

Movable Steel Bridges:-

This class of bridges is called temporary bridges. The steel bridges which consists of movable superstructure in a part of whole are known as movable bridges.

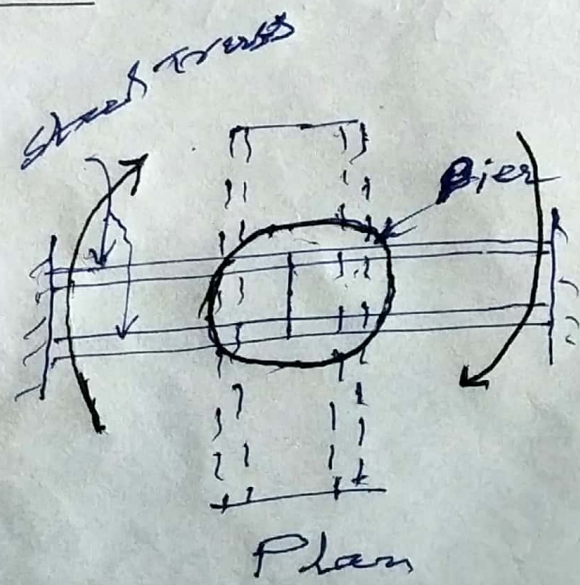
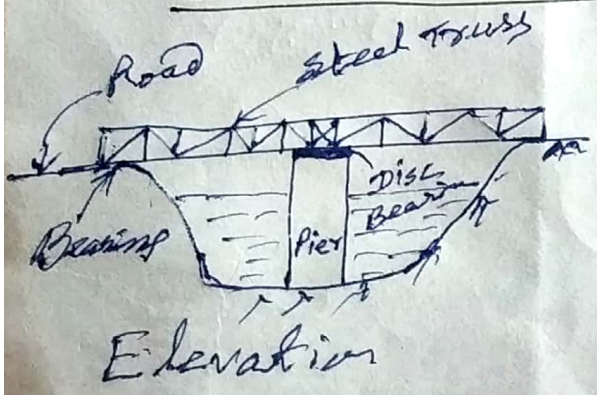
This type of bridges are used on navigation channels.

Classification of Movable Bridges-

The movable steel bridges are of the following types -

- (a) Swing Bridges
- (b) Traveller Bridges
- (c) Transporter Bridges
- (d) Bascule Bridges
- (e) or Lift Bridges

(a) Swing Bridges -



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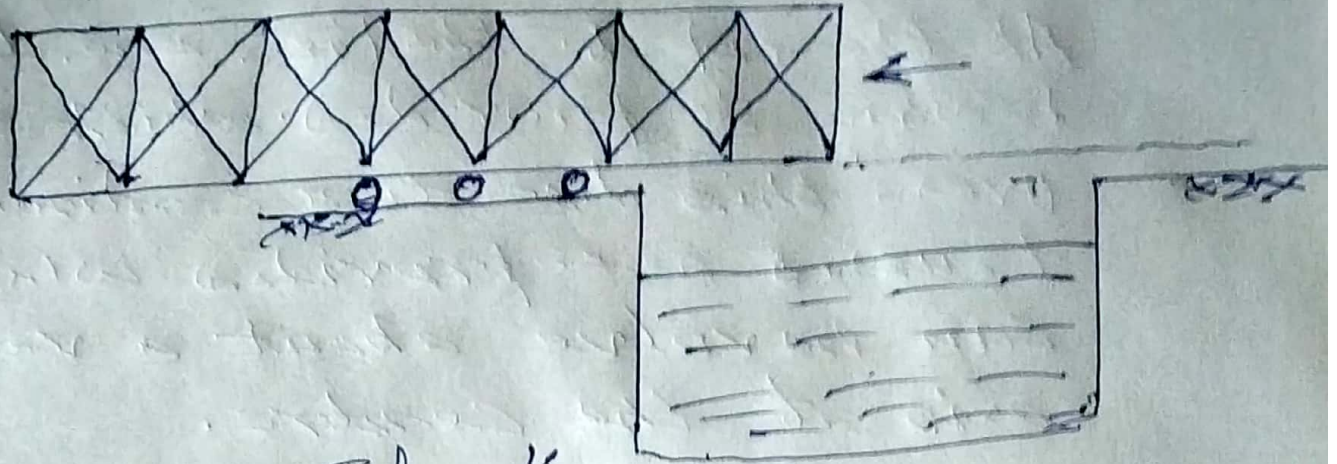
- In this class of bridges, one Pier is constructed in the channel. At the top of the Pier one disc bearing is provided. ~~which~~ over this disc two continuous trusses are provided which can revolve about a vertical axis at the centre.

