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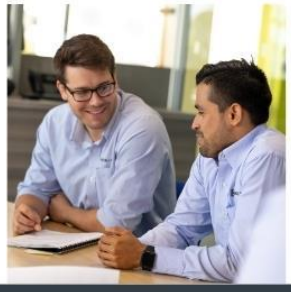

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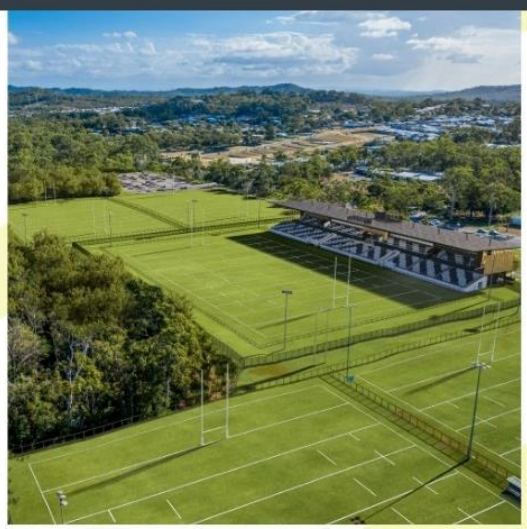



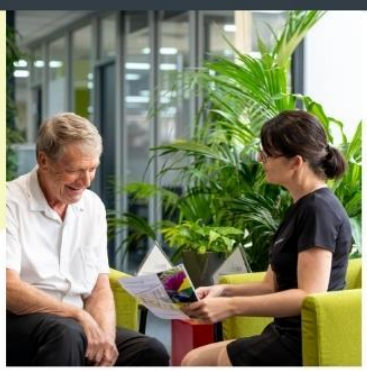

# North Maclean Factory Outlets & Distribution Centre
# Civil Engineering Report

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Appendix B – 2017 Traffic Survey Data
Appendix C – SIDRA Outputs
Appendix D – Structure Plan Layout
Appendix E – Plan of Development
Appendix F – Infrastructure Masterplan

# 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.

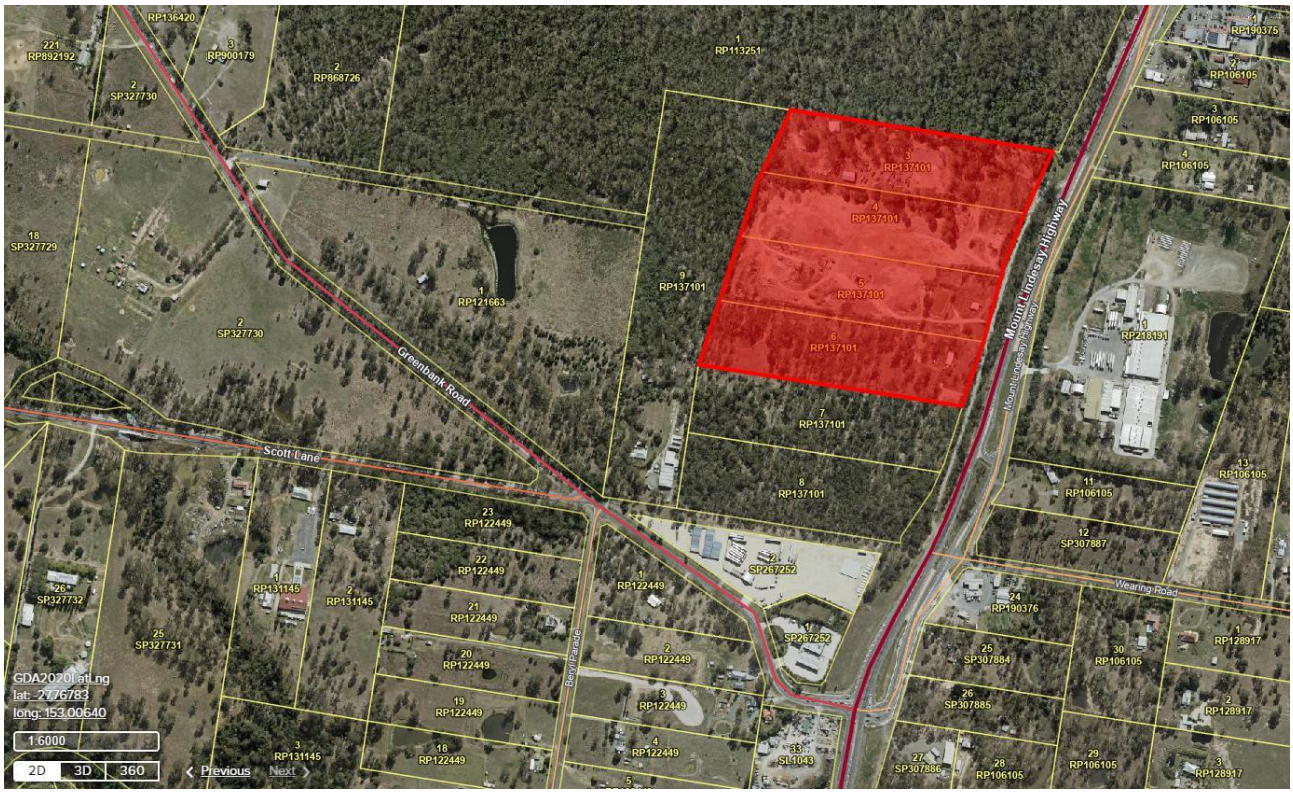



**Figure 2.1 Site Locality Plan**

### 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.

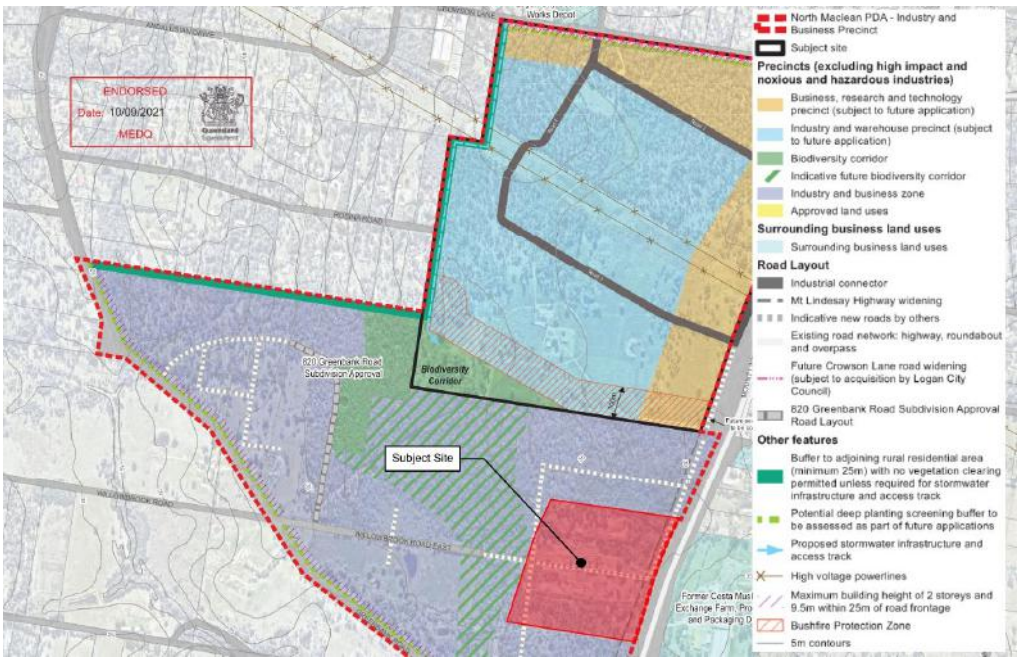



**Figure 3.1 Subject Sites within Industrial and Business Zone**

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 as per DEV2023/1370 & DEV2024/1470 approved levels. It is assumed that the finished surface levels for Lots 3 and 5 will be similar to the 'As Constructed' levels of Lot 4, and a minimum RL of 27.5m. 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.

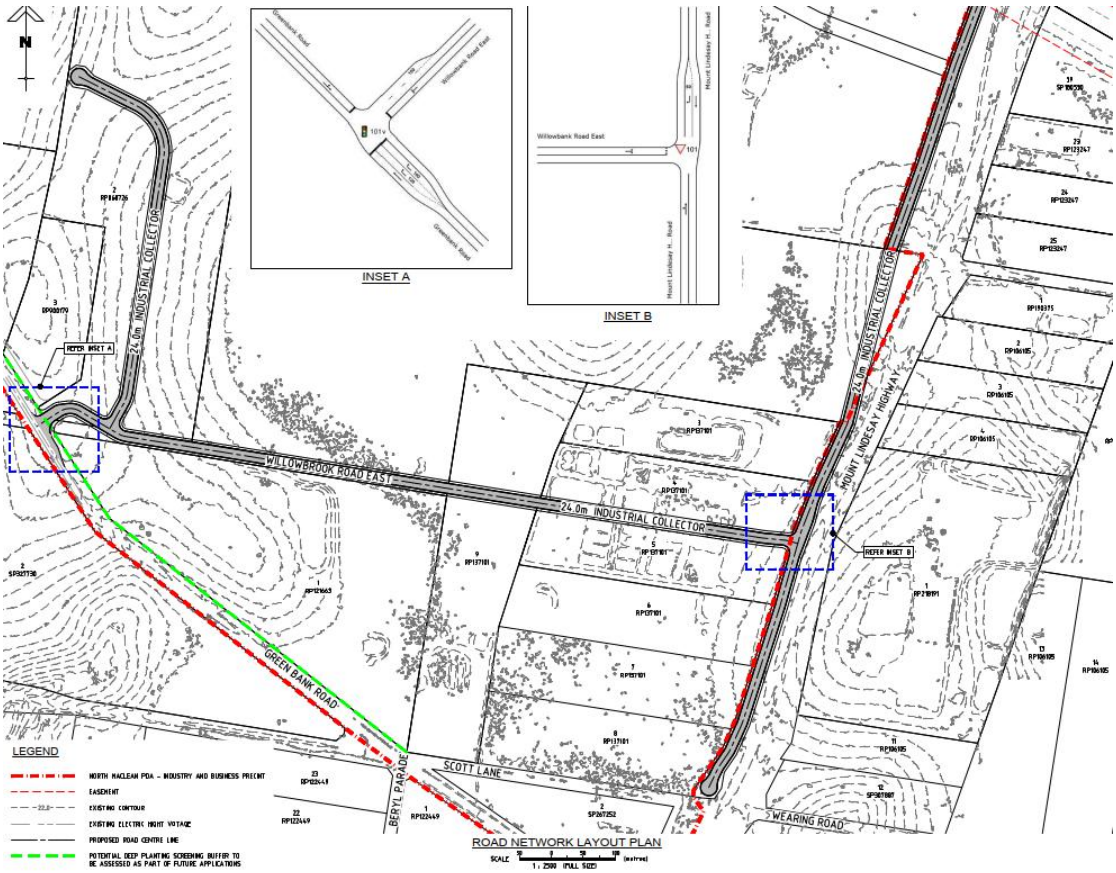



**Figure 5.1 Proposed Ultimate Service Road and Collector Road**

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.

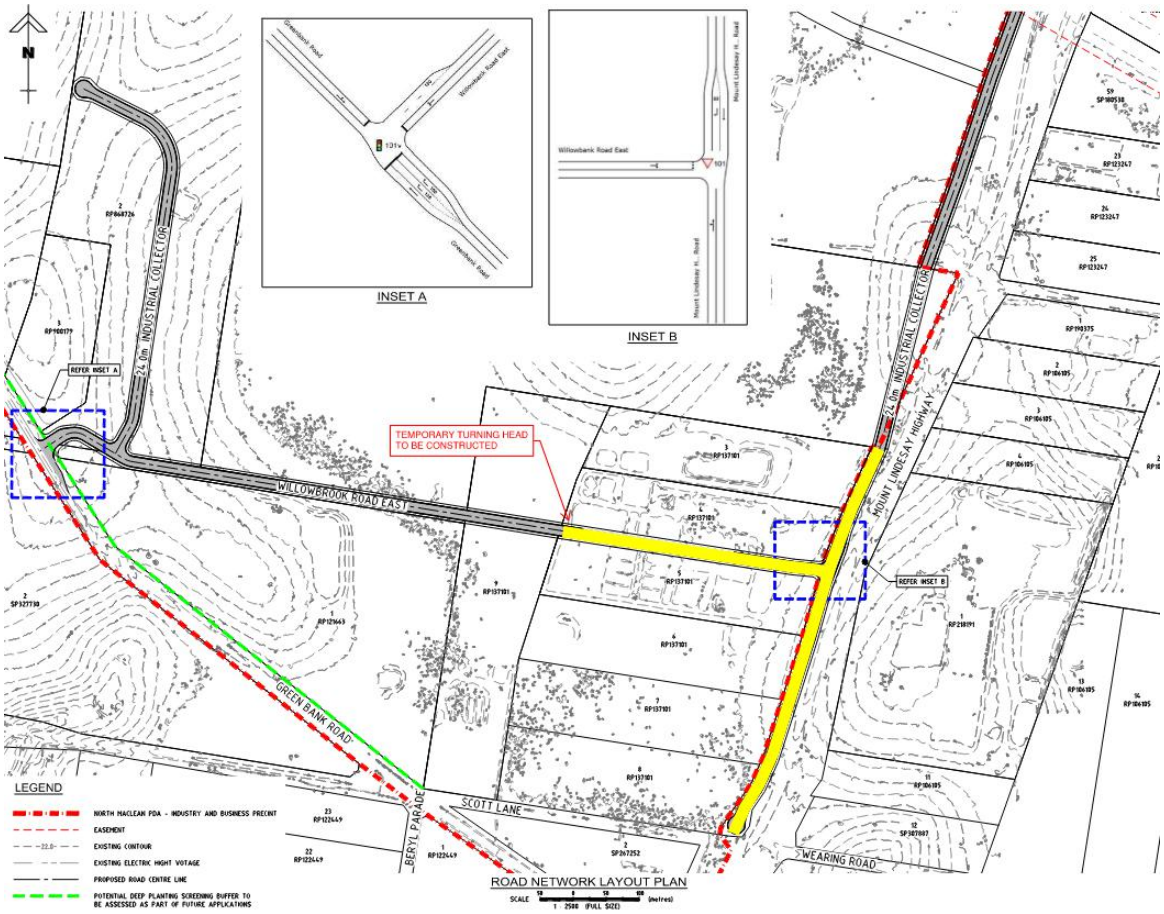



**Figure 5.2 Proposed Service Road and Collector Road DA scope**

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).

