Environmental Guidance Note – Minor Civil Works – Erosion and Sediment Control

HSE DOCUMENT

To manage and mitigate soil erosion/sedimentation during construction activities (involving minor civil/earthworks) the following steps must be undertaken and controls implemented where required.

Step 1: Follow the process below, make sure to:

1. **Plan** - Assess the soil and water risks present or potential on the worksite, prior to commencement of the work,
2. **Minimise** - area disturbed/exposed, Stabilise/rehabilitate disturbed areas progressively,
3. **Conserve** - topsoil/spoil/gravel where required for re-use,
4. **Control** - Water flow around and through site and sediment controls,
5. **Maintain** - Inspect and maintain all controls through the life of the project until site is stable i.e. minimum 70% cover established protecting the soil. Remove controls only once the site is stabilised.

Step 2: implement the following mitigation measures where required

Site Plans:

- For excavation works <250m^2 of disturbed area, a site plan may not be required.
- Where works are >250m^2 or varied (e.g. excavation + concreting + stockpiling) compile an environmental site map/plan (such as a Site Environmental Plan (SEP) or ESCP) showing (as a minimum):
  - North Point,
  - Soil and water risks (e.g. disturbed areas, limit of works, water-flow/fall, receiving waters),
  - Access/egress routes and works locations,
  - Parking, laydown areas and stockpiles, type of erosion and sediment controls (when they are to be used), and
  - Concrete washout location.
  - Location and details of erosion and sediment controls
- Seek advice from Transgrid HSE if the work requires a Site Plan or ESCP.
- If works will disturb an area >2500m², involve sediment basins, works in riparian areas or larger scale stormwater works, contact your Environmental Business Partner, as a specific design/plan may be required.

Stockpiles:

- Excess spoil must be stockpiled and stabilised to minimise erosion (such as covering or compacting).
- Locate stockpiles clear of drainage and steep areas. Ensure they are protected from erosion and do not encroach upon any waterway, footpath, nature strip or road.
- Waste spoil must be classified and disposed of in accordance with EPA requirements and Transgrid's Waste Management Procedure/Spoil Management Work Instruction.

Sediment Management:

- Sediment filters should be used where there is a risk of sediment entering drainage structures or migrating off site.
- Remove collected sediment ASAP and dispose to prevent re-mobilisation (you can reuse, stockpile or dispose of).
- Control vehicle access/egress to prevent tracking of material onto paved surfaces/roads, particularly during wet weather or when the sites are muddy. Where sediment is on hard surfaces it must be removed by means other than washing.

Access:

- Reduce access on unformed roads during or after rain.
- Stabilise unformed access routes if heavy damage is anticipated. Where required, new access routes, driveways and parking areas must be stabilised with suitable capping material as soon as possible after their formation.

Site Stabilisation:

- Stabilise surfaces to original condition or as designed.
- All disturbed areas where works are complete must be progressively stabilised so that within 60 days no completed areas remain exposed to potential erosion damage.

Erosion Management:

- Minimising erosion will decrease sediment loads and confine soil disturbance to the work site only (including stockpiles).
- Limit ground disturbance to 2-4m beyond the limit of excavations where possible.
- Avoid concentrating water flow (where possible).
- Avoid directing water over batters.
- Disturbed areas that are inactive or shut down for more than 20 days (works may continue later) must be stabilised to prevent erosion. Measures should be put in place to achieve 70% ground cover (or equivalent).

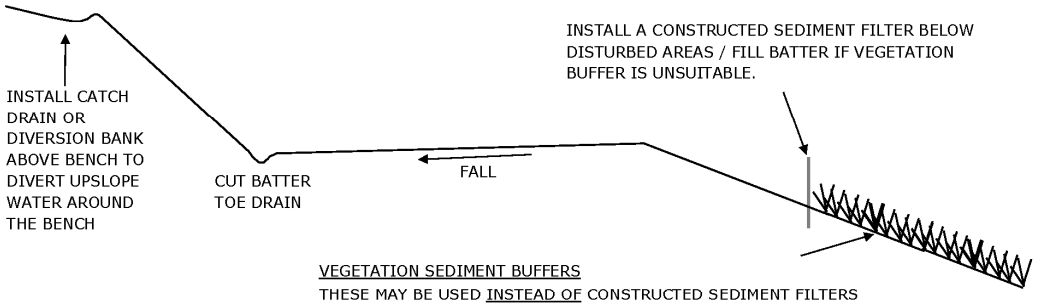
For works involving the use of concrete:

- Agitator washout is not permitted on Transgrid sites, ‘flick wet wiping’ of chutes only; residual concrete must be returned to the supplier.
- Install a sealed receptacle on site to allow for residues from chutes. Concrete may be discharged into prepared excavations/formwork or designated waste receptacles only.

