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Allen,

Please find enclosed of the Servicing Report.

Regards

James Olsen.

SINCLAIR KNIGHT MERZ
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City of Cockburn

Development Area 13 (Hammond Road) Servicing Report

CITY OF COCKBURN

- Infrastructure Servicing Advice
- 31 January 2008

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City of Cockburn

Development Area 13 (Hammond Road) Servicing Report

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- Infrastructure Servicing Advice
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1. Introduction

Sinclair Knight Merz are pleased to provide a servicing report into the engineering servicing and infrastructure requirements associated with the future urban development of Development Area 13, (Hammond Road), Success.

1.1 Background

The City of Cockburn commissioned Sinclair Knight Merz to carry out an investigation into the existing / planned servicing infrastructure and provide a servicing strategy report.

Information was sought from the following service providers in order to carry out the investigation:

- Water Corporation
- Department of Water
- Western Power
- AlintaGas
- Telstra

1.2 Development Area

Development Area 13, (Hammond Road), Success, forms part of the Southern Suburbs District Structure Plan. The proposed area for development lays West of Hammond Road and stretches from Hird Road, (North) to Bartram Road, (South), refer to shaded area on the Locality plan in **Appendix A.**

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2. Sewerage Reticulation

2.1 Existing Sewerage Infrastructure

There is currently no Water Corporation sewerage infrastructure within the Study Area. The existing development to the North of Darlot Avenue is serviced by a gravity sewer with a connection to Hammond Road. The invert levels of this sewer are not low enough to service the proposed development.

The Thomsons Lake Section 2 Branch Sewer (1050 diameter RCPL) follows Branch Circus to the West of the site. There are a number of 150 diameter spigots on this main for future development connections. These connections are at a suitable depth to service the proposed development.

2.2 Future Sewerage Servicing Infrastructure Needs

The Thomsons Lake Sewerage Reticulation Conceptual Planning for the area indicates sewer mains that are proposed within the development. The Water Corporation should be consulted with regards to the route of the proposed DN600 sewer crossing the site.

The site is planned to gravitate to the West split into two catchments with the lots connected to the main sewer via two DN150 sewer connections.

Standard Water Corporation fees for sewer infrastructure will be charged at $1,560 / Lot (April/June 2008 rates).

Refer **Appendix B.**

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3. Water Reticulation

3.1 Existing Water Infrastructure

The study area is within the existing Thomsons Lake Water Supply Scheme and is bounded by a number of large bore watermains. A 600 Steel main exists on Hammond Road. A 760 Steel main crosses the study area on the southern side of Darlot Road. Water Corporation advised that they would prefer if proposed lots did not have frontage onto the 760. 2 new mains (DN 1000) are located along Branch Circus and the southern edge of the study area.

The water mains shown in **Appendix C** are based on data supplied by the Water Corporation.

3.2 Future Water Servicing Infrastructure Needs

There are currently no planned water services within the study area.

The Water Corporation advised that the study area would be supplied via a DN200 water service from the 600S main in Hammond Road

Standard Water Corporation fees for water infrastructure will be charged at $3,378 / Lot (April/June 2008 rates).

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4. Stormwater Drainage

4.1 Existing Stormwater Drainage Infrastructure

There are a number of large stormwater drainage pipe west of the study area that feed into Thomsons Lake which form part of the *Southern Lakes Main Drainage scheme*. The majority (~ 70%) of the Southern Suburbs Stage 3 area, comprising mostly of Hammond Park, falls under this scheme. The *Southern Lakes Drainage Scheme* endorses an acceptable level of water quality for all runoff discharging into the South Jandakot Main Drain (See **Appendix D**).

There have been a number of drainage studies incorporating the catchments to the east of Hammond Road and south of Bartram Street. These included groundwater monitoring and nutrient management. Information available indicates that the study has thus far been excluded from previous drainage studies in the area.

In discussions with the Department of Water it became evident that additional studies may be required for the study area. Future developments within the study area should allow for detailed drainage and water quality assessments to ensure local Authority, Water Corporation, Water Board, The Water and Rivers Commission and the Department of Environmental Protection requirements are satisfied.

