

Industrial Development - Ellerslie Road | Meadowbrook

Engineering Code Compliance Report

Date 12 September 2018

Project Number 13470

REPORT CONTROL SHEET

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Report author:	M.Lobwein

Document control						
Revision	Author	Reviewer	Approved for issue			
			Name	RPEQ no.	Signature	Date
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B	M.Lobwein	K. Martin	K. Martin			24/08/18
C	M.Lobwein	K. Martin	K. Martin			12/09/18

Disclaimer:

This report is a professional opinion based on the information available at the time of writing. It is not intended as a quote, guarantee or warranty and does not cover any latent defects.

This report will comment on the Civil infrastructure to the project and may outline probable costs but the extent of the commission of RMA does not extend to detailed cost feasibility, as such the costs should not be relied on for financing arrangements.

The conclusions in this report should not be read in isolation. We recommend that its contents be reviewed in person with the author so that the assumptions and available information can be discussed in detail to enable the reader to make their own risk assessment in conjunction with information from other sources.

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1. Introduction

1.1 Background

RMA Engineers have been commissioned by the applicant to prepare an Engineering Assessment Report to support a development application for a proposed Medium Impact Industry and Warehouse on the following land:

- 28-30 and 32-34 Ellerslie Road, Meadowbrook (Lots 20 and 21 on RP91039)

1.2 Proposed development

The proposed development is two industrial buildings separated into multiple tenancies with an internal access driveway and carparks as shown on Multi Span's site development plan provided in **Appendix A**.

This site has been previously approved for a similar sized development, refer development application number MCUI/45/2011, decided 31 October 2013.

1.3 Scope

This report provides general comments on the following:

- Existing services
- Roadworks and earthworks
- Assessment of relevant engineering performance outcomes of the current Logan City Council (LCC) including the infrastructure code and filling and excavation code.

This report has been based on the following:

- Stormwater Assessment Report separately prepared by RMA Engineers
- Previous Decision Notice for Material Change of Use – General Industry, development application number MCUI/45/2011, decided 31 October 2013
- Site Development Plan prepared by Multi Span Australia
- Dial Before you Dig (DBYD) search results
- Logan City Council PDonline and online mapping
- Detailed survey prepared by AJS Surveys

This report has been prepared specifically for the Client, site and project. It has been written solely for the purpose of providing engineering advice on the above issues for the Council and the Client for this development site. Please note that this report has been compiled based on the information that is current at the time of report printing, and that the recommendations supplied within this report are based solely on the above.

It is further noted that no analysis has been undertaken beyond the lawful point(s) of stormwater discharge. As such, the responsibility for any existing drainage issues downstream is considered to remain the responsibility of Council to address.

2. Site characteristics

2.1 Location and description

The site is located on Ellerslie Road on land described as Lots 20 and 21 on RP91039, covering an area of approximately 2.02ha.

A tributary of the Logan River is located approximately 450m north of the site.

The site is currently undeveloped with its boundary highlighted in the figure below.



Figure 2.1 – Locality Map

2.2 Site layout

The conceptual site layout consists of a combination of slab on ground and suspended slab construction. **Figure 2.2** illustrates the concept development layout assessed in this report.

The conceptual layout includes an area of suspended slab along the eastern side to maintain the flood storage volume of the drainage channel in Lot 20 on RP91039.

The surface level of the conceptual development was set to 500mm above the current DFE.

Refer **Section 4.3** for further commentary on flooding and stormwater.



Figure 2.2 – Site Layout Plan

3. Services

3.1 Sewer reticulation

The subject site does not appear to be currently serviced by the existing sewerage network.

Information obtained from Dial Before you Dig (DBYD), survey and Council as constructed records (refer **Appendix A**) indicate that the nearest sewer reticulation main and expected connection point for the proposed development is located within Lot 37 on SP91039 (understood to be owned by Council) parallel to the northern site boundary.

This reticulation main connects to a trunk sewer line that traverses the eastern development site boundary. Although not currently applied, based on conditions highlighted in previous approval, an appropriately sized easement in accordance with Council and the South East Queensland Water Supply and Sewerage Design and Construction Code (SEQ Code) standard is expected to be provided over the existing trunk sewer main and confirmed during the operational works phase.

It is assumed that via the submission of this application, Council will confirm the capacity of the existing sewer reticulation main and the availability for connection to service the proposed development.

The expected point of sewer connection is shown in the **Concept Engineering Services Sketch Plan** within **Appendix E**.

3.2 Water reticulation

The subject site does not appear to be currently serviced by the existing water network.

Information obtained from DBYD, survey and Council as constructed records (refer **Appendix A**) indicate that the nearest water reticulation main and expected connection point for the proposed development is located on the southern side of Ellerslie Road.

It is assumed that via the submission of this application, Council will confirm the pressure and capacity of the existing reticulation infrastructure to service the proposed development.

The proposed water reticulation concept and expected point of connection are shown in the **Concept Engineering Services Sketch Plan** within **Appendix E**.

3.3 Electricity and telecommunication services

Information obtained from DBYD records (refer **Appendix C**) indicates that the site is currently serviced by existing underground electrical and telecommunication infrastructure located within Ellerslie Road.

Detailed design of the development will require these telecommunication services to be located by non-destructive means to determine their exact locations and depths. Guidance will be required from an Electrical / Telecommunications Engineer to confirm the suitability of the existing infrastructure relative to the requirements of the proposed development.

3.4 Gas

Information obtained from DBYD records (refer **Appendix C**) indicates that a 110PE live gas main is located within the Ellerslie Road reserve traversing the development site frontage. Detailed design of the development will require this infrastructure to be located by non-destructive means to determine its exact location and depth. Guidance will be sought from APA to confirm the suitability of the existing infrastructure relative to service the proposed development, if required.

4. Roadworks and earthworks

4.1 Roadworks

The proposed external road widening is expected to be an industrial collector road typology with a concrete barrier kerb and channel on a 4.5 metre alignment as per the previous development application (MCUI/45/2011).

The length of Ellerslie Road widening is to extend for the full frontage of Lot 20 and 21, then taper back to existing road pavement in accordance with Councils relevant standards. This includes removal and relocation of the existing guard rails.

As noted with the conditions of the previous development approval (MCUI/45/2011), a reinforced concrete cover over the headwall is expected to be provided to allow for the continuation of the concrete footpath associated to the road widening. This includes the provision of safety rail fencing, as required.

4.2 Earthworks

4.2.1 Development Works

As identified in the stormwater assessment report separately prepared by RMA Engineers, the site is subject to flooding and to address flood immunity requirements, filling of the site will be required.

Earthworks associated with the proposed development will be detailed in subsequent development permit applications for Operational Works. Earthworks will be designed in accordance with current LCC Planning Scheme Policies, the constraints of the site and good engineering practice.

Preliminary modelling has been undertaken to assess the extent of filling on site that could reasonably be accommodated. Compensatory earthworks to mitigate the potential impacts of the removal of flood storage have been included.

To address general compliance with the Logan City Council Planning Scheme, a detailed site survey has been undertaken and provided within **Appendix A**.

Detailed bulk earthworks design will be provided to Council for assessment through the Operational Works process.

It is noted that the frontage of the site and adjoining sites contain some reference to the landslide and steep land overlay codes. It is assumed that these are localised areas subject to further assessment.

4.2.2 Acid sulfate soils

The site is identified with the potential to be affected by acid sulfate soils as shown in Councils overlay mapping. Site elevation levels range from RL7.0m to RL10.35m which are below the RL20m AHD threshold for LCC.

Should acid sulfate soils be encountered on site, management of the affected soils will be undertaken by the Principle Contractor in accordance with the requirements of the State Planning Policy (SPP) and Councils Planning Scheme Policy.

4.2.3 Erosion and sediment control

Erosion and sediment control (ESC) measures will be required to be established and maintained in accordance with Councils standards.

A detailed ESC Plan will be prepared during the detailed design phase. During the construction phase of the project, it will be the responsibility of the Principle Contractor to implement and update as necessary the requirements of the ESC Plan.

4.3 Stormwater

Refer to RMA Engineer's separately prepared Stormwater Assessment Report for details on stormwater flooding, flood storage, quantity and quality management.

Internal stormwater infrastructure is proposed to direct discharge into the existing channel at multiple locations along the eastern boundary. Discharge locations will be locally shaped to encourage flow spreading to reduce the potential for scouring. Internal stormwater infrastructure is expected to allow for the capture of the existing upstream undeveloped catchment within Lot 22 on RP91039.

Refer to the Environmental/Ecologist reporting completed by others for further discussion surrounding the developments impact to the existing channel.

5. Engineering code responses

We have prepared preliminary responses to the following codes from Logan City Council's Planning Scheme 2015:

- Filling and Excavation Code
- Infrastructure Code

Comments on the performance criteria for the proposed development in relation to the above codes are included in **Appendix D**.

6. Conclusion

The following comments summarise the results of a preliminary assessment of the development proposal against Councils codes.

- The development could be serviced by the existing sewerage reticulation nearby the subject site. Council is to confirm the capacity of this existing reticulation and its availability for connection to service the proposed development.
- The development could be serviced by the existing water reticulation network within Ellerslie Road. Council is to confirm the pressure and capacity of this existing reticulation main and its availability for connection to service the proposed development.
- The development could be serviced by the existing electrical and telecommunication infrastructure within Ellerslie Road. Appropriate advice from service providers and suitability qualified consultants will be required to confirm the appropriateness of the existing site connections and service capacities for the proposed development.
- The site is subject to flooding and to address flood immunity requirements, partial filling of the site will be required. The conceptual layout includes an area of suspended slab along the eastern side to maintain the capacity volume of the drainage channel in Lot 20 on RP91039.
- The site has the potential to be affected by acid sulphate soils as shown in Councils overlay mapping. Should acid sulfate soils be encountered on site, management of the affected soils will be undertaken by the Principle Contractor in accordance with the requirements of the State Planning Policy (SPP) and Councils Planning Scheme Policy.

Based on the findings of this report, it is expected the proposed development can achieve compliance with Councils codes.

Appendix A Site Development Plan & Detailed Survey



PROPOSED INDUSTRIAL UNIT DEVELOPMENT

28 ELLERSLIE ROAD, MEADOWBROOK

B & L HOARE

28 ELLERSLIE

CONCEPT PERSPECTIVE

4662-SK09

07.09.2018

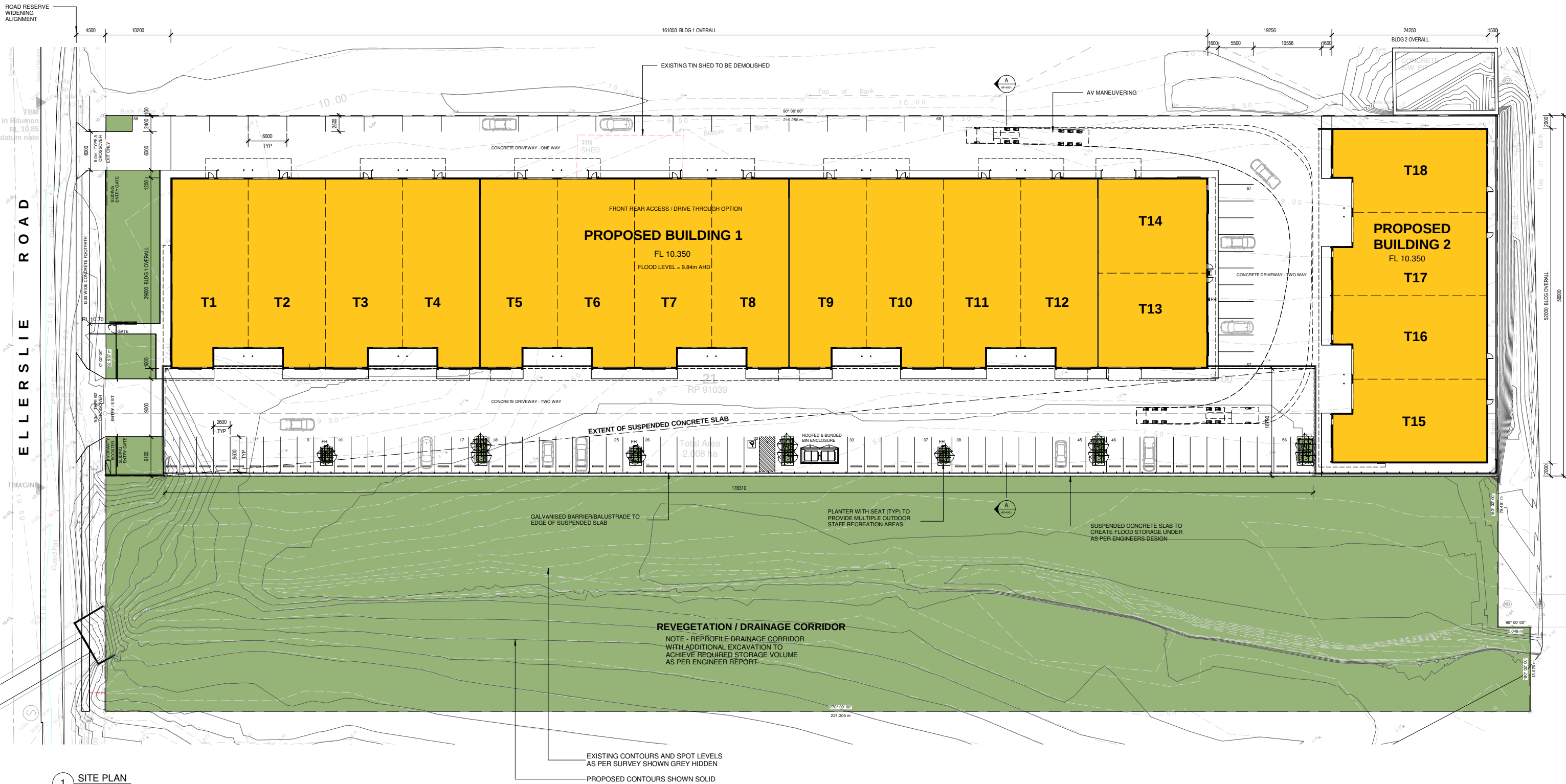
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1 SITE PLAN
1:300

