

Education

TSA

Level 15, 133 Castlereagh Street, Sydney NSW 2000 Australia **T** 61 2 9239 7100 **F** 61 2 9239 7199

E sydmail@ghd.com W www.ghd.com

LEGEND:

NEW GRATED TRENCH DRAIN NEW STORMWATER PIPE NEW STORMWATER PIT PIPE FLOW DIRECTION NEW DRAINAGE SWALE — SSD — — NEW SUBSOIL DRAINAGE **NEW RAINWATER TANK** NEW DOWNPIPE CONNECTION LINE Ø150 UPVC OVERLAND FLOW DIRECTION

NOTES:

- 1. ALL STORMWATER PIPES TO HAVE A MINIMUM OF 1% SLOPE IN DIRECTION SHOWN. ALL PIPES TO BE MINIMUM 450mm COVER IN LANDSCAPED/FOOTPATH AREA AND
- 600mm COVER IN TRAFFICABLE AREA. 2. ALL STORMWATER PIPES TO BE REINFORCED CONCRETE (RCP) CLASS 2 WITH
- RUBBER RING JOINT UNO. STORMWATER PIPES ARE TO BE INSTALLED IN ACCORDANCE WITH AS 3725. ALL
- BEDDING IS TO BE TYPE H2 UNLESS NOTED OTHERWISE.
- CARE IS TO BE TAKEN WITH LEVELS OF STORMWATER LINES. GRADE SHOWN ARE NOT TO BE REDUCED WITHOUT APPROVAL.
- STORMWATER MANHOLES/GRATED PITS AND COVERS/GRATES ARE TO BE
- CONSTRUCTED IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS.
- GRATES AND COVERS SHALL CONFORM WITH AS 3996-1992.
- ALL WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH CURRENT STANDARDS AND CONSTRUCTION SPECIFICATIONS.
- THE CONTRACTOR SHALL VERIFY LOCATIONS OF EXISTING SERVICES WITH ALL
- RELEVANT AUTHORITIES BEFORE COMMENCING CONSTRUCTION. ALL STRUCTURES TO BE CONSTRUCTED TO NEW FINISHED SURFACE LEVELS.
- 10. DATUM FOR LEVELS IS AHD.
- 11. THE POSITION, SIZE, SURFACE LEVELS AND INVERT LEVELS OF EXISTING STORMWATER MANHOLES AND 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.
- THE ASSET OWNER (i.e. COUNCIL). MAKE REQUIRED OPENING INSIDE 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 DURHAM OR RMS APPROVED HEAVY DUTY CLASS D.
- 15. GRATES AND FRAMES NOT IN ROADWAYS TO BE DURHAM OR EQUIVALENT MEDIUM DUTY 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).

DEVELOPMENT APPLICATION

NSW DEPARTMENT OF EDUCATION NORTH KELLYVILLE PUBLIC SCHOOL Drafting A.MACLEAN* A.RAHMAN* This document may only be used by Approved (Project Director) GHD's client (and any other person who **OVERALL STORMWATER DRAINAGE PLAN**

This Drawing must not be

used for Construction unless

GHD has agreed can use this document) Date

for the purpose for which it was prepared

and must not be used by any other

person or for any other purpose.

Drawing No: 2126108-NK-SD-CI-1010 Rev: E

No Revision Note: * indicates signatures on original issue of drawing or last revision of drawing Drawn

