WOOD & GRIEVE ENGINEERS

East Village

Utility Servicing Assessment Report

Prepared for:

Victoria Planning Authority

Prepared by:

Ronan Tongs
Project No. 30423

Date:
21 August 2018

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Revision

REVISION	DATE	COMMENT	APPROVED BY
A	31 March 2017	DRAFT	**RNT**
B	18 May 2017	DRAFT	**RNT**
C	23 May 2017	DRAFT	**RNT**
D	26 May 2017	DRAFT	**RNT**
E	26 May 2017	DRAFT	**RNT**
F	22 December 2017	DRAFT	**RNT**
G	12 February 2018	DRAFT	**RNT**
H	22 March 2018	DRAFT	**RNT**
I	21 August 2018	DRAFT	**RNT**

Site Address:	Corner of East Boundary and North Road, Bentleigh East
Lot & Plan Number:	Refer to Appendix B for complete list of existing land titles
Proposed Development:	Commercial & Residential Development
Client:	Victorian Planning Authority
Local Authority:	City of Glen Eira
Council Property Number:	74805
Directory Reference:	68 K10
Wood & Grieve Reference:	30423-MEL-C

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Ronan Tongs
For and on behalf of
Wood & Grieve Engineers

Contents

1. Introduction

Wood & Grieve Engineers have been commissioned by the Victorian Planning Authority (VPA) to prepare a Utility Servicing Assessment Report for the East Village development located at the corner of East Boundary Road and North Road, Bentleigh East 3165. The VPA is currently undertaking planning associated to the redevelopment of the site as a mixed use precinct comprising of: commercial, residential, retail and secondary school uses.

The purpose of this report is to assist the Victorian Planning Authority to:

- Identify the location, size, capacity and suitability of existing services infrastructure to service the needs of the future development
- Discuss with relevant service authorities and identify any required asset renewals, replacement or expansion strategies for the future redeveloped site;
- Outline the stormwater, sewer, water, gas, electrical and communication options available for the development of the site;
- Identify any servicing issues, which may influence the future urban structure and VPA planning associated with rezoning the site;
- Identify the potential infrastructure connections for:
    - Stormwater (to be read in conjunction with the flood management strategy report)
    - Water, Sewer & Gas
    - Power & Communications
- Identify Preliminary Engineering design calculations.

The information contained in this report has been based on:

- Publicly available information and Dial Before You Dig information
- Preliminary advice received from authorities (Refer to Appendix A for summary of engagement and correspondence that have been provided by relevant Authorities)

2. Summary of Report Outcomes

Outcomes of the Utility Servicing Assessment report are as follows:

- **Stormwater Drainage** – Within the site there is existing private drainage infrastructure, which will need to be replaced to service the future redeveloped site. The development will ultimately be serviced by council roads and drainage infrastructure which will be the responsibility of the City of Glen Eira.

  There is also a regional main drain in the north-east corner of the site which carries regional drainage through the site and is the responsibility of Melbourne Water. A drainage management strategy is currently being prepared for the precinct and this will identify future requirements for the local and regional drainage at this location.

- **Sewer –** It is anticipated that the point of connection will be into an existing 300mm dia. sewer or 225mm dia. sewer running to the north of the site in North Road, based on South East Water's preliminary advice. This ultimately connects to the Melbourne Water 1830mm Caulfield Intercepting Sewer located in North Road.

- **Water –** There is a 150mm dia. main along North Road and a 100mm dia. main in Murra, Carrey, Griffith and Cobar Street, as well as an existing 300mm dia water main along East Boundary Road that the development site can connect to. Based on received preliminary servicing advice, it is anticipated that the points of supply will be from the existing 300mm dia water main along East Boundary Road with a proposed 150mm dia main reticulated throughout the development site. It is also anticipated that the existing 100mm dia water main located north of the site may require upsizing as part of the development works.

- **Power** – There is an existing United Energy main area substation / switching yard located on the Western boundary of the site on East Boundary Road, which supplies the local area and a number of existing sub-station located within the site. During the future redevelopment of the site, the ultimate number and locations of the required substations will need to be discussed with the relevant power authority (currently United Energy).

- **Communications** – NBN cabling is expected to be provided to the site and to service the ultimate development. An application for NBN is expected when the design is further developed.

- **Gas –** There is an existing 150mmdia high pressure main along East Boundary Road as well as 100mmdia low pressure main reticulating through Griffith Avenue. It is envisaged that these mains may have sufficient pressure to service the development site and this is to be confirmed with the relevant authority.

Preliminary advice indicates there is sufficient capacity in the sewer, water, gas, electrical and telecommunication services to cater for the future redevelopment of the site, although details are subject to the implementation of the future redevelopment

Figure 1 below shows the likely ultimate connection points for all relevant services for the East Village Development.

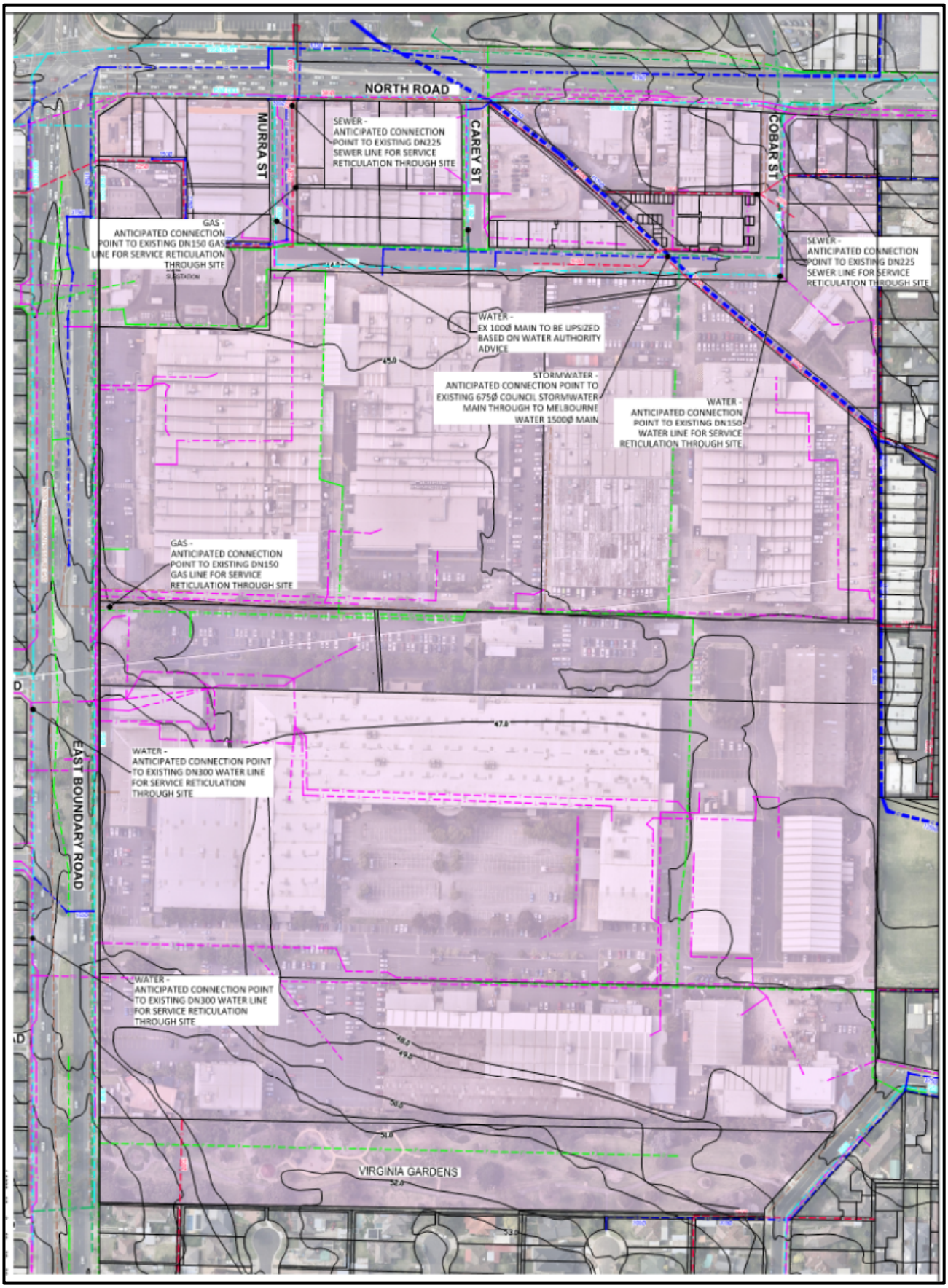


Figure 1 Anticipated Authority Service Connections to Site (Refer to CSK002)

3. Existing Site Characteristics

3.1 Property Detail

Address:	Corner of East Boundary and North Road, Bentleigh East 3165
Lot & Plan Number:	Refer to Appendix B for complete list of existing land titles
Total Site Area:	26.3 Ha

The site is the location of an existing industrial estate with mixed commercial uses with residential to the South and East boundaries.

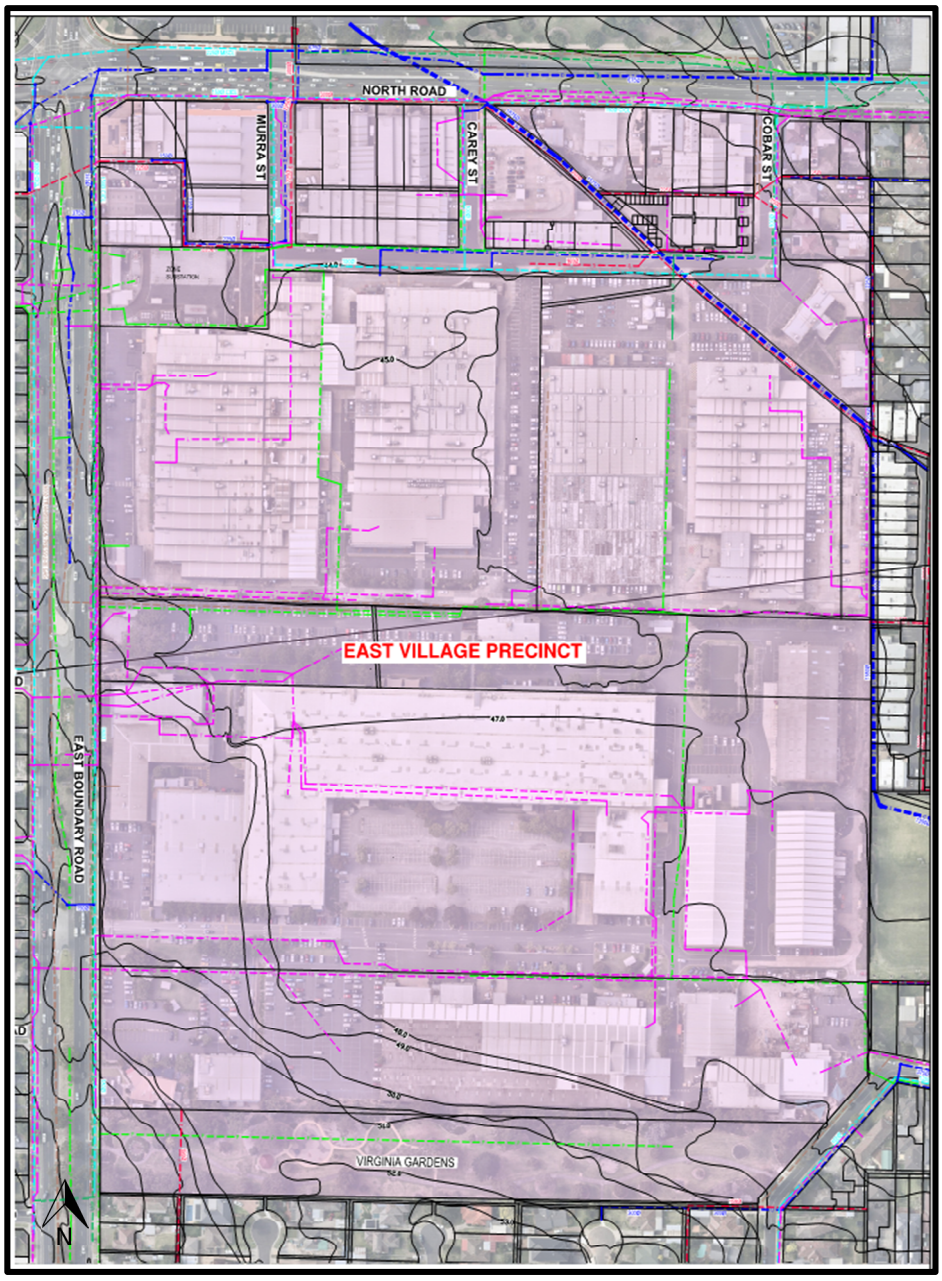


Figure 2 Existing Site Conditions Plan (Source: Nearmaps)

LEGEND:

- P — EXISTING ELECTRICITY (UNDERGROUND)
- OHP — EXISTING ELECTRICITY (OVERHEAD)
- G — EXISTING GAS
- T — EXISTING TELSTRA
- FO — EXISTING FIBRE OPTIC
- W — EXISTING WATER
- 300Ø D — EXISTING STORMWATER DRAIN AND PIT
- S — EXISTING SEWER
- 3.0 — EXISTING CONTOURS
- EXTENT OF WORKS

3.2 Proposed Site Conditions

Although preliminary, the proposed re-zoning is envisaged to accommodate a mixed precinct comprising of commercial, residential, retail and secondary school uses.

