



TRAFFIC IMPACT ASSESSMENT

MULTIPLE DWELLING DEVELOPMENT

**LOT 1 & 3 IN DP 538510, LOT 321 IN DP 1226898
AND LOT 1 IN DP 521620**

107 – 117 SWAN STREET, MORPETH

PREPARED FOR: GHT HOLDINGS PTY LTD

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REF: 21/189

**TRAFFIC IMPACT ASSESSMENT
MULTIPLE DWELLING DEVELOPMENT****LOTS 1 & 3 IN DP 538510, LOT 321 IN DP 1226898
AND LOT 1 IN DP 521620****107 – 117 SWAN STREET, MORPETH
GHT HOLDINGS PTY LTD**

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1. INTRODUCTION

Intersect Traffic Pty Ltd (Intersect Traffic) has been engaged by Perception Planning on behalf of GHT Holdings Pty Ltd to undertake a traffic impact assessment for the proposed multi-dwelling residential development on Lots 1 & 3 in DP 538510, Lot 321 in DP 1226898 and Lot 1 in DP 521620, 107 – 117 Swan Street, Morpeth. The development comprises ten (10) - two (2) storey units with associated car parking and access.

This traffic impact assessment is required to support a development application to Maitland City Council seeking approval for the proposed development. The purpose of this document is to undertake an assessment of the likely traffic impacts of the proposal on the local and state road network and associated roadside infrastructure to allow Council to assess the merits of the application.

This report presents the findings of the traffic impact assessment and includes the following:

- ◆ An outline of the existing situation near the site,
- ◆ An assessment of the traffic impacts of the proposed development including the predicted traffic generation and its impact on existing road and intersection capacities,
- ◆ A review of the proposed parking provision and layout,
- ◆ A review of the existing alternative transport mode availability and suitability, and
- ◆ A presentation of the conclusions and recommendations.

2. DEVELOPMENT ASSESSMENT

2.1 Site Description

The development site is located on Swan Street, Morpeth, between William Street and Market Street. It is approximately 50 metres east of the Morpeth CBD, approximately 9 kilometres east of Maitland and approximately 15 kilometres west of Raymond Terrace. The eastern and northern boundary of the property has a road frontage to Swan Street, with its eastern and western boundaries having a frontage to William Street and Market Street, respectively. The southern boundary of the site adjoins four residential properties which have a road frontage to Close Street. The site structures were being demolished at the time of undertaking this assessment which will result in a cleared, evenly graded, vacant site. The site is shown in the context of the surrounding residential area in **Figure 1** below.



Figure 1 – Site Location

The site has the following property descriptors:

- ◆ Lots 1 & 3 in DP 538510, Lot 321 in DP 1226898 and Lot 1 in DP 521620, 107 – 117 Swan Street, Morpeth,
- ◆ Street address of 107 – 117 Swan Street, Morpeth,
- ◆ Total development site area of 2,712.4 m², and
- ◆ Land zoning of R1 – General Residential pursuant to Maitland LEP 2011.

The site currently has one wide and one single urban concrete vehicular access at Swan Street and a bitumen rural style vehicular access at Market Street. **Photographs 1 - 4** below show some of the development site and accesses.



Photograph 1 – Existing site at Swan Street



Photograph 2 – Existing site from the rear



Photograph 3 – Wide access crossing at Swan Street servicing 3 lots of the existing site



Photograph 4 – Existing access near proposed new access to development



2.2 Development Proposal

The development comprises ten (10) - two (2) storey units with associated car parking and access. The proposed multi-dwelling development includes the following:

- ◆ Amalgamation of lots into one title,
- ◆ Demolition of site structures,
- ◆ Earthworks and provision of services,
- ◆ Construction of a new multi-dwelling development comprising:
 - 3 building blocks, 1 with 4 apartments and 2 with 3 apartments, being
 - 6 – 3 bedroom units and 4 – 2 bedroom units
 - Each unit built over 2 storeys,
- ◆ Provision of 20 on-site garage car parking spaces and 3 visitor parking spaces at ground floor level,
- ◆ Provision of new vehicular accesses and internal roadway at the rear of the property between William Street and Market Street,
- ◆ Property drainage to Maitland City Council's requirements, and
- ◆ Drainage and landscaping.

