



Our reference: SSD9354
Contact: Jake Hausfeld
Telephone: 4732 7876

10 March 2020

Richard Crookes Construction

4 Broadcrest Way
Artarmon NSW 2064

Attention: Mr Tom Hemmett

Dear Tom,

**Re: EA20/0006 - Section 138 Roads Act Approval for
Jordan Springs Public School**

Please find enclosed Roads Act Approval No. EA20/0006 for the above development together with a copy of the stamped plans.

Prior to the commencement of works, a pre-construction meeting is to be held between the applicant, the appointed contractor and Council. Please contact the person below to arrange a suitable date.

All works for the development are to be constructed in accordance with Penrith City Council's Engineering Construction Specification for Civil Works. During the construction stage, your contractors are required to arrange inspections in accordance with this guideline and as required by Council's inspector.

Your contact person for inspections will be Garry Fletcher. He can be contacted by mobile at 0409 986 392.

You will need to keep one set of stamped plans plus the Roads Act Approval on site at all times.

Yours sincerely

Jake Hausfeld
Development Engineer

Penrith City Council
PO Box 60, Penrith
NSW 2751 Australia
T 4732 7777
F 4732 7958
penrithcity.nsw.gov.au

ENGLISH	If you do not understand this, please contact the Telephone Interpreting Service on 131 450 and ask them to contact Penrith City Council on your behalf on (02) 4732 7777. Or come to the Council offices and ask for an interpreter.
ARABIC	إذا لم يكن بإمكانك قراءة النص أعلاه، الرجاء الاتصال بخدمات الترجمة الفورية الهاتفية (TIS) على الرقم 131 450 والطلب منهم الاتصال بدورهم بمجلس مدينة بنريث نيابة عنك على الرقم 4732 7777 (02). أو يمكنك الحضور إلى المجلس وطلب ترتيب مترجم فوري لك.
CHINESE	如果您无法阅读这些文字，请致电 131 450 联系电话传译服务中心，请他们代您拨打 (02) 4732 7777 联系 Penrith 市议会。您也可以亲自到市议会来并要求获得口译服务。
GREEK	Αν δεν μπορείτε να το διαβάσετε αυτό, τηλεφωνήστε στην Τηλεφωνική Υπηρεσία Διερμηνέων στο 131 450 και ζητήστε τους να επικοινωνήσουν με το Δήμο Penrith (Penrith City Council) για λογαριασμό σας στον αριθμό (02) 4732 7777, ή ελάτε στη Δημαρχία και ζητήστε διερμηνέα.
HINDI	यदि आप इसे नहीं पढ़ पाते हैं, तो कृपया 131 450 पर टेलीफोन दुभाषिया सेवा से संपर्क करें और उनसे कहें कि वे आपकी ओर से पेनरथि सिटी काउंसिल से (02) 4732 7777 पर संपर्क करें. या आप काउंसिल आएँ और एक दुभाषिया की माँग करें.
ITALIAN	Se non riuscite a leggere questo, contattate il servizio telefonico di interpretariato al numero 131 450 e chiedetegli di contattare da parte vostra il comune di Penrith City al numero (02) 4732 7777 oppure venite in comune e richiedete un interprete.
MALTESE	Jekk ma tistax taqra dan, jekk jogħġbok, ikkuntattja lit-Telephone Interpreting Service fuq 131 450 u itlobhom biex jikkuntattjaw Penrith City Council f'ismek fuq (02) 4732 7777. Jew ejja l-Kunsill u itlob għal interpretu.
PERSIAN	اگر نمی توانید این مطلب را بخوانید، لطفاً به خدمات ترجمه تلفنی به شماره 131 450 زنگ بزنید و از آنان بخواهید با شورای شهر پنریت Penrith City Council به شمار ه 4732 7777 (02) از جانب شما تماس بگیرند. یا اینکه به شهرداری Council آمده و مترجم بخواهید.
SINGHALESE	ඔබට මෙය කියවීමට නොහැකි නම්, කරුණාකර දුරකථන අංක 131 450 ඔස්සේ දුරකථන පරිවර්තන සේවාව (Telephone Interpreting Service) අමතා ඔබ වෙනුවෙන් දුරකථන අංක (02) 4732 7777 අමතා පෙන්වීම නගර සභාව (Penrith City Council) හා සම්බන්ධ කර දෙන ලෙස ඉල්ලා සිටින්න. නැතිනම් නගර සභාව වෙත පැමිණ හාමා පරිවර්තකයකු ලබා දෙන ලෙස ඉල්ලා සිටින්න.
TAMIL	இதை உங்களால் வாசிக்க இயலவில்லை என்றால், 'தொலைபேசி உரைபெயர்ப்பு சேவை'யை 131 450 எனும் இலக்கத்தில் அழைத்து 'பென்றித் நகரவை'யுடன் (02) 4732 7777 எனும் இலக்கத்தில் உங்கள் சார்பாக தொடர்பு கொள்ளுமாறு கேளுங்கள். அல்லது நகரவைக்கு விஜயம் செய்து உரைபெயர்ப்பாளர் ஒருவர் வேண்டுமெனக் கேளுங்கள்.
VIETNAMESE	Nếu quý vị không thể đọc được thông tin này, xin liên lạc Dịch Vụ Thông Dịch Qua Điện Thoại ở số 131 450 và yêu cầu họ thay mặt quý vị liên lạc với Hội Đồng Thành Phố Penrith ở số (02) 4732 7777. Hoặc hãy tới Hội Đồng và yêu cầu có thông dịch viên.



Our reference: SSD9354
Contact: Jake Hausfeld
Telephone: 4732 7876

10 March 2020

Richard Crookes Constructions
4 Broadcast Way
Artarmon NSW 2064

Attention: Mr Tom Hemmett

Dear Tom,

**Re: EA20/0006 - Section 138 Roads Act Approval for
14-28 Cullen Avenue, Jordan Springs (Jordan Springs Public School)**

Under Section 138 of the Roads Act 1993, approval is granted for works in the road reserve fronting Cullen Avenue & Lakeside Parade, Jordan Springs as detailed by conditions B21 and B22 of SSD9354 and in accordance with the stamped approved plans by Northrop Consulting Engineers listed in the following schedule.

Plan No.	Revision No.	Date	Sheet Title
C101.01	4	06/03/2020	Cover Sheet, Drawing Schedule and Locality Plan
C101.11	2	06/03/2020	Specification Notes – Sheet 01
C101.12	2	06/03/2020	Specification Notes – Sheet 02
C101.21	2	06/03/2020	General Arrangement Plan
C104.01	8	06/03/2020	Siteworks and Stormwater Management Plan – Sheet 1
C104.02	9	06/03/2020	Siteworks and Stormwater Management Plan – Sheet 2
C104.21	4	06/03/2020	Stormwater Longitudinal Sections – Sheet 01
C106.01	3	06/03/2020	Siteworks Setout Control Plan – Sheet 01
C106.02	2	06/03/2020	Siteworks Setout Control Plan – Sheet 02
C106.11	2	06/03/2020	Siteworks Setout Control Tables
C106.21	2	06/03/2020	Driveway Longitudinal Sections
C106.31	2	06/03/2020	Road Longitudinal Sections
C106.41	2	06/03/2020	Road Cross Sections – Sheet 01
C106.42	2	06/03/2020	Road Cross Sections – Sheet 02
C111.01	5	27/11/2019	Signage and Linemarking Plan – Sheet 01
C111.02	7	03/12/2019	Signage and Linemarking Plan – Sheet 02
C111.03	5	27/11/2019	Signage and Linemarking Plan – Sheet 03
C112.01	3	06/03/2020	Details – Sheet 01
C112.02	2	06/03/2020	Details – Sheet 02

Penrith City Council Roads Act Approval No. EA20/0006

Approval is subject to the following conditions:

1. All works shall be undertaken in accordance with the approved plans, Penrith City Council's Engineering Construction Specification for Civil Works and at the direction of Penrith City Council.
2. The applicant is to provide Penrith City Council with written notice of intention to commence works a minimum of two days before any construction activity on site.
3. The notice of commencement shall be accompanied by the following documentation:
 - a) Traffic control plan certified by a Roads & Maritime Services accredited Traffic Controller.
 - b) Contractor's license and details of public liability insurance with a limit of not less than \$20,000,000.00 (twenty million dollars) indemnifying Penrith City Council from all claims arising from the execution of works.
4. The contractor is to notify all affected residents in writing two (2) days prior to the commencement of construction. Vehicular access to all properties is to be maintained throughout construction of the development. The contractor's contact details are to be included in the letter.
5. Inspections are to be undertaken in accordance with the requirements of Penrith City Council's Engineering Construction Specification for Civil Works and at the direction of Penrith City Council Officers.
6. A final inspection will not be undertaken until full Works-As-Executed plans and compliance documentation have been submitted to Penrith City Council for review.
7. A letter of completion for works under this approval will not be issued by Penrith City Council until all defects identified in the final inspection have been completed and a maintenance bond has been lodged with Penrith City Council.
8. The Principal Certifying Authority shall not issue an Occupation Certificate for the building development until such times as a Compliance Certificate for works under this approval has been issued by Penrith City Council.
9. Prior to commencement of operation of Jordan Springs Public School, a boundary adjustment dedicating the widened public road reserve associated with the pick-up/drop-off bay to Penrith City Council is to be lodged with the NSW Land Registry Services. The performance bond associated with condition B24 will be withheld until such time that proof of registration is submitted to Council.

10. The lighting of any road works or pedestrian facility must be in accordance with AS/NZ 1742 and AS/NZ1158.

For further information in respect of this approval, please contact Jake Hausfeld Development Engineer on 4732 7876.

Yours sincerely



Jake Hausfeld
Development Engineer

JORDAN SPRINGS PUBLIC SCHOOL - PUBLIC DOMAIN

14-28 CULLEN AVE, JORDAN SPRINGS
CIVIL DOCUMENTATION



LOCALITY PLAN

SOURCE : NEARMAP.COM.AU (©2019)

CIVIL DRAWING SCHEDULE

DWG No.	DRAWING TITLE
C101.01	COVER SHEET, DRAWING SCHEDULE AND LOCALITY PLAN
C101.11	SPECIFICATION NOTES - SHEET 01
C101.12	SPECIFICATION NOTES - SHEET 02
C101.21	GENERAL ARRANGEMENT PLAN
C102.01	SEDIMENT AND SOIL EROSION CONTROL PLAN - SHEET 01
C102.02	SEDIMENT AND SOIL EROSION CONTROL PLAN - SHEET 02
C102.11	SEDIMENT AND SOIL EROSION CONTROL DETAILS
C104.01	SITEWORKS AND STORMWATER MANAGEMENT PLAN - SHEET 01
C104.02	SITEWORKS AND STORMWATER MANAGEMENT PLAN - SHEET 02
C104.21	STORMWATER LONGITUDINAL SECTIONS - SHEET 01
C106.01	SITEWORKS SETOUT CONTROL PLAN - SHEET 01
C106.02	SITEWORKS SETOUT CONTROL PLAN - SHEET 02
C106.11	SITEWORKS SETOUT CONTROL TABLES
C106.21	DRIVEWAY LONGITUDINAL SECTIONS
C106.31	ROAD LONGITUDINAL SECTIONS
C106.41	ROAD CROSS SECTIONS - SHEET 01
C106.42	ROAD CROSS SECTIONS - SHEET 02
C111.01	SIGNAGE AND LINEMARKING PLAN - SHEET 01
C111.02	SIGNAGE AND LINEMARKING PLAN - SHEET 02
C111.03	SIGNAGE AND LINEMARKING PLAN - SHEET 03
C112.01	DETAILS - SHEET 01
C112.02	DETAILS - SHEET 02

PENRITH
CITY COUNCIL

COUNCIL DOES NOT ATTEST TO THE ACCURACY OF DETAILS IN PLANS






This plan / document relates to

Development Consent: S138 Roads Act:

SSD9354
EA20/0006

Subject to the conditions outlined in the consent

FOR S138 APPROVAL

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT	ARCHITECT	SCALE	PROJECT	DRAWING TITLE	JOB NUMBER		
1	ISSUED FOR APPROVAL	JO		JRG	12.11.19			 ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE COMMENCING WORK. NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY. THIS DRAWING MAY HAVE BEEN PREPARED USING COLOUR, AND MAY BE INCOMPLETE IF COPIED TO BLACK & WHITE	 Sydney Level 11 345 George Street, Sydney NSW 2000 Ph (02) 9241 4188 Fax (02) 9241 4324 Email sydney@northrop.com.au ABN 81 094 433 100	JORDAN SPRINGS PUBLIC SCHOOL PUBLIC DOMAIN 14-28 CULLEN AVENUE, JORDAN SPRINGS	CIVIL DOCUMENTATION CONSTRUCTION CERTIFICATE COVER SHEET, DRAWING SCHEDULE AND LOCALITY PLAN	182535	
2	RE-ISSUED FOR APPROVAL	CP		JRG	19.12.19								
3	RE-ISSUED FOR APPROVAL	VC		JRG	16.01.20								
4	RE-ISSUED FOR APPROVAL	JRG		JRG	06.03.20								
						DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED	THE COPYRIGHT OF THIS DRAWING REMAINS WITH NORTHROP CONSULTING ENGINEERS PTY LTD						
												DRAWING NUMBER	REVISION
												C101.01	4
												DRAWING SHEET SIZE = A1	

NOTE: ALL CIVIL ENGINEERING CONSTRUCTION WORKS TO BE CARRIED OUT IN ACCORDANCE WITH PENRITH CITY COUNCIL DEVELOPMENT GUIDELINES.THE FOREMENTIONED GUIDELINES INCLUSIVE OF ALL SPECIFICATIONS TAKE PRECEDENCE OVER NOTES PROVIDED BELOW.

