



BOOTSTRAP FARMER

# 30' HOOP HOUSE

## INSTRUCTION & OWNERS MANUAL



FOR CUSTOMER SERVICE CALL (888) 406-1982  
OR EMAIL [CONTACT@BOOTSTRAPFARMER.COM](mailto:CONTACT@BOOTSTRAPFARMER.COM)

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Thank you for choosing Bootstrap Farmer for your farm's equipment needs.

Our All-Metal Greenhouse Kit is manufactured with 100% American made steel and aluminum for maximum strength and durability.

Our team strives to provide quality products that are built to last.

From all of us at Bootstrap Farmer, we thank you for putting your trust in us.

[Contact Us](#)  
(888)-406-1982  
[contact@bootstrapfarmer.com](mailto:contact@bootstrapfarmer.com)



BOOTSTRAP FARMER

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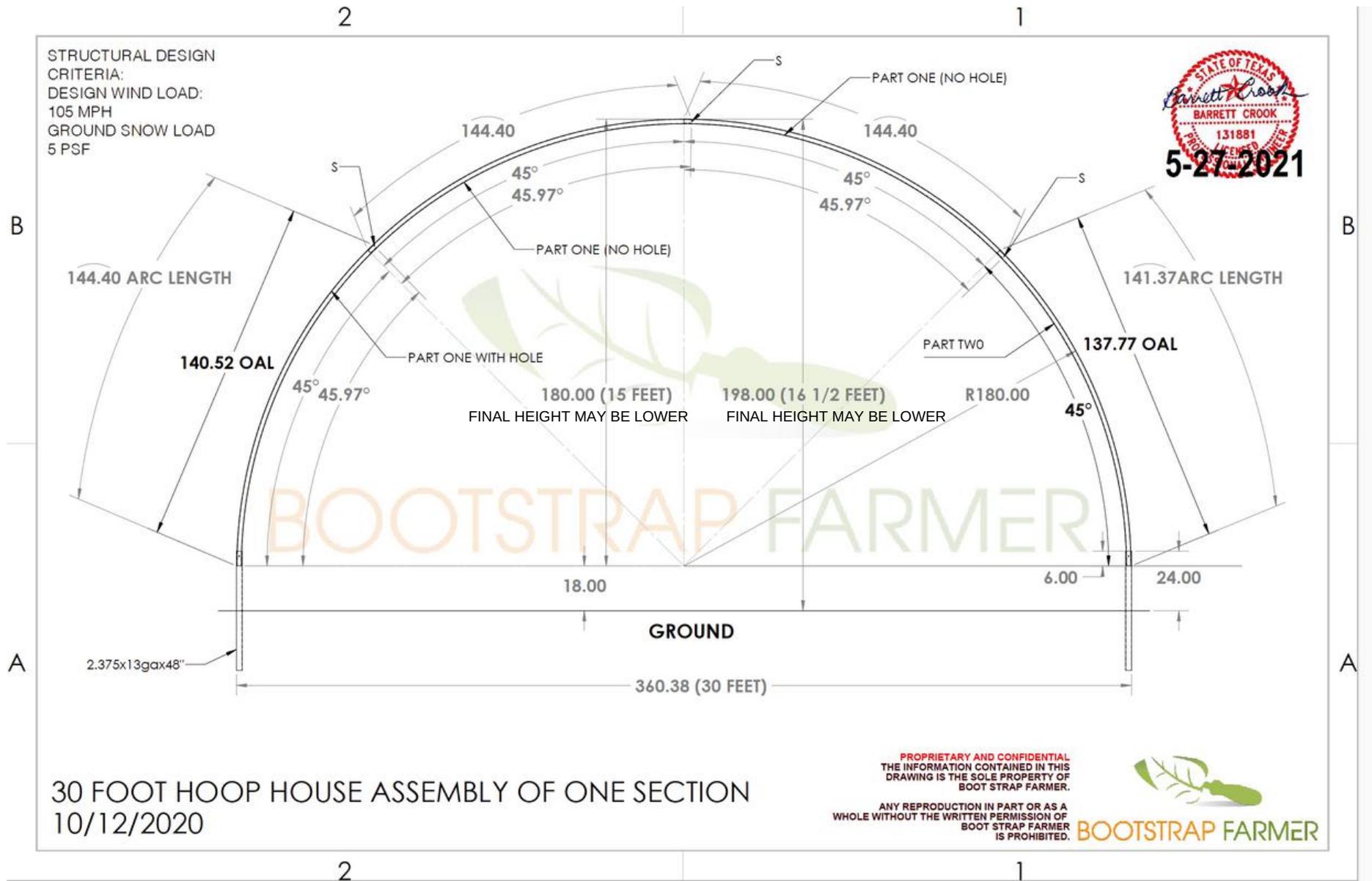
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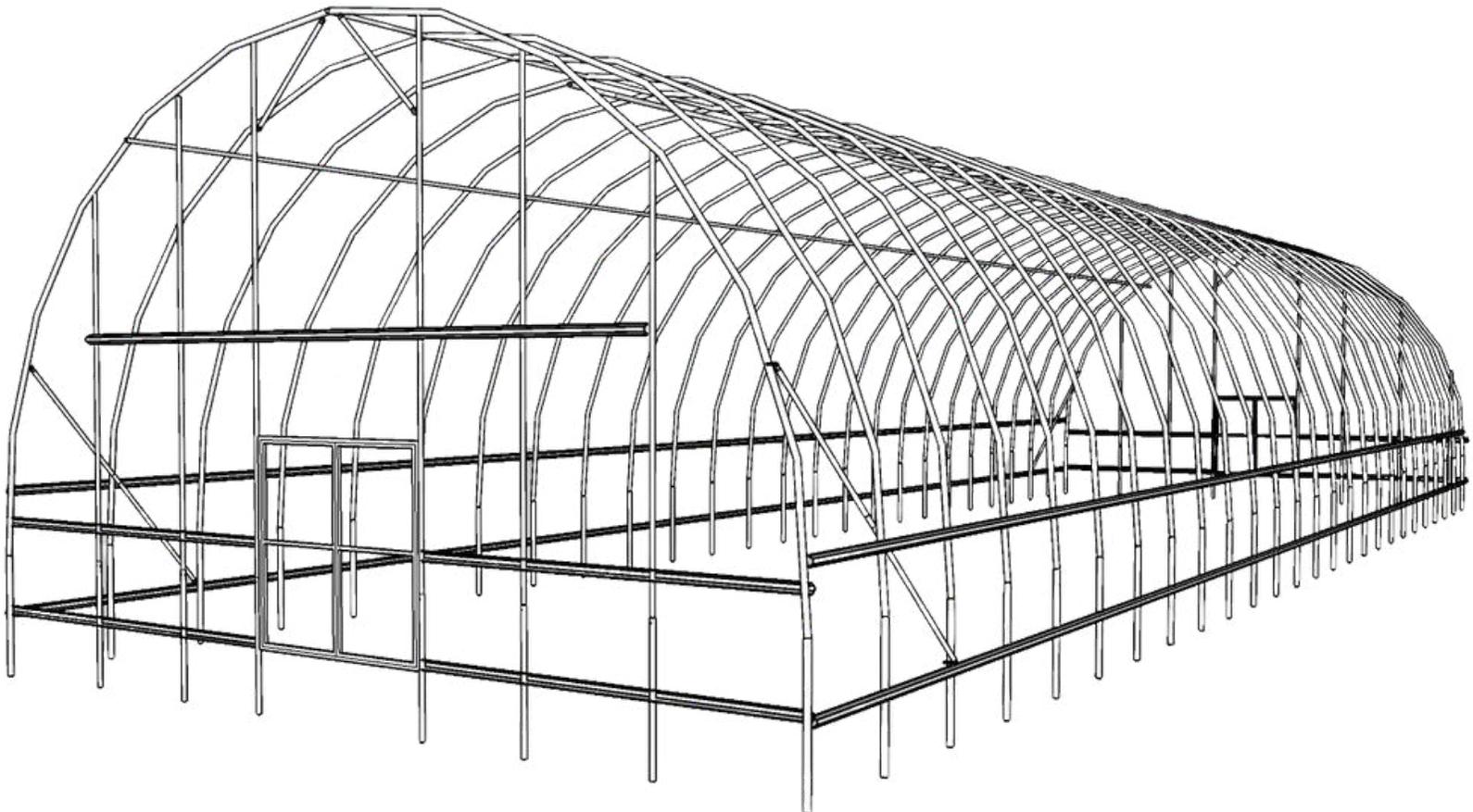
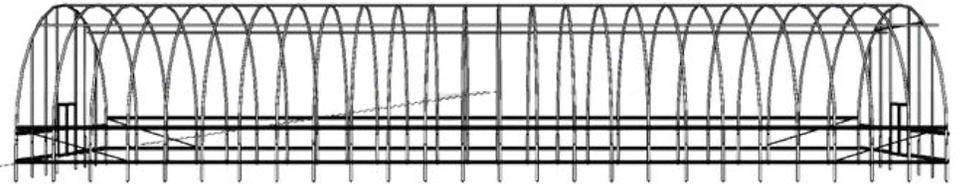
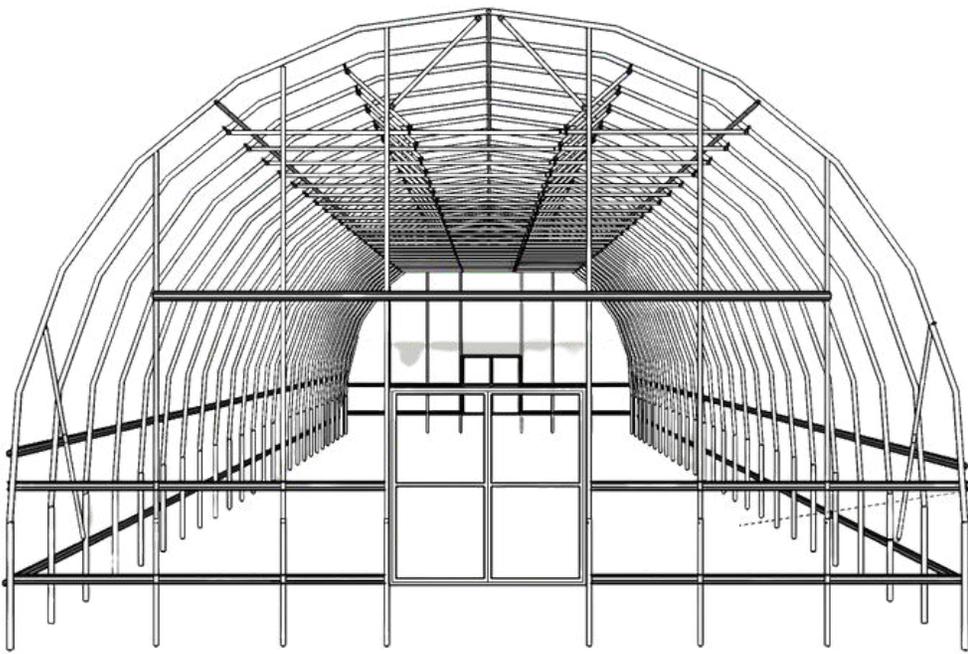
## MAINTENANCE

51-55

- Hoop House and Irrigation Maintenance

# ENGINEERED WIND & SNOW LOADS







# GETTING STARTED

## BEFORE BEGINNING INSTALLATION, PLEASE CAREFULLY READ THROUGH ALL INSTRUCTIONS

Uncrate shipment and check against packing list to ensure that all materials have been included. If any discrepancies are noted, please notify us immediately at (888)-406-1982 so we can get parts to you as soon as possible .

**For Your Safety:** Take all necessary safety precautions with power tools and building equipment. Personal protective gear such as: gloves, eye protection, ear plugs, and closed toe shoes are recommended.

### RECOMENDED TOOL LIST:

- Clamps
- Drill & Drill Bits  
(1/4" bit included)
- Impact Drill NOT RECOMMENDED FOR DRIVING SELF TAP SCREWS
- Duct/Electrical tape
- Extension Cord
- Ground Post Driver  
(included)
- Levels  
(long & string line)
- Metal File
- Metal Saw  
(reciprocating, chop or hack saw)
- Grinder
- Scissors / blade
- Sledge hammer
- Center hole punch
- Socket set & Adjustable Wrench  
(1/2" ratchet or nut driver)  
(7/16" socket for door latch bolts)
- Spare Rope
- Stakes/Markers
- Step Ladders
- Tape measure
- Extendable Painters Pole

### HEIGHT WARNING:



This 30' has a center height of 15.5' which means you will have to work 16-17' from the ground.

BOOTSTRAP FARMER cannot be held liable for unsafe work practices.

Installers and Farm Owners are encouraged to rent a lift from your local equipment rental company. Refer to their safety equip recommendations and best practices for the unit you rent during use, loading, unloading, and transport.

On build site keep the lift level and on packed solid ground.

Do not operate in inclement weather.

### Greenhouse Placement

We recommend finding a flat area of land, clear of any trees, and far enough away from existing structures to avoid runoff and snow drifts.

Pay attention to the drainage in the area. Extra ground work may be required to divert water runoff caused by regular greenhouse waterings.

Make sure that you are able to access the area with water.

\*\*Always check with your utility company or site map before any project to avoid building over power lines.

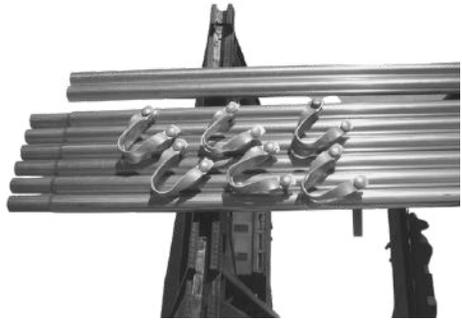


Scan or Visit Link for info on Greenhouse Orientation

<https://www.bootstrapfarmer.com/blogs/building-a-greenhouse/ideal-location-for-a-greenhouse>



10" Splice Channel



Ridge Pole & Purlin Poles  
Ridge Pole Extensions Cross Connectors

36" Extension Ridge Pole



75" Swaged  
Ridge Pole



End Wall Cross Connectors



Single Band Clamp 1.35



48" 1.66 Drilled Ground Post



Hoop Kit



Spring Wire



Aluminum Lock Channel



78" Hat Channel



Bundled Hoop Section

# PARTS LIST

HARDWARE

## Door

Door Hardware Kit Single

- Hinges (4)
- Cane Bolt (1)
- Spring (1 per door)
- Latch (1 per frame)

\*\*Upgraded double door will include additional hardware

- ¼ x 2" bolt galvanized (8)
- ¼ nut galvanized (8)
- ¼ split lock washer galvanized (8)
- ¼ flat washer galvanized (16)
- Door Mounting Kit

## Endwall

EndWall Hardware Kit with Tools (In zipper bag)

- 2¼" jobber length drill bit (1)
- 1" Hole Saw
- nut drivers for #8 self tap (2)
- Nut drivers for #10 self tap (2)
- #8 x ¾ zinc self tap (200)
- #10 x ¾ zinc self tap w/ rubber cap (50)
- ¼ x 2" bolt galvanized (10)
- ¼ nut galvanized (10)
- ¼ split lock washer galvanized (10)
- ¼ flat washer (20)

## Frame Hardware

Hardware Kit (20 ft Length) (in zipper bags)

- ¼ x 2" bolt galvanized (15)
- ¼ nut galvanized (15)
- ¼ split lock washer galvanized (15)
- ¼ flat washer galvanized (30)
- #8 x ¾ zinc self tap(500)
- #10 x ¾ zinc self tap (200)
- Sidewall Hardware Kit

\*\* Check "Pick-list" as hardware/part quantities are dependent on kit size

## CORNER BRACE KIT

- 4 Flat Open 75in Brace 1.315
- 4 Flat Swage 75in Brace 1.315
- 11 #8 Hex Self Tap Screws 1in
- 4-1 7/8 Tension Band for hoops
- 4- 2 3/8 Tension Band for ground posts

## PURLIN KIT KIT- (PER HOOP )

- 6 1.78 Tension Bands
- 1 75" Flat Open Bar
- 1 75" Open Flat Bar
- 1 57" Ridge Pole
- 2 48" Flat Flat

FRAME

- Door Frame Single GH
- Door GH (1)

\*DBL door upgrade available  
Door Frame Double GH  
Door GH  
Door Hardware Kit Double

- BandClamp1.35 (8)
- Endwall CrossConnectors 1.375 (2)

- 10in Splice Channel
- Cross Connector 1.375
- 75in Swage Ridge Pole
- 36in Extention Ridge Pole
- 78in Hat Channel
- 48in 1.66 Drilled Ground Post
- Channel Wire Lock
- Spring Wire
- Hoop Pack

\*\*Width Size Options  
14' Hoop Pack (2 96" Swaged & 1 102.75" Poles)  
or  
20' Hoop Pack (3'- 96" Swaged & 1-117"" Poles)

## ROLL-UP SIDEWALLS

PARTS LIST FOR OPTIONAL UPGRADE

- SideWall Hand Crank
- Snap Clamp Blue
- Strapping per Ft
- Roll Up Side Hardware Pack
- EMT 0.5in 2ft
- 78in 0.922 EMT Pole with Swedged End

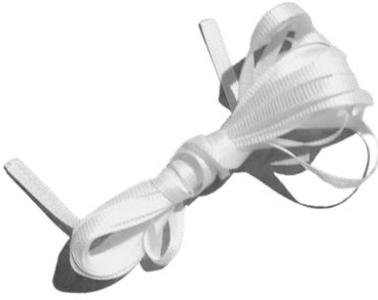
**ATTENTION: Check your parts list thoroughly. If you are missing any pieces or components call us at 1-888-406-1982 or email at us at [contact@bootstrapfarmer.com](mailto:contact@bootstrapfarmer.com)**



