

221 LUDDENHAM ROAD, ORCHARD HILLS

Utilities Report

08 SEPTEMBER 2021

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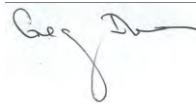
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Report No 03

Date 08/09/2021

Revision Text 04

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REVISIONS

Revision	Date	Description	Prepared by	Approved by
01	14/08/2020	First Draft	MF	GI
02	21/08/2020	Final Report	MF	GI
03	14/07/2021	Final Report – Amendment 01	MF	GI
04	08/09/2021	Final Report – Amendment 02	MF	GI

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EXECUTIVE SUMMARY

Arcadis has been engaged by HB+B Property to consult with Sydney Water, Jemena, NBN Co, and Endeavour Energy regarding the serviceability of the proposed development at 221 Luddenham Road, Orchard Hills. The focus of this utilities report is how the development site can be serviced at no cost to government. The findings are summarised below:

Potable Water

Sydney Water has a servicing strategy for the Greater Penrith to Eastern Creek (GPEC) corridor and is investigating servicing options to improve the existing water supply and allow for future growth within the area. Sydney Water have advised that the high level strategy for the areas is to service the development from the Bringelly Road Reservoir. Costs associated with the extension of Sydney Water's network to the development site will be covered by the developer. This servicing arrangement is subject to the outcomes of the detailed options planning work which is to be carried out by the developer in line with Sydney Water's guidelines.

Sewer

Sydney Water's high level strategy for the wastewater is for the site to discharge to the Penrith Water Recycling Treatment Plant. The route of the proposed sewer connection will be subject to the outcomes of the detailed options planning work which is to be carried out by the developer in line with Sydney Water's guidelines. The developer will cover the costs associated with extending Sydney Water's network to service the development site.

Electrical

Based on the Technical Advice received from Endeavour Energy it is anticipated that the proposed development will require three feeders that extend the existing network from the Mamre Zone Substation. The first feeder will run approximately 3.7km from an industrial estate on Erskine Park Road. A second extension of an existing feeder from The Grandstand along Cook Parade and McIntyre Ave to Luddenham Road is approximately 4.0 km. A third feeder from the existing overhead connection in Mamre Road is approximately 2.6 km.

The developer will consult with Endeavour Energy to confirm a supply arrangement and suitable staging strategy. Costs associated with the extension of Endeavour Energy's network will be covered by the developer.

Gas

Jemena has provided high level advice that the existing local gas network throughout the Erskine Park industrial area has sufficient capacity to service the proposed development, however this is dependent on the developments anticipated gas demands. To extend Jemena's network from Erskine Park to the development site will require approximately 4.8km of new gas main to be laid. Jemena will be able to confirm a suitable supply arrangement once the proposed development is locked in and gas demand is finalised. The type of agreement entered into by Jemena and the developer will determine which party will cover the costs associated with the new gas main.

Telecommunications

NBN have recently constructed servicing along Luddenham Road, it is believed that the proposed development will connect to this local service during construction. This arrangement will need to be formalised with NBN Co once the land rezoning application is successful and the development progresses to the next stage.

1 PROJECT OVERVIEW

Arcadis has been engaged by HB+B Property to consult with the relevant utility authorities regarding the serviceability of the proposed development site at 221 Luddenham Road, Orchard Hills, NSW 2748. The purpose of this report is to summarise the advice received from Sydney Water, Jemena, NBN Co, and Endeavour Energy regarding suitable connection points for the development site to existing utility networks.

This report has been prepared based on the following sources:

- Sketch 11178_SK022f, Master Plan, provided by HB+B Property dated August 2021.
- WSA 03-2011 *Water Supply Code of Australia Version 3.1*.
- NSW Planning & Environment online *Planning Portal*, at <https://www.planningportal.nsw.gov.au/>
- DBYD inquiries, lodged between 04/03/19 and 31/05/19.
- Arcadis' Due Diligence Investigation Report (revision 2, issued 21/03/19).
- Correspondence received from Jemena on 14/05/19.
- Supply Offers received from Endeavour Energy in May/June 2020 (refer Appendix F).
- Correspondence received from NBN Co on 24/06/19 and 01/07/19.
- Correspondence received from Sydney Water on 25/06/2021.
- Meeting with Sydney Water on 01/07/2021.

The current masterplan for the site (refer Appendix A) is proposed to be developed in stages. There is potential for the servicing strategy to be staged as well to cater for the increasing demand.

All service options and supply routes provided in this utilities report are potential options based on the above information and Arcadis' opinion. All servicing for the proposed development is subject to approval from the utility providers and may change.

2 PROJECT DESCRIPTION

The land to which this report applies (herein referred to as ‘the development site’) is shown in **Figure 1**. The development site is bound by private property to the south, Luddenham Road and private property to the east, Patons Lane to the north, and extends approximately 1.1 kilometres west towards Stockdale Road from the Luddenham Road and Patons Lane intersection. A 61m wide electrical transmission easement runs through the site from the western boundary to the northern boundary and services Transgrid’s 330kV transmission lines. The site will accommodate future planned transport corridors including the proposed outer Sydney orbital corridor, western Sydney freight line corridor, and north south rail line corridor that run through it – see Appendix A.

Arcadis has reviewed the information provided by HB+B Property, reviewed advice received from utility authorities, and undertaken its own research using information currently available within the public domain to prepare this report.

The key data for the development site is summarised in **Table 1**.

Luddenham Road Development Site	
LGA	Penrith City Council
Legal Description	Lot 1, DP 1099147 Lot 242, DP 1088991
Site Area	125.32 hectares
Current land owner	Atilol Holdings
Current land zoning	RU2 – Rural Landscape

Table 1 Key data for the development site

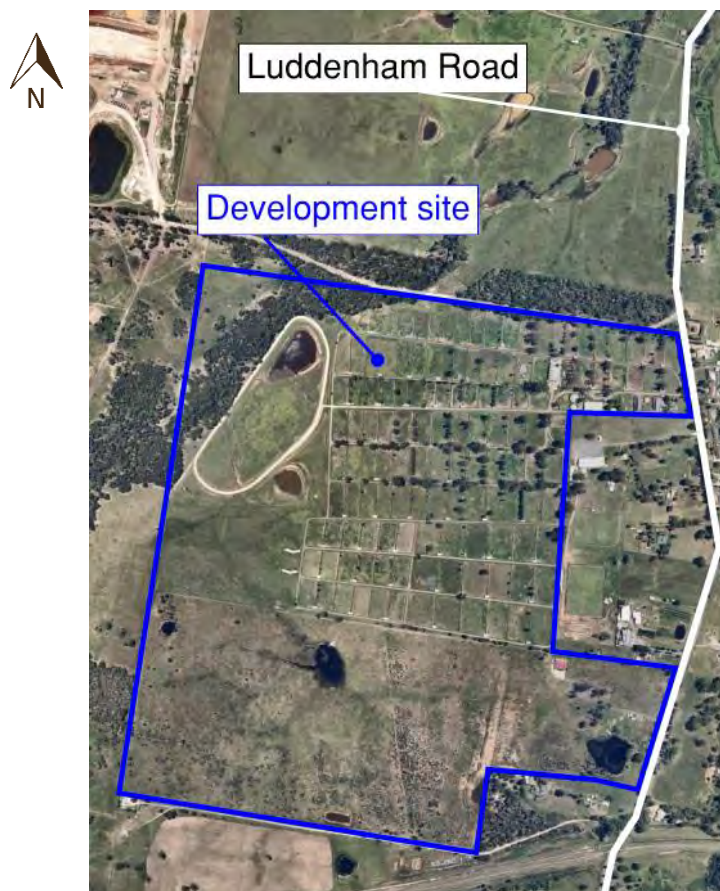


Figure 1 Proposed development site extents

3 UTILITIES

The following sections summarise preliminary advice received from Sydney Water, Endeavor Energy, Jemena, and NBN Co regarding the serviceability of the development site.

3.1 Potable Water

To the north-east of the site, approximately 1.5km away along Luddenham Road there is an existing 150mm diameter DICL watermain. There is also a 200mm diameter uPVC watermain approximately 1.6km away to the south east of the site, near the intersection of Twin Creeks Drive and Camargo Lane.

In a letter dated 25 June 2021, Sydney Water confirmed that the high level strategy to service the area for potable water is from the Bringelly Road Reservoir (Orchard Hills Water Filtration Plant) located north west of the site.

Table 2 summarises the preliminary estimated maximum daily water demand based on EP for each stage of the development refer to **Appendix D** for the detailed calculations.

Table 2 Preliminary Estimated Maximum Daily Water Demand Based on EP

Development Stage	Estimated Maximum Daily Water Demand (kL/day)
Stage 1	45.8
Stage 2	35.1
Stage 3	18.2
Additional Land	23.8
Total	122.8

In August 2019, following the lodgement of a feasibility application with Sydney Water, HB & B Property and Arcadis met with Sydney Water to discuss the proposed development and servicing requirements. Sydney Water advised that it was going through pathways planning for the Greater Penrith to Eastern Creek (GPEC) corridor to improve existing supply and allow for future growth within the area. Arcadis provided preliminary water demand figures for the proposed development for Sydney Water to incorporate into their GPEC corridor pathways planning.

HB & B Property and Arcadis met again with Sydney Water in August 2020 (refer to meeting minutes in **Appendix E**) to discuss the progress in planning for the proposed development. Sydney Water advised that there is a draft servicing strategy for the area, with servicing options being investigated, and that an option study would be required for the proposed development. Sydney Water has no objections to the proposed development and is committed to collaborating with HB & B Property in the delivery of GPEC services to the development site. Provided costs would be covered by HB & B Property, the developer could accelerate the extension of the potable water network to the development site if Sydney Water's servicing schedule for the area did not align with the timeline of the proposed development. Updated water demand figures for the proposed development have been provided to Sydney Water.

Sydney Water advised that the use of recycled water for irrigation purposes in the GPEC corridor is being investigated. Details regarding the harvesting and use of recycled water in the area are still to be determined, with the Department of Planning, Industry and Environment, and Penrith City Council currently working on legislation. HB & B Property has no objections to the incorporation of recycled water for the purposes of irrigation in the proposed development.

Further consultation was undertaken with Sydney Water in June/July 2021 to request a letter confirming the servicing strategy and provide further updates on the progress of the development. Refer to letter in **Appendix E**. Sydney Water confirmed that the development can be serviced, subject to detailed planning options to resolve the best outcome for the precinct, from Bringelly Road Reservoir. The detailed planning options work is proposed to be undertaken by the developer at their own cost. During

the meeting on 1 July 2021, Sydney Water highlighted the importance of consultation with other major developments in the surrounding area including Sydney Metro.

3.2 Sewer

Currently the development site and adjacent communities are serviced by either gravity sewer, low pressure sewer, or septic tanks.

The nearest sewer connection to the development site is on Mamre Road, approximately 2.2km to the north-east. This sewer line drains to the St Mary's Sewer Treatment Plant. Sydney Water's high level strategy for the wastewater is for the site to discharge to the Penrith Water Recycling Treatment Plant.

The route of the proposed sewer connection will be subject to the outcomes of the detailed planning options work to resolve the best outcomes for the precinct. The developer will cover the costs associated with extending Sydney Water's network to service the development site.

Table 3 summarises the preliminary estimated sewerage discharge based on EP for each stage of the development refer to **Appendix D** for the detailed calculations.

Table 3 Preliminary Estimated Sewerage Discharge Based on EP

Development Stage	Estimated Average Daily Sewerage Discharge (kL/day)
Stage 1	36.6
Stage 2	28.1
Stage 3	14.5
Additional Land	19.1
Total	98.3

In August 2019, following the lodgement of a feasibility application with Sydney Water, HB & B Property and Arcadis met with Sydney Water to discuss the proposed development and servicing requirements. Sydney Water advised that it was going through pathways planning for the GPEC corridor. Arcadis provided preliminary sewer demand figures for the proposed development for Sydney Water to incorporate into their GPEC corridor pathways planning.

HB & B Property and Arcadis met again with Sydney Water in August 2020 to discuss the progress in planning for the proposed development. Sydney Water advised that there is a draft servicing strategy for the area, with servicing options being investigated, and that an option study would be required for the proposed development. Sydney Water's draft servicing strategy for this area has wastewater draining to the Penrith Sewer Treatment Plant. Sydney Water has no objections to the proposed development and is committed to collaborating with HB & B Property in the delivery of GPEC services to the development site. It is expected that the developer will cover the costs associated with extending the sewer network to the development site if Sydney Water's servicing schedule for the area does not align with the timeline of the proposed development. Updated sewer demand figures for the proposed development have been provided to Sydney Water.