- Whenever the ship crosses the bridges, its superstructure is rotated through an angle 90° by means of Mechanical or electrical Power on the disc bearing.

- As soon as the ship pass, Superstructure is brought back and locked in its original position to allow the traffic to pass over it.



3/ (b) Traverser Bridges -

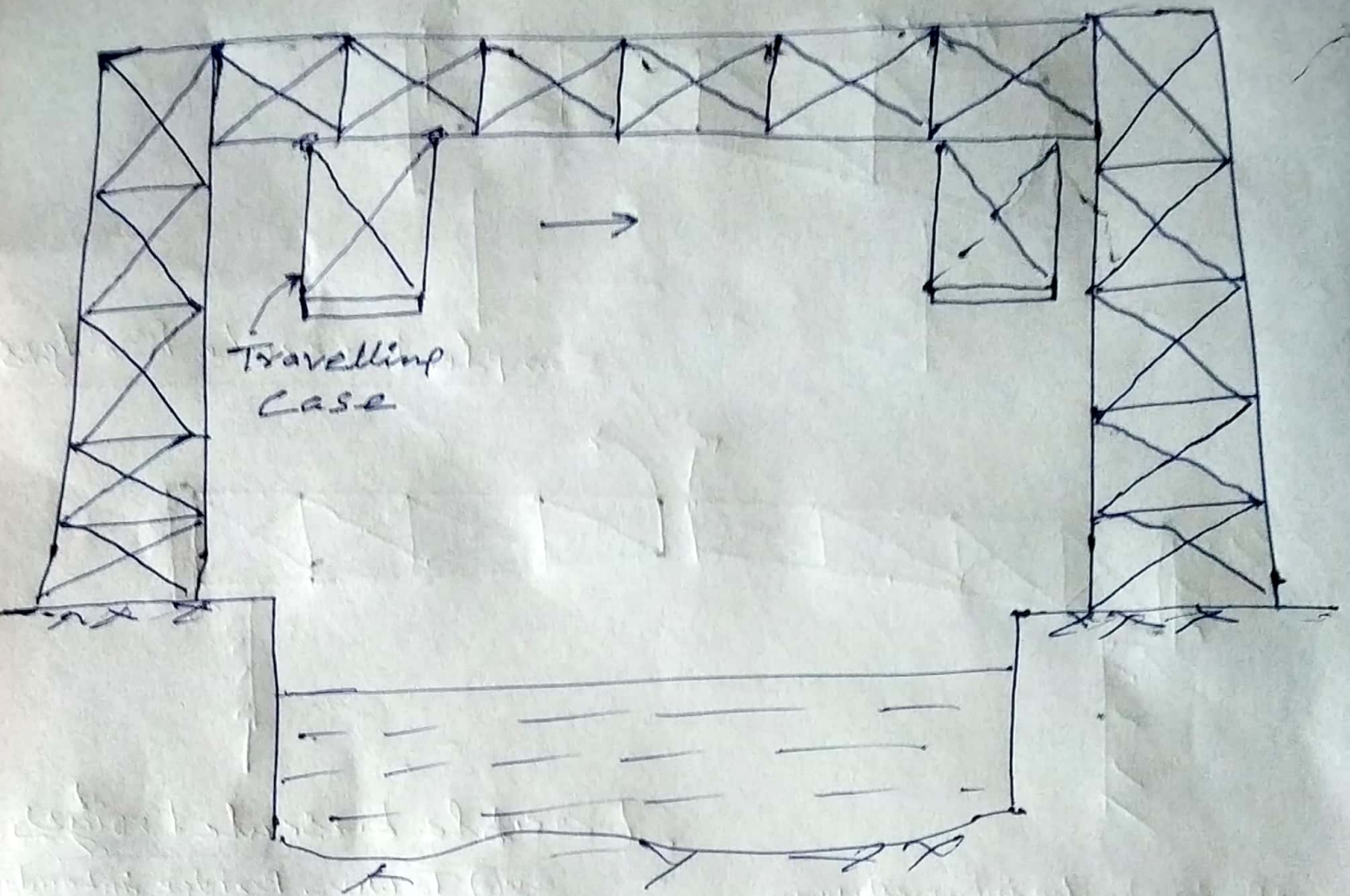


Elevation

