Land Notes
Natural Resource Management

CHECKBANKS AND DIVERSION BANKS

- These structures are constructed to divert water away from potentially eroded areas, or areas that have been repaired from the after-effects of erosion forces.
- Banks of different shapes and heights are used depending on the situation and the water diversion requirement

WHOA BOYS

In the case of water diversion on walking tracks, small whoa boys are suitable, these being approximately 10–30cm high (see Figure 1).

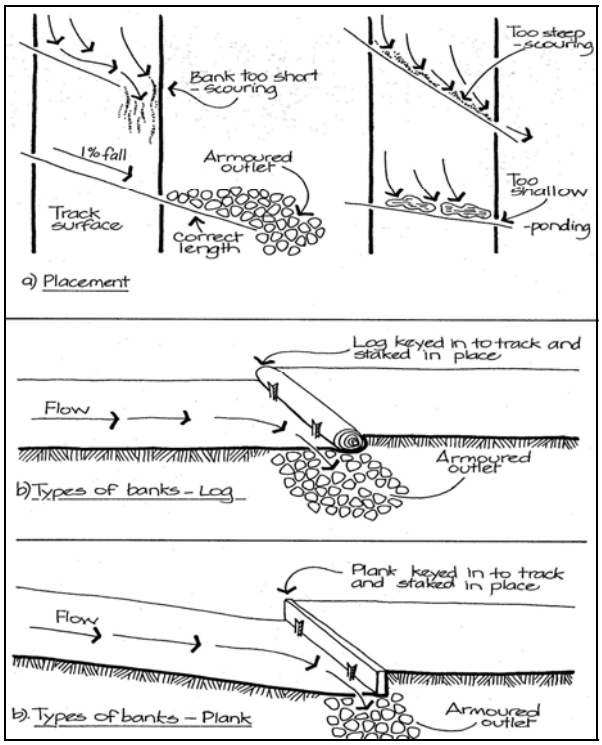

Figure 1 Walking track Whoa boy construction

CHECK BANKS

Check banks are used in situations where larger volumes of water need to be diverted.

Check banks are generally between 1.5 and 2m high with a 3m wide base. Check banks should be long enough to collect water flow from the repaired area and dispose of it safely. Ideally they should be as long as the road is wide, plus at least 2m more on each end.

A wing bank may need to be built at the lower end of the bank.

Distances between check banks will depend on slope, and the location of creeks, rivers, drainage lines and gullies (see Figures 2 and 3).

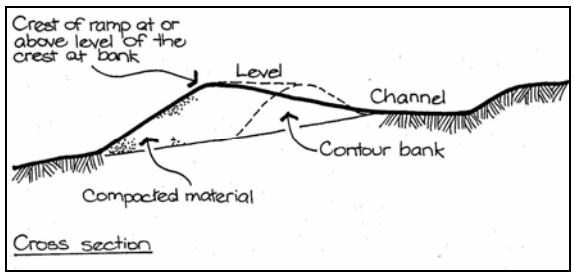

Figure 2 Cross section of a traffic check bank

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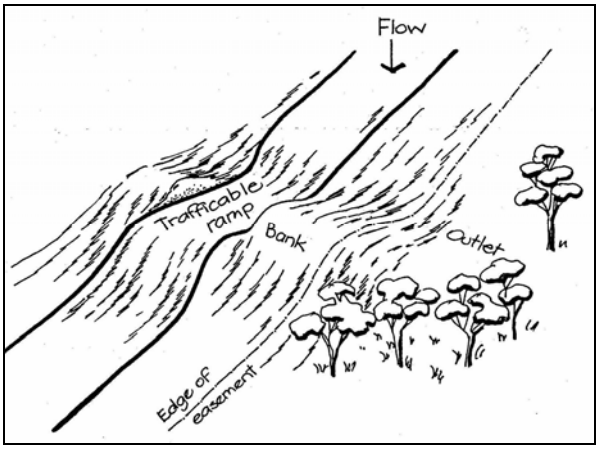

Figure 3 Check bank design allowing for vehicle traffic.

The following is a rough guide only: the exact location of banks should be decided after a site check;

1. Banks should be approximately:
    - 20m apart when the slope is 3-5%
    - 50m apart when the slope is 1-3%
    - 100m apart when the slope is 1%
2. Locate banks away from creeks, rivers and other drainage areas.
3. Rip at bank site to marry it to the ground, and where winning soil for the bank
    - Push uphill into the bank on low slopes (up to 5%)
    - Push downhill into the bank on high slopes (greater than 5%)
4. When winning soil up slope of the bank, the area where soil is won from will become the channel for the bank. The channel should be wide and shallow to avoid erosion within the channel.
    - Channel grade should be no more than 1% (drops 1m every 100m).
    - Smooth channel base
    - Spill to a stable, vegetated area or construct a sill at the lower end of the bank.

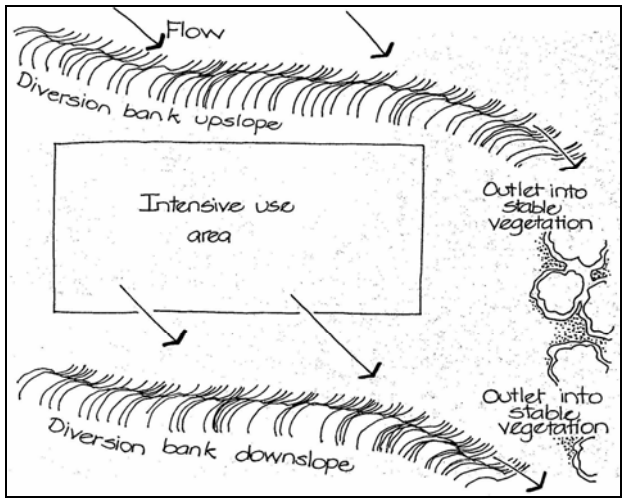

Figure 4 Diversion bank structure

Diversion banks

Diversion banks are significantly larger than check banks. They are used for large-scale gully erosion control, particularly in undeveloped areas such as road edges.

Structure and design of Diversion Banks:

Banks should be a minimum of 3m high and 4m wide at the base. They should be long enough to divert water from the gully head.

Position banks well above the gully head

Walk the area to determine water and soil movement – this influences where the diversion bank should go, and how long it will be

Survey the bank(s) prior to construction

Rip where placing the bank and where winning soil for the bank

Win soil for construction up slope of the diversion bank;

The area where soil is won will become the channel for the bank. The channel should be wide and shallow, to avoid erosion within the channel

Channel grade should be no more than 1% (drops 1m every 100m)

Smooth and remove dirt from channel base

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 (see Figure 4).

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

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

Northern Territory Government
Department of Infrastructure, Planning and Environment