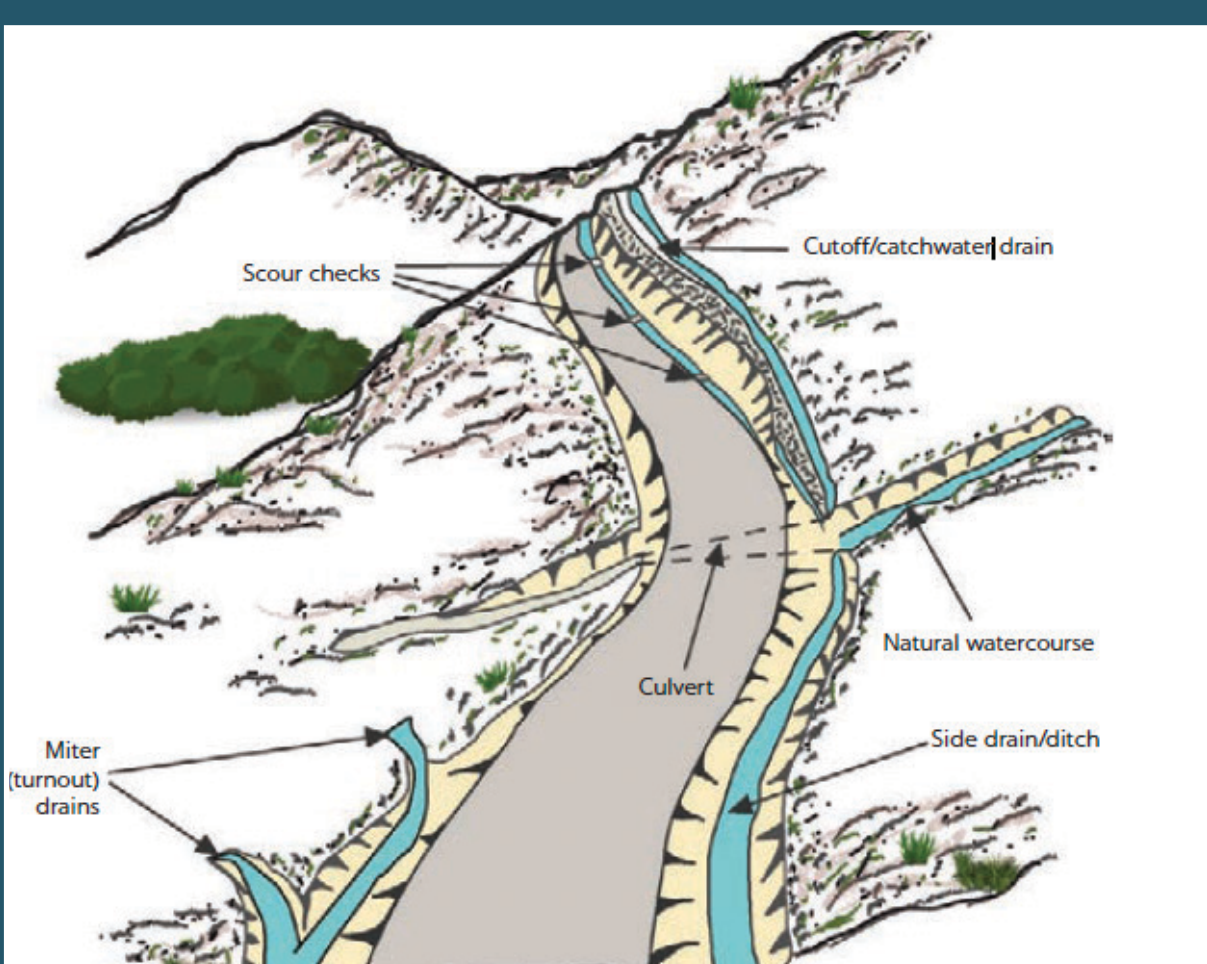


Cross drainage

Key Points

- 1 Cross drainage is important to evacuate water from the area around the road and avoid water logging in the landscape and prevent water accumulation around the road.
- 2 In many areas however roads are built with inadequate cross drainage – sometimes because of temporary funding constraints. This causes serious water logging in low lying areas, resulting in large agricultural losses and worsened public health. Such inadequate cross drainage should be corrected on priority basis.
- 3 A well-developed and well-maintained cross drainage system will prolong the life of the road and will also make it easy to collect the run-off water and direct to areas for beneficial use, i.e. a storage reservoir or recharge areas. This is particularly important in drought affected areas, where water supply is critical, such as the Barind.
- 4 Another important beneficial application is in rice growing areas, in particular where improved amon varieties are introduced. These need more water control: the timely release and ponding of water. For this often road culverts equipped with gates are most suitable. The gates are usually placed at the outlet side of the culvert.
- 5 Culverts are also important for fish movement – including fish migration and spawning. Culverts should not be too steep and have low/moderate flow velocity; they may have roughened surfaces (for catfish). They should have adequate water levels in the dry season as well. They should be connected to the downstream water body – so that the fish are not expected to ‘jump’. A new development to be considered are ‘arch culverts’, which have a relatively flat bottom, facilitating movement of fish and amphibians.
- 6 Cross-drainage should be self-clearing. Siltation should be avoided by having adequate clearance and minimum velocity of the flow: the latter is a function of the slope of the cross-drainage structure. For concrete culverts as minimum slope of 0.2-0.8% is recommended to allow flush out during high water events.

Examples of techniques



Well-developed drainage system collecting water and making it possible to route to areas of beneficial use



Road drainage water channelled into farm trench to irrigate root zones of the plants



Gated culvert making it possible to control water levels in rice fields for optimum production



Arched culvert – facilitating movement of fish, reptiles and amphibians.