21 March 2025

Our Ref: 23BRT0408
Your Ref:

Attention: Marnie Wood

Rochedale Development Partners Pty Ltd
C/- Wolter Consulting Group Pty Ltd
PO Box 436
NEW FARM QLD 4005

Dear Marnie,

RE: 202 Garnder Road, Rochedale – Reconfiguration of Lot (RoL) – 1 into 1 Lot Plus a New Road Traffic Impact Assessment – Development Application

1 Introduction

Colliers (formerly TTM) has been engaged by Rochedale Development Partners Pty Ltd to prepare an updated Traffic Impact Assessment (TIA) to accompany a RoL development application over the land parcel at 202 Gardner Road, Rochedale and formally described as Lot 4 on RP114765. The RoL development application, which will be submitted to Brisbane City Council (BCC), seeks to reconfigure the lot into 1 lot plus a new road.

This updated TIA specifically addresses comments raised by BCC in a pre-lodgement meeting on 28 January 2025 (and in pre-lodgement advice dated 21 January 2025).

2 Development Summary

The proposal involves delivery of a new eastern road connection and modifications to the Gardner Road/Prebble Street traffic signal controlled intersection as per BCC's Local Government Infrastructure Plan (LGIP) – Future Road Intersection Project - ROC-RI-004. It is noted that road works are currently being undertaken by others to convert the existing Gardner Road/Prebble Street priority controlled intersection to a traffic signal controlled intersection. These road works are associated with the development approval for the industrial development at 231 Gardner Road.

The proposed new eastern road connection is identified as the southern part of the district road, completing the road network from Gardner Road to approved Road 1 (as per BCC Ref: A005747839). The district road will ultimately connect with Rochedale Road via Farley Road.

As per the Town Planning Report prepared by Wolter Consulting Pty Ltd, the modifications to the Gardner Road/Prebble Street traffic signal controlled intersection represent an interim layout prior to the redevelopment of adjacent land parcels to the northwest and southeast of the intersection. It is noted the ultimate layout for the intersection (and new eastern road connection) includes land within both 202 and 210 Gardner Road and requires landowner agreement to deliver this outcome. The applicant has endeavoured to secure an adjoining landowner agreement with both parties, however only the landowner of 202 Gardner Road has agreed to the terms of the adjoining landowner agreement. The landowner of 210 Gardner Road has declined to participate in the adjoining landowner agreement.

On this basis, the proposal seeks to modify the Gardner Road/Prebble Street traffic signal controlled intersection and deliver the new eastern road connection within the curtilage of the land parcel at 202 Gardner Road only. Even with the inclusion of the land parcel at 210 Gardner Road, the modifications to the Gardner Road/Prebble Street traffic signal controlled intersection would still only represent an interim solution prior to the redevelopment of adjacent land parcels to the northwest of the intersection (and specifically at 227 Gardner Road).

It should be noted that the proposal only seeks to facilitate the construction of the new eastern road connection and the subsequent modifications to the Gardner Road/Prebble Street traffic signal controlled intersection. It does not involve the creation of a new lot/s or any built form other than the new road. The existing lot will be divided into two (2) parts because of the new eastern connection, and will be subject to a future development application/s.

3 Existing Conditions

3.1 The Road Network

The hierarchy and characteristics of the roads in the immediate vicinity of the site are shown in Table 1.

Table 1: Local Road Hierarchy

Road	Speed Limit	Lanes	Classification	Road Authority
Gardner Road	70kph	2 (undivided)	Suburban Road	BCC
Rochedale Road	70kph	2 (undivided)	Suburban Road	BCC
Prebble Street	50kph*	2 (undivided)	District Road	BCC
Farley Road	50kph*	2 (undivided)	Neighbourhood Road	BCC

*Default speed limit on unsigned roads in built-up areas in Queensland.

Gardner Road has a carriageway width varying between 10.9 and 16.8m and road reserve width varying between 19.9 and 26.7m in the vicinity of its intersection with Prebble Street.

Whilst the intersection of Gardner Road and Prebble Street currently operates under priority control, road works are currently being undertaken by others to convert the intersection to traffic signal control.

3.2 Road Planning

BCC has undertaken significant road planning in the vicinity of the subject site. This road planning includes the future duplication of Gardner Road and Rochedale Road (by others) and the extension of Prebble Street between Gardner Road and Rochedale Road (via Farley Road) to open-up land for redevelopment. The new eastern road connection will partially deliver the extension of Prebble Street (between Gardner Road and Rochedale) as envisaged by BCC.

Land dedications are provided to facilitate the future duplication of Gardner Road and the extension of Prebble Steet.

3.3 Other Road Users

Whilst pedestrian crossing facilities are being delivered as part of the road works currently being undertaken by others to convert the existing Gardner Road/Prebble Street priority controlled intersection to a traffic signal controlled intersection, it is noted that no footpath is currently in place along the eastern side of Gardner Road nor is it being provided as part of the current intersection upgrade works.

An on-road cycle lane is provided along the western side of Gardner Road.

4 Interim Intersection Layout

4.1 Interim Intersection Layout Without 210 Gardner Road

Drawing No.'s 23BRT0408-PR30-PR36 included as **Attachment 1** shows the interim intersection layout with the new eastern road connection contained within the curtilage of the land parcel at 202 Gardner Road only. It should be noted that given this restriction, these are the only modifications that are physically possible to the traffic signal controlled intersection whilst providing a layout that is safe and functional.

The interim intersection layout has been modified to address comments raised by BCC in pre-lodgement advice dated 18 July 2024 and 21 January 2025. These modifications include:

- The geometry of the new eastern road connection at the bend has been modified to ensure that a minimum radius of 50m is provided;

- Whilst limited pedestrian infrastructure is in place in the vicinity of the intersection (with no footpath provided along the eastern side of Gardner Road), a pedestrian crossing facility has been provided on the eastern approach as per BCC's request;
- The pedestrian crossing facility on the northern approach has been omitted as per BCC's request;
- The stop lines at the right turn lanes on the northern and southern approaches have been positioned as close to the intersection as possible (with the existing alignment of the northbound traffic and cycle lanes on the southern approach retained) whilst allowing suitable manoeuvring for the nominated design vehicles from the eastern and western approaches. It is proposed that the left turn from the eastern approach will be restricted to use by a 12.5m long heavy rigid vehicle (HRV), with articulated vehicles (AV's) travelling south having to re-route via the north (via Mount Gravatt-Capalaba Road) in order to connect with Gateway and Pacific Motorways to the south. This temporary arrangement, which will be suitably signed, is not considered a major imposition given the type and scale of the land-uses anticipated to be ultimately provided on the land parcels between Gardner Road and Rochedale Road (and to be accessed via the new eastern road connection). It is noted that AV's will still be able to travel straight ahead (i.e. east to west) if necessary;
- In order to address BCC's previous concerns regarding the lateral shift for the westbound through movement, the number of exit lanes on the western approach has been reduced to one lane. Traffic analysis (as detailed in Section 7) has confirmed that this modification still allows the intersection to perform satisfactorily over the design horizon;
- The deflection angle of the southbound through movement has been modified as per the requirements outlined in Austroads Guide to Road Design – Part 3 – Geometric Design (AGRD – Part 3) and Austroads Guide to Road Design – Part 4A – Unsignalised and Signalised Intersections (AGRD – Part 4) to suit a short channelised right turn lane (CHR(S)) geometry with a chevron median now included;
- The width of the verge on the eastern approach has been modified (with the on-road cycle lane removed) to allow for the introduction of the pedestrian crossing facility and to provide suitable room for the installation of the traffic signal hardware. Given the narrow width of the verge at this location it is expected that cyclists will generally share the section of the road on approach to the intersection with other users. Notwithstanding this, a kerb ramp has been provided for cyclists to exit the carriageway onto the verge should they wish to; &
- The phasing (as detailed in Section 7) has been determined based on the configuration of the intersection with delayed starts for concurrent conflicting left turn/pedestrian through phases. It is acknowledged that the sight distance for drivers at the stop line on the eastern approach to the pedestrian crossing facility on the southern approach is somewhat restricted, however, this is primarily due to the introduction of the pedestrian crossing facility on the eastern approach (which has necessitated the stop line being offset further from the intersection). Whilst pedestrian demands at this location are expected to be negligible, it is proposed that advanced warning signage will be provided on

the eastern approach to notify drivers of the presence of pedestrians on the side road. Given the tight radii at the southeast corner of the intersection, it is expected that traffic will turn left onto Gardner Road and approach the pedestrian crossing facility at a very low speed. This coupled with the delayed start for the left turn from the eastern approach will ensure that pedestrian safety at this location is not impacted.

The geometry of the interim intersection in terms of the width of the through lanes, turn lanes, bicycle lanes, etc. generally satisfies the requirements outlined in BCC's Infrastructure Design Planning Scheme Policy (Infrastructure Design PSP), AGRD – Part 3 and AGRD – Part 4.

4.2 Interim Intersection Layout With 210 Gardner Road

Drawing No.'s 23BRT0408-31, 42, 43 and 52 included as **Attachment 2** shows the interim intersection layout with the new eastern road connection contained within the curtilage of the land parcels at 202 and 210 Gardner Road.

Again, the geometry of the interim intersection in terms of the width of the through lanes, turn lanes, bicycle lanes, etc. generally satisfies the requirements outlined in BCC's Infrastructure Design PSP, AGRD – Part 3 and AGRD – Part 4.

Drawing No. 23BRT0408-SK 3-01 included as **Attachment 3** shows how the interim intersection layouts and new eastern road connection with and without 210 Gardner Road align.

4.3 Road Works along Gardner Road

The updated civil engineering plans included as **Attachment 4** show the works required along Gardner Road to the south of the intersection to address the introduction of the right turn lane and resolve the level difference between the existing northbound and southbound lanes due to the removal of a section of the central median.

5 Traffic Impact Assessment

5.1 Introduction

Colliers has undertaken a TIA to assess the suitability of the interim intersection layout (without 210 Gardner Road) over the design horizon.

5.2 Existing Traffic Volumes

Traffic surveys previously undertaken by others in 2020 at the Gardner Road/Prebble Street priority controlled intersection have been interrogated to confirm background traffic volumes in the weekday AM and PM peak-hour periods for use in the assessment. These 2020 background traffic volumes are shown in Figure 5-1.

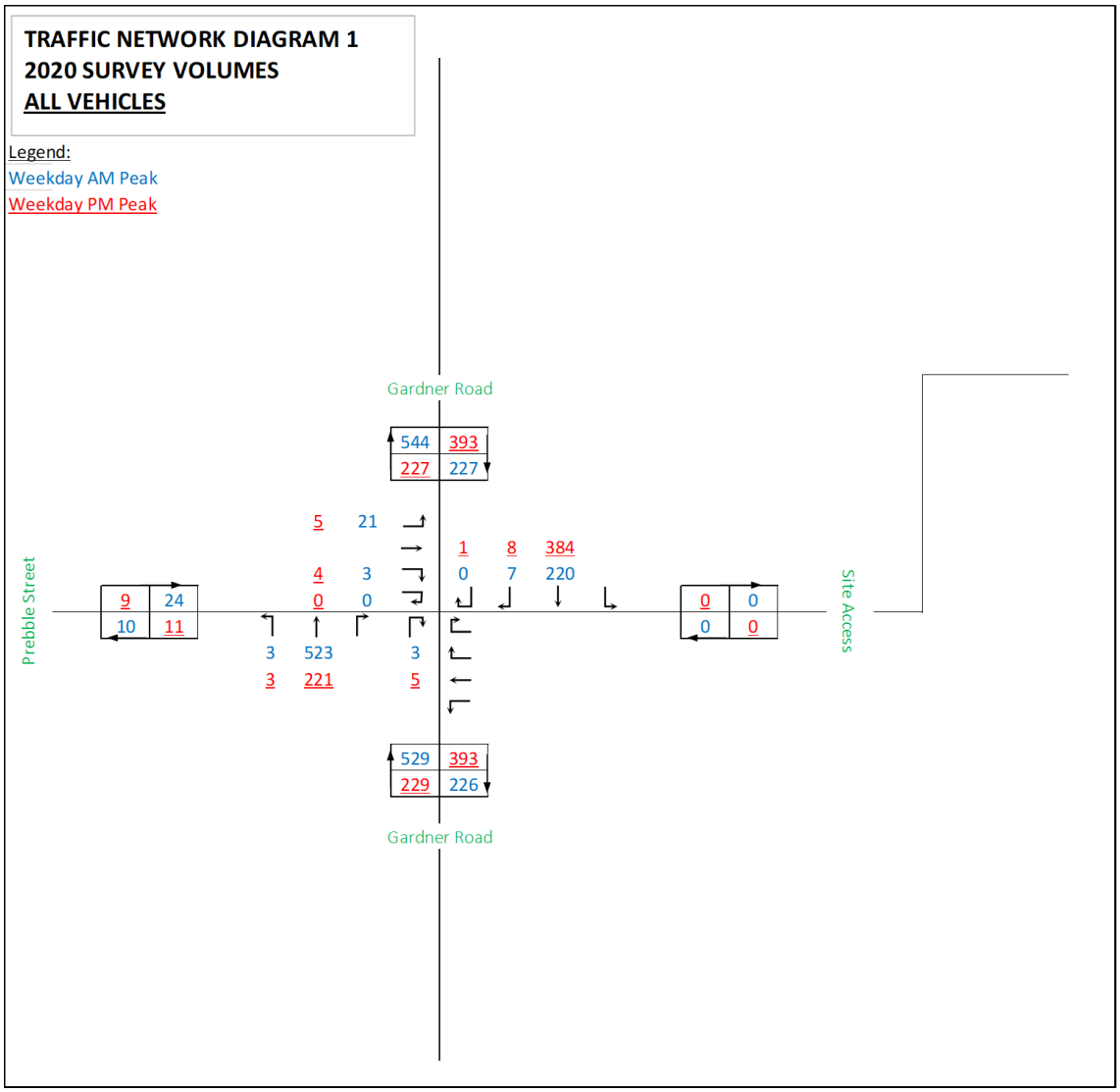


Figure 5-1: 2020 Background Traffic Volumes

Whilst Colliers acknowledge that the data sourced from the traffic surveys in 2020 is somewhat dated, the duration of the road works at the Gardner Road/Prebble Street priority controlled intersection (to convert the intersection to traffic signal control) has meant that traffic surveys could not be undertaken at the intersection for the purposes of this assessment. It should be noted that the background traffic volumes on Gardner Road to the north of Prebble Street are relatively consistent with the traffic volumes sourced from an automatic traffic count (ATC) survey undertaken by Colliers at this location in 2022.

5.3 Assessment Years

It is expected that the duplication of Gardner Road will be complete by 2035 (if not much earlier given that it was originally anticipated by BCC to be completed by 2026). Consequently, this appraisal has assessed the interim intersection layout (without 210 Gardner Road) over a design horizon up to and including 2035.

In order to obtain suitably robust future year scenarios, it was considered necessary to expand the background traffic volumes observed in 2020.

For the purposes of assessing the future traffic demands along Gardner Road, LGIP within Part 4 of the Brisbane City Plan 2014 provides guidance on future traffic growth expectations. Table SC3.1.7 indicates the assumed future transport demands within each of the Service Catchments of the BCC area; which is used for the purposes of determining trunk works in the LGIP. Rochedale is located within Catchment 3.

By comparing future traffic demand expectations up to 2031 (total vehicle trips per day) in Catchment 3 to base 2016 traffic demands, an equivalent growth rate of 1.5% p.a. has been determined. Notwithstanding this, a conservative growth rate of 2% p.a. has been adopted and applied to the traffic volumes along Gardner Road to account for background traffic growth. It should be noted that this growth rate is consistent with that applied in TIA's for other developments in the vicinity of the site.

The 2035 background traffic volumes are shown in Figure 5-2.

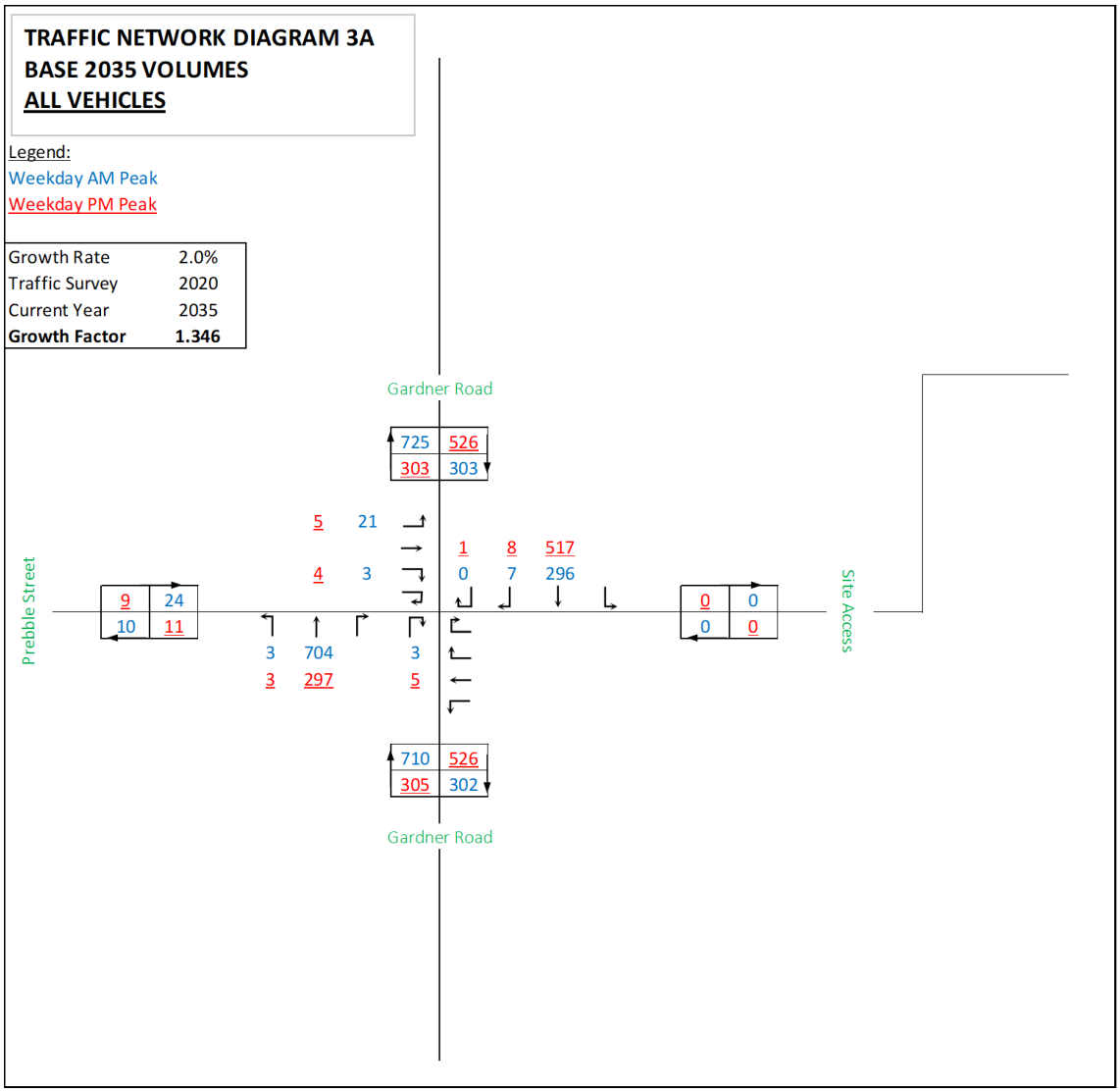


Figure 5-2: 2035 Background Traffic Volumes

5.4 Committed Development

With respect to committed development, Colliers notes that approved development in the vicinity will increase vehicular throughput at the Gardner Road/Prebble Street traffic signal controlled intersection and as such, should be accounted for to provide an accurate reflection of future traffic conditions. Consequently, the low impact industry land-uses previously approved by BCC at 231 Gardner Road have been considered as committed development. The traffic generation and distribution associated with this committed development has been sourced from the TIA prepared to support the development approval. The traffic volumes associated with the committed development are shown in Figure 5-3.

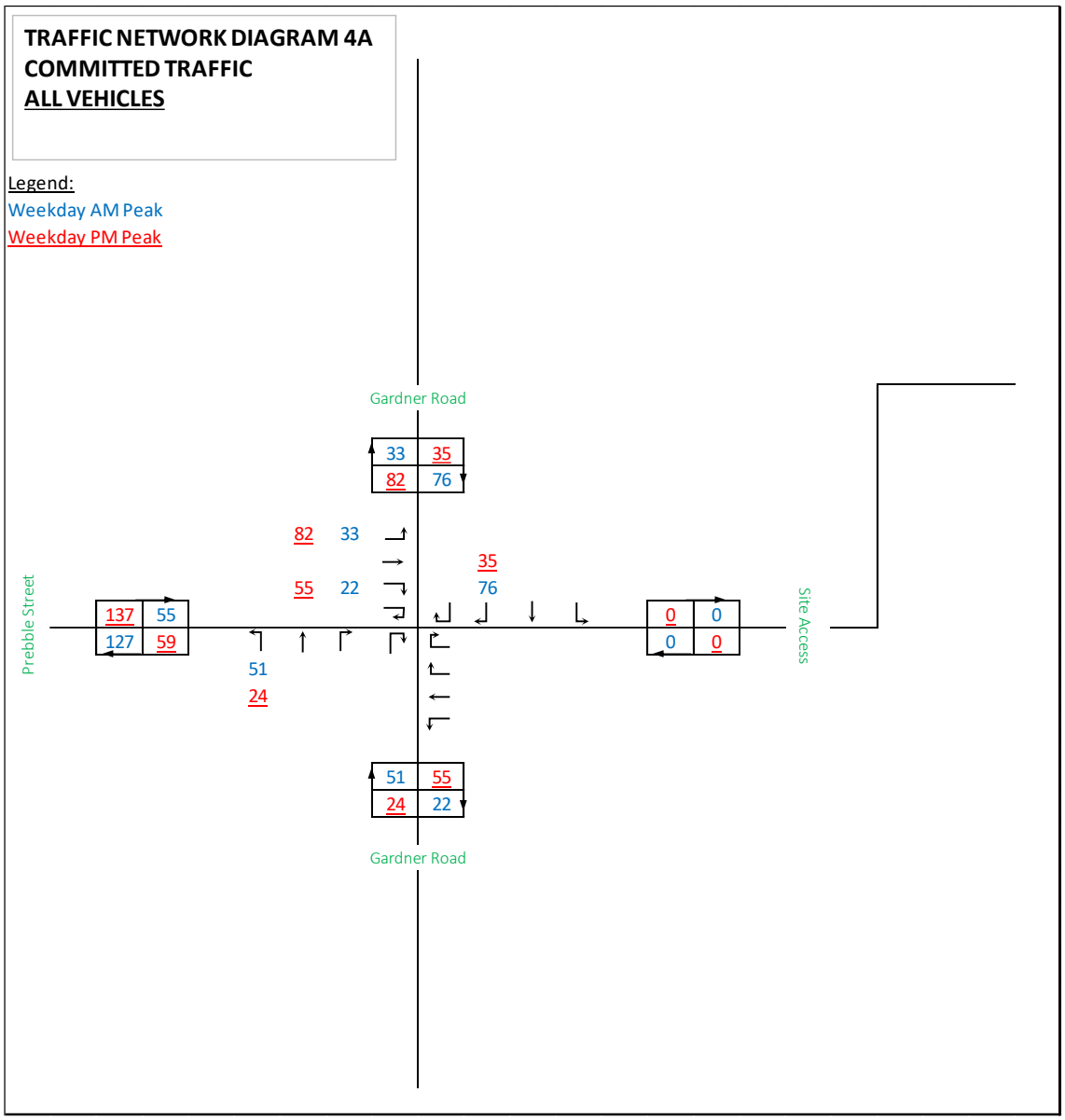


Figure 5-3: Committed Traffic Volumes

5.5 Baseline Traffic Volumes

The 2035 baseline traffic volumes are obtained by the addition of the traffic volumes associated with the committed development shown in Figure 5-3 to the 2035 background traffic volumes shown in Figure 5-2. The resultant traffic volumes are shown in Figure 5-4.

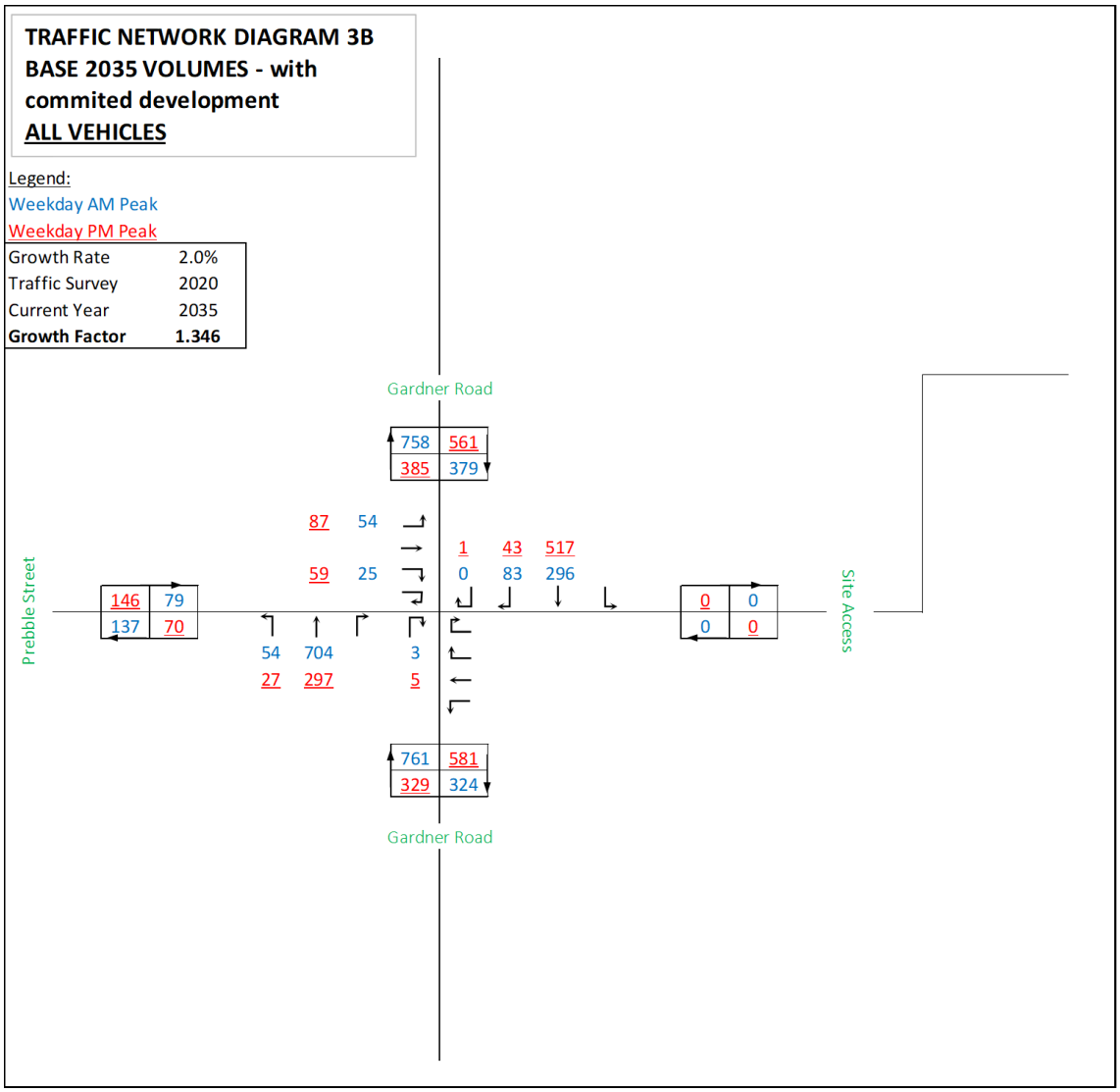


Figure 5-3: 2035 Baseline Traffic Volumes

5.6 Estimated Development Traffic Generation

5.6.1 Introduction

As noted previously the proposal only seeks to facilitate the construction of the new eastern road connection and the subsequent modifications to the Gardner Road/Prebble Street traffic signal controlled intersection. It does not involve the creation of a new lot/s or any built form other than the new road. Notwithstanding this, to assess the suitability of the interim intersection layout (without 210 Gardner Road) over the design horizon, it is necessary to estimate the traffic generation associated with land-uses anticipated to be provided by the applicant on the land parcels between Gardner Road and Rochedale Road (and to be accessed by the new eastern road connection).

For the land parcels under the ownership of the applicant (and whilst this will be subject to future development applications), it is anticipated that the following will be delivered:

- Multiple unit dwelling (MUD) developments comprising a total of 220 units; &
- Low impact industry (including business park) land-uses with a total site area of 43,296m² and a gross floor area (GFA) of 28,142m² (based on developable plot ratio of 0.65).

In addition to the above, it is anticipated that the following will be delivered by others:

- A neighbourhood centre with a total GFA of 1,500m²; &
- A business park with a total GFA of 1,500m².

Whilst it is acknowledged that additional developments will likely be provided by others, these are beyond the scope of this assessment and will be subject to future development application/s.

5.6.2 Traffic Generation & Distribution

MUD Development Land-Uses

The RTA Guide to Traffic Generating Developments recommends adopting a traffic generation rate of 0.65vph per unit in the weekday AM and PM peak-hour periods for MUD developments containing 3 bedroom (or more) units. Application of this traffic generation rate to the MUD developments anticipated by the applicant results in a traffic generation of **143vph** in the weekday AM/PM peak-hour and Saturday peak-hour periods.

A 30/70 split in terms of arrivals and departures has been adopted in the weekday AM peak-hour and a 70/30 split has been adopted in the weekday PM peak-hour.

Low Impact Industry (including Business Park) Land-Use

Traffic generation rates of 0.52vph per 100m² and 0.56vph per 100m² in the weekday AM and PM peak-hour periods, respectively, have been adopted for the low impact industry (including business park) anticipated by the applicant (and others). These traffic generation rates, which have been sourced from the RMS Guide of Traffic Generating Developments – Updated Traffic Survey (TDT 2013-04a), are consistent with that adopted in the TIA prepared to the development application for the low impact industry land-uses at 231 Gardner Road previously approved by BCC. Application of these traffic generation rates to the low impact industry (including business park) anticipated by the applicant (and others) results in a traffic generation of **154vph** in the weekday AM peak-hour and **166vph** in weekday PM peak-hour.

