STANBURY
TRAFFIC PLANNING
TRAFFIC, PARKING & TRANSPORT CONSULTANTS

UPDATED TRAFFIC & PARKING IMPACT ASSESSMENT

PROPOSED AFFORDABLE HOUSING DEVELOPMENT
171 WESTON STREET & 2 – 6 HINEMOA STREET
PANANIA

PREPARED FOR MORSON ARCHITECTS PTY. LTD.
OUR REF: 21-228-2

28 FEBRUARY 2025

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1. INTRODUCTION

1.1 Scope of Assessment

Stanbury Traffic Planning has been commissioned by Morson Architects Pty. Ltd. to prepare an Updated Traffic & Parking Impact Assessment to accompany a Development Application to be lodged with the Canterbury-Bankstown City Council. The Development Application seeks consent for the demolition of four existing detached residential dwellings and the construction of an affordable housing development containing 42 dwellings at 171 Weston Street and 2 – 6 Hinemoa Street, Panania (hereafter referred to as the 'subject site').

The aim of this assessment is to investigate and report upon the potential traffic and parking consequences of the development application and to recommend appropriate ameliorative measures where required. This report provides the following scope of assessment:

- Section 1 provides a summary of the site location, details, existing and surrounding land-uses;
- Section 2 describes the proposed development;
- Section 3 assess the adequacy of the proposed site access arrangements, parking provision, internal circulation and servicing arrangements with reference to relevant Council, Transport for NSW (TfNSW), Australian Standard and State Environmental Planning Policy specifications;
- Section 4 assesses the existing traffic, parking and transport conditions surrounding and servicing the subject development site including a description of the surrounding road network, traffic demands, operational performance and available public transport infrastructure; and
- Section 5 estimates the projected traffic generating ability of the proposed development and assesses the ability or otherwise of the surrounding road network to be capable of accommodating the altered demand in a safe and efficient manner.

The report has been prepared pursuant to State Environmental Planning Policy (Transport and Infrastructure) 2021.

1.2 Background

A Development Application (DA-1049/2024) was lodged with Canterbury – Bankstown City Council seeking consent for the demolition of four existing detached residential dwellings and the construction of an affordable housing development at 171 Weston Street and 2 – 6 Hinemoa Street, Panania. The lodged application involved a development serviced by a basement parking area containing a total of 19 off-street car parking spaces and six bicycle parking spaces.

This Practice prepared a Parking and Traffic Impact Assessment Report dated 26th August 2024 in support of the subject Development Application.

Following review of the application, Council provided correspondence seeking additional information on 10th December 2024 which requested, amongst other details, amendments to the basement ramp.

A meeting was held on 20th January 2025 with Council officers, where preliminary agreement was reached to amend the curved section of the basement access ramp to provide 600mm clearance between vehicles travelling in opposing directions and on the outside of the curve.

Following the abovementioned meeting, amended architectural plans were subsequently prepared by Morson Group, which this Practice utilising as a base to updated swept path plans. The package of amended architectural plans and the swept path plans were forwarded to Council for review, following which email correspondence was received from Council which advised that the amended basement access ramp arrangements were satisfactory.

This report forms an Updated Parking & Traffic Impact Assessment, reflecting the amended development scheme as detailed within architectural plans prepared by Morson Group (reduced copies of a selection of which are contained within **Appendix 1**) and specifically addressing the abovementioned Council request for additional information which relate to the basement ramp.

1.3 Reference Documents

Reference is made to the following documents throughout this report:

- TfNSW's *Guide to Traffic Generating Developments*;
- Canterbury-Bankstown City Council's Canterbury-Bankstown Development Control Plan 2023 (CBDCP 2023);
- Australian Standard for *Parking Facilities Part 1: Off-Street Car Parking* (AS2890.1:2004);
- Australian Standard for *Parking Facilities Part 3: Bicycle Parking Facilities* (AS2890.3:2015); and

- Australian Standard for *Parking Facilities Part 6: Off-Street Parking for People with Disabilities* (AS2890.6:2022).

- *State Environmental Planning Policy (Housing) 2021* (Housing SEPP 2021).

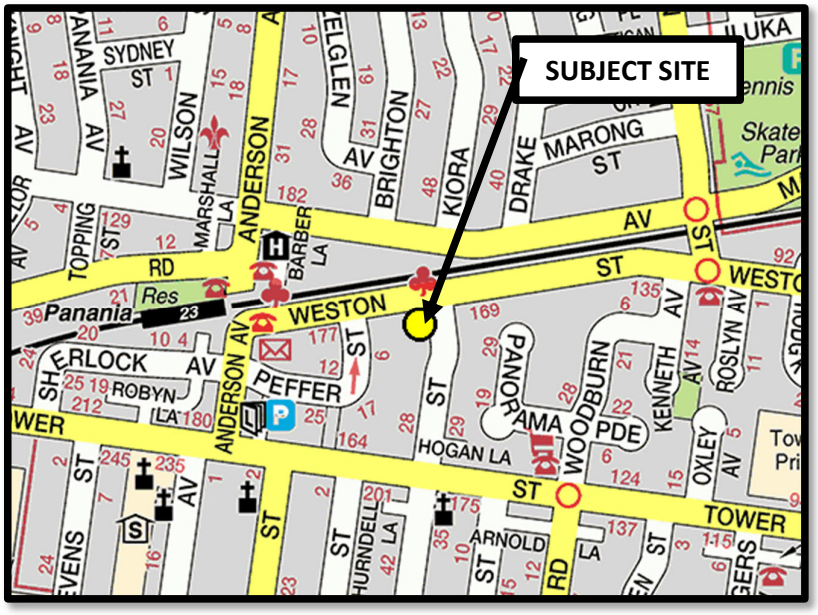
Architectural plans have been prepared by Morson Architects and should be read in conjunction with this report, reduced copies of a selection of which are included as **Appendix 2** for reference.

1.4 Site Details

1.4.1 Site Location

The subject site is situated on the south-western corner of the junction of Weston Street and Hinemoa Street, Panania. The site location is illustrated below and overleaf within a local and aerial context by **Figure 1** and **Figure 2**, respectively.

FIGURE 1
SITE LOCATION WITHIN A LOCAL CONTEXT



Source: UBD's Australian City Streets – Version 8

FIGURE 2
SITE LOCATION WITHIN AN AERIAL CONTEXT

Source: Nearmap (image date: 11/7/2024)

1.4.2 Site Description

The subject site provides a real property address of Lots 42, 43, 44 and 45 within DP 35211 and a street address of 171 Weston Street and 2, 4 and 6 Hinemoa Street, Panania, respectively.

Collectively, the allotments provide an irregular shaped parcel of land providing an approximate frontage of 45m and 52m to Weston Street and Hinemoa Street, respectively. The site provides a total area in the order of 2,264m^2.

1.4.3 Existing Site Use

The subject site currently contains four detached residential dwellings approximately situated in the central portion of each individual lot.

Vehicular access to No. 171 Weston Street is provided via a combined ingress / egress driveway connecting with Weston Street situated within the north-eastern corner of the lot.

Vehicular access to No. 2 Hinemoa Street is provided via a combined ingress / egress driveway connecting with Weston Street situated within the north-western corner of the lot.

Vehicular access to No. 4 Hinemoa Street and No. 6 Hinemoa Street is provided via a separate combined ingress / egress driveway connecting with Hinemoa Street situated within the north-eastern corner of each lot.

1.4.4 Surrounding Uses

The subject site is adjoined immediately by detached residential dwellings to the west and south. Similar detached residential dwellings occupy land to the east on the opposite side of Hinemoa Street, respectively.

Non-residential development within the subject precinct includes:

- Tower Street Public School is situated approximately 530m to the south-east, fronting and serviced by Tower Street;
- East Hills Boys High School is situated approximately 670m to the south-west of the site fronting Lucas Road, Tower Street and Singleton Avenue; and
- Panania town centre is situated approximately 280m to the west of the site.

2. PROPOSED DEVELOPMENT

2.1 Built Form

The subject application seeks approval for the demolition of four existing detached dwellings and the construction of an affordable housing development providing a total of 42 affordable rental dwellings to be managed by Land & Housing Corporation (LAHC) in accordance with the Housing SEPP 2021.

Table 1 below provides a summary of the proposed dwelling yield.

TABLE 1 SUMMARY OF PROPOSED DWELLING YIELD	
Dwelling Type	**Affordable Rental Dwellings**
1-bed	22
2-bed	20
Total	**42**

The dwellings are proposed to be contained within a single part-four-part-five storey building located approximately central within the site.

The development is to be serviced by a parking area with a single level of basement, containing a total of 19 car spaces (including five disabled spaces) and six bicycle spaces.