ACCESS AND SAFETY										EXISTING SERVICES										STORMWATER DRAINAGE										PRECAST STORMWATER PITS										ASPHALTIC CONCRETE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
<div>1. THE CONTRACTOR SHALL COMPLY WITH ALL STATUTORY AND INDUSTRIAL REQUIREMENTS FOR PROVISION OF A SAFE WORKING ENVIRONMENT INCLUDING TRAFFIC CONTROL.</div> <div>2. THE CONTRACTOR SHALL PROVIDE TRAFFIC MANAGEMENT PLANS FOR THE PROPOSED WORKS COMPLETED BY A SUITABLY QUALIFIED PERSON AND APPROVED BY COUNCIL / REGULATORY AUTHORITY. WORK IS NOT TO COMMENCE ON SITE PRIOR TO APPROVAL OF TRAFFIC MANAGEMENT SCHEME.</div> <div>3. THE CONTRACTOR SHALL ENSURE THAT AT ALL TIMES ACCESS TO BUILDINGS ADJACENT THE WORKS IS NOT DISRUPTED.</div> <div>4. WHERE NECESSARY THE CONTRACTOR SHALL PROVIDE SAFE PASSAGE OF VEHICLES AND/OR PEDESTRIANS THROUGH OR BY THE SITE.</div> <div>5. THE CONTRACTOR SHALL ENSURE PUBLIC ACCESS EXTERNAL TO THE SITE IS IN ACCORDANCE WITH COUNCILS REQUIREMENTS.</div>										<div>1. ALL UTILITY SERVICES INDICATED ON THE DRAWINGS ORIGINATE FROM SUPPLIED DATA OR DIAL BEFORE YOU DIG SEARCHES, THEREFORE THEIR ACCURACY AND COMPLETENESS IS NOT GUARANTEED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE AND CONFIRM THE LOCATION AND LEVEL OF ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE SUPERINTENDENT. CLEARANCES SHALL BE OBTAINED FROM THE RELEVANT SERVICE AUTHORITY. NOTE SERVICE AUTHORITY REQUIREMENTS FOR LOCATING OF SERVICES PRIOR TO COMMENCEMENT OF WORKS.</div> <div>2. CARE TO BE TAKEN WHEN EXCAVATING NEAR EXISTING SERVICES. NO MECHANICAL EXCAVATIONS AREA TO BE UNDERTAKEN OVER COMMUNICATION, GAS OR ELECTRICAL SERVICES. HAND EXCAVATION ONLY IN THESE AREAS.</div> <div>3. THE CONTRACTOR SHALL PROTECT AND MAINTAIN ALL EXISTING SERVICES THAT ARE TO BE RETAINED IN THE VICINITY OF THE PROPOSED WORKS. ANY AND ALL DAMAGE TO THESE SERVICES AS A RESULT OF THESE WORKS SHALL BE REPAIRED BY THE CONTRACTOR UNDER THE DIRECTION OF THE SUPERINTENDENT AT THE CONTRACTORS EXPENSE.</div> <div>4. THE CONTRACTOR SHALL ALLOW IN THE PROGRAM FOR THE ADJUSTMENT (IF REQUIRED) OF EXISTING SERVICES IN AREAS AFFECTED BY WORKS.</div> <div>5. THE CONTRACTOR SHALL ALLOW IN THE PROGRAM FOR THE CAPPING OFF, EXCAVATION AND REMOVAL (IF REQUIRED) OF EXISTING SERVICES IN AREAS AFFECTED BY WORKS UNLESS DIRECTED OTHERWISE ON THE DRAWINGS OR BY THE SUPERINTENDENT.</div> <div>6. THE CONTRACTOR SHALL ENSURE THAT AT ALL TIMES SERVICES TO ALL BUILDINGS NOT AFFECTED BY THE WORKS ARE NOT DISRUPTED AND MAINTAINED.</div> <div>7. PRIOR TO COMMENCEMENT OF ANY WORKS THE CONTRACTOR SHALL GAIN APPROVAL OF THE PROGRAM FOR THE RELOCATION AND/OR CONSTRUCTION OF TEMPORARY SERVICES AND FOR ANY ASSOCIATED INTERRUPTION OF SUPPLY.</div> <div>8. THE CONTRACTOR SHALL CONSTRUCT TEMPORARY SERVICES TO MAINTAIN EXISTING SUPPLY TO BUILDINGS REMAINING IN OPERATION DURING WORKS TO THE SATISFACTION AND APPROVAL OF THE SUPERINTENDENT. ONCE DIVERSION IS COMPLETE AND COMMISSIONED THE CONTRACTOR SHALL REMOVE ALL SUCH TEMPORARY SERVICES AND MAKE GOOD TO THE SATISFACTION OF THE SUPERINTENDENT.</div>										<div>1. ALL PIPES SHALL BE CLASS 2 RUBBER-RING JOINTED U.N.O. WHERE uPVC PIPES HAVE BEEN SPECIFIED, THE FOLLOWING CLASS PIPEWORK IS TO BE ADOPTED U.N.O. Ø100mm OR LESS TO BE CLASS 'SN10' AND ABOVE Ø100mm TO BE CLASS 'SN8'.</div> <div>2. uPVC STORMWATER LINES PASSING UNDER FLOOR SLABS TO BE CONCRETE ENCASED.</div> <div>3. PIPES EQUAL TO THAT OF THE STEEL REINFORCED CONCRETE PIPE CLASS SPECIFIED ON THE DRAWINGS MAY BE USED SUBJECT TO APPROVAL FROM THE SUPERINTENDENT.</div> <div>4. ALL PIPE ARE TO BE LAID AT 1.0% MIN GRADE U.N.O.</div> <div>5. COVERS<div>5.1. USE HOT DIPPED GALVANISED COVERS AND GRATES COMPLYING WITH RELEVANT COUNCIL AND AUSTRALIAN STANDARDS.</div><div>5.2. ALL COVERS AND GRATES TO BE POSITION IN A FRAME AND MANUFACTURED AS A UNIT.</div><div>5.3. ALL COVERS AND GRATES TO BE FITTED WITH POSITIVE COVER LIFTING KEYS</div><div>5.4. OBTAIN SUPERINTENDENTS APPROVAL FOR THE USE OF CAST IRON SOLID COVERS AND GRATES. CAST IRON SOLID COVERS (IF APPROVED) TO CONSIST OF CROSS-WEBBED, CELLULAR CONSTRUCTION WITH THE RIBS UPPERMOST TO ALLOW INFILLING WITH CONCRETE. INSTALL POSITIVE COVER LIFTING KEYS AND PLASTIC PLUGS.</div><div>5.5. UNLESS DETAILED OR SPECIFIED OTHERWISE, COVERS AND GRATES TO BE CLASS 'D' IN VEHICULAR PAVEMENTS AND CLASS 'B' ELSEWHERE.</div><div>5.6. ALL GRATED TRENCH DRAINS SHOULD BE 'CLASS D' CAST IRON WITHIN VEHICULAR PAVEMENTS AND CLASS 'B' HEEL SAFE WITHIN PEDESTRIAN PAVEMENTS.</div></div> <div>6. ALL PIPE BENDS, JUNCTIONS, ETC ARE TO BE PROVIDED USING PURPOSE MADE FITTINGS OR STORMWATER PITS.</div> <div>7. ALL CONNECTIONS TO EXISTING DRAINAGE STRUCTURES SHALL BE MADE IN A TRADESMAN-LIKE MANNER AND CEMENT RENDERED TO ENSURE A SMOOTH FINISH.</div> <div>8. STORMWATER PIPEWORK TO FINISH FLUSH WITH INTERNAL PIT WALLS AND MUST NOT PROTRUDE. CONNECTION TO BE NEATLY RENDER AND MADE NEAT.</div> <div>9. THE CONTRACTOR SHALL SUPPLY AND INSTALL ALL FITTINGS AND SPECIALS INCLUDING VARIOUS PIPE ADAPTORS TO ENSURE PROPER CONNECTION BETWEEN DISSIMILAR PIPEWORK.</div> <div>10. U.N.O. MATERIAL USED FOR BEDDING OF PIPES SHALL BE APPROVED NON-COHESIVE GRANULAR MATERIAL HAVING HIGH PERMEABILITY AND HIGH STABILITY WHEN SATURATED AND FREE OF ORGANIC AND CLAY MATERIAL.</div> <div>11. WHERE TRENCHES ARE IN ROCK, THE PIPE SHALL BE BEDDED ON A MIN 50mm CONCRETE BED (OR 75mm THICK BED OF 12mm BLUE METAL) UNDER THE BARREL OF THE PIPE. THE PIPE COLLAR AT NO POINT SHALL BEAR ON THE ROCK.</div> <div>12. BEDDING SHALL BE U.N.O TYPE HS2 UNDER ROADS AND H2 UNDER GENERAL AREAS IN ACCORDANCE WITH CURRENT RELEVANT INDUSTRY STANDARDS AND GUIDELINES.</div> <div>13. THE CONTRACTOR SHALL ENSURE AND PROTECT THE INTEGRITY OF ALL STORMWATER PIPES DURING CONSTRUCTION. ANY AND ALL DAMAGE TO THESE PIPES AS A RESULT OF THESE WORKS SHALL BE REPAIRED BY THE CONTRACTOR UNDER THE DIRECTION OF THE SUPERINTENDENT AND AT NO EXTRA COST.</div> <div>14. NOTE THAT THE PIT COVER LEVEL NOMINATED IN GUTTERS ARE TO THE INVERT OF THE GUTTER WHICH ARE 40mm LOWER THAN THE PAVEMENT LEVEL AT LIP OF GUTTER. REFER KERB DETAILS FOR CONFIRMATION.</div>										<div>1. THE USE OF PRE-CAST STORMWATER DRAINAGE PITS IS NOT ACCEPTED WITHOUT CONFIRMATION BETWEEN NORTHROP ENGINEERS AND THE CONTRACTOR REGARDING QUALITY CONTROL AND CERTIFICATION OF FINISHES.</div> <div>2. REFER MANUFACTURERS SPECIFICATIONS FOR INSTALLATION GUIDELINES.</div> <div>3. PRECAST PIT TO BE PLACED ON MINIMUM 150mm THICK CONCRETE PAD AND BED MINIMUM 50mm WHILST CONCRETE IS STILL PARTIALLY WET.</div> <div>4. ENSURE PENETRATION IS CORED THROUGH PIT FACE TO ALLOW CONNECTION.</div> <div>5. ENSURE A SMOOTH SEALED FINISH AT PIPE CONNECTIONS BY HAND APPLYING CONCRETE AROUND THE PIPE ON THE INTERNAL FACE OF THE PIT TO FILL IN ANY VOIDS CREATED WHEN PENETRATION FOR THE PIPE WAS CORED.</div> <div>6. ENSURE A SEALED FINISH AT PIPE CONNECTIONS BY HAND-APPLYING MINIMUM 150mm THICK CONCRETE AROUND PIPE AT THE EXTERNAL FACE OF THE PIT. ENSURE CONCRETE DOES NOT AFFECT THE INTEGRITY OF THE SUBSOIL DRAINAGE CONNECTED TO THE PIT.</div> <div>7. ENSURE PIPEWORK DOES NOT PROTRUDE INTO THE BEYOND THE WALL. PIPEWORK IS TO FINISH FLUSH WITH INTERNAL WALL (UNLESS OTHERWISE NOTED OR DETAILED).</div> <div>8. ENSURE THE OUTLET PIPE IS CONNECTED AT THE INVERT LEVEL OF THE PIT TO DRAIN. ALTERNATIVELY FILL THE BASE OF THE PIT WITH MASS CONCRETE (MIN 50mm THICK) OR APPROVED GROUTING COMPOUND (LESS THAN 50mm THICK) TO DRAIN.</div> <div>9. PROVIDE CONCRETE BENCHING TO SIDES OF PIT TO SUIT PIPE DIAMETER. HEIGHT TO MATCH MINIMUM 1/3 PIPE DIAMETER.</div>										<div>1. <u>GENERAL</u><div>1.1. ALL ASPHALTIC CONCRETE (AC) WORK TO BE PREPARED AND CARRIED OUT IN ACCORDANCE WITH GOOD ASPHALTIC PAVING PRACTICE AS DESCRIBED IN AS2150-2005 "ASPHALT (HOT-MIXED) PAVING – GUIDE TO GOOD PRACTICE" AND CURRENT RMS SPECIFICATIONS.</div></div> <div>2. <u>PAVEMENT PREPARATION</u><div>2.1. THE FINISHED PAVEMENT SURFACE TO BE SEALED SHALL BE WITHIN +/- 2% OF THE OPTIMUM AND BROOMED BEFORE COMMENCEMENT OF WORK TO ENSURE COMPLETE REMOVAL OF ALL SUPERFICIAL FOREIGN MATTER.</div><div>2.2. PRIME ALL SURFACES TO BE SEALED. ALLOW PRIME TO SETTLE FOR A MINIMUM OF 3 DAYS BEFORE APPLYING TACK COAT AND ASPHALT.</div><div>2.3. SWEEP PRIMED SURFACES BEFORE APPLYING TACK COAT.</div><div>2.4. ALL DEPRESSIONS OR UNEVEN AREAS ARE TO BE TACK-COATED AND BROUGHT UP TO GENERAL LEVEL OF PAVEMENT WITH ASPHALTIC CONCRETE BEFORE LAYING OF MAIN COURSE.</div><div>2.5. ALL DEFECTS IN THE BASE COURSE INCLUDING CRACKS, SURFACE DEFORMATION AND THE LIKE SHALL BE REPAIRED AS DIRECTED BY THE SUPERINTENDENT PRIOR TO PLACEMENT OF TACK COAT AND/OR AC COURSES.</div></div> <div>3. <u>PLACEMENTS</u><div>3.1. ALL ASPHALT SHALL BE PLACED UTILISING APPROVED MECHANICAL PAVING MACHINES. DO NOT HAND PLACE ASPHALT WITHOUT PRIOR APPROVAL FROM ENGINEER.</div></div> <div>4. <u>JOINTS</u><div>4.1. THE NUMBER OF JOINTS BOTH LONGITUDINAL AND TRANSVERSE SHALL BE KEPT TO A MINIMUM.</div><div>4.2. THE DENSITY AND SURFACE FINISH AT JOINTS SHALL BE SIMILAR TO THOSE OF THE REMAINDER OF THE LAYER.</div></div> <div>5. <u>COMPACTION</u><div>5.1. ALL COMPACTION SHALL BE UNDERTAKEN USING SELF PROPELLED ROLLERS.</div><div>5.2. INITIAL ROLLING SHALL BE COMPLETED BEFORE THE MIX TEMPERATURE FALLS BELOW 105°C USING A STEEL DRUM ROLLER HAVING A MINIMUM WEIGHT OF 8 TONNES AND A MAXIMUM UNIT LOAD ON THE REAR DRUM EQUIVALENT TO 55kN/m WIDTH OF DRUM.</div><div>5.3. SECONDARY ROLLING SHALL BE COMPLETED BEFORE THE MIX TEMPERATURE FALLS BELOW 80°C USING A PNEUMATIC TYRED ROLLER OF AT LEAST 10 TONNES MASS. A MINIMUM TYRE PRESSURE OF 550kPa AND A MINIMUM TOTAL LOAD OF 1 TONNE ON EACH TYRE.</div><div>5.4. <u>ROLLED SURFACES SHALL BE SMOOTH AND FREE OF UNDULATIONS. BONY AND/OR UNEVEN SURFACES WILL BE REJECTED.</u></div><div>5.5. PROVIDE 2 No. MINIMUM COMPACTION TESTS.</div></div> <div>6. <u>FINISHED SURFACE PROPERTIES</u><div>6.1. FINISHED SURFACES SHALL BE SMOOTH, DENSE AND TRUE OF SHAPE AND SHALL NOT VARY MORE THAN;<div>6.1.1. 3mm FROM THE SPECIFIED PLAN LEVEL AT ANY POINT.</div><div>6.1.2. 3mm FROM THE BOTTOM OF A STRAIGHT EDGE LAID TRANSVERSELY.</div><div>6.1.3. 5mm FROM THE BOTTOM OF A STRAIGHT EDGE LAID LONGITUDINALLY.</div><div>6.1.4. MINUS 0 TO PLUS 2mm ADJACENT TO OTHER ELEMENTS SUCH AS KERBS AND THE LIKE TO AVOID POOLING OF SURFACE WATER.</div><div>6.1.5. MINUS 0 FROM THE SPECIFIED THICKNESS.</div></div></div> <div>7. DO NOT STORE PLANT EQUIPMENT OR TRAFFIC NEWLY LAID ASPHALTIC CONCRETE PAVEMENTS WITHOUT PRIOR APPROVAL FROM THE ENGINEER.</div> <div>8. DO NOT APPLY MARKING PAINTS UNTIL ASPHALT HAS CURED IN ACCORDANCE WITH PAINT MANUFACTURERS SPECIFICATIONS.</div>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
SEDIMENT AND SOIL EROSION										SITEWORKS										SIGNAGE AND LINEMARKING										PAVEMENTS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
<div>1. THE SEDIMENT & EROSION CONTROL PLAN PRESENTS CONCEPTS ONLY. THE CONTRACTOR SHALL AT ALL TIMES BE RESPONSIBLE FOR THE ESTABLISHMENT & MANAGEMENT OF A DETAILED SCHEME MEETING COUNCILS DESIGN, OTHER REGULATORY AUTHORITY REQUIREMENTS AND MAKE GOOD PAYMENT OF ALL FEES.</div> <div>2. THE CONTRACTOR SHALL INSTIGATE ALL SEDIMENT AND EROSION CONTROL MEASURES IN ACCORDANCE WITH STATUTORY REQUIREMENTS AND IN PARTICULAR THE 'BLUE BOOK' (MANAGING URBAN STORMWATER SOILS AND CONSTRUCTION), PRODUCED BY THE DEPARTMENT OF HOUSING AND COUNCILS POLICIES. THESE MEASURES ARE TO BE INSPECTED AND MAINTAINED ON A DAILY BASIS.</div> <div>3. THE SITE SUPERINTENDENT SHALL ENSURE THAT ALL SOIL AND WATER MANAGEMENT WORKS ARE LOCATED AS INSTRUCTED IN THE DRAWINGS AND ADHERE TO ALL REGULATORY AUTHORITY REQUIREMENTS.</div> <div>4. THE CONTRACTOR SHALL INFORM ALL SUB CONTRACTORS OF THEIR RESPONSIBILITIES IN MINIMISING THE POTENTIAL FOR SOIL EROSION AND POLLUTION TO DOWNSLOPE LANDS AND WATERWAYS.</div> <div>5. WHERE PRACTICAL, THE SOIL EROSION HAZARD ON THE SITE SHALL BE KEPT AS LOW AS POSSIBLE. TO THIS END, WORKS SHOULD BE UNDERTAKEN IN THE FOLLOWING SEQUENCE;<div>5.1.CONSTRUCT TEMPORARY STABILISED SITE ACCESS INCLUSIVE OF SHAKE DOWN / WASH PAD.</div><div>5.2.INSTALL ALL TEMPORARY SEDIMENT FENCES AND BARRIER FENCES, WHERE FENCES ADJACENT EACH OTHER, THE SEDIMENT FENCE CAN BE INCORPORATED INTO THE BARRIER FENCE.</div><div>5.3.INSTALL SEDIMENT CONTROL MEASURES AS OUTLINED ON THE APPROVED PLANS.</div></div> <div>6. UNDERTAKE SITE DEVELOPMENT WORKS SO THAT LAND DISTURBANCE IS CONFINED TO AREAS OF MINIMUM WORKABLE SIZE.</div> <div>7. AT ALL TIMES AND IN PARTICULAR DURING WINDY AND DRY WEATHER, LARGE UNPROTECTED AREAS WILL BE KEPT MOIST (NOT WET) BY SPRINKLING WITH WATER TO KEEP DUST UNDER CONTROL ENSURING CONFORMITY TO REGULATORY AUTHORITY REQUIREMENTS.</div> <div>8. ANY SAND USED IN THE CONCRETE CURING PROCESS (SPREAD OVER THE SURFACE) SHALL BE REMOVED AS SOON AS POSSIBLE AND WITHIN 10 WORKING DAYS FROM PLACEMENT.</div> <div>9. WATER SHALL BE PREVENTED FROM ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS THE CATCHMENT AREA HAS BEEN STABILISED AND/OR ANY LIKELY SEDIMENT BEEN FILTERED OUT.</div> <div>10. TEMPORARY SOIL AND WATER MANAGEMENT STRUCTURES SHALL BE REMOVED ONLY AFTER THE LANDS THEY ARE PROTECTING ARE STABILISED / REHABILITATED.</div> <div>11. ALLOW FOR GRASS STABILISATION OF EXPOSED AREAS, OPEN CHANNELS AND ROCK BATTERS DURING ALL PHASES OF CONSTRUCTION.</div> <div>12. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED TO ENSURE THAT THEY OPERATE EFFECTIVELY. REPAIRS AND/OR MAINTENANCE SHALL BE UNDERTAKEN REGULARLY AND AS REQUIRED, PARTICULARLY FOLLOWING RAIN EVENTS.</div> <div>13. RECEPTORS FOR CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHT-WEIGHT WASTE MATERIALS AND LITTER SHALL BE DISPOSED OF IN ACCORDANCE WITH REGULATORY AUTHORITY REQUIREMENTS. CONTRACTOR TO PAY ALL FEES AND PROVIDE EVIDENCE OF SAFE DISPOSAL.</div> <div>14. IF A TEMPORARY SEDIMENT BASIN IS REQUIRED, ENSURE SAFE BATTER SLOPES IN ACCORDANCE WITH THE GEOTECHNICAL REPORT. MAINTAIN ADEQUATE STORAGE VOLUME IN ACCORDANCE WITH PLANS. TEMPORARY PUMP 'CLEAN FLOCULATED' WATER TO COUNCILS STORMWATER SYSTEM. ENSURE WHOLE SITE RUN-OFF IS DIRECTED TO TEMPORARY SEDIMENT BASIN.</div>										<div>1. ALL WORKS TO BE IN ACCORDANCE WITH RELEVANT LOCAL COUNCIL / REGULATORY AUTHORITIES REQUIREMENTS, ALL SPECIFICATIONS AND AUSTRALIAN STANDARDS. CONFLICTS BETWEEN SAID DOCUMENTS SHALL BE REFERRED TO THE SUPERINTENDENT FOR DIRECTION.</div> <div>2. THE CONTRACTOR IS TO DESIGN, OBTAIN APPROVALS AND CARRY OUT REQUIRED TEMPORARY TRAFFIC CONTROL PROCEDURES DURING CONSTRUCTION IN ACCORDANCE WITH ALL REGULATORY AUTHORITIES, INCLUSIVE OF LOCAL COUNCIL REGULATIONS AND REQUIREMENTS.</div> <div>3. THE CONTRACTOR IS TO OBTAIN ALL AUTHORITY APPROVALS AS REQUIRED PRIOR TO COMMENCEMENT OF WORKS.</div> <div>4. RESTORE ALL PAVED, COVERED, GRASSED AND LANDSCAPED AREAS TO THEIR ORIGINAL CONDITION OR AS DIRECTED BY THE SITE SUPERINTENDENT ON COMPLETION OF WORKS. WHERE PLANTING OF NEW GRASS IS NECESSARY REFER TO LANDSCAPE ARCHITECT AND / OR ARCHITECT DOCUMENTATION.</div> <div>5. ON COMPLETION OF ANY TRENCHING WORKS, ALL DISTURBED AREAS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION OR AS DIRECTED BY THE SITE SUPERINTENDENT, INCLUDING KERBS, FOOTPATHS, CONCRETE AREAS, GRAVEL, GRASSED AREAS AND ROAD PAVEMENTS.</div> <div>6. THE CONTRACTOR SHALL ARRANGE ALL SURVEY SETOUT TO BE CARRIED OUT BY A REGISTERED SURVEYOR PRIOR TO COMMENCEMENT OF WORKS.</div> <div>7. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND EXISTING LEVELS ONSITE PRIOR TO LODGMENT OF TENDER AND ONSITE WORKS. THE PRICE AS TENDERED SHALL BE INCLUSIVE OF ALL WORKS SHOWN ON THE TENDER PROJECT DRAWINGS. ADDITIONAL PAYMENTS FOR WORKS SHOWN ON THE TENDER PROJECT DRAWINGS WILL NOT BE APPROVED.</div> <div>8. DO NOT OBTAIN DIMENSIONS BY SCALING DRAWINGS.</div> <div>9. IN CASE OF DOUBT OR DISCREPANCY REFER TO SUPERINTENDENT FOR CLARIFICATION OR CONFIRMATION PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.</div> <div>10. WHERE NEW WORKS ABUT EXISTING THE CONTRACTOR SHALL ENSURE THAT A SMOOTH EVEN PROFILE, FREE FROM ABRUPT CHANGES IS OBTAINED. MAKE SMOOTH TRANSITION TO EXISTING FEATURES AND MAKE GOOD WHERE JOINED.</div> <div>11. TRENCHES THROUGH EXISTING ROAD AND CONCRETE PAVEMENTS SHALL BE SAWCUT TO FULL DEPTH OF CONCRETE AND A MIN 50mm IN BITUMINOUS PAVING.</div> <div>12. ALL CIVIL ENGINEERING DESIGN HAS BEEN DOCUMENTED UNDER THE ASSUMPTION THAT ALL NECESSARY SITE CONTAMINATION REMEDIATION WORKS HAVE BEEN SATISFACTORILY COMPLETED (IF APPLICABLE) AND THAT THE SITE IS NOT AFFECTED BY ANY SOIL STRATA OR GROUNDWATER TABLE CONTAMINATION.</div>										<div>1. ALL SIGNAGE TO BE INSTALLED IN ACCORDANCE WITH AUSTRALIAN STANDARDS 1742 / RMS STANDARDS AND SPECIFICATIONS.</div> <div>2. LINE MARKING AND PAINT SHALL BE IN ACCORDANCE WITH AS1742.3 AND RMS STANDARDS.</div> <div>3. PAINT SHALL BE TYPE 3 CLASS 'A' AND THE COLOUR SHALL BE WHITE AND NOT SUBJECT TO DISCOLOURATION BY BITUMEN FROM ROAD SURFACE. ALL PAINT TO BE APPLIED BY MECHANICAL SPRAYER.</div> <div>4. LINE MARKING SHALL BE SPOTTED OUT AND APPROVED PRIOR TO SPRAYING.</div> <div>5. PAINT SHALL BE APPLIED AT A WET THICKNESS OF BETWEEN 0.35mm AND 0.40mm.</div> <div>6. CARPARK LINEMARKING TO BE 80mm WIDE.</div>										<div>1. ALL PAVEMENT MATERIALS SHALL COMPLY WITH CURRENT RMS SPECIFICATIONS. PROVIDE MECHANICAL ANALYSIS FOR EACH BATCH OF PAVEMENT MATERIAL TO ENSURE CONFORMITY.</div> <div>2. <u>COMPACTION STANDARDS</u><div>BASE 98% MODIFIED MAXIMUM DRY DENSITY</div><div>SUBBASE 98% MODIFIED MAXIMUM DRY DENSITY</div><div>SUBGRADE 100% STANDARD MAXIMUM DRY DENSITY</div></div> <div>3. <u>THE CONTRACTOR SHALL CONFIRM THE DESIGN CBR WITH A MINIMUM OF 3 TESTS TAKEN AT SUBGRADE LEVEL. WHERE DISCREPANCY IS FOUND, CONTACT THE DESIGN ENGINEER.</u></div> <div>4. ALLOW FOR COMPACTION TESTING BY A N.A.T.A. REGISTERED LABORATORY FOR BASE LAYER, SUBBASE LAYER AND SUBGRADE LAYER IN ACCORDANCE WITH THE LATEST VERSION OF AS3798 FOR PAVEMENTS (MINIMUM 2 TESTS PER LAYER). ALLOW FOR AT LEAST TWO SUCCESSFUL COMPACTION TESTS IN EACH LAYER.</div> <div>5. MATCH NEW PAVEMENTS NEATLY AND FLUSH WITH EXISTING</div> <div>6. AFTER BASE IS APPROVED, SWEEP CLEAN AND PRIME AT NOMINAL RATE OF 1.0L PER 1.0 sq.m.</div> <div>7. <u>PAVEMENT HOLD POINTS</u><div>7.1. SUB-GRADE PROF ROLL PRIOR TO SET-UP AND FORM FOR CONCRETE POUR.</div><div>7.2. INSPECTION OF FORMWORK / STEEL PRIOR TO CONCRETE POUR.</div><div>7.3. SUBMISSION OF SUB-GRADE AND BASE DENSITY TESTS.</div></div>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
VERIFIER: J. GILLIGAN										JOB MANAGER: J. GILLIGAN										DESIGNED: J. GRINSELL										DRAWN: G. EMBRE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
REVISION										DESCRIPTION										ISSUED										VER'D										APP'D										DATE										CLIENT										ARCHITECT										ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE COMMENCING WORK. NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY. THIS DRAWING MAY HAVE BEEN PREPARED USING COLOUR, AND MAY BE INCOMPLETE IF COPIED TO BLACK & WHITE										PROJECT										DRAWING TITLE										JOB NUMBER																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
1										ISSUED FOR APPROVAL										CP																				JRG										19.12.19										RICHARD CROOKES CONSTRUCTIONS										NORTHROP										JORDAN SPRINGS PUBLIC SCHOOL PUBLIC DOMAIN										CIVIL DOCUMENTATION CONSTRUCTION CERTIFICATE										182535																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
2										RE-ISSUED FOR APPROVAL										JRG																				JRG										06.03.20																														14-28 CULLEN AVENUE, JORDAN SPRINGS										SPECIFICATION NOTES - SHEET 01										DRAWING NUMBER										REVISION																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	

NOTE: ALL CIVIL ENGINEERING CONSTRUCTION WORKS TO BE CARRIED OUT IN ACCORDANCE WITH PENRITH CITY COUNCIL DEVELOPMENT GUIDELINES.THE AFOREMENTIONED GUIDELINES INCLUSIVE OF ALL SPECIFICATIONS TAKE PRECEDENCE OVER NOTES PROVIDED BELOW.