ISSUED FOR SSD DEVELOPMENT APPLICATION

C | TENDER ADDENDUM

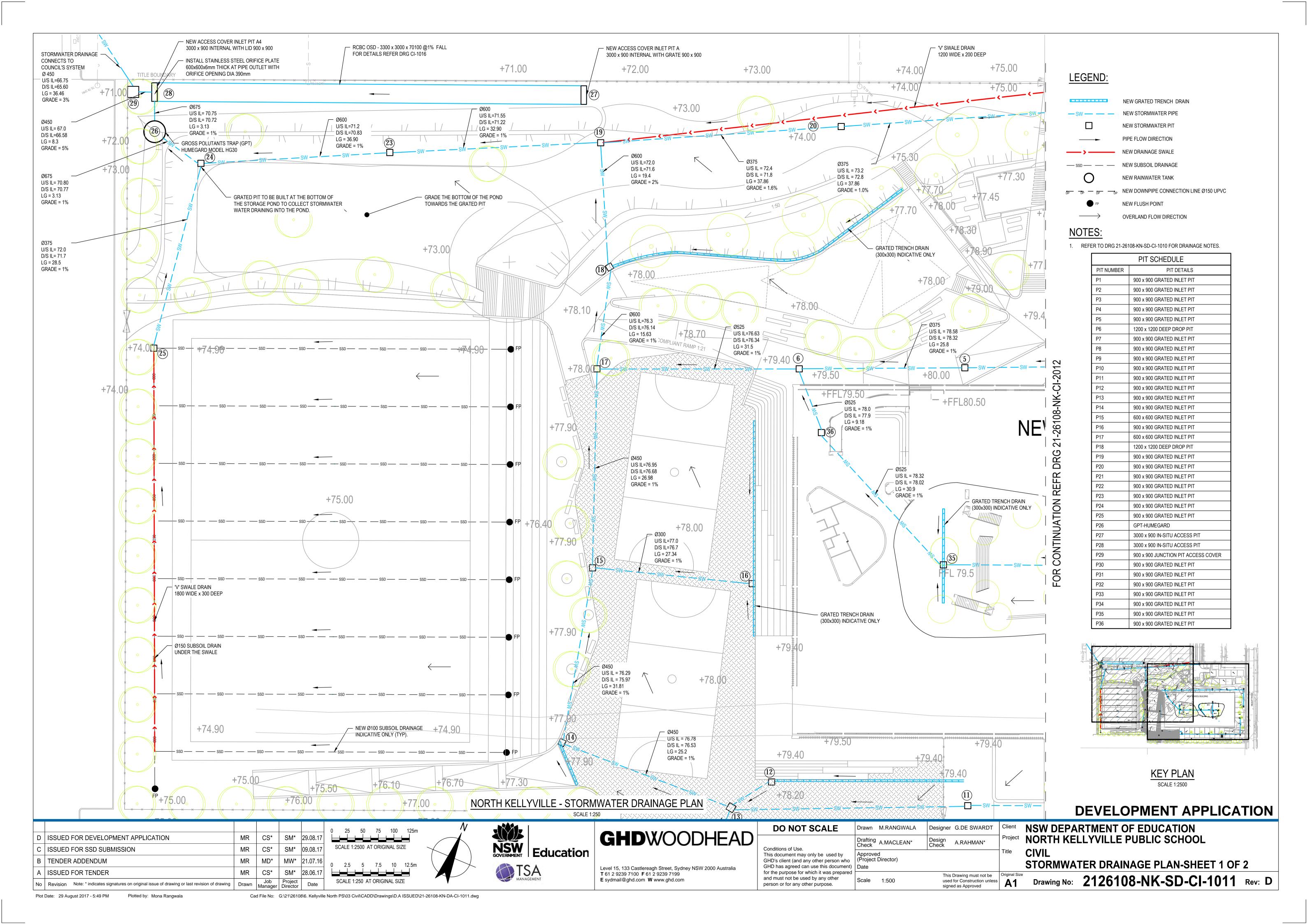
B | ISSUED FOR TENDER

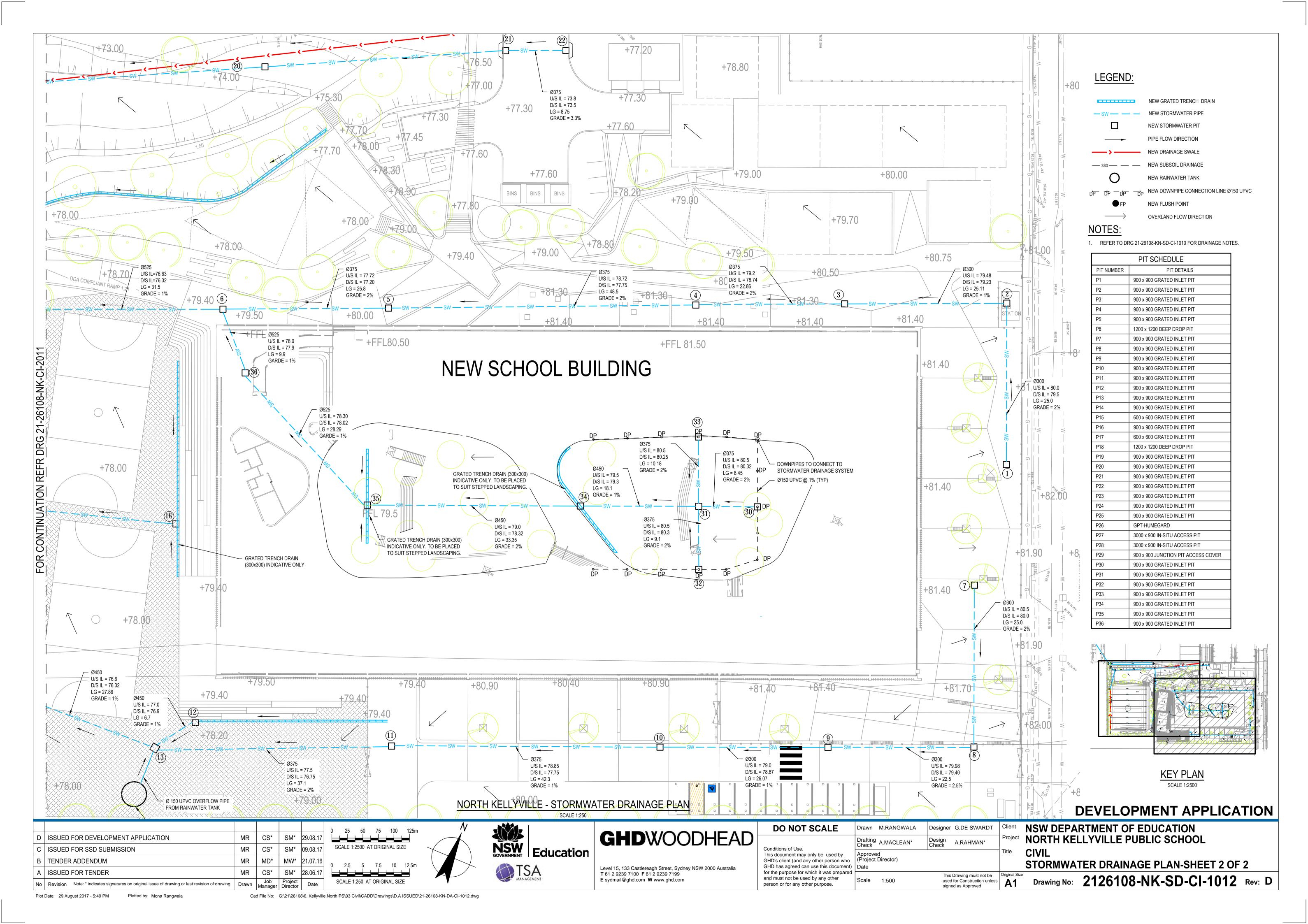
CS*

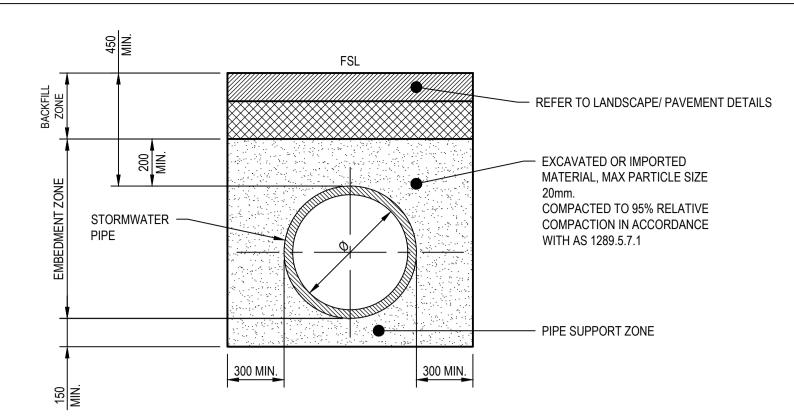
CS*

SM*

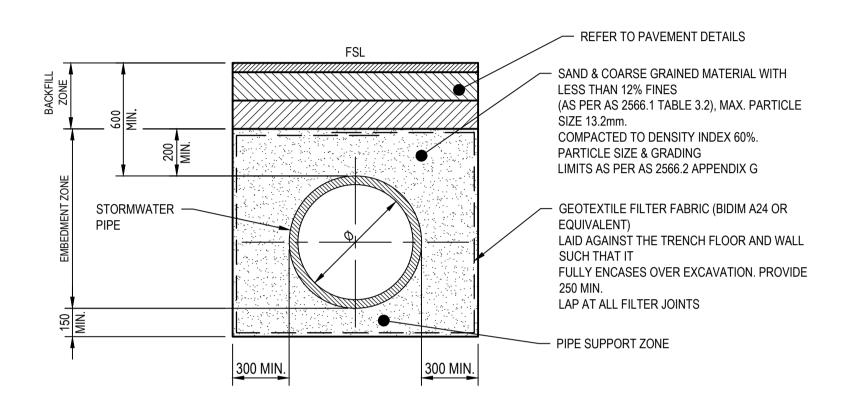
SM*



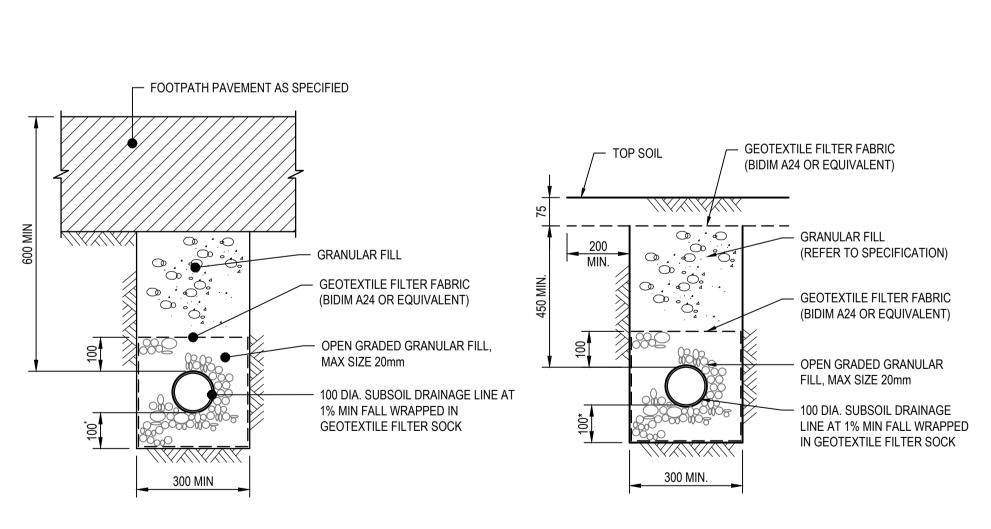




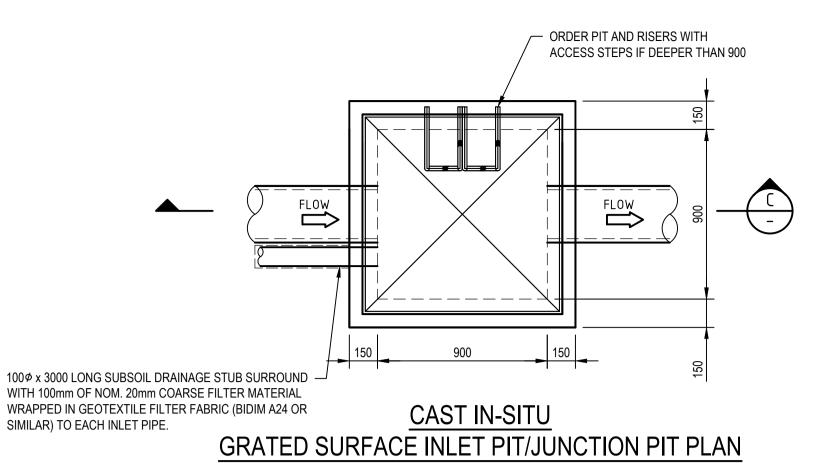
TRENCH DETAIL-BURIED PIPE UNDER NON-TRAFFICABLE AREA



TRENCH DETAIL-BURIED PIPE UNDER TRAFFICABLE AREA

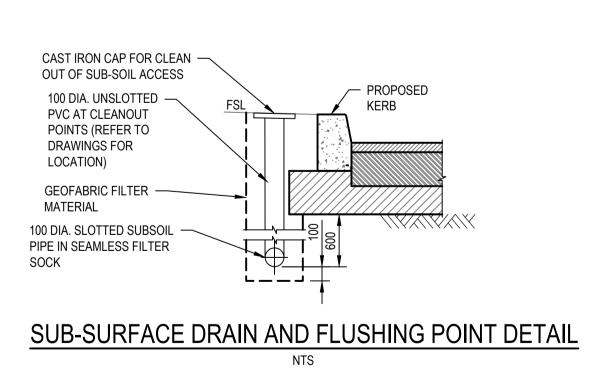


SUBSOIL IN LANDSCAPE AREAS



NTS

DURHAM 900x900 DROP IN GRATE/COVER HEAVY TRAFFICABLE N12-300 BOTH WAYS OR SL81 MESH, 50mm COVER TO INSIDE FACE - LEVEL AND COMPACT BASE MATERIAL TO 95% MODIFIED DENSITY MASS CONCRETE BENCHING



