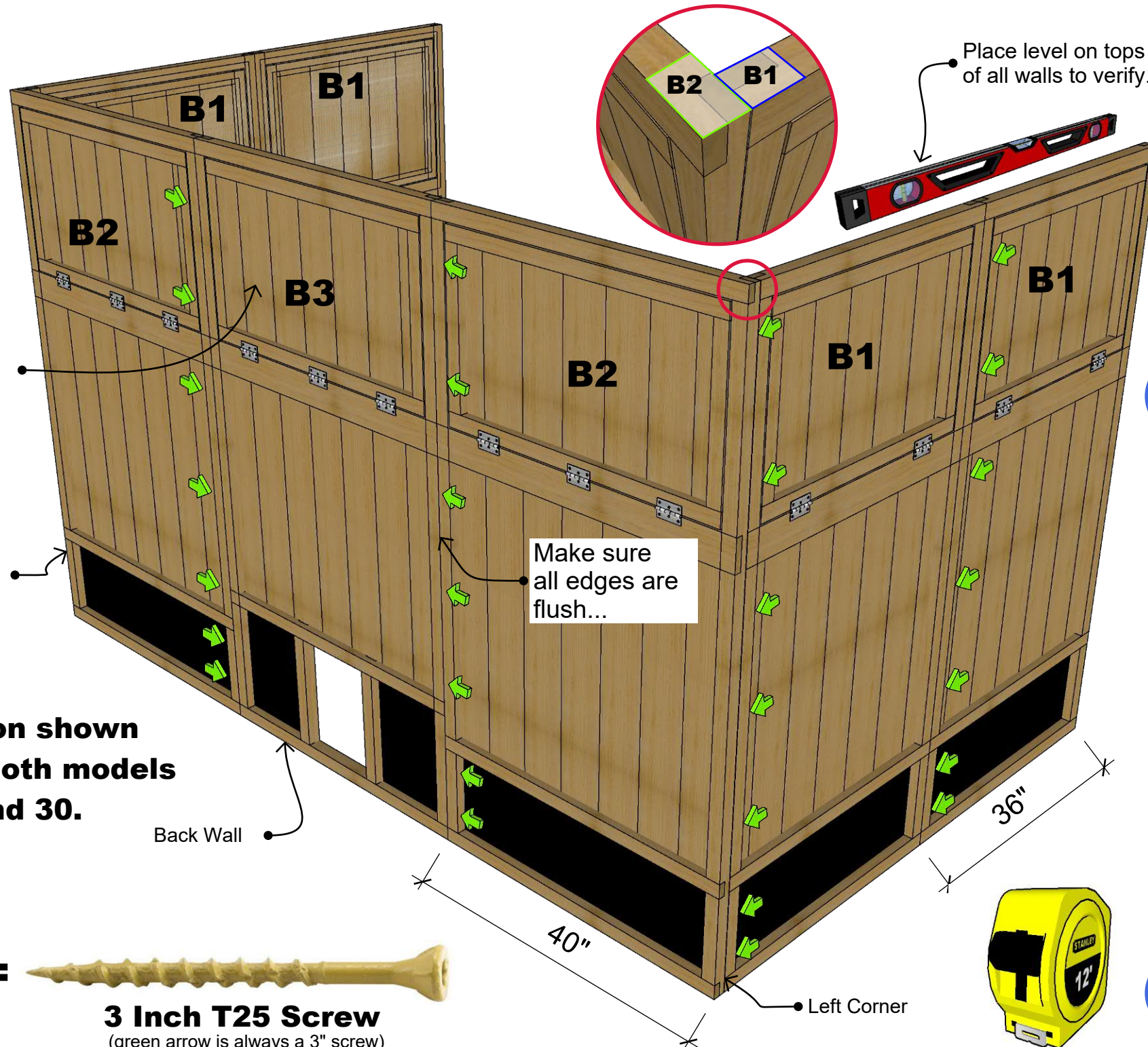
Page
15

 Be sure to start with the back of the coop placed in such a way that by the time you get to the front, it falls where you want it to be. Align all edges and corners and make flush. Variations in how level your ground is, rough cedar tolerances, shop variances, and your assembly precision will all add up over the course of the project and we want to minimize the impact these imperfections cause. Front to back and left to right level is key.

Model 40 Has 3 B1 Side Panels



Repeat Procedure
Model 40 for 3rd
Panel



Remove shipping
screw in doors as
needed to drop
down and install
screws through
door frames.

**Illustration shown
applies to both models
20 and 30.**



1 Connect B1 & B2 corner
panels together as illustrated
making sure edges top and
bottom are flush. Repeat for
both left and right corners.

Make sure to overlap as
indicated in red "call out".

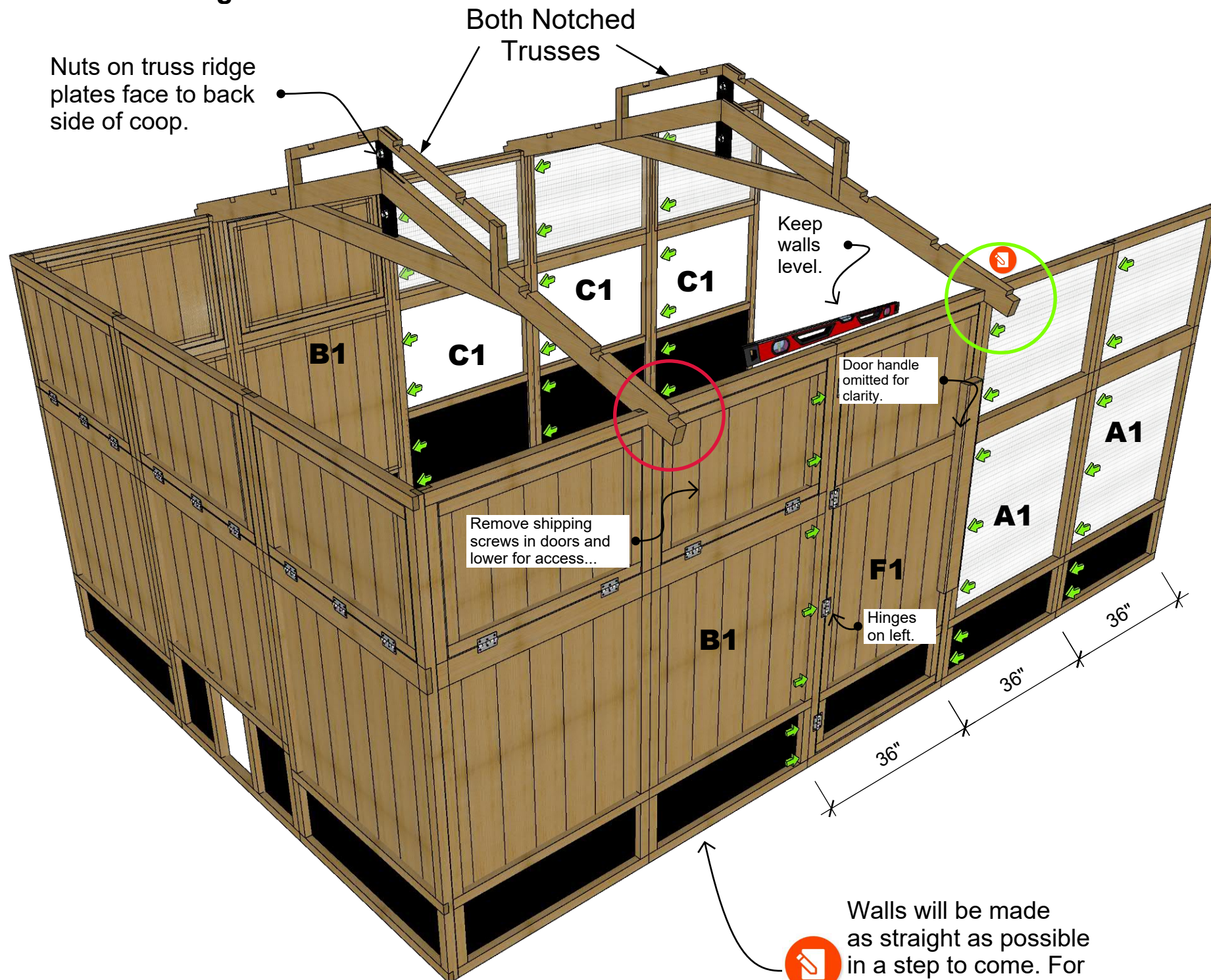
After corners are assembled
join them together with a
helper by installing the B3
panel between them.

Use three inch T25 screws as
illustrated. Arrows indicate
both position and direction.

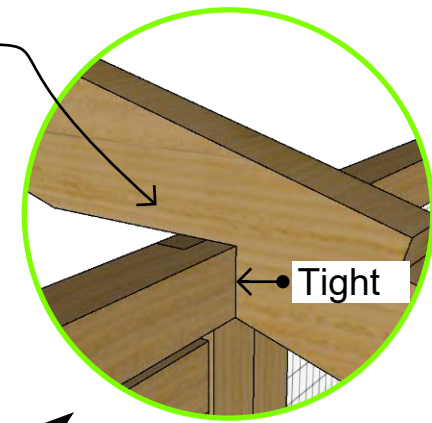
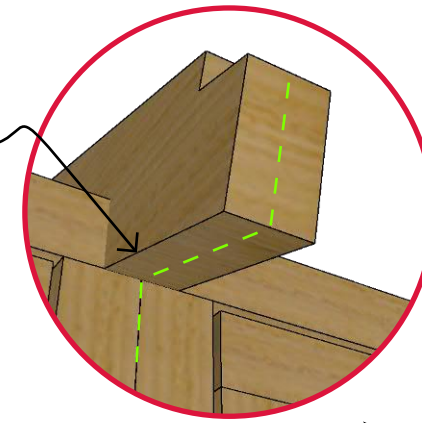
2 Connect forward B1 panels to
finish up roost side walls.
With a helper, install the B3
panel between two B2's.

Start adding the sides to the back...

- 1 Connect F1 & A1 panels to B1 on the left side and C1 panels on the right. Use same screw procedure as before making sure edges are flush.



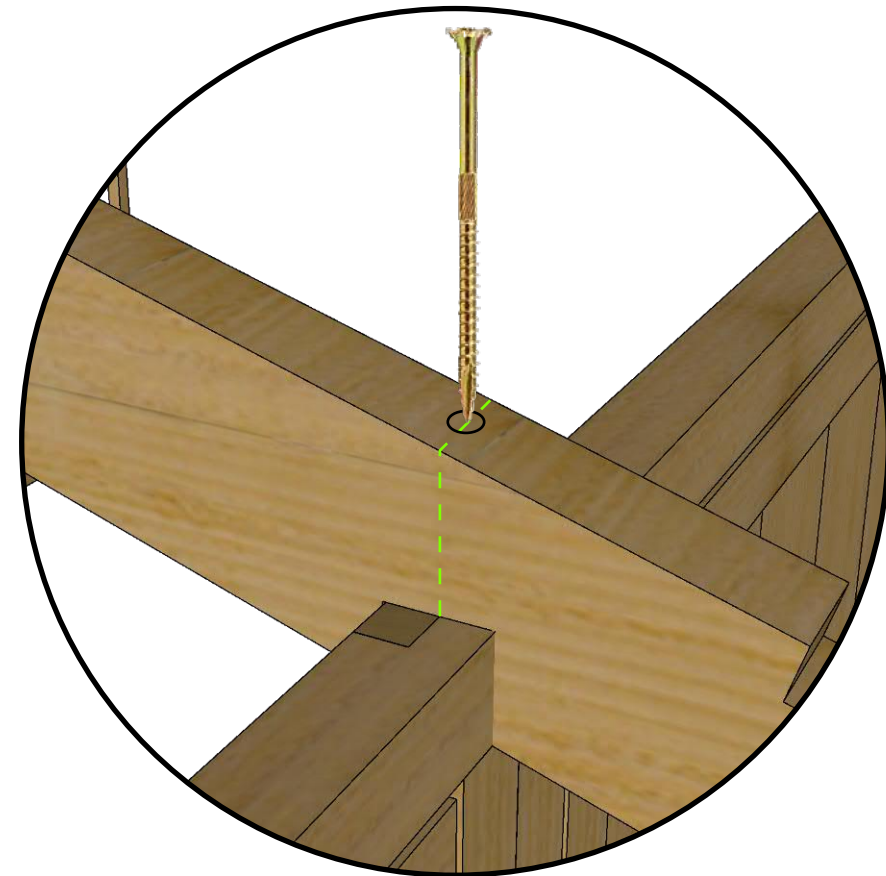
Truss tail wall notches are all centered between wall panel verticals unless noted otherwise.



Wedged Truss Tail

Tight

- 2 Identify the correct trusses and place over the tops of left and right walls in positions indicated and attach using one long T-25 screws as illustrated below, screwed into centers as shown.



4-1/2" Long GRK T25 Screw

Walls will be made as straight as possible in a step to come. For now keep them "visually" straight.

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1.5 - Mid Side Walls
Model 20

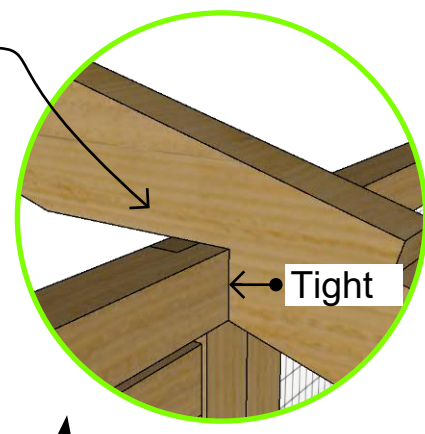
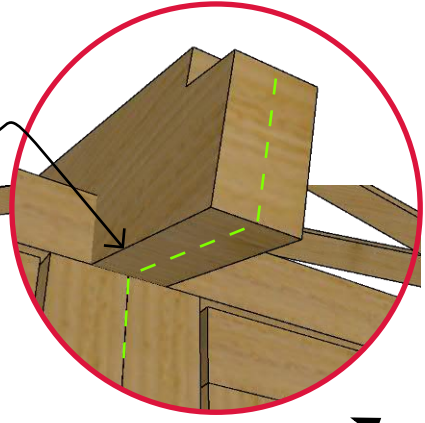
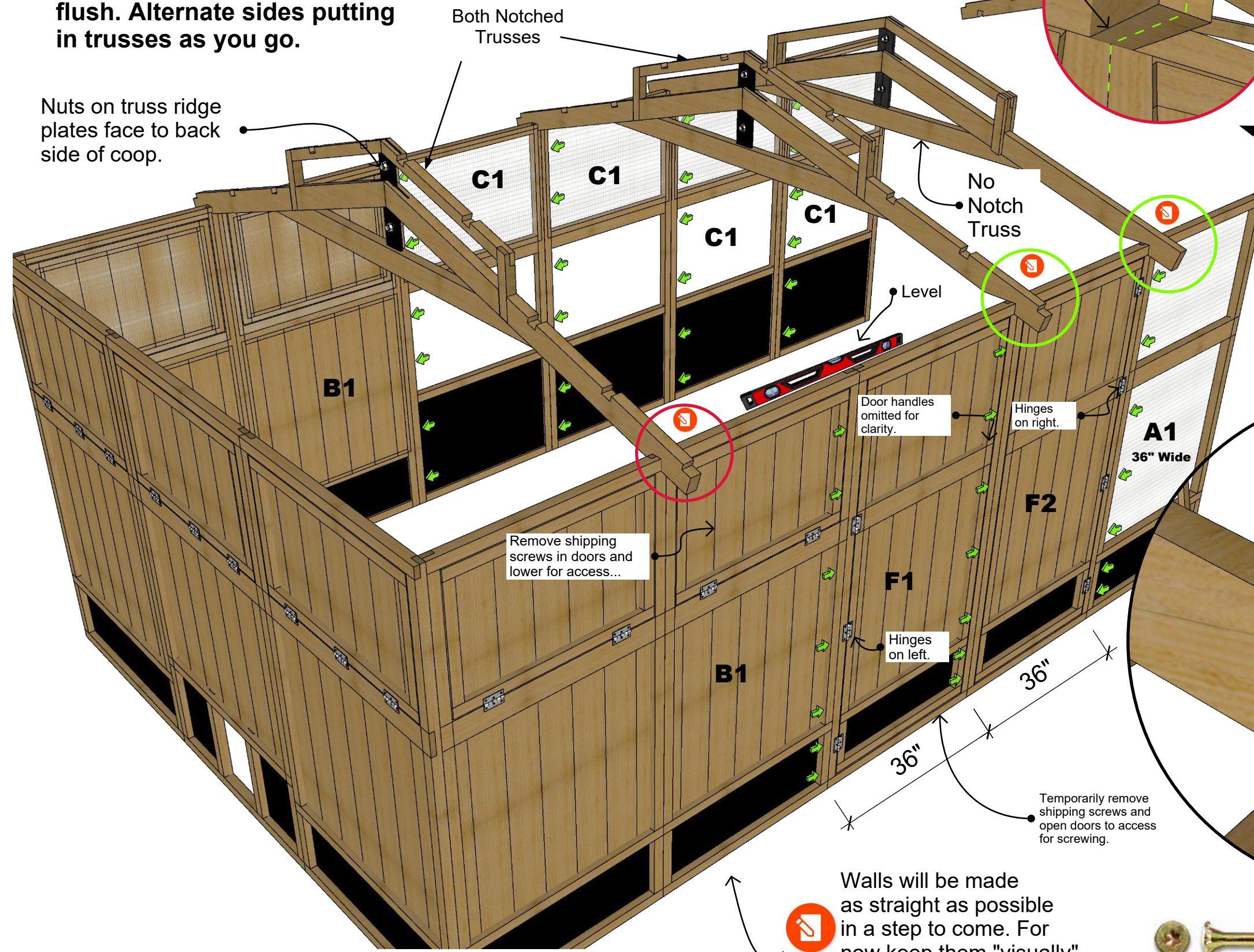
20

Page
17

Start adding the sides to the back...

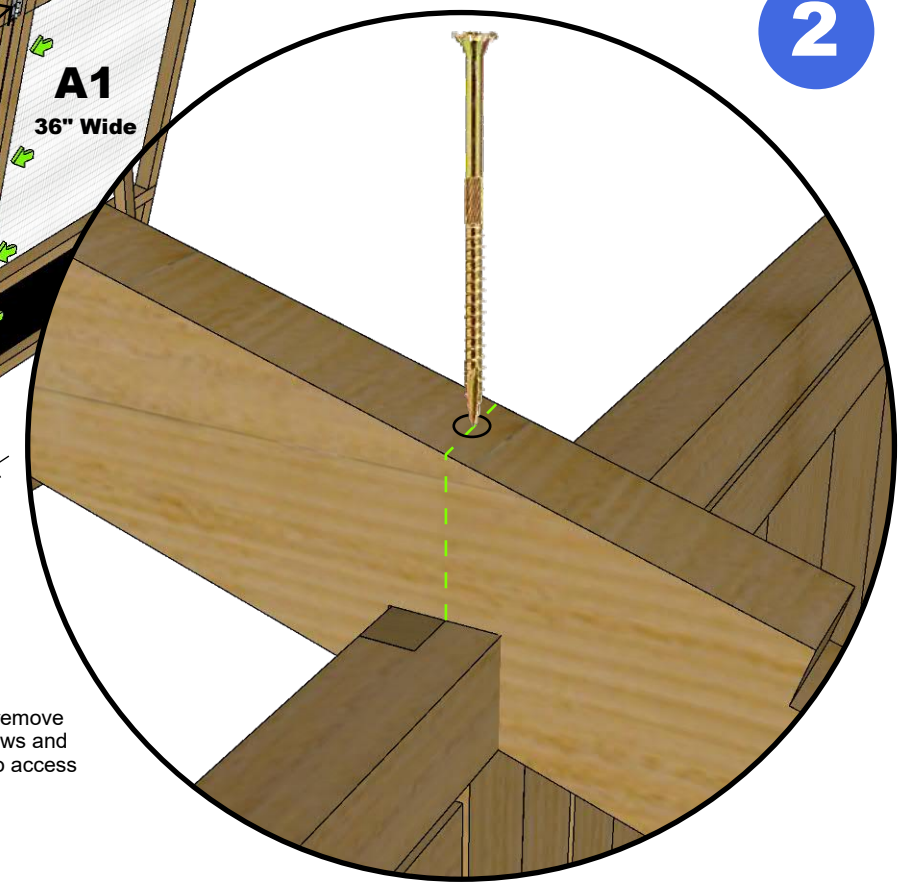
1

Connect F1, F2 & A1 panels to B1 on the left side and C1 panels on the right. Use same screw procedure as before making sure edges are flush. Alternate sides putting in trusses as you go.



Identify the correct trusses and place over the tops of left and right walls in positions indicated and attach using one long T-25 screws as illustrated below, screwed into centers as shown.

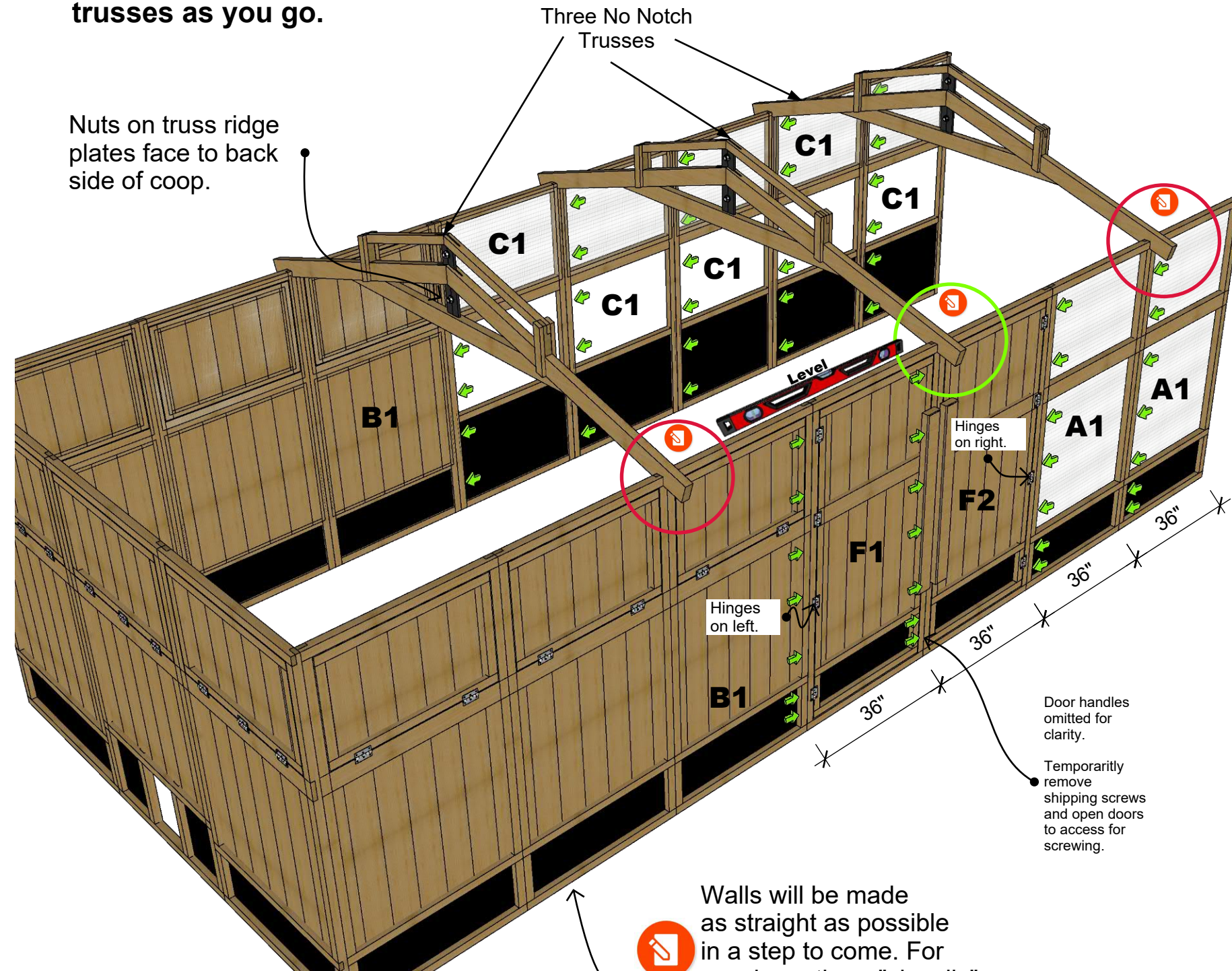
2



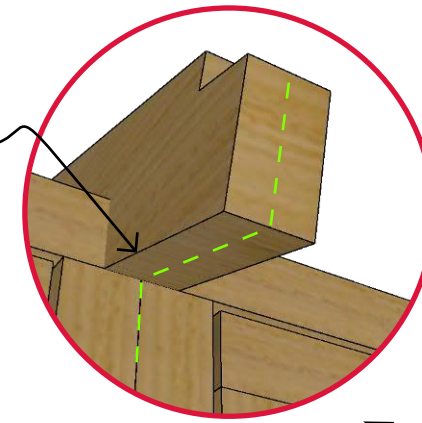
4-1/2" Long GRK T25 Screw

Start adding the sides to the back...

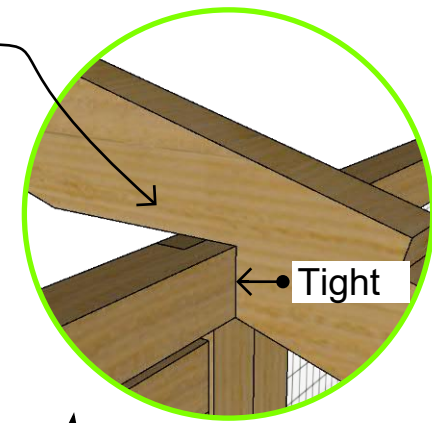
- 1 Connect F1, F2 & A1 panels to B1 on the left side and C1 panels on the right. Use same screw procedure as before making sure edges are flush. Alternate sides putting in trusses as you go.



Truss tail wall notches are all centered between wall panel verticals unless noted otherwise.

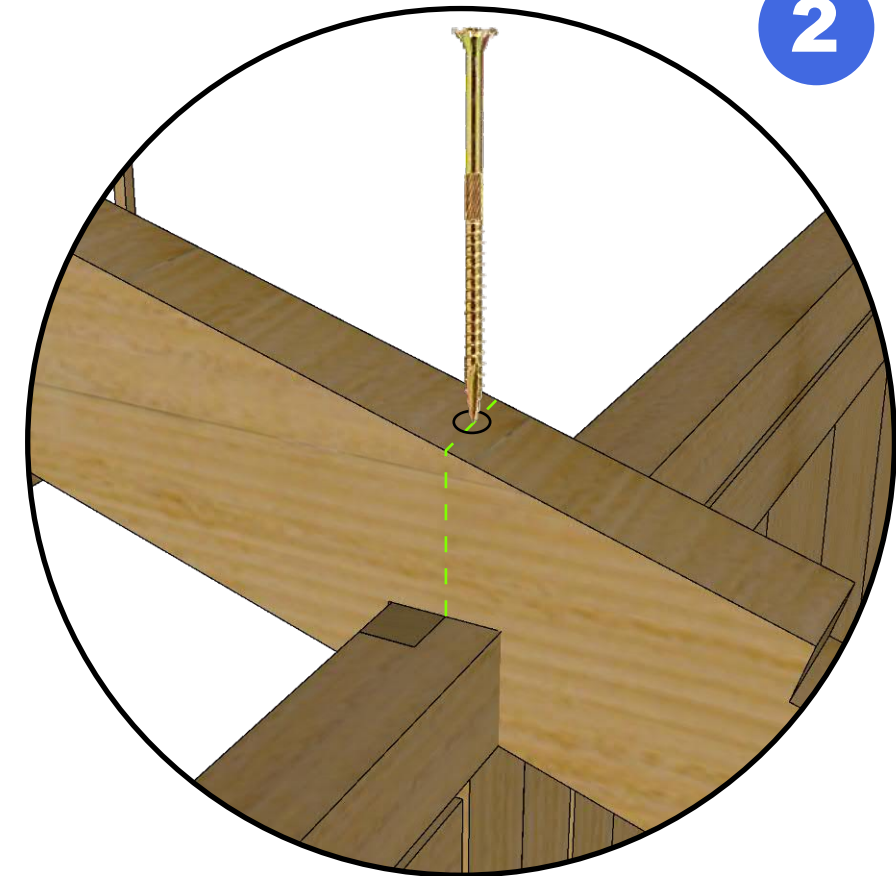


Wedged Truss Tail



Identify the correct trusses and place over the tops of left and right walls in positions indicated and attach using one long T-25 screws as illustrated below, screwed into centers as shown.

2



4-1/2" Long GRK T25 Screw

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1.5 - Mid Side Walls
Model 40

40

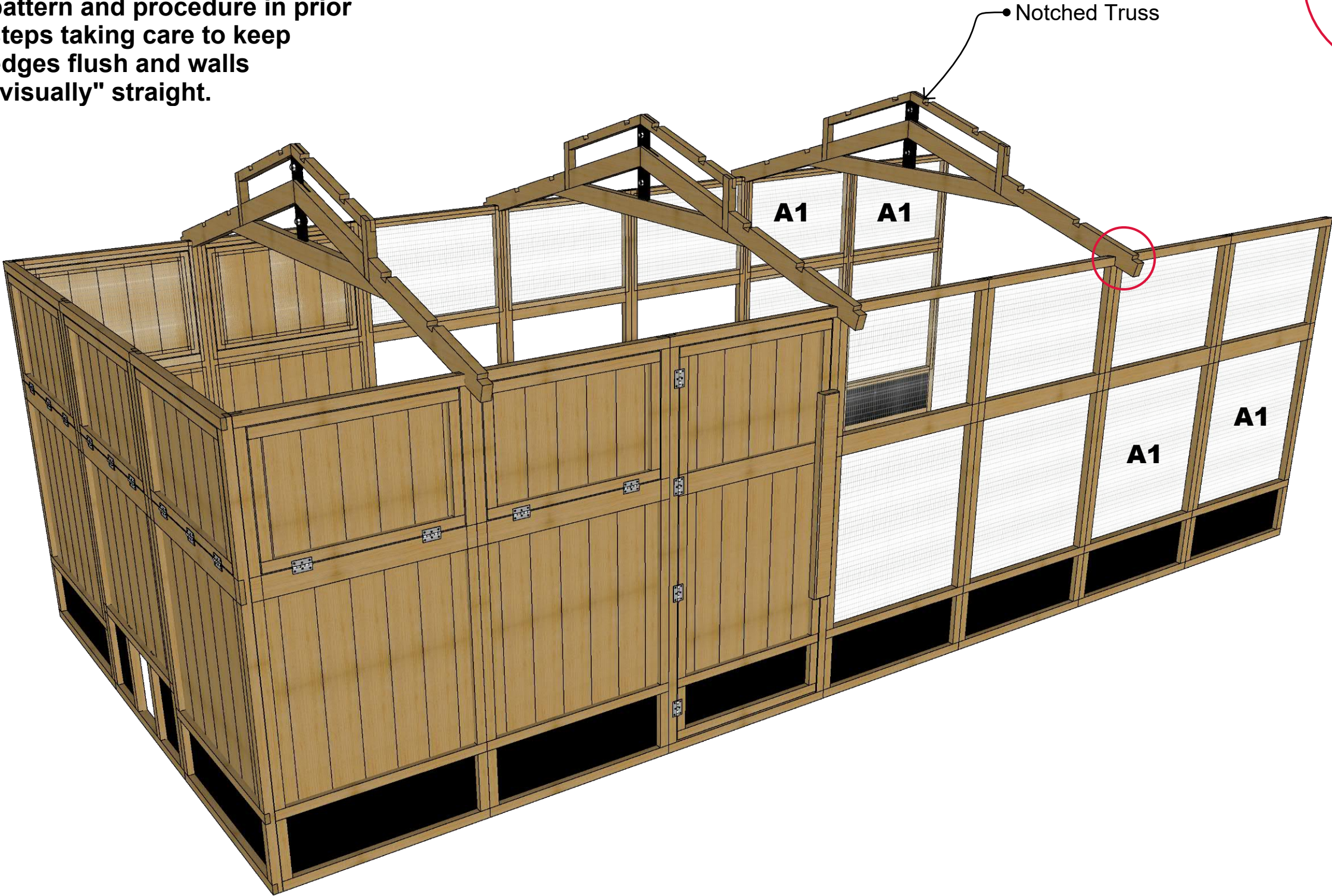
Page
19

Build out the remainder of the side walls.

- 1

Extend out remaining A1 panels using the same screw pattern and procedure in prior steps taking care to keep edges flush and walls "visually" straight.