2.3 Existing Road Network

Swan Street

Swan Street under a functional road hierarchy is a local collector road and is the main street in Morpeth. It collects and distributes regional and local traffic via adjoining roads between Maitland, East Maitland, Thornton North, Hinton, Raymond Terrace, Boolwarra, Clarence Town and Dungog. The 1 kilometre section of the road between Brisbane Fields Road and its intersection with Phoenix Park Road / Northumberland Street is under the care and control of Maitland City Council. The 300 metre section of Swan Street between Northumberland / Phoenix Park Road and Tank Street at its western end is a regional road (RR102) and is under the care and control of Maitland City Council, however the Council receives part funding for its maintenance from TfNSW.

Swan Street is a two-lane two-way sealed with a carriageway approximately 18 metres wide between kerbs, with travel lanes approximately 3 metres wide. Parallel parking exists on the southern side of Swan Street within a width of approximately 4 metres, whilst mostly 60° angled parking exists along the northern side of the road within a width of approximately 8 metres. Near the site a 50 km/h speed zoning exists and at the time of inspection Swan Street was observed to be in fair to good condition. **Photograph 5** below shows the condition of Swan Street adjacent to the development site.



Photograph 5 – Swan Street adjacent to the site

Phoenix Park Road / Northumberland Street

Phoenix Park Road and Northumberland Street under a functional road hierarchy are also classified as collector roads. They are therefore under the care and control of Maitland City Council. The roads form a 4 way cross intersection with Swan Street immediately south of the Morpeth Bridge over the Hunter River. Phoenix Park Road extends north from Swan Street and provides connections for traffic with origins / destinations for Hinton, Bolwarra, Clarence Town and Dungog and north and north western areas, and ends at its north western end at its intersection with Morpeth Street and Hunter Street in Largs.

Phoenix Park Road is approximately 5 kilometres long and a two-lane two-way sealed rural road near the site. It has a carriageway width of approximately 7 metres, with lane widths approximately 3.5 metres wide. It crosses the Morpeth Historical Bridge 30 metres north of its southern end and a 50 km/h speed zoning exists on Phoenix Park Road. At the time of inspection Phoenix Park Road was observed to be in fair to good condition.

Northumberland Street is 300 metres long and extends from Swan Street to its southern end at James Street. It collects and distributes local traffic from the southern and central residential areas of Morpeth. Northumberland Street is a two-lane two-way sealed urban road near the site. It has a carriageway width of approximately 13 metres between kerbs, with parallel parking on each side of the road. A 50 km/h speed zoning exists on the road and at the time of inspection Northumberland Road was observed to be in fair to good condition. **Photograph 6** below shows Northumberland

Street in the foreground adjoining Swan Street and Phoenix Park Road which extends to the rural areas across the bridge, in the background.



Photograph 6 – Northumberland Street and Phoenix Park Road near the site

Edward Road

Edward Road, under a functional road hierarchy is a local collector road and is therefore under the care and control of Maitland City Council with a 50 km/h speed zoning. It connects Swan Street to Duckenfield Road and McFarlanes Road southeast of the site which connect to the North Thornton, Chisolm, Thornton, Raymond Terrace and other eastern areas.

Edward Road is a 600 metre long a two-lane two-way sealed urban road with a carriageway width of approximately 11 metres between kerbs with parking lanes on both sides of the road. At the time of inspection Edward Road was observed to be in fair to good condition (see **Photograph 7**).

Market and William Street

Market Street and William Street under a functional road hierarchy are local access lanes and are therefore under the care and control of Maitland City Council with a 50 km/h speed zoning. Both are approximately 70 metres long and connect to Swan Street at their northern ends and to Close Street at their southern ends providing access between Swan Street and Close Street for local traffic only and to a few residential properties along its length.

Market and William Street are two-lane two-way sealed urban roads with approximately 5 metres of sealed width and grassed / gravel shoulders and little kerb and gutter, mainly at its intersections. A 50 km/h speed zoning applies to the roads and at the time of inspection were observed to be in fair condition. **Photograph 8**) shows Market Street from its intersection with Close Street looking towards Swan Street to the north.



