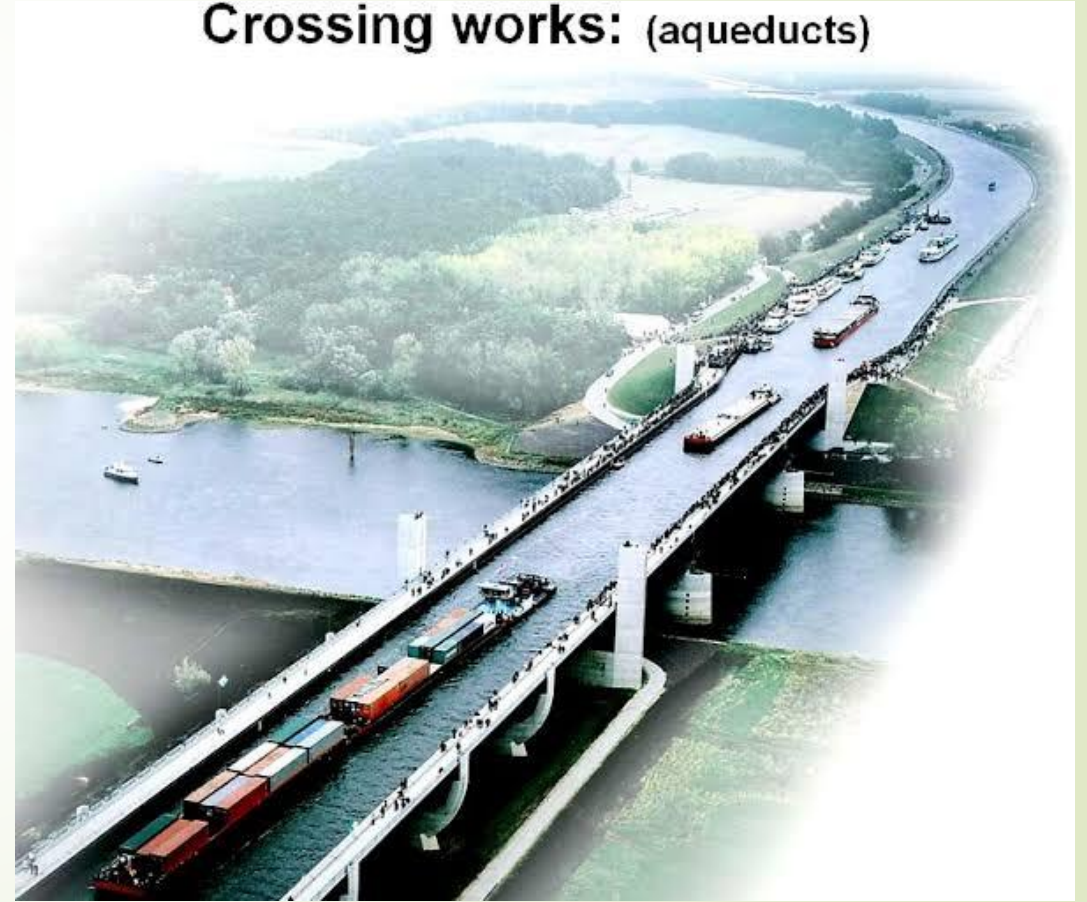


Cross Drainage Work

Crossing works: (aqueducts)



