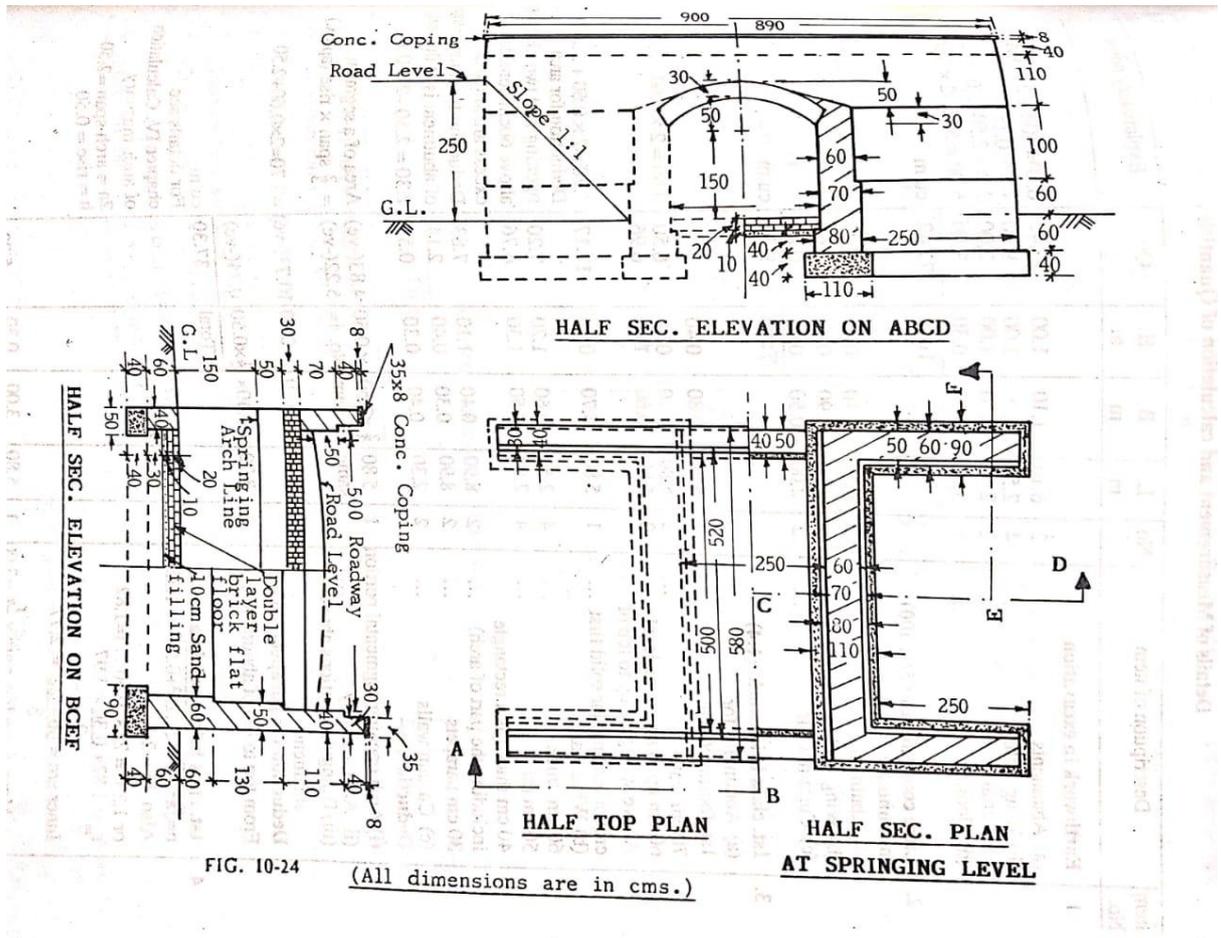


Question Bank on Estimation costing & Evaluation -II

1. Define Estimation. Why it is necessary for any construction work?
2. Differentiate between Bridge and Culvert?
3. Discuss about the different parts of a Culvert.
4. Calculate the quantity of earthwork for 200 metre length for a portion of a road in an uniform ground the heights of banks at the two ends being 1.00 m and 1.60 m. The formation width is 10 metre and side slope 2:1 (Horizontal:Vertical). Assume that there is no transverse slope.
5. Differentiate between Lead and Lift?
6. Discuss about different types of estimate?
7. Explain the term "Contingencies".
8. What do you mean by schedule of rates?
9. Write down the works carried out by a Junior engineer.
10. What is a 'Budget'?
11. Differentiate between earned money deposit and security money deposit?
12. What is a 'Contract'. Briefly discuss about different types of contract.
13. What is a measurement book.
14. What is Muster roll.
15. Define Piece Work Agreement?
16. Differentiate between Administrative approval & Technical sanction.
17. What is Schedule of rates?
18. What is Arbitration?
19. Example 1.0- Estimate of simple arched culvert- Prepare a detailed estimate of an arched culvert of 2.5 m span and 5 m clear roadway from the given figure.1
The general specifications are as follows-
Foundations shall be of cement concrete 1:2:4. All masonry work will be of 1st class brickwork in cement mortar 1:4 but brickwork in arch masonry will be cement mortar (1:3). The exposed surface including soffit, flooring or arch shall be cement flush pointed, 1:3 up to 15 cm below G.L. Present local market rates may be adopted to prepare the estimate and no plastering shall be allowed.