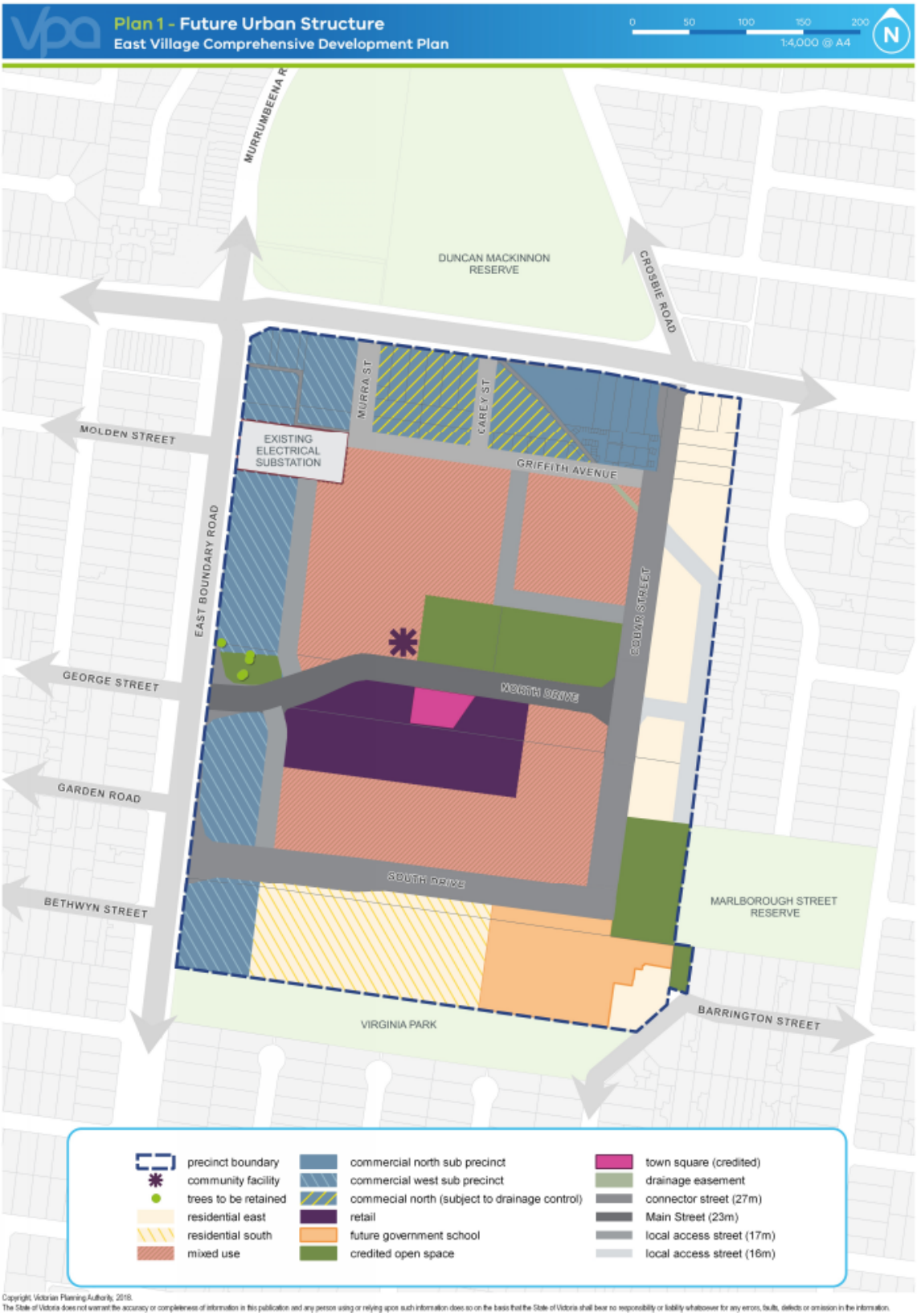


Figure 3 Draft Future Urban Structure (Source: VPA)

The following assumptions have been made regarding infrastructure assessments as advised by the Victorian Planning Authority.

Use	Area
Commercial	80,000 m^2
Residential	3000 dwellings
Retail	12,000 sqm (NLA)
Secondary School	800 students

Table 1 – Development Site Preliminary Make Up

4. Utility Assessments

4.1 Stormwater

4.1.1. Existing Internal Services

The existing private stormwater network throughout the site has not been fully investigated. However, based on received feature survey conducted, the site currently consists of its own internal stormwater network with mains approximately 150dia to 1050dia which appears to connect east of the site to the existing Melbourne Water / Council 1350dia drain via an existing 1200 x 900 box culvert. The internal drainage network will need to be abandoned / relocated or resized to service the future redeveloped site. The redevelopment will incorporate authority roads and services and the stormwater network will ultimately be the responsibility of the City of Glen Eira.

Any modifications to the regional 1500 – 1575dia stormwater drainage aligned through the site within the north east corner of the site, is subject to the approval of Melbourne Water.

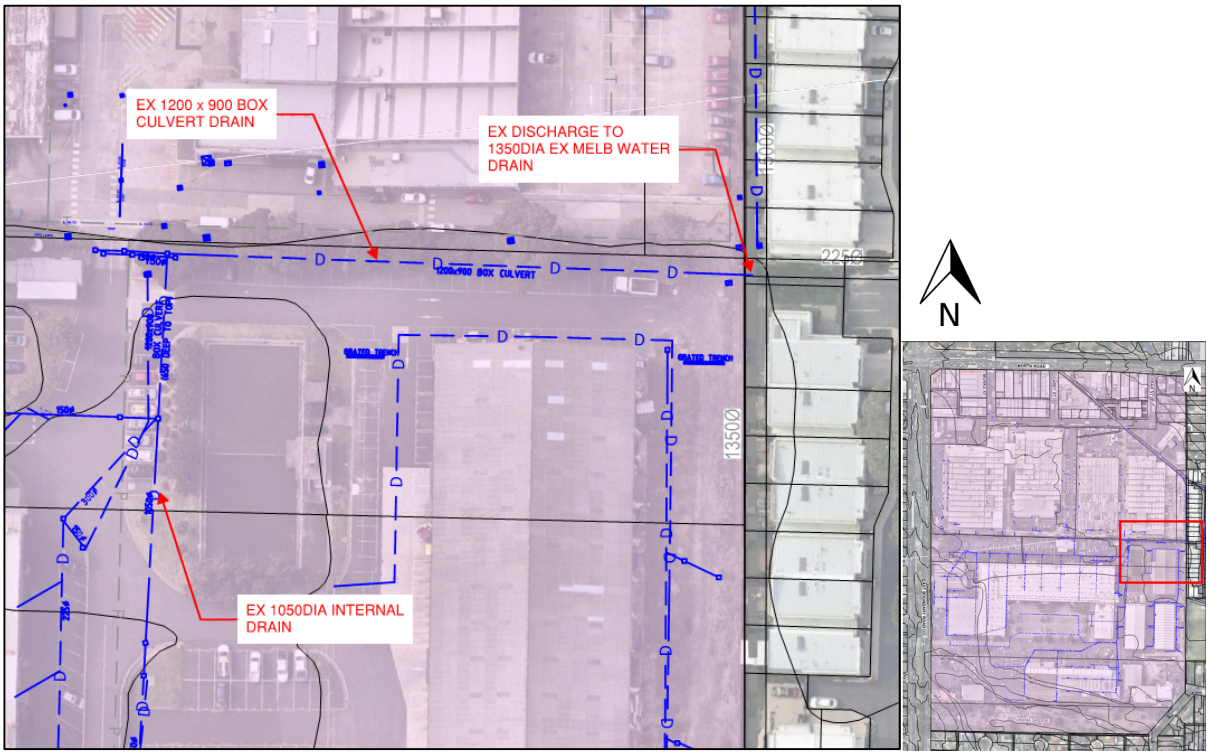


Figure 4 – Existing Drainage Network Discharge

4.1.2. Authority Connection

As the site generally grades north east the point of connection for the new drainage network is anticipated to be Griffith Avenue connecting to the existing 675 – 750dia stormwater drain. Given the potential size of the development, it is expected that multiple points of connection will be required depending on the proposed development makeup and existing infrastructure capacity and flooding and storm events. A drainage flood management strategy is currently being prepared and this will identify future requirements for the local and regional drainage at this location.

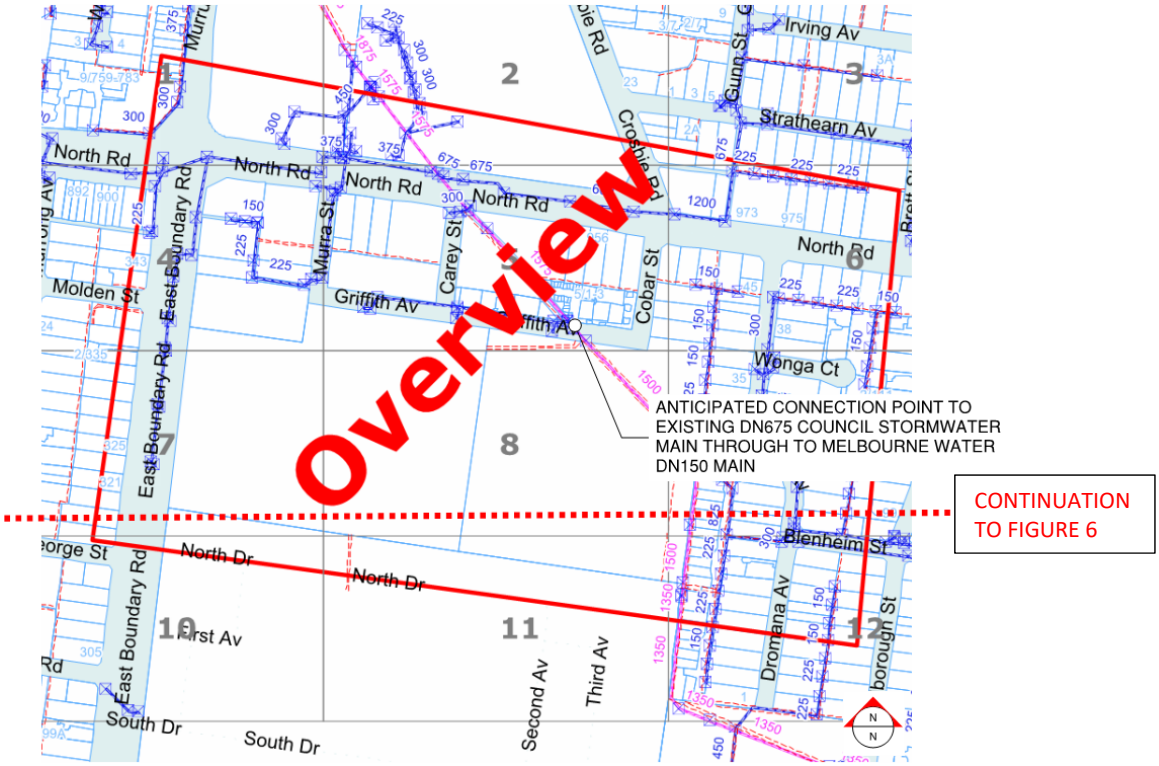


Figure 5 Existing Authority Stormwater Drainage Infrastructure - Northern Boundary

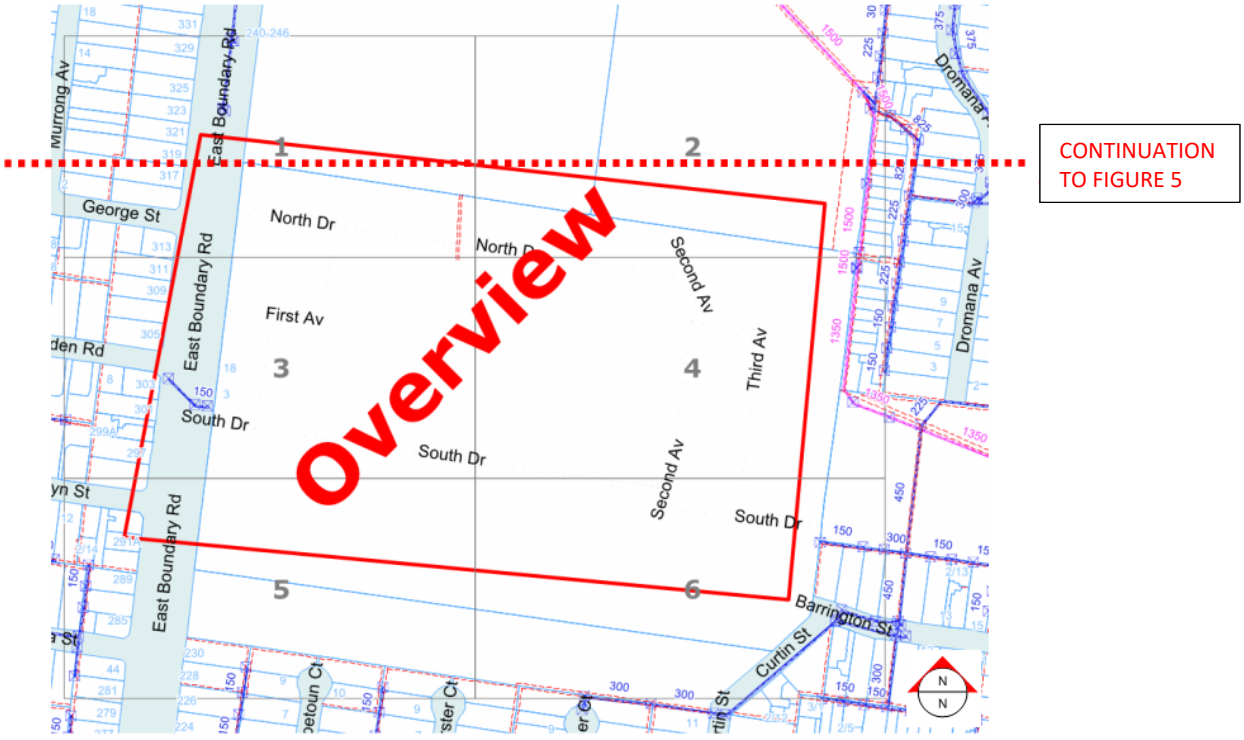


Figure 6 Existing Authority Stormwater Drainage Infrastructure - Southern Boundary

The site will also be serviced with a new pit and pipe network throughout the development.

4.2. Sewer

4.2.1. Existing Internal Services

Based on existing survey conducted for the site, the existing sewer reticulation consists of 100dia sewer mains running through the site. It is expected that majority if not all of these internal sewer services are to be abandoned / relocated or resized as part of the future development for the site.

Refer to **Figure 2** for existing internal services sketches.

4.2.2. Authority Connection

There are existing 225mm, 300mm and 160mm dia sewer mains that reticulate to North Road and ultimately to the 1830mm diameter Caulfield Intercepting Sewer main. This is shown in **Figure *7***.

