Hand Calculations:

Uniform live load: 0.5 k/ft
Concentrated force: 20 k

\[ F_{y,\text{max}} = \left(0.5 \text{ k/ft} \cdot \frac{1}{2} \cdot 25 + 1.25\right) + 20(1.25) \]
\[ F_{y,\text{max}} = 32.81 \text{ k} \]

\[ V_{c,\text{max}} = 2\left(0.5 \text{ k/ft} \cdot \frac{1}{2} \cdot 10 + 0.5\right) + 20(0.5) \]
\[ V_{c,\text{max}} = 12.5 \text{ k} \]

\[ M_{c,\text{max}} = (0.5 \text{ k/ft} \cdot \frac{1}{2} \cdot 20 + 0.5) + 20(5) \]
\[ M_{c,\text{max}} = 125 \text{ k-ft} \]
Robot Models:

Influence Line—Vertical Reaction at B

Influence Line—Shear at C
%difference=0% for each influence line (vertical reaction at B, shear at C, and moment at C) since the diagrams are the same shape and have the same values at the peaks and special points of interest. Note that in order to find the maximum values for the vertical reaction, shear, and moment, one must still apply the uniform live load and concentrated force accordingly to the Robot models.