

Proposed Commercial Development  
Isaac Street, Hagan Street & Ruthven  
Street,  
North Toowoomba

## Stormwater Management Plan



Prepared For County York Pty Ltd and Fairholme Street  
Trading Pty Ltd



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# 1. Introduction

This Stormwater Management Plan has been commissioned by County York Pty Ltd and Fairholme Street Trading Pty Ltd and forms part of a Material Change of Use (MCU)/Reconfiguration of Lot (ROL) to be lodged with Toowoomba Regional Council over the following parcels of land:

**Property Address:** Isaac Street, Hagan Street & Ruthven Street, North Toowoomba  
**Property Description:** 3/RP63441, 2-4 & 6-11/RP53542, 100/SP23496 1/RP107538  
**Client:** County York Pty Ltd and Fairholme Street Trading Pty Ltd  
**Council:** Toowoomba Regional Council  
**Site Area:** 1.589 ha

The proposed development involves the creation of commercial site that includes a shopping centre, retail tenancies as well as a food and drink outlet. Hagan Street runs north-south adjacent to the site and divides the development area, with the future development site on the eastern lot and the commercial outlets in the western portion of the development. The area will be comprised of two buildings, an internal driveway, carparking, landscaped areas and a vacant lot.

This is represented in Figure 1-1 below, with the area of works indicated in purple.

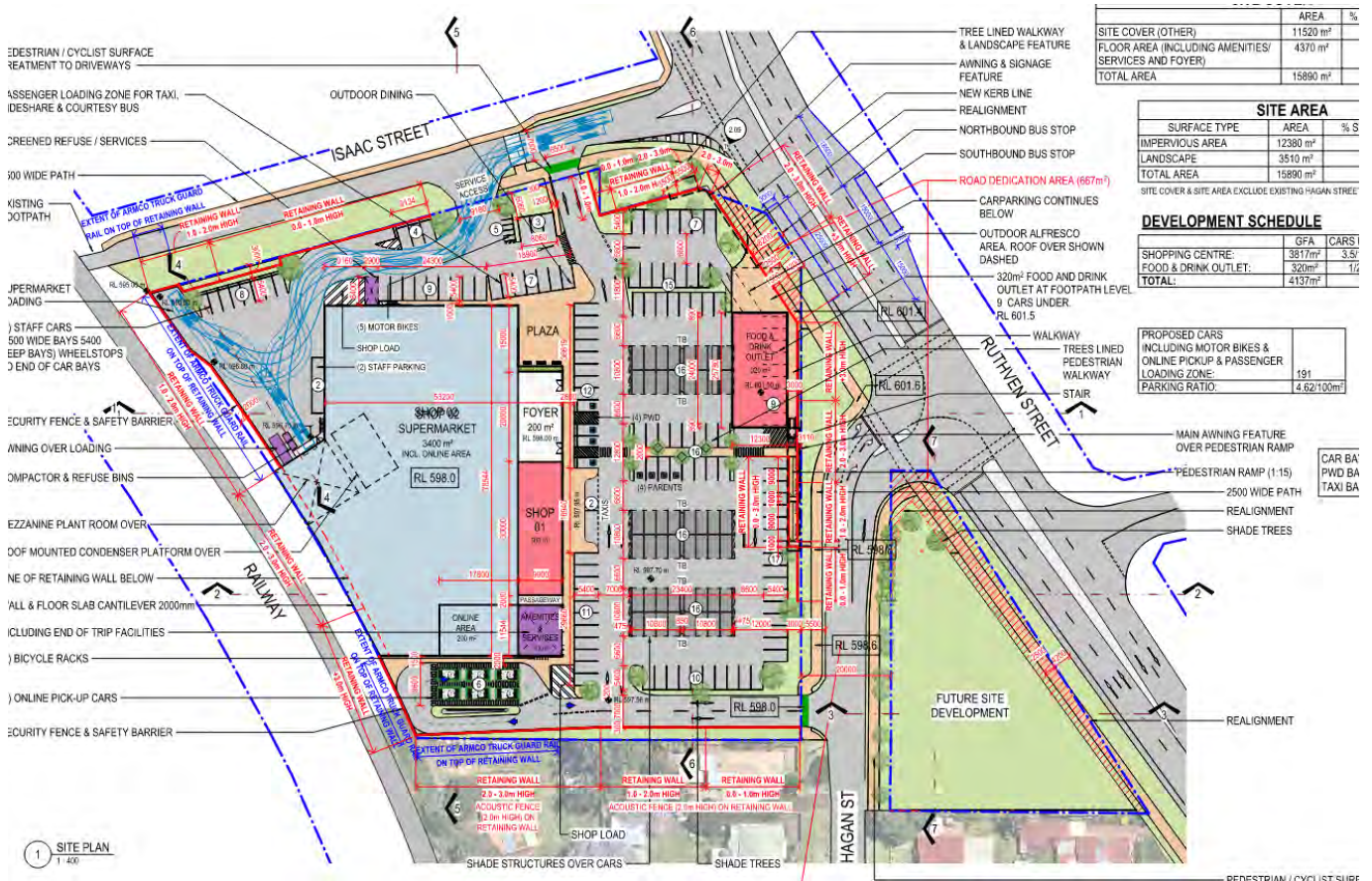


Figure 1-1 Proposed Development Layout (Source: A-1.02 Connectivity Plan (Rev 13) by Thomson Adsett)

This report describes the key stormwater management constraints associated with the proposed development, with the objectives of investigations listed below:

- Identify existing site conditions and drainage characteristics;
- Identify external catchments impacting the site;
- Identify a Lawful Point of Discharge in accordance with Council requirements;



- Demonstrate that the development can occur such that no actionable nuisance or adverse impact is created (Quantity Management); and
- Demonstrate that appropriate water quality objectives for the site have been achieved (Quality Management).

Based on the outcomes of the above investigations, this report provides civil engineering recommendations to address compliance with Toowoomba Regional Council requirements.

## 1.1 MCU1/2022/5495 Information Request

Earlier revisions of this report have been submitted to Toowoomba Regional Council for assessment under application number MCU1/2022/5495, with the current application documents including an Information Request issued 13 October 2025.

This revision of the report will address Council's queries and provide an amended stormwater strategy to suit the updated architectural layout.



## 2. Site Characteristics

### 2.1 Site Location

The proposed development is situated on multiple existing allotment at Isaac Street, Hagan Street & Ruthven Street, North Toowoomba, described as 3/RP63441, 2-4 & 6-11/RP53542, 100/SP23496 1/RP107538 and is located within the Toowoomba Regional Council local government area. Lot 3 on RP63441 is classified as Low Impact Industry and all other allotments are classified as Low-Medium Density Residential under the Regional Planning Scheme.

The site is located in the suburb of North Toowoomba and is in close proximity to surrounding amenities. It is situated directly adjacent to the New England Highway (Ruthven Street), which provides connectivity through Toowoomba to the north and the south. The development is located approximately 300m from Martin Klein Park to the south-west and approximately 400m from Harlaxton State School to the north-east. The site is currently bound by Isaac Street to the north, Ruthven Street to the east, Queensland Rail (QR) railway to the west and existing residential allotments to the south. The approximate area of the site has been measured as 1.589 ha, which includes the existing allotments only. A general locality plan is presented in Figure 2-1 below, with the allotment shown in purple and the subject site in pink.



Figure 2-1 Site Locality Plan (Source: Nearthmaps)

### 2.2 Land Usage

The site is currently used for a range of residential and non-residential uses. A range of long-standing commercial uses are currently provided on the subject site, including offices fronting Ruthven Street (i.e. CT Tax and Advisory), light industrial functioning in the western portion of the site off Hagan Street and Isaac Street (i.e. Toowoomba Scaffolding Hire) and road reserve. These areas are comprised of warehouse buildings, residential buildings, gravel hardstand, driveways and existing vegetation. Pedestrian and vehicular access to the site is currently available from Isaac Street, Ruthven Street and Hagan Street.



## 2.3 Topography

Approximate levels on the site range from RL 603.4m (AHD) in the south-western corner of the site adjacent to Ruthven Street to RL 595m (AHD) in the north-western corner adjacent to the railway corridor. The site has an average grade of 3.36% and generally grades from east to west.

## 2.4 Upstream Catchments

Toowoomba Regional Council Property Mapping contours indicate that there is a small upstream catchment that grades into the site, which includes the areas within the western portion of Ruthven Street and Hagan Street that border the development area. These flows are collected by the existing gully pits in Hagan Street, which are to be retained in the developed case. As such, additional infrastructure to accommodate the external catchment is not required. Flow directions for the area surrounding the site are shown in pink in Figure 2-2 below.

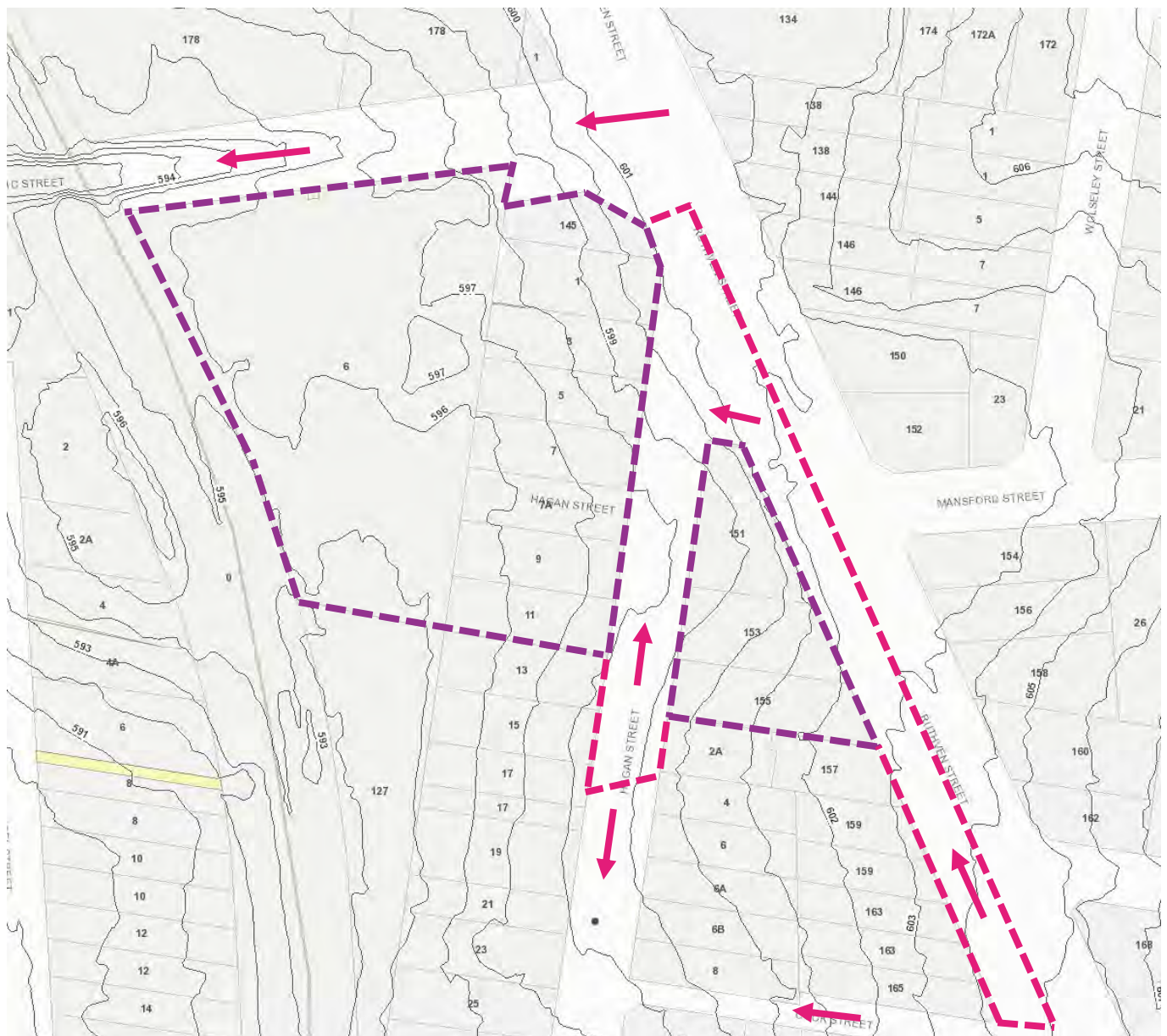


Figure 2-2 Existing Topography (Source: Toowoomba Regional Council)

Flows from the north are directed along Isaac Street via kerb and flows on the eastern side of Ruthven Street are captured by council-owned gully pits. As such, these are not included in the area of the external catchment.



### 2.4.1 Overland Flow Study Information Request

Item 9.1.5 of the Information Request dated 13<sup>th</sup> October 2025 stipulated:

*‘An overland flow study has identified overland flows from Mansford Street discharges to the western side of Ruthven Street. This must be allowed for in the stormwater assessment.’*

Council did not reference the study or any details regarding report outcomes or assumptions, and the Toowoomba Region Flood Risk Information Portal does not show any overland flow impacting the site. Google Street View indicates that the Ruthven Street road corridor is crowned, kerbed and includes multiple gully inlet pits along the eastern extent. It is therefore assumed to have sufficient capacity to convey minor and major flows given that there are no mapped overland flow paths crossing Ruthven Street.

Accordingly, no further assessment was undertaken for flows from Mansford Street based on the following:

- Existing infrastructure in Ruthven Street presumed to have sufficient capacity without overtopping the crown;
- There is no mapped flow overland path through the site;
- There is no evidence of the overland flow study or date of issue (i.e. may be a superseded document); and
- Overland flow path item items have not previously been raised within other Information Requests for the application.

It is noted that the external catchment flows from the western side of Ruthven Street and Hagan Street are intended to be directed through the commercial portion of the site under a 6m wide easement along the southern boundary. Stormwater assessment of the vacant lot can be undertaken as part of the future development application if required.

## 2.5 Existing Stormwater Infrastructure

The site is in close proximity to council-owned sewer, water and stormwater services.

There is a 100mm water main in Hagan Street which currently service each of the existing allotments in the site. There is also a 225mm sewer gravity main within the development area, with several existing structures throughout the site. Stormwater pipes within Ruthven Street and Isaac Street convey stormwater captured by gully pits within each road.

Infrastructure within and surrounding the subject site are summarised in Table 2-1 below, in accordance with the Toowoomba Regional Council Asset Mapping.

Table 2-1 Toowoomba Regional Council Asset List

Service	Type/ Material	Size	Location
Water Main	Ductile Iron	375mm	Hagan Street
Water Main	Ductile Iron	100mm	Hagan Street
Sewer Gravity Main	Concrete	150mm	Lot 3 & 4 on RP53542
Sewer Gravity Main	Concrete	150mm	Lot 6-11 on RP63441
Sewer Gravity Main	Concrete	225mm	Lot 3 on RP63441
Stormwater Drainage	RCP	750mm	Isaac Street



The existing services are shown in an excerpt from Toowoomba Regional Council Asset Mapping in Figure 2-3 below.



Figure 2-3 Existing Services (Source: Toowoomba Regional Council Asset Mapping)



### 3. Proposed Drainage

The proposed development will provide internal drainage and stormwater management in accordance with Toowoomba Regional Council requirements and the Queensland Urban Drainage Manual (QUDM).

The proposed works involve the creation of a commercial development and therefore require the following minimum drainage service standards:

- **Major Drainage System:** 1% AEP (*Toowoomba Planning Scheme v28 Schedule 6PSP2 Table SC6.2.7*); and
- **Minor Drainage System:** 10% AEP (*Toowoomba Planning Scheme v28 Schedule 6PSP2 Table SC6.2.7*).

The development is proposed to discharge both minor and major site-based stormwater flows to the nominated Lawful Point of Discharge.

#### 3.1 Lawful Point of Discharge

The existing Lawful Points of Discharge for the development site are split between two locations, as shown in Figure 3-1 below.

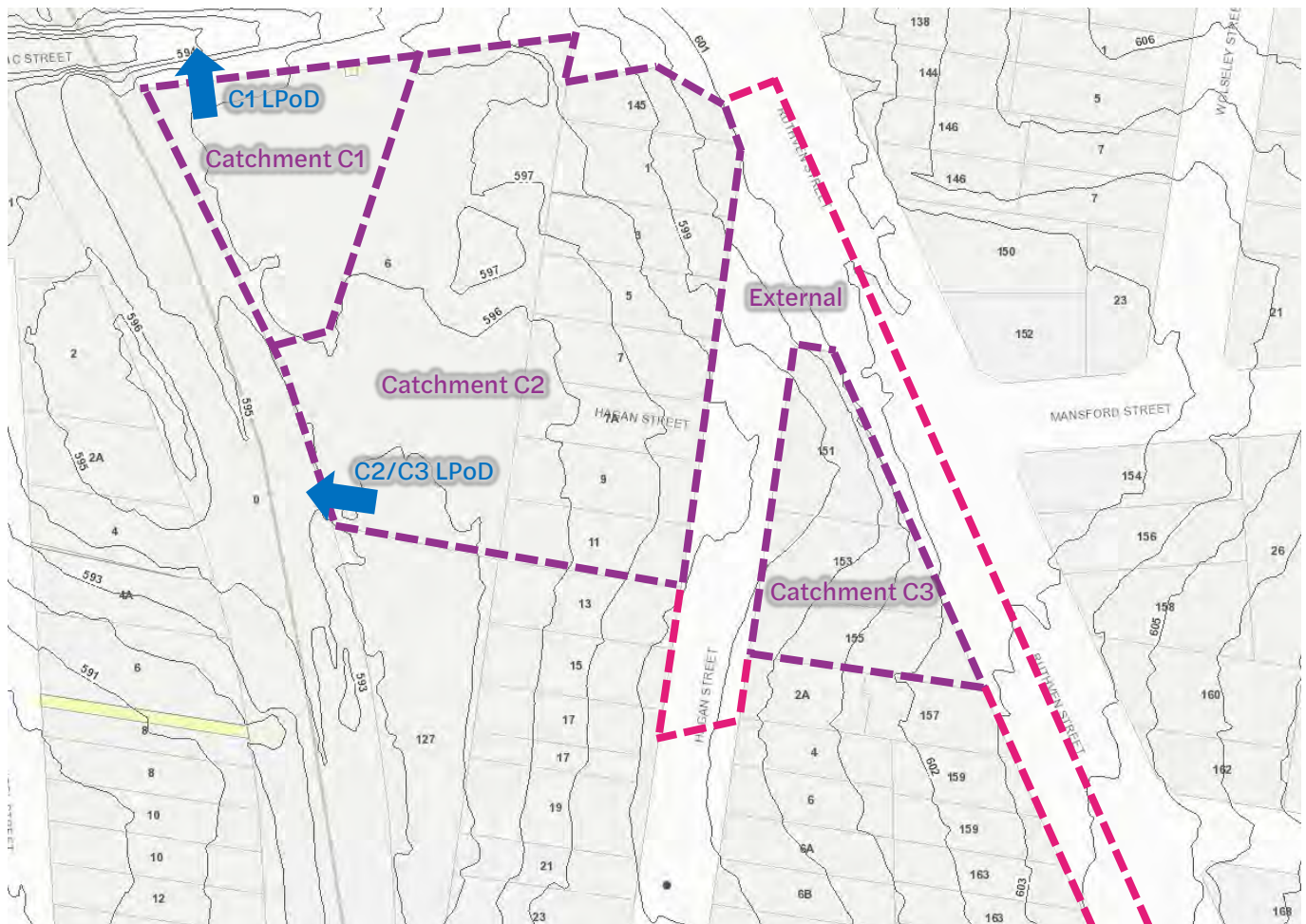


Figure 3-1 Existing Catchment Layout

Catchment C1 directs flows from the north-western corner of the site to the existing channel within the QR railway corridor and ultimately discharges to the existing gully pit in Isaac Street, shown in Figure 3-2 below.



Figure 3-2 Catchment C1 LPOD (Source: Google Street View)

The existing gully pit within Isaac Street is part of a larger drainage network that discharges to the west along Isaac Street via a 1500mm stormwater pipe, ultimately discharging to Gowrie Creek to the west.

Catchments C2 and C3 encompass the remainder of the site and discharges flow to the southern part of the stormwater channel within the QR railway corridor. Catchment boundaries were determined based on contours and the high point of the channel, with flows from Catchment C1 flowing to the north and flows from Catchment C2 and C3 flowing to the south, as shown in Figure 3-3 below.



Figure 3-3 Catchment Flow Directions

Catchments C2 and C3 include the eastern portion of the industrial allotments, the local access driveway connecting to Hagan Street and all the residential allotments within the site. Flows from Catchment C3 sheet flow to the front of the site and discharge to the existing gully pit as shown in Figure 3-4 below.



Figure 3-4 Lots 2 - 4 on RP53542 Discharge Location (Source: Google Street View)

This gully pit is shown on site survey to connect to another stormwater structure within the local access driveway connecting to Hagan Street. It has been reasonably assumed that this pit connects to a stormwater pipe within Catchment C2 that eventually outlets to the stormwater channel in the QR railway corridor to the east of the site.

In the developed case, the existing scheme is proposed to be improved through new internal stormwater infrastructure, including inlet pits and pipes, that will consolidate site flows to the existing Lawful Points of Discharge. It is proposed that the northwestern corner of the site will continue to discharge to Isaac Street and the remainder of the site will discharge to the QR corridor.

The discharge of runoff from the subject site is considered compliant with the two-point test described in QUDM by providing:

- i. The location of the discharge is under the lawful control of the local government or other statutory authority from whom permission to discharge has been received. Confirmation of this shall be assumed from future approval of the proposed development by Toowoomba Regional Council.
- ii. In discharging to that location, the discharge will not cause an actionable nuisance (i.e., a nuisance for which the current or some future neighbouring proprietor may bring an action or claim for damages arising out of the nuisance), or environmental or property damage.

## 3.2 Outlet Arrangement

The proposed development intends to improve the existing drainage regime capturing and conveying site-based flows through internal pits and pipes.

The outlet arrangement for Catchment C1 will consist of a stormwater pipe connecting directly to the existing manhole in Isaac Street.

The outlet arrangement for Catchments C2 and C3 will consist of two detention tanks and a networks of stormwater pipes, ultimately discharging to the QR railway corridor via a proposed outlet headwall.

## 3.3 Existing Discharge to Railway Corridor

A site investigation was conducted on 29 November 2022 to ascertain the nature of existing site flow that discharges into the TMR railway corridor, with photos shown in Figure 3-5 and Figure 3-6 below.



Figure 3-5 and Figure 3-6 indicate that concentrated site flows are directed into the TMR railway corridor via an existing outlet structure adjacent to the site boundary.

This indicates that the outlet arrangement indicated in Section 4.1 above retains the existing stormwater configuration of discharging concentrated flows to the railway corridor.



Figure 3-5 Railway Corridor Discharge Location



Figure 3-6 Railway Corridor Outlet Structure



### 3.4 Proposed Stormwater Infrastructure

The following additional infrastructure is required for the development to ensure that the site-based flows are directed to the Lawful Point of Discharge:

- Proposed inlet pits;
- Pipe infrastructure;
- Roof-water connection stub to building; and
- Surface grading to assist in conveyance.

Refer *C\_25023* 400 series drawings in Appendix A for further details on the proposed stormwater infrastructure.



## 4. Stormwater Quantity Management

The section of the report addresses peak stormwater discharging from the site and identifies whether additional infrastructure is required to ensure “non-worsening” of peak flows resulting from development on the allotment.

### 4.1 Non-Worsening Strategy

Non-worsening of site discharge will be achieved through:

- Mitigating peak flows discharging from the subject site to each Lawful Point of Discharge in the developed scenario to existing levels; and
- Minimising overland flow through the site.

These are deemed appropriate non-worsening objectives for the type, scale and location of the development.

### 4.2 Rational Method Peak Flows

#### 4.2.1 Methodology

The Rational Method has been utilised to estimate the peak flow of event hydrographs for each catchment within the pre-developed and post-developed scenario. The results of the Rational Method calculations are used in the following sections to:

- i. Evaluate the impact of the proposed development on the surrounding infrastructure, and;
- ii. Quantify the stormwater flows to each discharge location to ensure non-worsening objectives are achieved.

#### 4.2.2 Catchment

The existing and developed catchments considered in this assessment only include the internal catchments and does not consider external roadways. In the existing case, the development site consists of three catchments, as shown in Figure 3-1 above. Details of these catchments are summarised as follows:

- C1 – Consists of existing sheds, hardstand, internal gravel driveway and landscaped areas. Existing site runoff directed to northern portion of natural channel in QR railway corridor, which eventually discharges to existing inlet pit in Isaac Street;
- C2 – Consists of residential buildings, industrial warehouse, internal gravel driveway, local access driveway and landscaped areas. Existing site runoff directed to southern portion of the natural channel in QR railway corridor; and
- C3 – Consists of residential buildings, local access driveways and landscaped areas. Existing site runoff directed to southern portion of natural channel in QR railway corridor.

In the developed case, the site consists of three catchments, with details summarised as follows:

- D1 – Consists of proposed internal driveway and landscaped areas. Site runoff is captured and conveyed by internal pits and pipes to Lawful Point of Discharge in Isaac Street.
- D2 – Consists of proposed buildings, internal driveway, pedestrian hardstand and landscaped areas. Site runoff is captured and conveyed by internal pits and pipes to a proposed detention tank, which outlets to the existing Lawful Point of Discharge in the QR railway corridor. D2 also includes a small area of landscaping that will bypass the detention system.
- D3 – Consists of a proposed vacant lot, that is intended to be used as a future development site.



It is noted that D3 has been excluded from quantity analysis (including mitigation measures), as it is anticipated that detention requirements will be addressed as part of a future MCU application on the site.

Preliminary engineering drawings are attached in Appendix A and demonstrate the existing and proposed catchment boundaries. This assessment will consider whether the proposed development area will create significant change to each existing Lawful Point of Discharge.

Stormwater flows from the area external to the site, shown in Figure 2-2, will be captured and directed through the site to the lawful point of discharge in the QR corridor but will not be mitigated.

#### 4.2.3 $C_{10}$ Value

The  $C_{10}$  values for the site have been based on measured Fraction Impervious ( $f_i$ ) areas from the site survey and architectural layouts. Measured imperviousness on the site has been compared to the values in QUDM and interpolated for determination of the  $C_{10}$  value.

#### 4.2.4 Time of Concentration

The time of concentration for each catchment was determined using methods in accordance with Section 4 of QUDM. These are conservative value representing the worst-case scenario of flow to the existing discharge location.

#### 4.2.5 Summarised Parameters

The catchment area, fraction impervious and time of concentration of the development area have been summarised in Table 4-1 below.

Table 4-1 Rational Method Input Parameters

Catchment	Parameter	Value	Data Source/ Calculation Method
Existing C1	Area	3,685 m <sup>2</sup>	Site survey
	Fraction Impervious	77%	Approximated from site survey
	Time of Concentration	9 min	QUDM Section 4.6
Existing C2	Area	9,922 m <sup>2</sup>	Site survey
	Fraction Impervious	67%	Approximated from site survey
	Time of Concentration	11 min	QUDM Section 4.6
Existing C3	Area	2,546 m <sup>2</sup>	Site survey
	Fraction Impervious	12%	Approximated from site survey
	Time of Concentration	12 min	QUDM Section 4.6
Developed D1	Area	2,431 m <sup>2</sup>	Architectural plans
	Fraction Impervious	86%	Approximated from architectural plans
	Time of Concentration	6 min	QUDM Section 4.6
Developed D2	Area	10,963 m <sup>2</sup>	Architectural plans
	Fraction Impervious	94%	Approximated from architectural plans
	Time of Concentration	7 min	QUDM Section 4.6



Table 4-1 demonstrates that there will be an increase in fraction impervious and a decrease in time of concentration for Catchments 1 and 2 as a result of development on the site.

#### 4.2.6 Flow Summary

The resultant flows for each storm event have been summarised in Table 4-2 below.

Table 4-2 Existing C1 vs. Developed D1 Flows

	Q <sub>39%</sub> (m <sup>3</sup> /s)	Q <sub>18%</sub> (m <sup>3</sup> /s)	Q <sub>10%</sub> (m <sup>3</sup> /s)	Q <sub>5%</sub> (m <sup>3</sup> /s)	Q <sub>2%</sub> (m <sup>3</sup> /s)	Q <sub>1%</sub> (m <sup>3</sup> /s)
C1	0.072	0.100	0.120	0.149	0.198	0.234
D1	0.056	0.079	0.095	0.116	0.151	0.176
<b>Difference</b>	<b>-0.016</b>	<b>-0.021</b>	<b>-0.025</b>	<b>-0.033</b>	<b>-0.047</b>	<b>-0.059</b>
<b>Difference (%)</b>	<b>-22%</b>	<b>-21%</b>	<b>-21%</b>	<b>-22%</b>	<b>-24%</b>	<b>-25%</b>

Table 4-2 demonstrates that there is decrease in flows from catchment C1 to D1 across all storm events and therefore it will not be necessary to provide the catchment with attenuation to satisfy the non-worsening objectives specified in Section 4.1.

Table 4-3 Existing C2 vs. Developed D2 Flows

	Q <sub>39%</sub> (m <sup>3</sup> /s)	Q <sub>18%</sub> (m <sup>3</sup> /s)	Q <sub>10%</sub> (m <sup>3</sup> /s)	Q <sub>5%</sub> (m <sup>3</sup> /s)	Q <sub>2%</sub> (m <sup>3</sup> /s)	Q <sub>1%</sub> (m <sup>3</sup> /s)
C2	0.167	0.233	0.281	0.341	0.440	0.511
D2	0.255	0.355	0.428	0.525	0.685	0.770
<b>Difference</b>	<b>0.088</b>	<b>0.122</b>	<b>0.147</b>	<b>0.184</b>	<b>0.246</b>	<b>0.260</b>
<b>Difference (%)</b>	<b>+53%</b>	<b>+52%</b>	<b>+52%</b>	<b>+54%</b>	<b>+56%</b>	<b>+51%</b>

Table 4-3 demonstrates that there is an increase in flows from Catchment C2 to D2 across all storm events and therefore it will be necessary to provide the catchment with attenuation to satisfy the non-worsening objectives specified in Section 4.1.

Table 4-4 Existing C3 Flows

	Q <sub>39%</sub> (m <sup>3</sup> /s)	Q <sub>18%</sub> (m <sup>3</sup> /s)	Q <sub>10%</sub> (m <sup>3</sup> /s)	Q <sub>5%</sub> (m <sup>3</sup> /s)	Q <sub>2%</sub> (m <sup>3</sup> /s)	Q <sub>1%</sub> (m <sup>3</sup> /s)
C3	0.028	0.040	0.048	0.058	0.075	0.088

Table 4-4 demonstrates that the peak flows in the minor and major storms are estimated to be 0.048m<sup>3</sup>/s and 0.088m<sup>3</sup>/s respectively in the existing case.

### 4.3 Detention Design

DRAINS hydrologic software has been utilised to undertake the assessment of existing and developed stormwater discharge in catchments C2 and C3 for the purposes of the on-site detention specification process. DRAINS version 2020.061 has been utilised in this assessment.



### 4.3.1 Modifiable Inputs

The DRAINS software package has several inputs that can be used to manipulate the hydraulic behaviour of the model. The values adopted in this model are all default values, and are presented in Table 4-5 below:

Table 4-5 - DRAINS Modifiable Inputs

Input	Modelled Value
Antecedent Moisture Condition	3
Paved Depression Storage (mm)	1
Supplementary Depression Storage (mm)	1
Grassed (Pervious) Depression Storage (mm)	5
Soil Type	3

Depression Storage values of 1mm for paved/supplementary and 5mm for grassed (pervious) areas were adopted in this model as recommended in the DRAINS user manual. An Antecedent Moisture Condition (AMC) of 3.0 has been adopted as a default value for this site. A soil type classification type of 3 is representative of soil with slow infiltration rates (may have layers that impede downward movement of water). This value is the default (conservative) value adopted by DRAINS and is considered to represent the existing site conditions well.

### 4.3.2 Rainfall Data

DRAINS modelling has been undertaken using the following input files for rainfall data:

- Bureau of Meteorology IFD Rainfall Depth File (2016); and
- ARR Data Hub Increment Temporal Pattern File (2016).

### 4.3.3 DRAINS Calibration - Existing Case

Table 4-6 and below provides a summary of the process of calibration of the DRAINS model against Rational Method calculations for Catchment C2.

Table 4-6 DRAINS Calibration - Existing C2

	Q <sub>39%</sub> (m <sup>3</sup> /s)	Q <sub>18%</sub> (m <sup>3</sup> /s)	Q <sub>10%</sub> (m <sup>3</sup> /s)	Q <sub>5%</sub> (m <sup>3</sup> /s)	Q <sub>2%</sub> (m <sup>3</sup> /s)	Q <sub>1%</sub> (m <sup>3</sup> /s)
Rational Method C2	0.167	0.233	0.281	0.341	0.440	0.511
DRAINS C2	0.196	0.263	0.313	0.366	0.440	0.495
<b>Difference (%)</b>	<b>+17%</b>	<b>+13%</b>	<b>+11%</b>	<b>+7%</b>	<b>0%</b>	<b>-3%</b>

The results indicate that the DRAINS model is programmed with a satisfactory level of accuracy for the purposes of this exercise.

### 4.3.4 Detention Design Parameters

A process of iteration using a combination of detention system height, storage and outlet pipework arrangement have been used to determine the optimal design for the detention system.

Table 4-7 below provides the dimensions of the proposed detention system incorporated into the design model. This configuration is preliminary and is subject to refinement as part of a future details design stage.



Table 4-7 Detention Design Parameters

Feature	D2 Detention Tank
Base Area	100m <sup>2</sup>
Peak Water Depth (Q <sub>1%</sub> )	1.85m
Low Flow Outlet	355mm orifice @ base of tank
High Flow Outlet	0.27m wide internal weir @ 1.365m high
Total Detention Volume	185m <sup>3</sup>

These parameters were utilised the develop the DRAINS model.

### 4.3.5 DRAINS Hydrologic Modelling

The on-site stormwater detention arrangement described in Table 4-7 above has been designed to demonstrate that the proposed storage solution is effective in reducing developed peak stormwater discharge from the site. The DRAINS model can be seen below in Figure 4-1 for the proposed flow of the stormwater from the site.

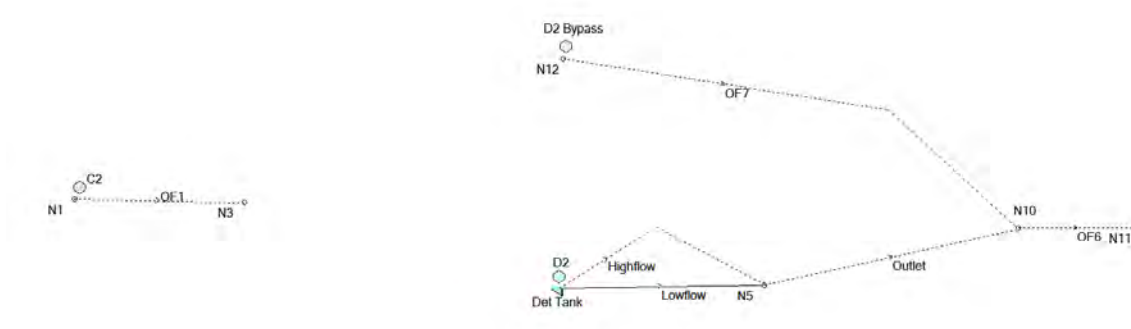


Figure 4-1 DRAINS Model

The results of this assessment and confirmation of the achievement of the on-site detention objectives are provided in Table 4-8 below.

Table 4-8 Mitigated Peak Flows

	Q <sub>39%</sub> (m <sup>3</sup> /s)	Q <sub>18%</sub> (m <sup>3</sup> /s)	Q <sub>10%</sub> (m <sup>3</sup> /s)	Q <sub>5%</sub> (m <sup>3</sup> /s)	Q <sub>2%</sub> (m <sup>3</sup> /s)	Q <sub>1%</sub> (m <sup>3</sup> /s)
Existing	0.196	0.263	0.313	0.366	0.440	0.495
Developed	0.196	0.238	0.271	0.320	0.417	0.495
<b>Difference</b>	<b>0.000</b>	<b>-0.025</b>	<b>-0.042</b>	<b>-0.046</b>	<b>-0.023</b>	<b>0.000</b>
<b>Difference (%)</b>	<b>0%</b>	<b>-10%</b>	<b>-13%</b>	<b>-13%</b>	<b>-5%</b>	<b>0%</b>

The proposed detention mitigation will be adequate to achieve ‘non worsening’ objectives. Table 4-8 shows that for all design storms the peak flow of the developed case is less than the existing.



### 4.3.6 Detention Tank Layout

The proposed development shows the detention tanks located under the 'Click and Collect' carpark adjacent to the supermarket building. Refer to drawing *C\_25023 440 Stormwater Structure Details* in Appendix A for further details.

## 4.4 Piped Network Specifications

### 4.4.1 Future Development Site Stub Sizing

The eastern portion of the property has been allocated as a vacant lot that is ultimately intended to be developed in the future. The connection stub for the site has been sized on the basis that detention will be provided in the ultimate case to mitigate peak flows to the existing scenario.

Per QUDM Chart A1-2, the minimum stub size required is **300mm @ 1% grade** for conveyance of the minor storm flow calculated in Table 4-4 ( $0.048\text{m}^3/\text{s}$ ). Sizing to be confirmed as part of detailed design assessment.

### 4.4.2 Easements

The development proposes to convey upstream catchment flows through the commercial (western) portion of the site consisting of stormwater from:

- Hagan Street and the western portion of Ruthven Road; and
- Future Development Site.

As the piped system traverses private property, a **6m wide easement** will be provided over the associated network and shall be dedicated in favour of Council.



## 5. Stormwater Quality Management

The objectives for stormwater quality management are outlined in Toowoomba Regional Council Planning Scheme Policies and the State Planning Policy (SPP). This section of the report identifies stormwater quality requirements and treatment devices to satisfy Council and SPP requirements.

### 5.1 Construction Phase

The development will comply with Construction Phase water quality objectives, and best practise measures will be utilised to minimise the potential impacts of pollutants generated during construction. The pollutants that would typically be generated during construction are outlined in Table 5-1 below.

Table 5-1 Typical Construction Phase Pollutants

Pollutants	Source
Litter	Paper, construction, food packaging, cement bags, off-cuts
Sediment	Unprotected exposed soils and stockpiles during earthworks and building
Hydrocarbons	Fuel and oil spills, leaks from construction equipment
Toxic Materials	Cement slurry, asphalt prime, solvents, cleaning agents, wash waters (eg. from tile works)
pH Altering Substance	Acid sulfate soils, cement slurry

The minimisation tactics during the construction phase may include erosion and sediment control measures in accordance with Internal Erosion Control Association documentation.

### 5.2 Operational Phase

An assessment has been undertaken to determine whether the new development necessitates compliance operational water quality objectives per the Toowoomba Regional Council questions, as outlined in Table 5-2 below.

Table 5-2 State Planning Policy Trigger Questions

Trigger Question	Development Response
Material Change of Use for Urban Purposes with land area greater than 2,500m <sup>2</sup> that:	Yes
Will result in an impervious area greater than 25% of the net developable area	Yes
Will result in 6 or more dwellings	No
Reconfiguration of Lot for Urban Purposes that involves land area greater than 2,500m <sup>2</sup>	Yes
Operational Work for Urban Purposes that involves disturbing more than 2,500m <sup>2</sup> of land	Yes

The above table indicates that the development triggers compliance with the State Planning Policy water quality objectives. Therefore, the site requires additional operational water quality treatment devices.



## 5.3 Catchment Source Area and Nodes

For the purposes of stormwater quality assessment, the subject site was broken down into catchments using the 'split catchment' approach, as summarised in Table 5-3.

It is noted that D3 has been excluded from quality analysis, as it is anticipated that treatment requirements will be addressed as part of a future MCU application on the site.

Table 5-3 Quality Catchment Areas

Catchment	D1 Area (m <sup>2</sup> )	D2 Area (m <sup>2</sup> )
Roof	0	5,155
Hardstand	128	359
Driveway	1,959	4,779
Pervious Ground	344	670
<b>Total Area</b>	<b>2,431</b>	<b>10,963</b>

Further detail can be seen in *C\_25023 415\_Quality Catchment Plan* in Appendix A.

## 5.4 Proprietary Treatment Devices

The treatment devices within the treatment train include:

- 21 OceanGuards with 200µm mesh bags (OG-200);
- 3 Tall (690) StormFilter cartridge in a 1200 SQ precast pit for Catchment D1; and
- 9 Tall (690) StormFilter cartridge in a 10m<sup>2</sup> chamber inside the detention tank for Catchment D2.

### 5.4.1 OceanGuard

The OceanGuard is a basket that is installed into field or kerb inlet gully pit. The flow diverter at the top of the unit has a rigid skirt that is installed against the walls directing all incoming stormwater flows into the filtration bag. Peak flows during large storm events are able to bypass through a flow diverter. The OceanGuard is typically designed to provide stormwater treatment in ultra-urban environment by meeting water quality standard whilst increasing yield and hence cost effectiveness for developers.

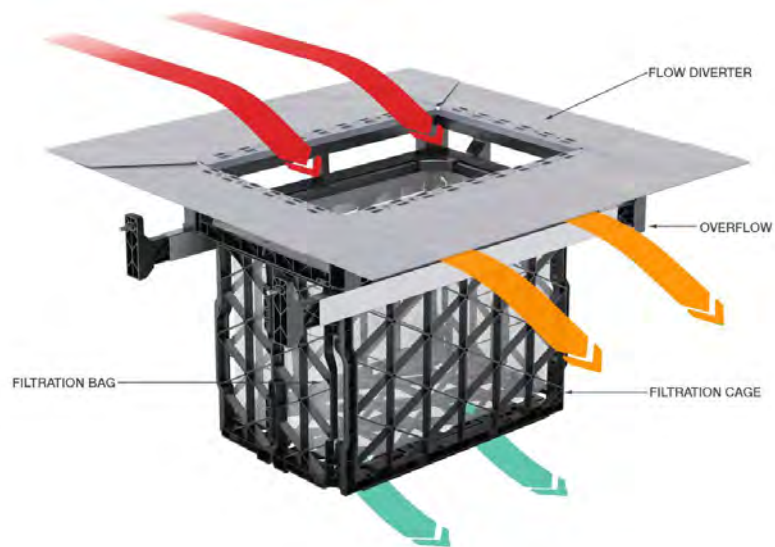


Figure 5-1 – Ocean Protect OceanGuard

### 5.4.2 Ocean Protect StormFilter Cartridge

The Ocean Protect StormFilter Cartridge is an underground stormwater treatment device which traps and adsorbs pollutants from stormwater runoff such as total suspended solids, hydrocarbons, nutrients, metals and other common pollutants. It is comprised of one or more structures that house rechargeable, media filled cartridges. Ocean Protect Filter Cartridges are SQUIDEP (Stormwater Quality Improvement Evaluation Protocol) verified.

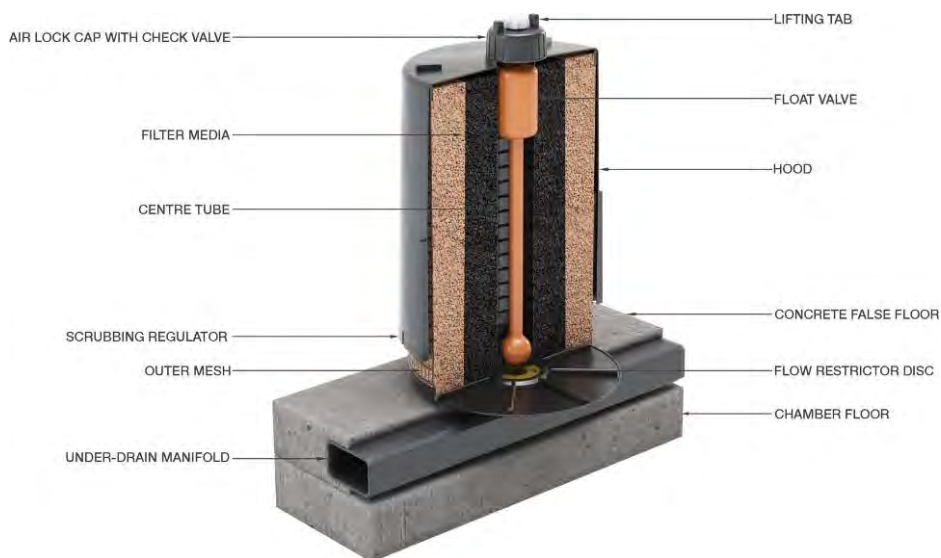


Figure 5-2 Ocean Protect StormFilter Cartridge

## 5.5 MUSIC Modelling Diagram

A diagrammatic layout of the MUSIC configuration used to model the proposed development is presented below in Figure 5-3.

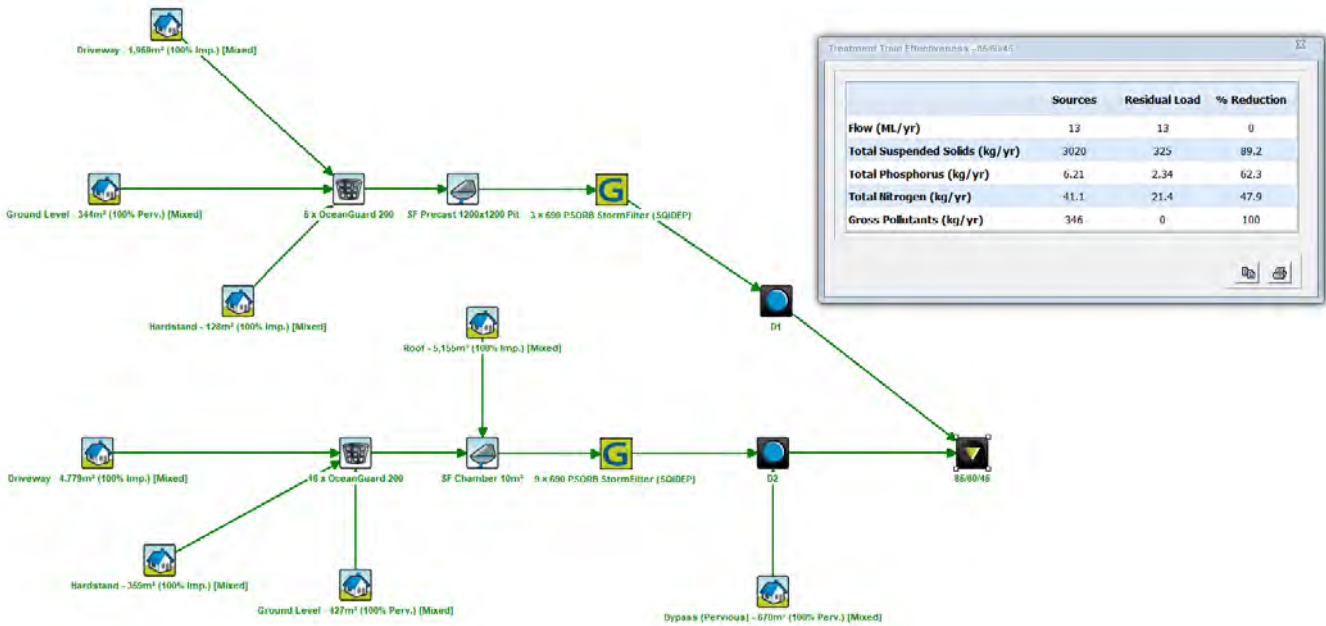


Figure 5-3 MUSIC Model

The MUSIC model was used to assess the performance of the proposed treatment train. The results of the proposed treatment train compared to the required water quality objectives are summarised in Table 5-4 below.

Table 5-4 MUSIC Modelling Results

Pollutant	Minimum Reduction in Mean Load	% Reduction
Total Suspended Solids	80	89.2
Total Phosphorus	60	62.3
Total Nitrogen	45	47.9
Gross Pollutants	90	100

The results indicate that the proposed proprietary products are sufficient in achieving the water quality objectives and exceeds the minimum required pollutant reduction targets.

## 5.6 Maintenance

The maintenance of internal water quality treatment is the responsibility of the developer and/or future landowner. The maintenance of proprietary treatment is to be undertaken in accordance with manufacturer guidelines and specifications.

The Operations and Maintenance Manuals for the proposed stormwater quality devices can be seen in Appendix F.



## 6. Council Information Request Responses

The proposed design was assessed against Toowoomba Regional Council's Information Requested dated 13 October 2025, as demonstrated in Table 6-1 below.

Table 6-1 Council Information Request Responses

IR Item	Response
<b>Item 9 – Stormwater Discharge</b>	
An updated Stormwater Management Plan is required recognising the following:	
1. An easement is required in favour for Council for the discharge of stormwater across the development site with discharge to the railway corridor;	A 6m wide easement will be provided over Council-owned assets in private property. Refer Section 4.4.2 for further details.
2. An easement will be required across the Future Development Site if stormwater cannot be conveyed within the verge.;	To be addressed as part of future development application to avoid prejudicing development layout.
3. A connection must be provided for the Future Development Site assuming on-site detention (non-worsening) will be required when that block is developed;	Minimum 300mm @ 1% connection stub to be provided for Future Development Site. Refer Section 4.4.1 for further details.
4. The stormwater system (including stormwater quality treatment) for the Subject Site must be separate from Council assets;	All infrastructure conveying upstream catchment flows to be located under easement where in a private property. The internal stormwater network for the development has been designed to be separate from Council-owned assets.
5. An overland flow study has identified overland flows from Mansford Street discharges to the western side of Ruthven Street. This must be allowed for in the stormwater assessment; and	Further assessment of flows in Mansford Street are not required for this application. Refer Section 2.4.1 for further details.
6. The Stormwater Management Plan approved by SARA must be consistent with that agreed to by Council.	<i>C_22059 R001_Stormwater Management Plan (Rev H)</i> to be submitted to both Council and SARA for assessment.

This demonstrates that the development complies with the Council's required amendments.



## 7. Conclusion

This Stormwater Management Plan has been commissioned by County York Pty Ltd and Fairholme Street Trading Pty Ltd for the Material Change of Use (MCU)/Reconfiguration of Lot (ROL) application at Isaac Street, Hagan Street & Ruthven Street, North Toowoomba. The proposed development involves the creation of a commercial site that includes a shopping centre and carparking areas.

A summary of the investigation and outcomes presented in this report are as follows:

- **Proposed Drainage (Section 3):** Lawful Point of Discharge is identified as the QR railway corridor and stormwater infrastructure in Isaac Street.
- **Stormwater Quantity Management (Section 4):** Development will require detention storages of 185m<sup>3</sup> to achieve non-worsening objectives.
- **Stormwater Quality Management (Section 5):** Development triggers compliance with State Planning Policy water quality objectives. Ocean Protect proprietary stormwater treatment devices have been specified.

## 8. Disclaimer

This report has been prepared on behalf of and for the exclusive use of County York Pty Ltd and Fairholme Street Trading Pty Ltd and is subject to and issued in accordance with the agreement between Context Engineering.

Our investigation and analysis has been specifically catered for the particular requirements of County York Pty Ltd and Fairholme Street Trading Pty Ltd and may not be applicable beyond this scope. For this reason, any other third parties are not authorised to utilise this report without further input and advice from Context Engineering.

Context Engineering accepts no liability or responsibility whatsoever for the report in respect of any use of or reliance upon this report by any third party.

The investigation and analysis have relied on information provided by others. We accept no responsibility for the accuracy of material supplied by others. The accuracy of the investigation, analysis and report are dependent upon the accuracy of this information.



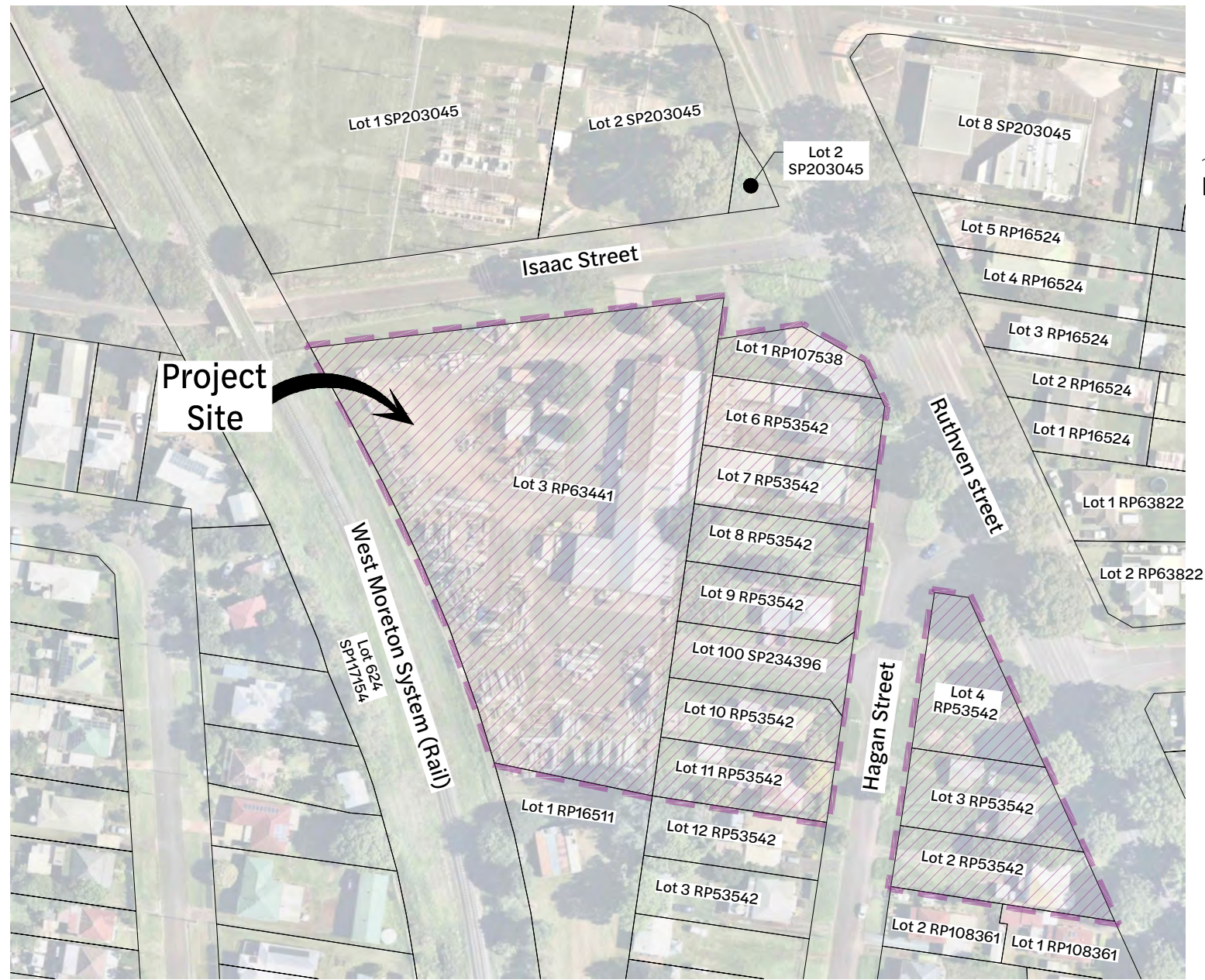
Isaac Street, Hagan Street & Ruthven Street, North Toowoomba  
Stormwater Management Plan

Appendix A **Schematic Design Drawings**

# Proposed Commercial Development

## Hagan Street, Isaac Street and Ruthven Street, North Toowomba

### Civil Engineering Works



Site Locality



Sheet List Table	
Sheet Number	Sheet Title
000	Cover Page
001	Standard Notes
010	Existing Features and Demolition Layout Plan
100	Bulk Earthworks Layout Plan (Sheet 1 of 5)
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103	Bulk Earthworks Layout Plan (Sheet 4 of 5)
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300	Internal Roadworks Layout Plan (Sheet 1 of 5)
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302	Internal Roadworks Layout Plan (Sheet 3 of 5)
303	Internal Roadworks Layout Plan (Sheet 4 of 5)
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320	Internal Functional Layout Plan (Sheet 1 of 4)
321	Internal Functional Layout Plan (Sheet 2 of 4)
322	Internal Functional Layout Plan (Sheet 3 of 4)
323	Internal Functional Layout Plan (Sheet 4 of 4)
350	Internal Roadworks Detail Plan
360	Internal Line Marking Layout Plan (Sheet 1 of 5)
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363	Internal Line Marking Layout Plan (Sheet 4 of 5)
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370	Jointing Layout Plan (Sheet 1 of 5)
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374	Jointing Layout Plan (Sheet 5 of 5)
380	Jointing Notes and Details

Sheet List Table	
Sheet Number	Sheet Title
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401	Stormwater Drainage Layout Plan (Sheet 2 of 5)
402	Stormwater Drainage Layout Plan (Sheet 3 of 5)
403	Stormwater Drainage Layout Plan (Sheet 4 of 5)
404	Stormwater Drainage Layout Plan (Sheet 5 of 5)
410	Stormwater Catchment Layout Plan (Sheet 1 of 5)
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412	Stormwater Catchment Layout Plan (Sheet 3 of 5)
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414	Stormwater Catchment Layout Plan (Sheet 5 of 5)
415	Quality Catchment Layout Plan
420	Stormwater Drainage Long Sections (Sheet 1 of 4)
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430	Stormwater Calculation Tables (Sheet 1 of 3)
431	Stormwater Calculation Tables (Sheet 2 of 3)
432	Stormwater Calculation Tables (Sheet 3 of 3)
440	Stormwater Structure Details (Sheet 1 of 2)
441	Stormwater Structure Details (Sheet 2 of 2)
500	Water Layout Plan (Sheet 1 of 5)
501	Water Layout Plan (Sheet 2 of 5)
502	Water Layout Plan (Sheet 3 of 5)
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506	Water Long Sections (Sheet 1 of 3)
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604	Sewer Layout Plan (Sheet 5 of 5)
605	Sewer Long Section
800	Erosion and Sediment Control Layout Plan
810	Erosion and Sediment Control Notes and Details

**TELECOMMUNICATIONS SERVICE PROVIDERS**

Note: Service locations are approximate only from provider plans. Locations are to be confirmed prior to the start of construction. Refer Before You Dig service location plans - available at [www.byda.com.au](http://www.byda.com.au)

**ENERGY SERVICE PROVIDERS**

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**Construction Hold Point**  
Prior to construction the contractor shall verify levels of all existing crossings and connection points.

**Construction Hold Point**  
Once the base of manholes, inspection pits, gullies and field inlets for stormwater drainage have been poured, further construction shall not proceed until the superintendent and or engineer have inspected the works for finished levels and approved construction to continue.

**Toowomba Regional Council**

Area of Site: 16,234m<sup>2</sup>  
SARA ref: 2211-32116 SRA

**Surveyor**  
Downes Group

**Lot Information**  
Hagan Street, Isaac Street and Ruthven Street

<table border="1"> <thead> <tr><th>Revision</th><th>Date</th><th>Issue Details</th></tr> </thead> <tbody> <tr><td>1</td><td>31.03.25</td><td>Issued for Information</td></tr> <tr><td>2</td><td>1.05.25</td><td>Issued for Approval</td></tr> <tr><td>3</td><td>19.12.25</td><td>Issued for Approval</td></tr> </tbody> </table>	Revision	Date	Issue Details	1	31.03.25	Issued for Information	2	1.05.25	Issued for Approval	3	19.12.25	Issued for Approval	<table border="1"> <thead> <tr><th>Drawn</th><th>Designed</th></tr> </thead> <tbody> <tr><td>MD</td><td>RTH</td></tr> <tr><td>PD</td><td>NR</td></tr> <tr><td>PD</td><td>JE</td></tr> </tbody> </table>	Drawn	Designed	MD	RTH	PD	NR	PD	JE	<table border="1"> <thead> <tr><th>QR Code</th><th>Status</th></tr> </thead> <tbody> <tr><td></td><td><b>Issued for Approval</b> Not for Construction</td></tr> </tbody> </table>	QR Code	Status		<b>Issued for Approval</b> Not for Construction	<table border="1"> <thead> <tr><th>Scale</th><th>Client</th><th>Project</th></tr> </thead> <tbody> <tr><td></td><td>Bernoth Holdings Pty Ltd</td><td>Hagan Street, Isaac Street and Ruthven Street North Toowomba</td></tr> </tbody> </table>	Scale	Client	Project		Bernoth Holdings Pty Ltd	Hagan Street, Isaac Street and Ruthven Street North Toowomba	<table border="1"> <thead> <tr><th>Project No.</th><th>Drawing No.</th><th>Revision</th></tr> </thead> <tbody> <tr><td>C_25023</td><td>000</td><td>3</td></tr> </tbody> </table>	Project No.	Drawing No.	Revision	C_25023	000	3
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**Cover Page**

## General Notes

- These drawings are to be reviewed alongside architectural, structural, landscaping, and other engineering drawings and specifications, as well as any issued written instructions.
- Prior to commencement of site works, construction, or fabrication, ensure that all dimensions indicated on these drawings are verified. If there are any discrepancies, consult the engineer before proceeding.
- The existing services depicted in these drawings are based on field surveys, Before You Dig / GIS records, and ground inspections. The underground service positions are advisory in nature, and it is the contractor's responsibility to confirm the actual locations of all services prior to construction. The contractor is liable for any costs incurred in rectifying services damaged during or as a result of construction.
- Utility services shown on the plans are provided for the contractor's information only. It is the responsibility of the contractor to verify service locations prior to construction. Context cannot be held responsible for any omissions or inaccuracies in the services depicted on the plans.
- The contractor must coordinate with relevant service authorities to determine the location, alignment, and elevation of all public and private services on-site. Any modifications to the services will be carried out by the respective service authority, or under their supervision / approval.
- Surface levels across the site have been determined through computer modeling of field survey data. These calculated levels may differ from the actual ground level. The contractor must establish construction levels using surveyed benchmarks provided by the appointed surveyor.
- All work must adhere to the current local authority standard drawings, specifications, and approval conditions.
- All construction activities shall comply with Workplace Health and Safety requirements.
- Construction works shall be programmed so as not to disturb nearby householders, either by dust, noise, flooding or disconnection of services.
- The contractor is to notify all relevant authorities prior to commencing work within existing road reserves.

## Construction Approvals:

- The contractor is to notify all relevant authorities prior to commencing work within existing road reserves. The contractor is to be responsible for obtaining all relevant works approvals prior to the commencement of construction. Approvals to consider include, but are not limited to:
  - Council/DTMR/service authority works approval(s);
  - Council/DTMR/service authority pre-start approval;
  - Land access notice and/or approval(s);
  - Traffic permit(s) and/or Traffic Management Plan(s);
  - Vehicle access permit(s);
  - Police permit(s);
  - Driveway permit/notice to work on Council / DMTR land;
  - Works across a bikeway or bikeway closure/detour; and
- The above is indicative, and it is the responsibility of the contractor to confirm and obtain all necessary work approvals.

## Vegetation and Clearing

- Written approval from the superintendent is required for any clearing beyond the extent of earthworks or for necessary construction activities.
- Suitable material should be mulched for reuse on-site.
- Before commencing site works, a fauna spotter qualified by QNPWS (Queensland National Parks and Wildlife Service) or equivalent personnel must inspect the site to identify any wildlife (fauna) or habitat features prior to clearing.
- Prior to any tree removal, a certified fauna spotter/catcher must conduct pre-clearing inspections, including fauna relocation and removal or blocking of all vacant hollows. Clearing operations must avoid nesting times of animals and birds. A qualified wildlife officer must protect and recover fauna (not previously removed) during clearing operations, coordinate staging and sequence of clearing with fauna protection, and oversee the translocation of animals and recovery procedures.