- This class of bridges, the superstructure can be rolled forward and backward across the opening to make sufficient gap for the ship to pass across.
- As soon as the ship pass, it is moved backward in its original position by mechanical or electrical Power.
- Now a days they are obsolete.



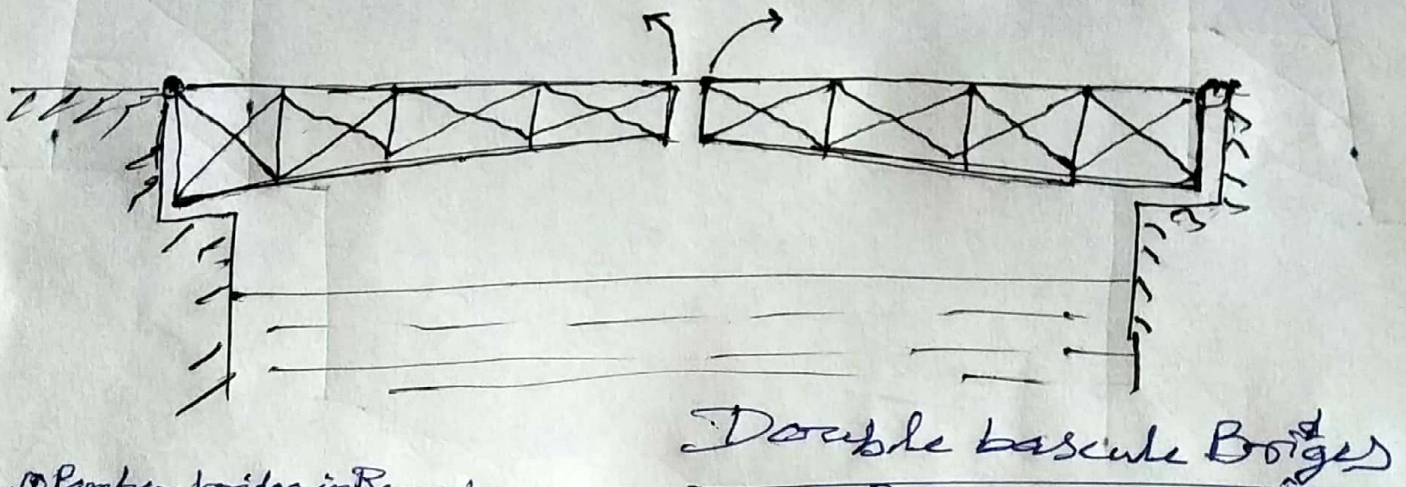
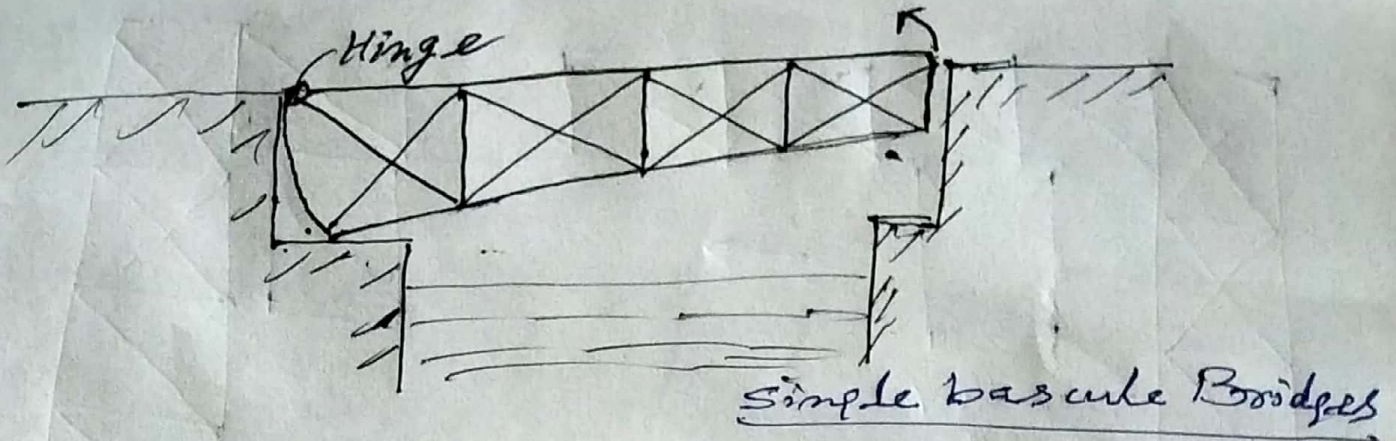
(C) Transporter Bridges