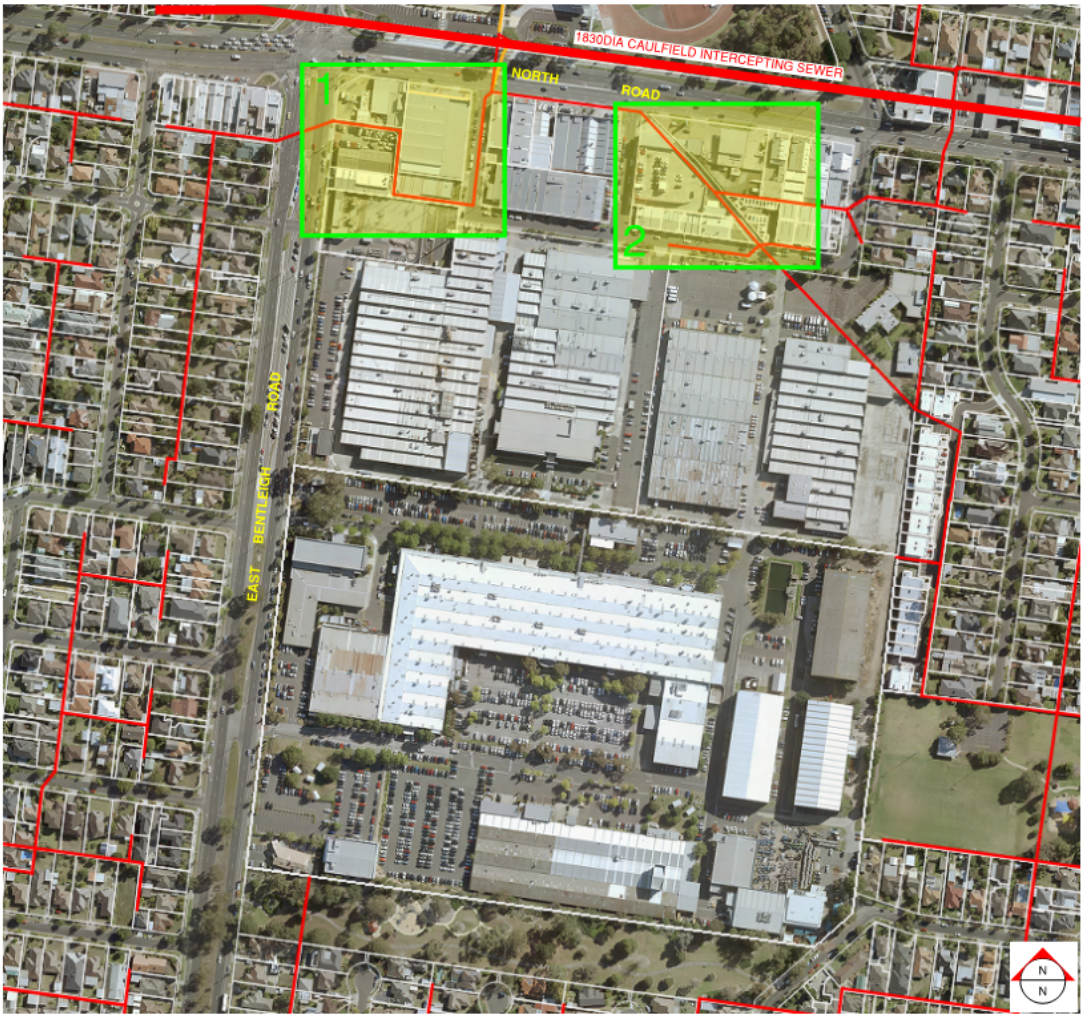
It is noted in the preliminary advice that upon receiving further detailed proposed development make up in addition to the information found in **Table 1 – Development Site Preliminary Make Up**, South East Water can then provide confirmation of the extent of sewer augmentation works that may be required to service the development.

Figure *7* shows the existing sewer layout in the area. The nearest point of connection is the existing 300mm diameter sewer in Griffith Avenue between Cobar Street and Carey Street. Potential alternative connection points are in Murra Street or in North Road

The proposed internal sewer network is anticipated to be equal to or less than the street main size (i.e. 225dia or 300dia), pending further confirmation of levels of the proposed network demand imposed upon the existing SEW system.

Preliminary servicing advice has been provided by South East Water. The preliminary servicing advice indicates a preference for sewer connections to Murra Street (225 dia.), while the existing sewers in Griffith Street between Carey and Cobar Street (300 dia) are currently deemed serviceable.

It is noted within the preliminary servicing advice that further consultation is required between SEW and Melbourne Water to confirm whether the existing 1830mm diameter Caulfield Intercepting Sewer is adequate to cater for the flows from the proposed development.



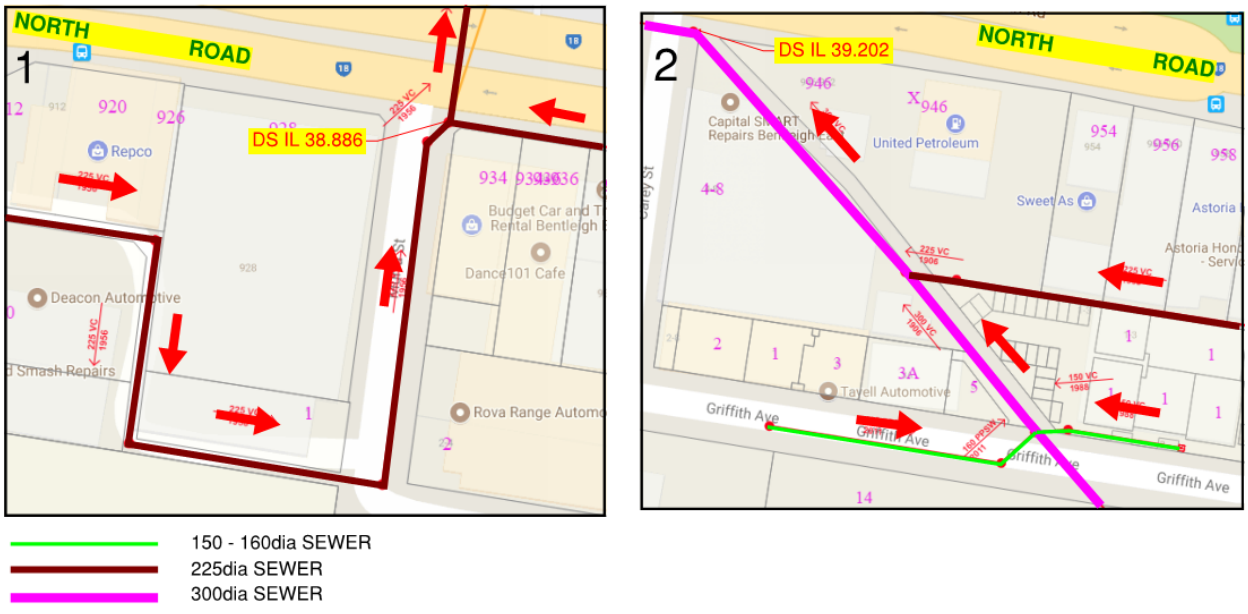


Figure 7 Existing Sewer Infrastructure and Anticipated Points of Connection

4.3. Water

4.3.1. Existing Internal Services

Based on received feature level survey conducted for the existing site, the primary water and fire service mains existing within the site are 150dia. Within the existing industrial precinct, there are existing hydrants, valves and fire services across the site. This is shown on CSK004 in Appendix C. It is expected that majority if not all of these internal water and fire services are to be abandoned / relocated or resized as part of the future development for the site. Any partial reuse of the existing water/fire services will be subject to SEW authority assessment, detailed design and approval.

As the anticipated proposed development progresses, it is recommended that engagement be made with the Metropolitan Fire Brigade (MFB) to understand the requirements around decommissioning existing hydrants and fire service lines.

Refer to **Figure 2** for existing internal services sketches.

4.3.2. Authority Connection

Figure *8* shows the water layout in the area and the proposed points of connection for the development and the associated proposed water network.

Preliminary servicing advice has been provided by South East Water. Preliminary advice indicates a preference for water connections along the west (East Boundary Road) to the existing 300mm water main which is deemed serviceable, provided that the water mains situated within Murra, Griffith, Carey and Cobar Street are upgraded from a 100mm dia to 150 mm dia. This will be subject to further discussion with SEW, with a detailed design by an accredited consultant and authority approval required as part of the development.

In addition to the preliminary advice from South East Water, further reticulated mains will be required to service the ultimate development and to all lots and buildings. The required services for each development lot and building will be subject to each individual building class type and requirements.

It is also important to note that Fire Fighting services will be subject to each individual building within the development and may require pumps and tanks.

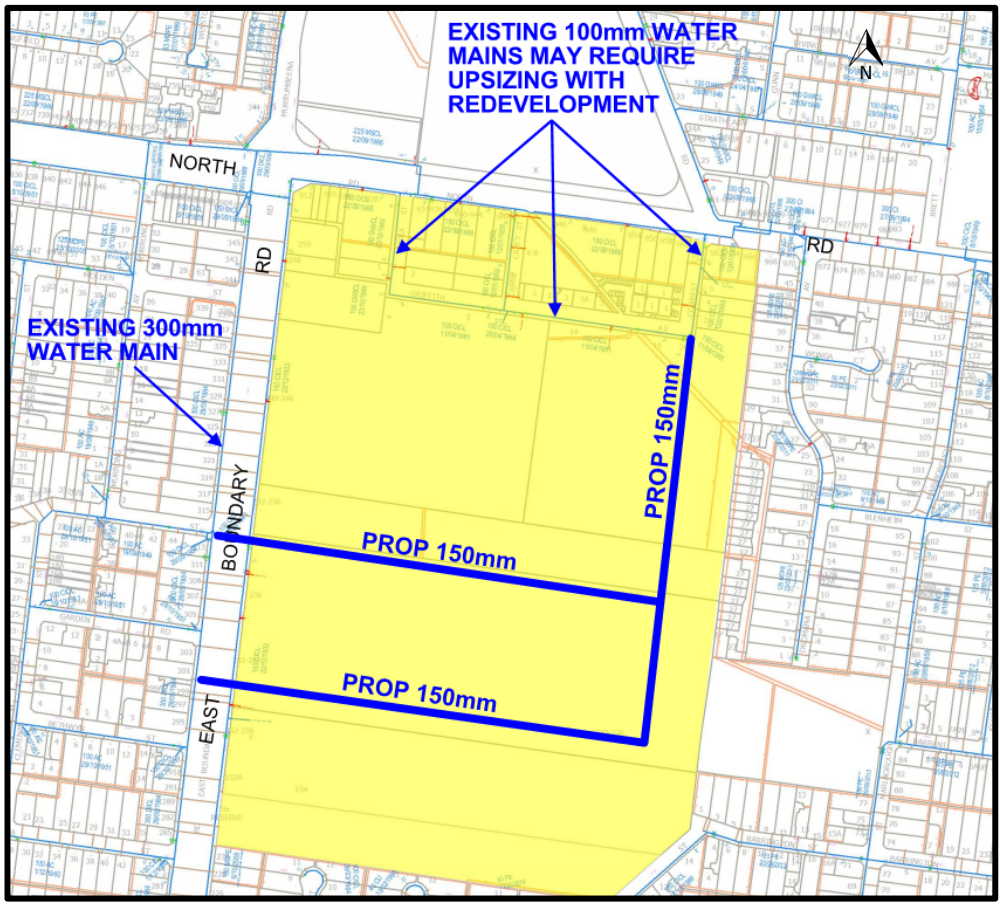


Figure 8 Existing Water Mains and Potential Connections

4.4. Electrical

There is an existing United Energy main area zone-substation / switching yard located on the Western boundary of the site on East Boundary Road, which supplies numerous customers in the Murrumbeena and Bentleigh East area, along with a number of existing sub-station located within the proposed site that supply the current buildings and lots within the East Village Precinct.

It is not feasible to relocate the existing area zone-substation / switching yard highlighted in green below as this is the main zone-substation supply the Murrumbeena and Bentleigh East area and there is no plan by the Power Authority to relocate it.

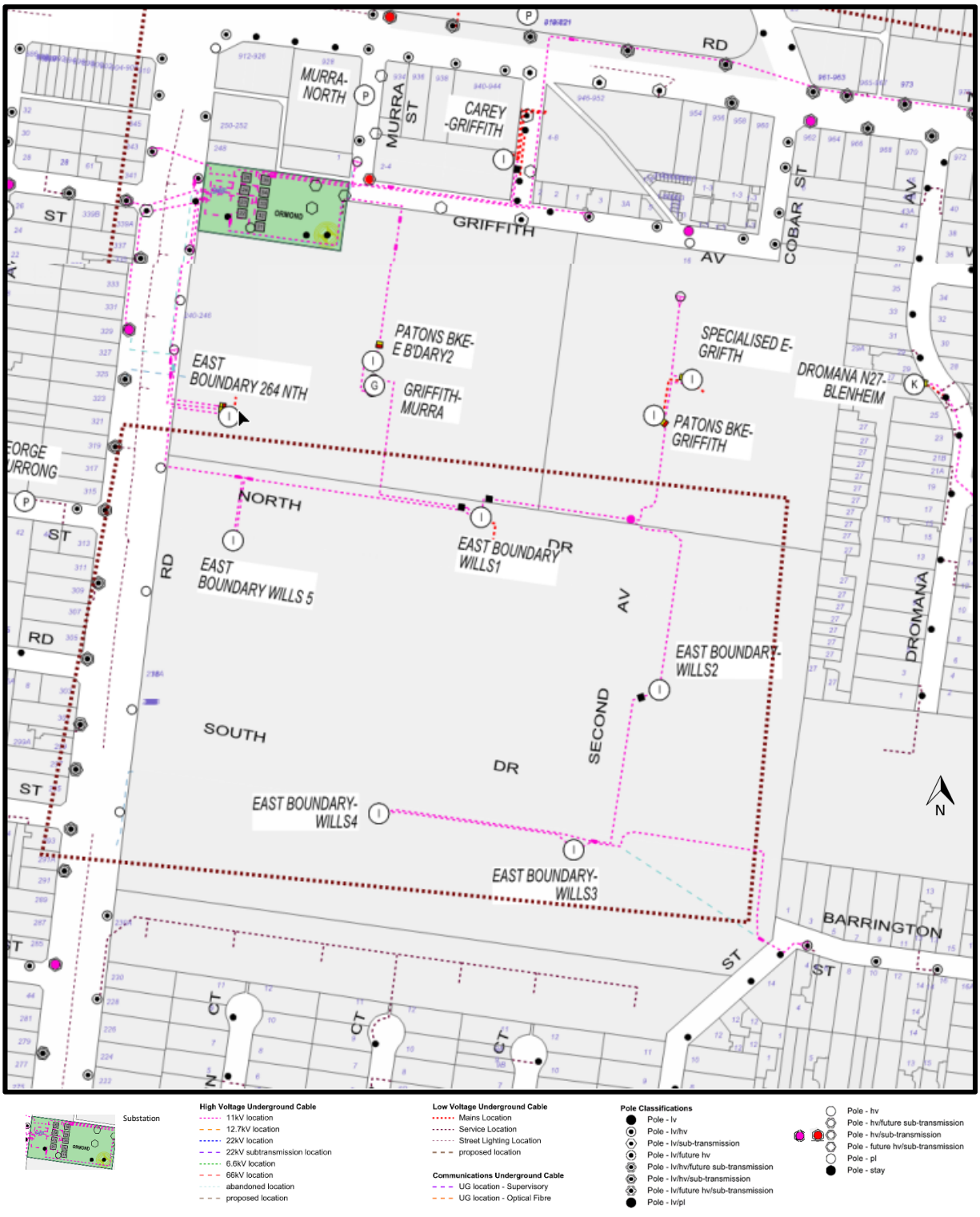


Figure 9 Existing Electrical

The existing above and below ground HV (11-22kV) and LV cables and sub-stations within the site can be decommissioned and removed, with new cables and sub-stations to be provided to suit the new precinct layout.