ENGINEERING CERTIFICATION

1.

TO CERTIFY THE CONSTRUCTED CIVIL WORKS, A QUALIFIED EXPERIENCED ENGINEER IS TO VISIT THE SITE TO OBSERVE CONSTRUCTION TECHNIQUES AND VARIOUS ELEMENTS THAT MAY BE CONCEALED WHEN THE WORKS ARE COMPLETE.

2.

THIS SPECIFICATION ALLOWS FOR CERTIFICATION OF WORKS CONTROLLED BY A PRIVATE CERTIFIER FOR LAND DEVELOPMENT WORKS. THIS SPECIFICATION DOES NOT COVER CERTIFICATION REQUIREMENTS FOR AUTHORITIES SUCH AS COUNCIL, RMS OR OFFICE OF WATER. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE AND PROVIDE ALL PROJECT SPECIFIC CONSTRUCTION COMPLIANCE (WORKS AS EXECUTED) INFORMATION TO THE SATISFACTION OF THE STAKEHOLDER / AUTHORITY. DISCREPANCIES BETWEEN THIS SPECIFICATION AND SPECIFICATIONS OF OTHER EXTERNAL STAKEHOLDERS / AUTHORITIES IS TO BE REPORTED TO THE SUPERINTENDENT FOR CLARIFICATION.

3.

THE CONTRACTOR IS TO AGREE WITH THE ENGINEER AN APPROPRIATE SITE VISIT SCHEDULE AND FEE ARRANGEMENT PRIOR TO COMMENCEMENT OF THE WORKS. THE CONTRACTOR SHALL ENSURE THAT THE ENGINEER CAN SAFELY ACCESS ALL CIVIL ELEMENTS TO BE REVIEWED. SITE VISITS ARE CONDUCTED DURING NORMAL BUSINESS HOURS. WE REQUIRE TWO (2) WORKING DAY NOTICE FOR ANY SITE VISIT.

4.

TO PROVIDE CERTIFICATION THE ENGINEER MUST VISIT THE SITE TO OBSERVE.

4.1.

PAVEMENTS

4.1.1.

POOR SUBGRADE CONDITIONS

4.1.2.

PROOF ROLLING OF SUB-GRADE

4.1.3.

PLACEMENT OF SUB-BASE COURSE, BASE COURSE AND WEARING COURSE.

4.1.4.

PLACEMENT OF STEEL REINFORCEMENT , DOWELS AND JOINT CRADLES PRIOR TO POURING OF CONCRETE

4.2.

EARTHWORKS

4.2.1.

TOPSOIL STRIP

4.2.2.

EARTHWORKS BATTER

4.2.3.

FILLING

4.3.

STORMWATER DRAINAGE

4.3.1.

DRAINAGE TRENCHES PRIOR TO BACKFILLING

4.3.2.

LEGAL POINT OF CONNECTION PRIOR TO BACKFILLING

4.3.3.

ANY OTHER DRAINAGE STRUCTURE THAT MAY BE CONCEALED DURING THE COURSE OF THE WORKS

4.4.

CONCRETE STRUCTURES

4.4.1.

PLACEMENT OF ANY STEEL REINFORCEMENT PRIOR TO CONSTRUCTION.

5.

THE CONTRACTOR SHALL PROVIDE SURVEYED LEVELS, PREPARED BY A QUALIFIED SURVEYOR FOR SUBGRADE, SUB-BASE COURSE, BASE COURSE AND WEARING COURSE.

6.

THE CONTRACTOR SHALL PROVIDE WORKS AS EXECUTED (WAE) DOCUMENTATION PREPARED BY A QUALIFIED PRACTICING SURVEYOR. THE WAE DRAWINGS SHALL CLEARLY SHOW, STORMWATER GRATE/ COVER LEVELS, STORMWATER PIT INVERT LEVELS AND CORRESPONDING INVERT LEVELS OF ANY INCOMING OR OUTGOING PIPES, DIAMETER OF ALL PIPES, DIMENSIONS AND VOLUME OF ON-SITE DETENTION FACILITIES, INVERT LEVELS OF ORIFICE PLATES, OVERFLOW WEIRS, BASE OF TANK FINISHED LEVELS OF PAVEMENTS. THE WAE SHALL SHOW WHERE THE SIZE OR ALIGNMENT OF CIVIL ENGINEERING ELEMENTS WHEN THEY DEVIATE FROM THE DESIGN DOCUMENTATION.

7.

THE WAE DRAWINGS SHALL BE STAMPED WITH THE FOLLOWING STATEMENT "THESE WAE DRAWINGS HAVE BEEN PREPARED BY [COMPANY NAME] AND ARE A TRUE AND ACCURATE REPRESENTATION OF THE CONSTRUCTED WORKS". EACH DRAWING SHALL BE SIGNED AND DATED BY THE SURVEYOR WHO PREPARED THE DRAWINGS.

THESE WAE DRAWINGS HAVE BEEN PREPARED BY [COMPANY NAME] AND ARE A TRUE AND ACCURATE REPRESENTATION OF THE CONSTRUCTED WORKS.

SIGNED..... DATE.....

NAME.....

POSITION.....

8.

WAE SHALL BE PROVIDED IN BOTH AUTOCAD AND PDF FORMAT. NORTHROP CONSULTING ENGINEERS WILL PROVIDE ENGINEERING PLANS TO THE CONTRACTOR IN AUTOCAD FORMAT TO AID PREPARATION OF WAE DOCUMENTATION.

9.

CONTRACTOR IS TO UNDERTAKE A CCTV INSPECTION OF ALL STORMWATER DRAINAGE PIPELINES AND PROVIDE TO THE ENGINEER FOR APPROVAL.

10.

THE CONTRACTOR SHALL PROVIDE ALL RELEVANT TEST CERTIFICATES PROGRESSIVELY THROUGHOUT THE DURATION OF THE WORKS. ALL TEST CERTIFICATES SHALL BE PREPARED BY A NATA REGISTERED LABORATORY. TEST CERTIFICATES ARE REQUIRED FOR PROOF ROLLING, SUBGRADE COMPACTION, COMPACTION OF PAVEMENT LAYERS, COMPACTION OF FILLING OPERATIONS, CONCRETE SLUMP TEST, AND CONCRETE STRENGTH TESTS. THE CONTRACT SHALL PROVIDE ALL RELEVANT VALIDATIONS BY A GEOTECHNICAL ENGINEER FOR ALL IMPORTED FILL

11.

EACH TEST CERTIFICATE WILL NOMINATE THE DATE AND TIME OF THE TEST AND PROVIDE A LOCATION OF WHERE THE TEST SAMPLE WAS TAKEN FROM.

12.

THE CONTRACTOR SHALL ARRANGE FOR THE ENGINEER TO CONDUCT A FINAL VISIT TO REVIEW OF THE CONSTRUCTED WORKS. THIS WILL REVIEW WILL NOT TAKE PLACE UNTIL THE WAE DOCUMENTATION AND RELEVANT TEST CERTIFICATES HAVE BEEN RECEIVED.

13.

IF DEFECTIVE OR INCOMPLETE WORK IS FOUND DURING THE FINAL INSPECTION ANOTHER INSPECTION MAY BE REQUIRED AT THE CONTRACTORS EXPENSE TO VERIFY THE RECTIFICATION WORKS HAVE BEEN COMPLETED.

VERIFIER: J. GILLIGAN

JOB MANAGER: J. GRINSELL

DESIGNED: J. GRINSELL

DRAWN: G. EMBKE

CONCRETE PAVEMENTS

1.

THIS SECTION REFERS TO CIVIL CONCRETE WORKS AND DOES NOT INCLUDE STRUCTURAL ELEMENTS SUCH AS BUILDINGS, BELOW GROUND STRUCTURES OR RETAINING WALLS.

2.

ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS3600 CURRENT EDITION WITH AMENDMENTS, EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.

3.

CONCRETE QUALITY AND REINFORCING COVER
ALL REQUIREMENTS OF THE CURRENT ACSE CONCRETE SPECIFICATION DOCUMENT 1 SHALL APPLY TO THE FORMWORK, REINFORCEMENT AND CONCRETE UNLESS NOTED OTHERWISE.

ELEMENT	CONCRETE STRENGTH f'c (MPa)	SPECIFIED SLUMP	NOMINAL AGGREGATE SIZE	MAX. 56 DAY DRYING SHRINKAGE	COVER (mm)
KERBS AND PATHS	25	60	20	650microns	TOP 40
PITS AND VEHICULAR PAVEMENTS	32	80	20	650microns	TOP 40

4.

CONCRETE PROPERTIES SHALL BE VARIED FROM NORMAL CLASS AS FOLLOWS:

4.1.

MINIMUM CEMENT CONTENT 250 kg/m³

4.2.

MAXIMUM 56 DAY SHRINKAGE STRAIN + AS NOMINATED ABOVE

4.3.

PRIOR TO COMMENCEMENT CONCRETE SUPPLIER TO PROVIDE DRYING SHRINKAGE TEST RESULTS FROM PRODUCTION ASSESSMENT AS EVIDENCE THAT SPECIFIED DRYING SHRINKAGE LIMITS CAN BE ACHIEVED USING NORMAL MIX DESIGN.

5.

ALL REINFORCEMENT SHALL BE FIRMLY SUPPORTED ON MILD STEEL PLASTIC TIPPED CHAIRS. PLASTIC CHAIRS OR CONCRETE CHAIRS AT NOT GREATER THAN 1m CENTRES BOTH WAYS. BARS SHALL BE TIED AT ALTERNATE INTERSECTIONS.

6.

CEMENT TYPE SHALL BE (ACSE SPECIFICATION) TYPE SL.

7.

PROJECT CONTROL TESTING SHALL BE CARRIED OUT IN ACCORDANCE WITH AS 1379. TEST CYLINDERS ARE TO BE KEPT ON SITE.

8.

ALL COMPRESSION STRENGTH TEST REPORTS SHALL BE SUBMITTED TO THE CIVIL ENGINEER FOR REVIEW.

9.

ALL CONCRETE IS TO BE CONTINUOUSLY CURED FOR A MINIMUM PERIOD OF 10 DAYS AFTER PLACING . CURING TO COMMENCE IMMEDIATELY AFTER FINISHING. SPRAY ON CURING COMPOUNDS TO COMPLY WITH AS3799.

10.

PLACE CONCRETE CONTINUOUSLY BETWEEN CONSTRUCTION JOINTS SHOWN ON PLAN. DO NOT BREAK OR INTERRUPT SUCCESSIVE POURS SUCH THAT COLD JOINTS OCCUR. ANY REVISIONS OR ADDITIONS TO CONSTRUCTION JOINTS SHOWN ON PLAN REQUIRE APPROVAL FROM THE CIVIL ENGINEER.

11.

FALLS IN SLAB AS SHOWN ON PLAN MAINTAIN MINIMUM SLAB THICKNESS AS SHOWN.

12.

NO ADMIXTURES SHALL BE USED IN CONCRETE UNLESS APPROVED IN WRITING BY THE DESIGN ENGINEER.

13.

THE FINISHED CONCRETE SHALL BE A DENSE HOMOGENOUS MASS, COMPLETELY FILLING THE FORMWORK, THOROUGHLY EMBEDDING THE REINFORCEMENT AND FREE OF STONE POCKETS.

14.

FABRIC SHALL BE LAPPED IN ACCORDANCE WITH THE FOLLOWING DETAIL:

25 MIN.

LAP TWO WIRES

•••••

•••••

FOLLOWING THE FABRIC SYMBOL SL IS THE REFERENCE NUMBER FOR FABRIC TO AS1304.

15.

POLYETHYLENE SHEET SHALL BE PLACED BELOW ALL CONCRETE PAVEMENTS.

16.

ALL PENETRATIONS TO HAVE 2/N12 TRIMMER BARS TOP AND BOTTOM TO EACH FACE U.N.O. EXTEND TRIMMERS 700 BEYOND PENETRATION. MAINTAIN 40mm COVER TOP AND BOTTOM.

17.

FORMWORK CLASS SHALL BE IN ACCORDANCE WITH AS3600.

18.

SURFACE FINISHES:

ELEMENT	FORMWORK CLASS
STORMWATER PIT	OFF FORM
PAVEMENTS	MACHINE FLOAT / BROOM FINISH
KERBS	STEEL FLOAT / TROWEL

19.

REINFORCEMENT SYMBOLS:

N

DENOTES GRADE 450 N BARS TO AS1302 GRADE N

R

DENOTES 230 R HOT ROLLED PLAIN BARS TO AS1302

SL

DENOTES HARD-DRAWN WIRE REINFORCING FABRIC TO AS1304

NUMBER OF BARS IN GROUP

17 N

20 250

NOMINAL BAR SIZE IN mm

BAR GRADE AND TYPE

SPACING IN mm THE FIGURE

CONCRETE SEALING

1.

THE CURING PROCESS FOR NEW CONCRETE IS TO INCORPORATE THE FOLLOWING ASPECTS, GENERALLY AS ORDERED;

11.

SPRAY CURING COMPOUND

12.

SAWCUT JOINTS AS LOCATED AND SPECIFIED AS SOON AS CURING PERMITS.

13.

COVER NEW PAVING WITH HESSIAN AND BLACK PLASTIC SHEETS TAPED AT JOINTS ON COMPLETION OF SAWCUTTING. NOTE COVERING IS TO EXTENT MIN 5m BEYOND PAVEMENT BEING CURED. OVER ADJOINING (EXISTING) PAVEMENT AREAS, MAINTAIN CURING AS SPECIFIED.

PAVEMENT JOINTS

1.

PROVIDE 10mm ABLEFLEX BETWEEN NEW CONCRETE WORKS AND EXISTING STRUCTURES.

2.

LOCAL AUTHORITY REQUIREMENTS SHALL TAKE PRECEDENCE WITHIN THE PUBLIC ROAD RESERVE.

3.

DOWELS TO BE PLACED ON PROPRIETARY CRADLES TO ENSURE CORRECT SPACING AND ALIGNMENT.

4.

PEDESTRIAN PAVEMENTS
ALL PEDESTRIAN PAVEMENTS ARE TO BE JOINTED AS FOLLOWS U.N.O. ON THE DESIGN DRAWINGS.

5.

EXPANSION JOINTS ARE TO BE LOCATED WHERE POSSIBLE AT TANGENT POINTS OF CURVES AND ELSEWHERE AT MAX. 6.0m CENTRES.

6.

WEAKENED PLANE JOINTS (SAWN OR TOOL JOINTS) ARE TO BE LOCATED AT A MAX. SPACING OF 15m x WIDTH OF THE PAVEMENT.

7.

WHERE POSSIBLE JOINTS SHOULD BE LOCATED TO MATCH KERBING AND OR ADJACENT PAVEMENT JOINTS.

8.

TYPICAL PEDESTRIAN PAVEMENT JOINT DETAIL

EJ

SJ

SJ

EJ

6.0m MAX.

15 x W

W

9.

VEHICULAR PAVEMENTS
ALL VEHICULAR PAVEMENTS TO BE JOINTED AS FOLLOWS U.N.O. ON THE DESIGN DRAWINGS.

10.

TIED KEYED CONSTRUCTION JOINTS SHOULD GENERALLY BE LOCATED LONGITUDINALLY AT A MAX. OF 6.0m CENTRES.

11.

SAWN JOINTS SHOULD GENERALLY BE LOCATED LATERALLY AT A MAX. OF 6.0m CENTRES WITH DOWELED EXPANSION JOINTS AT MAX. 18.0m CENTRES.

12.

TYPICAL VEHICULAR PAVEMENT JOINT DETAIL.

EJ

SJ

SJ

EJ

6.0m MAX.

18.0m MAX.

18.0m MAX.

13.

KERB EXPANSION JOINTS SHALL BE FORMED FROM 10mm ABLEFLEX FOR FULL DEPTH OF SECTION.

14.

KERB EXPANSION JOINTS TO BE LOCATED AT DRAINAGE PITS, TANGENT POINTS OF CURVES / CORNERS AND AT 12m MAX CENTRES.

15.

KERB TOOLED JOINTS TO BE MIN 3mm WIDE AND LOCATED AT MAX 3m CENTRES.

16.

INTEGRAL KERB JOINTS SHALL MATCH THE LOCATION OF PAVEMENT JOINTS.

CONCRETE

1.

CARRY OUT ALL CONCRETE WORK IN ACCORDANCE WITH AS3600 AND NATSPEC CONCRETE STANDARDS.

2.

CONCRETE PROPERTIES AND COVER TO REINFORCING:

ELEMENT	CONCRETE STRENGTH f'c (MPa)	MAX. 56 DAY DRYING SHRINKAGE	COVER (mm)
SLABS ON GROUND	32	650microns	TOP 40 BTM 40
TANK LID	40	700microns	TOP 40 BTM 40

MAXIMUM AGGREGATE SIZE

= 20mm U.N.O.

SLUMP DURING PLACING

= 75mm

EXPOSURE CLASSIFICATION

= B1

NO ADMIXTURES SHALL BE USED IN CONCRETE MIX UNLESS APPROVED BY STRUCTURAL ENGINEER IN WRITING.

3.

CONCRETE PROPERTIES FOR SLABS AND BEAMS SHALL BE VARIED FROM NORMAL CLASS AS FOLLOWS:

-

MINIMUM CEMENT CONTENT 250kg/cu.m.

-

PRIOR TO COMMENCEMENT CONCRETE SUPPLIER TO PROVIDE DRYING SHRINKAGE TEST

RESULTS FROM PRODUCTION ASSESSMENT AS EVIDENCE THAT SPECIFIED DRYING SHRINKAGE LIMITS CAN BE ACHIEVED USING NORMAL MIX DESIGN.

4.

SUBMIT FOR APPROVAL THE FOLLOWING TO THE STRUCTURAL ENGINEER:

-

CURING PROCEDURE (PVA MEMBRANES NOT PERMITTED)

-

STRIPPING PROCEDURE

-

DETAILS AND LOCATION OF CAST IN SERVICES

-

CONDUITS, PENETRATIONS AND CONSTRUCTION JOINT LOCATIONS

5.

ALL CONCRETE MIXES SHALL BE DESIGNED BY A RECOGNISED TESTING LAB AND SUBMITTED FOR REVIEW BY THE STRUCTURAL ENGINEER.

6.

ALL COMPRESSIVE STRENGTH TEST REPORTS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW.

7.

PROJECT CONTROL TESTING SHALL BE CARRIED OUT ON ALL CONCRETE IN ACCORDANCE WITH AS1379. TEST CYLINDERS ARE TO BE KEPT ON SITE.

8.

ALL CONCRETE IS TO BE CONTINUOUSLY CURED FOR A MINIMUM PERIOD OF 10 DAYS AFTER PLACING. CURING TO COMMENCE IMMEDIATELY AFTER FINISHING. SPRAY ON CURING COMPOUNDS TO COMPLY WITH AS3799.

9.

FOR TENDER PURPOSES ASSUME MINIMUM STRIPPING TIMES AND EXTENT OF BACK PROPPING AS PER AS3610-1995 SECTION 5.0 AND AS PER GENERAL NOTES FOR FORMWORK AND PROPPING.

10.

FORMWORK FINISH CLASSIFICATION TO AS3600:

ELEMENT	CLASS
INGROUND FOOTINGS	5
RETAINING WALLS	5 EARTH FACE
RETAINING WALLS	3 EXPOSED FACE
COLUMNS	2
BEAMS AND SLABS	2

11.

SURFACE FINISHES:

-

COLUMNS AND WALLS OFF FORM

12.

COMPACT ALL CONCRETE INCLUDING FOOTINGS AND SLABS, USING MECHANICAL VIBRATORS.

13.

PLACE CONCRETE CONTINUOUSLY BETWEEN CONSTRUCTION JOINTS SHOWN ON PLAN. DO NOT BREAK OR INTERRUPT SUCCESSIVE POURS SUCH THAT COLD JOINTS OCCUR. ANY REVISIONS OR ADDITIONS TO CONSTRUCTION JOINTS SHOWN ON PLAN REQUIRE APPROVAL FROM THE STRUCTURAL ENGINEER.

14.

CONCRETE PROFILES:

-

BEAM DEPTHS ARE WRITTEN FIRST AND INCLUDE THE SLAB THICKNESS.

-

SIZES OF CONCRETE ELEMENTS DO NOT INCLUDE THICKNESS OF APPLIED FINISHES.

-

NO HOLES, CHASES OR EMBEDMENT OF PIPES OTHER THAN SHOWN IN THE STRUCTURAL DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT THE PRIOR WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER.

-

PROVIDE DRIP GROOVES AT ALL EXPOSED EDGES, CHAMFERS, DRIP GROOVES, REGLETS ETC TO BE TO ARCHITECTS DETAILS.