Travelling
Case

- This type of bridges consist of two towers provided on both end banks. At the top of these towers a truss is supported. Travelling case moves from one bank to other bank.
- This type of bridge does not provide through traffic.

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(d) Bascule Bridges -
or lifting bridge.



ex ① Pambam bridge in Rameshwaram

ex ② Tower Bridge in London

- In such type of bridge, the super structure can be moved up vertically on a horizontal hinge provided on the abutment and occupies an upright position when the bridge is open.

- Bridge may consist of single or double leaf depending upon the span of bridge.

RCC Girder Bridge

"The bridge having its superstructure consisting of RCC girders and slab which support the bridge floor is known as RCC girder bridge"

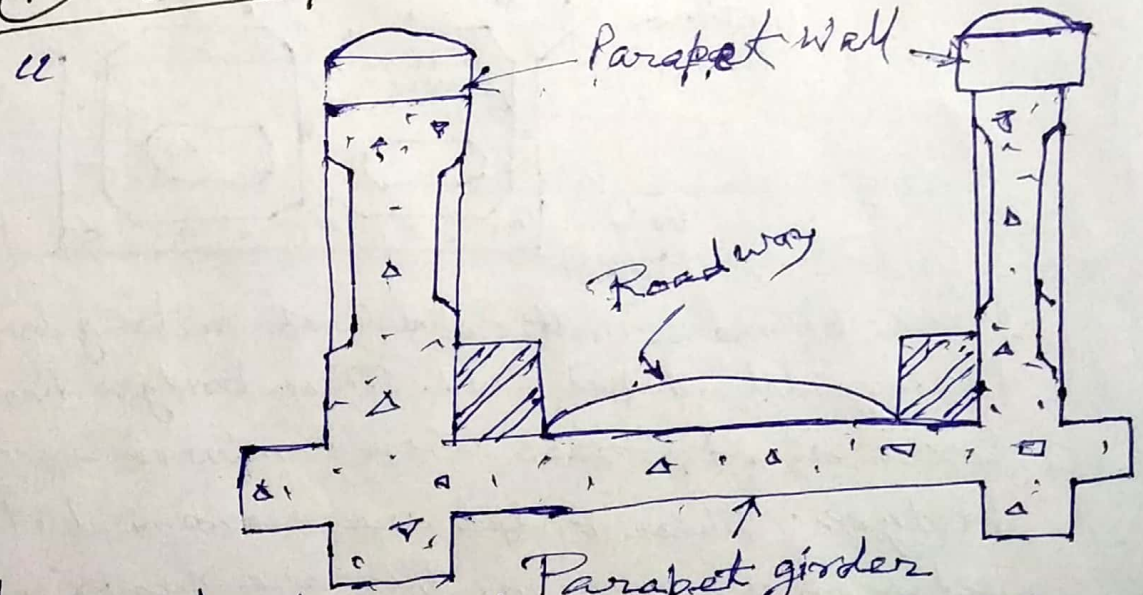
This is the most common type of bridges. It has most economical for spans varying from 10 m to 20 m.