SideWall Hank Crank



Snap Clamps



Ground Post Driver



Cane Bolt and Spring



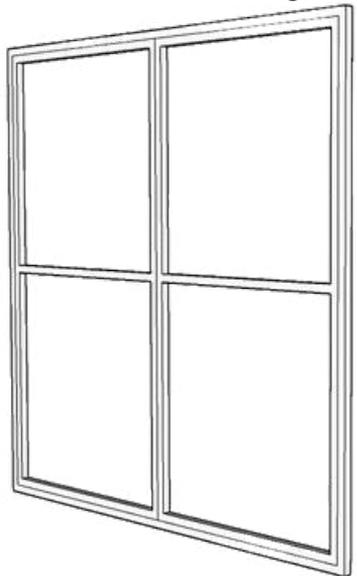
Door Latch and Hinges



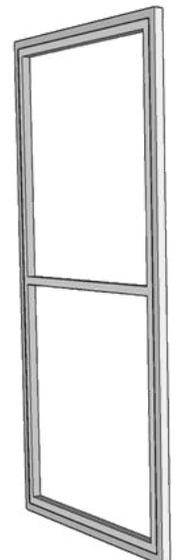
Door/Endwall Hardware

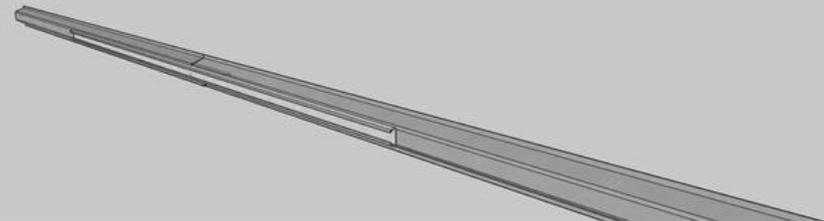
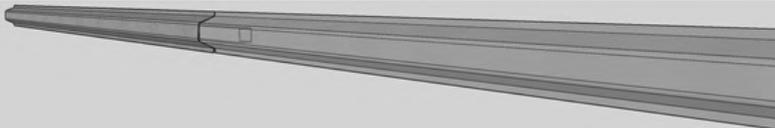
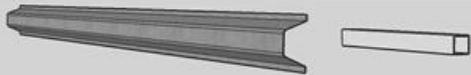
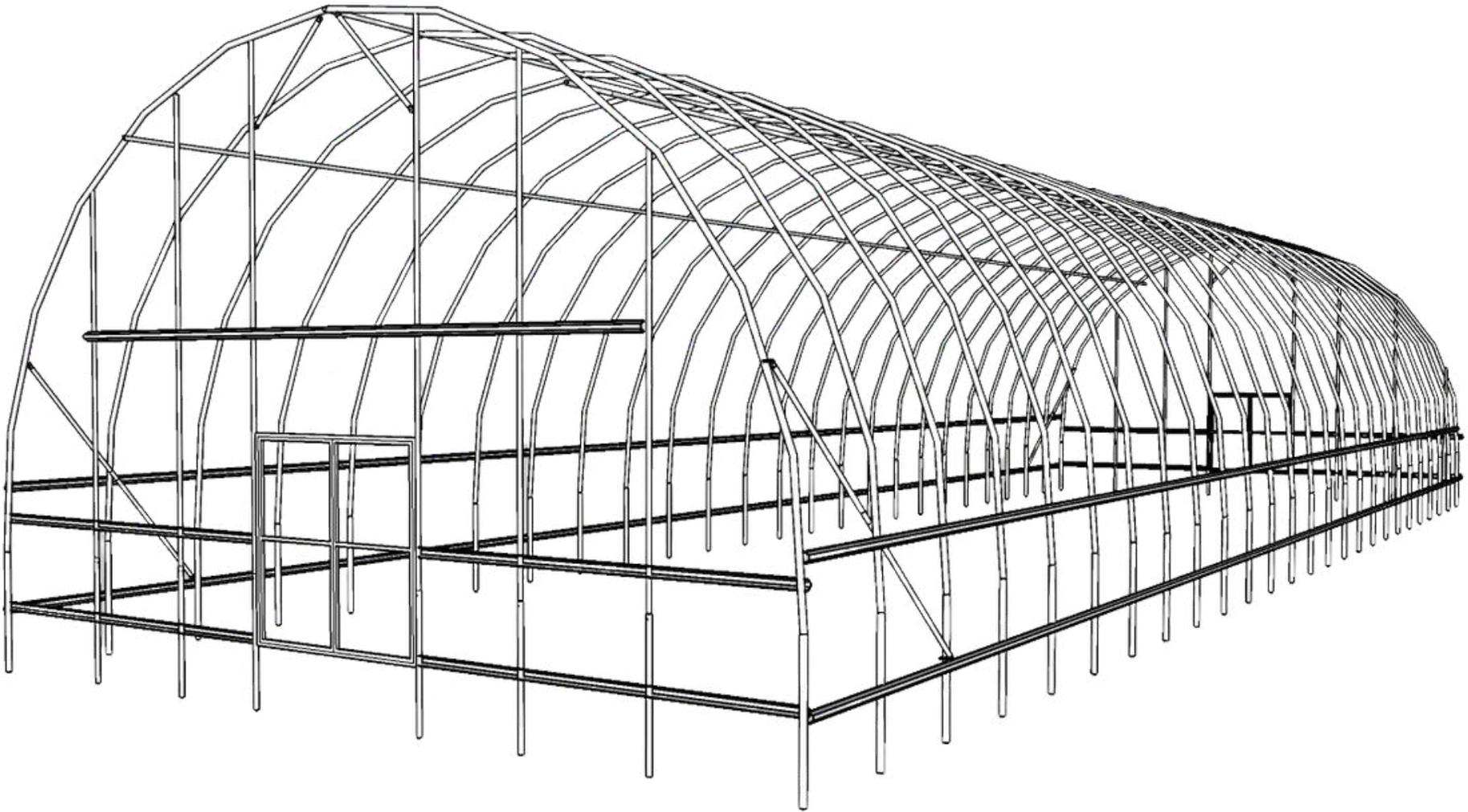


EMT with Swedged End



DBI/ Single Door Frame



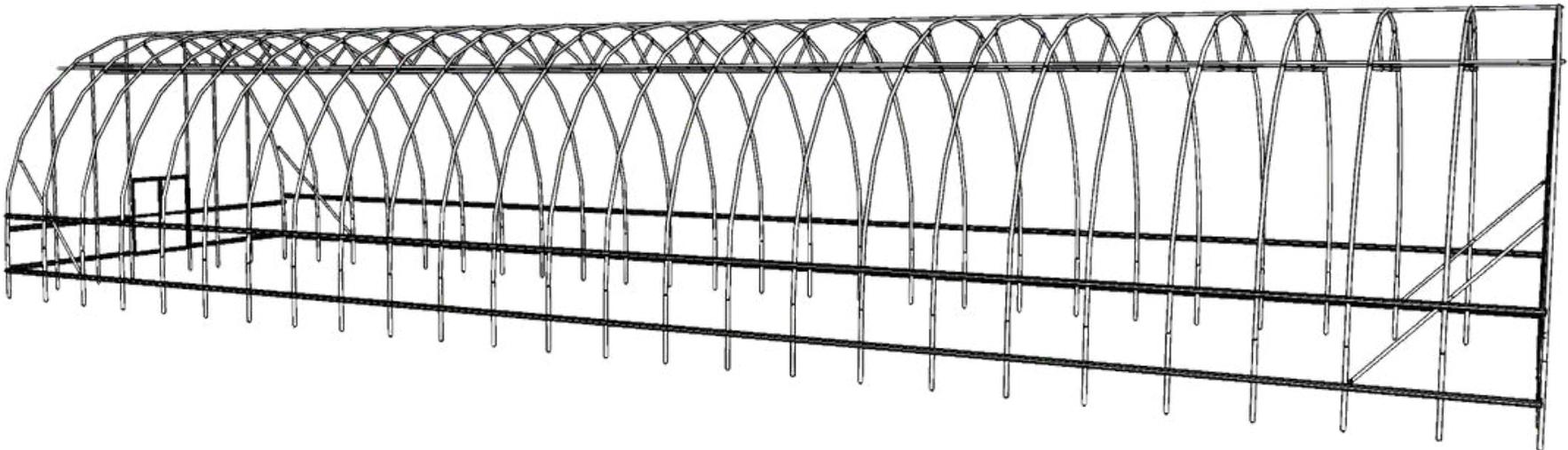


# CORNER BRACE KIT

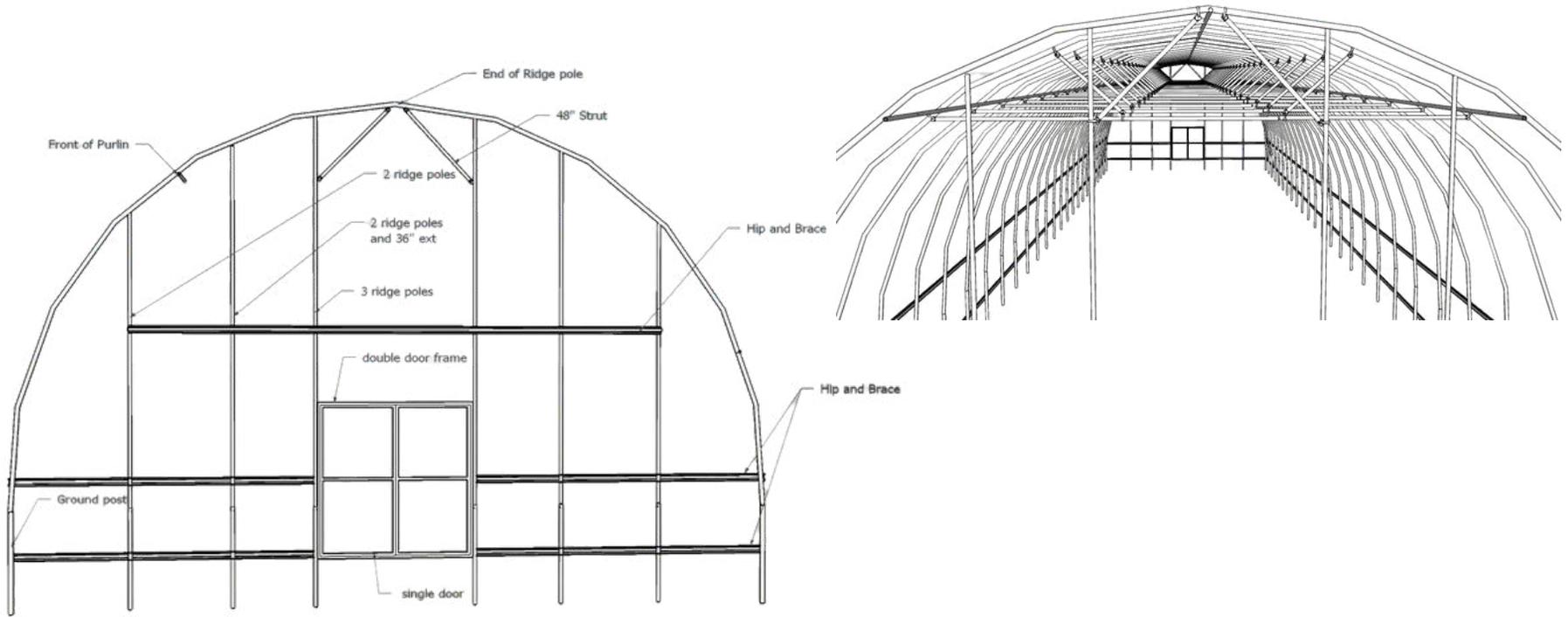
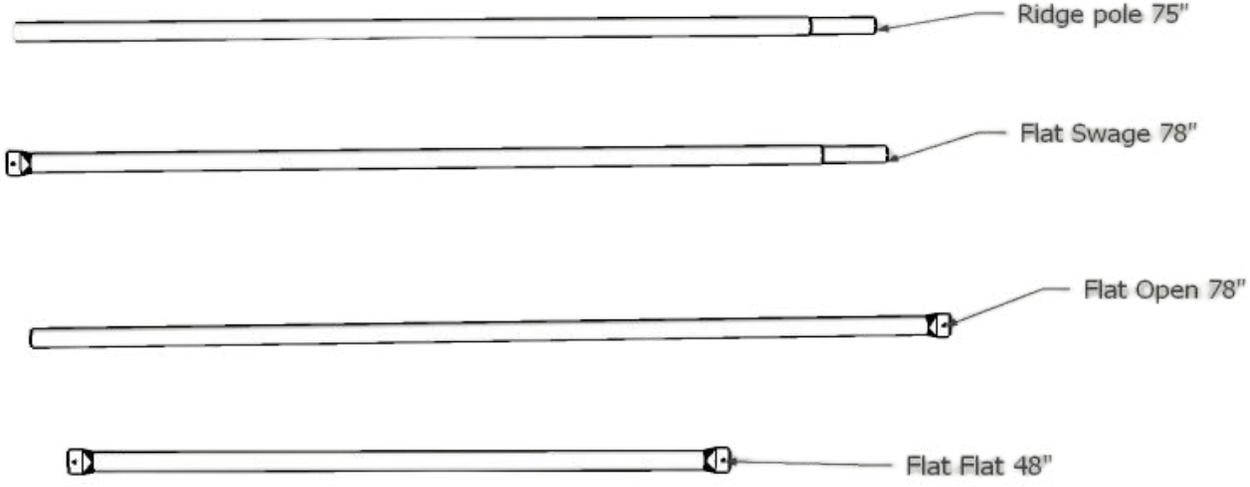


## Included

- 4 Flat Open 75in Brace 1.315
- 4 Flat Swage 75in Brace 1.315
- 11 #8 Hex Self Tap Screws 1in
- 4-1 7/8 Tension Band for hoops
- 4- 2 3/8 Tension Band for ground posts



# OPTIONAL HORIZONTAL BAR & TRUSS KIT



# GROUND POSTS

## TOOLS

- GROUND POST DRIVER
- LINE LEVEL
- SLEDGE HAMMER
- STAKE FLAGS
- TAPE MEASURE

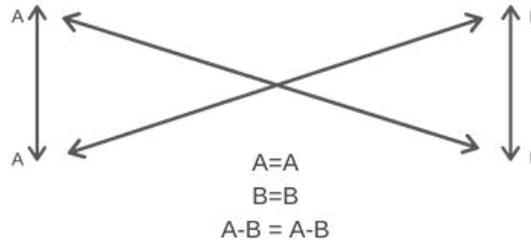
## PARTS

- 48in 1.66 Drilled Ground Post

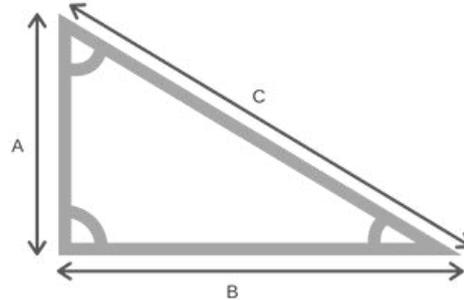
\*quantity of posts specific for each greenhouse size

14/20- (18)	20/20- (18)
14/40- (28)	20/40- (28)
14/60- (38)	40/60- (38)
14/80- (48)	20/80- (48)
14/100- (58)	20/100- (58)

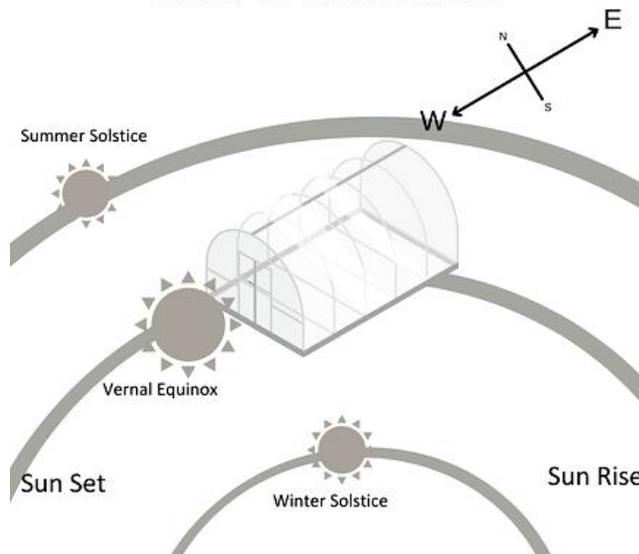
## TWO WAYS TO SQUARE A HOOP HOUSE



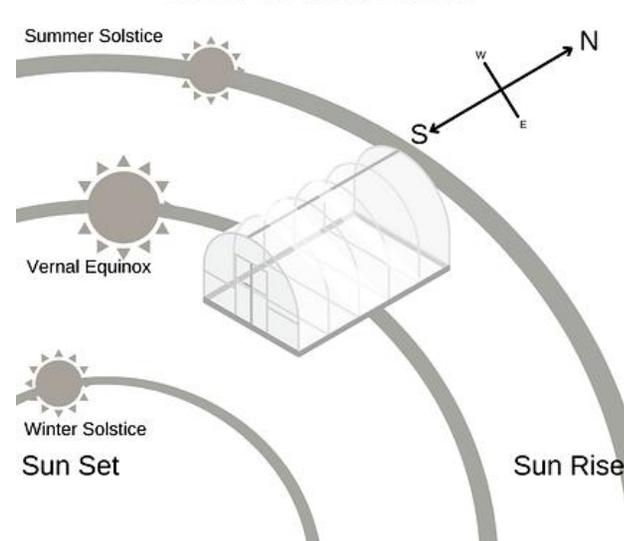
Pythagorean Theorem  $A^2 + B^2 = C^2$  (3 4 5 Rule)



## Hoop House Orientation Above 40° North Latitude



## Hoop House Orientation Below 40° North Latitude



Scan to Watch Video



# GROUND POSTS

**Optional:** Roll out and secure ground cover with ground staples.

Using one of the following methods, set your corner.

**For the Pythagorean Theorem method**, use your tape measure to measure and mark a line at 3 feet and the other line at 4 feet and then place a line directly across both marks. The third board should equal 5 feet a give you an square corner.

**Measure Method-** Mark each corner of your planned greenhouse area with any kind of marking stake - First measure length to length (its best to stick with lengths divisible by 4'). The width should be 30 foot for our high tunnels. Then measure diagonally, making sure the diagonal measurements are equal to each other. Double check that each length, width and diagonal measurements are equal. This ensures your greenhouse will be square.

Once your area is measured out, place a temporary stake to mark the location of each corner as this will be where your first ground posts are located.

First install each corner ground post from the previous step. Place your posts where you had previously marked the corners and begin driving those into the ground.

When driving your ground posts make sure you use a Ground Post Driver. This will prevent your pole end from becoming damaged.

While driving the posts into the ground you want to make sure the poles are plumb in all directions.

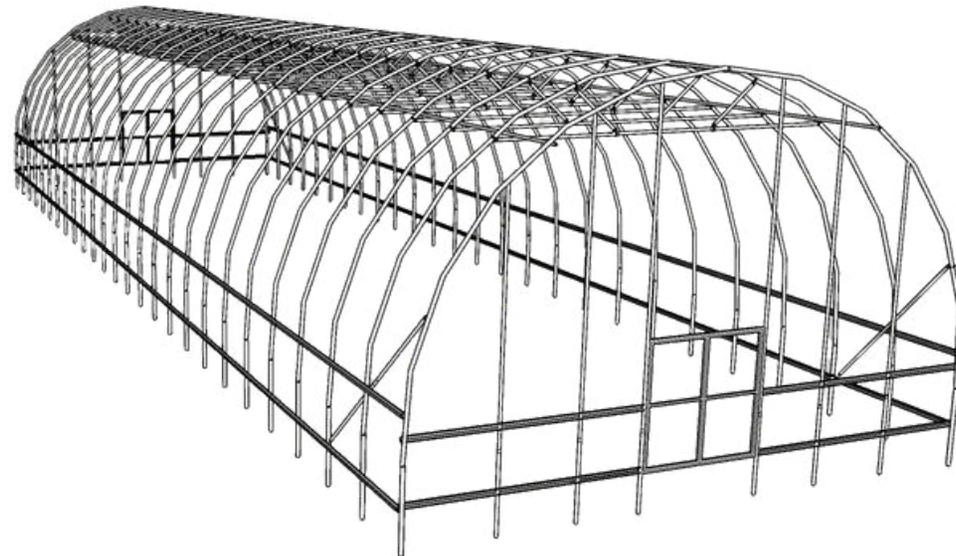
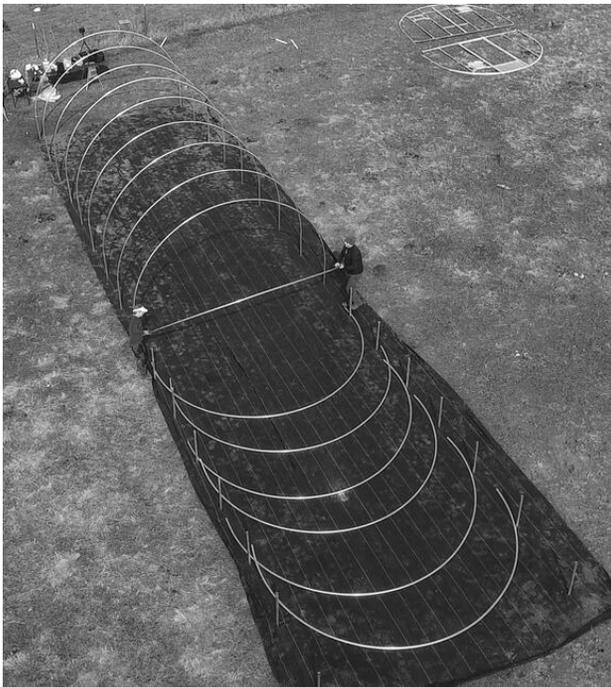
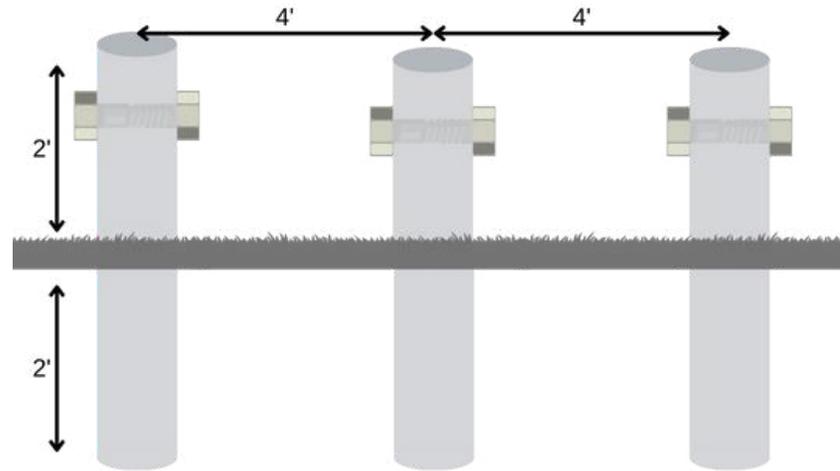
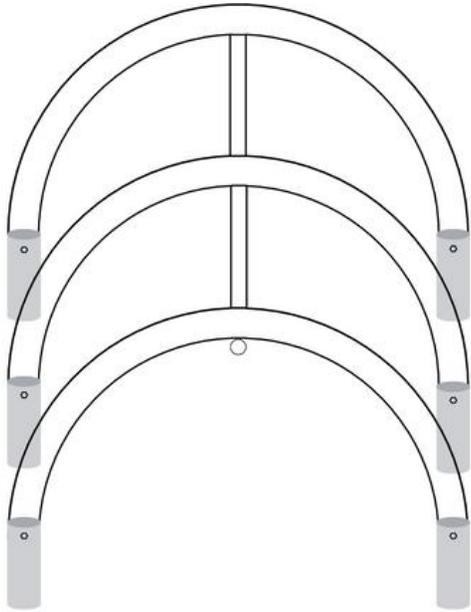
As you are driving the pole into the ground check for levelness on the front and sides and adjust as needed. The hole should be facing parallel to length of hoop house. Once corner ground posts are installed re-measure length, width and diagonally one last time. If you made a mistake it's not too late to fix it without too much work. Once you are satisfied, tie a string line around the outside of the corner posts. This will help to keep all your ground posts in alignment so you don't get wavy hoops later on.

