

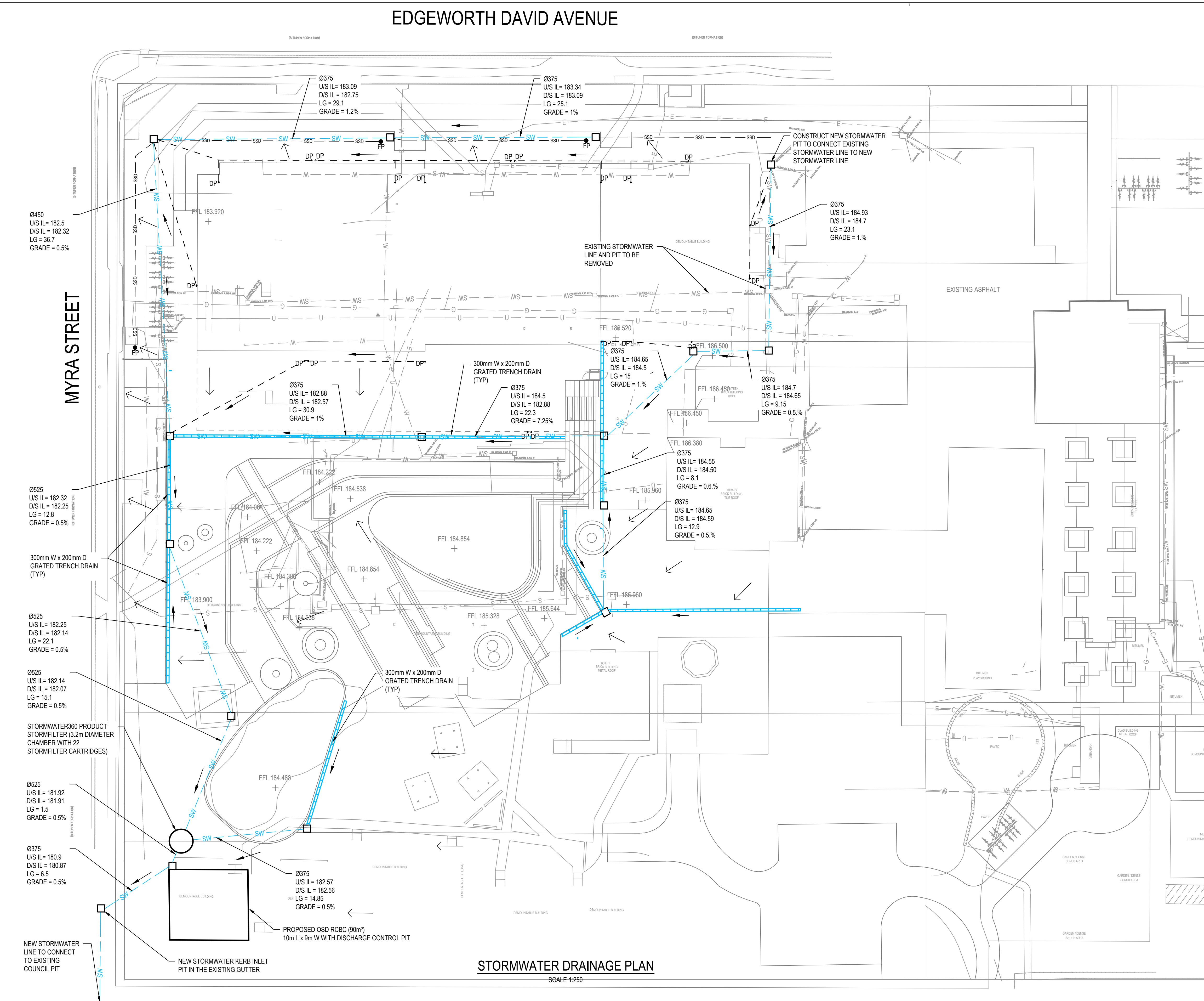
EDGEWORTH DAVID AVENUE

NOTES:

1. ALL STORMWATER PIPES TO HAVE A MINIMUM OF 1% SLOPE IN DIRECTION SHOWN.
2. ALL IN-GROUND STORMWATER PIPES TO BE Ø300 RCP CLASS 2 PIPES UNO.
3. ALL IN-GROUND STORMWATER PIPES TO BE MINIMUM 450 BELOW LANDSCAPED SURFACES AND 600 BELOW SURFACES IN TRAFFICABLE AREA.
4. STORMWATER PIPES ARE TO BE INSTALLED IN ACCORDANCE WITH AS 3725. ALL BEDDING IS TO BE TYPE H2 UNLESS NOTED OTHERWISE.
5. CARE IS TO BE TAKEN WITH LEVELS OF STORMWATER LINES. GRADE SHOWN ARE NOT TO BE REDUCED WITHOUT APPROVAL.
6. STORMWATER PITS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS.
7. GRATES AND COVERS SHALL CONFORM WITH AS 3996-1992.
8. ALL WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH CURRENT STANDARDS AND CONSTRUCTION SPECIFICATIONS.
9. THE CONTRACTOR SHALL VERIFY LOCATIONS OF EXISTING SERVICES WITH ALL RELEVANT AUTHORITIES BEFORE COMMENCING CONSTRUCTION.
10. ALL STRUCTURES TO BE CONSTRUCTED TO NEW FINISHED SURFACE LEVELS.
11. DATUM FOR LEVELS IS AHD, THE POSITION, SIZE, SURFACE LEVELS AND INVERT LEVELS OF EXISTING STORMWATER PITS ARE TAKEN FROM SURVEY DRAWING. THESE NEED TO BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
12. ALL STORMWATER PITS SHALL BE CONSTRUCTED USING CAST IN-SITU CONCRETE OR HEAVY DUTY PRECAST PITS.
13. CONNECTION TO EXISTING STORMWATER PITS TO BE CARRIED OUT BY THE CONTRACTOR IN ACCORDANCE WITH THE SPECIFICATION AND IN CONSULTATION WITH COUNCIL/RELEVANT AUTHORITIES. MAKE REQUIRED OPENING IN THE EXISTING STORMWATER PIT WALL AT THE CONNECTION POINT OF NEW LINE. REPAIR AND MAKE GOOD THE PIT WALL INCLUDING NECESSARY ADJUSTMENT OF THE PIT BENCHING TO MATCH NEW PIPE CONNECTIONS.
14. GRATES, FRAMES AND COVERS IN ROADWAYS TO BE CLASS D.
15. GRATES AND FRAMES NOT IN ROADWAYS TO BE CLASS B.
16. ALL GRATES TO BE HINGED AND LOCKABLE. PROVIDE HEEL SAFE GRATE AS PER AS 1428-1-7.5 IN ROADWAYS AND PARKING AREA (PEDESTRIAN TRAVERSING AREAS).
17. CONTRACTOR TO LOCATE AND EXPOSE ALL EXISTING SURFACES BEFORE CONSTRUCTION STARTS, EXISTING SERVICES TO BE RELOCATED WHERE NEEDED TO AVOID CLASHING.
18. ALL DOWNPIPES DRAIN LINE TO BE Ø150 UPVC. REFER TO HYDRAULIC DRGS FOR LOCATIONS AND DETAILS.

LEGEND:

- NEW GRATED TRENCH DRAIN 300mm WIDE x 200mm DEEP
- NEW STORMWATER PIPE
- NEW STORMWATER GRATED INLET PIT
- PIPE FLOW DIRECTION
- NEW DOWNPIPE DRAIN
- NEW DOWNPIPE CONNECTED TO RAINWATER TANK
- NEW SUBSOIL DRAIN
- NEW FLUSHING POINT
- OVERLAND FLOW DIRECTION



STORMWATER DRAINAGE PLAN

SCALE 1:250

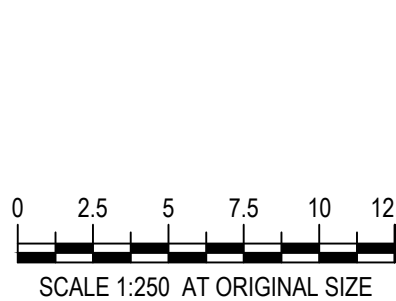
DEVELOPMENT APPLICATION

C	ISSUED FOR DEVELOPMENT APPLICATION	MR	PM*	MD*	19.09.17
B	ISSUED FOR REVIEW	MR	PM*	MD*	12.09.17
A	ISSUED FOR DEVELOPMENT APPLICATION	MR	MD*	MW*	24.08.17
No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director
					Date

