PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

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Queensland Government

Transport Engineering Report

Caloundra South West State School

About TTM

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Revision Record

No.	Author	Reviewed/Approved	Description	Date
1.	A. Riddles	A. Riddles	Draft Report	28/07/24
2.	E. Collins/ A. Riddles	A. Riddles	Draft Report	19/08/24
3.	E. Collins/ A. Riddles	A. Riddles	Draft Report	24/10/24
4.	E. Collins/ A. Riddles	A. Riddles	Final Report	05/11/24

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Contents

Table Index

Figure Index

1 Introduction

1.1 Background

TTM Consulting has been engaged by Hayball to prepare an updated transport engineering report investigating the proposed Caloundra South West State School, which will be situated within Precinct 14 of the Aura master planned community being developed by Stockland. The Aura (formerly known as Caloundra South) master planned community has been designated as a Priority Development Area (PDA) by Economic Development Queensland (EDQ).

In addition to the primary (and preparatory) school, a kindergarten and a health hub will be constructed on the wider site.

This updated report has been prepared taking cognisance of the transport and traffic engineering items raised by EDQ in email correspondence (via Ridgemill Pty Ltd) dated 29 August 2024. The pertinent items that TTM are responding to and the location of relevant responses are identified below in Table 1.1.

Table 1.1: Request for Further Information (RFI)

Item	Issue	Response Location
A	*240m2 of Health Hub is proposed in the report. The operational hour of the health hub/medical centre is not stated. As discussed, this is introducing a new use and intensification of the use. Stockland initially modelled this school as 1,100 students (PWC Traffic Modelling Refresh). The proposal by DoE is 1,140 students + 240m2 medical centre. Therefore, address if there are additional impacts to the two signalised intersections.*	Refer to Sections 2.1, 8 and 9. Given the scale of the health hub, the additional traffic generation associated with this land-use is relatively minor (equating to 12vph in the weekday AM and PM peak-hour periods). The original (and updated) transport engineering report assessed the additional traffic impacts associated with increased enrolment level, the health hub and the kindergarten. The traffic analysis has confirmed that the adjacent road network and specifically the northern and southern traffic signal controlled intersections are sufficient to cater for the traffic demands for both the ultimate and interim (prior to the Bells Creek Bridge Crossing opening in 2030) scenarios, albeit with modifications to the phasing strategy at the northern traffic signal controlled intersection. The queuing estimated for the southern and northern approaches at the northern and southern traffic signal controlled intersection, respectively, will not "block-back" and impede the operation of the upstream intersections.
B	*Parking numbers is satisfactory and there may be a slight oversupply of parking, assuming the peak parking demand of the medical centre is not the same as school drop-off and pick-up. No issues.*	Noted.
C	*The report proposes no-standing sign (7-9am, 2-4pm) on the southern side of Road 3. Although this is typical for primary school road frontage, EDQ do not support this outcome as the Plan of Development shows indented parking along the southern side of*	Noted. As per EDQ's request, the transport engineering report has been updated without any reference to the provision of the "NO STANDING" zone on the opposite side of the southern road frontage between 7-9am and 2-4pm on school days

	this road which is associated with the terrace housing.	
D	*The report assumes year 2030 school student capacity is approximately 67%. No issues.*	Noted.
E	*Banya Avenue signalised intersection has not been modelled as a protected signalised intersection in accordance with DTMR Selection and Design of Cycle Tracks. Cyclist and pedestrian have its own green time, without vehicle filtering. SIDRA is required to be amended.*	Refer to Sections 9.1 and 9.2. The phasing adopted in relation to filtered left turns is consistent with that adopted in the Egis's analysis and that indicated in the plans, which I assume both EDQ and Sunshine Coast Council (SCC) have approved. To account for the presence of the pedestrian crossing facilities on the various approaches, TTM have adopted a late start for the filtered left turns. This methodology is generally consistent with Table 4.5.2(A) and Figure 4.5.2 (C) of the DTMR Selection and Design of Cycle Tracks guideline where it is outlined that an early start bicycle phase (with concurrent conflicting vehicle turns run at a delayed start of 6 seconds) as a valid optimised signal phasing arrangement. This is how the intersection has been modelled. It is also noted that the traffic volumes provided by Stockland for the interim (i.e. prior to the bridge crossing being completed) and ultimate scenarios indicate negligible levels of the left turning traffic from the northern to eastern approaches (equating to 1-2 vehicles per cycle). Consequently, the level of conflict should be minor.
F	*Section 9.2 and 9.3 of the report recommends the existing concrete median on Western Drive to be modified. This is not strictly necessary as the existing intersection layout modelled in SIDRA complies with Stockland and SCC requirement (LGIA states DOS <0.9). Once the SIDRA is amended based on the item above, please confirm if the modification to the central median is required to comply with the LGIA.*	Refer to Sections 9.2 and 9.3. This suggested modification specifically relates to queuing and not capacity.

It is intended that this transport engineering report will ultimately support a plan of development (POD) development application submission to EDQ.

1.2 Scope

This report investigates the transport and traffic engineering aspects of the proposed development. The scope of the report includes assessment of the following aspects:

- External road network operations and active transport opportunities.
- Access configuration to provide efficient and safe manoeuvring between the site and the public road network.
- Parking supply.
- Internal car parking design.

- Service vehicle provisions.
- Suitability of external and internal active transport provisions.
- Identification of possible impacts on the surrounding road network.

1.3 Site Location

The proposed development will be located within Precinct 14 of the Aura master planned community. When fully developed, the wider Aura master planned community will contain approximately 20,000 dwellings.

The extent of the Aura master planned community is illustrated in Figure 1-1 and the location of the proposed primary school (within the Aura master planned community) is illustrated in Figure 1-2.

Figure 1-1: Extent of Aura Master Planned Community (Source: Stockland)

Figure 1-2: Location of the Proposed Primary School (Source: Stockland)

2 Proposed Development

2.1 Development Profile

The proposal encompasses the construction of a new state primary school, which will be constructed in two stages. It is understood that following the completion of Stage 2, the primary school will have an enrolment capacity of 1,140 students (including those in attendance at the preparatory school). It is estimated that 143 staff will be employed at the primary (and preparatory) school.

It is understood that Stage 1 will open in 2027 whilst Stage 2 will open in 2029. Whilst the enrolment capacity will be 1,140 students at the completion of Stage 2, the enrolment forecast will be much lower. The Department of Education (DoE) have indicated the following with respect to the enrolment forecast up to 2032:

- 2027 (Stage 1) – 349 students
- 2028 (Stage 1) – 525 students
- 2029 (Stage 1 & 2) – 675 students
- 2030 (Stage 1 & 2) – 759 students
- 2031 (Stage 1 & 2) – 818 students
- 2032 (Stage 1 & 2) – 885 students

In addition to the primary (and preparatory) school, a kindergarten (with up to 48 places) and a health hub with a gross floor area (GFA) of 240m² will be constructed on the wider site. It is expected that the kindergarten and the health hub will be constructed as part of Stage 2.

It is understood that the health hub will typically operate between 7am and 6pm Monday to Friday with occasional community events held at the weekend.

The masterplan is included in Appendix A.

2.2 Vehicular Access

Vehicular access to the primary (and preparatory) school, kindergarten and health hub will be achieved at several locations along the eastern, southern and western road frontages, as indicatively shown in Figure 2-1

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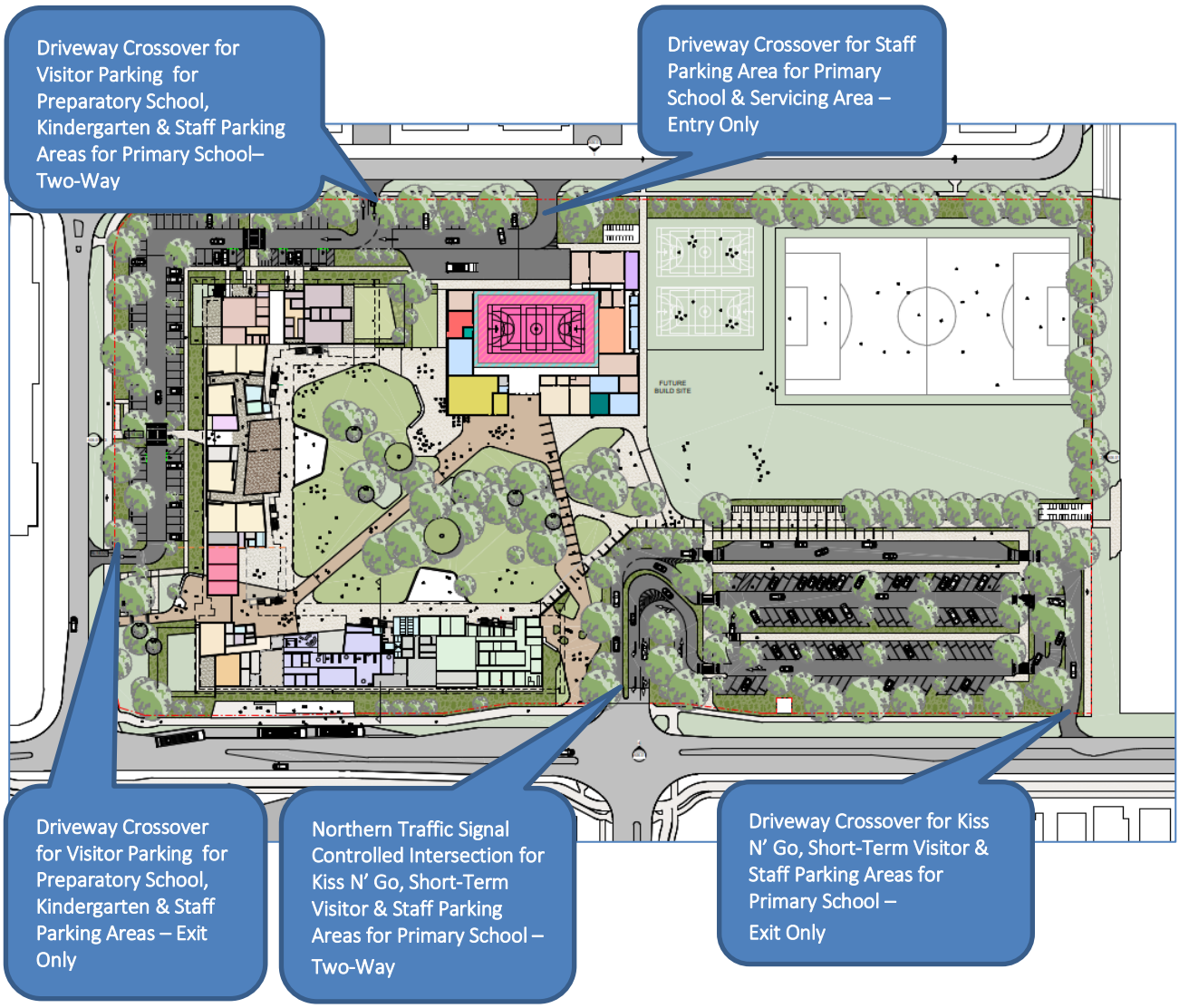


Figure 2-1: Overview of Access Arrangements

It is proposed that vehicular access to the kiss n' go and the parking areas provided in the northeastern portion of the wider site, which will be used for short-term visitor and staff parking for the primary school, will be achieved via a new western approach at the northern traffic signal controlled intersection constructed along the eastern road frontage. A separate exit only driveway crossover will be provided on the eastern road frontage to facilitate exit from the kiss n' go and the parking areas provided at this location to afford additional redundancy and assist routing to the north (and east).

Vehicular access to the parking areas provided in the southern and southwestern portions of the wider site, which will be used for visitor parking for the preparatory school, kindergarten and Health Hub and staff parking, will be achieved via the southern driveway crossover on the western road frontage and a separate exit only driveway crossover on the southern road frontage.

Vehicular access to the parking and servicing areas in the western portion of the wider site, which will also be used for staff parking for the primary school, will be achieved via the northern driveway crossover on the western road frontage. Egress from these staff parking and servicing areas will be achieved via the southern driveway crossover on the western road frontage.

In order to assist internal circulation and mitigate potential conflict, it is proposed that the access arrangements will generally operate as one-way. Whilst the southern driveway crossover on the western road frontage will operate as two-way, this is only to facilitate egress from the staff parking and servicing area (provided in the western portion of the wider site). Consequently, the level of conflict at the driveway crossover will be negligible especially given the fact that servicing is anticipated to occur outside of the peak-hour periods.

It is expected that a 40kph school zone (operational between 7-9am and 2-4pm Monday to Friday) will be installed on roads running north to south and east to west in the vicinity of the proposed primary school.

2.3 Bus Access

Buses will be facilitated via an indented bus stop provided along the eastern road frontage. The indented bus stop can facilitate up to three buses in a two-lead stop arrangement.

2.4 Car Parking

The masterplan provides the following parking supply:

- 14 parking spaces within the kiss n' go for the primary school;
- 67 short-term visitor parking spaces (including 2 PWD spaces) for the primary school;
- 14 visitor parking spaces (including 1 PWD space) for the preparatory school;
- 5 visitor parking spaces (including 1 PWD space) for the kindergarten;
- 100 staff parking spaces (including 3 PWD spaces); &
- 12 visitor/staff parking spaces (including 1 PWD spaces) and 3 motorcycle spaces for the health hub.

The location of the various parking areas is indicatively shown in Figure 2-2.

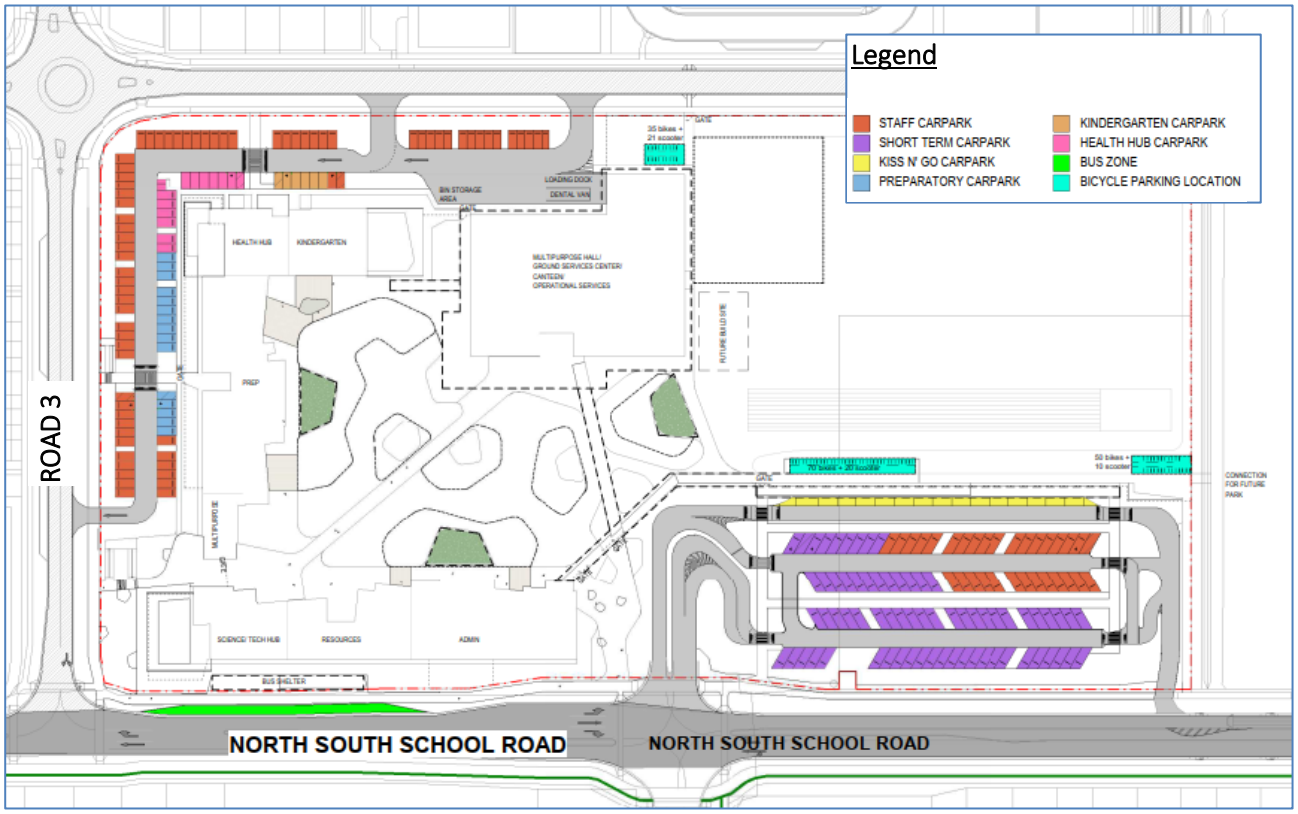


Figure 2-2: Overview of Parking Arrangements

3 Planned Transport Infrastructure

3.1 The Road Network

The majority of the roads to be built as part of the Aura master planned community are to be administered by Sunshine Coast Council (SCC). The hierarchy of the future roads and type of intersections to be provided in the vicinity of the proposed primary school are shown below in

Figure 3-1.

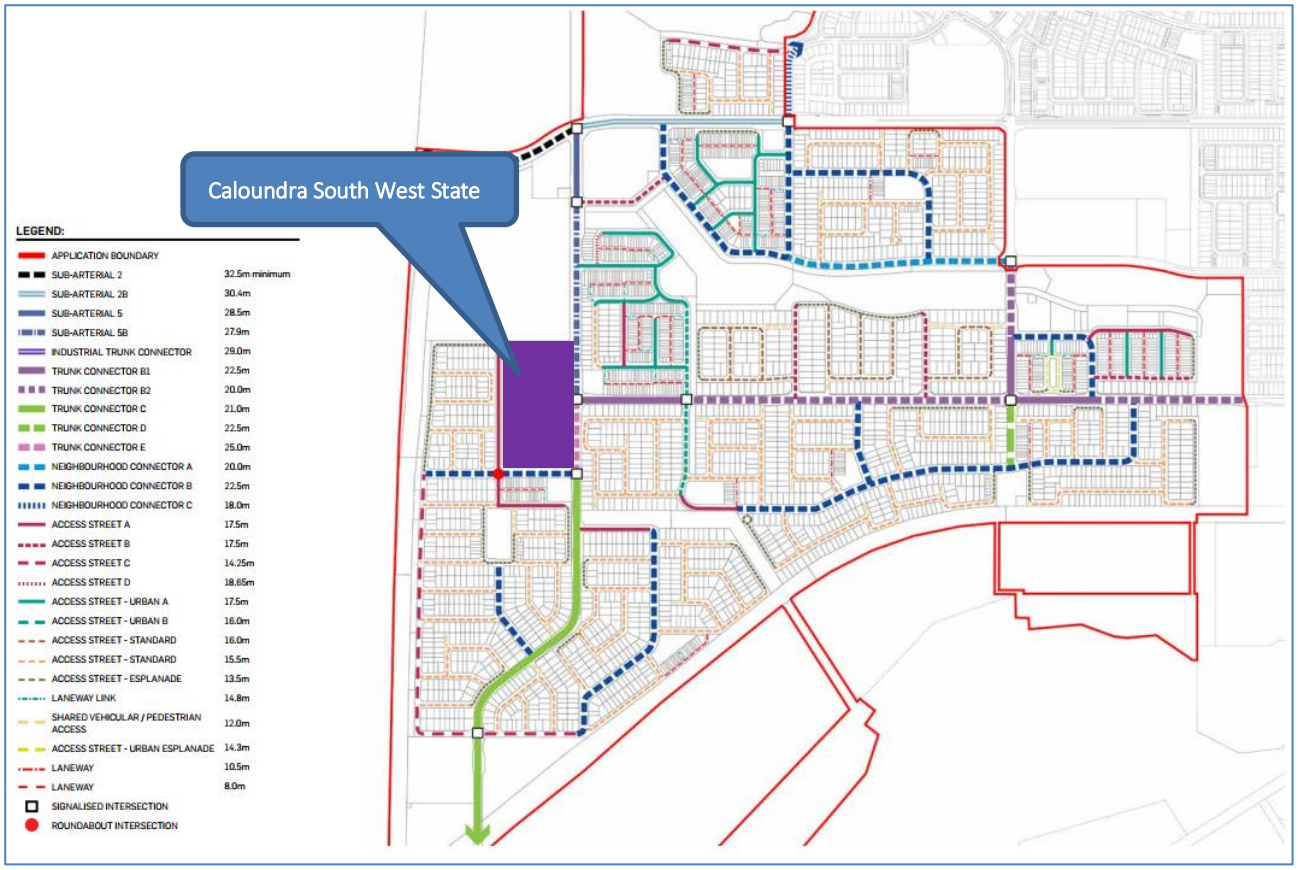


Figure 3-1: Future Road Hierarchy & Type of Intersection Control (Source: Stockland)

The northern section of the road along the eastern frontage is categorised as a 'Sub-Arterial 5B' road whilst the southern section is categorised as a 'Trunk Connector E' road. The road along the southern frontage is categorised as a 'Neighbourhood Connector B' road whilst the road along the western frontage is categorised as an 'Access Street A' road.

A number of traffic signal controlled intersections are provided in the vicinity of the site. The roundabout to be provided at the intersection of the roads along the southern and western frontages will be assist bus routing.

The number of lanes on the future roads provided in the vicinity of the site is shown in below in Figure 3-2.

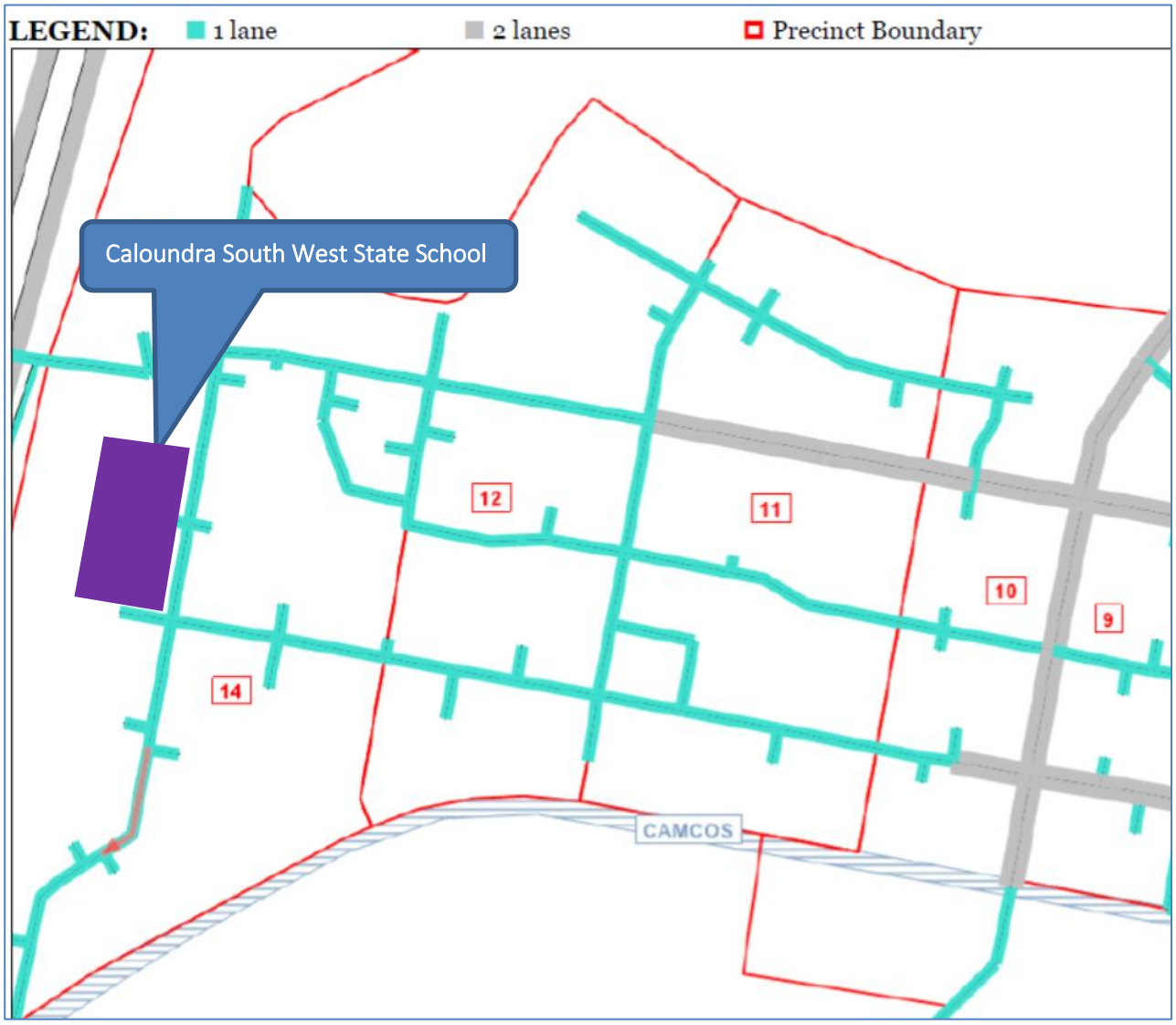


Figure 3-2: Number of Lanes on Future Roads (Source: Stockland)

3.1.1 Public Transport

The Caloundra South Urban Development Area (UDA) Development Scheme indicates that a future rail corridor will be constructed through the Aura master planned community, which will provide a connection between Maroochydore and Beerwah. Whilst the alignment of the future rail corridor (as indicatively shown in Figure 3-3) has been protected, TTM understands that funding has yet to be secured and therefore it is unclear when the project will be delivered.

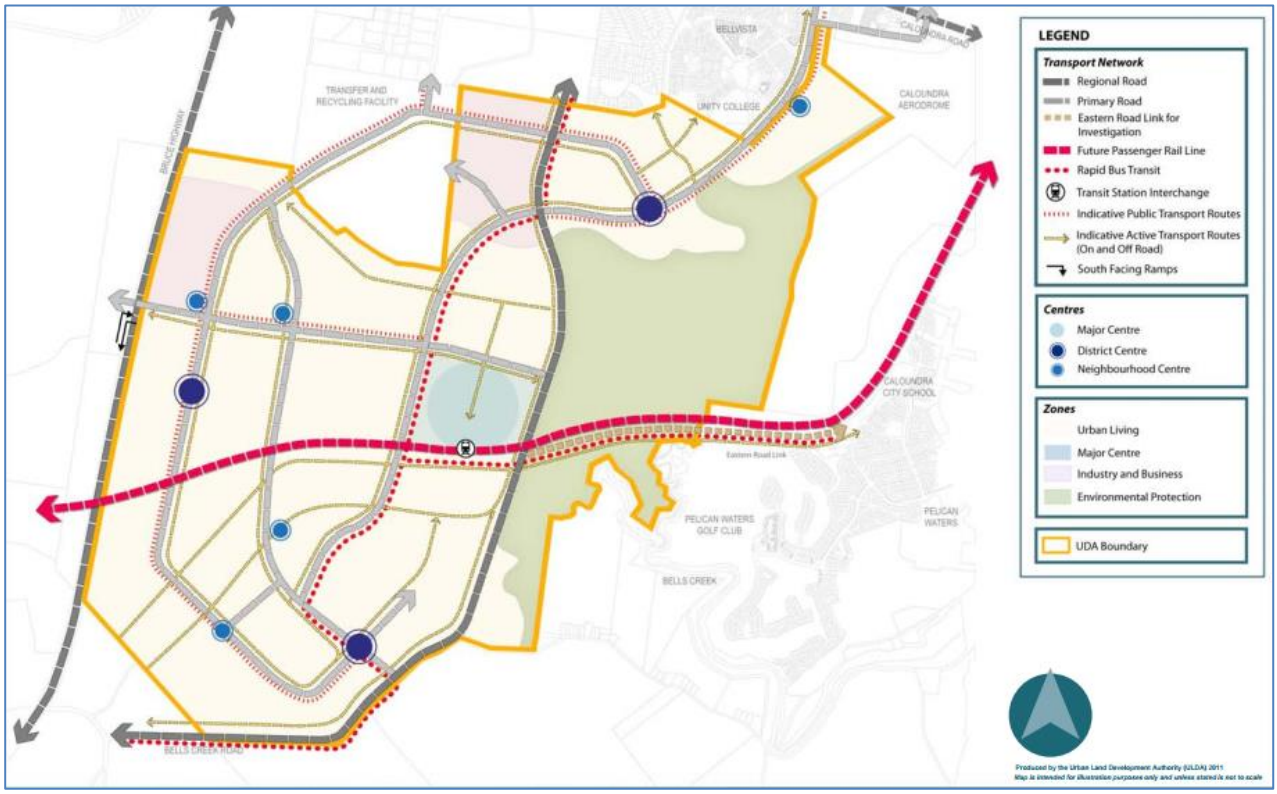


Figure 3-3: Future Public Transport Network (Source: Caloundra South UDA Development Scheme)

As shown in Figure 3-3, it is also proposed that a rapid bus transit system will be provided within the Aura master planned community. The rapid bus transit system will run north to south (via the town centre) and ultimately provide a connection to Caloundra (running parallel to future rail corridor). Additionally, it is proposed that local bus services will operate on the majority of arterial roads provided within the Aura master planned community.

Figure 3-4 indicatively shows the bus stops to be provided within the vicinity of the site.

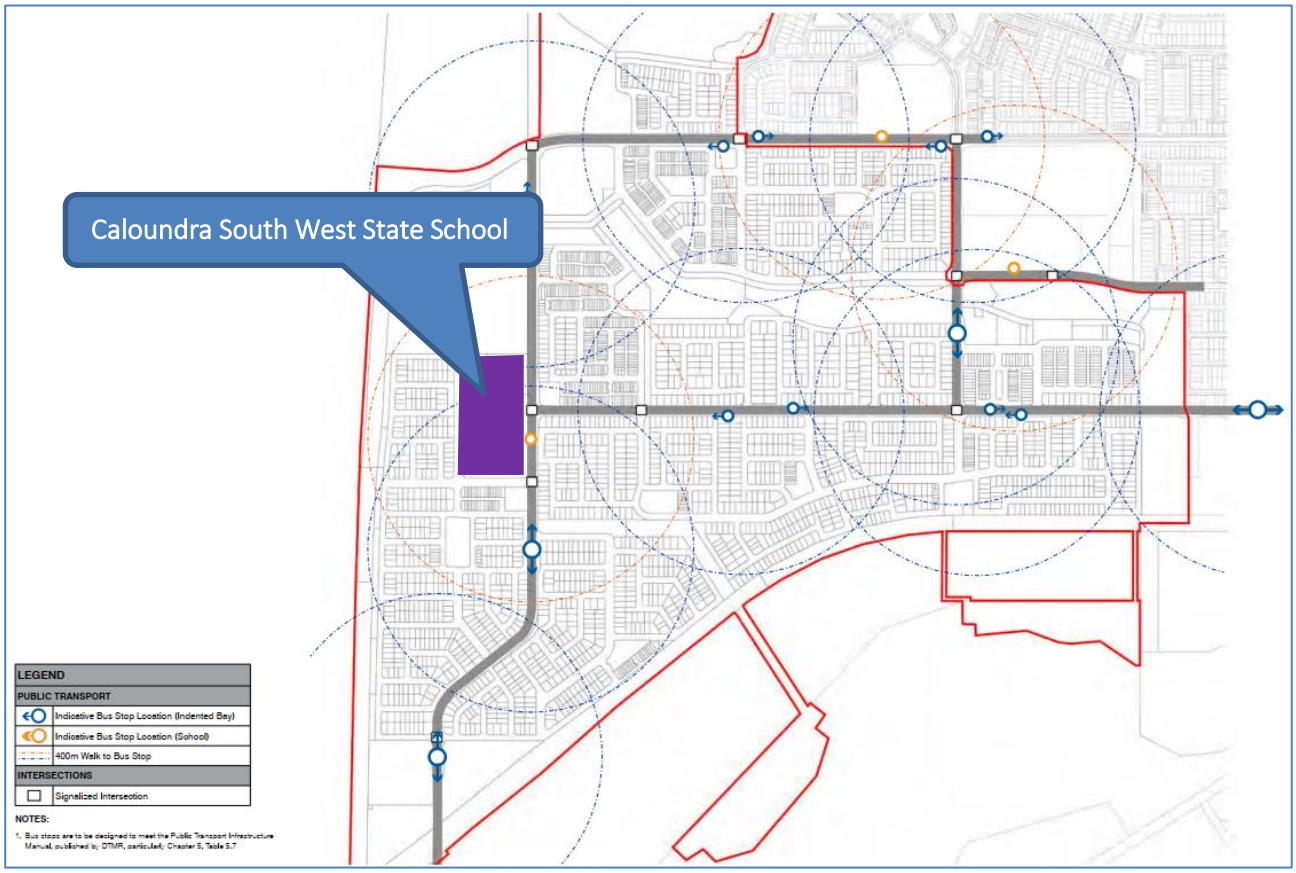


Figure 3-4: Future Bus Stop Locations (Source: Stockland)

3.1.2 Active Transport

Figure 3-5 indicatively shows the active transport provisions in the vicinity of the site. These are summarised as follows:

- Northern section of the eastern road frontage – a 1.8m wide footpath on the western side of the carriageway and a 1.8m wide footpath and 3m wide contra-flow cycle path on the eastern side of the carriageway.
- Southern section of the eastern road frontage – a 3m wide shared path on the western side of the carriageway and a 1.8m wide footpath and 3m wide contra-flow cycle path on the eastern side of the carriageway.
- Southern road frontage – a 2.5m wide shared path on the northern side of the carriageway and a 1.5m wide footpath on the southern side of the carriageway.
- Western road frontage – 1.5m wide footpaths on both sides of the carriageway.

Formal crossing facilities (including a dedicated cyclist crossing and shared crossings) will be provided at the traffic signal controlled intersections along the eastern road frontage. It is expected that crossing points will be provided at the roundabout at the intersection of the roads along the southern and western frontages.

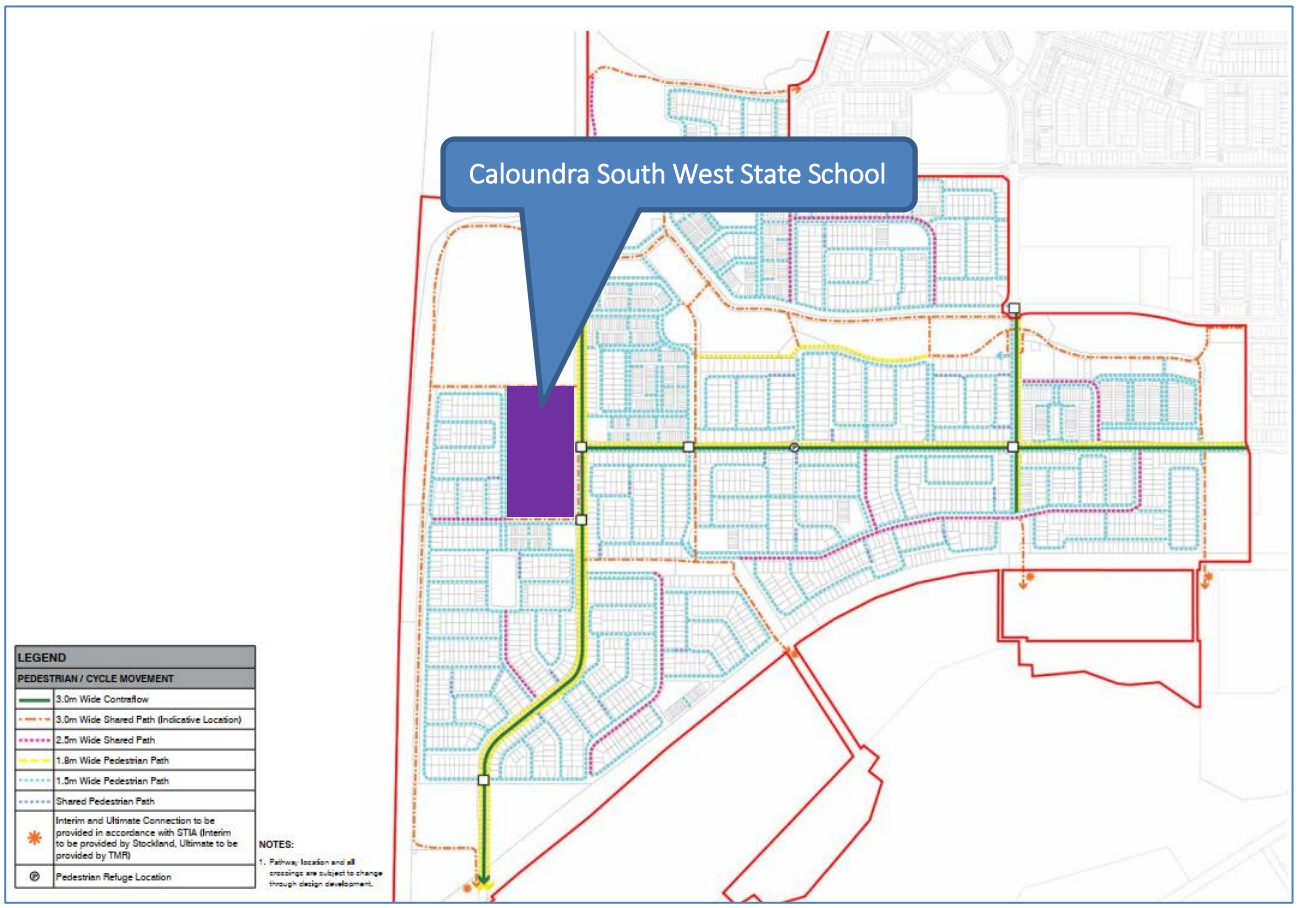


Figure 3-5: Future Pedestrian and Cycle Links (Source: Stockland)

4 Site Access Arrangements

4.1 Overview of Access Arrangements

Vehicular access to the site will be achieved several locations.

As noted previously, it is proposed that vehicular access to the kiss n' go and the parking areas provided in the northeastern portion of the wider site, which will be used for short-term visitor and staff parking for the primary school, will be achieved via a new western approach at the northern traffic signal controlled intersection constructed along the eastern road frontage.

Whilst DTMR's Planning for Safe Transport Infrastructure at Schools (PSTIS) specifies that vehicular access to kiss n' go and short-term visitor car parking areas for new schools should be achieved via collector roads (or roads of a lower classification), in order to cater for the desired travel patterns and alleviate potential congestion at adjacent intersections, vehicular access to the kiss n' go and short-term visitor parking area will be achieved via the eastern road frontage, the northern section of which is categorised as a 'Sub Arterial'. Notwithstanding this, inspection of the ultimate traffic volumes provided by PWC for Precinct 14 indicates that the road along the eastern frontage will carry between 6,000-7,000vpd, which is more typical of a trunk collector. For information purposes, preliminary traffic analysis has confirmed that the southern traffic signal controlled intersection (at the intersection of the eastern and southern road frontages) is inadequate to cater for the projected traffic volumes in the instance that vehicular access to the kiss n' go, short-term visitor and staff/long-term visitor parking areas was achieved exclusively via the roads along the southern or western frontages.

4.2 Suitability of Access Arrangements

Drawing No.'s 19BRT0434-SK 1 to SK 6 included in Appendix B provide an overview of the access arrangements and demonstrates (using Autotrack software) that the design of the access arrangements is suitable to facilitate access for the nominated design vehicles.

The suitability of the proposed access arrangements with regard to the requirements set out in AS2890.1, AS2890.2 and by the DTMR is discussed below.

4.2.1 Traffic Signal Controlled Intersection on Eastern Road Frontage – Kiss N' Go & Parking Areas in the Northeastern Portion of the Wider Site

Vehicular access to the kiss n' go and the parking areas provided in the northeastern portion of the wider site will be achieved via a new western approach at the northern traffic signal controlled intersection constructed along the eastern road frontage. To address pedestrian safety, formal crossing facilities will be provided across all approaches to the intersection. To address the desire line and the fact that a 3m wide contra-flow cycle path is provided on the eastern side of the carriageway, a dedicated cyclist crossing is provided on the eastern approach to the intersection whilst a shared crossing is provided on the northern approach to the intersection.

Traffic analysis, which has adopted the ultimate (and interim) traffic volumes provided by Stockland for Precinct 14, has confirmed that the traffic signal controlled intersection is adequate to cater for the northern traffic demands associated with the proposed development. The traffic analysis (for the traffic signal controlled intersection) is addressed in detail in Section 9.2.

It should be noted that the entry queuing provision at the traffic signal controlled intersection adequately satisfies the requirements outlined in the DTMR's PSTIS.

The design of the western approach at the traffic signal controlled intersection (and specifically the entry lane) has taken cognisance of the requirement to facilitate routing by a fire appliance.