15.

ALL PENETRATIONS TO HAVE 2-N16 TRIMMER BARS TOP AND BOTTOM TO EACH FACE U.N.O. EXTEND TRIMMERS 600 BEYOND PENETRATION.

16.

SETDOWNS OR FALLS IN FLOOR SURFACES ARE NOT PERMITTED UNLESS SHOWN ON DRAWINGS. MAINTAIN MINIMUM SLAB THICKNESS SHOWN ON PLAN WHERE FALLS OCCUR.

CONCRETE (cont)

17.

REINFORCEMENT GRADE AND NOTATION:

SYMBOL	BAR SHAPE	STRENGTH GRADE (MPa)	DUCTILITY CLASS	TO COMPLY WITH AUST. STANDARD
N	DEFORMED RIB BAR	500	NORMAL	AS4671
R	PLAIN ROUND BAR	250	NORMAL	AS4671
RL	RECTANGULAR MESH OF DEFORMED RIB BAR	500	LOW	AS4671
SL	SQUARE MESH OF DEFORMED RIB BAR	500	LOW	AS4671
L-TM	TRENCH MESH	500	LOW	AS4671

ALL REINFORCING BARS SHALL BE GRADE D500N TO AS4671 AND ALL MESH SHALL BE GRADE 500L TO AS4671 U.N.O. CLASS L REINFORCEMENT SHALL NOT BE USED U.N.O.

REINFORCEMENT LABELS:

N12-300

SPACING (mm)

3-N28

BAR SIZE (mm)

SL92

CENTRES AT 200mm

SPACING (mm)

BAR SIZE (mm)

TYPE OF REINFORCEMENT

BAR SIZE (mm)

TYPE OF REINFORCEMENT

NUMBER OF BARS

DUCTILITY CLASS

SQUARE MESH

18.

REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY, AND NOT NECESSARILY IN TRUE PROJECTION. BARS SHOWN ARE INDICATIVE ONLY AND LENGTHS MAY VARY. BEAM ELEVATIONS TAKE PRECEDENCE OVER SECTIONS. SLAB PLANS TAKE PRECEDENCE OVER SECTIONS. REFER TO SECTIONS FOR EXTRA BARS THAT MAY BE REQUIRED.

19.

USE ONLY ALL PLASTIC OR CONCRETE CHAIRS AT EXTERNAL SURFACES.

20.

SITE BENDING OF REINFORCEMENT BARS SHALL BE DONE WITHOUT HEATING USING A RE-BENDING TOOL. THE BARS SHALL BE RE-BENT AGAINST A FLAT SURFACE OR A PIN WITH A DIAMETER NOT LESS THAN THE MINIMUM PIN SIZE PRESCRIBED IN AS3600-2001.

21.

SPLICES IN REINFORCEMENT SHALL BE MADE ONLY IN POSITIONS SHOWN ON THE STRUCTURAL DRAWINGS OR IN POSITIONS OTHERWISE APPROVED IN WRITING BY THE STRUCTURAL ENGINEER. LAPS SHALL BE IN ACCORDANCE WITH AS3600 SECTION 13 AND NOT LESS THAN THE DEVELOPMENT LENGTH FOR EACH BAR.

22.

FOR LAPS IN MESH REFER TO SLAB ON GROUND NOTES.

23.

WELDING OF REINFORCEMENT SHALL NOT BE PERMITTED UNLESS SHOWN ON THE STRUCTURAL DRAWINGS OR APPROVED BY THE STRUCTURAL ENGINEER

24.

AT EXTERNALLY EXPOSED SURFACES NO METALLIC ITEMS INCLUDING FORM BOLTS, FORM SPACERS, METALLIC BAR CHAIRS AND TIE WIRE ARE TO BE PLACED IN THE COVER ZONE.

25.

ALL REINFORCEMENT, ANCHOR BOLTS AND OTHER CONCRETE INSERTS SHALL BE WELL SECURED IN POSITION AND INSPECTED BY THE STRUCTURAL ENGINEER PRIOR TO PLACING CONCRETE.

26.

HOLD DOWN BOLTS SHALL BE HOT DIPPED GALVANISED.

27.

U.N.O. ALL MASONRY ANCHORS INTO CONCRETE SHALL BE RAMSET TRUBOLTS (LONGEST VERSION) OR APPROVED EQUIVALENT. BOLTS SHALL BE GALVANISED WHERE THEY ARE ADJOINING NON FERROUS OR PREPAINTED MEMBERS. PROVIDE STAINLESS STEEL BOLTS FOR ALL EXTERNAL CONDITIONS, OR WHERE EXPOSED TO THE WEATHER.

3D INFORMATION DISCLAIMER

THE 12D DESIGN FILE SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO USE IN THE CONSTRUCTION WORKS.

HARDCOPY/PDF PLANS AND DOCUMENTS TAKE PRECEDENCE OVER THE SUPPLIED ELECTRONIC INFORMATION AND ANY INCONSISTENCIES SHOULD IMMEDIATELY BE REPORTED TO NORTHROP CONSULTING ENGINEERS FOR VERIFICATION PRIOR TO USE BY THE CONTRACTOR.

NORTHROP CONSULTING ENGINEERS TAKES NO RESPONSIBILITY FOR USE OF NON-VERIFIED 3D DESIGN INFORMATION USED IN THE WORKS.

THE USE OF THE 3D MODEL INFORMATION SHALL CONSTITUTE ACKNOWLEDGMENT AND ACCEPTANCE OF THE ABOVE STATEMENTS BY THE RECIPIENT.

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT
1	ISSUED FOR APPROVAL	CP		JRG	19.12.19	RICHARD CROOKES CONSTRUCTIONS
2	RE-ISSUED FOR APPROVAL	VC		JRG	16.01.20	
						DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED

ARCHITECT

GROUP USA

THE COPYRIGHT OF THIS DRAWING REMAINS WITH NORTHROP CONSULTING ENGINEERS PTY LTD

ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE COMMENCING WORK. NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY. THIS DRAWING MAY HAVE BEEN PREPARED USING COLOUR, AND MAY BE INCOMPLETE IF COPIED TO BLACK & WHITE.

NORTHROP

Sydney

Level 11 345 George Street, Sydney NSW 2000

Ph (02) 9241 4188 Fax (02) 9241 4324

Email sydney@northrop.com.au ABN 81 094 433 100

PROJECT

JORDAN SPRINGS PUBLIC SCHOOL PUBLIC DOMAIN

14-28 CULLEN AVENUE, JORDAN SPRINGS

DRAWING TITLE

CIVIL DOCUMENTATION CONSTRUCTION CERTIFICATE

SPECIFICATION NOTES - SHEET 02

JOB NUMBER

182535

DRAWING NUMBER

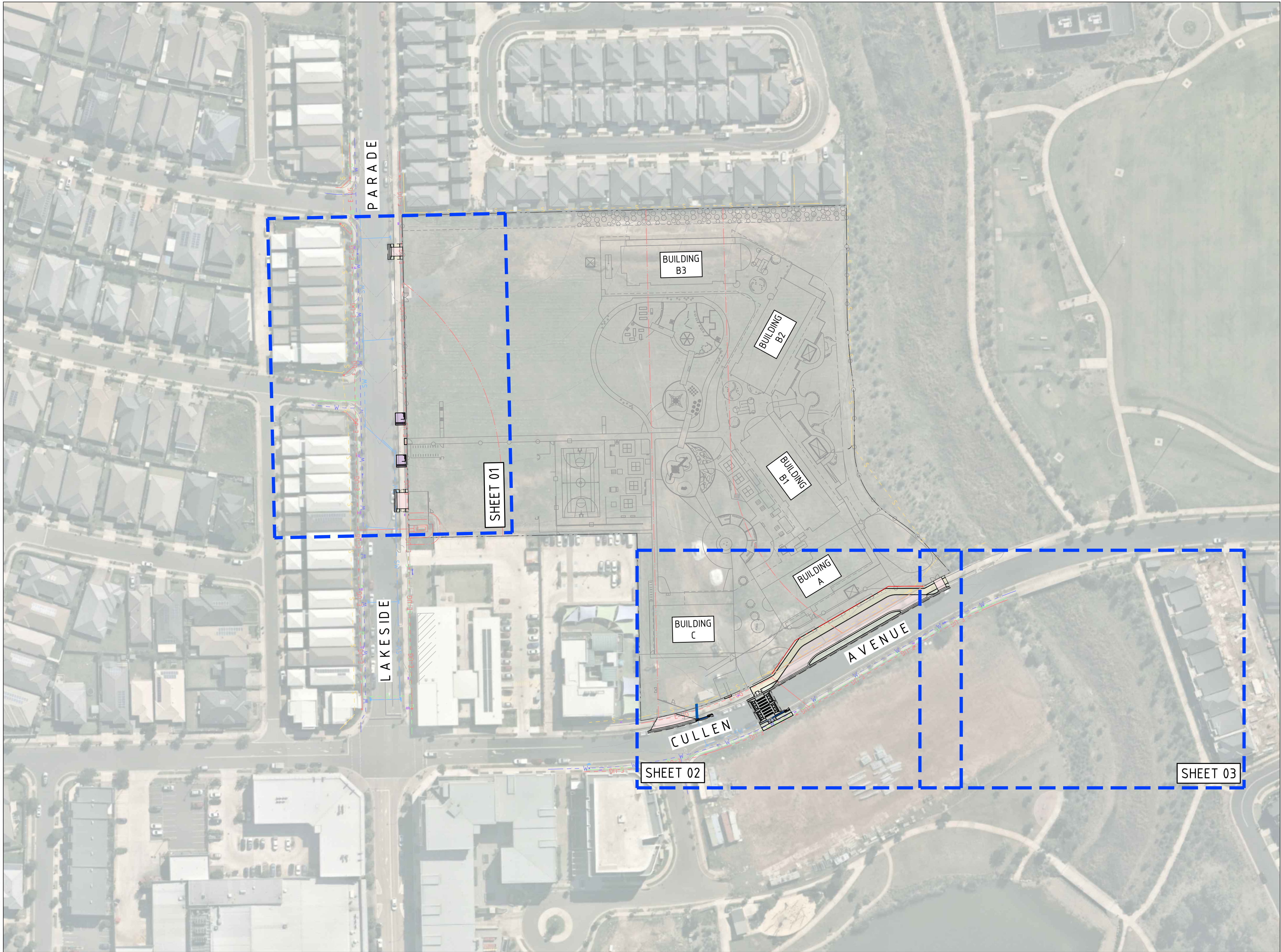
C101.12

REVISION

2

DRAWING SHEET SIZE = A1

DRAWN: W. EMBKE
DESIGNED: J. GRINSELL
JOB MANAGER: J. GILLIGAN
VERIFIER:



LEGEND	
	BOUNDARY LINE
	EASEMENT LINE
	EXISTING KERB
	EXISTING ELECTRICITY
	EXISTING ELECTRICITY (OVERHEAD)
	EXISTING ELECTRICITY (UNDERGROUND)
	EXISTING GAS
	EXISTING WATER
	EXISTING STORMWATER
	EXISTING CONTOURS
	SHEET EXTENTS

GENERAL NOTES:	
1.	SURVEY SUPPLIED BY: LTS LOCKLEY
1.1.	REFERENCE NUMBER: 43776 002DT
1.2.	DATE: 16/05/2018
1.3.	REVISION: 1
2.	ALL UTILITY SERVICES INDICATED ON THE DRAWINGS ORIGINATE FROM SUPPLIED DATA OR DIAL BEFORE YOU DIG SEARCHES, THEREFORE THEIR ACCURACY AND COMPLETENESS IS NOT GUARANTEED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE AND CONFIRM THE LOCATION AND LEVEL OF ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE SUPERINTENDENT. CLEARANCES SHALL BE OBTAINED FROM THE RELEVANT SERVICE AUTHORITY. NOTE SERVICE AUTHORITY REQUIREMENTS FOR LOCATING OF SERVICES PRIOR TO COMMENCEMENT OF WORKS.
3.	NORTHROP TAKE NO RESPONSIBILITY FOR THE ACCURACY AND/OR USE OF THIS SURVEY AND ITS CONTENTS

PENRITH
CITY COUNCIL
This plan / document relates to
Development Consent: **SSD9354**
S138 Roads Act: **EA20/0006**

COUNCIL DOES NOT ATTEST TO THE ACCURACY OF DETAILS IN PLANS

Subject to the conditions outlined in the consent

FOR S138 APPROVAL

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT
1	ISSUED FOR APPROVAL	CP		JRG	19.12.19	
2	RE-ISSUED FOR APPROVAL	JRG		JRG	06.03.20	

RICHARD CROOKES
CONSTRUCTIONS

DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED

GROUP USA

THE COPYRIGHT OF THIS DRAWING REMAINS WITH NORTHROP CONSULTING ENGINEERS PTY LTD

ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE COMMENCING WORK. NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY. THIS DRAWING MAY HAVE BEEN PREPARED USING COLOUR, AND MAY BE INCOMPLETE IF COPIED TO BLACK & WHITE.

SCALE 1:800@ A1

0 10 20 30 40m

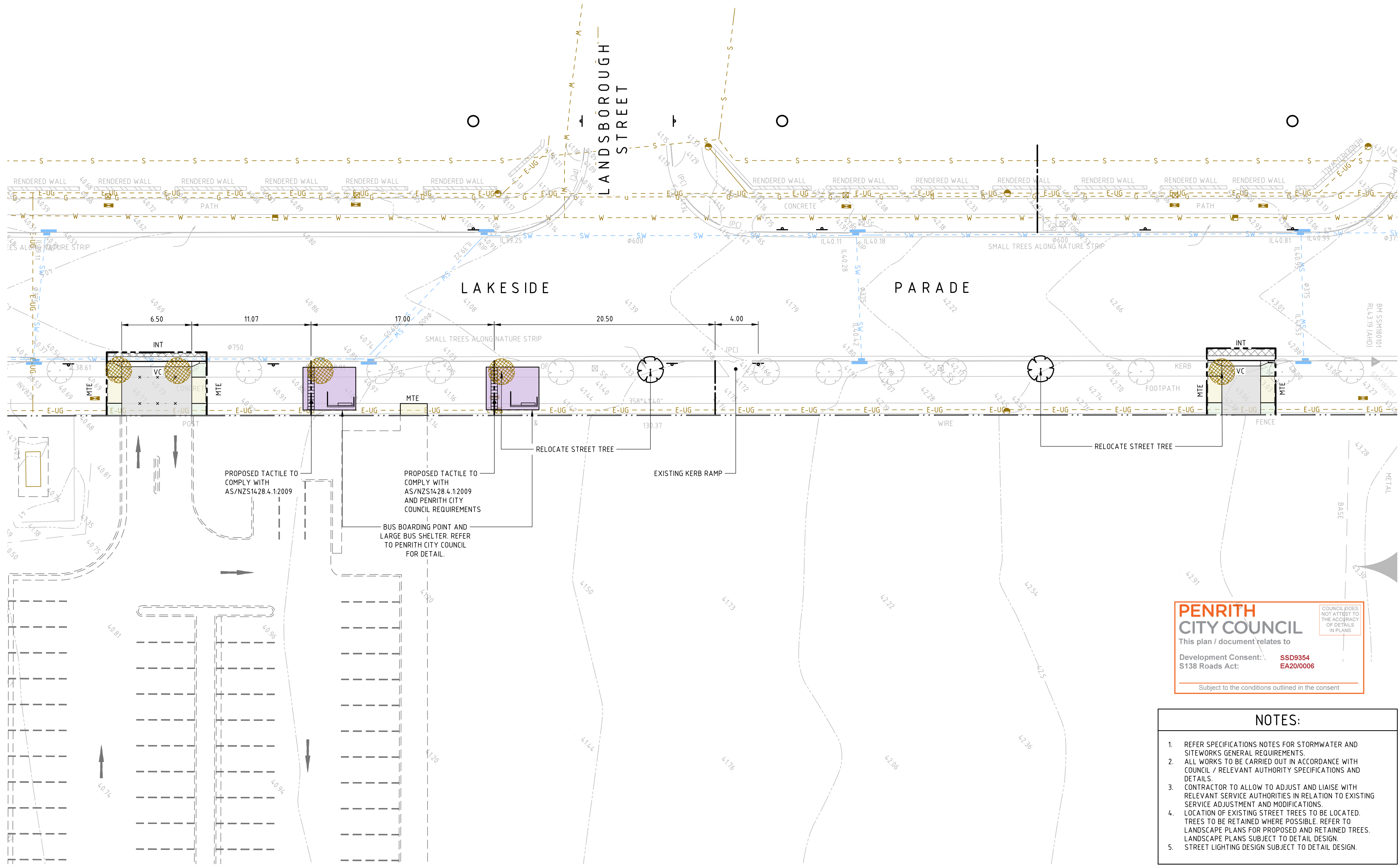
NORTHROP
Sydney
Level 11 345 George Street, Sydney NSW 2000
Ph (02) 9241 4188 Fax (02) 9241 4324
Email sydney@northrop.com.au ABN 81 094 433 100

PROJECT
JORDAN SPRINGS PUBLIC SCHOOL PUBLIC DOMAIN
14-28 CULLEN AVENUE, JORDAN SPRINGS

DRAWING TITLE
CIVIL DOCUMENTATION CONSTRUCTION CERTIFICATE
GENERAL ARRANGEMENT PLAN

JOB NUMBER 182535	REVISION 2
DRAWING NUMBER C101.21	
DRAWING SHEET SIZE = A1	

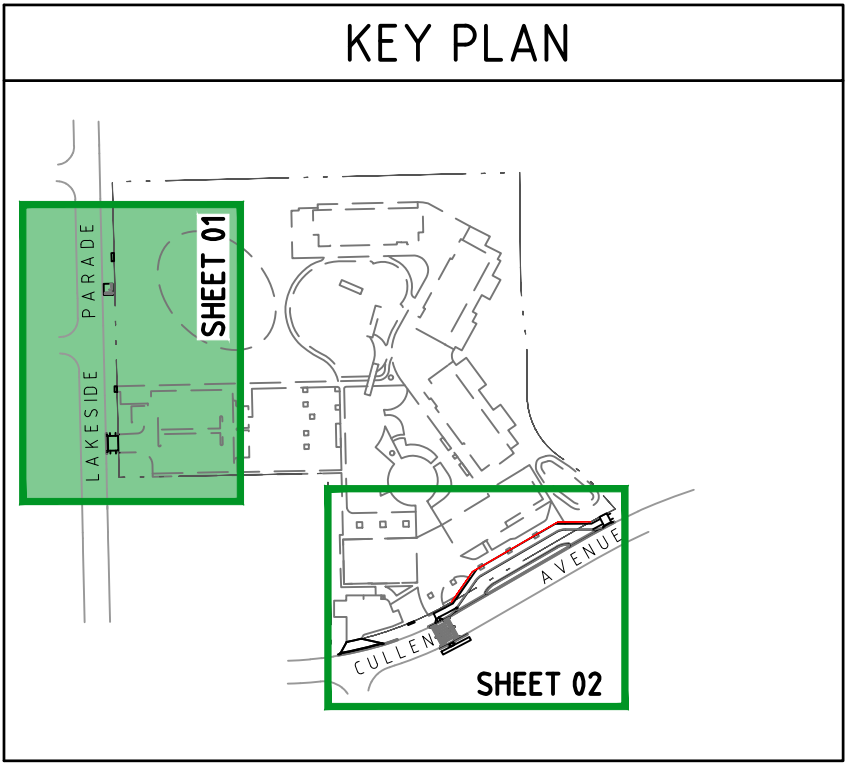
DRAWN: V. CHON
DESIGNED: J. GRINSELL
JOB MANAGER: J. GILLIGAN
VERIFIER:



PENRITH CITY COUNCIL
This plan / document relates to
Development Consent: S138 Roads Act. SSD9354 EA20/0006
Subject to the conditions outlined in the consent.

- NOTES:**
- REFER SPECIFICATIONS NOTES FOR STORMWATER AND SITEMWORKS GENERAL REQUIREMENTS.
 - ALL WORKS TO BE CARRIED OUT IN ACCORDANCE WITH COUNCIL / RELEVANT AUTHORITY SPECIFICATIONS AND DETAILS.
 - CONTRACTOR TO ALLOW TO ADJUST AND LIAISE WITH RELEVANT SERVICE AUTHORITIES IN RELATION TO EXISTING SERVICE ADJUSTMENT AND MODIFICATIONS.
 - LOCATION OF EXISTING STREET TREES TO BE LOCATED. TREES TO BE RETAINED WHERE POSSIBLE. REFER TO LANDSCAPE PLANS FOR PROPOSED AND RETAINED TREES. LANDSCAPE PLANS SUBJECT TO DETAIL DESIGN.
 - STREET LIGHTING DESIGN SUBJECT TO DETAIL DESIGN.