A 30/70 split in terms of arrivals and departures has been adopted in the weekday AM peak-hour and a 70/30 split has been adopted in the weekday PM peak-hour.

Neighbourhood Centre

The RTA Guide to Traffic Generating Developments recommends adopting a traffic generation rate of 12.5vph per 100m² in the weekday PM peak-hour period for shopping centres with a GFA between 0 and 10,000m². Application of this traffic generation rate to the neighbourhood centre anticipated by others results in a traffic generation of **188vph** in the weekday PM peak-hour period. For the purposes, of this assessment it has been assumed that the traffic generation in the weekday AM peak-hour will represent 50% of the traffic generation in the weekday PM peak-hour. It has therefore been assumed that the neighbourhood centre will generate **94vph** in the weekday AM peak-hour.

A 50/50 split in terms of arrivals and departures has been adopted in the weekday AM peak-hour and a 50/50 split has been adopted in the weekday PM peak-hour.

Total Traffic Generation

Based on the above, it estimated that the type and scale of the land-uses anticipated by the applicant and others will be generate the following:

- **391vph** (comprising 198 arrivals and 193 departures) in the weekday AM peak-hour;
- **497vph** (comprising 244 arrivals and 253 departures) in the weekday PM peak-hour.

In order for all the development anticipated by the applicant to be delivered it will be necessary for the new eastern road connection (branching from the Gardner Road/Prebble Street traffic signal controlled intersection) to connect to Rochedale Road via Farley Road. Notwithstanding this, for the purposes of the TIA, and to ensure a robust assessment, it has been assumed that all traffic generated by the developments anticipated by the applicant (and others) will utilise Gardner Road to connect with the wider road network. In reality, it is expected that a reasonable proportion of traffic generated by the developments will utilise Rochedale Road.

In addition to the above, not all the traffic generated by the neighbourhood centre will be new trips. For instance, Austroads Guide to Traffic Management Part 12 – Integrated Transport Assessments for Developments (AGTM – Part 12), indicates that the traffic generation associated with shopping centres with a GFA up to 3,000m² typically comprises 50% new trips and 50% pass-by/diverted trips. In this instance, the pass-by/diverted trips would largely be restricted to and radiate to traffic already using Gardner Road. Notwithstanding this, for the purposes of this TIA, and to ensure a robust assessment, it has been assumed that all traffic generated by the neighbourhood centre will constitute new trips, which will not be the case.

In terms of trip distribution, the following methodology has been applied:

- 60% of traffic will travel to/from the north; &
- 40% of traffic will travel to/from the south.

Based on the information provided above, the traffic volumes associated with the developments anticipated by the applicant (and others) are shown in Figure 5-5.

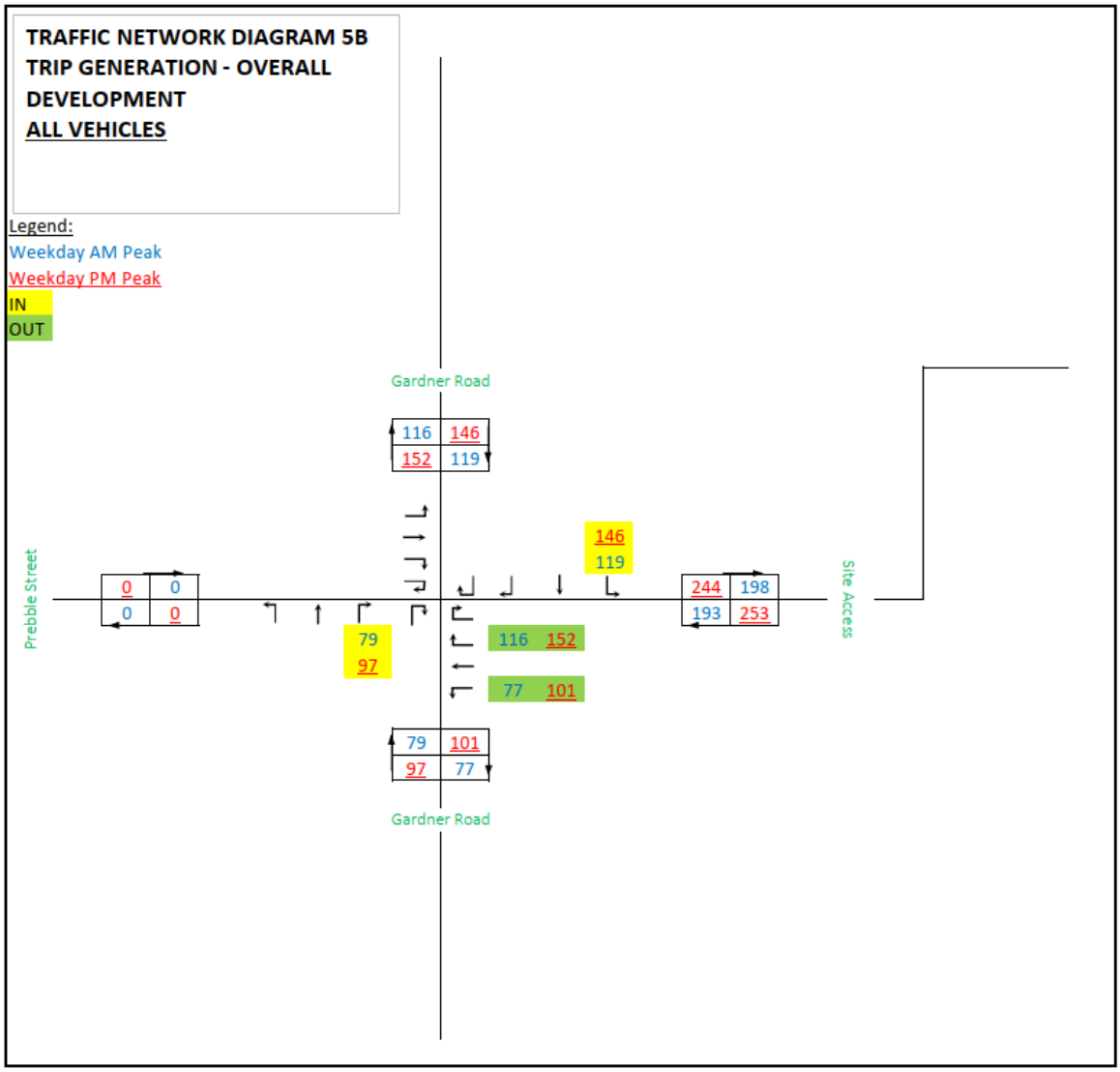


Figure 5-4: Estimated Traffic Volumes

5.7 Future Year Traffic Volumes

The future year 2035 traffic volumes are obtained by the addition of the traffic volumes associated with the developments anticipated by the applicant (and others) shown in Figure 5-5 to the 2035 baseline traffic volumes shown in Figure 5-4. The resultant traffic volumes are shown in Figure 5-5.

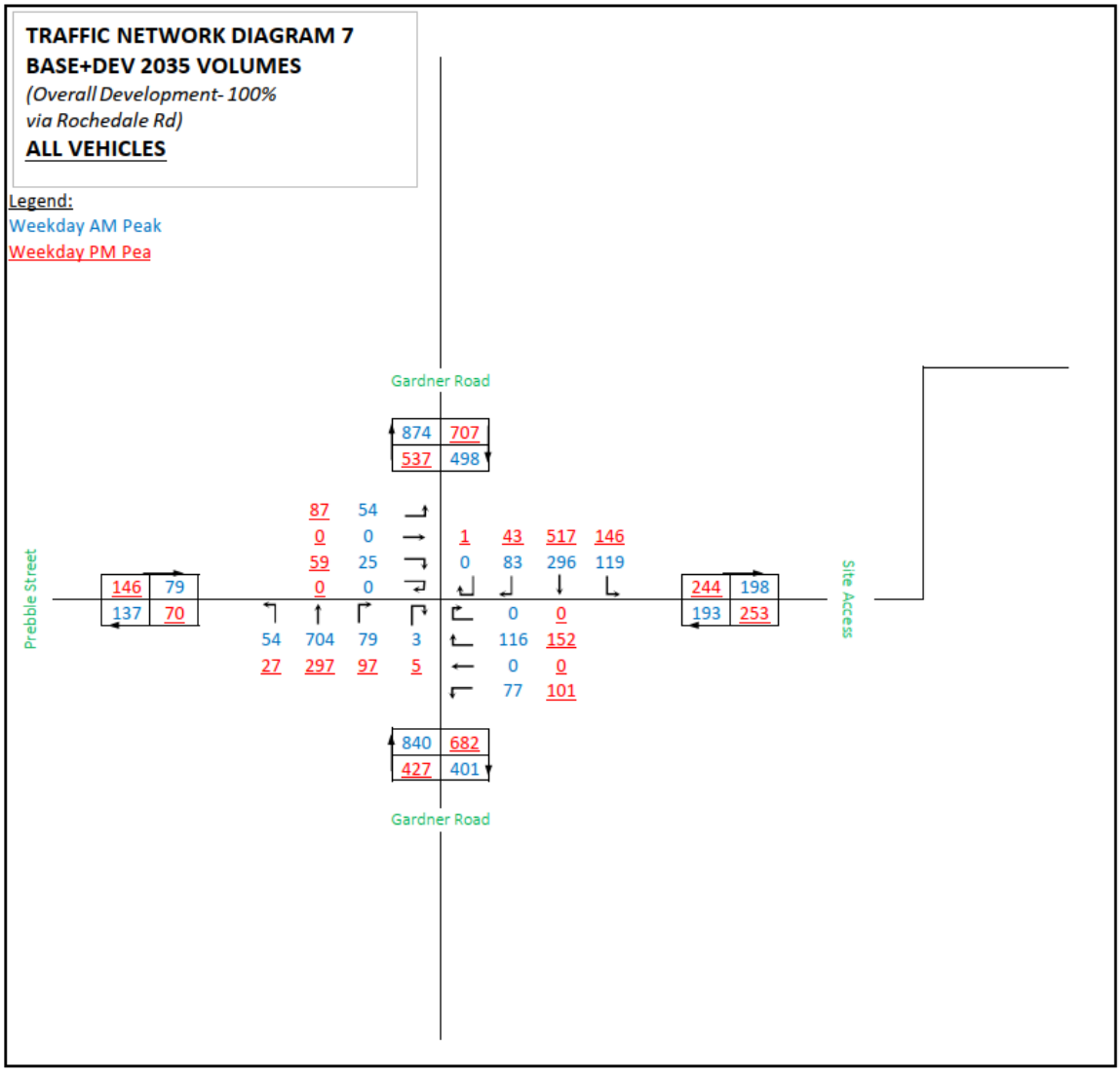


Figure 5-5: Future Year Traffic Volumes

6 Road Network Performance

6.1 Introduction

Colliers has conducted traffic analysis, using SIDRA Intersection (v9.1.3.210) Analysis Software, to confirm that the interim intersection layout (without 210 Gardner Road) can adequately cater for the traffic volumes associated with the developments anticipated by the applicant (and others) on the land parcels between Gardner Road and Rochedale Road (and to be accessed by the new eastern road connection).

6.2 Interim Intersection Layout Without 210 Gardner Road

The SIDRA layout identified for the intersection and phasing strategy to be adopted is shown in Figure 6-1.

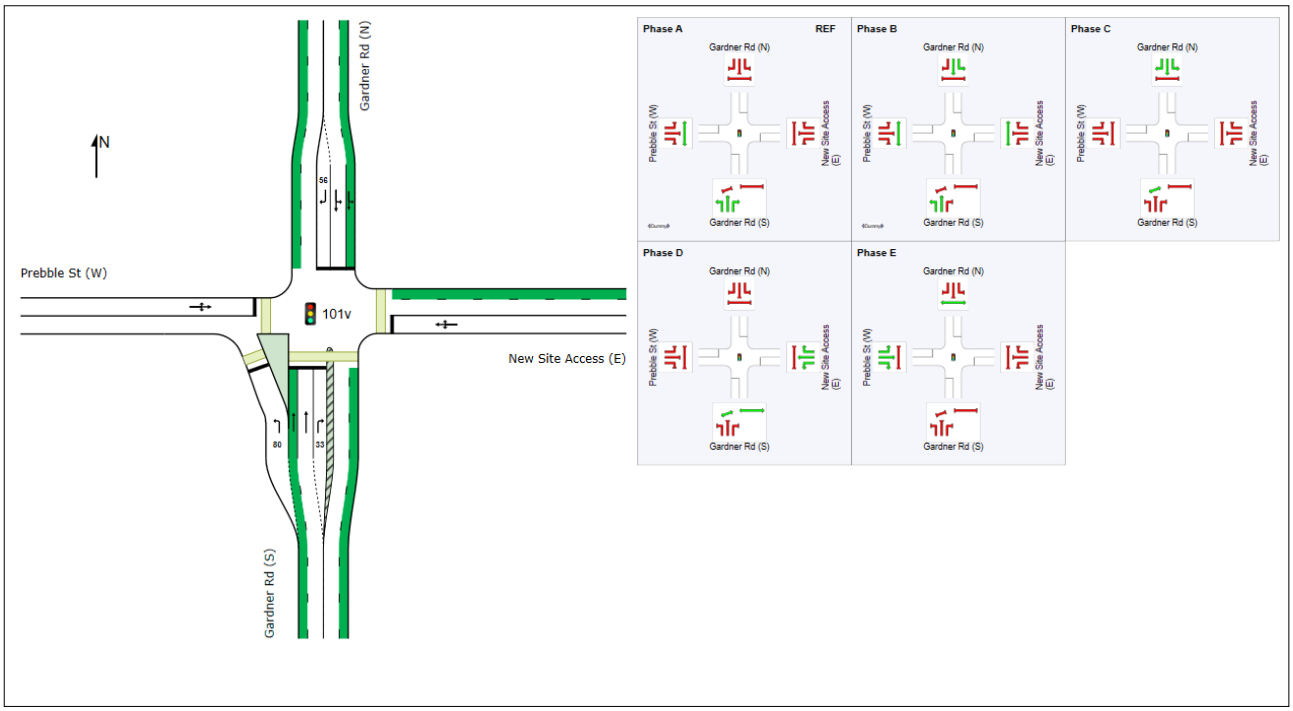


Figure 6-1: Indicative Configuration & Phasing Strategy for Interim Intersection Layout Without 210 Gardner Road

As shown in Figure 6-1, the following phasing strategy has been adopted:

- Lead-lag right turn signal phasing adopted with adjacent pedestrian phases activated;
- Adoption of delayed starts (of 3 seconds) for concurrent conflicting left turn/pedestrian through phases;
- Given the position of the stop line for the right turn lane on the southern approach, an inter-green of 8 seconds has applied for the phase change between Phase A and Phase B. All other phases have inter-green of 6 seconds; &
- A maximum cycle time of 120 seconds has been applied.

6.3 Analysis Results

Detailed SIDRA outputs are included as **Attachment 5**. However, the SIDRA movement results have been summarised and presented in Table 6-1. These are expressed in terms of the Degree of Saturation (DoS), the Maximum Average Delay at the intersection measured in seconds, the Level of Service (LoS) and the Critical Queue on each approach measured in metres.

Table 6-1: Summary of SIDRA Outputs for the Interim Intersection Layout Without 210 Gardner Road

Case	DOS	Maximum Average Delay (s)	LOS	95th Percentile Critical Queue (m)			
		Worst Movement		South	East	North	West
AM Peak-Hour							
Future Year 2035	86%	76 (RT – North Approach)	E	283	97	153	40
PM Peak-Hour							
Future Year 2035	93%	78 (RT – North Approach)	E	83	126	317	74

Whilst the interim intersection layout (without 210 Gardner Road) will operate slightly above the desired 90% threshold in terms of DoS in the weekday PM peak-hour period at future year 2035, the level of performance (including the queuing levels) estimated (in both peak-hour periods) is considered suitable in this instance given that the layout represents only an interim solution prior to the redevelopment of the land parcels at 210 Gardner Road and the future duplication of Gardner Road (following the redevelopment of the land parcel at 227 Gardner Road). In addition, it should be noted that the traffic generation and distribution methodology applied in the TIA is considered highly conservative. As noted previously, not all the traffic generated by the neighbourhood centre will be new trips. For instance, AGTM – Part 12, indicates that the traffic generation associated with shopping centres with a GFA up to 3,000m² typically comprises of only 50% new trips. Notwithstanding this, for the purposes of this TIA, it has been conservatively assumed that all traffic generated by the neighbourhood centre will constitute new trips, which will not be the case.

In addition, in order for all the development anticipated by the applicant to be delivered it will be necessary for the new eastern road connection (branching from the Gardner Road/Prebble Street traffic signal controlled intersection) to connect to Rochedale Road via Farley Road. Notwithstanding this, for the purposes of the TIA, it has been conservatively assumed that all traffic generated by the developments anticipated by the applicant (and others) will utilise Gardner Road to connect with the wider road network. In reality, it is expected that a reasonable proportion of traffic generated by the developments will utilise Rochedale Road. This will reduce the traffic volumes at the Gardner Road/Prebble Street traffic signal controlled intersection.

Subsequent traffic analysis (the results of which are included as **Attachment 6**) has confirmed that the interim intersection layout (without 210 Gardner Road) will operate within the desired 90% threshold in terms of DoS in the weekday AM and PM peak-hour periods at future year 2035 in the instance that only 75% of the traffic likely to be generated by the developments anticipated by the applicant (and others) was to utilise Gardner Road to connect with the wider road network. For ease of reference, the subsequent traffic analysis for this scenario has identified that the interim intersection layout operates at a DoS at or below 85% in both the weekday AM and PM peak-hour periods at future year 2035.

On the basis of the above, it is considered that the interim intersection layout (without 210 Gardner Road) will perform satisfactorily over the design horizon up to and including 2035.

7 TAPS Code

A response to the TAPS Code is included as **Attachment 7**.

8 Conclusion

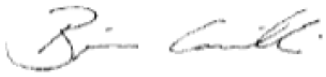
It is concluded from the TIA, that the interim intersection layout (without 210 Gardner Road) provides a safe and functional outcome that will perform satisfactorily over the design horizon up to and including 2035.

If you have any queries with regards to the information contained within this letter, please feel free to contact Andrew Riddles on (07) 3327 9500.

Yours sincerely,

Andrew Riddles
Senior Associate Director

Reviewed:

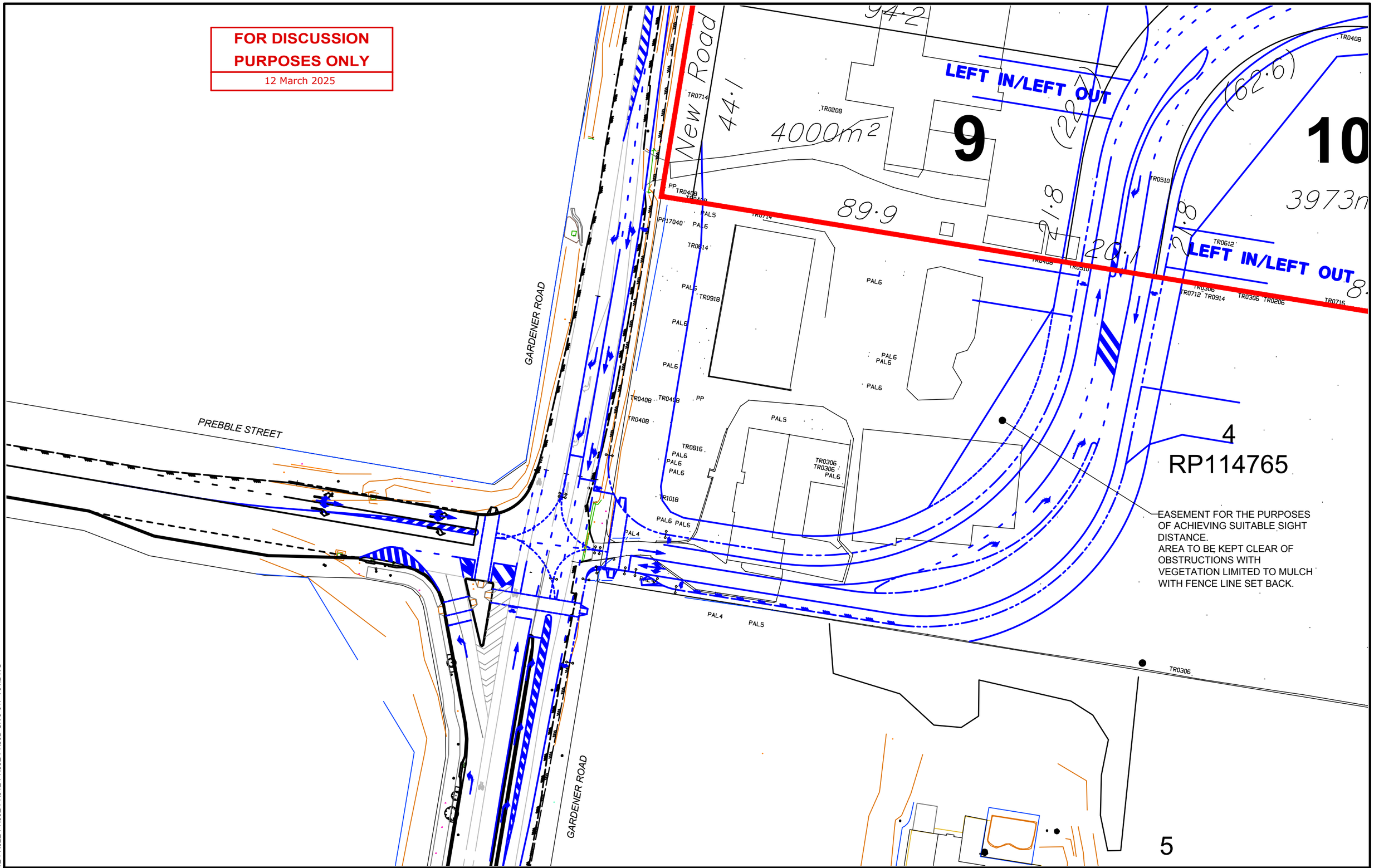


Brian Camilleri (RPEQ - 7577)
Principal Director
Colliers International Engineering
& Design (TTMC) Pty Ltd

Attachment 1 – Drawing No.’s 23BRT0408-PR30-36

FOR DISCUSSION PURPOSES ONLY

12 March 2025



REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
E	12-03-25	NORTHERN PEDESTRIAN CROSSING REMOVED & NORTHBOUND BIKE LANE KEPT	DSF	AR	BC
D	09-09-24	GENERAL REVISION	DSF	AR	RW
C	15-08-24	PROPERTY BOUNDARY EASEMENT REVISED	DSF	AR	RW
B	12-08-24	PRE-LODGEMENT DISCUSSION FEEDBACK GENERAL REVISION (R50m MINIMUM)	WMC	AR	RW
A	28-02-24	ORIGINAL ISSUE	WMC	AR	RW

SCALE 0 10 20 30 40m

SCALE 1:750 AT ORIGINAL SIZE

NORTH

CLIENT

ROCHEDALE DEVELOPMENT PARTNERS PTY LTD

Colliers International Engineering & Design (TTMC) Pty Ltd

ABN 65 010 868 621
LEVEL 8, 369 Ann Street, BRISBANE QLD 4000
P.O. BOX 12015, BRISBANE QLD 4003

T: (07) 3327 9500 F: (07) 3327 9501
E: ttmbris@ttmgroup.com.au W: www.ttmgroup.com.au

PROJECT
202 - 210 GARDNER ROAD, ROCHDALE

DRAWING TITLE
GARDNER RD / PREBBLE ST INTERSECTION UPGRADE
ROAD LAYOUT WITH NO WORKS ON SOUTHERN PROPERTY

PROJECT NUMBER	ORIGINAL SIZE
23BRT0408	A3
DRAWING NUMBER	REVISION
23BRT0408-PR30	E
DATE	SHEET
12 Mar 2025	1 OF 6

23BRT0408-PR30E-PR31E-PR32E-PR33E-PR34E-PR35E-PR36D-SK 3-01F V01.DWG

FOR DISCUSSION PURPOSES ONLY

12 March 2025

PREBBLE STREET

GARDENER ROAD

GARDENER ROAD

EASEMENT FOR THE PURPOSES OF ACHIEVING SUITABLE SIGHT DISTANCE. AREA TO BE KEPT CLEAR OF OBSTRUCTIONS WITH VEGETATION LIMITED TO MULCH WITH FENCE LINE SET BACK.

4.68

5.90

TR0814 PAL5 TR0918 PAL6 PAL6 PAL6 PAL6 PAL6 TR0408 TR0408 PP TR0408 PAL5 TR0816 PAL6 PAL6 PAL6 TR1018 PAL6 PAL6 PAL4 PAL4 PAL5 TR0306 TR0306 PAL6

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B	12-08-24	PRE-LODGEMENT DISCUSSION FEEDBACK GENERAL REVISION (R50m MINIMUM)	WMC	AR	RW
A	28-02-24	ORIGINAL ISSUE	WMC	AR	RW

SCALE 0 5 10 15 20 25m

SCALE 1:500 AT ORIGINAL SIZE

NORTH

CLIENT

ROCHEDALE DEVELOPMENT PARTNERS PTY LTD

Colliers International Engineering & Design (TTMC) Pty Ltd
ABN 65 010 868 621
LEVEL 8, 369 Ann Street, BRISBANE QLD 4000
P.O. BOX 12015, BRISBANE QLD 4003
T: (07) 3327 9500 F: (07) 3327 9501
E: ttmbris@ttmgroup.com.au W: www.ttmgroup.com.au

PROJECT
202 - 210 GARDNER ROAD, ROCHDALE

DRAWING TITLE
GARDNER RD / PREBBLE ST INTERSECTION UPGRADE
ROAD LAYOUT WITH NO WORKS ON SOUTHERN PROPERTY

PROJECT NUMBER	ORIGINAL SIZE
23BRT0408	A3
DRAWING NUMBER	REVISION
23BRT0408-PR31	E
DATE	SHEET
12 Mar 2025	2 OF 6

23BRT0408-PR30E-PR31E-PR32E-PR33E-PR34E-PR35E-PR36D-SK 3-01F V01.DWG

FOR DISCUSSION PURPOSES ONLY

12 March 2025

PREBBLE STREET

GARDENER ROAD

GARDENER ROAD

TR0814
PAL6
PAL5
TR0918
PAL6
PAL6
PAL6
PAL6
PAL6
TR0408
TR0408
PP
TR0408
PAL5
TR0816
PAL6
PAL6
PAL6
TR0306
TR0306
PAL6
TR1018
PAL6 PAL6
PAL4
PAL5
PAL4
PAL5

LEFT-TURN MOVEMENT
RESTRICTED TO 12.5m
HEAVY RIGID VEHICLE SIZE

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
E	12-03-25	NORTHERN PEDESTRIAN CROSSING REMOVED & NORTHBOUND BIKE LANE KEPT	DSF	AR	BC
D	09-09-24	GENERAL REVISION	DSF	AR	RW
C	15-08-24	PROPERTY BOUNDARY EASEMENT REVISED	DSF	AR	RW
B	12-08-24	PRE-LODGEMENT DISCUSSION FEEDBACK GENERAL REVISION (R50m MINIMUM)	WMC	AR	RW
A	28-02-24	ORIGINAL ISSUE	WMC	AR	RW

SCALE 0 5 10 15 20 25m

SCALE 1:500 AT ORIGINAL SIZE

NORTH

CLIENT

ROCHEDALE DEVELOPMENT PARTNERS PTY LTD

Colliers International Engineering & Design (TTMC) Pty Ltd
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PROJECT
202 - 210 GARDNER ROAD, ROCHDALE

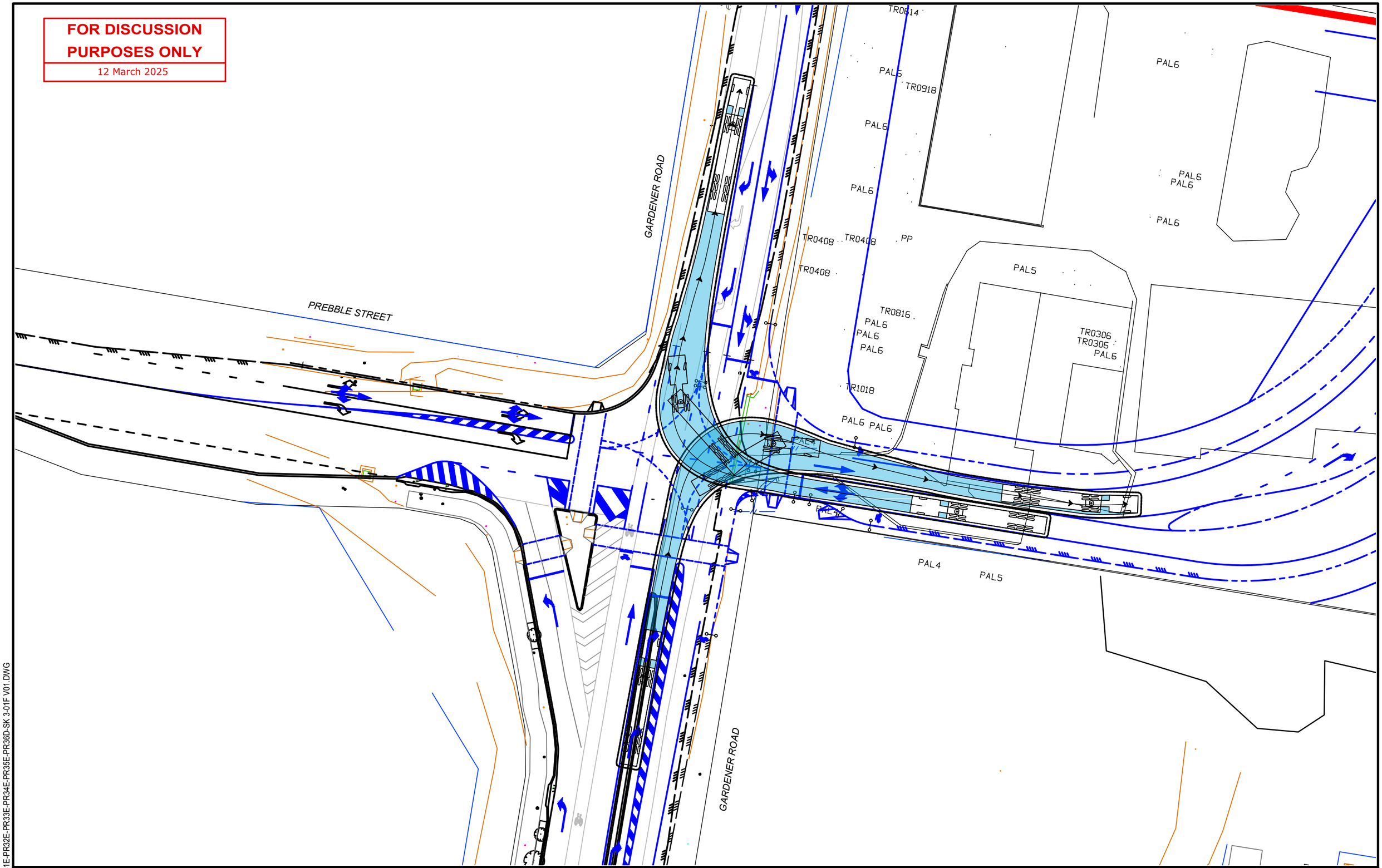
DRAWING TITLE
SWEPT PATH ANALYSIS
20m SEMI-TRAILER MANOEUVRING REQUIREMENTS

PROJECT NUMBER	ORIGINAL SIZE
23BRT0408	A3
DRAWING NUMBER	REVISION
23BRT0408-PR32	E
DATE	SHEET
12 Mar 2025	3 OF 6

23BRT0408-PR30E-PR31E-PR32E-PR33E-PR34E-PR35E-PR36D-SK 3-01F V01.DWG

FOR DISCUSSION PURPOSES ONLY

12 March 2025



REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
E	12-03-25	NORTHERN PEDESTRIAN CROSSING REMOVED & NORTHBOUND BIKE LANE KEPT	DSF	AR	BC
D	09-09-24	GENERAL REVISION	DSF	AR	RW
C	15-08-24	PROPERTY BOUNDARY EASEMENT REVISED	DSF	AR	RW
B	12-08-24	PRE-LODGEMENT DISCUSSION FEEDBACK GENERAL REVISION (R50m MINIMUM)	WMC	AR	RW
A	28-02-24	ORIGINAL ISSUE	WMC	AR	RW

