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**ST MATTHEWS CATHOLIC SCHOOL
BROADHEAD ROAD, MUDGEE**

SOIL AND WATER MANAGEMENT REPORT

21 FEBRUARY 21

REFERENCE: TX13798.00-08.RPT.JD

SYDNEY | ADELAIDE | BAROSSA | DARWIN | MUDGEE

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1 INTRODUCTION

Triaxial have been engaged by North Construction and Building to undertake the civil and stormwater design of the proposed Catholic School located at Lot 40, Broadhead Road, Mudgee.

The design consists of internal and external road upgrades, bulk earthworks and stormwater design. This report is to be read in conjunction with civil engineering plans produced by Triaxial Consulting. The relevant plans referenced in this report are attached in Appendix A.

Refer Appendix A – Triaxial Consulting plans TX13843.00-C3.0 and C3.1

2 EXISTING SITE CONDITIONS

2.1 DEVELOPMENT SITE

The proposed development site is located at the intersection of Bruce Road and Broadhead Road. Bruce Road is unsealed along the frontage of the site. Broadhead Road is sealed with a narrow pavement of 6m width constructed from the Northern side of the site. Towards the Southern end of the site Broadhead Road has been recently upgraded to a 7m wide sealed road with table drains either side.

A large 3 cell culvert has been constructed under Broadhead Road, consisting of 3 x 2.4m wide by 0.9m high culvert cells to allow the passage of stormwater. A diversion bank has been constructed on the outlet of this culvert to divert upstream stormwater towards an existing farm dam located towards the Northern end of the site.

Bruce Road has 2 x 900mm stormwater culverts currently allowing stormwater to cross the Western side of the Broadhead Road intersection where it continues to flow towards the new 3-cell culvert under Broadhead Road.

The site slopes gradually towards the North East.

2.2 ACID SULPHATE SOIL

Extensive Geotechnical investigations conducted by both Martens Consulting (2019) and Barnson Consulting (2017) did not detect the presence of acid sulphate soils on the site. No additional measures are required for acid sulphate soil management.

3 CONSTRUCTION SITE CONDITIONS

3.1 STORMWATER CONTROL AND SITE STORMWATER DISCHARGE

Erosion and sediment control measures as outlined on Triaxial Consulting plans are to be installed prior to any disturbance of the existing site being undertaken.

Erosion and sediment control measures to be implemented include:

- Designated site entry locations.
- Silt fence around the perimeter of the disturbed area of the site.
- Existing site areas with established vegetation cover to remain undisturbed.
- Topsoil stockpile locations to be nominated and protected with silt fencing.

Stormwater discharging from site is to be monitored by North Construction & Building (NCB) with weekly inspections during the construction period, with any sediment control features requiring maintenance, repair or replacement to be undertaken immediately.

Site stormwater discharge is to be to the Northern end of the site over land currently vegetated with established grass cover and used as grazing land, in the area nominated to construct the bioretention basin. In accordance with existing stormwater conditions on site, sheet flow is to be promoted from the discharge location to lessen the impact of channelising stormwater flow from the site.

This is to be achieved by providing 5m wide rock lined outlets from the stormwater collection point and ensuring existing vegetated areas downstream of the site remain undisturbed.

3.2 SEDIMENT CONTROL

Sediment leaving site from stormwater runoff will be controlled by the measures outlined on Triaxial Consulting plans.

North Construction and Building will monitor construction equipment including subcontractor machinery leaving the construction site to ensure sediment is not conveyed on machinery including all tyres, tracks and bodywork.

Site entry is to be only in the areas nominated. Care should be taken to ensure areas of site downstream from the construction site should be disturbed, as they are currently covered with low level vegetation cover which is an effective sediment removal measure.

3.3 STORM MEASURES

For all storms events up to and including the 1% AEP event, construction of the diversion banks along the perimeter of the Bruce Road frontage of the site, and the levee bank adjacent to the existing culverts under Broadhead Road will ensure stormwater from the upstream catchment will be diverted along the Bruce Road reserve and towards the riparian zone, without entering the site.

