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Soil and water Conservation Engineering

Presented By-

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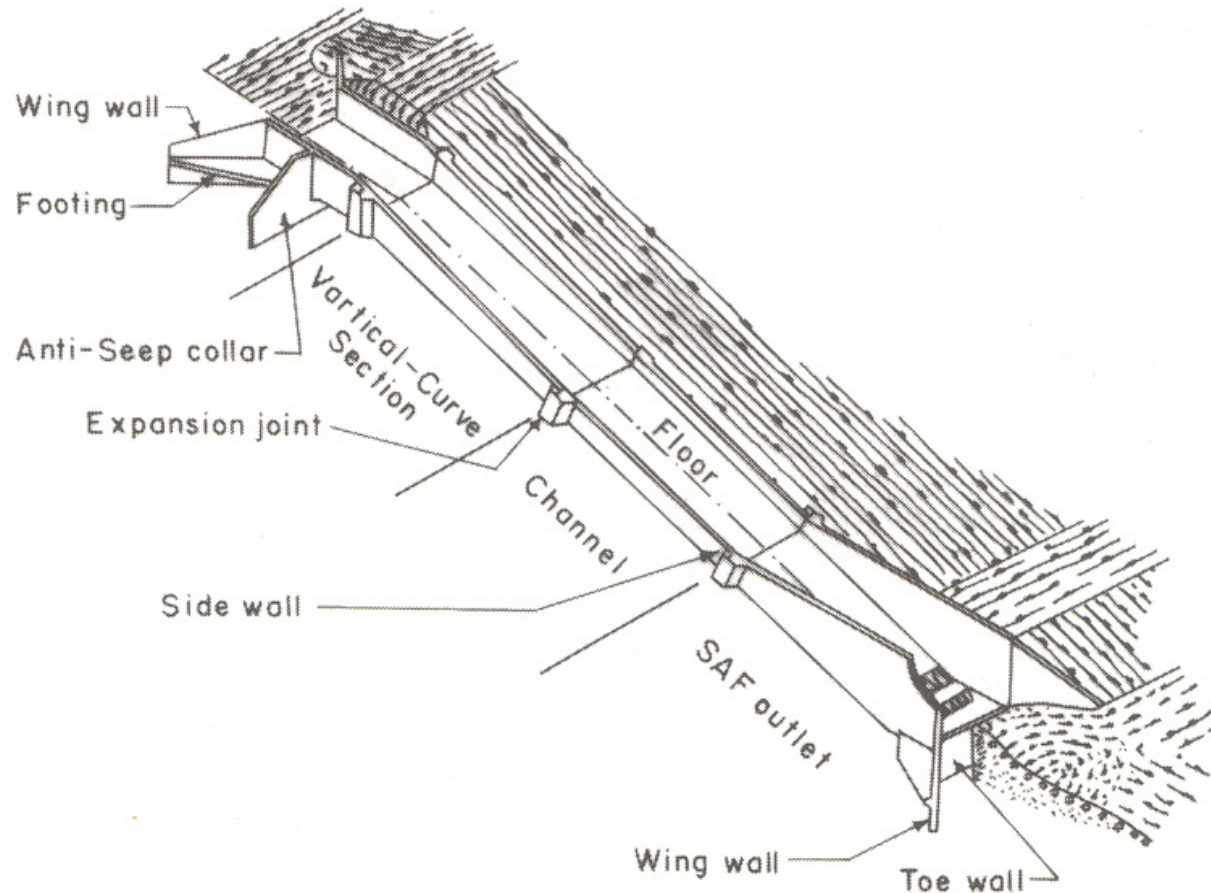


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CHUTE SPILLWAY

Open channel like structure in which flow is carried down steep slope at super critical velocities.





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FUNCTIONAL USE

- Control the gradient in natural or artificial channel.
- Convey runoff from u/s areas into the gully safely without erosion.
- Serve as a spillway for flood protection, water conservation and sediment collection structures.

ADAPTABILITY

- For gully controls upto 5 to 6m.
- Suitable for sites where construction of check dams is not possible.
- Constructed in combination with check dams and other retention type structures.



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ADVANTAGES:

- Requires less construction materials than drop structure of the same capacity and is more economical for high grades.