## Earthworks

- Before commencing earthworks, the contractor must verify the locations of all existing underground services with the relevant authority and mark them accordingly.
- The contractor shall notify the superintendent prior to commencing the demolition of any existing structures.
- The contractor is to ensure existing services are to be preserved from the effects of structural loading generated by the earthworks and/or construction.
- Prior to earthworks, remove and stockpile topsoil unless otherwise instructed by the site superintendent.
- Clear and remove all vegetation to the satisfaction of the superintendent before placing any fill material.
- All excavation and filling must adhere to the specifications of AS3798-2007 and comply with the current specification(s) and standard drawings of the local authority.
- Control testing of earthworks should generally follow AS1289.5 and AS3798-2007, with Level 1 geotechnical certification to be provided.
- Prior to commencing upslope earthworks, ensure that all pre-earthworks erosion and sediment control measures are in place and fully operational.
- Before commencing filling operations, ensure that the existing surface is clear of

vegetation matter.

- Fill material must be of good quality and free from unsuitable materials.
- The actual limits of cutting and filling, as well as the finished surface levels, shall be determined on-site by the superintendent during construction. Adjustments may be made during construction, following written direction from the superintendent, and after amended drawings have been approved by the Council.
- All areas subject to earthworks must be free draining with a minimum slope of 1:100 unless noted otherwise.
- Temporary stockpiles, if applicable, should have a maximum side batter of 1:6 (grass seeded).
- When topsoil stockpiles are located adjacent to fill areas, caution must be exercised to prevent contamination of structural fill by blending with topsoil.

## Roadworks and Pavements

- All roadworks must comply with the requirements and standard drawings specified by the local authority.
- Subgrade test results to be forwarded to the Superintendent for determination of box depths prior to excavation. Tests shall include soaked CBR and/or other tests as requested by the superintendent at appropriate depth.
- The pavement design as detailed on the engineering drawings and/or specifications is to be considered preliminary and not for construction until confirmed otherwise. Preliminary pavement design(s) have been based on assumed subgrade CBR values, which may vary from inground conditions.
- The pavement design is to be confirmed by the supervising engineer or superintendent following a review of the CBR tests and prior to the construction of pavement.
- Ensure that all kerbing conforms to the relevant standard drawings provided by the local authority.
- Subsoil drains are to be provided beneath all kerbs and kerb and channel, in general accordance with the typical sections and IPWEAQ standard drawing
- The contractor is to install subsoil drains beneath all kerbs, and kerb and channel, following the typical sections and IPWEAQ standard drawing RS-140.
- Unless specified otherwise, the contractor is responsible for the construction of concrete footpaths. Concrete footpaths (including jointing) are to be in accordance with local authority requirements.
- Ensure that pavement markings and signage are in accordance with the Manual of Uniform Traffic Control Devices (MUTCD).
- Install Telstra, Energex and other service conduits beneath roadways and driveways as directed by the superintendent on-site.

## Stormwater Drainage

- Ensure that all stormwater drainage is in compliance with the requirements and standard drawings of the local authority.
- Stormwater pipes beneath roadways and footpaths should be Class '3' RCP unless noted otherwise.
- All stormwater pipes up to and including 600Ø shall be Rubber Ring Jointed (RRJ). Stormwater pipes greater than 600Ø shall be internal Flush Jointed (FJ).
- Stormwater pipe classes are designed for service loads only. The contractor is responsible for evaluating anticipated construction loads and upgrading pipe classes where necessary, following AS3725-2007 guidelines, at the contractor's expense.
- Where the depth of a manhole, gully or tank exceeds 1.2m, a step iron ladder shall be installed. Ladders shall conform with AS4198 and AS1657, respectively.
- The proposed stormwater labels indicate the stormwater catchment name, unless stated otherwise.
- For layout and pipework details, refer to the longitudinal sections. Consult the calculations tables for hydraulic design information.
- Levels and gradients at junctions with existing works may be varied as required to achieve a satisfactory connection and the contractor shall include the cost of this work in the tender price. Where new work joins existing, the work shall transition neatly with the pavement so that deviation from the line of a 3.0m straight edge shall be no greater than 10mm.
- All dimensions are in metres unless shown otherwise.



**ENERGY SERVICE PROVIDERS**

Note: Service locations are approximate only from provider plans. Locations are to be confirmed prior to the start of construction. Refer Before You Dig service location plans - available at [www.byda.com.au](http://www.byda.com.au)

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1	31.03.25	Issued for Information	MD	RTH
2	1.05.25	Issued for Approval	PD	NR
3	19.12.25	Issued for Approval	PD	JE

QR Code

**Issued for Approval  
Not for Construction**

Scale

Client  
**Bernoth Holdings Pty Ltd**

Project  
**Hagan Street, Isaac Street  
and Ruthven Street  
North Toowoomba**

Disclaimer  
All dimensions to be checked on site by contractor prior to construction. Use written dimensions only, do not scale.



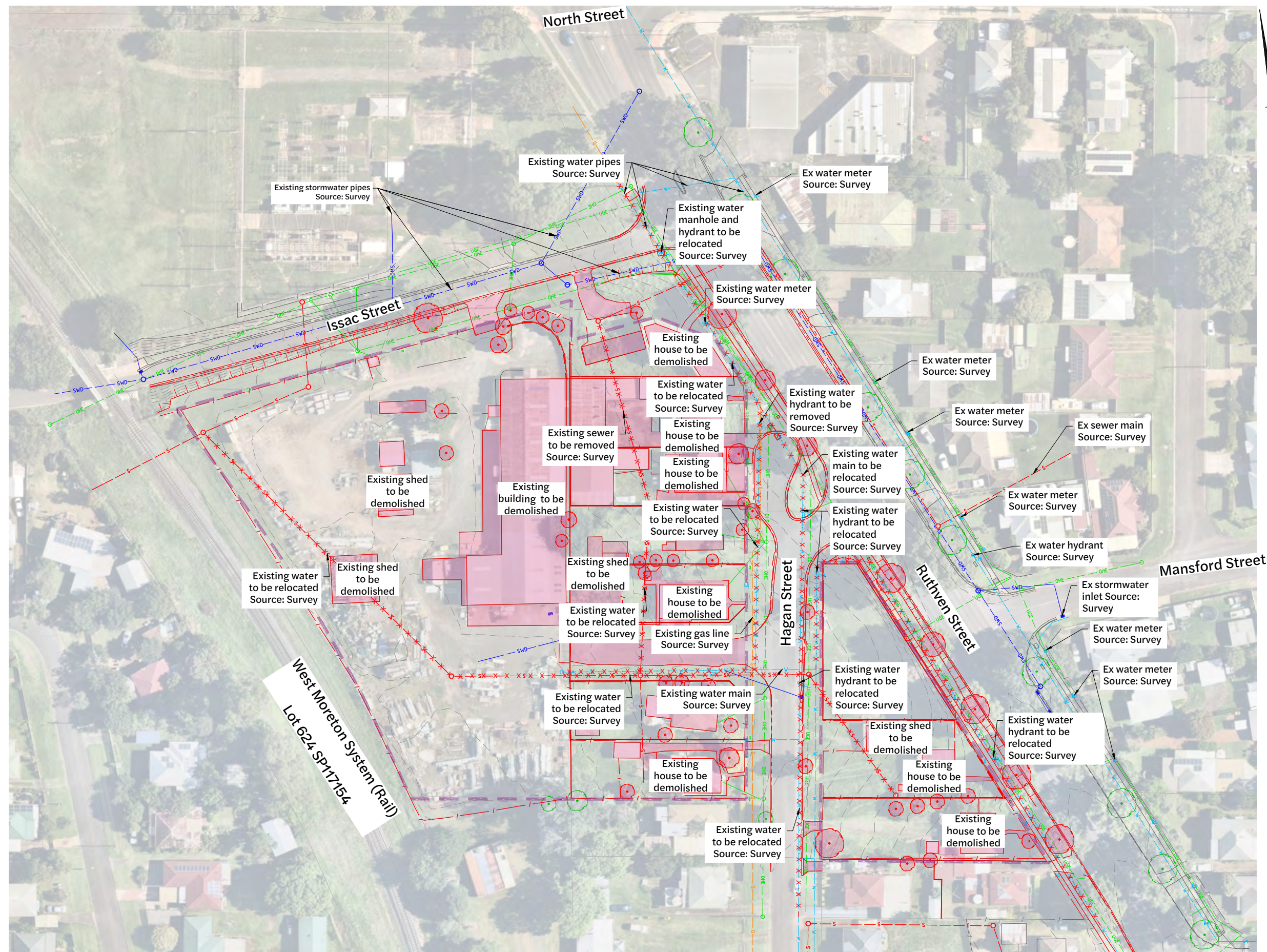
Drawing Title		
<b>Standard Notes</b>		
Project No. <b>C_25023</b>	Drawing No. <b>001</b>	Revision <b>3</b>

**Existing Legend**

- Property Boundary
- 0.5 Existing Surface Contour
- Stormwater Drainage
- Sewer Line
- Water Line
- Gas Line
- Overhead Electrical
- Underground Telecommunications
- Fence
- Barrier Kerb & Channel
- Footpath
- Sewer Manhole
- Stormwater Manhole
- Tree Structural Root Zone (SRZ) by Arborist (to remain)

**Proposed Legend**

- Site Boundary
- Property Boundary
- Demolition Area
- Existing feature to be removed
- Tree Structural Root Zone (SRZ) by Arborist (to remove)
- Masonry Retaining Wall
- Batter Top
- Sewer Line to be Removed
- Water Line to be Removed
- Stormwater Line to be Removed

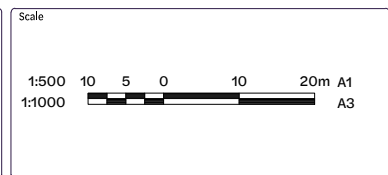


**Existing Features and Demolition Layout Plan**  
1:500 Scale

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	1.05.25	Issued for Approval	PD	NR
3	19.12.25	Issued for Approval	PD	JE

QR Code	Status
	<b>Issued for Approval</b> Not for Construction

**Issued for Approval**  
Not for Construction



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**Bernoth Holdings Pty Ltd**

Project  
**Hagan Street, Isaac Street and Ruthven Street North Toowoomba**

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Drawing Title		
<b>Existing Features and Demolition Layout Plan</b>		
Project No. <b>C_25023</b>	Drawing No. <b>010</b>	Revision <b>3</b>

FILE G:\MYP DRIVE\PROJECTS\C\_25023 - RUTHVEN STREET NORTH TOOWOOMBA\A1\_MODEL\AUTOCAD\C\_25023\_010\_EXISTING FEATURES AND DEMOLITION LAYOUT PLAN.DWG LAST SAVED BY: JONJE

**Existing Legend**

- Property Boundary
- 0.5 Existing Surface Contour
- Stormwater Drainage
- Sewerage Reticulation
- Water Reticulation
- Gas
- Overhead Electrical
- Underground Telecommunications
- Fence
- Barrier Kerb & Channel
- Footpath
- Sewer Manhole
- Stormwater Manhole
- Tree Structural Root Zone (SRZ) by Arborist(to remain)

**Proposed Legend**

- Site Boundary
- 1.0 Design Surface Contour Major
- 0.2 Design Surface Contour Minor
- Retaining Wall

**Bulk Earthworks Legend**

Hatching from Existing surface to Design surface

Cut		Fill	
	> 5.0m		> 5.0m
	2.0 to 5.0m		2.0 to 5.0m
	1.0 to 2.0m		1.0 to 2.0m
	0.0 to 1.0m		0.0 to 1.0m

**Earthworks Schedule**

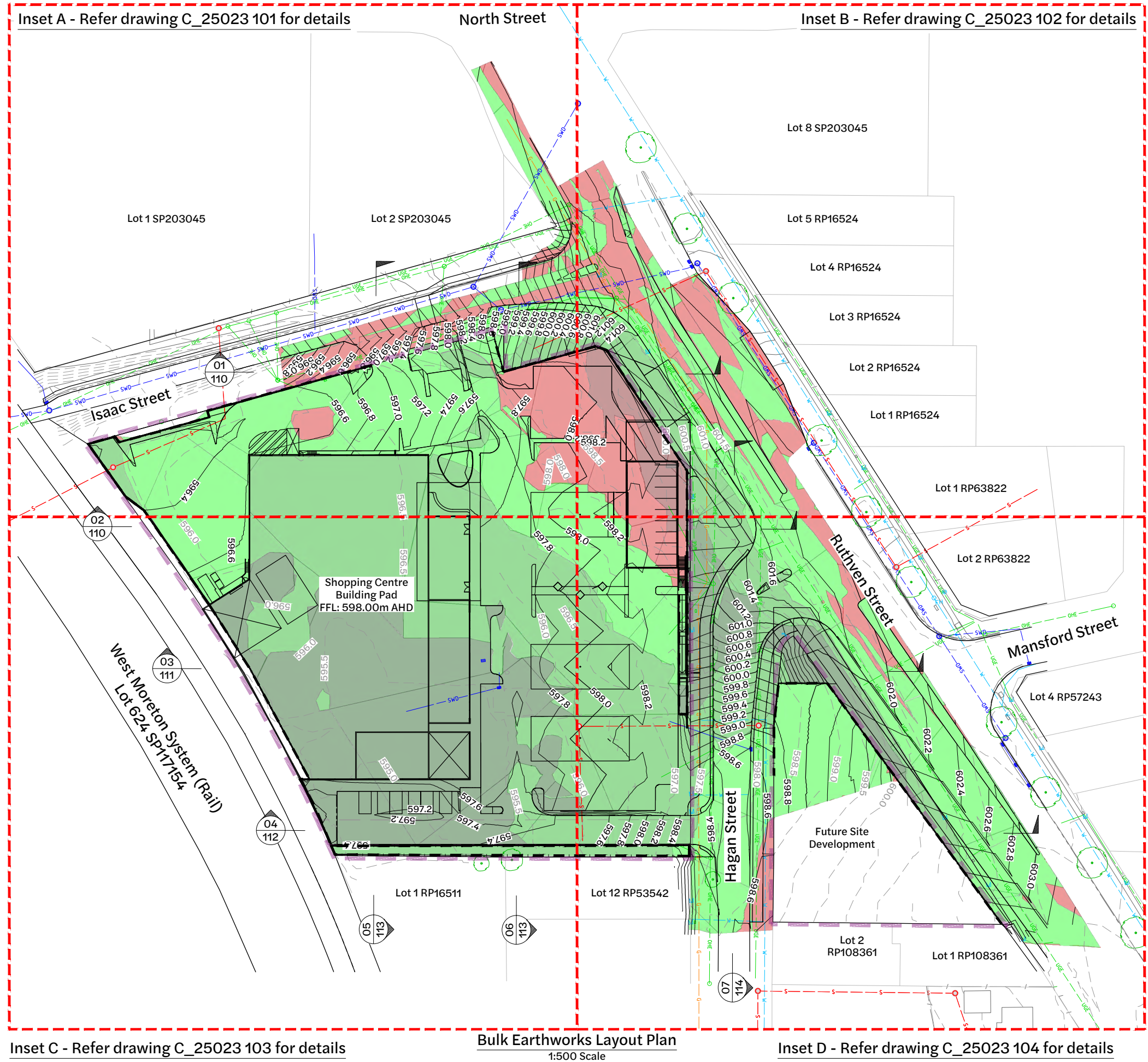
Volumes measured from Existing Surface to Design Surface (depth varies, refer \* below)

Type	Volume (m <sup>3</sup> )
Cut	-998.4*
Fill	23,045*
<b>Total Balance</b>	<b>22,046*</b>

\*Assume no strip and no pavement allowance.

**Note:**

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Inset A - Refer drawing C\_25023 101 for details

**Bulk Earthworks Layout Plan**  
1:500 Scale

Inset D - Refer drawing C\_25023 104 for details

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	1.05.25	Issued for Approval	PD	NR
3	26.05.25	Updated Architectural Plans	NR	NR
4	19.12.25	Issued for Approval	PD	JE
5	22.01.26	Issued for Approval	VK	VK

QR Code

Status

**Issued for Approval**  
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Scale

1:500 10 5 0 10 20m A1  
1:1000

Client

Bernoth Holdings Pty Ltd

Project

Hagan Street, Isaac Street  
and Ruthven Street  
North Toowoomba













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Drawing Title


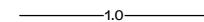
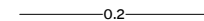

**Bulk Earthworks Layout Plan (Sheet 1 of 5)**

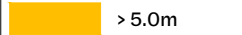
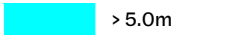
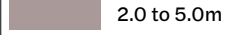
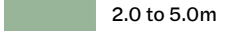
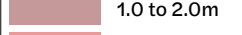
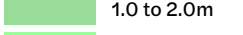
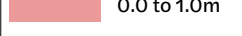
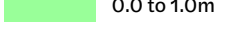
Project No. C\_25023    Drawing No. 100    Revision 5

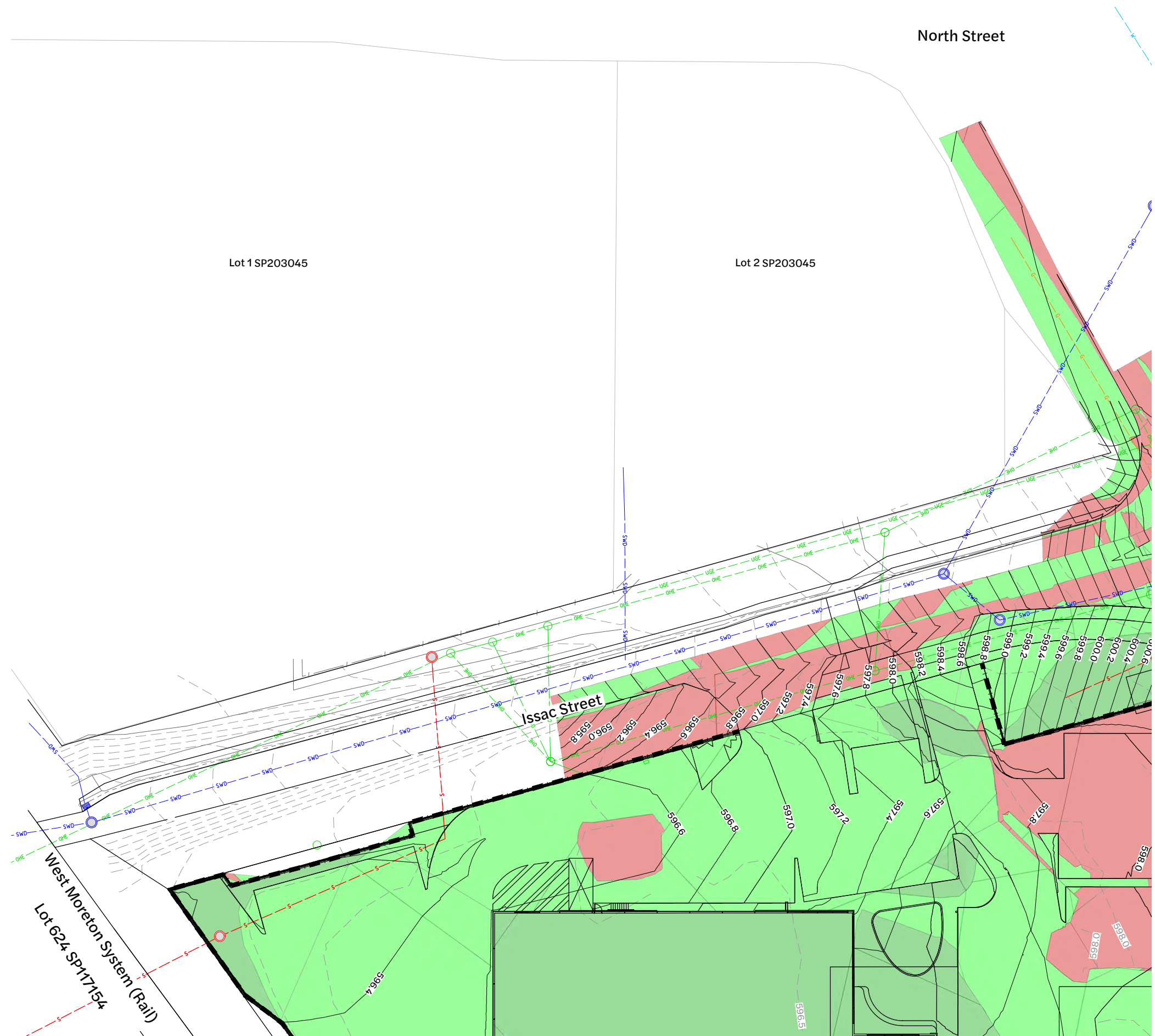
**Existing Legend**

-  Property Boundary
-  Existing Surface Contour
-  Stormwater Drainage
-  Sewerage Reticulation
-  Gas
-  Overhead Electrical
-  Underground Telecommunications
-  Fence
-  Barrier Kerb & Channel
-  Footpath
-  Sewer Manhole
-  Stormwater Manhole

**Proposed Legend**

-  Site Boundary
-  Design Surface Contour Major
-  Design Surface Contour Minor
-  Retaining Wall

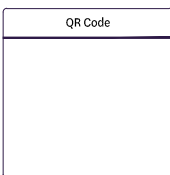
Bulk Earthworks Legend	
Hatching from Existing surface to Design surface	
Cut	Fill
 > 5.0m	 > 5.0m
 2.0 to 5.0m	 2.0 to 5.0m
 1.0 to 2.0m	 1.0 to 2.0m
 0.0 to 1.0m	 0.0 to 1.0m



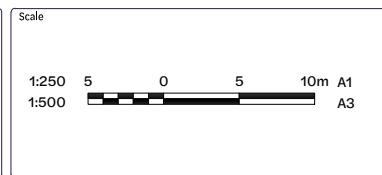
**Note:**  
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**Inset A - Bulk Earthworks Layout Plan**  
 1:250 Scale

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	1.05.25	Issued for Approval	PD	NR
3	26.05.25	Updated Architectural Plans	NR	NR
4	19.12.25	Issued for Approval	PD	JE



**Issued for Approval**  
 Not for Construction



Client  
 Bernoth Holdings Pty Ltd

Project  
 Hagan Street, Isaac Street  
 and Ruthven Street  
 North Toowoomba



Drawing Title <b>Bulk Earthworks Layout Plan (Sheet 2 of 5)</b>		
Project No. <b>C_25023</b>	Drawing No. <b>101</b>	Revision <b>4</b>

FILE G:\MY DRIVE\PROJECTS\25023 - RUTHVEN STREET NORTH TOOWOOMBA\4 - MODEL\AUTOCAD\C\_25023\_101\_BULK EARTHWORKS LAYOUT PLAN\DWG\LAST SAVED BY:CNTE

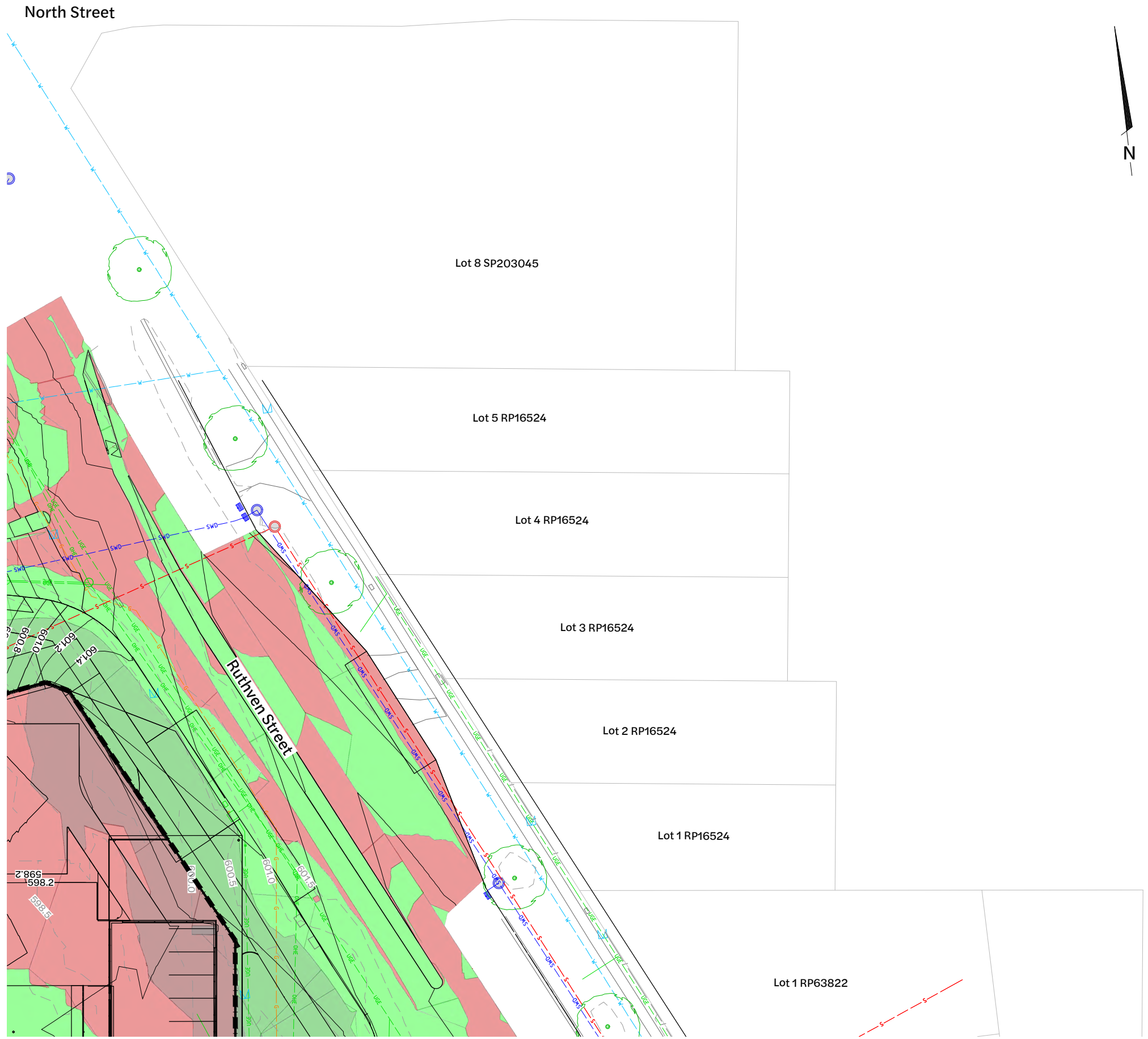
**Existing Legend**

- Property Boundary
- Existing Surface Contour 0.5
- Stormwater Drainage
- Sewerage Reticulation
- Water Reticulation
- Gas
- Overhead Electrical
- Underground Telecommunications
- Fence
- Barrier Kerb & Channel
- Footpath
- Sewer Manhole
- Stormwater Manhole
- Tree Structural Root Zone (SRZ) by Arborist(to remain)

**Proposed Legend**

- Site Boundary
- Design Surface Contour Major 1.0
- Design Surface Contour Minor 0.2
- Retaining Wall

Bulk Earthworks Legend	
Hatching from Existing surface to Design surface	
Cut	Fill
> 5.0m	> 5.0m
2.0 to 5.0m	2.0 to 5.0m
1.0 to 2.0m	1.0 to 2.0m
0.0 to 1.0m	0.0 to 1.0m



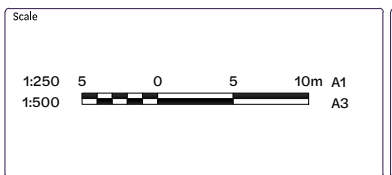
**Inset B - Bulk Earthworks Layout Plan**  
1:250 Scale

**Note:**  
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Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	1.05.25	Issued for Approval	PD	NR
3	26.05.25	Updated Architectural Plans	NR	NR
4	19.12.25	Issued for Approval	PD	JE

QR Code

**Issued for Approval**  
Not for Construction



Client  
**Bernoth Holdings Pty Ltd**

Project  
**Hagan Street, Isaac Street and Ruthven Street North Toowoomba**





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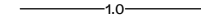
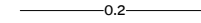

Drawing Title		
<b>Bulk Earthworks Layout Plan (Sheet 3 of 5)</b>		
Project No. <b>C_25023</b>	Drawing No. <b>102</b>	Revision <b>4</b>









FILE G:\MY DRIVE\PROJECTS\C\_25023 - RUTHVEN STREET NORTH TOOWOOMBA\HAGAN MODEL\AUTOCAD\C\_25023\_102\_BULK EARTHWORKS LAYOUT PLAN.DWG LAST SAVED BY:CNTE

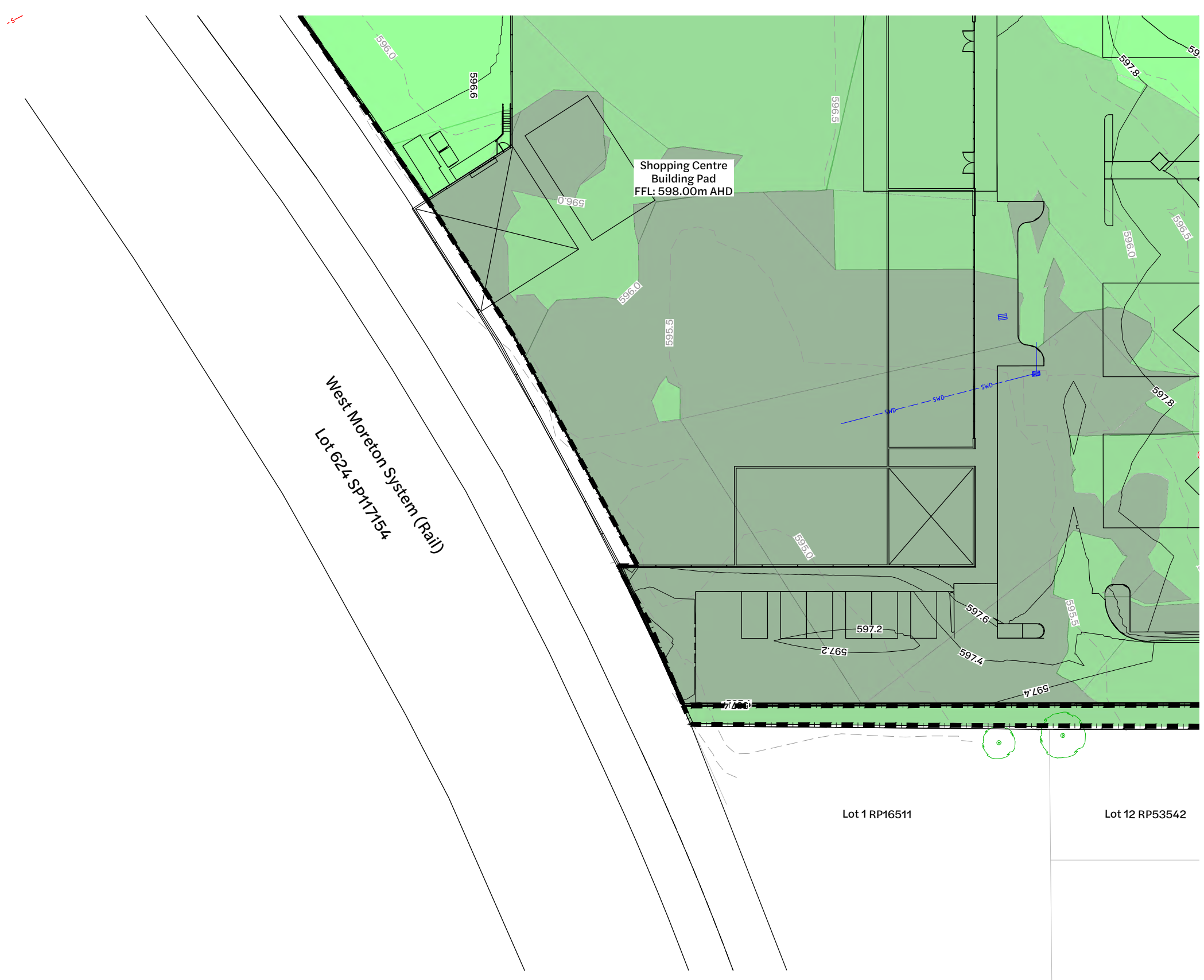
**Existing Legend**

-  Property Boundary
-  0.5 Existing Surface Contour
-  Stormwater Drainage
-  Tree Structural Root Zone (SRZ) by Arborist(to remain)

**Proposed Legend**

-  Site Boundary
-  1.0 Design Surface Contour Major
-  0.2 Design Surface Contour Minor
-  Retaining Wall

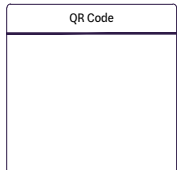
Bulk Earthworks Legend	
Hatching from Existing surface to Design surface	
Cut	Fill
 > 5.0m	 > 5.0m
 2.0 to 5.0m	 2.0 to 5.0m
 1.0 to 2.0m	 1.0 to 2.0m
 0.0 to 1.0m	 0.0 to 1.0m



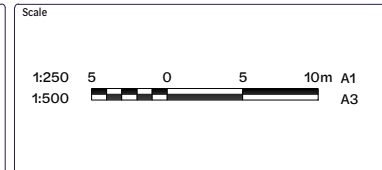
**Note:**  
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**Inset C - Bulk Earthworks Layout Plan**  
 1:250 Scale

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	1.05.25	Issued for Approval	PD	NR
3	26.05.25	Updated Architectural Plans	NR	NR
4	19.12.25	Issued for Approval	PD	JE
5	22.01.26	Issued for Approval	VK	VK



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Client  
**Bernoth Holdings Pty Ltd**

Project  
**Hagan Street, Isaac Street and Ruthven Street North Toowoomba**



Drawing Title <b>Bulk Earthworks Layout Plan (Sheet 4 of 5)</b>		
Project No. <b>C_25023</b>	Drawing No. <b>103</b>	Revision <b>5</b>

FILE: Z:\PROJECTS\C\_25023 - RUTHVEN STREET NORTH TOOWOOMBA\BULK\_EARTHWORKS\_LAYOUT\_PLAN\DWG\_LIST\_SAVED\_BY\HAGAN

**Existing Legend**

- Property Boundary
- 0.5 Existing Surface Contour
- Stormwater Drainage
- Sewerage Reticulation
- Water Reticulation
- Gas
- Overhead Electrical
- Underground Telecommunications
- Fence
- Barrier Kerb & Channel
- Footpath
- Sewer Manhole
- Stormwater Manhole
- Tree Structural Root Zone (SRZ) by Arborist(to remain)

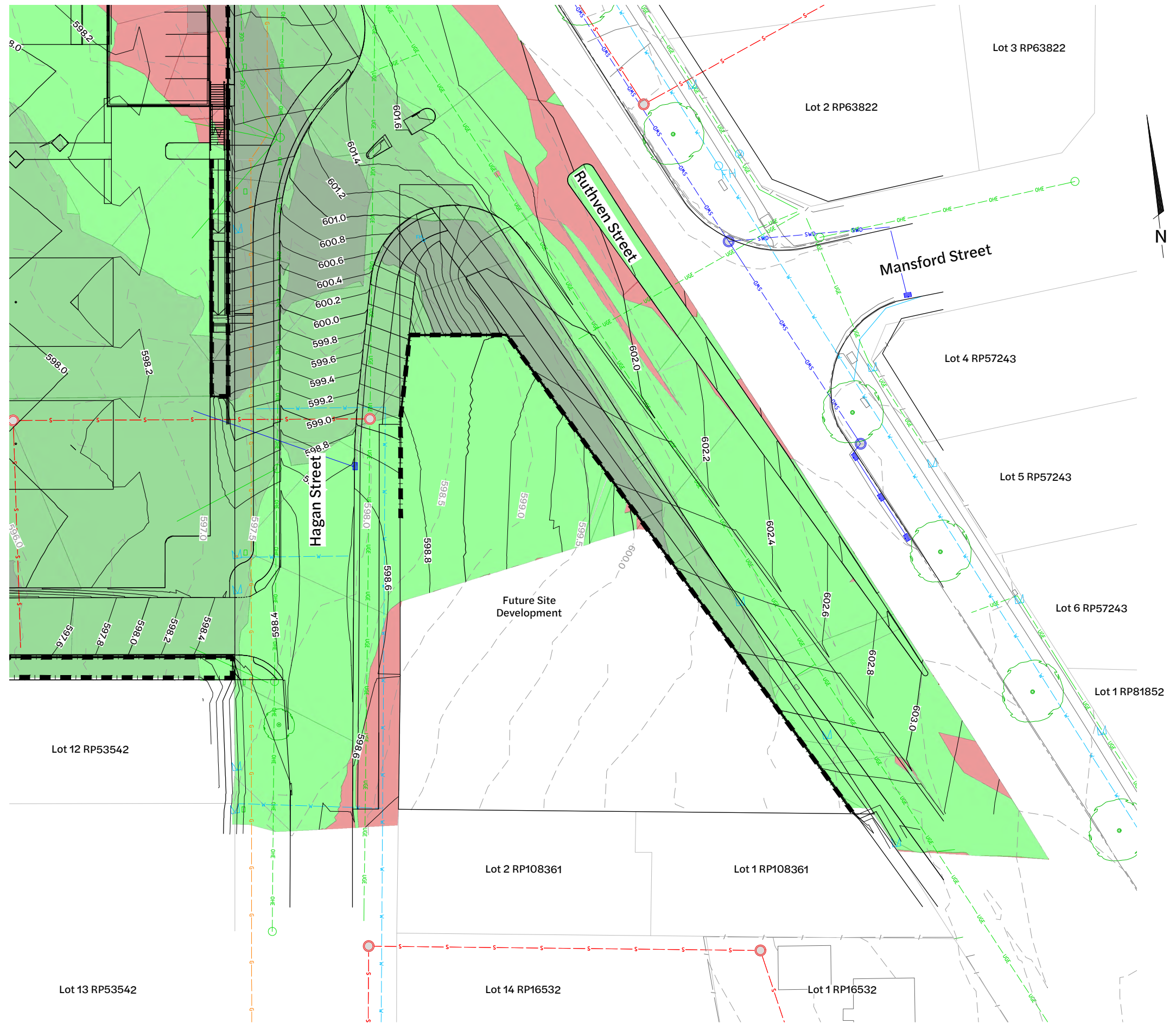
**Proposed Legend**

- Site Boundary
- 1.0 Design Surface Contour Major
- 0.2 Design Surface Contour Minor
- Retaining Wall

**Bulk Earthworks Legend**

Hatching from Existing surface to Design surface

Cut	Fill
> 5.0m	> 5.0m
2.0 to 5.0m	2.0 to 5.0m
1.0 to 2.0m	1.0 to 2.0m
0.0 to 1.0m	0.0 to 1.0m



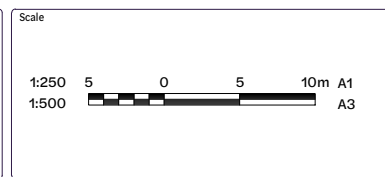
**Inset D - Bulk Earthworks Layout Plan**  
1:250 Scale

**Note:**  
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Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	1.05.25	Issued for Approval	PD	NR
3	26.05.25	Updated Architectural Plans	NR	NR
4	19.12.25	Issued for Approval	PD	JE
5	22.01.26	Issued for Approval	VK	VK

QR Code	Status
	Issued for Approval Not for Construction

**Issued for Approval**  
Not for Construction



Client  
**Bernoeth Holdings Pty Ltd**

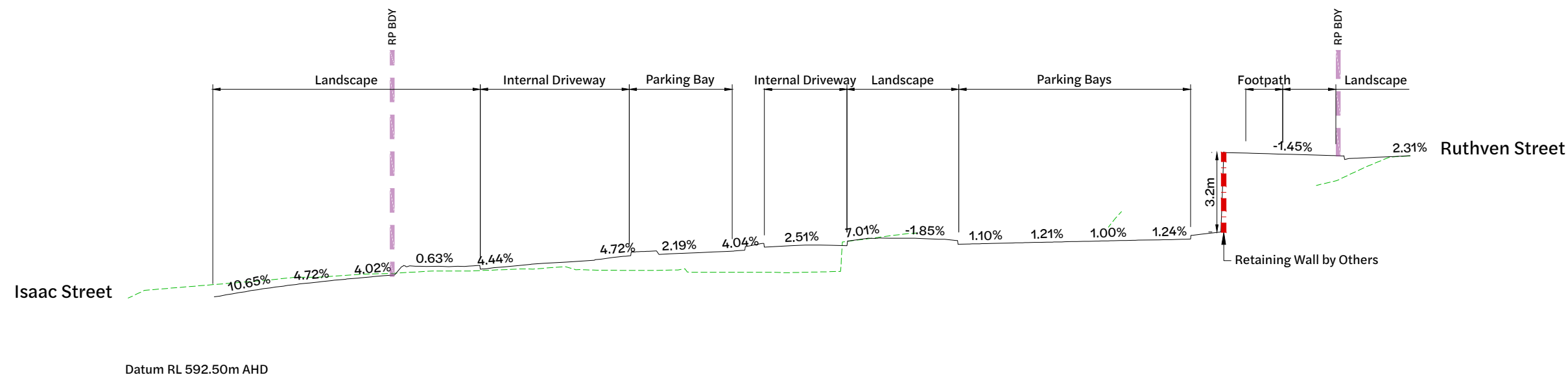
Project  
**Hagan Street, Isaac Street and Ruthven Street North Toowoomba**



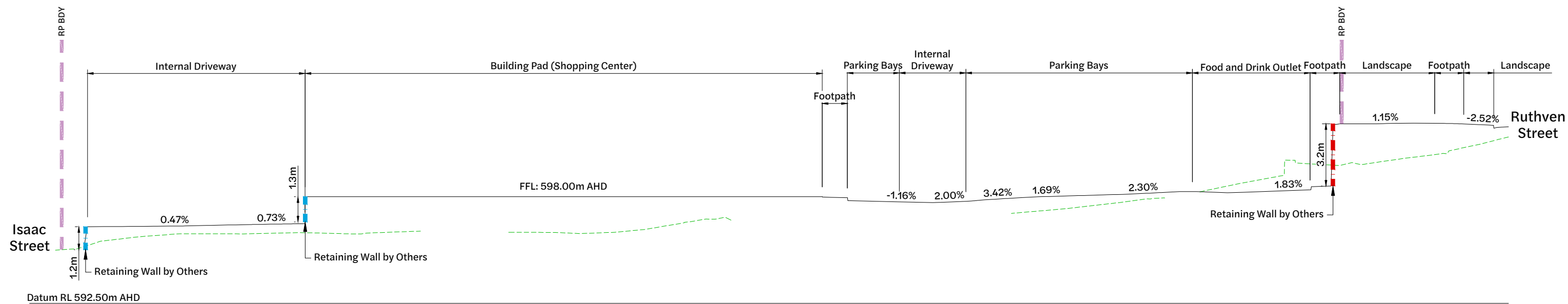
Drawing Title		
<b>Bulk Earthworks Layout Plan (Sheet 5 of 5)</b>		
Project No. <b>C_25023</b>	Drawing No. <b>104</b>	Revision <b>5</b>

**Legend**

- Existing Surface
- Design Surface
- Site Boundary
- Retaining Wall (1.0m - 2.0m)
- Retaining Wall (> 3.0m)



**Section 01**  
 Horizontal: 1:200  
 Vertical: 1:100

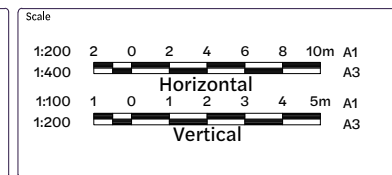


**Section 02**  
 Horizontal: 1:200  
 Vertical: 1:100

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	1.05.25	Issued for Approval	PD	NR
3	26.05.25	Updated Architectural Plans	NR	NR
4	19.12.25	Issued for Approval	PD	JE

QR Code

**Issued for Approval**  
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Client  
 Bernoth Holdings Pty Ltd

Project  
 Hagan Street, Isaac Street  
 and Ruthven Street  
 North Toowoomba

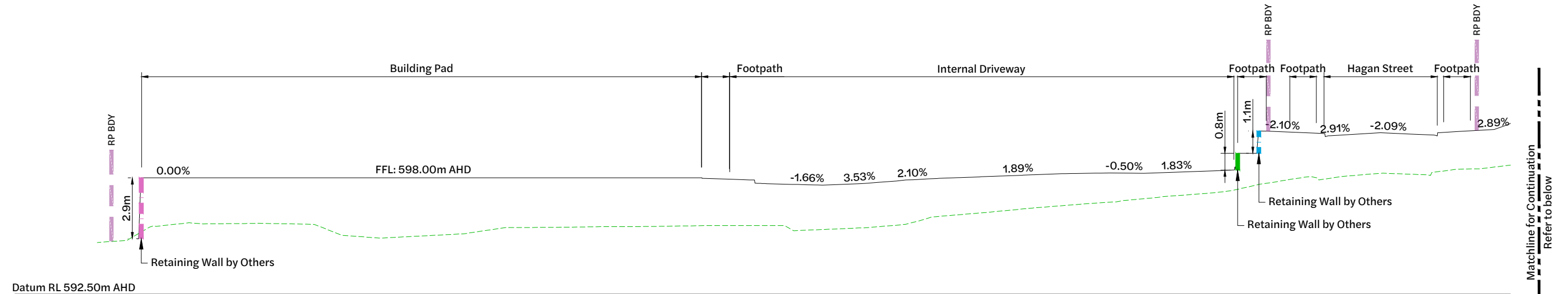
Disclaimer  
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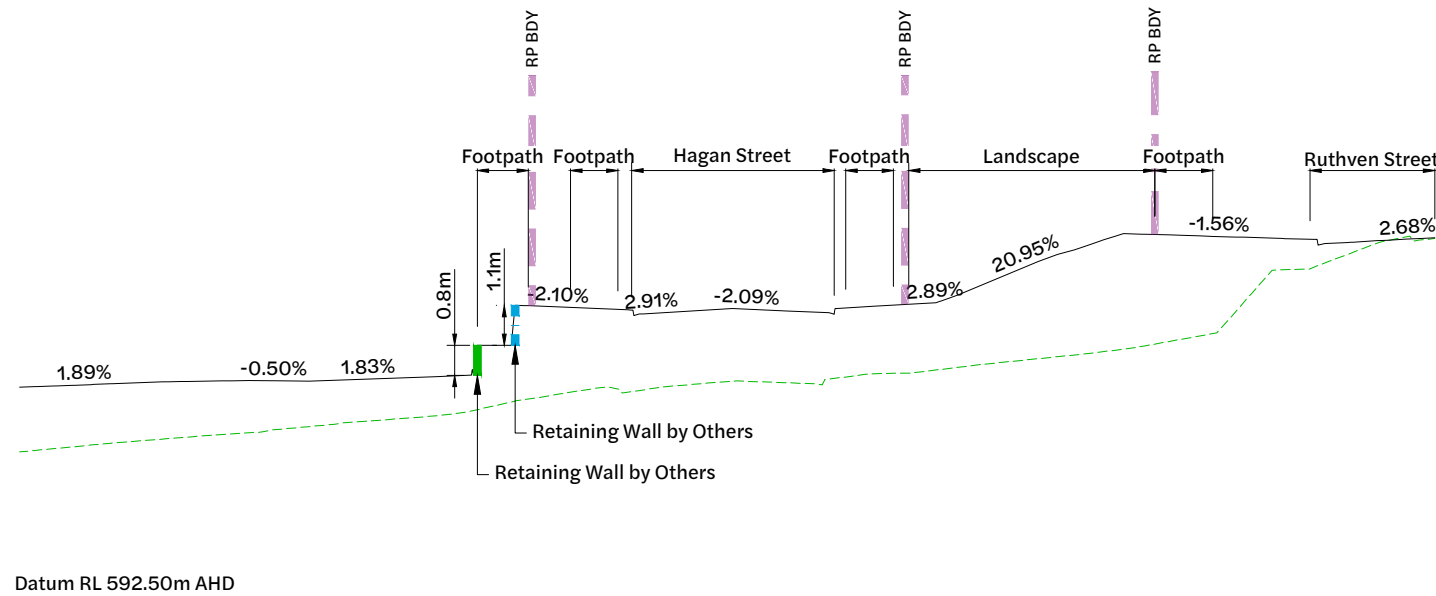
Drawing Title		
<b>Bulk Earthworks Sections (Sheet 1 of 5)</b>		
Project No. C_25023	Drawing No. 110	Revision 4

**Legend**

- - - - - Existing Surface
- Design Surface
- - - - - Site Boundary
- - - - - Retaining Wall (0.0m - 1.0m)
- - - - - Retaining Wall (1.0m - 2.0m)
- - - - - Retaining Wall (2.0m - 3.0m)



**Section 03**  
 Horizontal: 1:200  
 Vertical: 1:100

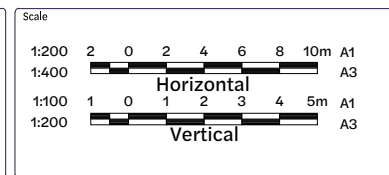


**Section 03**  
 Horizontal: 1:200  
 Vertical: 1:100

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	1.05.25	Issued for Approval	PD	NR
3	26.05.25	Updated Architectural Plans	NR	NR
4	19.12.25	Issued for Approval	PD	JE

QR Code

**Issued for Approval**  
 Not for Construction



Client  
 Bernoth Holdings Pty Ltd

Project  
 Hagan Street, Isaac Street  
 and Ruthven Street  
 North Toowoomba

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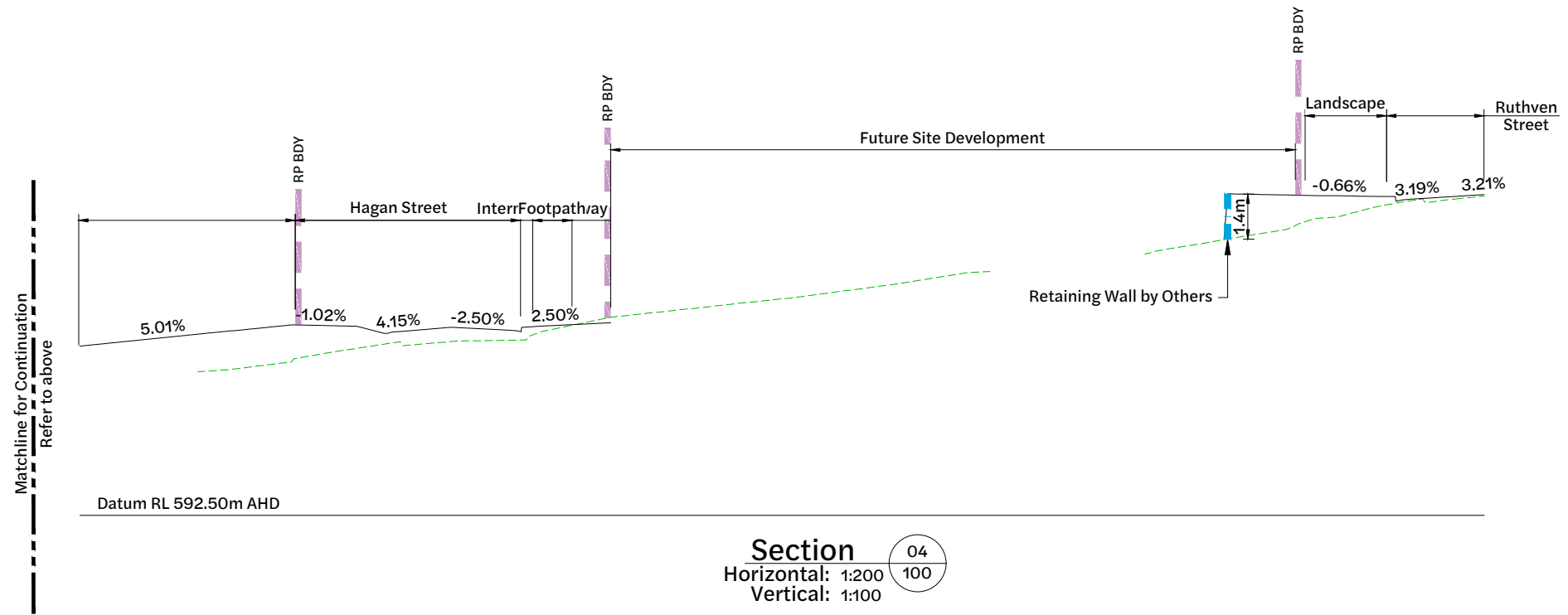
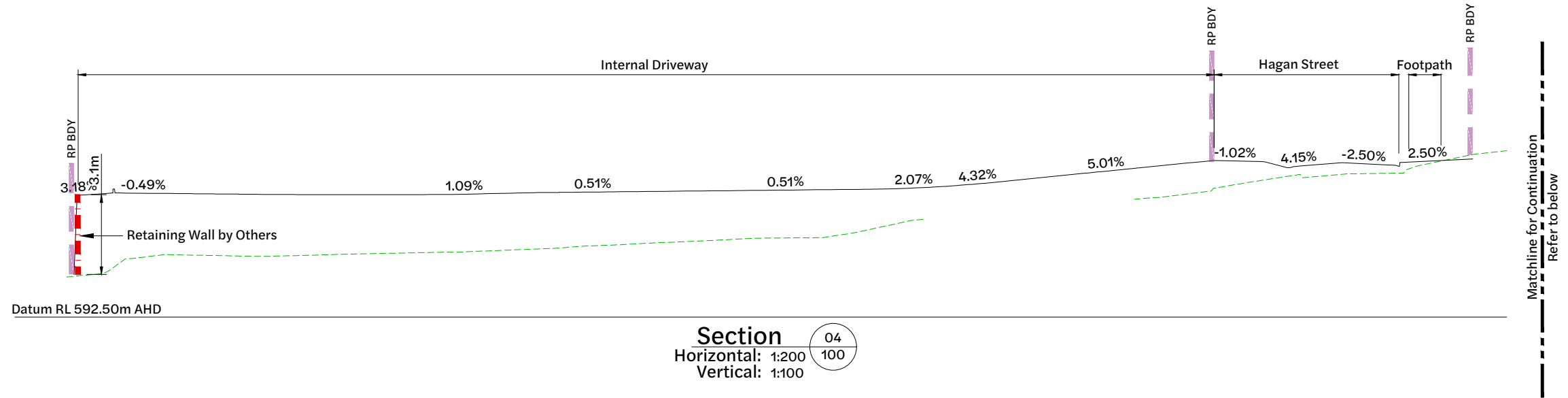


Drawing Title		
<b>Bulk Earthworks Sections (Sheet 2 of 5)</b>		
Project No. C_25023	Drawing No. 111	Revision 4

FILE: G:\MY DRIVE\PROJECTS\2025 - RUTHVEN STREET NORTH TOOWOOMBA\4. MODEL\AUTOCAD\C\_25023\10\_BULK EARTHWORKS SECTIONS.DWG LAST SAVED BY: JEMIE

**Legend**

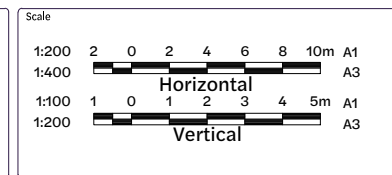
- Existing Surface
- Design Surface
- Site Boundary
- Retaining Wall (1.0m - 2.0m)
- Retaining Wall (> 3.0m)



Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	1.05.25	Issued for Approval	PD	NR
3	26.05.25	Updated Architectural Plans	NR	NR
4	19.12.25	Issued for Approval	PD	JE

QR Code

**Issued for Approval**  
Not for Construction



Client  
Bernoth Holdings Pty Ltd

Project  
Hagan Street, Isaac Street  
and Ruthven Street  
North Toowoomba

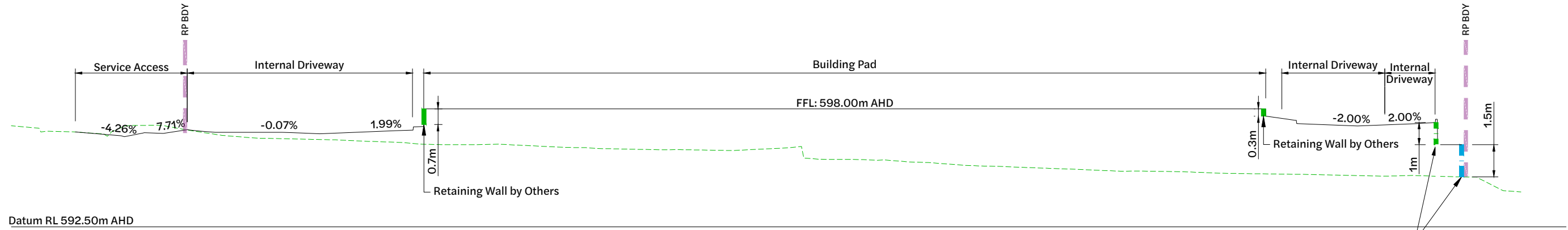
Disclaimer  
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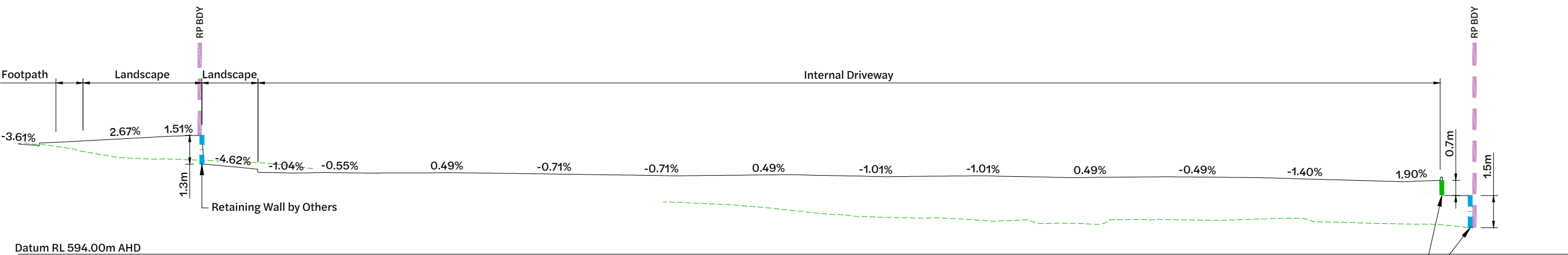
Drawing Title		
Bulk Earthworks Sections (Sheet 3 of 5)		
Project No. C_25023	Drawing No. 112	Revision 4

**Legend**

- Existing Surface
- Design Surface
- Site Boundary
- Retaining Wall (0.0m - 1.0m)
- Retaining Wall (1.0m - 2.0m)
- Retaining Wall (2.0m - 3.0m)



**Section 05**  
 Horizontal: 1:200  
 Vertical: 1:100

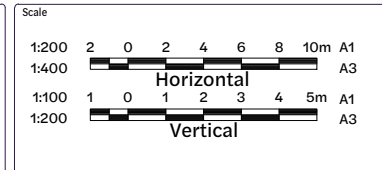


**Section 06**  
 Horizontal: 1:200  
 Vertical: 1:100

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	1.05.25	Issued for Approval	PD	NR
3	26.05.25	Updated Architectural Plans	NR	NR
4	19.12.25	Issued for Approval	PD	JE
5	22.01.26	Issued for Approval	VK	VK

QR Code

**Issued for Approval**  
 Not for Construction



Client: **Bernoth Holdings Pty Ltd**

Project: **Hagan Street, Isaac Street and Ruthven Street North Toowoomba**

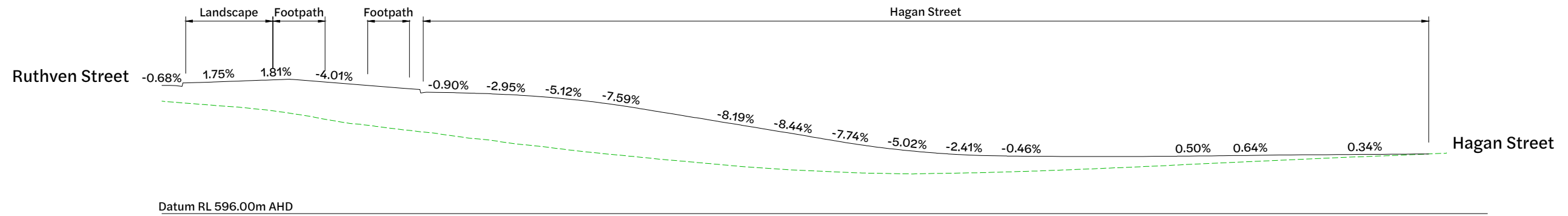


Drawing Title: <b>Bulk Earthworks Sections (Sheet 4 of 5)</b>		
Project No. <b>C_25023</b>	Drawing No. <b>113</b>	Revision <b>5</b>

FILE: Z:\PROJECTS\C\_25023 - RUTHVEN STREET NORTH TOOWOOMBA\BULK\_EARTHWORKS\_SECTIONS\DWG\LAST\_SAVED\_BY\_VK.DWG

**Legend**

- - - - - Existing Surface
- Design Surface
- Site Boundary
- Retaining Wall (2.0m - 3.0m)

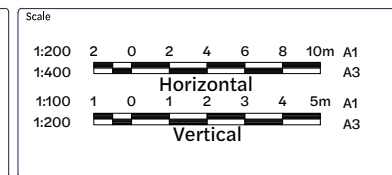


**Section** 07  
 Horizontal: 1:200 100  
 Vertical: 1:100

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	1.05.25	Issued for Approval	PD	NR
3	26.05.25	Updated Architectural Plans	NR	NR
4	19.12.25	Issued for Approval	PD	JE

QR Code

**Issued for Approval**  
Not for Construction



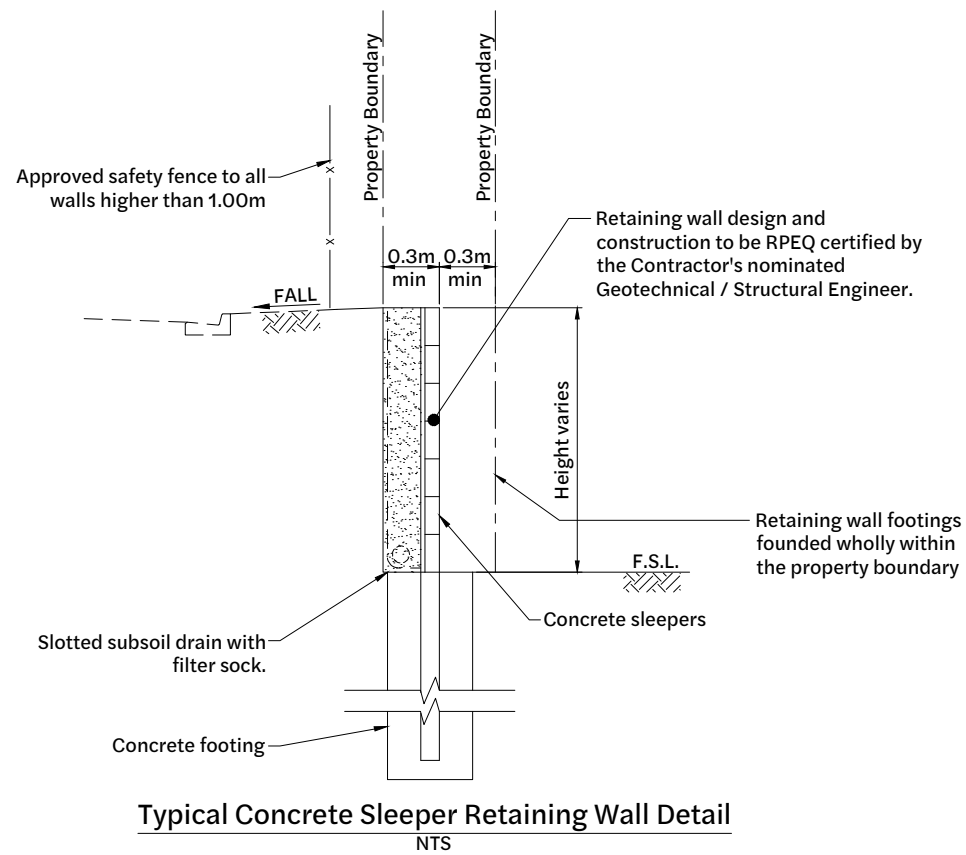
Client  
Bernoth Holdings Pty Ltd

Project  
Hagan Street, Isaac Street  
and Ruthven Street  
North Toowomba

Disclaimer  
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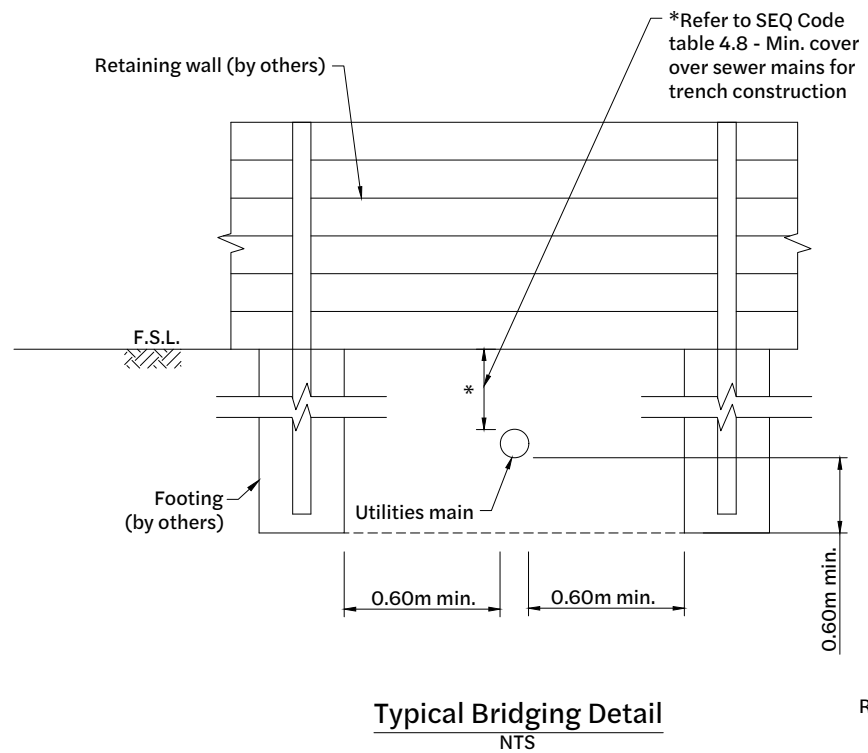


Drawing Title		
<b>Bulk Earthworks Sections (Sheet 5 of 5)</b>		
Project No. C_25023	Drawing No. 114	Revision 4

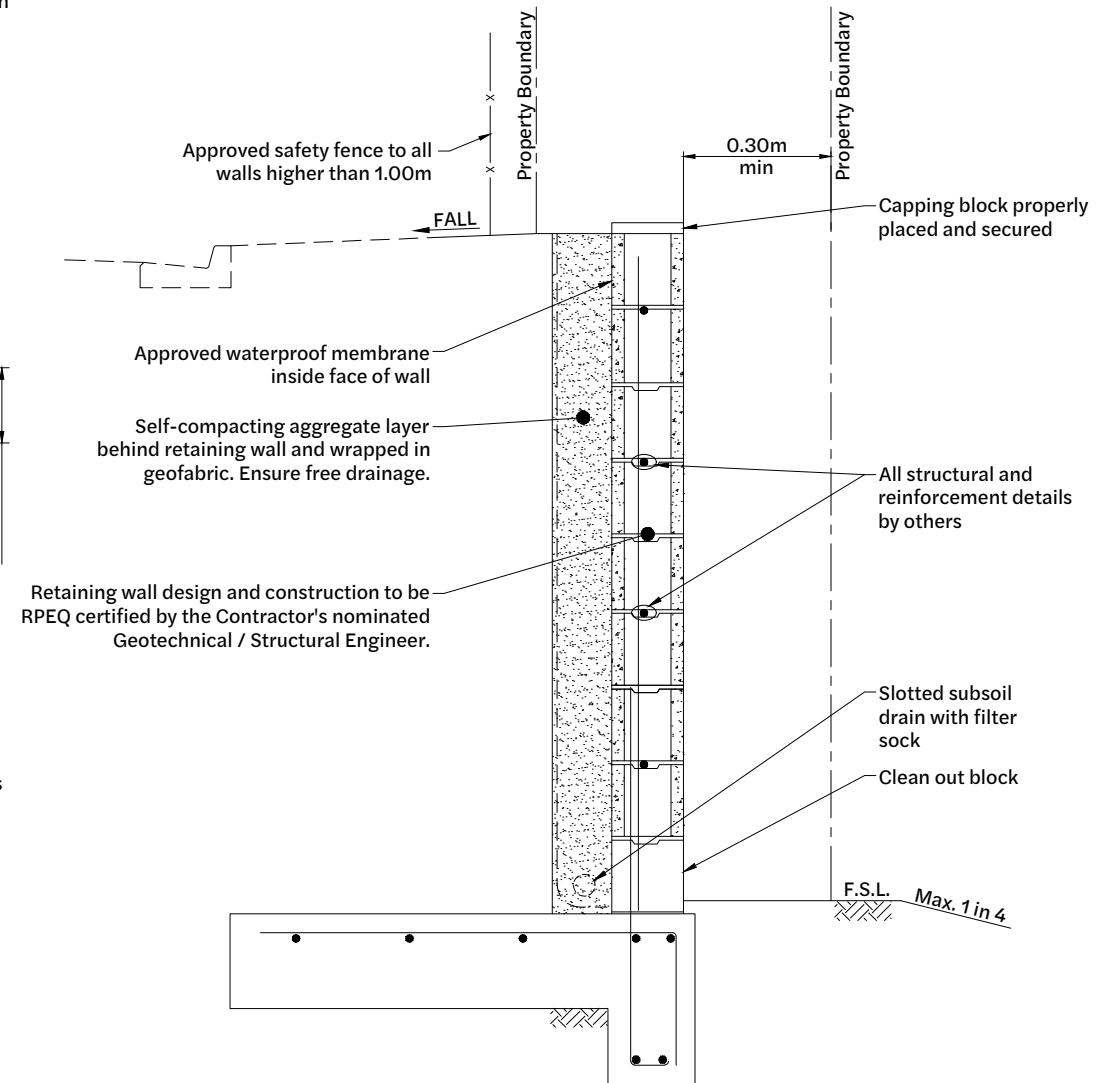


**Typical Concrete Sleeper Retaining Wall Detail**  
NTS

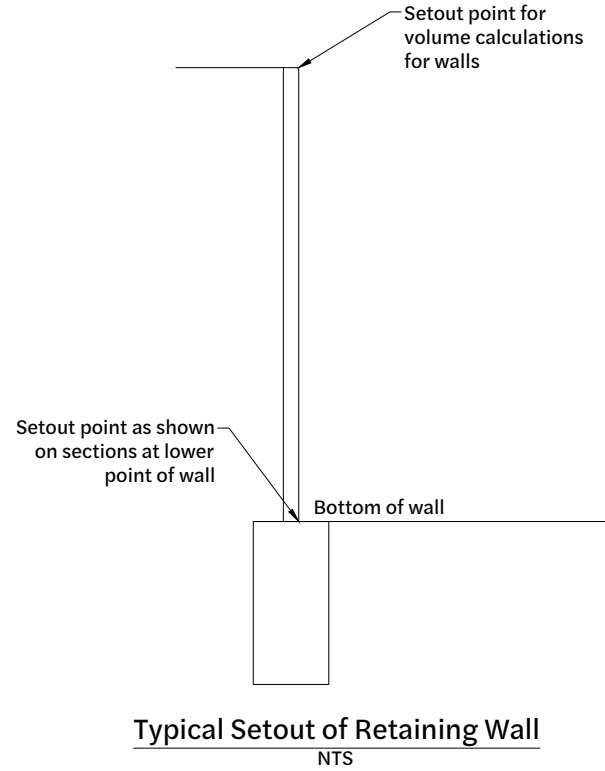
- Minimum Design Requirements - Sleeper Wall**
- Surcharge traffic loading on backfill : 20kPa
  - Surcharge non-traffic loading on backfill : 5kPa
  - Post and footing design to allow for acoustic fence / guardrail requirements
  - Guard rail and footing as specified by structural engineer
  - Max 1V:2H temporary slope behind wall
  - Max 1V:3H permanent slope behind wall
  - Max height per Geotechnical supervision



**Typical Bridging Detail**  
NTS



**Typical Blockwork Retaining Wall Detail**  
NTS



**Typical Setout of Retaining Wall**  
NTS

**Note:**  
Notwithstanding that existing services may or may not be shown on the job drawings, no responsibility is taken by the Superintendent or the Principal for this information which has been supplied by others. The details are provided for information only. The Contractor shall ascertain the position of any underground services in this area and shall be responsible for making good any damage thereto.

