Two Pound - Two Person Tent

Introduction

This is a shelter modeled after the new Henry Shires Tarptent. I had seen a thru-hiker with one while section hiking of the AT in the spring of 2004. He was a 4 time thru-hiker and he really liked it. It was light, compact, and easy to set up. It has plenty of room for one and is ample for two. It took lots of planning and paper models before I actually started cutting the silnylon. My final weight is just over 2 pounds, so I am happy with that. The total weight including pole and stakes was 34.5 ounces.

I started with the dimensions of two large sleeping pads, 24" by 72" and added just a little more room. This should be great for those that have a 20" wide sleeping pad. Working with a tent pole I already had from a Coleman Cobra tent, I used this as the pole for the foot of the shelter. I used the two bent sections, five regular sections in the middle and cut one section in half as the sidewall height. I wanted some headroom at the head of the tent, so I settled for a 45" height. This allows you to sit up, move around some and change clothes without bumping the tent roof. Now I had a basic design to work with, so I put it down on paper and modified it slightly to accommodate for standard material widths. Microsoft Visio was used to draw the side, front and top views.

From these drawings, I could determine the size and shape of each panel on the tent. I drew those and cut them out to build a paper model. I used a scale of one inch to one foot.

As in Henry's tent, I did not want the floor putting undue strain on the mesh walls. Using Grosgrain ribbon and grommets to support the back pole, I was able to accomplish this easily for the back end of the tent. My sidewalls are higher than Henry's tent, and I left a little extra mesh material all around and attached the floor to it. The tent has lots of roof area, so the floor is not exposed, even with its ability to move somewhat under the tarp.

I found a Sharpie Permanent marker worked well to mark the silnylon material. Old fashioned chalk also works, but the Sharpie is a little neater. However, a dark colored marker on light colored material will show through seams so be careful where you mark. I usually trim off the mark anyway before sewing. I used my metal tape measure as a straight edge.

Features

- Weight: 36 oz. including 4 stakes and the rear pole.
- Capacity: 2 people plus gear
- Mosquito netting to keep the insects at bay.
- Silnylon floor
- Zippered front door
- Material cost: approx. $75 total including the pole (This is by far the cheapest silnylon I found at $2.75 per yard - http://www.noahlamport.com/ but the minimum is 10 yards and there is a $5 cutting fee. Everything else came from OWF except the thread and grommets.)
- Pole cost: $21 from Coleman – Part No. 9667-801 Just look under backpacking tents and find the Cobra tent.