The sub transmission line, HV (66kV) feeders and LV assets supplying customers in Murrumbeena and Bentleigh East via Murra Street, Griffiths Avenue, Carey Street and Cobar Street require no-go clearance zones to be maintained (ie. Building clearances to the power cables).

No-go clearance zones are required to be maintained to the HV overhead lines that extend along East Boundary Road and North Road. This may require buildings to be set back from the lot boundaries.

Typical clearance zones are 3m to 5m for 33kV to 132kV aerial lines. Refer to the clearance documents provided in Appendix A

The existing above ground assets, that run through the site and along East Boundary Road and North Road, can be relocated underground removing some of the no-go clearance requirements. The cost of relocating assets underground would be based on the life cycle of the existing assets and would require further negotiations with United Energy.

Below is a preliminary site maximum demand calculation based on the Development Site Preliminary Make Up. From preliminary conversations with UE via Zinfra, the existing power network has sufficient capacity for the preliminary site maximum demand requirements.

Component	Description	Unit	Load (kVA)
Commercial / Research		80,000 m^2 (NLA)	4,700
Residential	Townhouses	500 dwellings	2,350
	Apartments	2500 dwellings	7,900
Retail		12,000 m^2 (NLA)	1,200
Secondary School		800 students	500
Total Site Demand			**16,650**

Table 2 – Preliminary Site Maximum Demand

Prior to the decommissioning of the existing authority assets on the site, it is recommended that the site maximum demand requirements are agreed with United Energy, to ensure that the capacity from the existing substations on site is not allocated to others. Existing sub-stations may be required to be maintained to provide power to the site during construction. The sub-stations to be retained would need to be selected based on the proposed construction staging plan and set up of the construction office on the site.

4.5. Telecommunications

There are existing Telstra telecommunications assets in East Boundary Road as well as throughout the site. The telecommunications infrastructure will be designed for NBN requirements. An application to NBN to confirm the connection detail will be required when the design is further developed.

The removal and/or relocation of existing telecommunications base stations will need to be coordinated with the individual Telco-providers.

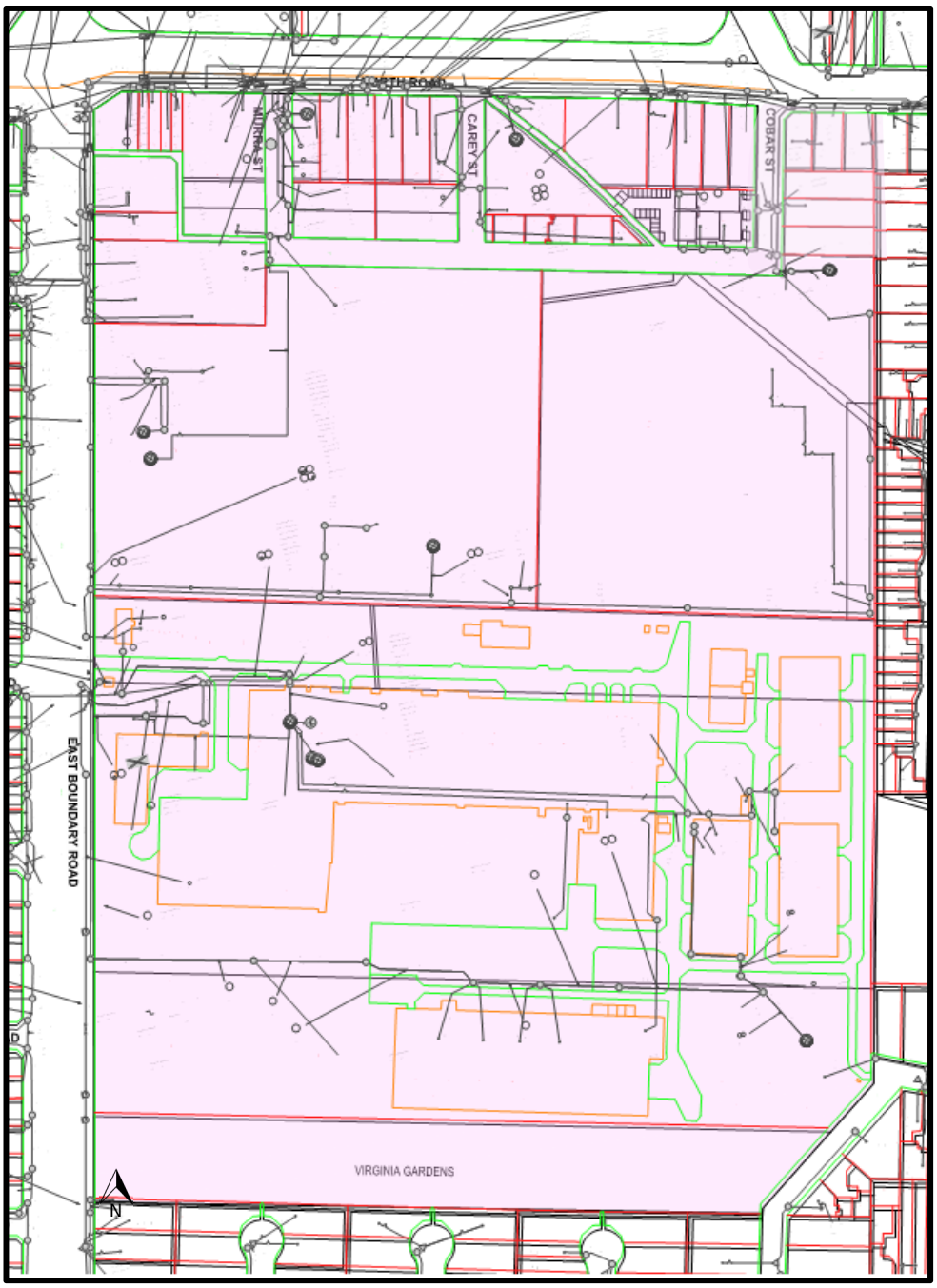
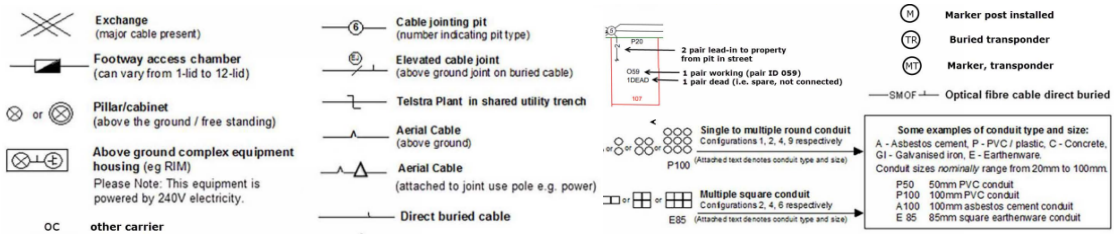


Figure 10 Telstra Telecommunications Assets



4.6. Gas

4.6.1. Existing Internal Services

With authority gas mains reticulating internal to the site, it is anticipated that majority if not all of the existing gas mains and gas enclosures are to be removed or upsized as part of the future development for the site. The primary mains sizes are approximately 100dia and 80dia located within the industrial areas.

Refer to **Figure 2** for existing internal services sketches.

4.6.2. Authority Connection

There are numerous possible locations for the gas connections; as there is an existing 150dia high pressure gas main situated along East Boundary Road as well as a 100mm dia low pressure gas main along Griffith Avenue and along North Road. The low pressure main ranges up to 7kPa whilst the high pressure main ranges from 100kPa to 515kPa.

Upon discussions with the Service Provider Comdain who manage Bentleigh East, high pressure gas can be provided to the site as it is surrounded by a High Pressure network. 2.75kPa metering pressure will be available also. Additionally, there should be no upstream network augmentation required based on preliminary servicing advice from Comdain.

Further discussions with Comdain is required once detailed make up of the development is known so that flow rate can be understood, proposed metering locations determined as well as demand loads can be calculated to satisfy authority requirements.