Vehicular access to the basement parking area is proposed via a combined ingress / egress driveway connecting with Hinemoa Street in the south-eastern corner of the site.

Pedestrian access is proposed via a series of pedestrian walkways connecting with the southern Weston Street footpath and the western Hinemoa Street footpath.

3. SITE ACCESS & INTERNAL CIRCULATION

3.1 Access Arrangements

3.1.1 Vehicle Access

Vehicular access between the development site and Hinemoa Street is proposed to be provided via a 6.3m wide combined ingress / egress driveway located within the south-western corner of the site. The driveway provides direct connectivity to an internal ramp / roadway adjoining the southern boundary, linking directly with the basement parking area.

AS2890.1:2004 provides driveway design specifications based on the proposed primary land use, the functional order of the access road and the number of spaces the driveway is to serve. Tables 3.1 and 3.2 of AS2890.1:2004 specify that a Category 1 type driveway is required, providing a combined ingress / egress driveway width of between 3m and 5.5m based on the local (non-arterial) functional order of Hinemoa Street, the residential land-use and the on-site passenger vehicle parking provision of less than 25 spaces. The proposed 6.3m wide combined ingress / egress driveway therefore exceeds the minimum AS2890.1-2004 specifications and is accordingly considered to be satisfactory.

Swept path plans have been prepared in order to demonstrate the ability of passenger vehicles to enter and exit the site, copies of which are included as **Appendix 2**. These swept paths also indicate that all vehicles are able to enter and exit the site in a forward direction.

The safety and efficiency of access / egress movements are also proposed to be assisted by the following:

- The provision of a relatively level (averaging less than 1:20) grade within the first 6m of the combined ingress / egress driveway inside the property boundary;

- No obstructions to visibility adjacent to the egress (northern) side of the driveway facilitating appropriate sight distance between exiting motorists and potential pedestrians travelling along the western Hinemoa Street footpath; and

- The reasonably consistent horizontal and vertical alignment of Hinemoa Street in the vicinity of the subject site facilitates appropriate sight distance between the driveway and approaching public road traffic flow.

3.1.2 Pedestrian Access

Pedestrian access is proposed via a series of pedestrian paths connecting with the southern Weston Street and western Hinemoa Street, situated along the northern and eastern boundaries of the site.

3.2 Parking Provision

3.2.1 Vehicular Parking Provision

The basement parking level is proposed to provide 19 car parking spaces, including five disabled spaces, with all spaces being specifically allocated to residents.

The Housing SEPP 2021 provides state wide relevant resident parking requirements for in fill affordable housing. Clause 19(2)(e) of the Housing SEPP states the following with respect to car parking:

19. Non-discretionary development standards – the Act, s 4.15

(2) The following are non-discretionary development standards in relation to the residential development to which this division applies -

(e) the following number of parking spaces for dwellings used for affordable housing –

(i) for each dwelling containing 1 bedroom—at least 0.4 parking spaces,

(ii) for each dwelling containing 2 bedrooms—at least 0.5 parking spaces,

(iii) for each dwelling containing 3 bedrooms—at least 1 parking space,

The Housing SEPP does not provide requirements for residential visitors.

Application of the minimum parking rates within Clause 19(2)(e) there results in the following:

(22 x 0.4) + (20 x 0.5) = 18.8 (adopt 19) spaces

A consent authority accordingly cannot refuse consent to the proposed development given 19 resident spaces are provided.

3.2.2 Bicycle Parking

The subject development is to provide bicycle storage racks capable of accommodating up to six bicycles within the basement parking area.

The Housing SEPP 2021 does not provide minimum bicycle parking requirements. Notwithstanding this, Canterbury-Bankstown City Council provides the following locally sensitive minimum parking requirements for on-site residential bicycle parking within CBDCP 2023:

1 visitor space per 10 dwellings

Application of the abovementioned bicycle parking rates and based on 42 dwellings results in:

Visitor bicycle parking

42 / 10 = 4.2 (adopt 4)

The proposed provision of six bicycle spaces exceeds the minimum requirement specified in the CBDCP 2023 and accordingly, is considered satisfactory.

3.3 Internal Circulation and Manoeuvrability

3.3.1 Basement Access Ramp

Passenger vehicles, upon entry to the site via Hinemoa Street, will travel in a forward direction via an internal roadway / ramp running along the southern site boundary, prior to curving to the north to connecting with the basement level. The following sub-sections of this report provide an assessment of the compliance of the proposed ramp design with specifications of AS2890.1:2004 with respect to grades and alignment / width.

3.3.1.1 Ramp Grades

The ramp provides a grade profile as follows between the eastern property boundary and the basement parking level:

- 1:8 (as a downgrade for exiting vehicles) for 2m;
- 2m of level grade;
- 1:8 (as an upgrade for exiting vehicles) for 2m;
- 1:4 for approximately 16m;
- 1:8 for 2m.

The provided ramp grade profile complies with the relevant requirements of AS2890.1:2004 whereby a maximum grade of 1:4 is provided, a maximum change in grade of 1:8 is provided, and the minimum length of transitional grades is 2m.

Notwithstanding the above, it is acknowledged that there is a technical variation to Clause 3.3 of AS2890.1:2004, which specifies following maximum gradients of a roadway connecting with an access driveway for a distance of 6m inside the property, whereby the grade is measured in the direction of an exiting vehicle:

- 1 in 20 upgrade; and
- 1 in 8 downgrade.

The provided arrangement is therefore compliant with the above Clause with the exception of the 1:8 upgrade between 4m and 6m from the property boundary.

Whilst not specified within the Standard, the intent of this requirement is to ensure that an exiting vehicle is situated on a reasonably level grade to facilitate sight distance between the driver and pedestrians within an adjoining roadway. The subject arrangement is however considered to be consistent with the intent of AS2890.1:2004 whereby the rear wheels of an exiting vehicle will be positioned on a 1:8 upgrade and the front wheels will be positioned on a 1:8 downgrade, immediately within the site prior to this vehicle entering into a possible conflict scenario with pedestrians within the adjoining western Hinemoa Street footpath. The consistent extent of the opposing grades is such that an exiting vehicle will negotiate a nett neutral (or level) grade when exiting the site. The internal roadway grades in the location of an exiting vehicle's wheels are therefore compliant with the intent of the requirements of AS2890.1:2004 and accordingly, the internal access grade provisions on immediate approach to the eastern site boundary are considered to be satisfactory.

3.3.1.2 Ramp Alignment

The straight portion of the basement access ramp is to provide a width of 5.5m, prior to widening to 7.4m through the curved section prior to connecting with the central basement parking aisle.

Whilst the abovementioned ramp widths suitably comply with the minimum requirements of 5.5m for a straight ramp and 6.7m for a curved roadway, it is acknowledged that outer ramp radius of approximately 5.5m represents a variation from Figure 2.9 of AS2890.1:2004 which specifies a minimum outer radius of 11.8m.

The provided arrangement is however considered to be satisfactory as it achieves the intent of Clause 2.5.2(c) of AS2890.1:2004, which specifies that intersections between circulation roadways and ramp are to be designed to be capable of accommodating opposing B85 and B99 passenger vehicles in combination. In this regard, the swept path plans contained within **Appendix 2** demonstrate that two-way travel can occur throughout the curved ramp section, with appropriate 300mm manoeuvring clearance between ramp kerbs and 600mm clearance between opposing vehicles, with such an arrangement being facilitated through the adoption of a wider than minimum two-way roadway width through the curve (7.4m in lieu of 6.7m as specified by the Standard).

In consideration of the abovementioned discussion, the proposed basement access ramp is envisaged to facilitate safe and efficient connectivity between the site access driveway and the basement parking area, complying with the intent of AS2890.1:2004 and is accordingly concluded to be satisfactory.

3.3.2 Basement Parking Design

The basement passenger vehicle area is proposed to comprise of two 90-degree angled parking rows, being serviced by a single adjacent circulation aisle. The basement parking area has been designed in accordance with the minimum requirements of AS2890.1:2004, AS2890.3:2015 and AS2890.6:2022 providing the following minimum dimensions:

- Standard 90-degree passenger vehicle parking space width = 2.4m;
- Disabled vehicular parking space width = 2.4m (with adjoining 2.4m wide shared area);
- Horizontal rack bicycle parking space width = 0.5m;
- Standard and disabled parking space length = 5.4m;
- Horizontal bicycle parking space length = 1.8m;
- Aisle width servicing vehicular parking spaces = 5.8m;
- Aisle width servicing bicycle parking spaces = 2.4m;
- Parking aisle extension past dead end 90-degree parking spaces = 2.4m;
- Headroom = 2.2m;
- Headroom above disabled parking spaces and adjoining shared areas = 2.5m;
- Maximum grade throughout standard parking module = 1:20; and
- Maximum grade throughout disabled parking module = 1:40.