______ FLOW 1200 SQ PLAN - DEEP DROP PIT (DP) NTS - DRILL Ø30 HOLE x 120mm DEEP AND EPOXY INTO WALL WITH EPOXY MORTAR EQUAL TO EPIREZ 633 (NON SAG) REFER TO MANUFACTURER'S INSTALLATION GUIDE FOR DETAILS SIDE VIEW REFER TO NOTES Ø24 GALVANISED MILD STEEL <u>PLAN</u> **FRONT VIEW**

PIT STEP IRON TYPICAL DETAILS

WHEN POSITIONED IN STRAIGHT ALIGNMENT, STEP IS 400mm WIDE. STAGGERED STEPS ARE 200mm WIDE, STEPS ARE STAGGERED 200 CENTRE TO CENTRE FOR ALL ALTERNATE STEPS.

NW SECTION

3. SPACING OF STEPS ARE UNIFORM TO WITHIN ±2mm IN EACH PIT.

50mmCONCRETE BLINDING SECTION - N16-200 'L' BARS TYP SECTIONAL PLAN N16-200 CORNER BARS 450 MIN LAP

- 1000X900 DURHAM ACCESS

IN FILLED CLASS D

COVER & FRAME CONCRETE

- ACCESS LADDER TO MEET

AS 1657 REQUIREMENTS,

- N16-200 EW EF

TRIMMER BARS

465 COVER TYP.

>─ N16-200 EF TYP

 MASS CONCRETE **BENCHING 10MPa**

REFER NOTE 2

BLOCKOUT AS REQUIRED -

N16-200 'U' BARS -

//X/X/X///

FOR COVER FRAME

N16-200 T & B

DIA. 300 RCP

DEVELOPMENT APPLICATION

D | ISSUED FOR DEVELOPMENT APPLICATION CS* SM* 29.08.17 CS* SM* |09.08.1 C | ISSUED FOR SSD SUBMISSION CS* B | ISSUED FOR TENDER SM* 28.06.17 A ISSUED FOR SSD DEVELOPMENT APPLICATION CS* | SM* |14.06.17 No Revision Note: * indicates signatures on original issue of drawing or last revision of drawing Drawn Job Manager Director

SUBSOIL IN PAVED AREAS



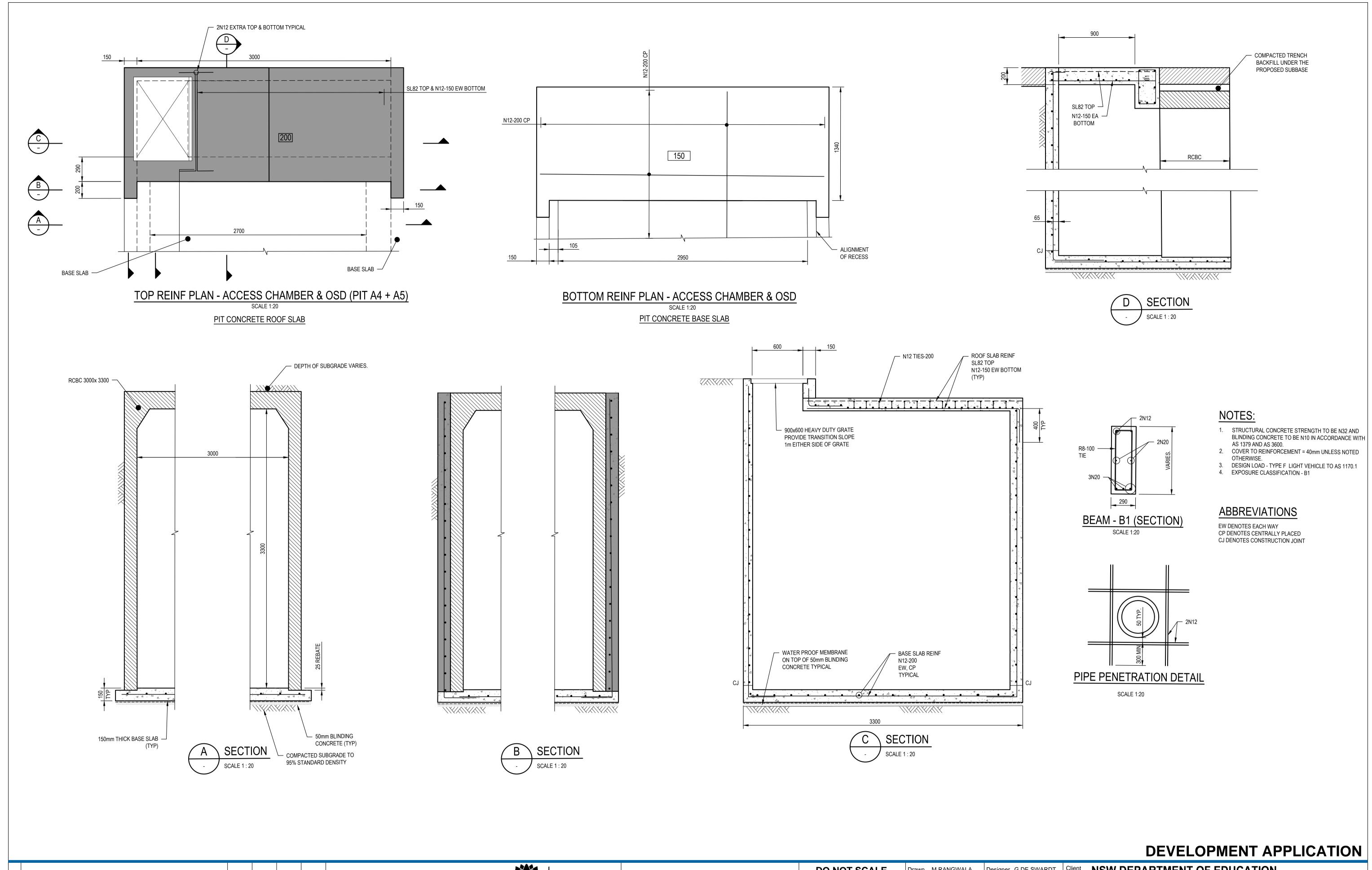
GHD WOODHEAD	_

Level 15, 133 Castlereagh Street, Sydney NSW 2000 Australia T 61 2 9239 7100 F 61 2 9239 7199 **E** sydmail@ghd.com **W** www.ghd.com

DO NOT SCALE	Drawn M.RANGWALA	Designer G.DE SWARDT	Client
Conditions of Use.	Drafting A.MACLEAN*	Design A.RAHMAN*	Project
This document may only be used by GHD's client (and any other person who GHD has agreed can use this document)	Approved (Project Director) Date		Title
for the purpose for which it was prepared and must not be used by any other person or for any other purpose.		This Drawing must not be used for Construction unless	Original Si

t	NSW DEPARTMENT OF EDUCATION
ct	NORTH KELLYVILLE PUBLIC SCHOOL
	CIVIL
	STORMWATER DRAINAGE DETAILS-SHEET 1 OF 2

Drawing No: 21-26108-NK-SD-CI-1015 Rev: D



No Revision Note: * indicates signatures on original issue of drawing or last revision of drawing Drawn Job Manager Director Date SCALE 1:20 AT ORIGINAL SIZE

CS* SM* 29.08.17

MR | CS* | SM* | 09.08.17



GHD WOODHEAD
Level 15, 133 Castlereagh Street, Sydney NSW 2000 Australia T 61 2 9239 7100 F 61 2 9239 7199