DEVELOPMENT SUMMARY	
28-30 & 32-34 ELLERSLIE ROAD MEADOWBROOK QLD 4131	
LOT 20 & 21 ON RP91039 PARISH of MACKENZIE COUNTY of STANLEY	
SITE AREA - 2007m ²	
LOCAL AUTHORITY - LOGAN CITY COUNCIL	
ZONE MEDIUM IMPACT INDUSTRY	
CLASS 7b (TYPE C CONSTRUCTION)	
SITE COVER 5765m ² (29%)	
HARDSTAND AREA - 6025m ² TOTAL IMPERVIOUS AREA - 11790m ²	
CARPARKING REQUIRED 1/80 UPTO 500m ² + 1/100 OVER 500m ² - 88	
CARSPACES PROVIDED 88 CARSPACES	
BICYCLE PARKING REQUIRED 1/800m ² 11 SPACES	
BICYCLE PARKING PROVIDED - 1 WALL MOUNTED BICYCLE HOOK PER TENANCY (18)	
DESIGN VEHICLE - AV	
LANDSCAPING REQUIRED 10% 2007m ²	
PROPOSED 8300m ² (INCLUDING DRAINAGE & REVEGETATION CORRIDOR, EXCLUDES UNDERCROFT)	

AREA SCHEDULE - GROSS FLOOR AREA	
T1	339 m ²
T1 - MEZZ	169 m ²
T2	339 m ²
T2 - MEZZ	167 m ²
T3	339 m ²
T3 - MEZZ	167 m ²
T4	339 m ²
T4 - MEZZ	167 m ²
T5	339 m ²
T5 - MEZZ	167 m ²
T6	339 m ²
T6 - MEZZ	167 m ²
T7	339 m ²
T7 - MEZZ	167 m ²
T8	339 m ²
T8 - MEZZ	167 m ²
T9	339 m ²
T9 - MEZZ	167 m ²

AREA SCHEDULE - GROSS FLOOR AREA	
T10	339 m ²
T10 - MEZZ	167 m ²
T11	339 m ²
T11 - MEZZ	167 m ²
T12	339 m ²
T12 - MEZZ	167 m ²
T13	252 m ²
T13 - MEZZ	138 m ²
T14	252 m ²
T14 - MEZZ	138 m ²
T15	300 m ²
T15 - MEZZ	153 m ²
T16	298 m ²
T16 - MEZZ	151 m ²
T17	298 m ²
T17 - MEZZ	151 m ²
T18	300 m ²
T18 - MEZZ	155 m ²
8658 m ²	

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Land Development, Planning &
Surveying Consultants
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EMAIL: mail@ajs.net.au
PH: 3823 2144 FAX: 3823 2155

LEGEND	
⊕	LIGHT POLE
OP	ORIGINAL PEG
●	POWER POLE
⊞	FIRE HYDRANT
⊞	VALVE
⊞	SEWER MANHOLE
⊞	ROOFWATER PIT
⊞	POWER BOX
⊞	TELSTRA PIT
⊞	RETAINING WALL
⊞	STORMWATER MANHOLE
⊞	GAS SUPPLY/GAS CYLINDER
⊞	TEMPORARY BENCH MARK (TBM)
⊞	PERMANENT SURVEY MARK
⊞	GULLY GRATE
⊞	WATER METER
⊞	SON
⊞	HEADWALL/CROSSOVER
⊞	ROCK WALL
⊞	PALM
⊞	TREE



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PROJECT
28 ELLERSLIE
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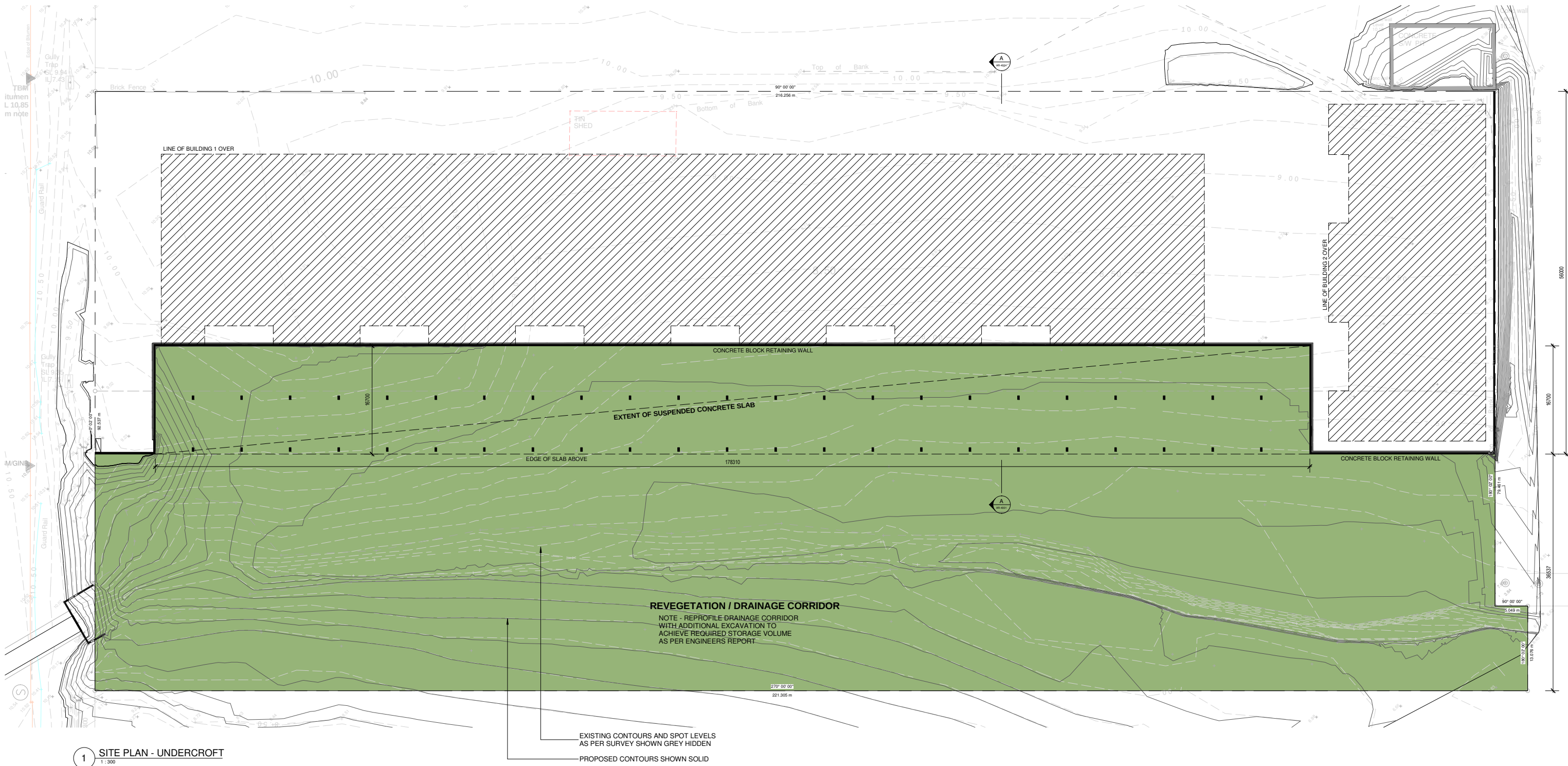


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PROPOSED INDUSTRIAL UNIT DEVELOPMENT

28 ELLERSLIE ROAD MEADOWBROOK



1 SITE PLAN - UNDERCROFT
1:300

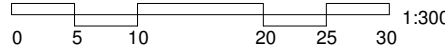
DEVELOPMENT SUMMARY	
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LOT 20 & 21 ON RP91039 PARISH OF MACKENZIE COUNTY OF STANLEY	CARSPACES PROVIDED 88 CARSPACES
SITE AREA - 20077m ²	BICYCLE PARKING REQUIRED 1/800m ² 11 SPACES
LOCAL AUTHORITY - LOGAN CITY COUNCIL	BICYCLE PARKING PROVIDED - 1 WALL MOUNTED BICYCLE HOOK PER TENANCY (18)
ZONE MEDIUM IMPACT INDUSTRY	DESIGN VEHICLE - AV
CLASS 7b (TYPE C CONSTRUCTION)	LANDSCAPING REQUIRED 10% 2007m ²
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⊙	PALM
⊙	TREE



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PROPOSED INDUSTRIAL UNIT DEVELOPMENT

28 ELLERSLIE ROAD MEADOWBROOK

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28 ELLERSLIE ROAD MEADOWBROOK

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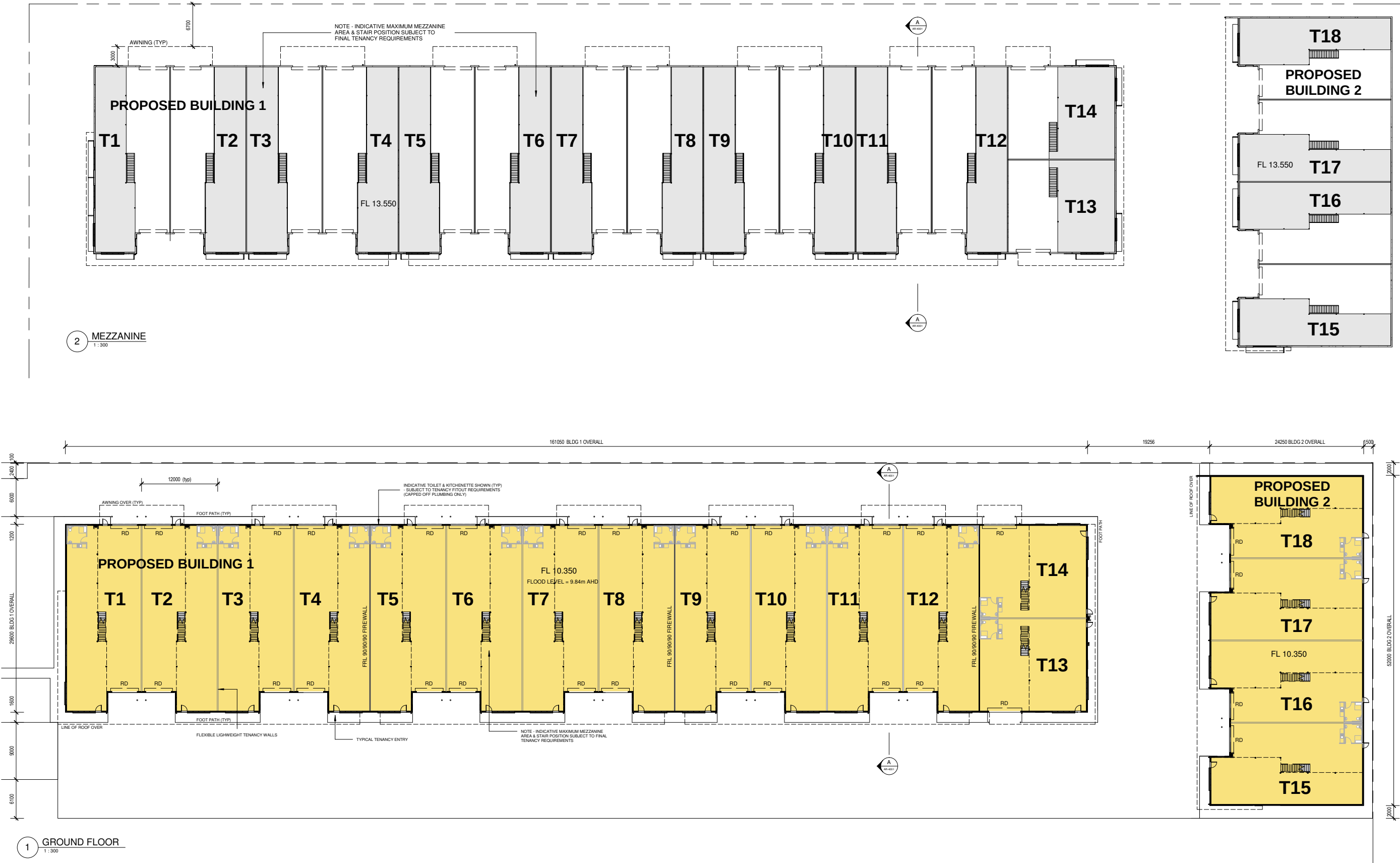


