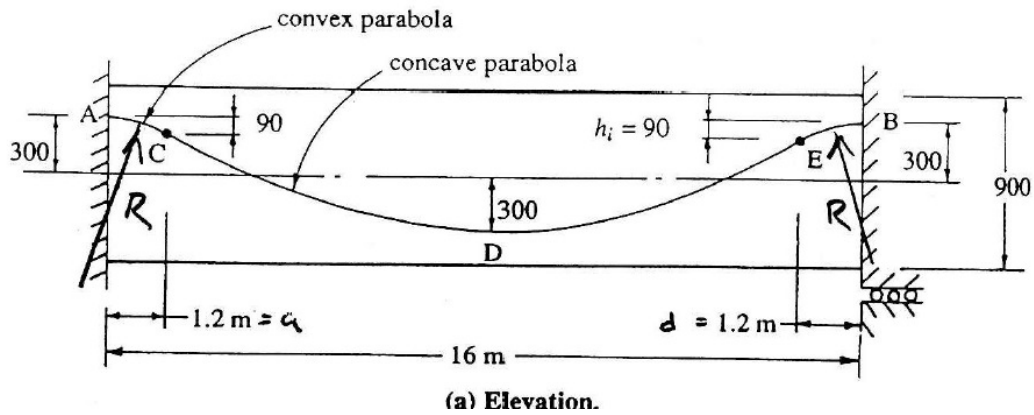


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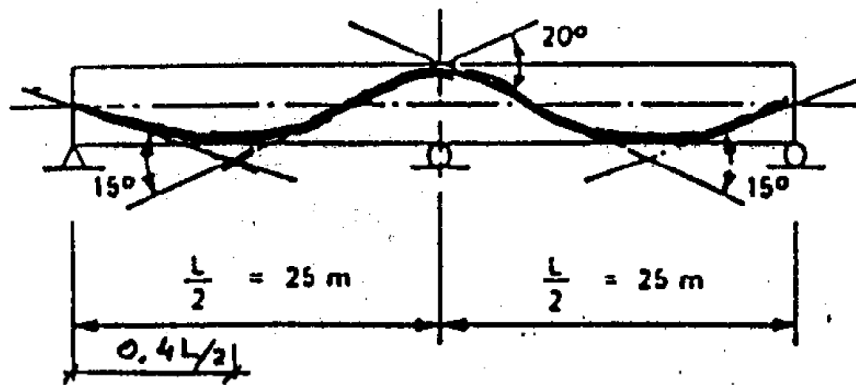
Excercise 3:

1.



Calculate balanced forces, when prestressing force $P=2500$ kN

2.



Input data:

VSL post-tension system

Strands $12 \phi 12,5$ $A_{p1} := 93 \cdot \text{mm}^2$ $A_p := 12 \cdot A_{p1}$ $A_p = 1116 \text{mm}^2$

Prestressing steel grade St 1600/1800

Elastic modulus $E_p := 195000 \text{MPa}$

Friction coefficient $\mu := 0.2$ wobble coefficient $\beta := 0.005 \cdot \frac{\text{rad}}{\text{m}}$

Initial prestress at the jacking anchor $\sigma_{p0} := 1240 \cdot \text{MPa}$

Prestress force $P_0 := \sigma_{p0} \cdot A_p$ $P_0 = 1383.8 \text{kN}$

Calculate

- prestress loss due to anchorage slippage and
- prestress loss due to friction at the point $0,4L$ from the left support