

Servicing For Urban Development

Lot 8, DP 816552

5 Anderson Road, Glenning Valley



Suite 3, Unit 5 Edward Street
PO Box 627, CESSNOCK NSW 2325
P (02) 4991 7171
F (02) 4991 7272
E admin@acmlandmark.com.au
www.acmlandmark.com.au

CONTENTS

1.0	INTRODUCTION	1
2.0	THE SITE	1
3.0	PROPOSAL	1
4.0	SERVICING	1
4.1	ROADS	1
4.2	TRAFFIC	2
5.0	STORMWATER AND DRAINAGE	4
6.0	POWER	4
7.0	WATER RETICULATION	4
8.0	SEWER	5
9.0	NATURAL GAS	6
10.0	TELECOMMUNICATIONS	6
11.0	EXISTING SERVICES INFORMATION	6
12.0	MINE SUBSIDENCE	6
13.0	CONCLUSION	6

LIST OF FIGURES

1. SITE LOCATION PLAN

APPENDICES

- A. CONCEPT SUBDIVISION LAYOUT
- B. CONCEPT LONGITUDINAL SECTIONS
- C. CONCEPT POWER SUPPLY PLAN
- D. EXISTING WATER RETICULATION
- E. WATER SUPPLY PLAN
- F. EXISTING SEWER RETICULATION
- G. PROPOSED SEWER ROUTE
- H. INTERNAL SEWER RETICULATION CONCEPT PLAN
- I. JEMENA PTY LTD CORRESPONDENCE

1.0 INTRODUCTION

ACM Landmark have been engaged to assess servicing of the subject site to permit future residential development. A concept subdivision pattern has been prepared which represents a possible urban outcome for the land.

2.0 THE SITE



Figure.1 – Site Location
Extract from Google Maps

The land is located on the eastern side of Anderson Road approximately 30m south of the intersection of Anderson Road and Hillside Drive. The land is known as Lot 8 DP 816552 No.5 Anderson Road and has an area of 1.911ha. The site also has frontage on its south to Gordon Vaughan Road.

The land comprises gentle slopes at generally the top of the catchment rising from RL 22m AHD in the south west corner at Anderson Road, to RL 42m AHD at the north east corner. There are no structural improvements on the land other than rural fences around the east, south, and west boundaries and urban fencing abutting urban lots along the northern boundary. The site is mown grass with some remnant vegetation along the Anderson Road and Gordon Vaughan Road frontages. The site location can be seen in Figure 1.

3.0 PROPOSAL

It is proposed to rezone the subject land from its current 7(c) scenic protection small holdings zone to an urban residential 2(a) residential zone or to a R1 General residential zone within the Wyong Shire Comprehension LEP to permit the lands use for residential purposes. The proposed development of the land comprises the concept subdivision layout shown as Appendix A. The proposed layout includes two (2) internal access roads providing frontage to nineteen (19) residential lots with areas ranging from 481m² to 1719m². The bulk of the lots have an area of 500m² to 630m². There is no direct access proposed to lots from Anderson Road or Gordon Vaughn Road given the extent of remnant vegetation comprising some threatened species and the relatively large height difference from the lot boundary to Anderson Road with open drainage adjacent to Gordon Vaughn Road.

4.0 SERVICING

4.1 ROADS

The Subject site is serviced predominantly by Anderson Road although the site has frontage to both Anderson Road and Gordon Vaughan Road. No direct access is proposed to the future lots fronting Anderson Road or Gordon Vaughan Road as previously discussed.

Anderson Road is Bitumen sealed to 11m wide between kerbs immediately to the north of the site with upright kerbs and gutter. Fronting the site, the road is 6m wide, comprising two (2) 3m wide travelling lanes with 1m wide sealed and gravelled shoulders outer side.

Double barrier lines define the centreline of the road with 50kph sign posted speed signs along the road. Speed advisory signs indicate a speed environment of 45kmp given the intersection of Hill Side Drive and curve to the south in Anderson Road. There is an existing grassed swale drain fronting the site on the eastern side of Anderson Road. The road reserve width is 20.1m and variable.

Internal access is proposed via two (2) local access streets terminating in a cul-de-sac, each approximately 100m and 80m long respectively.

The roads and their general vertical alignment can be seen in Appendix B. The proposed roads are 15m and 17m wide with a 7m carriage way and 4m wide footpath reserve.

The proposed roads constitute an effective access pattern to the future subdivision. Final detail survey and detail design of the roads and drainage with future development application would refine the subdivision. Concept road gradings have previously been shown in Appendix B.

4.2 TRAFFIC

The RTA guide to traffic generating developments provides potential traffic generating rates for a range of land use activities.

Land Use	Traffic Generations
Residential (19 lots)	9 trips/dwelling per day 0.85 trips per dwelling in the typical peak hour <u>Equates to</u> 171 trips per day 16 in the typical peak hour or 170 Utpd.

The approximate average daily traffic on Anderson Road as provided by Wyong Council has been determined at 1126vpd based upon 2002 figures with 2.5% growth per annum. It can be seen that the proposal represents an approximate increase of 9% in terms of vehicle trips/hr on the Anderson Road traffic.



Photo – Anderson Road facing south to Gordon Vaughan Road Intersection.

The following table, 4.1, shows the level of peak period traffic interaction that can maintain acceptable flow conditions. The subject precinct will not generate near any of those levels.

Similarly table 7.1 shows the mid block capacities for urban roads and again the subject precinct will generate nowhere near any of those levels.

Major Road Type ¹	Major Road Flow (vph) ²	Minor Road Flow (vph) ³
Two-lane	400	250
	500	200
	650	100
Four-lane	1000	100
	1500	50
	2000	25

Notes:

1. Major road is through road (i.e. has priority).
2. Major road design volumes include through and turning movements.
3. Minor road design volumes include through and turning volumes.

Type of Road	One-Way Mid-block Capacity (veh/hr)
Median or inner lane	
• divided road	1,000
• undivided road	900
Outer or kerb lane	
• adjacent parking lane	900
• clearway conditions	900
• occasional parked vehicles	600
4 lane undivided	1,500
4 lane undivided - clearway conditions	1,800
4 lane divided - clearway conditions	1,900
6 lane undivided	2,400
6 lane divided - clearway conditions	2,900

Route and/or intersection capacities, when Austroads capacity limits are referenced indicate that the potential urban use of the land could proceed without adverse impact on the road network.

Anderson Road has adequate capability to accept the traffic from the proposed urban development of the subdivision.

5.0 STORMWATER AND DRAINAGE

The future development of the land for urban purposes has the potential to increase stormwater runoff from the increase in impervious areas. The accompanying Water Cycle Management Plan demonstrates the ability for the subdivision to incorporate measures to reduce stormwater flows from the site and also incorporates water quality measures.

The subdivision layout proposes a relatively standard capture and conveyance network for the roads via kerbs and gutter and piped drainage with outlets via proprietary gross pollutant traps to existing/impounded swale drains.

Roofwater capture and reuse for future dwellings incorporating additional on site storage within the BASIX commitments (tanks) will ultimately control stormwater outflow from the site. Additionally small rainwater gardens within each lot will provide additional infiltration and detention.

6.0 POWER

Overhead power exists within Anderson Road and is located along the frontage of the subject site.

Connection to the power system is possible for the subdivision upon specific application at Development Application stage.

The power reticulation to the future subdivision will be via underground supply and Appendix C shows an indicative plan of that power supply reticulation.

