

Afteron Ltd

60 Wallgrove Road, Minchinbury



Review of Infrastructure Services

Author: Michael Guinane

Approver: Anthony Mclandsborough

Report no: QS-R001

Revision: 03

Date: April 2009

This report has been prepared for Afteron Ltd in accordance with the terms and conditions of appointment. AT&L and Associates Pty Ltd (ABN 96 130 882 405) cannot accept any responsibility for any use of or reliance on the contents of this report by any third party.

This report is based upon a desktop review and relies upon information supplied by utility providers and Council. To the extent that the report incorporates such material, AT&L and Associates Pty Ltd takes no responsibility for any loss or damage caused by any error or omission arising from reliance on it.

Please note that utility providers reserve the right to change their decision in relation to network deployment within the development without prior notice. Additionally it is our experience that utility providers will not reserve capacity. For this reason, they operate on a first come first serve basis.

AT&L and Associates Pty Ltd
Level 8, 107 Walker Street
North Sydney NSW 2060



Contents

1	INTRODUCTION.....	2
1.1	Site Description	2
2	INTRODUCTION.....	3
2.1	Sewer	3
2.2	Water	4
2.3	Gas	4
2.4	Electrical	5
2.5	Telecommunications	5
3	STORMWATER MANAGEMENT	7
3.1	The Site	7
3.2	Site Analysis	7
3.3	Stormwater Management	8
4	CONCLUSION	11

LIST OF FIGURES AND TABLES

Figure 1	Blacktown City Council – Engineering Guide for Development – Figure 7.1 Catchment Area Boundaries
Table 1	Permissible Site Discharge and Site Storage Requirements

APPENDIX

Appendix A – Photographs
Appendix B – Correspondence
Appendix C – Drawings

1 INTRODUCTION

AT&L and Associates Pty Limited have been engaged by ICPS to undertake a review of infrastructure required for future employment development at 60 Wallgrove Road, Minchinbury. ICPS is managing and co-ordinating planning and environmental studies of the site on behalf of the land owner Afteron Ltd.

It is the intent of this report to review general services available to the site and likely stormwater management issues.

This report details the following civil infrastructure items:

General Services

- Locations of existing services and the likely connection points to supply the site;
- Potential service upgrades required to ensure adequate capacity to the site;
- Timing of service upgrades;
- Indicative works required to upgrade or provide new services;
- Letters/correspondence confirming availability of supply.

Stormwater

- Flood extents for 100 year ARI;
- On Site Detention (OSD) requirements.

1.1 Site Description

The site is approximately 21ha in area and is located in the Blacktown Local Government area between the Great Western Highway to the north, the Western Motorway to the south, Wallgrove Road to the east and Pine Grove Memorial Park to the west. Refer C01 in Appendix C.

For the purposes of our review we have assumed a site development potential of:

- 90,000 m² Industrial – Gross Floor Area (GFA);
- 15,000 m² Commercial – GFA

The service provider's assessments are based on the above information, which is subject to change during the design process.

2 INTRODUCTION

The following asset owners are located within the vicinity of the site:

- Sewer – Sydney Water
- Water – Sydney Water
- Gas – Agility
- Electrical – Integral Energy
- Telecommunications - Telstra

2.1 Sewer

Existing sewer infrastructure in the area consists of:

- 150mm diameter spur at the northern property boundary. This spur drains north where it increases to a 225mm diameter main at Eskdale Street and crosses under the Great Western Highway. This main continues north to Sewer Pump Station (SPS) SP0395 near the corner of Cable Place and Rooty Hill Road and ultimately to Quakers Hill Sewer Treatment Plant (STP).
- Eastern Creek sewer submain Section 3-5 draining north along Pikes Lane and ultimately to Quakers Hill Sewer Treatment Plant (STP).

There are two viable options for servicing the site based on initial inquiries:

Option 1

Install/Upgrade approximately 780m of 225mm diameter sewer pipe between the site and the SPS (provided the SPS has capacity). This option would require boring under the Great Western Highway. Refer attached C02 in Appendix C.

Option 2

Install approximately 320m of 225mm diameter sewer pipe between the site and the Eastern Creek sewer submain. This option would require boring under Wallgrove Road and the M7 and is the preferred option. Refer attached C02 in Appendix C.

Helal Morshedi (Sydney Water Coordinator Strategic Projects) has advised via email on 4 February 2009 that; capacity has been provided for this site to drain to the developer funded Eastern Creek Sewer Submain Section 3-5.

The final size, route and length would need to be determined in consultation with Sydney Water during the Section 73 process.

Whilst upgrades will be required to allow full development of the site, it maybe possible to discharge the initial stage(s) to the existing sewer connection. This will need to be confirmed by Sydney Water and is dependant entirely on the flow from the initial stage(s)

The Government has recently abolished collection of Sydney Water developer charges.

2.2 Water

Existing water infrastructure in the area consists of:

- 250mm diameter main which runs adjacent the site along the eastern boundary. The main crosses under Walgrove Road and connects into the trunk feeder mains in the Great Western Highway. Sydney Water has advised that this main is not suitable for supply. There maybe an option to draw a minor supply from this main in the short term or by utilising the existing connection to site to service the initial stage(s). This would need to be confirmed by Sydney Water.

Helal Morshedi (Sydney Water Coordinator Strategic Projects) has advised via email on 4 February 2009 that; there is a second surface reservoir in operation at Minchinbury that will supply the site. A link main (approx. 200mm diameter) will be required between the site and reservoir (Approximately 1 km south). Refer attached C03 in Appendix C.

The final size, route and length would need to be determined in consultation with Sydney Water during the Section 73 process.

The Government has recently abolished collection of Sydney Water developer charges.

2.3 Gas

Existing Gas infrastructure in the area consists of:

- 50mm (210kPa) main running along the western side of Fleurs Street.
- Secondary main running along Archbold Street. Refer insert attached C04 in Appendix C.
- High pressure Primary main running along the northern side of the Great Western Highway. Refer attached C04 in Appendix C.

Neale Hilton (Jemena Assets Management) has advised via email on 9 February 2009 that; the 50mm 210kPa natural gas main in Fleurs St would be suitable to supply residential home sub-divisions in this area. Refer attached C04 in Appendix C. It is not suitable for heavy industry and/or Industrial manufacturing.

Mr Hilton further advised that; the closest high pressure Secondary gas main is located approximately 2.5km west in Archbold Road, Minchinbury, which could be suitable for heavy industry. Refer attached C04 in Appendix C.