Management of the site earthworks and disturbed areas will be as per the adopted Erosion and Sediment Control Plan (ESCP).

All storage of materials and equipment on site is to occur at a minimum of 500mm above ground level, to ensure safe storage in a minor (5-year) or major (100-year) event. Stabilisation of highly trafficked areas of the site including the site entry location is to occur as per the ESCP.

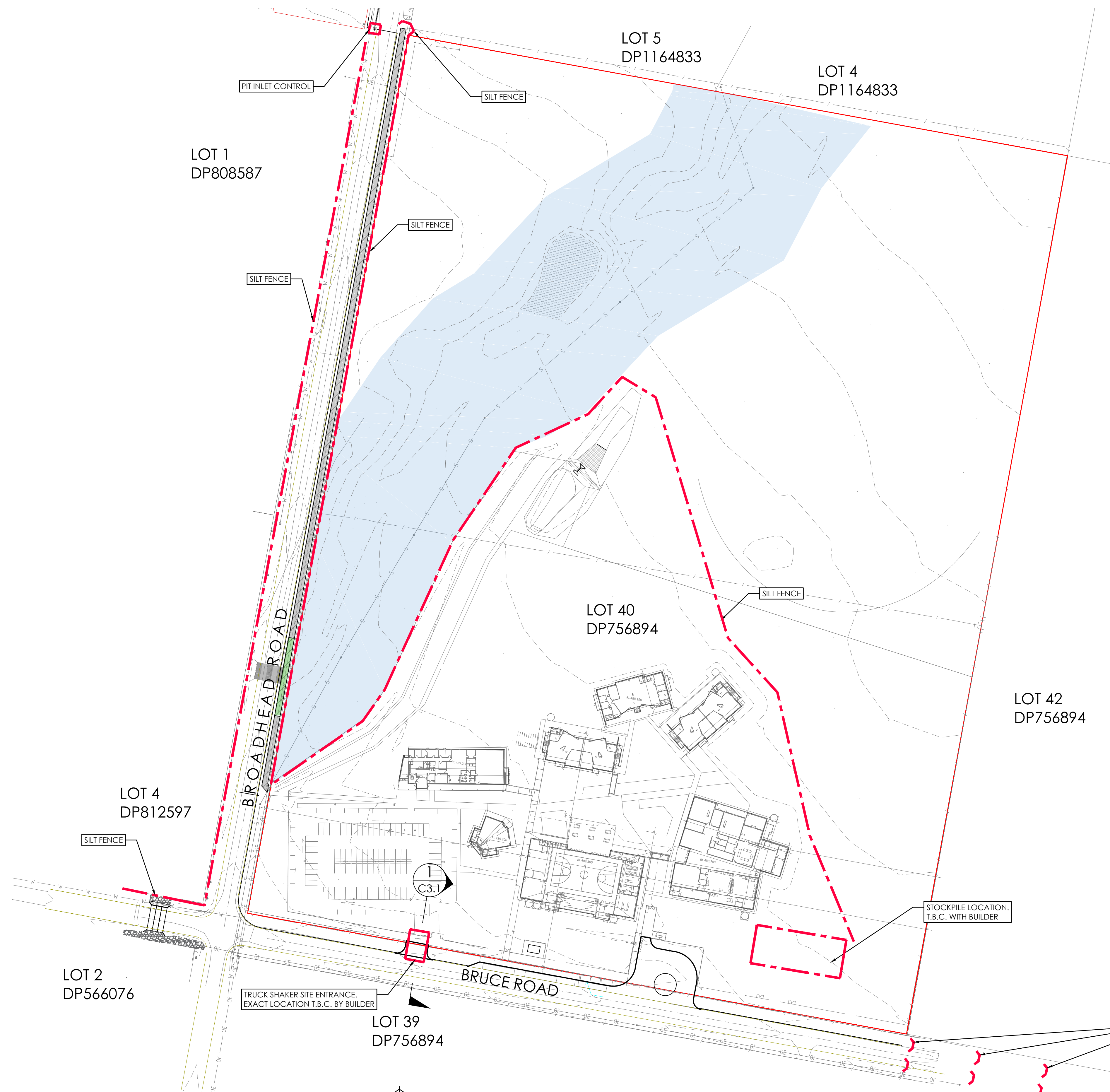
3.4 GROUNDWATER MANAGEMENT

Groundwater was not observed in any borehole testing completed on the site, with borehole depth varying between 1.5m and 7.0m.

Whilst no site works are scheduled for depths of 7.0m or more, we recommend the following measures be implemented if groundwater is encountered during construction works.

- All plant and machinery to be removed from close proximity to ground water.
- North Construction and Building inspect all plant and equipment upon arrival to ensure the equipment does not have any leaking fluids or the like.
- Enforce daily plant inspections by the subcontractor completed within their pre-starts.
- Spillage of any hazardous material to be immediately remediated.

APPENDIX A – TRIAXIAL PLANS TX13843.00-C3.0 AND C3.1



- NOTES:**
