Planning for Erosion and Sediment Control on Single Residential Allotments

All builders/developers are required to prepare an Erosion and Sediment Control Plan showing how they will minimise soil erosion and trap sediment that may be eroded from the site during the construction of a building. The complexity of the Plan depends upon the nature and the scale of any particular development, especially the amount of land likely to be disturbed. Small-scale development, such as house extensions and the construction of small driveways, may not require a Plan, but should still be undertaken in a manner which reduces pollution risk.

The plan should be a stand-alone document consisting of both drawings and a commentary that can be understood easily by all site workers. This brochure outlines the information to be contained in a Plan for a single residential allotment. Make sure everyone working on the site understands the Plan and how important it is to not pollute stormwater.

Responsibilities for stormwater management arise from the Protection of the Environment Operations (POEO) Act 1997. One way that you can help to comply with the POEO Act is to prepare an Erosion and Sediment Control Plan that shows how you will minimise stormwater pollution and to implement it once approved by Council.

A more detailed Soil and Water Management Plan is required for larger-scale developments, where more than 2,500 square metres of land is to be disturbed, in accordance with the *Managing Urban Stormwater: Soils and Construction* document (Landcom 2004).

The POEO Act gives Council the powers to issue cleanup or prevention notices and issue on the spot fines of up to $1,500. Higher penalties can be imposed for serious pollution incidents, should Council launch, prosecution proceedings within Court. Cleanup notices are issued to require cleanup action when pollution has occurred, while prevention notices require an activity to be carried out in an environmentally satisfactory manner. You are required to notify your Council when a pollution incident occurs that causes or threatens material environmental harm.

Builders/developers have the responsibility to manage the following pollution sources:

- air pollution, including dust
- noise that might interfere with neighbouring properties
- waste discharges including erosion leakage or spills of construction materials, soil, sand, gravel slurries and concrete
- trade and domestic rubbish, including litter packaging, off-cuts and spoiled materials
- toxic chemicals, including fuels, paints, solvents, sealants, adhesives, lubricants and pesticides.

Most of these matters can be addressed in an Erosion and Sediment Control Plan.

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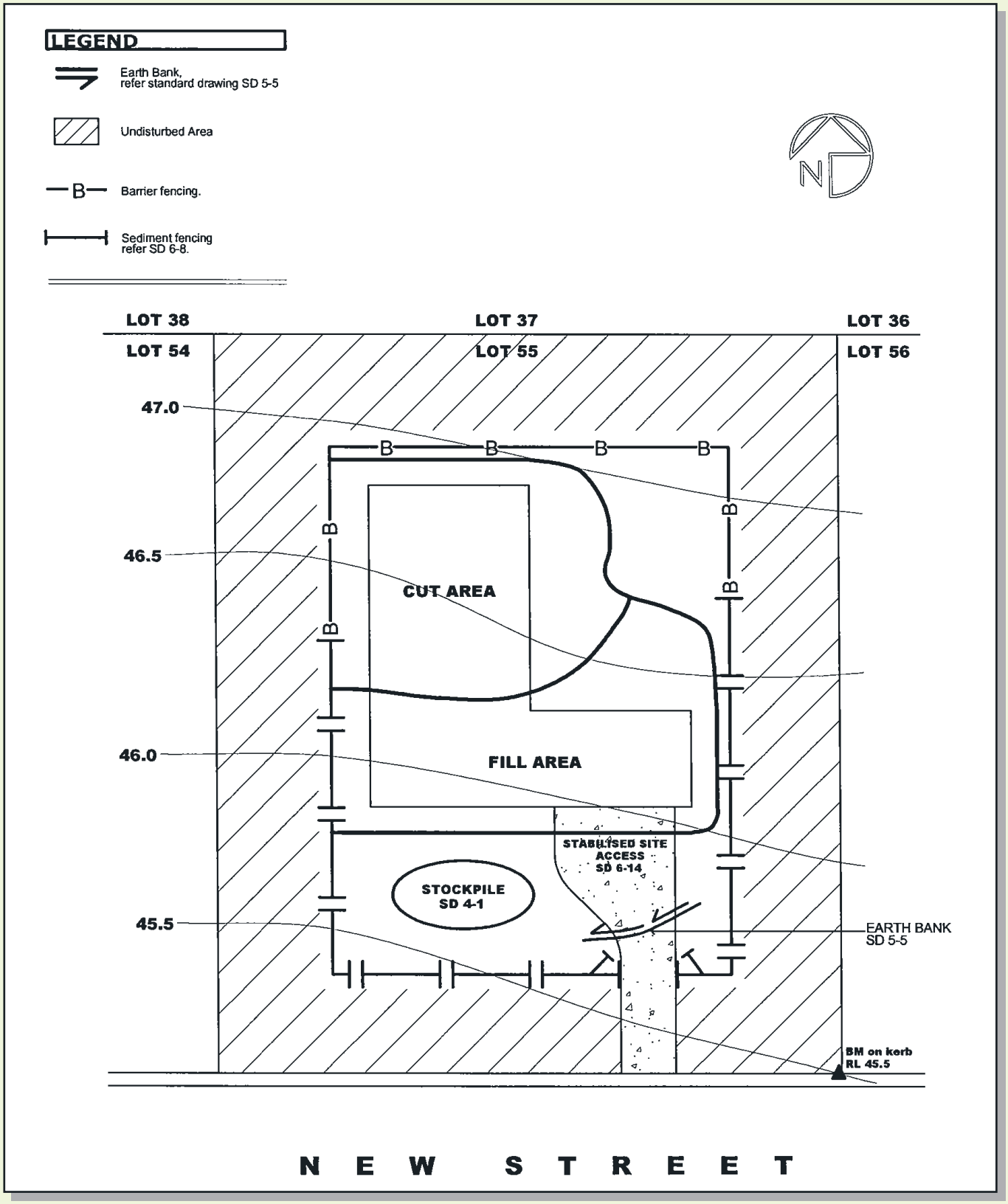
A Model Erosion and Sediment Control Plan

