

Hoopty-Do

9/14/08

The present hoop house was first put up in September 2006. It is an idea that has evolved over the years from cold frames to low polyethylene hoops and plastic. These both require daily venting and offer not the luxury of being able to stand up inside. We have decided that low hoops do best with low maintenance crops (unlike lettuce mixes) and covered with a floating row cover which allows air, sun, and water to pass thru and does not require venting. With a little more money and time a hoop house can be had. They truly give more than just winter food. It is lovely to have your hands in the soil surrounded by green leaves in an unheated structure at 70° F, when it's 40° F out.

The present hoop house design was inspired by the Noble Foundation. Their model uses ropes to secure plastic and hoops without purlins. To cut the cost of a \$55 store bought hoop, we decided to bend our own hoops. In order to make it easier to bend the hoops without twisting them, square tubing seemed better than round, additionally it is easier to attach wiggle wire channel to the square. Ground posts are commonly used as a foundation; they are pieces of tubing hammered into the ground which the hoops are then stabbed into. The problem is that the tubing gets smashed before it gets driven all the way in. Instead we tried using rebar which is cheaper and easier to drive. We put up two hoop houses this way in 2006, and added another in 2007. We have learned some things along the way and are still trying different ideas.

We orient the hoop houses lengthwise east and west to get the most sun in winter. In the summer the breezes out of the south provide better ventilation. North and south orientation reflects much of the low winter sun, and does not take full advantage of summer breezes.

Venting the hoop houses on nice days is a chore, as the hoops can heat up quickly and damage the plants. To vent the hoop houses, the sides are raised up a few feet, and the ends are opened up. One solution might be an automatic vent; another is to use floating row cover material on low hoops for any crops that do not require much maintenance. These vent naturally and, if left sealed up, keep out insects. In central Oklahoma we have found that leaf lettuces survive all winter with just this protection.

The hoop houses are filled in fall with cool weather plants such as broccoli, arugula, lettuces, mache, and Asian greens. These will all be harvested throughout the winter and then replanted with early spring plants in February and March. Much beyond June, most plants do not enjoy the added heat of the tunnel, even with the sides fully raised. Next year we will try removing the plastic and replacing it with shade cloth for the summer. Sweet potatoes thrive in the hoop houses all summer with just the sides raised up, so that the plastic can be left on.

There are several types of plastic covering available, we have tried both IR blocking plastic with anti-condensation additives and Klerk's Kool Lite PPlus, which blocks lots of heat on sunny days by reflecting back the infrared, ultraviolet, and green part of the spectrum. The Kool Lite definitely stays about 10° F cooler, there were only a couple of days when the sides had to be raised in addition to opening the end. On cool overcast days the Kool Lite was just as warm or warmer than the IR blocking plastic. Regular 4 year 6 mil plastic costs \$230, the IR/anti-condensate \$300, and the Kool Lite Plus \$550. This year we will try a hoop house with the cheaper plastic.

