Complete the two problems below. For each beam, draw the free-body diagram first. Remember to get the units right! Show all your work for full credit.

1. An 15'-long simply-supported beam carries a uniformly distributed load $\omega$ and the point load shown. Calculate the resultant for the distributed load and determine the reaction forces at A and B using the equations of equilibrium. Redraw your final answer.

   ![Diagram of beam with distributed load and point load](image)

   $\omega = 50 \text{ lbs/ft}$

   A

   400 lbs

   B

   5'-0" 15-0"

2. For the floor framing plan shown below, draw and shade the floor areas that are tributary to beam B1, beam B2, and column C2. ALSO, please calculate and list each of those tributary areas, in $\text{ft}^2$.

   ![Diagram of floor framing plan](image)

   C1

   C2

   C3

   C4

   C5

   C6

   B1

   B2

   B3

   C1

   C2

   C3

   C4

   C5

   C6

   75'

   25'

   20'

   40'

   decking

   open
3. Indicate the tributary area for B1, G1, and G2 by cross-hatching. Calculate their tributary areas in ft².

4. Draw B1, G1, and G2 with their respective loading. Assume uniform area Dead Load (DL) 75 psf and Live Load (LL) is 50 psf. Boundary conditions should be pin and roller for these members. (Hint: A decking area load becomes a line load on a beam. A supported beam acts as a point load on a girder. It is possible to have both point loads and distributed loads simultaneously, see G2)