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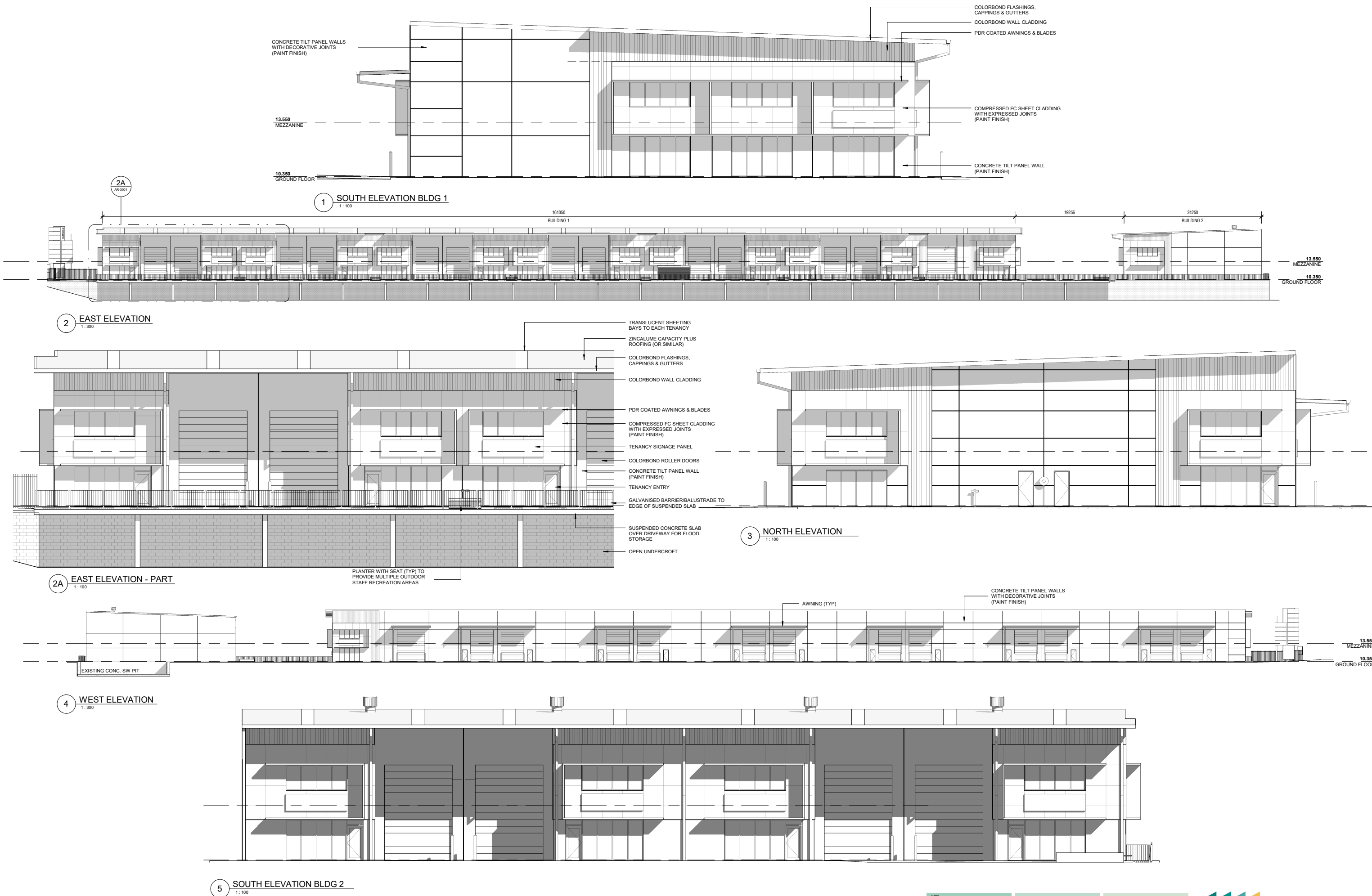
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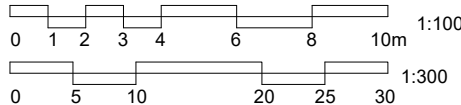
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1 GROUND FLOOR
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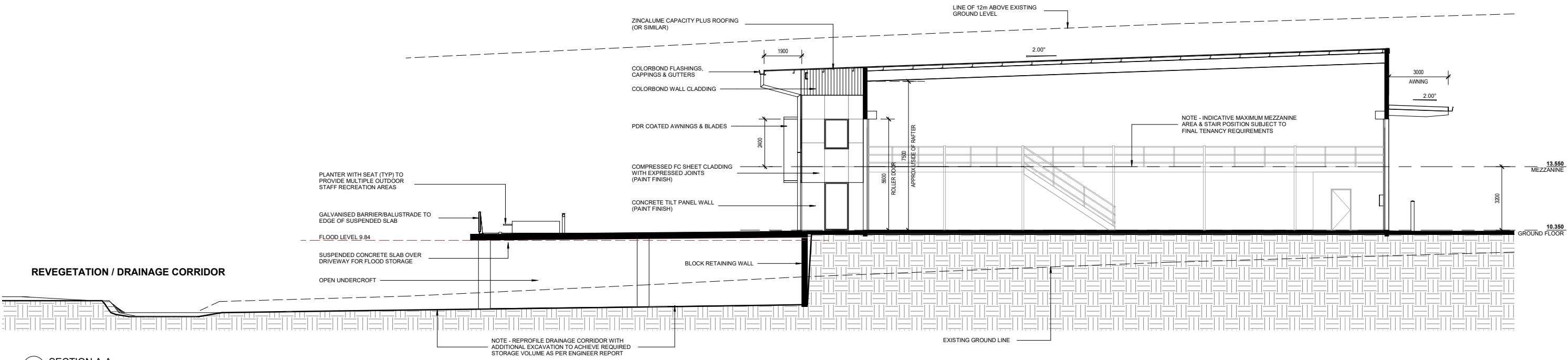
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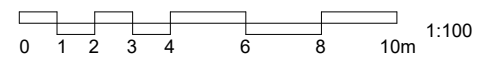




A SECTION A-A
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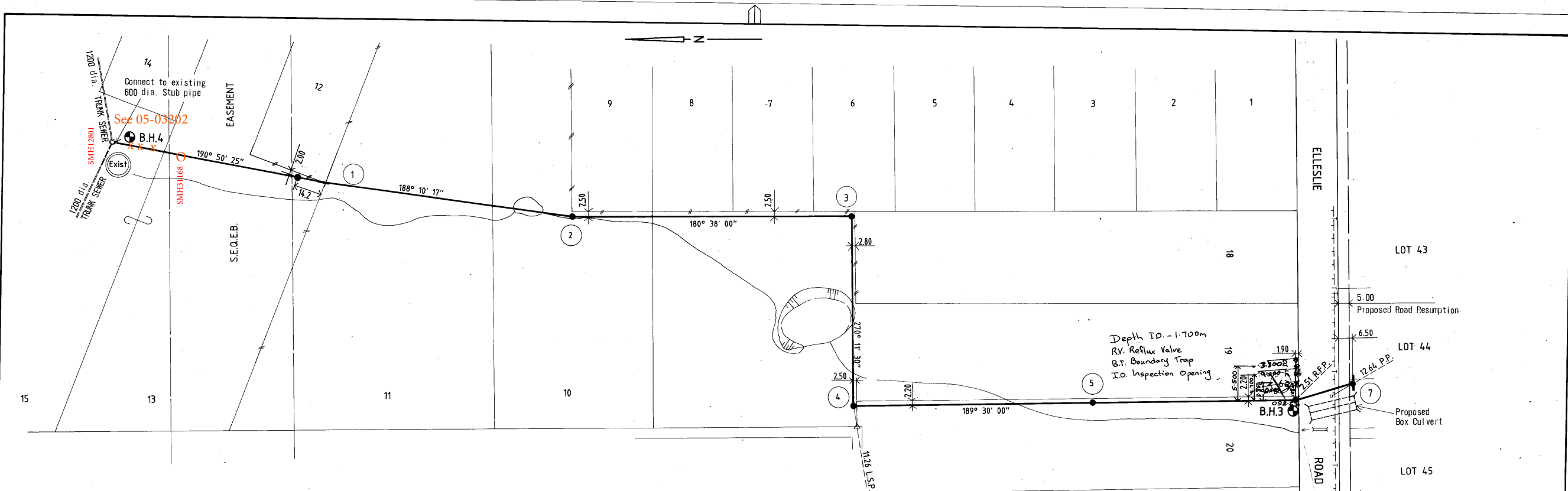
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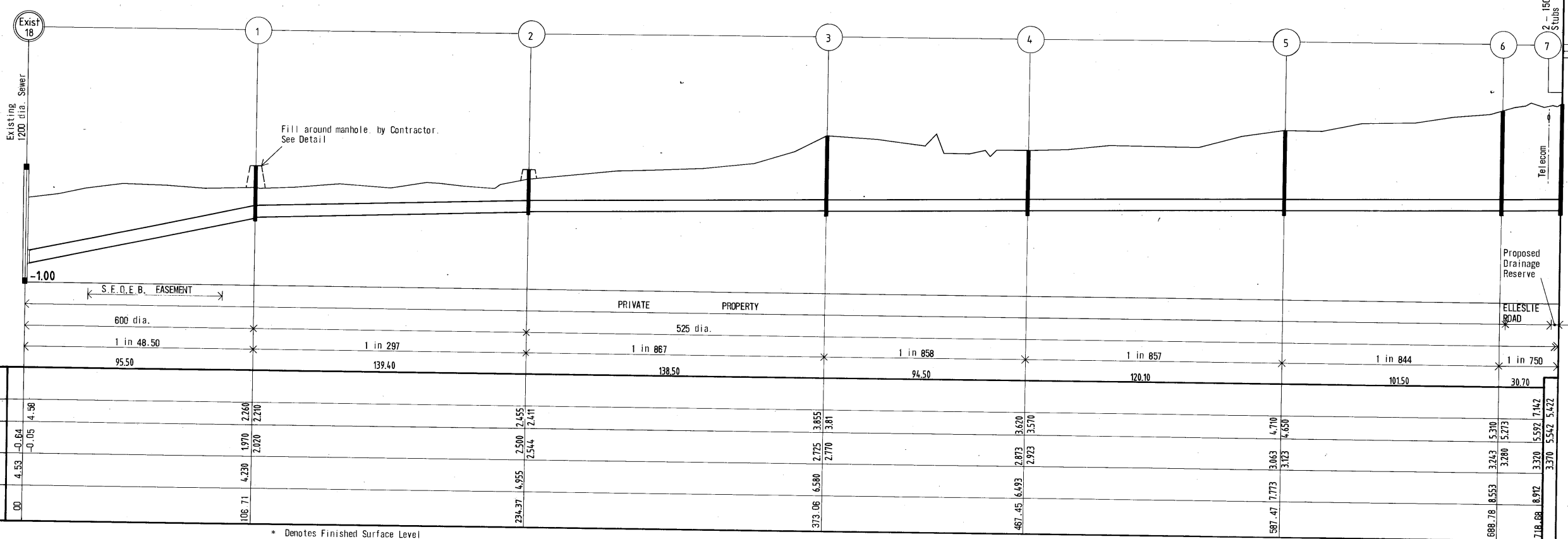
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Appendix B As Constructed Data



MANHOLE NO
AND TYPE



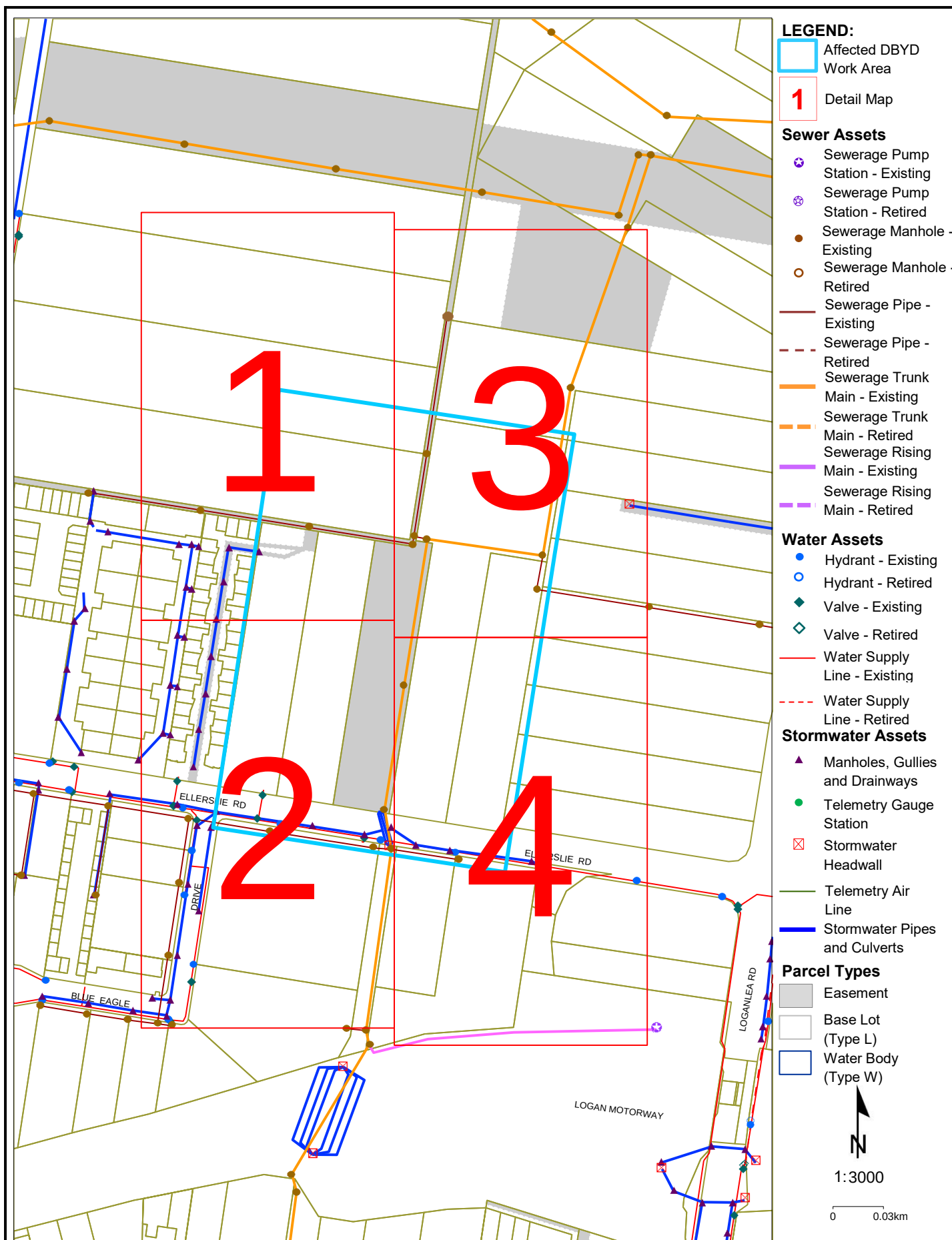
LONGITUDINAL SECTIONS

DATE: 3-8-05		As Con Info Added to 28 Elleslie		DAM		INIT. RV.		DATE		REVISIONS		INIT. RV.	
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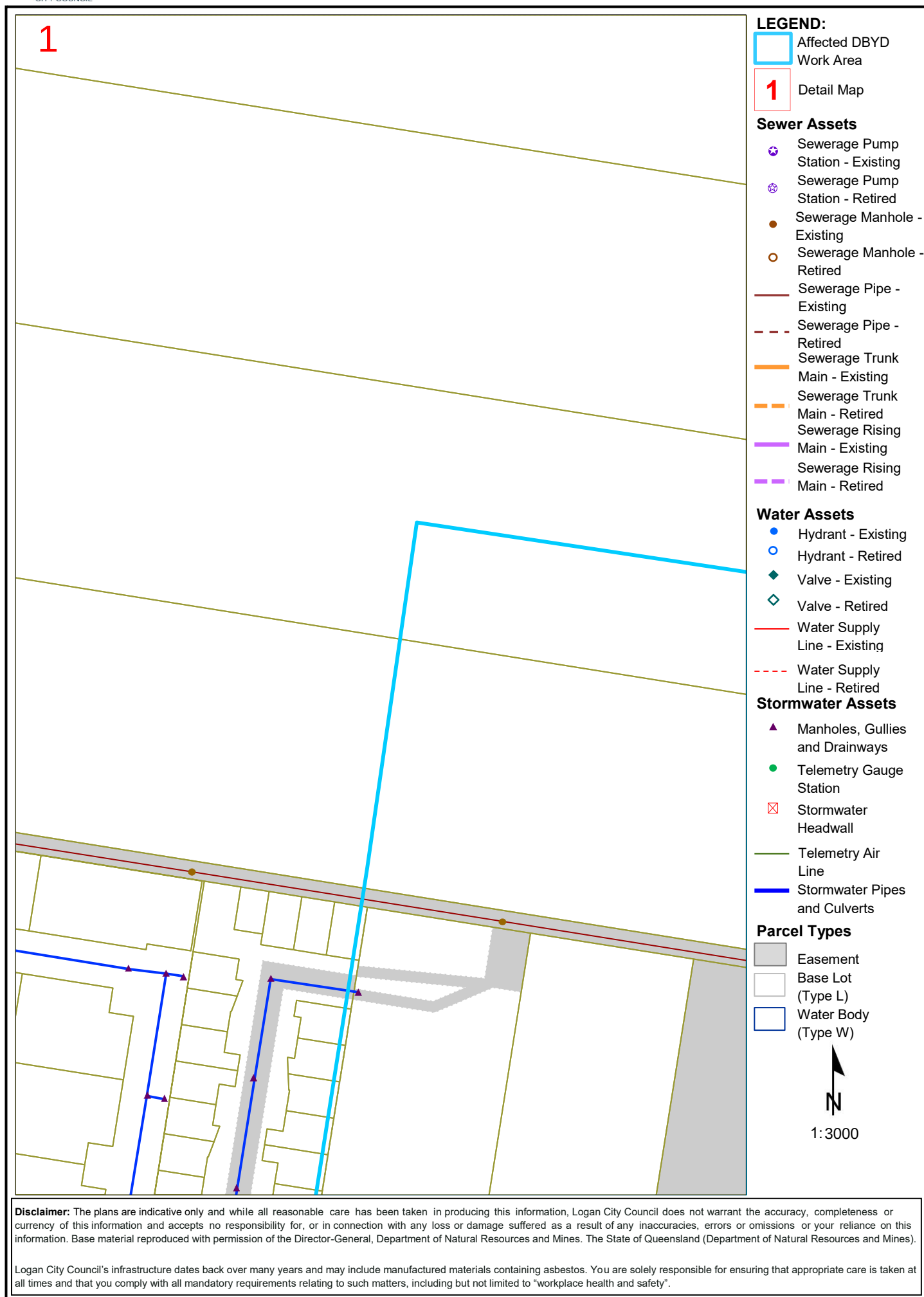
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DRAWING No: 102/13-17