7.0 WATER RETICULATION

Reticulated water fronts the subject site and comprises a 150mm UPVC main. This main connects to Hillside Drive and through Anderson Road north of Hillside Drive to the carrier main within Wyong Road. The existing water reticulation can be seen in Appendix D.

Connection to the future subdivision is possible, advice from Council officers indicates that water supply up to RL 40m AHD is possible however supply above RL 40 cannot be guaranteed.

Two (2) lots within the concept subdivision, Lots 6 and 7, sit at or above RL 40. The arrangement of the concept subdivision has considered this factor with lot orientation and building envelopes at RL 40 with the benching of the rear of Lots 6 and 7 to a maximum of 1m will ensure all lots within the concept subdivision can be fully serviced with guaranteed water supply.

The reorientation of Lots 6 and 7 alters the subdivision from that originally proposed within the Water Cycle Plan and other supporting reports. This difference in concept subdivision layout does not alter the basic premise of the subdivision and final design solutions can be effected with any Development Application documentation.

A concept Water Supply Plan is shown in Appendix E.

8.0 SEWER

The subject land is not directly connected to the sewerage system. Lots immediately adjoining to the north of the site sit atop the catchment ridge and drain northerly to existing reticulation in Hillside Drive, Anderson Road (north) and Wyong road.

The existing sewer reticulation can be seen in Appendix F.

Discussions with Council officers have confirmed previous advice contained within a servicing report prepared in August 1999 for the subject into and a wider rezoning area. That advice was to require the developer to design and construct a sewer system to connect to manhole Y/2 adjacent to Heather Avenue, Glenning Valley.

This connection proposal necessitates the provision of a small on-site sewer pump station and rising main from the site via Anderson Road, along Wyong Road to Heather Avenue and to manhole Y/2 a distance of approximately 1.2km. Over this distance the rising main will possibly require oxygenation.

Within the 1999 investigation a short term connection was proposed to service 40ET within a first stage development comprising the subject Lot 8 which contributed 24ET with other included first stage lands contributing 16ET.

The short term connection was via manhole AK/5 to discharge through the Berkeley Vale east system. At the time of the 1999 investigation discussions with Councils sewer staff confirmed that manhole AK/5 and the Berkeley Vale east sewer could accommodate up to 40ET.

Currently Lot 8 is proposed to have nineteen (19) residential lots contributing 19ET. Consequently the load proposed to be via manhole AK/5 is less than half of that originally considered possible (40ET) as a first stage connection during the 1999 study.

Subject to rezoning of the land for urban purposes it is recommended that the downstream system from manhole AK/5 be further investigated to confirm capacities to accept the 19ET proposed. However from initial investigations from the previous 1999 study there appears to be capacity to accept the proposal via manhole AK/5.

The proposed sewer route can be seen in Appendix G with a concept internal sewer reticulation shown in Appendix H.

9.0 NATURAL GAS

Natural gas is available to the site with reticulation within Hillside Drive and Anderson Road (north) connecting to mains in Wyong Road.

Jemena Pty Ltd advise that extension and connection to the site is possible. The route of the gas main would be within common trenching with power supply.

Appendix I shows correspondence from Jemena confirming supply availability.

10.0 TELECOMMUNICATIONS

Telecommunications are available to the site and are currently located with Anderson Road fronting the site and also within Hillside Drive.

Connection to the National Broadband Network (NBN) will be necessary for any new subdivision from January 1st 2011. Supply can be made available to the proposal upon specific application with any Development Application for subdivision.

11.0 EXISTING SERVICES INFORMATION

Documentation comprising Dial Before You Dig can be seen within the rear of the report.

12.0 MINE SUBSIDENCE

Review of the Mine Subsidence Board district maps indicates that the site is not within a proclaimed Mine Subsidence District. As such there are currently no limitations from this source to urban development of the subject land.

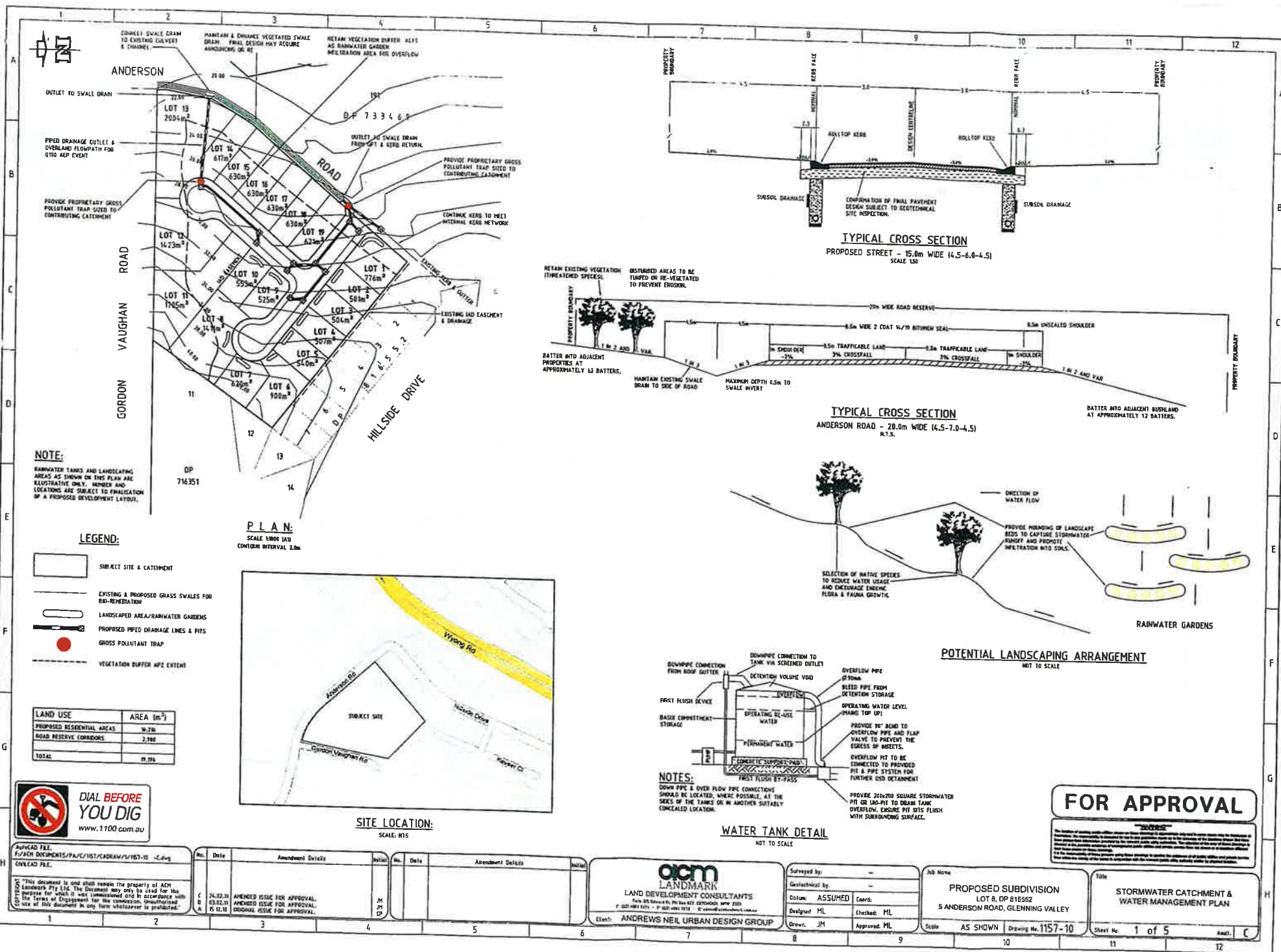
13.0 CONCLUSION

The land has the capability for urban uses. The provision of services such as road access, power, water, telecommunications, natural gas and sewer are all possible to the site.