Install ground posts every 4' on center following your line keeping approximately 2' in and 2' above ground

Scan to Watch Video



# HOOPS



# HOOPS

## TOOLS

Drill

#8 Self Tap Screw

## PARTS

14' WIDE HOOP set contains:

(2) 96\* SWAGED POLES

(bent)

(1)102.75" Pole (bent)

or

20' WIDE HOOP

(3)96in\_1.35\_Swage\_Hoop

(1)117' Pole (bent)

## Pole Layout for Hoops

Our pre-bent poles come with (1) swaged end to decrease the diameter, similar to a pipe nipple. This enables you to connect poles without the use of fittings.

**\*\*Always drill on the underside of the hoop so that the screw will end up parallel to the ground when the hoop is placed upright to protect the plastic from damage.\*\***

## Connect and Install Hoops

1. Piece your hoop set together on a flat surface.
2. Using a #8 self tap screw, connect the hoop together to prevent twisting and separation. The screw must be placed on what will be the underside of the hoop.
3. When all of the hoops are connected place near the ground posts.
4. With a partner, stand the hoops up and place one side into a ground post and then the other. For consistency have the same person go first. At this point do not force the hoops down into the ground posts all the way. Adjustments will come on the next couple of steps.

**NOTE: If you purchased optional bracing installing on the ground now will be much easier.**

**SKIP TO PAGE 22 for install instructions.**

**After you set up one you can use stakes or spray paint to mark bracing points for consistency.**

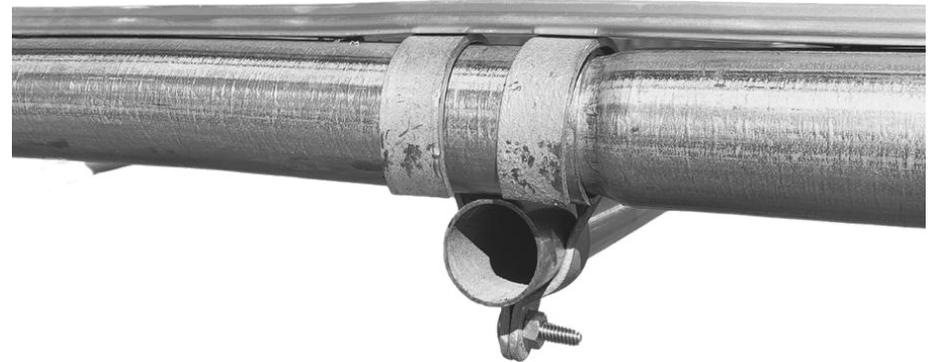
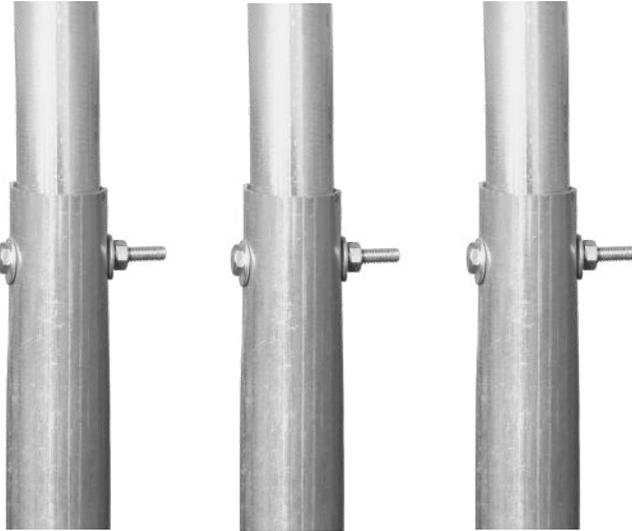
*Do not stress out about the hoops looking uneven when in the ground posts at this point.*

*Adjustments will come later.*

Scan to Watch Video



# Ridge Poles



# Ridge Poles

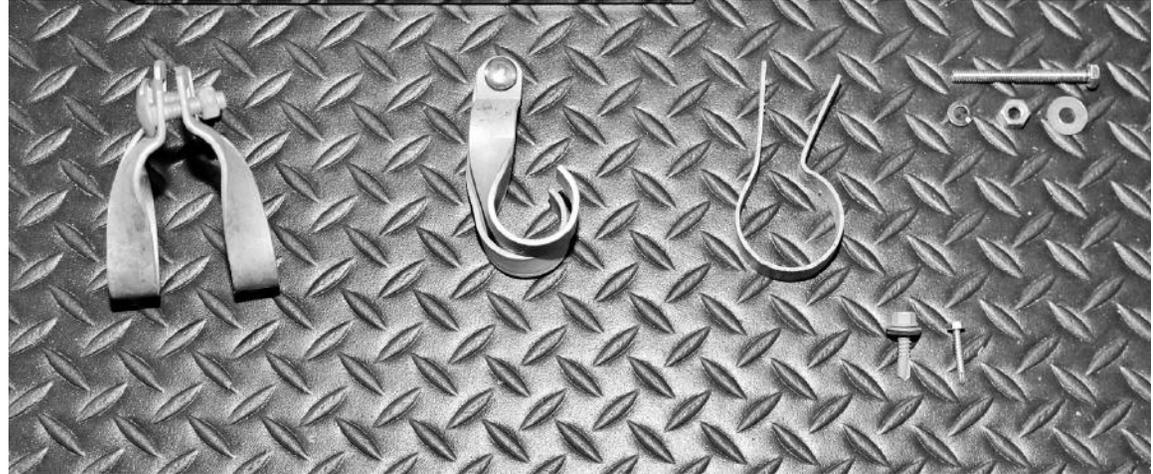
## Securing Hoops Install Cross Connectors, and Ridge Poles

### TOOLS

- Drill w/ 1/4" bit
  - Step Ladder
  - Saw
  - Ratchet & Sockets
- 10in Splice Channel
  - Cross Connector 1.375
  - 75in Swage Ridge Pole

### PARTS

- 1/4 x 2" bolt galvanized (15)
- 1/4 nut galvanized (15)
- 1/4 split lock washer galvanized (15)
- 1/4 flat washer galvanized (30) (PER 20FT)
- 36in Extention Ridg Pole
- Endwall CrossConnectors 1.375
- #10 self tap screws W/rubber-washer/cap
- #8 self tap lock channel
- hat channel
- hat splice



1. While on a ladder, one person eyeball the top of hoops as a partner adjusts the height of the hoops at ground posts.
2. Adjust height and sides until they all line up and down the structure.
3. When you are satisfied with the hoops being aligned drill a 1/4" hole through the hoop at the hole in the ground post. Secure with 1/4"x2" bolt, flat washers, lock washer, and 1/4" nut.
4. Loosely place end wall cross connector with bolt on inside of house
5. Loosely place cross connector on hoops (that are not end walls) on top of hoops as shown
6. Starting at one end wall carefully plumb an end wall and insert a ridge pole into the end wall ridge pole connector and the next hoop.
7. Center the loose assembly on the very top and center of the hoop, double check plumb of end wall and tighten the bolt on the connector.
8. Measure 4' on center from 1st tightened connector to the next and tighten 4" oc.
9. Repeat this process for each hoop as you make final plumb adjustments while keeping cross connectors 4' apart. The very bottom of the hat may be difficult to reach when installing bottom #10 self tap.
10. Use an extension or dig out a little hole to get the screw in there.

Scan to Watch Video



We recommend adding a #8 self tap screw to all tension bands and end wall cross connectors- but not the saddle type cross connectors.

# HIP & BASE BRACES



**For Bootstrap Farmer All Metal Kits we use 16 gauge hat channel (shown on this page). When we refer to Hat channel know that it is the same material for both the hip board and baseboards where lumber would typically be used.**



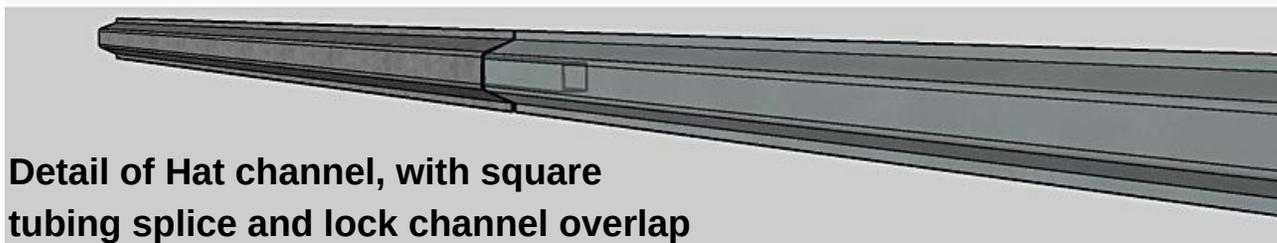
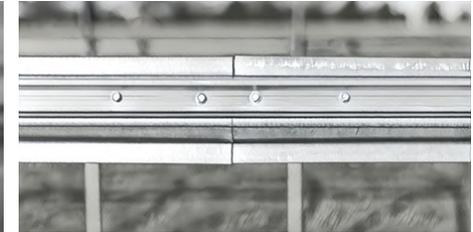
Inside (back) view of hat splice



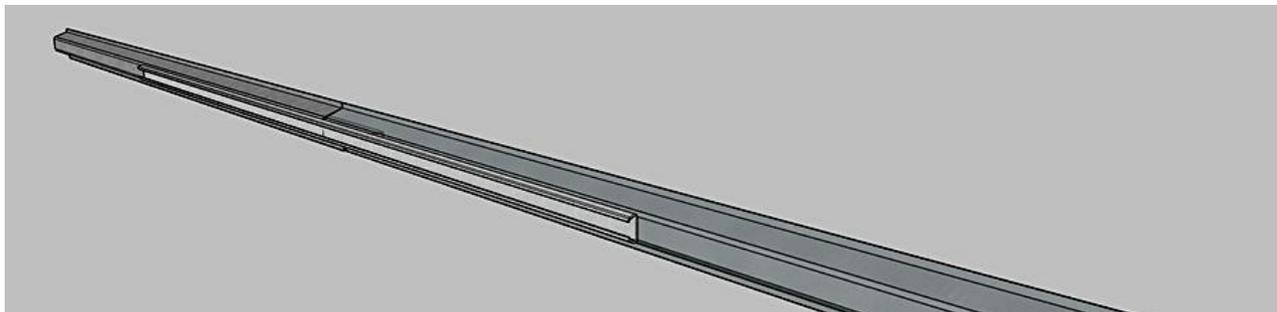
Installing 2nd hat channel  
Slide past the hoop and butt up against the previously installed hat channel



Starting the hat channel on end wall



**Detail of Hat channel, with square tubing splice and lock channel overlap**



Scan to Watch Video



# HIP & BASE BRACES

## Base and Hip Brace Installation with Lock Channel

### **Base and Hip Brace Installation will be between 4-1/2" and 5-1/2"**

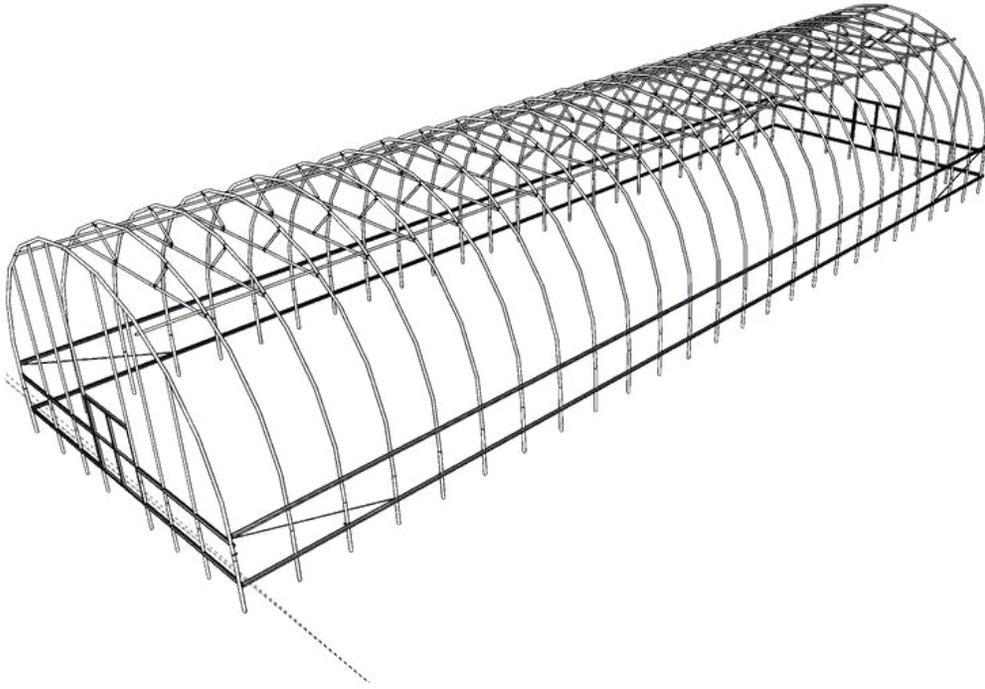
This will give your roll up door a large opening to cross ventilate and will also work with the Insect Netting and 42' wide shade cloth

1. Begin on the same side you started the ridge pole. Using #10 self tap screws, attach baseboard hat channel level (using a bubble level) and even with the end wall hoop as you secure to the second hoop. \*note: you do not need a splice on the end wall hoops.
2. Cut a piece of lock channel to 2' and secure it to the hat channel on the outside face of the first hat channel with #8 self tap screws (no washer diag 1). This allows seams to stagger.
3. Using a clamp secure a hat splice (from behind see diag 2) spaced evenly (5 in.) between the butt joints of the hat while sandwiching a full (6'6") piece of lock channel. Secure all three pieces (lock channel/hat channel/ and hat splice) with #8 self tap screws. Note that you only securing half of the hat splice.
4. Next, slide a new piece of hat channel between the space left by the previous half hat splice and the lock channel. Secure seam with #8 self tap screws (no washer) through lock channel/hat channel/ and hat splice
5. Secure new hat channel to next hoop (using #10 self tap screws the ones with the rubber washer and cap) and repeat the process until the end
6. Cut off excess hat and channel at the end hoop house flush with the end wall.

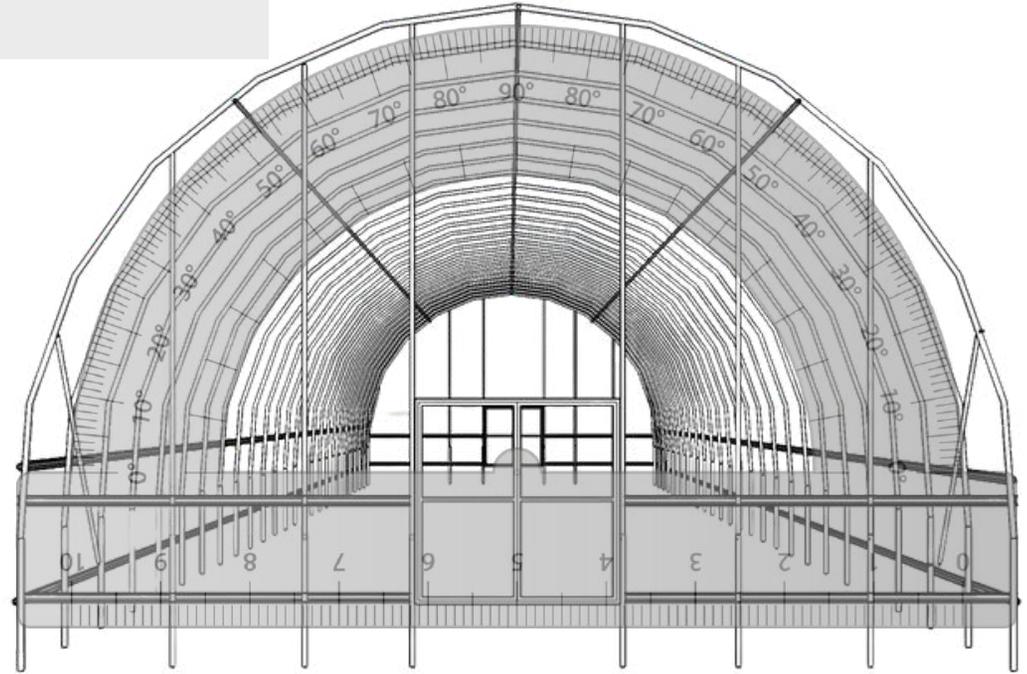
**For the Hip Brace-** Begin on the same side you started the ridge pole.

The hip and base braces are made exactly the same way and is a layering process between hat channel, hat splice, and lock channel. These steps are not complicated but do require your understanding of the process before you start. Please read all steps in this panel, view pictures, and consult our video on the build process. Hat splice seams will get close but not fall directly on hoops. When you are assembling understand that you slide the next hat channel inside of a space between the hat splice and lock channel as you butt up to the previously installed hat channel. Begin with Base and then the hip brace. Keep these level and check hoops for plumb as you go.

# PURLINS



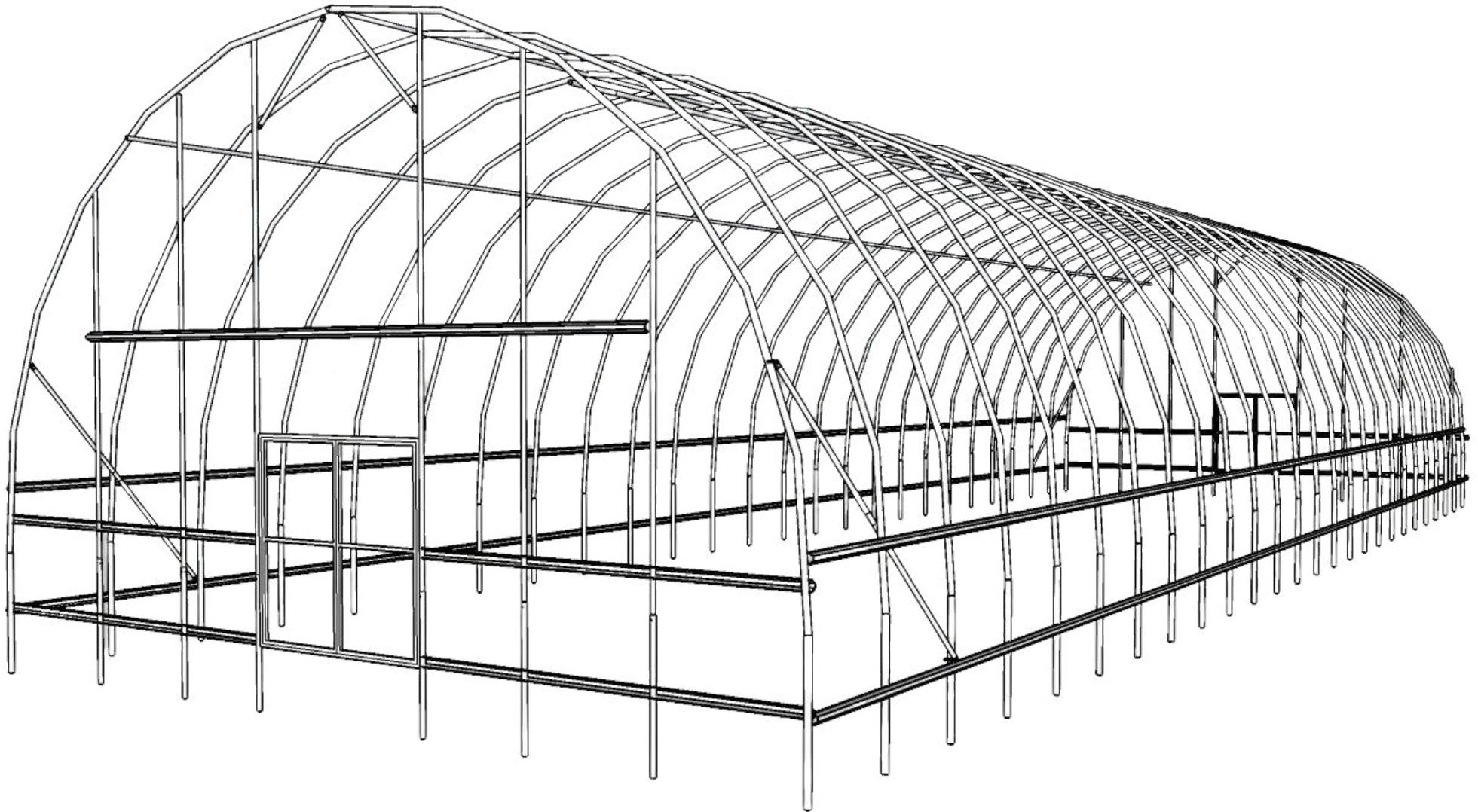
# PURLINS



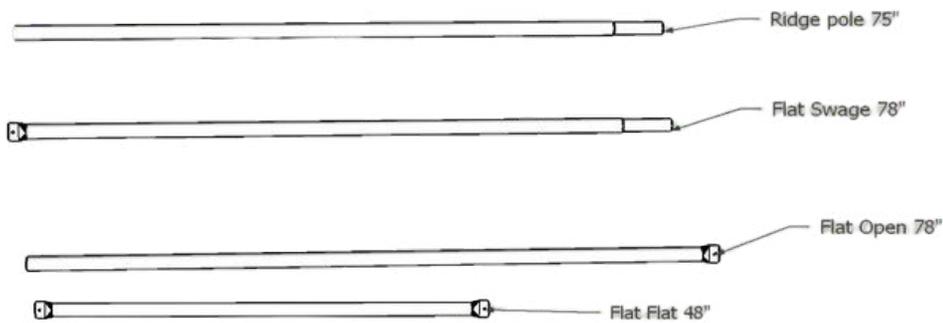
The Purlin Kit is installed the same was as the ridge pole. Purlin poles will be installed approximately on the 50° mark. Depending on your end wall options it may or may not fall in line with vertical end wall supports. This is okay as they are not dependent on each other. You may notice the hoops may still need adjusting as you work your way down. Use a clamp to help pull the the Purlin to the hoop so you can install the cross connectors.

