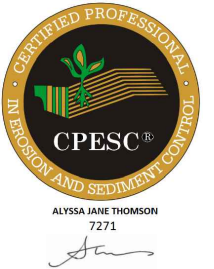


ASPECT INDUSTRIAL ESTATE

MAMRE ROAD, KEMPS CREEK

STAGE 1



INITIAL OVER-ARCHING EROSION AND SEDIMENT CONTROL PLAN

OVER-ARCHING

DRAWING SCHEDULE

DRAWING NUMBER	DRAWING TITLE
22000177_P01_ESCP00	INITIAL OVER-ARCHING ESCP - COVER SHEET, LOCALITY PLAN AND DRAWING SCHEDULE
22000177_P01_ESCP01	INITIAL OVER-ARCHING ESCP - GENERAL REQUIREMENTS - SHEET 1 OF 2
22000177_P01_ESCP02	INITIAL OVER-ARCHING ESCP - GENERAL REQUIREMENTS - SHEET 2 OF 2
22000177_P01_ESCP03	INITIAL OVER-ARCHING ESCP - EROSION AND SEDIMENT CONTROL PLAN - MAIN SITE
22000177_P01_ESCP04	INITIAL OVER-ARCHING ESCP - EROSION AND SEDIMENT CONTROL PLAN - MAMRE ROAD INTERSECTION
22000177_P01_ESCP05	INITIAL OVER-ARCHING ESCP - TABLES 1 - 4
22000177_P01_ESCP06	INITIAL OVER-ARCHING ESCP - TYPICAL DETAIL, PHOTO EXAMPLES AND IECA STANDARD DRAWING
22000177_P01_ESCP07	INITIAL OVER-ARCHING ESCP - BLUE BOOK STANDARD DRAWINGS - SHEET 1 OF 3
22000177_P01_ESCP08	INITIAL OVER-ARCHING ESCP - BLUE BOOK STANDARD DRAWINGS - SHEET 2 OF 3
22000177_P01_ESCP09	INITIAL OVER-ARCHING ESCP - BLUE BOOK STANDARD DRAWINGS - SHEET 3 OF 3



LOCALITY PLAN

N.T.S.

REV	DATE	DES.	DRN.	APP.	REVISION DETAILS	DRAWING STATUS	North	CLIENT	PROJECT TITLE	DRAWING TITLE	PROJECT NO.	SUB-PR NO.	DRAWING NO.	REV
						DESIGN BY DRAWN BY FINAL APPROVAL SCALE: (on A1 Original)								
03	24/06/22	A.T.	A.T.	J.A.	ADDITIONAL AMMENDMENTS TO GENERAL REQUIREMENTS	N.T.S.								
02	23/06/22	A.T.	A.T.	A.T.	MINOR MODIFICATIONS FOR APPROVAL									
01	19/05/22	A.T.	A.T.	A.M.	GENERAL MODIFICATIONS TO ADDRESS PLANNING CONDION/S									
00	09/05/22	A.T.	A.T.	A.M.	FINAL - FOR APPROVAL									
A	28/04/22	A.T.	A.T.	A.M.	DRAFT ISSUE - FOR REVIEW	FINAL								

Plot Date: Friday, June 24, 2022 11:51:18 AM

CAD File Name: C:\Users\aburnus\Desktop\PROJECTS\22000177 Aspect Industrial Estate Mamre Road - Western Earthmoving\Drawings\22000177_P01_ESCP_REV 03.dwg

Western Earthmoving

SEEC

Suites 7 & 8, 68-70 Station Street
PO Box 1098, Bowral NSW 2576.
(t) 02 4862 1633
(f) 02 4862 3088
email: reception@seec.com.au
www.seec.com.au

ASPECT INDUSTRIAL ESTATE
MAMRE ROAD
KEMPS CREEK
STAGE 1

INITIAL OVER-ARCHING ESCP
COVER SHEET, LOCALITY PLAN
AND DRAWING SCHEDULE

21000258 P01 ESCP00 03

GENERAL REQUIREMENTS

EROSION AND SEDIMENT CONTROL DESIGN

The details shown within this plan are over-arching erosion and sediment control requirements only for the initial stage of the bulk earthworks. As the works progress and site conditions change, this plan is to be updated accordingly. Site specific progressive Erosion and Sediment Control Plans (PESCPs) will also be required to detail specific works. This ESCP has been prepared to accompany the project’s CEMP and CSMP.

This Erosion and Sediment Control Plan (ESCP) has been prepared by a CPESC (as certified) in accordance with Blue Book Volume 1 (Landcom, 2004) and to meet the requirements of the construction WSUD principals set out in the Draft Technical Guidance for achieving Wianamatta South Creek Stormwater Management Targets (NSW Government, 2022). It demonstrates the construction approach and timing requirements for achieving the construction phase stormwater quality targets.

This ESCP covers two main areas of work; the Main Site area and the Mamre Road Intersection works. The erosion and sediment controls for the Main Site are shown on ESCP03 and the erosion and sediment controls for the Mamre Road Intersection are on ESCP04.

An erosion hazard assessment has been completed for the proposed works and the predicted soil loss has been determined in accordance with the following:

A = R x K x LS x C x P

Where

A = Annual soil loss due to erosion (t/ha/yr)

R = Rainfall erosivity factor

K = Soil erodibility factor

LS = Topographic factor derived from slope length (SL) and slope gradient (S)

C = Cover and management factor

P = Erosion control practice factor

- The following values have been used:
- R : 2500 (Sourced from Appendix B of the Blue Book)
 - K : 0.0456 (Based on soil data for the Blacktown and Luddenham Soil Landscapes)
 - SL : Up to 80m MAX.
 - S : Main Site = 7% ; Mamre Rd Intersection = 4% (Average MAX. values)
 - LS : 1.76.
 - C : 1.0 (Construction stage – i.e. no soil surface protection or ground cover applied)
 - P : 1.3 (for general construction areas)

Based on the above data, the potential soil loss is:

- 261 t/ha/yr for the Main Site works; and
- 135 t/ha/yr for the Mamre Road Intersection works.

The disturbed catchment areas are approximately:

- 55.82 ha for the Main Site works; and
- 1 ha for each stage of the Mamre Road Intersection works.

Under Blue Book standards, sediment basins are required if the estimated soil loss is > 200 t/yr for any catchment/stage. The estimated total soil loss is:

- 14,548 t/yr for the Main Site works; and
- 135 t/yr for each Stage of the Mamre Road Intersection works.

Therefore, a sediment basin/s is required for the Main Site works but not for the Mamre Road Intersection works.

The NSW Government (2022) technical guideline (as noted above) requires 80% of the average annual runoff volume achieves 50mg/L Total Suspended Solids (TSS) or less and pH in the range (6.5–8.5). The standard Blue Book sediment basin design and other standard erosion and sediment control measures are estimated to achieve approximately 60% hydrological effectiveness. Therefore, in order to achieve 80% hydrological effectiveness, additional erosion and sediment control measures above the standard Blue Book design have been recommended within this plan – refer to the following instructions and notes and the plans on ESCP03&04. These additional measures include:

- Sediment basin design to the 85th percentile rainfall depth rather than the standard 80th percentile Blue Book requirement providing additional water storage volume;
- Utilising existing dams and/or future water retention devices where practicable to provide additional water storage volume and break up catchments;
- Enhanced erosion controls (e.g. reduced slope lengths, increased focus on temporary and progressive stabilisation, additional check dams and a focus on temporary drainage control);
- Passive broadcast gypsum spreading over the entire disturbed catchment prior to larger rainfall events beyond the sediment basin design to assist with water treatment and to minimise soil loss;
- Pre-loading sediment basin, sediment traps and their inlet drainage devices with gypsum or biopolymer socks to speed up settlement rates; and
- Regular (monthly) inspections by a CPESC to monitor the site conditions and water quality and provide advice if changes to the erosion and sediment controls are necessary.

If all of the proposed measures within this plan are implemented successfully, the target water quality outcomes can be achieved for at least 80% of the average annual runoff as required by the NSW Government (2022) technical guideline.

DESIGN ASSUMPTIONS

- The IFD: 2year, 6hour storm intensity = 9.13mm/hr (BOM).
- The site is located on the Blacktown Soil Landscape (across the majority of the site), the Luddenham Soil Landscape (a small portion of the site at the highest top crest) and South Creek Soil Landscape (a very small portion of the site at the lowest part of the site within the drainage areas that cross Mamre Road).
- Potential limitations to the soils/landscapes include localised seasonal waterlogging, localised water erosion hazard, moderately reactive highly plastic subsoils, moderate salinity potential, potentially sodic and highly dispersive subsoils, localised surface movement potential, localised impermeable and localised high water tables.
- The K-factor is based on the worst case value for the Blacktown and Luddenham Soil Landscapes of 0.038. This is then increased by 20% to account for potential dispersible soils. This gives an K-factor of 0.0456.
- 5-day, 85th %ile rainfall depth = 34mm – Based on an average of the rainfall depths for Blacktown, Liverpool, Penrith and Wallacia provided within the Blue Book (Kemps Creek is approximately in the middle of these locations).
- Volumetric runoff coefficient (CV) = 0.64 (assuming hydrologic group D runoff coefficient – low infiltration, high runoff).
- Runoff coefficient (Cio) = 0.9.
- Groundwater is not expected to be encountered in the earthworks associated with the project as noted within the ‘Groundwater Management Plan’ (Arcadis, 2020). Refer to this ‘Groundwater Management Plan’ (Arcadis, 2020) for all groundwater considerations and requirements.

EROSION AND SEDIMENT CONTROL INSTRUCTIONS – STAGING

Before commencement of clearing, topsoil stripping and earthworks for each area of work, the site is to be secured and the following erosion and sediment control measures installed in order except for Items 13 to 20 which are to be undertaken progressively as required as the works progress. Stripping and earthworks necessary to install the erosion and sediment controls are permitted but must be kept to an absolute minimum:

- Site access and disturbance must be minimised to the areas essential for the construction works only. Barrier fencing (or alternative measures) is to be in place around the edge of the construction boundary to restrict access and in any additional locations as required to minimise unnecessary disturbance.
- Establish stabilised site entry/exit points (Standard Drawing SD 6-14) in the locations shown and at all egress points. Ensure that all vehicles entering and leaving the work area pass over one of these points. A vehicle wheel wash (wash down) facility is to be established at the main construction exit and all construction vehicles must pass through this point when leaving the site.
- Establish a temporary site office, toilet and parking area as nominated by the site manager.
- Install sediment fencing in the locations shown and following Standard Drawing SD 6-8.
- Offsite (clean) water diversions are to be constructed and stabilised – refer to ESCP03&04, the ‘Stabilisation’ notes and to Table 4 on ESCP05 for locations and sizing. Once clean water diversion construction is completed clean water diversions are to be confirmed as stable by a CPESC.
- The permanent channel diversion is to be constructed and stabilised. A progressive area specific PESCP is to be produced for this work prior to starting construction. Also refer to the plan for additional details. Once permanent channel diversion construction is completed it is to be confirmed as stable by a CPESC. Refer to ESCP03&04 and the ‘Stabilisation’ notes for additional requirements.
- The sediment basins and their inlet and outlet structures are to be constructed and stabilised – refer to ESCP03&04 for locations and basin sizing details (also refer to the ‘Sediment Basin’ notes below and to SD 6-4).
- Sediment traps are to be installed – refer to ESCP03&04 for locations/details and to the ‘Stabilisation’ notes (also refer SD UST-01).
- Onsite (dirty) water diversions are to be constructed and stabilised – refer to ESCP03&04, the ‘Stabilisation’ notes and to Table 4 on ESCP05 for locations and sizing. Additional dirty water diversions may be required as the works progress. The locations of these are to be provided on progressive ESCPs.
- Stockpile areas are to be established in locations as shown or as specified by the site manager and in accordance with the ‘Soil Stripping and Stockpiling’ notes below.
- The existing dams are to be dewatered in accordance with the project approved dewatering procedure and in accordance with the ‘Dirty Water Treatment and Discharge Requirements’ notes and other recommendations on this plan. Note that in some instances (where diversion drains or sediment basins are located in the position of existing dams, dewatering of the dams will need to occur prior to the construction of these devices – refer to ESCP03&04 for details.
- Once all of the above measures are complete and stable, construction works can commence in accordance with the engineering plans.

