

Full Marks: 80

Answer any five Questions including Q No.1 & 2
Figures in the right hand margin indicates marks

2 x 10

1 Answer All questions

- a. What is Muster Roll
- b. Differentiate between store and stock
- c. What do you mean by piece work agreement.
- d. What is earnest money.
- e. What is drainage syphon
- f. Mention the function of coping and kerb in a culvert.
- g. Find out weight of a 12 mm dia bar of 1m length.
- h. Write down the necessity of providing canal fall.
- i. Define lead and lift.
- j. What do you mean by Notice Inviting Tender.

6 x 5

2 Answer Any Six Questions

- a. Calculate the area of the side slopes of portion of a bank for a length of 200 metre. The heights of bank at two ends being 2.50 m and 3.50 m and the ratio of the side slope 2:1. If the side slopes are to be provided with 15 cm thick stone pitching, calculate the cost of pitching at the rate of Rs. 150/- per cum.
- b. Calculate the quantity of main reinforcement required for a slab of 2.1mX 4.8m size provided with 20 mm dia main bars @ 15 cm C/C. In the slab alternate bars bent at 45° with end hooks.
- c. Find out the quantity of earthwork in excavation for drainage syphon from figure 1.
- d. Estimate the quantity of cement concrete work in foundation of a fall from figure 2
- e. What do you mean by administrative approval and technical sanction.
- f. An isolated column footing is of size 2.1 m x 2.1 m and of thickness 650 mm. Find out the volume of cement concrete work for the footing.
- g. Estimate the items involved for construction of a WBM road from the following data:
Length of road = 500 m.
Metalled width = 7 m.
Thickness of brick soiling = 7.5 cm.
Wearing coat of grade-II metal = 12 cm thick loose and 8cm thick compacted surface to be finished with 2 coats of bitumen as given below:
First finishing coat = 12 mm chips @ 0.018 m³/sqm and bitumen @ 1.2 kg per m² of road surface.
Second finishing coat = 6 mm chips @ 0.009 m³/sqm and bitumen @ 1.2 kg per m² of road surface.
Consumption of fuel @ 0.3 kg per kg of bitumen.

Prepare a detailed estimate for earthwork for a portion of a road from the following data

10

Formation width of road is 10m, side slope 2:1 in banking and 1½:1 in cutting

Dis ta nc e in me tre	0	100	200	300	400	500	600	700	80 0	90 0	100 0	110 0	120 0
R.L of GL	11 4.5	114. 75	115. 25	115. 20	116. 10	116. 85	118. 00	118. 25	11 8.1 0	11 7.8 0	117 .75	117. 9	119. 5
RL of FL	115 upward gradient 1 in 200							Downward gradient 1 in 400					

4 Write short notes on

10

- Measurement book
- Security money
- Temporary advance
- Acquittance Roll**

5 Estimate the following items involved for septic tank shown in Figure 3

2+4+4

- Earthwork in excavation
- I class brick work in 1:4 cement mortar
- 12 mm thick inside plastering.

6 Estimate the following items of work of a slab culvert from Fig No 4.

5+5

- 1st class brickwork in 1:4 cement mortar
- Cement pointing 1:2

7 a. Estimate the quantity of 1st class brickwork in 1:4 cement mortar of a 60 cm fall from Fig No 2
b. Estimate the quantity of cement pointing of a drainage syphon from Fig No 1

