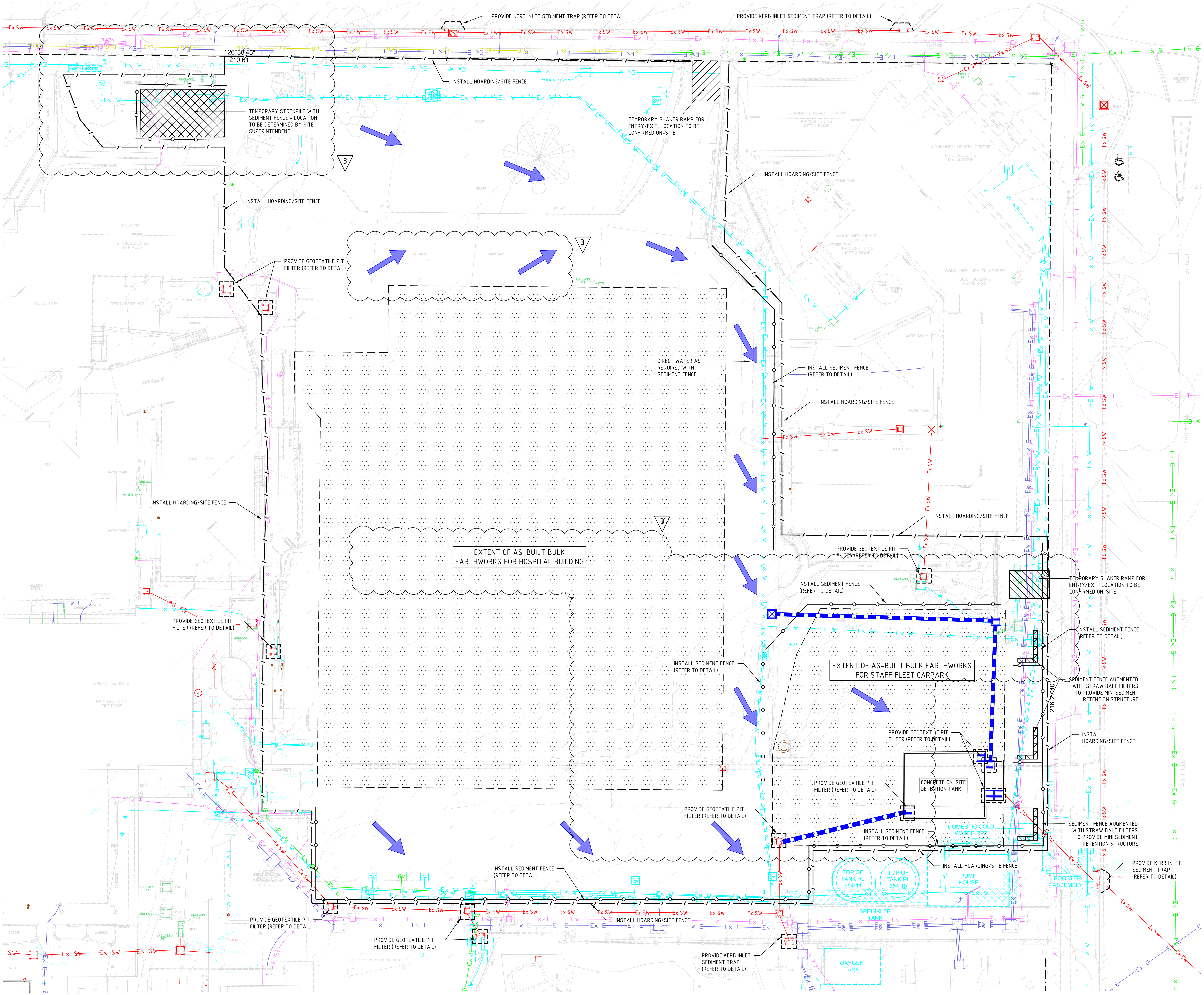

SOIL AND WATER MANAGEMENT NOTES

1. IT HAS BEEN ASSUMED THAT HOARDINGS/SILT FENCING WILL BE PROVIDED TO THE STAGE BOUNDARY SUFFICIENT TO PREVENT SEDIMENT RUNOFF FROM LEAVING SITE (EXCEPT IN THE CASE OF ENTRY/EXIT LOCATIONS WHERE TEMPORARY CONSTRUCTION ENTRY/EXIT SEDIMENT TRAP ARE PROVIDED). IF THIS IS NOT THE CASE, PROVIDE SEDIMENT FENCE TO STANDARD DETAIL BELOW AS REQUIRED TO PREVENT SEDIMENT FROM LEAVING SITE, DIRECT RUNOFF TO SEDIMENT BASIN.
2. ALL SEDIMENT CONTROL MEASURES TO BE INSTALLED IN ACCORDANCE WITH LANDCOM MANAGING URBAN STORMWATER "BLUE BOOK".
3. SEDIMENT CONTROL FOR LANDSCAPED WORKS DOWNSTREAM OF THE BUILDING TO INCLUDE A SILT FENCE AND SANDBAGS AS REQUIRED. INSTALL BUND TO DIVERT UPSTREAM CATCHMENT AWAY FROM DISTURBED SOIL AREA. TO BE MANAGED BY THE CONTRACTOR ON SITE.