The following erosion and sediment control measures are to be undertaken as required during all stages of the works:

- Topsoil stripping is to be undertaken in accordance with the ‘Soil Stripping and Stockpiling’ notes.
- Slope lengths across disturbed lands are to be maintained at maximum 40m intervals during all rainfall events. To achieve this, diversion bunds/drains, low flow earth banks (Standard Drawing SD 5-5) or sandbags/equivalent should be installed prior to forecast rainfall and site closure of more than 2 days. (Note that 40m intervals are less than the design slope length of 80m to provide enhanced erosion control and assist with reducing sediment movement – Also refer to the ‘Rainfall Preparation Procedure’ notes).
- Broadcast gypsum spreading is to be undertaken across all exposed soils prior to forecast rainfall above the 85th percentile design rainfall event and site closure of more than 2 days in accordance with the ‘Rainfall Preparation Procedure’.
- Sediment basin and sediment trap inlet points will be pre-loaded with gypsum (or equivalent) prior to forecast rainfall above the 85th percentile design rainfall event and site closure of more than 2 days in accordance with the ‘Rainfall Preparation Procedure’.
- Major dirty water diversion drains will have gypsum, biopolymer gel socks (or equivalent) placed within them at 80m intervals. These devices will be maintained or replaced as required to ensure they are in place prior to forecast rainfall above the 85th percentile design rainfall event and site closure of more than 2 days in accordance with the ‘Rainfall Preparation Procedure’.
- Dust suppression to be carried out when required (Refer to the ‘Dust Suppression’ notes).
- Temporary dirty water control structures (e.g. batter chutes, check dams and windrows) are to be implemented (Refer to the ‘Rainfall Preparation Procedure’ notes).
- Temporary stabilisation is to be undertaken in accordance with the ‘Stabilisation’ notes and the ‘Rainfall Preparation Procedure’ and the instructions on the plan/s.
- Treatment of dirty water is to be carried out as necessary in accordance with the ‘Dirty Water Treatment and Discharge Requirements’ notes.
- Measures to assist with salinity management are to be carried out in accordance with the ‘Salinity Considerations’ notes and the project’s Salinity Management Plan.
- Monitoring, maintenance and inspections are to be carried out regularly as required, in accordance with the ‘Site Inspection and Monitoring’ notes.
- Undertake progressive stabilisation of lands as final earthworks are complete in each area (rather than waiting until the completion of works). Final stabilisation is to be completed in accordance with the ‘Stabilisation’ notes.

SOIL STRIPPING AND STOCKPILING

- Ideally, strip topsoil when it is moist, not too wet or too dry.
- Take care when stripping topsoil not to strip subsoil with the topsoil profile. Topsoil and subsoils should be managed separately.
- Wherever possible, stockpiles are to be established and maintained in accordance with Standard Drawing SD 4-1 (Landcom, 2004).
- As much as is feasible, mulched vegetation, topsoil and subsoil (if applicable) are to be stockpiled separately.
- Sediment fencing is to be installed around the lower edge of stockpiles as per Standard Drawing SD 4-1, unless the stockpile is immediately adjacent to a suitable alternative control such as a sediment basin.
- A diversion drain/bund is to be installed on the high side of stockpiles if run-on from upslope lands could impact on the stockpile.
- Stockpiles are not to be positioned within 5m of possible concentrated water flow (includes road gutters and table drains).
- Stockpiles are to be sited at least 50m from any watercourse, natural drainage line or creek and at least 2m from any trees to be retained.
- Stockpiles will not be located on flood prone lands below the 2year flood level.
- Stockpiles will be positioned within the approved project construction boundary and away from protected areas (e.g. native vegetation).
- Inactive stockpile faces are to be provided with at least 60% cover (i.e. RUSLE C-factor of 0.1) within 10 days of formation. Stabilisation of stockpiles can be achieved by seeding and spraying with a soil stabiliser (e.g. Vital P47), covering with geotextile or matting or equivalent (note seeding is not required for stockpiles if they will be in place for less than 3 months or if they have an existing seedbank).
- Stockpiles of topsoil or mulch should be constructed to no more than 2 meters in height wherever possible (note this only applies to topsoil and mulch).
- Stockpiles should be formed to be no steeper than 2:1 (H:V) wherever possible.

DUST SUPPRESSION

- Dust suppression is to be carried out whenever necessary to minimise sediment becoming air borne due to wind erosion.
- An appropriate water source for dust suppression and/or dust suppressant management system must be identified prior to starting construction works.
- Ensure dust suppression is carried out in a manner to avoid water runoff, erosion or ponding on surfaces (i.e. apply in a gentle manner at appropriate rates and monitor regularly).
- Temporary stabilisers (e.g. Vital Bon-Matt P47), geotextile, jute matting or equivalent can be used in non-trafficked areas to assist with dust control.

NOTES CONTINUE ON THE FOLLOWING PAGE

REV	DATE	DES.	DRN.	APP.	REVISION DETAILS	DRAWING STATUS	North	CLIENT		PROJECT TITLE	DRAWING TITLE
						DESIGN BY DRAWN BY FINAL APPROVAL	A.T. A.T. A.M.			ASPECT INDUSTRIAL ESTATE MAMRE ROAD KEMPS CREEK STAGE 1	INITIAL OVER-ARCHING ESCP GENERAL REQUIREMENTS SHEET 1 OF 2
03	24/06/22	A.T.	A.T.	J.A.	ADDITIONAL AMMENDMENTS TO GENERAL REQUIREMENTS	SCALE: (on A1 Original)	N/A				
02	23/06/22	A.T.	A.T.	A.T.	MINOR MODIFICATIONS FOR APPROVAL						
01	19/05/22	A.T.	A.T.	A.M.	GENERAL MODIFICATIONS TO ADDRESS PLANNING CONDTION/S						
00	09/05/22	A.T.	A.T.	A.M.	FINAL – FOR APPROVAL						
A	28/04/22	A.T.	A.T.	A.M.	DRAFT ISSUE – FOR REVIEW						

GENERAL REQUIREMENTS CONTINUED

STABILISATION

- Undertake progressive stabilisation of disturbed ground surfaces as they are completed rather than at the end of the works program (Refer to Tables 1 and 2).
- Final stabilisation is to achieve the C-factors (ground cover) detailed in Tables 1 and 2.
- Final rehabilitation is to be in accordance with the landscaping/rehabilitation plans.
- Areas to be revegetated are to be topsoiled first. Topsoil is to be spread evenly to at least 75mm. Refer to Standard Drawing (SD 4-2) for instructions regarding topsoil replacement.
- Topsoil is to be tested prior to revegetation to confirm treatment (amelioration/fertilization) requirements including testing for dispersion, pH, trace nutrients, EC and CeC.
- Appropriate seedbed preparation should be carried out when revegetating lands (See Standard Drawing (SD 7-1)).
- As much as possible, avoid handling topsoils when they are too wet or too dry. This helps preserve soil structure.
- Avoid blending fresh mulch with topsoil, as this leads to de-nitrification.
- To help preserve soil structure, avoid excessive compaction of topsoils.
- Gypsum should be applied to subsoils (as clay breaker) at around 0.5kg/m² for general surfaces and batters. Rates to be confirmed prior to revegetation with soil testing.
- All flow area subsoils (drainage lines, waterways, diversion drains, channels, basins) should be gypsum treated at a rate of 1.5kg/m².
- Topsoils should be ameliorated with lime to adjust pH if field testing shows pH is below 6.
- Topsoils would most likely benefit from an application of NPK fertilizer plus trace elements (S, Ca and Mo). Soil testing prior to re-spreading can confirm the appropriate rate.
- Permanent drains are to be stabilised in accordance with engineering design but must achieve the C-factors (ground cover) detailed in Table 1. Soil testing of subsoils and topsoils is to be undertaking to potential soil treatment/stabilisation requirements.
- Temporary diversion drains/bunds are to be stabilised to achieve the C-factors as detailed in Tables 1 and 2, using seeding + Vital P47 + jute mesh/matting or alternatively geotextile fabric, rock or TRM. Subsoils are to be treated first by lightly ripping gypsum into the surface at a rate of approx. 1.5kg/m². Refer to the plans for specific details. Also refer to Standard Drawings (SD 5-6 and SD 5-7).
- Refer to the 'Soil Stripping and Stockpiling' notes for stabilisation requirements on stockpiles. Also refer to Tables 1 and 2 and Standard Drawing (SD 4-1).
- Sediment basin inlets/outlets are to be stabilised in accordance with permanent engineering design (where applicable) or with geotextile underlay and rock in accordance with recommendations for 'High Flow' areas on Table 1 and as detailed on the plan.
- Highly trafficked areas such as laydown/storage areas, haul roads/access tracks and site compounds will be formed in accordance with engineering specifications and stabilised where necessary and as much as practicable to minimise erosion and provide a trafficable surface. Stabilisation of these areas will be achieved with suitable trafficable measures (e.g. with heavy bound DGB (cement stabilised), aggregate, crushed rock, road base or a heavy duty trafficable soil stabiliser) and re-grading/re-surfacing as necessary.
- As surfaces are stabilised (at least 90% of any finished area has at least 70% ground cover) and permanent drainage measures are installed, temporary erosion and sediment control devices and water management structures can be removed (e.g. diversion drains).
- Temporary stabilisation of exposed surfaces on high risk areas (i.e. steep slopes (>5%), batters, surfaces not draining to sediment basins and works in/near waterways) will be undertaken prior to rainfall in accordance with the 'Rainfall Preparation Procedure' notes and the instructions on the plan.
- All exposed lands where works are not actively occurring (for 20 days or more) are to be temporarily stabilised with a temporary ground cover (i.e. a soil binder (e.g. Vital Stonewall), matting, geofabric or equivalent).
- Wherever possible, re-use cleared/mulched vegetation for either temporary or permanent stabilisation of disturbed areas.