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5. Electrical Reticulation

5.1 Electrical Infrastructure

The proposed development will most likely be supplied from one of the feeders out of the 22 kV Cockburn Cement Zone Substation. The proposed site is approximately 6.8km from Cockburn Zone Substation. The estimated design load is approximately 2.45 MVA, which will occur in say four stages over six years.

The CC507 Hammond and CC515 Russell Road East are most likely feeders to supply the proposed development. The surrounding Bibra Lake feeders may also be able to indirectly assist if required. The CC515 Russell Road East feeder is currently supplying the area. Refer attached **Appendix E**, indicating the location of Western Power Infrastructure.

The developer may also be able to take advantage of any newly installed capacity on the network. This option would need to be assessed closer to the required in service date.

The weak conductor along Hammond Road and Branch Circus (7/14 Cu, 7/3.00 AAC and 7/2.50 AAC) is to be pulled down as part of the new development. Therefore, a new backbone will need to be created through the proposed development to replace the weak conductor.

In summary, there is sufficient capacity available to supply the proposed development, however the may be potential under voltage issues at the end of the feeder (end of Hammond Road). This may become less of an issue as the weak conductors in the area are pulled down, as this will naturally increase the voltage in the area.

Due to the dynamic nature of the distribution network, further studies for network reinforcement would be required at the time the subdivision is to proceed to determine the final network requirements.

The current information is based on indicative staging and timeframes.

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6. Natural Gas

6.1 Existing Gas Supply

Correspondence from AlintaGas Networks Pty Ltd states that there currently exists no AlintaGas infrastructure within the study area. A 160 medium pressure main extends along the eastern side of Hammond Road.

6.2 Future Gas Infrastructure Needs

AlintaGas advises there are currently no plans to extend natural gas service into this area and future applications for gas services will be considered on a case by case basis.

AlintaGas reviews the provision of gas services on a case by case basis and thus cannot provide additional information regarding future infrastructure installations without first undertaking an economic evaluation of a proposed subdivision.

It is anticipated that AlintaGas infrastructure will be extended from the 160 MP main in Hammond Road.

Refer **Appendix F.**

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7. Telecommunications

7.1 Existing Telecommunications Infrastructure

The attached **Appendix G** show the location of existing Telstra distribution cables and optical fibre cables in the Study Area. Telstra has confirmed existing Optic Fibre Cables running along Hammond Road.

7.2 Future Telecommunications Infrastructure Needs

Telstra plans expansion of their infrastructure to suit on-going development and thus has no planning information for this area.

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8. General

The information provided in this report is based on the best data available at the date of printing and subject to ongoing review and amendment.

Responses from the aforementioned service providers were generally qualified with statements regarding the dynamic nature of planning data and no assurances were given to the future accuracy of information that was provided.

The information included in this report is an accurate representation of the verbal, electronic and written data provided by the service providers.

We trust that this information is suitable for preparation of your feasibility for development of Hammond Road DA13 area.

8.1 SKM Contact

Should you have any queries or wish to discuss any matter, please do not hesitate to contact James Olsen on 9268 4509 or Chris Beard on 9268 4425.

