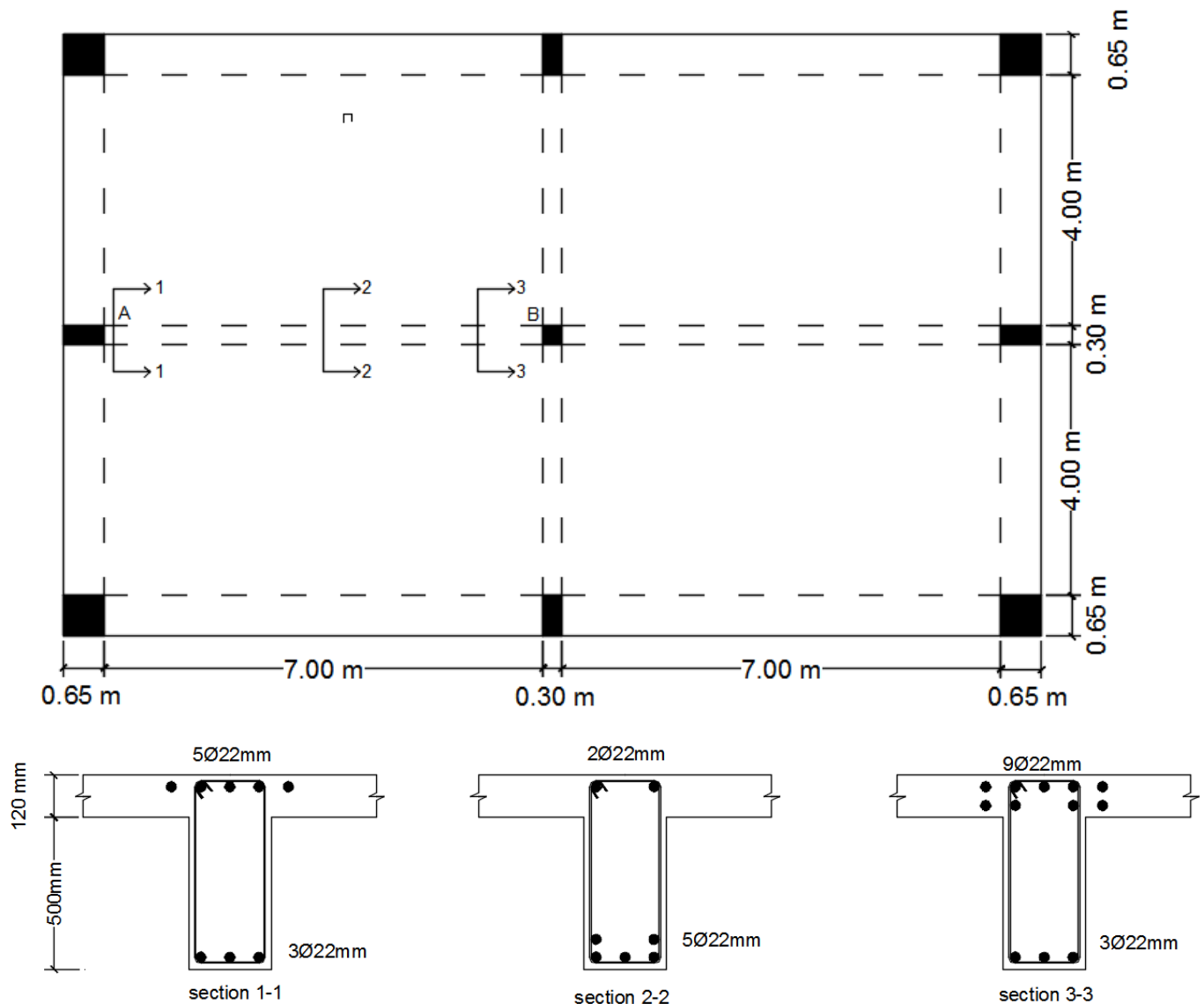
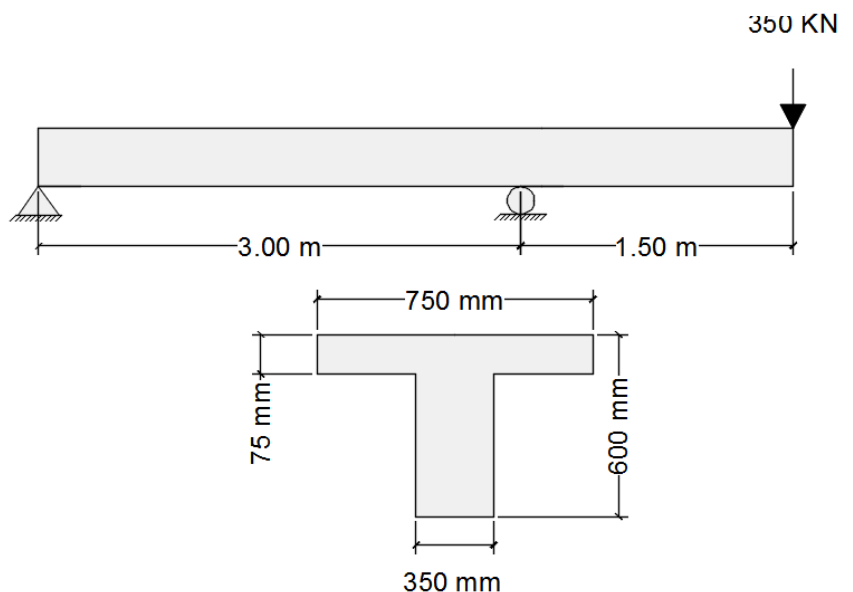