DISADVANTAGES:

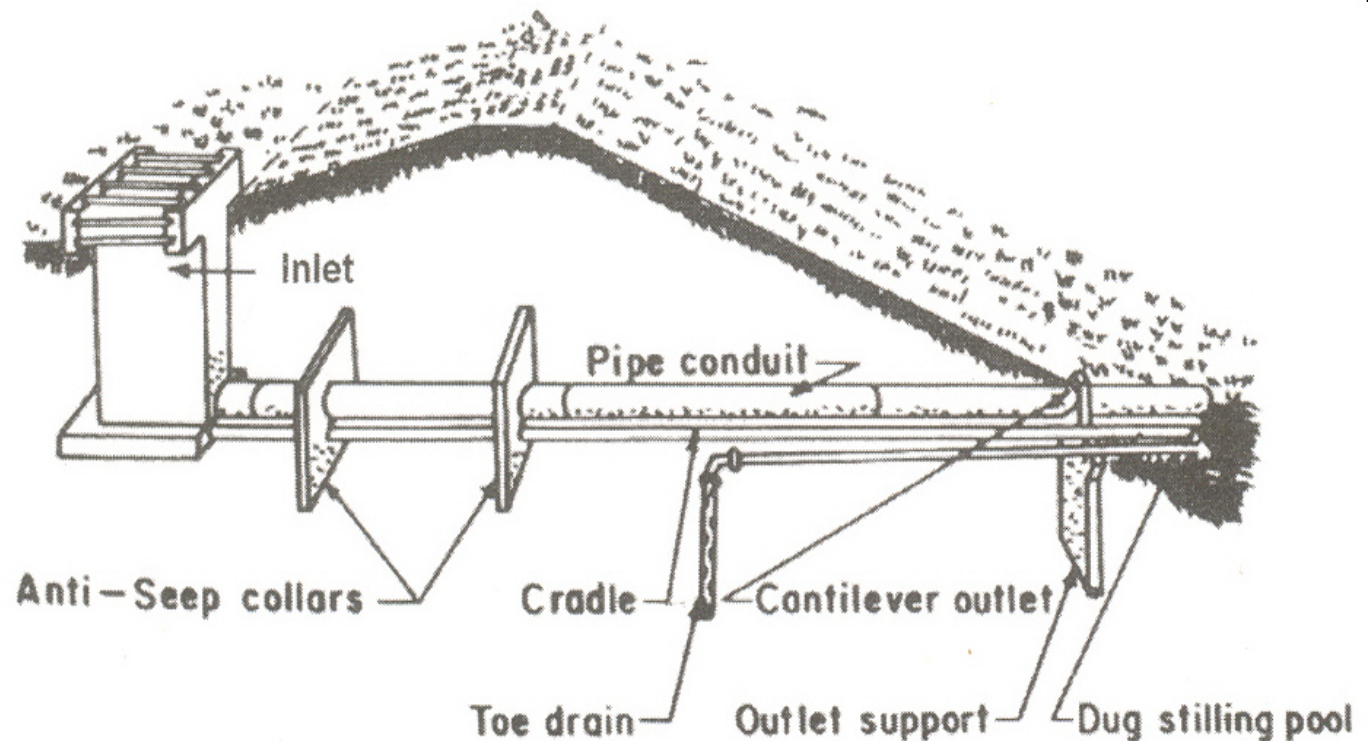
1. Danger of undermining of the structure by rodents.
2. In poorly drained locations, seepage tends to weaken the foundation and hence needs seepage control provisions.
3. Does not provide any storage of water u/s of the structure.



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DROP INLET SPILLWAY

- Closed conduit designed to carry water under pressure from above an embankment to a lower elevation without erosion.





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MATERIALS:

- The riser of drop inlet spillway may be of plain concrete, masonry or pipe.
- The barrel may be of reinforced concrete, concrete or clay tile, or smooth metal pipe having water tight joints (RCC pipes in India).

FUNCTIONAL USE:

- Principal spillway for farm ponds and reservoirs.
- Grade stabilization.
- Principal spillways for debris basin.
- Flood prevention structures.
- Road way structures.
- Surface water inlet for drainage or irrigation.



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ADAPTABILITY:

Efficient structure for controlling relative high heads usually above 3m.

Provide appreciable amount of temporary storage above inlet.

ADVANTAGES:

1. Requires less material than a drop spillway for the same head.
2. Where an appreciable amount of storage is available above the inlet, the design discharge capacity of the structure can be materially reduced.
3. Most efficient structure for flood prevention and channel grade stabilization.



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DISADVANTAGES:

1. Small drop inlets are susceptible to be choked by debris.
2. Limited to locations where satisfactory earthen embankments can be constructed.