- Notes:**
1. This drawing does not represent structural details of any proposed retaining structures. Retaining wall design and construction to be RPEQ certified by the Contractor's nominated Geotechnical / Structural Engineer.
  2. Contractor to provide structural certification for retaining walls design and construction.
  3. Provide approved safety fence to all walls higher than 1.0m.
  4. All retaining wall footings to be located a minimum 1.0m horizontally clear of the roofwater and sewer and be taken a minimum of 0.3m below the zone of influence.

Revision	Date	Issue Details	Drawn	Designed	QR Code	Status	Scale	Client	Project	Project No.	Drawing No.	Revision
1	31.03.25	Issued for Information	MD	RTH		<b>Issued for Approval Not for Construction</b>		Bernoth Holdings Pty Ltd	Hagan Street, Isaac Street and Ruthven Street North Toowoomba	C_25023	130	1



**Bulk Earthworks  
Notes and Details**

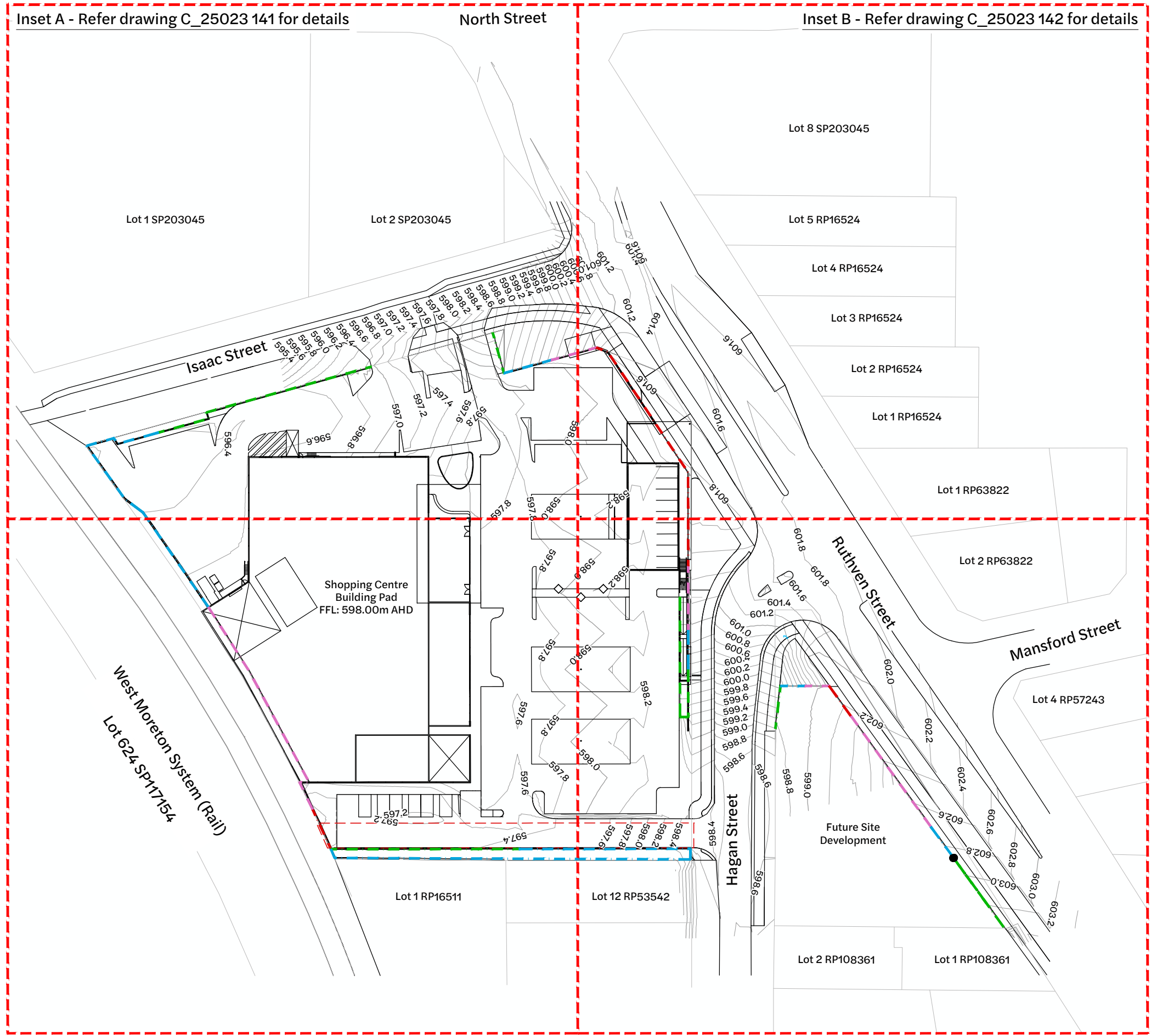
FILE G:\MY DRIVE\PROJECTS\C\_25023 - RUTHVEN STREET NORTH TOOWOOMBA\A\_MODEL\AUTOCAD\C\_25023\_130\_BULK EARTHWORKS NOTES AND DETAILS.DWG(LAST SAVED BY:CONE)

**Existing Legend**

Property Boundary

**Proposed Legend**

- Site Boundary
- 1.0 Design Surface Contour Major
- 0.2 Design Surface Contour Minor
- Retaining Wall (0.0m - 1.0m)
- Retaining Wall (1.0m - 2.0m)
- Retaining Wall (2.0m - 3.0m)
- Retaining Wall (> 3.0m)
- - - Easement



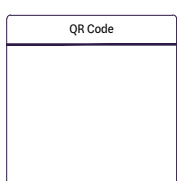
**Note:**  
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Inset C - Refer drawing C\_25023 143 for details

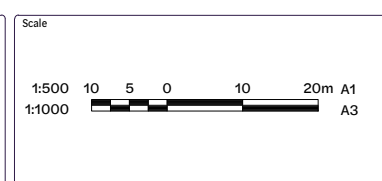
Retaining Wall Layout Plan  
 1:500 Scale

Inset D - Refer drawing C\_25023 144 for details

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	1.05.25	Issued for Approval	PD	NR
3	26.05.25	Updated Architectural Plans	NR	NR
4	19.12.25	Issued for Approval	PD	JE
5	22.01.26	Issued for Approval	VK	VK



Status  
**Issued for Approval**  
 Not for Construction



Client  
 Bernoth Holdings Pty Ltd

Project  
 Hagan Street, Isaac Street  
 and Ruthven Street  
 North Toowoomba



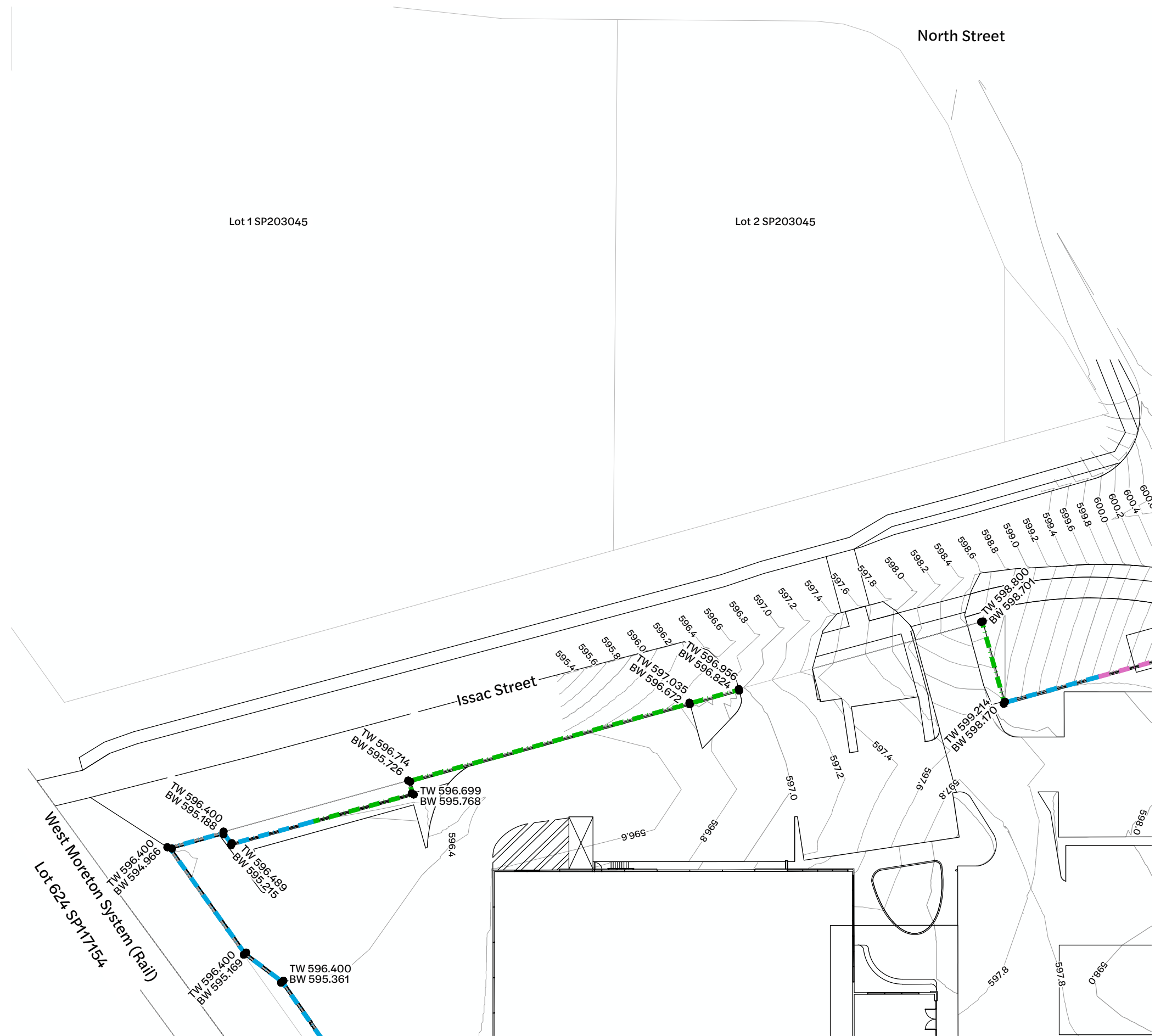
Drawing Title <b>Retaining Wall Layout Plan</b> (Sheet 1 of 5)		
Project No. <b>C_25023</b>	Drawing No. <b>140</b>	Revision <b>5</b>

**Existing Legend**

Property Boundary

**Proposed Legend**

- Site Boundary
- Design Surface Contour Major
- Design Surface Contour Minor
- Retaining Wall (0.0m - 1.0m)
- Retaining Wall (1.0m - 2.0m)
- Retaining Wall (2.0m - 3.0m)



**Note:**

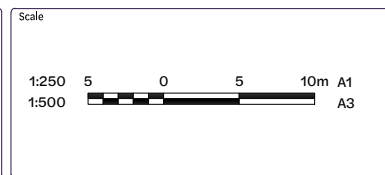
Notwithstanding that existing services may or may not be shown on the job drawings, no responsibility is taken by the Superintendent or the Principal for this information which has been supplied by others. The details are provided for information only. The Contractor shall ascertain the position of any underground services in this area and shall be responsible for making good any damage thereto.

**Inset A - Retaining Wall Layout Plan**  
1:250 Scale

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	1.05.25	Issued for Approval	PD	NR
3	26.05.25	Updated Architectural Plans	NR	NR
4	19.12.25	Issued for Approval	PD	JE

QR Code

**Issued for Approval**  
Not for Construction



Client  
**Bernoth Holdings Pty Ltd**

Project  
**Hagan Street, Isaac Street and Ruthven Street North Toowoomba**

Disclaimer  
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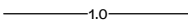
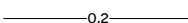




Drawing Title		
<b>Retaining Wall Layout Plan (Sheet 2 of 5)</b>		
Project No. <b>C_25023</b>	Drawing No. <b>141</b>	Revision <b>4</b>

**Existing Legend**

Property Boundary

**Proposed Legend**

-  Site Boundary
-  1.0 Design Surface Contour Major
-  0.2 Design Surface Contour Minor
-  Retaining Wall (2.0m - 3.0m)
-  Retaining Wall (> 3.0m)

North Street



**Inset B - Retaining Wall Layout Plan**  
1:250 Scale

**Note:**

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Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	1.05.25	Issued for Approval	PD	NR
3	26.05.25	Updated Architectural Plans	NR	NR
4	19.12.25	Issued for Approval	PD	JE

QR Code

**Issued for Approval**  
Not for Construction

Scale
1:250 5 0 5 10m A1 1:500

Client  
**Bernoth Holdings Pty Ltd**

Project  
**Hagan Street, Isaac Street  
and Ruthven Street  
North Toowoomba**

Disclaimer  
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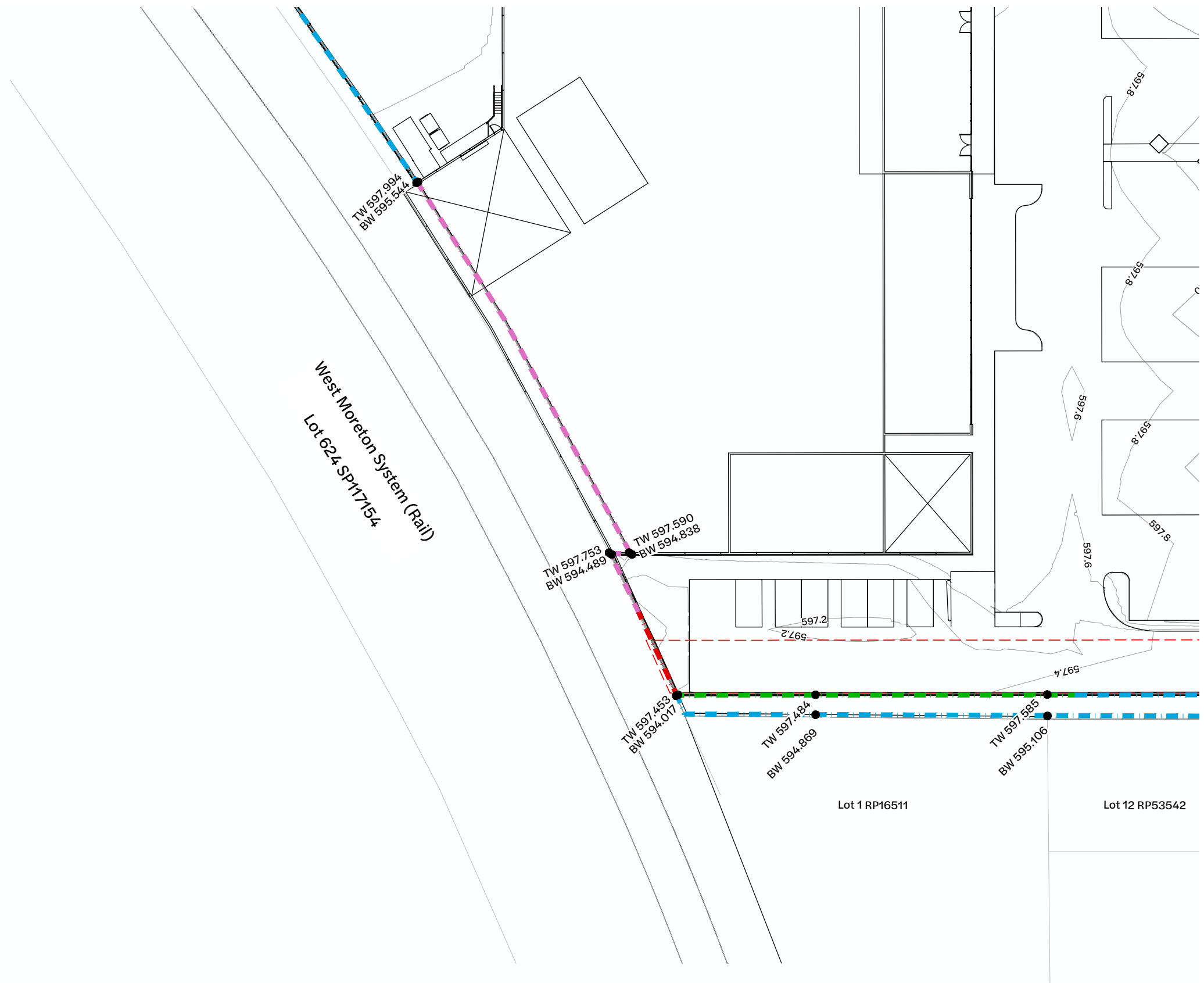
Drawing Title		
<b>Retaining Wall Layout Plan (Sheet 3 of 5)</b>		
Project No. <b>C_25023</b>	Drawing No. <b>142</b>	Revision <b>4</b>

**Existing Legend**

Property Boundary

**Proposed Legend**

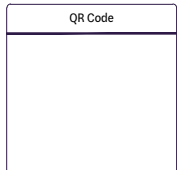
- Site Boundary
- Design Surface Contour Major
- Design Surface Contour Minor
- Retaining Wall (0.0m - 1.0m)
- Retaining Wall (1.0m - 2.0m)
- Retaining Wall (2.0m - 3.0m)
- Retaining Wall (> 3.0m)
- Easement



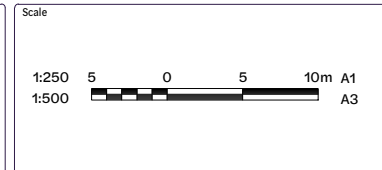
**Note:**  
 Notwithstanding that existing services may or may not be shown on the job drawings, no responsibility is taken by the Superintendent or the Principal for this information which has been supplied by others. The details are provided for information only. The Contractor shall ascertain the position of any underground services in this area and shall be responsible for making good any damage thereto.

**Inset C - Retaining Wall Layout Plan**  
 1:250 Scale

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	1.05.25	Issued for Approval	PD	NR
3	26.05.25	Updated Architectural Plans	NR	NR
4	19.12.25	Issued for Approval	PD	JE
5	22.01.26	Issued for Approval	VK	VK



**Issued for Approval**  
 Not for Construction



Client  
 Bernoth Holdings Pty Ltd

Project  
 Hagan Street, Isaac Street  
 and Ruthven Street  
 North Toowoomba








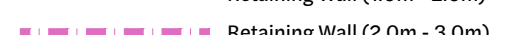
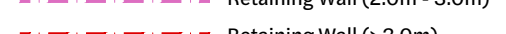
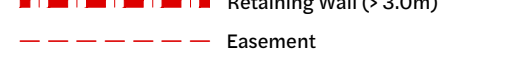
Drawing Title <b>Retaining Wall Layout Plan</b> (Sheet 4 of 5)		
Project No. <b>C_25023</b>	Drawing No. <b>143</b>	Revision <b>5</b>

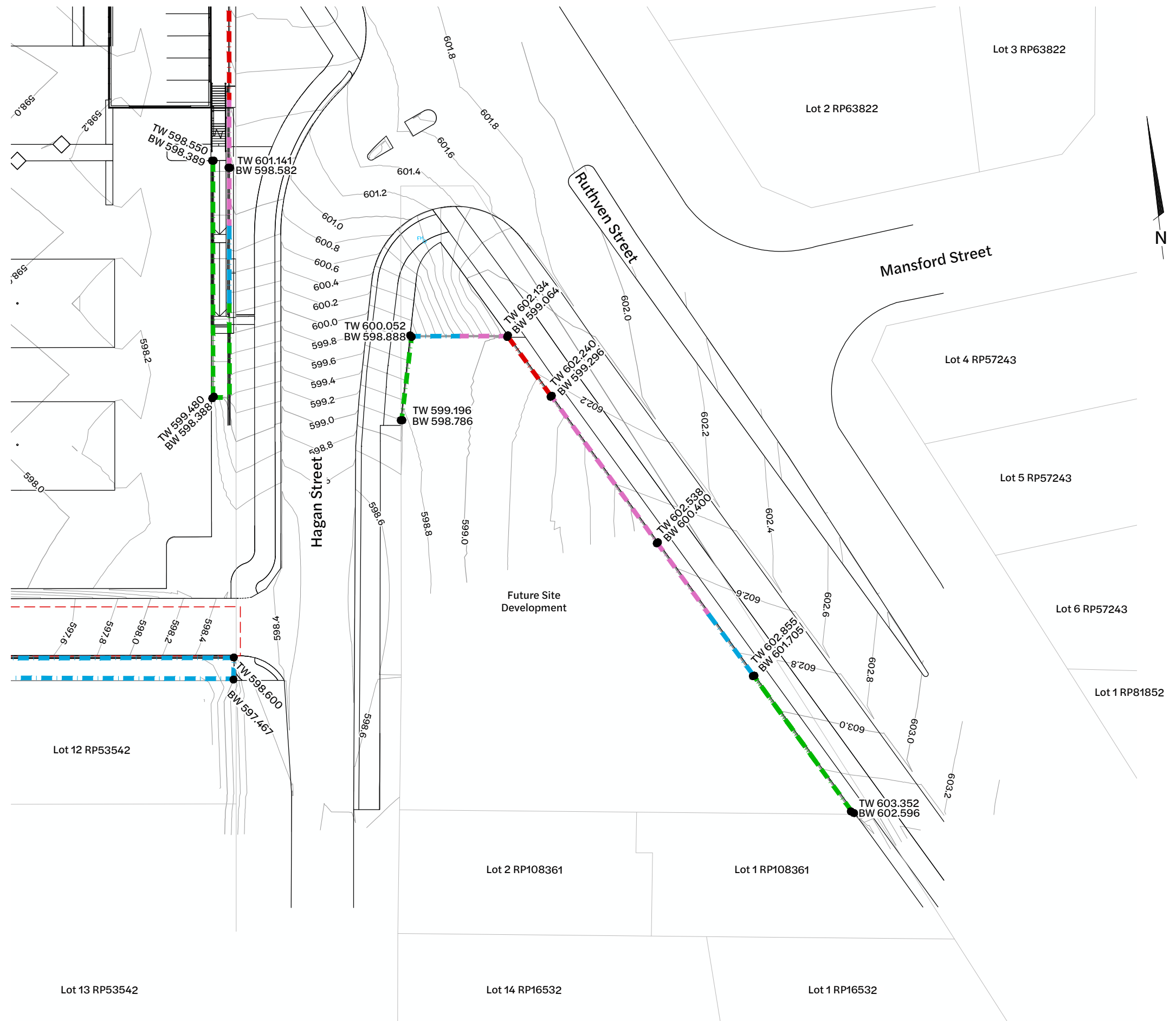
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**Existing Legend**

Property Boundary

**Proposed Legend**

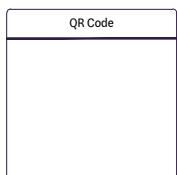
-  Site Boundary
-  Design Surface Contour Major
-  Design Surface Contour Minor
-  Retaining Wall (0.0m - 1.0m)
-  Retaining Wall (1.0m - 2.0m)
-  Retaining Wall (2.0m - 3.0m)
-  Retaining Wall (> 3.0m)
-  Easement



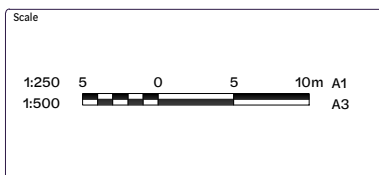
**Note:**  
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**Inset D - Retaining Wall Layout Plan**  
1:250 Scale

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	1.05.25	Issued for Approval	PD	NR
3	26.05.25	Updated Architectural Plans	NR	NR
4	19.12.25	Issued for Approval	PD	JE
5	22.01.26	Issued for Approval	VK	VK



**Issued for Approval**  
Not for Construction



Client  
**Bernoth Holdings Pty Ltd**

Project  
**Hagan Street, Isaac Street and Ruthven Street North Toowoomba**

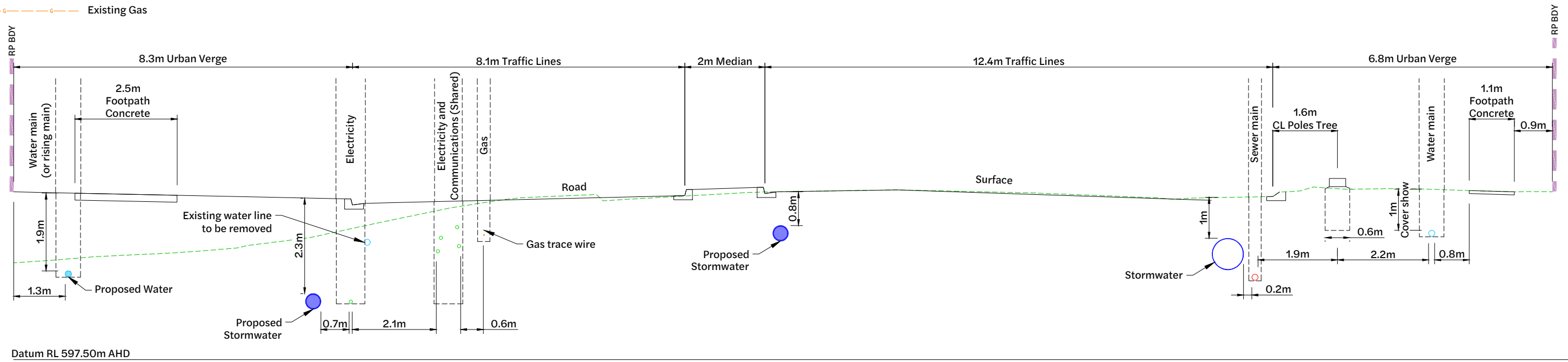
Disclaimer  
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Drawing Title <b>Retaining Wall Layout Plan (Sheet 5 of 5)</b>		
Project No. <b>C_25023</b>	Drawing No. <b>144</b>	Revision <b>5</b>

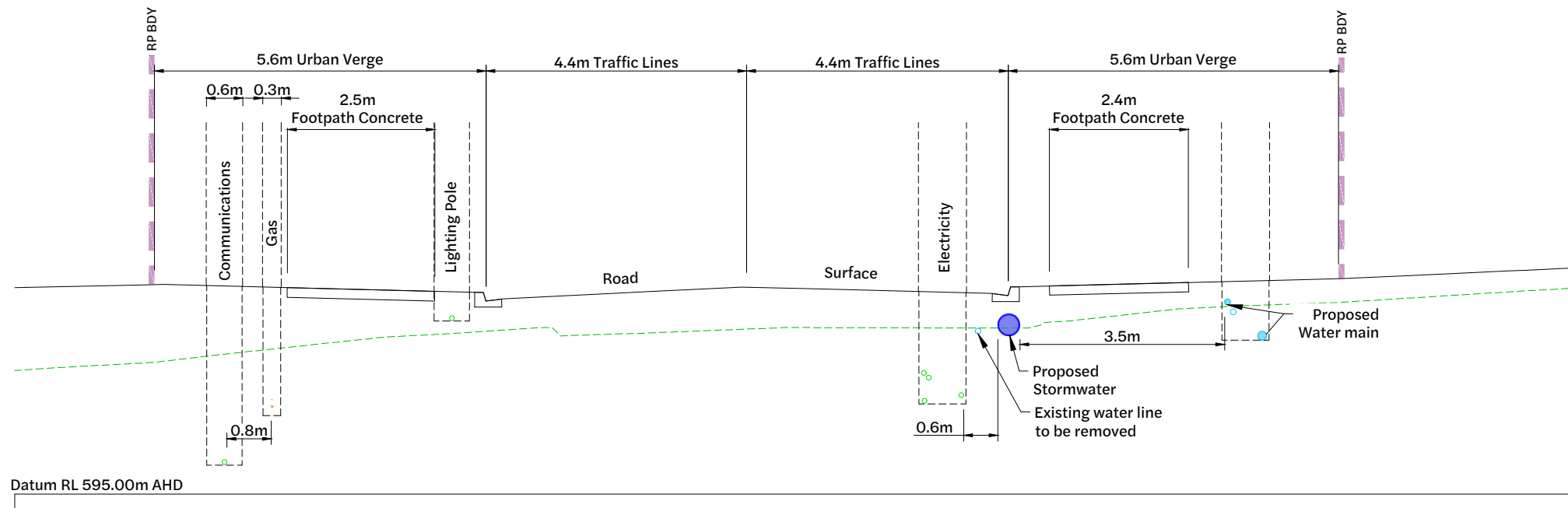
**Legend**

- Site Boundary
- UGE - Underground Electrical
- UGT - Underground Telecom
- SWD - Stormwater Line
- S - Sewer Line
- W - Water Line
- G - Existing Gas



**Road Service Corridor Section - Ruthven Street**

1:50 Scale

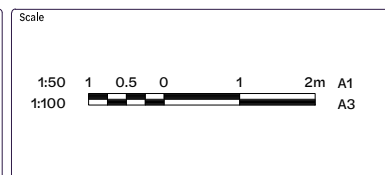


**Road Service Corridor Section - Hagan Street**

1:50 Scale

Revision	Date	Issue Details	Drawn	Designed	QR Code	Status
1	13.01.26	Issued for Information	PD	EG		Issued for Approval Not for Construction

**Issued for Approval**  
Not for Construction



Client  
**Bernoth Holdings Pty Ltd**

Project  
**Hagan Street, Isaac Street and Ruthven Street North Toowoomba**

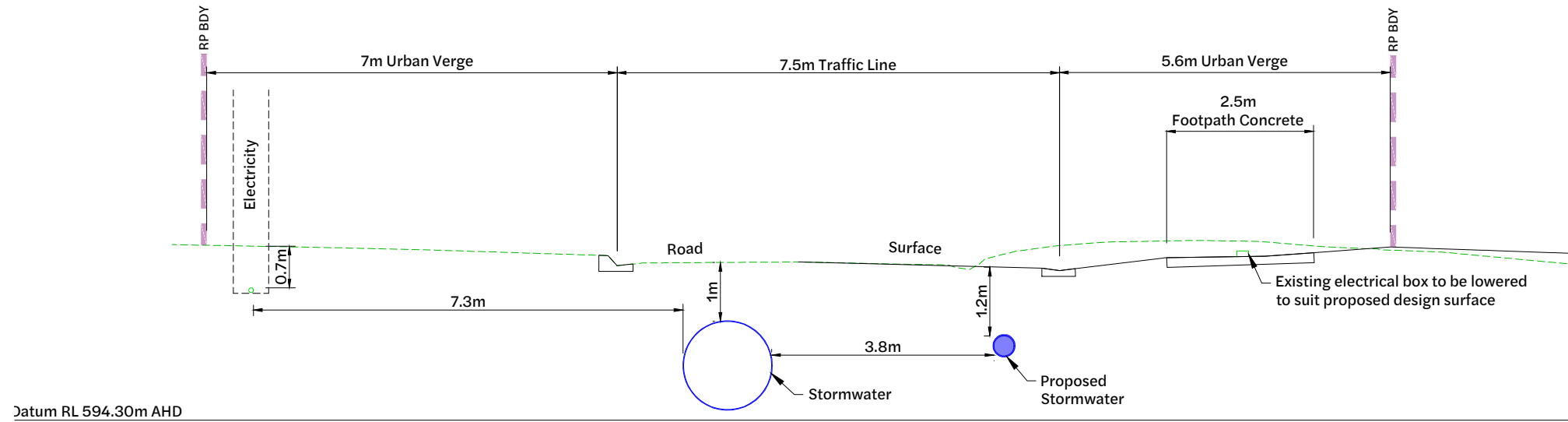


Drawing Title		
<b>Service Corridor (Sheet 1 of 2)</b>		
Project No. <b>C_25023</b>	Drawing No. <b>200</b>	Revision <b>1</b>

FILE: Z:\PROJECTS\C\_25023 - RUTHVEN STREET NORTH TOOWOOMBA\A1\_MODEL\AUTOCAD\C\_25023\_200\_SERVICE CORRIDOR.DWG LAST SAVED BY: CONTE

**Legend**

- Site Boundary
- Underground Electrical
- Stormwater Line

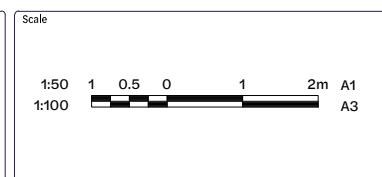


**Road Service Corridor Section - Isaac Street**  
1:50 Scale

Revision	Date	Issue Details	Drawn	Designed
1	13.01.26	Issued for Information	PD	EG

QR Code

**Issued for Approval**  
Not for Construction



Client  
**Bernoth Holdings Pty Ltd**













Project  
**Hagan Street, Isaac Street and Ruthven Street North Toowoomba**

Disclaimer  
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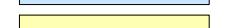
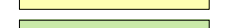


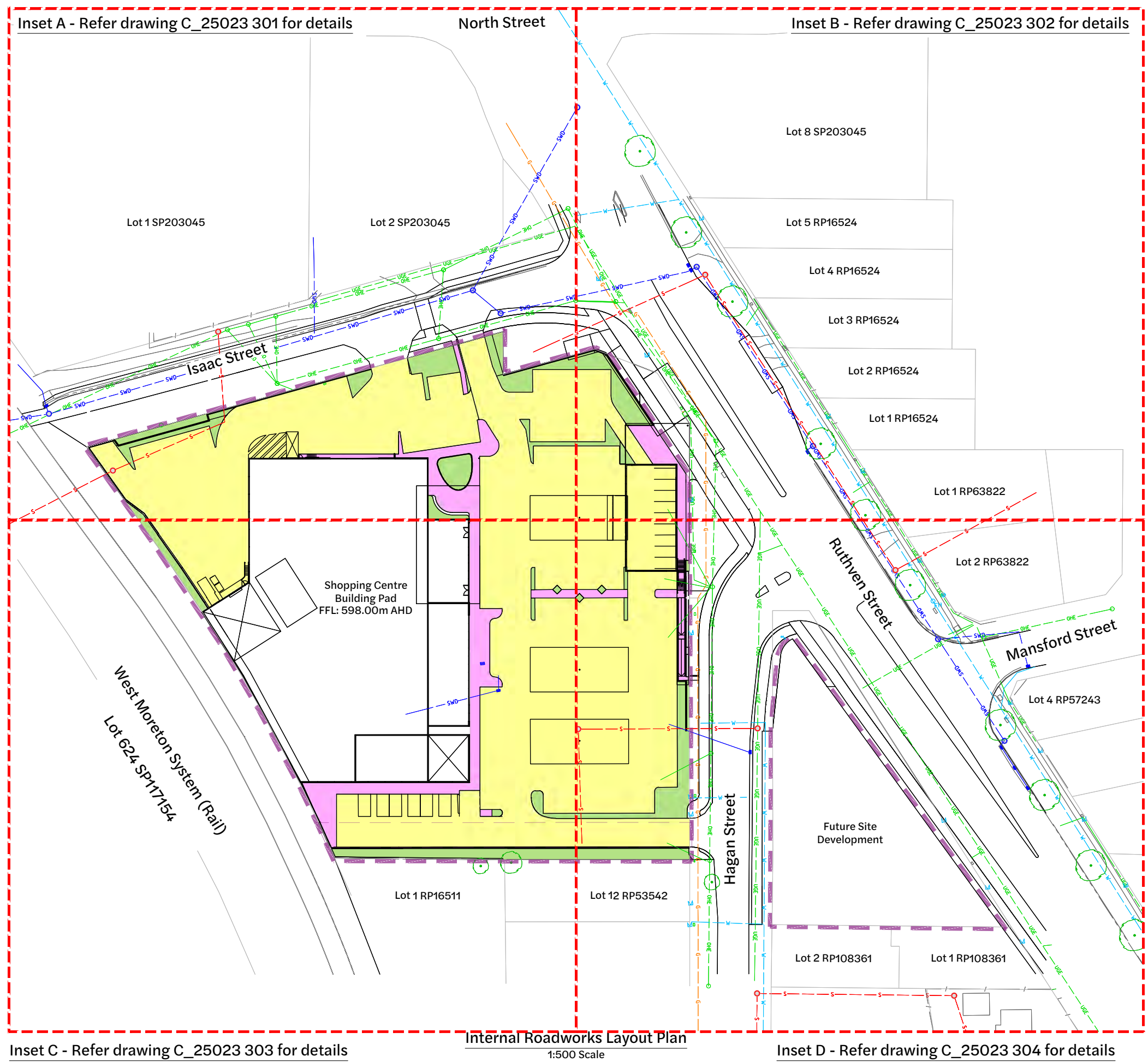
Drawing Title		
<b>Service Corridor (Sheet 2 of 2)</b>		
Project No. <b>C_25023</b>	Drawing No. <b>201</b>	Revision <b>1</b>

**Existing Legend**

-  Property Boundary
-  Stormwater Drainage
-  Sewerage Reticulation
-  Water Reticulation
-  Gas
-  Overhead Electrical
-  Underground Telecommunications
-  Fence
-  Barrier Kerb & Channel
-  Footpath
-  Sewer Manhole
-  Stormwater Manhole
-  Tree Structural Root Zone (SRZ) by Arborist(to remain)

**Proposed Legend**

-  Site Boundary
-  Footpath
-  Asphalt Pavement
-  Rigid (Concrete) Pavement
-  Grassed



**Pavement Note:**

1. Preliminary pavement designs have been based on an assume subgrade CBR of 3%, actual pavement designs to be confirmed following test results.
2. Pavement gravels shall extend under the kerb and channel to 150mm behind.
3. For jointing details refer to Drawing No. 370.

Inset C - Refer drawing C\_25023 303 for details

Internal Roadworks Layout Plan

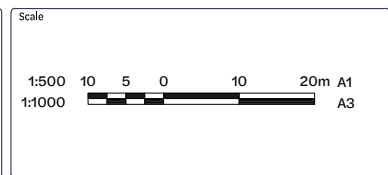
1:500 Scale

Inset D - Refer drawing C\_25023 304 for details

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	1.05.25	Issued for Approval	PD	NR
3	26.05.25	Updated Architectural Plans	NR	NR
4	19.12.25	Issued for Approval	PD	JE

QR Code

**Issued for Approval**  
Not for Construction



Client  
**Bernoth Holdings Pty Ltd**

Project  
**Hagan Street, Isaac Street and Ruthven Street North Toowoomba**














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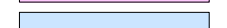
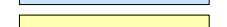
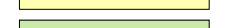
Drawing Title		
<b>Internal Roadworks Layout Plan (Sheet 1 of 5)</b>		
Project No. <b>C_25023</b>	Drawing No. <b>300</b>	Revision <b>4</b>

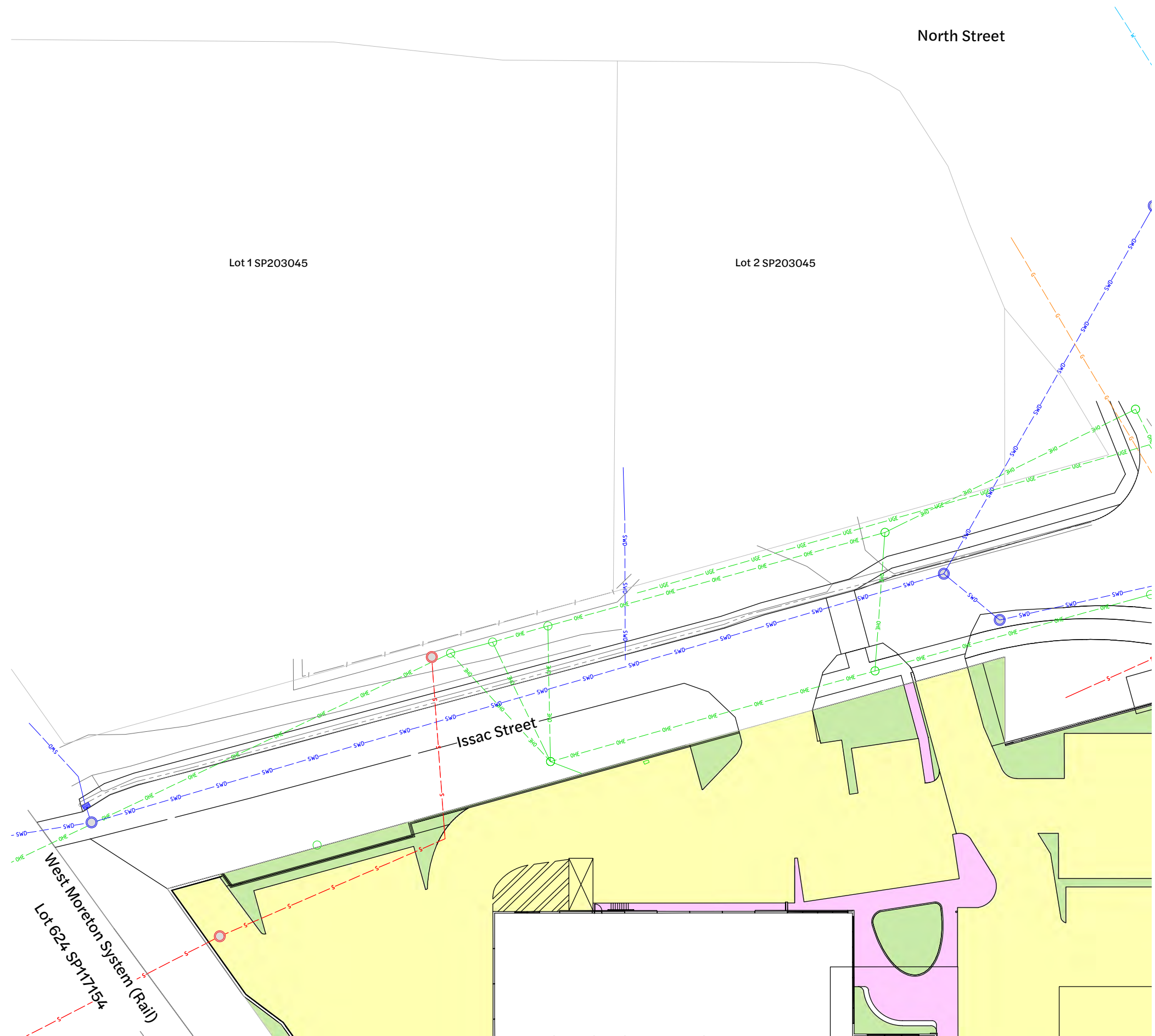
FILE G:\MYP DRIVE\PROJECTS\C\_25023 - RUTHVEN STREET NORTH TOOWOOMBA\A1\_MODEL\AUTOCAD\C\_25023\_300\_INTERNAL ROADWORKS LAYOUT PLAN (SHEET 1 OF 5).DWG

**Existing Legend**

-  Property Boundary
-  Stormwater Drainage
-  Sewerage Reticulation
-  Water Reticulation
-  Gas
-  Overhead Electrical
-  Underground Telecommunications
-  Fence
-  Barrier Kerb & Channel
-  Footpath
-  Sewer Manhole
-  Stormwater Manhole
-  Tree Structural Root Zone (SRZ) by Arborist(to remain)

**Proposed Legend**

-  Site Boundary
-  Footpath
-  Asphalt Pavement
-  Rigid (Concrete) Pavement
-  Grassed



**Pavement Note:**

1. Preliminary pavement designs have been based on an assume subgrade CBR of 3%, actual pavement designs to be confirmed following test results.
2. Pavement gravels shall extend under the kerb and channel to 150mm behind.
3. For jointing details refer to Drawing No. 370.

**Inset A - Internal Roadworks Layout Plan**

1:250 Scale

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	1.05.25	Issued for Approval	PD	NR
3	26.05.25	Updated Architectural Plans	NR	NR
4	19.12.25	Issued for Approval	PD	JE

QR Code

**Issued for Approval**  
Not for Construction

Scale
1:250 5 0 5 10m A1 1:500

Client  
**Bernoth Holdings Pty Ltd**

Project  
**Hagan Street, Isaac Street and Ruthven Street North Toowoomba**














Disclaimer  
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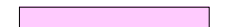

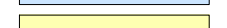
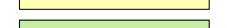
Drawing Title		
<b>Internal Roadworks Layout Plan (Sheet 2 of 5)</b>		
Project No. <b>C_25023</b>	Drawing No. <b>301</b>	Revision <b>4</b>

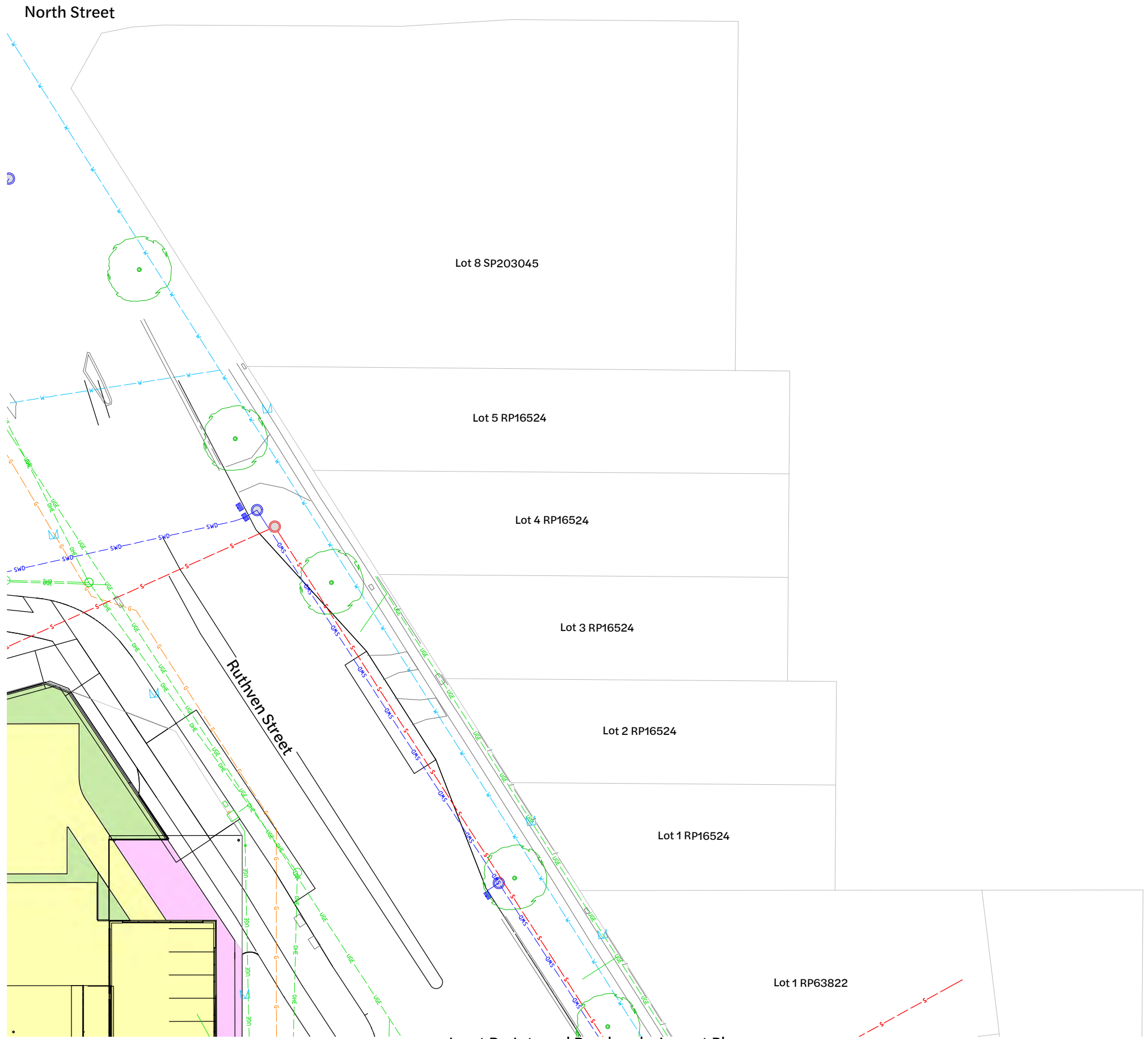
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**Existing Legend**

-  Property Boundary
-  Stormwater Drainage
-  Sewerage Reticulation
-  Water Reticulation
-  Gas
-  Overhead Electrical
-  Underground Telecommunications
-  Fence
-  Barrier Kerb & Channel
-  Footpath
-  Sewer Manhole
-  Stormwater Manhole
-  Tree Structural Root Zone (SRZ) by Arborist(to remain)

**Proposed Legend**

-  Site Boundary
-  Footpath
-  Asphalt Pavement
-  Rigid (Concrete) Pavement
-  Grassed



**Inset B - Internal Roadworks Layout Plan**  
1:250 Scale

**Pavement Note:**

1. Preliminary pavement designs have been based on an assume subgrade CBR of 3%, actual pavement designs to be confirmed following test results.
2. Pavement gravels shall extend under the kerb and channel to 150mm behind.
3. For jointing details refer to Drawing No. 370.

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	1.05.25	Issued for Approval	PD	NR
3	26.05.25	Updated Architectural Plans	NR	NR
4	19.12.25	Issued for Approval	PD	JE

QR Code

**Issued for Approval**  
Not for Construction

Scale
1:250 5 0 5 10m A1 1:500

Client  
**Bernoth Holdings Pty Ltd**

Project  
**Hagan Street, Isaac Street and Ruthven Street North Toowoomba**














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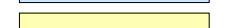
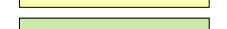
Drawing Title		
<b>Internal Roadworks Layout Plan (Sheet 3 of 5)</b>		
Project No. <b>C_25023</b>	Drawing No. <b>302</b>	Revision <b>4</b>

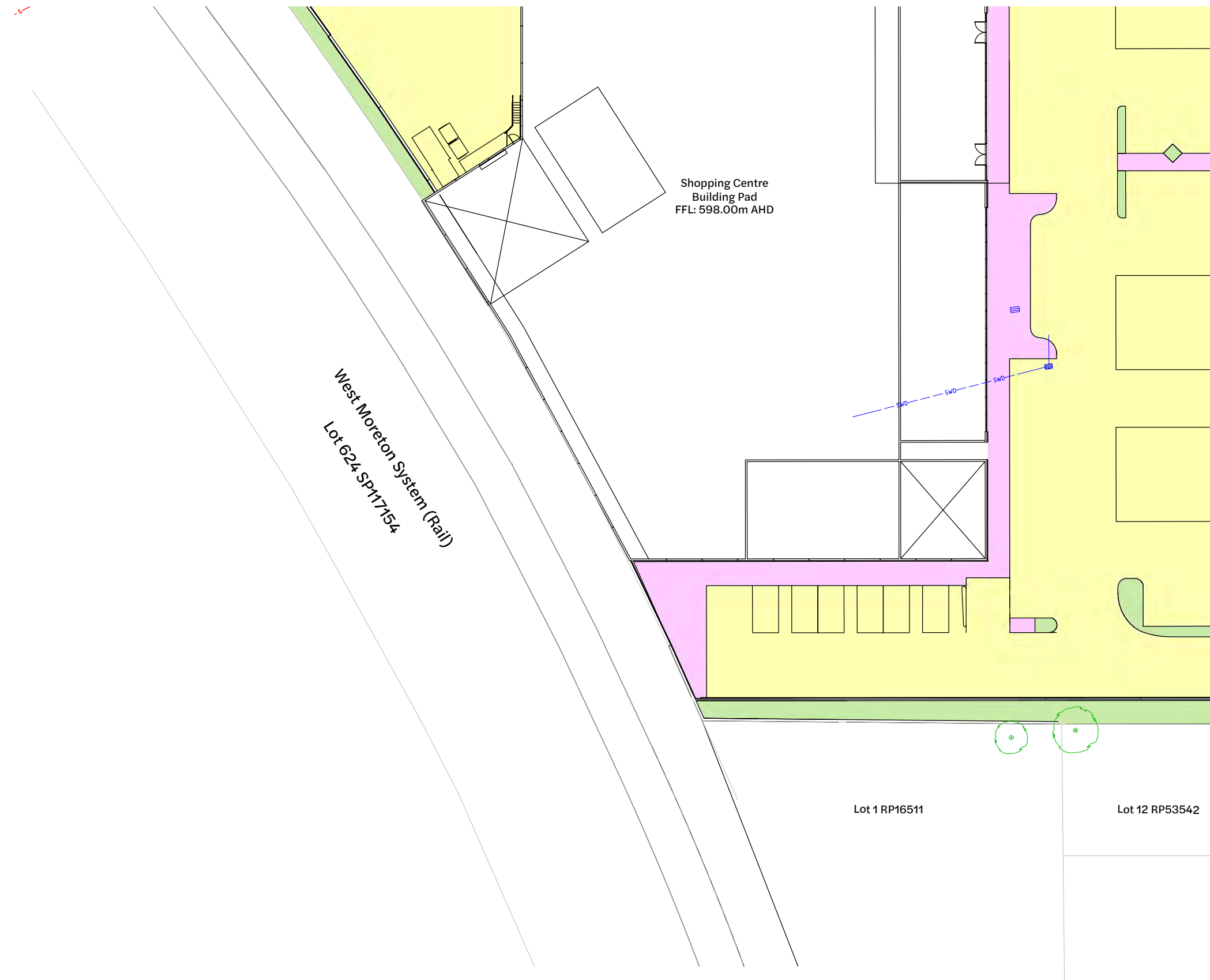
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**Existing Legend**

-  Property Boundary
-  Stormwater Drainage
-  Sewerage Reticulation
-  Water Reticulation
-  Gas
-  Overhead Electrical
-  Underground Telecommunications
-  Fence
-  Barrier Kerb & Channel
-  Footpath
-  Sewer Manhole
-  Stormwater Manhole
-  Tree Structural Root Zone (SRZ) by Arborist(to remain)

**Proposed Legend**

-  Site Boundary
-  Footpath
-  Asphalt Pavement
-  Rigid (Concrete) Pavement
-  Grassed



Shopping Centre  
Building Pad  
FFL: 598.00m AHD

West Moreton System (Rail)  
Lot 624-SP17154

Lot 1 RP16511

Lot 12 RP53542

**Pavement Note:**

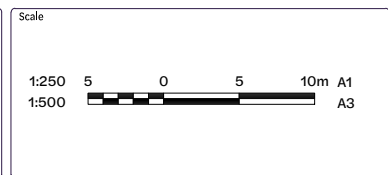
1. Preliminary pavement designs have been based on an assume subgrade CBR of 3%, actual pavement designs to be confirmed following test results.
2. Pavement gravels shall extend under the kerb and channel to 150mm behind.
3. For jointing details refer to Drawing No. 370.