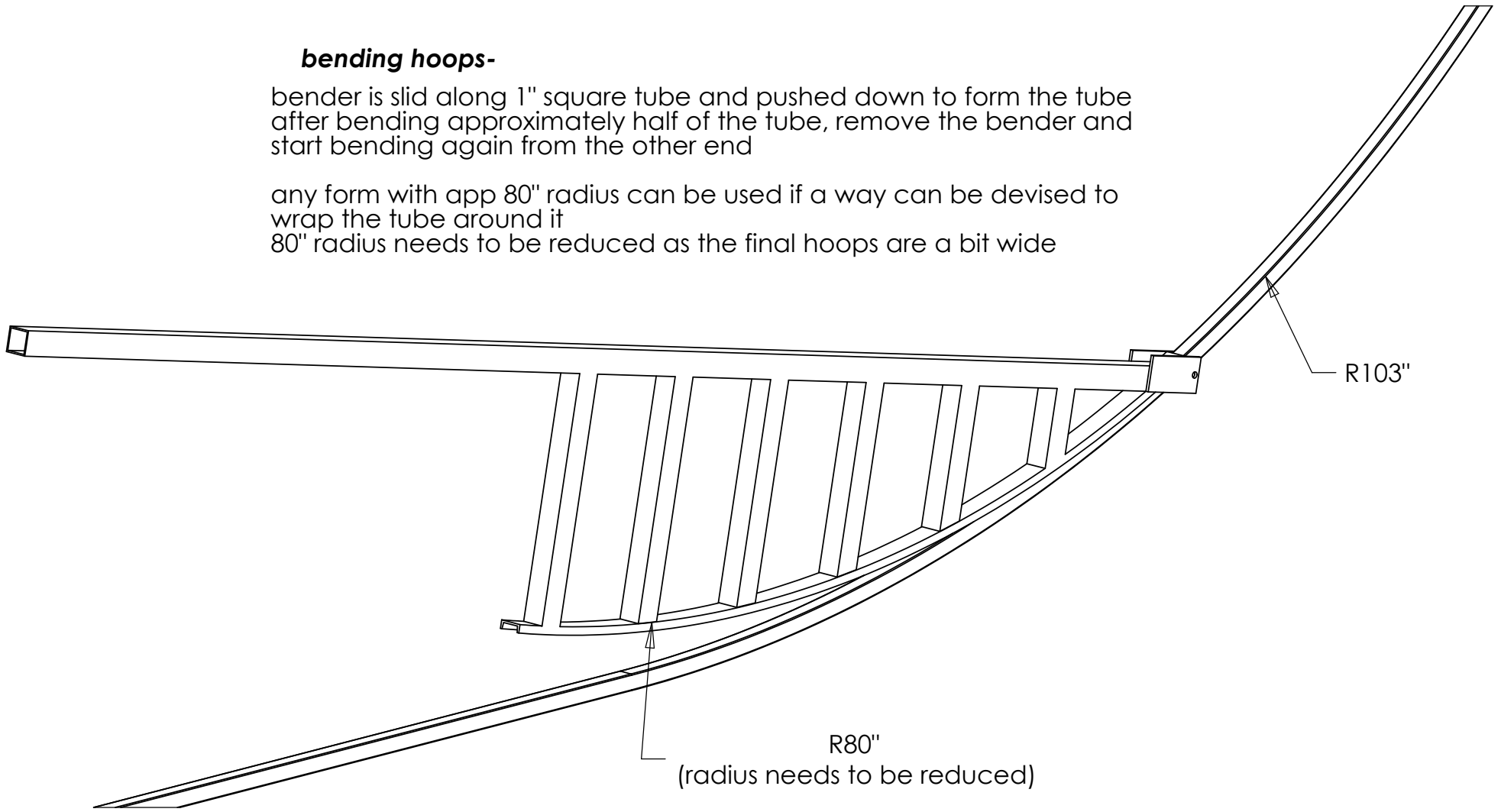
We appreciate your interest and please feel free to contact us with questions or comments.
Many thanks to the Kerr Center for Sustainable Agriculture for all of their help!

Jamie & Tod Hanley (405) 812 5982

bending hoops-

bender is slid along 1" square tube and pushed down to form the tube
after bending approximately half of the tube, remove the bender and
start bending again from the other end

any form with app 80" radius can be used if a way can be devised to
wrap the tube around it
80" radius needs to be reduced as the final hoops are a bit wide



make sure that tube will slide freely between bolt and arc on bender, bolt should not trap the tube

1.5" wide bar channel

R6 1 3/8"

DETAIL A
SCALE 1 : 3

1/4 plate

1 1/16"

1 1/16"

Ø 3/8"

4"

1 1/2" square tube

14 1/32"

13 19/32"

12 3/32"

9 7/16"

5 7/16"

96"

8"

8"

8"

8"

8"

