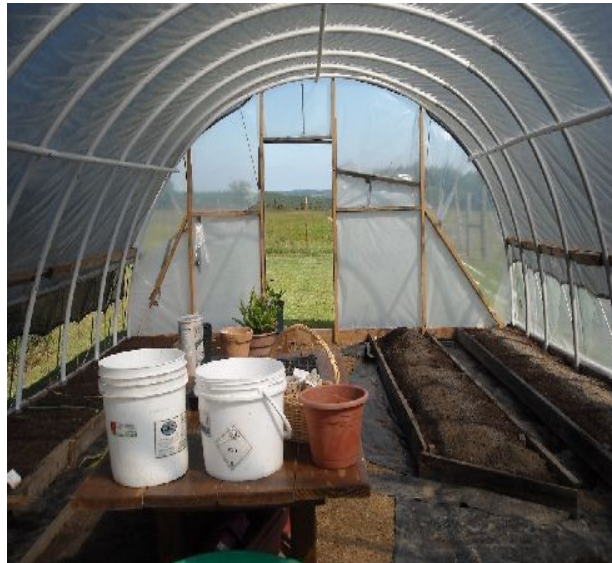


Hoop House Plans

By Steve Robinson



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This Hoop House Plan creates a strong durable environment for your vegetable garden , flowers or whatever you enjoy growing. The dimensions are 18 feet wide by 30 feet long . It is constructed using lumber for the baseboards and PVC pipe for the hoops. This Hoop House cost me around \$800.00.

I built most of the hoop house by myself, with the exception of friends helping me place the plastic and cover cloth over the hoops. With the help of a few friends, it could easily be constructed in a day.

You can always alter the dimensions of your hoop house if you do not have enough space. Or you may want to extend it for a larger growing area. Some regions may use 1 inch PVC pipe, but I recommend using 1 ½ inch PVC for its additional strength. Also, if you live in a sandy soil region, you may want to drive your stakes and pipes in 3 feet deep. I'm in a rocky region and I did good getting the stakes and PVC pipe 2 foot deep. You may also decide to cement your PVC post into the ground. If you alter your dimensions, you can figure out the length of your pipe by using the circumference of a circle formula: $(3.14)r$; where r stands for radius which is half the width of your hoop house. Make sure you add 3 feet to insert into the ground.

Equipment and Tools:

Plumb line and Level

Step ladder

Stapler with staple

Sledge hammer for driving your baseboard stakes and PVC ground post

Saw to cut your lumber and PVC pipe.

Drill, screwdriver bit, ¼" wooden drill bit to drill hole for carriage bolts

Selecting a Site and Construction of Your Hoop House

1. Selecting a Site Select a good site for your Hoop House tunnel in regards to receive enough light, proper drainage, accessibility, and irrigations. I have positioned my Hoop House east to west so the sides receive the majority of the wind.

2. Framing your Hoop House Use stakes to mark your corners measuring 18' wide by 30' long. Make sure corners are square by measuring equal distance between perpendicular corners. (it is 35' between perpendicular corners) Drive your 4 stakes into the ground at the corners and stretch your string around the perimeter of the corner stakes where your baseboards will be placed. Use your leveler to level out the position of your baseboards.

3. Time for your Baseboards Cut fourteen 2' pieces of 2" X 4", Cut them in a point on one end so you can drive them into the ground. Now, drive in your stakes for baseboard attachment on the inside of your guide string. Make sure you have the broad side of the 2" X 4" facing the string.

On the long sides of your hoop house, your posts should be 1-' from each end where your baseboard will meet and 6" from the corners. This will allow you space for PVC ground posts in the corners. Attach your 2" X 6" X 10' side baseboards to the stakes with 3 1/2" screws. Start at one end flush with the corner stake.

On the end walls, drive a stake 10' from the outer edge of one of the sideboards and 6" from each of the corners. Screw the first 2" X 6" X 10' flush against the end of the side wall baseboard and cut the second board to fit the remaining of the end wall(eight feet). Remove your 4 corner stakes and string.

4. Drive your 2" PVC Ground Posts Now, on the side walls, make a mark every 3 feet starting from the end of the sidewall baseboard. Drive your PVC 2" pipe into the ground at your marks and in the corners. They should be driven into the ground to make them flush with your 2" X 6" boards.

Note: When driving your PVC into the ground, place a 2" X 4" board over your PVC pipe and hit it instead of your PVC pipe. I may break otherwise.

5. Time for the Hoop Assembly! Prime and glue one 1 1/2" X 10' and 1 1/2" X 20' PVC

pipe together to make one 30' long pipe. Follow the instruction for using the primer and glue.

6. Raising Your Hoops Place one end of your 30' long pipe into a 2" PVC ground post. Bend the hoop to insert the other end on the other side of the tunnel directly across.

After you have inserted all of your hoops. Get up on a step ladder and have another person on the ground. The person on the step ladder needs to eyeball all of the hoops to level them and the person on the ground will make adjustments to the depth of the hoops.

Now, it's time to begin drilling through the baseboard and the pipes using your 1/4" drill bit. Use your carriage bolts, washers and nuts to secure the hoops next to the baseboards. Take caution to push the bolts through from the outside and tightening the hoops from the inside.