Plot Date: 19 September 2017 - 5:00 PM

Plotted by: Mona Rangwala

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Drawn M.RANGWALA

Designer G.DE SWARDT

Drafting Check A.MACLEAN*

Design Check A.RAHMAN*

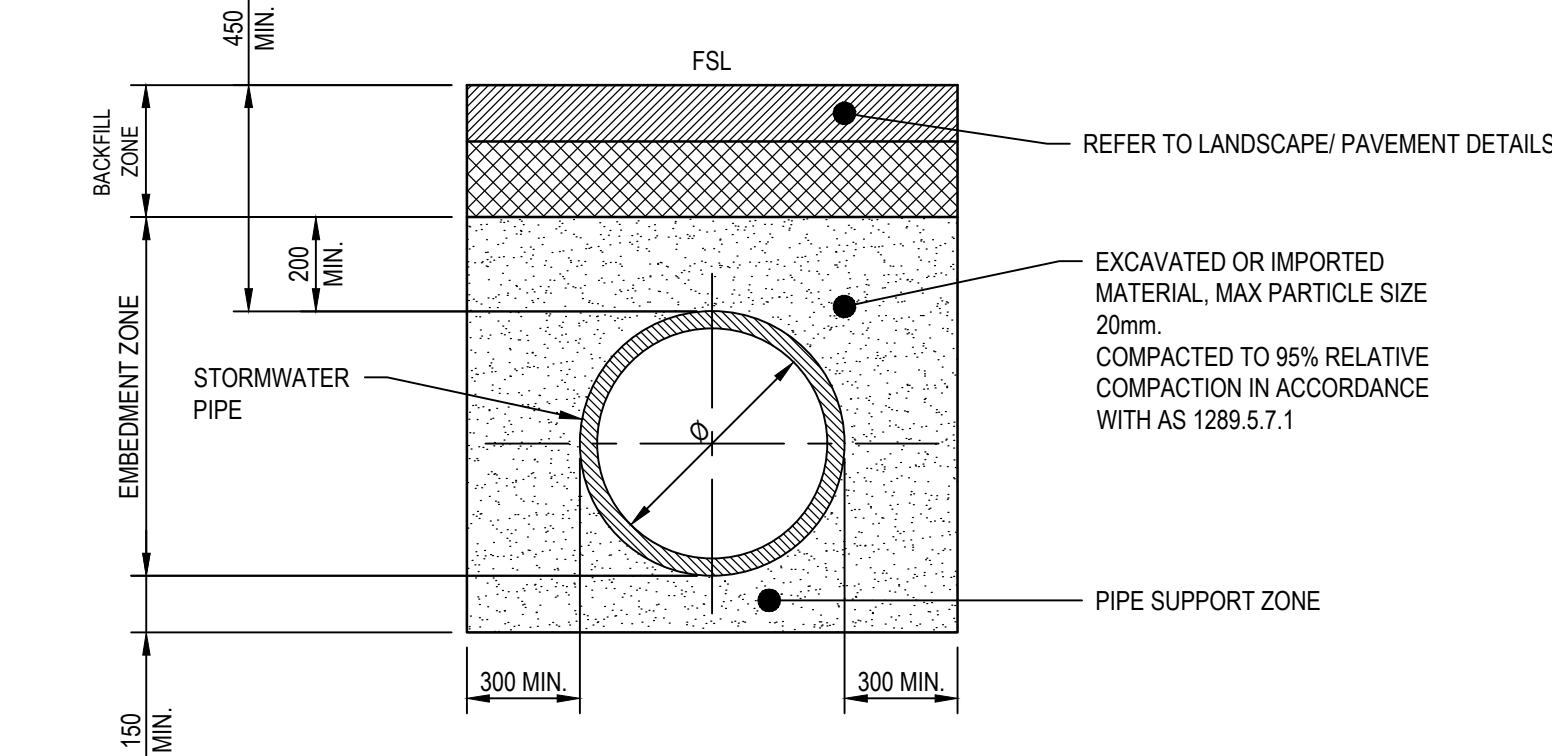
Approved (Project Director)

Date

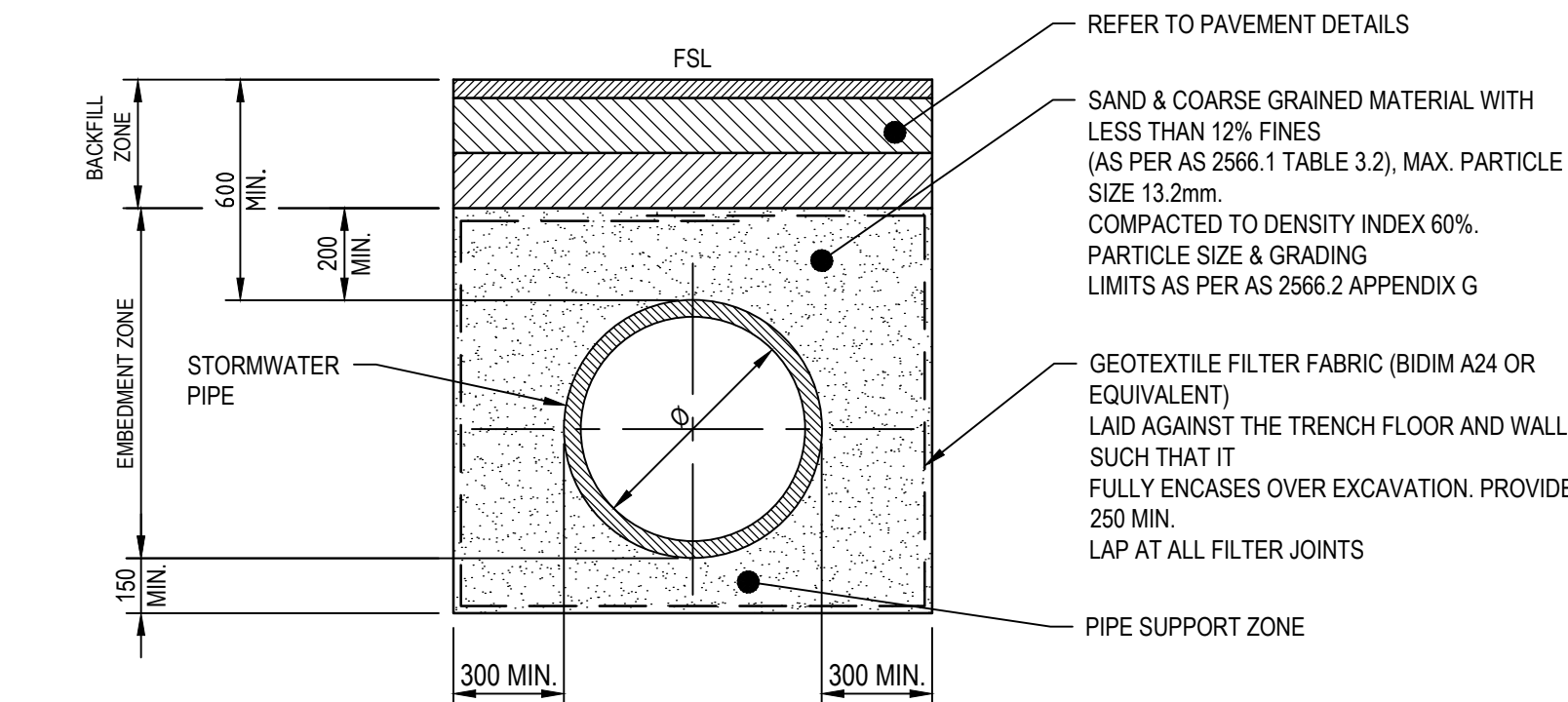
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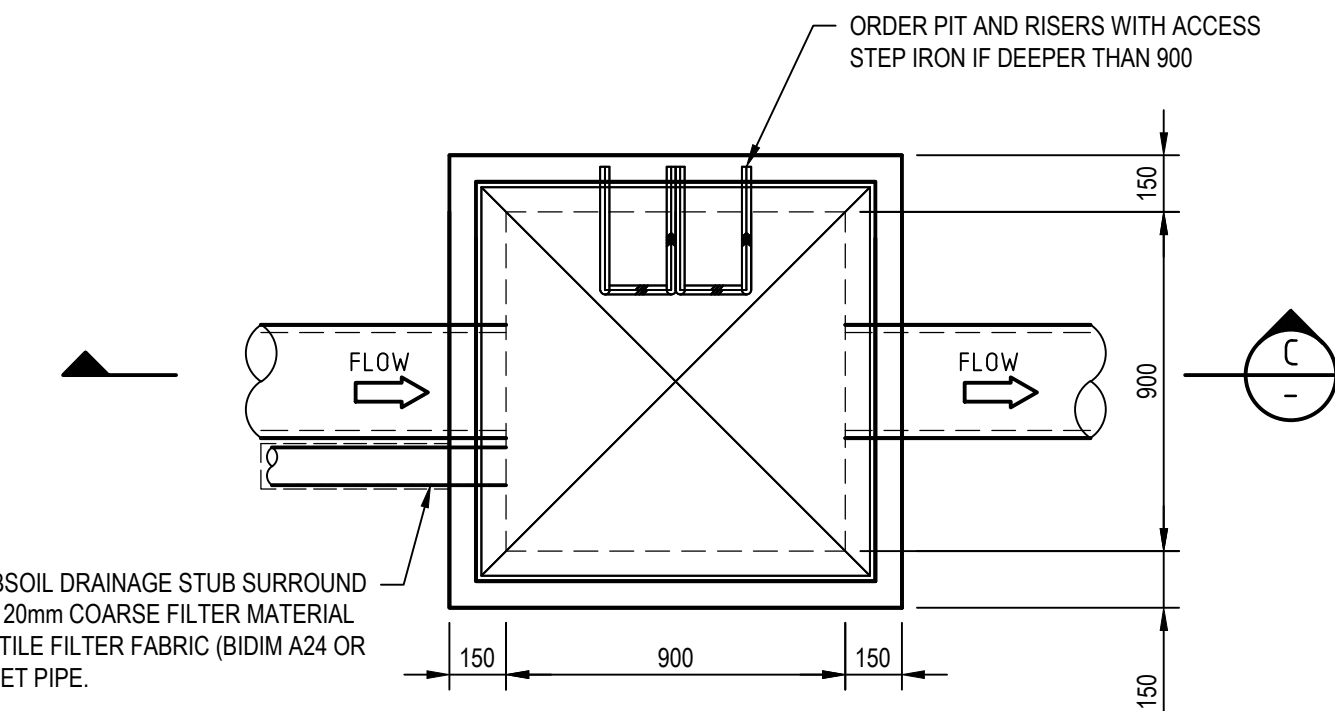
Client	THE DEPARTMENT OF EDUCATION
Project	WAITARA PUBLIC SCHOOL
Title	CIVIL STORMWATER DRAINAGE PLAN
Original Size	A1
Drawing No:	21-26108-WA-DA-CI-1010
Rev:	C