Types of RCC Girder Bridges -

RCC girder bridges are classified into following types -

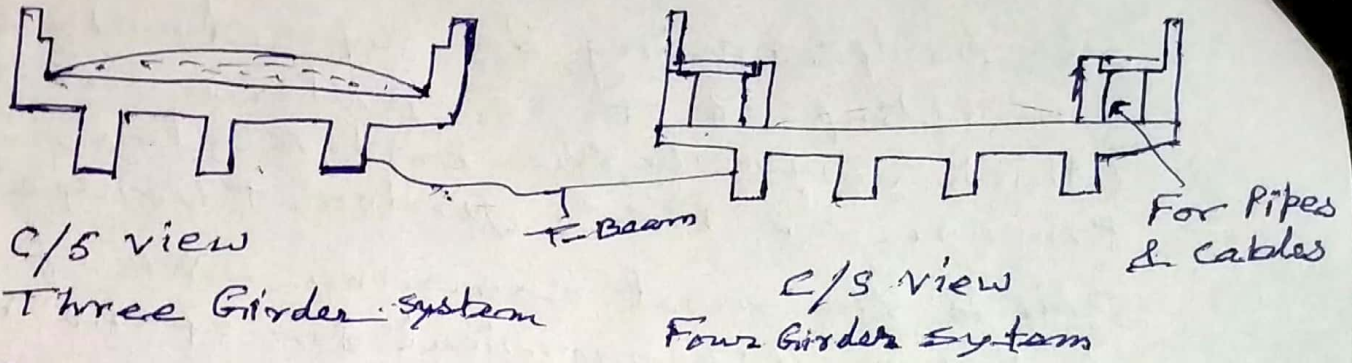
- ① Parapet Bridges
- ② T-Beam Bridges
- ③ Hollow girder Bridges

① Parapet Bridges -



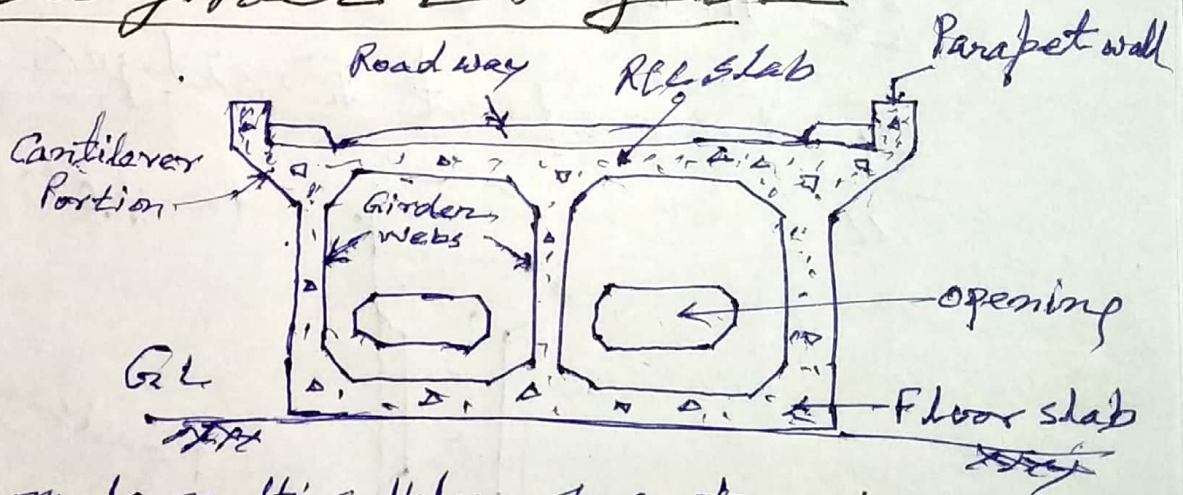
It consists of Parapet girders as main supporting members with thick slab or transverse beams with thinner slab cast monolithic with the parapets at their bottom. It is used for roadway bridge with narrow width. It is used for pedestrian traffic.