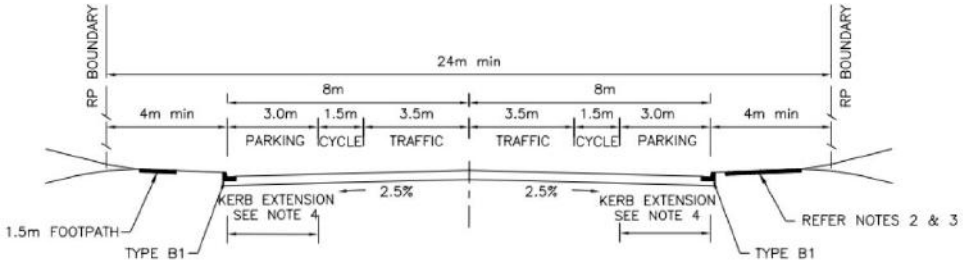



**Figure 5.3 Industrial Collector Road Cross Section**

## 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.

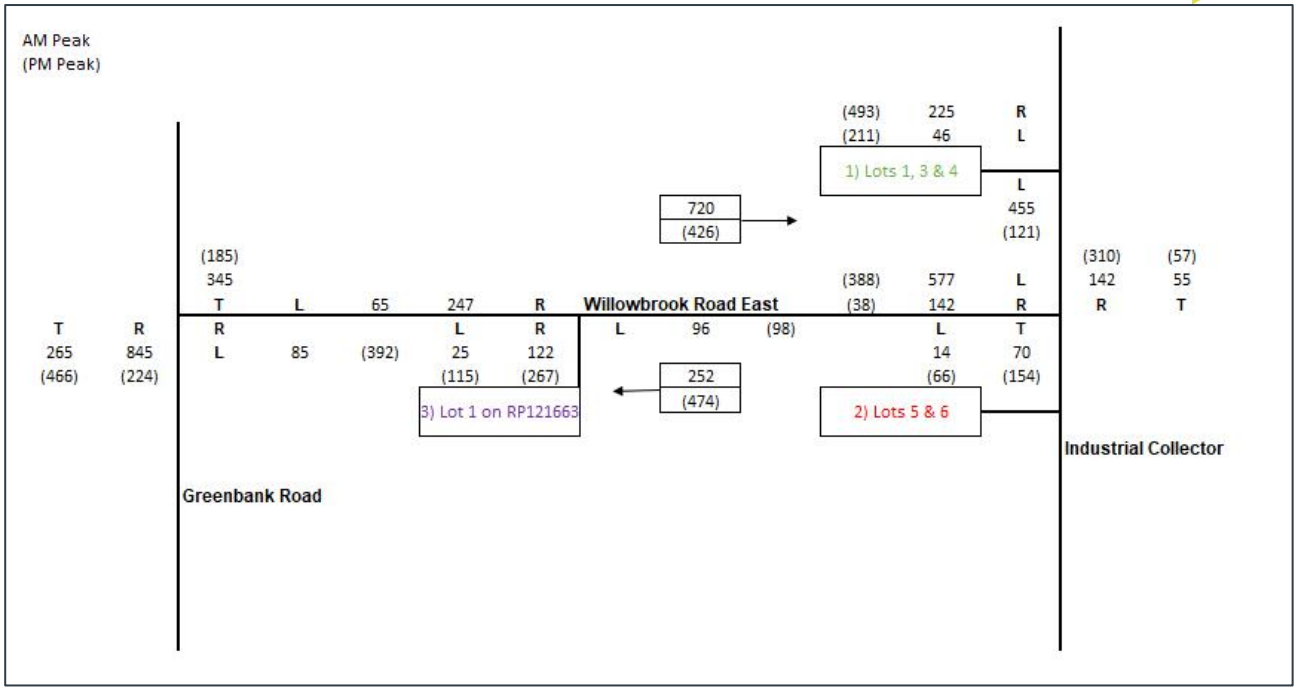



**Figure 5.4 Year of Opening (2025) Post-development Traffic Volumes**

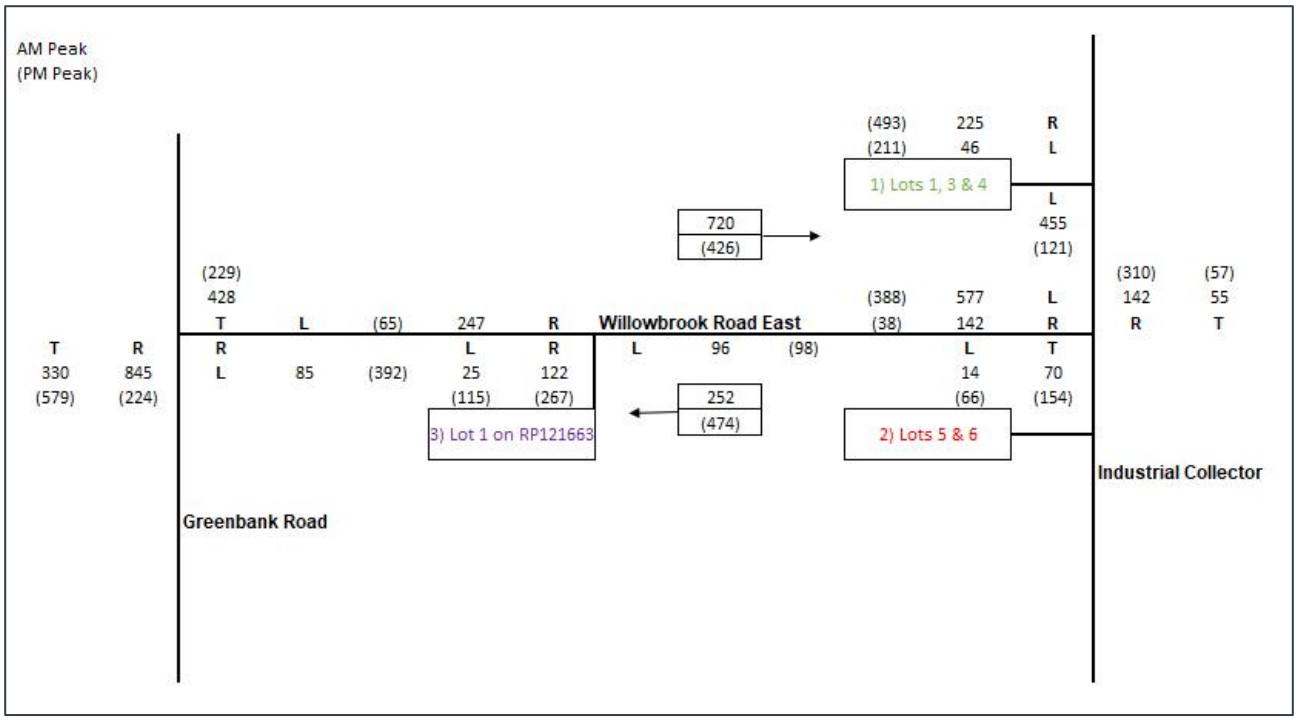



**Figure 5.5 10-Year Horizon (2035) Post-development Traffic Volumes**

## 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

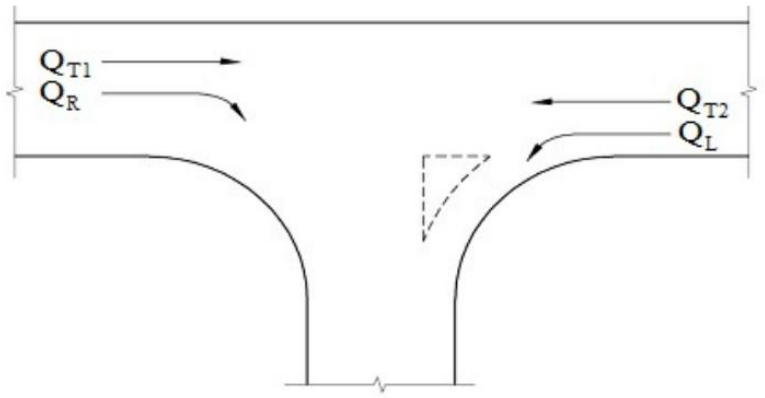
Turn Warrants Assessment

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.

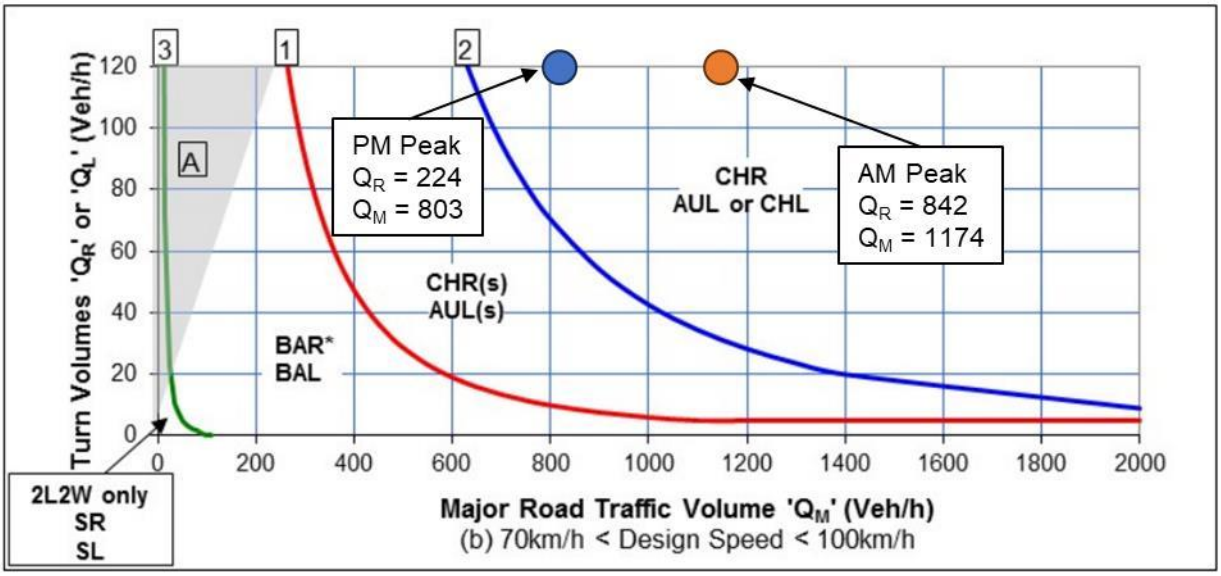



**Figure 5.7 Turn Warrants For Major Road (70km/h <Design Speed <100km/h)**

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).

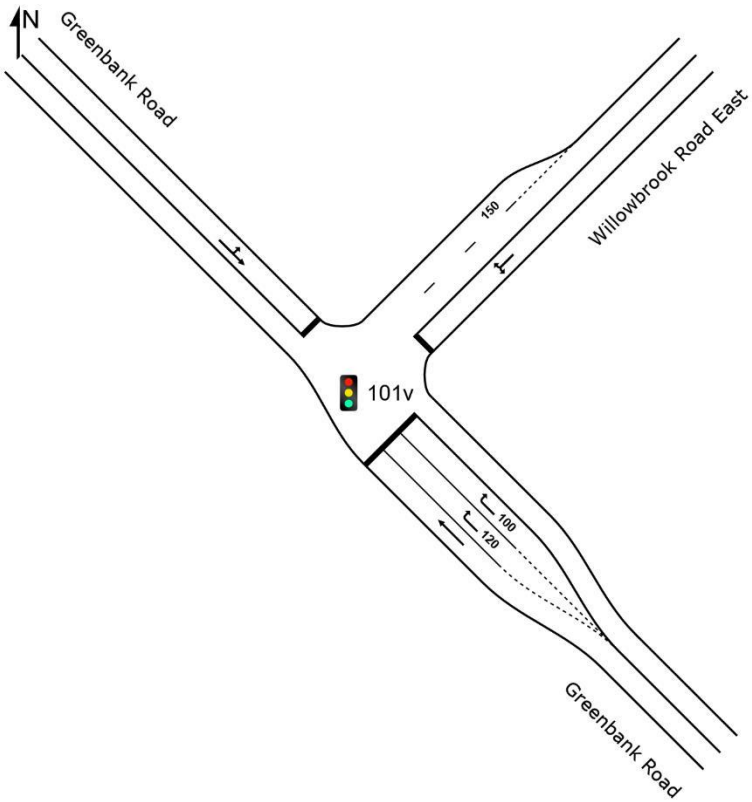



**Figure 5.8 Proposed Ultimate Intersection Layout**

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.

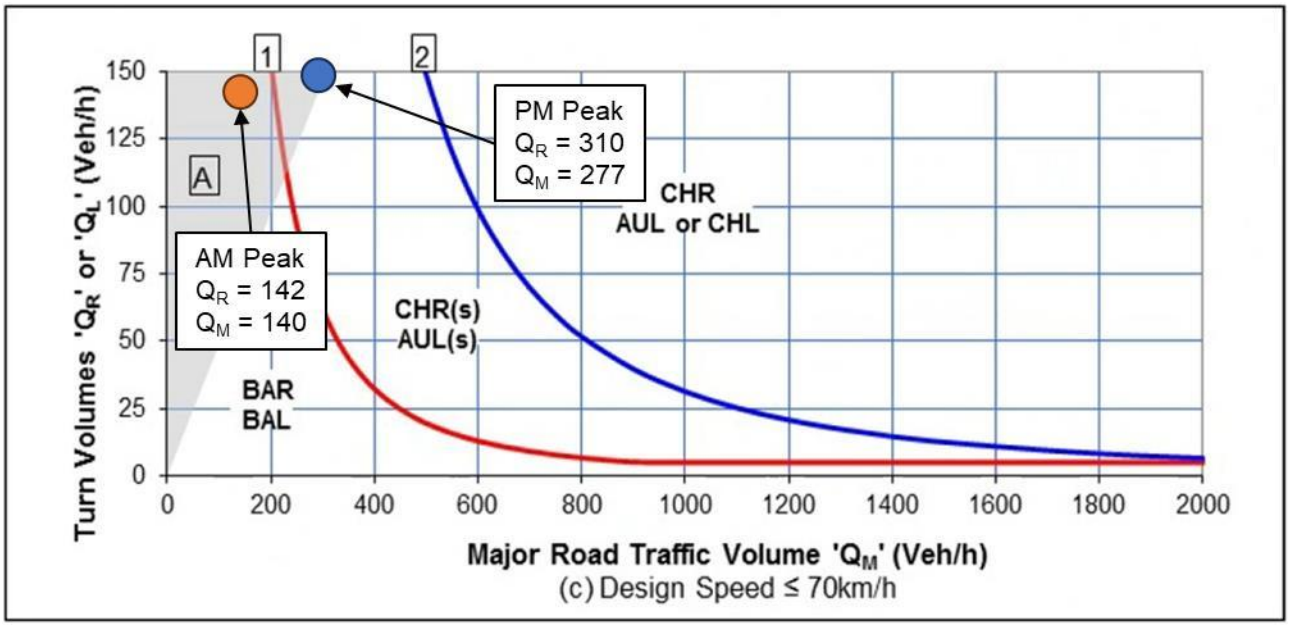



**Figure 5.9 Turn Warrants For Major Road (Design Speed <70km/h)**

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.

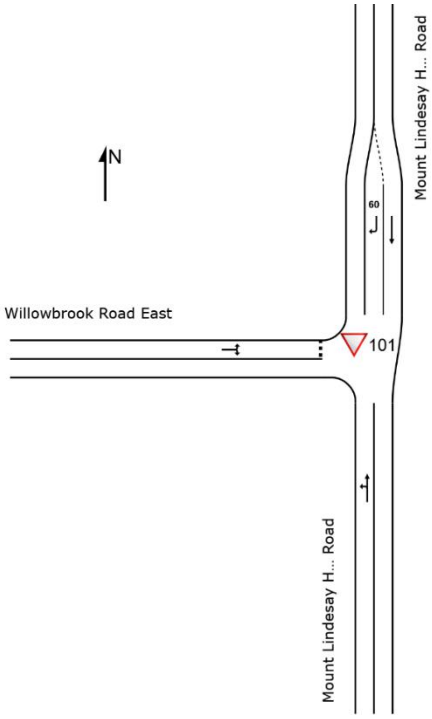



**Figure 5.10 Proposed Intersection Layout**

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.

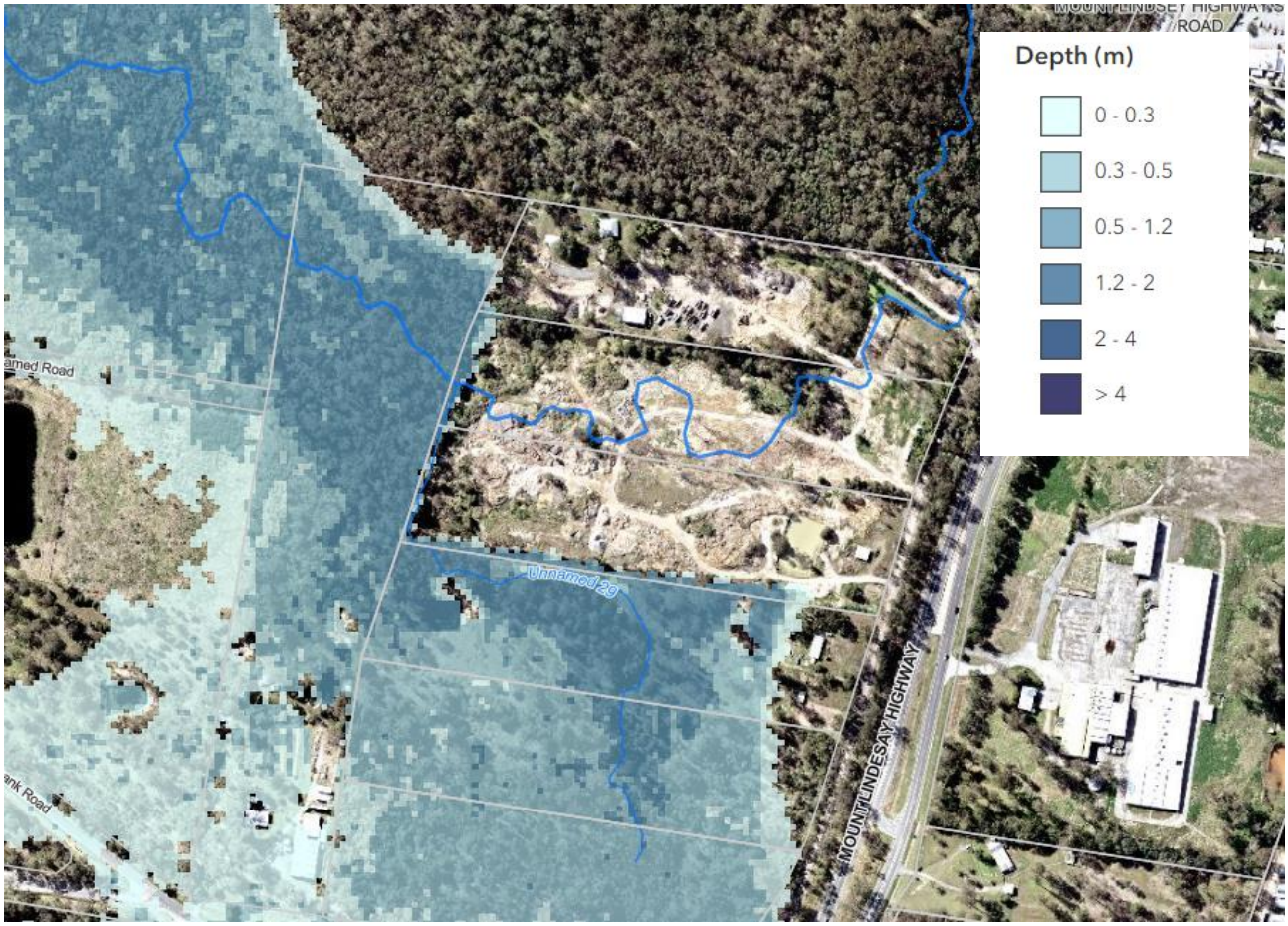



**Figure 6.1 2100 1% AEP Flood Depth Mapping (LCC, 2023)**

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.