SCALE 0 5 10 15 20 25m

SCALE 1:500 AT ORIGINAL SIZE

NORTH

CLIENT

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PROJECT
202 - 210 GARDNER ROAD, ROCHDALE

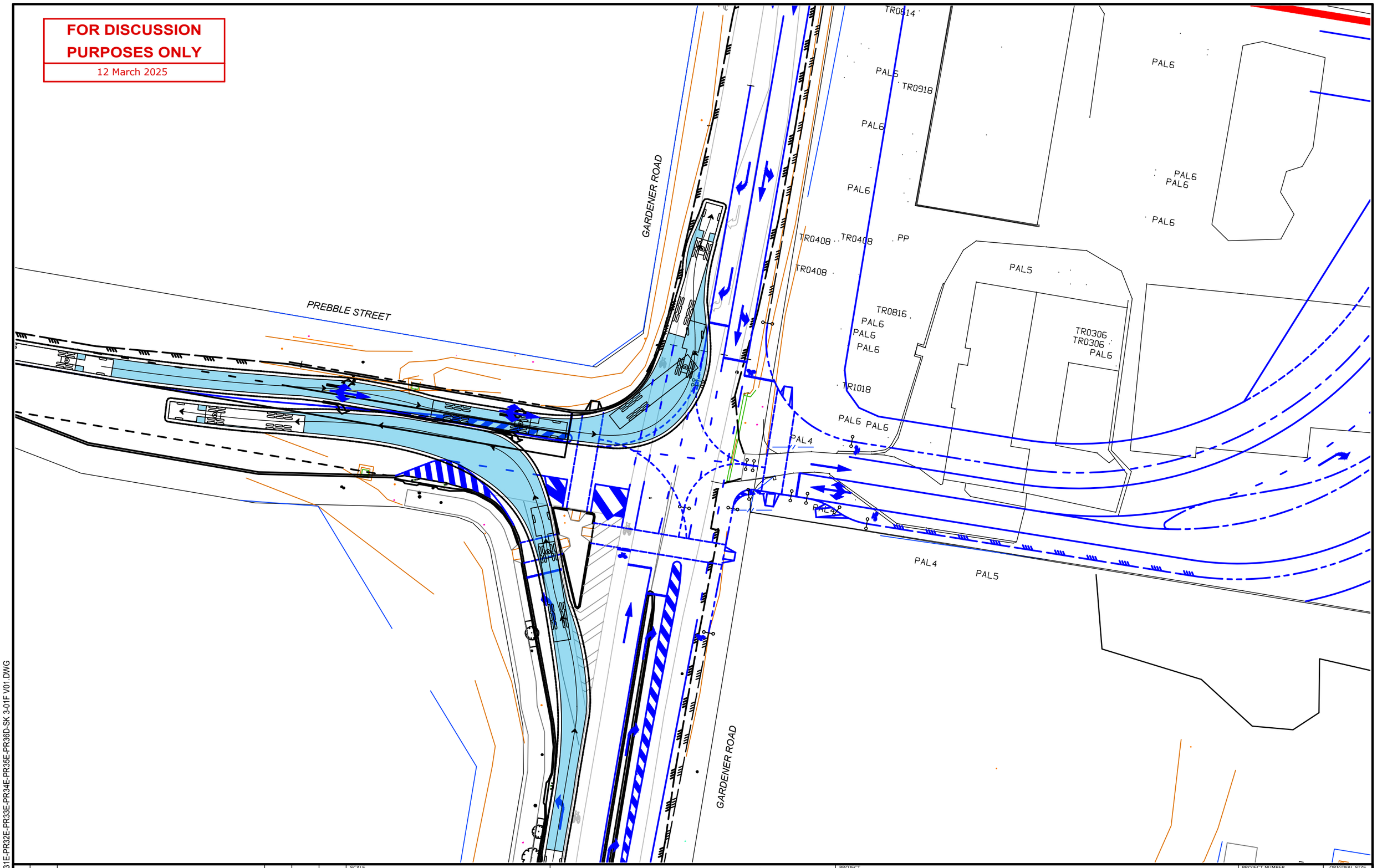
DRAWING TITLE
SWEPT PATH ANALYSIS
20m SEMI-TRAILER MANOEUVRING REQUIREMENTS

PROJECT NUMBER	ORIGINAL SIZE
23BRT0408	A3
DRAWING NUMBER	REVISION
23BRT0408-PR33	E
DATE	SHEET
12 Mar 2025	4 OF 6

23BRT0408-PR30E-PR31E-PR32E-PR33E-PR34E-PR35E-PR36D-SK 3-01F V01.DWG

FOR DISCUSSION PURPOSES ONLY

12 March 2025



REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
E	12-03-25	NORTHERN PEDESTRIAN CROSSING REMOVED & NORTHBOUND BIKE LANE KEPT	DSF	AR	BC
D	09-09-24	GENERAL REVISION	DSF	AR	RW
C	15-08-24	PROPERTY BOUNDARY EASEMENT REVISED	DSF	AR	RW
B	12-08-24	PRE-LODGEMENT DISCUSSION FEEDBACK GENERAL REVISION (R50m MINIMUM)	WMC	AR	RW
A	28-02-24	ORIGINAL ISSUE	WMC	AR	RW

SCALE 0 5 10 15 20 25m

SCALE 1:500 AT ORIGINAL SIZE

NORTH

CLIENT

ROCHEDALE DEVELOPMENT PARTNERS PTY LTD

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T: (07) 3327 9500 F: (07) 3327 9501
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PROJECT
202 - 210 GARDNER ROAD, ROCHDALE

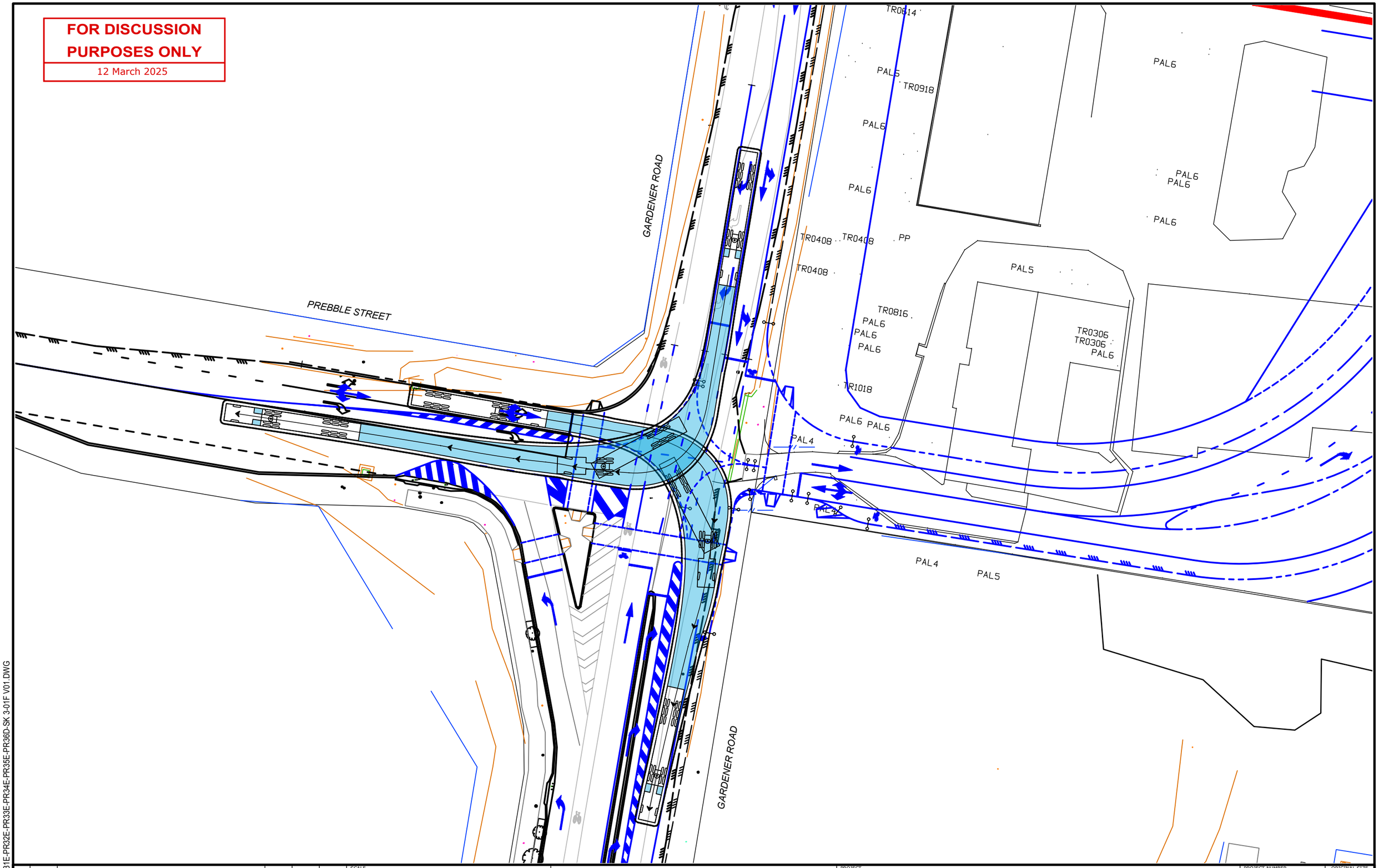
DRAWING TITLE
SWEPT PATH ANALYSIS
20m SEMI-TRAILER MANOEUVRING REQUIREMENTS

PROJECT NUMBER	ORIGINAL SIZE
23BRT0408	A3
DRAWING NUMBER	REVISION
23BRT0408-PR34	E
DATE	SHEET
12 Mar 2025	5 OF 6

23BRT0408-PR30E-PR31E-PR32E-PR33E-PR34E-PR35E-PR36D-SK 3-01F V01.DWG

FOR DISCUSSION PURPOSES ONLY

12 March 2025



REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
E	12-03-25	NORTHERN PEDESTRIAN CROSSING REMOVED & NORTHBOUND BIKE LANE KEPT	DSF	AR	BC
D	09-09-24	GENERAL REVISION	DSF	AR	RW
C	15-08-24	PROPERTY BOUNDARY EASEMENT REVISED	DSF	AR	RW
B	12-08-24	PRE-LODGEMENT DISCUSSION FEEDBACK GENERAL REVISION (R50m MINIMUM)	WMC	AR	RW
A	28-02-24	ORIGINAL ISSUE	WMC	AR	RW

SCALE 0 5 10 15 20 25m

SCALE 1:500 AT ORIGINAL SIZE

NORTH

CLIENT

ROCHEDALE DEVELOPMENT PARTNERS PTY LTD

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PROJECT
202 - 210 GARDNER ROAD, ROCHDALE

DRAWING TITLE
SWEPT PATH ANALYSIS
20m SEMI-TRAILER MANOEUVRING REQUIREMENTS

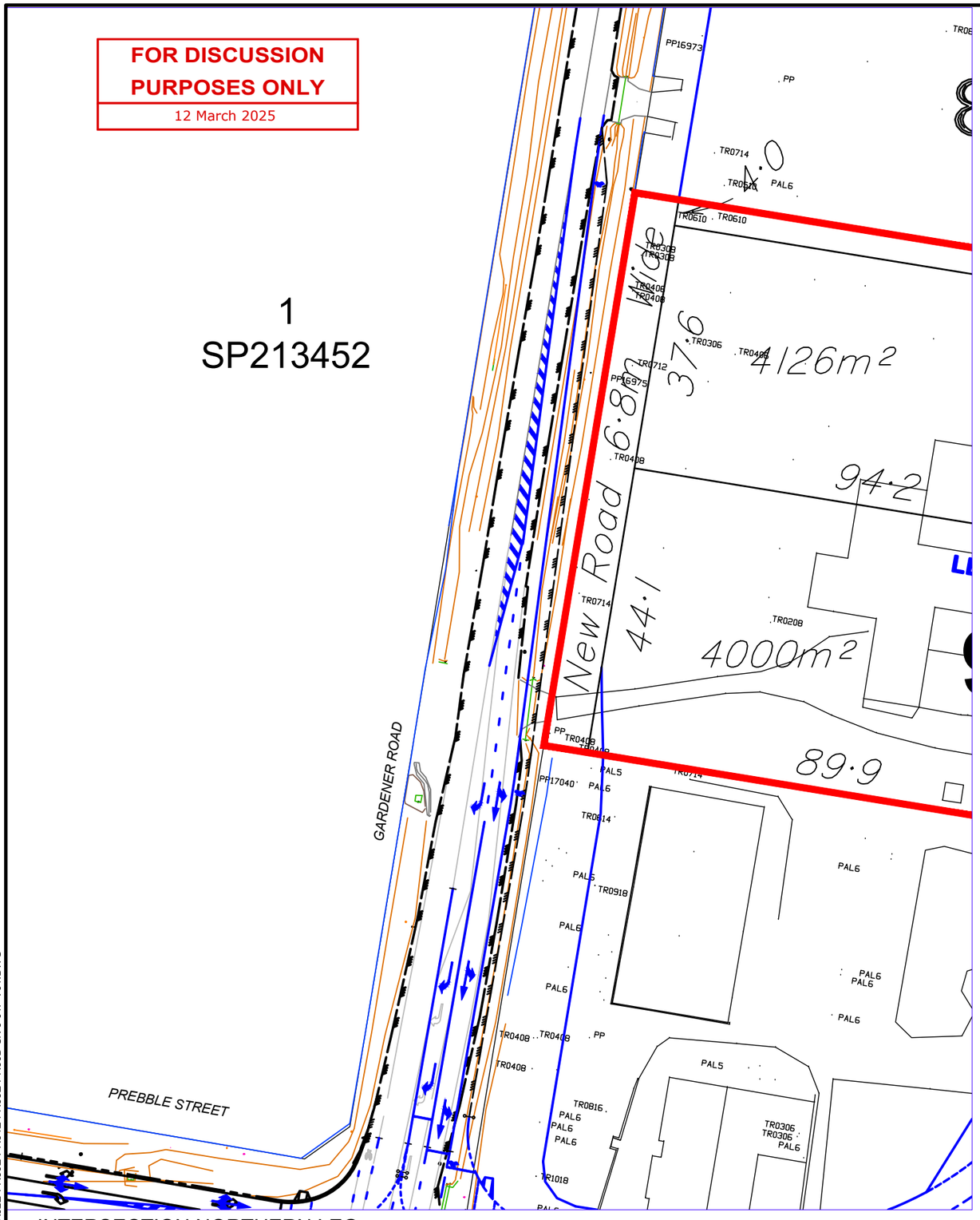
PROJECT NUMBER	ORIGINAL SIZE
23BRT0408	A3
DRAWING NUMBER	REVISION
23BRT0408-PR35	E
DATE	SHEET
12 Mar 2025	6 OF 6

23BRT0408-PR30E-PR31E-PR32E-PR33E-PR34E-PR35E-PR36D-SK 3-01F V01.DWG

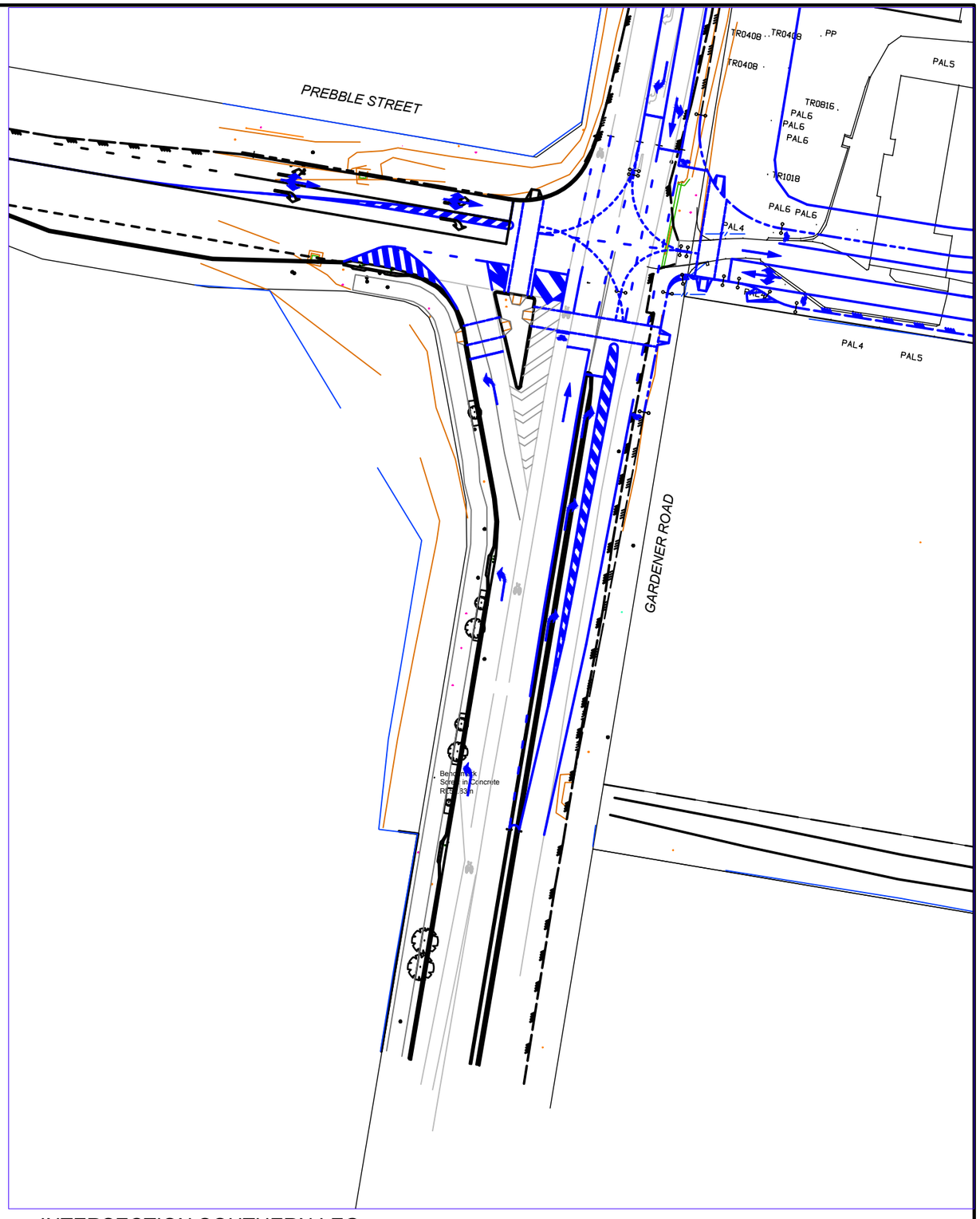
FOR DISCUSSION PURPOSES ONLY

12 March 2025

1
SP213452



INTERSECTION NORTHERN LEG



INTERSECTION SOUTHERN LEG

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
D	12-03-25	NORTHERN PEDESTRIAN CROSSING REMOVED & NORTHBOUND BIKE LANE KEPT	DSF	AR	BC
C	09-09-24	GENERAL REVISION	DSF	AR	RW
B	15-08-24	PROPERTY BOUNDARY EASEMENT REVISED	DSF	AR	RW
A	12-08-24	ORIGINAL ISSUE	DSF	AR	RW

SCALE
0 10 20 30 40m
SCALE 1:750 AT ORIGINAL SIZE

NORTH

CLIENT
ROCHEDALE DEVELOPMENT PARTNERS PTY LTD

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ABN 65 010 868 621
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P.O. BOX 12015, BRISBANE QLD 4003

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PROJECT
202 - 210 GARDNER ROAD, ROCHDALE

DRAWING TITLE
GARDNER RD / PREBBLE ST INTERSECTION UPGRADE (NORTH)
ROAD LAYOUT WITH NO WORKS ON SOUTHERN PROPERTY

PROJECT NUMBER	ORIGINAL SIZE
23BRT0408	A3
DRAWING NUMBER	REVISION
23BRT0408-PR36	D
DATE	SHEET
12 Mar 2025	1 OF 1

23BRT0408-PR30E-PR31E-PR32E-PR33E-PR34E-PR35E-PR36D-SK 3-01F V01.DWG

Attachment 2 – Drawing No.’s 23BRT0408-31, 42, 43 & 52

GARDNER ROAD

PREBBLE ST

NEW ROAD

EASEMENT FOR THE PURPOSES OF ACHIEVING SUITABLE SIGHT DISTANCE.
AREA TO BE KEPT CLEAR OF OBSTRUCTIONS WITH VEGETATION LIMITED TO MULCH WITH FENCE LINE SET BACK.

DESIGN OF MEDIAN TO BE RESOLVED AS PART OF DETAILED DESIGN STAGE

LEFT

3

4

RP114

PAL6 PAL5 PAL4 TR0408 TR0306 TR0712 TR0914 TR0612 TR0816 TR1018 TR0918 PP

23BRT0408-30D-31G-32C-33C-34C-35C-36C-37C-38D-39D-40C-41C-42F TO 51C V00.DWG

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
G	12-03-25	NORTHERN PEDESTRIAN CROSSING REMOVED & NORTHBOUND BIKE LANE KEPT	DSF	AR	BC
F	09-09-24	GENERAL REVISION	DSF	AR	AR
E	29-08-24	GENERAL REVISION	DSF	AR	AR
D	23-05-24	PREBBLE STREET NORTHEASTERN PROP. BDY. REVISED	DSF	AR	AR
C	28-11-23	LAYOUT AMENDED TO BCC RFI	ALS	AR	BC
B	17-11-23	LAYOUT AMENDED TO BCC RFI	WMC	AR	AR
A	18-10-23	ORIGINAL ISSUE	WMC	AR	AR

SCALE 0 5 10 15 20 25m
SCALE 1:500 AT ORIGINAL SIZE

NORTH

CLIENT
ROCHEDALE DEVELOPMENT PARTNERS PTY LTD

TTM CONSULTING PTY LTD
ABN 65 010 868 621
LEVEL 8, 369 Ann Street, BRISBANE QLD 4000
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T: (07) 3327 9500 F: (07) 3327 9501
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PROJECT
202 - 210 GARDNER ROAD, ROCHDALE

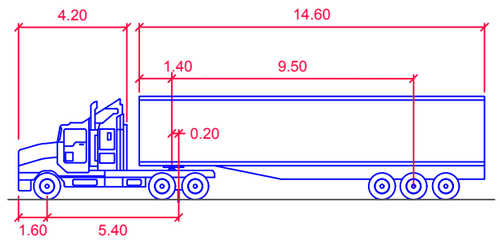
DRAWING TITLE
GARDNER RD / PREBBLE STREET
ROAD LAYOUT WITH WORKS ON SOUTHERN PROPERTY
(INCORPORATING 210 GARDNER ROAD)

PROJECT NUMBER	ORIGINAL SIZE
23BRT0408	A3
DRAWING NUMBER	REVISION
23BRT0408-31	G
DATE	SHEET
12 Mar 2025	1 OF 1

PREBBLE ST

GARDNER ROAD

NEW ROAD



AV - (20m) Articulated Vehicle

Overall Length	20.000m
Overall Width	2.500m
Track Width	2.500m
Lock-to-lock time	6.00s
Steering Angle	28.3°
Articulating Angle	72.0°
Design Speed Forward	15.00km/h
Clearance Envelope	0.500m

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
F	12-03-25	NORTHERN PEDESTRIAN CROSSING REMOVED & NORTHBOUND BIKE LANE KEPT	DSF	AR	BC
E	09-09-24	GENERAL REVISION	DSF	AR	AR
D	29-08-24	GENERAL REVISION	DSF	AR	AR
C	23-05-24	PREBBLE STREET NORTHEASTERN PROP. BDY. REVISED	DSF	AR	AR
B	17-11-23	LAYOUT AMENDED TO BCC RFI	WMC	AR	AR
A	18-10-23	ORIGINAL ISSUE	WMC	AR	AR

SCALE 0 5 10 15 20 25m
SCALE 1:500 AT ORIGINAL SIZE

NORTH

CLIENT
ROCHEDALE DEVELOPMENT PARTNERS PTY LTD

TTM CONSULTING PTY LTD
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PROJECT
202 - 210 GARDNER ROAD, ROCHDALE

DRAWING TITLE
SWEPT PATH ANALYSIS
20m SEMI-TRAILER MANOEUVRING REQUIREMENTS

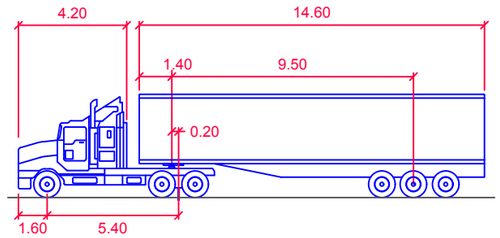
PROJECT NUMBER	ORIGINAL SIZE
23BRT0408	A3
DRAWING NUMBER	REVISION
23BRT0408-42	F
DATE	SHEET
12 Mar 2025	1 OF 1

23BRT0408-30D-31G-32C-33C-34C-35C-36C-37C-38D-39D-40C-41C-42F TO 51C V00.DWG

PREBBLE ST

GARDNER ROAD

NEW ROAD



AV - (20m) Articulated Vehicle

Overall Length	20.000m
Overall Width	2.500m
Track Width	2.500m
Lock-to-lock time	6.00s
Steering Angle	28.3°
Articulating Angle	72.0°
Design Speed Forward	15.00km/h
Clearance Envelope	0.500m

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
F	12-03-25	NORTHERN PEDESTRIAN CROSSING REMOVED & NORTHBOUND BIKE LANE KEPT	DSF	AR	BC
E	09-09-24	GENERAL REVISION	DSF	AR	AR
D	29-08-24	GENERAL REVISION	DSF	AR	AR
C	23-05-24	PREBBLE STREET NORTHEASTERN PROP. BDY. REVISED	DSF	AR	AR
B	17-11-23	LAYOUT AMENDED TO BCC RFI	WMC	AR	AR
A	18-10-23	ORIGINAL ISSUE	WMC	AR	AR

SCALE 0 5 10 15 20 25m

SCALE 1:500 AT ORIGINAL SIZE

NORTH

CLIENT

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PROJECT
202 - 210 GARDNER ROAD, ROCHDALE