(2) T-Beam Bridges -



"When the main supporting members are T-Beams then such R.C.C. girder bridge is known as T-Beam bridge"
It is used for two lane or wider bridges of the roadway. T-beam as longitudinal girders.

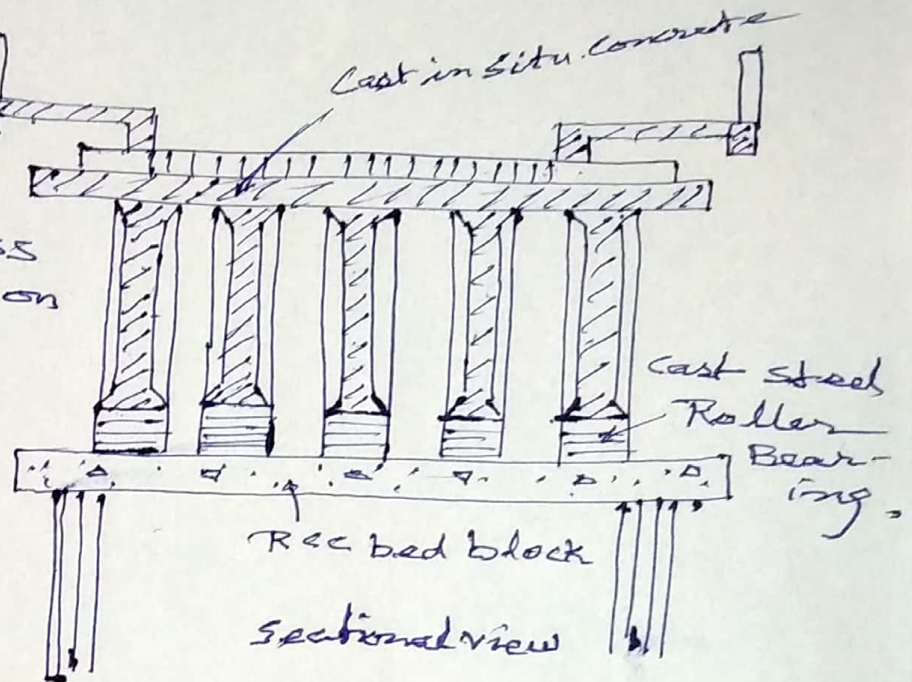
(3) Hollow girder Bridges -



It can be made multicellular of rectangular or trapezoidal shaped cells. These bridges have more torsional stiffness when compared to T-Beam bridges. These bridges are economical for spans between 25 to 30 m. They are comprised of closed box section.

Prestressed Girder Bridge -

The figure shows the decking arrangement of Cauvery's Bridge constructed across Cauvery River on NH-45.



"The bridge having their superstructure consisting of prestressed concrete members in any structural form, which supports the bridge floor are known as prestressed Girder Bridges."

- Prestressing technique eliminates the
- cracking of concrete.
 - This reduces the maintenance cost.
 - Prestressed concrete members require high tensile steel which is more expensive than ordinary mild steel.
 - It also requires special equipments like anchorages, jacks etc. for Prestressing.