5+5

DRAINAGE SYPHON

Cross Sections

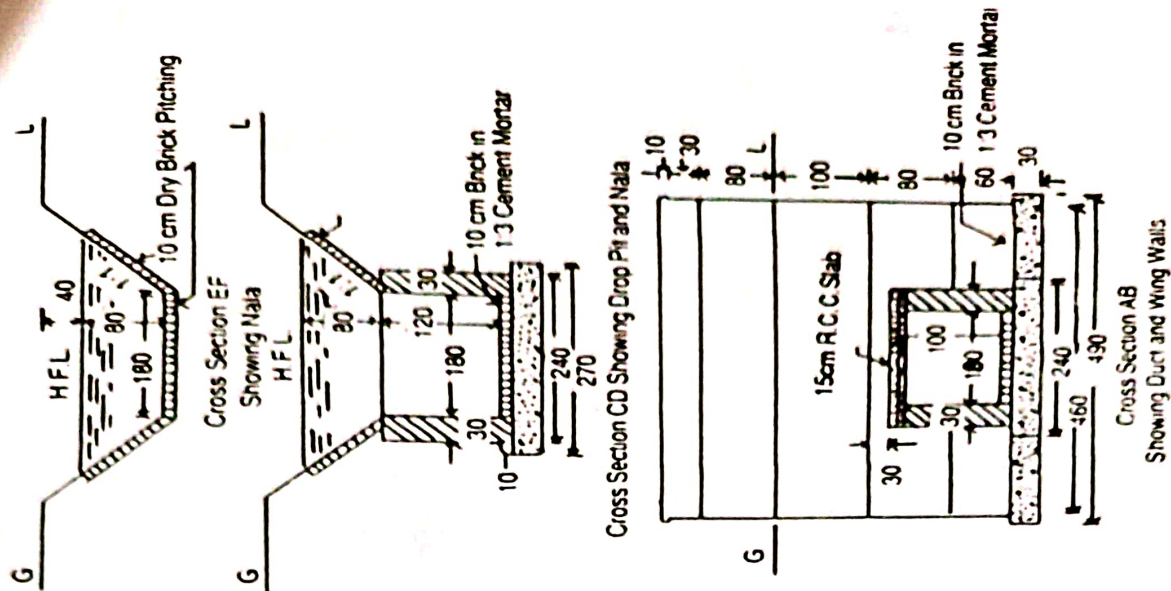


Figure 1

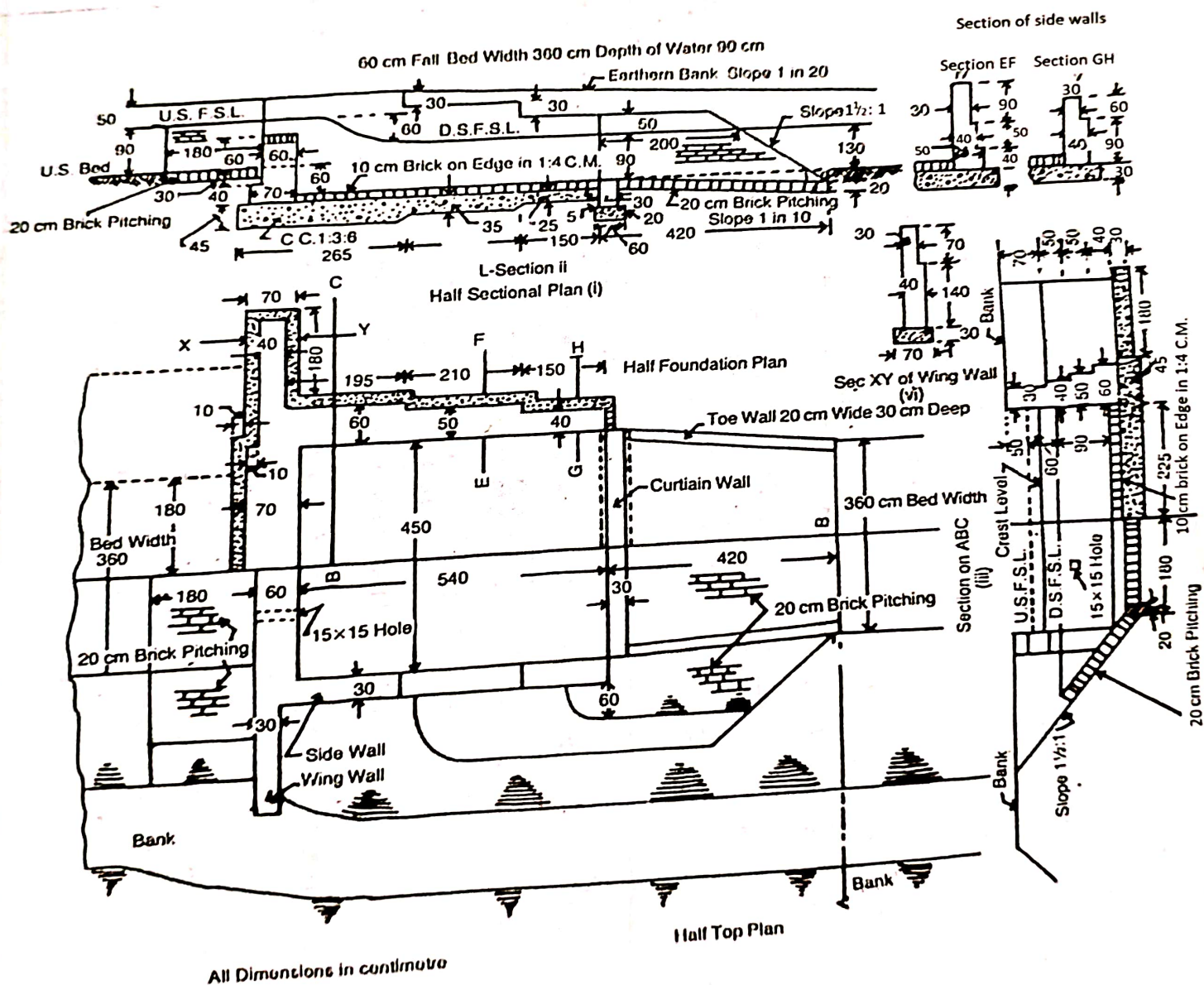


Figure 2

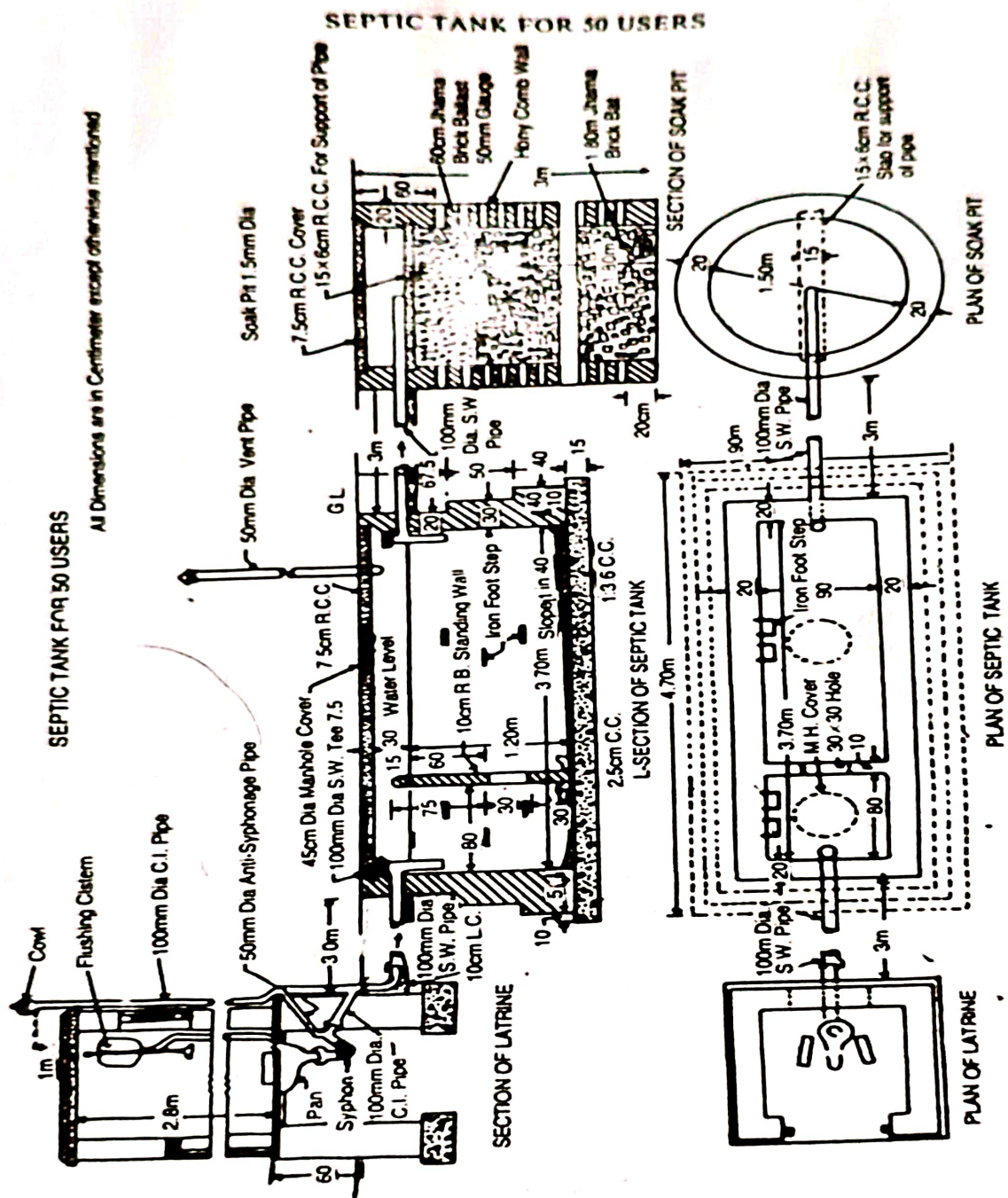


Figure 3

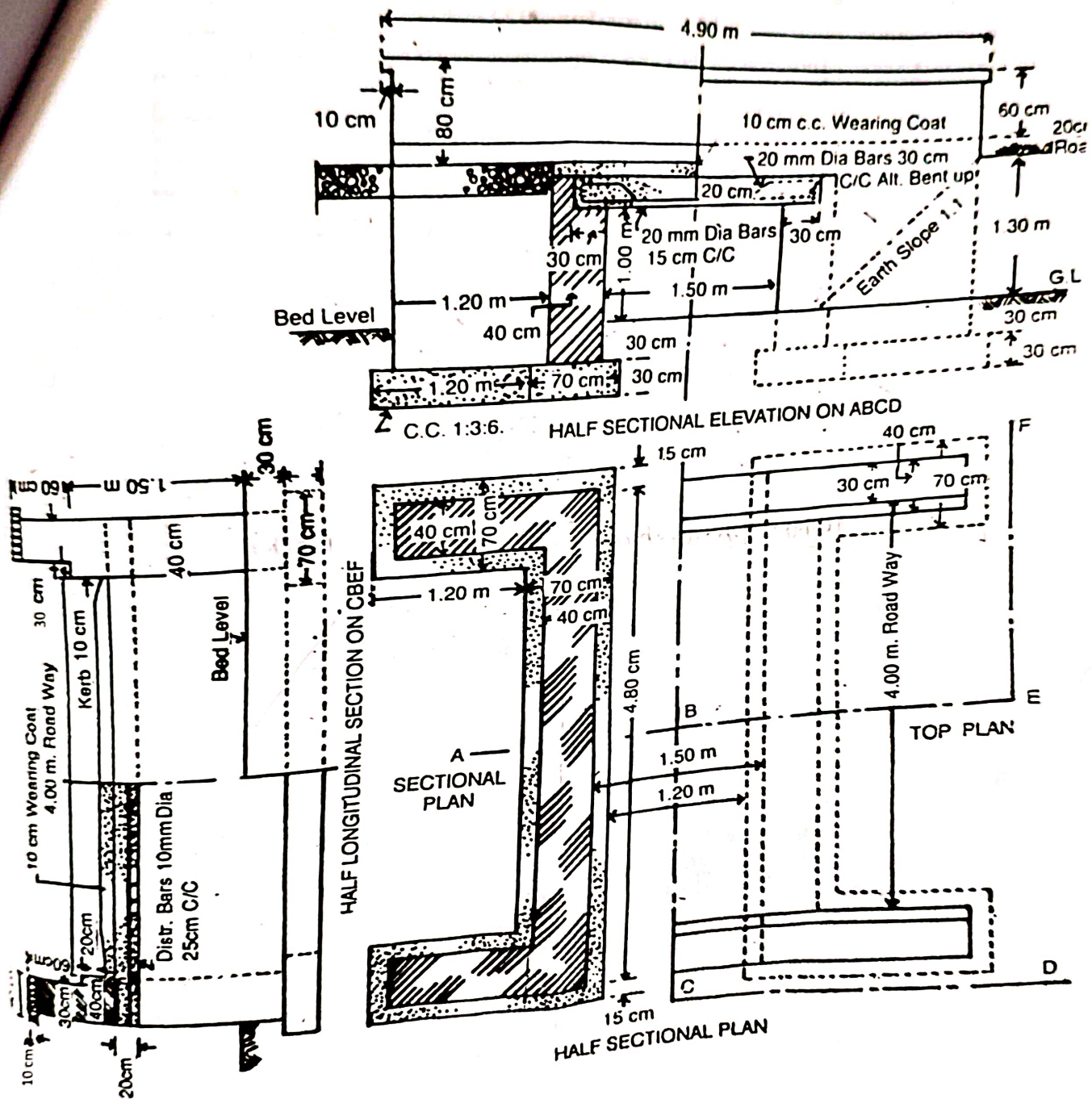


Figure 4

5TH SEM. / CIVIL./2023(W) NEW
Th-5 Estimation & Cost Evaluation-II

Full Marks: 80

Time- 3 Hrs

Answer any five Questions Including Q No.1& 2
Figures in the right hand margin indicates marks.

1. Answer All questions. 2X10
- Mention the need of kerb and coping in culverts.
 - Under which circumstances, fall is provided in canal?
 - What are the components of a drainage siphon?
 - Differentiate between original work and repair work.