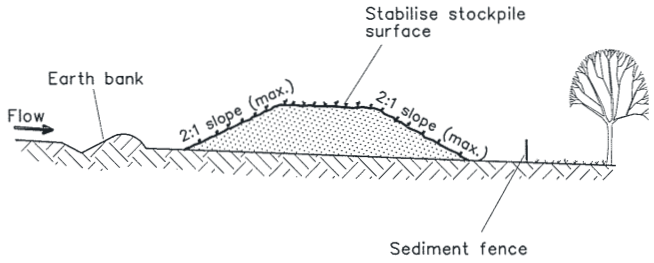
The Drawing



The Commentary

1. Site works will not start until the erosion and sediment control works outlined in clauses 2 to 4, below, are installed and functional.
2. The entry to and departure of vehicles from the site will be confined to one stabilised point. Sediment or barrier fencing will be used to restrict all vehicular movements to that point. Stabilisation will be achieved by either:
   - constructing a sealed (e.g. concrete or asphalt) driveway to the street
   - constructing a stabilised site access following Standard Drawing SD 6-14 or other suitable technique approved by the Council.
3. Sediment fences (SD 6-8) and barrier fences will be installed as shown on the attached drawing.
4. Topsoil from the work's area will be stripped and stockpiled (SD 4-1) for later use in landscaping the site.
5. All stockpiles will be placed in the location shown on the ESCP and at least 2 metres clear of all areas of possible areas of concentrated water flow, including driveways.
6. Lands to the rear of the allotment and on the footpath will not be disturbed during works except where essential, e.g. drainage works across the footpath. Where works are necessary, they will be undertaken in such a way to minimise the occurrence of soil erosion, even for short periods. They will be rehabilitated (grassed) as soon as possible. Stockpiles will not be placed on these lands and they will not be used as vehicle parking areas.
7. Approved bins for building waste, concrete and mortar slurries, paints, acid washings and litter will be provided and arrangements made for regular collection and disposal.
8. Guttering will be connected to the stormwater system or the rainwater tank as soon as practicable.
9. Topsoil will be respread and all disturbed areas will be stabilised within 20 working days of the completion of works.
10. All erosion and sediment controls will be checked at least weekly and after rain to ensure they are maintained in a fully functional condition.