LEGEND	
	PROPOSED BOUNDARY LINE
	BOUNDARY LINE BY OTHERS
	REDUNDANT BOUNDARY LINE
	PROPOSED KERB
	EXISTING KERB
	FUTURE KERB
	INT SAWCUT AND PAVEMENT INFILL
	EXISTING KERB 'TYPE AS BELOW'
	KERB ONLY
	KERB AND GUTTER
	MOUNTABLE KERB AND GUTTER
	DISH DRAIN
	MATCH TO EXISTING
	KERB RAMP
	VEHICULAR CROSSING
	STORMWATER PIPE
	STORMWATER PIPE. REFER TO JORDAN SPRINGS PUBLIC SCHOOL INTERNAL WORKS PACKAGE FOR DETAILS
	EXISTING STORMWATER
	EXISTING SERVICE TO BE REMOVED
	EXISTING DRAINAGE STRUCTURE
	NEW DRAINAGE STRUCTURE
	SUBSOIL DRAINAGE LINE
	SUBSOIL DRAINAGE CLEAROUT
	STORMWATER PIT TAG LINE ID / STRUCTURE No
	PROPOSED FOOTPATH
	PROPOSED LANDSCAPING
	PROPOSED FLEXIBLE PAVEMENT
	PROPOSED VEHICULAR CROSSING
	PROPOSED BUS SHELTER
	LIMIT OF WORKS
	EXISTING CONTOURS
	RELOCATED TREES
	EXISTING TREES TO BE RETAINED
	EXISTING TREE TO BE REMOVED
	EXISTING ELECTRICITY
	EXISTING ELECTRICITY (OVERHEAD)
	EXISTING ELECTRICITY (UNDERGROUND)
	EXISTING SEWER



FOR S138 APPROVAL

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
3	ISSUED FOR APPROVAL	JO		JRG	12.11.19
4	RE-ISSUED FOR APPROVAL	JO		JRG	26.11.19
5	RE-ISSUED FOR APPROVAL	JO		JRG	27.11.19
6	RE-ISSUED FOR APPROVAL	CP		JRG	27.11.19
7	RE-ISSUED FOR APPROVAL	VC		JRG	16.01.20
8	RE-ISSUED FOR APPROVAL	JRG		JRG	06.03.20

RICHARD CROOKES CONSTRUCTIONS

DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED

GROUP USA

THE COPYRIGHT OF THIS DRAWING REMAINS WITH NORTHROP CONSULTING ENGINEERS PTY LTD

ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE COMMENCING WORK. NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY. THIS DRAWING MAY HAVE BEEN PREPARED USING COLOUR, AND MAY BE INCOMPLETE IF COPIED TO BLACK & WHITE.

SCALE 1:200@A1

NORTHROP

Sydney
Level 11 345 George Street, Sydney NSW 2000
Ph (02) 9241 4188 Fax (02) 9241 4324
Email sydney@northrop.com.au ABN 81 094 433 100

PROJECT
JORDAN SPRINGS PUBLIC SCHOOL PUBLIC DOMAIN
14-28 CULLEN AVENUE, JORDAN SPRINGS

DRAWING TITLE
CIVIL DOCUMENTATION CONSTRUCTION CERTIFICATE
SITEMWORKS AND STORMWATER MANAGEMENT PLAN - SHEET 01

JOB NUMBER
182535

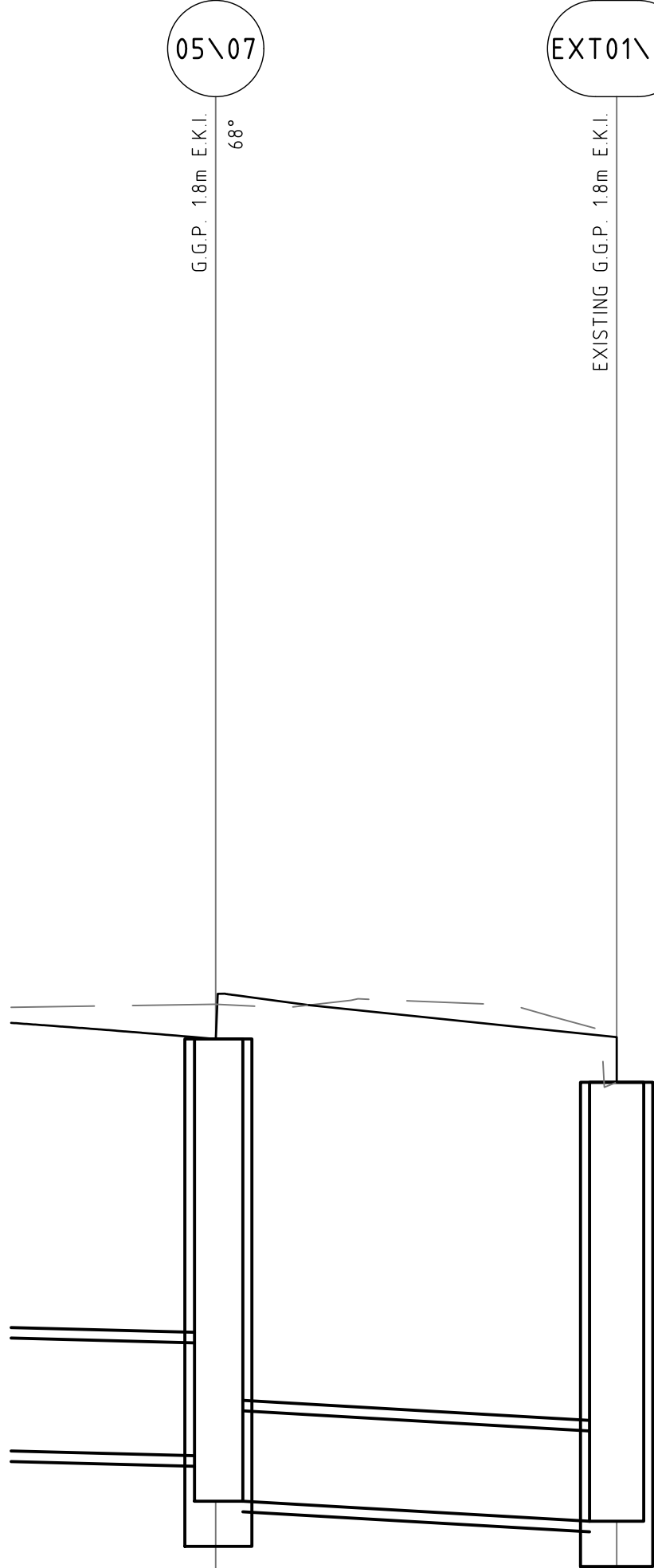
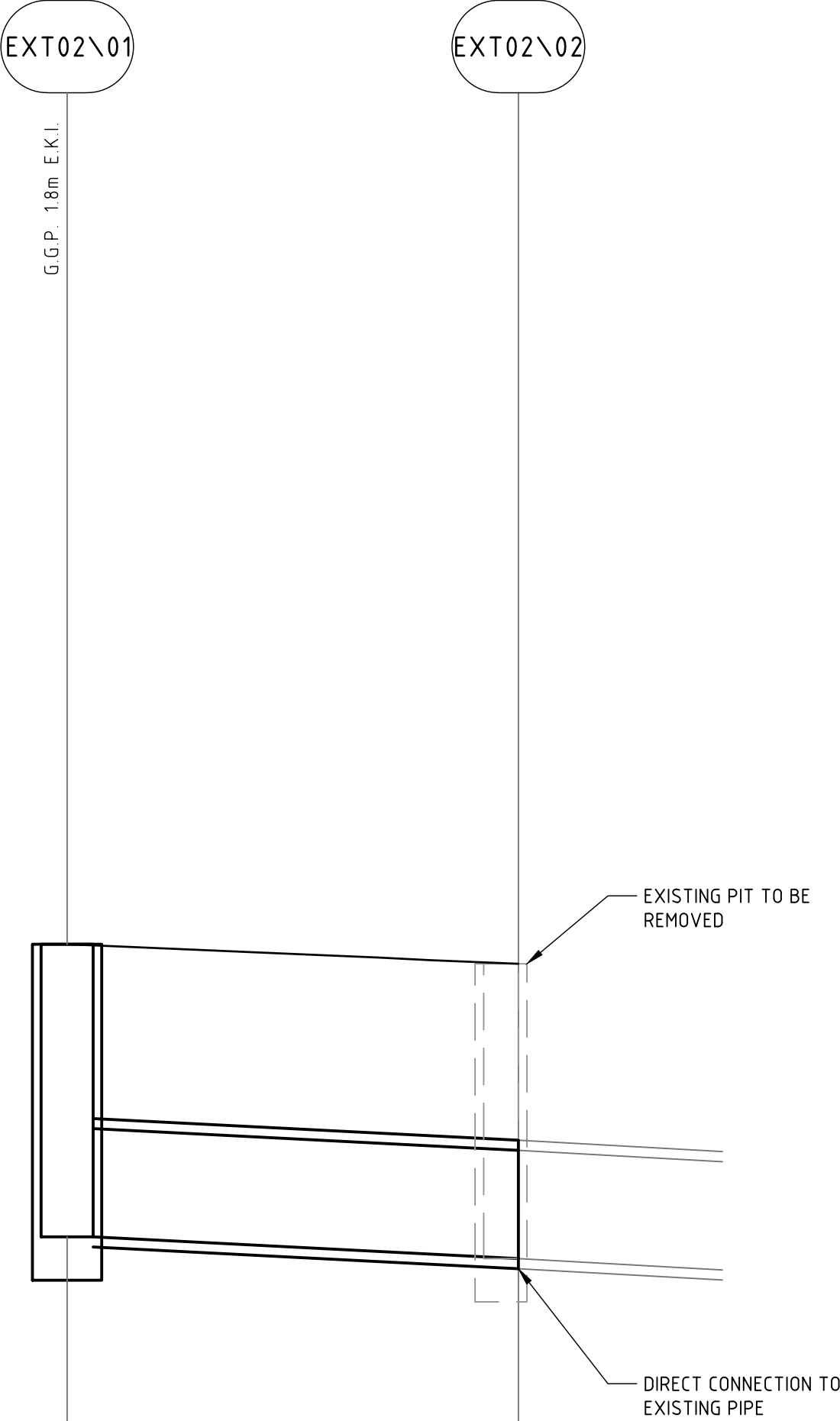
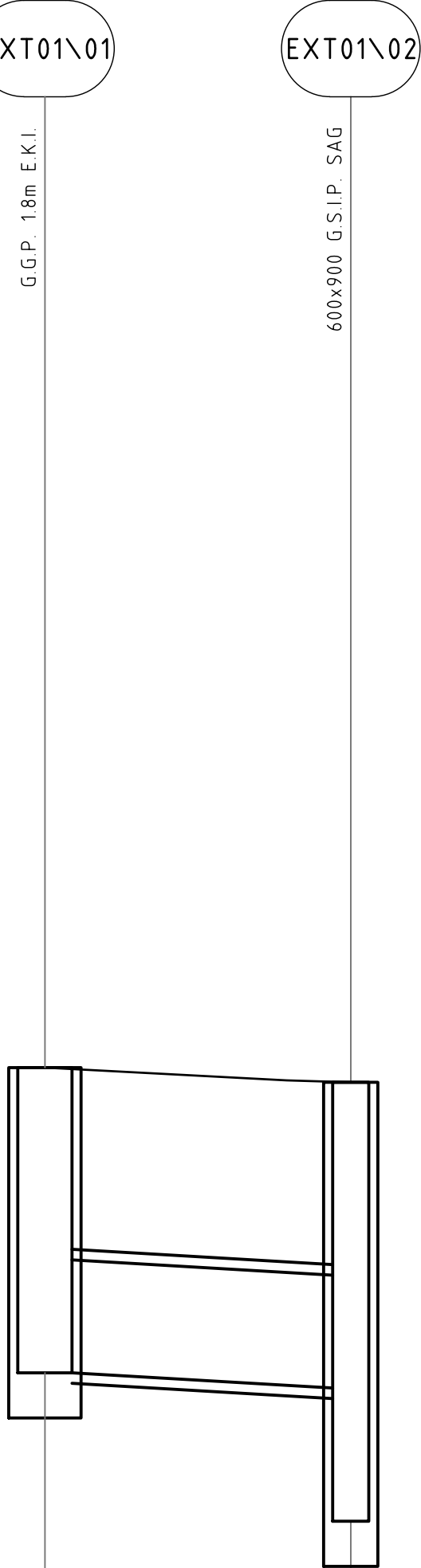
DRAWING NUMBER
C104.01

REVISION
8

DRAWING SHEET SIZE = A1

DRAWN: G. EMBKE
DESIGNED: J. GRINSELL
JOB MANAGER: J. GILLIGAN
VERIFIER:

PIPE CLASS
PIPE GRADE (%)
PIPE SIZE (mm)
MINIMUM COVER (m)



DATUM RL	36.0	
FINISHED SURFACE	39.676	39.627
NATURAL SURFACE	39.676	39.627
PIPE INVERT LEVEL	38.663	38.612
DEPTH TO INVERT	1.013	1.015
CO-ORDINATED SETOUT	0.000 E289421.710 N6255893.137	5.073 E289416.956 N6255891.366
CHAINAGE		

LINE EXT01

DATUM RL	36.0	
FINISHED SURFACE	39.950	39.882
NATURAL SURFACE	39.950	39.882
PIPE INVERT LEVEL	38.936	38.861
DEPTH TO INVERT	1.014	1.021
CO-ORDINATED SETOUT	0.000 E289452.801 N6255895.108	7.816 E289446.116 N6255891.672
CHAINAGE		

LINE EXT02

DATUM RL	36.0	
FINISHED SURFACE	39.772	39.627
NATURAL SURFACE	39.772	39.627
PIPE INVERT LEVEL	38.388	38.170
DEPTH TO INVERT	1.384	1.457
CO-ORDINATED SETOUT	0 E289416.417 N6255898.002	6.658 E289416.956 N6255891.366
CHAINAGE		

LINE 05

PENRITH
CITY COUNCIL
This plan / document relates to
Development Consent: **SSD9354**
S138 Roads Act: **EA20/0006**
Subject to the conditions outlined in the consent

COUNCIL DOES
NOT ATTEST TO
THE ACCURACY
OF DETAILS
IN PLANS

FOR S138 APPROVAL

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
1	ISSUED FOR APPROVAL	CP		JRG	19.12.19
2	RE-ISSUED FOR APPROVAL	VC		JRG	16.01.20
3	RE-ISSUED FOR APPROVAL	JRG		JRG	02.03.20
4	RE-ISSUED FOR APPROVAL	JRG		JRG	06.03.20

RICHARD CROOKES
CONSTRUCTIONS

DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS
VERIFICATION SIGNATURE HAS BEEN ADDED

GROUP GSA

THE COPYRIGHT OF THIS DRAWING REMAINS WITH
NORTHROP CONSULTING ENGINEERS PTY LTD

ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE
COMMENCING WORK.
NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE
USABILITY, COMPLETENESS OR SCALE OF DRAWINGS
TRANSFERRED ELECTRONICALLY.
THIS DRAWING MAY HAVE BEEN PREPARED USING COLOUR,
AND MAY BE INCOMPLETE IF COPIED TO BLACK & WHITE.

SCALE 1:100 @ A1
SCALE 1:20 @ A1

0 0.2 0.4 0.6 0.8 1.0m

NORTHROP
Sydney
Level 11 345 George Street, Sydney NSW 2000
Ph (02) 9241 4188 Fax (02) 9241 4324
Email sydney@northrop.com.au ABN 81 094 433 100

PROJECT
**JORDAN SPRINGS PUBLIC SCHOOL
PUBLIC DOMAIN**
**14-28 CULLEN AVENUE,
JORDAN SPRINGS**

DRAWING TITLE
**CIVIL DOCUMENTATION
CONSTRUCTION CERTIFICATE**
**STORMWATER LONGITUDINAL
SECTIONS - SHEET 01**

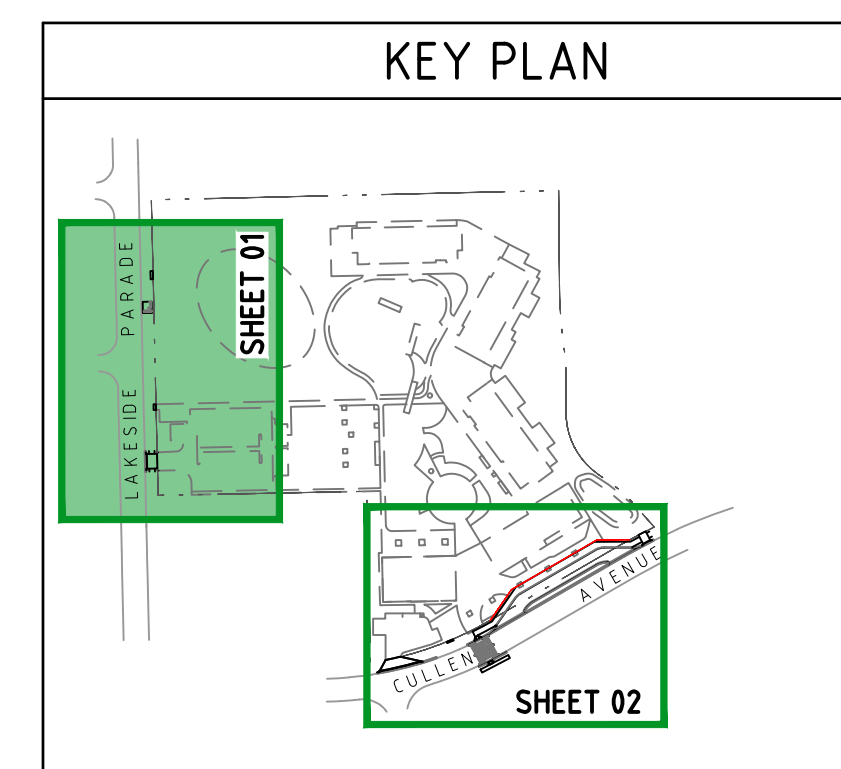
JOB NUMBER
182535

DRAWING NUMBER
C104.21







REVISION
4

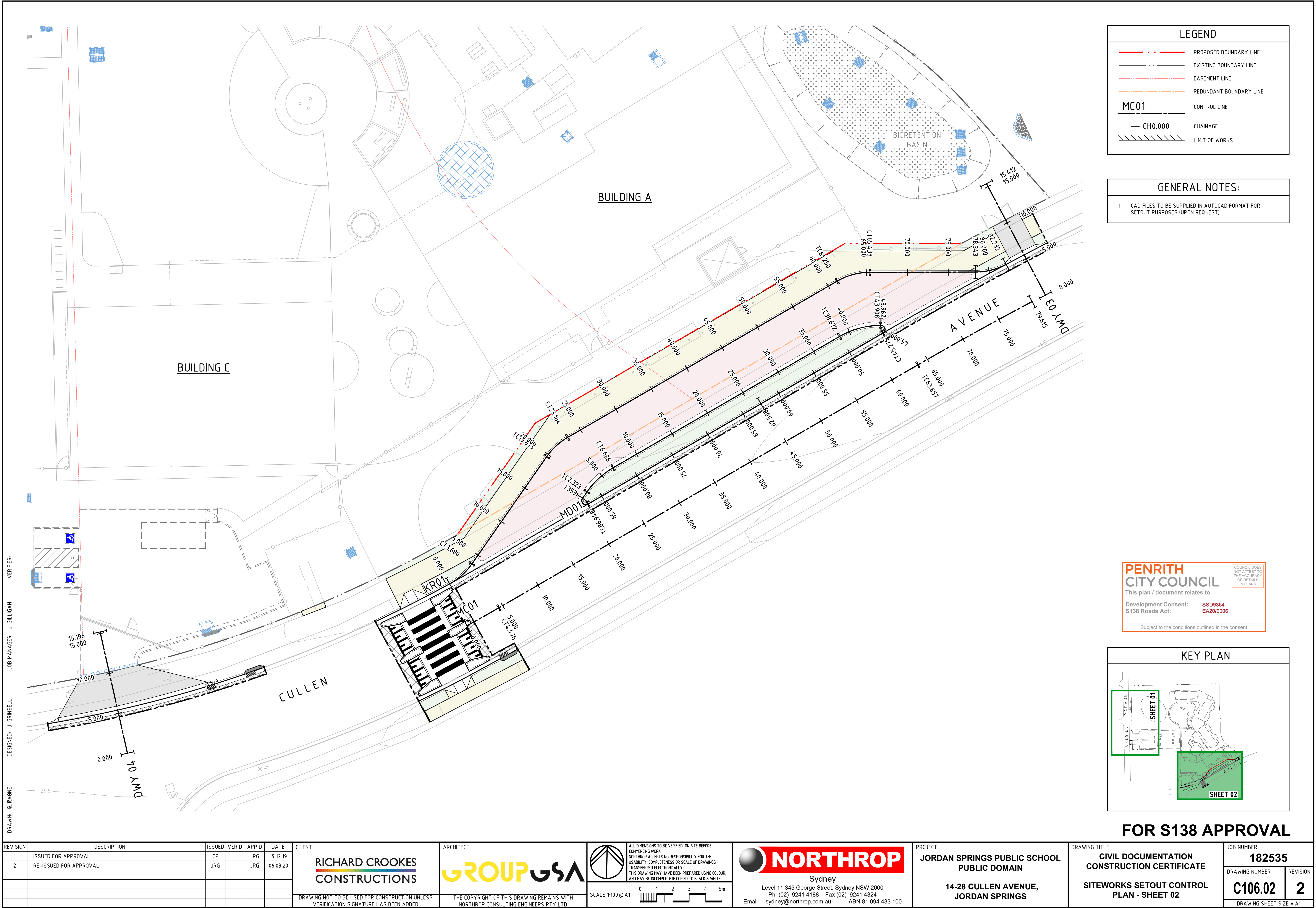
DRAWING SHEET SIZE = A1

GENERAL NOTES:	
1.	CAD FILES TO BE SUPPLIED IN AUTOCAD FORMAT FOR SETOUT PURPOSES (UPON REQUEST).