20. Prepare a quantity survey of a slab culvert of 1.5 m clear span and 4 m roadway as shown in the figure.2
The general specifications are as follows:-
Foundations shall be of cement concrete 1:2:4. Brickwork shall be of first class in cement mortar 1:4 Exposed surface of brick masonry shall be cement pointed 1:3 carried up to 15 cm below G.L. The exposed surface of R.C.C. shall be given a smooth finish during centering, and no plastering shall be allowed. The string courses shall be 8 cm deep and 12 cm thick with cement mortar 1:3 finished with neat cement. (wt. Of 16 mm and 10 mm dia. Bars are 1.58 kg and 0.62 kg respectively per r.m).

Example 3.0- Estimation of a 90 cm dia. Hume pipe culvert

Prepare a quantity estimate for a barrel of 30 cm length (total length depends on the bank height and drop walls). In the estimate, the earth cushion whose depth has been indicated by $X=60$ cm minimum and the Hard Crust has not to be included. General Specification of works are same as mentioned in the drawing. Extra earthwork in excavation shall be considered in the estimate to provide a side slope of 1:2 in order to prevent collapsing of earthwork at water level. As shown in Figure.3



(Figure.1)

DRAINAGE SYPHON ACROSS A MINOR

Example 7. — Prepare a detailed estimate of a Drainage Syphon across a minor from the given drawing, Figs. 9-8 and 9-9.

Foundation concrete shall be of 1 : 4 : 8 cement concrete with brick ballast. All brickwork shall be of 1 : 4 cement mortar. Exposed surfaces of brickwork shall be struck pointed with 1 : 2 cement mortar. Brick pitching shall be of dry brick with straight over burnt bricks.

Assume suitable rates for the different items of work.