Two Pound - Two Person Tent

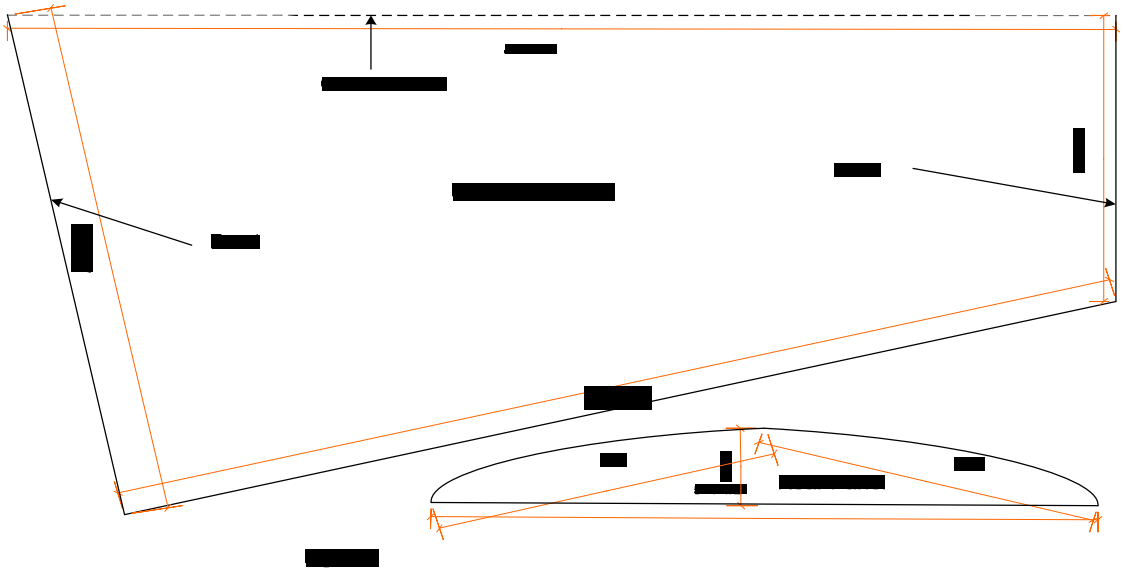
Material List

1.1 oz. Siliconized ripstop nylon	7.5 yd. Top color 3.3 yd bottom (black)
No-see-um mesh	4 yd.
¾" Grosgrain ribbon	4 yd.
#3 Continuous coil zipper	4 yd.
#3 Double tab zipper pulls	3 ea.
Polyester thread (250 yd. spool)	2 --1 ea. Floor color and top color
¾" Hook (like Velcro)	1 yd.
¾" Loop (like Velcro)	1 yd.
Pole from Coleman	Part No. 9667-801 Just look under backpacking tents and find the Cobra tent.
Grommets	1 @ 3/8 and 2 @ 5/16
Elastic Cord	1 ft.
Glove hook	1 ea.
Sharpie Permanent marker	1 ea.
Small tube of GE Silicon Calk	1 ea.
Draw cord 1/8 inch	10 yd. (I ordered the reflective cord from OWF but something like Kelty Triptease would work well)

Note: all seams ½" flat-felled seams unless noted otherwise. Some basic sewing experience is assumed.

Step 1: Cutting the Materials

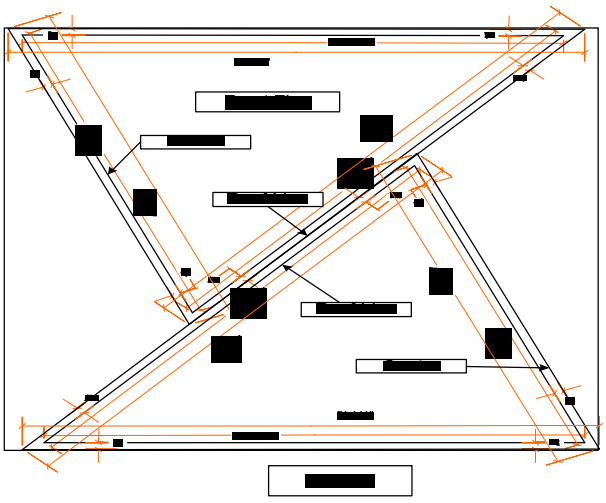
1.1 Start by reviewing the drawings below to obtain the measurements needed before cutting. Cut out all fabric pieces according to Figures 1 through 5. Figure 1 is cut from one piece of material that measures 104" by 66". Be sure to leave a ½ inch seam allowance along each edge. To cut out the other top panel, just lay the Right Top Panel on your uncut material and trace the outline. Once you cut the Right Top Panel, line up the "Front edge" of the Top Panel to the edge of your uncut material. The center seam will not follow the edge of the material, but be at a slight angle. This insures that both halves are the same shape and size. This will also save a few inches of material when cutting out the Left Top panel.



1.2 To cut the Rear Top Panel, you will first need to make the webbing that holds the rear pole. This webbing is made from 3/4" grosgrain ribbon with grommets on each end. The grommets need to be 54.5 inches apart. However, the ribbon needs to extend 7 - 8 inches past the grommet on each end. This extra ribbon will be sewed to the tent roof itself to hold it down in the rear of the tent. I doubled the ribbon back about 1.5 inches, folded it over, bar tacked it and then inserted the grommet in the double thick section of ribbon.

