Landcare Notes

Trickle Flow Pipes for Erosion Control

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Trickle flow pipes have been used extensively across Victoria as a cheap, effective method of controlling gully head erosion. They are usually installed together with a grass chute. The trickle flow pipe carries the small flows, while the grass chute carries the larger flood flows.

Materials

A variety of materials can be used for the pipe, inlet pit and anti-seepage collars. Materials include polyethylene, poly vinyl chloride (PVC), recycled plastic and concrete. Materials must be strong, durable and capable of installation with watertight joins. Common pipe sizes used for trickle flow pipes are 150 mm and 300 mm. To avoid blockage or injury the inlet pit should be covered with a grated lid or protective grill. Anti seepage collars must be fitted to the pipe to reduce the risk of tunnelling. The collars should be at least 1000 mm in diameter.

Siting

Normally trickle flow pipes are sited in the lowest point of the main drainage line. Ideal sites are relatively flat, well grassed and have adequate bypass facilities. In most situations, a grass chute is installed adjacent to the trickle flow pipe to handle the larger flows. Trickle flow pipes are normally used for catchment areas of less than 50 ha.

Installation

It is important that both the inlet pit and pipe are installed in solid ground. Installation in fill is rarely successful. Selected moist clay should be used to backfill around the inlet pit, pipe and anti seepage collars. It is critical that the clay is well compacted around the anti seepage collars and adjacent pipe. Any bends in the pipe should be gradual and not exceed the manufacturer's specification. Anti-seepage collars are critical to the success of the works. Care should be taken to avoid disturbing the grass around the inlet pit.

Inlet Construction

A common method of making a concrete inlet for a 150 mm diameter trickle flow pipe is to use a 200 litre drum as a mould to form the pit. A hole is dug approximately 750 mm deep and 900 mm in diameter. A concrete floor is poured, then the pit is formed once the pipe and drum are in place. A light cage of reinforcement mesh should be installed. The mesh should be centrally placed and must be covered by a minimum of 50 mm of concrete. A larger inlet is required for a 300 mm diameter trickle flow pipe.

Topsoil

All topsoil from beneath the embankment, diversion banks, along the trench line and on areas to be battered should be removed and stockpiled adjacent to the construction site. On completion, all disturbed areas, including diversion banks, should be covered with topsoil and sown to a recommended seed and fertiliser mixture.

Maintenance

Regular inspection and maintenance of trickle flow pipes and associated works is essential. Maintenance usually involves clearing the pipe inlet of debris, checking for damage to diversion banks and controlling the excessive growth of grass around the pipe inlet and on the grass chute.

Further Assistance

It is recommended that you seek professional on-site advice prior to commencing construction. Contact your local office for more details.

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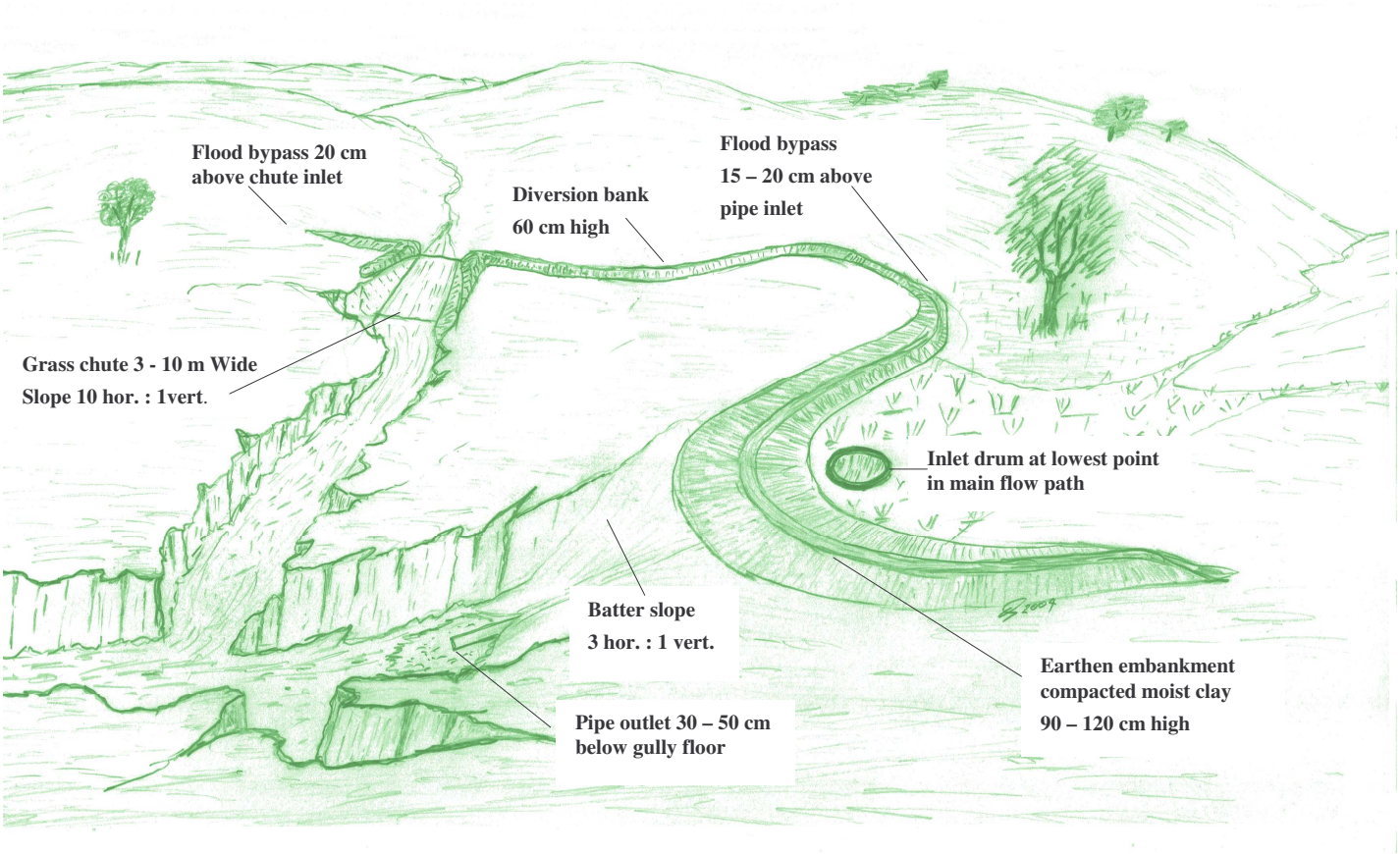
Typical Layout

Plan View



Cross Section View