Monitoring:

- All controls must be inspected and maintained regularly (min weekly) and/or after 10mm of rain.
- Weekly Inspections must be documented.

BENCHING DETAILS (GENERAL)



VEGETATION SEDIMENT BUFFERS

THESE MAY BE USED INSTEAD OF CONSTRUCTED SEDIMENT FILTERS (LIKE SEDIMENT FENCE /COIR LOGS) ONLY WHERE:

a. SOILS ARE STABLE, SAND &/OR GRAVELLY, &
b. VEG FILTERS ARE >20M WIDE & ON SLOPES GENERALLY <5% &
c. DISTURBED / BENCH AREA MUST BE A MIN OF 40M FROM ANY WATERWAYS, INCLUDING DAMS & GULLIES.

CONSIDERATIONS FOR WORKS IN RURAL AREAS

STABILISATION WITH VEGETATION AND/OR USE OF STRAWMULCH SHOULD CONSIDER THE PRESCENCE OF STOCK.

SEDIMENT FENCES AND COIR LOGS ARE PRONE TO STOCK DAMAGE

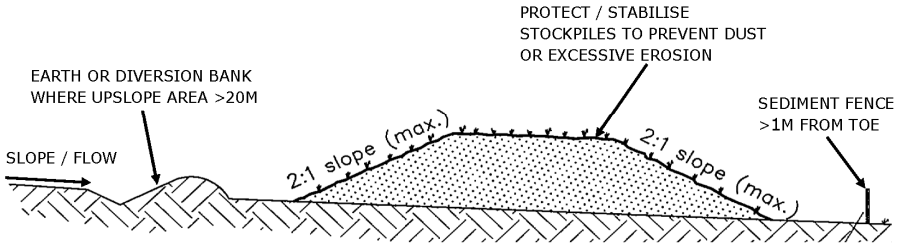
BENCHING NOTES:

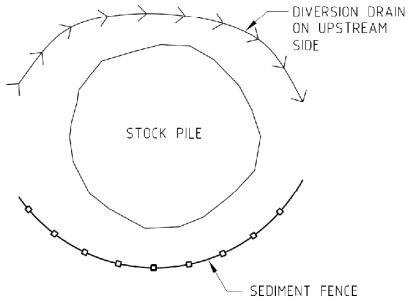
1. EROSION AND SEDIMENT CONTROL MEASURES SHOWN IS FOR A TYPICAL SLOPED TRANSMISSION STRUCTURE CONSTRUCTION SITE LAYOUT, WHERE CONSTRUCTION BENCHING IS REQUIRED.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN (CEMP) OR ESCP.
3. WHERE POSSIBLE, ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AS THE FIRST STEP IN THE CONSTRUCTION SEQUENCE.
4. CONTROL WATER FROM UPSTREAM OF THE SITE SUCH THAT IT DOES NOT ENTER THE DISTUBED SITE (VIA AN EARTH BANK OR CATCH DRAIN TO A STABLE LOCATION).
5. CONSIDER LEVEL SPREADERS OR ROCK ARMOUR AT DRAINAGE OUTLETS TO MITIGATE EROSION.
6. ALL TOPSOIL TO BE PLACED IN SHORT TERM STOCKPILES AND RE-SPREAD ON BATTERS AND DISTURBED AREAS PRIOR TO CONSTRUCTION COMPLETION (OR STOCKPILED SEPERATELY IF BENCHES ARE TEMPORARY)
7. BATTERS SHOULD BE INSTALLED AT THE LEAST STEEP GRADE POSSIBLE (≥ 1 IN 3)
8. RUNOFF FROM ALL DISTURBED AREAS SHOULD BE DIRECTED THROUGH SEDIMENT CONTROLS WHERE VEGETATED FILTERS ARE INADEQUATE
9. ALL SEDIMENT CONTROL STRUCTURES SHOULD BE CLEANED OUT AFTER EACH SIGNIFICANT RAINFALL EVENT.
10. STABILISE BATTERS & DRAINS & APPLY SEED & EROSION CONTROL (I.E. STRAW / HYDRO MULCH, JUTE MATTING OR BINDER) AS SOON AS DESIGN GRADES ARE ACHIEVED. EROSION & SEDIMENT CONTROLS SHALL REMAIN IN PLACE AND NOT BE DECOMMISSIONED UNTIL GROUND SURFACES ARE STABILISED AND/OR REVEGETATED.
11. ALL WORK SHALL BE GENERALLY CARRIED OUT IN ACCORDANCE WITH:
    a. NSW DEPARTMENT OF HOUSING MANUAL "MANAGING URBAN STORMWATER, SOILS AND CONSTRUCTION", 4th EDITION, MARCH 2004. (THE BLUE BOOK).
    b. EPA-POLLUTION CONTROL MANUAL FOR URBAN STORMWATER (ACT).
    c. ANY LOCAL AUTHORITY REQUIREMENTS.