**We recommend adding a #8 self tap screw to all tension bands and end wall cross connectors- but not the saddle type cross connectors.**

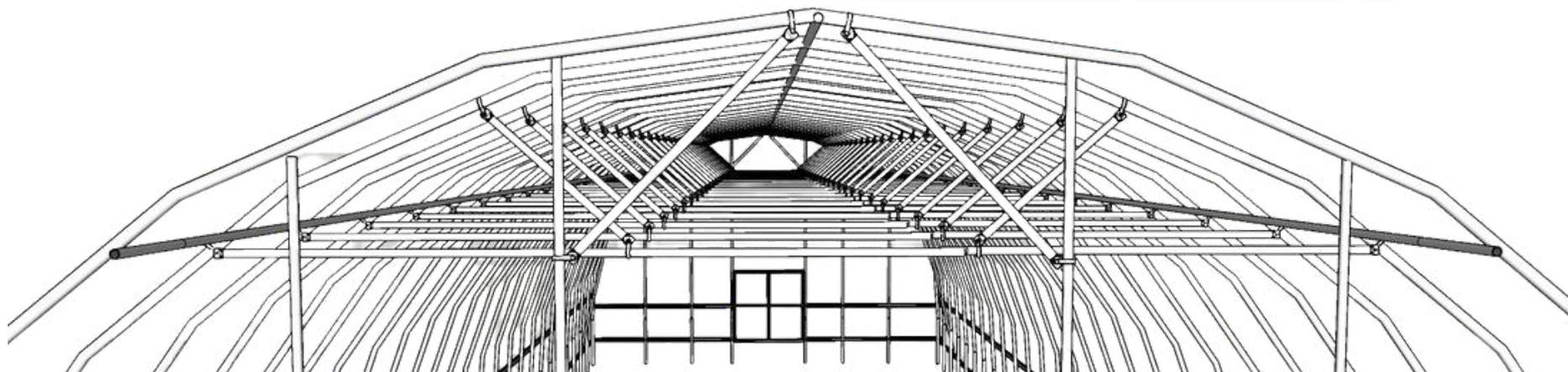
# BRACING: TRUSS & CORNER BRACE



# BRACING: TRUSS & CORNER BRACE

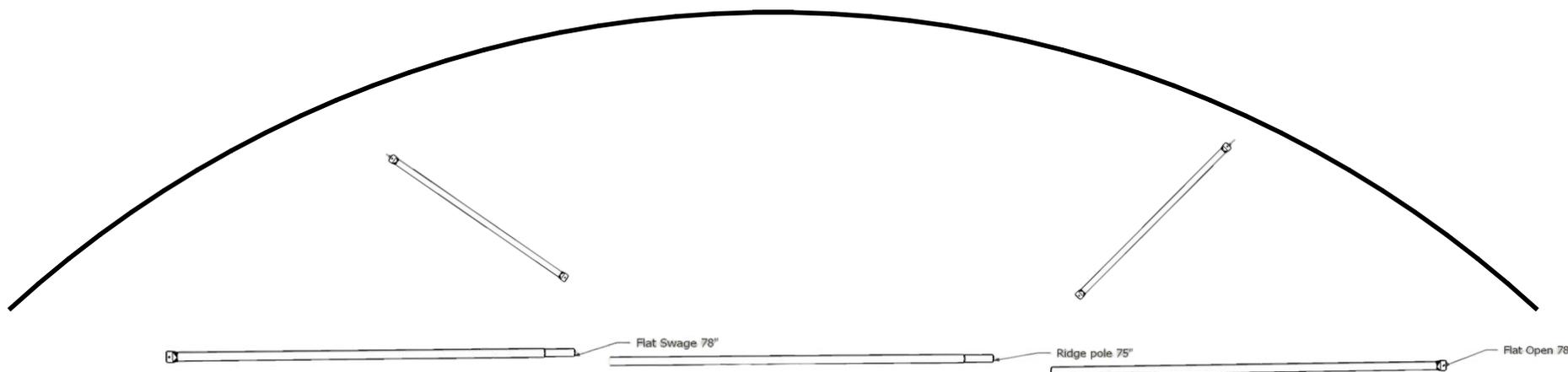


1 7/8 Tension Band

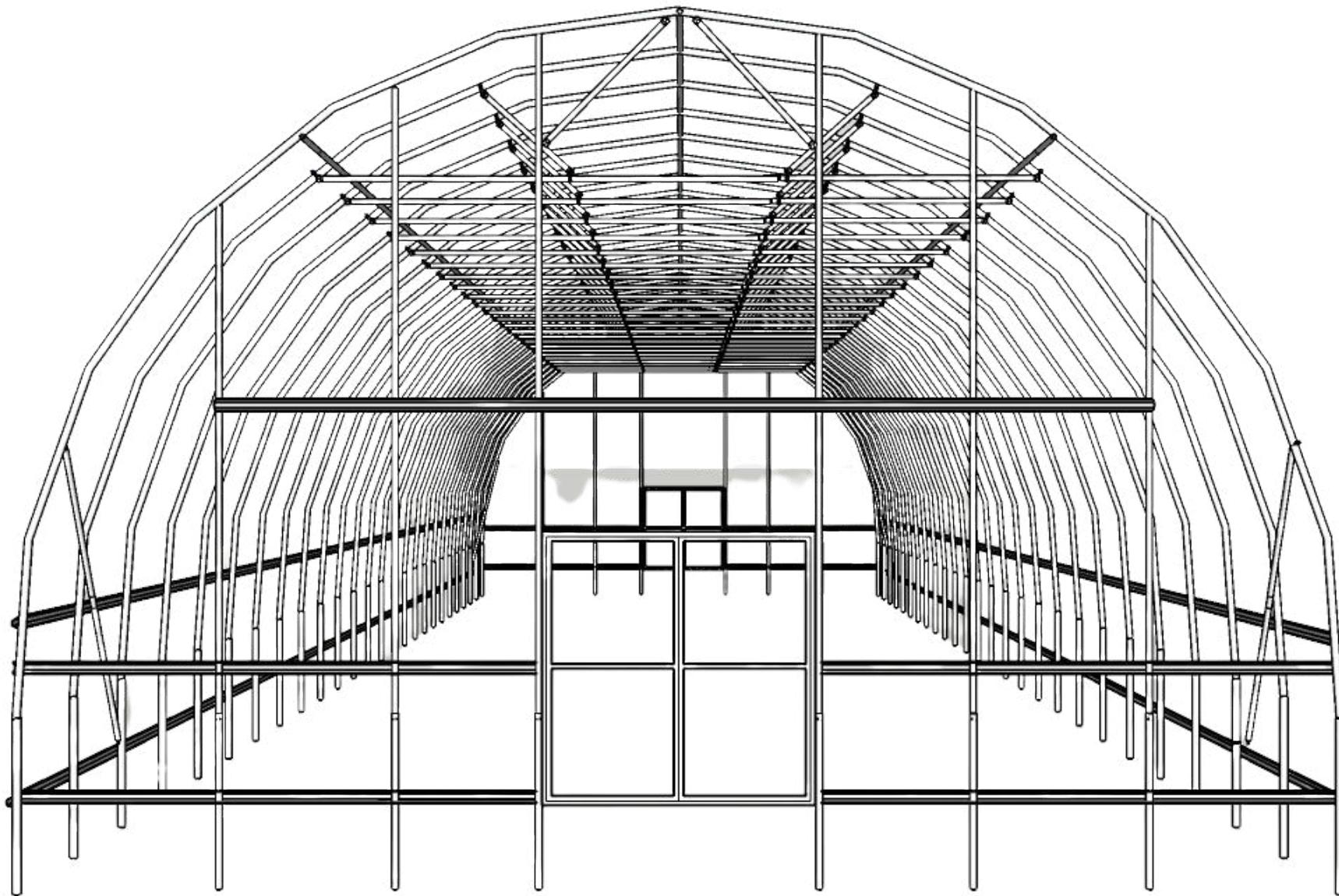


Note the difference in the End Wall configuration vs. the inner hoop Horizontal Bars and Truss.

**We recommend adding a #8 self tap screw to all tension bands and end wall cross connectors- but not the saddle type cross connectors.**

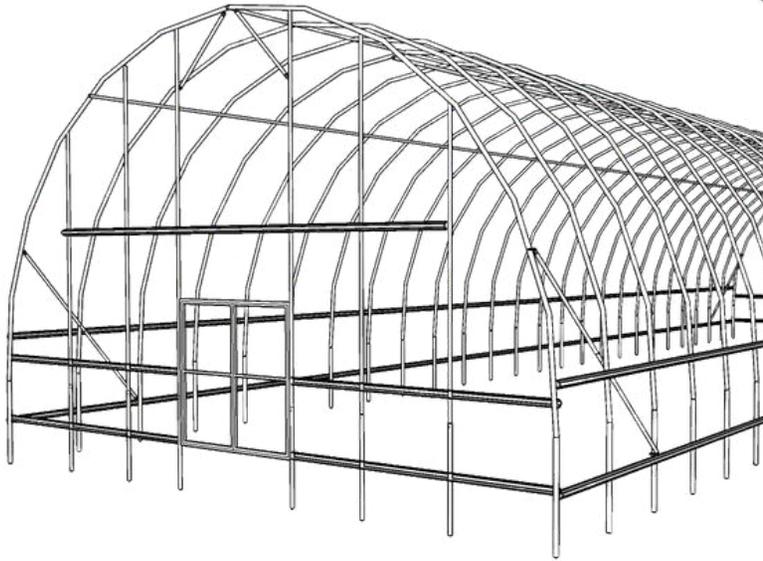


# BRACING: TRUSS & CORNER BRACE

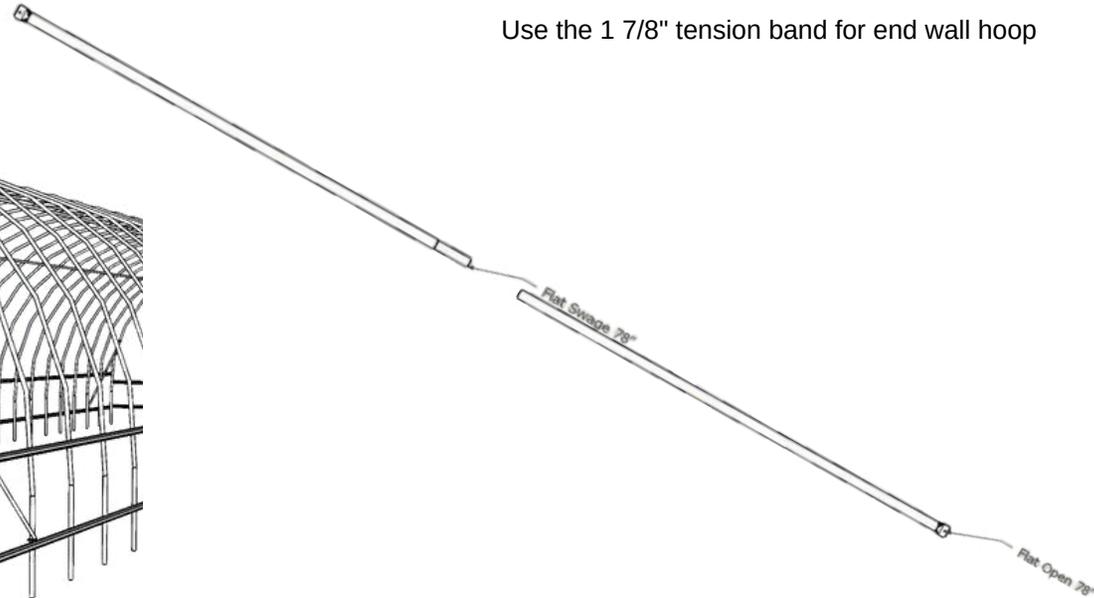


# BRACING: TRUSS & CORNER BRACE

## TRUSS & CORNER BRACE



Corner Braces will attach at the bottom of the second hoop from the end wall on all four corners and will extend past the hip board on the end wall



Use the 1 7/8" tension band for end wall hoop

Use the 2 3/8" tension band for bottom that will attach at the ground post

Scan to Watch Video



We recommend adding a #8 self tap screw to all tension bands and end wall cross connectors- but not the saddle type cross connectors.

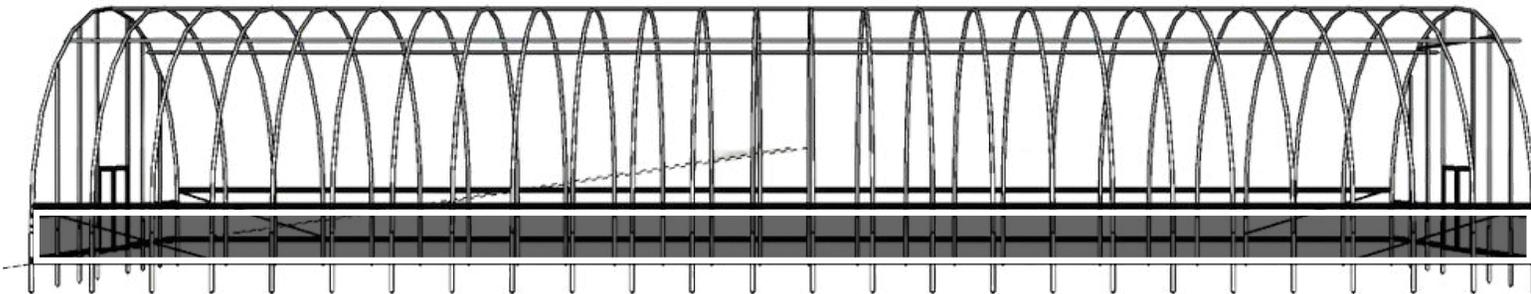
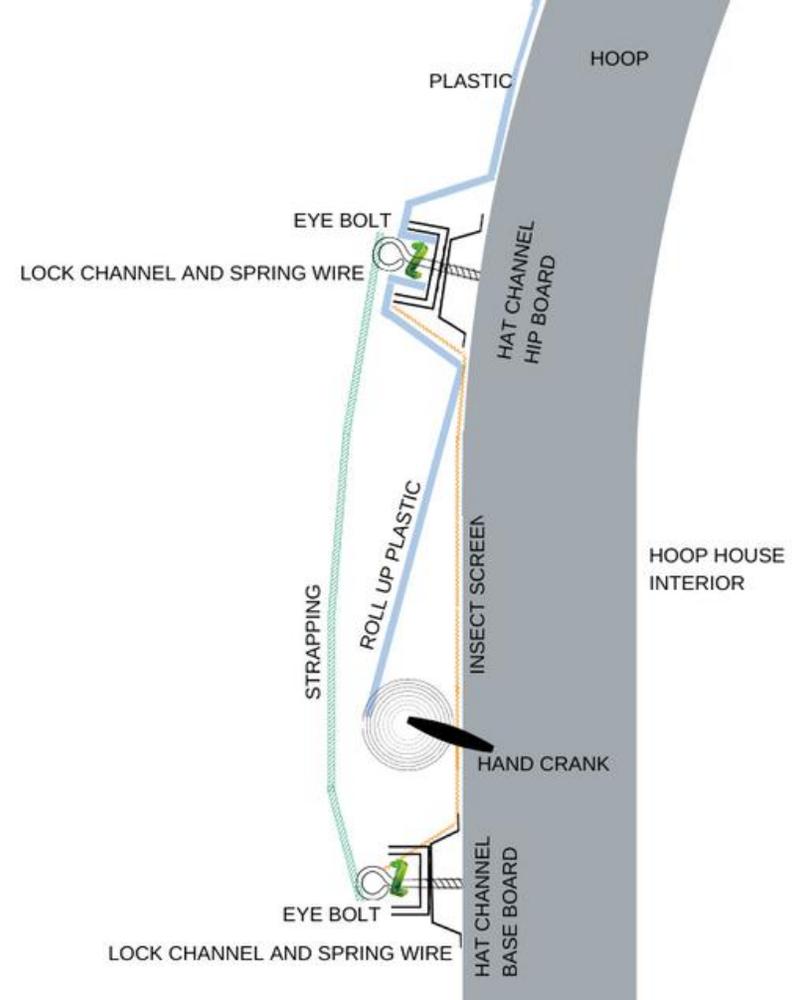
# INSECT NETTING



# INSECT NETTING

Hold up insect net against the side walls and attach using the lock channel and spring wire. Install your insect netting BEFORE the plastic layer. Work along the hip board, securing into lock channel with spring wire. Secure in lock channel down the end wall and across the base board.

This will be your protection from pests when the roll up sides are open.