1.3 Next, take your pole apart by pulling out the pole tip and untie the knot in the elastic cord. Remove all pole sections but leave the final pole tip on one end. I took two sections of pole, removed the coupler from the end of one section and cut both pole sections in half with a pipe cutter. This made each piece 4 7/8" long. These will be used as the downward leg of each end of the pole and as the center pole section. Slide one of these short sections onto the elastic cord that still has the pole tip attached. Follow this short piece by one of the bent pole sections. The short end of the bent section goes on first since it has a coupler which connects to the short pole section. Next, slide on two regular sections followed by a half pole section with no couplers. Now slide on two more sections. Make sure all the sections lock together correctly with couplers. Now slide on the second bent section with the short end last. Slide on the remaining short pole section and tie on the pole tip. Pull slightly on the elastic cord and tie a knot. Remember that the elastic cord gets stretched when you fold up the pole, so don't stretch it much when tying on the pole tip. Leave about three inches on the end of the elastic cord and cut off the remaining cord. Shove this excess cord and the pole tip back into the end of the pole. Your pole should measure 75 ½ inches in length, not counting the pole tips.

1.4 Once you make the ribbon and have shortened the pole, fix the pole to each grommet in the ribbon by inserting the pole tips into the grommets. This will give you the correct arch for the rear or the tent. Lay the extra material from figure 1 on a flat surface with a light source directly overhead. I used my pool table, but a kitchen table would also work. Lay the pole on top of the material and hold up the ribbon 15" off the table. I used my construction tape measure, locked it to the correct length (don't forget to subtract the thickness of the measuring tape case, mine is 3.5 inches) and stood it up. I laid the ribbon onto the top of



the tape measure. This produced a shadow from the pole onto the material. Draw a line where this shadow is. This is where you will cut the material. But again, leave a ½ inch seam allowance. Leave a one inch seam allowance on the bottom edge of the Rear Top Panel and cut off any excess.

1.5 Figure 2 is cut from a piece of material 66 by 5ft, 2½ in. This drawing includes the seam allowance. As you can see, the diagonal line splits both halves. You will need to cut a piece of material about three inches wide and 1 inch longer than your rear pole. This will serve as the pole sleeve. You can get this from the scrap of the Left Top Panel section.

This is what the top sections look like laid out:

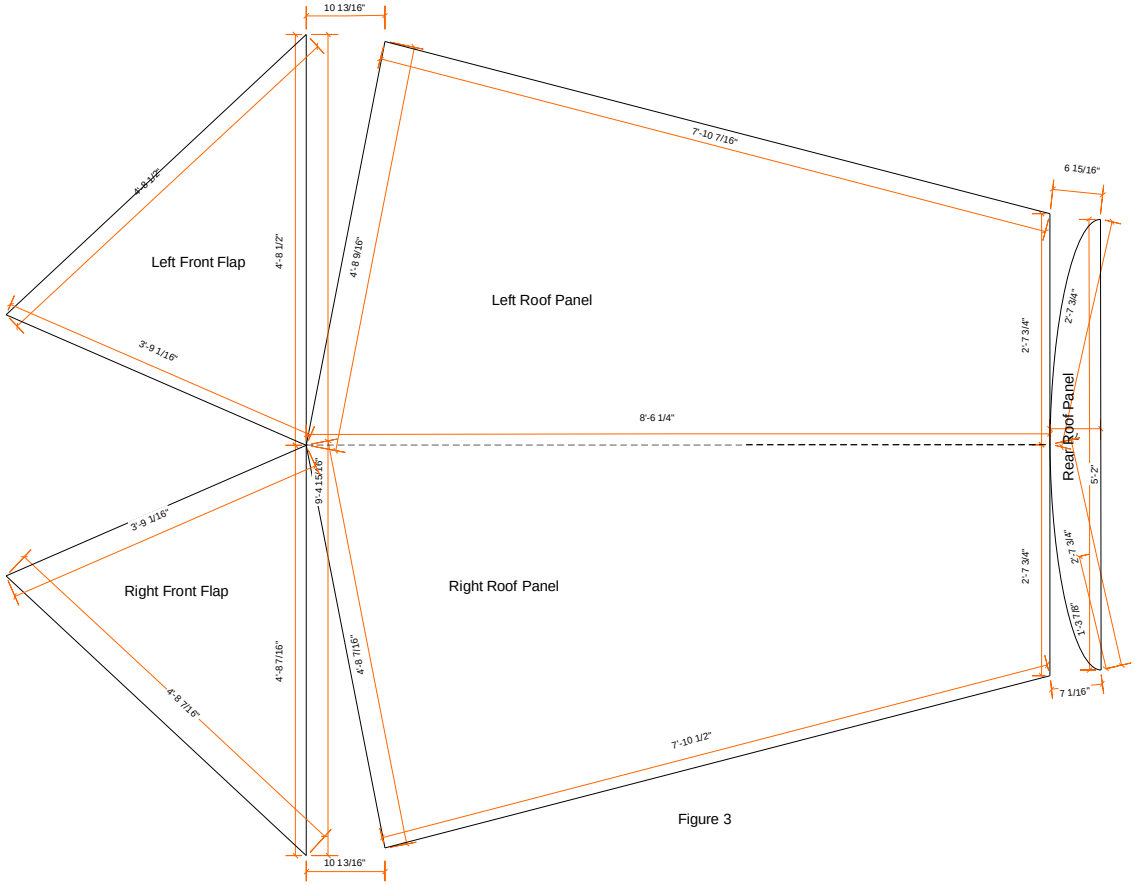
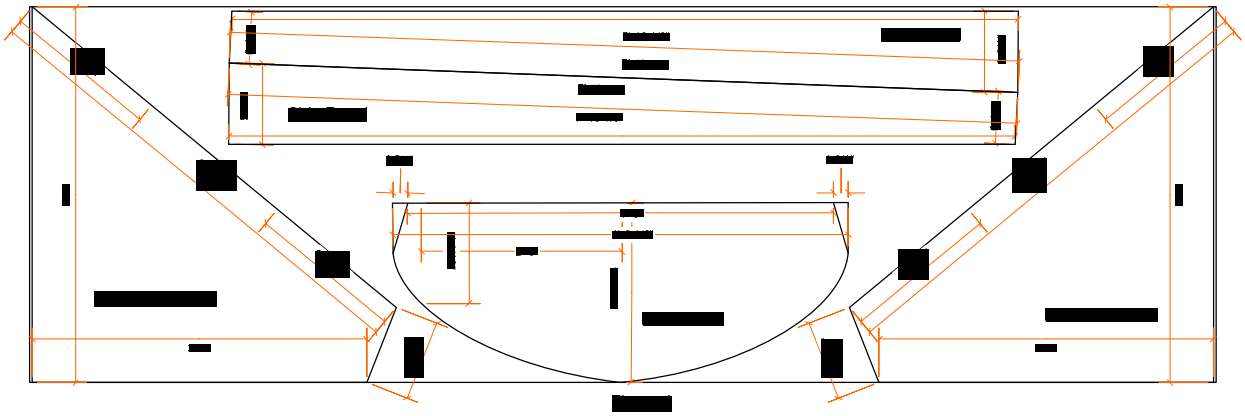


Figure 3

1.6 Now, let's cut the mesh panels. To cut the curve for the rear panel, use the pole fixed to the



ribbon again. Leave about 1 inch margin for seam allowance. But this time, lay the fixed pole on top of the mesh. The mesh will follow the line of the pole since it will hang perpendicular to the pole when assembled. The remaining mesh sections are easy to follow in Figure 4. Leave two or three extra inches of mesh along the long edges of the side panels. This can be trimmed up after they are attached to the roof.

1.7 The floor is cut from the black material. I like to use black because it dries faster. You may prefer to use another color. I'm sorry, but you will have to do some math for this one. Subtract the 5ft 2 5/8 in. from the 6ft 10 5/16 in. and divide the answer by two. This will be the distance you will need to measure in, along the bottom edge of your uncut material, for the first floor section. The integrity of the whole tent is based on the top section only, so the floor doesn't have to be exact. The mesh and bottom hang from the top and do not require the corners to be staked to the ground.