1. ALL EROSION & SEDIMENT CONTROL MEASURES TO BE IMPLEMENTED PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS.
 2. ALL EROSION & SEDIMENT CONTROL MEASURES TO BE INSPECTED & MAINTAINED DAILY BY SITE MANAGER.
 3. SILT FENCES TO BE RETAINED AND MAINTAINED UNTIL FINAL COMPLETION, UNLESS APPROVED OTHERWISE BY COUNCIL/ENGINEER.
 4. CONTRACTOR SHALL MINIMISE THE PASSAGE OF CONSTRUCTION TRAFFIC OVER THE LAND SO AS TO PREVENT DISTURBANCE OF NATURAL GROUND.
 5. EXISTING VEGETATION AND TOPSOIL SHALL NOT BE STRIPPED FROM AREAS THAT DO NOT REQUIRE FILLING. ANY AREAS THAT ARE STRIPPED SHALL BE PROTECTED BY SILT FENCES TO THE REQUIREMENTS OF THE COUNCIL/ENGINEER.
 6. BATTERS TO BE STABILISED BY VEGETATING, TURFING OR OTHER APPROVED METHOD WITHIN 30 DAYS OF COMPLETION.
 7. DUST MINIMISATION CONTROL BY WATERING TO BE IMPLEMENTED BY SITE MANAGER AS REQUIRED OR AS PER COUNCIL SPECIFICATIONS.
 8. ROADS & FOOTPATHS TO BE SWEEPED DAILY. NO MUD OR DIRT ALLOWED ON PUBLIC FOOTPATH OR ROAD PAVEMENTS.
 9. VEHICLE TRAFFIC SHALL BE LIMITED TO 15KM/H.
 10. CONSTRUCTION TRAFFIC TO BE LIMITED TO ONE ENTRY/EXIT POINT.
 11. NO MATERIAL TO BE STOCKPILED ON SITE. EXCESS MATERIAL WHICH IS NOT UTILISED AS BULK FILL, SHALL BE REMOVED AND DISPOSED OFF SITE.