STOCKPILE DETAILS

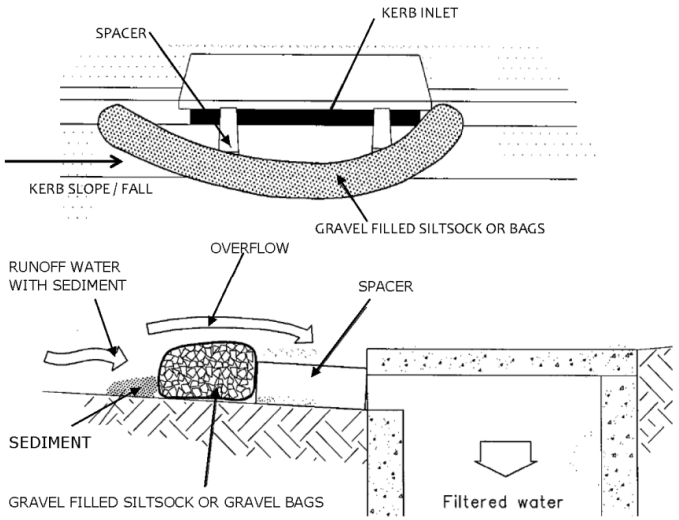
STOCKPILE NOTES

1. PLACE STOCKPILES >10m FROM DRAINAGE OR HAZARD AREAS.
2. CONSTRUCT ON CONTOUR IN LOW FLAT MOUND (≤2m HIGH IF TOPSOIL).
3. DIVERT 'CLEAN WATER' AROUND WHERE NECESSARY.
4. IF STATIC >10 DAYS OR MOD-HIGH RAINFALL PREDICTED STABILISE TO MITIGATE EROSION
5. AVOID PLACING SPOIL DIRECTLY ON TO SWITCHYARD GRAVEL OR GRASS WHERE POSSIBLE
6. REHABILITATE STOCKPILE SITES AS PER SWMP / ESCP.





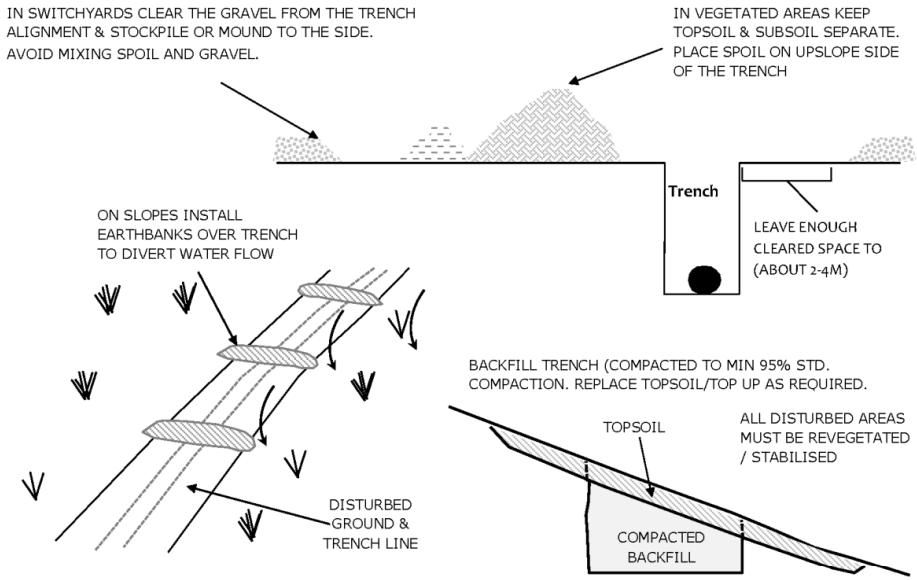
INLET SEDIMENT CONTROL (GENERAL)