Further consultation was undertaken with Sydney Water in June/July 2021 to request a letter confirming the servicing strategy and provide further updates on the progress of the development. Refer to letter in **Appendix E**. Sydney Water confirmed that the development will discharge to the Penrith Water Treatment Plant subject to detailed planning options to resolve the best outcome for the precinct. The detailed planning options work is proposed to be undertaken by the developer at their own cost.

3.3 Electrical

Connect Infrastructure, on behalf of the developer, lodged a technical review enquiry with Endeavour Energy (EE) seeking advice on how the proposed development may be serviced.

To supply the initial stage of development, EE have prepared mapping showing the new HV lead in works and connection points (refer **Appendix F**) Three separate HV underground feeders are required to service the development refer to **Figure 2** for a summary of the proposed routes. The blue line depicted in **Figure 2** is an extension of feeder MM1332 from an industrial estate on Erskine Park Road with a length of approximately 3.7km. A second extension of an existing feeder (MM1392) from The Grandstand along Cook Parade and McIntyre Ave to Luddenham Road is shown in purple and is approximately 4.0 km. A third feeder from the existing overhead connection in Mamre Road is shown in green and is approximately 2.6 km. The EE mapping calls up 6 x 125 ducts for each feeder. The costs associated with these feeders will be covered by the developer.

Endeavour Energy have advised that a new zone substation is unlikely to be required based on the total load of the development.

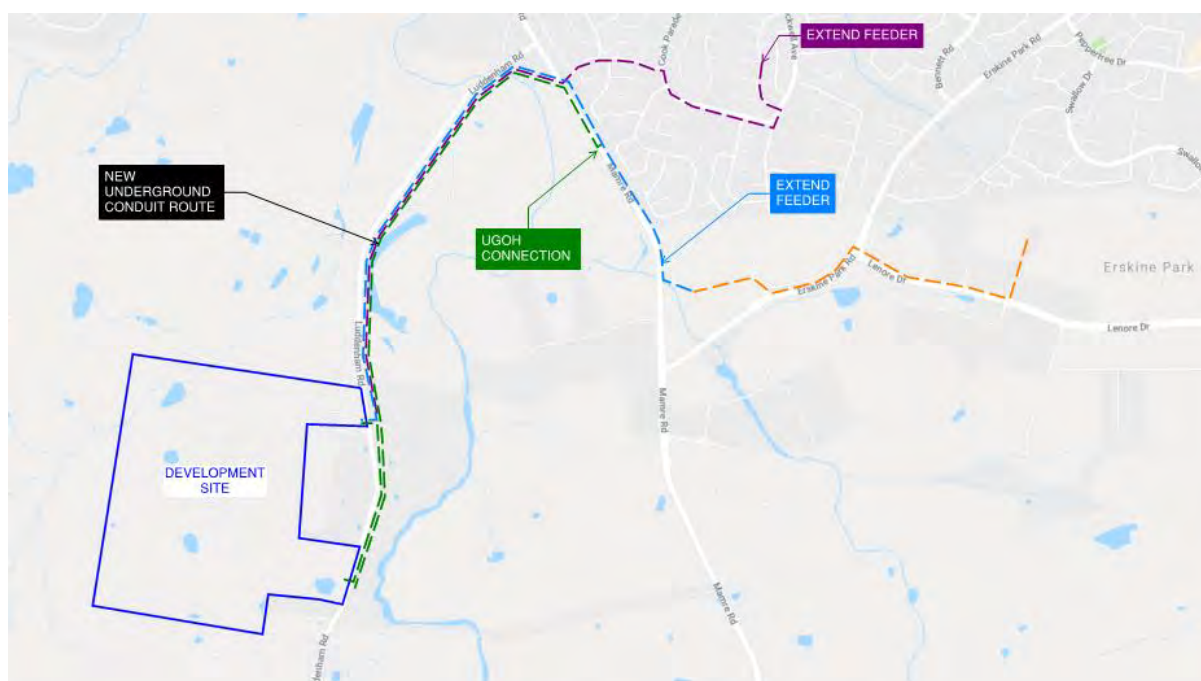


Figure 2 Proposed routes for electrical feeders to service the development site

Table 4 summarises the preliminary estimated electrical demand for each stage of the development refer to for the detailed calculations.

Table 4 Preliminary Estimated Electrical Demand Loading

Development Stage	Estimated Electrical Demand Loading (kVA)
Stage 1	7,150
Stage 2	6,033
Stage 3	2,838
Additional Land	3,725
Total	19,746

3.4 Gas

Jemena distributes natural gas throughout Sydney and currently services the Erskine Park industrial area to the east of the development site. The DBYD indicates that in Erskine Park there is an existing 150mm diameter gas main with a pressure of 1050 kPa on Lenore Drive – see **Figure 3**. Jemena has advised that this existing main can supply the development site. Supply to the proposed development will be via a new gas main laid between the intersection of Lenore Drive and Erskine Park Road, and Patons Lane – approximately 4.8km in length.

Jemena has advised that when there is certainty around gas demand and end customers, a point of connection for the development can be confirmed. Jemena will comment further on the servicing of the site once the land is rezoned. Depending on the agreement entered into by Jemena and the developer, costs associated with extending Jemena's network will either be shared between the two parties or covered entirely by one party.

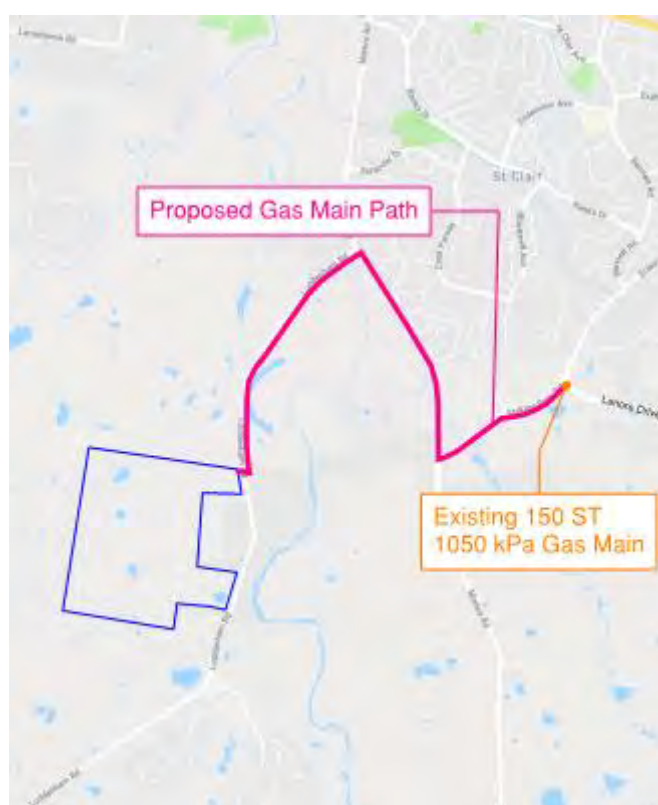


Figure 3 Proposed route of new gas main to service the development site

3.5 Telecommunications

A feasibility inquiry was lodged with NBN Co to determine the serviceability of the development site. NBN Co confirmed that the NBN network can be extended to service the proposed development. NBN have recently constructed servicing along Luddenham Road, it is believed that the proposed development will connect to this local service during construction. This arrangement will need to be formalised with NBN Co once the land rezoning application is successful.

APPENDIX A

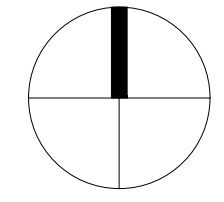
Proposed Development Masterplan

Aspec Industrial Business Park	
3-Sep-21	SK022f
TOTAL SITE AREA (m²)	1,466,103
AIBP Total Site Area	1,253,713
Additional Land Total Site Area	212,390
Constraints (m²)	SITE AREA (m²)
Outer Sydney Orbital	360,412
Western Sydney Freight (eadd. overlap)	6,089
Electrical Easement (eadd. overlap)	23,335
Enviro. Management & Basins (incl. severed land)	84,259
Luddenham Road Widening Corridor (eadd. overlap)	21,238
Road Reserves	79,755
CONSTRAINTS TOTAL	575,088
TOTAL DEVELOPABLE AREA (m²)	891,015
STAGE 1 AREA (m²) (incl. internal constraints)	414,375
LOT 1 - Aspec	
Landtake area	87,227
Total Warehouse	47,191
Total Office	900
Total Building Area	48,091
Lot FSR	0.55:1
Carparking Achieved	500
LOT 3	
Landtake area	50,784
Total Warehouse	25,934
Total Office	1,600
Total Building Area	27,534
Lot FSR	0.54:1
Carparking Achieved	275
LOT 4	
Landtake area	38,022
Total Warehouse	19,806
Total Office	1,300
Total Building Area	21,106
Lot FSR	0.56:1
Carparking Achieved	214
LOT 5	
Landtake area	69,993
Total Warehouse	39,795
Total Office	2,200
Total Building Area	41,995
Lot FSR	0.6:1
Carparking Achieved	420
LOT 6	
Landtake area	64,905
Total Warehouse	37,834
Total Office	2,200
Total Building Area	40,034
Lot FSR	0.62:1
Carparking Achieved	402
STAGE 2 AREA (m²) (incl. internal constraints)	284,749
LOT 7	
Landtake area	65,202
Total Warehouse	36,917
Total Office	2,200
Total Building Area	39,117
Lot FSR	0.6:1
Carparking Achieved	392
LOT 8	
Landtake area	65,988
Total Warehouse	37,822
Total Office	2,200
Total Building Area	40,022
Lot FSR	0.61:1
Carparking Achieved	400
LOT 9	
Landtake area	41,001
Total Warehouse	20,521
Total Office	1,100
Total Building Area	21,621
Lot FSR	0.53:1
Carparking Achieved	217
LOT 10	
Landtake area	42,726
Total Warehouse	23,744
Total Office	1,300
Total Building Area	25,044
Lot FSR	0.59:1
Carparking Achieved	251
LOT 11	
Landtake area	45,585
Total Warehouse	23,713
Total Office	1,300
Total Building Area	25,013
Lot FSR	0.55:1
Carparking Achieved	251

STAGE 3 AREA (m²) (incl. internal constraints)	373,736
LOT 12	
Landtake area	29,711
Total Warehouse	16,032
Total Office	800
Total Building Area	16,832
Lot FSR	0.57:1
Carparking Achieved	168
LOT 13	
Landtake area	32,111
Total Warehouse	16,595
Total Office	800
Total Building Area	17,395
Lot FSR	0.54:1
Carparking Achieved	174
LOT 14	
Landtake area	35,902
Total Warehouse	17,217
Total Office	1,300
Total Building Area	18,517
Lot FSR	0.52:1
Carparking Achieved	187
LOT 15	
Landtake area	35,583
Total Warehouse	16,897
Total Office	1,300
Total Building Area	18,197
Lot FSR	0.51:1
Carparking Achieved	186
ADDITIONAL LAND	
Landtake area	186,275
Total Warehouse	87,549
Total Office	5,588
Total Building Area	93,138
Lot FSR	0.5:1
Carparking Achieved	935
Total Landtake	891,015
Total Warehouse Area	467,567
Total Office Area	26,088
Total Building Area	493,656
Site FSR	0.55:1
Total Car Parking	4,972
Required Car Parking	4,937



ISSUED FOR INFORMATION



APPENDIX B

Site Map with Existing Contours

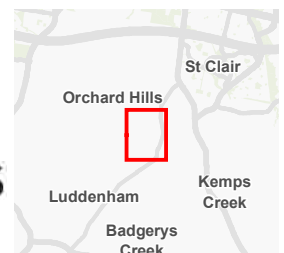


LEGEND

- Site boundary
- Cadastre
- 2m contour (LPI)

ARCADIS AUSTRALIA PACIFIC PTY LTD
 ABN 76 104 485 289
 Level 5, 141 Walker St | North Sydney NSW 2060
 P: +61 (0) 2 8907 9000 | F: +61 (0) 2 8907 9001
 Coordinate System: GDA 1994 MGA Zone 56
 Date issued: March 14, 2019