**Inset C - Internal Roadworks Layout Plan**  
1:250 Scale

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	1.05.25	Issued for Approval	PD	NR
3	26.05.25	Updated Architectural Plans	NR	NR
4	19.12.25	Issued for Approval	PD	JE

QR Code

**Issued for Approval**  
Not for Construction



Client  
**Bernoth Holdings Pty Ltd**

Project  
**Hagan Street, Isaac Street and Ruthven Street North Toowoomba**

Disclaimer  
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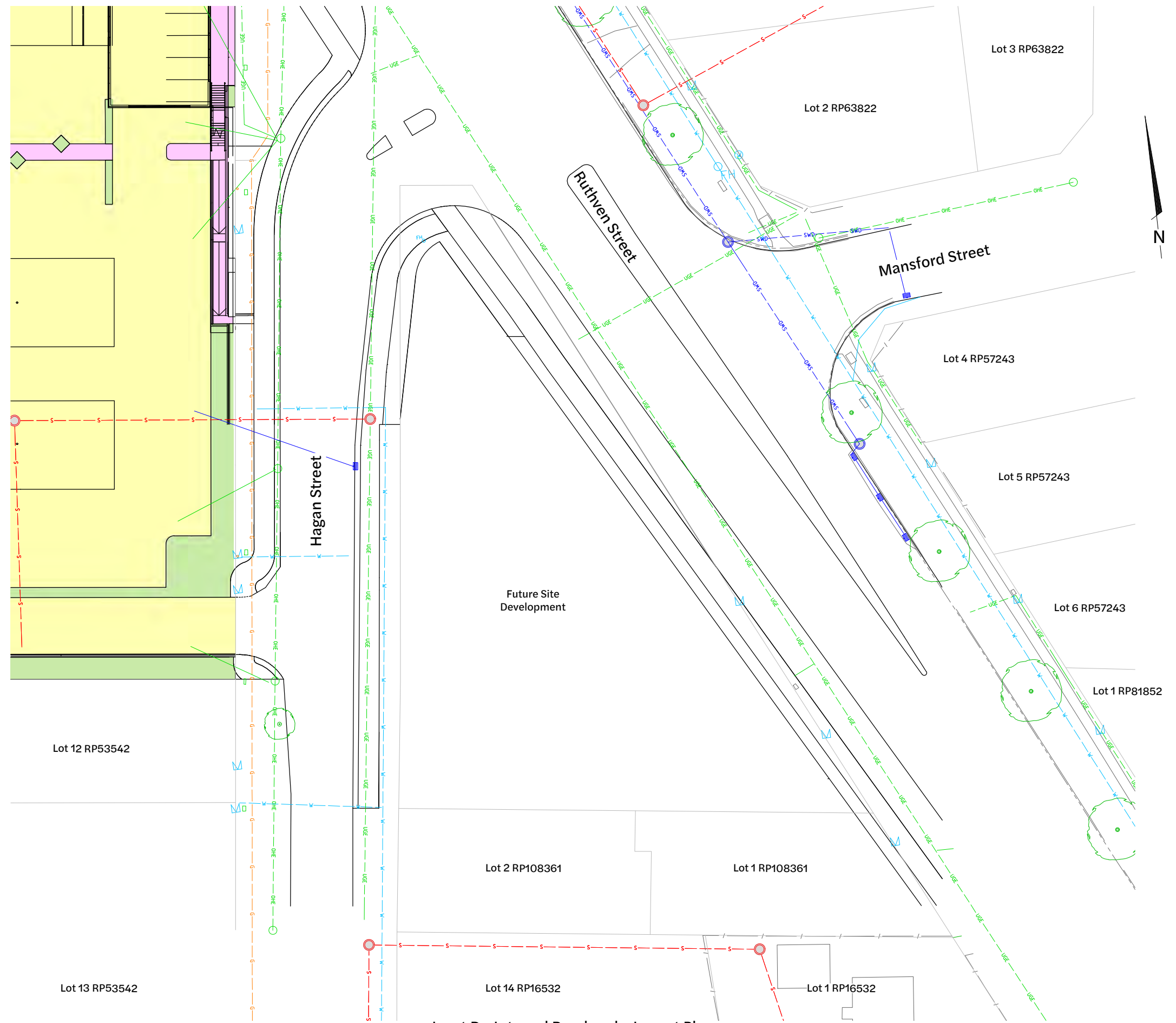
Drawing Title		
<b>Internal Roadworks Layout Plan (Sheet 4 of 5)</b>		
Project No. <b>C_25023</b>	Drawing No. <b>303</b>	Revision <b>4</b>

**Existing Legend**

- Property Boundary
- Stormwater Drainage
- Sewerage Reticulation
- Water Reticulation
- Gas
- Overhead Electrical
- Underground Telecommunications
- Fence
- Barrier Kerb & Channel
- Footpath
- Sewer Manhole
- Stormwater Manhole
- Tree Structural Root Zone (SRZ) by Arborist(to remain)

**Proposed Legend**

- Site Boundary
- Footpath
- Asphalt Pavement
- Rigid (Concrete) Pavement
- Grassed



**Inset D - Internal Roadworks Layout Plan**  
1:250 Scale

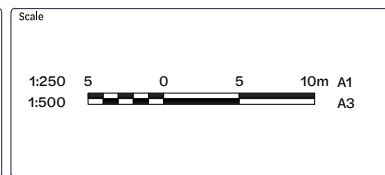
**Pavement Note:**

1. Preliminary pavement designs have been based on an assume subgrade CBR of 3%, actual pavement designs to be confirmed following test results.
2. Pavement gravels shall extend under the kerb and channel to 150mm behind.
3. For jointing details refer to Drawing No. 370.

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	1.05.25	Issued for Approval	PD	NR
3	26.05.25	Updated Architectural Plans	NR	NR
4	19.12.25	Issued for Approval	PD	JE

QR Code

**Issued for Approval**  
Not for Construction



Client  
Bernoth Holdings Pty Ltd

Project  
Hagan Street, Isaac Street  
and Ruthven Street  
North Toowoomba

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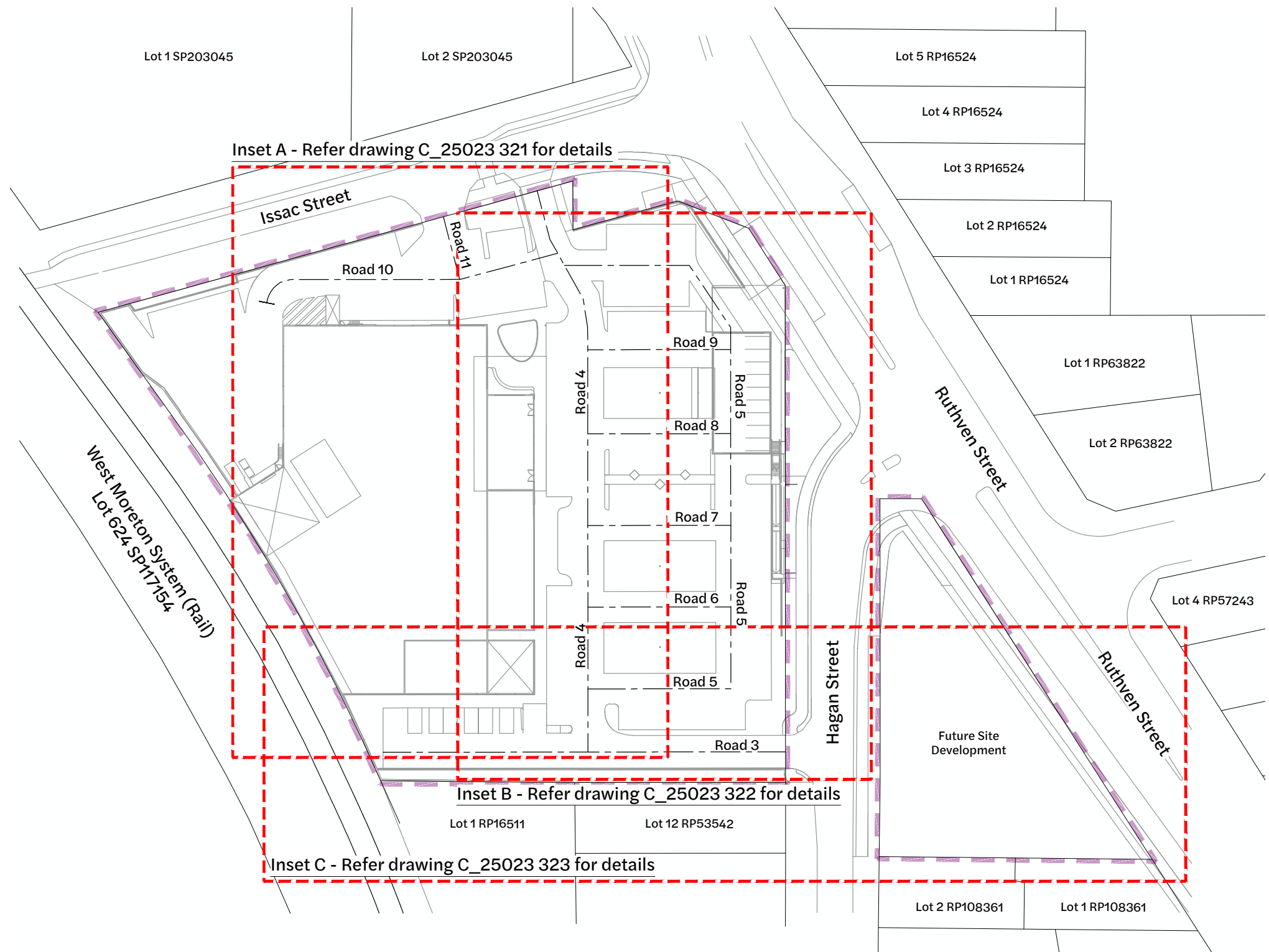
Drawing Title		
<b>Internal Roadworks Layout Plan (Sheet 5 of 5)</b>		
Project No. C_25023	Drawing No. 304	Revision 4

**Existing Legend**

Property Boundary

**Proposed Legend**

- Site Boundary
- Road Control line
- Chainage Marker

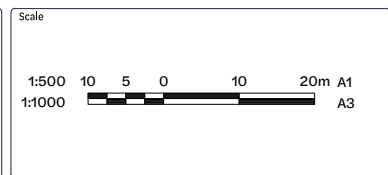


**Internal Functional Layout Plan**  
1:500 Scale

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	26.05.25	Updated Architectural Plans	NR	NR
3	19.12.25	Issued for Approval	PD	JE

QR Code

**Issued for Approval**  
Not for Construction



Client  
**Bernoth Holdings Pty Ltd**

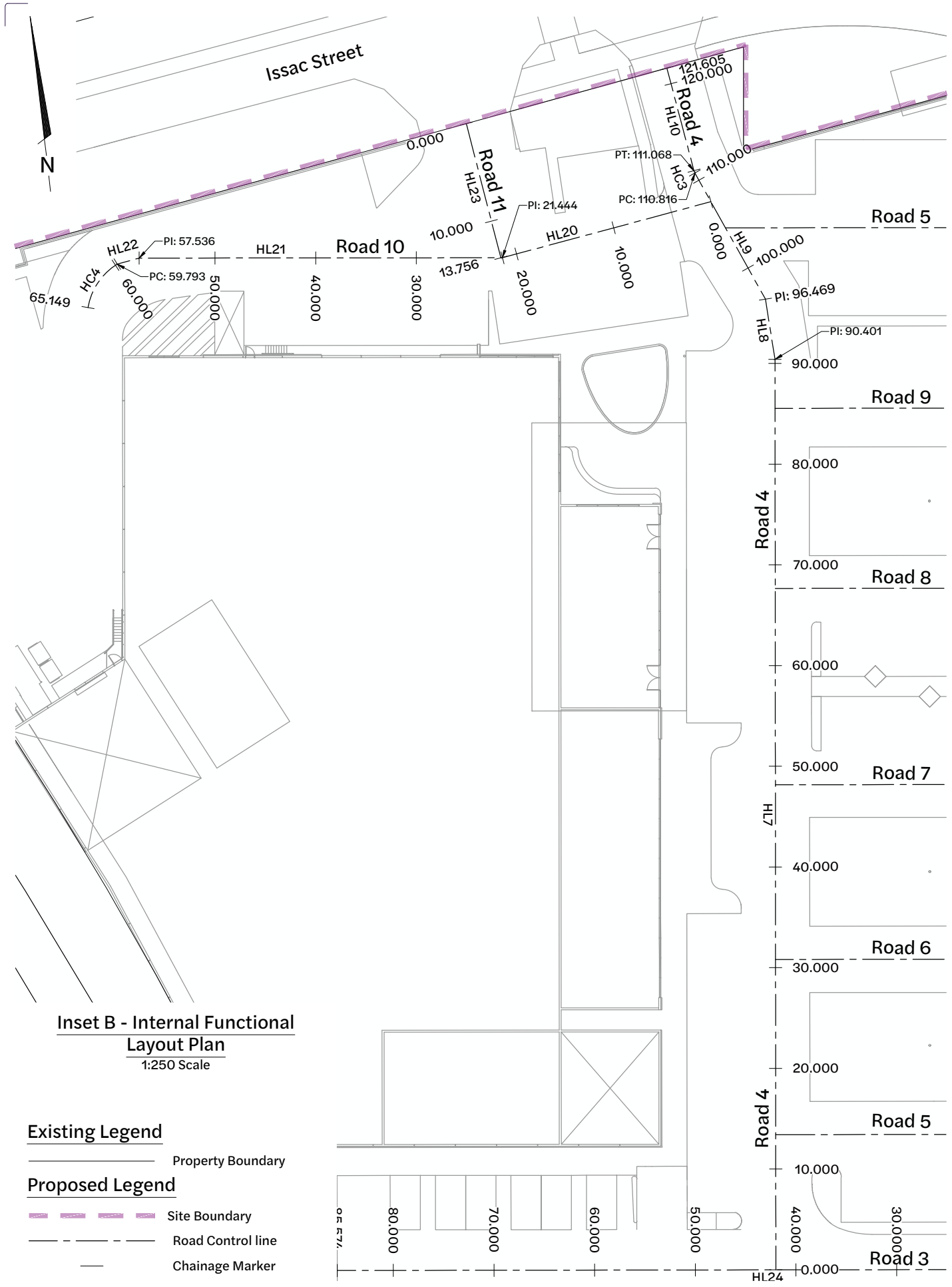
Project  
**Hagan Street, Isaac Street and Ruthven Street North Toowoomba**

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Drawing Title <b>Internal Functional Layout Plan (Sheet 1 of 4)</b>		
Project No. <b>C_25023</b>	Drawing No. <b>320</b>	Revision <b>3</b>

FILE G:\MY DRIVE\PROJECTS\C\_25023 - RUTHVEN STREET NORTH TOOWOOMBA\A\_ MODEL\AUTOCAD\C\_25023\_020\_INTERNAL FUNCTIONAL LAYOUT PLAN\DWG\LAST SAVED BY CONTE



CONTROL LINE - Road 4										
TAG		CHAINAGE	EASTING	NORTHING	LENGTH	RADIUS	BEARING	RAD/SPIRAL	A. LENGTH	D. ANGLE
HL7	IP	0.000	396683.898	6952898.148	90.401	-	007° 56' 52"	-	-	-
	IP	90.401	396696.398	6952987.681						
HL8	IP	90.401	396696.398	6952987.681	6.068	-	358° 57' 37"	-	-	-
	IP	96.469	396696.288	6952993.748						
HL9	IP	96.469	396696.288	6952993.748	14.346	-	338° 46' 16"	-	-	-
	IP	110.816	396691.093	6953007.121						
HC3	TP	110.816	396691.0931	6953007.121	0.253	1.000	346° 00' 44"	1.000	0.253	1718°52'24"
	IP	110.943	396691.047	6953007.239						
	TP	111.068	396691.032	6953007.365						
HL10	IP	111.068	396691.032	6953007.365	10.537	-	353° 15' 11"	-	-	-
	IP	121.605	396689.794	6953017.829						

CONTROL LINE - Road 10										
TAG		CHAINAGE	EASTING	NORTHING	LENGTH	RADIUS	BEARING	RAD/SPIRAL	A. LENGTH	D. ANGLE
HL20	IP	0.000	396692.275	6953004.079	21.444	-	262° 57' 34"	-	-	-
	IP	21.444	396670.992	6953001.450						
HL21	IP	21.444	396670.992	6953001.450	36.092	-	277° 56' 52"	-	-	-
	IP	57.536	396635.247	6953006.441						
HL22	IP	57.536	396635.247	6953006.441	2.257	-	262° 31' 47"	-	-	-
	IP	59.793	396633.009	6953006.147						
HC4	TP	59.793	396633.0094	6953006.147	5.356	6.261	221° 57' 08"	6.261	5.356	274°32'37"
	IP	62.647	396630.393	6953005.007						
	TP	65.149	396629.537	6953002.284						

CONTROL LINE - Road 11										
TAG		CHAINAGE	EASTING	NORTHING	LENGTH	RADIUS	BEARING	RAD/SPIRAL	A. LENGTH	D. ANGLE
HL23	IP	0.000	396669.289	6953015.140	13.756	-	173° 31' 56"	-	-	-
	IP	13.756	396670.838	6953001.472						

<table border="1"> <thead> <tr> <th>Revision</th> <th>Date</th> <th>Issue Details</th> <th>Drawn</th> <th>Designed</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>31.03.25</td> <td>Issued for Information</td> <td>MD</td> <td>RTH</td> </tr> <tr> <td>2</td> <td>26.05.25</td> <td>Updated Architectural Plans</td> <td>NR</td> <td>NR</td> </tr> <tr> <td>3</td> <td>19.12.25</td> <td>Issued for Approval</td> <td>PD</td> <td>JE</td> </tr> </tbody> </table>	Revision	Date	Issue Details	Drawn	Designed	1	31.03.25	Issued for Information	MD	RTH	2	26.05.25	Updated Architectural Plans	NR	NR	3	19.12.25	Issued for Approval	PD	JE	<table border="1"> <thead> <tr> <th>Drawn</th> <th>Designed</th> </tr> </thead> <tbody> <tr> <td>MD</td> <td>RTH</td> </tr> <tr> <td>NR</td> <td>NR</td> </tr> <tr> <td>PD</td> <td>JE</td> </tr> </tbody> </table>	Drawn	Designed	MD	RTH	NR	NR	PD	JE	<table border="1"> <thead> <tr> <th>QR Code</th> <th>Status</th> </tr> </thead> <tbody> <tr> <td></td> <td><b>Issued for Approval</b> Not for Construction</td> </tr> </tbody> </table>	QR Code	Status		<b>Issued for Approval</b> Not for Construction	<table border="1"> <thead> <tr> <th>Scale</th> </tr> </thead> <tbody> <tr> <td>1:250 5 0 5 10m A1 1:500</td> </tr> </tbody> </table>	Scale	1:250 5 0 5 10m A1 1:500	<table border="1"> <thead> <tr> <th>Client</th> </tr> </thead> <tbody> <tr> <td>Bernoth Holdings Pty Ltd</td> </tr> </tbody> </table>	Client	Bernoth Holdings Pty Ltd	<table border="1"> <thead> <tr> <th>Project</th> </tr> </thead> <tbody> <tr> <td>Hagan Street, Isaac Street and Ruthven Street North Toowoomba</td> </tr> </tbody> </table>	Project	Hagan Street, Isaac Street and Ruthven Street North Toowoomba	<table border="1"> <thead> <tr> <th>Project No.</th> <th>Drawing No.</th> <th>Revision</th> </tr> </thead> <tbody> <tr> <td>C_25023</td> <td>321</td> <td>3</td> </tr> </tbody> </table>	Project No.	Drawing No.	Revision	C_25023	321	3	<table border="1"> <thead> <tr> <th>Drawing Title</th> </tr> </thead> <tbody> <tr> <td>Internal Functional Layout Plan (Sheet 2 of 4)</td> </tr> </tbody> </table>	Drawing Title	Internal Functional Layout Plan (Sheet 2 of 4)
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Internal Functional Layout Plan (Sheet 2 of 4)																																																					

Context Engineering

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**Inset B - Internal Functional Layout Plan**  
1:250 Scale

CONTROL LINE - Road 5										
TAG		CHAINAGE	EASTING	NORTHING	LENGTH	RADIUS	BEARING	RAD/SPIRAL	A. LENGTH	D. ANGLE
HL11	IP	0.000	396685.753	6952911.436	30.400	-	097° 56' 52"	-	-	-
	IP	30.400	396715.861	6952907.232						
HL12	IP	30.400	396715.861	6952907.232	72.130	-	007° 56' 52"	-	-	-
	IP	102.530	396725.835	6952978.670						
HL13	IP	102.530	396725.835	6952978.670	4.738	-	007° 56' 54"	-	-	-
	IP	107.269	396726.490	6952983.362						
HL14	IP	107.269	396726.490	6952983.362	15.838	-	334° 20' 43"	-	-	-
	IP	123.107	396719.633	6952997.639						
HL15	IP	123.107	396719.633	6952997.639	26.537	-	277° 56' 52"	-	-	-
	IP	149.644	396693.351	6953001.309						

CONTROL LINE - Road 6										
TAG		CHAINAGE	EASTING	NORTHING	LENGTH	RADIUS	BEARING	RAD/SPIRAL	A. LENGTH	D. ANGLE
HL16	IP	0.000	396688.159	6952928.669	30.400	-	097° 56' 52"	-	-	-
	IP	30.400	396718.267	6952924.465						

CONTROL LINE - Road 7										
TAG		CHAINAGE	EASTING	NORTHING	LENGTH	RADIUS	BEARING	RAD/SPIRAL	A. LENGTH	D. ANGLE
HL17	IP	0.000	396690.558	6952945.852	30.400	-	097° 56' 52"	-	-	-
	IP	30.400	396720.666	6952941.649						

CONTROL LINE - Road 8										
TAG		CHAINAGE	EASTING	NORTHING	LENGTH	RADIUS	BEARING	RAD/SPIRAL	A. LENGTH	D. ANGLE
HL18	IP	0.000	396693.254	6952965.165	30.400	-	097° 56' 52"	-	-	-
	IP	30.400	396723.363	6952960.961						

CONTROL LINE - Road 9										
TAG		CHAINAGE	EASTING	NORTHING	LENGTH	RADIUS	BEARING	RAD/SPIRAL	A. LENGTH	D. ANGLE
HL19	IP	0.000	396695.726	6952982.873	30.401	-	097° 56' 52"	-	-	-
	IP	30.401	396725.835	6952978.670						

- Existing Legend**
- Property Boundary
- Proposed Legend**
- Site Boundary
  - Road Control line
  - Chainage Marker

<table border="1"> <thead> <tr> <th>Revision</th> <th>Date</th> <th>Issue Details</th> <th>Drawn</th> <th>Designed</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>31.03.25</td> <td>Issued for Information</td> <td>MD</td> <td>RTH</td> </tr> <tr> <td>2</td> <td>26.05.25</td> <td>Updated Architectural Plans</td> <td>NR</td> <td>NR</td> </tr> <tr> <td>3</td> <td>19.12.25</td> <td>Issued for Approval</td> <td>PD</td> <td>JE</td> </tr> </tbody> </table>	Revision	Date	Issue Details	Drawn	Designed	1	31.03.25	Issued for Information	MD	RTH	2	26.05.25	Updated Architectural Plans	NR	NR	3	19.12.25	Issued for Approval	PD	JE	<table border="1"> <thead> <tr> <th>Drawn</th> <th>Designed</th> </tr> </thead> <tbody> <tr> <td>MD</td> <td>RTH</td> </tr> <tr> <td>NR</td> <td>NR</td> </tr> <tr> <td>PD</td> <td>JE</td> </tr> </tbody> </table>	Drawn	Designed	MD	RTH	NR	NR	PD	JE	<table border="1"> <thead> <tr> <th>QR Code</th> <th>Status</th> </tr> </thead> <tbody> <tr> <td></td> <td><b>Issued for Approval</b> Not for Construction</td> </tr> </tbody> </table>	QR Code	Status		<b>Issued for Approval</b> Not for Construction	<table border="1"> <thead> <tr> <th>Scale</th> </tr> </thead> <tbody> <tr> <td>1:250 1:500</td> </tr> </tbody> </table>	Scale	1:250 1:500	<table border="1"> <thead> <tr> <th>Client</th> </tr> </thead> <tbody> <tr> <td>Bernoth Holdings Pty Ltd</td> </tr> </tbody> </table>	Client	Bernoth Holdings Pty Ltd	<table border="1"> <thead> <tr> <th>Project</th> </tr> </thead> <tbody> <tr> <td>Hagan Street, Isaac Street and Ruthven Street North Toowoomba</td> </tr> </tbody> </table>	Project	Hagan Street, Isaac Street and Ruthven Street North Toowoomba		<table border="1"> <thead> <tr> <th>Drawing Title</th> </tr> </thead> <tbody> <tr> <td>Internal Functional Layout Plan (Sheet 3 of 4)</td> </tr> </tbody> </table>	Drawing Title	Internal Functional Layout Plan (Sheet 3 of 4)	<table border="1"> <thead> <tr> <th>Project No.</th> <th>Drawing No.</th> <th>Revision</th> </tr> </thead> <tbody> <tr> <td>C_25023</td> <td>322</td> <td>3</td> </tr> </tbody> </table>	Project No.	Drawing No.	Revision	C_25023	322	3
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**Existing Legend**

Property Boundary

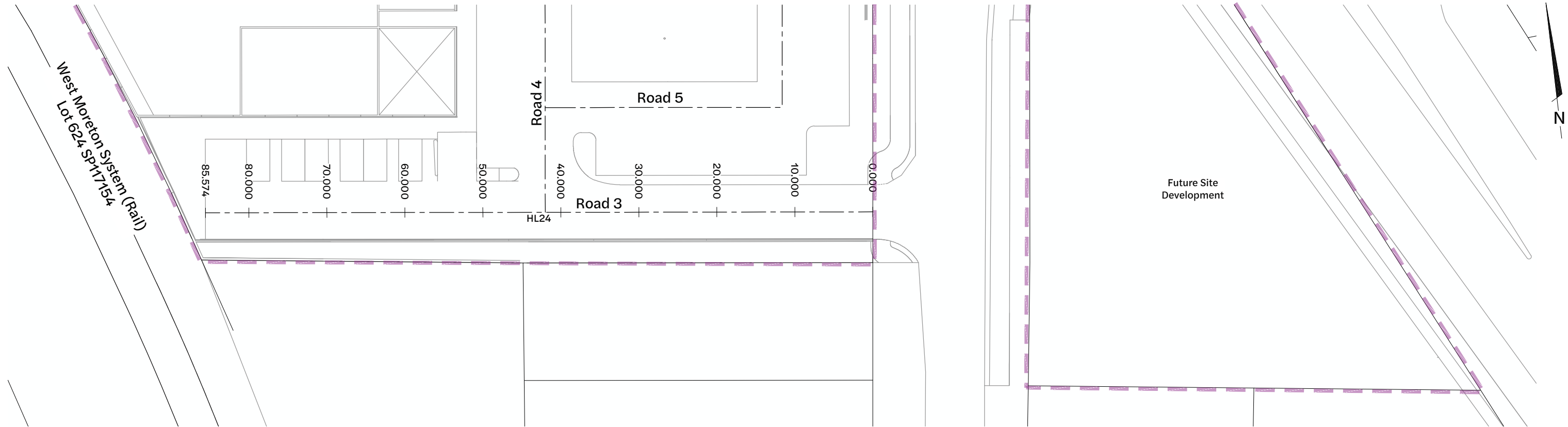
**Proposed Legend**

Site Boundary

Road Control line

Chainage Marker

CONTROL LINE - Road 3										
TAG		CHAINAGE	EASTING	NORTHING	LENGTH	RADIUS	BEARING	RAD/SPIRAL	A. LENGTH	D. ANGLE
HL24	IP IP	0.000 85.574	396725.494 396640.737	6952892.348 6952904.142	85.574	-	277° 55' 20"	-	-	-

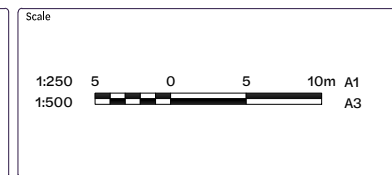


**Inset C - Internal Functional Layout Plan**  
1:250 Scale

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	26.05.25	Updated Architectural Plans	NR	NR
3	19.12.25	Issued for Approval	PD	JE

QR Code

**Issued for Approval**  
Not for Construction



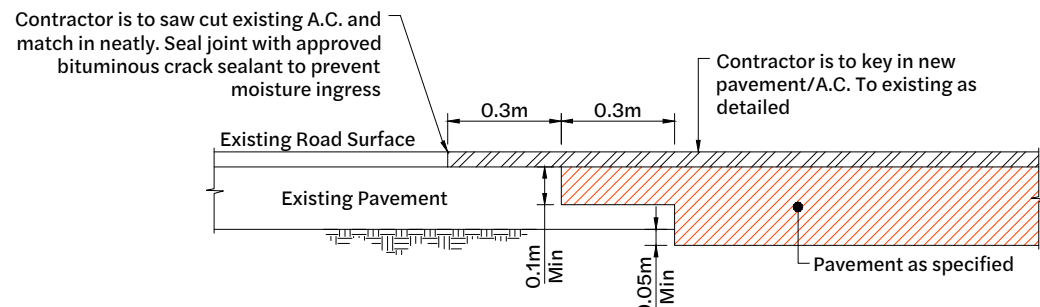
Client  
**Bernoth Holdings Pty Ltd**

Project  
**Hagan Street, Isaac Street  
and Ruthven Street  
North Toowoomba**

Disclaimer  
All dimensions to be checked on site by contractor prior to construction. Use written dimensions only, do not scale.

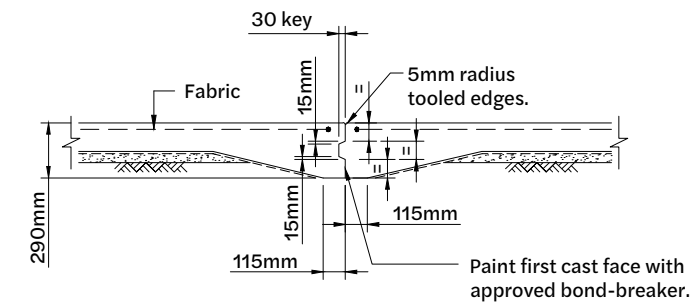


Drawing Title		
<b>Internal Functional Layout Plan (Sheet 4 of 4)</b>		
Project No. <b>C_25023</b>	Drawing No. <b>323</b>	Revision <b>3</b>



**Connection to Existing Pavement**

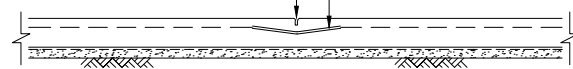
Typical detail  
Showing longitudinal construction detail for connection to existing pavement/A.C.  
N.T.S



**Typical Keyed Joint (K.J.) Detail**

Scale 1:20

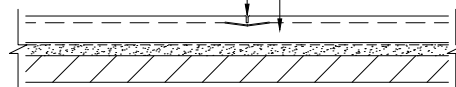
30 deep x 6 wide tool joint. 5 radius to tooled edges. Saw cut within 24 hrs. of placing concrete. Fill with a joint filler as specified.  
Fabric- cut every second wire crossing joint and depress fabric to maintain cover.



**Typical Sawn Joint (S.J.) Detail**

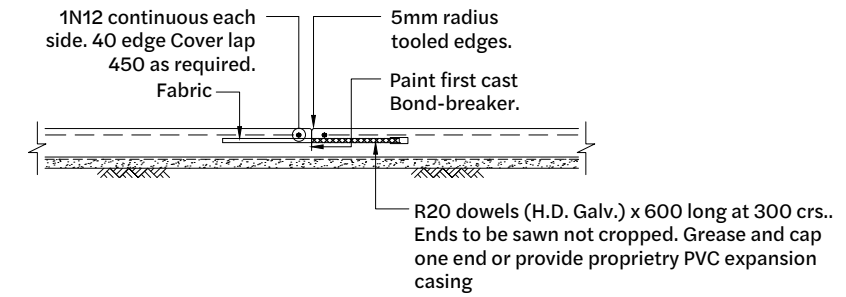
Scale 1:20

30 deep x 6 wide tool joint. 5 radius to tooled edges. Saw cut within 24 hrs. of placing concrete. Fill with a joint filler as specified.  
Fabric - cut every second wire crossing joint and depress fabric to maintain cover.



**Typical Tool Joint (T.J.) Detail**

Scale 1:20



**Typical Dowelled Construction Joint (D.J.) Detail**

Scale 1:20

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	26.05.25	Updated Architectural Plans	NR	NR
3	19.12.25	Issued for Approval	PD	JE
4	19.12.25	Issued for Approval	PD	JE

QR Code

Status  
**Issued for Approval  
Not for Construction**

Scale  
**AS  
SHOWN**

Client  
**Bernoth Holdings Pty Ltd**

Project  
**Hagan Street, Isaac Street  
and Ruthven Street  
North Toowoomba**

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Drawing Title		
<b>Internal Roadworks Detail Plan</b>		
Project No. <b>C_25023</b>	Drawing No. <b>350</b>	Revision <b>4</b>

**Existing Legend**

Property Boundary

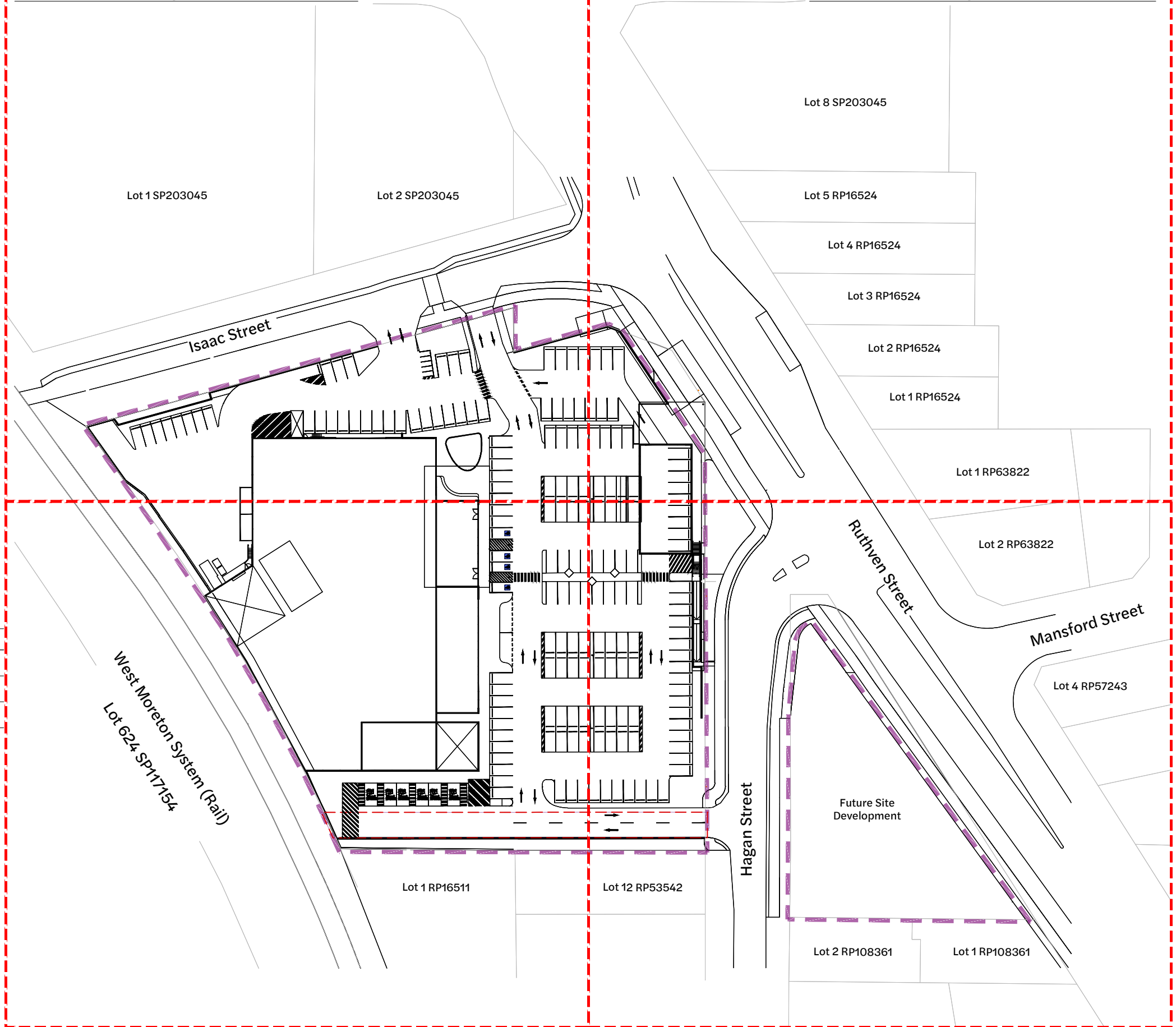
**Proposed Legend**

Site Boundary

Inset A - Refer drawing C\_25023 361 for details

North Street

Inset B - Refer drawing C\_25023 362 for details



**Pavement Marking Legend**

Pavement Markings	Length(m)	Gap(m)	Width(mm)
Park Line	-	-	100
Stop Line	-	-	300
Give Way Line	0.6	0.6	300

Inset C - Refer drawing C\_25023 363 for details

Internal Line Marking Layout Plan

1:500 Scale

Inset D - Refer drawing C\_25023 364 for details

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	26.05.25	Updated Architectural Plans	NR	NR
3	19.12.25	Issued for Approval	PD	JE
4	19.12.25	Issued for Approval	PD	JE

QR Code

**Issued for Approval**  
Not for Construction

Scale
1:500 10 5 0 10 20m A1 1:1000 A3

Client  
**Bernoth Holdings Pty Ltd**

Project  
**Hagan Street, Isaac Street and Ruthven Street North Toowoomba**



Drawing Title		
<b>Internal Line Marking Layout Plan (Sheet 1 of 5)</b>		
Project No. <b>C_25023</b>	Drawing No. <b>360</b>	Revision <b>4</b>

**Existing Legend**

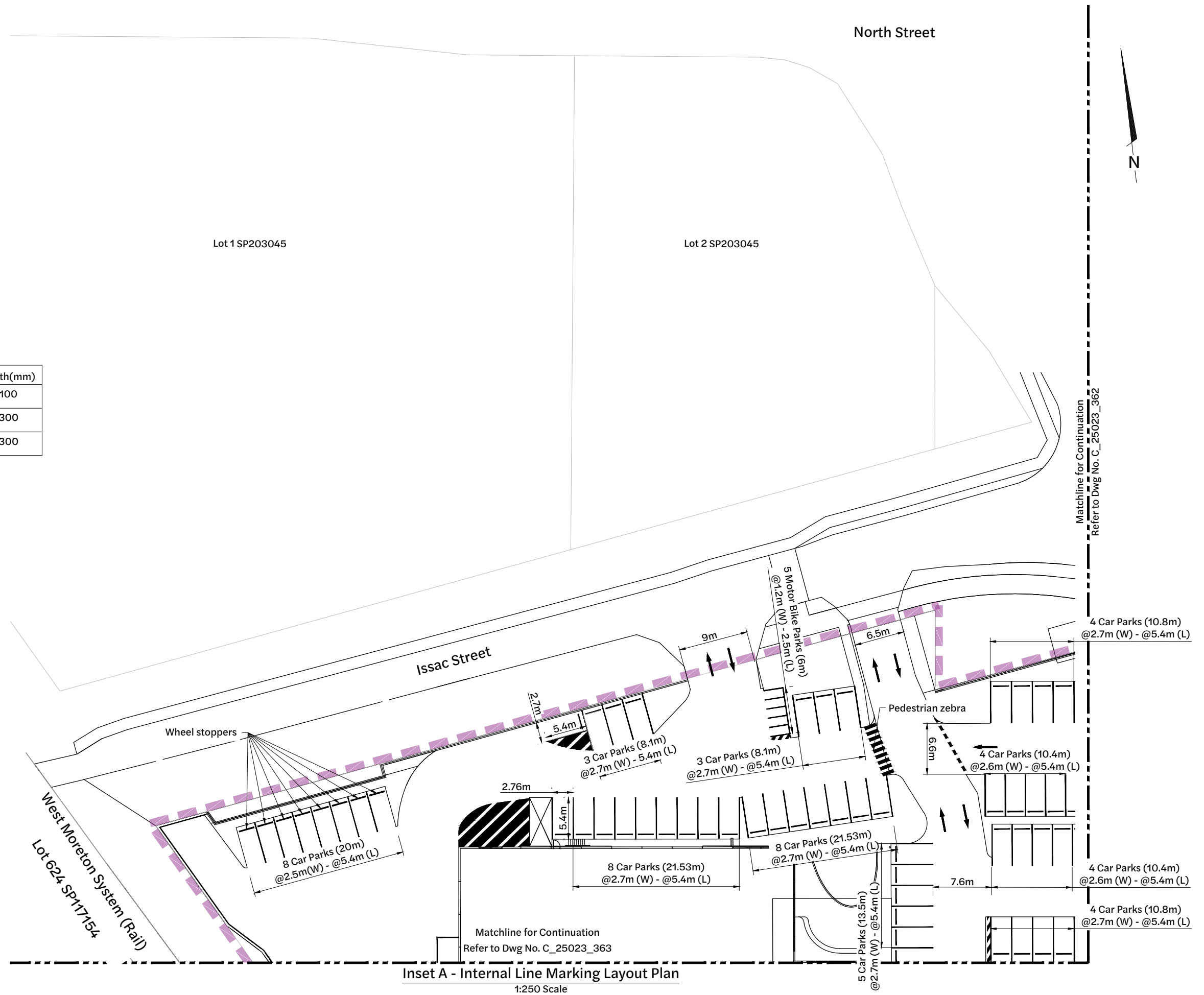
Property Boundary

**Proposed Legend**

Site Boundary

**Pavement Marking Legend**

Pavement Markings	Length(m)	Gap(m)	Width(mm)
Park Line	-	-	100
Stop Line	-	-	300
Give Way Line	0.6	0.6	300



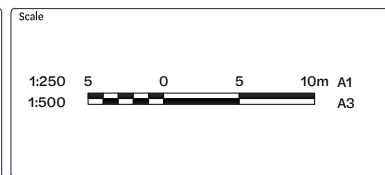
**Inset A - Internal Line Marking Layout Plan**

1:250 Scale

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	26.05.25	Updated Architectural Plans	NR	NR
3	19.12.25	Issued for Approval	PD	JE
4	19.12.25	Issued for Approval	PD	JE

QR Code

**Issued for Approval**  
Not for Construction



Client  
**Bernoth Holdings Pty Ltd**

Project  
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Drawing Title		
<b>Internal Line Marking Layout Plan (Sheet 2 of 5)</b>		
Project No. <b>C_25023</b>	Drawing No. <b>361</b>	Revision <b>4</b>

**Existing Legend**

Property Boundary

**Proposed Legend**

Site Boundary

**Pavement Marking Legend**

Pavement Markings	Length(m)	Gap(m)	Width(mm)
Park Line	-	-	100
Stop Line	-	-	300
Give Way Line	0.6	0.6	300

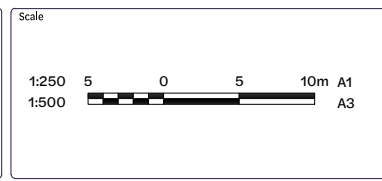


**Inset B - Internal Line Marking Layout Plan**  
1:250 Scale

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	26.05.25	Updated Architectural Plans	NR	NR
3	19.12.25	Issued for Approval	PD	JE
4	19.12.25	Issued for Approval	PD	JE

QR Code

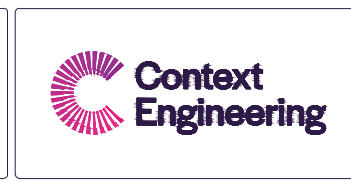
**Issued for Approval**  
Not for Construction



Client  
**Bernoth Holdings Pty Ltd**

Project  
**Hagan Street, Isaac Street and Ruthven Street North Toowoomba**

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Drawing Title		
<b>Internal Line Marking Layout Plan (Sheet 3 of 5)</b>		
Project No. <b>C_25023</b>	Drawing No. <b>362</b>	Revision <b>4</b>

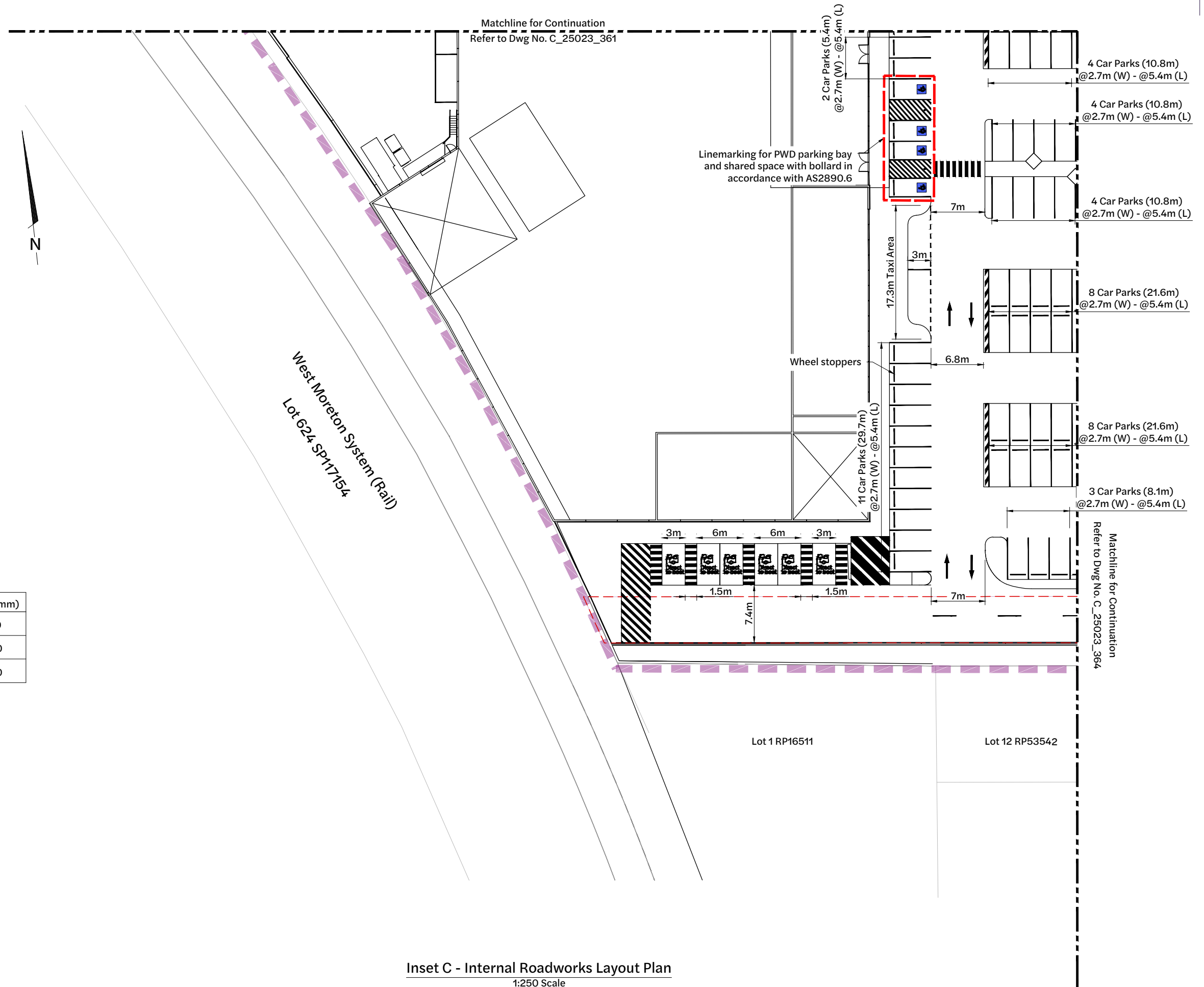
FILE G:\MY DRIVE\PROJECTS\C\_25023 - RUTHVEN STREET NORTH TOOWOOMBA\A\_ MODEL\AUTOCAD\C\_25023\_362\_INTERNAL LINE MARKING LAYOUT PLAN.DWG LAST SAVED BY COINTE

**Existing Legend**

Property Boundary

**Proposed Legend**

Site Boundary



**Pavement Marking Legend**

Pavement Markings	Length(m)	Gap(m)	Width(mm)
Park Line	-	-	100
Stop Line	-	-	300
Give Way Line	0.6	0.6	300

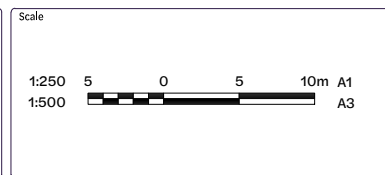
**Inset C - Internal Roadworks Layout Plan**  
1:250 Scale

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	26.05.25	Updated Architectural Plans	NR	NR
3	19.12.25	Issued for Approval	PD	JE
4	19.12.25	Issued for Approval	PD	JE

QR Code

Status

**Issued for Approval**  
Not for Construction



Client

Bernoth Holdings Pty Ltd

Project

Hagan Street, Isaac Street  
and Ruthven Street  
North Toowoomba

Disclaimer  
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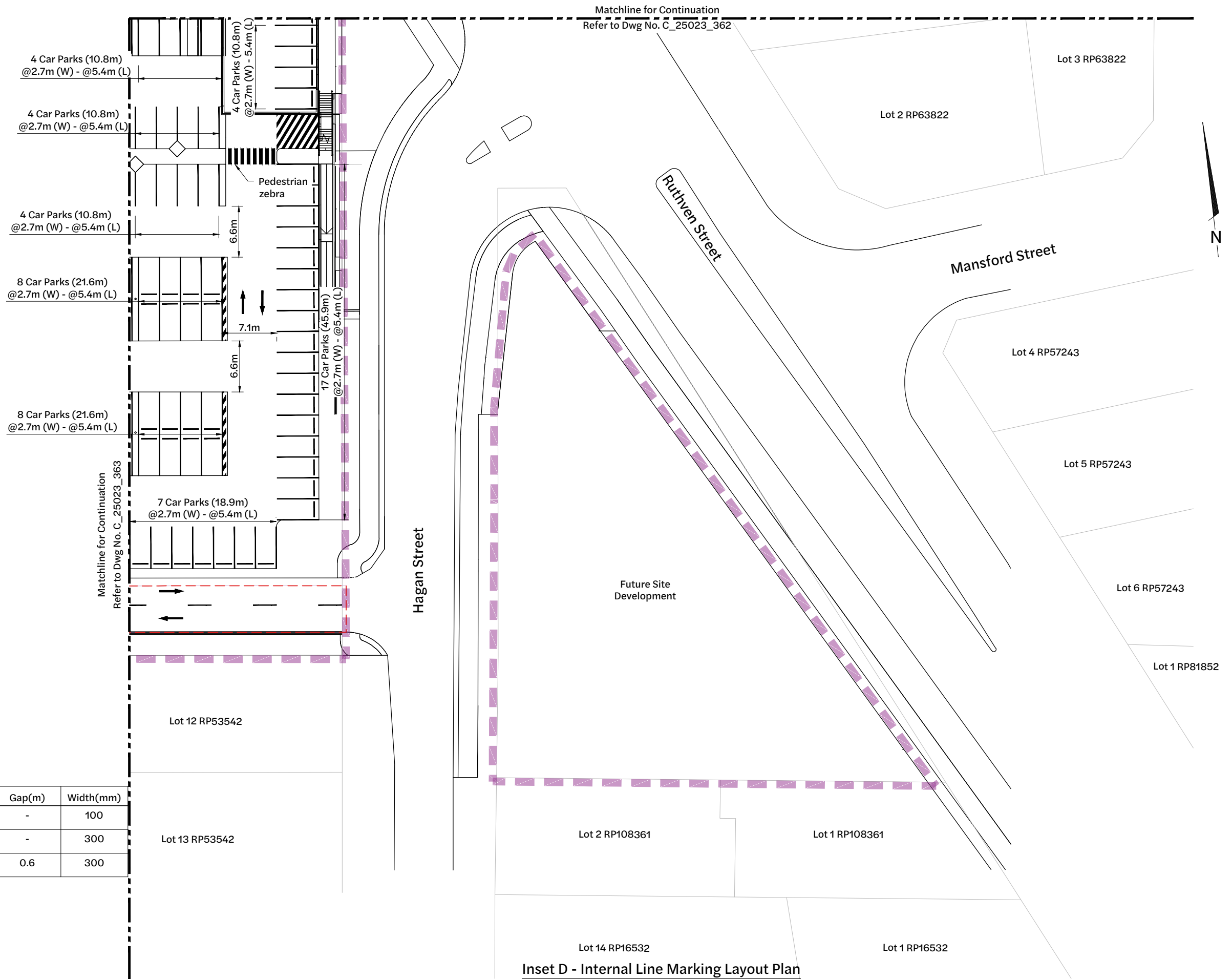
Drawing Title		
<b>Internal Line Marking Layout Plan (Sheet 4 of 5)</b>		
Project No. <b>C_25023</b>	Drawing No. <b>363</b>	Revision <b>4</b>

**Existing Legend**

Property Boundary

**Proposed Legend**

Site Boundary



**Pavement Marking Legend**

Pavement Markings	Length(m)	Gap(m)	Width(mm)
Park Line	-	-	100
Stop Line	-	-	300
Give Way Line	0.6	0.6	300

**Inset D - Internal Line Marking Layout Plan**  
1:250 Scale

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	26.05.25	Updated Architectural Plans	NR	NR
3	19.12.25	Issued for Approval	PD	JE
4	19.12.25	Issued for Approval	PD	JE

QR Code

**Issued for Approval**  
Not for Construction

Scale
1:250 5 0 5 10m A1 1:500

Client  
**Bernoth Holdings Pty Ltd**






Project  
**Hagan Street, Isaac Street and Ruthven Street North Toowoomba**

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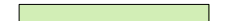



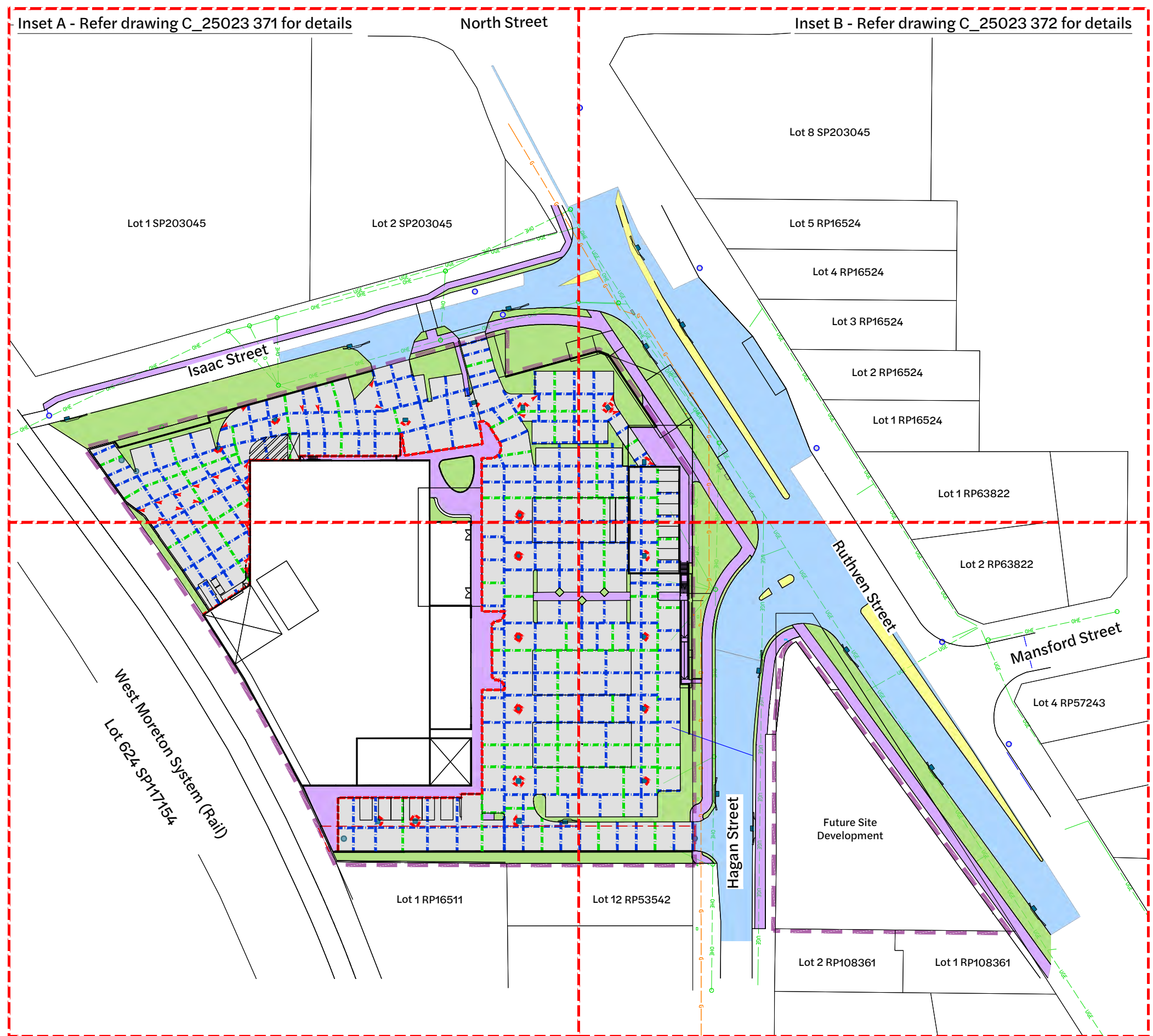
Drawing Title		
<b>Internal Line Marking Layout Plan (Sheet 5 of 5)</b>		
Project No. <b>C_25023</b>	Drawing No. <b>364</b>	Revision <b>4</b>

**Existing Legend**

-  Property Boundary
-  Stormwater Drainage
-  Gas
-  Overhead Electrical
-  Stormwater Manhole

**Proposed Legend**

-  Site Boundary
-  Expansion Joint - EJ
-  Sawn Cut Joint - SJ
-  Isolation Joint - IJ
-  Trimmer Bars
-  Stormwater Inlet
-  Stormwater Manhole
-  Pedestrian Footpath
-  Rigid (Concrete) Pavement
-  Landscaping
-  Asphalt Pavement

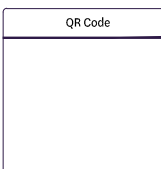


**NOTE:**  
\* Subject to confirmation of Subgrade CBR and Proof Roll inspection.

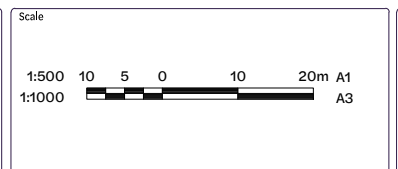
**NOTE:**  
Stormwater drainage pits shown indicatively. Refer Drawing 400 for complete set.

Inset C - Refer drawing C\_25023 373 for details      **Jointing Layout Plan**      Inset D - Refer drawing C\_25023 374 for details  
1:500 Scale

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	26.05.25	Updated Architectural Plans	NR	NR
3	19.12.25	Issued for Approval	PD	JE
4	19.12.25	Issued for Approval	PD	JE



Status  
**Issued for Approval**  
Not for Construction



Client  
**Bernoth Holdings Pty Ltd**






Project  
**Hagan Street, Isaac Street and Ruthven Street North Toowoomba**












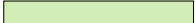
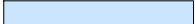
Drawing Title <b>Jointing Layout Plan (Sheet 1 of 5)</b>		
Project No. <b>C_25023</b>	Drawing No. <b>370</b>	Revision <b>4</b>

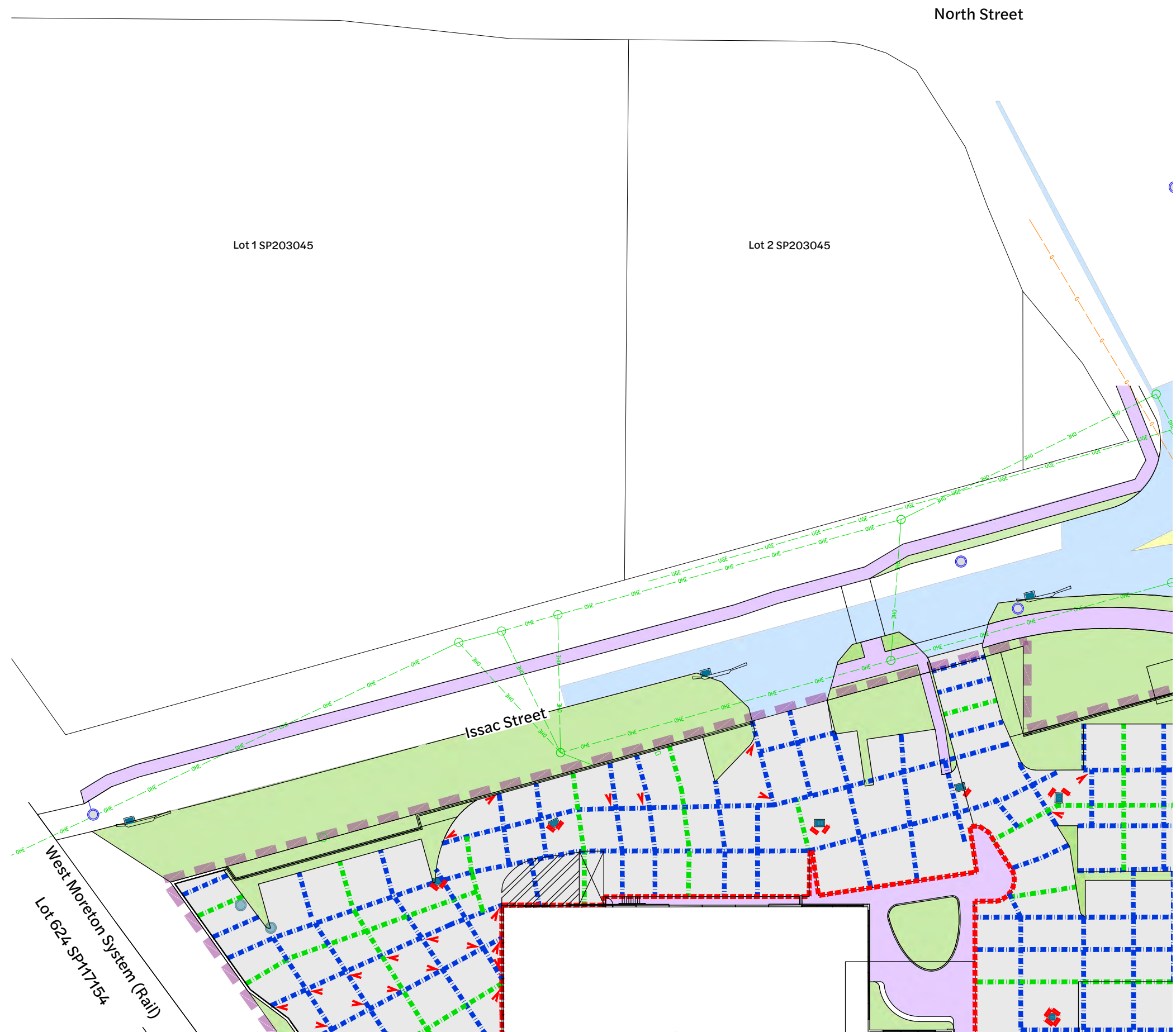
FILE G:\MAP DRIVE\PROJECTS\C\_25023 - RUTHVEN STREET NORTH TOOWOOMBA\A1\_MODEL\AUTOCAD\C\_25023\_370\_JOINTING LAYOUT PLAN.dwg LAST SAVED BY:CDP

**Existing Legend**

-  Property Boundary
-  Stormwater Drainage
-  Gas
-  Overhead Electrical
-  Stormwater Manhole

**Proposed Legend**

-  Site Boundary
-  Expansion Joint - EJ
-  Sawn Cut Joint - SJ
-  Isolation Joint - IJ
-  Trimmer Bars
-  Stormwater Inlet
-  Stormwater Manhole
-  Pedestrian Footpath
-  Rigid (Concrete) Pavement
-  Landscaping
-  Asphalt Pavement



**NOTE:**  
\* Subject to confirmation of Subgrade CBR and Proof Roll inspection.

**NOTE:**  
Stormwater drainage pits shown indicatively. Refer Drawing 410 for complete set.

**Inset A - Jointing Layout Plan**  
1:250 Scale

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	26.05.25	Updated Architectural Plans	NR	NR
3	19.12.25	Issued for Approval	PD	JE
4	19.12.25	Issued for Approval	PD	JE

QR Code

**Issued for Approval**  
Not for Construction

Scale

1:250 5 0 5 10m A1  
1:500

Client

Bernoth Holdings Pty Ltd

Project






Hagan Street, Isaac Street and Ruthven Street North Toowoomba

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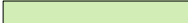
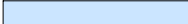


Drawing Title		
<b>Jointing Layout Plan (Sheet 2 of 5)</b>		
Project No. C_25023	Drawing No. 371	Revision 4

**Existing Legend**

-  Property Boundary
-  Stormwater Drainage
-  Gas
-  Overhead Electrical
-  Stormwater Manhole

**Proposed Legend**

-  Site Boundary
-  Expansion Joint - EJ
-  Sawn Cut Joint - SJ
-  Isolation Joint - IJ
-  Trimmer Bars
-  Stormwater Inlet
-  Stormwater Manhole
-  Pedestrian Footpath
-  Rigid (Concrete) Pavement
-  Landscaping
-  Asphalt Pavement

North Street



**NOTE:**  
\* Subject to confirmation of Subgrade CBR and Proof Roll inspection.

**NOTE:**  
Stormwater drainage pits shown indicatively. Refer Drawing 410 for complete set.

**Inset B - Jointing Layout Plan**  
1:250 Scale

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	26.05.25	Updated Architectural Plans	NR	NR
3	19.12.25	Issued for Approval	PD	JE
4	19.12.25	Issued for Approval	PD	JE

QR Code

**Issued for Approval**  
Not for Construction

Scale
1:250 5 0 5 10m A1 1:500

Client  
**Bernoth Holdings Pty Ltd**






Project  
**Hagan Street, Isaac Street and Ruthven Street North Toowoomba**

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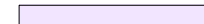

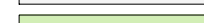


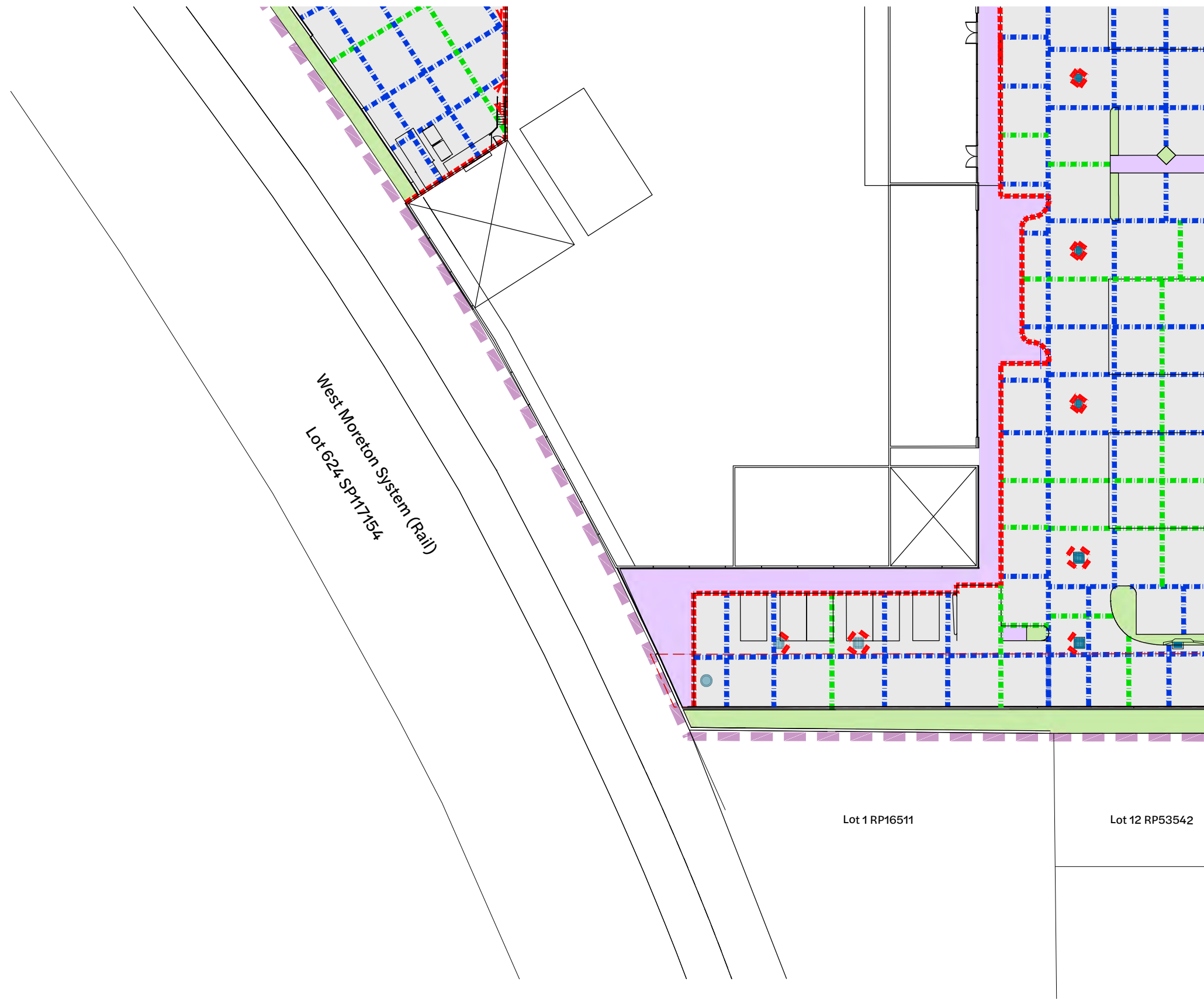
Drawing Title		
<b>Jointing Layout Plan (Sheet 3 of 5)</b>		
Project No. <b>C_25023</b>	Drawing No. <b>372</b>	Revision <b>4</b>

**Existing Legend**

-  Property Boundary
-  Stormwater Drainage
-  Gas
-  Overhead Electrical
-  Stormwater Manhole

**Proposed Legend**

-  Site Boundary
-  Expansion Joint - EJ
-  Sawn Cut Joint - SJ
-  Isolation Joint - IJ
-  Trimmer Bars
-  Stormwater Inlet
-  Stormwater Manhole
-  Pedestrian Footpath
-  Rigid (Concrete) Pavement
-  Landscaping
-  Asphalt Pavement



**NOTE:**  
\* Subject to confirmation of Subgrade CBR and Proof Roll inspection.

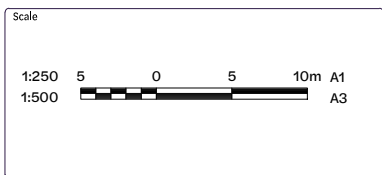
**NOTE:**  
Stormwater drainage pits shown indicatively. Refer Drawing 410 for complete set.