90°

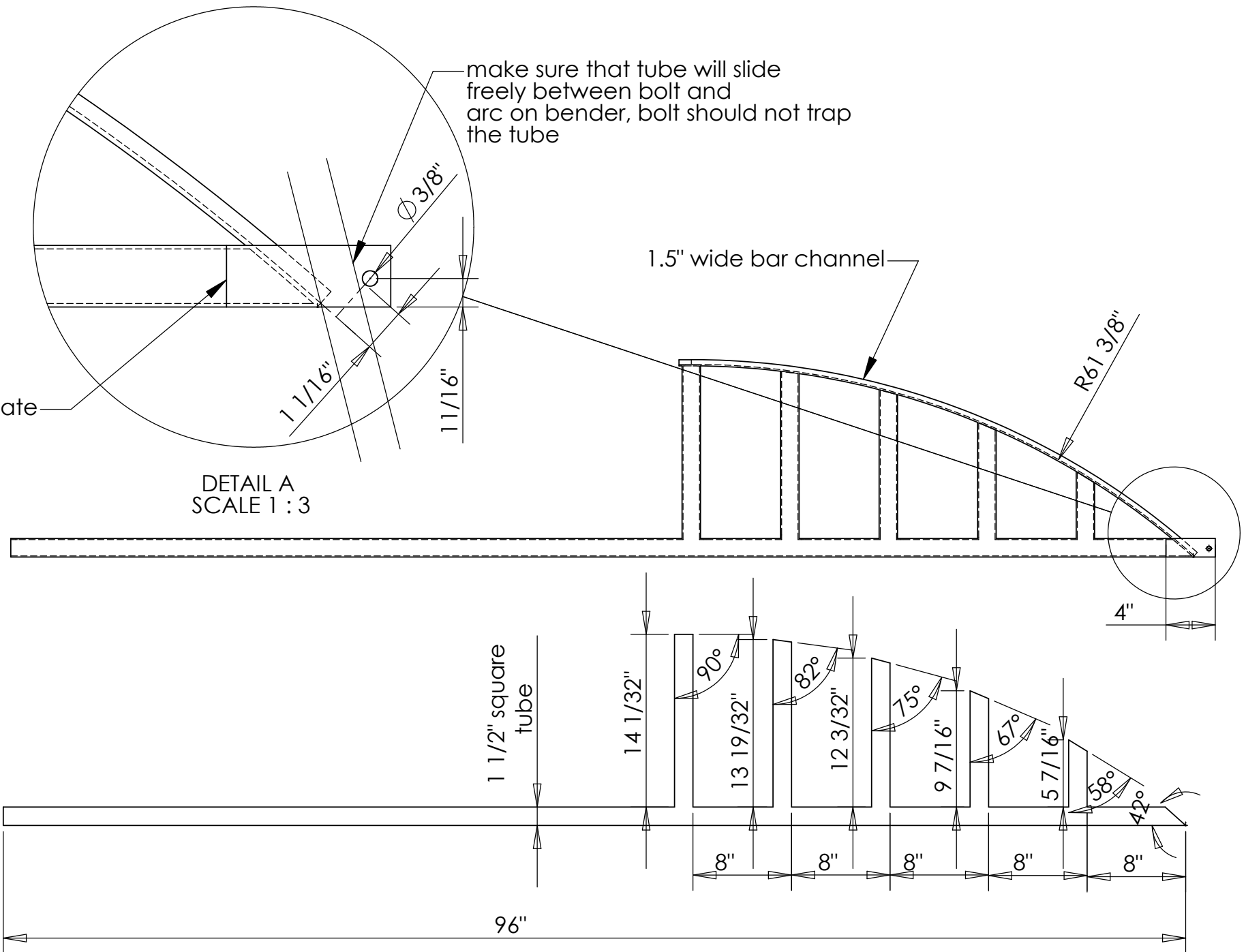
82°

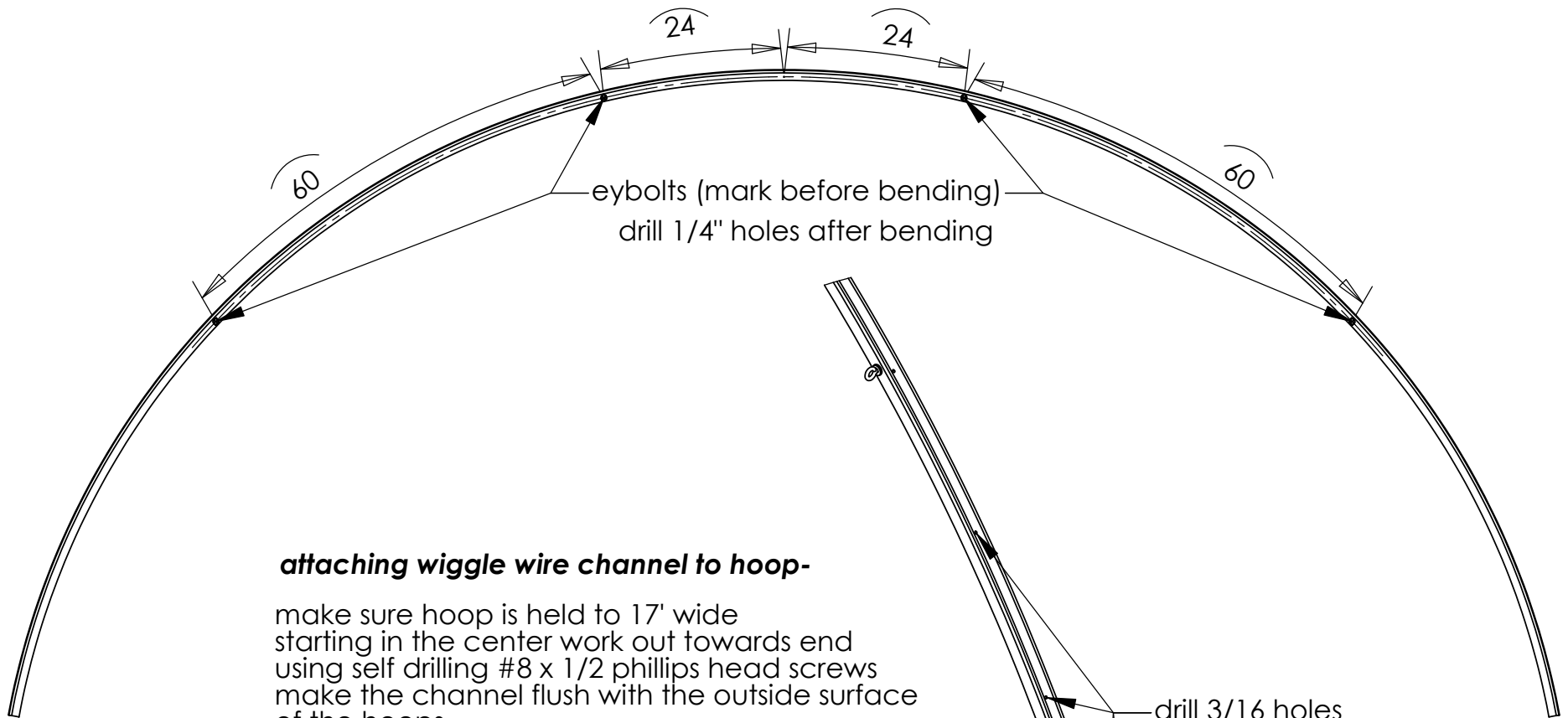
75°

67°

58°

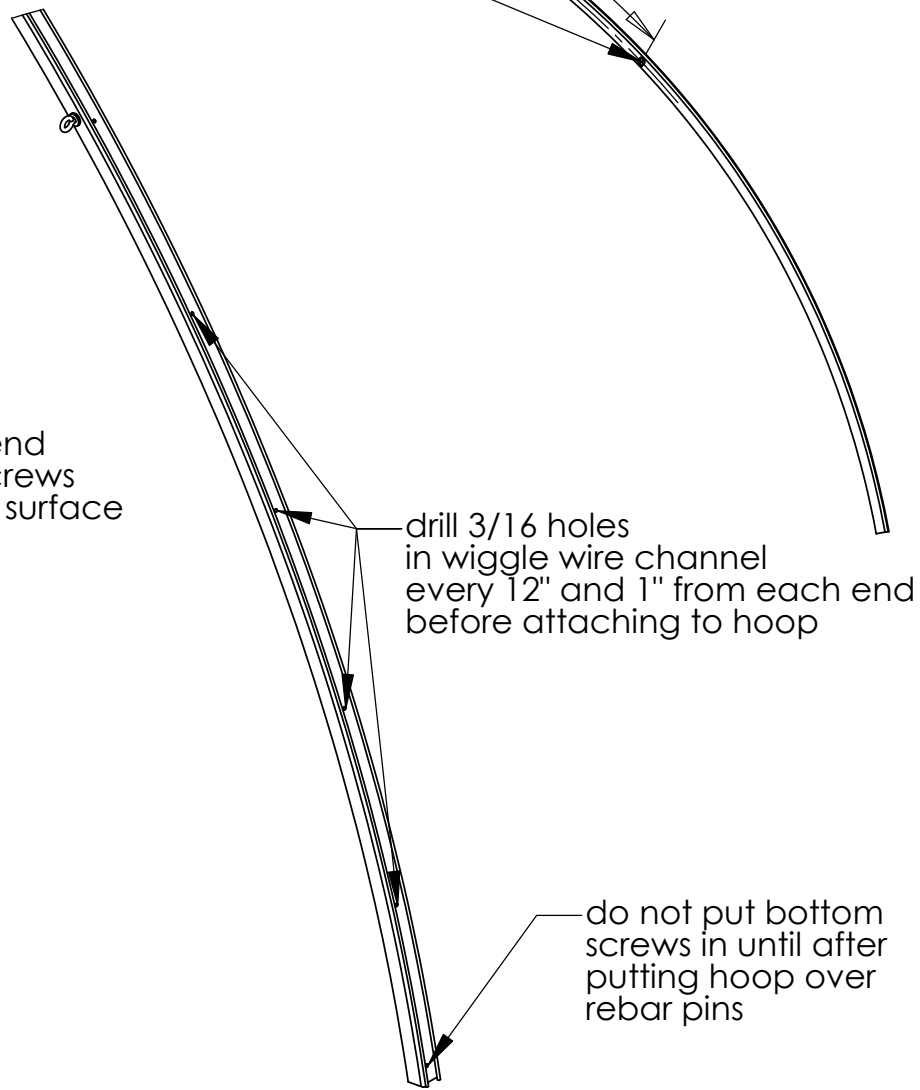