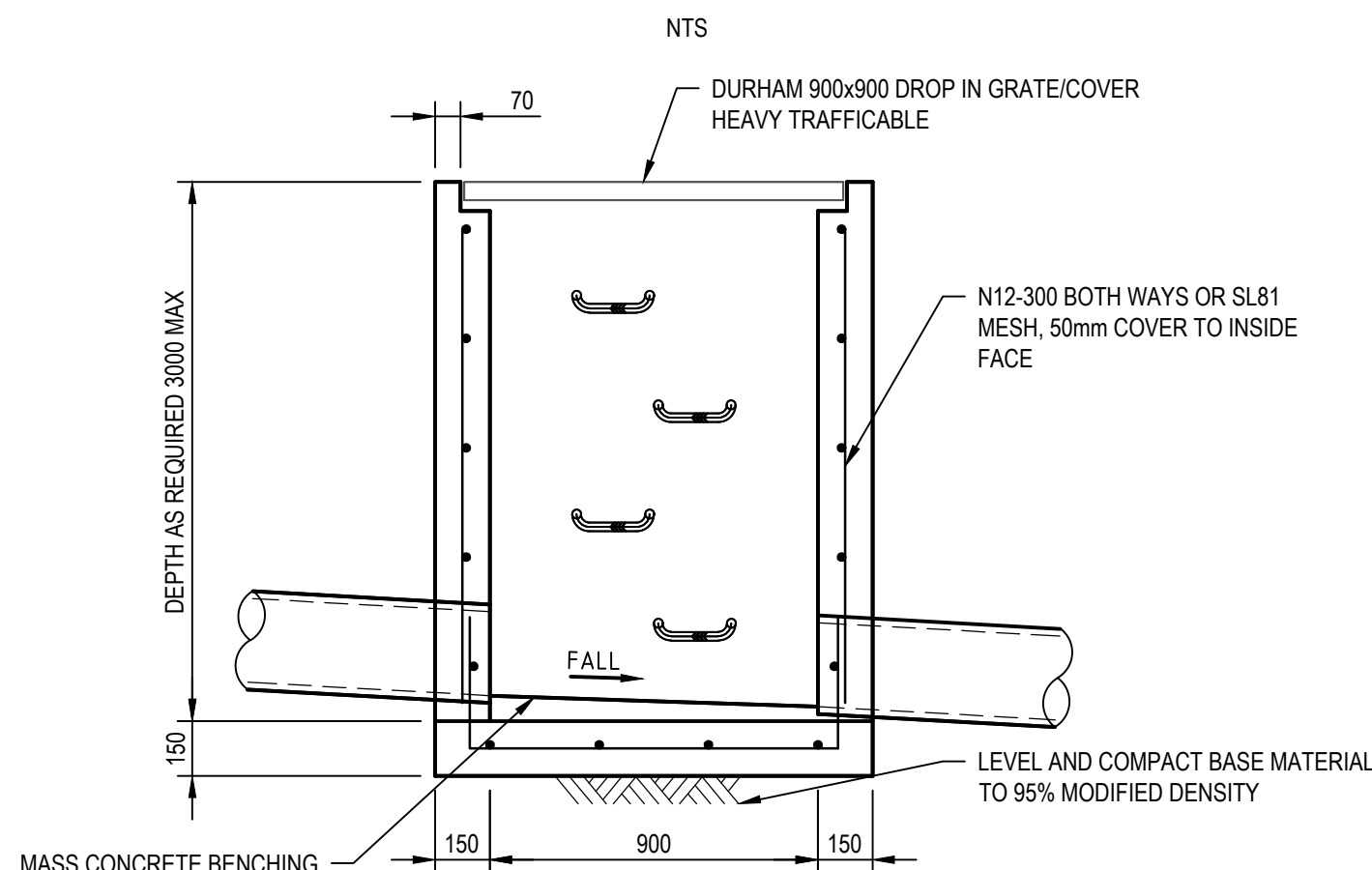
TRENCH DETAIL-BURIED PIPE UNDER NON-TRAFFICABLE AREA
NTS



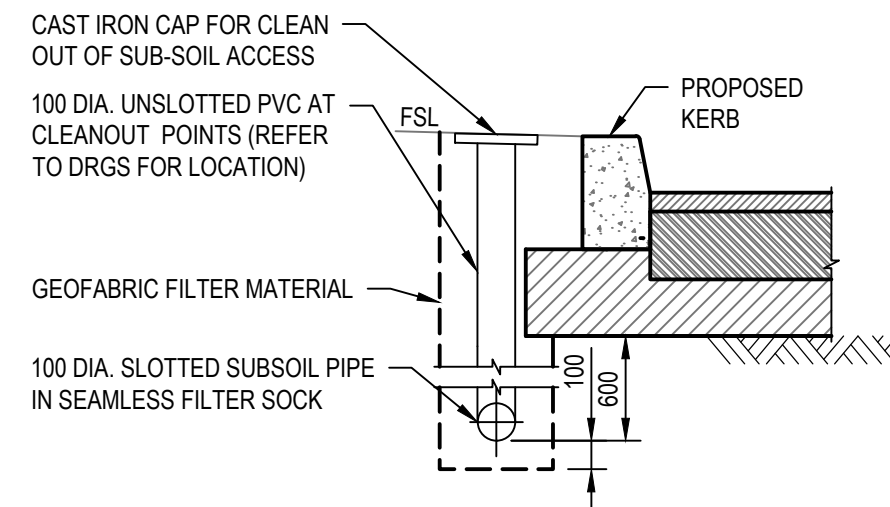
TRENCH DETAIL-BURIED PIPE UNDER TRAFFICABLE AREA
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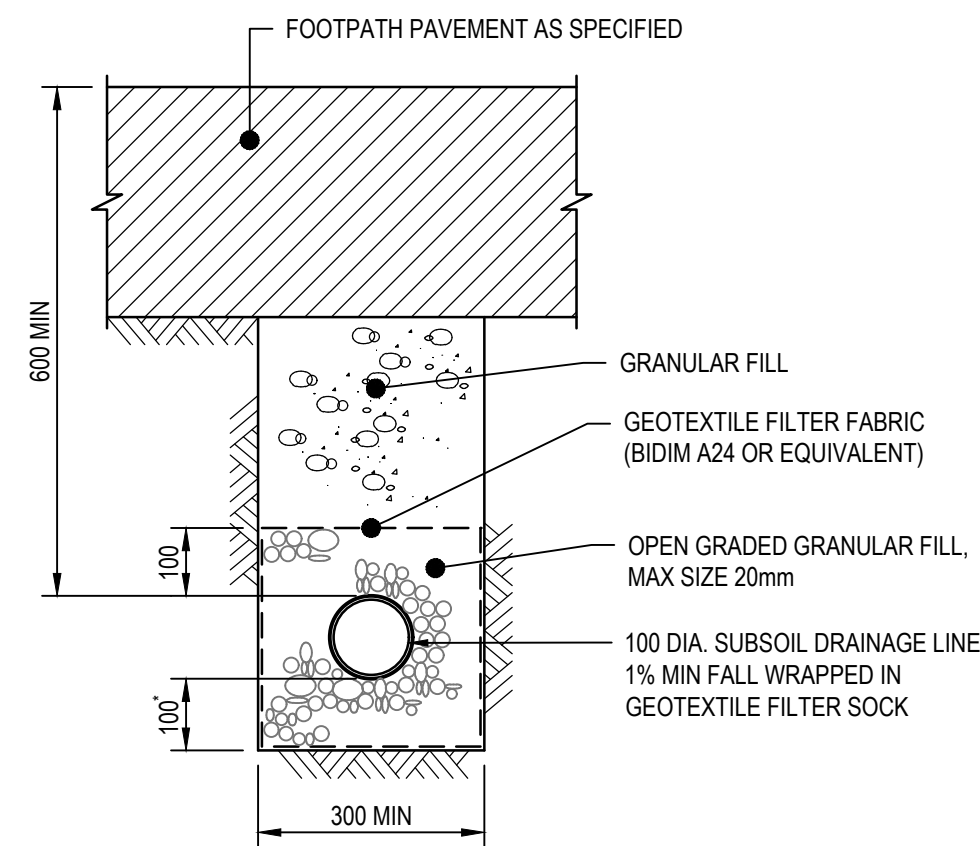
CAST IN-SITU
GRATED SURFACE INLET PIT/JUNCTION PIT PLAN
NTS



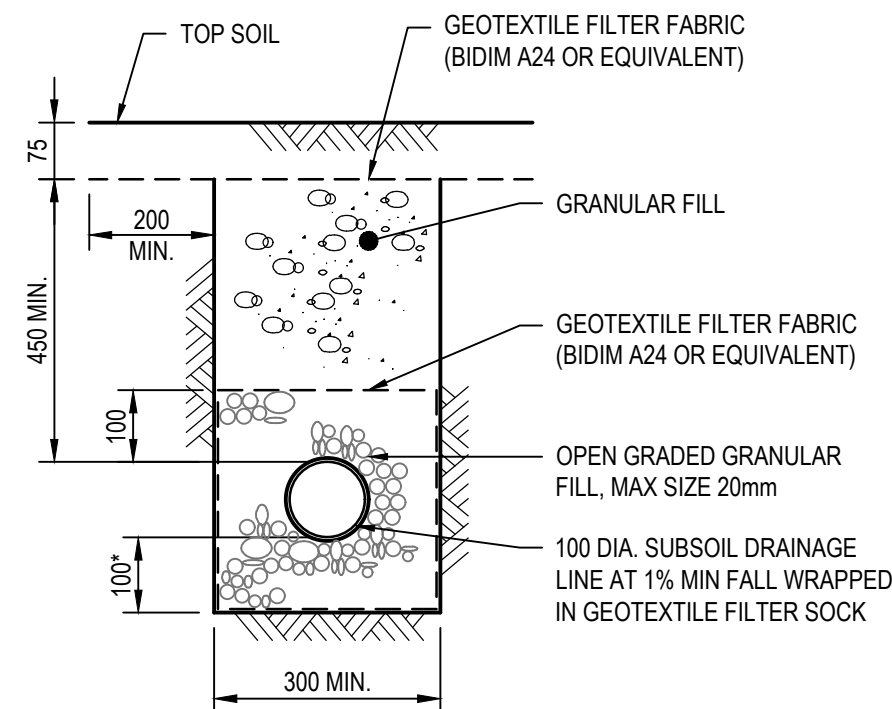
SECTION C
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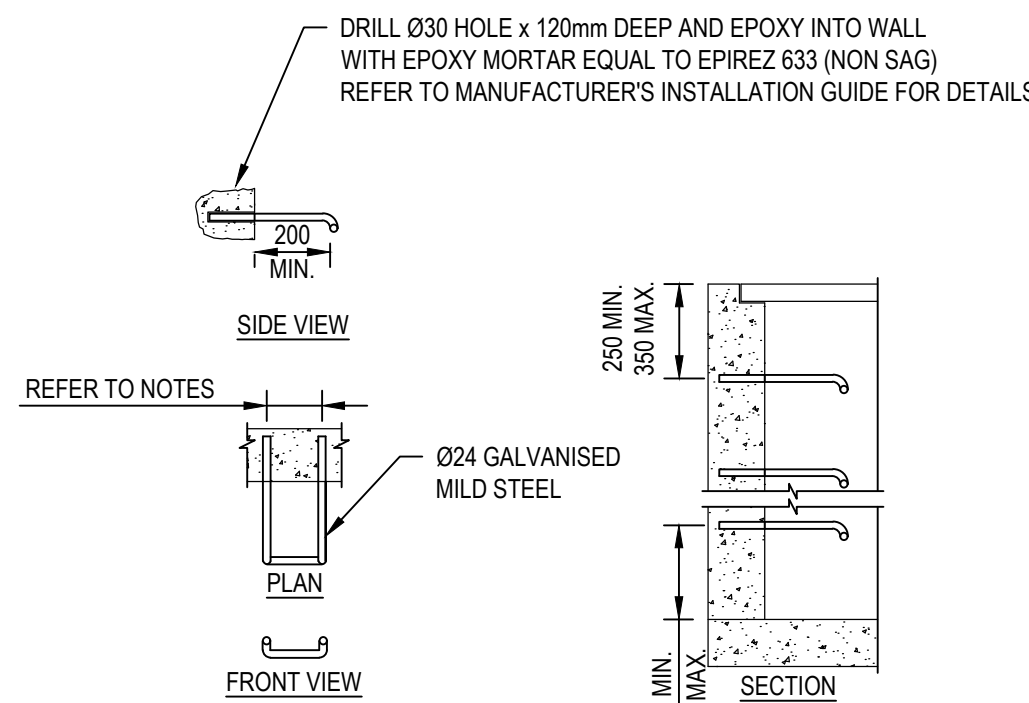
SUB-SURFACE DRAIN AND FLUSHING POINT DETAIL
NTS