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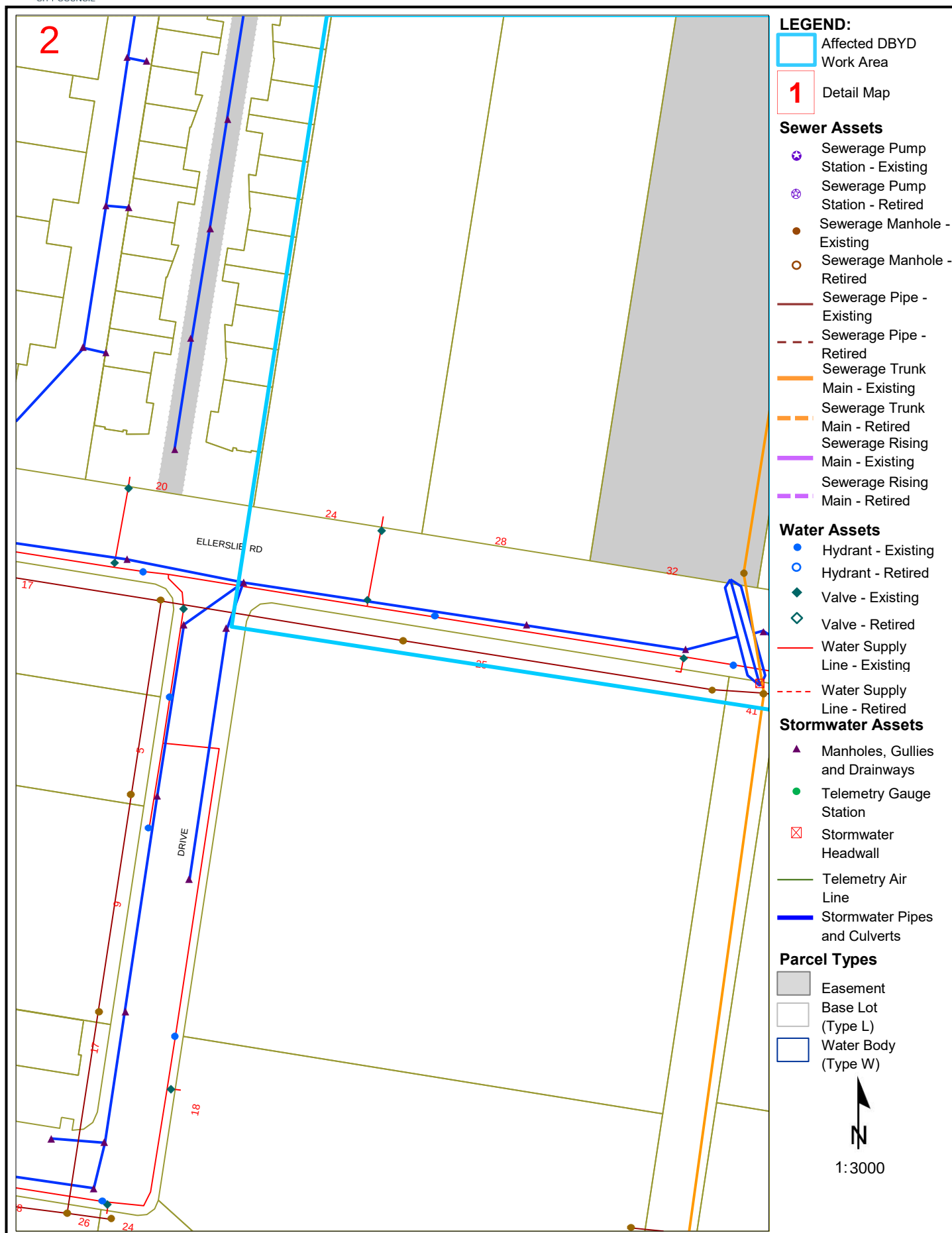
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Logan City Council's infrastructure dates back over many years and may include manufactured materials containing asbestos. You are solely responsible for ensuring that appropriate care is taken at all times and that you comply with all mandatory requirements relating to such matters, including but not limited to "workplace health and safety".



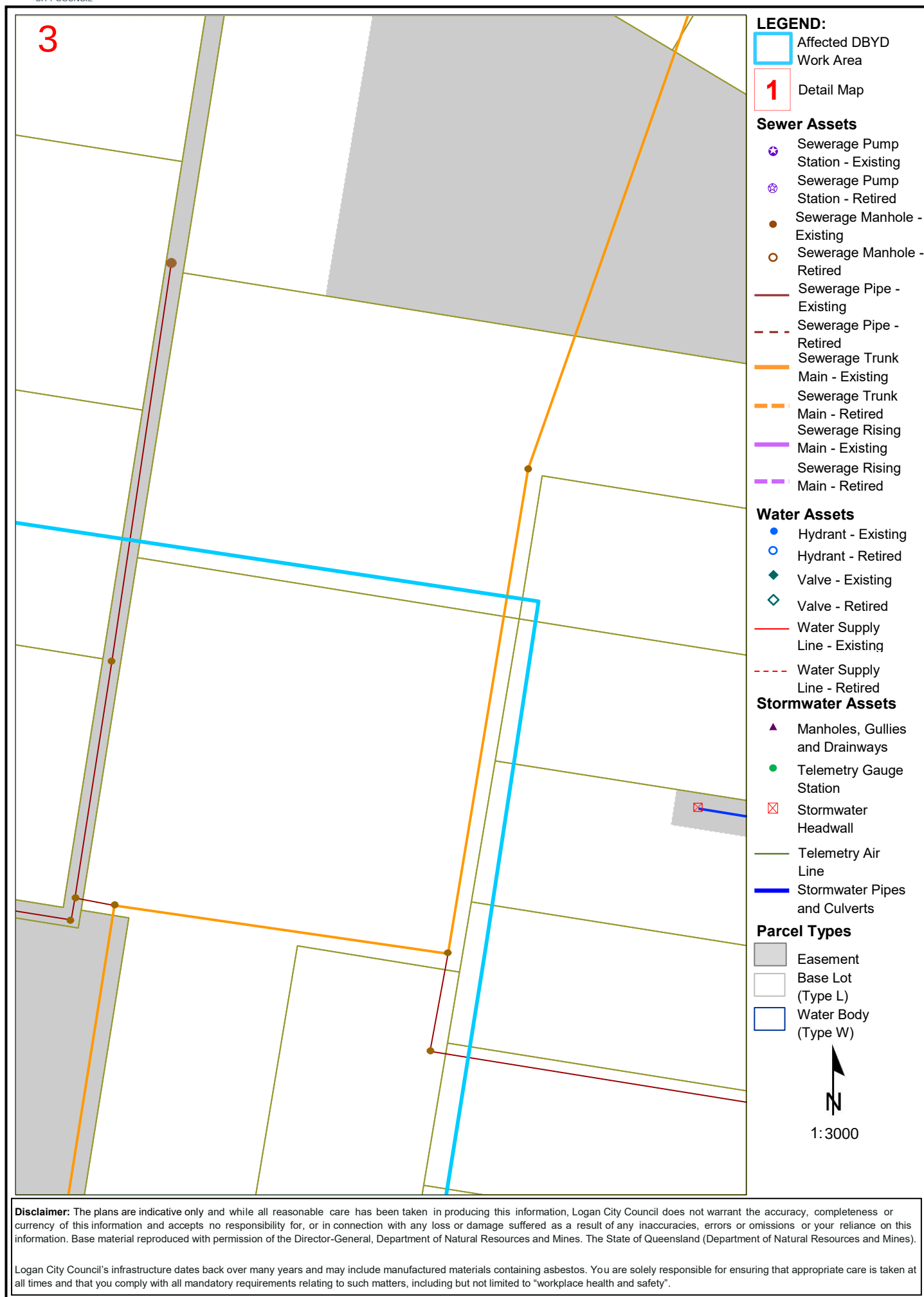
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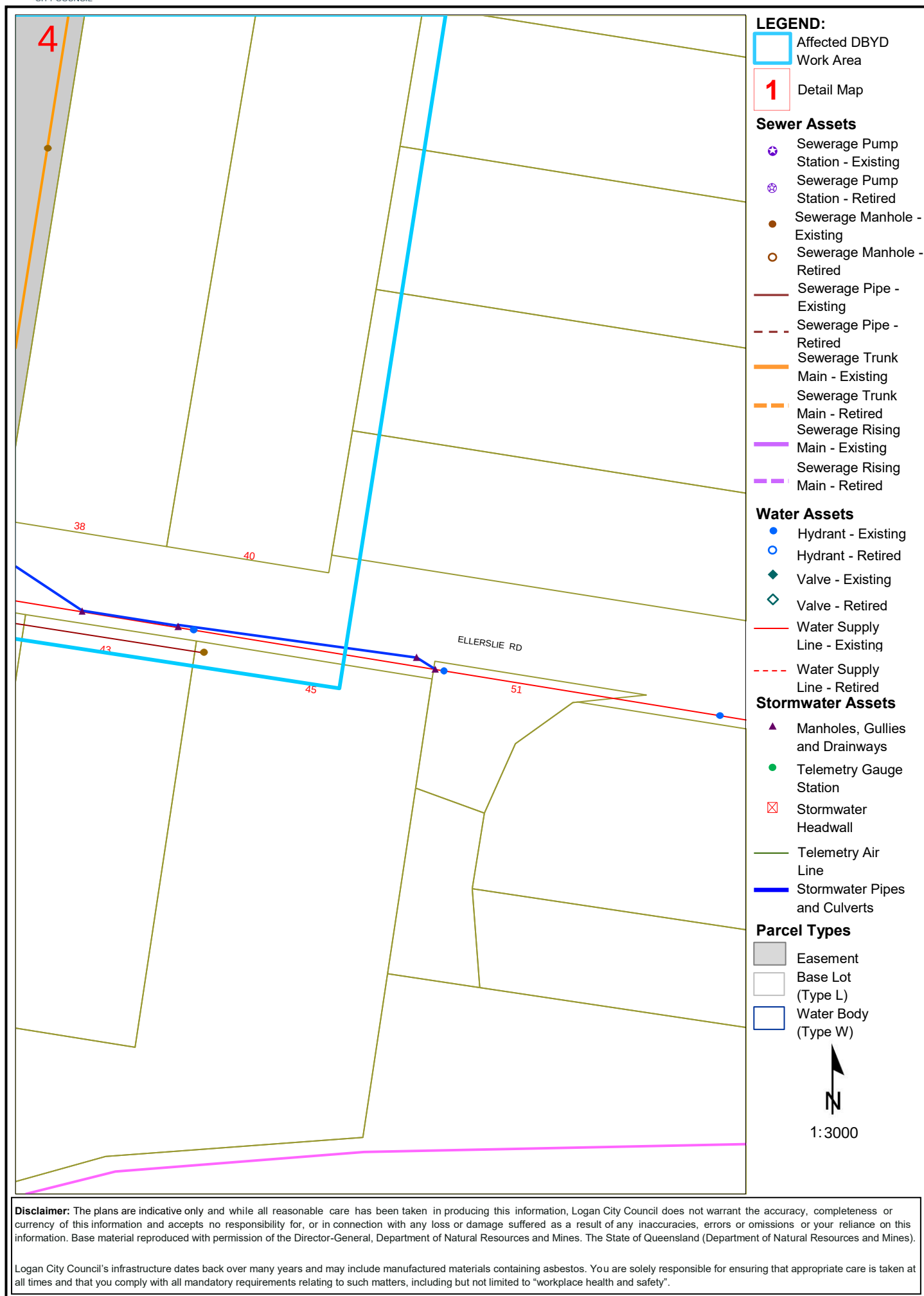
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24/07/2018

SCALE: DO NOT SCALE

REF NO: 73782526

As work on APA underground plant is ongoing any drawing with an issue date of more than 30 days previous can no longer be considered valid. All persons planning civil works on any site are advised to contact APA to confirm location. All underground gas pipelines are the property of APA & are not to be accessed by unauthorised persons. All care is taken with preparation of the drawings & no responsibility is accepted for errors or omissions