The high pressure Primary main located on the northern side of the Great Western Highway is not available for any consumer connection.

Jemena does not have any current plans for network upgrades at this point in time and will assess capacity once a known gas load requirement is presented. Jemena can provide an estimate of costs associated with the development once a load has been determined. Jemena may fund the works as part of a commercial agreement provided it is deemed commercially viable.

2.4 Electrical

David Ho (Network Connections Branch, Integral Energy) has advised via email on 23 February 3 2009 that; the site forms part of the Western Sydney Employment Hub area.

Integral Energy has assessed the anticipated load required for the site to be in the order of 4MVA. Supply to the site will be via 1 or possibly 2, 11kV feeders from the proposed North Eastern Creek Zone Substation, which is expected to be commissioned in 2011. Refer attached C05 in Appendix C.

It should be possible, although this would need to be confirmed by IE that a minor supply be provided from the adjacent overhead supply to service the initial stage(s). Refer attached photograph A006 in Appendix A.

A more definitive analysis of the site demand and electrical infrastructure requirements for this development can be made once detailed development plans and timings are made available to Integral Energy. An application for connection must be submitted to Integral Energy prior making any financial commitments.

2.5 Telecommunications

The site is currently serviced by the Rooty Hill Exchange service area.

Telecommunications infrastructure in the area consists of:

- Major optic fibre currently runs along the western side of Wallgrove road adjacent the site. Optic fibre feeders currently service the site via the access off Wallgrove Road. Refer attached C06 in Appendix C.

Telstra is obliged to supply new developments under a shared cost arrangement, provided Telstra is given adequate notice.

Amer Chaabo (Telstra Area Planner) has indicated via letter on 3 February 2009 that; Telstra maintains existing network throughout the land marked for rezoning and development and that, Telstra has no objection to the change of zoning of this land.

Mr Chaabo further advised that; to accommodate the proposed development, the telecommunications network would require upgrade. To achieve this, Telstra may require the planner to provide an overview of any likely requirements for example the type of tenancy and the timing.

The technology and services provided would be determined closer to the time of development commencement, depending on Telstra deployment policy and any negotiations based on a commercial agreement.

3 STORMWATER MANAGEMENT

3.1 The Site

The site generally grades from south to north at varying slopes of between 1% to 5%. There are a number of natural depressions and gullies traversing the site, which drain the site and the external catchments ultimately towards Eastern Creek. Refer attached C07 in Appendix C.

3.2 Site Analysis

3.2.1 Catchment Description

The site drains to Eastern Creek which is a tributary of South Creek and is located in the Hawkesbury Nepean Catchment. A Catchment Action Plan (CAP) was prepared for this catchment by Hawkesbury Nepean Catchment Management Authority (HNCMA).

Internal Catchments

- The site is divided into three internal catchments: Refer attached C08 in Appendix C.
 1. The eastern catchment generally grades from south-west to north-east and discharges from the site via a culvert under Wallgrove Road and the M7. Refer Photograph A005 This catchment ultimately drains to Eastern Creek via a natural depression in the neighbouring properties.
 2. The western catchment generally grades from south to north and discharges from the site via a culvert under a built up access track. Refer Photograph A002. This catchment eventually drains to what appears to be a dam located on the adjoining cemetery property before ultimately crossing Wallgrove Road and the M7 and discharging into Eastern Creek.
 3. The northern catchment generally grades from south to north and discharges from the site freely via overland flow paths.

3.3 Stormwater Management

3.3.1 OSD

The site falls within Area 4 catchment as determined by Figure 7.1 from Blacktown City Council – Engineering Guide for Development – February 2005. Refer **Figure 1** for a copy of the map.

Based on Council Guidelines, OSD requirements are as follows:

Area 4 Hawkesbury River Sub-Catchments	Site Area Draining		
	100%	90%	80%
Maximum PSD (litres/sec/ha)	147	101	56
SSR (m3/ha)	264	301	473

Table 1 – Permissible Site Discharge and Site Storage Requirements

Using the above as a general guide only, indicative OSD volumes are as follows:

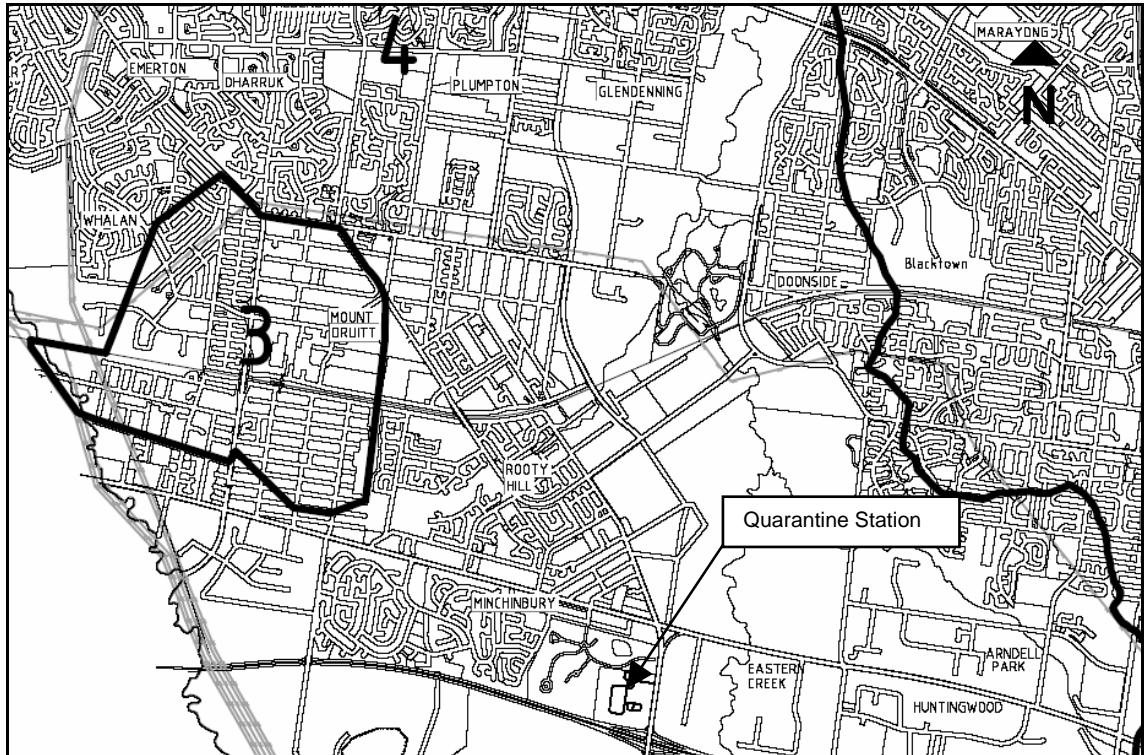
1. Eastern Catchment OSD volume is likely to be in the order of 2300m³. Assuming an aboveground storage of approximately 1m depth this equates to approximately 2300m² of landtake.*
2. Western Catchment OSD volume is likely to be in the order of 2200m³. Assuming an aboveground storage of approximately 1m depth this equates to approximately 2200m² of landtake.*
3. Northern Catchment OSD volume is likely to be in the order of 1300m³. Assuming an aboveground storage of approximately 1m depth this equates to approximately 1300m² of landtake.*