SUBSOIL DRAINAGE LINE IN PAVED AREAS
NTS



SUBSOIL DRAINAGE LINE IN LANDSCAPE AREAS
NTS



PIT STEP IRON TYPICAL DETAILS

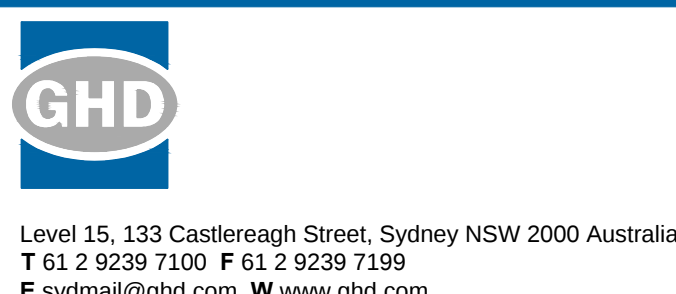
- NOTES:
1. WHEN POSITIONED IN STRAIGHT ALIGNMENT, STEP IS 400mm WIDE.
 2. STAGGERED STEPS ARE 200mm WIDE, STEPS ARE STAGGERED 200 CENTRE TO CENTRE FOR ALL ALTERNATIVE STEPS.
 3. SPACING OF STEPS ARE UNIFORM TO WITHIN ± 2 mm IN EACH PIT.

DEVELOPMENT APPLICATION

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											Conditions of Use. This document may only be used by GHD's client (and any other person who GHD has agreed can use this document) for the purpose for which it was prepared and must not be used by any other person or for any other purpose.			Drafting Check A.MACLEAN*		Design Check A.RAHMAN*		Project									
C ISSUED FOR DEVELOPMENT APPLICATION					MR		PM*	MD*	19.09.17					Approved (Project Director)				Title									
B ISSUED FOR REVIEW					MR		PM*	MD*	12.09.17					Date				CIVIL									
A ISSUED FOR DEVELOPMENT APPLICATION					MR		MD*	MW*	24.08.17					Scale NTS		This Drawing must not be used for Construction unless signed as Approved		Original Size	STORMWATER DRAINAGE DETAILS								
No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing			Drawn	Job Manager	Project Director	Date										A1	Drawing No: 21-26108-WA-DA-CI-1015 Rev: C								
														Level 15, 133 Castlereagh Street, Sydney NSW 2000 Australia T 61 2 9239 7199 F 61 2 9239 7199 E syd@mail@ghd.com W www.ghd.com													

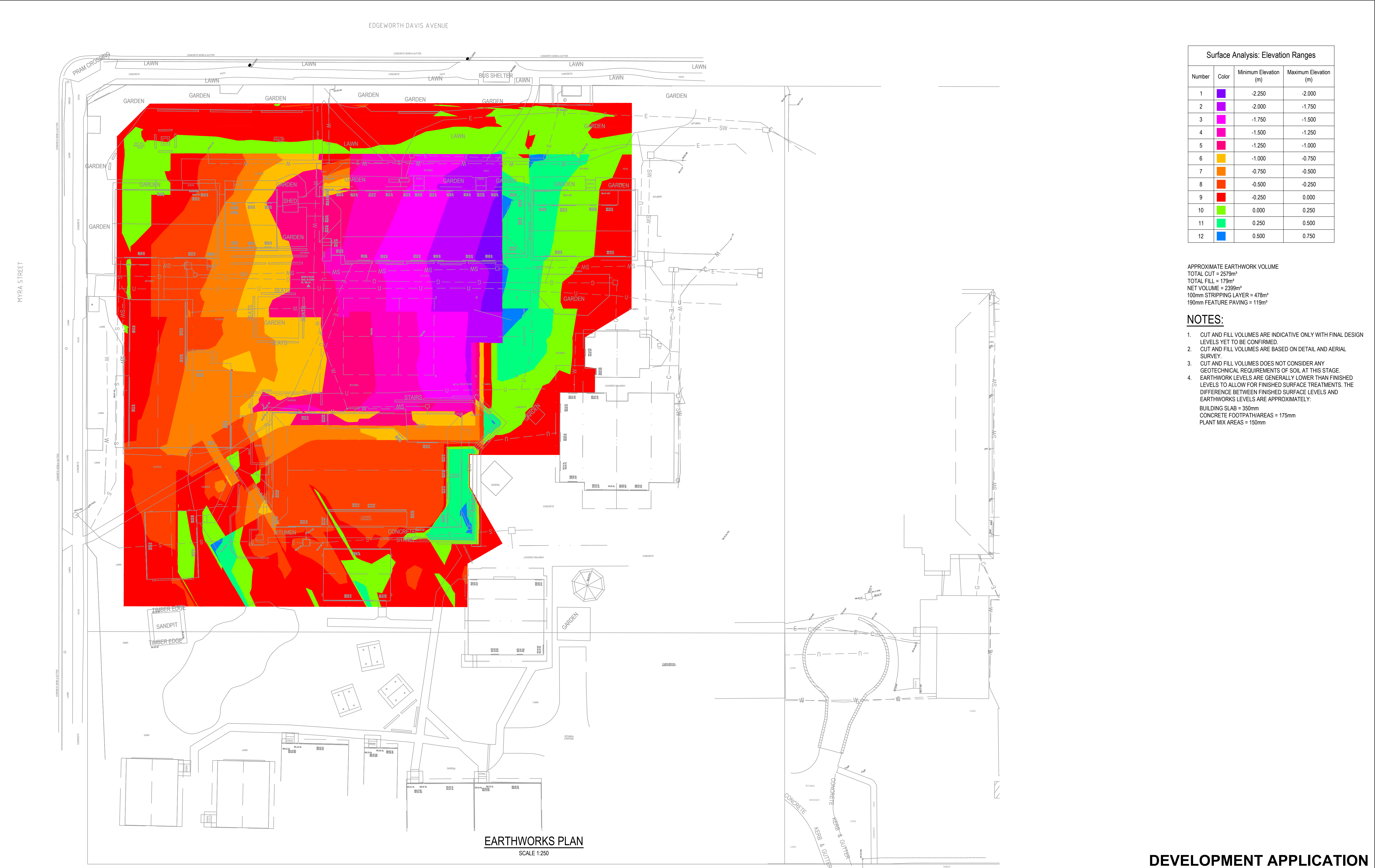
Plot Date: 19 September 2017 - 4:39 PM Plotted by: Mona Rangwala

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	Drafting Check	A.MACLEAN*	Design Check	A.ARAHMAN*
	Approved (Project Director)	Date		
	Scale	NTS		

Client	THE DEPARTMENT OF EDUCATION		
Project	WAITARA PUBLIC SCHOOL		
Title	CIVIL STORMWATER DRAINAGE DETAILS		
Original Size	A1	Drawing No:	21-26108-WA-DA-CI-1015 Rev: C



Surface Analysis: Elevation Ranges			
Number	Color	Minimum Elevation (m)	Maximum Elevation (m)
1		-2.250	-2.000
2		-2.000	-1.750
3		-1.750	-1.500
4		-1.500	-1.250
5		-1.250	-1.000
6		-1.000	-0.750
7		-0.750	-0.500
8		-0.500	-0.250
9		-0.250	0.000
10		0.000	0.250
11		0.250	0.500
12		0.500	0.750

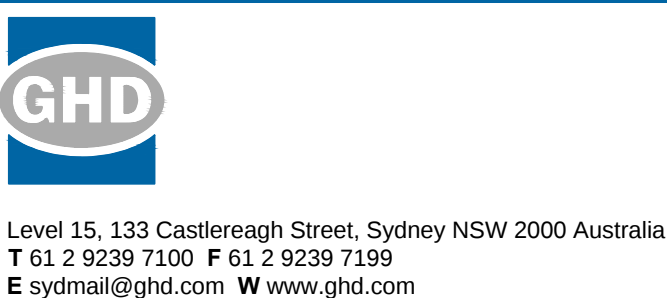
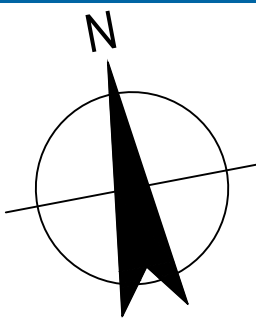
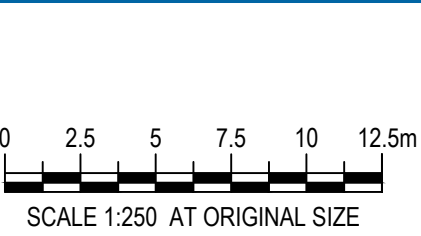
APPROXIMATE EARTHWORK VOLUME
TOTAL CUT = 2579m³
TOTAL FILL = 179m³
NET VOLUME = 2399m³
100mm STRIPPING LAYER = 478m³
190mm FEATURE PAVING = 119m³