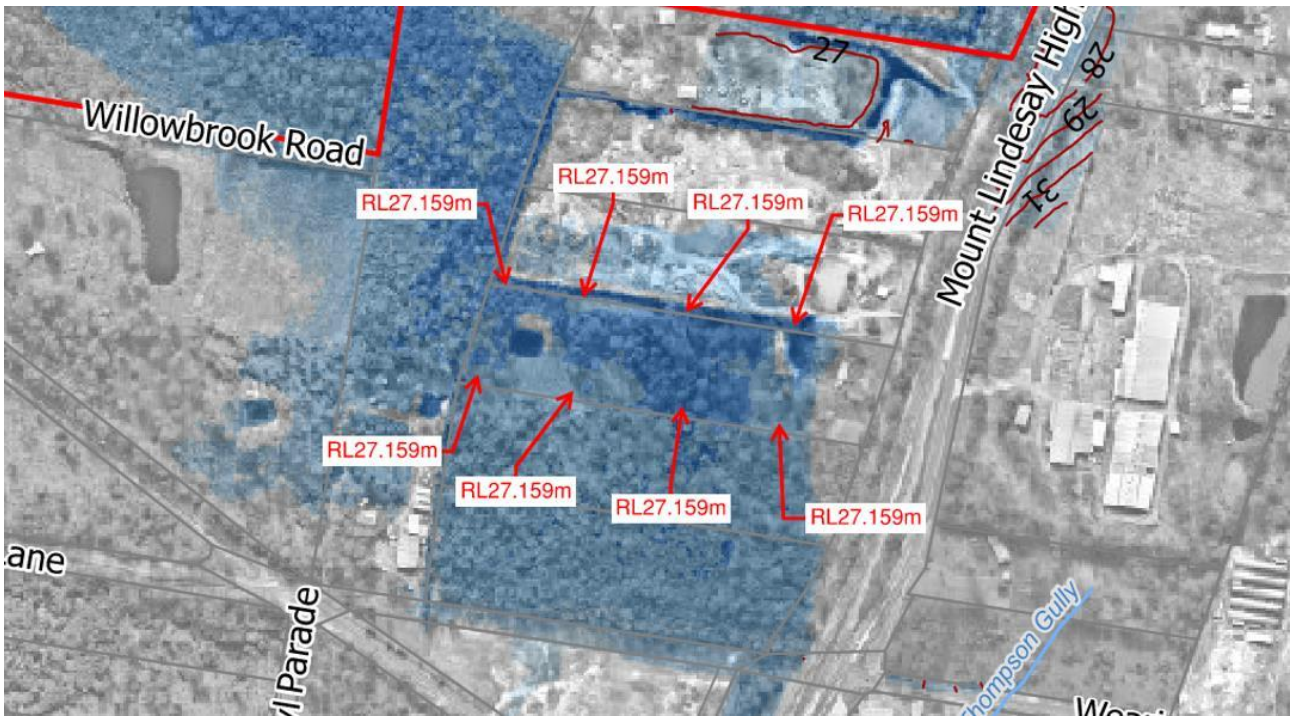



**Figure 6.2 Flood Level Extracts for the Subject Site**

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.

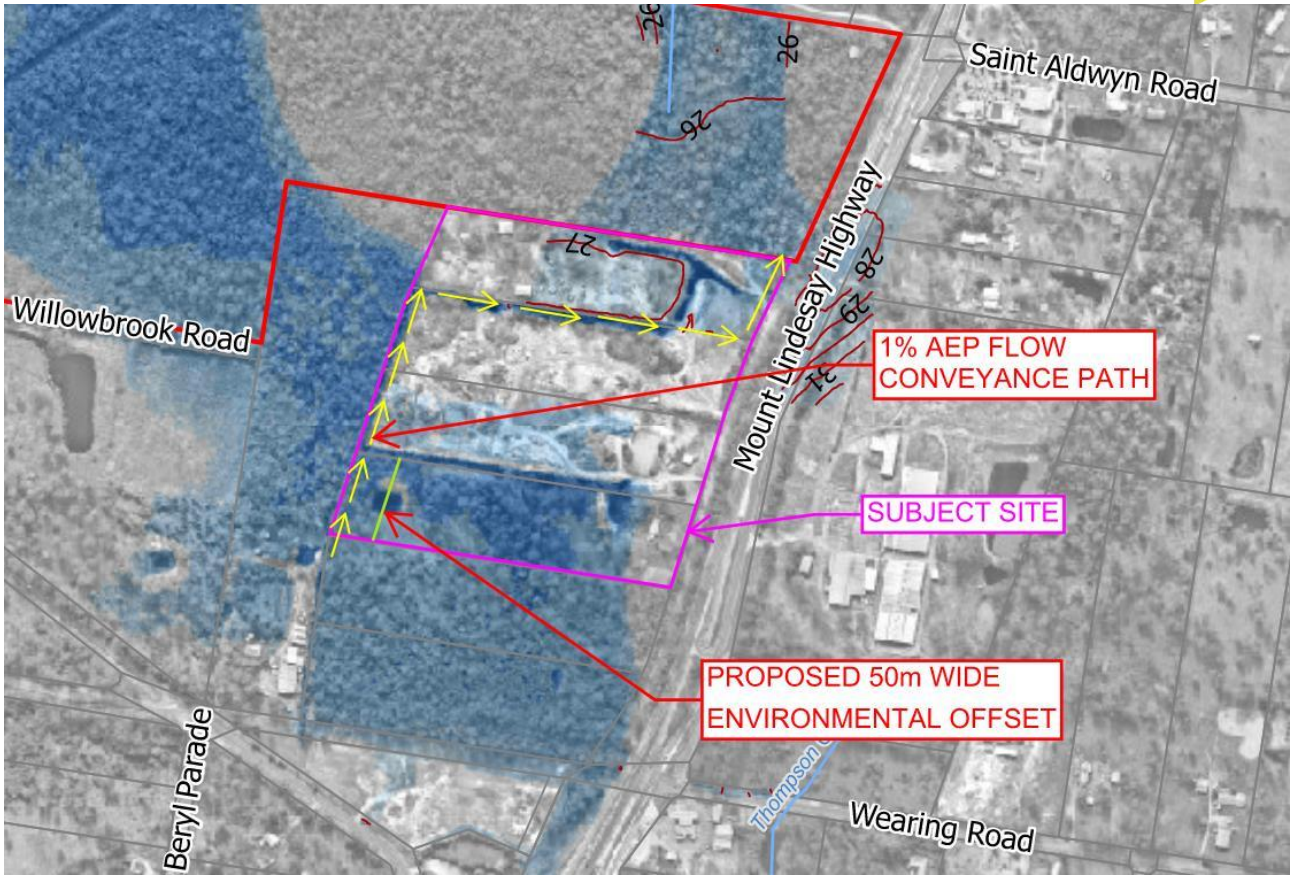



**Figure 6.3 Demonstrated 1% AEP Stormwater Flow Conveyance**

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.

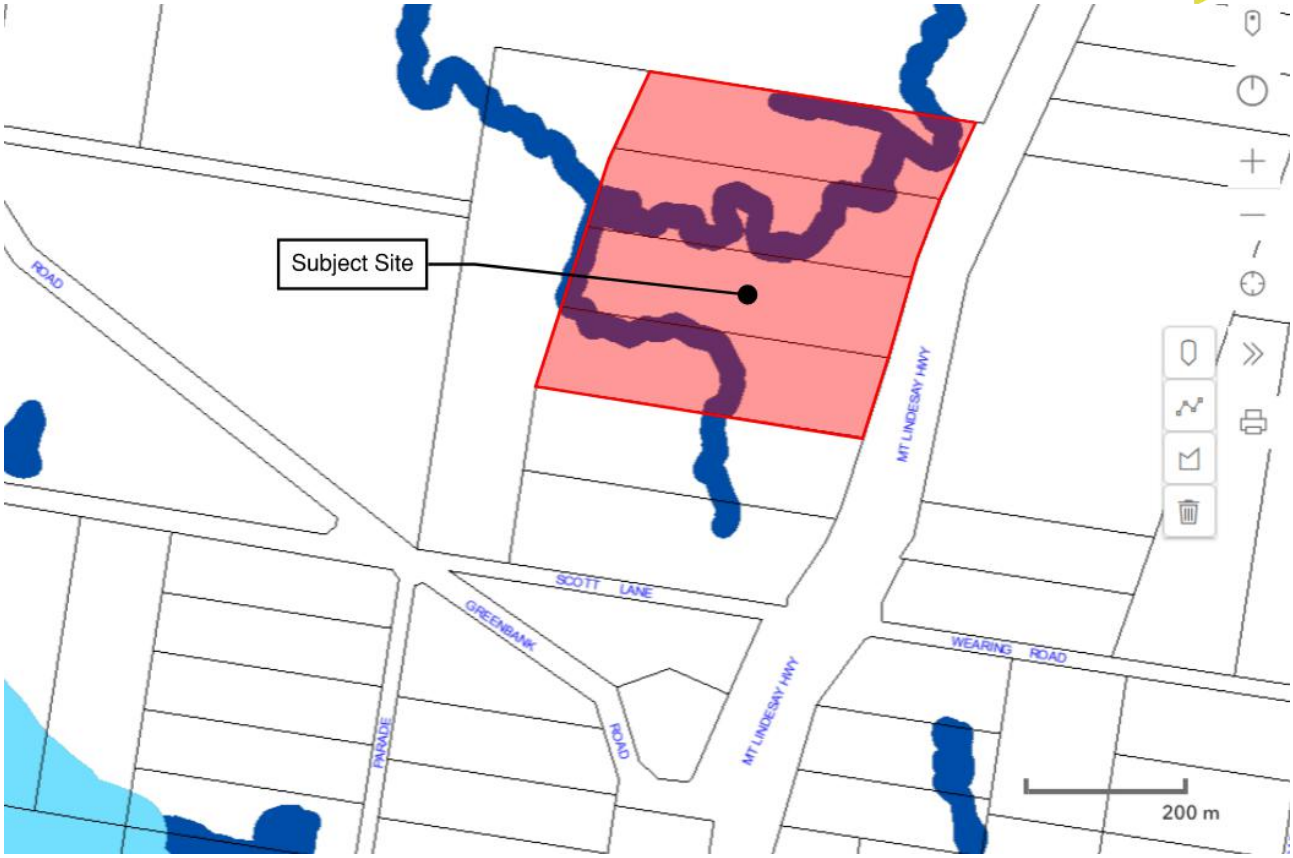



**Figure 6.4 LCC Planning Scheme OM-14.1 Waterways Overlay**

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.