Enquiry: 73782526

Papersize: A4 Scale: 1: 6000

0 0.07km



Data Source

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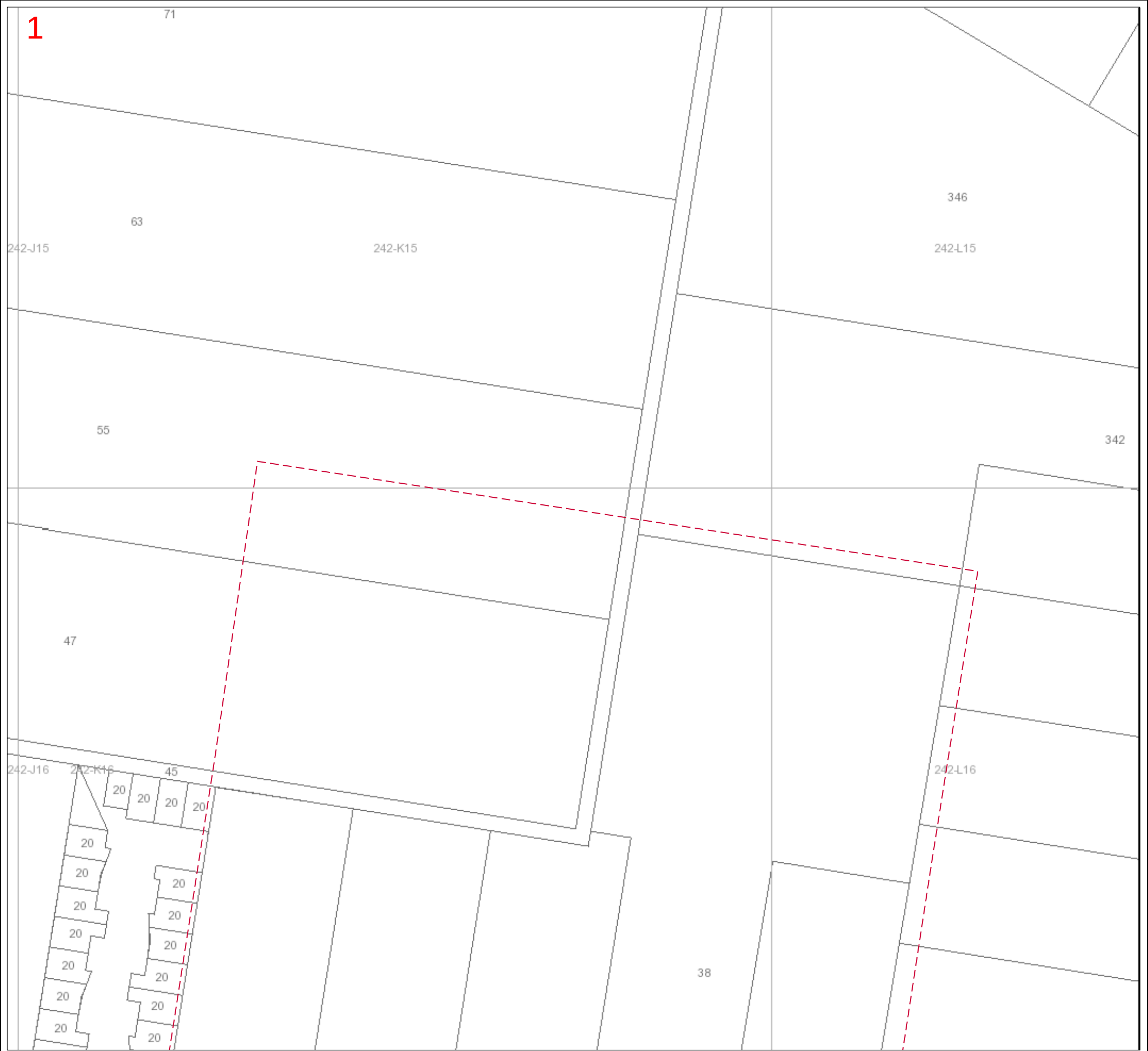
Legend

Distribution Main	Gas Assets and Fittings	Pipe Materials
- Class 900 Transmission - Class 600 Transmission - Class 300 Transmission - High Pressure Steel - High Pressure PE Trunk - High Pressure/ Class 500 - Medium Pressure PE/ Nylon - Medium Pressure (Allgas) - Low Pressure - LPG - TLP - Proposed/ Under Construction - Idle Gas Pipe - Abandoned Gas Pipe - Sleeve	- Gate Station - Regulator Station - Block/ Emergency Valve - Isolation Valve - Test Point - Syphon - Anode - Pipeline Marker - Trace Wire Point - Reducer - Pipe Connector/ Tee - Pipe Connector - End Cap	- CI Cast Iron - CU Copper - GAL Wrought Galvanised Iron - PGAL Poly Coated Wrought Galvanised Iron - ST Steel - NY/ NY11 Nylon - PE Polyethylene - MDPE Medium Density Polyethylene - HDPE High Density Polyethylene - DN Nominal Diameter - OD Outside Diameter

Examples: 40PE in DN80 CI 40mm Polyethylene in an 80mm (Nominal Diameter) Cast Iron Sleeve
63PE INS 63mm Polyethylene inserted in another pipe

Line/ Polygon Request

APA Group does not guarantee the accuracy or completeness of the map and does not make any warranty about the data. APA Group is not under any liability to the user for any loss or damage (including consequential loss or damage) which the user may suffer resulting from the use of this map.



73782526 Map Sheet: 1

Papersize: A3 Scale: 1: 1000

0 0.01km



Map Key:

1
2

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Legend

Distribution Main	Gas Assets and Fittings	Pipe Materials
Class 900 Transmission	Gate Station	CI Cast Iron
Class 600 Transmission	Regulator Station	CU Copper
Class 300 Transmission	Block/ Emergency Valve	GAL Wrought Galvanised Iron
High Pressure Steel	Isolation Valve	PGAL Poly Coated Wrought Galvanised Iron
High Pressure PE Trunk	Test Point	ST Steel
High Pressure/ Class 500	Syphon	NY/ NY11 Nylon
Medium Pressure PE/ Nylon	Anode	PE Polyethylene
Medium Pressure (Allgas)	Pipeline Marker	MDPE Medium Density Polyethylene
Low Pressure	Trace Wire Point	HDPE High Density Polyethylene
LPG	Reducer	DN Nominal Diameter
TLP	Pipe Connector/ Tee	OD Outside Diameter
Proposed/ Under Construction	Pipe Connector	
Idle Gas Pipe	End Cap	
Abandoned Gas Pipe		
Sleeve		

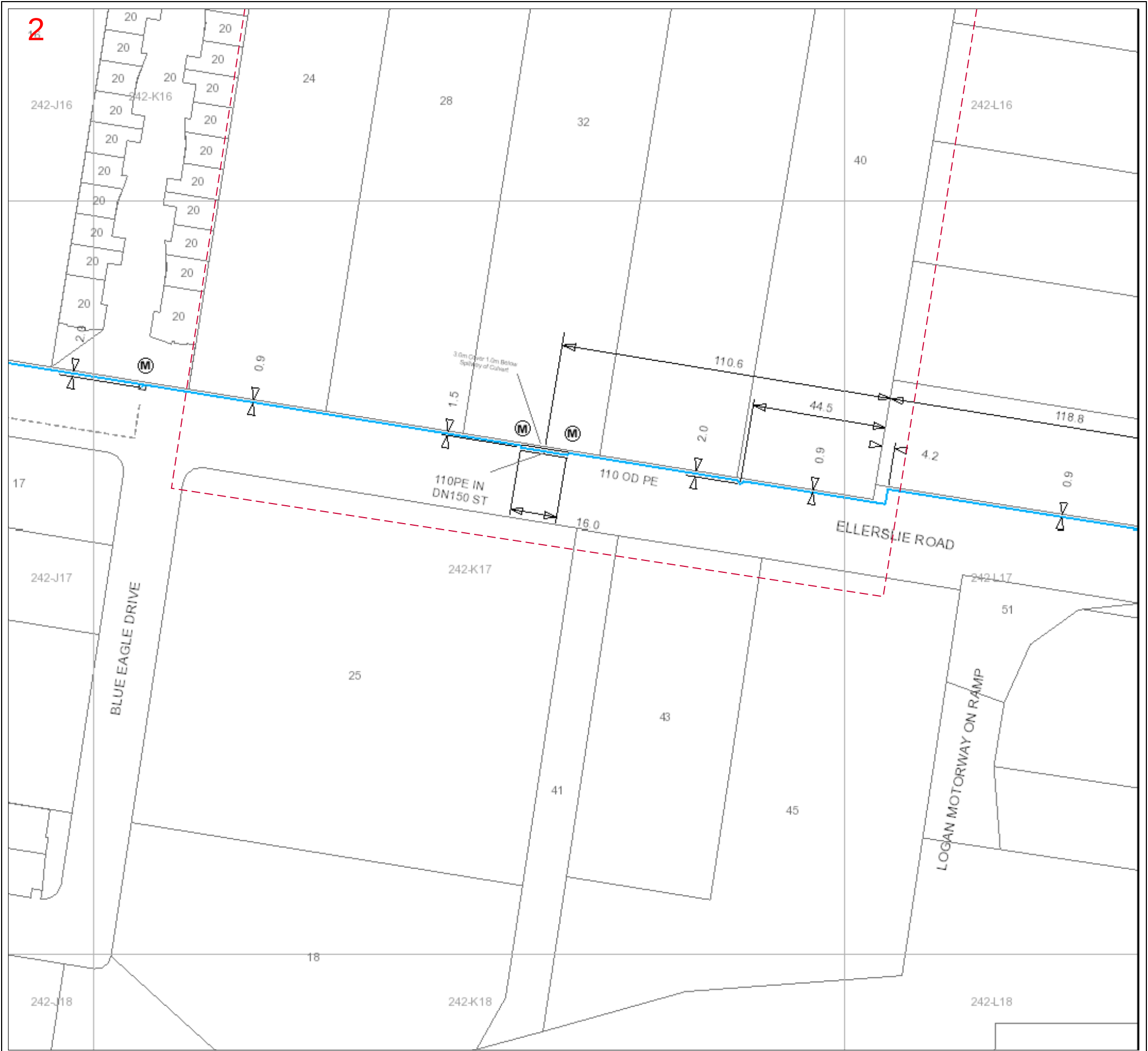
(1) Medium Pressure in AGN/ Nylon in Allgas

Examples: 40mm Polyethylene in an 80mm (Nominal Diameter) Cast Iron Sleeve
 63mm Polyethylene inserted in another pipe

----- Line/ Polygon Request

Data Source

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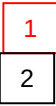
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Papersize: A3 Scale: 1: 1000

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Map Key:



This maps is created in colour and shall be printed in colour

Legend

Distribution Main

- Class 900 Transmission
- Class 600 Transmission
- Class 300 Transmission
- High Pressure Steel
- High Pressure PE Trunk
- High Pressure/ Class 500
- Medium Pressure PE/ Nylon
- Medium Pressure (Allgas)
- Low Pressure
- LPG
- TLP
- Proposed/ Under Construction
- Idle Gas Pipe
- Abandoned Gas Pipe
- Sleeve

(1) Medium Pressure in AGN/ Nylon in Allgas

Gas Assets and Fittings

- Gate Station
- Regulator Station
- Block/ Emergency Valve
- Isolation Valve
- Test Point
- Syphon
- Anode
- Pipeline Marker
- Trace Wire Point
- Reducer
- Pipe Connector/ Tee
- Pipe Connector
- End Cap

Pipe Materials

- CI Cast Iron
- CU Copper
- GAL Wrought Galvanised Iron
- PGAL Poly Coated Wrought Galvanised Iron
- ST Steel
- NY/ NY11 Nylon
- PE Polyethylene
- MDPE Medium Density Polyethylene
- HDPE High Density Polyethylene
- DN Nominal Diameter
- OD Outside Diameter

Examples: 40PE in DN80 CI 40mm Polyethylene in an 80mm (Nominal Diameter) Cast Iron Sleeve
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Line/ Polygon Request

Data Source

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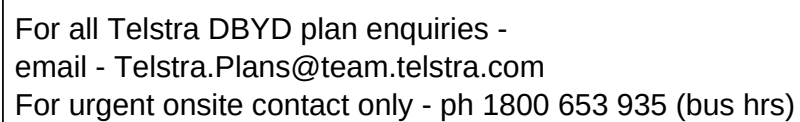
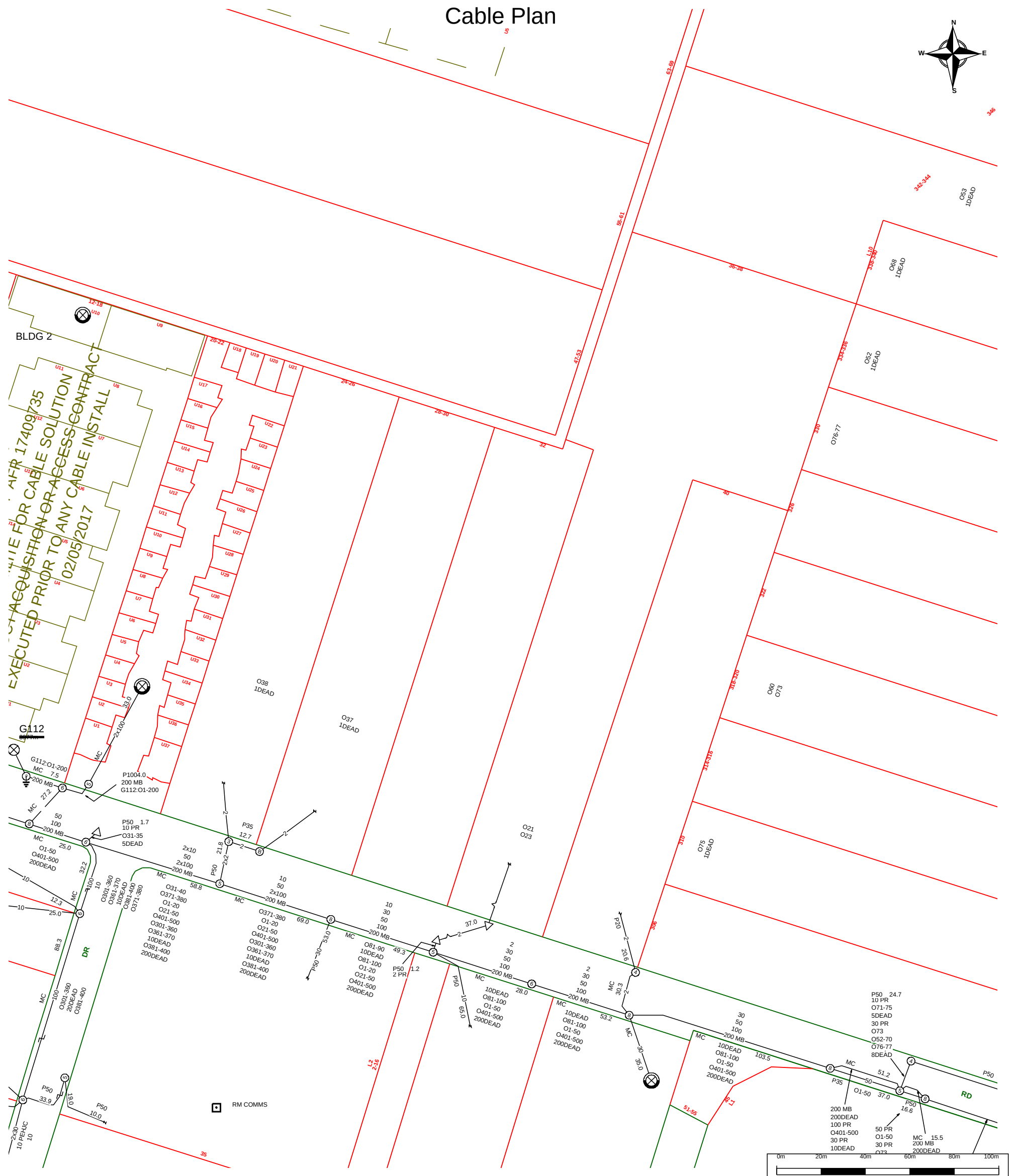
Sequence Number: 73782525

Date Generated: 24/07/2018



For all Optus DBYD plan enquiries –
Email: Fibre.Locations@optus.net.au
For urgent onsite assistance contact 1800 505 777
Optus Limited ACN 052 833 208





Generated On 24/07/2018 20:57:51

CAUTION: Fibre optic and/ or major network present in plot area. Please read the Duty of Care and contact Telstra Plan Services should you require any assistance.