Q14- find the maximum live load can be carry by the beam AB in floor system shown below if dead load=32.9 kN/m, $f_y = 400 \text{ Mpa}$ and $f'_c = 25 \text{ Mpa}$.



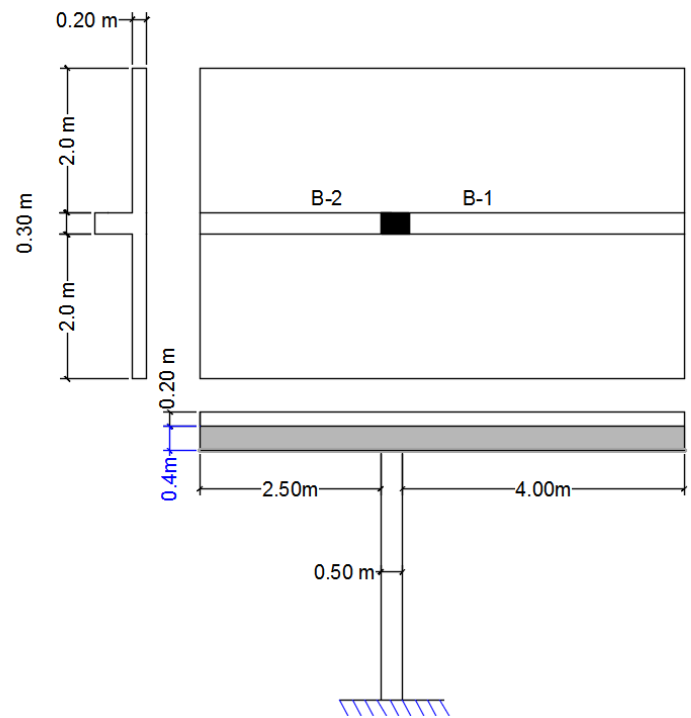
Q15- The overhang beam shown in Figure support a concentrated factored load of 350 KN as shown. The effective depth = 500 mm, neglect self-weight. Design and sketch the flexural reinforcement.

$f_y = 400 \text{ Mpa}$ and $f'_c = 28 \text{ Mpa}$.



