Appendix H
Integrated Transport Assessment

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160 Mazengarb Road - Residential Development

Integrated Transport Assessment

Prepared for:
Sussex Trust

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1 Introduction

Stantec has been commissioned by Sussex Trust to assess the traffic and transport effects of a proposed residential development at #160 Mazengarb Road (the "**Site**") in Paraparaumu.

The proposed development plans provide for the removal an existing residential dwelling on the Site to deliver a new purpose-built medium density residential development accommodating a mixture of mainly 1-2 bedroom typologies, providing a total of 41 dwellings. This residential activity will be supported by 43 off-street parking spaces.

This Integrated Transport Assessment (**ITA**) report forms part of the resource consent application for the redevelopment of the Site and has been undertaken with regard to the Kapiti Coast District Plan (**District Plan**) and other relevant industry standards. The ITA addresses the following key matters:

- describes the Site location in the context of the existing local transport network and surrounding land use;
- reviews the existing road safety record and current local traffic volumes;
- summarises the development proposal, including the associated access and internal Site circulation arrangements, on-site parking, and anticipated servicing demands and practices;
- describes the associated impacts of the development on the local transport network, including in relation to Site traffic generation; and
- provides an assessment of the proposal against relevant transport provisions of the District Plan.

By way of summary, it is concluded that the proposal can be supported from a traffic and transportation perspective, and that the associated transport demands generated by the proposed residential redevelopment can be safely and appropriately accommodated on the local transport network.

2 Existing Transport Environment

2.1 Site Location

The proposal Site is located at #160 Mazengarb Road, as illustrated in **Figure 2-1** below, and has sole frontage and access to Mazengarb Road. Land use in the immediate vicinity is characterised by suburban residential to the east, south and west, whilst Paraparaumu College is located to the north of the Site.

Figure 2-1: Site Location (background Image Source: Kapiti Coast District Counil GIS)

The Site is zoned 'General Residential' under the provisions of the District Plan, with much of the adjoining land similarly zoned and developed as suburban residential, including recent development of the site to the immediate south.

2.2 Roading Hierarchy

The road hierarchy categories for each of the streets in the vicinity of the Site as identified within the provisions of the District Plan, are illustrated in **Figure 2-2**.

Figure 2-2: Site Location in relation to the surrounding Road Hierarchy Classifications (District Plan)

Mazengarb Road is classified as a Major Community Connector within the District Plan roading hierarchy, and as such has the function of connecting suburbs and major transport nodes and forming a major link to/from the coast.

Guildford Drive and Ratanui Road, which connect with Mazengarb Road to the north and south of the development Site respectively, are classified as Local Community Connectors, serving as the main access routes through adjacent suburbs and forming a link to the major connector routes (such as Mazengarb Road).

The other streets in the vicinity of the Site, including College Drive and Stella Court, are classified as local roads and as such provide a property access function.

2.3 Road Environment

Mazengarb Road runs generally north-south to the east of the Site and comprises two lanes (single traffic lane in each direction) with an approximately 11.5m wide carriageway.

The general roading characteristics of Mazengarb Road adjacent to the Site are shown in the photographs included in **Figure 2-3** and **Figure 2-4**.

Figure 2-3: View north along Mazengarb Road (Site on the left)

Figure 2-4: View south along Mazengarb Road (Site on the right)

Mazengarb Road includes an approximately 2.8m wide central flush median, along with marked shoulders. A generous footpath is provided on the western side of the carriageway along the Site

frontage adjacent to a narrow front berm, along with a second narrower path between it and the Site boundary that meanders within the rear berm; Council has indicated their preference to remove the narrower rear path as part of the development works boundary tie-in to the road berm. South of the Site, the two paths merge to provide an approximately 2.5m overall width with faded stencils indicating this as a shared path. A footpath is also provided on the eastern side of the carriageway, which widens to the north of the Site to around 2.5m and is signposted as a shared path. Adjacent to the Site's northern boundary is a dedicated pedestrian crossing point with short kerb buildouts and a 2.5m wide refuge, allowing pedestrians to cross the carriageway in stages. Mazengarb Road has a posted speed limit of 50kph, noting the section just south of the Site to just north of the College includes Variable Message Speed signs which enforce a 30kph speed limit during the start and end of College.

To the southeast of the Site, Stella Court connects with Mazengarb Road via a give-way priority tee-intersection on the opposite side of the carriageway. A marked right turn bay is provided on Mazengarb Road for right turning vehicles to wait clear of through traffic. Stella Court is a short no exit cul-de-sac serving approximately 22 dwellings. Observations of kerbside parking within Stella Court during mid-morning on a weekday in term time showed a total 6 vehicles parked between Mazengarb Road and the cu-de-sac head, with ample additional capacity available as illustrated in the photographs included at **Figure 2-5**. Anecdotally it is understood that some parents and caregivers on occasion park in Stella Court at the end of the school day whilst waiting to collect students from the College. Outside of these times, and as described above, parking demand is modest.

Figure 2-5: View along Stella Court looking west (left picture) and east towards Mazengarb Road (right picture)

Approximately 35m north of Stella Court, a shared access driveway connects off the eastern side of Mazengarb Road and provides access to 5 dwellings. Noting these established accesses on the eastern side of Mazengarb Road adjacent to the Site frontage, the proposal plans have been purposefully designed to take access roughly mid-way between Stella Court and the shared driveway opposite.

Some 55m north of the Site, Mazengarb Road intersects with College Drive via a priority tee-intersection, opposite the Paraparaumu College. College Drive is local residential road formed as a long cul-de-sac, in turn connecting with Holcombe Drive which connects via other local roads back onto Mazengarb Road to the south of the Site via Hudson Place. Observations during a weekday mid-

morning in term time show only modest kerbside parking occupancy, as illustrated in the photograph included in **Figure 2-6**, indicating that outside of pick-up and drop-off activity, College staff and visitor parking demand is largely accommodated within the off-street carparking areas provided at the school.

Figure 2-6: View east down College Drive (from Mazengarb Road)

2.3.1 Existing Site Access

Access to the Site is currently achieved via an existing driveway to Mazengarb Road located at the southern boundary and directly opposite Stella Court, as illustrated in the photograph included in **Figure 2-7**.

The proposal plans provide for this existing vehicle crossing to be closed and a new driveway connection provided to the north of Stella Court, so as to separate turning movements for vehicles entering / existing the Site from this existing intersection.

Figure 2-7: View across Mazengarb Road to the Existing Access Driveway to the Site (from Stella Court)

2.4 Current Traffic Patterns

Annual Daily Traffic (**ADT**) volumes, along with associated heavy vehicle proportions, have been obtained from available Council traffic counts and the NZ Transport Agency Waka Kotahi (**NZTA**) MobileRoads database. The traffic volume data for the local roads within the vicinity of the Site across which development trips are expected to distribute is summarised in **Table 2-1.**

Table 2-1: Local Traffic Volumes Summary

Location	ADT	Heavy Vehicle %	Source
Mazengarb Road	7,900	5%	Council Count
Guildford Drive	2,600	6%	MobileRoads
College Drive	370	6%	MobileRoads
Stella Court	160	6%	MobileRoads

As shown, Mazengarb Road in the vicinity of the Site carries around 8,000 vehicles per day (**vpd**), commensurate with its role as a Major Community Connector. Guildford Road at its northern end adjacent to the roundabout connection with Mazengarb Road carries around 2,600vpd, reflecting its lower classification as a 'Local' Community Connector, noting traffic volumes increase as it extends south to around 5,000vpd in the vicinity of Realm Drive / Te Roto Drive. College Drive and Stella Court carry around 370vpd and 160vpd, respectively, consistent with their property access function; such low volumes provide a high level of amenity and convenience for vehicles manoeuvring to/from

kerbside parking along these streets, noting that as discussed later at Chapter 6, any overspill parking from the Site may occur in either College Drive or Stella Court.

In addition to the above, week long tube count data of traffic flows on Mazengarb Road just north of the Site adjacent to the College during November 2023, has been obtained from Council for the purposes of understanding hour by hour patterns, as illustrated within **Figure 2-8**.