* Note: Assuming 100% of the site drains towards the OSD, the overall detention storage required for the future development will be in the order of 5,800 m³.

The above volumes are to be used as a guide only and would need to be confirmed/ refined at the detailed design stage through modelling. Council may be amenable to providing an offset to these volumes through stormwater harvesting and reuse.

The basin(s) would be designed as dry basins and could be included in the landscape calculation for the development.

In order to limit the flows entering the development consideration should be given to diverting external flows around the development with a formalised channel along the western and southern boundary that is appropriately sized to cater for the 100 year storm event.



**Figure 1 – Blacktown City Council – Engineering Guide for Development – Figure 7.1
Catchment Area Boundaries (extract)**

3.3.2 Flooding

Indicative flood widths for the 100 year Average Recurrence Interval (ARI) event under existing conditions were based on information provided in Blacktown City Councils – Flood Risk Map, as shown in **Figure 2**. Alex Ugron (Blacktown City Council Land Information) has verbally advised on 4 February 2009 that; the site is not flood affected.

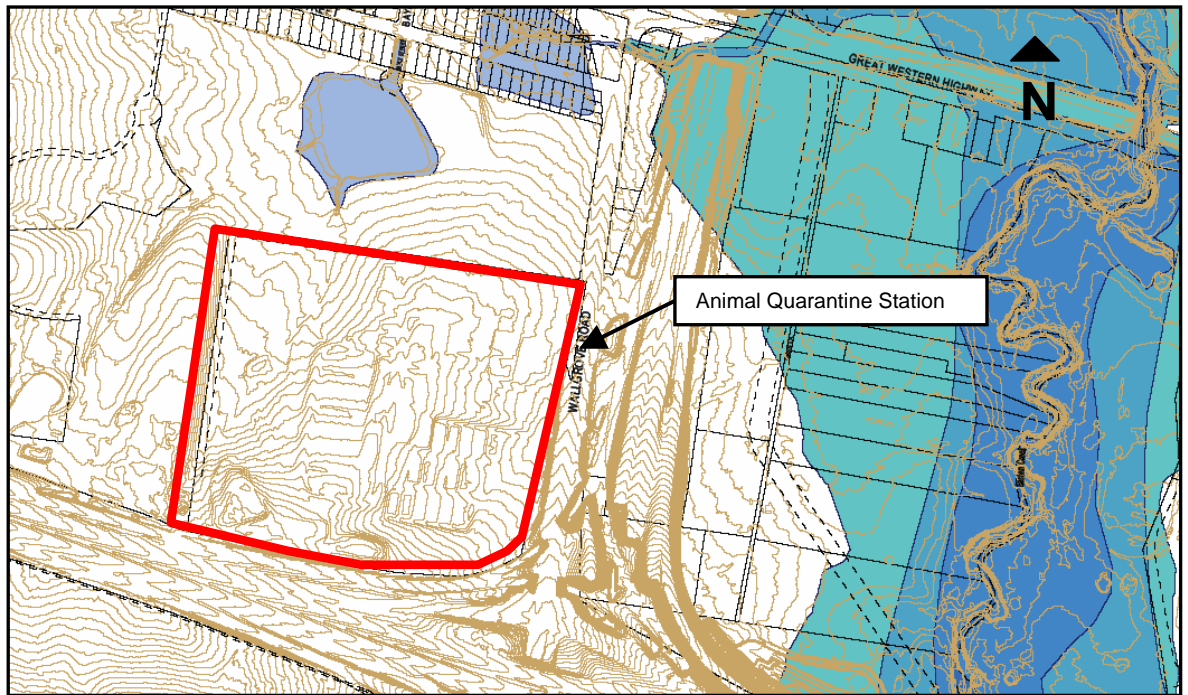


Figure 2 – Blacktown City Council –Flood Risk Map (Provided by Alex Ugron Blacktown City Council Land Information Unit - 4th February 2009)

4 CONCLUSION

Services including sewer, water, gas, electrical and telecommunications can be provided to the site to enable its full development for employment purposes.

There is potential to service the initial stage(s) of the site development by utilising either the existing connections to site and/or by making additional connections to the existing services directly adjacent to the site.

On Site Detention is required and would necessitate an amount of land set aside for stormwater management. The basins/ponds could be designed to be incorporated into the landscape design. The areas will be subject to further design and in our opinion could possibly be reduced depending on the extent of water capture and reuse in the future development.

There are no major flooding issues currently associated with the site.

Appendix A

Photographs



A001 – Sewer Pit (northern site boundary)



A002 – Culvert draining western catchment (northern site boundary)



A003 – Natural depression diverting external catchment (western site boundary)



A004 – Existing basin (southern area of site)



A005 – Culvert draining eastern catchment under Wallgrove Road (eastern boundary)



A006 – Above ground high voltage (eastern site boundary/entry)

Appendix B

Correspondence

Sydney Water

From: HELAL MORSHEDI [mailto:HELAL.MORSHEDI@sydneywater.com.au]

Sent: Wednesday, 4 February 2009 2:42 PM

To: Michael Guinane

Subject: Re: Animal Quarantine Station - Sewer & Water

Michael

It seems like some investigation works have been done. As I am aware, sewer capacity has been provided for this site to drain, to the developer funded Eastern Creek Sewer Submain Section 3-5, which runs along eastern side of the site and drains to Quakers Hill STP. You need link sewer main I believe to link the site to this main.

For water, we have second surface reservoir in operation at Minchinbury, and developer is building an elevated reservoir and WP. Link main will be required, and size, route and length need to be determined by your WSC in consultation with Sydney Water during s73 process.