In order to demonstrate the internal passenger vehicle manoeuvrability within the vicinity of these areas and generally throughout the overall parking area, this Practice has prepared a number of swept path plans which are included as **Appendix 2**. The turning paths provided on the plans have been generated using Autoturn software and derived from B99 and B85 vehicle specifications provided within AS2890.1:2004.

Section B4.4 of AS2890.1:2004 states the following with regard to the use of templates to assess vehicle manoeuvring:

'Constant radius swept turning paths, based on the design vehicle's minimum turning circle are not suitable for determining the aisle width needed for manoeuvring into and out of parking spaces. Drivers can manoeuvre vehicles within smaller spaces than swept turning paths would suggest.'

It would therefore appear that whilst the turning paths provided within AS2890.1:2004 can be utilised to provide a 'general indication' of the suitability or otherwise of internal parking and manoeuvring areas, vehicles can generally manoeuvre more efficiently than the paths indicate. Notwithstanding this, the swept path plans illustrate that passenger vehicles can manoeuvre throughout and enter and exit the most difficult passenger vehicle parking spaces within the parking areas.

Whilst it is acknowledged that the basement parking area forms a dead-end aisle, without a dedicated turning bay, the proposed specific allocation of all internal car parking spaces to residents of the development is such that there should be

no requirement for vehicles to turnaround within the basement parking area. In this regard, the requirement for a dedicated turning bay as detailed within Clause 2.4.2(c) of AS2890.1:2004 only applies to 'car parks open to the public'. Notwithstanding the above, if considered necessary the access driveway could be supplemented with signage facing entering traffic from Hinemoa Street specifying "resident vehicles only", the requirement for which could reasonably be imposed as a condition of consent.

In consideration of the abovementioned compliance of the development design with the relevant requirements of the Australian Standards, the proposed internal passenger vehicle circulation arrangements are considered to be satisfactory.

3.3.3 Internal Pedestrian Circulation

Pedestrian access between the building and the southern Weston Street footpath and the western Hinemoa Street footpath is proposed via a series of pedestrian pathways, situated along the northern and eastern boundaries of the site. The pedestrian walkways provide connectivity to the entrance lobbies of the residential apartment building.

3.3.4 Site Servicing

The subject site is anticipated to generate the requirement for regular waste collection vehicle servicing. Bins are proposed to be contained within a storage room situated at ground floor level, within the northern portion of the building. These bins are proposed to be wheeled to the northern Weston Street kerb for collection in a similar manner to adjoining residential developments.

4 EXISTING TRAFFIC CONDITIONS

4.1 Surrounding Road Network

The following provides a description of the local road network surrounding the subject site:

- **Weston Street** performs a minor collector road function under the care and control of Canterbury-Bankstown City Council, providing an east-west alignment between The River Road / Uranus Road in the east and Anderson Avenue in the west.

  Weston Street primarily provides an 11m wide pavement providing one through lane of traffic in each direction in conjunction with unrestricted parallel parking along both kerb alignments.

  Traffic flow within Weston Street is governed by a local area speed limit of 50km/h.

  Adjacent to the site, Weston Street forms a T-junction with Hinemoa Street operating under 'Stop' signage control with Weston Street performing the priority route.

  To the east of the site, Weston Street forms two T-junctions with Woodburn Avenue and Carson Street, operating under one lane circulating roundabout control in both instances.

  Further to the east, Weston Street forms an intersection with The River Road and Uranus Road operating under traffic signal control. Right turn movements from Weston Street to The River Road are prohibited. Right turn movements from The River Road to Weston Street are prohibited.

  To the west of the site, Weston Street forms a T-junction with Peffer Street, operating under 'Stop' signage control with Weston Street performing the priority route.

- **Hinemoa Street** performs a local access function under the care and control of Canterbury-Bankstown City Council, providing a north-south alignment between Weston Street in the north and Lawler Street in the south.

  Hinemoa Street provides a variable pavement width between 7.5m – 10.5m providing one through lane of traffic in each direction in conjunction with parallel parking along both kerb alignments.

  Traffic flow within Hinemoa Street is governed by the local area speed limit of 50km/h.

  To the south of the site, Hinemoa Street forms an intersection with Tower Street, operating under one lane circulating roundabout control.

Further to the south of the site, Hinemoa Street forms a T-junction with Lawler Street operating under major / minor priority control with Lawler Street performing the priority route.

- **Tower Street** performs a regional road function under the care and control of Canterbury-Bankstown City Council providing an east-west alignment between The River Road in the east and Park Road in the west.

  Tower Street provides an 13m wide pavement providing one through lane of traffic in each direction in conjunction with parallel parking along both kerb alignments. Parking adjacent to the commercial developments along Tower Street are restricted to 1P between 8:30am – 6pm on weekdays and 8:30am – 12:30pm on Saturdays.

  Traffic flow within Tower Street is governed by the sign posted speed limit of 60km/h; however, a 40 km/h school zone speed limit applies during prescribed school start / finish times the west of the site, associated with Tower Street Public School and East Hills Boys High School.

  At its eastern extremity, Tower Street forms a T-junction with The River Road operating under traffic signal control.

  At its western extremity, Tower Street forms a T-junction with Park Road operating under one lane circulating roundabout control.

4.2 Existing Traffic Volumes

4.2.1 Junction at Weston Street and Hinemoa Street

Traffic demand surveys have been undertaken by staff of this Practice at the junction of Weston Street and Hinemoa Street, in order to accurately ascertain existing traffic demands within the immediate precinct.

Surveys were undertaken between 7:00am – 9:00am and 4:00pm – 6:00pm on Wednesday the 6th of August 2023.

Figure 4 overleaf provides a summary of the surveyed peak hour intervals of traffic flows at the subject intersection including a morning peak hour which has been identified as 8:00am — 9:00am (AM Peak) and an afternoon commuter peak hour of 5:00pm – 6:00pm (PM Peak), whilst full details are contained within **Appendix 3**.

FIGURE 3
EXISTING WEEKDAY COMMUTER PEAK HOUR TRAFFIC VOLUMES
JUNCTION AT WESTON STREET AND HINEMOA STREET

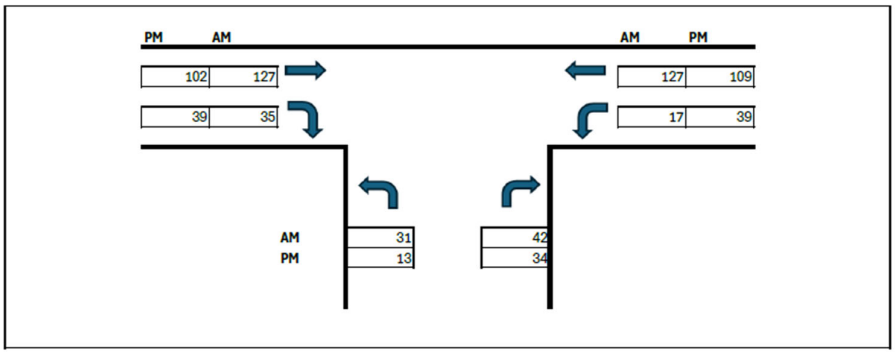


Figure 3 indicates the following:

- Weston Street accommodates directional traffic demands between 150 – 200 vehicles during weekday peak hours; and

- Hinemoa Street accommodates directional traffic demands approximately between 50 – 100 vehicles during weekday peak hours.

4.3 Existing Road Network Operation

4.3.1 Junction of Weston Street and Hinemoa Street

The surveyed junction of Weston Street and Hinemoa Street has been analysed utilising the SIDRA computer intersection analysis program in order to objectively assess the operation of the surveyed intersections. SIDRA is a computerised traffic arrangement program which, when volume and geometrical configurations of an intersection are imputed, provides an objective assessment of the operation efficiency under varying types of control (i.e. signs, signal and roundabouts). Key indicators of SIDRA include level of service where results are placed on a continuum from A to F, with A providing the greatest intersection efficiency and therefore being the most desirable by the TfNSW.

SIDRA uses detailed analytical traffic models coupled with an iterative approximation method to provide estimates of the abovementioned key indicators of capacity and performance statistics. Other key indicators provided by SIDRA are average vehicle delay, the number of stops per hour and the degree of saturation. Degree of saturation is the ratio of the arrival rate of vehicles to the capacity of the approach. Degree of saturation is a useful and professionally accepted measure of intersection performance.

SIDRA provides analysis of the operating conditions that can be compared to the performance criteria set out in **Table 2** (being the TfNSW NSW method of calculation of Level of Service).

