Assignment 7

Due on 2020-09-18, 20:59 IST.

1. A new soil embankment is to be constructed on a uniform vertical surface of 0.6 m, with a slope angle of 45°. The properties of the soil are: e=0.5, d=0.4, y=25.0 kN/m³. The surcharge of 10 kN/m² is acting on the slope face. The stiffness coefficient of the soil in the horizontal direction is 200 kN/m². What is the total number of layers to be provided in the embankment?

2. A strip load of 10 kN/m is to be applied on a uniform vertical surface of 0.6 m wide. The surcharge of 10 kN/m² is acting on the slope face. The stiffness coefficient of the soil in the horizontal direction is 200 kN/m². What is the total number of layers to be provided in the embankment?

3. In Problem No. 2, what is the minimum length of wall to prevent both pullout and sliding failure? (Use the design charts provided.)

4. In Problem No. 3, what is the minimum length of wall to prevent both pullout and sliding failure? (Use the design charts provided.)

5. If the reinforcement layers are provided at uniform vertical spacing of 0.8 m, what is the total length of the reinforcement layer provided at a depth of 0.6 m from the top of the embankment?

6. In Problem No. 4, what is the length of wall to prevent both pullout and sliding failure? (Use the design charts provided.)

7. In Problem No. 5, what is the total number of layers to be provided if the pore pressure coefficient is 0.2?

8. In Problem No. 6, what is the total number of layers to be provided if the pore pressure coefficient is 0.2?

9. According to Stroud's analysis, the outward shear movement of embankment soil over smooth foundation soil reduces bearing capacity due to:
   - Increase in water content
   - Decrease in vertical load
   - Lack of friction resistance
   - Lack of foundation soil cohesion

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