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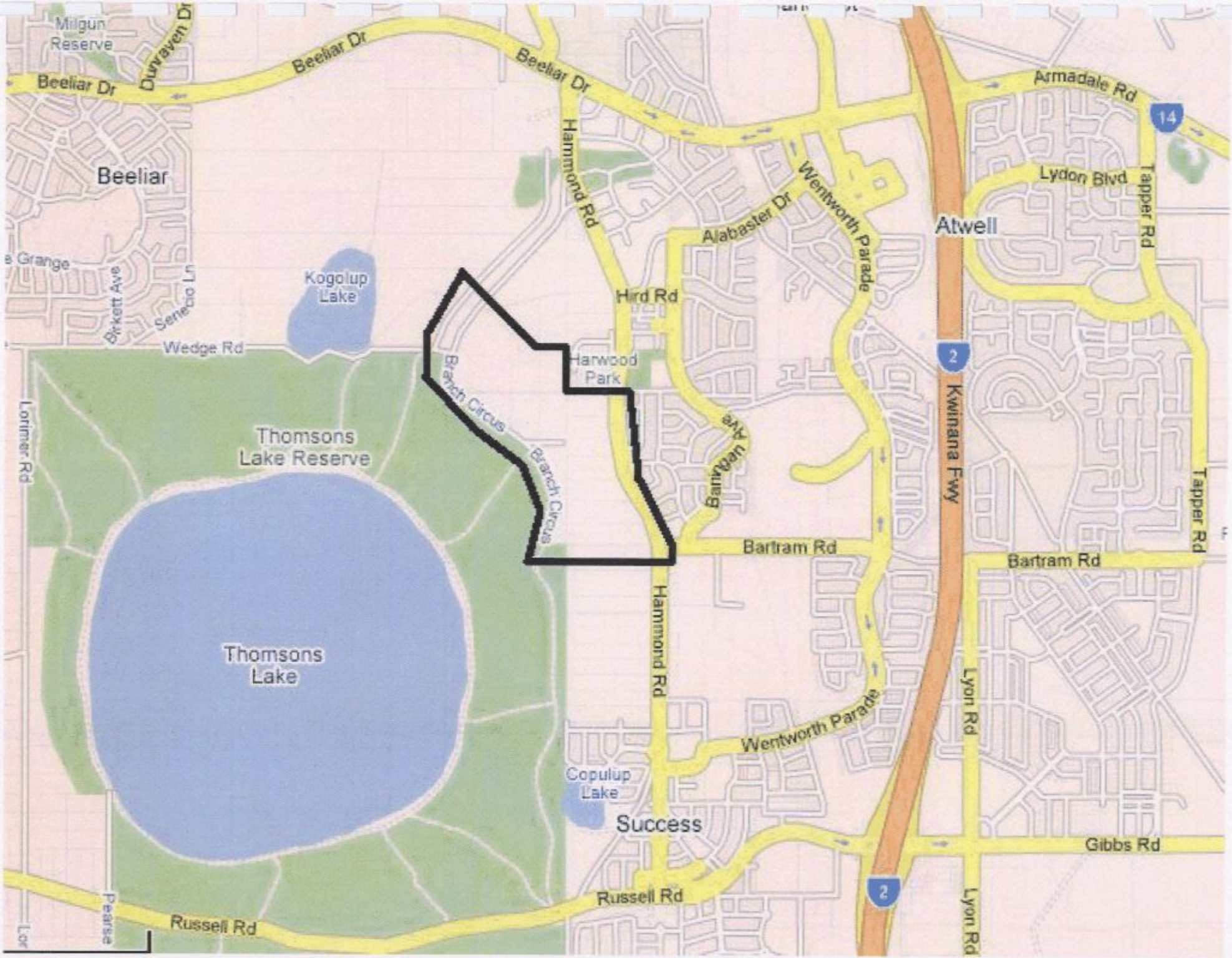
Appendix A Locality Plan