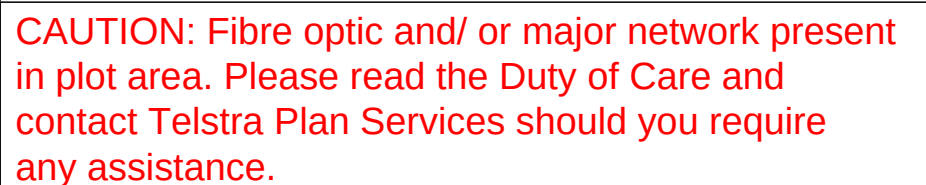
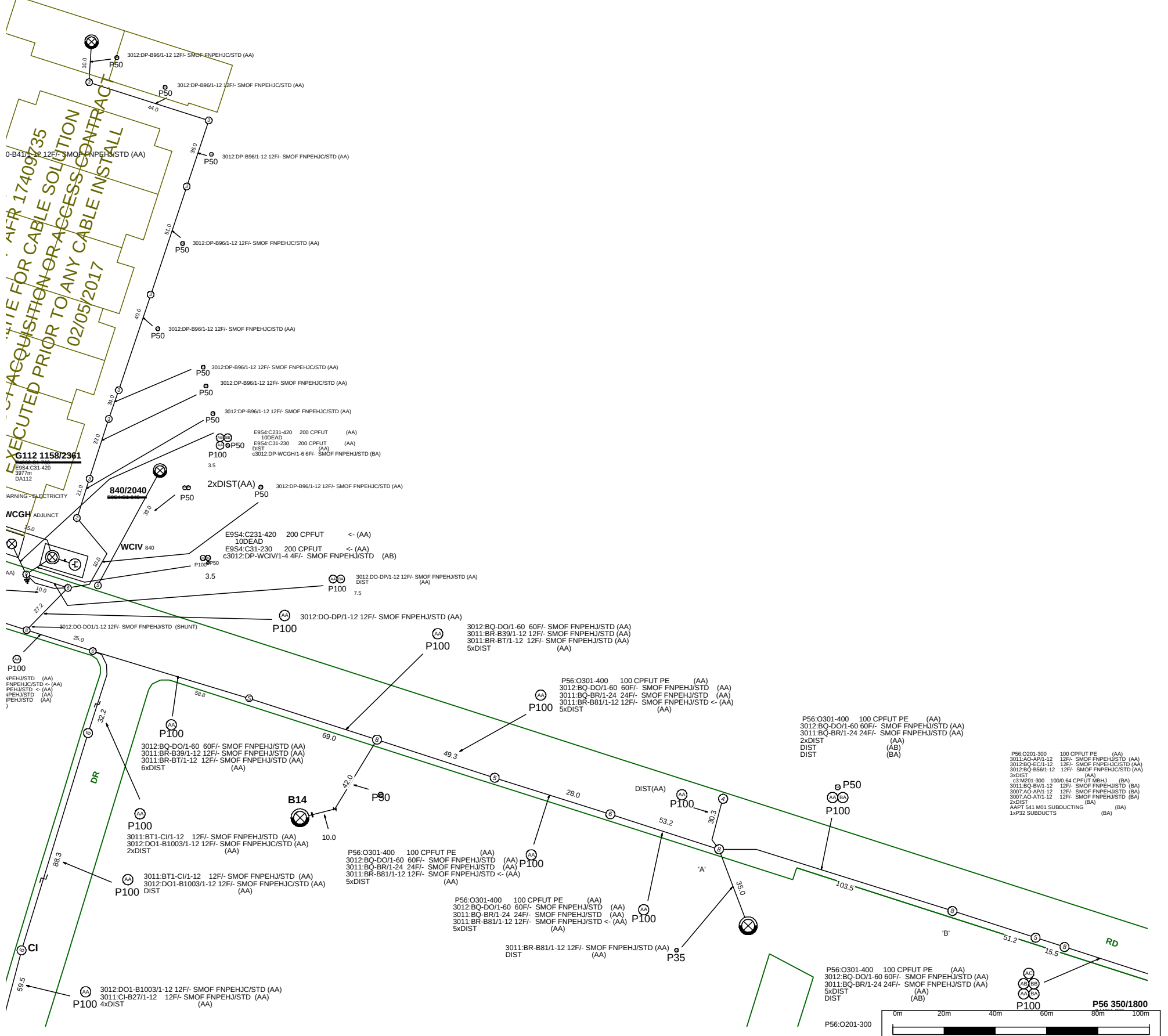
WARNING - Due to the nature of Telstra underground plant and the age of some cables and records, it is impossible to ascertain the precise location of all Telstra plant from Telstra's plans. The accuracy and/or completeness of the information supplied can not be guaranteed as property boundaries, depths and other natural landscape features may change over time, and accordingly the plans are indicative only. Telstra does not warrant or hold out that its plans are accurate and accepts no responsibility for any inaccuracy shown on the plans.

It is your responsibility to locate Telstra's underground plant by careful hand pot-holing prior to any excavation in the vicinity and to exercise due care during that excavation.

Please read and understand the information supplied in the duty of care statement attached with the Telstra plans. TELSTRA WILL SEEK COMPENSATION FOR LOSS CAUSED BY DAMAGE TO ITS PLANT.

Telstra plans and information supplied are valid for 60 days from the date of issue. If this timeframe has elapsed, please reapply for plans.

IJ/STD (AA)



Page 2 of 2

All underground cables shall be treated as being energised. Where a cable is located that is not represented on the ENERGEX EnerGISE DBYD map, then ENERGEX shall be contacted immediately.

For Emergency Situations
Please call 13 19 62



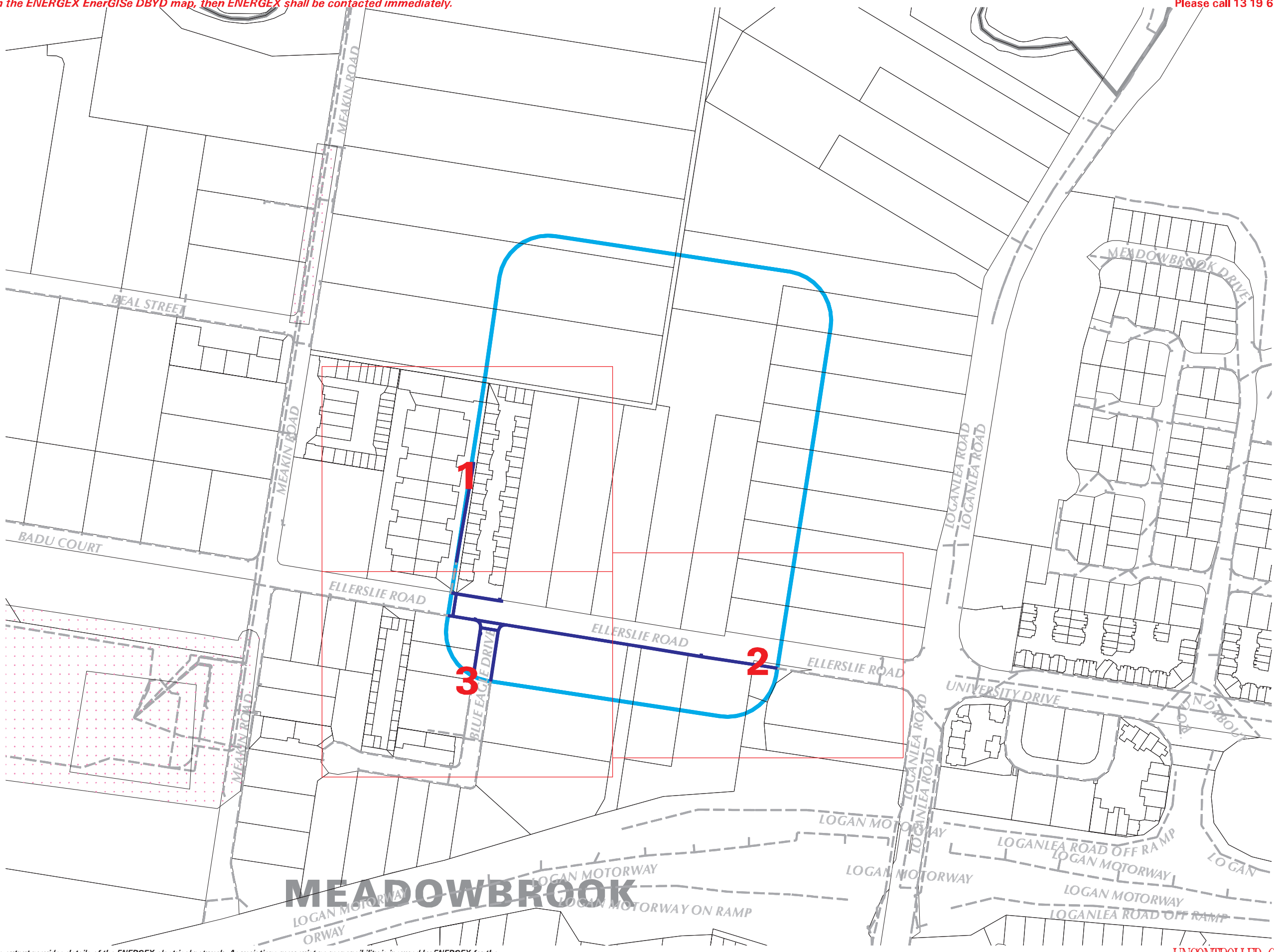
**EnerGISE
DBYD**

Date: 24 Jul 18 Time: 15.53.46
Requested By: DBYD

NOT TO SCALE
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**Enquiry No: 73782523
KEY MAP**

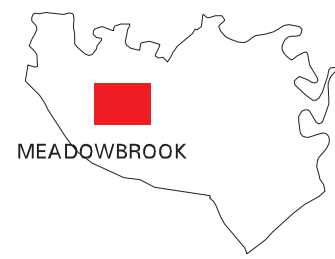
Enquiry Area



This output provides details of the ENERGEX electrical network. As variations may exist no responsibility is incurred by ENERGEX for the accuracy or completeness of the information provided. Exact positions of cables and electrical connectivity should be confirmed on site.

UNCONTROLLED COPY

LOCALITY DIAGRAM



All underground cables shall be treated as being energised. Where a cable is located that is not represented on the ENERGEX EnerGISE DBYD map, then ENERGEX shall be contacted immediately.

For Emergency Situations
Please call 13 19 62



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Requested By: DBYD

SCALE 1:1000



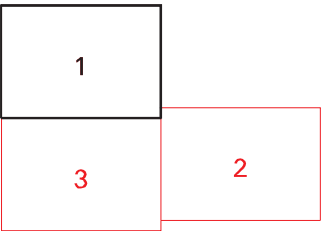
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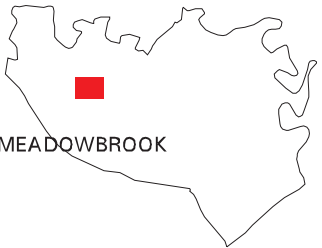
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|--|---------------------|--|------------------------------|
| | Ground Transformer | | Cable Voltage Less Than 33kV |
| | Cubicle Transformer | | Cable Voltage 33kV or Higher |
| | Ring Main Unit | | Direct-Lay Cable |
| | Metering Unit | | Conduit |
| | Link Pillar | | Multi-Section Duct |
| | Service Pillar | | Trench |
| | Junction Pillar | | Cable Tray |
| | Pit | | Tunnel |
| | Cable Joint | | |
| | Cable Termination | | |
| | Cable Marker | | |
| | Street Light Pole | | |
| | Earth | | |
| | Works Order Polygon | | |



INDEX TO SHEETS



LOCALITY DIAGRAM



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For Emergency Situations
Please call 13 19 62