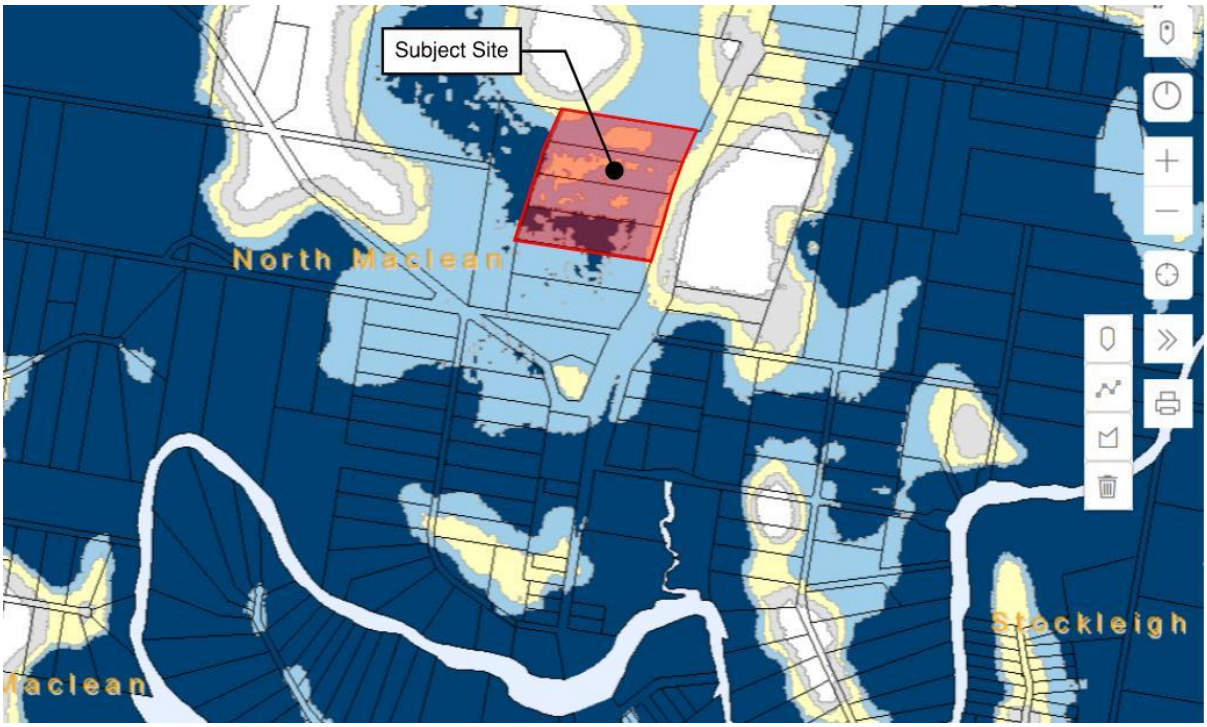



**Figure 6.5 LCC Planning Scheme OM-05 Flood Hazard Overlay**

## 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.

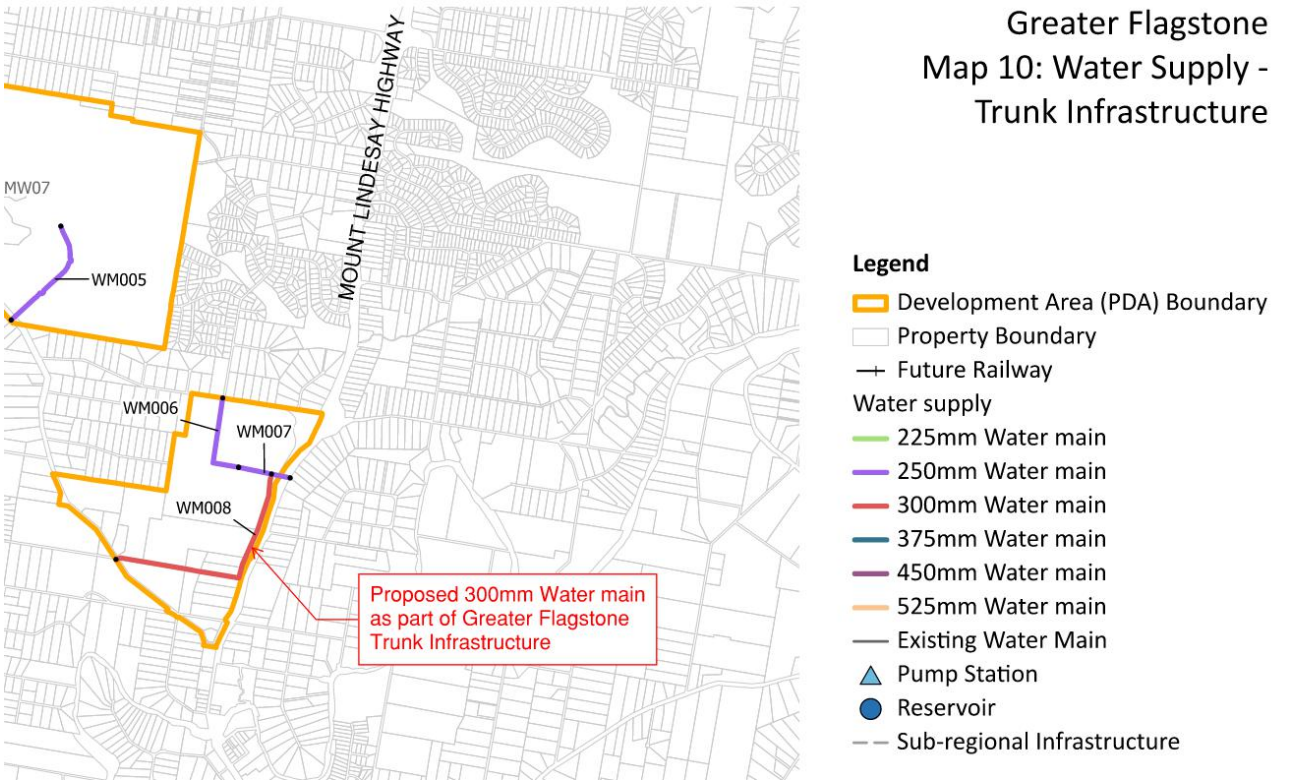



**Figure 7.1 EDQ Greater Flagstone Proposed Trunk Water Infrastructure Network**

## 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<br>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.

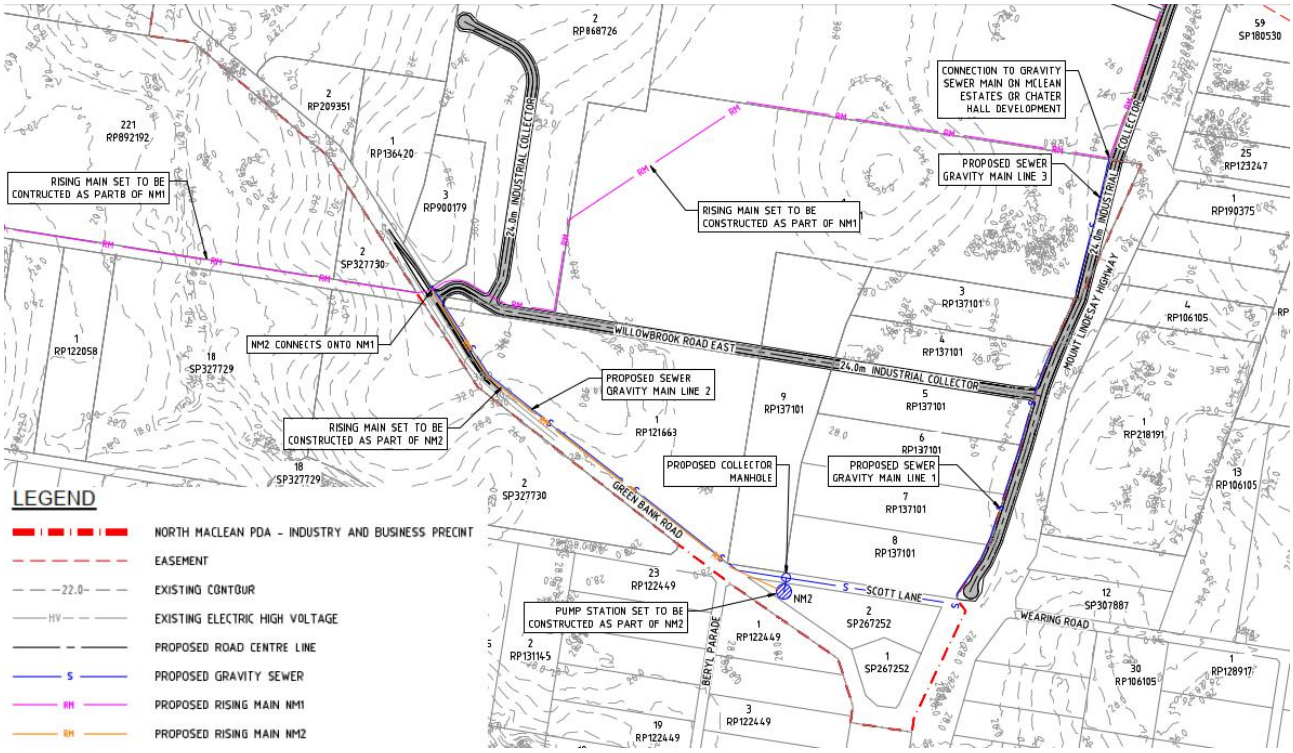



**Figure 8.1 Proposed Sewer Network Plan**

## 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<br>Where:<br>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.

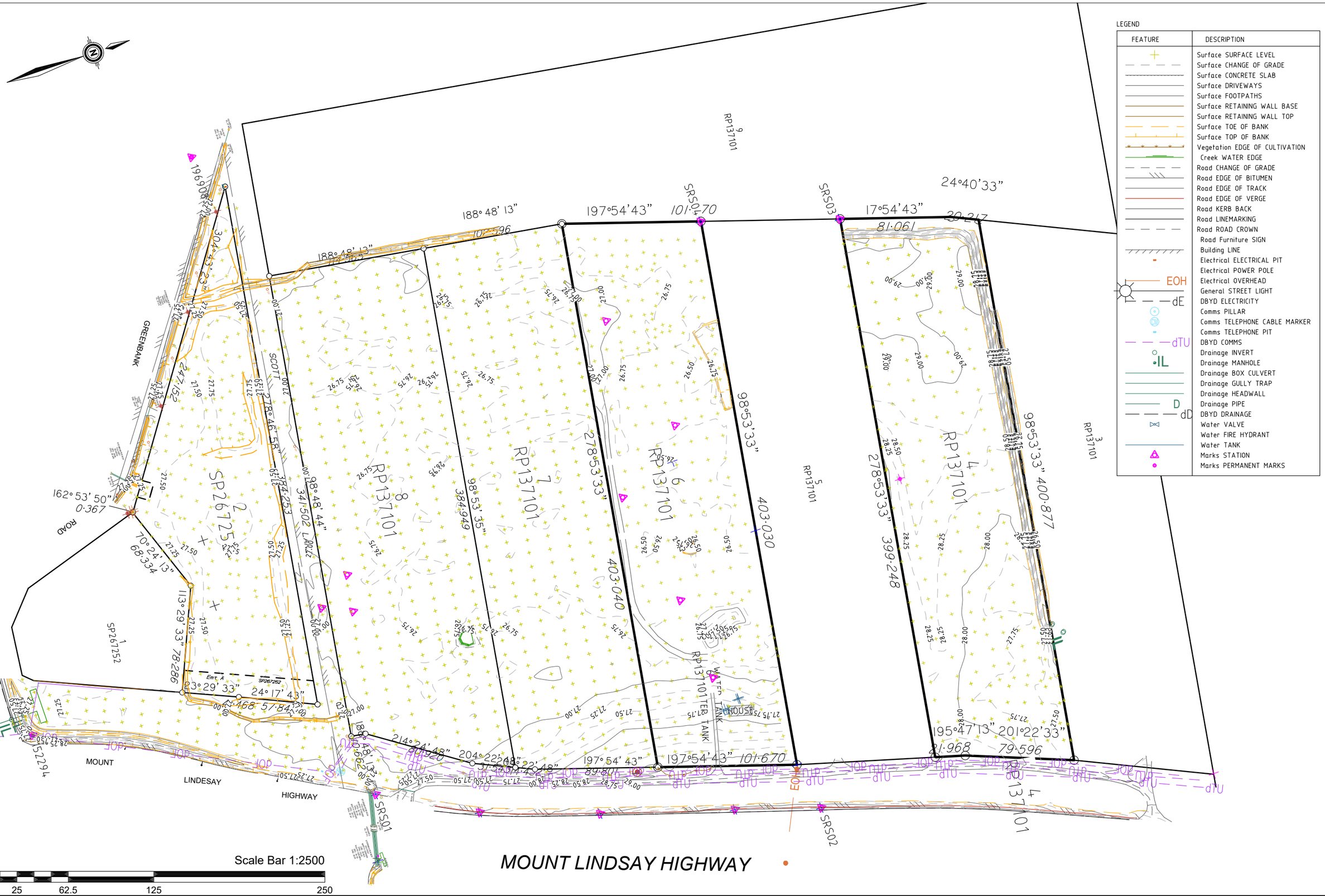
The water connection will be provided via a new water main extension from Greenbank Road. The water main alignment will be along the verge of the proposed Willowbrook Road East. The proposed water main is subject to a more detailed assessment, including a detailed sizing of mains during the detailed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

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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

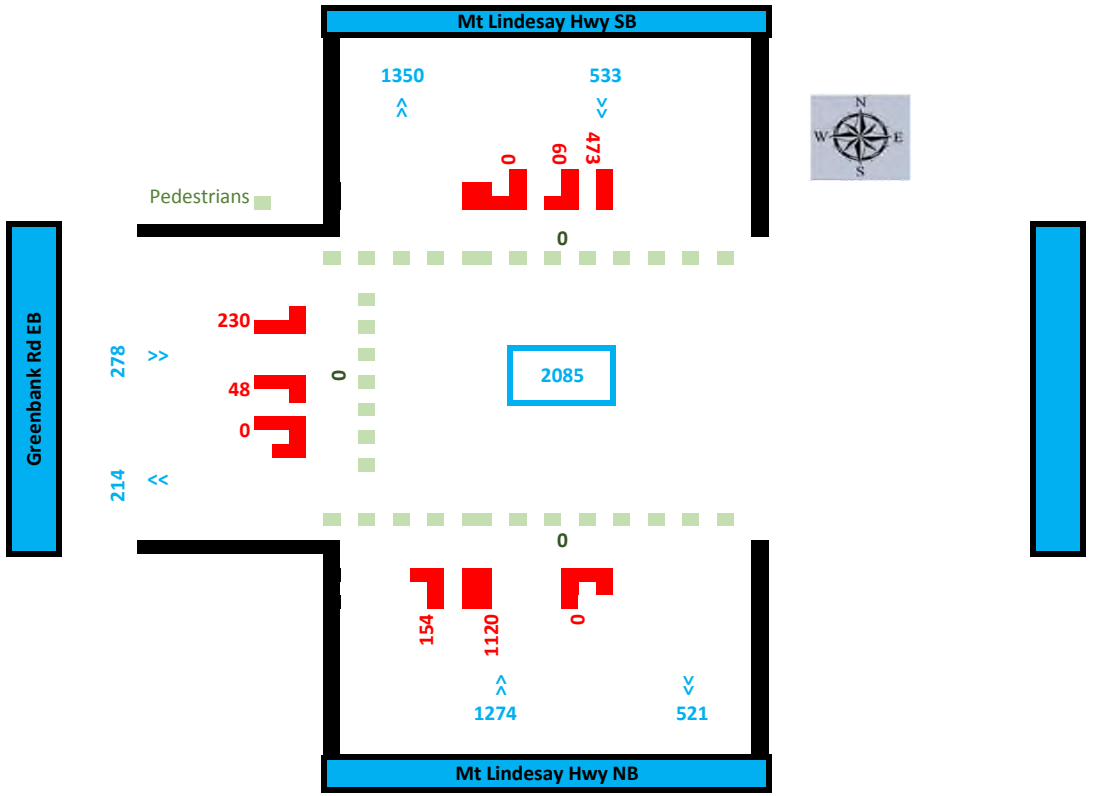
Project Location: Synergy12d://SRV01/SRS/01 - PROJECTS/22095 - ADHOC - Mount Lindsay Hwy North Maclean/01. 12d Data/4. Detail/22095 4001 MTC Detail 240927.12dmodel

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

# Appendix B – 2017 Traffic Survey Data

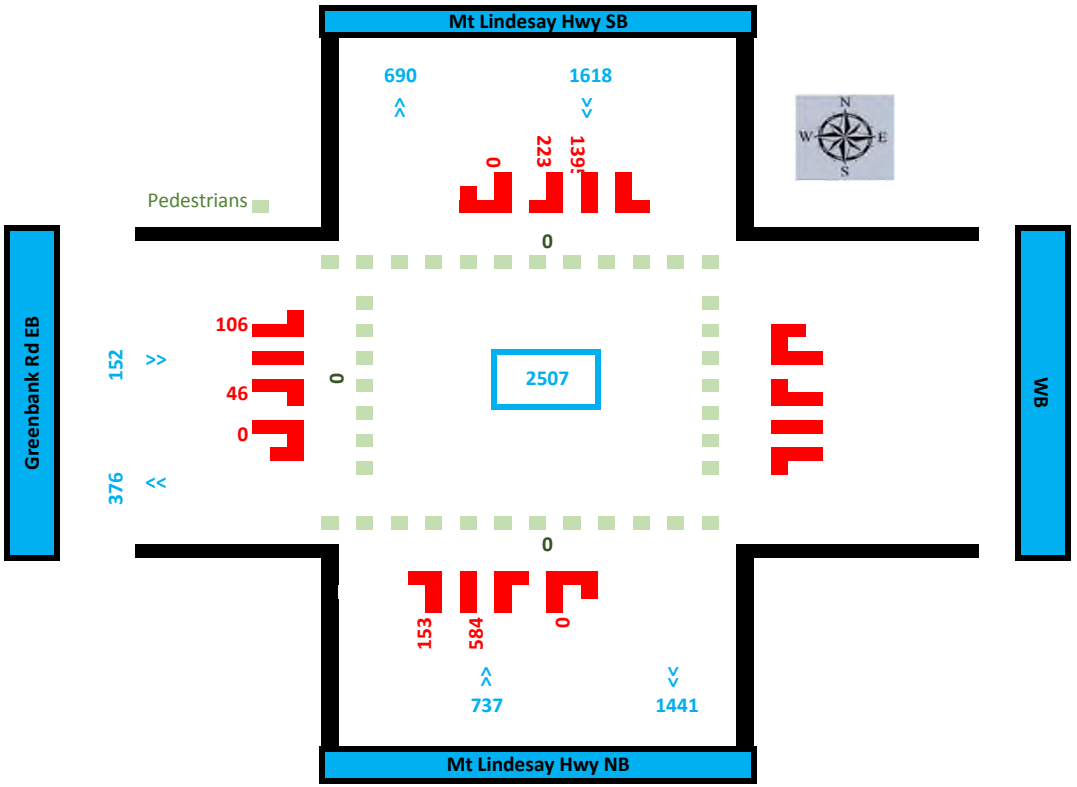
# Turning Movement Count Summary

| | |
|---|---|
| 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)]

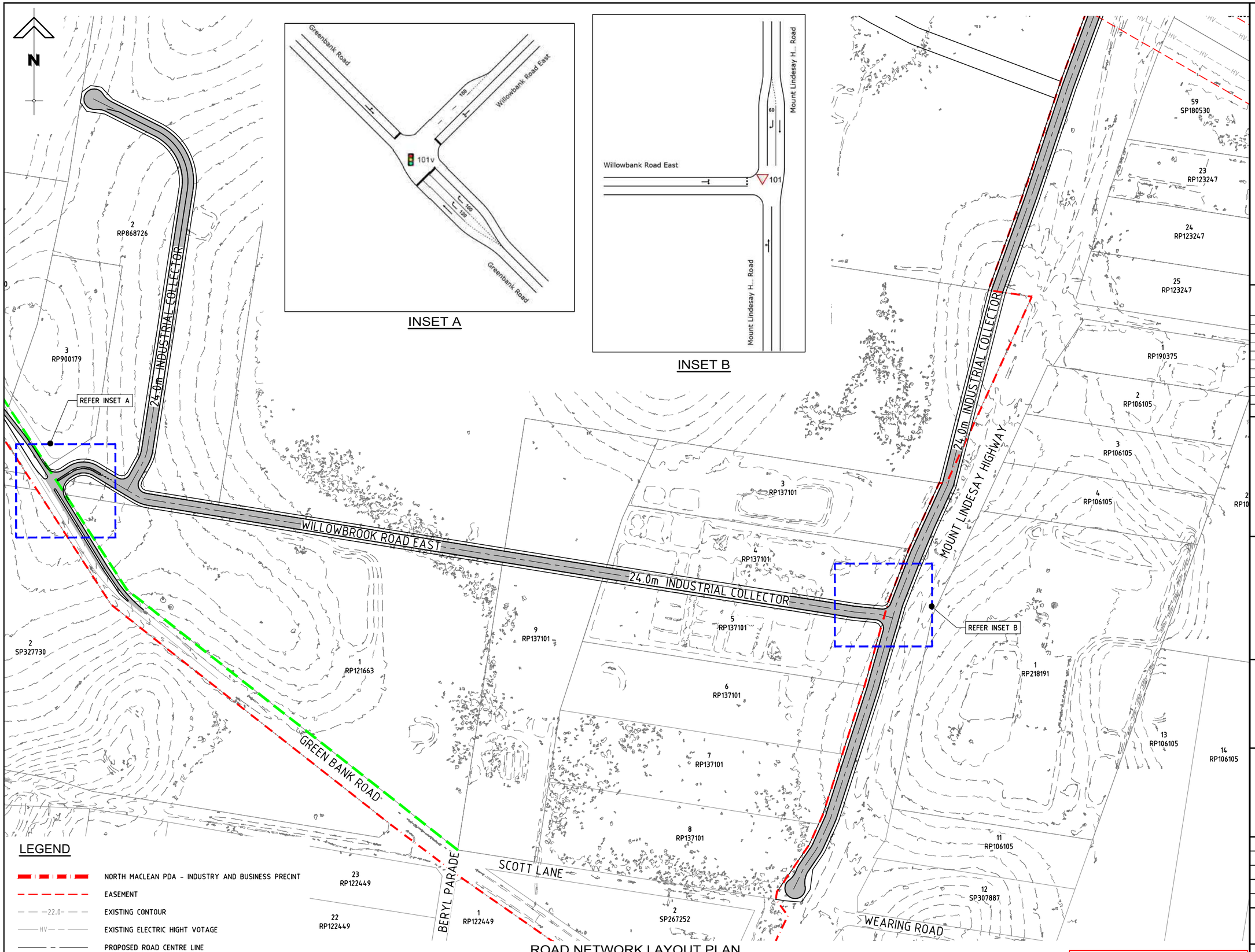
Willowbank Road East / Mt Lindesay Hwy
DEV 2035
AM Peak
Site Category: (None)
Give-Way (Two-Way)

**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




# 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 |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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 :