4.2.2 Proposed Driveway Crossover on Eastern Road Frontage – Kiss N' Go & Parking Areas in the Northeastern Portion of the Wider Site

A separate exit only driveway crossover will be provided on the eastern road frontage to facilitate exit from the kiss n' go and the parking areas provided northeastern portion of the wider site to afford additional redundancy and assist routing to the north (and east). Given the central median provided along the eastern road frontage, this driveway crossover will be restricted to left-out only.

The design of the driveway crossover has taken cognisance of the requirement to facilitate routing by a fire appliance. Drawing No.'s 19BRT0434-SK 1-01, SK 1-05 and SK 3-02 to SK 6 included in Appendix B confirm that the central median along the eastern road frontage will need to be modified to allow suitable routing by a fire appliance.

The key design parameters of the driveway crossover provided on the eastern road frontage in accordance with DTMR/AS2890.1/AS2890.2 are set out in Table 4.1.

Table 4.1: Design Characteristics for the Driveway Crossover on the Eastern Road Frontage – Exit Only

Design Aspect	DTMR/AS2890.1/AS2890.2 Requirement	Proposed Provision	Compliance
Crossover Width	3.5m *	5.2m	Compliant
Minimum Intersection Separation	6m from the tangent point at the kerb (at the nearest intersection)	110m from the tangent point at the kerb (at the nearest intersection)	Compliant
Sight Distance (50kph)	Ideally 69m, minimum of 45m	Greater than 69m to the south	Compliant
Pedestrian Visibility Splays	2m x 2.5m	2m x 2.5m	Compliant
Entry Queue Capacity	N/A	N/A	N/A
Gradient of first 6m	1:20 (5%)	Generally Flat	Compliant

**Based on the crossover being one-way and facilitating vehicles up to the size of a 11m long fire appliance.

The location and design of the driveway crossover on the eastern road frontage complies with the requirements set out in AS2890.1/AS2890.2 and by the DTMR.

4.2.3 Proposed Driveway Crossovers on Southern & Western Road Frontages – Parking Areas in the Southern & Southwestern Portions of the Wider Site

Vehicular access to the parking areas provided in the southern and southwestern portions of the wider site, which will be used for visitor parking for the preparatory school, kindergarten and health hub and staff parking, will be achieved via the southern driveway crossover on the western road frontage and a separate exit only driveway crossover on the southern road frontage.

The key design parameters of the driveway crossover provided on the southern road frontage in accordance with DTMR/AS2890.1 are set out in Table 4.2.

Table 4.2: Design Characteristics for the Driveway Crossover on the Southern Road Frontage – Exit Only

Design Aspect	DTMR/AS2890.1 Requirement	Proposed Provision	Compliance
Crossover Width	3m *	4.5m	Compliant
Minimum Intersection Separation	6m from the tangent point at the kerb (at the nearest intersection)	37m from the tangent point at the kerb (at the nearest intersection)	Compliant
Sight Distance (50kph)	Ideally 69m, minimum of 45m	Greater than 69m to the north and south	Compliant
Pedestrian Visibility Splays	2m x 2.5m	2m x 2.5m	Compliant
Entry Queue Capacity	N/A	N/A	N/A
Gradient of first 6m	1:20 (5%)	Generally Flat	Compliant

*Based on the crossover being one-way and facilitating vehicles up to the size of an Australian Standard B99 design vehicle.

The location and design of the driveway crossover on the southern road frontage complies with the requirements set out in AS2890.1 and by the DTMR.

The southern driveway crossover on the western road frontage, which will facilitate vehicular access to the parking areas provided in the southern and southwestern portions of the wider site to be used for visitor parking for the preparatory school, kindergarten and health hub and staff parking, will also facilitate egress from the parking and servicing areas in the western portion of the wider site. Consequently, this driveway crossover will operate as two-way.

The key design parameters of the southern driveway crossover provided on the western road frontage in accordance with DTMR/AS2890.1 /AS2890.2 are set out in Table 4.3.

Table 4.3: Design Characteristics for the Southern Driveway Crossover on the Western Road Frontage – Two Way

Design Aspect	DTMR/AS2890.1/AS2890.2 Requirement	Proposed Provision	Compliance
Crossover Width	6.0m-9.0m *	7m	Compliant
Minimum Intersection Separation	6m from the tangent point at the kerb (at the nearest intersection)	49m from the tangent point at the kerb (at the nearest intersection)	Compliant
Sight Distance (50kph)	Ideally 69m, minimum of 45m	Greater than 69m to the north and south	Compliant
Pedestrian Visibility Splays	2m x 2.5m	2m x 2.5m	Compliant
Entry Queue Capacity	4 vehicles (24m) **	4 vehicles (24m)***	Compliant
Gradient of first 6m	1:20 (5%)	Generally Flat	Compliant

*The crossover width requirement is based on a Class 1/1A/2 car parking facility, containing 25 to 100 spaces accessed from a local road whilst facilitating vehicles up to the size of a 17.3m long dental van.

**The entry queue capacity requirement is based on DTMR's requirements for a staff and long-term visitor car parking area containing 76 to 100 spaces.

***Measured between the property boundary and the first internal parking space.

The location and design of the southern driveway crossover on the western road frontage complies with the requirements set out in AS2890.1/AS2890.2 and by the DTMR.

4.2.4 Proposed Northern Driveway Crossover on Western Road Frontage – Staff Parking & Service Areas in the Western Portion of the Wider Site

Vehicular access to the parking and servicing areas in the western portion of the wider site, which will also be used for staff parking for the primary school, will be achieved via the northern driveway crossover on the western road frontage. Egress from these staff parking and servicing areas will be achieved via the southern driveway crossover on the western road frontage.

The key design parameters of the northern driveway crossover provided on the western road frontage in accordance with DTMR/AS2890.1/AS2890.2 are set out in Table 4.4.

Table 4.4: Design Characteristics for the Northern Driveway Crossover on the Western Road Frontage – Entry Only

Design Aspect	DTMR/AS2890.1/AS2890.2 Requirement	Proposed Provision	Compliance
Crossover Width	3.5m *	6.4m	Compliant
Minimum Intersection Separation	6m from the tangent point at the kerb (at the nearest intersection)	106m from the tangent point at the kerb (at the nearest intersection)	Compliant
Sight Distance (50kph)	Ideally 69m, minimum of 45m	Greater than 69m to the north and south	Compliant
Pedestrian Visibility Splays	N/A	N/A	Compliant
Entry Queue Capacity	1 vehicle (6m) **	3 vehicles (19m) ***	Performance Solution
Gradient of first 6m	1:20 (5%)	Generally Flat	Compliant

*Based on the crossover being one-way and facilitating vehicles up to the size of 17.3m long dental van.

**The entry queue capacity requirement is based on DTMR's requirements for a staff and long-term visitor car parking area containing up to 25 spaces.

***Measured between the property boundary and the first internal parking space/loading area.

The location and design of the northern driveway crossover on the western road frontage generally complies with the requirements set out in AS2890.1/AS2890.2 and by DTMR.

4.3 Conclusions

Overall, the design of the proposed access arrangements generally complies with the requirements set out in AS2890.1/AS2890.2 and by the DTMR and are therefore considered acceptable.

5 Car Parking Arrangements

5.1 Parking Requirements

The DTMR's PSTIS provides guidance on the minimum parking space requirements for schools. Whilst the DoE and local authorities around Queensland also provide guidance on the minimum parking requirements, based on past experience and empirical research, TTM consider the parking requirements specified by the DTMR as generally the most accurate guide when assessing parking provisions for primary schools in particular.

The parking requirements based on a total enrolment of 1,140 students at the preparatory and primary schools, 48 children at the kindergarten and a health hub/medical centre with a total GFA of 240m² in accordance with the DTMR and SCC parking rates is outlined in Table 5.1.

Table 5.1: Parking Requirements

Type	Rate	Extent	Parking Requirement	Provision
Staff & Long-Term Car Parking	0.7 spaces per staff member*	143 staff**	100.1 staff spaces	100 staff spaces
Short-Term (15 min) Car Parking	1 space per 15 students*	1002 students	66.8 short-term spaces	67 short-term spaces
Kiss N' Go (2 min)	20% of short-term supply*	66.8 short-term spaces	13.4 spaces	15 spaces
Preparatory School	1 space per 8-10 students*	138 students	13.8 spaces	14 spaces
Kindergarten	1 space per 8-10 students*	48 students	4.8 spaces	5 spaces
Health Hub	1 space per 20m² + 1 motorcycle space per 100m2***	240m2	12 spaces + 2.4 motorcycle spaces	12 spaces + 3 motorcycle spaces
Total			**198 spaces + 3 motorcycle spaces + 14 kiss n' go spaces**	**198 spaces + 3 motorcycle spaces + 14 kiss n' go spaces**

*Sourced from the DTMR PSTIS guidelines.

**Estimated staffing levels.

***Sourced from the SCC Transport & Parking Code.

As outlined in Table 5.1, the masterplan proposes a total parking provision of 198 parking spaces, 3 motorcycle spaces and 14 spaces within the kiss n' go. This provision satisfies the requirements outlined by DTMR and SCC.

The parking supply is inclusive of 8 PWD spaces. The Building Code of Australia (BCA) and the DTMR's PSTIS states that parking spaces for vehicle occupants with disabilities are to be provided at rates between 1 space per 50 standard spaces and 1 space per 100 standard spaces, respectively. The proposed PWD parking provision equates to roughly 1 space per 25 standard parking spaces, which adequately satisfies the requirements set out by the BCA and the DTMR. Furthermore, suitable PWD parking is provided for each user group.

Overall, the proposed parking provisions satisfy DTMR's and SCC's requirements and are therefore considered adequate.

5.2 Car Park Layout

Given the spatial constraints of the wider site and the costs associated with undercroft parking, it has been necessary for staff parking for the primary school to be provided at several locations. All parking spaces will be suitably signed for each user group.

The design of the parking areas has taken cognisance of the provisions set out in the DTMR's PSTIS. In order to assist internal circulation and mitigate potential conflict, it is proposed that the parking areas will operate as one-way.

It should be noted that the design of the kiss n' go has been dictated by the requirement to facilitate adequate routing for a fire appliance.

Circulation within the parking areas for the nominated design vehicles is demonstrated (using Autotrack software) on Drawing No.'s 19BRT0434-SK 3 and SK 6 included in Appendix B.

Given the desire to satisfy the requirements set out in DTMR's PSTIS, it is proposed that 60° angled parking spaces will be provided within the short-term visitor and staff parking areas in the northeastern portion of the wider site.

5.2.1 Design of Parking Areas

Table 5.2 identifies the characteristics of the proposed parking areas with respect to the DTMR/AS2890.1 requirements. The last column identifies the compliance of each design aspect.

Table 5.2: Parking Design Requirements

Design Aspect	Minimum DTMR/AS2890.1 Requirement	Proposed Provision	Compliance
Parking Space Length:			
• Standard space	5.4m (min)	5.4m	Compliant
• 60° space (Class 1A)	5.9m (min) *	6m	Compliant
• 60° space (Class 3)	6m (min) *	6m	Compliant
• Parallel space	5.4-6.2m	5.4-6.2m	Compliant
Parking Space Width:			
• Class 1A	2.4m (min)	2.4-2.6m **	Compliant
• Class 2	2.5m (min)	2.6m	Compliant
• Class 3	2.6m (min)	2.6m	Compliant
• Parallel Space	2.5m (min)	2.5m	Compliant
Parking Envelope Clearance – Space adjacent to Wall	Space 0.3m clear of wall	Space 0.3m clear of wall	Compliant
Aisle Width:			
• Circulation Road (Two-Way)	5.5m (min)	7m	Compliant
• Circulation Road (One-Way)	3m (min)	3.5-5.1m	Compliant
• Parking Aisle (Class 1A)	5.8m (min)	6.4-7m	Compliant
• Parking Aisle (Class 2)	5.8m (min)	6.4m	Compliant
• 60° Parking Aisle (Class 1A)	4.9m (min)	5.1m	Compliant
• 60° Parking Aisle (Class 3)	4.3m (min)	5.1m	Compliant
• Parallel Parking Aisle	3m (min)	3.2m	Compliant
Maximum Gradient:			
• PWD Parking	1:40 (2.5%)	Flat	Compliant
• Parking Bay	1:20 (5.0%)	Flat	Compliant
• Parking Aisle	1:16 (6.25%)	Flat	Compliant

*Where parking is controlled by wheel stops at right angles to the direction of parking.

**The 2.4m wide parking spaces are restricted to the staff parking area for the primary school provided in the western portion of the wider site.

The layout of the proposed kiss n' go and the parking areas complies with the DTMR/AS2890.1 requirements.

5.3 Conclusion

Overall, the proposed parking provisions and the design provisions adopted for the proposed parking areas are considered acceptable.

6 Buses & Service Vehicle Arrangements

6.1 Buses

TTM has reviewed the modal split for primary schools across SEQ as identified in the Travel in South-East Queensland document prepared by the DTMR. This document suggests that 12% of students at primary schools (irrespective of location and the density of the adjacent residential catchment) utilise public transport. Applying this to the proposed primary school would result in 137 students travelling by public transport and the need to accommodate between two and three buses. Furthermore, the provision of three buses is adequate to facilitate the transportation of one year group cohort on a school trip/outing. It is noted that this provision is consistent with that provided at Baringa State School, which will ultimately have a similar enrolment level to the proposed primary school.

Buses will be facilitated via an indented bus stop provided along the eastern road frontage. The indented bus stop can facilitate up to three buses in a two-lead stop arrangement. It should be noted that the requirement to provide suitable queue storage capacity at the northern traffic signal controlled intersection (and specifically for the left-turn lane on the southern approach) means that there is no scope to provide additional storage capacity (for a fourth bus) at the indented bus stop.

Buses travelling from the north will utilise the roundabout at the intersection of the roads along the southern and western frontage to assist routing whilst buses travelling to the south will utilise the road network to the east to assist routing.

Drawing No. 19BRT0424-SK 4 included in Appendix B demonstrates (using Autotrack software) that the design of the adjacent road network (including the roundabout at the intersection of the roads along the southern and western frontages) and the indented bus stop is suitable to facilitate routing and use by a 14.5m long bus.

On the basis of the above, the design of the adjacent road network and the location and design of the indented bus stop is considered adequate.

6.2 Service Vehicle Requirements

Table 9.4.8.3.3 of the SCC Transport and Parking Code outlines the required design vehicles and the number of service bays required for each development classification. Based on the education establishment land-use, on-site servicing is required for a waste collection vehicle (WCV). The proposed servicing area, which will also be used by the health hub, is located in the western portion of the wider site and is accessed via the western road frontage. Drawing No. 19BRT0434 SK 5, included in Appendix B, demonstrates (using Autotrack software) that a front-loading WCV can adequately manoeuvre to/from the servicing area.

Drawing No. 19BRT0434 SK 2, included in Appendix B, demonstrates (using Autotrack software) that the design of the adjacent road network (including the roundabout at the intersection of the roads along the southern and western frontages) and the proposed servicing area is suitable to facilitate routing and manoeuvring by a 17.3m long dental van.

All service vehicles will be able to enter and exit the site in a forward gear.

6.3 Conclusion

Overall, TTM considers that proposed service vehicle arrangements acceptable.

7 Active Transport

7.1 Overview

An overview of the active transport provisions is included in Appendix A.

7.2 Pedestrians

As shown on the masterplan and associated plans, multiple pedestrian access points will be provided along the eastern, southern and western road frontages. The location of the pedestrian access points (including that in the northern portion of the wider site) have taken cognisance of desire lines and the desire to minimise the requirement for pedestrians to cross driveways and/or the side roads at adjacent intersections.

Whilst the width of the external and internal paths does not strictly satisfy the requirements set out in DTMR's PSTIS, they are considered adequate in this instance given the variety of routing options available and the fact that pedestrian demand will be dispersed with peak demand (associated with the proposed primary school) only occurring for short discrete periods in the morning and afternoon. Furthermore, it should be noted that the width of the external paths, which are mostly already constructed, has been accepted by EDQ and SCC.

As noted previously, to address pedestrian safety at the northern traffic signal controlled intersection (which will facilitate vehicular access to the kiss n' go and the parking areas provided in the northeastern portion of the wider site), formal crossing facilities will be provided across all approaches to the intersection. To address the desire line and the fact that a 3m wide contra-flow cycle path is provided on the eastern side of the carriageway, a dedicated cyclist crossing is provided on the eastern approach to the intersection whilst a shared crossing is provided on the northern approach to the intersection. A shared crossing is also provided on the northern approach to the traffic signal controlled intersection to the south (at the intersection of the eastern and southern road frontages).

In order to address the potential desire line from the west, the provision of an additional pedestrian crossing point along the western road frontage (to the north of the driveway crossovers) is considered appropriate. Whilst subject to the detailed design it is expected that the pedestrian crossing point will take the form of kerb buildouts to minimise the crossing distance. Use of this pedestrian crossing point should be monitored when the school opens, and when this portion of the adjacent residential catchment is completed with additional treatment provided if demand (and safety considerations) necessitates it.

Raised pedestrian crossings will be provided along the internal circulation road/aisles to address safety.

Fencing will be provided between the kiss n' go and short-term visitor and staff parking areas in the northeastern portion of the wider site and along the perimeter of the circulation roads facilitating access to the kiss n' go in order to guide pedestrians away from unsafe crossing locations.

7.3 Cyclists & Scooter/Skateboard Users

7.3.1 Primary School

DTMR's PSTIS – Bicycle Parking – Technical Note – 207 outlines the following bicycle parking requirements for the primary school:

- 1.5 bicycle spaces (Security Level B*) per 10 students;
- 0.5 scooter spaces per 10 students, or two racks, whichever is greater, for students;
- 1 skateboard rack for students;
- 1 bicycle space (Security Level B*) per 10 staff; &
- Visitor bicycle parking (Security Level C*) provided at a rate of 25% of the student parking.

The above rates equate to the following requirements:

- **151 bicycle spaces (Security Level B*) for students;**
- **51 scooter spaces, or two racks, whichever is greater, for students;**
- **1 skateboard rack for students;**
- **15 bicycle spaces (Security Level B*) for staff; &**
- **38 bicycle spaces (Security Level C*) for visitors.**

**Refer to AS 2890.3 for further details on security level classifications:*

- ***Security Level A**: An individual locker with a high security locking mechanism. Typical application at transport hubs (not for use in school environments).*
- ***Security Level B**: A secure room or structure, protected from the weather, containing bicycle= parking devices that allow users to lock the bicycle frame and both wheels. Typical application at a workplace or school where all day parking is required.*
- ***Security Level C**: A parking space, where a bicycle frame and both wheels can be locked to a bicycle parking device using the owners own locking device, and scooters and skateboards can be locked to appropriate devise using the owners own locking device.*

In terms of end-of-trip-facilities (EOTF), DTMR require the following:

- 2 lockers per 10 staff;
- 1 shower per 100 staff;
- 1 toilet per 2 showers with a minimum of 1 per male/female; &
- 1 wash basin per shower.

The above rates equate to the following requirements:

- 29 lockers;
- 2 showers;
- 2 toilets (i.e. 1 each for males and females); &
- 2 wash basins.

As shown on the masterplan and associated plans, 155 bicycle spaces and 51 scooter spaces for students and 15 bicycle spaces (adjacent to the administration block) will be provided for staff. These provisions are in accordance with DTMR's requirements. The provision of a skateboard rack for students, bicycle parking for visitors (which will be provided at several locations around the wider side) and the EOTF provisions for staff will be resolved as part of the detailed design stage.

7.3.2 Health Hub

The SCC Transport & Parking Code outlines the following bicycle parking requirements for the health hub:

- 1 bicycle space for staff per 100m² GFA; &
- 1 bicycle space for visitors per 100m² GFA.

The above rates equate to the following requirements:

- 3 bicycle spaces for staff; &
- 3 bicycle space for visitors.

Bicycle parking for the health hub, which will be provided in close proximity to the pedestrian entrance, will be resolved as part of the detailed design stage.

7.3.3 Summary

Whilst subject to detailed design, the bicycle parking provisions and end-of-trip-facilities (for staff) will take cognisance of DTMR's and SCC's requirements as outlined above.

7.4 Conclusion

Overall, TTM considers that proposed active transport provisions acceptable.

8 Estimated Future Transport Demands

8.1 Development Scenarios

8.1.1 Ultimate Scenario

For the purposes of assessing the potential traffic impacts associated with the proposed development on the operation of the adjacent road network, TTM have adopted the ultimate traffic volumes provided by Stockland for Precinct 14. These background traffic volumes are shown in Figure C-1 included in Appendix C.

It should be noted that the ultimate traffic volumes for the PM peak-hour as shown in Figure C-1 are more reflective of the network peak-hour (i.e. 5-6pm) and the traffic volumes during the school peak-hour in the afternoon will likely to be much lower. Notwithstanding this, these background traffic volumes have been applied to ensure a robust assessment.

Given that the ultimate traffic volumes provided by Stockland for Precinct 14 represent the projected traffic volumes when all development proposed within Precinct 14 has been complete and is operational, further traffic analysis to consider any future year design horizon is not considered necessary in this instance.

8.1.2 Interim Scenario

TTM has also assessed the potential traffic impacts associated with the proposed development on the operation of the surrounding road network prior to the Bells Creek Bridge Crossing being completed in 2030. For the purposes of this assessment, TTM have adopted the interim traffic volumes outlined in Egis's Technical Memorandum dated 31 May 2024. These background traffic volumes are shown in Figure C-2.

8.2 Estimated Development Traffic Generation & Distribution

8.2.1 Traffic Generation

To assess the impact of the proposed development on the adjacent road network it is necessary to predict the likely volume of vehicles that will be generated.

8.2.1.1 Primary (& Preparatory) School - Students

Traffic surveys undertaken at Baringa State School on 16 March 2020 indicated that the traffic generation, based on attendance on the day of the survey, is as follows:

- AM Peak – 0.53vph/student
- PM Peak – 0.46vph/student

Based on the above, and an enrolment capacity of 1,140 students at the completion of Stage 2, the proposed primary (and preparatory) school is estimated to generate the following traffic volumes:

- AM Peak – 604vph

- PM Peak – 524vph

These traffic volumes have been adopted for the ultimate scenario.

Based on an enrolment forecast of 759 students in 2030 and prior to the completion of the Bells Creek Bridge Crossing, the proposed primary (and preparatory) school is estimated to generate the following traffic volumes:

- AM Peak – 402vph
- PM Peak – 349vph

These traffic volumes have been adopted for the interim scenario.

8.2.1.2 Primary (& Preparatory) School - Staff

As staff typically arrive prior to the AM peak-hour and depart after the PM peak-hour, the assessment has been based solely on the student numbers as outlined above. Notwithstanding this, it is expected that the traffic generation rates as sourced from the traffic surveys undertaken at Baringa State School did already account for a component of staff trips, especially in the AM peak-hour.

8.2.1.3 Kindergarten

The RTA Guide to Traffic Generating Developments recommends, for planning purposes, adopting a traffic generation rate of 0.8vph/child in the AM peak-hour and 0.3vph/child in the PM peak-hour (between 2:30 and 4pm) for childcare centres/kindergartens.

Based on 48 places, the kindergarten is estimated to generate the following traffic volumes:

- AM Peak – 38vph
- PM Peak – 14vph

It should be noted that these estimates are considered highly conservative estimate given that the kindergarten will be co-located with a primary school and therefore the majority of the traffic generated by this particular land-use will likely comprise of shared trips.

8.2.1.4 Health Hub

Traffic surveys previously undertaken by the DTMR indicate that medical centres/heath care facilities generate 4.95vph per 100m² in the AM and PM peak-hour periods.

Based on a GFA of 240m², the health hub is estimated to generate the following traffic volumes:

- AM & PM Peak – 12vph

8.2.2 Traffic Distribution

In accordance with the traffic surveys undertaken at Baringa State School, a 59/41 split and 40/60 split in terms of arrivals and departures has been adopted in the AM and PM peak-hour periods, respectively, for the primary (and preparatory) school.

A 50/50 split in terms of arrivals and departures has been adopted for the kindergarten and the health hub, which is typical traffic engineering practice for these types of land-uses, in the AM and PM peak-hour periods.

Traffic distribution for the primary (and preparatory) school and kindergarten has been determined based on the likely catchment of the school (considering the proximity of Nirimba State School to the east), the layout of the adjacent road network and the routes parents/guardians (and staff) are likely to utilise when travelling to/from the site. For the purposes of the assessment, the following traffic distribution has been applied:

- 20% of traffic to/from the north
- 30% of traffic to/from the east
- 50% of traffic to/from the south.

The distribution methodology outlined above has also been applied for the traffic generation associated with the health hub.

It has been assumed that all parents/guardians transporting children to the preparatory school will utilise the parking areas in the southern and southwestern portions of the wider site.

8.2.3 Proposed Traffic Demands

8.2.3.1 Ultimate Scenario

For the ultimate scenario (and based on the assumptions above), it estimated that the proposed development will generate the following:

- AM Peak – 654vph (including 382 arrivals and 272 departures)
- PM Peak – 550vph (including 223 arrivals and 327 departures)

The projected traffic demands associated with the proposed development for ultimate scenario are shown in Figure C-3. It should be noted that these traffic generation estimates, do not include service vehicle movements (which are anticipated to occur outside of the peak hour periods) or bus movements.

8.2.3.2 Interim Scenario

For interim scenario (and prior to the Bells Creek Bridge Crossing opening in 2030), it is estimated that proposed development (based on an enrolment forecast of 759 students at the primary school) will generate the following:

- AM Peak – 453vph (including 263 arrivals and 190 departures)

- PM Peak – 375vph (including 153 arrivals and 223 departures)

The projected traffic demands associated with the proposed development for interim scenario are shown in Figure C-4.

8.2.4 Future Year Traffic Volumes

8.2.4.1 Ultimate Scenario

The ultimate scenario future year traffic volumes are obtained by the addition of the ultimate traffic generation shown in Figure C-3 to the ultimate background traffic volumes shown in Figure C-1. The resultant traffic volumes are shown in Figure C-5.

8.2.4.2 Interim Scenario Future Year Traffic Demands

The interim scenario future year traffic volumes (prior to the Bells Creek Bridge Crossing opening in 2030) are obtained by the addition of the interim traffic generation shown in Figure C-4 to the interim background traffic volumes shown in Figure C-2. The resultant traffic volumes are shown in Figure C-6.

9 Road Network Performance

9.1 Introduction

TTM has conducted traffic analysis, using SIDRA Intersection (v9.1.3.210) Analysis Software, to confirm that the traffic signal controlled intersections adjacent to the site can adequately cater for the traffic demands associated with the proposed development.

The peak traffic demand for schools during the AM and PM peak-hour periods is generated by student pick-up/set-down. This peak demand occurs over relatively short periods, particularly in the PM peak hour where the traffic demands disperse within 15 minutes of school finishing time. To account for this, the peak flow period in the PM peak-hour been reduced to 15 minutes; as opposed to the default 30 minutes. The peak flow factor for the traffic movements directly associated with the proposed development has also been adjusted from 95% to 80%.

The phasing strategy adopted for the traffic signal controlled intersections has progressed from what was outlined in Egis's Technical Memorandum dated 31 May, 2024 to include the following at the northern traffic signal controlled intersection:

- Removal of opposing right turn green phases to accommodate the nominated design vehicle swept paths and improve capacity;
- Lead-lag right turn signal phasing adopted with adjacent pedestrian phases activated;
- Adoption of 6-second late start for left-turning vehicle phase with the adjacent pedestrian and bicycle through phases (coded in SIDRA under Opposing Pedestrians (Signals) parameter). This methodology is generally consistent with Table 4.5.2(A) and Figure 4.5.2 (C) of the DTMR Selection and Design of Cycle Tracks guideline where it is outlined that an early start bicycle phase (with concurrent conflicting vehicle turns run at a delayed start) as a valid optimised signal phasing arrangement; and
- Coordination with the signal plan for the southern traffic signal controlled intersection.

Detailed phasing summaries along with movement timings are provided in Appendix D.

Given the proximity of the traffic signal controlled intersections (with only 142m provided between stop lines and the fact there are no side roads between the intersections), the intersections have been modelled as a network. The SIDRA analysis has assumed that a suitable level of coordination is provided between the traffic signal controlled intersections in order to prioritise critical routes through the network in the AM and PM peak-hour periods.

The network has been assessed to determine the optimal cycle time up to a maximum of 120 seconds (as per EDQ and SCC requirements).

The pedestrian demands at the various pedestrian crossing facilities at the northern and southern traffic signal controlled intersections have been estimated based on the layout of the adjacent residential catchments and the likely routing to/from the proposed primary school.

9.2 Northern Traffic Signal Controlled Intersection

The SIDRA layout and phasing strategy identified for this intersection is shown in Figure 9-1.

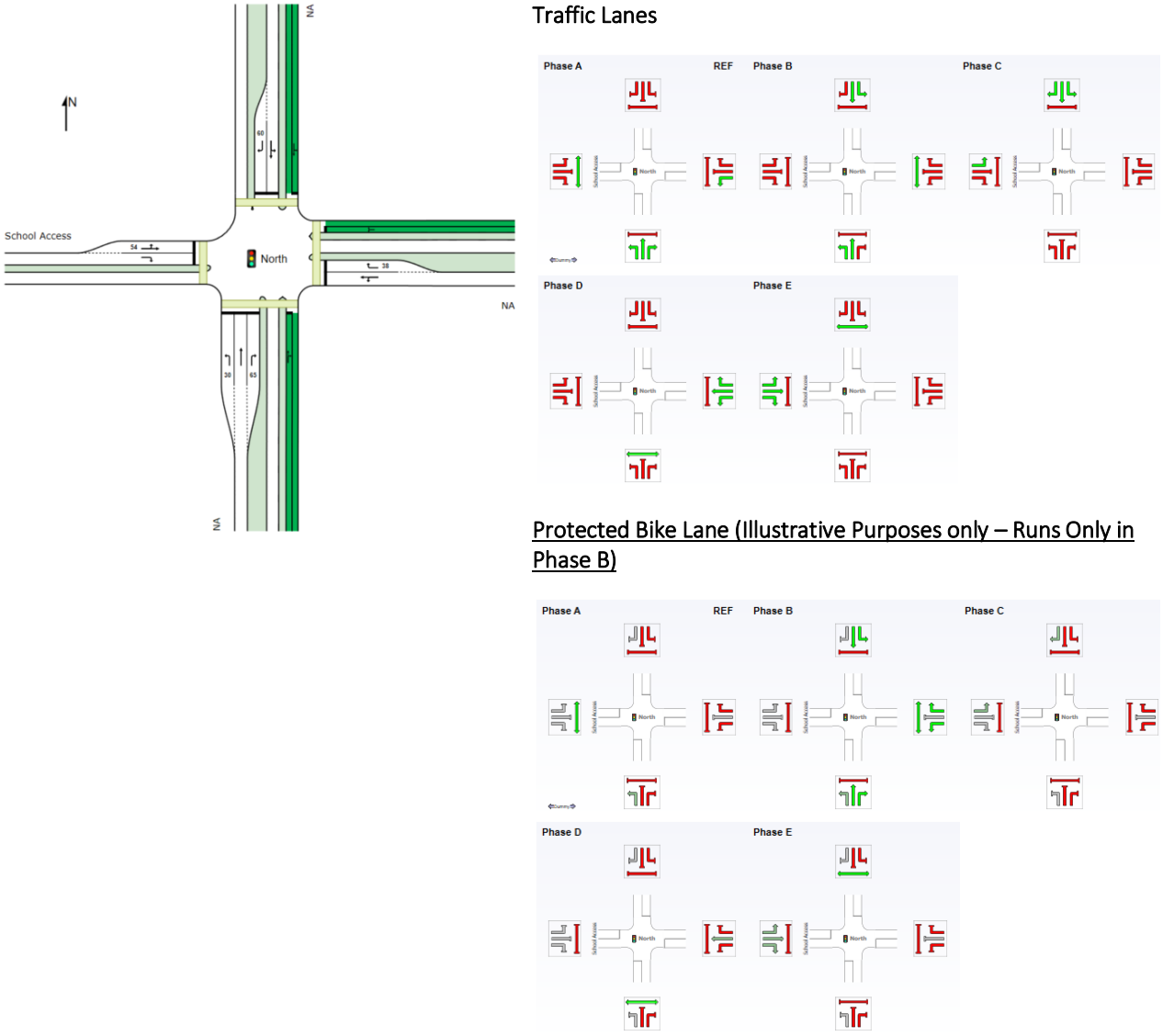


Figure 9-1: Indicative Configuration of the Northern Traffic Signal Controlled Intersection

9.2.1 Analysis Results

Detailed SIDRA outputs are included in Appendix D. However, the SIDRA movement results have been summarised and presented in Table 9.1. 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 9.1: Summary of SIDRA Outputs for the Northern Traffic Signal Controlled Intersection

Case	DOS	Maximum Average Delay (s)	LOS	95th Percentile Critical Queue (m)			
		Worst Movement		South	East	North	West
AM Peak-Hour							
Ultimate Scenario	86%	70 (Thru - East Leg)	D	38	42	40	26
Interim Scenario at 2030	71%	61 (RT - North Leg)	D	98	63	72	27
PM Peak-Hour							
Ultimate Scenario	70%	67 (Thru - West Leg)	D	60	55	141	71
Interim Scenario at 2030	88%	68 (RT - North Leg)	E	119	88	212	42

As shown in Table 9.1, the northern traffic signal controlled intersection is sufficient to cater for the projected traffic demands for both the ultimate and interim (prior to the Bells Creek Bridge Crossing opening in 2030) scenarios and will operate within the desired 90% threshold in terms of DoS.

As noted previously, the background traffic volumes during the school peak-hour in the afternoon will likely be much lower. Notwithstanding this, the queuing estimated in both the ultimate and interim scenarios for the southern approach will not “block-back” and impede the operation of the southern traffic signal controlled intersection.

It is acknowledged that it is only an issue in the interim (and prior to the Bells Creek Bridge Crossing opening in 2030), however, in order to better cater for the traffic demands at the northern traffic signal controlled intersection it is suggested that the right turn lane on the southern approach is extended to 75m (from 65m currently) and the length of the right turn lane on the northern approach to the southern traffic signal controlled intersection is reduced to 40m (from 50m currently). Whilst these modifications will not fully accommodate the projected queuing levels in the right turn lane (on the southern approach to the northern traffic signal controlled intersection) and will still result in occasional overspill of queuing into the adjacent lane, they are considered appropriate given the level of traffic turning right at the northern traffic signal controlled intersection prior to the opening of the Bells Creek Bridge Crossing.

9.3 Southern Traffic Signal Controlled Intersection

The SIDRA layout and phasing strategy identified for this intersection is shown in Figure 9-2.

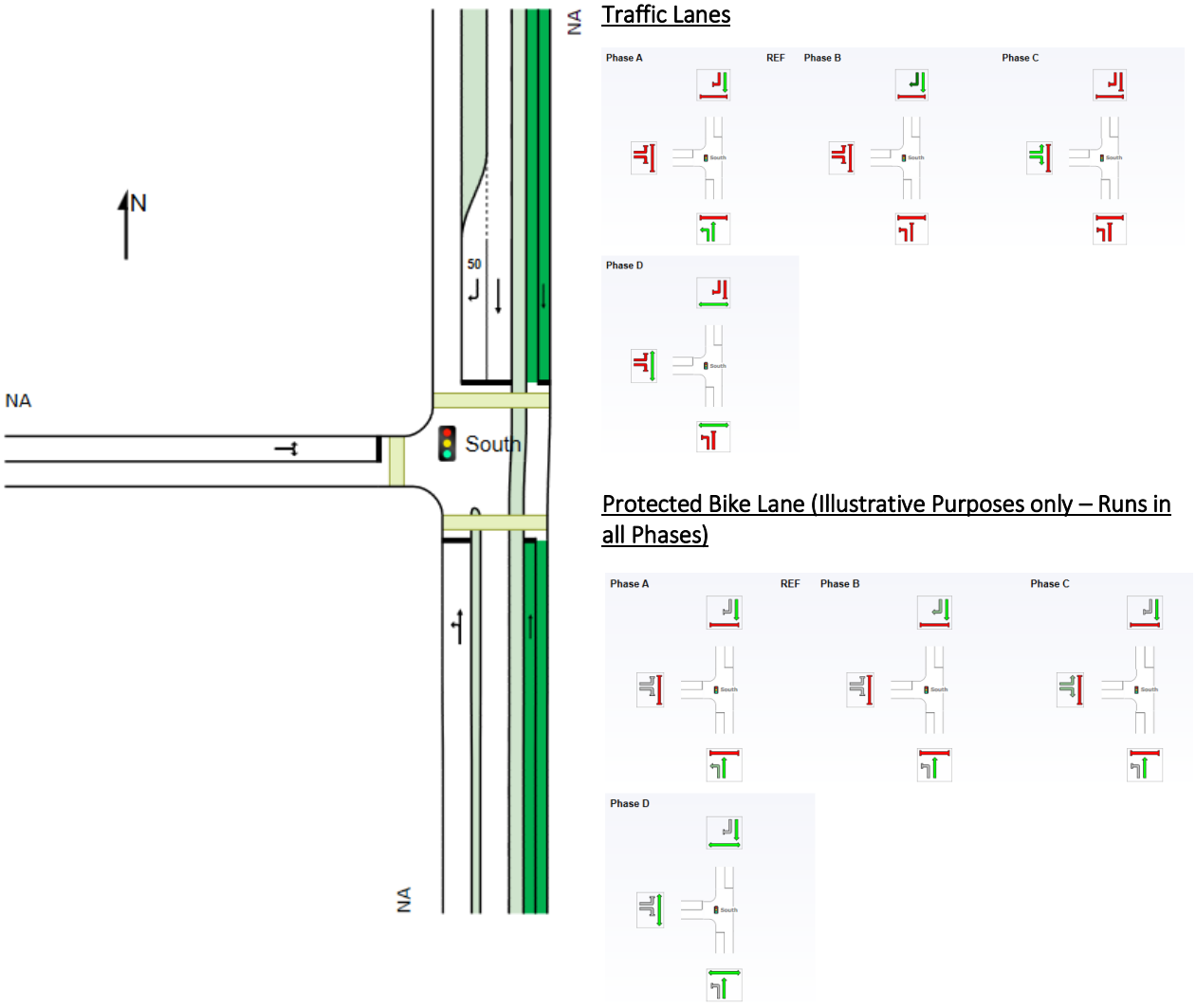


Figure 9-2: Indicative Configuration of the Southern Traffic Signal Controlled Intersection

9.3.1 Analysis Results

Detailed SIDRA outputs are included in Appendix D. However, the SIDRA movement results have been summarised and presented in Table 9.2. These are expressed in terms of the DoS, the Maximum Average Delay at the intersection measured in seconds, the LoS and the Critical Queue on each approach measured in metres.

Table 9.2: Summary of SIDRA Outputs for the Southern Traffic Signal Controlled Intersection

Case	DOS	Maximum Average Delay (s)	LOS	95th Percentile Critical Queue (m)		
		Worst Movement		South	North	West
AM Peak-Hour						
Ultimate Scenario	75%	68 (RT - North Leg)	C	128	46	34
Interim Scenario at 2030	81%	73 (RT - North Leg)	C	280	61	62
PM Peak-Hour						
Ultimate Scenario	49%	60 (RT - North Leg)	C	111	125	44
Interim Scenario at 2030	65%	66 (LT/RT - West Leg)	C	134	123	47

As shown in Table 9.2, the southern traffic signal controlled intersection is sufficient to cater for the projected traffic demands for both the ultimate and interim (prior to the Bells Creek Bridge Crossing opening in 2030) scenarios and will operate within the desired 90% threshold in terms of DoS.

Furthermore, the queuing estimated for the northern approach will not "block-back" and impede the operation of the northern traffic signal controlled intersection. For the interim scenario, it estimated that the queuing on the western approach in the AM peak-hour could "block-back" and impede the operation of the exit-only driveway crossover on the southern frontage road. Should this materialise, it is recommended that "KEEP CLEAR" line marking is installed on the southern frontage road directly adjacent to the driveway crossover to allow vehicles (especially those turning right) to exit.

9.4 Analysis Conclusions

The traffic analysis has confirmed that the adjacent road network and specifically the northern and southern traffic signal controlled intersections are sufficient to cater for the traffic demands for both the ultimate and interim (prior to the Bells Creek Bridge Crossing opening in 2030) scenarios, albeit with modifications to the phasing strategy at the northern traffic signal controlled intersection. The queuing estimated for the southern and northern approaches at the northern and southern traffic signal controlled intersection, respectively, will not "block-back" and impede the operation of the upstream intersections.