- NOTES:**
- CUT AND FILL VOLUMES ARE INDICATIVE ONLY WITH FINAL DESIGN LEVELS YET TO BE CONFIRMED.
 - CUT AND FILL VOLUMES ARE BASED ON DETAIL AND AERIAL SURVEY.
 - CUT AND FILL VOLUMES DOES NOT CONSIDER ANY GEOTECHNICAL REQUIREMENTS OF SOIL AT THIS STAGE.
 - EARTHWORK LEVELS ARE GENERALLY LOWER THAN FINISHED LEVELS TO ALLOW FOR FINISHED SURFACE TREATMENTS. THE DIFFERENCE BETWEEN FINISHED SURFACE LEVELS AND EARTHWORKS LEVELS ARE APPROXIMATELY:
BUILDING SLAB = 350mm
CONCRETE FOOTPATH/AREAS = 175mm
PLANT MIX AREAS = 150mm

EARTHWORKS PLAN
SCALE 1:250

DEVELOPMENT APPLICATION

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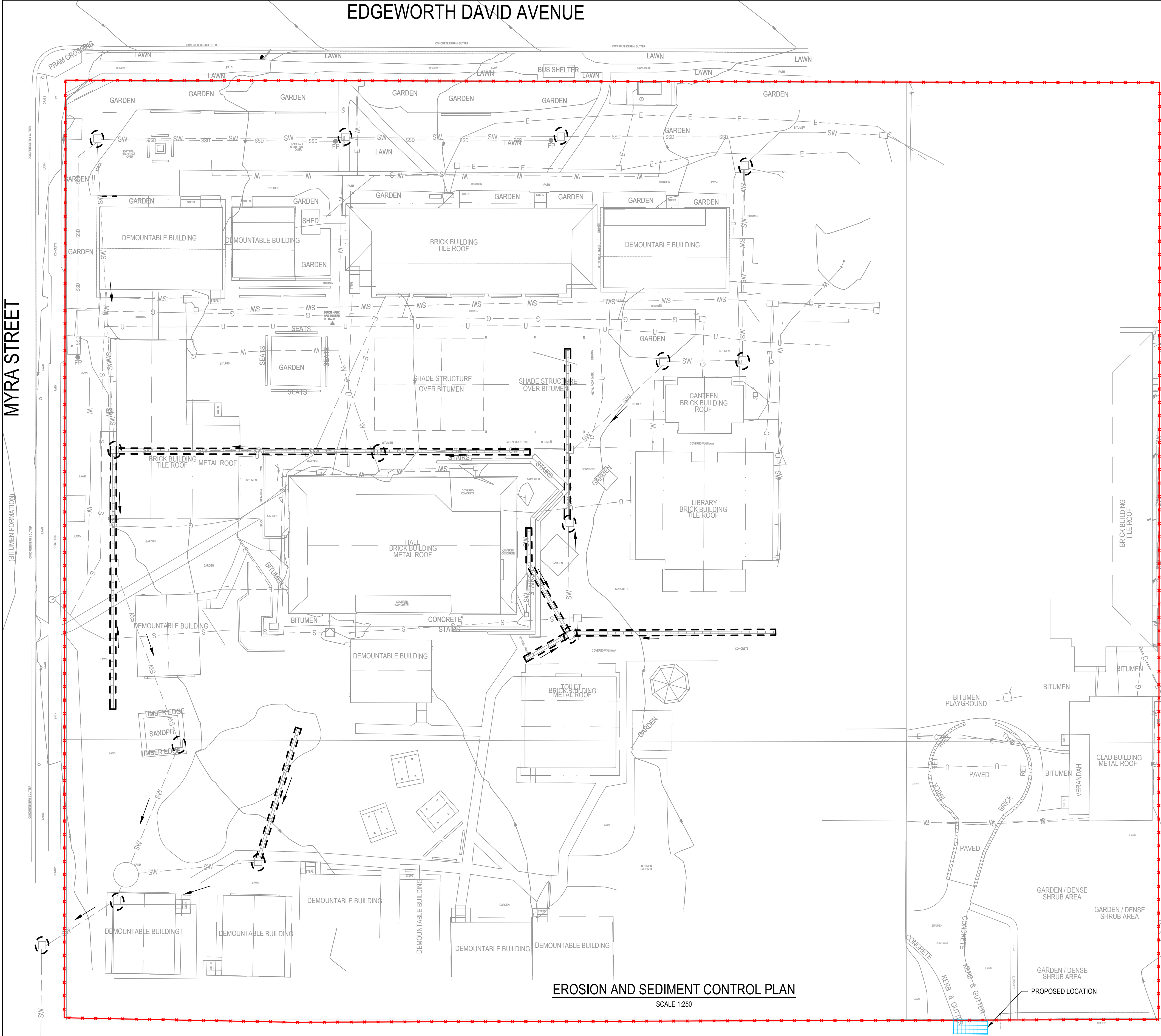


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Drafting Check A.MACLEAN*	Design Check A.RAHMAN*
Approved (Project Director) Date	
Scale 1:250	This Drawing must not be used for Construction unless signed as Approved

Client Project	THE DEPARTMENT OF EDUCATION WAITARA PUBLIC SCHOOL	
Title	CIVIL EARTHWORKS PLAN	
Original Size	A1	Drawing No: 21-26108-WA-DA-CI-1030Rev: C

EDGEWORTH DAVID AVENUE

MYRA STREET



NOTES:

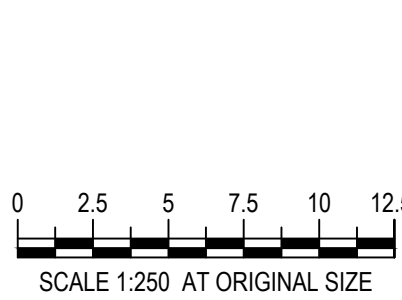
- ALL WORKS SHALL BE GENERALLY CARRIED OUT IN ACCORDANCE WITH:
(A) EPA - POLLUTION CONTROL MANUAL FOR URBAN STORMWATER.
(B) DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT MANUAL - "URBAN EROSION & SEDIMENT CONTROL".
(C) SOIL AND CONSTRUCTION VOLUME 1, 4TH EDITION, MARCH 2004 - LANDCOM
- MAINTAIN ALL EROSION AND SEDIMENT CONTROL DEVICES TO THE SATISFACTION OF THE PRINCIPAL'S REPRESENTATIVE.
- MINIMISE THE AREA OF SITE BEING DISTURBED AT ANY ONE TIME.
- PROTECT ALL STOCKPILES OF MATERIALS FROM SCOUR AND EROSION. DO NOT STOCKPILE LOOSE MATERIAL IN ROADWAYS, NEAR DRAINAGE PITS OR IN WATERCOURSES.
- ALL SOIL AND WATER CONTROL MEASURES ARE TO BE PUT BACK IN PLACE AT THE END OF EACH WORKING DAY, AND MODIFIED TO BEST SUIT SITE CONDITIONS.
- CONTROL WATER FROM UPSTREAM OF THE SITE SUCH THAT IT DOES NOT ENTER THE DISTURBED SITE.
- ALL CONSTRUCTION VEHICLES SHALL ENTER & EXIT THE SITE VIA THE APPROVED CONSTRUCTION ENTRY/EXIT ROUTE.
- ALL VEHICLES LEAVING THE SITE SHALL BE CLEANED & INSPECTED BEFORE LEAVING.
- MAINTAIN ALL STORMWATER PIPES CLEAR OF DEBRIS & SEDIMENT. INSPECT STORMWATER SYSTEM & CLEAN OUT AFTER EACH STORM EVENT.
- CLEAN OUT ALL EROSION & SEDIMENT CONTROL DEVICES AFTER EACH STORM EVENT.
- SEDIMENT AND EROSION CONTROL PLAN IS INDICATIVE ONLY.
- ALL NEW STORMWATER PITS TO BE SURROUNDED BY GEOTEXTILE INLET FABRIC DURING CONSTRUCTION.

LEGEND:

- PROPOSED SEDIMENT FENCE
- PROPOSED GEOTEXTILE FILTER AROUND NEW STORMWATER PITS
- STABILIZED SITE ACCESS (TEMP ACCESS)

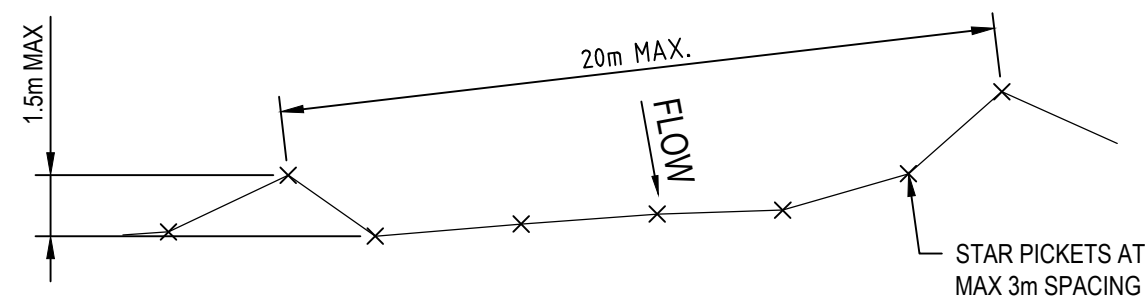
DEVELOPMENT APPLICATION

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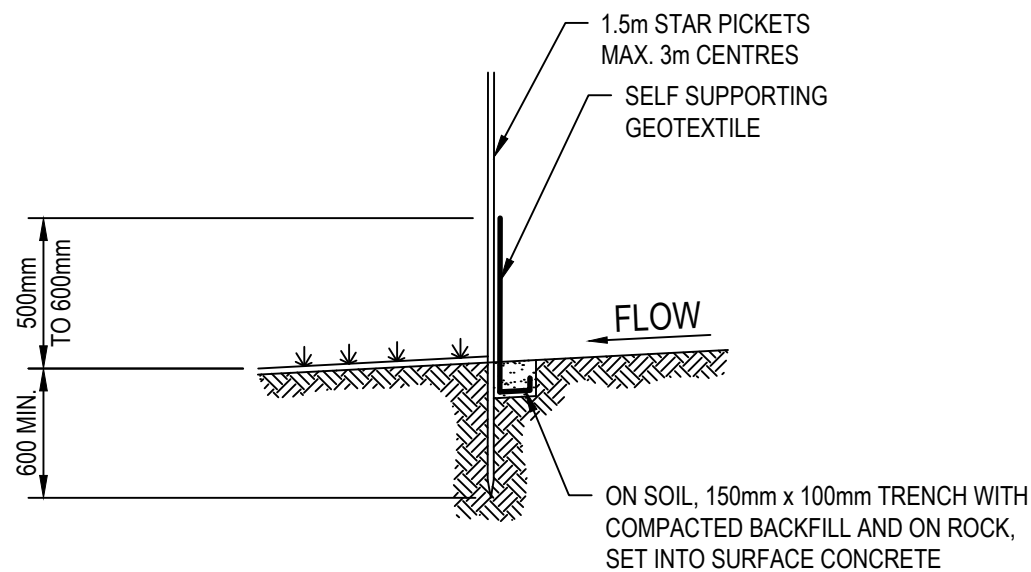