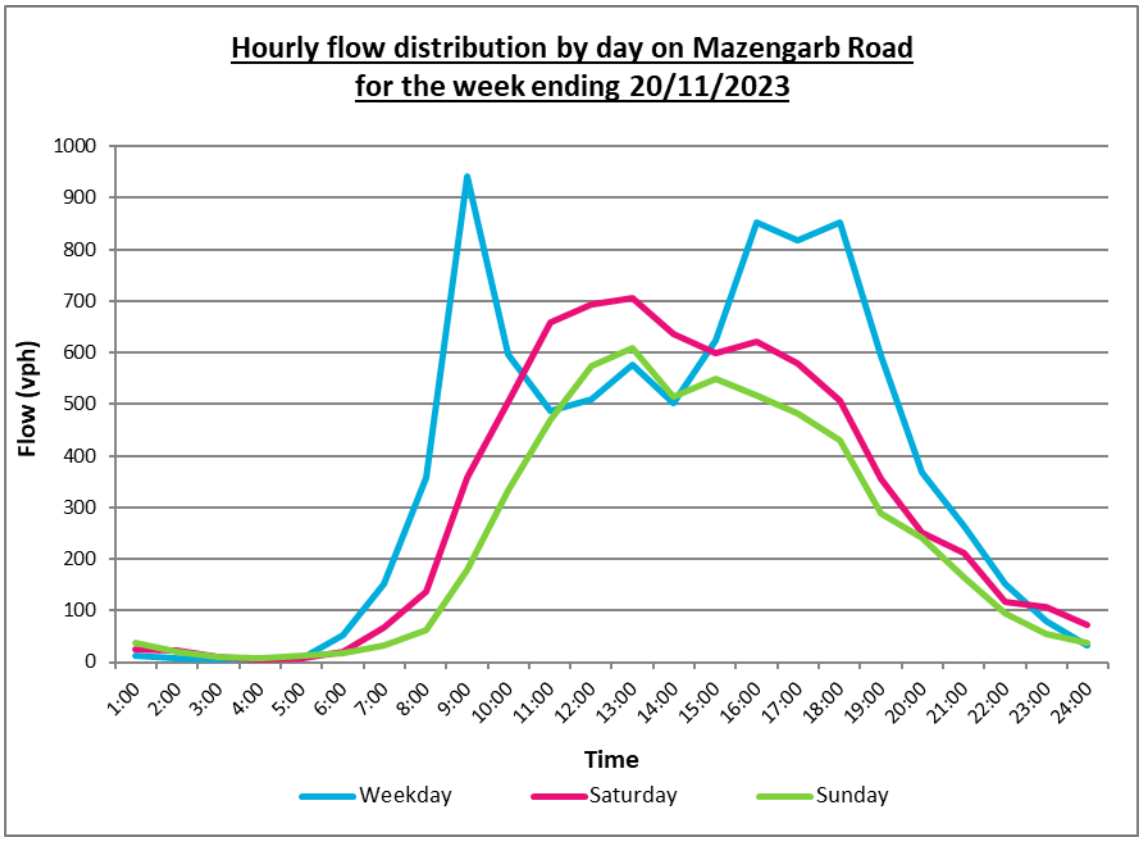


Figure 2-8: Daily Traffic Flows on Mazengarb Road

As shown in Figure 2-8, two-way traffic volumes on Mazengarb Road during weekdays indicate a AM and PM peak of around 800-900 vehicles per hour (**vph**), noting review of directional splits indicates a slghtly higher northbound flow in the AM, and a roughly 50/50 northbound/southbound split in the PM. Outside of these commuter peaks, two-way hourly volumes on this part of Mazengarb Road generally sit at around 500-600vph. These flows inform the analysis presented at Section 5.3.

2.4.1 School Activity

Observations during the start and end of college show that some pick-up and drop-off activity currently occurs along Mazengarb Road adjacent to the Site. Such practice is illustrated in the photograph included in **Figure 2-9**.

Figure 2-9: View south along Mazengarb Road from the College during AM drop-off period (vehicles dropping off students at the kerbside on western side of the carriageway)

As described later at Chapter 5, as part of the proposed Site development a recommendation is included to install broken yellow lines on the western side Mazengarb Road along the Site frontage, to ensure sightlines for vehicles exiting the development driveway remain clear. This measure will also beneficially serve to protect sightlines for pedestrians using the current pedestrian crossing adjacent the northern end of the Site. Liaison with Council's transport officers show agreement in principle with the marking of broken yellow no stopping lines to protect these sightlines.

2.5 Road Safety

A search of the NZTA 'Crash Analysis System' has been undertaken for the purpose of reviewing the road safety record of the local transport network around the Site. The search was conducted for the most recent complete 5-year period (2019 to 2023) and captures the extent of Mazengarb Road between (and inclusive) of the intersections with Guildford Drive to the north, and Ratanui Road to the south. This area captures the extent of Mazengarb Road and associated key intersections where the majority of development Site trips will distribute in accessing to and from the wider network.

A total of 16 crashes have been reported within the search area, as summarised below in **Figure 2-10** and **Table 2-2**.

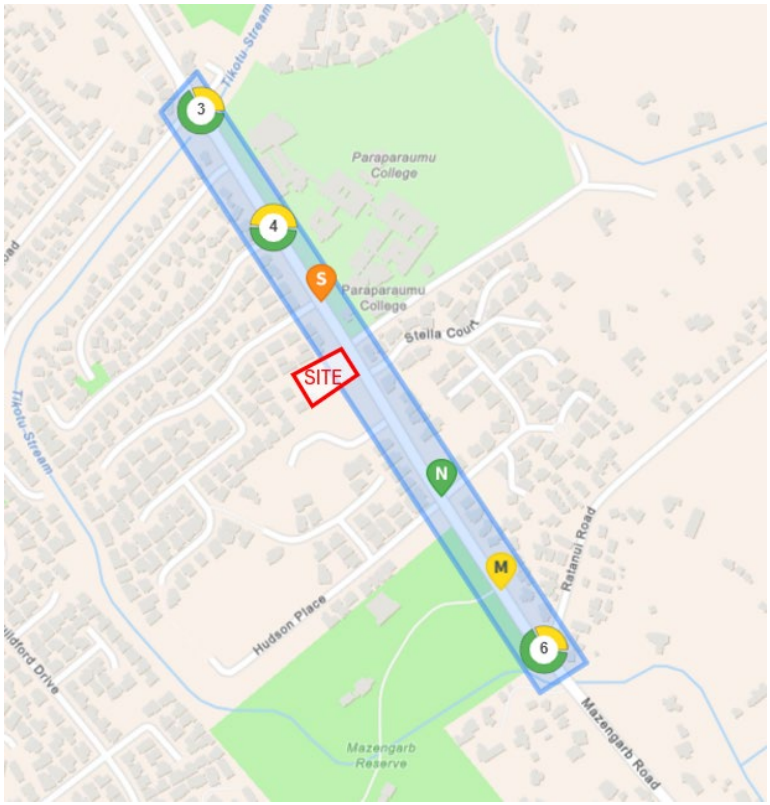


Figure 2-10: Crash Location Map for Period 2019-2023 (NZTA)

Table 2-2: Summary of Crashes within the Search Area (NZTA)

Location	Date	Severity	Description
Guildford Road / Mazengarb Rd Roundabout	01/04/2021 06/05/2019	Non-injury	Vehicle entering roundabout failed to give-way resulting in collision. 'Failed to give-way to priority traffic' and 'visibility impaired due to dazzling sun' listed as contributing factors.
	18/03/2023	Minor injury	Eastbound vehicle on Guildford Drive missed the roundabout, left carriageway and collided with a fence. Driver intoxicated.
Mazengarb Road – midblock btwn Rosewood Drive and College Drive	23/07/2022	Non-injury	Northbound vehicle on Mazengarb Road intentionally rear-ended the car in front. Emotionally upset, speed too fast, road rage.
	22/11/2020	Minor injury	Southbound vehicle on Mazengarb Road collided with vehicle parked at the kerbside. Attention diverted.
	25/06/2019	Non-injury	Vehicle turning right out of College driveway collided with pedestrian crossing the road. Failed to notice another party, obstructed view.
	05/11/2020	Minor injury	Vehicle reversed out of driveway (#140 Mazengarb Road) and collided with a pedestrian sitting in the berm. Did not check /. Notice another party behind.
College Drive / Mazengarb Road intersection	15/03/2022	Serious	Vehicle turning right out of College Drive collided with Cyclist travelling southbound on Mazengarb Road. Failed to give-way, did not check / notice another party.
Mazengarb Road / Hudson Place intersection	25/01/2022	Non-injury	Southbound vehicle on Mazengarb Road rear-ended a vehicle waiting to turn right into Hudson Place. Failed to notice vehicle in front slowing/stopped.

Location	Date	Severity	Description
Mazengarb Road / Scaife Drive intersection	24/07/2019	Minor-injury	Northbound vehicle on Mazengarb road rear-ended car in front that had stopped to turn right into a residential driveway. Following too closely and emotionally upset recorded as contributing factors.
Mazengarb Road / Ratanui Road roundabout	25/11/2021	Non-injury	Northbound vehicle on Mazengarb Road turning right at the roundabout into Ratanui Road side-swiped by vehicle overtaking on the right. Erratic driving, vehicle fled the scene.
	22/07/2019 25/12/2019	2 x Non-injury	Northbound vehicle on Mazengarb Road failed to give-way to priority traffic at the roundabout, resulting in collision. Failed to give-way to priority traffic, road works in operation, and alcohol listed as contributing factors.
	23/08/2023	Minor injury	Westbound vehicle on Ratanui Road drove through the roundabout and left carriageway, sliding down the bank. Sudden illness.
	20/05/2020	Non-injury	Northbound vehicle on Mazengarb Road lost control and travelled through the roundabout and collided with the pedestrian refuge (north of the roundabout). Visibility impaired due to dazzling sun.
	21/07/2021	Minor injury	Northbound vehicle on Mazengarb Road approaching the roundabout lost control, left carriageway to the left and collided with pedestrian on the footpath. Driver suffered medical event.

As shown, there is no record of any crashes having occurred on the local section of Mazengarb Road adjacent to the Site, including at the Stella Court intersection, adjacent shared driveway, or at the pedestrian crossing.

The majority of crashes occurred at the two Mazengarb Road roundabouts at Guildford Drive and Ratanui Road, noting the nature and frequency of these are not out of character for the road hierarchy and daily traffic volumes on this part of the network. Analysis of the individual circumstances show they involve a range of factors but do not point to any inherent safety defects associated with the established road network.

Overall, from the assessment above there is nothing to suggest from these records that there are patterns of existing safety concerns that would be exacerbated in respect of the current proposal, either locally at the Site frontage or at the intersections on Mazengarb Road to the north and south.

Notwithstanding the above, it is recommended that broken yellow no stopping lines be introduced across the Site frontage to ensure clear sightlines for vehicles exiting the new driveway and to protect visibility for pedestrians using the established crossing point near the Site's northern boundary.