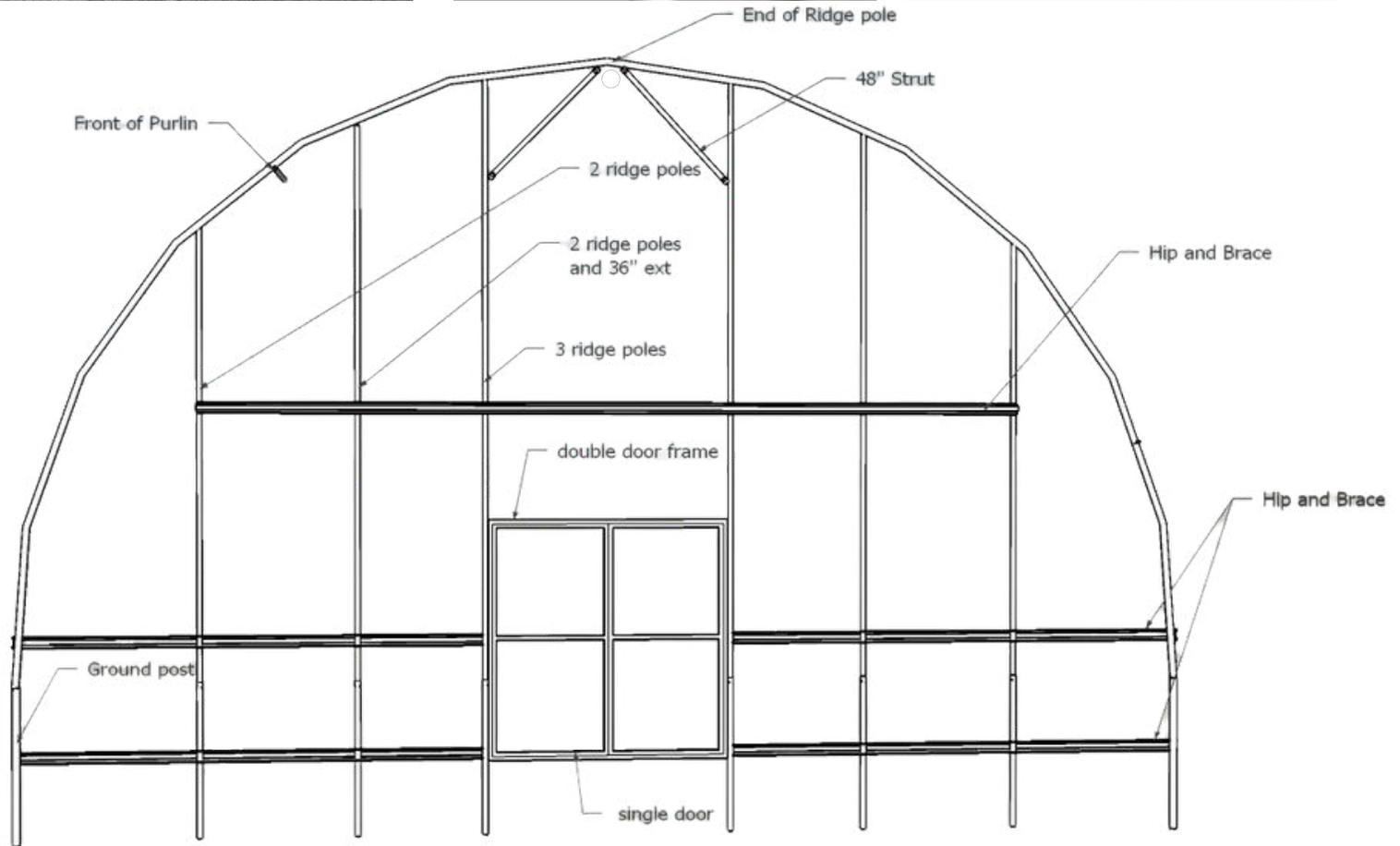


Frame the Insect Netting

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# END WALLS

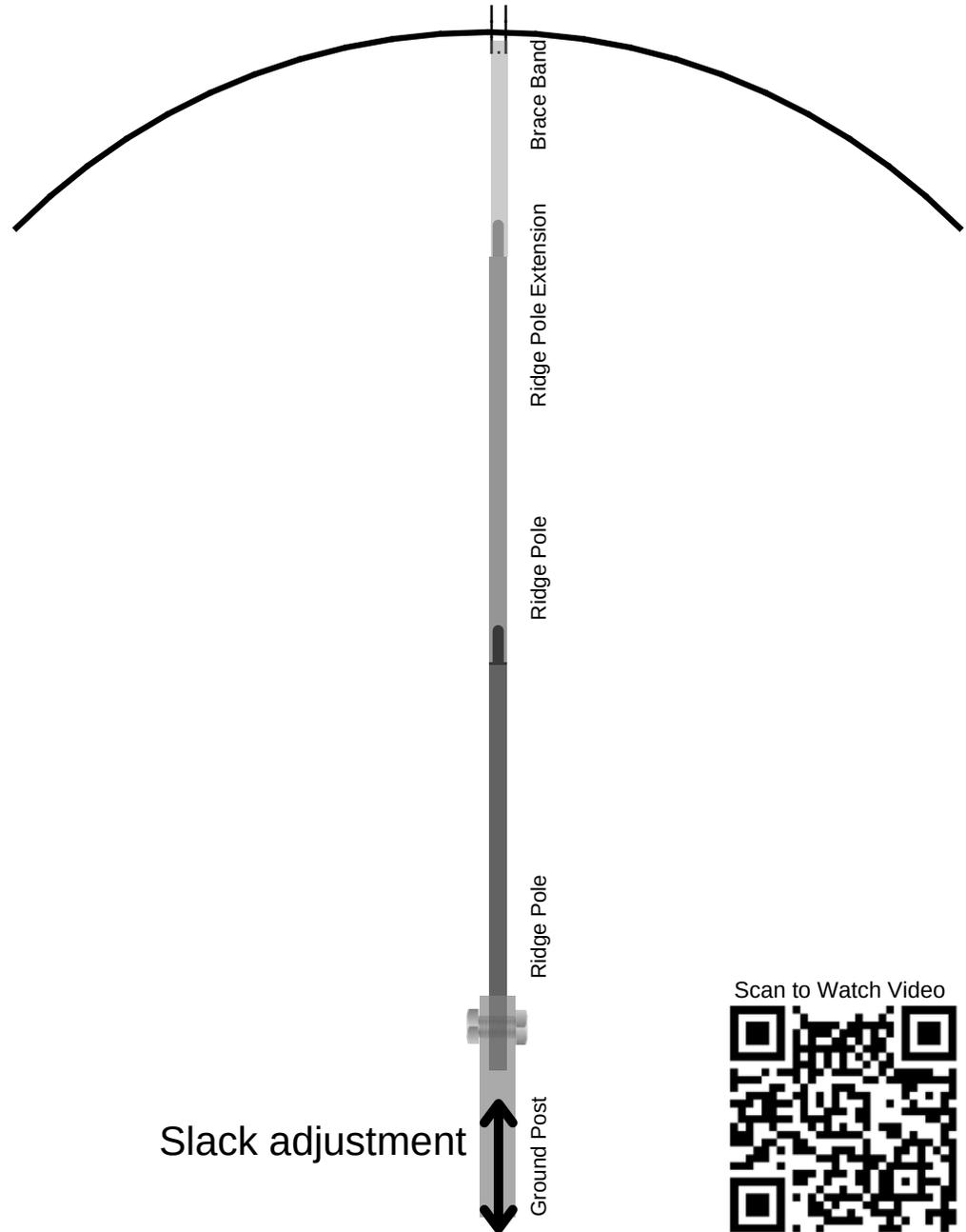


# END WALLS

## End wall construction

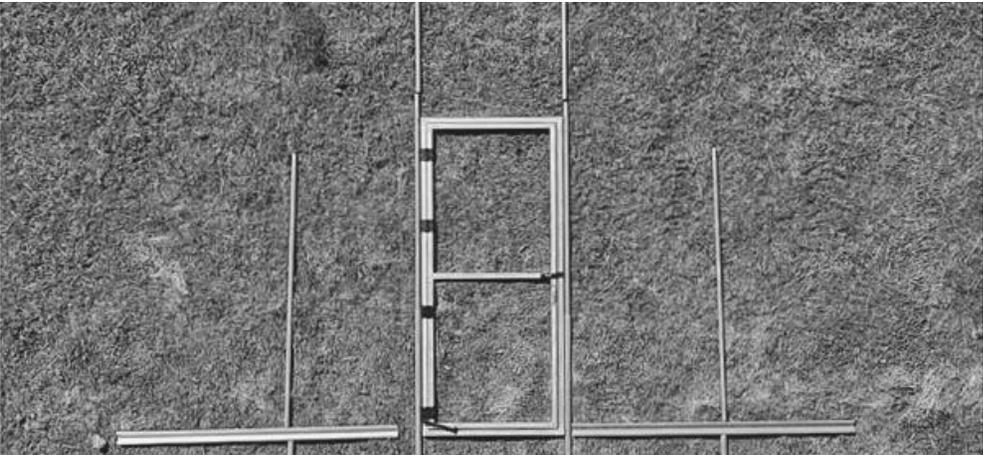
1. Run mason line between last hoops on the outside of the building
2. Center door frame in the middle of the hoop
3. Install ground post inside of line and immediately to the left and right of door frame-2'in ground/2' above
4. Attach hat channel base with #10 self tap screws level along ground attach to hoop and ground post-cut off excess
5. For 20' houses center additional vertical supports 1/2 way between hoop and door and install ground post and attach hat channel
6. A. Insert ridge pole (with swag facing up) B. Insert ridge pole extender onto ridge pole (door uprights only) & secure with #8 self tap
7. Slide ridge pole up to bottom of hoop and secure with a brace band with a #10 self tap. (Pre-drill a pilot hole)

*Keep your level handy and check for level and plumb often your door frame needs to be as perfect as you can get.*



**We recommend adding a #8 self tap screw to all tension bands and end wall cross connectors- but not the saddle type cross connectors.**

# DOORS



# DOORS

## TOOLS

- DRILL
- LEVEL
- STEP LADDER
- TAPE MEASURE

## PARTS

- Hinges (4)
- Cane Bolt (1)
- Spring (1 per door)
- Latch (1 per frame)
- 1/4 x 2" bolt galvanized (8)
- 1/4 nut galvanized (8)
- 1/4 split lock washer galvanized (8)
- 1/4 flat washer galvanized (16)
- Door Frame Single GH Door GH (1)

## Door Frame Installation

Once the verticals (consisting of ground posts, ridge poles, ridge pole extensions, brace bands) have been secured with #10 self tap (ones with washer):

Stand the door frame up and temporarily hold to verticals with clamps. Confirm plumb along door verticals and level along door frame horizontals. Use shims/scrap wood to make adjustments to level/plumb until door frame bolts are plumb, level and secure.

Drill a 1/4" hole through the ridge pole uprights from inside of the door frame using the 1/4" hole on the outside of the door frame ( and up against the upright).

Secure with a 1/4" X 2" bolt lock washer, flat washer and 1/4" nut placed on both sides of the frame.

Most 1/2" deep sockets will fit into the larger hole of the door frame.

Scan to Watch Video



# DOORS

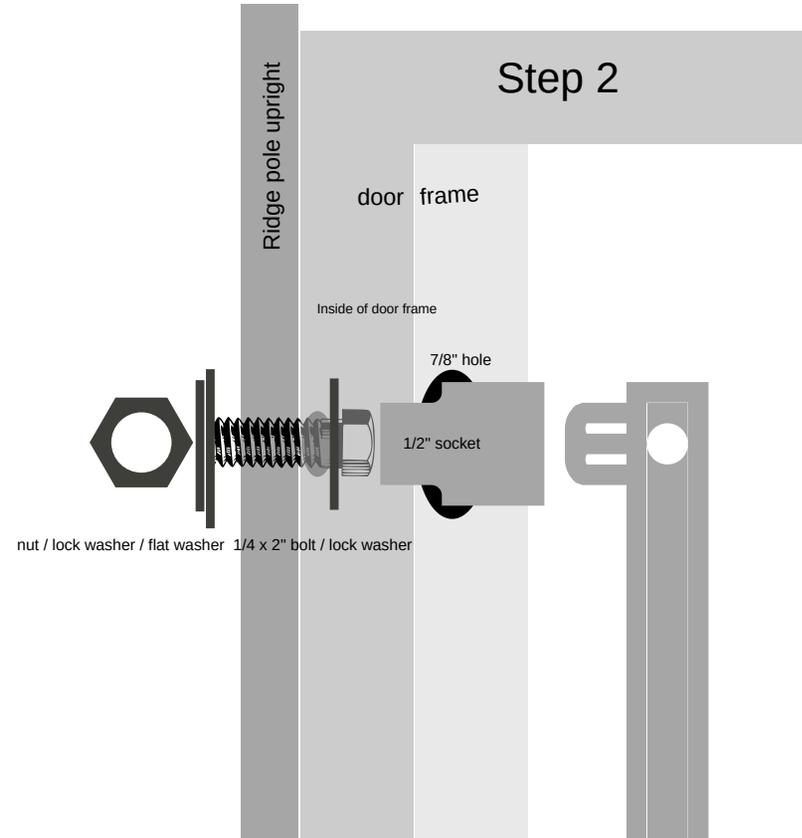
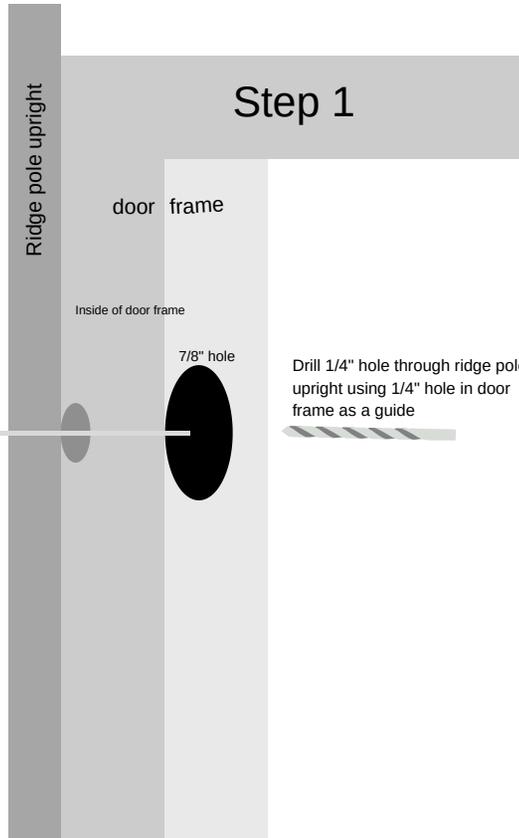
## Door Frame Installation

### TOOLS

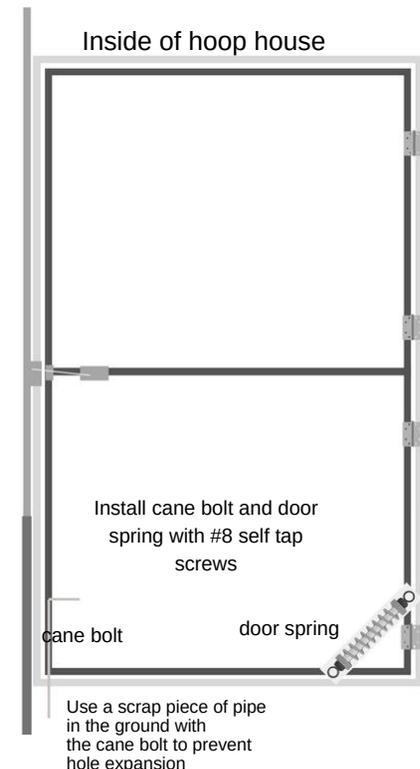
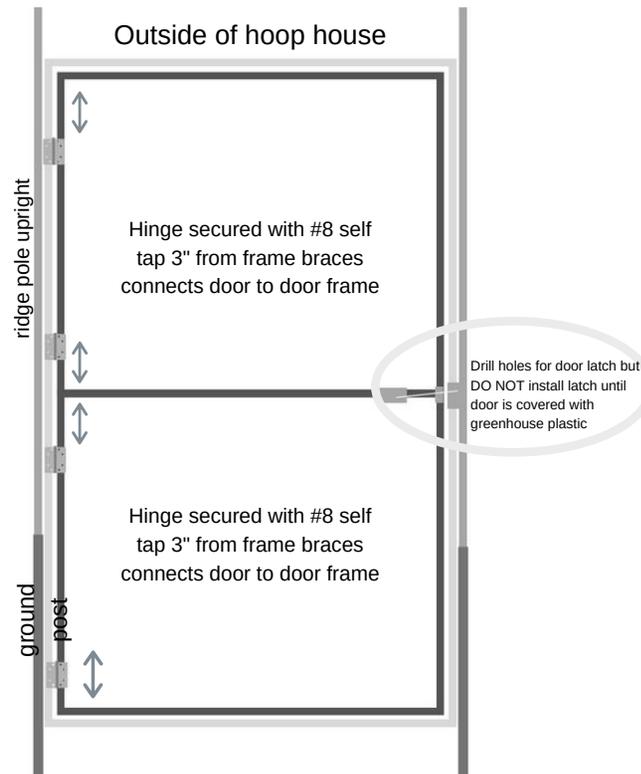
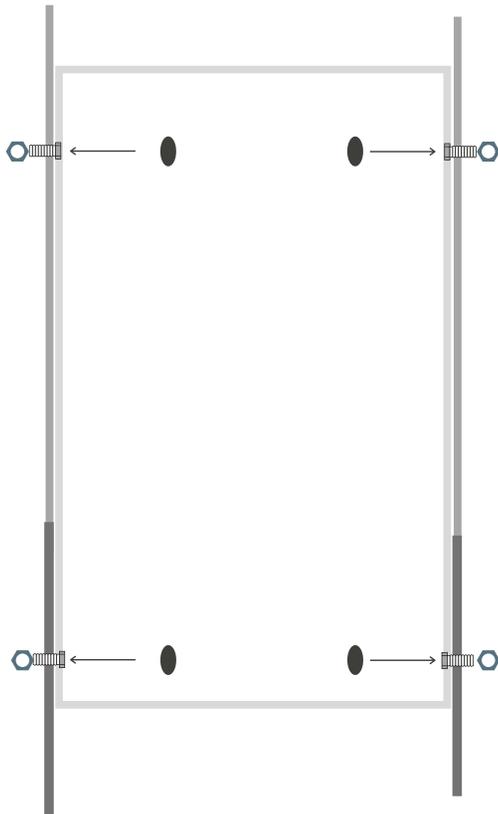
- DRILL
- LEVEL
- STEP LADDER
- TAPE MEASURE

### PARTS

- Hinges (4)
- Cane Bolt (1)
- Spring (1 per door)
- Latch (1 per frame)
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- 1/4 nut (8)
- 1/4 split lock washer galvanized (8)
- 1/4 flat washer galvanized (16)
- Door Frame Single GH (1)
- Door GH (1)



# DOORS



# DOORS

## Door latch install

This step is done AFTER plastic is on

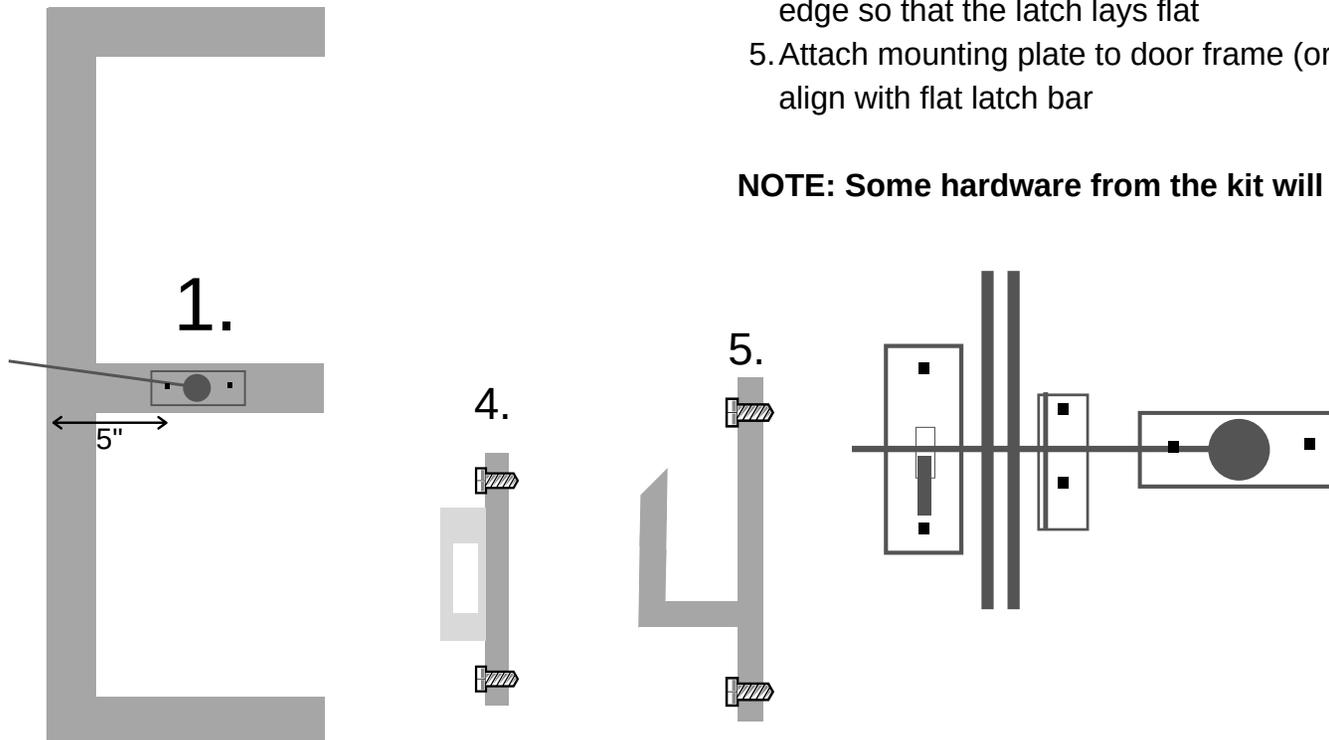
### Tools

- 1/4 drill bit
- 1" hole saw ( included with hardware pack)
- 7/16 sockets or adjustable wrench (will need two)
- 1/4" driver for #8 self tap