The proposed rezoning of the land to permit urban uses should not be precluded on the basis of the provision of any services.

APPENDIX A

Concept Subdivision Layout



ANDERSON

GORDON VAUGHAN ROAD

HILLSIDE DRIVE

L.P. ROAD 2

DATUM 10.0

DESIGN	25.670	27.050	29.190	30.390	31.310	32.930	35.770	36.230
NATURAL	26.157	28.000	30.000	31.349	32.000	34.000	36.000	36.625
CHAINAGE	0.000	13.765	35.182	49.533	56.456	71.193	97.111	101.307

SCALE HORIZONTAL 1:500 VERTICAL 1:500 (A1)

ROAD No. 1

DATUM 10.0

DESIGN	30.390	29.900	28.934	28.560	28.700	28.150	28.060
NATURAL	31.291	30.000	28.558	28.000	27.573	28.000	28.500
CHAINAGE	0.000	13.994	40.880	51.273	62.000	70.883	83.377

SCALE HORIZONTAL 1:500 VERTICAL 1:500 (A1)

ROAD No. 2

FOR APPROVAL

NOTES

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No.	Date	Amendment Details	Initials
C	24.02.21	AMENDED/ISSUE FOR APPROVAL	JM
B	03.02.21	AMENDED/ISSUE FOR APPROVAL	JM
A	15.12.19	ORIGINAL ISSUE FOR APPROVAL	CP

acm LANDMARK
LAND DEVELOPMENT CONSULTANTS
Suite 500 Level 5, 100 The Esplanade, Newport, VIC 3015
P: 03 9334 1111 F: 03 9334 1112 E: info@acm.landmark.com.au

Client: ANDREWS NEIL URBAN DESIGN GROUP

Surveyed by:	
Geotechnical by:	
Datum:	ASSUMED
Designed:	ML
Checked:	ML
Drawn:	JM
Approved:	ML

Job Name:
PROPOSED SUBDIVISION
LOT 8, DP 816582
5 ANDERSON ROAD, GLENNING VALLEY

Scale: AS SHOWN Drawing No. 1157-10

Title:
CONCEPT LONGITUDINAL SECTIONS

Sheet No. 2 of 5

13
PLAN:
SCALE 1:500 (A1)
CONTOUR INTERVAL 2.0m

APPENDIX B

Concept Longitudinal Sections

ANDERSON

20.00

191

D P 7 3 3 4 6 9

I.P. ROAD 2

DATUM 10.0		10.0%		11.0%	
DESIGN	25.670	27.050	29.190	30.390	31.310
NATURAL	26.157	28.000	30.000	31.349	32.000
CHAINAGE	0.000	13.765	35.182	49.533	56.456
				71.193	97.111
					101.307

SCALE HORIZONTAL 1:500 VERTICAL 1:500 (A1)

ROAD No. 1

DATUM 10.0		-3.5%		1.0%	
DESIGN	30.390	29.900	28.934	28.560	28.200
NATURAL	31.291	30.000	28.558	28.000	27.523
CHAINAGE	0.000	13.994	40.880	51.273	62.000
				70.883	83.377

SCALE HORIZONTAL 1:500 VERTICAL 1:500 (A1)

ROAD No. 2



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No.	Date	Amendment Details	Initials	No.	Date	Amendment Details	Initials
1	03.02.11	AMENDED ISSUE FOR APPROVAL	JH	2	05.12.10	ORIGINAL ISSUE FOR APPROVAL	CP

acm LANDMARK
LAND DEVELOPMENT CONSULTANTS
Suite 308 Monash Bldg 700 Box Hill VIC 3083
P 03 9484 1171 F 03 9484 1028 E land@acmconsultants.com.au

Client: ANDREWS NEIL URBAN DESIGN GROUP

Surveyed by: —
Geotechnical by: —
Datum: ASSUMED Coord: —
Designed: ML Checked: ML
Drawn: JH Approved: ML

Job Name: PROPOSED SUBDIVISION
LOT 8, DP 816552
5 ANDERSON ROAD, GLENNING VALLEY

Title: CONCEPT LONGITUDINAL SECTIONS

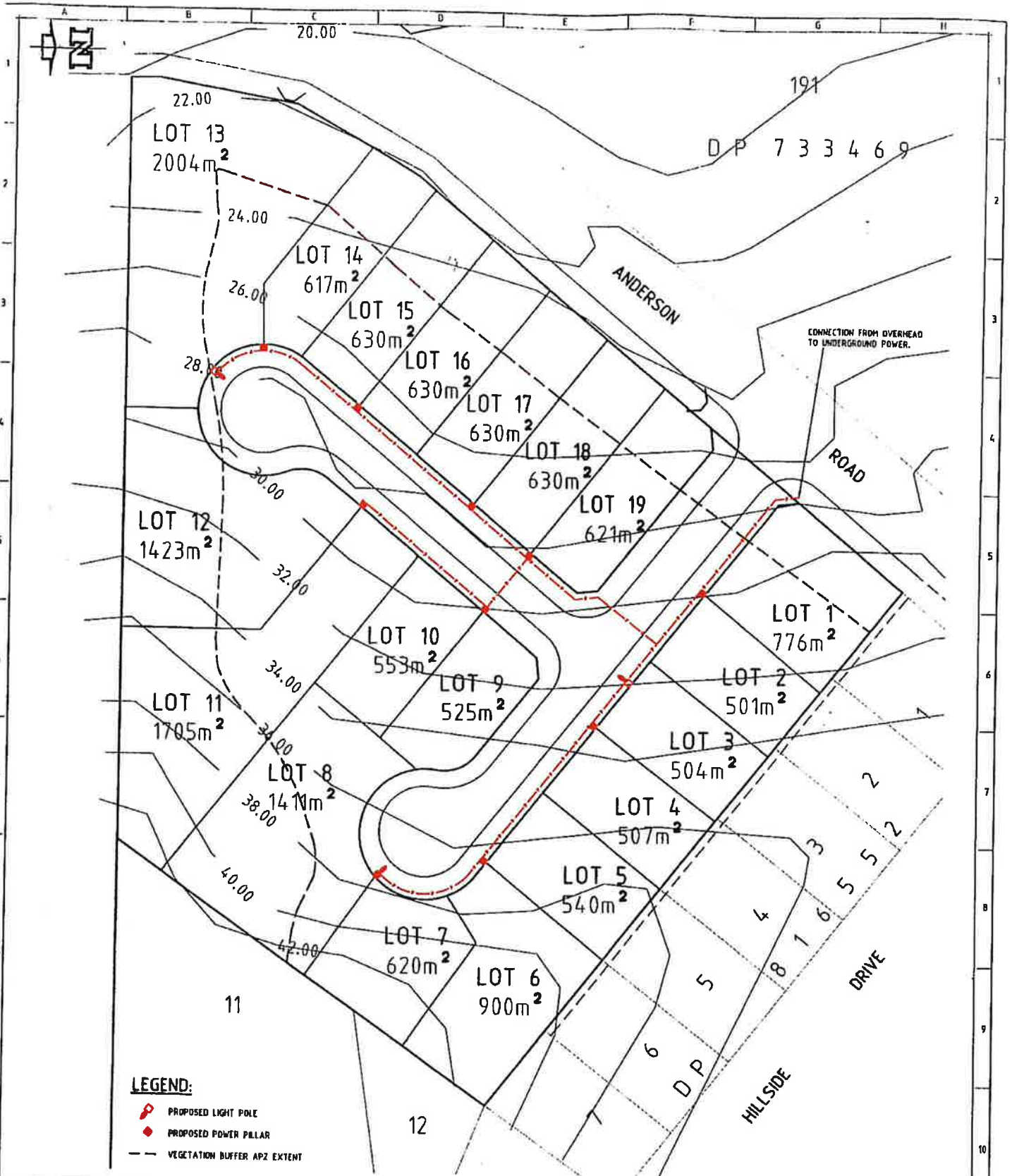
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Sheet No. 2 of 2