1:10,000 at A4

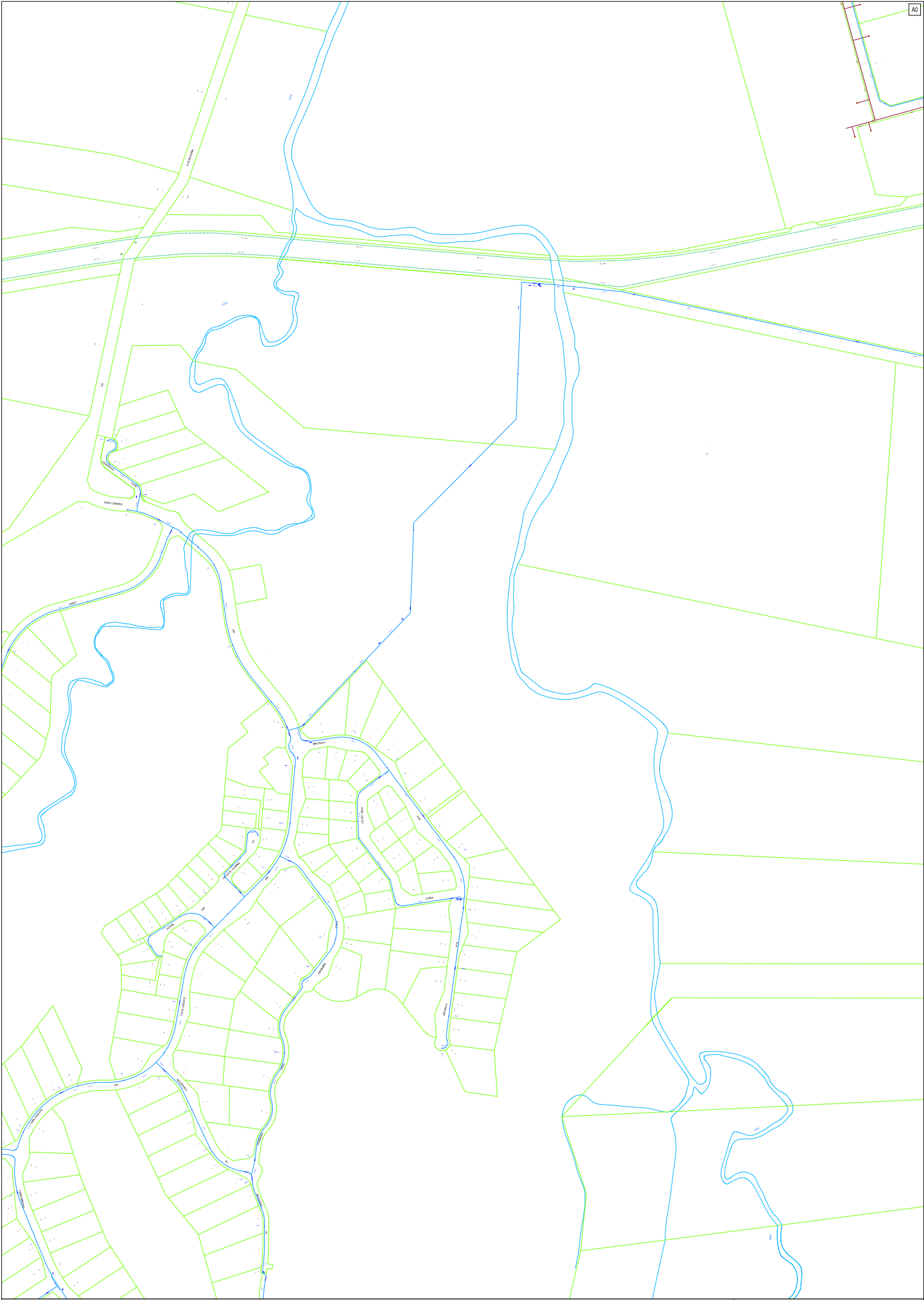


APPENDIX C

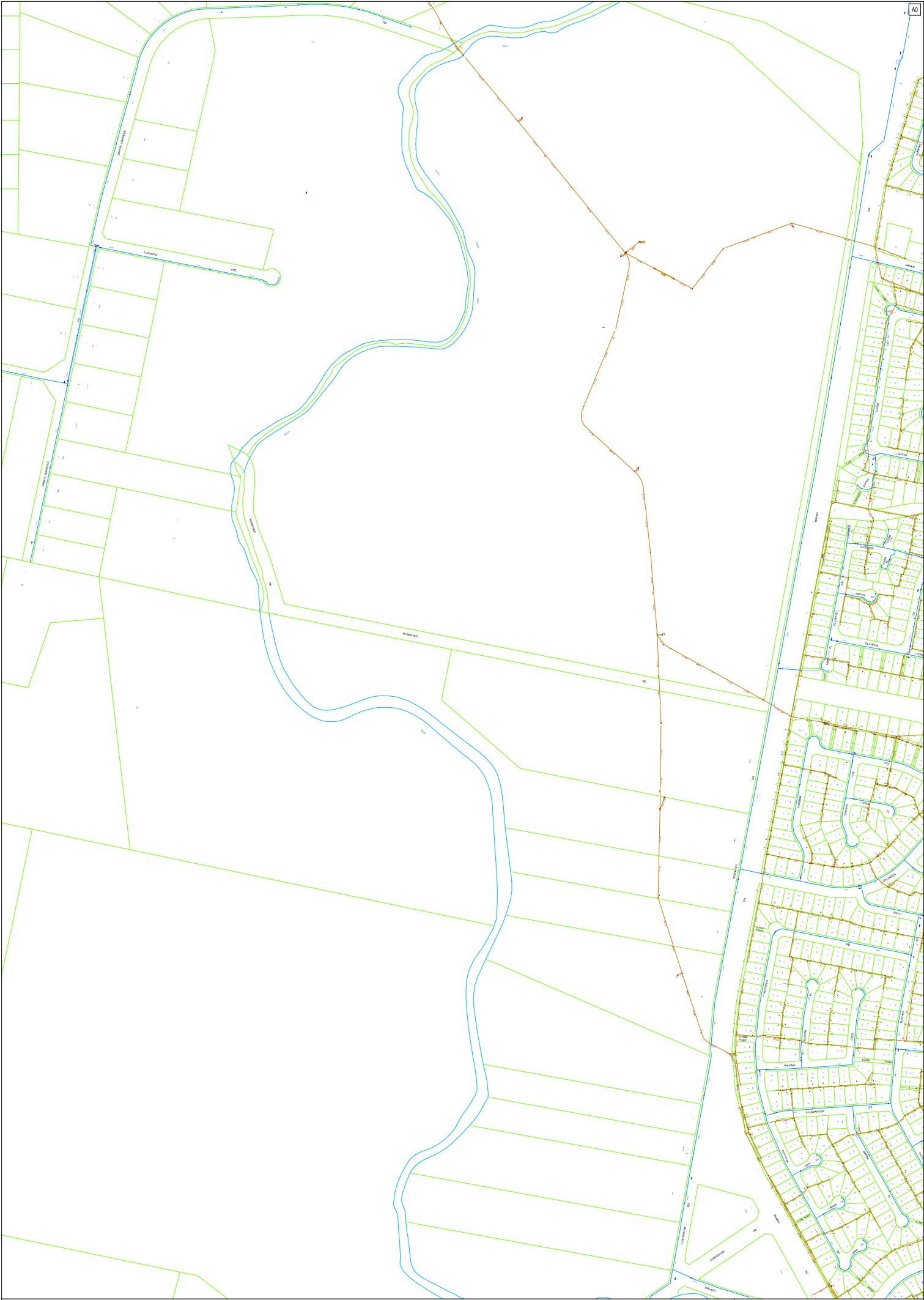
Dial Before You Dig



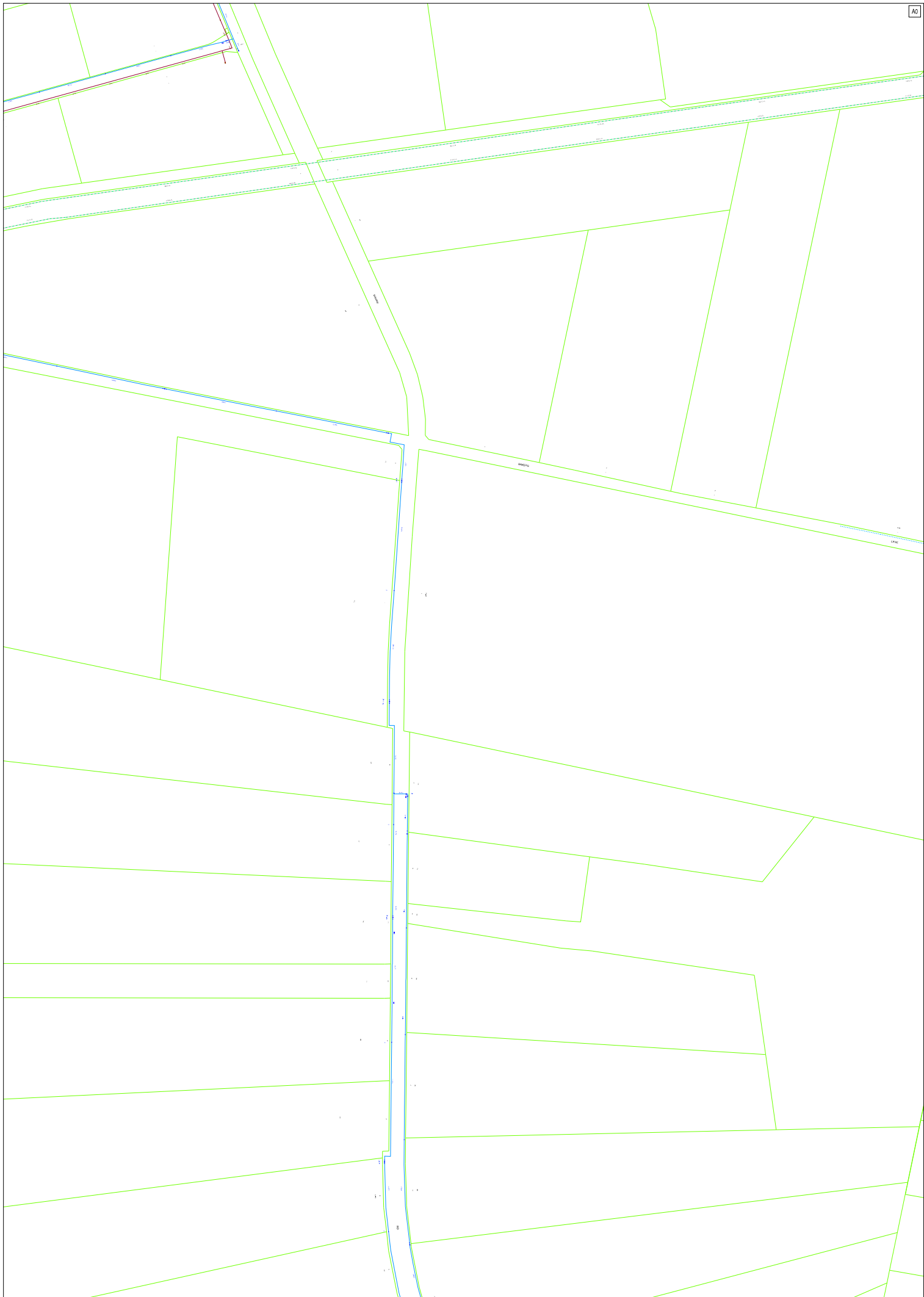


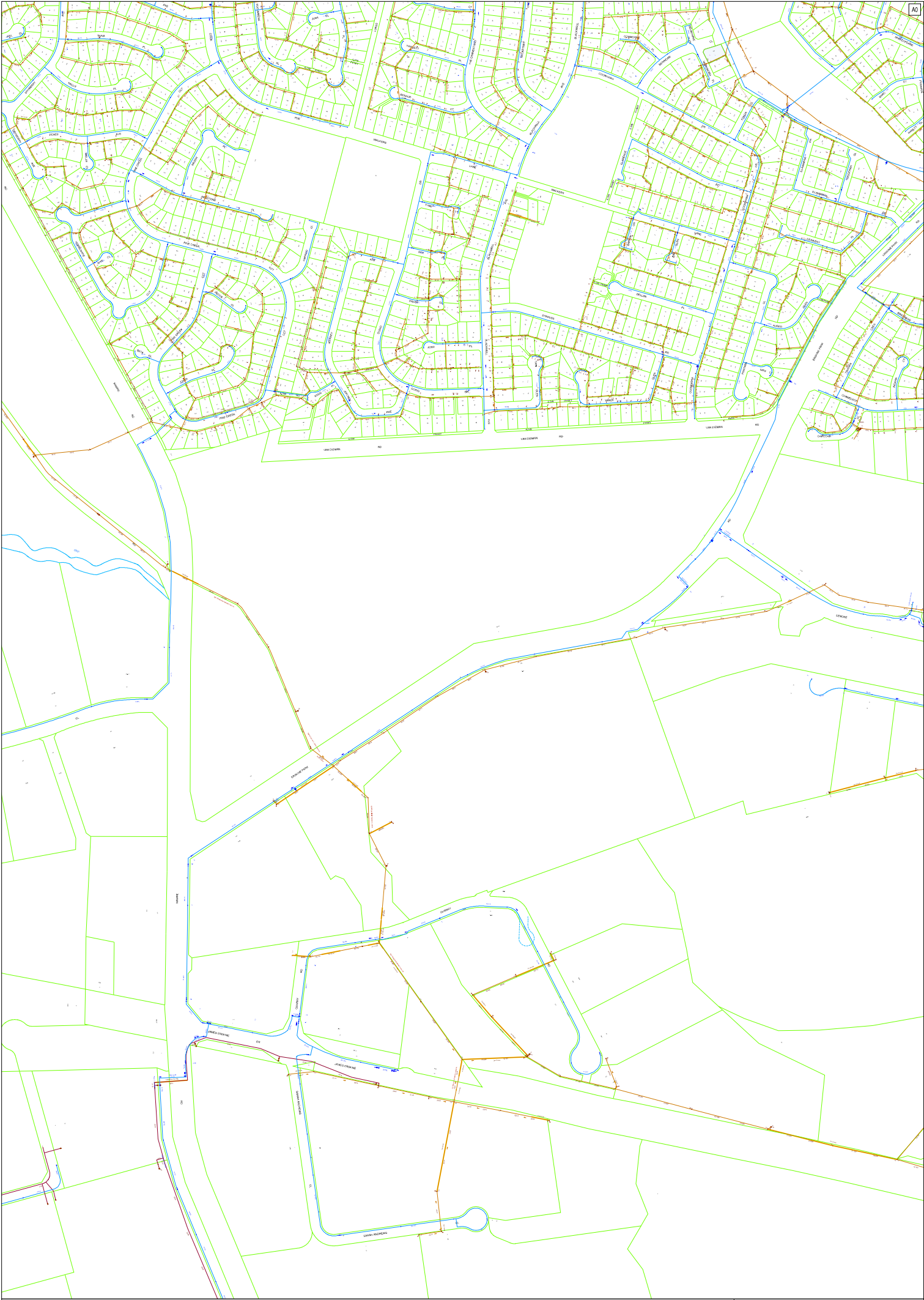


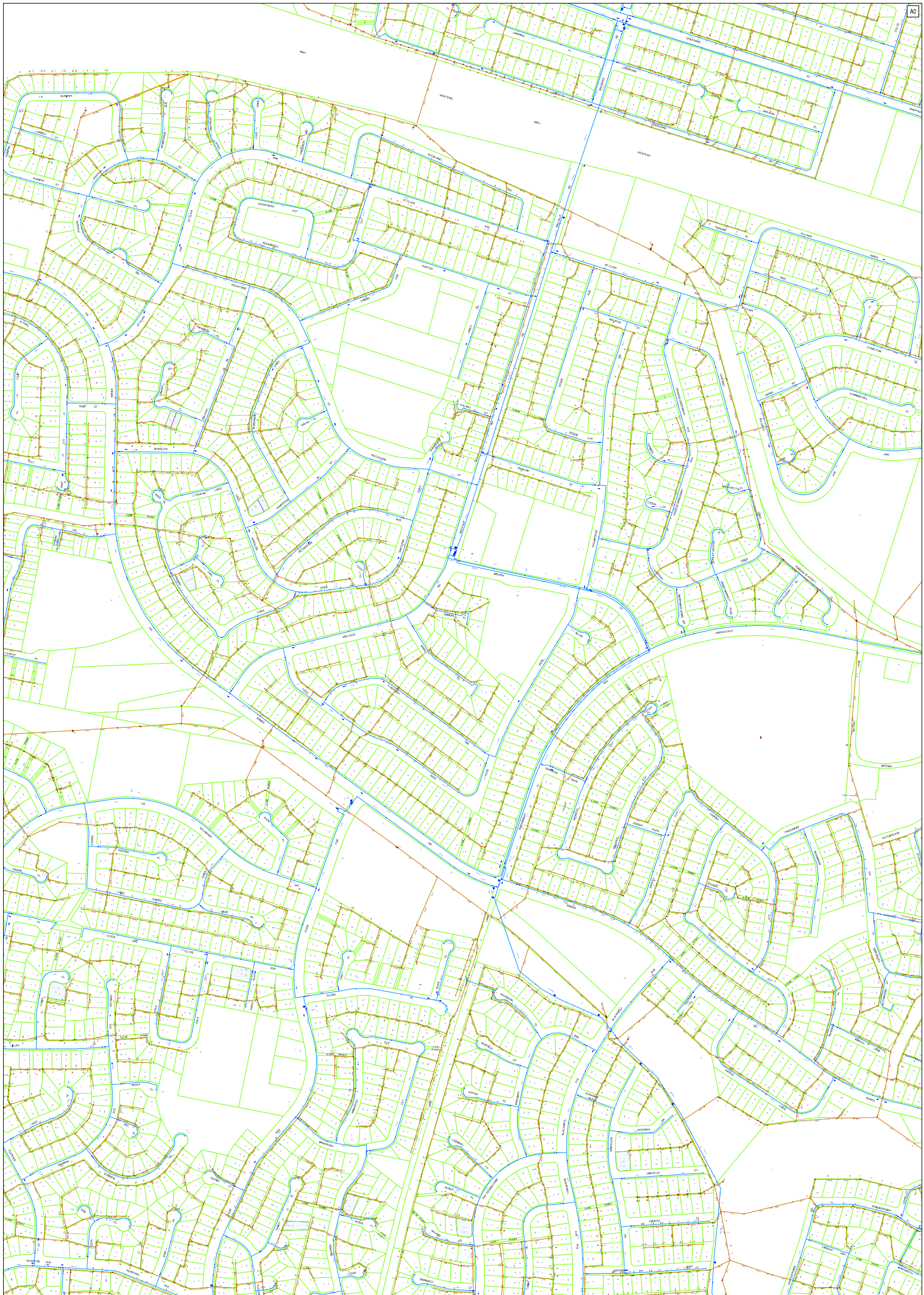
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