**Inset C - Jointing Layout Plan**  
1:250 Scale

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	26.05.25	Updated Architectural Plans	NR	NR
3	19.12.25	Issued for Approval	PD	JE
4	19.12.25	Issued for Approval	PD	JE

QR Code

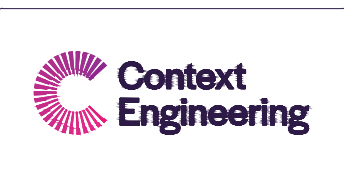
**Issued for Approval**  
**Not for Construction**



Client  
**Bernoth Holdings Pty Ltd**






Project  
**Hagan Street, Isaac Street and Ruthven Street North Toowoomba**

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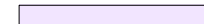

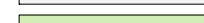


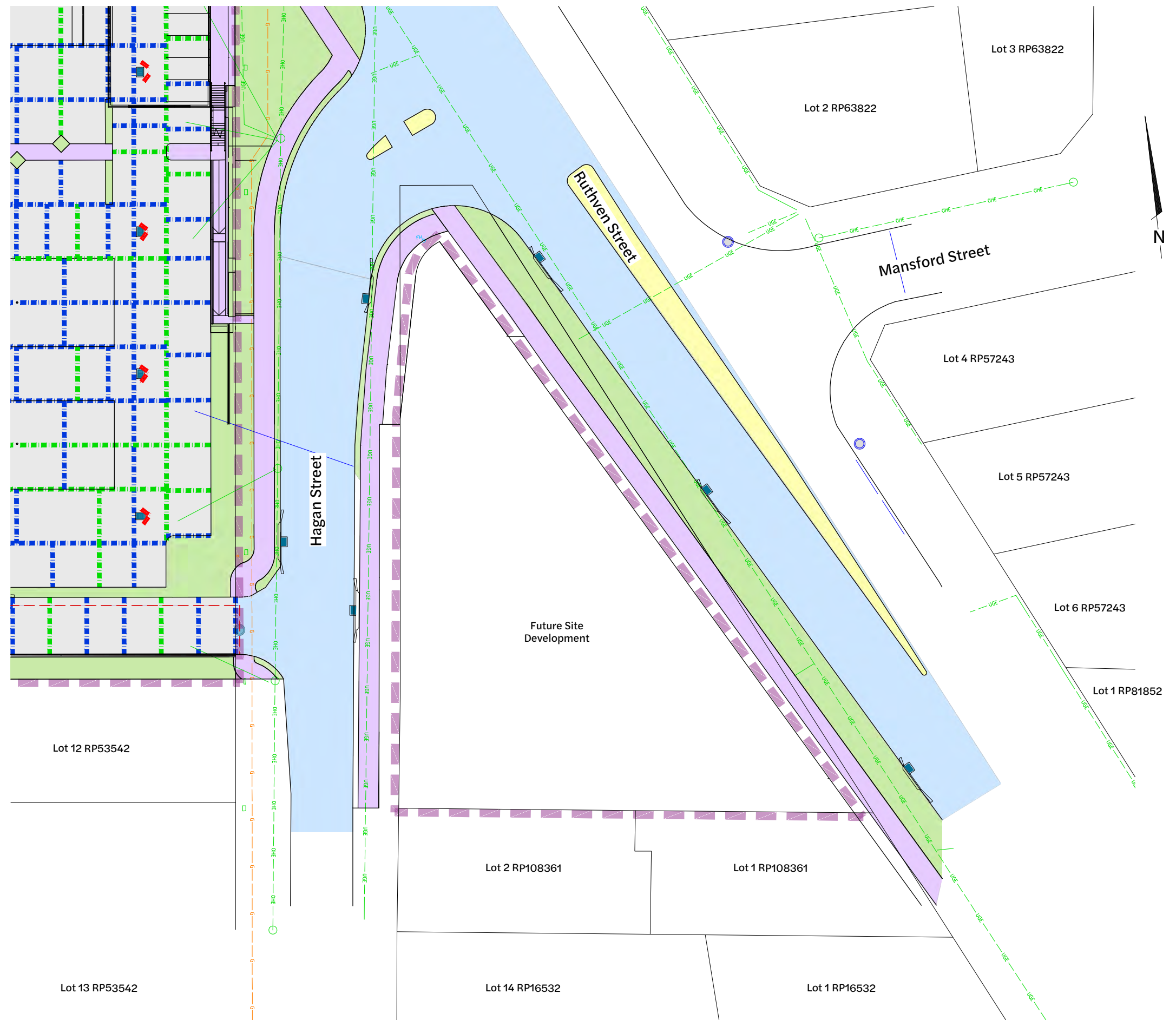
Drawing Title		
<b>Jointing Layout Plan (Sheet 4 of 5)</b>		
Project No. <b>C_25023</b>	Drawing No. <b>373</b>	Revision <b>4</b>

**Existing Legend**

-  Property Boundary
-  Stormwater Drainage
-  Gas
-  Overhead Electrical
-  Stormwater Manhole

**Proposed Legend**

-  Site Boundary
-  Expansion Joint - EJ
-  Sawn Cut Joint - SJ
-  Isolation Joint - IJ
-  Trimmer Bars
-  Stormwater Inlet
-  Stormwater Manhole
-  Pedestrian Footpath
-  Rigid (Concrete) Pavement
-  Landscaping
-  Asphalt Pavement



**Inset D - Jointing Layout Plan**  
1:250 Scale

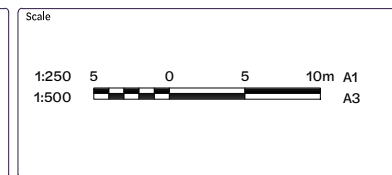
**NOTE:**  
\* Subject to confirmation of Subgrade CBR and Proof Roll inspection.

**NOTE:**  
Stormwater drainage pits shown indicatively. Refer Drawing 410 for complete set.

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	26.05.25	Updated Architectural Plans	NR	NR
3	19.12.25	Issued for Approval	PD	JE
4	19.12.25	Issued for Approval	PD	JE

QR Code

**Issued for Approval**  
Not for Construction



Client  
**Bernoth Holdings Pty Ltd**

Project  
**Hagan Street, Isaac Street and Ruthven Street North Toowoomba**

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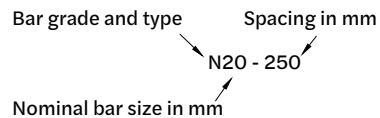


Drawing Title		
<b>Jointing Layout Plan (Sheet 5 of 5)</b>		
Project No. <b>C_25023</b>	Drawing No. <b>374</b>	Revision <b>4</b>

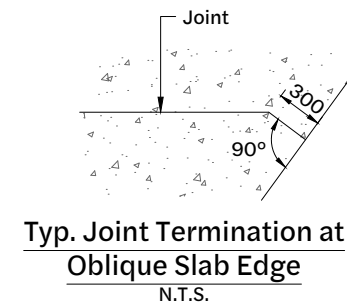
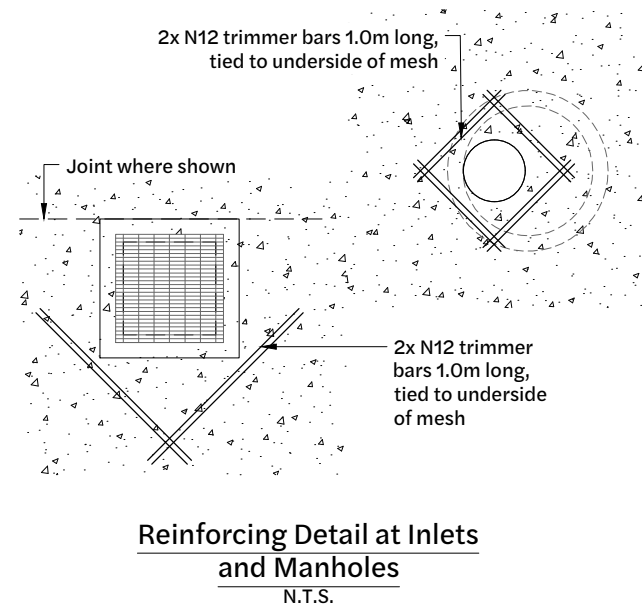
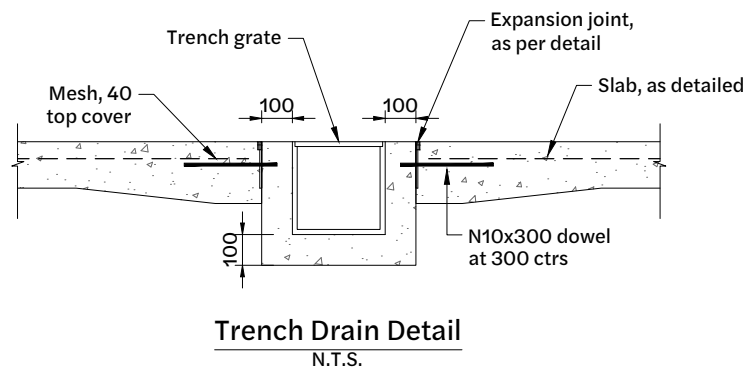
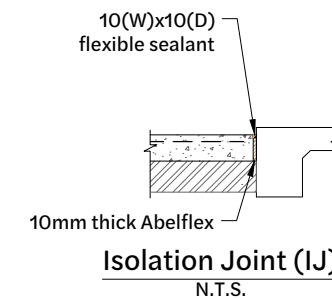
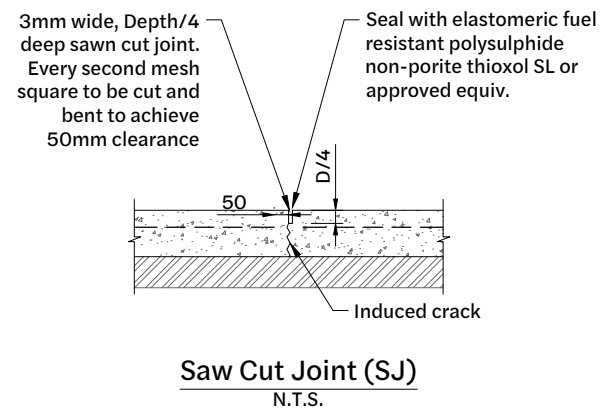
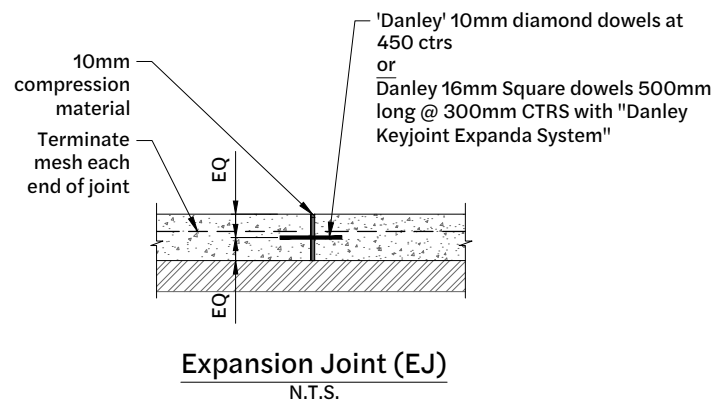
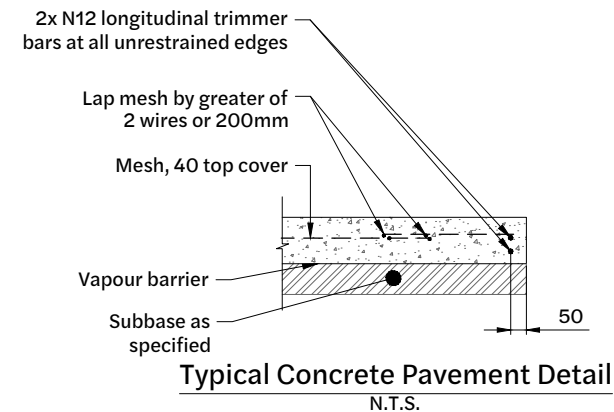
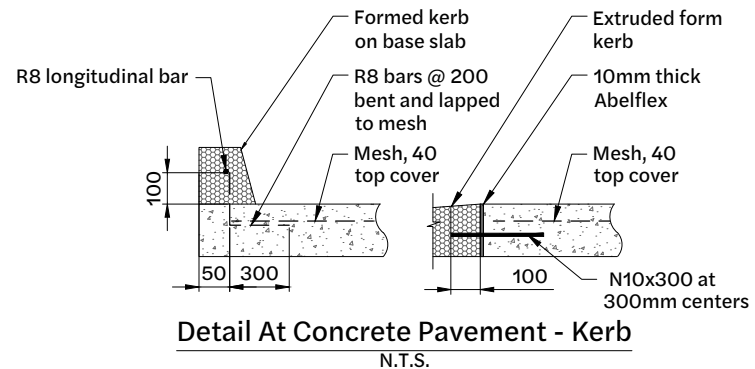
## Concrete Notes

- All workmanship and materials shall be in accordance with AS3600.
- Minimum concrete strength to be 32MPa
- Clear cover (including fitments) to be 50mm unless noted otherwise
- Concrete Specification:  
Slump..... 100 mm  
Max. Aggregate..... 20 mm
- Project control testing shall be carried out in accordance with AS3600 and the specification
- The Contractor is to notify the Engineer in writing of any admixtures to be used in the concrete mix. No admixtures shall be used without written approval by the superintendent. Calcium chloride will not be permitted and shall not be used under any circumstances.
- All formwork shall conform to AS3610. Reshoring is not permitted.
- Reinforcement symbols

'N' - deformed bar grade N500N to AS 4671  
 'R' - plain round bar grade R250N to AS 4671  
 'S' - deformed bar grade D250N to AS 4671  
 'RL' - ribbed reinforcing mesh grade D500L to AS 4671  
 'SL' - ribbed reinforcing mesh grade D500L to AS 4671



- The figures following the fabric symbol 'SL' is the reference number for fabric to AS4671
- All formwork shall conform to AS3610. Reshoring not permitted.
- Sizes of concrete elements do not include thickness of applied finishes.
- Reinforcement is shown diagrammatically and not necessarily in true projection.
- Welding of reinforcement is not permitted.
- Reinforcement shall be bent cold in accordance with AS3600 except where approved by the engineer. No rebending shall be permitted unless approved by the Structural Engineer.
- All reinforcement shall be securely supported in its correct position during concreting by approved plastic tipped bar chairs, spacers or support bars. Maximum centres of supporting chairs shall be 800mm for fabric, 600mm for bars up to 12mm diameter, 900mm for bars 16mm and greater.
- Construction break locations and details shall be approved by the Superintendent prior to construction.
- The face of all concrete against which new concrete is to be cast is to be thoroughly mechanically scabbled, fully exposing the aggregate matrix.
- All concrete surfaces are to be cured for seven days after casting using a method approved by the Engineer.
- Concrete testing shall be carried out by a registered NATA testing laboratory, in accordance with AS 3600 project assessment.
- All concrete to be found below the required strength at 28 days shall be removed and replaced at the Contractor's expense.
- Concrete shall be cured with a coat of approved chlorinated rubber curing compound, applied immediately after finishing operations.



Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	26.05.25	Updated Architectural Plans	NR	NR
3	19.12.25	Issued for Approval	PD	JE
4	19.12.25	Issued for Approval	PD	JE

QR Code

Status  
**Issued for Approval**  
 Not for Construction

Scale  
**AS SHOWN**

Client  
 Bernoth Holdings Pty Ltd













Project  
 Hagan Street, Isaac Street and Ruthven Street North Toowoomba  
Disclaimer  
 All dimensions to be checked on site by contractor prior to construction. Use written dimensions only, do not scale.

Project Title  
**Context Engineering**




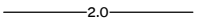
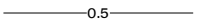








Jointing Notes and Details		
Project No.	Drawing No.	Revision
C_25023	380	4

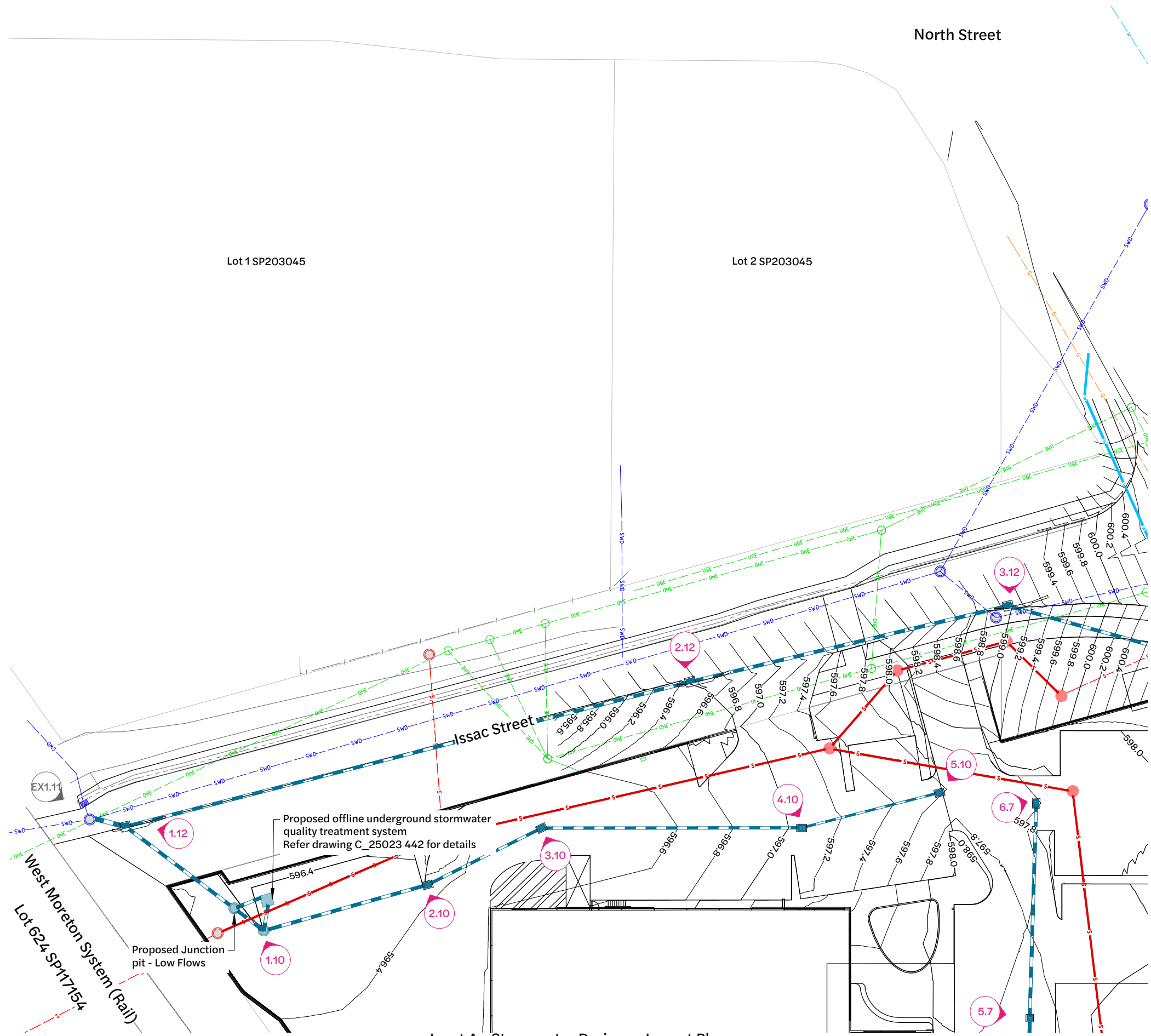


**Existing Legend**

-  Property Boundary
-  Stormwater Drainage
-  Sewerage Reticulation
-  Gas
-  Overhead Electrical
-  Underground Telecommunications
-  Fence
-  Barrier Kerb & Channel
-  Footpath
-  Sewer Manhole
-  Stormwater Manhole
-  Structure Label

**Proposed Legend**

-  Site Boundary
-  Water Line
-  Sewer Line
-  Design Surface Contour Major
-  Design Surface Contour Minor
-  Sewer Manhole
-  Maintenance Hole
-  Stormwater Inlet Pit
-  Stormwater Drainage
-  Kerb Adaptor
-  Stormwater Gully Inlet
-  Stormwater Headwall
-  Structure Label



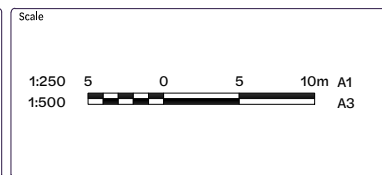
**Inset A - Stormwater Drainage Layout Plan**  
1:250 Scale

**Note:**  
Available records provided for design. Contractor to confirm location and depth of existing services prior to commencement of works and notify superintendent should any discrepancies or non-conformances on clearances to other services become apparent.

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	1.05.25	Issued for Approval	PD	NR
3	26.05.25	Updated Architectural Plans	NR	NR
4	19.12.25	Issued for Approval	PD	JE

QR Code

**Issued for Approval**  
Not for Construction



Client  
**Bernoth Holdings Pty Ltd**














Project  
**Hagan Street, Isaac Street and Ruthven Street North Toowoomba**






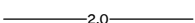
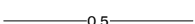




Drawing Title		
<b>Stormwater Drainage Layout Plan (Sheet 2 of 5)</b>		
Project No. <b>C_25023</b>	Drawing No. <b>401</b>	Revision <b>4</b>

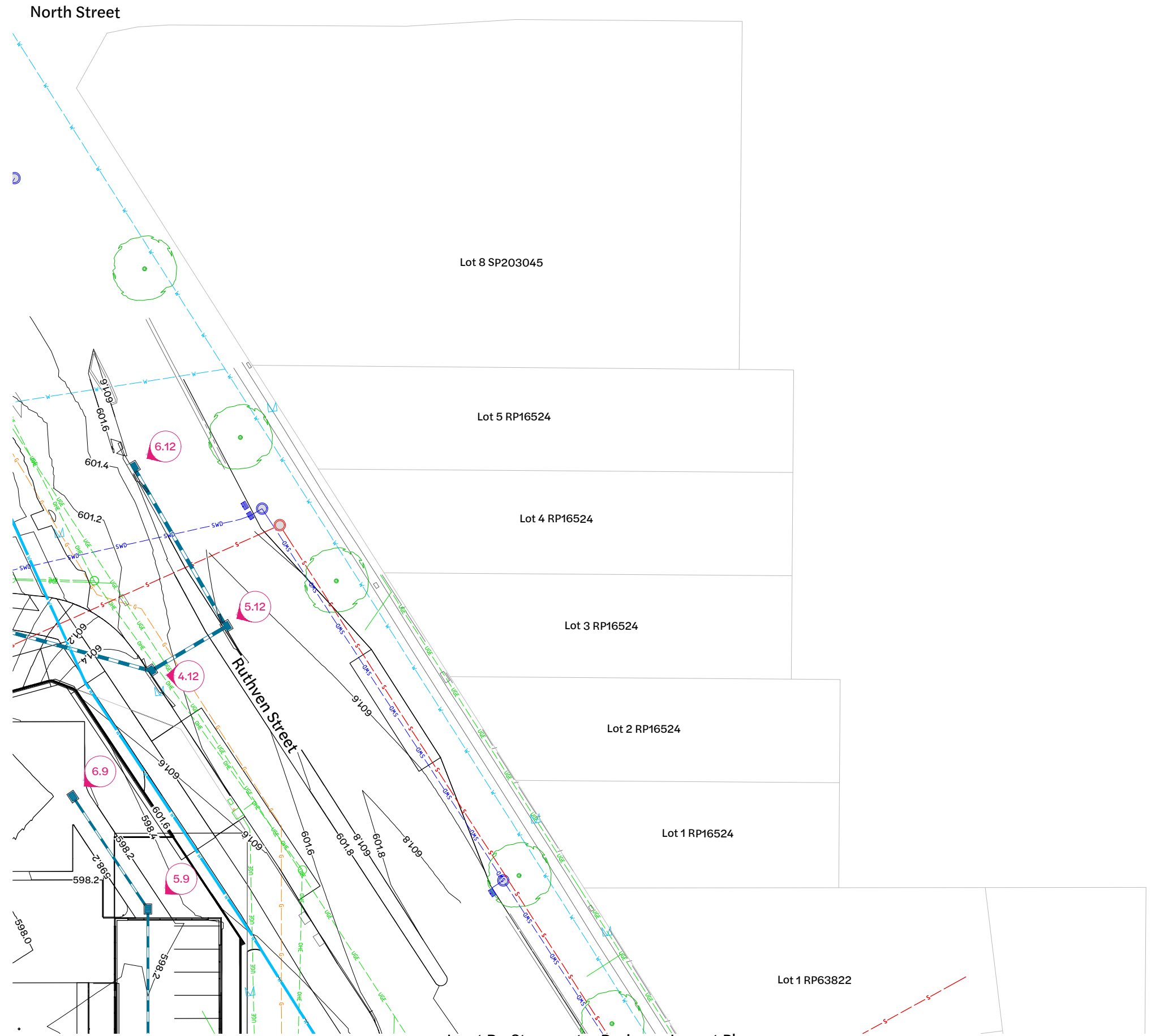
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**Existing Legend**

-  Property Boundary
-  Stormwater Drainage
-  Sewerage Reticulation
-  Water Reticulation
-  Gas
-  Overhead Electrical
-  Underground Telecommunications
-  Fence
-  Barrier Kerb & Channel
-  Footpath
-  Sewer Manhole
-  Stormwater Manhole
-  Tree Structural Root Zone (SRZ) by Arborist(to remain)

**Proposed Legend**

-  Site Boundary
-  Water Line
-  Sewer Line
-  2.0 Design Surface Contour Major
-  0.5 Design Surface Contour Minor
-  Stormwater Inlet Pit
-  Stormwater Drainage
-  Stormwater Gully Inlet
-  Structure Label



**Note:**  
 Available records provided for design. Contractor to confirm location and depth of existing services prior to commencement of works and notify superintendent should any discrepancies or non-conformances on clearances to other services become apparent.

**Inset B - Stormwater Drainage Layout Plan**  
 1:250 Scale

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	1.05.25	Issued for Approval	PD	NR
3	26.05.25	Updated Architectural Plans	NR	NR
4	19.12.25	Issued for Approval	PD	JE

QR Code	Status
	<b>Issued for Approval</b> Not for Construction

Scale
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Client
Bernoth Holdings Pty Ltd

Project
Hagan Street, Isaac Street and Ruthven Street North Toowoomba

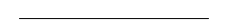


Disclaimer  
 All dimensions to be checked on site by contractor prior to construction. Use written dimensions only, do not scale.





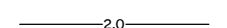






Drawing Title		
<b>Stormwater Drainage Layout Plan (Sheet 3 of 5)</b>		
Project No.	Drawing No.	Revision
C_25023	402	4

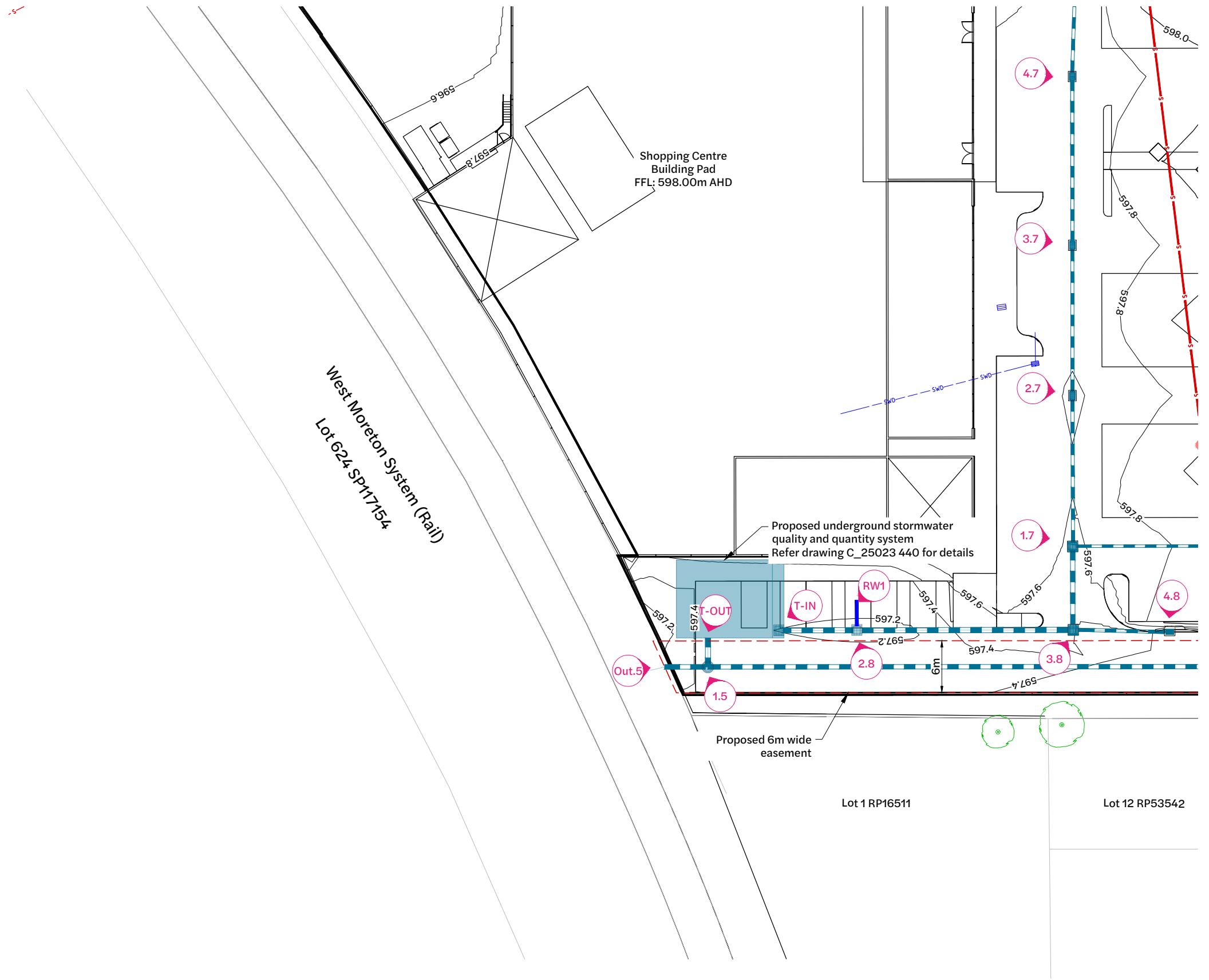
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**Existing Legend**

-  Property Boundary
-  Stormwater Drainage
-  Tree Structural Root Zone (SRZ) by Arborist (to remain)

**Proposed Legend**

-  Site Boundary
-  Sewer Line
-  Design Surface Contour Major
-  Design Surface Contour Minor
-  Easement
-  Stormwater Inlet Pit
-  Stormwater Drainage
-  Structure Label
-  Roofwater Line



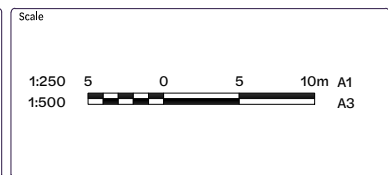
**Note:**  
 Available records provided for design. Contractor to confirm location and depth of existing services prior to commencement of works and notify superintendent should any discrepancies or non-conformances on clearances to other services become apparent.

**Inset C - Stormwater Drainage Layout Plan**  
 1:250 Scale

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	1.05.25	Issued for Approval	PD	NR
3	26.05.25	Updated Architectural Plans	NR	NR
4	19.12.25	Issued for Approval	PD	JE

QR Code

**Issued for Approval**  
 Not for Construction



Client  
 Bernoth Holdings Pty Ltd

Project  
 Hagan Street, Isaac Street and Ruthven Street North Toowoomba

Disclaimer  
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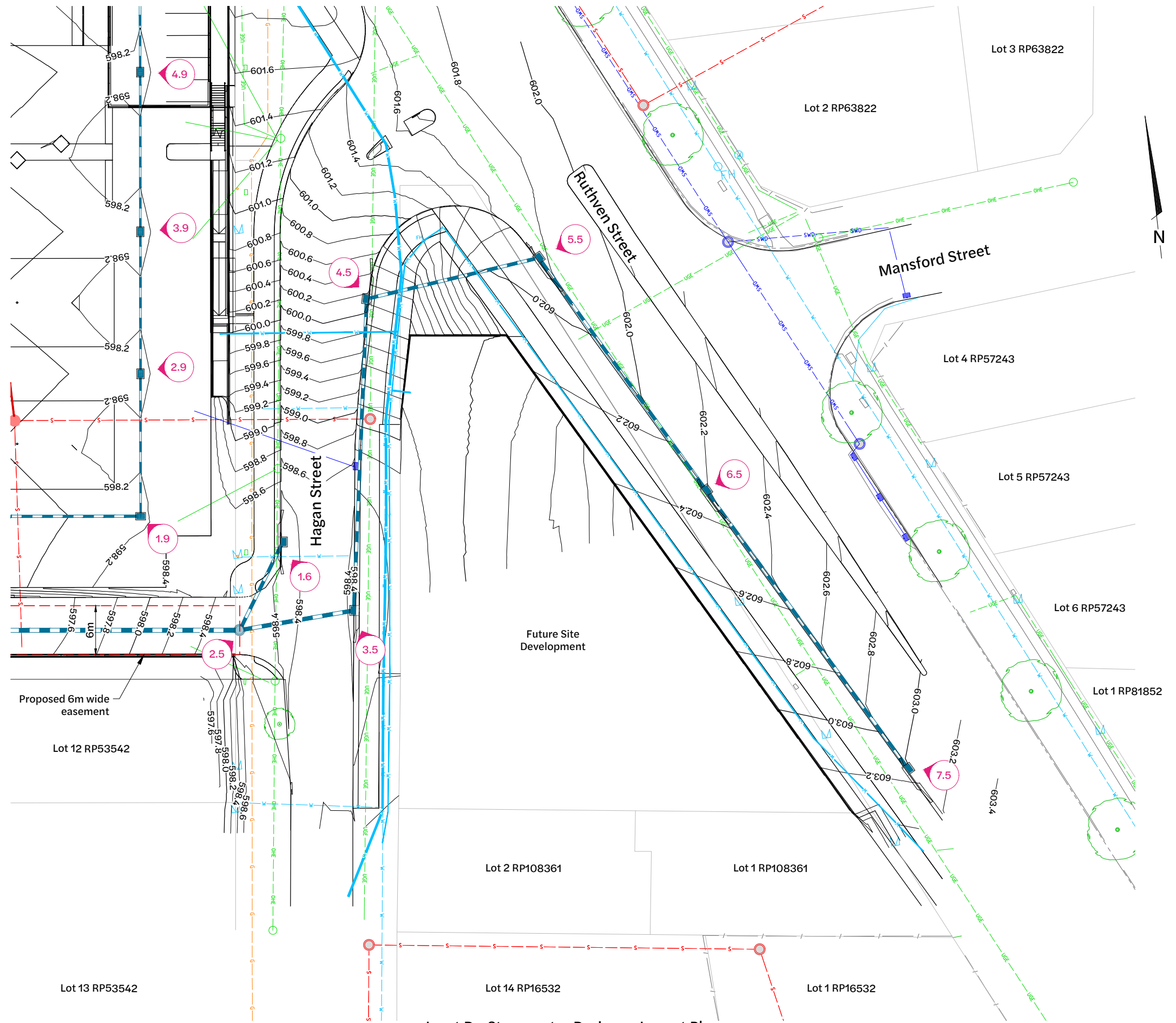
Drawing Title		
<b>Stormwater Drainage Layout Plan (Sheet 4 of 5)</b>		
Project No. C_25023	Drawing No. 403	Revision 4

**Existing Legend**

- Property Boundary
- Stormwater Drainage
- Sewerage Reticulation
- Water Reticulation
- Gas
- Overhead Electrical
- Underground Telecommunications
- Fence
- Barrier Kerb & Channel
- Footpath
- Sewer Manhole
- Stormwater Manhole
- Tree Structural Root Zone (SRZ) by Arborist(to remain)
- Structure Label

**Proposed Legend**

- Site Boundary
- Water Line
- Sewer Line
- Design Surface Contour Major
- Design Surface Contour Minor
- Easement
- Maintenance Hole
- Stormwater Inlet Pit
- Stormwater Drainage
- Stormwater Gully Inlet
- Structure Label



**Note:**  
 Available records provided for design. Contractor to confirm location and depth of existing services prior to commencement of works and notify superintendent should any discrepancies or non-conformances on clearances to other services become apparent.

**Inset D - Stormwater Drainage Layout Plan**  
 1:250 Scale

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	1.05.25	Issued for Approval	PD	NR
3	26.05.25	Updated Architectural Plans	NR	NR
4	19.12.25	Issued for Approval	PD	JE

QR Code	Status
	<b>Issued for Approval</b> Not for Construction

Scale
1:250 5 0 5 10m A1 1:500

Client
Bernoth Holdings Pty Ltd

Project
Hagan Street, Isaac Street and Ruthven Street North Toowoomba













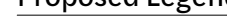
Project
Hagan Street, Isaac Street and Ruthven Street North Toowoomba




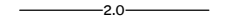
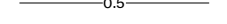





Drawing Title		
<b>Stormwater Drainage Layout Plan (Sheet 5 of 5)</b>		
Project No. C_25023	Drawing No. 404	Revision 4

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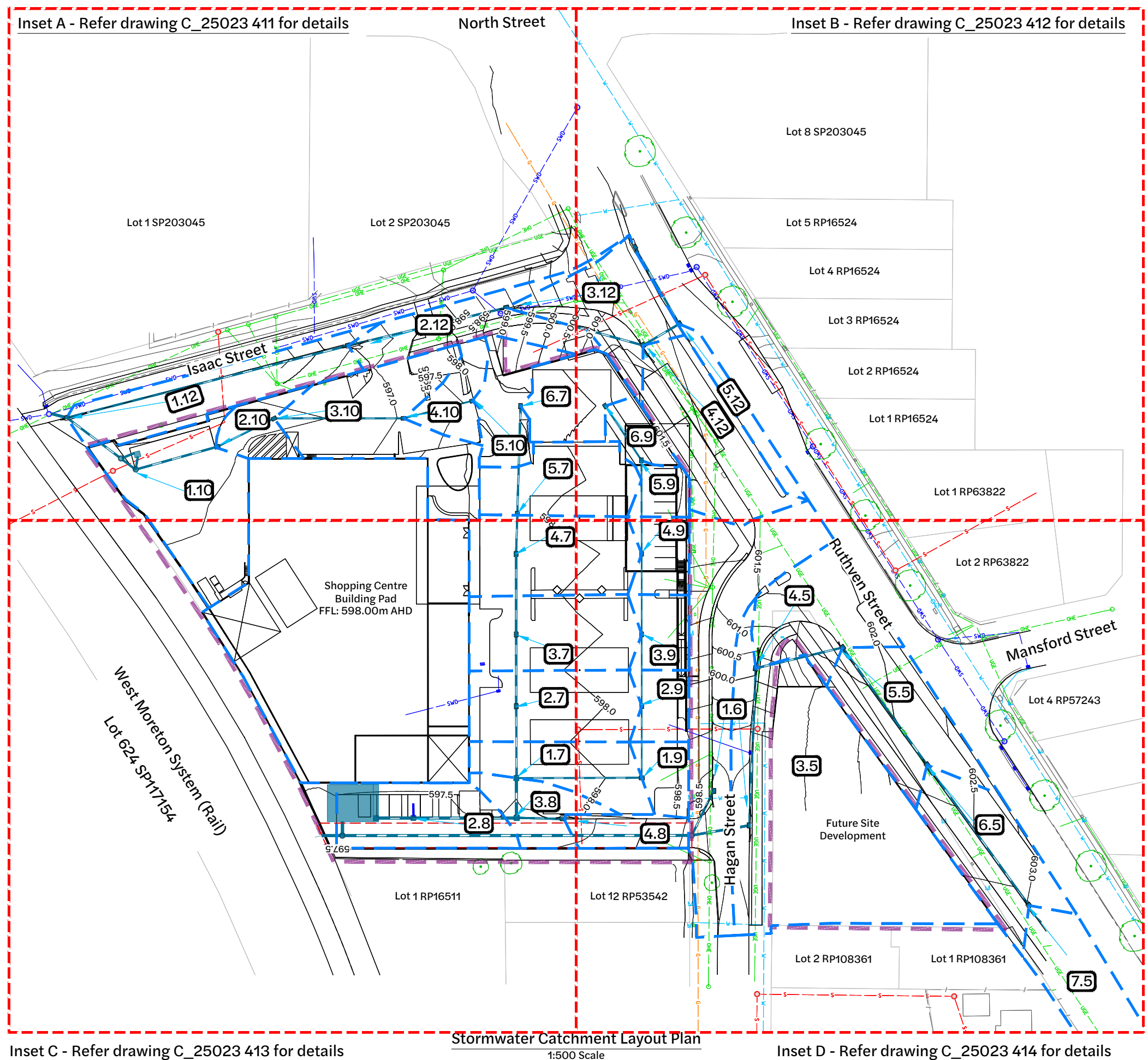
**Existing Legend**

-  Property Boundary
-  Stormwater Drainage
-  Sewerage Reticulation
-  Water Reticulation
-  Gas
-  Overhead Electrical
-  Underground Telecommunications
-  Fence
-  Barrier Kerb & Channel
-  Footpath
-  Sewer Manhole
-  Stormwater Manhole
-  Tree Structural Root Zone (SRZ) by Arborist(to remain)

**Proposed Legend**

-  Site Boundary
-  Design Surface Contour Major
-  Design Surface Contour Minor
-  Catchment Boundary
-  Catchment Label
-  Stormwater Inlet Pit
-  Drainage Flow Arrow
-  Easement

Developed Catchment Areas	
Catchment Name	Area (ha)
1.12	0.077
2.12	0.058
3.12	0.063
4.12	0.085
5.12	0.017
1.10	0.100
2.10	0.023
3.10	0.099
4.10	0.026
5.10	0.039
2.8	0.063
3.8	0.033
4.8	0.023
1.7	0.049
2.7	0.070
3.7	0.073
4.7	0.077
5.7	0.058
6.7	0.042
1.9	0.020
2.9	0.023
3.9	0.024
4.9	0.025
5.9	0.016
6.9	0.018
1.6	0.142
3.5	0.027
4.5	0.069
5.5	0.076
6.5	0.073
7.5	0.124
<b>Total</b>	<b>1.709</b>



Inset A - Refer drawing C\_25023 411 for details

Stormwater Catchment Layout Plan

1:500 Scale

Inset D - Refer drawing C\_25023 414 for details

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	1.05.25	Issued for Approval	PD	NR
3	26.05.25	Updated Architectural Plans	NR	NR
4	19.12.25	Issued for Approval	PD	JE

QR Code	Status
	<b>Issued for Approval</b> Not for Construction

Scale
1:500 10 5 0 10 20m A1 1:1000

Client
Bernoth Holdings Pty Ltd

Project
Hagan Street, Isaac Street and Ruthven Street North Toowoomba












Project
Hagan Street, Isaac Street and Ruthven Street North Toowoomba




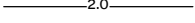
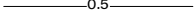




Drawing Title		
Stormwater Catchment Layout Plan (Sheet 1 of 5)		
Project No.	Drawing No.	Revision
C_25023	410	4

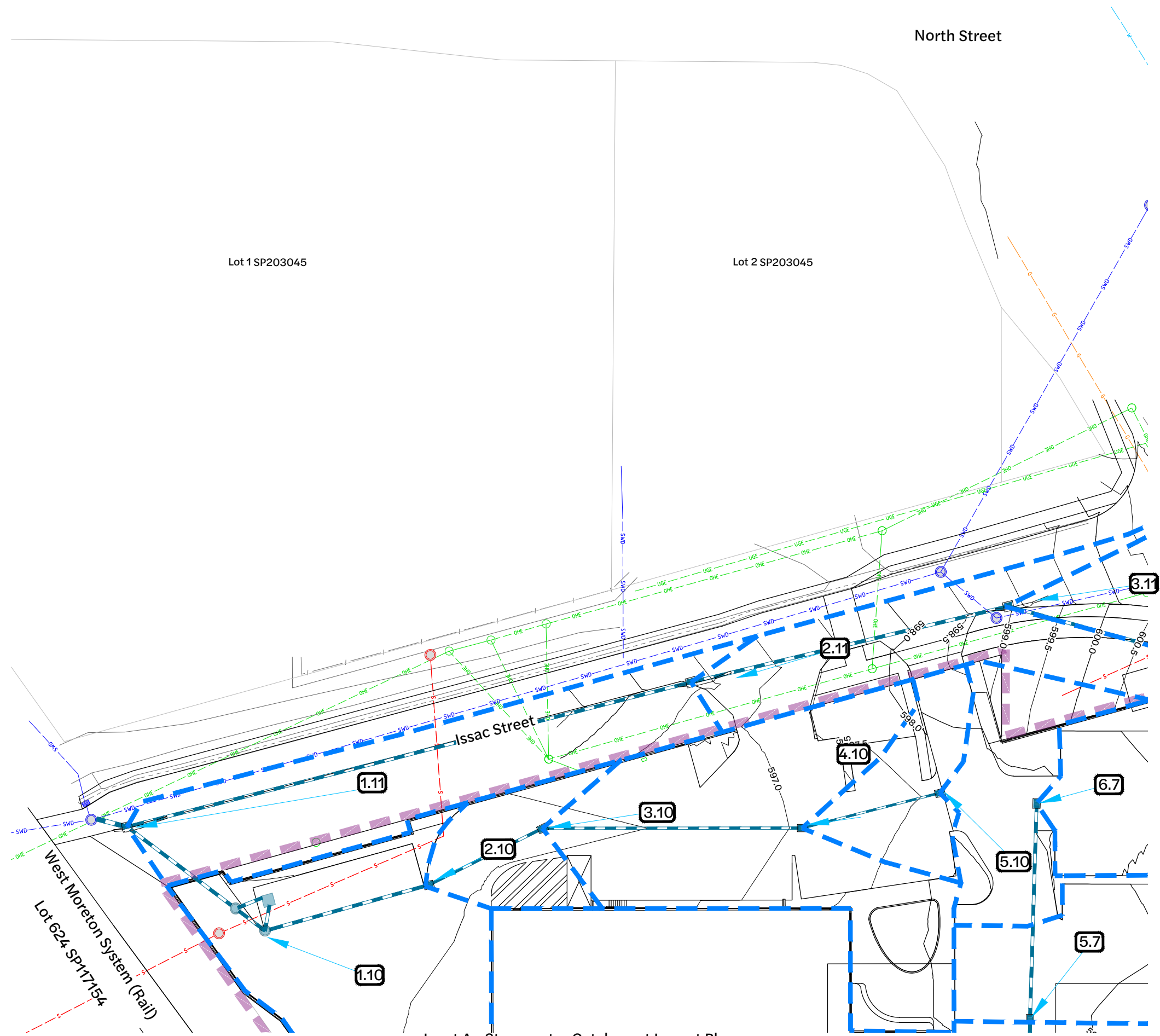
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**Existing Legend**

-  Property Boundary
-  Stormwater Drainage
-  Sewerage Reticulation
-  Gas
-  Overhead Electrical
-  Underground Telecommunications
-  Fence
-  Barrier Kerb & Channel
-  Footpath
-  Sewer Manhole
-  Stormwater Manhole

**Proposed Legend**

-  Site Boundary
-  Design Surface Contour Major
-  Design Surface Contour Minor
-  Catchment Boundary
-  Catchment Label
-  Stormwater Inlet Pit
-  Drainage Flow Arrow



**Inset A - Stormwater Catchment Layout Plan**  
1:250 Scale

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	1.05.25	Issued for Approval	PD	NR
3	26.05.25	Updated Architectural Plans	NR	NR
4	19.12.25	Issued for Approval	PD	JE

QR Code

**Issued for Approval**  
Not for Construction

Scale
1:250 5 0 5 10m A1 1:500

Client  
**Bernoth Holdings Pty Ltd**

Project  
**Hagan Street, Isaac Street and Ruthven Street North Toowoomba**














Disclaimer  
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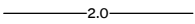
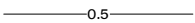




Drawing Title		
<b>Stormwater Catchment Layout Plan (Sheet 2 of 5)</b>		
Project No. <b>C_25023</b>	Drawing No. <b>411</b>	Revision <b>4</b>

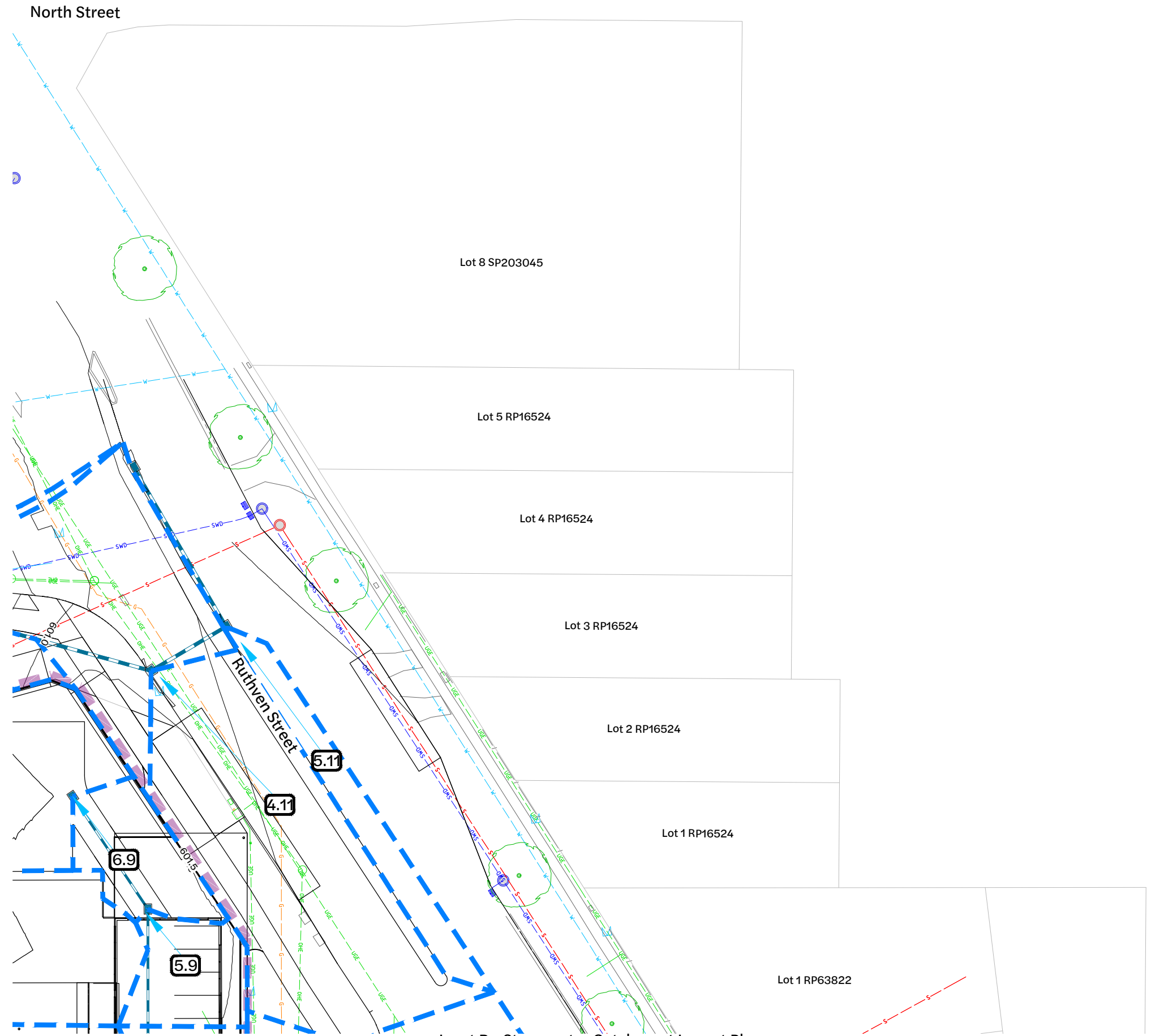
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**Existing Legend**

-  Property Boundary
-  Stormwater Drainage
-  Sewerage Reticulation
-  Water Reticulation
-  Gas
-  Overhead Electrical
-  Underground Telecommunications
-  Fence
-  Barrier Kerb & Channel
-  Footpath
-  Sewer Manhole
-  Stormwater Manhole
-  Tree Structural Root Zone (SRZ) by Arborist(to remain)

**Proposed Legend**

-  Site Boundary
-  Design Surface Contour Major
-  Design Surface Contour Minor
-  Catchment Boundary
-  Catchment Label
-  Stormwater Inlet Pit
-  Drainage Flow Arrow



**Inset B - Stormwater Catchment Layout Plan**  
1:250 Scale

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	1.05.25	Issued for Approval	PD	NR
3	26.05.25	Updated Architectural Plans	NR	NR
4	19.12.25	Issued for Approval	PD	JE

QR Code	Status
	<b>Issued for Approval</b> Not for Construction

Scale
1:250 5 0 5 10m A1 1:500

Client
Bernoth Holdings Pty Ltd

Project
Hagan Street, Isaac Street and Ruthven Street North Toowoomba




Project
Hagan Street, Isaac Street and Ruthven Street North Toowoomba




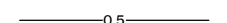
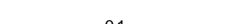




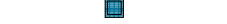
Drawing Title		
<b>Stormwater Catchment Layout Plan (Sheet 3 of 5)</b>		
Project No. C_25023	Drawing No. 412	Revision 4

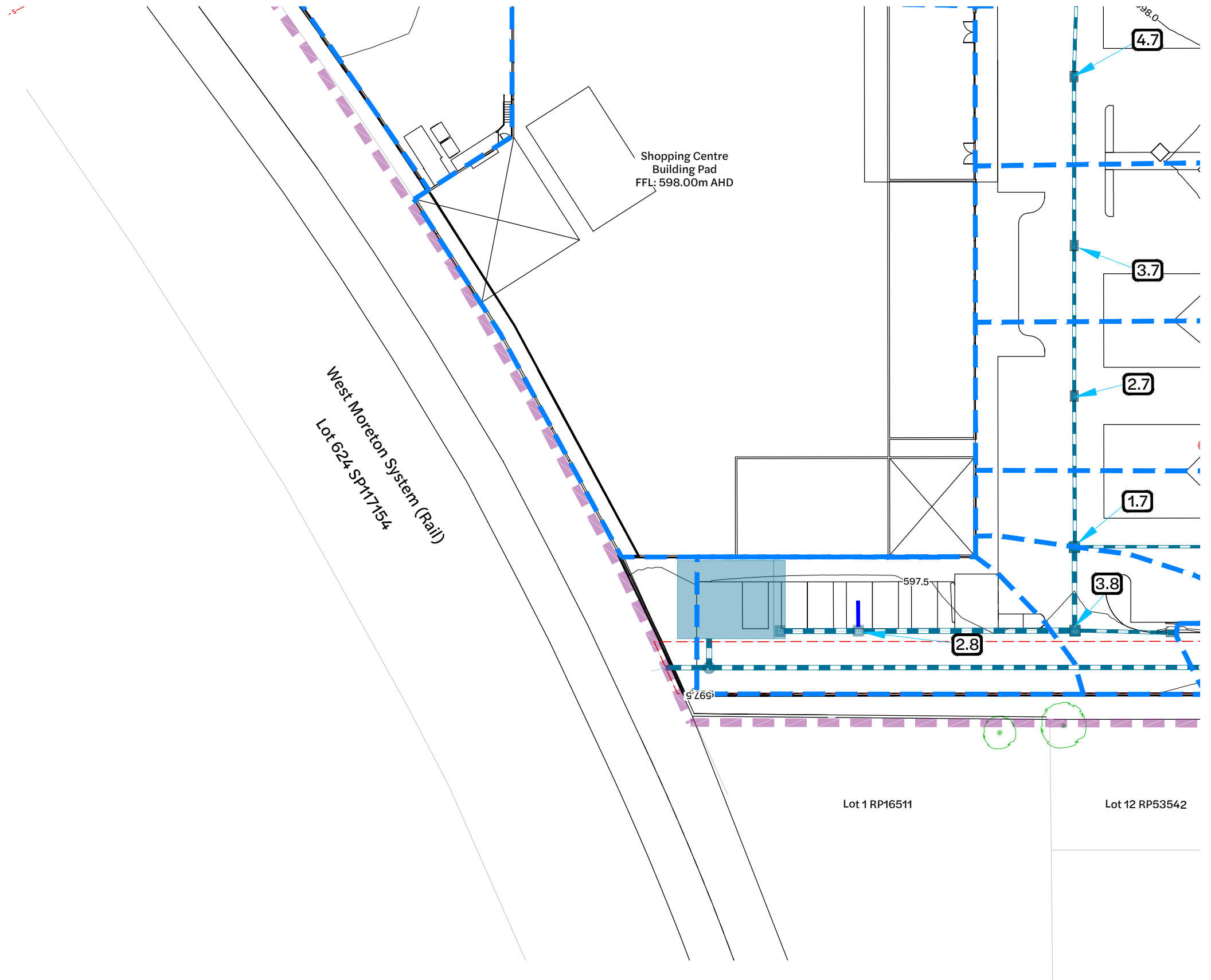
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**Existing Legend**

-  Property Boundary
-  Stormwater Drainage
-  Tree Structural Root Zone (SRZ) by Arborist (to remain)

**Proposed Legend**

-  Site Boundary
-  Design Surface Contour Major
-  Design Surface Contour Minor
-  Easement
-  Catchment Boundary
-  Catchment Label
-  Stormwater Inlet Pit
-  Drainage Flow Arrow



**Inset C - Stormwater Catchment Layout Plan**

1:250 Scale

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	1.05.25	Issued for Approval	PD	NR
3	26.05.25	Updated Architectural Plans	NR	NR
4	19.12.25	Issued for Approval	PD	JE

QR Code

**Issued for Approval**  
Not for Construction

Scale
1:250 5 0 5 10m A1 1:500

Client  
**Bernoth Holdings Pty Ltd**

Project  
**Hagan Street, Isaac Street and Ruthven Street North Toowoomba**

Disclaimer  
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Drawing Title		
<b>Stormwater Catchment Layout Plan (Sheet 4 of 5)</b>		
Project No. <b>C_25023</b>	Drawing No. <b>413</b>	Revision <b>4</b>