2.6 Sustainable Transport

As described earlier at Section 2.3, the local transport network adjacent to the Site includes footpaths and off-road shared paths to accommodate walking and cycling trips. In addition, a formal pedestrian crossing with island refuge is provided immediately adjacent to the Site at its northern boundary, facilitating staged crossing of the carriageway as illustrated in the photograph included in **Figure 2-11** below. Whilst on-road cycle lane markings are included on Mazengarb Road through the intersections to the north of the Site, it is understood from Council no traffic resolution has been passed that formally identifies on-road cycle lanes on this section of carriageway adjacent to the Site.

Figure 2-11: View south along Mazengarb Road to existing pedestrian crossing (Site on the right)

A review of the road safety record as described earlier at Section 2.5 shows no record of any crashes having occurred at the crossing in the last five years, indicating it is operating safely. Notwithstanding, the recommended introduction of no stopping lines on the western side of Mazengarb Road adjacent to the Site frontage to prevent kerbside parking is expected to provide benefits in maintaining safe pedestrian sightlines for people crossing west to east.

Beyond the immediate Site, the existing walking and cycling provisions on Mazengarb Road connect with the SH1 Expressway off-road shared path, which in turn links with shared path facilities on Kapiti Road allowing access to the town centre.

Bus stops located on Mazengarb Road approximately 150-200m north of the Site provide access to Service #262 (Paraparaumu – Paraparaumu Beach). Associated buses operate between Paraparaumu town centre and Paraparaumu Beach approximately every 30-minutes throughout the day, and hourly on the weekends.

2.7 Future Changes to Mazengarb Road

It is understood that Council is proposing some changes along Mazengarb Road in the vicinity of the Site, as part of the current Long Term Plan initiatives. These changes are expected to include upgrading the current pedestrian crossing in its current location to a full zebra arrangement. The Site access strategy has purposefully been developed to locate the shared entry/exit driveway to the south of the current pedestrian crossing, midway between the established driveway and intersection on the

opposite side of the road. As such, the proposal plans do not impact on the continued safe operation of the pedestrian crossing point in either its current or future state.

3 Development Proposal

3.1 Existing Site Use

The Site currently accommodates a single residential dwelling, with vehicular access achieved via an established vehicle crossing adjacent to the southern boundary, immediately opposite Stella Court.

3.2 Proposed Development

The proposal seeks to redevelop the Site to provide a total of 41 dwellings, including a mixture of 1, 2, 3-bedroom standalone houses with supporting on-site carparking, as shown within the proposal plans included at **Appendix A**.

The development plans include the following:

- 36 x 1-bedroom or 2-bedroom units;
- 5 x 3-bedroom units;
- on-site car parking providing a total of 43 spaces, including '1 allocated space per unit' plus 2 visitor parks;
- a shared internal Site circulation driveway designed to accommodate service trucks (including rubbish collection);
- a residents park;
- centralised refuse collection areas; and
- supporting walkways to facilitate pedestrian connectivity to and within the Site.

Vehicular access to the Site will be achieved via a single new driveway crossing to Mazengarb Road, between the established vehicle accesses on the opposite side of the road.

The Site will be supported by a total of 43 on-site car parks. The Site access, internal circulation, and on-site parking has been designed with consideration of the District Plan and relevant industry standards, including 'AS/NZS2890.1:2004 Parking Facilities Part 1: Off-street car parking' (**AS/NZS2890.1**), as described in more detail in Chapters 5 and 6.

4 District Plan Assessment

The proposed development Site is zoned 'General Residential' under the District Plan, and an assessment of the proposal's compliance with the relevant transport rules and standards has been undertaken, as described in **Table 4-1** below.

Table 4-1: District Plan Compliance Assessment against the Transport Rules

Reference	Rule	Assessment of Compliance
Part 2 – District-Wide Matter / Energy, Infrastructure and Transport / Transport		
TR – R1: Maintenance and Repair of Roads		
2.	Compliance with Council's Land Development Minimum Requirements.	Complies. The internal Site circulation RoW has been designed in accordance with NZS4404:2010[1] which is consistent with the guidance in Council's Land Development Minimum Requirements.
TR – R2: Vehicle Movements		
1.	1. up to 200vpod in Working Zone…	Not applicable
2.	In all other zones, any activity must not generate more than 100 vpd, except extractive industries that are provided for as a restricted discretionary activity under EW-EXT-R13.	Does not Comply. The activity exceeds the 100vpd limit, and is therefore considered a 'Restricted Discretionary' activity.
TR – R3: Site Access and Loading for Vehicles		
1.	Access – every site must provide either: a. vehicular access over land by mutual right of way or service lane for parking and/or loading and shall be in accordance with TR-Diagram-2 b. N/A	Complies. Vehicle access to the Site will be via Mazengarb Road, with access to individual units and parking within the development achieved via a private Right-of-Way (**RoW**).

[1] NZS4404: 2010 'Land Development and Subdivision Infrastructure'

Reference	Rule	Assessment of Compliance
2.	Vehicle access and pedestrian access - all vehicle accesses and pedestrian accesses must be designed, constructed and maintained to ensure that: a) they are able to be used in all weather conditions; b) they have no adverse impact on the roadside drainage system; and c) surface water and detritus (including gravel and silt) does not migrate onto the highway pavement.	Compiles. The Site's RoW will be formed and sealed with appropriate drainage systems to avoid the collection of surface water and detritus.
3.	Vehicle access – all vehicle accesses must meet the following: a) be a minimum of 3.5 metres wide, except for as set out in TR-Table 1. b) be a maximum of 9 metres wide, except in the Beach Residential Zone at Waikanae Beach where the maximum shall be 6.0 metres wide.	Complies. The RoW off Mazengarb Road that extends through the Site is 5.8m wide, whilst the short laneway connecting off the main RoW in the southwest corner of the Site is designed at 4.5m wide. The proposed design thereby satisfies the minimum and maximum standards set out in TR-Table-1.
6.	Access spacing – at intersections (except on strategic arterial routes) carrying traffic volumes of 1,000 vehicles or more in any peak hour, or at which traffic signals are operating, no part of a crossing point must be located within 30 metres of an intersection or within 60 metres on the departure side of an urban state highway intersection.	Complies. There are no signalised intersections or intersections carrying more than 1,000vph on Mazengarb Road in the vicinity of the Site.
7.	Vehicle access spacing – Where a site is located near an intersection having volumes less than 1,000 vehicles in any peak hour; the minimum distance between the crossing point and the roadway edge or kerb line must be: a) 9 metres measured from the intersecting point of the kerb lines or road edge lines or 4.5 metres from the tangent point of the kerb lines or road edge whichever is greater; and b) 12 metres where a "Stop" or "Give Way" control exists on the roadway measured from the intersecting point of the kerb lines or road edge lines.	Complies. The proposed RoW connection to Mazengarb Road is located approximately 14m from the Stella Court intersection and 16m from the shared driveway on the opposite side of the road.

Reference	Rule	Assessment of Compliance
8.	Access spacing for major traffic activities – no crossing point must be located closer to any intersection than the distance specified in TR-Table 2 – Access Distance Dimensions. Distances are measured in metres (m) to the intersecting kerb line.	Does not Comply. Given the Site will generate more than 100vpd it is considered a major traffic activity. As Mazengarb Road is classified as a Major Community Connector, any site access must be located no closer than 30m to a local road intersection. The proposed Site driveway is approximately 14m from the Stella Court intersection.
9.	Vehicle access spacing sight distances – the required minimum sight distance between the access and the road must be in accordance with TR-Diagram – 3 and TR-Table 3 – Sight Distance Dimensions} (where m = metres)	Complies. The proposed Site access driveway achieves the minimum 50m sightlines in each direction on Mazengarb Road, noting a recommendation to avoid parked vehicles obstructing these sightlines is described at Chapter 5.
12.	Manoeuvring – a. Private residential access – unless the driveway accesses directly from a Neighbourhood Access Route, sufficient manoeuvring space must be provided on-site to ensure no reversing onto the road is necessary. Note: for clarification see the Transport Network Hierarchy	Complies. Sufficient manoeuvring space is provided within the Site's RoW to enable vehicles to turn on-site, removing the need for any reverse manoeuvres to/from Mazengarb Road.
15.	Landscaping – all landscaping adjoining the road boundary of subject sites, must be designed and maintained so that visibility to and from the crossing point complies at all times with the minimum standards sight distances set out in TR-Table 3 Sight Distance Dimensions.	Complies. Landscaping will be designed and maintained to meet the minimum sight distance requirements.
TR – R4: Design and Layout of Vehicle Parking for All Activities		
1.	All parking must be formed, marked out and maintained for use in all weathers.	Complies. Parking spaces will be formed to an all-weather
2.	Surface water originating from the parking area must be managed without adversely impacting other properties either upstream or downstream of the development subject site.	