### Steps

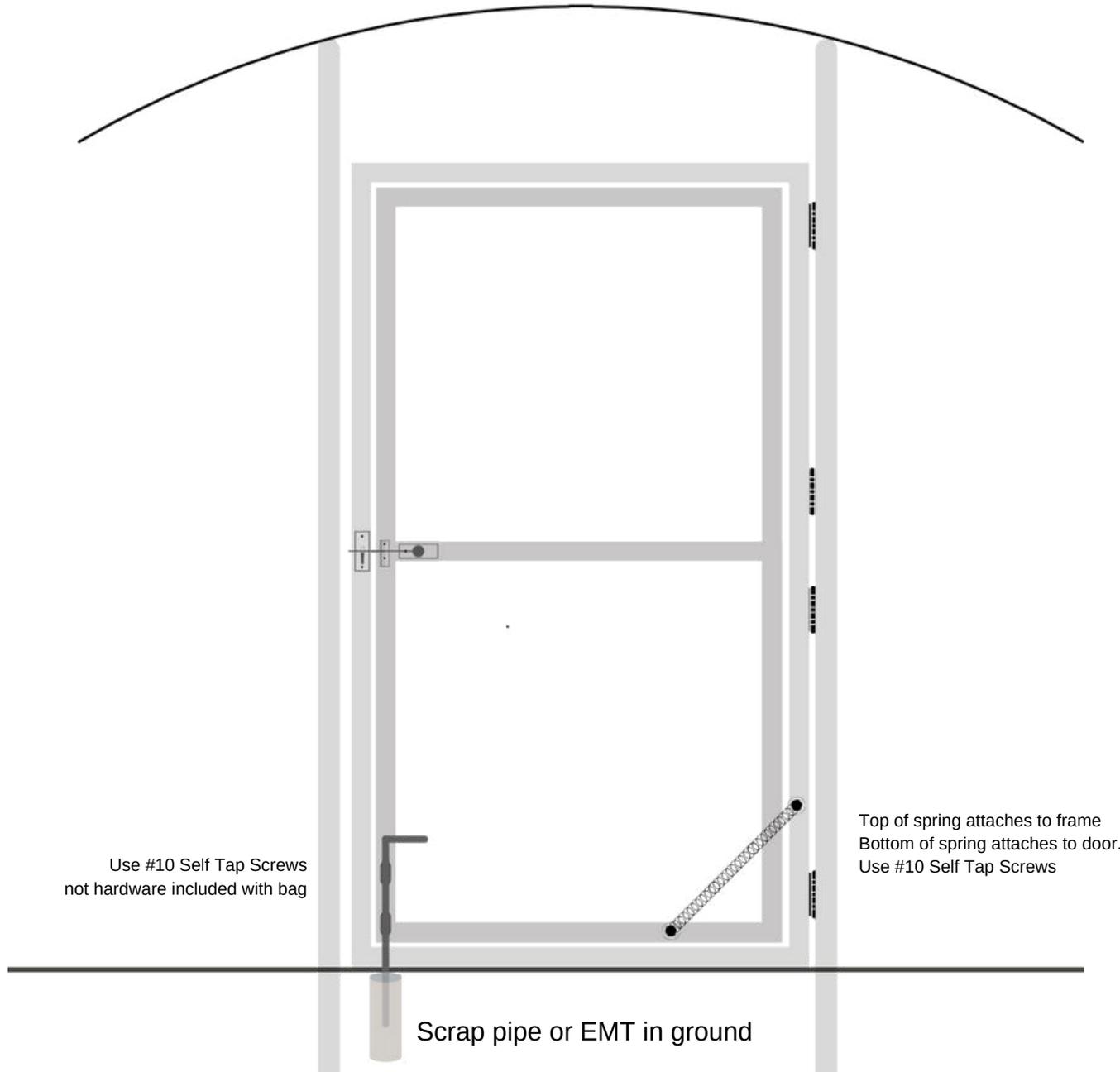
1. Drill a 1" hole 5" from door edge and right in the middle of door frame center brace
2. Thread latch through hole and align plate horizontally mark holes
3. secure with provided 1/4"x3"bolts, nuts, and back plate. Use 7/16 socket/wrenches
4. Mount door latch with #8 self tap screws against door edge so that the latch lays flat
5. Attach mounting plate to door frame (or double door)to align with flat latch bar

**NOTE: Some hardware from the kit will not be used.**



# DOORS

Door latch, spring, & cane bolt install locations as viewed from INSIDE



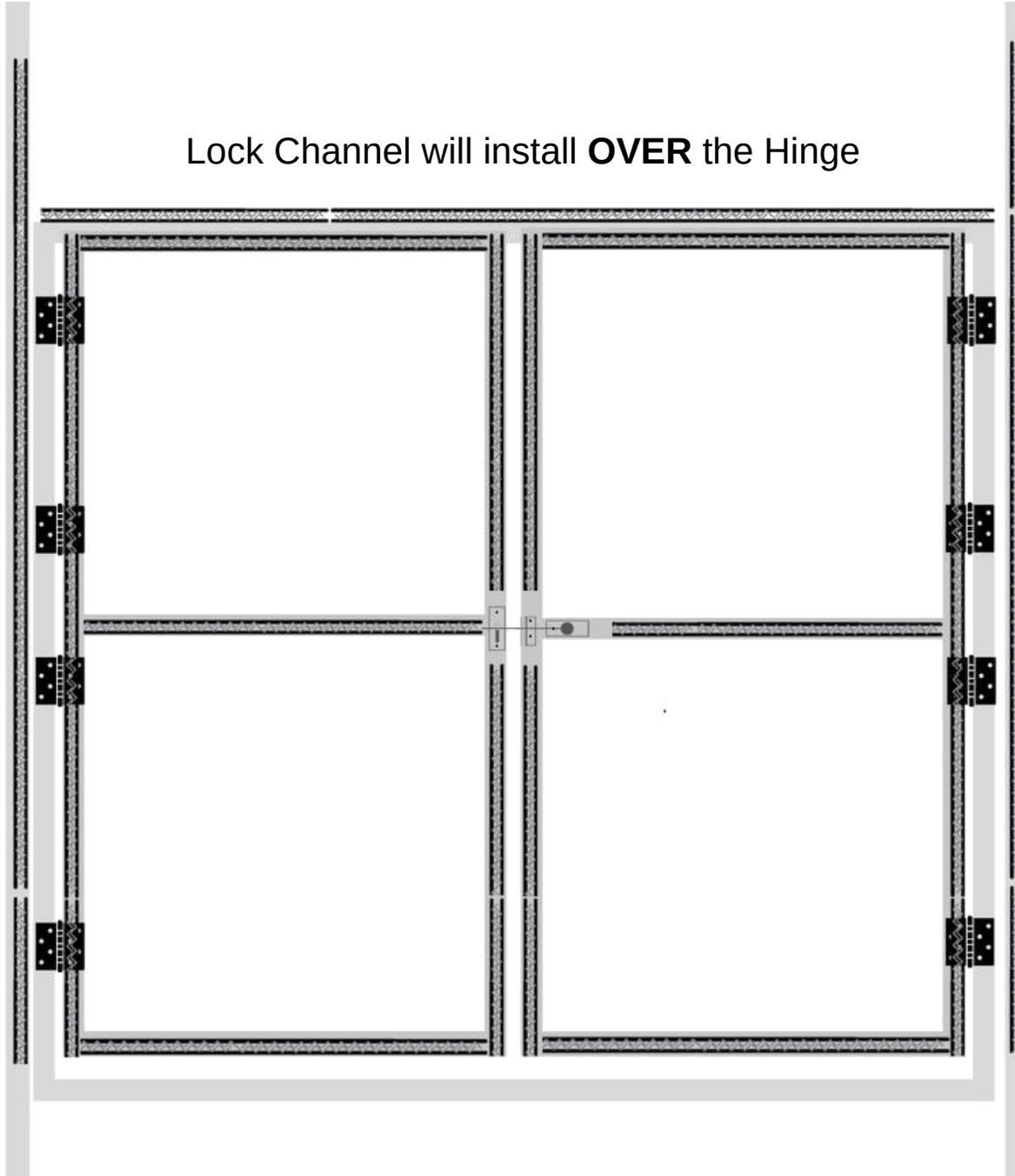
# DOORS

## Lock Channel, Door Latch, & Hinge Locations

Lock Channel will install  
from base board to 12"  
FROM TOP OF HOOP

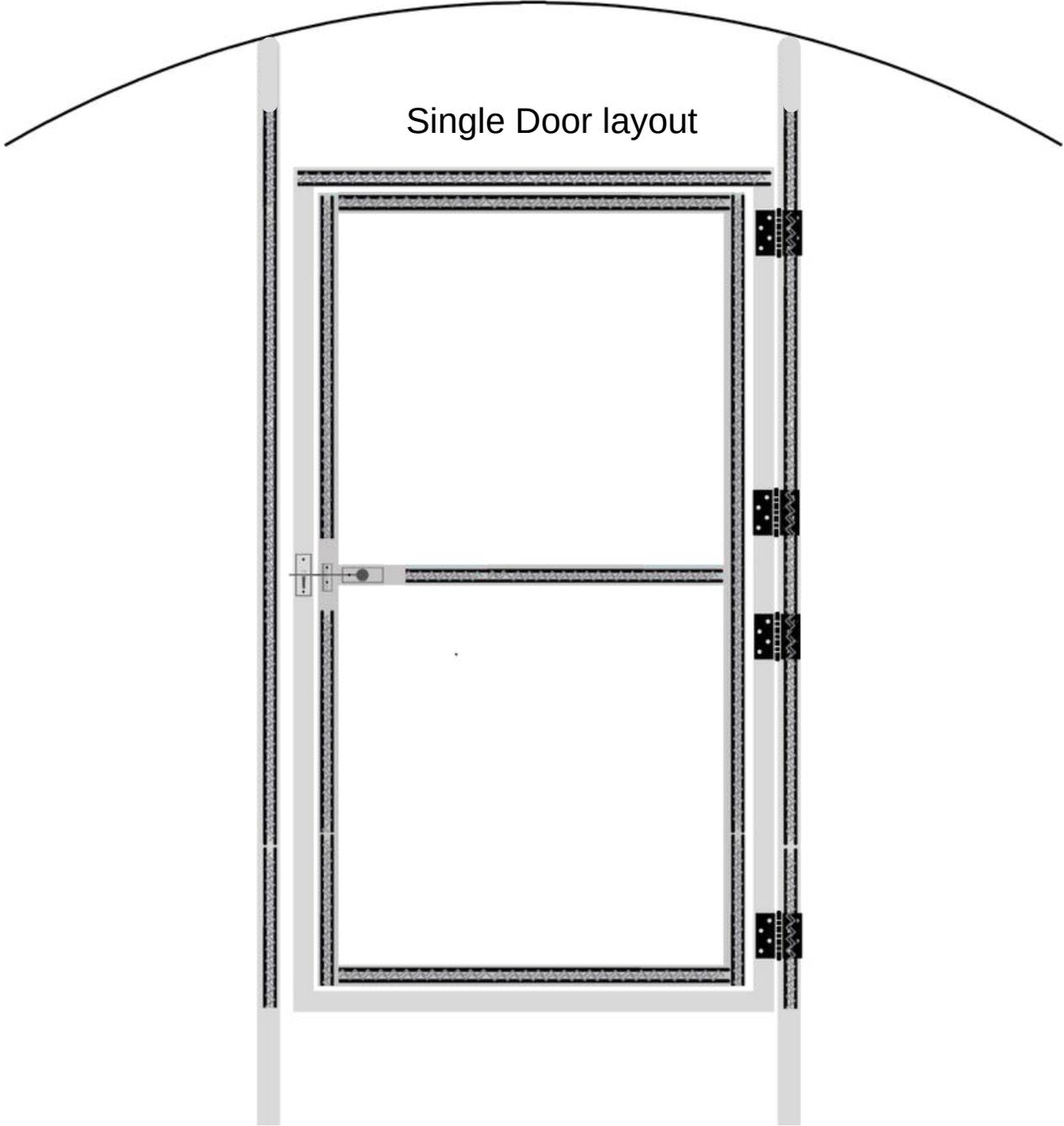
Lock Channel will install  
from base board to 12"  
FROM TOP OF HOOP

Lock Channel will install **OVER** the Hinge

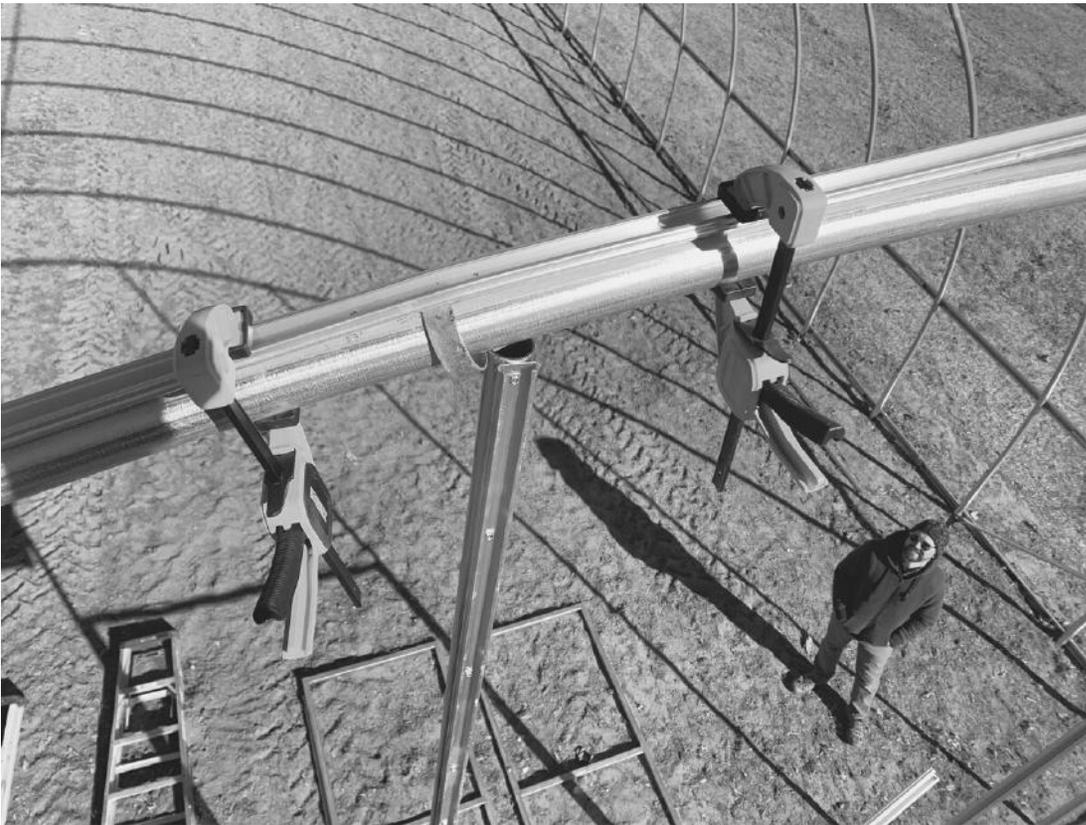


# DOORS

Lock Channel will install  
from base board to 12"  
FROM TOP OF HOOP



# End Wall Lock Channel



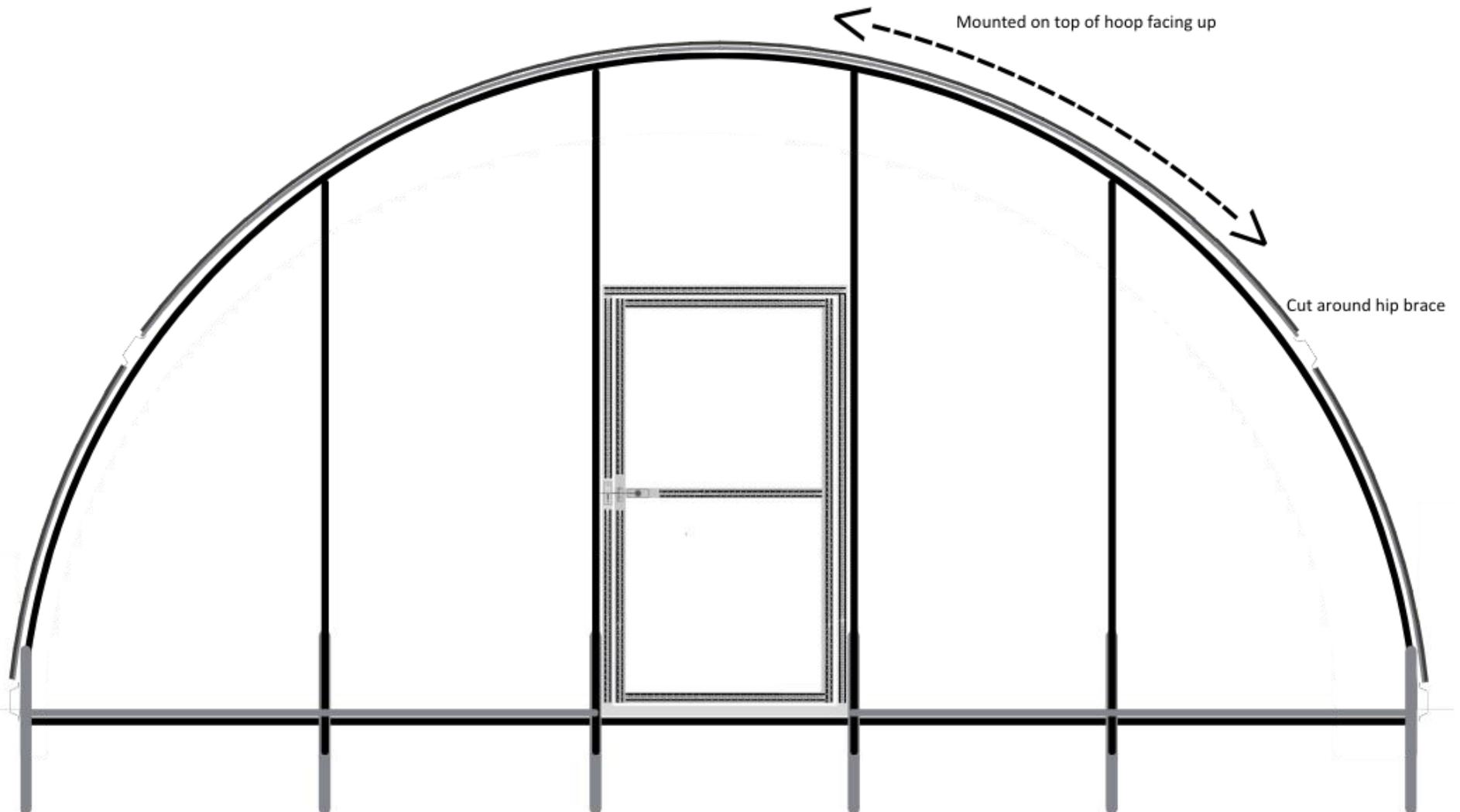
# End Wall Lock Channel

On the End Walls, install the lock channel from the base brace going over the outside/top of the hoop.