Wall Notch
Truss Type
(not wedge)



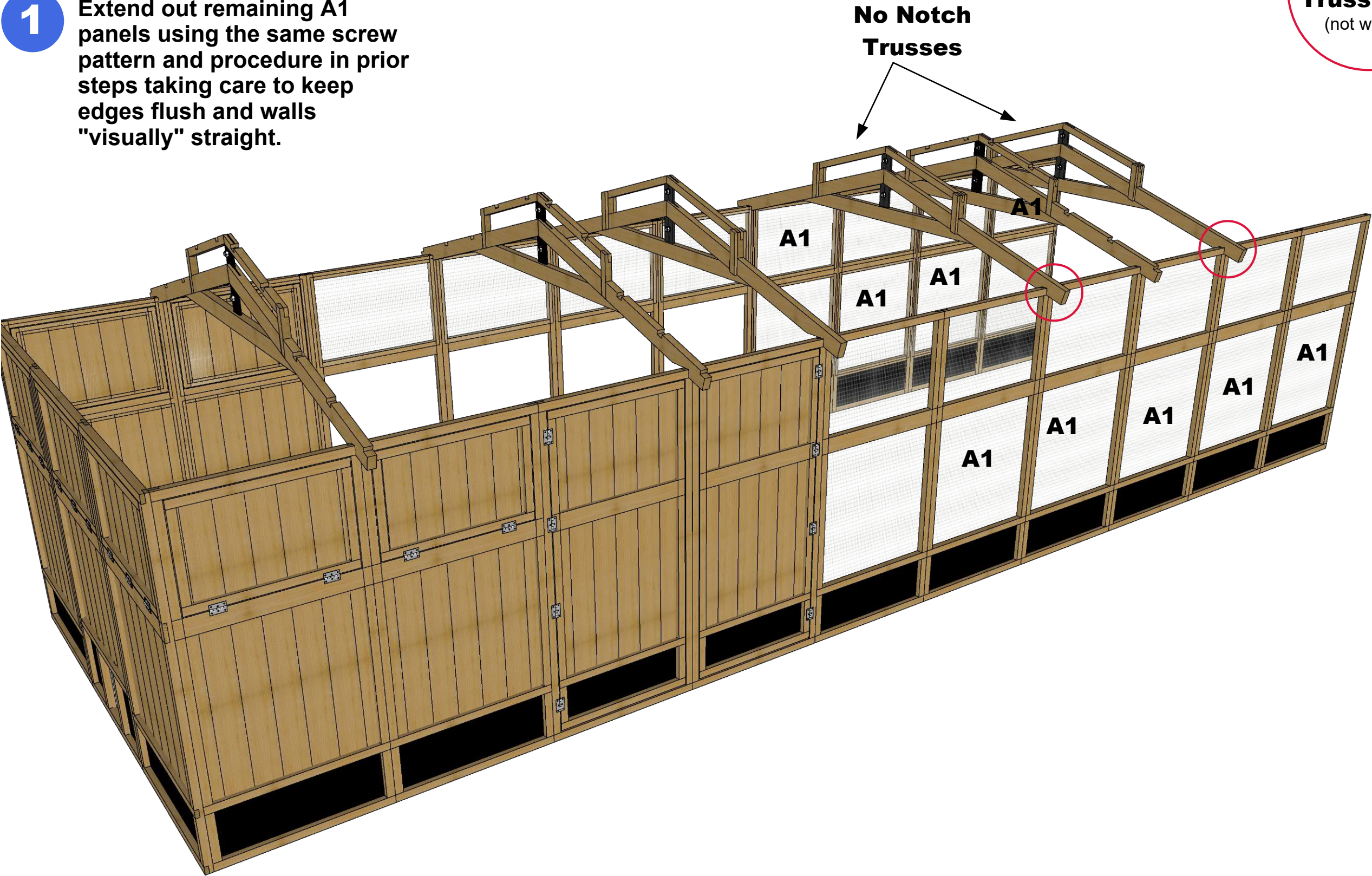
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1.6 Front Side Walls
Model 20

Build out the remainder of the side walls.

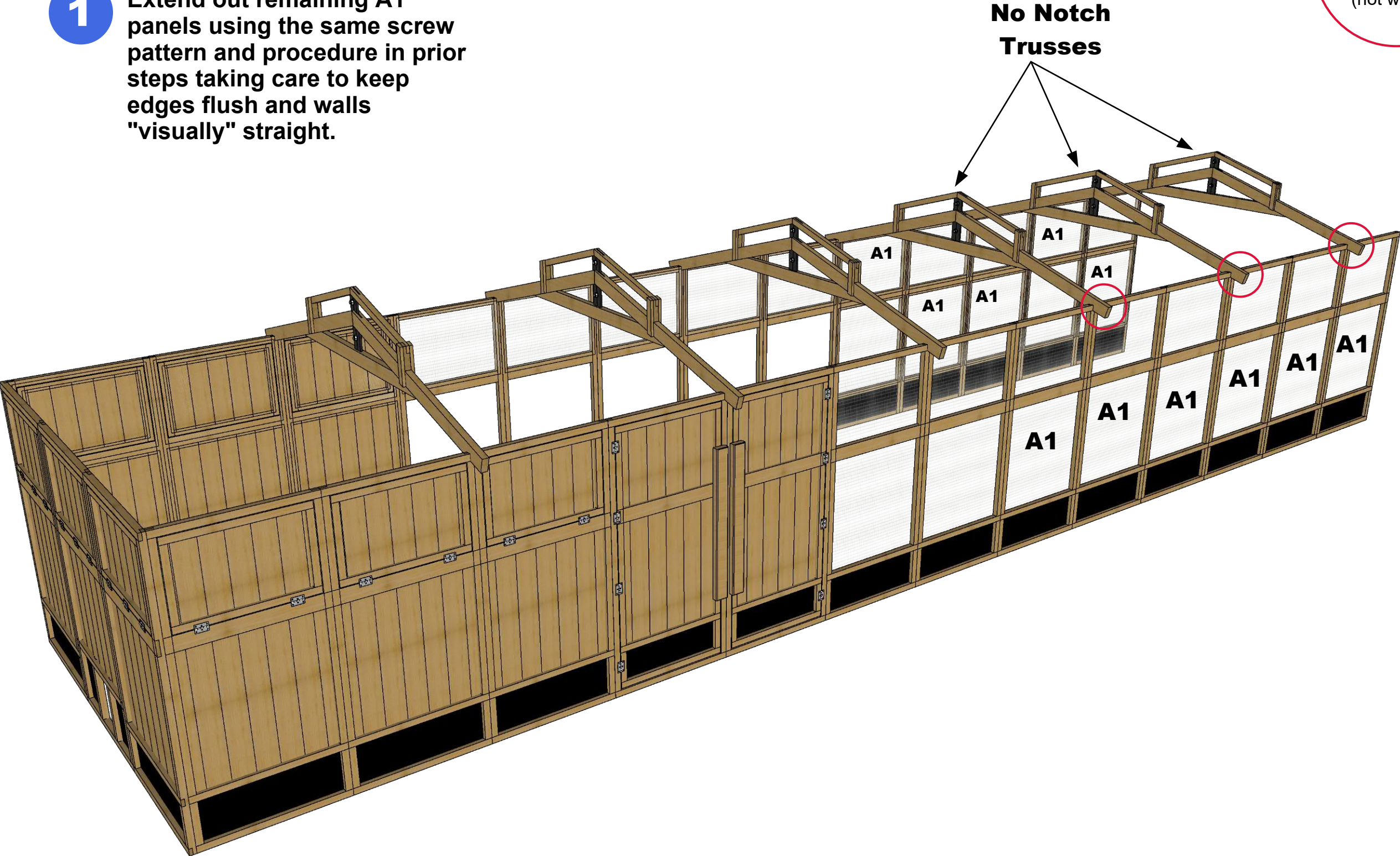
- 1

Extend out remaining A1 panels using the same screw pattern and procedure in prior steps taking care to keep edges flush and walls "visually" straight.



- 1

Extend out remaining A1 panels using the same screw pattern and procedure in prior steps taking care to keep edges flush and walls "visually" straight.

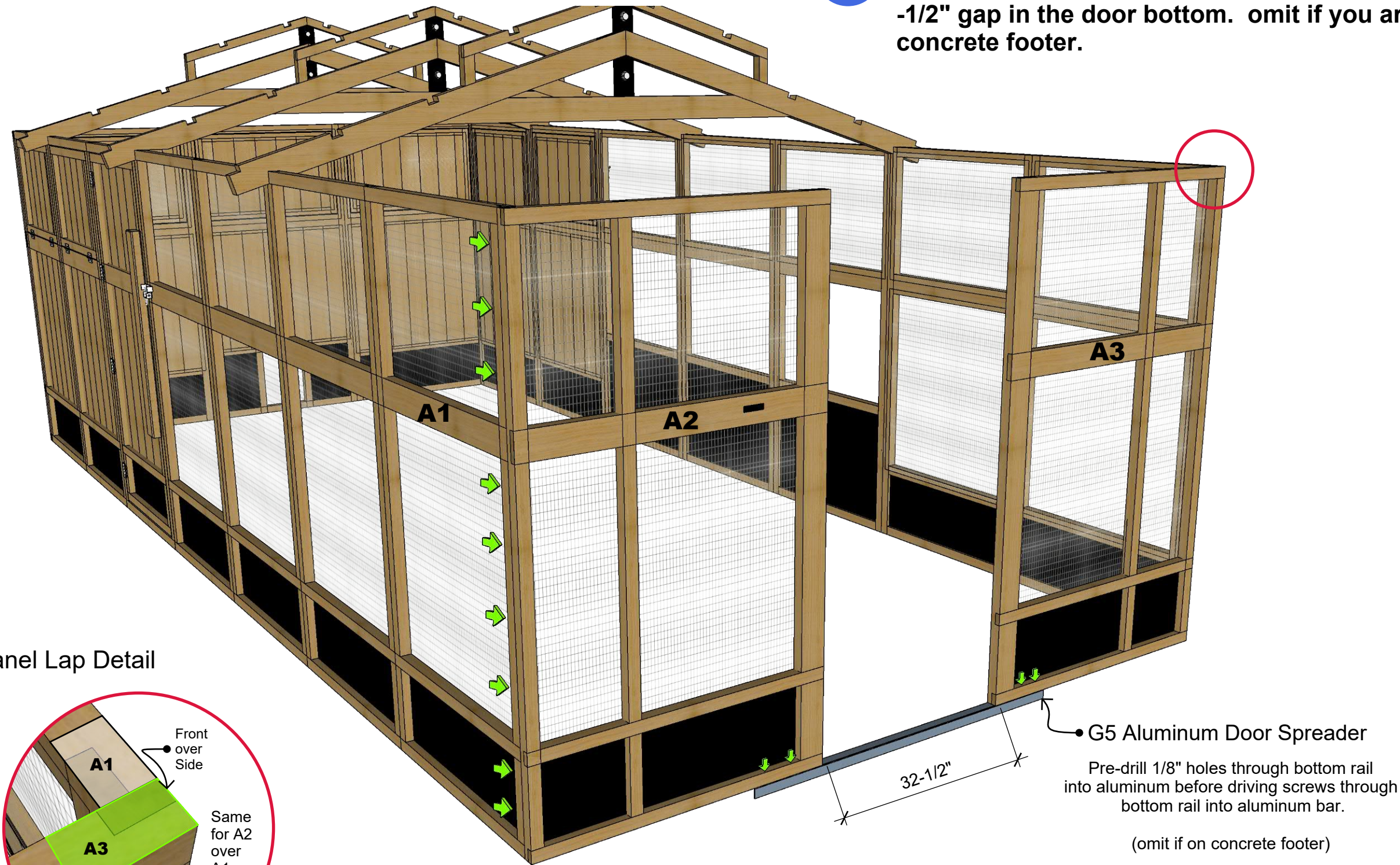


Wall Notch
Truss Type
(not wedge)

The front wall of the coop is the same for all three models.

- 1
- Screw the A2 and A3 panels onto fronts of the A1 panels screwing through the A1 panels back into the A2 and A3 panels as indicated by the green arrows using 3" T25 screws.

- 2
- If you're building your coop directly onto the ground an optional H7 door spreader can be installed to maintain the 32-1/2" gap in the door bottom. omit if you are using a concrete footer.



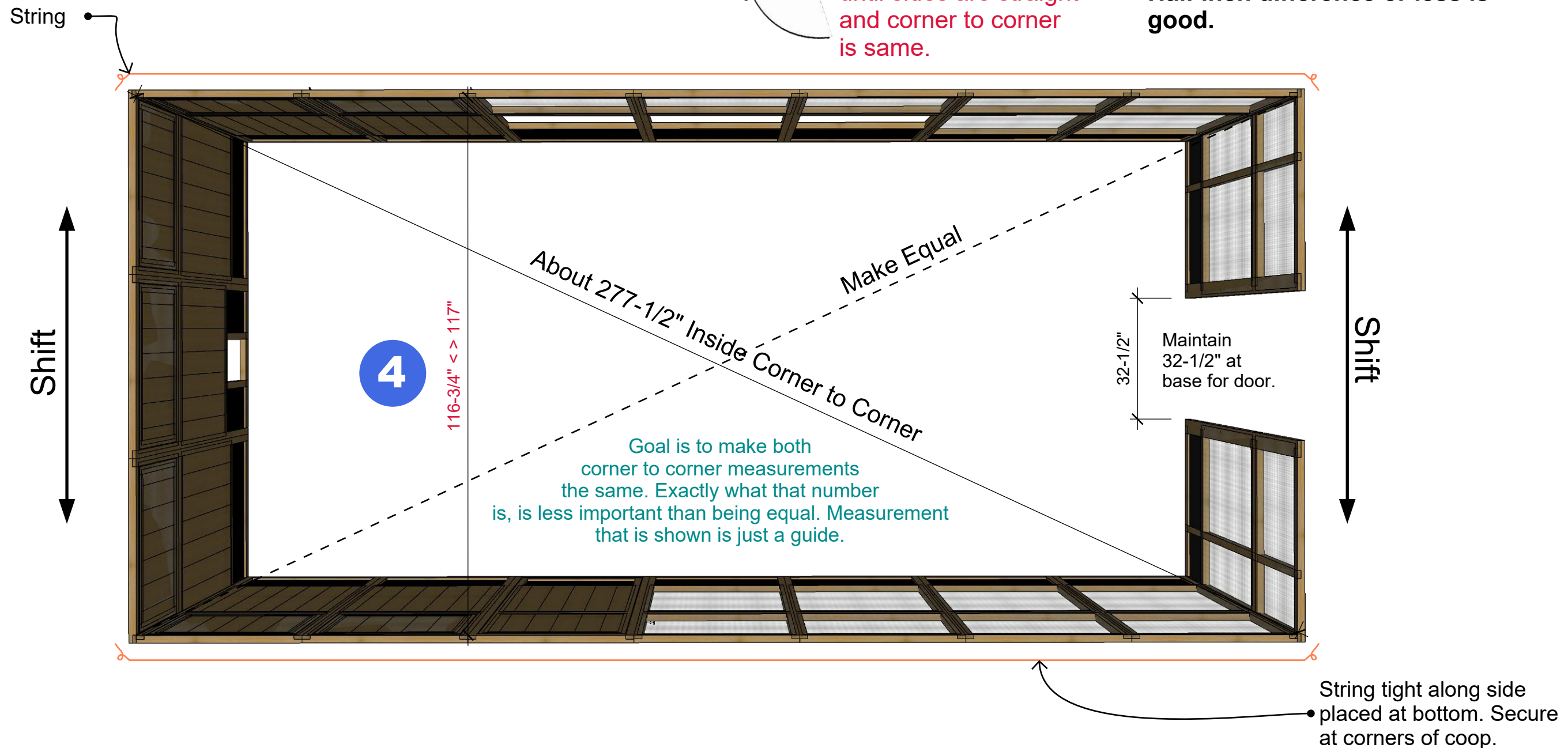
Straightening and squaring the coop is a 3 part repetitive procedure...

1 Use included string to tie a piece along bottom edge and tie around corners or use a little nail so that it runs tightly along edges.

2 Start pulling out bottoms of walls on both sides until the walls run along the string equally along the length of the coop. Move tops if needed too.

3 Using another piece of string (or a long tape measure if you have one) shift ends (front and back) of coop left or right until the inside corner to corner to corner measurement of the coop is pretty much equal. Half inch difference or less is good.

Repeat steps 2 & 3 until sides are straight and corner to corner is same.



- 1. Trusses omitted for illustration purposes.
- 2. Even if you poured a concrete footer, verify using this step.
- 3. Any "waves" in the wall are taken out by stiffeners in next steps.
- 4. Try to make it to where it feels structure is straight and relaxed. Not under tension.

4 Using whatever anchoring method you choose (see anchoring page) put in at least enough of your anchors in the bottom rails to keep from shifting during the balance of construction. Take note at position (4) in the diagram to not let distance between base of walls be less than 116-3/4" or greater than 117".

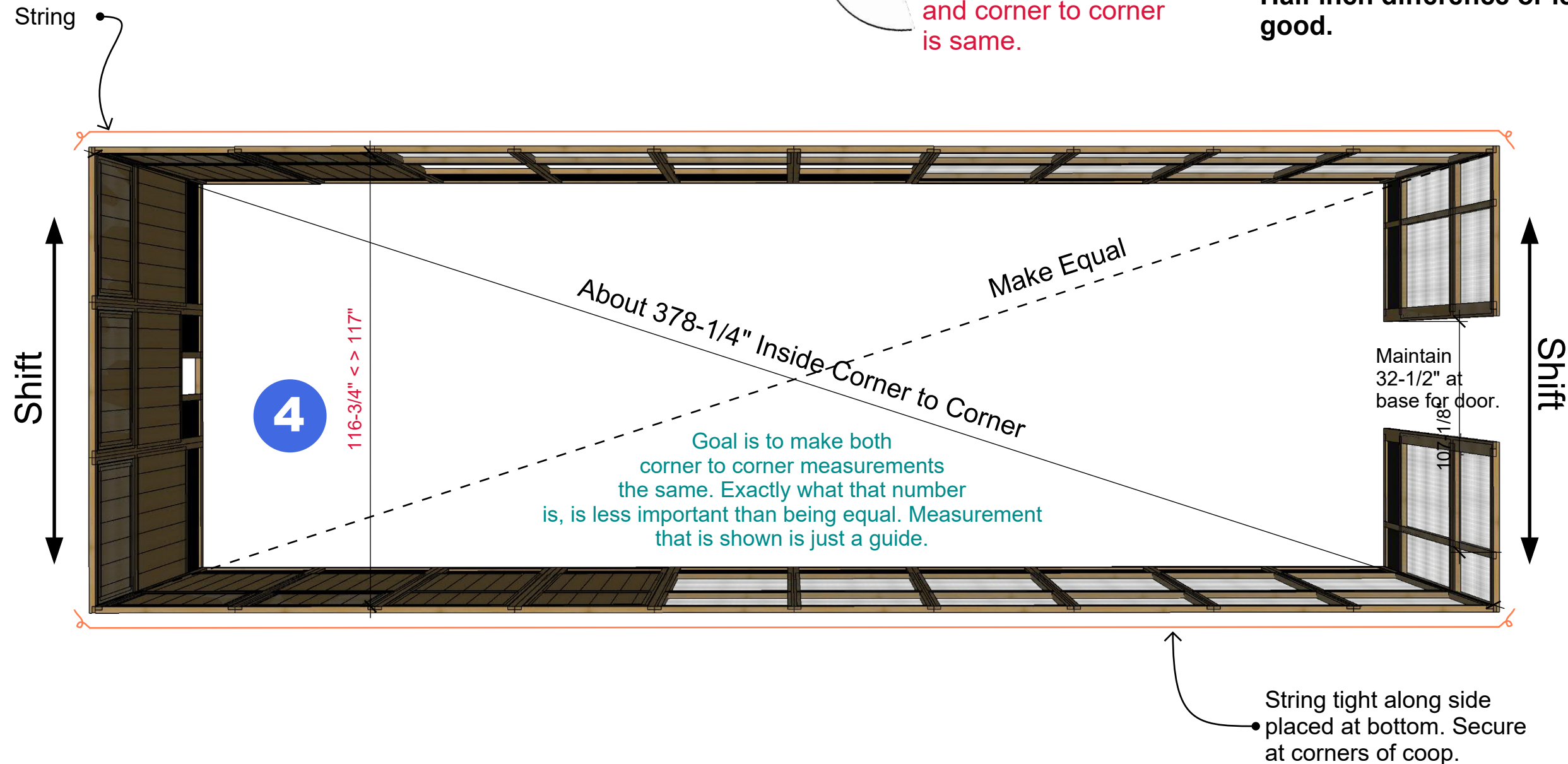
Straightening and squaring the coop is a 3 part repetitive procedure...

1 Use included string to tie a piece along bottom edge and tie around corners or use a little nail so that it runs tightly along edges.

2 Start pulling out bottoms of walls on both sides until the walls run along the string equally along the length of the coop. Move tops if needed too.

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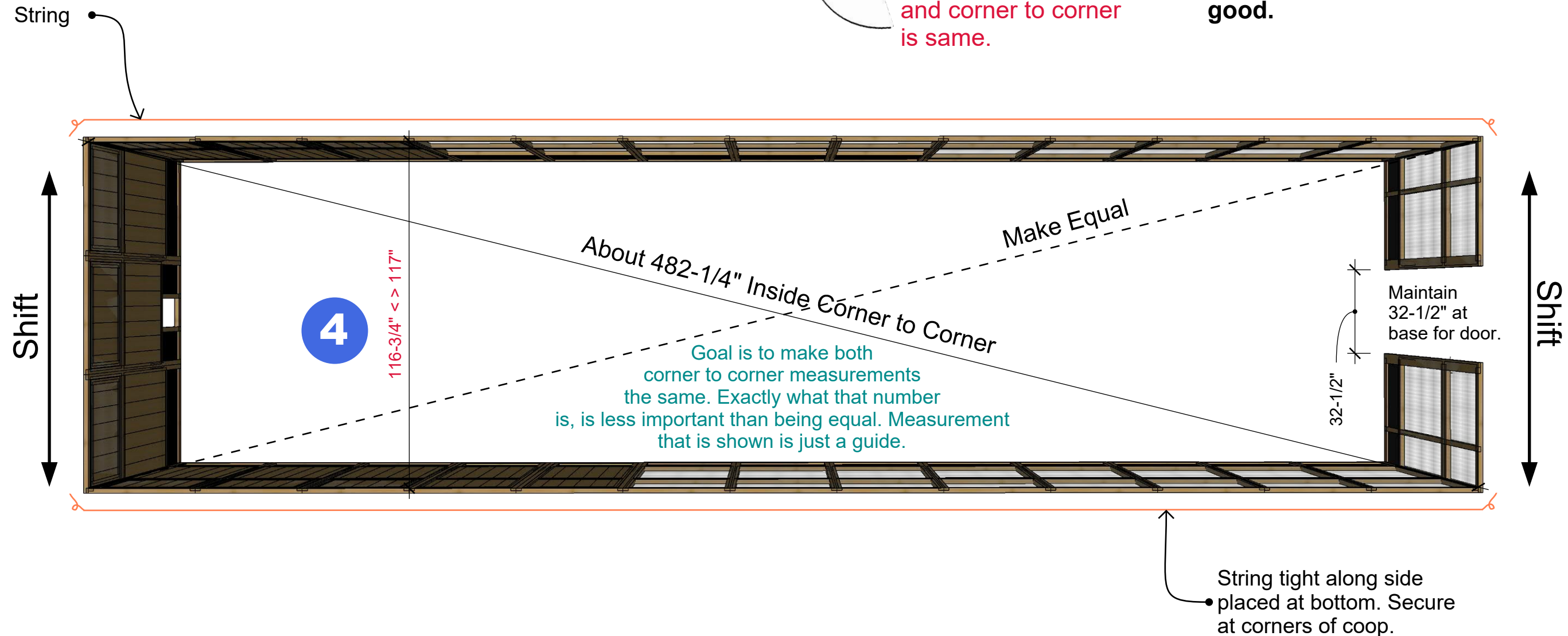
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Repeat steps 2 & 3 until sides are straight and corner to corner is same.



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1.8 Square -
Straighten - Anchor
| Model 40

40

Page
26

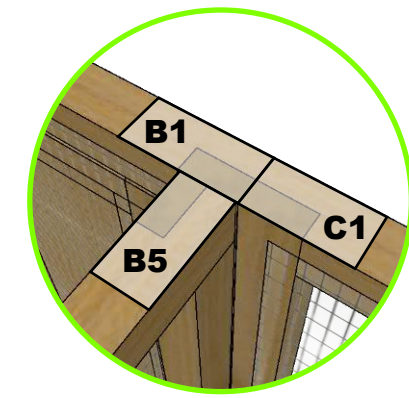
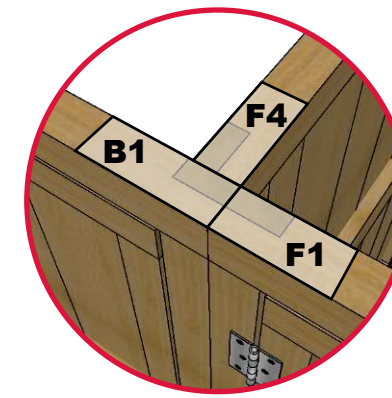
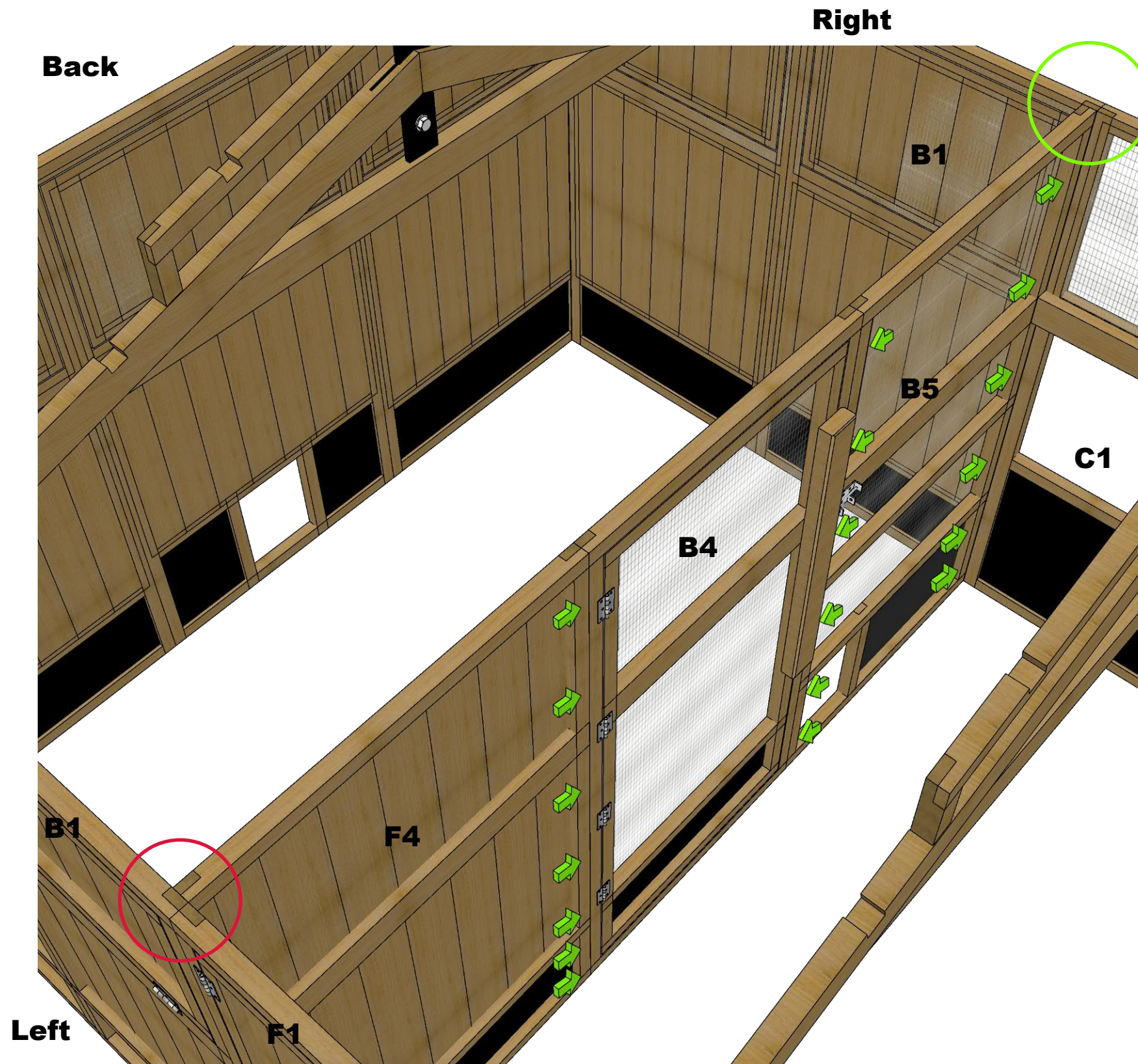
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1. Trusses omitted for illustration purposes.
2. Even if you poured a concrete footer, verify using this step.
3. Any "waves" in the wall are taken out by stiffeners in next steps.
4. Try to make it to where it feels structure is straight and relaxed. Not under tension.

4 Using whatever anchoring method you choose (see anchoring page) put in at least enough of your anchors in the bottom rails to keep from shifting during the balance of construction. Take note at position (4) in the diagram to not let distance between base of walls be less than 116-3/4" or greater than 117".

In this step we'll start adding some stability to the structure.

- 1 Screw B5 panel into vertical side rail of right B1 panel as illustrated. See blow up diagrams for placement. Make sure top edges are flush. Next screw the F4 panel into vertical side rail of left B1 panel making sure top edges are flush. Use a similar screw pattern as indicated on B5 panel.



- 2 Insert the B4 panel between the B5 and F4 panels. Spread B5 and F4 if needed to squeeze the B4 panel in.

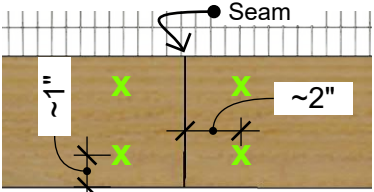
At this point, do not remove shipping screw(s) from door.

Screw from B5 and F4 into B4 as indicated pulling panels together to close any gaps as needed.