The Government has recently abolished collection of Sydney Water developer charges.

I have sent your note to relevant asset planner. Please arrange for your Water Servicing Coordinator to apply for feasibility letter and/or Section73 application. A Notice of Requirements will be issued which will have our requirements, to be advised by our Asset Planners, who have also your note which you sent me.

I do not intend to provide any further advice at this stage, it seems things are in order, and I am busy with other projects. You need to determine the length and size of link water and sewer mains required, fund and construct along with site reticulation to meet development timing or to expedite the process. Our NOR will state Sydney Water's requirements during s73 application/approval process. Bulk capacity may be available.

Thank you.

Kind regards

Helal Morshedi

Coordinator, Strategic Projects
Urban Growth, Asset Solutions, Sydney Water
Level 16, 115 Bathurst Street, Sydney 2000

Tel. (02) 9350 6687, Fax: (02) 9350 5559
Mobile: 0418 118 751
Email: helal.morshedi@sydneywater.com.au
<http://www.sydneywater.com.au>

Gas

From: Hilton, Neale
Sent: WMonday, 9 February 2009 12:21 PM
To: Michael Guinane
Subject: Re: Animal Quarantine Station - Gas

Michael,

The only option is the 50mm 210kPa natural gas main in Fleurs St, Minchinbury. It would be suitable to supply residential home sub-divisions in this area. It is not suitable for heavy industry and/or

Industrial manufacturing. The high pressure Primary main located on the northern side of the Great Western Highway is not available for any consumer connection. Jemena does not have any current plans for network upgrades at this point in time and will assess capacity once a known gas load requirement is presented. Costs associated with this load are unknown at this point in time.

The closest high pressure Secondary gas main is located in Archbold St Minchinbury, which could be suitable for heavy industry.

Neale Hilton

Network Dev. Manager

Asset Management

[Jemena](#)

Level 14, 1 O'Connell Street , SYDNEY NSW 2000

Locked Box 2/159 Ridgescrop Drv, CASTLE HILL NSW 2154

Electrical

From: David Ho [mailto:David.Ho@integral.com.au]

Sent: Monday, 23 February 2009 12:59 PM

To: Michael Guinane

Subject: ENL0940 - Animal Quarantine Station, Wallgrave Road, Eastern Creek

Dear Michael,

Thank you for your enquiry regarding the electricity supply to above proposed industrial/commercial development. This enquiry has been registered under our reference number – ENL0940, please quote this number for all future correspondence.

This Quarantine Station development forms part of the Western Sydney Employment Hub area. Integral Energy has assessed the anticipated load required for this development in the order of 4MVA based on 40VA per squared metre times developable site area as per your advice.

Supply to this development will be as per Integral Energy's Industrial/Commercial Subdivision policies and standards in urban areas, with the linkage point being the proposed North Eastern Creek ZS which is expected to be commissioned in 2011.

A more definitive analysis of the site demand and electrical infrastructure requirements for this development can be made once detailed development plans and timings are made available to IE.

I trust this preliminary advice provides the information that was requested. Please note that the advice provided is in response to an enquiry only and does not constitute a formal method of supply. An application must be submitted to Integral Energy prior making any financial commitments.

If you have any questions regarding this matter, please contact me.

Regards,
David

David Ho

Contestable Projects Manager - North
Network Connections Branch
Integral Energy

☎ (02) 9853 6680 | 📠 (02) 9853 6036

✉ Email: david.ho@integral.com.au

Appendix

Telstra

03 February 2009

Mr Michael Guinane

AT&L and Associates Pty Limited

0407 938 093

Amer Chaabo

Area Planner

Network and Technology

Forecasting and Area Planning

Sydney Metro North

4/52-54 Railway Pde BURWOOD 2134

Telephone (02) 03973310

Facsimile (02) 93973559

amer.chaabo@team.telstra.com

Re: Animal Quarantine Station at Minchinbury

Dear Michael,

Based on the provided information relating to the proposed Animal Quarantine development located at Minchinbury, a review was undertaken of the area and nearby telecommunications infrastructure.

Telstra maintains existing network throughout the land marked for rezoning and development. Telstra has no objection to the change of zoning of this land.

To accommodate the proposed development, the telecommunications network would require upgrade. To achieve this, Telstra may require the planner to provide an overview of any likely requirements for example the type of tenancy and the timing.

The technology and services provided would be determined closer to the time of development commencement, depending on Telstra deployment policy and any negotiations based on a commercial agreement.

Telstra will require the protection of/relocation of its telecommunications infrastructure that may be impacted by activities on this site. To minimise risk of liability due to any damage, the Telstra 1100 Inquiry number should be contacted to obtain location of Telstra plant before commencement of construction work.

Further discussions regarding details for network expansion are strongly encouraged once detailed planning for the development is in progress. To inform Telstra of likely commencement of this development, you are requested to register this development on the Telstra Smart Community website: <http://www.telstrasmartcommunity.com>

Please note that Telstra reserves the right to change its decision in relation to network deployment within the development without prior notice.

For future correspondence and enquiries regarding this matter, please contact the undersigned on 02 93973310

Yours faithfully,

Amer Chaabo

Area Planner

Appendix

Appendix C

Drawings



LEGEND

SITE BOUNDARY

AUSIMAGE © Sinclair Knight Merz Pty Ltd 2008

Issue

C1

ISSUE FOR INFORMATION

MG

MG

02.04.09

Description

0 50 100 150 200m

1 : 2000 @ A1

0 100 200 300 400m

1 : 4000 @ A3

Client

ICPS

Scale (A1)

1 : 2000

Drawn

Designed

Datum

AHD

MG

Project

QUARANTINE STATION

LOCALITY PLAN

AT&L

Project Managers and Civil Engineers

AT&L ASSOCIATES PTY LTD

Level 8

107 Malabar St

North Sydney, NSW, 2060

ABN 96 130 882 405

Email: anthony@atl.net.au

Project Code

RESERVED

Drawing No.