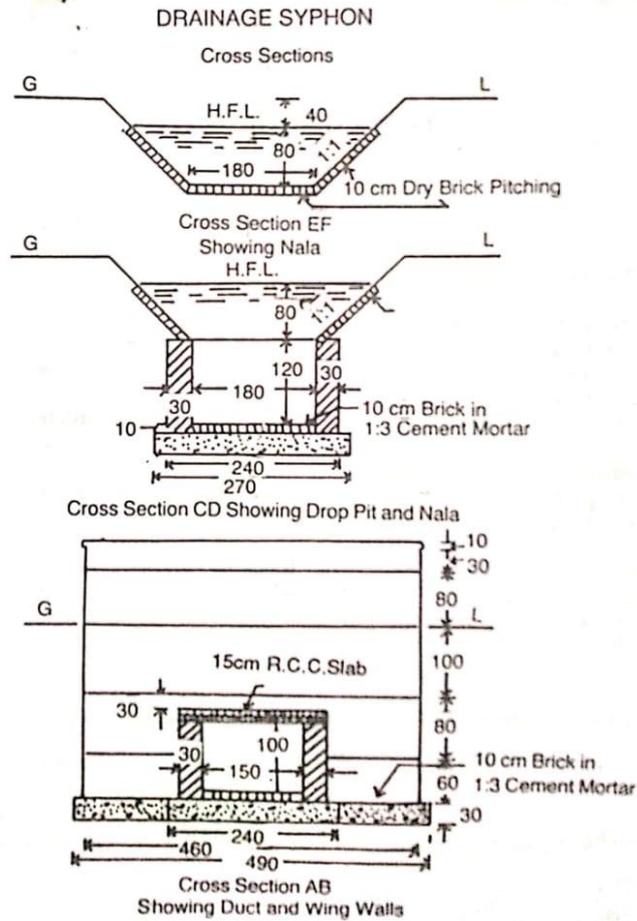
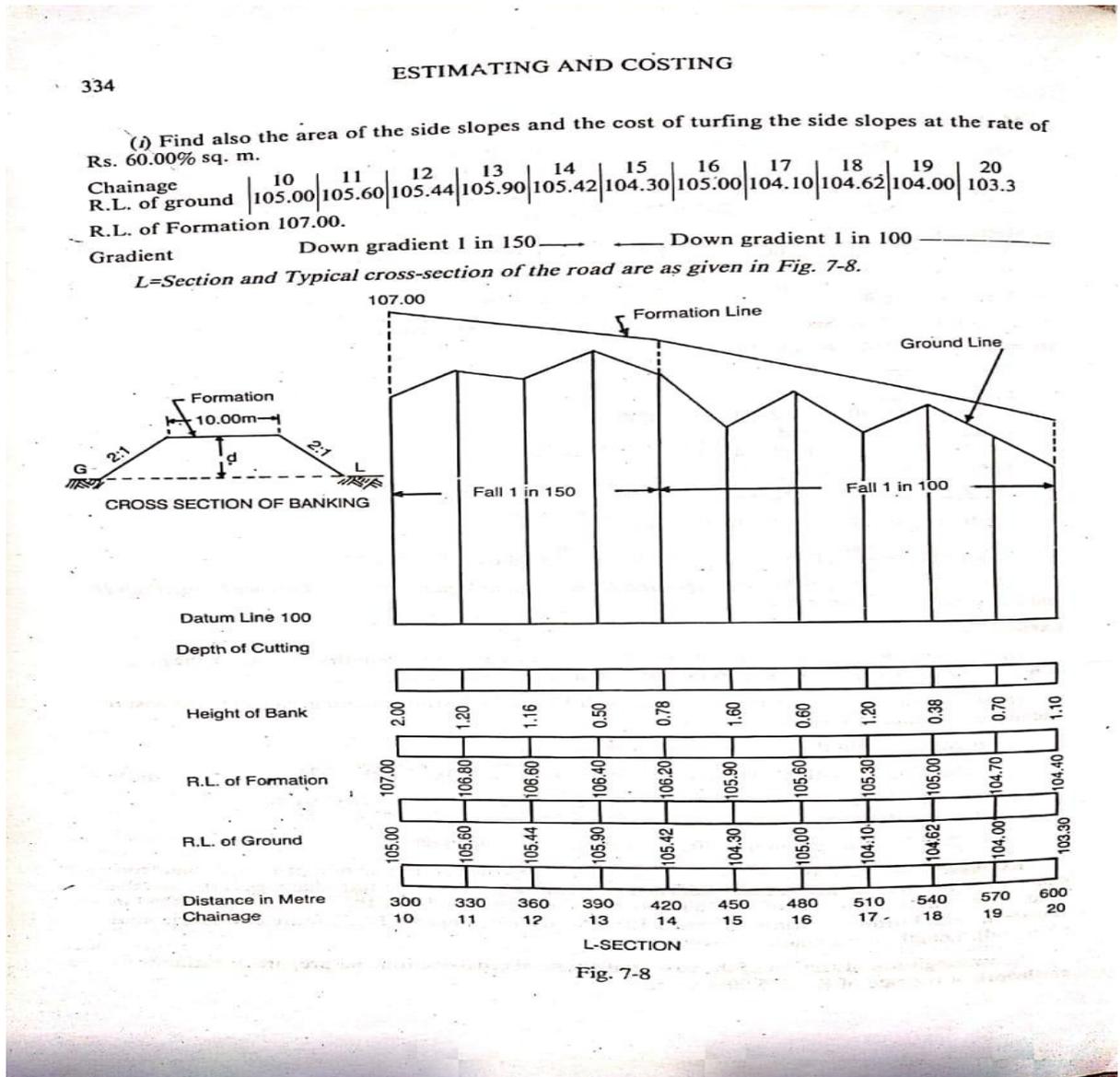


Fig. 9-8

(Figure.4)

22. Reduced level (R.L.) of ground along the centre line of a proposed road from chainage 10 to chainage 20 are given below. the formation level at the 10th chainage is 107 and the road is in downward gradient of 1 in 150 up to the chainage 14 and then the gradient changes to 1 in 100 downward. formation width of road is 10 metre and side slopes of banking are 2:1 (horizontal:Vertical). Length of the chain is 30 metre.
- Draw longitudinal section of the road and a typical cross-section and prepare an estimate of earthwork at the rate of Rs. 275% cu m



(Figure.6)