Arch: B

APPENDIX C

Concept Power Supply Plan



No.	Date	Revised Details	Notes
1	15/01/11	APPROVED FOR APPROVAL	
2	15/01/11	APPROVED FOR APPROVAL	
3	15/01/11	ORIGINAL ISSUE FOR APPROVAL	

Prepared by: JN
Checked by: JN
Drawn by: JN

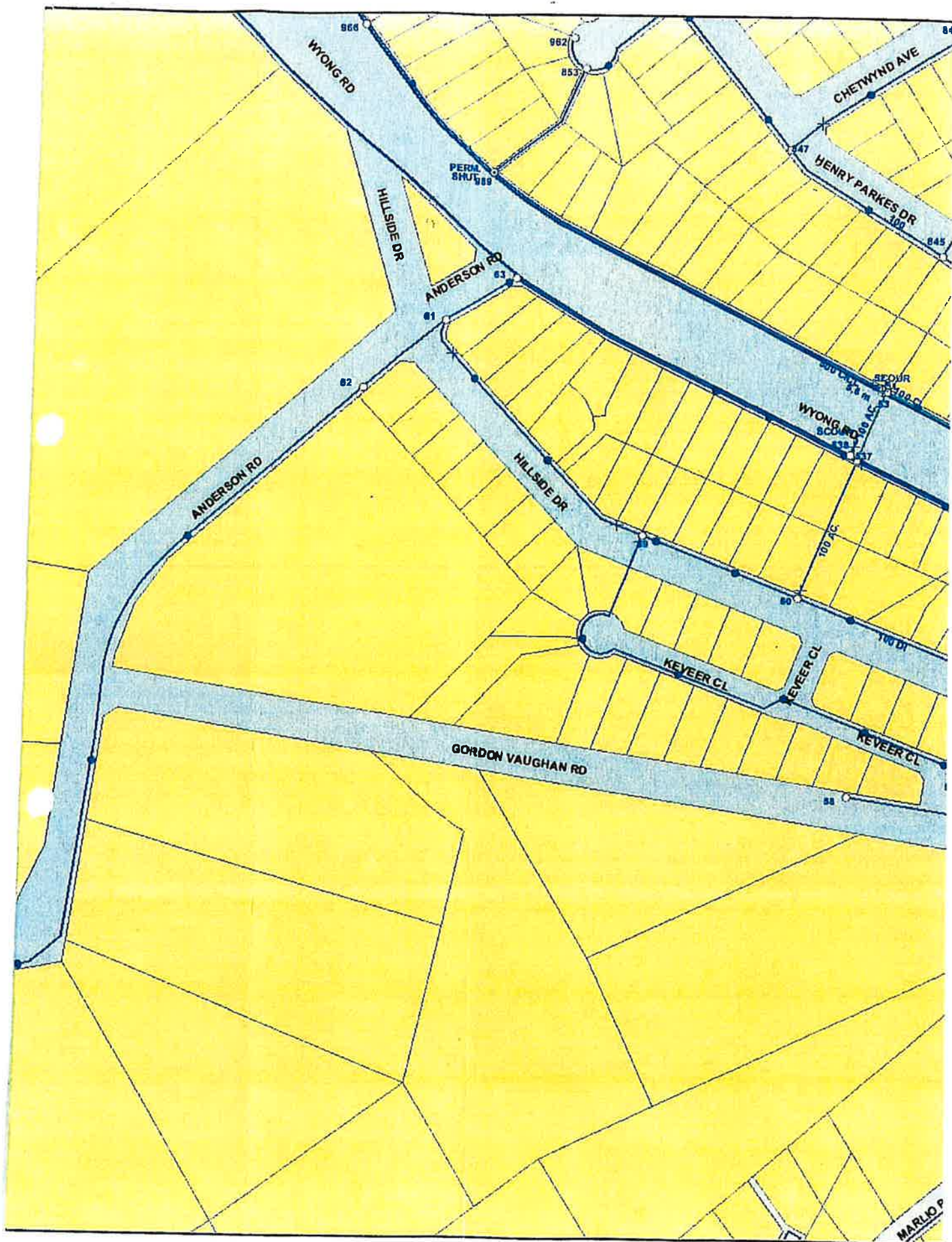
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LAND DEVELOPMENT CONSULTANTS
Suite 201, 100/102, 104/106, 108/110, 112/114, 116/118, 120/122, 124/126, 128/130, 132/134, 136/138, 140/142, 144/146, 148/150, 152/154, 156/158, 160/162, 164/166, 168/170, 172/174, 176/178, 180/182, 184/186, 188/190, 192/194, 196/198, 200/202, 204/206, 208/210, 212/214, 216/218, 220/222, 224/226, 228/230, 232/234, 236/238, 240/242, 244/246, 248/250, 252/254, 256/258, 260/262, 264/266, 268/270, 272/274, 276/278, 280/282, 284/286, 288/290, 292/294, 296/298, 300/302, 304/306, 308/310, 312/314, 316/318, 320/322, 324/326, 328/330, 332/334, 336/338, 340/342, 344/346, 348/350, 352/354, 356/358, 360/362, 364/366, 368/370, 372/374, 376/378, 380/382, 384/386, 388/390, 392/394, 396/398, 400/402, 404/406, 408/410, 412/414, 416/418, 420/422, 424/426, 428/430, 432/434, 436/438, 440/442, 444/446, 448/450, 452/454, 456/458, 460/462, 464/466, 468/470, 472/474, 476/478, 480/482, 484/486, 488/490, 492/494, 496/498, 500/502, 504/506, 508/510, 512/514, 516/518, 520/522, 524/526, 528/530, 532/534, 536/538, 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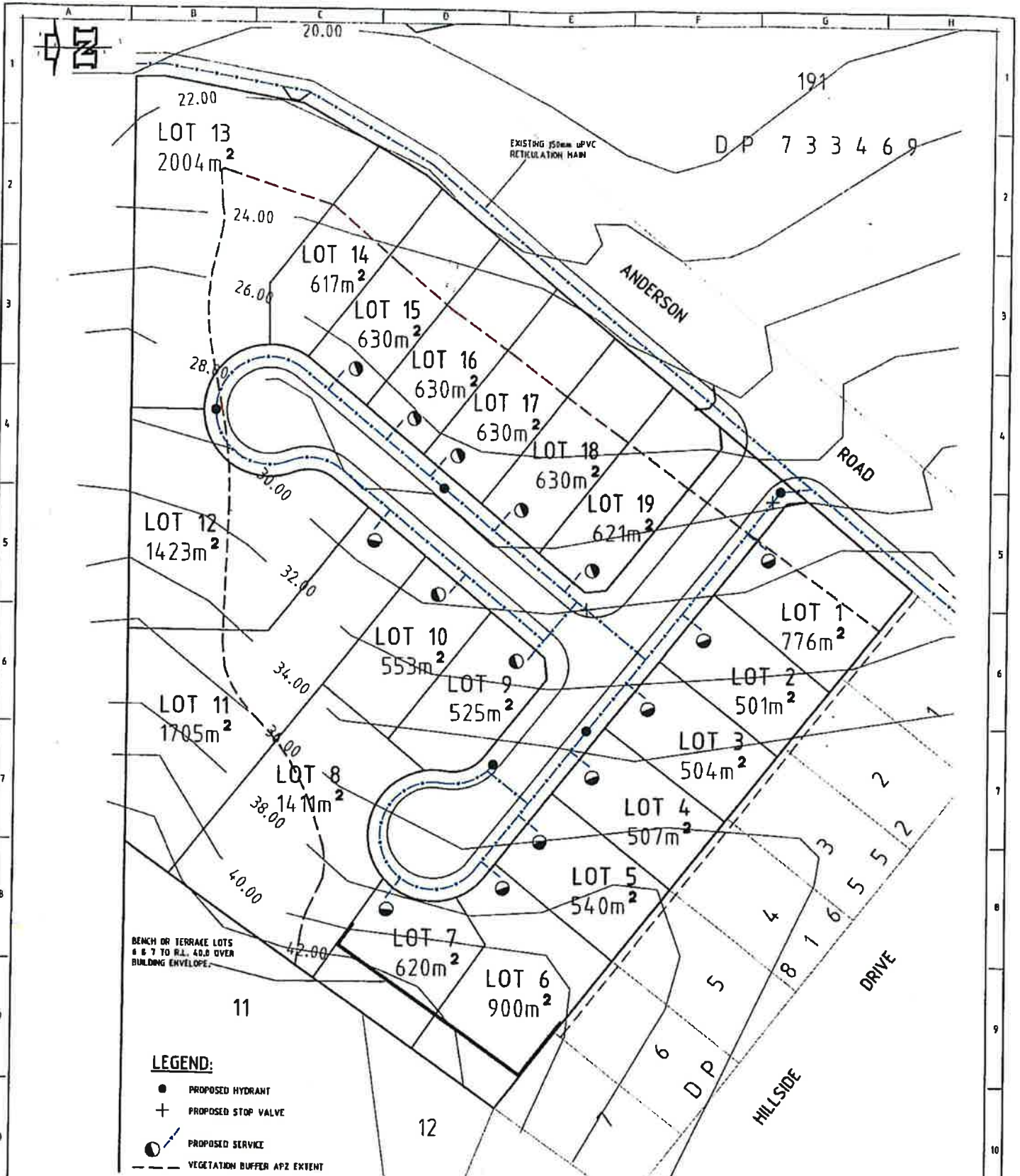
APPENDIX D