SEDIMENT BASIN/S

- Sediment basin location/s and sizing are shown on the plan.
- Within 5 calendar days of the conclusion of any rainfall causing runoff, the sediment basins are to be empty, ready for the next rainfall event. This might include testing water, treating (e.g. flocculating), de-watering and de-silting basins. See the 'Dirty Water and Discharge Requirements' notes below regarding de-watering. If rainfall (causing runoff) occurs again within 5 days of the previous rain event, the 5-day requirement re-sets.
- Dirty water accumulating in sediment basins can be used onsite for dust suppression or construction purposes. If this occurs it does not need to be treated first. Note that the 5-day maintenance requirement for basins to be emptied still applies.
- The design rainfall event for the sediment basins is 34mm (85th %ile). It is assumed that the basins could overflow in an event of more than 34mm over any 5-day period.
- The sediment basins are to include outlets (weir overflow/spillway) sized to have a capacity to pass the 100 year peak flow. Outlets are to be onto stable lands or into a stable waterway.
- Water quality must be checked prior to any controlled release from sediment basins. Refer to the 'Dirty Water and Discharge Requirements' notes below.
- Additional volume can be provided in sediment basins for storing water if so desired (i.e. they can be made bigger than is required by this ESCP). Markers will need to be installed within basins to indicate the various volumes.
- Sediment basin floors and walls are to be well compacted to minimise infiltration to engineering detail.

- Sediment basin walls, inlets and spillway outlets are to be gypsum treated at a rate of 1.5kg/m² to promote sediment settling and minimise dispersion.
- A marker peg (or similar) is to be included in every basin showing the level of the Sediment Storage volume.
- Sediment basins are to be de-silted whenever sediment accumulates to more than 60% of the Sediment Storage Volume. Sediment removed from the basin can be taken to a stockpile area, buried onsite or used as general fill. Ensure sediment removed from basins is not placed where it could wash, blow or fall offsite.
- Sediment basins are to achieve at least 3:1 length:width from their inlet(s) to their spillway. If this is not achieved through the natural shape of the basin, a baffle is to be included.
- If so desired, dirty water accumulating in excavations/cut sections can be pumped or carted to a sediment basin providing adequate capacity is available and the basin won't overflow as a result. Note that the 5-day maintenance requirement for basins to be emptied still applies (see below).

DIRTY WATER TREATMENT AND DISCHARGE REQUIREMENTS

The development must comply with Section 120 of the POEO Act which prohibits the pollution of waters, except as expressly provided for in an EPL. The following requirements are to be adhered to to ensure this:

- Water accumulating in sediment basins, traps, excavations or in any other low points onsite can either be:
 - Re-used for dust suppression or construction purposes; or
 - Treated (if required) and tested in situ, then released off site once it meets the required water quality discharge criteria (see below); or
 - Pumped into a tank, truck or other holding area for later treatment; or
 - Spread out and infiltrated onto well vegetated lands within the site boundary at least 50m away from any waterway, swale or drainage line. Ensure water is applied slowly and in a manner to avoid concentrated surface runoff and/or erosion.
- Any active discharge of water from the project (i.e. where water is moved offsite via direct action such as pumping rather than flowing off the project as a result of heavy rainfall) is to achieve:
 - 50mg/L or less TSS (Total Suspended Sediment); and
 - pH 6.5 to 8.5; and
 - <10mg/L oil and grease and no visible trace.
- Adequate water quality can be achieved by using gypsum at a rate of approximately 30 kg/100 m3 of stormwater. Alternative flocculating agents can only be used if they do not cause environmental harm when discharged. Refer to manufacturers guidelines for dosage details.
- Spread the treatment agent evenly over the entire pond surface for proper treatment of water.
- These de-watering requirements apply to dirty water accumulating in any sort of excavation, sump, or other ponded water body on the project.
- If the water is going to be used within the construction site for dust-suppression or construction purposes and will drain back into the sediment capture system it does not require treatment.
- Dewatering of the existing dams is to be in accordance with the project approved Dam Decommissioning Strategy (20220310_DAM_SILT_STRATEGY_AIREDIBLE by MIRVAC) and in accordance with the above requirements and other recommendations on this plan.

RAINFALL PREPARATION PROCEDURE

- The weather forecast is to be monitored regularly (at least daily and hourly when rainfall is imminent) by the site environmental manager (or their representative).
- Prior to forecast rainfall (> 70% chance of 5mm or more over 24 hours) and site closure of more than 2 days, the following will occur:
 - The site environment manager (or their representative) is to inspect the condition of all erosion and sediment controls and action any urgent repair, maintenance or improvement works. They are to keep a record all findings (including details of actions and their close outs).
 - Slope breaks/contour berms will be pushed up or cut in across large, exposed areas to slow down flows and minimise erosion. Slope lengths are to be restricted to 40m intervals across all exposed surfaces prior to and during rainfall. Diversion bunds/drains, low flow earth banks (Standard Drawing SD 5-5) or sandbags/equivalent should be installed prior to rainfall event to achieve this where required. Note that slope breaks/contour berms are not required to be in place during active construction works when rainfall is not forecast/occurring. Locations of slope breaks for the initial earthworks are shown on ESCP03&04. However, as works progress locations for slopes breaks will change and these are to be updated on progressive ESCPs.
 - Temporary diversions around culvert works are to be installed in the locations shown on the plans to take upslope clean water flows around/through the works – refer to the plans and to Detail 1 for specific instructions.
 - All exposed surfaces of high risk areas (i.e. steep slopes (>5%), batters, surfaces not draining to sediment basins and works in/near waterways and flow areas) will be stabilised with temporary ground covers (i.e. Vital P47/stonewall, geotextile or black plastic (securely pinned) or equivalent).
 - Check dams are to be provided within all drainage devices including roadside table drains at max. 40m intervals.
- Prior to forecast high rainfall (> 70% chance of 10mm or more over 24 hours) and site closure of more than 2 days, the following will occur in addition to the above:

- Windrows/bunds are to be provided along the top edge of fill batters to protect fill batters. Locations and details are to be confirmed onsite as works progress and documented on site specific progressive ESCPs. They are not required for initial stripping works. They are to be formed as compacted earth berms (min. 600mm high) along the top edge of fill platforms prior to rainfall and site closure (>2 days). They are not required during dry weather. Additional windrows and geofabric lined batter chutes at regular intervals may need to be provided as the works progress – locations and details are to be provided on site specific progressive ESCPs. Refer to Photo 6 on ESCP006 for a batter chute example.
- Prior to forecast rainfall (>70% chance of 34mm or more over a 5 day period) and site closure of more than 2 days, the following will occur in addition to the above:
 - Gypsum will be spread/dusted evenly over all exposed soil surfaces.
 - Sediment basin and sediment trap inlet points will be preloaded with gypsum.
 - Major dirty water diversion drains will have gypsum, biopolymer gel socks (or equivalent) placed within them or replenished at 80m intervals (if not already in place).

SALINITY CONSIDERATIONS

To minimise the risk of salinity occurring during the construction phase of works the following measures are to be implemented:

- Topsoil is to be tested prior to revegetation to confirm treatment requirements.
- Ensure topsoil is spread over areas to be revegetated to at least 75mm.
- Watering of newly revegetated areas is to be minimised to only what is necessary for plants to thrive. Avoid over-watering which could exacerbate catchment salinity.
- The floor and walls of each sediment basin is to be well compacted to minimise infiltration.
- Swale/diversion drains are to be gypsum-dusted and lined with matting as noted to promote flow and reduce ponding and erosion.
- Avoid ponding water across the site in areas where shale or clay fill materials have been placed.
- Rehabilitation and revegetation of completed earthworks is to be undertaken progressively as each area is finished.

The above list outlines general strategies for minimising the potential salinity risk during construction. Refer to the project's Salinity Management Plan (PSM3739-031L by other) for detailed recommendations.

SITE INSPECTION, MONITORING AND MAINTENANCE

- Regular site inspections are to be conducted by the site environment manager (or their representative):
 - At least weekly during normal construction hours; and
 - Prior to forecast rainfall (see above); and
 - Daily during rain events (if safe to do so); and
 - Within 24 hours of the cessation of a rain event that causes runoff.
- Minimum monthly audits/site inspections are also to be conducted by a CPESC to ensure all of the required outcomes and water quality targets are being met and where necessary provide advice and modifications to this plan to ensure ongoing compliance.
- Records of the site inspections/audits are to be kept for the duration of construction and for a minimum of 12 months following the completion of construction works.
- Prior to forecast rainfall of 5mm or more over 24 hours, the site environment manager (or their representative) is to inspect the condition of all erosion and sediment controls and action any urgent repair, maintenance or improvement works. They are to keep a record all findings (including details of actions and their close outs).
- Prior to site shutdown of more than 2 days, slope breaks/contour berms will be pushed up or cut in across large, exposed areas to slow down flows and minimise erosion. Diversion bunds/drains, low flow earth banks (Standard Drawing SD 5-5) or sandbags/equivalent should be installed to achieve this where required.
- Additional erosion and sediment controls will be installed and existing controls repaired/upgraded/maintained as necessary to ensure satisfactory outcomes in keeping with the project conditions and best-practice Blue Book guidelines.
- Site specific progressive ESCPs will be prepared and/or updated as required.
- Sediment or rocks tracked from the site will be removed from public roads as soon as possible (e.g. with street sweepers).
- After rainfall, sediment accumulated in trapping devices (e.g. basin, sediment fence) will be removed to a secure location where it can't wash or blow offsite (preferably to an active stockpile).
- Weather conditions will be monitored onsite and daily rainfall will be recorded. A rainfall gauge will be installed at the site compound.
- Safe storage areas for wastes, fuels, excess concrete and other potential contaminants are to be delineated by the site manager.
- Adequate supplies of erosion control measures (e.g. geofabric rolls, jute matting, hydraulic soil binders) are to be maintained in the site compound for rapid deployment as required.
- Water treatment chemical(s) and equipment are to be maintained onsite.

REV	DATE	DES.	DRN.	APP.	REVISION DETAILS	DRAWING STATUS		North	CLIENT	  Suites 7 & 8, 68-70 Station Street PO Box 1098, Bowral NSW 2576. (t) 02 4862 1633 (f) 02 4862 3088 email: reception@seec.com.au WWW.SEEC.COM.AU	PROJECT TITLE	DRAWING TITLE			
					DESIGN BY	A.T.	INITIAL OVER-ARCHING ESCP								
					DRAWN BY	A.T.	GENERAL REQUIREMENTS								
					FINAL APPROVAL	A.M.	SHEET 2 OF 2								
03	24/06/22	A.T.	A.T.	J.A.	ADDITIONAL AMMENDMENTS TO GENERAL REQUIREMENTS	SCALE:	N/A					PROJECT NO.	SUB-PR NO.	DRAWING NO.	REV
02	23/06/22	A.T.	A.T.	A.T.	MINOR MODIFICATIONS FOR APPROVAL	(on A1 Original)		FINAL				21000258	P01	ESCP02	03
01	19/05/22	A.T.	A.T.	A.M.	GENERAL MODIFICATIONS TO ADDRESS PLANNING CONDTION/S										
00	09/05/22	A.T.	A.T.	A.M.	FINAL – FOR APPROVAL										
A	28/04/22	A.T.	A.T.	A.M.	DRAFT ISSUE – FOR REVIEW										

DD1

Clean Water Diversion (1)

CD1

Dirty Water Diversion (1)

B

Construction Work Boundary for Current Stage - Barrier Flagging/Fence or Similar

SD 6-8

Sediment Fence (SD 6-8) - Returns to be provided at max. 20m intervals

D1

Existing Dam / Temporary Water Storage Device for Initial Works

Stockpile/Storage Area (SD 4-1) - [2]

Stabilised Site Access (SD 6-14) with Vehicle Wheel Wash (Wash Down) Facility - [2]

Temporary Contour Berms (Approximate Location for Initial Earthworks) [3]

Site Compound - Office, Storage, Parking Etc. - [2]

SB1

Sediment Basin (SB) - (Indicative Footprint Only) - [1]

Dissipater Inlet/Outlet (Geotextile (BIDIM A34 Min.) + Rock Ø200min. Unless Specified Otherwise)

Stabilised Surfaces [1]

Temporary Waterway Crossing (SD 5-1) with Temporary Pipe

Temporary Pipe (Min. 375Ø Unless Specified Otherwise.)