Q17- A single central column supporting reinforced concrete shed slab serving as bus stop with details shown in **Figure** support uniform ultimate load of 16 kN/m^2 . Design the beam (B-1 and B-2) and sketch the detail of reinforcement.

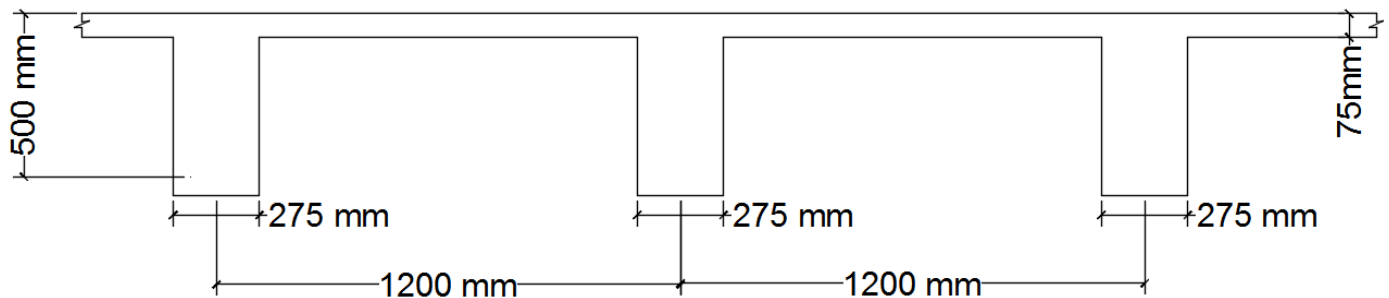
$$f_y = 400 \text{ Mpa and } f'_c = 28 \text{ Mpa.}$$



Q18- For the floor system shown in figure consist of 75 mm slab thickness supported by continues beam of length 7.5 m spaced 1.2 m center to center.

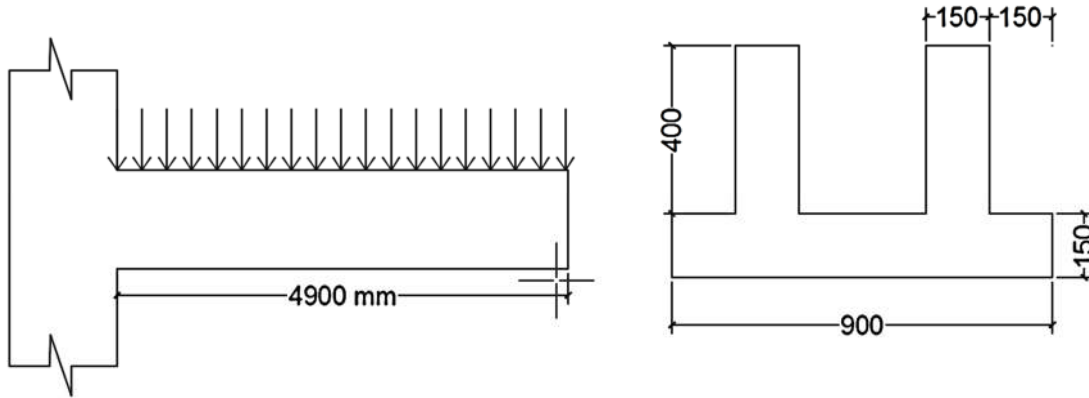
Calculate the tension reinforcement at mid span to resist a factored moment of 750 kN.m

