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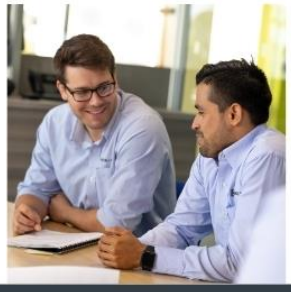

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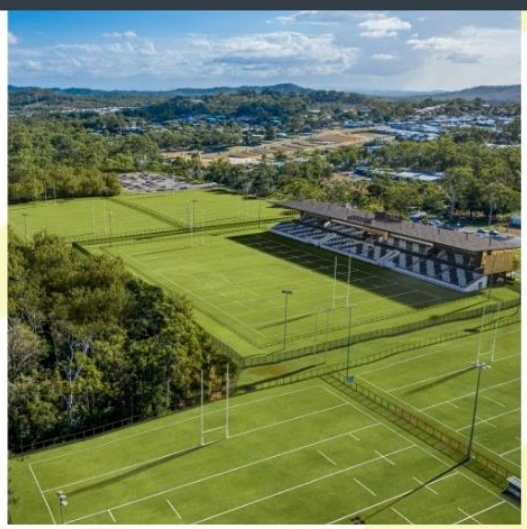

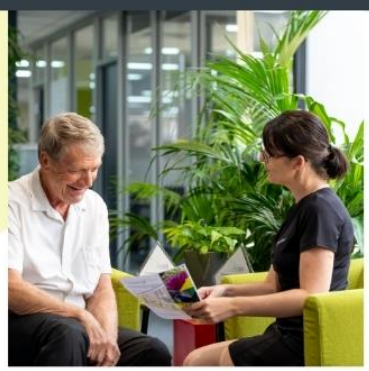

North Maclean Factory Outlets & Distribution Centre
Civil Engineering Report

Client:	Roubaix Properties Pty Ltd
Project Number:	BE220566
Document Number:	BE220566-RP-CER-03
Date of Issue:	14 October 2024

Document Control Record

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Date:	14/10/24

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Position:	Principal Engineer
Signed:	
Date:	14/10/24

Version No.	Description	Date	Prepared	Approved
01	Draft Issue	23/08/2024	DO	LF
02	Updated Issue	26/09/2024	DO	LF
03	Final Issue	10/10/2024	DO	LF

Recipients are responsible for eliminating all superseded documents in their possession.

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1. Introduction

Roubaix Properties Pty Ltd (Roubaix) has engaged Burchills Engineering Solutions (Burchills) to prepare a Civil Engineering Report to be considered part of a Development Approval (DA) to Economic Development Queensland (EDQ). The proposed North Maclean Factory Outlets and Distribution Centres development is located across 4693-4731 Mount Lindesay Highway, North Maclean.

This report determined that the site is suitable for the proposed development, in relation to matters particularly relating to civil engineering design parameters, and site constraints. The development can be undertaken in accordance with the current Logan City Council (LCC) guidelines, South East Queensland (SEQ) Water Supply and Sewerage, Design and Construction Code and best management practices.

1.1 Scope of Report

This report describes the existing physical conditions of the site, and suitability for the proposed development with particular respect to:

- Project Identification;
- Proposed Development;
- Site Earthworks;
- Roadworks, Access and Traffic;
- Stormwater Drainage;
- Water Supply;
- Sewer Reticulation; and
- Electricity and Telecommunications Supply.

This report represents an assessment of the facts and circumstances pertaining to these matters, as they are known to the writer at the time of preparation.

2. Project Identification

2.1 Real Property Description

The site is legally described as Lots 3 RP137101, 4 RP137101, 5 RP137101 and 6 RP137101. The corresponding street addresses are 4693-4703, 4705-4715, 4717-4731 and 4733-4743 Mount Lindesay Highway, North Maclean respectively. The combined site is generally rectangular and occupies an area of approximately 16.01 ha.

A detailed site survey has been undertaken by Sunrise Surveying and is included within Appendix A of this report. The location of the subject site is shown on Figure 2.1 below.

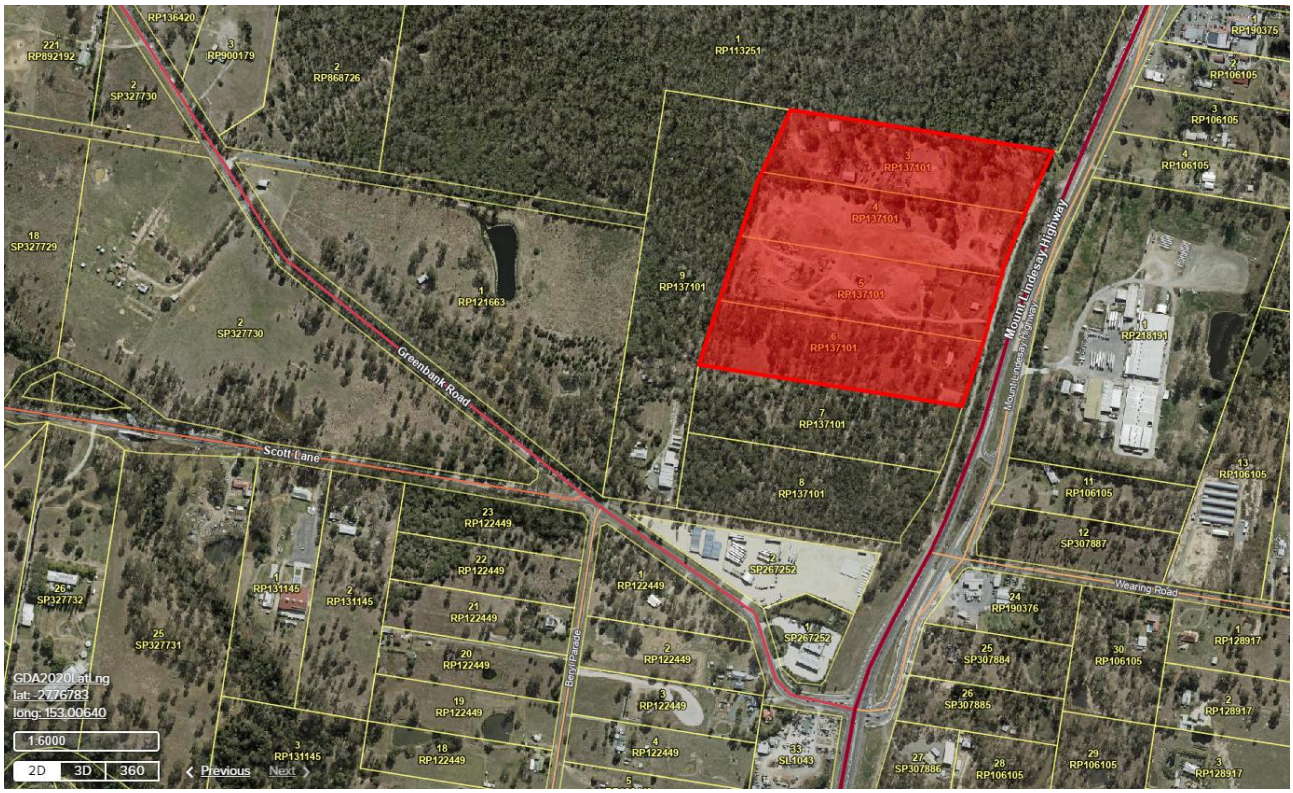


Figure 2.1 Site Locality Plan

2.2 Physical Description

The site is accessed from Mount Lindesay Highway service road, an existing road which fronts the eastern boundary of the subject site.

The subject site is relatively flat with majority of the site at an approximate level of RL26 mAHD to RL29 mAHD. There are currently development approvals on Lots 3, 4, 5 and 6 on RP137101 for civil earthworks (clearing in the case of Lot 6). Currently, the subject site has the following features:

- Lot 3 has sheds and dwelling
- Lot 4 is clear vacant land
- Lot 5 is clear vacant land as civil works are underway under approval DEV2019/1065
- Lot 6 has a single dwelling and due to commence civil works under DEV2023/1370 and DEV2024/1470

The subject site is located within the Great Flagstone Priority Development Area (PDA).

The site is bounded by the following existing land uses:

North: Vacant Land;
East: Mount Lindsay Highway;
South: Vacant Land; and
West: Industrial supplier/business.

3. Proposed Development

The subject site falls within the Greater Flagstone PDA, which is controlled by EDQ. The Context Plan indicates that the site is within an industrial and business zone as shown in Figure 3.1.

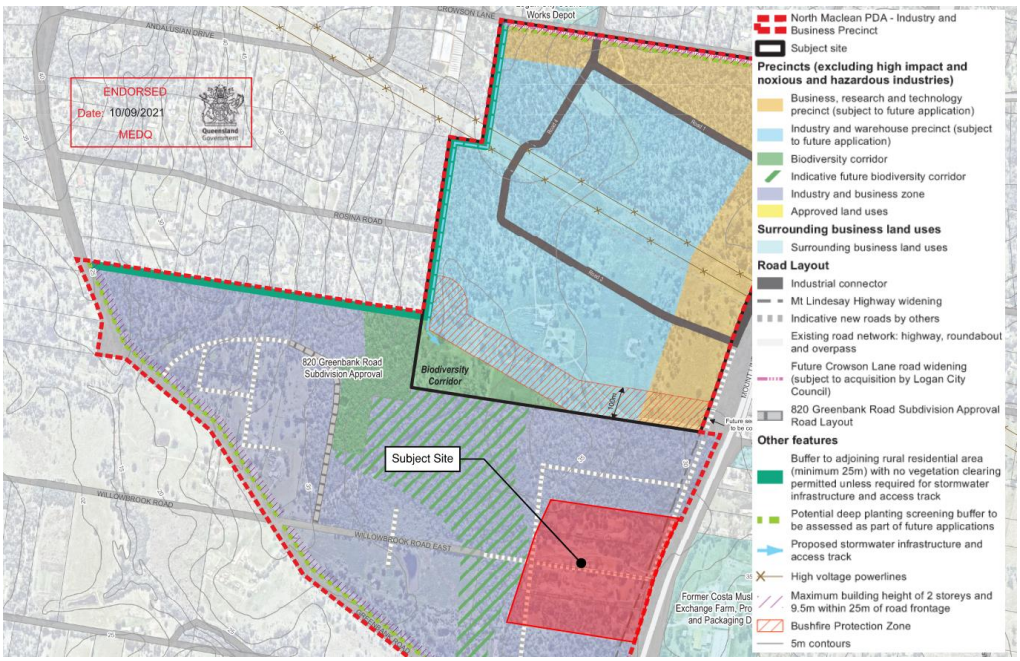


Figure 3.1 Subject Sites within Industrial and Business Zone

Based on the SEQ Water Supply and Sewerage Design & Construction Code, the Equivalent Tenements (ET) and Equivalent Population (EP) for the proposed development is shown in Table 3.1. The ET and EP has been calculated assuming a maximum building GFA of 50% for each lot (it is noted that the LCC planning scheme states a max 80% site coverage that is inclusive of carparking, landscaping and others).

Table 3.1 Development Summary

Use	Unit	Total Units (m^2)	EP's/Unit	Total EP
Industrial	GFA	77,505	0.97 EP per 100m2 GFA	751.8

Given the proposal is in the initial stages, a detailed development proposal has not yet been compiled. Initial investigations will allow for the filling of the site for an industrial purpose. The plan of development is attached as Appendix E.

4. Site Earthworks

It is anticipated that earthworks associated with the proposed development will be kept to a minimum with general cutting and filling associated with the driveway construction, trenching of services, flat building pad and basin construction. Given the proposal is in the initial stages, a detailed development proposal has not yet been compiled. Initial investigations will allow for the filling of the site for an industrial purpose.

Earthworks will be completed under the following development approvals:

- Lot 3 and 4: DEV2020/1144
- Lot 5: DEV2019/1065
- Lot 6: DEV2023/1370; DEV2024/1470

Earthworks on Lot 4 is complete and the 'As Constructed' package has been submitted to EDQ. Earthworks on Lot 3 and 5 are ongoing with final 'As Constructed' packages to be submitted under those approvals to EDQ. For the purpose of this report, it is assumed that the finished surface levels of Lot 6 will be similar to the 'As Constructed' levels of Lot 4, and a minimum RL of 27.5m for Lots 3 and 5.

Any additional earthworks required, including for provision of external infrastructure will be captured under the future material change of use, ROL or building use applications and subsequent OPW applications.

4.1 Sediment and Erosion Control

The best management practices will be implemented according to the IECA Best Practice Erosion and Sediment Control (2008) guidelines.

The following is a procedure of water quality controls to be implemented for the construction stage of the development.

4.1.1 Phase 1 – Stripping and Bulk Earthworks

- Identify and mark all trees to be retained and erect exclusions zones.
- Prior to any demolition, stripping or bulk earthworks on site, sediment fences, inlet traps, gully protection and entry/exit pad shall be put in place.
- A wash-down area and entry/exit pad will be provided at the construction site entrance to minimise the amount of sediment being tracked off the site.
- The wash down area will be drained to a suitable sediment capture device installed downstream of the construction entry.
- Sediment fences are to be installed along the downstream property boundaries prior to stripping and earthworks commencing.
- Construct an appropriately sized sediment basin for the development.
- If refueling of machinery is to occur on site, appropriate absorbent products for cleaning oil spills will be provided.
- Provide bins on site for the disposal of waste and building debris.
- All fresh water upstream of disturbed areas and stockpiles is to be diverted around the disturbed area to minimise the amount of sediment mobilization.
- If it is anticipated that stockpiled material will not be used for a period of two weeks or more, a polythene cover (or equivalent) shall be used to prevent sediment transport by rain during wet periods. Conversely during dry spells a cover shall be used to prevent fine sediments becoming airborne.
- The contractor shall provide on-going maintenance of sediment and erosion control devices around the site.

- The contractor is to stage all works so that disturbed areas remain exposed for a short a period as practicable.

Measures to minimise airborne pollutants during construction in the form of dust during dry and/or windy weather shall include the following:

- Exposed soils shall be kept damp to prevent particulates becoming airborne; and
- Stockpiles exposed for more than two weeks shall be covered to prevent wind erosion.

4.1.2 Phase 2 – Infrastructure, Building and Roadworks

- The site stormwater pipes and pits shall be installed with drop inlets provided to all pits.
- Provide sediment fences, sandbags or fine mesh cover to all gully pits.
- Monitoring of new stormwater pipes and infrastructure (including the storm water quality improvement devices) to ensure they are free of sediment and debris.
- Maintain shake down and wash down area at entry/exit.
- All disturbed areas are to be surfaced or landscaped/grassed (maintained to minimum 70% ground cover) as soon as practicable after completion of localized works.

4.1.3 Phase 3 – Finishing Works and Defects Liability Period

All erosion and sediment control measures, including sediment fences and inlet traps shall be maintained until completion of surface finishes including landscaping and turfing:

- Maintain sediment fences.
- Tend to landscaped areas to maintain ground cover.

5. Roadworks, Access and Traffic

5.1 Existing Traffic Background

The existing service road currently provides access to residence, Council waste service trucks and postal/deliveries to existing dwellings on Lot 3 and 6. It also accommodates for existing industrial use activity on Lots 3 and 5 RP137101 for Council and TMR infrastructure project contractors since 2019. EDQ/TMR compliance assessment of Lot 3, 4 and 5 RP137101 construction traffic access has been approved for earthworks filling under the existing development approvals.

5.2 Proposed Road Network

Access to the sites is proposed via:

- A new collector road (Willowbrook Road East) connecting the subject site to Greenbank Road at Willowbrook Road, and
- A new service road on the eastern frontage which will connect to the Mount Lindesay Highway / Chambers Flat Road interchange.

This layout is preferred due to:

- Private land ownership constraints for services alignment
- Existing approvals and environmental constraints external of the site boundaries

It is noted that this layout is typically consistent with the North Maclean Context plan with exception of the services south of Willowbrook Road East where site constraints determined the optimal alignment. The proposed road network is shown in Figure 5.1 below.

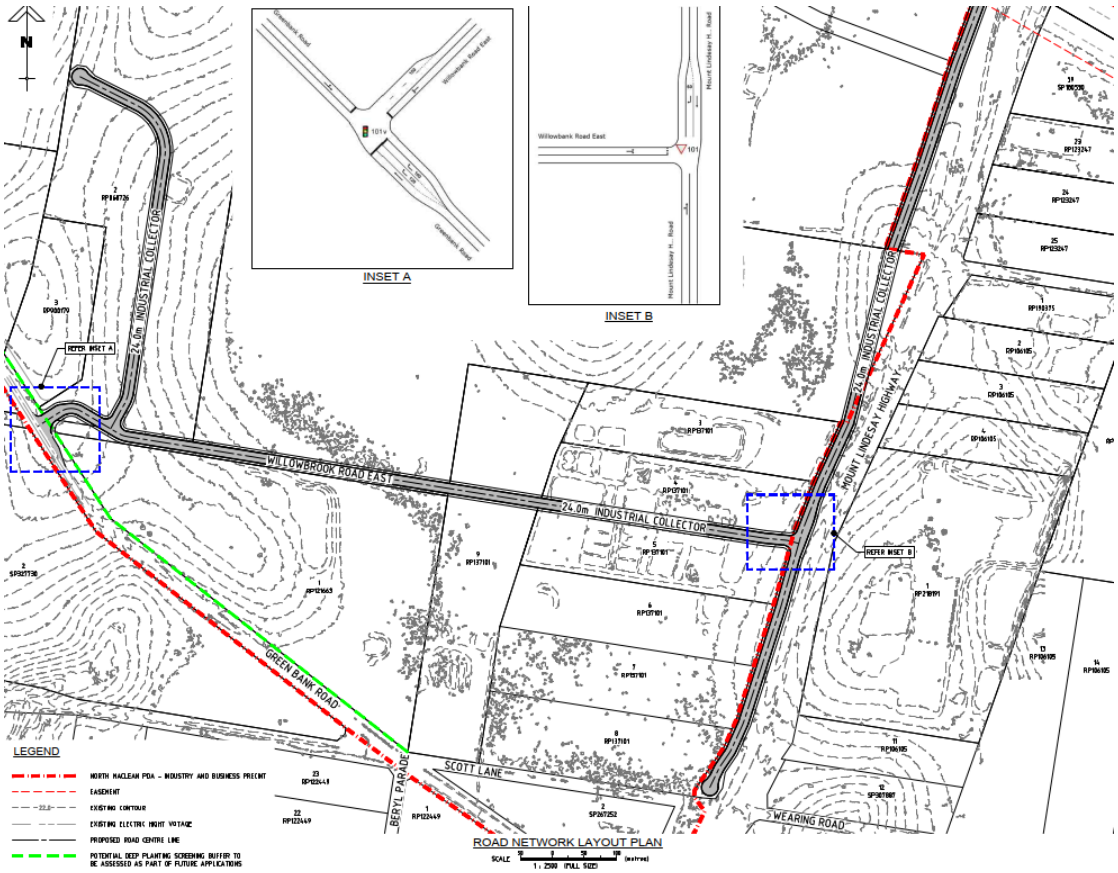


Figure 5.1 Proposed Ultimate Service Road and Collector Road

As part of the development scope, a temporary turnaround is proposed along Willowbrook Road East at the western boundary of Lot 4/5 due to private land ownership to the west. The existing service road will continue to the unformed road corridor at Scott Lane for the turnaround cul-de-sac. The existing property accesses will be retained to the existing service road and managed during construction of the future service road as part the construction traffic management plan construction methodology. The proposed development scope of roadworks is highlighted in yellow in Figure 5.2.

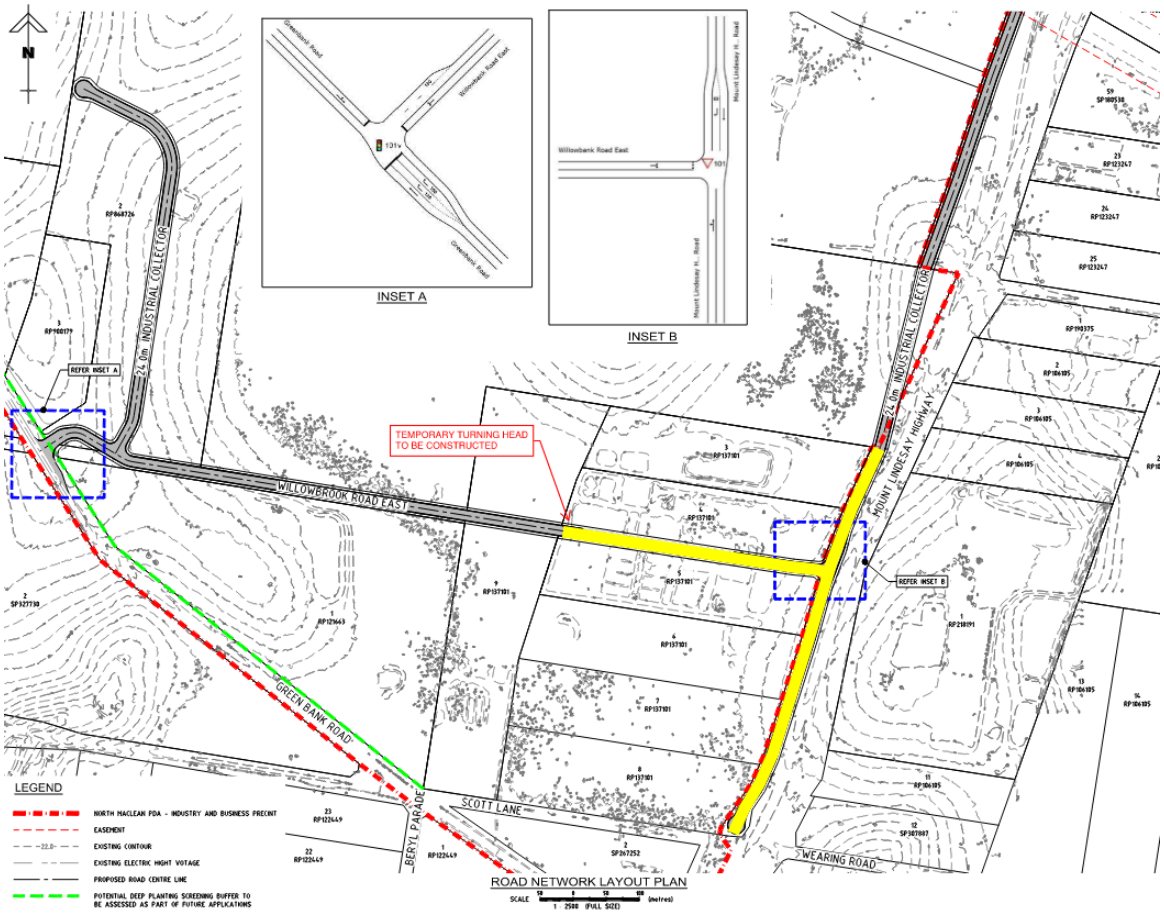


Figure 5.2 Proposed Service Road and Collector Road DA scope

Existing access points will be connected to the future road alignment. Internal site distribution will be captured in future material change of use, ROL and or building use applications.

5.3 Proposed Road Cross Section

As the proposed road will be providing access to light industrial land uses, a minimum 24m wide industrial collector road cross section should be provided in accordance with LCC Standard Drawing 8-00382 (excerpt shown in Figure 5.3 below).

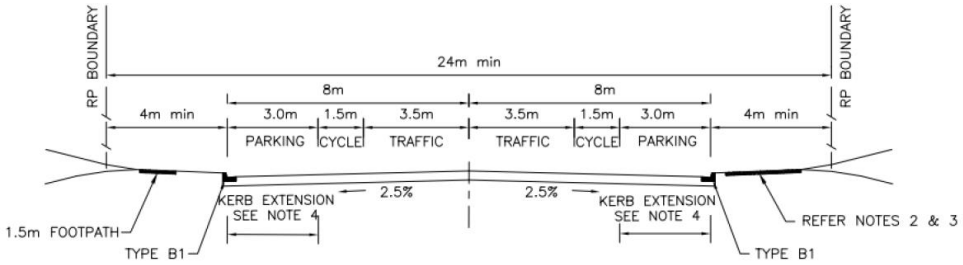


Figure 5.3 Industrial Collector Road Cross Section

5.4 Traffic Assumptions and Characteristics

5.4.1 Study Intersections

The operation of the following intersections has been modelled using SIDRA 9 to assess their likely operation and capacity at year of opening and at the 10-year design horizon in accordance with TMR's Guide to Traffic Generating Developments.