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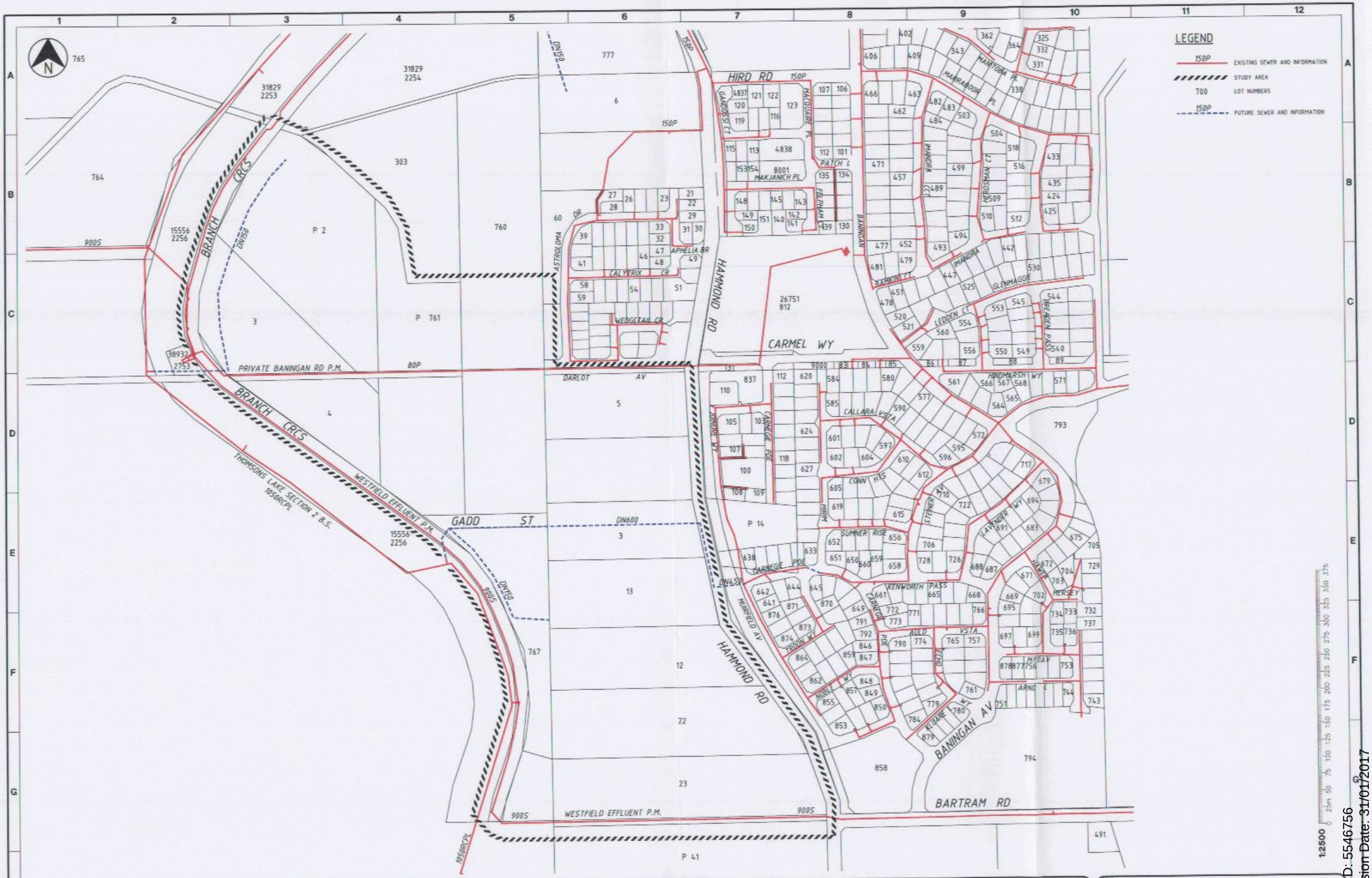
Appendix B Sewerage Reticulation Plan



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DRAFTER: C. RAYNER
DESIGNED
DRAFTING CHECK
DESIGN REVIEW
REVIEWED PROJECT MANAGER
APPROVED PROJECT DIRECTOR

TITLE: SEWER SERVICING STRATEGY
SCALE: 1:2500
SKM PROJECT No: DE02959
DRAWING No: FIGURE 1
AMDT: A

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Appendix C Water Reticulation

A						ISSUED FOR INFORMATION
No	DATE	DRAFTING CHECK	DESIGN REVIEW	REV'D P.MGR	APP'D P.DIR	AMENDMENT

No	DRAWING NUMBER	REFERENCE DRAWING TITLE
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C. RAYNER			
DESIGNED	DESIGN REVIEW		