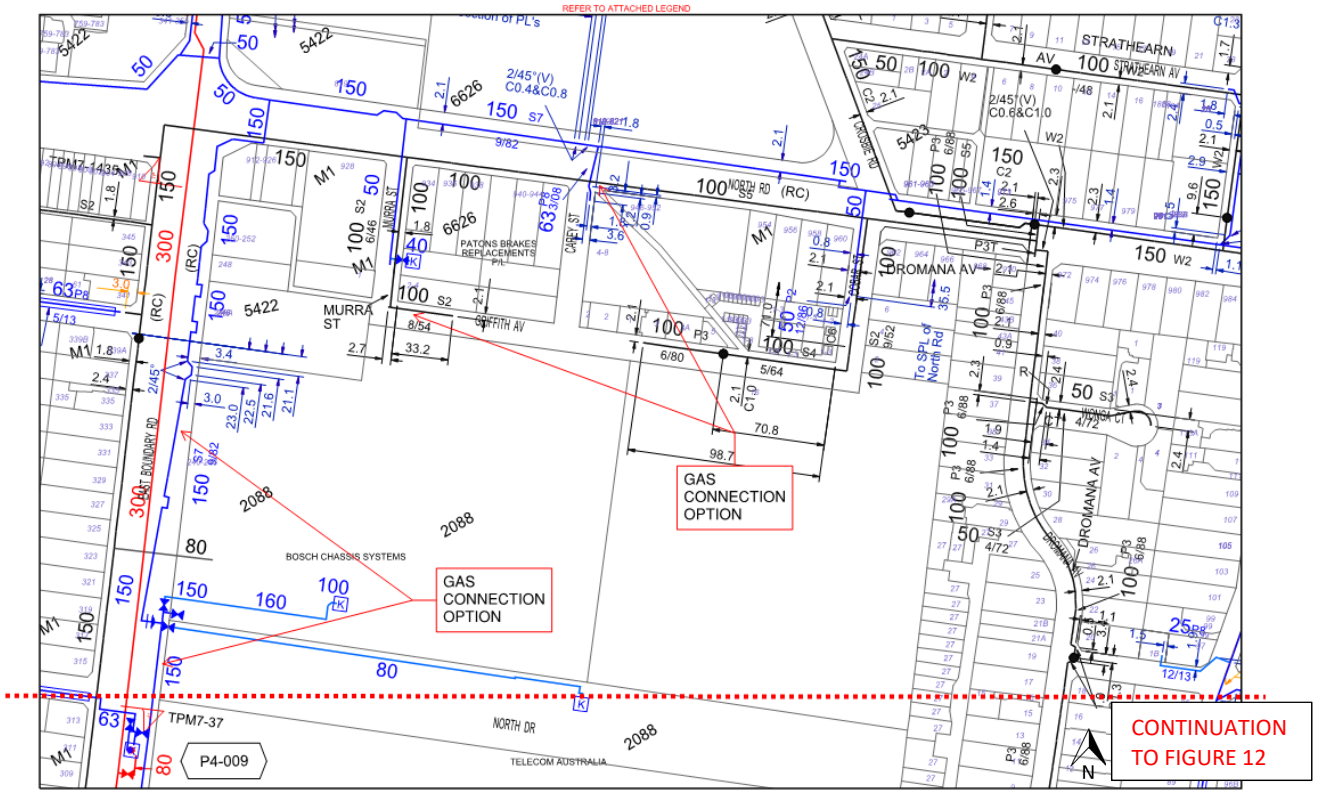


Figure 11 Authority Gas Assets & Gas Connection Options- Northern Boundary

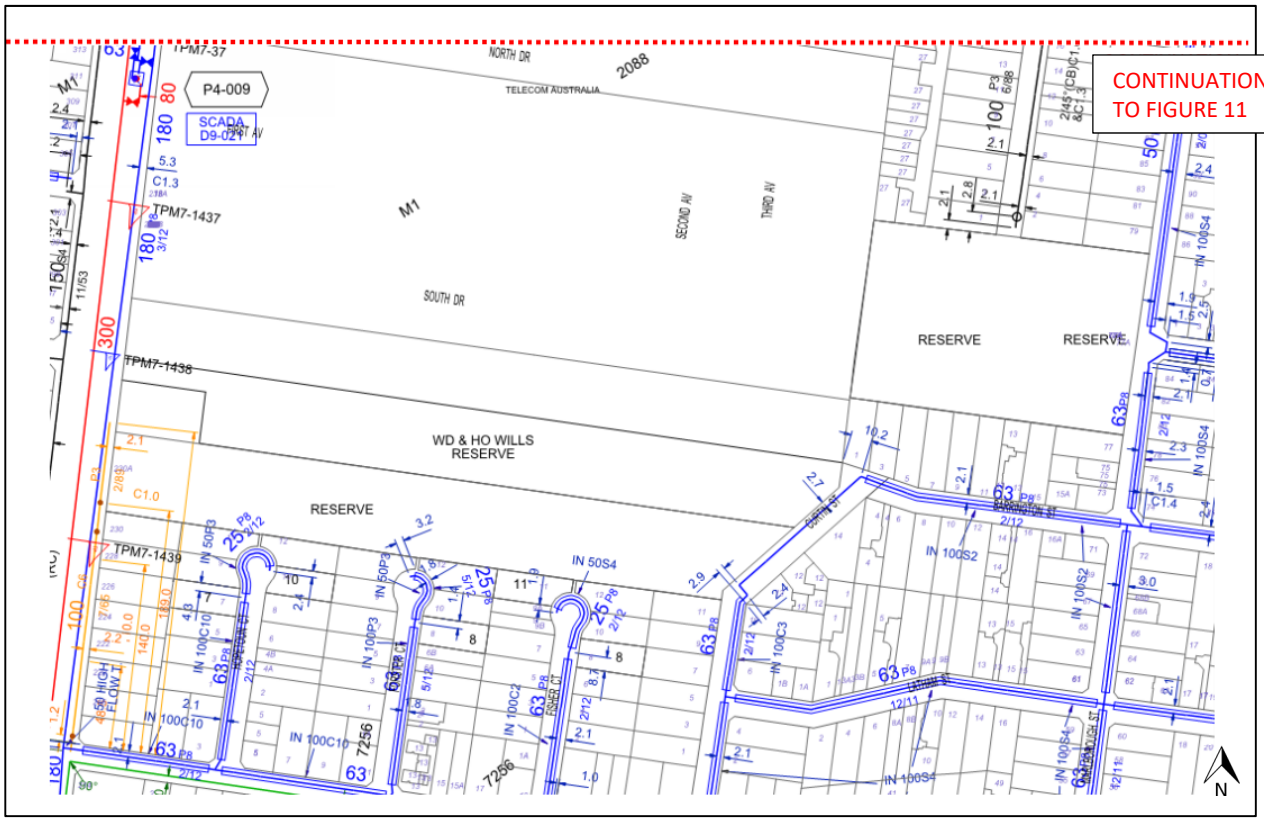


Figure 12 Authority Gas Assets & Gas Connection Options- Southern Boundary

5. Conclusion

Overall, this report outlines the conceptual infrastructure connections for the proposed development. It is anticipated based on the review of the existing services and site that it is readily serviceable subject to authority input, confirmation, approval and required upgrades and extensions to existing assets.

Based on a combination of publicly accessible infrastructure data and preliminary estimate demand calculations, preliminary advice indicates there is sufficient capacity in the sewer, water, gas, electrical and telecommunication services to cater for the future redevelopment of the site, although details are subject to the implementation of the future redevelopment. All servicing advice highlighted throughout the report is current at the date of this report and subject to confirmation at the time of development. Overall, all works will be subject to authority offers and conditions

It is recommended that further engagement with authorities be undertaken as the proposed development makeup and masterplan is continually developed and confirmed. This will assist in:

- Informing the proposed service layout strategy for the development
- Informing any required alteration to the masterplan and;
- Any external service upgrades, augmentations or extension.

6. Appendix A – Authority Correspondence

- SEW – Preliminary Servicing Advice
- Multinet Gas – Preliminary Servicing Advice
- Zinfra – Preliminary Servicing Advice
- Zinfra – Minimum Electrical Clearances and Clearances to Buildings

20 JULY 2017

Mr Stefan Bettiol
E-mail: stefan.bettiol@vpa.vic.gov.au

Dear Mr Bettiol,

PRELIMINARY SERVICING ADVICE FOR 240-246 EAST BOUNDARY ROAD, BENTLEIGH EAST
OUR REFERENCE: CASE NUMBER 28971014 FILE 10PD6629

I refer to your application requesting Preliminary Servicing Advice for the provision of South East Water's drinking water, recycled water and/or sewerage facilities to the above property. We are able to provide you with the following general servicing advice for the proposed development based on the information provided.

This preliminary servicing advice has been prepared based on the information available at the time, however we reserve the right to vary this advice in the future as circumstances change without further notification.

DRINKING WATER
Preliminary hydraulic assessment indicates that the existing water infrastructure has sufficient capacity to supply the proposed development with the main source of supply being the existing 300mm water main located in East Boundary Road, as indicated on the attached 'Drinking Water Indicative Alignment Plan'.

To service the development internally requires the extent of 150mm reticulated water mains as indicated on the attached 'Drinking Water Indicative Alignment Plan', including connecting sized mains to be designed by an accredited consultant in accordance with the WSAA Water Code. It is also noted that there are existing 100mm mains within the northern portion of the development site which may need to be upsized subject to the nature of the surrounding development.

SEWER
The proposed development site is to be serviced by the following sewers which ultimately discharge into the existing Melbourne Water 1830mm Caulfield Intercepting Sewer located in North Road, as indicated on the attached 'Sewer Indicative Alignment Plan':

- The existing 300mm Leila Road Branch Sewer traversing the north east corner of the development site and running along the north boundary in North Road and discharging into Melbourne Water's sewer; and
- The existing 225mm sewer in the northwest corner discharging into the 300mm Leila Road Branch Sewer.

Upon being provided with detailed information in relation to the proposed development and expected flows, South East Water will be in a position to confirm the extent of any sewer augmentation works that may be required to service the development.

Please be advised that South East Water will be required to consult with Melbourne Water to determine if there is sufficient capacity within the 1830mm diameter Caulfield Intercepting Sewer to cater for the flows from this development.

Any trade waste discharge being accepted by South East Water is subject to the Owner entering into a trade waste agreement and the effluent complying with South East Water's trade waste guidelines. For further details and prior to finalising any plans, please contact the trade waste department on 9552 3662 or trade.waste@sew.com.au.

GENERAL
This Preliminary Servicing Advice is assessed on a lot/s basis only for the proposed development. To obtain hydraulic/plumbing servicing advice for site specific general and/or firefighting flow rates please apply for conditions via South East Water online portal 'PropertyConnect' or contact South East Water's Property Development Group on 9552 3770.

Contributions
New Customer Contributions will apply to this development. The current rates are available on South East Water's website www.southeastwater.com.au/developmentprices

Formal Conditions
To obtain South East Water's formal financial and servicing conditions apply on line via www.southeastwater.com.au

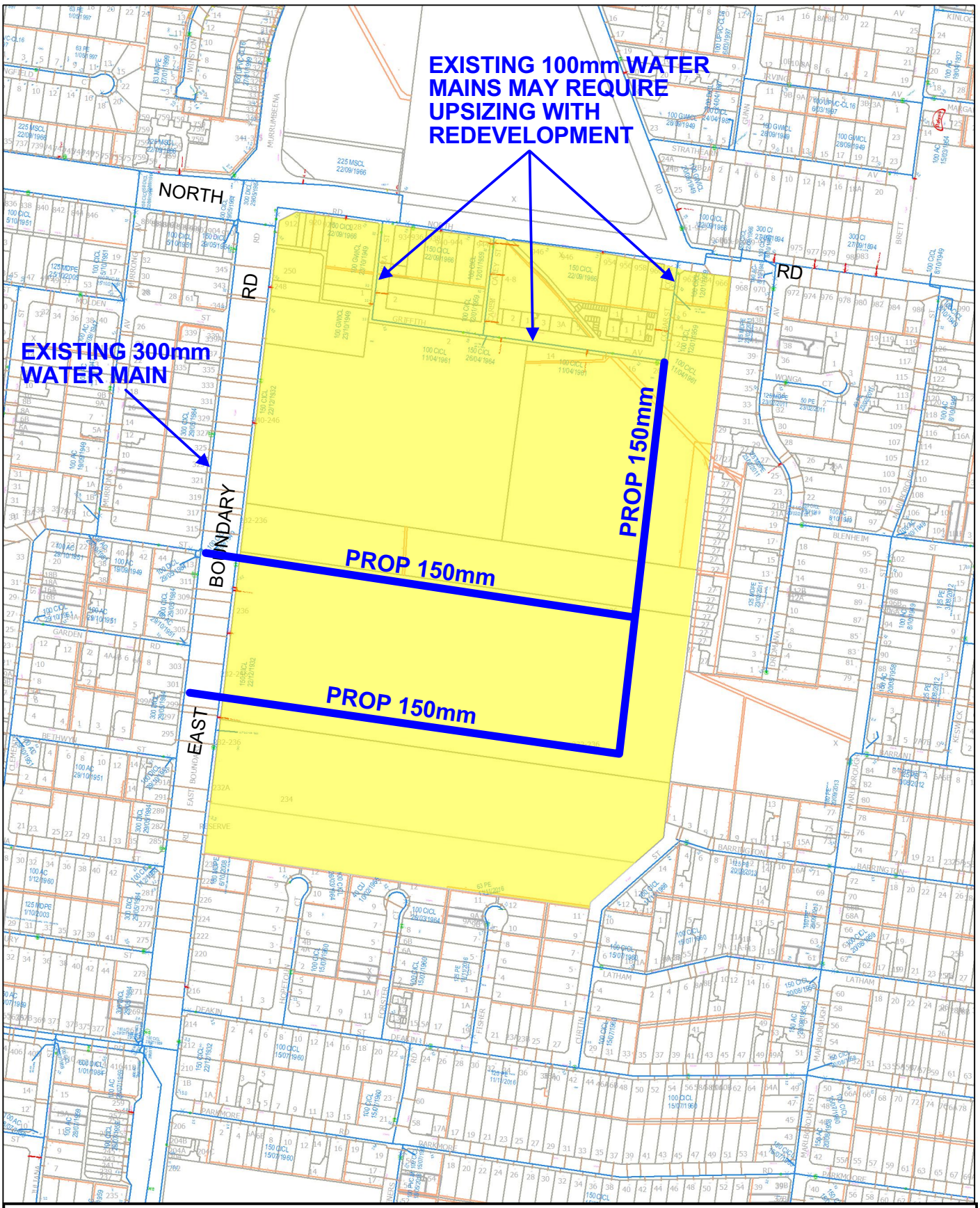
- ➔ PropertyConnect
- ➔ Land Development
- ➔ Works Agreement

All works are to be carried out in accordance with the Melbourne Retail Water Agency (MRWA) edition of the Water Services Association of Australia (WSAA) Codes.

If you require further information, please contact Todd Martin on 9552 3261.

Yours sincerely

Tim Jerram
GROUP MANAGER DEVELOPMENT



DRINKING WATER INDICATIVE ALIGNMENT PLAN

South East Water

South East Water Corporation
ABN 89 066 902 547

N

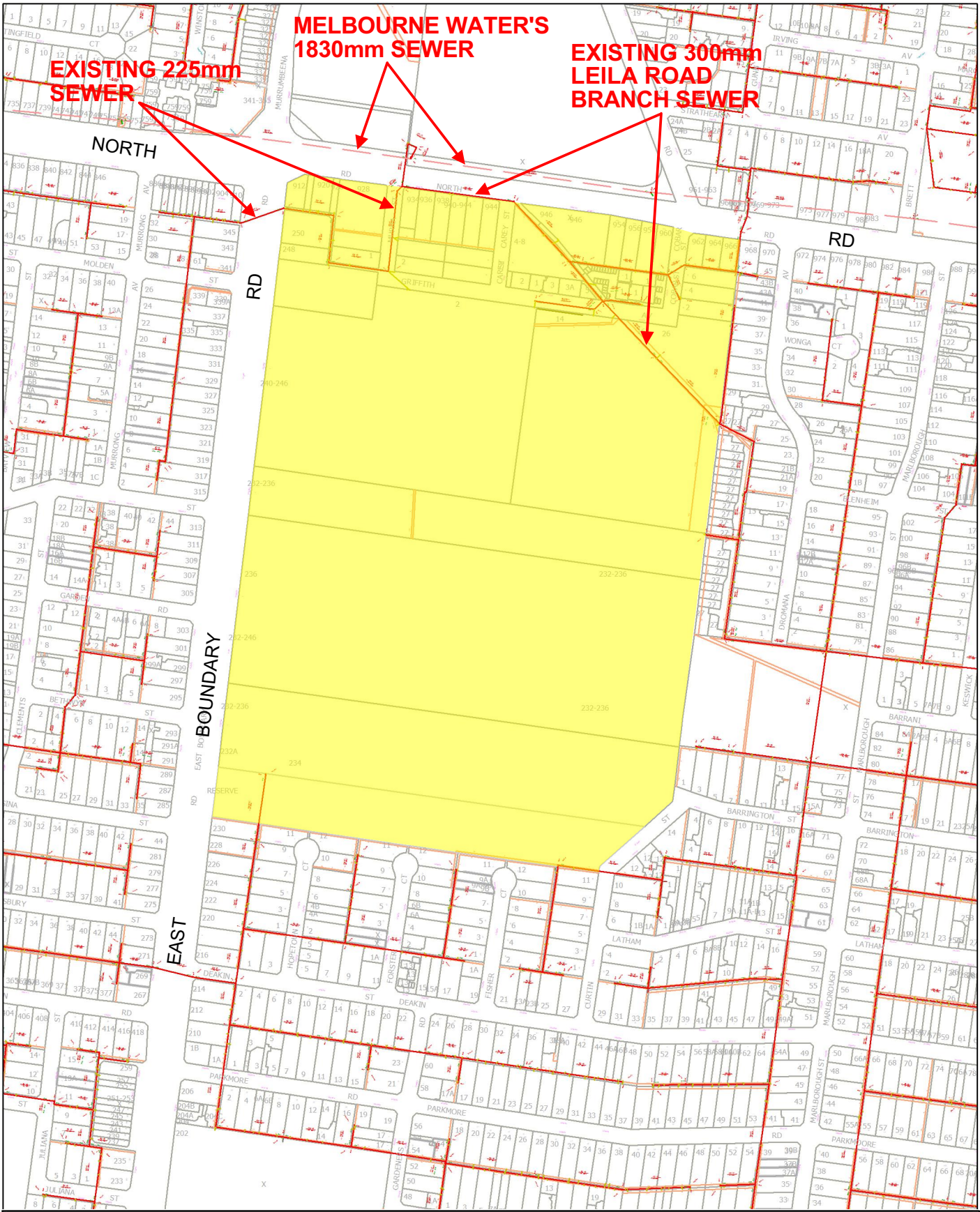
DEVELOPMENT LOCATION:	240-246 EAST BOUNDARY ROAD, BENTLEIGH EAST	
SOUTH EAST WATER REFERENCE:	CASE 28971014	FILE 10PD6629
PREPARED BY:	TODD MARTIN	MEL REF: 68 K10
ORIGINAL SIZE: A4 *Note: Pipe sizes shown are the internal diameter*	SCALE: 1 : 5000	MAX HGRL: 126.2M (106.2m + 20.0m surge)

WARNING

This plan is issued solely for the purpose of assisting you in identifying South East Water's water assets through further investigation only. It is not to be used for any other purpose, including to identify any other assets, property boundaries or dimensions.

