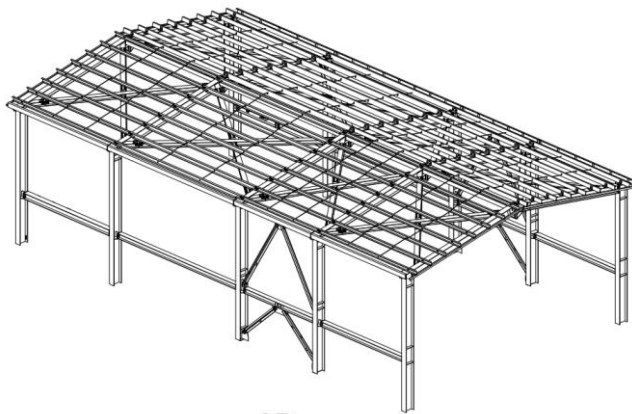


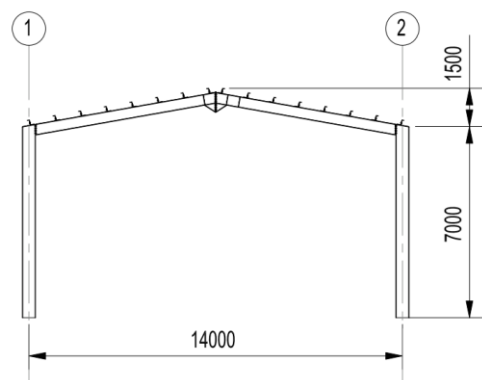
**CE482-DESIGN OF STEEL STRUCTURES**  
**2019 – 2020 Fall Semester**

**Assignment # 1 – Date Due: 25.10.2019**

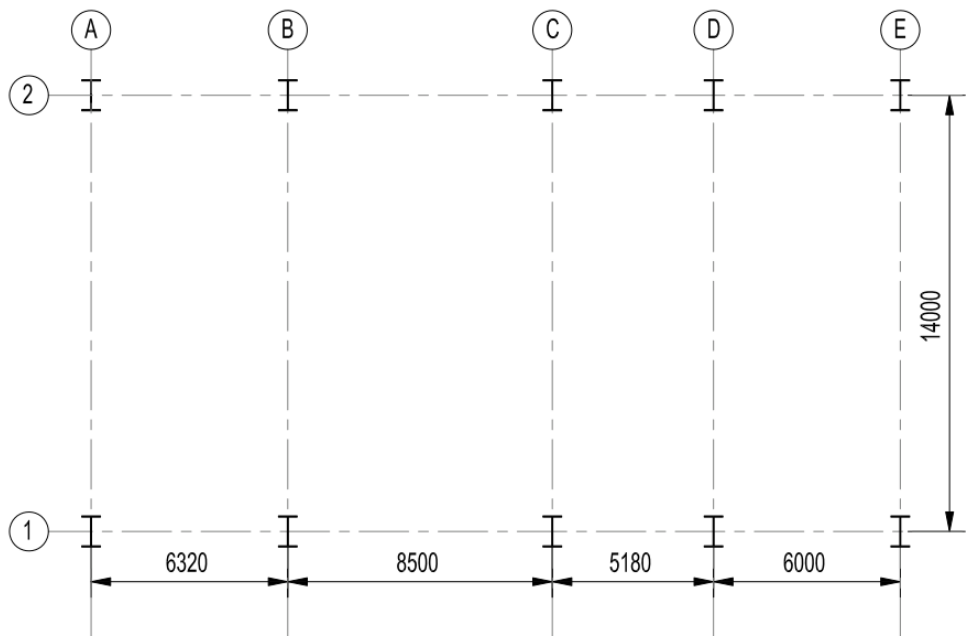
- 1) A structural steel industrial building is to be constructed in Istanbul.
- Calculate the snow (S), wind (W) and seismic (E) loads acting on the structural frame located on C-C axis.
  - Create load combinations using D, S, W, E load cases according to EN 1990. (D: 0.60 kPa “dead load”).
  - Calculate maximum tensile load on the column located at the intersection of 1 and C axes by taking into account load combinations created.



3D



Grid C



Plan

**Necessary Information about Snow Loading:**

- For this calculation  $C_e$  and  $C_t$  values may be taken as 1.0
- Characteristic value of snow on the ground,  $S_k=1.25 \text{ kN/m}^2$

**Necessary Information about Wind Loading:**

- Terrain category may be taken as “III” (Area with regular cover of vegetation or buildings)
- Orography factor is taken as 1.0 ( $C_o(z)=1$  and  $C_e(z)=1$ )
- Basic wind velocity,  $V_b=40 \text{ m/sec}$
- Air density,  $\rho=1.25 \text{ kg/m}^3$
- Structural factor  $C_s.C_d=1$

**Necessary Information about Seismic Loading:**

- $a_{gR}=0.40g$
- Soil type D
- $T=0.85 \text{ sec.}$
- Ductility class: DCM (Medium)