- Willowbrook Road East / Greenbank Road
- Willowbrook Road East / Mount Lindesay Highway service road

5.4.2 Background Traffic Volumes

Existing traffic volumes on Greenbank Road were sourced from traffic survey data obtained at the Greenbank Road / Mount Lindesay Highway intersection in 2017 (refer Appendix B). Growth rates were applied to the traffic survey data to obtain year of opening and 10-year design horizon background traffic volumes.

5.4.3 Traffic Growth

A conservative (i.e. high) annual linear growth rate of 3% was applied to the background traffic volumes on Greenbank Road.

5.4.4 Catchment

It has been assumed that the proposed service road and Willowbrook Road East will service the following lots in the 10 year design scenario:

- The subject site (Lots 3 to 6 on RP137101)
- Lot 1 on RP121663 and
- Lot 1 on RP11325.

It has been assumed that the lots north of these (i.e. Charter Hall) will connect to the road network via the Chambers Flat Road / Mount Lindesay Highway interchange.

5.4.5 Traffic Generation

The peak traffic generation for the industrial sites within the catchment of the proposed road has been calculated assuming a maximum building GFA of 50% for each lot (it is noted that the LCC planning scheme states a max 80% site coverage that is inclusive of carparking, landscaping and others). The traffic generation rate was sourced from the RTA Guide to Traffic Generating Developments Technical Direction (2013). The AM and PM peak trip rates for 'business park' have been used for the purpose of this assessment. The traffic generation calculations are summarised in Table 5.1.

Table 5.1 Estimated Traffic Generation

Parcel	Total Land Area (m^2)	Estimated Site Coverage (GFA – m^2)	AM Peak Traffic Generation Rate	Peak Traffic Generation – Two-way (vehicle / hour)	PM Peak Traffic Generation Rate	Peak Traffic Generation – Two-way (vehicle / hour)
Lot 4 on RP137101 (subject site)	39,820	19,910	0.7 veh/hr per 100m2 GFA	139 veh/h	0.78 veh/hr per 100m2 GFA	155 veh/h
Lot 6 on RP137101 (subject site)	40,470	20,235		142 veh/h		158 veh/h

Parcel	Total Land Area (m^2)	Estimated Site Coverage (GFA – m^2)	AM Peak Traffic Generation Rate	Peak Traffic Generation – Two-way (vehicle / hour)	PM Peak Traffic Generation Rate	Peak Traffic Generation – Two-way (vehicle / hour)
Lot 3 on RP137101 (subject site)	39,540	19,770		138 veh/h		154 veh/h
Lot 5 on RP137101 (subject site)	40,280	20,140		141 veh/h		157 veh/h
Lot 1 on RP121663	139,844	69,922		489 veh/h		545 veh/h
Lot 1 on RP113251	178,845	89,423		626 veh/h		697 veh/h
			Total	1,676 veh/h		1,867 veh/h

5.4.6 Directional Distribution

The directional distribution has been estimated based on industry standards for industrial land uses. The distribution has been summarised in Table 5.2.

Table 5.2 Directional Distribution

Land Use	AM Peak Period		PM Peak Period	
	IN	OUT	IN	OUT
Industrial	70%	30%	30%	70%

5.4.7 Traffic Distribution

The existing traffic survey data at the nearby Greenbank Road / Mount Lindesay Highway intersection has been analysed to determine the external distributions for the development traffic. The existing in / out splits and north / south origins and destinations at the intersection were applied to the traffic originating from and travelling to the sites in the catchment area.

5.4.8 Post-development Traffic

The traffic expected to be generated by the development was added to the background traffic volumes for the year of opening (2025) and 10-year design horizon (2035). The post-development traffic volumes are shown in Figure 5.4 and Figure 5.5.

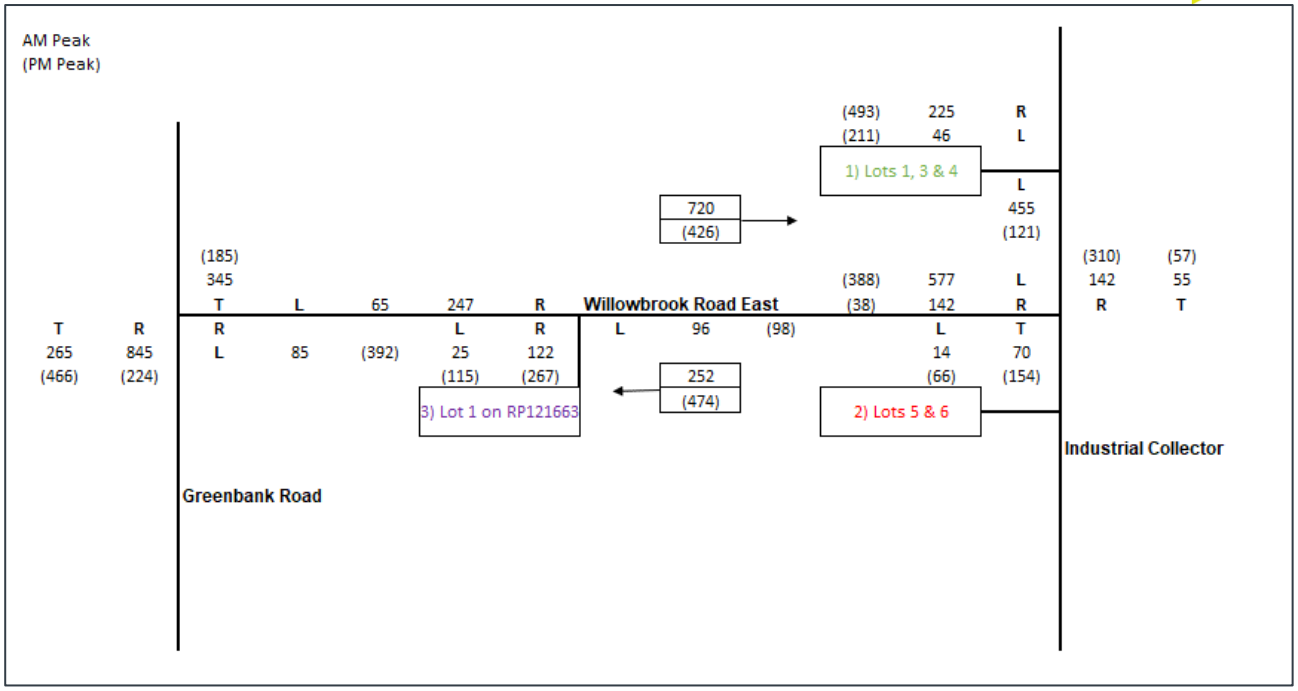


Figure 5.4 Year of Opening (2025) Post-development Traffic Volumes

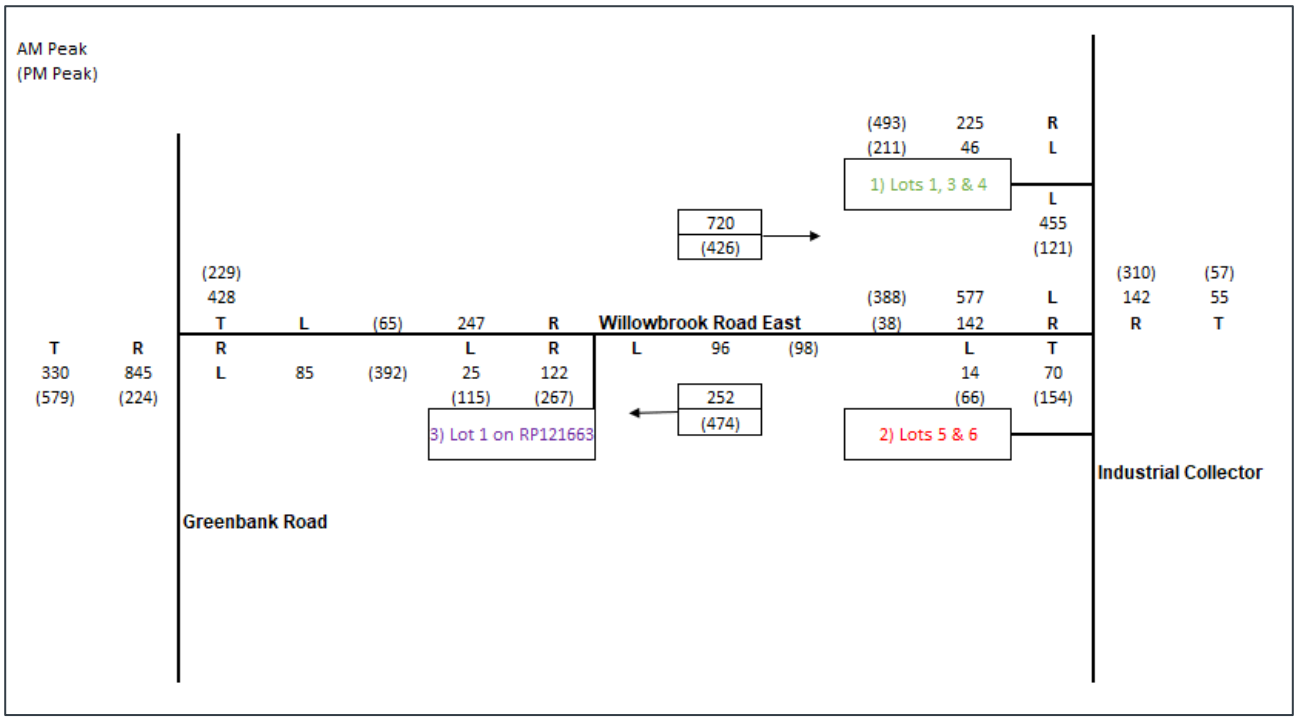


Figure 5.5 10-Year Horizon (2035) Post-development Traffic Volumes

5.5 Capacity Assessment

5.5.1 Willowbrook Road East Link Capacity

The industrial collector cross section proposed on Willowbrook Road East is expected to be able to carry a minimum of 1,800 vehicles per hour in each direction.

Based on the traffic generation assumptions outlined above, Willowbrook Road East is likely to carry in the order of 1,000 vehicles per hour (two-way) during the peak hour once the lots in the catchment are developed.

As the two-way capacity of the road link is approximately 3,600 veh/h, the road capacity is considered sufficient to support the needs of both the subject site and the surrounding land uses.

5.5.2 Willowbrook Road East / Greenbank Road Intersection

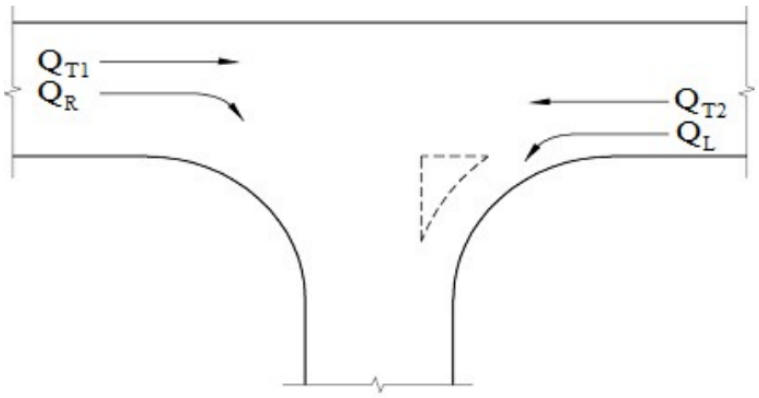
Turn Warrants Assessment

A turn warrants assessment based on the expected traffic generation of the development was undertaken to determine the appropriate treatments at the proposed Willowbrook Road East / Greenbank Road intersection. The warrants have been developed around the relationship between traffic volumes, speed environments and accident statistics, employing a Benefit Cost Ratio (BCR) across an assumed design life.

The warrants are based on the construction of intersections on new roads.

Turn Warrant assessment is based on the Department of Transport and Main Roads (DTMR) Road Planning and Design Manual Edition 2: Volume 3 Supplement to Austroads Guide to Road Design Part 4A: Unsignalised Intersections November 2021. Figure 5.6 shows the calculation of the major road traffic volume parameters 'Qm' and turning warrants assessment based on Figure 4A -1 Warrants – major road turn treatments – normal design domain from the DTMR - RPDM.

Figure 4A-A 5 - Calculation of the major road traffic volume parameter 'Q_M'



Road Type	Turn Type	Splitter Island	Q_M (veh/h)
2 Lane 2 Way	Right	No	= $Q_{T1} + Q_{T2} + Q_L$
		Yes	= $Q_{T1} + Q_{T2}$
	Left	Yes/No	= Q_{T2}
4 Lane 2 Way	Right	No	= 50% x $Q_{T1} + Q_{T2} + Q_L$
		Yes	= 50% x $Q_{T1} + Q_{T2}$
	Left	Yes/No	= 50% x Q_{T2}

Figure 5.6 Turn Warrants Qm Traffic Flow Calculation

An estimate of the peak hour traffic passing the site at the 10-year design horizon (2035) is shown in Table 5.3.

Table 5.3 Greenbank Road / Willowbrook Road East Trips Peak Hours (Right Turn)

Traffic Volume	AM peak hour	PM peak hour
QT1 (northbound)	330	579
QT2 (southbound)	428	229
QL (from north)	1	1
QR (from south)	842	223

Table 5.3 shows the traffic volumes adopted for the calculation of Qm and the turning warrants based on 8 as extracted from the DTMR – RPDM.

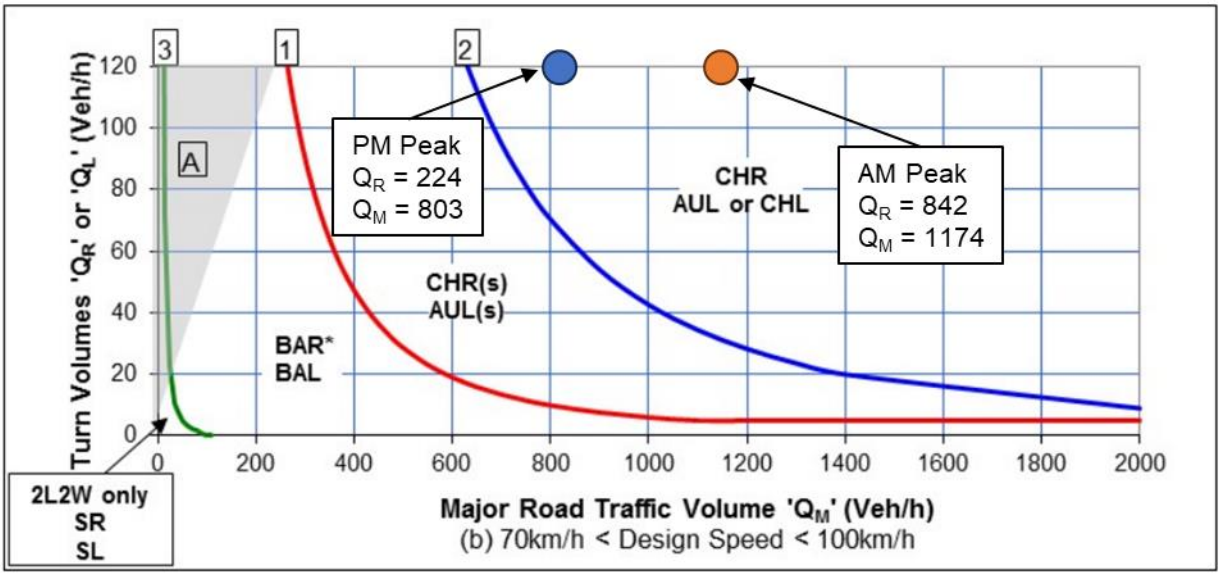


Figure 5.7 Turn Warrants For Major Road (70km/h <Design Speed <100km/h)

As shown above, at a minimum, this intersection will require a channelized right turn lane (CHR) to support the right turn traffic volumes into Willowbrook Road East.

SIDRA Assessment

Initial analysis was undertaken in SIDRA of a priority-controlled intersection with a channelized right turn lane (CHR) into Willowbrook Road East for both the year of opening (2025) and 10-year design horizon (2035). The modelling indicated that in 2035, the delay at the intersection exceeded 42 seconds. Based on TMR's GTIA, this is an unacceptable level of delay for a priority-controlled intersection.

Based on the above, a signalised intersection with dual right turn lanes and dual exit lanes on Willowbrook Road East is proposed to support the traffic demands of the ultimate yield of the catchment, as shown in Figure 5.8. Given that these are significant upgrades, the timing of delivery of the upgrade could be determined via a trigger assessment (i.e. at the point at which development on the sites in the catchment oversaturate the priority-controlled intersection).

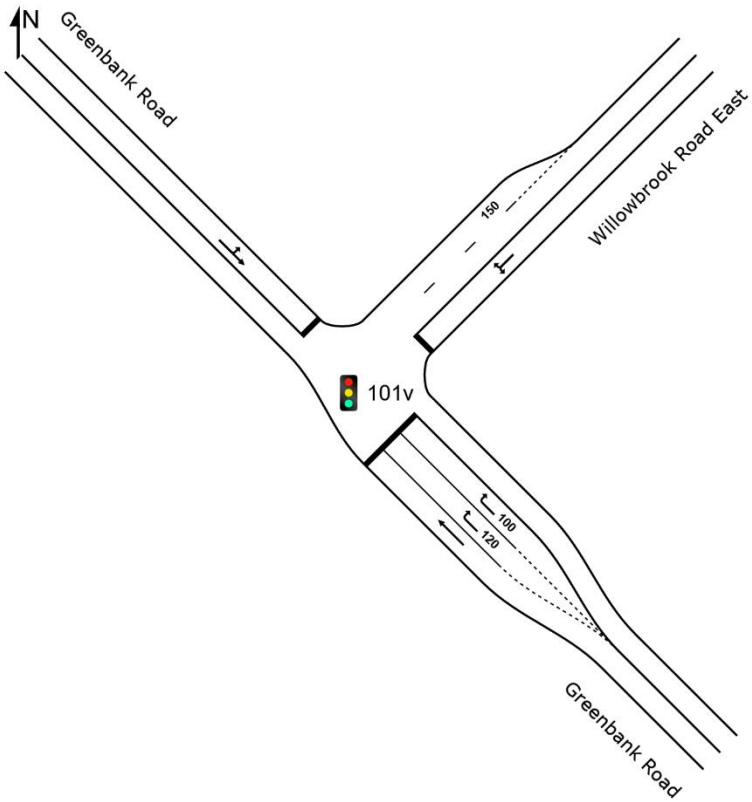


Figure 5.8 Proposed Ultimate Intersection Layout

The SIDRA model results for the proposed signalised intersection are summarised in Table 5.4.

Table 5.4 SIDRA Results – Willowbrook Road East / Greenbank Road

Scenario	AM Peak			PM Peak		
	DoS	Delay (s)	Queues (m)	DoS	Delay (s)	Queues (m)
2035 Post-development	0.772	22.3	112	0.745	12.6	56

As shown above, the intersection performs within acceptable limits (i.e. a DOS <0.90 in accordance with TMR's GTIA). Additionally, the delays are less than 42 seconds.

5.5.3 Willowbrook Road East / Mount Lindesay Highway Service Road Intersection

Turn Warrants Assessment

A turn warrants assessment based on the expected traffic generation of the development was undertaken to determine the appropriate treatments at the proposed Willowbrook Road East / Mount Lindesay Highway Service Road intersection.

An estimate of the peak hour traffic passing the site at the 10-year design horizon is shown in Table 5.5.

Table 5.5 Willowbrook Road East / Service Road Trips Peak Hours (Right Turn)

Traffic Volume	AM peak hour	PM peak hour
QT1 (northbound)	71	155
QT2 (southbound)	56	57
QL (from south)	14	67
QR (from north)	146	308

Table 5.5 shows traffic volumes adopted for the calculation of Qm and the turning warrants based on Figure 5.9 as extracted from the DTMR – RPDM.

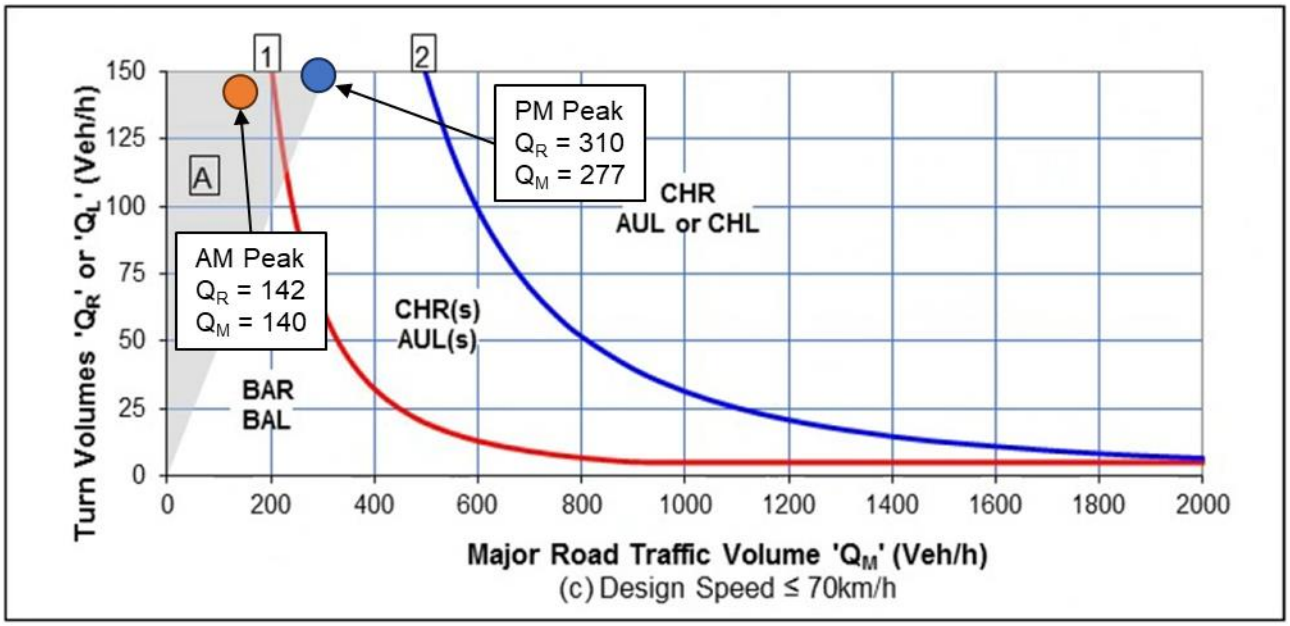


Figure 5.9 Turn Warrants For Major Road (Design Speed <70km/h)

The results of the turn warrant assessment indicate that a Basic Right turn treatment is triggered during the AM peak while a CHR(s) is triggered during the PM peak.

Due to the high demand for southbound right turns and the low demand for southbound through traffic, a short channelized right turn (CHR(s)) is proposed on the southbound side of the service road approaching the intersection.

The left turns out of the southern leg of the intersection are low, and do not warrant any further treatments.

SIDRA Assessment

Initial analysis was undertaken in SIDRA of a priority-controlled intersection at the Willowbrook Road / Service Road intersection for the year of opening (2025) only, as the traffic demands on this intersection are resulting only from the development (i.e. no background traffic at this intersection). The SIDRA layout is shown in Figure 5.10.

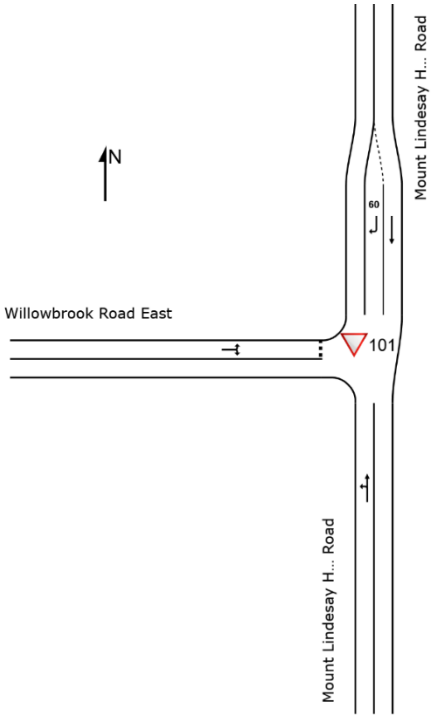


Figure 5.10 Proposed Intersection Layout

The SIDRA results are summarised in Table 5.6.

Table 5.6 SIDRA Results – Willowbrook Road East / Mount Lindesay Highway Service Road

Scenario	AM Peak			PM Peak		
	DoS	Delay (s)	Queues (m)	DoS	Delay (s)	Queues (m)
2025 Post-development	0.567	6.6	29	0.354	6.7	13

The results above indicate minimal queues and delays at the intersection. In addition, the intersection operates at an acceptable DoS (<0.80 in accordance with TMR's GTIA).