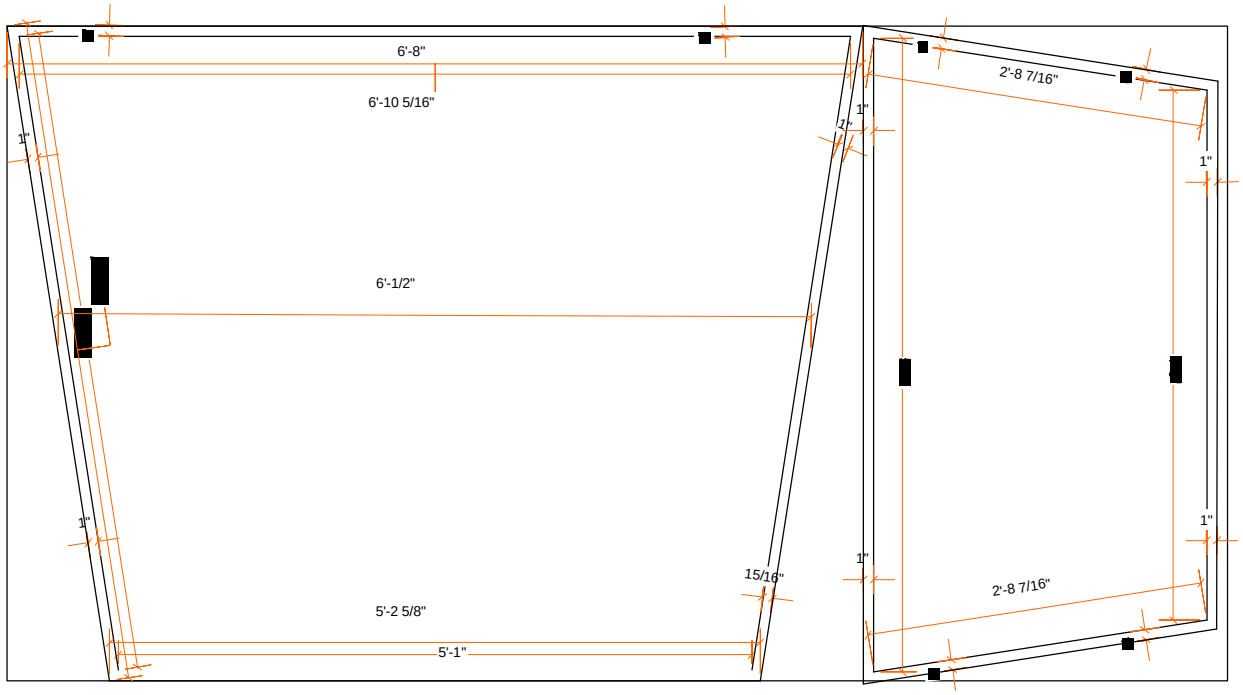
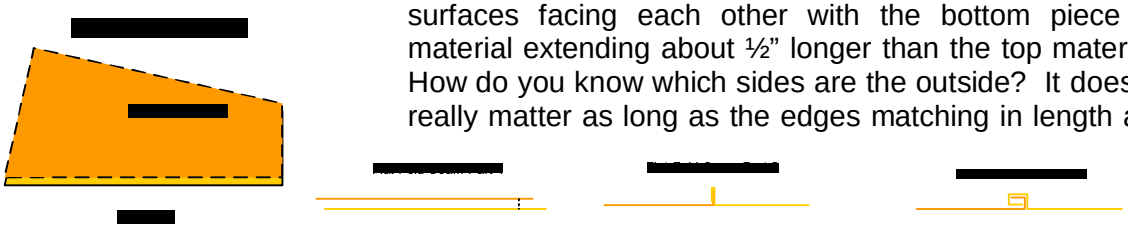


Figure 5

Step 2: Building the roof of the tent

2.1 Start by laying out the two pieces of material that will make up the main tent roof. These are the sections from Figure 1. Refer to figure 3 to get a general idea of the shape of the roof. Figure 6 shows you how to start your first seam. (Also see the flat-felled seam parts 1, 2 and 3 below.) Lay one side of the tarp on top of the other side with the outside surfaces facing each other with the bottom piece of material extending about ½" longer than the top material. How do you know which sides are the outside? It doesn't really matter as long as the edges matching in length are

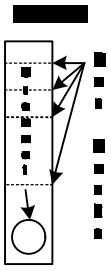


together. I find it helpful to use a stapler that lets the ends of the staple turn out. I find it is easier to staple the seams before sewing. Just make sure your stapler can flare the ends out instead of in. The staples pull out as I am sewing the first seam. After sewing the first seam, flip the two halves apart, curl the overlapped edge over, fold it flat and sew the second half of the flat feld seam. Be sure the part you curled over and sewed ends up on the inside of the tent. It is much easier to seam seal the outside of this seam. Try to do the same with all the other seams (front doors, rear panel and mesh sides.