TABLE 2 LEVEL OF SERVICE CRITERIA FOR PRIORITY CONTROLLED INTERSECTIONS		
Level of Service	**Average Delay per Vehicle (secs/veh)**	**Expected Delay**
A	Less than 14	Good
B	15 to 28	Acceptable delays and spare capacity
C	29 to 42	Satisfactory
D	43 to 56	Near capacity
E	57 to 70	At capacity and requires other control mode
F	> 70	Unsatisfactory and requires other control mode

The existing conditions have been modelled utilising the peak hour traffic volumes presented within **Figure 3**. **Table 3** provides a summary of the SIDRA output data whilst more detailed summaries are included as **Appendix 4**.

TABLE 3 SIDRA OUTPUT – EXISTING WEEKDAY PEAK HOUR PERFORMANCE JUNCTION OF WESTON STREET AND HINEMOA STREET		
	AM PEAK (8:00AM-9:00AM)	**PM PEAK (5:00PM-6:00PM)**
Hinemoa Street South Approach		
Delay (seconds / vehicle)	6.9	7.5
Degree of Saturation	0.06	0.05
Level of Service	A	A
Weston Street East Approach		
Delay (seconds / vehicle)	5.5	5.5
Degree of Saturation	0.04	0.04
Level of Service	A	A
Weston Street West Approach		
Delay (seconds / vehicle)	6.1	6.1
Degree of Saturation	0.05	0.05
Level of Service	A	A
Total Intersection		
Delay (seconds / vehicle)	6.1	7.5
Degree of Saturation	0.06	0.05
Level of Service	A	A

Table 4, in conjunction with more detailed output contained within **Appendix 4**, indicates that the junction of Weston Street and Hinemoa Street provides all movements with a level of service 'A' during peak periods, representing good operation with spare capacity.

4.3.2 Hinemoa Street

4.3.2.1 Level of Service

Reference is made to TfNSW's *Guide to Traffic Generating Developments* to undertake an assessment of the operational performance of Hinemoa Street. **Table 4** overleaf provides the level of service assigned to the surveyed peak hour directional traffic flow within Hinemoa Street based on surveys provided within **Appendix 3** and the criteria specified within the *Guide to Traffic Generating Developments*.

TABLE 4 HINEMOA STREET PEAK HOUR DIRECTIONAL TRAFFIC FLOW LEVEL OF SERVICE		
	AM PEAK (8:00AM-9:00AM)	**PM PEAK (5:00PM-6:00PM)**
Northbound Traffic Flow Volume Level of Service	 73 A	 47 A
Southbound Traffic Flow Volume Level of Service	 52 A	 78 A

TfNSW specifies that a Level of Service A is considered free flow where drivers are virtually unaffected by other vehicles and have freedom to select their desired speed and to manoeuvre within the traffic stream.

4.4 Public Transport

4.4.1 Buses

The following bus services operate along Weston Street and Hinemoa Street in the immediate vicinity of the site:

- Route 923 – Panania to Bankstown via Picnic Point; and
- Route 924 – East Hills to Bankstown via Panania.

The above routes provide the closest stops in proximity of the site on Weston Street and Hinemoa Street adjacent to the site with a collective service frequency of approximately every 30 minutes during the weekdays and a 60-minute frequency during weekends and public holidays.

4.4.2 Heavy Rail

Panania Railway Station is situated approximately 350m walking distance (4-minute walk) the west of the site.

Panania Railway Station provides services along the T8 (Airport and South Line). The T8 Line provides regular services between the Macarthur, Campbelltown, the Airport and the City linking with numerous other lines servicing the greater Sydney metropolitan area and beyond via interchanges at Glenfield, Wooli Creek, Sydenham and the City.

4.4.3 Pedestrians

Pedestrians are provided with the following access and mobility infrastructure within the immediate vicinity of the subject site:

- A footpath is provided along the southern side of Weston Street;
- A footpath is provided along the western side of Hinemoa Street;

- A median refuge is provided across Hinemoa Street to the south of Weston Street;

- A median refuge is provided over Weston Street at Anderson Avenue; and

- A median refuge is provided across all approaches to the roundabout at the intersection of Tower Street and Hinemoa Street.

5. PROJECTED TRAFFIC CONDITIONS

5.1 Traffic Generation

Traffic generation rates for various land-uses have been established through extensive surveys undertaken throughout NSW and published within TfNSW's *Guide to Traffic Generating Developments* and the more recently released *Technical Direction TDT 203/04a*. The following sub-sections provide a summary of the traffic generating potential of the previous and proposed site uses with respect to those rates established by TfNSW.

5.1.1 Existing Site Uses

Section 1.3.3 of this report presented that the subject site currently contains four detached residential dwellings.

TfNSW's *Technical Direction TDT 203/04a* specifies average traffic generation rates of 0.95 peak hour vehicle movements per dwelling during the morning peak and 0.99 peak hour vehicle movements per dwelling during the evening peak.

For the purposes of this assessment and for reasons of simplicity, a traffic generation rate of 1 peak hour vehicle trip per dwelling has been applied to detached residential dwellings. The current site development is therefore capable of generating up to four vehicle trips to and from the site during weekday commuter peaks periods.

5.1.2 Proposed Development

Technical Direction TDT 203/04a specifies the following average weekday traffic generation rates relevant to the proposed development for high density residential dwellings:

High Density Residential Flat Dwellings
0.19 trips per unit during the morning peak
0.15 trips per unit during the evening peak

For the purposes of this assessment and for reasons of simplicity, a traffic generation rate of 0.2 peak hour vehicle trip per dwelling has been applied to the proposed development.

The peak hour traffic generating ability of the proposed development is accordingly estimated to be in the order of 8.4 (adopt 9) trips to and from the site.

5.2 Trip Distribution

The development has been projected to generate in the order of nine vehicle movements to and from the subject site during peak hours. These vehicle movements are primarily likely to comprise egress movements during the morning peak period and ingress movements during the evening peak period, associated with normal journey to and from work patterns of residential development. The development is projected, for the purposes of this assessment to generate seven egress movements and two ingress movement during the morning peak hour. The development is conversely projected to generated two ingress movements and seven egress movement during the evening peak hour.

5.3 Traffic Impacts

The development has been projected to generate in the order of nine vehicle movements to and from the subject site during peak hours, or five additional vehicle movements over and above that currently generated by the existing detached dwelling located within the subject site, representing approximately one additional vehicle movement every 12 minutes during peak periods. Such a level of additional traffic is not projected to, in itself, result in any unreasonable impacts on the existing operational performance of the surrounding local road network. The previous assessment contained within this report has revealed that traffic demands within the surrounding local road network are reasonably low and accordingly motorists are provided with a good level of service with spare capacity.

In consideration of the above, the impact of the development is most likely to be a result of the safety and efficiency with which motorists are capable of entering and exiting the development. The low traffic demands within Hinemoa Street combined with the reasonable sight distance provisions between the frontage road and the driveway location is such that it is envisaged that motorists will be capable of entering and exiting the site in a safe and efficient manner.

5.4 Transport Impacts

The subject site is located approximately within reasonably close walking distance to a number of bus services operating along Weston Street and Hinemoa Street, and train services operating out of Panania Railway Station. It is accordingly expected that a portion of the future residents within the subject development will utilise the surrounding public transport infrastructure to access destinations throughout the Sydney metropolitan area. The capacity of the existing public transport system is however not envisaged to be measurably affected by any additional demand associated with the development, given its limited scale.

6. CONCLUSION

This report assesses the potential traffic and parking implications associated with a residential development containing 42 dwellings at 171 Weston Street and 2 – 6 Hinemoa Street, Panania. Based on this assessment, the following conclusions are now made:

- The proposed site access arrangements are projected to result in motorists being capable of entering and exiting the subject site in a safe and efficient manner;

- The proposed off-street vehicular parking provision complies with the relevant requirements the Housing SEPP for resident parking requirements;

- The proposed off-street bicycle parking provision complies with the relevant requirements of CBDCP 2023;

- The internal passenger vehicle circulation arrangements are capable of providing for safe and efficient internal manoeuvring;