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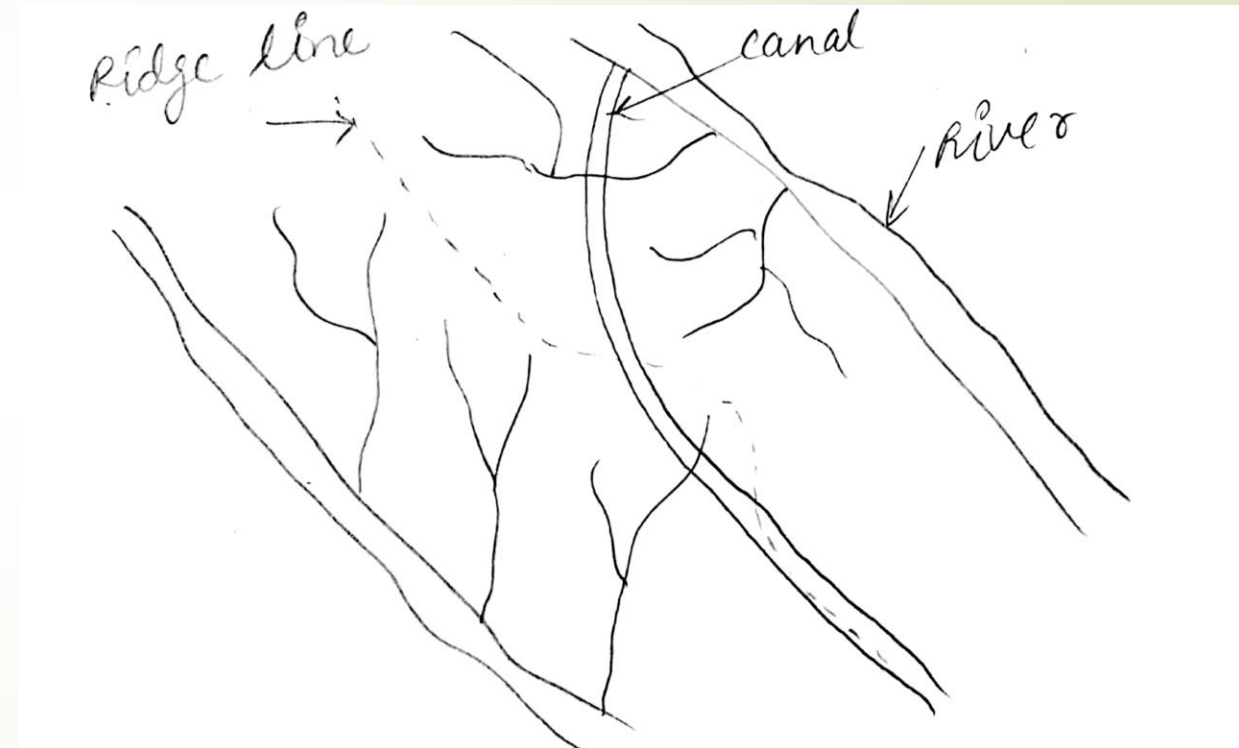
Asst. Prof.

Department of civil engineering

RPS CET, BALANA

Cross Drainage work

- ➔ It is defined as a structure constructed at the crossing of a natural drain and canal to prevent the mixing of drain water and canal water is called cross drainage work.





Types of cross drainage work

- By passing canal over the drain
- By passing canal below the drain
- By passing canal through drain