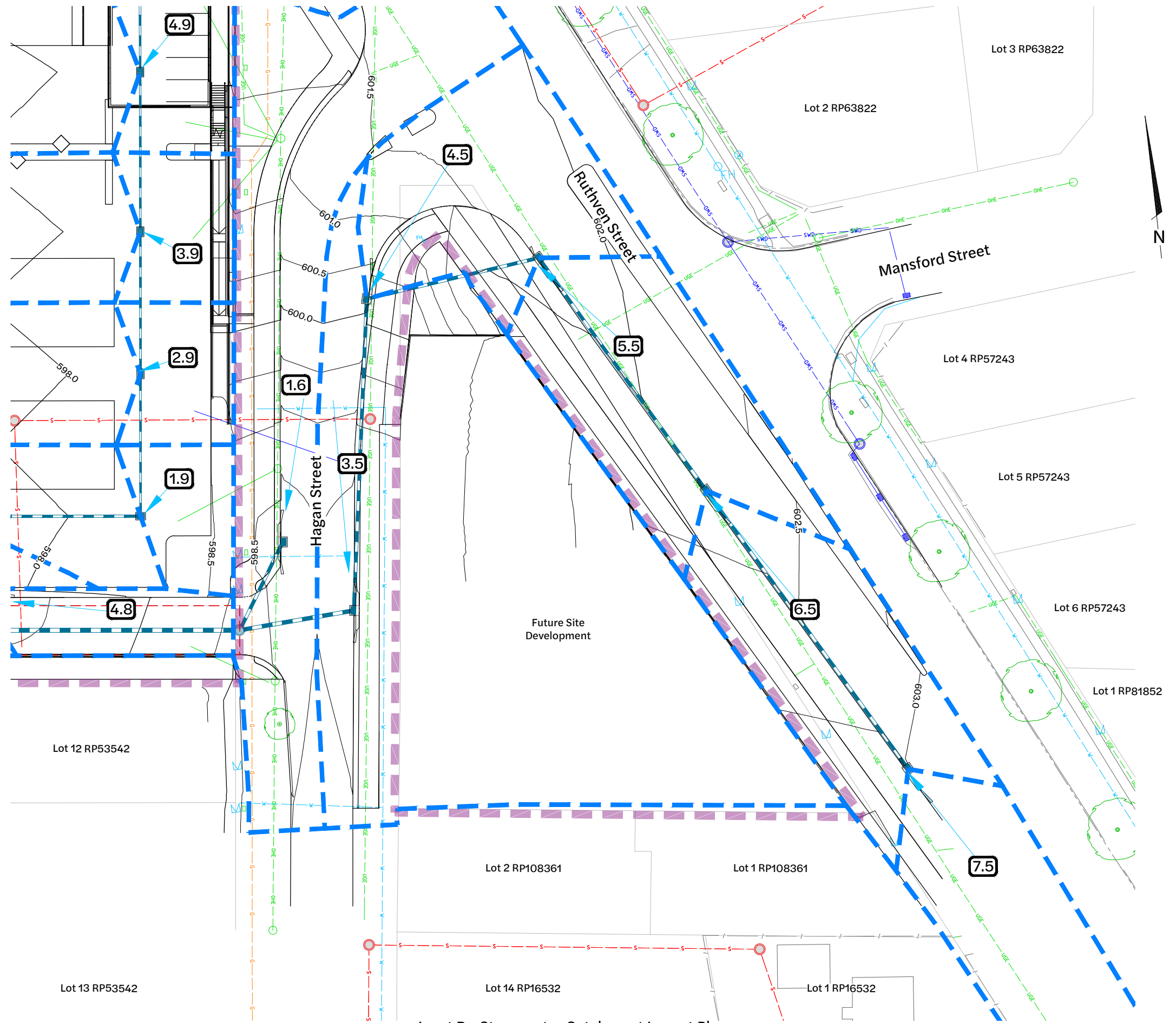
FILE G:\MY DRIVE\PROJECTS\C\_25023 - RUTHVEN STREET NORTH TOOWOOMBA\A\_ MODEL\AUTOCAD\C\_25023 413\_STORMWATER CATCHMENT LAYOUT PLAN.DWG LAST SAVED BY:JONIE

**Existing Legend**

- Property Boundary
- Stormwater Drainage
- Sewerage Reticulation
- Water Reticulation
- Gas
- Overhead Electrical
- Underground Telecommunications
- Fence
- Barrier Kerb & Channel
- Footpath
- Sewer Manhole
- Stormwater Manhole
- Tree Structural Root Zone (SRZ) by Arborist(to remain)

**Proposed Legend**

- Site Boundary
- Design Surface Contour Major
- Design Surface Contour Minor
- Easement
- Catchment Boundary
- Catchment Label
- Stormwater Inlet Pit
- Drainage Flow Arrow

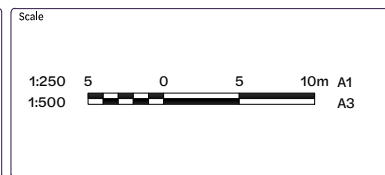


**Inset D - Stormwater Catchment Layout Plan**  
1:250 Scale

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	1.05.25	Issued for Approval	PD	NR
3	26.05.25	Updated Architectural Plans	NR	NR
4	19.12.25	Issued for Approval	PD	JE

QR Code

**Issued for Approval**  
Not for Construction



Client  
**Bernoth Holdings Pty Ltd**

Project  
**Hagan Street, Isaac Street and Ruthven Street North Toowoomba**

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Drawing Title		
<b>Stormwater Catchment Layout Plan (Sheet 5 of 5)</b>		
Project No. <b>C_25023</b>	Drawing No. <b>414</b>	Revision <b>4</b>

FILE G:\MY DRIVE\PROJECTS\C\_25023 - RUTHVEN STREET NORTH TOOWOOMBA\A\_01\AUTOCAD\C\_25023-410\_STORMWATER CATCHMENT LAYOUT PLAN.DWG LAST SAVED BY:JHONKE

**Existing Legend**

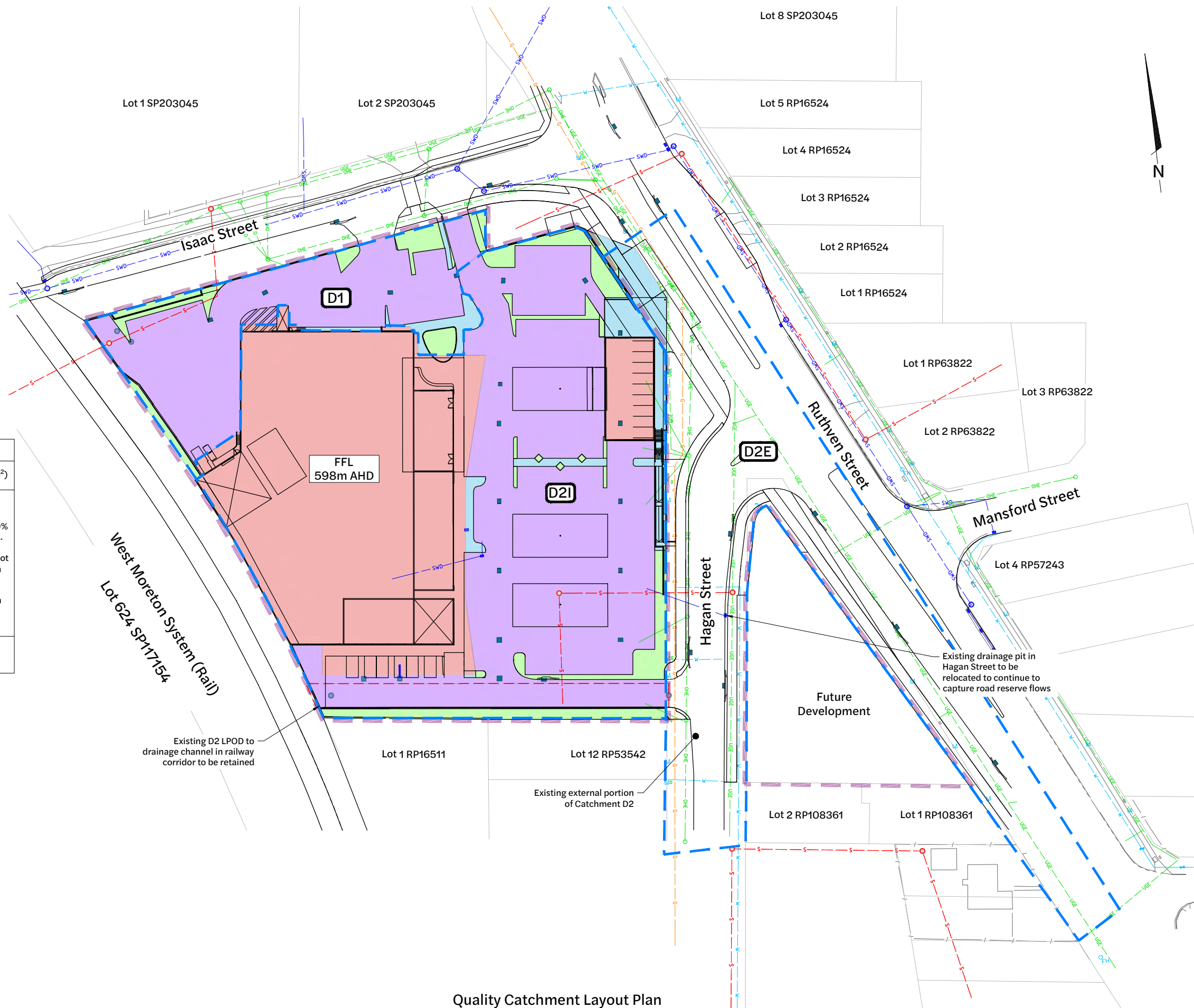
- Property Boundary
- Stormwater Drainage
- Sewerage Reticulation
- Water Reticulation
- Overhead Electrical
- Underground Telecommunications
- Fence
- Batter Top
- Barrier Kerb & Channel
- Footpath
- Sewer Manhole
- Stormwater Manhole

**Proposed Legend**

- Site Boundary
- Catchment Boundaries
- Catchment Label
- Stormwater Inlet Pit

Developed Catchment Area				
Legend	Description	D1 Area (m <sup>2</sup> )	D2I Area (m <sup>2</sup> )	D2E Area (m <sup>2</sup> )
	Roof	0	5,155	Assumed 60% impervious. External catchment not included in quality treatment calculation
	Hardstand Area	128	359	
	Driveway	1,959	4,779	
	Ground Level Pervious	344	670	
	<b>Total Area</b>	<b>2,431</b>	<b>10,963</b>	<b>6,020</b>

**Note:**  
Future development portion of the quality to be addressed as part of a subsequent Material Change of Use

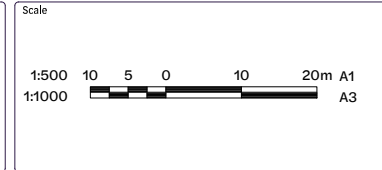


**Quality Catchment Layout Plan**  
1:500 Scale

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	28.04.25	Issued for Information (Update Architectural Plans)	PD	PD
3	26.05.25	Updated Architectural Plans	NR	NR
4	19.12.25	Issued for Approval	PD	JE

QR Code

Status  
**Issued for Approval**  
Not for Construction



Client  
Bernoth Holdings Pty Ltd

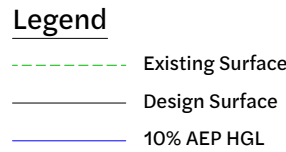
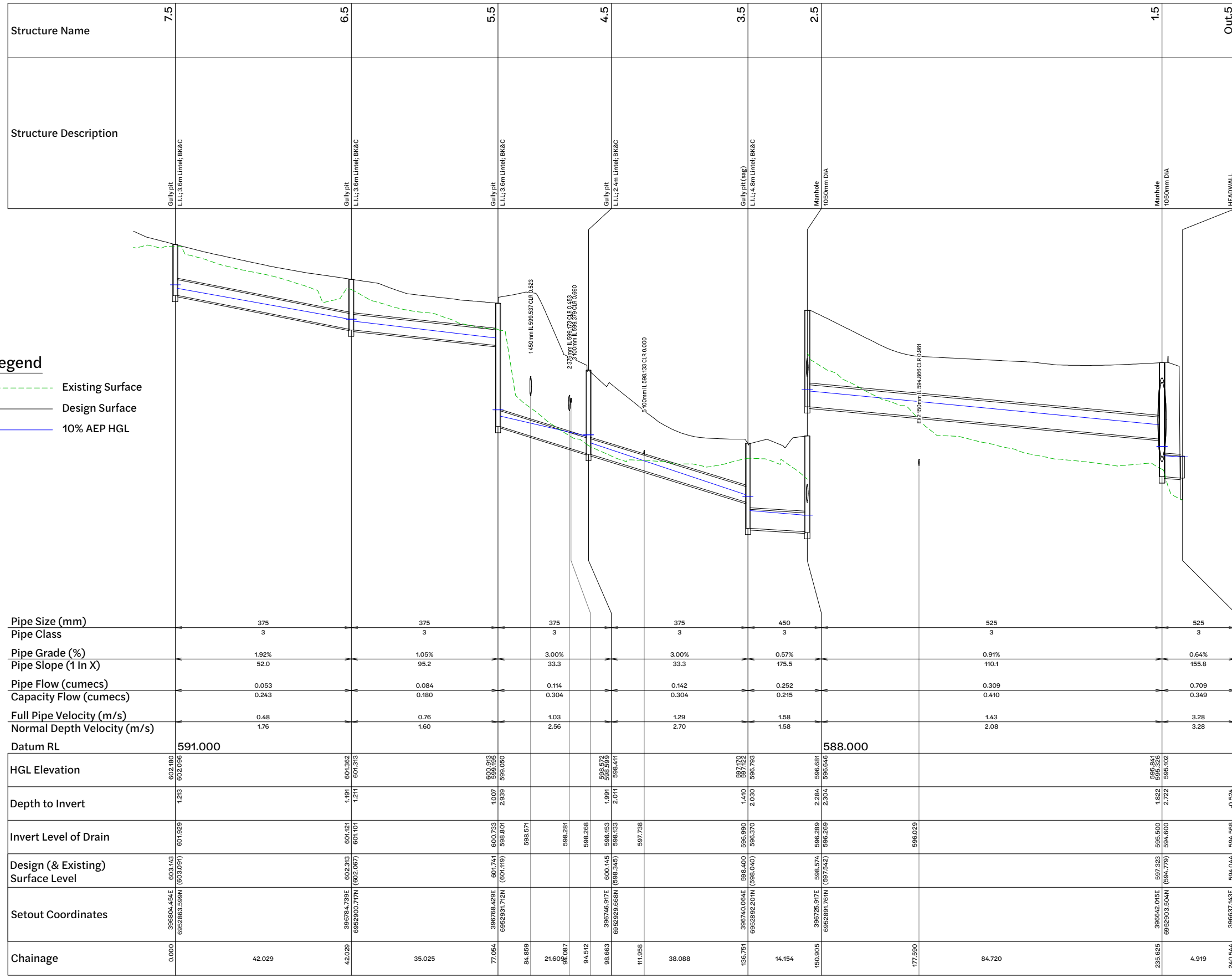
Project  
Hagan Street, Isaac Street  
and Ruthven Street  
North Toowoomba

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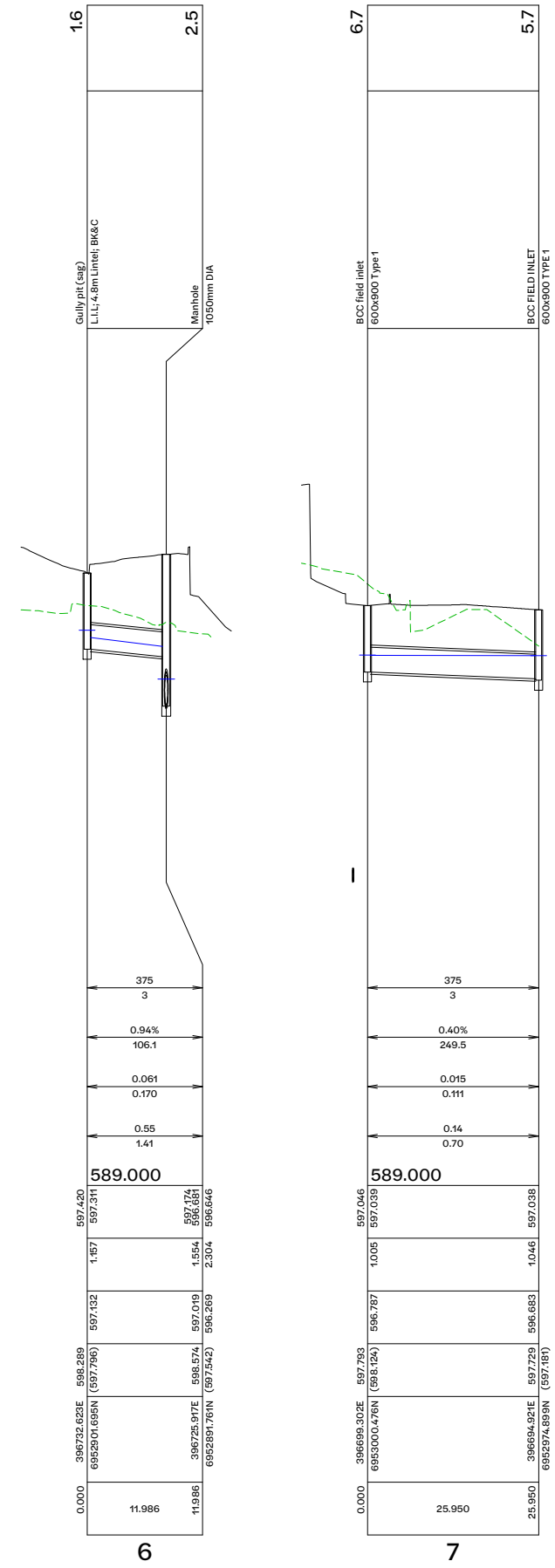


Drawing Title		
<b>Quality Catchment Layout Plan</b>		
Project No. <b>C_25023</b>	Drawing No. <b>415</b>	Revision <b>4</b>

FILE: G:\WP DRIVE\PROJECTS\C\_25023 - RUTHVEN STREET NORTH TOOWOOMBA\A1\_MODEL\AUTOCAD\C\_25023\_A15\_QUALITY CATCHMENT LAYOUT PLAN.DWG LAST SAVED BY: CONTE



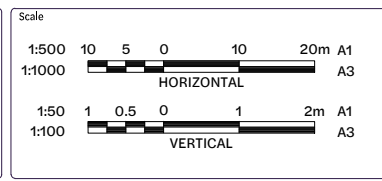
Pipe Size (mm)	375	375	375	375	450	525	525
Pipe Class	3	3	3	3	3	3	3
Pipe Grade (%)	1.92%	1.05%	3.00%	3.00%	0.57%	0.91%	0.64%
Pipe Slope (1 In X)	52.0	95.2	33.3	33.3	175.5	110.1	155.8
Pipe Flow (cumecs)	0.053	0.084	0.114	0.142	0.252	0.309	0.709
Capacity Flow (cumecs)	0.243	0.180	0.304	0.304	0.215	0.410	0.349
Full Pipe Velocity (m/s)	0.48	0.76	1.03	1.29	1.58	1.43	3.28
Normal Depth Velocity (m/s)	1.76	1.60	2.56	2.70	1.58	2.08	3.28
Datum RL	591.000				588.000		
HGL Elevation	602.180 602.096	601.362 601.313	600.910 599.193 599.050	598.572 598.356 598.411	597.170 597.162 596.793	595.84 595.326 595.102	595.044 594.568 594.044
Depth to Invert	1.23	1.191 1.211	1.007 2.939	1.991 2.011	1.410 2.030	1.822 2.722	-0.524 -0.524
Invert Level of Drain	601.929	601.121 601.101	600.733 598.801	598.571 598.281 598.268	596.289 596.269	595.600 594.600	594.568 594.044
Design (& Existing) Surface Level	603.143 603.091	602.313 602.067	601.741 601.119	600.145 598.345	598.974 597.542	597.323 594.710	594.044 594.044
Setout Coordinates	396804.454E 6952863.598N	395784.795E 6952900.717N	396768.429E 6952921.712N	396746.917E 6952929.668N	396725.917E 6952894.761N	396642.015E 6952903.504N	396637.143E 6952904.186N
Chainage	0.000	42.029	77.054	84.859	21.609 94.087	94.512	98.663
					11.958	38.088	136.751
					14.154	160.905	177.590
							84.720
							218.625
							238.625
							4.919
							240.544



Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	26.05.25	Updated Architectural Plans	NR	NR
3	19.12.25	Issued for Approval	PD	JE

QR Code

Status  
**Issued for Approval**  
Not for Construction



Client  
Bernoth Holdings Pty Ltd

Project  
Hagan Street, Isaac Street  
and Ruthven Street  
North Toowoomba



Drawing Title  
**Stormwater Drainage Long Sections (Sheet 1 of 4)**

Project No. C\_25023  
Drawing No. 420  
Revision 3

FILE G:\MYP DRIVE\PROJECTS\C\_25023 - RUTHVEN STREET NORTH TOOWOOMBA\A MODEL\AUTOCAD\C\_25023\_420\_STORMWATER DRAINAGE LONG SECTIONS\LONG SECTIONS SHEET 1.DWG

Structure Name	5.7	4.7	3.7	2.7	1.7	3.8
Structure Description	BCC FIELD INLET 600x900 TYPE 1	Field Inlet 900x900 flush grate	Field Inlet 900x900 flush grate	Field Inlet 900x900 flush grate	BCC FIELD INLET 600x900 TYPE 1	BCC FIELD INLET 600x900 TYPE 1
Pipe Size (mm)	375	375	375	375	525	
Pipe Class	3	3	3	3	3	
Pipe Grade (%)	0.41%	0.41%	0.40%	0.40%	1.05%	
Pipe Slope (1 In X)	246.9	246.8	247.9	248.6	94.9	
Pipe Flow (cumecs)	0.033	0.066	0.098	0.130	0.194	
Capacity Flow (cumecs)	0.112	0.112	0.111	0.111	0.442	
Full Pipe Velocity (m/s)	0.30	0.60	0.89	1.18	0.90	
Normal Depth Velocity (m/s)	0.88	1.05	1.14	1.18	1.97	
Datum RL	588.000					
HGL Elevation	596.683 597.038 597.026	596.623 597.023 596.986	596.524 596.989 596.896	596.434 596.791 596.842	596.344 596.647 596.620	596.499 596.514 596.437
Depth to Invert	1.046 1.066	1.031 1.051	1.091 1.111	1.137 1.157	1.227 1.247	1.205 1.292
Invert Level of Drain	596.683 596.663	596.623 596.603	596.524 596.504	596.434 596.414	596.344 596.324	596.222 596.135
Design (& Existing) Surface Level	597.729 597.181	597.654 597.101	597.615 597.107	597.572 597.022	597.572 597.022	597.428 596.462
Setout Coordinates	396694.921E 6952974.899N	396693.254E 6952974.899N	396690.588E 6952945.852N	396688.199E 6952925.699N	396685.703E 6952914.398N	396664.477E 69529018.381N
Chainage	25.950 9.876	35.825 19.500	55.326 17.350	72.676 17.400	90.076 9.682	99.798

LINE 7

Structure Name	4.8	3.8	2.8	1.8	1.5
Structure Description	BCC field inlet 600x900 Type 1	BCC FIELD INLET 600x900 TYPE 1	Field Inlet 600x900 flush grate	Field Inlet 600x900 flush grate	Manhole 1050mm DIA
Pipe Size (mm)	375	600	600	1800	
Pipe Class	3	3	3	3	
Pipe Grade (%)	1.53%	1.00%	1.00%	0.10%	
Pipe Slope (1 In X)	65.6	100.0	100.0	1000.0	
Pipe Flow (cumecs)	0.008	0.218	0.416	0.415	
Capacity Flow (cumecs)	0.217	0.614	0.614	3.637	
Full Pipe Velocity (m/s)	0.07	0.77	1.47	0.16	
Normal Depth Velocity (m/s)	0.92	1.99	2.33	0.95	
Datum RL	588.000				
HGL Elevation	596.523 596.521	596.499 596.494 596.437	596.392 596.288	596.197 595.423	595.326 595.326 595.102
Depth to Invert	0.963	1.297 1.292	1.287 1.307	1.422 2.129	2.262 2.222
Invert Level of Drain	596.460	596.200 596.135	595.885 595.885	595.375 595.069	595.060 594.600
Design (& Existing) Surface Level	597.424 595.682	597.428 595.462	597.173 594.980	597.167 594.393	597.323 594.779
Setout Coordinates	396695.480E 6952900.065N	396684.477E 69529018.381N	396669.716E 6952903.290N	396650.788E 6952906.540N	396642.015E 6952903.504N
Chainage	0.000 11.145	11.145 25.000	36.145 9.015	45.160 9.284	54.444

LINE 8

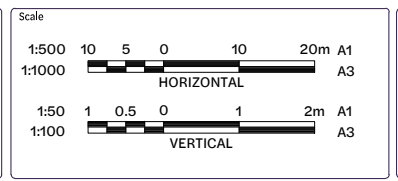
Structure Name	6.9	5.9	4.9	3.9	2.9	1.9	1.7
Structure Description	BCC field inlet 600x900 Type 1	BCC field inlet 600x900 Type 1	BCC field inlet 600x900 Type 1	BCC field inlet 600x900 Type 1	BCC field inlet 600x900 Type 1	BCC field inlet 600x900 Type 1	BCC FIELD INLET 600x900 TYPE 1
Pipe Size (mm)	225	225	225	225	225	300	
Pipe Class	3	3	3	3	3	3	
Pipe Grade (%)	1.01%	0.50%	0.50%	0.50%	0.50%	0.50%	
Pipe Slope (1 In X)	99.4	198.7	199.0	199.4	200.0	200.0	
Pipe Flow (cumecs)	0.007	0.012	0.020	0.030	0.039	0.047	
Capacity Flow (cumecs)	0.045	0.032	0.032	0.032	0.032	0.068	
Full Pipe Velocity (m/s)	0.17	0.30	0.50	0.74	0.98	0.67	
Normal Depth Velocity (m/s)	0.82	0.75	0.85	0.91	0.98	1.04	
Datum RL	588.000						
HGL Elevation	597.254 597.243	597.159 597.150	597.137 597.114	597.075 597.032	596.997 596.895	596.767 596.710	596.647 596.620
Depth to Invert	0.846	1.132 1.152	1.290 1.310	1.408 1.428	1.514 1.534	1.624 1.641	1.182 1.247
Invert Level of Drain	597.176	597.017 596.997	596.883 596.863	596.765 596.745	596.658 596.638	596.551 596.531	596.456 596.324
Design (& Existing) Surface Level	598.022 599.235	598.149 598.245	598.173 598.179	598.173 597.477	598.173 596.775	598.173 596.672	597.572 596.644
Setout Coordinates	396719.633E 6952997.639N	396726.490E 6952983.399N	396723.363E 6952980.951N	396720.667E 6952974.649N	396716.267E 6952974.465N	396714.896E 6952972.239N	396685.703E 6952914.398N
Chainage	0.000 15.806	15.806 22.654	38.460 19.500	57.960 17.350	75.310 8.0647	92.710 17.400	123.110 9.682

LINE 9

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	26.05.25	Updated Architectural Plans	NR	NR
3	19.12.25	Issued for Approval	PD	JE

QR Code

Status  
**Issued for Approval**  
Not for Construction



Client  
**Berthon Holdings Pty Ltd**

Project  
**Hagan Street, Isaac Street and Ruthven Street North Toowoomba**

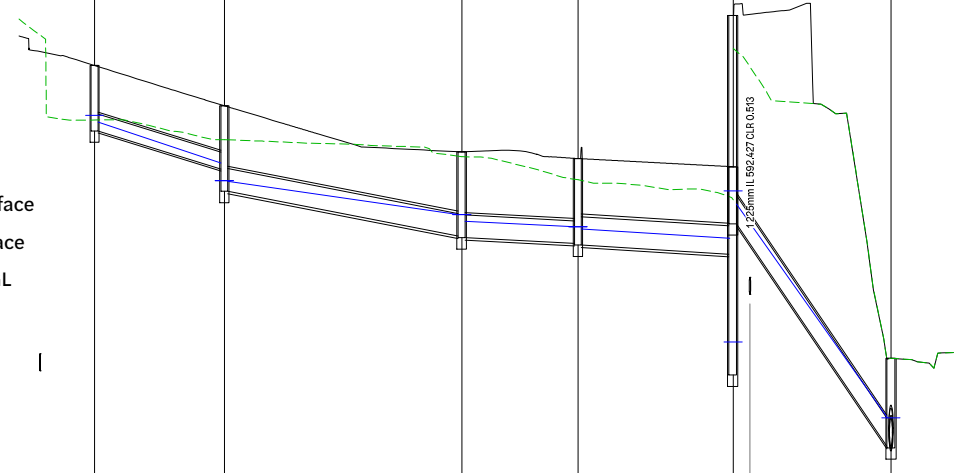


Drawing Title		
<b>Stormwater Drainage Long Sections (Sheet 2 of 4)</b>		
Project No. <b>C_25023</b>	Drawing No. <b>421</b>	Revision <b>3</b>

Structure Name	5.10	4.10	3.10	2.10	1.10	1.12
Structure Description	BCC field inlet 600x900 Type1	BCC field inlet 600x900 Type1	BCC field inlet 600x900 Type1	BCC field inlet 600x900 Type1	1050 Dia MH with 900x900 flush grate	Gully pit L.L.I.: 3.6m Linel; BK&C

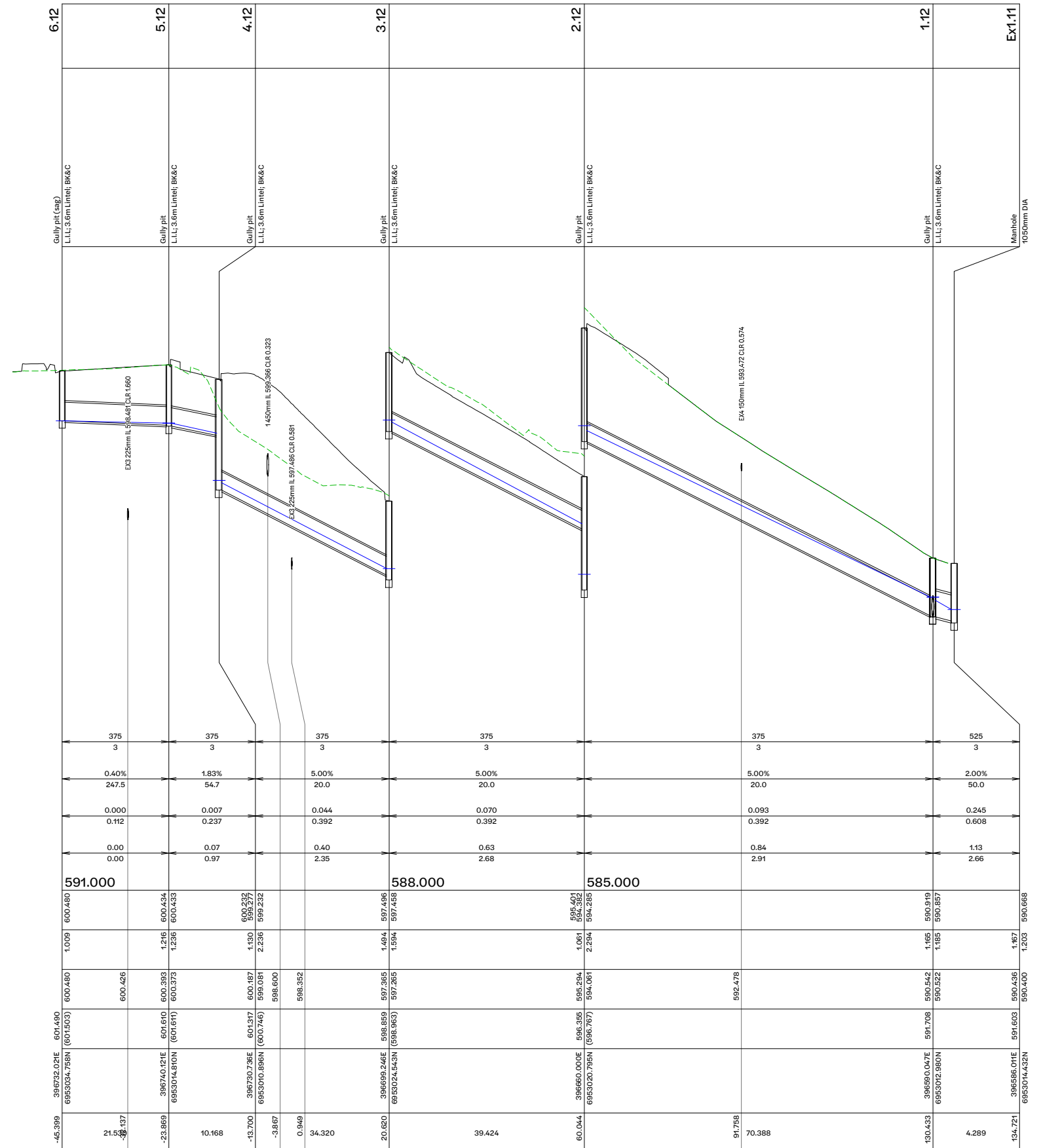
**Legend**

- Existing Surface
- Design Surface
- 10% AEP HGL



Pipe Size (mm)	225	300	300	375	375	375
Pipe Class	3	3	3	3	3	3
Pipe Grade (%)	2.93%	1.89%	0.50%	0.59%	14.10%	
Pipe Slope (1 In X)	34.1	52.9	199.6	169.7	7.1	
Pipe Flow (cumecs)	0.020	0.029	0.060	0.083	0.125	
Capacity Flow (cumecs)	0.077	0.133	0.068	0.135	0.659	
Full Pipe Velocity (m/s)	0.50	0.41	0.85	0.75	1.14	
Normal Depth Velocity (m/s)	1.63	1.50	1.09	1.28	4.59	
Datum RL	587.000			585.000		
HGL Elevation	596.920 596.830	596.287 596.058	595.607 595.519	595.234 593.746	595.919 590.807	
Depth to Invert	0.867	0.837 1.130	1.144 1.134	1.123 1.143	1.165 1.185	1.203
Invert Level of Drain	596.713	596.209 595.916	595.232 595.302	595.225 595.205	590.542 590.522	
Design (& Existing) Surface Level	597.580 (596.859)	597.046 (596.598)	596.497 (596.372)	595.349 (596.067)	594.708 (594.542)	
Setout Coordinates	396687.915E 6953003.364N	396670.898E 6953004.422N	396639.740E 6953005.816N	396625.160E 6953000.952N	396590.047E 6953072.980N	
Chainage	0.000	17.181	31.400	48.582	63.950	86.696

LINE 10

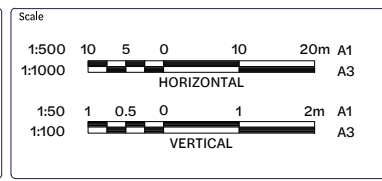


LINE 12

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	26.05.25	Updated Architectural Plans	NR	NR
3	19.12.25	Issued for Approval	PD	JE

QR Code	Status
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**Issued for Approval**  
Not for Construction



Client  
**Bernoth Holdings Pty Ltd**

Project  
**Hagan Street, Isaac Street and Ruthven Street North Toowoomba**



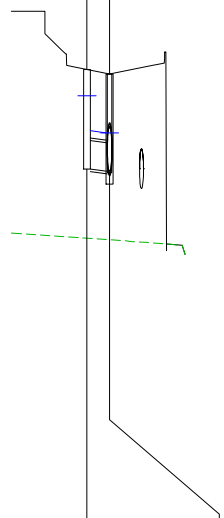
Drawing Title <b>Stormwater Drainage Long Sections (Sheet 3 of 4)</b>		
Project No. <b>C_25023</b>	Drawing No. <b>422</b>	Revision <b>3</b>

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Structure Name	RW1	2.8
Structure Description	Roof water stub Field inlet 600x900 flush grate	

**Legend**

- - - Existing Surface
- Design Surface
- 10% AEP HGL



Pipe Size (mm)	375
Pipe Class	3
Pipe Grade (%)	1.00%
Pipe Slope (1 In X)	100.0
Pipe Flow (cumecs)	0.174
Capacity Flow (cumecs)	0.175
Full Pipe Velocity (m/s)	1.57
Normal Depth Velocity (m/s)	1.81
Datum RL	588.000
HGL Elevation	596.883 596.422
Depth to Invert	1.317 1.287 1.307
Invert Level of Drain	595.915 595.895 595.865
Design (& Existing) Surface Level	597.233 597.173 594.880
Setout Coordinates	396660.531E 6952905.260N (595.000) 396659.716E 6952905.230N (594.880)
Chainage	0.000 2.999

LINE RW1

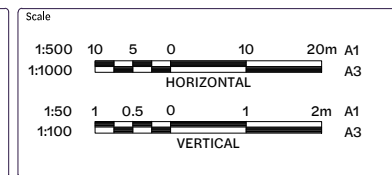
**Reference Point Location for Drainage Structures**

Structure Type	Horizontal Control (Reference Point Location)	Vertical Control (Reference Level)
Manhole	C of Main Shaft	Finished Surface Level
Gully Pit	Centre of Structure	Kerb Lip Level
Headwall	Intersection of Headwall Face and Pipe C	Top of Headwall

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	26.05.25	Updated Architectural Plans	NR	NR
3	19.12.25	Issued for Approval	PD	JE

QR Code

Status  
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Not for Construction**



Client  
Bernoth Holdings Pty Ltd

Project  
Hagan Street, Isaac Street  
and Ruthven Street  
North Toowoomba

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Drawing Title <b>Stormwater Drainage Long Sections (Sheet 4 of 4)</b>		
Project No. <b>C_25023</b>	Drawing No. <b>423</b>	Revision <b>3</b>



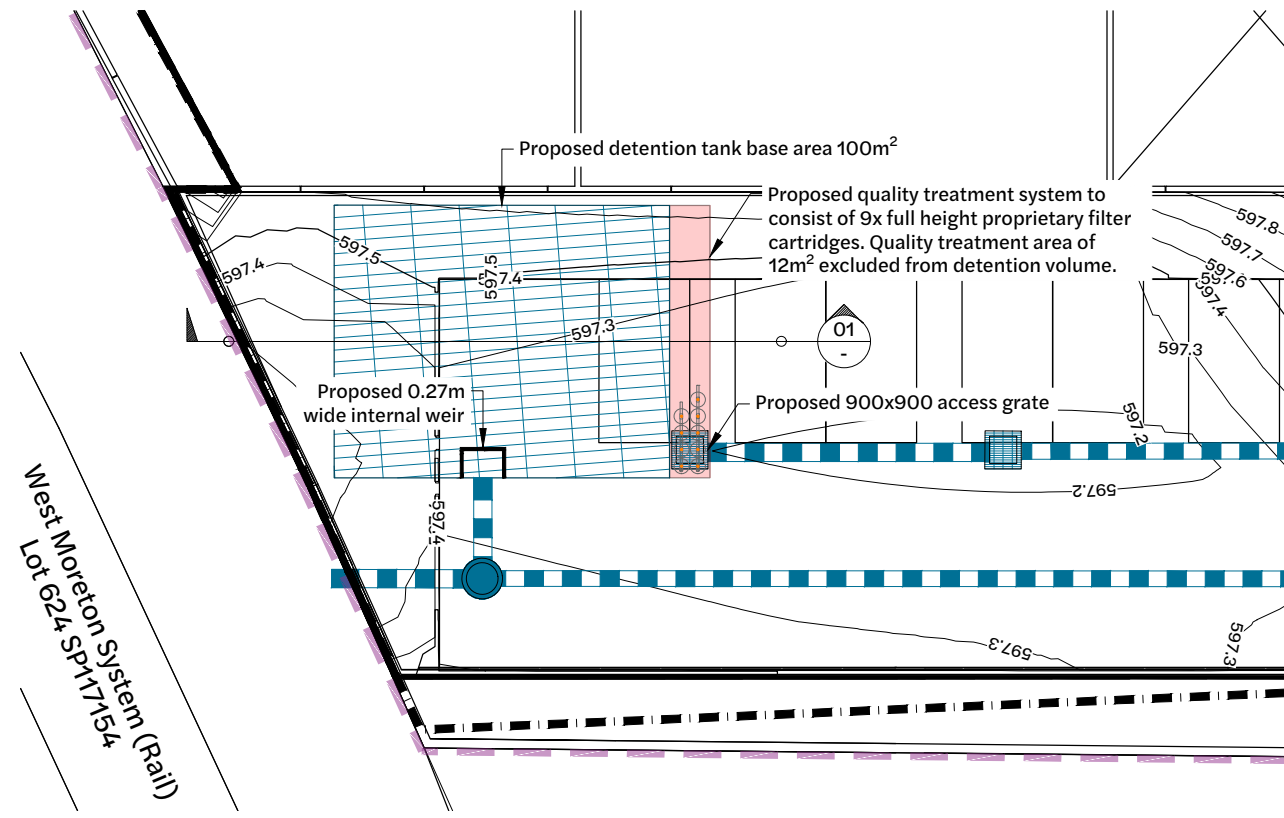


**Existing Legend**

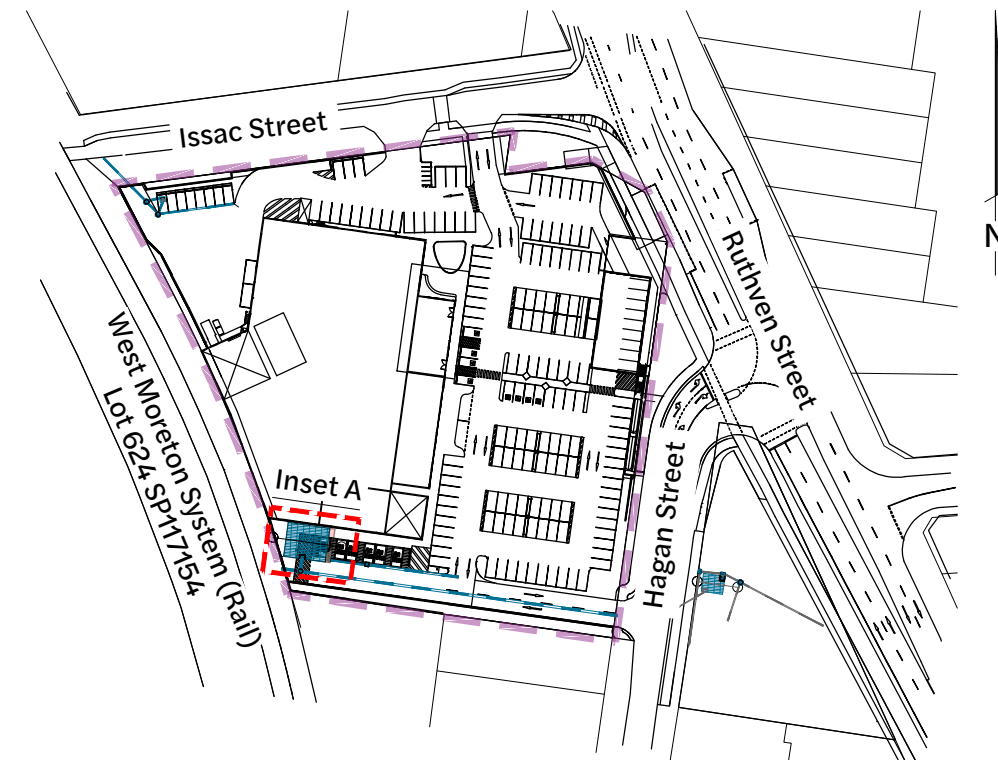
- Property Boundary
- Existing Surface

**Proposed Legend**

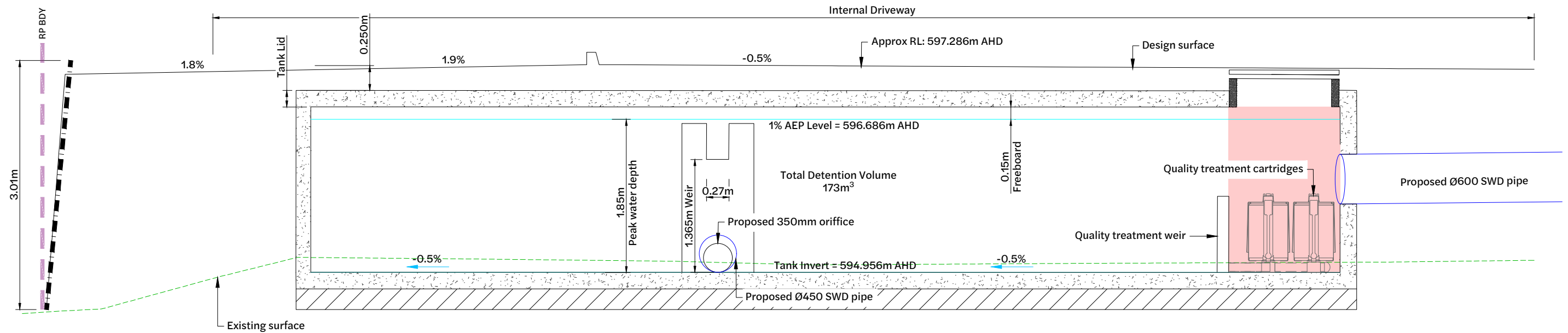
- Site Boundary
- Design Surface Contour Major
- Design Surface Contour Minor
- Retaining wall
- Stormwater Inlet Pit
- Stormwater Drainage
- Flow Arrow



**Inset A - Stormwater Structure Detail Plan View**  
1:125 Scale



**Locality Plan**  
1:1000 Scale

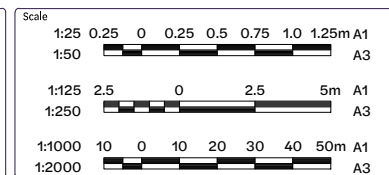


**Section O1 - Stormwater Structure Detail Section View**  
1:25 Scale

Revision	Date	Issue Details	Drawn	Designed
1	1.05.25	Issued for Information	PD	NR
2	19.12.25	Issued for Approval	PD	JE

QR Code

**Issued for Approval**  
Not for Construction



Client  
**Bernoth Holdings Pty Ltd**

Project  
**Hagan Street, Isaac Street and Ruthven Street North Toowoomba**



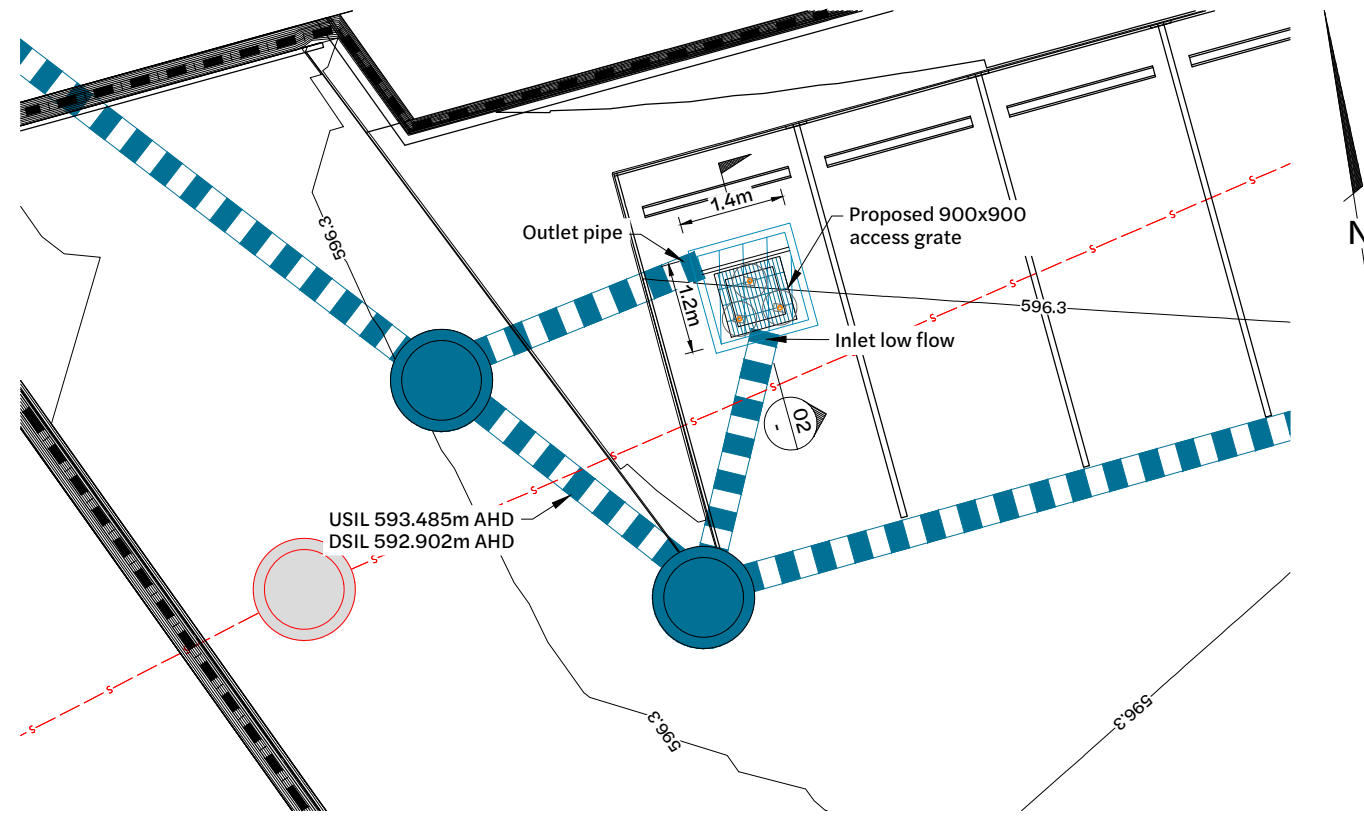
Drawing Title		
<b>Stormwater Structure Details (Sheet 1 of 2)</b>		
Project No.	Drawing No.	Revision
C_25023	440	2

**Existing Legend**

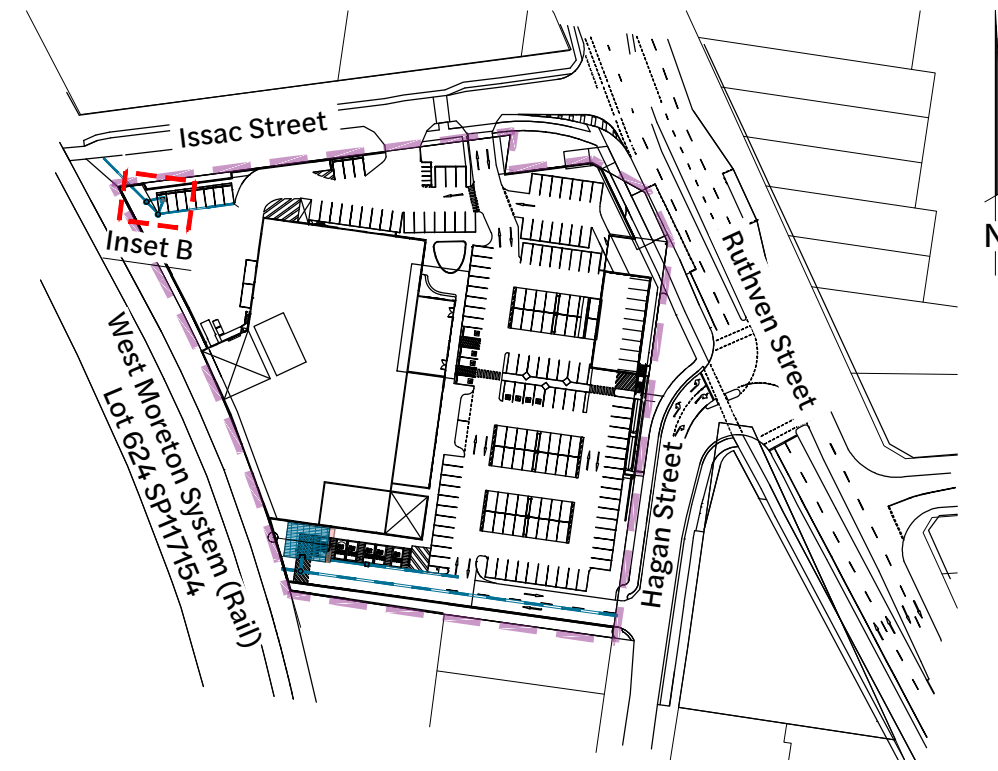
- Property Boundary
- Existing Surface

**Proposed Legend**

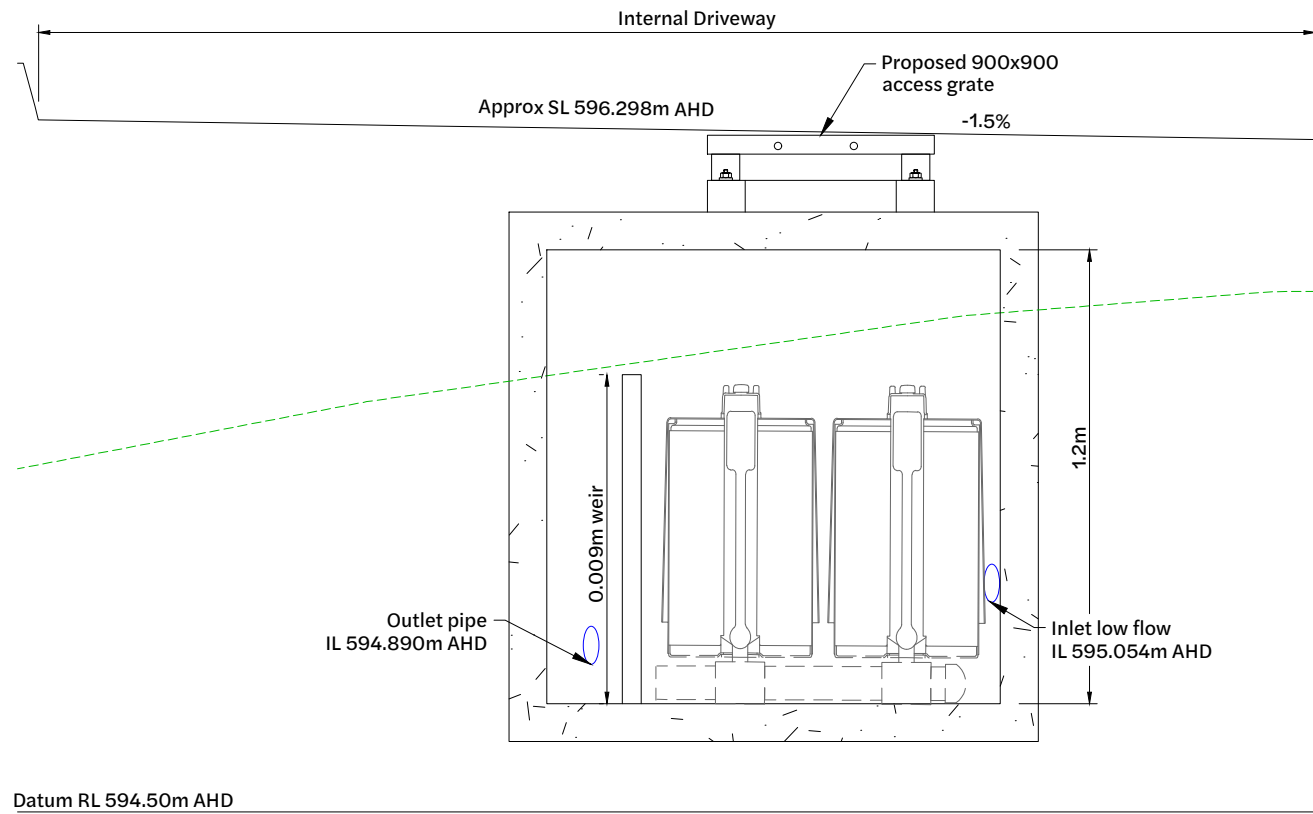
- Site Boundary
- Design Surface Contour Major
- Design Surface Contour Minor
- Retaining wall
- Stormwater Inlet Pit
- Stormwater Drainage



**Inset B - Stormwater Structure Detail Plan View**  
1:50 Scale



**Locality Plan**  
1:1000 Scale



**Section 02 - Stormwater Structure Detail Section View**  
1:20 Scale

Revision	Date	Issue Details	Drawn	Designed
1	1.05.25	Issued for Information	PD	NR
2	19.12.25	Issued for Approval	PD	JE

QR Code

**Issued for Approval**  
Not for Construction

Scale
1:10 0 0.1 0.2 0.3 0.4 0.5m A1
1:20 0 0.5 1 2m A3
1:50 0 1 2 4 8m A1
1:100 0 10 20 30 40 50m A3
1:1000 0 10 20 30 40 50m A1
1:2000 0 10 20 30 40 50m A3










Client  
**Bernoth Holdings Pty Ltd**

Project  
**Hagan Street, Isaac Street and Ruthven Street North Toowoomba**













Drawing Title		
<b>Stormwater Structure Details (Sheet 2 of 2)</b>		
Project No.	Drawing No.	Revision
C_25023	441	2

**Existing Legend**

-  Property Boundary
-  Stormwater Drainage
-  Gas
-  Overhead Electrical
-  Underground Electrical
-  Water Line
-  Sewer Line
-  Stormwater Manhole
-  Sewer Manhole

**Proposed Legend**

-  Site Boundary
-  Water Line
-  Sewer Line
-  Water Line to be Removed
-  Sewer Manhole
-  Maintenance Hole
-  Stormwater Inlet Pit
-  Stormwater Drainage
-  Stormwater Gully Inlet
-  Stormwater Headwall

**General:**

1. All work and materials shall be in accordance with current South east Queensland Water Supply Code specifications and standards.
2. Unless specified otherwise all materials and work shall comply with the relevant Australian Standards.

**Environmental Protection:**

All environment protection measures shall be implemented prior to any construction work, including clearing, commencing.

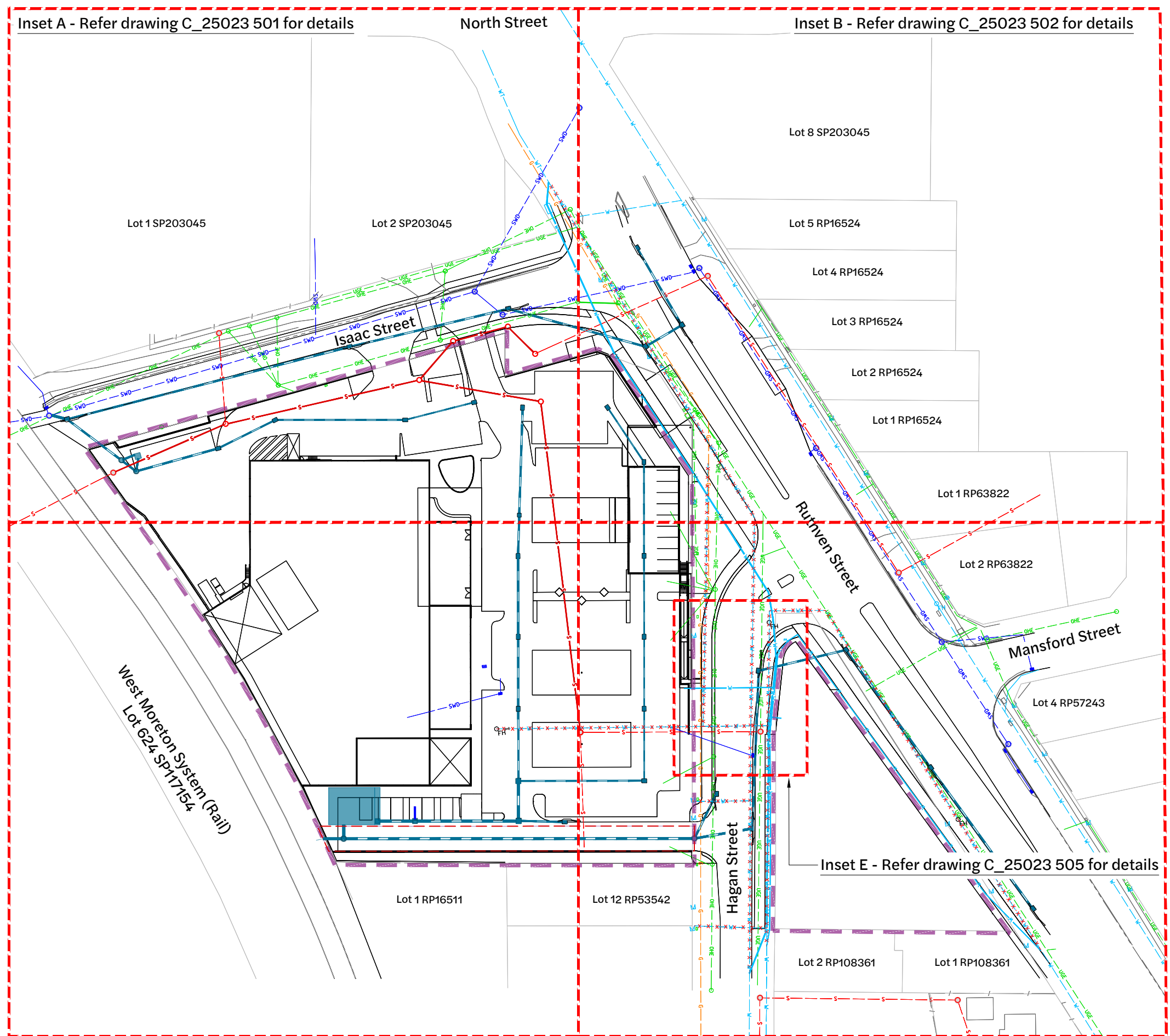
**Construction Approvals:**

The contractor is to be responsible for obtaining all relevant works approvals prior to the commencement of construction. Approvals to consider include, but are not limited to:

- Traffic permits and management plans
- QLD police permit
- Driveway permit/notice to work on council property
- Works across a TRC bikeway or bikeway closure/detour

**Water Service Provider Approval:**

1. Only drawings that are signed by an R.P.E.Q are to be used for construction.
2. The issue of these drawings for tender does not constitute approval to commence works.
3. All works are subject to conditions of approval issued by Urban Utilities.
4. The developer is responsible for all costs and actions associated with obtaining approval from the water service provider (Toowoomba Region) prior to the commencement of works.
5. Underground services exist in the area, and may not all be represented on this plan. Contractor to locate all existing services and confirm levels prior to excavation works.



Inset A - Refer drawing C\_25023 501 for details

**Water Layout Plan**  
1:500 Scale

Inset D - Refer drawing C\_25023 504 for details

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	20.05.25	Issued for Approval	AG	AG
3	26.05.25	Updated Architectural Plans	NR	NR
4	19.12.25	Issued for Approval	PD	JE

QR Code	Status
	<b>Issued for Approval</b> Not for Construction

Scale
1:500 10 5 0 10 20m A1 1:1000 A3

Client
Bernoth Holdings Pty Ltd

Project
Hagan Street, Isaac Street and Ruthven Street North Toowoomba










Project
Hagan Street, Isaac Street and Ruthven Street North Toowoomba













Drawing Title		
<b>Water Layout Plan</b> (Sheet 1 of 5)		
Project No. C_25023	Drawing No. 500	Revision 4

FILE: G:\MY DRIVE\PROJECTS\C\_25023 - RUTHVEN STREET NORTH TOOWOOMBA\HAGAN MODEL\AUTOCAD\C\_25023 500\_WATER LAYOUT PLAN.DWG LAST SAVED BY: ANANDARAJAN

**Existing Legend**

-  Property Boundary
-  Stormwater Drainage
-  Gas
-  Overhead Electrical
-  Underground Electrical
-  Water Line
-  Sewer Line
-  Stormwater Manhole
-  Sewer Manhole

**Proposed Legend**

-  Site Boundary
-  Water Line
-  Sewer Line
-  Water Line to be Removed
-  Sewer Manhole
-  Maintenance Hole
-  Stormwater Inlet Pit
-  Stormwater Drainage
-  Stormwater Gully Inlet
-  Stormwater Headwall

**General:**

1. All work and materials shall be in accordance with current South east Queensland Water Supply Code specifications and standards.
2. Unless specified otherwise all materials and work shall comply with the relevant Australian Standards.