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 |

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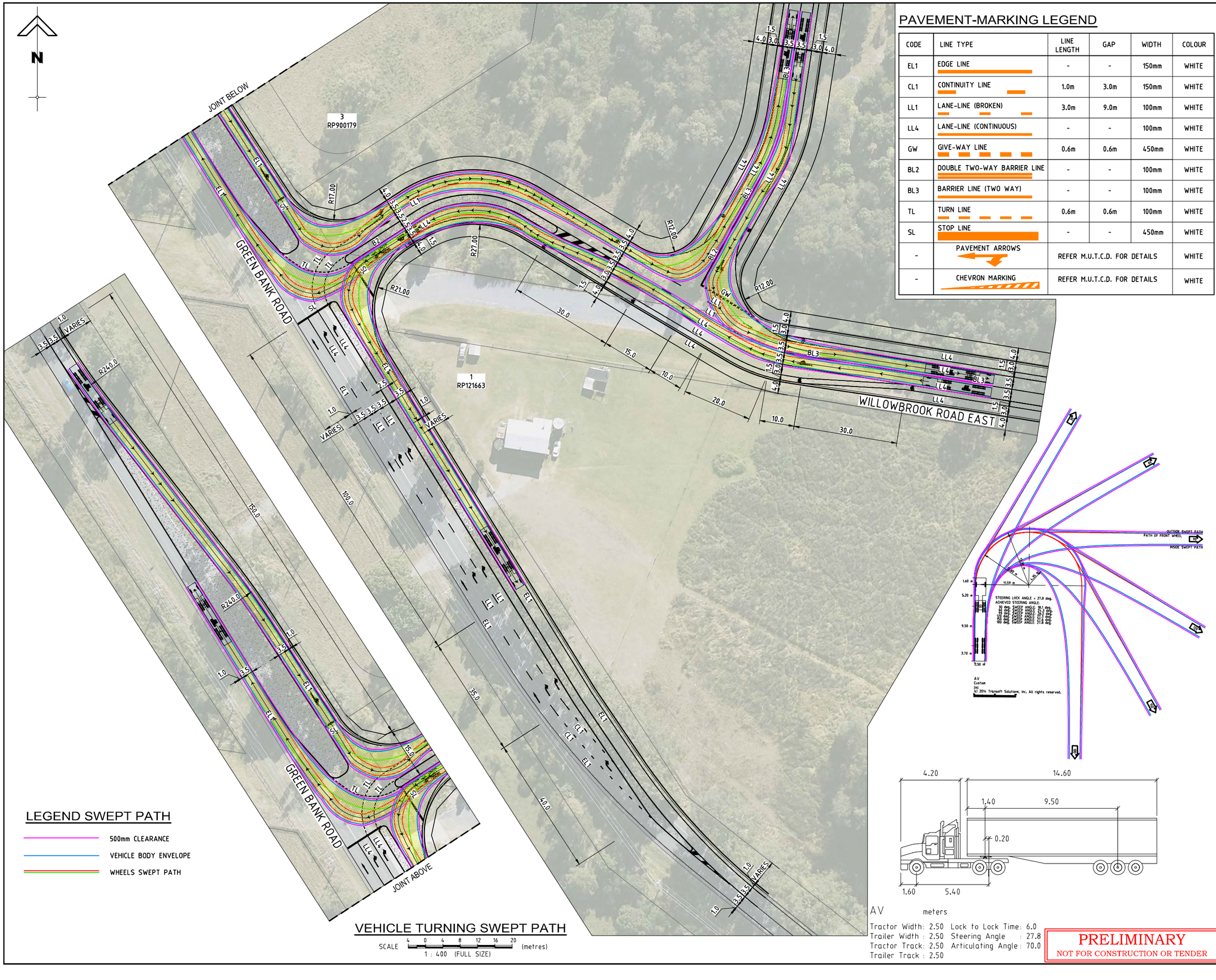


## PAVEMENT-MARKING LEGEND

| 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 4 0 4 8 12 16 20 (metres)
1 : 400 (FULL SIZE)







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 |

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COOTE BURCHILLS ENGINEERING PTY LTD
ABN 76 166 942 365

PROJECT:
4693-4731 MOUNT LINDESAY HIGHWAY

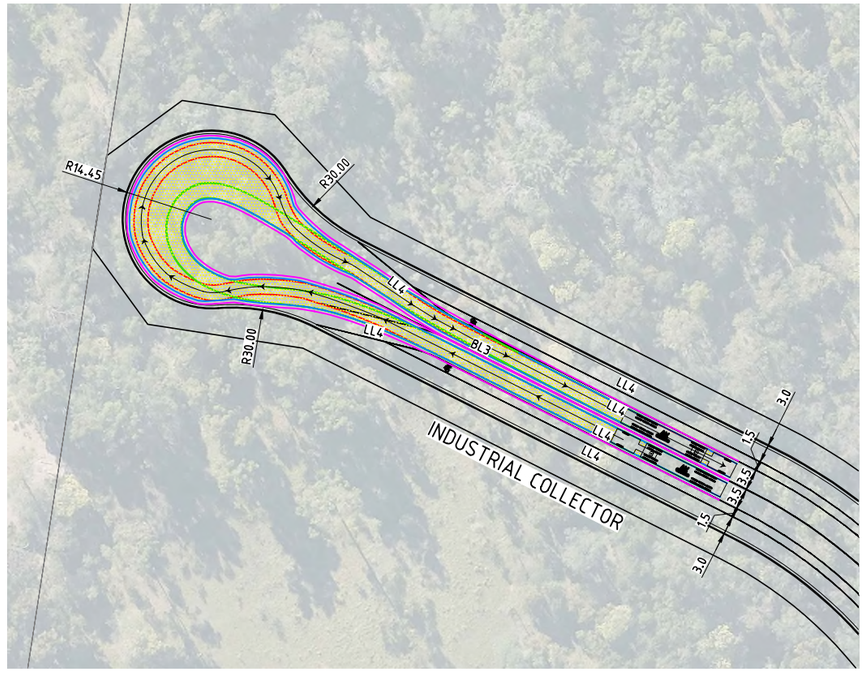
DRAWING TITLE :
VEHICLE TURNING SWEPT PATH SHEET 1

| | | |
|---|---|---|
| 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 |

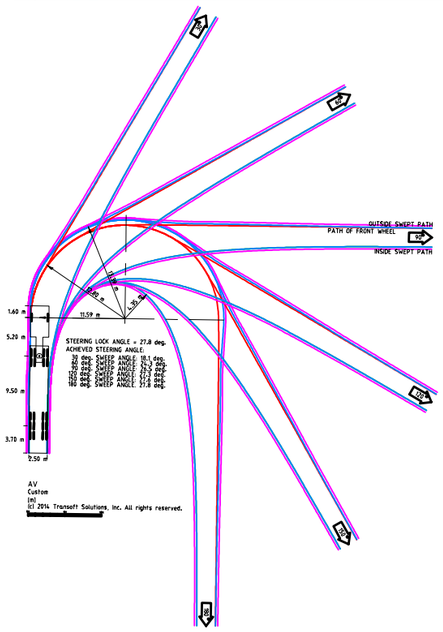


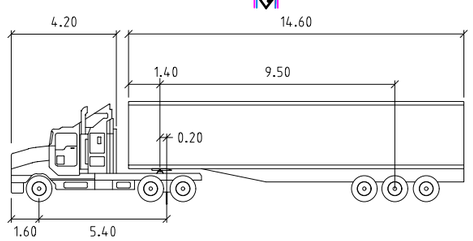

## PAVEMENT-MARKING LEGEND

| 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

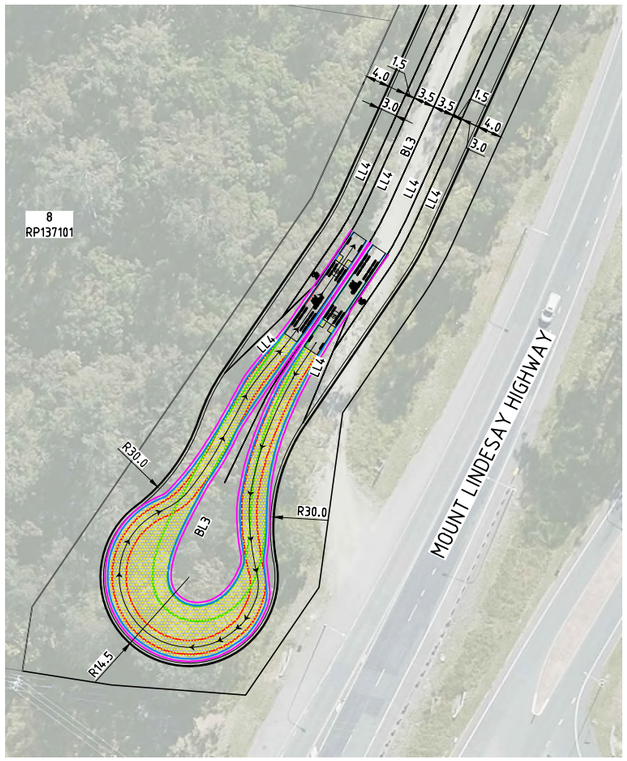
- 500mm CLEARANCE
- VEHICLE BODY ENVELOPE
- WHEELS SWEPT PATH




AV

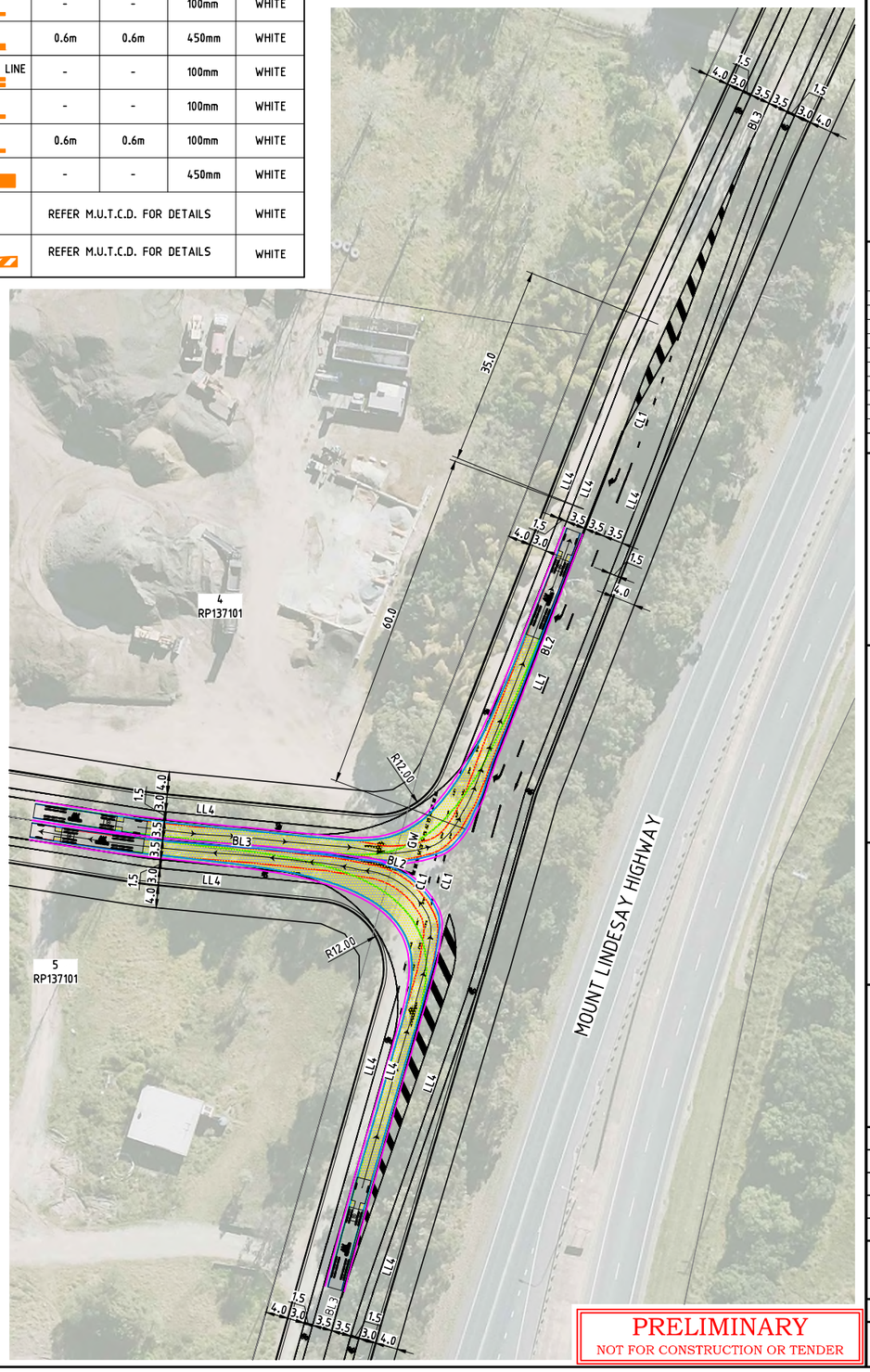
| | meters | | |
|---|---|---|---|
| Tractor Width | : 2.50 | Lock to Lock Time | : 6.0 |
| Trailer Width | : 2.50 | Steering Angle | : 27.8 |
| Tractor Track | : 2.50 | Articulating Angle | : 70.0 |
| Trailer Track | : 2.50 | | |




## VEHICLE TURNING SWEPT PATH

SCALE 5 0 5 10 15 20 25 (metres)

1 : 500 (FULL SIZE)

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# 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 |

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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

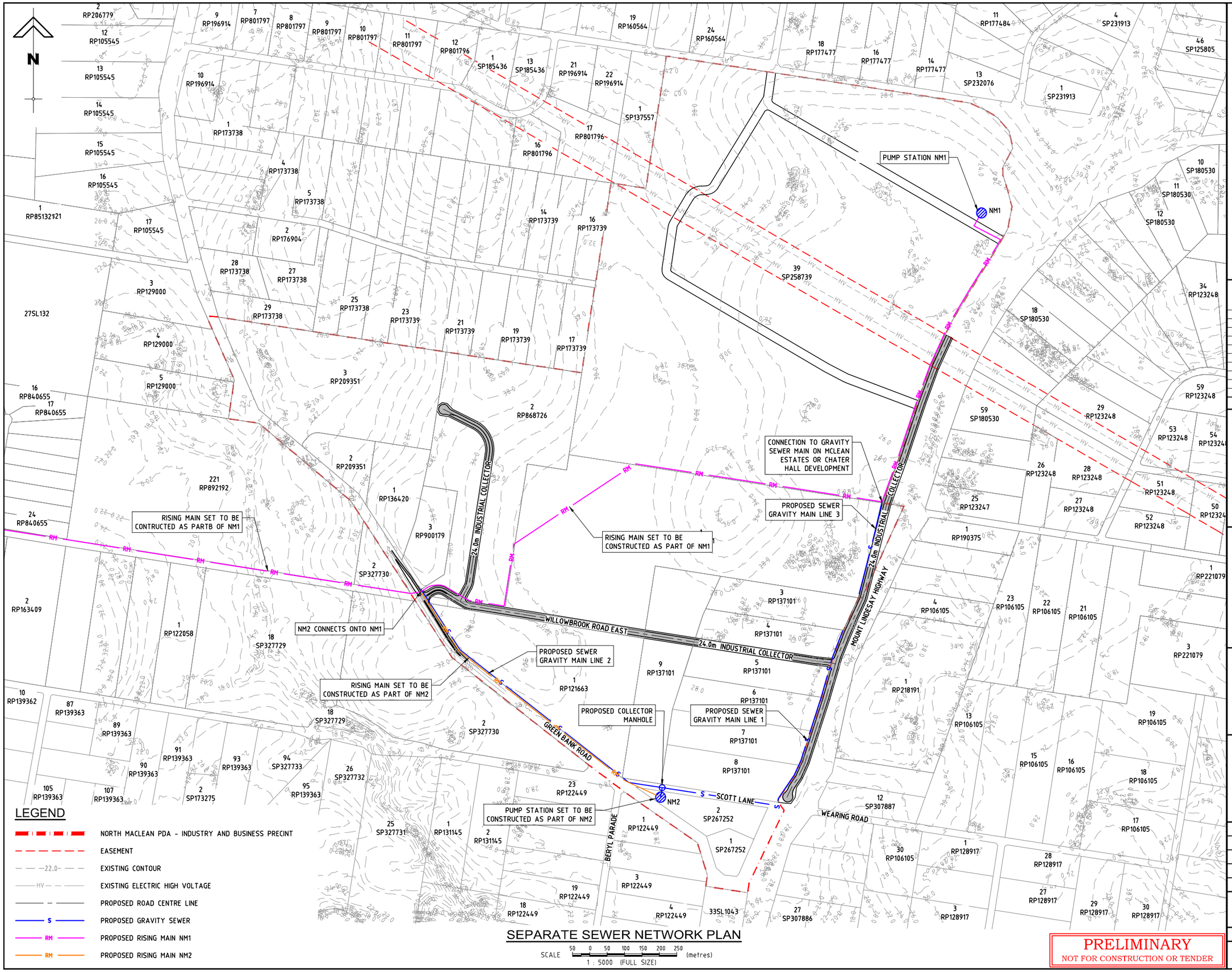
DRAWING TITLE :