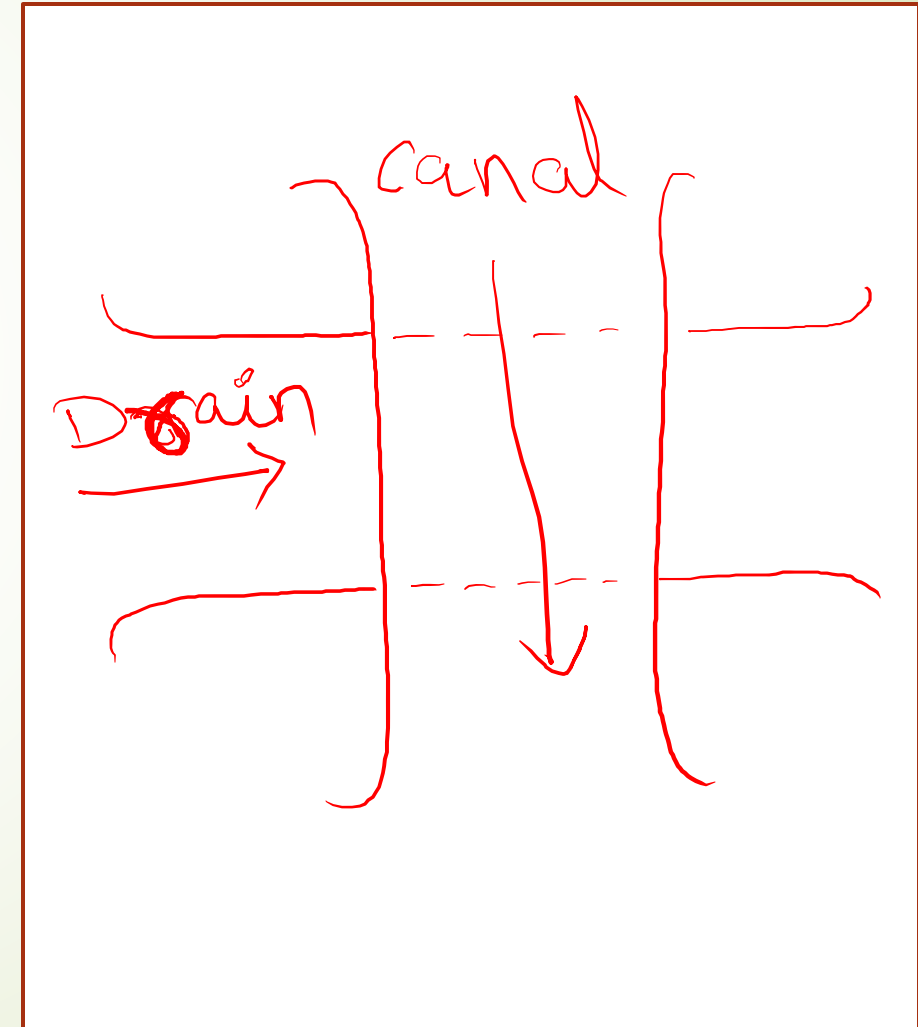
- By passing canal over the drain

- In this case, drain bed level is below the canal bed level

- These are classified as:-

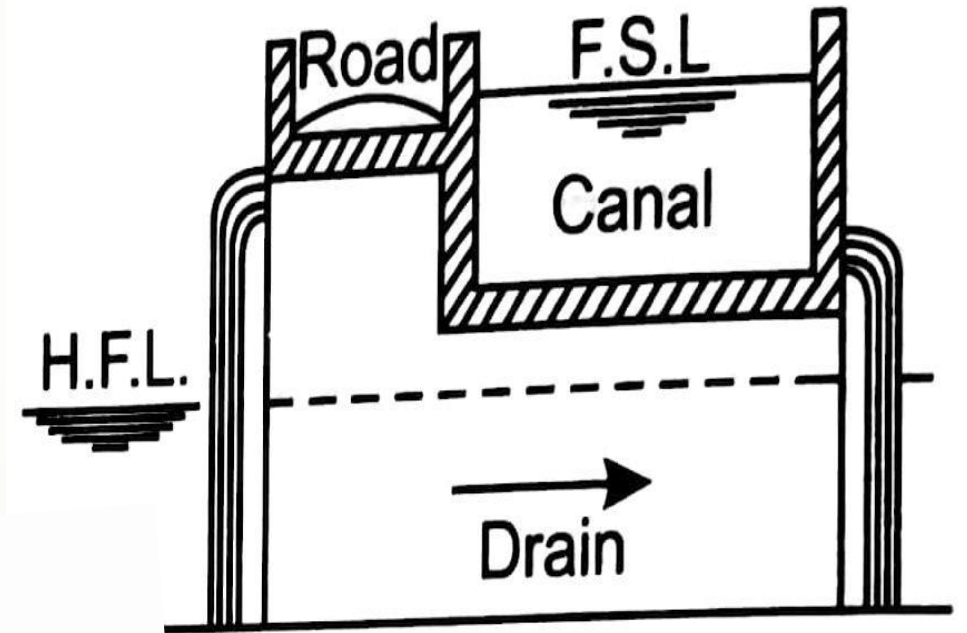
1. Aqueduct

2. Syphon aqueduct



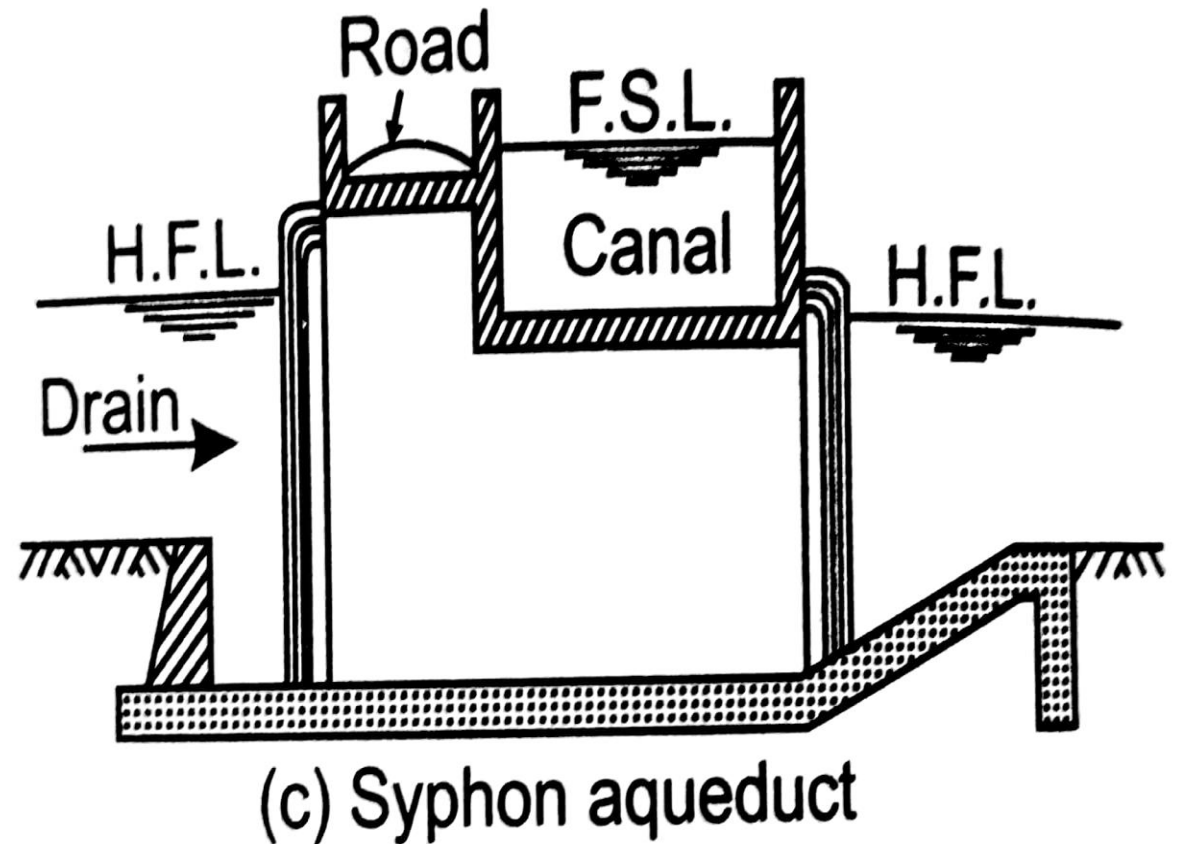
Aqueduct

- It is just like a bridge which carries a canal over a natural drain instead of road or railway.
- It is constructed when bed level of canal is above high flood level of drain.
- In this drainage water flows freely under gravity.
- The canal is taken across a drainage in a trough which is supported on piers.
- An inspection road is generally provided along the trough.



Syphon Aqueduct

- It is constructed when high flood level of drain is higher than bed level of canal.
- The drain water passes through aqueduct barrels under syphonic action.
- The bed of drain is depressed and has a pucca floor.