It is acknowledged that it is only an issue in the interim (and prior to the Bells Creek Bridge Crossing opening in 2030), however, in order to better cater for the traffic demands at the northern traffic signal controlled intersection it is suggested that the right turn lane on the southern approach is extended to 75m (from 65m currently), and the length of the right turn lane on the northern approach to the southern traffic signal controlled intersection is reduced to 40m (from 50m currently). Whilst these modifications will not fully accommodate the projected queuing levels in the right turn lane (on the southern approach to the northern traffic signal controlled intersection) and will still result in occasional overspill of queuing into the adjacent lane, they are considered appropriate given the level of traffic turning right at the northern traffic signal controlled intersection prior to the opening of the Bells Creek Bridge Crossing.

10 Summary and Conclusions

10.1 Vehicular Access Arrangements

Vehicular access to the primary (and preparatory) school, kindergarten and health hub will be achieved at several locations along the eastern, southern and western road frontages

It is proposed that vehicular access to the kiss n' go and the parking areas provided in the northeastern portion of the wider site, which will be used for short-term visitor and staff parking for the primary school, will be achieved via a new western approach at the northern traffic signal controlled intersection constructed along the eastern road frontage.

Whilst DTMR's Planning for Safe Transport Infrastructure at Schools (PSTIS) specifies that vehicular access to kiss n' go and short-term visitor car parking areas for new schools should be achieved via collector roads (or roads of a lower classification), in order to cater for the desired travel patterns and alleviate potential congestion at adjacent intersections, vehicular access to the kiss n' go and short-term visitor parking area will be achieved via the eastern road frontage, the northern section of which is categorised as a 'Sub Arterial'. Notwithstanding this, inspection of the ultimate traffic volumes provided by PWC for Precinct 14 indicates that the road along the eastern frontage will carry between 6,000-7,000vpd, which is more typical of a trunk collector. For information purposes, preliminary traffic analysis has confirmed that the southern traffic signal controlled intersection (at the intersection of the eastern and southern road frontages) is inadequate to cater for the projected traffic volumes in the instance that vehicular access to the kiss n' go, short-term visitor car parking area and staff and long-term visitor car parking area was achieved exclusively via the roads along the southern or western frontages.

A separate exit only driveway crossover will be provided on the eastern road frontage to facilitate exit from the kiss n' go and the parking areas provided at this location to afford additional redundancy and assist routing to the north (and east).

Vehicular access to the parking areas provided in the southern and southwestern portions of the wider site, which will be used for short-term visitor parking for the preparatory school, kindergarten and Health Hub and staff parking, will be achieved via a separate entry only driveway crossover on the western road frontage and a separate exit only driveway crossover on the southern road frontage.

Vehicular access to the parking and servicing areas in the western portion of the wider site, which will also be used for staff parking for the primary school, will be achieved via separate entry and exit only driveway crossovers on the western road frontage.

In order to assist internal circulation and mitigate potential conflict, it is proposed that the access arrangements will generally operate as one-way.

It is expected that a 40kph school zone (operational between 7-9am and 2-4pm Monday to Friday) will be installed on roads running north to south and east to west in the vicinity of the proposed primary school.

Overall, TTM considers the proposed access arrangements acceptable.

10.2 Car Parking Arrangements

The masterplan proposes a total parking provision of 198 parking spaces, 3 motorcycle spaces and 14 spaces within the kiss n' go. This provision satisfies the requirements outlined by DTMR and SCC.

Given the spatial constraints of the wider site and the costs associated with undercroft parking, it has been necessary for staff parking for the primary school to be provided at several locations. All parking spaces will be suitably signed for each user group.

The design of the car parking areas has taken cognisance of the provisions set out in the DTMR's PSTIS. In order to assist internal circulation and mitigate potential conflict, it is proposed that the parking areas will operate as one-way.

The design of the various car parking areas is in accordance with the requirements specified by the DTMR and in AS2890.1.

Overall, TTM considers the proposed parking arrangements acceptable.

10.3 Service Vehicle Arrangements

TTM has reviewed the modal split for primary schools across SEQ as identified in the Travel in South-East Queensland document prepared by the DTMR. This document suggests that 12% of students at primary schools (irrespective of location and the density of the adjacent residential catchment) utilise public transport. Applying this to the proposed primary school would result in 137 students travelling by public transport and the need to accommodate between two and three buses. Furthermore, the provision of three buses is adequate to facilitate the transportation of one year group cohort on a school trip/outing. It is noted that this provision is consistent with that provided at Baringa State School, which will ultimately have a similar enrolment level to the proposed primary school.

Buses will be facilitated via an indented bus stop provided along the eastern road frontage. The indented bus stop can facilitate up to three buses in a two-lead stop arrangement. It should be noted that the requirement to provide suitable queue storage capacity at the northern traffic signal controlled intersection (and specifically for the left-turn lane on the southern approach) means that there is no scope to provide additional storage capacity (for a fourth bus) at the indented bus stop.

Buses travelling from the north will utilise the roundabout at the intersection of the roads along the southern and western frontage to assist routing whilst buses travelling to the south will utilise the road network to the east to assist routing.

The design of the adjacent road network and the location and design of the indented bus stop is considered adequate.

The design of the service vehicle area (which will also be used by the health hub) is suitable to cater for on-site manoeuvring for a WCV in accordance with SCC's requirements and a 17.3m long dental van.

Overall, TTM considers that proposed service vehicle arrangements acceptable.

10.4 Active Transport Facilities

Multiple pedestrian access points will be provided along the eastern, southern and western road frontages. The location of the pedestrian access points (including that in the northern portion of the wider site) have taken cognisance of desire lines and the desire to minimise the requirement for pedestrians to cross driveways and/or the side roads at adjacent intersections.

Whilst the width of the external and internal paths does not strictly satisfy the requirements set out in DTMR's PSTIS, they are considered adequate in this instance given the variety of routing options available and the fact that pedestrian demand will be dispersed with peak demand (associated with the proposed primary school) only occurring for short discrete periods in the morning and afternoon. Furthermore, it should be noted that the width of the external paths, which are mostly already constructed, has been accepted by EDQ and SCC.

To address pedestrian safety at the northern traffic signal controlled intersection (which will facilitate vehicular access to the kiss n' go and the parking areas provided in the northeastern portion of the wider site), formal crossing facilities will be provided across all approaches to the intersection. To address the desire line and the fact that a 3m wide contra-flow cycle path is provided on the eastern side of the carriageway, a dedicated cyclist crossing is provided on the eastern approach to the intersection whilst a shared crossing is provided on the northern approach to the intersection. A shared crossing is also provided on the northern approach to the southern traffic signal controlled intersection.

In order to address the potential desire line from the west, the provision of an additional pedestrian crossing point along the western road frontage (to the north of the driveway crossovers) is considered appropriate. Whilst subject to the detailed design it is expected that the pedestrian crossing point will take the form of kerb buildouts to minimise the crossing distance. Use of this pedestrian crossing point should be monitored when the school opens, and when this portion of the adjacent residential catchment is completed with additional treatment provided if demand (and safety considerations) necessitates it.

Raised pedestrian crossings will be provided along the internal circulation road/aisles to address safety.

Fencing will be provided between the kiss n' go and short-term visitor car parking area and along the perimeter of the circulation roads facilitating access to the kiss n' go in order to guide pedestrians away from unsafe crossing locations.

The bicycle parking provision and end-of-trip-facilities (for staff) will take cognisance of DTMR's and SCC's requirements as outlined above.

Overall, TTM considers the active transport provisions acceptable

10.1 Traffic Impact Assessment

The traffic analysis has confirmed that the adjacent road network and specifically the northern and southern traffic signal controlled intersections are generally sufficient to cater for the traffic demands for both the ultimate and interim (prior to the Bells Creek Bridge Crossing opening in 2030) scenarios, albeit with

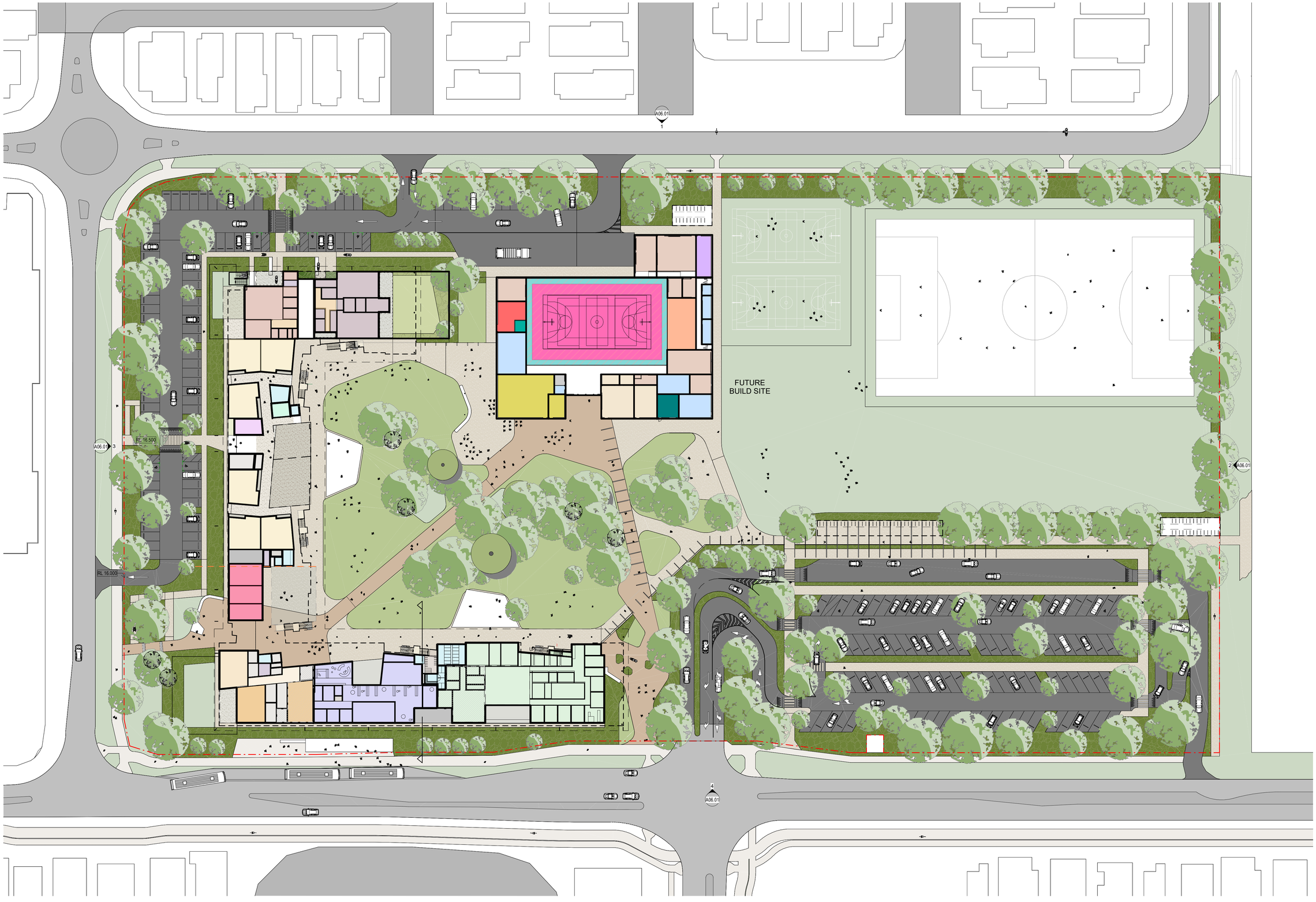
modifications to the phasing strategy at the northern traffic signal controlled intersection. The queuing estimated for the southern and northern approaches at the northern and southern traffic signal controlled intersection, respectively, will not "block-back" and impede the operation of the upstream intersections.

It is acknowledged that it is only an issue in the interim (and prior to the Bells Creek Bridge Crossing opening in 2030), however, in order to better cater for the traffic demands at the northern traffic signal controlled intersection it is suggested that the right turn lane on the southern approach is extended to 75m (from 65m currently), whilst the length of the right turn lane on the northern approach to the southern traffic signal controlled intersection is reduced to 40m (from 50m currently). Whilst these modifications will not fully accommodate the projected queuing levels in the right turn lane (on the southern approach to the northern traffic signal controlled intersection) and will still result in occasional overspill of queuing into the adjacent lane, they are considered appropriate given the level of traffic turning right at the northern traffic signal controlled intersection prior to the opening of the Bells Creek Bridge Crossing.

10.2 Conclusion

Based on the assessment contained within this report, TTM see no transport or traffic engineering reason why the relevant approvals should not be granted.

Appendix A Masterplan



Project Title

Caloundra South West Revision B

WESTERN DRIVE
AURA

hayball

Melbourne
Level 1
250 Flinders Lane
Melbourne VIC 3000
T +61 3 9699 3644

Sydney
Ground Floor
11-17 Buckingham Street
Surry Hills NSW 2010
T +61 2 9660 9329

Brisbane
Level 5,
293 Queen Street,
Brisbane Qld 4000
T +61 7 3211 9821

Canberra
Level 1,
33 Allara Street,
Canberra ACT 2601
T +61 2 9660 9329

ABN: 84006394261 NSW Nominated Architects:Tom Jordan 7521,Richard Leonard 7522, David Tordoff 8028, Fiona Young 7014

Drawn By	Author
Checked By	Checker
Date Printed	30/07/2024 10:33:34 AM
Scale	1 : 500@ A1

0 5 10 15 25 m

Rev	Date	Description
1	2024.05.20	TRAFFIC REVIEW
2	2024.06.06	TRAFFIC REVIEW
3	2024.06.12	UPDATED DRAWINGS
4	20240626	UPDATED DRAWINGS
5	20240702	PRELIMINARY 50% MASTER PLAN ISSUE
6	20240716	COORDINATION ISSUE

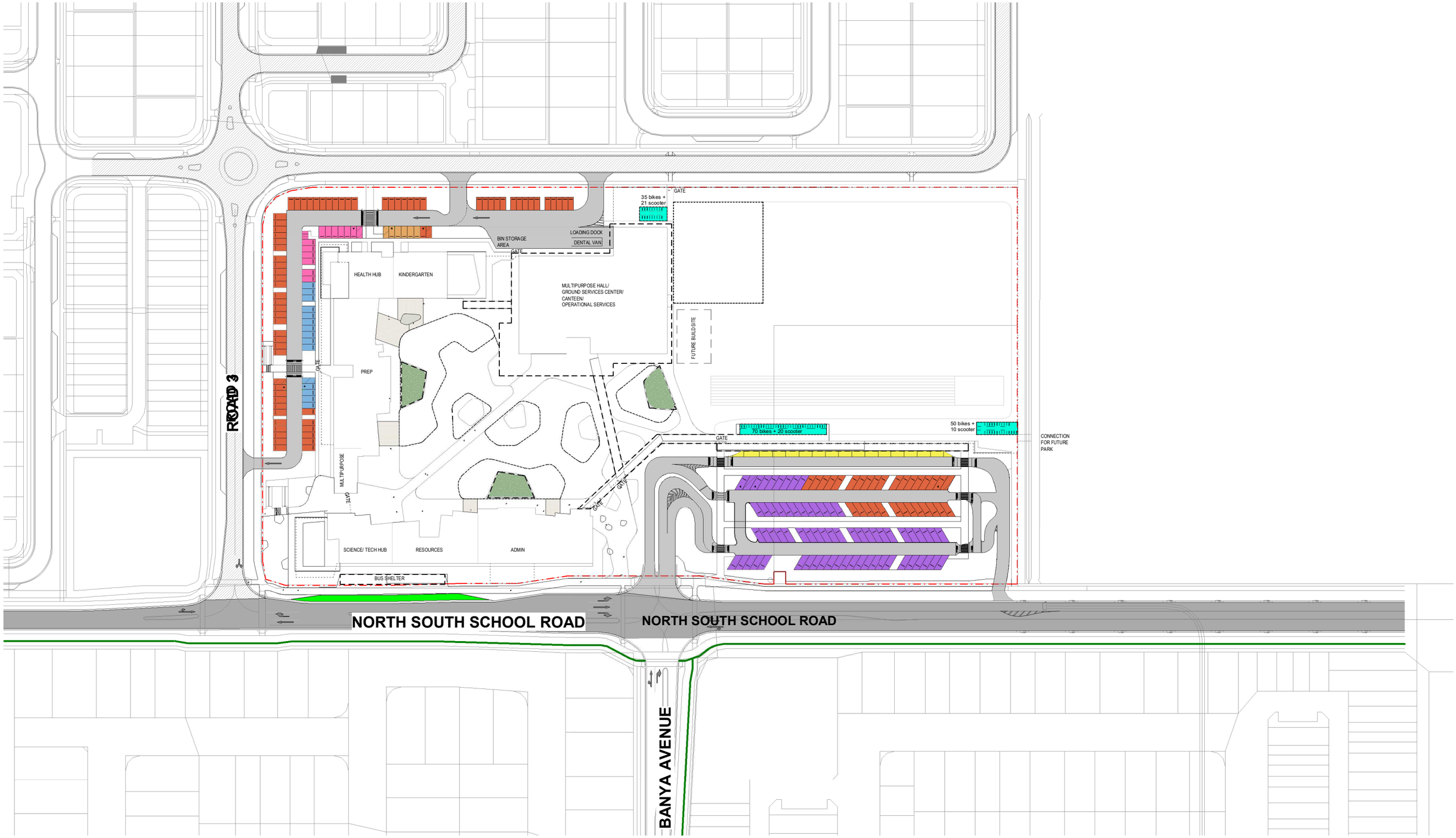
Drawing Title

MASTER PLAN- GROUND

Status

PRELIMINARY ISSUE

Project No	Drawing No	Revision
2453.01	A00.30	6



- SITE BOUNDARY
- INTERNAL ROAD
- MAJOR STREET FRONTAGE
- MINOR STREET FRONTAGE
- STAFF CARPARK
- SHORT TERM CARPARK
- KISS N' GO CARPARK
- PREPARATORY CARPARK
- KINDERGARTEN CARPARK
- HEALTH HUB CARPARK
- BUS ZONE
- BICYCLE PARKING LOCATION

Project Title

Caloundra South West Revision B

WESTERN DRIVE

AURA

hayball

Melbourne
Level 1
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Sydney
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T +61 2 9660 9329

ABN: 84006394261 NSW Nominated Architects:Tom Jordan 7521,Richard Leonard 7522, David Tordoff 8028, Fiona Young 7014

Drawn By Author
Checked By Checker
Date Printed 31/07/2024 9:45:17 AM
Scale 1 : 750@ A1

0 7.5 15 22.5 37.5 m

Rev	Date	Description

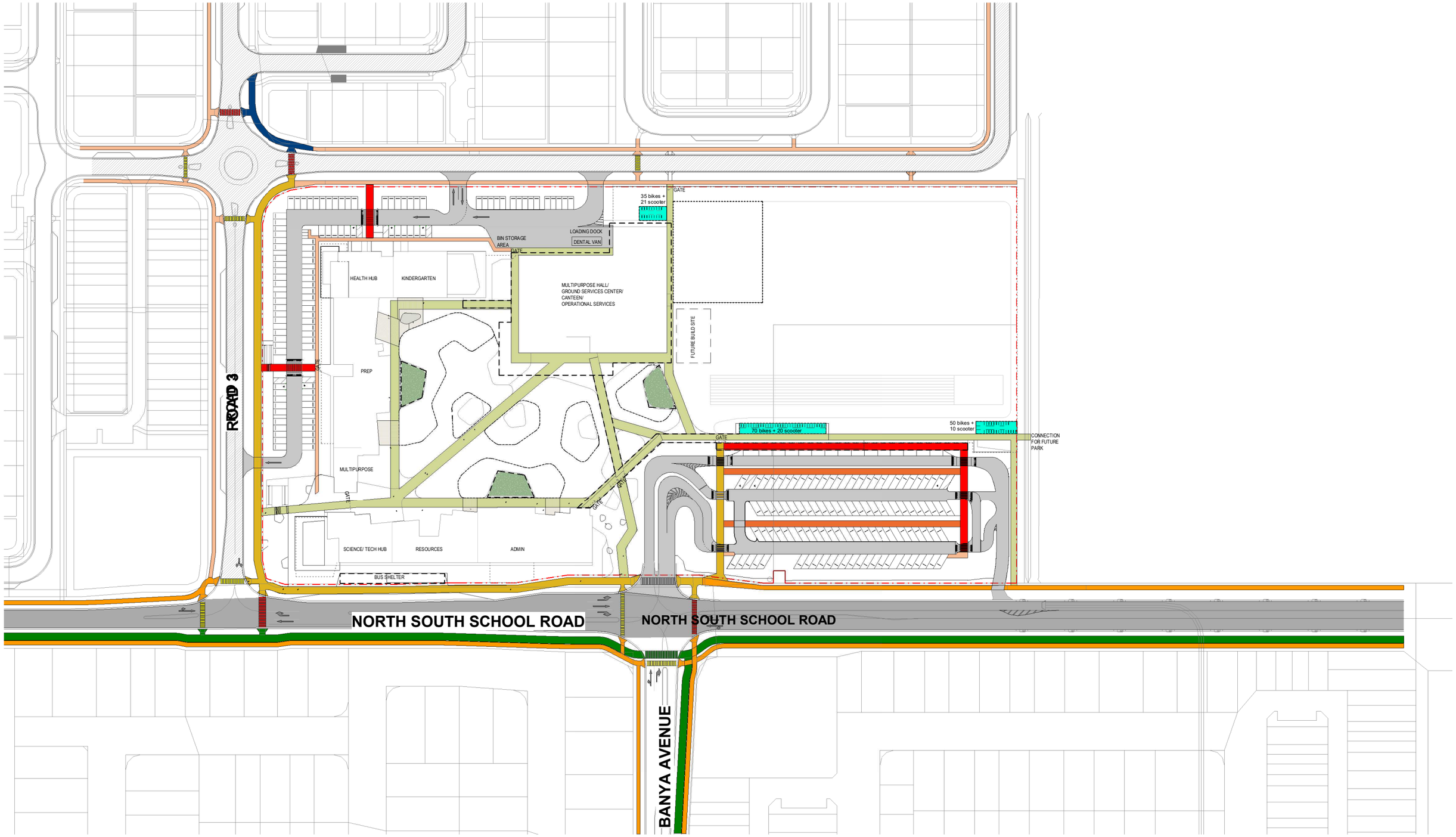
Drawing Title MODE OF TRANSPORT

Status

Project No 2453.01

Drawing No A01.00

Revision



SITE BOUNDARY
INTERNAL ROAD
MAJOR STREET FRONTAGE
MINOR STREET FRONTAGE

DEDICATED CYCLIST CROSSING
SHARED CROSSING
PEDESTRIAN CROSSING

3m WIDE PEDESTRIAN PATH
2.6m WIDE PEDESTRIAN PATH
1.8m WIDE PEDESTRIAN PATH
1.5m WIDE PEDESTRIAN PATH

SHARED PATH- VARYING WIDTH
3m WIDE SHARED PATH
2.5 WIDE SHARED PATH
3m WIDE CONTRAFLOW CYCLE PATH

Project Title

Caloundra South West Revision B

WESTERN DRIVE

AURA

hayball

Melbourne
Level 1
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Melbourne VIC 3000
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Sydney
Ground Floor
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Canberra ACT 2601
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ABN: 84006394261 NSW Nominated Architects:Tom Jordan 7521,Richard Leonard 7522, David Tordoff 8028, Fiona Young 7014

Drawn By Author
Checked By Checker
Date Printed 31/07/2024 9:45:22 AM
Scale 1 : 750@ A1

0 7.5 15 22.5 37.5 m

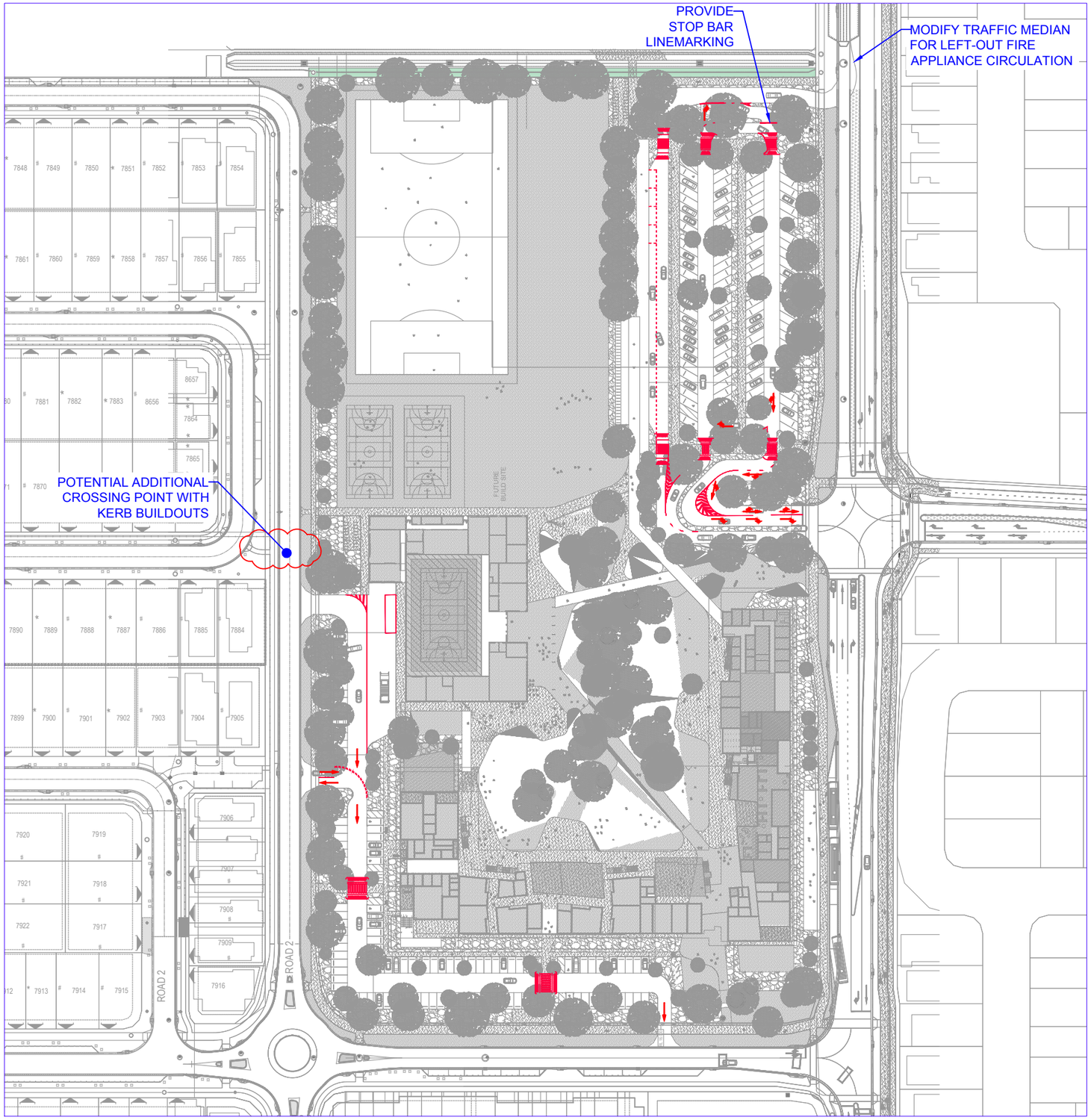
Rev	Date	Description

Drawing Title
ACTIVE TRANSPORT
HIERARCHY

Status

Project No	Drawing No	Revision
2453.01	A01.01	

Appendix B TTM Drawings



NOTES:
1. PEDESTRIAN CROSSINGS TO BE RAISED.

PRELIMINARY
ADVICE ONLY
18 July 2024

0 15 30 45 60 75m
SCALE 1:1500 AT ORIGINAL SIZE

19BRT0434-SK 1-01 RevF

LAYOUT MODIFICATIONS - OVERALL

REF: CALOUNDRA WEST STATE SCHOOL.

TTM CONSULTING PTY LTD
ABN 65 010 868 621
LEVEL 8, 369 Ann Street, BRISBANE QLD 4000
P.O. BOX 12015, BRISBANE QLD 4003
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E: ttmbris@ttmgroup.com.au W: www.ttmgroup.com.au

NOTES:
1. PEDESTRIAN CROSSINGS TO BE RAISED.

PRELIMINARY ADVICE ONLY
18 July 2024

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

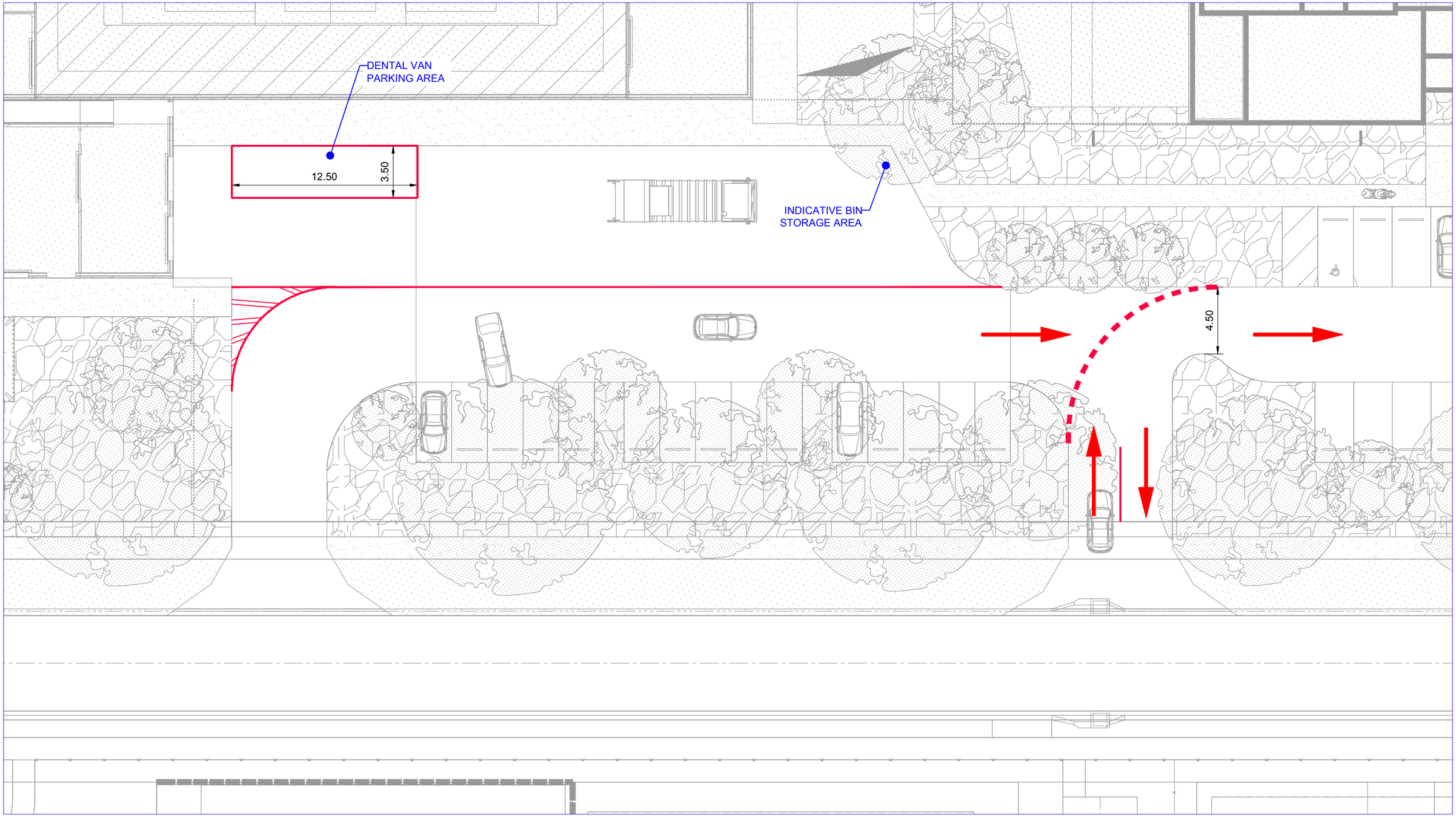
19BRT0434-SK 1-02 RevF

LAYOUT MODIFICATIONS - SOUTHERN ROADWAY AREA

REF: CALOUNDRA WEST STATE SCHOOL.

TTM CONSULTING 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

19BRT0434-F08 REV00 LAYOUT REVIEW.DWG



NOTES:
1. PEDESTRIAN CROSSINGS TO BE RAISED.

PRELIMINARY
ADVICE ONLY
18 July 2024

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SCALE 1:250 AT ORIGINAL SIZE

19BRT0434-SK 1-03 RevF

LAYOUT MODIFICATIONS - WESTERN CAR PARK AREA

REF: CALOUNDRA WEST STATE SCHOOL.

TTM CONSULTING PTY LTD
ABN 65 010 868 621
LEVEL 8, 369 Ann Street, BRISBANE QLD 4000
P.O. BOX 12015, BRISBANE QLD 4003
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E: ttmbris@ttmgroup.com.au W: www.ttmgroup.com.au

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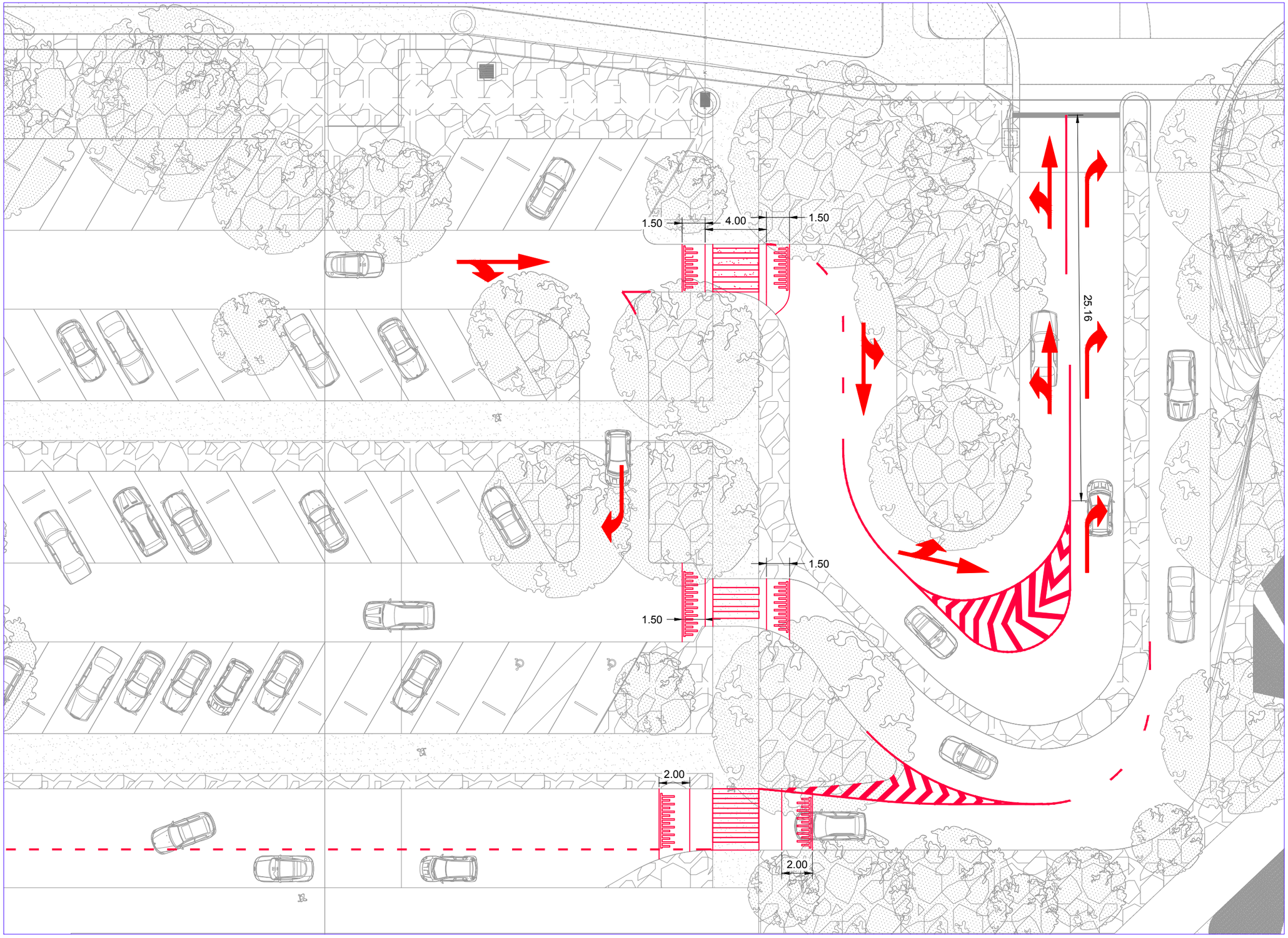

NOTES:
1. PEDESTRIAN CROSSINGS TO BE RAISED.

PRELIMINARY ADVICE ONLY

18 July 2024

0 2.5 5 7.5 10 12.5m

SCALE 1:250 AT ORIGINAL SIZE

19BRT0434-SK 1-04 RevF

LAYOUT MODIFICATIONS - SOUTHERN INTERSECTION AREA

REF: CALOUNDRA WEST STATE SCHOOL.

TTM CONSULTING PTY LTD
ABN 65 010 868 621
LEVEL 8, 369 Ann Street, BRISBANE QLD 4000
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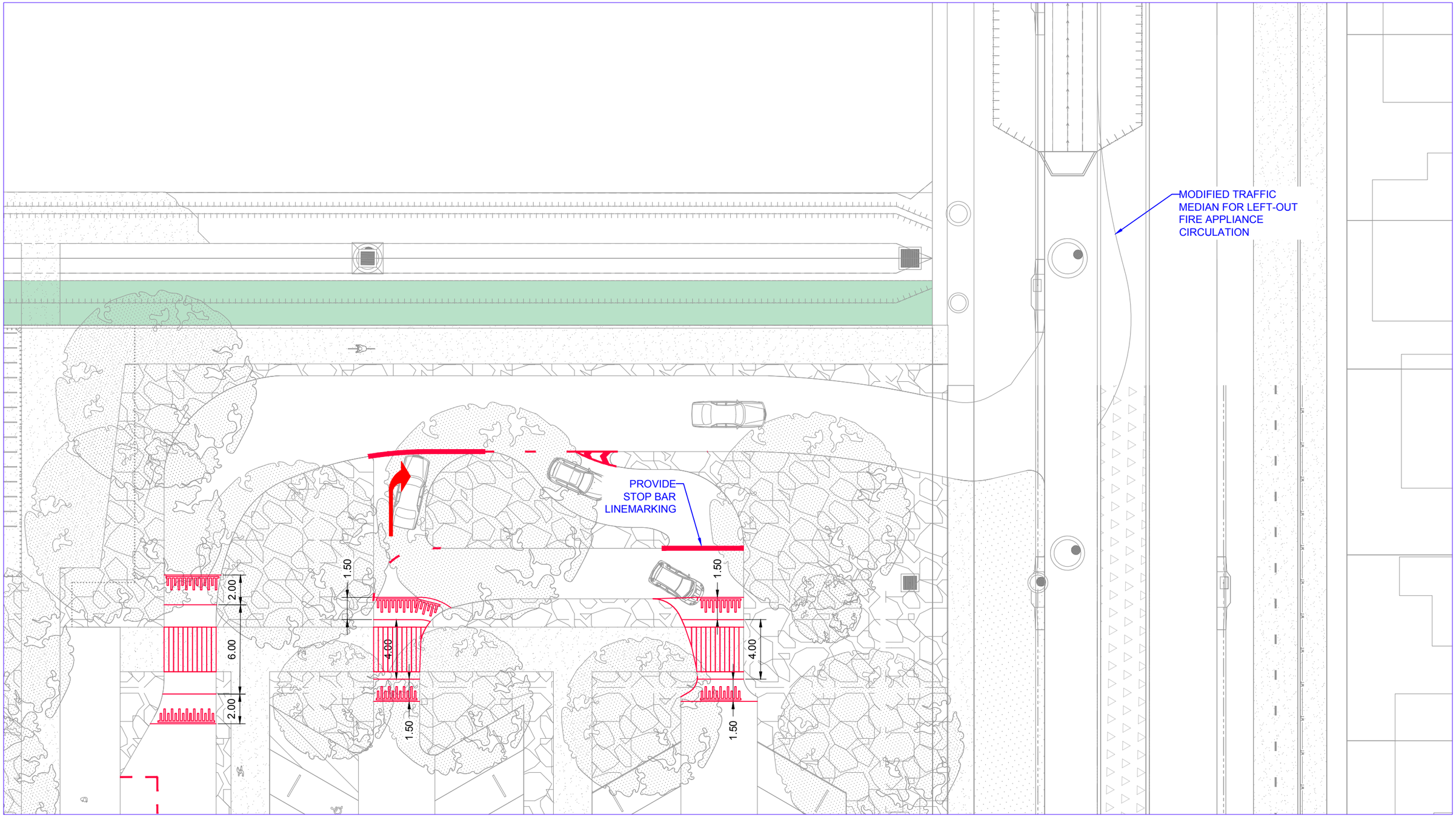
T: (07) 3327 9500 F: (07) 3327 9501
E: ttmbris@ttmgroup.com.au W: www.ttmgroup.com.au



NOTES:
1. PEDESTRIAN CROSSINGS TO BE RAISED.