DRAWING TITLE
SWEPT PATH ANALYSIS
20m SEMI-TRAILER MANOEUVRING REQUIREMENTS

PROJECT NUMBER	ORIGINAL SIZE
23BRT0408	A3
DRAWING NUMBER	REVISION
23BRT0408-43	F
DATE	SHEET
12 Mar 2025	1 OF 1

23BRT0408-30D-31G-32C-33C-34C-35C-36C-37C-38D-39D-40C-41C-42F TO 51C V00.DWG

1
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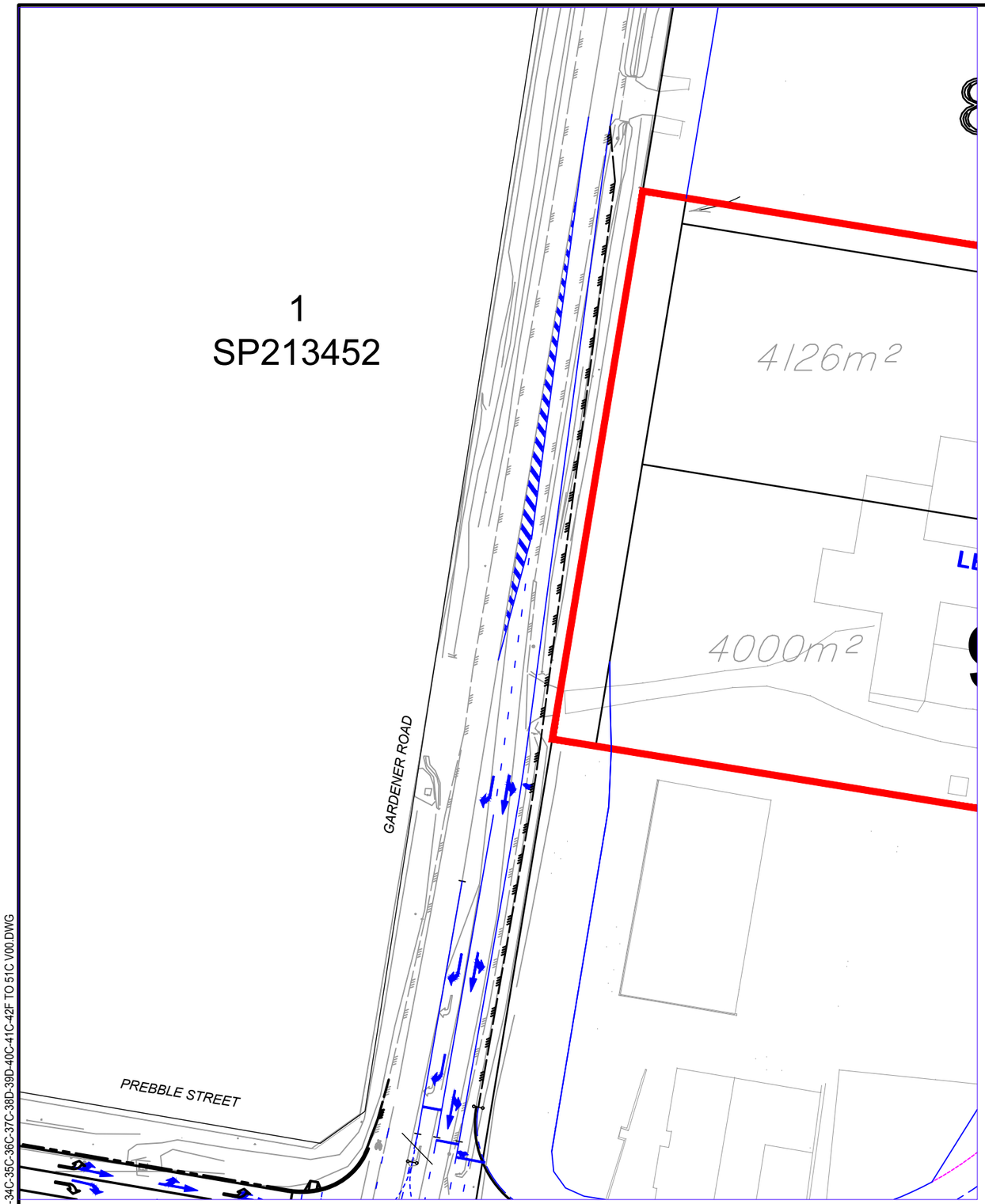
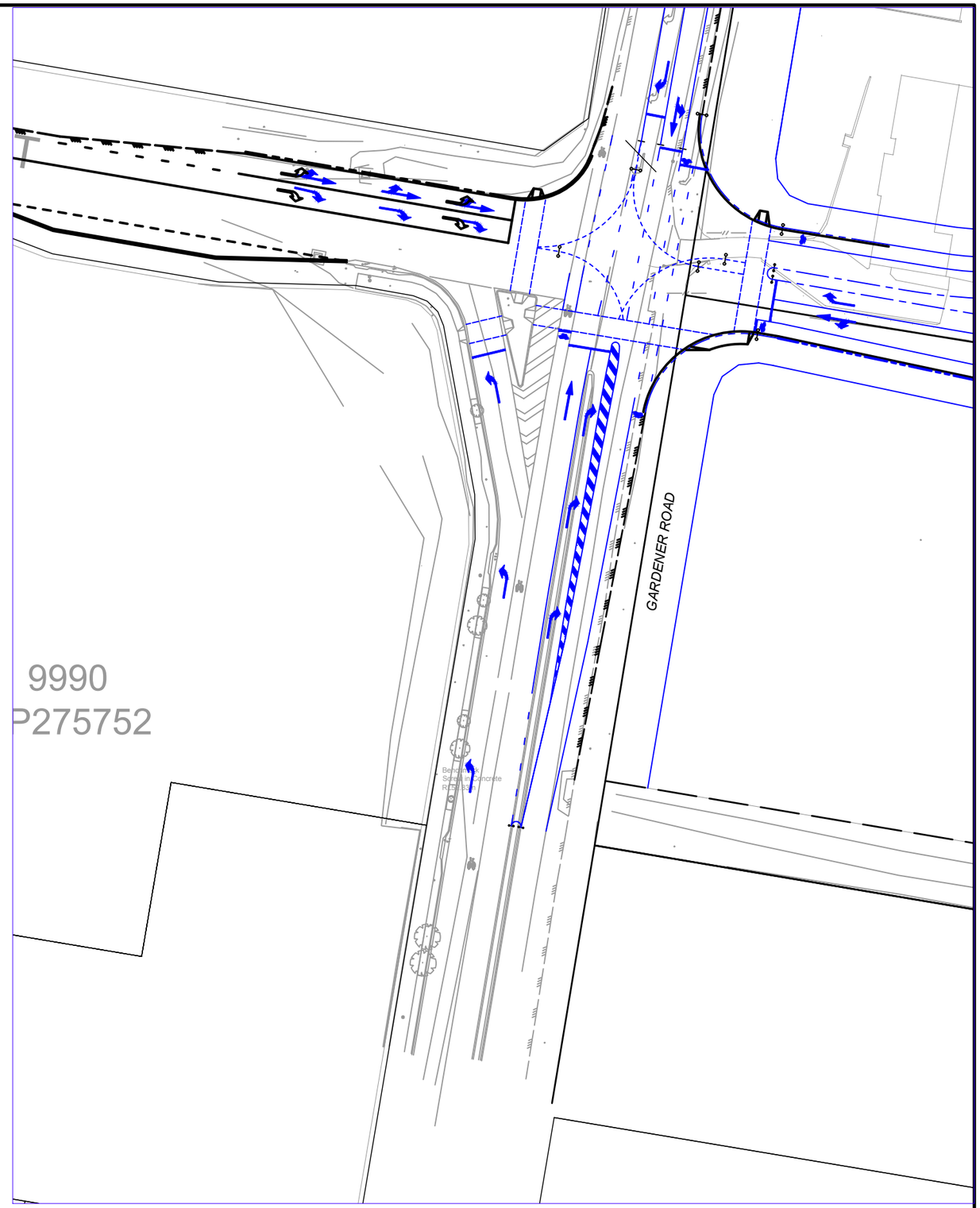


INTERSECTION NORTHERN LEG



INTERSECTION SOUTHERN LEG

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
C	12-03-25	NORTHERN PEDESTRIAN CROSSING REMOVED & NORTHBOUND BIKE LANE KEPT	DSF	AR	BC
B	09-09-24	ORIGINAL ISSUE	DSF	AR	AR
A	29-08-24	ORIGINAL ISSUE	DSF	AR	AR

SCALE 0 5 10 15 20 25m
SCALE 1:500 AT ORIGINAL SIZE

NORTH

CLIENT
ROCHEDALE DEVELOPMENT PARTNERS PTY LTD

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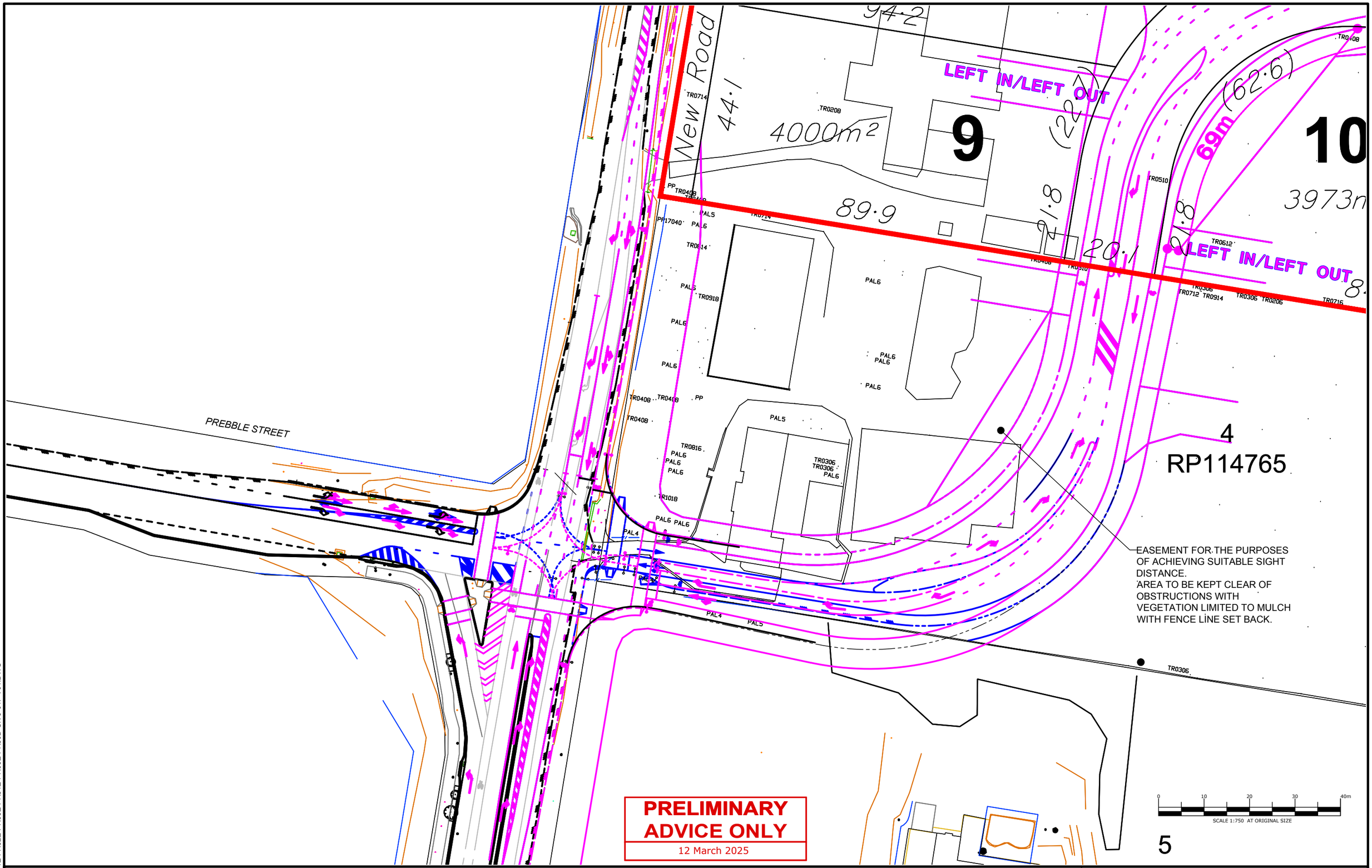
PROJECT
202 - 210 GARDNER ROAD, ROCHDALE

DRAWING TITLE
GARDNER RD / PREBBLE ST (NORTH & SOUTH)
ROAD LAYOUT WITH WORKS ON SOUTHERN PROPERTY
(INCORPORATING 210 GARDNER ROAD)

PROJECT NUMBER	ORIGINAL SIZE
23BRT0408	A3
DRAWING NUMBER	REVISION
23BRT0408-52	C
DATE	SHEET
12 Mar 2025	1 OF 1

23BRT0408-30D-31G-32C-33C-34C-35C-36C-37C-38D-39D-40C-41C-42F TO 51C V00.DWG

Attachment 3 – Drawing No. 23BRT0408-SK 3-01



23BRT0408-SK 3-01 RevF

INTERIM LAYOUT WITH 210 GARDNER ROAD (MAGENTA) OVERLAYED OVER INTERIM LAYOUT WITHOUT 210 GARDNER ROAD

REF: 202 - 210 GARDENER ROAD, ROCHEDALE

Colliers International Engineering & Design (TTMC) Pty Ltd
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23BRT0408-PR30E-PR31E-PR32E-PR33E-PR34E-PR35E-PR36D-SK 3-01F V01.DWG

Attachment 4 – Civil Engineering Plans

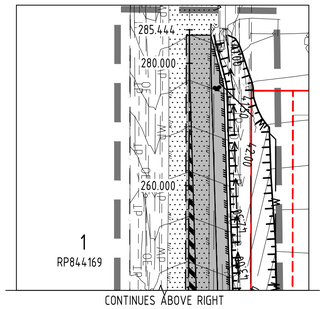
LEGEND

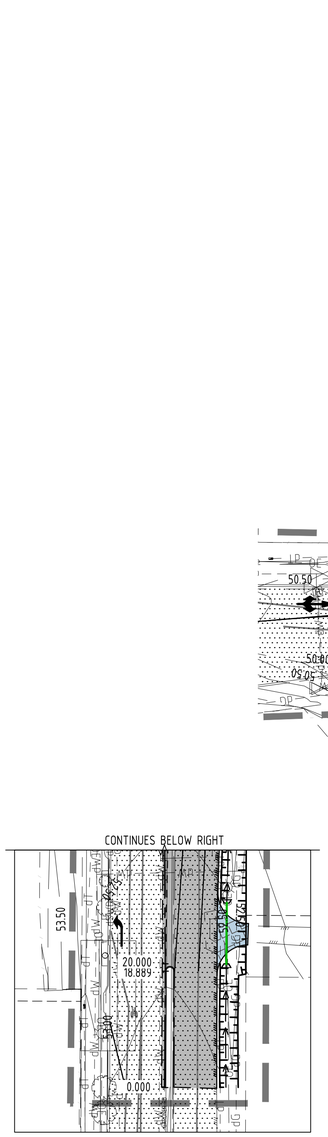
- SITE BOUNDARY
- PROPOSED ROAD RESUMPTION LINE
- EXISTING PROPERTY BOUNDARY
- EXISTING EASEMENT BOUNDARY
- EXISTING NOMINAL KERB LINE
- EXISTING EDGE OF BITUMEN
- EXISTING ROAD CENTERLINE
- SWD — EXISTING STORMWATER DRAINAGE
- dS — EXISTING SEWER (RECORDS)
- dW — EXISTING WATER (RECORDS)
- OE — EXISTING OVERHEAD ELECTRICITY
- dT — EXISTING TELECOMMUNICATIONS (RECORDS)
- ABANDONED SERVICE
- EXISTING BATTER
- EXISTING FENCE
- LIMIT OF WORKS
- SWD — PROPOSED STORMWATER DRAINAGE
- SWD — PREVIOUS STAGE STORMWATER DRAINAGE
- PROPOSED BIORETENTION TREE PITS
- S — PROPOSED SEWER MAIN
- S — PREVIOUS STAGE SEWER
- W — PROPOSED WATER
- W — PREVIOUS STAGE WATER
- PROPOSED ROAD CENTRE LINE
- PREVIOUS STAGE ROAD CENTRE LINE
- EXISTING ROAD
- PROPOSED 1.2m WIDE FOOTPATH IN ACCORDANCE WITH BCC STD DRG. BSD-5201
- PROPOSED ROAD PAVEMENT
- PROPOSED DRIVEWAY CROSSOVER
- PROPOSED RURAL DRIVEWAY CROSSOVER
- PROPOSED EASEMENTS
- TE — PROPOSED 'TYPE E' BARRIER KERB AND CHANNEL IN ACCORDANCE WITH BCC STD DRG BSD-2001
- TEK — PROPOSED 'TYPE E' BARRIER KERB ONLY IN ACCORDANCE WITH BCC STD DRG BSD-2001
- SH — PROPOSED EDGE OF SHOULDER
- PREVIOUS STAGE KERB NOMINAL LINE
- PROPOSED TEMPORARY SWALE
- PROPOSED 1% AEP FLOOD LINE
- EXISTING WATERWAY FRINGE (10m)
- EXISTING WATERWAY CORE (30m)

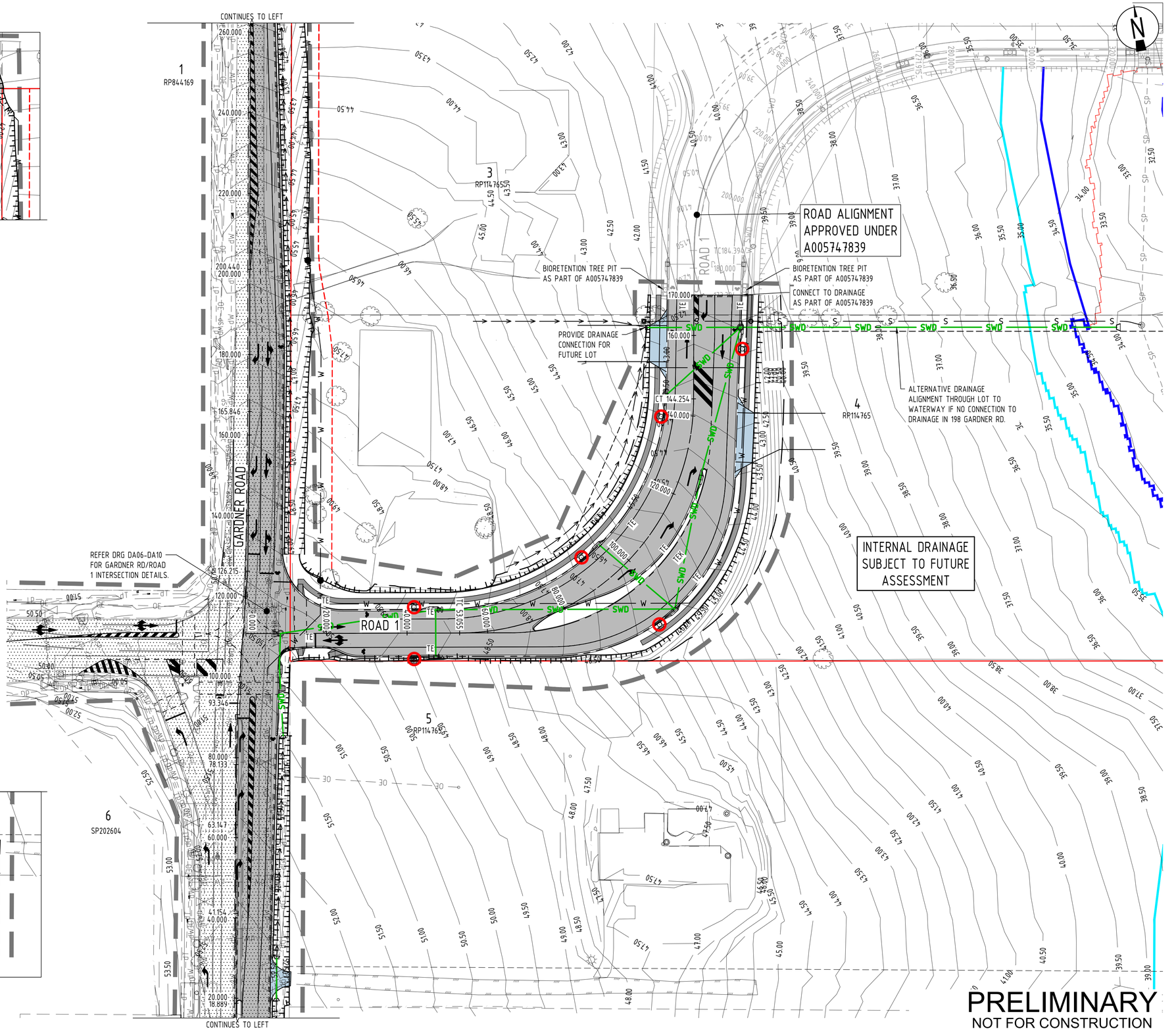
NOTES

1. FOR ROADWORKS LONGITUDINAL SECTIONS REFER DRG No. DA03.
2. FOR ROADWORKS AND DRAINAGE TYPICAL CROSS SECTION REFER DRG No. DA03.

ALL DETAILS SHOWN ARE SUBJECT TO FURTHER DETAILED DESIGN







PRELIMINARY
NOT FOR CONSTRUCTION

Rev	Date	Description	By	Chk
02	18.03.25	PRELIMINARY - ISSUED FOR INFORMATION	CM	ML
01	27.08.24	PRELIMINARY - ISSUED FOR INFORMATION	LDV	ML

0 10 20 30m
SCALE 1:500
AT ORIGINAL SIZE (A1)

ADG
T:1300 657 402 E: info@adgce.com W: www.adgce.com
Quality Assurance ISO 9001:2015 | Work Health Safety ISO 45001:2018
Environmental Management ISO 14001:2015

Client: PARTNERS IN PROPERTY QLD PTY LTD

Project Name: 202-210 GARDNER ROAD ROCHEDALE, QLD, 4123

Discipline		Status
CIVIL		PRELIMINARY
Designed By	Checked By	Approved By
LDV	ML	ML
Project No.	Drawn By	Scale at A1
27292	LDV	1:500

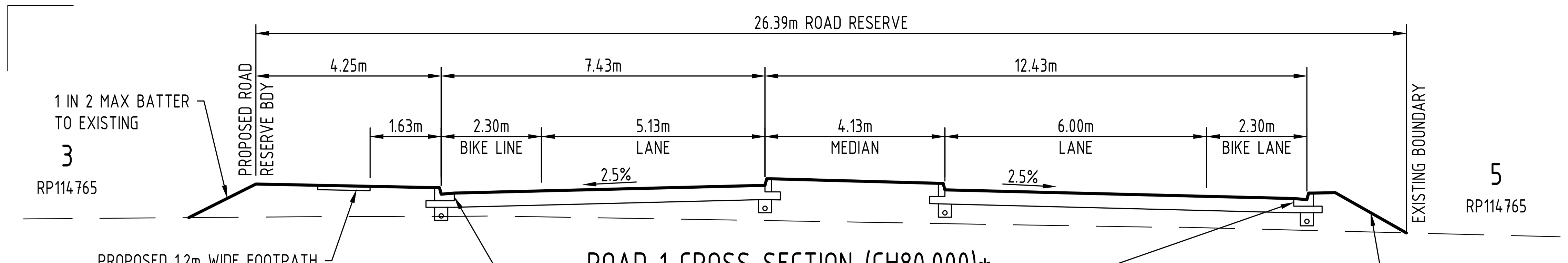
Title: PRELIMINARY ROADWORK LAYOUT PLAN

Drawing No.: DA02

Revision: 02

FULL SIZE ON ORIGINAL 0 10 20 30 40 50 60 70 80 90 100mm

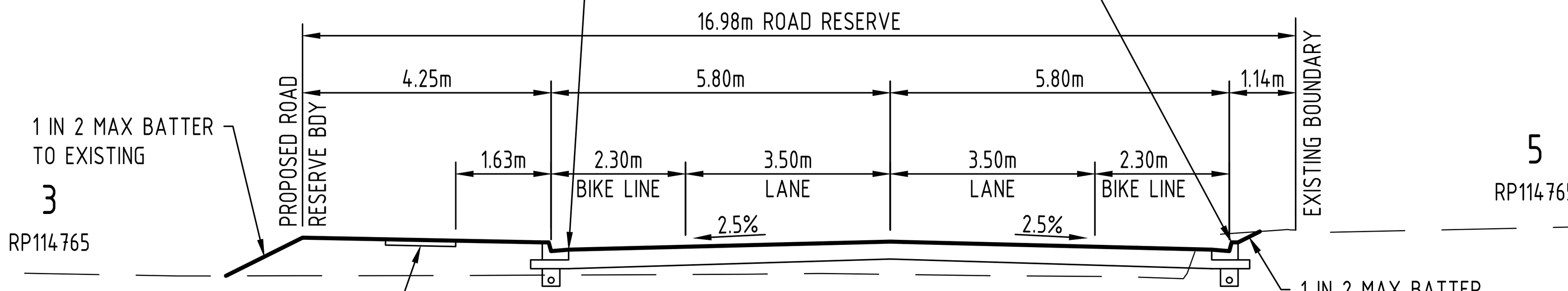
PLOT DATE: 3/18/2025 7:27 AM FILENAME: J:\QLC\27000\27292\CIVIL\DWG\27292_DA02_PRELIMINARY ROADWORK LAYOUT PLAN.DWG



ROAD 1 CROSS SECTION (CH80.000)*

SCALE 1:100

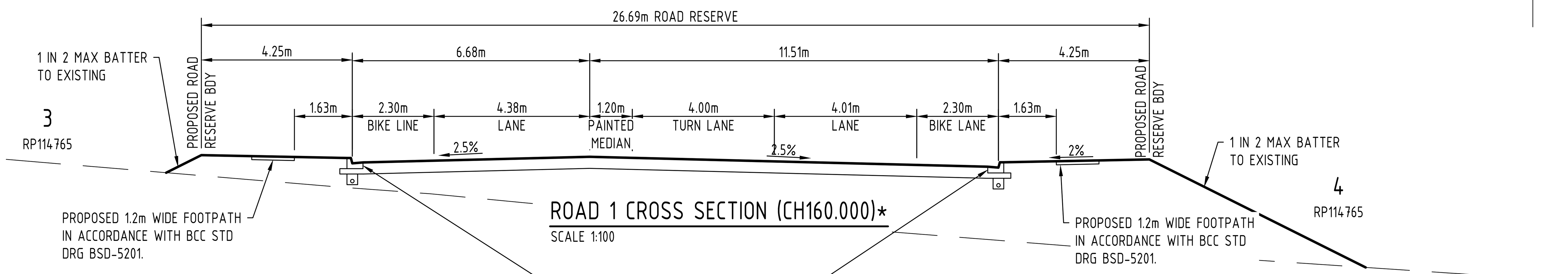
PROPOSED TYPE 'E' KERB & CHANNEL IN ACCORDANCE WITH BCC STD DRG BSD-2001 INCLUDING SUBSOIL DRAINS IN ACCORDANCE WITH BCC STD DRG BSD-2041.



ROAD 1 CROSS SECTION (CH40.000)*

SCALE 1:100

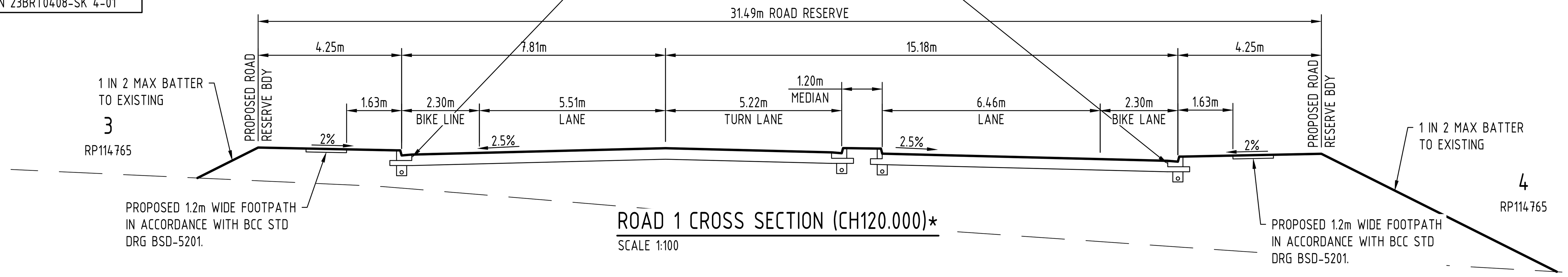
* LANE WIDTHS VARY TO BE IN ACCORDANCE WITH TTM INTERIM LAYOUT PLAN 23BRT0408-SK 4-01



ROAD 1 CROSS SECTION (CH160.000)*

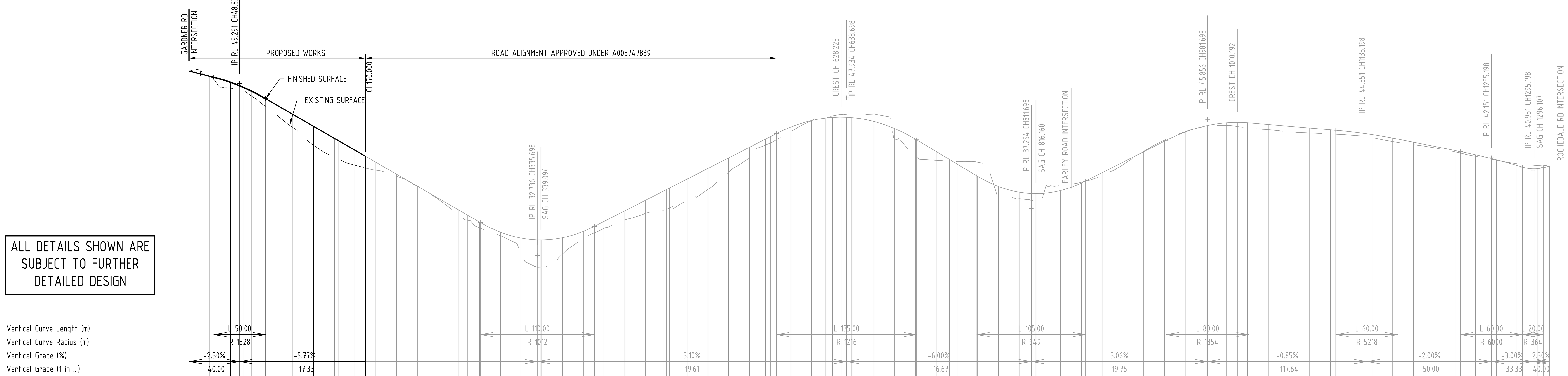
SCALE 1:100

PROPOSED TYPE 'E' KERB & CHANNEL IN ACCORDANCE WITH BCC STD DRG BSD-2001 INCLUDING SUBSOIL DRAINS IN ACCORDANCE WITH BCC STD DRG BSD-2041.