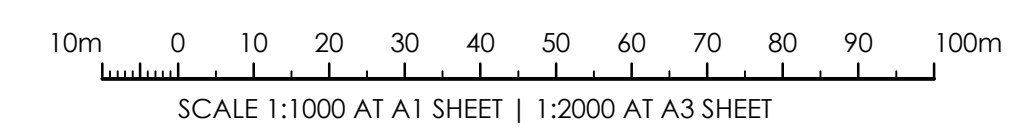
LEGEND:

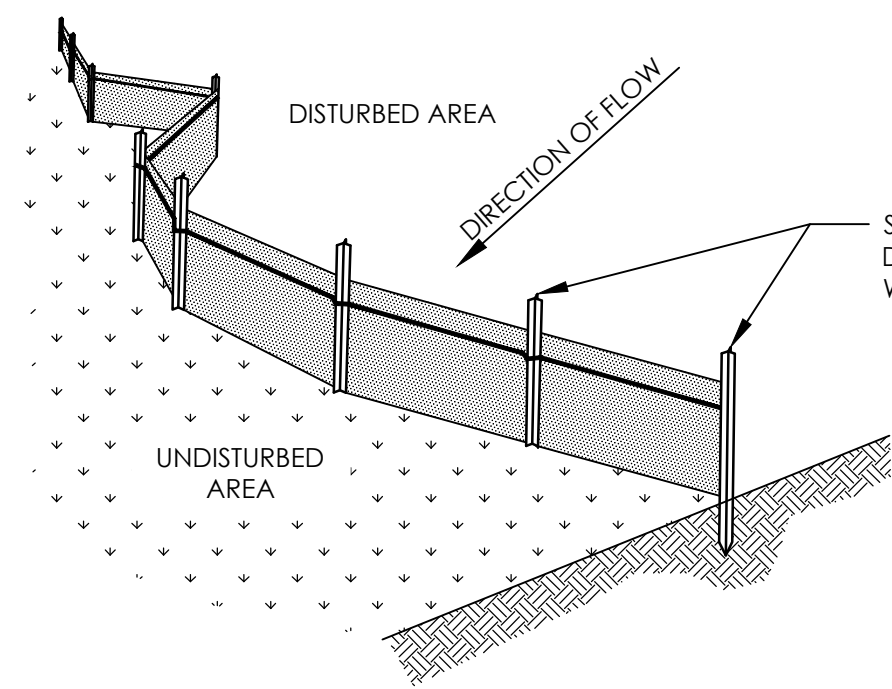
PROVIDE 1m RETURNS TO SILT FENCE AT 30m MAX. INTERVALS.
TYPICAL (N.S.O.P.)

--- SILT FENCE ONLY (UNLESS NOTED OTHERWISE)