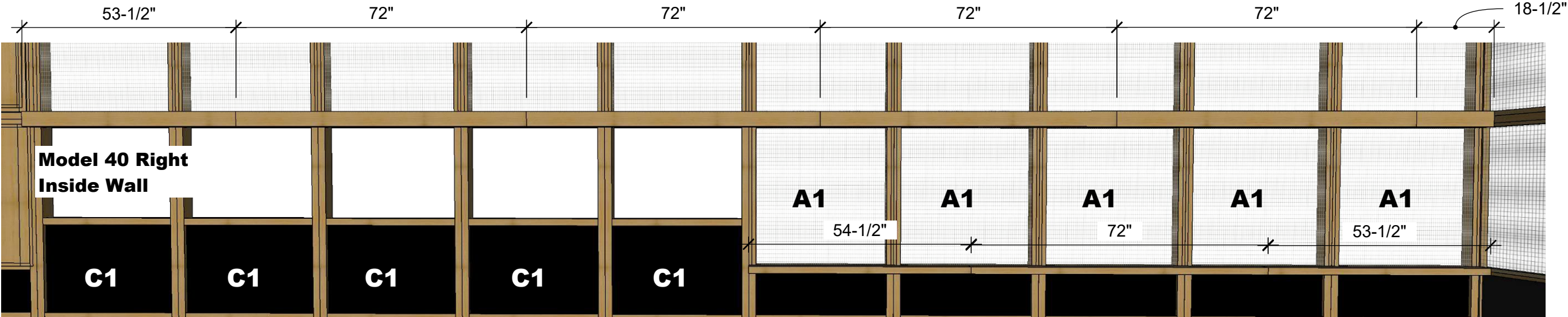
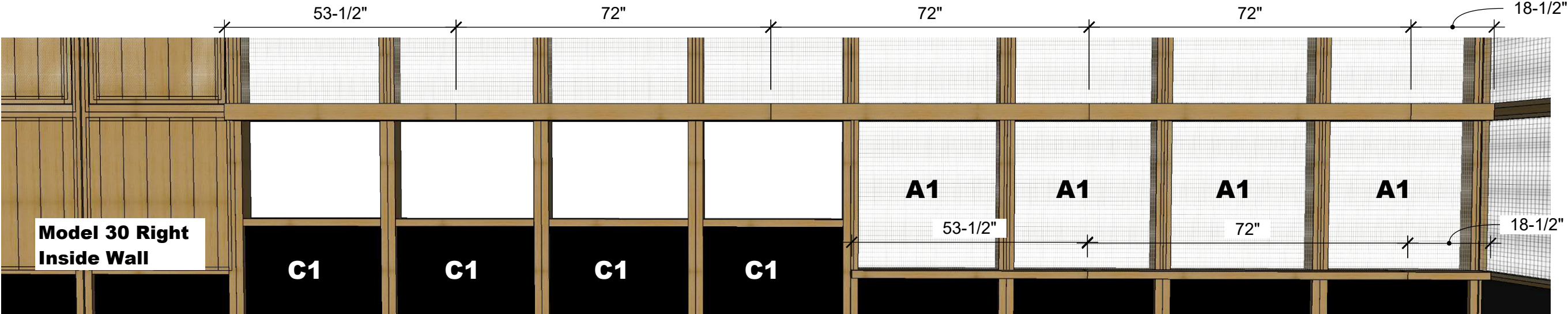
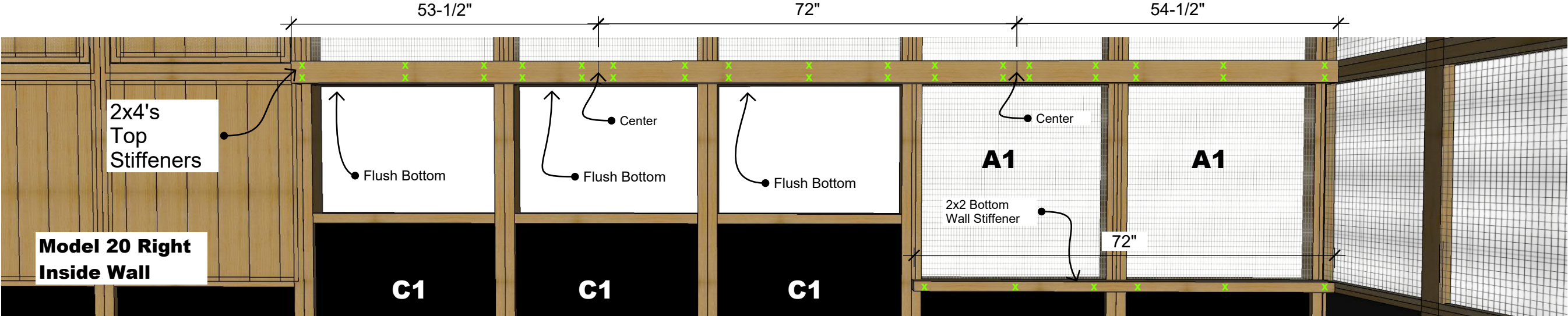
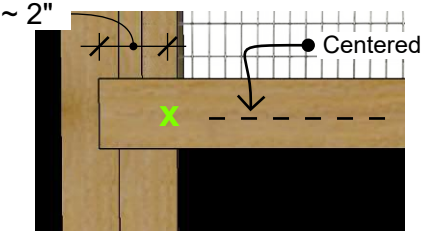
In this step we'll stiffen up the right run inside walls so that they are straighter and stronger.

1 Using T25 3" screws identify the proper length 2x4 and 2x2 stiffener boards and place them as indicated in the diagram for the model you own. Green X's are used instead of arrows in previous steps and shows pattern to use. Use detail for Model 20 screw pattern and notes to extrapolate the Model 20 & Model 40 stiffeners shown.

2x4 Screw Pattern

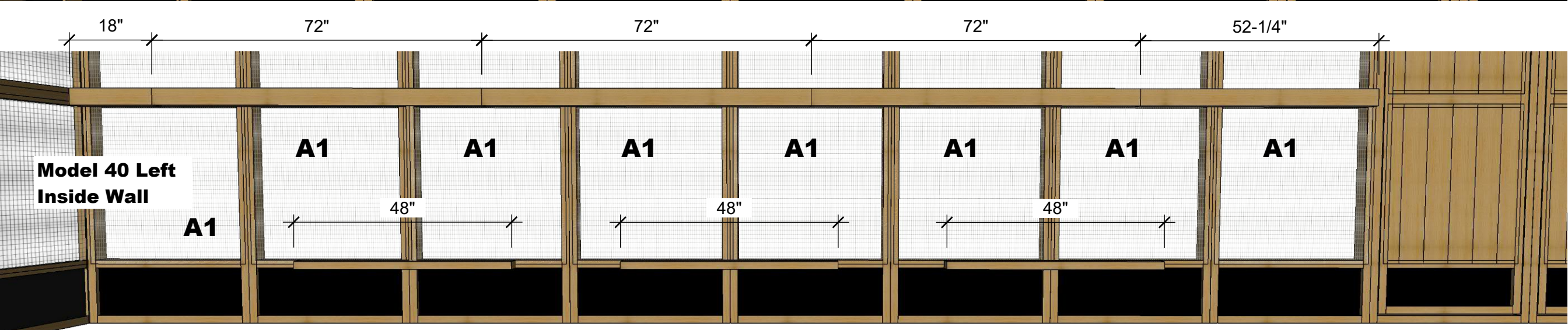
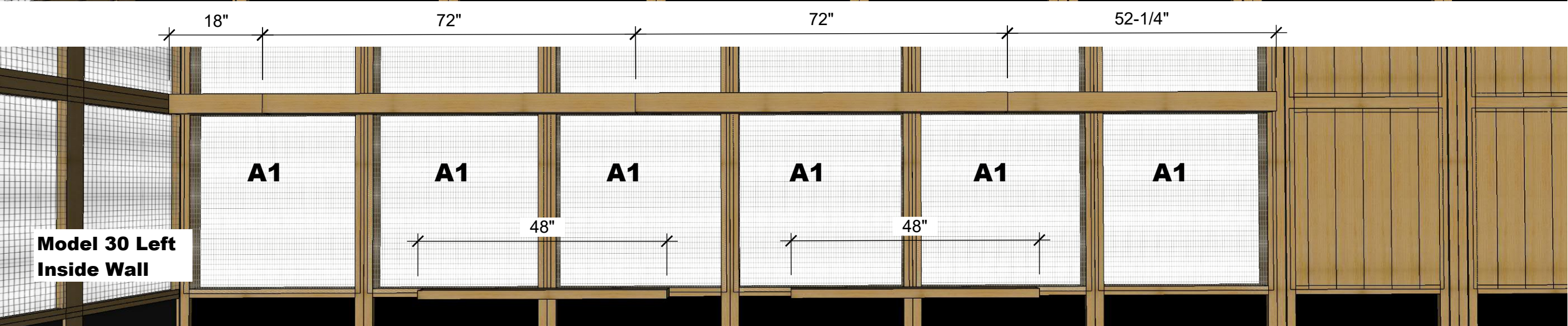
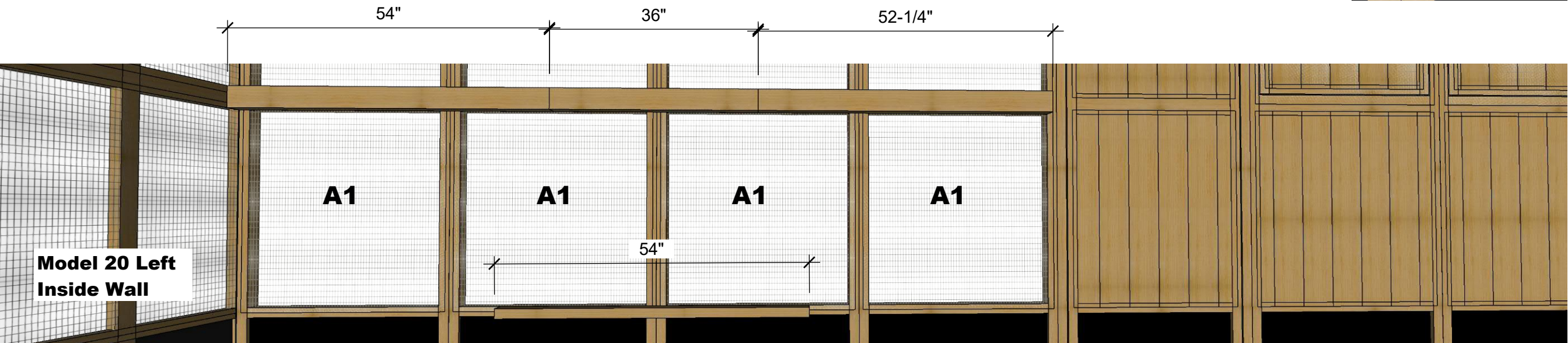
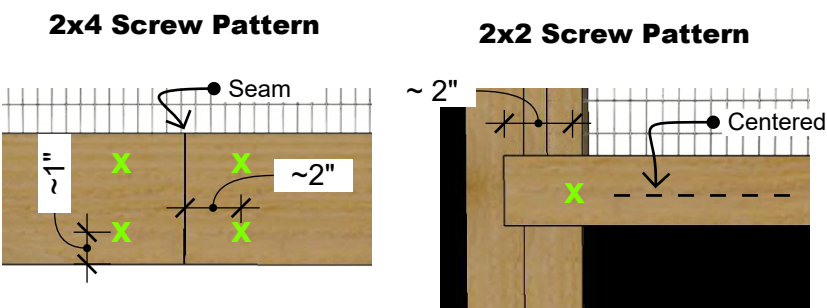


2x2 Screw Pattern



In this step we'll stiffen up the left run inside walls so that they are straighter and stronger.

1 Using the same teachings and procedures from step 2.1 place the 2x4 and 2x2 left inside wall stiffeners as illustrated.

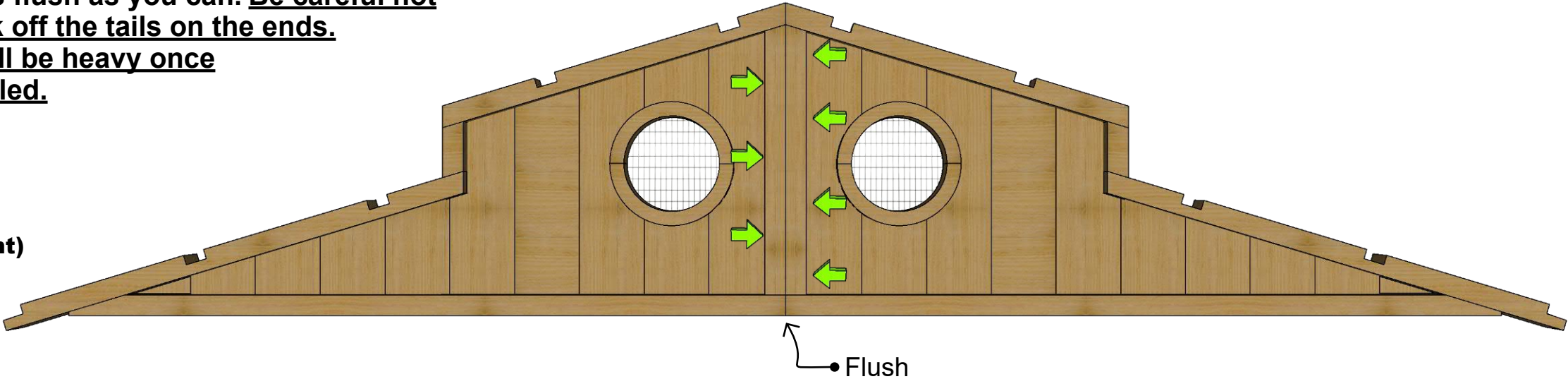


In this step we'll assemble the three roof gables...

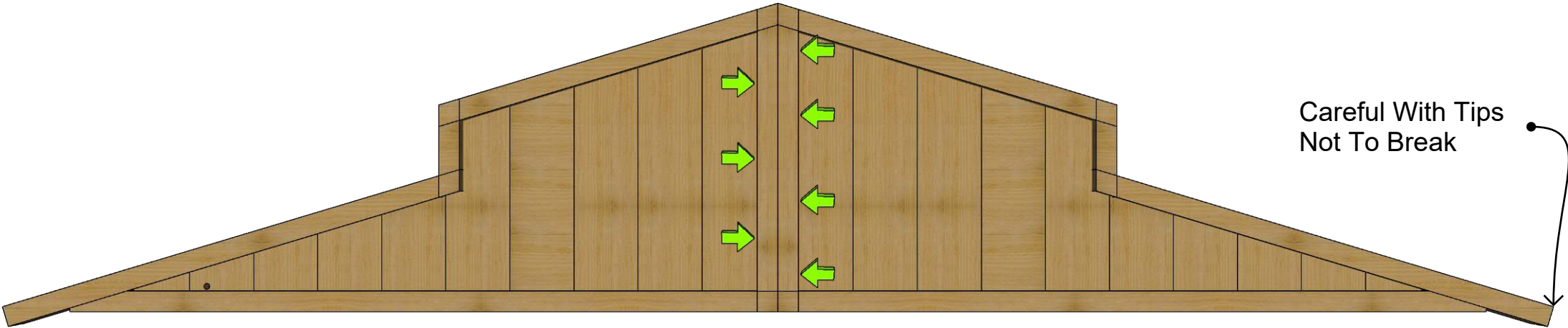
- 1

Using T-25 3" screws assemble the gable halves using the illustrations to guide you. Favor making bottom edges flush and keep faces as flush as you can. Be careful not to break off the tails on the ends. They will be heavy once assembled.

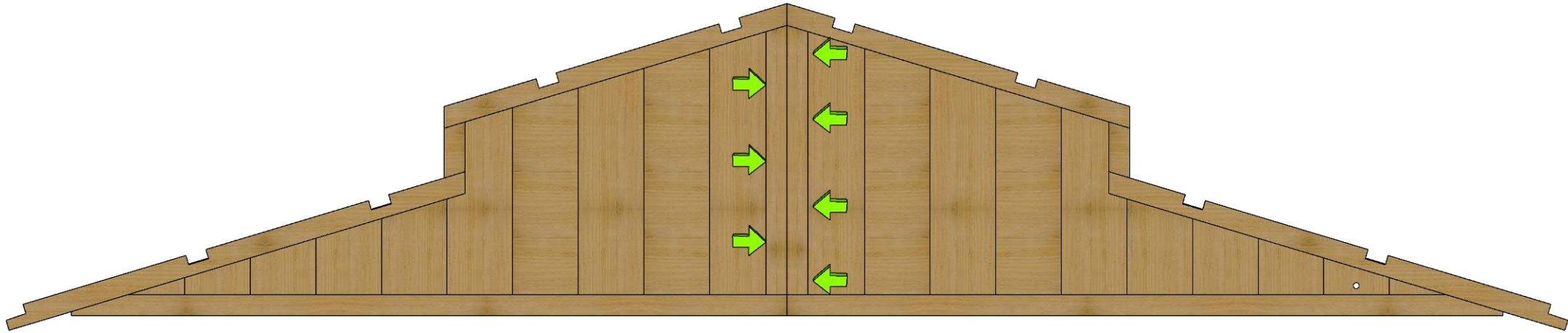
Front
(looking from front)



Mid
(looking from front)



Back
(looking from back)

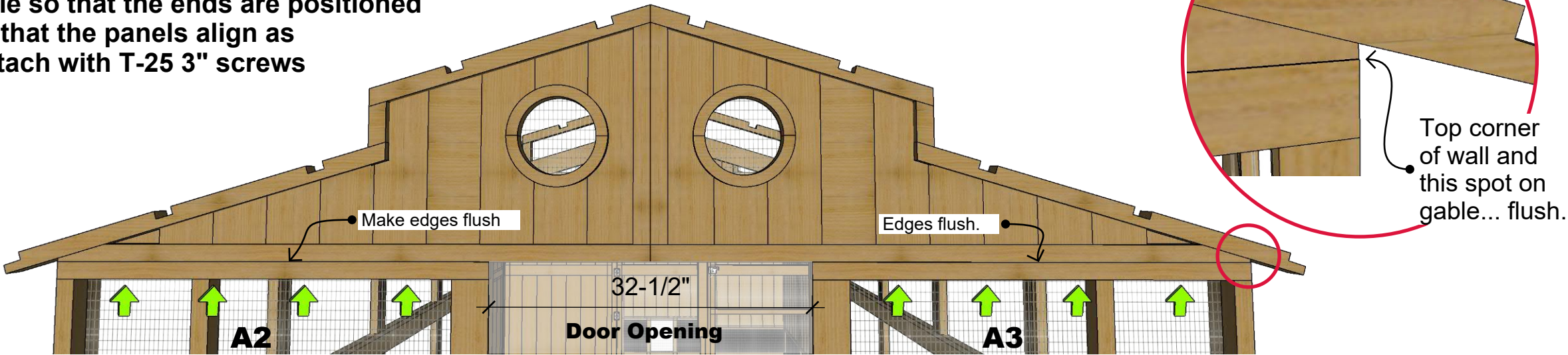


In this step we'll assemble the three roof gables...

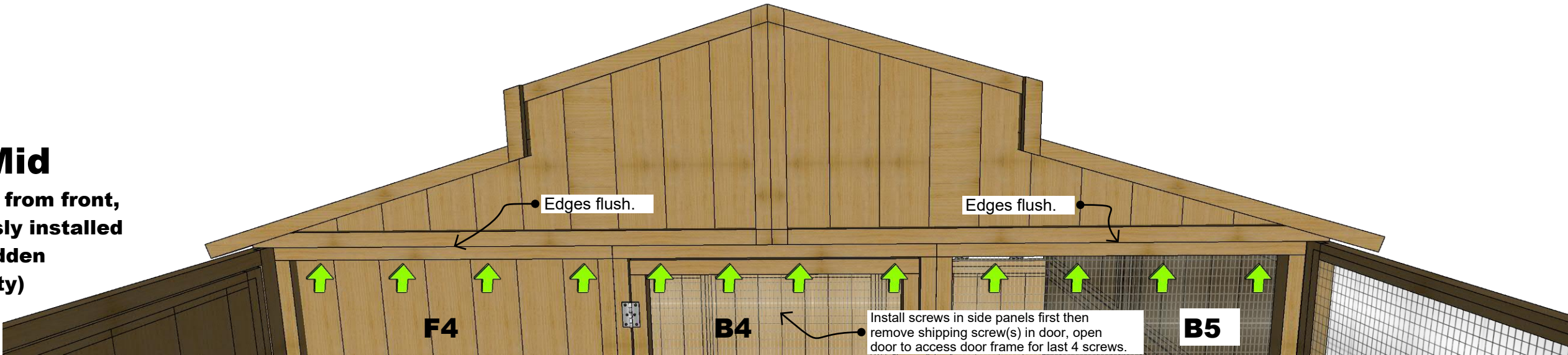
- 1

With the help of one or two other people, lift the gables up and on top of the front, mid and back walls as illustrated, shifting panels and adjusting gable so that the ends are positioned correctly and that the panels align as illustrated. Attach with T-25 3" screws as indicated.

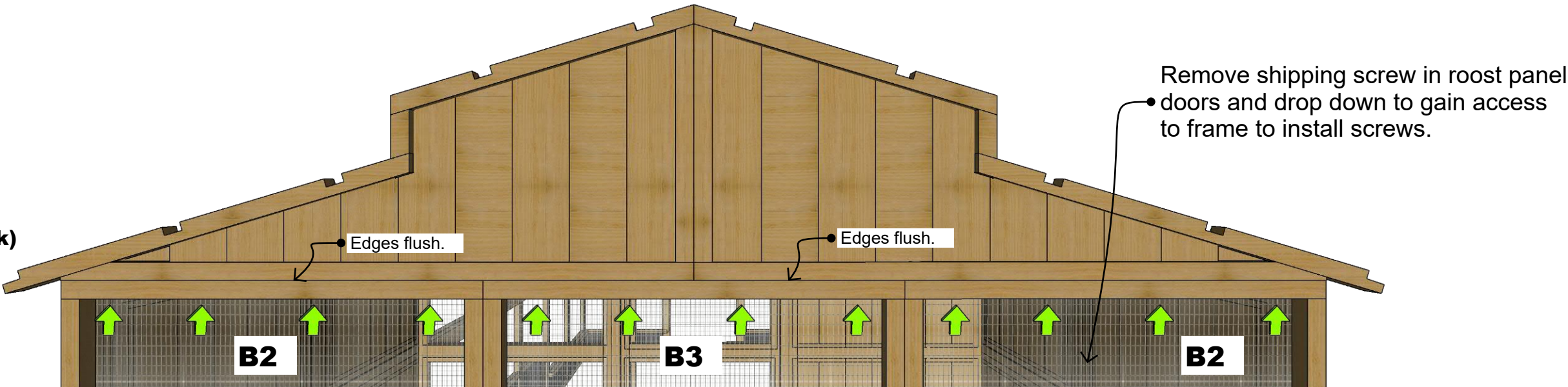
Front
(looking from front)



Mid
(looking from front, previously installed truss hidden for clarity)



Back
(looking from back)

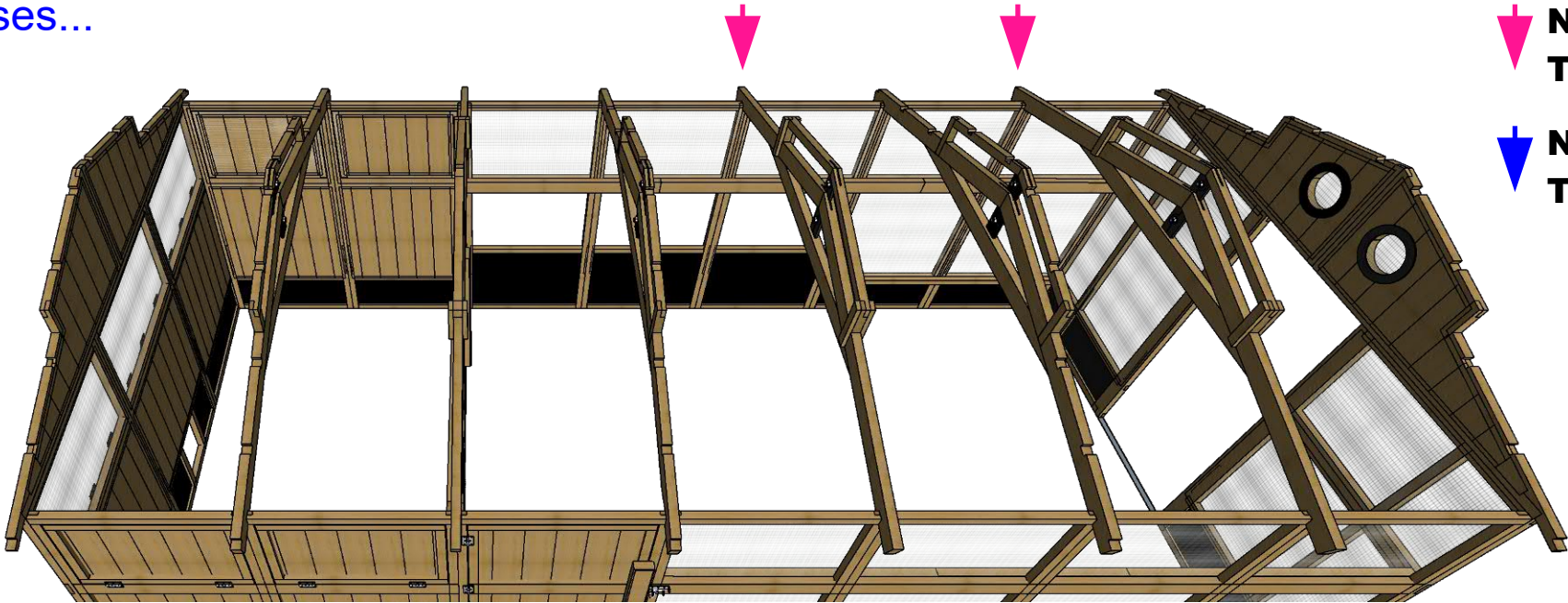


In this step we'll install the remaining trusses...

1

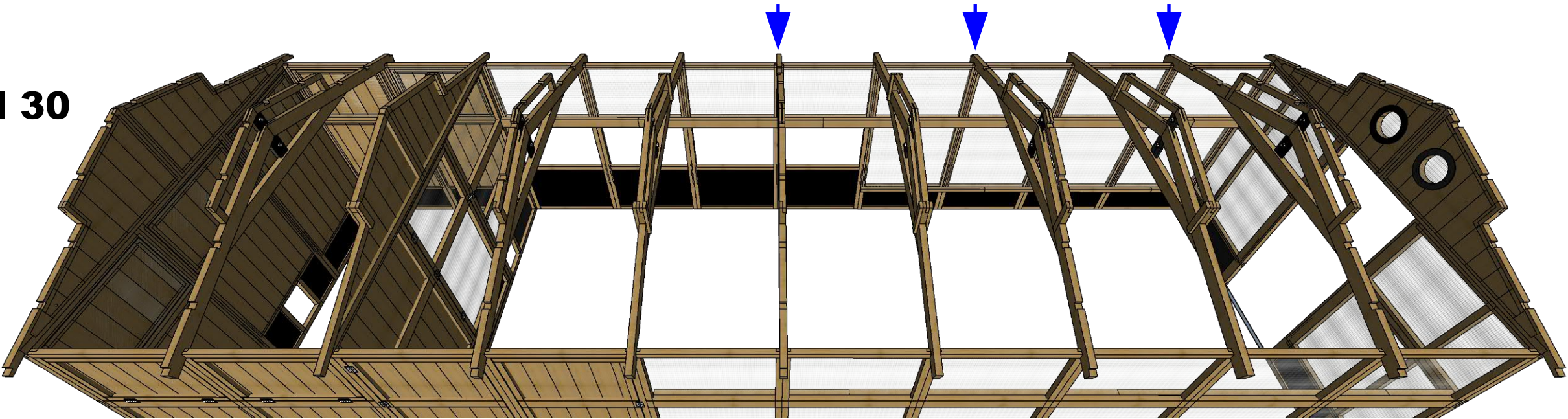
Using the same procedures as in steps 1.5 and 1.6 install the remaining trusses in the locations indicated by the color coded arrows for the model that you are assembling.

Model 20

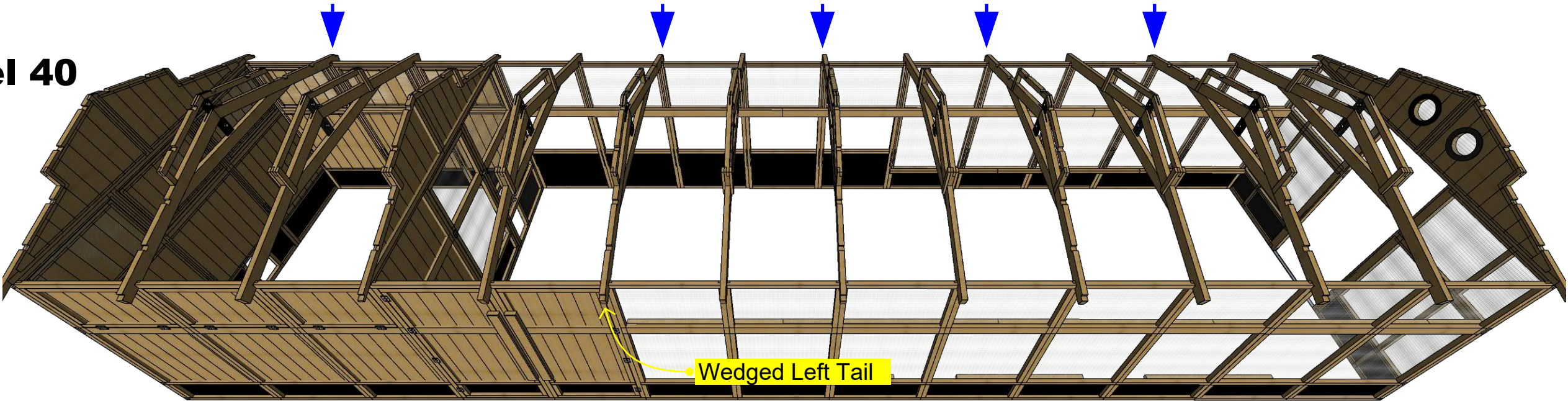


↓ No Notch Truss
↓ Notch Truss

Model 30



Model 40



Wedged Left Tail

Before going to next steps we want to release some tension from wall tops and align the truss ends...

- 1
- Using a piece of string pulled between both ends of the front and rear gable tails... tug and push on wall tops to get truss ends to run evenly along string. The straighter you can get this the easier the Purlin Panels in the next steps will install and the straighter your roof panels and ridge cap will look. In theory :-) you only have to do this for one side or the other...



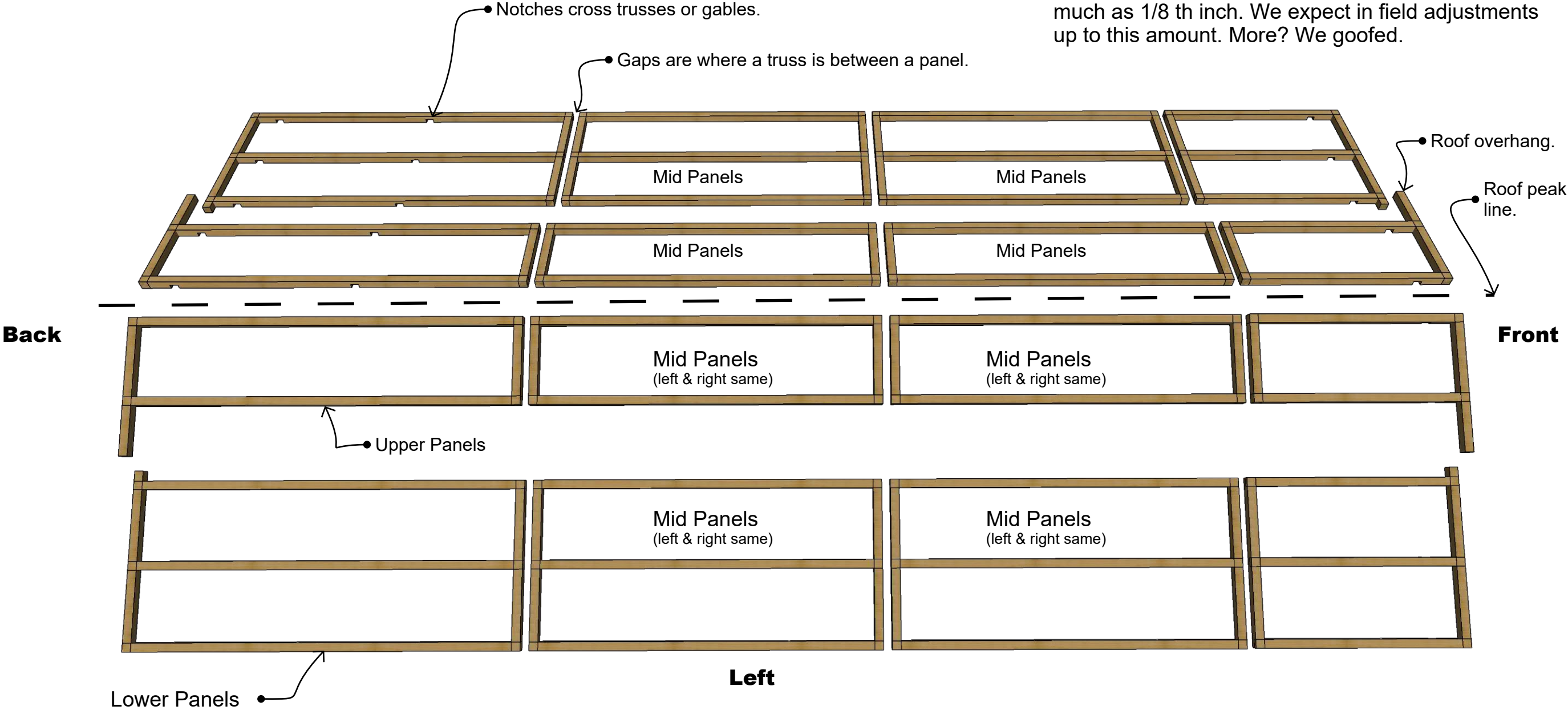
Inevitably, our errors, your errors in ground level, truss angle errors... all these things combining to not be perfect, can cause one side to be straight and the other side to not be straight. Place a string on both sides and shift wall tops to split the difference between sides making both sides as straight as possible.

Model 30 Illustrated
(same concept for models 20 and 40)

Purlin Panels lock into and between roof trusses to form the roof structure...

1 Using the illustrations below, familiarize yourself with the idea of how we'll talk about Purlin Panels...

- 1. Trusses omitted for illustration purposes.
- 2. Some notches are not illustrated.
- 3. Back and front upper and lower panels are unique. Mid panels are the same.
- 4. Human error, machine tolerances and wood variation may cause notches to be off by as much as 1/8 th inch. We expect in field adjustments up to this amount. More? We goofed.