 - Differentiate between lumpsum contract & item rate contract.
 - Define earnest money deposit (EMD) .
 - What is the weight of a 16 mm dia. reinforcing bar of 4 m length?
 - Define muster roll.
 - What is RERA and when it was formed in Odisha?
 - Define setback and bin card.
2. Answer Any Six Questions. 6 x 5
- An RCC slab of 5m x 3m x 150 mm is reinforced with 10 mm dia bars along shorter span with alternate bent ups at 150 mm spacing c/c. 8 mm bars are used straight along longer span at 250 mm spacing c/c. 6 nos of 8 mm bars used as binder to support bent up bars along longer span 3 nos on each side. The slab is having a bottom cover of 20 mm and side cover of 15 mm. No end hooks are provided in any reinforcing bar in this slab. Estimate the quantity of reinforcing bar used in this slab. 2.5x2
 - Define measurement book (MB). Mention the procedure for making entries of measurement of work in an MB. 2.5x2
 - Estimate the quantities of following items from Fig.1.
 - Earthwork in excavation
 - Foundation Concrete (1:3:6)
 - Write short notes on administrative approval.
 - Elaborate the method of execution of work through contractors and Engineering Department. 10
 - Estimate the quantities of following items from Fig.2.
 - Earthwork in excavation
 - Cement concrete 1:4:8 in foundation
 - Explain building byelaws and mention the objectives of it.
- Answer Any Three Questions**
3. Estimate the cost of earthwork for a portion of a road of 1 km length from the following data. The cost of earthwork is Rs.800/- for banking and Rs. 950/- for cutting. Also draw the longitudinal section and typical section. Formation width of the road is 10 m and side slope is 2:1 in banking and 1.5:1 in cutting. Length of the chain is 40 m. 5x2
4. Estimate the quantities of following items from Fig.1.
 - 1st class brickwork in 1:4 cm
 - Cement Pointing in 1:65x2
5. Estimate the quantities of following items from Fig.2.
 - 1st class brickwork in 1:4 cm
 - Cement Pointing in 1:65x2
6. Estimate the quantities of following items from Fig.3.
 - Earthwork in Excavation
 - Foundation Concrete in (1:3:6)