U-Shaped Sediment Trap (SD UST-01) [1]

Stabilised Haul Road [2] [4]

Temporary Diversion Around Culvert Works [5]

Roadside Table Drain

Check Dam (SD 5-4)

(1) Refer to Plan for Details

(2) Locations are approximate and indicative only and may move as the works progress. Exact locations are to be determined onsite by the site manager. Not all locations are shown.

(3) Contour berms to be provided at maximum 40m intervals across all exposed surfaces prior to rainfall (~70% chance of rainfall >5mm) and site closure of more than 2 days (not required during active works when rainfall is not forecast). To be formed parallel to the contour as earth banks/bunds cut in with a grader blade, mulch bunds, sandbag bunds or equivalent.

(4) Haul roads are to be constructed as per engineering specifications. Surfaces are to be maintained trafficable and stable at all times with heavy bound DGB (cement stabilised) or equivalent and re-grading/re-surfacing as necessary.

(5) Provide a temporary pipe diversion or lined diversion drain to take upslope clean water flows around the culvert/pipe works prior to the permanent culvert being installed (pipe/drain diversion sized to engineering detail). Alternatively all exposed surfaces are to be stabilised prior to rainfall. Refer to the plan for details.

REFER TO ESCP01-02 FOR EROSION AND SEDIMENT CONTROL INSTRUCTIONS AND REQUIREMENTS. REFER TO ESCP05 FOR DIVERSION DRAIN SIZING. REFER TO ESCP05-09 FOR STABILISATION MEASURES, TYPICAL DETAILS AND STANDARD DRAWINGS.

0 10 20 30 40 50m

Scale: 1:1000 (A1 SHEET)

CULVERT/PIPE WORKS

- A SITE SPECIFIC PROGRESSIVE ESCP IS TO BE PREPARED PRIOR TO STARTING CONSTRUCTION WORKS TO DETAIL ALL THE NECESSARY CONTROLS AND SPECIFIC STAGING REQUIREMENTS.
- WHERE POSSIBLE CULVERT/PIPE WORKS ARE TO BE UNDERTAKEN AS EARLY WORKS AND USED TO DIVERT CLEAN WATER ACROSS THE WORK AREA. ALTERNATIVELY A TEMPORARY CLEAN WATER DIVERSION (PIPE/CHANNEL) WILL BE REQUIRED - REFER TO DETAIL 1 ON ESCP06.
- SCHEDULE WORKS FOR A PERIOD OF LOW RAINFALL AND COMPLETE INCLUDING STABILISATION AS QUICKLY AS POSSIBLE.
- STAGE WORKS TO MINIMISE THE AMOUNT OF OPEN DISTURBANCE AT ANY ONE TIME TO MANAGEABLE SECTIONS. WHERE POSSIBLE STAGE THE WORKS SUCH THAT THE DOWNSTREAM END OF THE CHANNEL DIVERSION IS COMPLETED FIRST.
- A TEMPORARY DIVERSION (PIPE/CHANNEL/PUMP) WILL BE REQUIRED DURING THE CONSTRUCTION WORKS TO DIVERT UPSLOPE CLEAN WATER FLOWS THROUGH THE WORK AREA - REFER TO DETAIL 1 ON ESCP06. ALTERNATIVELY ALL EXPOSED SURFACES WITHIN THE FLOW AREA ARE TO BE COVERED PRIOR TO RAINFALL WITH GEOFABRIC, BLACK PLASTIC (SECURELY PINNED) OR EQUIVALENT.
- ALL WATER ACCUMULATING ONSITE WITHIN THE WORK AREA IS TO BE MANAGED IN ACCORDANCE WITH THE 'DIRTY' WATER TREATMENT AND DISCHARGE REQUIREMENTS' NOTES ON ESCP01.

REV					DESIGN	DRAWING STATUS	North	CLIENT	PROJECT TITLE	DRAWING TITLE					
DATE	DES.	DRN.	APP.	REVISION DETAILS						INITIAL OVER-ARCHING ESCP EROSION AND SEDIMENT CONTROL PLAN - MAMRE RD INTERSECTION					
03	24/06/22	A.T.	A.T.	J.A.	ADDITIONAL AMMENDMENTS TO GENERAL REQUIREMENTS	SCALE: 1:1000 (on A1 Original)				ASPECT INDUSTRIAL ESTATE MAMRE ROAD KEMPS CREEK STAGE 1	PROJECT NO. 21000258	SUB-PR NO. P01	DRAWING NO. ESCP04	REV 03	
02	23/06/22	A.T.	A.T.	A.T.	MINOR MODIFICATIONS FOR APPROVAL										
01	19/05/22	A.T.	A.T.	A.M.	GENERAL MODIFICATIONS TO ADDRESS PLANNING CONDNION/S										
00	09/05/22	A.T.	A.T.	A.M.	FINAL - FOR APPROVAL										
A	28/04/22	A.T.	A.T.	A.M.	DRAFT ISSUE - FOR REVIEW										

Plot Date: Friday, June 24, 2022 11:51:32 AM CAD File Name: C:\Users\aburnus\Desktop\PROJECTS\22000177 Aspect Industrial Estate Mamre Road - Western Earthmoving\Drawings\22000177_P01_ESCP_REV 03.dwg

This drawing is subject to COPYRIGHT ©. The information on this drawing remains the property of SEEC.

TABLE 1 – STABILISATION REQUIREMENTS AND TREATMENT METHODS

DURING CONSTRUCTION – TEMPORARY STABILISATION (During periods of inactivity when works are on hold)				
LANDS	STABILISATION REQUIREMENT	TIMEFRAMES	TREATMENT METHODS – PRODUCTS	REMARKS
High Risk Areas Soil Loss Class 6 or above lands (where applicable)	C-factor = 0.1 (60% grass cover or equivalent ground cover ^[1])	Applies prior to rainfall and after 10 working days of inactivity (even though works might continue later)	Soil binder (i.e. Vital P47/stonewall or equivalent ^[1])	- Stabilise all exposed soils by spraying surfaces with Vital P47/stonewall or equivalent ^[1] . - Vital dilution rate = 1:10 (Vital:Water). - Application rate = 1L / m ² of diluted Vital mixture. - Re-apply/maintain as necessary to ensure the required cover is provided.
			Geotextile, jute matting, black plastic (securely pinned) or equivalent ^[1]	- Cover all exposed soils. - Re-apply/maintain as necessary to ensure the required cover is provided.
All lands (including waterways and stockpiles)	C-factor = 0.15 (50% grass cover or equivalent ground cover ^[1])	Applies after 20 working days of inactivity (even though works might continue later)	Soil binder (i.e. Vital P47/stonewall or equivalent ^[1])	- Spray all stockpile surfaces with Vital P47/stonewall or equivalent ^[1] . - Vital dilution rate = 1:10 (Vital:Water). - Application rate = 1L / m ² of diluted Vital mixture. - Re-apply/maintain as necessary (approx. every 3-6 months without suitable vegetation cover) to ensure the required cover is provided.
			Geotextile, jute matting, black plastic (securely pinned) or equivalent ^[1]	- Cover all exposed soils. - Re-apply/maintain as necessary to ensure the required cover is provided.

TABLE 3 LIMITATIONS TO ACCESS DURING CONSTRUCTION

LAND USE	LIMITATION	REMARKS
Construction areas	Limited to 5 (preferably 2) metres from the edge of any essential construction activity as shown on the engineering plans	All site workers should clearly recognise these areas that, where appropriate, are identified with barrier fencing (upslope) and sediment fencing (downslope) or similar materials.
Access areas	Limited to a maximum width of 5 metres	The site manager will determine and mark the location of these zones on site. They can vary in position so as to best conserve existing vegetation and protect downstream areas while being considerate of the needs of efficient works activities. All site workers will clearly recognise these boundaries
Remaining lands, including revegetation areas	Entry prohibited except for essential management works	Thinning of growth might be necessary, for example, for fire risk reduction or weed removal. All thinning activities additional to the agreed scope must be approved prior to commencement.

TABL 4 DIVERSION DRAIN SIZING

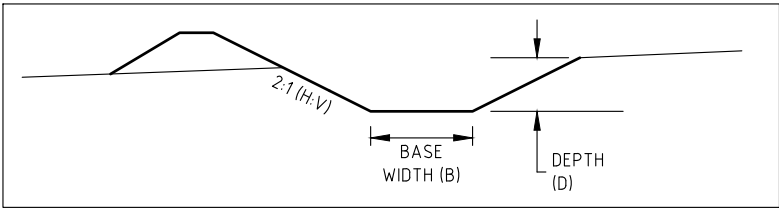
DRAIN SIZING	Refer to 'Typical Detail' below											
Structure Name	CD1	CD2	CD3	CD4	CD5	DD1	DD2	DD3	DD4	DD5	DD6	DD7
Channel Details				*	*	*			*		*	*
Channel/bund depth, D (m)	[1]	[2]	[2]	0.6	0.6	0.8	0.8	0.8	0.6	0.8	0.6	0.6
Channel base width, B (m)	[1]	[2]	[2]	-	-	-	1.2	1	-	1.2	-	-
Channel/bund side slope (H:V)	[1]	[2]	[2]	2	2	2	2	2	2	2	2	2
Channel top width, (m)	[1]	[2]	[2]	-	-	-	4.4	4.2	-	4.4	-	-
Drain slope (%)	Drain slopes to be relative to the site topography. However, the absolute minimum drain slope to be 1%.											
In locations where permanent drains are used as diversion drains for erosion and sediment control, construct drains to permanent sizing requirements.												

* - Constructed as a bund. Top of bund to be min. 0.3m wide.

[1] - To permanent drain/channel sizing specifications

[2] - To future engineering detail

TEMPORARY DIVERSION DRAIN/BUND – TYPICAL DETAIL



DRAIN/BUND STABILISATION AND LINING

Soil preparation prior to lining drains:

- Gypsum shallow/lightly ripped into subgrade at a rate of 500g/m² (e.g rip in using grader or excavator bucket tines (teeth))
 - Place topsoil over entire drain surface to a minimum depth of 75mm.
- (Soil preparation also applies to temporary drains in place for < 6 months)

Drain lining:

- Seeding + Vital P47 (or Vital Stonewall) + Jute matting:
 - (Vital P47/Stonewall to be applied at a maximum dilution of 1:10 (Vital:Water))
 - Seeding to be a combination of a cover crop (e.g. Rye grass for winter months / Japanese Millet for summer months) and a suitable perennial (long term) local native grass mix.