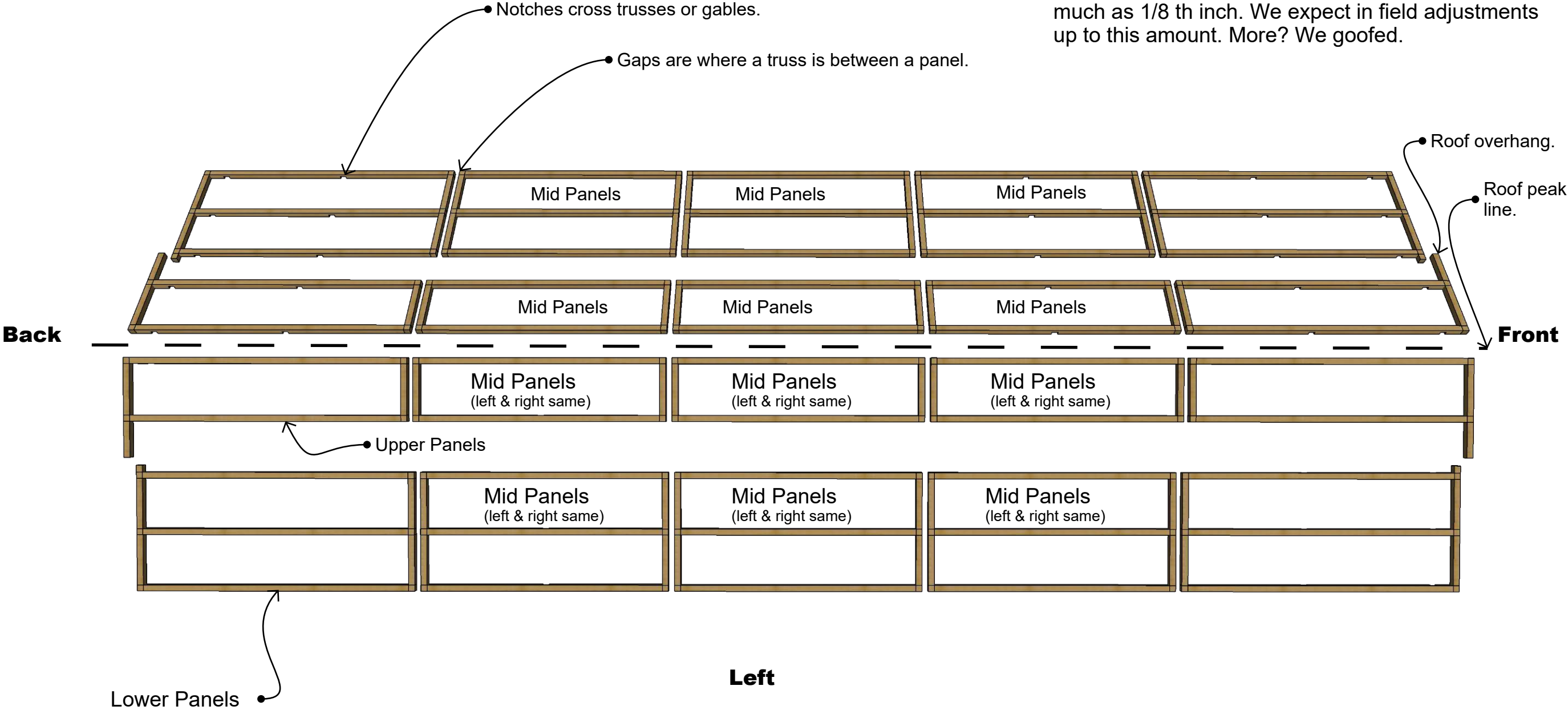


We supply a small bottle of very strong polyurethane glue that can be used to make roof structure "stiffer". Best practice would be placing a dime to nickel sized dollop of glue on the notched to notch overlaps before putting a T-20 screw in. Gluing and screwing is stronger. Too much glue would drip, too little would still be stronger than just a screw. Use judgement in the field. Wait for any drips to dry completely before cutting them off. Allow some dry time before wiggling structure too much.

Purlin Panels lock into and between roof trusses to form the roof structure...

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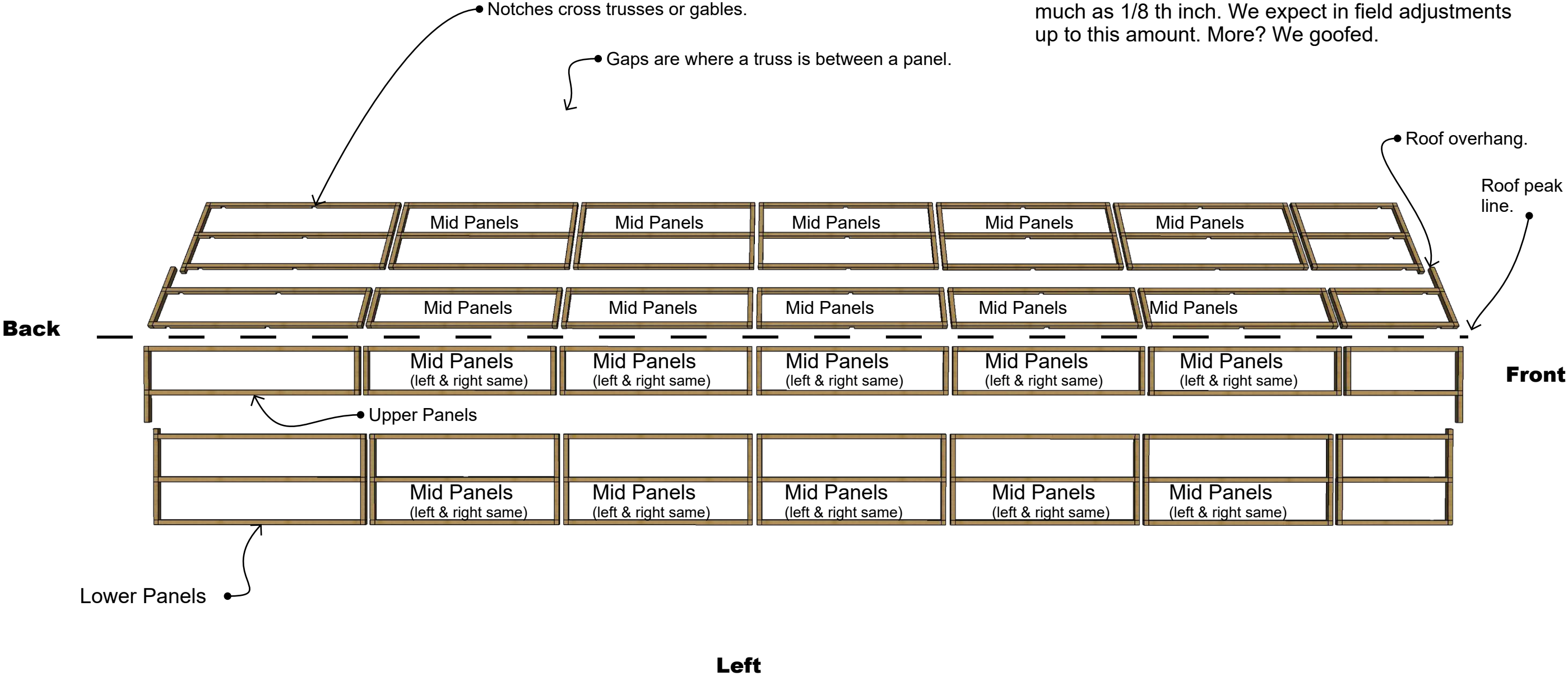


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Purlin Panels lock into and between roof trusses to form the roof structure...

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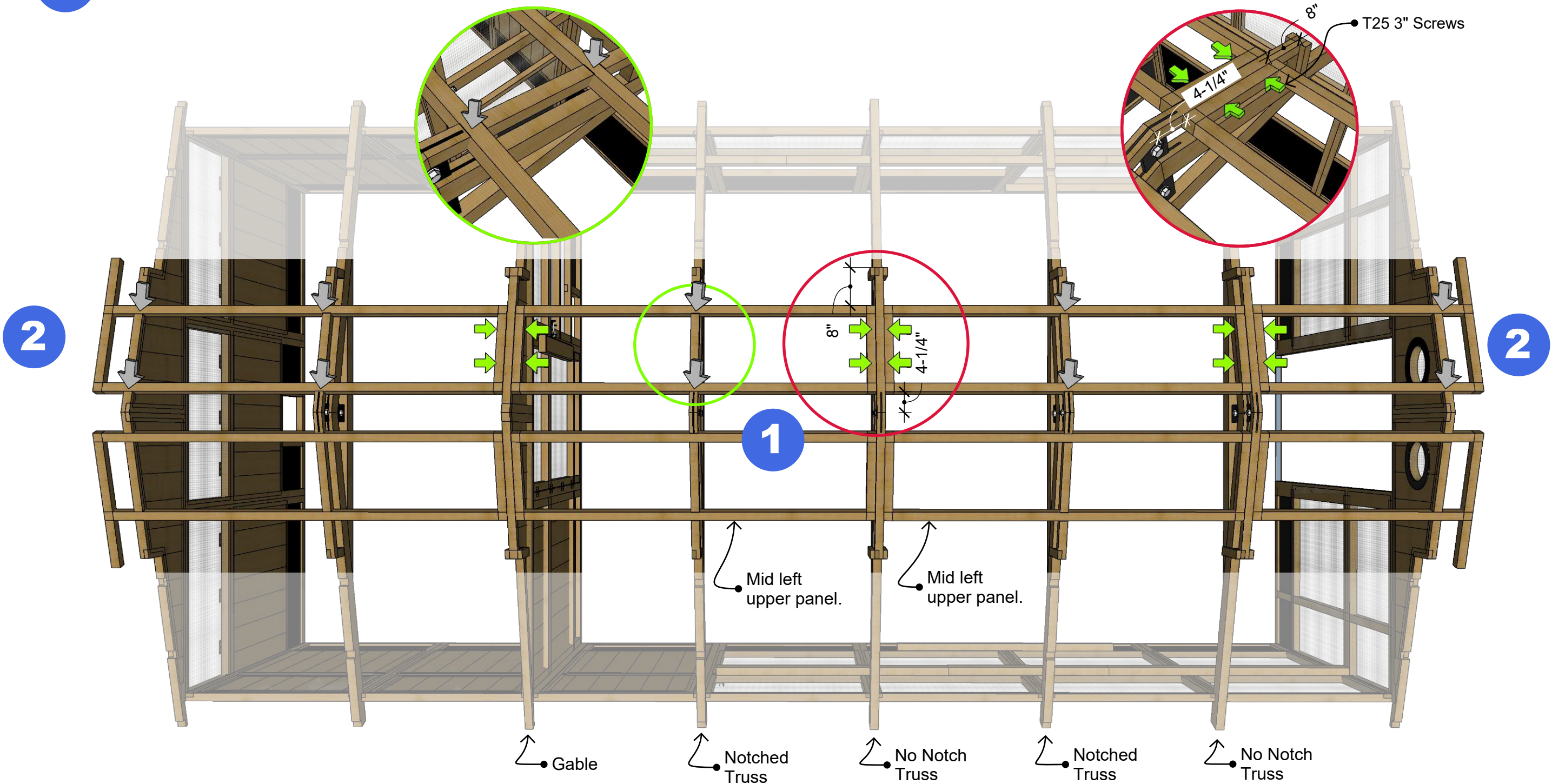
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Installing the upper purlin panels will set the trusses in place.

- 1

Begin by identifying and installing two mid left upper panels. Place the notch in the panels over the notch in the notched trusses and then ends of the panels butting up against the no notch trusses. See diagram(s) for screwing instructions. Repeat for right.
- 2

Install both the left and right front and back upper purlin panels as illustrated using the same procedures as explained in step 1.



Model 20 Illustrated
(same concept for models 30 and 40)

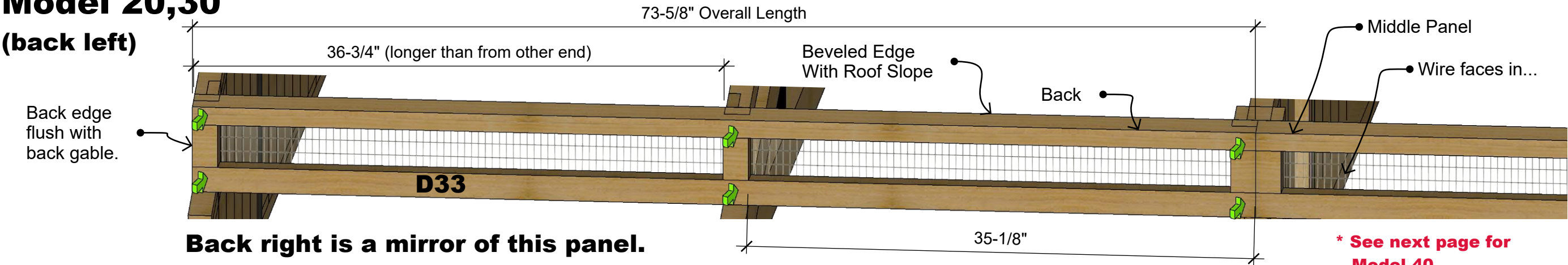
The next step before installing the upper roof, is to install the left and right transom panels... part 1 of 2

- 1

Transom panels are the skinny wired panels that mount between trusses and gables on the step up from the lower to the upper roof. The two left and right back panels are each unique mirrors of each other. Use a tape measure to choose correct panels. The two shorter front panels are the same and are interchangeable. Four middle panels are the same and interchangeable too. Attach each panel with T25 3" screws as indicated. Identify your model on this and the following pages and install panels as illustrated.

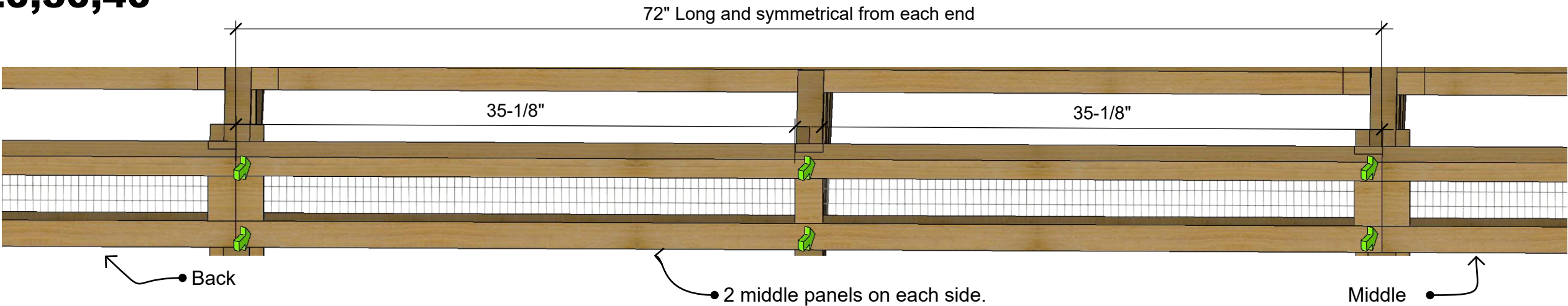


Model 20,30
(back left)

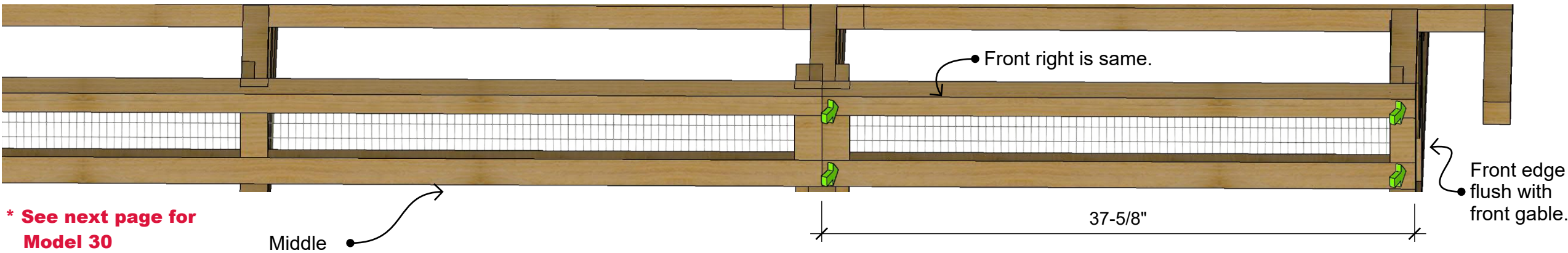


All measurements are +/- 1/8 inch. Wrong panels will be obviously wrong.

Model 20,30,40
(middles)



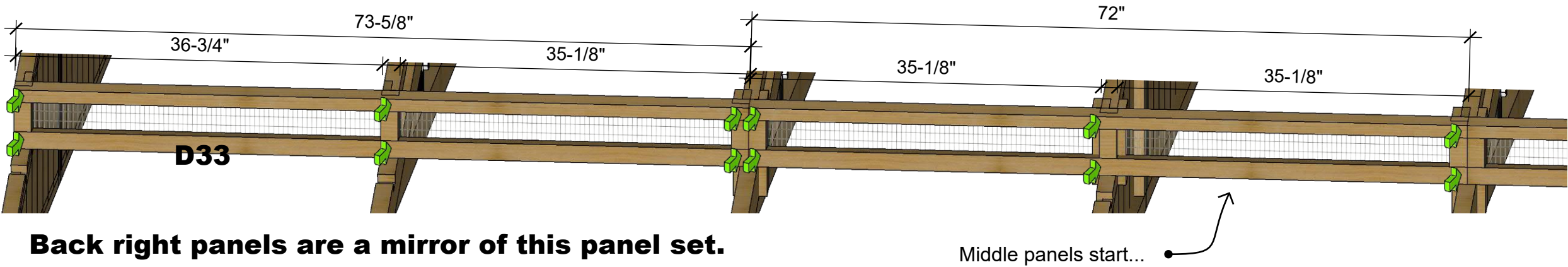
Model 20,40
(front left)



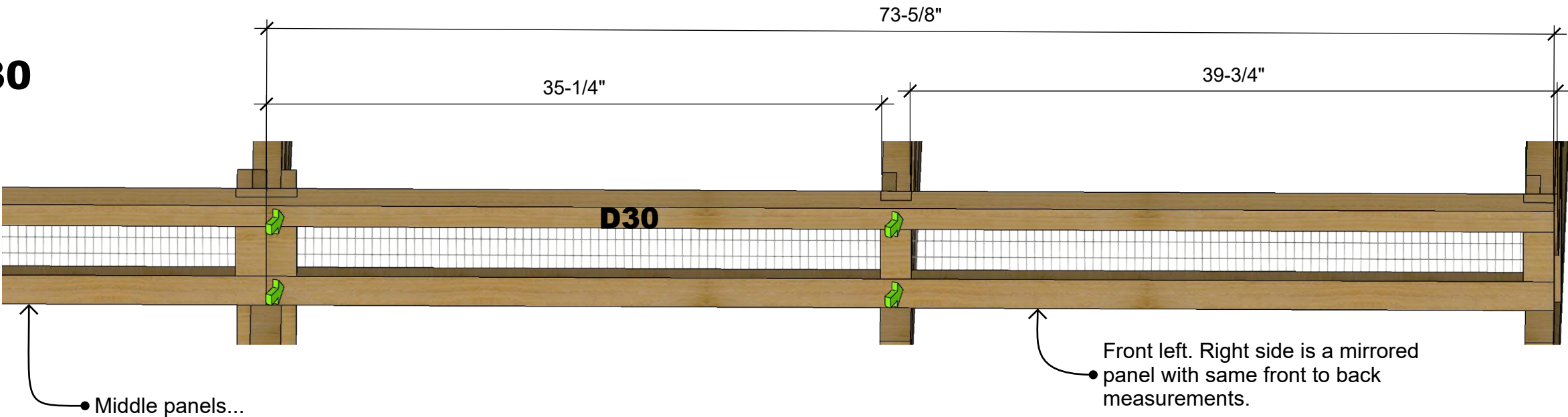
1 Disregard this page if you're assembling a Model 20. Apply concepts on previous page to this step for the coop you are assembling. Attach each panel with T25 3" screws as indicated.




Model 40
(back left
2 panels)



Model 30
(front left)




 All measurements are +/- 1/8 inch. Wrong panels will be obviously wrong.

This is what we will be aiming for in the following steps...

1 Please study this illustration so you'll know what we're aiming for in the following steps and we can get a few instructional items out of the way.

Model 30 Illustrated


(same concept for models 20 and 40)




Bit Holder

Self Piercing Roof Screw


A bit holder with no bit is used to drive roof screws. If you have a 1/4" bit for your drill, it can also be used. On roof panels, only tighten roof screws enough to compress the neoprene washer and hold down the panel. Do not tighten so tight as to deform the panel. Screws are designed to self pierce the panels. You can use the provided drill bit if you like to pre-drill hole in the panel if needed. Don't drill into wood. Let screw do that part.



INCORRECT




INCORRECT

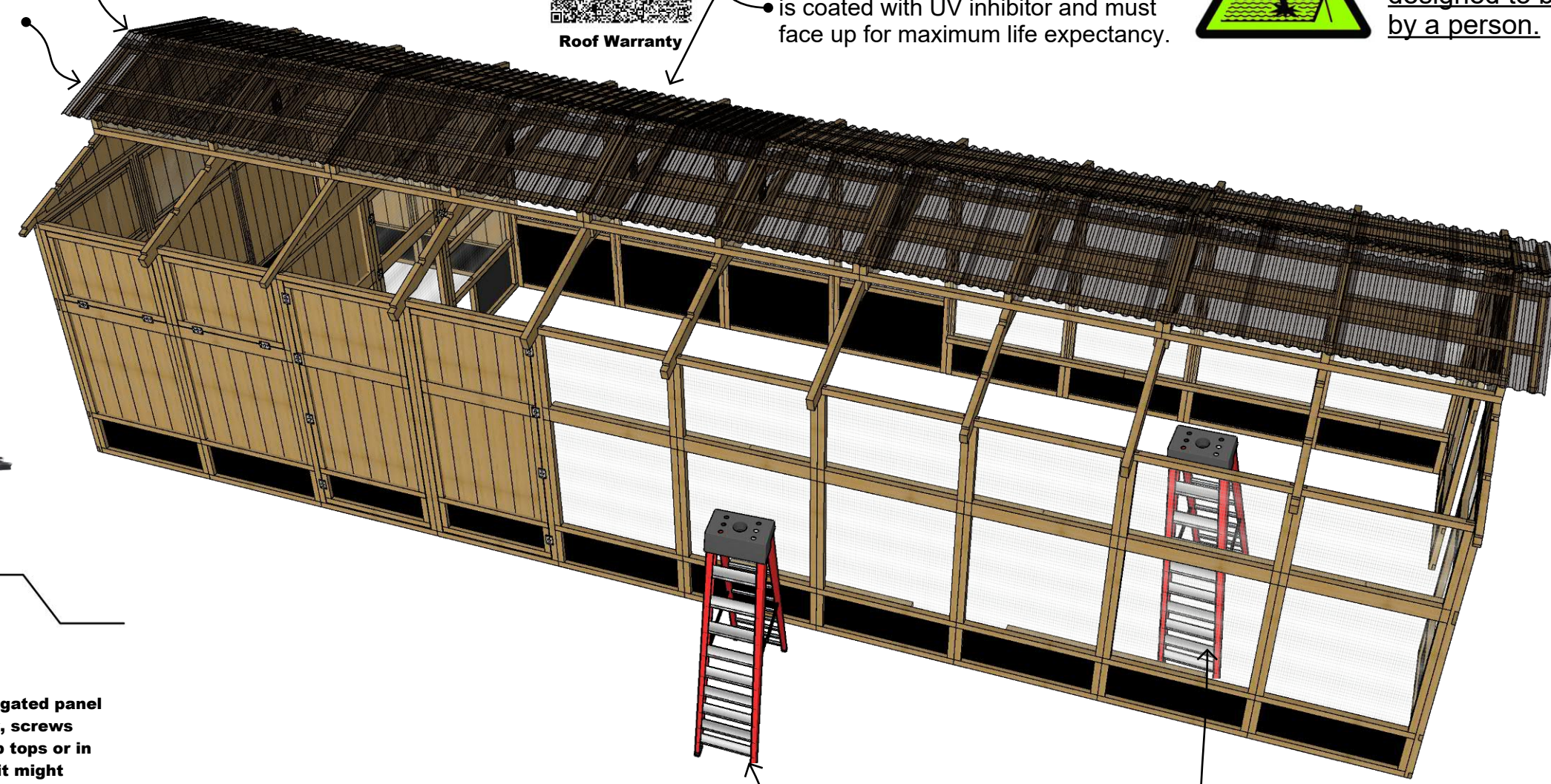


CORRECT


Ridge Cap is in 4' Sections

Upper roof panels are 32" long and shorter than 40" lower panels.






Roof Warranty

 **SUNTUF**
Corrugated Polycarbonate Panels

Roof panels have a top side that is coated with UV inhibitor and must face up for maximum life expectancy.



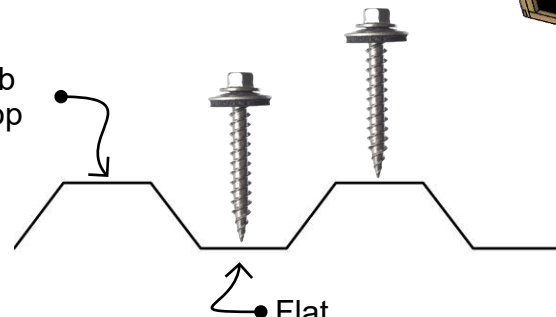
This roof is designed to support itself and about 32" of ordinary snow. It is not designed to be walked on by a person.

When working on the lower roof panels, your ladder will be outside the coop.

You'll stand on a ladder in the lower roof openings to work on upper roof. A 6' ladder should be sufficiently tall to provide adequate reach for an averaged height person.

Rib Top

Flat



Where to put a screw on a corrugated panel is a topic of debate. Technically, screws can either be installed on the rib tops or in the flats. Where panels overlap it might make the most sense to place on the rib top. Palram, the manufacturer of the panels suggests they be placed on the rib top in all circumstances.

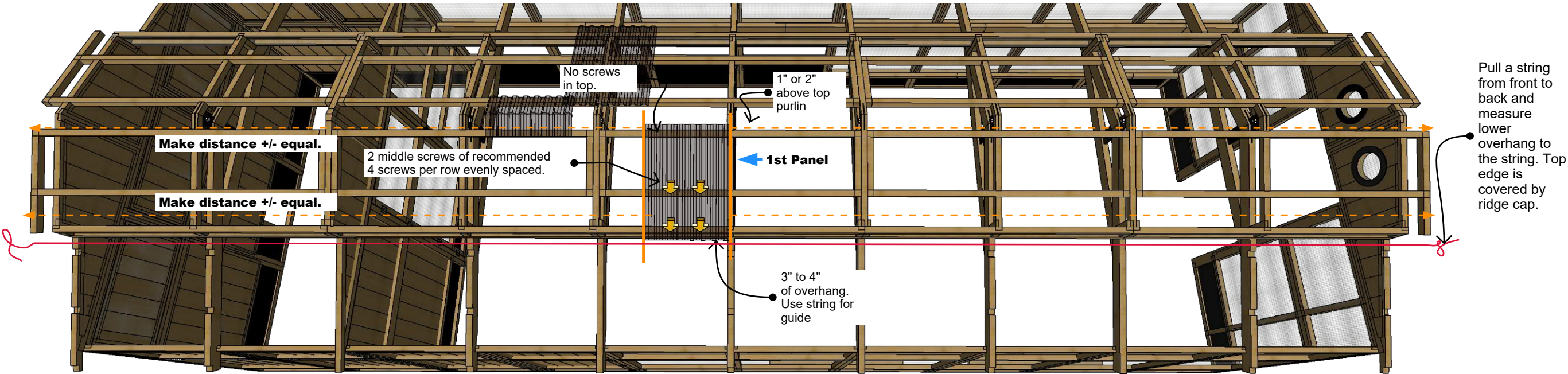
We leave this to a field decision or to your roofer. There is no "wrong" answer.

Using concepts discussed on previous page, install the upper roof panels on both left and right sides of coop as illustrated.

1

Note: An experienced roofer can roof the coop any way they want. We're writing instructions assuming a DIY homeowner might be performing the work and needs a method to perform the task. We realize that the method we illustrate is only one way of many to roof the coop and yield to the experience of the installer.

Place an upper panel (UV protected side up) as illustrated with edge of panel at roughly the center of the coop towards the back and adjust the panel to where the end to end measurements of the panel are as equal as you can make them. For a variety of reasons, it won't likely be perfect. This method will split errors in the squareness of the coop and make the sightline of the roof look the most straight and make the best edges when you get there. Place four roofing screws in the panel approximately where indicated, angled like roof, where washer hits roof panel flat.



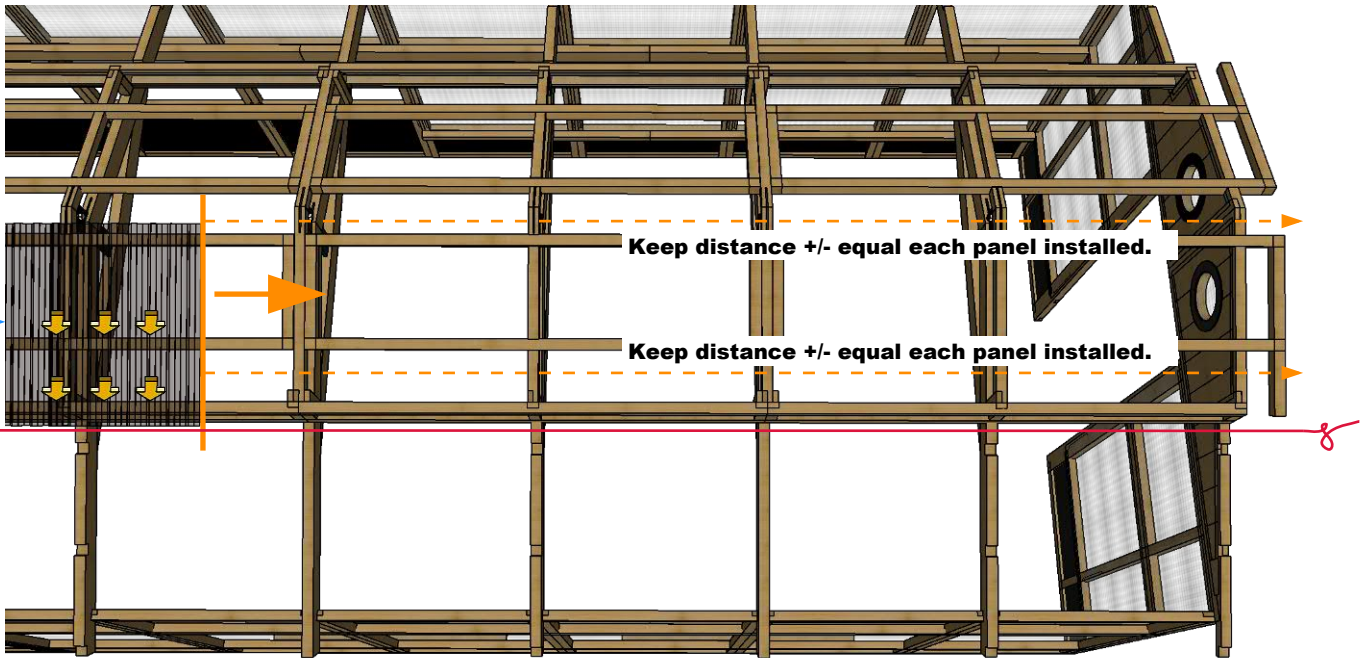
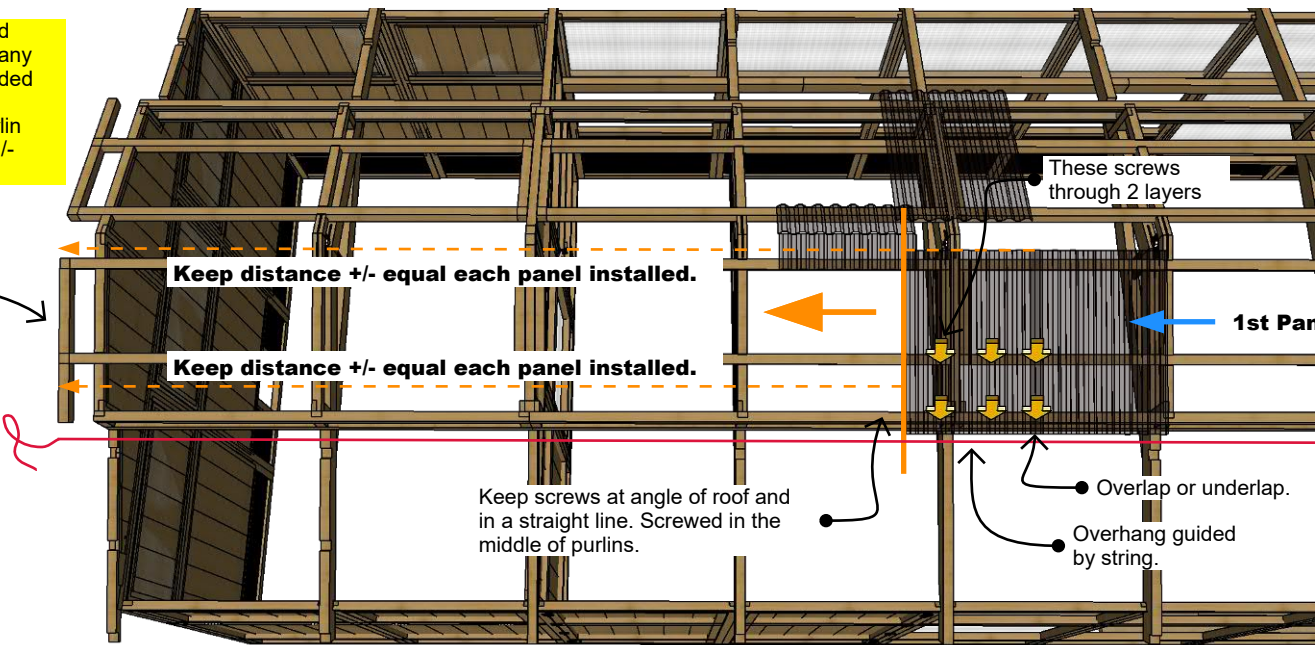
2

Work from middle to back by slipping 1 rib of the panel under (or over) the first panel. Measure each time to the back edge of the purlin and little by little make adjustments as you move to keep +/- equal. Keep bottom edge overhang +/- equal running along your string. As long as the top overhangs the top purlin rail it will be covered by the ridge cap. Repeat this until you're at the back and then slip last panel under as many ribs as needed to overhang purlin end by about 2". If you know how to cut a panel, you can do that instead of overlapping more than 1 rib.