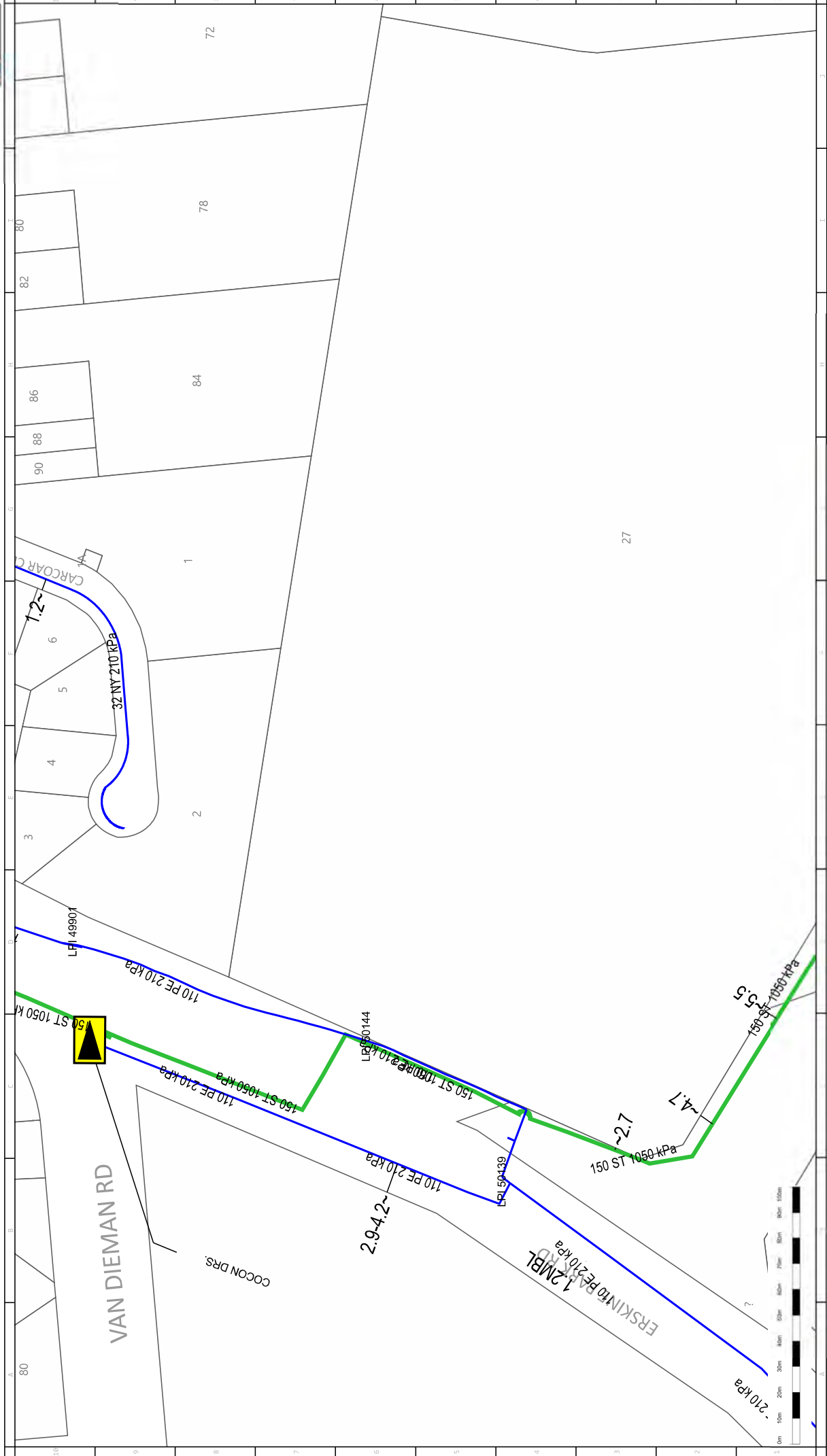



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Issue Date: 31/05/2019
DBYD Seq No: 83953369
DBYD Job No: 16384633

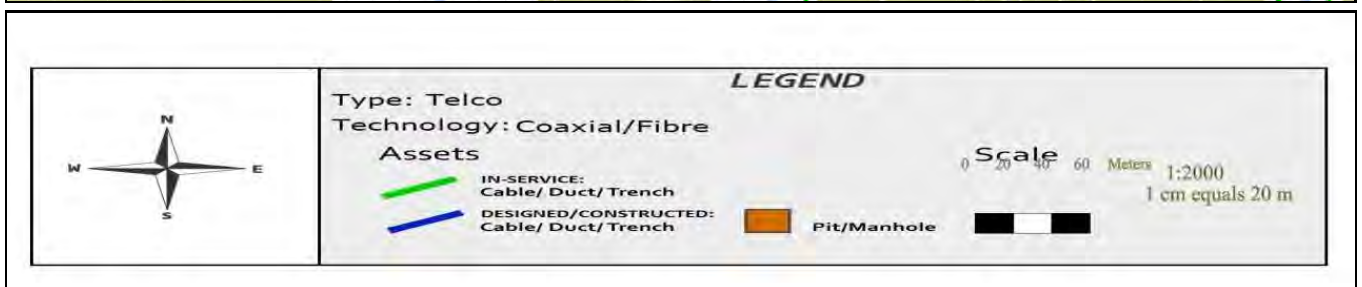
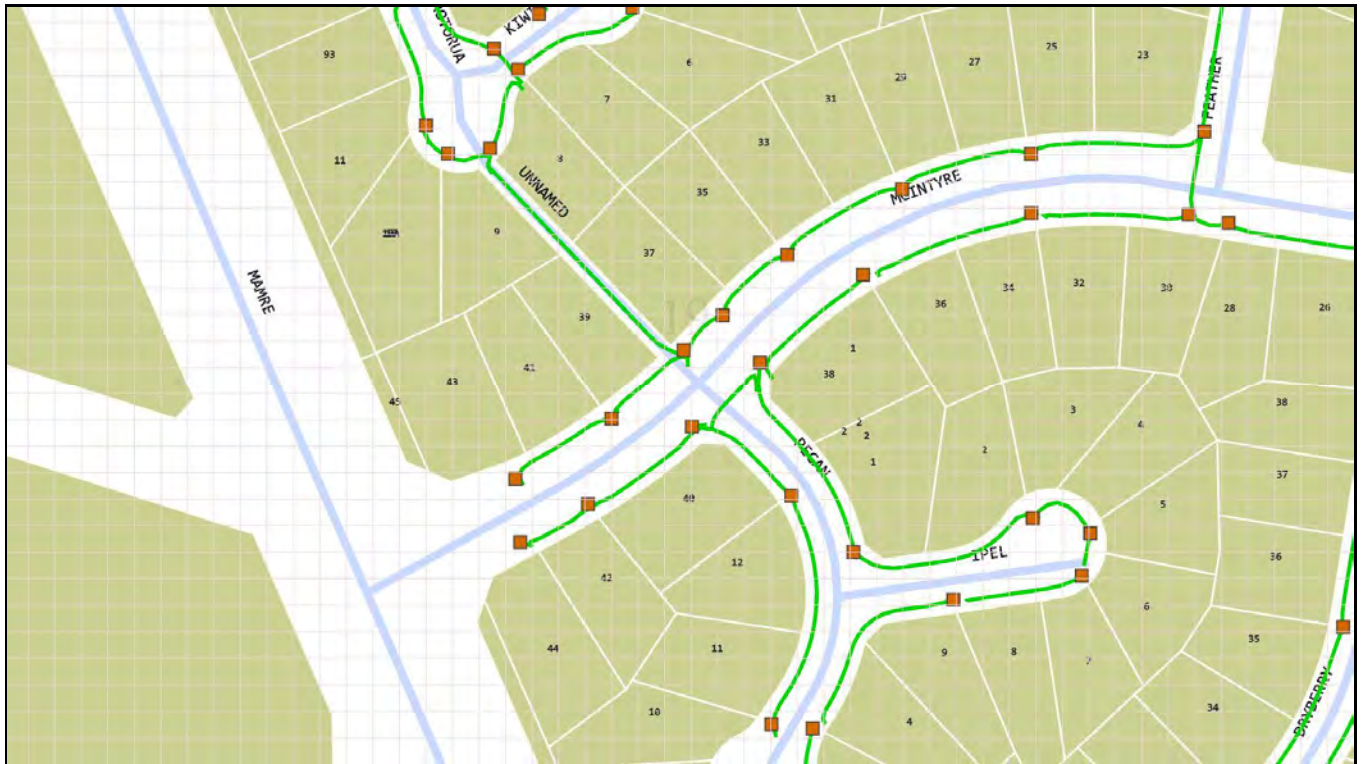
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Legend:

Main	In Service	Proposed	High Pressure Main & Pipeline	In Service	Proposed	Fittings, Valves & Regulators
Unknown Pressure	-----	-----	Secondary - 1050 kPa	-----	-----	Regulator Set
Distribution - 2 kPa	-----	-----	Secondary Service	-----	-----	Regulator Station
Distribution - 7 kPa	-----	-----	Primary - 3500 kPa	-----	-----	Automatic Line Break Valve
Distribution - 30 kPa	-----	-----	JGN Trunk - 7000 kPa	-----	-----	
Distribution - 100 kPa	-----	-----	Transmission	-----	-----	
Distribution - 210 kPa	-----	-----		-----	-----	

Distance in metres of Main from Boundary Line
MBL = Metres Backs of Kerb
NPL = Metres from Fence Line

WARNING: This is a representation of Jemena Gas Networks underground assets only and may not indicate all assets in the area. It must not be used for the purpose of exact asset location in order to undertake any type of excavation. This plan is diagrammatic only, and distances scaled from this plan may not be accurate. Please read all conditions and information on the attached information sheet. This extract is subject to those conditions. The information contained on this plan is only valid for 28 days from the date of issue.



WARNING

- All electrical apparatus shall be regarded as live until proved de-energised. Contact with live electrical apparatus will cause severe injury or death.
- In accordance with the *Electricity Supply Act 1995*, you are obliged to report any damage to Endeavour Energy Assets immediately by calling 131 003.
- The customer must obtain a new set of plans from Endeavour Energy if work has not been started or completed within twenty (20) working days of the original plan issue date.
- The customer must contact Endeavour Energy if any of the plans provided have blank pages, as some underground asset information may be incomplete.
- Endeavour Energy underground earth grids may exist and their location may not be shown on plans. Persons excavating are expected to exercise all due care, especially in the vicinity of padmount substations, pole mounted substations, pole mounted switches, transmission poles and towers.
- Endeavour Energy plans do not show any underground customer service mains or information relating to service mains within private property.
- Asbestos or asbestos-containing material may be present on or near Endeavour Energy's underground assets.
- Organo-Chloride Pesticides (OCP) may be present in some sub-transmission trenches.
- All plans must be printed and made available at the worksite where excavation is to be undertaken. Plans must be reviewed and understood by the crew on site prior to commencing excavation.

INFORMATION PROVIDED BY ENDEAVOUR ENERGY

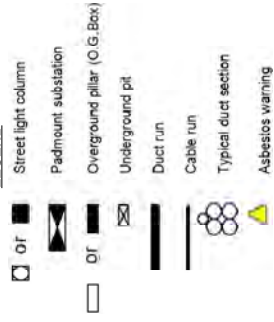
- Any plans provided pursuant to this service are intended to show the approximate location of underground assets relative to road boundaries, property fences and other structures at the time of installation.
- Depth of underground assets may vary significantly from information provided on plans as a result of changes to road, footpath or surface levels subsequent to installation.
- Such plans have been prepared solely for use by Endeavour Energy staff for design, construction and maintenance purposes.
- All enquiry details and results are kept in a register.

DISCLAIMER

Whilst Endeavour Energy has taken all reasonable steps to ensure that the information contained in the plans is as accurate as possible it will accept no liability for inaccuracies in the information shown on such plans.



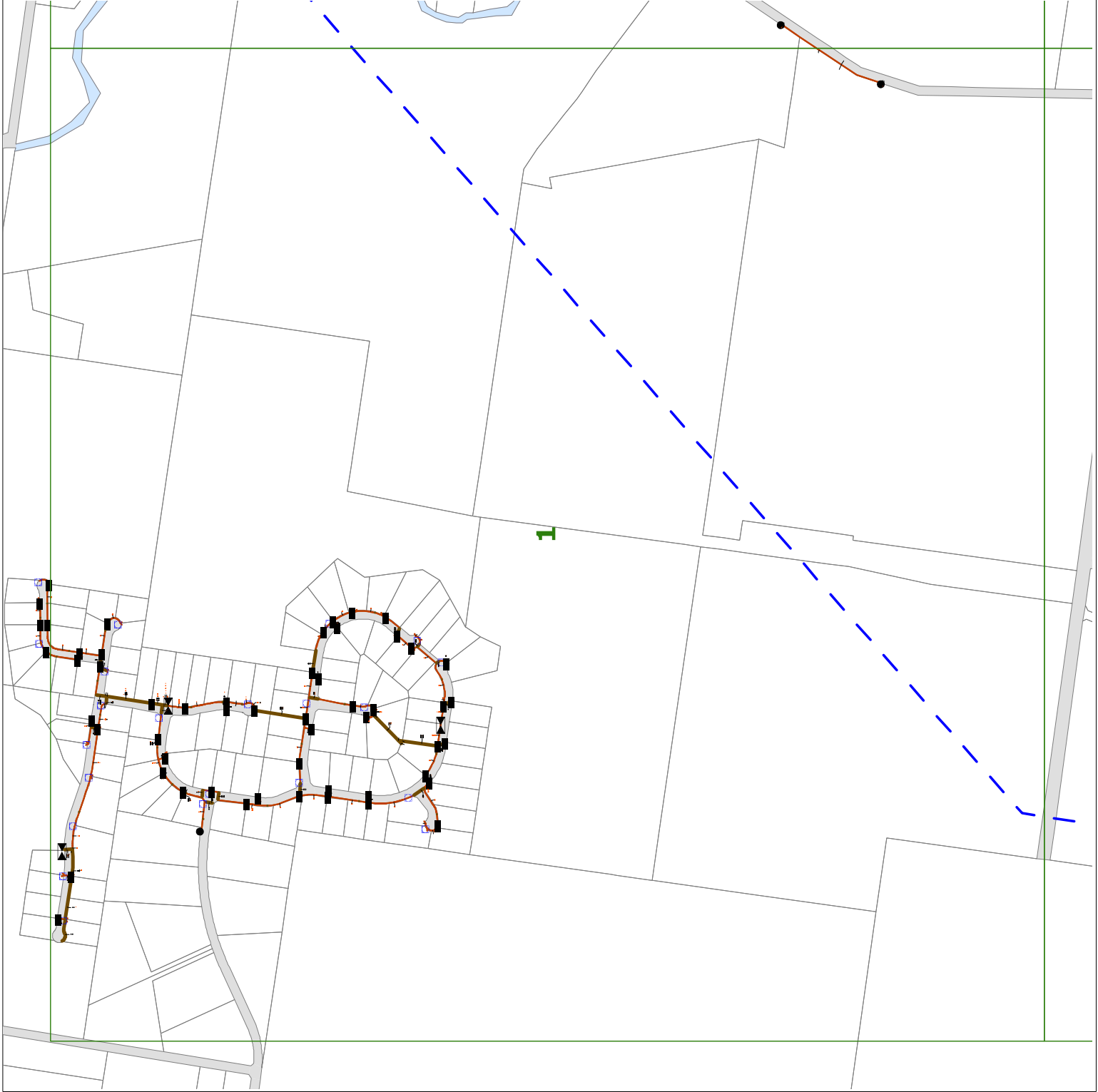
LEGEND



NOT TO SCALE

DBYD Sequence No.: 81184974

Issued Date: 14/03/2019



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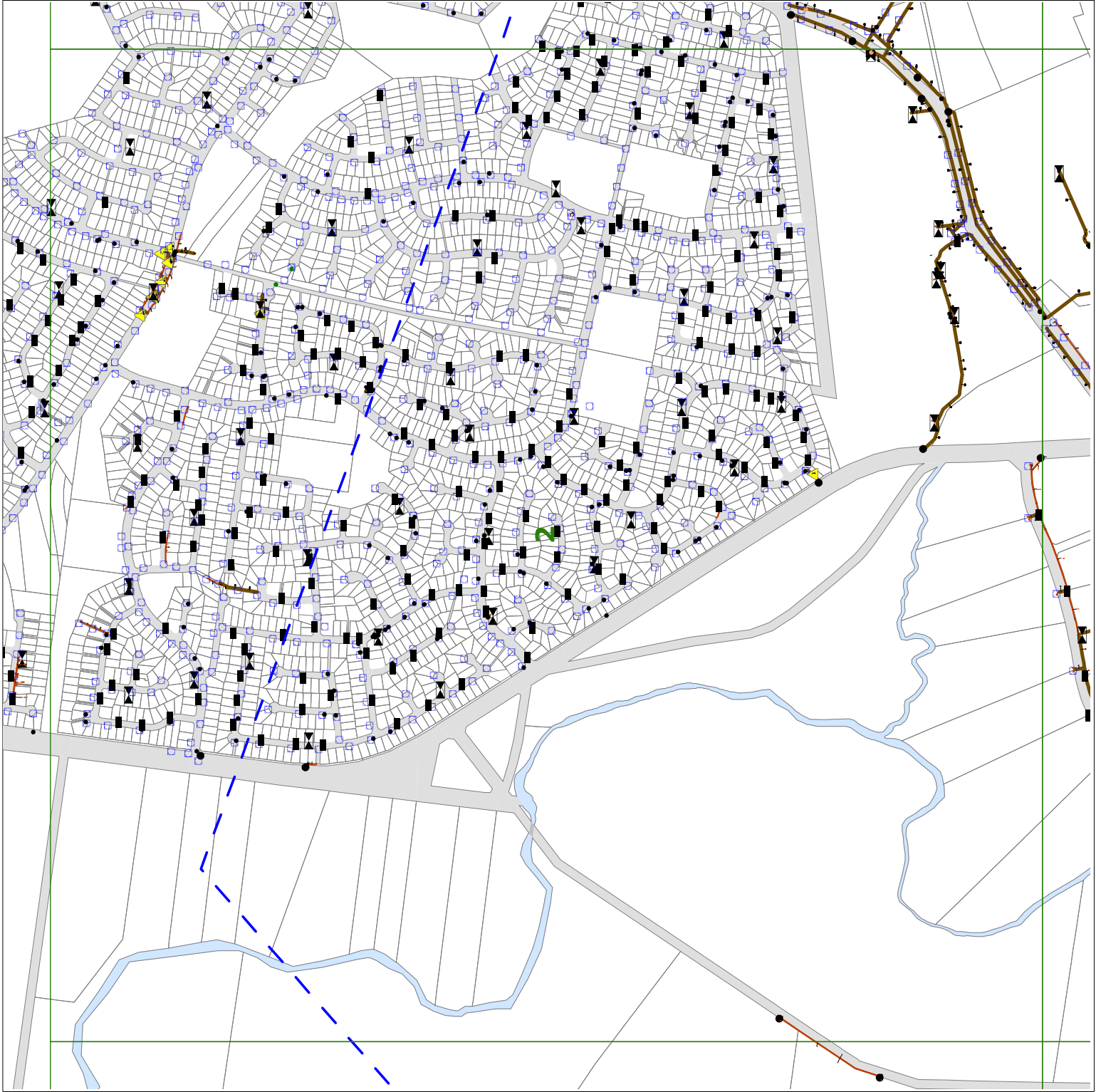
LEGEND

	or		Street light column
			Padmount substation
	or		Overground pillar (O.G.Box)
			Underground pit
			Duct run
			Cable run
			Typical duct section
			Asbestos warning



