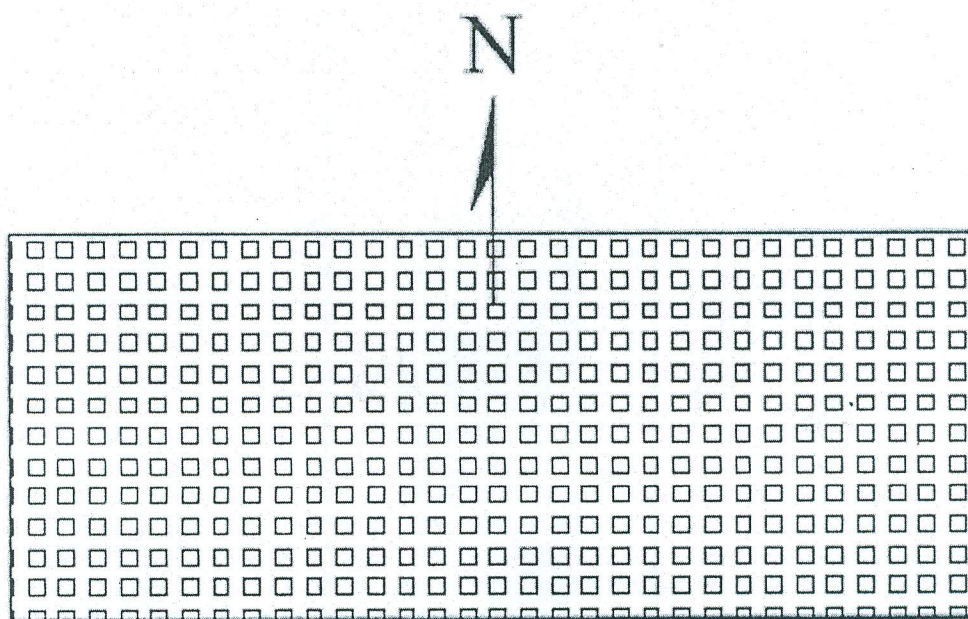


The industrial hall shown in figure has a short dimension of 20 m and a long dimension of 80 m. The hall is supposed to have a **natural light from the north direction**. The short dimension of the hall is parallel to the north direction as shown in the figure. The hall is supposed to have a minimum clear height of 5.0 m while the foundation level is 2.0 m below the ground level. The concrete used for construction has a characteristic strength of 30 MPa while the 40/60 high-grade steel is used. The soil bearing capacity is 0.2 MPa. **Interior Columns are not permitted.**



It is required to:

1. Propose as suitable structural system to cover the hall showing all its components in clear sketches, plan, elevation, and side view.
2. For the chosen system, design **all** the structural elements of the **saw-tooth roof, main girder** and its **foundations**.
3. Draw clear sketches for the reinforcement details of various **structural elements, joints** and foundations of the hall.

Any missing data may be reasonably assumed.

يسمح للطالب باستخدام الكود المصري + جداول د شاکر البحيري + جداول الكود المصري