Reference	Rule	Assessment of Compliance
3.	Vehicles using the parking area must only use the formed vehicle access point (crossing point) to enter and exit the vehicle parking areas.	sealed surface, with access to/from the Site's parking areas provided via the RoW connection to Mazengarb Road only. Surface water will be adequately accommodated for in the engineering design.
TR – R6: Heavy Trade Vehicle Access		
1.	Heavy trade vehicle accesses, including those for milk tankers and stock trucks, must be designed and constructed to carry the volume and weight of traffic likely to use the access and shall be designed in accordance with TR-Diagram 4.	Not Applicable.
2.	The surface of a heavy trade vehicle access must be constructed to the same standard as the adjoining road carriageway. This requirement must be deemed to have been complied with if the first 12 metres of the vehicle access, measured from the near edge of the carriageway, is so constructed.	Complies. The proposed vehicle access and extension of the internal RoW through the Site has been designed to accommodate a large rigid truck, which appropriately provides for 8-9m long rubbish/recycling and emergency vehicles to visit this area of the development, as well as occasional larger 10.5m furniture trucks or the like.
3.	Heavy trade vehicle accesses must be designed and constructed so that no heavy trade vehicle has to cross the road carriageway centre line when making a left-turn.	Complies. As described in Chapter 7 (and demonstrated in the associated vehicle tracking), service vehicles accessing the Site are able to undertake left turns at the driveway at Mazengarb Road using the central flush median without crossing into the opposing southbound traffic lane.
TR-R10: Vehicle Movements not Permitted by TR-R2 (Major Traffic Activities)		

Reference	Rule	Assessment of Compliance
2.	A transport assessment and a travel plan must be prepared by a suitably qualified person and submitted to Council with the application for resource consent	Complies. This ITA has been prepared to accompany the application and provides analysis of the traffic-related impacts and assessment of effects on the adjacent transport network.
TR – Park – P8: Parking		
1.	All new subdivision and development shall provide for safe vehicular and pedestrian access and appropriate accessible carparks by: 1. providing accessible carpark numbers, layouts and dimensions consistent with standards that meet the needs of users; 2. supplying adequate off street accessible carparks to meet the demand of the land use while having regard to the following factors: a. the intensity, duration location and management of the activity. b. the adequacy of accessible carparks in the location and adjacent areas. c. the classification and use of the road (as per transport network hierarchy in TR-Table 7), and the speed restrictions that apply. d. the nature of the subject site, in particular its capacity to accommodate accessible carparks. e. the characteristics of the previous activity undertaken on the subject site; f. where the new development is an alteration or addition to an existing building, the actual demand for accessible carparks created by the additional gross floor area added to the existing building (excluding any uncovered patio or deck); and 3. taking effects on neighbouring areas into account when designing the location, layout and number of cycle parks and accessible carparks; 4. ensuring the location, layout and number of cycle parks and accessible carparks is safe, user-friendly and appropriate; and 5. recognising that, where an existing building comprises multiple individual businesses or activities (e.g. shopping mall) any accessible carparks available for that building will be considered to contribute to meeting the demand for accessible carparks associated with new activities within the existing building provided that any alterations or additions to facilitate new activity do not increase the gross floor area if the existing building.	Complies. The development plans include 41 residential dwellings and 43 on-site car parks. An assessment of the Site's anticipated parking demand is provided in Chapter 6, which draws from surveyed parking demand from an established analogous medium density typology development, alongside a review of the current utilisation of kerbside parking within a short walk of the Site, to demonstrate the adequacy of the proposed parking provision.

Reference	Rule	Assessment of Compliance
TR – Park – R18: Any activity requiring more than 2 carparks		
1.	Accessible carparks must be provided at the rate shown in TR-Table 6A below: Medium Density Housing: Multi-unit residential • 4-5 units = 1 space • 6-25 units = 2 spaces • Plus 1 additional space for every additional 25 units or part thereof.	Complies. Provision of at least three carparks on the Site that will be capable of accommodating accessible users (including a visitor park) has been allowed for, as per the intent of this Rule.
TR – Park – R19: Cycle Parking		
1.	Cycle parking must be located no more than 25 metres from the entrance to the destination for all activities listed in TR-Table-6B excluding the following activities: a. Multi-unit residential; b. Visitor accommodation; c. Hostels, Hotels, Motels and Visitor Accommodation d. Sports Fields (including lawn bowls) e. Education facilities.	Complies. Provision of at least 3 visitor cycle parks has been allowed for within the dedicated cycle hoops located in the central park area, whilst residents will be able to safely store cycles in secure yard areas (including with the use of slim cycle lockers).
2.	Cycle parking shall: a. be securely anchored to an immovable object b. support the bicycle frame and front wheel c. allow the bicycle frame to be secured d. be accessible for users of all ages and abilities e. provide a minimum separation distance of 1.2 metres between cycle stands f. provide a minimum separation distance of 1 metre between any marked carpark space, wall or any other obstruction g. be clearly signposted or visible to cyclists entering the site h. be located so as not to impede pedestrian thoroughfares, including areas used by people whose mobility or vision is restricted i. be located so that the bicycle is at no risk of damage from vehicle movements within the site; and j. be in a covered area and in an area excluded from general public access when provided exclusively for staff/employee use	

Reference	Rule	Assessment of Compliance
3.	Cycle parking must be provided at the rate shown in TR-Table 6B below: Medium Density Housing: Multi-unit residential Visitor Cycles • 4-20 residential units: 1 space • Plus 1 additional space for every additional 20 residential units, or part thereof Staff / Resident / Student cycle parks • 4-10 residential units: 1 space • Plus 1 additional space for every additional 10 residential units or part thereof.	

As shown, the development proposal aligns well with the traffic and transport provisions of the District Plan in satisfying each of the relevant standards, with the exception of the proposed access separation distances under TR-R3.8. In this regard the development plans fall short of providing a 30m separation to Stella Court. Further assessment of this deviation from the standard is described at Chapter 5, noting the proposed Site driveway location has been developed to achieve maximum separation from the two established vehicle connections on the opposite of Mazengarb Road, so as to mitigate as far as practicable any potential conflict between vehicles turning at these respective accesses.

In addition to above, the proposed development is considered a major traffic activity under TR-R2, and as such an assessment of the associated Site traffic impacts on the adjacent network has been undertaken at Chapter 5. By way of summary, this shows that with the modest additional vehicle trips added to the network with the development in place, impacts on the Mazengarb Road operation are minor.

5 Access and Development Site Traffic

5.1 Proposed Site Access Arrangements

Access to the development Site will be provided by way of a new shared RoW driveway connecting with Mazengarb Road, approximately 20m from the Site's southern boundary. This location has been specifically chosen to provide an appropriate off-set from the two established vehicle access points which connect with Mazengarb Road on the opposite side of the road to the Site, and to also be separated from the existing pedestrian crossing point located adjacent to the northern end of the Site. With the existing flush median on Mazengarb Road, right turning traffic entering the Site will be able to wait, clear of southbound through traffic.

Whilst the Site access is off-set from Stella Court by around 14m, and doesn't therefore meet the full minimum 30m separation for an access from an existing intersection on a Major Community Connector road, right turning traffic exiting these two connections will be around 25m apart as they turn on Mazengarb Road. With these right turn volumes involving only a small number of movements during the peaks (expected to be <10vph for each of the Site and Stella Court), such manoeuvres are assessed as being able to be accommodated safely, both in terms of avoiding any right turn conflicts and negotiating through traffic flows (as evidenced by the lack of recorded crashes on this adjacent section of Mazengarb Road including at the Stella Court intersection).

With only 5 dwellings accessed off the shared driveway located on the opposite side of Mazengarb Road approximately 16m north of the proposed Site access, instances of any turning conflicts with traffic accessing the development Site will be even lower. Accordingly, it is not considered necessary to mark dedicated right turn bays at these respective driveways to separate associated turn movements, with the existing flush median able to accommodate turning traffic appropriately, as it does at other shared driveways along this road corridor.

As described earlier in chapter 2, observations during the start and end of College show some vehicles associated with student drop-off and pick-up park at the kerbside on the western side of Mazengarb Road in the vicinity of the Site, including close to the current pedestrian crossing. To deter such behaviour from either College or Site related vehicles parking in this location, it is recommended that broken yellow no stopping lines be introduced along the full width of the Site on the western side of Mazengarb Road. This will safeguard sightlines for vehicles exiting the development, as well as beneficially protect intervisibility between northbound traffic and pedestrians at the crossing. As noted earlier, discussion with Council shows general support for this recommendation given the associated safety benefit outcomes.

5.2 Internal Movement Network

The new RoW access into the Site includes a 5.8m wide two-way vehicle driveway connection to Mazengarb Road. The internal vehicle circulation arrangements provide for a single loop road, similarly formed to a 5.8m width to allow for two-way vehicle flow throughout the development and ensure adequate aisle widths for vehicles manoeuvring at adjacent 90-degree parks. Localised widening has been included around bends to ensure tracking of larger vehicles (e.g., rubbish trucks)

can be safely accommodated as described further at Chapter 7, noting the Site's access and internal circulation routes will be formed and sealed to an appropriate heavy vehicle standard.

Provision for pedestrians is provided via a series of footpaths and internal walkway connections through the Site. Internal footpaths have been designed with a 1.5m width for key accessible connections throughout the Site.

Cyclists accessing the development will share the vehicle RoW carriageway, noting these have been designed to encourage a slow speed environment through the use of surface treatments and thresholds, with the slower speed supported by a 15kph speed limit.

5.3 Site Traffic Generation and Effects Assessment

In forecasting the anticipated traffic generated by the proposed Site development, trip generation rates have been determined using survey data collected by Stantec at other comparable medium density residential developments in the Wellington region[2], along with industry standard rates from surveys of households reported in the NZTA Research Report 453 "Trips and parking related to land use" (**RR453**). These associated weekday peak hour trip generation rates are summarised in **Table 5-1**.

Table 5-1: Forecast Trip Generation

Source	AM Peak Hour Rate	PM Peak Hour Rate
Stantec Medium Density Residential Surveys	0.52	0.4
RR453[3]	0.9	0.9

It is noted that the rates reported in the RR453 more generally draw from lower density detached residential suburban development, rather than the medium density activity proposed for the Site in this case. Noting too that the proposed dwelling typology for the Site consists mainly of smaller 1-2 bedroom units, a commensurately lower car ownership rate is expected as compared to more traditional standalone suburban dwellings. To appropriately take account of these influences the generic RR453 rates and Stantec surveyed trip generation rates have been averaged to provide what is considered a robust trip generation rate for the Site, providing rates for the AM and PM peaks of 0.71vph and 0.65vph, respectively. Applying these rates to the proposed 41 dwellings for the Site results in a traffic generation of 30vph during the AM peak and 27vph for PM peak. Such volumes are not high.