NOT TO SCALE

DBYD Sequence No.:	81184974
Issued Date:	14/03/2019



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WARNING
THIS EXCAVATION IS IN THE VICINITY OF
ENDEAVOUR ENERGY TRANSMISSION, PILOT
COMMUNICATION OR FIBRE OPTIC CABLES.
PLEASE RING 9953 7121 or ROB 1407 68 629
4 WORKING DAYS BEFORE COMMENCING WORK

LEGEND

- or ■ Street light column
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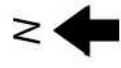
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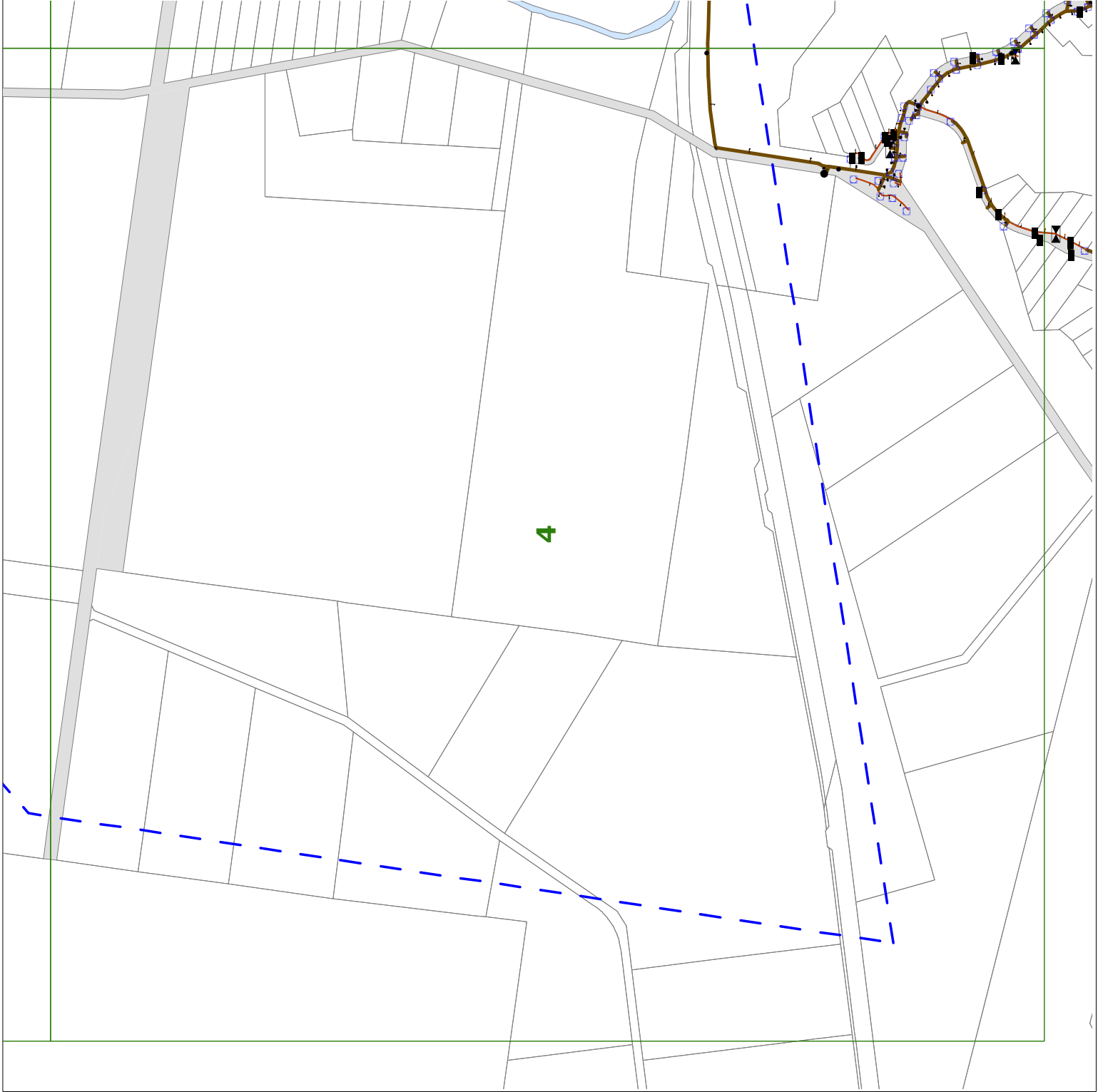
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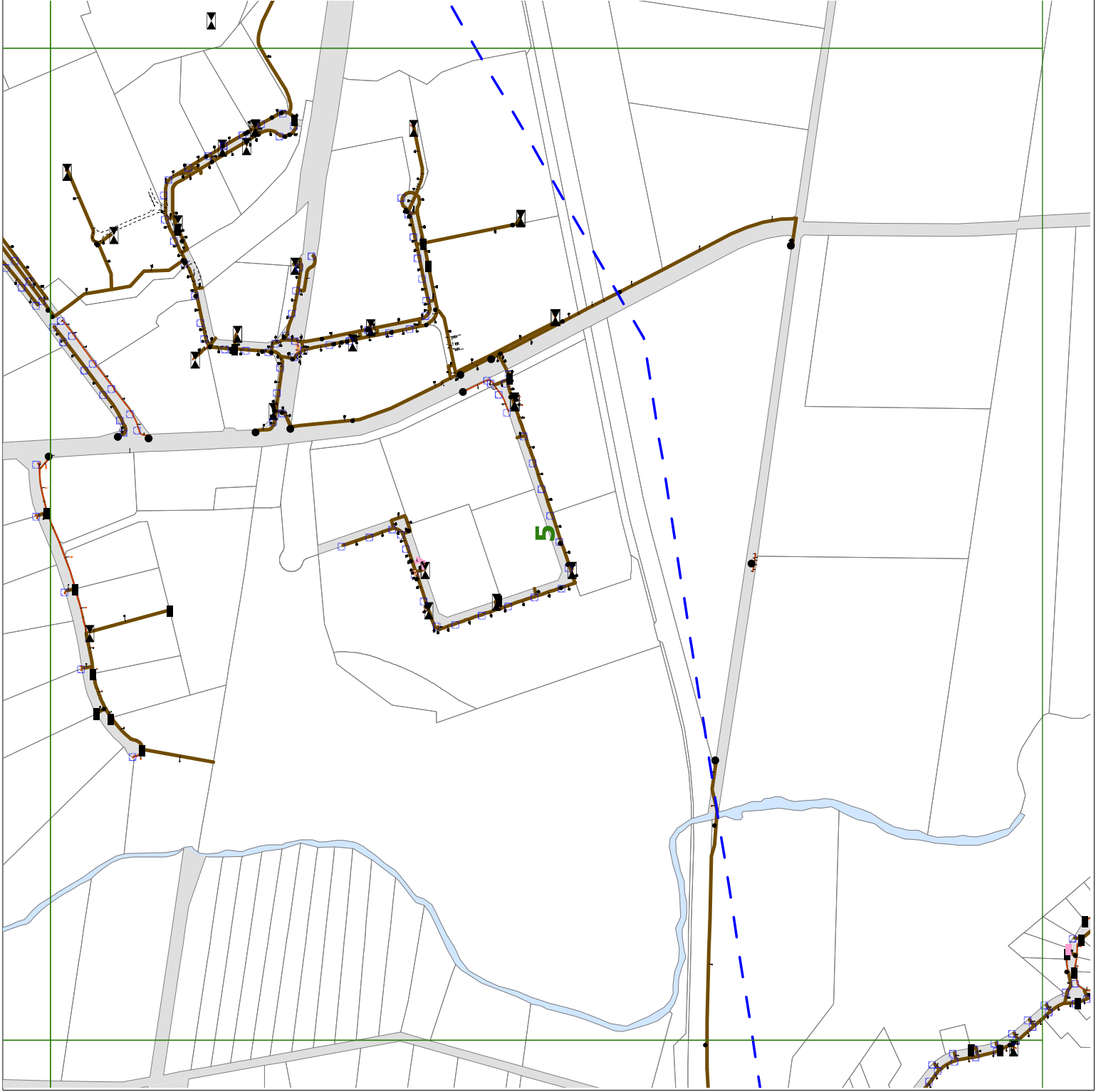
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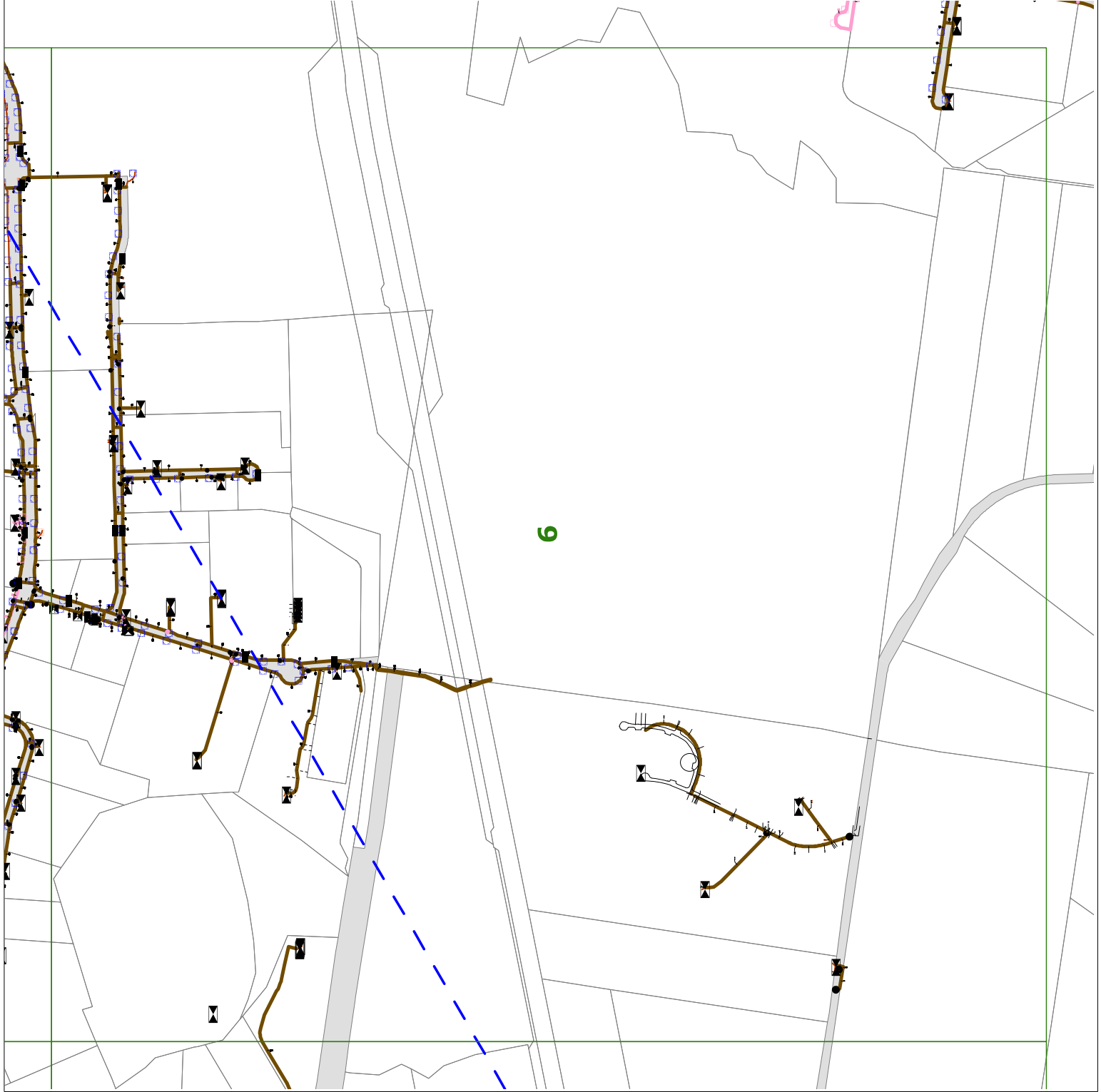
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APPENDIX D