Watering:

- Regular watering required where rainfall is insufficient.
- Ensure water is applied gently (not with a pressure spray).
- Ensure overwatering does not occur and is minimised to only what is necessary for plants to thrive.

Lining of temporary drains (in place for < 6 months):

- Line with geotextile (bidim A24 min. or equivalent).

TABLE 2 – STABILISATION REQUIREMENTS AND TREATMENT METHODS CONTINUED

POST CONSTRUCTION				
LANDS	STABILISATION REQUIREMENT	TIMEFRAMES	TREATMENT METHODS – PRODUCTS	REMARKS
Waterways, drainage lines and concentrated flow areas	C-factor = 0.05 (70% grass cover or equivalent ground cover ^[1])	Applies after 10 working days from completion of formation and before they are allowed to carry concentrated flows	Refer to the drain specifications detailed on the plan for specific lining/stabilisation requirements. Example treatment methods are shown below.	
			Temporary lining – Geotextile (i.e. Bidim A24 or equivalent ^[1])	- Complete any subsoil treatment before laying the matting. - Install matting in accordance with SD 5-7. - Re-apply/maintain as necessary to ensure the required cover is provided.
			Jute mesh, seeding and soil binder (i.e. Vital P47/stonewall or equivalent ^[1]) - Low flows	- Complete subsoil treatment (e.g. gypsum lightly ripped into surgrade at a rate of 15tonnes/ha). Testing to confirm treatment rates. - Place topsoil to a depth of at least 75mm. - Complete any fertilisation and seeding before laying the matting. - Install matting in accordance with SD 5-7. - Spray all surfaces with Vital P47/stonewall or equivalent ^[1] . - Vital dilution rate = 1:10 (Vital:Water). - Application rate = 1L / m ² of diluted Vital mixture. - Re-apply/maintain as necessary to ensure the required cover is permanently maintained.
			Jute matting (~350gsm) and seeding or equivalent ^[1] - Low to moderate flows	- Complete subsoil treatment (e.g. gypsum lightly ripped into surgrade at a rate of 15tonnes/ha). Testing to confirm treatment rates. - Place topsoil to a depth of at least 75mm. - Complete any fertilisation and seeding before laying the matting. - Install matting in accordance with SD 5-7. - Re-apply/maintain as necessary to ensure the required cover is permanently maintained.
			Turf reinforcement matting (TRM) (e.g. TerraMat or equivalent ^[1]) - Moderate flows	- Complete subsoil treatment (e.g. gypsum lightly ripped into surgrade at a rate of 15tonnes/ha). Testing to confirm treatment rates. - Place topsoil to a depth of at least 75mm. - Complete any fertilisation and seeding before laying the matting. - Install matting in accordance with SD 5-7. - Re-apply/maintain as necessary to ensure the required cover is permanently maintained.
Stockpiles	C-factor = 0.10 (60% grass cover or equivalent ground cover ^[1])	Applies after 10 working days from completion of formation	Seeding and soil binder (i.e. Vital P47/stonewall or equivalent ^[1])	- Complete subsoil treatment (e.g. gypsum lightly ripped into surgrade at a rate of 15tonnes/ha). Testing to confirm treatment rates. - Install geotextile underlay (if specified) in accordance with SD 5-7. - Install rock armouring (to the depth and size as specified on the plan). - Re-apply/maintain as necessary to ensure the required cover is provided.
				- Apply seed to all stockpile surfaces (Note: seeding may not be required if existing seedbed is present). - Spray all stockpile surfaces with Vital P47/stonewall or equivalent ^[1] . - Vital dilution rate = 1:10 (Vital:Water). - Application rate = 1L / m ² of diluted Vital mixture. - Re-apply/maintain as necessary to ensure the required cover is permanently maintained.
			Geotextile, jute matting, black plastic (securely pinned) or equivalent ^[1]	- Cover all exposed soils. - Re-apply/maintain as necessary to ensure the required cover is provided.
General Surfaces	C-factor = 0.10 / 0.05 (60% / 70% grass cover or equivalent ground cover ^[1])	C-factor = 0.1 applies after 10 working days from completion of formation and C-factor = 0.05 applies within a further 60 days	Topsoil, seeding and soil binder (i.e. Vital P47/stonewall or equivalent ^[1])	- Refer to SD 7-1. - Complete subsoil treatment (e.g. gypsum lightly ripped into surgrade at a rate of 5tonnes/ha). Testing to confirm treatment rates. - Place gypsum treated topsoil to a depth of at least 75mm. - Apply any fertilisers required. - Apply seed to all surfaces (Note: seeding may not be required if existing seedbed is present). - Spray all surfaces with Vital P47/stonewall or equivalent ^[1] . - Vital dilution rate = 1:10 (Vital:Water). - Application rate = 1L / m ² of diluted Vital mixture. - Re-apply/maintain as necessary to ensure the required cover is permanently maintained.
			Hydromulch or equivalent ^[1]	- Refer to SD 7-1. - Complete subsoil treatment (i.e. gypsum lightly ripped into surgrade at a rate of 5tonnes/ha). - Place topsoil to a depth of at least 75mm. - Apply hydromulch to soil surfaces. - Re-apply/maintain as necessary to ensure the required cover is permanently maintained.

[1] – Equivalent cover/product must achieve the equivalent C-factor with proven reasearch/documentation to verify this.

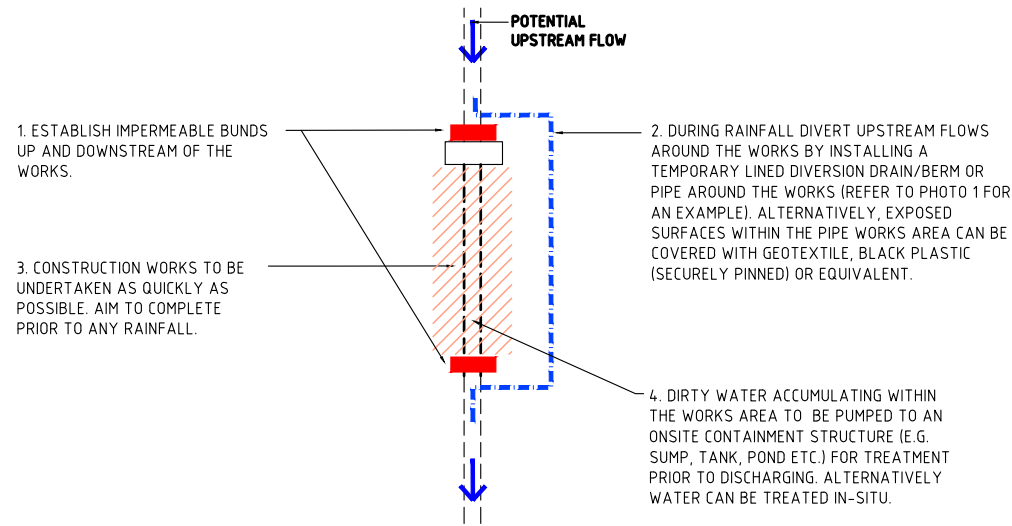
REV	DATE	DES.	DRN.	APP.	REVISION DETAILS	DRAWING STATUS	North	CLIENT	PROJECT TITLE	DRAWING TITLE	PROJECT NO.	SUB-PR NO.	DRAWING NO.	REV
						DESIGN BY A.T.				INITIAL OVER-ARCHING ESCP				
						DRAWN BY A.T.				TABLES 1 – 4				
						FINAL APPROVAL A.M.								
03	24/06/22	A.T.	A.T.	J.A.	ADDITIONAL AMMENDMENTS TO GENERAL REQUIREMENTS	SCALE: (on A1 Original) N/A FINAL				ASPECT INDUSTRIAL ESTATE MAMRE ROAD KEMPS CREEK STAGE 1	21000258	P01	ESCP05	03
02	23/06/22	A.T.	A.T.	A.T.	MINOR MODIFICATIONS FOR APPROVAL									
01	19/05/22	A.T.	A.T.	A.M.	GENERAL MODIFICATIONS TO ADDRESS PLANNING CONDNION/S									
00	09/05/22	A.T.	A.T.	A.M.	FINAL – FOR APPROVAL									
A	28/04/22	A.T.	A.T.	A.M.	DRAFT ISSUE – FOR REVIEW									

Plot Date: Friday, June 24, 2022 11:51:33 AM

CAD File Name: C:\Users\aburnus\Desktop\PROJECTS\22000177 Aspect Industrial Estate Mamre Road – Western Earthmoving\Drawings\22000177_P01_ESCP_REV 03.dwg

This drawing is subject to COPYRIGHT ©. The information on this drawing remains the property of SEEC.

DETAIL 1 - CONCEPT WATER MANAGEMENT FOR STORMWATER CULVERT INSTALLATIONS



EROSION AND SEDIMENT CONTROL REQUIREMENTS FOR CULVERT/PIPE WORKS

- GENERAL
- THIS DETAIL ILLUSTRATES CONCEPT CONTROLS FOR CULVERT INSTALLATION WORKS. SITE SPECIFIC PROGRESSIVE ESCPs ARE TO PROVIDE ADDITIONAL DETAIL (WHERE NECESSARY) FOR EACH SECTION OF WORKS.
 - GENERALLY CULVERT WORKS ARE TO BE COMPLETED AS EARLY WORKS (I.E. PRIOR TO BULK EARTHWORKS).
 - WORKS ARE TO BE SCHEDULED FOR A DRY PERIOD AND ARE TO BE COMPLETED AS QUICKLY AS POSSIBLE (INCLUDING HEADWALL AND OUTLET DISSIPATERS). AIM TO COMPLETE THE WORKS PRIOR TO FORECAST RAIN.
 - WORKS MAY NEED TO BE STAGED TO AVOID OPENING UP LARGE SECTIONS WHICH CANNOT FEASIBLY BE MANAGED OR COMPLETED PRIOR TO UPCOMING RAINFALL.
 - PRIOR TO UNDERTAKING ANY CONSTRUCTION OR EARTHWORKS ENSURE TEMPORARY GROUNDCOVER MATERIALS (E.G. GEOFABRIC OR BLACK PLASTIC) ARE TO BE LOCATED ON SITE FOR STABILISATION OF EXPOSED SURFACES.
 - UPSTREAM STORMWATER FLOWS GENERALLY WON'T OCCUR DURING DRY PERIODS. THEREFORE, A TEMPORARY LINED DIVERSION DRAIN/BERM OR PIPE WILL ONLY BE REQUIRED DURING RAINFALL SO CLEAN WATER FLOWS DO NOT COME INTO CONTACT WITH EXPOSED SOIL OR DIRTY CONSTRUCTION WATER. ALTERNATIVELY, ALL EXPOSED SURFACES WITHIN THE WORKS AREA CAN BE COVERED WITH GEOTEXTILE, BLACK PLASTIC (SECURELY PINNED) OR EQUIVALENT.
 - DIRTY (ON-SITE) WATER ACCUMULATING WITHIN THE WORKS AREA IS TO BE PUMPED TO AN ONSITE CONTAINMENT STRUCTURE (E.G. BASIN, SUMP ETC.) FOR TREATMENT OR TREATED IN-SITU PRIOR TO DISCHARGING.
 - ALTERNATIVELY ONSITE WATER CAN BE USED FOR DUST SUPPRESSION ON THE ROADWORK AREAS OUTSIDE OF THE WATERWAY EXTENT (I.E. AREAS THAT DRAIN BACK INTO A SEDIMENT BASIN).