INLET FILTER NOTES

1. FABRICATE FILTER LONGER THAN PIT & USE 20-40MM GRAVEL.
2. INSTALL WITH ELLIPTICAL CROSS-SECTION ABOUT 150MM HIGH.
3. USE SPACERS IF REQUIRED TO PREVENT BLOCKAGE.
4. SEAL ENDS TO KERB TO PREVENT BYPASS.

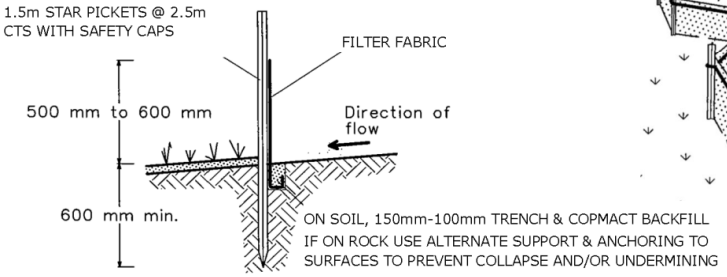
TRENCHING CONTROLS (GENERAL)

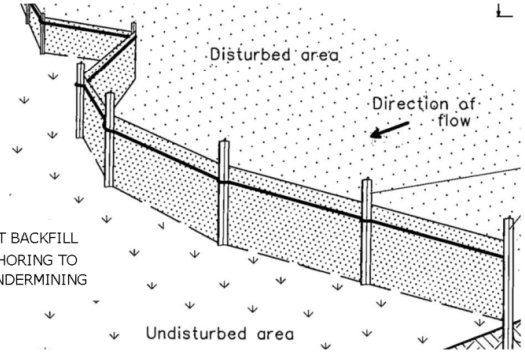


TRENCHING NOTES

1. DO NOT PLACE SPOIL ON SWITCHYARD GRAVEL (UNLESS ON GEOFABRIC) OR WITHIN 10M OF STORMWATER DRAINAGE I.E. NEXT TO KERB AND GUTTER (UNLESS OPERATIONS WILL ONLY OCCUR DURING DRY WEATHER).
2. INSTALL SEDIMENT FILTERS AT THE ENDS OF SPOIL BUNDS ON SLOPING SITES TO FILTER DIVERTED WATER.
3. TRENCHES RUNNING DOWN GRADE MAY REQUIRE WEIRS OR TRENCH STOPS (USE GRAVEL OR SAND BAGS) IN THE TRENCH TO PREVENT WATER RUNNING DOWN THE TRENCH.

SEDIMENT FENCE (GENERAL)





SEDIMENT FENCE NOTES

1. INSTALL AS CLOSE AS POSSIBLE TO PARALLEL TO SITE CONTOURS
2. USE 1.5m STAR PICKETS @ 2.5m CTS WITH SAFETY CAPS
3. DIG 150mm DEEP 100mm WIDE TRENCH ALONG THE LINE OF THE FENCE FOR THE BOTTOM OF THE FILTER FABRIC
4. BACKFILL AND COMPACT TRENCH
5. FIX FILTER FABRIC TO UPSLOPE SIDE OF PICKETS WITH WIRE TIES OR AS RECOMMENDED BY MANUFACTURER
6. JOINS/OVERLAPS SHOUILD BE AT A POST AND MINIMUM 0.5 m TO PREVENT BYPASS