Preliminary Water and Sewer Demand Calculations

Demand Based on EP

Demand Based on Area

Building	Area	Staff	Average Water Demand	Max Water Demand	Sewerage Discharge	Average Water Demand	Max Water Demand	Sewerage Discharge
	m ²		kL/day	kL/day	kL/day	kL/day	kL/day	kL/day
Stage 1								
Warehouse 01a	22939	46	3.7	5.9	4.7	20.9	33.4	16.70
Warehouse 01b	24252	49	3.9	6.2	5.0	22.1	35.3	17.66
Warehouse 03a	13033	26	2.1	3.3	2.7	11.9	19.0	9.49
Warehouse 03b	12910	26	2.1	3.3	2.6	11.7	18.8	9.40
Warehouse 04a	10060	20	1.6	2.6	2.1	9.2	14.6	7.32
Warehouse 04b	9746	19	1.6	2.5	2.0	8.9	14.2	7.10
Warehouse 05a	19245	38	3.1	4.9	3.9	17.5	28.0	14.01
Warehouse 05b	20550	41	3.3	5.3	4.2	18.7	29.9	14.96
Warehouse 06a	18917	38	3.0	4.8	3.9	17.2	27.5	13.77
Warehouse 06b	18917	38	3.0	4.8	3.9	17.2	27.5	13.77
Offices	8200	16	1.3	2.1	1.7	7.5	11.9	5.97
Stage 2								
Warehouse 07a	18458	37	3.0	3.0	2.4	16.8	26.9	13.44
Warehouse 07b	18459	37	3.0	3.0	2.4	16.8	26.9	13.44
Warehouse 08a	18233	36	2.9	4.7	3.7	16.6	26.5	13.27
Warehouse 08b	19589	39	3.1	5.0	4.0	17.8	28.5	14.26
Warehouse 09	20521	41	3.3	5.3	4.2	18.7	29.9	14.94
Warehouse 10a	11719	23	1.9	3.0	2.4	10.7	17.1	8.53
Warehouse 10b	12025	24	1.9	3.1	2.5	10.9	17.5	8.75
Warehouse 11a	11007	22	1.8	2.8	2.3	10.0	16.0	8.01
Warehouse 11b	12706	25	2.0	3.3	2.6	11.6	18.5	9.25
Offices	8100	16	1.3	2.1	1.7	7.4	11.8	5.90
Stage 3								
Warehouse 12	16032	32	2.6	4.1	3.3	14.6	23.3	11.67
Warehouse 13	16595	33	2.7	4.2	3.4	15.1	24.2	12.08
Warehouse 14a	9159	18	1.5	2.3	1.9	8.3	13.3	6.67
Warehouse 14b	8058	16	1.3	2.1	1.7	7.3	11.7	5.87
Warehouse 15a	8260	17	1.3	2.1	1.7	7.5	12.0	6.01
Warehouse 15b	8637	17	1.4	2.2	1.8	7.9	12.6	6.29
Offices	4200	8	0.7	1.1	0.9	3.8	6.1	3.06
Sub-Total	400,527	801	64.1	99.0	79.2	364.5	583.2	291.58
Additional Lands								
Warehouse	87549	175	14.0	22.4	17.9	79.7	127.5	63.74
Office	5588	11	0.9	1.4	1.1	5.1	8.1	4.07
Sub-Total	93,137	186	14.9	23.8	19.1	84.8	135.6	67.80
Grand Total	493,664	987	79.0	122.8	98.3	449.2	718.8	359.39

Notes:

- 1 Based on an allowance of 1 person per 500m² of area
- 2 Ave demand water assumed 80 l/day/person
- 3 Maximum flow= average demand/ 3 shifts/ 1 peak hr per shift/3600
- 4 Assumptions taken from WSA 03-2011 Water Supply Code of Australia Version 3.1
- 5 Average daily demand sewer= 80% Ave demand water
- 6 0.91 kL/day Average water demand based on area
- 7 FSR for Lots 1-24 = 0.5
- 9 FSR for IN1 South and IN2 East = 0.5

APPENDIX E

Sydney Water Advice Letter and Meeting Minutes

26/09/2019

Mai Lam
Arcadis Group
Level 16, 580 George Street, Sydney
NSW 2000

Dear Mai,

Re: HB &B development proposal, 221-227 and 289-317 Luddenham Road, Orchard Hills. Lot 1, DP 1099147, Lot 242, DP1088991

Thank you for meeting with Sydney Water on the 28th of August to discuss the future servicing demands for the proposed industrial and warehousing development at Luddenham Road with associated creation of 1,052 jobs. We understand that the development will be delivered in 3 stages.

Sydney Water's 2019 Growth Servicing Plan, which details our five-year planning forecast, does not currently include for the Greater Penrith to Eastern Creek (GPEC) area. However, Sydney Water supports the Governments' growth objectives for GPEC and is liaising directly with the Department of Planning and local government to fully understand the zoning, timescales and ultimate yields for the area, in which the above proposed development sits.

Sydney Water is currently carrying out high-level Strategic (pathways) Planning for the GPEC area. We are investigating how this sits within the vision for the wider Western Sydney Parkland City and; assessing the impact of the servicing demand to understand where water services could be brought from, where wastewater could be directed to and whether recycled water provision is indicated for this area. We expect to have the strategic planning assessment completed by late 2019/early 2020. Your proposed development will be included within our growth data set.

Sydney Water advises that the final dwelling yield and employment numbers for GPEC have not been confirmed and we understand from the DPIE that there may be further changes to ultimate yields and timescales. Cognisance also needs to be taken of proposed transport and utility infrastructure planned for within the area, when this will be finalised and the impact this may have, not only on ultimate density and timescales, but also on the ultimate and interim sizing of our water and wastewater assets as well as assessing suitable locations for installing these assets.

Sydney Water has adopted an adaptive planning approach to enable us to start assessing infrastructure requirements whilst waiting for finalised or updated dwelling and employment data.

Upon completion of our strategic pathways planning, Sydney Water will assess when to commence options planning based on; the transport data available, DPIE's most recent planning status and advice, and any additional developer intelligence that we have for the area.

Sydney Water is committed to ensuring that HB and B are kept up to date on our planning status and outcomes from our reviews, and Sydney Water would welcome the opportunity to collaborate with HB and B in assessing feasible acceleration opportunities around future planning activities and delivery of services to the site, should this be required. We recommend a follow-up meeting be arranged upon completion of the strategic servicing planning and we would also ask that, should your proposed developments' land use activity, ultimate employment numbers or staging details change that you advise us of this as soon as possible.

I hope this meets with your understanding, if you have any queries, please do not hesitate to contact me directly on: kristine.leitch@sydneywater.com.au or 8849 4900.

Yours sincerely



Kristine Leitch
Western Sydney Account Manager
City Growth and Development

CC: Danny Kataieh, HB&B property

Issue date 7/08/2020
Issue to Sydney Water Corporation
Issued by Arcadis
Subject 221 Luddenham, Orchard Hills – Sewer & Water Servicing Strategy
Reference A0003-30051519
Client HBB Property
Meeting date 6/08/2020
Time 1pm-2pm
Location On-Line Meeting – Teams
Present Greg Ives (GI) – Arcadis
Alex Black (AB) – Arcadis
Michael Carey (MC) – Arcadis
Mai Lam (ML) – Arcadis
Kathy Hansen (KH) – Sydney Water
Eldwin Gunawan (EG) – Sydney Water
Danny Kataieh (DK) - HBB

ITEM	COMMENTS	ACTION
1	Introduction of the site from Greg Ives. Discussion of purpose of meeting. <ul style="list-style-type: none">Looking to re-engage with SWC after prior meeting last year.Looking to re-introduce development and give updates.Looking for “no objections in principle” from SWC for proposed development.	GI
2	Discussion of development & current progress. <ul style="list-style-type: none">Looking to rezone land from RU2 to IN1 for industrial / employment usesSite to be developed in x3 stagesNorthern portion of site (Alspeg) is to be stage 1 and to be completed circa end of 2023Stage 2 to be completed 2024, stage 3 to be completed by 2026	DK
3	GPEC sewer water updates. <ul style="list-style-type: none">There is recycled water networks being made available to the north of the site at Orchard Hills North. Recycled water is to be used for irrigation purposes.DPIE and Penrith Council are still currently working on legislation for recycled water use.SWC indicated a preference for some recycled water use at the site and would like to see a % of recycled water used as a best estimate. ‘	EG KH

-
- Future potential recycled water could come from Penrith WTP via a trunk main but SWC are still investigating.
 - There is a wastewater treatment strategy in the works to take local sewer from the development to Penrith WTP. SWC may support an interim sewer solution for the site.
 - There is a draft servicing strategy from SWC but there are no servicing options. Final report will be ready in next 2 months for servicing strategy.
 - SWC indicated it would require an option study carried out for this development.
 - As part of the GPEC development, SWC was supportive of this development. If developer is keen then HBB can forward fund the application.
 - HBB to forward servicing strategy for forward funding
-

4 Next Steps

GI

- Arcadis to write a report demonstrating that we have engaged and are consulting with SWC with regards to the development, report will discuss that SWC have no objections to the development and SWC will be willing to work with developer in discussing interim solutions.
 - Arcadis to discuss that the development is staged and will not require as large initial servicing capacity
 - Report needs to clarify that we have some options for site servicing, and it is subject to further detail
 - Send our report to SWC for review and comment (if no response received within the week then assume no objections and will proceed)
 - Re-apply for feasibility application with SWC
-

5 Additional Notes:

- Kathy Hansen at SWC will investigate the steps involved for options assessment and will respond.
 - SWC are considering using recycled water in the area and the development has no objections to use of recycled water for use of irrigation on the property.
 - Arcadis to DRAFT up sewer & water sections of servicing report and to send to Kathy and Eldwin for their comment.
 - Original feasibility application for the development has lapsed as these lapse a year after acceptance.
-

25 June 2021

Mr Alex Black,
Project Manager, Urban development and regeneration
Arcadis
Level 16, 580 George St
Sydney NSW 2000

Dear Alex

**RE: development at 221-227 & 290-317 Luddenham Rd Orchard Hills
Lot 1 DP 1099147, Lot 242 DP 1088991**

I refer to the proposed industrial and warehouse development at the above mentioned site.

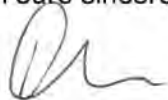
This site is within the Orchard Hills South growth area considered in Sydney Water's Greater Penrith to Eastern Creek (GPEC) subregional plan. This development can be serviced, subject to detailed planning options to resolve the best outcome for the precinct. The detailed planning options work is proposed to be undertaken by the developer at their own cost.

As per the GPEC subregional plan, the high level strategy for this area is as follows:

Drinking water: to be provided from Bringelly Rd Reservoir

Wastewater: discharge to Penrith Treatment Plant.

Yours sincerely



Kathy Hansen
Account Manager – West
Development Services
City Growth and Development
Business Development
Sydney Water
Email: kathy.hansen@sydneywater.com.au

APPENDIX F

Endeavour Energy Mapping and Supply Offers

UIS0907 Luddenham
Rd, Orchard Hills

Upgrade HV switchgear in PM 7138 to
3 HV feeder unit. Extend feeder
MM1392.

Lay 240mm² 3c 11kV Al XLPE cable
along the shown route. Install 4 x
125mm ducts in new trench.

Lay 240mm² 3c 11kV Al XLPE cables
along the shown route. Install 6 x
125mm ducts.

UGOH connect 240mm² 3c 11kV Al
XLPE to OH portion of feeder MM1112.

Install 6 x 125mm ducts.

Lay 240mm² 3c 11kV Al XLPE cable
along the shown route. Install 6 x
125mm ducts.