$$f_y = 420 \text{ Mpa and } f'_c = 20 \text{ Mpa.}$$

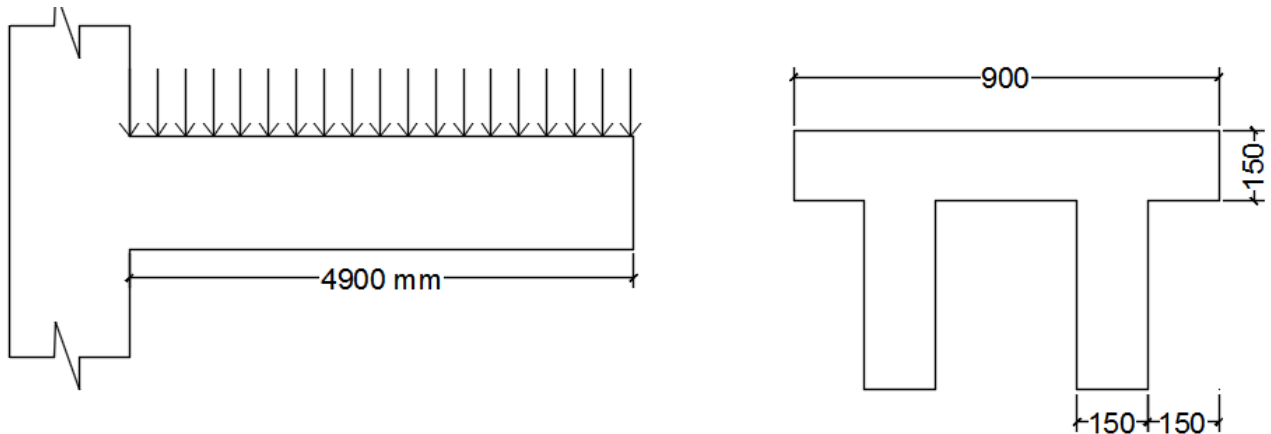


Q19-

- 1- Design the beam of cross section shown in figure to support only its self-weight and live load of 16.5 kN/m. $f_y = 400 \text{ Mpa}$ and $f'_c = 25 \text{ Mpa}$. $\gamma = 24 \frac{\text{kN}}{\text{m}^3}$, $d = 510 \text{ mm}$, $d' = 60 \text{ mm}$



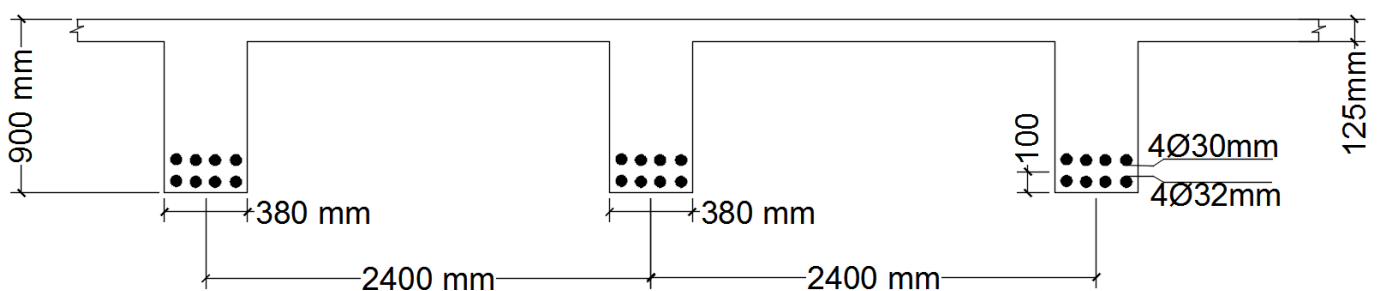
- 2- Same previous question but use the cross section shown below.



Q20- for the floor system shown in figure consist of 125 mm slab thickness supported by simple span beam of length 9.1 m spaced 2.4 m center to center.

- 1- Calculate the nominal moment strength of the beam.
- 2- What is the maximum live load can be carry by this slab?

$f_y = 420 \text{ Mpa}$ and $f'_c = 30 \text{ Mpa}$. $\gamma_c = 24 \text{ kN/m}^3$



Q21-The floor of building shown below is design to carry its self-weight (5 kN/m^2), service dead load of 6 kN/m^2 and service live load of 4 kN/m^2 . Answer the following.

- 1- Find the load supported by beam AB and CD.
- 2- Design the beam AB.
- 3- Design the beam CD.

