To start, I decided to find a solution to a 3 x 12 rectangle because I figured that the height restriction would simplify my solution. I created a symmetrical matrix pairing different pieces and determining whether or not two pieces can be next to each other.

Assumptions made:

- There won't be any flat edges in the middle of the rectangle - only on the ends.

- The elbow piece will be on one end.

After examining the matrix I noticed that the plus piece had the hardest time fitting. So, I assumed that one side would be next to the gate piece (I_I) and since it was flat, I put it on the other end. From there I worked from the plus side trying to end with space to fit the elbow piece.