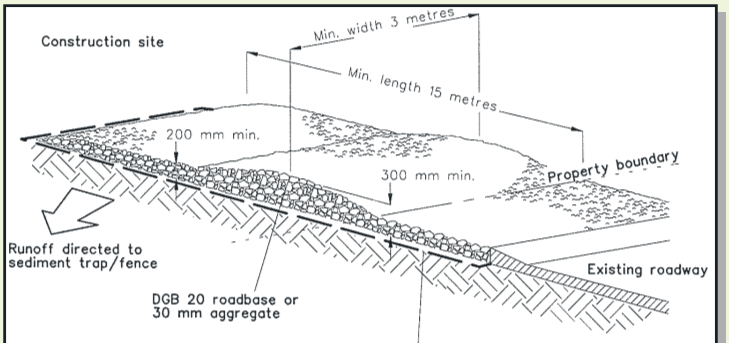
Standard Drawings



Construction Notes

1. Where possible locate stockpile at least 5 metres from existing vegetation, concentrated water flows, roads and hazard areas.
2. Construct on the contour as a low, flat, elongated mound.
3. Where there is sufficient area topsoil stockpiles shall be less than 2 metres in height.
4. Rehabilitate in accordance with the SWMP/ESCP.
5. Construct earth bank (Standard Drawing 5-5) on the upslope side to divert run off around the stockpile and a sediment fence (Standard Drawing 6-8) 1 to 2 metres downslope of stockpile.

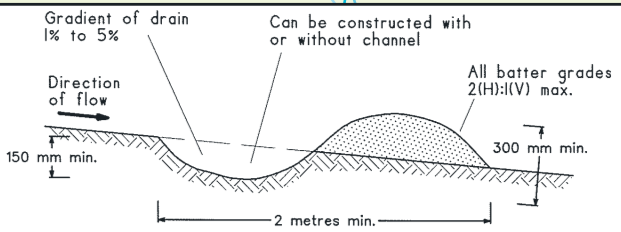
TOPSOIL STOCKPILE **SD 4-1**



Construction Notes

1. Strip topsoil and level site.
2. Compact subgrade.
3. Cover area with needle-punched geotextile.
4. Construct 200 mm thick pad over geotextile using roadbase or 30 mm aggregate. Minimum length 15 metres or to building alignment. Minimum width 3 metres.
5. Construct hump immediately within boundary to divert water to a sediment fence or other sediment trap.

STABILISED SITE ACCESS **SD 6-14**

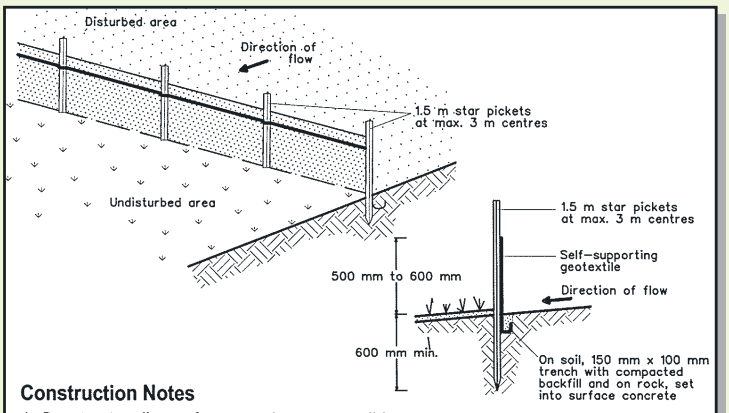


NOTE:
Only to be used as temporary bank where maximum upslope length is 80 metres.

Construction Notes

1. Construct with gradient of 1 per cent to 5 per cent.
2. Avoid removing trees and shrubs if possible.
3. Drains to be of circular, parabolic or trapezoidal cross section not V-shaped.
4. Earth banks to be adequately compacted in order to prevent failure.
5. Permanent or temporary stabilisation of the earth bank to be completed within 10 days of construction.
6. All outlets from disturbed lands are to feed into a sediment basin or similar.
7. Discharge runoff collected from undisturbed lands onto either a stabilised or an undisturbed disposal site within the same subcatchment area from which the water originated.
8. Compact bank with a suitable implement in situations where they are required to function for more than five days.
9. Earth banks to be free of projections or other irregularities that will impede normal flow.