7. Attach the Purlins Attach your purlins (30' 1/2" PVC) on the inside of the hoops. The first purlin should be place directly in the center and the other two purlins should be place between the hip board and top of the hoop. You will need to attach your hip

boards before you place the 2nd and 3rd purlin up. Use your stepladder and drill, to drill through the hoops and purlins every 3 feet and attaching with carriage bolts, washers and nuts. The head of the carriage bolt should be up to assure a smooth surface for the plastic to rest on.

Note: (Duct tape can be used to cover the head of your carriage bolt)

8. Attach Your Hip Boards Measure 3' high on your hoops above your baseboards and place your hip boards using 1 ½" screws. Hip boards should start at one end of the tunnel and placed end to end. Secure your hip boards together with a piece of wood at each junction to make one long hip board of 30'

9. Time to Construct Your End Walls Use 2' X 4" lumber to frame in your end walls.

There is no rule here because of door variations and needs. I used 4 vertical studs with horizontal and diagonal bracing. Cut notches in your studs to fit on the inside of the baseboard and the above hoop. Use 2 ½" or 3 ½" screws to attach your studs and bracing.

10. Time for End Wall Bracing. Cut out a 2" X 4" board to run from the side baseboard (close to the second hoop), to the end wall and baseboard.

11. Time for the First Furring Strips Place furring strips end to end along the upper half of the hip boards.

12. Time for the Plastic Do this on a calm day. Lay your poly out lengthwise on one side of your hoop house. Pull your plastic over the hoop house. An easy way is to secure a rope close to the edge of the ply at each end of the hoop house and tie a tennis ball (or round object) that you can throw over your hoop house. Then throw the rope over the hoop house and go around to the other side and gently pull the plastic over the hoop house.

Make certain that the plastic is centered properly and tight before securing with furring strips over the plastic, snug against and just below the first furring strip previously placed. Use 1 ½" crews placed every 2 or 3 feet apart.

Pull the plastic tight and attach to the opposite side in the same way. Finish fastening the plastic by attaching to the end walls, using furring strips.

Note: (you may choose to buy poly tak strips which are commercially available.)

13 Time for the Roll up Sides (Curtains) Prime and glue together your 31' long 2" diameter PVC pipe. Be sure the pipe is longer than the tunnel on both ends so you can attach a handle and to avoid any problem with rolling up your sides. Attach your plastic to your PVC pipe with duct tape. You can also purchase special clips for attaching poly to pipe.

You may choose not to have roll up sides at all, but to just tie up your plastic when ventilation is needed. You can accomplish this by simply placing eye hooks in the hip board at every hoop and running a piece of string below the sidewall plastic around the hoop and back.

14. Time to Stabilize Sidewalls You will need to prevent the sidewalls from flapping

in the breeze outwards. To do this, cut pieces of drip hose or old water hose and attach them with washer and screws from the hip board to the baseboard at each hoop.

15. Time to Install Plastic on the End Walls Since I will take off my plastic from the

end walls during the hot summer, I use a cheaper plastic. You may choose to use commercially available poly tack strips or securing strips like we used to secure the sidewalls. Then cut out your doorway.

16. Time for the Door Frame and Door You can make a door, or use an old door laying around in storage on one or both ends of your hoop house.

17. Time for the Shade Cloth Installation A shade cloth will help keep the temperature down during the hot summer months in your hoop house. I usually place my shade cloth on the hoop house around Memorial Day until Labor Day. The grommets that are every three feet apart allow for tying down to the eye hooks that are fixed into the baseboards. I place my shade cloth a little extra to the South to provide better shade.

Material	Dimension	Quantity	Comments
String and Stakes		100 feet of string; 4 stakes	Square off your hoop house: Dimensions 18 X 30
Lumber	2" X 6" X10'	6	These are your base boards. They will be in contact with the soil; so use cedar or

			redwood; Do not use chemically treated lumber because of health concerns if you are planting in the ground.
	1" X 4" X 10'	6	These are your hip boards
	2" X 4" X 8' 18 To attach you baseboards, framing and	18	To attach you baseboards, framing and bracing the end walls. bracing the end walls.
	2"X 4" X 10	6	These are used to frame up your door(s) I put a 32" door at each end. Yours may vary.
Furring Strips	1" X 2" X 10'	16	These are used to attach plastic to hip boards and end walls.
PVC Pipe (Schedule 40)	1 1/2" X 20' bell end	14	These are part of your 11 hoops plus 3 purlins.
	1 1/2" X 10 straight end	14	These are your other part of your 11 hoops plus 3 purlins.
	2-3' long pieces of 2" PVC	22	These are your ground post and will have to buy your PVC in eight to ten foot pieces
	2"X 30'	2	These are used to roll up your curtains. You will have to buy in 10 or 20 foot sections.
	2" pipe	8	These are used to make handles for the curtains to be rolled up.
Primer and Glue			Use to connect your PVC pipe together.
Carriage bolts	5 1/2" X 1/4"	40	Purchase bolts, washers and nuts. These are used to attach baseboards to PVC posts and your hoops to the purlins.
Deck Screws	1 1/2"	2 lb	
	.2 1/2"	3 lb	
	3 1/2"	3 lb	
Self Tapping Screws			To connect handle to your curtain rod(pvc)

Greenhouse Polyethylene	30' X 34'	1	Buy in one piece. Do not try and piece together. Use this to cover your hoop house. Use 6 mil UV stabilized. You may decide to use cheaper plastic for your end walls.
Shade Cloth	30' X 25'	1	White/Black; 38 % shade cloth with grommets every 3 feet apart.