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	Approved (Project Director)	Date
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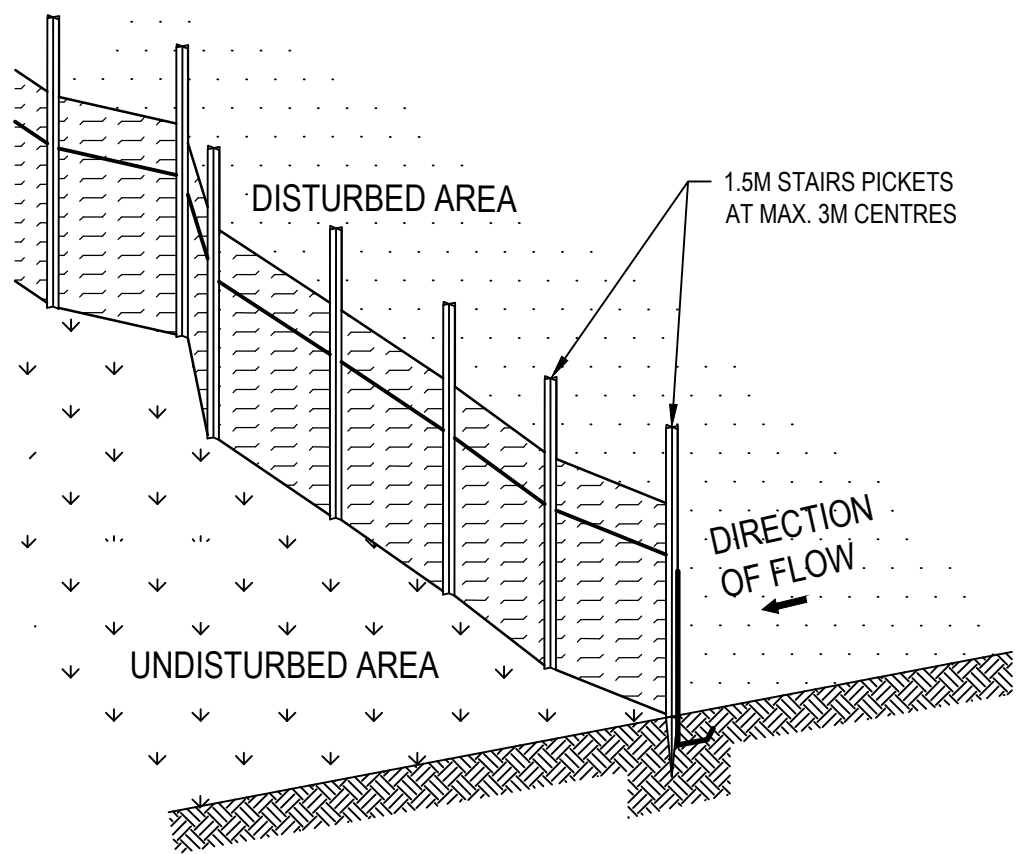
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Original Size	A1
Drawing No:	21-26108-WA-DA-CI-1035
Rev:	C



SEDIMENT FENCE PLAN
NTS



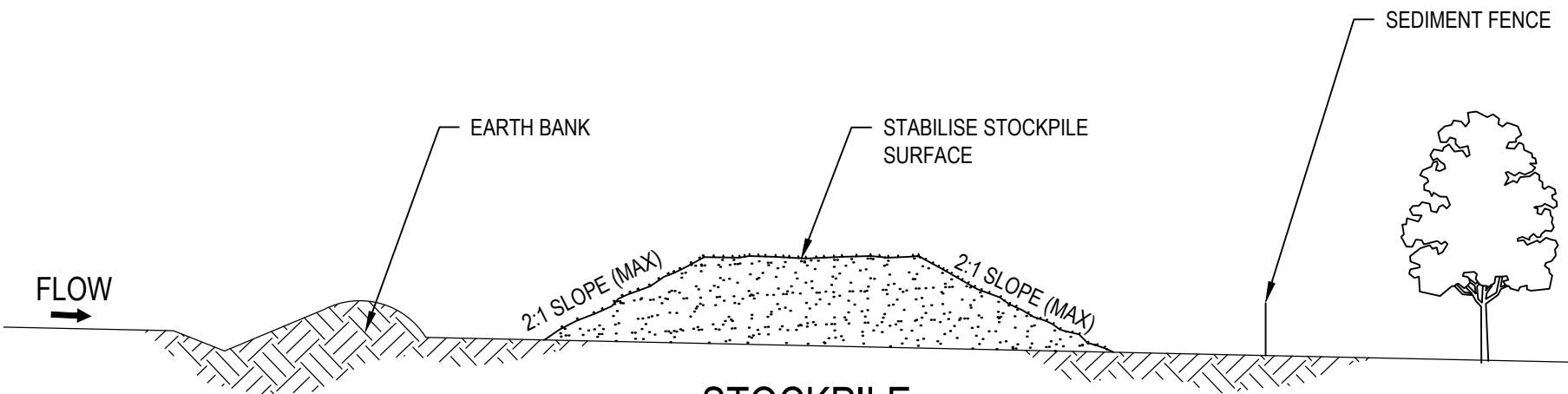
SEDIMENT FENCE SECTION
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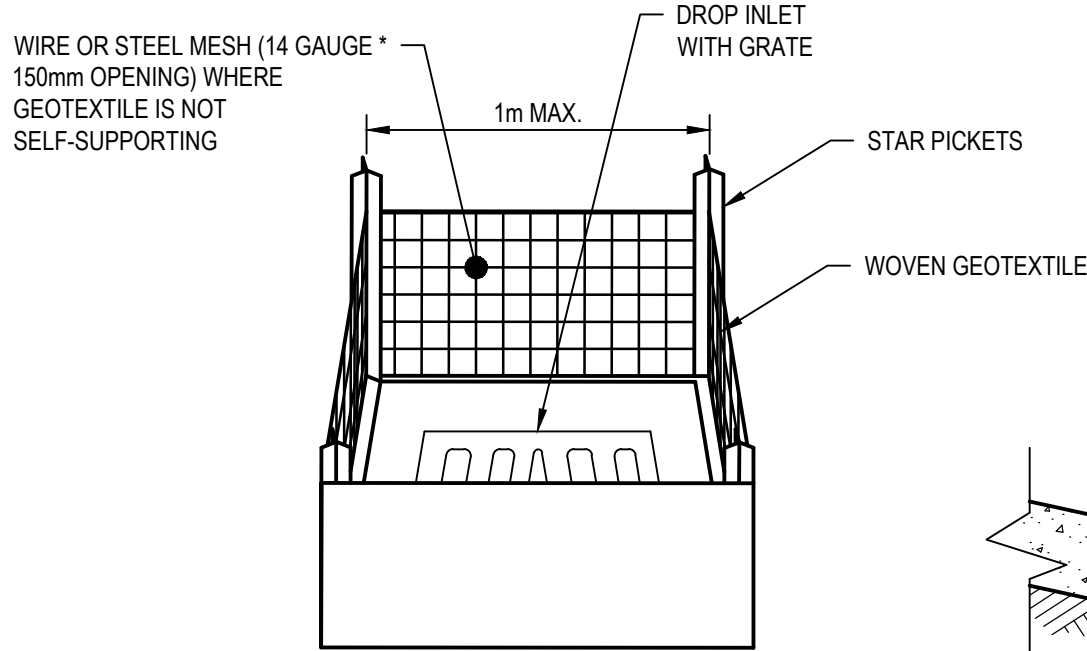
SEDIMENT FENCE
NTS

SILT FENCE CONSTRUCTION NOTES

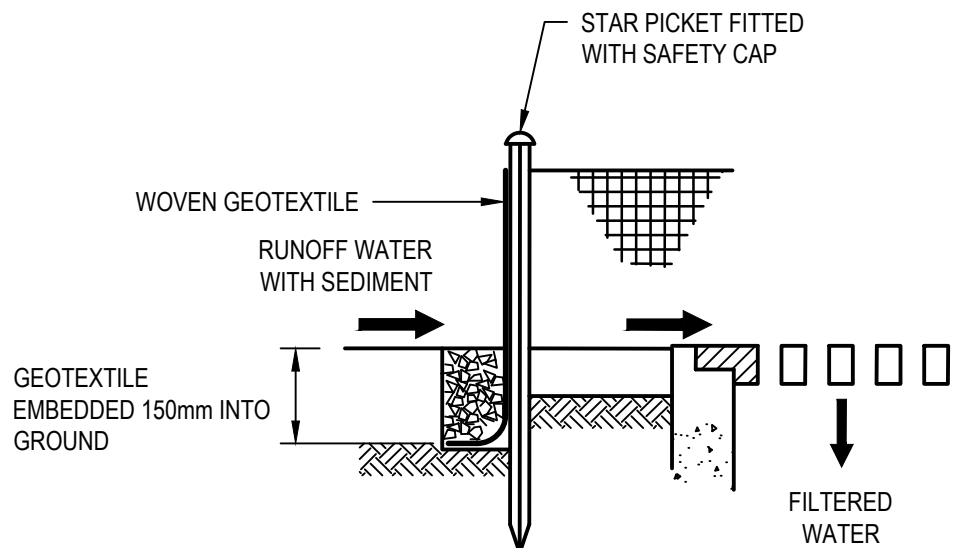
1. CONSTRUCT SEDIMENT FENCE AS CLOSE AS POSSIBLE TO PARALLEL TO THE CONTOURS OF THE SITE.
2. DRIVE 1.5m LONG STAR PICKETS INTO GROUND, 3m APART.
3. DIG A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
4. BACKFILL TRENCH OVER BASE OF FABRIC.
5. FIX SELF-SUPPORTING GEOTEXTILE TO UPSLOPE SIDE OF POST WITH WIRE TIES OR AS RECOMMENDED BY GEOTEXTILE MANUFACTURER. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.



