So e = 600 ft

Matching ends:

\[ M = M_0 + (2 \frac{K}{ft})(5')(2.5') \]

\[ = 625 \text{ kft} \]

Then d = 625 kft

\[ M = 600 + (2 \frac{K}{ft})(10')(5') = 700 \text{ kft} \]

and c = 700 kft

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Volume Integrals:

\[ S = \int_0^6 0 + \int_0^{10} 600 \text{ ft} = 32,500 \]

Equations:

\[ S = \int_0^{10} (600 + 2 \frac{(x)}{2}) \text{ ft} = \int_0^{10} 600x + x^3 = \frac{600x^2}{2} + \frac{x^4}{4} \]

\[ = 32,500 \text{ ft}^2 \text{ answer in feet} \]

Checks out

Delta using volume integral equations = \( L(a + 2d)/6 = 10(10)[700 + 2*625]/6 = 32,500/\text{EI} \)