A review of the traffic data recorded on Mazengarb Road adjacent to the Site for directional traffic splits during the weekday AM and PM peaks, as recorded at Section 2.4, shows a slight bias towards the north in the AM (meaning a slightly higher number of vehicles likely turning left out of the Site during this period than turning right out), and an almost equal north-south split during the PM (meaning very similar left turn in / right turn in movements at the Site driveway).

2 Including a trip generation survey of the 'Te Ara O Paetutu' residential development in Petone

3 85th percentile peak hour trip generation rates for an inner suburban residential dwelling

In considering the traffic generation and distribution described above, the good safety record on the immediate section of the network, and with the proposed Site access arrangements at Mazengarb Road which provide for any right turning vehicles entering the Site to wait in the existing flush median clear of through traffic, these additional vehicle trips are assessed as being able to be readily accommodated on the local network without impacting adversely on its safety or performance.

6 Parking

Whilst parking minimums no longer apply for new development in the wake of the National Policy Statement for Urban Development, specific consideration has been given to the quantum of parking demand generated by the proposed development, to ensure an appropriate supply is provided. In this manner, parking data captured at an established comparable medium density development of a similar scale shows a demand of 1.2 vehicles per dwelling, reflective of the smaller unit typology, noting the majority of dwellings proposed on the Site will be 1 or 2-bed units. Applying this rate to the proposed 41 dwellings on the Site gives a total demand for 50 car parks. The plans include provision of 43 on-site car parks, noting residual capacity within on-street parking close to the Site either in College Drive or Stella Court, is readily available to accommodate any occasional overspill (of around 7 vehicles) without materially impacting on existing parking behaviours in these adjacent residential streets.

The on-site parking spaces provided have been designed to meet the dimension requirements and minimum aisle widths prescribed within the District Plan and AS/NZS2890.1, with parking stalls marked at a minimum 5m deep (allowing for a 600mm overhang where they abut a kerb) and minimum 5.8m wide manoeuvre width provided within the RoW. Whilst the short section of laneway in the southwest corner of the Site includes a 4.5m wide manoeuvre aisle, the 3m wide parking pads provided for each of the three spaces it provides access to ensures practicable manoeuvring to / from each of these parks is readily achieved, as demonstrated within the tracking included in **Appendix B**.

Provision for cycle storage is available within the secure courtyards of the proposed units, with residents able to install a slim shed / storage locker within these outdoor areas to provide an additional level of security for bikes/other items.

7 Servicing

Regular servicing requirements associated with residential developments such as that proposed are largely limited to recycling and refuse collection, with occasional household furniture deliveries.

The development plans show two dedicated communal rubbish storage areas located adjacent to the central park area. Collection of refuse and recycling will be undertaken by trucks circulating through the Site emptying bins from the RoW, adjacent to the collection points. During occasions when rubbish/recycling trucks are stationary for a short time emptying bins adjacent to the collection points, development Site traffic will still be able route around the other side of the internal loop road to access units or exit the Site.

Example tracking paths demonstrating a standard medium rigid 8m rubbish truck accessing the development, manoeuvring through the Site, and exiting to Mazengarb Road, are provided in Appendix B, along with equivalent manoeuvring for a large (10.5m) rigid truck. These tracking plans also demonstrate that a service truck can undertake left turns at the Site driveway using the flush central median on Mazengarb Road, without needing to cross into the opposing traffic lane, thereby satisfying District Plan Rule TR-R6.3.

Accordingly, all servicing requirements generated by the proposed development can be accommodated within the Site itself, and without the need for service vehicles to undertake reverse manoeuvres to and from the adjacent street network.

8 Conclusion

A detailed assessment of the transport related effects of a proposed residential development fronting Mazengarb Road in Paraparaumu has been undertaken in accordance with the requirements described in the District Plan and relevant best practice.

The proposed development comprises a total of 41 standalone dwellings, with associated on-site car parking. Vehicular access to the Site will be achieved via a shared Right-of-Way connection off Mazengarb Road located mid-way between existing vehicle connections on the opposite side of the street. A recommendation is made to mark broken yellow no stopping lines along the western side of Mazengarb Road across the Site frontage to discourage parking and therefore protect sightlines at the development access and adjacent pedestrian crossing.

The only regular servicing expected to be generated by the Site will be waste collection, which can be accommodated on-site. Vehicle tracking demonstrating a large rigid truck (i.e. associated service / emergency vehicles / residential delivery) accessing to and through the Site indicates that such manoeuvres can be achieved in a forward direction, and without the need to reverse to/from the public street.

The proposal plans include a total of 43 on-site car parks to accommodate the majority of parking demand generated at the Site. Should some additional demand occur, it can be readily accommodated within the residual kerbside parking resource nearby and without materially impacting the existing on-street parking amenity in these local streets.

The anticipated traffic generated by the proposed development is not high and can be accommodated on the adjacent road network without noticeable effects on the capacity, function and safety of the surrounding streets.

Based on the assessments undertaken, it can be concluded that there are no transport engineering or transport planning reasons to preclude approval of the development as proposed.