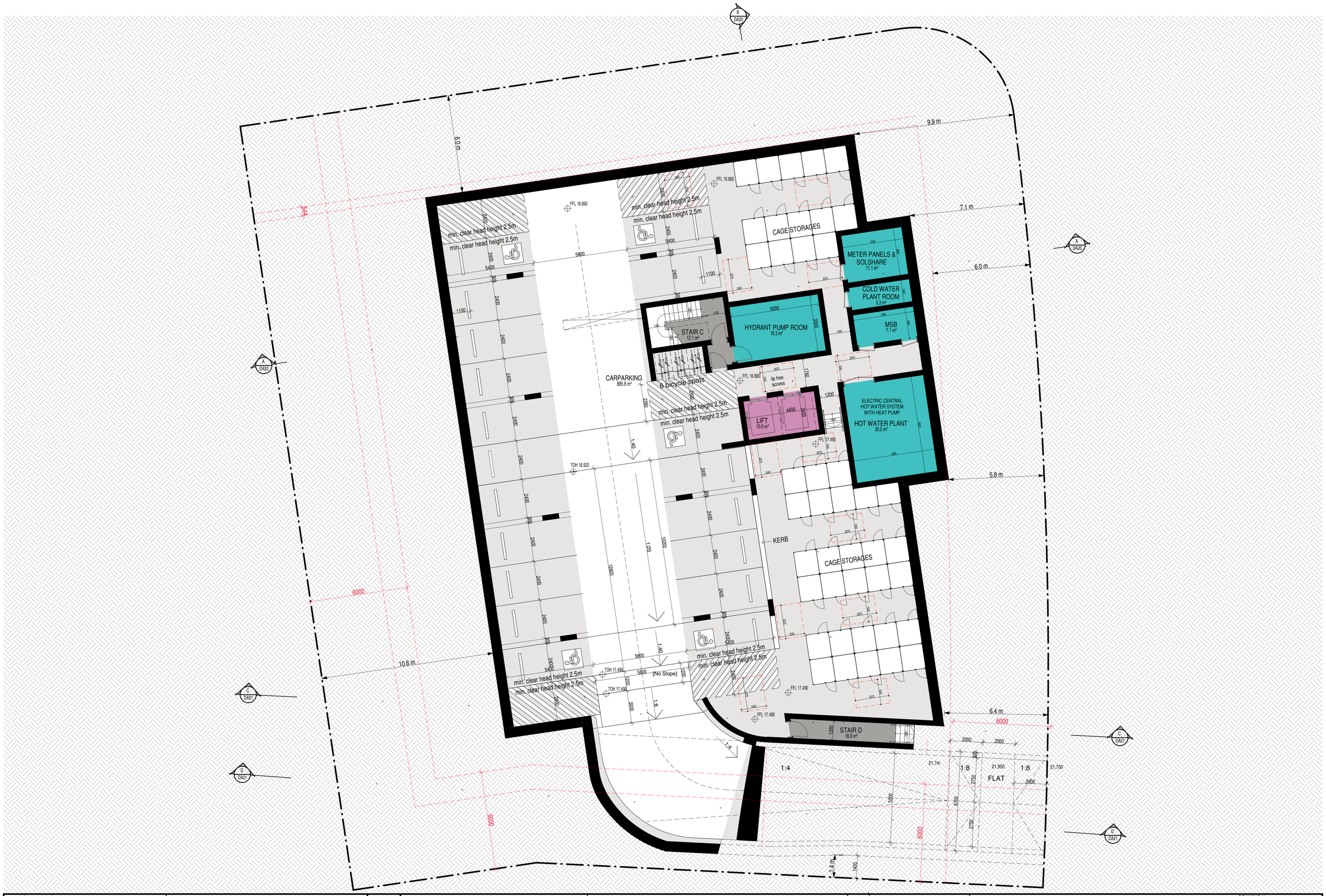
- The surrounding road network operates with a good level of service during peak periods;

- The subject development has been projected to generate up to five peak hour vehicle trips to and from the subject site, over and above that capable of being generated by the existing site development; and

- It is considered that the adjoining road network is capable of accommodating the traffic projected to be generated by the subject development.

It is considered, based on the contents of this report and the conclusions contained herein, there are no traffic or parking related issues that should prevent approval of the subject application. This action is therefore recommended to Council.

APPENDIX 1



ISSUE	DATE	AMENDMENT
A	2024-08-30	DA ISSUE

TRUE NORTH

0 1 2 3 4 5 7 10m

SCALE 1:100@A1 (1:200@A3)

PROJECT
PANANIA - LAHC 2021/505
ADDRESS
171 Weston St & 2-6 Hinemoa St, Panania, NSW, 2213
LOT 42, 43, 44, 45 / DP35211

CLIENT
NSW LAHC
LOCKED BAG 5022
PARRAMATTA NSW 2124
PHONE 1800 738 718

PROJECT No. **21042**

CLIENT
LAHC

MORSON GROUP
NOMINATED ARCHITECT - P F MORSON REGISTRATION NUMBER 8100
ACN 159 480 056, ABN 41 159 480 056
www.morsongroup.com.au
(02) 9380 4946
PO Box 170, Ports Point, NSW 1335

SHEET SIZE: A1
SCALE: 1 : 100

SHEET NAME: **BASEMENT PLAN**

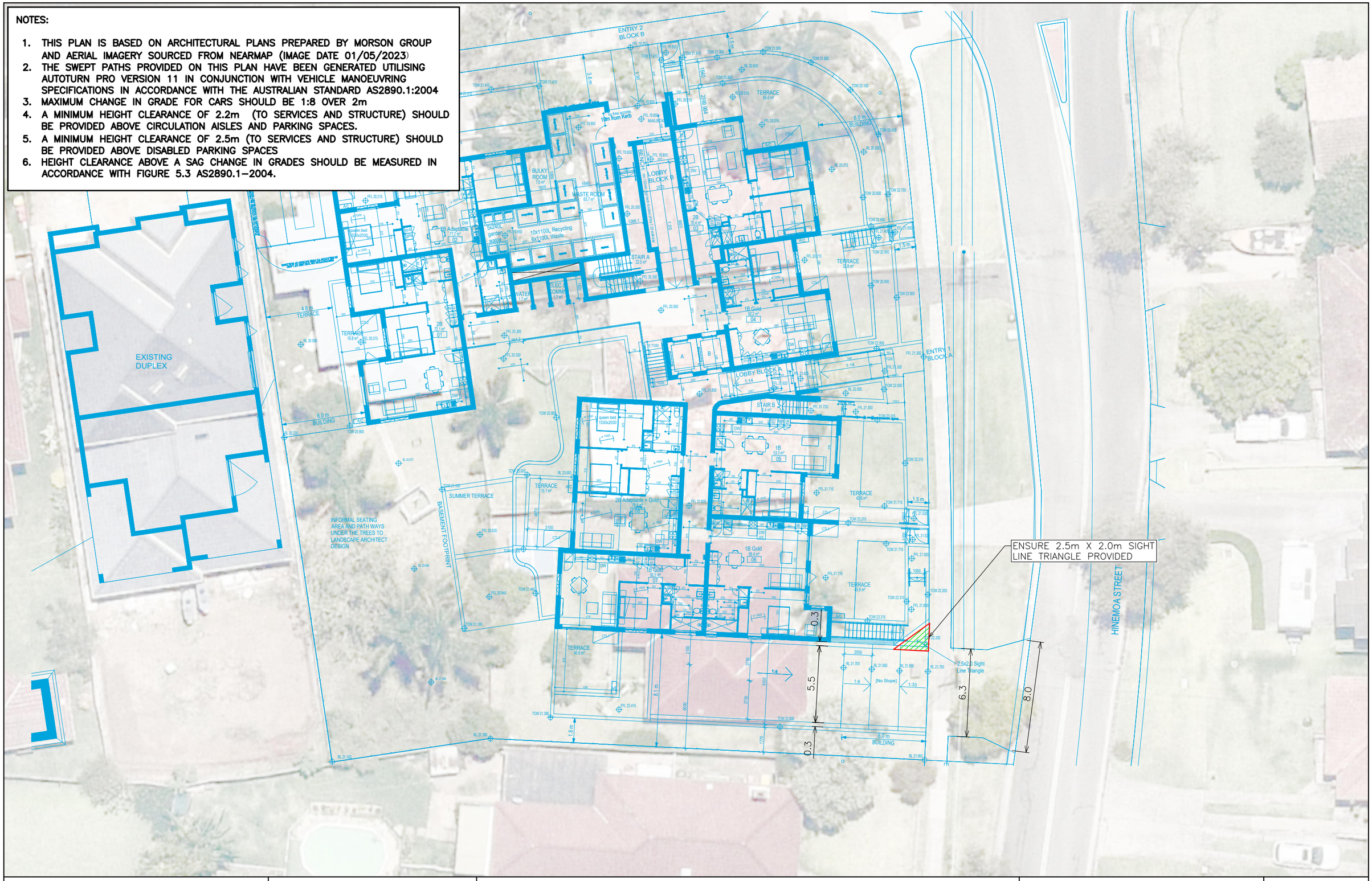
DRAWING No. **DA11**
ISSUE No. **A**

20/2/2025 15:42:10 C:\Users\clari\MG Dropbox\MGP\PROJECTS\PANANIA\21042 - LAHC GH\Architecture\CAD\21042_171 Weston St, Panania_20250220_CC.rvt

APPENDIX 2

NOTES:

1. THIS PLAN IS BASED ON ARCHITECTURAL PLANS PREPARED BY MORSON GROUP AND AERIAL IMAGERY SOURCED FROM NEARMAP (IMAGE DATE 01/05/2023)
2. THE SWEPT PATHS PROVIDED ON THIS PLAN HAVE BEEN GENERATED UTILISING AUTOTURN PRO VERSION 11 IN CONJUNCTION WITH VEHICLE MANOEUVRING SPECIFICATIONS IN ACCORDANCE WITH THE AUSTRALIAN STANDARD AS2890.1:2004
3. MAXIMUM CHANGE IN GRADE FOR CARS SHOULD BE 1:8 OVER 2m
4. A MINIMUM HEIGHT CLEARANCE OF 2.2m (TO SERVICES AND STRUCTURE) SHOULD BE PROVIDED ABOVE CIRCULATION AISLES AND PARKING SPACES.
5. A MINIMUM HEIGHT CLEARANCE OF 2.5m (TO SERVICES AND STRUCTURE) SHOULD BE PROVIDED ABOVE DISABLED PARKING SPACES
6. HEIGHT CLEARANCE ABOVE A SAG CHANGE IN GRADES SHOULD BE MEASURED IN ACCORDANCE WITH FIGURE 5.3 AS2890.1–2004.