SEDIMENT CONTROL CONDITIONS

1. SEDIMENT FENCES WILL BE INSTALLED AS SHOWN AND ELSEWHERE AT THE DISCRETION OF THE SITE MANAGER TO CONTAIN COARSER SEDIMENT FRACTIONS INCLUDING AGGREGATED FINES) AS NEAR AS POSSIBLE TO THEIR SOURCE.
2. SEDIMENT REMOVED FROM ANY TRAPPING DEVICE WILL BE RELOCATED WHERE FURTHER POLLUTION TO DOWNSLOPE LANDS & WATERWAYS CANNOT OCCUR.
3. STOCKPILES WILL BE PLACED WHERE SHOWN ON DRAWING OR ELSEWHERE AT THE DISCRETION OF THE SITE MANAGER AND NOT WITHIN 5m OF HAZARD AREAS INCLUDING LIKELY AREAS OF HIGH VELOCITY FLOWS SUCH AS WATERWAYS, PAVED AREAS & DRIVEWAYS.
4. WATER WILL BE PREVENTED FROM DIRECTLY ENTERING THE PERMANENT DRAINAGE SYSTEM WITH INLET FILTERS (SEE DETAILS) UNLESS IT IS SEDIMENT FREE.
5. TEMPORARY SEDIMENT TRAPS WILL BE RETAINED UNTIL AFTER THE LANDS THEY ARE PROTECTING ARE COMPLETELY REHABILITATED.
6. SOIL AND WATER MANAGEMENT CALCULATIONS HAVE BEEN COMPLETED IN ACCORDANCE WITH 'BLUE BOOK' REQUIREMENTS (REFER SHEET 006). FOR THIS STAGE OF CONSTRUCTION, SOIL LOSS HAS BEEN CALCULATED AS LESS THAN 150m^3/YR (CALCULATED AS 75m^3/YR). IN ACCORDANCE WITH 'BLUE BOOK' GUIDELINES, A SEDIMENT BASIN IS NOT REQUIRED. SEDIMENT FENCES, AUGMENTED WITH STRAW BALES AS REQUIRED. DETAIL EXCAVATION MAY ALSO BE USED AS REQUIRED TO RETAIN SEDIMENT LADEN WATER.

SITE INSPECTION & MAINTENANCE CONDITIONS

THE SITE MANAGER WILL INSPECT THE SITE AT LEAST WEEKLY AND WILL:

1. ENSURE THAT DRAINS OPERATE PROPERLY & TO EFFECT ANY NECESSARY REPAIRS
2. REMOVE SPILLED SAND OR OTHER MATERIALS FROM HAZARD AREAS, INCLUDING LANDS CLOSER THAN 5m FROM AREAS OF LIKELY CONCENTRATED OR HIGH VELOCITY FLOWS ESPECIALLY WATERWAYS & PAVED AREAS.
3. REMOVE TRAPPED SEDIMENT WHENEVER LESS THAN DESIGN CAPACITY REMAINS WITHIN THE STRUCTURE
4. ENSURE REHABILITATED LANDS HAVE EFFECTIVELY REDUCED THE EROSION HAZARD AND TO INITIATE UPGRADING OR REPAIR AS APPROPRIATE.
5. CONSTRUCT ADDITIONAL EROSION AND/OR SEDIMENT CONTROL WORKS AS MIGHT BECOME NECESSARY TO ENSURE THE DESIRED PROTECTION IS GIVEN TO DOWNSLOPE LANDS AND WATERWAYS.
6. MAINTAIN EROSION & SEDIMENT CONTROL MEASURES IN A FULLY FUNCTIONING CONDITION UNTIL ALL EARTHWORK ACTIVITIES ARE COMPLETED AND THE SITE IS REHABILITATED.
7. REMOVE TEMPORARY SOIL CONSERVATION STRUCTURES AS THE LAST ACTIVITY IN THE REHABILITATION PROGRAM.

AS PART OF THE STATUTORY 'DILIGENCE OF CARE' RESPONSIBILITIES, THE SITE MANAGER WILL KEEP A LOGBOOK MAKING ENTRIES AT LEAST WEEKLY, IMMEDIATELY BEFORE FORECAST RAIN AND AFTER RAINFALL.
ENTRIES WILL INCLUDE:

1. THE VOLUME & INTENSITY OF ANY RAINFALL EVENTS
2. THE CONDITION OF ANY SOIL & WATER MANAGEMENT WORKS
3. THE CONDITION OF VEGETATION & ANY NEED TO IRRIGATE
4. THE NEED FOR DUST PREVENTION STRATEGIES
5. ANY REMEDIAL WORKS TO BE UNDERTAKEN

THE BOOK WILL BE KEPT ONSITE & MADE AVAILABLE TO ANY AUTHORISED PERSON ON REQUEST. IT WILL BE GIVEN TO THE PROJECT MANAGER AT THE CONCLUSION OF WORKS.