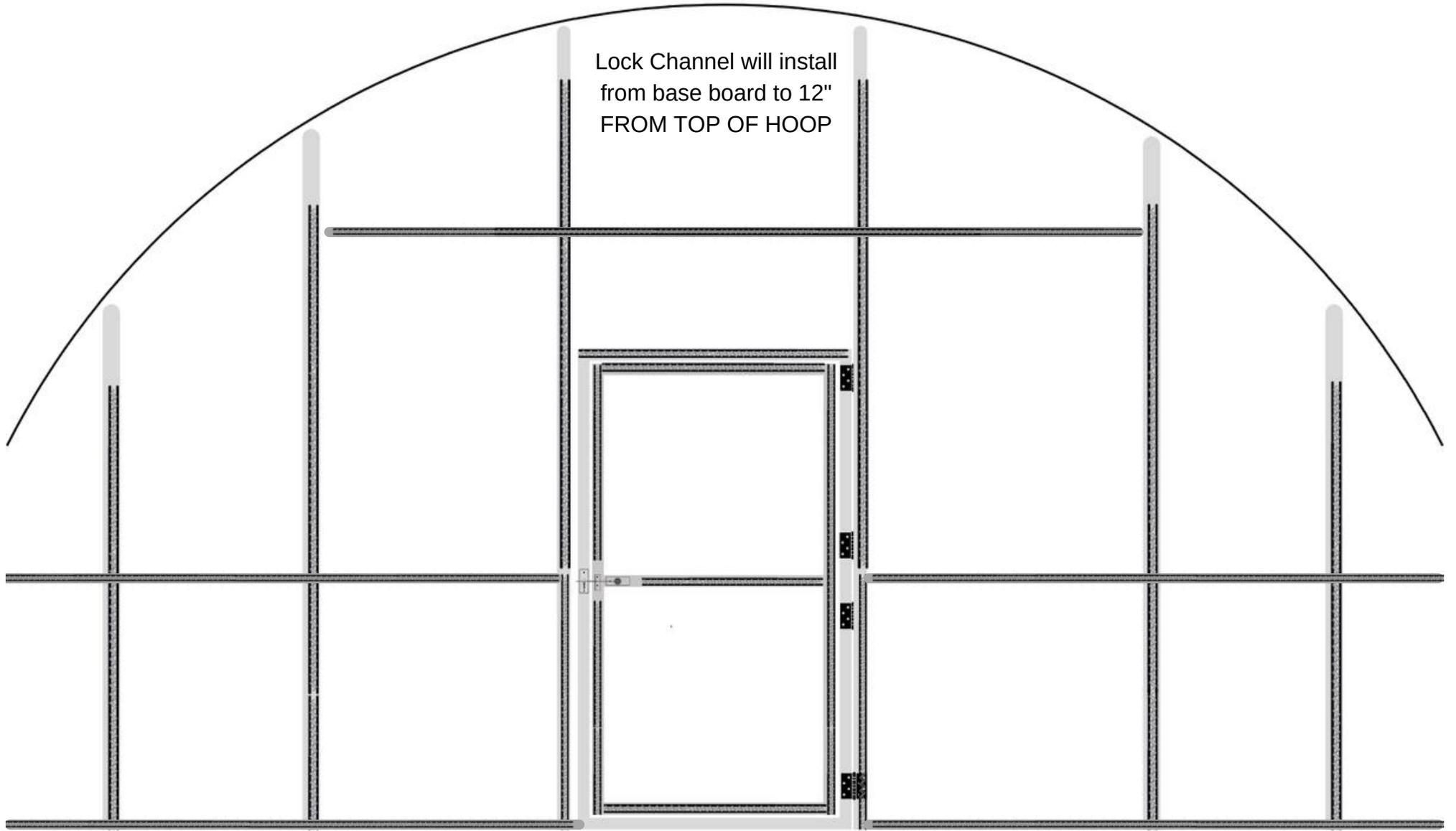
The channel will bend with the curve with **ZERO modifications, Do Not Notch the Channel.**

Keep your clamps at the ready to assist with bending and holding the channel as you use the #8 self tap screws directly in the center of the channel. (Use the grooves in the Lock Channel)

At the Hip Brace, cut the lock channel and continue along to the bottom base brace.

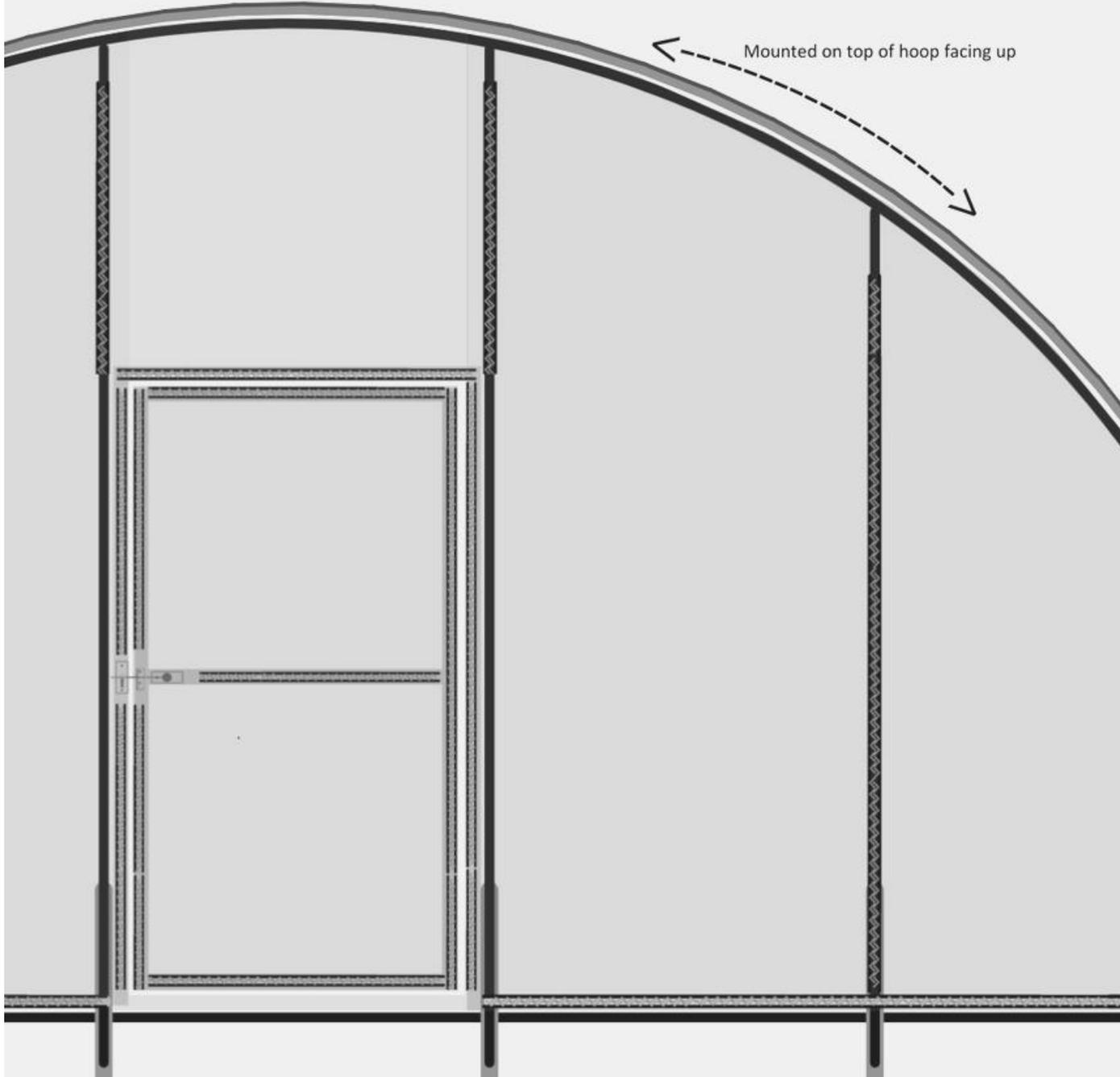


# End Wall Lock Channel



# End Wall Lock Channel

LOCK CHANNEL END WALL LOCATIONS

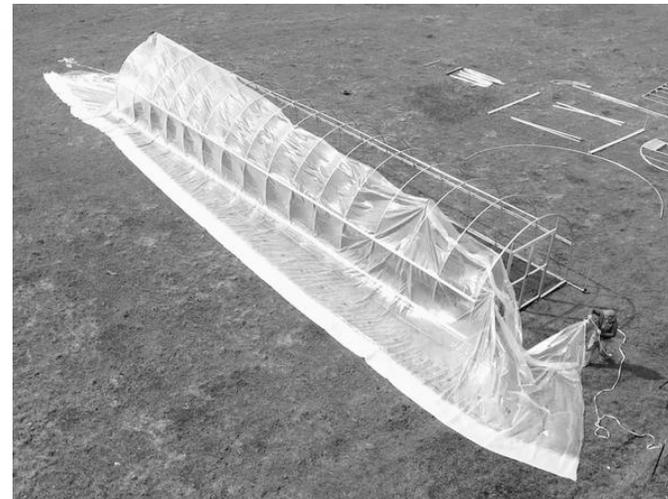
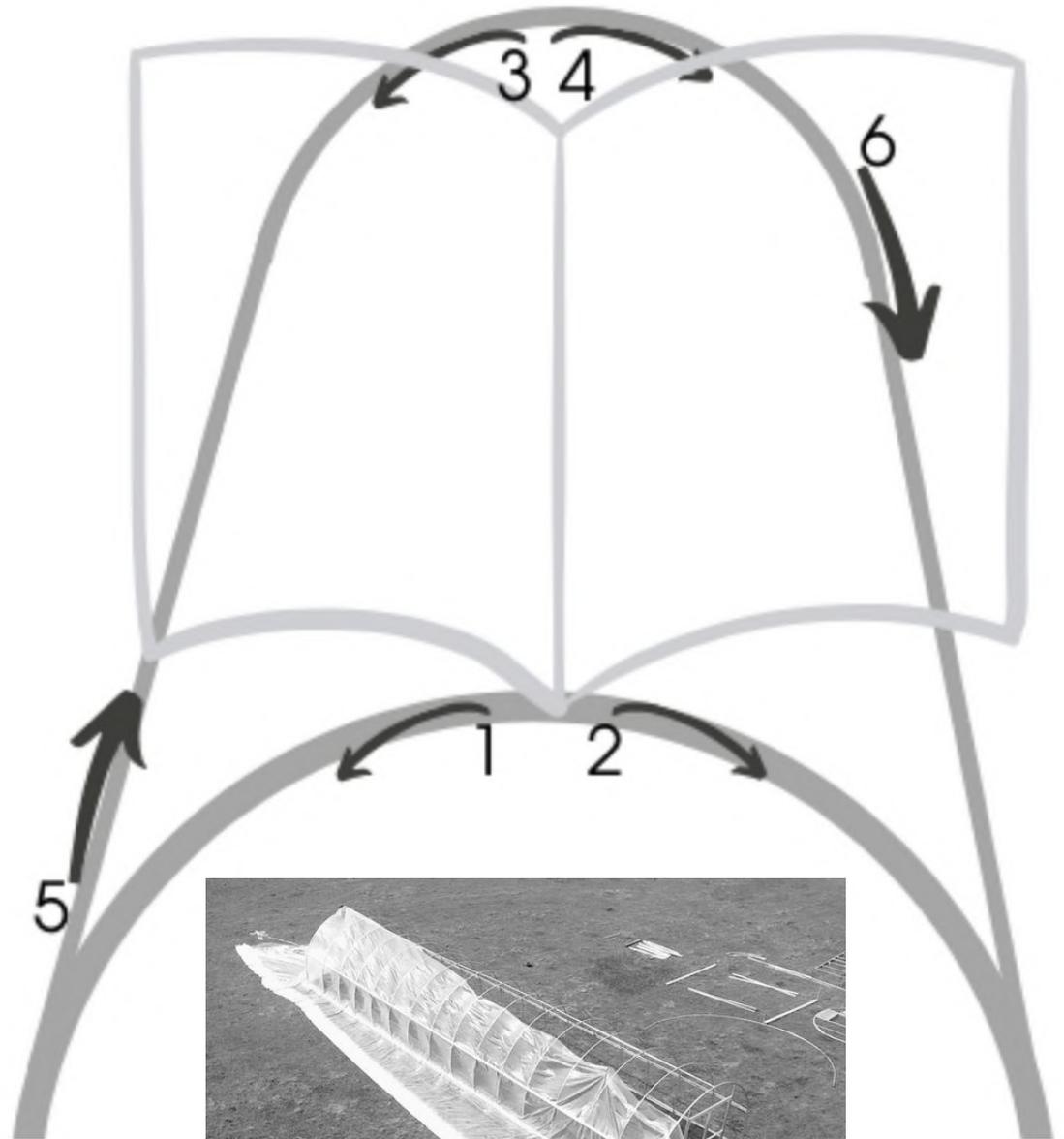


# INSTALLING PLASTIC



**\*This label should be on the inside of your structure**

Installing plastic can be the most intimidating part of your build but once you get going you will find it to be pretty straight forward. Having 2-4 people will make the job go faster and easier. Keep a rounded broom handle or painter's pole handy to help gently push the plastic over hoops in the middle. Grab your friends and step ladders and  
Let's go folks!



# INSTALLING PLASTIC

## Covering Your Hoop House

Make sure you can finish securing the plastic before you end for the day, so it doesn't blow away on you. Roll the plastic out and drape over the **length** of the greenhouse. Ensure there is an equal amount of plastic that overhangs both ends. Begin by securing the plastic only on one end by installing the spring wire from the top of the arch to the hip board.

1. Install spring wire in the middle top of hoop to bottom
2. Spring wire top down on other side
3. On opposite side, pull plastic tight and repeat step 1
4. On opposite side, pull plastic tight and repeat step 2
5. Pull the plastic tight and attach with spring wire along the hip boards one at a time. (\*See Note Below)
6. Pull tight and attach plastic with the spring wire along the base boards of the hoop house.

Once the top/long sides are covered and attached cut excess plastic off of both ends at the top facing lock channel. The resulting two pieces are what you will use to cover your endwalls. Pull the plastic tight as you go. Just install the spring wire down to the hip board.

We will install the remainder of the spring wire after we complete the roll up sides.

**If you have Roll Up Side option please read next page before beginning.**



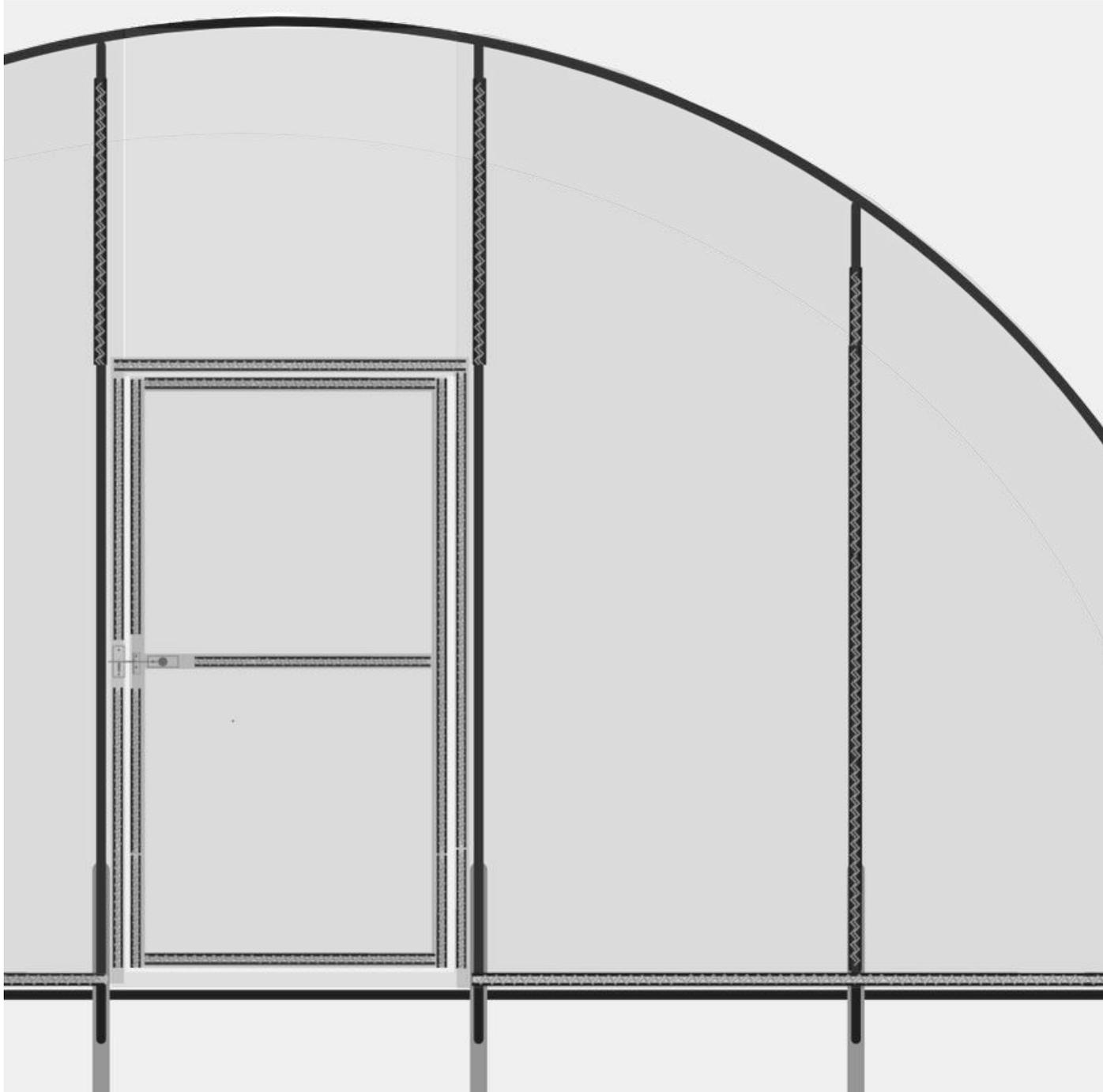
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# INSTALLING END WALL PLASTIC



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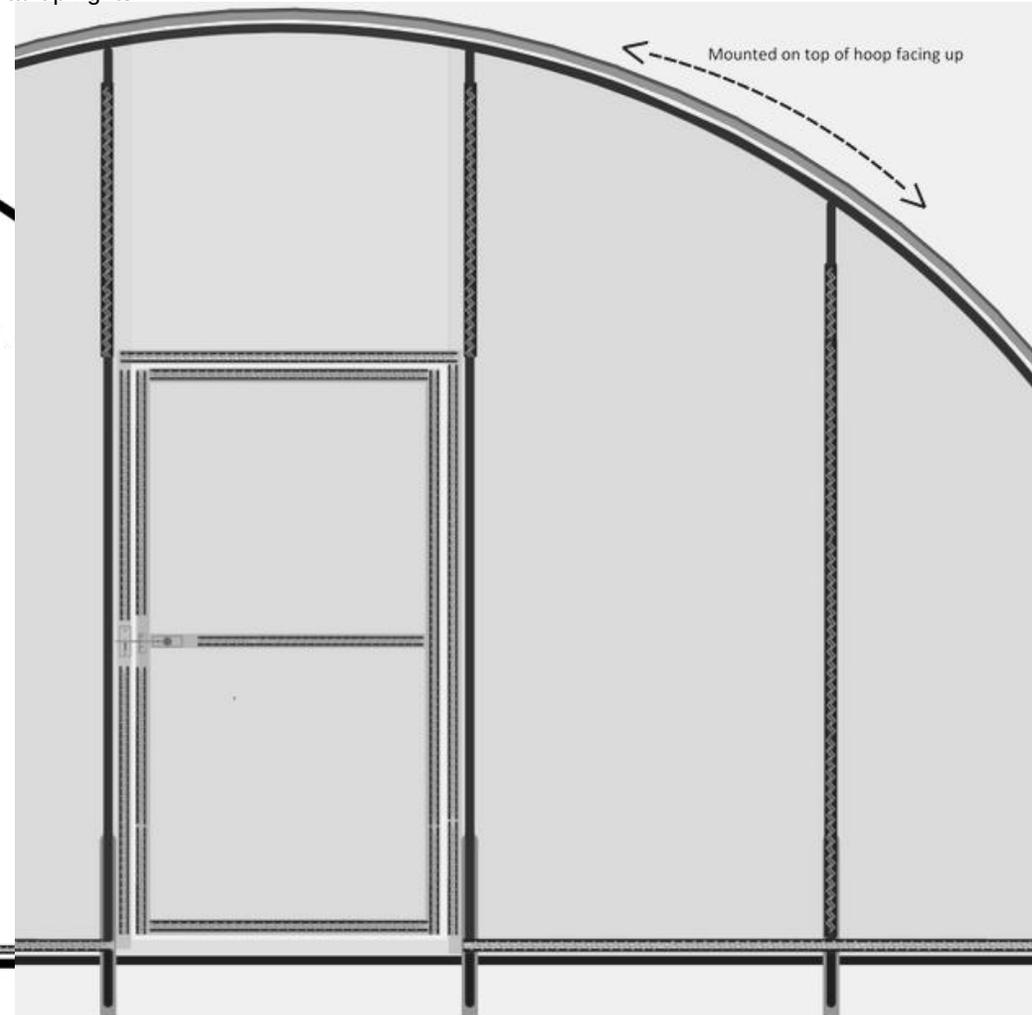
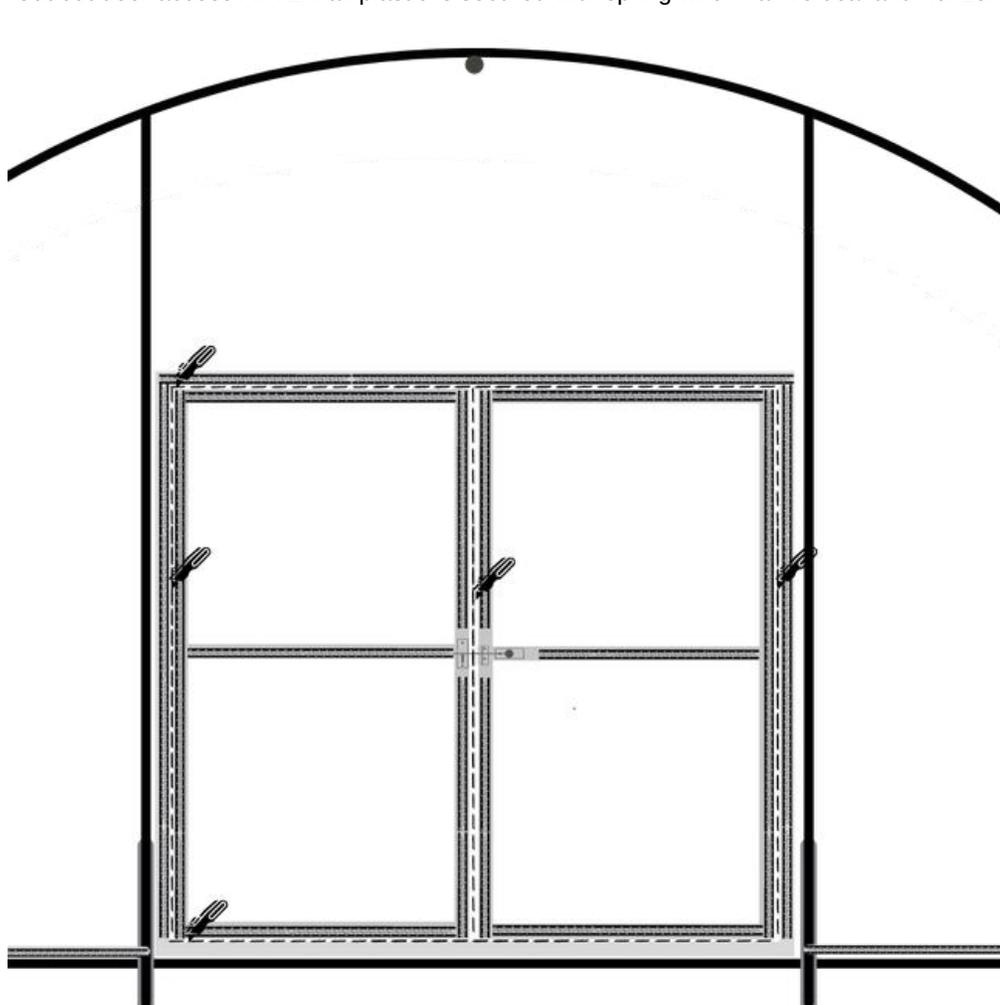
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# INSTALLING END WALL PLASTIC

