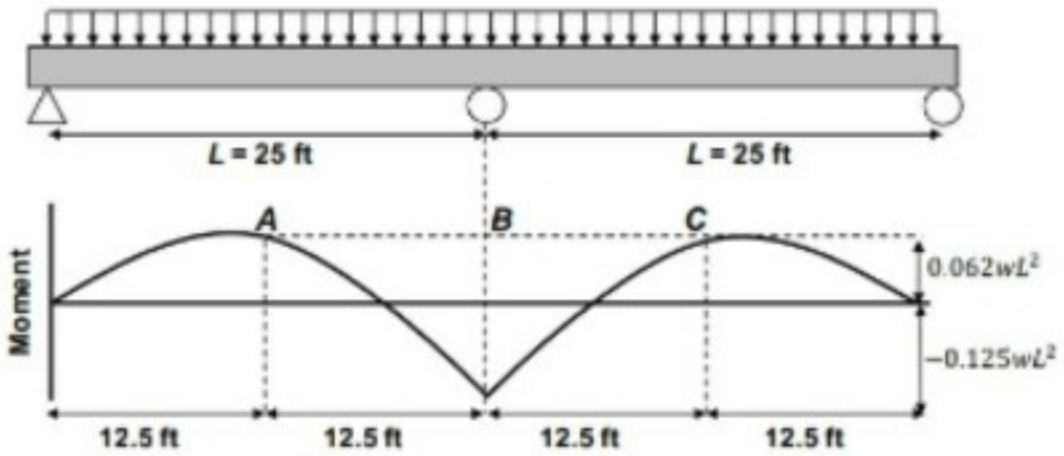
A two-span continuous beam with equal span lengths is loaded with a uniformly distributed load. Flexural yield and nominal strengths are reported, and the member is symmetrically reinforced such that the properties are the same in positive and negative bending.



Properties

$M_{y,A}M_{n,A}$ = 600 kip-ft $M_{y,B}M_{n,B}$ = 1000 kip-ft

$M_{y,C}M_{n,C}$ = 750 kip-ft E = 4,600 ksi

I = 12,000 in.^{4} $\Delta_A = \Delta_C = 0.0052\frac{wL^4}{EI}$

4. Perform plastic collapse analysis on the structure, identifying the load and displacement corresponding to all events. Assume that all plastic hinges have sufficient rotational capacity to form a collapse mechanism. [30 points]

5. In the space provided, explain what happens to a reinforced concrete cross section during plastic hinge rotation. **[5 points]**