LEGEND

- SITE BOUNDARY
- EX SURFACE LEVEL (× 24.50)
- EX SURFACE CONTOUR (5.00)
- EX TREE
- Ex SW — EXISTING STORMWATER DRAINAGE LINE
- Ex S — EXISTING SEWER LINE
- Ex W — EXISTING WATER MAIN
- Ex G — EXISTING GAS LINE
- Ex T — EXISTING TELECOMMUNICATIONS LINE
- Ex S — EXISTING ELECTRICAL LINE
- EXISTING UNKNOWN SERVICE
- BARRIER FENCING (HOARDING/SECURITY FENCE)
- SEDIMENT FENCE
- CD — CATCH DRAIN/EARTH BUND
- TEMPORARY SHAKER RAMP FOR ENTRY/EXIT. (LOCATION TBC ON-SITE)
- TEMPORARY STOCKPILE (LOCATION TBC ON-SITE)
- 3 — AS-BUILT BULK EARTHWORKS EXTENT
- GEOTEXTILE PIT FILTER / FILTER SURROUND INSTALLED ON EXISTING PIT
- SANDBAGS INSTALLED ON EXISTING PIT
- OVERLAND FLOW
- 3 — AS-BUILT STORMWATER DRAINAGE NETWORK

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SCALE 1:200 (0m 2m 4m 8m 12m)