C01

Issue

C1

Status

PRELIMINARY ONLY

NOT TO BE USED FOR CONSTRUCTION

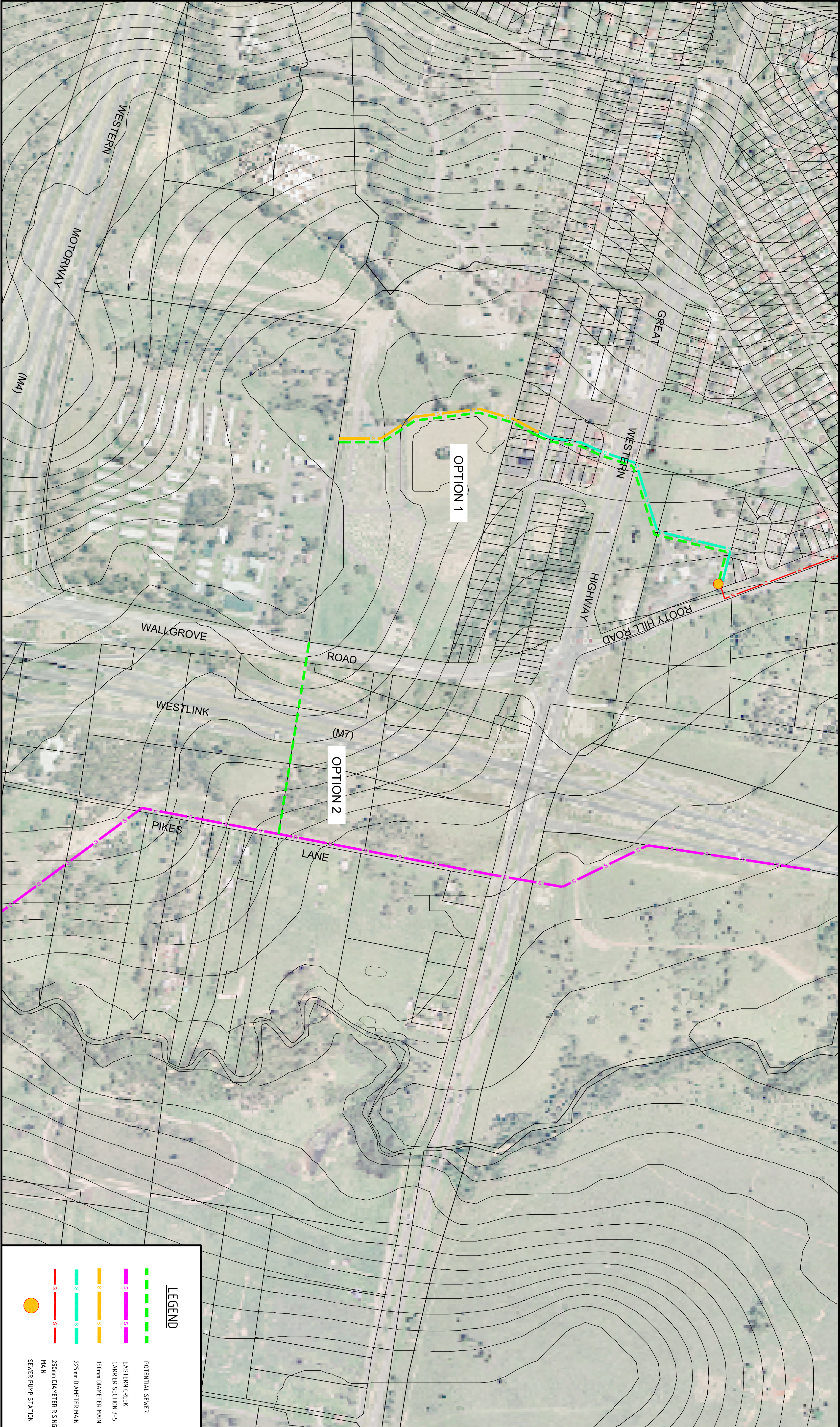
N

10mm

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310 320 330 340 350 360 370 380 390 400 410 420 430 440 450 460 470 480 490 500 510 520 530 540 550 560 570 580 590 600 610 620 630 640 650 660 670 680 690 700 710 720 730 740 750 760 770 780 790 800 810 820 830 840 850 860 870 880 890 900 910 920 930 940 950 960 970 980 990 1000