5.6 Conclusion

The proposed road extension (Willowbrook Road East) requires a minimum 24m road reserve and a cross section in accordance with an Industrial Collector (LCC Standard Drawing 8-00382). This road link is expected to have sufficient capacity to carry the expected traffic volumes resulting from the developments within the catchment of the new road.

A high-level assessment of the operation of key intersections indicates that at full development buildout within the catchment at the 10-year design horizon (2035), the future Willowbrook Road East / Greenbank Road intersection is likely to require signalisation with a dual right turn into Willowbrook Road East to mitigate queueing and delay impacts on Greenbank Road created by AM peak demands into the proposed industrial sites. The timing of these upgrades could be determined by a trigger assessment based on completion of developments within the catchment.

The expected traffic demands on the Willowbrook Road East / Service Road intersection are likely to require a short channelised right turn (CHR(s)) treatment on the north approach to allow southbound through traffic to pass vehicles turning right (westbound) into Willowbrook Road East. SIDRA modelling indicates that the intersection operates within acceptable limits at full development yield.

6. Flooding and Stormwater Drainage

6.1 Existing Site Conditions

6.1.1 Flood Conditions – Regional Event

The latest mapping on Logan's Flood Portal indicates that three (3) of the four (4) lots (Lots 3 RP137101, 4 RP137101, 5 RP137101) are currently filled above the 2100 1% AEP Flood level. A screen shot of the flood extent has been provided in Figure 6.1 below.

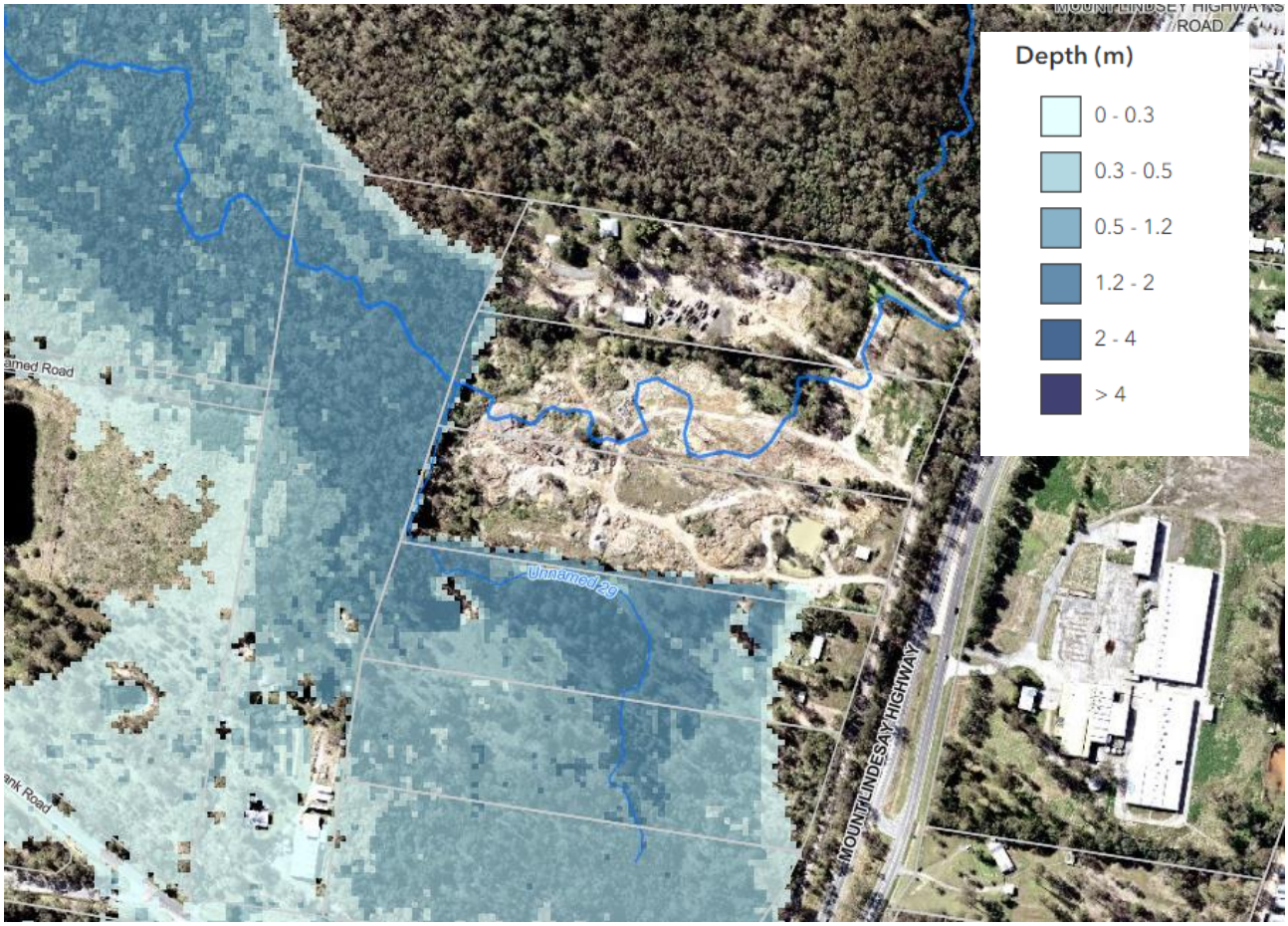


Figure 6.1 2100 1% AEP Flood Depth Mapping (LCC, 2023)

The 2100 1% AEP flood level or Defined Flood Event Level over Lot 6 RP137101 has been identified by the Logan Flood Portal as RL27.2 mAHD. There is an existing Bulk earthworks approval over Lot 6 RP137101 to fill the site to approximately RL28 mAHD (DEV2023-1370 and DEV2024-1470). Once filled the majority of the lot will be flood free the same as the three (3) lots to the north.

6.1.2 Flood Conditions – Local Event

There is approximately 150 ha of upstream catchment that drains adjacent to the site, with overland flow discharging the site along the north-western boundary to the south. The local area is relatively flat which would result in the ponding of flood water during major events before flows are discharged through 2/1200 x 600 box culverts beneath Mount Lindsey Highway.

A Hydraulic Impact Assessment report (EAG002-30139050-AAR-03) was prepared by Arcadis for the local area as part of the development application over 4653-4691 Mount Lindesay Highway, which indicates the major storm flows are discharged to the north.

The model validates the local flooding is a backwater effect, with runoff conveyed along the western site boundary to the north and between Lot 3 and Lot 4 RP137101 before discharging to the proposed channel on the Maclean Estates land (Lot 1 RP113251). Lot 3 will finish earthworks to match in with Lot 1 approval to the north DEV2022/1315/2 to maintain conveyance of the front property boundary alignment.

The Arcadis flood model results demonstrate there are no impacts from this flood conveyance regime. Therefore, it is proposed to retain these arrangements and provide a 20m wide drainage reserve on the western site boundary to maintain the conveyance to the north.

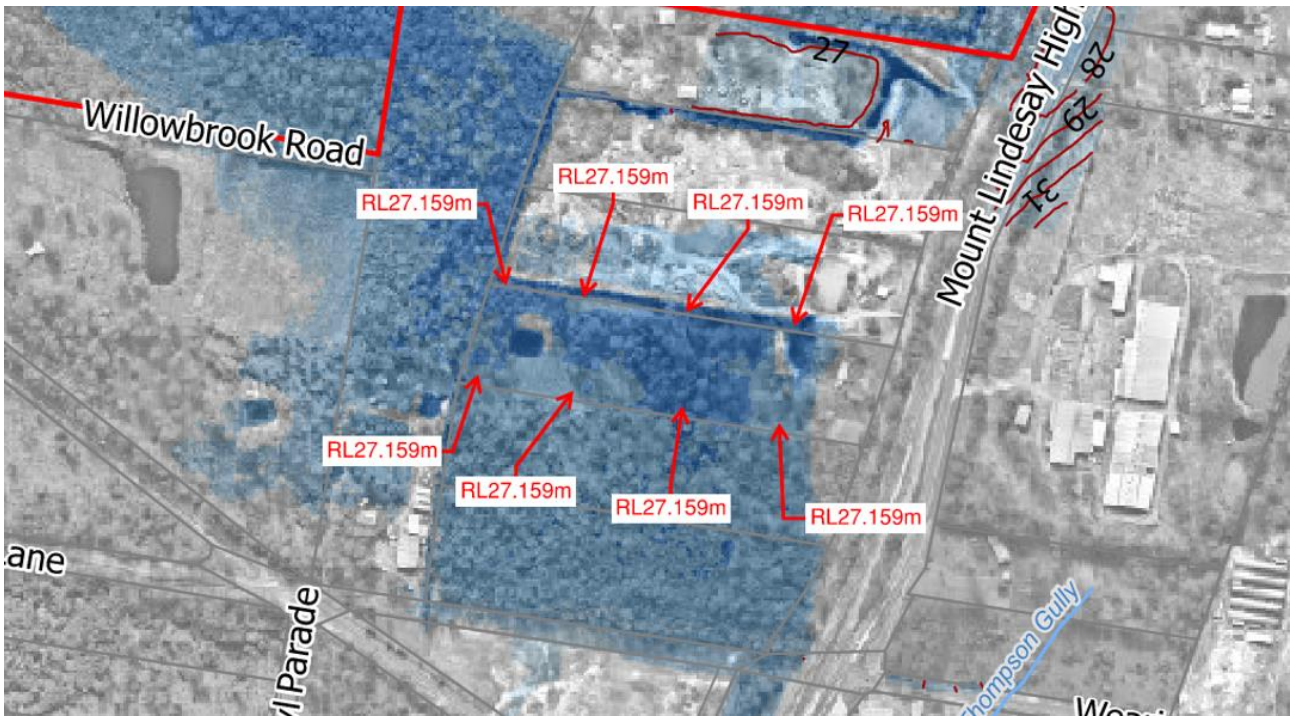


Figure 6.2 Flood Level Extracts for the Subject Site

The drainage reserve should be continued on the adjoining properties to the north as they are developed, and / or could be dedicated as road reserve in accordance with the approved North Maclean Enterprise Context Plan Land Use and Road Network (DEV201896) and the future road utilised for stormwater drainage and overland flow purposes. This will ensure an integrated master plan development strategy that can be implemented progressively as development occurs.

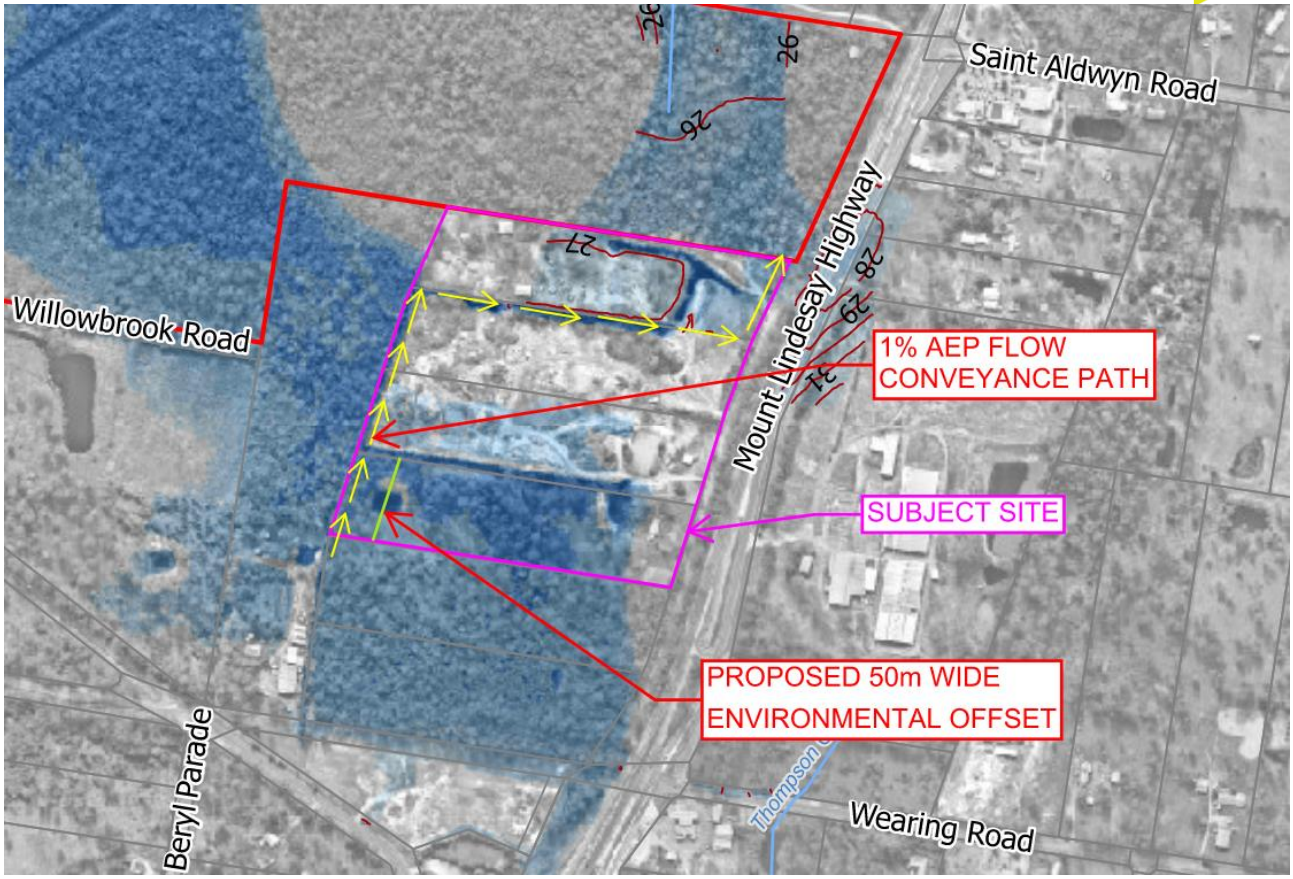


Figure 6.3 Demonstrated 1% AEP Stormwater Flow Conveyance

This flood conveyance regime will meet the intent and demonstrate compliance with adjoining approved development. The proposed drainage swale and/or drainage systems are appropriate for managing the external runoffs without causing obstruction, as required by the condition, and will ensure an integrated master plan development strategy that can be implemented progressively as development occurs.

6.1.3 Economic Development Queensland

The subject site is located within the PDA zone as per the LCC Planning Scheme. EDQ will be the assessing agency for the proposed development; however, the flood assessment will be assessed against the LCC Waterways and Flood Overlay codes.

6.1.4 Logan City Council Planning Scheme

Overland Flow

According to LCC Overlay Map OM-14.01 “Waterways“, a minor waterway is mapped to traverse the site which would indicate that an overland flow path is present over the site. Figure 6.4 shows an excerpt from the LCC Planning Scheme 2015 Version 9.0 indicating the extents and location of the mapped waterway.

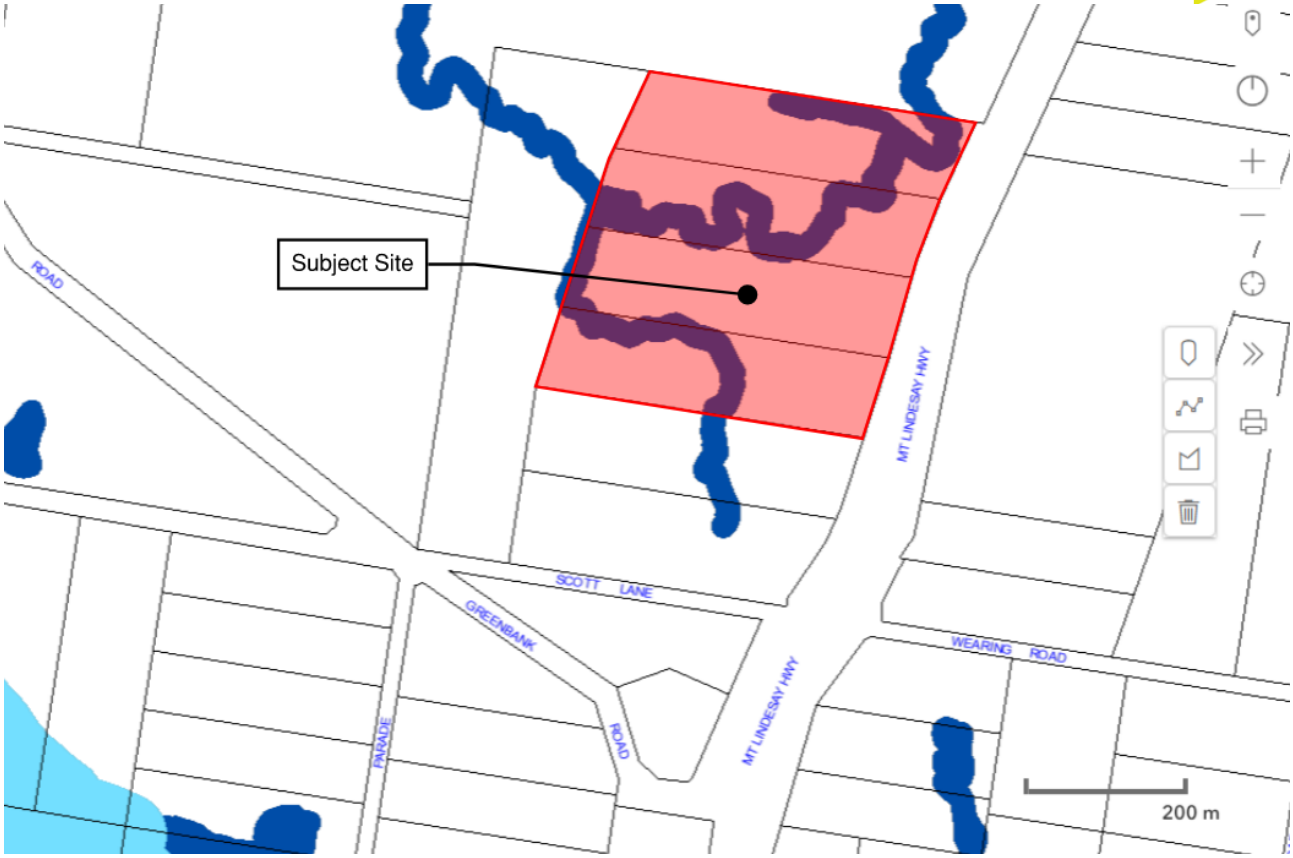


Figure 6.4 LCC Planning Scheme OM-14.1 Waterways Overlay

The proposed development will be required to comply with the LCC Planning Scheme Part 9.4.2 Filling and Excavation Code, in particular Performance Outcome 6 (PO6) which relates to "Surface Water Flow". The following requirements are outlined by the Performance Outcome:

Surface water drainage does not cause any of the following:

- Ponding on any premises; or
- A hazard or adversely affect personal health and safety and premises; or
- Diversion or concentration of flow from or onto adjoining premises or infrastructure.

It should be noted that approval for bulk earthworks over the subject site have been obtained and these items have been addressed throughout the approval process.

Flood Hazard Overlay

Under the current Planning Scheme Overlay Map OM-05 "Flood Hazard Overlay" the subject site is triggered by the Flood Hazard Overlay Trigger. Figure 6.5 shows an excerpt from the Planning Scheme indicating the location of the Flood Hazard Overlay in relation to the proposed development site.

The development will be required to comply with the flood hazard overlay code. The following Performance Outcomes will have the most influence on the proposed design.

- PO3 - Development provides a development envelope area that is above the flood level during the defined flood event (DFL).
- PO6 - Development for any of the uses identified in column 1 of Table 8.2.5.3.3 - Minimum flood levels, are able to function effectively during and immediately after flood events.

- PO8 - The natural conveyance of flood waters and natural overland flow paths are protected and maintained without adversely affecting adjoining premises.

It should be noted that approval for bulk earthworks over the subject site have been obtained and these items have been addressed throughout the approval process.

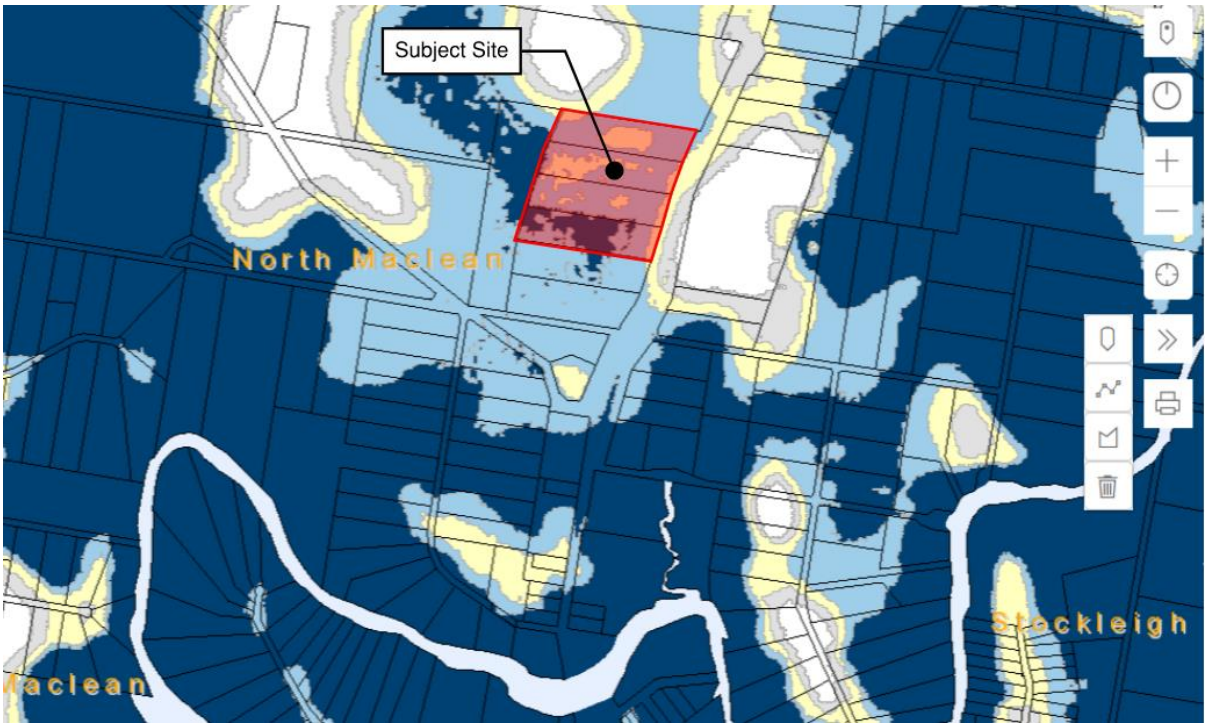


Figure 6.5 LCC Planning Scheme OM-05 Flood Hazard Overlay

6.2 Development Considerations

6.2.1 Impact on Conveyance

Overland flow paths have been identified to flow through the site, entering the site from the north-western boundary. It will be required that the proposed development will not cause any of the following:

- ponding on any premises; or
- a hazard or adversely affect personal health and safety and premises; or
- diversion or concentration of flow from or onto adjoining premises or infrastructure

It will be necessary to further investigate the impacts of the proposed development to determine whether the development is to comply with the filling and excavation code. Diversion drains/conveyance buffers have been provided along the southern and western boundaries to allow for the existing conveyance through the site to be maintained. It is proposed that easements will be placed over these diversions drains which will provide Lawful Points of Discharge for each individual lot.

6.2.2 Minimum Floor Levels

In accordance with Table 8.2.5.3.3 Minimum Flood Planning Levels in Section 8.2.5 of the planning scheme, the Under the current planning scheme, the minimum flood planning level of a Class 7 (b) building is to be the defined flood event level (DFE). The DFE level for the site has been identified as RL27.2 mAHD as per the property flood report provided by Logan City Council.

Currently Lots 3 RP137101, 4 RP137101, 5 RP137101 are above this level and there is a bulk earthworks approval over Lot 6 RP137101 to fill majority of the site above RL28 mAHD.

The proposed development is to comply with the Minimum Flood Planning Levels outlined in the planning scheme.

6.3 Stormwater Management – Quality and Quality

It has been assumed that the stormwater management over each lot will be managed individually in the future. The development of the lots will be required to comply with relevant guidelines and planning scheme with regards to stormwater quantity mitigation and stormwater quality treatment objectives. Each lot will be required to discharge to an appropriate Lawful Point of Discharge in accordance with the Queensland Urban Drainage Manual (IPWEAQ, 2017).