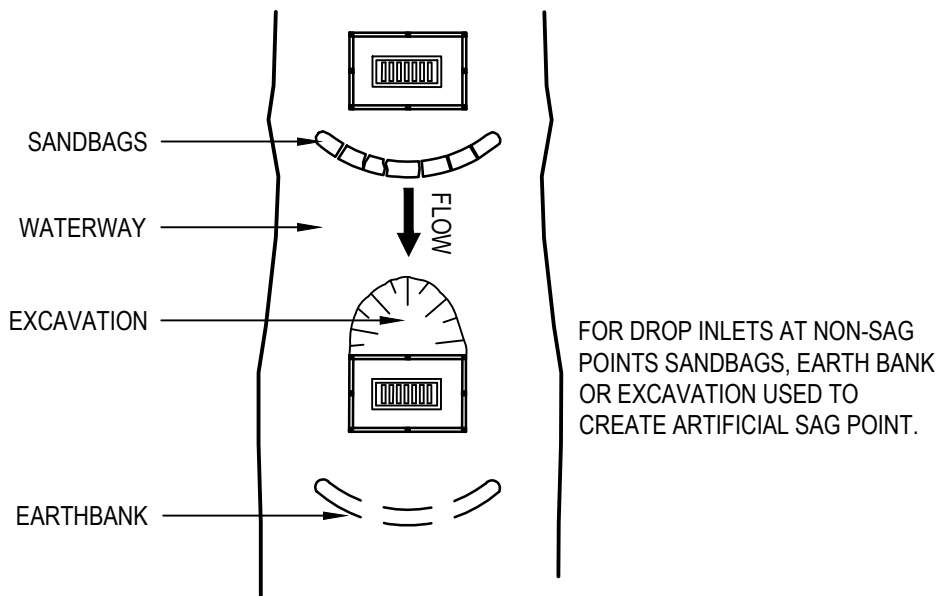
STOCKPILE
NTS



GEOTEXTILE INLET FILTERS
NTS



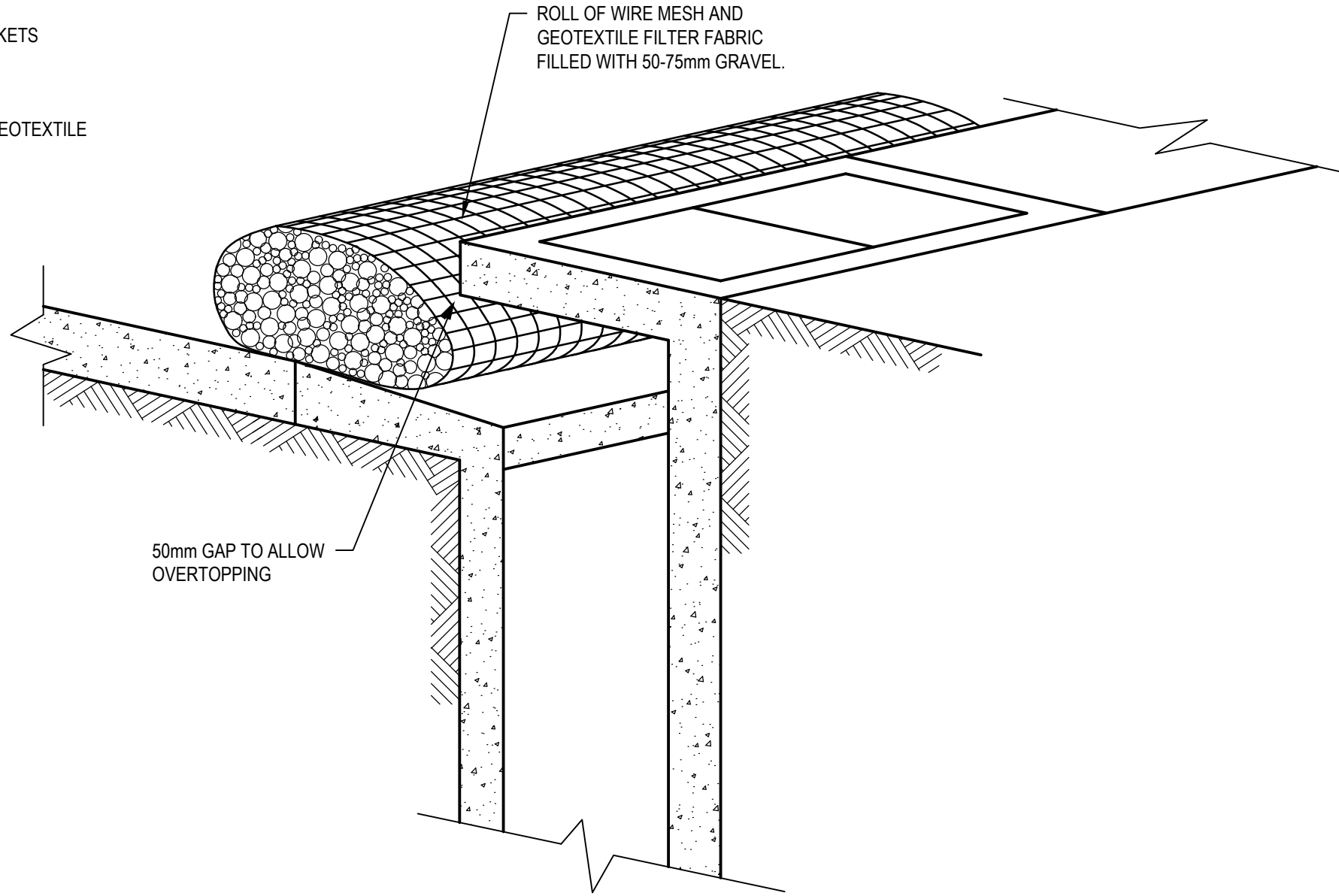
GEOTEXTILE INLET FILTERS SECTION
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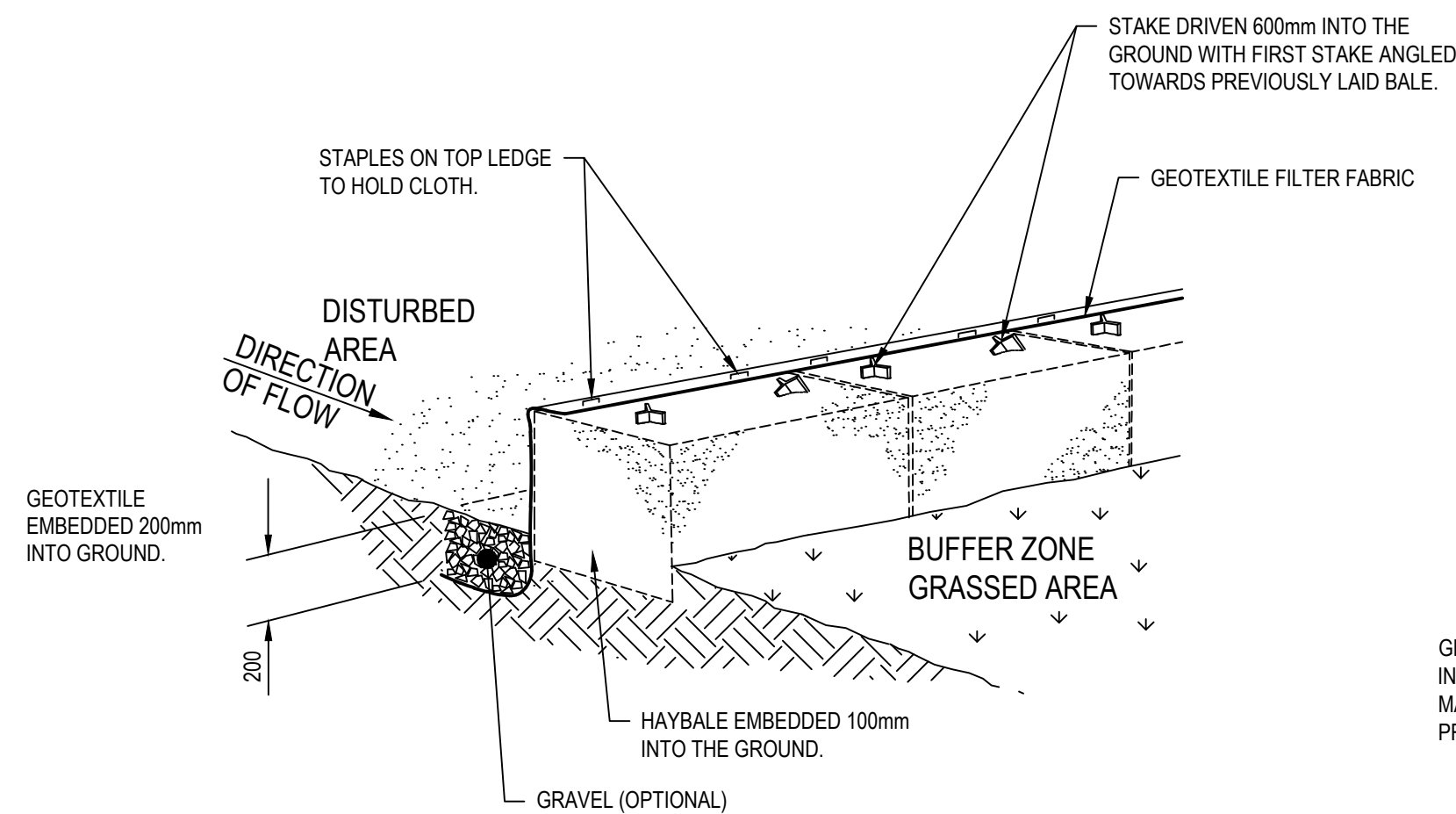
GEOTEXTILE INLET FILTER PLAN
NTS