E sydmail@ghd.com W www.ghd.com

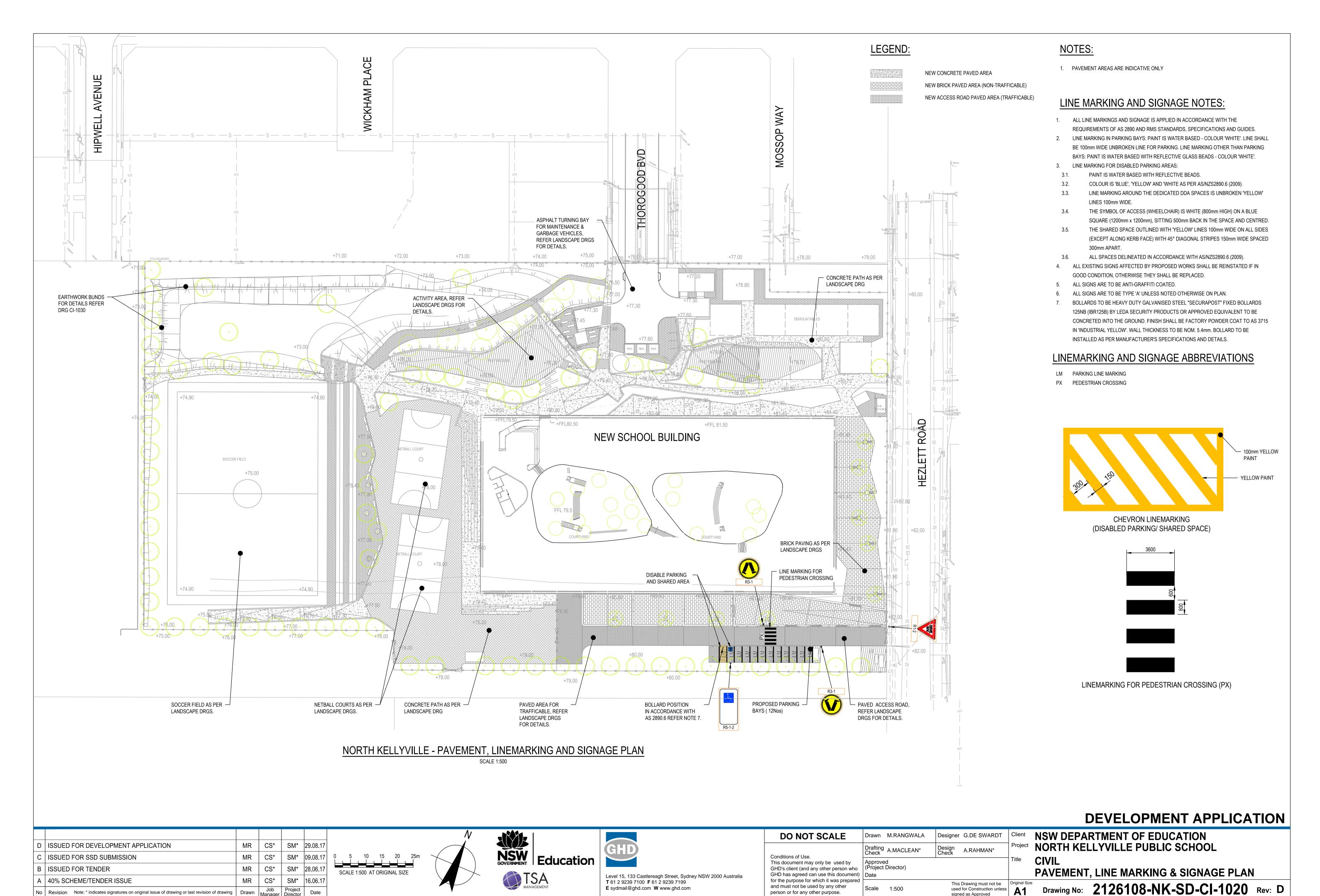
DO NOT SCALE	Drawn M.RANGWALA	Designer G.DE SWARDT	Client
Conditions of Use.	Drafting A.MACLEAN*	Design Check A.RAHMAN*	Project
This document may only be used by GHD's client (and any other person who GHD has agreed can use this document)	Approved (Project Director) Date		Title
for the purpose for which it was prepared and must not be used by any other person or for any other purpose.	Scale 1:20	This Drawing must not be used for Construction unless signed as Approved	Original Siz

NSW DEPARTMENT OF EDUCATION
NORTH KELLYVILLE PUBLIC SCHOOL
CIVIL
STORMWATER DRAINAGE DETAILS-SHEET 2 OF 2

Drawing No: 21-26108-NK-SD-CI-1016 Rev: B

B ISSUED FOR DEVELOPMENT APPLICATION

√ ISSUED FOR SSD SUBMISSION



E sydmail@ghd.com **W** www.ghd.com

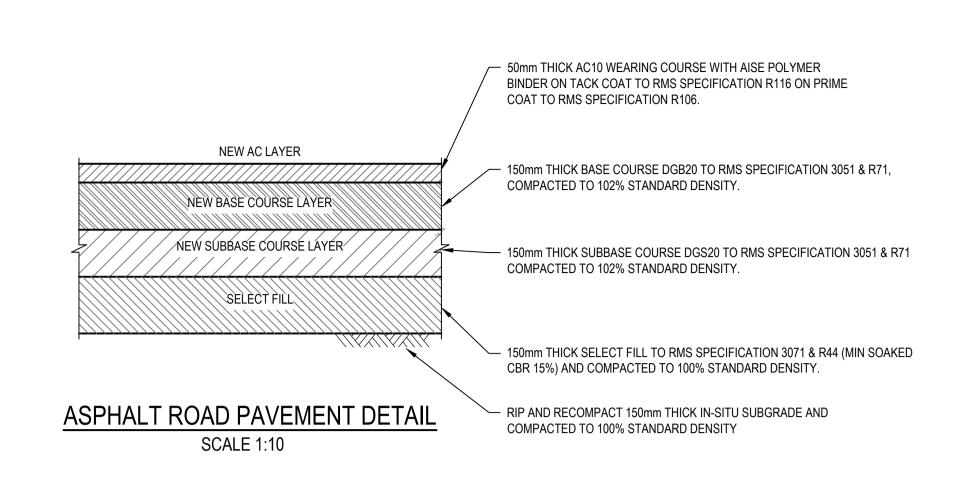
person or for any other purpose.

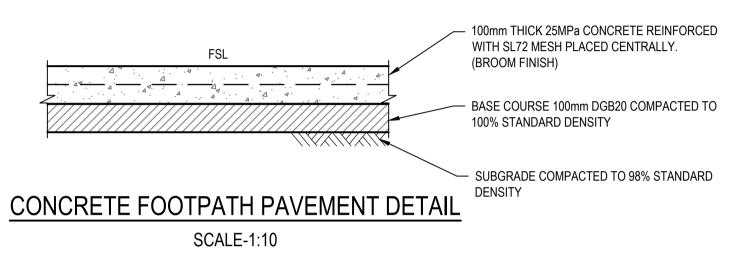
used for Construction unless

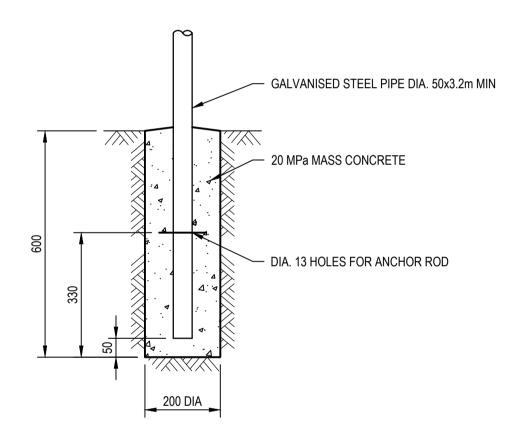
signed as Approved

No Revision Note: * indicates signatures on original issue of drawing or last revision of drawing Drawn Job Manager Director