FOR S138 APPROVAL

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT	ARCHITECT		ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE COMMENCING WORK. NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY. THIS DRAWING MAY HAVE BEEN PREPARED USING COLOUR, AND MAY BE INCOMPLETE IF COPIED TO BLACK & WHITE.		PROJECT	DRAWING TITLE	JOB NUMBER				
1	ISSUED FOR APPROVAL	CP		JRG	19.12.19				SCALE 1:100 @ A1		Sydney Level 11 345 George Street, Sydney NSW 2000 Ph (02) 9241 4188 Fax (02) 9241 4324 Email sydney@northrop.com.au ABN 81 094 433 100	JORDAN SPRINGS PUBLIC SCHOOL PUBLIC DOMAIN	CIVIL DOCUMENTATION CONSTRUCTION CERTIFICATE SITEWORKS SETOUT CONTROL PLAN - SHEET 01	182535			
2	RE-ISSUED FOR APPROVAL	VC		JRG	16.01.20									DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS SPECIFIC AUTHORISATION HAS BEEN OBTAINED FROM NORTHROP CIVIL ENGINEERING	THE COPYRIGHT OF THIS DRAWING REMAINS WITH NORTHROP CIVIL ENGINEERING	DRAWING NUMBER	REVISION
3	RE-ISSUED FOR APPROVAL	JRG		JRG	06.03.20											C106.01	3
														DRAWING SHEET SIZE = A1			



DRAWN: G. EMBKE
DESIGNED: J. GRINSELL
JOB MANAGER: J. GILLIGAN
VERIFIER:

KR01 VERTICAL POINTS						
PT	CHAINAGE	HEIGHT	GRADE	K VALUE	RADIUS	LENGTH
IP 1	0.000	39.935				
IP 2	6.541	40.077				
IP 3	19.745	40.336				
TC	46.253	40.601	1.00%			
IP 4	53.753	40.676		19.45	1945.180	15.000
CT	61.253	40.693	0.20%			
IP 5	64.359	40.700				
IP 6	75.975	40.558				
IP 7	82.232	40.459				

KR01 HORIZONTAL POINTS								
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
IP 1	0.000	289446.073	6265903.939	39.935	61°14'27.94"			
IP 2	1.840	289447.715	6265904.841	39.975		R = -8.000	3.680	26°21'25.66"
CT	3.680	289448.786	6265906.377	40.015	34°53'02.28"			
TC	19.673	289457.933	6265919.496	40.334	34°53'02.28"			
IP 3	21.418	289458.947	6265920.951	40.353		R = 8.000	3.491	25°00'00.00"
CT	23.164	289460.481	6265921.841	40.370	59°53'02.28"			
TC	61.250	289493.426	6265940.951	40.693	59°53'02.28"			
IP 4	63.344	289495.280	6265942.026	40.698		R = 8.000	4.189	30°00'00.00"
CT	65.438	289497.424	6265942.031	40.687	89°53'02.28"			
IP 5	78.343	289510.328	6265942.057	40.521				
IP 6	80.287	289512.312	6265942.061	40.490		R = -8.000	3.889	27°51'09.95"
IP 7	82.232	289514.064	6265942.991	40.459	62°01'51.16"			

MD01 VERTICAL POINTS (CLOSED)						
PT	CHAINAGE	HEIGHT	GRADE	K VALUE	RADIUS	LENGTH
IP 1	0.000	40.132				
IP 2	4.180	40.213				
TC	23.544	40.406	1.00%			
IP 3	31.044	40.481		25.93	2593.098	15.000
CT	38.544	40.513	0.40%			
IP 4	40.355	40.520				
TC	42.558	40.516	-0.20%			
IP 5	50.058	40.500		18.95	1894.489	15.000
CT	57.558	40.425	-1.00%			
IP 6	86.938	40.131				
IP 7	86.948	40.132				

MD01 HORIZONTAL POINTS (CLOSED)								
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
IP 1	0.000	289462.970	6265913.689	40.132				
IP 2	0.338	289462.623	6265913.488	40.138		R = 0.500	0.676	77°29'59.66"
CC	0.676	289462.351	6265913.783	40.145	317°23'02.47"			
IP 3	1.014	289462.079	6265914.079	40.151		R = 0.500	0.676	77°29'59.66"
IP 4	1.353	289462.309	6265914.408	40.158				
TC	2.323	289462.864	6265915.204	40.177	34°53'02.28"			
IP 5	4.504	289464.131	6265917.022	40.216		R = 10.000	4.363	25°00'00.00"
CT	6.686	289466.049	6265918.135	40.238	59°53'02.28"			
TC	38.672	289493.717	6265934.183	40.513	59°53'02.28"			
IP 6	41.290	289496.035	6265935.528	40.518		R = 10.000	5.236	30°00'00.00"
CT	43.908	289498.714	6265935.533	40.513	89°53'02.28"			
IP 7	43.962	289498.769	6265935.533	40.512				
IP 8	44.289	289499.153	6265935.534	40.511		R = 0.500	0.654	74°59'51.66"
CT	44.617	289499.253	6265935.164	40.510	164°53'09.87"			
IP 9	44.944	289499.353	6265934.793	40.509		R = 0.500	0.654	74°59'51.66"
CT	45.271	289499.021	6265934.601	40.508	239°53'01.53"			
IP 10	62.508	289484.111	6265925.952	40.376				

PENRITH

CITY COUNCIL

This plan / document relates to

Development Consent: **SSD9354**
S138 Roads Act: **EA20/0006**

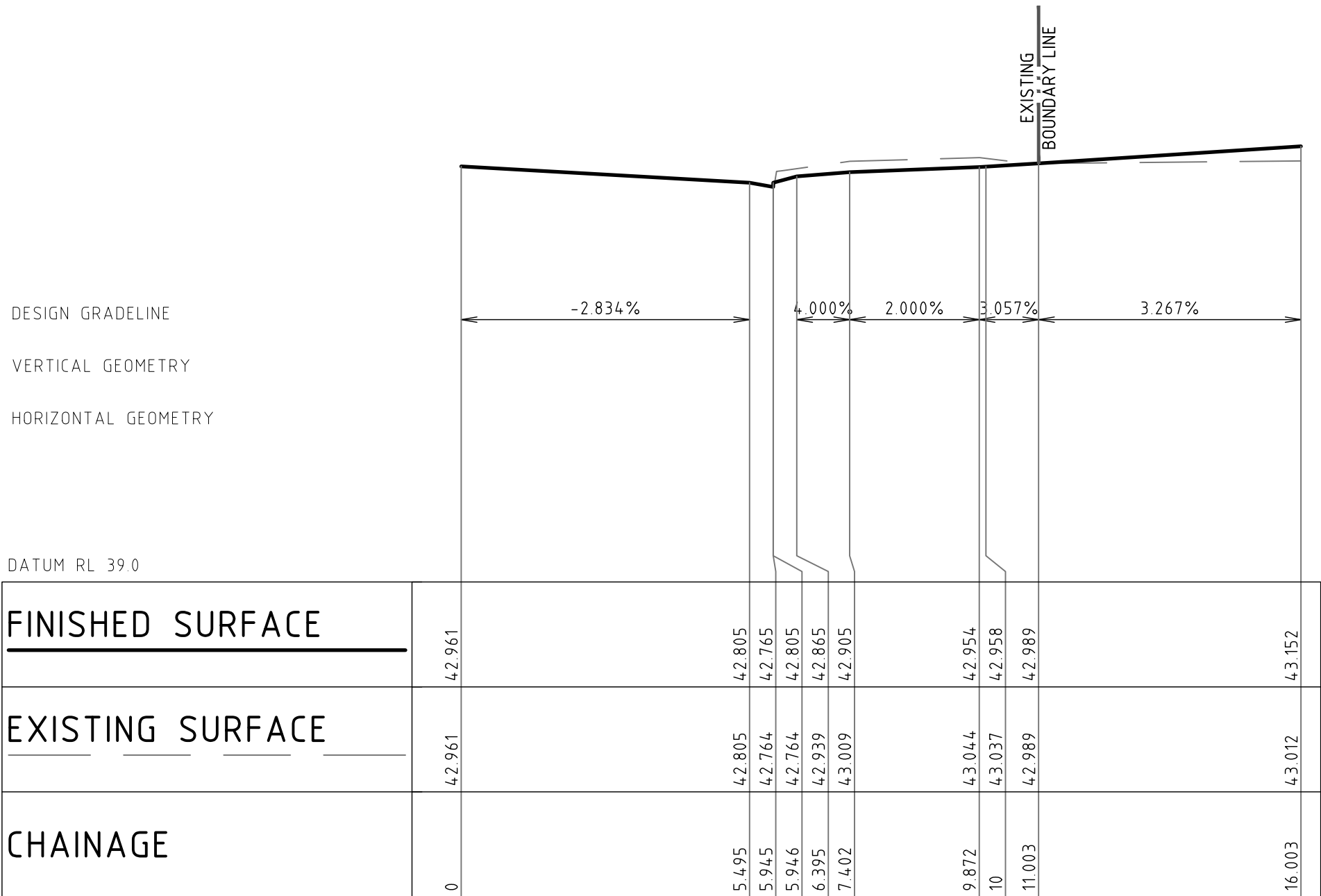
COUNCIL DOES NOT ATTEST TO THE ACCURACY OF DETAILS IN PLANS

Subject to the conditions outlined in the consent

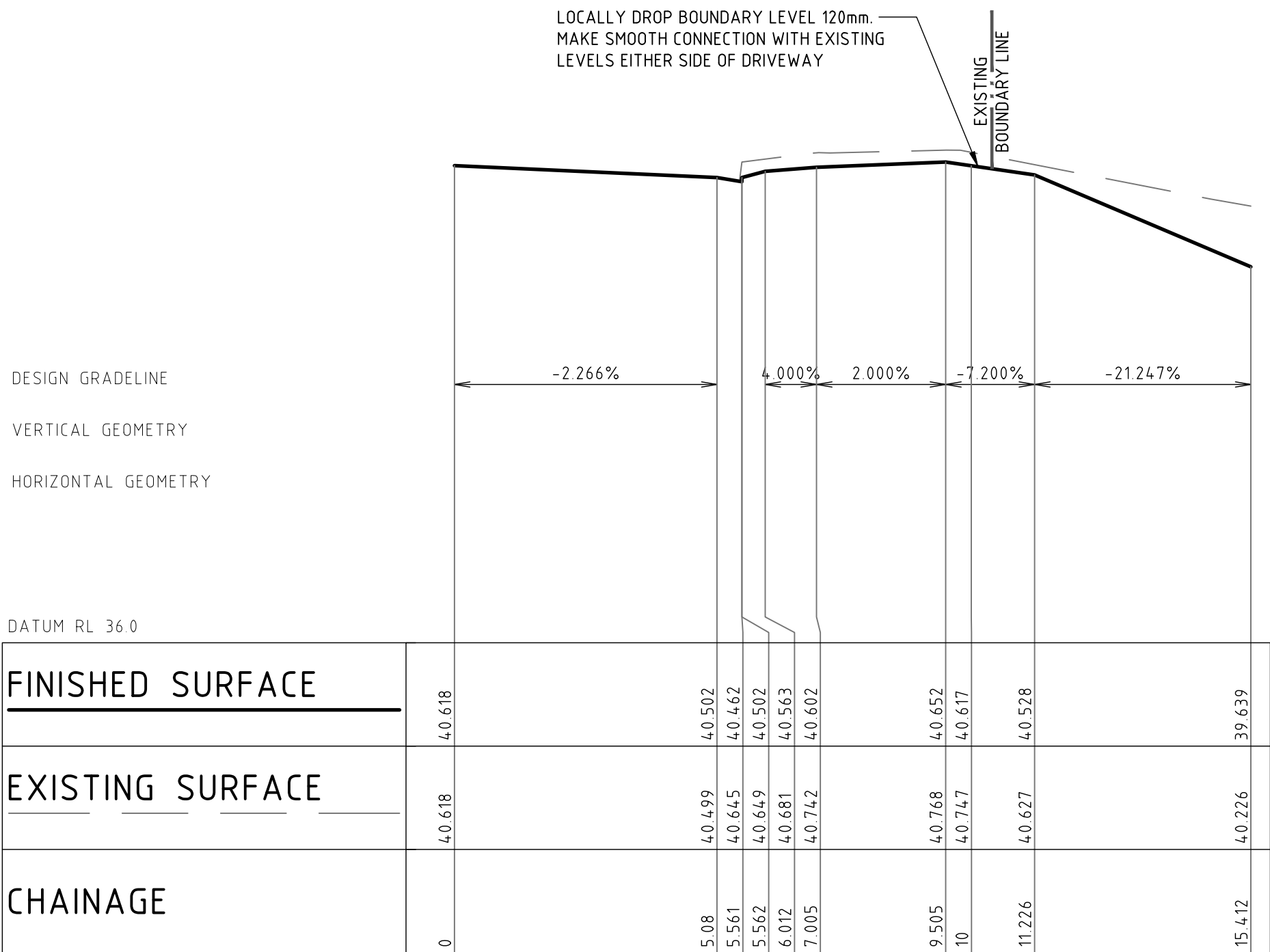
FOR S138 APPROVAL

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT	ARCHITECT		PROJECT	DRAWING TITLE	JOB NUMBER		
1	ISSUED FOR APPROVAL	CP		JRG	19.12.19	<div><div>RICHARD CROOKES</div><div>CONSTRUCTIONS</div></div>	<div><div>GROUPGSA</div></div>	<div><div>ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE COMMENCING WORK.</div><div>NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY.</div><div>THIS DRAWING MAY HAVE BEEN PREPARED USING COLOUR, AND MAY BE INCOMPLETE IF COPIED TO BLACK & WHITE.</div></div>	<div><div><div><div></div><div>NORTHROP</div></div><div>Sydney</div><div>Level 11 345 George Street, Sydney NSW 2000</div><div>Ph (02) 9241 4188 Fax (02) 9241 4324</div><div>Email sydney@northrop.com.au ABN 81 094 433 100</div></div></div>	<div><div>JORDAN SPRINGS PUBLIC SCHOOL</div><div>PUBLIC DOMAIN</div><div>14-28 CULLEN AVENUE,</div><div>JORDAN SPRINGS</div></div>	<div><div>CIVIL DOCUMENTATION</div><div>CONSTRUCTION CERTIFICATE</div><div>SITWORKS SETOUT</div><div>CONTROL TABLES</div></div>	182535	
2	RE-ISSUED FOR APPROVAL	JRG		JRG	06.03.20							DRAWING NUMBER	REVISION
												C106.11	2
												DRAWING SHEET SIZE = A1	
						DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED	THE COPYRIGHT OF THIS DRAWING REMAINS WITH NORTHROP CONSULTING ENGINEERS PTY LTD						

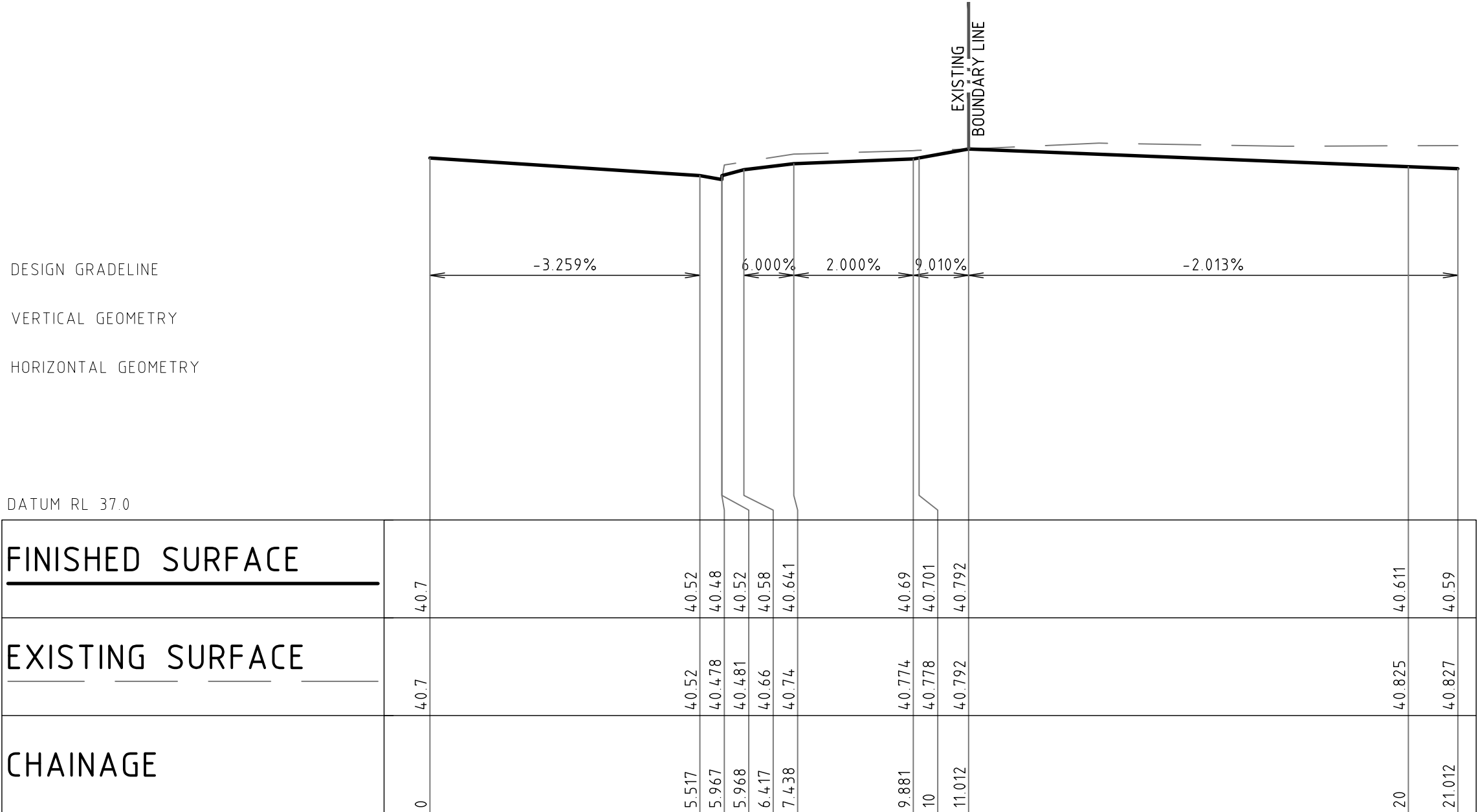
DRAWN: G. EMBKE
DESIGNED: J. GRINSELL
JOB MANAGER: J. GILLIGAN
VERIFIER:



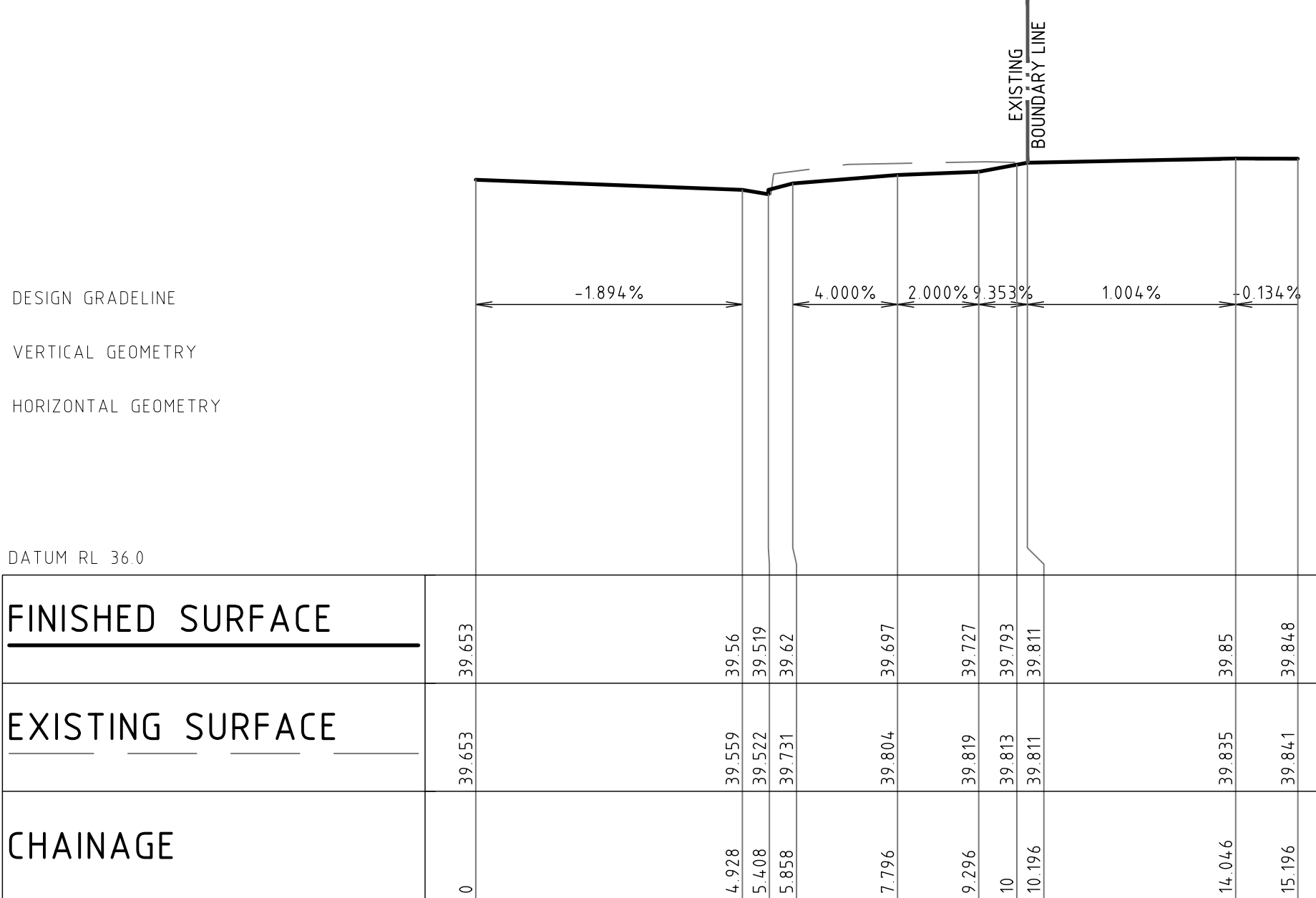
LONGITUDINAL SECTION ALONG DWY 01
HORIZONTAL SCALE 1:100@A1
VERTICAL SCALE 1:50@A1



