

Installation of Services

GENERAL CONSTRUCTION PRACTICE



Photo 1 – Service trench



Photo 2 – Installation of new sewer connection

Introduction

Considerable soil disturbance can be associated with the installation of services such as water supply, wastewater, stormwater and telecommunications. The de-watering of excavated trenches can also produce large quantities of turbid water that can be difficult to treat.

The principles of Erosion and Sediment Control (ESC) as used by service providers and those contracted to install services are the same as the ESC principles used by the general building and construction industry. Differences only exist in which principles attract the greatest priority.

Service providers often operate within an existing building/construction envelope. As a result, the focus of their sediment control practices is usually targeted at the appropriate management of stockpiles and de-watering activities (e.g. the de-watering of excavated trenches after rainfall).

Service providers must take all reasonable and practicable measures to:

- Minimise the adverse environmental impacts resulting from their products, processes and activities.
- Actively promote employee awareness of the potential environmental risks associated with their work activities, and the means of managing these risks.
- Monitor and review environmental outcomes, making appropriate modifications to adopted work practices and operational guidelines.
- Appropriately address areas of non-conformance.
- Report the provider's environmental performance both internally and externally.

Site Assessment

The application of erosion and sediment control on the small soil disturbances commonly associated with the installation of services can generally be achieved through consideration of the following rules:

1. Safety issues must take priority—don't install or operate an ESC device in a manner that may cause a safety hazard.
2. Look up-slope of the site and assess where stormwater runoff may come from, then if practicable, and if rain is likely, divert this runoff around any soil disturbance.
3. Look at the site and assess the best way to stockpile materials, perform the necessary works, and de-water trenches, while taking all reasonable and practicable measures to minimise the extent and duration of soil disturbance.

4. Look down-slope of the site and assess where sediment-laden runoff may flow (if not appropriately managed), then place appropriate sediment traps to filter and/or settle-out the sediment.
5. Review all sediment controls immediately following their installation and confirm that water will temporarily pond up-slope of the trap (allowing settlement), and that the water will **not** simply be diverted around the trap.
6. Prior to leaving the site, take steps to actively accelerate the rehabilitation of disturbed areas—this may involve turfing or grass seeding, as appropriate for the conditions.



Photo supplied by Catchments & Creeks Pty Ltd

Photo 3 – Installation of telecommunications cables



Photo supplied by Catchments & Creeks Pty Ltd

Photo 4 – Vacuum truck used to excavated hole for power pole

Erosion and Sediment Control Practices

Best practice installation procedures for services includes appropriate consideration of the following activities:

- Appropriately coordinate the installation of water and sewer services with initial land clearing and road works.
- Avoid locating services along the **invert** of overland flow paths such as table drains and grass swales.
- Divert water flow away from the trench line using temporary *Flow Diversion Banks* (e.g. earth banks, sandbag diversions, straw bale barriers).
- Where practicable, place excavation spoil on the up-slope side of the trench.
- Properly compact backfill and leave the final level slightly above (about 75mm) the adjacent ground elevation to allow for subsequent settlement.
- Install services prior to topsoil application.
- Utilise appropriate de-watering and sediment control measures to minimise the release of turbidity to receiving waters.

Even after service trenches are backfilled, ongoing soil compaction can result in the concentration of surface runoff causing soil erosion. Service trenches can also impact on sub-surface groundwater flow causing long-term seepage problems down-slope of the trench.

To minimise the risk of the land surface settling below normal ground level causing the formation of a drainage depression, service trenches should be back-filled with compacted soil such that the finished soil surface is at least 75mm above adjacent ground level.