PRELIMINARY
ADVICE ONLY
18 July 2024

0 2.5 5 7.5 10 12.5m
SCALE 1:250 AT ORIGINAL SIZE

19BRT0434-SK 1-05 RevF

LAYOUT MODIFICATIONS - NORTHERN CAR PARK AREA

REF: CALOUNDRA WEST STATE SCHOOL.

TTM CONSULTING PTY LTD
ABN 65 010 868 621
LEVEL 8, 369 Ann Street, BRISBANE QLD 4000
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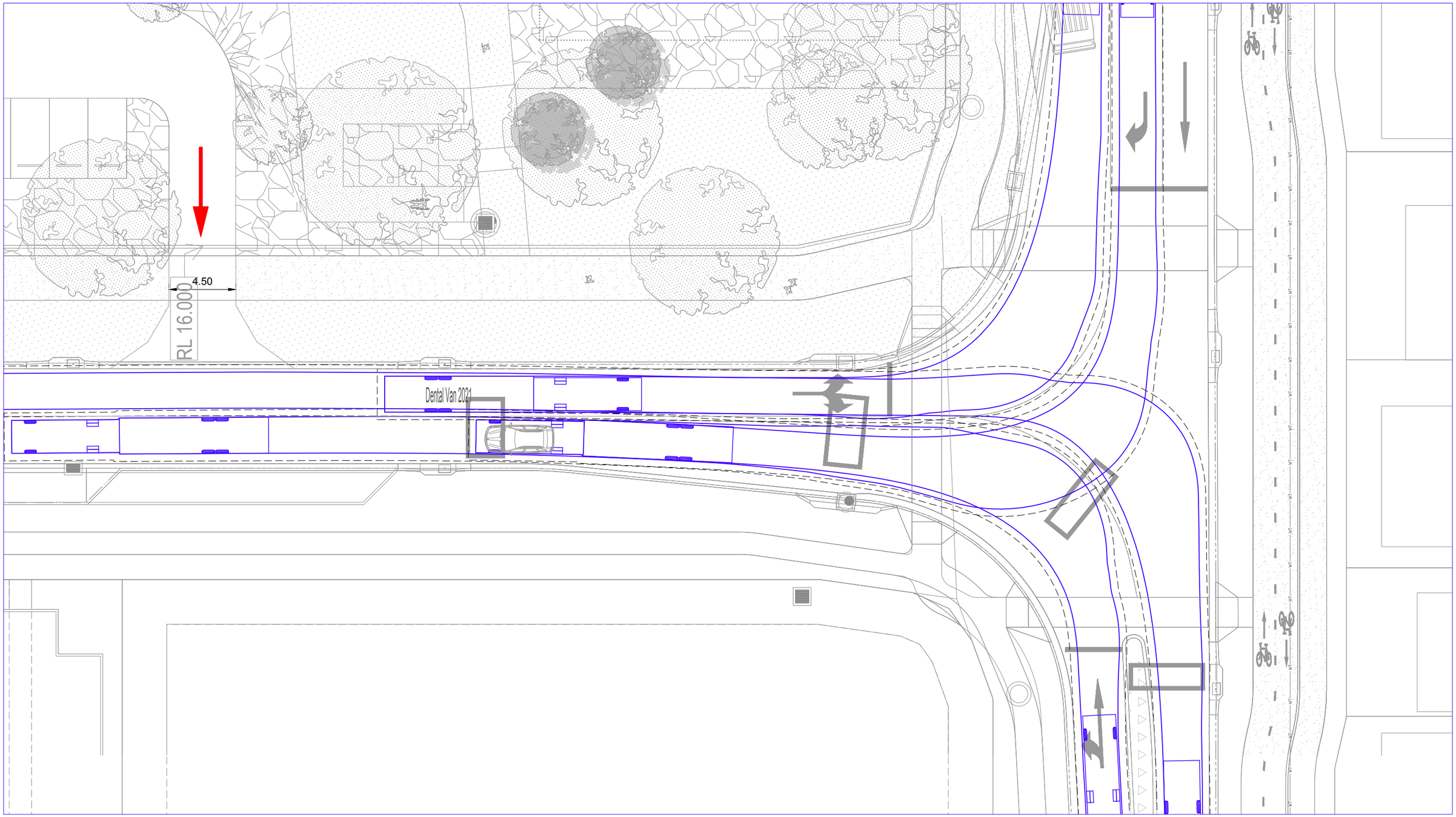
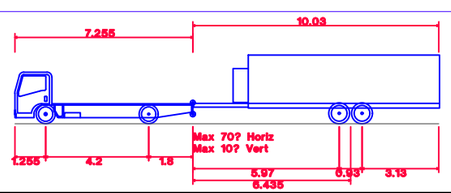
19BRT0434-F08 REV00 LAYOUT REVIEW.DWG



NOTES:
1. PEDESTRIAN CROSSINGS TO BE RAISED.



Dental Van 2021	
Overall Length	17.285m
Overall Width	2.420m
Overall Body Height	2.800m
Min Body Ground Clearance	0.250m
Max Track Width	2.420m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	8.400m
Design Speed Forward	10.0km/h
Clearance Envelope	0.500m

PRELIMINARY ADVICE ONLY
18 July 2024

0 2.5 5 7.5 10 12.5m
SCALE 1:250 AT ORIGINAL SIZE

19BRT0434-SK 2-01 RevF

SWEPT PATH ANALYSIS - 17.285m DENTAL VAN CIRCULATING SOUTHERN INTERSECTION AREA

REF: CALOUNDRA WEST STATE SCHOOL.

TTM CONSULTING PTY LTD
ABN 65 010 868 621
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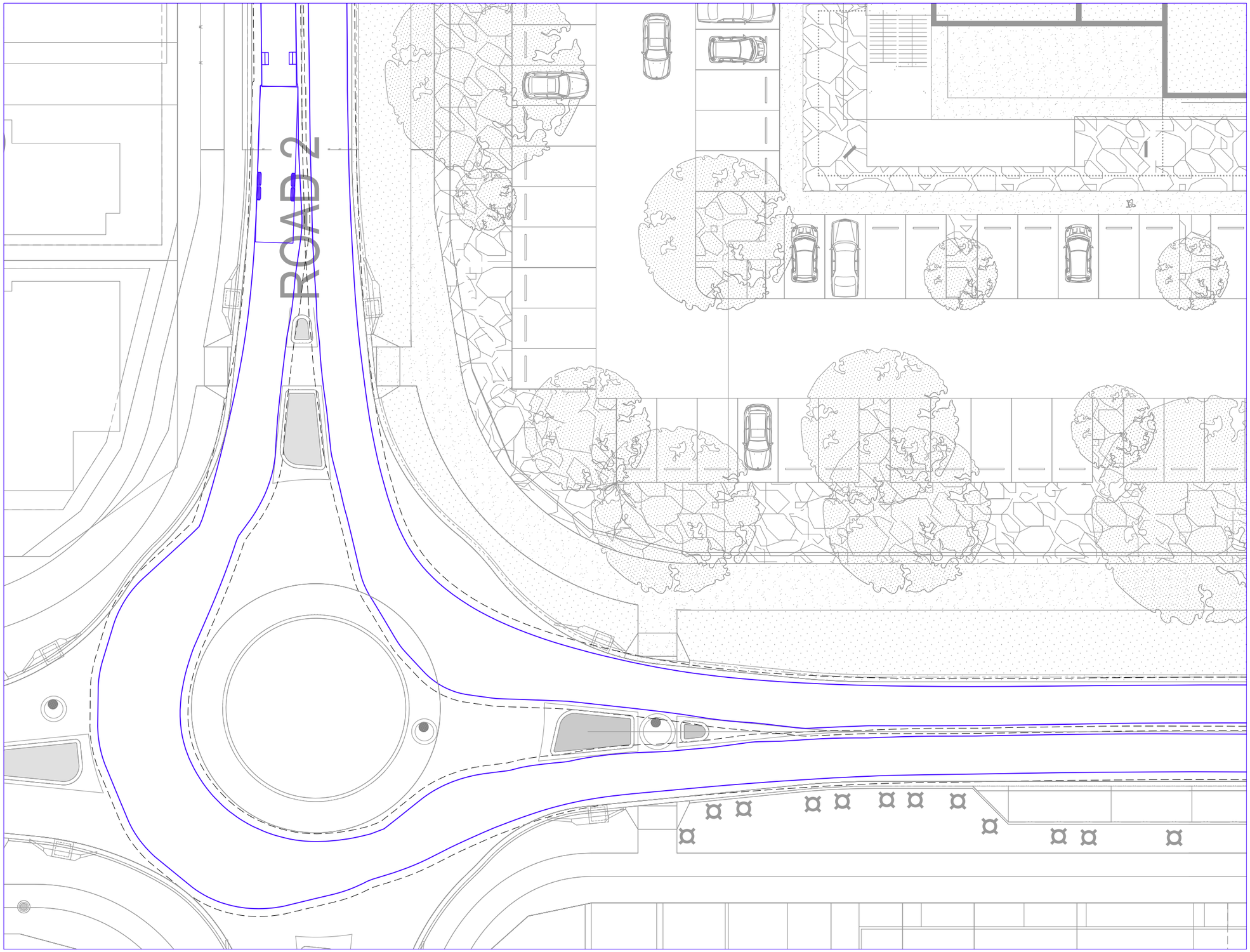
E: ttmbris@ttmgroup.com.au W: www.ttmgroup.com.au



Dental Van 2021

Overall Length	17.285m
Overall Width	2.420m
Overall Body Height	2.800m
Min Body Ground Clearance	0.250m
Max Track Width	2.420m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	8.400m
Design Speed Forward	10.0km/h
Clearance Envelope	0.500m

PRELIMINARY ADVICE ONLY

18 July 2024

NOTES:

1. PEDESTRIAN CROSSINGS TO BE RAISED.

0 2.5 5 7.5 10 12.5m

SCALE 1:250 AT ORIGINAL SIZE

19BRT0434-SK 2-02 RevF

SWEPT PATH ANALYSIS - 17.285m DENTAL VAN CIRCULATING SOUTHERN ROUNDABOUT AREA

REF: CALOUNDRA WEST STATE SCHOOL.

TTM CONSULTING PTY LTD
ABN 65 010 868 621
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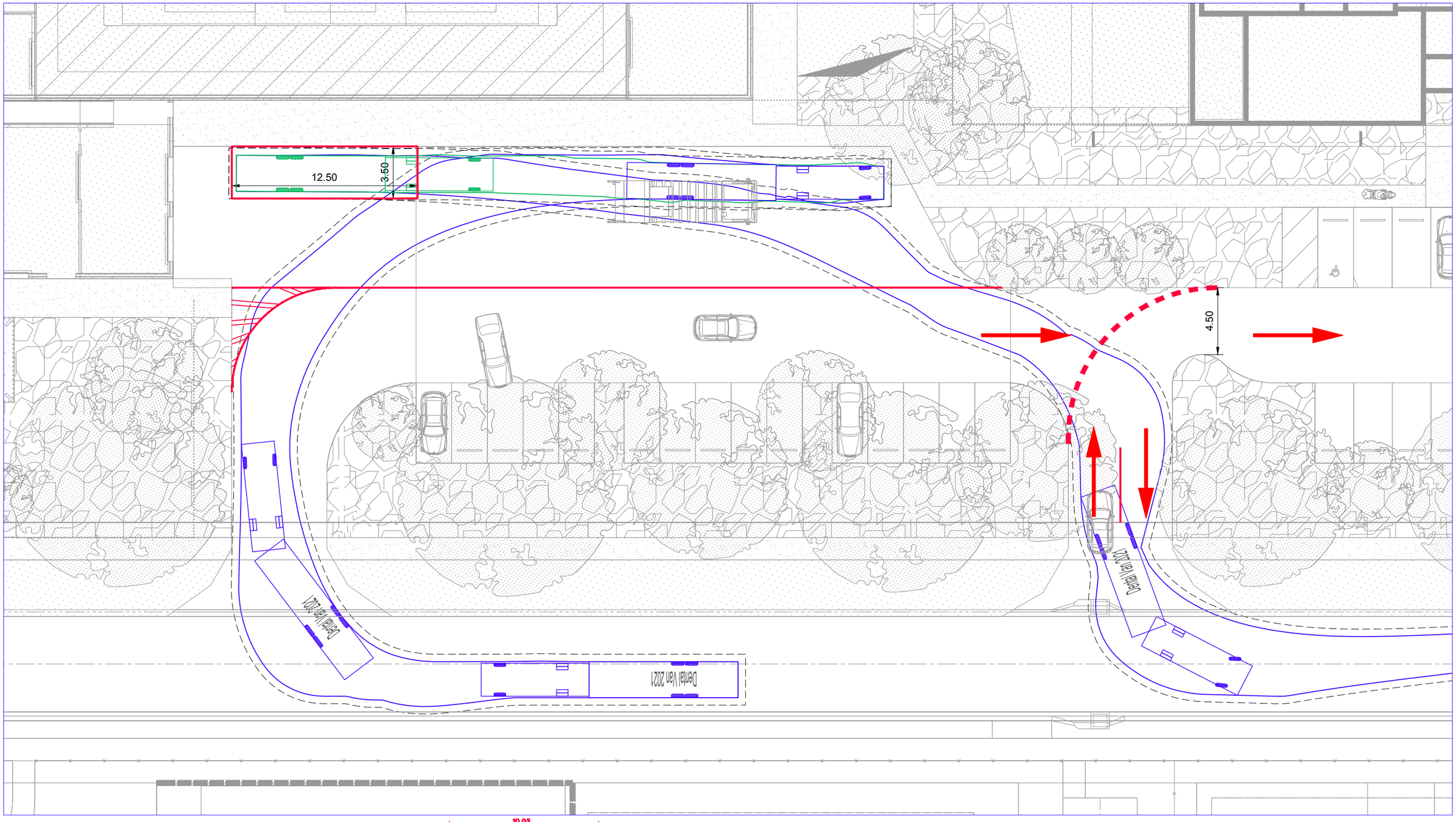
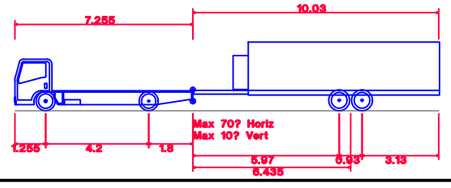
19BRT0434-F08 REV00 LAYOUT REVIEW.DWG



NOTES:
1. PEDESTRIAN CROSSINGS TO BE RAISED.



Dental Van 2021	
Overall Length	17.285m
Overall Width	2.420m
Overall Body Height	2.800m
Min Body Ground Clearance	0.250m
Max Track Width	2.420m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	8.400m
Design Speed Forward	10.0km/h
Clearance Envelope	0.500m

PRELIMINARY
ADVICE ONLY
18 July 2024

0 2.5 5 7.5 10 12.5m
SCALE 1:250 AT ORIGINAL SIZE

19BRT0434-SK 2-03 RevF

SWEPT PATH ANALYSIS - 17.285m DENTAL VAN CIRCULATING WESTERN CAR PARK AREA

REF: CALOUNDRA WEST STATE SCHOOL.

TTM CONSULTING PTY LTD
ABN 65 010 868 621
LEVEL 8, 369 Ann Street, BRISBANE QLD 4000
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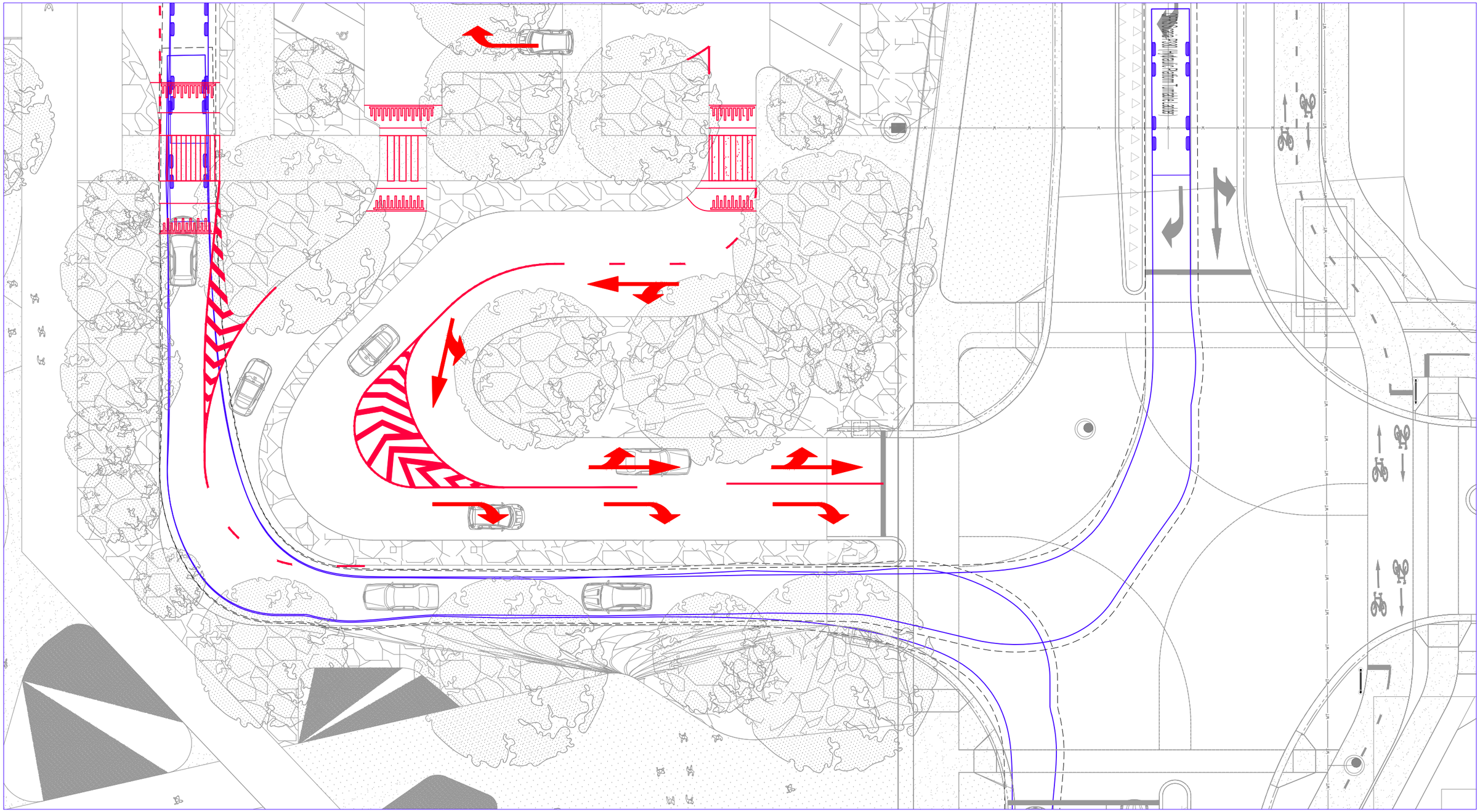
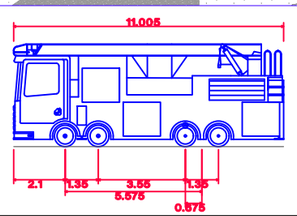
19BRT0434-F08 REV00 LAYOUT REVIEW.DWG





QFRS Scania P380 (Hydraulic Platform Turntable Ladder)

Overall Length	11.005m
Overall Width	2.500m
Overall Body Height	4.180m
Min Body Ground Clearance	0.300m
Track Width	2.500m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	11.000m
Design Speed Forward	10.0km/h
Clearance Envelope	0.500m

NOTES:
1. PEDESTRIAN CROSSINGS TO BE RAISED.

PRELIMINARY ADVICE ONLY
18 July 2024

0 2.5 5 7.5 10 12.5m
SCALE 1:250 AT ORIGINAL SIZE

19BRT0434-SK 3-01 RevF

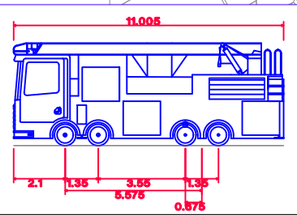
SWEPT PATH ANALYSIS - 11.005m FIRE TRUCK CIRCULATING CENTRAL INTERSECTION AREA

REF: CALOUNDRA WEST STATE SCHOOL.

TTM CONSULTING 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

19BRT0434-F08 REV00 LAYOUT REVIEW.DWG

MODIFY TRAFFIC MEDIAN
FOR LEFT-OUT FIRE
APPLIANCE CIRCULATION



QFRS Scania P380 (Hydraulic Platform Turntable Ladder)

Overall Length	11.005m
Overall Width	2.500m
Overall Body Height	4.180m
Min Body Ground Clearance	0.300m
Track Width	2.500m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	11.000m
Design Speed Forward	10.0km/h
Clearance Envelope	0.500m

NOTES:
1. PEDESTRIAN CROSSINGS TO BE RAISED.

PRELIMINARY
ADVICE ONLY
18 July 2024

0 2.5 5 7.5 10 12.5m
SCALE 1:250 AT ORIGINAL SIZE

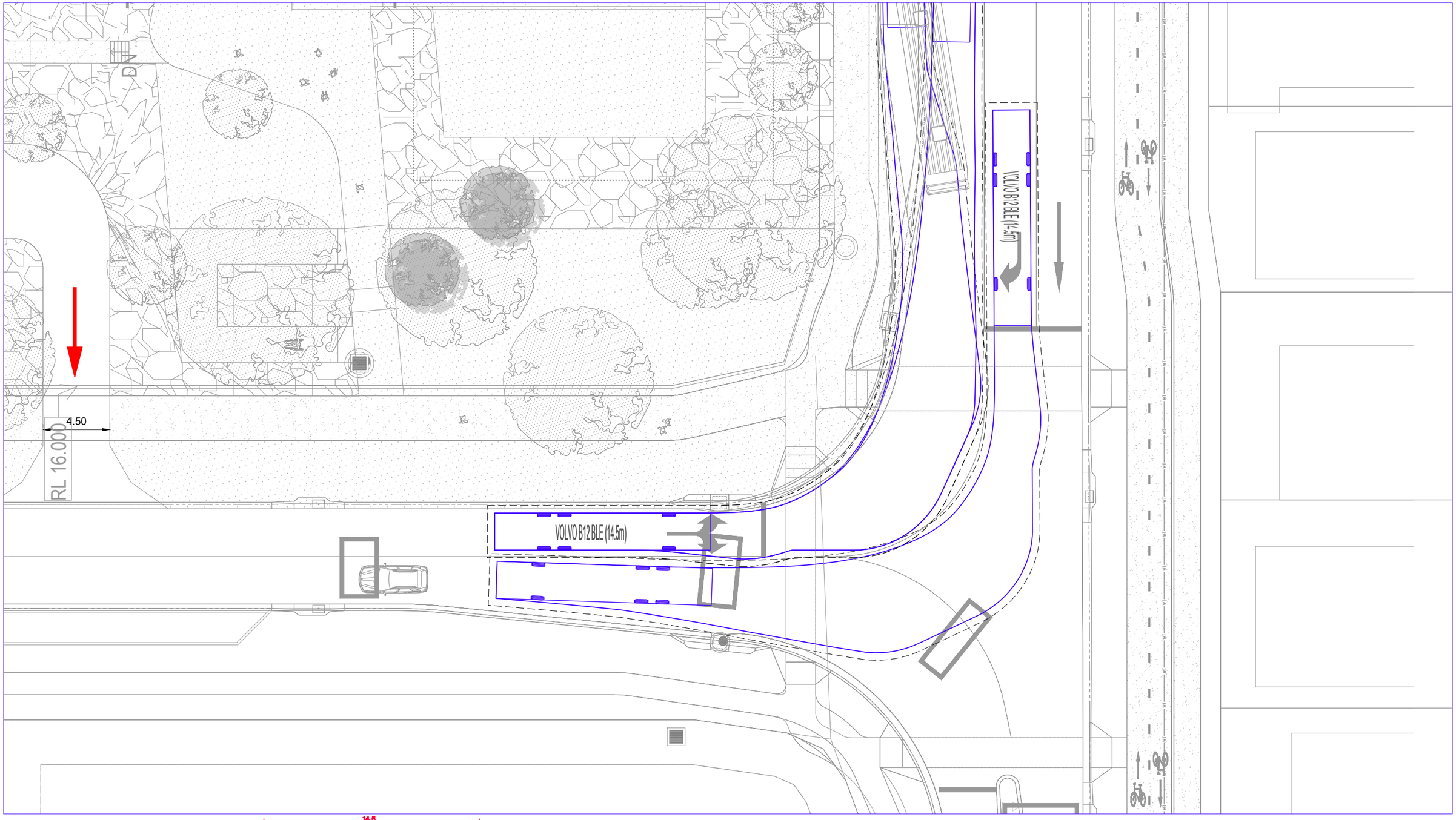
19BRT0434-SK 3-02 RevF

SWEPT PATH ANALYSIS - 11.005m FIRE TRUCK CIRCULATING NORTHERN CAR PARK AREA

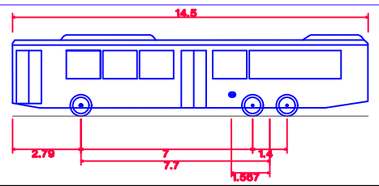
REF: CALOUNDRA WEST STATE SCHOOL.

TTM CONSULTING 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

19BRT0434-F08 REV00 LAYOUT REVIEW.DWG



NOTES:
1. PEDESTRIAN CROSSINGS TO BE RAISED.



VOLVO B12 BLE (14.5m)	
Overall Length	14.500m
Overall Width	2.500m
Overall Body Height	3.311m
Min Body Ground Clearance	0.337m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	10.430m
Design Speed Forward	10.0km/h
Clearance Envelope	0.500m

PRELIMINARY ADVICE ONLY
18 July 2024

0 2.5 5 7.5 10 12.5m
SCALE 1:250 AT ORIGINAL SIZE

19BRT0434-SK 4-01 RevF

SWEPT PATH ANALYSIS - 14.5m BUS CIRCULATING SOUTHERN INTERSECTION AREA

REF: CALOUNDRA WEST STATE SCHOOL.

TTM CONSULTING PTY LTD
ABN 65 010 868 621
LEVEL 8, 369 Ann Street, BRISBANE QLD 4000
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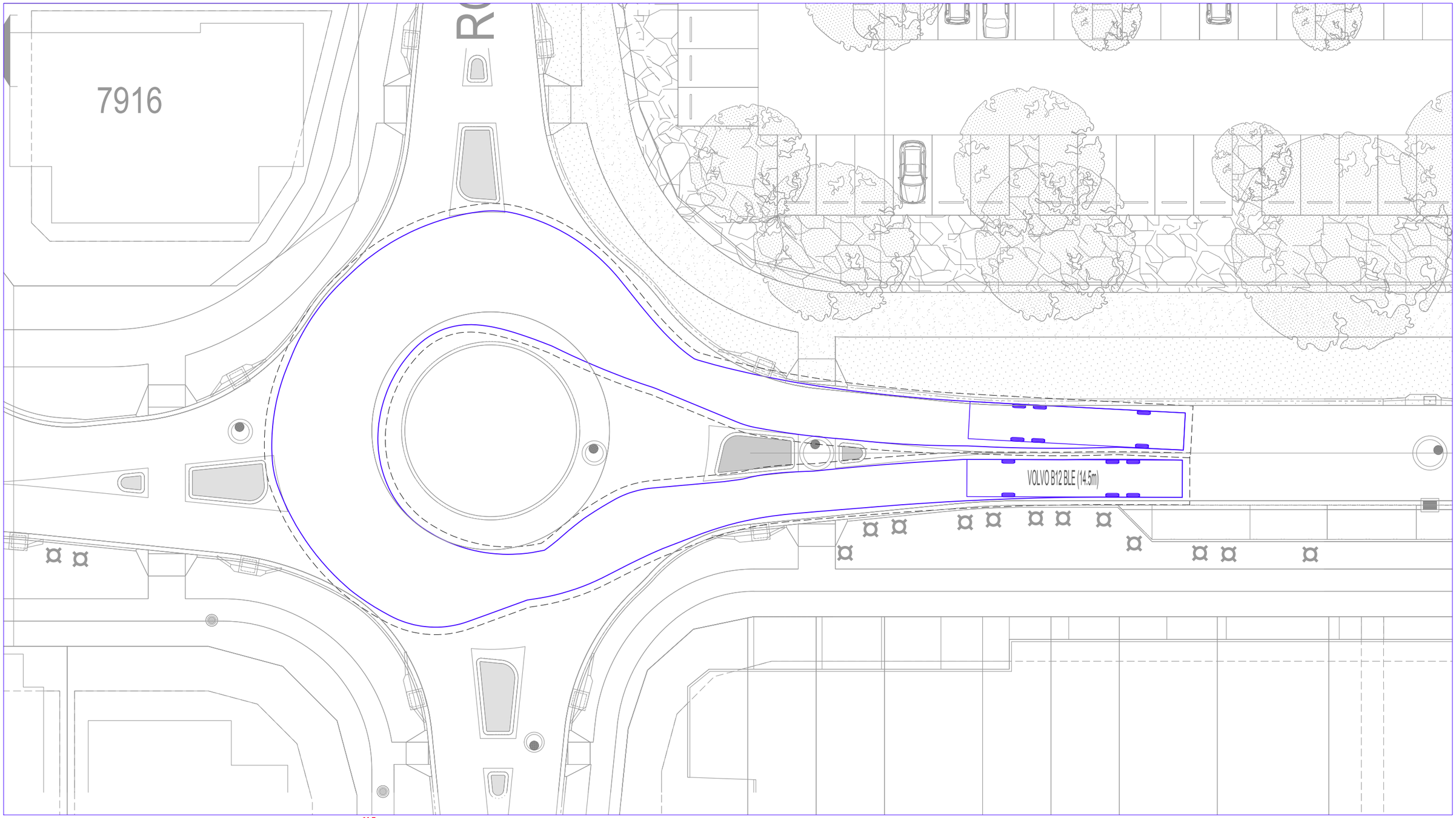
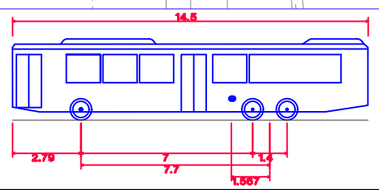
E: ttmbris@ttmgroup.com.au W: www.ttmgroup.com.au

19BRT0434-F08 REV00 LAYOUT REVIEW.DWG



NOTES:
1. PEDESTRIAN CROSSINGS TO BE RAISED.



VOLVO B12 BLE (14.5m)	
Overall Length	14.500m
Overall Width	2.500m
Overall Body Height	3.311m
Min Body Ground Clearance	0.337m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	10.430m
Design Speed Forward	10.0km/h
Clearance Envelope	0.500m

PRELIMINARY ADVICE ONLY
18 July 2024

0 2.5 5 7.5 10 12.5m
SCALE 1:250 AT ORIGINAL SIZE

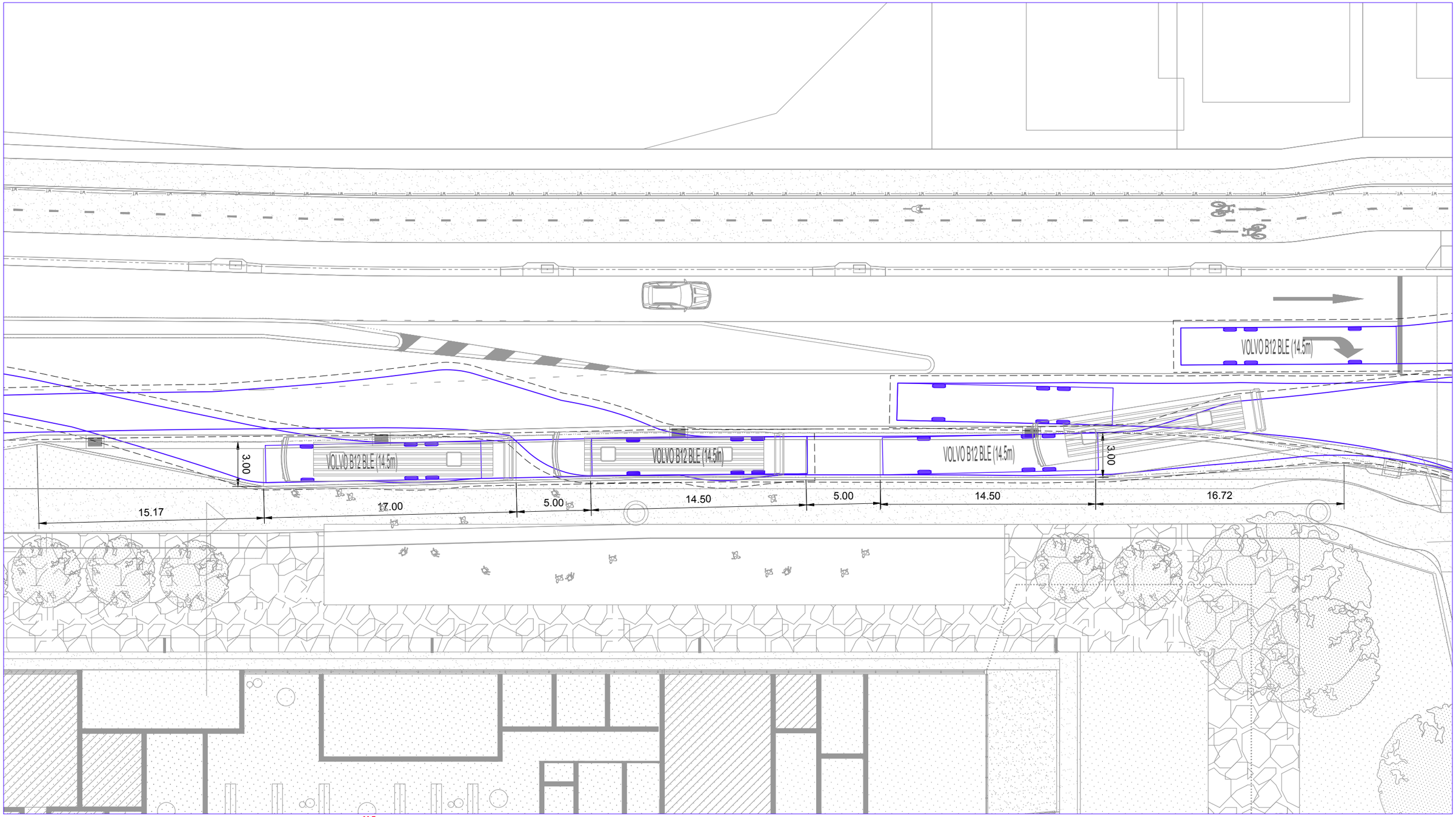
19BRT0434-SK 4-02 RevF

SWEPT PATH ANALYSIS - 14.5m BUS CIRCULATING SOUTHERN ROUNDABOUT AREA

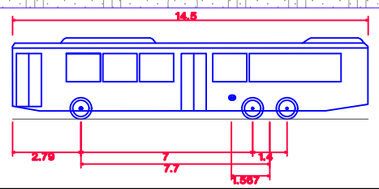
REF: CALOUNDRA WEST STATE SCHOOL.

TTM CONSULTING 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

19BRT0434-F08 REV00 LAYOUT REVIEW.DWG



NOTES:
1. PEDESTRIAN CROSSINGS TO BE RAISED.



VOLVO B12 BLE (14.5m)

Overall Length	14.500m
Overall Width	2.500m
Overall Body Height	3.311m
Min Body Ground Clearance	0.337m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	10.430m
Design Speed Forward	10.0km/h
Clearance Envelope	0.500m

PRELIMINARY ADVICE ONLY
18 July 2024

0 2.5 5 7.5 10 12.5m
SCALE 1:250 AT ORIGINAL SIZE

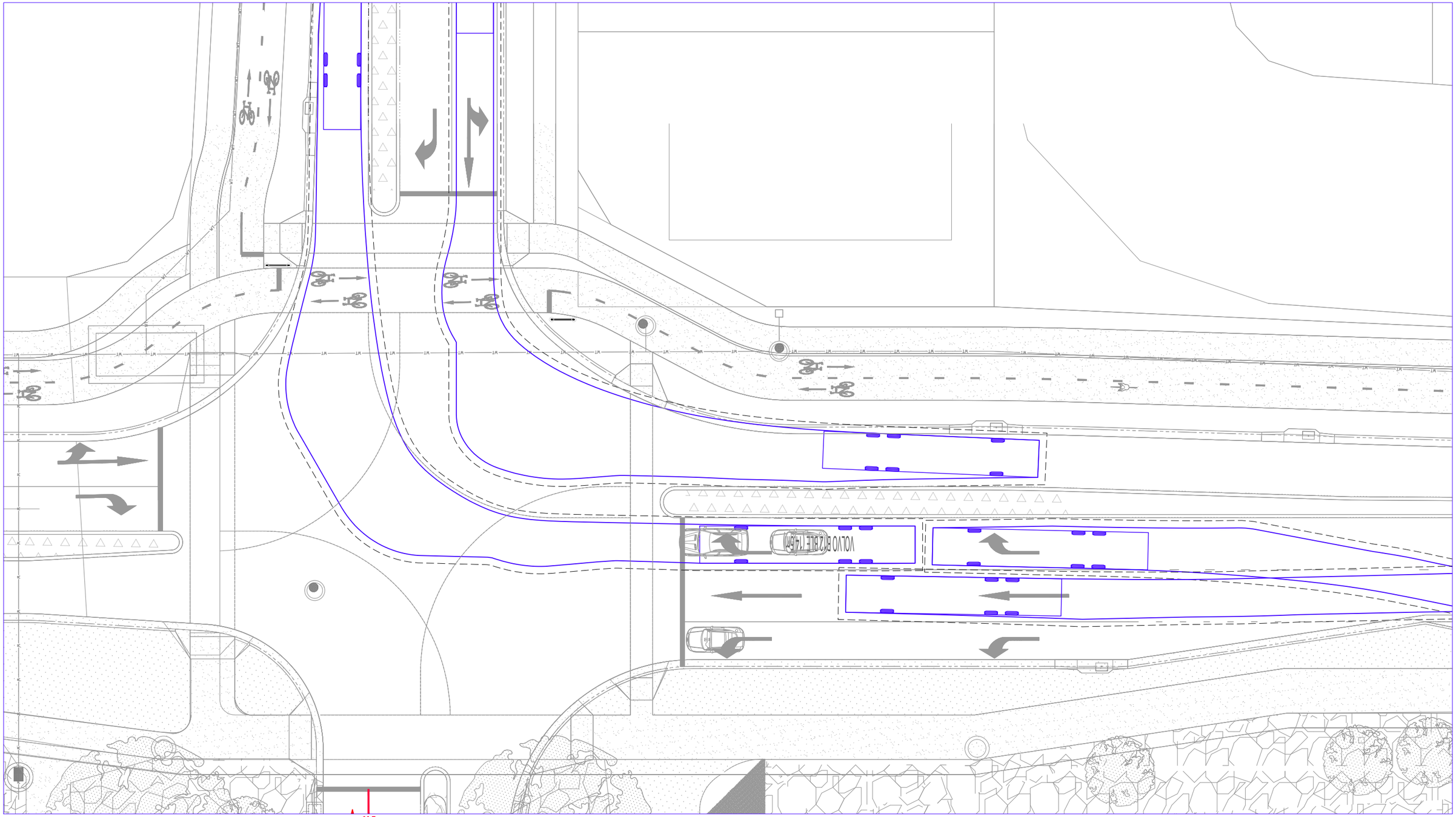
19BRT0434-SK 4-03 RevF

SWEPT PATH ANALYSIS - 14.5m BUS CIRCULATING SOUTHERN EASTERN SET-DOWN AREA

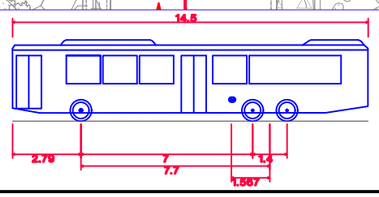
REF: CALOUNDRA WEST STATE SCHOOL.

TTM CONSULTING 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

19BRT0434-F08 REV00 LAYOUT REVIEW.DWG



NOTES:
1. PEDESTRIAN CROSSINGS TO BE RAISED.