Plot Date: 29 August 2017 - 5:50 PM





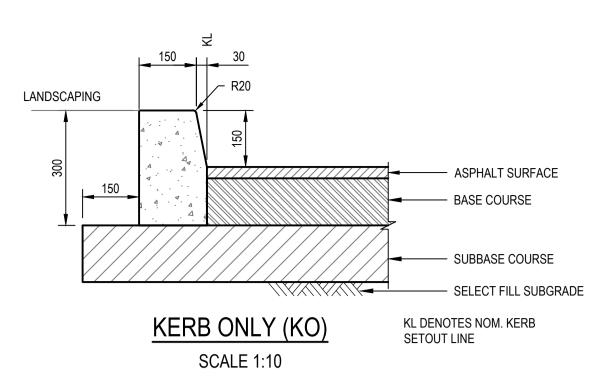


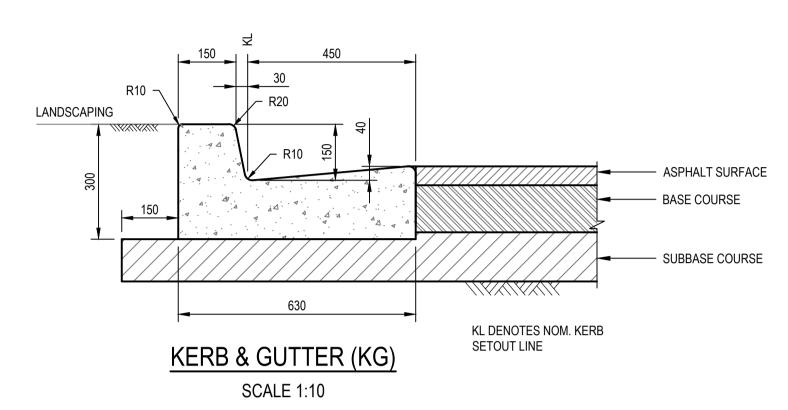
SIGNPOST FOOTING DETAIL

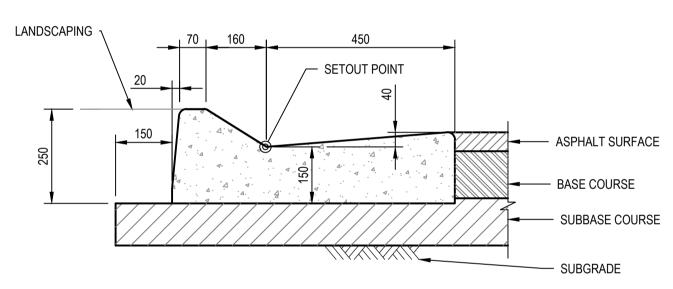
SCALE 1:10

Plotted by: Mona Rangwala

Plot Date: 29 August 2017 - 5:51 PM







MOUNTABLE KERB & GUTTER (MK&G)

SCALE 1:10

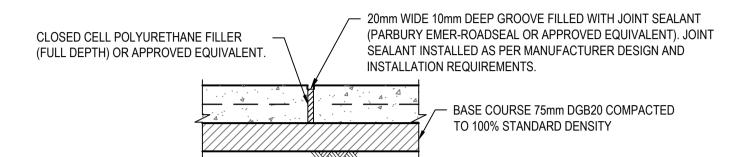
WET FORMED TOOLED JOINT, 25mm DEEP GROOVE MADE BY TOOL WITHIN 24 HOURS OF POURING AND SEALED OFF WITH JOINT SEALANT (PARBURY EMER-ROADSEAL).