ROAD 1 CROSS SECTION (CH120.000)*

SCALE 1:100



ALL DETAILS SHOWN ARE SUBJECT TO FURTHER DETAILED DESIGN

DATUM RL17.000

CHAINAGE	CUT / FILL DEPTH	DESIGN LEVELS ON ROAD CL	EXISTING SURFACE ON ROAD CL
0.000	-0.098	50.512	50.611
20.000	-0.249	50.012	50.261
23.832	0.187	49.916	49.730
40.000	0.561	49.427	48.866
48.832	0.279	49.087	48.808
53.055	0.291	48.907	48.615
60.000	0.466	48.584	48.118
73.832	0.740	47.849	47.109
80.000	0.809	47.493	46.683
100.000	1.257	46.338	45.081
120.000	1.826	45.184	43.358
140.000	1.832	44.030	42.197
144.254	1.788	43.784	41.997
160.000	1.443	42.876	41.432
170.000	1.140	42.299	41.159
180.000	0.764	41.721	40.957
181.092	0.714	41.658	40.944
200.000	0.194	40.567	40.373
220.000	-0.027	39.413	39.440
240.000	0.101	38.259	38.158
260.000	0.506	37.104	36.599
268.613	0.480	36.607	36.127
280.000	0.558	35.950	35.393
280.698	0.547	35.910	35.363
300.000	0.338	34.980	34.642
320.000	1.432	34.405	32.973
335.698	2.646	34.230	31.585
339.094	2.627	34.225	31.598
340.000	2.623	34.225	31.602
360.000	1.562	34.441	32.879
380.000	0.627	35.052	34.425
390.698	0.626	35.541	34.914
400.000	0.674	36.015	35.341
420.000	0.882	37.035	36.153
440.000	1.260	38.055	36.795
456.746	1.820	38.909	37.090
460.000	1.917	39.075	37.158
462.962	1.916	39.226	37.310
480.000	2.044	40.095	38.051
500.000	2.023	41.115	39.092
520.000	1.368	42.135	40.767
540.000	1.019	43.155	42.136
555.715	0.573	43.956	43.384
560.000	0.610	44.175	43.565
560.489	0.614	44.200	43.586
566.198	0.595	44.491	43.896
580.000	0.455	45.117	44.661
600.000	0.014	45.745	45.731
613.744	-0.039	45.987	46.026
620.000	-0.139	46.045	46.184
628.225	-0.255	46.073	46.328
633.698	-0.243	46.060	46.303
638.192	-0.247	46.032	46.279
640.000	-0.269	46.016	46.285
660.000	-0.705	45.658	46.363
680.000	0.976	44.971	43.995
700.000	1.624	43.955	42.331
701.198	1.652	43.884	42.231
720.000	0.853	42.755	41.903
733.068	0.142	41.971	41.829
740.000	-0.241	41.555	41.796
759.198	-1.336	40.404	41.740
760.000	-1.366	40.356	41.722
780.000	1.087	39.383	38.296
800.000	0.640	38.832	38.193
811.404	0.669	38.707	38.038
811.698	0.658	38.705	38.047
816.160	0.733	38.695	37.962
820.000	0.830	38.703	37.873
840.000	-0.483	38.994	39.477
860.000	-0.086	39.707	39.793
864.198	0.013	39.910	39.897
880.000	0.280	40.710	40.430
900.000	0.250	41.722	41.472
920.000	-0.036	42.734	42.769
940.000	-0.110	43.746	43.856
941.698	-0.109	43.832	43.941
960.000	-0.032	44.634	44.666
980.000	0.056	45.228	45.172
981.698	0.067	45.265	45.197
1000.000	0.251	45.526	45.275
1010.192	0.394	45.564	45.170
1020.000	0.489	45.529	45.040
1021.698	0.499	45.516	45.016
1040.000	0.497	45.360	44.863
1060.000	0.536	45.190	44.654
1080.000	0.476	45.020	44.544
1100.000	0.395	44.850	44.455
1105.198	0.379	44.806	44.426
1120.000	0.328	44.659	44.331
1135.198	0.278	44.465	44.186
1140.000	0.284	44.394	44.110
1160.000	0.340	44.052	43.712
1165.198	0.328	43.951	43.623
1180.000	0.241	43.655	43.414
1200.000	0.141	43.255	43.114
1220.000	0.130	42.855	42.725
1225.198	0.139	42.751	42.612
1240.000	0.145	42.437	42.291
1255.198	0.067	42.076	42.008
1260.000	0.036	41.954	41.918
1280.000	-0.167	41.404	41.572
1285.198	-0.262	41.251	41.513
1295.198	-0.353	41.088	41.441
1296.107	-0.347	41.087	41.434
1300.000	-0.296	41.108	41.404
1305.198	-0.178	41.201	41.378
1311.228		41.352	

ROAD 1 - LONGITUDINAL SECTION

SCALE HORIZONTAL 1 : 2000
VERTICAL 1 : 200

PRELIMINARY
NOT FOR CONSTRUCTION

Rev	Date	Description	By	Chk
02	18.03.25	PRELIMINARY - ISSUED FOR INFORMATION	CM	ML
01	27.08.24	PRELIMINARY - ISSUED FOR INFORMATION	LDV	ML

SCALE 1:100 (0 1 2 3 4 5m)

SCALE 1:200 VERTICAL (0 50 100m)
SCALE 1:2000 HORIZONTAL (0 2 4 6 8 10m)

AT ORIGINAL SIZE (A1)

ADG
T:1300 657 402 E: info@adgce.com W: www.adgce.com
Quality Assurance ISO 9001:2015 | Work Health Safety ISO 45001:2018
Environmental Management ISO 14001:2015

Client: PARTNERS IN PROPERTY QLD PTY LTD

Project Name: 202-210 GARDNER ROAD ROCHEDALE, QLD, 4123

Discipline		Status
CIVIL		PRELIMINARY
Designed By: LDV	Checked By: ML	Approved By: ML
Project No.: 27292	Drawn By: LDV	Scale at A1: AS SHOWN

Title: PRELIMINARY ROAD 1 LONGITUDINAL AND TYPICAL CROSS SECTION

Drawing No.: DA03 | Revision: 02

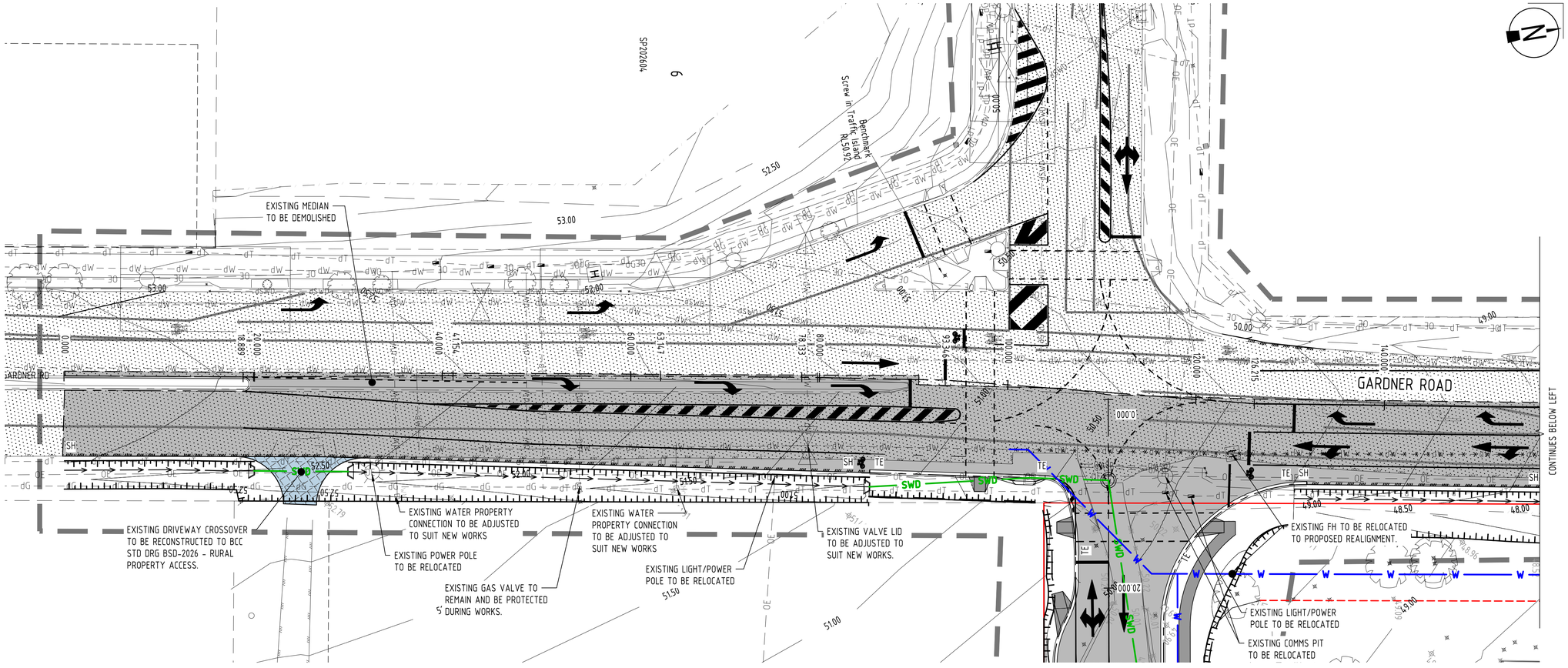
FULL SIZE ON ORIGINAL 0 10 20 30 40 50 60 70 80 90 100mm

PLOT DATE: 3/18/2025 7:27 AM FILENAME: J:\GLC\27000\27292\CVL\DWG\27292_DA03_PRELIMINARY ROAD 1 LONGITUDINAL AND TYPICAL CROSS SECTION.DWG

LEGEND

- SITE BOUNDARY
- EXISTING PROPERTY BOUNDARY
- EXISTING EASEMENT BOUNDARY
- EXISTING NOMINAL KERB LINE
- EXISTING EDGE OF BITUMEN
- EXISTING ROAD CENTERLINE
- EXISTING BATTER
- EXISTING FENCE
- LIMIT OF WORKS
- PROPOSED PROPERTY BOUNDARY
- PROPOSED ROAD RESUMPTION LINE
- PROPOSED ROAD CENTRE LINE
- EXISTING ROAD
- PROPOSED 1.2m WIDE FOOTPATH IN ACCORDANCE WITH BCC STD DRG. BSD-5201
- PROPOSED ROAD PAVEMENT
- PROPOSED DRIVEWAY CROSSOVER
- PROPOSED RURAL DRIVEWAY CROSSOVER
- TE — PROPOSED 'TYPE E' BARRIER KERB AND CHANNEL IN ACCORDANCE WITH BCC STD DRG BSD-2001
- SH — PROPOSED EDGE OF SHOULDER
- SWD — PROPOSED STORMWATER DRAINAGE
- W — PROPOSED WATERMAIN ALIGNMENT SUBJECT TO UU APPROVAL

NOTES
REFER ALSO FUNCTIONAL LAYOUT PLAN BY TTM DRG 23BRT0408-SK 4-01 REV B



ALL DETAILS SHOWN ARE SUBJECT TO FURTHER DETAILED DESIGN

NOTE:
ALL EXISTING SERVICES LOCATED WITHIN PROPOSED PAVEMENT WIDENING TO BE RELOCATED AS REQUIRED AS DIRECTED BY SERVICES AUTHORITIES.

PRELIMINARY
NOT FOR CONSTRUCTION

Rev	Date	Description	By	Chk
02	18.03.25	PRELIMINARY - ISSUED FOR INFORMATION	CM	ML
01	27.08.24	PRELIMINARY - ISSUED FOR INFORMATION	LDV	ML

0 5 10 15m
SCALE 1:250
AT ORIGINAL SIZE (A1)

ADG
T:1300 657 402 E: info@adgce.com W: www.adgce.com
Quality Assurance ISO 9001:2015 | Work Health Safety ISO 45001:2018
Environmental Management ISO 14001:2015

Client: PARTNERS IN PROPERTY QLD PTY LTD
Project Name: 202-210 GARDNER ROAD ROCHEDALE, QLD, 4123

Discipline	Status
CIVIL	PRELIMINARY

Designed By	Checked By	Approved By
LDV	ML	ML

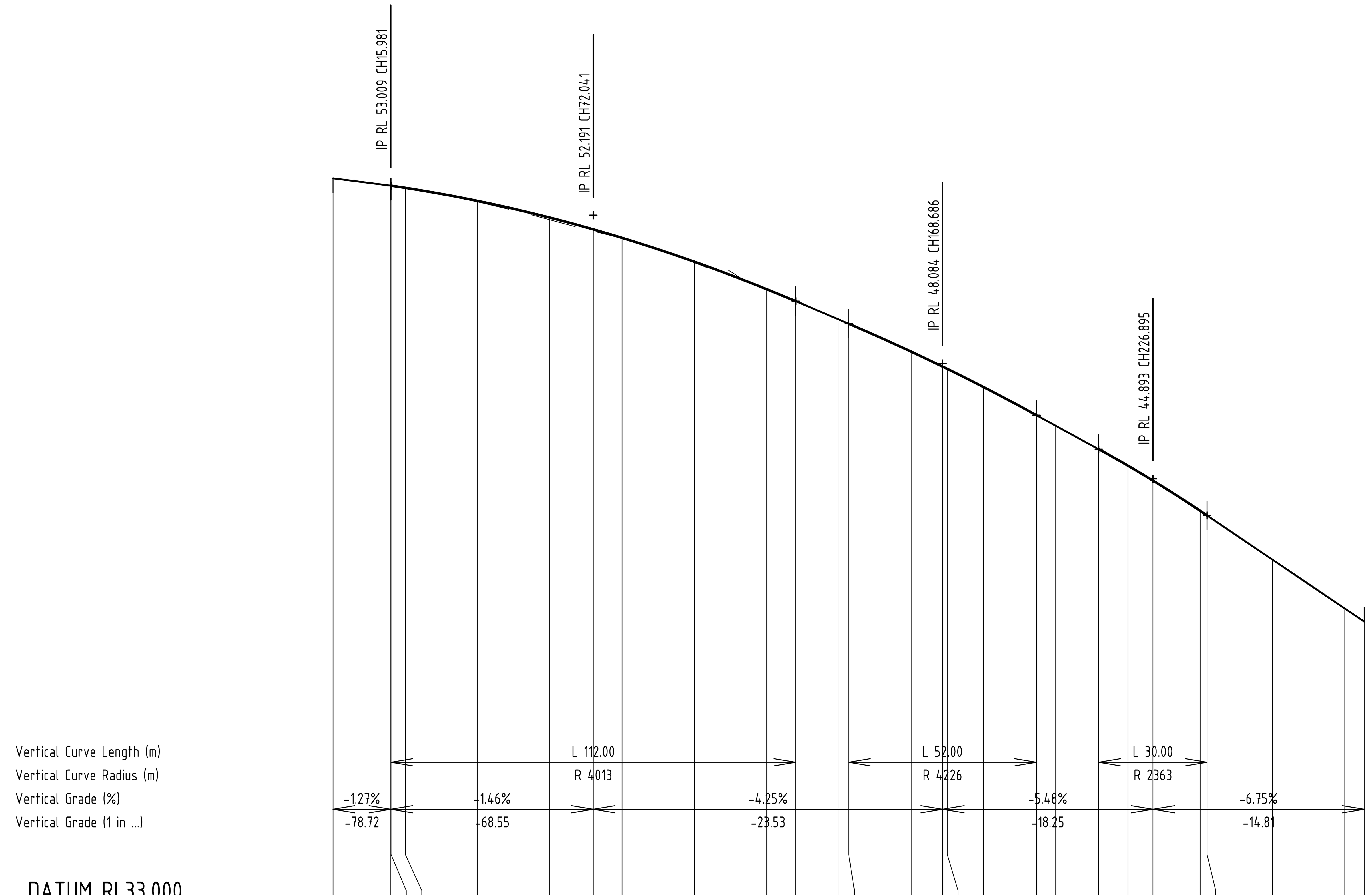
Project No.	Drawn By	Scale at A1
27292	LDV	1:250

Title: GARDNER ROAD PRELIMINARY INTERSECTION LAYOUT PLAN

Drawing No.: DA06
Revision: 02

FULL SIZE ON ORIGINAL 0 10 20 30 40 50 60 70 80 90 100mm

PLOT DATE: 3/18/2025 7:28 AM FILENAME: J:\GLC\27000\27292\CIVL\DWG\27292_DA06_GARDNER ROAD PRELIMINARY INTERSECTION LAYOUT PLAN.DWG



DATUM RL33.000

CHAINAGE	CUT / FILL DEPTH	DESIGN LEVELS ON ROAD CL	EXISTING SURFACE ON ROAD CL
0.000	-0.000	53.212	53.212
15.981	0.001	53.009	53.008
16.041	0.001	53.008	53.007
20.000	0.004	52.948	52.944
40.000	0.029	52.587	52.558
60.000	0.061	52.126	52.064
72.041	0.051	51.800	51.749
80.000	0.013	51.565	51.552
100.000	0.025	50.905	50.879
120.000	0.004	50.145	50.141
128.041	-0.026	49.811	49.837
140.000	0.003	49.303	49.300
142.686	0.009	49.189	49.180
160.000	0.011	48.417	48.406
168.686	-0.003	48.004	48.007
170.000	-0.004	47.939	47.943
180.000	-0.020	47.438	47.458
194.686	0.003	46.659	46.656
200.000	0.003	46.367	46.364
211.895	0.004	45.716	45.712
220.000	-0.016	45.257	45.274
226.895	-0.001	44.846	44.847
240.000	-0.005	44.008	44.014
241.895	-0.006	43.881	43.887
260.000	0.006	42.659	42.653
280.000	-0.006	41.309	41.315
285.383	-0.004	40.945	40.949
285.444		40.945	

ROAD GARDNER RD - LONGITUDINAL SECTION

SCALE HORIZONTAL 1 : 1000
VERTICAL 1 : 100

ALL DETAILS SHOWN ARE SUBJECT TO FURTHER DETAILED DESIGN

ALL DETAILS SHOWN ARE SUBJECT TO FURTHER DETAILED DESIGN

PRELIMINARY
NOT FOR CONSTRUCTION

Rev	Date	Description	By	Chk
02	18.03.25	PRELIMINARY - ISSUED FOR INFORMATION	CM	ML
01	27.08.24	PRELIMINARY - ISSUED FOR INFORMATION	LDV	ML

SCALE 1:100 VERTICAL 0 1 2 3 4 5m
0 10 20 30 40 50m SCALE 1:1000 HORIZONTAL
AT ORIGINAL SIZE (A1)

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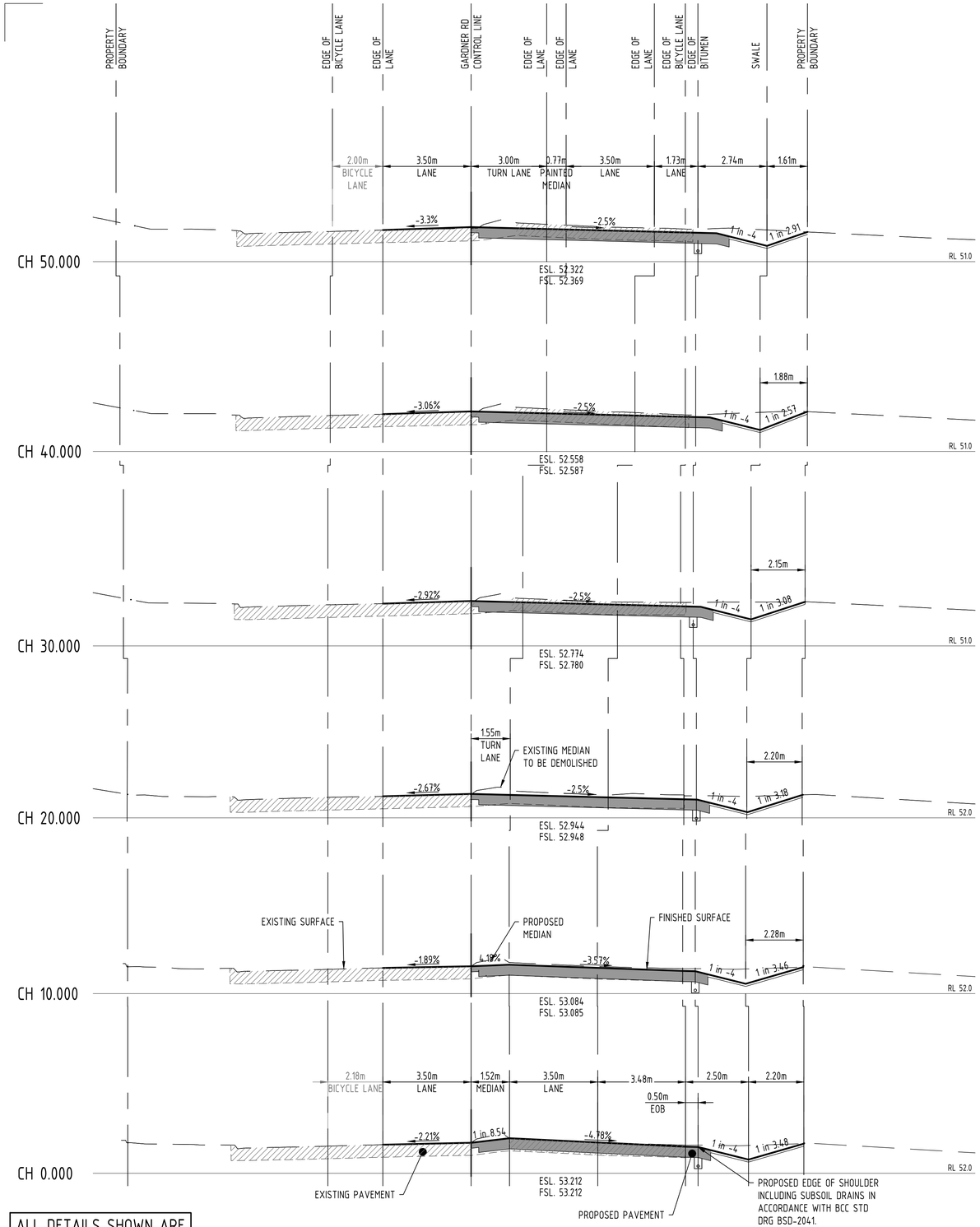
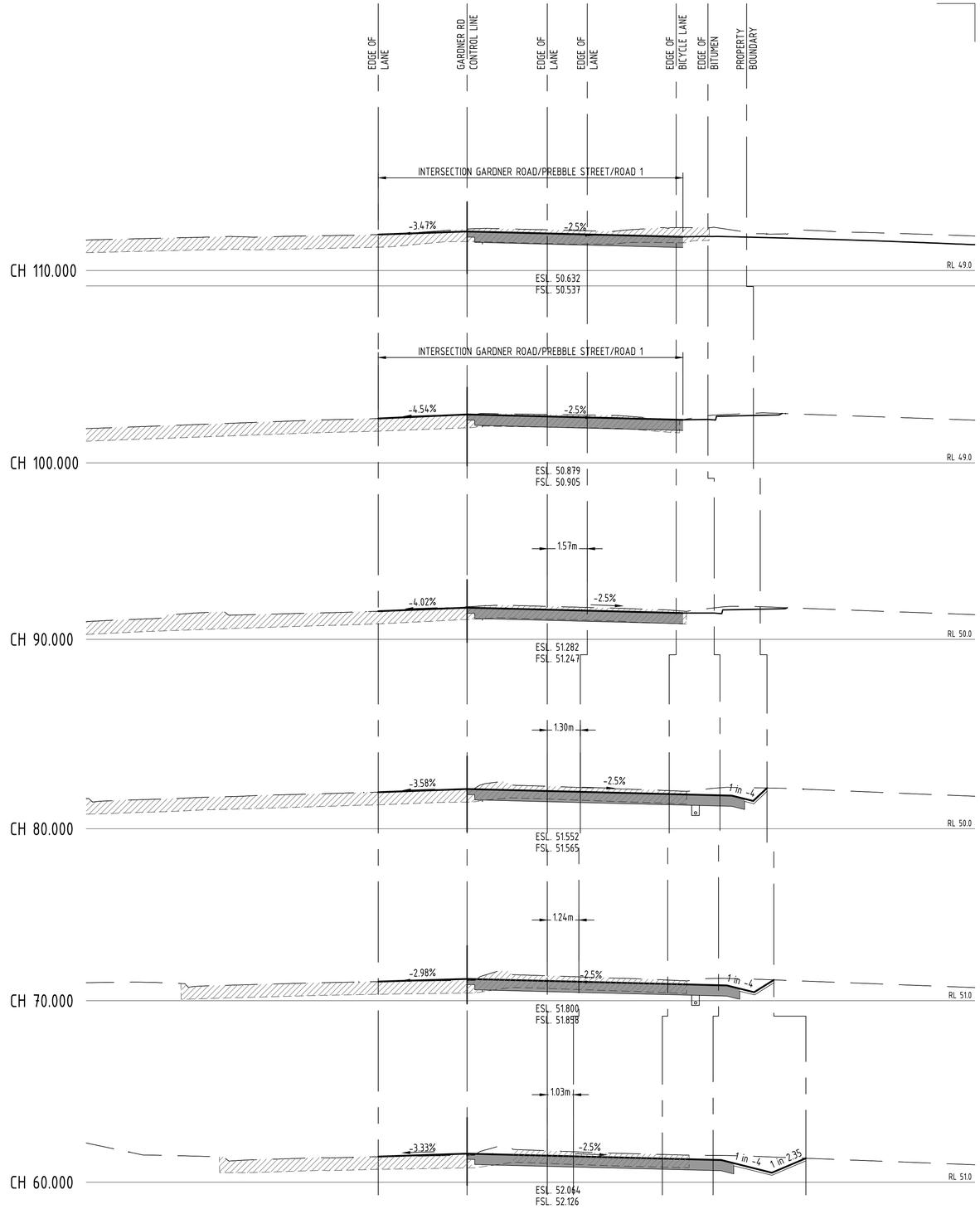
Quality Assurance ISO 9001:2015 | Work Health Safety ISO 45001:2018
Environmental Management ISO 14001:2015

Field	Value
Client	PARTNERS IN PROPERTY QLD PTY LTD
Project Name	202-210 GARDNER ROAD ROCHEDALE, QLD, 4123
Discipline	CIVIL
Status	PRELIMINARY
Designed By	LDV
Checked By	ML
Approved By	ML
Project No.	27292
Drawn By	LDV
Scale at A1	AS SHOWN
Title	GARDNER ROAD PRELIMINARY LONGITUDINAL SECTION
Drawing No.	DA07
Revision	02

FULL SIZE ON ORIGINAL 0 10 20 30 40 50 60 70 80 90 100mm

PLOT DATE: 3/18/2025 7:28 AM FILENAME: J:\GLC\27000\27292\CVL\DWG\27292_DA07_GARDNER ROAD PRELIMINARY LONGITUDINAL SECTION.DWG





ALL DETAILS SHOWN ARE SUBJECT TO FURTHER DETAILED DESIGN

GARDNER ROAD CROSS SECTIONS

SCALE 1:100

PRELIMINARY
NOT FOR CONSTRUCTION

Rev	Date	Description	By	Chk
02	18.03.25	PRELIMINARY - ISSUED FOR INFORMATION	CM	ML
01	27.08.24	PRELIMINARY - ISSUED FOR INFORMATION	LDV	ML

0 1 2 3 4 5m
SCALE 1:100
AT ORIGINAL SIZE (A1)

ADG
T:1300 657 402 E: info@adgce.com W: www.adgce.com
Quality Assurance ISO 9001:2015 | Work Health Safety ISO 45001:2018
Environmental Management ISO 14001:2015

Client: PARTNERS IN PROPERTY QLD PTY LTD
Project Name: 202-210 GARDNER ROAD
ROCHEDALE, QLD, 4123

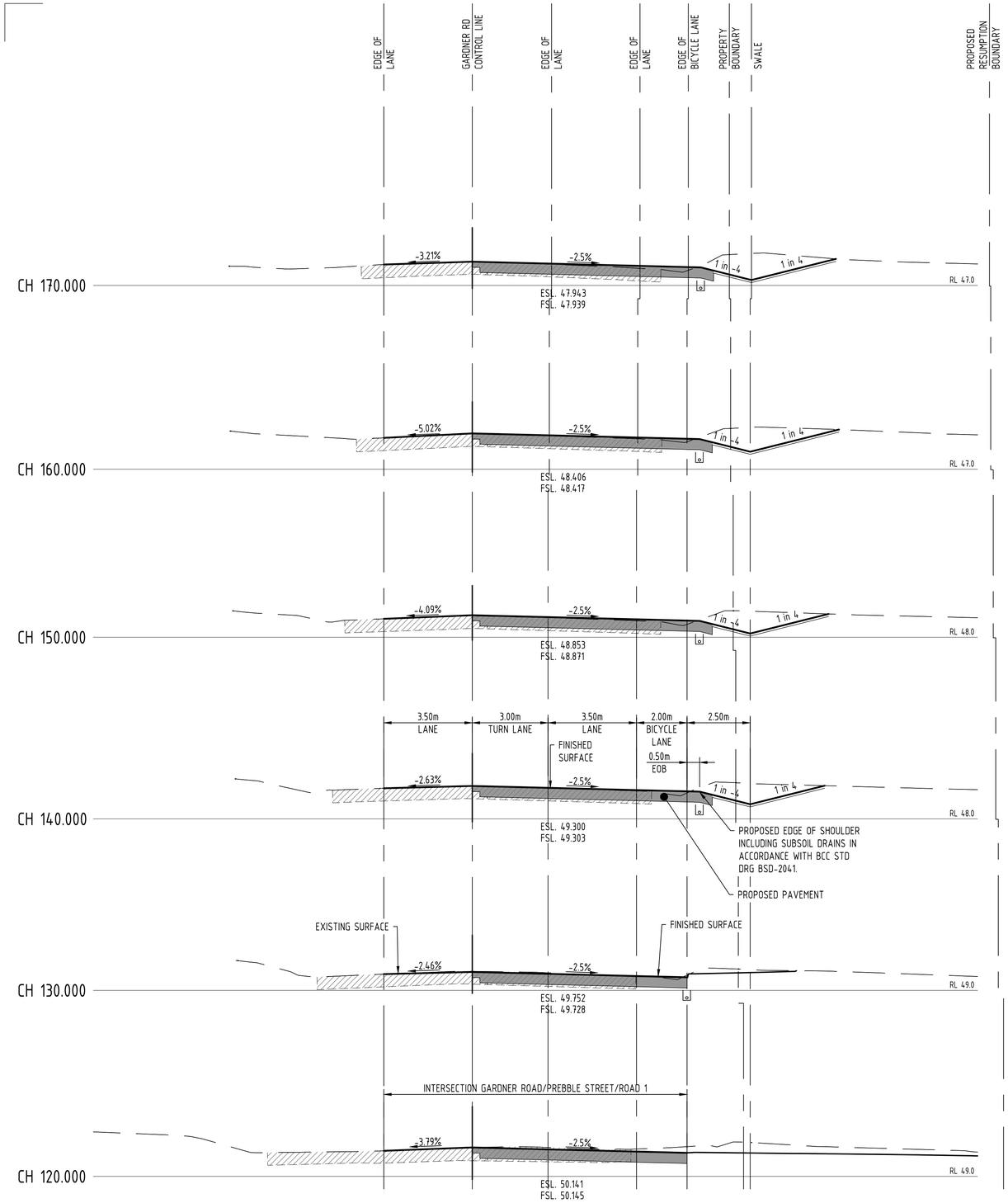
Discipline		Status
CIVIL		PRELIMINARY
Designed By	Checked By	Approved By
LDV	ML	ML
Project No.	Drawn By	Scale at A1
27292	LDV	1:100