Overlap end panel as many ribs as needed to extend beyond purlin end by 2" +/-

3

In the same way you worked in step 2, work from middle to front by slipping 1 rib of the panel under (or over) the first panel. Measure each time to the front edge of the purlin and little by little make adjustments as you move to keep +/- equal.



Model 30 Illustrated

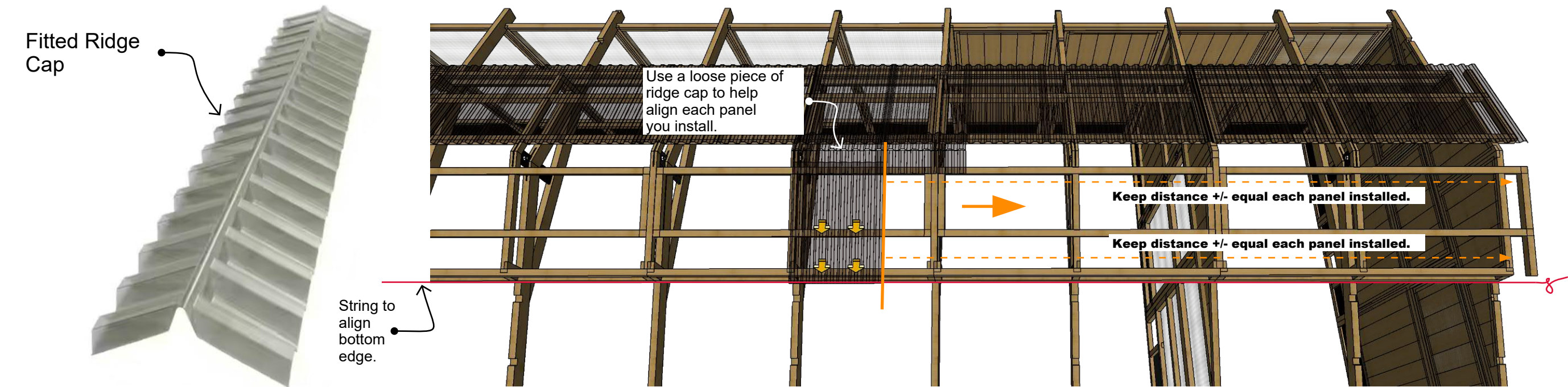
(same concept for models 20 and 40)

Using work methods performed on left side upper roof, install right side upper roof making sure panels align with ridge cap too...

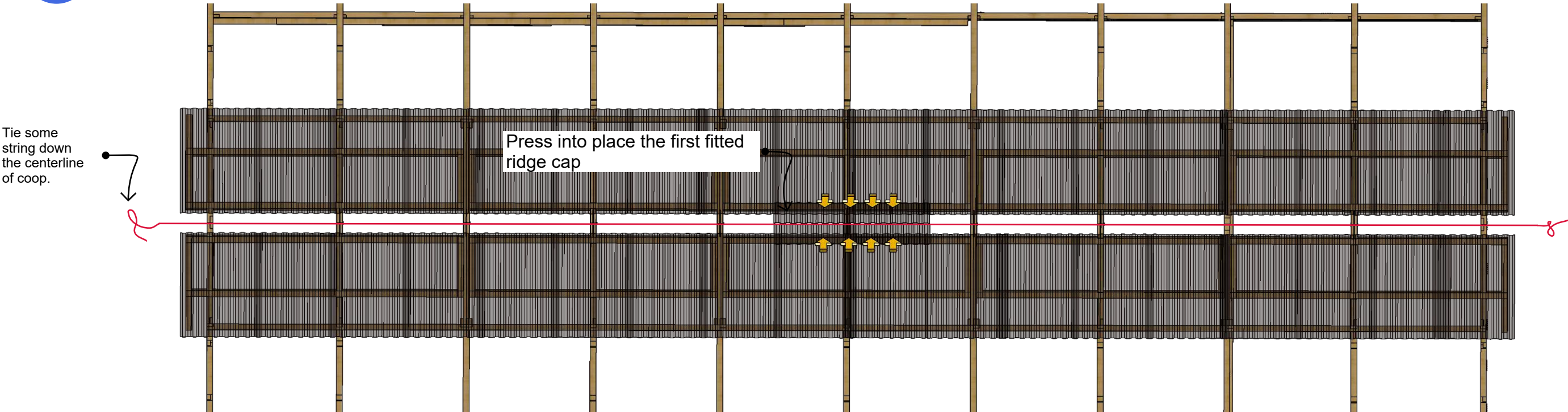
1 Place an upper panel (UV protected side up) as illustrated with top edge of panel opposite a panel you installed on the other side. Have a helper hold in place and press down a piece of fitted ridge cap over the ribs of the panel already installed and the panel that you're installing making sure ribs on both panels and valleys on fitted ridge cap all align nicely. Slide your roof panel as needed for bottom edge to overhang the 3" to 4" (same as you chose on other side) and once everything is aligned properly up and down and left to right set the panel in place by installing 4 roofing screws.

Repeat this procedure for the remaining panels to the back and then install all the panels towards the front.

Model 30 Illustrated
(same concept for models 20 and 40)



2 Stretch a string across the centerline of the roof ridge. Again, you will probably need a helper... press into place the first piece of fitted ridge cap (splay out as needed to fit flat) starting in center of the coop. Install screws in a pattern similar to the ones installed on lower panels screwing through the ridge cap, through the upper edge of the roof panel and into the upper purlin. On the ridge you can screw into valleys or tops of ribs as it is two layers. Whatever makes ridge lay most flat. Leave ends not screwed down so you can slip in next ridges.



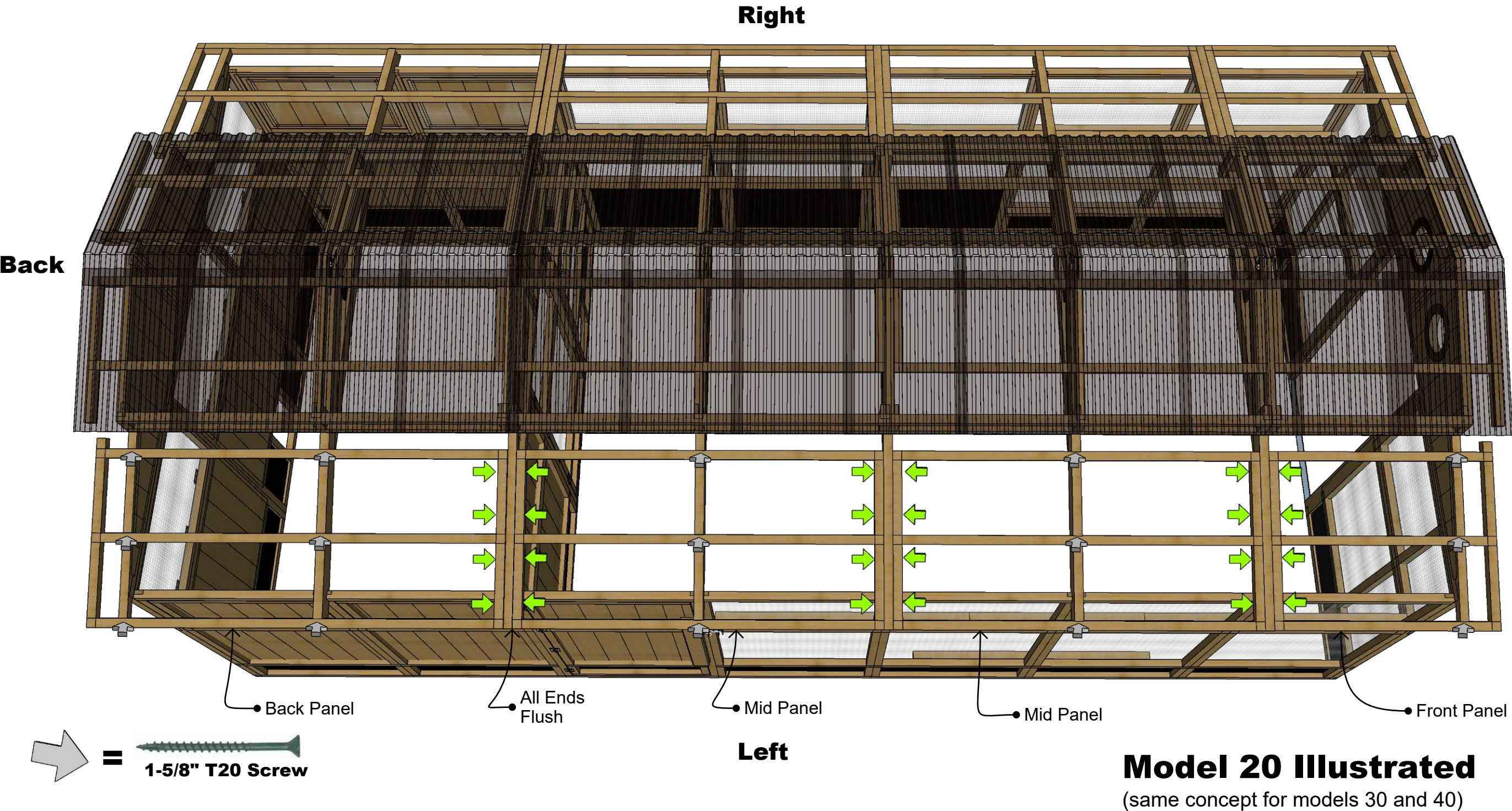
3 Either slip under or lay over ridge panels towards front and back of coop. You can overlap 1 or 2 ribs... slip under or lay over, whichever lays the most flat. Use roof screws in the same pattern as the roof panels below to attach ridge cap. Extra screws can be used to pin more flat if needed. Extend out even with roof panels on each end or 1 rib extended. Remove centerline string from under ridge when done.

Time to install the lower purlin panels so you can install the lower roof panels.

- 1

Using the illustration on the Section 3.0 page for your particular coop... identify the left back and left front panels and install as illustrated. Place the notch in the panels over the notch in the notched trusses and gables. Make sure to make bottom edges flush with tails of gables and trusses. End of panel that butts up to a no notch truss is held in place by T25 3" screws as indicated. See diagram(s) for screwing instructions. Insert mid purlin panels between trusses as illustrated affixing them with the same screw pattern as ends.
- 2

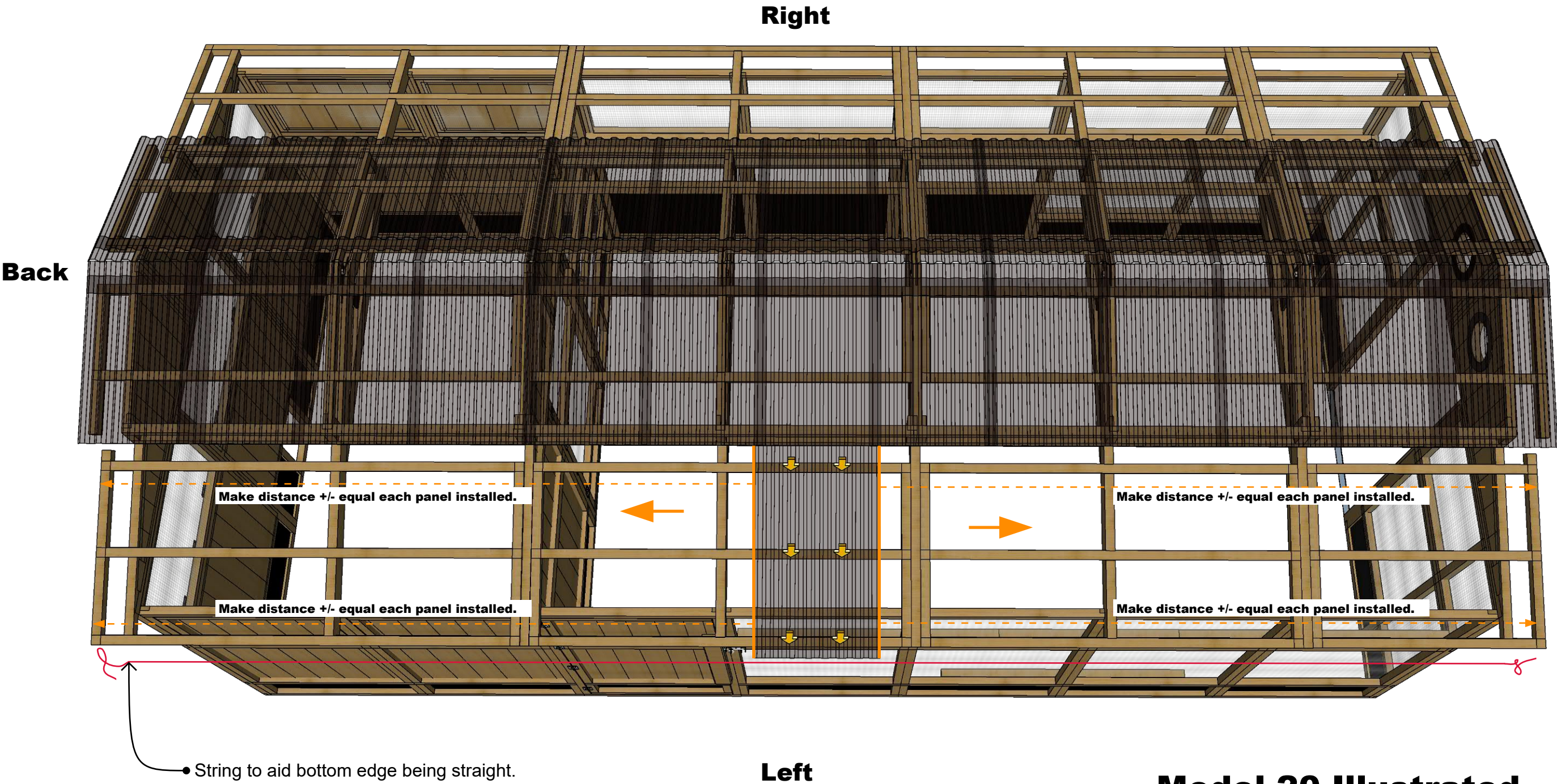
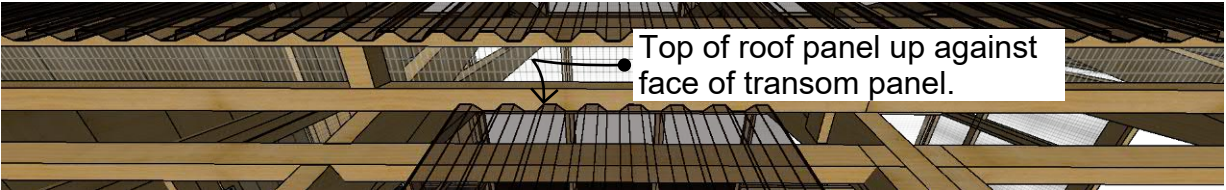
Install the right side end and mid purlin panels as illustrated using the same procedures as explained in step 1.



Install the lower roof panels using same techniques explained on upper roof panels.

1 Lower roof panels jam up against the face of the transom panels on the top edge and overhang the bottom purlin rail on the eave edge. There are three rows of screws per panel. Using the same aligning methods in section 3.4 and 3.5, position first panel left to right and set the center screws. After that repeat procedure as before and install all panels to the front and to the back.

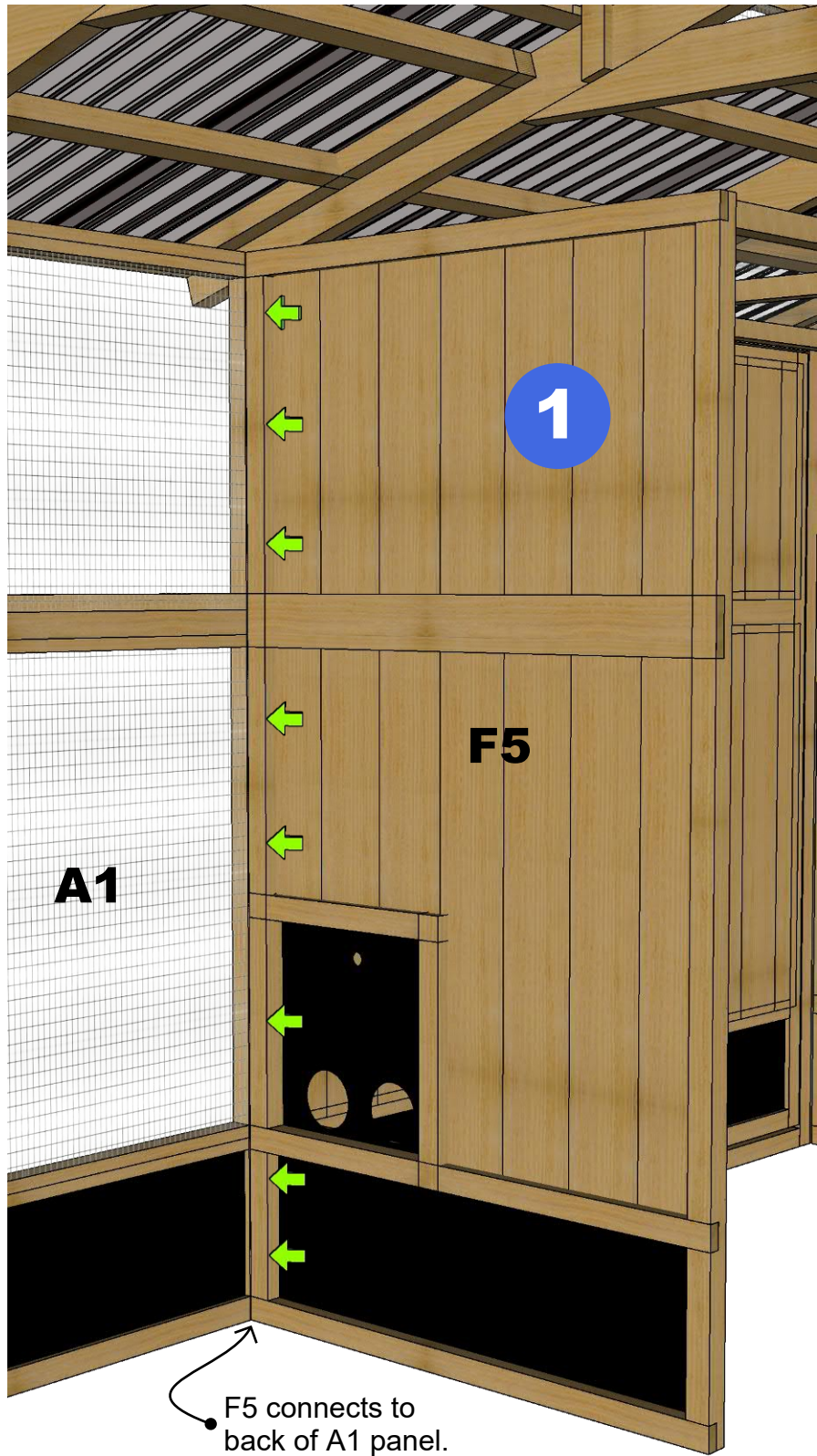
2 After completing one side, repeat the procedure on the other.



Model 20 Illustrated
(same concept for models 30 and 40)

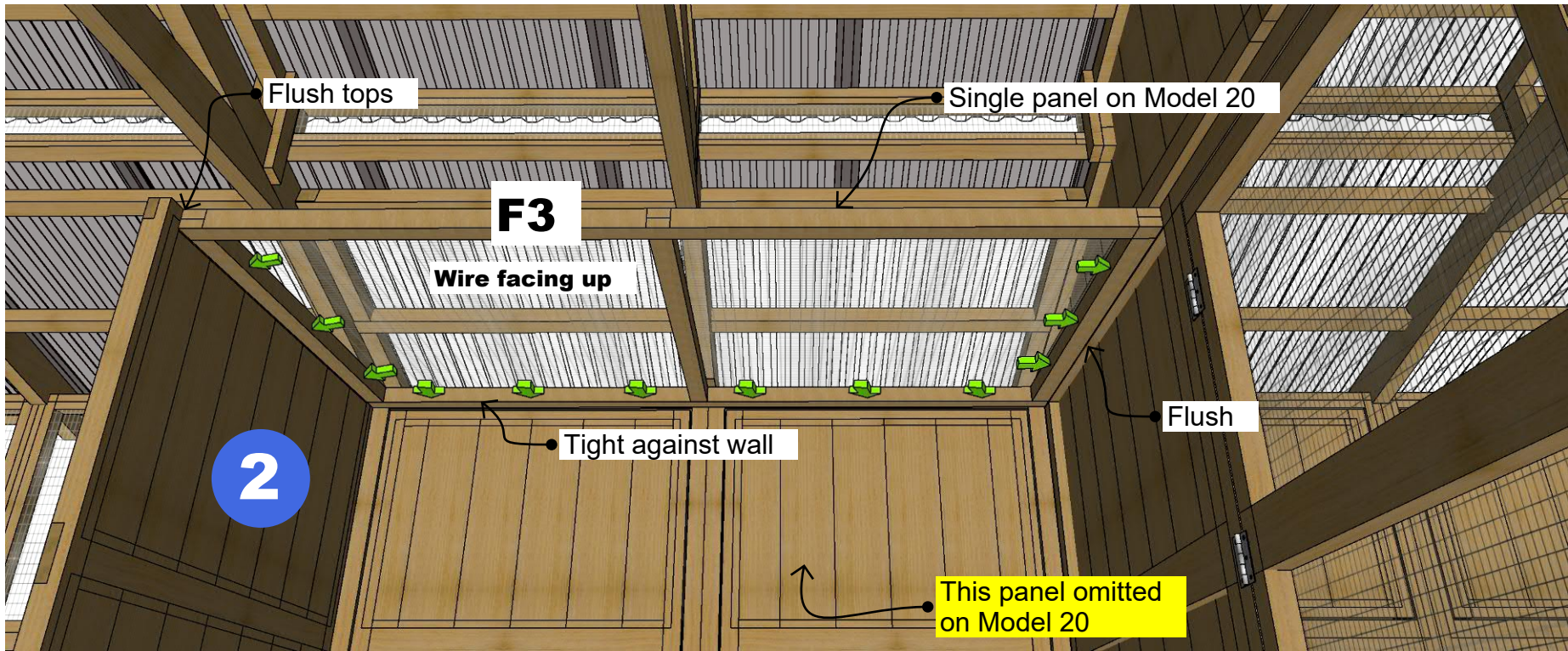
Install interior storage room walls and ceiling.

1 Install the F5 panel as illustrated. Take care to position panel as illustrated.

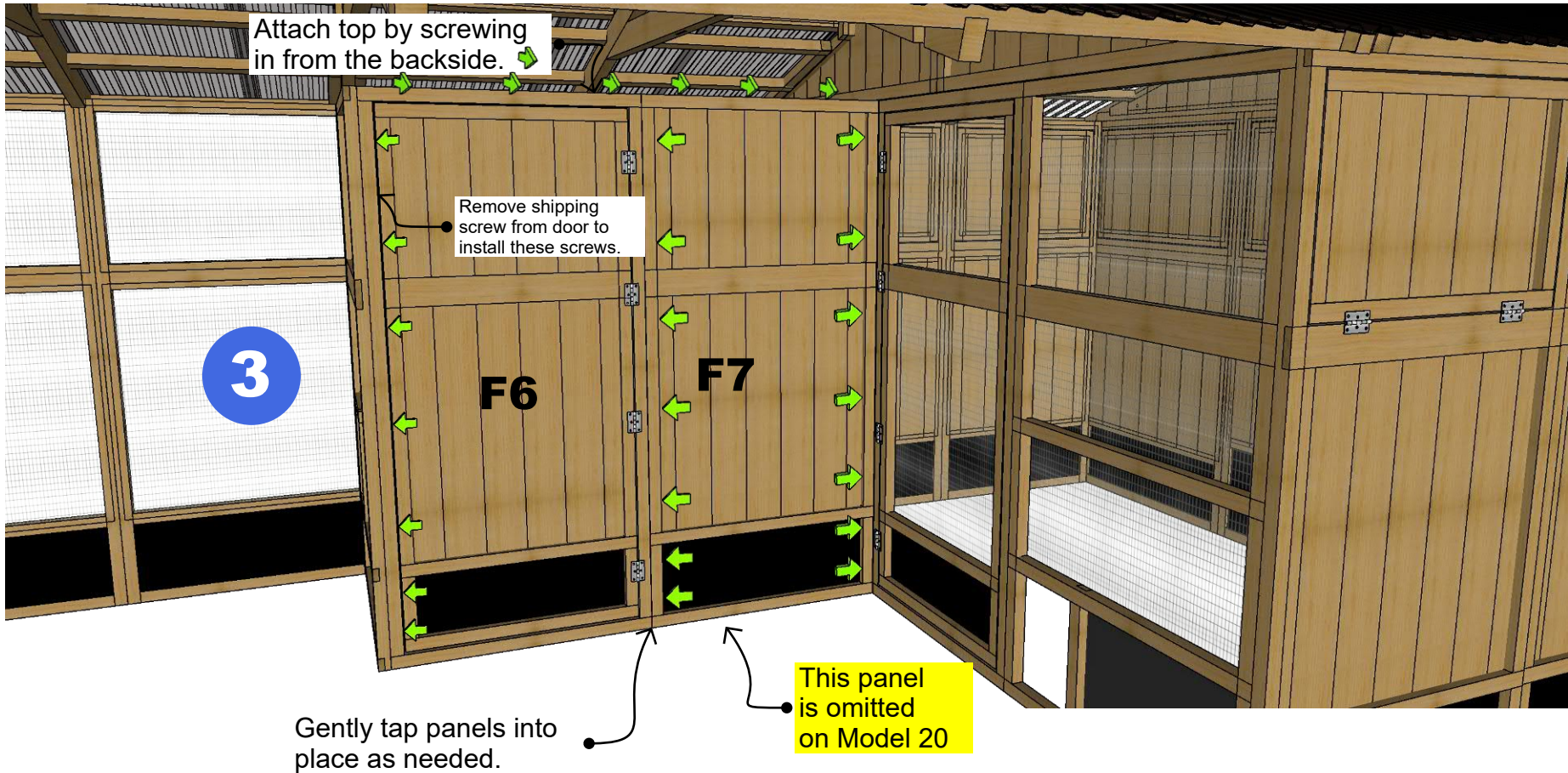


Model 30 Illustrated
(same concept for models 20 and 40)

2 Install the F3 shed ceiling panel wire side up in top of shed. Its to keep chickens out and strengthen walls. Use illustration for panel placement and screw pattern.

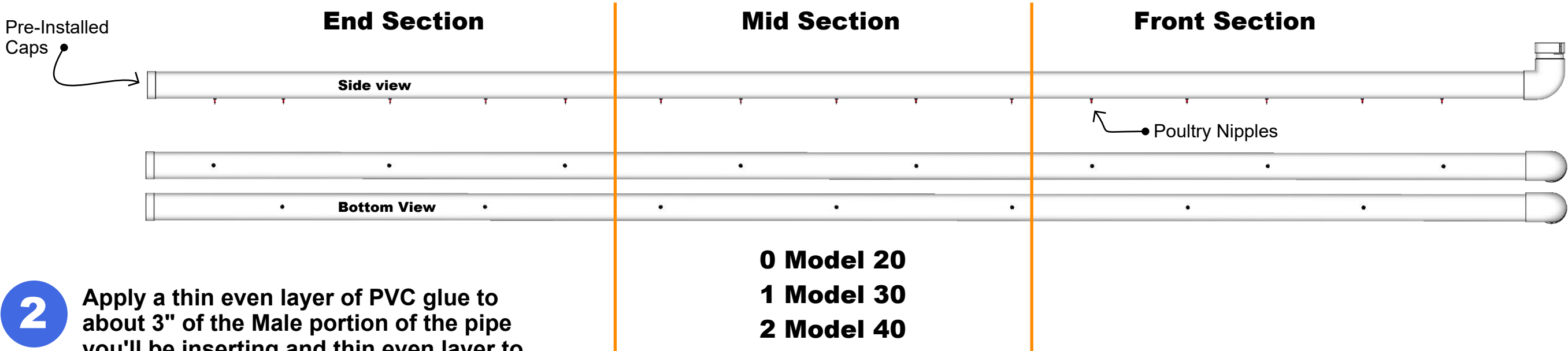


3 Install F6 & F7 panels as illustrated. You may need to try several methods to get panels in between walls as they might be a little tight. Screw pattern is as illustrated.



The dual redundant waterers are delivered in sections because they are too long to ship assembled...

1 Waterers are delivered in 2,3 or 4 sections depending on what coop you purchased. They are sized with the chicken capacity in mind and redundancy in the event a poultry nipple were to malfunction. The idea is the same... you'll be using the included PVC glue to connect mid sections between front and end sections. Best practice would be to pay attention to the poultry nipple pattern and choose the correct middles for the correct end / front combos. See video or photos for gluing procedure. Primer is omitted because waterers are not under pressure.



2 Apply a thin even layer of PVC glue to about 3" of the Male portion of the pipe you'll be inserting and thin even layer to the first 1" of the female pipe section you'll be inserting into.



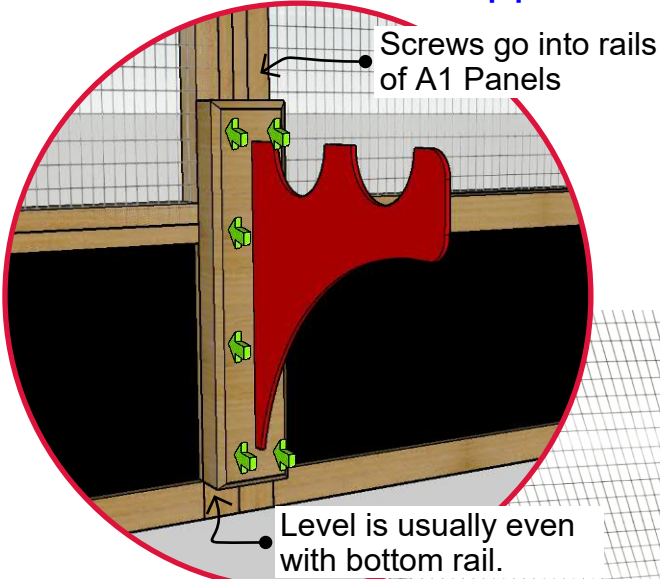
Model 30 Illustrated
(same concept for models 20 and 40 just with fewer or more sections)

3 Within about 30 seconds, insert the male portion of the pipe into the female portion, pushing all the way in, and rotating back and forth about 1/4 turn, ending up with the poultry nipple holes all aligned. We typically drill holes along the wording on the pipe.



