Let

$$b = \frac{(50^2)(4{,}200)(\$0.055)(10{,}580)}{1{,}000} = \$6{,}109{,}950$$

From the formula developed in the previous article we know that the most economical value of x, x_e, occurs when

$$x = \sqrt{\frac{b}{a}}$$

$$x_e = \sqrt{\frac{\$6{,}109{,}950}{\$0.000861}} = 84{,}240 \text{ circular mils}$$

By examining a table of wire sizes (American Wire Gage, B & S) the closest available conductor is Gage No. 1, with 83,690 circular mils.