Question 2 – *Effective lengths and compression check*

The plan of a two-storey building, the orientation of the columns and elevation of the frames on different gridlines are shown in Figure 2. Determine the maximum design compressive capacity (pure compression) for columns A-1 and A-2 (gridlines A and 1, and A and 2 respectively) on the ground floor according to AS4100. All columns are 250 UC 89.5 sections (Grade 350) and all beams are 360 UB 56.7 sections (Grade 350). All beam-to-column connections in the East-West direction are rigid and the beam-to-column and beam-to-shear wall connections are pins. The column-to-footing connections in both planes are fixed.

(*Hint:* Buckling in both directions needs to be considered, with the effective length obtained using the γmethod).

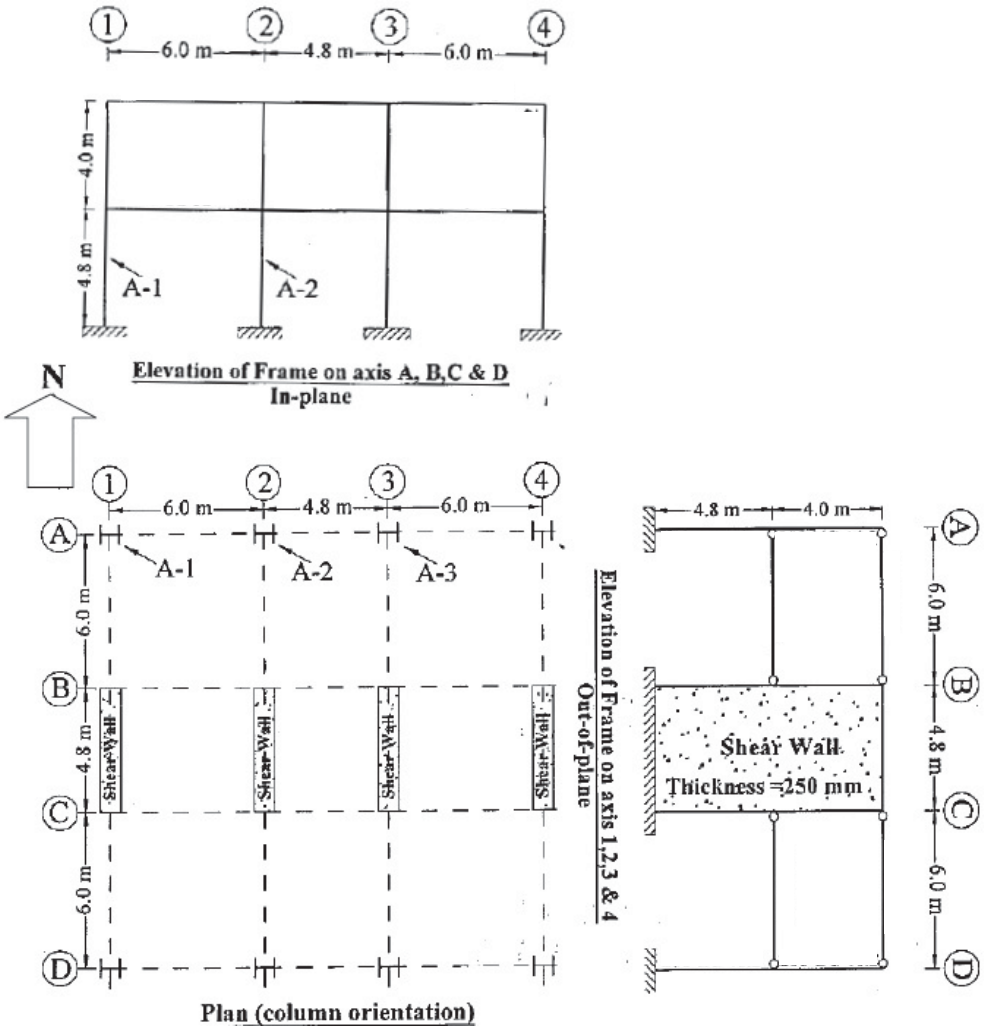

Figure 2.