Existing Water Reticulation



APPENDIX E

Water Supply Plan



PLAN:
SCALE 1:500 IAR
CONTOUR INTERVAL 2.0m

FOR APPROVAL

WARNING
The location of existing public utilities shown on these drawings is approximate only and is to be used as a guide only. It is the responsibility of the user to verify the location of all public utilities and private services shown on these drawings by physical location.

No.	Date	Amendment Details	By
1	15.12.19	AMENDED ISSUE FOR APPROVAL	JM
2	17.12.19	AMENDED ISSUE FOR APPROVAL	JM
3	18.12.19	FINAL ISSUE FOR APPROVAL	JM

APPROVED FOR CONSTRUCTION

FOR CONSTRUCTION

FOR CONSTRUCTION



LANDMARK LANDMARK CONSULTANTS
LAND DEVELOPMENT CONSULTANTS
1100 1100 1100 - 1100 1100 1100 - 1100 1100 1100

Designed by:	Assessed by:
Designed: ML	Assessed: ML
Drawn: JM	Approved: ML

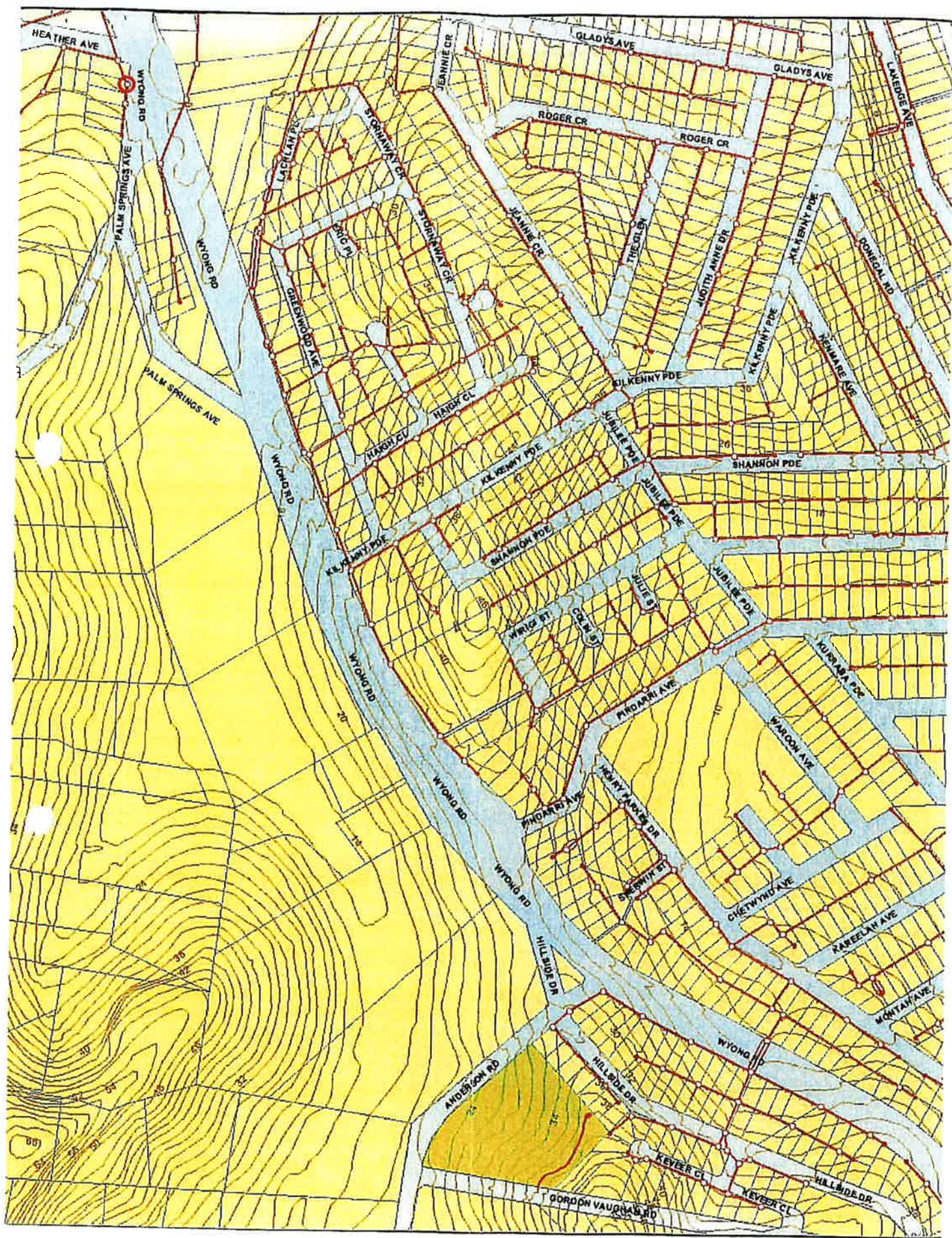