Shown on original A1

©

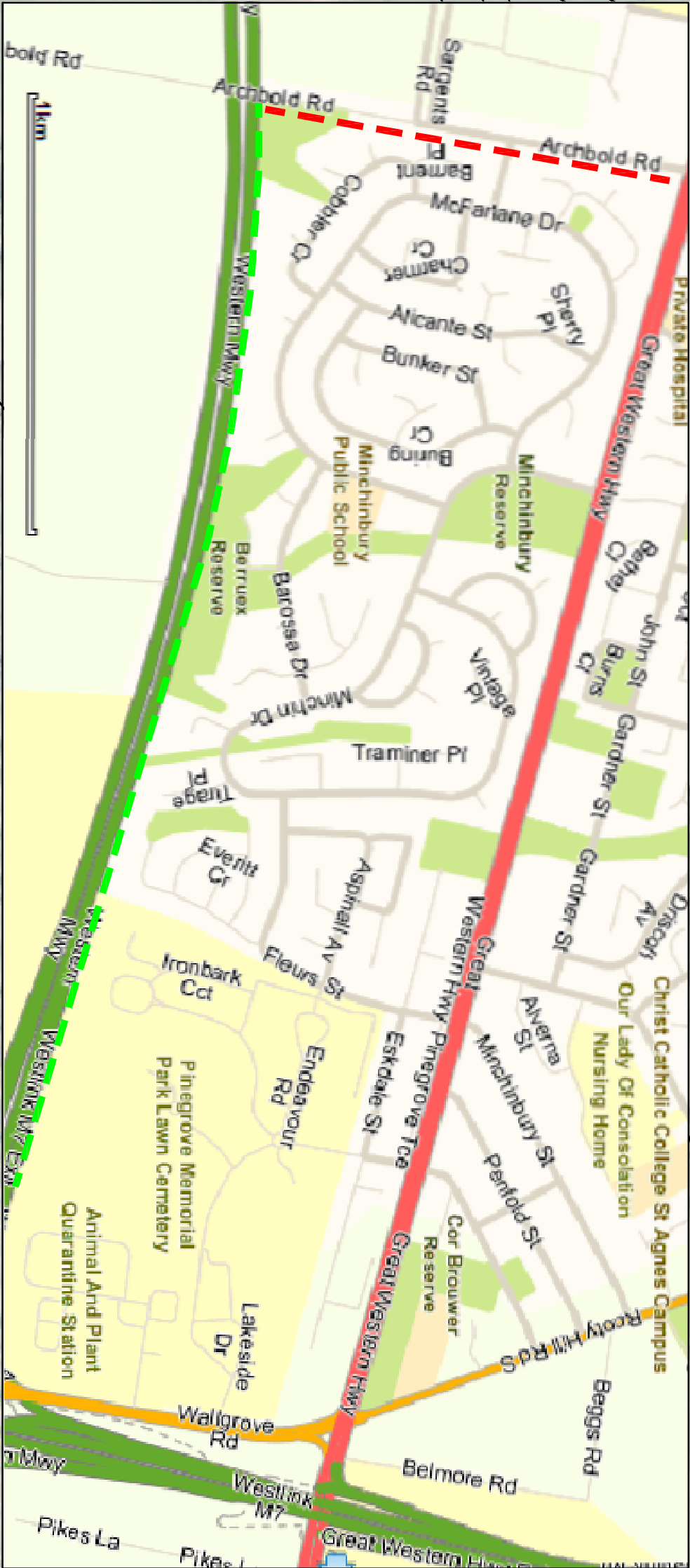
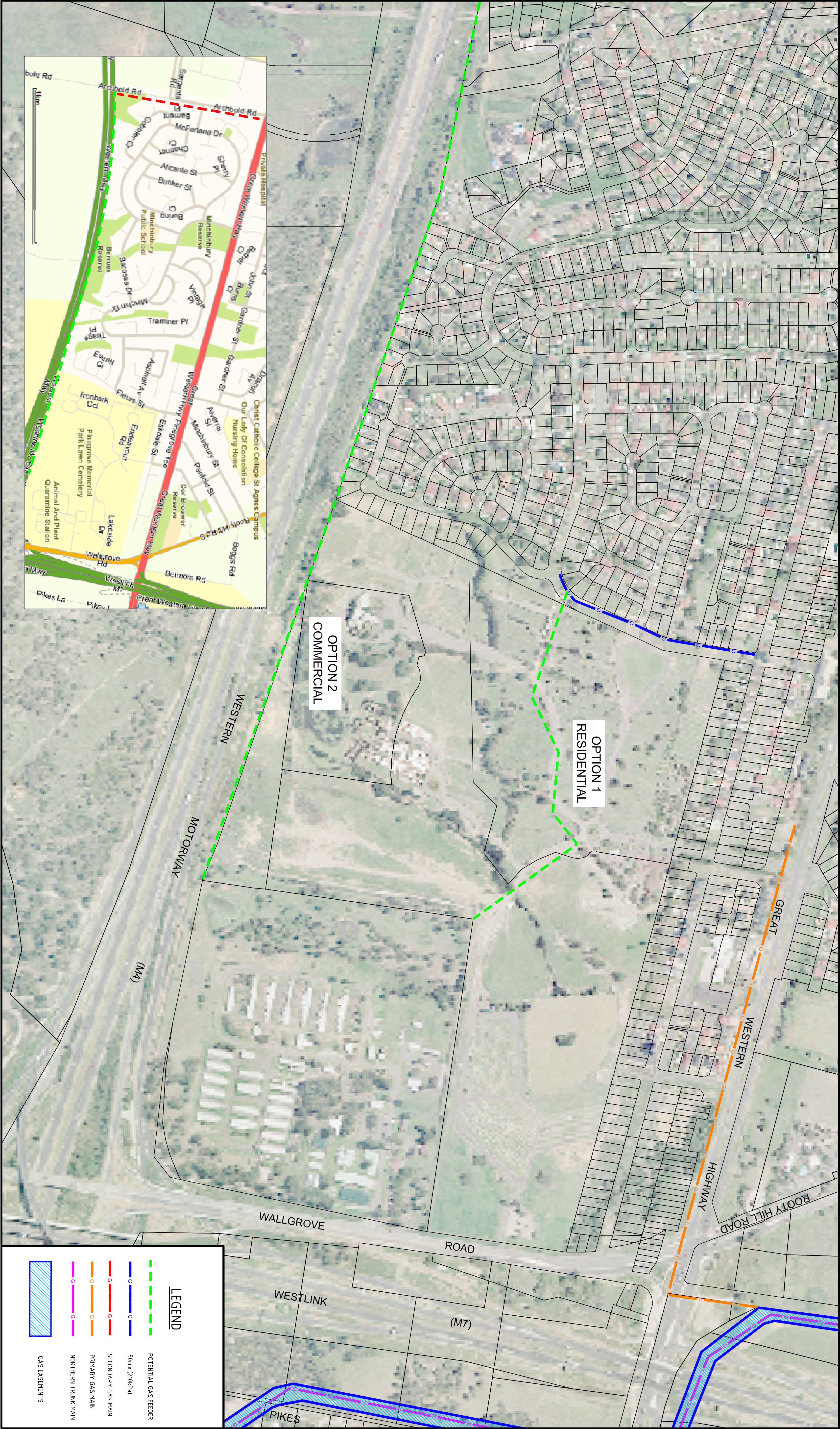


AUSIMAGE © Sinclair Knight Merz Pty Ltd 2008



AUSIMAGE • Sinclair Knight Merz Pty Ltd 2008

[illegible]



OPTION 2
COMMERCIAL

OPTION 1
RESIDENTIAL

WESTERN
MOTORWAY

(M4)

WALLGROVE
ROAD

ROAD

(M7)