VEHICLE TURNING SWEPT PATH SHEET 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 | SK03 | B |




## SEPARATE SEWER NETWORK PLAN

SCALE 1 : 5000 (FULL SIZE) (metres)

**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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IPSWICH | MORETON BAY
PHONE: +61 7 5509 6400
FAX: +61 7 5509 6411
EMAIL: ADMIN@BURCHILLS.COM.AU
**COOTE BURCHILLS ENGINEERING PTY LTD**
ABN 76 166 942 365

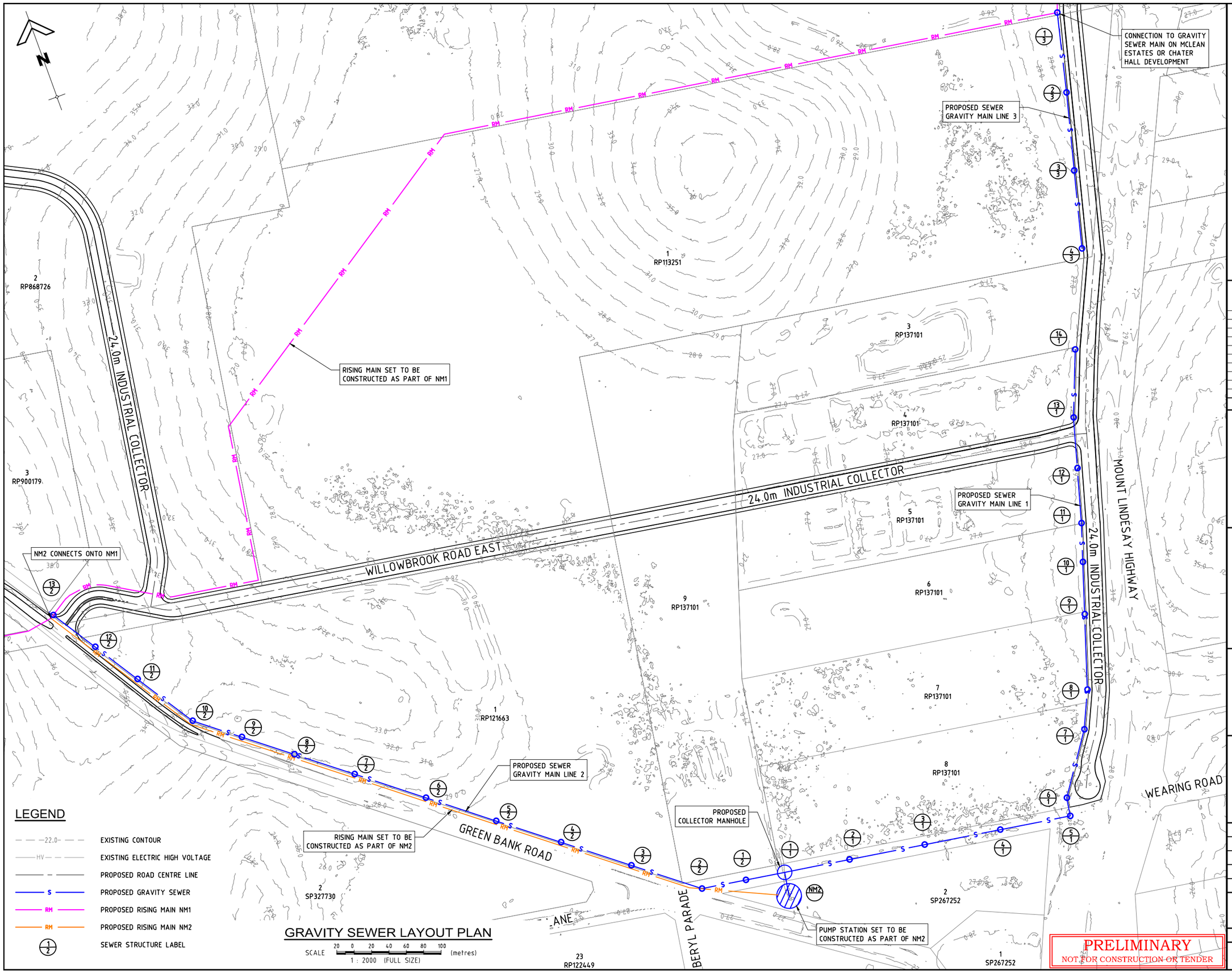

PROJECT:
4693-4731 MOUNT LINDESAY HIGHWAY

DRAWING TITLE :
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

A1 ORIGINAL SIZE BEFORE REDUCTION

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

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 |

N

PROPOSED 300DIA WATER MAIN (WM008) AS PART OF GREATER FLAGSTONE TRUNK INFRASTRUCTURE TO BE DELIVERED BY OTHERS.

PROPOSED 300DIA WATER MAIN (WM008) AS PART OF GREATER FLAGSTONE TRUNK INFRASTRUCTURE TO BE DELIVERED THE APPLICANT.

PROPOSED WATER RETICULATION CONNECTION TO THE TRUNK WATER MAIN (WM008)

PROPOSED WATER RETICULATION TO SERVICE LOT 3-6 TO BE DELIVERED BY THE APPLICANT (SIZE OF THE WATER CONNECTIONS TO EACH ALLOTMENT WILL BE DETERMINED AS PART OF FUTURE DEVELOPMENT APPLICATIONS.

1 RP113251
3 RP137101
4 RP137101
4 RP106105
5 RP137101
6 RP137101
7 RP137101
9 RP137101
1 RP218191

24.0m INDUSTRIAL COLLECTOR

MOUNT LINDESAY HIGHWAY

24.0m INDUSTRIAL COLLECTOR

## LEGEND

- EXISTING CONTOUR
- EXISTING ELECTRIC HIGH VOLTAGE
- PROPOSED ROAD CENTRE LINE
- PROPOSED 300DIA WATER MAIN (TO BE DILIVERED BY OTHERS)
- PROPOSED 300DIA WATER MAIN (TO BE DILIVERED BY THE APPLICATION)
- PROPOSED WATER RETICULATION

## WATER LAYOUT PLAN

SCALE 12.5 0 12.5 25 37.5 50 62.5 (metres)
1 : 1250 (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 |
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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

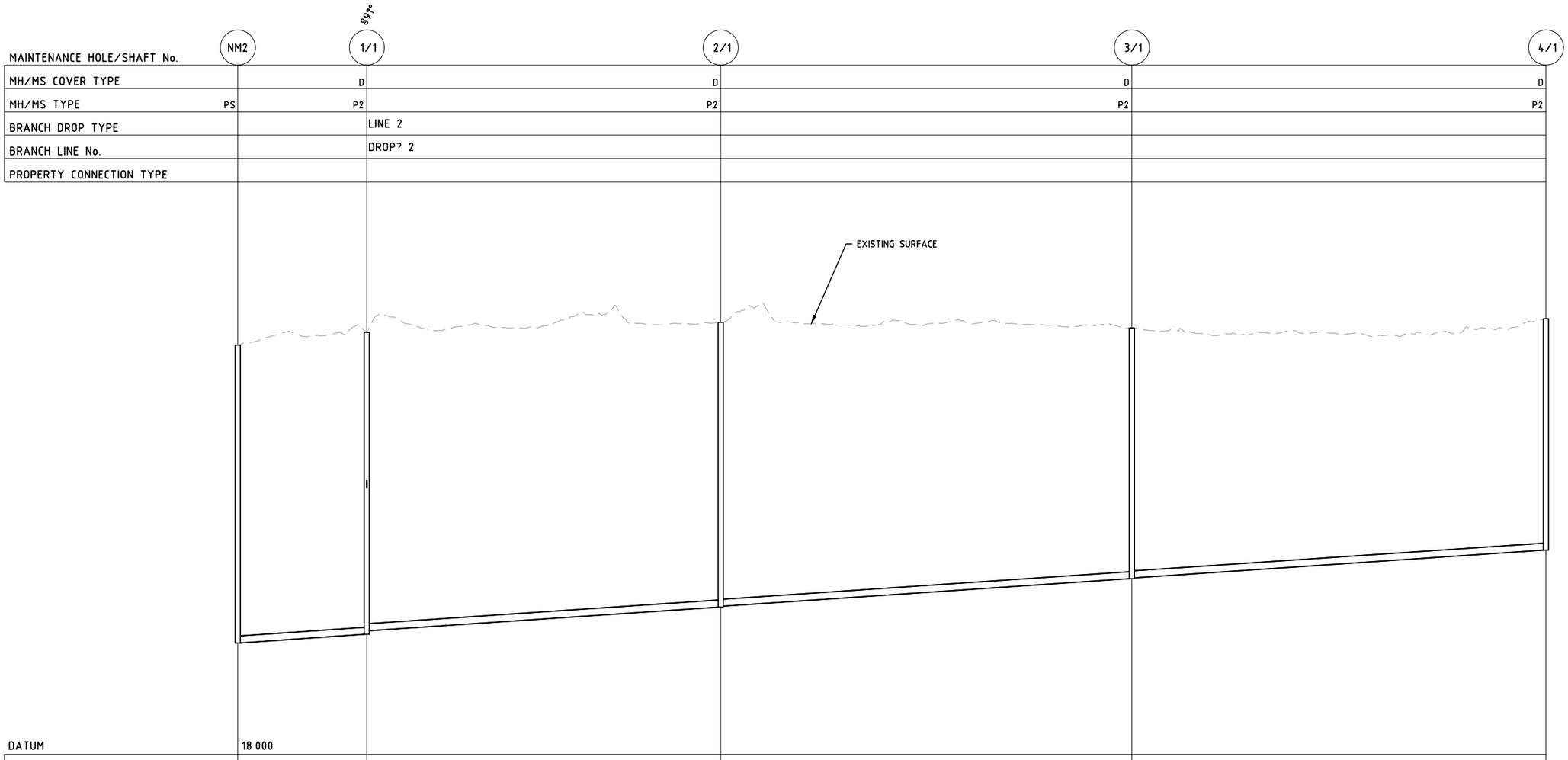
DRAWING TITLE :
WATER LAYOUT PLAN

| | |
|---|---|
| DEVEL. APPLIC. No. : | DATE : 29-11-24 |
| 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 | A |




| 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 |
| 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 |
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| B | UPDATED ISSUE | 01-10-24 |
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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

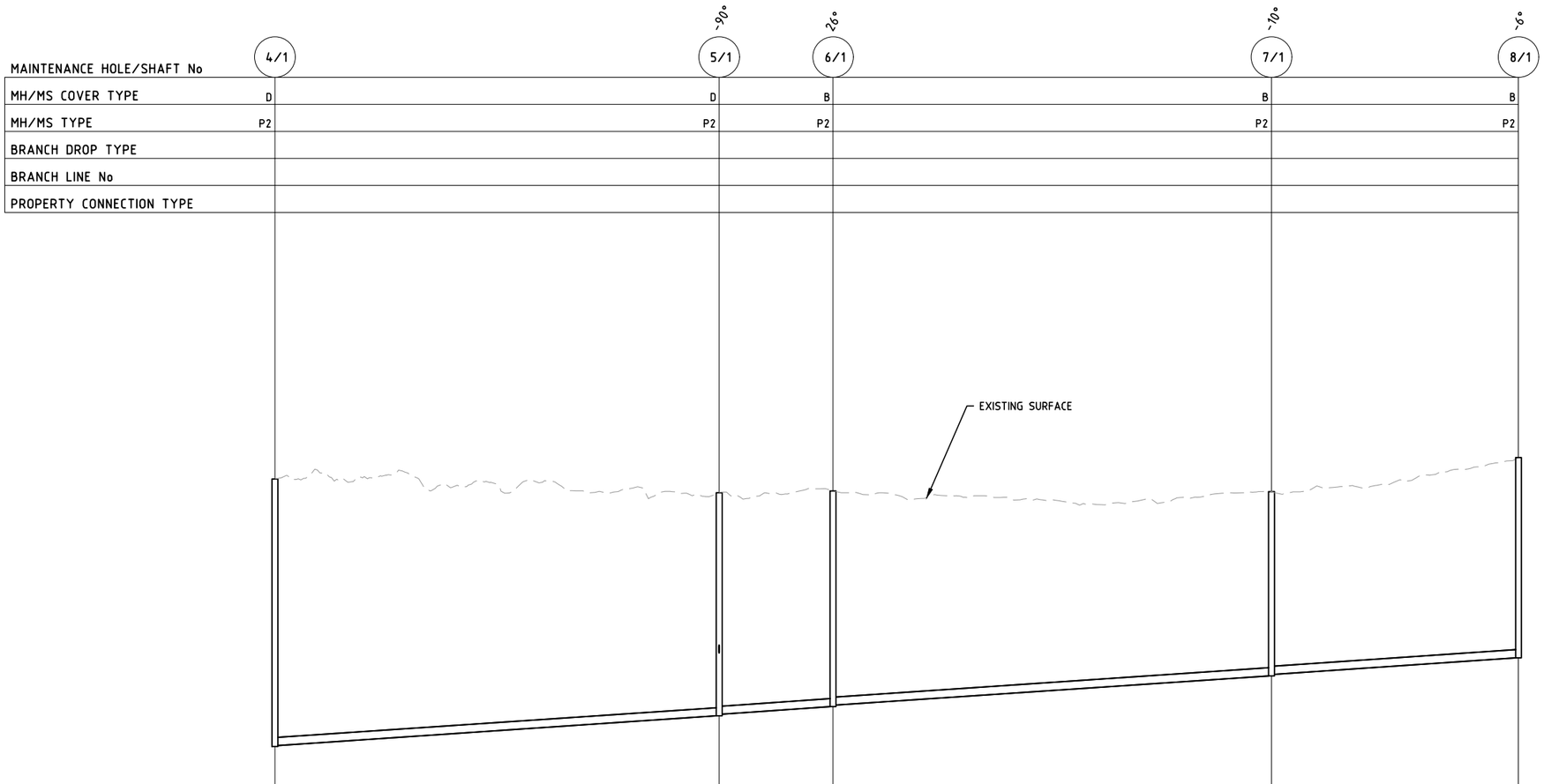
| | |
|---|---|
| DEVEL. APPLIC. No. : | DATE : 01-10-24 |
| PROJECT LEADER : | JACK SHAO |
| DESIGNER : | NHUNG NGUYEN |
| DRAFTSPERSON : | NHUNG NGUYEN |
| CHECKED : | JACK SHAO |

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 | SK07 | 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<br>N6927704.703 | | E501306 439<br>N6927692 135 | | E501309 651<br>N6927712.931 | | E501355 468<br>N6927779 851 | E501374 352<br>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

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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

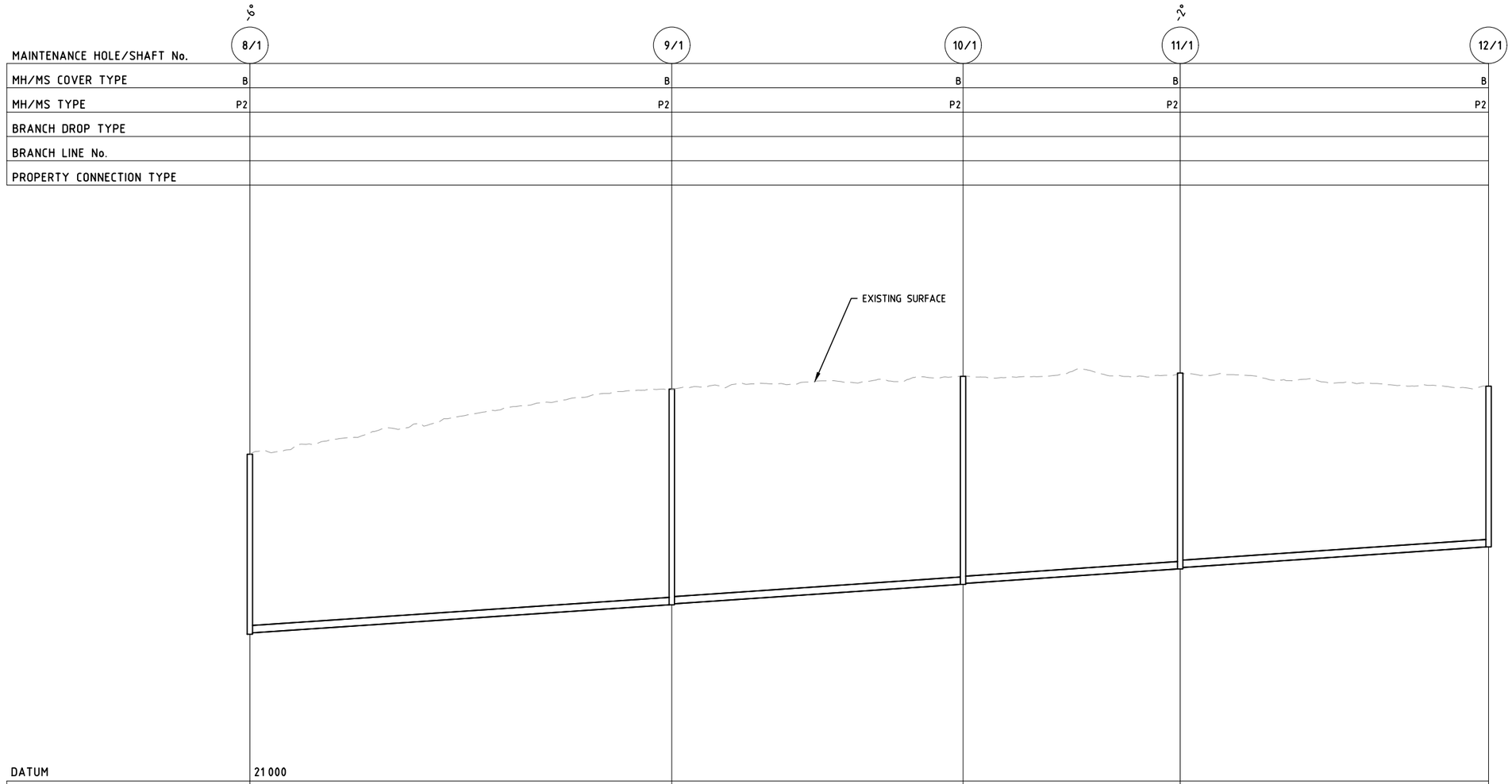
DRAWING TITLE :
SEWER LONGITUDINAL SECTION SHEET 2

| | |
|---|---|
| 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 | SK08 | 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 N6927821505 | E501401.022 N6927904.068 | E5014.19 432 N6927961 062 | E5014.33.156 N6928003.546 | E5014.50 394 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 |
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| A | ORIGINAL ISSUE | 08-08-23 |