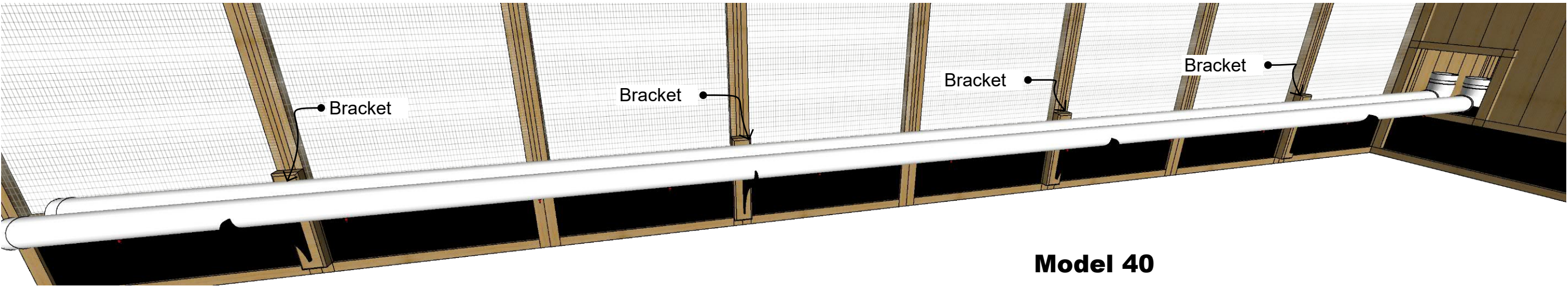
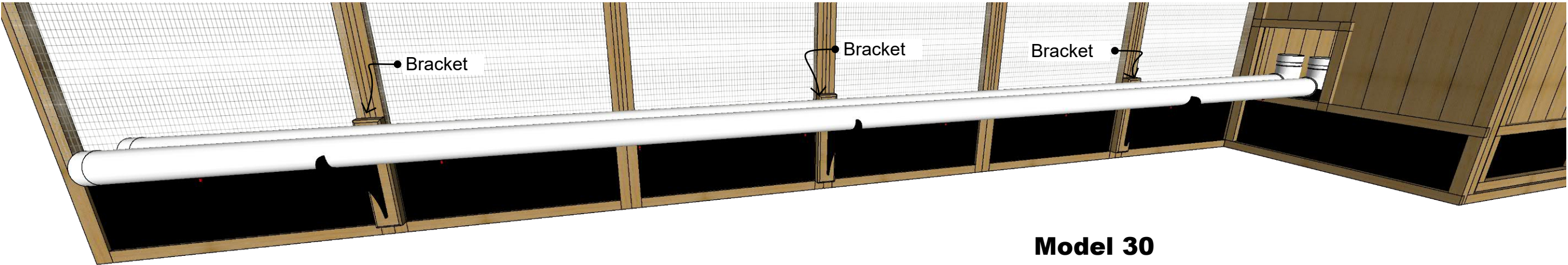
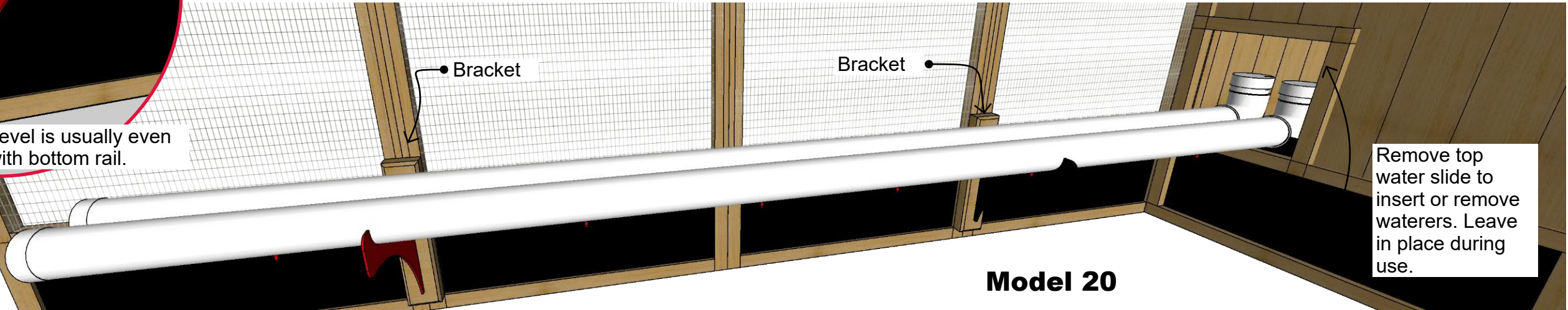
**YouTube
Gluing Video**

Install the waterer support brackets in the positions indicated for your coop... making sure waterer sits level when empty.



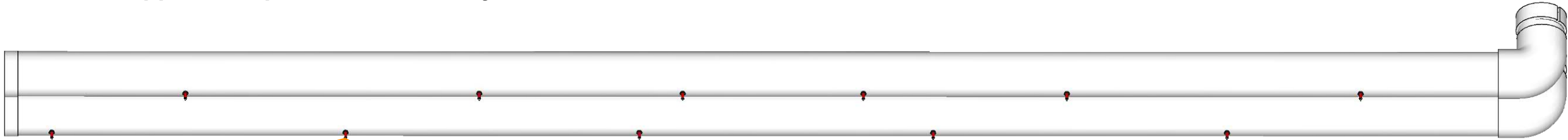
1

Attach waterer support brackets using 8 T25 screws per bracket (water is heavy) as shown in the positions as indicated. Remove the top slide in the front wall of the storage shed rest one waterer in place and using the level install the furthest bracket first and work your way back making waterer level as you go. Replace top water slide.



Install the poultry nipples you ordered with your kit. There are a lot :-)

1 Roll waterers over in their brackets and install all poultry nipples as per the illustrations below. Whether you ordered freeze guard or standard nipples, the process is basically the same.



Standard Poultry Nipple

1st install rubber grommet into holes. Rotate to seat. Use a little vegetable oil if needed to lubricate.

2nd force fit by pushing the nipple into the grommet. Protect your hand with a towel if needed.

Optional Freeze-Guard Poultry Nipple



1 Open included water soluble non-toxic lubricant and dispense a small portion onto your finger.



2 Smear a small amount of lubricant onto upper body of the Freeze-Guard Poultry Drinker™.



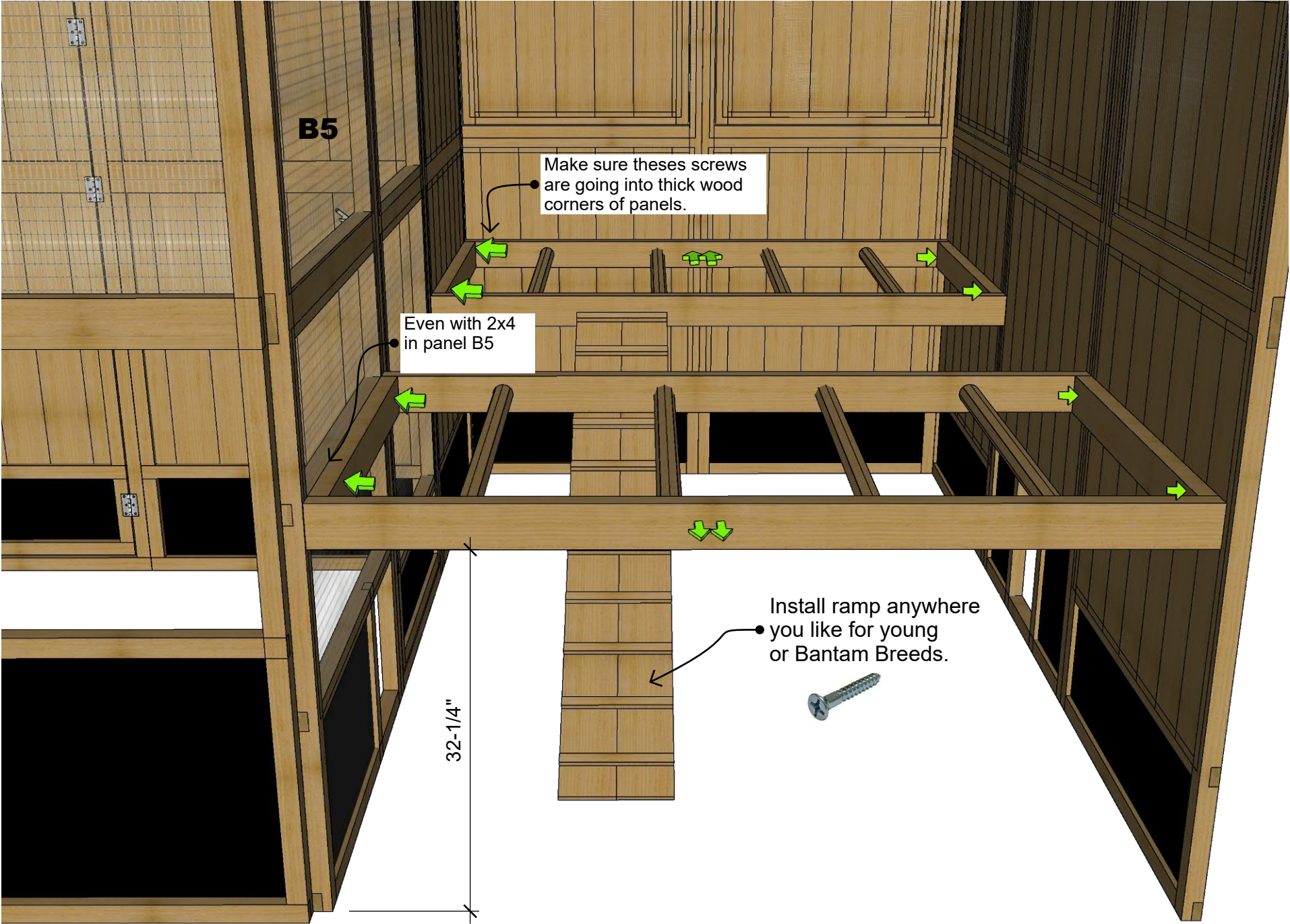
3 Applying even pressure, force Freeze-Guard Poultry Drinker™ into pre-installed black rubber grommet until fully seated.



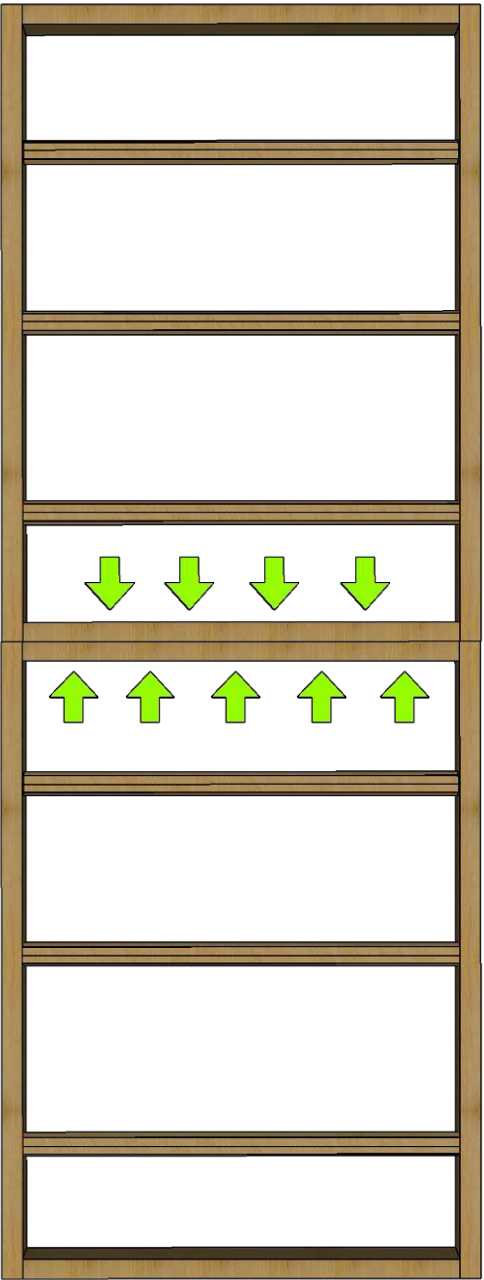
4 Showing properly installed Freeze-Guard Poultry Drinker™. Remove and reinstall using same method if you are taking your waterer out of coop.

1 Model 20 and 30 bunks are one piece units. First assemble Model 40 units (shipped in halves). You can install bunk units at any height you want but we tested the coop with them set at 32-1/4 inches from ground and the ramp length is designed for this. This height is easy for an adult non bantam breed chicken to just jump to with no ramp and is a happy medium for weather protection and ventilation if roost wall doors are dropped down. Whatever height you decide, we suggest they be equally high.

Please pay notice that all screws drive into 2x2 or 2x4 wood. Make level.



Model 40
(ships in two halves)



Model 20&30 Illustrated

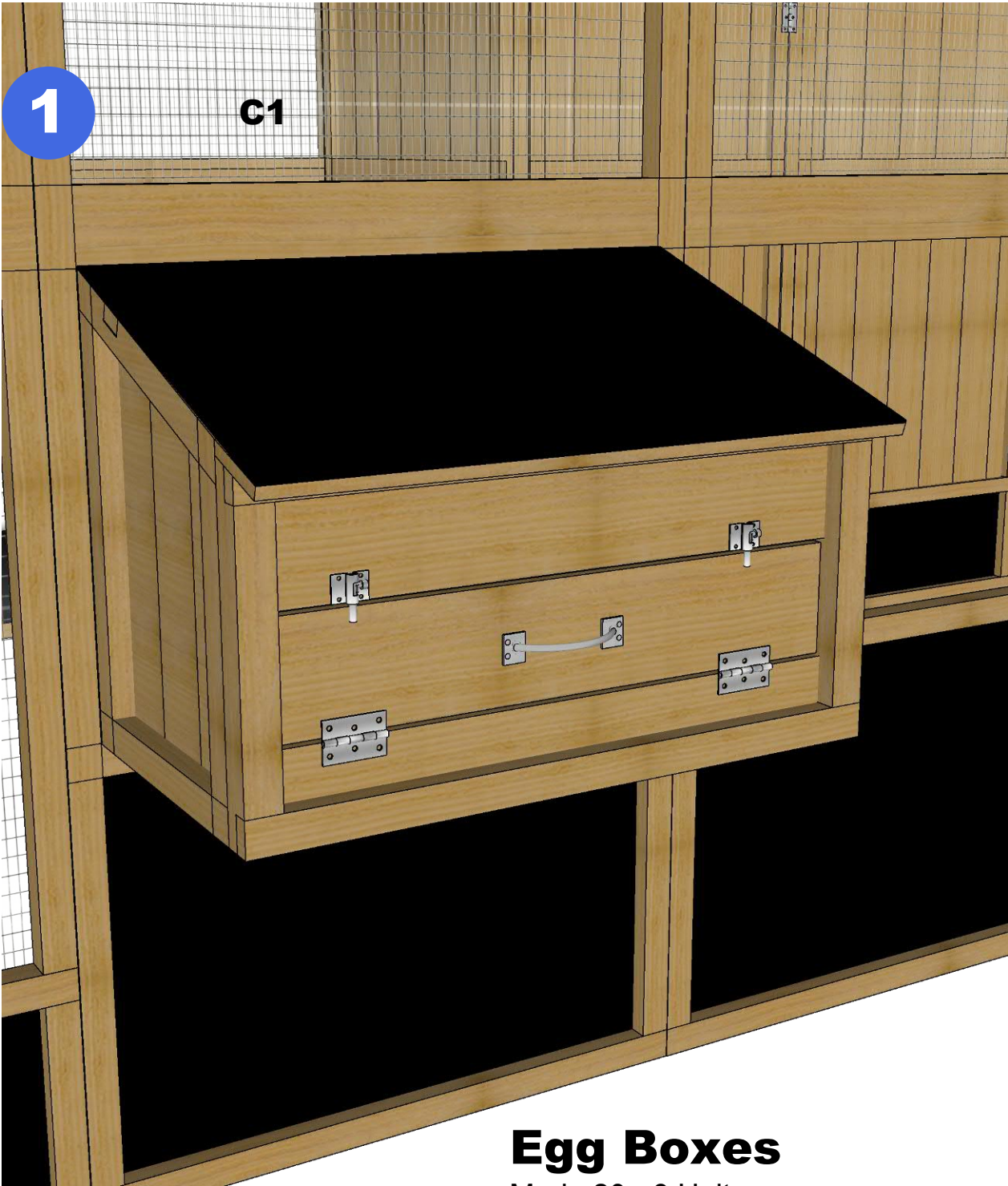
(same concept for model 40 after assembling roost bunk halves)

Egg boxes install as pre-fab assemblies into the openings in the C1 panels...

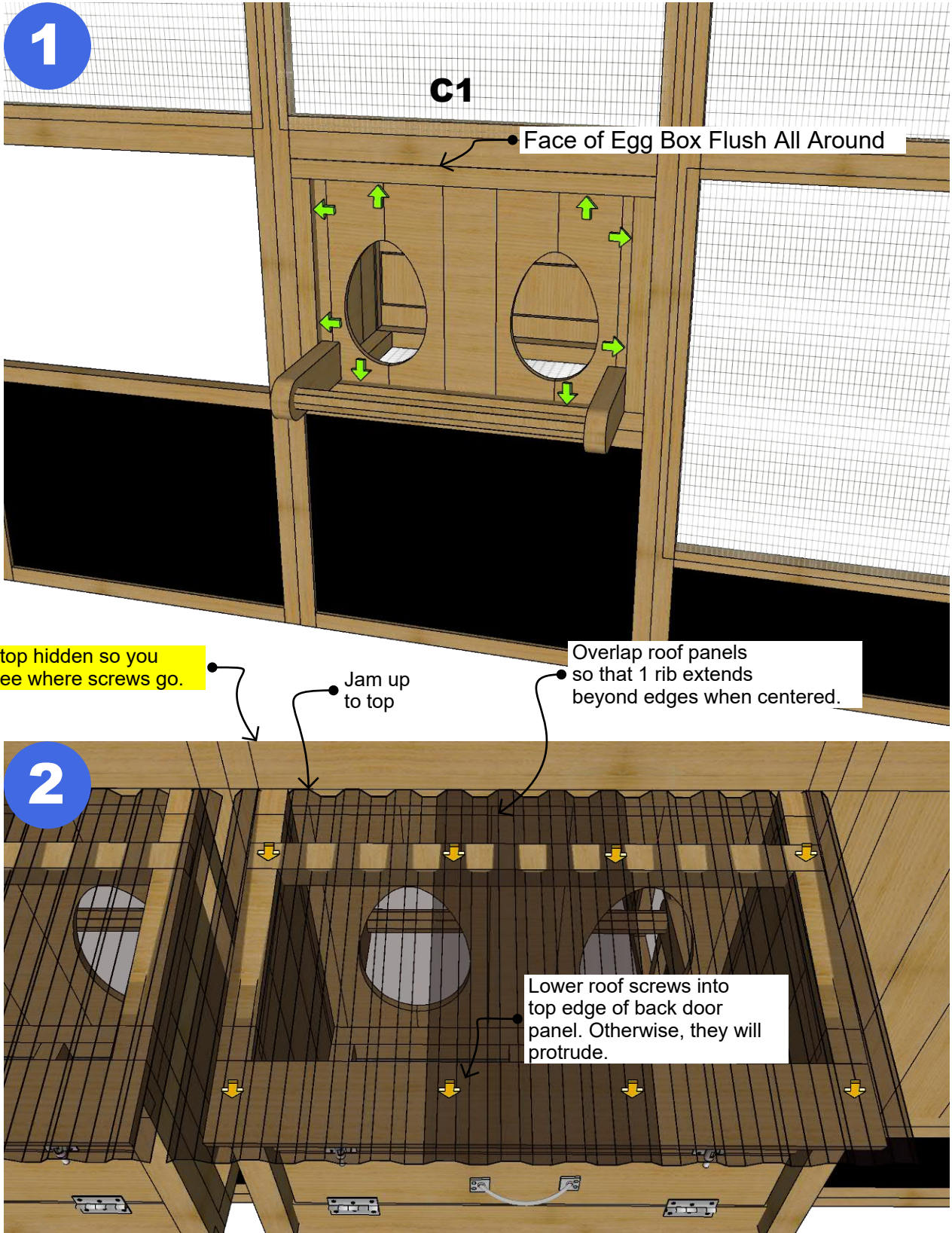
- 1

Insert egg box units into openings in C1 panels mounting them with 6 T25 3" screws as illustrated.
- 2

Install roof panels using roof screws and driving them through dark tops of egg boxes into wood as shown. Dark tops are required so that no light comes in. Chickens will in part instinctively lay eggs in a dark spot. Cozy counts too. Insert provided egg box liners. Liners are designed to be able to clean, and not be so comfy that chickens sleep in egg boxes or get broody. They go in, do their business and make room for the next hen.



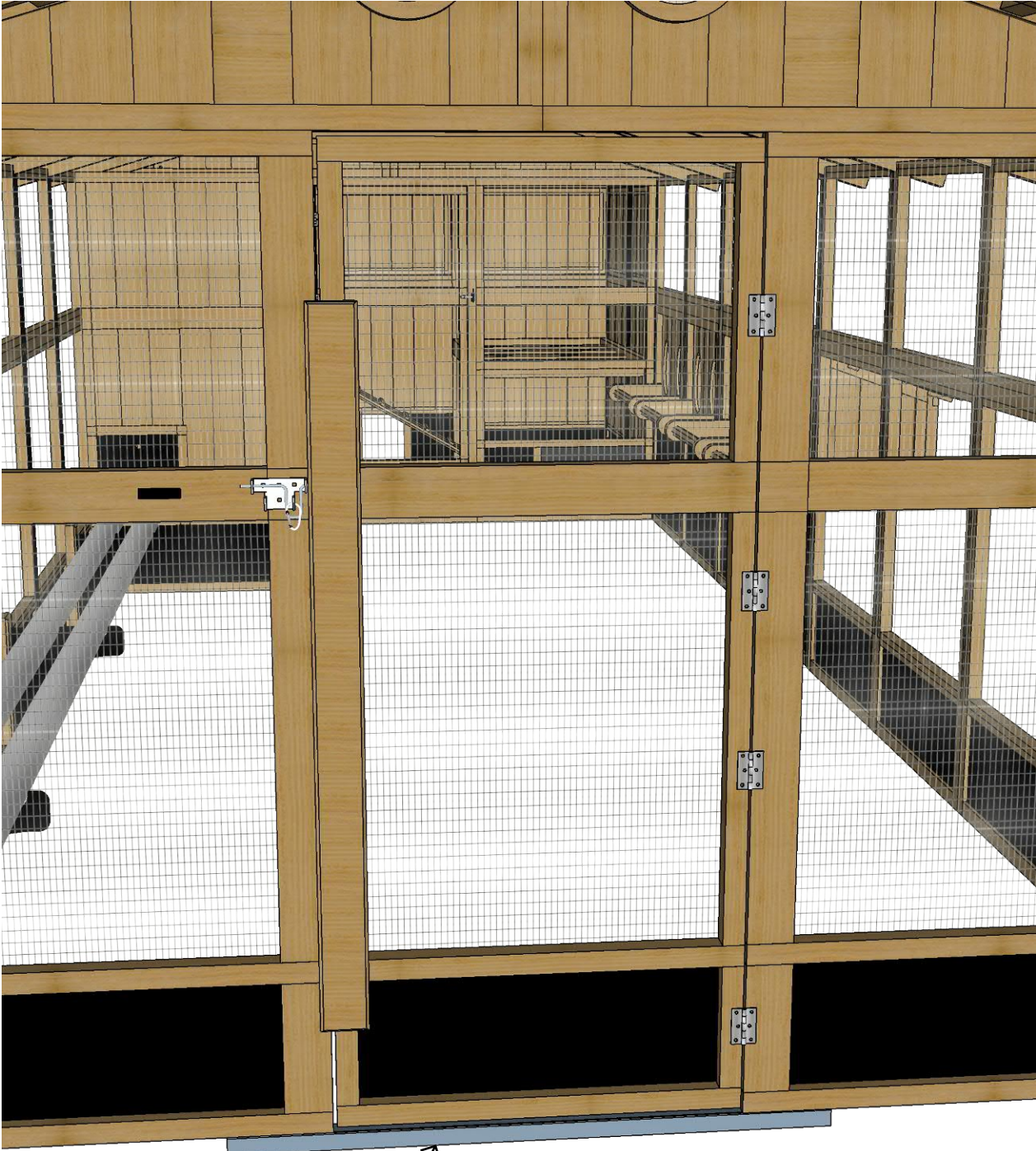
Egg Boxes
Mode 20 - 3 Units
Model 30 - 4 Units
Model 40 - 5 Units



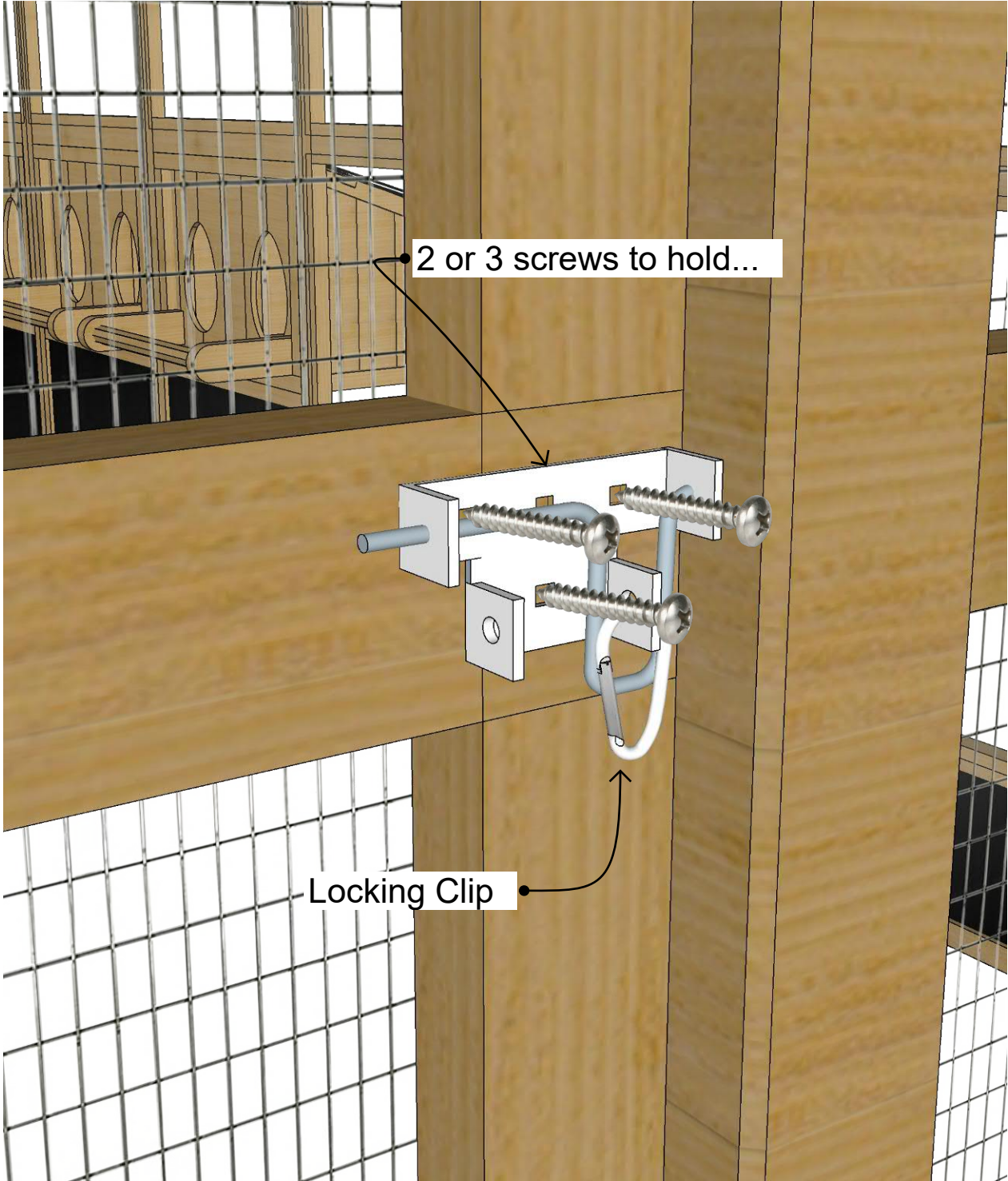
Time to install the front door...

- 1
- Front door hinges are pre-attached to the door and the screw holes for other half of the hinge are pre-drilled in the right door frame. Starting off with the very top hinge and top screw, use provided Phillips head screw and install. Install snug. Switch the bottom screw on the bottom hinge and install and make snug. Switch back and forth from top to bottom installing all screws snugly making sure door stays straight. When confirmed aligned straight, tighten all screws tight, but don't strip out wood by over tightening. Door handle serves as handle, door stop, door stiffener, and catch for gate lock.

Install gate lock with larger pan head Phillips screws as indicated such that it freely goes in and out of hole provided in door handle.



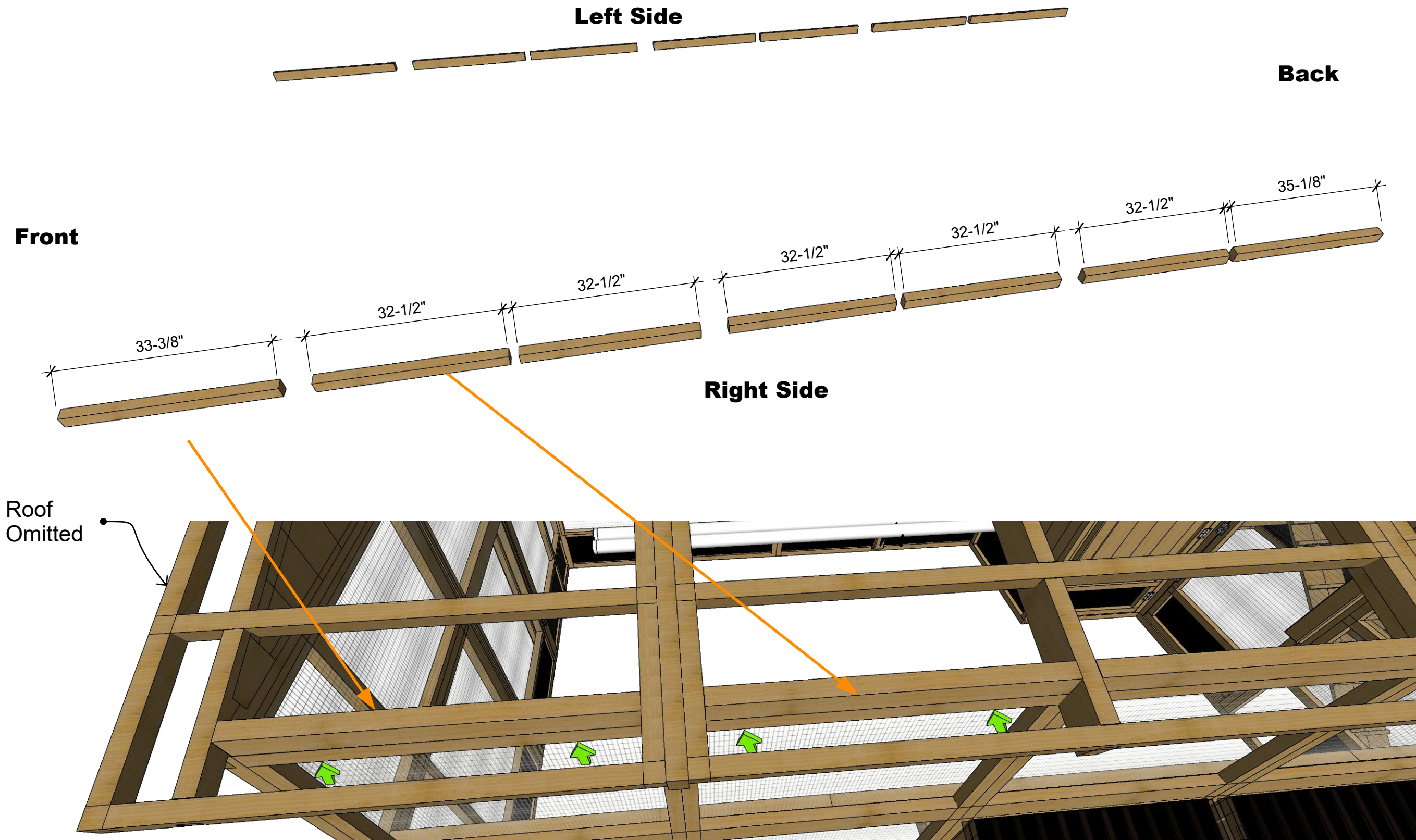
Omitted if on concrete.