PROPOSED SUBDIVISION
LOT 8, DP 816682
5 ANDERSON ROAD, GLENNING VALLEY

CONCEPT WATER RETICULATION PLAN

APPENDIX F

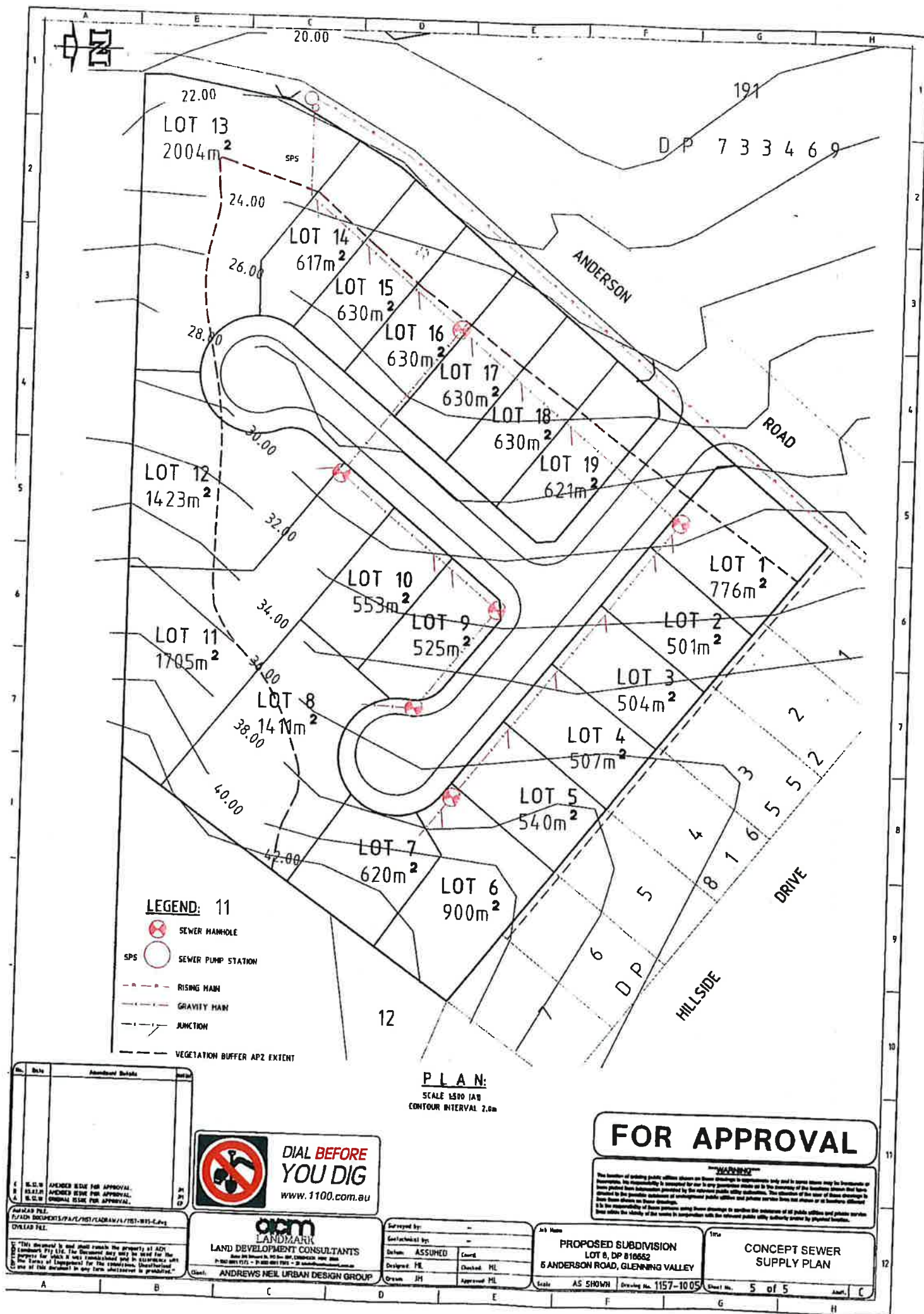
Existing Sewer

Reticulation



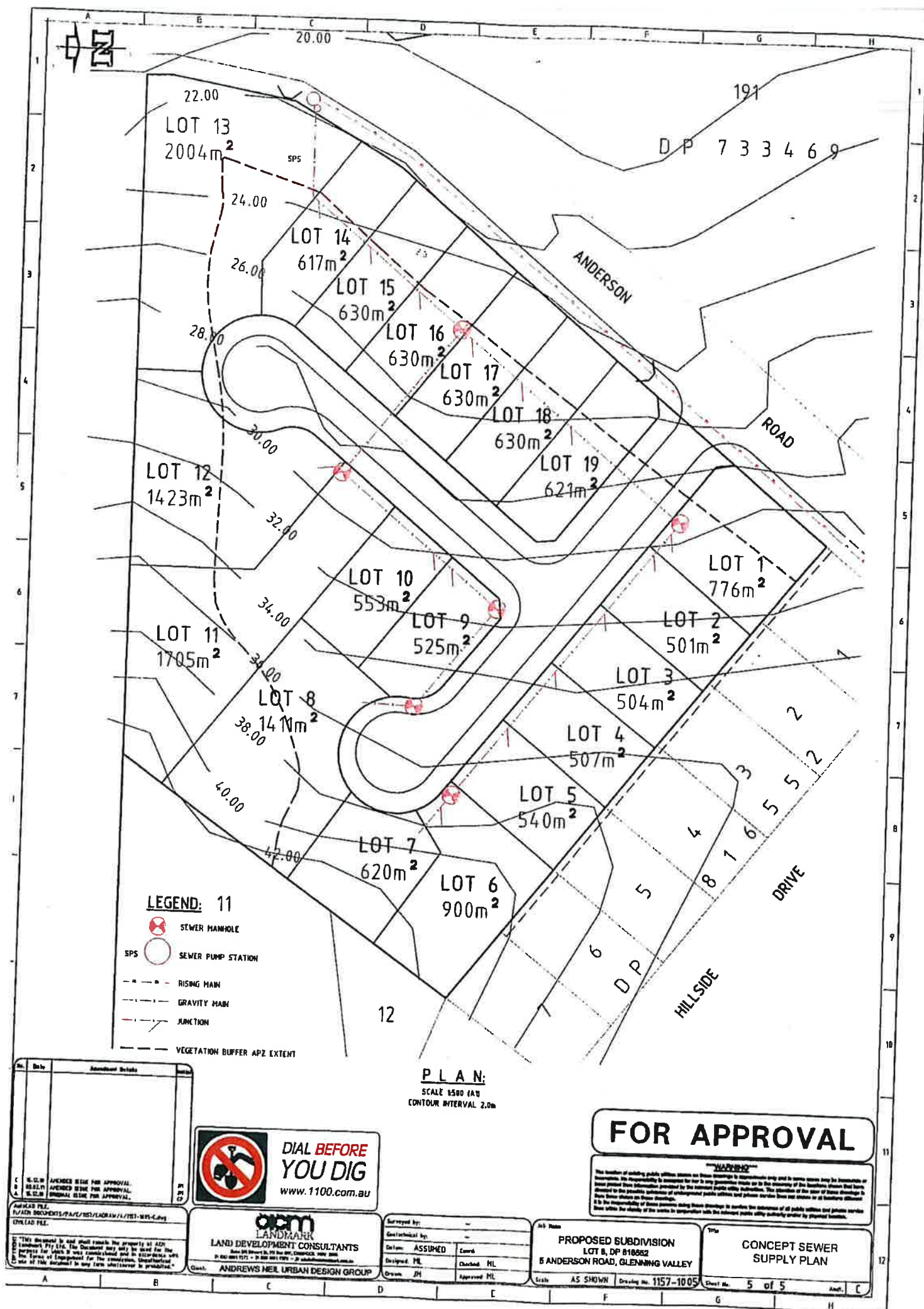
APPENDIX G

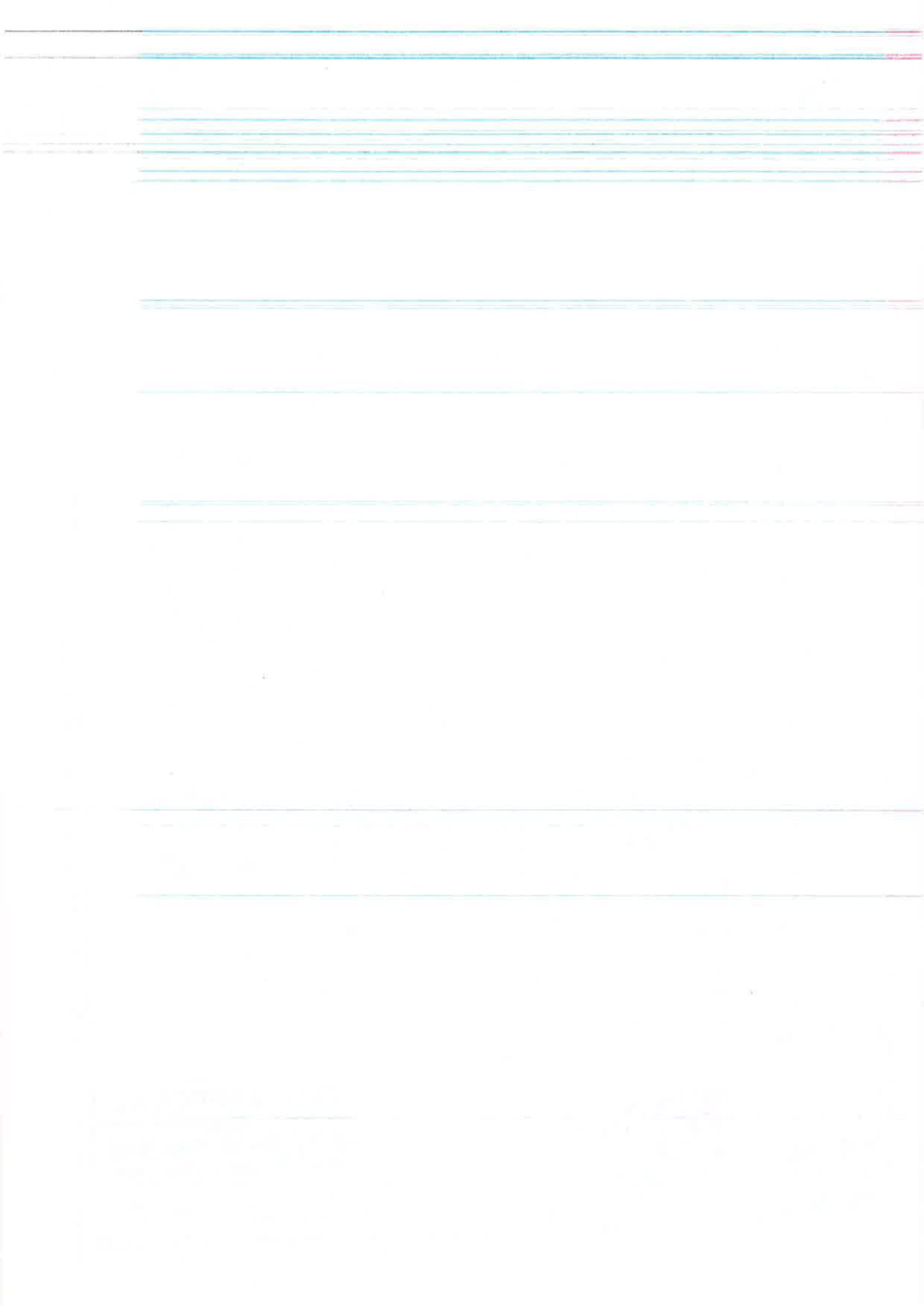
Proposed Sewer Route



APPENDIX H

Internal Sewer Reticulation Concept





APPENDIX I

Jemena Pty Ltd

Corrospondence



Network Protection

In reply to your enquiry, there are gas mains at the location of your intended work as per the attached map. For an explanation of the map, please see the key below. The following excavation guidelines apply:

Excavation Guidelines:

If you are going to excavate/bore within 0.4m of the gas main location as indicated on the map you must excavate carefully by hand. If you can't locate the gas main, contact the local depot.