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED

Rev	Description	Date	By	App
3	ISSUED FOR CONSTRUCTION	20.02.20	JF	SN
2	ISSUED FOR CONSTRUCTION	14.02.20	JF	SN
1	ISSUED FOR CONSTRUCTION	07.11.19	HM	SN

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Project Name: GOULBURN HOSPITAL AND HOSPITAL SERVICES REDEVELOPMENT

Drawing Title: SOIL AND WATER MANAGEMENT PLAN PHASE 2

FOR CONSTRUCTION

Designed	SK
Drawn	DV
Scale	1:200
Date	MAY 19
Sheet	B1
Project Director Approved	
Date	
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Project Ref	
Drawing No	CV-MW-00-00005
Rev	3

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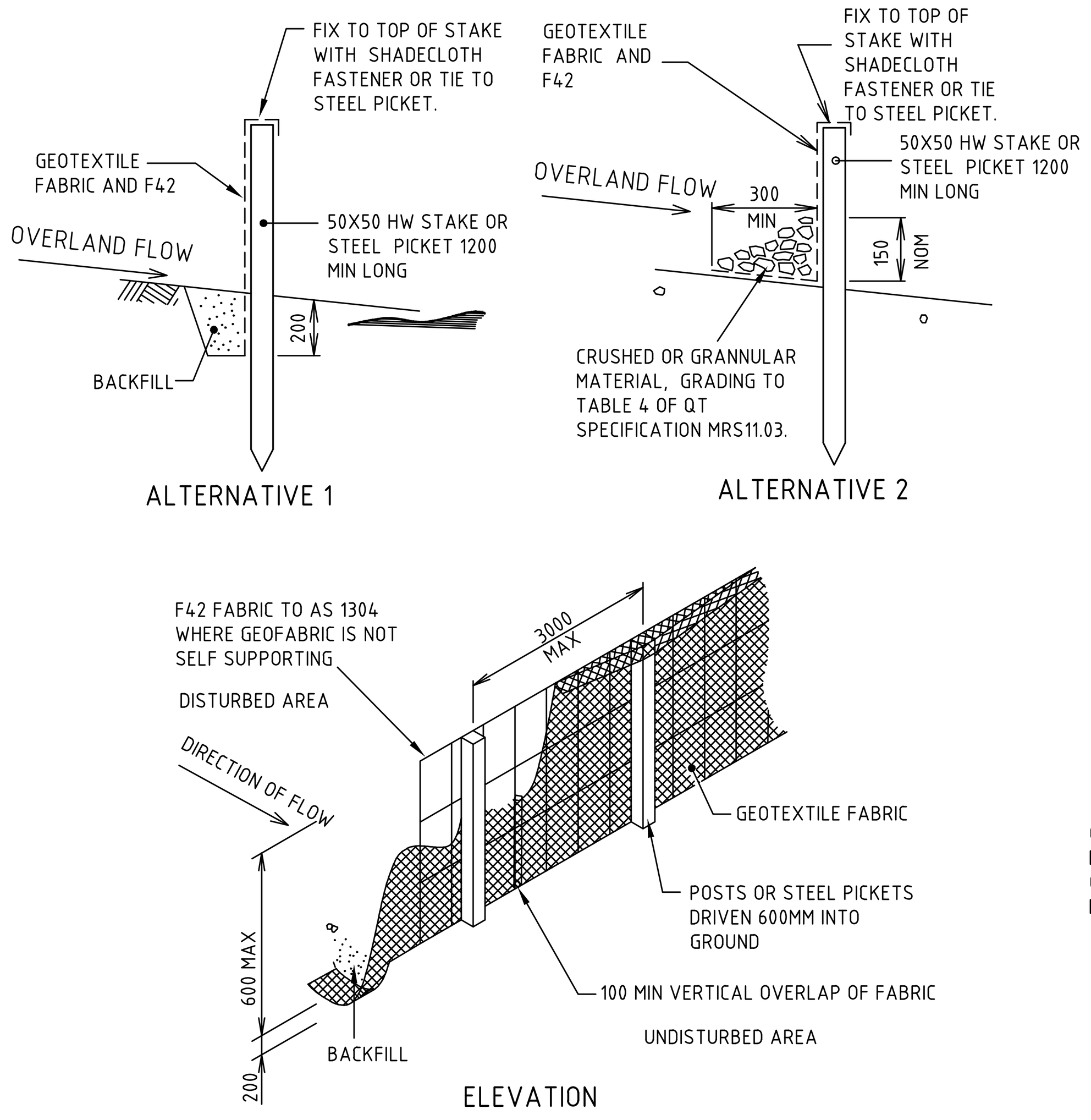
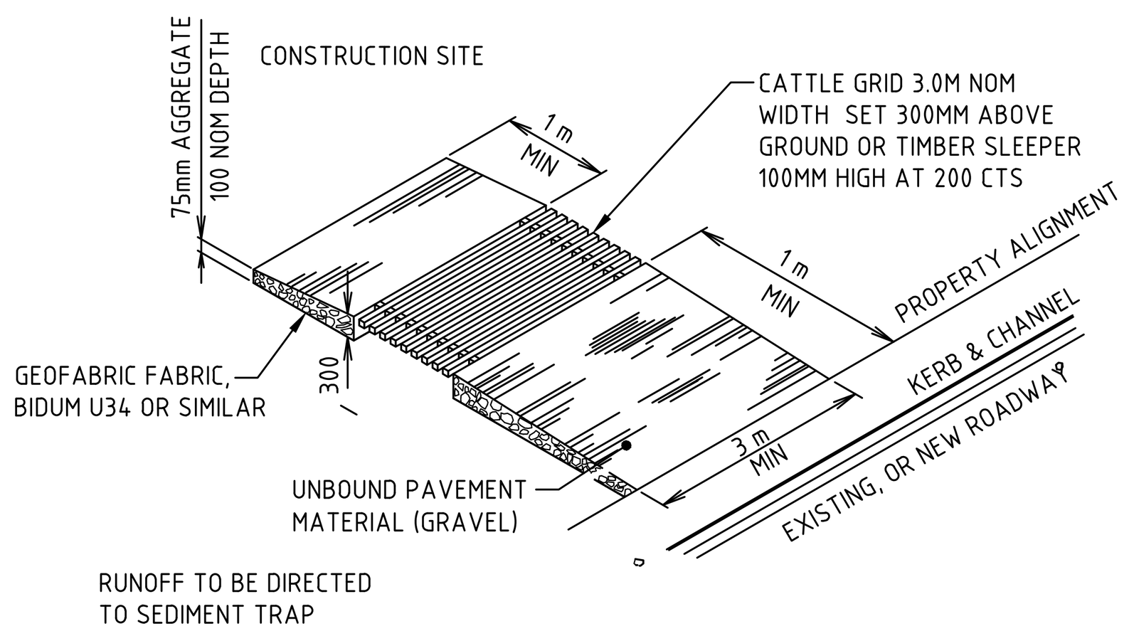