7. Water Supply

The subject site is proposed to be serviced by a new 300mm trunk water main along the eastern site boundary. This proposed trunk infrastructure forms part of EDQ's planned water supply for Greater Flagstone as shown in Figure 7.1. The water supply connection is proposed from the Maclean Estates/Charter Halls (north of the subject site). As part of the development scope, the proposed trunk water main will only extend up to the western boundary of Lots 4 and 5 due to adjoining private land ownership. Service connections will be provided to each lot as a registered free hold industrial lot. Internal site distribution will be captured in future material change of use, ROL and or building use applications.

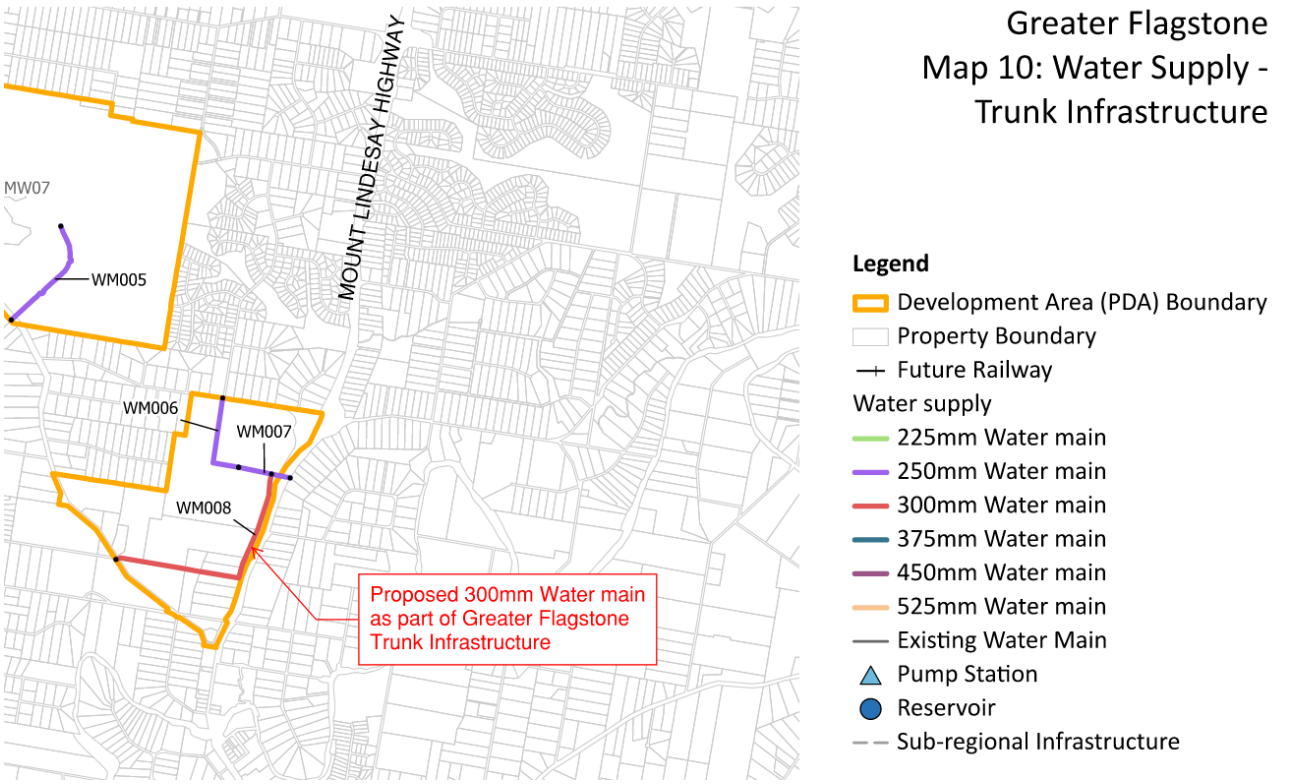


Figure 7.1 EDQ Greater Flagstone Proposed Trunk Water Infrastructure Network

7.1 Water Demand Calculation

To determine suitable pipe sizing for the proposed development, water demands are calculated according to the intended new development. The water criteria and design parameters are based on the following references:

- SEQ Water Supply and Sewerage Design & Construction Code (SEQ WS&S D&C Code); and
- Water Services Association of Australia – WSA 03-2013 Water Supply Code of Australia, Part 1: Planning and Design.

The service mains internal of each building will be designed and constructed in accordance with AS/NZS 3500.1:2003 Plumbing and Drainage – Water services (Standards Australia, 2003).

The water flow parameters shown in Table 7.1, Table 7.2 and Table 7.3 required to meet Council's Standards of Service and have been based on Single Supply (Drinking Water Only) Network parameters shown in SEQ Design Criteria Table 4.1.

Table 7.1 Potable Water Supply Demand and Peaking Factors

Property Type	Average Day (AD) Demand L/EP/day	Non-Revenue L/EP/day	Peaking Factors		
			Mean Day Maximum Month (MDMM)	Peak Day (PD)	Peak Hour (PH)
Industrial	230	30	1.5	2	2.8

Table 7.2 Potable Water Pressure Parameters

Item	Pressure Parameter
Minimum Service Pressure	22 metres (adjoining the property boundary)
Maximum Service Pressure	55 metres

Table 7.3 Fire Fighting Parameters

Item	Pressure Parameter
Minimum Residential Mains Pressure (Emergency Fire operating conditions)	12 metres at the main at the property boundary 6 metres elsewhere
Fire Flow Urban Residential	15 L/s for a duration of 2 hrs
Fire Flow Commercial	30 L/s for a duration of 4 hrs
Background Demand	2/3 x Peak Hour demand (not less than Average Day demand)

The calculated water supply demand for the proposed development is shown in Table 7.4.

Table 7.4 Water Supply Demand Calculations

Use	EP	AD Flow	Non-Revenue	AD (L/s)	PH (L/s)
Industrial	751.8	230	30	2.26	5.86

Calculations of maximum peak demand and demand multiplier for the development is based on an allowance of 230 L/EP/day, a peak hour factor of 2.8 and applying the Non-Revenue flows of 30 L/EP/day, as follows:

Maximum Peak Demand = PHF x Demand Rate x EP's + NR
= 2.8 x 230 x 751.8 + 30 x 751.8
= 506,713 L/day
= 5.86 L/s

Demand Multiplier = Maximum Demand / EP's
= 0.01 L/EP/s

Fire flow demand will be approximately 30 L/s. this will require a 150mm diameter connection to be made to Council's existing infrastructure.

8. Sewer Reticulation

The subject site is proposed to be serviced by a new sewer gravity main along Mount Lindesay Highway service road. This proposed alignment aims to provide ease of maintenance access and locates the sewer main away from the watercourse identified in Section 6.1.4. The proposed sewer gravity main will connect into the proposed sewer rising main to be constructed as part of NM1 and NM2 scope of works. Service connections will be provided to each lot as a registered free hold industrial lot. Internal site distribution will be captured in future material change of use, ROL and or building use applications.

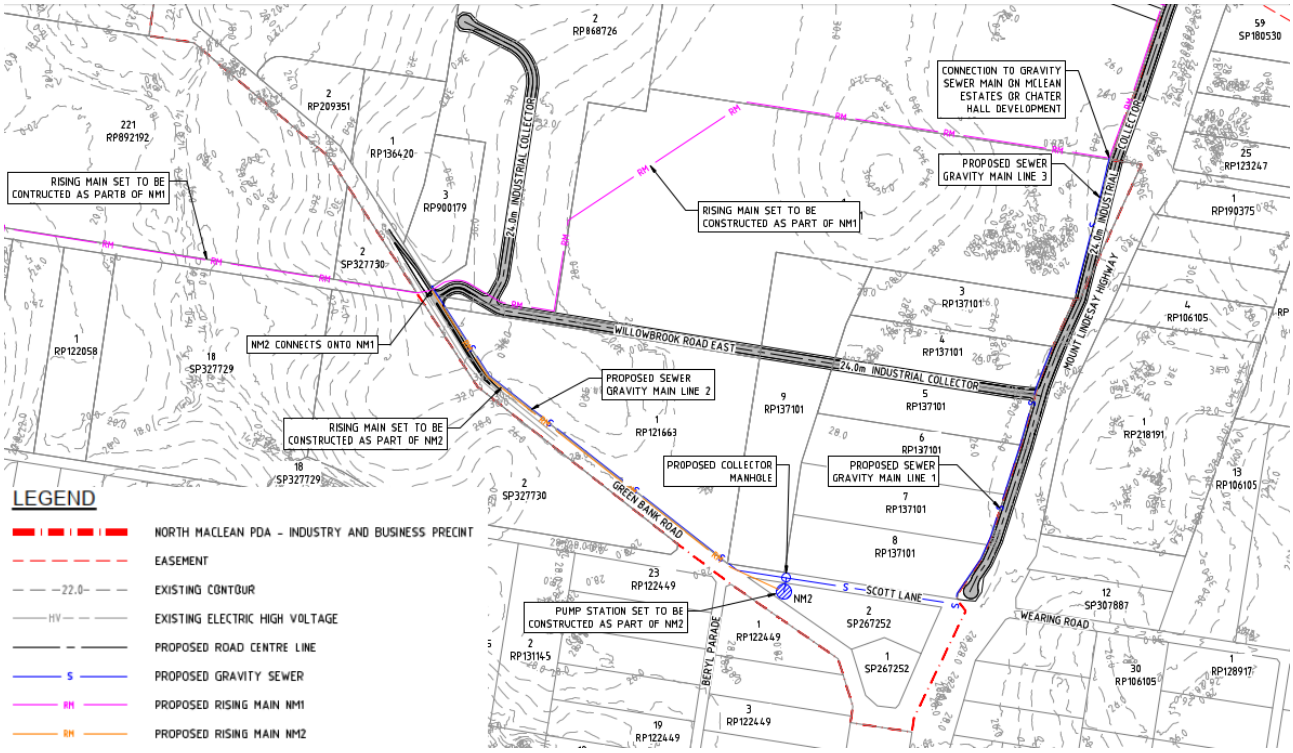


Figure 8.1 Proposed Sewer Network Plan

8.1 Sewer Demand Calculation

The sewer criteria and design parameters are based on the following references:

- SEQ Water Supply and Sewerage Design & Construction Code (SEQ WS&S D&C Code); and
- Water Services Association of Australia – WSA 02-2014 Sewerage Code of Australia, Part 1: Planning and Design.

The sewer flow generation, pipe design parameters, minimum sewer pipe grades and maximum capacity are shown below in Table 8.1, Table 8.2 and Table 8.3. The following parameters are based on a RIGGS system:

Table 8.1 Sewer Flow Generation Parameters

Flow	Parameter
Average Dry Weather Flow (ADWF)	200 L/EP/d
Peak Dry Weather Flow (PDWF)	PDWF = C2 x ADWF Where: C2 = 4.7 x (EP)^(-0.105) = 2.445
Peak Wet Weather Flow (PWWF)	PWWF = 5 x ADWF

Table 8.2 Pipe Design Parameters

Flow	Parameter
Mannings 'n'	0.013
Minimum velocity @ PDWF	0.7 m/s
Depth of Flow @ PWWF – Existing system	Up to 1.0 m below MH cover level and no spillage through overflow structures
Depth of Flow @ PWWF – Proposed sewers	Max flow depth shall not exceed ¾ pipe full (75% d/D).

Table 8.3 Minimum Pipe Capacity – New Sewers Flowing ¾ Full

Pipe Size (mm)	Min Pipe Grade (1 in x)	Capacity (L/s)
150	180	10.4
225	300	23.6
300	400	44.1
525	750	143.0
1200	2400	796.1

The calculated sewer demand generation for the proposed development is shown in Table 8.4.

Table 8.4 Water Supply Demand Calculations

Use	EP	ADWF Rate	ADWF (L/d)	PWWF (L/d)	PWWF (L/s)
Industrial	751.8	200	150,360	751,800	8.7

The calculations indicate that the total post development demand at PWWF will be approximately 8.7 L/s.

9. Electrical and Telecommunications

A detailed site survey has been prepared by Sunrise Surveying and is included within Appendix A. The survey indicates there are existing Energex power supply services and telecommunications services along Mount Lindsay Highway service road. It is envisaged that adequate supply can be provided to the site from the existing infrastructure. However, a specialist electrical consultant will need to be engaged to provide advice in relation to internal electrical reticulation requirements, to prepare detailed designs and to liaise with the relevant authorities.

10. Conclusion

The findings of this Civil Engineering Report support the site use proposed in this DA to the EDQ.

The earthworks associated with the proposed development will be general cutting and filling associated with the new site access point, the commercial carpark, trenching of services, stormwater basins and flat building pads.

The subject sites are flood free and / or have bulk earthworks approval to provide finished development levels above the Defined Flood Level. Stormwater quality improvement measures will be incorporated into the future developments.

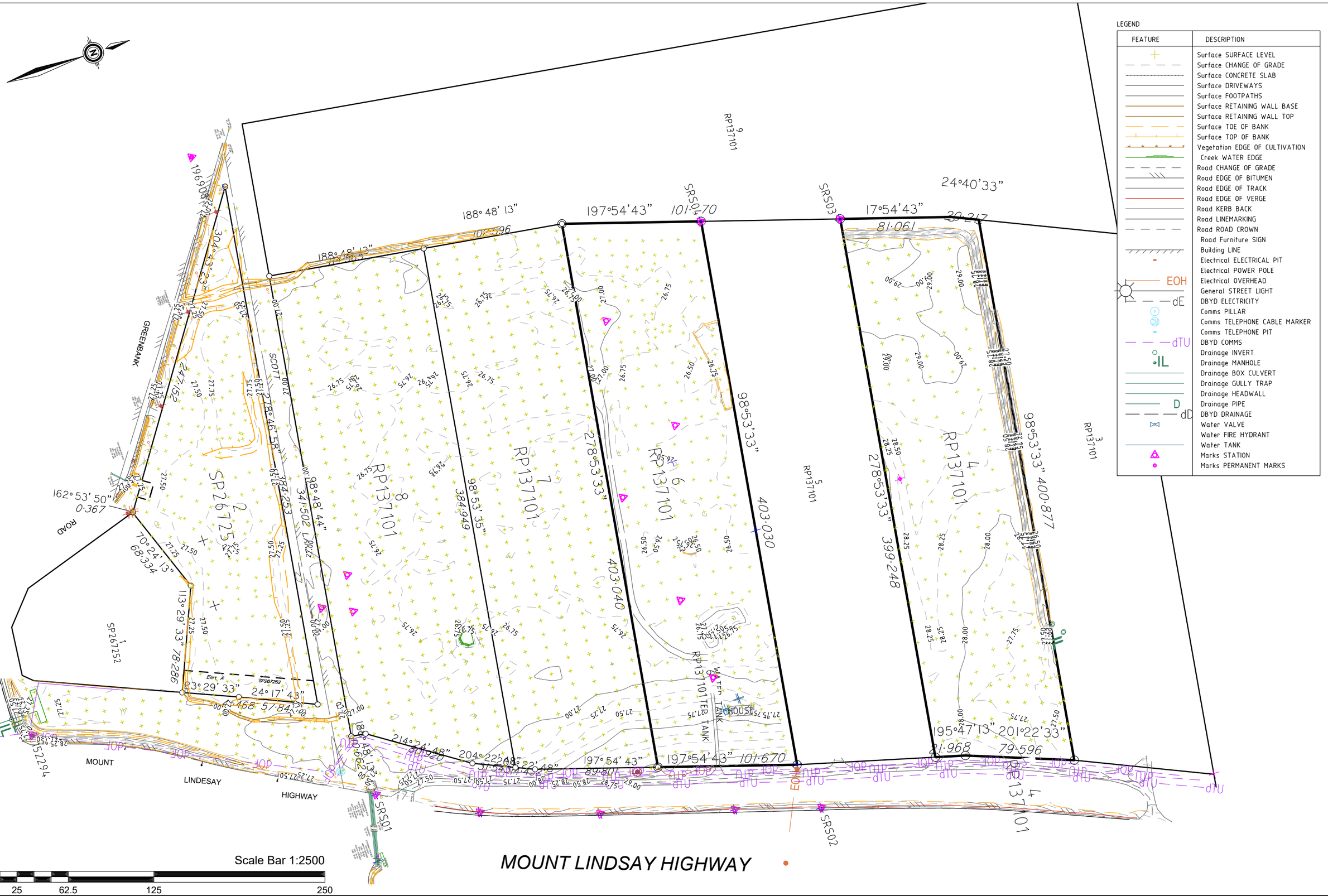
The water connection will be provided via a new water main extension from Greenbank Road. The water main alignment will be along the verge of the proposed Willowbrook Road East. The proposed water main is subject to a more detailed assessment, including a detailed sizing of mains during the detailed design phase

The subject site is proposed to be serviced by a new sewer gravity main along Mount Lindesay Highway service road. This proposed alignment aims to provide ease of maintenance access and locates the sewer main away from the watercourse. The proposed sewer gravity main will connect into the proposed sewer rising main to be constructed as part of NM1 and NM2 scope of works.

All required essential services can be suitably provided to the development, including:

- Stormwater Drainage;
- Reticulated Water Services;
- Reticulated Sewerage Services;
- Electricity and Telecommunications Supply.

Appendix A – Site Survey



REV.	DATE	DESCRIPTION	DRAWN	SURV	CHKD
A	11/10/24	Issue to Cleint	11/10/24	MAB	MC

SUNRISE SURVEYING

Brisbane (Head Office)
Ground Floor, 18 Finchley St, Milton
admin@sunrisesurveying.com.au
Toowoomba
Tenancy 1, 4 Laurel St, Toowoomba
toowoomba@sunrisesurveying.com.au
Rockhampton
Level 1, 159 Denison St, Rockhampton
rockhampton@sunrisesurveying.com.au
Yeppoon
47 Normanby St, Yeppoon
yeppoon@sunrisesurveying.com.au

CLIENT.

PROJECT.
Mt Lindsay Highway
Maclean

HORIZONTAL DATUM.
MGA2020 Zone 56 (Ground)
Vide PSM 196908

VERTICAL DATUM.
AHD D
Vide PSM 196908
RL: 27.348

DRAWING DESCRIPTION.
Detail Survey
Combined Data over Various Lots

Sheet 1 of 1

DRAWING NAME:
22095 4001 001-A

SCALE.
1: 2500 @ A3

SITE ADDRESS.

LOCAL AUTHORITY
Logan City Council

SURVEY DATE
-

CONTOUR INTERVAL
Minor: 0.25
Major: 1

REV
A

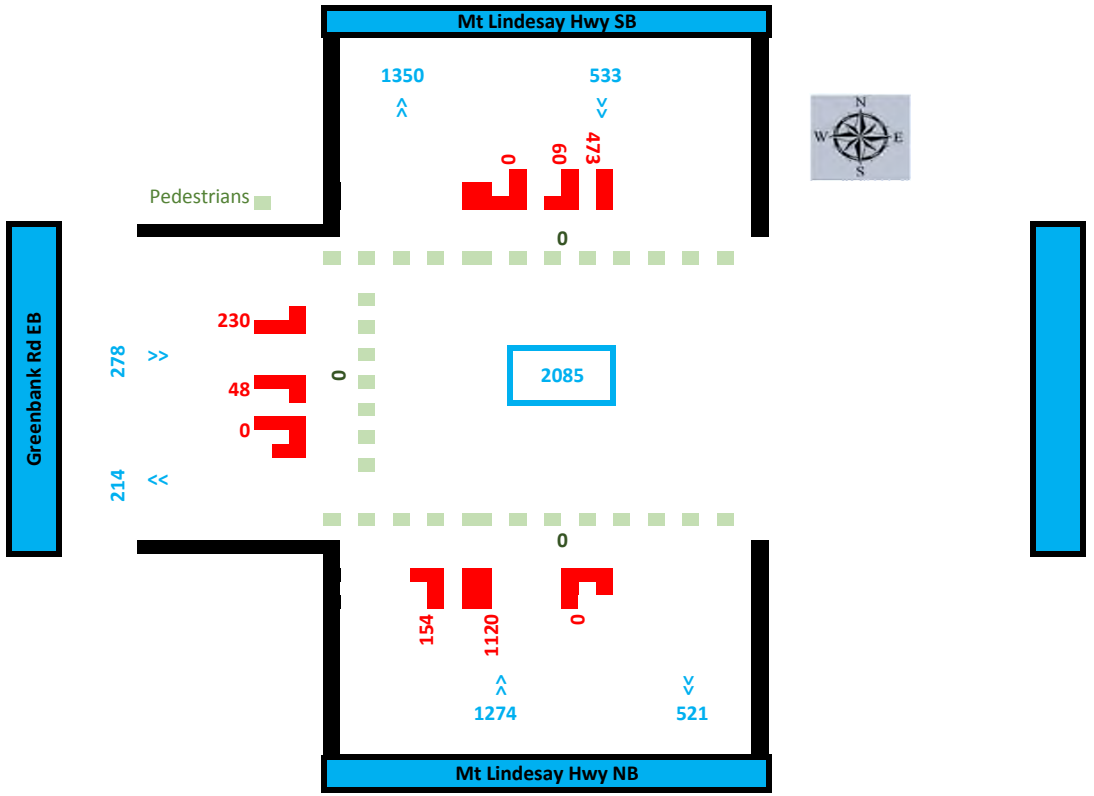
Project Location: Synergy12d://SRV01/SRS/01 - PROJECTS/22095 - ADHOC - Mount Lindesay Hwy North Maclean/01. 12d Data/4. Detail/22095 4001 MTC Detail 240927.12dmodel

Drawing Plotted Friday, October 11, 2024 17:42:23 by MeghanBowman

Appendix B – 2017 Traffic Survey Data

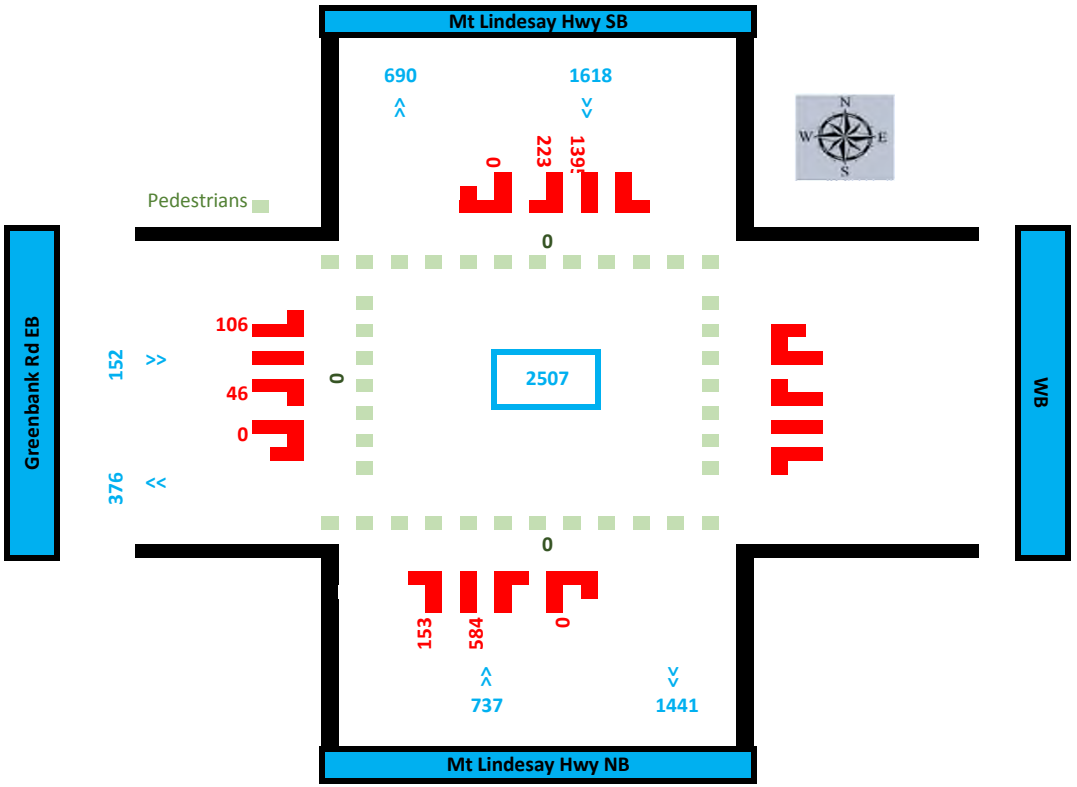
Turning Movement Count Summary

Site ID:	1
Location:	Mt Lindesay Hwy & Greenbank Rd, North Maclean
Date:	9-Feb-2016
Surveyed Time:	6:00 AM to 9:00 AM
Weather:	Fine
Data for hour starting:	6:15 AM to 7:15 AM
Vehicle Class:	ALL VEHICLES