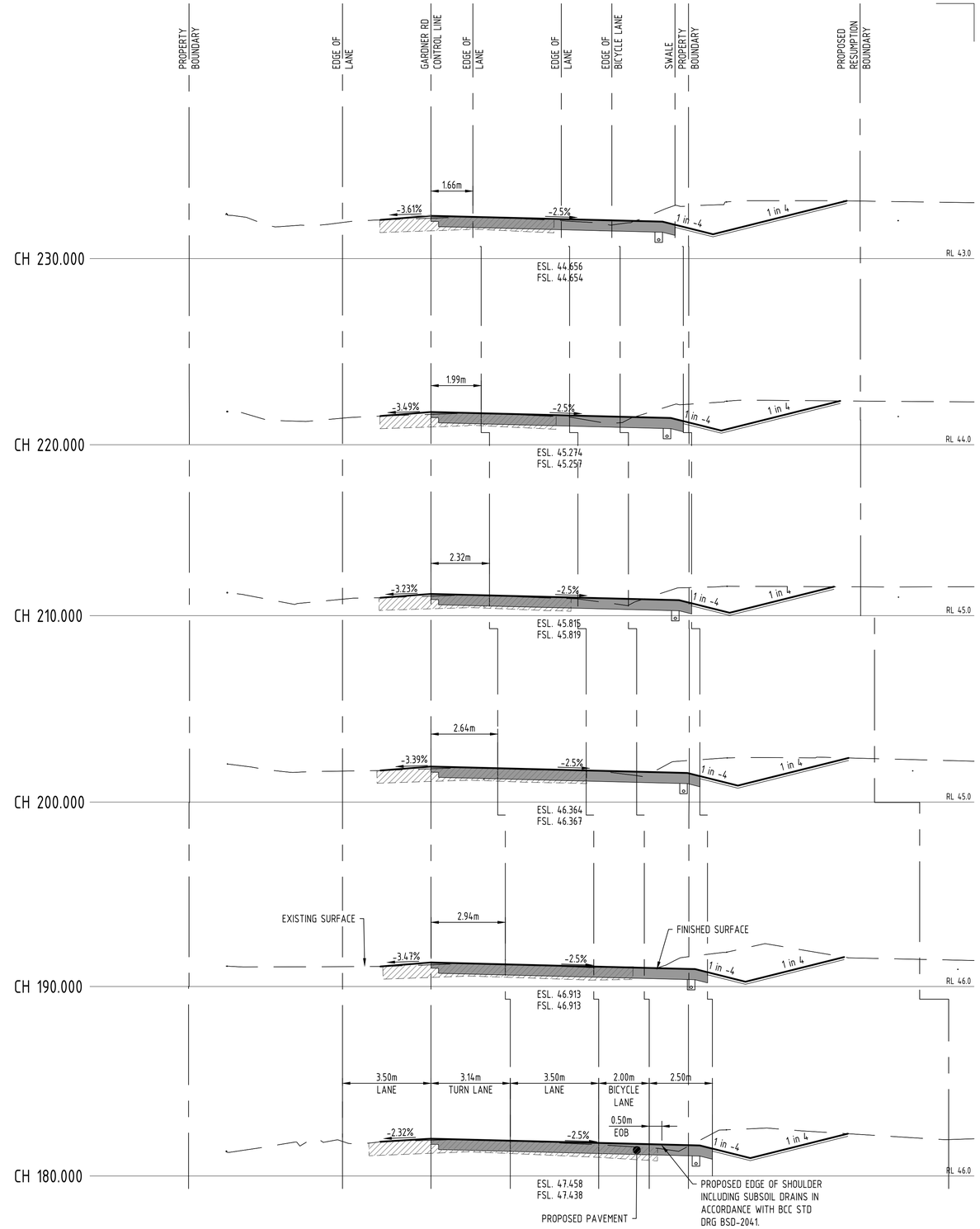
Title: GARDNER ROAD
PRELIMINARY CROSS SECTIONS
SHEET 1 OF 3

Drawing No.: DA08
Revision: 02

PLOT DATE: 3/18/2025 7:58 AM FILENAME: J:\GLC\27000\27292\CVL\DWG\27292_DA08_GARDNER ROAD PRELIMINARY CROSS SECTIONS SHEET 1 OF 3.DWG

FULL SIZE ON ORIGINAL 0 10 20 30 40 50 60 70 80 90 100mm





ALL DETAILS SHOWN ARE SUBJECT TO FURTHER DETAILED DESIGN

GARDNER ROAD CROSS SECTIONS

SCALE 1:100

PRELIMINARY
NOT FOR CONSTRUCTION

Rev	Date	Description	By	Chk
02	18.03.25	PRELIMINARY - ISSUED FOR INFORMATION	CM	ML
01	27.08.24	PRELIMINARY - ISSUED FOR INFORMATION	LDV	ML

0 1 2 3 4 5m
SCALE 1:100
AT ORIGINAL SIZE (A1)

ADG
T:1300 657 402 E: info@adgce.com W: www.adgce.com
Quality Assurance ISO 9001:2015 | Work Health Safety ISO 45001:2018
Environmental Management ISO 14001:2015

Client: PARTNERS IN PROPERTY QLD PTY LTD
Project Name: 202-210 GARDNER ROAD ROCHEDALE, QLD, 4123

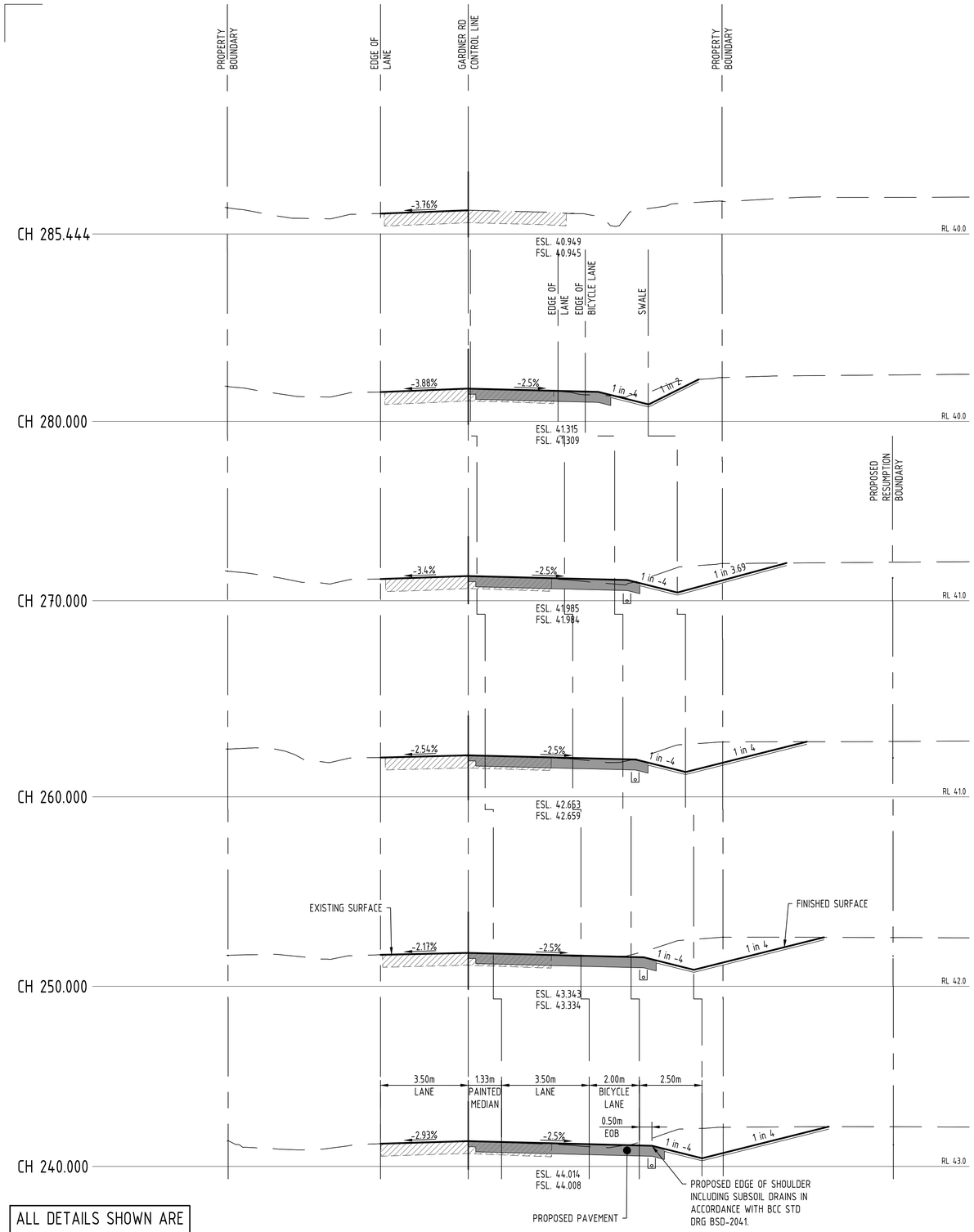
Discipline		Status
CIVIL		PRELIMINARY
Designed By	Checked By	Approved By
LDV	ML	ML
Project No.	Drawn By	Scale at A1
27292	LDV	1:100

Title: GARDNER ROAD PRELIMINARY CROSS SECTIONS SHEET 2 OF 3

Drawing No.: DA09
Revision: 02

PLOT DATE: 3/18/2025 7:58 AM FILENAME: J:\QLC\27000\27292\CVL\DWG\27292_DA09_GARDNER ROAD PRELIMINARY CROSS SECTIONS SHEET 2 OF 3.DWG

FULL SIZE ON ORIGINAL 0 10 20 30 40 50 60 70 80 90 100mm



ALL DETAILS SHOWN ARE SUBJECT TO FURTHER DETAILED DESIGN

GARDNER ROAD CROSS SECTIONS

SCALE 1:100

PRELIMINARY
NOT FOR CONSTRUCTION

Rev	Date	Description	By	Chk
02	18.03.25	PRELIMINARY - ISSUED FOR INFORMATION	CM	ML
01	27.08.24	PRELIMINARY - ISSUED FOR INFORMATION	LDV	ML

0 1 2 3 4 5m
SCALE 1:100
AT ORIGINAL SIZE (A1)

ADG
T:1300 657 402 E: info@adgce.com W: www.adgce.com
Quality Assurance ISO 9001:2015 | Work Health Safety ISO 45001:2018
Environmental Management ISO 14001:2015

Client: PARTNERS IN PROPERTY QLD PTY LTD

Project Name: 202-210 GARDNER ROAD
ROCHEDALE, QLD, 4123

Discipline	Designed By	Checked By	Status
CIVIL	LDV	ML	PRELIMINARY
	Project No. 27292	Drawn By LDV	Approved By ML
			Scale at A1 1:100

Title: GARDNER ROAD
PRELIMINARY CROSS SECTIONS
SHEET 3 OF 3

Drawing No. DA10
Revision 02

PLOT DATE: 3/18/2025 7:59 AM FILENAME: J:\QLC\27000\27292\CIVL\DWG\27292_DA10_GARDNER ROAD PRELIMINARY CROSS SECTIONS SHEET 3 OF 3.DWG

FULL SIZE ON ORIGINAL 0 10 20 30 40 50 60 70 80 90 100mm

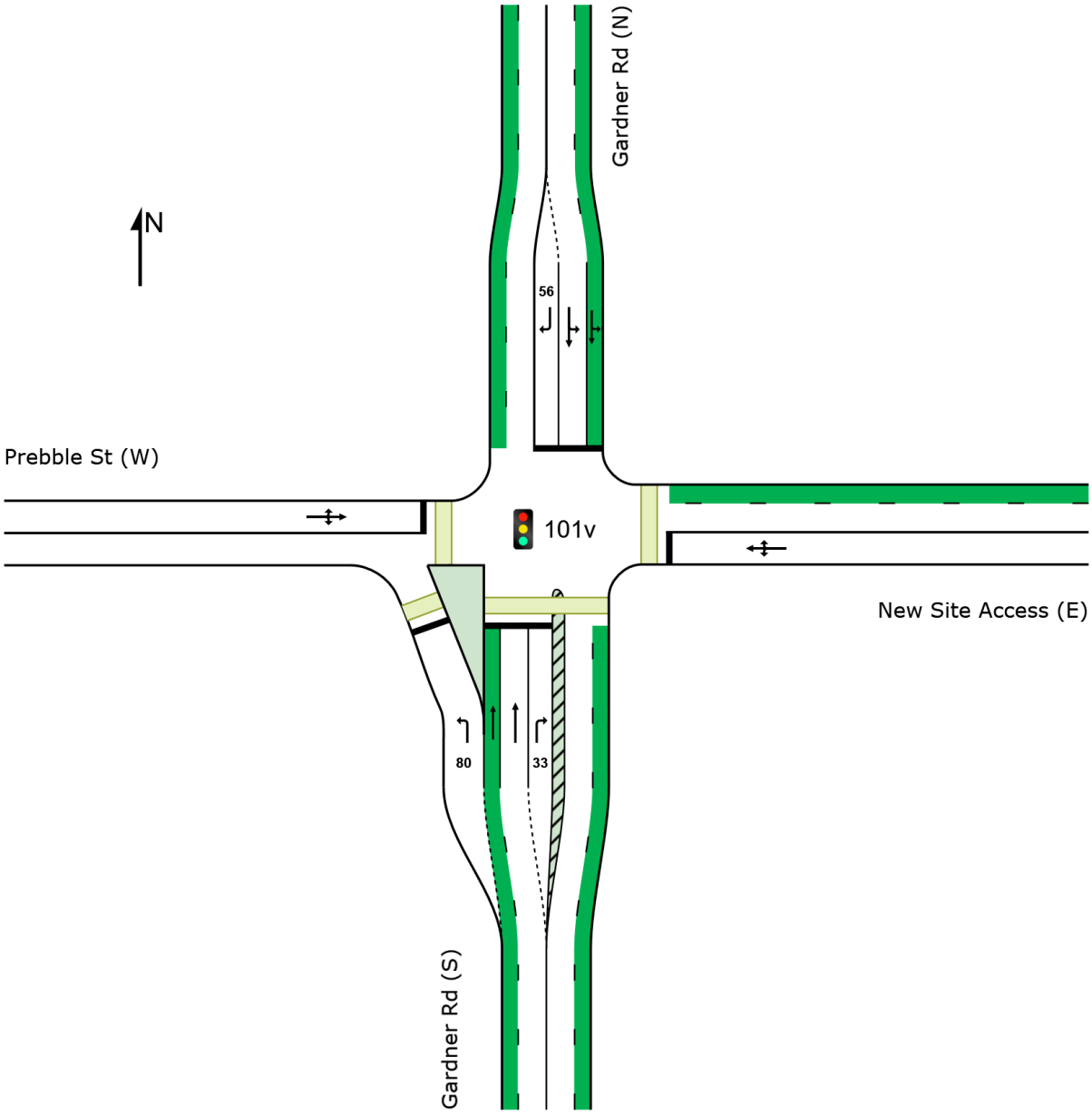
Attachment 5 – SIDRA Output

SITE LAYOUT

Site: 101v [Base+dev 2035 AM Peak (Site Folder: 1_Gardner Rd_Prebble St - Interim Design 100%)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



MOVEMENT SUMMARY

Site: 101v [Base+dev 2035 AM Peak (Site Folder: 1_Gardner Rd_Prebble St - Interim Design 100%)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Gardner Rd (S)															
1	L2	All MCs	57	7.0	57	7.0	0.057	22.3	LOS C	1.6	12.2	0.53	0.69	0.53	45.1
2	T1	All MCs	741	5.0	741	5.0	* 0.837	49.7	LOS D	38.8	283.0	0.93	0.88	0.97	44.3
3	R2	All MCs	83	7.0	83	7.0	0.249	70.6	LOS E	4.2	31.0	0.89	0.77	0.89	25.5
Approach			881	5.3	881	5.3	0.837	49.9	LOS D	38.8	283.0	0.90	0.85	0.93	42.5
East: New Site Access (E)															
4	L2	All MCs	81	7.0	81	7.0	* 0.856	71.4	LOS E	13.1	97.4	1.00	0.95	1.25	20.6
5	T1	All MCs	1	0.0	1	0.0	0.856	62.5	LOS E	13.1	97.4	1.00	0.95	1.25	20.9
6	R2	All MCs	122	7.0	122	7.0	0.856	68.1	LOS E	13.1	97.4	1.00	0.95	1.25	20.6
Approach			204	7.0	204	7.0	0.856	69.4	LOS E	13.1	97.4	1.00	0.95	1.25	20.6
North: Gardner Rd (N)															
7	L2	All MCs	125	7.0	125	7.0	0.653	51.5	LOS D	20.9	153.4	0.88	0.80	0.88	23.2
8	T1	All MCs	312	5.0	312	5.0	0.653	42.4	LOS D	20.9	153.4	0.88	0.80	0.88	42.2
9	R2	All MCs	87	7.0	87	7.0	* 0.547	75.7	LOS E	5.1	38.1	1.00	0.78	1.00	29.3
Approach			524	5.8	524	5.8	0.653	50.1	LOS D	20.9	153.4	0.90	0.79	0.90	34.8
West: Prebble St (W)															
10	L2	All MCs	57	7.0	57	7.0	0.787	72.8	LOS E	5.4	39.9	1.00	0.89	1.25	27.1
11	T1	All MCs	1	0.0	1	0.0	* 0.787	67.2	LOS E	5.4	39.9	1.00	0.89	1.25	20.3
12	R2	All MCs	26	7.0	26	7.0	0.787	72.8	LOS E	5.4	39.9	1.00	0.89	1.25	27.2
Approach			84	6.9	84	6.9	0.787	72.7	LOS E	5.4	39.9	1.00	0.89	1.25	27.1
All Vehicles			1694	5.7	1694	5.7	0.856	53.4	LOS D	38.8	283.0	0.92	0.85	0.98	35.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Gardner Rd (S)												
P1	Full	50	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
P1B	Slip/ Bypass	50	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96

East: New Site Access (E)											
P2	Full	50	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
West: Prebble St (W)											
P4	Full	50	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
All Pedestrians		100	211	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

PHASING SUMMARY

Site: 101v [Base+dev 2035 AM Peak (Site Folder: 1_Gardner Rd_Prebble St - Interim Design 100%)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: Lead lag right
Input Phase Sequence: A, B, C, D, E
Output Phase Sequence: A, B, C, D, E
Reference Phase: Phase A

Phase Timing Summary

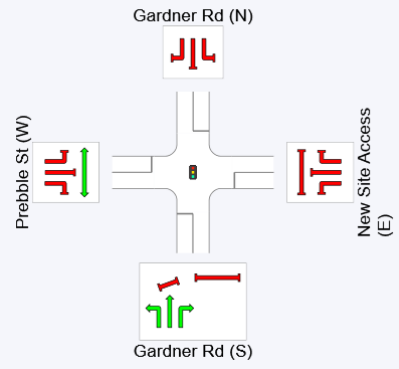
Phase	A	B	C	D	E
Phase Change Time (sec)	0	29	67	84	107
Green Time (sec)	23	30	11	17	7
Phase Time (sec)	31	36	17	23	13
Phase Split	26%	30%	14%	19%	11%
Phase Frequency (%)	100.0[1]	100.0[1]	100.0[1]	100.0[1]	100.0[1]

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

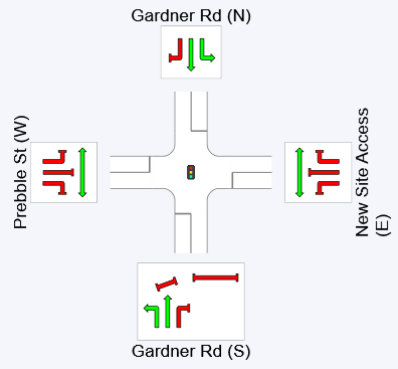
1 Phase Frequency has been given with User-Specified Phase Times.

Output Phase Sequence

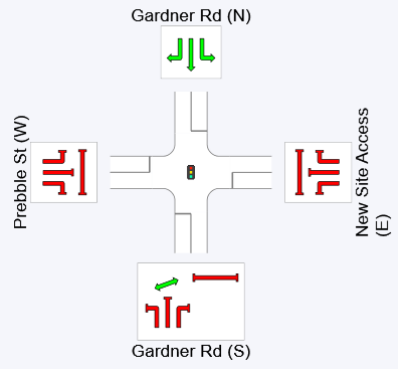
Phase A **REF**



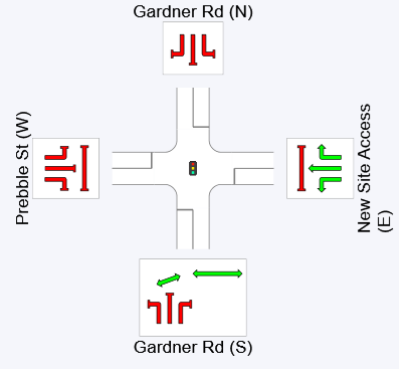
Phase B



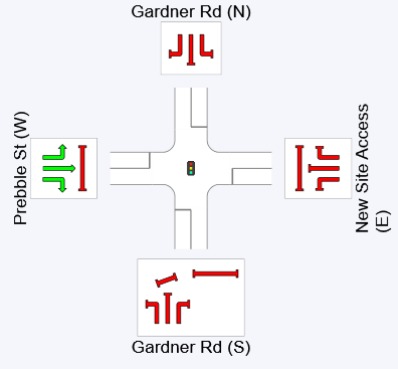
Phase C



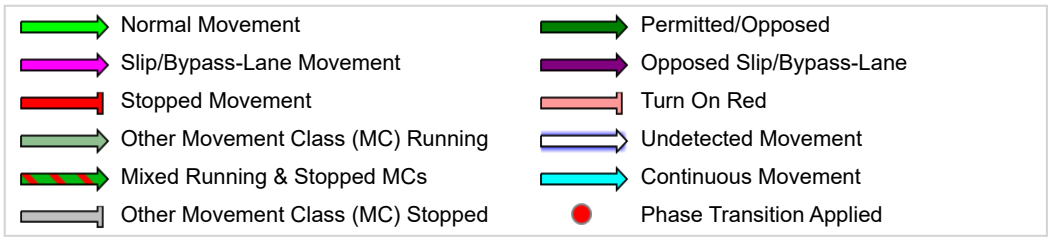
Phase D



Phase E



REF: Reference Phase
VAR: Variable Phase



MOVEMENT TIMING

All Movement Classes

Site: 101v [Base+dev 2035 AM Peak (Site Folder: 1_Gardner Rd_Prebble St - Interim Design 100%)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

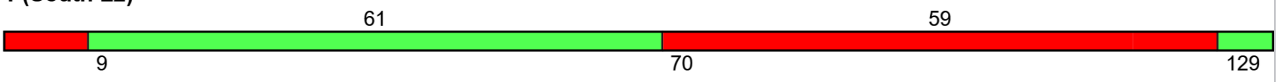
New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: Lead lag right
Input Phase Sequence: A, B, C, D, E
Output Phase Sequence: A, B, C, D, E
Reference Phase: Phase A

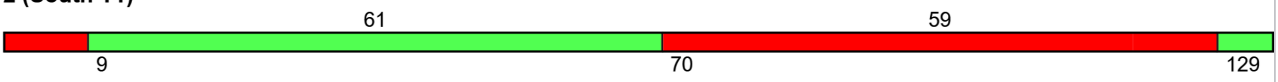
Displayed Signal Timing - Phases

Effective Signal Timing - Movements

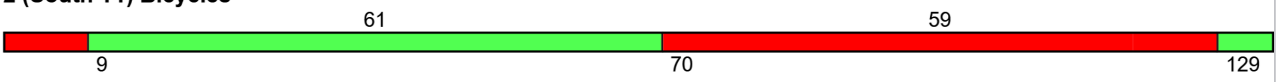
1 (South L2)



2 (South T1)



2 (South T1) Bicycles



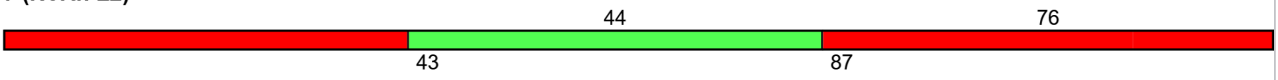
3 (South R2)

4 (East L2)

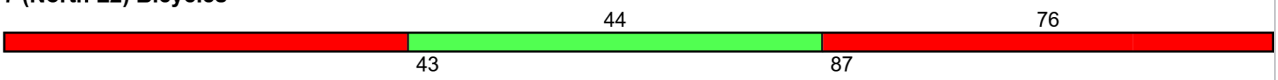
5 (East T1)

6 (East R2)

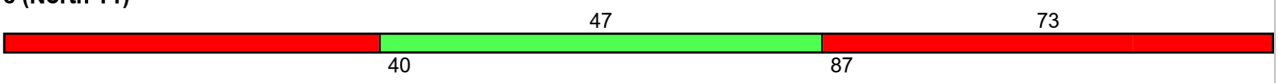
7 (North L2)



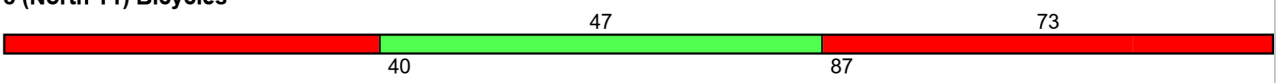
7 (North L2) Bicycles



8 (North T1)



8 (North T1) Bicycles



9 (North R2)

10 (West L2)

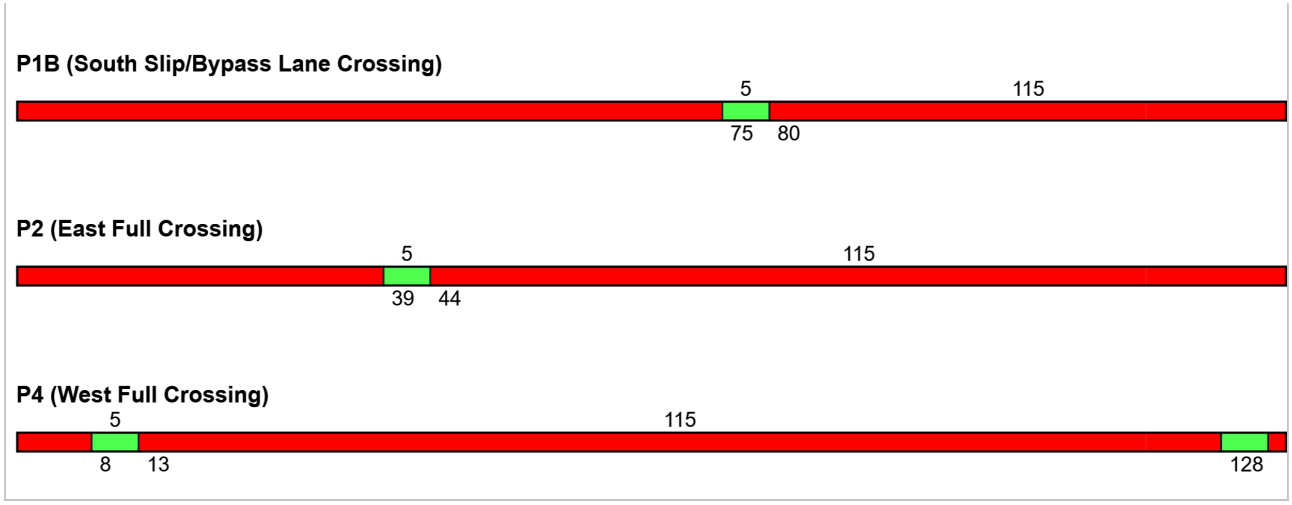
11 (West T1)

12 (West R2)

Green Interval
Red Interval

Pedestrian Signal Timing

P1 (South Full Crossing)



Green Interval
Red Interval

MOVEMENT SUMMARY

Site: 101v [Base+dev 2035 PM Peak (Site Folder: 1_Gardner Rd_Prebble St - Interim Design 100%)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 110 seconds (Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Gardner Rd (S)															
1	L2	All MCs	28	7.0	28	7.0	0.033	25.3	LOS C	0.9	6.3	0.60	0.68	0.60	43.5
2	T1	All MCs	313	5.0	313	5.0	0.415	29.1	LOS C	11.4	83.4	0.73	0.63	0.73	48.7
3	R2	All MCs	102	7.0	102	7.0	*0.806	74.2	LOS E	6.0	44.8	1.00	0.90	1.28	21.4
Approach			443	5.6	443	5.6	0.806	39.2	LOS D	11.4	83.4	0.79	0.70	0.85	40.4
East: New Site Access (E)															
4	L2	All MCs	106	7.0	106	7.0	0.911	71.5	LOS E	16.9	125.6	1.00	1.02	1.36	20.6
5	T1	All MCs	1	0.0	1	0.0	*0.911	62.6	LOS E	16.9	125.6	1.00	1.02	1.36	20.8
6	R2	All MCs	160	7.0	160	7.0	0.911	68.2	LOS E	16.9	125.6	1.00	1.02	1.36	20.6
Approach			267	7.0	267	7.0	0.911	69.5	LOS E	16.9	125.6	1.00	1.02	1.36	20.6
North: Gardner Rd (N)															
7	L2	All MCs	154	7.0	154	7.0	0.920	75.5	LOS E	43.3	317.3	1.00	1.07	1.21	19.9
8	T1	All MCs	544	5.0	544	5.0	*0.920	66.0	LOS E	43.3	317.3	1.00	1.07	1.21	35.7
9	R2	All MCs	45	7.0	45	7.0	0.318	78.4	LOS E	2.4	17.9	0.98	0.74	0.98	30.4
Approach			743	5.5	743	5.5	0.920	68.7	LOS E	43.3	317.3	1.00	1.05	1.20	31.9
West: Prebble St (W)															
10	L2	All MCs	92	7.0	92	7.0	0.928	76.0	LOS E	10.0	74.2	1.00	1.05	1.50	26.5
11	T1	All MCs	1	0.0	1	0.0	*0.928	70.4	LOS E	10.0	74.2	1.00	1.05	1.50	19.7
12	R2	All MCs	62	7.0	62	7.0	0.928	76.1	LOS E	10.0	74.2	1.00	1.05	1.50	26.6
Approach			155	7.0	155	7.0	0.928	76.0	LOS E	10.0	74.2	1.00	1.05	1.50	26.5
All Vehicles			1608	5.9	1608	5.9	0.928	61.4	LOS E	43.3	317.3	0.94	0.95	1.16	31.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Gardner Rd (S)												
P1	Full	50	53	49.3	LOS E	0.2	0.2	0.95	0.95	203.1	200.0	0.98
P1B	Slip/ Bypass	50	53	49.3	LOS E	0.2	0.2	0.95	0.95	203.1	200.0	0.98

East: New Site Access (E)											
P2	Full	50	53	49.3	LOS E	0.2	0.2	0.95	0.95	203.1	200.0	0.98
West: Prebble St (W)											
P4	Full	50	53	49.3	LOS E	0.2	0.2	0.95	0.95	203.1	200.0	0.98
All Pedestrians		100	211	49.3	LOS E	0.2	0.2	0.95	0.95	203.1	200.0	0.98

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

PHASING SUMMARY

Site: 101v [Base+dev 2035 PM Peak (Site Folder: 1_Gardner Rd_Prebble St - Interim Design 100%)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 110 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: Lead lag right
Input Phase Sequence: A, B, C, D, E
Output Phase Sequence: A, B, C, D, E
Reference Phase: Phase A

Phase Timing Summary

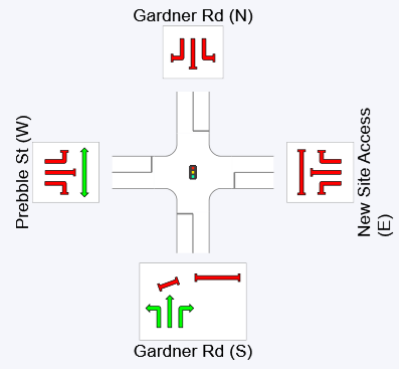
Phase	A	B	C	D	E
Phase Change Time (sec)	0	14	54	69	94
Green Time (sec)	8	32	9	19	10
Phase Time (sec)	16	38	15	25	16
Phase Split	15%	35%	14%	23%	15%
Phase Frequency (%)	100.0[1]	100.0[1]	100.0[1]	100.0[1]	100.0[1]

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

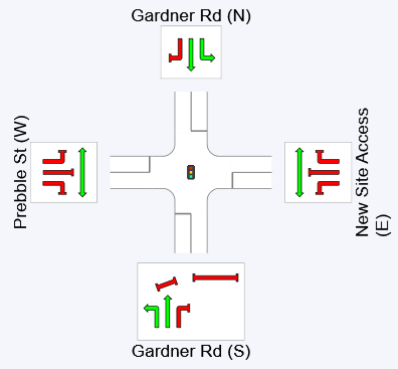
1 Phase Frequency has been given with User-Specified Phase Times.