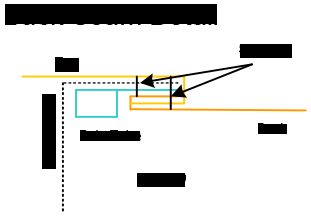
2.2 I took a small piece of grosgrain ribbon and made a loop for inside the tent. I attached this near the back end of the roofline about two inches from the unfinished end. This makes a good place to hang the back end of a clothes line inside the tent. The front loop will be part of the pole strap.

2.3 Now, we will attach the front beak and netting doors. Find the correct pieces for each side. The front beak may be a little difficult since two sides of each triangle are very close to the same length. Before attaching them, finish the two sides not attached to the top by curling the edge over itself and sewing it. Now, look at figure 7 to see how to stack the material. Start with the top section and lay the door on top of it with the outside surfaces facing each other. Leave ½" extra roof material stick out from the front door. Lay the mesh door on top of this and sew your first seam. Look back at figure 4 to see the locations for the velcro tabs used to hold open the door or mesh. This velcro is cut into 4 inch strips with a fuzzy piece laid onto the roof first (fuzzy side down) followed by the door material. Next, lay a sticky piece of velcro with the points pointing down toward the door. Lay the mesh door on top of this followed by another fuzzy piece of velcro with the fuzzy side down. This is demonstrated in Figure 7. I put two of these on each side 1.5 feet from the top and 1.5 feet from the bottom. In hindsight, I think just one velcro closure at 1.5 feet from the bottom would be sufficient. Sew the first seam. Fold the mesh and door over, curl and fold the excess edge of the roof material and sew the second seam of the flat feld seam. But, only sew the roof and door material to the door, not the mesh or inside velcro. Let the mesh hang from the first seam. Do both doors.

2.4 Next, take a piece of grosgrain ribbon about 8 inches in length and fold it over so that three inches overlap on one end and one inch overlaps on the other end. Near the long overlap end of the loop, insert the 3/8" grommet. Leave enough room in front of the grommet to insert the front guy line through. This will be the strap that holds the pole tip, the front guy line and the inside clothes line. Attach this to the front of the top ridge line by bar tacking it in four places. These seams will be under a lot of stress, so it should be sewed well. Allow one inch of the strap to stick out beyond the tent and start your first bar tack about ¼ inch from the front edge. The second bar tack will be about one and three quarters inches from the front of the strap, the third will be about three quarters of an inch from the inside end of the strap and the last bar tack will be about one half inch from the inside end of the strap.



2.5 Start the back seam by laying the back panel on the roof with both outside surfaces facing each other (just as we started all of our seams attached to the roof) and ½" of the roof material sticking out. Pre-sew the pole tube with a single seam to hold it together and lay it on

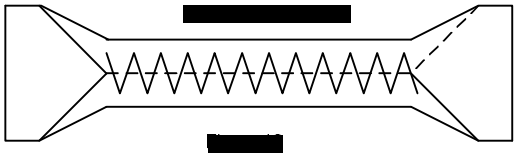


the stack. Lay the rear netting on top of this and start your first seam. This is a seam you will definitely want to staple or pin before trying to sew it. Now, fold the rear netting and pole tube back panel over, curl the excess from the top section and sew the second seam. Leave the rear netting and pole tube hanging while sewing this second seam. Curl the straight edge of the rear panel and sew it.

2.6 Attach the mesh along the sides by laying it on the outside of the roof section and sewing the first seam leaving the excess roof material just as we did in the front and rear sections. Fold the mesh over, curl the excess roof material and sew the second seam. Just as you did for the front and back mesh, only sew the second seam to the top, not the mesh. The mesh will hang slightly inside the edge of the roof edge.