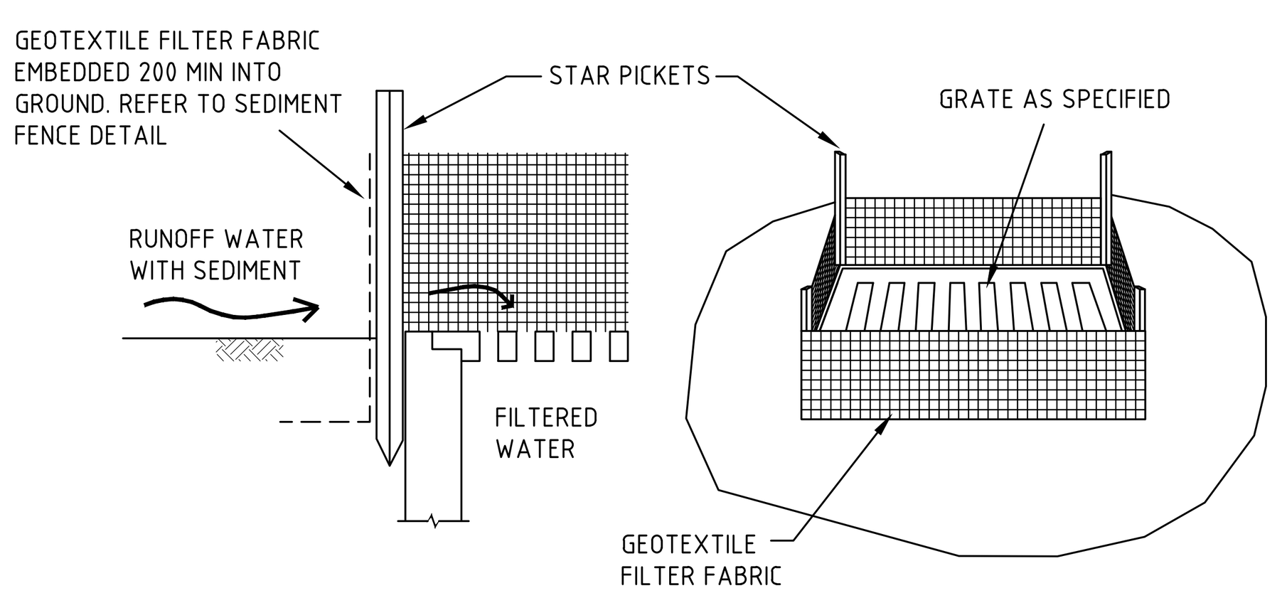
SEDIMENT FENCE

NOT TO SCALE



TEMPORARY CONSTRUCTION VEHICLE ENTRY/EXIT SEDIMENT TRAP

NOT TO SCALE



GEOTEXTILE PIT FILTER 1

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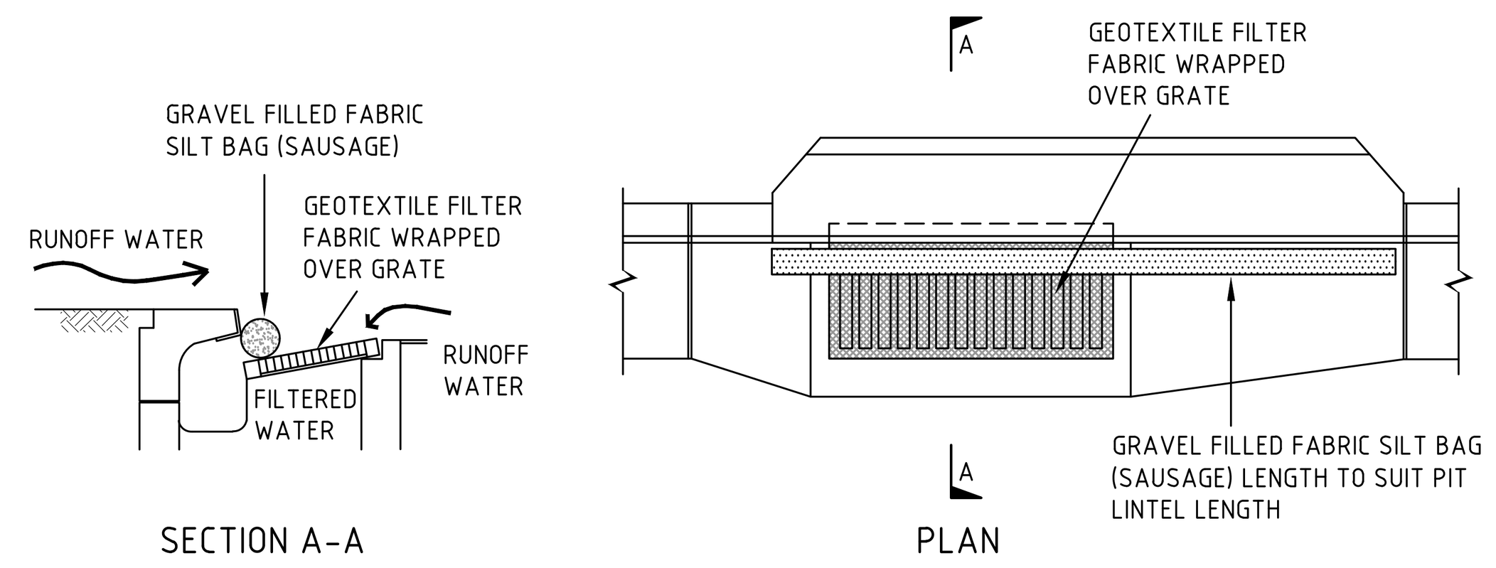
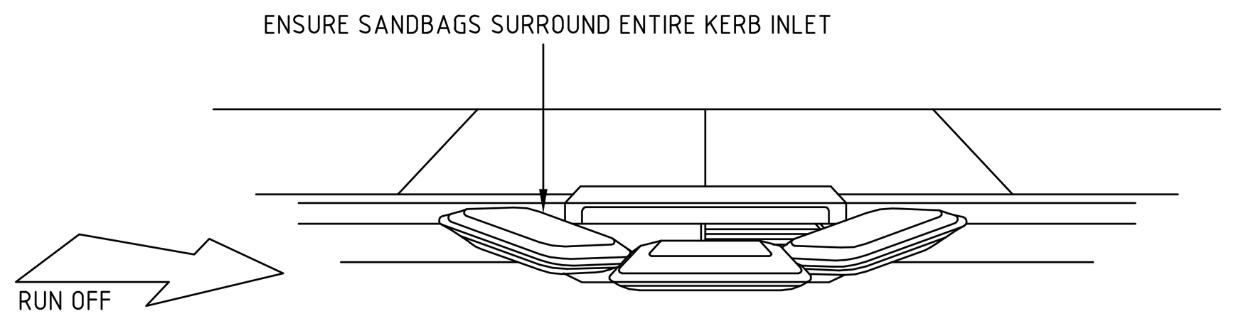