BASE COURSE 75mm DGB20 COMPACTED TO 100% STANDARD DENSITY

TOOLED JOINT (TJ) ON

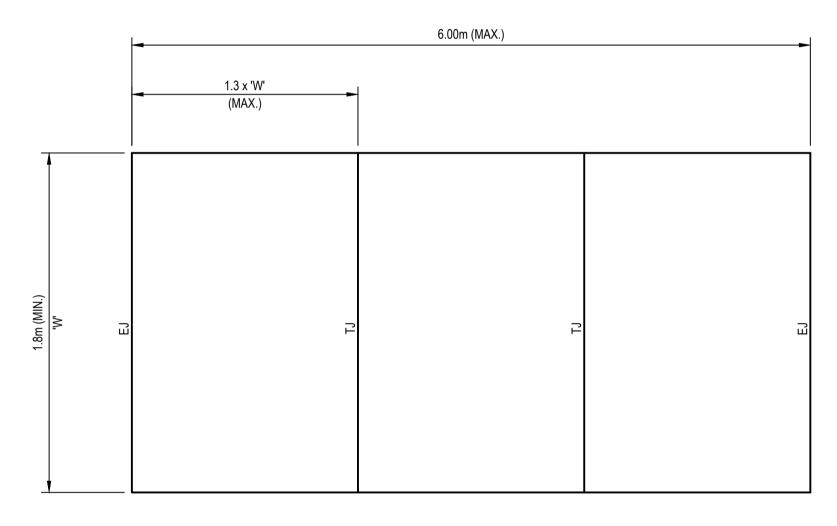
CONCRETE FOOTPATH DETAIL

NTS



EXPANSION JOINT (EJ) ON CONCRETE FOOTPATH DETAIL

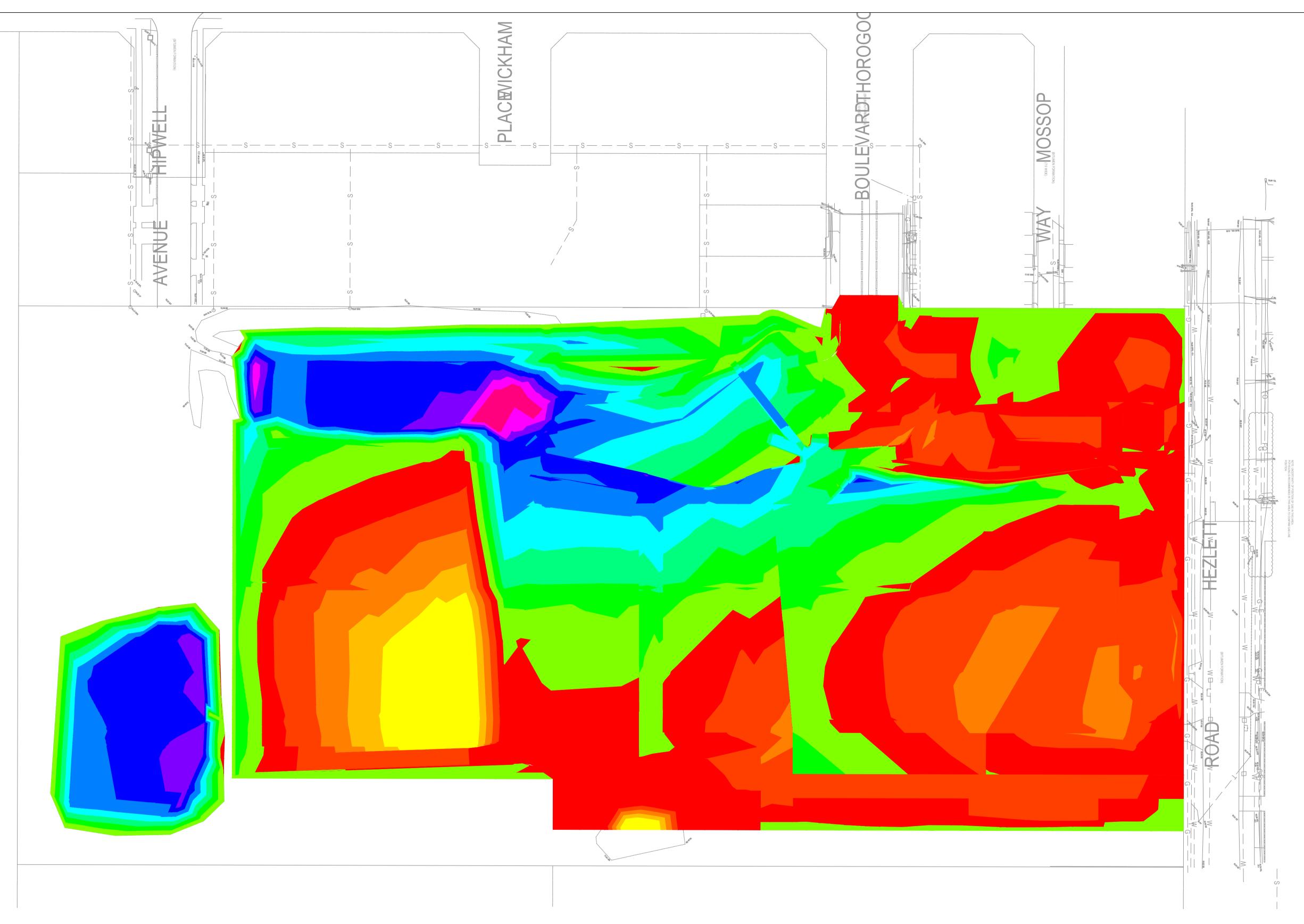
NTS



TJ: TOOL JOINT EJ: EXPANSION JOINT TYPICAL FOOTPATH JOINT DETAIL

DEVELOPMENT APPLICATION

				0 0.1 0.2 0.3 0.4 0.5m			DO NOT SCALE	Drawn M.RANGWALA	Designer G.DE SWARDT	Client	NSW DEPARTMENT OF EDUCATION
D ISSUED FOR DEVELOPMENT APPLICATION	MR	CS*	SM* 29.08.17			GHD WOODHEAD		Drafting A.MACLEAN*	Design A.RAHMAN*	Project	NORTH KELLYVILLE PUBLIC SCHOOL
C ISSUED FOR SSD SUBMISSION	MR	CS*	SM* 09.08.17	SCALE 1:10 AT ORIGINAL SIZE	NSW Education		Conditions of Use.	Approved	Chečk A.KARIVIAN	Title	CIVIL
B ISSUED FOR TENDER	MR	CS*	SM* 28.06.17				GHD's client (and any other person who GHD has agreed can use this document)	(Project Director)			CIVIL- ROAD WORKS DETAILS
A ISSUED FOR SSD DEVELOPMENT APPLICATION	MR	CS*	SM* 09.06.17		TSA	Level 15, 133 Castlereagh Street, Sydney NSW 2000 Australia T 61 2 9239 7100 F 61 2 9239 7199	for the purpose for which it was prepared and must not be used by any other	d Date	This Drawing must not be	Original Si	
No Revision Note: * indicates signatures on original issue of drawing or last revision of dr	rawing Drawn	Job Manager	Project Director Date		MANAGEMENT	E sydmail@ghd.com W www.ghd.com	person or for any other purpose.	Scale AS SHOWN	used for Construction unles signed as Approved	A1	Drawing No: 21-26108-NK-SD-CI-1025 Rev: D



Surface Analysis: Elevation Ranges										
Number	Color	Minimum Elevation (m)	Maximum Elevation (m)							
1		-3.000	-2.500							
2		-2.500	-2.000							
3		-2.000	-1.500							
4		-1.500	-1.000							
5		-1.000	-0.500							
6		-0.500	0.000							
7		0.000	0.500							
8		0.500	1.000							
9		1.000	1.500							
10		1.500	2.000							
11		2.000	2.500							
12		2.500	3.000							
13		3.000	3.500							
14		3.500	4.000							
15		4.000	4.500							
16		4.500	5.000							

APPROX .EARTHWORKS VOLUMES
CUT 10496m³ (Includes 2929m³ of 100mm Stripping Layer)
FILL 19309m³ (Includes 4590m³ to Fill South-western dam)
NET 8813m³ Fill required

NOTES:

- CUT AND FILL VOLUMES ARE INDICATIVE ONLY WITH FINAL DESIGN LEVELS YET TO BE CONFIRMED.
 CUT AND FILL VOLUMES DOES NOT ACCOUNT FOR CLEARING AND
- CUT AND FILL VOLUMES DOES NOT ACCOUNT FOR CLEARING AN GRUBBING VOLUMES.
- 3. CUT AND FILL VOLUMES ARE BASED ON AN AERIAL SURVEY.
- 4. CUT AND FILL VOLUMES DOES NOT CONSIDER ANY GEOTECHNICAL REQUIREMENTS OF SOIL AT THIS STAGE.
- 5. 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 = 175mm