Accordingly, the location of all assets should be proven by hand on site prior to the commencement of any work (Refer to Development Agreement for further details).

LEGEND (PROPOSED WORKS)			
Water main		Hydrant	
Valve	X	Fireplug/Washout	
		Tapper/Reducer	



SEWER INDICATIVE ALIGNMENT PLAN

South East Water

South East Water Corporation
ABN 89 066 902 547

N

DEVELOPMENT LOCATION:	**240-246 EAST BOUNDARY ROAD, BENTLEIGH EAST**	
SOUTH EAST WATER REFERENCE:	**CASE 28971014**	**FILE 10PD6629**
PREPARED BY:	**TODD MARTIN**	**MEL REF: 68 K10**
Original Size: A4 *Note: Pipe sizes shown are the internal diameter*	**SCALE: 1 : 5000**	**B/T AREA: YES**

WARNING
This plan is issued solely for the purpose of assisting you in identifying South East Water's sewer assets through further investigation only. It is not to be used for any other purpose, including to identify any other assets, property boundaries or dimensions.

Accordingly, the location of all assets should be proven by hand on site prior to the commencement of any work (Refer to Development Agreement for further details).

LEGEND (PROPOSED WORKS)			
Sewer main	———	Maintenance Hole	●
Easement	- - - - -	Inspection Shaft	■
		Direction of flow	←

From: Ronan Tongs
Sent: Wednesday, 24 January 2018 8:31 PM
To: Vinh Do
Subject: RE: Corner of East Boundary Road and North Road (Melway Ref: 68 K10)

Thanks Vinh,

The key item is that no augmentations are to be assumed.

Cheers.

Ronan Tongs
Civil Project Engineer
Wood & Grieve Engineers
D: (03) 8554 7120 | T: (03) 8554 7000 | M: 0403 074 258
E: Ronan.Tongs@wge.com.au

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From: Vinh Do
Sent: Wednesday, 24 January 2018 5:36 PM
To: Gerrard Ziino <gziino@comdain.com.au>
Cc: Ronan Tongs <Ronan.Tongs@wge.com.au>; Michael O'Donnell <modonnell@comdain.com.au>
Subject: RE: Corner of East Boundary Road and North Road (Melway Ref: 68 K10)

Thanks Gerrard,

Appreciate that insight. If you have any queries, Ill touchbase further.

Kind regards

Vinh Do
Civil Engineer
Wood & Grieve Engineers
D: (03) 8554 7024 | T: (03) 8554 7000
E: Vinh.Do@wge.com.au

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---

From: Gerrard Ziino [mailto:gziino@comdain.com.au]
Sent: Tuesday, 23 January 2018 9:16 AM
To: Vinh Do <Vinh.Do@wge.com.au>
Cc: Ronan Tongs <Ronan.Tongs@wge.com.au>; Michael O'Donnell <modonnell@comdain.com.au>
Subject: RE: Corner of East Boundary Road and North Road (Melway Ref: 68 K10)

Vinh,

Please consider and adopt the following.

1. If there are council roads proposed the gas mains that would be constructed in them at you request would form part of a sub-division. In which case this needs to be sent to the email address provided below with plans of subdivision

Alternatively

2. Any gas supply requests along common property, off common property, or off gas Mains laid (or to be laid in council roads) require a gas application to a retailer at the time when the following is definitively known for each land title

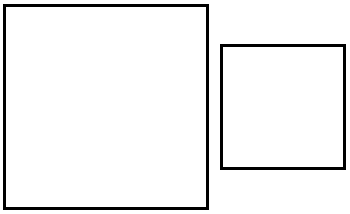
- Flow rates per gas meter
- Proposed Location of the gas meter(s)
- The metering pressure

You can assume no upstream network augmentation is required and that if perchance it were unusually necessary it would not be chargeable to the applicant

Regards

Gerrard Ziino
CIC Engineer
t +61 3 9535 8303

Add to contacts | Disclaimer | Comdaininfrastructure.com.au



From: Day, Robert [mailto:Robert.Day@ue.com.au]
Sent: Tuesday, 23 January 2018 8:54 AM
To: Vinh Do
Cc: Poole, Scott; Gerrard Ziino; Ronan.Tongs@wge.com.au
Subject: FW: Corner of East Boundary Road and North Road (Melway Ref: 68 K10)

Hi Vinh,

The Bentleigh East area is looked after by my colleague Scott Poole, however new estate and subdivision type applications are currently handled by our Service Provider Comdain.

For your information I have attached a GIS plot of the location that shows that the area is surrounded by our High Pressure network and therefore High Pressure can be provided to the development.

2.75 kPa metering pressure will be available.

The Multinet Network Planning engineers in conjunction with Comdain will need to determine what main extension and/or network augmentation is required.

Please forward all relevant information to Gerrard Ziino at Comdain.

Email - Comserv_newestate@comdain.com.au

Regards,

Robert Day
CIC Planner
M 0405 500 694
E robert.day@ue.com.au

Multinet Gas
43-45 Centreway, Mt Waverley VIC 3149
multinetgas.com.au

From: Vinh Do [mailto:Vinh.Do@wge.com.au]
Sent: Monday, 22 January 2018 4:24 PM
To: Day, Robert <Robert.Day@ue.com.au>
Cc: Ronan Tongs <Ronan.Tongs@wge.com.au>
Subject: Corner of East Boundary Road and North Road (Melway Ref: 68 K10)

Hi Rob,

Happy new year. Just wondering whether Bentleigh East in in the area you look after?

If so, we're in the process of gaining some high level servicing advice from a gas perspective for the following development located at:

Corner of East Boundary Road and North Road (Melway Ref: 68 K10)

The site development plan is very high level at this stage but wish to gain Multinet's understanding on any authority works/capacity at this early stage.

Please find some assumptions for the proposed development along with a high level structure plan.

- Commercial – 80,000sqm
- Residential – 3,000 dwellings
- Retail – 12,000sqm
- Secondary School – 800 students

Kind regards

Vinh Do
Civil Engineer
Wood & Grieve Engineers
D: (03) 8554 7024 | T: (03) 8554 7000
E: Vinh.Do@wge.com.au

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Nicholas Blay

From: Samantha Stone <Samantha.Stone@zinfra.com.au>
Sent: Monday, 22 January 2018 3:53 PM
To: Nicholas Blay
Subject: RE: East Village, Bentleigh East
Attachments: Clearances.pdf; Clearances to Buildings.pdf

Categories: Filed by Newforma

Hi Nick,

Supply as per the below shouldn't be a problem, and will require several substations in locations nominated by your client.
The biggest concern for this site will be the relocation of assets, as there's one subtransmission line and a few HV feeders that supply a lot of customers in Murrumbeena and Bentleigh East that run through Murra Street, Griffiths Avenue, Carey Street and Cobar Street.
If they can be kept in existing position that would be the easiest and by far cheapest option, however your client would be required to abide by No Go Zone clearances for the final building and during construction.
As there are HV overhead lines along East Boundary Road and North Road they would need to ensure they meet No Go Zone clearances if building near those boundaries too.

Regards,
Samantha Stone
Customer Projects Manager
Zinfra
200 Burwood Highway
Burwood 3125 VIC Australia
T: 03 9173 6647
E: samantha.stone@zinfra.com.au
www.zinfragroup.com.au

From: Nicholas Blay [mailto:Nicholas.Blay@wge.com.au]
Sent: Thursday, 18 January 2018 2:11 PM
To: Samantha Stone <Samantha.Stone@zinfra.com.au>
Cc: Ronan Tongs <Ronan.Tongs@wge.com.au>; Vinh Do <Vinh.Do@wge.com.au>
Subject: FW: East Village, Bentleigh East

Samantha,

We working with the Victorian Planning Authority to develop the PSP for a site on the corner of East Boundary and North Road, Bentleigh East. The proposed re-zoning of the 23.9Ha precinct is envisaged to accommodate a mixed precinct comprising of retail, commercial, residential, education and aged care facility/retirement centre.

Due to the size of the development, we would like to have early engagement on the network capacity in the area and any limitation of the existing zone sub-station that is located within the precinct on East Boundary Rd.

We note that we are in early concept design stage, but based on the current proposal the preliminary maximum demand for the site is as follows:

Component	Description	Unit	Load (kVA)
Commercial / Research		84,800 m² (NLA)	5,000
Residential	Townhouses	500 dwellings	2,350
	Apartments	2500 dwellings	7,900
Retail		13,300 m² (NLA)	1,300
Secondary School		500 students	315
Aged Care	Beds	381 beds	400
	Independent Living	176 IL Units	460
Total Site Demand			**17,725**

If you are able to give me a call to discuss further it would be appreciated.

Regards,

Nicholas Blay
Electrical Project Engineer
Wood & Grieve Engineers
D: (03) 8554 7077 | T: (03) 8554 7000 | M: 0428 523 757
E: Nicholas.Blay@wge.com.au

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From: Brennan Drewett [mailto:Brennan.Drewett@zinfra.com.au]
Sent: Wednesday, 17 January 2018 2:00 PM
To: Nicholas Blay <Nicholas.Blay@wge.com.au>
Cc: Ronan Tongs <Ronan.Tongs@wge.com.au>; Vinh Do <Vinh.Do@wge.com.au>
Subject: RE: East Village, Bentleigh East

Hi Nick,

Your point of contact for this site is Samantha Stone, you can contact Samantha on the below details as required;

Samantha Stone
Customer Projects Manager
Zinfra
200 Burwood Highway
Burwood 3125 VIC Australia
T: 03 9173 6647
E: samantha.stone@zinfra.com.au
www.zinfragroup.com.au

Regards,

Brennan Drewett
Project Manager – Customer Projects
T: +61 3 9173 6591
E: brennan.drewett@zinfra.com.au

Zinfra

200 Burwood Hwy
Burwood, VIC 3125 Australia
M: 0437 455 908
www.zinfra.com.au

From: Nicholas Blay [mailto:Nicholas.Blay@wge.com.au]
Sent: Wednesday, 17 January 2018 11:57 AM
To: Brennan Drewett <Brennan.Drewett@zinfra.com.au>
Cc: Ronan Tongs <Ronan.Tongs@wge.com.au>; Vinh Do <Vinh.Do@wge.com.au>
Subject: East Village, Bentleigh East

Brennan,

As discussed we are looking at a major precinct development for a client on the corner of East Boundary and North Road, Bentleigh East. The proposed re-zoning of the 23.9Ha site is envisaged to accommodate a mixed precinct comprising of retail, commercial, residential, education and aged care facility/retirement centre.

Due to the size of the development, we would like to have early engagement on the network capacity in the area and any limitation of the existing zone sub-station that is located within the precinct on East Boundary Rd.

We note that we are in early concept design stage, but based on the current proposal the preliminary maximum demand for the site is as follows:

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Residential	Townhouses	500 dwellings	2,350
	Apartments	2500 dwellings	7,900
Retail		13,300 m² (NLA)	1,300
Secondary School		500 students	315
Aged Care	Beds	381 beds	400
	Independent Living	176 IL Units	460
Total Site Demand			**17,725**

If you are able to let me know who is responsible for the area to discuss further it would be appreciated.

Regards,

Nicholas Blay
Electrical Project Engineer
Wood & Grieve Engineers
D: (03) 8554 7077 | T: (03) 8554 7000 | M: 0428 523 757
E: Nicholas.Blay@wge.com.au

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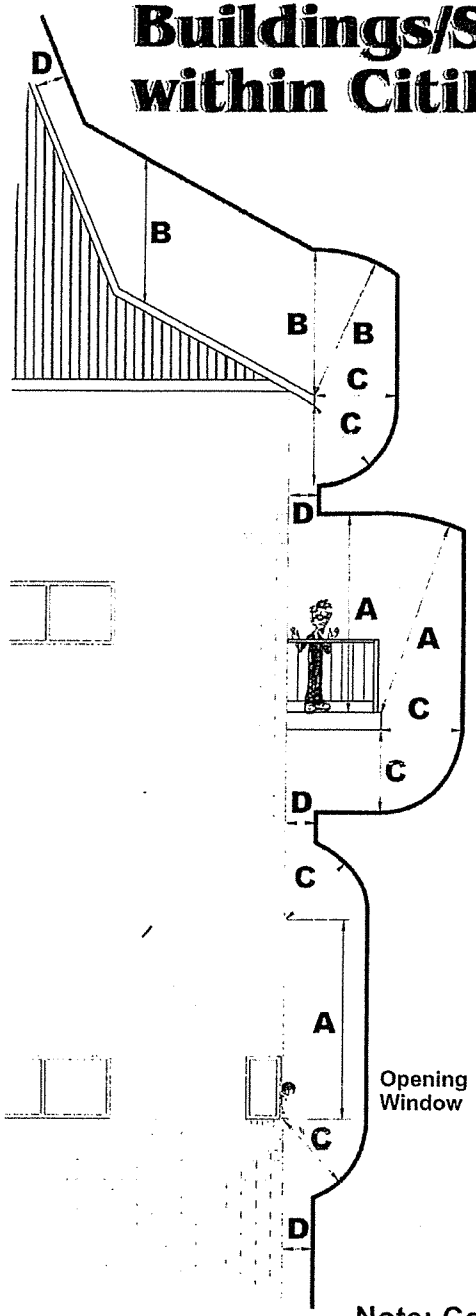
Minimum Clearances between Buildings/Structures and Overhead Powerlines within CitiPower/Powercor Areas

CITIPOWER

Powercor AUSTRALIA



Note: Conductor SAG & SWAY must be considered

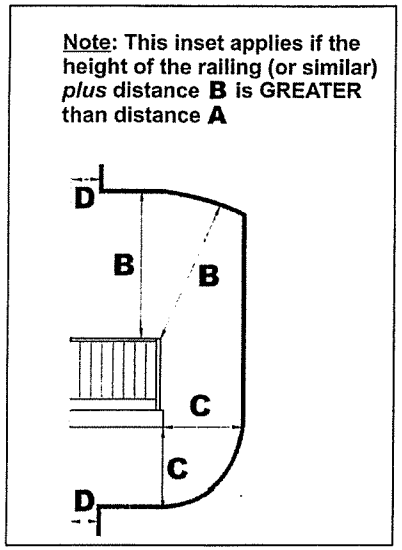


Table 313 Minimum distances from parts of buildings, structures, scaffolding or posts to aerial lines of relevant installations

Minimum Distance and Nominal Voltage

	CitiPower/Powercor			
	Alternating current aerial lines Up to 1000 Volt	1000 Volt a.c. or 1500 Volt d.c. Up to 33 000 volt	33 000 Volt upto 132 000 Volt	132 000 Volt Up to 275 000 Volt
A Vertically above those parts of a building, structure, scaffolding or post normally accessible to persons	3700mm	4600mm	5000mm	6800mm
B Vertically above those parts of a building, structure, scaffolding or post not normally accessible but on which a person can stand	2700mm	3700mm	4600mm	6000mm
C In any direction other than vertical from windows, openings and balconies and those parts of a building, structure, scaffolding or post normally accessible to persons	1500mm	2700mm	3000mm	4600mm
D In any direction other than vertical from those parts of a building, structure, scaffolding or post not normally accessible to persons	600mm	2700mm	3000mm	3700mm
In any direction from a footbridge	4600mm	4600mm	4600mm	6800mm

The above information is derived from the Electrical Safety (Installations) Regulations 2009
S.R. No. 164/2009 Part 3 Division2 Duties of the Public

Table 1 - Clearances to ground of Bare & Covered Conductors.