PIPE CULVERT

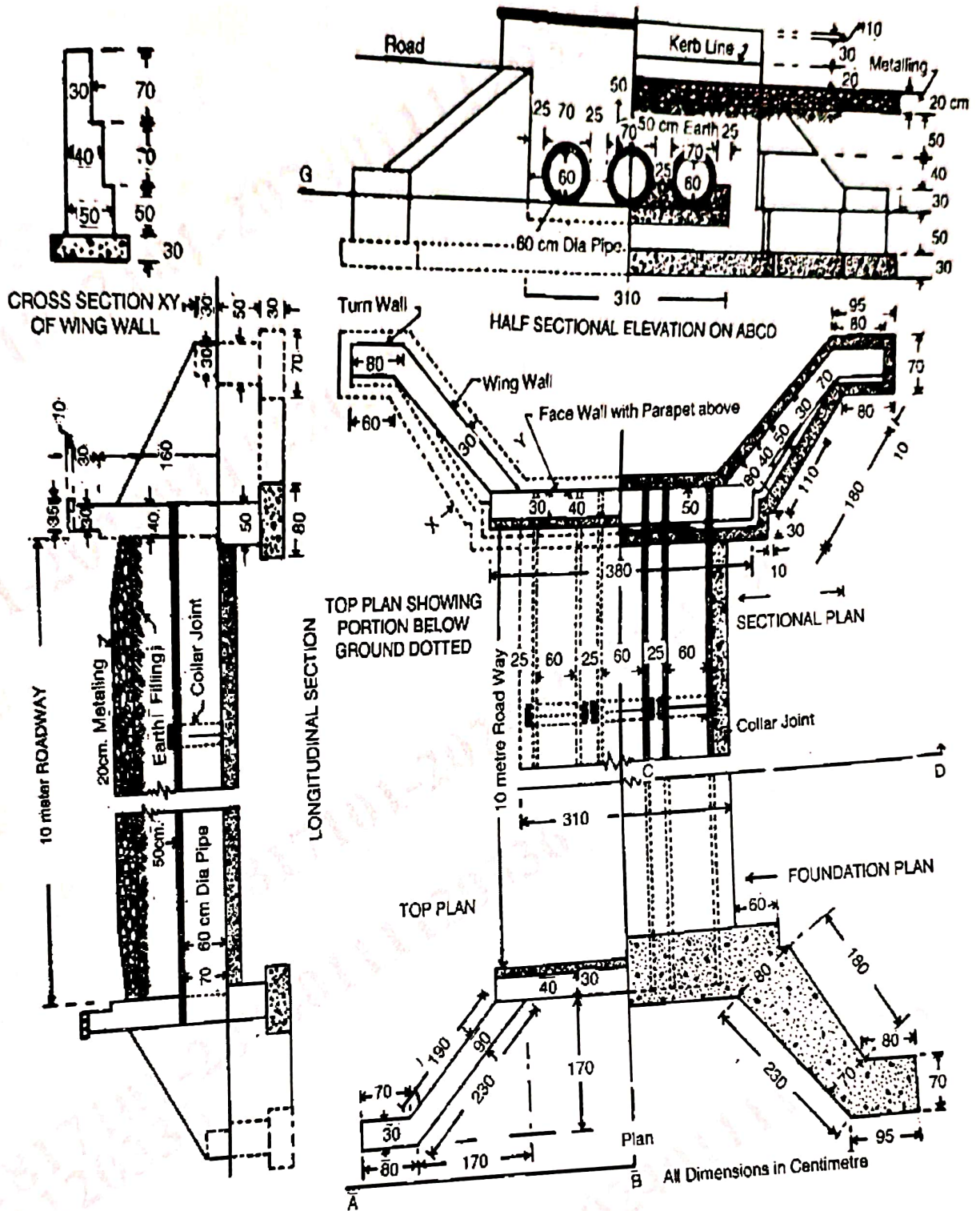


Figure-2

Write short notes on.

- i. Administrative approval
- ii. Technical Sanction
- iii. Measurement Bill
- iv. RA Bill

2..