PHOTO 1 - EXAMPLE OF OFFSITE (CLEAN) WATER DIVERSION



PHOTO 2 - PROGRESSIVE STABILISATION OF BATTERS AS WORKS PROGRESS



PHOTO 3 - TEMPORARY STABILISATION OF BATTERS WITH POLYMER



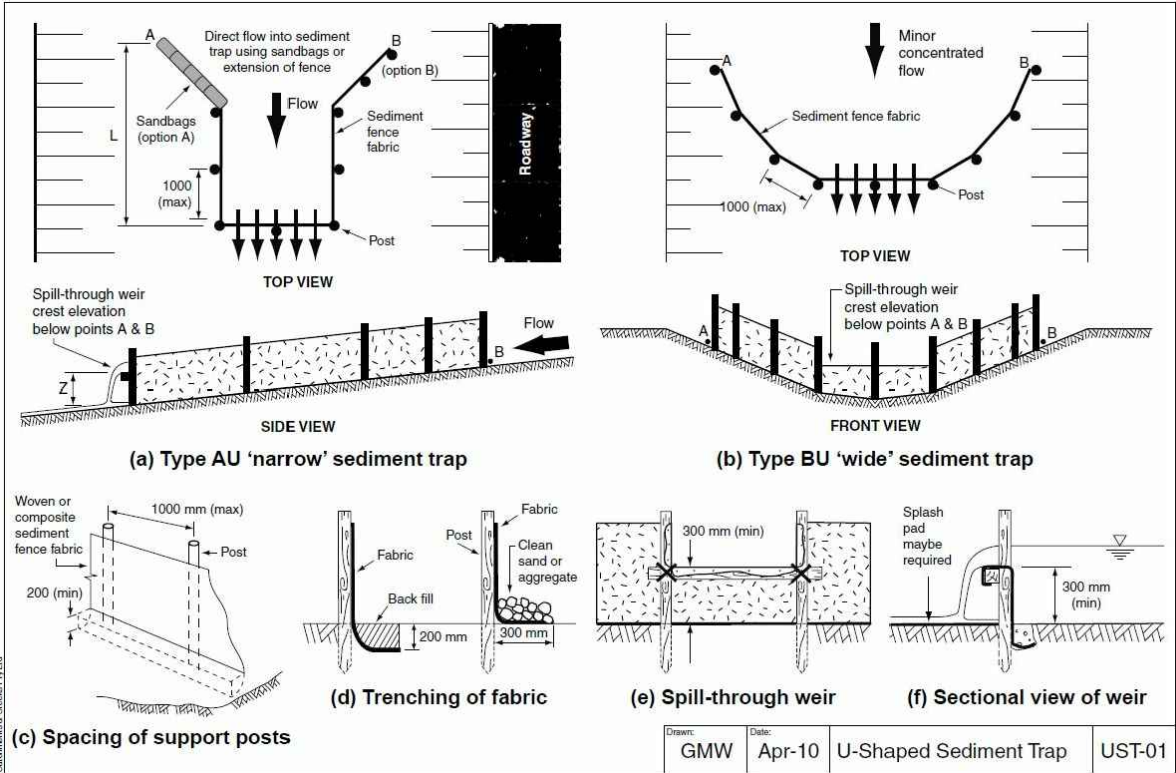
PHOTO 4 - EXAMPLE OF TEMPORARY PIPED (CLEAN) WATER DIVERSION INSTALLED PRIOR TO RAINFALL



PHOTO 5 - EXAMPLE OF ROCK FILTER DAM AND SUMP

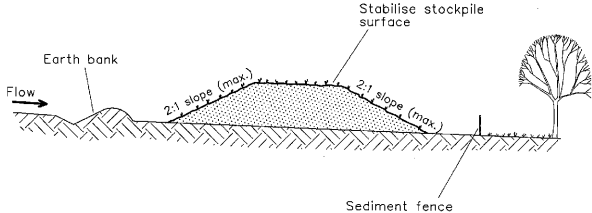


PHOTO 6 - EXAMPLE OF BATTER CHUTE



STANDARD DRAWING UST-01 COPYRIGHT FROM CATCHMENTS AND CREEKS PTY LTD

REV	DATE	DES.	DRN.	APP.	REVISION DETAILS	DRAWING STATUS	North	CLIENT	PROJECT TITLE	DRAWING TITLE	PROJECT NO.	SUB-PR NO.	DRAWING NO.	REV
						DESIGN BY DRAWN BY FINAL APPROVAL				INITIAL OVER-ARCHING ESCP DETAIL 1, PHOTO EXAMPLES AND IECA STANDARD DRAWING	21000258	P01	ESCP06	03
03	24/06/22	A.T.	A.T.	J.A.	ADDITIONAL AMMENDMENTS TO GENERAL REQUIREMENTS	SCALE: (on A1 Original)								
02	23/06/22	A.T.	A.T.	A.T.	MINOR MODIFICATIONS FOR APPROVAL	N/A								
01	19/05/22	A.T.	A.T.	A.M.	GENERAL MODIFICATIONS TO ADDRESS PLANNING CONDION/S									
00	09/05/22	A.T.	A.T.	A.M.	FINAL - FOR APPROVAL									
A	28/04/22	A.T.	A.T.	A.M.	DRAFT ISSUE - FOR REVIEW	FINAL								

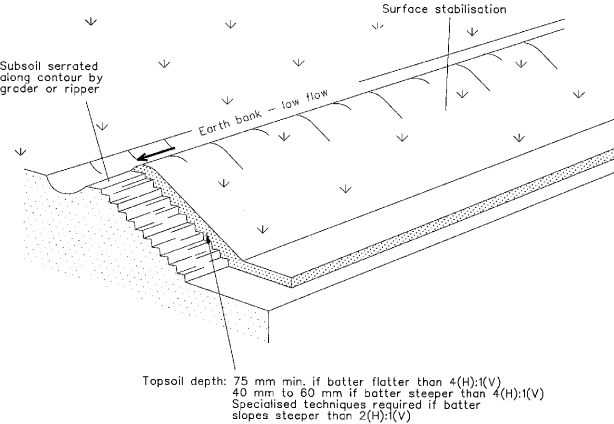


Construction Notes

- Place stockpiles more than 2 (preferably 5) metres from existing vegetation, concentrated water flow, roads and hazard areas.
- Construct on the contour as low, flat, elongated mounds.
- Where there is sufficient area, topsoil stockpiles shall be less than 2 metres in height.
- Where they are to be in place for more than 10 days, stabilise following the approved ESCP or SWMP to reduce the C-factor to less than 0.10.
- Construct earth banks (Standard Drawing 5-5) on the upslope side to divert water around stockpiles and sediment fences (Standard Drawing 6-8) 1 to 2 metres downslope.

STOCKPILES

SD 4-1

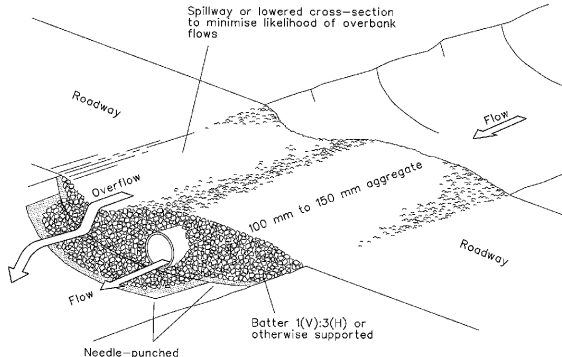


Construction Notes

- Scarify the ground surface along the line of the contour to a depth of 50 mm to 100 mm to break up any hardsetting surfaces and to provide a good bond between the respread material and subsoil.
- Add soil ameliorants as required by the ESCP or SWMP.
- Rip to a depth of 300 mm if compacted layers occur.
- Where possible, replace topsoil to a depth of 40 to 60 mm on lands where the slope exceeds 4(H):1(V) and to at least 75 mm on lower gradients.

REPLACING TOPSOIL

SD 4-2

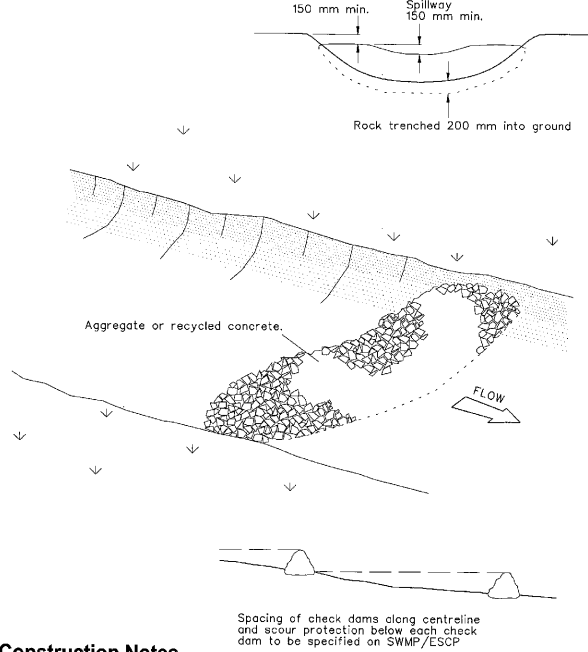


Construction Notes

- Prohibit all traffic until the access way is constructed.
- Strip any topsoil and place a needle-punched textile over the base of the crossing.
- Place clean, rigid, non polluting aggregate or gravel in the 100 mm to 150 mm size class over the fabric to a minimum depth of 200 mm.
- Provide a 3-metre wide carriageway with sufficient length of culvert pipe to allow less than a 3(H): 1 (V) slope on side batters.
- Install a lower section to act as an emergency spillway in greater than design storm events.
- Ensure that culvert outlets extend beyond the toe of fill embankments.