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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

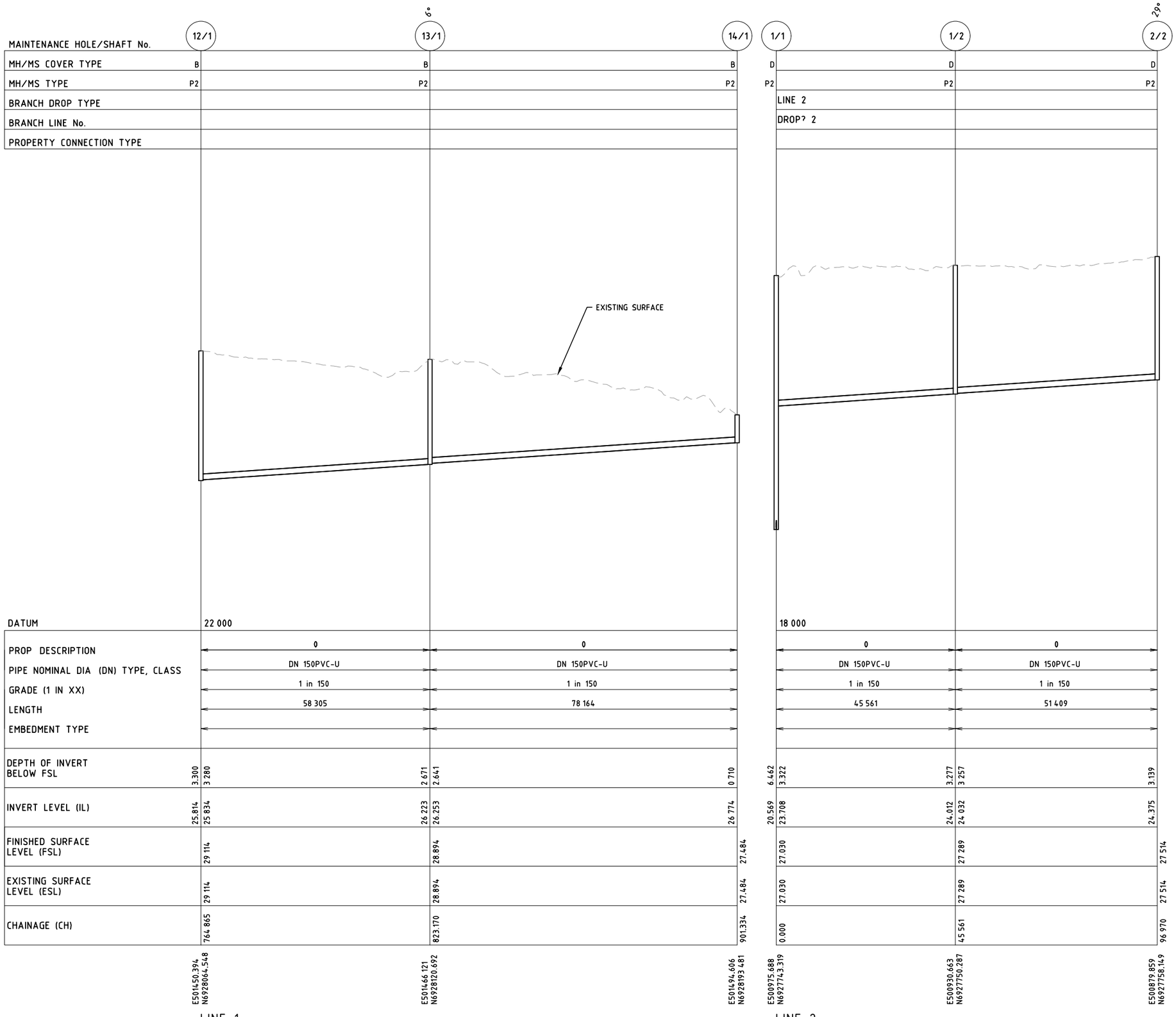
PROJECT:
4693-4731 MOUNT LINDESAY HIGHWAY

DRAWING TITLE :
SEWER LONGITUDINAL SECTION SHEET 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. : BE220566 | DRAWING No. : SK09 | VERSION: 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 |
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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

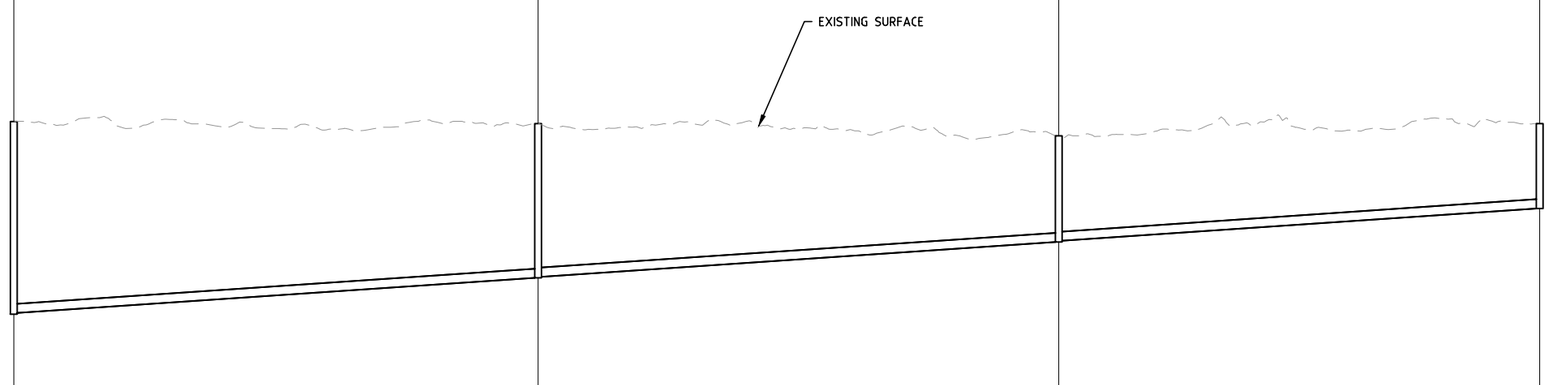
DRAWING TITLE :
SEWER LONGITUDINAL SECTION SHEET 4

| | |
|---|---|
| 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. : SK10 | VERSION: B |

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




| 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 |

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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

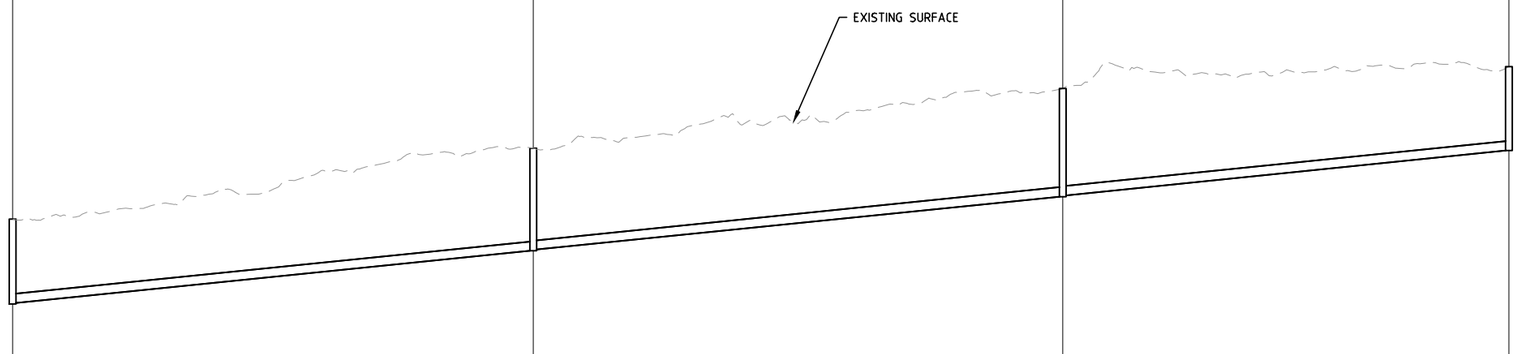
DRAWING TITLE :
SEWER LONGITUDINAL SECTION SHEET 5

| | |
|---|---|
| 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. : BE220566 | DRAWING No. : SK11 | VERSION: B |

| MAINTENANCE HOLE/SHAFT No. | | 5/2 | | 6/2 | | 7/2 | | 8/2 |
|---|---|---|---|---|---|---|---|---|
| MH/MS COVER TYPE | 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 | 1.648 | 1.761 | 1.741 | 1.368 | |
| INVERT LEVEL (IL) | 26.095 | 26.115 | 26.965 | 26.985 | 27.849 | 27.869 | 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 |

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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

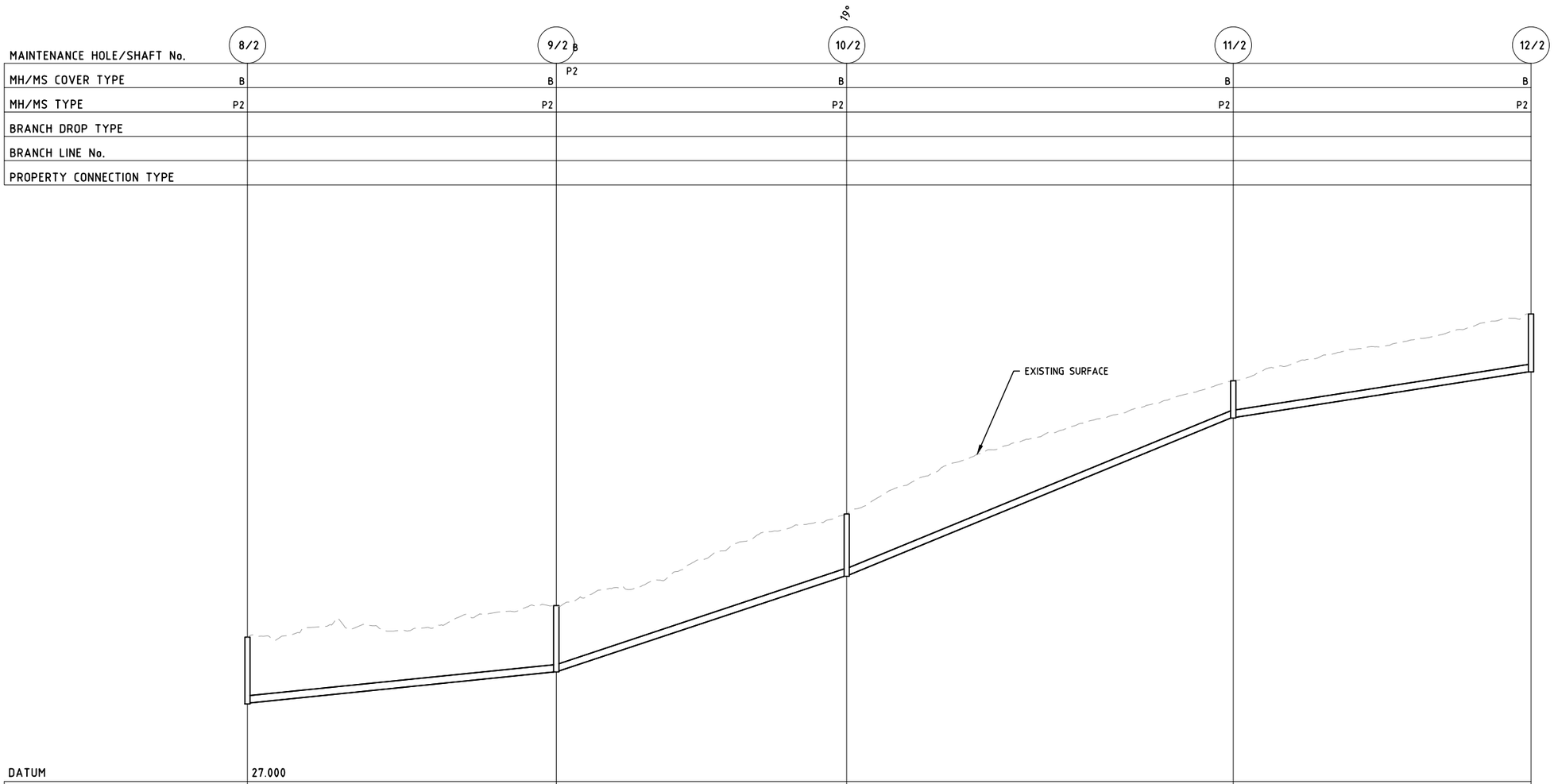
PROJECT:
4693-4731 MOUNT LINDESAY HIGHWAY

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. : BE220566 | DRAWING No. : SK12 | VERSION: 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 |

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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 7

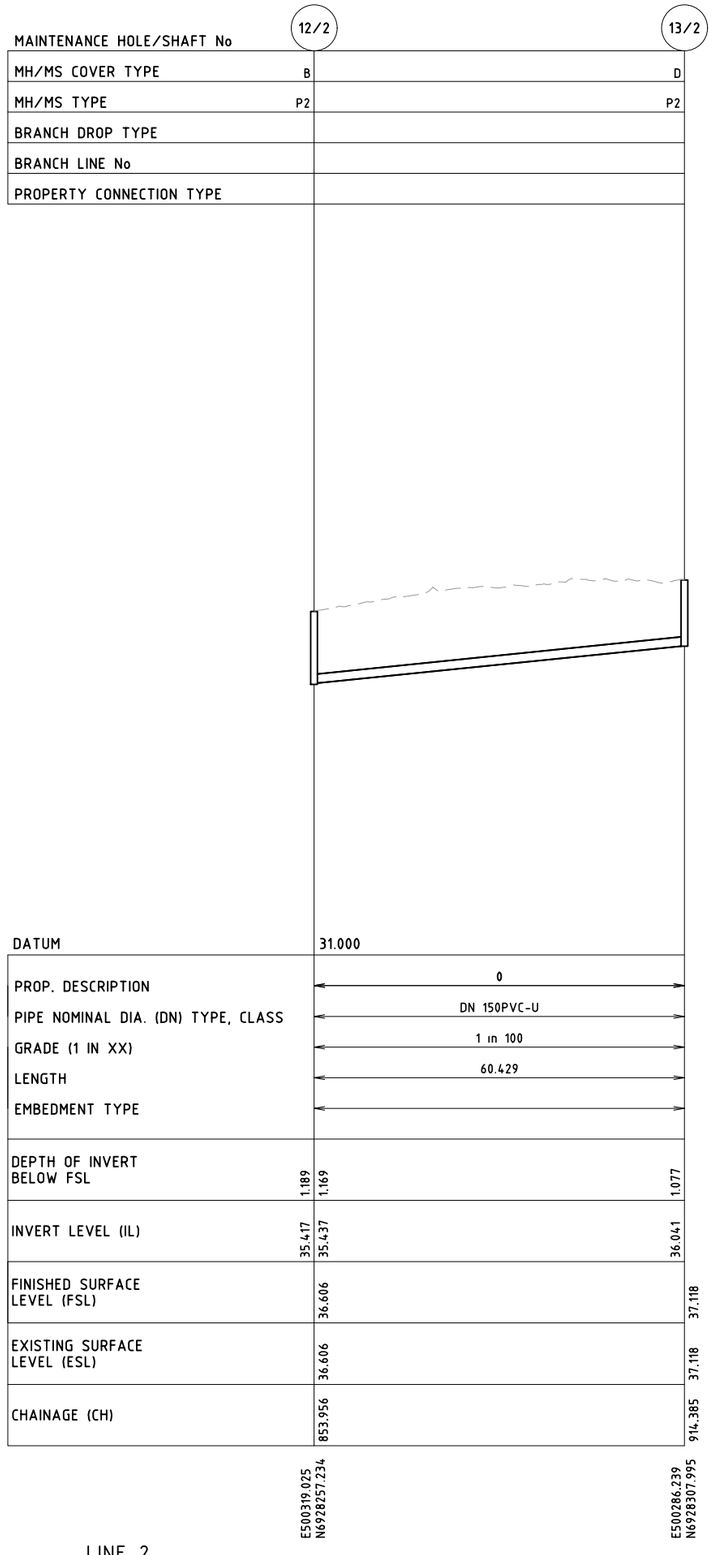
| | |
|---|---|
| DEVEL. APPLIC. No. : | DATE : 01-10-24 |
| PROJECT LEADER : | JACK SHAO |
| DESIGNER : | NHUNG NGUYEN |
| DRAFTSPERSON : | NHUNG NGUYEN |
| CHECKED : | JACK SHAO |