Step 3: Adding the pullouts

3.1 Start by cutting the grosgrain webbing into 7 inch long strips. Use a flame to slightly melt the edges after you cut them to prevent the edges from unraveling. There will be 7 pullouts. Fold the webbing from each side into the middle and sew it to look like Figure 10. This makes the ribbon stiffer in the middle and makes a much nicer pullout loop. Fold each of these in half and sew the flat edges together. Attach these to the tent as shown in figure 11. Use bar tacking in two locations to spread the stress applied when the guy lines are tightened. When attaching the pullouts at the corners, angle them so that they will pull the tent out and slightly forward. The three pullouts at the rear of the tent should be spaced evenly across the straight edge of the rear panel with one pullout directly in the center of the panel. Now insert the rear pole through the pole sleeve and fix the pole into the grommets. pull down on the corners of the rear panel so that the rear of the tent is taut. Determine how much of each end of the ribbon needs to be attached to the rear panel corners. Sew each end of the ribbon to the bottom corners of the rear panel of the tent right where they attach to the roof. It should be about two inches of ribbon. Attach it to the panel and use two rows of bar tacking. I also added a pullout to the center of each long side of the roof section just in case it gets real windy. This will help hold down the side and can be tied to a rock, root or shrub.



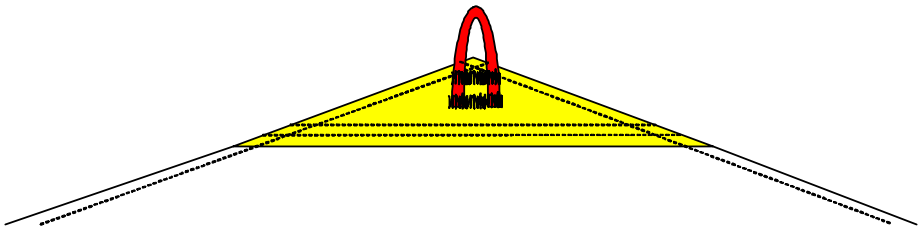


Figure 11: Pullout areas

Step 4: Closing up the netting and adding the guy lines

4.1 Sew the netting together at the four corners of the tent. I used a flat feld seam for these as well. Once the netting has been sewn together, you can set up the tent.

4.2 Go to the rear of the tent and insert the pole into the pole sleeve and the pole tips into the grommets. The pole should make the rear section of the tent take shape and be pretty tight. Tie a guy line to the center pullout along the rear panel with two half hitches. About one foot from the tent along the guy line, tie a bowline with a small loop. Stake off this guy line. Now tie a guy line to one of the other rear pullouts, pass it through the bowline loop and tie it to the remaining pullout using a taut line hitch at both ends. Adjust the tension so that the rear of the tent has equal tension on all three pullouts.

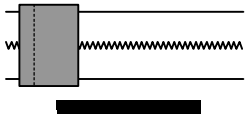
4.3 Attach a guy line to the front pole strap with the grommet in it. Also attach guy lines to the front two corner pullouts. The length of the guy line in the front will have to be determined. To do this, set your trekking pole to 117 centimeters (this is 1.17 meters or about 45 inches). Put the pole tip into the grommet. Go ahead and stake out the front and two sides. Now let's work on the length of the front guy line. Hold the front flaps together with about a one inch overlap. Stretch these out from the front of the tent with just a little tension. We will be sewing a piece of elastic cord to one of these flaps and putting a glove hook on the elastic cord. This will attach to a bowline loop in the front guy line. You may need to re-stake this line so it can follow the same line as the front flaps and just slightly beyond the front flaps. These front flaps should be about a foot from the ground. Leave enough line to tie the bowline. Now take down the tent and let's finish sewing.

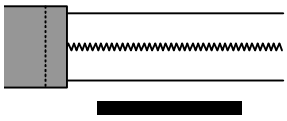
4.4 The extra draw cord can be used as a clothes line inside the tent. Tie it to the two pullout tabs you sewed to the centerline of the roof in section 2.2.

Step 5: Adding the floor and zippers

5.1 Now it is time to attach the floor to the netting. First, sew the two pieces of floor together. Now, start in one of the front corners, and sew the floor to the side wall netting and work toward the back. I used the flat-felled seam along this seam as well. The outside surfaces of the floor and the mesh should be facing each other when you start the first seam. Leave ½" of the floor material stick out from the mesh, curl it over and finish the flat felt seam. Be careful not to stretch the mesh material because it will cause bunching and gathering along this seam. Continue across the back and up the other side. I found it best to have the tent turned inside out for this. Do not attach the netting in the front of the tent to the floor. We will install a zipper for this closure.