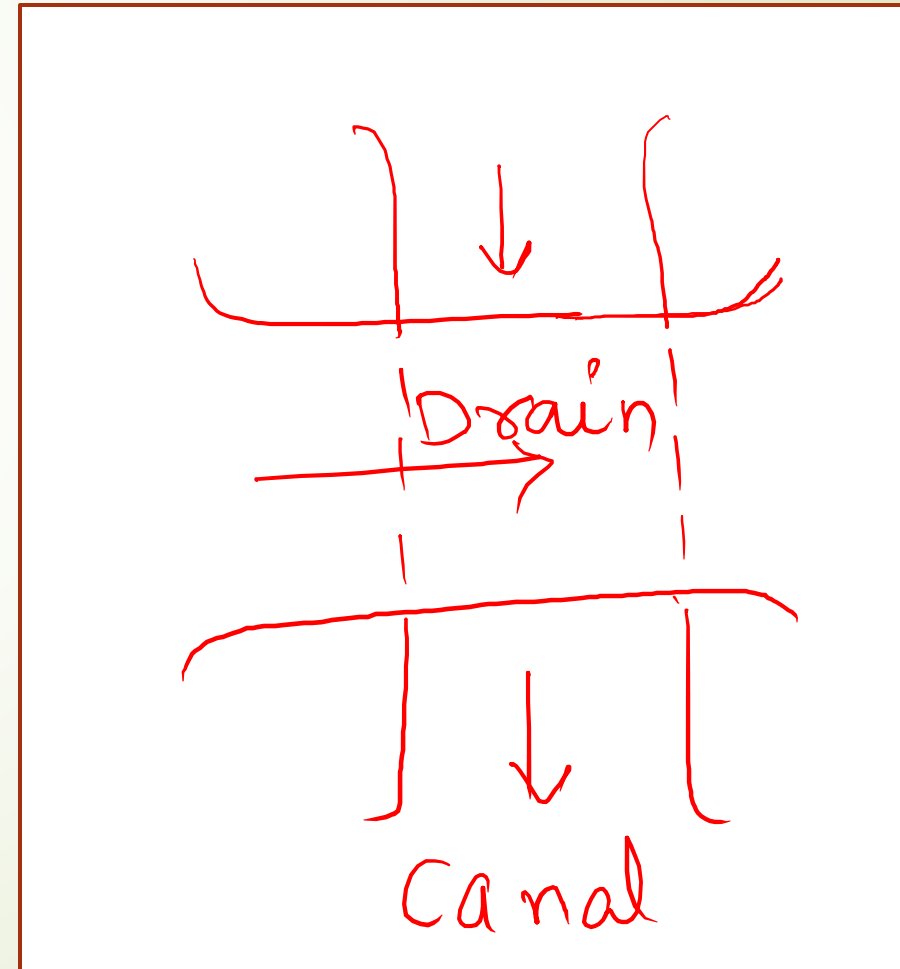


• By passing canal below the drain

➤ In this canal bed level is below drain bed level.