Alternating Current Aerial Line Nominal system voltage (U)	Carriageway of roads (m)	Ground Traversable by Vehicles (m)	Elsewhere (m)
Bare or insulated U≤1kV **OR** Insulated conductor with earthed screen U>1kV	5.5	5.5	4.5
Insulated conductor without an earthed screen U>1kV	6.0	5.5	4.5
Bare or covered conductor 1kV<U≤33kV 33kV<U≤132kV 132kV<U≤275kV 275kV<U≤330kV 330kV<U≤500kV	 6.7 6.7 8.7 9.7 11.4	 5.5 6.7 6.7 6.7 10.7	 4.5 5.5 6.7 6.7 10.7

Table 2 - Clearances to Ground of Aerial Service Lines and Other Cable Systems

Service line and "other cable systems" location	Min. Distance to the ground (m)
Over a 2.0m wide strip in the centre of each carriageway of a road	5.5
Over any other part of a freeway,primary road, or highway as defined in Part A of Schedule 3 of Electricity Safety (Network Assets) Regulations 1999	5.5
Over any other part of a secondary road, or collector road as defined in Part B of Schedule 3 of Electricity Safety (Network Assets) Regulations 1999	4.9
Over any other part of any other road	4.6
Over any part of a driveway	4.6
Over other ground Traversable by Vehicles	4.6
At the Connection to a Building or Structure	3.0
Elsewhere	3.0

Table 4 - Clearances of Structures from Aerial Lines

(This table is only for use by persons constructing builbings or structures near aerial lines of network operator.)

	MINIMUM DISTANCE IN METRES					
	Other cable systems, electrolysis drainage cables & alternating current aerial lines U≤1kV	Alternating Current Aerial Lines (Nom. voltage 'U')				
		1kV< U≤33kV	33kV <U≤132kV	132kV< U≤275kV	275kV< U≤330kV	330kV< U≤500kV
Vertically above those parts of a building, structure, scaffolding or post normally accessible to persons	3.7	4.6	5.0	6.8	8.0	9.8
Vertically above those parts of a building, structure, scaffolding or post not normally accessible but on which a person can stand	2.7	3.7	4.6	6.0	7.0	8.0
In any direction from those parts of a building, structure, scaffolding or post not normally accessible to persons	0.6	2.7	3.0	3.7	4.7	6.4
In any direction from windows, openings and balconies and those parts of a building, structure, scaffolding or post normally accessible to persons	1.5	2.7	3.0	4.6	5.5	6.4
In any direction from a footbridge	4.6	4.6	4.6	6.8	8.0	9.8

Table 5 - Clearances to Tramway Systems

Nominal Voltage of UE Crossing Conductor	Minimum Distance from part of a Tramway System (metres)		
	Above Track	From d.c. Traction Feeder Conductors	From d.c. Traction Contact Wire/ Contact Wire Support
LV	7.0	0.6	2.7
6.6kV & 11kV	8.2	1.2	3.7
22kV	8.2	1.2	3.7
66kV	8.2	1.8	4.6

Definitions

"Active conductor" means
(a) a conductor of a network asset that is maintained at a potential difference from
  (i) the neutral conductor; or
  (ii) the earthed conductor; or
(b) if a network asset does not include a neutral or earthed conductor, each conductor of the network.

"Aerial line" means a conductor placed above the ground or water and in the open air.

"Conductor" means the whole or any part of a wire, cable or other thing used, or to be used, for the purpose of transmitting, distributing or supplying electricity, but does not include a wire, cable or other thing directly used in generating electrical energy or converting electrical energy into another form of energy.

"Earthing System" means a system designed to directly electrically connect the conductors and/or metalwork of electrical network assets to the general mass of earth so as to ensure and maintain the effective dissipation of electrical energy.

"Extra low voltage" means not exceeding 50 volts alternating current, or 120 volts ripple free direct current.

"Low voltage" means exceeding extra low voltage, but not exceeding 1000 volts alternating current or 1500 volts direct current.

"High voltage" means exceeding low voltage.

"Network operator" means a person who owns or operates
(a) an upstream network; or
(b) a railway or tramway system.

"Neutral conductor" means a conductor of a circuit that is earthed at its origin.

"Other cable system" means
(a) telecommunication and control cables or
(b) aerial earthed cables

"Carriageway" means a part of a road's surface on which vehicles travel

"Service line" means the final span or section of a low voltage aerial or underground line of an upstream network that is connected to a point of supply.

"Substation" means a plant, building or structure that is above ground or underground in which electricity supply is generated, converted, controlled or transformed.

"Upstream network" means the part of a supply network that is upstream of the point of supply in relation to electric lines forming part of that supply network.

"Supply Network" means a network consisting of electric lines, generators, substation, circuits and any other things required for the purpose of the generation, transmission, distribution or supply of electricity.

Notes:

1. Minimum distances between aerial lines and the ground or the surface of any water not accessible to boats with masts.
   (1) An aerial service line or an aerial line that forms part of another cable system must not, at any time, be closer to the ground or the surface of any water not accessible to boats with masts than the relevant minimum distance specified in Table 2.
   (2) Any other aerial line must not, at any time, be closer to the ground or the surface of any water not accessible to boats with masts than the relevant minimum distance specified in Table 1.

Notes continued:

(3) This regulation does not apply to:
   (a) a low voltage insulated conductor supported along the facade of a building of structure;
   (b) in the case of an aerial service line or an aerial line that forms part of another cable system, that part of the line up to 2000mm from the point of connection to a building where—:
      (i) the part of the line is over any part of a driveway or other ground transverable by vehicles; and
      (ii) the height from any point of the part of the line to the ground is not less than 3.6 metres.

2. Minimum distances between a,c, aerial lines and parts of tramway systems.
   An aerial line carrying alternating current must not, at any time, be closer to a part of a tramway system specified in Table 5 than the relevant minimum distance specified in that Table.

3. Minimum distances between parts of buildings, structures, scaffolding and posts and aerial lines of network operators.
   A person must not build, erect or maintain a building, structure, scaffolding or post, or part of a building, structure, scaffolding or post, specified in Table 4 so that, at any time, the building, structure, scaffolding, post or part is closer to an aerial line of a network operator than the relevant minimum distance specified in that Table.

REFERENCES

MIN. PERMISSIBLE CLEARANCES & SPACINGS–Sht2	UE9/7020/19/1
MIN. PERMISSIBLE CLEARANCES & SPACINGS–Sht3	UE9/7020/22

UNITED ENERGY
ACN 064 651 029

DRAWN *Ian Cook 15/08/01*
DESIGN CHECKED *I. McCartney 25/08/01*
APPROVED *J Tsirikis 25-11-99*

DRG No. UE9/7020/19 A

DISTRIBUTION CONSTRUCTION STANDARDS MANUAL Section 7.1

OVERHEAD LINES UP TO 66kV
PRINCIPLES OF DESIGN & CONSTRUCTION
MINIMUM PERMISSIBLE
CLEARANCES & SPACINGS - SHEET 1 OF 3

A4

Revision: Was based on VX9/7020/19F: A- 15/08/01 Table 4 & 5 added & new notes added (I.C.)

AUTOCAD

Clearance and Spacings - Sheet 1 of 3 UE9/7020/19

TO CONTENTS

7. Appendix B – Land Titles Lot & Plan Number

EAST VILLAGE EXISTING LAND TITLES

PARCEL_SPI	ADDRESS	PSP_PropNo
1\TP827940		1
CM\RP9858	CAREY STREET BENTLEIGH EAST 3165	2
1\TP749593	2A NORTH DRIVE BENTLEIGH EAST 316	3
5\RP9858	5 GRIFFITH AVENUE BENTLEIGH EAST 3	4
14\SP29131	1-3 COBAR STREET BENTLEIGH EAST 31	5
4\RP9858	3A GRIFFITH AVENUE BENTLEIGH EAST	6
9\SP29131		7
15\SP29131	1-3 COBAR STREET BENTLEIGH EAST 31	8
3\RP9858	3 GRIFFITH AVENUE BENTLEIGH EAST 3	9
8\SP29131		10
16\SP29131	1-3 COBAR STREET BENTLEIGH EAST 31	11
2\RP9858	1 GRIFFITH AVENUE BENTLEIGH EAST 3	12
1\RP9858	2 CAREY STREET BENTLEIGH EAST 3165	13
1\SP29131	1-3 COBAR STREET BENTLEIGH EAST 31	14
17\SP29131	1-3 COBAR STREET BENTLEIGH EAST 31	15
18\SP29131	1-3 COBAR STREET BENTLEIGH EAST 31	16
19\SP29131	1-3 COBAR STREET BENTLEIGH EAST 31	17
20\SP29131	1-3 COBAR STREET BENTLEIGH EAST 31	18
21\SP29131	1-3 COBAR STREET BENTLEIGH EAST 31	19
22\SP29131	1-3 COBAR STREET BENTLEIGH EAST 31	20
5\SP29131	5/1-3 COBAR STREET BENTLEIGH EAST	21
26\LP10881		22
1\TP841064	232A EAST BOUNDARY ROAD BENTLEI	23
7\SP29131		24
6\SP29131		25
28\LP10881	4-8 CAREY STREET BENTLEIGH EAST 31	26
1\TP297149	960 NORTH ROAD BENTLEIGH EAST 31	27
1\TP208711	958 NORTH ROAD BENTLEIGH EAST 31	28
33\SP29131	1-3 COBAR STREET BENTLEIGH EAST 31	29
23\SP29131	1-3 COBAR STREET BENTLEIGH EAST 31	30
32\SP29131	1-3 COBAR STREET BENTLEIGH EAST 31	31
31\SP29131	1-3 COBAR STREET BENTLEIGH EAST 31	32
30\SP29131	1-3 COBAR STREET BENTLEIGH EAST 31	33
1\PS632867	240-246 EAST BOUNDARY ROAD BENTI	34
29\SP29131	1-3 COBAR STREET BENTLEIGH EAST 31	35
24\SP29131	1-3 COBAR STREET BENTLEIGH EAST 31	36
28\SP29131	1-3 COBAR STREET BENTLEIGH EAST 31	37
1\TP203555	956 NORTH ROAD BENTLEIGH EAST 31	38
27\SP29131	1-3 COBAR STREET BENTLEIGH EAST 31	39
26\SP29131	1-3 COBAR STREET BENTLEIGH EAST 31	40
25\SP29131	1-3 COBAR STREET BENTLEIGH EAST 31	41
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PC353136	946-952 NORTH ROAD BENTLEIGH EAS	43
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23\LP10881		47
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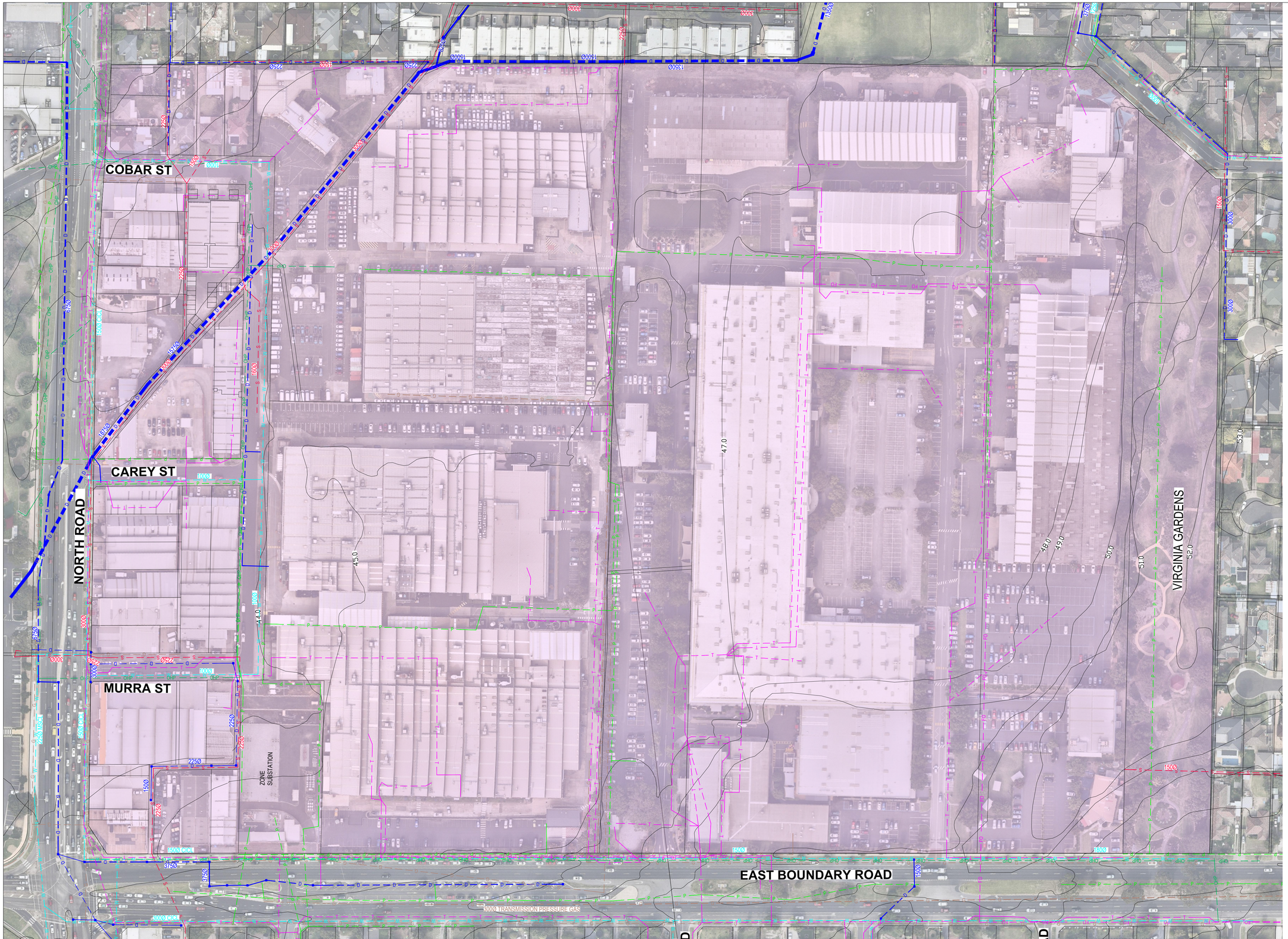
1\PS329746	934 NORTH ROAD BENTLEIGH EAST 31	49
22\LP10881	940-944 NORTH ROAD BENTLEIGH EAS	50
17\LP10881	2-4 MURRA STREET BENTLEIGH EAST 3	51
21\LP10881	938 NORTH ROAD BENTLEIGH EAST 31	52
18\LP10881		53
CM\PS329746	MURRA STREET BENTLEIGH EAST 3165	54
2\SP29131	2/1-3 COBAR STREET BENTLEIGH EAST	55
16\LP10881	1 MURRA STREET BENTLEIGH EAST 316	56
12\LP10881	928 NORTH ROAD BENTLEIGH EAST 31	57
1\TP202140	248 EAST BOUNDARY ROAD BENTLEIGI	58
9\LP10881	250-252 EAST BOUNDARY ROAD BENTI	59
8\LP10881		60
CP160029		61
4\LP10881		62
1\LP10881	912-926 NORTH ROAD BENTLEIGH EAS	63
A\PS632886	16 GRIFFITH AVENUE BENTLEIGH EAST	64
12\SP29131		65
10\SP29131		66
11\SP29131		67
13\SP29131		68
51\LP22277	1 BARRINGTON STREET BENTLEIGH EAS	69
1\TP203612	966 NORTH ROAD BENTLEIGH EAST 31	70
1\TP148010	964 NORTH ROAD BENTLEIGH EAST 31	71
1\TP555082	962 NORTH ROAD BENTLEIGH EAST 31	72
44\LP10881	4 COBAR STREET BENTLEIGH EAST 316	73
43\LP10881	6 COBAR STREET BENTLEIGH EAST 316	74
45\LP10881	2 COBAR STREET BENTLEIGH EAST 316	75
3\SP29131	3/1-3 COBAR STREET BENTLEIGH EAST	76
4\SP29131	4/1-3 COBAR STREET BENTLEIGH EAST	77
1\TP130257	246 EAST BOUNDARY ROAD BENTLEIGI	78