Turning Movement Count Summary

Site ID:	1
Location:	Mt Lindesay Hwy & Greenbank Rd, North Maclean
Date:	9-Feb-2016
Surveyed Time:	3:30 PM to 6:30 PM
Weather:	Fine
Data for hour starting:	4:15 PM to 5:15 PM
Vehicle Class:	ALL VEHICLES



Appendix C – SIDRA Outputs

USER REPORT FOR SITE

All Movement Classes

Project: Intersection Models — **Template: Movement Summary**

Site: 101v [DEV 2035_Greenbank Road / Willowbank Road East - AM Peak (Site Folder: Signals_Dual Right_2035)]

Greenbank Rd / Willowbank Rd
DEV 2025
AM Peak
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 70 seconds (Site Optimum Cycle Time - Minimum Delay)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Convert Function Default
Reference Phase: Phase B
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Greenbank Road														
2	T1	330	0.0	347	0.0	0.240	3.0	LOS A	3.7	25.7	0.33	0.29	0.33	57.2
3	R2	842	0.0	886	0.0	* 0.750	28.0	LOS C	16.0	112.0	0.91	0.86	0.95	40.2
Approach		1172	0.0	1234	0.0	0.750	21.0	LOS C	16.0	112.0	0.75	0.70	0.78	43.9
NorthEast: Willowbank Road East														
4	L2	85	0.0	89	0.0	0.100	15.4	LOS B	1.6	11.3	0.55	0.70	0.55	46.9
6	R2	1	0.0	1	0.0	* 0.100	15.4	LOS B	1.6	11.3	0.55	0.70	0.55	46.7
Approach		86	0.0	91	0.0	0.100	15.4	LOS B	1.6	11.3	0.55	0.70	0.55	46.8
NorthWest: Greenbank Road														
7	L2	1	0.0	1	0.0	0.772	34.1	LOS C	15.4	107.5	0.97	0.91	1.09	40.7
8	T1	428	0.0	451	0.0	* 0.772	27.2	LOS C	15.4	107.5	0.97	0.91	1.09	41.5
Approach		429	0.0	452	0.0	0.772	27.2	LOS C	15.4	107.5	0.97	0.91	1.09	41.5
All Vehicles		1687	0.0	1776	0.0	0.772	22.3	LOS C	16.0	112.0	0.79	0.75	0.84	43.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Site: 101v [DEV 2035_Greenbank Road / Willowbank Road East - PM Peak (Site Folder: Signals_Dual Right_2035)]

Greenbank Rd / Willowbank Rd
DEV 2025
AM Peak
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 36 seconds (Site Optimum Cycle Time - Minimum Delay)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Convert Function Default
Reference Phase: Phase B
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Greenbank Road														
2	T1	579	0.0	609	0.0	0.625	7.3	LOS A	8.1	56.4	0.78	0.68	0.78	53.6
3	R2	223	0.0	235	0.0	* 0.426	21.2	LOS C	2.3	15.9	0.93	0.77	0.93	43.2
Approach		802	0.0	844	0.0	0.625	11.2	LOS B	8.1	56.4	0.82	0.71	0.82	50.2
NorthEast: Willowbank Road East														
4	L2	391	0.0	412	0.0	0.447	12.0	LOS B	4.8	33.8	0.69	0.77	0.69	49.0
6	R2	1	0.0	1	0.0	* 0.447	12.0	LOS B	4.8	33.8	0.69	0.77	0.69	48.8
Approach		392	0.0	413	0.0	0.447	12.0	LOS B	4.8	33.8	0.69	0.77	0.69	49.0
NorthWest: Greenbank Road														
7	L2	1	0.0	1	0.0	0.745	24.3	LOS C	4.7	33.1	1.00	0.93	1.30	45.0
8	T1	229	0.0	241	0.0	* 0.745	18.5	LOS B	4.7	33.1	1.00	0.93	1.30	46.0
Approach		230	0.0	242	0.0	0.745	18.6	LOS B	4.7	33.1	1.00	0.93	1.30	46.0
All Vehicles		1424	0.0	1499	0.0	0.745	12.6	LOS B	8.1	56.4	0.81	0.76	0.86	49.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Site: 101 [DEV 2035 Willowbank Road East / Mt Lindesay Hwy Service Road - AM Peak (Site Folder: DEV 2035)]

Willowbank Road East / Mt Lindesay Hwy
DEV 2035
AM Peak
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Mount Lindesay Hwy Service Road														
1	L2	14	0.0	15	0.0	0.046	5.6	LOS A	0.0	0.0	0.00	0.10	0.00	57.5
2	T1	71	0.0	75	0.0	0.046	0.0	LOS A	0.0	0.0	0.00	0.10	0.00	59.1
Approach		85	0.0	89	0.0	0.046	0.9	NA	0.0	0.0	0.00	0.10	0.00	58.8
North: Mount Lindesay Hwy Service Road														
8	T1	56	0.0	59	0.0	0.030	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
9	R2	142	0.0	149	0.0	0.090	5.7	LOS A	0.4	3.0	0.20	0.56	0.20	52.6
Approach		198	0.0	208	0.0	0.090	4.1	NA	0.4	3.0	0.14	0.40	0.14	54.5
West: Willowbank Road East														
10	L2	574	0.0	604	0.0	0.567	6.1	LOS A	4.2	29.1	0.28	0.57	0.29	52.7
12	R2	143	0.0	151	0.0	0.567	9.0	LOS A	4.2	29.1	0.28	0.57	0.29	52.2
Approach		717	0.0	755	0.0	0.567	6.6	LOS A	4.2	29.1	0.28	0.57	0.29	52.6
All Vehicles		1000	0.0	1053	0.0	0.567	5.6	NA	4.2	29.1	0.23	0.50	0.23	53.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Site: 101 [DEV 2035 Willowbank Road East / Mt Lindesay Hwy Service Road - PM Peak (Site Folder: DEV 2035)]

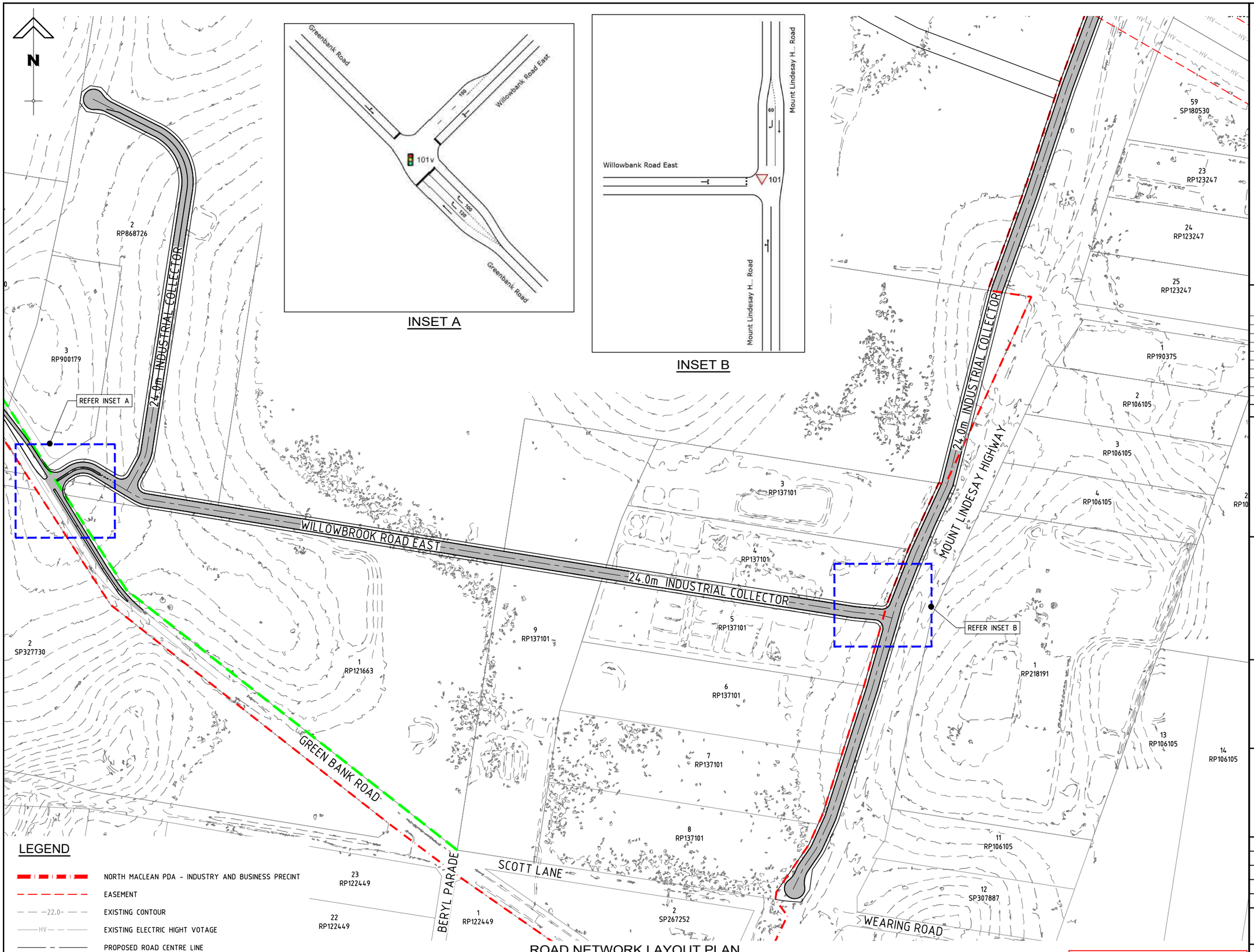
Willowbank Road East / Mt Lindesay Hwy
DEV 2035
AM Peak
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Mount Lindesay Hwy Service Road														
1	L2	67	0.0	71	0.0	0.122	5.6	LOS A	0.0	0.0	0.00	0.18	0.00	56.8
2	T1	155	0.0	163	0.0	0.122	0.0	LOS A	0.0	0.0	0.00	0.18	0.00	58.3
Approach		222	0.0	234	0.0	0.122	1.7	NA	0.0	0.0	0.00	0.18	0.00	57.9
North: Mount Lindesay Hwy Service Road														
8	T1	57	0.0	60	0.0	0.031	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
9	R2	308	0.0	324	0.0	0.223	6.3	LOS A	1.1	7.9	0.38	0.61	0.38	52.1
Approach		365	0.0	384	0.0	0.223	5.4	NA	1.1	7.9	0.32	0.52	0.32	53.2
West: Willowbank Road East														
10	L2	387	0.0	407	0.0	0.354	6.2	LOS A	1.8	12.5	0.34	0.60	0.34	52.6
12	R2	38	0.0	40	0.0	0.354	11.5	LOS B	1.8	12.5	0.34	0.60	0.34	52.1
Approach		425	0.0	447	0.0	0.354	6.7	LOS A	1.8	12.5	0.34	0.60	0.34	52.5
All Vehicles		1012	0.0	1065	0.0	0.354	5.1	NA	1.8	12.5	0.26	0.48	0.26	53.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Appendix D – Structure Plan Layout



INSET A

INSET B

LEGEND

- NORTH MACLEAN PDA - INDUSTRY AND BUSINESS PRECINT
- EASEMENT
- EXISTING CONTOUR
- EXISTING ELECTRIC HIGHT VOTAGE
- PROPOSED ROAD CENTRE LINE
- POTENTIAL DEEP PLANTING SCREENING BUFFER TO BE ASSESSED AS PART OF FUTURE APPLICATIONS

ROAD NETWORK LAYOUT PLAN

SCALE 50 0 50 100 (metres)
1 : 2500 (FULL SIZE)

PRELIMINARY
NOT FOR CONSTRUCTION OR TENDER

PROPOSED INDUSTRIAL DEVELOPMENT

4693-4731 MOUNT LINDESAY HIGHWAY, NORTH MACLEAN
RPD: LOT 3, 4, 5 AND 6 ON RP137101
FOR

ROUBAIX PROPERTIES PTY LTD

A1 ORIGINAL SIZE BEFORE REDUCTION

VER.	DESCRIPTION	DATE
B	UPDATED ISSUE	01-10-24
A	ORIGINAL ISSUE	07-07-23

BURCHILLS ENGINEERING SOLUTIONS

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FAX: +61 7 5509 6411
EMAIL: ADMIN@BURCHILLS.COM.AU
COOTE BURCHILLS ENGINEERING PTY LTD
ABN 76 166 942 365

PROJECT:

4693-4731 MOUNT LINDESAY HIGHWAY

DRAWING TITLE :

ROAD NETWORK LAYOUT PLAN

DEVEL. APPLIC. No. :	DATE : 01-10-24
PROJECT LEADER :	JACK SHAO
DESIGNER :	NHUNG NGUYEN
DRAFTSPERSON :	NHUNG NGUYEN
CHECKED :	JACK SHAO

APPROVED FOR AND ON BEHALF OF
BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365

RPEQ No. :

SCALE : AS NOTED	DATUM : AHD	FULL SIZE : A1
PROJECT No.: BE220566	DRAWING No. : SK01	VERSION: B

PAVEMENT-MARKING LEGEND

CODE	LINE TYPE	LINE LENGTH	GAP	WIDTH	COLOUR
EL1	EDGE LINE	-	-	150mm	WHITE
CL1	CONTINUITY LINE	1.0m	3.0m	150mm	WHITE
LL1	LANE-LINE (BROKEN)	3.0m	9.0m	100mm	WHITE
LL4	LANE-LINE (CONTINUOUS)	-	-	100mm	WHITE
GW	GIVE-WAY LINE	0.6m	0.6m	450mm	WHITE
BL2	DOUBLE TWO-WAY BARRIER LINE	-	-	100mm	WHITE
BL3	BARRIER LINE (TWO WAY)	-	-	100mm	WHITE
TL	TURN LINE	0.6m	0.6m	100mm	WHITE
SL	STOP LINE	-	-	450mm	WHITE
-	PAVEMENT ARROWS	REFER M.U.T.C.D. FOR DETAILS			WHITE
-	CHEVRON MARKING	REFER M.U.T.C.D. FOR DETAILS			WHITE

LEGEND SWEPT PATH

- 500mm CLEARANCE
- VEHICLE BODY ENVELOPE
- WHEELS SWEPT PATH

VEHICLE TURNING SWEPT PATH

SCALE 1 : 400 (FULL SIZE) (metres)

AV meters

Tractor Width: 2.50 Lock to Lock Time: 6.0
Trailer Width : 2.50 Steering Angle : 27.8
Tractor Track: 2.50 Articulating Angle : 70.0
Trailer Track : 2.50

PRELIMINARY
NOT FOR CONSTRUCTION OR TENDER

PROPOSED INDUSTRIAL DEVELOPMENT

4693-4731 MOUNT LINDESAY HIGHWAY, NORTH MACLEAN
RPD: LOT 3, 4, 5 AND 6 ON RP137101
FOR

ROUBAIX PROPERTIES PTY LTD

A1 ORIGINAL SIZE BEFORE REDUCTION

VER.	DESCRIPTION	DATE
B	UPDATED ISSUE	01-10-24
A	ORIGINAL ISSUE	12-08-24

BURCHILLS ENGINEERING SOLUTIONS
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EMAIL: ADMIN@BURCHILLS.COM.AU
COOTE BURCHILLS ENGINEERING PTY LTD
ABN 76 166 942 365

PROJECT:

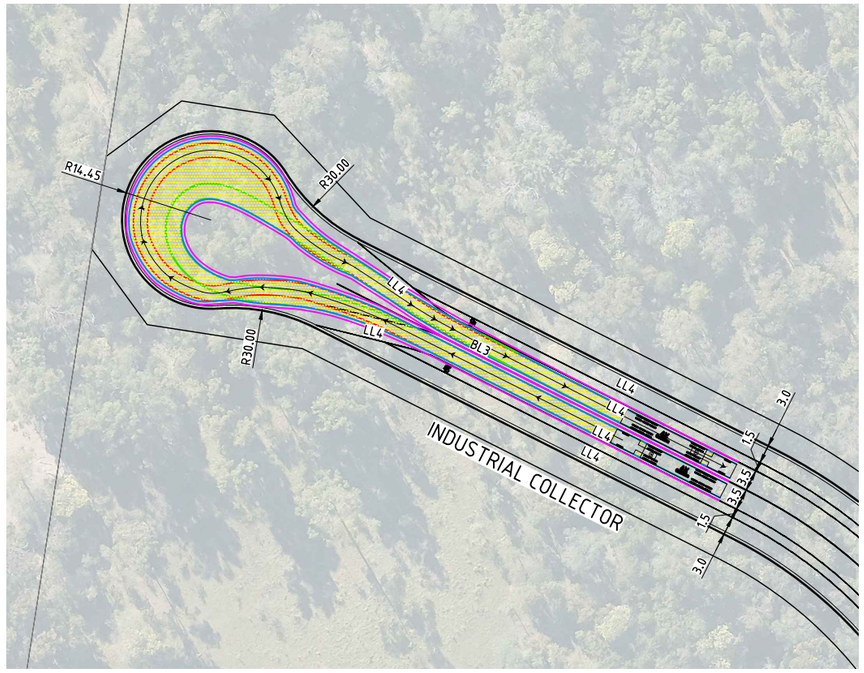
4693-4731 MOUNT LINDESAY HIGHWAY

DRAWING TITLE :

VEHICLE TURNING SWEPT PATH SHEET 1

DEVEL. APPLIC. No. :	DATE : 01-10-24
PROJECT LEADER : JACK SHAO	
DESIGNER : NHUNG NGUYEN	
DRAFTSPERSON : NHUNG NGUYEN	
CHECKED : JACK SHAO	
APPROVED FOR AND ON BEHALF OF BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365	
RPEQ No. :	

SCALE : AS NOTED	DATUM : AHD	FULL SIZE : A1
PROJECT No.: BE220566	DRAWING No. : SK02	VERSION: B

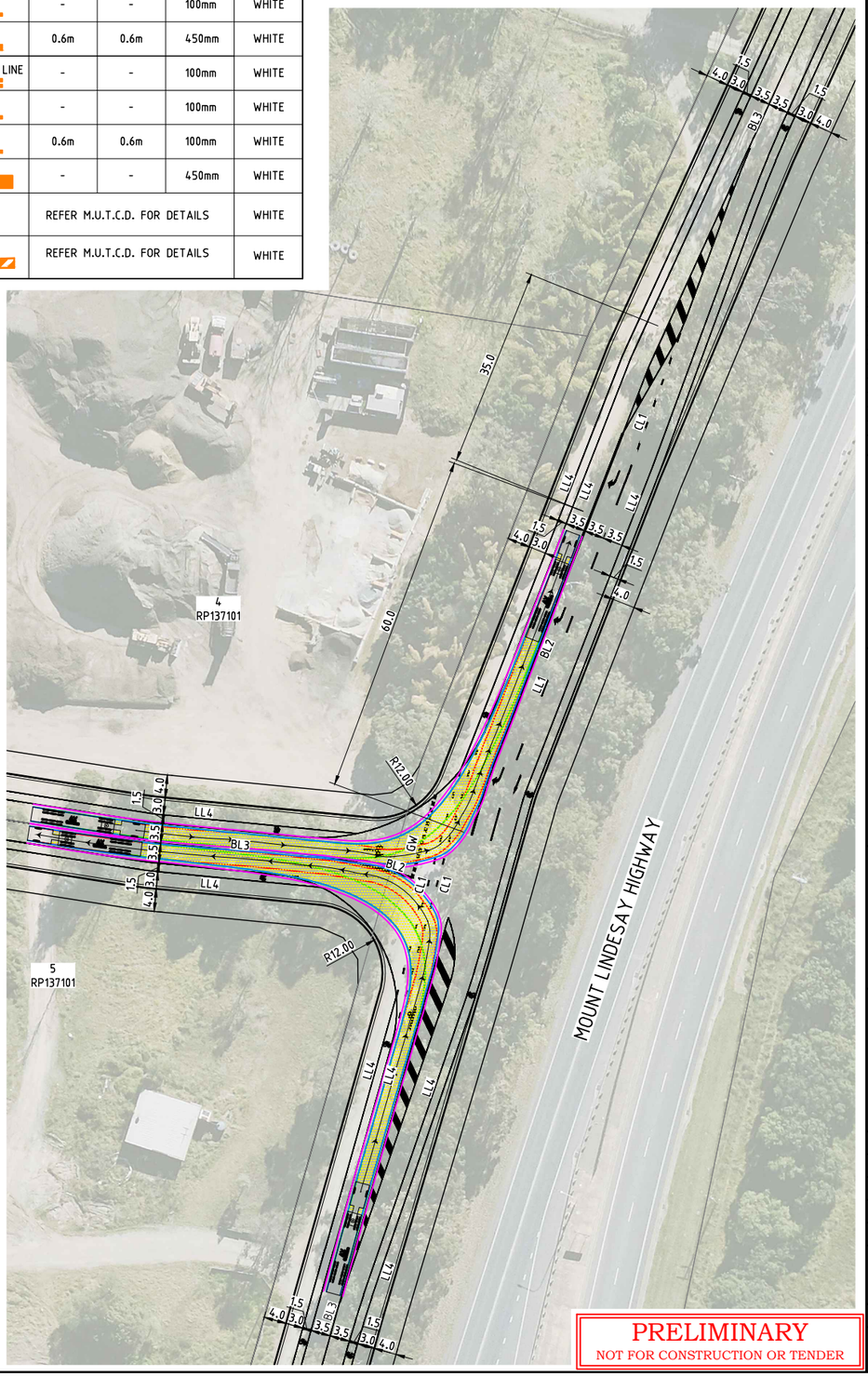


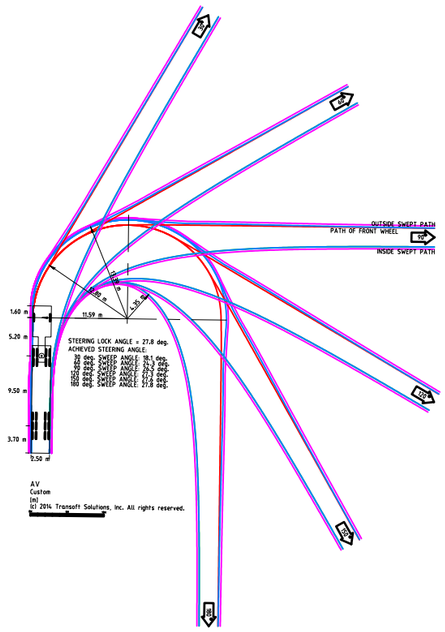
PAVEMENT-MARKING LEGEND

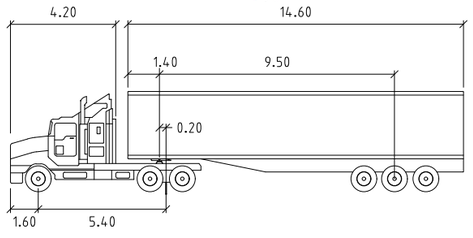
CODE	LINE TYPE	LINE LENGTH	GAP	WIDTH	COLOUR
EL1	EDGE LINE	-	-	150mm	WHITE
CL1	CONTINUITY LINE	1.0m	3.0m	150mm	WHITE
LL1	LANE-LINE (BROKEN)	3.0m	9.0m	100mm	WHITE
LL4	LANE-LINE (CONTINUOUS)	-	-	100mm	WHITE
GW	GIVE-WAY LINE	0.6m	0.6m	450mm	WHITE
BL2	DOUBLE TWO-WAY BARRIER LINE	-	-	100mm	WHITE
BL3	BARRIER LINE (TWO WAY)	-	-	100mm	WHITE
TL	TURN LINE	0.6m	0.6m	100mm	WHITE
SL	STOP LINE	-	-	450mm	WHITE
-	PAVEMENT ARROWS	REFER M.U.T.C.D. FOR DETAILS			WHITE
-	CHEVRON MARKING	REFER M.U.T.C.D. FOR DETAILS			WHITE

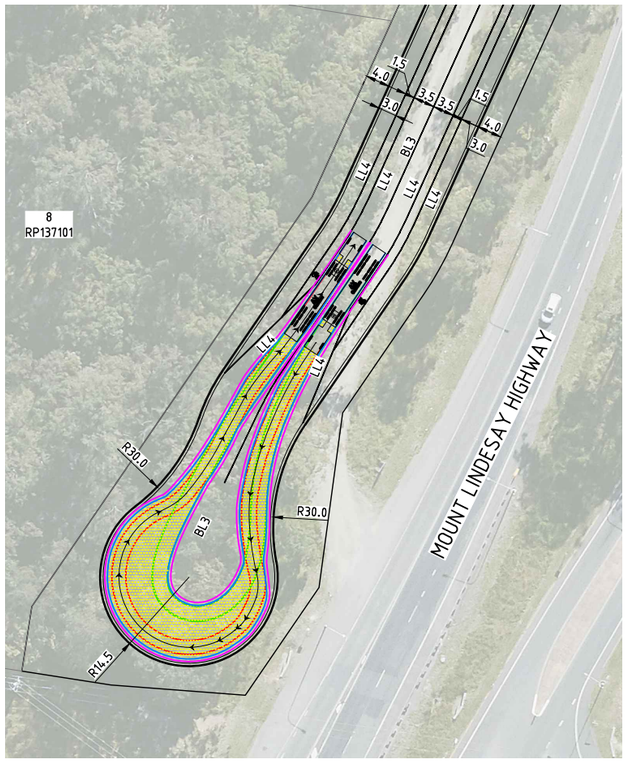
LEGEND SWEPT PATH

- 500mm CLEARANCE
- VEHICLE BODY ENVELOPE
- WHEELS SWEPT PATH









AV	meters		
Tractor Width	: 2.50	Lock to Lock Time	: 6.0
Trailer Width	: 2.50	Steering Angle	: 27.8
Tractor Track	: 2.50	Articulating Angle	: 70.0
Trailer Track	: 2.50		

VEHICLE TURNING SWEPT PATH

SCALE 5 0 5 10 15 20 25 (metres)

1 : 500 (FULL SIZE)

PRELIMINARY
NOT FOR CONSTRUCTION OR TENDER

PROPOSED INDUSTRIAL DEVELOPMENT

4693-4731 MOUNT LINDESAY HIGHWAY,
NORTH MACLEAN
RPD: LOT 3, 4, 5 AND 6 ON RP137101
FOR

ROUBAIX PROPERTIES PTY LTD

A1 ORIGINAL SIZE BEFORE REDUCTION

VER.	DESCRIPTION	DATE
B	UPDATED ISSUE	01-10-24
A	ORIGINAL ISSUE	12-08-24

NOTE
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Figured dimensions take precedence over scale. Do not scale reduced size drawings. Verify dimensions prior to commencing any on-site or off-site works or fabrication.

