

Land Notes

Natural Resource Management

BUILDING TRACKS TO MINIMISE EROSION

Some benefits of properly constructed roads include:

- maintenance of pasture productivity;
- better drainage - water is removed from roads quicker and risk of subsequent erosion is reduced; and
- reduced road and vehicle maintenance costs

WINDROWS

- Sweep windrows to surrounding ground level.
- All windrows should be removed and adequate drainage enabled where needed. (Windrows alter sheet water flow patterns by collecting and diverting water. This concentrates flow and is a major cause of erosion on roads, fence lines and firebreaks).

GRADING

- avoid flat grading where possible;
- keep cleared area to the minimum width needed;
- well used roads and those in unstable areas should be formed, crowned and drained;
- try not to disturb the soil surface: just remove rocks and scrub, especially if clearing for fences;
- during construction, stay on the path you have flagged. The grader operator should also walk the route first to get a mental picture of the track, noting changes in slope, location for drains etc.;
- roads along fence lines should drain away from the fence to avoid erosion of the fence line.

DRAINAGE CROSSINGS

- avoid removing vegetation and try not to disturb the soil surface (use a stick rake) even if the rest of the road is formed and crowned;
- construct a cross-bank at the entrance to the depression to divert the water flow away from the approach and departure.

DRAINAGE OPTIONS

Mitre Drains

Mitre drains are also called spoon drains or 'off-shoots'. They should have a broad flat base (unlike the old V-drains) so plant growth can stabilise the drain and slow water flow. Slash rather than grade these drains for maintenance.

Drain spacing depends on the steepness and length of slope, and the location of creeks and rivers. The following is a rough guide only, do a ground check to decide the exact location.

Drains should be;

- 25m apart for slopes of 3%+
- 50m apart for slopes of 1-3%
- 100m apart for slopes 1%,

Advisory and Regulatory Services
Conservation & Natural Resources
Balancing Conservation and Development



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<http://www.lpe.nt.gov.au/advis/>

Mitre Drains (continued)

- locate drains away from creek and rivers, and avoid running drains towards creek;
- drain grade should be no more than 1%
- the angle of the drain to the road is determined by slope of the land, but it should be low enough to slow water down;
- spill drain to stable, vegetated areas.
- If spill can't be taken to a stable area, construct a sill at the lower end of the drain. Remove loose dirt and ridges within the channel;
- Smooth and compact the bank;
- Spill to a stable, vegetated area.

If spill can't be taken to a stable area, construct a sill at the lower end of the bank. (Figure 1).

A combination of mitre drains and trafficable cross-banks is best. This is more expensive, however, so aim for at least adequate drains, with the occasional cross bank where drainage alone is inadequate.

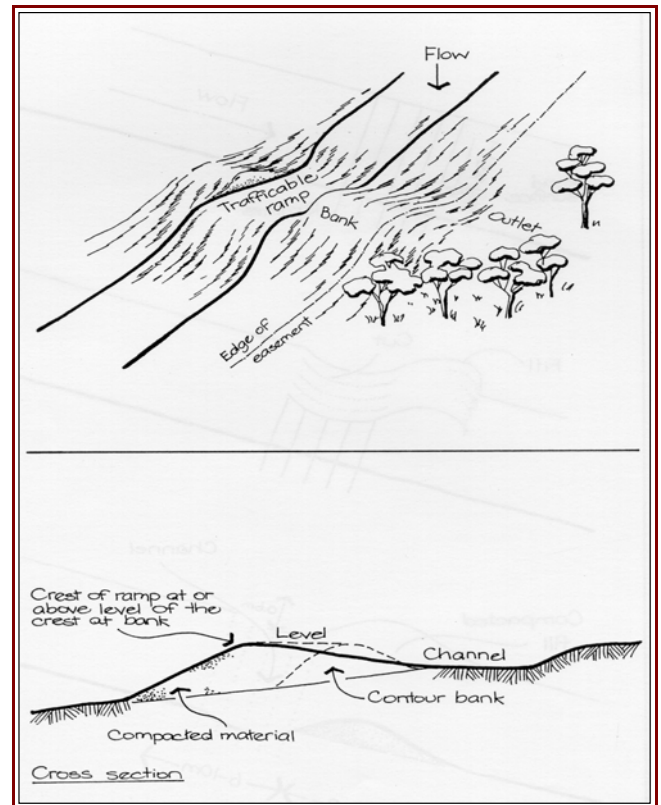


Figure 2 – Cross-bank design

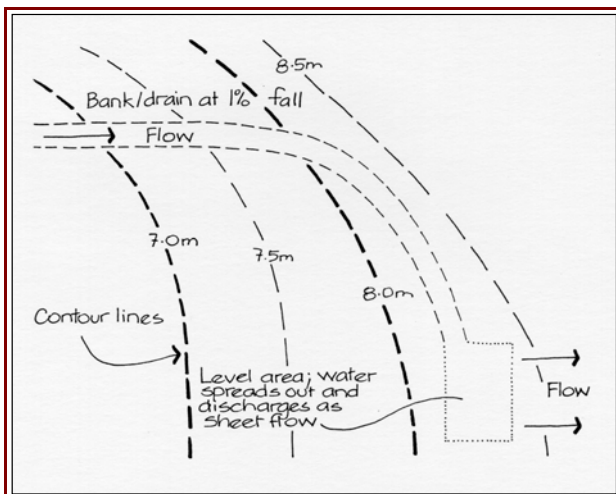


Figure 1 Sill Structure

For further information about controlling erosion in the southern region of the NT contact Advisory and Regulatory Services or visit our website

www.lpe.nt.gov.au/advis/land/soils.htm



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