5.2 Let's start with the center vertical zipper. Refer to figure 12 and 13. Take a small piece of scrap material 2 to 3 inches in length and long enough to wrap around the zipper. About ½" up the zipper run a line of stitches as shown in figure 12. Then fold the material back over the end of the zipper and run another line of stitches through the material and the end of the zipper as shown in figure 13. This finishes off the end of the zipper nicely. Now, attach the zipper to both door halves with the finished end at the top of the tent. It should cover the pole/front guy line pull out. Be careful not to stretch the mesh material when sewing the zipper to it. This will cause your door to have an unwanted curl to it. Also make sure your zipper pull is installed correctly. I usually fold the open end of the zipper back about ½" and sew it to the rest of the zipper. I do this instead of installing a zipper stop.





5.3 The bottom of each net door will also have a zipper installed. Perform the same operation to finish off one end of the zipper with material. Sew half of the zipper to the bottom of the door and the other half will be sewed to the tent bottom. However, I moved this zipper about two inches down the outside edge of the tent bottom. This way, when the zipper is closed, the floor acts as a flap lying on the netting material.

5.4 The last bit of sewing involves the front flaps or beak. I sewed three 2" tabs of velcro along the front opening. This will hold the door closed. I put the fuzzy half on the inside door. When attaching the velcro at the bottom of the inside door, include a ribbon pullout as a location to tie the elastic cord. Once it is sewed under the velcro and to the door flap, Use about 7 or 8 inches of elastic cord and let it extend below the front flap. Put the glove hook on it and tie a figure 8 knot at the end. This will hook to the bowline loop you tied in the front guy line. It will hold one door closed if you roll up the other door.

5.5 Take about 6 inches of the elastic cord and sew the two ends to the tent bottom just below where the three zippers come together. This will form a loop that can be stretched to go around the handle of your trekking pole. This serves to hold down the front bottom of the tent, especially when you are trying to step in or out of it.

5.6 I also made a small square of material about 5 inches by 5 inches. I finished all four edges of this flap. I attached one corner to the top of the tent and let it hang over the pole strap (Figure 8). Attach a small piece of velcro to two of the other corners of this and a corresponding piece of velcro to the front flaps, only closer in then the small square is wide. This flap will cove the pole tip and keep any stray rain drops from entering this small opening.

5.7 An optional item is a front vent. I think this helps keep condensation from developing, so I added this to the inside door flap. Start by cutting a small triangle from the door flap, about 6 inches on each side and with one of the points pointing down. Cut a small scrap of netting triangle 7 inches on each side. Sew one edge to the top edge of the front flap. Also cut a small scrap of material triangle 7 inches on two sides and 9 inches on the third side. Finish the longer edge by curling it over and sewing it. This will be the top of the triangle and will hang open. The other two sides will be attached to the front flap. You can sew the mesh and the material at the same time to the two remaining sides of the triangle on the front flap.

Step 6: Seam Sealing

6.1 This is the fun part. To seal the seams from water seepage through the thread, you will need to coat the seams with silicon calking thinned with mineral spirits (paint thinner). I used a 6 oz. Empty tuna can and poured about two ounces of mineral spirits in it. I then squeezed about two ounces of GE silicon calking into the can and started stirring. The calking will eventually dissolve in the mineral spirits and be the consistency of white glue. I used a 1" foam brush and applied a generous coating to all of the seams. It really helps if you set up the tent first. This way, the material is being stretched and the

sealant can get into all of the needle holes easily. The main seams to seal include the ridge line, the front door flaps, the rear panel seam and the floor seam. The roof edges and the floor edges are not that important. After I finished all of the seams, I re-applied another coat to the seams again. I also applied some of this mixture to the floor of the tent to prevent my sleeping pad from sliding around. Several big S patterns will do the trick. That's it, enjoy your new tent.

The Finished Product

Two Pound - Two Person Tent

Two Pound - Two Person Tent