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FAX: +61 7 5509 6411
EMAIL: ADMIN@BURCHILLS.COM.AU
COOTE BURCHILLS ENGINEERING PTY LTD
ABN 76 166 942 365

PROJECT:
4693-4731 MOUNT LINDESAY HIGHWAY

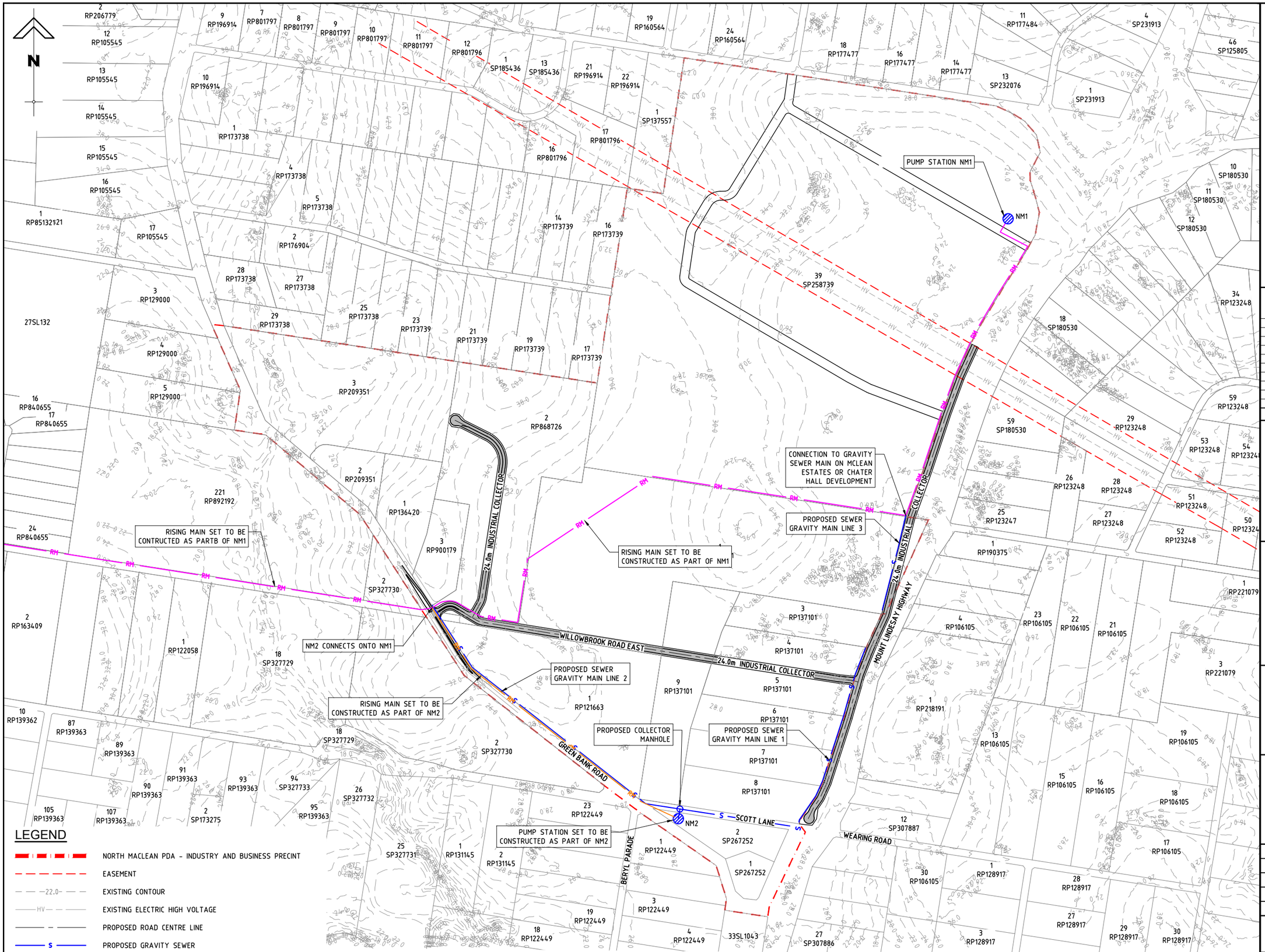
DRAWING TITLE :
VEHICLE TURNING SWEPT PATH SHEET 2

DEVEL. APPLIC. No. :	DATE : 01-10-24
PROJECT LEADER : JACK SHAO	
DESIGNER : NHUNG NGUYEN	
DRAFTSPERSON : NHUNG NGUYEN	
CHECKED : JACK SHAO	

APPROVED FOR AND ON BEHALF OF BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365

RPEQ No. :

SCALE : AS NOTED	DATUM : AHD	FULL SIZE : A1
PROJECT No.: BE220566	DRAWING No. : SK03	VERSION: B



LEGEND

- NORTH MACLEAN PDA - INDUSTRY AND BUSINESS PRECINT
- EASEMENT
- EXISTING CONTOUR
- EXISTING ELECTRIC HIGH VOLTAGE
- PROPOSED ROAD CENTRE LINE
- PROPOSED GRAVITY SEWER
- PROPOSED RISING MAIN NM1
- PROPOSED RISING MAIN NM2

SEPARATE SEWER NETWORK PLAN

SCALE 50 0 50 100 150 200 250 (metres)
1 : 5000 (FULL SIZE)

PRELIMINARY
NOT FOR CONSTRUCTION OR TENDER

PROPOSED INDUSTRIAL DEVELOPMENT

4693-4731 MOUNT LINDESAY HIGHWAY, NORTH MACLEAN
RPD: LOT 3, 4, 5 AND 6 ON RP137101
FOR

ROUBAIX PROPERTIES PTY LTD

A1 ORIGINAL SIZE BEFORE REDUCTION

VER.	DESCRIPTION	DATE
B	UPDATED ISSUE	01-10-24
A	ORIGINAL ISSUE	28-07-23

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EMAIL: ADMIN@BURCHILLS.COM.AU
COOTE BURCHILLS ENGINEERING PTY LTD
ABN 76 166 942 365

PROJECT:
4693-4731 MOUNT LINDESAY HIGHWAY

DRAWING TITLE :
SPEPARATE SEWER NETWORK PLAN

DEVEL. APPLIC. No. :	DATE : 01-10-24
PROJECT LEADER : JACK SHAO	
DESIGNER : NHUNG NGUYEN	
DRAFTSPERSON : NHUNG NGUYEN	
CHECKED : JACK SHAO	

APPROVED FOR AND ON BEHALF OF BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365
RPEQ No. :

SCALE : AS NOTED	DATUM : AHD	FULL SIZE : A1
PROJECT No.: BE220566	DRAWING No. : SK04	VERSION: B

PROPOSED INDUSTRIAL DEVELOPMENT

4693-4731 MOUNT LINDESAY HIGHWAY,
NORTH MACLEAN
RPD: LOT 3, 4, 5 AND 6 ON RP137101
FOR

ROUBAIX PROPERTIES PTY LTD

CONNECTION TO GRAVITY SEWER MAIN ON MCLEAN ESTATES OR CHATER HALL DEVELOPMENT

PROPOSED SEWER GRAVITY MAIN LINE 3

PROPOSED SEWER GRAVITY MAIN LINE 1

PROPOSED SEWER GRAVITY MAIN LINE 2

RISING MAIN SET TO BE CONSTRUCTED AS PART OF NM1

RISING MAIN SET TO BE CONSTRUCTED AS PART OF NM2

NM2 CONNECTS ONTO NM1

PROPOSED COLLECTOR MANHOLE

PUMP STATION SET TO BE CONSTRUCTED AS PART OF NM2

24.0m INDUSTRIAL COLLECTOR

WILLOWBROOK ROAD EAST

MOUNT LINDESAY HIGHWAY

GREEN BANK ROAD

BERYL PARADE

WEARING ROAD

1 RP113251
2 RP868726
3 RP900179
3 RP137101
4 RP137101
5 RP137101
6 RP137101
7 RP137101
8 RP137101
9 RP137101
1 RP121663
2 SP327730
23 RP122449
2 SP267252
1 SP267252

LEGEND

- EXISTING CONTOUR
- EXISTING ELECTRIC HIGH VOLTAGE
- PROPOSED ROAD CENTRE LINE
- PROPOSED GRAVITY SEWER
- PROPOSED RISING MAIN NM1
- PROPOSED RISING MAIN NM2
- SEWER STRUCTURE LABEL

GRAVITY SEWER LAYOUT PLAN

SCALE 20 0 20 40 60 80 100 (metres)
1 : 2000 (FULL SIZE)

PRELIMINARY
NOT FOR CONSTRUCTION OR TENDER

A1 ORIGINAL SIZE BEFORE REDUCTION

VER.	DESCRIPTION	DATE
B	UPDATED ISSUE	01-10-24
A	ORIGINAL ISSUE	08-08-23

BURCHILLS ENGINEERING SOLUTIONS

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COOTE BURCHILLS ENGINEERING PTY LTD
ABN 76 166 942 365

PROJECT:

4693-4731 MOUNT LINDESAY HIGHWAY

DRAWING TITLE :

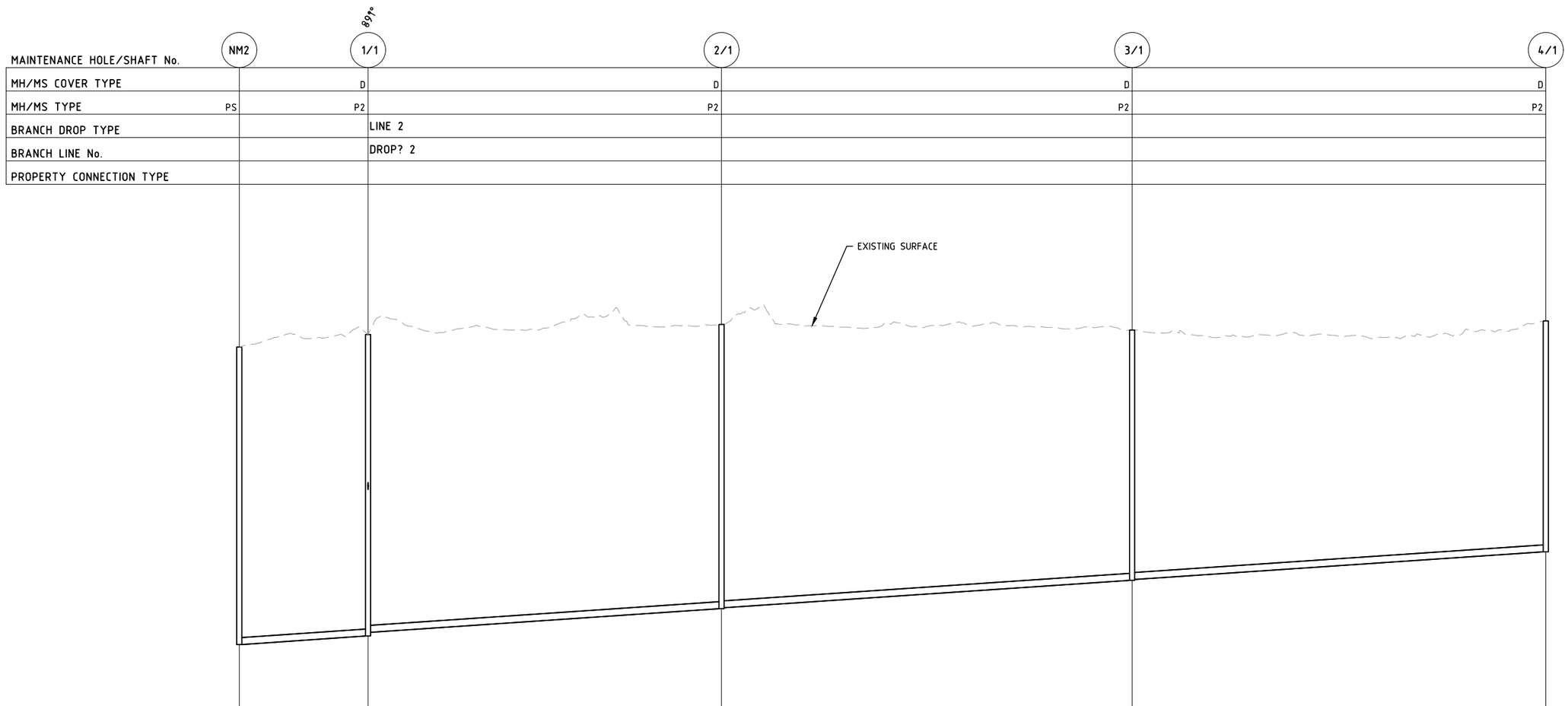
GRAVITY SEWER LAYOUT PLAN

DEVEL. APPLIC. No. :	DATE : 01-10-24
PROJECT LEADER : JACK SHAO	
DESIGNER : NHUNG NGUYEN	
DRAFTSPERSON : NHUNG NGUYEN	
CHECKED : JACK SHAO	

APPROVED FOR AND ON BEHALF OF BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365

RPEQ No. :

SCALE : AS NOTED	DATUM : AHD	FULL SIZE : A1
PROJECT No.: BE220566	DRAWING No. : SK05	VERSION: B



MAINTENANCE HOLE/SHAFT No.		NM2	1/1	2/1	3/1	4/1	
MH/MS COVER TYPE		D	D	D	D	D	
MH/MS TYPE	PS	P2	P2	P2	P2	P2	
BRANCH DROP TYPE			LINE 2				
BRANCH LINE No.			DROP? 2				
PROPERTY CONNECTION TYPE							
DATUM		18.000					
PROP. DESCRIPTION		0	0	0	0	0	
PIPE NOMINAL DIA. (DN) TYPE, CLASS		DN 150PVC-U	DN 150PVC-U	DN 150PVC-U	DN 150PVC-U	DN 150PVC-U	
GRADE (1 IN XX)		1 in 150	1 in 150	1 in 150	1 in 150	1 in 150	
LENGTH		27.604	75.772	88.042	88.687		
EMBEDMENT TYPE							
DEPTH OF INVERT BELOW FSL	6.377	6.377	6.462 6.382	6.092 6.072	5.365 5.345	4.951	
INVERT LEVEL (IL)	20.385	20.385	20.569 20.649	21.154 21.174	21.761 21.781	22.372	
FINISHED SURFACE LEVEL (FSL)		26.762	27.030	27.246	27.126		27.323
EXISTING SURFACE LEVEL (ESL)		26.762	27.030	27.246	27.126		27.323
CHAINAGE (CH)		0.000	27.604	103.376	191.417		280.105
		E500971.222 N6927716.079	E500975.688 N6927743.319	E501050.569 N6927731.731	E501137.575 N6927718.267	E501225.219 N6927704.703	

LINE 1

SEWER LONGITUDINAL SECTION

VERTICAL SCALE 5 0 5 10 15 20 25 1:50 (meters)

HORIZONTAL SCALE 5 0 5 10 15 20 25 1:500 (meters)

PRELIMINARY
NOT FOR CONSTRUCTION OR TENDER

PROPOSED INDUSTRIAL DEVELOPMENT

4693-4731 MOUNT LINDESAY HIGHWAY, NORTH MACLEAN
RPD: LOT 3, 4, 5 AND 6 ON RP137101
FOR

ROUBAIX PROPERTIES PTY LTD

A1 ORIGINAL SIZE BEFORE REDUCTION

VER.	DESCRIPTION	DATE
B	UPDATED ISSUE	01-10-24
A	ORIGINAL ISSUE	08-08-23

BURCHILLS ENGINEERING SOLUTIONS
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EMAIL: ADMIN@BURCHILLS.COM.AU
COOTE BURCHILLS ENGINEERING PTY LTD
ABN 76 166 942 365

PROJECT:
4693-4731 MOUNT LINDESAY HIGHWAY

DRAWING TITLE :
SEWER LONGITUDINAL SECTION SHEET 1

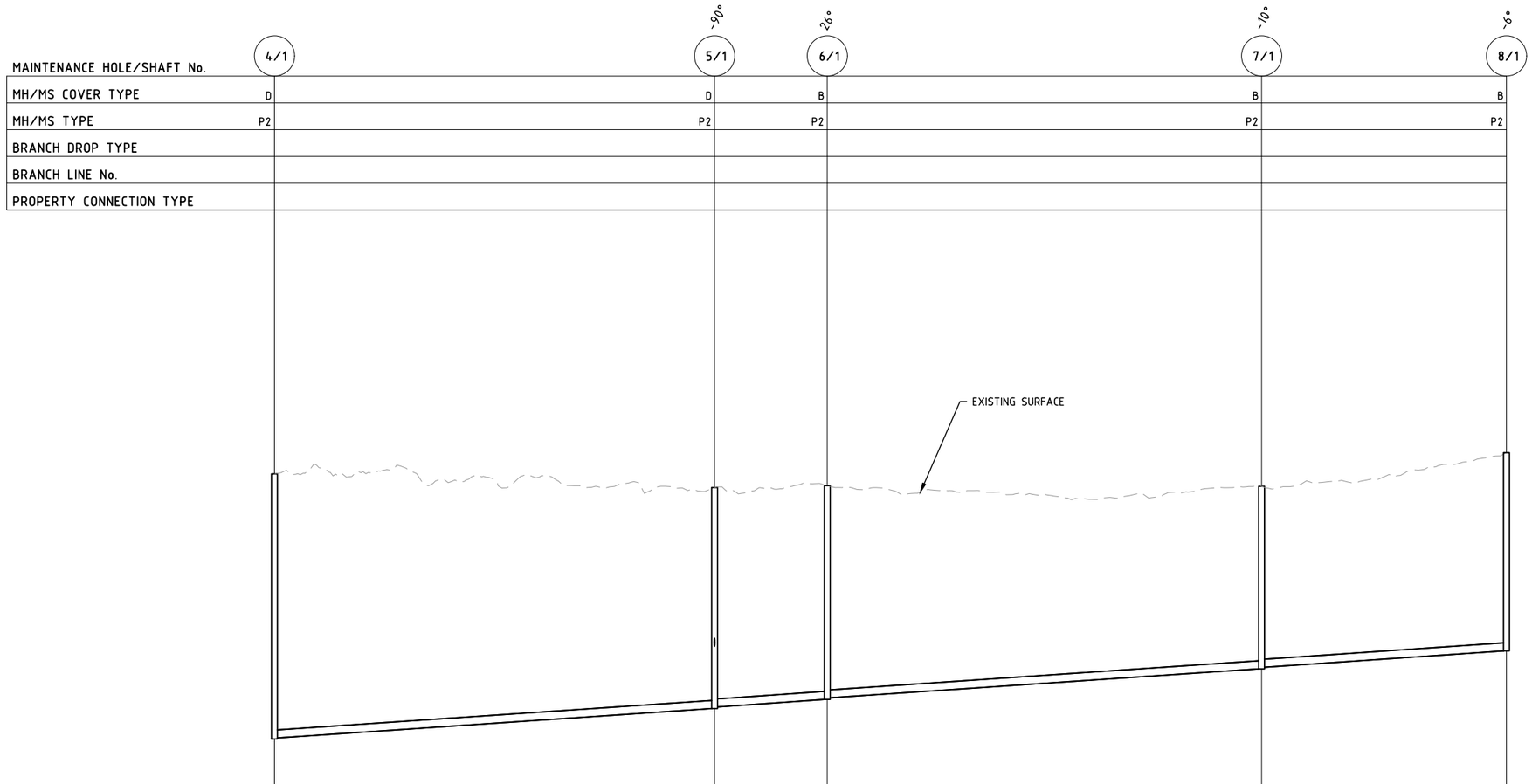
DEVEL. APPLIC. No. :	DATE : 01-10-24
PROJECT LEADER : JACK SHAO	
DESIGNER : NHUNG NGUYEN	
DRAFTSPERSON : NHUNG NGUYEN	
CHECKED : JACK SHAO	

APPROVED FOR AND ON BEHALF OF BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365

RPEQ No. :

SCALE : AS NOTED	DATUM : AHD	FULL SIZE : A1

PROJECT No.:	DRAWING No. :	VERSION:
BE220566	SK06	B



MAINTENANCE HOLE/SHAFT No.		4/1	5/1	6/1	7/1	8/1	
MH/MS COVER TYPE	D	D	D	B	B	B	
MH/MS TYPE	P2	P2	P2	P2	P2	P2	
BRANCH DROP TYPE							
BRANCH LINE No.							
PROPERTY CONNECTION TYPE							
DATUM		20.000					
PROP. DESCRIPTION		0	0	0	0		
PIPE NOMINAL DIA. (DN) TYPE, CLASS		DN 150PVC-U	DN 150PVC-U	DN 150PVC-U	DN 150PVC-U		
GRADE (1 IN XX)		1 in 150	1 in 150	1 in 150	1 in 150		
LENGTH		82.187	21.043	81.101	45.735		
EMBEDMENT TYPE							
DEPTH OF INVERT BELOW FSL	4.951	4.931	4.129	4.099	3.992	3.962	3.408	3.378	3.701	
INVERT LEVEL (IL)	22.372	22.392	22.940	22.970	23.110	23.140	23.681	23.711	24.016	
FINISHED SURFACE LEVEL (FSL)		27.323		27.069		27.102		27.089		27.717
EXISTING SURFACE LEVEL (ESL)		27.323		27.069		27.102		27.089		27.717
CHAINAGE (CH)		280.105		362.291		383.335		464.436		510.171
		E501225.219 N6927704.703		E501306.439 N6927692.135		E501309.651 N6927712.931		E501355.468 N6927779.851		E501374.352 N6927821.505

LINE 1

SEWER LONGITUDINAL SECTION

VERTICAL SCALE 5 0 5 10 15 20 25 1:50 (meters)

HORIZONTAL SCALE 5 0 5 10 15 20 25 1:500 (meters)

PRELIMINARY
NOT FOR CONSTRUCTION OR TENDER

PROPOSED INDUSTRIAL DEVELOPMENT

4693-4731 MOUNT LINDESAY HIGHWAY, NORTH MACLEAN
RPD: LOT 3, 4, 5 AND 6 ON RP137101
FOR

ROUBAIX PROPERTIES PTY LTD

A1 ORIGINAL SIZE BEFORE REDUCTION

VER.	DESCRIPTION	DATE
B	UPDATED ISSUE	01-10-24
A	ORIGINAL ISSUE	08-08-23

BURCHILLS ENGINEERING SOLUTIONS
GOLD COAST | BRISBANE | TOOWOOMBA
IPSWICH | MORETON BAY
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FAX: +61 7 5509 6411
EMAIL: ADMIN@BURCHILLS.COM.AU
COOTE BURCHILLS ENGINEERING PTY LTD
ABN 76 166 942 365