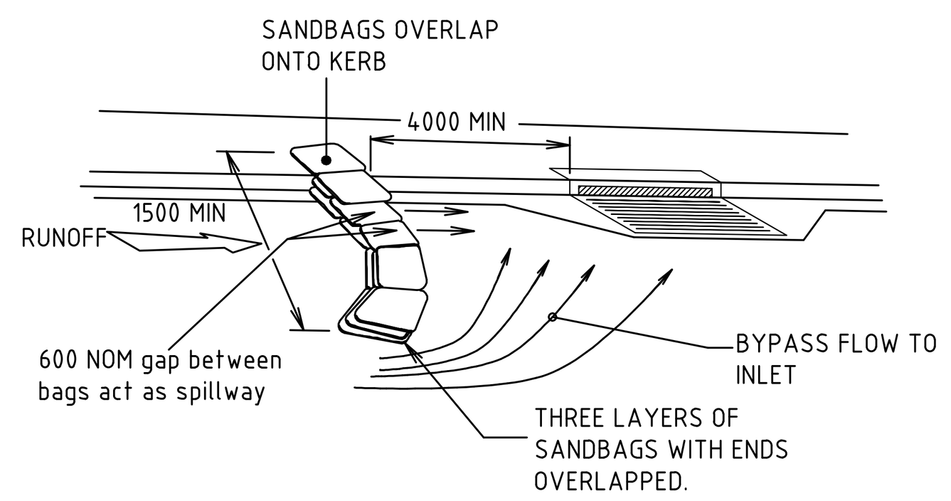
KERB INLET SEDIMENT TRAP

NOT TO SCALE



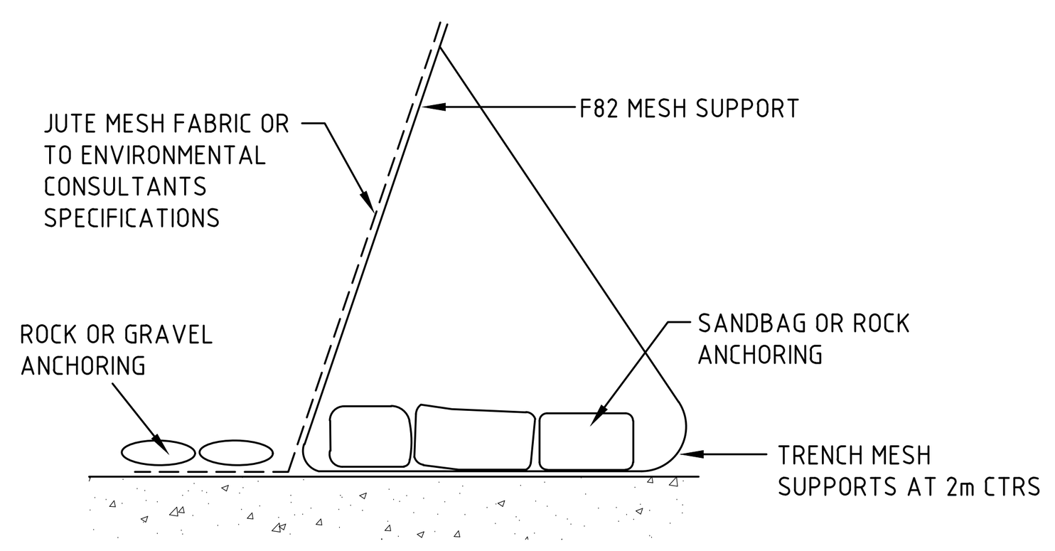
SANDBAG KERB INLET SEDIMENT TRAP

NOT TO SCALE



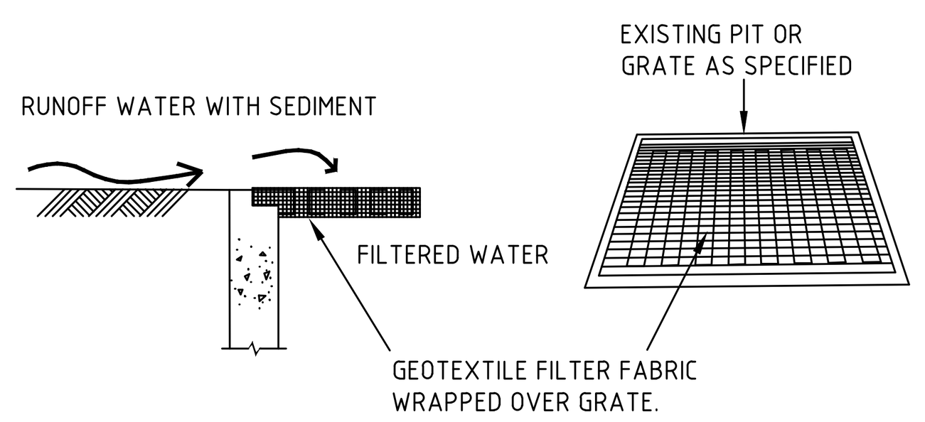
ON GRADE KERB INLET SEDIMENT TRAP

NOT TO SCALE



ALTERNATIVE SEDIMENT FENCE

NOT TO SCALE

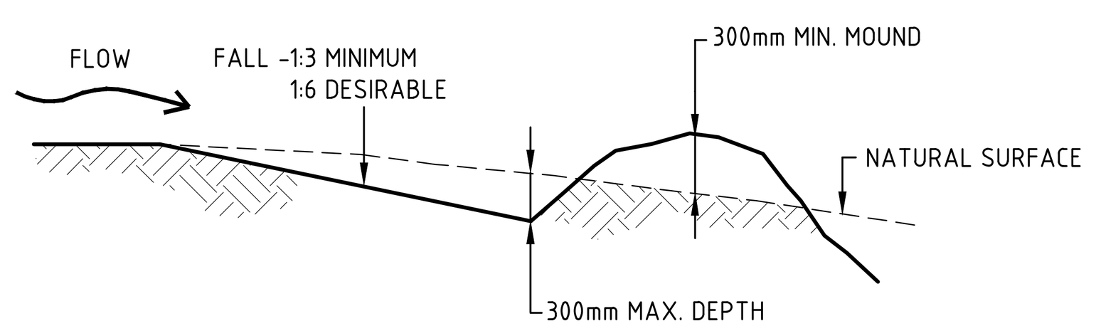


GEOTEXTILE PIT FILTER 2

NOT TO SCALE

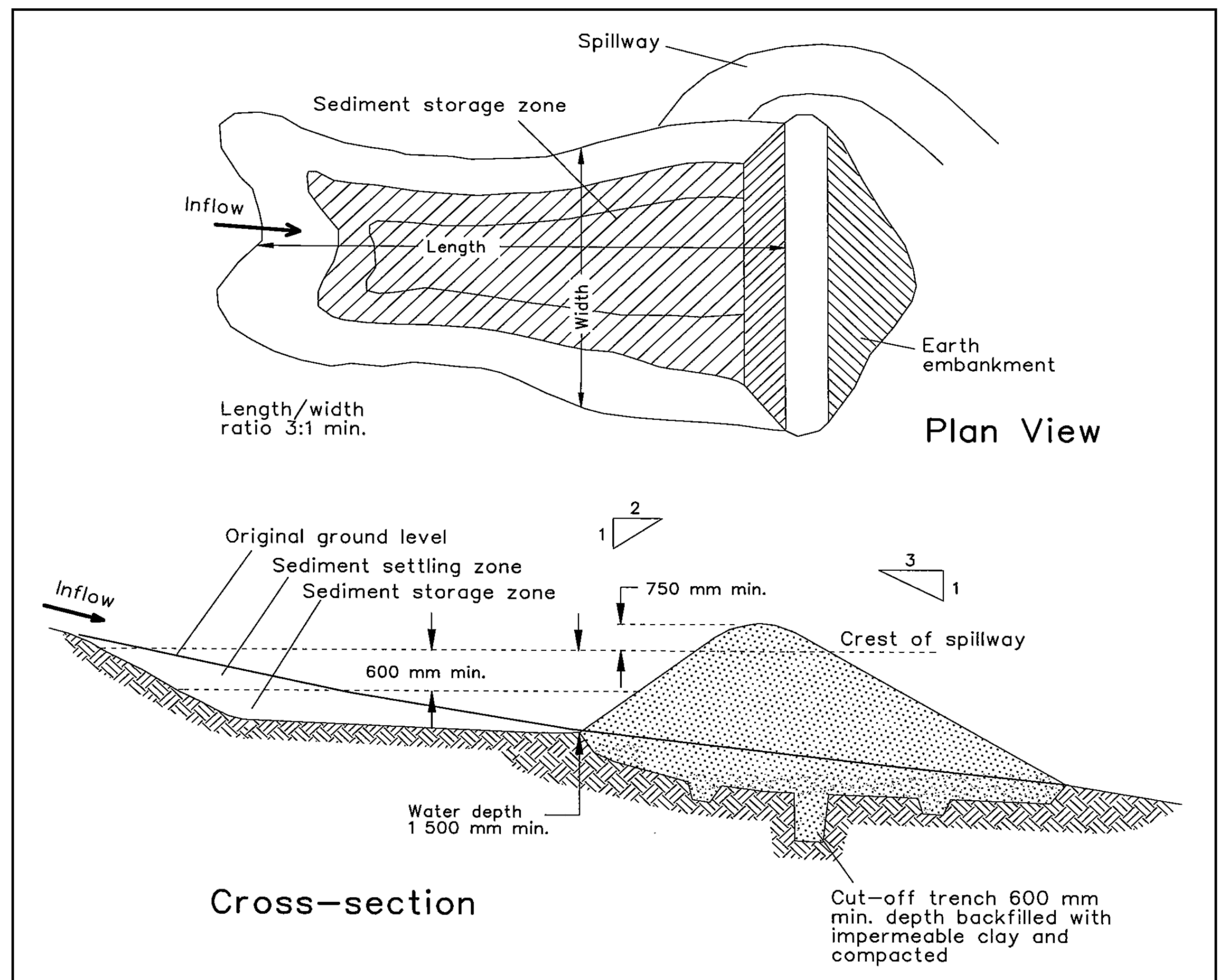
ALTERNATIVE SEDIMENT FENCE NOTES

1. INSTALL THIS TYPE OF SEDIMENT FENCE WHEN USE OF SUPPORT POSTS IS NOT DESIRABLE OR NOT POSSIBLE. SUCH CONDITIONS MIGHT APPLY, FOR EXAMPLE, WHERE APPROVAL IS GRANTED FROM THE APPROPRIATE AUTHORITIES TO PLACE THESE FENCES IN HIGHLY SENSITIVE ESTUARINE AREAS.
2. USE BENT TRENCH MESH TO SUPPORT THE F82 WELDED MESH FACING AS SHOWN ON THE DRAWING ABOVE. ATTACH THE JUTE MESH TO THE WELDED MESH FACING USING UV-RESISTANT CABLE TIES.
3. STABILISE THE WHOLE STRUCTURE WITH SANDBAG OR ROCK ANCHORING OVER THE TRENCH MESH AND THE LEADING EDGE OF THE JUTE MESH. THE ANCHORING SHOULD BE SUFFICIENTLY LARGE TO ENSURE STABILITY OF THE STRUCTURE IN THE DESIGN STORM EVENT, USUALLY THE 10 YEAR EVENT.



CATCH DRAIN

NOT TO SCALE



Construction Notes

1. Remove all vegetation and topsoil from under the dam wall and from within the storage area.
2. Construct a cut-off trench 500 mm deep and 1,200 mm wide along the centreline of the embankment extending to a point on the gully wall level with the riser crest.
3. Maintain the trench free of water and recompact the materials with equipment as specified in the SWMP to 95 per cent Standard Proctor Density.
4. Select fill following the SWMP that is free of roots, wood, rock, large stone or foreign material.
5. Prepare the site under the embankment by ripping to at least 100 mm to help bond compacted fill to the existing substrate.
6. Spread the fill in 100 mm to 150 mm layers and compact it at optimum moisture content following the SWMP.
7. Construct the emergency spillway.
8. Rehabilitate the structure following the SWMP.