EARTH BANK (LOW FLOW) **SD 5-5**



Construction Notes

1. Construct sediment fence as close as possible to parallel to the contours of the site.
2. Drive 1.5 metre long star pickets into ground, 2.5 metres apart (max.).
3. Dig a 150 mm deep trench along the upslope line of the fence for the bottom of the fabric to be entrenched.
4. Fix self-supporting geotextile to upslope side of posts with wire ties or as recommended by geotextile manufacturer.
5. Join sections of fabric at a support post with a 150 mm overlap.
6. Backfill the trenchover the base of the fabric and compact it thoroughly over the geotextile

SEDIMENT FENCE **SD 6-8**

Principles of Erosion and Sediment Control

1. Planning

Prepare an Erosion and Sediment Control Plan for your site before works start and submit it with your building application. The Plan should show how you will prevent stormwater pollution throughout the construction phase and until the site landscaping has been completed, i.e. the erosion hazard has been reduced to an acceptable level. Different controls might be necessary at different stages over the construction phase as the nature of the site changes, e.g. changing drainage patterns, moving stockpiles to different places, etc. If such changes are likely, these must be shown on the Plan. A model Plan is overleaf. Note that it is made up of both a Commentary and Drawings and relates to a specific site.

2. Installation of Controls

Before works start, set up the erosion and sediment controls and install a sign warning everyone of the penalties of pollution (this may be provided by council). Make sure that all site workers understand their individual responsibilities in preventing pollution. A recommended sequence for setting up controls is:

(i) Establish a single stabilised entry/exit point to the site;

(ii) Install sediment fences along the low side of the site;

(iii) Divert upslope water around the site and, if necessary, stabilise the channels and outlet;

(iv) Clear only those lands that must be disturbed during the building works. Put up a barrier fence around areas where the vegetation is to not be disturbed;

(v) Ensure that any stockpiles are on your land – not the footpath or the next-door neighbours land. Where necessary, seek approval from Council or your neighbour(s) for any offsite stockpiles. Ensure stockpiles have appropriate erosion and sediment controls;

(vi) Install onsite waste receptacles, such as skips or bins, and wind-proof litter receptacles, etc.;

(vii) Start building works;

(viii) Install and connect roof downpipes before the frame inspection; and

(ix) Stabilise any exposed earth banks when the building works are completed.

3. Maintenance of Controls

All erosion and sediment control works should be checked at least once each week and after each rainfall event to ensure they are working properly. Maintenance might include:

(i) Removing sediment trapped in sediment fences, catch drains or other areas;

(ii) Topping up the gravel on the stabilised access;

(iii) Repairing any erosion of drainage channels; and

(iv) Repairing damage to sediment fences.

Remember that the erosion and sediment control works might need to change as the slope and drainage paths change during the development phase. Best practice includes anticipation of the likely risks and being prepared for unusual circumstances, e.g. having spare sediment fence material on the site.

4. Finalisation of Works

Ensure that the site is stabilised and no exposed soil remains before removing the erosion and sediment controls. If landscaping is not completed before handing over the site to the owners, ensure they are aware of their responsibilities to prevent pollution.

5. Four Basic Principles

(i) Make sure everyone working on the site understands how important it is to not pollute stormwater.