LONGITUDINAL SECTION ALONG DWY 03
HORIZONTAL SCALE 1:100@A1
VERTICAL SCALE 1:50@A1



LONGITUDINAL SECTION ALONG DWY 02
HORIZONTAL SCALE 1:100@A1
VERTICAL SCALE 1:50@A1



LONGITUDINAL SECTION ALONG DWY 04
HORIZONTAL SCALE 1:100@A1
VERTICAL SCALE 1:50@A1

PENRITH
CITY COUNCIL
This plan / document relates to

Development Consent: **SSD9354**
S138 Roads Act: **EA20/0006**

Subject to the conditions outlined in the consent

COUNCIL DOES NOT ATTEST TO THE ACCURACY OF DETAILS IN PLANS

FOR S138 APPROVAL

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT	ARCHITECT	<div>ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE COMMENCING WORK. NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY. THIS DRAWING MAY HAVE BEEN PREPARED USING COLOUR, AND MAY BE INCOMPLETE IF COPIED TO BLACK & WHITE</div> <div><div>SCALE 1:100 @ A1</div><div>SCALE 1:50 @ A1</div><div><div>012345m</div><div>0.00.51.01.52.02.5m</div></div></div>		PROJECT	DRAWING TITLE	JOB NUMBER
1	ISSUED FOR APPROVAL	CP		JRG	19.12.19	<div><div>RICHARD CROOKES</div><div>CONSTRUCTIONS</div></div>	<div><div>GROUP USA</div></div>	<div><div><div><div></div><div></div></div><div>Sydney</div><div>Level 11 345 George Street, Sydney NSW 2000</div><div>Ph (02) 9241 4188 Fax (02) 9241 4324</div><div>Email sydney@northrop.com.au ABN 81 094 433 100</div></div></div>	<div>JORDAN SPRINGS PUBLIC SCHOOL PUBLIC DOMAIN</div> <div>14-28 CULLEN AVENUE, JORDAN SPRINGS</div>	<div>CIVIL DOCUMENTATION CONSTRUCTION CERTIFICATE</div> <div>DRIVEWAY LONGITUDINAL SECTIONS</div>	<div>182535</div>	
2	RE-ISSUED FOR APPROVAL	JRG		JRG	06.03.20						DRAWING NUMBER	REVISION
											C106.21	2
											DRAWING SHEET SIZE = A1	
						DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED	THE COPYRIGHT OF THIS DRAWING REMAINS WITH NORTHROP CONSULTING ENGINEERS PTY LTD					




DRAWN: 	DESIGNED: J. GRINSELL	JOB MANAGER: J. GILLIGAN	VERIFIER:
--	-----------------------	--------------------------	-----------

DESIGN GRADELINE
VERTICAL GEOMETRY
HORIZONTAL GEOMETRY

DATUM RL 36.0

FINISHED SURFACE	EXISTING SURFACE	CHAINAGE
	4.0 095	0
	4.0 138	4.476
	4.0 143	5
	4.0 191	10
	4.0 239	15
	4.0 286	20
	4.0 333	25
	4.0 38	30
	4.0 441	35
	4.0 502	40
	4.0 538	42.926
	4.0 561	45
	4.0 59	50
	4.0 62	55
	4.0 636	60
	4.0 637	60.426
	4.0 641	63.657
	4.0 643	65
	4.0 647	67.917
	4.0 65	70
	4.0 638	75
	4.0 628	77.926
	4.0 623	79.615

LONGITUDINAL SECTION ALONG - MC01
HORIZONTAL SCALE 1:250@A1
VERTICAL SCALE 1:50@A1

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT	ARCHITECT		PROJECT	DRAWING TITLE	JOB NUMBER			
1	ISSUED FOR APPROVAL	CP		JRG	19.12.19	 RICHARD CROOKES CONSTRUCTIONS	 GROUP USA	<p>ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE COMMENCING WORK.</p> <p>NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY.</p> <p>THIS DRAWING MAY HAVE BEEN PREPARED USING COLOUR, AND MAY BE INCOMPLETE IF COPIED TO BLACK & WHITE</p>	 NORTHROP Sydney Level 11 345 George Street, Sydney NSW 2000 Ph (02) 9241 4188 Fax (02) 9241 4324 Email sydney@northrop.com.au ABN 81 094 433 100	JORDAN SPRINGS PUBLIC SCHOOL PUBLIC DOMAIN 14-28 CULLEN AVENUE, JORDAN SPRINGS	CIVIL DOCUMENTATION CONSTRUCTION CERTIFICATE ROAD LONGITUDINAL SECTIONS	182535 C106.31	REVISION	
2	RE-ISSUED FOR APPROVAL	JRG		JRG	06.03.20								DRAWING NUMBER	2
						DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED	THE COPYRIGHT OF THIS DRAWING REMAINS WITH NORTHROP CONSULTING ENGINEERS PTY LTD	SCALE 1:25@A1 SCALE 1:50@A1			DRAWING SHEET SIZE = A1			

DATUM RL 39.0					
FINISHED SURFACE		4.0 576	4.0 562	4.0 512	4.0 484 4.0 484 4.0 334
EXISTING SURFACE		4.0 378	4.0 376	4.0 370	4.0 367 4.0 367 4.0 367
OFFSET	-18.287 -17.587			-15.087	-13.687 -13.537 -13.497
					-5.950 -5.500 -5.050
					4.0 145 4.0 129 4.0 169
					4.0 286
					0.000

Centreline Data X = 289461.193 Y = 6265906.300 Z = 40.245 DATUM RL 39.0			
FINISHED SURFACE		4.0.494 4.0.480	4.0.430 4.0.402 4.0.252
EXISTING SURFACE		4.0.353 4.0.351	4.0.298 4.0.296 4.0.295
OFFSET		-16.068 -15.368	-12.868 -11.468 -11.318 -11.278

DATUM RL 39.0			
FINISHED SURFACE		4.0 386 4.0 372	4.0 195
EXISTING SURFACE		4.0 264 4.0 254	4.0 191
OFFSET		-13.736 -13.036	0.000

Centreline Data X = 289452.542 Y = 6265901.283 Z = 40.145					
DATUM RL 39.0					
FINISHED SURFACE					
EXISTING SURFACE					
OFFSET					

[illegible]

DATUM RL 39.0									
FINISHED SURFACE		4.0 828	4.0 814		4.0 764	4.0 736		4.0 378	4.0 544
EXISTING SURFACE		4.0 449	4.0 448		4.0 494	4.0 542		4.0 560	4.0 561
OFFSET		-18 590	-17 890		-15 390	-13 990		-5 500	0.000
						-13 840		-5 050	
						-13 800			

DATUM RL 39.0					
FINISHED SURFACE		4.0 778	4.0 764	4.0 714	
EXISTING SURFACE		4.0 524	4.0 522	4.0 515	
OFFSET	-18.500 -17.890 -15.380 -13.990 -13.840 -13.800	4.0 500 4.0 495 4.0 495 4.0 495	4.0 495 4.0 495 4.0 495 4.0 495	4.0 495 4.0 495 4.0 495 4.0 495	4.0 495 4.0 495 4.0 495 4.0 495

[illegible]

DATUM RL 39.0					
FINISHED SURFACE		4.0 678	4.0 664	4.0 614	
EXISTING SURFACE		4.0 514	4.0 513	4.0 508	
OFFSET	-18 590 -17 890	-13 990 -13 840 -13 800	-13 990 -13 840 -13 800	-13 990 -13 840 -13 800	-13 990 -13 840 -13 800

[illegible]

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
1	ISSUED FOR APPROVAL	CP		JRG	19.12.19
2	RE-ISSUED FOR APPROVAL	JRG		JRG	06.03.20

JOB NUMBER	
182535	
DRAWING NUMBER	REVISION
C106.41	2
DRAWING SHEET SIZE = A1	

PENRITH CITY COUNCIL This plan / document relates to Development Consent: SSD9354 S138 Roads Act: EA20/0006	COUNCIL DOES NOT ATTEST TO THE ACCURACY OF DETAILS IN PLANS
---	--

Subject to the conditions outlined in the consent

FOR S138 APPROVAL

DATUM RL 39.0

FINISHED SURFACE			40 850	40 836		40 786	40 758		40 522		
EXISTING SURFACE		40 545	40 594		40 697	40 708	40 758		40 698	40 616	40 648
OFFSET	-16.175 -13.475				-10.975	-9.575 -9.425	-9.385		-5.950 -5.500	-5.050	40 000

CHAINAGE 70.000

DATUM RL 39.0

[illegible]

CHAINAGE 65.000

DATUM RL 39.0

FINISHED SURFACE		4.0 920	4.0 906		4.0 856		4.0 828		4.0 828		4.0 878		4.0 837
EXISTING SURFACE		4.0 387	4.0 415		4.0 515		4.0 571		4.0 577		4.0 661		4.0 636
OFFSET		-18 590	-17 890		-15 390		-13 990		-13 840		-5 500		0.000

CHAINAGE 60.000

DATUM RL 39.0

FINISHED SURFACE		4.0 899	4.0 885			4.0 835		4.0 807	4.0 657			4.0 450	4.0 430	4.0 616
EXISTING SURFACE		4.0 398	4.0 426			4.0 526		4.0 577	4.0 582	4.0 584		4.0 643	4.0 486	4.0 620
OFFSET		-18 590	-17 890			-15 390		-13 990	-13 840	-13 800		-5 500	-5 050	0.000

CHAINAGE 55.000

DATUM RL 39.0

FINISHED SURFACE	40.868 40.854		40.804	40.776 40.776 40.626		40.419 40.559	40.585
EXISTING SURFACE	40.409 40.437		40.527	40.577 40.582 40.584		40.606 40.449	40.550
OFFSET	-18.590 -17.890		-15.390	-13.990 -13.840 -13.800		-5.500 -5.050	0.000

CHAINAGE 50.000

DATUM RI 39 0

FINISHED SURFACE		40.701	40.687	40.637	40.609	40.609	40.609	40.625
EXISTING SURFACE		40.710	40.754	40.712	40.672	40.663	40.659	40.625
OFFSET	-10.290 -9.590			-7.090	-5.690	-5.540	-5.500	0.000

CHAINAGE 78.941

DATUM RL 39.0

FINISHED SURFACE		40.742	40.728	40.678	40.650	40.639
EXISTING SURFACE		40.697	40.726	40.724	40.738	40.638
OFFSET	-11.377	-10.677	-8.177	-6.777	-6.627	0.000
				-6.587	-5.900	
					-5.050	

CHAINAGE 75.000

	0	1	2	3	4	5m
A1						

SCALE 1:100 @ A1

Sydney
Level 11 345 George Street, Sydney NSW 2000
Ph (02) 9241 4188 Fax (02) 9241 4324
Email sydney@northrop.com.au ABN 81 094 433 100

PROJECT

**JORDAN SPRINGS PUBLIC SCHOOL
PUBLIC DOMAIN**

**14-28 CULLEN AVENUE,
JORDAN SPRINGS**

DRAWING TITLE

**CIVIL DOCUMENTATION
CONSTRUCTION CERTIFICATE**

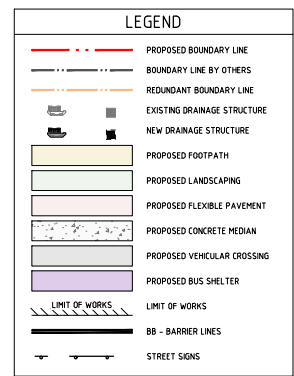
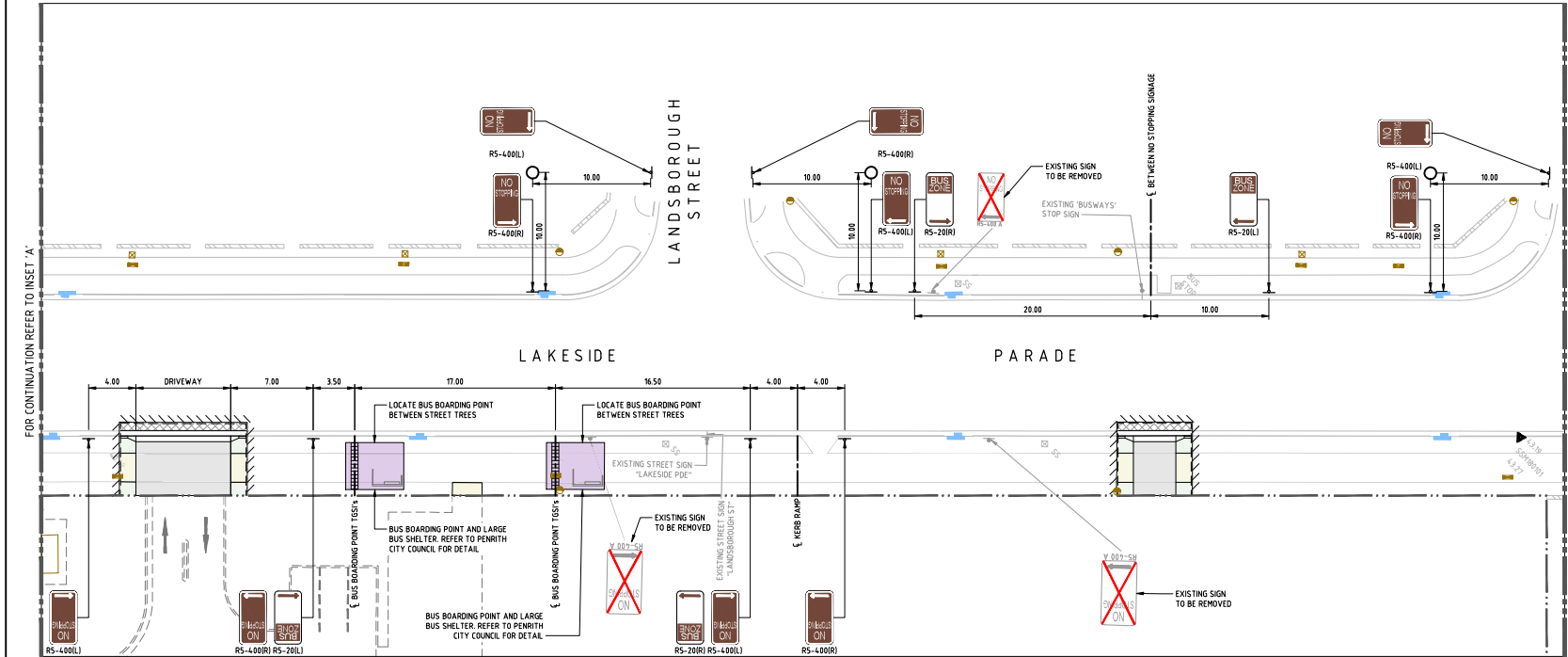
**ROAD CROSS SECTIONS -
SHEET 02**

JOB NUMBER		182535	
DRAWING NUMBER		REVISION	
C106.42		2	
DRAWING SHEET SIZE = A1			

PENRITH CITY COUNCIL This plan / document relates to Development Consent: S138 Roads Act:	SSD9354 EA20/0006	COUNCIL DOES NOT ATTEST TO THE ACCURACY OF DETAILS IN PLANS
---	------------------------------------	--

FOR S138 APPROVAL

DRAWN: V. COON
DESIGNED: J. GRINSELL
JOB MANAGER: J. O'LEARY
VERIFIED:



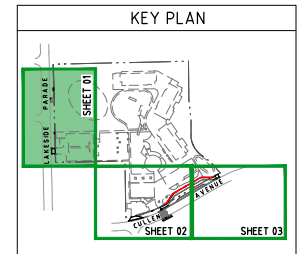
- GENERAL NOTES:
1. REFER SPECIFICATIONS NOTES FOR SIGNAGE AND LINE MARKING GENERAL REQUIREMENTS.
 2. ALL WORKS TO BE CARRIED OUT IN ACCORDANCE WITH COUNCIL / RELEVANT AUTHORITY SPECIFICATIONS AND DETAILS.
 3. CAD FILES TO BE SUPPLIED IN AUTOCAD FORMAT FOR SETOUT PURPOSES UPON REQUEST.

PENRITH CITY COUNCIL

SIGNAGE AND LINE MARKING APPROVED FOR INSTALLATION

Subject to the conditions in development consent: **SSD 9354**

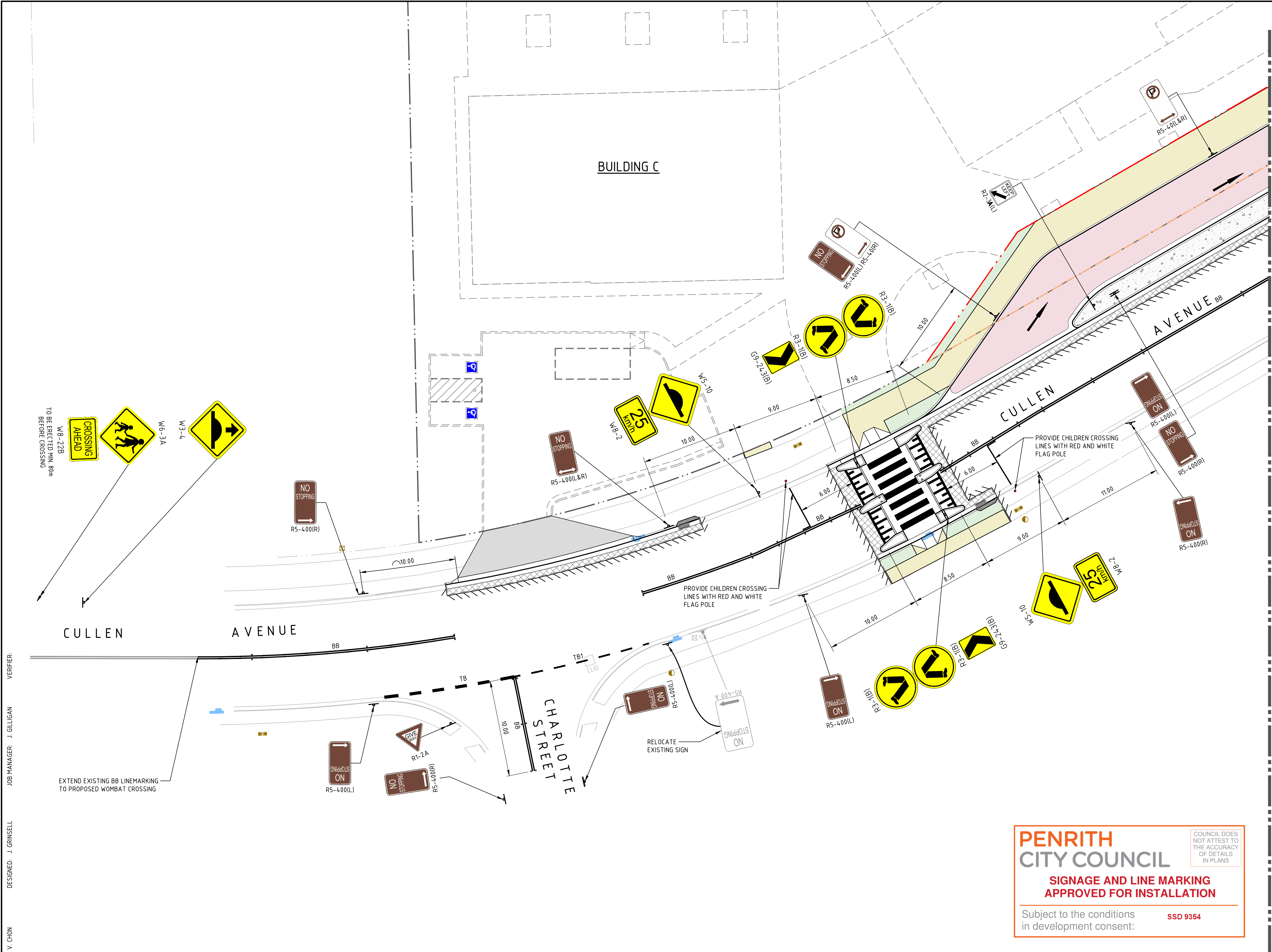
COUNCIL DOES NOT ATTEST TO THE ACCURACY OF DETAILS IN PLANS



NOT FOR CONSTRUCTION

REVISION	DESCRIPTION	ISSUED	VERD	APPD	DATE	CLIENT	ARCHITECT	SCALE	PROJECT	DRAWING TITLE	JOB NUMBER
1	ISSUED FOR CLIENT REVIEW	VC	JRG	01.11.19		RICHARD CROOKES CONSTRUCTIONS	GROUP USA	1:200 @ A1	JORDAN SPRINGS PUBLIC SCHOOL PUBLIC DOMAIN	CIVIL DOCUMENTATION CONSTRUCTION CERTIFICATE	182535
2	ISSUED FOR CLIENT REVIEW	VC	JRG	06.11.19							
3	ISSUED FOR APPROVAL	JO	JRG	12.11.19							
4	RE-ISSUED FOR APPROVAL	CP	JRG	26.11.19							
5	RE-ISSUED FOR APPROVAL	JO	JRG	27.11.19							

ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE COMMENCING WORK. NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE LIABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY. THIS DRAWING MAY HAVE BEEN PREPARED USING COLOUR, AND MAY BE INCOMPLETELY COPIED TO BLACK & WHITE.	NORTHROP Sydney Level 11 345 George Street, Sydney NSW 2000 Ph (02) 9241 4188 Fax (02) 9241 4324 Email sydney@northrop.com.au ABN 91 094 433 100	PROJECT JORDAN SPRINGS PUBLIC SCHOOL PUBLIC DOMAIN 14-28 CULLEN AVENUE, JORDAN SPRINGS	DRAWING TITLE CIVIL DOCUMENTATION CONSTRUCTION CERTIFICATE SIGNAGE AND LINE MARKING PLAN - SHEET 01	JOB NUMBER 182535 DRAWING NUMBER C111.01 REVISION 5 DRAWING SHEET SIZE = A1
--	---	--	---	---



LEGEND

PROPOSED BOUNDARY LINE

BOUNDARY LINE BY OTHERS

REDUNDANT BOUNDARY LINE

EXISTING DRAINAGE STRUCTURE

NEW DRAINAGE STRUCTURE

PROPOSED FOOTPATH

PROPOSED LANDSCAPING

PROPOSED FLEXIBLE PAVEMENT

PROPOSED CONCRETE MEDIAN

PROPOSED VEHICULAR CROSSING

PROPOSED BUS SHELTER

LIMIT OF WORKS

BB - BARRIER LINES

STREET SIGNS

GENERAL NOTES:

1. REFER SPECIFICATIONS NOTES FOR SIGNAGE AND LINEMARKING GENERAL REQUIREMENTS.

2. ALL WORKS TO BE CARRIED OUT IN ACCORDANCE WITH COUNCIL / RELEVANT AUTHORITY SPECIFICATIONS AND DETAILS.

3. CAD FILES TO BE SUPPLIED IN AUTOCAD FORMAT FOR SETOUT PURPOSES (UPON REQUEST).

NOTES:

1. RMS IS TO BE CONTACTED FOR IMPLEMENTATION OF 40KPH SCHOOL ZONE RESTRICTIONS, SIGNAGE AND PAVEMENT MARKING.

KEY PLAN

SHEET 01

SHEET 02

SHEET 03

VERIFIER: J. GILLIGAN
JOB MANAGER: J. GRINSELL
DESIGNED: J. GRINSELL
DRAWN: V. CHON

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
2	ISSUED FOR CLIENT REVIEW	VC		JRG	06.11.19
3	ISSUED FOR APPROVAL	JO		JRG	12.11.19
4	RE-ISSUED FOR APPROVAL	CP		JRG	26.11.19
5	RE-ISSUED FOR APPROVAL	JO		JRG	27.11.19
6	RE-ISSUED FOR APPROVAL	JO		JRG	27.11.19
7	RE-ISSUED FOR APPROVAL	CP		JRG	03.12.19

RICHARD CROOKES

CONSTRUCTIONS

DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS
VERIFICATION SIGNATURE HAS BEEN ADDED

ARCHITECT

GROUP

GSA

THE COPYRIGHT OF THIS DRAWING REMAINS WITH
NORTHROP CONSULTING ENGINEERS PTY LTD

ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE
COMMENCING WORK.
NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE
USABILITY, COMPLETENESS OR SCALE OF DRAWINGS
TRANSFERRED ELECTRONICALLY.
THIS DRAWING MAY HAVE BEEN PREPARED USING COLOUR,
AND MAY BE INCOMPLETE IF COPIED TO BLACK & WHITE.

SCALE 1:200@A1

0

2

4

6

8

10m

NORTHROP

Sydney

Level 11 345 George Street, Sydney NSW 2000

Ph (02) 9241 4188 Fax (02) 9241 4324

Email sydney@northrop.com.au ABN 81 094 433 100

PROJECT

JORDAN SPRINGS PUBLIC SCHOOL
PUBLIC DOMAIN

14-28 CULLEN AVENUE,
JORDAN SPRINGS

DRAWING TITLE

CIVIL DOCUMENTATION
CONSTRUCTION CERTIFICATE

SIGNAGE AND LINEMARKING
PLAN - SHEET 02

JOB NUMBER

182535

DRAWING NUMBER

C111.02

REVISION

7

DRAWING SHEET SIZE = A1

FOR CONTINUATION REFER TO SHEET 03

PENRITH

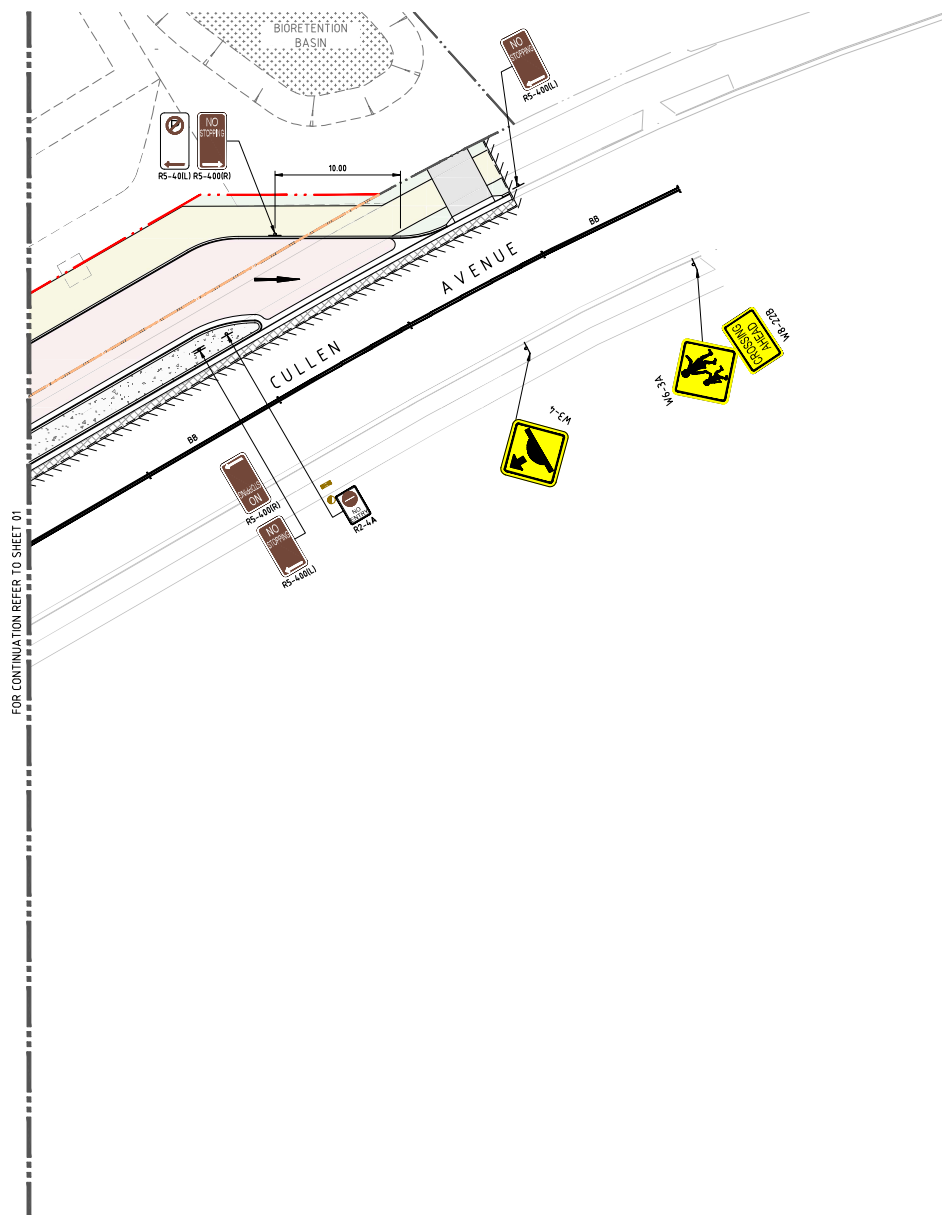
CITY COUNCIL

SIGNAGE AND LINE MARKING
APPROVED FOR INSTALLATION

Subject to the conditions
in development consent: SSS 9354

COUNCIL DOES
NOT ATTEST TO
THE ACCURACY
OF DETAILS
IN PLANS

NOT FOR CONSTRUCTION



LEGEND

	PROPOSED BOUNDARY LINE
	BOUNDARY LINE BY OTHERS
	REDUNDANT BOUNDARY LINE
	EXISTING DRAINAGE STRUCTURE
	NEW DRAINAGE STRUCTURE
	PROPOSED FOOTPATH
	PROPOSED LANDSCAPING
	PROPOSED FLEXIBLE PAVEMENT
	PROPOSED CONCRETE MEDIAN
	PROPOSED VEHICULAR CROSSING
	PROPOSED BUS SHELTER
	LIMIT OF WORKS
	BB - BARRIER LINES
	STREET SIGNS

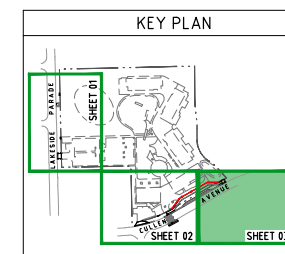
GENERAL NOTES:	
1.	REFER SPECIFICATIONS NOTES FOR SIGNAGE AND LINEMARKING GENERAL REQUIREMENTS.
2.	ALL WORKS TO BE CARRIED OUT IN ACCORDANCE WITH COUNCIL / RELEVANT AUTHORITY SPECIFICATIONS AND DETAILS.
3.	CAD FILES TO BE SUPPLIED IN AUTOCAD FORMAT FOR SETOUT PURPOSES (UPON REQUEST).


PENRITH CITY COUNCIL

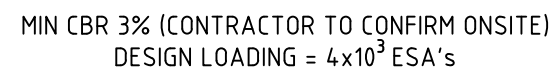
**SIGNAGE AND LINE MARKING
APPROVED FOR INSTALLATION**

Subject to the conditions
in development consent: **SSD 9354**

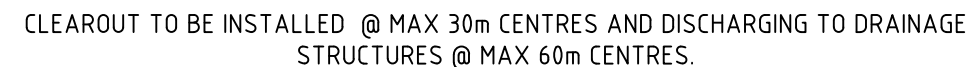
COUNCIL DOES
NOT ATTEST TO
THE ACCURACY
OF DETAILS
IN PLANS




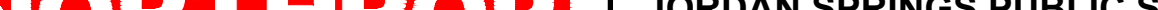


REVISION	DESCRIPTION	ISSUED	VERD	APPD	DATE	CLIENT	ARCHITECT	SCALE	PROJECT	DRAWING TITLE	JOB NUMBER	
1	ISSUED FOR CLIENT REVIEW	VC		JRG	01.11.19	<div><div>RICHARD CROOKES</div><div>CONSTRUCTIONS</div></div>	<div><div>GROUP</div><div>USA</div></div>	<div><div></div><div>NORTHROP</div><div>Sydney</div><div>Level 11 345 George Street, Sydney NSW 2000</div><div>Ph: (02) 8244 4188 Fax: (02) 9244 4324</div><div>Email: sydney@northrop.com.au ABN: 81,594 433 100</div></div>	JORDAN SPRINGS PUBLIC SCHOOL PUBLIC DOMAIN	CIVIL DOCUMENTATION CONSTRUCTION CERTIFICATE	182535	
2	ISSUED FOR CLIENT REVIEW	VC		JRG	06.11.19							
3	ISSUED FOR APPROVAL	JO		JRG	12.11.19							
4	RE-ISSUED FOR APPROVAL	CP		JRG	26.11.19							
5	RE-ISSUED FOR APPROVAL	JO		JRG	27.11.19							
DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS						THE COPYRIGHT OF THIS DRAWING REMAINS WITH		SCALE 1:200 @ A1	14-28 CULLEN AVENUE, JORDAN SPRINGS			DRAWING SHEET 03 OF 03

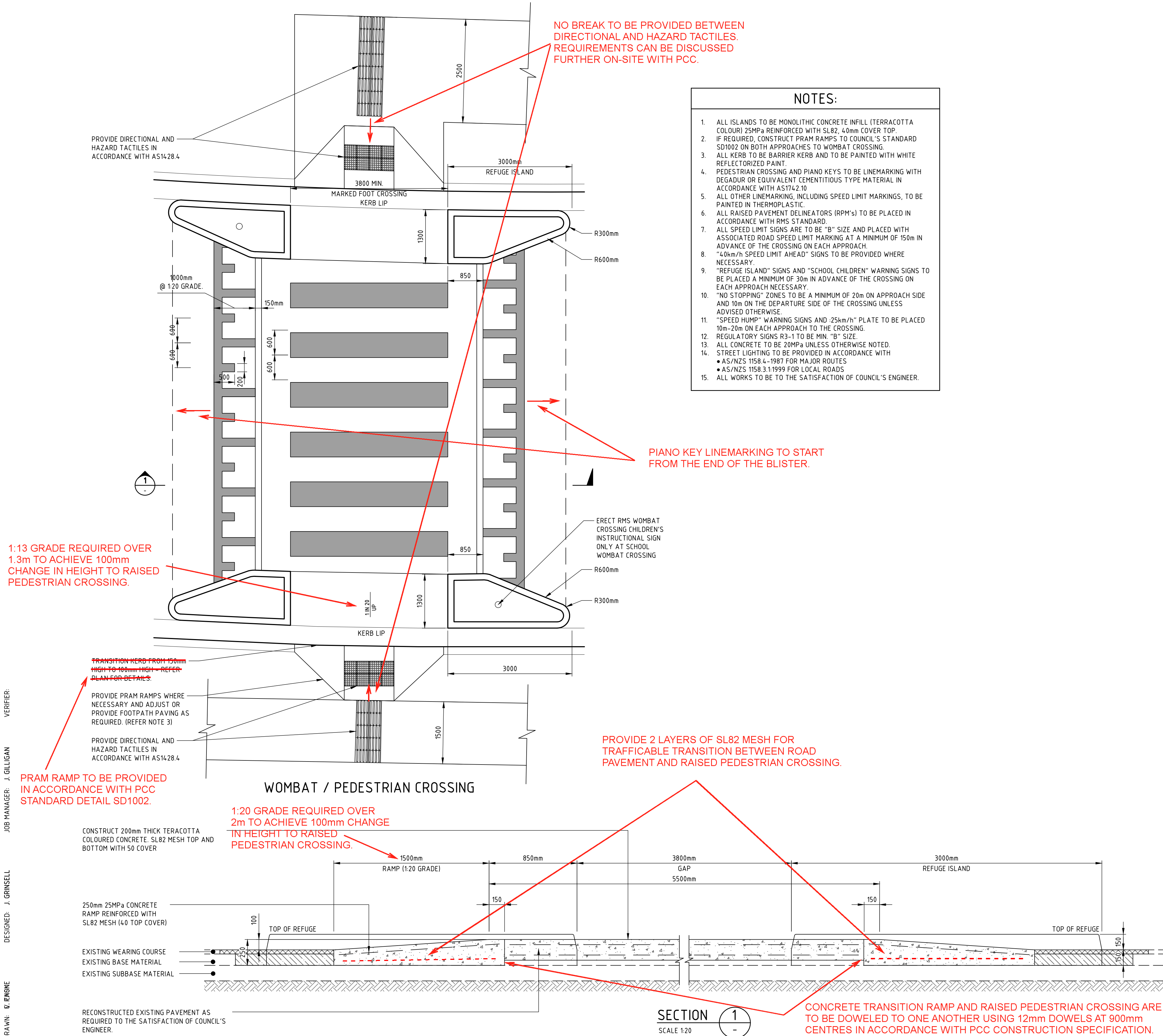


MIN CBR 3% (CONTRACTOR TO CONFIRM ONSITE)



REVISION		DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT	ARCHITECT	ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE COMMENCING WORK. NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY. THIS DRAWING MAY HAVE BEEN PREPARED USING COLOUR, AND MAY BE INCOMPLETE IF COPIED TO BLACK & WHITE		PROJECT	DRAWING TITLE	JOB NUMBER				
1		ISSUED FOR APPROVAL	CP		JRG	19.12.19	 RICHARD CROOKES CONSTRUCTIONS	 GROUP GSA	 Sydney Level 11 345 George Street, Sydney NSW 2000 Ph (02) 9241 4188 Fax (02) 9241 4324 Email sydney@northrop.com.au ABN 81 094 433 100	 SCALE 1:10 @ A1	JORDAN SPRINGS PUBLIC SCHOOL PUBLIC DOMAIN	CIVIL DOCUMENTATION CONSTRUCTION CERTIFICATE	182535				
2		RE-ISSUED FOR APPROVAL	VC		JRG	16.01.20								14-28 CULLEN AVENUE, JORDAN SPRINGS	DETAILS - SHEET 01	C112.01	3
3		RE-ISSUED FOR APPROVAL	JRG		JRG	06.03.20											
							DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED	THE COPYRIGHT OF THIS DRAWING REMAINS WITH NORTHROP CONSULTING ENGINEERS PTY LTD		DRAWING SHEET SIZE = A1							

VERIFIER: J. GILLIGAN
JOB MANAGER: J. GRINSELL
DESIGNED: J. GRINSELL
DRAWN: G. EMBKE



- NOTES:**
- ALL ISLANDS TO BE MONOLITHIC CONCRETE INFILL (TERRACOTTA COLOUR) 25MPa REINFORCED WITH SL82, 40mm COVER TOP
 - IF REQUIRED, CONSTRUCT PRAM RAMP TO COUNCIL'S STANDARD SD1002 ON BOTH APPROACHES TO WOMBAT CROSSING.
 - ALL KERB TO BE BARRIER KERB AND TO BE PAINTED WITH WHITE REFLECTORIZED PAINT.
 - PEDESTRIAN CROSSING AND PIANO KEYS TO BE LINEMARKING WITH DEGADUR OR EQUIVALENT CEMENTITIOUS TYPE MATERIAL IN ACCORDANCE WITH AS1742.10
 - ALL OTHER LINEMARKING, INCLUDING SPEED LIMIT MARKINGS, TO BE PAINTED IN THERMOPLASTIC.
 - ALL RAISED PAVEMENT DELINEATORS (RPM's) TO BE PLACED IN ACCORDANCE WITH RMS STANDARD.
 - ALL SPEED LIMIT SIGNS ARE TO BE "B" SIZE AND PLACED WITH ASSOCIATED ROAD SPEED LIMIT MARKING AT A MINIMUM OF 150m IN ADVANCE OF THE CROSSING ON EACH APPROACH.
 - "40km/h SPEED LIMIT AHEAD" SIGNS TO BE PROVIDED WHERE NECESSARY.
 - "REFUGE ISLAND" SIGNS AND "SCHOOL CHILDREN" WARNING SIGNS TO BE PLACED A MINIMUM OF 30m IN ADVANCE OF THE CROSSING ON EACH APPROACH NECESSARY.
 - "NO STOPPING" ZONES TO BE A MINIMUM OF 20m ON APPROACH SIDE AND 10m ON THE DEPARTURE SIDE OF THE CROSSING UNLESS ADVISED OTHERWISE.
 - "SPEED HUMP" WARNING SIGNS AND 25km/h PLATE TO BE PLACED 10m-20m ON EACH APPROACH TO THE CROSSING.
 - REGULATORY SIGNS R3-1 TO BE MIN. "B" SIZE.
 - ALL CONCRETE TO BE 20MPa UNLESS OTHERWISE NOTED.
 - STREET LIGHTING TO BE PROVIDED IN ACCORDANCE WITH
 - AS/NZS 1158.4-1987 FOR MAJOR ROUTES
 - AS/NZS 1158.3:1999 FOR LOCAL ROADS
 - ALL WORKS TO BE TO THE SATISFACTION OF COUNCIL'S ENGINEER.

PENRITH CITY COUNCIL
This plan / document relates to
Development Consent: **SSD9354**
S138 Roads Act: **EA20/0006**
Subject to the conditions outlined in the consent

COUNCIL DOES NOT ATTEST TO THE ACCURACY OF DETAILS IN PLANS

FOR S138 APPROVAL

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
1	ISSUED FOR APPROVAL	VC		JRG	16.01.20
2	RE-ISSUED FOR APPROVAL	JRG		JRG	06.03.20

RICHARD CROOKES CONSTRUCTIONS

DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED

GROUP USA

THE COPYRIGHT OF THIS DRAWING REMAINS WITH NORTHROP CONSULTING ENGINEERS PTY LTD

ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE COMMENCING WORK. NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY. THIS DRAWING MAY HAVE BEEN PREPARED USING COLOUR, AND MAY BE INCOMPLETE IF COPIED TO BLACK & WHITE.

SCALE VARIES

NORTHROP
Sydney
Level 11 345 George Street, Sydney NSW 2000
Ph (02) 9241 4188 Fax (02) 9241 4324
Email sydney@northrop.com.au ABN 81 094 433 100

PROJECT
JORDAN SPRINGS PUBLIC SCHOOL PUBLIC DOMAIN
14-28 CULLEN AVENUE, JORDAN SPRINGS

DRAWING TITLE
CIVIL DOCUMENTATION CONSTRUCTION CERTIFICATE
DETAILS - SHEET 02

JOB NUMBER
182535

DRAWING NUMBER C112.02	REVISION 2
----------------------------------	----------------------

DRAWING SHEET SIZE = A1