TITLE: WATER SERVICING STRATEGY

SCALE	SKM PROJECT No	DRAWING No	AMDT
1:2500	DE02959	FIGURE 2	A

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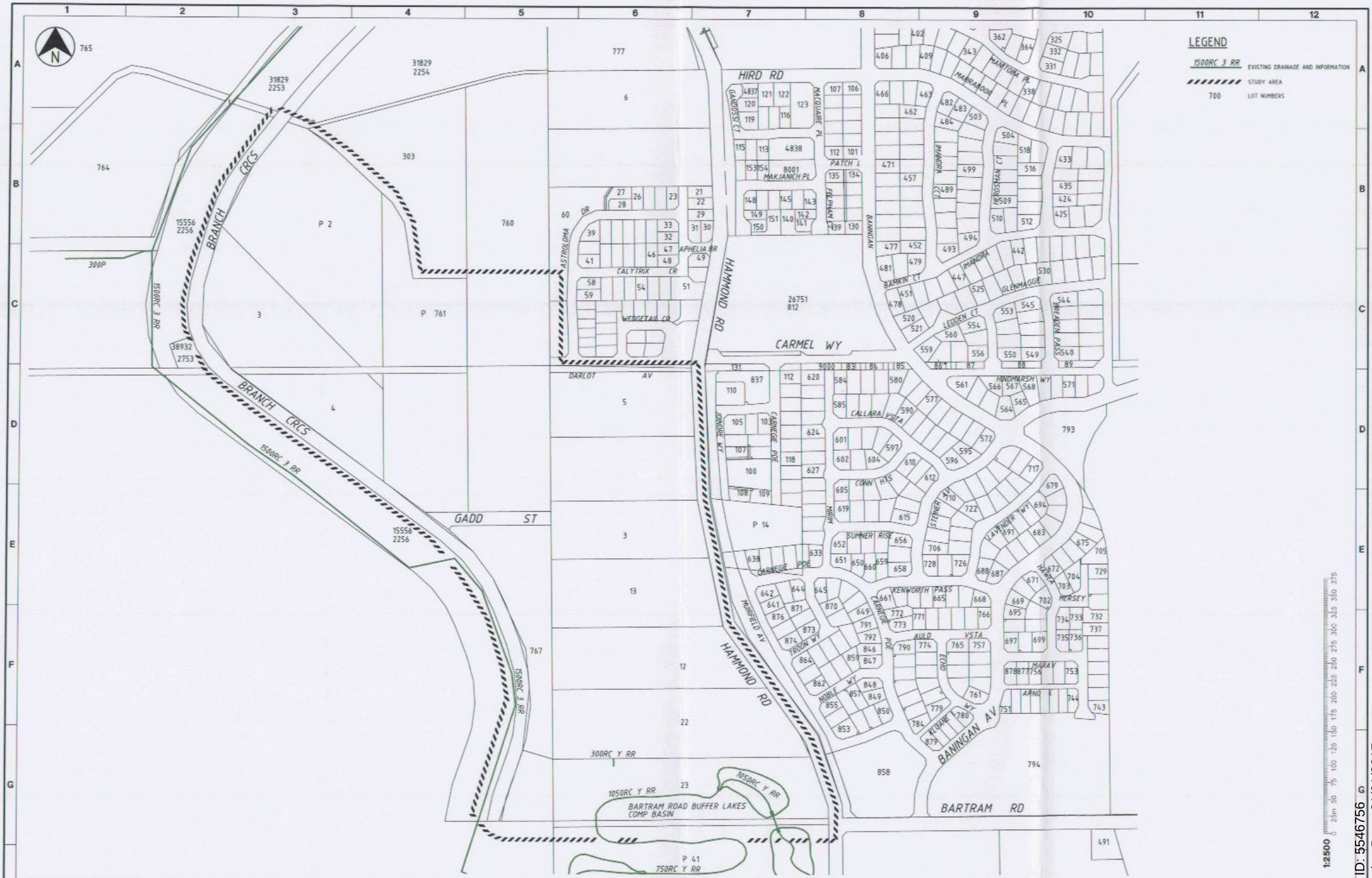
Appendix D Drainage Catchment Areas



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No	DRAWING NUMBER	REFERENCE DRAWING TITLE
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DESIGNED	DESIGN REVIEW		