--- CONTOUR 1m INTERVALS

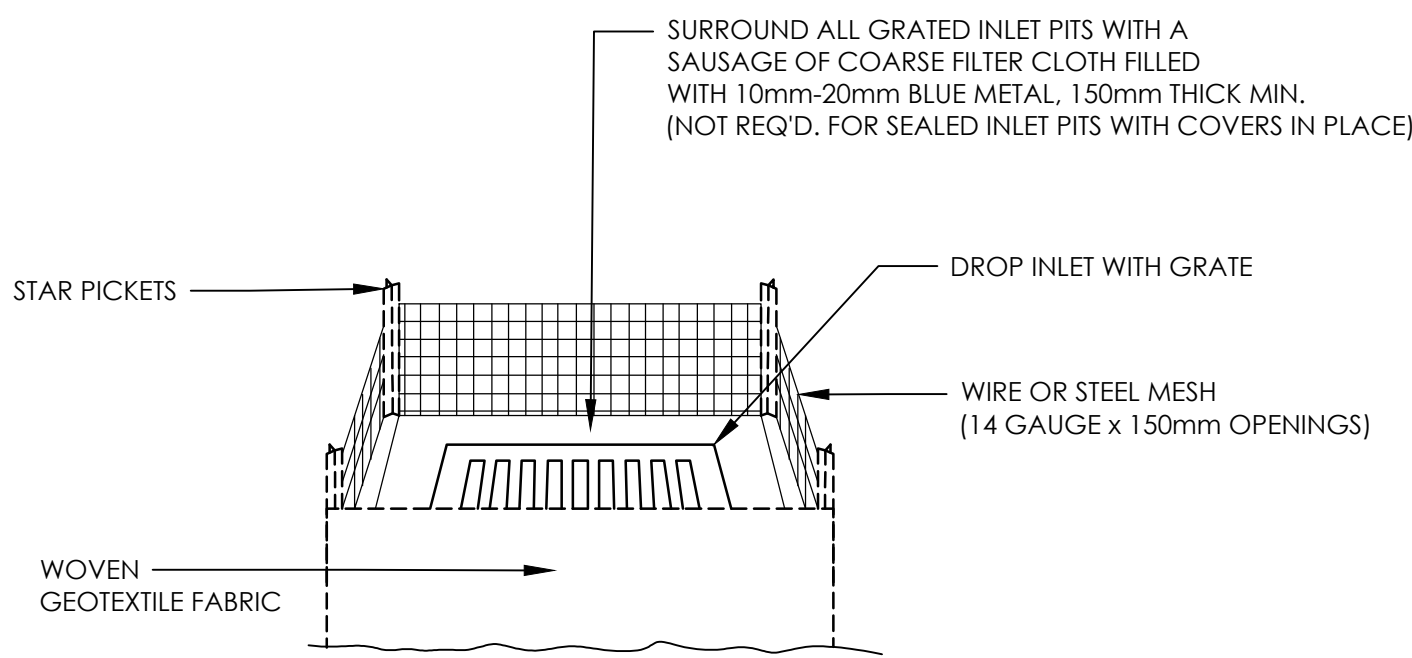
EROSION & SEDIMENT CONTROL PLAN
SCALE 1:1000 AT A1





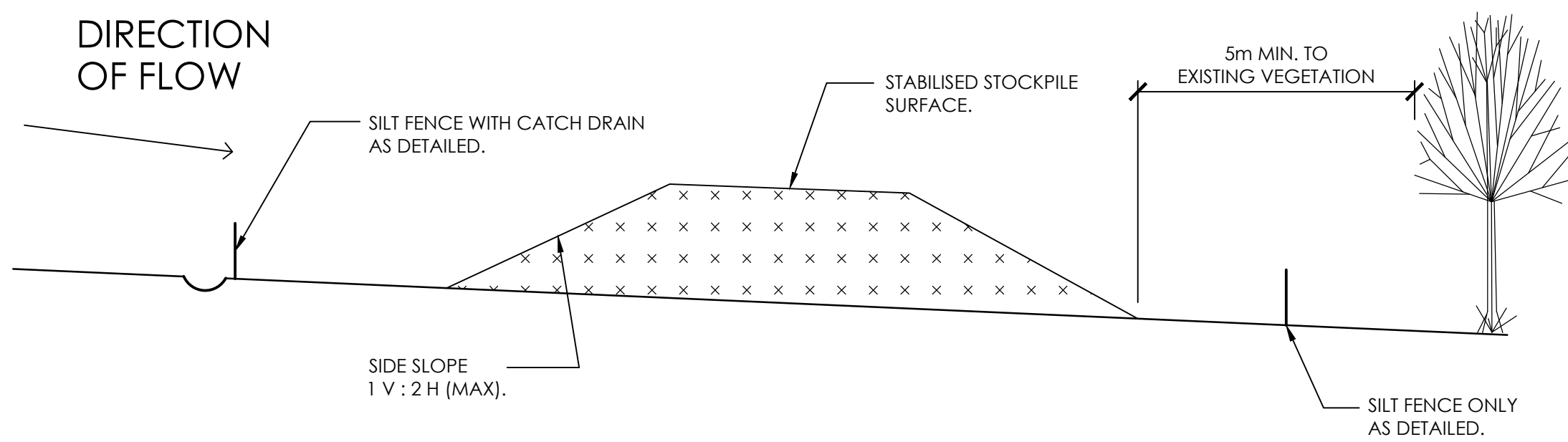
SILT FENCE DETAIL
NOT TO SCALE

NOTE:
PROVIDE 1m RETURNS AT 30m INTERVALS. TYPICAL.