Output Phase Sequence

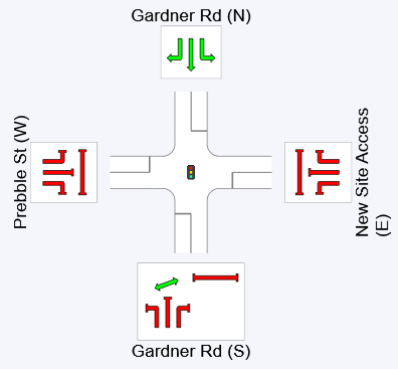
Phase A **REF**



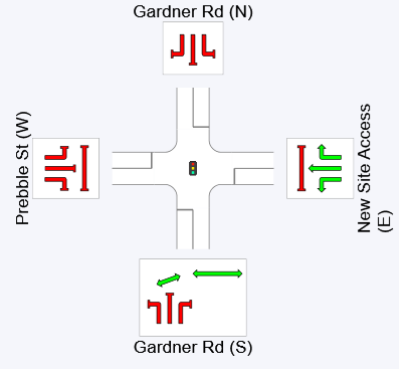
Phase B



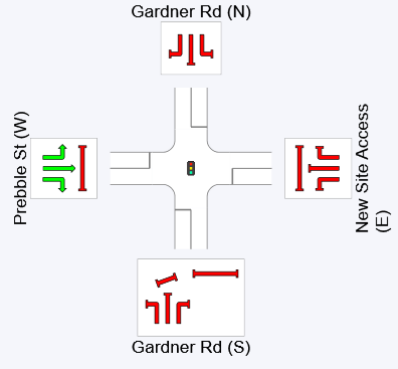
Phase C



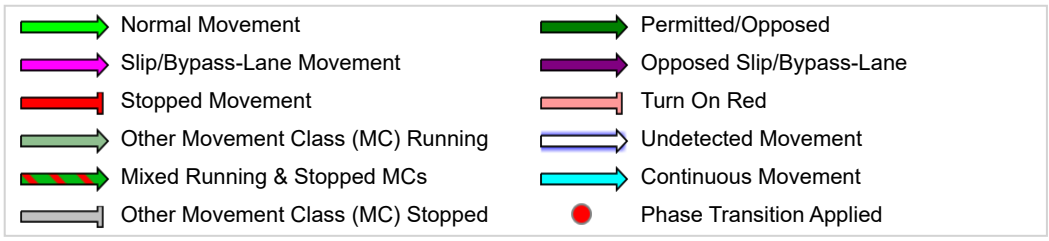
Phase D



Phase E



REF: Reference Phase
VAR: Variable Phase



MOVEMENT TIMING

All Movement Classes

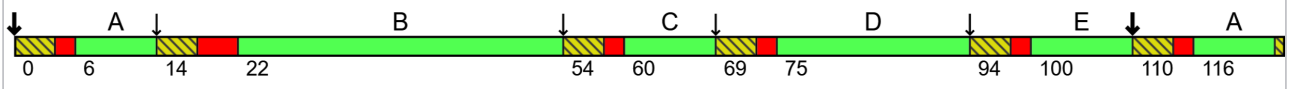
Site: 101v [Base+dev 2035 PM Peak (Site Folder: 1_Gardner Rd_Prebble St - Interim Design 100%)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

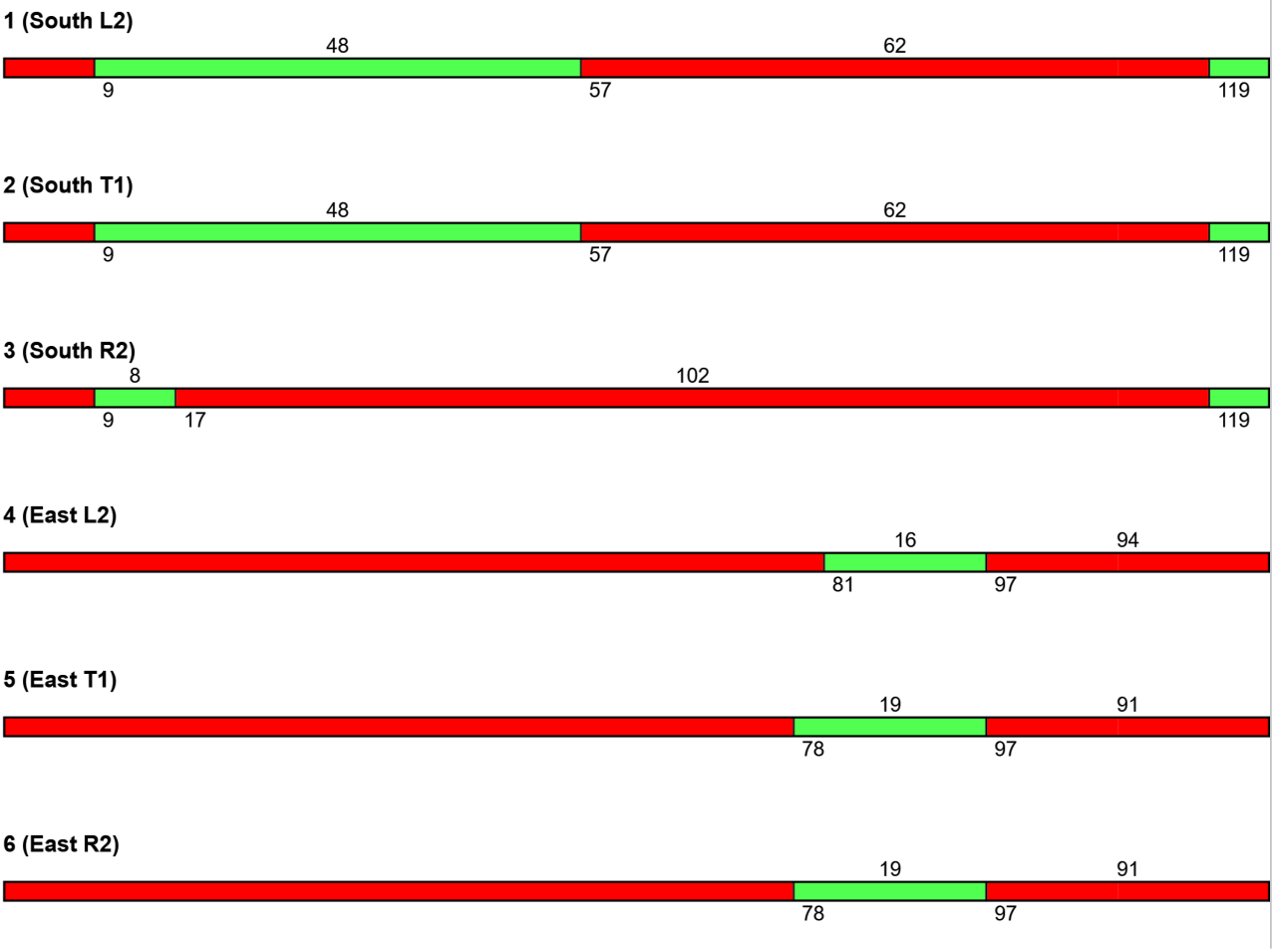
New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 110 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: Lead lag right
Input Phase Sequence: A, B, C, D, E
Output Phase Sequence: A, B, C, D, E
Reference Phase: Phase A

Displayed Signal Timing - Phases



Effective Signal Timing - Movements



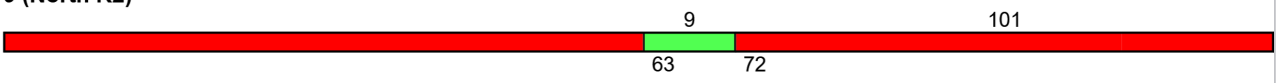
7 (North L2)

7 (North L2) Bicycles

8 (North T1)

8 (North T1) Bicycles

9 (North R2)



10 (West L2)

11 (West T1)

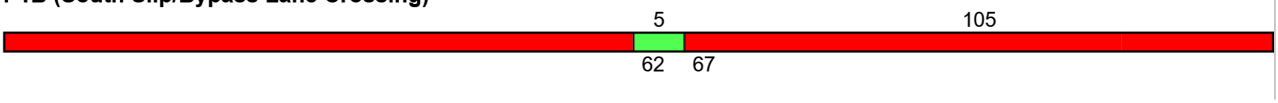
12 (West R2)

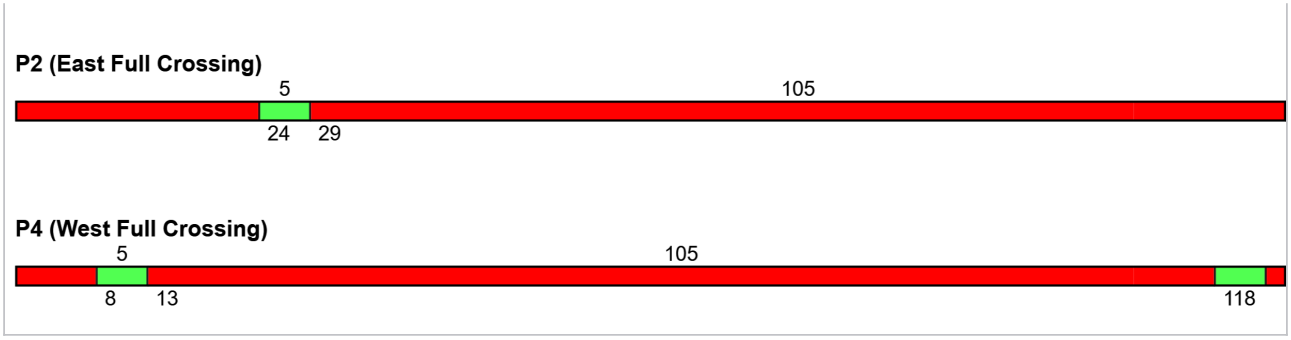
Green Interval
Red Interval

Pedestrian Signal Timing

P1 (South Full Crossing)

P1B (South Slip/Bypass Lane Crossing)





Green Interval
Red Interval

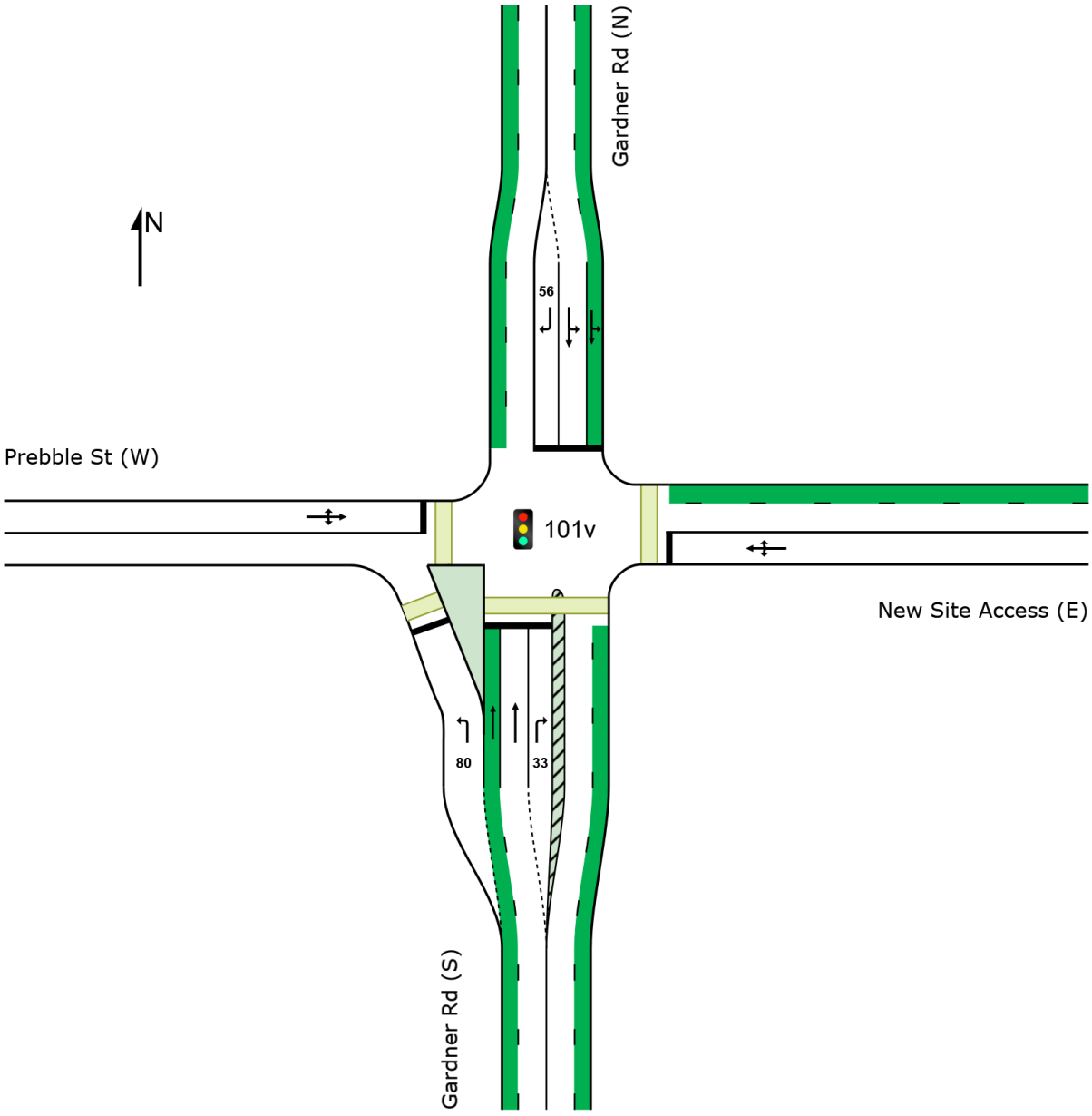
Attachment 6 – SIDRA Output – Sensitivity Testing

SITE LAYOUT

Site: 101v [Base+dev 2035 AM Peak (Site Folder: 1_Gardner Rd_Prebble St - Interim Design 75%/25%)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



MOVEMENT SUMMARY

Site: 101v [Base+dev 2035 AM Peak (Site Folder: 1_Gardner Rd_Prebble St - Interim Design 75%/25%)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Gardner Rd (S)															
1	L2	All MCs	57	7.0	57	7.0	0.057	22.3	LOS C	1.6	12.2	0.53	0.69	0.53	45.1
2	T1	All MCs	741	5.0	741	5.0	* 0.818	47.2	LOS D	37.1	271.1	0.91	0.85	0.93	45.5
3	R2	All MCs	62	7.0	62	7.0	0.186	69.7	LOS E	3.1	22.8	0.88	0.75	0.88	25.7
Approach			860	5.3	860	5.3	0.818	47.2	LOS D	37.1	271.1	0.88	0.83	0.90	43.9
East: New Site Access (E)															
4	L2	All MCs	61	7.0	61	7.0	0.644	62.6	LOS E	8.9	65.7	1.00	0.82	1.02	22.4
5	T1	All MCs	1	0.0	1	0.0	* 0.644	53.9	LOS D	8.9	65.7	1.00	0.82	1.02	22.7
6	R2	All MCs	92	7.0	92	7.0	0.644	59.4	LOS E	8.9	65.7	1.00	0.82	1.02	22.4
Approach			154	7.0	154	7.0	0.644	60.7	LOS E	8.9	65.7	1.00	0.82	1.02	22.4
North: Gardner Rd (N)															
7	L2	All MCs	94	7.0	94	7.0	0.593	47.3	LOS D	18.7	136.9	0.85	0.76	0.85	23.7
8	T1	All MCs	312	5.0	312	5.0	0.593	38.3	LOS D	18.7	136.9	0.85	0.76	0.85	43.1
9	R2	All MCs	87	7.0	87	7.0	* 0.547	73.1	LOS E	5.1	38.1	1.00	0.78	1.00	29.3
Approach			493	5.7	493	5.7	0.593	46.1	LOS D	18.7	136.9	0.88	0.77	0.88	36.1
West: Prebble St (W)															
10	L2	All MCs	57	7.0	57	7.0	0.787	72.8	LOS E	5.4	39.9	1.00	0.89	1.25	27.1
11	T1	All MCs	1	0.0	1	0.0	* 0.787	67.2	LOS E	5.4	39.9	1.00	0.89	1.25	20.3
12	R2	All MCs	26	7.0	26	7.0	0.787	72.8	LOS E	5.4	39.9	1.00	0.89	1.25	27.2
Approach			84	6.9	84	6.9	0.787	72.7	LOS E	5.4	39.9	1.00	0.89	1.25	27.1
All Vehicles			1591	5.7	1591	5.7	0.818	49.5	LOS D	37.1	271.1	0.90	0.81	0.92	37.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Gardner Rd (S)												
P1	Full	50	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
P1B	Slip/ Bypass	50	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96

East: New Site Access (E)											
P2	Full	50	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
West: Prebble St (W)											
P4	Full	50	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
All Pedestrians		100	211	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

PHASING SUMMARY

Site: 101v [Base+dev 2035 AM Peak (Site Folder: 1_Gardner Rd_Prebble St - Interim Design 75%/25%)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: Lead lag right
Input Phase Sequence: A, B, C, D, E
Output Phase Sequence: A, B, C, D, E
Reference Phase: Phase A

Phase Timing Summary

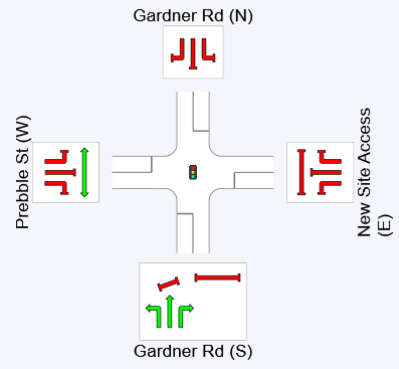
Phase	A	B	C	D	E
Phase Change Time (sec)	0	29	67	84	107
Green Time (sec)	23	30	11	17	7
Phase Time (sec)	31	36	17	23	13
Phase Split	26%	30%	14%	19%	11%
Phase Frequency (%)	100.0[1]	100.0[1]	100.0[1]	100.0[1]	100.0[1]

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

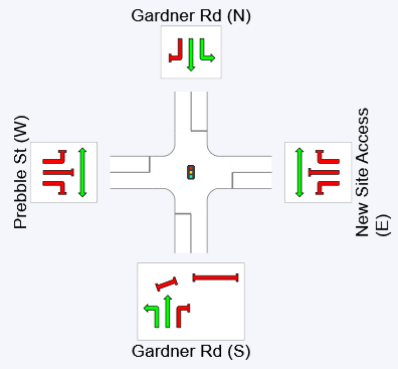
1 Phase Frequency has been given with User-Specified Phase Times.

Output Phase Sequence

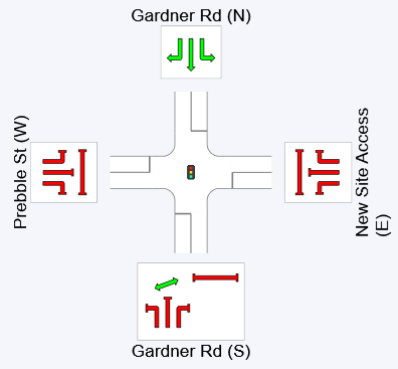
Phase A **REF**



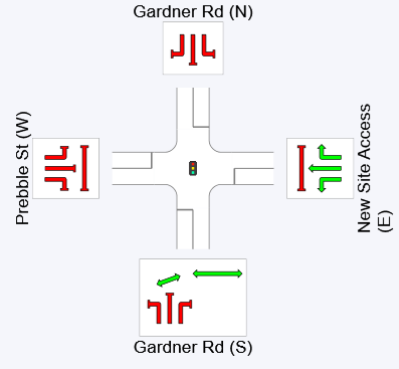
Phase B



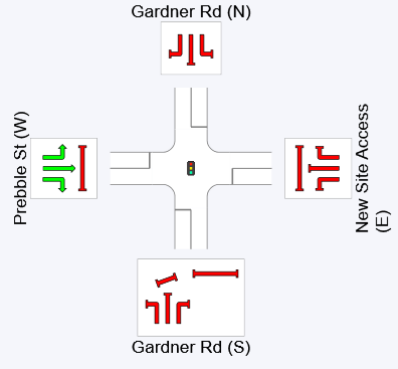
Phase C



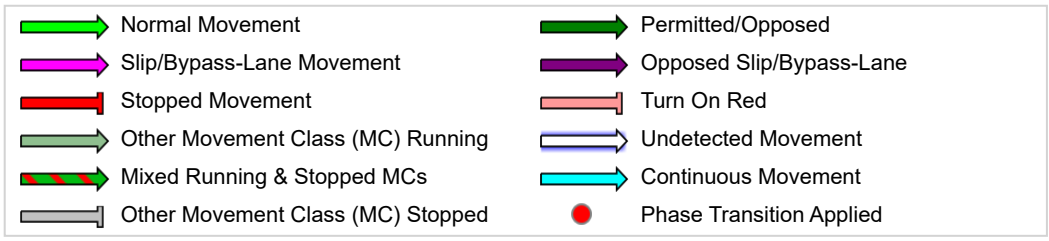
Phase D



Phase E



REF: Reference Phase
VAR: Variable Phase



MOVEMENT TIMING

All Movement Classes

Site: 101v [Base+dev 2035 AM Peak (Site Folder: 1_Gardner Rd_Prebble St - Interim Design 75%/25%)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

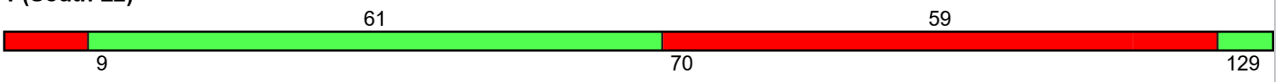
New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: Lead lag right
Input Phase Sequence: A, B, C, D, E
Output Phase Sequence: A, B, C, D, E
Reference Phase: Phase A

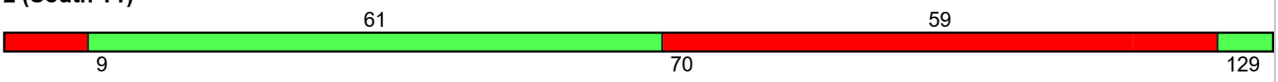
Displayed Signal Timing - Phases

Effective Signal Timing - Movements

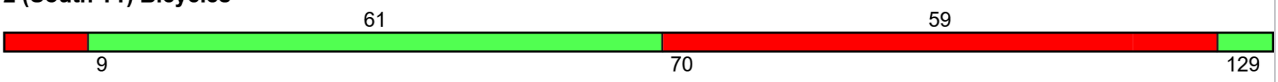
1 (South L2)



2 (South T1)



2 (South T1) Bicycles



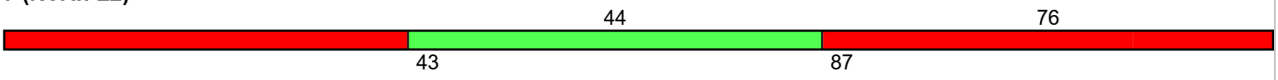
3 (South R2)

4 (East L2)

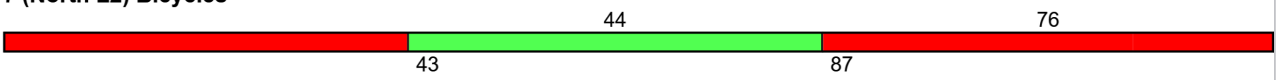
5 (East T1)

6 (East R2)

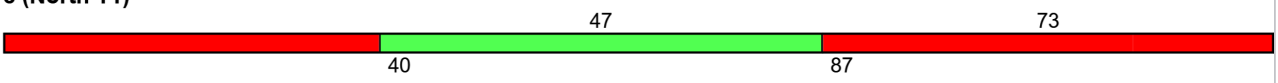
7 (North L2)



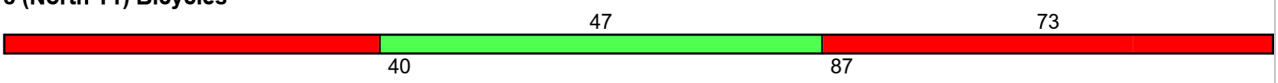
7 (North L2) Bicycles



8 (North T1)



8 (North T1) Bicycles



9 (North R2)

10 (West L2)

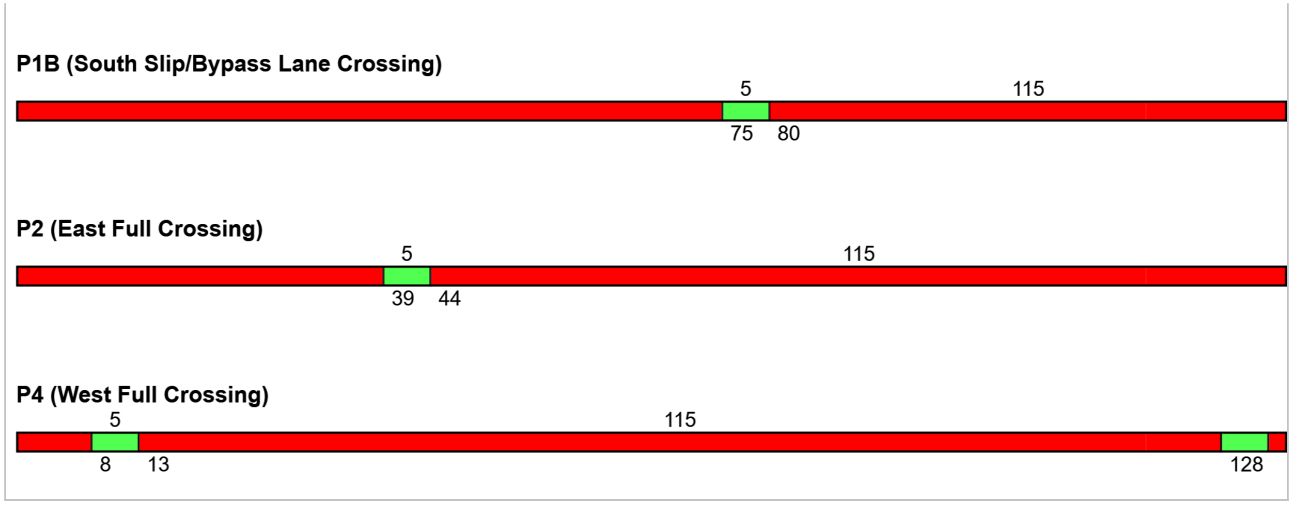
11 (West T1)

12 (West R2)

Green Interval
Red Interval

Pedestrian Signal Timing

P1 (South Full Crossing)



Green Interval
Red Interval

MOVEMENT SUMMARY

Site: 101v [Base+dev 2035 PM Peak (Site Folder: 1_Gardner Rd_Prebble St - Interim Design 75%/25%)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 110 seconds (Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Gardner Rd (S)															
1	L2	All MCs	28	7.0	28	7.0	0.032	24.7	LOS C	0.8	6.2	0.59	0.68	0.59	43.8
2	T1	All MCs	313	5.0	313	5.0	0.396	27.7	LOS C	11.2	81.6	0.72	0.62	0.72	49.3
3	R2	All MCs	77	7.0	77	7.0	*0.693	71.8	LOS E	4.4	32.8	1.00	0.83	1.15	21.8
Approach			418	5.5	418	5.5	0.693	35.6	LOS D	11.2	81.6	0.76	0.66	0.79	42.5
East: New Site Access (E)															
4	L2	All MCs	80	7.0	80	7.0	0.726	58.3	LOS E	10.9	80.7	1.00	0.86	1.09	23.4
5	T1	All MCs	1	0.0	1	0.0	*0.726	49.5	LOS D	10.9	80.7	1.00	0.86	1.09	23.8
6	R2	All MCs	120	7.0	120	7.0	0.726	55.1	LOS E	10.9	80.7	1.00	0.86	1.09	23.4
Approach			201	7.0	201	7.0	0.726	56.3	LOS E	10.9	80.7	1.00	0.86	1.09	23.4
North: Gardner Rd (N)															
7	L2	All MCs	116	7.0	116	7.0	*0.846	59.5	LOS E	34.4	251.8	0.96	0.93	1.05	22.7
8	T1	All MCs	544	5.0	544	5.0	0.846	50.2	LOS D	34.4	251.8	0.96	0.93	1.05	41.3
9	R2	All MCs	45	7.0	45	7.0	0.357	77.4	LOS E	2.5	18.2	0.99	0.74	0.99	30.1
Approach			705	5.5	705	5.5	0.846	53.5	LOS D	34.4	251.8	0.96	0.92	1.04	37.1
West: Prebble St (W)															
10	L2	All MCs	92	7.0	92	7.0	0.844	66.3	LOS E	9.2	68.0	1.00	0.95	1.29	28.5
11	T1	All MCs	1	0.0	1	0.0	*0.844	60.6	LOS E	9.2	68.0	1.00	0.95	1.29	21.6
12	R2	All MCs	62	7.0	62	7.0	0.844	66.3	LOS E	9.2	68.0	1.00	0.95	1.29	28.6
Approach			155	7.0	155	7.0	0.844	66.2	LOS E	9.2	68.0	1.00	0.95	1.29	28.5
All Vehicles			1479	5.8	1479	5.8	0.846	50.2	LOS D	34.4	251.8	0.92	0.84	1.00	35.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Gardner Rd (S)												
P1	Full	50	53	49.3	LOS E	0.2	0.2	0.95	0.95	203.1	200.0	0.98
P1B	Slip/ Bypass	50	53	49.3	LOS E	0.2	0.2	0.95	0.95	203.1	200.0	0.98