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. : | DRAWING No. : | VERSION: |
|---|---|---|
| BE220566 | SK13 | 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 |

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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

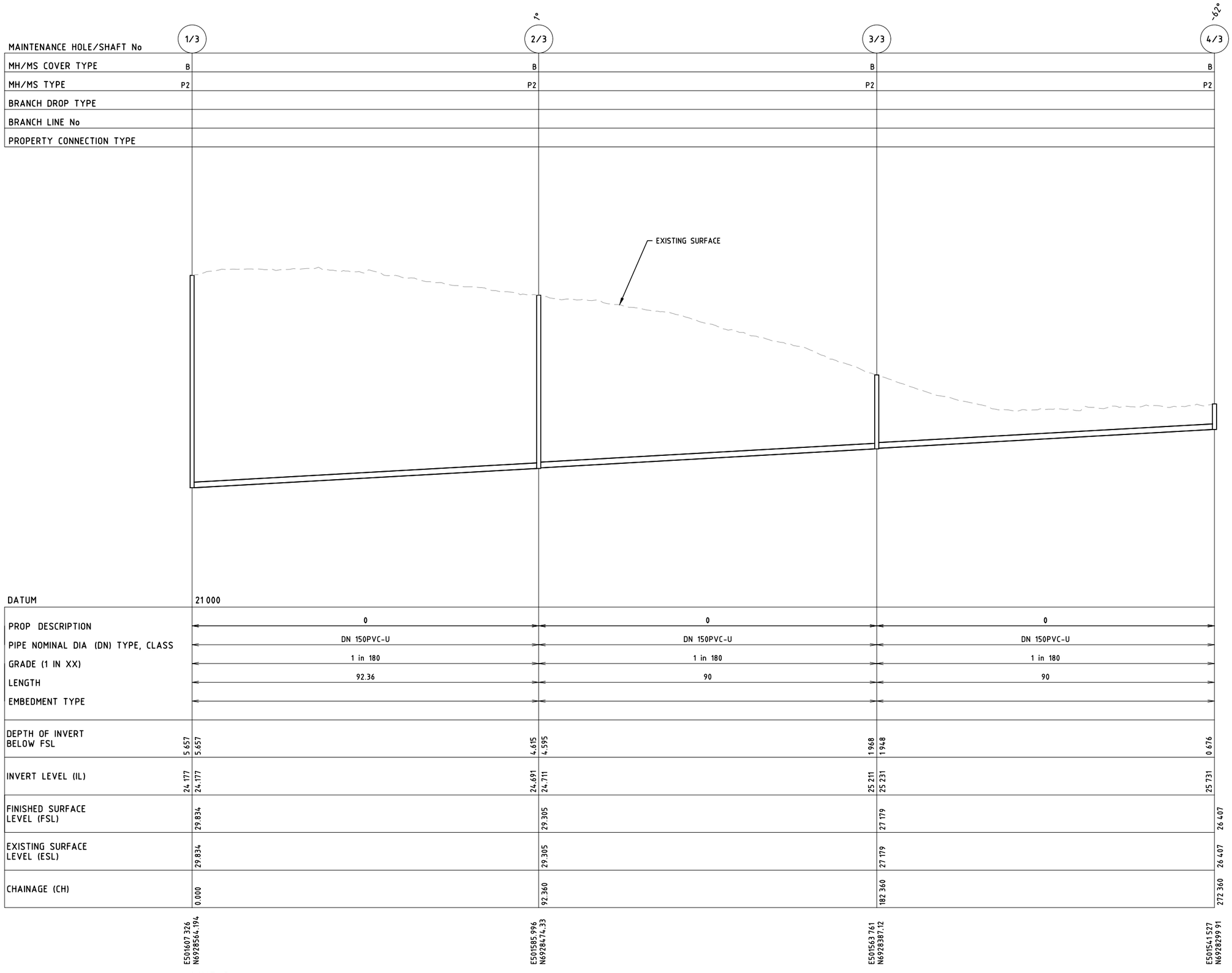
DRAWING TITLE :
SEWER LONGITUDINAL SECTION SHEET 8

| | |
|---|---|
| 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. : BE220566 | DRAWING No. : SK14 | VERSION: B |




| MAINTENANCE HOLE/SHAFT No | | 1/3 | 2/3 | 3/3 | 4/3 |
|---|---|---|---|---|---|
| MH/MS COVER TYPE | B | B | B | B | B |
| MH/MS TYPE | P2 | P2 | P2 | P2 | P2 |
| BRANCH DROP TYPE | | | | | |
| BRANCH LINE No | | | | | |
| PROPERTY CONNECTION TYPE | | | | | |
| 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 180 | 1 in 180 | 1 in 180 | |
| LENGTH | | 92.36 | 90 | 90 | |
| EMBEDMENT TYPE | | | | | |
| DEPTH OF INVERT BELOW FSL | 5.657 | 5.657 | 4.595 | 1.948 | 0.676 |
| INVERT LEVEL (IL) | 24.177 | 24.177 | 24.711 | 25.231 | 25.731 |
| FINISHED SURFACE LEVEL (FSL) | | 29.834 | 29.305 | 27.179 | 26.407 |
| EXISTING SURFACE LEVEL (ESL) | | 29.834 | 29.305 | 27.179 | 26.407 |
| CHAINAGE (CH) | | 0.000 | 92.360 | 182.360 | 272.360 |
| | | E501607.326 N6928564.194 | E501585.996 N6928474.33 | E501563.761 N6928387.12 | E501541.527 N6928299.91 |

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 |

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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 9

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

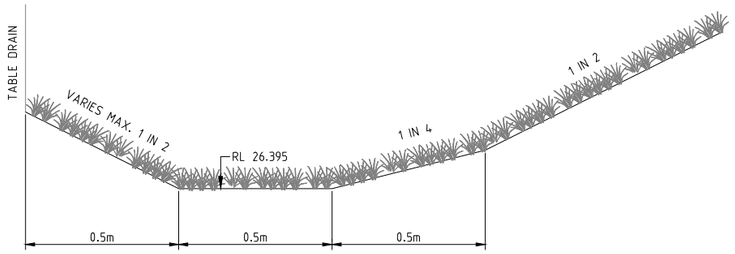
APPROVED FOR AND ON BEHALF OF BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365
RPEQ No. :

| | | |
|---|---|---|
| SCALE : AS NOTED | DATUM : AHD | FULL SIZE : A1 |
| PROJECT No. : BE220566 | DRAWING No. : SK15 | VERSION: B |

N

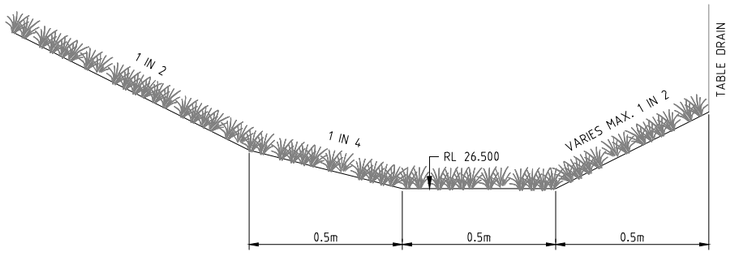
LEGEND

- SUBJECT SITE
- TABLE DRAIN
- ENVIRONMENTAL OFFSET
- 1% AEP FLOW PATH



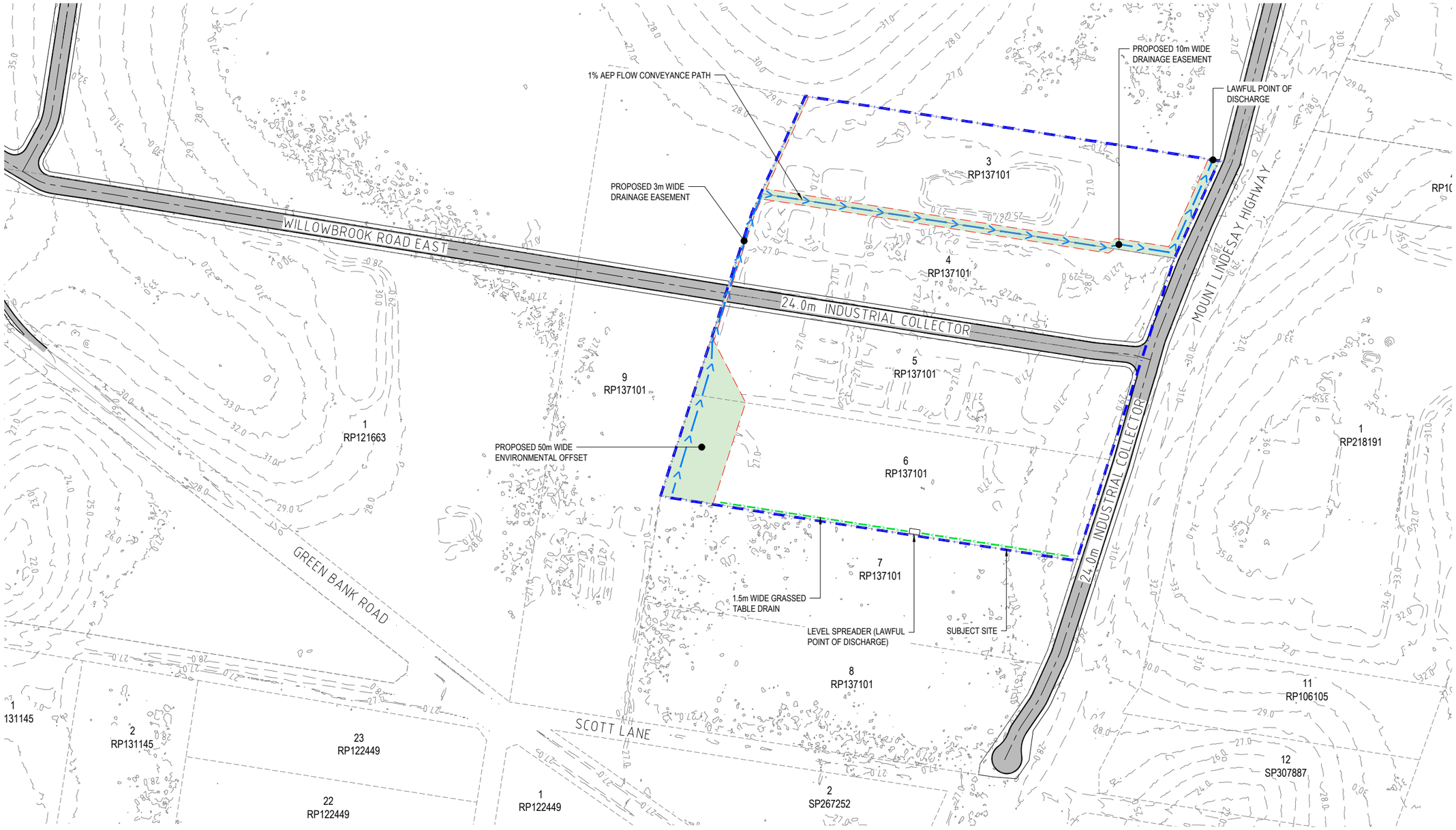

TYPICAL SECTION - TABLE DRAIN AT RL 26.395

SCALE 0.1 0 0.1 0.2 0.3 0.4 0.5 (metres)
1 : 10 (FULL SIZE)




TYPICAL SECTION - TABLE DRAIN AT RL 26.500

SCALE 0.1 0 0.1 0.2 0.3 0.4 0.5 (metres)
1 : 10 (FULL SIZE)

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# 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 |
|---|---|---|
| A | ORIGINAL ISSUE | 16-12-24 |


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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 :
STORMWATER CONVEYANCE LAYOUT

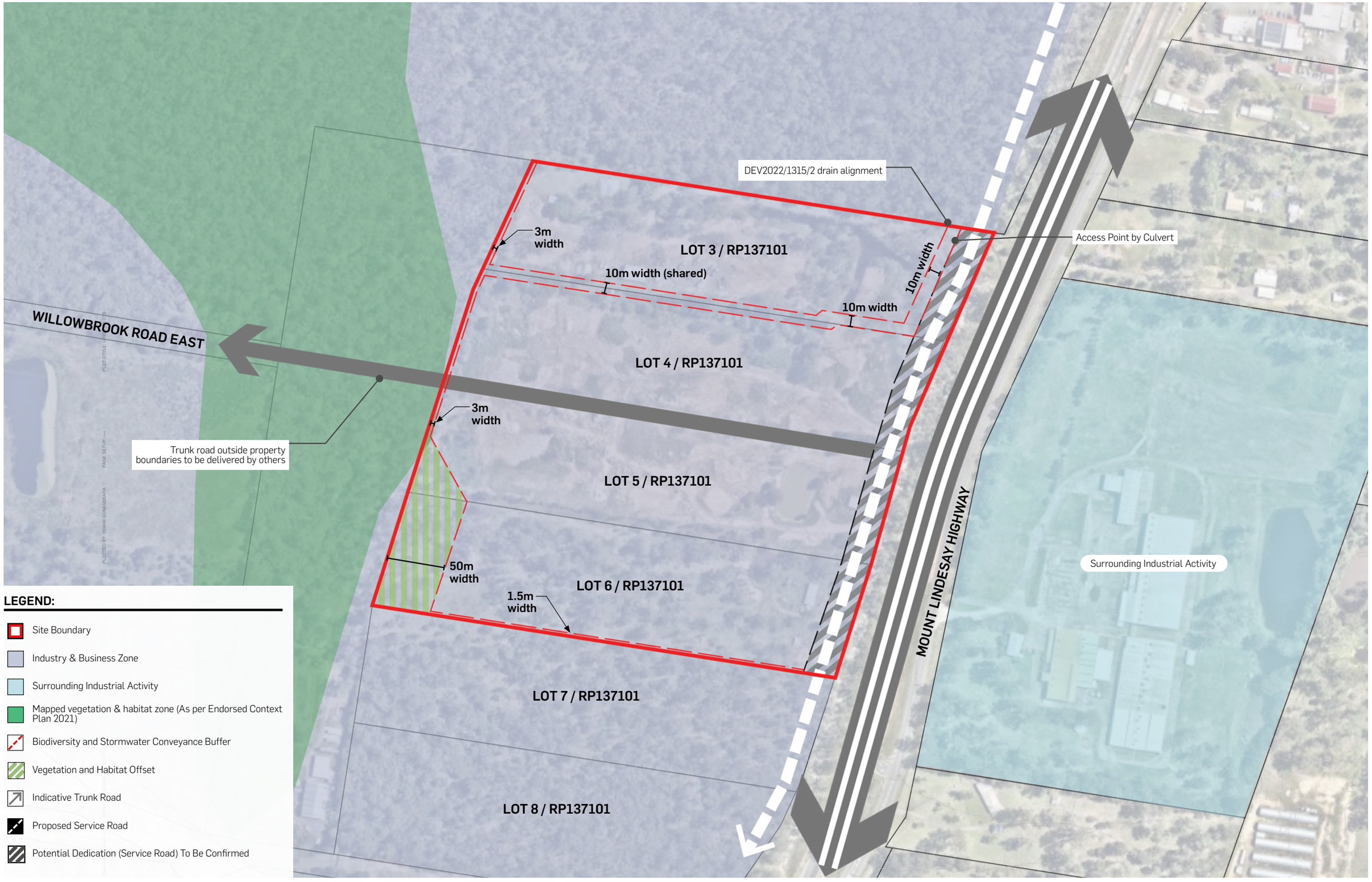
| | | |
|---|---|---|
| DEVEL. APPLIC. No. : | | DATE : 16-12-24 |
| PROJECT LEADER : | JACK SHAO | |
| DESIGNER : | CARL KRUGER | |
| DRAFTSPERSON : | CARL KRUGER | |
| CHECKED : | JACK SHAO | |

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. : SK16 | VERSION: A |

# Appendix E – Plan of Development




URBIS

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

## PLAN OF DEVELOPMENT

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1:3000 @ A3

0 25 50 75 100 125 150

**DATE:** 17.12.2024
**JOB NO:** P0045017
**DWG NO:** POD-01
**REV:** 6

# 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 INFRASTRUCUTRE:**

- Roads - to be delivered by Client
- Roads - to be delivered by others
- 300mm 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

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URBIS

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

## INFRASTRUCTURE MASTER PLAN

1:10,000 @ A3

0 100 200 300 400 500

**DATE:** 04.12.2024
**JOB NO:** P0045017
**DWG NO:** IM-01
**REV:** 3