**Environmental Protection:**

All environment protection measures shall be implemented prior to any construction work, including clearing, commencing.

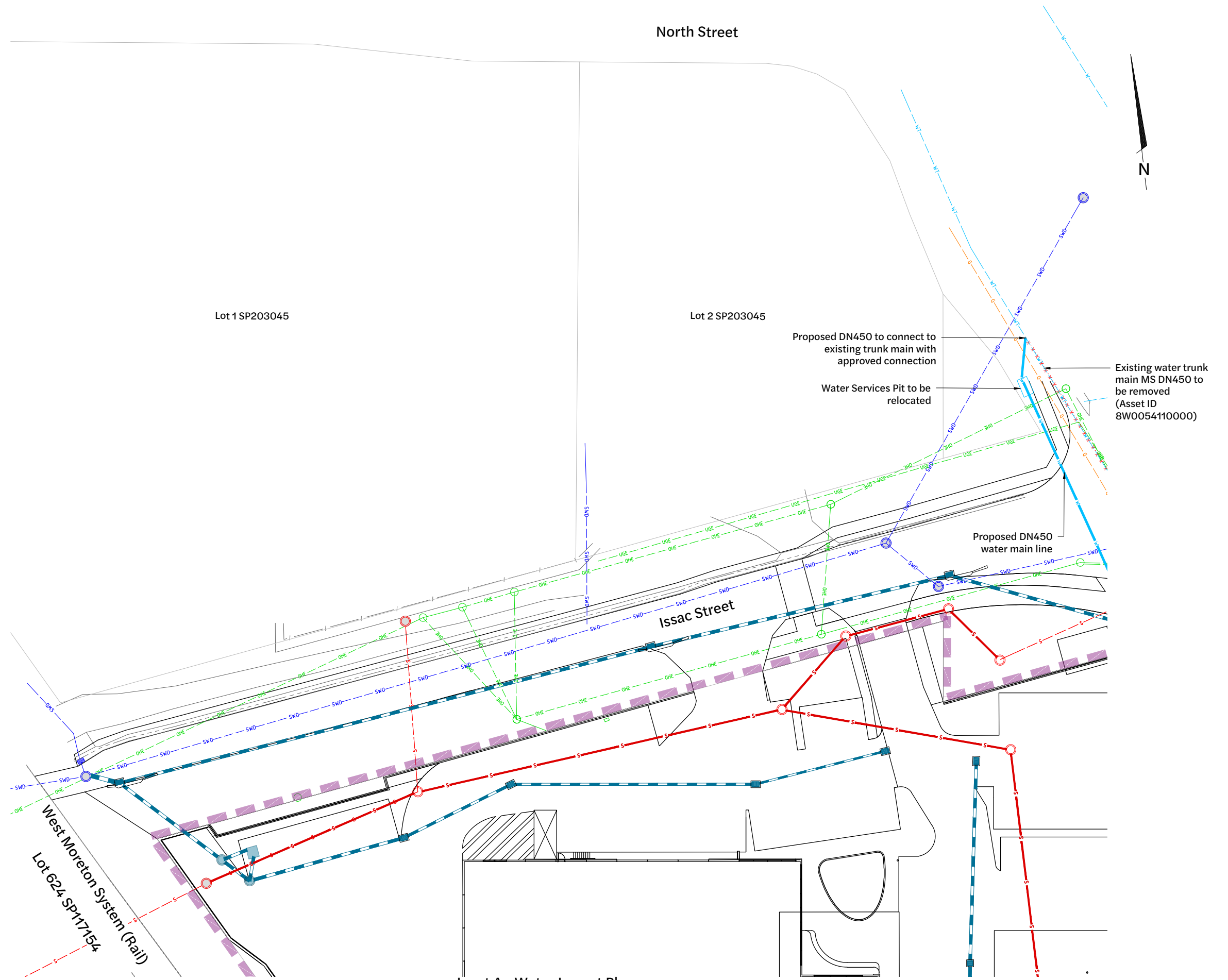
**Construction Approvals:**

The contractor is to be responsible for obtaining all relevant works approvals prior to the commencement of construction. Approvals to consider include, but are not limited to:

- Traffic permits and management plans
- QLD police permit
- Driveway permit/notice to work on council property
- Works across a TRC bikeway or bikeway closure/detour

**Water Service Provider Approval:**

1. Only drawings that are signed by an R.P.E.Q are to be used for construction.
2. The issue of these drawings for tender does not constitute approval to commence works.
3. All works are subject to conditions of approval issued by Urban Utilities.
4. The developer is responsible for all costs and actions associated with obtaining approval from the water service provider (Toowoomba Region) prior to the commencement of works.
5. Underground services exist in the area, and may not all be represented on this plan. Contractor to locate all existing services and confirm levels prior to excavation works.



**Inset A - Water Layout Plan**  
1:250 Scale

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	20.05.25	Issued for Approval	AG	AG
3	26.05.25	Updated Architectural Plans	NR	NR
4	19.12.25	Issued for Approval	PD	JE

QR Code

**Issued for Approval**  
Not for Construction

Scale
1:250 5 0 5 10m A1 1:500 A3

Client  
**Bernoth Holdings Pty Ltd**










Project  
**Hagan Street, Isaac Street and Ruthven Street North Toowoomba**

Disclaimer  
All dimensions to be checked on site by contractor prior to construction. Use written dimensions only, do not scale.













Drawing Title		
<b>Water Layout Plan (Sheet 2 of 5)</b>		
Project No. <b>C_25023</b>	Drawing No. <b>501</b>	Revision <b>4</b>

**Existing Legend**

-  Property Boundary
-  Stormwater Drainage
-  Gas
-  Overhead Electrical
-  Underground Electrical
-  Water Line
-  Sewer Line
-  Stormwater Manhole
-  Sewer Manhole

**Proposed Legend**

-  Site Boundary
-  Water Line
-  Sewer Line
-  Water Line to be Removed
-  Sewer Manhole
-  Maintenance Hole
-  Stormwater Inlet Pit
-  Stormwater Drainage
-  Stormwater Gully Inlet
-  Stormwater Headwall

**General:**

1. All work and materials shall be in accordance with current South east Queensland Water Supply Code specifications and standards.
2. Unless specified otherwise all materials and work shall comply with the relevant Australian Standards.

**Environmental Protection:**

All environment protection measures shall be implemented prior to any construction work, including clearing, commencing.

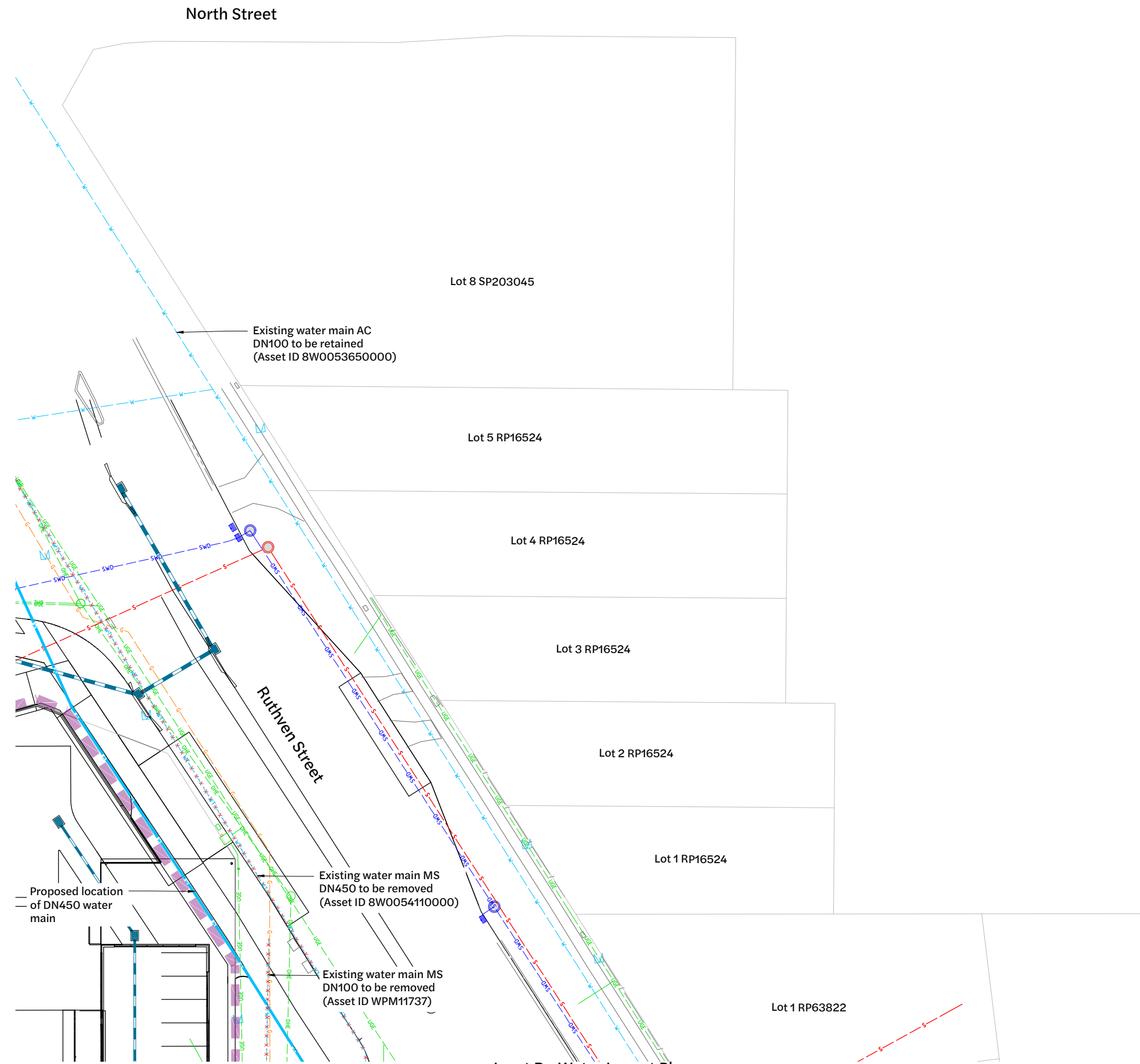
**Construction Approvals:**

The contractor is to be responsible for obtaining all relevant works approvals prior to the commencement of construction. Approvals to consider include, but are not limited to:

- Traffic permits and management plans
- QLD police permit
- Driveway permit/notice to work on council property
- Works across a TRC bikeway or bikeway closure/detour

**Water Service Provider Approval:**

1. Only drawings that are signed by an R.P.E.Q are to be used for construction.
2. The issue of these drawings for tender does not constitute approval to commence works.
3. All works are subject to conditions of approval issued by Urban Utilities.
4. The developer is responsible for all costs and actions associated with obtaining approval from the water service provider (Toowoomba Region) prior to the commencement of works.
5. Underground services exist in the area, and may not all be represented on this plan. Contractor to locate all existing services and confirm levels prior to excavation works.



**Inset B - Water Layout Plan**  
1:250 Scale

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	20.05.25	Issued for Approval	AG	AG
3	26.05.25	Updated Architectural Plans	NR	NR
4	19.12.25	Issued for Approval	PD	JE

QR Code	Status
	<b>Issued for Approval</b> Not for Construction

Scale
1:250 5 0 5 10m A1 1:500 A3

Client
Bernoth Holdings Pty Ltd

Project
Hagan Street, Isaac Street and Ruthven Street North Toowoomba

Project
Hagan Street, Isaac Street and Ruthven Street North Toowoomba



Drawing Title		
<b>Water Layout Plan</b> (Sheet 3 of 5)		
Project No. C_25023	Drawing No. 502	Revision 4

**Existing Legend**

- Property Boundary
- Stormwater Drainage
- Gas
- Overhead Electrical
- Underground Electrical
- Water Line
- Sewer Line
- Stormwater Manhole
- Sewer Manhole

**Proposed Legend**

- Site Boundary
- Water Line
- Sewer Line
- Water Line to be Removed
- Sewer Manhole
- Maintenance Hole
- Stormwater Inlet Pit
- Stormwater Drainage
- Stormwater Gully Inlet
- Stormwater Headwall

**General:**

1. All work and materials shall be in accordance with current South east Queensland Water Supply Code specifications and standards.
2. Unless specified otherwise all materials and work shall comply with the relevant Australian Standards.

**Environmental Protection:**

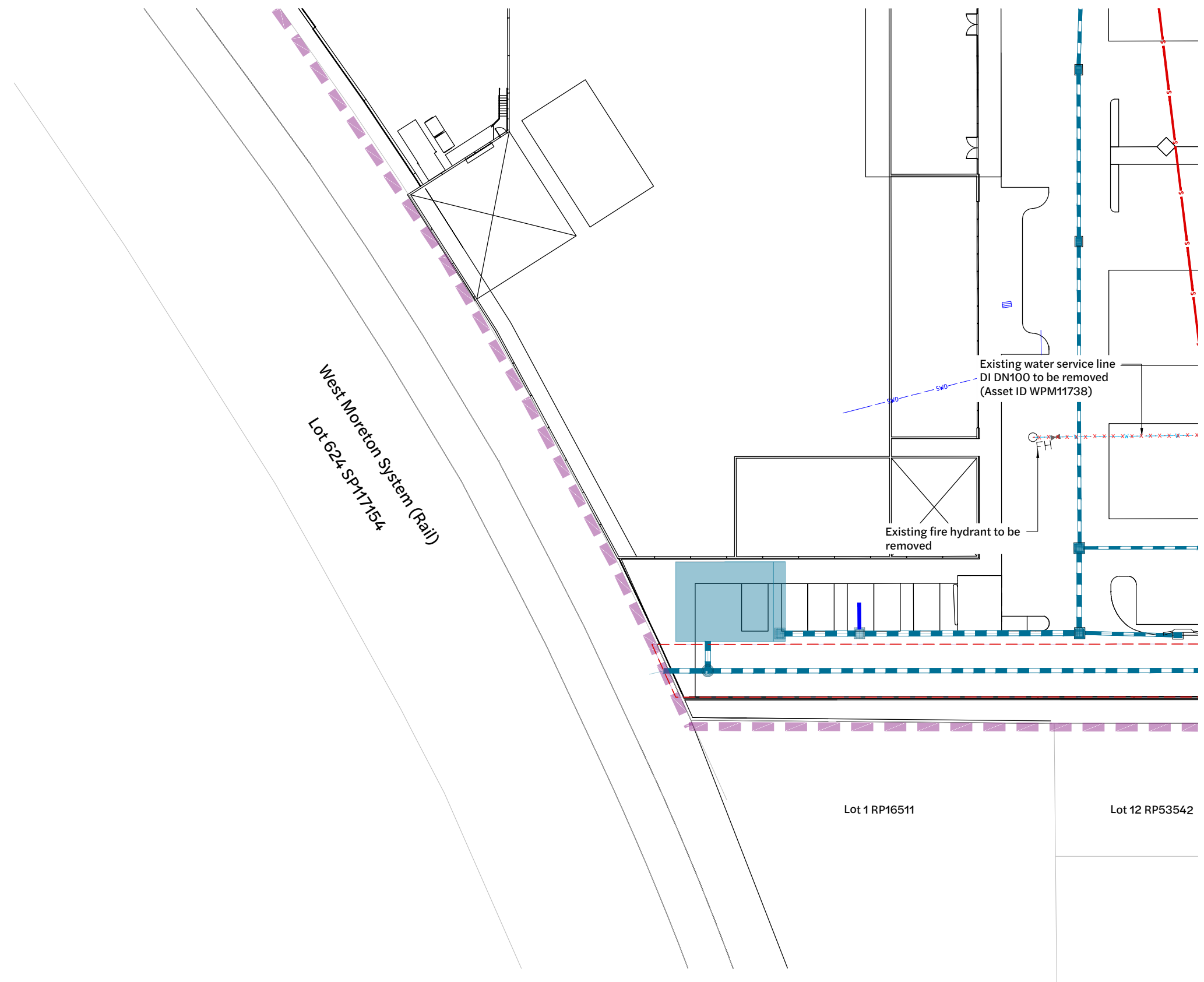
All environment protection measures shall be implemented prior to any construction work, including clearing, commencing.

**Construction Approvals:**

- The contractor is to be responsible for obtaining all relevant works approvals prior to the commencement of construction. Approvals to consider include, but are not limited to:
- Traffic permits and management plans
  - QLD police permit
  - Driveway permit/notice to work on council property
  - Works across a TRC bikeway or bikeway closure/detour

**Water Service Provider Approval:**

1. Only drawings that are signed by an R.P.E.Q are to be used for construction.
2. The issue of these drawings for tender does not constitute approval to commence works.
3. All works are subject to conditions of approval issued by Urban Utilities.
4. The developer is responsible for all costs and actions associated with obtaining approval from the water service provider (Toowoomba Region) prior to the commencement of works.
5. Underground services exist in the area, and may not all be represented on this plan. Contractor to locate all existing services and confirm levels prior to excavation works.

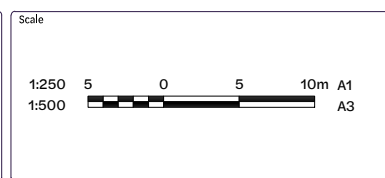


**Inset C - Water Layout Plan**  
1:250 Scale

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	20.05.25	Issued for Approval	AG	AG
3	26.05.25	Updated Architectural Plans	NR	NR
4	19.12.25	Issued for Approval	PD	JE

QR Code

**Issued for Approval**  
**Not for Construction**



Client  
**Bernoth Holdings Pty Ltd**










Project  
**Hagan Street, Isaac Street and Ruthven Street North Toowoomba**

Disclaimer  
All dimensions to be checked on site by contractor prior to construction. Use written dimensions only, do not scale.













Drawing Title		
<b>Water Layout Plan (Sheet 4 of 5)</b>		
Project No. <b>C_25023</b>	Drawing No. <b>503</b>	Revision <b>4</b>

**Existing Legend**

-  Property Boundary
-  Stormwater Drainage
-  Gas
-  Overhead Electrical
-  Underground Electrical
-  Water Line
-  Sewer Line
-  Stormwater Manhole
-  Sewer Manhole

**Proposed Legend**

-  Site Boundary
-  Water Line
-  Sewer Line
-  Water Line to be Removed
-  Sewer Manhole
-  Maintenance Hole
-  Stormwater Inlet Pit
-  Stormwater Drainage
-  Stormwater Gully Inlet
-  Stormwater Headwall

**General:**

1. All work and materials shall be in accordance with current South east Queensland Water Supply Code specifications and standards.
2. Unless specified otherwise all materials and work shall comply with the relevant Australian Standards.

**Environmental Protection:**

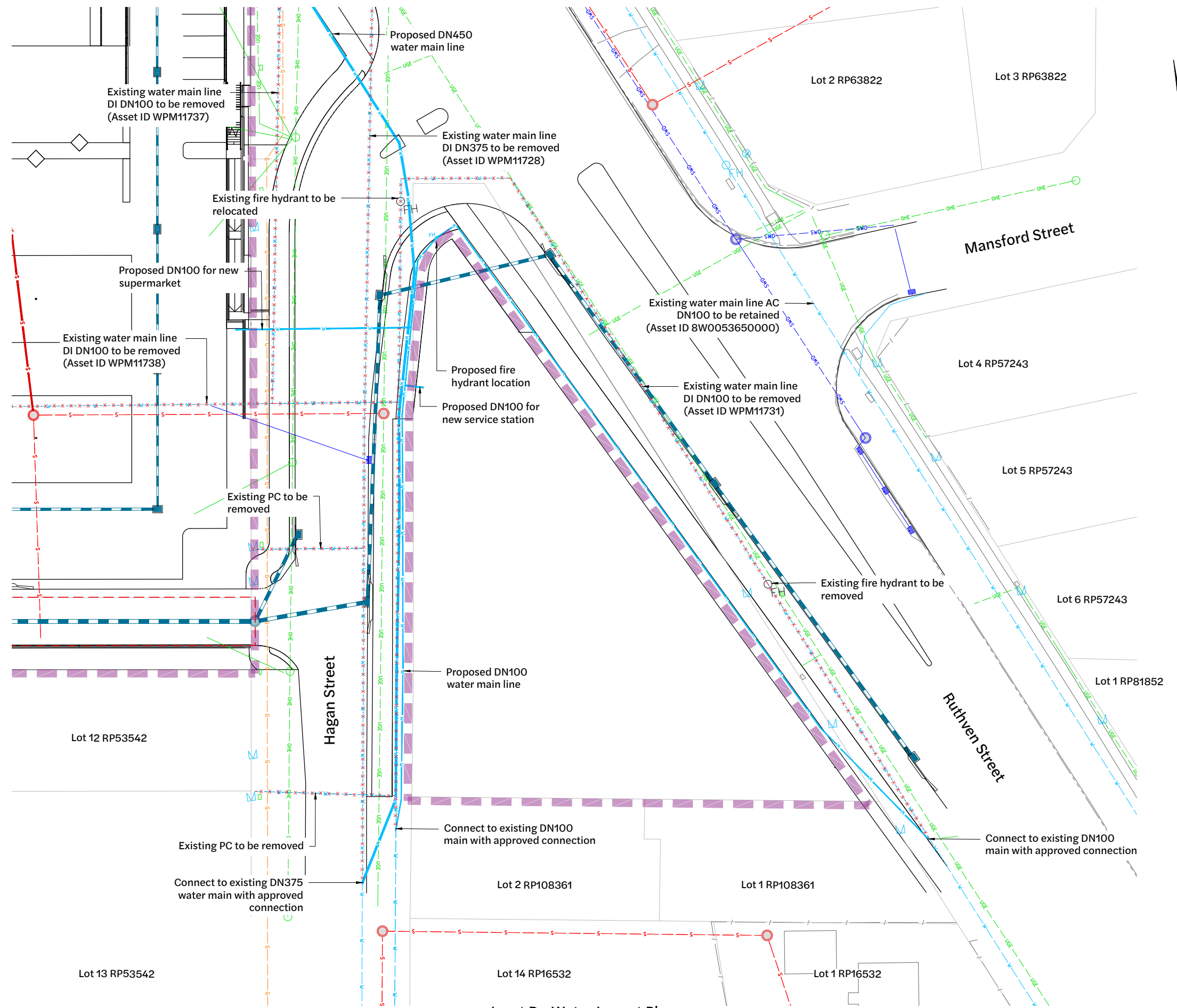
All environment protection measures shall be implemented prior to any construction work, including clearing, commencing.

**Construction Approvals:**

- The contractor is to be responsible for obtaining all relevant works approvals prior to the commencement of construction. Approvals to consider include, but are not limited to:
- Traffic permits and management plans
  - QLD police permit
  - Driveway permit/notice to work on council property
  - Works across a TRC bikeway or bikeway closure/detour

**Water Service Provider Approval:**

1. Only drawings that are signed by an R.P.E.Q are to be used for construction.
2. The issue of these drawings for tender does not constitute approval to commence works.
3. All works are subject to conditions of approval issued by Urban Utilities.
4. The developer is responsible for all costs and actions associated with obtaining approval from the water service provider (Toowoomba Region) prior to the commencement of works.
5. Underground services exist in the area, and may not all be represented on this plan. Contractor to locate all existing services and confirm levels prior to excavation works.

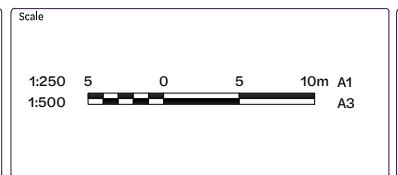


**Inset D - Water Layout Plan**  
1:250 Scale

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH
2	20.05.25	Issued for Approval	AG	AG
3	26.05.25	Updated Architectural Plans	NR	NR
4	19.12.25	Issued for Approval	PD	JE

QR Code

**Issued for Approval**  
Not for Construction



Client  
**Bernoth Holdings Pty Ltd**

Project  
**Hagan Street, Isaac Street and Ruthven Street North Toowoomba**

Disclaimer  
All dimensions to be checked on site by contractor prior to construction. Use written dimensions only, do not scale.

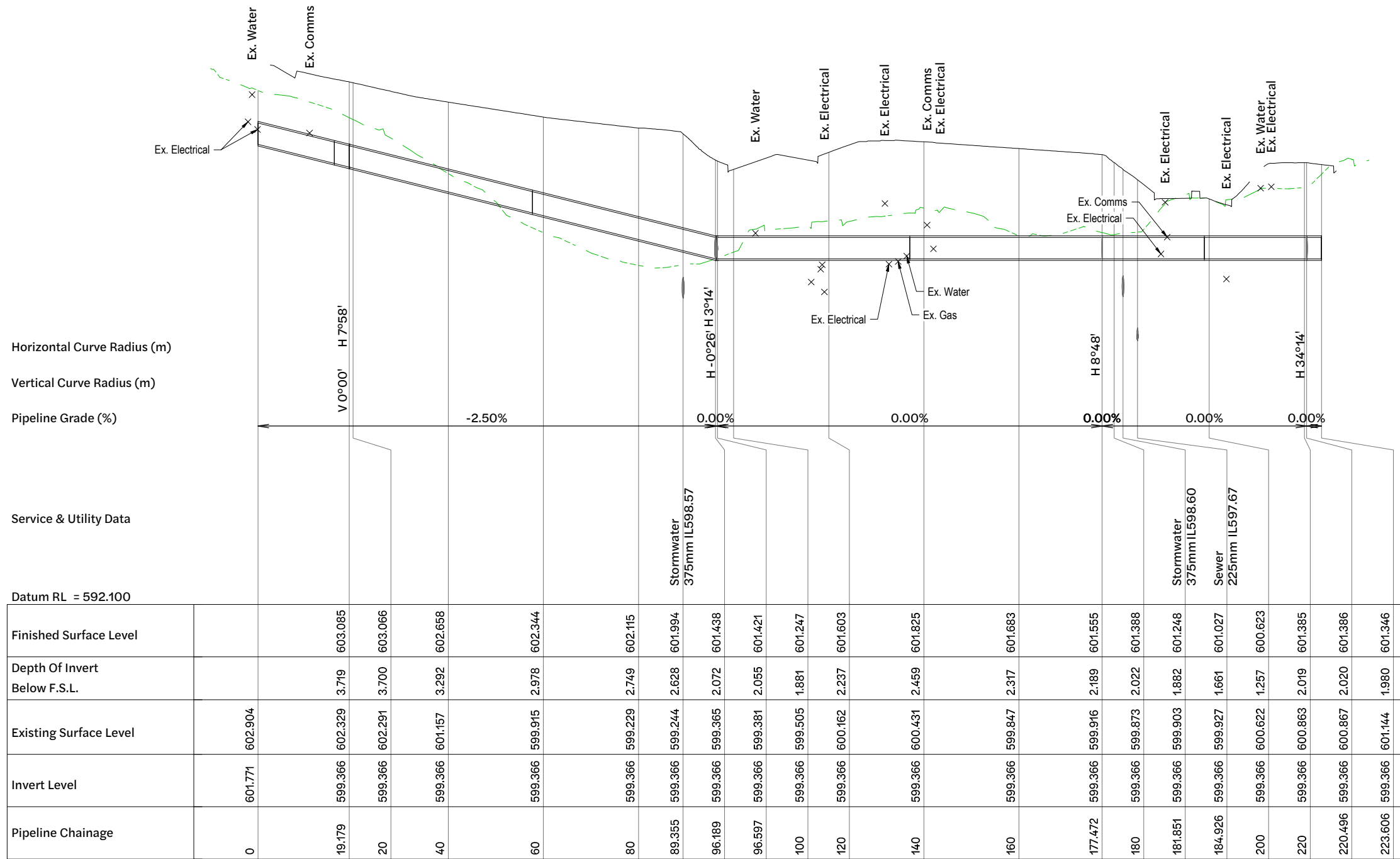


Drawing Title		
<b>Water Layout Plan (Sheet 5 of 5)</b>		
Project No. <b>C_25023</b>	Drawing No. <b>504</b>	Revision <b>4</b>

FILE: G:\MY DRIVE\PROJECTS\C\_25023 - RUTHVEN STREET NORTH TOOWOOMBA\HAGAN MODEL\AUTOCAD\C\_25023\_504\_WATER LAYOUT PLAN.DWG LAST SAVED BY: ANANDRANKAN

**Legend**

- - - Existing Surface
- Design Surface

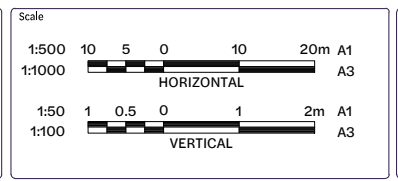


**Longitudinal Section 1**

Revision	Date	Issue Details	Drawn	Designed
1	23.05.25	Issued for Approval	PD	JE
2	19.12.25	Issued for Approval	PD	JE

QR Code

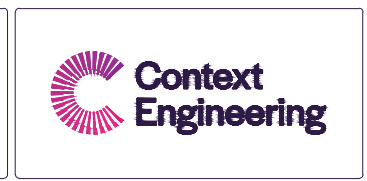
**Issued for Approval**  
Not for Construction



Client  
**Bernoth Holdings Pty Ltd**

Project  
**Hagan Street, Isaac Street and Ruthven Street North Toowoomba**

Disclaimer  
All dimensions to be checked on site by contractor prior to construction. Use written dimensions only, do not scale.

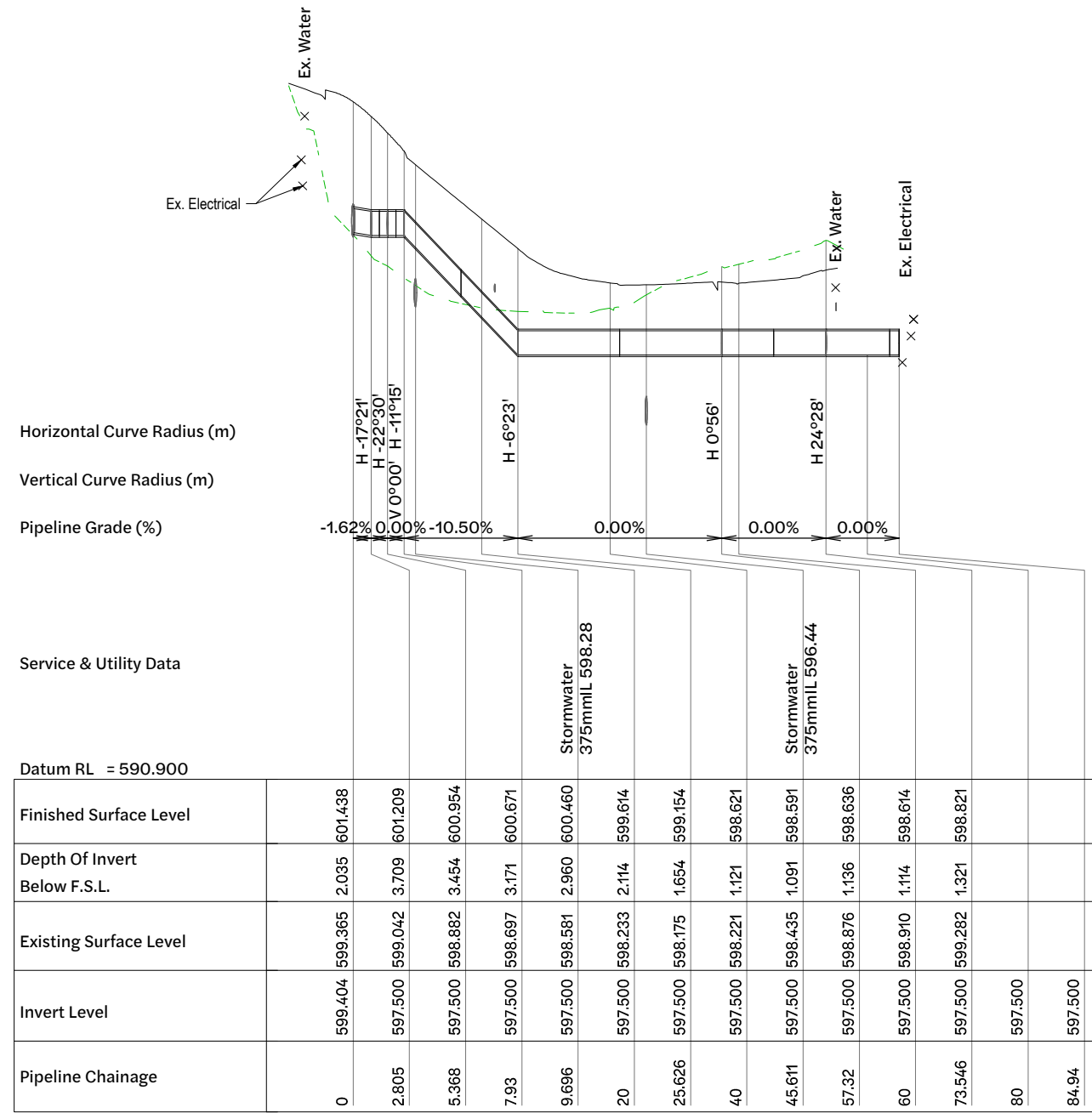


Drawing Title		
<b>Water Long Sections (Sheet 1 of 3)</b>		
Project No. <b>C_25023</b>	Drawing No. <b>506</b>	Revision <b>2</b>

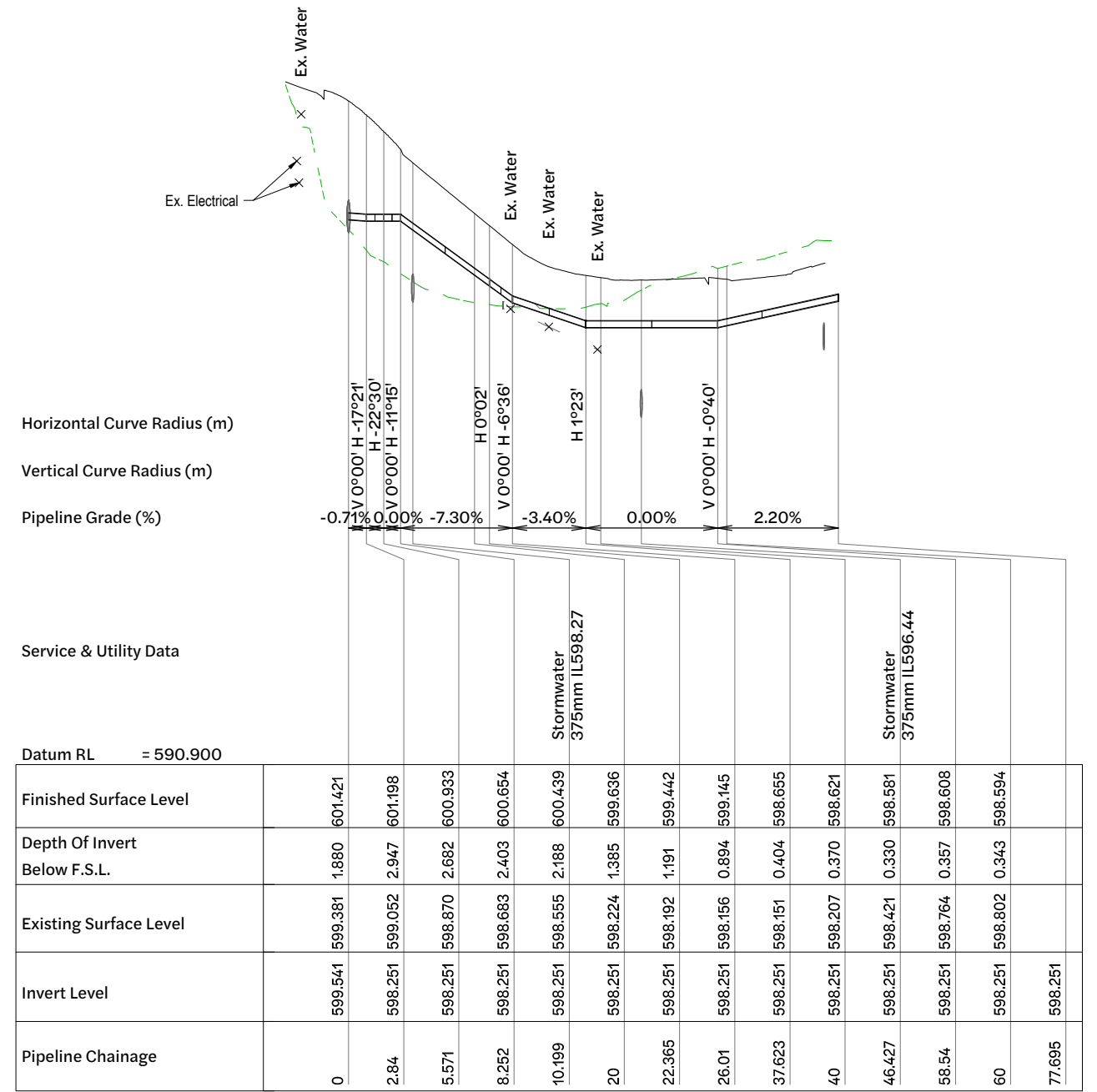
FILE G:\MP DRIVE\PROJECTS\C\_25023 - RUTHVEN STREET NORTH TOOWOOMBA\A1\_MODEL\AUTOCAD\C\_25023\_S05\_WATER LONG SECTIONS\LONG1.SAT SAVED BY:COMTE

**Legend**

- - - Existing Surface
- Design Surface



**Longitudinal Section 2**

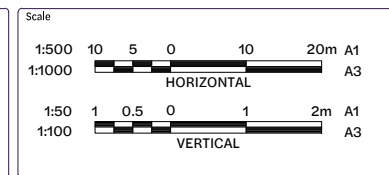


**Longitudinal Section 3**

Revision	Date	Issue Details	Drawn	Designed
1	23.05.25	Issued for Approval	PD	JE
2	19.12.25	Issued for Approval	PD	JE

QR Code

**Issued for Approval**  
Not for Construction



Client  
 Bernoth Holdings Pty Ltd

Project  
 Hagan Street, Isaac Street  
 and Ruthven Street  
 North Toowoomba

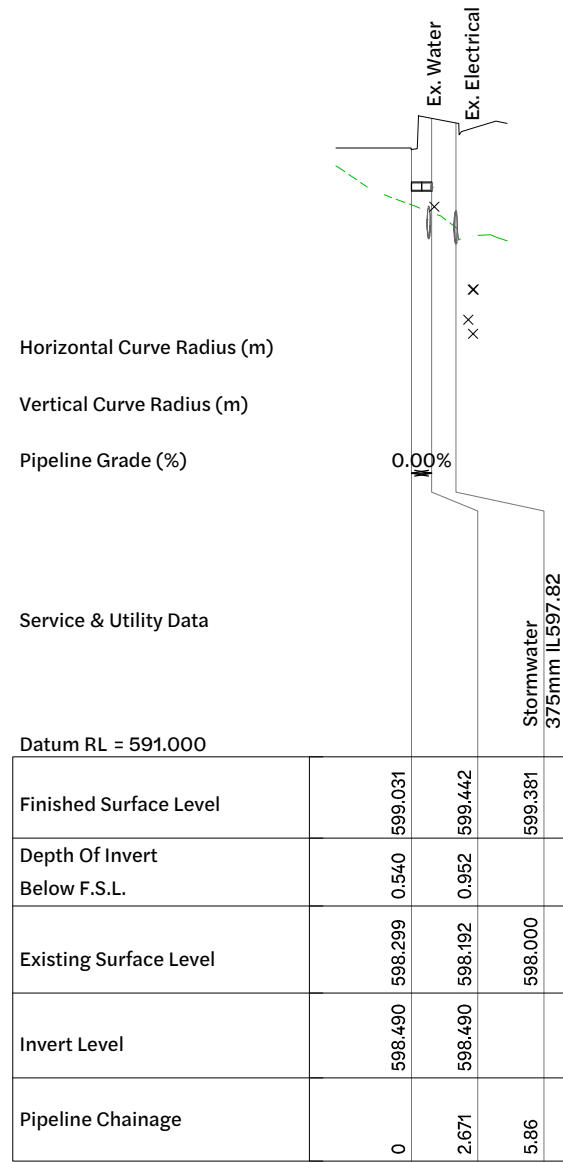
Disclaimer  
 All dimensions to be checked on site by contractor prior to construction. Use written dimensions only, do not scale.



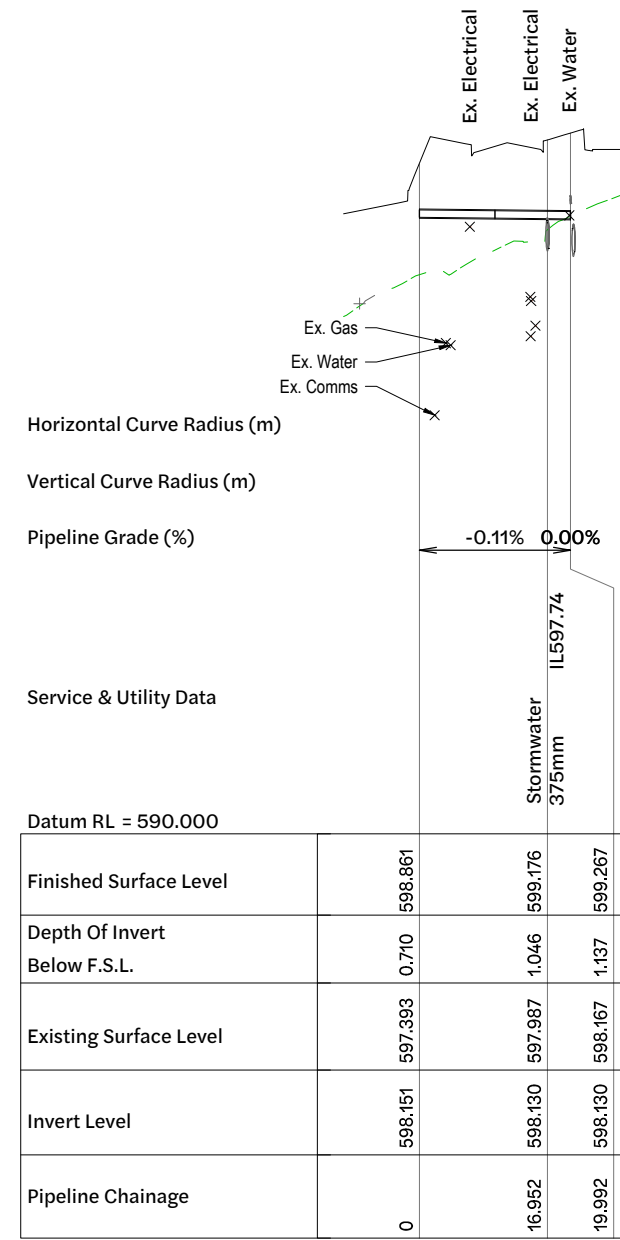
Drawing Title <b>Water Long Sections</b> (Sheet 2 of 3)		
Project No. C_25023	Drawing No. 507	Revision 2

**Legend**

- - - - - Existing Surface
- Design Surface



**Longitudinal Section 4**

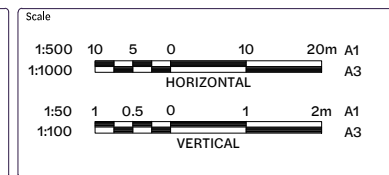


**Longitudinal Section 5**

Revision	Date	Issue Details	Drawn	Designed
1	23.05.25	Issued for Approval	PD	JE
2	19.12.25	Issued for Approval	PD	JE

QR Code
[QR Code Placeholder]

**Issued for Approval**  
Not for Construction



Client  
**Bernoth Holdings Pty Ltd**

Project  
**Hagan Street, Isaac Street and Ruthven Street North Toowoomba**

Disclaimer  
All dimensions to be checked on site by contractor prior to construction. Use written dimensions only, do not scale.



Drawing Title		
<b>Water Long Sections (Sheet 3 of 3)</b>		
Project No. <b>C_25023</b>	Drawing No. <b>508</b>	Revision <b>2</b>

**Existing Legend**

- Property Boundary
- Stormwater Drainage
- Gas
- Overhead Electrical
- Underground Electrical
- Water Line
- Sewer Line
- Stormwater Manhole
- Sewer Manhole
- Sewer Structure Label

**Proposed Legend**

- Site Boundary
- Water Line
- Sewer Line
- Sewer Manhole
- Maintenance Hole
- Stormwater Inlet Pit
- Stormwater Drainage
- Stormwater Gully Inlet
- Stormwater Headwall
- Sewer Structure Label

**General:**

1. All work and materials shall be in accordance with current South east Queensland Water Supply Code specifications and standards.
2. Unless specified otherwise all materials and work shall comply with the relevant Australian Standards.
3. Adopt lip of kerb or shoulder of road as permanent level.
4. Cover on mains from permanent level to be as shown in SEQ-SEW-1200-2.
5. Conduits to be installed in accordance with the standard drawings.
6. All materials used in the works shall comply with the SEQ-SP's accepted products and materials list or be appropriately shown, listed and defined in the engineering submission so that the alternative product or material can be assessed and if appropriate, approved by the SEQ-SP.
7. The construction of the sewer reticulation work shown on this drawing must be supervised by an engineer who has RPEQ registration or authorised representative. Works not complying with this requirement will not be permitted to connect to the reticulation system.

**Environmental Protection:**

All environment protection measures shall be implemented prior to any construction work, including clearing, commencing.

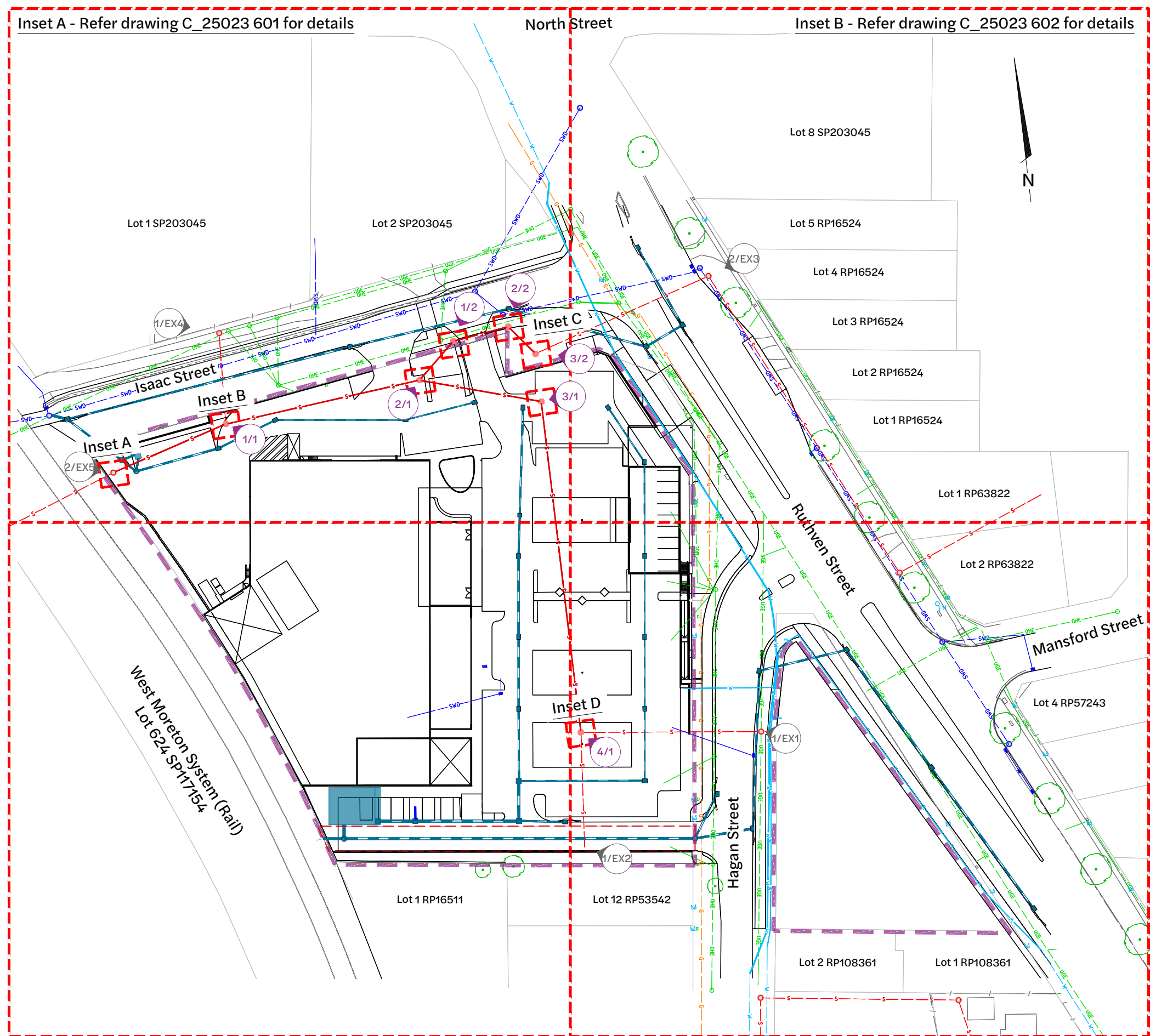
**Construction Approvals:**

The contractor is to be responsible for obtaining all relevant works approvals prior to the commencement of construction. Approvals to consider include, but are not limited to:

- Traffic permits and management plans
- QLD police permit
- Driveway permit/notice to work on council property
- Works across a TRC bikeway or bikeway closure/detour

**Sewer Connection Notes:**

1. Underground services exist in the area, and may not all be represented on this plan. Contractor to locate all existing services and confirm levels prior to excavation works.
2. Contractor is responsible for the location, protection and necessary relocation of all underground services prior to commencement of works.
3. Known existing services have been shown on longitudinal sections for identification, but have not been accurately located and may not represent all in ground services
4. Dimensions in millimeters (U.N.O).



Inset A - Refer drawing C\_25023 601 for details

Sewer Layout Plan  
1:500 Scale

Inset D - Refer drawing C\_25023 604 for details

Revision	Date	Issue Details	Drawn	Designed	QR Code	Status
1	31.03.25	Issued for Information	CG	RTH		Issued for Approval Not for Construction
2	20.05.25	Issued for Approval	AG	RTH		
3	26.05.25	Updated Architectural Plans	NR	NR		
4	19.12.25	Issued for Approval	PD	JE		

Scale	1:500 10 5 0 10 20m A1 1:1000 A3
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Client	Bernoth Holdings Pty Ltd
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Project	Hagan Street, Isaac Street and Ruthven Street North Toowoomba
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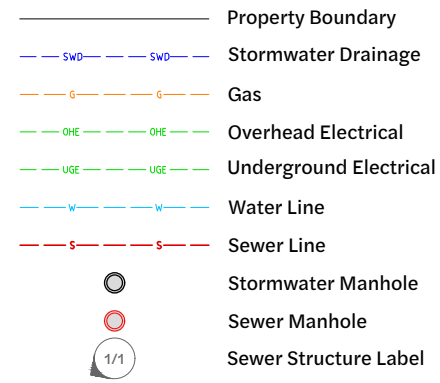
Project No.	C_25023
Drawing No.	600
Revision	4



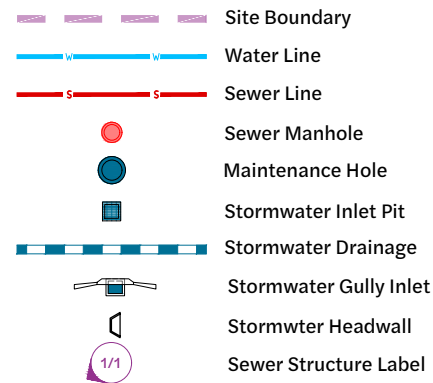
Drawing Title		
Sewer Layout Plan (Sheet 1 of 5)		
Project No.	Drawing No.	Revision
C_25023	600	4

FILE: G:\MP\_DRIVE\PROJECTS\C\_25023 - RUTHVEN STREET NORTH TOOWOOMBA\A1\_MODEL\AUTOCAD\C\_25023\_600\_SEWER\_LAYOUT\_PLAN.DWG LAST SAVED BY: CONTE

**Existing Legend**



**Proposed Legend**



**General:**

1. All work and materials shall be in accordance with current South east Queensland Water Supply Code specifications and standards.
2. Unless specified otherwise all materials and work shall comply with the relevant Australian Standards.
3. Adopt lip of kerb or shoulder of road as permanent level.
4. Cover on mains from permanent level to be as shown in SEQ-SEW-1200-2.
5. Conduits to be installed in accordance with the standard drawings.
6. All materials used in the works shall comply with the SEQ-SP's accepted products and materials list or be appropriately shown, listed and defined in the engineering submission so that the alternative product or material can be assessed and if appropriate, approved by the SEQ-SP.
7. The construction of the sewer reticulation work shown on this drawing must be supervised by an engineer who has RPEQ registration or authorised representative. Works not complying with this requirement will not be permitted to connect to the reticulation system.

**Environmental Protection:**

All environment protection measures shall be implemented prior to any construction work, including clearing, commencing.

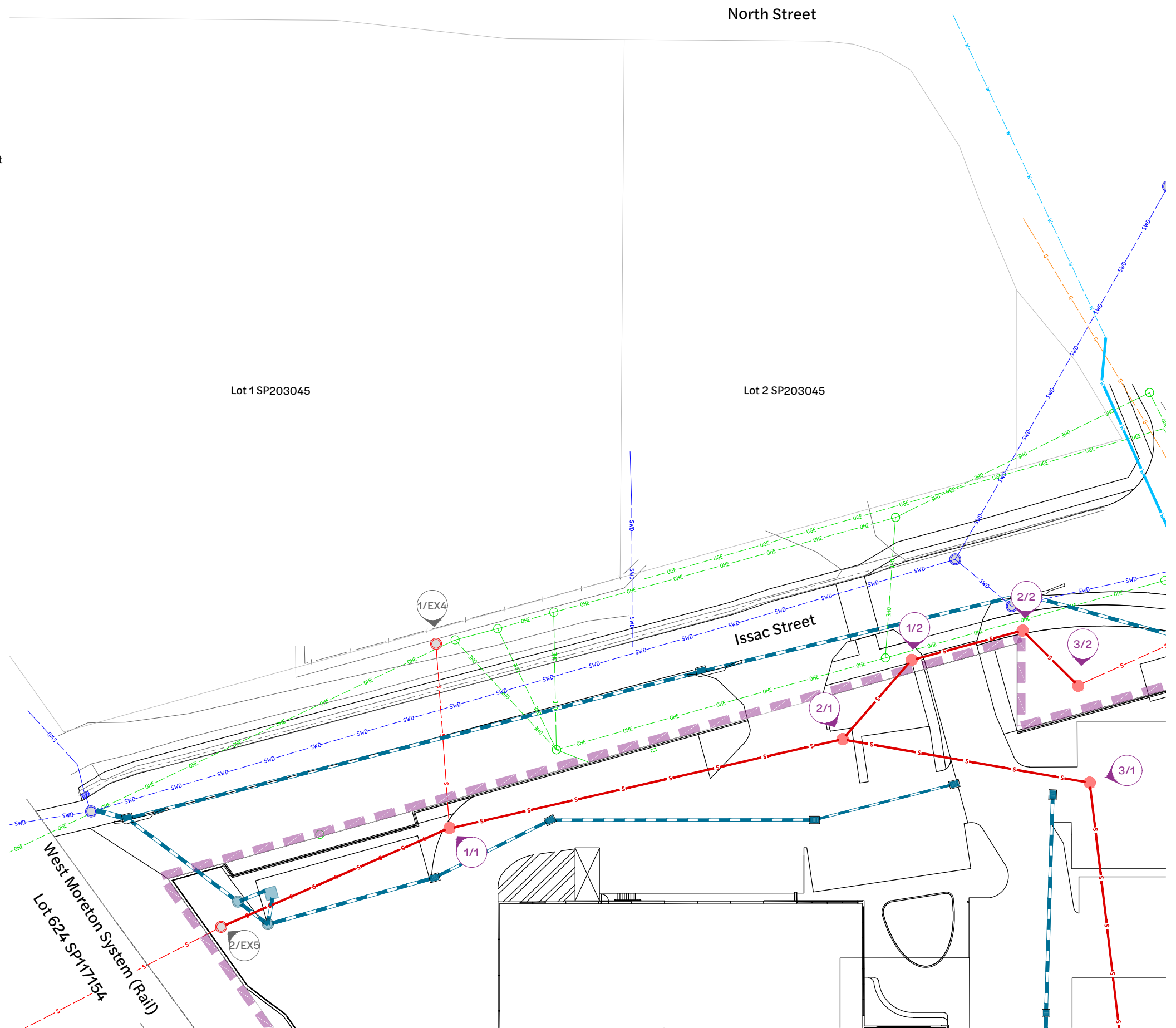
**Construction Approvals:**

The contractor is to be responsible for obtaining all relevant works approvals prior to the commencement of construction. Approvals to consider include, but are not limited to:

- Traffic permits and management plans
- QLD police permit
- Driveway permit/notice to work on council property
- Works across a TRC bikeway or bikeway closure/detour

**Sewer Connection Notes:**

1. Underground services exist in the area, and may not all be represented on this plan. Contractor to locate all existing services and confirm levels prior to excavation works.
2. Contractor is responsible for the location, protection and necessary relocation of all underground services prior to commencement of works.
3. Known existing services have been shown on longitudinal sections for identification, but have not been accurately located and may not represent all in ground services
4. Dimensions in millimeters (U.N.O).

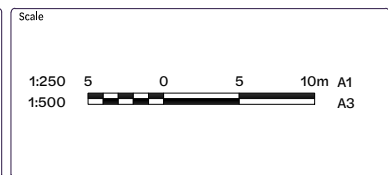


**Inset A - Sewer Layout Plan**  
1:250 Scale

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	CG	RTH
2	20.05.25	Issued for Approval	AG	RTH
3	26.05.25	Updated Architectural Plans	NR	NR
4	19.12.25	Issued for Approval	PD	JE

QR Code

**Issued for Approval**  
Not for Construction



Client  
**Bernoth Holdings Pty Ltd**

Project  
**Hagan Street, Isaac Street and Ruthven Street North Toowoomba**

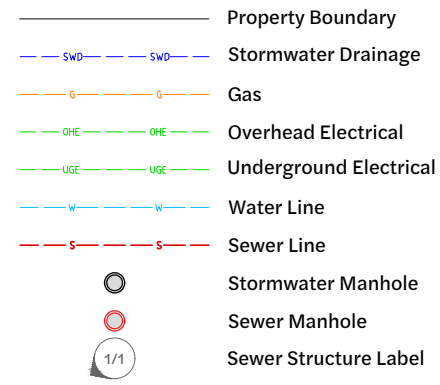
Disclaimer  
All dimensions to be checked on site by contractor prior to construction. Use written dimensions only, do not scale.



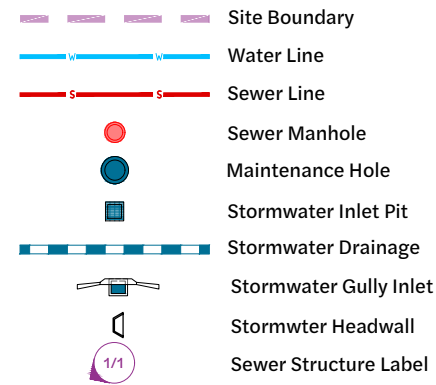
Drawing Title		
<b>Sewer Layout Plan (Sheet 2 of 5)</b>		
Project No. <b>C_25023</b>	Drawing No. <b>601</b>	Revision <b>4</b>

FILE: G:\MY DRIVE\PROJECTS\C\_25023 - RUTHVEN STREET NORTH TOOWOOMBA\A1\_MODEL\AUTOCAD\C\_25023\_601\_SEWER\_LAYOUT\_PLAN.DWG LAST SAVED BY: CONTE

**Existing Legend**



**Proposed Legend**



**General:**

1. All work and materials shall be in accordance with current South east Queensland Water Supply Code specifications and standards.
2. Unless specified otherwise all materials and work shall comply with the relevant Australian Standards.
3. Adopt lip of kerb or shoulder of road as permanent level.
4. Cover on mains from permanent level to be as shown in SEQ-SEW-1200-2.
5. Conduits to be installed in accordance with the standard drawings.
6. All materials used in the works shall comply with the SEQ-SP's accepted products and materials list or be appropriately shown, listed and defined in the engineering submission so that the alternative product or material can be assessed and if appropriate, approved by the SEQ-SP.
7. The construction of the sewer reticulation work shown on this drawing must be supervised by an engineer who has RPEQ registration or authorised representative. Works not complying with this requirement will not be permitted to connect to the reticulation system.

**Environmental Protection:**

All environment protection measures shall be implemented prior to any construction work, including clearing, commencing.

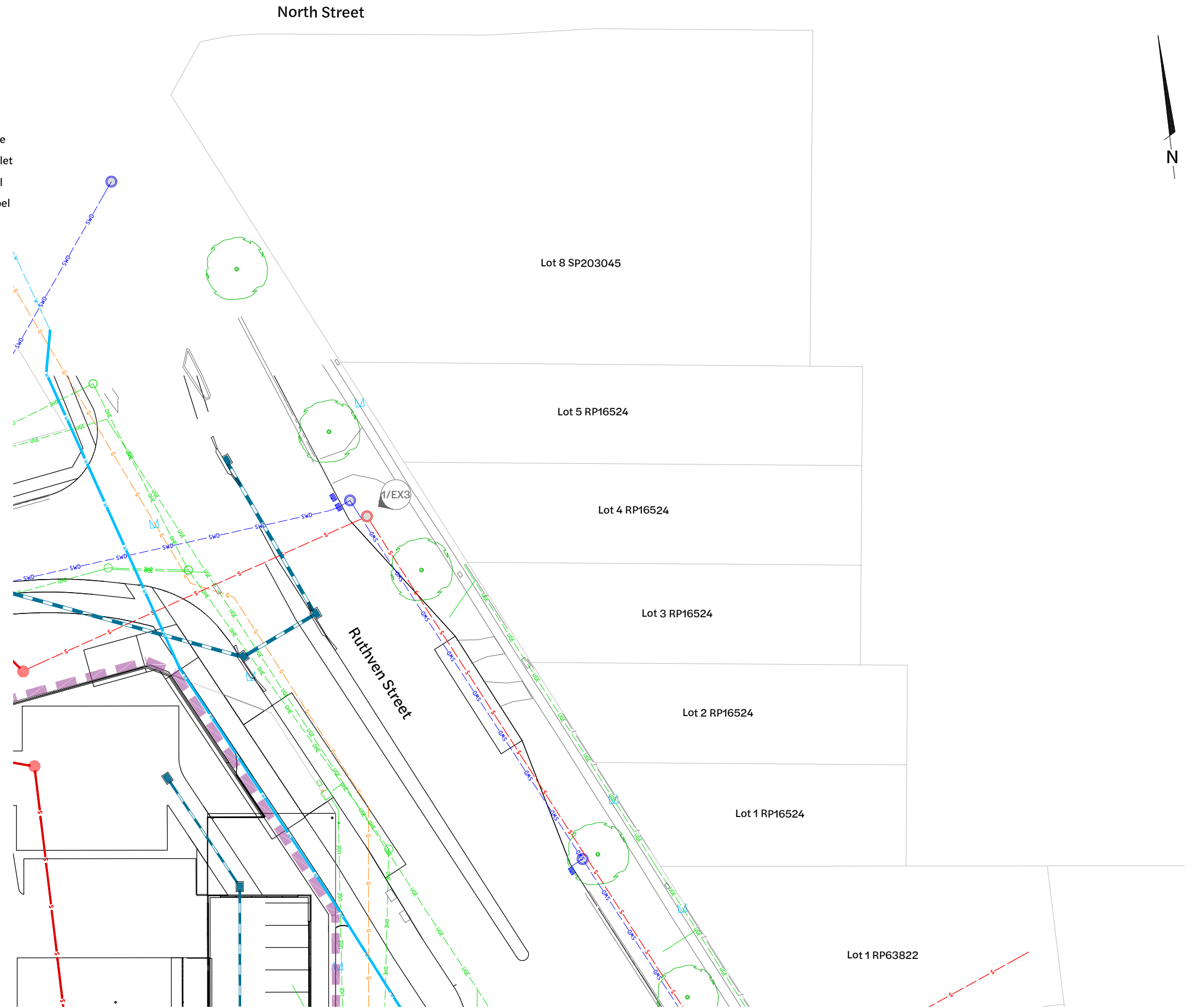
**Construction Approvals:**

The contractor is to be responsible for obtaining all relevant works approvals prior to the commencement of construction. Approvals to consider include, but are not limited to:

- Traffic permits and management plans
- QLD police permit
- Driveway permit/notice to work on council property
- Works across a TRC bikeway or bikeway closure/detour

**Sewer Connection Notes:**

1. Underground services exist in the area, and may not all be represented on this plan. Contractor to locate all existing services and confirm levels prior to excavation works.
2. Contractor is responsible for the location, protection and necessary relocation of all underground services prior to commencement of works.
3. Known existing services have been shown on longitudinal sections for identification, but have not been accurately located and may not represent all in ground services
4. Dimensions in millimeters (U.N.O).