VOLVO B12 BLE (14.5m)

Overall Length	14.500m
Overall Width	2.500m
Overall Body Height	3.311m
Min Body Ground Clearance	0.337m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	10.430m
Design Speed Forward	10.0km/h
Clearance Envelope	0.500m

PRELIMINARY ADVICE ONLY
18 July 2024

0 2.5 5 7.5 10 12.5m
SCALE 1:250 AT ORIGINAL SIZE

19BRT0434-SK 4-04 RevF

SWEPT PATH ANALYSIS - 14.5m BUS CIRCULATING CENTRAL INTERSECTION AREA

REF: CALOUNDRA WEST STATE SCHOOL.

TTM CONSULTING PTY LTD
ABN 65 010 868 621
LEVEL 8, 369 Ann Street, BRISBANE QLD 4000
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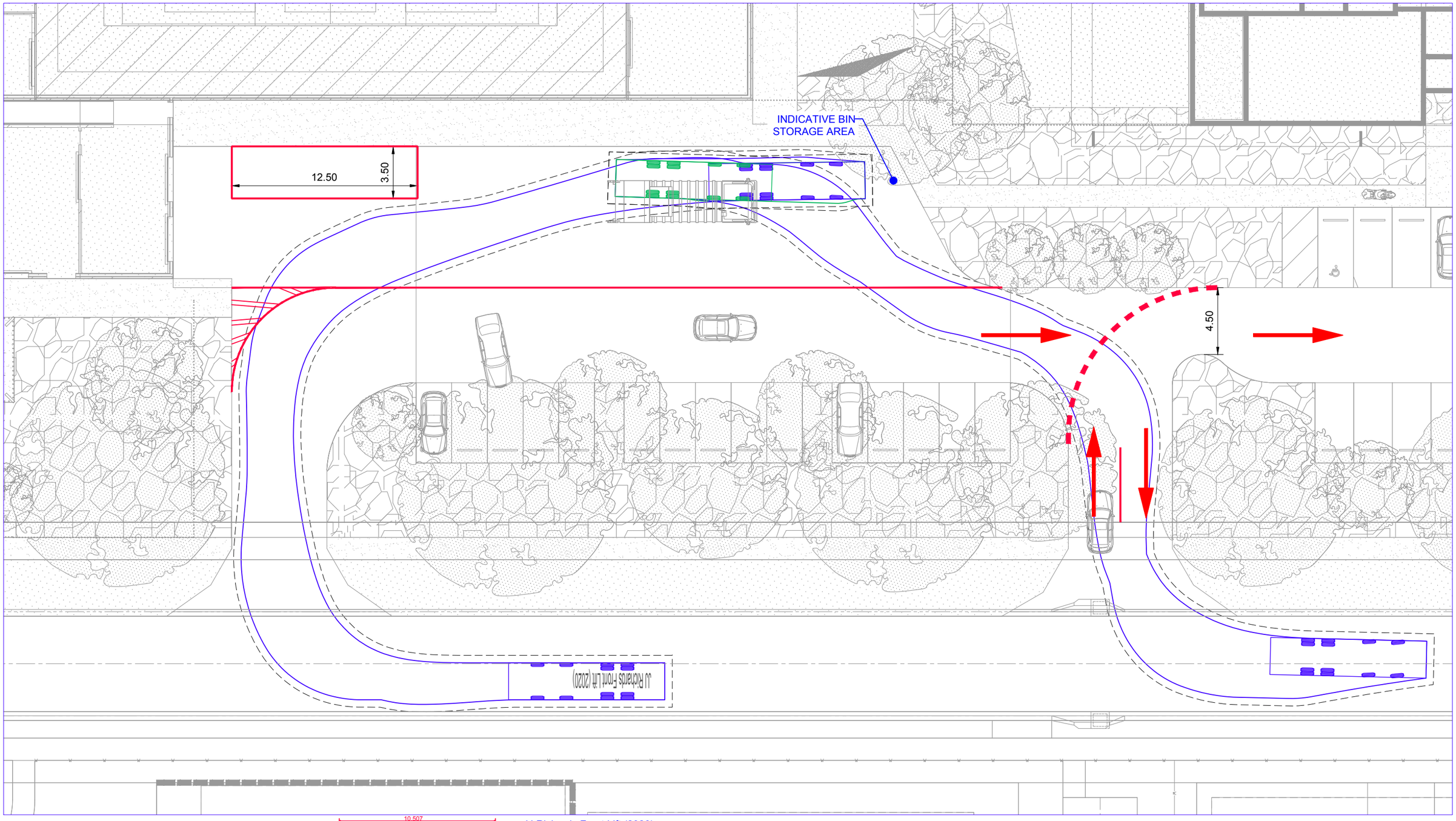
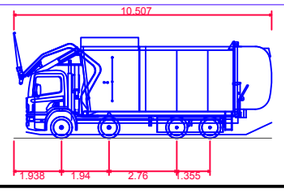
E: ttmbris@ttmgroup.com.au W: www.ttmgroup.com.au



NOTES:
1. PEDESTRIAN CROSSINGS TO BE RAISED.



JJ Richards Front Lift (2020)

Overall Length	10.507m
Overall Width	2.490m
Overall Body Height	4.300m
Min Body Ground Clearance	0.150m
Track Width	2.490m
Lock-to-lock time	5.00s
Curb to Curb Turning Radius	10.800m
Design Speed Forward	10.0km/h
Clearance Envelope	0.500m

PRELIMINARY
ADVICE ONLY
18 July 2024

0 2.5 5 7.5 10 12.5m
SCALE 1:250 AT ORIGINAL SIZE

19BRT0434-SK 5-01 RevF

SWEPT PATH ANALYSIS - 10.507m FRONT LOADING REFUSE COLLECTION VEHICLE CIRCULATING WESTERN AREA

REF: CALOUNDRA WEST STATE SCHOOL.

TTM CONSULTING PTY LTD
ABN 65 010 868 621
LEVEL 8, 369 Ann Street, BRISBANE QLD 4000
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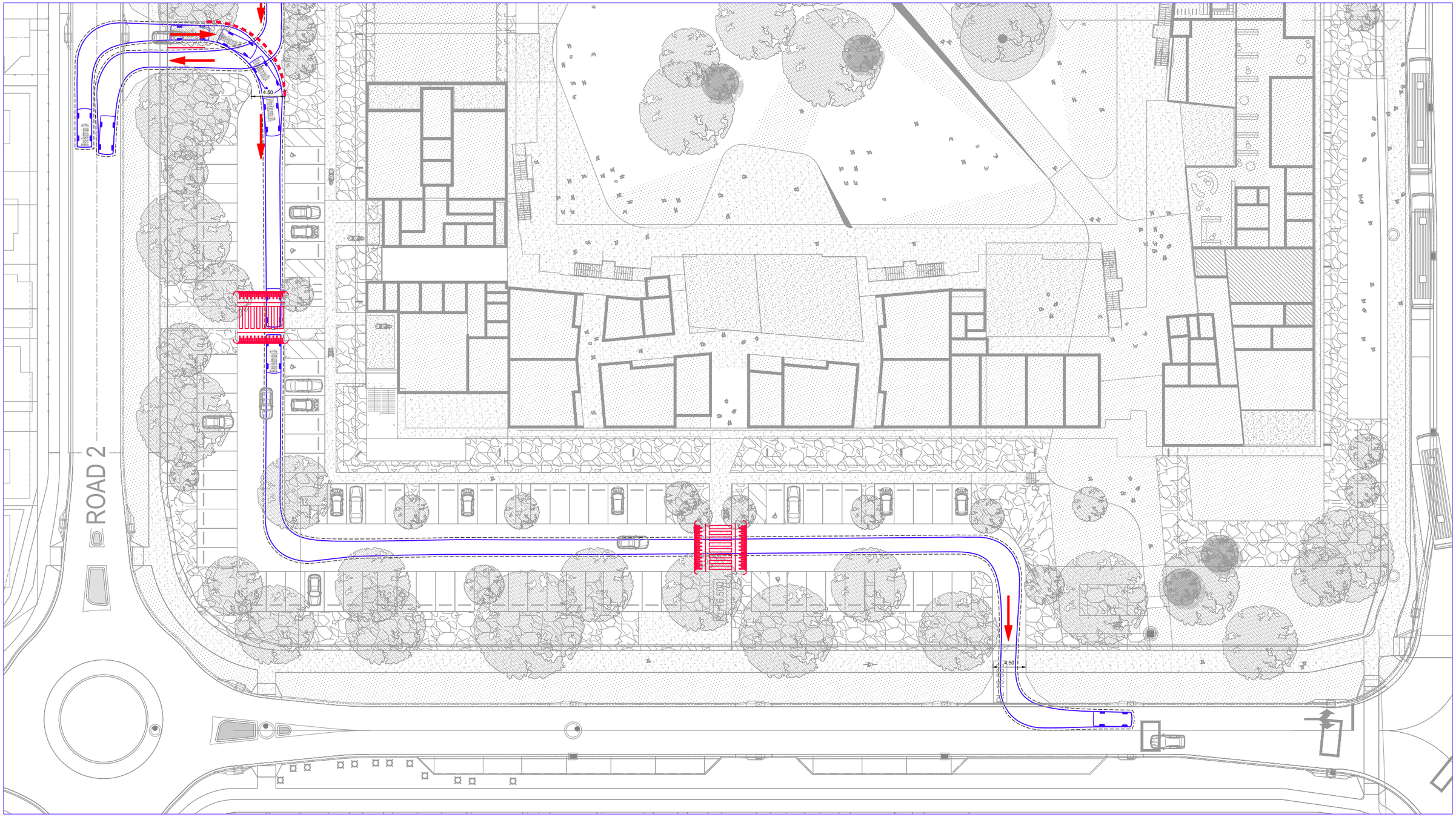
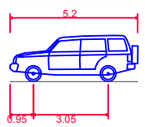
E: ttmbris@ttmgroup.com.au W: www.ttmgroup.com.au

19BRT0434-F08 REV00 LAYOUT REVIEW.DWG





B99 Vehicle (Realistic min radius) (2004)

Overall Length	5.200m
Overall Width	1.940m
Overall Body Height	1.878m
Min Body Ground Clearance	0.272m
Track Width	1.840m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	6.250m
Design Speed Forward	10.00km/h
Clearance Envelope	0.300m

NOTES:
1. PEDESTRIAN CROSSINGS TO BE RAISED.

PRELIMINARY ADVICE ONLY
18 July 2024

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

19BRT0434-SK 6-01 RevF

SWEPT PATH ANALYSIS - 5.2m (B99) LARGE CAR CIRCULATING SOUTHERN CAR PARKING AREA

REF: CALOUNDRA WEST STATE SCHOOL.

TTM CONSULTING PTY LTD
ABN 65 010 868 621
LEVEL 8, 369 Ann Street, BRISBANE QLD 4000
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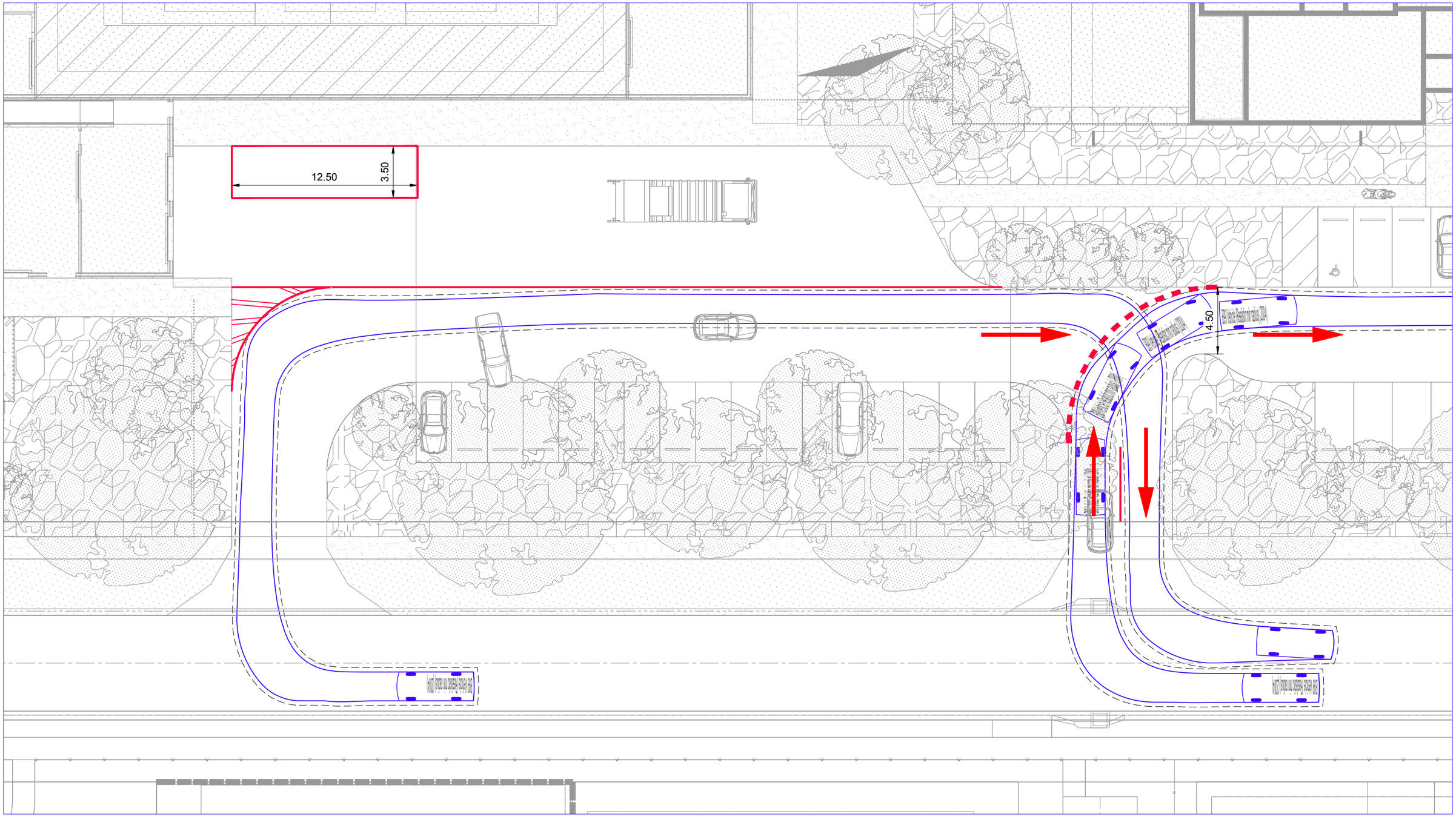
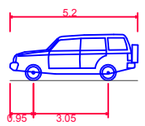
E: ttmbris@ttmgroup.com.au W: www.ttmgroup.com.au

19BRT0434-F08 REV00 LAYOUT REVIEW.DWG





B99 Vehicle (Realistic min radius) (2004)

Overall Length	5.200m
Overall Width	1.940m
Overall Body Height	1.878m
Min Body Ground Clearance	0.272m
Track Width	1.840m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	6.250m
Design Speed Forward	10.00km/h
Clearance Envelope	0.300m

NOTES:
1. PEDESTRIAN CROSSINGS TO BE RAISED.

PRELIMINARY ADVICE ONLY
18 July 2024

0 2.5 5 7.5 10 12.5m
SCALE 1:250 AT ORIGINAL SIZE

19BRT0434-SK 6-02 RevF

SWEPT PATH ANALYSIS - 5.2m (B99) LARGE CAR CIRCULATING WESTERN CAR PARKING AREA

REF: CALOUNDRA WEST STATE SCHOOL.

TTM CONSULTING PTY LTD
ABN 65 010 868 621
LEVEL 8, 369 Ann Street, BRISBANE QLD 4000
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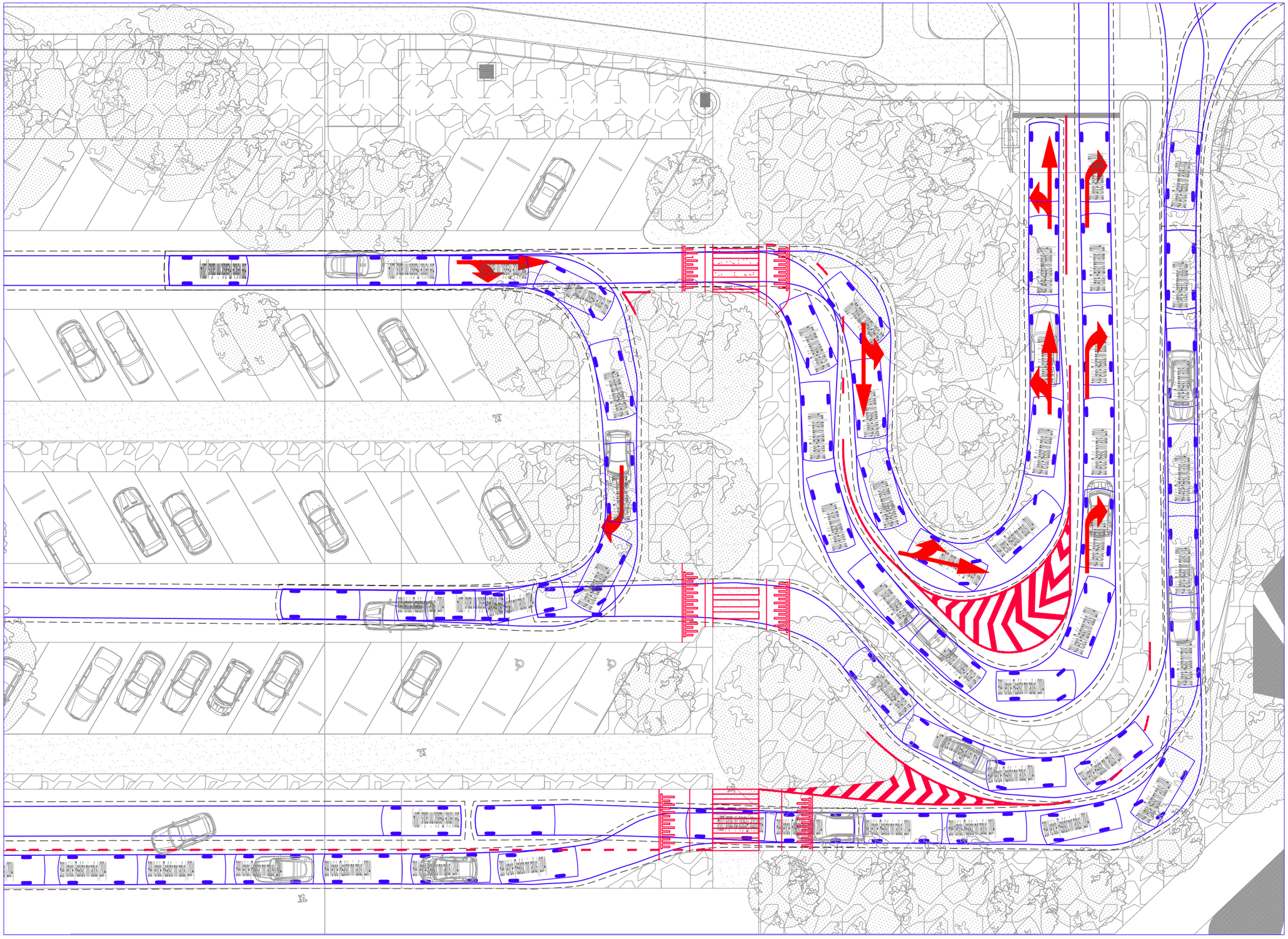
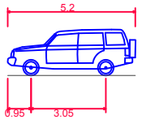
E: ttmbris@ttmgroup.com.au W: www.ttmgroup.com.au

19BRT0434-F08 REV00 LAYOUT REVIEW.DWG





B99 Vehicle (Realistic min radius) (2004)

Overall Length	5.200m
Overall Width	1.940m
Overall Body Height	1.878m
Min Body Ground Clearance	0.272m
Track Width	1.840m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	6.250m
Design Speed Forward	10.00km/h
Clearance Envelope	0.300m

PRELIMINARY ADVICE ONLY

25 June 2024

NOTES:

1. PEDESTRIAN CROSSINGS TO BE RAISED.

0 2.5 5 7.5 10 12.5m

SCALE 1:250 AT ORIGINAL SIZE

19BRT0434-SK 6-03 RevG

SWEPT PATH ANALYSIS - 5.2m (B99) LARGE CAR CIRCULATING EASTERN CAR PARKING AREA

REF: CALOUNDRA WEST STATE SCHOOL.

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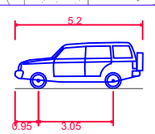
19BRT0434-F08 REV00 LAYOUT REVIEW.DWG

PROVIDE
STOP BAR
LINEMARKING

PROVIDE
STOP BAR
LINEMARKING



B99 Vehicle (Realistic min radius) (2004)

Overall Length	5.200m
Overall Width	1.940m
Overall Body Height	1.878m
Min Body Ground Clearance	0.272m
Track Width	1.840m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	6.250m
Design Speed Forward	10.00km/h
Clearance Envelope	0.300m

NOTES:
1. PEDESTRIAN CROSSINGS TO BE RAISED.

PRELIMINARY ADVICE ONLY
25 June 2024

0 2.5 5 7.5 10 12.5m
SCALE 1:250 AT ORIGINAL SIZE

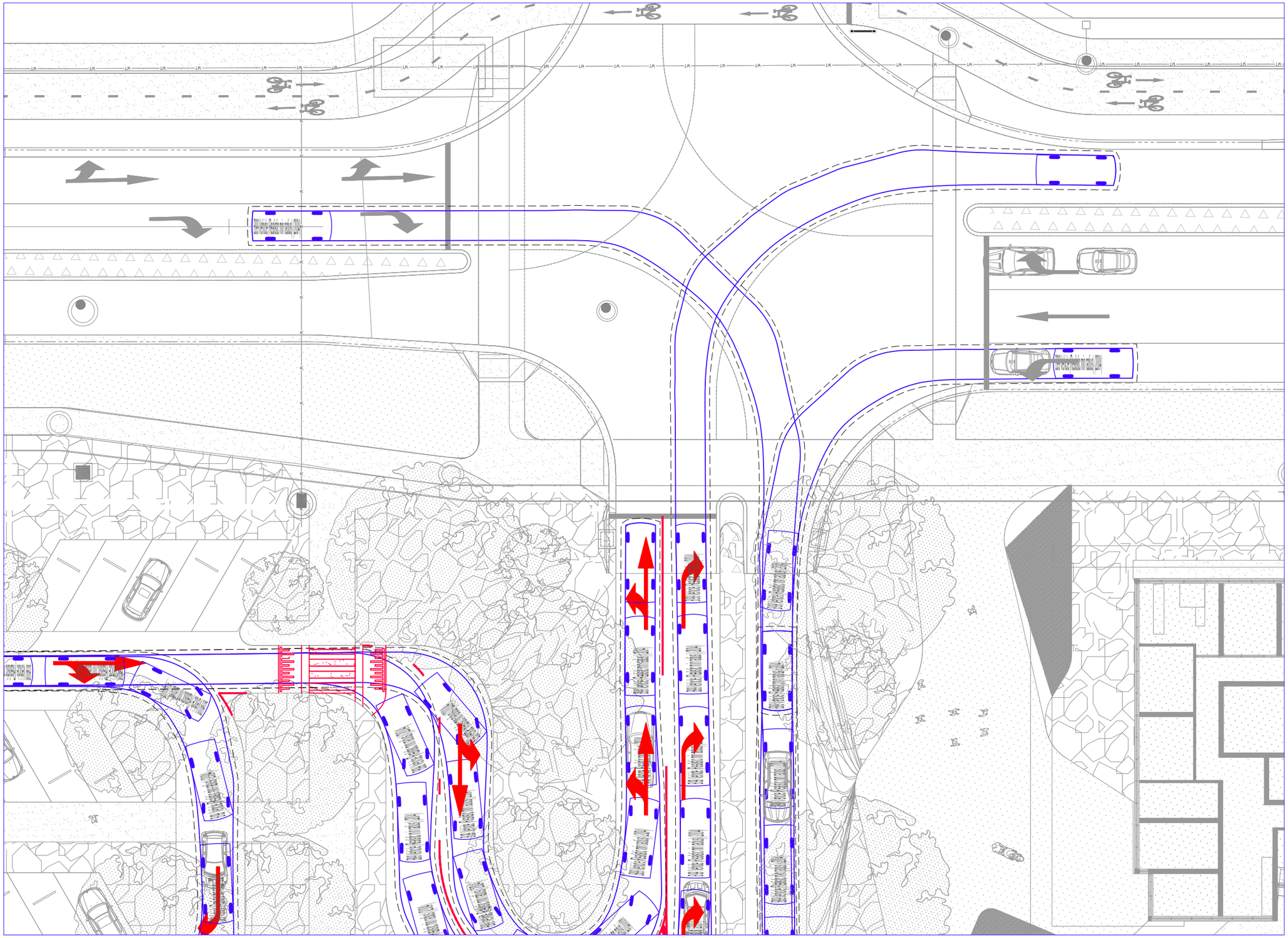
19BRT0434-SK 6-04 RevG

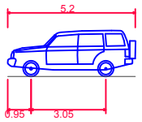
SWEPT PATH ANALYSIS - 5.2m (B99) LARGE CAR CIRCULATING NORTHERN CAR PARKING AREA

REF: CALOUNDRA WEST STATE SCHOOL.

TTM CONSULTING 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





B99 Vehicle (Realistic min radius) (2004)

Overall Length	5.200m
Overall Width	1.940m
Overall Body Height	1.878m
Min Body Ground Clearance	0.272m
Track Width	1.840m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	6.250m
Design Speed Forward	10.00km/h
Clearance Envelope	0.300m

PRELIMINARY ADVICE ONLY

25 June 2024

NOTES:

1. PEDESTRIAN CROSSINGS TO BE RAISED.

0 2.5 5 7.5 10 12.5m

SCALE 1:250 AT ORIGINAL SIZE

19BRT0434-SK 6-05 RevG

SWEPT PATH ANALYSIS - 5.2m (B99) LARGE CAR CIRCULATING CENTRAL INTERSECTION AREA

REF: CALOUNDRA WEST STATE SCHOOL.

TTM CONSULTING PTY LTD
ABN 65 010 868 621
LEVEL 8, 369 Ann Street, BRISBANE QLD 4000
P.O. BOX 12015, BRISBANE QLD 4003
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E: ttmbris@ttmgroup.com.au W: www.ttmgroup.com.au

