3. A telephone installation crew must run a line underground between two junction boxes. Unfortunately there is a 36 feet wide paved road between the two boxes, and one box is 100 feet down that lane from the other. It costs $30 per foot to cut and repair the paved road, but only $24 per foot to dig and refill along the side of the road. The crew will cut and repair the road to a point $x$ feet from the point directly across from the first junction box, and then dig along the road the rest of the way. They are told that they should aim for a point $x = 48$ ft from the point directly across from the junction box. Show that $x = 48$ is the point where the cost of the line will be the least possible.