Install Bird Stop...

- 1
- Using a tape measure, identify the various pieces of bird stop and install on top of exterior wall panels using T-25 screws as indicated in the positions between trusses and gables. They fit snug. It may require a tap with a hammer. More than taps... you've probably got the wrong piece or it may require a trim.

Beveled edge on tops of boards sit under roof line and flat bottoms on top of walls. Left and right sides are mirrors of each other.

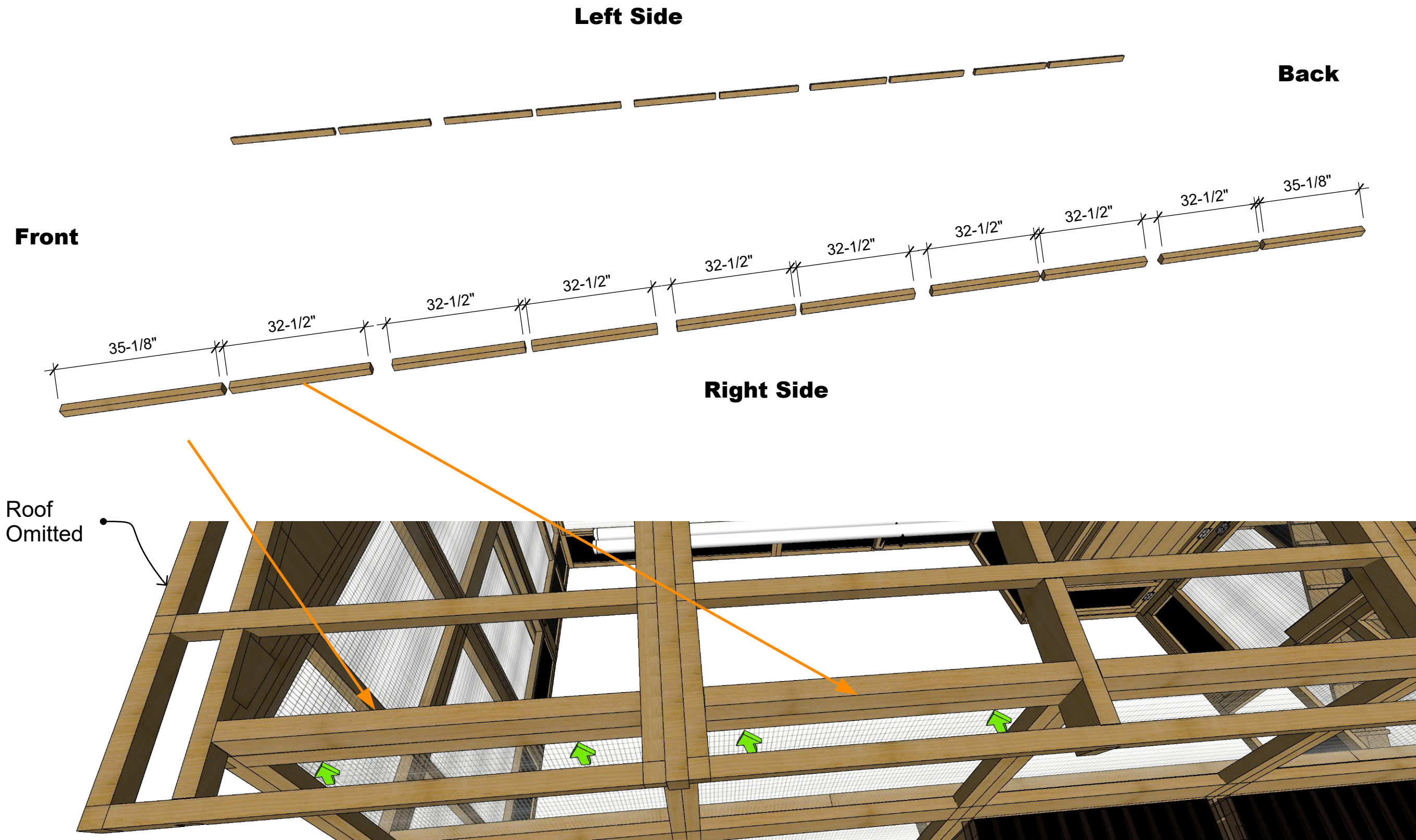


Model 20 shown for screw placement detail...

Install Bird Stop...

- 1
- Using a tape measure, identify the various pieces of bird stop and install on top of exterior wall panels using T-25 screws as indicated in the positions between trusses and gables. They fit snug. It may require a tap with a hammer. More than taps... you've probably got the wrong piece or it may require a trim.

Beveled edge on tops of boards sit under roof line and flat bottoms on top of walls. Left and right sides are mirrors of each other.

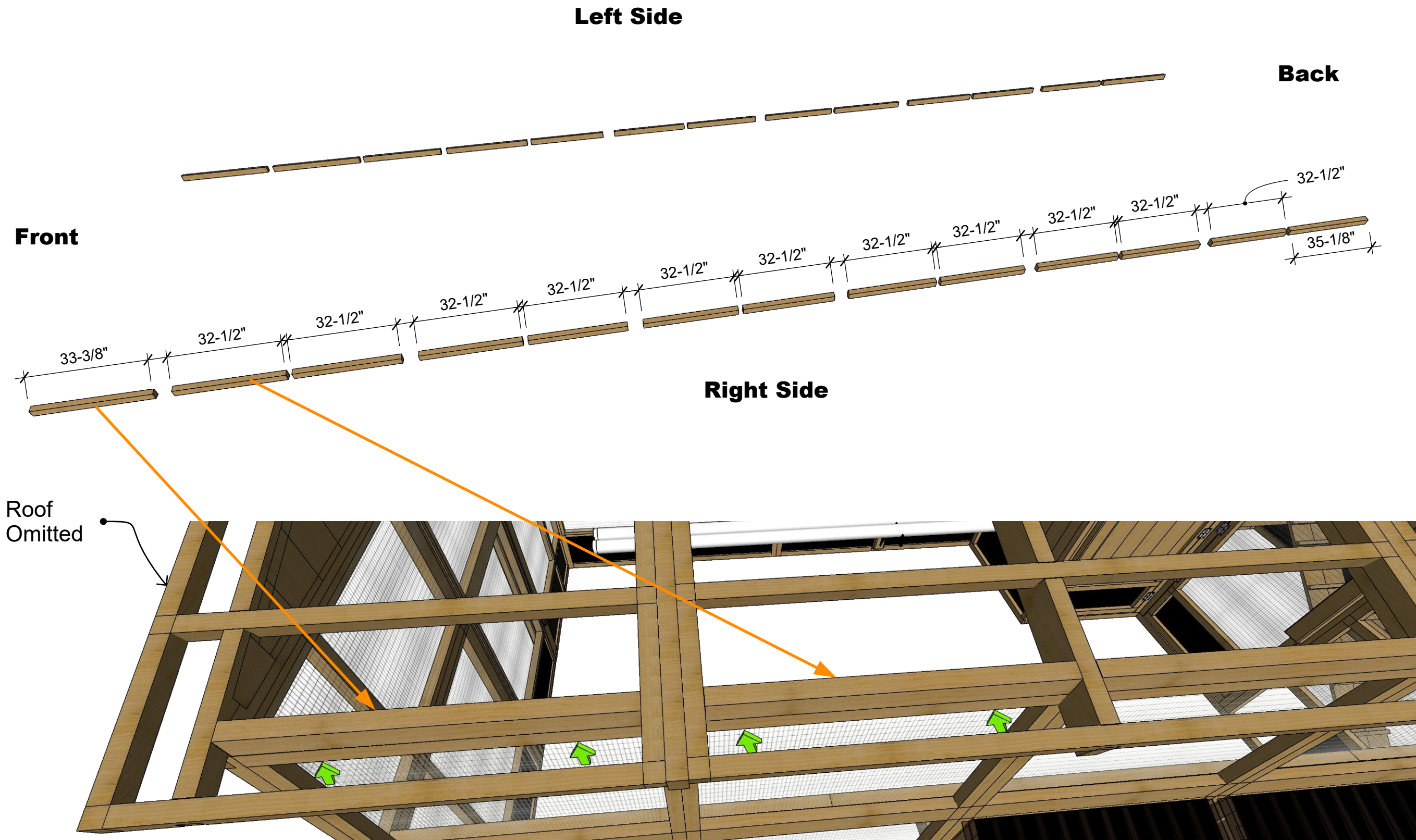


Model 20 shown for screw placement detail...

Install Bird Stop...

- 1
- Using a tape measure, identify the various pieces of bird stop and install on top of exterior wall panels using T-25 screws as indicated in the positions between trusses and gables. They fit snug. It may require a tap with a hammer. More than taps... you've probably got the wrong piece or it may require a trim.

Beveled edge on tops of boards sit under roof line and flat bottoms on top of walls. Left and right sides are mirrors of each other.



Model 20 shown for screw placement detail...

Your coop comes standard with two high quality automatic doors...

Operating Concept - See provided manufacturers instructions for details, but here is an overview. Two doors are provided, one for the roost back and one for the roost entry. Both doors are outfitted with photo sensor eyes. If the program to the doors are not modified, they will each open automatically at sunrise, and then perform a close at sunset with their "second chance" function. Idea of back door is a turnout door, and front door as a second line of dense to a predator. This arrangement could also allow you to grow out one set of younger birds in the coop, and turn out older birds during the day. Both doors are operated by one battery and a solar panel to keep the battery topped off.

Kit Contents:

- (1) *5W Solar Panel* - attached wire in loom | bracket | two rare earth magnets
- (2) *Right Hand Swing Doors* - attached wire loom (model 40 back door 3' longer)
- (1) *SLA Battery* - included battery box
- (25) *Wire Clamps* - includes clamps and screws
- (2) *Factory Hardware Envelopes* - programming magnet | instructions | screws | fuse

You cannot let the rare earth magnets used to hold the solar panel in place to touch each other. They're powerful and often shatter if allowed to hit each other and can pinch your finger to the point of bleeding. They attach to the solar panel bracket through the roof and allow it to be held in place without drilling any holes in the roof.

- 1

Install each door in the indicated positions using the included manufacturers provided mounting hardware and for the moment carefully lay the wire on the ground next to each door.

Do not overtighten screws such that a bind would be placed on the doors but make them only tight enough to be firmly held in place.



Door Outside Coop On Back Wall



Door Inside Coop On Mid Wall

2

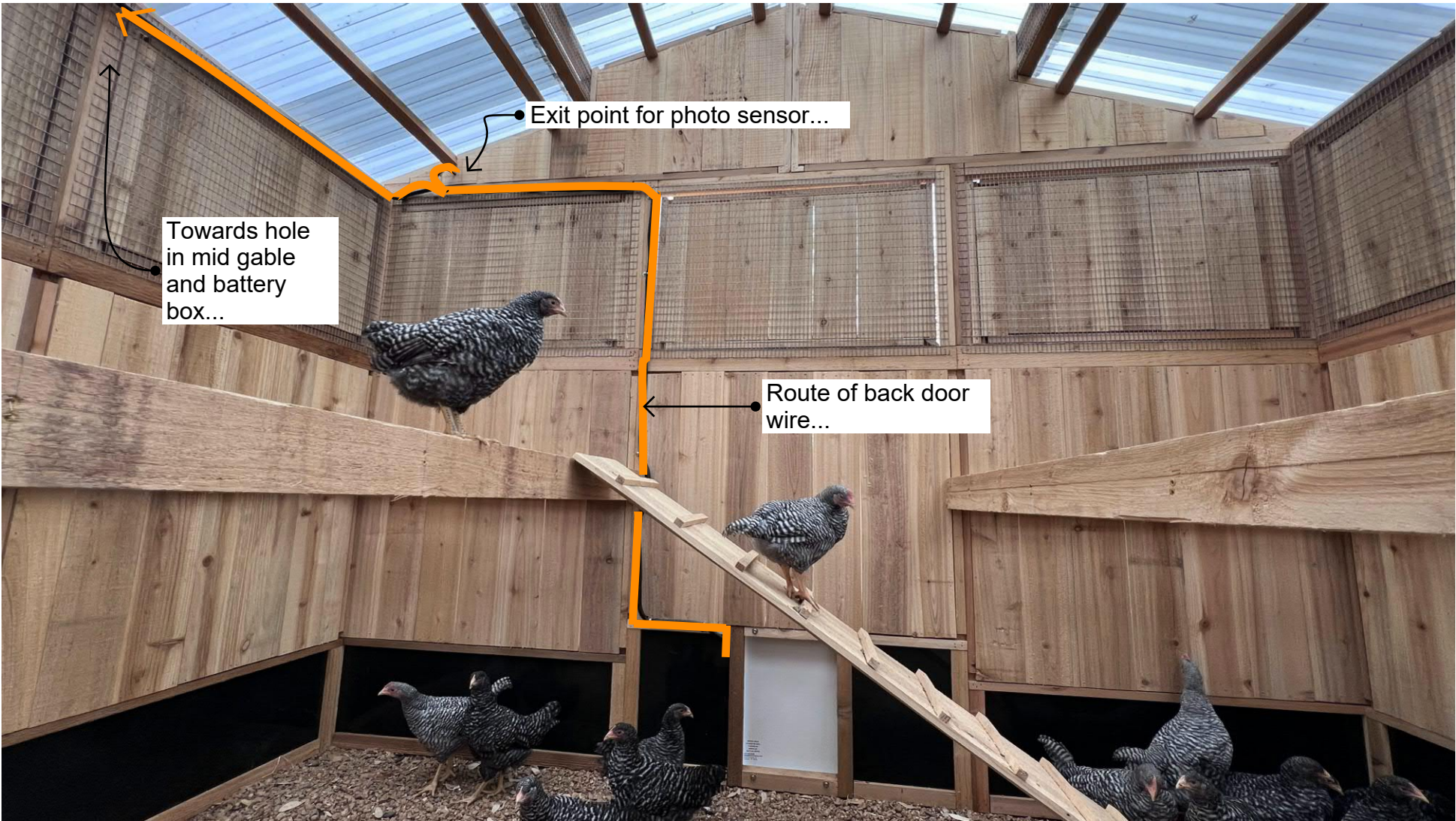
Route the wire on the back door first through the hole in the right black panel (illustrated) and then up and along the wall towards the location that the battery box is situated.

At about the 7' mark the photo sensor eye exits the main wire loom. Place it through the hole in the Back Gable as illustrated so that it can get outdoor light.

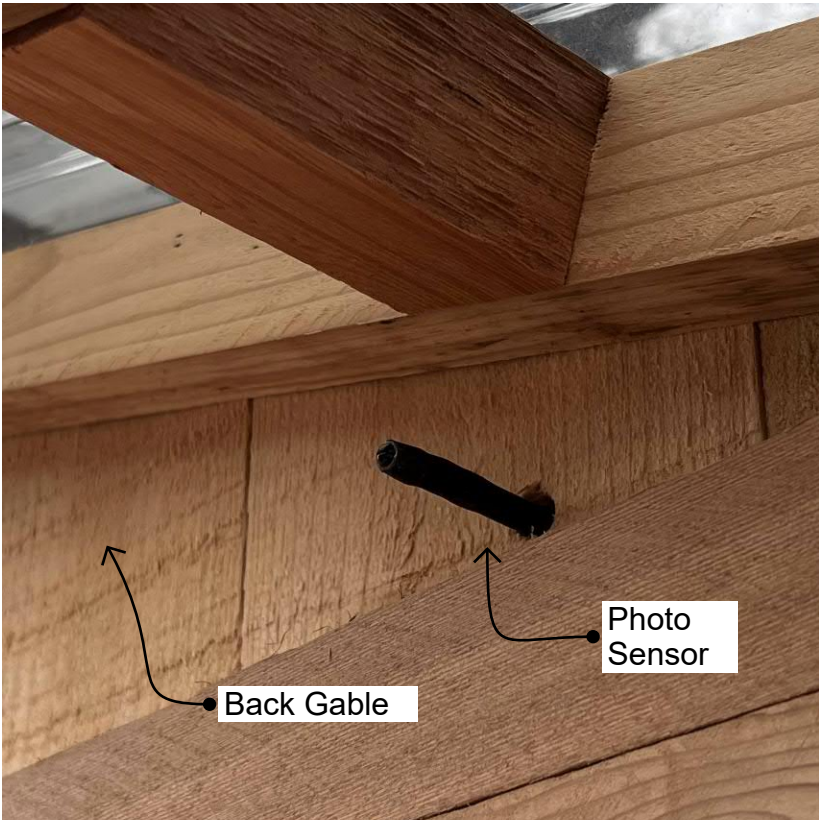
Use a clamp every 24" or so and in corners to hold the wire in its loom firmly.

See collection of illustrations and photos.

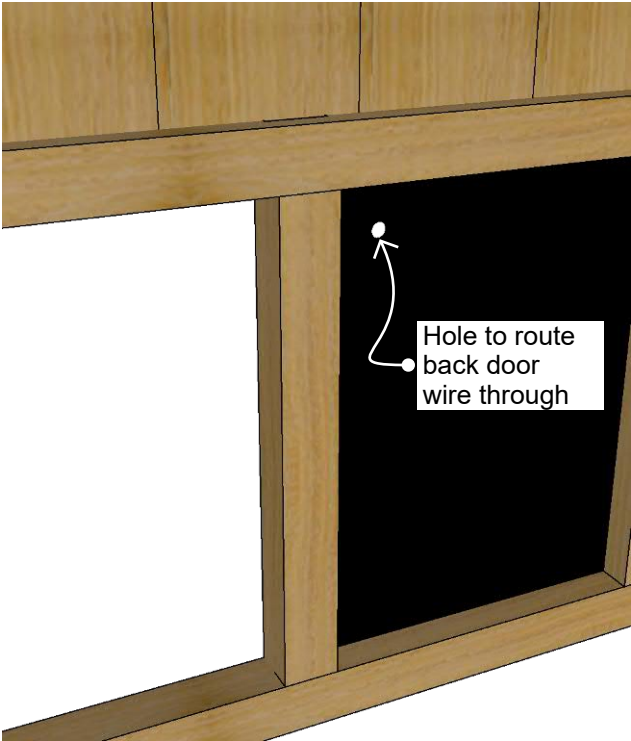
Be a little bit gentle pulling the wire so as not to break it.



Back door photo sensor exit point...



Battery box sits on top of shed ceiling...



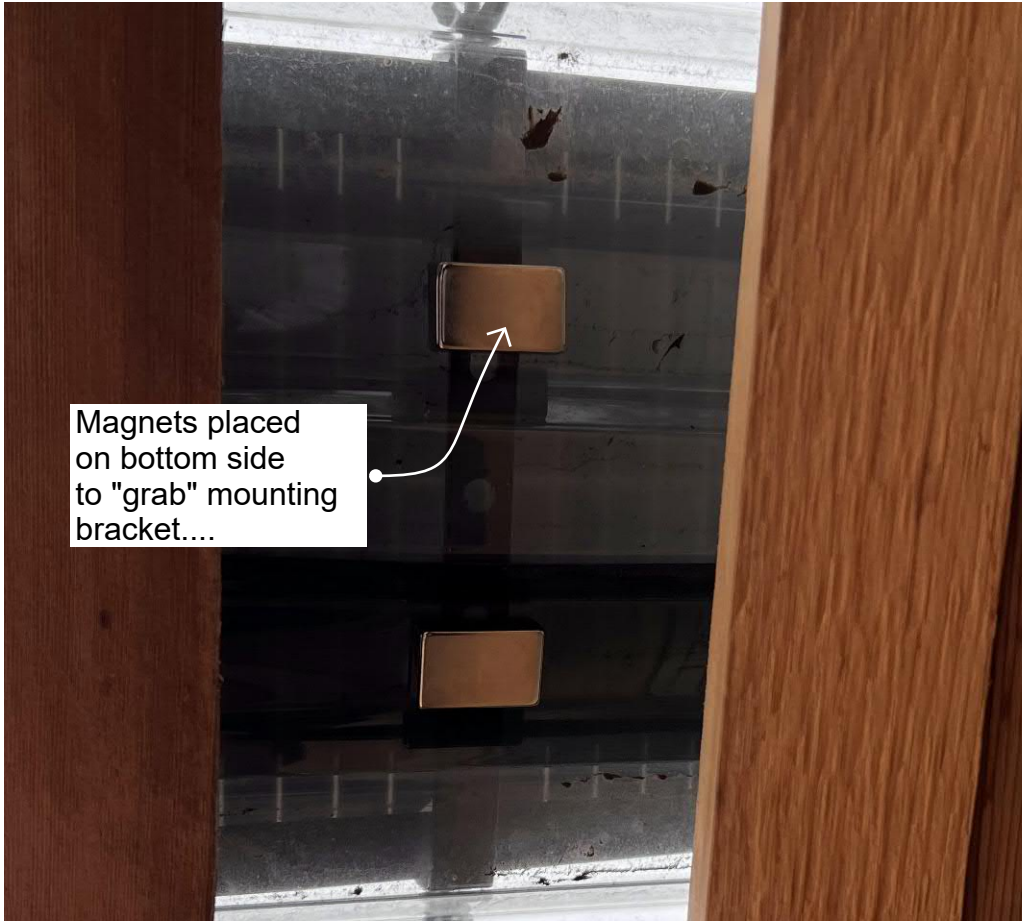
3

Route the wire for the mid door as indicated and then up and along the wall towards the location that the battery box is situated. At about the 7' mark the photo sensor eye exits the main wire loom. Place it through the hole in the side of coop as illustrated so that it can get outdoor light. Use a clamp every 24" or so and in corners to hold the wire in its loom firmly. See photos to assist you. Be a little bit gentle pulling the wire so as not to break it.



4

The solar panel is held in place by magnets. Route the wire of the solar panel under a roof rib near the battery box and lay on roof where it faces the sun. From the underside, attach two of the rare earth magnets under the roof where they magnetically hold the solar panel bracket in place. Make sure the bracket is a little bit loose so that it lays down flat on roof ribs and allows the magnets to get a full "grab" on the bracket.



5

Attach Negative Wires - (1) attach the black wire piggy back terminal connector of the solar panel to the negative terminal of the battery. (2) connect the piggy back black wire of one of the doors to negative side of solar panel piggy back. (3) connect remaining negative (black) wire from second door to negative side of battery too.

6

Attach Positive Wires - (1) Attach the red fused lead provided to the positive terminal of the battery. (2) attach the red wire piggy back terminal connector of the solar panel to the fused lead terminal. (3) connect the piggy back red wire of one of the doors to positive solar panel piggy back. (3) connect remaining positive (red) wire from second door to positive side of battery too. **Don't let wires of solar panel touch each other once it is placed in the sun as it is producing electricity.** Excess wire can be rolled up and carefully stored inside of battery box.

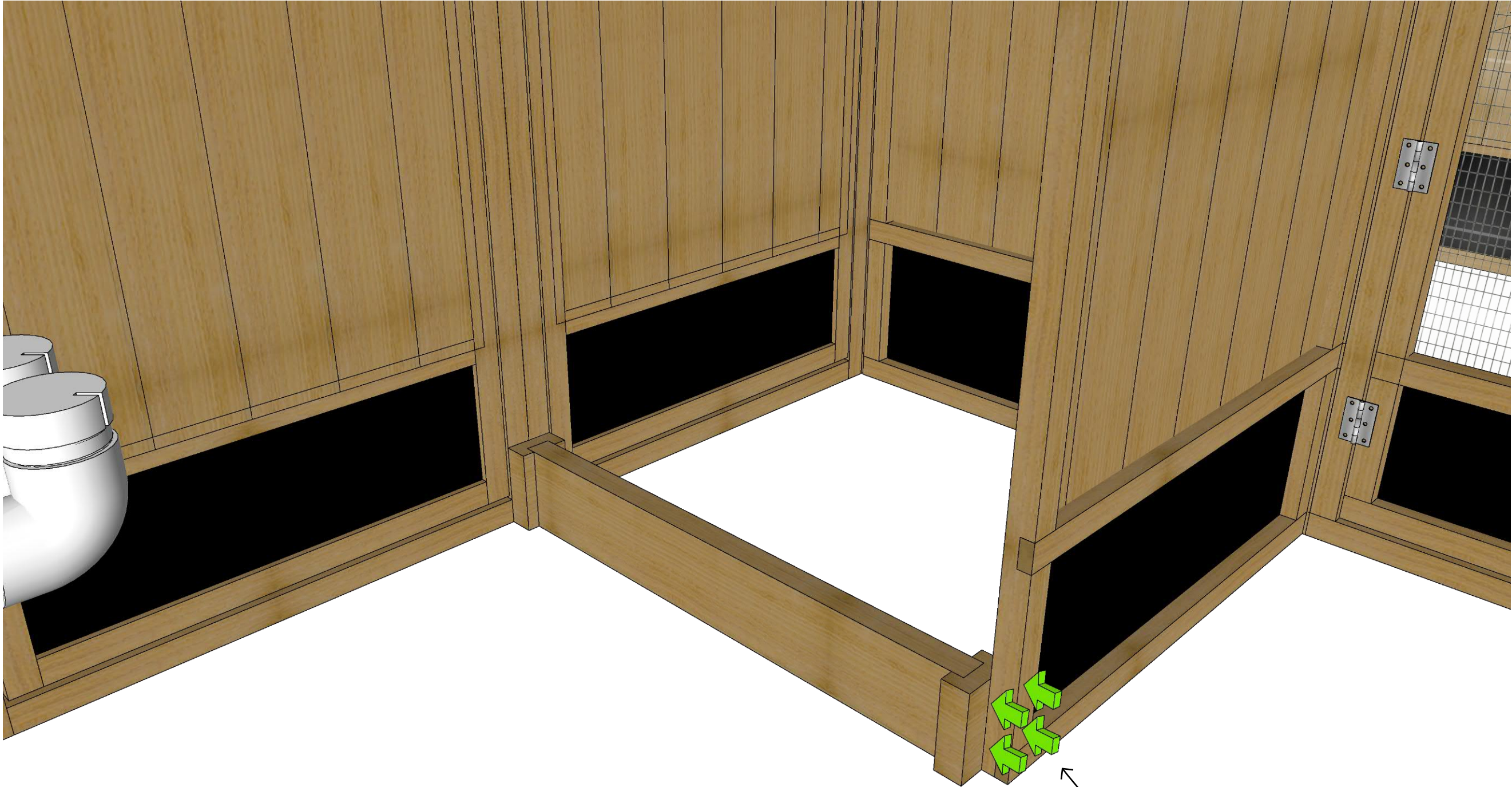


Piggy Back Connector

To operate doors follow the instructions as provided by the manufacturer. You can also go to www.chickendoors.com

Install optional shed wall stabilizer...

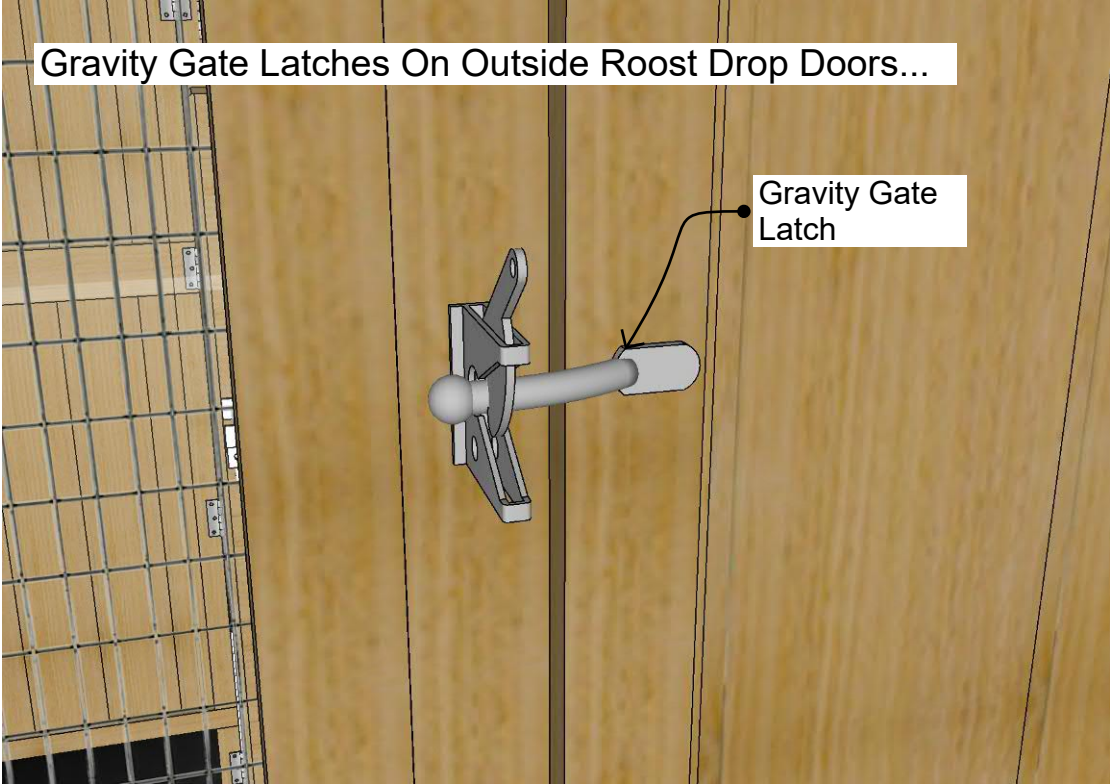
- 1
- If you poured a footer under the shed walls and plan to or have screwed the shed walls to the footer, this stabilizer strut can be omitted. Otherwise we recommend installing the illustrated stabilizer between inside and exterior shed wall in the middle to add additional stability. Use 3" T-25 Screws as illustrated.



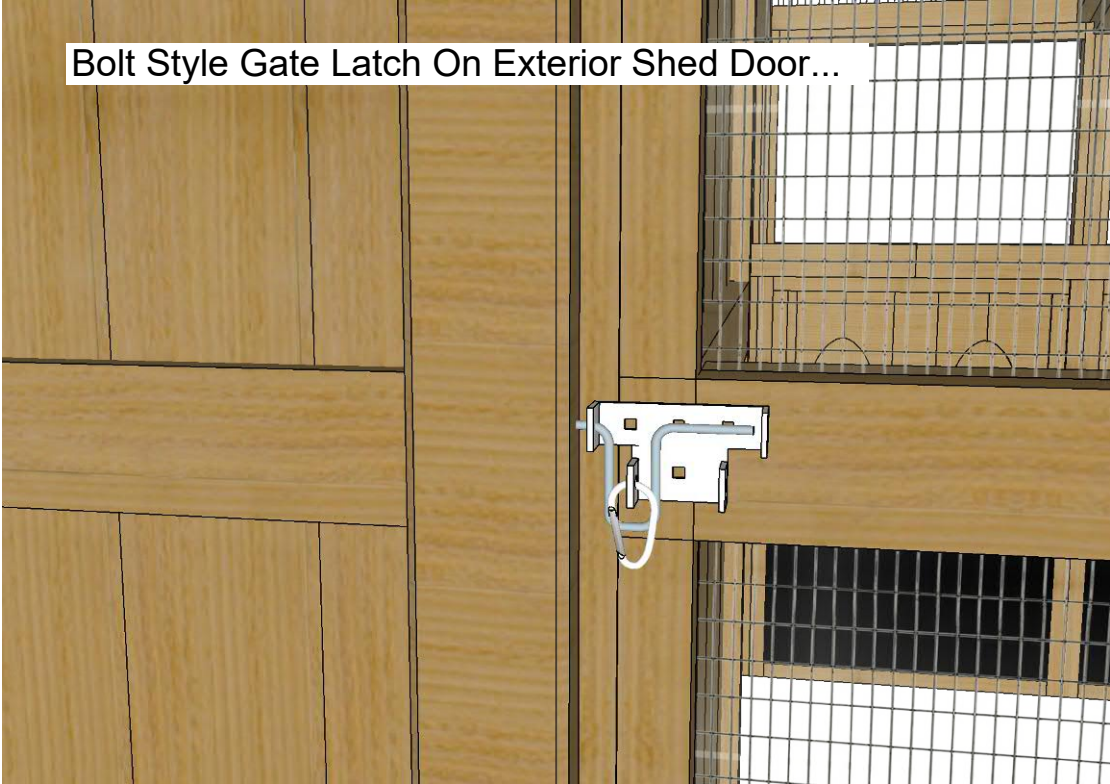
Walls omitted for clarity.

Same screw pattern from other side too.