Sydney North (02) 9397 9290

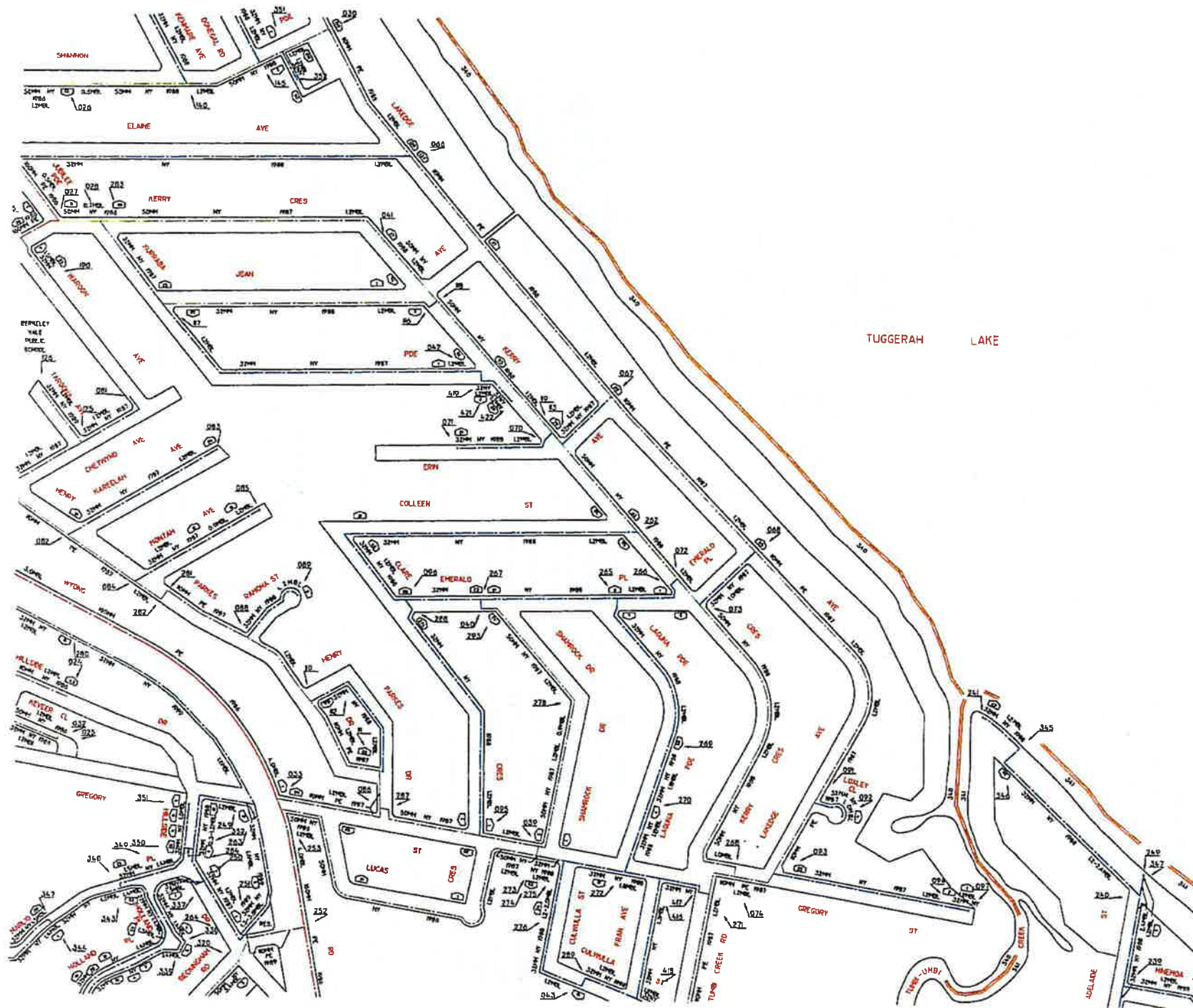
MAXIMUM ALLOWABLE OPERATING PRESSURE		KEY	
—T—	TRUNK MAIN 7000 kPa	◀▶	VALVE
—P—	PRIMARY MAIN 3500 kPa	□	SYSTEM PRESSURE REGULATOR
—S—	SECONDARY MAIN 1050 kPa	⋮	SIPHON
----	300 kPa	6NB	6 INCH CAST IRON MAIN
----	210 kPa	150MM	150MM STEEL MAIN
----	7 kPa	110MM PE/NY	110MM POLYETHYLENE / NYLON MAIN
—400—	400 kPa	Ⓢ NB 50MM NY	50MM NYLON INSERTED INTO
—100—	100 kPa	1.2MBL	6 INCH CAST IRON MAIN
—30—	30 kPa	23	DISTANCE IN METRES OF MAIN FROM BUILDING LINE (TOLERANCE OF 0.4M)
----	2 kPa	123	HOUSE NUMBERS
--- --	PROPOSED MAINS	=====	NETWORK BOUNDARY
		123	NETWORK NODES

Warning: The enclosed plans show the position of Jemena Gas Networks (NSW) Ltd's underground gas mains and installations in public gazetted roads only. Individual customers' services and services belonging to other third parties are not included on these plans. These plans have been prepared solely for the use of Jemena Gas Networks (NSW) Ltd and Jemena Asset Management Pty Ltd (together "Jemena") and any reliance placed on these plans by you is entirely at your own risk. The plans may show the position of underground mains and installations relative to fences, buildings etc., as they existed at the time the mains etc were installed. The plans may not have been updated to take account of any subsequent change in the location or style of those features since the time at which the plans were initially prepared. Jemena makes no warranty as to the accuracy or completeness of the enclosed plans and does not assume any duty of care to you nor any responsibility for the accuracy, adequacy, suitability or completeness of the plans or for any error, omission, lack of detail, transmission failure or corruption in the information provided. Jemena does not accept any responsibility for any loss that you or anyone else may suffer in connection with the provision of these plans, however that loss may arise (including whether or not arising from the negligence of Jemena, its employees, agents, officers or contractors). The recipient of these plans must use their own care and diligence in carrying out their works and must carry out further surveys to locate services at their work site. Persons excavating or carrying out other earthworks will be held responsible for any damage caused to Jemena's underground mains and equipment.