TEMPORARY WATERWAY CROSSING

SD 5-1



Construction Notes

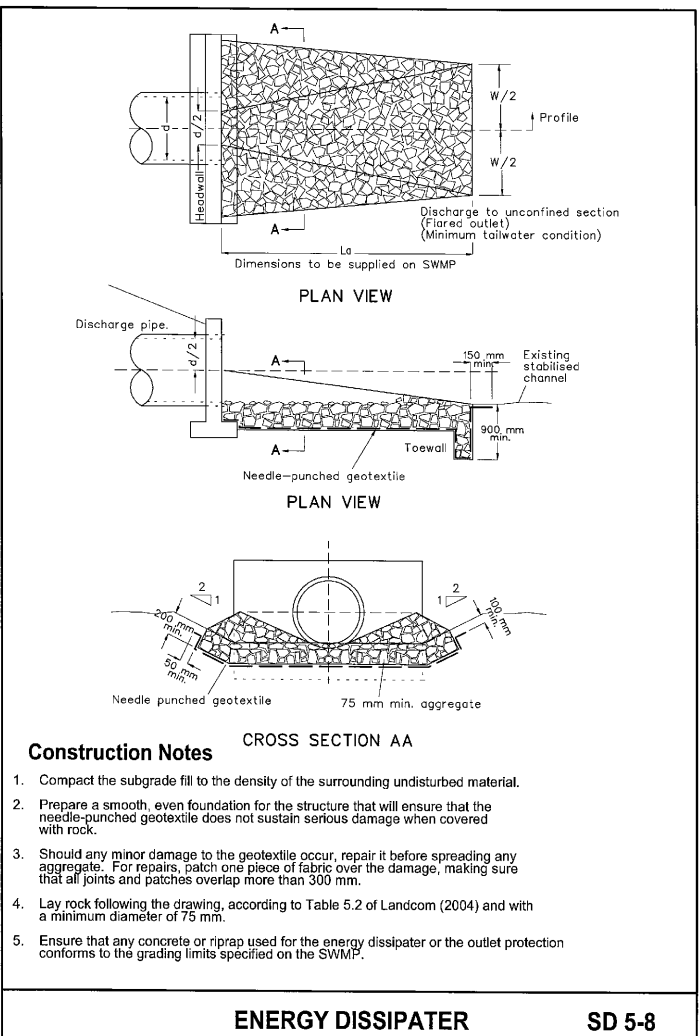
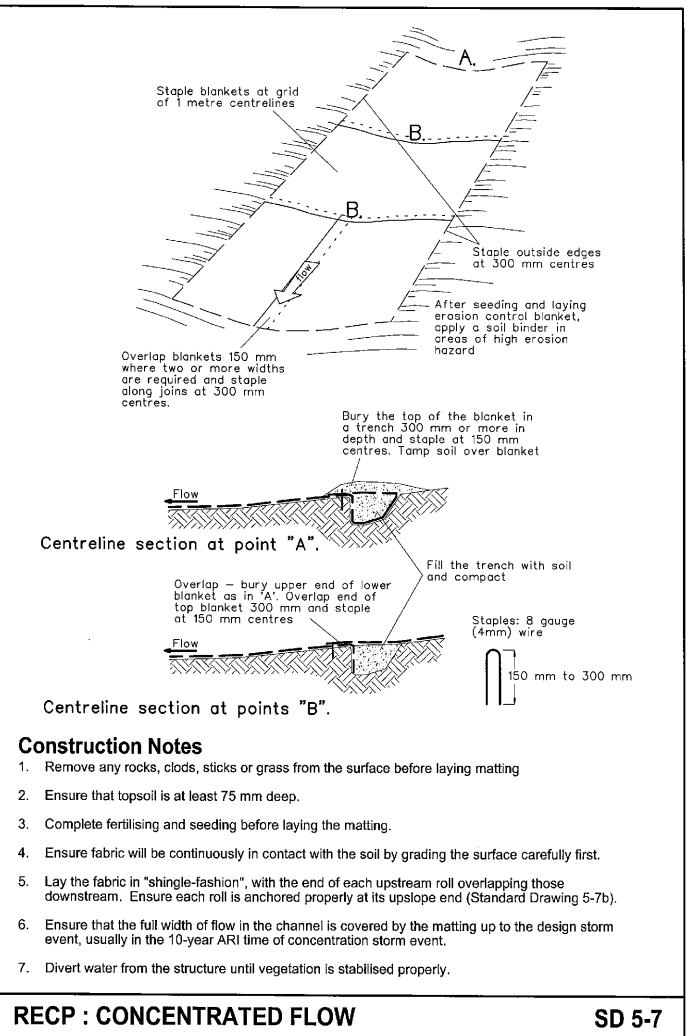
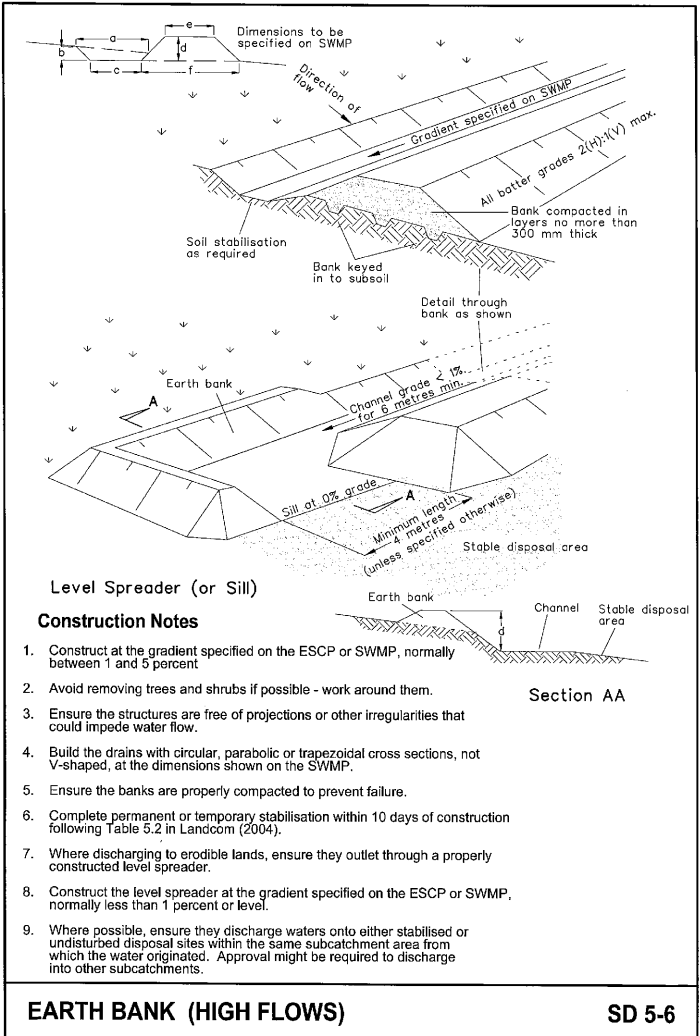
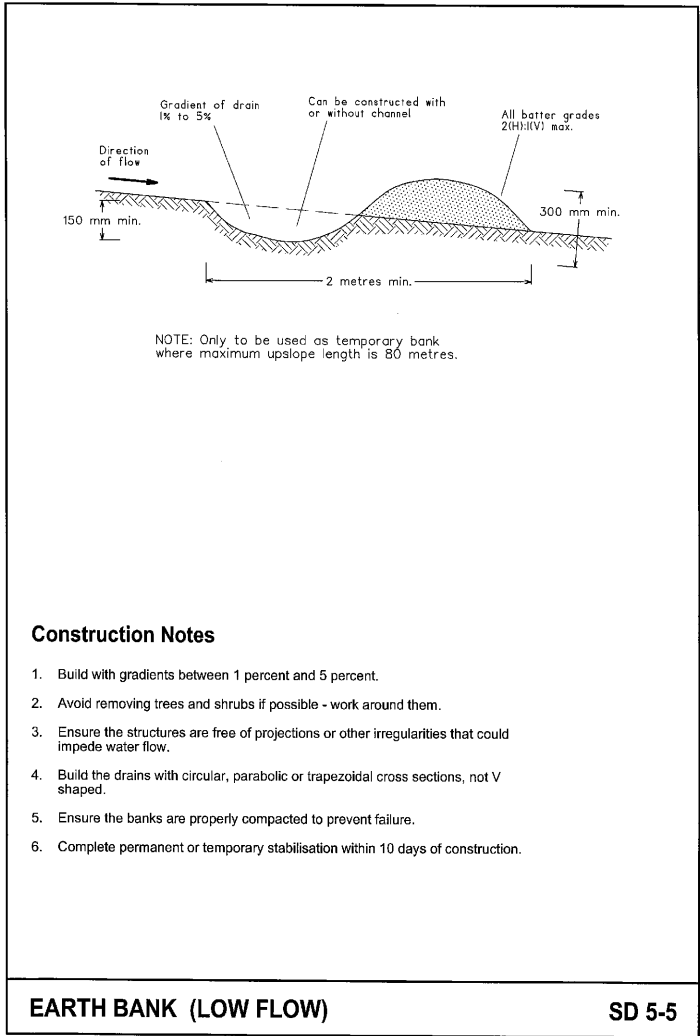
- Check dams can be built with various materials, including rocks, logs, sandbags and straw bales. The maintenance program should ensure their integrity is retained, especially where constructed with straw bales. In the case of bales, this might require their replacement each two to four months.
- Trench the check dam 200 mm into the ground across its whole width. Where rock is used, fill the trenches to at least 100 mm above the ground surface to reduce the risk of undercutting.
- Normally, their maximum height should not exceed 600 mm above the gully floor. The centre should act as a spillway, being at least 150 mm lower than the outer edges.
- Space the dams so the toe of the upstream dam is level with the spillway of the next downstream dam.