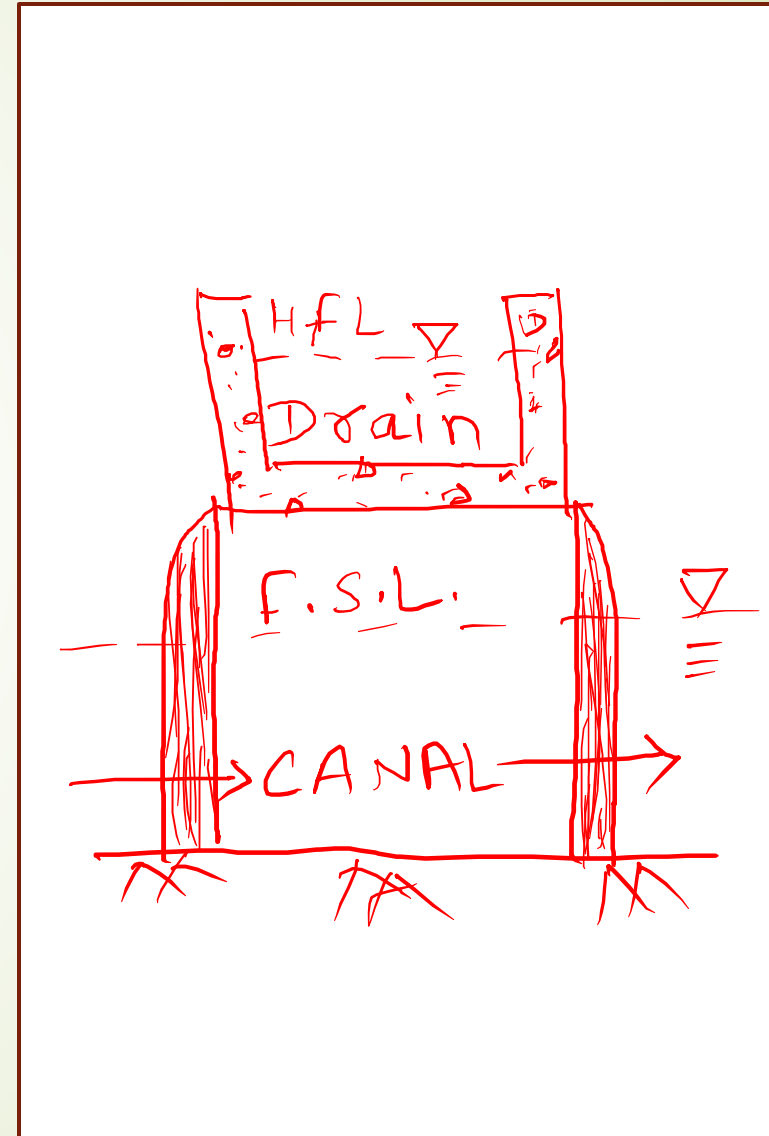
➤ These are classified as:-

1. Super passage
2. Canal syphon



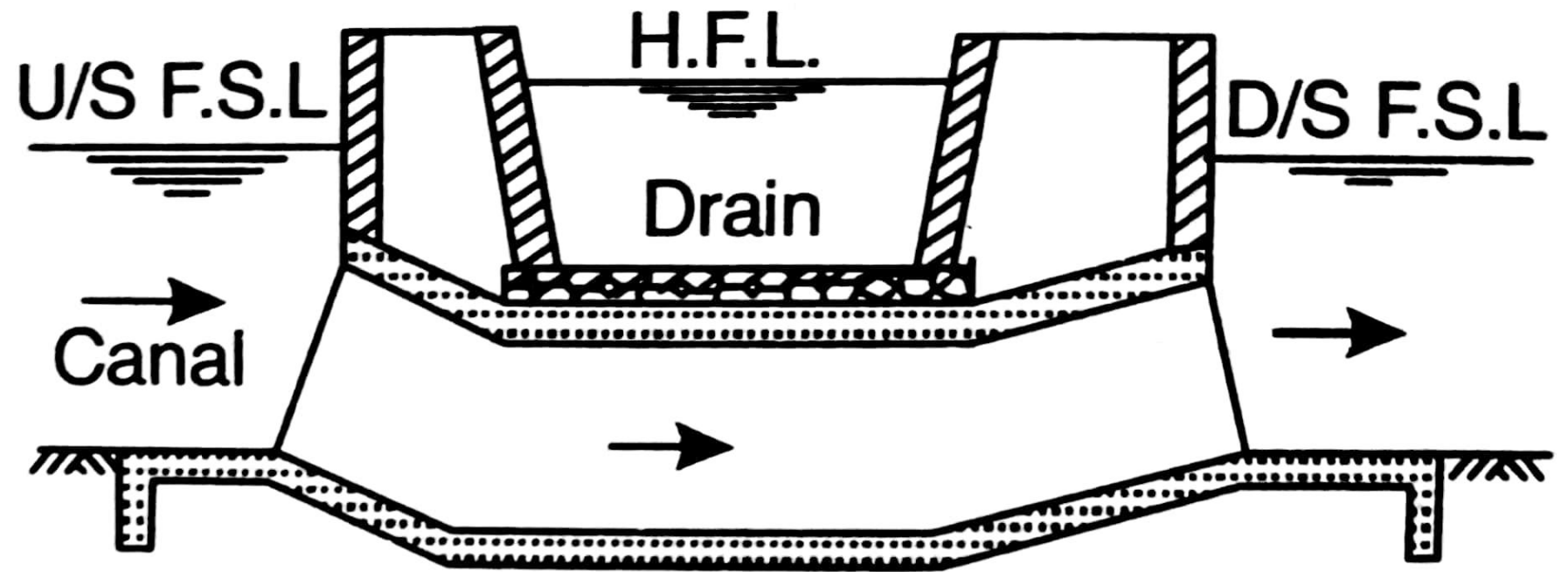
Super Passage

- It is constructed when the full supply level of canal is below the bed level of drain.
- It is reverse of an aqueduct.
- In this canal water runs freely under gravity.
- The drain water is taken across the canal in a trough which is supported on piers.
- In this no inspection road is required.



Canal Syphon

- It is constructed when the full supply level of canal is much above the bed level of drain.
- The canal water passes through the barrels under syphonic action.
- Hence, it is reverse of syphon aqueduct but no inspection road is provided.
- The canal bed is lowered and a ramp is provided at the exit to avoid silting.





- **By passing canal through drain**

- In this, canal and drain both cross at same level.
- In this, canal and drain water intermingle with each other.