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Requested By: DBYD

SCALE 1:1000



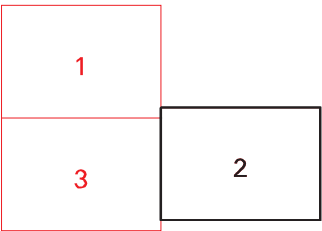
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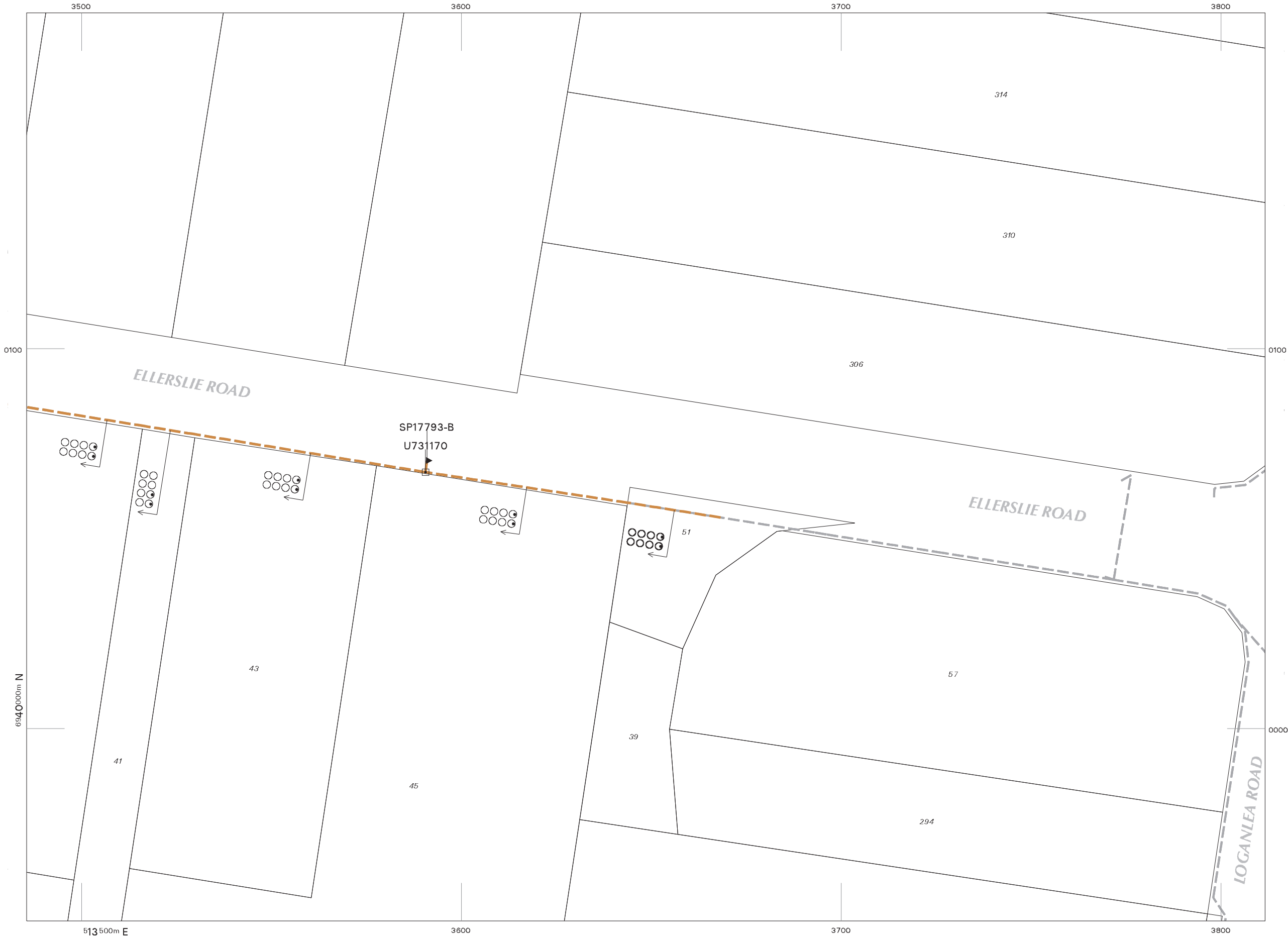
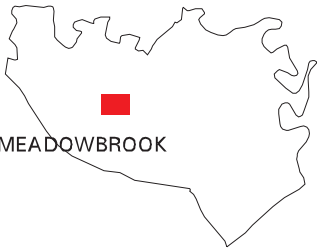
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|--|---------------------|--|------------------------------|
| | Ground Transformer | | Cable Voltage Less Than 33kV |
| | Cubicle Transformer | | Cable Voltage 33kV or Higher |
| | Ring Main Unit | | |
| | Metering Unit | | Direct-Lay Cable |
| | Link Pillar | | Conduit |
| | Service Pillar | | Multi-Section Duct |
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| | Pit | | Cable Tray |
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| | Cable Termination | | |
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| | Earth | | |
| | Works Order Polygon | | |



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For Emergency Situations
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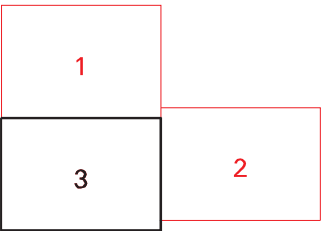
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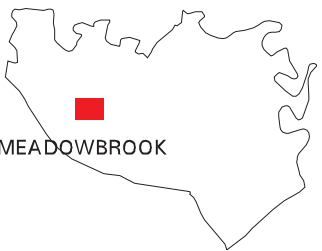
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LOCALITY DIAGRAM



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Appendix D Code Assessment Responses

FILLING AND EXCAVATION CODE

Logan Planning Scheme 2015 version 5.1

Project: Industrial Development, Ellerslie Road, Meadowbrook

Table 9.4.2.3.1—Filling and excavation code: accepted development (subject to requirements) and assessable development

Performance outcomes	Acceptable outcomes	Comments
For accepted development (subject to requirements) and assessable development		
Protection of natural processes and ecosystems		
PO1 The discharge of sediments and pollutants from filling or excavation does not adversely affect a waterway or the stormwater network.	A01 The discharge of sediments and pollutants to a waterway or stormwater network complies with part 3.3—Filling and excavation standards in planning scheme policy 5—Infrastructure.	Will Comply. Development is expected to include appropriate erosion and sediment control measures during design and construction. Stormwater infrastructure is proposed to direct discharge into the existing channel at multiple locations along the eastern boundary. Discharge locations will be locally shaped to encourage flow spreading to reduce the potential for scouring. Design and construction of the developments internal stormwater drainage network is expected to be provided in accordance with Council's standards. Refer to RMA Engineers separately prepared Stormwater Assessment Report for further details on stormwater flooding, flood storage, quantity and quality management.
PO2 Topsoil and spoil stockpiled on the premises do not adversely affect natural processes and ecosystems.	A02 Topsoil and spoil is stockpiled to comply with part 3.3—Filling and excavation standards in planning scheme policy 5—Infrastructure.	Will Comply. Development is expected to include appropriate erosion and sediment control measures during design and construction.
PO3 Filling is carried out using stable, solid and clean earth, free of organic and putrescible waste, rubbish and refuse material.	A03 Filling complies with part 3.3—Filling and excavation standards in planning scheme policy 5—Infrastructure.	Will Comply. Only clean fill is expected to be used and all works carried out as per Councils relevant standards.

FILLING AND EXCAVATION CODE

Logan Planning Scheme 2015 version 5.1

Project: Industrial Development, Ellerslie Road, Meadowbrook

Performance outcomes	Acceptable outcomes	Comments
Protection of existing and planned infrastructure		
PO4 Filling or excavation works do not adversely affect infrastructure, including any services.	A04 Filling or excavation works comply with part 3.3–Filling and excavation standards in planning scheme policy 5–Infrastructure.	Will Comply. Fill and excavation works are expected to be designed and constructed as per Councils relevant standards.
Protection and enhancement of personal health and safety and premises		
PO5 Filling or excavation works do not adversely affect personal health and safety.	A05 Filling or excavation works comply with part 3.3–Filling and excavation standards in planning scheme policy 5–Infrastructure.	Will Comply. The development site is subject to flooding and to address flood immunity requirements, compensatory filling of the site will be required. It is not expected that filling/excavation will result in adversely affecting personal health and safety. Earthworks to be design and constructed in accordance with Council and Australian Standards. Refer to RMA Engineers separately prepared Stormwater Assessment Report for further details on stormwater flooding, flood storage, quantity and quality management.

FILLING AND EXCAVATION CODE

Logan Planning Scheme 2015 version 5.1

Project: Industrial Development, Ellerslie Road, Meadowbrook

Performance outcomes	Acceptable outcomes	Comments
Surface water flow		
P06 Surface water drainage does not cause any of the following: (a) ponding on any premises; or (b) a hazard or adversely affect personal health and safety and premises; or (c) diversion or concentration of flow from or onto adjoining premises or infrastructure.	A06 Surface water drainage complies with part 3.3—Filling or excavation standards in planning scheme policy 5—Infrastructure.	Will Comply. The development site is subject to flooding and to address flood immunity requirements, compensatory filling of the site will be required. It is not expected that filling/excavation will result in adversely affecting personal health and safety. Earthworks to be design and constructed in accordance with Council and Australian Standards. Refer to RMA Engineers separately prepared Stormwater Assessment Report for further details on stormwater flooding, flood storage, quantity and quality management.

FILLING AND EXCAVATION CODE

Logan Planning Scheme 2015 version 5.1

Project: Industrial Development, Ellerslie Road, Meadowbrook

Performance outcomes	Acceptable outcomes	Comments
Batters		
P07 A batter: (a) does not adversely affect the natural physical processes and ecosystems; (b) protects existing and planned infrastructure; (c) is safe, stable and easily maintained; (d) is landscaped to enhance visual amenity.	A07 A batter is designed and constructed to comply with the standards specified in section 3.3.6–Batters and retaining walls in planning scheme policy 5–Infrastructure.	Will Comply. Earthwork batters will be required and are expected to be design and constructed as per Council's relevant standards. The development site is subject to flooding and to address flood immunity requirements, compensatory filling and retaining of the site will be required. Earthworks are proposed within a waterway to achieve compensatory flood storage volumes as detailed further within RMA Engineer's separately prepared Stormwater Assessment Report. Retaining walls will be required. It is not expected that walls will result in adversely affecting natural physical processes and ecosystems. Retaining walls to be design and constructed in accordance with Council and Australian Standards. Refer to the Environmental/Ecologist reporting for responses to waterway and environmental overlays.
Retaining walls		
P08 A retaining wall: (a) is not constructed of timber and are not located on existing or proposed lot boundaries, or movement networks; (b) does not adversely affect the natural physical processes and ecosystems; (c) is located to avoid conflict with adjoining premises;	A08 A retaining wall is designed and constructed to comply with the standards specified in section 3.3.6.2–Retaining walls in planning scheme policy 5–Infrastructure.	Will Comply. The development site is subject to flooding and to address flood immunity requirements, compensatory filling and retaining of the site will be required.

FILLING AND EXCAVATION CODE

Logan Planning Scheme 2015 version 5.1

Project: Industrial Development, Ellerslie Road, Meadowbrook

Performance outcomes	Acceptable outcomes	Comments
(d) is located such that existing and planned infrastructure is not adversely affected; (e) protects the visual amenity of adjoining premises or a public open space; (f) is located within the premises that is being filled; (g) is located within the premises that is cut and is designed to take any surcharge loading allowable on the uphill lot; (h) is safe and stable; (i) enables easy access for maintenance.		Earthworks are proposed within a waterway to achieve compensatory flood storage volumes as detailed further within RMA Engineer's separately prepared Stormwater Assessment Report. Retaining walls will be required. It is not expected that walls will result in adversely affecting natural physical processes and ecosystems. Retaining walls to be design and constructed in accordance with Council and Australian Standards. Refer to the Environmental/Ecologist reporting for responses to waterway and environmental overlays.
Filling of a dam		
PO9 The filling of a dam: (a) does not adversely affect the natural physical processes and ecosystems; (b) creates a safe and stable surface; (c) is integrated into the landscape.	A09 The filling of a dam complies with part 3.3–Filling and excavation standards in planning scheme policy 5–Infrastructure.	Not Applicable.

INFRASTRUCTURE CODE
Logan Planning Scheme 2015 version 5.1
Project: Industrial Development, Ellerslie Road, Meadowbrook

Table 9.4.3.3.1—Infrastructure code: accepted development (subject to requirements) and assessable development

Performance outcomes	Acceptable outcomes	Comments
For accepted development (subject to requirements) and assessable development		
Provision, design, construction and location of infrastructure		
PO1 Development is demonstrated to be capable of being serviced by necessary infrastructure.	AO1 Reports, plans and drawings are provided in accordance with part 2 of planning scheme policy 5—Infrastructure.	Will Comply. There is existing sewer, water, electricity and telecommunication infrastructure in close proximity to the site. These existing services are expected to be extended into the site, if necessary, to service the proposed development. Stormwater infrastructure to direct discharge into existing channel. Refer to RMA Engineers Stormwater Assessment Report dated 15 March 2018 for further details on stormwater strategy. Through submission of this application, it is expected. Council will confirm capacities of the existing sewer and water infrastructure. Guidance will be required from an Electrical/Telecommunication Engineer to confirm the capacity of existing infrastructure to service the proposed development. The site is to be accessed via Ellerslie Road with the expectation of it's widening to an Industrial Collector standard for the length of the developments frontage. A Concept Engineering Services Sketch Plan has been provided with conjunction with the attached Engineering Code Compliance Report. This sketch plan identifies the development is capable of being serviced by all necessary infrastructure.

INFRASTRUCTURE CODE

Logan Planning Scheme 2015 version 5.1

Project: Industrial Development, Ellerslie Road, Meadowbrook

Performance outcomes	Acceptable outcomes	Comments
PO2 Development: (a) provides necessary infrastructure to service the development; (b) provides that the design, construction and location of necessary infrastructure: (i) protects existing and planned infrastructure networks; (ii) services proposed development; (iii) integrates with existing and planned infrastructure networks; (iv) delivers a standard of service that is efficient and equitable; (v) minimises the cost to the community for the life of the infrastructure by providing a suitable design life, ease of maintenance and ease of replacement; (vi) protects personal health, safety and premises; (vii) protects environmental values.	A02 Development: (a) in a water supply service area connects to the water network in accordance with the SEQ Water Supply and Sewerage Design and Construction Code; (b) not in a water supply service area provides a tank with a minimum storage capacity of 45,000 litres; (c) in a sewerage supply service area connects to the waste water network in accordance with the SEQ Water Supply and Sewerage Design and Construction Code; (d) not in a sewerage supply service area complies with part 1 of the Queensland Plumbing and Wastewater Code; (e) provides stormwater infrastructure in accordance with part 3.6 of planning scheme policy 5–Infrastructure; (f) provides a movement network infrastructure in accordance with part 3.4 of planning scheme policy 5–Infrastructure; (g) provides parks in accordance with part 3.12 of planning scheme policy 5–Infrastructure; (h) provides road lighting in accordance with part 3.5 of planning scheme policy 5–Infrastructure; (i) provides electricity reticulation in accordance with part 3.8 of planning scheme policy 5–Infrastructure; (j) provides gas and telecommunications reticulation in accordance with part 3.9 of planning scheme policy 5–Infrastructure. Editor's note—The delivery of any part of a network identified in the plans for trunk infrastructure is governed by Part 4—Local government infrastructure plan.	Will Comply. There is existing sewer, water, electricity and telecommunication infrastructure in close proximity to the site. These existing services are expected to be extended into the site, if necessary, to service the proposed development. Stormwater infrastructure to direct discharge into existing channel. Refer to RMA Engineers Stormwater Assessment Report dated 15 March 2018 for further details on stormwater strategy. Through submission of this application, it is expected. Council will confirm capacities of the existing sewer and water infrastructure. Guidance will be required from an Electrical/Telecommunication Engineer to confirm the capacity of existing infrastructure to service the proposed development. The site is to be accessed via Ellerslie Road with the expectation of it's widening to an Industrial Collector standard for the length of the developments frontage. A Concept Engineering Services Sketch Plan has been provided with conjunction with the attached Engineering Code Compliance Report. This sketch plan identifies the development is capable of being serviced by all necessary infrastructure.