GRATED INLET PIT FILTER DETAIL
NOT TO SCALE

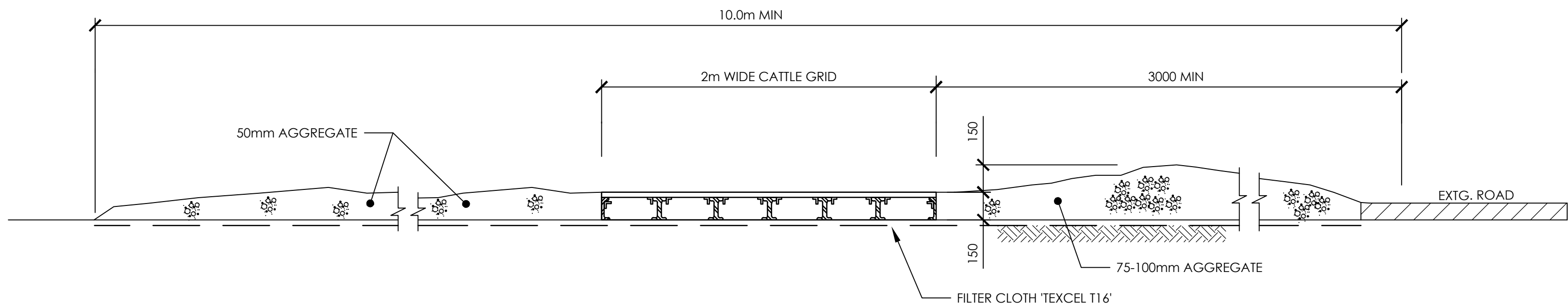
NOTE:
ADOPT ABOVE DETAIL AROUND ALL PITS WITHIN AREA ENCOMPASSED BY SILT FENCE.



TYPICAL STOCKPILE DETAIL
N.T.S.

STOCKPILE NOTES:
1. PLACE ALL STOCKPILES IN LOCATIONS MORE THAN 5m FROM EXISTING VEGETATION, ROADS & HAZARD AREAS.
2. CONSTRUCT ON THE CONTOUR AS LOW, FLAT ELONGATED MOUNDS. SIDE SLOPE TO BE 1 V: 2 H MAX.
3. WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2m IN HEIGHT.
4. WHERE STOCKPILES ARE TO BE IN PLACE FOR MORE THAN 10 DAYS, STABILISE USING WOOD CHIP MULCH - 14 TONNE/Ha.
5. CONSTRUCT SILT FENCE WITH CATCH DRAIN ON UPSLOPE SIDE TO DIVERT WATER AROUND STOCKPILES & SILT FENCE ONLY 1 TO 2m DOWNSLOPE AS SHOWN.

NOTES :
ALL EROSION & SEDIMENT CONTROL MEASURES TO BE IMPLEMENTED PRIOR TO COMMENCEMENT OF SITE WORKS.
ALL EROSION & SEDIMENT CONTROL MEASURES TO BE INSPECTED & MAINTAINED DAILY BY SITE MANAGER.
MINIMISE DISTURBED AREAS.
ROADS & FOOTPATHS TO BE SWEEPED DAILY. NO MUD OR DIRT ALLOWED ON FOOTPATH OR ROAD PAVEMENTS.
BATTERS TO BE STABILISED BY VEGETATING, TURFING OR OTHER APPROVED METHOD WITHIN 30 DAYS OF COMPLETION.
DUST MINIMISATION CONTROL BY WATERING TO BE IMPLEMENTED BY SITE MANAGER AS REQUIRED OR AS PER COUNCIL SPECIFICATIONS.



STABILISED CONSTRUCTION ENTRANCE 'SHAKER PAD'
NOT TO SCALE

NOTE:
TO BE CONSTRUCTED PRIOR TO COMMENCEMENT OF ANY WORKS.