Once the top/ long sides are covered, cut the excess plastic off of the hoop at the lock channel

1. While making sure the "inside" label is facing in install wiggle wire along your base while keeping the plastic stretched left & right
2. Next, stretch the plastic up and work from the top of the hoop to one side. you will keep pressure by pulling up and out. You will install this spring into the same lock channel that you secured the top plastic into.
3. Now repeat for the other side
4. Install plastic on upright and door frame and door channel.
5. Carefully cut the seam between door and door frame to allow access.
6. Follow instructions for door latch and install over plastic
7. Cut out door access AFTER all plastic is secured with spring wire in all vertical and horizontal up rights



# OPTIONAL ROLL UP SIDES

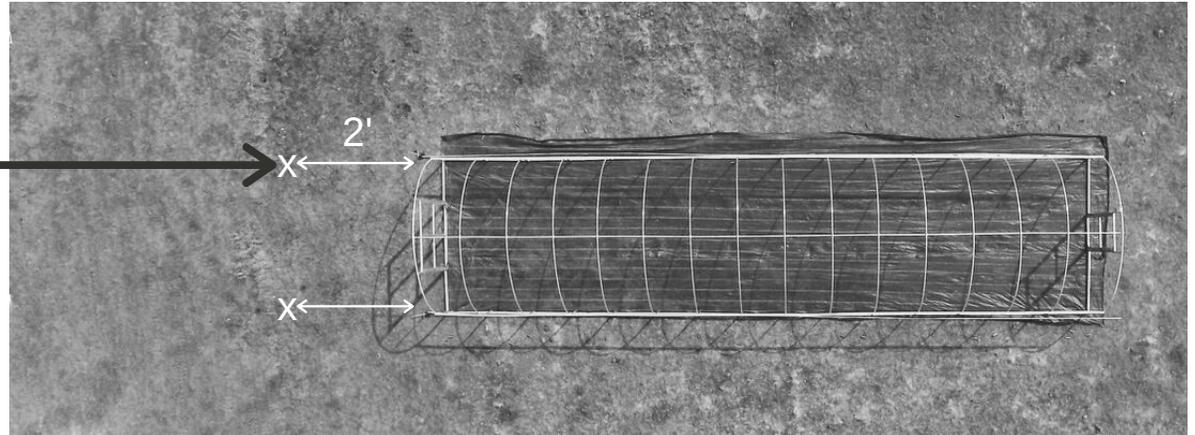
## Prep roll-up side EMT

Drive 1/2 x 2' EMT into the ground 2' from the house on the x to help secure the 3/4 hand crank guide rod.

Connecting EMT- Connect EMT by inserting swaged end into open of other EMT piece to create on long piece, continue until full length of high tunnel is reached.

Use a drill to drive #8x3/4 self tapping screw to secure connected pieces of EMT to each other so they rotate as one.

NOTE: Instructions in hand crank box ask you to put the crank less than 2', however we have had better performance 2' away from the building.



Place your snap clamps next to your long EMT sections to use during the covering process.

Following instructions in the box install hand crank on 3/4 EMT



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# ROLL UP SIDES

## Installing Roll Up Side

Roll the end of the plastic onto the EMT pipe you made earlier. Make sure you roll it under the pipe like in the diagram so that the rolled plastic does not collect rainwater.

Install the snap clamps every 18" or so with the ends a little closer together.

The first time you slowly roll it up it will likely not roll up even. As you roll it up and down you will pull down on higher parts to tighten up your roll. Roll it up and down a few times during this process and it will work out the loose sections and become straighter.

Roll as tight as you can on the emt and you can secure the snap clamps with additional #8 self tap screws for added strength



# DOUBLE LAYER PLASTIC & INFLATION FAN

If you have the double layer the second, and smaller layer, will install from end wall to end wall and base to base in the same channel as your first piece of plastic and end wall.

It will only cover the top portion from hip to hip and end wall to end wall.

The second layer of plastic is installed with lock channel and spring wire. The space between the two layers of plastic is filled with air using a simple air pump and outside air. Filling the space with air creates a pocket of insulation. This pocket of air acts as a barrier between the warmer air within your hoop house and the cooler air outdoors.

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# INFLATION FANS

1-Attach bracket to 1st hoop  
(not endwall)



2- Gently open hole



3- Place plastic dome from outside  
into bracket and turn to the right



3- Place plastic dome from outside  
into bracket and turn to the right  
OUTSIDE VIEW



4- Install fan onto bolt studs with nuts.



5- On the end wall use the metal  
bracket and the metal inlet canister.  
Sandwich the end wall plastic  
between, screw with self tap screws.  
Gently open hole.



5- Outside view of step 5- Gently open  
hole



6- Insert hose into 3 tabs and turn  
to the right to lock into place.

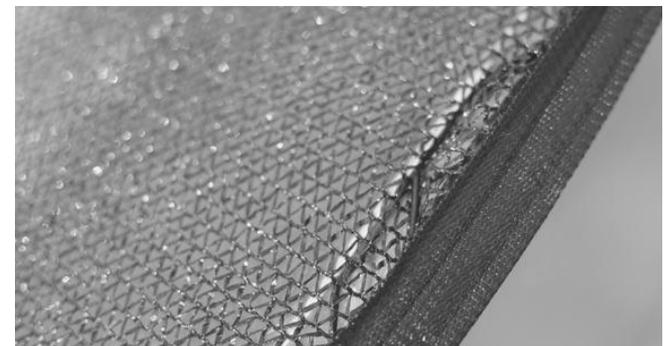
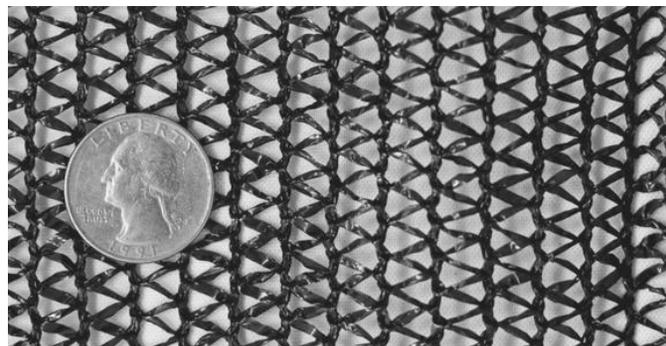
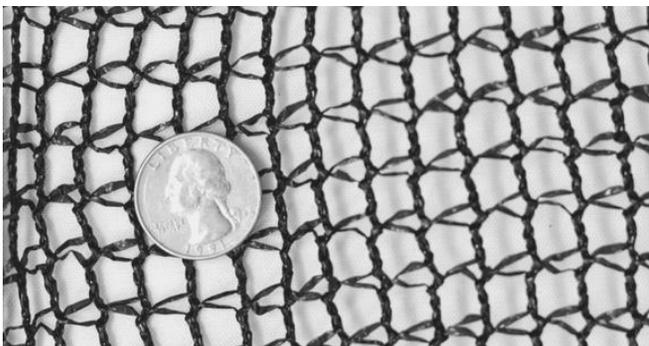
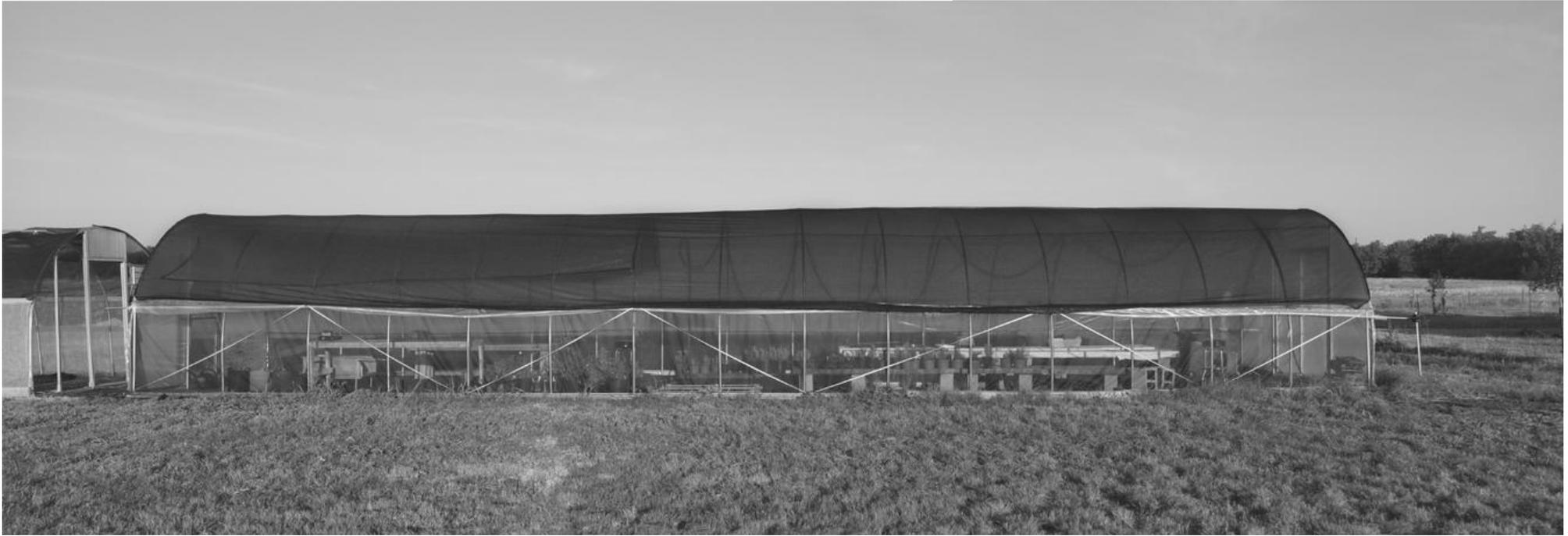


7- Insert hose into opening of fan and  
secure with electrical tape.  
Wire into junction box or add a 3 prong  
plug. Consult with an electrician if needed.



**ATTENTION:**  
We recommend pulling the outside air with the inflation fan. If you draw the air from inside of the hoop house itself to inflate your double layers, all that excess moisture from the humidity will end up between your plastic layers.

# SHADE CLOTH



# SHADE CLOTH

## Installing Shade Cloth

Shade cloth is generally installed two ways.

- Shade Cloth Clips - A plastic clam shell with spikes that grip the shade cloth with a hole in the middle to strap with rope, strap, or other securing line. This works best if your shade cloth doesn't reach your hip board. Clips should be installed at least every 24" and we suggest extra at the corners. If you are using clips you can just secure the sides. Wind will pass through the knit so you do not have the same wind loads as greenhouse plastic.
- Spring wire into the same channel as your plastic. Follow the same instructions as you would for double layer. End wall hoop from back to front and hip to hip.

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# MAINTENANCE

## Maintaining Your Hoop House

One of the great things about hoop houses is that, once installed, they are a low maintenance option for season extension. This does not mean that they are NO maintenance though. There are a few things you will need to do in order to keep your house in good working order and extend its life.

Set a time to do an intentional walk around your house to look for any problems. Do this monthly and after any major weather events. This is one of those times that an ounce of prevention is worth a pound of cure. You are looking for any rips or holes in the plastic, clogged drainage ditches, loosening of the plastic, and anything near your house that has the potential to cause damage, IE. fallen branches, tools leaning on the side of the house.

### Plastic

- Keep your plastic tight.
  - Using lock channel and spring wire makes it easy to tighten individual sections as needed.
  - Loose plastic is more likely to tear during inclement weather.
- Do not allow unpainted PVC to be in contact with the plastic. PVC reacts with the plastic and contact between the two will void your warranty.
- Keep chemical sprays away from the plastic.
  - If you need to spray your plants try to limit over spray by using a more directed stream instead of misting.
  - Turn off circulation fans while you spray.
- If chemicals do get on the plastic, clean them off with mild soap and lots of water ASAP.
  - This is particularly important with sulfur and chlorine as both will damage the plastic and high levels may void your plastic warranty.
  - If you live near a large farm or vineyard that regularly sprays their crops, you can ask them to let you know so you can rinse off your hoop house afterwards.
- Keep a roll of repair tape on hand at all times.
  - Taping up a small hole when it happens will save you a big tear the next time the wind picks up.
  - We farmers have a tendency to keep pokey things in our pocket.
  -

Hoop houses are a major investment for most small farmers and doing these simple tasks will ensure that you get the most from your's. Although most coverings have a 4-year warranty, well maintained plastic can last far longer.

# MAINTENANCE

**Seasonal Considerations**, once a season run through this list to head off eventual problems.

- Tighten bolts and screws.
- Oil hinges and moving parts.
- Tighten batten tape and rollup side ropes as needed.
- Tighten any sways in your plastic.
- Keep any drainage trenches and lines clear of debris. Re-dig trenches if necessary, particularly in late fall once the rains start falling.

## **Special Weather Conditions**

- Brush off any snow build up during storms.
- During heavy rains check for puddling on your plastic and tighten as needed.
- Clear storm debris from ditches.
- Brush off fallen leaves and branches.
- If hurricane force winds are predicted for your area, remove the plastic to avoid damage to your structure.

# IRRIGATION MAINTENANCE

## Maintaining an Irrigation System

To get the most use out of your irrigation, we recommend implementing a regular maintenance schedule. This schedule will include daily, weekly, and yearly tasks. In addition to proper maintenance, look for irrigation products that use high-grade components that break down slower when exposed to UV, climate, and poor water quality.

Here are the suggested NRCS maintenance items:

### Weekly

- Inspect flow meter, and monitor water application.

The flow meter measures the speed of the water moving through the irrigation. This is important to monitor as it can help detect leaks or other issues. If you notice that the meter reads lower than usual, this could be a sign of a clog or a pump in need of repair. If your system is operating at too high of a pressure, it can cause the drip emitters to pop off the drip line.

- Perform a visual inspection of crop performance and emission flows, if visible, and repair or clean emitters as necessary.

Check that all of your emitters are cleared and feeding water evenly to your plants. If you see a sluggish plant in the row, chances are it isn't getting enough moisture. Notice an abundance of birds in one area? You might have a leak in the system. This maintenance item will be a constant thing to keep an eye on.

- Clean or backflush filters, as needed.

Filters need to be checked at a minimum weekly. The two most common types of filters used in irrigation are mesh and disk filters. Suppose you live in an area with hard water or are pumping water out of a dirty water source, i.e., greywater, ponds, or harvested rainwater; you may need to increase this maintenance item from weekly to daily checks or need a larger disk filter. Remember, filters are put into use to protect the overall system. Give your filter a thorough rinse and return to the filter housing. Keeping the filter clear of debris will help keep your system in good working order.

# IRRIGATION MAINTENANCE

## Monthly

- Measure pressure often on installed gauges or at Schrader valves with a handheld gauge to ensure proper system operation. A pressure drop (or rise) may indicate a problem.

You will want to check the pressure at each valve on the feeder line. Ideally, it will be in a range between 20 and 50 psi. Have a good idea of where your water pressure rate typically is to catch fluctuations. If you are noticing that you are operating at a lower pressure than this threshold, consider adjusting or removing your pressure regulator. If your drip runs above 50 psi, you will need to add a pressure regulator to reduce this output. High psi rates cause damage to tubing and fittings, reducing the longevity of your system.

- Follow proper maintenance and water treatment to prevent clogging based upon dripper and water quality characteristics  
Having a filter in place will help reduce clogging. Some drip emitters have built-in check valves that open and close simultaneously, helping to conserve water and prevent reverse suction through the emitters. These functions, along with the dripper lines' continuous flushing, help reduce clogs. If you do notice a clog- you might need to blow out your system.

- Check pressure gauges to ensure proper operation. Repair or replace damaged gauges.  
Check any gauges that are included in your system regularly. To manually check the pressure for each valve, turn on the system's controller and manually turn on each valve. Run each zone and check for leaks around the solenoid or reduced flow. If you spot leaks, mark them with a flag or rock. They might be the site of a broken emitter. Also, check that all fittings are forming tight connections, free of leaks and that the tubing is staying secure.

Repair leaks marked previously. Whether the tubing is warped or visibly damaged, you will want to cut out the damage and reconnect with fittings. At this point, you can add in additional tubing or reconnect to the undamaged portion of the line. After the repair, flush the system with the end cap removed to ensure all the sediment is released. Afterward, pressurize and run the system and recheck for leaks.

# IRRIGATION MAINTENANCE

## Monthly Cont.

- Inject chemicals as required to prevent precipitate buildup and algae growth.

Depending on your water source, minerals buildup in an irrigation system the same way you will see hard water in sinks and on faucets. Depending on your preference, you have a few options to decalcify your irrigation. Check your manual for any warranty requirements.

How do I clean my irrigation system?

Sulfuric acid, phosphoric acid, nitric acid, and hydrochloric acid (used individually) get the grime out of drip irrigation systems. These chemicals are run through the line using fertigation methods.

- Check chemical injection equipment regularly to ensure it is operating properly.

This is referring to fertigation or dosing equipment. You will need to consult your product manual for further instructions as they will vary.

- Check and assure proper operation of backflow protection devices.

## Yearly

- Flush lateral lines once or twice annually.

These lines run from the backflow preventer to the computer ran valves. Keeping this flushed will reduce the debris that reaches your filter.

- Make provisions for the complete removal of water from the pipeline by gravity or other means when:
  - Freezing temperatures are a hazard,
  - The pipe manufacturer requires draining,
  - Draining of the pipeline is otherwise specified.

The water drained from pipelines shall not cause water quality, soil erosion, or safety problems upon release.