ROCK CHECK DAM

SD 5-4

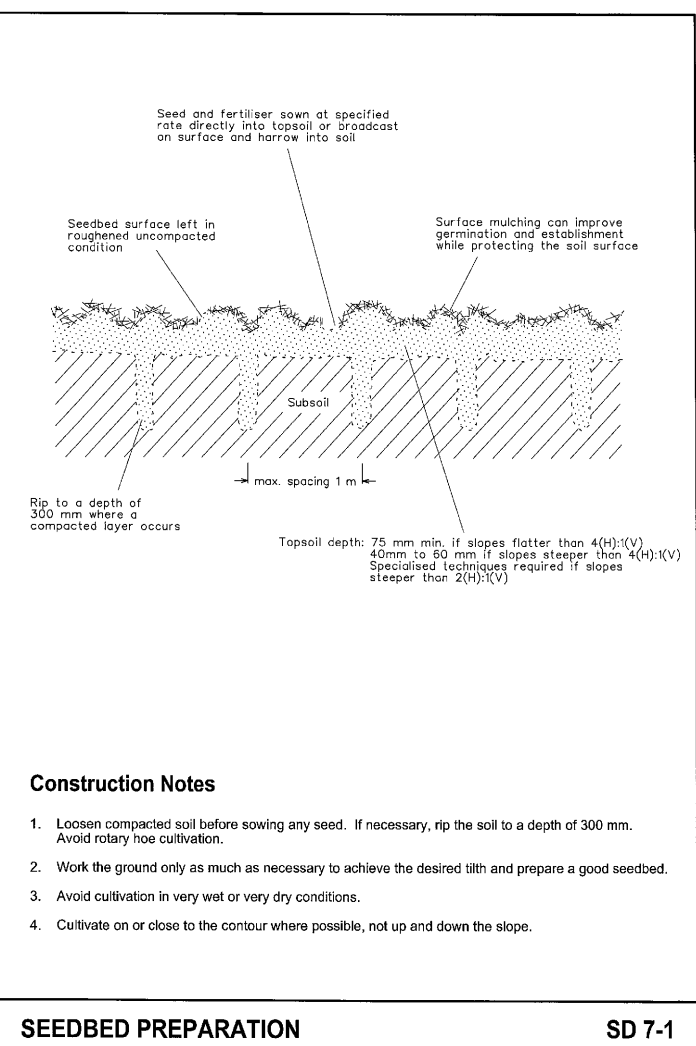
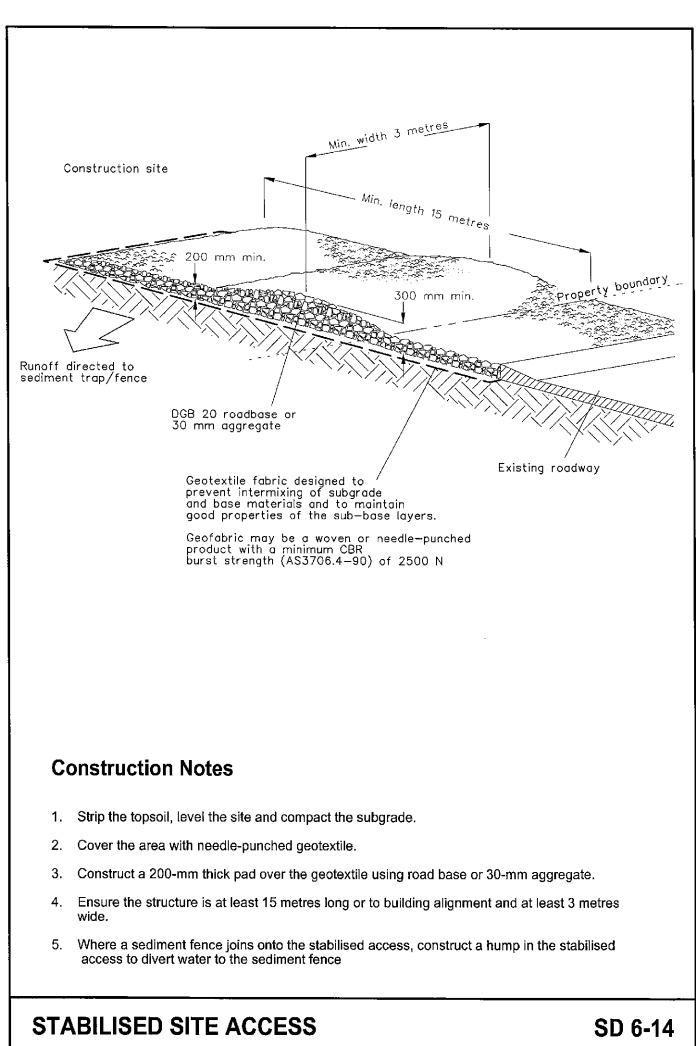
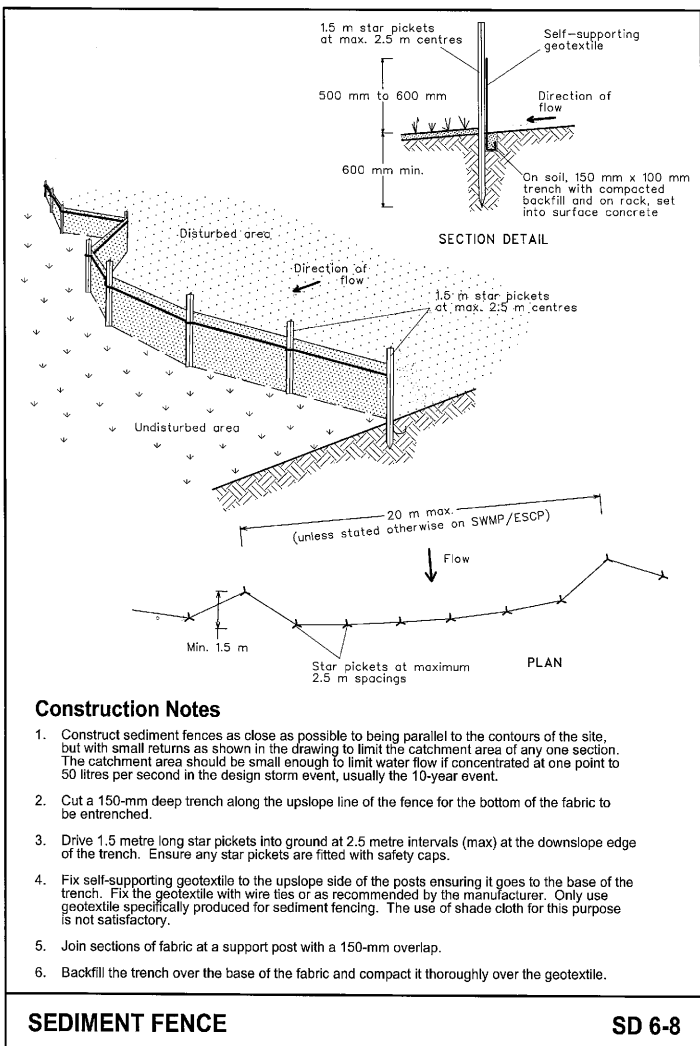
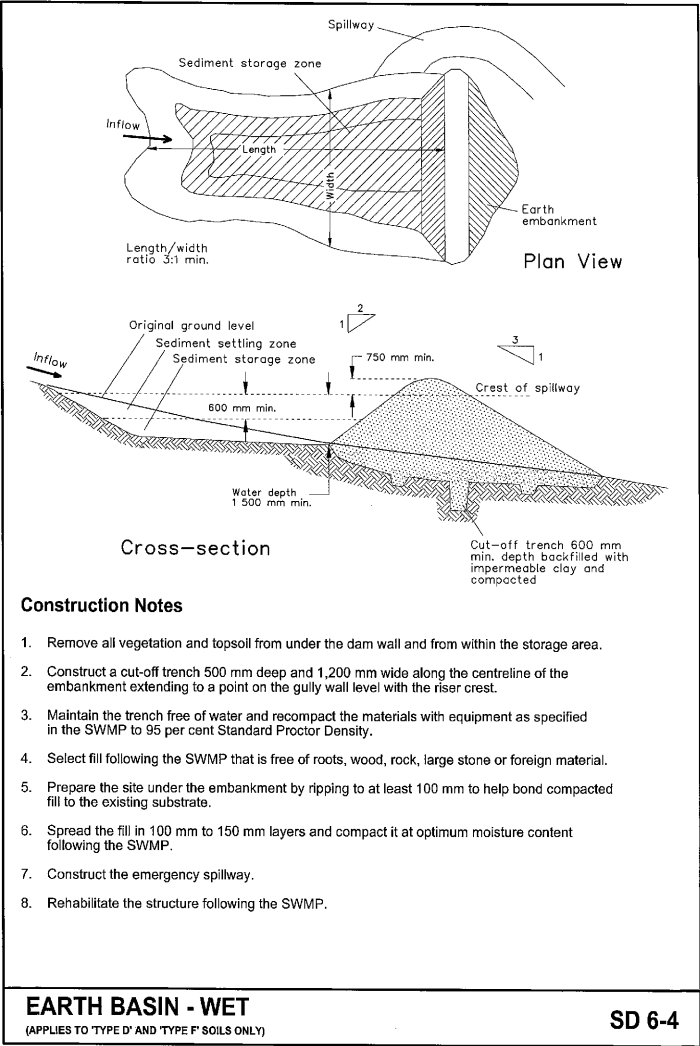
ALL STANDARD DRAWINGS ARE COPYRIGHT FROM LANDCOM, 2004.

REV	DATE	DES.	DRN.	APP.	REVISION DETAILS	DRAWING STATUS	North	CLIENT	PROJECT TITLE	DRAWING TITLE
						DESIGN BY DRAWN BY FINAL APPROVAL				INITIAL OVER-ARCHING ESCP BLUE BOOK STANDARD DRAWINGS SHEET 1 OF 3
03	24/06/22	A.T.	A.T.	J.A.	ADDITIONAL AMMENDMENTS TO GENERAL REQUIREMENTS	SCALE: (on A1 Original)				PROJECT NO.
02	23/06/22	A.T.	A.T.	A.T.	MINOR MODIFICATIONS FOR APPROVAL	N/A				SUB-PR NO.
01	19/05/22	A.T.	A.T.	A.M.	GENERAL MODIFICATIONS TO ADDRESS PLANNING CONDION/S					DRAWING NO.
00	09/05/22	A.T.	A.T.	A.M.	FINAL - FOR APPROVAL					REV
A	28/04/22	A.T.	A.T.	A.M.	DRAFT ISSUE - FOR REVIEW	FINAL			ASPECT INDUSTRIAL ESTATE MAMRE ROAD KEMPS CREEK STAGE 1	21000258 P01 ESCP07 03



ALL STANDARD DRAWINGS ARE COPYRIGHT FROM LANDCOM, 2004.

REV	DATE	DES.	DRN.	APP.	REVISION DETAILS	DRAWING STATUS	North	CLIENT	PROJECT TITLE	DRAWING TITLE	PROJECT NO.	SUB-PR NO.	DRAWING NO.	REV
						DESIGN BY DRAWN BY FINAL APPROVAL				INITIAL OVER-ARCHING ESCP BLUE BOOK STANDARD DRAWINGS SHEET 2 OF 3				
03	24/06/22	A.T.	A.T.	J.A.	ADDITIONAL AMMENDMENTS TO GENERAL REQUIREMENTS	SCALE: (on A1 Original)					21000258	P01	ESCP08	03
02	23/06/22	A.T.	A.T.	A.T.	MINOR MODIFICATIONS FOR APPROVAL	N/A								
01	19/05/22	A.T.	A.T.	A.M.	GENERAL MODIFICATIONS TO ADDRESS PLANNING CONDION/S									
00	09/05/22	A.T.	A.T.	A.M.	FINAL - FOR APPROVAL									
A	28/04/22	A.T.	A.T.	A.M.	DRAFT ISSUE - FOR REVIEW	FINAL								



ALL STANDARD DRAWINGS ARE COPYRIGHT FROM LANDCOM, 2004.

REV	DATE	DES.	DRN.	APP.	REVISION DETAILS	DRAWING STATUS	North	CLIENT	PROJECT TITLE	DRAWING TITLE
						DESIGN BY DRAWN BY FINAL APPROVAL				INITIAL OVER-ARCHING ESCP BLUE BOOK STANDARD DRAWINGS SHEET 3 OF 3
03	24/06/22	A.T.	A.T.	J.A.	ADDITIONAL AMMENDMENTS TO GENERAL REQUIREMENTS	SCALE: (on A1 Original)				PROJECT NO.
02	23/06/22	A.T.	A.T.	A.T.	MINOR MODIFICATIONS FOR APPROVAL	N/A				SUB-PR NO.
01	19/05/22	A.T.	A.T.	A.M.	GENERAL MODIFICATIONS TO ADDRESS PLANNING CONDION/S					DRAWING NO.
00	09/05/22	A.T.	A.T.	A.M.	FINAL - FOR APPROVAL					REV
A	28/04/22	A.T.	A.T.	A.M.	DRAFT ISSUE - FOR REVIEW	FINAL				



WESTERN EARTHMOVING



SEEC

Suites 7 & 8, 68-70 Station Street
PO Box 1098, Bowral NSW 2576.
(t) 02 4862 1633
(f) 02 4862 3088
email: reception@seec.com.au
WWW.SEEC.COM.AU

ASPECT INDUSTRIAL ESTATE
MAMRE ROAD
KEMPS CREEK
STAGE 1

21000258 P01 ESCP09 03

Plot Date: Friday, June 24, 2022 11:51:38 AM CAD File Name: C:\Users\aburnus\Desktop\PROJECTS\22000177 Aspect Industrial Estate Mamre Road - Western Earthmoving\Drawings\22000177_P01_ESCP_REV 03.dwg

This drawing is subject to COPYRIGHT ©. The information on this drawing remains the property of SEEC.