PAVER TYPE 1 (NON-TRAFFICABLE) = 190mm

PAVER TYPE 2 (TRAFFICABLE) = 350mm

COMPACTED TOPPING = 150mm

ROAD PAVEMENT = 340mm

SPORTSFIELD TURF = 200mm

NORTH KELLYVILLE - EARTHWORKS PLAN

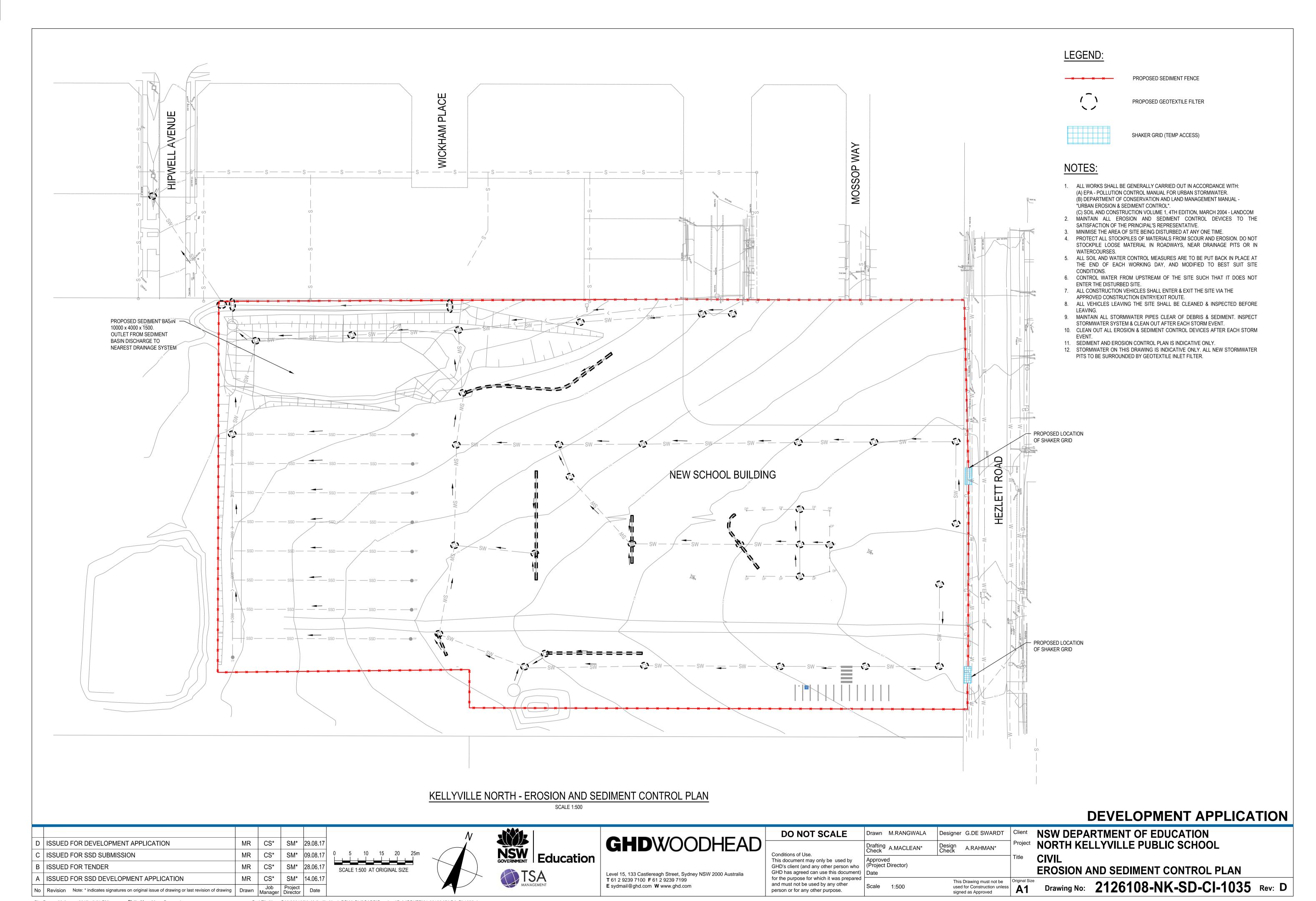
SCALE 1:500

DEVELOPMENT APPLICATION

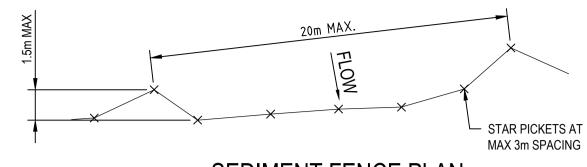
					Ņ			DO NOT SCALE	Drawn M.RANGWALA	Designer G.DE SWARDT Cli	ient NSW DEPARTMENT OF EDUCATION
D ISSUED FOR DEVELOPMENT APPLICATION	MR	CS*	SM* 29.08.17				GHD WOODHEAD		Drafting A.MACLEAN*	Design A.RAHMAN*	oject NORTH KELLYVILLE PUBLIC SCHOOL
C ISSUED FOR SSD SUBMISSION	MR	CS*	SM* 09.08.17	0 5 10 15 20 25m		NSW Education		Conditions of Use.	Approved	Titl	tle CIVIL
B ISSUED FOR TENDER	MR	CS*	SM* 28.06.17					GHD has agreed can use this document)	(Project Director)		EARTHWORKS PLAN
A ISSUED FOR SSD DEVELOPMENT APPLICATION	MR	CS*	SM* 14.06.17	SCALE 1:500 AT ORIGINAL SIZE		TSA	Level 15, 133 Castlereagh Street, Sydney NSW 2000 Australia T 61 2 9239 7100 F 61 2 9239 7199	for the purpose for which it was prepared	Date	This Drawing must not be Origi	visal Cira
No Revision Note: * indicates signatures on original issue of drawing or last revision of dra	wing Drawn	Job Manager	Project Director Date			MANAGEMENT	E sydmail@ghd.com W www.ghd.com	and must not be used by any other person or for any other purpose.	Scale 1:500	used for Construction unless signed as Approved	Drawing No: 2126108-NK-SD-CI-1030 Rev: D

Plot Date: 29 August 2017 - 5:51 PM

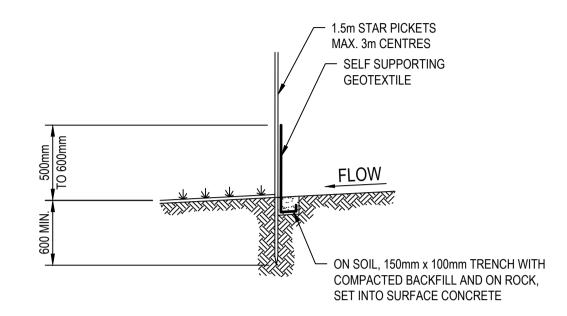
Plotted by: Mona Rangwala



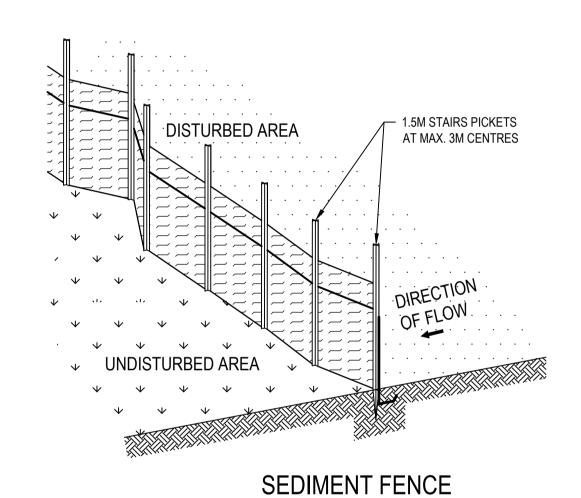
Plot Date: 29 August 2017 - 5:51 PM



SEDIMENT FENCE PLAN NTS



SEDIMENT FENCE SECTION NTS



SILT FENCE CONSTRUCTION NOTES

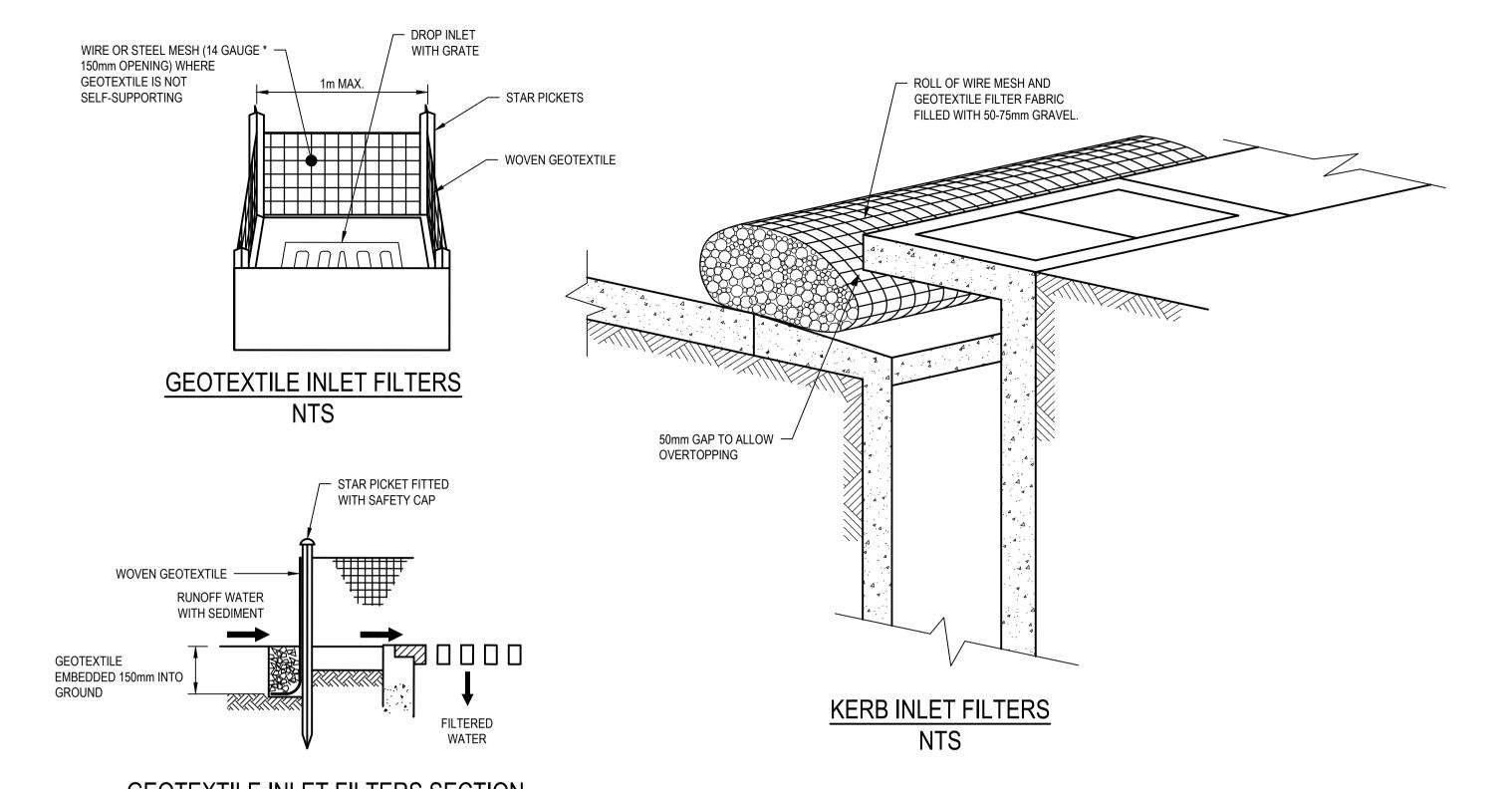
- CONSTRUCT SEDIMENT FENCE AS CLOSE AS POSSIBLE TO PARALLEL TO
- THE CONTOURS OF THE SITE.

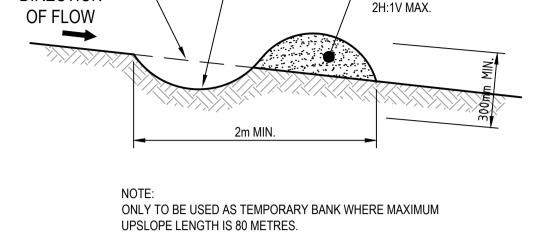
Plot Date: 29 August 2017 - 5:52 PM

- DRIVE 1.5m LONG STAR PICKETS INTO GROUND, 3m APART. DIG A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE
- FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
- BACKFILLL TRENCH OVER BASE OF FABRIC.

Plotted by: Mona Rangwala

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.





- CAN BE CONSTRUCTED WITH

- ALL BATTER GRADES

OR WITHOUT CHANNEL.