STANBURY TRAFFIC PLANNING TRAFFIC, PARKING & TRANSPORT CONSULTANTS	ADDRESS: 401/380 HARRIS ST, PYRMONT PH: (02) 8971 8314 EMAIL: info@stanburytraffic.com.au WEBSITE: www.stanburytraffic.com.au	STANBURY TRAFFIC PLANNING 171 WESTON STREET & 2–6 HINEMOA STREET, PANANIA CAR PARK COMPLIANCE REVIEW CONCEPT LAYOUT GROUND	SCALE 0 2.5 5.0 1:250@A3 DRAWING NO. 21–228–02–V6 DATE 21 February 2025	CREATED BY Y.H APPROVED BY M.S SHEET 01 / 05

NOTES:

1. THIS PLAN IS BASED ON ARCHITECTURAL PLANS PREPARED BY MORSON GROUP AND AERIAL IMAGERY SOURCED FROM NEARMAP (IMAGE DATE 01/05/2023)
2. THE SWEPT PATHS PROVIDED ON THIS PLAN HAVE BEEN GENERATED UTILISING AUTOTURN PRO VERSION 11 IN CONJUNCTION WITH VEHICLE MANOEUVRING SPECIFICATIONS IN ACCORDANCE WITH THE AUSTRALIAN STANDARD AS2890.1:2004
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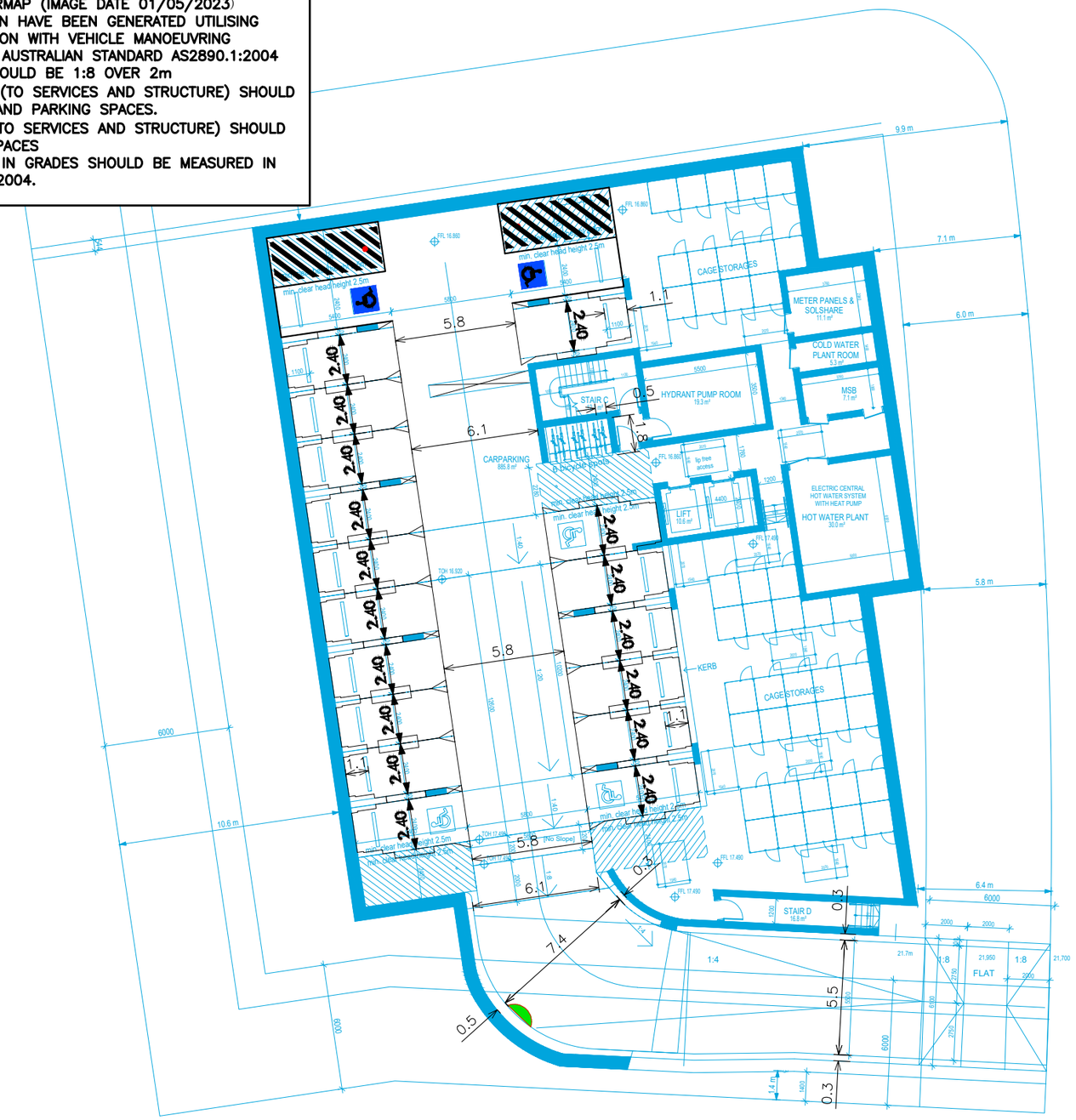
6. HEIGHT CLEARANCE ABOVE A SAG CHANGE IN GRADES SHOULD BE MEASURED IN ACCORDANCE WITH FIGURE 5.3 AS2890.1–2004.

LEGEND:

PROPOSED CONVEX MIRROR



STANBURY TRAFFIC PLANNING TRAFFIC, PARKING & TRANSPORT CONSULTANTS	ADDRESS: 401/380 HARRIS ST, PYRMONT PH: (02) 8971 8314 EMAIL: info@stanburytraffic.com.au WEBSITE: www.stanburytraffic.com.au	STANBURY TRAFFIC PLANNING 171 WESTON STREET & 2–6 HINEMOA STREET, PANANIA CAR PARK COMPLIANCE REVIEW CONCEPT LAYOUT BASEMENT	SCALE 0 2.5 5.0 1:250@A3 DRAWING NO. 21–228–02–V6 DATE 21 February 2025	CREATED BY Y.H APPROVED BY M.S SHEET 02 / 05

NOTES:

1. THIS PLAN IS BASED ON ARCHITECTURAL PLANS PREPARED BY MORSON GROUP AND AERIAL IMAGERY SOURCED FROM NEARMAP (IMAGE DATE 01/05/2023)
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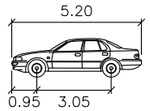
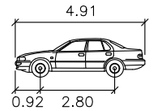
SWEPT PATH KEY:

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY



B99

	meters
Width	: 1.94
Track	: 1.84
Lock to Lock Time	: 6.0
Steering Angle	: 33.9



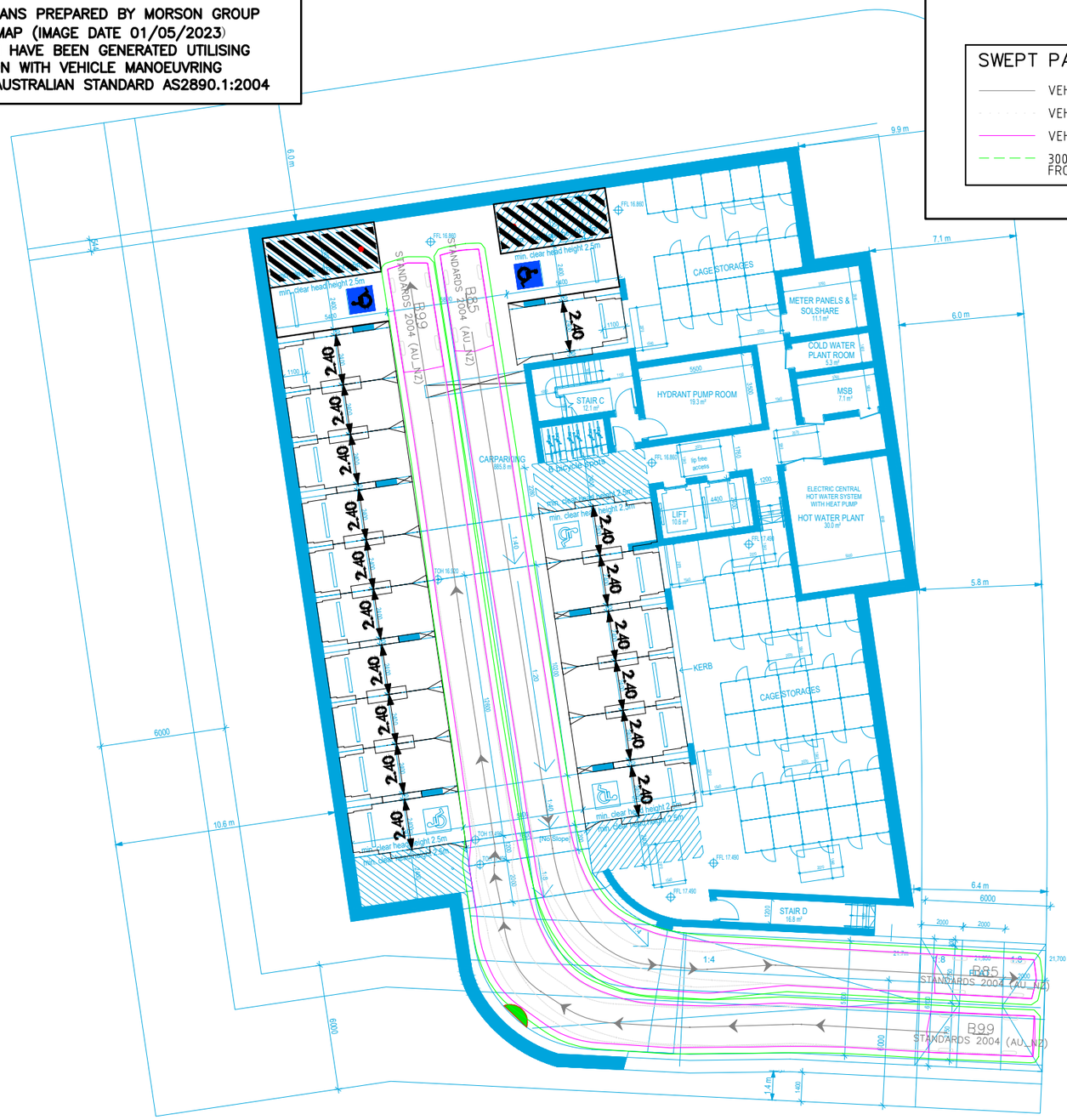
B85

	meters
Width	: 1.87
Track	: 1.77
Lock to Lock Time	: 6.0
Steering Angle	: 34.1

STANBURY TRAFFIC PLANNING TRAFFIC, PARKING & TRANSPORT CONSULTANTS	ADDRESS: 401/380 HARRIS ST, PYRMONT PH: (02) 8971 8314 EMAIL: info@stanburytraffic.com.au WEBSITE: www.stanburytraffic.com.au	STANBURY TRAFFIC PLANNING 171 WESTON STREET & 2–6 HINEMOA STREET, PANANIA CAR PARK COMPLIANCE REVIEW SWEPT PATH ASSESSMENT GROUND	SCALE 0 2.5 5.0 1:250@A3 DRAWING NO. 21–228–02–V6 DATE 21 February 2025	CREATED BY Y.H APPROVED BY M.S SHEET 03 / 05

NOTES:

1. THIS PLAN IS BASED ON ARCHITECTURAL PLANS PREPARED BY MORSON GROUP AND AERIAL IMAGERY SOURCED FROM NEARMAP (IMAGE DATE 01/05/2023)
2. THE SWEPT PATHS PROVIDED ON THIS PLAN HAVE BEEN GENERATED UTILISING AUTOTURN PRO VERSION 11 IN CONJUNCTION WITH VEHICLE MANOEUVRING SPECIFICATIONS IN ACCORDANCE WITH THE AUSTRALIAN STANDARD AS2890.1:2004



STANBURY TRAFFIC PLANNING TRAFFIC, PARKING & TRANSPORT CONSULTANTS	ADDRESS: 401/380 HARRIS ST, PYRMONT PH: (02) 8971 8314 EMAIL: info@stanburytraffic.com.au WEBSITE: www.stanburytraffic.com.au	STANBURY TRAFFIC PLANNING 171 WESTON STREET & 2–6 HINEMOA STREET, PANANIA CAR PARK COMPLIANCE REVIEW SWEPT PATH ASSESSMENT BASEMENT	SCALE 0 2.5 5.0 1:250@A3 DRAWING NO. 21–228–02–V6 DATE 21 February 2025	CREATED BY Y.H APPROVED BY M.S SHEET 04 / 05

NOTES:

1. THIS PLAN IS BASED ON ARCHITECTURAL PLANS PREPARED BY MORSON GROUP AND AERIAL IMAGERY SOURCED FROM NEARMAP (IMAGE DATE 01/05/2023)
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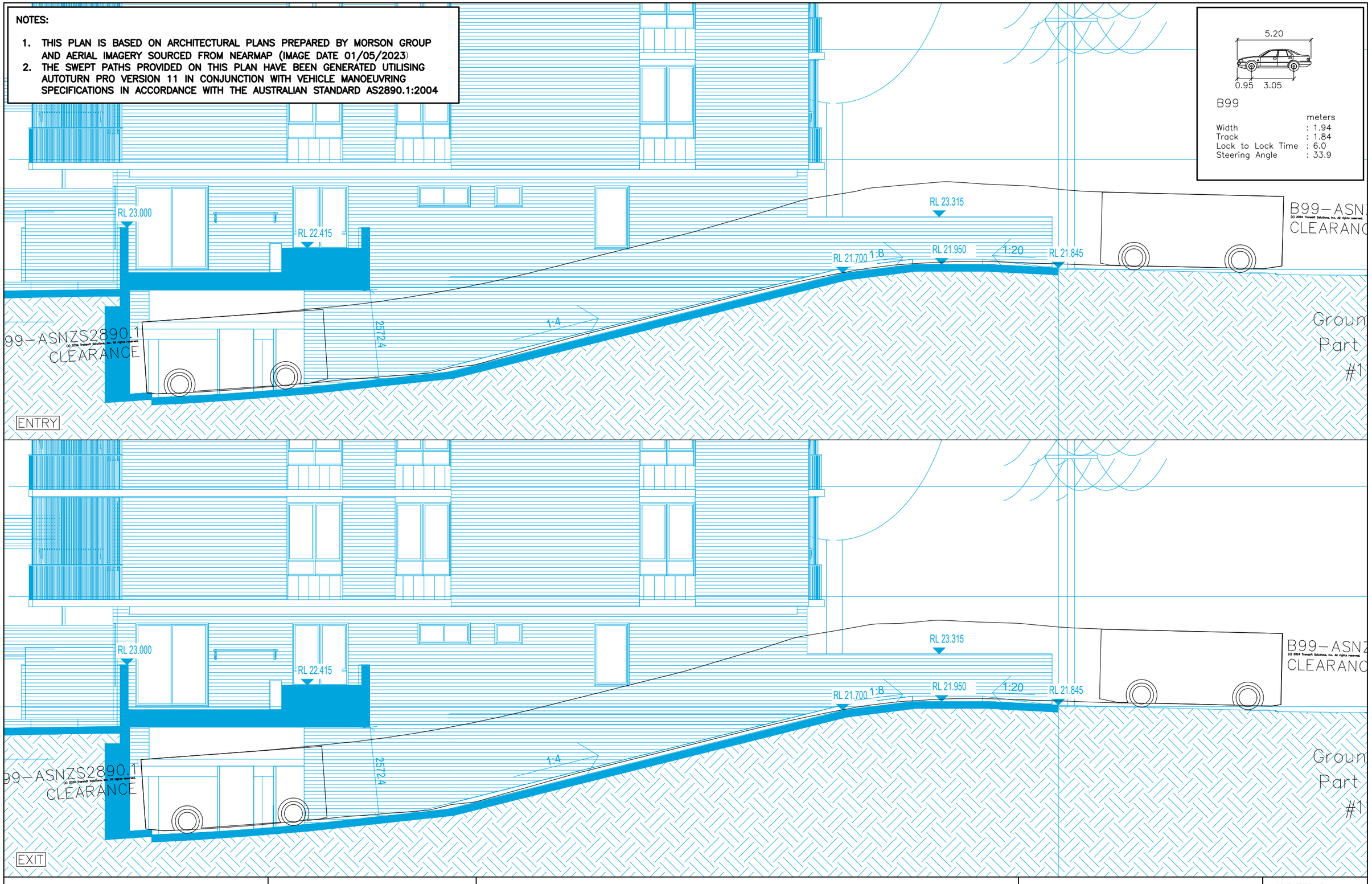