19BRT0434-F08 REV00 LAYOUT REVIEW.DWG

Appendix C Traffic Network Diagrams

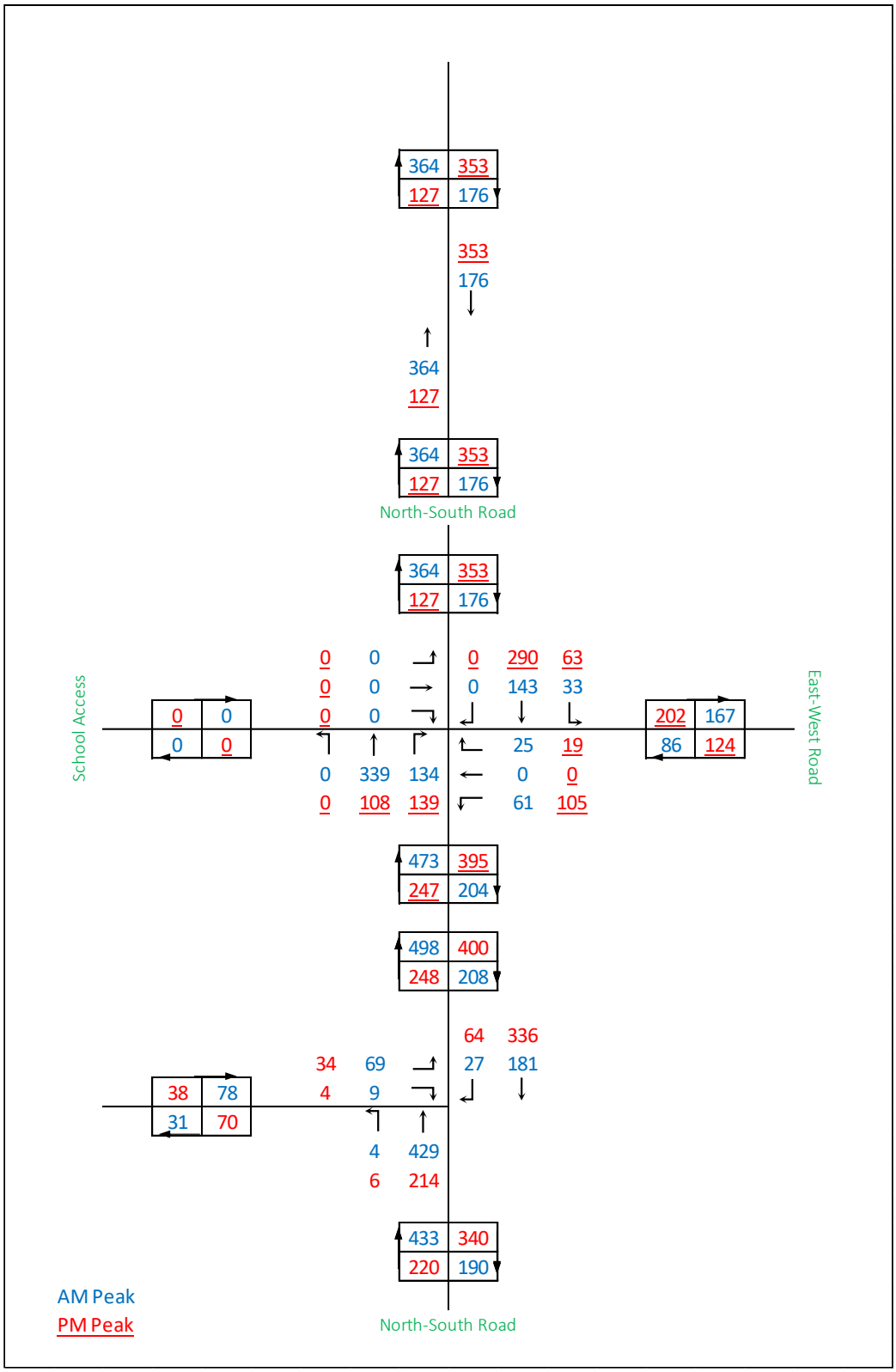


Figure C-1: Ultimate Background Traffic Volumes, Without Development

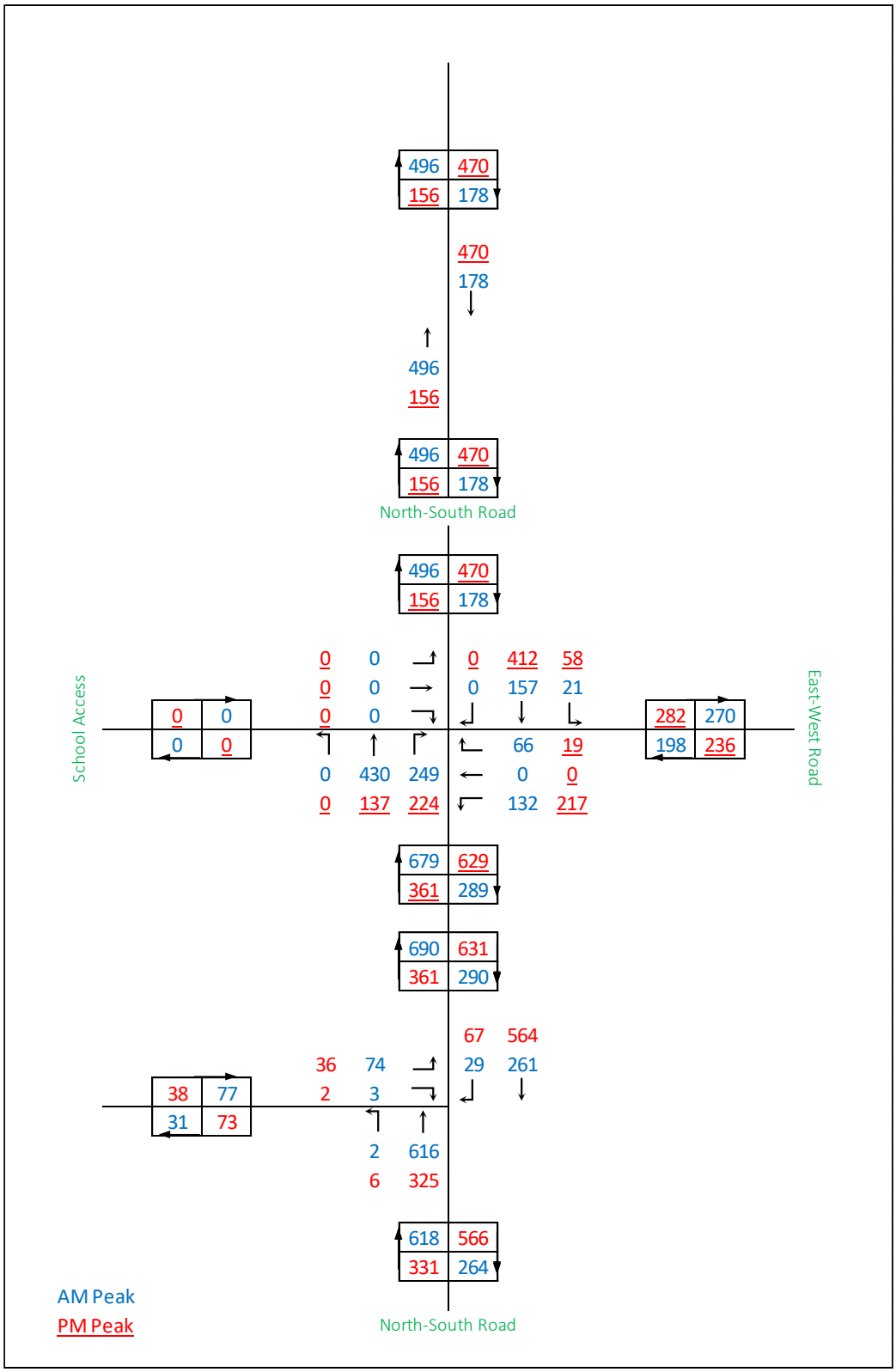


Figure C-2: Interim 2030 Background Traffic Volumes, Without Development

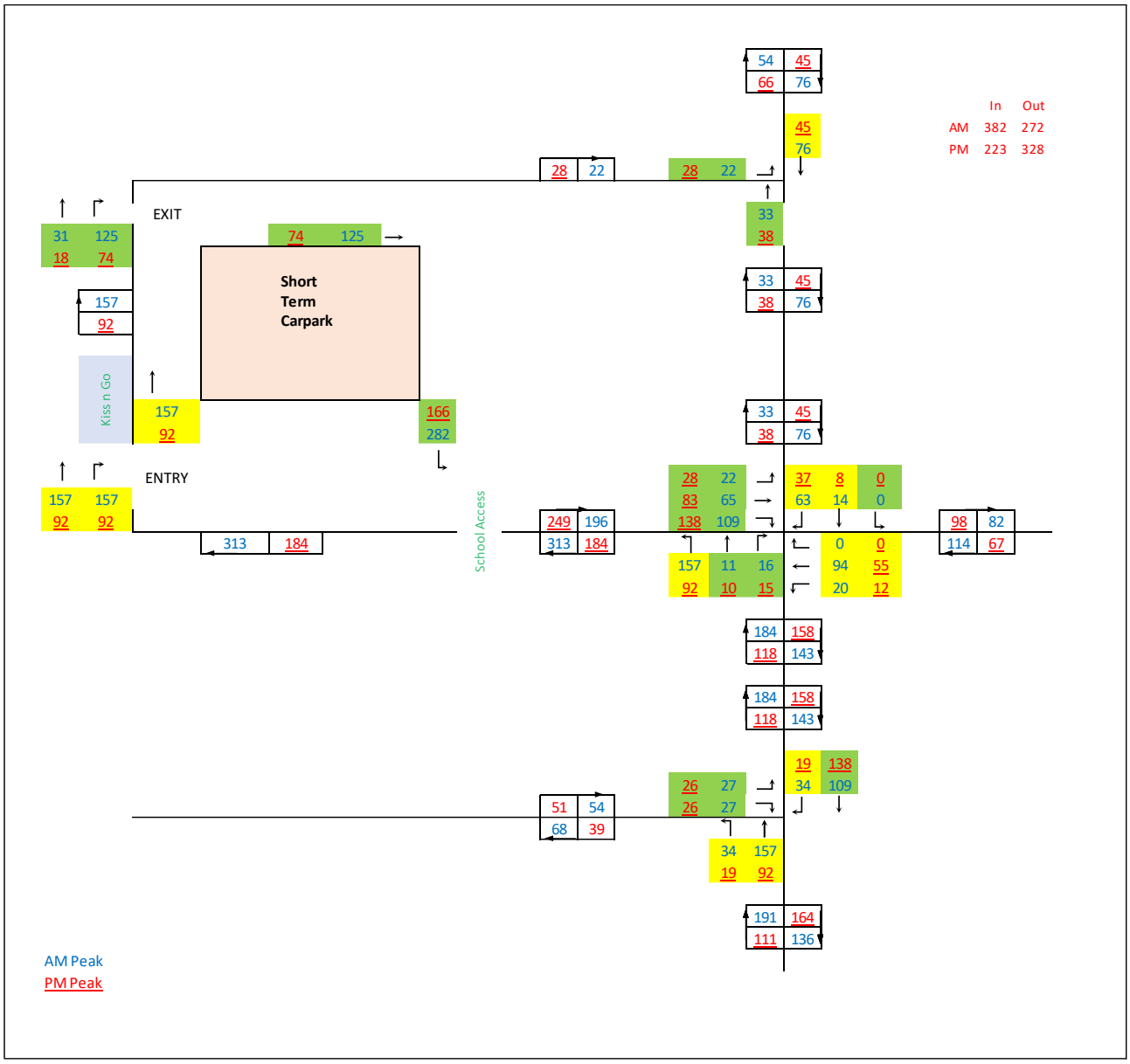


Figure C-3: Proposed Traffic Demands – Ultimate Scenario

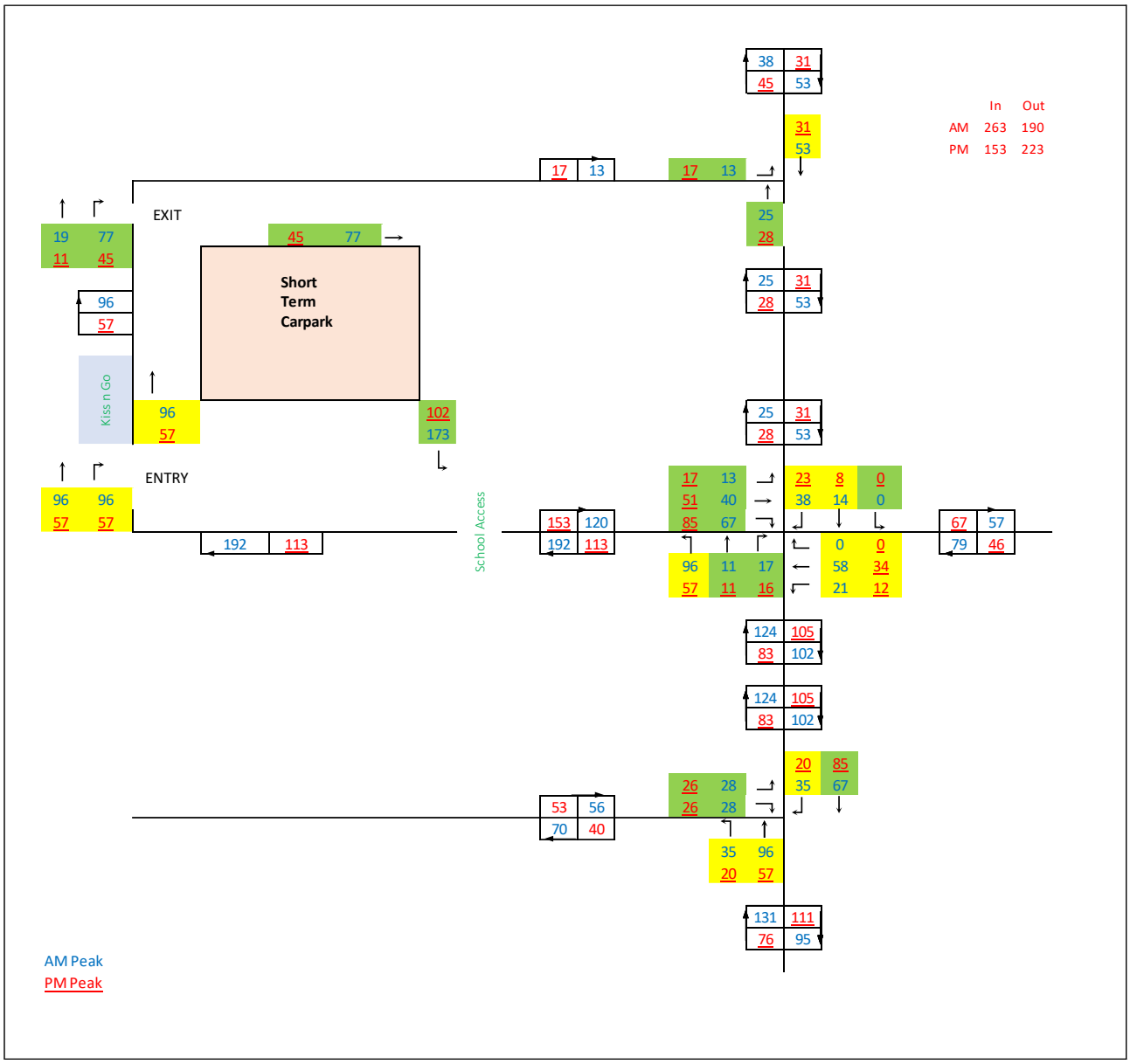


Figure C-4: Proposed Traffic Demands – Interim 2030 Scenario – 759 Students

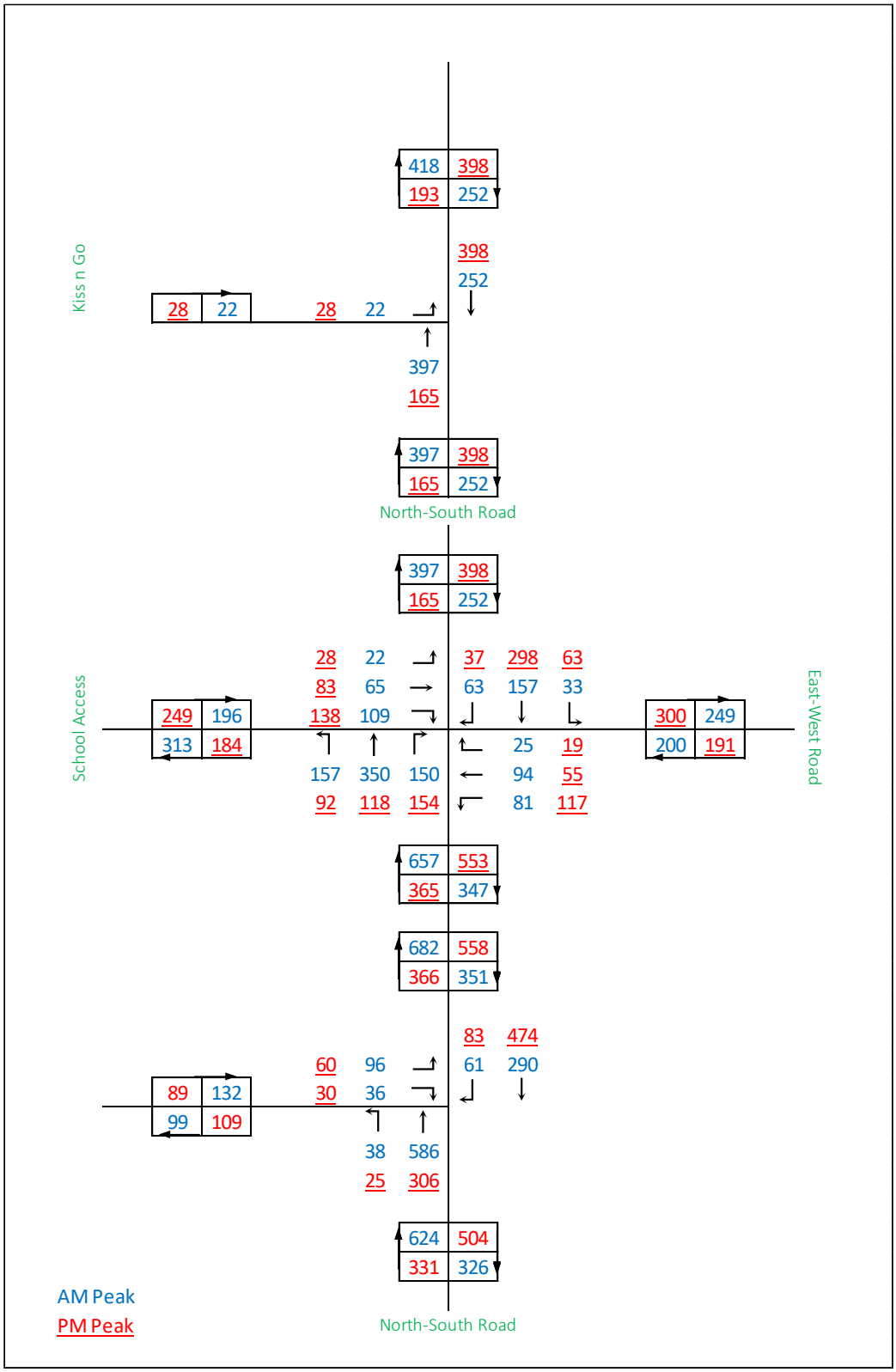


Figure C-5: Ultimate Future Year Traffic Volumes, With Development

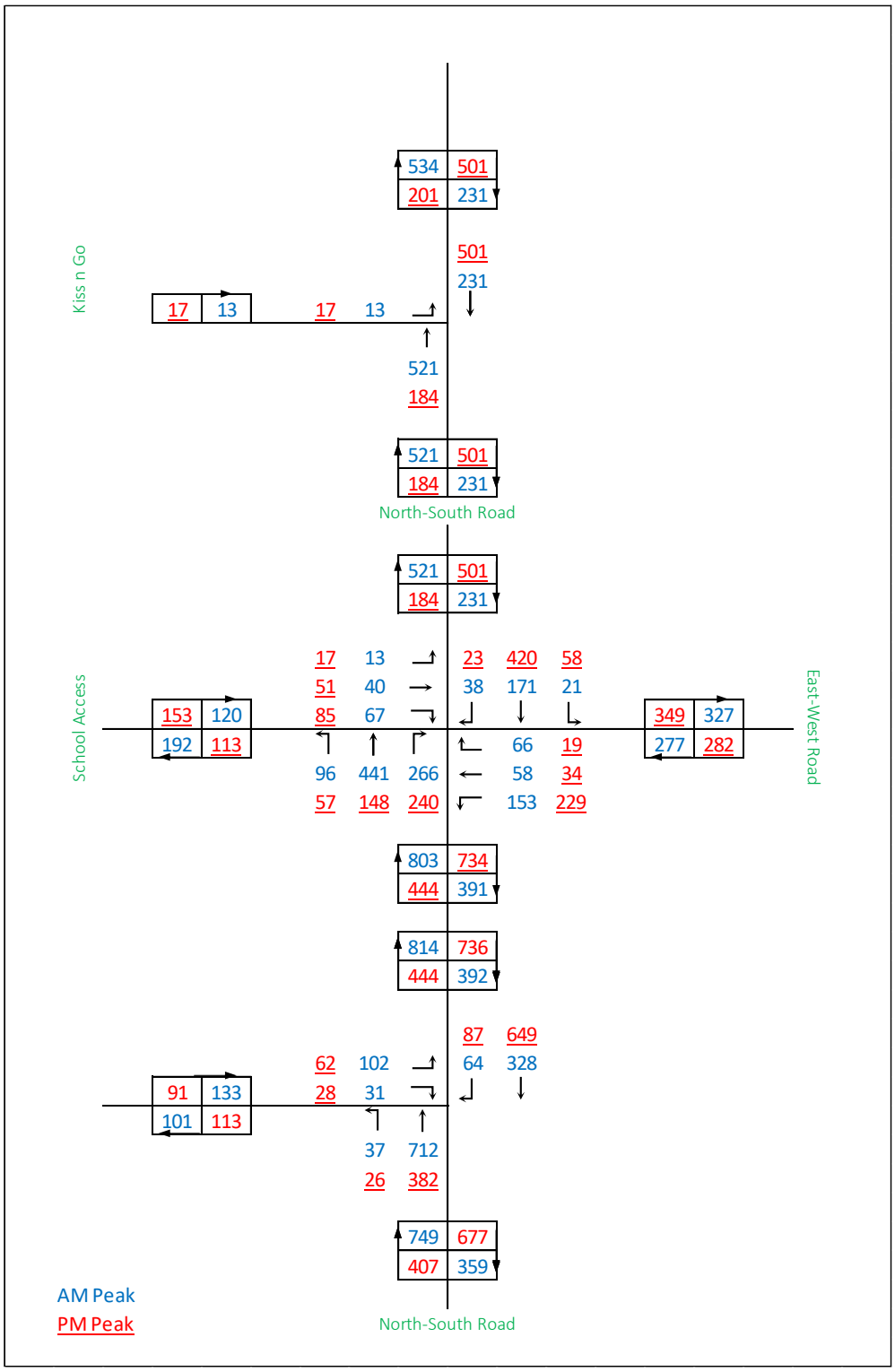


Figure C-6: Interim Future Year 2030 Traffic Volumes, With Development

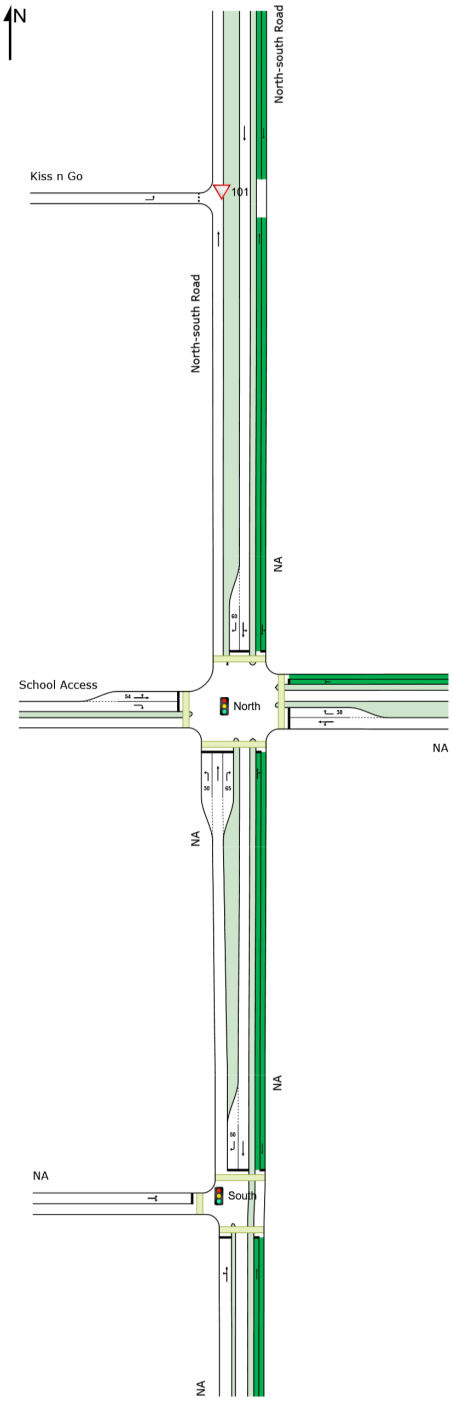
Appendix D Detailed SIDRA Outputs

NETWORK LAYOUT

Network: N101 [AM - Interim (Network Folder: General)]

New Network
Network Category: (None)

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



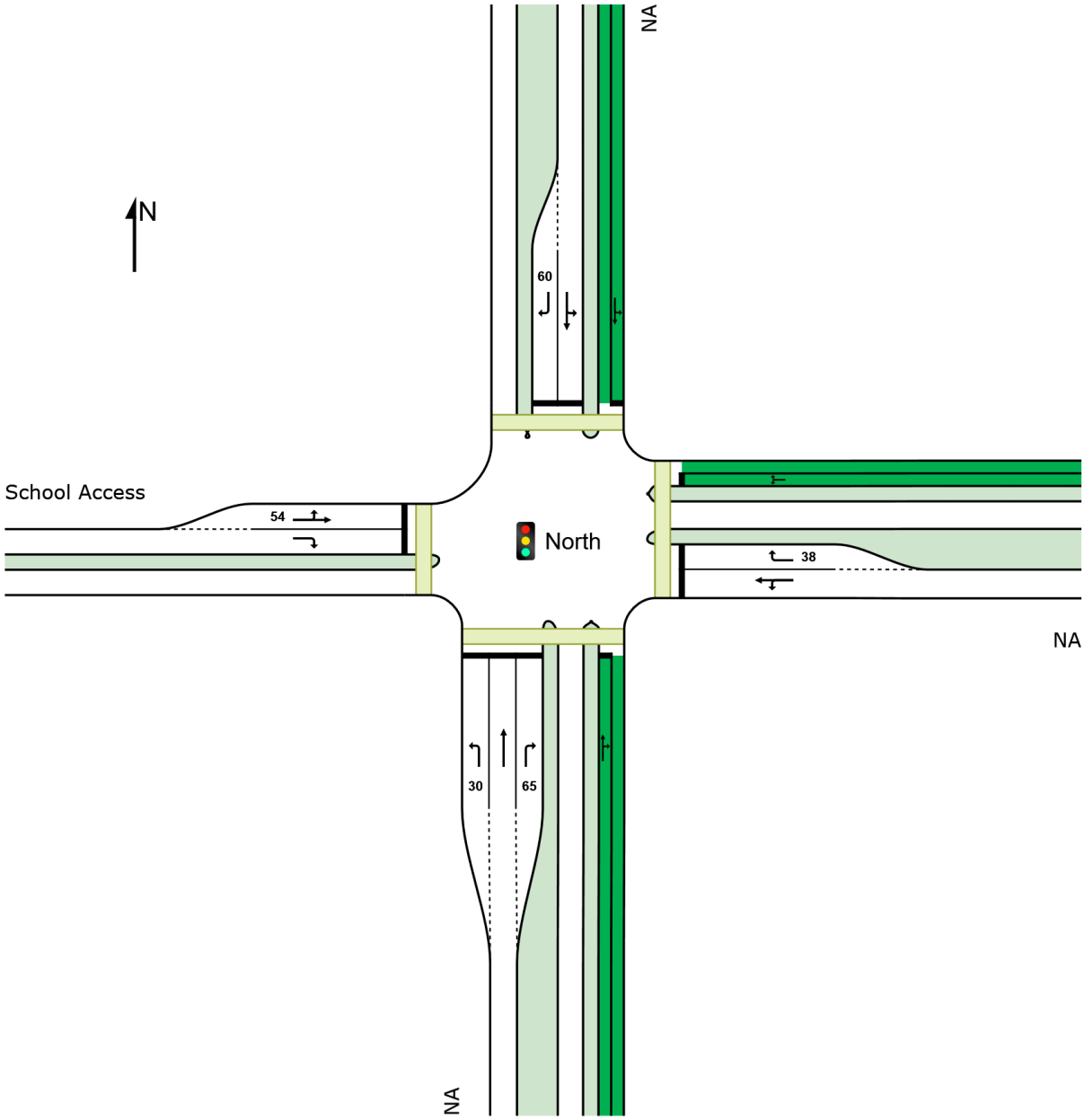
SITES IN NETWORK		
Site ID	**CCG ID**	**Site Name**
▽101	NA	Kiss n Go AM Peak - Interim
North	NA	North Intersection AM Peak - Interim
South	NA	South Intersection AM Peak - Interim

SITE LAYOUT

Site: North [North Intersection AM Peak - Interim (Site Folder: Project - EDQ Submission)]

NA
Site Category: NA
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

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

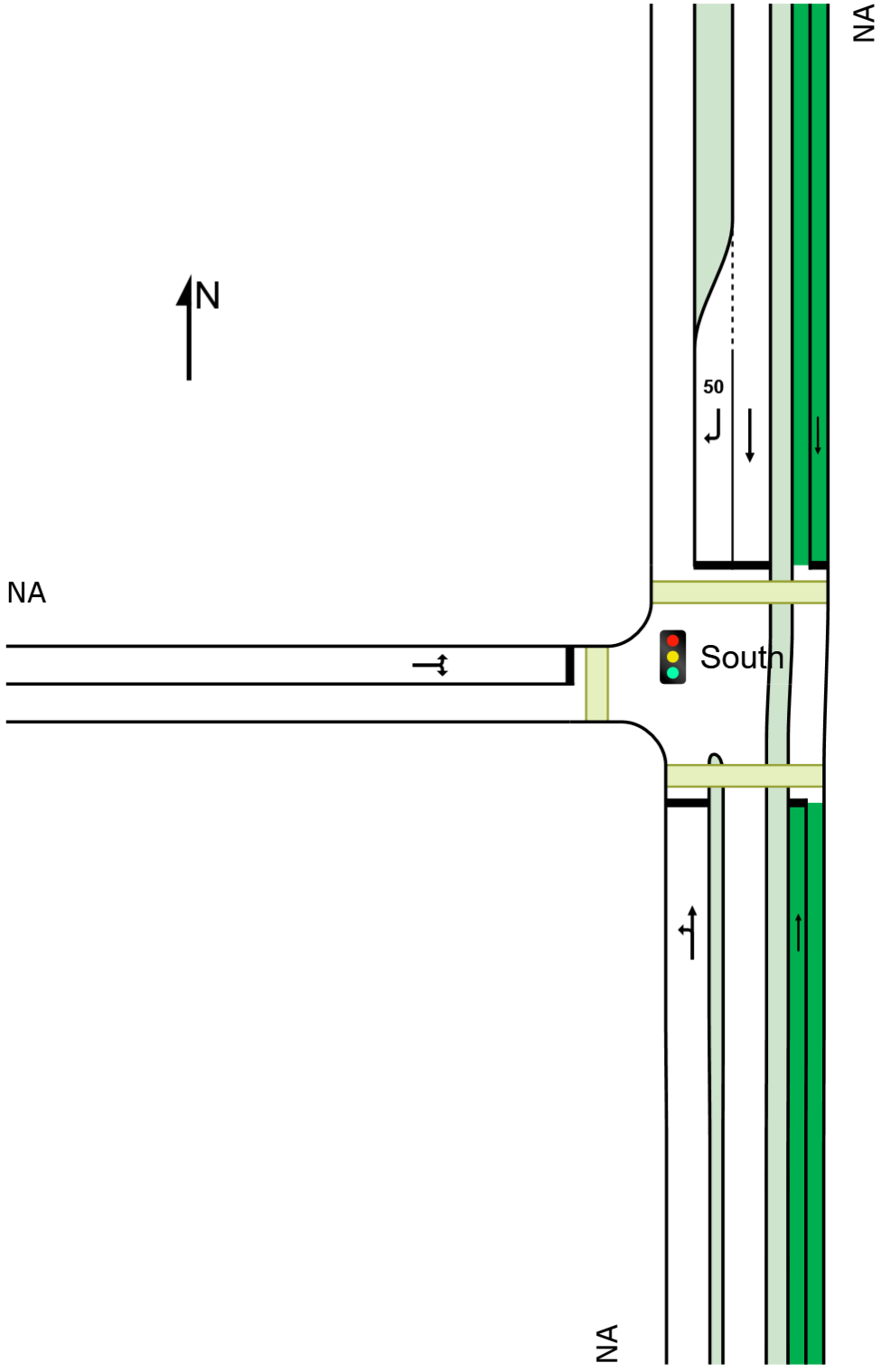


SITE LAYOUT

Site: South [South Intersection AM Peak - Interim (Site Folder: Project - EDQ Submission)]

NA
Site Category: NA
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

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



MOVEMENT SUMMARY

Site: North [North Intersection AM Peak - Interim (Site Folder: Project - EDQ Submission)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [AM - Interim (Network Folder: General)]

NA
Site Category: NA
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

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:															
1	L2	All MCs	101	0.0	101	0.0	0.162	26.4	LOS C	2.2	15.5	0.40	0.67	0.40	21.9
2	T1	All MCs	517	4.5	517	4.5	0.697	20.3	LOS C	12.4	90.7	0.54	0.46	0.54	23.0
3	R2	All MCs	333	4.1	333	4.1	0.713	40.1	LOS D	13.4	97.8	0.87	0.79	0.87	17.7
Approach			951	3.9	951	3.9	0.713	27.9	LOS C	13.4	97.8	0.64	0.60	0.64	19.9
East:															
4	L2	All MCs	213	3.7	213	3.7	*0.624	31.5	LOS C	8.7	62.9	0.96	0.79	0.96	12.0
5	T1	All MCs	61	0.0	61	0.0	*0.624	55.7	LOS E	8.7	62.9	0.97	0.81	0.97	17.6
6	R2	All MCs	122	2.8	122	2.8	0.204	50.8	LOS D	5.4	14.7	0.91	0.74	0.91	9.4
Approach			397	2.9	397	2.9	0.624	41.2	LOS D	8.7	62.9	0.94	0.78	0.94	11.8
North:															
7	L2	All MCs	75	1.5	75	1.5	*0.421	51.7	LOS D	9.9	72.3	0.92	0.72	0.92	14.1
8	T1	All MCs	233	4.1	233	4.1	0.421	41.8	LOS D	9.9	72.3	0.89	0.74	0.89	11.1
9	R2	All MCs	40	0.0	40	0.0	0.215	60.7	LOS E	2.2	15.5	0.96	0.73	0.96	10.8
Approach			347	3.0	347	3.0	0.421	46.1	LOS D	9.9	72.3	0.91	0.73	0.91	11.9
West: School Access															
10	L2	All MCs	14	0.0	14	0.0	0.266	31.0	LOS C	2.5	17.4	0.95	0.77	0.95	5.3
11	T1	All MCs	42	0.0	42	0.0	0.266	58.2	LOS E	2.5	17.4	0.95	0.77	0.95	12.8
12	R2	All MCs	71	0.0	71	0.0	*0.304	57.1	LOS E	3.9	27.0	0.95	0.76	0.95	4.8
Approach			126	0.0	126	0.0	0.304	54.7	LOS D	3.9	27.0	0.95	0.76	0.95	7.7
All Vehicles			1821	3.2	1821	3.2	0.713	36.1	LOS D	13.4	97.8	0.78	0.68	0.78	14.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data 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	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:											
P1	Full	105	54.4	LOS E	0.3	0.3	0.95	0.95	208.2	200.0	0.96
East:											

P2 Full	105	54.4	LOS E	0.3	0.3	0.95	0.95	208.2	200.0	0.96
North:										
P3 Full	105	54.4	LOS E	0.3	0.3	0.95	0.95	208.2	200.0	0.96
West: School Access										
P4 Full	211	54.6	LOS E	0.7	0.7	0.96	0.96	208.5	200.0	0.96
All Pedestrians	526	54.5	LOS E	0.7	0.7	0.96	0.96	208.3	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: North [North Intersection AM Peak - Interim (Site Folder: Project - EDQ Submission)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [AM - Interim (Network Folder: General)]

NA
Site Category: NA
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

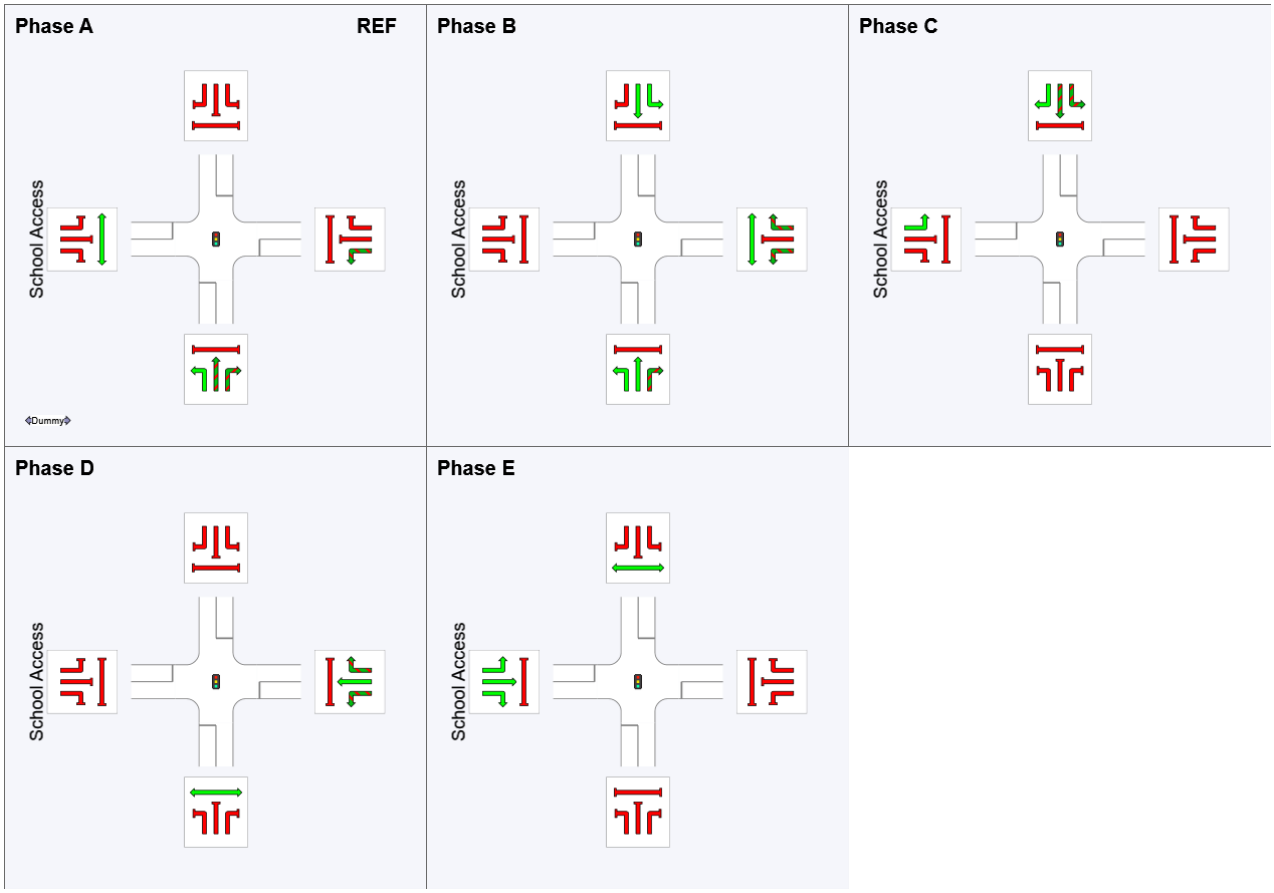
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Lagging Right Turn - Import
Input Phase Sequence: A, B, C, D, E
Output Phase Sequence: A, B, C, D, E
Reference Phase: Phase A
Offset: 0 seconds (Program)

Phase Timing Summary

Phase	A	B	C	D	E
Phase Change Time (sec)	0	32	52	70	99
Green Time (sec)	26	14	12	23	15
Phase Time (sec)	32	20	18	29	21
Phase Split	27%	17%	15%	24%	18%
Phase Frequency (%)	100.0	100.0	100.0	100.0	100.0

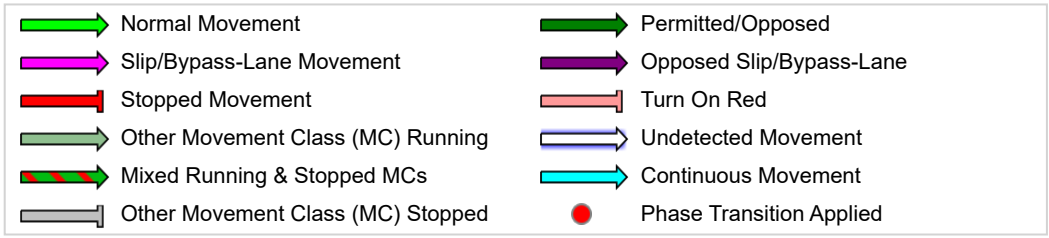
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



MOVEMENT TIMING

All Movement Classes

Site: North [North Intersection AM Peak - Interim (Site Folder: Project - EDQ Submission)]

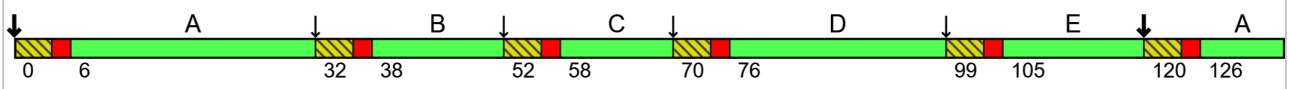
Network: N101 [AM - Interim (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

NA
Site Category: NA
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Lagging Right Turn - Import
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)

3 (South R2) Bicycles

4 (East L2)

4 (East L2) Bicycles

5 (East T1)

6 (East R2)

6 (East R2) Bicycles

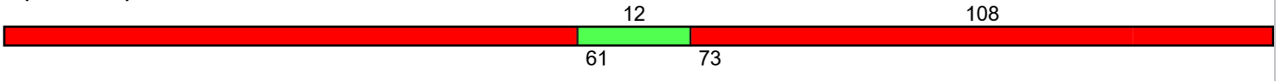
7 (North L2)

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)

P2 (East Full Crossing)

P3 (North Full Crossing)

P4 (West Full Crossing)

Green Interval
Red Interval

MOVEMENT SUMMARY

Site: South [South Intersection AM Peak - Interim (Site Folder: Project - EDQ Submission)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [AM - Interim (Network Folder: General)]

NA
Site Category: NA
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

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:															
1	L2	All MCs	39	0.0	39	0.0	0.807	32.5	LOS C	38.4	279.7	0.91	0.83	0.91	17.4
2	T1	All MCs	855	4.4	855	4.4	* 0.807	23.7	LOS C	38.4	279.7	0.81	0.74	0.81	16.6
Approach			894	4.2	894	4.2	0.807	24.0	LOS C	38.4	279.7	0.81	0.75	0.82	16.7
North:															
8	T1	All MCs	451	3.7	451	3.7	0.301	7.8	LOS A	8.3	60.5	0.35	0.31	0.35	36.1
9	R2	All MCs	67	0.0	67	0.0	* 0.680	72.8	LOS E	4.2	29.6	1.00	0.80	1.07	10.2
Approach			518	3.3	518	3.3	0.680	16.2	LOS B	8.3	60.5	0.44	0.37	0.45	28.1
West:															
10	L2	All MCs	107	0.0	107	0.0	0.814	70.0	LOS E	8.8	61.9	1.00	0.92	1.23	5.4
12	R2	All MCs	33	0.0	33	0.0	* 0.814	70.0	LOS E	8.8	61.9	1.00	0.92	1.23	10.8
Approach			140	0.0	140	0.0	0.814	70.0	LOS E	8.8	61.9	1.00	0.92	1.23	6.8
All Vehicles			1552	3.5	1552	3.5	0.814	25.6	LOS C	38.4	279.7	0.70	0.64	0.73	18.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data 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	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:											
P1	Full	105	54.4	LOS E	0.3	0.3	0.95	0.95	208.2	200.0	0.96
North:											
P3	Full	105	54.4	LOS E	0.3	0.3	0.95	0.95	208.2	200.0	0.96
West:											
P4	Full	211	54.6	LOS E	0.7	0.7	0.96	0.96	208.5	200.0	0.96
All Pedestrians		421	54.5	LOS E	0.7	0.7	0.96	0.96	208.4	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: South [South Intersection AM Peak - Interim (Site Folder: Project - EDQ Submission)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [AM - Interim (Network Folder: General)]

NA
Site Category: NA
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Input Phase Sequence: A, B, C, D
Output Phase Sequence: A, B, C, D
Reference Phase: Phase A
Offset: 110 seconds (Program)

Phase Timing Summary

Phase	A	B	C	D
Phase Change Time (sec)	110	56	68	85
Green Time (sec)	60	6	11	19
Phase Time (sec)	66	12	17	25
Phase Split	55%	10%	14%	21%
Phase Frequency (%)	100.0[4]	100.0[4]	100.0[4]	100.0[4]

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%.

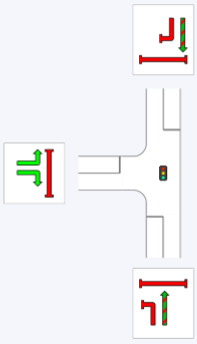
4 Phase Frequency specified by the user (phase times not specified).

Output Phase Sequence

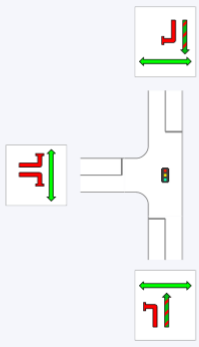
Phase A **REF**

Phase B

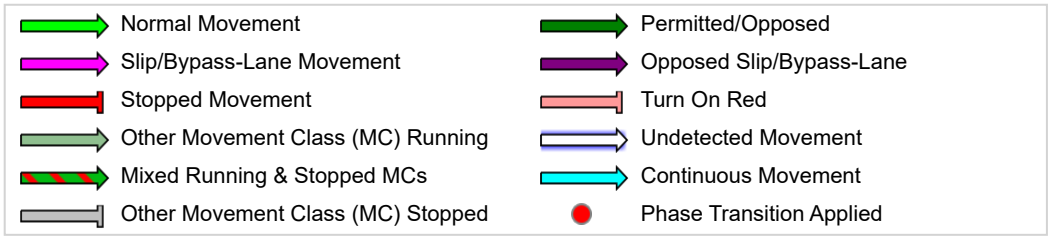
Phase C



Phase D



REF: Reference Phase
VAR: Variable Phase



MOVEMENT TIMING

All Movement Classes

Site: South [South Intersection AM Peak - Interim (Site Folder: Project - EDQ Submission)]

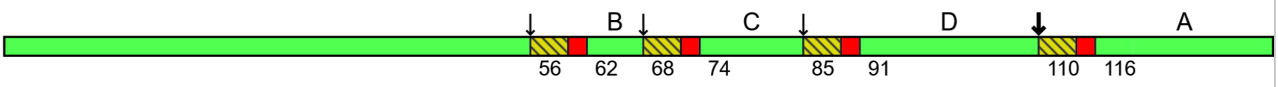
Network: N101 [AM - Interim (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

NA
Site Category: NA
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Input Phase Sequence: A, B, C, D
Output Phase Sequence: A, B, C, D
Reference Phase: Phase A

Displayed Signal Timing - Phases

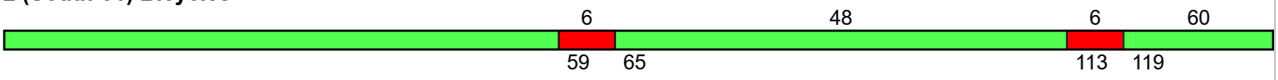


Effective Signal Timing - Movements

1 (South L2)

2 (South T1)

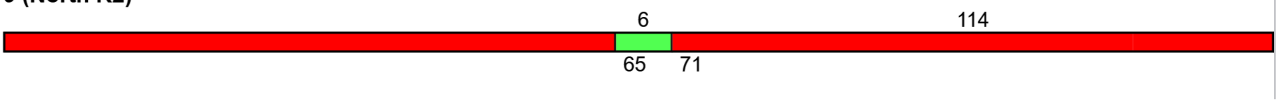
2 (South T1) Bicycles



8 (North T1)

8 (North T1) Bicycles

9 (North R2)



10 (West L2)

12 (West R2)

Green Interval
Red Interval

Pedestrian Signal Timing

P1 (South Full Crossing)

P3 (North Full Crossing)

P4 (West Full Crossing)

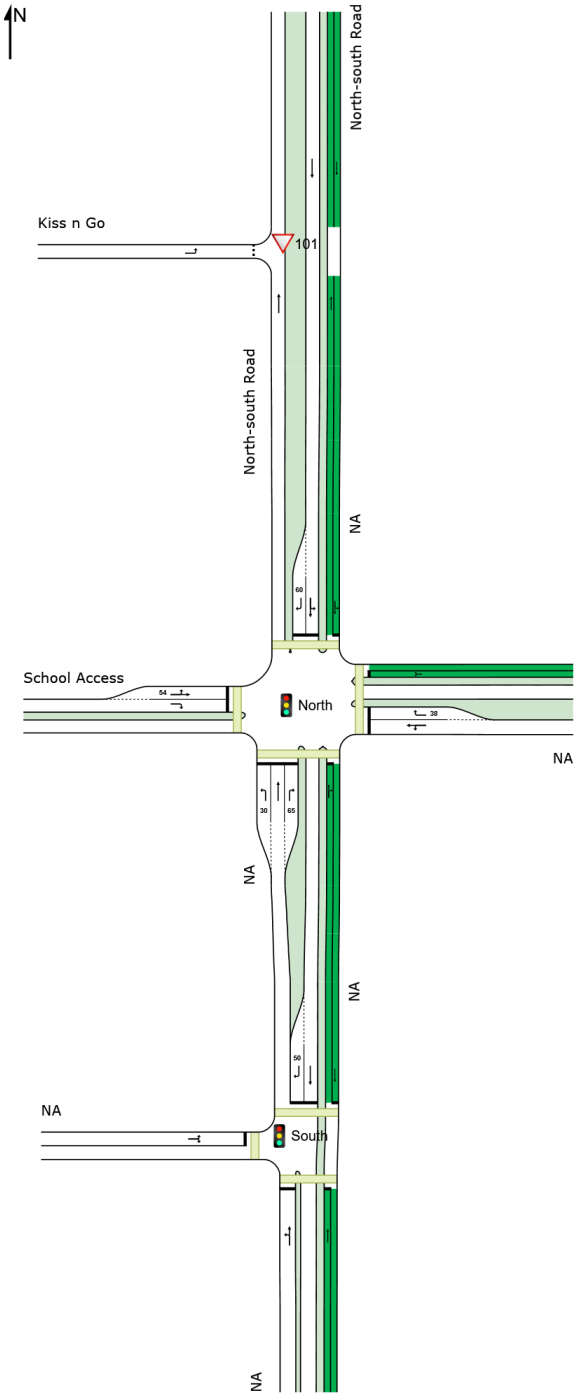
Green Interval
Red Interval

NETWORK LAYOUT

Network: N101 [AM - Ultimate (Network Folder: General)]

New Network
Network Category: (None)

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



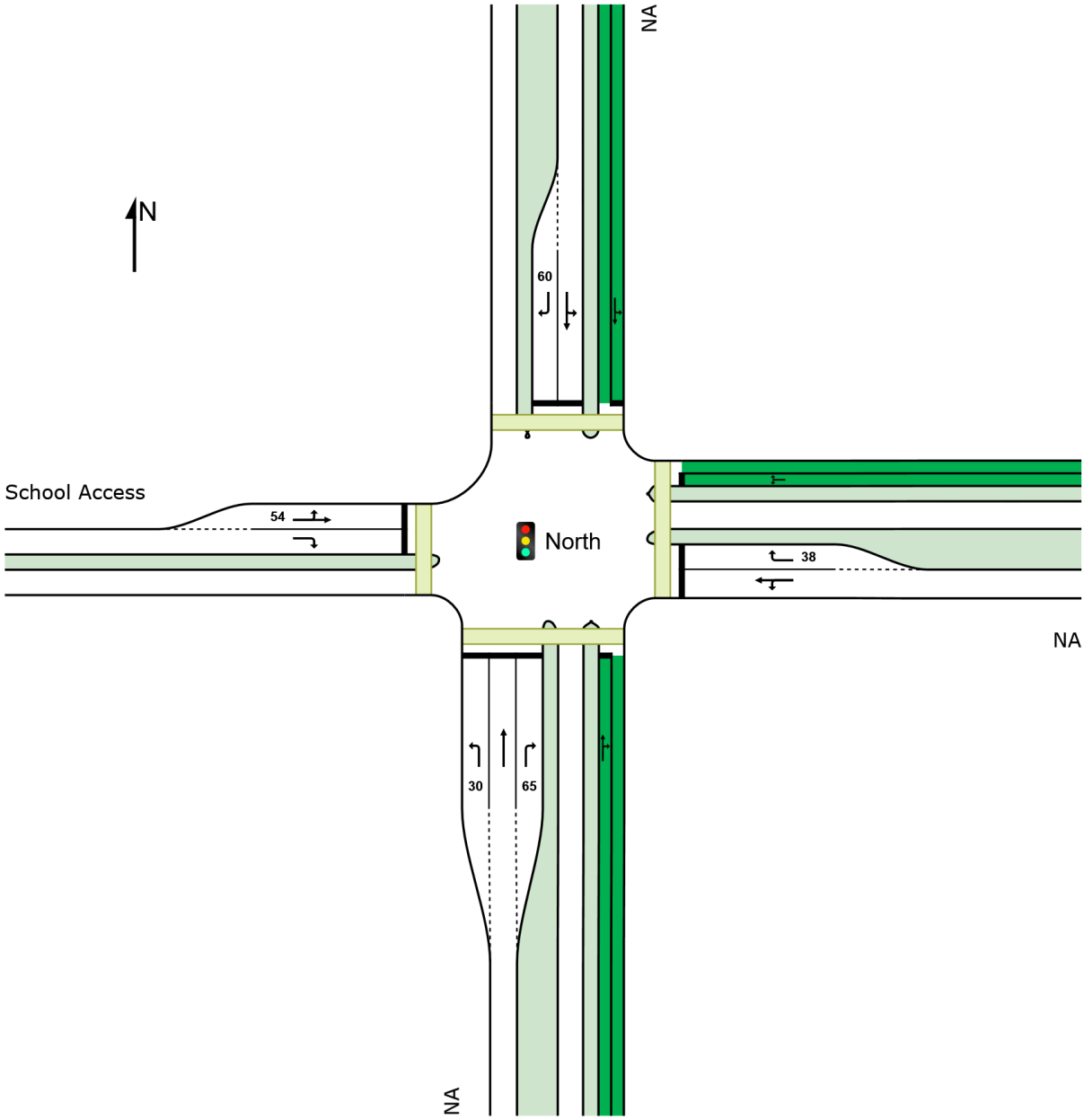
SITES IN NETWORK		
Site ID	**CCG ID**	**Site Name**
▽101	NA	Kiss n Go AM Peak - Ultimate
North	NA	North Intersection AM Peak - Ultimate
South	NA	South Intersection AM Peak - Ultimate