Appendices

Appendix A Proposal Plans

WORKING PLOT

REV	DATE	DRN	DESCRIPTION
A	07/24	SJ	FOR INFORMATION ONLY

160 MAZENGARB ROAD

SITE LAYOUT

CLIENT LOGO

Stantec

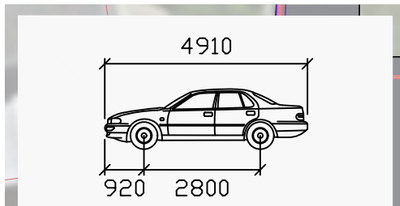
SCALE:	VARIES
DRAWN:	STEVEN JIANG
DATE:	19/07/2024
DESIGN:	JAMIE WHITTAKER

FIGURE No. FIG1

OF A

\\NZ4113-PPFSS01\shared_projects\310206187\5_drawings\CAD\310206187_C001.dwg

Appendix B Vehicle Tracking



B85

	mm
Width	: 1870
Track	: 1770
Lock to Lock Time	: 6.0
Steering Angle	: 34.1

A,B1,D,F

A,B1,D,F

2 0 5m

SCALE 1:100

REV	DATE	DRN	DESCRIPTION
A	07/24	SJ	FOR INFORMATION ONLY

160 MAZENGARB ROAD

VEHICLE TRACKING

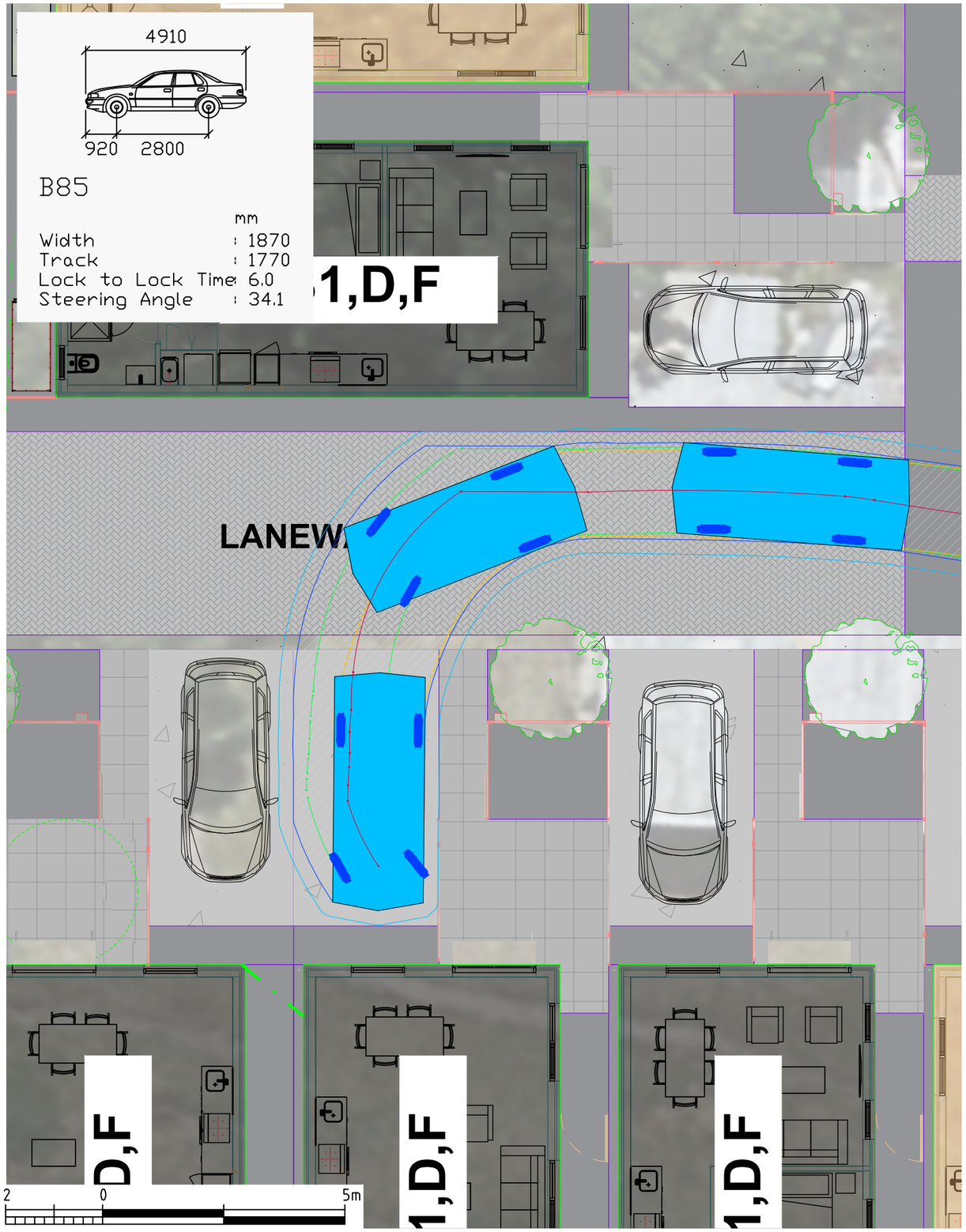
B85 LANEWAY END SPACE #1

CLIENT LOGO

Stantec

SCALE:	1:100 @ A3
DRAWN:	STEVEN JIANG
DATE:	22/07/2024
DESIGN:	JAMIE WHITTAKER
FIGURE No.	TR1
OF	A

\\NZ4113-PPFSS01\shared_projects\310206187\5_drawings\CAD\310206187_C001.dwg



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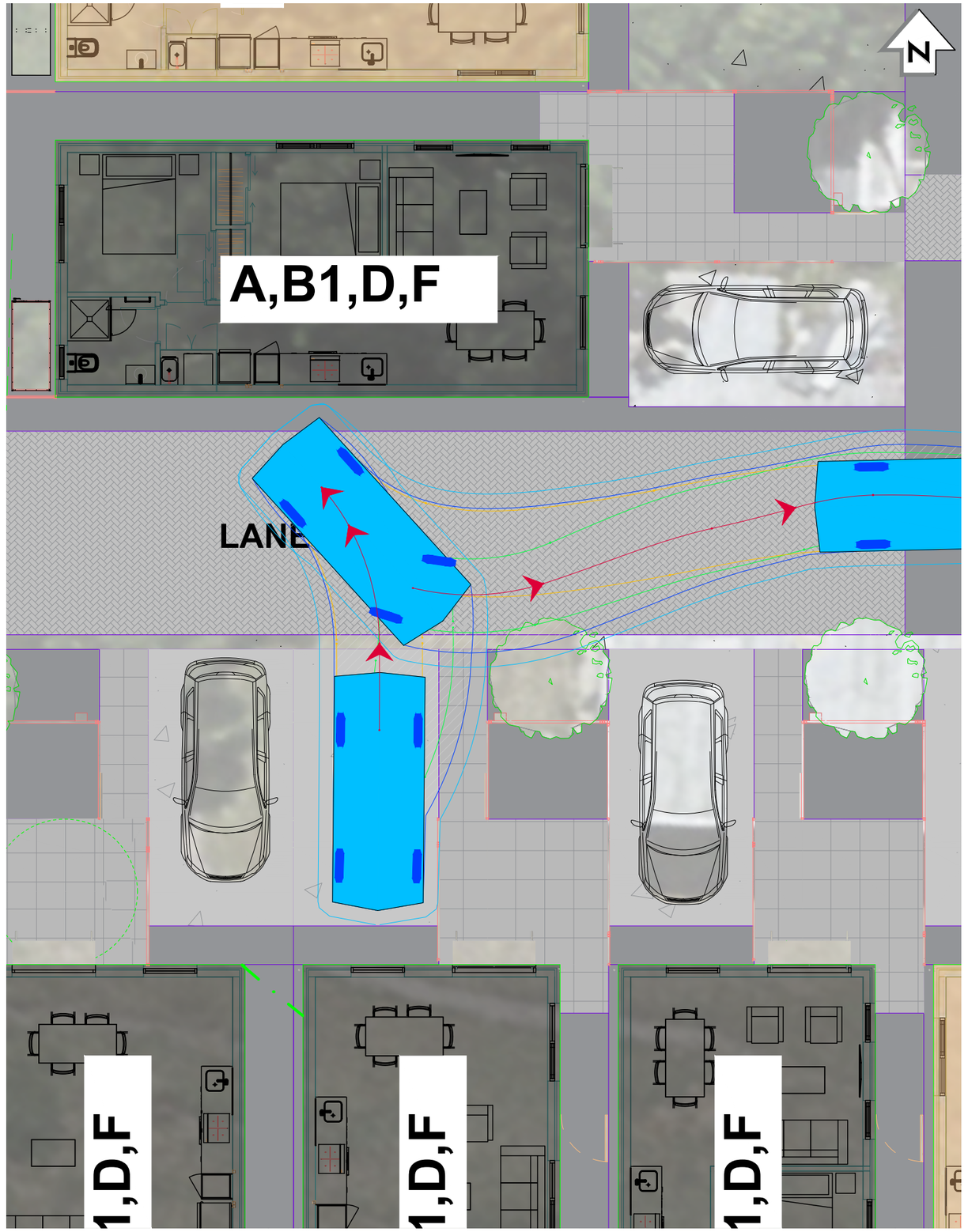