INFRASTRUCTURE CODE

Logan Planning Scheme 2015 version 5.1

Project: Industrial Development, Ellerslie Road, Meadowbrook

Performance outcomes	Acceptable outcomes	Comments
Location of development		
PO3 Development is located to protect existing and planned infrastructure networks.	A03 Development is located outside: (a) planned widening of a road or a new road identified in Table 7.3.1.1—Road encroachment maps of planning scheme policy 5—Infrastructure; (b) planned public transport network identified on Figure 3.4.1.3.1—Public transport network in planning scheme policy 5—Infrastructure; (c) a planned cycle network identified on Figure 3.4.1.2.1—Cycle network in planning scheme policy 5—Infrastructure; (d) a planned network identified in Local government infrastructure plan map—LGIP-07.00 Plan for trunk parks infrastructure in Schedule 3—Local government infrastructure plan mapping and tables.	Will Comply. Ellerslie Road is located outside of the planned road network, public transport network and trunk park mapping in the Local Government Infrastructure Plan (LGIP). Ellerslie Road is located within the planned cycle network. District future cycle network to be considered in the design and construction of road widening.
Fire fighting		
PO4 Development in a water service area accessed by common private title provides: (a) fire hydrant infrastructure; (b) unimpeded access for emergency services vehicles. Editor's note—The term common private title refers to areas such as access roads in community title developments or strata title unit access, which are private and under group or body corporate control.	A04 Development in a water service area accessed by common private title complies with the Acceptable outcomes of the SPP code: Fire services in developments accessed by common private title in Appendix 1 of the state planning policy.	Not Applicable.

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Performance outcomes	Acceptable outcomes	Comments
PO5 Development not in a water service area provides sufficient water storage with adequate pressure, volume and flow to service development for fire fighting purposes.	AO5 Development: (a) is connected to a reticulated water supply scheme that has sufficient flow and pressure characteristics for fire fighting purposes at all times with a minimum pressure and flow of 10 litres per second at 200kPa; or (b) has an on-site water storage in accordance with Table 9.4.3.3.2-Water storage for fire fighting, dedicated or retained for fire fighting purposes that is made of fire resistant materials and is: (i) a separate tank; or (ii) a reserve section in the bottom part of the main water supply tankwater tank. Editor's note—The requirement in AO5 is; – in addition to the requirement for potable water supply/storage in AO2 in Table 9.4.3.3.1–Infrastructure code: accepted development (subject to requirements) and assessable development; – reflected in AO5 in Table 8.2.3.3.1–Bushfire hazard overlay code: accepted development (subject to requirements) and assessable development.	Not Applicable.
Disposal of trade waste		
PO6 The disposal of trade waste in a sewerage supply service area does not adversely affect the sewerage network.	AO6 The disposal of trade waste in a sewerage supply service area complies with the sewer admission standards in section 3.2.6–Sewer admission standards in planning scheme policy 3–Environmental management.	Will Comply. Any trade waste is expected to be disposed of suitably as per relevant standards.

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Performance outcomes	Acceptable outcomes	Comments
Roof water drainage and surface water drainage		
PO7 Development provides stormwater infrastructure for the drainage of the premises so as not to cause any of the following: (a) ponding of stormwater on the premises; (b) a hazard to personal health and safety; (c) damage to premises; (d) an increased risk of flooding to premises within the catchment.	A07 Development complies with the standards for stormwater infrastructure specified in part 3.6 of planning scheme policy 5–Infrastructure.	Will Comply. Stormwater infrastructure is proposed to direct discharge into the existing channel at multiple locations along the eastern boundary. Discharge locations will be locally shaped to encourage flow spreading to reduce the potential for scouring. Design and construction of the developments internal stormwater drainage network is expected to be provided in accordance with Council's standards. Refer to RMA Engineers separately prepared Stormwater Assessment Report for further details on stormwater flooding, flood storage, quantity and quality management.
Natural flow of surface water		
PO8 Development provides that the natural flow of surface water is: (a) not altered so as to cause a risk to personal health and safety or damage to property; (b) not increased in intensity, velocity or frequency; (c) not concentrated onto adjoining premises.	A08 Development complies with the standards for stormwater infrastructure specified in part 3.6 of planning scheme policy 5–Infrastructure.	Will Comply. The development site is subject to flooding and to address flood immunity requirements, compensatory filling of the site will be required. The conceptual layout includes an area of suspended slab at the eastern side to maintain the capacity volume of the drainage channel in Lot 20 in RP91039. Stormwater infrastructure is proposed to direct discharge into the existing channel at multiple locations along the eastern boundary. Discharge locations will be locally shaped to encourage flow spreading to reduce the potential for scouring. Design and construction of the developments internal stormwater drainage network is expected to be provided in accordance with Council's standards.

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Performance outcomes	Acceptable outcomes	Comments
		Refer to RMA Engineers separately prepared Stormwater Assessment Report for further details on stormwater flooding, flood storage, quantity and quality management.
Water sensitive urban design		
PO9 Development which provides stormwater infrastructure incorporates water sensitive urban design principles having regard to: (a) protecting existing natural features and ecological processes; (b) protecting the natural hydrologic behaviour of catchments; (c) protecting the existing natural flow and water quality regimes of waterways; (d) protecting water quality of surface and ground waters; (e) minimising demand on the water network; (f) minimising sewage discharges to the natural environment; (g) integrating water into the landscape to enhance visual and ecological values.	AO9 Development complies with the standards for stormwater infrastructure specified in part 3.6 of planning scheme policy 5—Infrastructure.	Will Comply. A suitable stormwater drainage design is expected to be designed and constructed for the site as per Council's standards. Developer is expected to contribute a stormwater quality offset to Council to remove the need for any onsite stormwater quality treatment devices. Refer to RMA Engineers separately prepared Stormwater Assessment Report for further details.
Movement network		
PO10 The projected traffic levels for a use do not adversely affect the planned standards of service for a road or intersection.	AO10 Development does not cause or contribute to projected traffic levels: (a) exceeding the maximum vehicle trips per day in Table 3.4.1.4.2 in planning scheme policy 5—Infrastructure; or (b) exceeding the maximum control delays through intersections in peak periods in Table 3.4.1.4.3 in planning scheme policy 5—Infrastructure.	Will Comply. The development is not expected to exceed the projected traffic levels. Refer to Traffic Engineering Technical Note prepared separately by RMA Engineers for further traffic analysis.

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Performance outcomes	Acceptable outcomes	Comments
Integrated movement concept report		
PO11 Development which generates more than 3,000 vehicle trips per average weekday is designed to integrate the movement network to minimise the transportation costs required to service the use.	AO11 Development which generates more than 3,000 vehicle trips per average weekday provides an integrated movement concept report which integrates the planning of the movement network in accordance with part 2 and 3 of planning scheme policy 5—Infrastructure.	Not Applicable.
For assessable development only		
Land use and transport integration		
PO12 Development within 400 metres of existing or future public passenger transport facilities where the total site area is 5,000m ² or more: (a) supports a road hierarchy which facilitates efficient, safe and accessible bus services connecting to existing and future public passenger transport facilities; (b) enhances connectivity between existing and future public passenger transport facilities and other transport modes; (c) optimises the walkable catchment to existing and future public passenger transport facilities; (d) provides for direct and safe access to and use of existing or future public passenger transport facilities. Note—SPP code: Land use and transport integration in Appendix 4 of the state planning policy provides guidance to achieve this outcome.	AO12 No acceptable outcome provided.	Not Applicable.

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Table Error! No text of specified style in document..1—Water storage for fire fighting

Column 1	Column 2
Lot size / use type	Water requirement
For each residential lot:	
(a) less than 1,000m ²	5,000 litres
(b) between 1,000m ² and less than 1 hectare	10,000 litres
(c) greater than 1 hectare	20,000 litres
Multiple dwelling	5,000 litres per dwelling up to a maximum of 20,000 litres
A use other than Multiple dwelling	5,000 litres or the prevailing rural fire brigade standard

Appendix E Concept Engineering Services Sketch Plan



DA APPROVAL NOTE:

Design information is shown as indicative only to support the DA application. Full design details will need to be confirmed following DA approval.

INFORMATION DISCLAIMER NOTE:

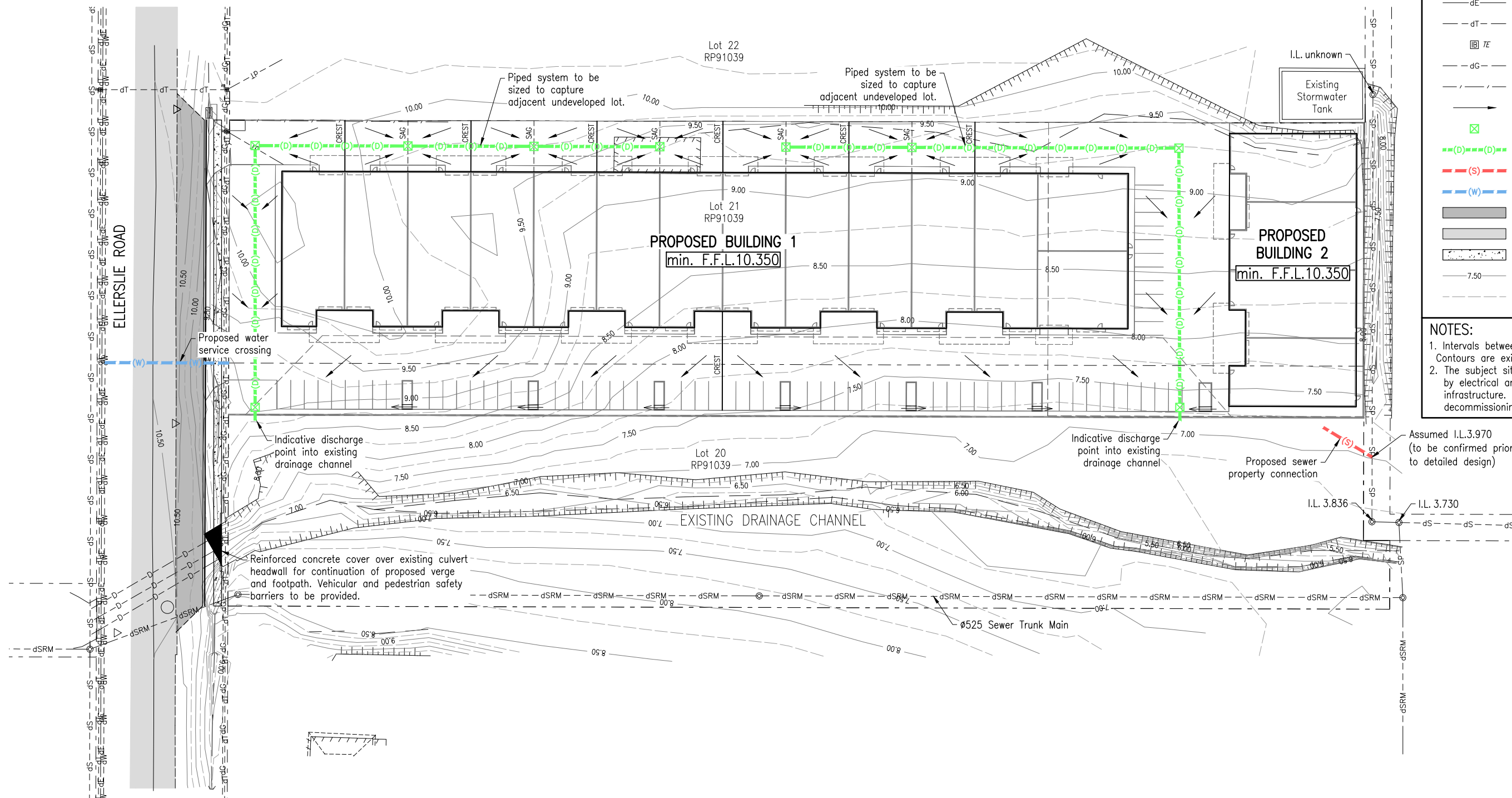
Existing services shown on plan have been sourced and plotted from Dial Before You Dig and detailed survey, available at the time of distribution of this drawing. Information shown on plan should be considered preliminary and subject to further detailed survey verification and pot holing of existing services.

LEGEND:

- Existing Property Boundary
- Existing Batter
- D--- Existing Stormwater
- dS--- DBYD Sewer Main
- dSRM--- DBYD Sewer Rising Main
- dW--- DBYD Water Main
- dE--- DBYD Electrical Line
- dT--- DBYD Telecomms Line
- TE Existing Telecomms Inspection
- dG--- DBYD Gas
- Existing Fence
- Fall Direction
- Proposed Stormwater Pit
- Proposed Stormwater Pipe
- Proposed Sewer Connection
- Proposed Water Service
- Proposed Road Pavement
- Existing Road Pavement
- Proposed Footpath
- 7.50 Existing Major Contours
- Existing Minor Contours

NOTES:

- Intervals between contours — 0.25m
Contours are existing surface levels.
- The subject site is currently serviced by electrical and telecommunication infrastructure. Extension or decommissioning by others.



CONCEPT ENGINEERING SERVICES SKETCH PLAN
Scale 1:400(A1)

PRELIMINARY

13 August 2018

0 4 8 12 16m
1:400(A1) 1:800(A3)

ISSUE	DESCRIPTION	DATE	DWN	DES	CHK	APP
A	PRELIMINARY ISSUE	13/08/18	MDL	MDL	KPM	

NOTE: FIGURED DIMENSIONS TO TAKE PRECEDENCE OVER SCALED MEASUREMENTS. VERIFY ALL ON SITE DIMENSIONS & LEVELS PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION. CONTRACTOR TO NOTIFY ENGINEER IMMEDIATELY OF ANY DISCREPANCIES. COPYRIGHT OF THIS DRAWING IS VESTED WITH RMA ENGINEERS PTY. LTD.



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PROJECT
INDUSTRIAL DEVELOPMENT
ELLERSLIE ROAD
MEADOWBROOK QLD 4131
TITLE
CONCEPT ENGINEERING SERVICES SKETCH PLAN

R.P.E.Q.
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13470
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