8. Appendix C – Existing Internal Services Sketches



LEGEND:

- P — EXISTING ELECTRICITY (UNDERGROUND)
- OHP — EXISTING ELECTRICITY (OVERHEAD)
- G — EXISTING GAS
- T — EXISTING TELSTRA
- FO — EXISTING FIBRE OPTIC
- W — EXISTING WATER
- 300Ø D — EXISTING STORMWATER DRAIN AND PIT
- S — EXISTING SEWER
- 3.0 — EXISTING CONTOURS
- EXTEND OF WORKS

NOTE:
LOCATION OF EXISTING SERVICES IS DIAGRAMMATIC ONLY AND TO BE CONFIRMED ON SITE PRIOR TO START OF ANY CONSTRUCTION WORKS

1:1000 10 0 10 20 30 40 50 A1
1:2000 A3

REV	DESCRIPTION	DRAWN	APP'D	DATE
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A	PRELIMINARY ISSUE	NJHE	.	17/03/17

ARCHITECT/CLIENT

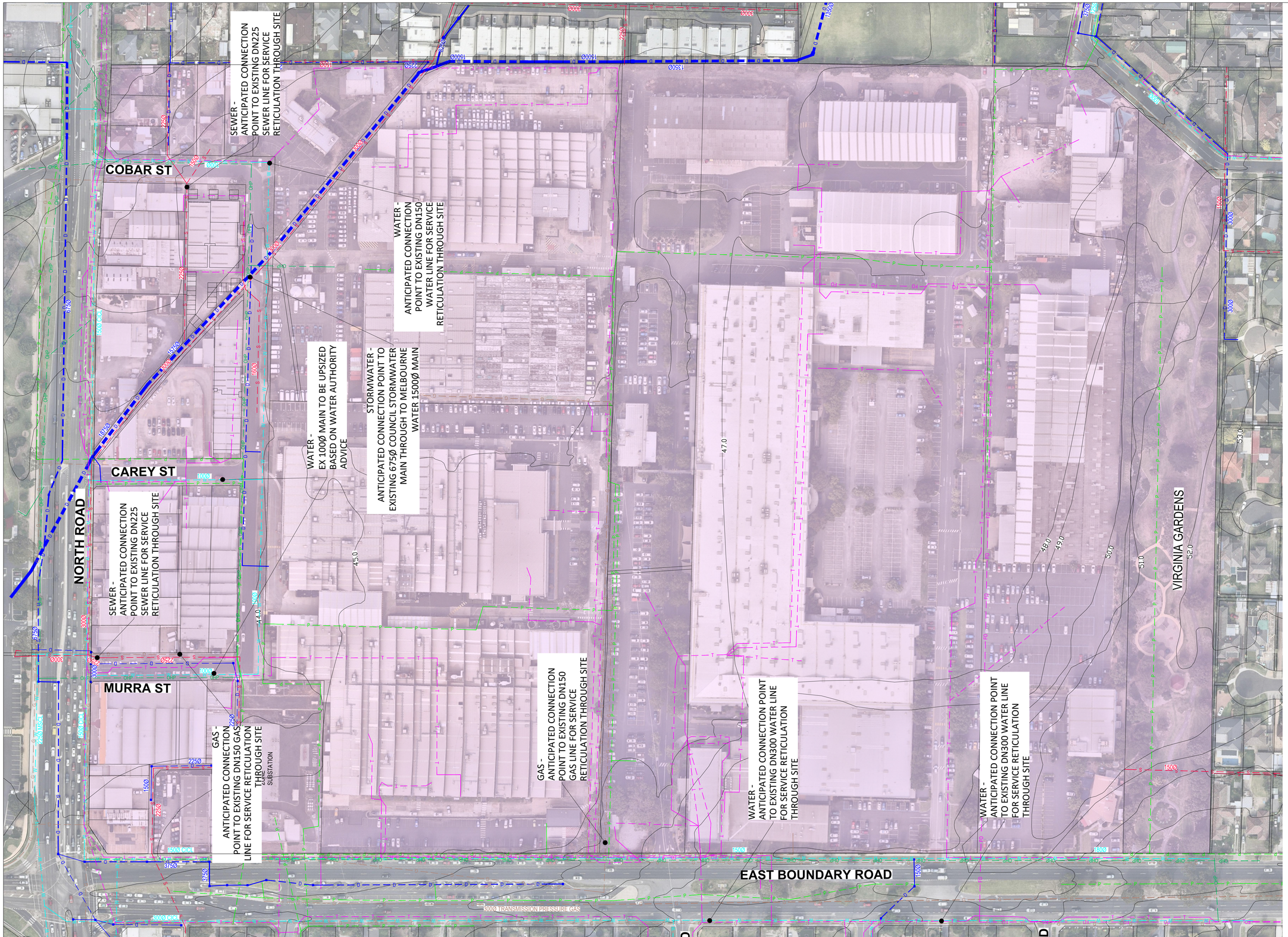
PROJECT: EAST VILLAGE
TITLE: CIVIL ENGINEERING EXISTING SERVICES PLAN

WOOD & GRIEVE ENGINEERS

PRELIMINARY
NOT FOR CONSTRUCTION

SCALE @ A1	PROJECT No	DRAWING No	REV
1:200 @A1	30423	CSK001	A

CSK001-30423.dwg
21/03/2018 3:28:34 PM



NOTE:
LOCATION OF EXISTING SERVICES IS DIAGRAMMATIC ONLY AND TO BE CONFIRMED ON SITE PRIOR TO START OF ANY CONSTRUCTION WORKS

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REV	DESCRIPTION	DRAWN	APP'D	DATE
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B	PRELIMINARY ISSUE	VD	.	21/03/18
A	PRELIMINARY ISSUE	VD	.	05/02/18

ARCHITECT/CLIENT

PROJECT: EAST VILLAGE
TITLE: CIVIL ENGINEERING AUTHORITY SERVICE CONNECTIONS

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WOOD & GRIEVE ENGINEERS

PRELIMINARY
NOT FOR CONSTRUCTION

SCALE @ A1	PROJECT No	DRAWING No	REV
1:1000	30423	CSK002	B

LEGEND:

- P — EXISTING ELECTRICITY (UNDERGROUND)
- OHP — EXISTING ELECTRICITY (OVERHEAD)
- G — EXISTING GAS
- T — EXISTING TELSTRA
- FO — EXISTING FIBRE OPTIC
- W — EXISTING WATER
- 300Ø D — EXISTING STORMWATER DRAIN AND PIT
- S — EXISTING SEWER
- 3.0 — EXISTING CONTOURS

EXTEND OF WORKS

NOTE:
LOCATION OF EXISTING SERVICES IS DIAGRAMMATIC ONLY AND TO BE CONFIRMED ON SITE PRIOR TO START OF ANY CONSTRUCTION WORKS

1:1000 10 0 10 20 30 40 50 A1
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REV	DESCRIPTION	DRAWN	APP'D	DATE
A	PRELIMINARY ISSUE	VD	.	12/02/18

ARCHITECT/CLIENT

EAST VILLAGE

PROJECT

CIVIL ENGINEERING
EXISTING INTERNAL
STORMWATER SERVICES

TITLE

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WOOD & GRIEVE ENGINEERS

PRELIMINARY
NOT FOR CONSTRUCTION

SCALE	30423	CSK003	A
SCALE @ A1	PROJECT No	DRAWING No	REV

LEGEND:

- P — EXISTING ELECTRICITY (UNDERGROUND)
- OHP — EXISTING ELECTRICITY (OVERHEAD)
- G — EXISTING GAS
- T — EXISTING TELSTRA
- FO — EXISTING FIBRE OPTIC
- W — EXISTING WATER
- F — EXISTING WATER
- 300Ø D — EXISTING STORMWATER DRAIN AND PIT
- S — EXISTING SEWER
- 3.0 — EXISTING CONTOURS

EXTEND OF WORKS

NOTE:
LOCATION OF EXISTING SERVICES IS DIAGRAMMATIC ONLY AND TO BE CONFIRMED ON SITE PRIOR TO START OF ANY CONSTRUCTION WORKS

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A	PRELIMINARY ISSUE	VD	.	12/02/18

ARCHITECT/CLIENT

PROJECT: EAST VILLAGE
TITLE: CIVIL ENGINEERING EXISTING INTERNAL FIRE, SEWER & WATER SERVICES

CSK004-30423.dwg

WOOD & GRIEVE ENGINEERS

PRELIMINARY
NOT FOR CONSTRUCTION

SCALE			
SCALE @ A1	PROJECT No	DRAWING No	REV
	30423	CSK004	

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LEGEND:

- P — EXISTING ELECTRICITY (UNDERGROUND)
- OHP — EXISTING ELECTRICITY (OVERHEAD)
- G — EXISTING GAS
- T — EXISTING TELSTRA
- FO — EXISTING FIBRE OPTIC
- W — EXISTING WATER
- 300Ø D — EXISTING STORMWATER DRAIN AND PIT
- S — EXISTING SEWER
- 3.0 — EXISTING CONTOURS

EXTEND OF WORKS

NOTE:
LOCATION OF EXISTING SERVICES IS DIAGRAMMATIC ONLY AND TO BE CONFIRMED ON SITE PRIOR TO START OF ANY CONSTRUCTION WORKS

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REV	DESCRIPTION	DRAWN	APP'D	DATE
A	PRELIMINARY ISSUE	VD	.	12/02/18

ARCHITECT/CLIENT

PROJECT: EAST VILLAGE
TITLE: CIVIL ENGINEERING EXISTING INTERNAL GAS SERVICES

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WOOD & GRIEVE ENGINEERS

PRELIMINARY
NOT FOR CONSTRUCTION

SCALE	PROJECT No	DRAWING No	REV
SCALE @ A1	30423	CSK005	A

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LEGEND:

- P — EXISTING ELECTRICITY (UNDERGROUND)
- OHP — EXISTING ELECTRICITY (OVERHEAD)
- G — EXISTING GAS
- T — EXISTING TELSTRA
- FO — EXISTING FIBRE OPTIC
- W — EXISTING WATER
- 300Ø D — EXISTING STORMWATER DRAIN AND PIT
- S — EXISTING SEWER
- 3.0 — EXISTING CONTOURS
- EXTEND OF WORKS

NOTE:
LOCATION OF EXISTING SERVICES IS DIAGRAMMATIC ONLY AND TO BE CONFIRMED ON SITE PRIOR TO START OF ANY CONSTRUCTION WORKS

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A	PRELIMINARY ISSUE	VD	.	12/02/18

ARCHITECT/CLIENT

EAST VILLAGE
PROJECT

CIVIL ENGINEERING
EXISTING INTERNAL ELECTRICAL & TELECOM SERVICES
TITLE

CSK006-30423.dwg

WOOD & GRIEVE ENGINEERS

PRELIMINARY
NOT FOR CONSTRUCTION

SCALE			
SCALE @ A1	PROJECT No	DRAWING No	REV
	30423	CSK006	A

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