REV	DATE	DRN	DESCRIPTION
A	07/24	SJ	FOR INFORMATION ONLY

160 MAZENGARB ROAD

VEHICLE TRACKING

B85 LANEWAY END SPACE #2

CLIENT LOGO

Stantec

SCALE: 1:100 @ A3

DRAWN: STEVEN JIANG

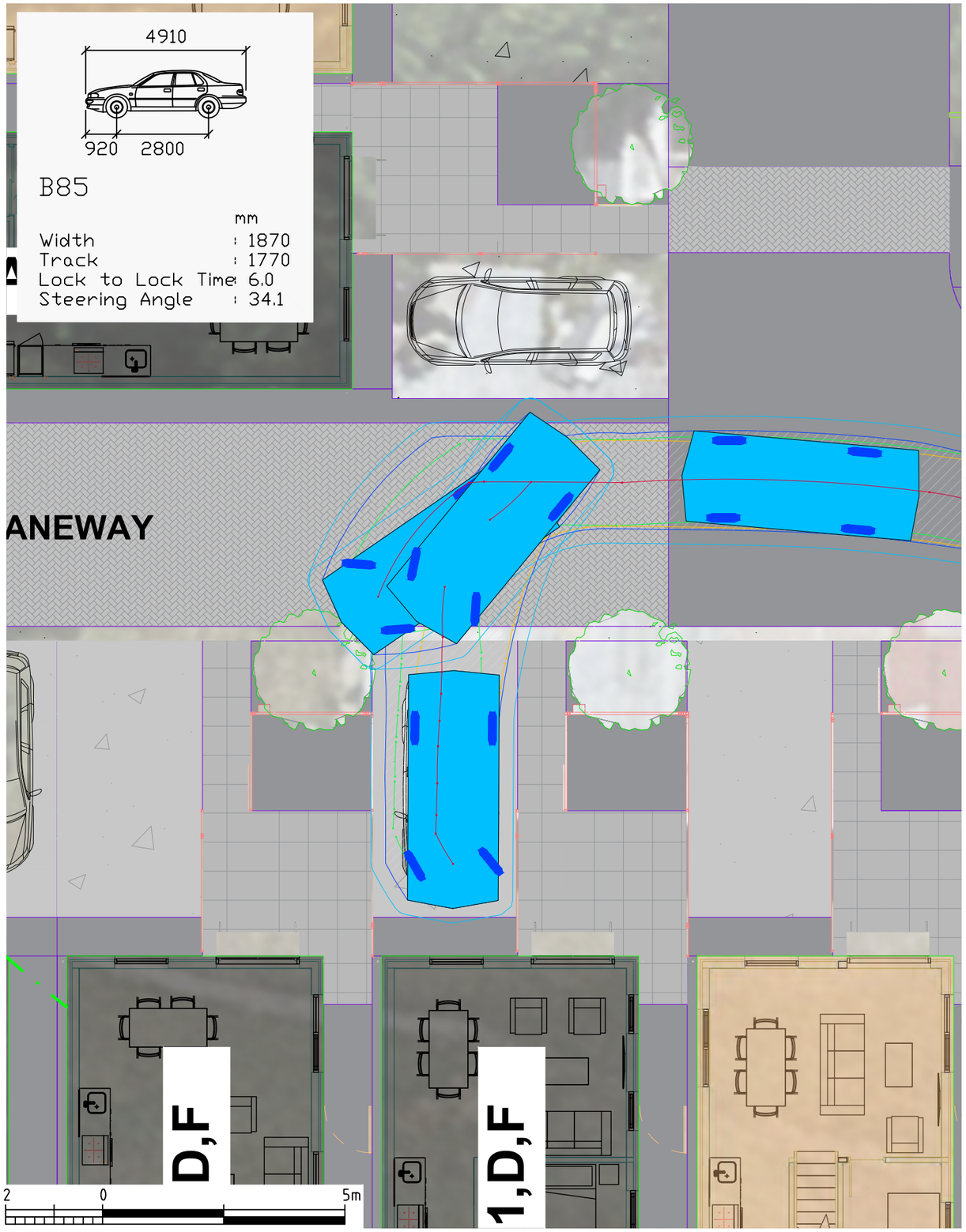
DATE: 19/07/2024

DESIGN: JAMIE WHITTAKER

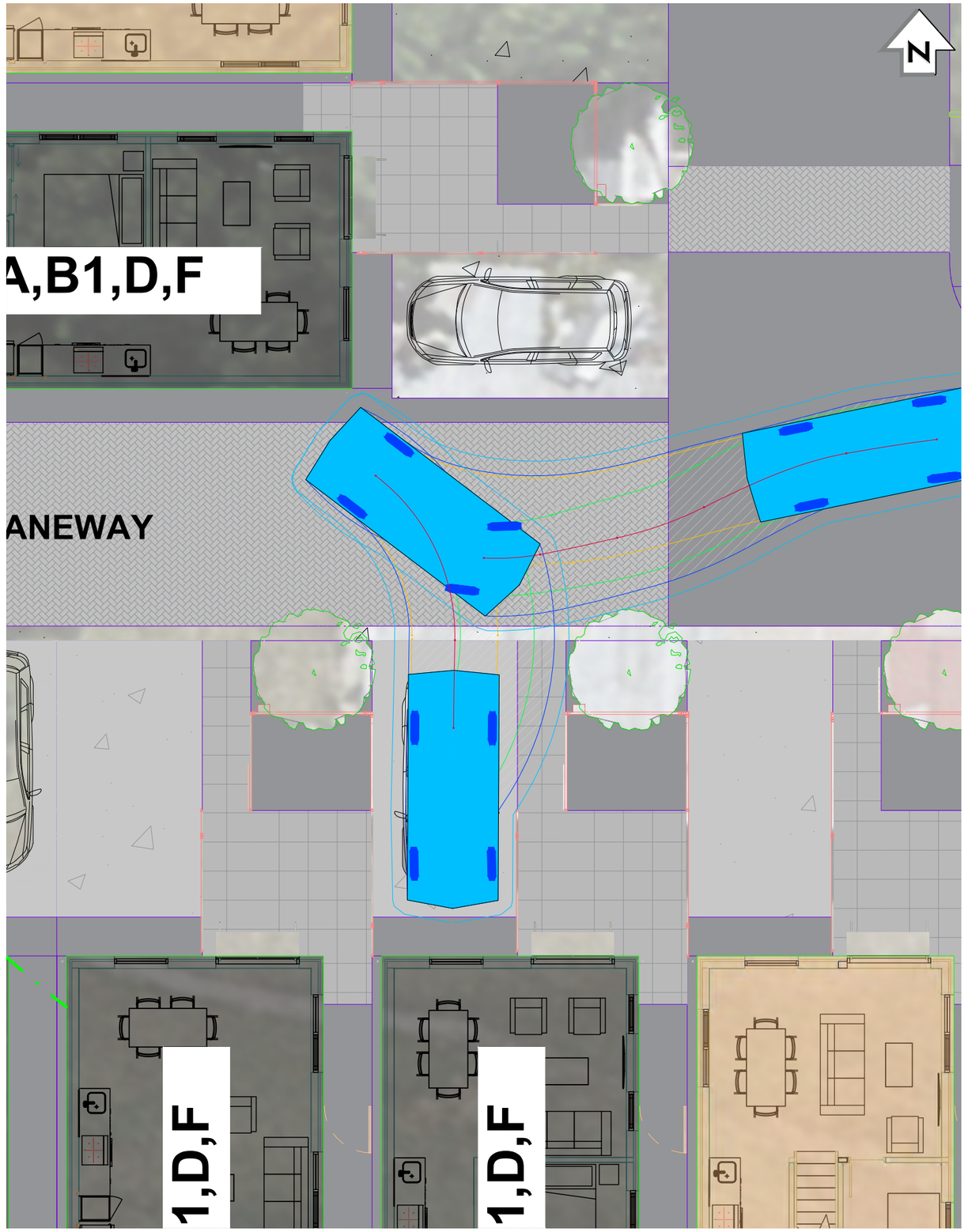
FIGURE No. TR2

OF A

\\NZ4113-PPFSS01\shared_projects\310206187\5_drawings\CAD\310206187_C001.dwg



SCALE 1:100



REV	DATE	DRN	DESCRIPTION
B	07/24	SJ	FOR INFORMATION ONLY
A	07/24	SJ	FOR INFORMATION ONLY

160 MAZENGARB ROAD

VEHICLE TRACKING

B85 LANEWAY END SPACE #3

CLIENT LOGO

Stantec

SCALE: 1:100 @ A3

DRAWN: STEVEN JIANG

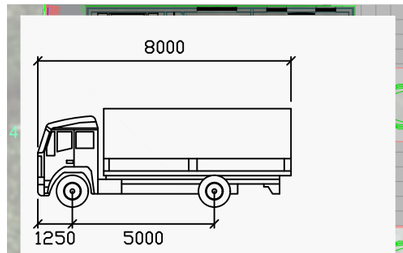
DATE: 24/07/2024

DESIGN: JAMIE WHITTAKER

FIGURE No. TR3

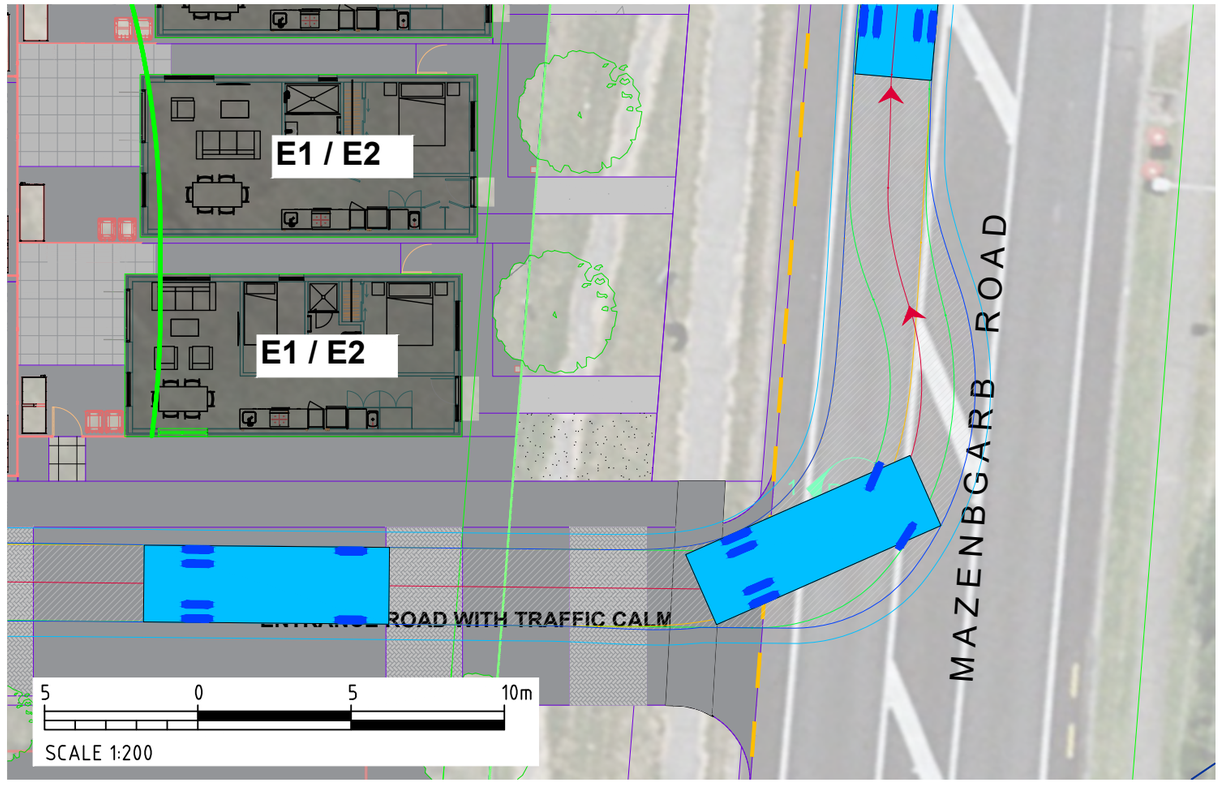
OF B

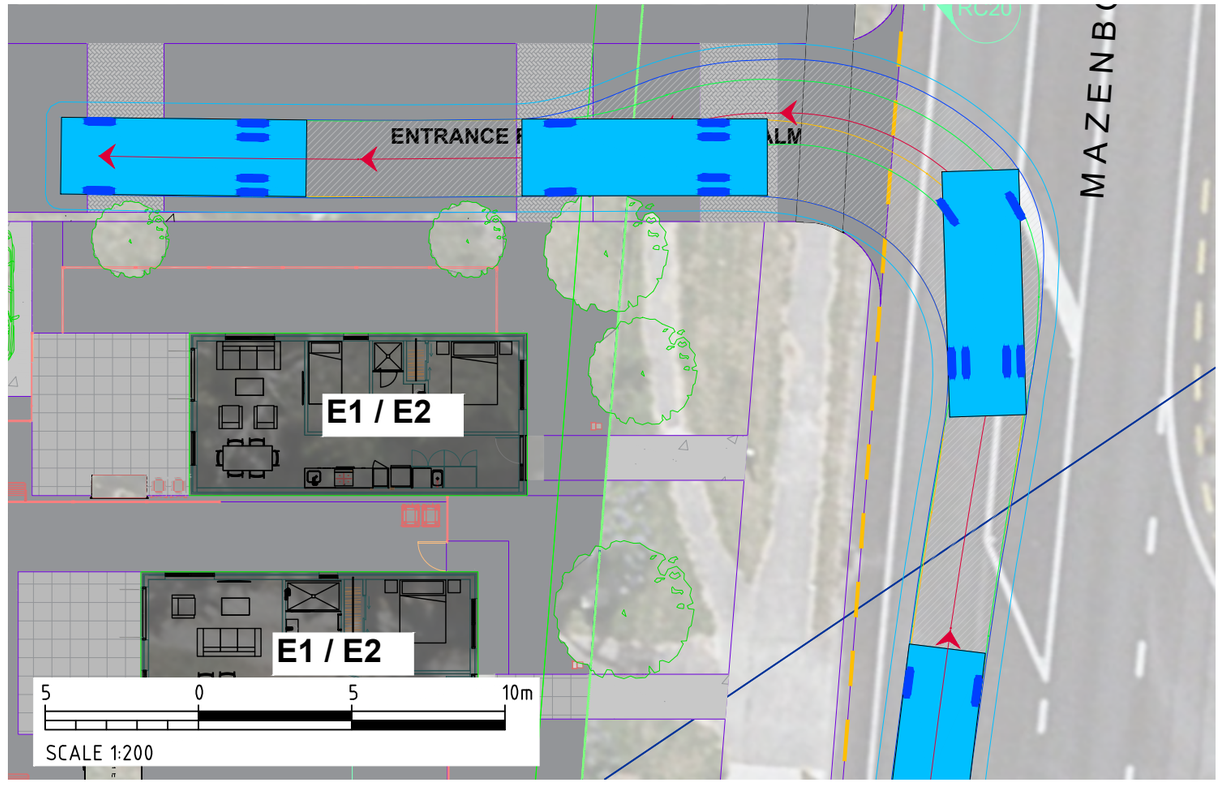
\\NZ4113-PPFSS01\shared_projects\310206187\5_drawings\CAD\310206187_C001.dwg



