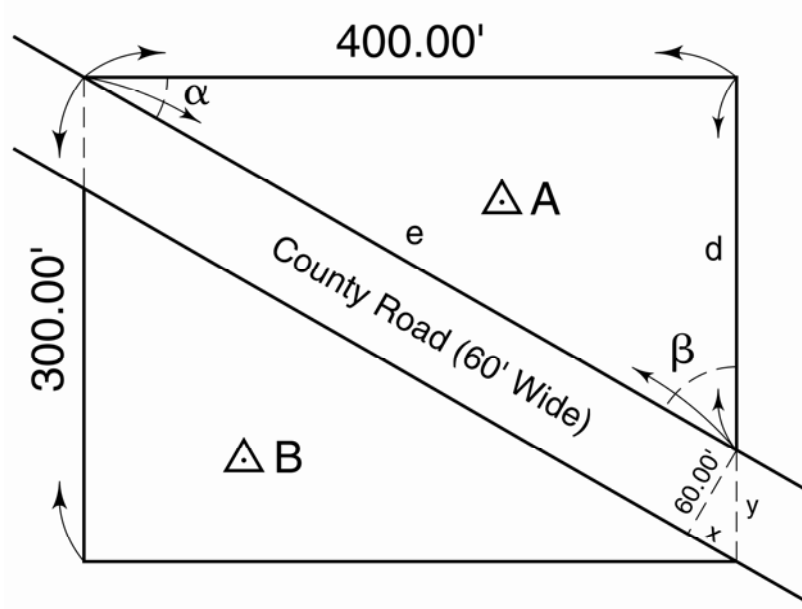


Answers to "Test Yourself" No. 19

Split the Tract

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Using similar triangles:

$$\frac{60}{x} = \frac{400}{300 - \sqrt{3600 + x^2}}$$

↓ a few steps later...

$$\frac{1564}{36}x^2 - 4000x + 86400 = 0$$

Apply quadratic formula, arrive at two possible solutions:

$$x = 34.61' \quad \text{or} \quad x = 57.46'$$

Upon inspection $\left(\frac{x}{60} < \frac{3}{4}\right)$, $x = 34.61'$ is the correct solution.

Using this solution, $y = 69.27'$

$$\text{Area } \Delta A = \text{Area } \Delta B = 46,147 \text{ ft}^2$$

$$d = 230.73', \quad e = 461.775'$$

$$\cos \alpha = \frac{400}{461.775}, \quad \alpha = 29^\circ 58' 39''$$

$$\cos \beta = \frac{230.73}{461.775}, \quad \beta = 60^\circ 01' 21''$$