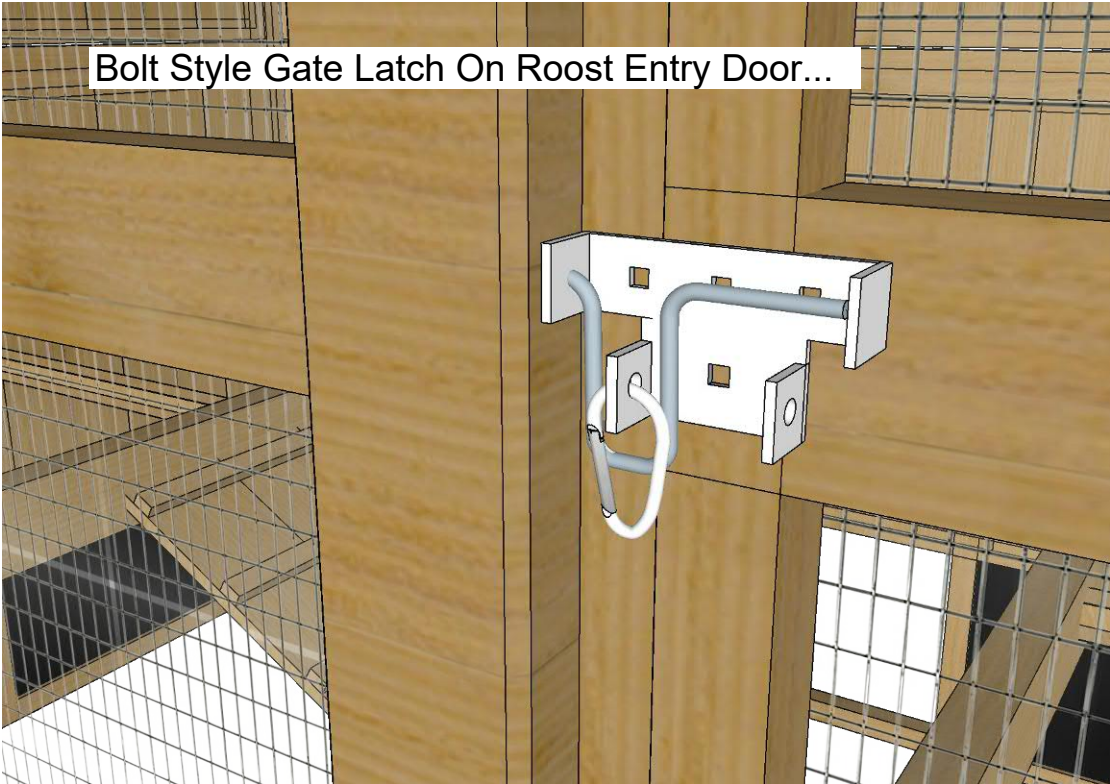
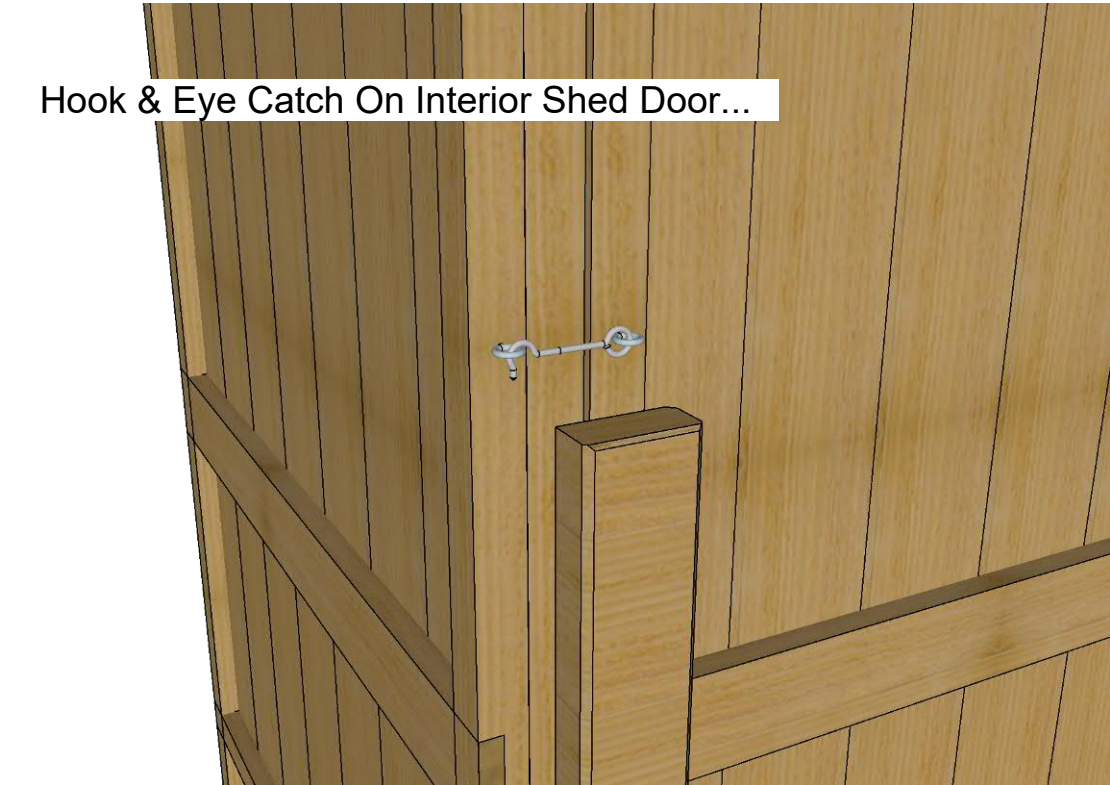
Install the various door latches as required. Align for smooth operation...



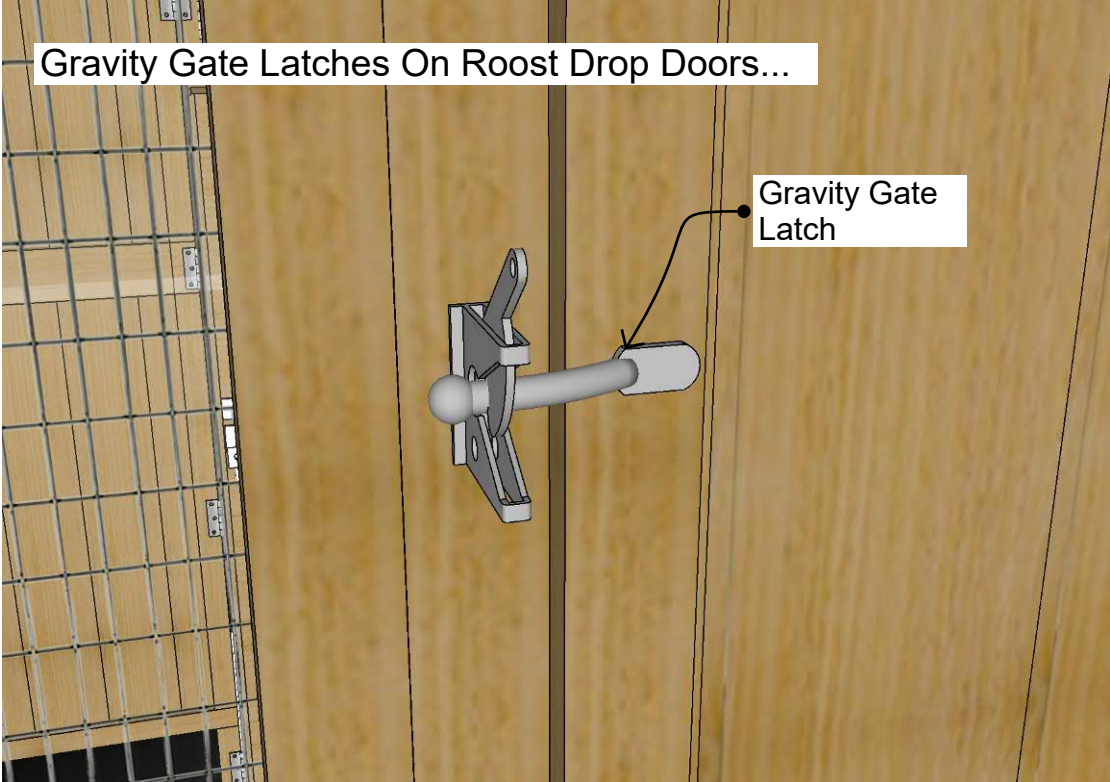
Smaller pan head screws are for gravity gate latches.



Larger pan head screws are for bolt style gate latches.



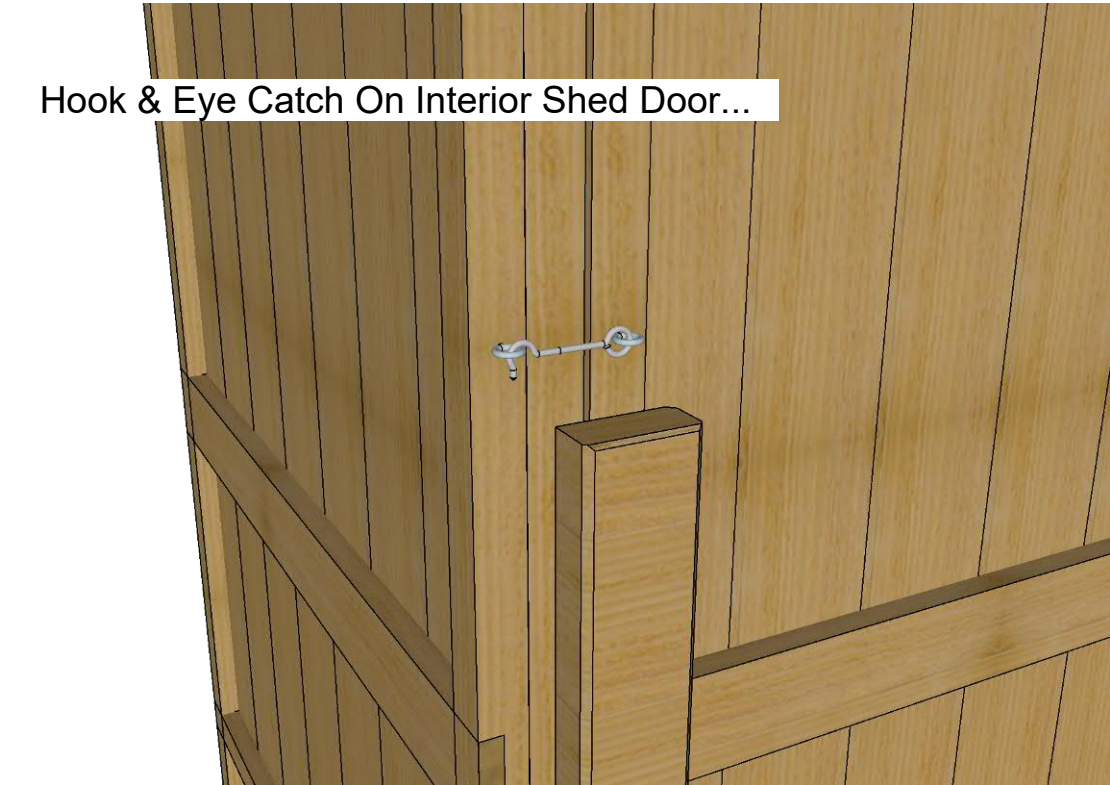
Install the various door latches as required. Align for smooth operation...



Smaller pan head screws are for gravity gate latches.



Larger pan head screws are for double door gate latch.





The included SockIt Box is attached the shed wall above the waterers. It is designed to give a safe out of the way place to connect an extension cord to two NOT PROVIDED immersible water heaters that your waterers will accept. See our website or call to learn about what heaters will be good for your model and your area. If you do not live somewhere where you expect to want to heat the water, you may omit.



Your coop comes with either one or two Coop Worx bulk feeders. Instructions for assembly, adjusting the height of the legs, and usage are included in the manufacturers box.

It is normal for some feed to spill onto the ground and it gives the chickens some pecking to do. But this feeder is dry, holds a lot, has sufficient feed ports, and is very rodent resistant.

Optional Storm Panels Concept Overview

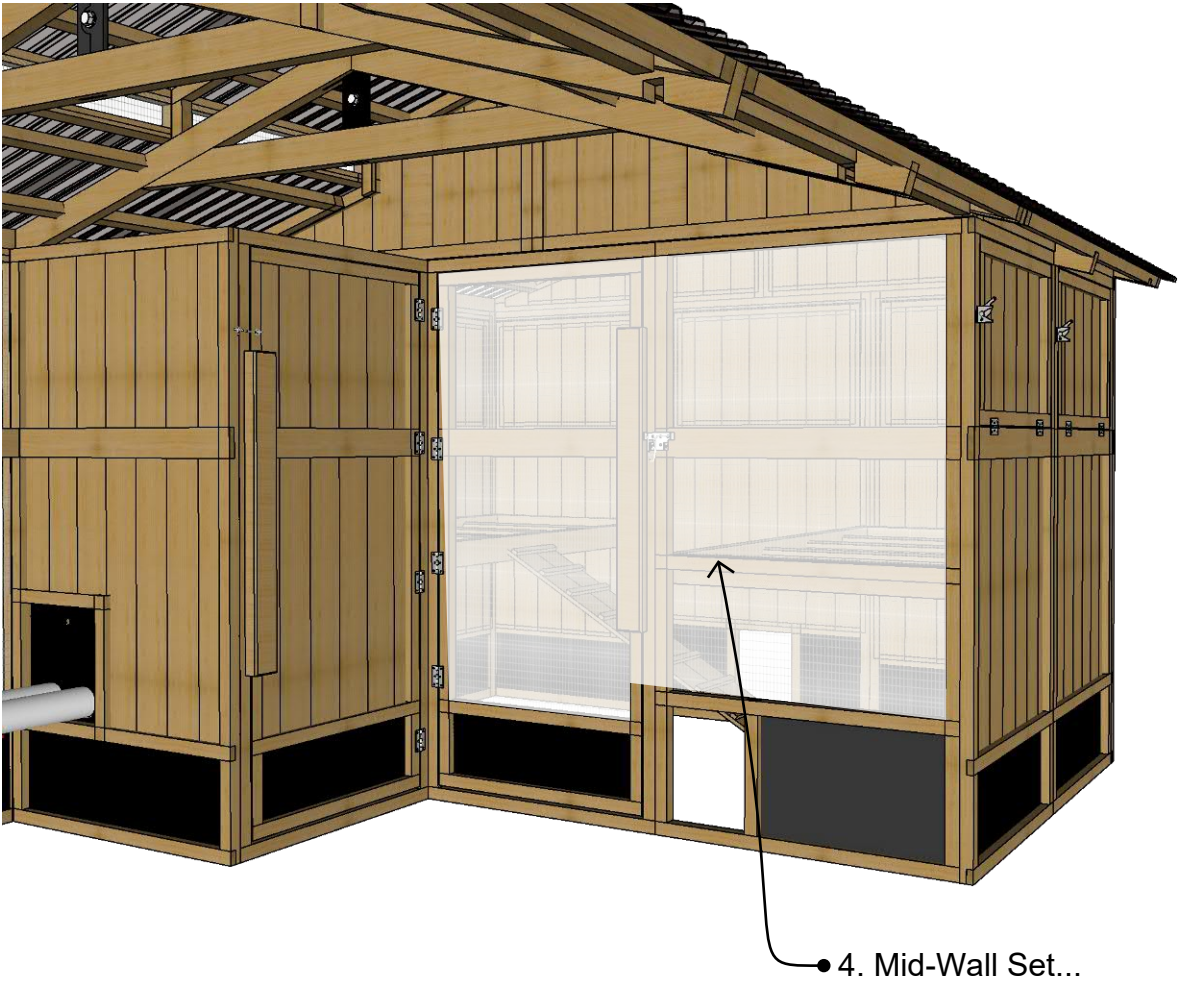
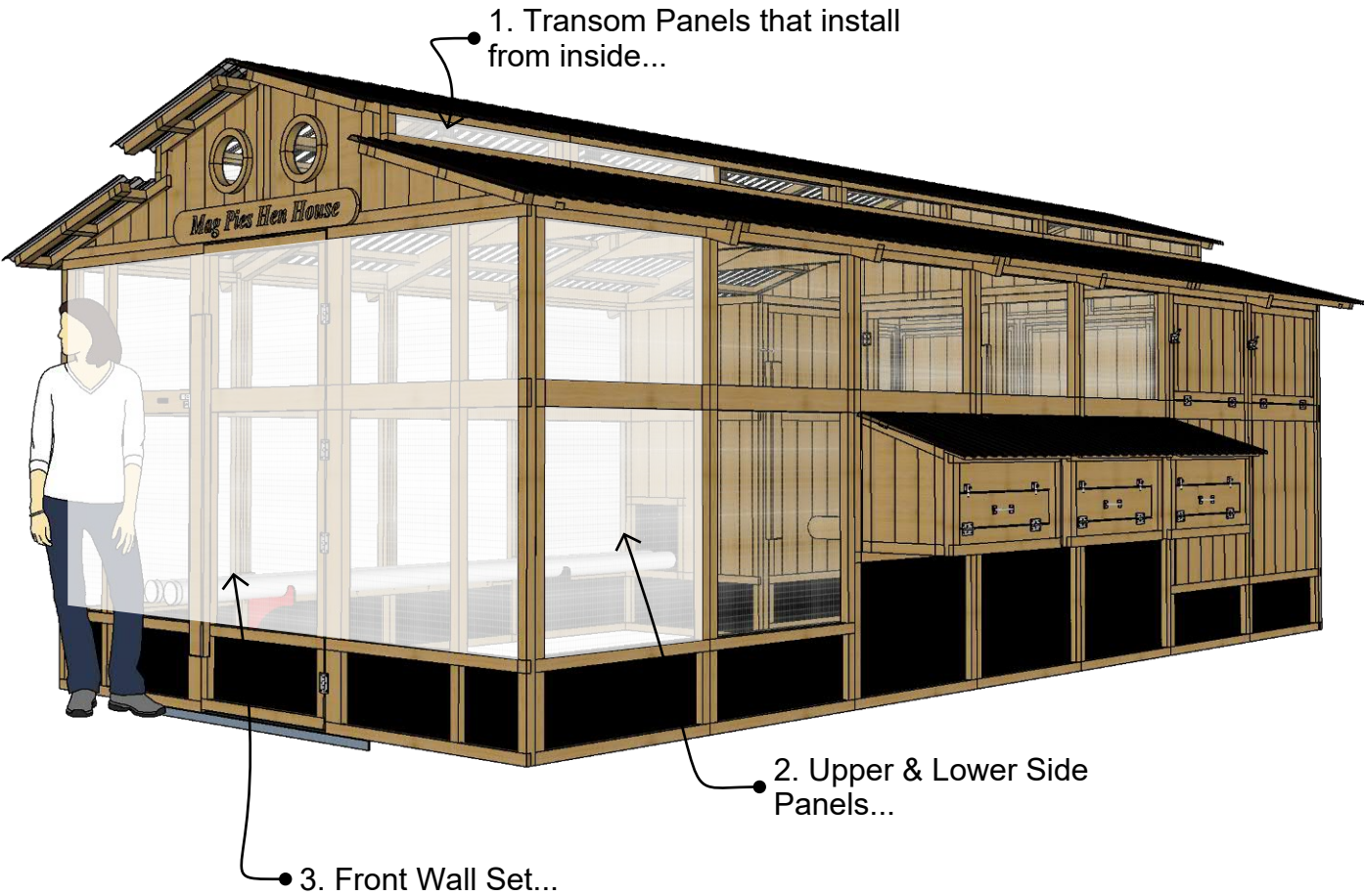
The primary purpose of storm panels is sub zero wind protection and helping to keep snow accumulation inside your coop to a minimum. They can also be used in regions that recieve monsoon wind driven rains to limit wind driven rain as well. We focus on "cold" in these instructions, but for whatever reason you decide to use the panels, the procedure is the same.



It's key to remember... regional appropriate adult chickens are very cold hardy. Your first move when nights begin to dip below about 20°F in the fall is to control the weather in the roosting compartment at nighttime with the flip up doors on roost panels. Each year your chickens will go through a process to add winter feathers. If you interfere too much with protecting them from the cold they will not add as much protection as they naturally would. Wet Sub-Zero conditions is mostly what you're trying to protect from... and undesirable accumulations of too much snow that creates too much of a mess. Chickens that are mostly dry and who can seek wind protection can easily deal with even sub zero temperatures. Sub -20°F temperatures for fully feathered adult chickens is where the needs begin to protect from frostbite. Every year we talk to customers whose chickens make it through even several nights of -30°F without dying. If you expect weeks of sub -20°F temperatures that don't warm up during the days you would want to take some measures to provide supplemental heat. **ONLY USE HEATERS AS A LAST RESORT AND ONLY HEATERS THAT ARE DESIGNED FOR CHICKEN COOPS.**

* If you live somewhere with a long cold season you may also want to research the deep litter method of creating warmth in the winter.

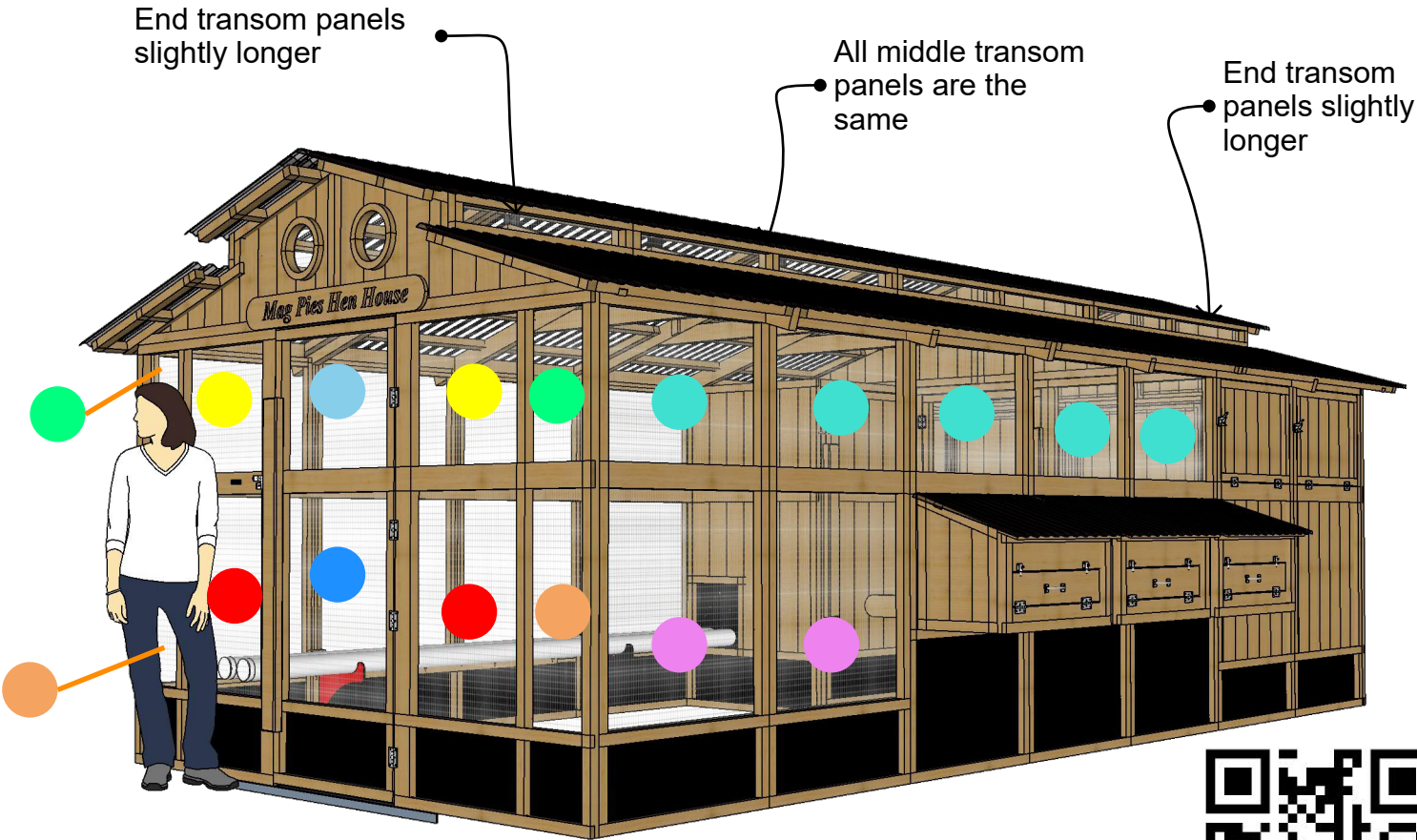
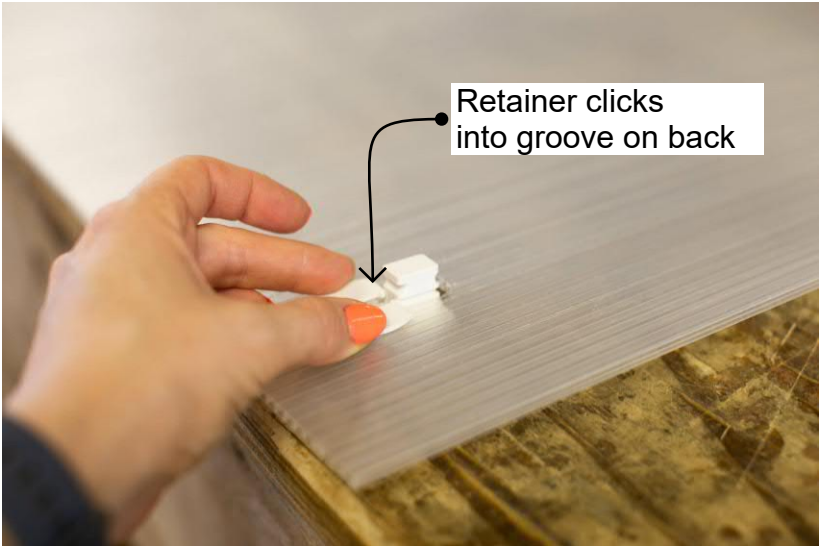
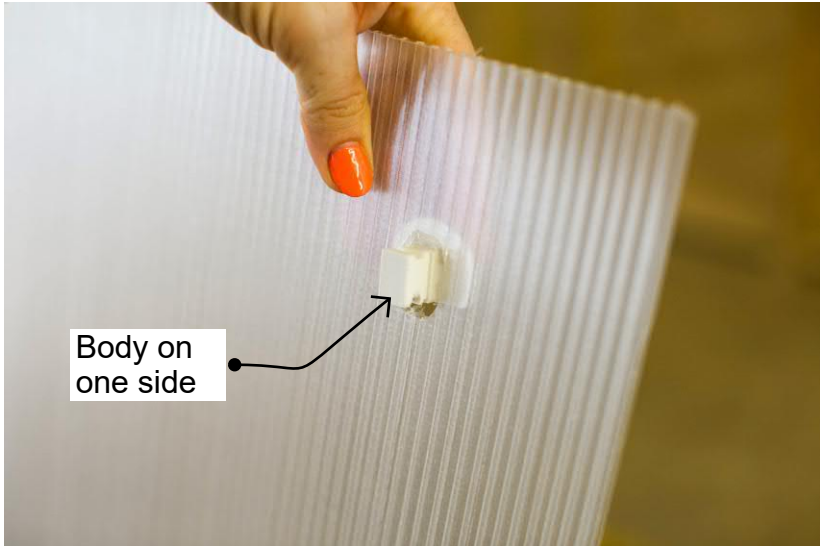
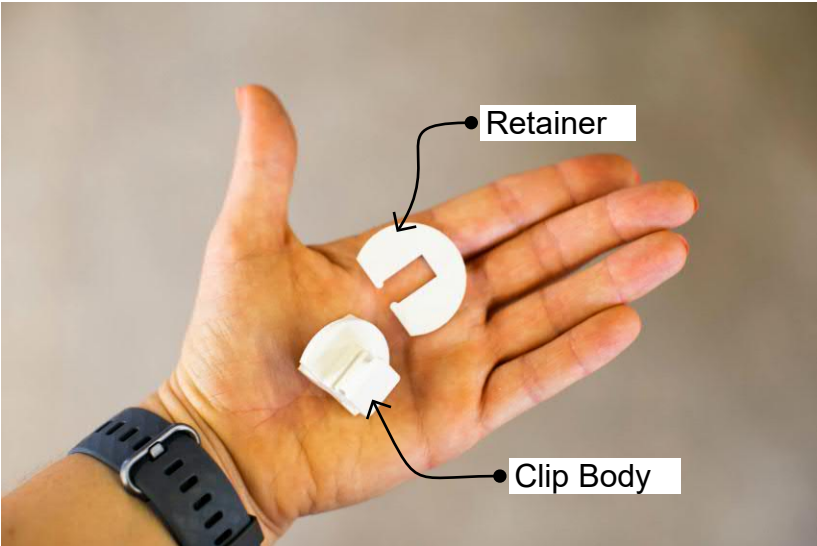
Your coop requires a large number of panels to be applied to enclose it. The goal is to put them on once per year, and take them off in Spring. They fit loosely so that there is still adequate air flow but knock out the vast majority of wind and snow. There are 4 types of panels provided.



Depending on your model, the front and mid walls are the same but the number of transom, upper and lower panels will vary.

Install twist lock clips onto storm panels.

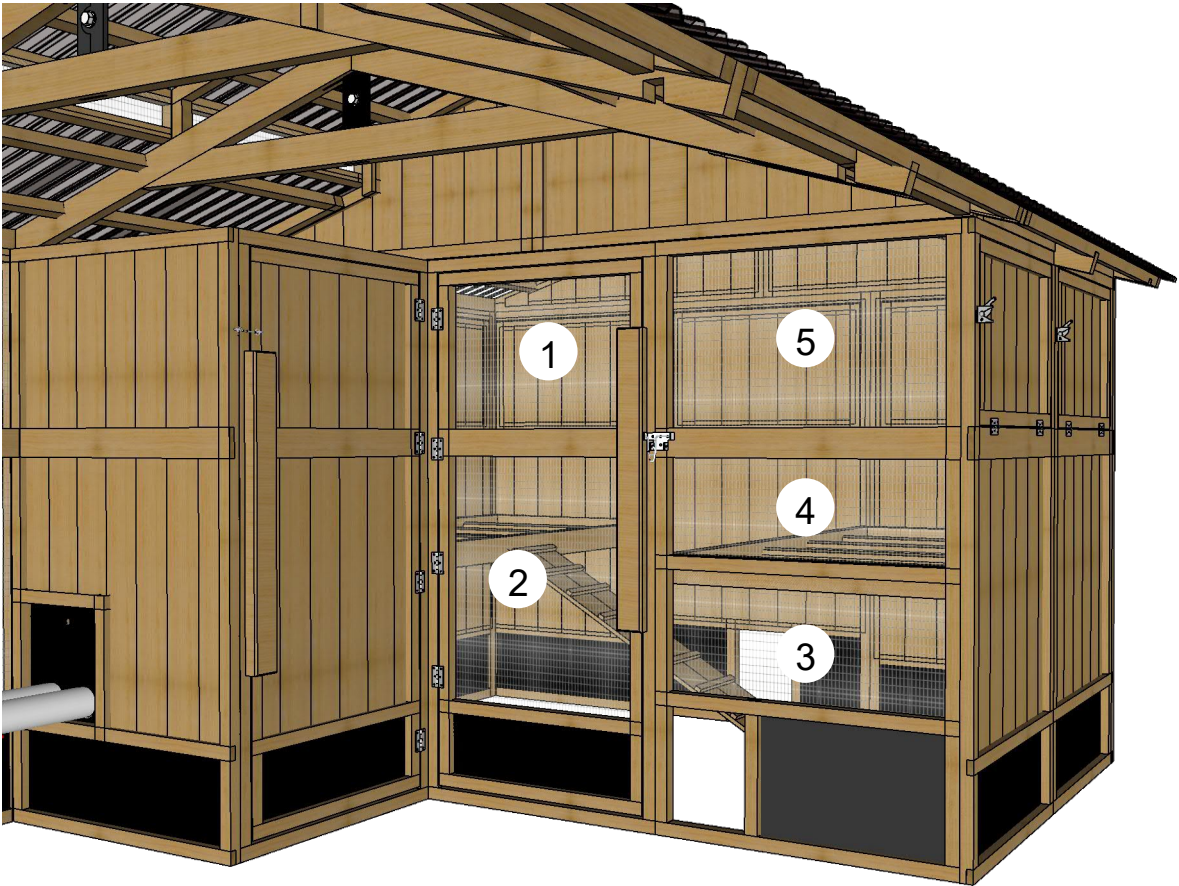
1 Storm panels are held in place by a two part 3D printed clip that once installed stays on all panels. The first thing you need to do is install all of the clips onto all of the panels. Again, depending on the model, there could be quite a few.



Color coded diagram indicates those panels that are the same and that are unique.



Install Video



All 5 panels on the mid wall are unique.
* Note that panels allow for about 3/16 gap all around for manufacturing tolerances and ventilation.