SITE LAYOUT

Site: North [North Intersection AM Peak - Ultimate (Site Folder: Project - EDQ Submission)]

NA
Site Category: NA
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

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

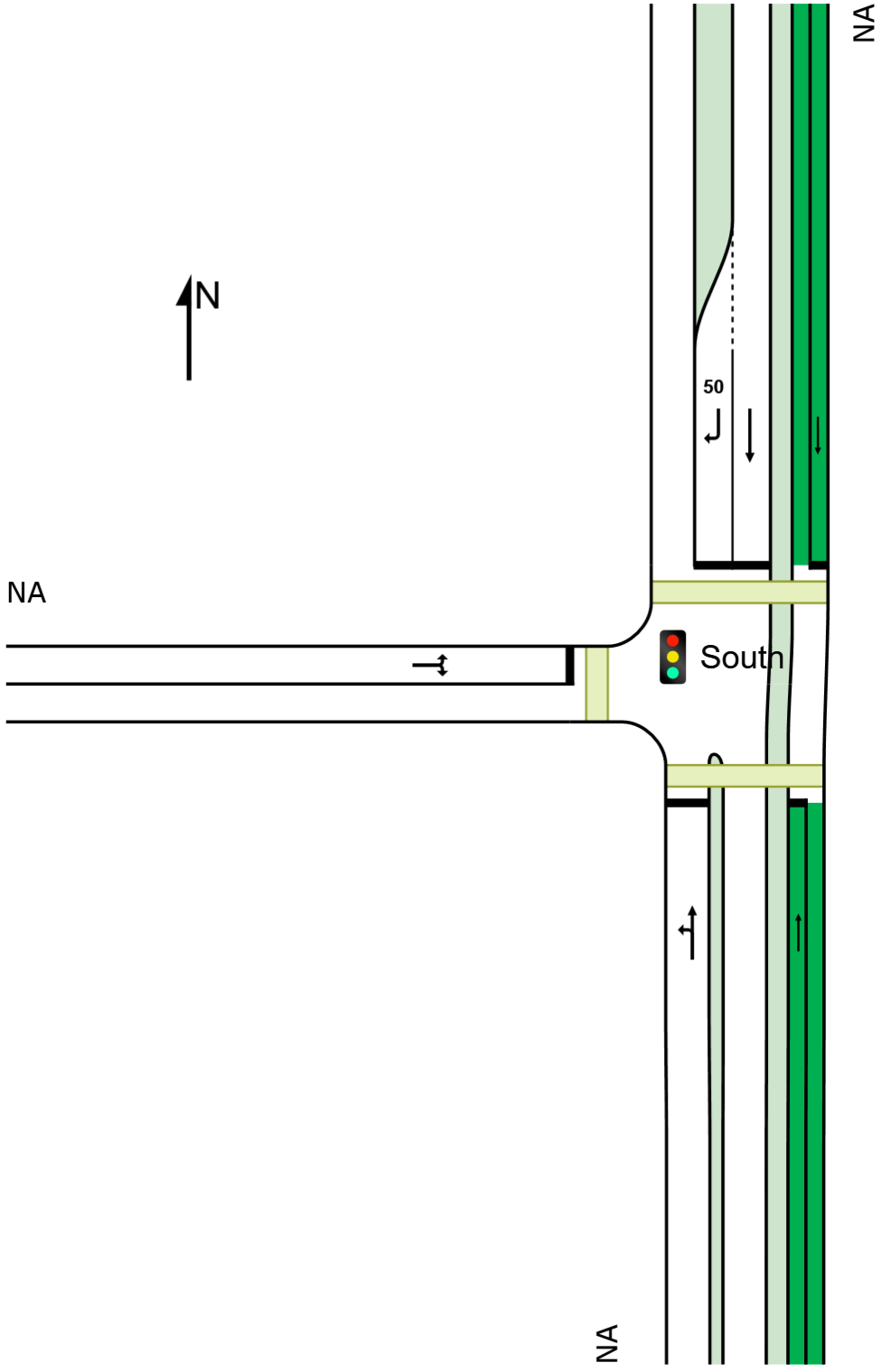


SITE LAYOUT

Site: South [South Intersection AM Peak - Ultimate (Site Folder: Project - EDQ Submission)]

NA
Site Category: NA
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

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



MOVEMENT SUMMARY

Site: North [North Intersection AM Peak - Ultimate (Site Folder: Project - EDQ Submission)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [AM - Ultimate (Network Folder: General)]

NA
Site Category: NA
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 112 seconds (Network Optimum Cycle Time - Minimum Delay)

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	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South:															
1	L2	All MCs	165	0.0	165	0.0	0.247	18.2	LOS B	1.8	12.9	0.36	0.67	0.36	24.4
2	T1	All MCs	422	4.5	422	4.5	0.507	16.7	LOS B	5.1	37.6	0.51	0.43	0.51	22.4
3	R2	All MCs	212	4.0	212	4.0	0.379	41.3	LOS D	4.1	29.8	0.83	0.75	0.83	17.0
Approach			799	3.4	799	3.4	0.507	23.5	LOS C	5.1	37.6	0.56	0.56	0.56	20.3
East:															
4	L2	All MCs	138	3.1	138	3.1	* 0.859	39.4	LOS D	5.9	42.3	0.97	0.87	1.15	9.4
5	T1	All MCs	99	0.0	99	0.0	* 0.859	69.7	LOS E	5.9	42.3	1.00	0.96	1.29	12.4
6	R2	All MCs	79	1.3	79	1.3	0.143	49.2	LOS D	3.1	8.3	0.92	0.72	0.92	9.3
Approach			316	1.7	316	1.7	0.859	51.3	LOS D	5.9	42.3	0.97	0.86	1.14	10.3
North:															
7	L2	All MCs	87	2.4	87	2.4	* 0.398	47.1	LOS D	5.5	40.0	0.90	0.72	0.90	15.4
8	T1	All MCs	218	3.9	218	3.9	0.398	37.4	LOS D	5.5	40.0	0.88	0.73	0.88	11.9
9	R2	All MCs	66	0.0	66	0.0	0.333	57.2	LOS E	2.1	14.9	0.97	0.76	0.97	11.3
Approach			372	2.8	372	2.8	0.398	43.2	LOS D	5.5	40.0	0.90	0.73	0.90	12.8
West: School Access															
10	L2	All MCs	23	0.0	23	0.0	0.409	32.6	LOS C	2.6	17.9	0.97	0.81	0.97	5.2
11	T1	All MCs	68	0.0	68	0.0	0.409	59.7	LOS E	2.6	17.9	0.97	0.81	0.97	12.6
12	R2	All MCs	115	0.0	115	0.0	* 0.461	54.1	LOS D	3.7	25.6	0.97	0.79	0.97	5.1
Approach			206	0.0	206	0.0	0.461	53.5	LOS D	3.7	25.6	0.97	0.80	0.97	7.8
All Vehicles			1693	2.5	1693	2.5	0.859	36.7	LOS D	5.9	42.3	0.76	0.68	0.79	14.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data 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	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:											
P1	Full	105	50.4	LOS E	0.3	0.3	0.95	0.95	204.2	200.0	0.98

East:										
P2 Full	105	50.4	LOS E	0.3	0.3	0.95	0.95	204.2	200.0	0.98
North:										
P3 Full	105	50.4	LOS E	0.3	0.3	0.95	0.95	204.2	200.0	0.98
West: School Access										
P4 Full	211	50.6	LOS E	0.6	0.6	0.95	0.95	204.5	200.0	0.98
All Pedestrians	526	50.5	LOS E	0.6	0.6	0.95	0.95	204.3	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: North [North Intersection AM Peak - Ultimate (Site Folder: Project - EDQ Submission)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [AM - Ultimate (Network Folder: General)]

NA
Site Category: NA
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 112 seconds (Network Optimum Cycle Time - Minimum Delay)

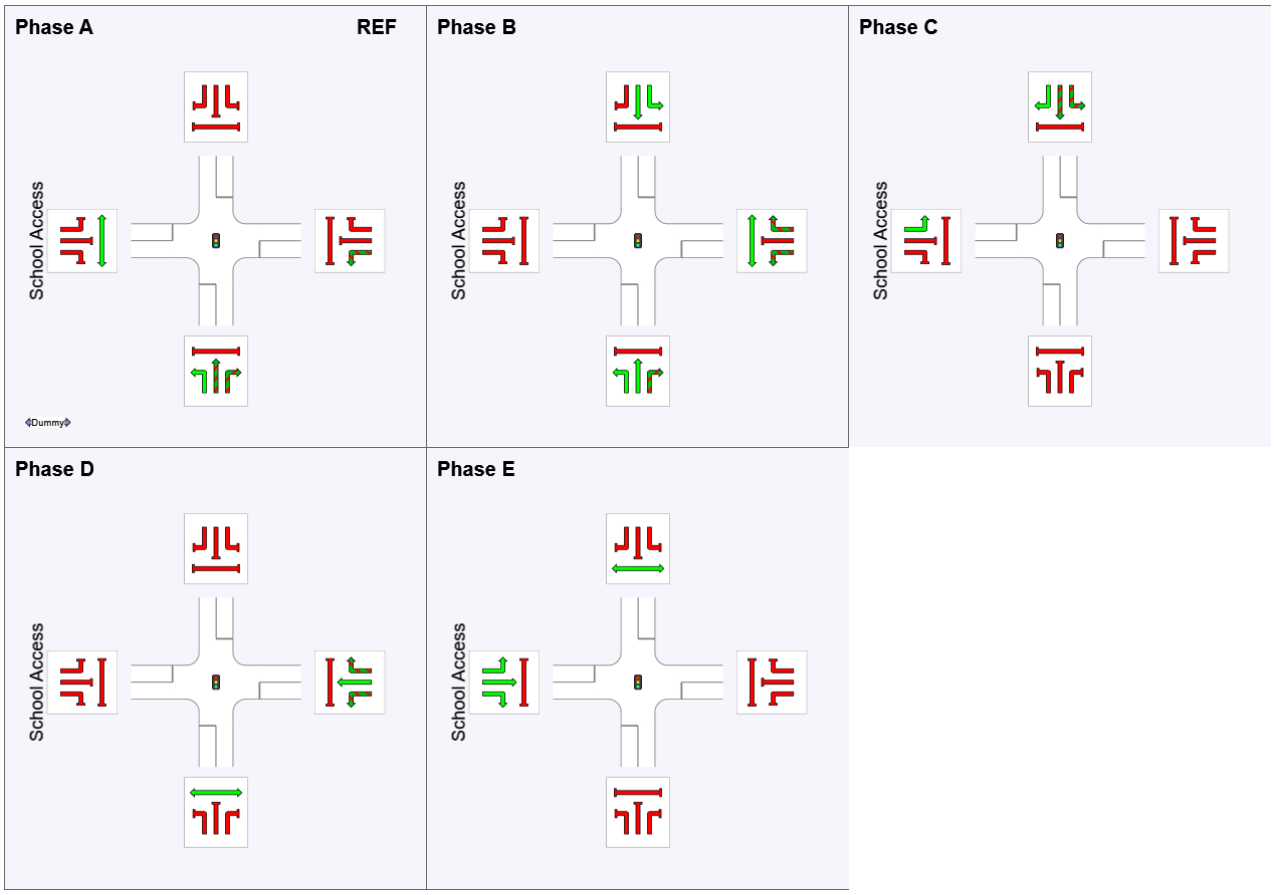
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Lagging Right Turn - Import
Input Phase Sequence: A, B, C, D, E
Output Phase Sequence: A, B, C, D, E
Reference Phase: Phase A
Offset: 0 seconds (User)

Phase Timing Summary

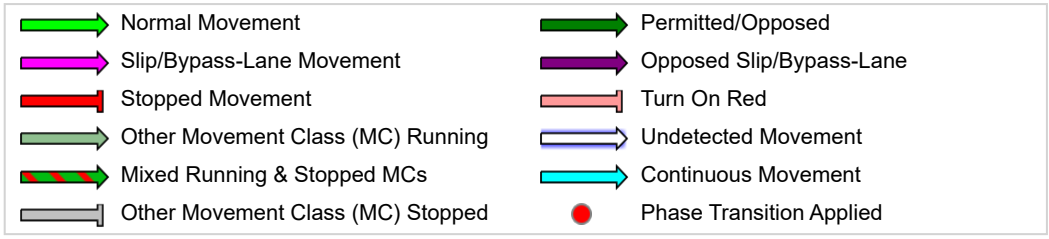
Phase	A	B	C	D	E
Phase Change Time (sec)	0	32	52	70	91
Green Time (sec)	26	14	12	15	15
Phase Time (sec)	32	20	18	21	21
Phase Split	29%	18%	16%	19%	19%
Phase Frequency (%)	100.0	100.0	100.0	100.0	100.0

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%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



MOVEMENT TIMING

All Movement Classes

Site: North [North Intersection AM Peak - Ultimate (Site Folder: Project - EDQ Submission)]

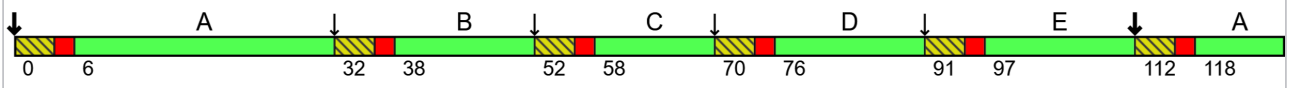
Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [AM - Ultimate (Network Folder: General)]

NA
Site Category: NA
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 112 seconds (Network Optimum Cycle Time - Minimum Delay)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Lagging Right Turn - Import
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)

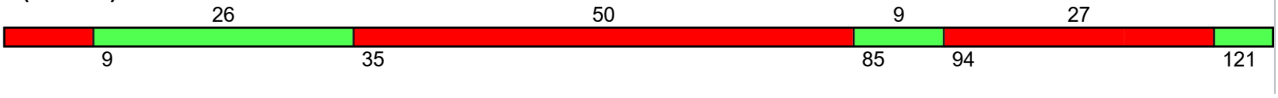
2 (South T1)

2 (South T1) Bicycles

3 (South R2)

3 (South R2) Bicycles

4 (East L2)



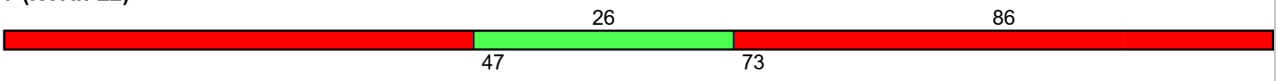
4 (East L2) Bicycles

5 (East T1)

6 (East R2)

6 (East R2) Bicycles

7 (North L2)

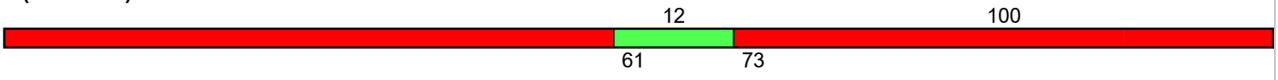


7 (North L2) Bicycles

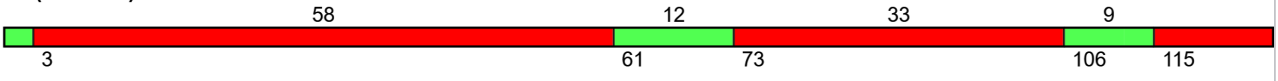
8 (North T1)

8 (North T1) Bicycles

9 (North R2)



10 (West L2)



11 (West T1)

12 (West R2)

Green Interval
Red Interval

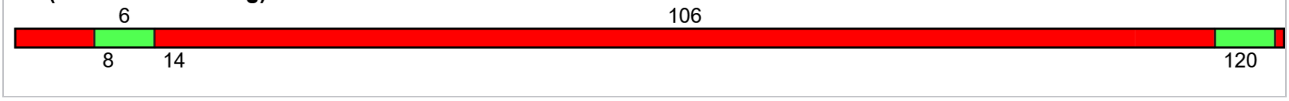
Pedestrian Signal Timing

P1 (South Full Crossing)

P2 (East Full Crossing)

P3 (North Full Crossing)

P4 (West Full Crossing)



Green Interval
Red Interval

MOVEMENT SUMMARY

Site: South [South Intersection AM Peak - Ultimate (Site Folder: Project - EDQ Submission)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [AM - Ultimate (Network Folder: General)]

NA
Site Category: NA
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 112 seconds (Network Optimum Cycle Time - Minimum Delay)

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	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South:															
1	L2	All MCs	40	0.0	40	0.0	0.723	31.4	LOS C	17.6	128.1	0.87	0.79	0.87	17.7
2	T1	All MCs	722	4.2	722	4.2	* 0.723	22.1	LOS C	17.6	128.1	0.76	0.69	0.76	17.3
Approach			762	4.0	762	4.0	0.723	22.6	LOS C	17.6	128.1	0.77	0.69	0.77	17.3
North:															
8	T1	All MCs	412	3.8	412	3.8	0.281	12.2	LOS B	6.3	45.7	0.50	0.39	0.50	31.2
9	R2	All MCs	64	0.0	64	0.0	* 0.605	67.5	LOS E	2.3	16.1	1.00	0.79	1.04	10.9
Approach			476	3.3	476	3.3	0.605	19.7	LOS B	6.3	45.7	0.57	0.44	0.57	25.6
West:															
10	L2	All MCs	101	0.0	101	0.0	0.754	63.2	LOS E	4.9	34.3	1.00	0.88	1.16	5.9
12	R2	All MCs	38	0.0	38	0.0	* 0.754	63.2	LOS E	4.9	34.3	1.00	0.88	1.16	11.7
Approach			139	0.0	139	0.0	0.754	63.2	LOS E	4.9	34.3	1.00	0.88	1.16	7.7
All Vehicles			1377	3.4	1377	3.4	0.754	25.7	LOS C	17.6	128.1	0.72	0.62	0.74	18.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data 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	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:											
P1	Full	105	50.4	LOS E	0.3	0.3	0.95	0.95	204.2	200.0	0.98
North:											
P3	Full	105	50.4	LOS E	0.3	0.3	0.95	0.95	204.2	200.0	0.98
West:											
P4	Full	211	50.6	LOS E	0.6	0.6	0.95	0.95	204.5	200.0	0.98
All Pedestrians		421	50.5	LOS E	0.6	0.6	0.95	0.95	204.3	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: South [South Intersection AM Peak - Ultimate (Site Folder: Project - EDQ Submission)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [AM - Ultimate (Network Folder: General)]

NA
Site Category: NA
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 112 seconds (Network Optimum Cycle Time - Minimum Delay)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Input Phase Sequence: A, B, C, D
Output Phase Sequence: A, B, C, D
Reference Phase: Phase A
Offset: 0 seconds (User)

Phase Timing Summary

Phase	A	B	C	D
Phase Change Time (sec)	0	58	70	87
Green Time (sec)	52	6	11	19
Phase Time (sec)	58	12	17	25
Phase Split	52%	11%	15%	22%
Phase Frequency (%)	100.0[4]	100.0[4]	100.0[4]	100.0[4]

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%.

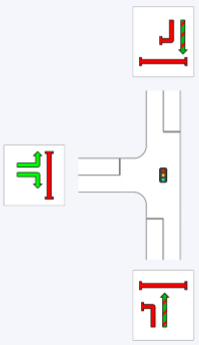
4 Phase Frequency specified by the user (phase times not specified).

Output Phase Sequence

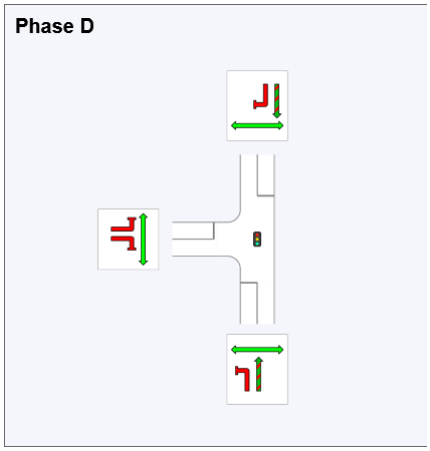
Phase A **REF**

Phase B

Phase C



Phase D



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

MOVEMENT TIMING

All Movement Classes

Site: South [South Intersection AM Peak - Ultimate (Site Folder: Project - EDQ Submission)]

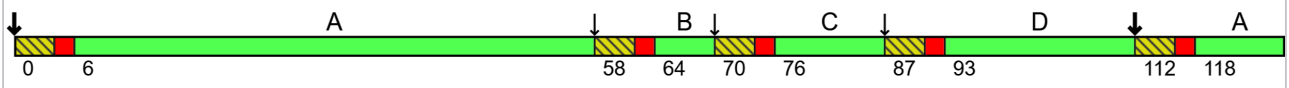
Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [AM - Ultimate (Network Folder: General)]

NA
Site Category: NA
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 112 seconds (Network Optimum Cycle Time - Minimum Delay)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Input Phase Sequence: A, B, C, D
Output Phase Sequence: A, B, C, D
Reference Phase: Phase A

Displayed Signal Timing - Phases

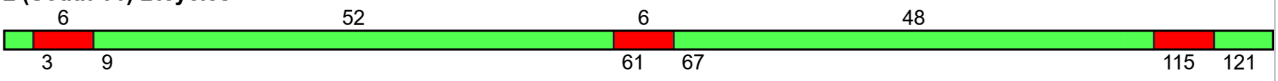


Effective Signal Timing - Movements

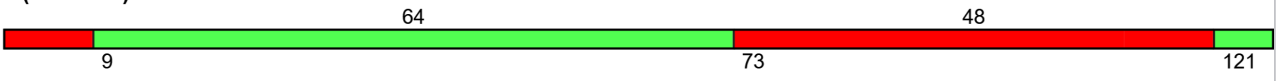
1 (South L2)

2 (South T1)

2 (South T1) Bicycles



8 (North T1)



8 (North T1) Bicycles

9 (North R2)

10 (West L2)

12 (West R2)

Green Interval
Red Interval

Pedestrian Signal Timing

P1 (South Full Crossing)

P3 (North Full Crossing)

P4 (West Full Crossing)

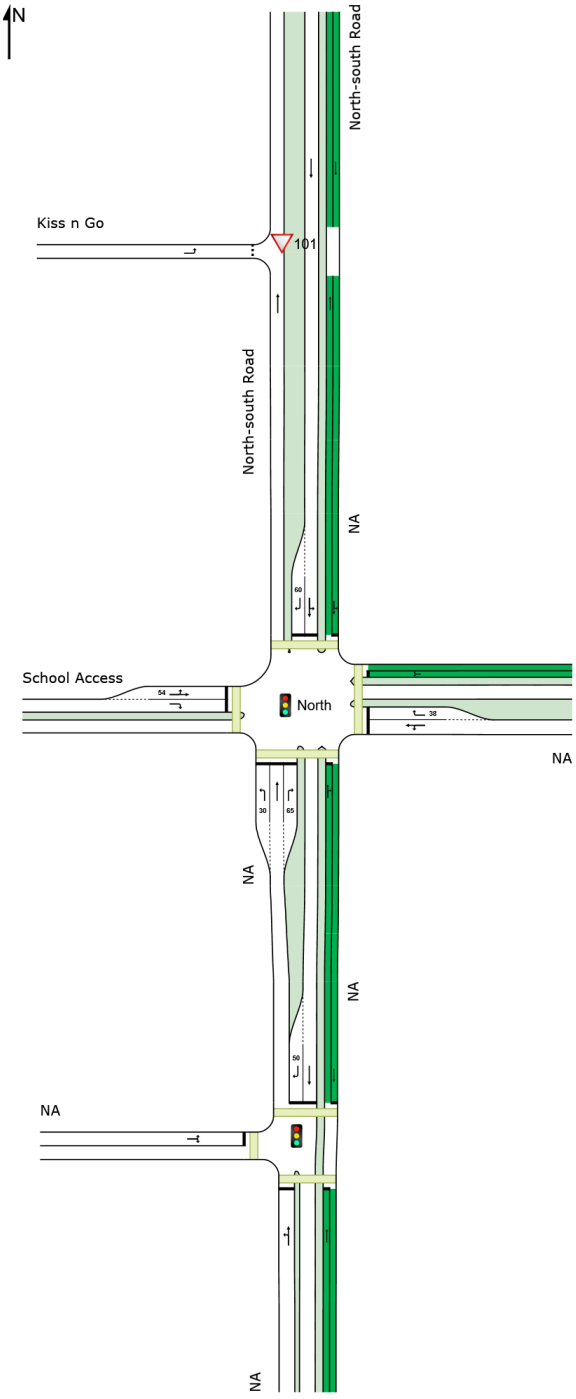
Green Interval
Red Interval

NETWORK LAYOUT

Network: N101 [PM - Interim (Network Folder: General)]

New Network
Network Category: (None)

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



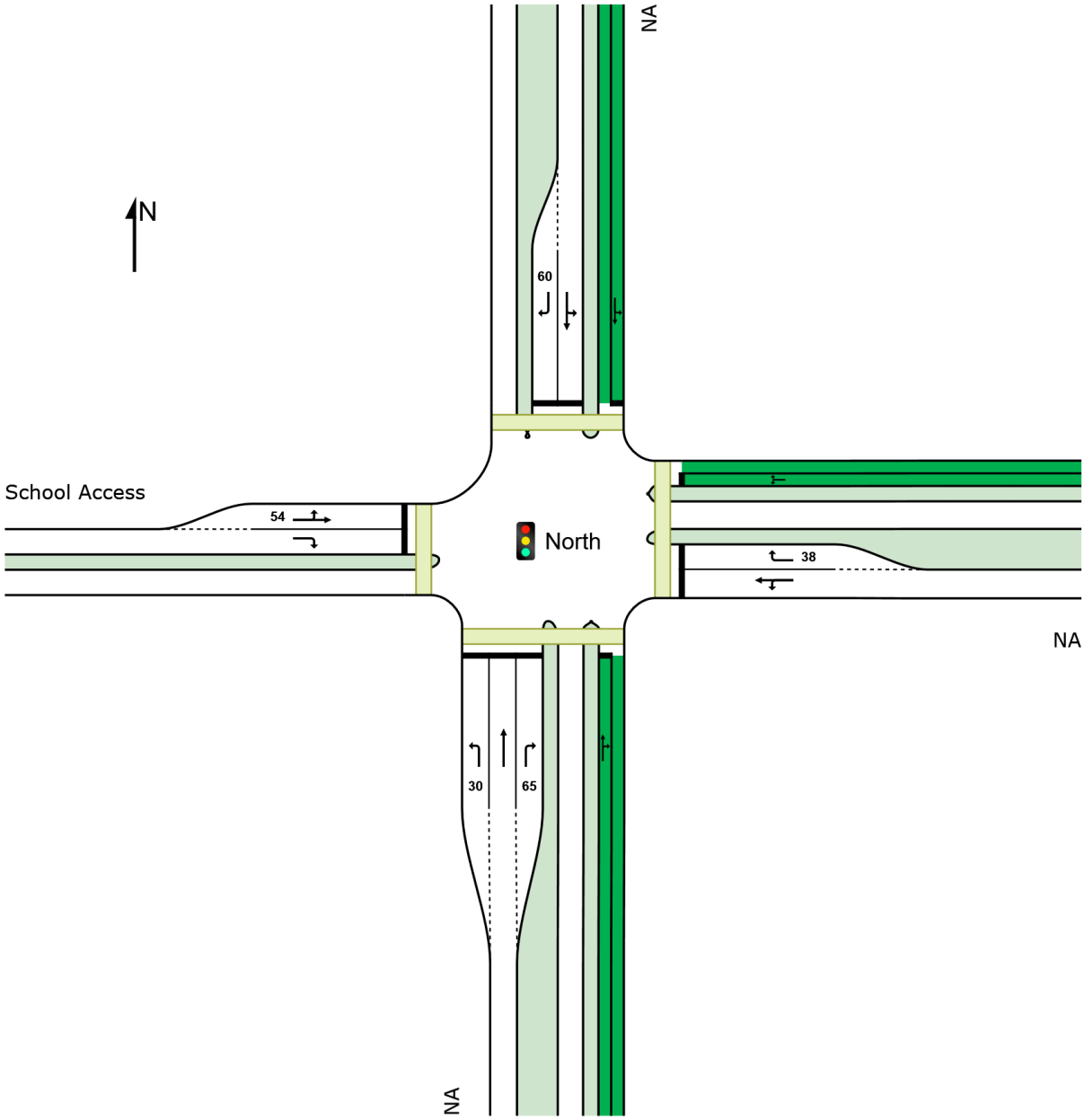
SITES IN NETWORK		
Site ID	**CCG ID**	**Site Name**
101	NA	Kiss n Go PM Peak - Interim
North	NA	North Intersection PM Peak - Peak Factor 80% - Interim
	NA	South Intersection PM Peak - Peak Factor - 80% - Interim

SITE LAYOUT

Site: North [North Intersection PM Peak - Peak Factor 80% - Interim (Site Folder: Project - EDQ Submission)]

NA
Site Category: NA
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

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

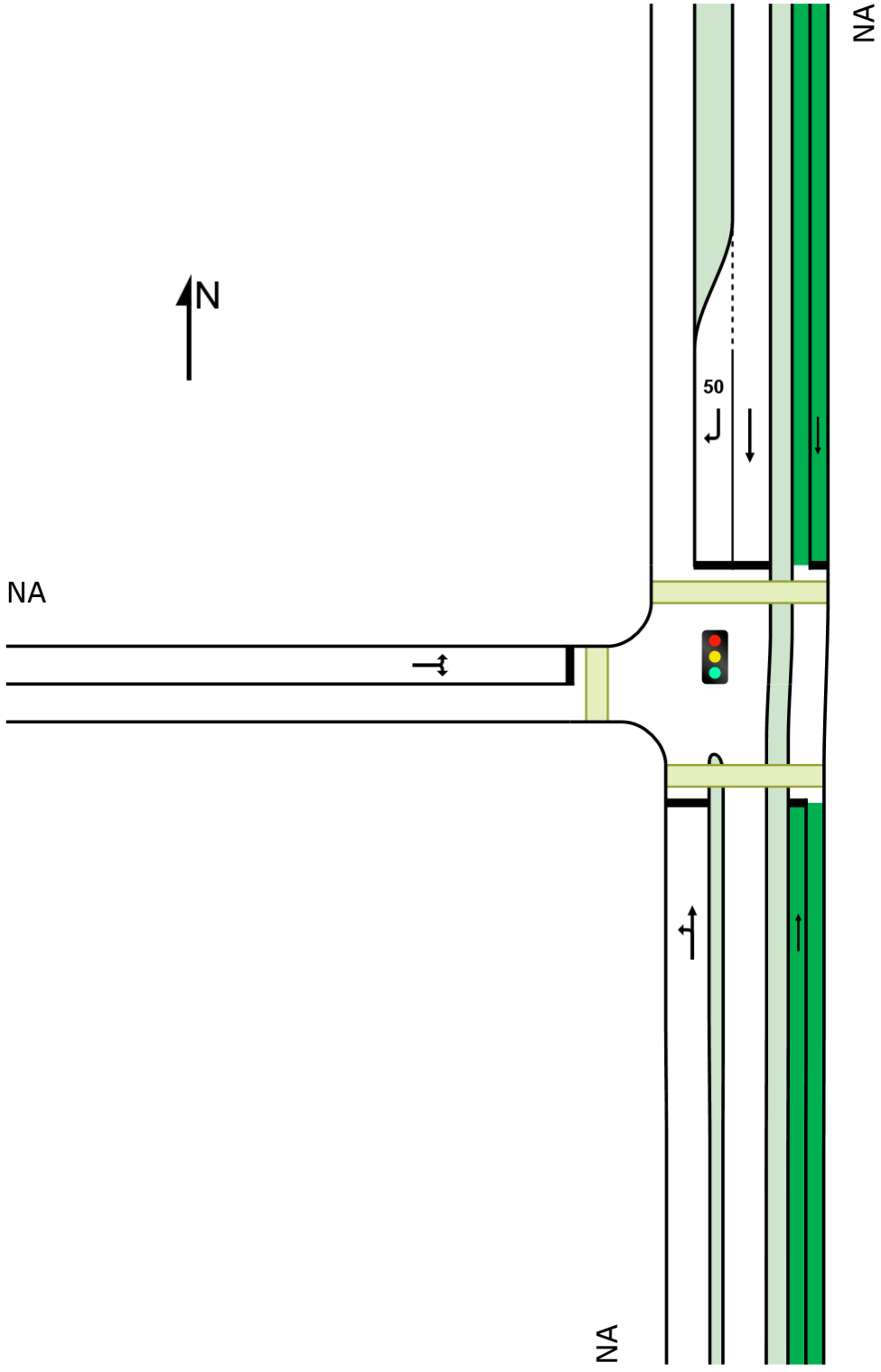


SITE LAYOUT

Site: [South Intersection PM Peak - Peak Factor - 80% - Interim (Site Folder: Project - EDQ Submission)]

NA
Site Category: NA
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

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



MOVEMENT SUMMARY

Site: North [North Intersection PM Peak - Peak Factor 80% - Interim (Site Folder: Project - EDQ Submission)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [PM - Interim (Network Folder: General)]

NA
Site Category: NA
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

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:															
1	L2	All MCs	71	0.0	71	0.0	0.138	49.5	LOS D	3.5	24.7	0.89	0.76	0.89	12.8
2	T1	All MCs	208	3.5	208	3.5	0.262	45.2	LOS D	8.0	57.9	0.93	0.73	0.93	10.8
3	R2	All MCs	305	4.1	305	4.1	* 0.881	66.0	LOS E	16.4	119.4	0.99	0.92	1.17	12.6
Approach			585	3.4	585	3.4	0.881	56.6	LOS E	16.4	119.4	0.96	0.83	1.05	12.1
East:															
4	L2	All MCs	294	3.9	294	3.9	0.761	40.9	LOS D	12.2	88.2	0.99	0.84	1.04	11.8
5	T1	All MCs	43	0.0	43	0.0	* 0.761	65.9	LOS E	12.2	88.2	1.00	0.87	1.06	16.3
6	R2	All MCs	73	1.4	73	1.4	0.153	53.0	LOS D	5.4	14.7	0.92	0.72	0.92	8.9
Approach			409	3.1	409	3.1	0.761	45.7	LOS D	12.2	88.2	0.98	0.82	1.02	11.5
North:															
7	L2	All MCs	114	2.8	114	2.8	* 0.833	63.1	LOS E	29.0	212.1	0.97	0.83	1.01	14.8
8	T1	All MCs	495	4.5	495	4.5	0.833	59.6	LOS E	29.0	212.1	0.98	0.91	1.06	10.8
9	R2	All MCs	29	0.0	29	0.0	0.088	67.5	LOS E	1.4	9.9	0.87	0.71	0.87	12.4
Approach			637	4.0	637	4.0	0.833	60.6	LOS E	29.0	212.1	0.98	0.89	1.04	11.8
West: School Access															
10	L2	All MCs	21	0.0	21	0.0	0.406	27.6	LOS C	4.2	29.3	0.97	0.80	0.97	5.1
11	T1	All MCs	64	0.0	64	0.0	0.406	62.2	LOS E	4.2	29.3	0.97	0.80	0.97	12.4
12	R2	All MCs	106	0.0	106	0.0	* 0.458	58.4	LOS E	5.9	41.6	0.97	0.78	0.97	4.7
Approach			191	0.0	191	0.0	0.458	56.3	LOS E	5.9	41.6	0.97	0.79	0.97	7.5
All Vehicles			1822	3.2	1822	3.2	0.881	55.5	LOS E	29.0	212.1	0.97	0.85	1.03	11.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data 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	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:											
P1	Full	105	54.4	LOS E	0.3	0.3	0.95	0.95	208.2	200.0	0.96
East:											

P2 Full	105	54.4	LOS E	0.3	0.3	0.95	0.95	208.2	200.0	0.96
North:										
P3 Full	105	54.4	LOS E	0.3	0.3	0.95	0.95	208.2	200.0	0.96
West: School Access										
P4 Full	211	54.6	LOS E	0.7	0.7	0.96	0.96	208.5	200.0	0.96
All Pedestrians	526	54.5	LOS E	0.7	0.7	0.96	0.96	208.3	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: North [North Intersection PM Peak - Peak Factor 80% - Interim (Site Folder: Project - EDQ Submission)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [PM - Interim (Network Folder: General)]

NA
Site Category: NA
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

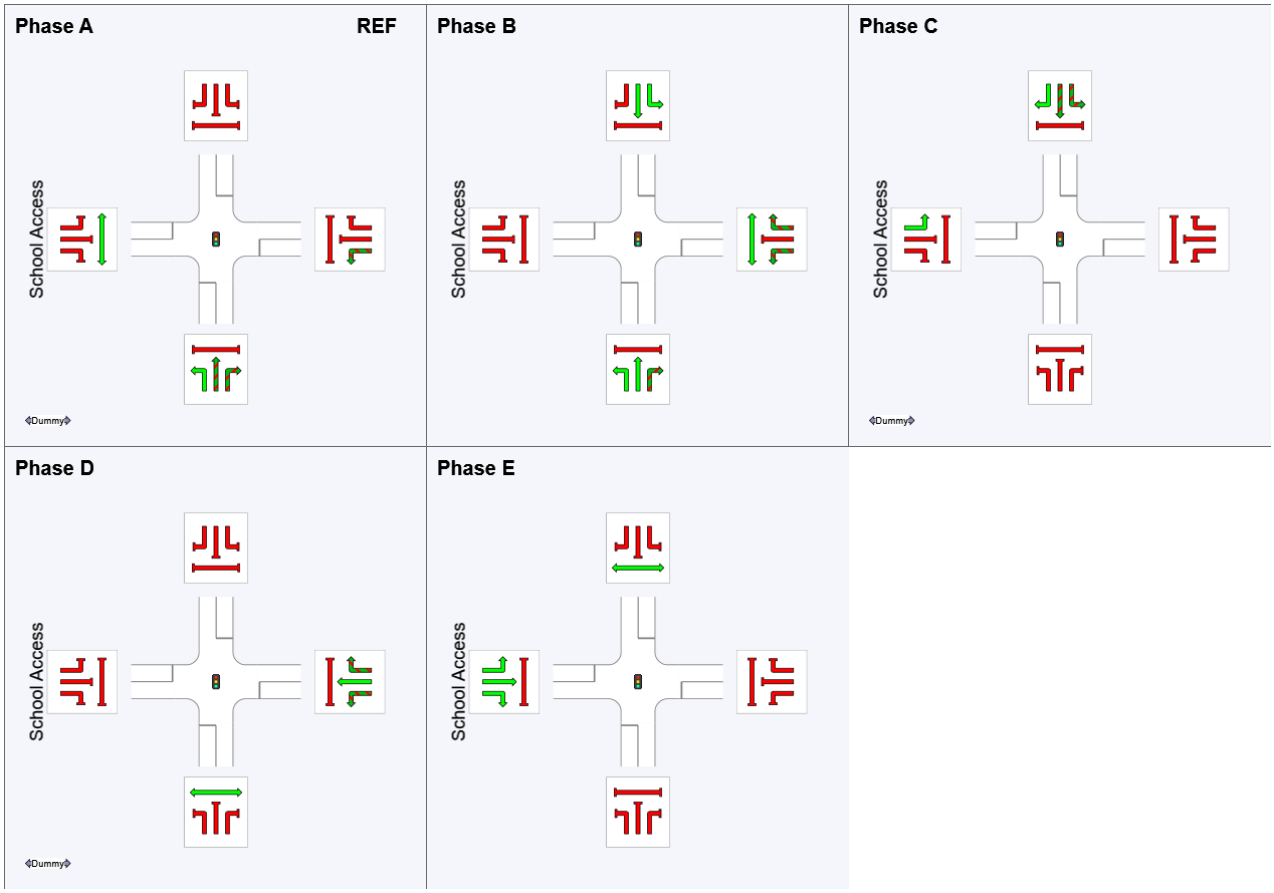
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Lagging Right Turn - Import - Import
Input Phase Sequence: A, B, C, D, E
Output Phase Sequence: A, B, C, D, E
Reference Phase: Phase A
Offset: 0 seconds (Program)