WESTLINK

PIKES

GREAT

WESTERN

HIGHWAY

ROOTY HILL ROAD

LEGEND

- POTENTIAL GAS FEEDER
- 50mm (200-P)
- SECONDARY GAS MAIN
- PRIMARY GAS MAIN
- NORTHERN TOWN MAIN
- GAS EASEMENTS

AUSIMAGE © Sinclair Knight Merz Pty Ltd 2008

C1		ISSUE FOR INFORMATION		MG	MG		04.03.09											
Issue	Description	Drawn	Cdd	Appd	Date													
<div><div><div><div><div></div><div>0</div></div><div><div>50</div><div>100</div><div>150</div><div>200m</div></div></div><div>1: 2000 @ A1</div></div><div><div><div><div></div><div>0</div></div><div><div>100</div><div>200</div><div>300</div><div>400m</div></div></div><div>1: 4000 @ A3</div></div></div>																		
<div><div><div><div></div><div>TS</div></div><div><div>MG</div><div>AHD</div></div></div><div>Scale (x1)</div><div>1: 2000</div></div> <div><div><div><div></div><div>TS</div></div><div><div>MG</div><div>AHD</div></div></div><div>Scale (x1)</div><div>1: 2000</div></div> <div><div><div><div></div><div>TS</div></div><div><div>MG</div><div>AHD</div></div></div><div>Scale (x1)</div><div>1: 2000</div></div>						<div><div><div><div></div><div>ICPS</div></div><div><div><div><div></div><div>North</div><div>Arrow</div></div><div>North</div></div></div></div></div>												
						<div><div><div><div></div><div>AT&L ASSOCIATES PTY LTD</div></div><div><div><div><div></div><div>Level 8</div><div>1077 Kippure St</div><div>North Sydney, NSW, 2060</div><div>ABN 96 130 882 405</div></div><div>Email: anthony@atlnet.au</div></div></div></div></div>												
Status						PRELIMINARY ONLY												
NOT TO BE USED FOR CONSTRUCTION																		
Client						Project												
Title						QUARANTINE STATION												
CONCEPT GAS PLAN																		
Project Code						Drawing No.												
RESERVED						C04												
						Issue												
						C1												



AUSIMAGE • Sinclair Knight Merz Pty Ltd 2008

[illegible]



LEGEND

OF

OPTIC FIBRE

T

LOCAL CABLE

AUSIMAGE © Sinclair Knight Merz Pty Ltd 2008

C1	ISSUE FOR INFORMATION	MG	MG	04.03.09
Issue	Description	Drawn	Chd	Appd
				Date

0 50 100 150 200m

1 : 2000 @ A1

0 100 200 300 400m

1 : 4000 @ A3

Status

PRELIMINARY ONLY

NOT TO BE USED FOR CONSTRUCTION

Client

Scale (A1)

1 : 2000

Drawn

MG

Datum

AHD

Designed

MG

Project

QUARANTINE STATION

CONCEPT TELSTRA PLAN

Title

AT&L ASSOCIATES PTY LTD
Level 8
107 Malabar St
North Sydney, NSW, 2060
ABN 96 130 882 405
Email: anthony@atl.net.au

Project Code

RESERVED

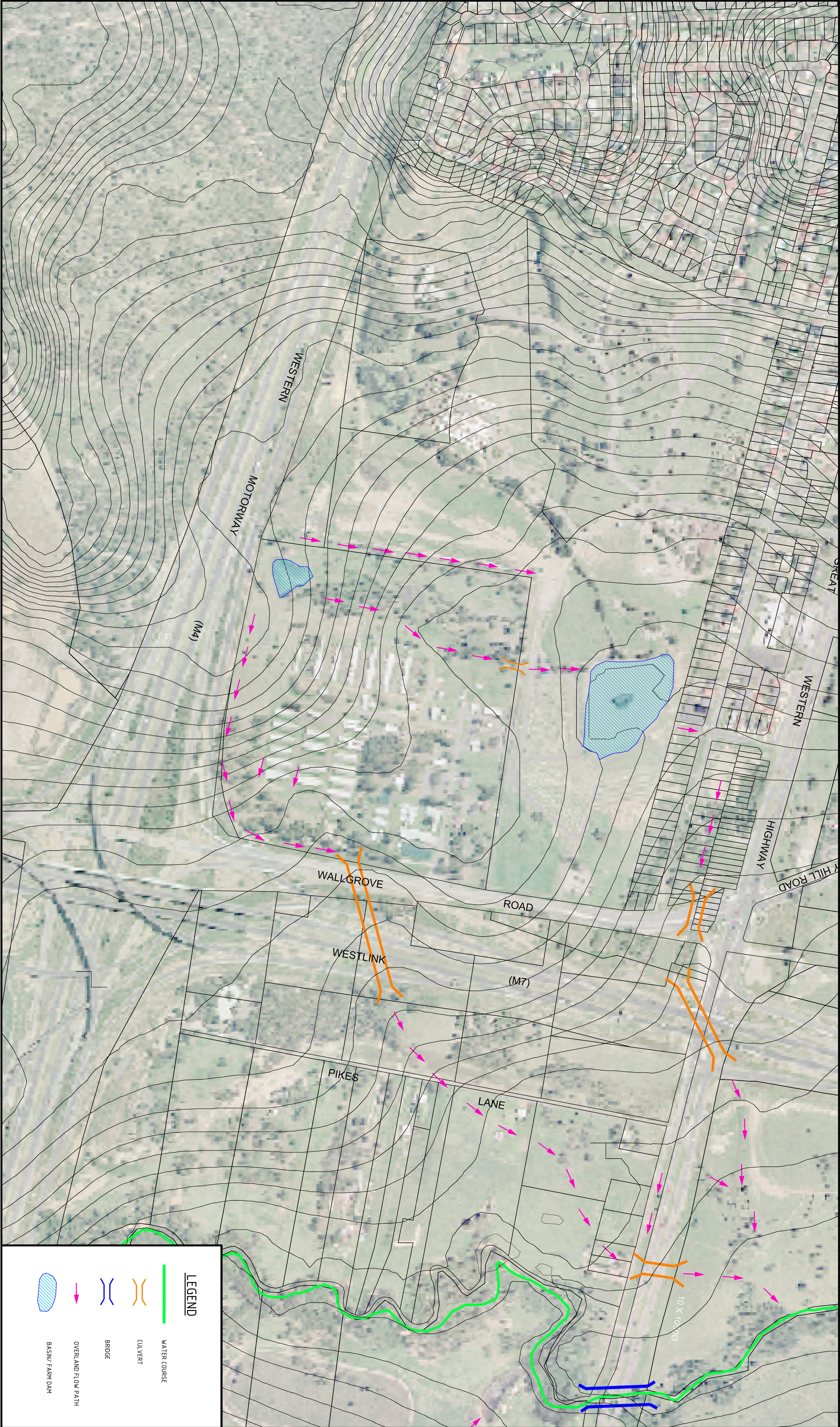
Drawing No.