East: New Site Access (E)											
P2	Full	50	53	49.3	LOS E	0.2	0.2	0.95	0.95	203.1	200.0	0.98
West: Prebble St (W)											
P4	Full	50	53	49.3	LOS E	0.2	0.2	0.95	0.95	203.1	200.0	0.98
All Pedestrians		100	211	49.3	LOS E	0.2	0.2	0.95	0.95	203.1	200.0	0.98

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

PHASING SUMMARY

Site: 101v [Base+dev 2035 PM Peak (Site Folder: 1_Gardner Rd_Prebble St - Interim Design 75%/25%)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 110 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: Lead lag right
Input Phase Sequence: A, B, C, D, E
Output Phase Sequence: A, B, C, D, E
Reference Phase: Phase A

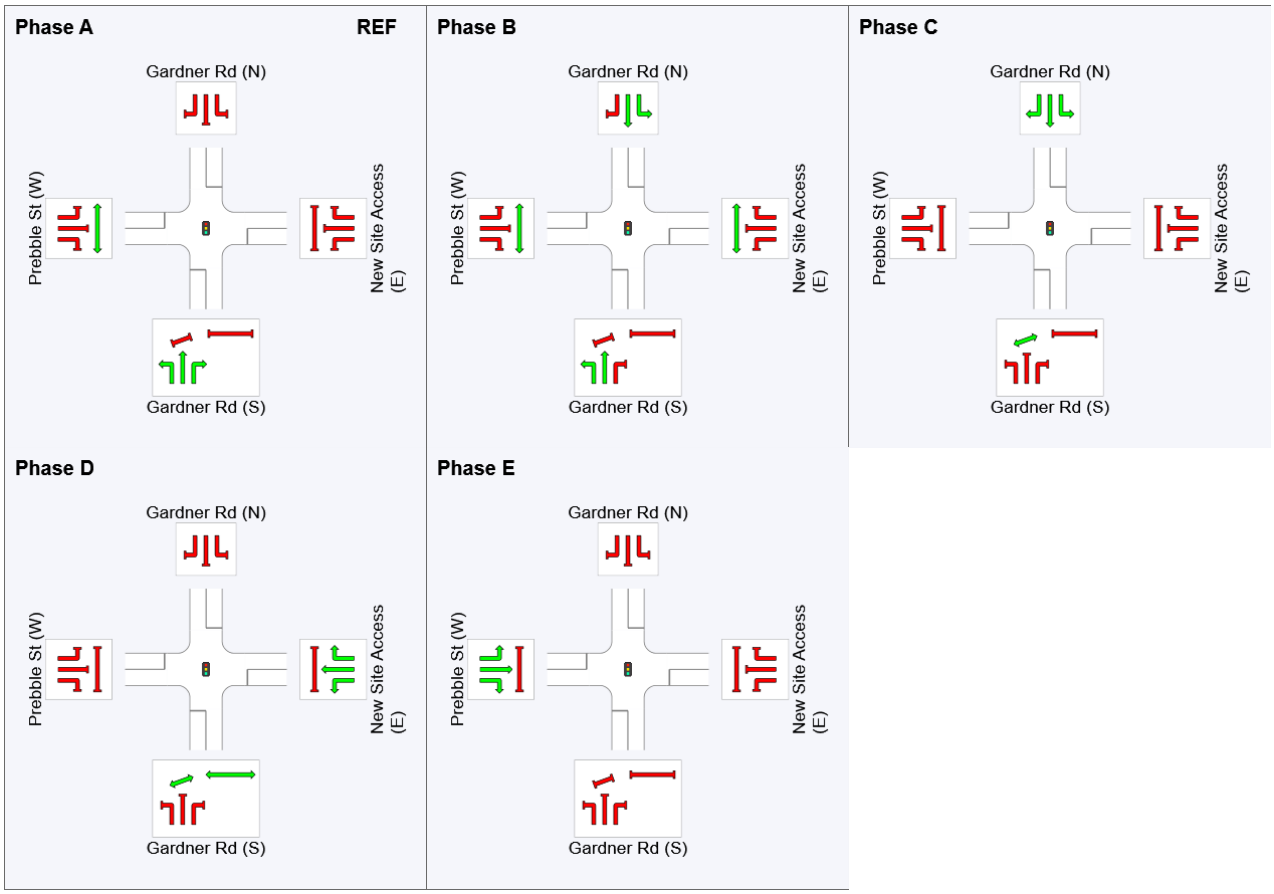
Phase Timing Summary

Phase	A	B	C	D	E
Phase Change Time (sec)	0	13	55	69	93
Green Time (sec)	7	34	8	18	11
Phase Time (sec)	15	40	14	24	17
Phase Split	14%	36%	13%	22%	15%
Phase Frequency (%)	100.0[1]	100.0[1]	100.0[1]	100.0[1]	100.0[1]

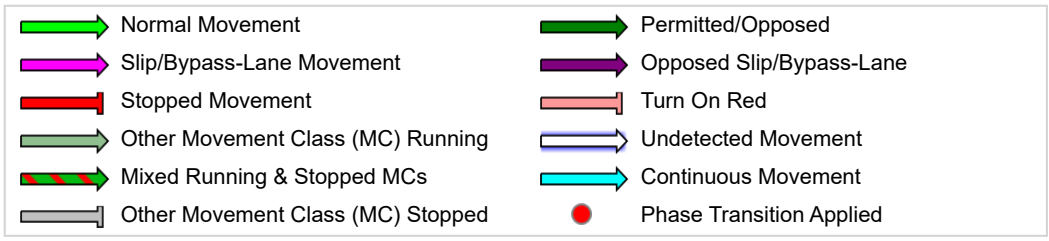
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

1 Phase Frequency has been given with User-Specified Phase Times.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



MOVEMENT TIMING

All Movement Classes

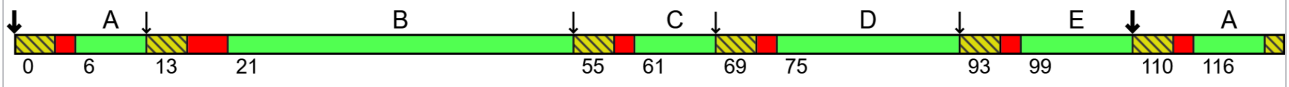
Site: 101v [Base+dev 2035 PM Peak (Site Folder: 1_Gardner Rd_Prebble St - Interim Design 75%/25%)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 110 seconds (Site User-Given Phase Times)

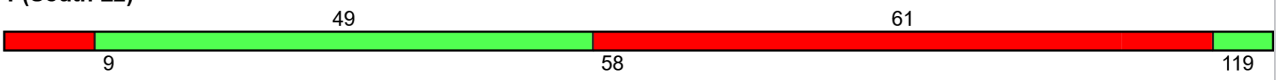
Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: Lead lag right
Input Phase Sequence: A, B, C, D, E
Output Phase Sequence: A, B, C, D, E
Reference Phase: Phase A

Displayed Signal Timing - Phases

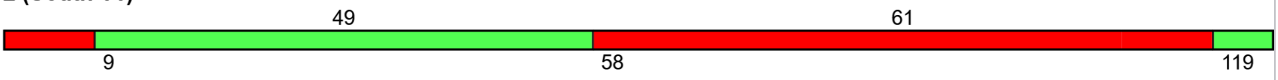


Effective Signal Timing - Movements

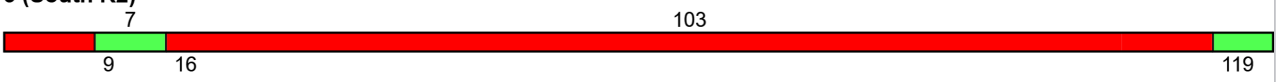
1 (South L2)



2 (South T1)



3 (South R2)



4 (East L2)

5 (East T1)

6 (East R2)

7 (North L2)

7 (North L2) Bicycles

8 (North T1)

8 (North T1) Bicycles

9 (North R2)

10 (West L2)

11 (West T1)

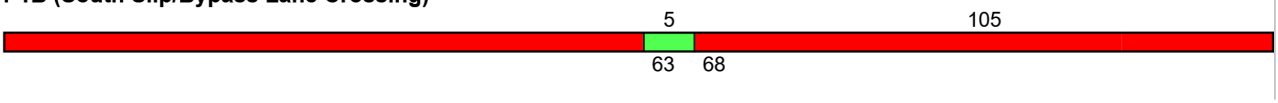
12 (West R2)

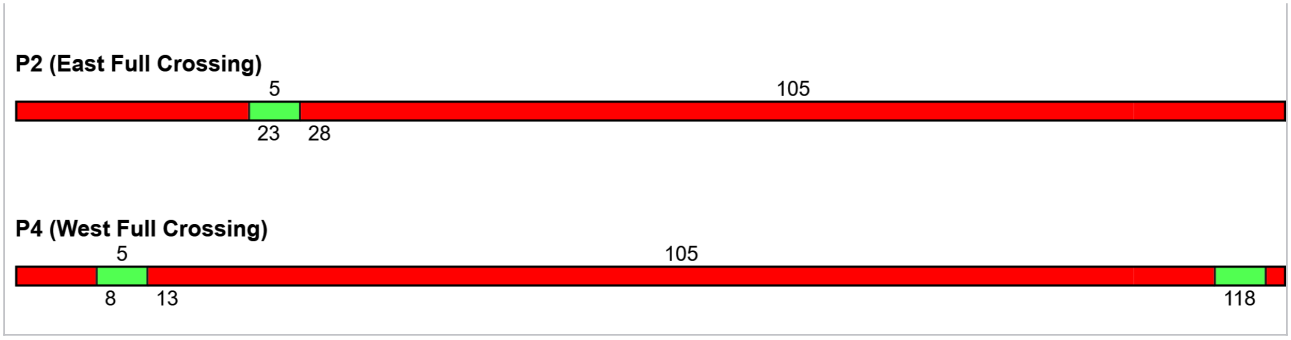
Green Interval
Red Interval

Pedestrian Signal Timing

P1 (South Full Crossing)

P1B (South Slip/Bypass Lane Crossing)





Green Interval
Red Interval

Attachment 7 – Response to TAPS Code

9.4.11 Transport, access, parking and servicing code

9.4.11.1 Application

1. This code applies to assessing:
    a. operational work which is assessable development if this code is identified as a prescribed secondary code in the assessment benchmarks column of a table of assessment for operational work (section 5.8); or
    b. a material change of use or reconfiguring a lot if:
        i. assessable development where this code is identified as a prescribed secondary code in the assessment benchmarks column of a table of assessment for a material change of use (section 5.5) reconfiguring a lot (section 5.6), or an overlay (section 5.10); or
        ii. impact assessable development, to the extent relevant.
2. When using this code, reference should be made to section 1.5 and section 5.3.3.

Note—The following purpose, overall outcomes, performance outcomes and acceptable outcomes comprise the assessment benchmarks of this code.

Note—Where this code contains performance outcomes or acceptable outcomes that relate to:

- crime prevention through environmental design principles, guidance is included in the Crime prevention through environmental design planning scheme policy;
- design for the reduction of graffiti, guidance is provided and the Graffiti prevention planning scheme policy;
- infrastructure design and construction works, guidance is provided in the Infrastructure design planning scheme policy;
- refuse and recycling, guidance is provided in the Refuse planning scheme policy;
- transport, access, parking and servicing standards and guidelines are contained in the Transport, access, parking and servicing planning scheme policy and the Infrastructure design planning scheme policy.

Note—If involving a standard format lot with common property such as requiring a community management scheme under the *Body Corporate and Community Management Act 1997*, the development contains a reconfiguring a lot aspect of development and the Subdivision code will apply.

9.4.11.2 Purpose

1. The purpose of the Transport, access, parking and servicing code is to assess the suitability of the transport, access, parking and servicing aspects of development.
2. The purpose of the code will be achieved through the following overall outcomes:
    a. Development provides for access, circulation, parking and vehicle-based services for all relevant transport modes, including walking, cycling and public transport relevant to the nature of the proposed development and its location in relation to the transport network and surrounding existing and future land uses.
    b. Development enhances the potential for trip making other than by private vehicle.
    c. Development provides safe access for all transport modes that does not impact adversely on the efficiency and safety of the transport network or diminish the amenity of nearby land uses.
    d. Development ensures that impacts on amenity caused by traffic generation is consistent with the community's reasonable expectations for the intended use.
    e. Development provides site access arrangements to ensure that any adverse impacts on other development, the transport network and those who use it, are minimised to maintain amenity of the area and the safety and efficiency of the transport system.

f. Development ensures that access, parking and servicing arrangements and impacts such as noise, are consistent with the community's reasonable expectations and avoid risk of damage to people, property and vehicles.
g. Development maximises safety in the use of the transport network, particularly for the most vulnerable users (children, pedestrians, persons with disabilities and cyclists) so that all transport modes are safe and convenient.
h. Development provides for walking and cycling routes and end-of-trip facilities for pedestrians and cyclists, designed and located to make walking and cycling attractive and viable transport options.
i. Development envisaged by the planning scheme, which will potentially have an adverse impact on the operation of the transport network, is designed and of a scale that maintains the safety and efficiency of the transport network.
j. Development provides for on-site parking and manoeuvring areas for cars, motorcycles, bicycles and service vehicles which:
    i. are safe and convenient to use;
    ii. if outside the City core and the City frame identified in Figure a are adequate to meet the design peak-parking demands without significant overflow to adjacent premises or the generation of excessive on-street car parking demand, taking into account the requirements of other road users.
k. Development provides for on-site servicing that is safe, convenient to use, but discrete, and adequate to meet the reasonably expected demands generated by the development, without significant adverse impacts on the external road system or adjacent premises.
l. Development accommodates future road upgrades and widenings ensuring the ongoing capacity, efficiency and safety of the transport network.

9.4.11.3 Performance outcomes and acceptable outcomes

Table 9.4.11.3—Performance outcomes and acceptable outcomes

Performance outcomes	Acceptable outcomes	Comments
PO1 Development is designed: a. to include a technically competent and accurate response to the transport and traffic elements of the development; b. in accordance with the standards in the Transport, access, parking and servicing planning scheme policy; c. to ensure the efficient operation and safety of the development and its surrounds. Note—The acceptable outcome and performance outcome can be demonstrated through a development application that:	**AO1** Development complies with the standards in the Transport, access, parking and servicing planning scheme policy.	**Complies with Performance Outcome** Refer to the TTM Transport Engineering Assessment for a detailed assessment of the interim intersection layout.

• is accompanied by sufficient information, including computer modelling input and output data, to allow the proposed development to be properly assessed against the requirements of this code and the standards and guidelines of the Transport, access, parking and servicing planning scheme policy; • is certified by a Registered Professional Engineer Queensland that all plans, documents and dimensioned drawings comply with the requirements of this code and the standards and guidelines of the Transport, access, parking and servicing planning scheme policy; • ensures that any computer modelling input and output data are accurate, reasonable and carried out in accordance with sound traffic engineering practices.		
PO2 Development of a major size incorporates on-site provision for integration with the public transport network and the management of vehicles, public transport, pedestrians and cyclists, including providing appropriate pedestrian and cyclist linkages to adjoining uses, public areas and the transport network consistent with the planning by the Queensland Government and Council.	**AO2** No acceptable outcome is prescribed.	**Not Applicable**
PO3 Development provides vehicle access that is located and designed so as to have no significant impact on the safety, efficiency, function, convenience of use or capacity of the road network.	**AO3.1** Development provides site access that is located and designed in compliance with the standards in the Transport, access, parking and servicing planning scheme policy. **AO3.2** Development provides an easement for a vehicular access benefiting all adjoining landowners and the Council if the vehicular access services more than an individual development or premises.	**Complies with Acceptable Outcome** Refer to the TTM Transport Engineering Assessment for a detailed assessment of the interim intersection layout.
PO4 Development provides walking and cycle routes through the site which:	**AO4.1** Development provides walking and cycle routes which are constructed on the carriageway or through the site to:	**Complies with Acceptable Outcome**

a. link to the external network and pedestrian and cyclist destinations such as schools, shopping centres, open space, public transport stations, shops and local activity centres along the safest, most direct and convenient routes; b. encourage walking and cycling; c. ensure pedestrian and cyclist safety; d. provide a direct and legible network. Note—The Infrastructure design planning scheme policy provides additional guidance on how to comply with this performance outcome.	a. create a walking or cycle route along the full frontage of the site; b. connect to public transport and existing cycle and walking routes at the frontage or boundary of the site. **AO4.2** Development provides walking and cycle routes that are constructed in compliance with the standards in the Transport, access, parking and servicing planning scheme policy and the Infrastructure design planning scheme policy.	
	AO4.3 Development provides walking and cycle routes which do not include a potential entrapment area, blind corner or sudden change in level that restrict sightlines.	
PO5 Development provides secure and convenient bicycle parking which: a. for visitors is obvious and located close to the building's main entrance; b. for employees is conveniently located to provide secure and convenient access between the bicycle storage area, end-of-trip facilities and the main area of the building; c. is easily and safely accessible from outside the site; d. does not impact adversely on visual amenity; e. does not impede the movement of pedestrians or other vehicles; f. is designed to comply with a recognised standard for the construction of bicycle facilities. Note—For a performance outcome relating to the number of bicycle parking spaces provided, the application must demonstrate how the	**AO5.1** Development provides on-site bicycle parking spaces in compliance with the standards in the Transport, access, parking and servicing planning scheme policy. **AO5.2** Development provides bicycle parking spaces for employees which are co-located with end-of-trip facilities (shower cubicles and lockers) in compliance with the Transport, access, parking and servicing planning scheme policy and AS 2890.3-1993 Bicycle parking facilities.	**Not Applicable**
	AO5.3 Development ensures that the location of visitor bicycle parking is discernible either by direct view or using signs from the street.	
	AO5.4	

needs of the intended users of the site differ from the standard rates in the Transport, access, parking and servicing planning scheme policy.	Development provides visitor bicycle parking which does not impede pedestrian movement. **AO5.5** Development provides bicycle parking which is constructed in compliance with the standards in the Transport, access, parking and servicing planning scheme policy.	
PO6 Development provides shower cubicles and lockers in sufficient numbers to meet the needs and volume of predicted pedestrian and cyclist users. Note—For a performance outcome the application must demonstrate how the needs of the intended users of the site differ from the standard rates in the Transport, access, parking and servicing planning scheme policy.	**AO6** Development provides shower cubicles and lockers for pedestrians and cyclists in compliance with the standards in the Transport, access, parking and servicing planning scheme policy.	**Not Applicable**
PO7 Development provides pedestrian and cyclist access to the site which is designed to provide safe movement and avoid unnecessary conflict between pedestrians, cyclists and motor vehicles.	**AO7** Development provides pedestrian and cycle access that is designed and constructed in compliance with the site access design guidelines, pedestrian facilities standards and cyclist facilities standards in the Transport, access, parking and servicing planning scheme policy.	**Not Applicable**
PO8 Development provides pedestrian and cyclist access to and from the site which is located to take advantage of safe crossing points of the adjacent road system, key destinations and public transport facilities.	**AO8** No acceptable outcome is prescribed.	**Not Applicable**
PO9 Development provides access driveways in the road area that are located, designed and controlled to:	**AO9.1** No acceptable outcome for access is prescribed, for a major development (as described in the Transport, access, parking and servicing planning scheme policy). **AO9.2**	**Not Applicable**

a. minimise adverse impacts on the safety and operation of the transport network, including the movement of pedestrians and cyclists; b. ensure the amenity of adjacent premises, from impacts such as noise and light.	Development which is not a major development (as described in the Transport, access, parking and servicing planning scheme policy) provides a single site access driveway in the road area to the lowest order road to which the site has frontage.	
	AO9.3 Development ensures that sight distances to and from all proposed access driveways in the road area and intersections are in compliance with the standards in the Transport, access, parking and servicing planning scheme policy.	
	AO9.4 Development provides access driveways in the road area which: a. are located, designed and controlled in compliance with the standards in the Transport, access, parking and servicing planning scheme policy; b. are not provided through a bus stop, taxi rank or pedestrian crossing or refuge.	
	AO9.5 Development makes provision for shared access arrangements particularly where it is necessary to limit access points to a major road.	
PO10 Redevelopment provides for: a. the closure of all access driveways in the road area that no longer comply with the standards in the Transport, access, parking and servicing planning scheme policy; b. the reinstatement of adjacent footpaths.	**AO10** No acceptable outcome is prescribed.	**Not Applicable**
PO11	**AO11.1**	**Not Applicable**

Development provides that an internal approach to an access driveway in the road area is designed and located to provide for the safety of pedestrians and cyclists using paths adjacent to the frontage of the site, and motorists.	Development provides sight distances to and from all proposed access driveways in the road area and intersections which are in compliance with the standards in the Transport, access, parking and servicing planning scheme policy. **AO11.2** Development ensures that convex mirrors are only used in a site: a. as a secondary support at access driveways; b. in addition to acceptable sight splays that comply with the sight distances standards in the Transport, access, parking and servicing planning scheme policy.	
PO12 Development in the City core and City frame as identified in Figure a provides car parking spaces at rates to discourage private car use and encourage walking, cycling and the use of public transport.	**AO12** Development in the City core and City frame as identified in Figure a provides maximum car-parking rates in compliance with the standards in the Transport, access, parking and servicing planning scheme policy. Note—For accepted development subject to compliance with identified requirements including an existing premises, no reduction to existing car parking is required to comply with a maximum car-parking rate in the Transport, access, parking and servicing planning scheme policy.	**Not Applicable**
PO13 Development outside of the City core and City frame as identified in Figure a provides on-site car parking spaces to accommodate the design peak parking demand without any overflow of car parking to an adjacent premises or adjacent street.	**AO13** Development outside of the City core and City frame as identified in Figure a: a. provides on-site car parking spaces in compliance with the standards in the Transport, access, parking and servicing planning scheme policy; or b. for accepted development subject to compliance with identified requirements, does not result in on-street car parking if no parking standard is identified in the Transport, access, parking and servicing planning scheme policy.	**Not Applicable**

	Note—For accepted development subject to compliance with identified requirements including an existing premises, no reduction to existing car parking is required to comply with a maximum car-parking rate in the Transport, access, parking and servicing planning scheme policy.	
PO14 Development ensures that the number of car parking spaces and design of the car parking area: a. meet the combined design peak parking demand for residential, visitor and business parking; b. allow for the temporal sharing of car-parking spaces for uses with different peak parking demands. Note—In order to demonstrate that adequate car parking is provided, a traffic impact assessment prepared in compliance with the Transport, access, parking and servicing planning scheme policy is to identify the appropriate number of car parking spaces to be provided.	**AO14.1** Development provides a number of car parking spaces on site equalling the sum of the maximum design peak parking demand for the individual uses at any point in time. **AO14.2** Development involving mixed use provides a non-residential car parking area with shared parking for all the businesses in the development.	**Not Applicable**
PO15 Development provides a car park layout which allows for on-site vehicle parking that: a. is clearly defined, safe and easily accessible; b. is designed to contain potential adverse impacts within the site; c. does not detract from the aesthetics or amenity of an area; d. discourages on-street parking if parking has an adverse traffic management safety or amenity impact; e. is consistent with safe and convenient pedestrian and cyclist movement.	**AO15** Development provides parking bays, queue areas and manoeuvring areas which are designed for the design service vehicle to the standards in the Transport, access, parking and servicing planning scheme policy.	**Not Applicable**
PO16 Development creates a safe environment by incorporating the key elements of crime prevention through environmental design.	**AO16** Development incorporates the key elements of crime prevention through environmental design in its layout, building and structure design and landscaping by:	**Refer to Town Planning Report**

	a. facilitating casual surveillance opportunities and including good sightlines to publicly accessible areas such as car parks, pathways, public toilets and communal areas; b. defining different uses and ownerships through design and restricting access from non-residential uses into private residential dwellings; c. promoting safety and minimising opportunities for graffiti and vandalism through exterior building design and orientation of buildings and use of active frontages; d. ensuring publicly accessible areas such as car parks, pathways, public toilets and communal areas are well lit; e. including way-finding cues; f. minimising predictable routes and entrapment locations near public spaces such as car parks, public toilets, ATMs and communal areas. Note—For guidance in achieving the key elements of crime prevention through environmental design, refer to the Crime prevention through environmental design planning scheme policy.	
PO17 Development minimises the potential for graffiti and vandalism through access control, canvas reduction and easy maintenance selection.	**AO17** Development incorporates graffiti and vandalism prevention techniques in its layout, building and structure design and landscaping, by: a. denying access to potential canvases through access control techniques; b. reducing potential canvases through canvas reduction techniques; c. ensuring graffiti can be readily and quickly removed through easy maintenance selection techniques. Note—For guidance on graffiti and vandalism prevention techniques, refer to the Graffiti prevention planning scheme policy.	**Refer to Town Planning Report**

PO18 Development is serviced by an adequate number and size of service vehicles.	**AO18** Development ensures that the number and size of design service vehicles selected for the site is in compliance with the standards in the Transport, access, parking and servicing planning scheme policy.	**Not Applicable**
PO19 Development layout provides for services which: a. are wholly within the site, other than service vehicle manoeuvring areas which may overhang the verge on a minor road where use of the footpath is not adversely affected; b. are clearly defined, safe and easily accessible; c. are designed to contain potential adverse impacts of servicing within the site; d. do not detract from the aesthetics or amenity of the surrounding area.	**AO19.1** Development ensures that a service bay provided on site: a. is provided and designed to comply with the design vehicle table and service area design standards in the Transport, access, parking and servicing planning scheme policy; b. is located away from street frontages and screened from adjoining premises. **AO19.2** Development provides on-site servicing facilities and associated on-site vehicle manoeuvring areas which are designed in compliance with the service area design standards in the Transport, access, parking and servicing planning scheme policy. **AO19.3** Development provides service areas for refuse collection in compliance with the standards in the Refuse planning scheme policy, Transport, access, parking and servicing planning scheme policy and the Infrastructure design planning scheme policy.	**Not Applicable**
PO20 Development provides service vehicle access routes to and from the site which minimise the impact on: a. amenity and safety in residential areas; b. streets not constructed to a standard that accommodate increased heavy vehicle movements.	**AO20** Development ensures that service vehicles use the shortest and most direct route to the major road network in compliance with the heavy vehicle standards in the Transport, access, parking and servicing planning scheme policy.	**Not Applicable**

If for development which is required to be serviced by a b-double (Austroad class 10 vehicle), multi-combination vehicle, over-dimensioned vehicle or any other vehicle identified by the Queensland Government as requiring a permit to operate on the road (freight-dependent development)		
PO21 Development which is freight-dependent development ensures that the traffic generated by the development does not impact on: a. the operation of the transport network; b. the safety and amenity of a residential area; c. a road not constructed to accommodate a non-standard vehicle such as a road only constructed to accommodate a vehicle that has a legal right of access to all roads including Austroads vehicles classes 1—9.	**AO21.1** Development which is freight-dependent development is located on a site which: a. has frontage to or direct access to the freight network in the Road hierarchy overlay via roads in a zone in the Industry zones category; or b. can be serviced by a route that can act as a primary freight access route and connect to an existing primary freight route without impacting on the safe operation of the road network in compliance with the heavy vehicle standards in the Transport, access, parking and servicing planning scheme policy. **AO21.2** Development which is freight-dependent development provides any necessary upgrade to a road used as an access route in compliance with the Infrastructure design planning scheme policy.	**Not Applicable**

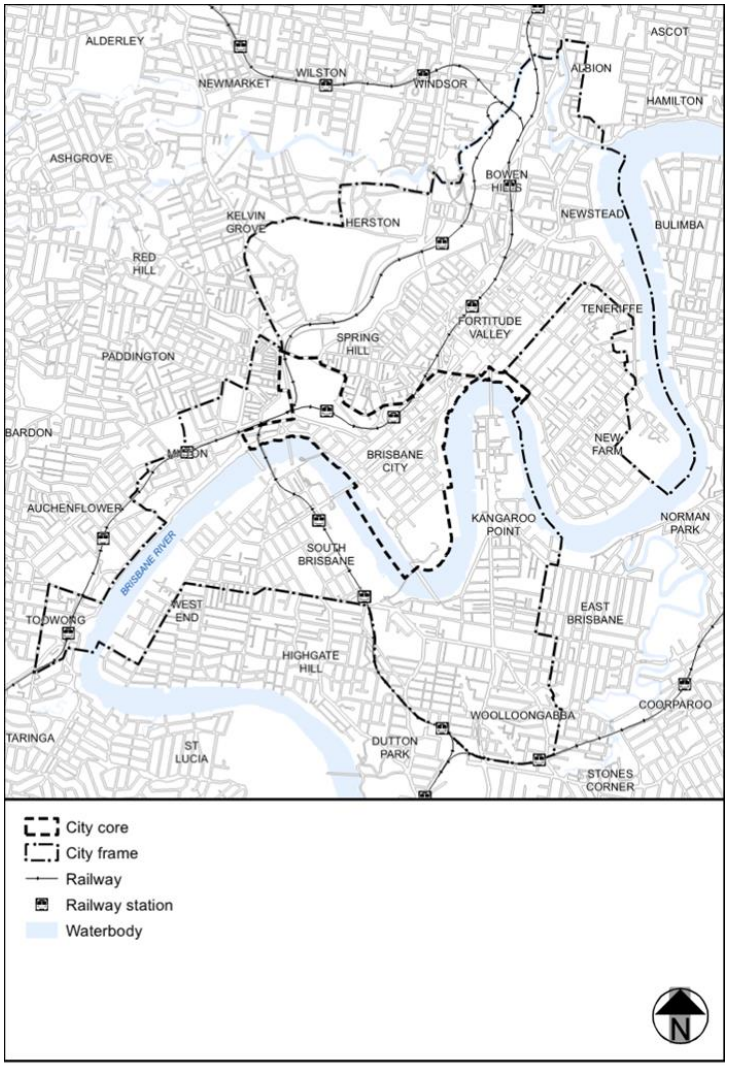


Figure a—City core and City frame

View the high resolution of Figure a—City core and City frame