PROJECT:
4693-4731 MOUNT LINDESAY HIGHWAY

DRAWING TITLE :
SEWER LONGITUDINAL SECTION SHEET 2

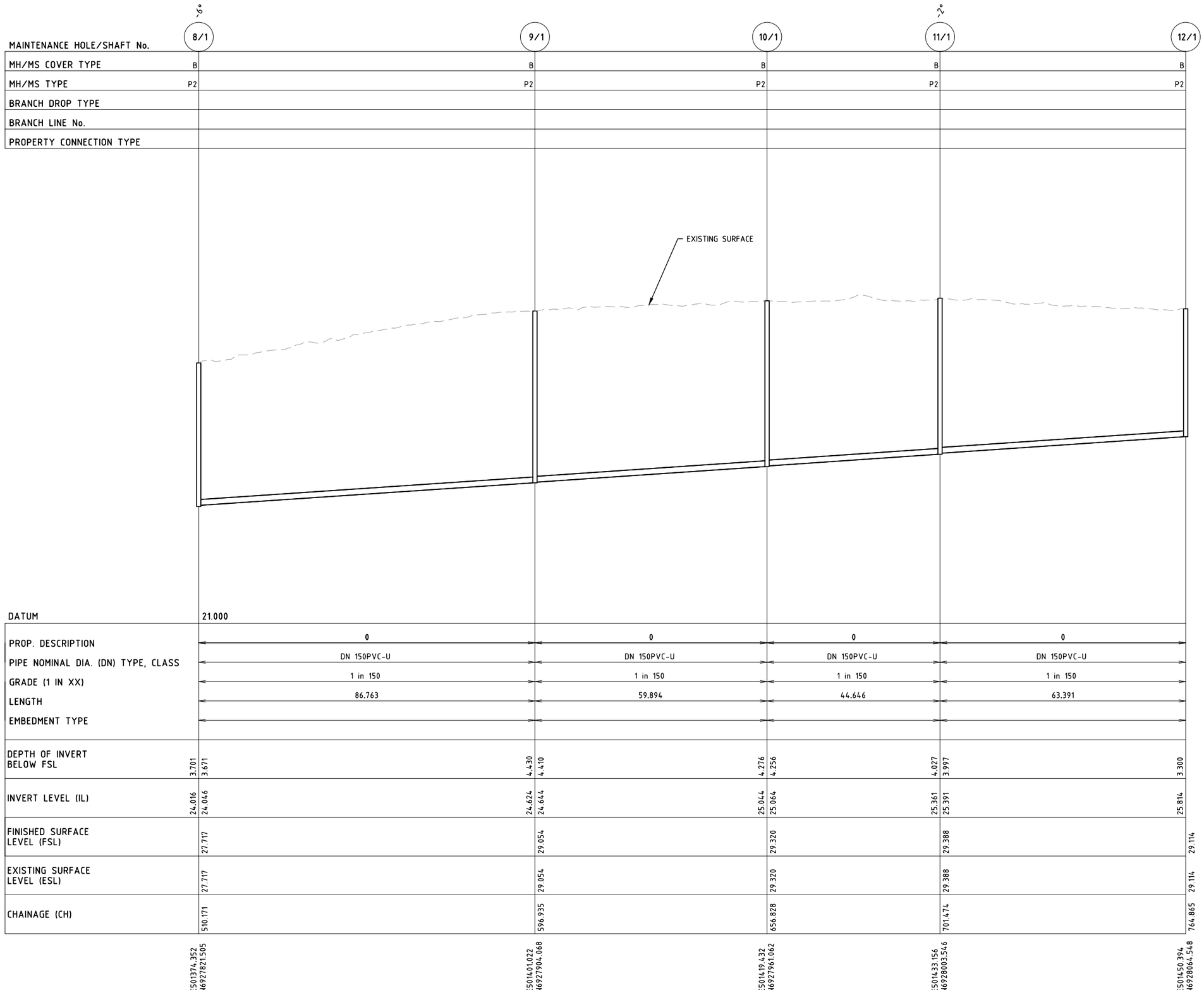
DEVEL. APPLIC. No. :		DATE : 01-10-24
PROJECT LEADER :	JACK SHAO	
DESIGNER :	NHUNG NGUYEN	
DRAFTSPERSON :	NHUNG NGUYEN	
CHECKED :	JACK SHAO	

APPROVED FOR AND ON BEHALF OF BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365

RPEQ No. :

SCALE : AS NOTED	DATUM : AHD	FULL SIZE : A1

PROJECT No.:	DRAWING No. :	VERSION:
BE220566	SK07	B



MAINTENANCE HOLE/SHAFT No.		8/1	9/1	10/1	11/1	12/1
MH/MS COVER TYPE	B	B	B	B	B	B
MH/MS TYPE	P2	P2	P2	P2	P2	P2
BRANCH DROP TYPE						
BRANCH LINE No.						
PROPERTY CONNECTION TYPE						
DATUM		21.000				
PROP. DESCRIPTION		0	0	0	0	
PIPE NOMINAL DIA. (DN) TYPE, CLASS		DN 150PVC-U	DN 150PVC-U	DN 150PVC-U	DN 150PVC-U	
GRADE (1 IN XX)		1 in 150	1 in 150	1 in 150	1 in 150	
LENGTH		86.763	59.894	44.646	63.391	
EMBEDMENT TYPE						
DEPTH OF INVERT BELOW FSL	3.701	3.671	4.430	4.410	4.276	4.256	4.027	3.997	3.300
INVERT LEVEL (IL)	24.016	24.046	24.624	24.644	25.044	25.064	25.361	25.391	25.814
FINISHED SURFACE LEVEL (FSL)		27.717		29.054		29.320		29.388	29.114
EXISTING SURFACE LEVEL (ESL)		27.717		29.054		29.320		29.388	29.114
CHAINAGE (CH)		510.171		596.935		656.828		701.474	764.865
		E501374.352 N6927821.505		E501401.022 N6927904.068		E501419.432 N6927961.062		E501433.156 N6928003.546	E501450.394 N6928064.548

LINE 1

SEWER LONGITUDINAL SECTION

VERTICAL SCALE 5 0 5 10 15 20 25 1:50 (meters)

HORIZONTAL SCALE 5 0 5 10 15 20 25 1:500 (meters)

PRELIMINARY
NOT FOR CONSTRUCTION OR TENDER

PROPOSED INDUSTRIAL DEVELOPMENT

4693-4731 MOUNT LINDESAY HIGHWAY, NORTH MACLEAN
RPD: LOT 3, 4, 5 AND 6 ON RP137101
FOR

ROUBAIX PROPERTIES PTY LTD

A1 ORIGINAL SIZE BEFORE REDUCTION

VER.	DESCRIPTION	DATE
B	UPDATED ISSUE	01-10-24
A	ORIGINAL ISSUE	08-08-23

BURCHILLS ENGINEERING SOLUTIONS
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EMAIL: ADMIN@BURCHILLS.COM.AU
COOTE BURCHILLS ENGINEERING PTY LTD
ABN 76 166 942 365

PROJECT:
4693-4731 MOUNT LINDESAY HIGHWAY

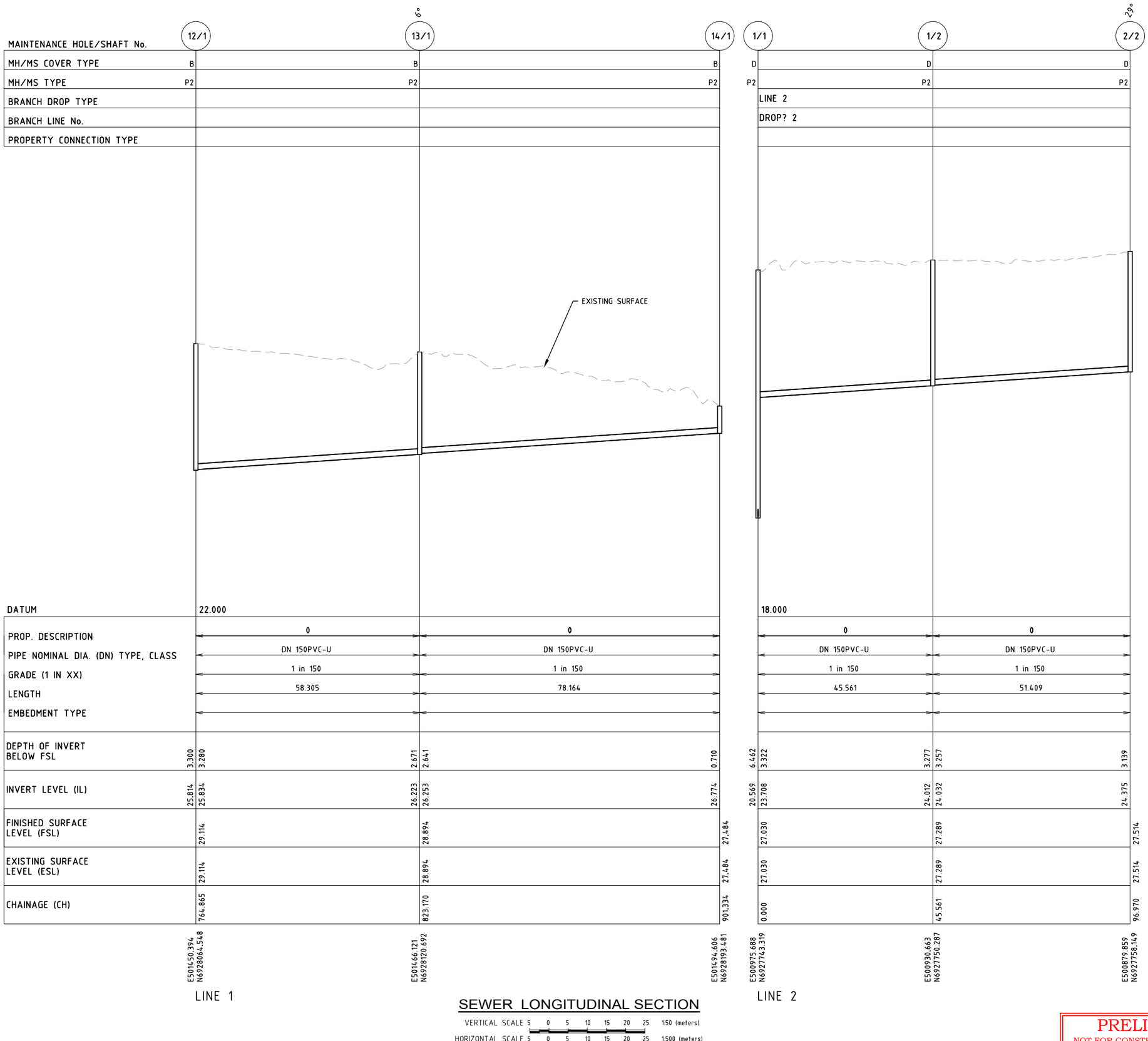
DRAWING TITLE :
SEWER LONGITUDINAL SECTION SHEET 3

DEVEL. APPLIC. No. :	DATE : 01-10-24
PROJECT LEADER : JACK SHAO	
DESIGNER : NHUNG NGUYEN	
DRAFTSPERSON : NHUNG NGUYEN	
CHECKED : JACK SHAO	

APPROVED FOR AND ON BEHALF OF BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365
RPEQ No. :

SCALE : AS NOTED	DATUM : AHD	FULL SIZE : A1

PROJECT No.:	DRAWING No. :	VERSION:
BE220566	SK08	B



MAINTENANCE HOLE/SHAFT No.	12/1	13/1	14/1	1/1	1/2	2/2
MH/MS COVER TYPE	B	B	B	D	D	D
MH/MS TYPE	P2	P2	P2	P2	P2	P2
BRANCH DROP TYPE				LINE 2		
BRANCH LINE No.				DROP? 2		
PROPERTY CONNECTION TYPE						
DATUM	22.000			18.000		
PROP. DESCRIPTION	0	0		0	0	
PIPE NOMINAL DIA. (DN) TYPE, CLASS	DN 150PVC-U	DN 150PVC-U		DN 150PVC-U	DN 150PVC-U	
GRADE (1 IN XX)	1 in 150	1 in 150		1 in 150	1 in 150	
LENGTH	58.305	78.164		45.561	51.409	
EMBEDMENT TYPE						
DEPTH OF INVERT BELOW FSL	3.300 / 3.280	2.671 / 2.641	0.710	6.462 / 3.322	3.277 / 3.257	3.139
INVERT LEVEL (IL)	25.814 / 25.834	26.223 / 26.253	26.774	20.569 / 23.708	24.012 / 24.032	24.375
FINISHED SURFACE LEVEL (FSL)	29.114	28.894	27.484	27.030	27.289	27.514
EXISTING SURFACE LEVEL (ESL)	29.114	28.894	27.484	27.030	27.289	27.514
CHAINAGE (CH)	764.865	823.170	901.334	0.000	45.561	96.970
	E501450.394 N6928064.548	E501466.121 N6928120.692	E501494.606 N6928193.481	E500975.688 N6927743.319	E500930.663 N6927750.287	E500879.859 N6927758.149

LINE 1

LINE 2

SEWER LONGITUDINAL SECTION

VERTICAL SCALE 5 0 5 10 15 20 25 1:50 (meters)

HORIZONTAL SCALE 5 0 5 10 15 20 25 1:500 (meters)

PRELIMINARY
NOT FOR CONSTRUCTION OR TENDER

PROPOSED INDUSTRIAL DEVELOPMENT

4693-4731 MOUNT LINDESAY HIGHWAY, NORTH MACLEAN
RPD: LOT 3, 4, 5 AND 6 ON RP137101
FOR

ROUBAIX PROPERTIES PTY LTD

A1 ORIGINAL SIZE BEFORE REDUCTION

VER.	DESCRIPTION	DATE
B	UPDATED ISSUE	01-10-24
A	ORIGINAL ISSUE	08-08-23

BURCHILLS ENGINEERING SOLUTIONS
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ABN 76 166 942 365

PROJECT:

4693-4731 MOUNT LINDESAY HIGHWAY

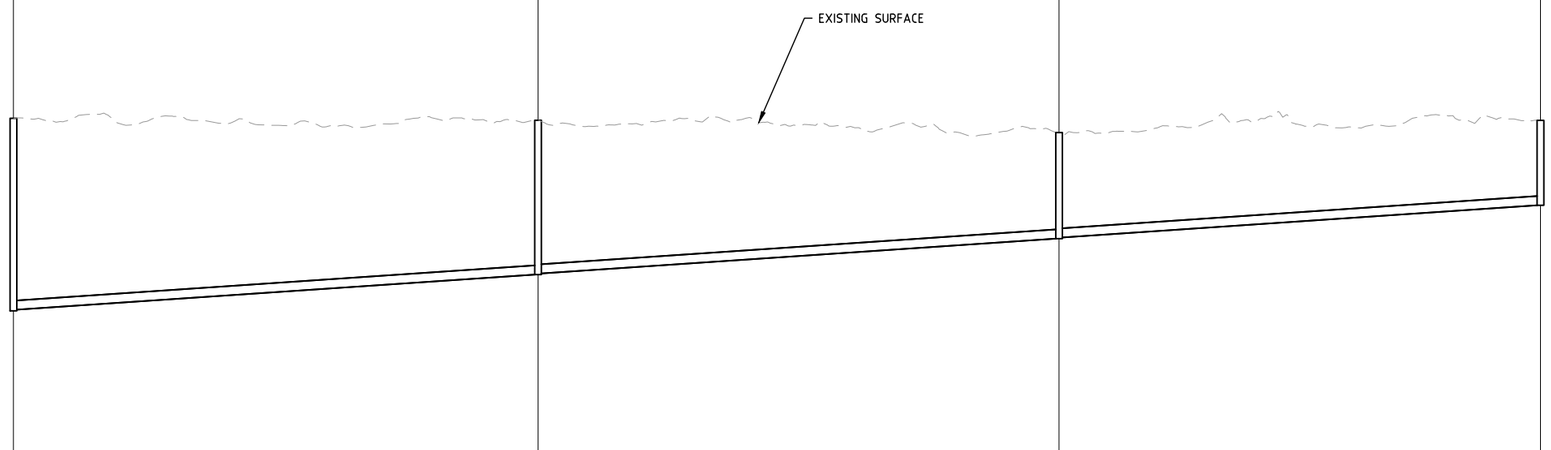
DRAWING TITLE :

SEWER LONGITUDINAL SECTION SHEET 4

DEVEL. APPLIC. No. :	DATE : 01-10-24
PROJECT LEADER : JACK SHAO	
DESIGNER : NHUNG NGUYEN	
DRAFTSPERSON : NHUNG NGUYEN	
CHECKED : JACK SHAO	
APPROVED FOR AND ON BEHALF OF BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365	
RPEQ No. :	
SCALE : AS NOTED	DATUM : AHD / FULL SIZE : A1
PROJECT No.: BE220566	DRAWING No. : SK09 / VERSION: B

MAINTENANCE HOLE/SHAFT No.		2/2	3/2	4/2	5/2
MH/MS COVER TYPE	D	B	B	B	B
MH/MS TYPE	P2	P2	P2	P2	P2
BRANCH DROP TYPE					
BRANCH LINE No.					
PROPERTY CONNECTION TYPE					

29°



DATUM		21.000																					
PROP. DESCRIPTION		0						0						0									
PIPE NOMINAL DIA. (DN) TYPE, CLASS		DN 150PVC-U						DN 150PVC-U						DN 150PVC-U									
GRADE (1 IN XX)		1 in 150						1 in 150						1 in 150									
LENGTH		85.571						84.985						78.525									
EMBEDMENT TYPE																							
DEPTH OF INVERT BELOW FSL	3.139	3.119						2.517	2.497					1.729	1.709					1.386			
INVERT LEVEL (IL)	24.375	24.395						24.965	24.985					25.552	25.572					26.095			
FINISHED SURFACE LEVEL (FSL)		27.514						27.482						27.281						27.481			
EXISTING SURFACE LEVEL (ESL)		27.514						27.482						27.281						27.481			
CHAINAGE (CH)		96.970						182.541						267.526						346.051			
		E500879.859 N6927758.149						E500812.591 N6927811.039						E500745.784 N6927863.568						E500684.055 N6927912.104			

LINE 2

SEWER LONGITUDINAL SECTION

VERTICAL SCALE 5 0 5 10 15 20 25 1:50 (meters)

HORIZONTAL SCALE 5 0 5 10 15 20 25 1:500 (meters)

PRELIMINARY
NOT FOR CONSTRUCTION OR TENDER

PROPOSED INDUSTRIAL DEVELOPMENT

4693-4731 MOUNT LINDESAY HIGHWAY, NORTH MACLEAN
RPD: LOT 3, 4, 5 AND 6 ON RP137101
FOR

ROUBAIX PROPERTIES PTY LTD

A1 ORIGINAL SIZE BEFORE REDUCTION

VER.	DESCRIPTION	DATE
B	UPDATED ISSUE	01-10-24
A	ORIGINAL ISSUE	08-08-23

BURCHILLS ENGINEERING SOLUTIONS
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EMAIL: ADMIN@BURCHILLS.COM.AU
COOTE BURCHILLS ENGINEERING PTY LTD
ABN 76 166 942 365

PROJECT:
4693-4731 MOUNT LINDESAY HIGHWAY

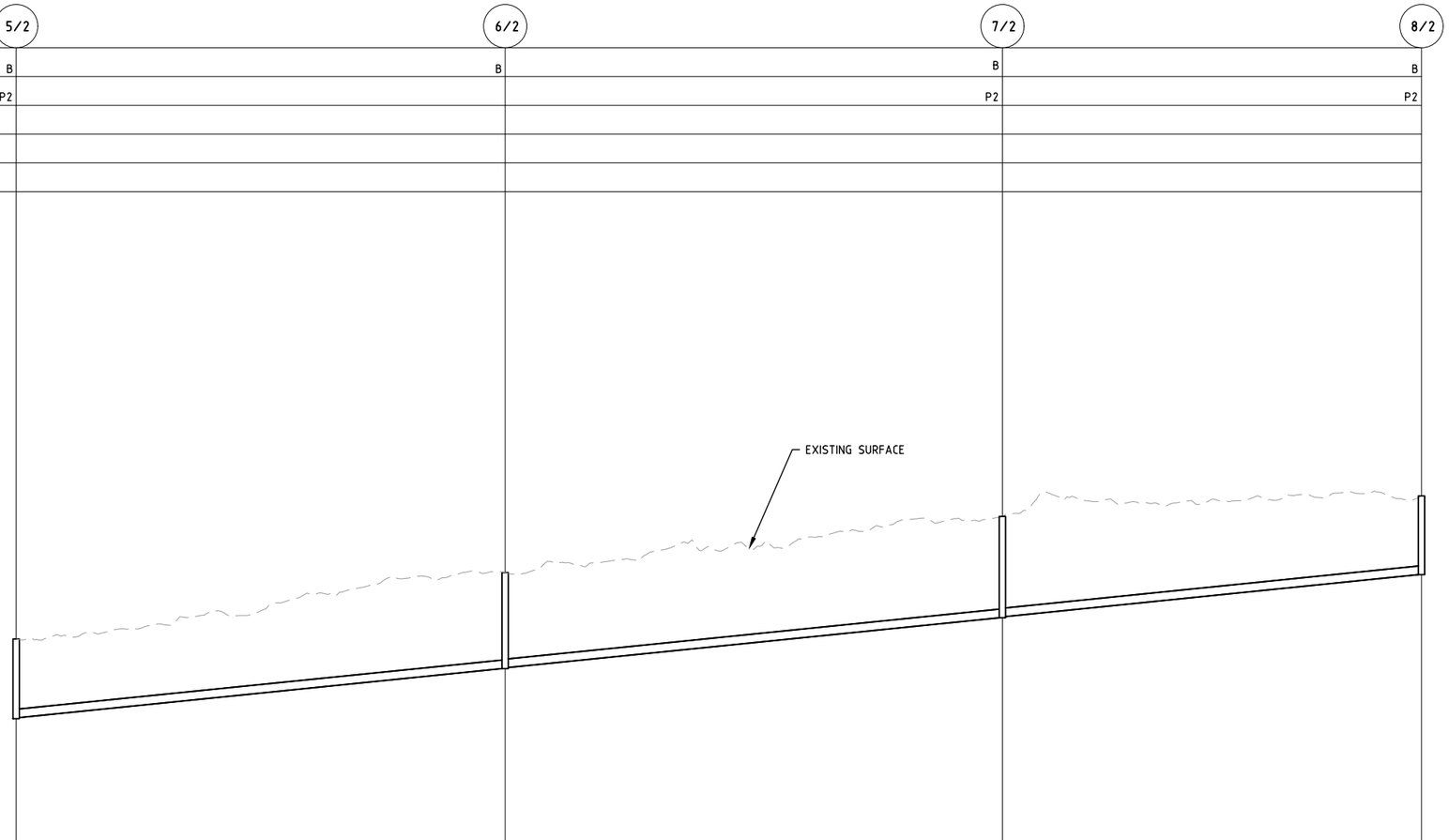
DRAWING TITLE :
SEWER LONGITUDINAL SECTION SHEET 5

DEVEL. APPLIC. No. :	DATE : 01-10-24
PROJECT LEADER : JACK SHAO	
DESIGNER : NHUNG NGUYEN	
DRAFTSPERSON : NHUNG NGUYEN	
CHECKED : JACK SHAO	

APPROVED FOR AND ON BEHALF OF BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365
RPEQ No. :

SCALE : AS NOTED	DATUM : AHD	FULL SIZE : A1

PROJECT No.:	DRAWING No. :	VERSION:
BE220566	SK10	B



MAINTENANCE HOLE/SHAFT No.		5/2	6/2	7/2	8/2
MH/MS COVER TYPE	B	B	B	B	B
MH/MS TYPE	P2		P2	P2	P2
BRANCH DROP TYPE					
BRANCH LINE No.					
PROPERTY CONNECTION TYPE					
DATUM		23.000			
PROP. DESCRIPTION		0	0	0	
PIPE NOMINAL DIA. (DN) TYPE, CLASS		DN 150PVC-U	DN 150PVC-U	DN 150PVC-U	
GRADE (1 IN XX)		1 in 100	1 in 100	1 in 100	
LENGTH		84.98	86.417	72.837	
EMBEDMENT TYPE					
DEPTH OF INVERT BELOW FSL	1.386	1.366	1.668	1.761	1.368
INVERT LEVEL (IL)	26.095	26.115	26.965	27.849	28.598
FINISHED SURFACE LEVEL (FSL)	27.481		28.633	29.610	29.966
EXISTING SURFACE LEVEL (ESL)	27.481		28.633	29.610	29.966
CHAINAGE (CH)	346.051		431.031	517.448	590.284
	E500684.055 N6927912.104		E500617.252 N6927964.629	E500549.319 N6928018.043	E500492.062 N6928063.063