42°



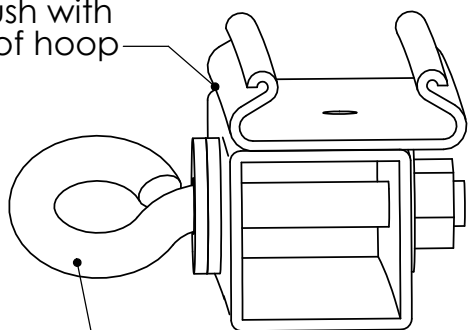


attaching wiggle wire channel to hoop-

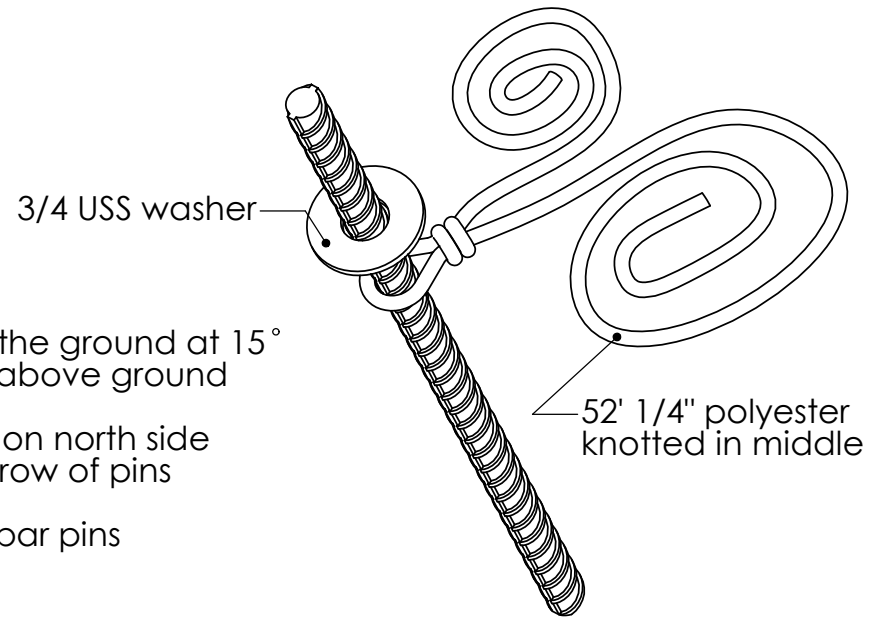
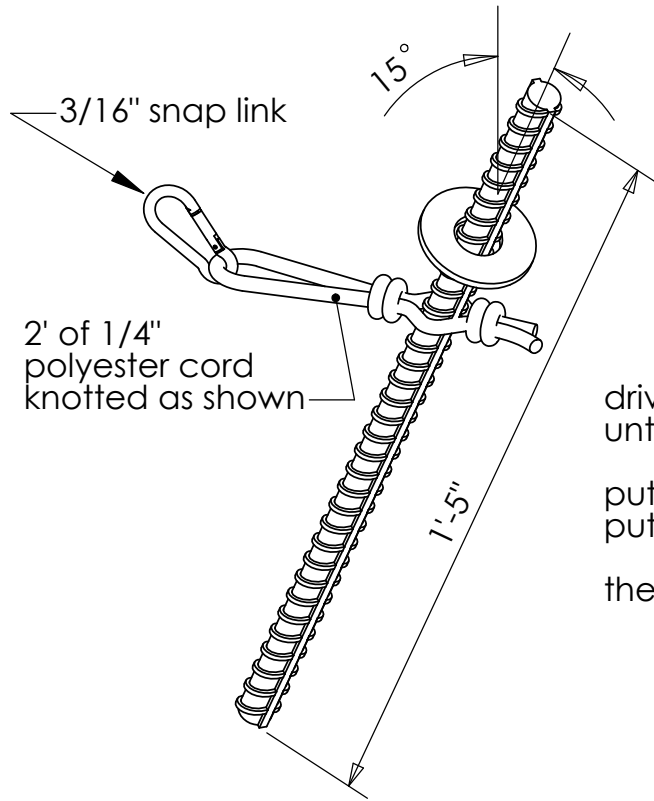
make sure hoop is held to 17' wide
 starting in the center work out towards end
 using self drilling #8 x 1/2 phillips head screws
 make the channel flush with the outside surface
 of the hoops