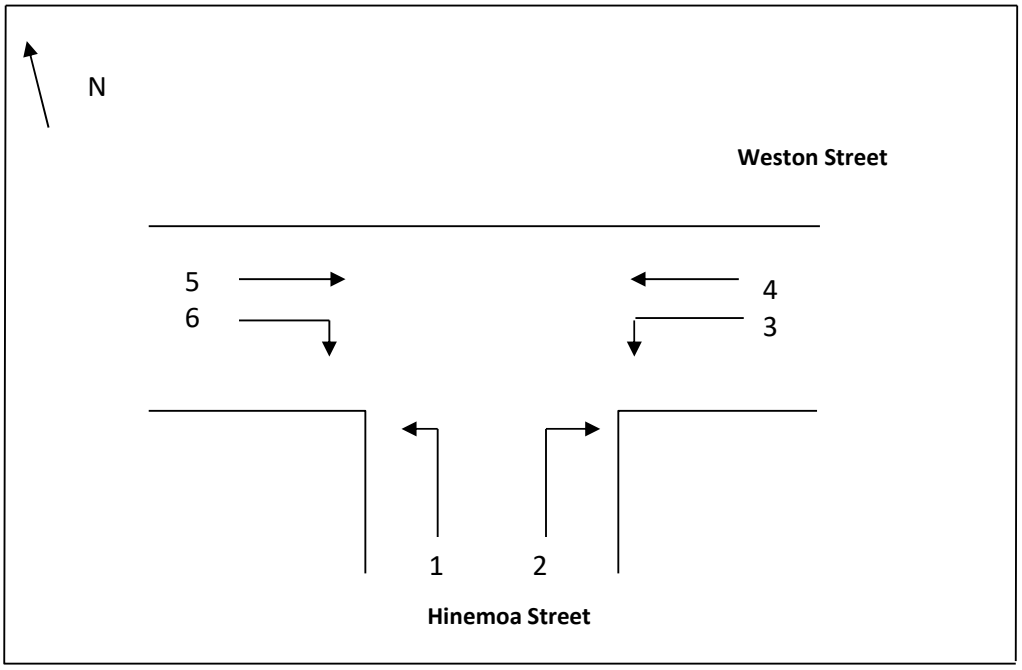
STANBURY TRAFFIC PLANNING TRAFFIC, PARKING & TRANSPORT CONSULTANTS	ADDRESS: 401/380 HARRIS ST, PYRMONT PH: (02) 8971 8314 EMAIL: info@stanburytraffic.com.au WEBSITE: www.stanburytraffic.com.au	STANBURY TRAFFIC PLANNING 171 WESTON STREET & 2–6 HINEMOA STREET, PANANIA CAR PARK COMPLIANCE REVIEW VERTICAL CLEARANCE ASSESSMENT MAIN ACCESS RAMP	SCALE 0 1.0 2.0 1:100@A3 DRAWING NO. 21–228–02–V6 DATE 21 February 2025	CREATED BY Y.H APPROVED BY M.S SHEET 05 / 05

APPENDIX 3

STANBURY TRAFFIC PLANNING
TRAFFIC, PARKING & TRANSPORT CONSULTANTS

TRAFFIC COUNTS AT: Weston Street & Hinemoa Street
DATE: Wednesday 7th August 2024
TIME: 7:00am to 9:00am and 4:00pm to 6:00pm
WEATHER

Time	Direction of Vehicular Traffic					
	1	**2**	**3**	**4**	**5**	**6**
7.00 – 7.15am	8	2	2	10	14	7
7.15 – 7.30am	9	3	2	12	20	9
7.30 – 7.45am	7	5	5	12	13	6
7.45 – 8.00am	11	10	5	18	15	16
TOTAL	**35**	**20**	**14**	**52**	**62**	**38**
8.00 – 8.15am	6	10	3	17	21	14
8.15 – 8.30am	8	13	3	27	31	10
8.30 – 8.45am	12	16	3	48	34	6
8.45 – 9.00am	5	3	8	35	41	5
TOTAL	**31**	**42**	**17**	**127**	**127**	**35**
4.00 – 4.15pm	2	4	9	28	15	8
4.15 – 4.30pm	3	7	5	37	33	9
4.30 – 4.45pm	4	4	12	23	31	15
4.45 – 5.00pm	4	10	12	26	25	7
TOTAL	**13**	**25**	**38**	**114**	**104**	**39**
5.00 – 5.15pm	4	11	6	23	25	14
5.15 – 5.30pm	1	4	8	24	24	9
5.30 – 5.45pm	4	10	17	32	21	29
5.45 – 6.00pm	4	9	8	30	32	22
TOTAL	**13**	**34**	**39**	**109**	**102**	**74**



APPENDIX 4

MOVEMENT SUMMARY

Site: 101 [Weston Street & Himemoa Street am existing (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Weston Street & Himemoa Street am existing
Site Category: (None)
Give-Way (Two-Way)

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: Himemoa Street															
1	L2	All MCs	33	0.0	33	0.0	0.026	5.7	LOS A	0.1	0.6	0.14	0.54	0.14	52.5
3	R2	All MCs	44	0.0	44	0.0	0.060	7.8	LOS A	0.2	1.6	0.43	0.64	0.43	51.2
Approach			77	0.0	77	0.0	0.060	6.9	LOS A	0.2	1.6	0.30	0.60	0.30	51.8
East: Weston Street															
4	L2	All MCs	18	0.0	18	0.0	0.039	5.5	LOS A	0.0	0.0	0.00	0.14	0.00	56.3
5	T1	All MCs	134	0.0	134	0.0	0.039	0.0	LOS A	0.0	0.0	0.00	0.06	0.00	59.4
Approach			152	0.0	152	0.0	0.039	0.7	NA	0.0	0.0	0.00	0.07	0.00	59.0
West: Weston Street															
11	T1	All MCs	134	5.0	134	5.0	0.050	0.1	LOS A	0.2	1.5	0.07	0.10	0.07	58.9
12	R2	All MCs	37	0.0	37	0.0	0.050	6.1	LOS A	0.2	1.5	0.23	0.33	0.23	54.3
Approach			171	3.9	171	3.9	0.050	1.4	NA	0.2	1.5	0.10	0.15	0.10	57.9
All Vehicles			399	1.7	399	1.7	0.060	2.2	NA	0.2	1.6	0.10	0.20	0.10	57.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
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 Gap.
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.

MOVEMENT SUMMARY

Site: 101 [Weston Street & Himemoa Street pm existing (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Weston Street & Himemoa Street pm existing
Site Category: (None)
Give-Way (Two-Way)

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: Himemoa Street															
1	L2	All MCs	14	0.0	14	0.0	0.011	5.7	LOS A	0.0	0.3	0.10	0.54	0.10	52.6
3	R2	All MCs	36	0.0	36	0.0	0.047	7.5	LOS A	0.2	1.2	0.40	0.62	0.40	51.4
Approach			49	0.0	49	0.0	0.047	7.0	LOS A	0.2	1.2	0.32	0.60	0.32	51.8
East: Weston Street															
4	L2	All MCs	41	0.0	41	0.0	0.040	5.5	LOS A	0.0	0.0	0.00	0.32	0.00	54.9
5	T1	All MCs	115	0.0	115	0.0	0.040	0.0	LOS A	0.0	0.0	0.00	0.10	0.00	59.1
Approach			156	0.0	156	0.0	0.040	1.5	NA	0.0	0.0	0.00	0.16	0.00	57.9
West: Weston Street															
11	T1	All MCs	107	5.0	107	5.0	0.045	0.1	LOS A	0.2	1.4	0.06	0.09	0.06	59.0
12	R2	All MCs	41	0.0	41	0.0	0.045	6.1	LOS A	0.2	1.4	0.26	0.40	0.26	53.6
Approach			148	3.6	148	3.6	0.045	1.8	NA	0.2	1.4	0.11	0.17	0.11	57.4
All Vehicles			354	1.5	354	1.5	0.047	2.4	NA	0.2	1.4	0.09	0.23	0.09	56.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
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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.