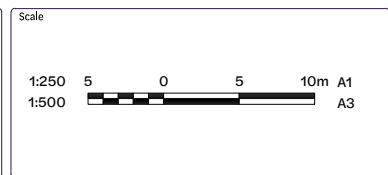


**Inset B - Sewer Layout Plan**  
1:250 Scale

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	CG	RTH
2	20.05.25	Issued for Approval	AG	RTH
3	26.05.25	Updated Architectural Plans	NR	NR
4	19.12.25	Issued for Approval	PD	JE

QR Code

**Issued for Approval**  
Not for Construction



Client  
**Bernoth Holdings Pty Ltd**

Project  
**Hagan Street, Isaac Street and Ruthven Street North Toowoomba**

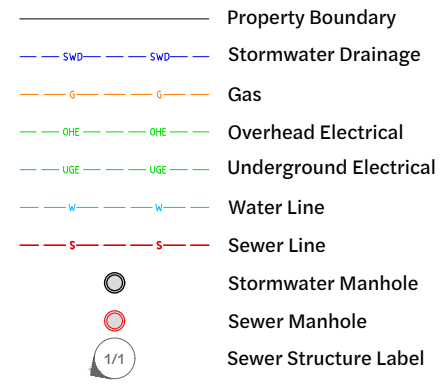
Disclaimer  
All dimensions to be checked on site by contractor prior to construction. Use written dimensions only, do not scale.



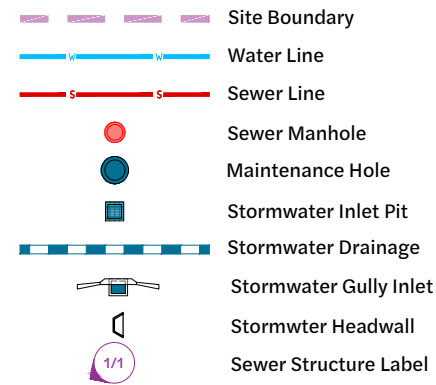
Drawing Title		
<b>Sewer Layout Plan (Sheet 3 of 5)</b>		
Project No. <b>C_25023</b>	Drawing No. <b>602</b>	Revision <b>4</b>

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**Existing Legend**



**Proposed Legend**



**General:**

1. All work and materials shall be in accordance with current South east Queensland Water Supply Code specifications and standards.
2. Unless specified otherwise all materials and work shall comply with the relevant Australian Standards.
3. Adopt lip of kerb or shoulder of road as permanent level.
4. Cover on mains from permanent level to be as shown in SEQ-SEW-1200-2.
5. Conduits to be installed in accordance with the standard drawings.
6. All materials used in the works shall comply with the SEQ-SP's accepted products and materials list or be appropriately shown, listed and defined in the engineering submission so that the alternative product or material can be assessed and if appropriate, approved by the SEQ-SP.
7. The construction of the sewer reticulation work shown on this drawing must be supervised by an engineer who has RPEQ registration or authorised representative. Works not complying with this requirement will not be permitted to connect to the reticulation system.

**Environmental Protection:**

All environment protection measures shall be implemented prior to any construction work, including clearing, commencing.

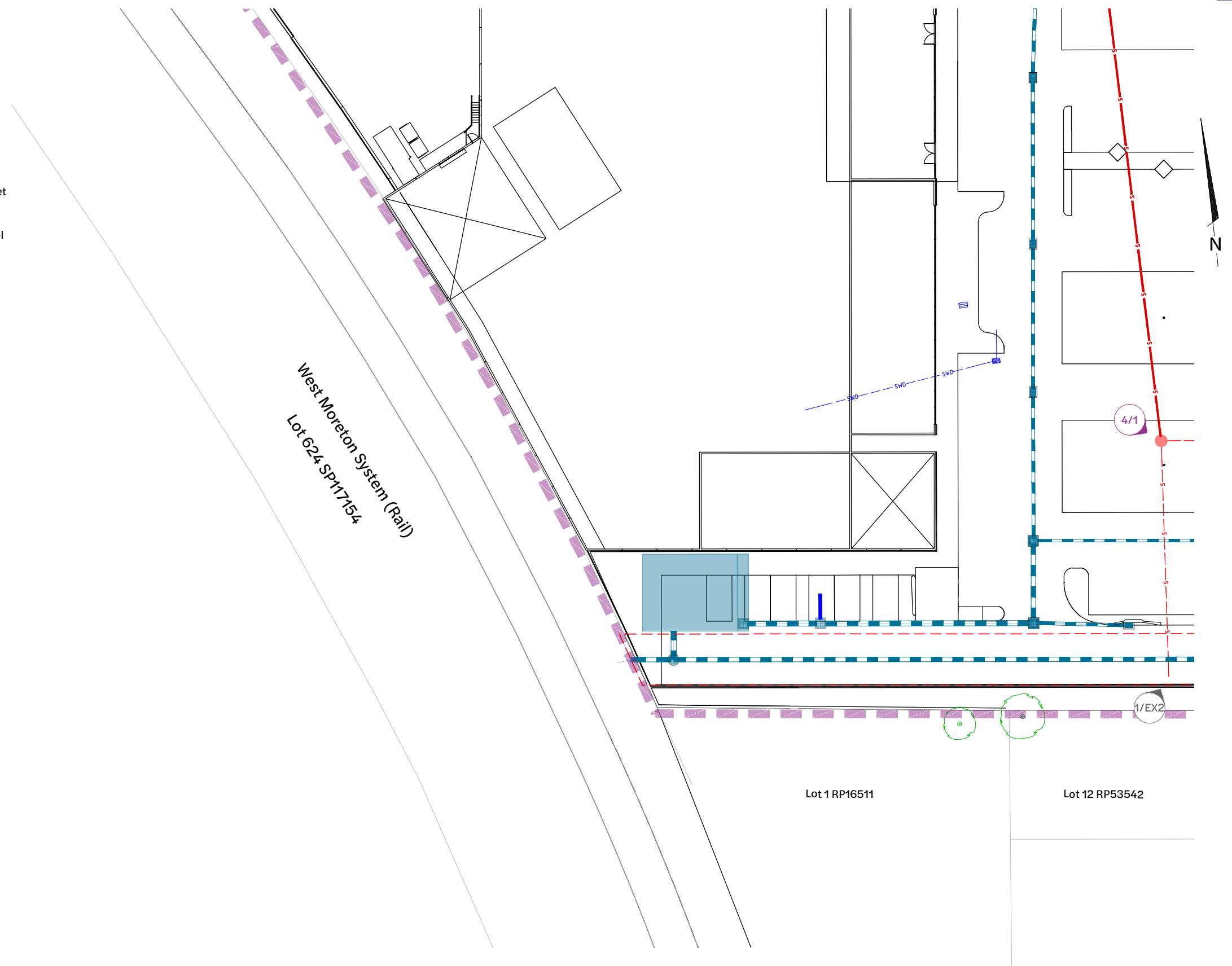
**Construction Approvals:**

The contractor is to be responsible for obtaining all relevant works approvals prior to the commencement of construction. Approvals to consider include, but are not limited to:

- Traffic permits and management plans
- QLD police permit
- Driveway permit/notice to work on council property
- Works across a TRC bikeway or bikeway closure/detour

**Sewer Connection Notes:**

1. Underground services exist in the area, and may not all be represented on this plan. Contractor to locate all existing services and confirm levels prior to excavation works.
2. Contractor is responsible for the location, protection and necessary relocation of all underground services prior to commencement of works.
3. Known existing services have been shown on longitudinal sections for identification, but have not been accurately located and may not represent all in ground services
4. Dimensions in millimeters (U.N.O).



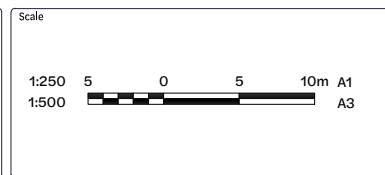
**Inset C - Sewer Layout Plan**

1:250 Scale

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	CG	RTH
2	20.05.25	Issued for Approval	AG	RTH
3	26.05.25	Updated Architectural Plans	NR	NR
4	19.12.25	Issued for Approval	PD	JE

QR Code

**Issued for Approval  
Not for Construction**



Client  
**Bernoth Holdings Pty Ltd**

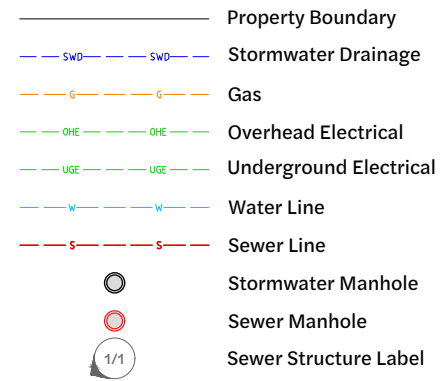
Project  
**Hagan Street, Isaac Street  
and Ruthven Street  
North Toowoomba**

Disclaimer  
All dimensions to be checked on site by contractor prior to construction. Use written dimensions only, do not scale.

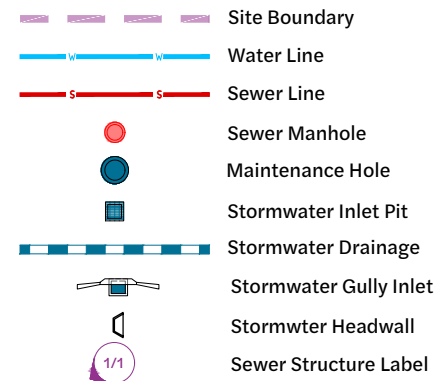


Drawing Title		
<b>Sewer Layout Plan (Sheet 4 of 5)</b>		
Project No. <b>C_25023</b>	Drawing No. <b>603</b>	Revision <b>4</b>

**Existing Legend**



**Proposed Legend**



**General:**

1. All work and materials shall be in accordance with current South east Queensland Water Supply Code specifications and standards.
2. Unless specified otherwise all materials and work shall comply with the relevant Australian Standards.
3. Adopt lip of kerb or shoulder of road as permanent level.
4. Cover on mains from permanent level to be as shown in SEQ-SEW-1200-2.
5. Conduits to be installed in accordance with the standard drawings.
6. All materials used in the works shall comply with the SEQ-SP's accepted products and materials list or be appropriately shown, listed and defined in the engineering submission so that the alternative product or material can be assessed and if appropriate, approved by the SEQ-SP.
7. The construction of the sewer reticulation work shown on this drawing must be supervised by an engineer who has RPEQ registration or authorised representative. Works not complying with this requirement will not be permitted to connect to the reticulation system.

**Environmental Protection:**

All environment protection measures shall be implemented prior to any construction work, including clearing, commencing.

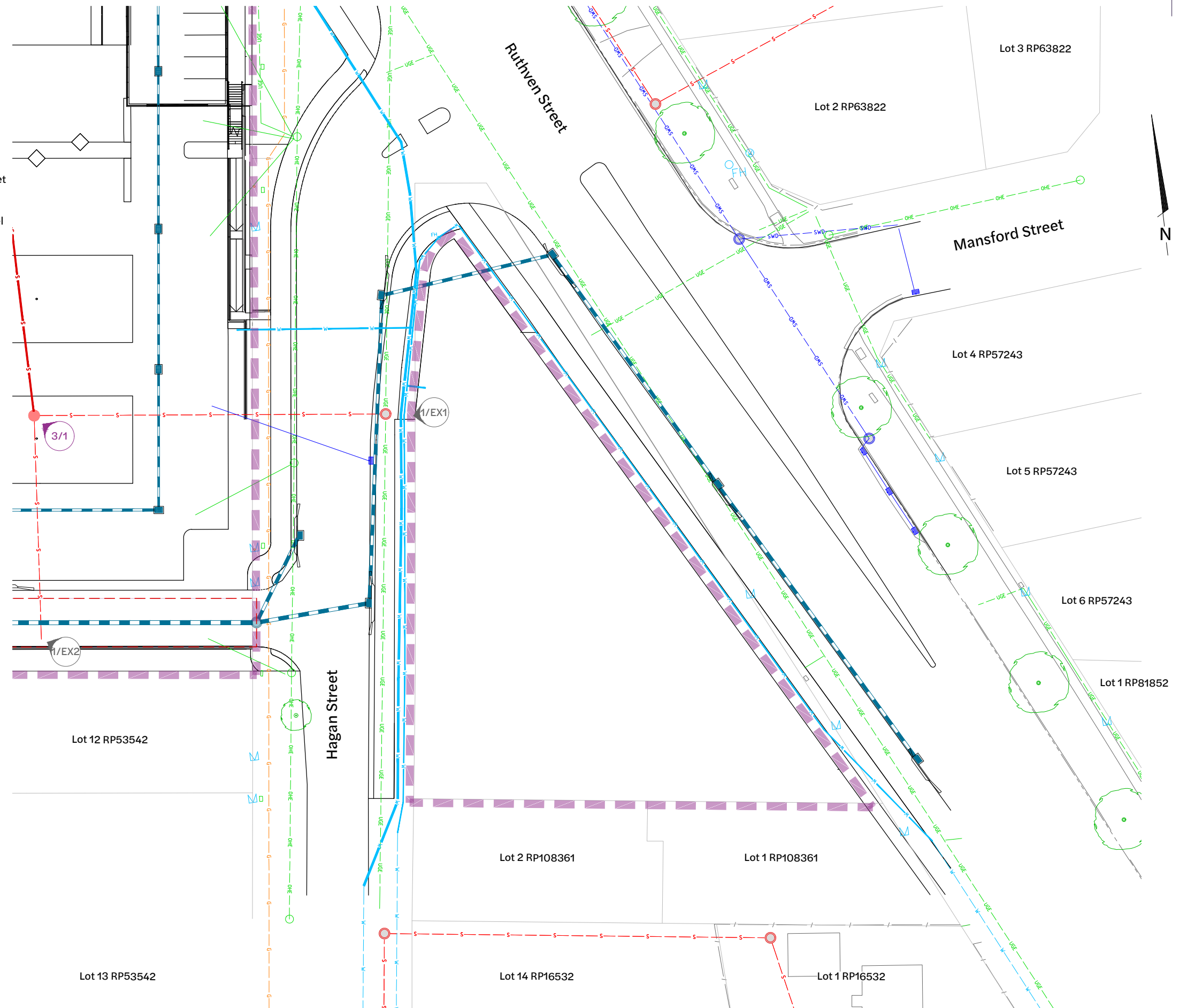
**Construction Approvals:**

The contractor is to be responsible for obtaining all relevant works approvals prior to the commencement of construction. Approvals to consider include, but are not limited to:

- Traffic permits and management plans
- QLD police permit
- Driveway permit/notice to work on council property
- Works across a TRC bikeway or bikeway closure/detour

**Sewer Connection Notes:**

1. Underground services exist in the area, and may not all be represented on this plan. Contractor to locate all existing services and confirm levels prior to excavation works.
2. Contractor is responsible for the location, protection and necessary relocation of all underground services prior to commencement of works.
3. Known existing services have been shown on longitudinal sections for identification, but have not been accurately located and may not represent all in ground services
4. Dimensions in millimeters (U.N.O).

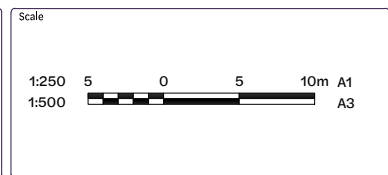


**Inset D - Sewer Layout Plan**  
1:250 Scale

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	CG	RTH
2	20.05.25	Issued for Approval	AG	RTH
3	26.05.25	Updated Architectural Plans	NR	NR
4	19.12.25	Issued for Approval	PD	JE

QR Code

**Issued for Approval**  
Not for Construction



Client  
**Bernoth Holdings Pty Ltd**

Project  
**Hagan Street, Isaac Street and Ruthven Street North Toowoomba**



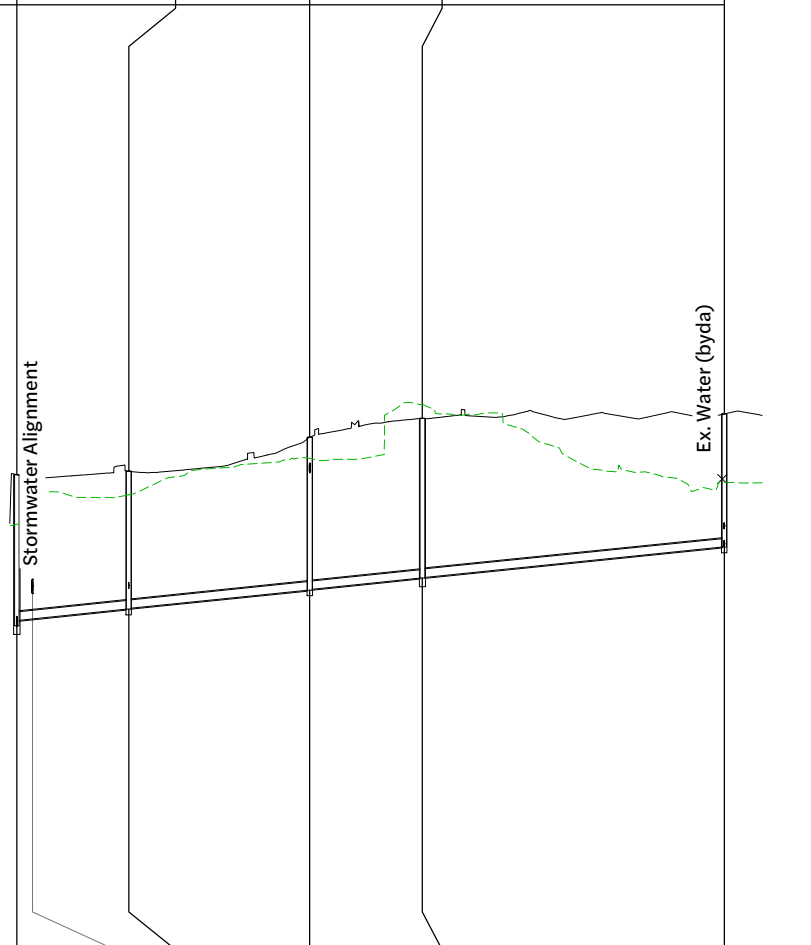
Drawing Title		
<b>Sewer Layout Plan (Sheet 5 of 5)</b>		
Project No. <b>C_25023</b>	Drawing No. <b>604</b>	Revision <b>4</b>

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Maintenance Hole / Shaft Name	2/EX5	1/1	2/1	3/1	4/1
MH / MS Cover Type					
MH / MS Type	X	F	F	X	F
DS MH / MS Drop Type					
Line Deflection & Branches	Ex5	11° Ex4 -71°	23° 2 -36°	73°	Ex1 -83° Ex2 5°
Property Connection Type					

**Legend**

- Existing Surface
- Design Surface
- Stormwater pipe

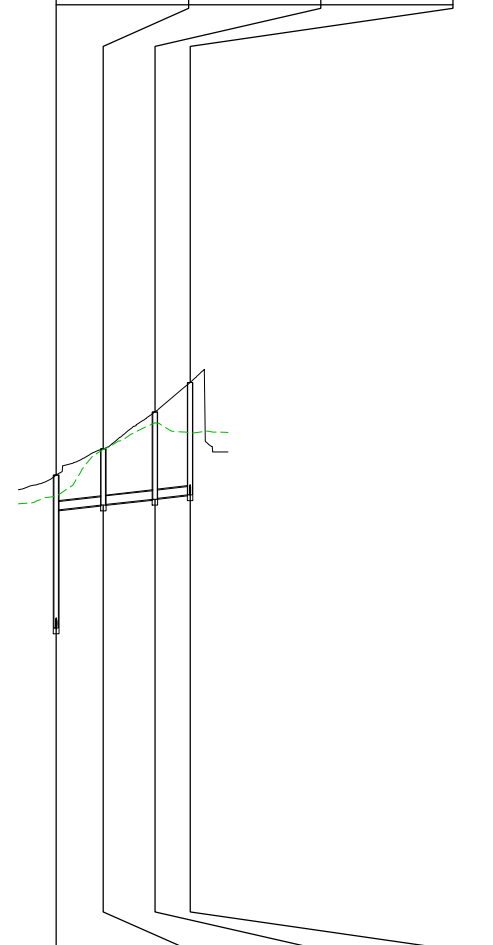


Datum RL	583.000				
Property Description					
Pipe Size (mm), Class	225 PVC SN8	225 PVC SN8	225 PVC SN8	225 PVC SN8	
Grade (1 in X)	99.94	99.82	99.68	99.95	
Length	29.581	47.912	29.805	79.858	
Embedment Type					
Finished (& Existing) Surface Level	596.364 (596.058)	596.459 (595.836)	597.360 (596.799)	597.861 (598.225)	597.971 (596.168)
Depth Of Invert Below FSL	3.994 3.848	3.647 3.627	4.048 4.028	4.230 4.210	3.521
Invert Level	592.370 592.516	592.812 592.832	593.312 593.332	593.631 593.651	594.450
Chainage	0.000	4.138	77.493	107.298	187.156

Line

1

Maintenance Hole / Shaft Name	2/1	1/2	2/2	3/2
MH / MS Cover Type				
MH / MS Type	F	F	F	F
DS MH / MS Drop Type				
Line Deflection & Branches	1	34°	60°	Ex3 -69°
Property Connection Type				



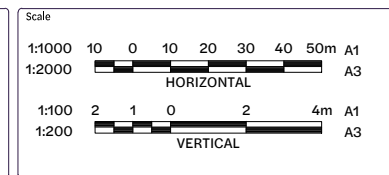
Datum RL	584.000			
Property Description				
Pipe Size (mm), Class	225 PVC SN8	225 PVC SN8	225 PVC SN8	
Grade (1 in X)	99.72	99.64	99.04	
Length	12.465	13.65	9.31	
Embedment Type				
Finished (& Existing) Surface Level	597.360 (596.799)	598.049 (598.036)	599.029 (598.738)	599.807 (598.466)
Depth Of Invert Below FSL	4.048 0.926	1.490 1.470	2.313 2.293	2.977
Invert Level	593.312 596.434	596.559 596.579	596.716 596.736	596.830
Chainage	0.000	12.465	26.115	35.425

2

Revision	Date	Issue Details	Drawn	Designed
1	23.05.25	Issued for Approval	PD	JE
2	19.12.25	Issued for Approval	PD	JE

QR Code

**Issued for Approval**  
Not for Construction



Client  
**Bernoth Holdings Pty Ltd**

Project  
**Hagan Street, Isaac Street  
and Ruthven Street  
North Toowoomba**



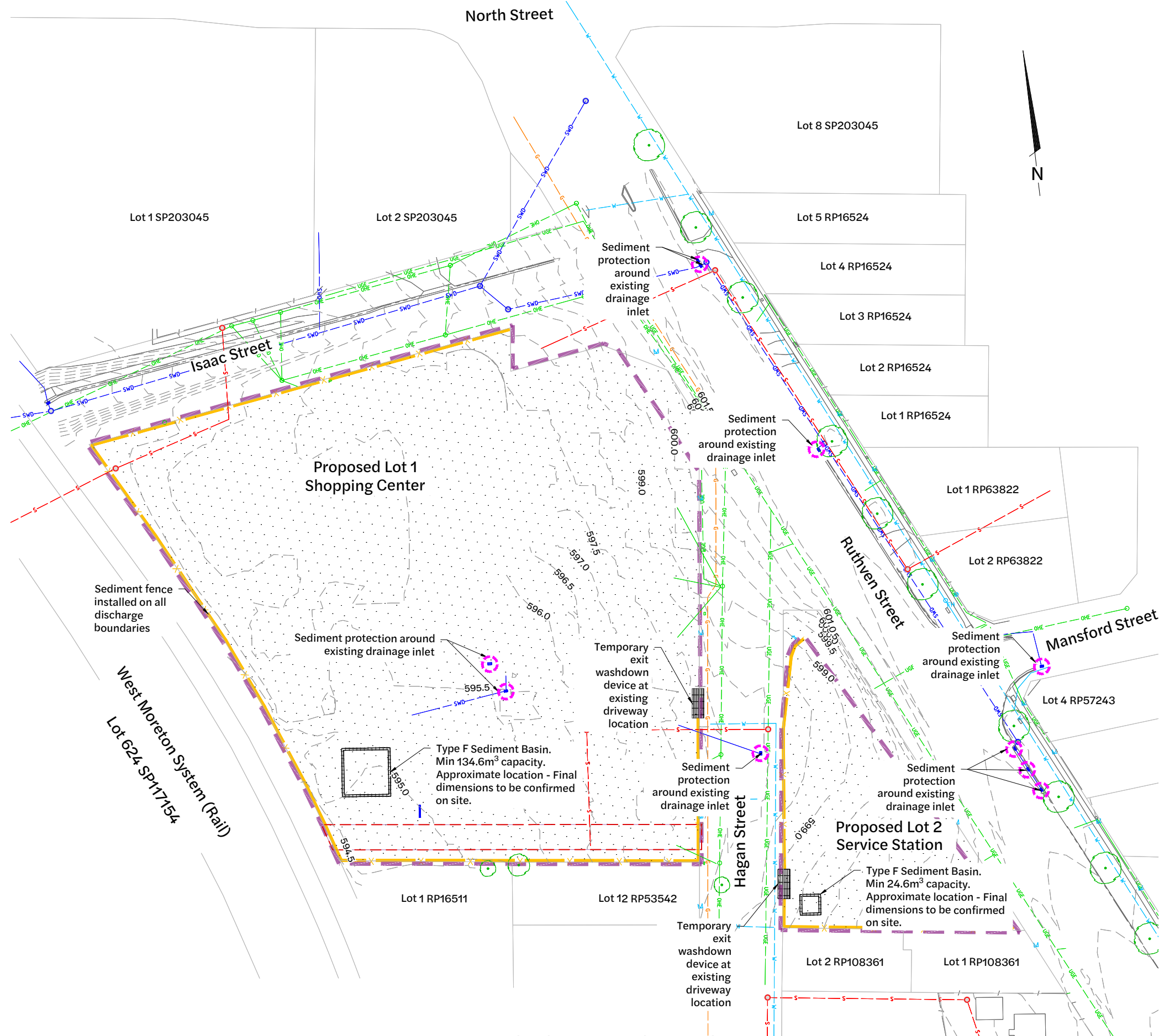
Drawing Title		
<b>Sewer Long Section</b>		
Project No. <b>C_25023</b>	Drawing No. <b>605</b>	Revision <b>2</b>

**Existing Legend**

- Property Boundary
- 0.1 Surface Contour
- Stormwater Drainage
- Sewerage Reticulation
- Water Reticulation
- Gas
- Overhead Electrical

**Proposed Legend**

- Site Boundary
- Sediment Fence (or as directed by Site Superintendent)
- Temporary Exit Washdown Grate
- Area of Disturbance
- Inlet Protection



**Erosion and Sediment control Layout Plan**  
1:400 Scale

Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH

QR Code

Status  
**Issued for Approval**  
Not for Construction

Scale
1:400 1:800

Client  
Bernoth Holdings Pty Ltd

Project  
Hagan Street, Isaac Street and Ruthven Street North Toowoomba



Drawing Title		
<b>Erosion and Sediment Control Layout Plan</b>		
Project No. C_25023	Drawing No. 800	Revision 1

FILE G:\MY DRIVE\PROJECTS\C\_25023 - RUTHVEN STREET NORTH TOOWOOMBA\A1\_MODEL\AUTOCAD\C\_25023\_BOL\_EROSION AND SEDIMENT CONTROL LAYOUT PLAN.DWG LAST SAVED BY: CONE

## Erosion and Sediment Control Notes:

- The Contractor is to take all necessary precautions to control and minimise erosion and downstream sedimentation during all stages of construction including the maintenance period.
- Notwithstanding the design shown on the drawings, the Contractor is responsible to implement sediment control devices using best practices as necessary to minimise the quantity of sediment leaving the site.
- Some variations to the specified construction sequence may be necessary in certain areas to facilitate construction. Where this is the case, any variation must be approved by the superintendent prior to implementation.
- At all times the Contractor shall monitor the prevailing weather conditions and protect any downstream construction gully inlets.
- Clearing of site and stockpile site to be determined on site by Superintendent and is to be clear of any water course.
- Where possible provide cut-off drains to divert clean water from undisturbed catchment.
- All perimeter banks/swales shall have uninterrupted positive grade to an outlet.
- Construct wash down bay or shake down at entry/exit to council standards and to IECA guidelines.
- Inlets to have silt protection in accordance with kerb inlet protection detail at locations shown or as directed by the superintendent.
- The extent of grassing or hydromulching be determined by the engineer and shall be seeded, as specified, within seven days of final trimming.
- The Contractor shall be responsible for complying with council's requirements in relation to grass strike and grass coverage rates at the on and off maintenance inspections.
- Provide turf strips over sewer/roofwater lines where adjacent to existing properties.
- All sediment fences to be installed to IECA guidelines.
- All sediment fences to be separate from other barriers on site.
- All open ended pipework located in open trenches and incomplete pits are to be capped with suitable filter cloth at the end of each day's work and immediately prior to storms.
- All materials tracked or sediment washed onto council's road from the development are to be broomed up and collected and not washed into stormwater system.
- All sediment control devices shall be monitored, cleaned and/or repaired whenever the capacity of the erosion and sediment control measure falls below 75%.
- All erosion and sediment control measures shall be inspected at least daily (when work is occurring on site) or weekly (when work is not occurring on site). Within 24 hours of expected rain and within 18 hours of a rainfall event as required to maintain control devices.
- All temporary Erosion and Sediment Control (ESC) measures are to be maintained and fully operational during the maintenance period, and are to be removed after the satisfactory completion of an 'Off Maintenance' inspection and prior to formal acceptance by council.
- No obstructions shall be placed on council's public roads or gully pits for safety reasons.

## Sediment Management Program:

### 1. Clearing

- Install appropriate safety fencing and signage.
- Sediment fence, sediment basins and diversion drains to be constructed as required.
- Existing grassed areas to remain where possible.
- Shake down/wash down bay at entry/exit point as required.
- Construct upstream clean water diversion drains
- Superintendent to confirm extent of clearing to Contractor prior to commencement of works.
- Refer also to Vegetation Management Plan.

### 2. Earthworks

- Sediment fences and diversion drains to be constructed as required
- Temporary lateral contour drains to be instated as specified.

### 3. Sewer/Roofwater/Stormwater/Services

- Excavated material to be placed on high side of trench and to protect pipe work and direct surface runoff away from excavations.
- Topsoil and hydromulch areas in allotments immediately after completing the sewer and roofwater drainage construction and turf over trenches where adjacent to existing properties.
- Depress ground around temporary field inlets to create sediment pond.
- Turf open drains where shown

### 4. Stockpile

- Sediment fence to be erected 5m from toe of batter on low side of stockpile.
- Cut off drain on high side to direct surface runoff around stockpile.

### 5. Roadworks

- Sediment fences to allotments to be erected.
- Kerb inlet protection to be provided to all gullies unless noted otherwise.
- Place turf filter strips behind kerb and channel.

### 6. Allotments

- Mulch, topsoil and hydromulch allotments as directed.
- Sediment fences to allotments to be erected.
- Covers to gully grates to be removed if the superintendent indicates the grass strike is sufficient.

### 7. Maintenance period

- All erosion and sediment control measures shall be inspected:
  - At least daily (when work is occurring on site) or weekly (when work is not occurring on site)
  - Within 24 hours of expected rain; and
  - Within 18 hours of a rainfall event
- All erosion and sediment control measures shall be maintained the same day when the capacity of the erosion and sediment control measure falls below 75%.
- Any repairs to erosion and sediment control devices are to be effected immediately. Sediment after rain is to be cleaned from streets and allotments immediately and corrective action taken to avoid a re-occurrence of the failure.

## Construction Sequence:

- Construct entry and exit point together with shake down device.
- Erect sediment fences along downstream adjacent property boundaries. Place barrier fences around lots or areas that do not require disturbance to ensure areas remain undisturbed.
- Install protection measures as directed to any existing gullies and field inlets affected by the new works.
- Construct clean water diversion swales along to ensure upstream runoff is diverted around the site. All diversion swales are to be constructed prior to any earthworks operations.
- Undertake earthworks operations..
- Construct all underground hydraulic services ensuring stormwater drains remain capped during construction. Install field inlet and gully pit protection measures as directed.
- Place sediment fences at boundaries adjacent to roadways where lot slopes towards road.
- Turf verges progressively following completion of utility services.
- On completion of works as stated above, establishment of 70% grass cover and approval by council, remove sediment basin, sediment traps and rehabilitate areas. Hydromulch immediately. Place sediment fences to downstream sides of disturbed areas.

## B.C.C Environment Management Branch Approval:

### Environment Category

The following environment protection measures should be implemented prior to any construction work (including clearing) commencing.

### Vegetation Protection

- Trees within 4m of general machine operation should be protected with tree guards. These comprise rubber or hardwood girdles constructed with 1.8m battens closely spaced and arranged vertically from ground level. Girdles should be strapped to the tree prior to construction and remain until completion.
- All construction vehicle activity should be restricted by temporarily fencing the undisturbed areas adjacent to the construction alignment.
- Where possible, tree roots should be tunnelled under rather than severed. In the event of root damage, make a clean cut above the severed root and treat the root with a suitable fungicide.
- Access should be restricted to pre-existing tracks or the path of disturbance.
- Tree limbs which will interfere with excavation machinery should be cleanly pruned prior to construction activity commencing.

### Soil Management

- Topsoil and subsoil should be stockpiled separately.
- Minimal loss of sediment should occur from the work site. This will necessitate the use of appropriate sediment controls.
- Care should be taken to prevent sediment from entering the stormwater system. This will require placing appropriate sediment controls around stockpiles and silt traps around stormwater gullies.

### Rehabilitation

- Pre-disturbance soil profiles and compaction levels are to be reinstated.
- The trench area is to be topsoiled and seeded or turfed upon completion of works.
- All disturbed areas associated with the construction of the alignment should be seeded. Heavily compacted areas should be ripped prior to seeding.
- All disturbed areas to be left in a stable condition.
- All planting will need to be maintained throughout the establishment phase.

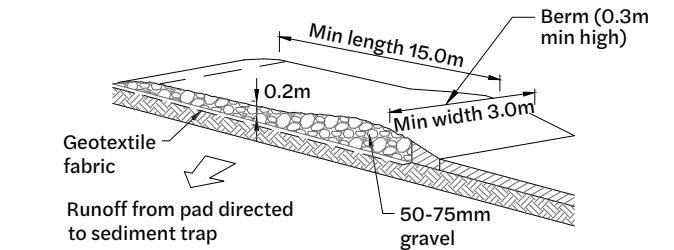
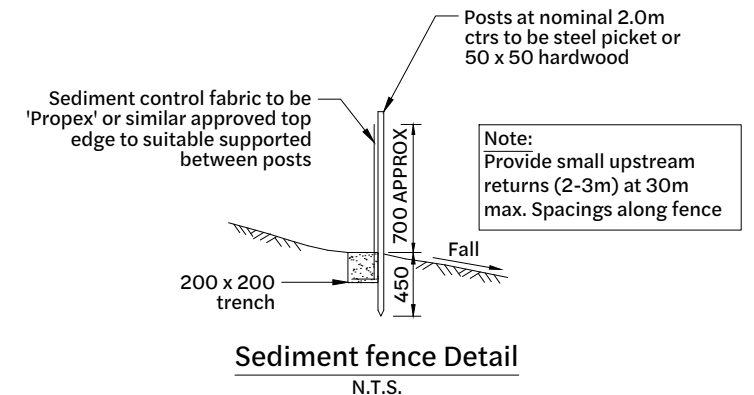
### Water Quality Monitoring & Requirements

- Water sampling shall be undertaken to achieve the following water quality objectives:

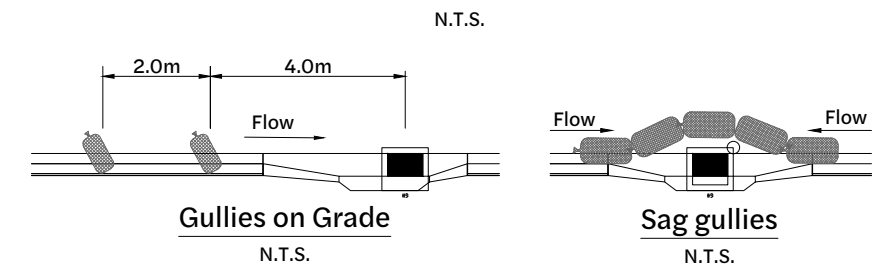
- Water pH between 6.5 - 8.5;
- Total suspended solids  $\leq 50$  mg/L;
- Oils and grease - No visible films and odour; and
- Litter - No visible litter washed from site

- Test results to be available on site

Sediment Basin Calculations				Sediment Basin Calculations			
1.	Sediment Basin	= "Type D"		1.	Sediment Basin	= "Type D"	
2.	Settling Volume	= $400 * C_v * 1.346$ (Ha)	= 269.3051m <sup>3</sup>	2.	Settling Volume	= $400 * C_v * 0.246$ (Ha)	= 49.350m <sup>3</sup>
	Where:	$C_v$	= 0.5 (Open Soil)		Where:	$C_v$	= 0.5 (Open Soil)
		Area	= 1.346ha			Area	= 0.246ha
3.	Sediment Storage Volume	= 50% * Settling Volume	= 134.6m <sup>3</sup>	3.	Sediment Storage Volume	= 50% * Settling Volume	= 24.67m <sup>3</sup>

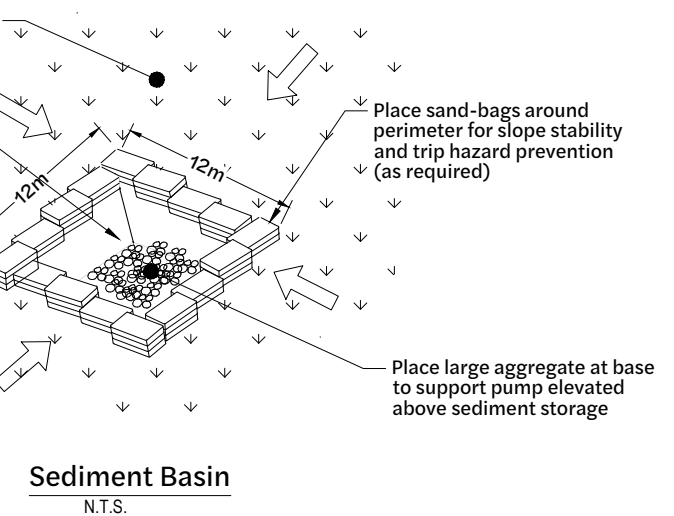
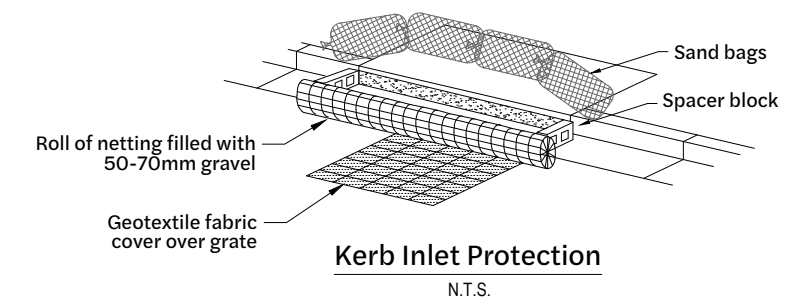


## Temporary Construction Exit Washdown Device



## Sandbags at Gullies

To be provided at all gullies



Revision	Date	Issue Details	Drawn	Designed
1	31.03.25	Issued for Information	MD	RTH

QR Code

Status
<b>Issued for Approval Not for Construction</b>

Scale

Client
Bernoth Holdings Pty Ltd

Project
Hagan Street, Isaac Street and Ruthven Street North Toowoomba

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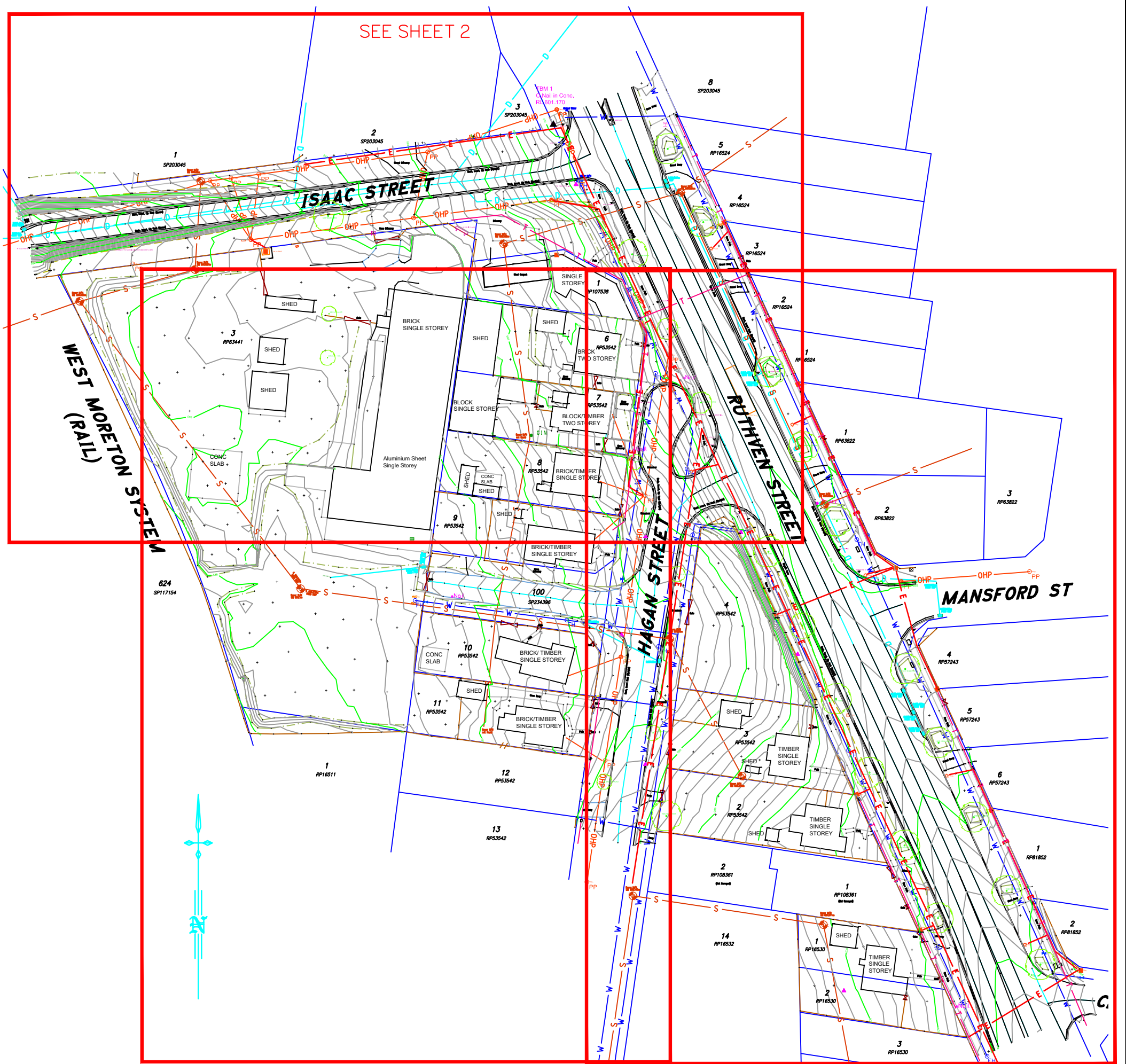
Drawing Title		
<b>Erosion and Sediment Control Notes and Details</b>		
Project No. <b>C_25023</b>	Drawing No. <b>810</b>	Revision <b>1</b>



## Isaac Street, Hagan Street & Ruthven Street, North Toowoomba Stormwater Management Plan

# Appendix B Survey

SEE SHEET 2



SEE SHEET 3

SEE SHEET 4

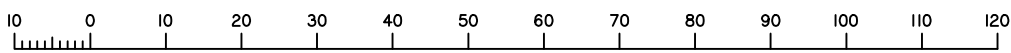
**Other Notes**

The Digital File is a 3D AutoCAD File.  
Note that any distances measured in AutoCAD will be slope distances.

Contour Interval : 0.2m  
Indexed : 1.0 m

The street trees in Ruthven Street are to be removed subject to prelodgement consultation.

Scale 1:1000



**IMPORTANT WARNING NOTES**

- \* This plot relates to data prepared for Bernoth Properties from a combination of field survey and existing records for the purpose of assisting design of new development within the subject land, and should not be used for any other purpose.
- \* This plot is not an identification plan and boundaries have not been marked. The subject property boundaries as shown on the plan face have been plotted from deed dimensions and minimal cadastral survey connections. They are subject to cadastral survey.
- \* This survey is based on GDA20/MGA20 (Zone 56) and AHD\_D DATUM at TBM1 derived from PM40828 by GNSS RTK. Survey distances are (1:1) on MGA meridian, they are correct as at the time of survey.
- \* In particular, no reliance should be placed on the information provided on this plot for any financial dealings involving the land.
- \* Contour Information as shown has been derived from detail survey.
- \* Above and Underground services have been plotted from visible surface markers observed by the surveyor at the time of survey and using records obtained from the relevant authorities. Prior to any demolition, excavation, or construction within the site, the relevant authorities should be contacted for possible location of additional underground services and detailed locations of all services.
- \* Sewer manhole lids could not be opened at the time of survey and will require TRC assistance to understand depths of service.
- \* All underground services strings shown in this data have been plotted from DBYD plans and should not be relied upon for accurate location of the individual service, they are indicative only.
- \* This plot is provided for verification of survey data only and should not be used for any other purpose.
- \* These notes are an integral part of the subject plan

LINEWORK		SYMBOLS	
— Subject Lot Boundary	— Centre-Line of Gully	⊠ Electricity Pit	⊠ Telstra Pit
- - - Adjoining Boundary	— Change of Grade	⊠ Electricity Manhole	⊠ Telstra Manhole
— OHP	— Top of Bank	⊠ Electricity Manhole	⊠ Telstra Manhole
— E	— Bottom of Bank	⊠ Electricity Manhole	⊠ Telstra Manhole
— G	— Top of Wall	⊠ Electricity Manhole	⊠ Telstra Manhole
— S	— Bottom of Wall	⊠ Electricity Manhole	⊠ Telstra Manhole
— D	— Fence Line	⊠ Electricity Manhole	⊠ Telstra Manhole
— T	— Edge of Bitumen	⊠ Electricity Manhole	⊠ Telstra Manhole
— O	— IL of Kerb	⊠ Electricity Manhole	⊠ Telstra Manhole
— W	— Back of Kerb	⊠ Electricity Manhole	⊠ Telstra Manhole
— W	— Crown of Road	⊠ Electricity Manhole	⊠ Telstra Manhole
— W	— Concrete	⊠ Electricity Manhole	⊠ Telstra Manhole
— W	— Paving	⊠ Electricity Manhole	⊠ Telstra Manhole
— W	— Tree	⊠ Electricity Manhole	⊠ Telstra Manhole
— W	— Shrub	⊠ Electricity Manhole	⊠ Telstra Manhole
— W	— Palm Tree	⊠ Electricity Manhole	⊠ Telstra Manhole
— W	— Bench Mark	⊠ Electricity Manhole	⊠ Telstra Manhole
— W	— Traffic Sign	⊠ Electricity Manhole	⊠ Telstra Manhole

PROJECT : <b>Hagan Street</b>	
12d File Ref : ZA20507	Date Drafted : 20-06-2022
Level Datum : AHD Der	Drafted By : BJI/ MRT
Origin : TBM 1 RL 601.170	Surveyed : FW
	Checked By : MRT
DWG Name : ZA20507D01.dwg	Scale : 1:1000 @A3

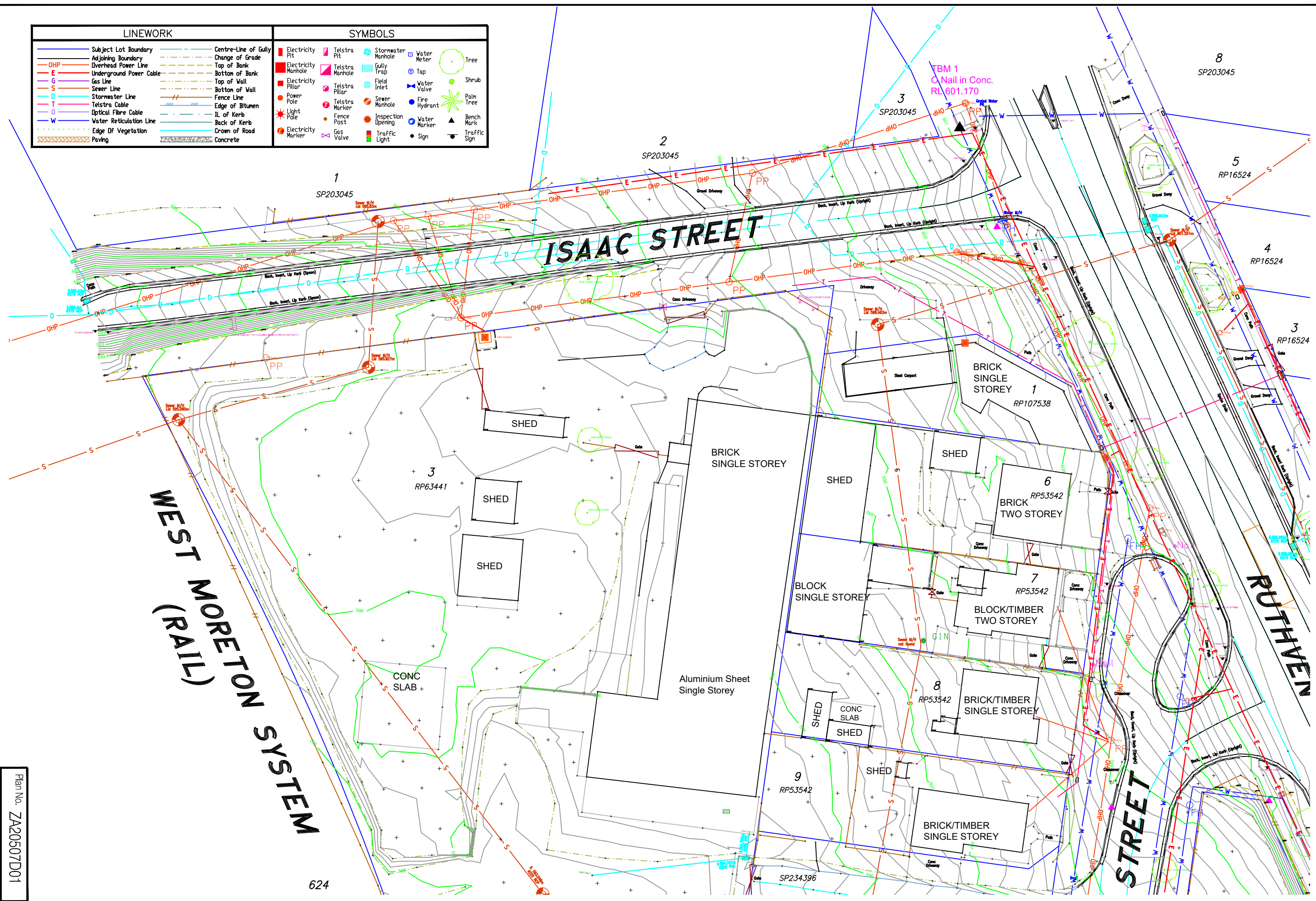
CLIENT : <b>Bernoth Properties</b>	
<b>Detail and Contour Survey</b>	
<b>Ruthven, Hagan &amp; Isaac Streets</b>	
<b>North Toowoomba</b>	
A3	Local Authority : Toowoomba Regional Council



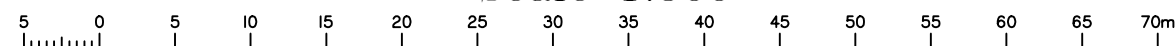
**group  
downes**  
Surveyors - Planners -  
Development Consultants  
Sunshine Coast \* Toowoomba \* Western Downs  
www.downes.com.au A.C.N. 010 841 639

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LINEWORK		SYMBOLS	
	Subject Lot Boundary		Electricity Pit
	Adjoining Boundary		Electricity Manhole
	Overhead Power Line		Electricity Pillar
	Underground Power Cable		Power Pole
	Gas Line		Light Pole
	Sewer Line		Electricity Marker
	Stormwater Line		Telstra Pit
	Telstra Cable		Telstra Manhole
	Optical Fibre Cable		Telstra Pillar
	Water Reticulation Line		Telstra Marker
	Edge Of Vegetation		Fence Post
	Paving		Gas Valve
	Centre-Line of Gully		Stormwater Manhole
	Change of Grade		Water Meter
	Top of Bank		Tap
	Bottom of Bank		Water Valve
	Top of Wall		Fine Hydrant
	Bottom of Wall		Water Marker
	Fence Line		Bench Mark
	Edge of Bitumen		Traffic Sign
	IL of Kerb		Sign
	Back of Kerb		Tree
	Crown of Road		Shrub
	Concrete		Palm Tree

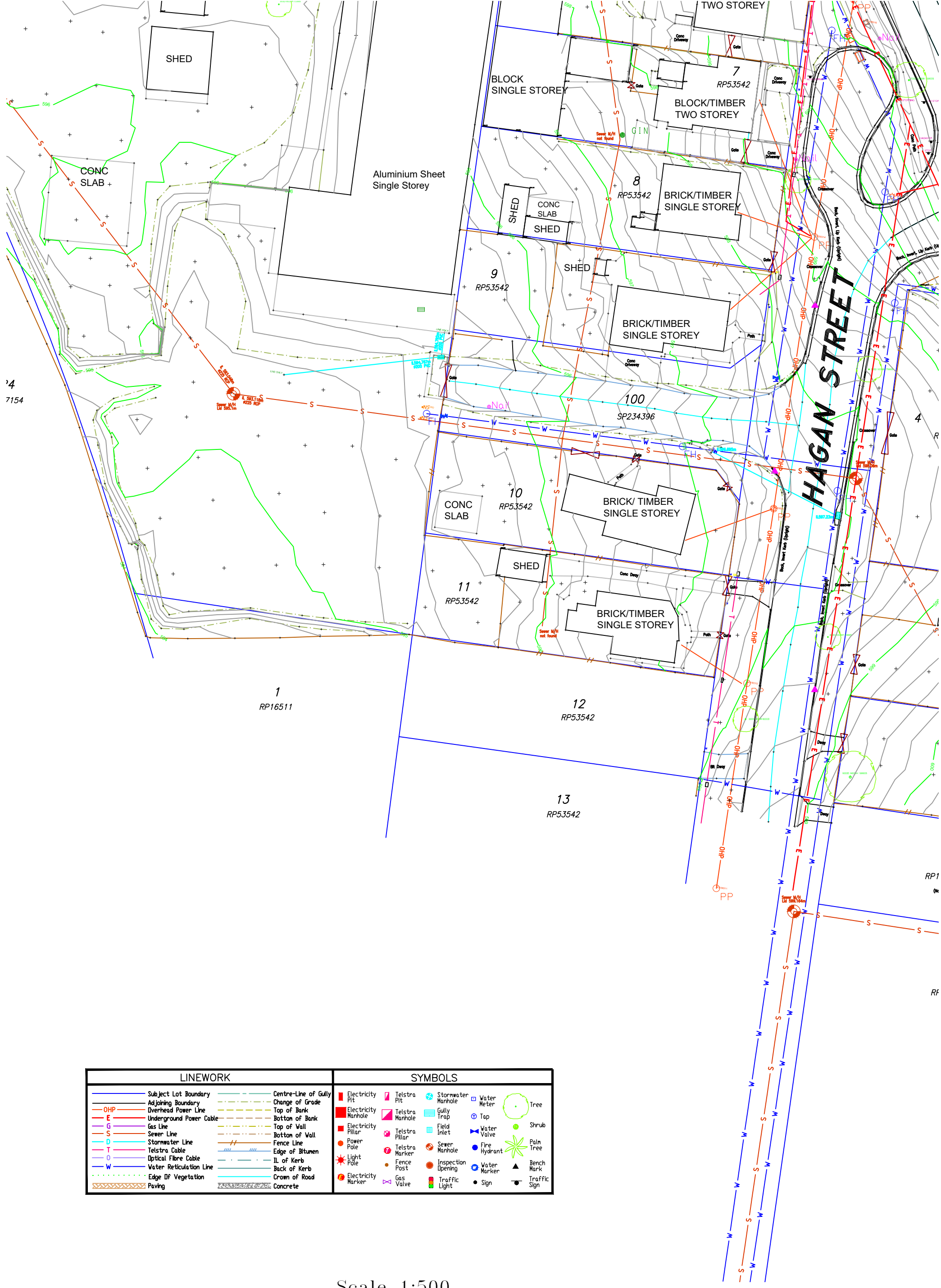


Scale 1:500



Plan No. ZA20507D01  
 Amended:  
 Sheet 2 of 4

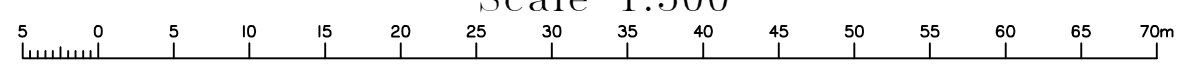
624

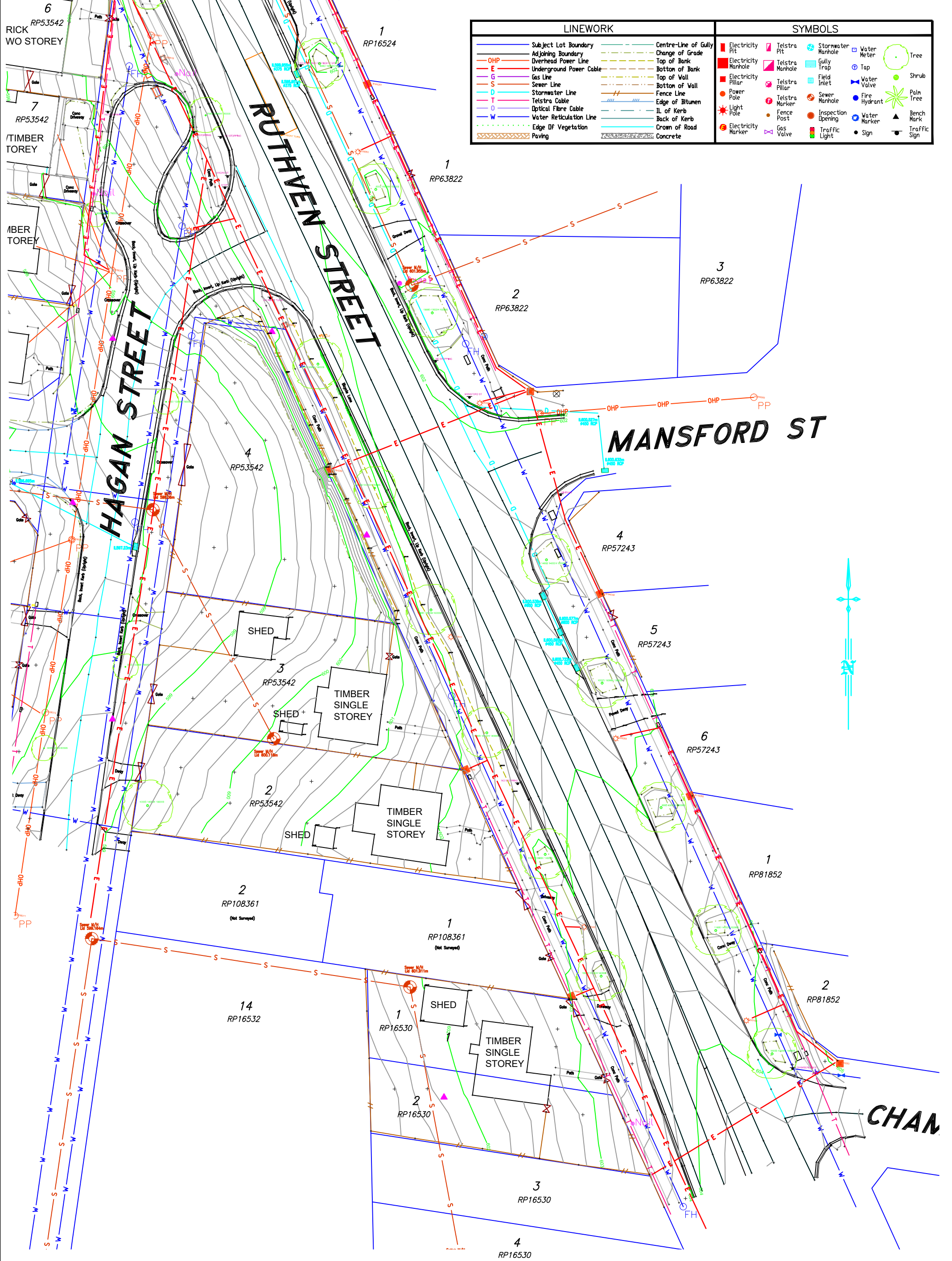


'4  
7154

LINEWORK		SYMBOLS	
	Subject Lot Boundary		Electricity Pit
	Adjoining Boundary		Electricity Manhole
	Overhead Power Line		Power Pole
	Underground Power Cable		Light Pole
	Gas Line		Electricity Marker
	Sewer Line		Telstra Pit
	Stormwater Line		Telstra Manhole
	Telstra Cable		Telstra Pillar
	Optical Fibre Cable		Telstra Marker
	Water Reticulation Line		Power Post
	Edge of Vegetation		Gas Valve
	Paving		Stormwater Manhole
	Centre-Line of Gully		Gully Trap
	Change of Grade		Field Inlet
	Top of Bank		Water Valve
	Bottom of Bank		Fire Hydrant
	Top of Wall		Water Marker
	Bottom of Wall		Sign
	Fence Line		Water Meter
	Edge of Bitumen		Tap
	IL of Kerb		Water Meter
	Back of Kerb		Water Meter
	Crown of Road		Water Meter
	Concrete		Tree
			Shrub
			Palm Tree
			Bench Mark
			Traffic Sign

Scale 1:500





LINEWORK		SYMBOLS	
	Subject Lot Boundary		Electricity Pit
	Adjoining Boundary		Electricity Manhole
	Overhead Power Line		Electricity Manhole
	Underground Power Cable		Electricity Manhole
	Gas Line		Electricity Manhole
	Sewer Line		Electricity Manhole
	Stormwater Line		Electricity Manhole
	Telstra Cable		Electricity Manhole
	Optical Fibre Cable		Electricity Manhole
	Water Reticulation Line		Electricity Manhole
	Edge Of Vegetation		Electricity Manhole
	Paving		Electricity Manhole
	Centre-Line of Gully		Electricity Manhole
	Change of Grade		Electricity Manhole
	Top of Bank		Electricity Manhole
	Bottom of Bank		Electricity Manhole
	Top of Wall		Electricity Manhole
	Bottom of Wall		Electricity Manhole
	Fence Line		Electricity Manhole
	Edge of Bitumen		Electricity Manhole
	IL of Kerb		Electricity Manhole
	Back of Kerb		Electricity Manhole
	Crown of Road		Electricity Manhole
	Concrete		Electricity Manhole



Scale 1:500