LINE 2

SEWER LONGITUDINAL SECTION

VERTICAL SCALE 5 0 5 10 15 20 25 1:50 (meters)

HORIZONTAL SCALE 5 0 5 10 15 20 25 1:500 (meters)

PRELIMINARY
NOT FOR CONSTRUCTION OR TENDER

PROPOSED INDUSTRIAL DEVELOPMENT

4693-4731 MOUNT LINDESAY HIGHWAY, NORTH MACLEAN
RPD: LOT 3, 4, 5 AND 6 ON RP137101
FOR

ROUBAIX PROPERTIES PTY LTD

A1 ORIGINAL SIZE BEFORE REDUCTION

VER.	DESCRIPTION	DATE
B	UPDATED ISSUE	01-10-24
A	ORIGINAL ISSUE	08-08-23

BURCHILLS ENGINEERING SOLUTIONS
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IPSWICH | MORETON BAY
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FAX: +61 7 5509 6411
EMAIL: ADMIN@BURCHILLS.COM.AU
COOTE BURCHILLS ENGINEERING PTY LTD
ABN 76 166 942 365

PROJECT:
4693-4731 MOUNT LINDESAY HIGHWAY

DRAWING TITLE :
SEWER LONGITUDINAL SECTION SHEET 6

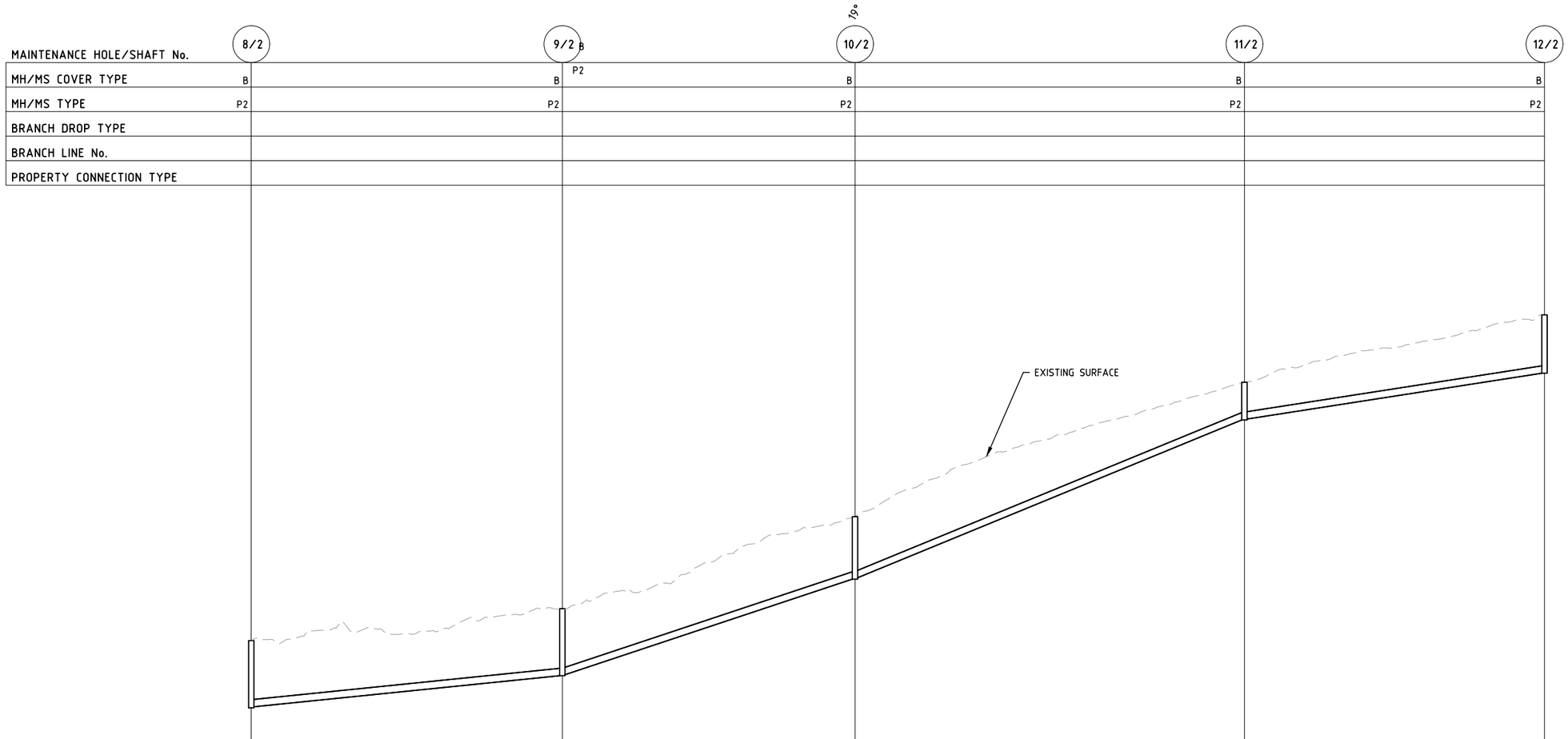
DEVEL. APPLIC. No. :	DATE : 01-10-24
PROJECT LEADER : JACK SHAO	
DESIGNER : NHUNG NGUYEN	
DRAFTSPERSON : NHUNG NGUYEN	
CHECKED : JACK SHAO	

APPROVED FOR AND ON BEHALF OF BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365

RPEQ No. :

SCALE : AS NOTED	DATUM : AHD	FULL SIZE : A1

PROJECT No.:	DRAWING No. :	VERSION:
BE220566	SK11	B



MAINTENANCE HOLE/SHAFT No.	8/2	9/2	10/2	11/2	12/2
MH/MS COVER TYPE	B	B P2	B	B	B
MH/MS TYPE	P2	P2	P2	P2	P2
BRANCH DROP TYPE					
BRANCH LINE No.					
PROPERTY CONNECTION TYPE					
DATUM	27.000				
PROP. DESCRIPTION	0	0	0	0	
PIPE NOMINAL DIA. (DN) TYPE, CLASS	DN 150PVC-U	DN 150PVC-U	DN 150PVC-U	DN 150PVC-U	
GRADE (1 IN XX)	1 in 100	1 in 30.63	1 in 24.7	1 in 65.57	
LENGTH	63.436	59.654	79.399	61.182	
EMBEDMENT TYPE					
DEPTH OF INVERT BELOW FSL	1.368 / 1.348	1.366 / 1.346	1.275 / 1.245	0.769 / 0.749	1.189
INVERT LEVEL (IL)	28.598 / 28.618	29.252 / 29.272	31.219 / 31.249	34.464 / 34.484	35.417
FINISHED SURFACE LEVEL (FSL)	29.966	30.617	32.495	35.232	36.606
EXISTING SURFACE LEVEL (ESL)	29.966	30.617	32.495	35.232	36.606
CHAINAGE (CH)	590.284	653.721	713.375	792.774	853.956
	E500492.062 N6928063.063	E500442.194 N6928102.272	E500395.3 N6928139.144	E500352.221 N6928205.84	E500319.025 N6928257.234

LINE 2

SEWER LONGITUDINAL SECTION

VERTICAL SCALE 5 0 5 10 15 20 25 1:50 (meters)

HORIZONTAL SCALE 5 0 5 10 15 20 25 1:500 (meters)

PRELIMINARY
NOT FOR CONSTRUCTION OR TENDER

PROPOSED INDUSTRIAL DEVELOPMENT

4693-4731 MOUNT LINDESAY HIGHWAY, NORTH MACLEAN
RPD: LOT 3, 4, 5 AND 6 ON RP137101
FOR

ROUBAIX PROPERTIES PTY LTD

A1 ORIGINAL SIZE BEFORE REDUCTION

VER.	DESCRIPTION	DATE
B	UPDATED ISSUE	01-10-24
A	ORIGINAL ISSUE	08-08-23

BURCHILLS ENGINEERING SOLUTIONS
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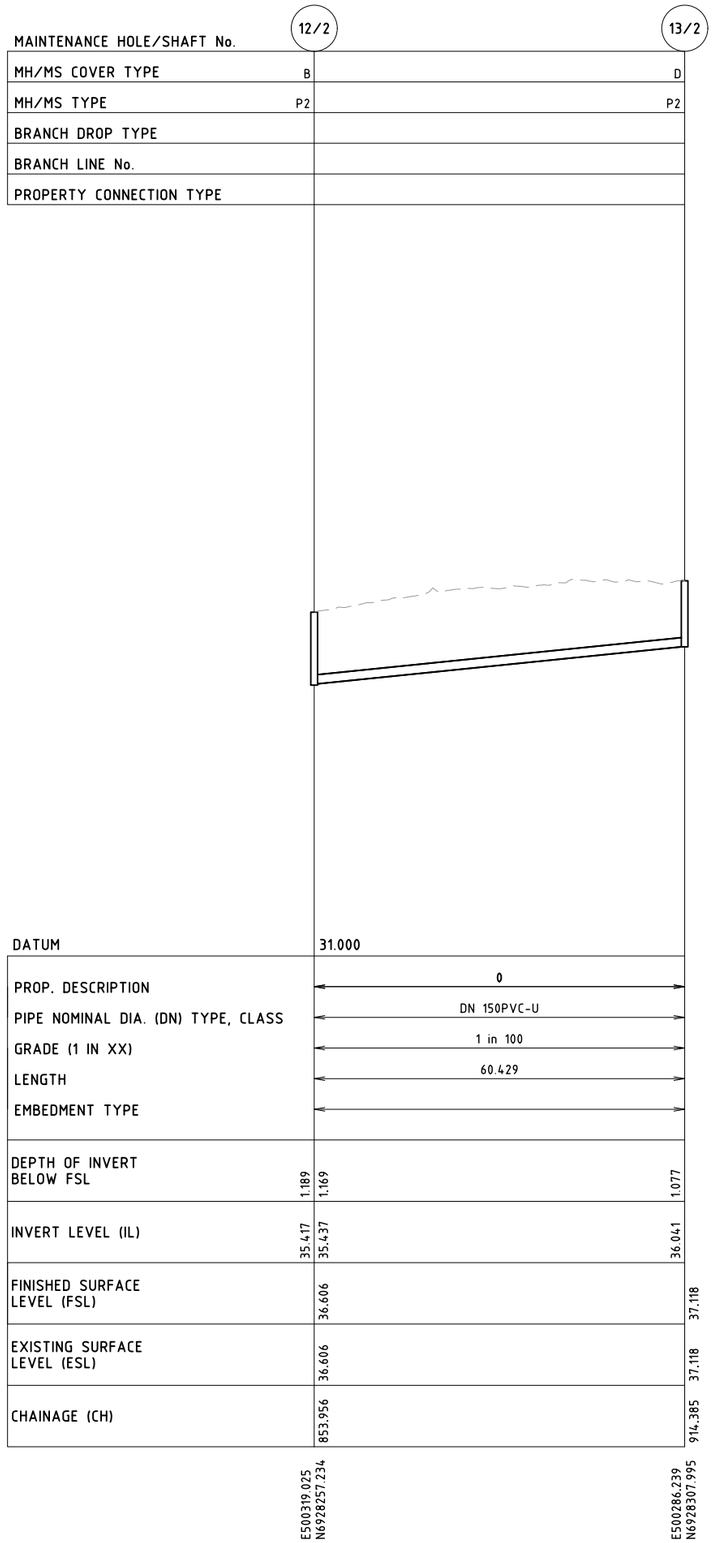
COOTE BURCHILLS ENGINEERING PTY LTD
ABN 76 166 942 365

PROJECT:
4693-4731 MOUNT LINDESAY HIGHWAY

DRAWING TITLE :
SEWER LONGITUDINAL SECTION SHEET 7

DEVEL. APPLIC. No. :	DATE : 01-10-24
PROJECT LEADER : JACK SHAO	
DESIGNER : NHUNG NGUYEN	
DRAFTSPERSON : NHUNG NGUYEN	
CHECKED : JACK SHAO	
APPROVED FOR AND ON BEHALF OF BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365	
RPEQ No. :	
SCALE : AS NOTED	DATUM : AHD / FULL SIZE : A1
PROJECT No.: BE220566	DRAWING No. : SK12 / VERSION: B



LINE 2

SEWER LONGITUDINAL SECTION

VERTICAL SCALE 5 0 5 10 15 20 25 1:50 (meters)

HORIZONTAL SCALE 5 0 5 10 15 20 25 1:500 (meters)

PRELIMINARY
NOT FOR CONSTRUCTION OR TENDER

PROPOSED INDUSTRIAL DEVELOPMENT

4693-4731 MOUNT LINDESAY HIGHWAY, NORTH MACLEAN
RPD: LOT 3, 4, 5 AND 6 ON RP137101
FOR

ROUBAIX PROPERTIES PTY LTD

A1 ORIGINAL SIZE BEFORE REDUCTION

VER.	DESCRIPTION	DATE
B	UPDATED ISSUE	01-10-24
A	ORIGINAL ISSUE	08-08-23

BURCHILLS ENGINEERING SOLUTIONS
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ABN 76 166 942 365

PROJECT:
4693-4731 MOUNT LINDESAY HIGHWAY

DRAWING TITLE :
SEWER LONGITUDINAL SECTION SHEET 8

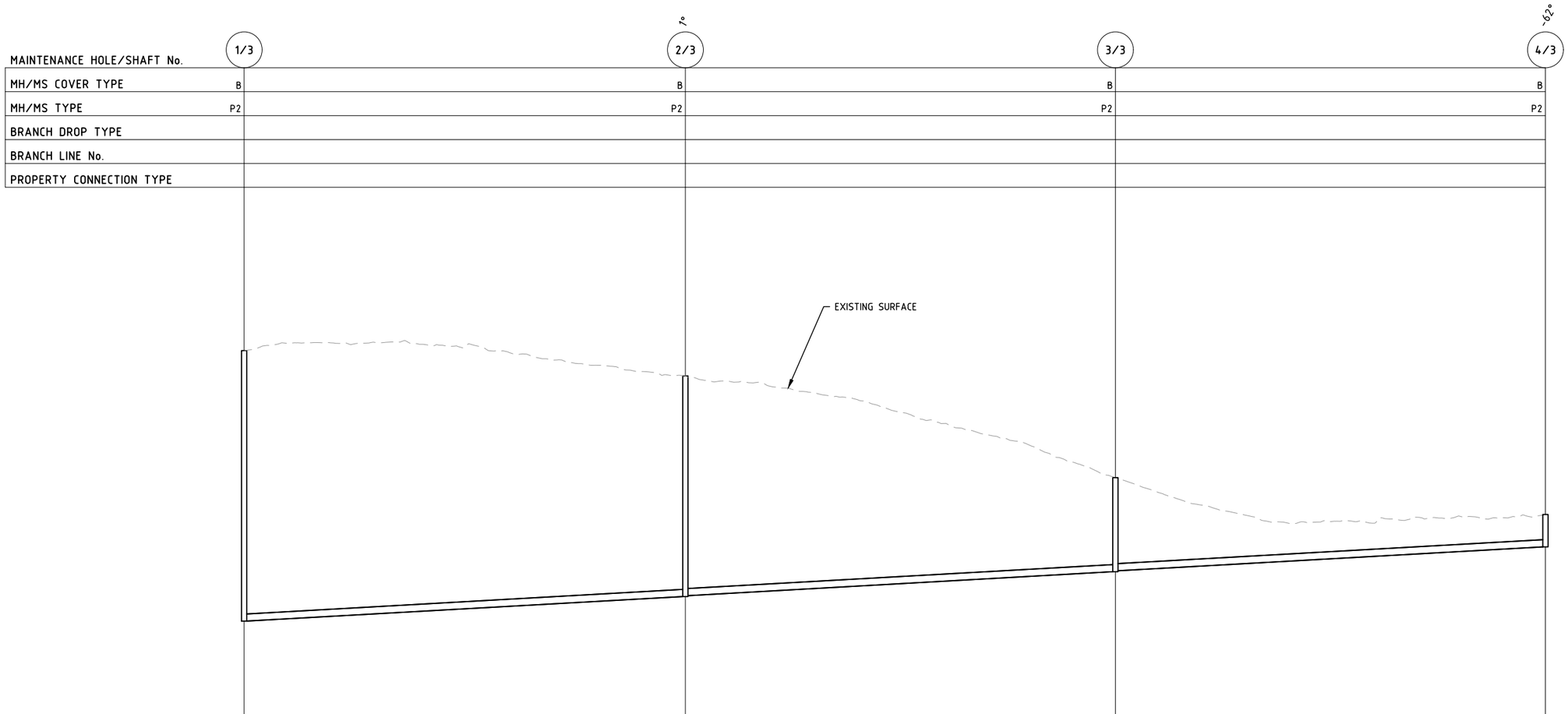
DEVEL. APPLIC. No. :	DATE : 01-10-24
PROJECT LEADER :	JACK SHAO
DESIGNER :	NHUNG NGUYEN
DRAFTSPERSON :	NHUNG NGUYEN
CHECKED :	JACK SHAO

APPROVED FOR AND ON BEHALF OF
BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365

RPEQ No. :

SCALE : AS NOTED	DATUM : AHD	FULL SIZE : A1

PROJECT No.:	DRAWING No. :	VERSION:
BE220566	SK13	B



LINE 3

SEWER LONGITUDINAL SECTION

VERTICAL SCALE 5 0 5 10 15 20 25 1:50 (meters)

HORIZONTAL SCALE 5 0 5 10 15 20 25 1:500 (meters)

PRELIMINARY
NOT FOR CONSTRUCTION OR TENDER

PROPOSED INDUSTRIAL DEVELOPMENT

4693-4731 MOUNT LINDESAY HIGHWAY, NORTH MACLEAN
RPD: LOT 3, 4, 5 AND 6 ON RP137101
FOR

ROUBAIX PROPERTIES PTY LTD

A1 ORIGINAL SIZE BEFORE REDUCTION

VER.	DESCRIPTION	DATE
B	UPDATED ISSUE	01-10-24
A	ORIGINAL ISSUE	08-08-23

BURCHILLS ENGINEERING SOLUTIONS
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FAX: +61 7 5509 6411
EMAIL: ADMIN@BURCHILLS.COM.AU
COOTE BURCHILLS ENGINEERING PTY LTD
ABN 76 166 942 365

PROJECT:
4693-4731 MOUNT LINDESAY HIGHWAY

DRAWING TITLE :
SEWER LONGITUDINAL SECTION SHEET 9

DEVEL. APPLIC. No. :	DATE : 01-10-24
PROJECT LEADER :	JACK SHAO
DESIGNER :	NHUNG NGUYEN
DRAFTSPERSON :	NHUNG NGUYEN
CHECKED :	JACK SHAO

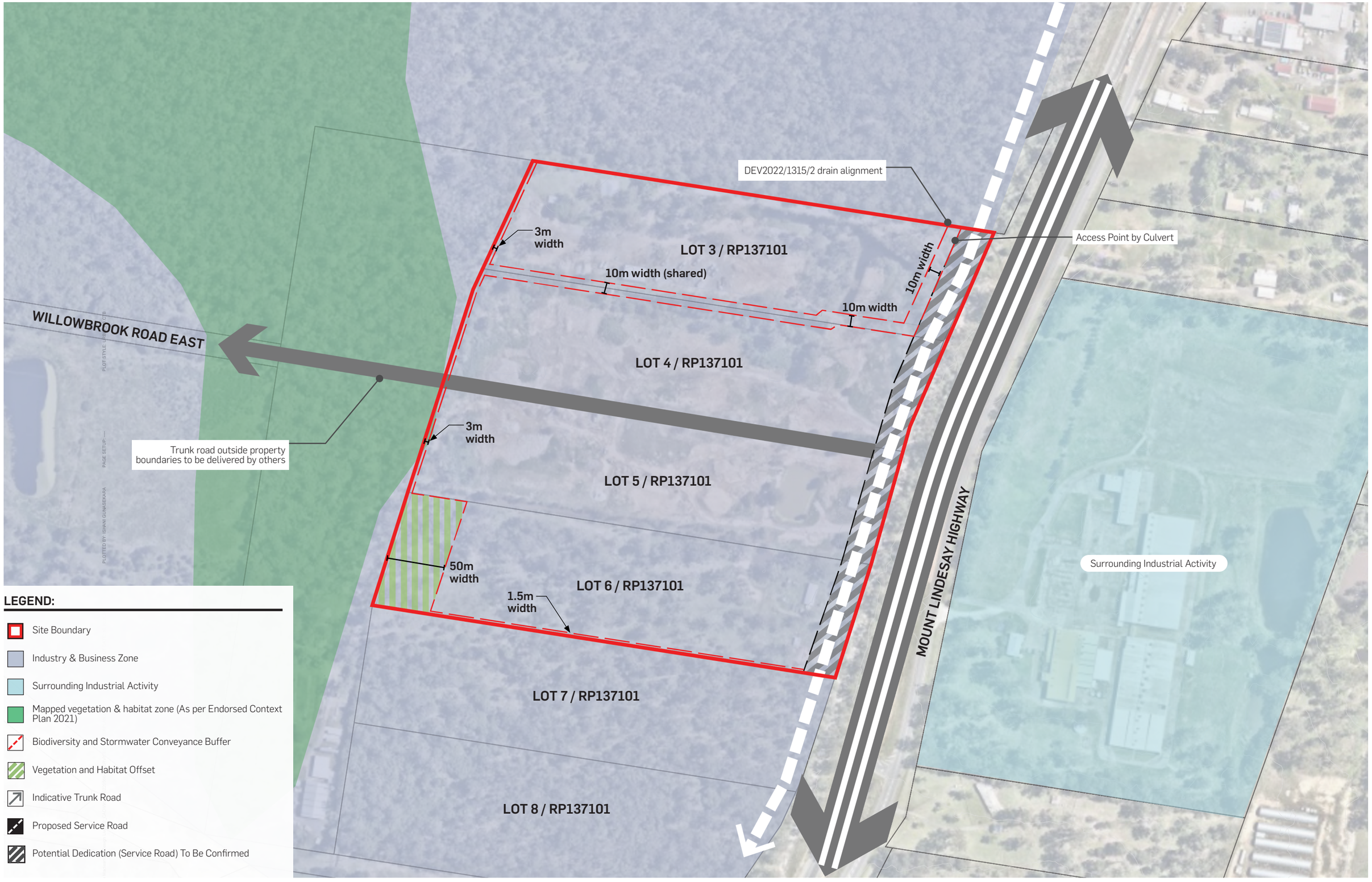
APPROVED FOR AND ON BEHALF OF BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365

RPEQ No. :

SCALE : AS NOTED	DATUM : AHD	FULL SIZE : A1

PROJECT No.:	DRAWING No. :	VERSION:
BE220566	SK14	B

Appendix E – Plan of Development



URBIS

4693-4703, 4705-4715, 4717-4731 & 4733-4743 MOUNT LINDESAY HIGHWAY

PLAN OF DEVELOPMENT

1:3000 @ A3

0 25 50 75 100 125 150

DATE: 11.10.2024
JOB NO: P0045017
DWG NO: POD-01
REV: 5

Appendix F – Infrastructure Masterplan

Pump Station NM1
to be delivered by
others

Serivce Road

MOUNT LINDSAY HIGHWAY

Temporary
turnaround

WILLOWBROOK ROAD EAST

LOT 3 / RP137101

LOT 4 / RP137101

LOT 5 / RP137101

LOT 6 / RP137101

GREENBANK ROAD

Proposed Sewer
Gravity Main Line 1

WEARING ROAD

SCOTT LANE

Pump Station NM2
to be delivered by
Client

WEARING ROAD

LEGEND:

- North Maclean PDA boundary
- Site boundary
- Contours (1m)

PROPOSED TRUNK INFRASTRUCUTRE:

- Roads - to be delivered by Client
- Roads - to be delivered by others
- 450mm Water main to be delivered by Client
- Water main to be delivered by others
- Gravity sewer to be delivered by Client
- Gravity sewer to be delivered by others
- Rising main NM2 to be delivered by Client
- Rising main NM1 to be delivered by others
- Pump Station NM2 to be delivered by Client
- Pump Station NM1 to be delivered by others

URBIS

4693-4703, 4705-4715, 4717-4731 & 4733-4743 MOUNT LINDESAY HIGHWAY

INFRASTRUCTURE MASTERPLAN

1:10,000 @ A3

0 100 200 300 400 500

DATE: 14.10.2024
JOB NO: P0045017
DWG NO: IM-01
REV: 2