- These are classified as:-

1. Level crossing
2. Inlet and outlet

Level crossing

- It is constructed when the water of a large canal and a huge drain cross each other almost at the same level.
- The water of canal and drain is disposed with the help of regulators.
- Level crossing consist of:-

- **A. Crest**

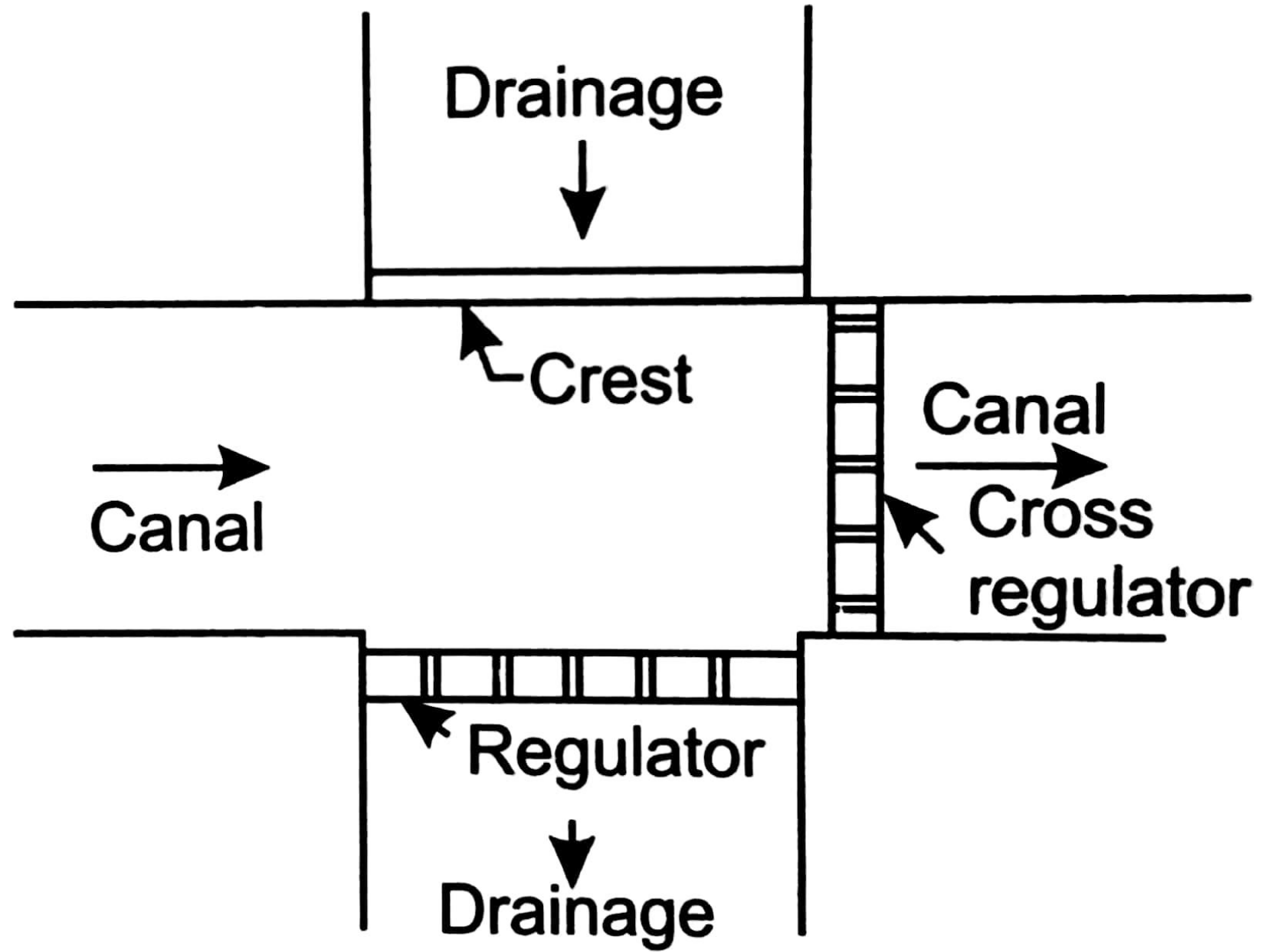
It is provided across the drain at the u/s junction with canal.
It has its top level equal to the F.S.L. of canal.

- **B. Regulator**

It is provided in d/s side of drain across the drain.

- **C. Cross regulator**

It is provided across the canal at its d/s side junction with drain.



Inlet and outlet

- It is constructed when bed level of drain is slightly higher or lower than F.S.L. of canal.
- An inlet is an open cut or a pipe which is provided in canal bank and protected by stone pitching.
- Similarly outlet is another open cut in opposite canal bank protected by pitching.