EARTH BASIN - WET **SD 6-4**

(APPLIES TO 'TYPE D' AND 'TYPE F' SOILS ONLY)

6-19

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Rev	Description	Date	By	App
E	ISSUED FOR CONSTRUCTION CERTIFICATE	23.10.19	DS	-
D	ISSUED FOR 109R SUBMISSION	16.10.19	DS	-
C	REISSUED FOR 100% DD	16.08.19	DV	-
B	REISSUED FOR 100% DD	12.06.19	DV	-
A	ISSUED FOR 100% DD	10.05.19	SK	-

Rev	Description	Date	By	App
1	ISSUED FOR CONSTRUCTION	07.11.19	HM	SN

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Project Name: GOULBURN HOSPITAL AND HOSPITAL SERVICES REDEVELOPMENT

Drawing Title: SOIL AND WATER DETAILS

FOR CONSTRUCTION

Designed	SK	Project Director Approved	Date
Drawn	DV		North
Scale	NTS		
Date	MAY 19	Project Ref	Drawing No
Sheet	B1	CV-MW-00-00007	Rev 1

SWMP Commentary, Detailed Calculations

Note: These "Detailed Calculation" spreadsheets relate only to high erosion hazard lands as identified in figure 4.6 or where the designer chooses to use the RUSLE to size sediment basins. The "Standard Calculation" spreadsheets should be used on low erosion hazard lands as identified by figure 4.6 and where the designer chooses not to run the RUSLE in calculations.

1. Site Data Sheet

Site Name: Goulburn Hospital

Site Location: 130 Goldsmith St, Goulburn NSW 2580

Precinct: Health

Description of Site:

Site area	Site						Remarks
	2						
Total catchment area (ha)	0.89						Bulk earthworks complete, site relatively flat
Disturbed catchment area (ha)	0.89						Assumed fully disturbed (conservative)

Soil analysis

% sand (faction 0.02 to 2.00 mm							Soil texture should be assessed through mechanical dispersion only. Dispersing agents (e.g. Calgon) should not be used
% silt (fraction 0.002 to 0.02 mm)							
% clay (fraction finer than 0.002 mm)							
Dispersion percentage							E.g. enter 10 for dispersion of 10%
% of whole soil dispersible							See Section 6.3.3(e)
Soil Texture Group							See Section 6.3.3(c), (d) and (e)

Rainfall data

Design rainfall depth (days)	5						See Sections 6.3.4 (d) and (e)
Design rainfall depth (percentile)	85						See Sections 6.3.4 (f) and (g)
x-day, y-percentile rainfall event	22.2						See Section 6.3.4 (h)
Rainfall intensity: 2-year, 6-hour storm	6.35						See IFD chart for the site

RUSLE Factors

Rainfall erosivity (*R*-factor)	1100						Automatic calculation from above data
Soil erodibility (*K*-factor)	0.055						RUSLE data can be obtained from Appendixes A, B and C
Slope length (m)	138						
Slope gradient (%)	1						
Length/gradient (*LS*-factor)	1.28						
Erosion control practice (*P*-factor)	1.3						
Ground cover (*C*-factor)	1						

Calculations

Soil loss (t/ha/yr)	100.7						
Soil Loss Class	1						See Section 4.4.2(b)
Soil loss (m^3/ha/yr)	77.7						
Sediment basin storage volume, m^3	13						See Sections 6.3.4(i) and 6.3.5 (e)

SOIL LOSS LESS THAN 150m^3/YR

Sediment Basin Calculation Sheet.xls 1

NOTES

IN ACCORDANCE WITH THE "BLUE BOOK" MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION (LANDCOM. 2004) SECTION 6.3.2, A SEDIMENT BASIN WILL NOT BE PROVIDED BASED ON THE FOLLOWING:

- BULK EARTHWORKS HAS BEEN COMPLETED, THE SITE IS RELATIVELY FLAT;
- BASED ON ABOVE CALCULATION, THE AVERAGE ANNUAL SOIL LOSS FROM THE TOTAL AREA OF LAND DISTURBED = 77.7 CUBIC METRE/ha/YEAR X 0.89 ha = 69.2 CUBIC METRES PER YEAR WHICH IS LESS THAN 150 CUBIC METRES PER YEAR. IN ACCORDANCE WITH ABOVE DOCUMENT, THE BUILDING OF A SEDIMENT RETENTION BASIN CAN BE CONSIDERED UNNECESSARY.
- ALTERNATE MEASURES INCLUDING SEDIMENT FENCES, SANDBAG PIT INLET TRAPS, GEOTEXTILE PIT FILTERS ARE TO BE EMPLOYED DURING CONSTRUCTION TO PROTECT THE RECEIVING WATER.

NOTES:

1 REFER TO CV-MW-00-000005 FOR SEDIMENT BASIN LOCATION.

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2	ISSUED FOR CONSTRUCTION	14.02.20	JF	SN
1	ISSUED FOR CONSTRUCTION	07.11.19	HM	SN

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Project Name: GOULBURN HOSPITAL AND HOSPITAL SERVICES REDEVELOPMENT

Drawing Title: SOIL AND WATER CALCULATIONS - PHASE 2

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Drawn	DV		
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Date	MAY 19	Project Ref	Drawing No / Rev
Sheet	B1	CV-MW-00-00006	2

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