National Park Service

National Park Service
U.S. Department of the Interior

Fort Frederica National Monument
St. Simons, Island, GA

Fort Frederica
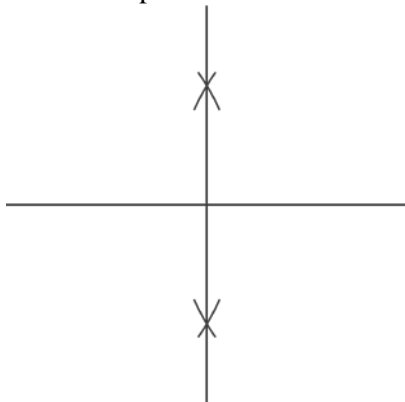
How to Build A Star Fort

NPS Files

When building a fort in the wilderness, most commanders with some military training would build a star fort. Examples of these are Fort Frederica and the Castillo de San Marcos, which are remarkably similar in shape. Star forts in the North American wilderness are usually square, and usually have bastions on the corners of the square. The bastions are purposefully skewed, not square, so that soldiers in the bastions could defend the adjacent outer walls without exposing themselves. Square bastions would always have a dead space in the outside corners that would not be visible from anywhere in the fort.
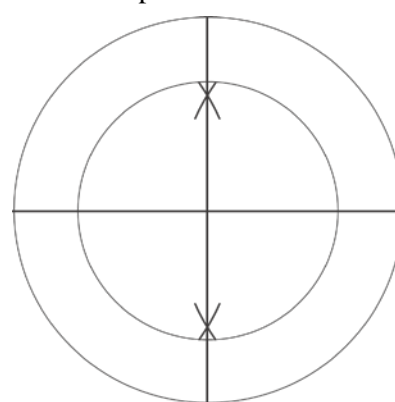
Laying out a star fort in the wilderness required simple geometric design that could be implemented with a straight ruler and a compass for drawing arcs. In the wilderness, the straight ruler and compass were usually implemented with ropes. Wooden stakes were used to mark important points, and lines were drawn with a small shovel to dig along rope lines.

1. First you need to figure out how big your fort is, and in what direction you would like it to point. Once this is done, a rope of the correct length (a ruler) is stretched from one outer bastion corner diagonally to the opposite outer bastion corner. Another shorter measuring rope (compass) is then used to make four arcs from the two ends of the first rope, with the two arc intersections marked with stakes. A second rope of the same length as the first rope is folded in half, its center is placed on the horizontal line, and the two ends are stretched vertically until the rope passes through the two stakes. The ends of the two lines are the salient points of the bastions.

2. One end of the measuring rope is now placed in the middle where the other two ropes cross, and the measuring rope is marked at the length of the salient points. It is then used as the radius to encircle the star fort. This step is repeated with the measuring rope marked at roughly 2/3 the previous length, although this length can be changed to give the star fort a pointier or boxier look.
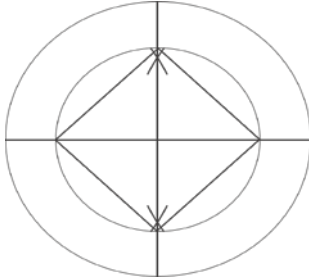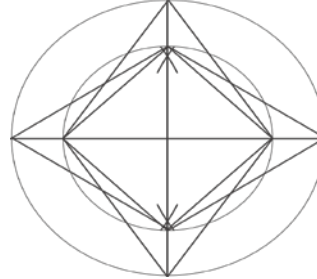
Step 1

Step 2

3. Lines are drawn connecting the intersections of the straight lines and the inner circle as shown in Step 3 below. These are the curtain walls. These would often be laid out with a rope and made permanent with a small shovel digging along the line.

4. Lines are now drawn from the salient points in the bastions back to the corners of the curtain, again using a rope and a shovel. These form the bastion walls, see Step 4 below.
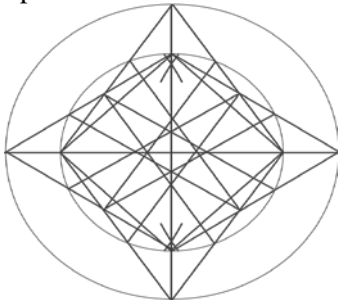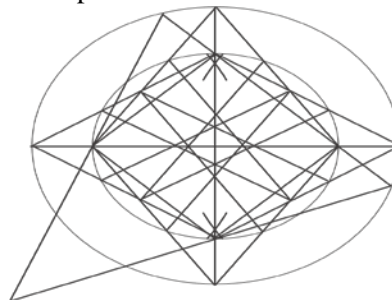
Step 3

Step 4

5. Lines are now drawn as shown in Step 5 below to create the flanks of the bastions. After the rope is stretched, only the sections outside the curtains need to be marked or dug with a shovel.

6. The outline of the star fort is essentially completed. If the entrance require a fortified ravelin, this is easily created as shown in Step 6 below.
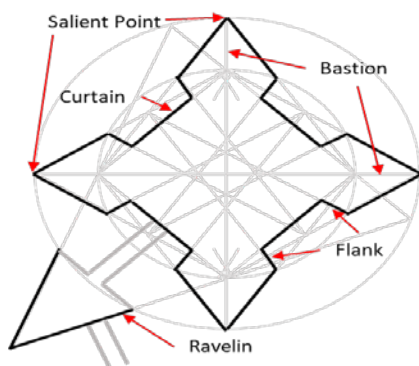
Step 5

Step 6

7. Be sure that the star fort outline has been highlighted or dug along with the shovel. This process is easily modified to accommodate various terrain features.

Of course the walls will only be thin straight lines if palisades are used. Otherwise a more substantial fort will have thick walls. The walls are often constructed from earth taken from a ditch or moat outside the walls. An example wall cross-section is usually given with the fort outline. In the cross-section, the walls usually have areas similar to the area of earth taken from the ditch. It is important to keep the slopes of the fort walls relatively shallow to prevent rapid erosion. If a vertical wall is desired, usually on the inside to stand behind, palisades, stones, bricks, or tabby are used as an inside wall barrier.

Looking outward

Vauban, Sebastien Le Prestre de. 1702. *The New Method of Fortification, as practiced by Monsieur de Vauban...* London: W. Freeman.