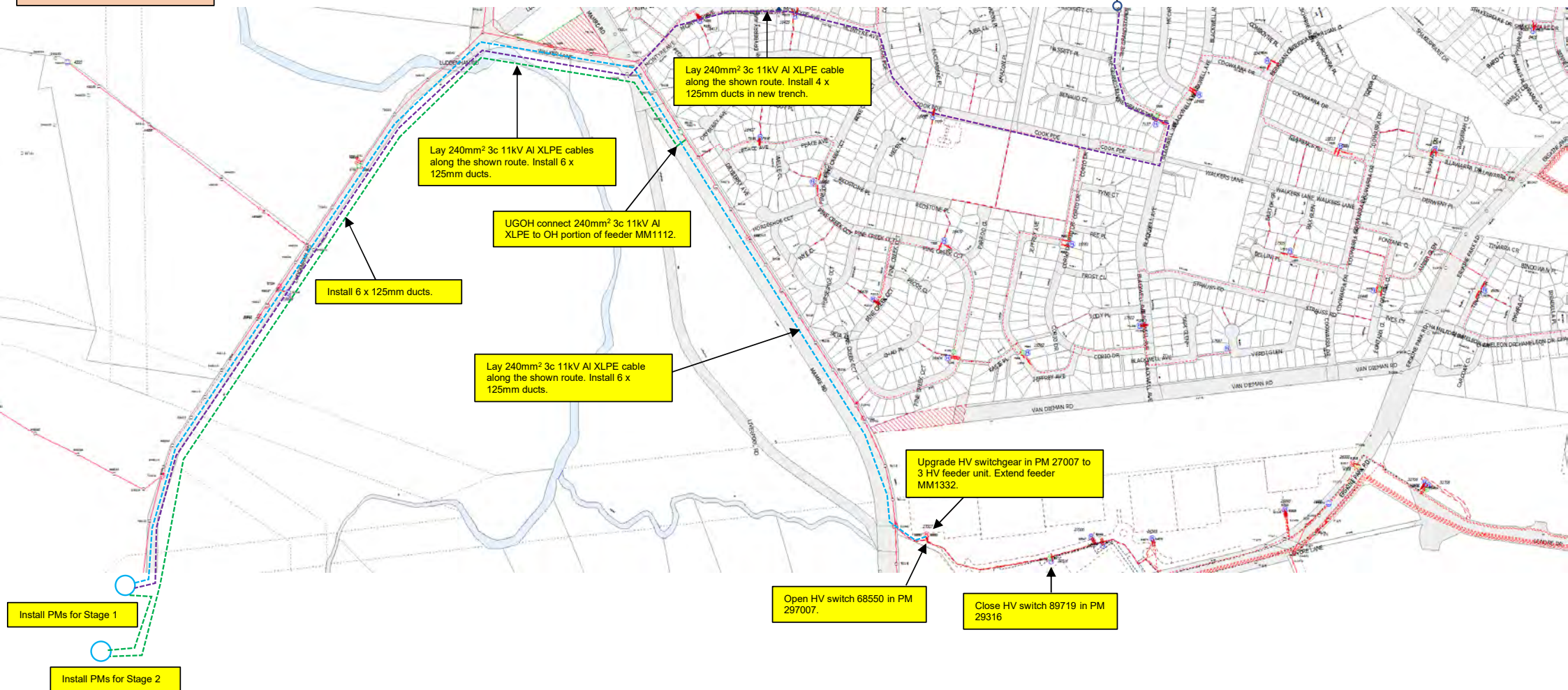
Upgrade HV switchgear in PM 27007 to
3 HV feeder unit. Extend feeder
MM1332.

Open HV switch 68550 in PM
297007.

Close HV switch 89719 in PM
29316

Install PMs for Stage 1

Install PMs for Stage 2

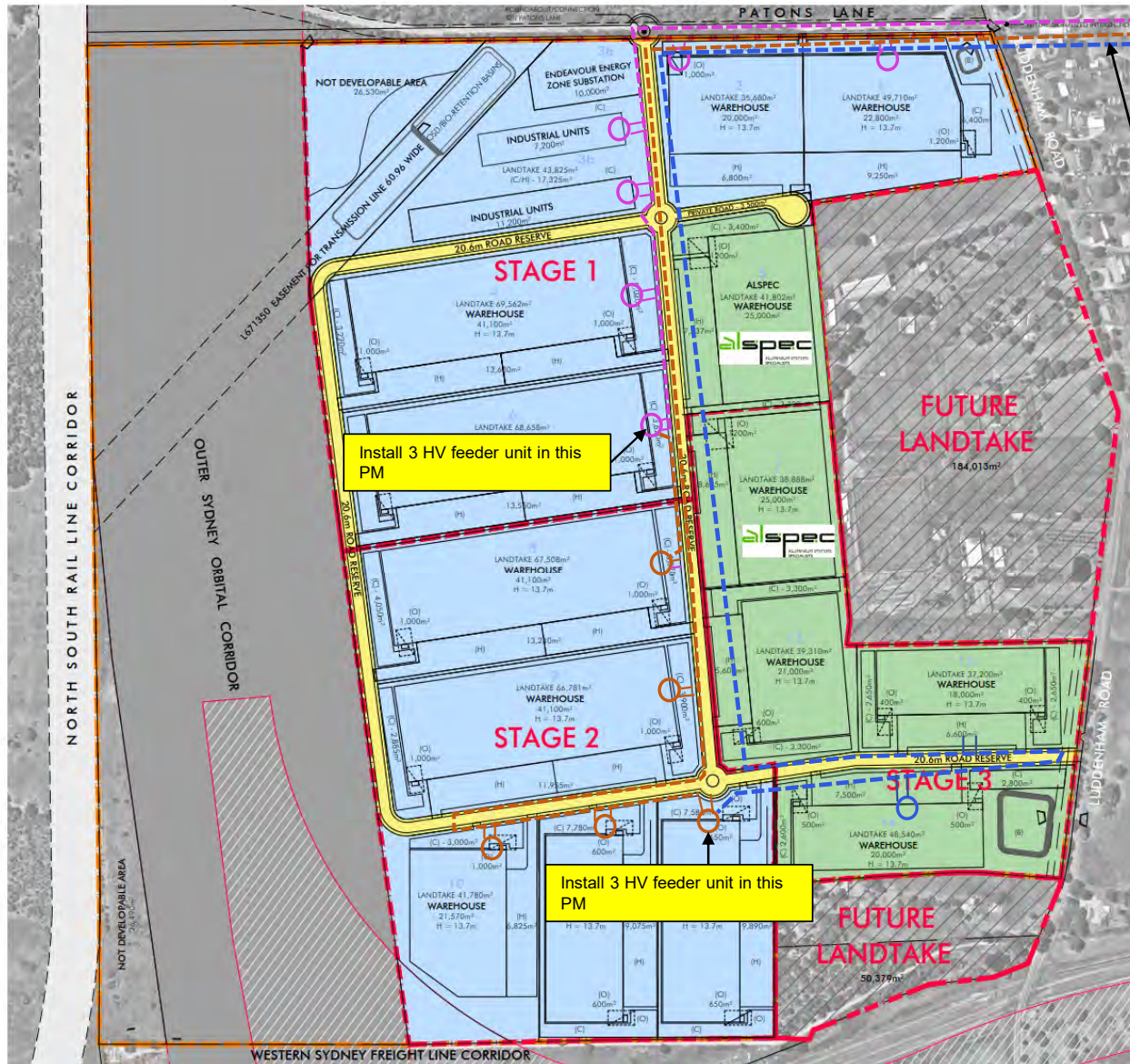


DEVELOPMENT SUMMARY	
SITE AREA 1	739,974m ²
SITE AREA 2	513,462m ²
TOTAL SITE	1,253,436m²
RMS ORBITAL	360,362m ²
NOT DEVELOPABLE (EXCL. BASINMENTS)	53,020m ²
WESTERN SYDNEY FREIGHT	6,056m ²
ELECTRICAL EASEMENT	23,329m ²
ENDEAVOUR ENERGY ZONE	
SUBSTATION	10,000m ²
ROAD RESERVE	64,030m ²
TOTAL DEDUCTIONS	516,797 m²
TOTAL DEVELOPMENT AREA	736,639m²
TOTAL VENDOR LANDTAKE	205,740m ²
TOTAL HB + B LANDTAKE	530,899m ²
TOTAL WAREHOUSE GLA	385,770m²
TOTAL OFFICE GLA	19,400m²
TOTAL INDUSTRIAL UNITS	18,400m²
TOTAL BUILDING AREA	423,570m²
TOTAL DEVELOPABLE F.S.R.	0.57:1

STAGE 1	
SITE AREA	690,903m ²
WAREHOUSE (3 BUILDINGS)	150,000m ²
INDUSTRIAL UNITS (2 BUILDINGS)	18,400m ²
OFFICE (2 STOREY) (7 OFFICES)	7,400m ²
OFFICE - INDUSTRIAL UNITS	900m ²
TOTAL BUILDING AREA	176,700m²
HEAVY DUTY AREA (TRUCKS)	50,767m ²
LIGHT DUTY AREA (CARS)	38,700m ²
INDUSTRIAL UNITS (SHARED CAR/TRUCK ZONE)	17,323m ²
CAR PARKING REQUIRED	990 SPACES
CAR PARKING PROVIDED	
ROAD RESERVE 20.6m WIDE	31,807m ²
SITE COVERAGE (EXCLUDING WAREHOUSE PARKING AREAS)	193,300m ² (46.6%)

STAGE 2	
SITE AREA	294,416m ²
WAREHOUSE (5 BUILDINGS)	151,770m ²
OFFICE (2 STOREY) (9 OFFICES)	7,500m ²
TOTAL BUILDING AREA	159,270m²
HEAVY DUTY AREA (TRUCKS)	50,985m ²
LIGHT DUTY AREA (CARS)	32,570m ²
CAR PARKING REQUIRED	684 SPACES
CAR PARKING PROVIDED	
ROAD RESERVE 20.6m WIDE	24,241m ²
SITE COVERAGE (EXCLUDING WAREHOUSE PARKING AREAS)	138,350m ² (53.0%)

STAGE 3	
SITE AREA	172,244m ²
WAREHOUSE (4 BUILDINGS)	84,000m ²
OFFICE (2 STOREY) (4 OFFICES)	3,400m ²
TOTAL BUILDING AREA	87,400m²
HEAVY DUTY AREA (TRUCKS)	38,323m ²
LIGHT DUTY AREA (CARS)	19,246m ²
CAR PARKING REQUIRED	368 SPACES
CAR PARKING PROVIDED	
ROAD RESERVE 20.6m WIDE	7,719m ²
SITE COVERAGE (EXCLUDING WAREHOUSE PARKING AREAS)	64,730m ² (46.42%)



Lay extended feeders MM1392 and MM1332 along subdivision roads as shown; subs will be connected by cutting in and out of the cables along the roads.

Lay extended feeder MM1112 to supply Stage 2 and part Stage 3 as shown; subs will be connected by cutting in and out of the cables along the roads.

Assumed location of the subs required to supply Stage 1, Stage 2 and part Stage 3

DRAFT



221-227 & 289-317 Luddenham Road
Orchard Hills - NSW
Lot 1 in DP 1099147 & Lot 242 in DP 1088991

Luddenham Road
master plan - ground
SCALE 1:5000(A3)
DATE APRIL 2020 SKETCH NUMBER 11178 SK017(P2)



APPENDIX G

Preliminary Electrical Demand Calculations

Load Assumptions		
3 Phase Amps	5	Per Apartment
VA/m ²	Refer Table	Retail
VA/m ²	120	Commercial
VA/m ²	120	Community
VA/m ²	5	Carpark

Retail Special Conditions				
Food and Bev.	Grocer	Show Room	Special Retail	
500	300	40	200	VA/m ²

Building	Area m ²	Staff	Electrical Loading kVA
Stage 1			
Warehouse 01a	22939	46	918
Warehouse 01b	24252	49	970
Warehouse 03a	13033	26	521
Warehouse 03b	12901	26	516
Warehouse 04a	10060	20	402
Warehouse 04b	9746	19	390
Warehouse 05a	19245	38	770
Warehouse 05b	20550	41	822
Warehouse 06a	18917	38	757
Warehouse 06b	18917	38	757
Offices	8200	16	328
Stage 2			
Warehouse 07a	18458	37	738
Warehouse 07b	18459	37	738
Warehouse 08a	18233	36	729
Warehouse 08b	19589	39	784
Warehouse 09	20521	41	821
Warehouse 10a	11719	23	469
Warehouse 10b	12025	24	481
Warehouse 11a	11007	22	440
Warehouse 11b	12706	25	508
Offices	8100	16	324
Stage 3			
Warehouse 12	16032	32	641
Warehouse 13	16595	33	664
Warehouse 14a	9159	18	366
Warehouse 14b	8058	16	322
Warehouse 15a	8260	17	330
Warehouse 15b	8637	17	345
Offices	4200	8	168
Additional Land			
Warehouse	87549	175	3502
Offices	5588	11	224
Total	493895	987	19746