R.C.C. SLAB CULVERT 1.50 m SPAN with standard modular bricks

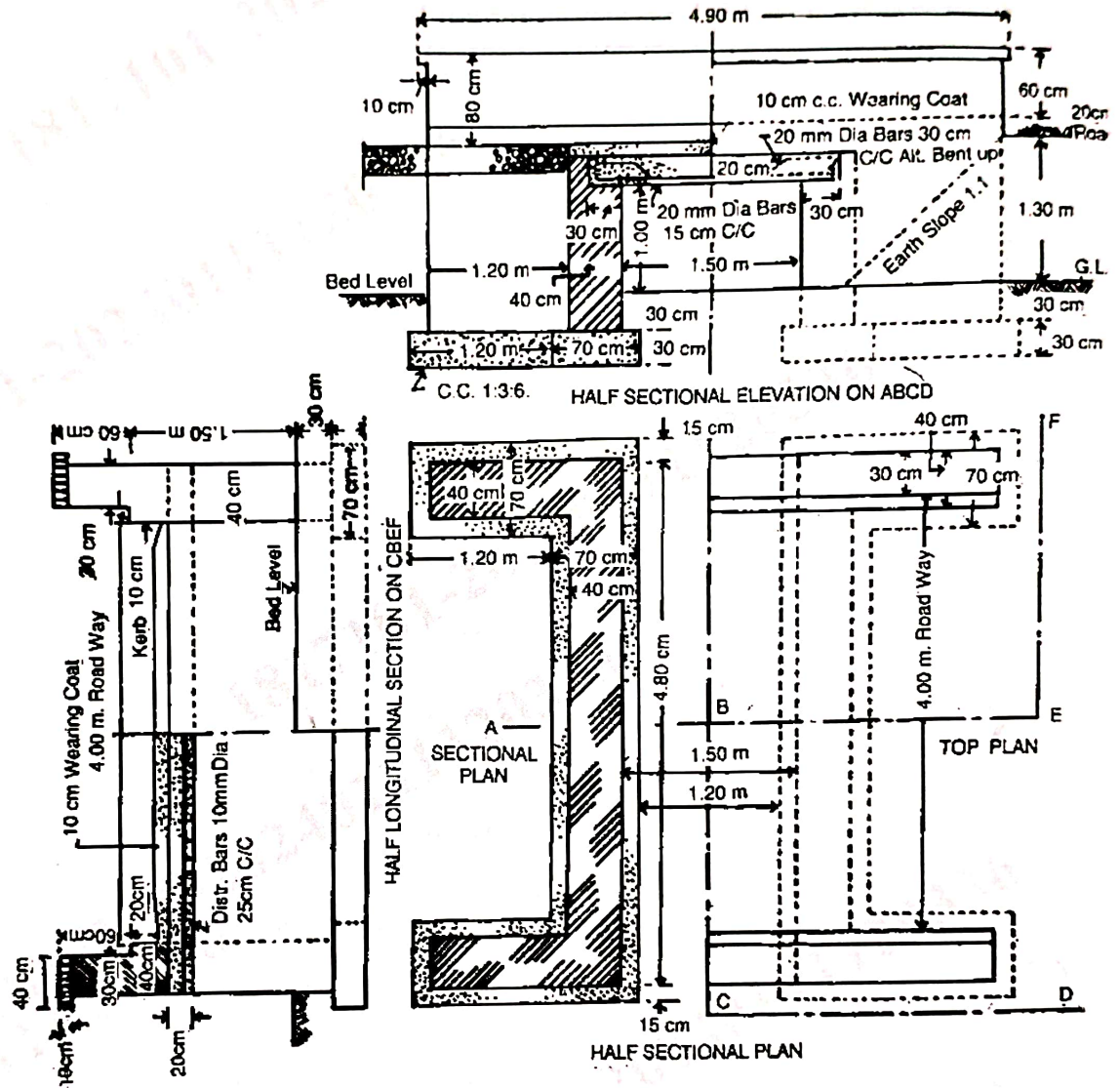


Figure-1