C06

Issue

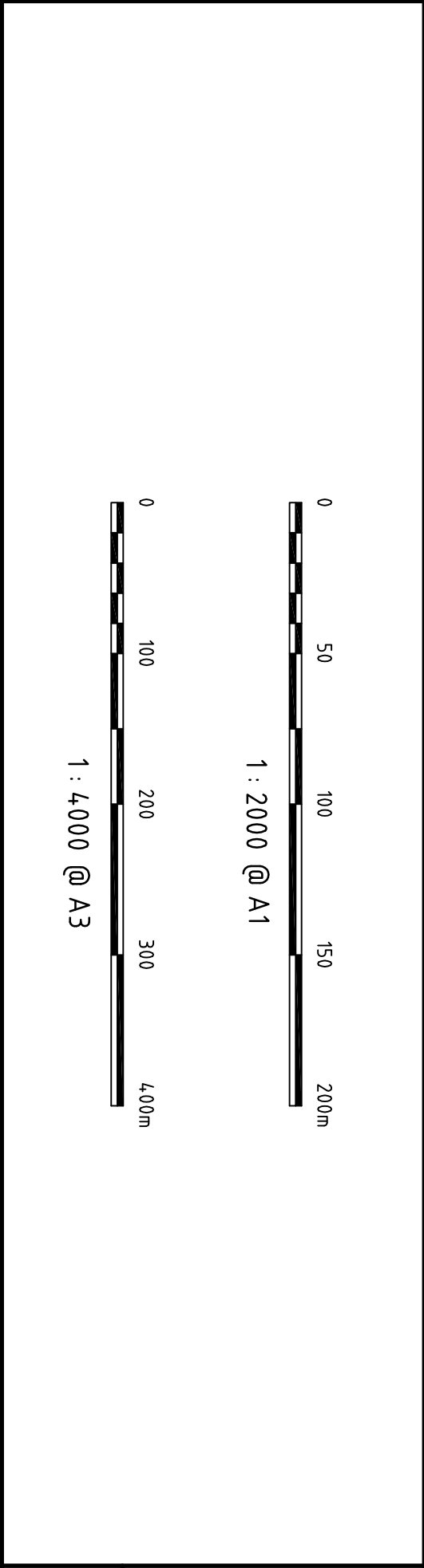
C1

Shown on original A1



AUSIMAGE © Sinclair Knight Merz Pty Ltd 2008

C1	ISSUE FOR INFORMATION	MG	MG	04.03.09
Issue	Description	Drawn	Chd	Appd
				Date



Status
PRELIMINARY ONLY
NOT TO BE USED FOR CONSTRUCTION

Client

Scale (A1)
1 : 2000

Drawn
MG

Designed
MG

Datum
AHD

Project

QUARANTINE STATION

Title
CONCEPT SITE ANALYSIS PLAN

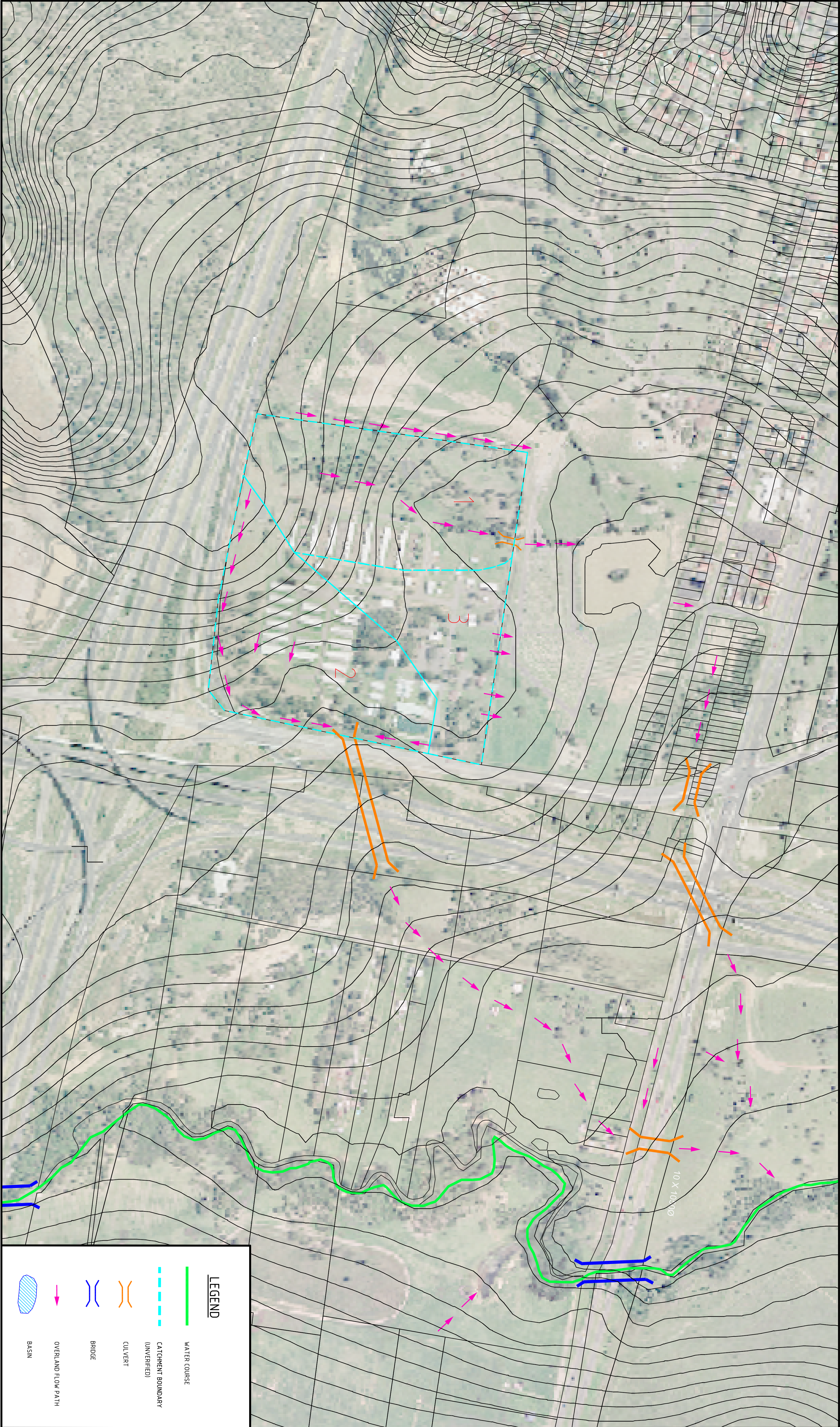
AT&L ASSOCIATES PTY LTD
Level 8
107 Macleay St
North Sydney, NSW, 2060
ABN 96 130 882 405
Email: anthony@atl.net.au

Project Code
RESERVED

Drawing No.
C07

Issue
C1

Memo on original A1



AUSIMAGE © Sinclair Knight Merz Pty Ltd 2008