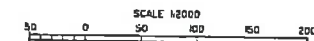
In case of Emergency Phone 131 909 (24 hours)

Mario
02 939 79109

Jemena Asset Management Pty Ltd ABN 53 086 013 461
for and on behalf of Jemena Gas Networks (NSW) Ltd ABN 87 003 004 322



BERKELEY



THIS MAP UPDATED ON 19/08/05
THIS PLAN IS DIAGRAMATIC ONLY. DISTANCES
SCALED FROM THIS PLAN MAY NOT BE ACCURATE.
DATE ALTERED: BY:

BV5A	BV5B	BV6A
BV5C	BV5D	BV6C
BV8A	BV8B	BV9A

ADJOINING MAPS

340	WYONG
NETWORK AREA	MUNICIPALITY AREA



KEY

MAX ALLOWABLE OPERATING PRESSURE

TRUNK MAIN	7000 kPa
PRIMARY MAIN	3500 kPa
SECONDARY MAIN	1050 kPa
	300 kPa
	250 kPa
	7 kPa
	400 kPa
	100 kPa
PROPOSED MAINS	2 kPa

- STEEL MAIN PROJECT NUMBER
- PRESSURE MONITORING STATION
- VALVE
- SYSTEM PRESSURE REGULATOR
- SPHON
- NETWORK NODES
- ITEM DETAIL SKETCH AVAILABLE
- VALVE NUMBER (OLD NUMBERING)
- 6 INCH CAST IRON MAIN
- 150MM STEEL MAIN
- 100MM PE/HDPE
- 150MM POLYETHYLENE/NYLON MAIN
- 50MM NYLON INSERTED INTO
- 600MM MAIN CAST IRON MAIN
- DISTANCE IN METRES OF MAIN FROM BUILDING LINE (TOLERANCE OF 0.4M)
- 1.2MBS
- 1957
- YEAR LAID
- MUNICIPALITY BOUNDARY
- NETWORK BOUNDARY
- HOUSE NUMBER



SCALE 1:2000
0 50 100 150 200

THIS MAP UPDATED ON 30/05/97
THIS PLAN IS DIAGRAMATIC ONLY DISTANCES
SCALED FROM THIS PLAN MAY NOT BE ACCURATE
DATE ALIGNED BY

EV 1	EV 2	EV 3
EV 4	EV 5	EV 6
EV 7	EV 8	EV 9

ADJOINING MAPS

2	3
W. 101	W. 102

NETWORK AREA MUNICIPALITY AREA

Jemena

KEY

MAX ALLOWABLE OPERATING PRESSURE

TRUNK MAIN	7000 kPa
PRIMARY MAIN	3500 kPa
SECONDARY MAIN	1050 kPa
	300 kPa
	210 kPa
	7 kPa
	400 kPa
	100 kPa
	2 kPa

PROPOSED MAINS

- STEEL MAIN PROJECT NUMBER
- PRESSURE MONITORING STATION
- VALVE
- SYSTEM PRESSURE REGULATOR
- SIPHON
- NETWORK NODES
- ITEM DETAIL SKETCH AVAILABLE
- VALVE NUMBER (OLD NUMBERING)
- 6 INCH CAST IRON MAIN
- 150MM STEEL MAIN
- 150MM PE/NY
- 150MM NYLON INSERTED INTO
- 6 INCH MAIN CAST IRON MAIN
- DISTANCE IN METRES OF MAIN FROM BUILDING LINE (TOLERANCE OF 0.4M)
- YEAR LAG
- MUNICIPALITY BOUNDARY
- NETWORK BOUNDARY
- HOUSE NUMBER



Dial Before You Dig

Existing Services Information