EARTH BANK (LOW FLOW)

EARTH BANK (LOW FLOW) CONSTRUCTION SEQUENCE

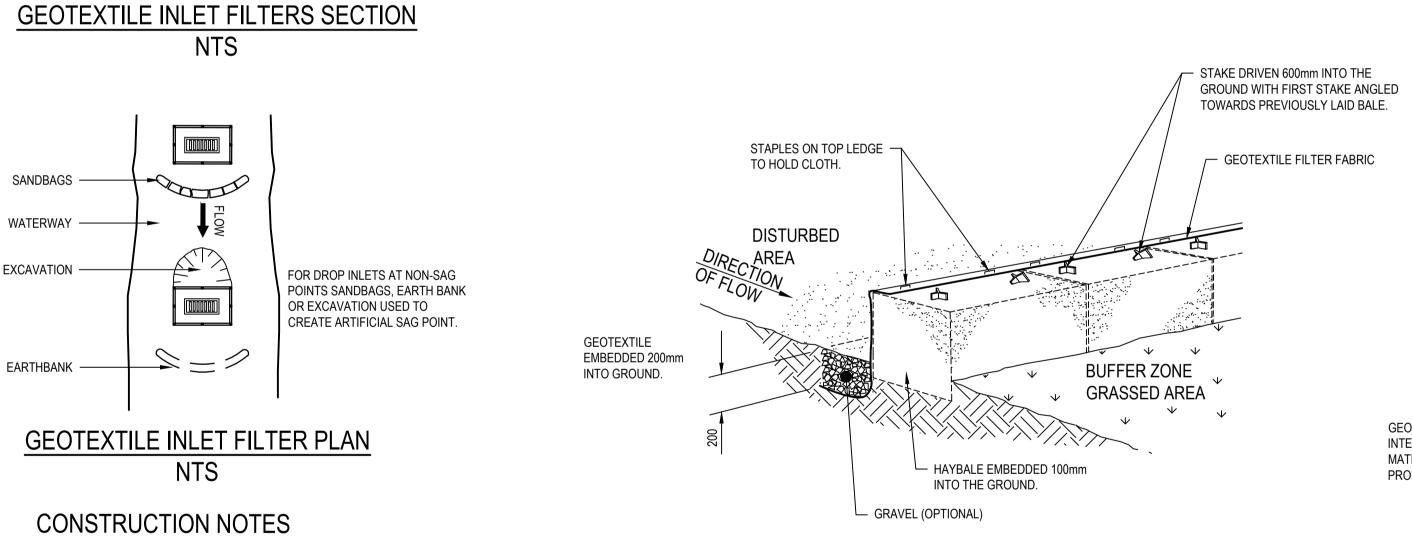
1. CONSTRUCT WITH GRADIENT OF 1% TO 5%.

GRADIENT OF

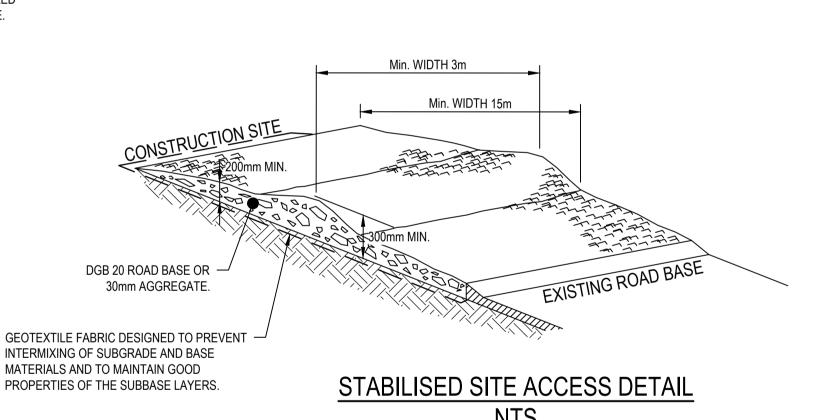
DRAIN 1% TO 5%

DIRECTION

- 2. AVOID REMOVING TREES AND SHRUBS IF POSSIBLE.
- DRAINS TO BE OF CIRCULAR, PARABOLIC OR TRAPEZOIDAL CROSS SECTION NOT V-SHAPED.
- 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 ALL OUTLETS FROM DISTURBED LANDS ARE TO BE FEED INTO A SEDIMENT BASIN OR SIMILAR.
- DISCHARGE RUNOFF COLLECTED FROM UNDISTURBED LANDS ONTO EITHER A STABILISED OR AN UNDISTURBED DISPOSAL SITE WITHIN THE SAME SUBCATCHMENT AREA FROM WHICH THE WATER
- 8. COMPACTED BANK WITH A SUITABLE IMPLEMENT IN SITUATIONS WHERE THEY ARE REQUIRED TO FUNCTION
- 9. EARTH BANKS TO BE FREE OF PROJECTIONS OR OTHER IRREGULARITIES THAT WILL IMPEDE NORMAL FLOW.



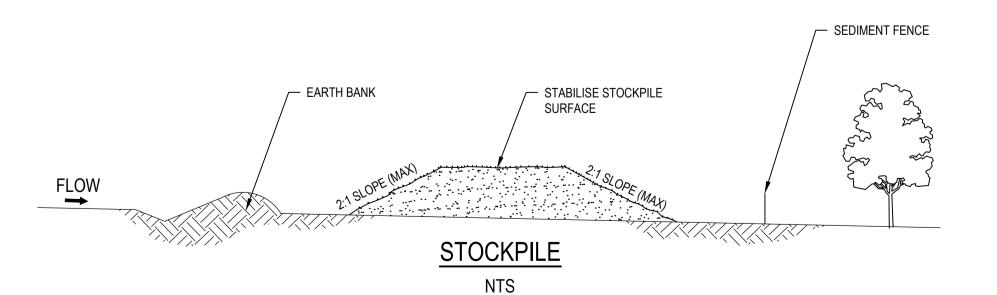
HAY BALE AND GEOTEXTILE SEDIMENT FILTER



STABILISED SITE ACCESS CONSTRUCTION NOTES

- STRIP TOPSOIL AND LEVEL SITE.
- COMPACT SUBGRADE.
- COVER AREA WITH NEEDLE PUNCHED GEOTEXTILE
- CONSTRUCT 200mm THICK PAD OVER GEOTEXTILE USING ROAD BASE OR 30mm AGGREGATE. MINIMUM
- CONSTRUCT HUMP IMMEDIATELY WITHIN BOUNDARY TO DIVERT WATER TO A SEDIMENT FENCE OR

LENGTH 15 METRES OR TO BUILDING ALIGNMENT. MINIMUM WIDTH 3 METRES. OTHER SEDIMENT TRAP.



STOCKPILE CONSTRUCTION

1. FABRICATE A SEDIMENT BARRIER MADE FROM GEOTEXTILE OR STRAW BALES.

SUPPORT GEOTEXTILE WITH MESH TIED TO POST AT 1m CENTRES

DO NOT COVER INLET WITH GEOTEXTILE.

- LOCATE STOCKPILE AT LEAST 5 METRES FROM EXISTING VEGETATION, CONCENTRATED WATER FLOWS, ROADS
- CONSTRUCT ON THE CONTOUR AS A LOW, FAT, ELONGATED MOUND. WHERE THERE IS SUFFICIENT AREA TOPSOIL STOCKPILES SHALL BE LESS THAN 2 METRES IN HEIGHT.
- 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

THE DEPARTMENT OF EDUCATION DO NOT SCALE Drawn M.RANGWALA esigner G.DE SWARDT **GHD**WOODHEAD NORTH KELLYVILLE PUBLIC SCHOOL Drafting A.MACLEAN* A.RAHMAN SM* 29.08.1 **Education** CS* : | ISSUED FOR DEVELOPMENT APPLICATION **CIVIL** This document may only be used by GHD's client (and any other person who (Project Director) B | ISSUED FOR SSD SUBMISSION CS* SM* |09.08.17 SEDIMENT CONTROL DEVICES GHD has agreed can use this document) Date TSA MANAGEMENT Level 15, 133 Castlereagh Street, Sydney NSW 2000 Australia ISSUED FOR SSD DEVELOPMENT APPLICATION CS* SM* |14/06/17 for the purpose for which it was prepared T 61 2 9239 7100 F 61 2 9239 7199 This Drawing must not be Drawing No: 21-26108-NK-SD-CI-1036 Rev: C and must not be used by any other E sydmail@ghd.com W www.ghd.com used for Construction unless No Revision Note: * indicates signatures on original issue of drawing or last revision of drawing Drawn person or for any other purpose. signed as Approved