MEDIUM RIGID TRUCK

	mm
Width	: 2500
Track	: 2500
Lock to Lock Time	: 6.0
Steering Angle	: 37.3





REV	DATE	DRN	DESCRIPTION
B	07/24	SJ	FOR INFORMATION ONLY
A	07/24	SJ	FOR INFORMATION ONLY

160 MAZENGARB ROAD

VEHICLE TRACKING

8m MRV CIRCULATION AND ENTRY/EXIT TO SITE

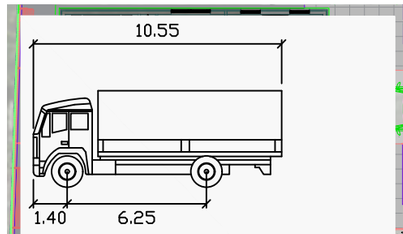
CLIENT LOGO

Stantec

SCALE: VARIES
DRAWN: STEVEN JIANG
DATE: 24/07/2024
DESIGN: JAMIE WHITTAKER

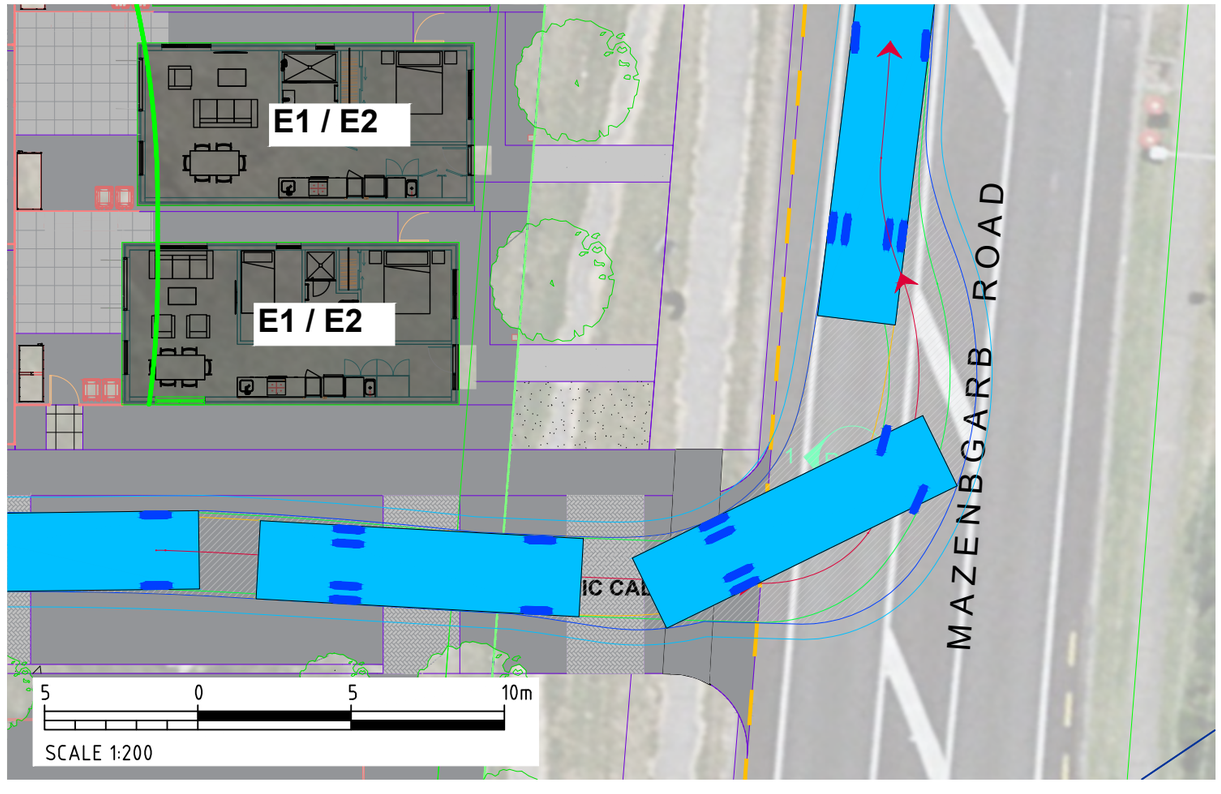
FIGURE No. TR4
OF B

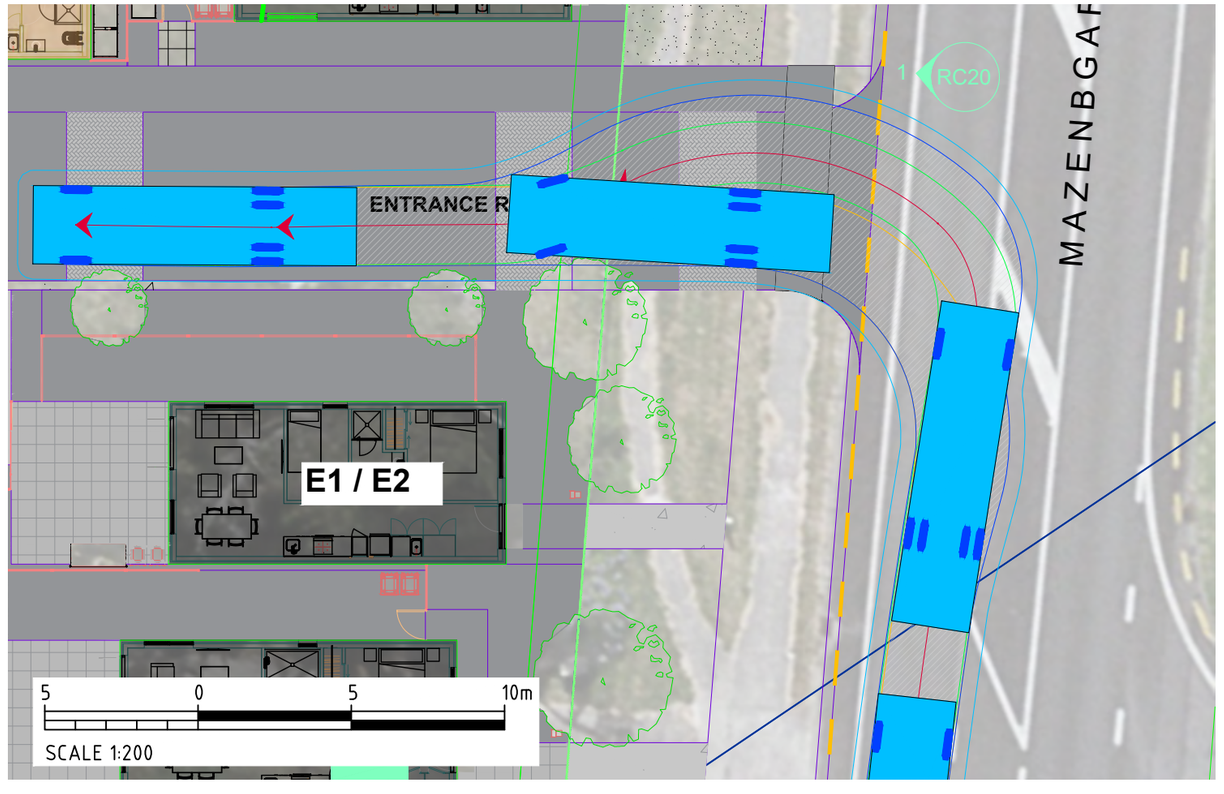
\\NZ4113-PPFSS01\shared_projects\310206187\5_drawings\CAD\310206187_C001.dwg



CAMION LIGERO

	meters
Width	: 2.55
Track	: 2.55
Lock to Lock Time	: 6.0
Steering Angle	: 43.4





REV	DATE	DRN	DESCRIPTION
B	07/24	SJ	FOR INFORMATION ONLY
A	07/24	SJ	FOR INFORMATION ONLY

160 MAZENGARB ROAD

VEHICLE TRACKING

10.5m TRUCK - CIRCULATION AND ENTRY/EXIT TO SITE

CLIENT LOGO

Stantec

SCALE: VARIES
DRAWN: STEVEN JIANG
DATE: 24/07/2024
DESIGN: JAMIE WHITTAKER

FIGURE No. TR5
OF B

\\NZ4113-PPFSS01\shared_projects\310206187\5_drawings\CAD\310206187_C001.dwg

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Stantec is a global leader in sustainable architecture, engineering, and environmental consulting. The diverse perspectives of our partners and interested parties drive us to think beyond what's previously been done on critical issues like climate change, digital transformation, and future-proofing our cities and infrastructure. We innovate at the intersection of community, creativity, and client relationships to advance communities everywhere, so that together we can redefine what's possible.