



## Trench digging

G-11.1

Trench digging is necessary for the installation of pipes and services and is often part of construction projects. Trenches may be dug with heavy machinery or manual labour. It is important to ensure that trenches will not be exposed to water flows as this can create serious erosion problems. Schedule works when rain is unlikely and plan carefully to keep trenches open for no more than three days.

*Use these guidelines in conjunction with the information provided in Chapter 11 when planning works and engaging consultants and contractors to ensure the proposed works use the most effective methods and minimise the risk of causing damage to coastal values.*

### Planning

Careful planning to minimise the size of the trench and the time left open is the simplest way to reduce erosion and will also save on work.

Avoid trenching in areas where water flow is likely to concentrate. Alternatively, schedule work during periods when rainfall is low.

Organise the timing of the service installations to enable progressive backfilling.

### Environmental & cultural considerations

Trench digging requires disturbance of the shoreline and as such have the potential to impact on vegetation communities, wildlife habitat, Aboriginal and maritime heritage values, threatened species and coastal ecosystems. Minimise impacts on coastal values during trench digging.

It is important to identify all natural values, such as threatened species, that may be affected. Seek advice from specialists. Vegetation and fauna assessments may be required.

Schedule works to avoid significant wildlife events such as shorebird and penguin breeding times between September and March.

It is important to identify all cultural values that may be affected. Contact Aboriginal Heritage Tasmania, an assessment and permit may be required.

Be aware of acid sulfate soils which can pollute waterways and corrode infrastructure and concrete. Watch out for indicators such as yellow deposits or a rotten egg smell when soil is disturbed. If discovered stop work and seek specialist advice.

### Minimise erosion

The following key steps will minimise the risk of erosion:

1. Do not open any trench unless it is likely to be closed in three days
2. Place excavated material up-slope of the trench
3. Stockpile topsoil separately from subsoil
4. Divert runoff from the line of the cut with diversion measures
5. Rehabilitate quickly

### On the job

Ensure all works staff and contractors are briefed on minimising environmental impacts and provide adequate supervision to ensure best practice environmental standards are being implemented.

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Ensure trench widths and depths are the minimum necessary. This will minimise the disturbance to the soil structure.

Divert surface water away from trench openings. The diversion measures need to discharge any run-off into a stabilised area or a sedimentation trap. Ensure that run-off will not be channelled or funnelled together as this will increase erosion.

Align and space diversion measures, such as banks or berms, according to the slope of the land and the potential for erosion due to soil type and rainfall.

Place excavated material up slope of the trench so that any run-off will deposit the material back into the trench and not allow it to run down slope and off the site.

Stockpile topsoil and subsoil separately to maintain soil profile when backfilling.

Use sandbags as plugs or bulkheads across trench inverts to shorten the length of sediment-laden water flow in the trench.

Leave excavations open for the minimum practical time (try to limit the time trenches are left open to fewer than three days). Avoid opening trenches whenever the risks of heavy rainfall is high.

Take care when backfilling to prevent the trench acting as a subsoil drain. Ensure backfilling maintains soil profile (subsoil first, properly compacted and then topsoil). Trench stops may be required on steep gradients or highly erodible soils.

Provide an appropriate allowance for settling of uncompacted backfill material (e.g. 10%).

### Rehabilitate

After backfilling, remove excess or unsuitable spoil from the site. Then, replace topsoil and revegetate to match surrounding ground levels and vegetation species as soon as possible.

### More information

*Soil and water management on building and construction sites: Fact sheets, Derwent Estuary Program 2009*

*Tasmanian coastal works manual: Chapter 11, Page & Thorp 2010*

*Tasmanian coastal works manual: Guideline 11.2 Acid sulfate soils*



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### When excavating trench...

Excavated soil placed upslope of trench

Excavated soil not to be placed:  
-on road  
-in areas of runoff  
-within 1 metre of kerb

Trench

Kerbside turf strip

Kerb

Road

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### When backfilling trench...

Trench backfilled, compacted to 95 per cent standard compaction, topsoiled, levelled and topped up as necessary should subsidence occur

All bare soil revegetated

Topsoil

Compacted subsoil

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### On steep and/or long sections of trench...

Trench line and disturbed ground vegetation

Earth banks across trench line

**Construction notes:**

1. Do not open any trench unless it is likely to be closed in three days
2. Place excavated material upslope of the trench
3. Stockpile topsoil separately from subsoil
4. Divert runoff from the line of the cut with diversions as directed by Standard Drawing 5 - 2
5. Rehabilitate in accordance with specification

Source: *Managing urban stormwater soils and construction vol 2A*. © Department of Environment and Climate Change, NSW (2008a).

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