CONSTRUCTION NOTES

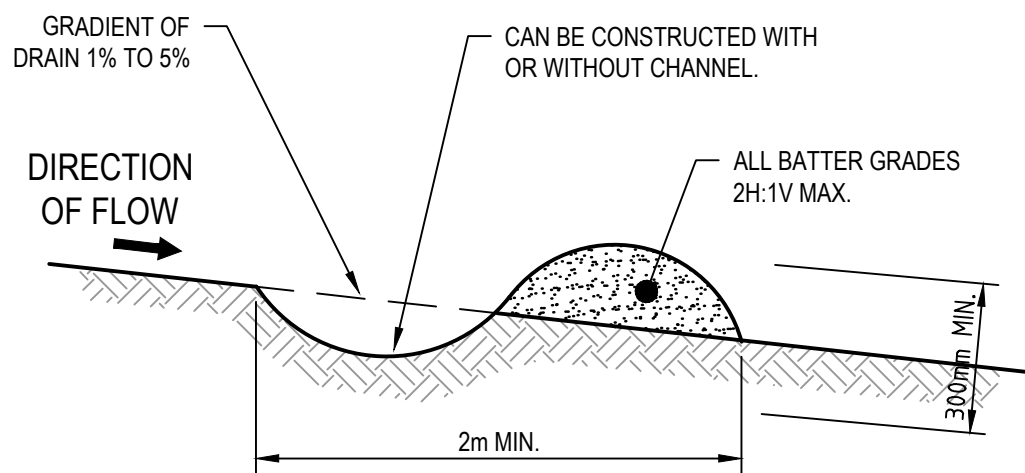
1. FABRICATE A SEDIMENT BARRIER MADE FROM GEOTEXTILE OR STRAW BALES.
2. SUPPORT GEOTEXTILE WITH MESH TIED TO POST AT 1m CENTRES
3. DO NOT COVER INLET WITH GEOTEXTILE.
4. CONSTRUCTION DETAILS ARE SIMILAR TO STANDARD DRAWING 6-6 AND STANDARD DRAWING 6-7.



KERB INLET FILTERS
NTS



HAYBALE AND GEOTEXTILE SEDIMENT FILTER
NTS

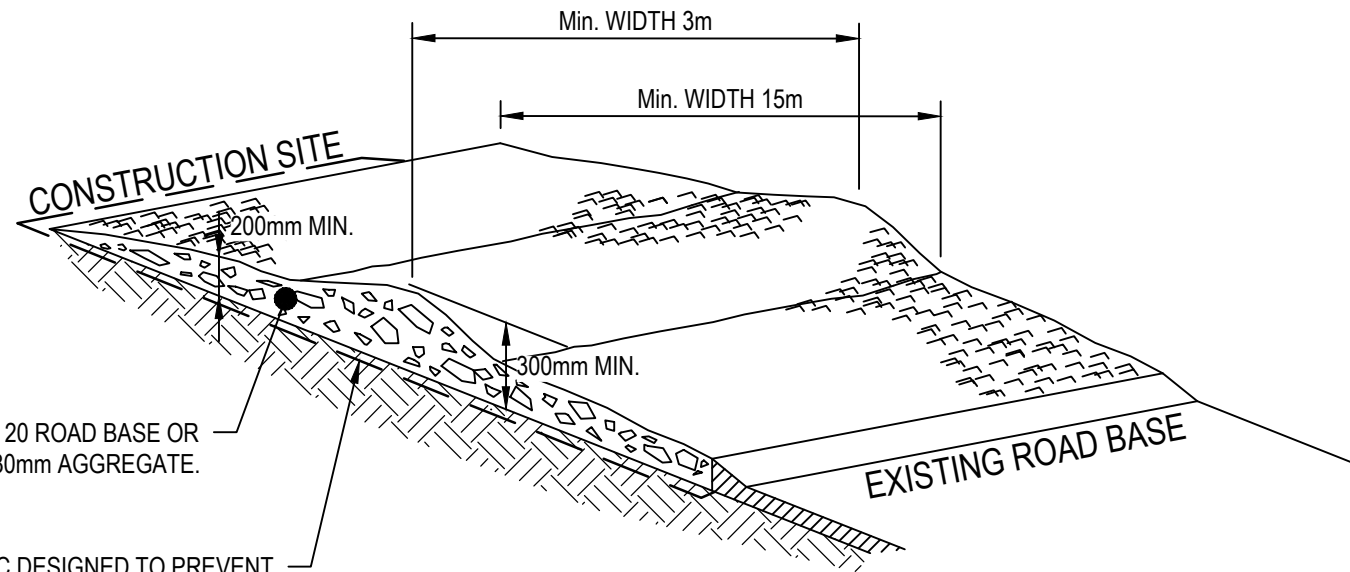


NOTE:
ONLY TO BE USED AS TEMPORARY BANK WHERE MAXIMUM UPSLOPE LENGTH IS 80 METRES.

EARTH BANK (LOW FLOW)
NTS

EARTH BANK (LOW FLOW) CONSTRUCTION SEQUENCE

1. CONSTRUCT WITH GRADIENT OF 1% TO 5%.
2. AVOID REMOVING TREES AND SHRUBS IF POSSIBLE.
3. DRAINS TO BE OF CIRCULAR, PARABOLIC OR TRAPEZOIDAL CROSS SECTION NOT V-SHAPED.
4. EARTH BANKS TO BE ADEQUATELY COMPACTED IN ORDER TO PREVENT FAILURE.
5. PERMANENT OR TEMPORARY STABILISATION OF THE EARTH BANK TO BE COMPLETED WITHIN 10 DAYS OF CONSTRUCTION.
6. ALL OUTLETS FROM DISTURBED LANDS ARE TO BE FEED INTO A SEDIMENT BASIN OR SIMILAR.
7. DISCHARGE RUNOFF COLLECTED FROM UNDISTURBED LANDS ONTO EITHER A STABILISED OR AN UNDISTURBED DISPOSAL SITE WITHIN THE SAME SUBCATCHMENT AREA FROM WHICH THE WATER ORIGINATED.
8. COMPACTED BANK WITH A SUITABLE IMPLEMENT IN SITUATIONS WHERE THEY ARE REQUIRED TO FUNCTION FOR MORE THAN FIVE DAYS.
9. EARTH BANKS TO BE FREE OF PROJECTIONS OR OTHER IRREGULARITIES THAT WILL IMPEDE NORMAL FLOW.



STABILISED SITE ACCESS DETAIL
NTS

STABILISED SITE ACCESS CONSTRUCTION NOTES

1. STRIP TOPSOIL AND LEVEL SITE.
2. COMPACT SUBGRADE.
3. COVER AREA WITH NEEDLE - PUNCHED GEOTEXTILE.
4. CONSTRUCT 200mm THICK PAD OVER GEOTEXTILE USING ROAD BASE OR 30mm AGGREGATE. MINIMUM LENGTH 15 METRES OR TO BUILDING ALIGNMENT. MINIMUM WIDTH 3 METRES.
5. CONSTRUCT HUMPS IMMEDIATELY WITHIN BOUNDARY TO DIVERT WATER TO A SEDIMENT FENCE OR OTHER SEDIMENT TRAP.

STOCKPILE CONSTRUCTION

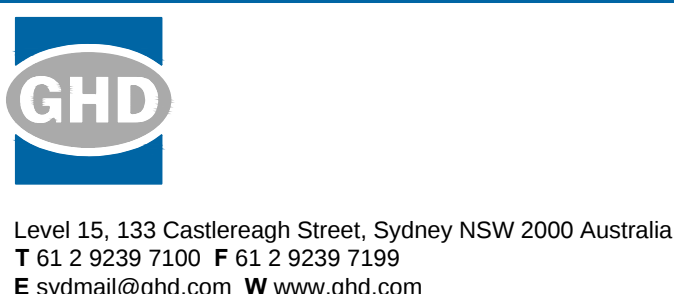
1. LOCATE STOCKPILE AT LEAST 5 METRES FROM EXISTING VEGETATION, CONCENTRATED WATER FLOWS, ROADS AND HAZARD AREAS.
2. CONSTRUCT ON THE CONTOUR AS A LOW, FAT, ELONGATED MOUND.
3. WHERE THERE IS SUFFICIENT AREA TOPSOIL STOCKPILES SHALL BE LESS THAN 2 METRES IN HEIGHT.
4. REHABILITATE IN ACCORDANCE WITH THE CONSTRUCTION ENVIRONMENT MANAGEMENT PLAN. CONSTRUCT EARTH BANK (STANDARD DRAWING 5-5) ON THE UPSLOPE SIDE TO DIVERT RUN OFF AROUND THE STOCKPILE AND A SEDIMENT FENCE (STANDARD DRAWING 6-8) 1 TO 2 METRES DOWNSLOPE OF STOCKPILE.

DEVELOPMENT APPLICATION

No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date
C	ISSUED FOR DEVELOPMENT APPLICATION		MR	PM*	MD*	19.09.17
B	ISSUED FOR REVIEW		MR	PM*	MD*	12.09.17
A	ISSUED FOR DEVELOPMENT APPLICATION		MR	MD*	MW*	24.08.17

Plot Date: 19 September 2017 - 4:40 PM Plotted by: Mona Rangwala

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	Approved (Project Director)	Date			Title	CIVIL SEDIMENT CONTROL DEVICES
	Scale	NTS		This Drawing must not be used for Construction unless signed as Approved	Original Size	A1
					Drawing No:	21-26108-WA-DA-CI-1036
					Rev:	C