TITLE: STORMWATER DRAINAGE STRATEGY

SCALE	SKM PROJECT No	DRAWING No	AMDT
1:2500	DE02959	FIGURE 3	A

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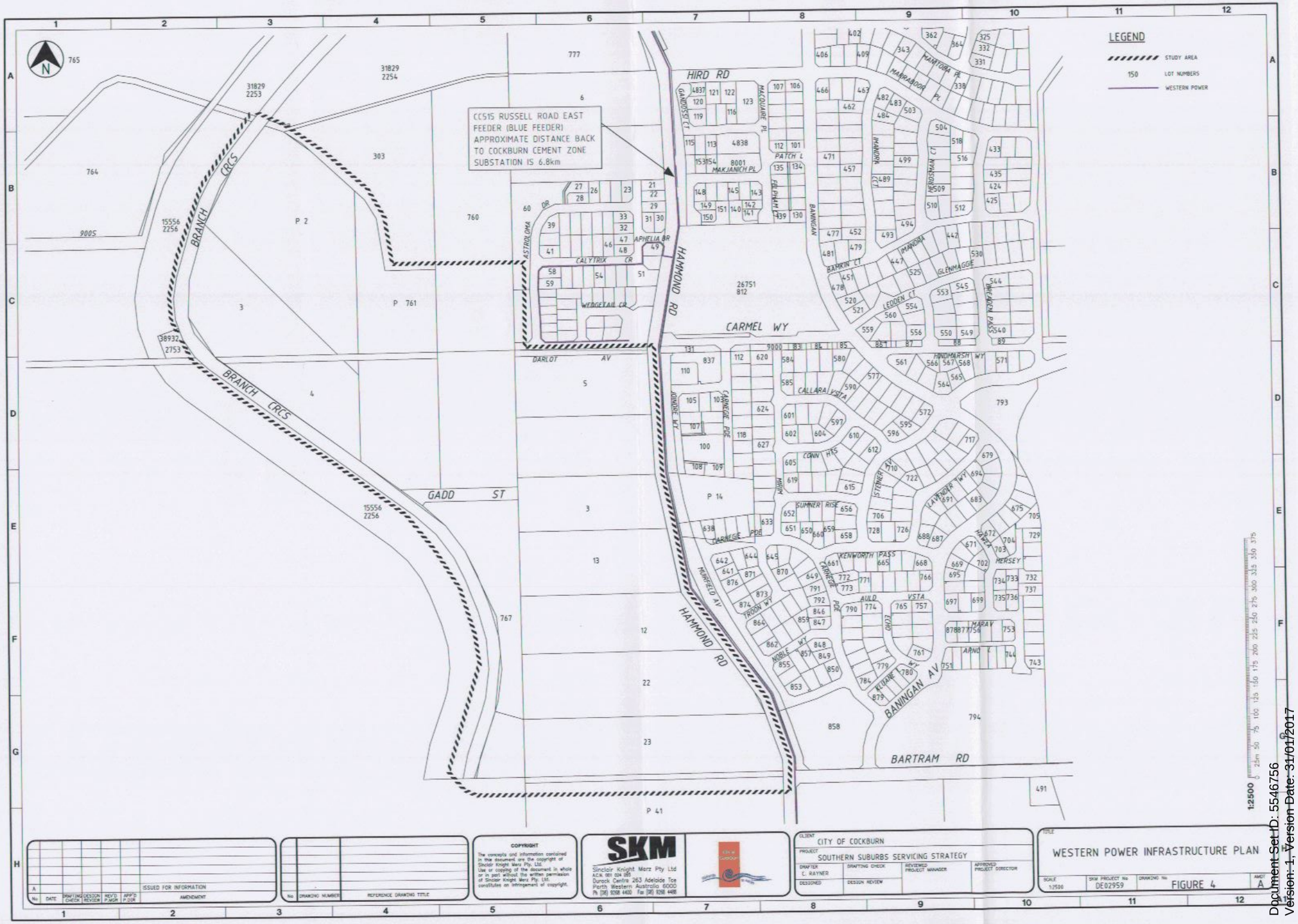
Appendix E Western Power Infrastructure



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DESIGN REVIEW:
REVIEWED PROJECT MANAGER:
APPROVED PROJECT DIRECTOR:

TITLE: WESTERN POWER INFRASTRUCTURE PLAN
SCALE: 1:2500
SKM PROJECT No: DE02959
DRAWING No: FIGURE 4
AMDT: A

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Appendix F Natural Gas

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DESIGNED	DESIGN REVIEW		

TITLE: GAS INFRASTRUCTURE PLAN

SCALE	SKM PROJECT No	DRAWING No	AMDT
1:2500	DE02959	FIGURE 5	A

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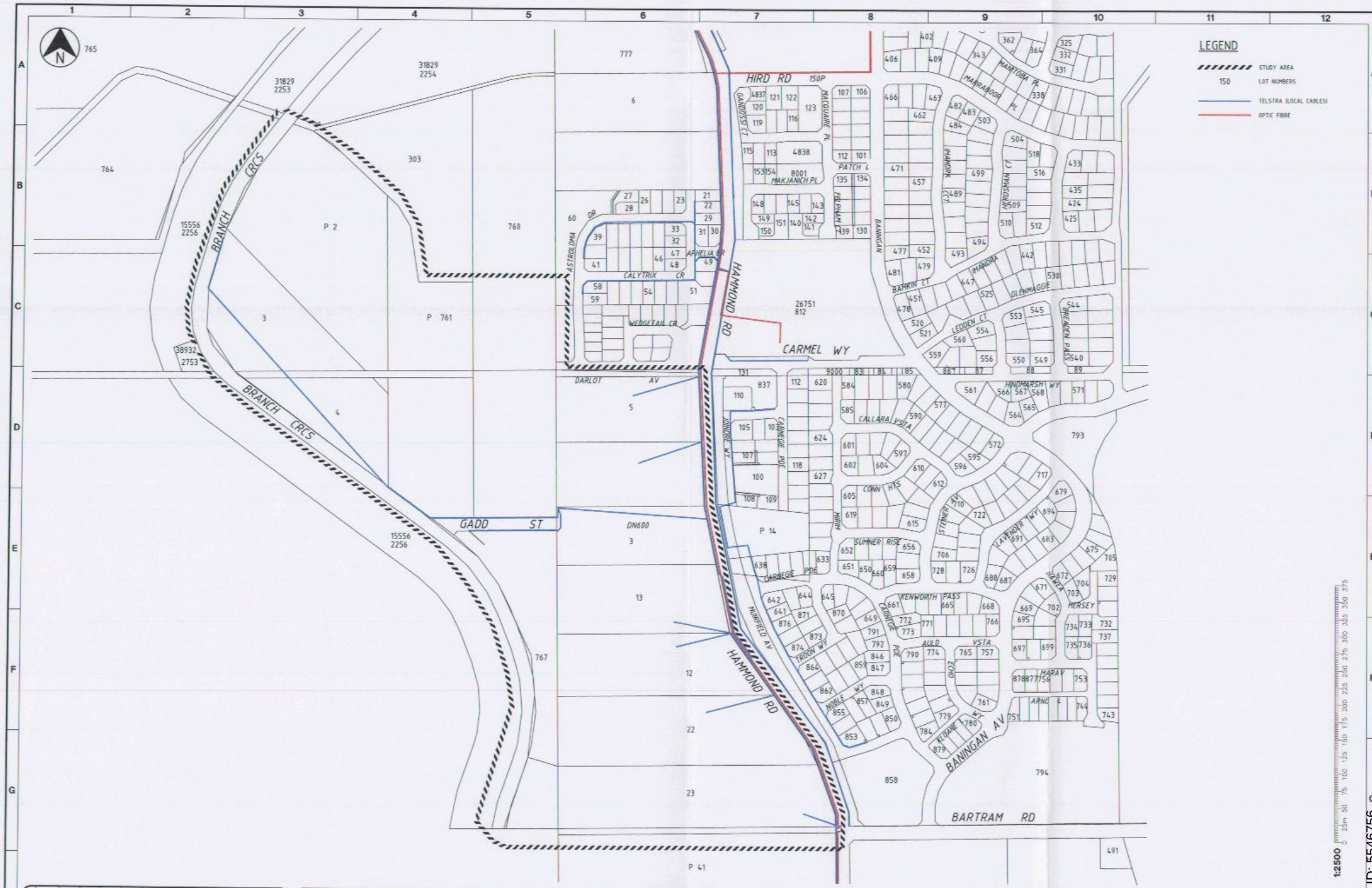
Appendix G Existing Telstra Infrastructure



No	DATE	DRAFTING CHECK	DESIGN REVIEW	REV'D P MGR	APP'D P DIR	AMENDMENT
A						ISSUED FOR INFORMATION

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DESIGNED | DESIGN REVIEW

TITLE: TELSTRA INFRASTRUCTURE PLAN
SCALE: 1:2500 | SKM PROJECT No.: DE02959 | DRAWING No.: FIGURE 6 | AMDT: A