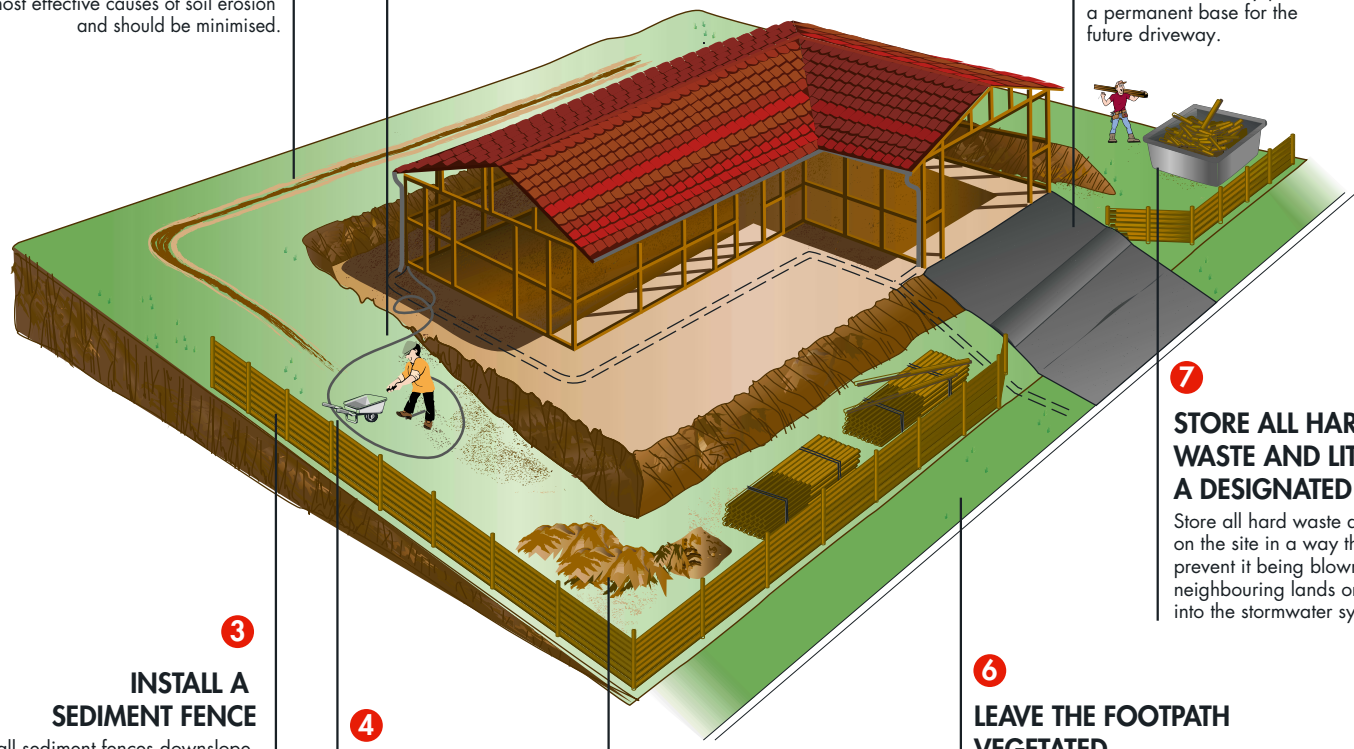
(ii) Do not disturb more of the site than you have to.

(iii) Install erosion and sediment controls before starting work.

(iv) Maintain your erosion and sediment control works throughout the construction phase.

Ways you can reduce erosion & control sediment on a building or construction site

Follow these site management practices and you will help reduce impact on our waterways...



1 LIMIT DISTURBANCE WHEN EXCAVATING

Preserve as much of the vegetated area as possible. Vegetation improves the appearance of the site, greatly reduces the erosion hazard and can be a very effective natural sediment filter. The erosion hazard of well-vegetated lands is often less than 1 percent of those that have been cleared.

2 DIVERT UPSLOPE STORMWATER

Where possible to do so, divert upslope stormwater around around all lands that do not have a protective vegetative cover – see Standard Drawing 5-5. Water sheeting over the ground is one of the most effective causes of soil erosion and should be minimised.

3 INSTALL A SEDIMENT FENCE

Install sediment fences downslope of all disturbed lands to filter coarse sediment before it gets into the gutters, drains and watercourses. Details on their construction are shown on Standard Drawings.

4 WASH EQUIPMENT IN DESIGNATED AREA

Wash all equipment, including that with concrete waste in a designated area that does not drain to the stormwater system.

5 PLACE SANDS AND SOIL STOCKPILES BEHIND A SEDIMENT FENCE

Place all stockpiles totally on the site well away from drainage paths and, where they comprise erodible materials such as sand and soil, behind a sediment barrier – see Standard Drawing 4-1. Ensure soil and cement bags are covered at the end of each day if rain or excessive wind are likely.

6 LEAVE THE FOOTPATH VEGETATED

Apart from the stabilised entrance, maintain a well vegetated (grassed) footpath. Keeping lands vegetated is the single most important thing that can be done to reduce erosion hazard.

7 STORE ALL HARD WASTE AND LITTER IN A DESIGNATED AREA

Store all hard waste and litter on the site in a way that will prevent it being blown onto neighbouring lands or washed into the stormwater system.

8 RESTRICT VEHICLE MOVEMENTS TO A STABLISED ACCESS

Restrict all vehicle movements onto the site to a stabilised access as shown on Standard Drawings. This allows all-weather entry/exit, reduces how much soil is carried to the street and may provide a permanent base for the future driveway.