

CULVERT

It is required to design the culvert proposed to pass the canal under the roadway according the following data:-

> CANAL

- Bed level = (10.00), Bed width = 4.50 m
- Berm level = (13.50), Bank level = (14.25)
- W.L = (12.70),
- Canal discharge = $10.30 \text{ m}^3/\text{sec}$,
- sides slopes are 1:1 and 3:2

> ROAD

- Road width = 8.0 m
- Road side slopes = 3:2
- Uniform distributed L.L = 1 t/m^2

> CULVERT

- Allowable heading up = 10.0 cm
- U.S min submersion = 10.0 cm
- Use R.C box-type section.

> SOIL

- Dry unite weight = 1.80 t/m^3
- Saturated unite weight = 2.1 t/m^3
- Angle of internal friction = 30°

II REQUIREMENTS

1. Find the dimensions of culvert and check of heading up
2. Draw the absolute B.M and N.F diagrams for the critical sections of the culvert and make the necessary R.C design.
3. Draw to scale 1:100
 1. P.H.E.R (Plan Half Earth Remove).
 2. Longitudinal section elevation (lower vent).
 3. Reinforcement details of the culvert section.