Phase Timing Summary

Phase	A	B	C	D	E
Phase Change Time (sec)	0	25	45	72	99
Green Time (sec)	19	14	21	21	15
Phase Time (sec)	25	20	27	27	21
Phase Split	21%	17%	23%	23%	18%
Phase Frequency (%)	100.0	100.0	100.0	100.0	100.0

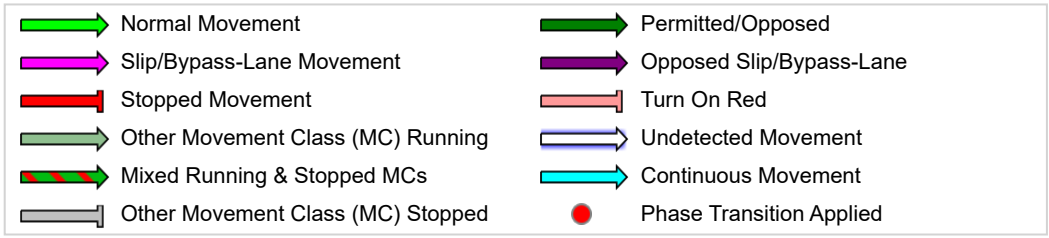
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



MOVEMENT TIMING

All Movement Classes

Site: North [North Intersection PM Peak - Peak Factor 80% - Interim (Site Folder: Project - EDQ Submission)]

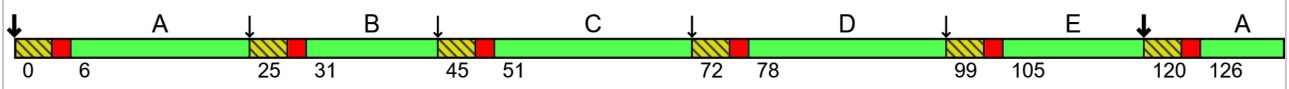
Network: N101 [PM - Interim (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

NA
Site Category: NA
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Lagging Right Turn - Import - Import
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)

3 (South R2) Bicycles

4 (East L2)

4 (East L2) Bicycles

5 (East T1)

6 (East R2)

6 (East R2) Bicycles

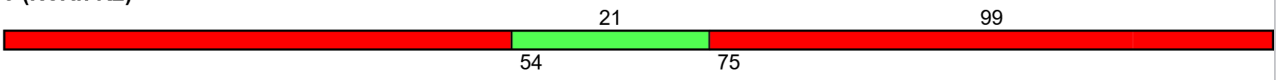
7 (North L2)

7 (North L2) Bicycles

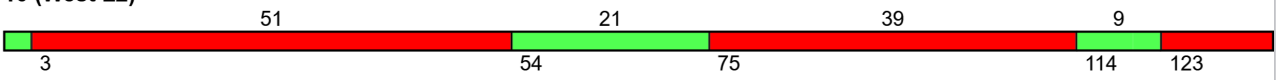
8 (North T1)

8 (North T1) Bicycles

9 (North R2)



10 (West L2)



11 (West T1)

12 (West R2)

Green Interval
Red Interval

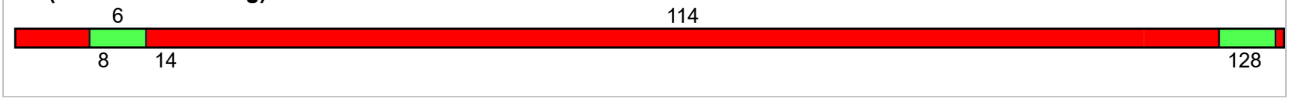
Pedestrian Signal Timing

P1 (South Full Crossing)

P2 (East Full Crossing)

P3 (North Full Crossing)

P4 (West Full Crossing)



Green Interval
Red Interval

MOVEMENT SUMMARY

Site: [South Intersection PM Peak - Peak Factor - 80% - Interim (Site Folder: Project - EDQ Submission)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [PM - Interim (Network Folder: General)]

NA
Site Category: NA
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

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:															
1	L2	All MCs	33	0.0	33	0.0	0.533	33.5	LOS C	18.9	137.5	0.80	0.72	0.80	17.0
2	T1	All MCs	507	3.9	507	3.9	0.533	22.2	LOS C	18.9	137.5	0.66	0.58	0.66	16.9
Approach			540	3.7	540	3.7	0.533	22.9	LOS C	18.9	137.5	0.67	0.59	0.67	16.9
North:															
8	T1	All MCs	788	4.3	788	4.3	* 0.628	9.2	LOS A	17.0	124.0	0.41	0.37	0.41	39.4
9	R2	All MCs	109	0.0	109	0.0	0.519	60.8	LOS E	6.1	42.5	0.97	0.79	0.97	12.2
Approach			897	3.8	897	3.8	0.628	15.5	LOS B	17.0	124.0	0.48	0.42	0.48	31.9
West:															
10	L2	All MCs	78	0.0	78	0.0	0.654	65.5	LOS E	6.7	47.1	1.00	0.82	1.06	5.7
12	R2	All MCs	35	0.0	35	0.0	* 0.654	65.5	LOS E	6.7	47.1	1.00	0.82	1.06	11.4
Approach			113	0.0	113	0.0	0.654	65.5	LOS E	6.7	47.1	1.00	0.82	1.06	7.7
All Vehicles			1550	3.5	1550	3.5	0.654	21.7	LOS C	18.9	137.5	0.58	0.51	0.58	23.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data 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	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:											
P1	Full	105	54.4	LOS E	0.3	0.3	0.95	0.95	208.2	200.0	0.96
North:											
P3	Full	105	54.4	LOS E	0.3	0.3	0.95	0.95	208.2	200.0	0.96
West:											
P4	Full	211	54.6	LOS E	0.7	0.7	0.96	0.96	208.5	200.0	0.96
All Pedestrians		421	54.5	LOS E	0.7	0.7	0.96	0.96	208.4	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: [South Intersection PM Peak - Peak Factor - 80% - Interim (Site Folder: Project - EDQ Submission)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [PM - Interim (Network Folder: General)]

NA
Site Category: NA
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Input Phase Sequence: A, B, C, D
Output Phase Sequence: A, B, C, D
Reference Phase: Phase A
Offset: 37 seconds (Program)

Phase Timing Summary

Phase	A	B	C	D
Phase Change Time (sec)	37	93	115	12
Green Time (sec)	50	16	11	19
Phase Time (sec)	56	22	17	25
Phase Split	47%	18%	14%	21%
Phase Frequency (%)	100.0[4]	100.0[4]	100.0[4]	100.0[4]

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%.

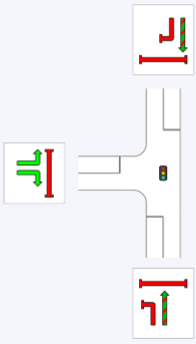
4 Phase Frequency specified by the user (phase times not specified).

Output Phase Sequence

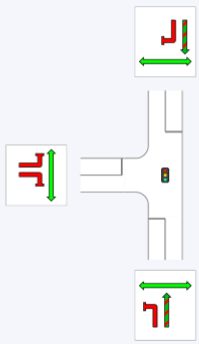
Phase A REF

Phase B

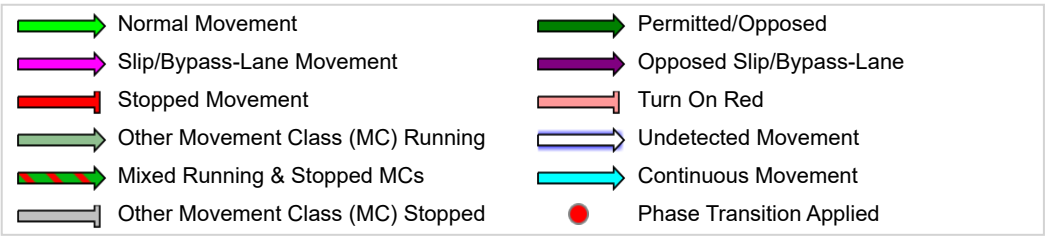
Phase C



Phase D



REF: Reference Phase
VAR: Variable Phase



MOVEMENT TIMING

All Movement Classes

Site: [South Intersection PM Peak - Peak Factor - 80% - Interim (Site Folder: Project - EDQ Submission)]

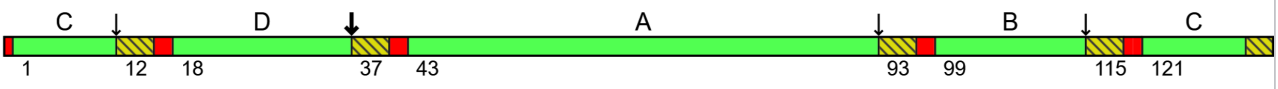
Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [PM - Interim (Network Folder: General)]

NA
Site Category: NA
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

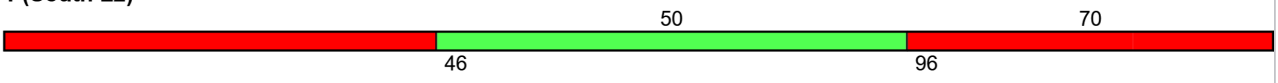
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Input Phase Sequence: A, B, C, D
Output Phase Sequence: A, B, C, D
Reference Phase: Phase A

Displayed Signal Timing - Phases

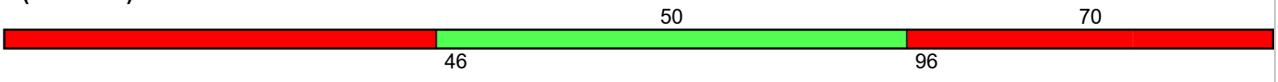


Effective Signal Timing - Movements

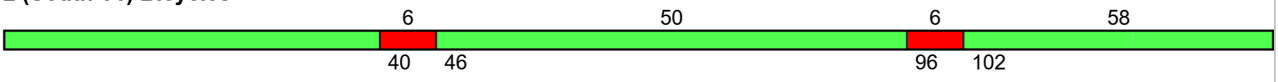
1 (South L2)



2 (South T1)



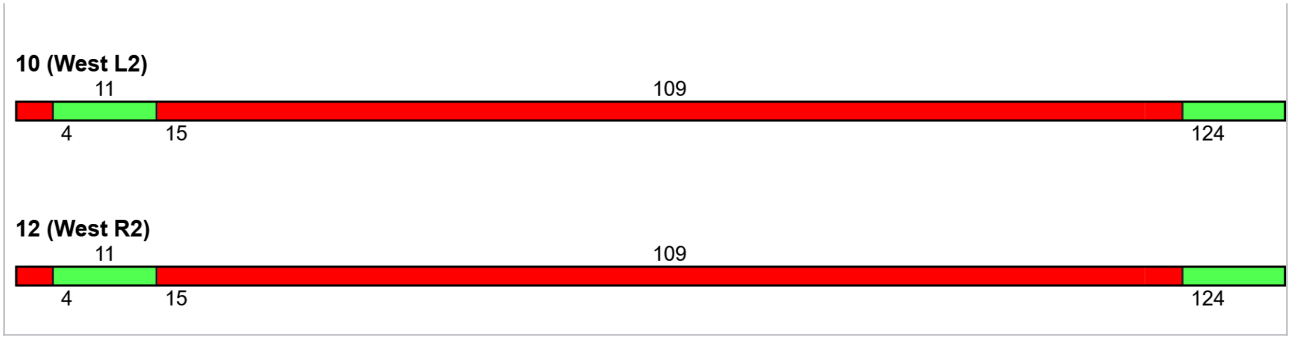
2 (South T1) Bicycles



8 (North T1)

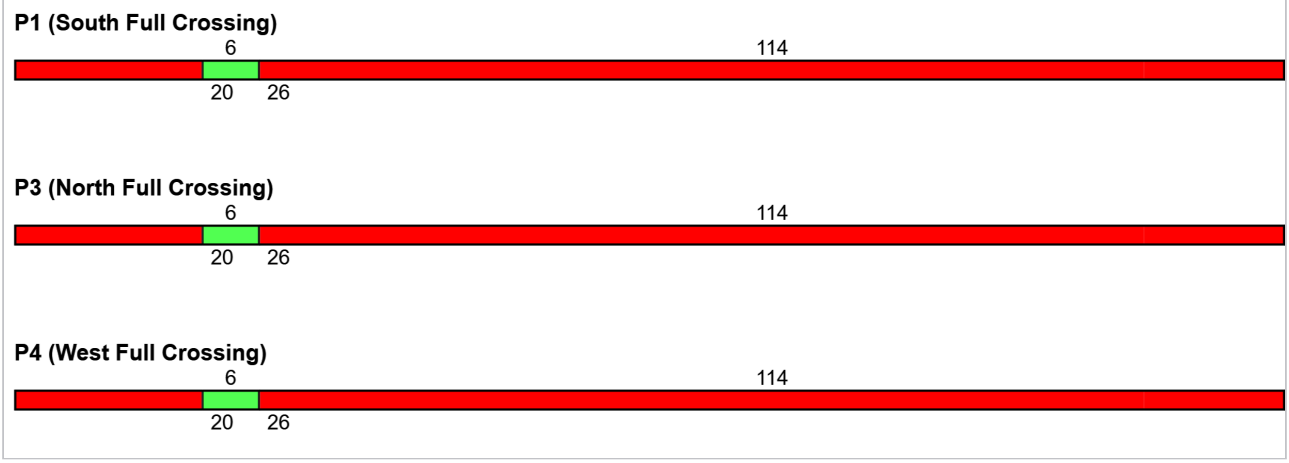
8 (North T1) Bicycles

9 (North R2)



Green Interval
Red Interval

Pedestrian Signal Timing



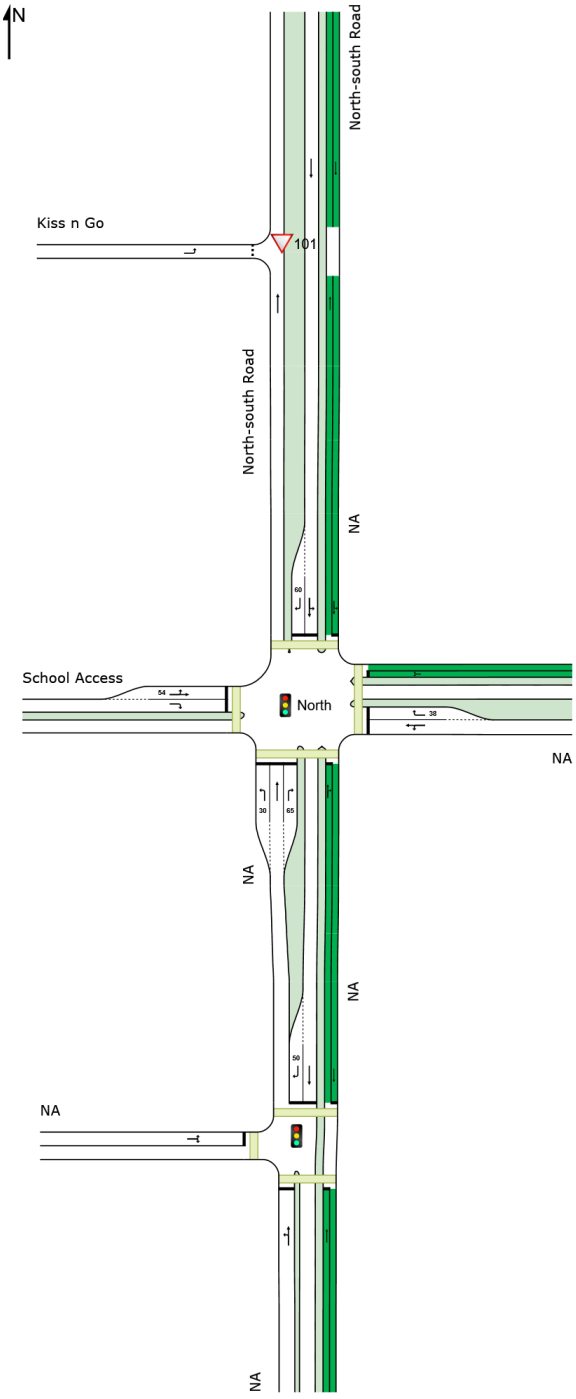
Green Interval
Red Interval

NETWORK LAYOUT

Network: N101 [PM - Ultimate (Network Folder: General)]

New Network
Network Category: (None)

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



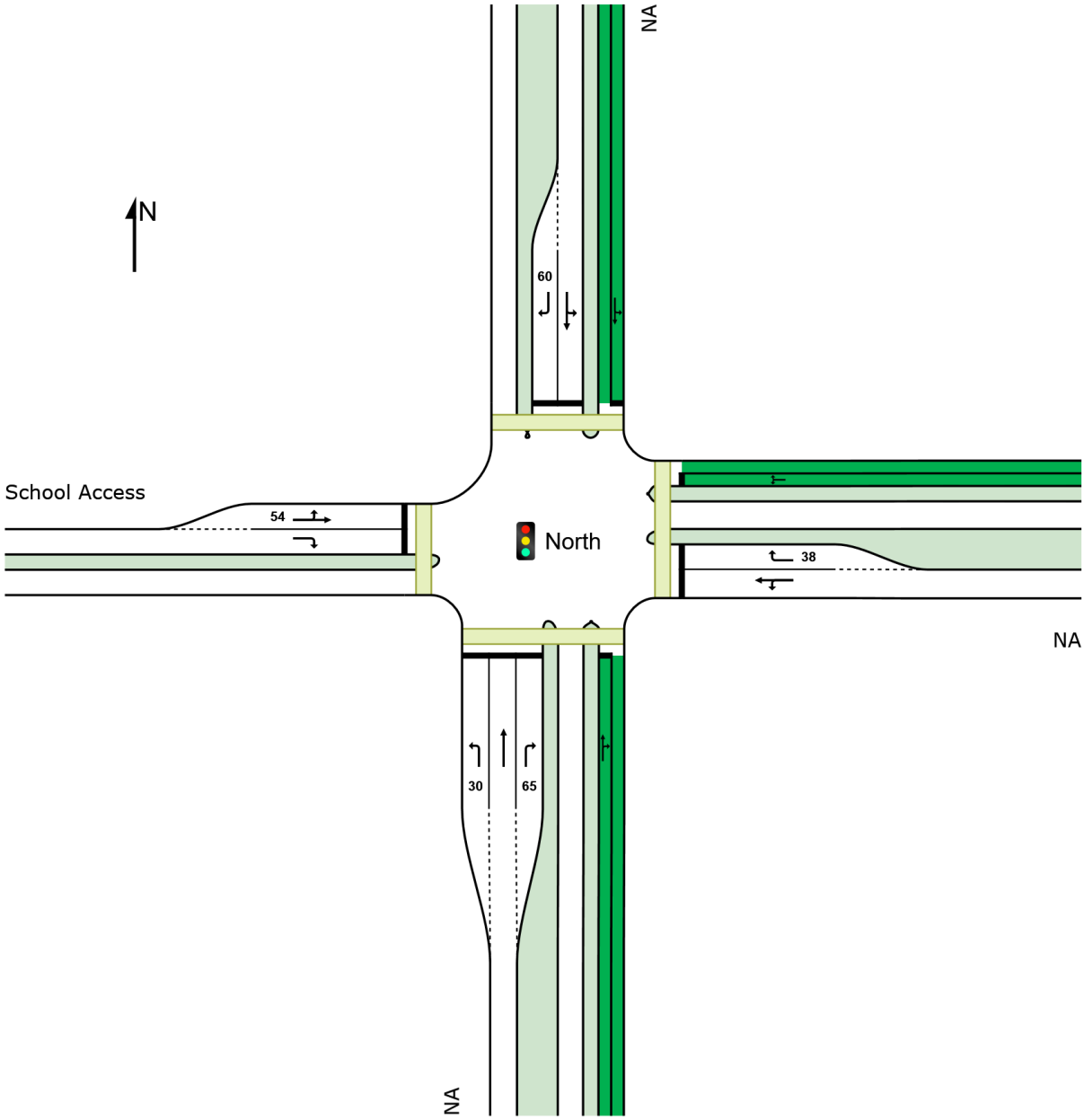
SITES IN NETWORK		
Site ID	**CCG ID**	**Site Name**
▽101	NA	Kiss n Go PM Peak - Ultimate
North	NA	North Intersection PM Peak - Peak Factor 80% - Ultimate
	NA	South Intersection PM Peak - Peak Factor - 80% - Ultimate

SITE LAYOUT

Site: North [North Intersection PM Peak - Peak Factor 80% - Ultimate (Site Folder: Project - EDQ Submission)]

NA
Site Category: NA
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

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

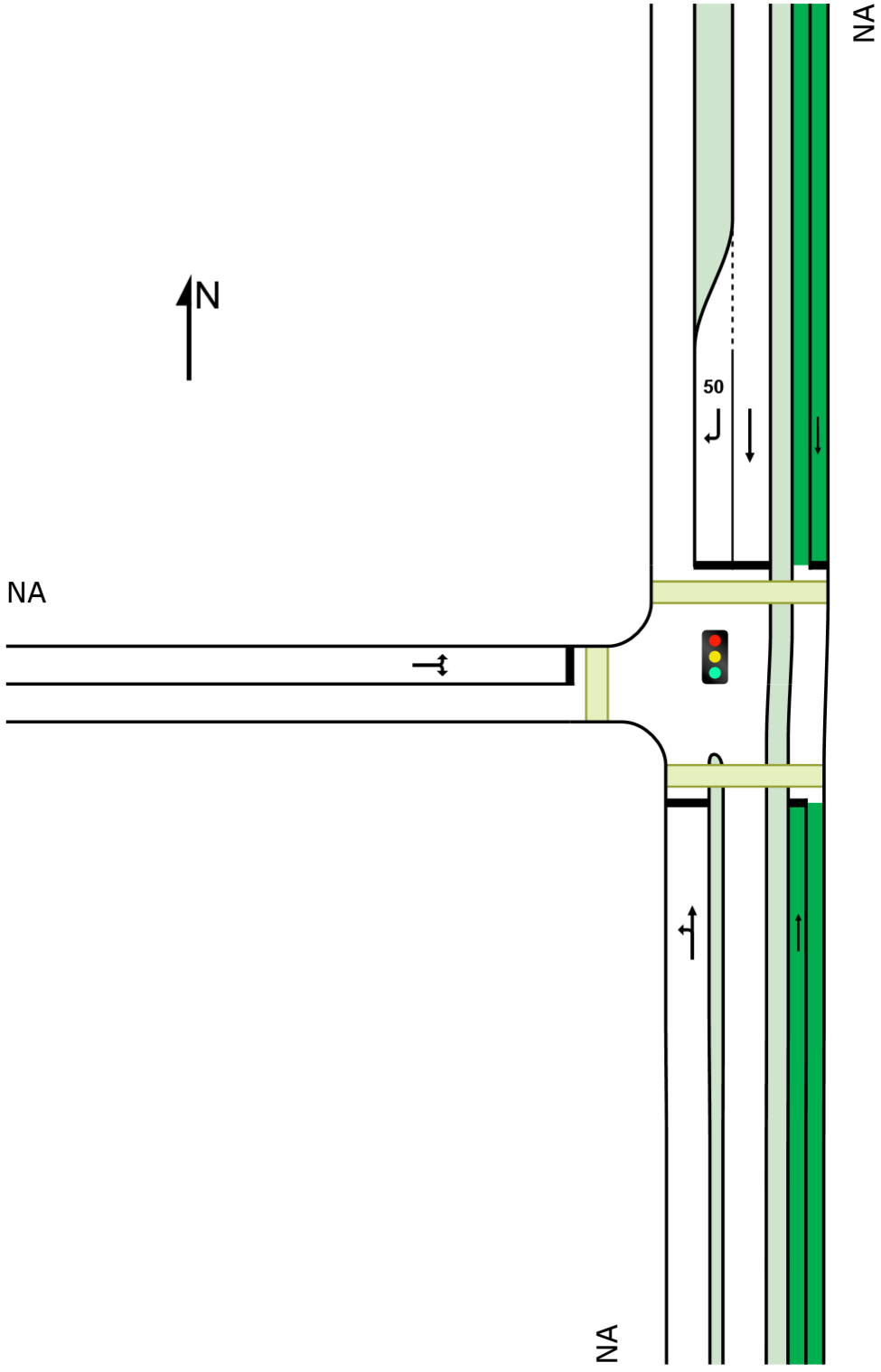


SITE LAYOUT

Site: [South Intersection PM Peak - Peak Factor - 80% - Ultimate (Site Folder: Project - EDQ Submission)]

NA
Site Category: NA
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

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



MOVEMENT SUMMARY

Site: North [North Intersection PM Peak - Peak Factor 80% - Ultimate (Site Folder: Project - EDQ Submission)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [PM - Ultimate (Network Folder: General)]

NA
Site Category: NA
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

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:															
1	L2	All MCs	115	0.0	115	0.0	0.223	20.8	LOS C	2.5	17.5	0.39	0.67	0.39	21.6
2	T1	All MCs	177	3.6	177	3.6	0.200	24.6	LOS C	5.4	14.7	0.54	0.43	0.54	15.8
3	R2	All MCs	215	3.9	215	3.9	0.566	49.3	LOS D	8.2	60.1	0.90	0.77	0.90	15.2
Approach			507	2.9	507	2.9	0.566	34.2	LOS C	8.2	60.1	0.66	0.63	0.66	16.3
East:															
4	L2	All MCs	176	3.6	176	3.6	* 0.598	33.9	LOS C	7.6	54.7	0.96	0.78	0.96	11.6
5	T1	All MCs	69	0.0	69	0.0	* 0.598	48.6	LOS D	7.6	54.7	0.97	0.80	0.97	17.3
6	R2	All MCs	73	1.4	73	1.4	0.153	51.1	LOS D	5.4	14.7	0.92	0.72	0.92	8.9
Approach			317	2.3	317	2.3	0.598	41.0	LOS D	7.6	54.7	0.95	0.77	0.95	11.9
North:															
7	L2	All MCs	119	2.7	119	2.7	* 0.675	55.2	LOS E	19.4	141.4	0.93	0.77	0.93	15.5
8	T1	All MCs	366	4.3	366	4.3	0.675	46.8	LOS D	19.4	141.4	0.93	0.80	0.93	11.7
9	R2	All MCs	46	0.0	46	0.0	0.157	61.8	LOS E	2.4	16.5	0.90	0.74	0.90	12.0
Approach			532	3.6	532	3.6	0.675	50.0	LOS D	19.4	141.4	0.93	0.79	0.93	12.8
West: School Access															
10	L2	All MCs	35	0.0	35	0.0	0.617	30.3	LOS C	7.4	51.8	1.00	0.85	1.01	4.8
11	T1	All MCs	104	0.0	104	0.0	0.617	66.7	LOS E	7.4	51.8	1.00	0.85	1.01	11.7
12	R2	All MCs	173	0.0	173	0.0	* 0.697	60.6	LOS E	10.1	70.7	1.00	0.85	1.06	4.6
Approach			311	0.0	311	0.0	0.697	59.2	LOS E	10.1	70.7	1.00	0.85	1.03	7.1
All Vehicles			1667	2.5	1667	2.5	0.697	45.2	LOS D	19.4	141.4	0.87	0.75	0.87	12.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data 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	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:											
P1	Full	105	54.4	LOS E	0.3	0.3	0.95	0.95	208.2	200.0	0.96

East:										
P2 Full	105	54.4	LOS E	0.3	0.3	0.95	0.95	208.2	200.0	0.96
North:										
P3 Full	105	54.4	LOS E	0.3	0.3	0.95	0.95	208.2	200.0	0.96
West: School Access										
P4 Full	211	54.6	LOS E	0.7	0.7	0.96	0.96	208.5	200.0	0.96
All Pedestrians	526	54.5	LOS E	0.7	0.7	0.96	0.96	208.3	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: North [North Intersection PM Peak - Peak Factor 80% - Ultimate (Site Folder: Project - EDQ Submission)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [PM - Ultimate (Network Folder: General)]

NA
Site Category: NA
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

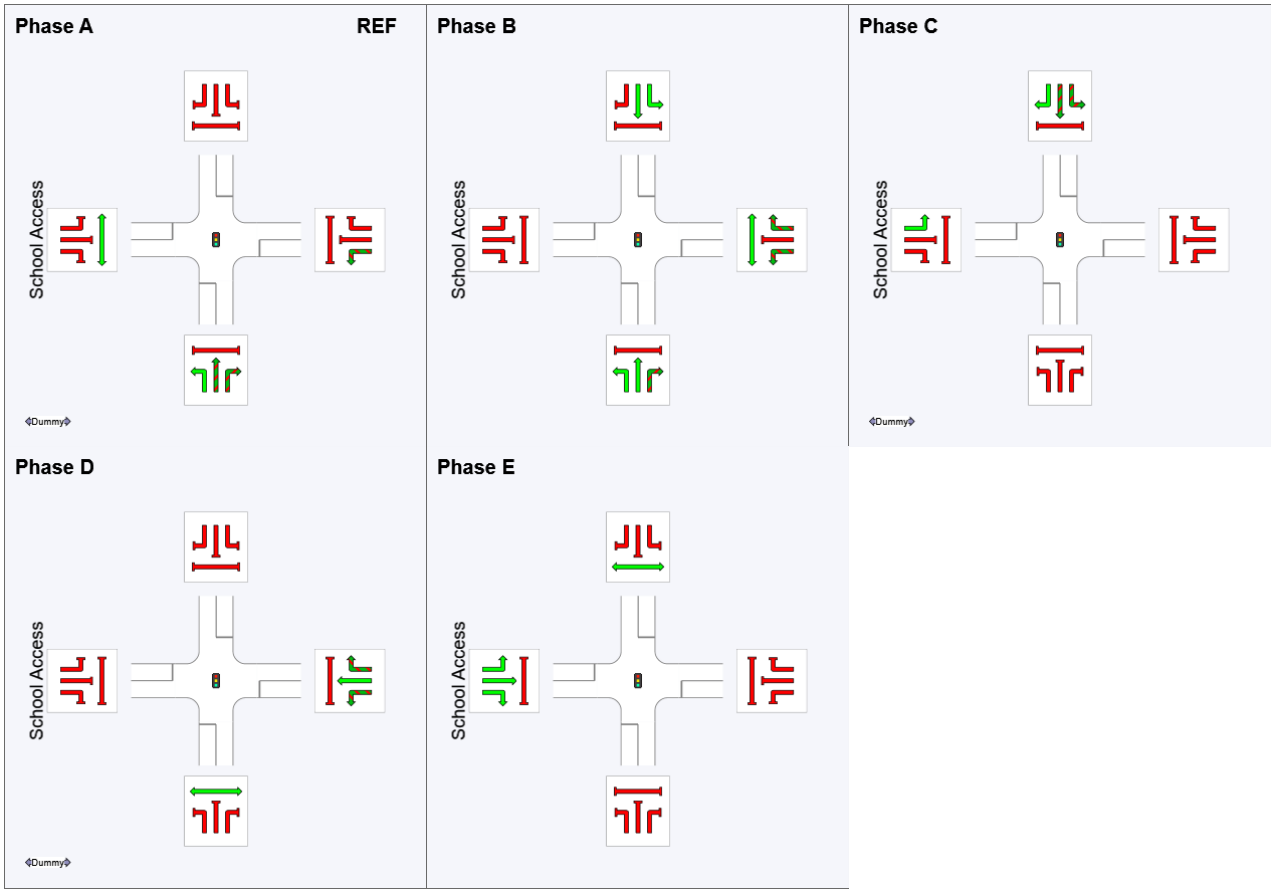
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Lagging Right Turn - Import - Import
Input Phase Sequence: A, B, C, D, E
Output Phase Sequence: A, B, C, D, E
Reference Phase: Phase A
Offset: 0 seconds (User)

Phase Timing Summary

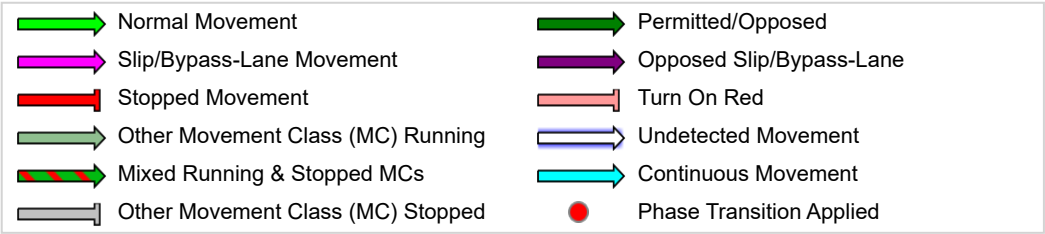
Phase	A	B	C	D	E
Phase Change Time (sec)	0	25	45	70	98
Green Time (sec)	19	14	19	22	16
Phase Time (sec)	25	20	25	28	22
Phase Split	21%	17%	21%	23%	18%
Phase Frequency (%)	100.0	100.0	100.0	100.0	100.0

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%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



MOVEMENT TIMING

All Movement Classes

Site: North [North Intersection PM Peak - Peak Factor 80% - Ultimate (Site Folder: Project - EDQ Submission)]

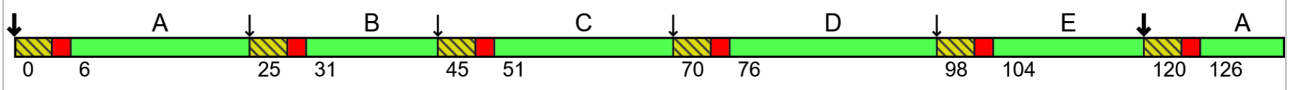
Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [PM - Ultimate (Network Folder: General)]

NA
Site Category: NA
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Lagging Right Turn - Import - Import
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)

3 (South R2) Bicycles

4 (East L2)

4 (East L2) Bicycles

5 (East T1)

6 (East R2)

6 (East R2) Bicycles

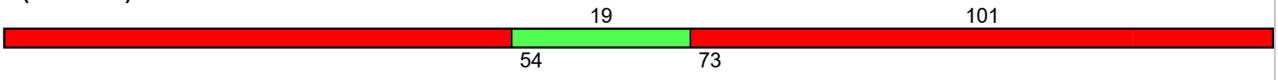
7 (North L2)

7 (North L2) Bicycles

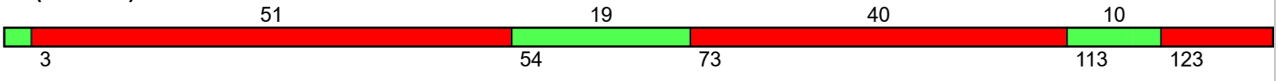
8 (North T1)

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)

P2 (East Full Crossing)

P3 (North Full Crossing)

P4 (West Full Crossing)

Green Interval
Red Interval

MOVEMENT SUMMARY

Site: [South Intersection PM Peak - Peak Factor - 80% - Ultimate (Site Folder: Project - EDQ Submission)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [PM - Ultimate (Network Folder: General)]

NA
Site Category: NA
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

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:															
1	L2	All MCs	31	0.0	31	0.0	0.482	36.1	LOS D	15.7	113.8	0.82	0.72	0.82	16.2
2	T1	All MCs	427	3.7	427	3.7	* 0.482	23.1	LOS C	15.7	113.8	0.64	0.56	0.64	16.3
Approach			459	3.4	459	3.4	0.482	24.0	LOS C	15.7	113.8	0.65	0.57	0.65	16.3
North:															
8	T1	All MCs	604	4.2	604	4.2	0.495	17.2	LOS B	17.1	125.1	0.53	0.48	0.53	31.3
9	R2	All MCs	104	0.0	104	0.0	* 0.470	57.6	LOS E	5.5	38.2	0.91	0.78	0.91	13.1
Approach			708	3.6	708	3.6	0.495	23.1	LOS C	17.1	125.1	0.59	0.52	0.59	26.6
West:															
10	L2	All MCs	75	0.0	75	0.0	0.480	59.7	LOS E	6.3	44.2	0.98	0.79	0.98	6.2
12	R2	All MCs	38	0.0	38	0.0	* 0.480	59.7	LOS E	6.3	44.2	0.98	0.79	0.98	12.2
Approach			113	0.0	113	0.0	0.480	59.7	LOS E	6.3	44.2	0.98	0.79	0.98	8.5
All Vehicles			1279	3.2	1279	3.2	0.495	26.7	LOS C	17.1	125.1	0.65	0.56	0.65	20.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data 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	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:											
P1	Full	105	54.4	LOS E	0.3	0.3	0.95	0.95	208.2	200.0	0.96
North:											
P3	Full	105	54.4	LOS E	0.3	0.3	0.95	0.95	208.2	200.0	0.96
West:											
P4	Full	211	54.6	LOS E	0.7	0.7	0.96	0.96	208.5	200.0	0.96
All Pedestrians		421	54.5	LOS E	0.7	0.7	0.96	0.96	208.4	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: [South Intersection PM Peak - Peak Factor - 80% - Ultimate (Site Folder: Project - EDQ Submission)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [PM - Ultimate (Network Folder: General)]

NA
Site Category: NA
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Input Phase Sequence: A, B, C, D
Output Phase Sequence: A, B, C, D
Reference Phase: Phase A
Offset: 0 seconds (User)

Phase Timing Summary

Phase	A	B	C	D
Phase Change Time (sec)	0	51	74	95
Green Time (sec)	45	17	15	19
Phase Time (sec)	51	23	21	25
Phase Split	43%	19%	18%	21%
Phase Frequency (%)	100.0[4]	100.0[4]	100.0[4]	100.0[4]

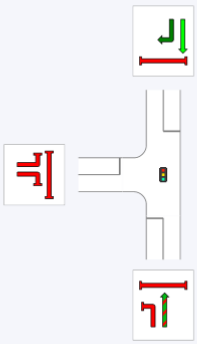
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

4 Phase Frequency specified by the user (phase times not specified).

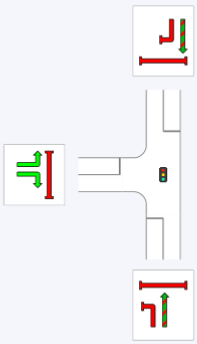
Output Phase Sequence

Phase A REF

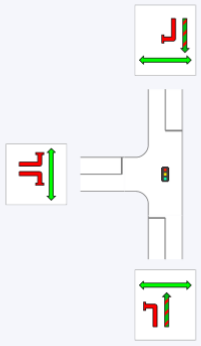
Phase B



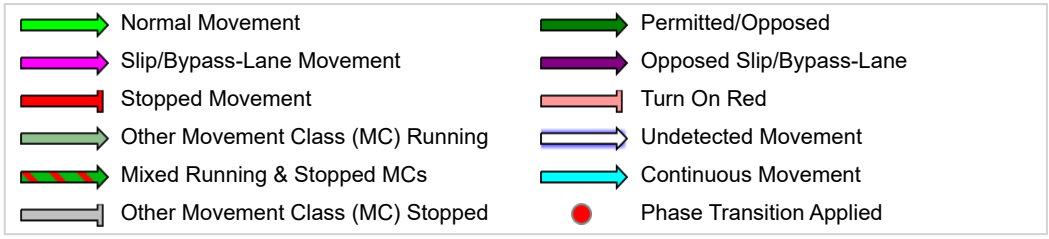
Phase C



Phase D



REF: Reference Phase
VAR: Variable Phase



MOVEMENT TIMING

All Movement Classes

Site: [South Intersection PM Peak - Peak Factor - 80% - Ultimate (Site Folder: Project - EDQ Submission)]

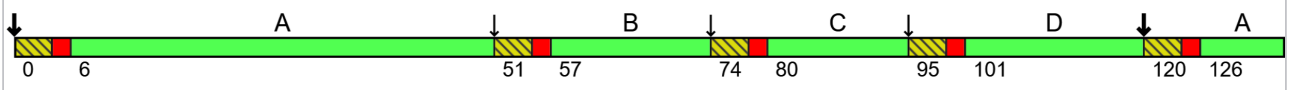
Network: N101 [PM - Ultimate (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

NA
Site Category: NA
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Input Phase Sequence: A, B, C, D
Output Phase Sequence: A, B, C, D
Reference Phase: Phase A

Displayed Signal Timing - Phases



Effective Signal Timing - Movements

1 (South L2)

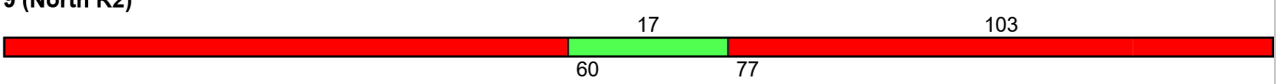
2 (South T1)

2 (South T1) Bicycles

8 (North T1)

8 (North T1) Bicycles

9 (North R2)



10 (West L2)

12 (West R2)

Green Interval
Red Interval

Pedestrian Signal Timing

P1 (South Full Crossing)

P3 (North Full Crossing)

P4 (West Full Crossing)

Green Interval
Red Interval