make flush with outside of hoop



1/4-20 x 1.5 eyebolt

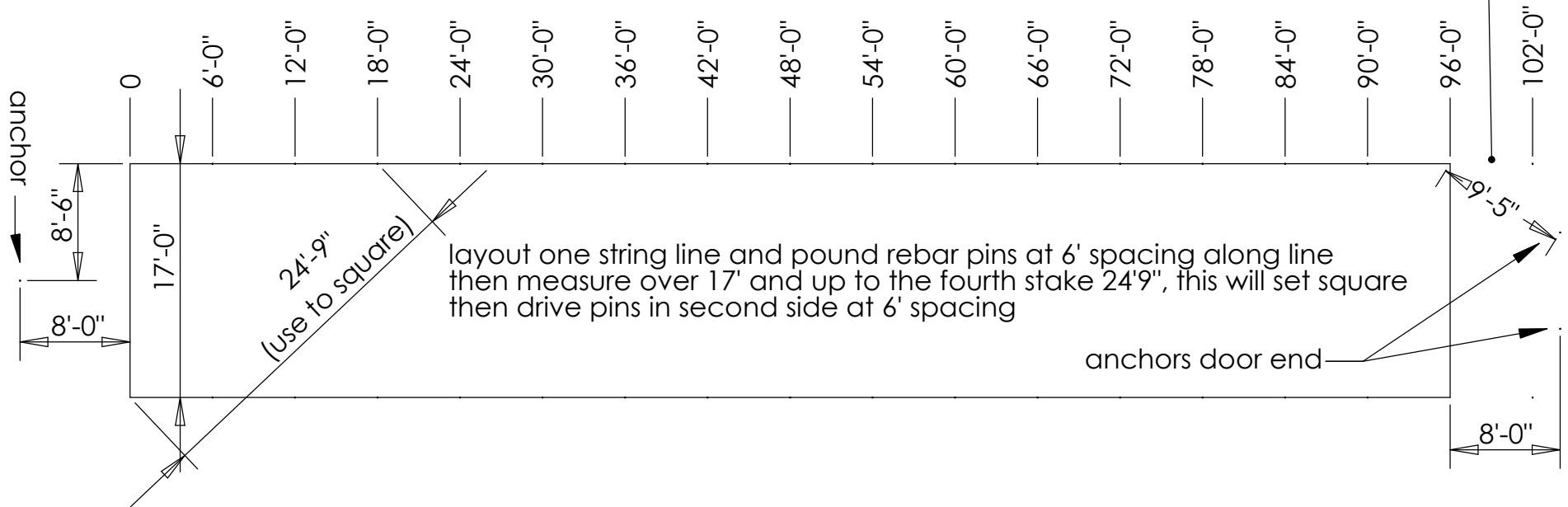


drive 5/8 rebar pins into the ground at 15° until approximately 6" is above ground

put snap link assemblies on north side
put long cords on south row of pins

then slide hoops over rebar pins

usually the sheet is longer than 100'
set last rebar pins to use all the plastic
(102' shown as example)



layout one string line and pound rebar pins at 6' spacing along line
then measure over 17' and up to the fourth stake 24'9", this will set square
then drive pins in second side at 6' spacing

anchors door end

HOOPHOUSE PARTS AND SUPPLIERS

QTY	DESCRIPTION	PRICE	SUPPLIER	PHONE	NOTES	LINE TOT
1	100' x 24' Tufflite 6mil 4 year greenhouse film	\$ 231.66	American Plant OKC (Wholesale)	(800) 522-3376	also avail from Farmtek in 26' width	\$ 231.66
0.33	100' x 10' Tufflite 6mil 4 year greenhouse film	\$ 96.53	American Plant OKC (Wholesale)	(800) 522-3376	also avail from Farmtek For Ends only need 33'	\$ 31.85
18	1" Square x 16ga galv 24' long	\$ 24.48	U.S.Wholesale Pipe & Tube, Inc	call Tod Hanley 405 812 5982	shipping can be high from Dallas app \$180 or consolidate load free	\$ 440.64
3	5/8 rebar x 20'	\$ 10.53	Hardware Store		saw into 17" lengths	\$ 31.59
36	3/4" USS Flat Washer	\$ 0.63	Hardware Store			\$ 22.55
8	Eye Bolts 1/4 x 1.5	\$ 0.70	Hardware Store			\$ 5.60
24	1/4 Flat Washer	\$ 0.03	Hardware Store			\$ 0.77
8	1/4-20 hex nuts	\$ 0.06	Hardware Store			\$ 0.48
56	8 x 1/2 self drilling screws	\$ 0.06	Hardware Store		use pan head phillips hex heads will cut plastic	\$ 3.25
1	Polyester Rope #8 (1/4") 1000' roll	\$ 83.95	Farmtek p/n CC5525	1 800 327 6835	do not use polypropylene	\$ 83.95
6	Aluminum Poly Latch single channel 8'	\$ 7.69	Farmtek p/n 102197	1 800 327 6835		\$ 46.14
6	Stainless Steel Spring Wiggle Wire - 0.83	\$ 1.82	Farmtek p/n 102198	1 800 327 6835		\$ 10.92
3	Auger Style Earth Anchor 1/2" x 15" x 4"	\$ 4.79	Farmtek p/n CC6250	1 800 327 6835		\$ 14.37
18	3/16 SS Snap Link	\$ 1.00	Farmtek p/n AS3150 \$3.24	call Tod Hanley 405 812 5982	This is a case price for wholsale	\$ 18.00
3	Zip-Up Zippers, 7ft peel and stick	\$ 7.50	Home Depot (\$15.56)	call Tod Hanley 405 812 5982	This is a case price for wholsale	\$ 22.50
					TOTAL	\$ 964.27