Photograph 7 – Edward Road near the site



Photograph 8 – Market Street near the site

2.4.1 Traffic Volumes

Intersect Traffic undertook manual intersection counts at the Phoenix Park Road / Swan Street / Northumberland Street 3-way stop sign controlled 4 way cross-intersection. The counts were carried out on Thursday 21st October 2021 and Wednesday 20th October 2021 during the likely peak hour morning period of 8.00 am to 9.00 am and evening period of 3.00 to 4.00 pm, respectively. The traffic data sheets for these counts are provided in **Attachment B**.

Based on the data collected the current mid-block two-way traffic volumes on the road network around the development site are as shown in **Table 1** below. Also shown in the table is the predicted 2031 traffic volumes for the road network without this development and based on an assumption the background traffic growth rate for the network is 1.5% per annum.

Table 1 – Existing and future (2031) traffic volumes without development

| Road | Section | 2021 | | 2031 | |
|-----------------------|-------------------------------|-----------|-----------|-----------|-----------|
| | | AM (vtph) | PM (vtph) | AM (vtph) | PM (vtph) |
| Phoenix Park Road | north of Swan Street | 475 | 586 | 551 | 680 |
| Northumberland Street | south of Swan Street | 115 | 138 | 134 | 160 |
| Swan Street | east of Northumberland Street | 259 | 240 | 301 | 279 |
| Swan Street | west of Northumberland Street | 523 | 589 | 607 | 684 |

Note: Edward Road is assumed to have the same peak hour traffic as Swan Street, east of Northumberland Street.

These mid-block peak hour volumes are considered relevant and are utilised in the assessment of the development.

2.4.2 Traffic Generation

Traffic generation data is generally sourced from the TfNSW's - *RTA Guide to Traffic Generating Developments (2002)* or TfNSW's RMS Technical Direction TDT 13/04. In regard to the proposed development the relevant traffic generation rates within the TfNSW - RMS Technical direction are as follows:

In regard to low density residential dwellings the following advice is provided within the TDT for regional areas.

Rates.

Daily vehicle trips = 7.4 per dwelling.

Weekday average evening peak hour vehicle trips = 0.78 per dwelling.

Weekday average morning peak hour vehicle trips = 0.71 per dwelling.

Therefore, the additional traffic generated by the proposed multiple dwelling development during the weekday peak periods, noting one residential dwelling already exists on the site can be calculated as follows:

Daily vehicle trips = 10 dwellings x 7.4 trips per dwelling
= **74 vtpd.**

Weekday evening peak hour = 10 dwellings x 0.78 trips per dwelling
= **7.8 vtph say 8 vtph.**

Weekday morning peak hour = 10 dwellings x 0.71 trips per dwelling
= **7.1 vtph say 8 vtph.**

The traffic associated with the development needs to be distributed through the road network and the likely traffic distribution assumptions adopted for this assessment are:

- ◆ 100% will enter the site via William Street and 100% will exit the site via Market Street,
- ◆ 80% will exit the site and 20% will enter the site in the AM peak hour period,
- ◆ 70% will enter the site and 30% will exit the site in the PM peak hour period,
- ◆ William Street entering traffic will have origins 50% east via Swan Street and 50% west via Swan Street
- ◆ The entering 50% Swan Street west traffic will be split 40% Swan Street west of Phoenix Park Road and 10% Phoenix Park Road north of Swan Street,
- ◆ The entering 50% Swan Street west traffic will in turn be via Edward Street south of Swan Street,
- ◆ Market Street exiting traffic will have destinations 50% east via Swan Street and 50% west via Swan Street
- ◆ The exiting 50% Swan Street west traffic will be split 40% Swan Street west of Phoenix Park Road and 10% Phoenix Park Road north of Swan Street, and
- ◆ The exiting 50% Swan Street west traffic will in turn be via Edward Street south of Swan Street.

There will be some variations to the assumed distributions however their impact is considered insignificant to the assessment. The resulting trip distribution is presented diagrammatically in **Figure 2** below.

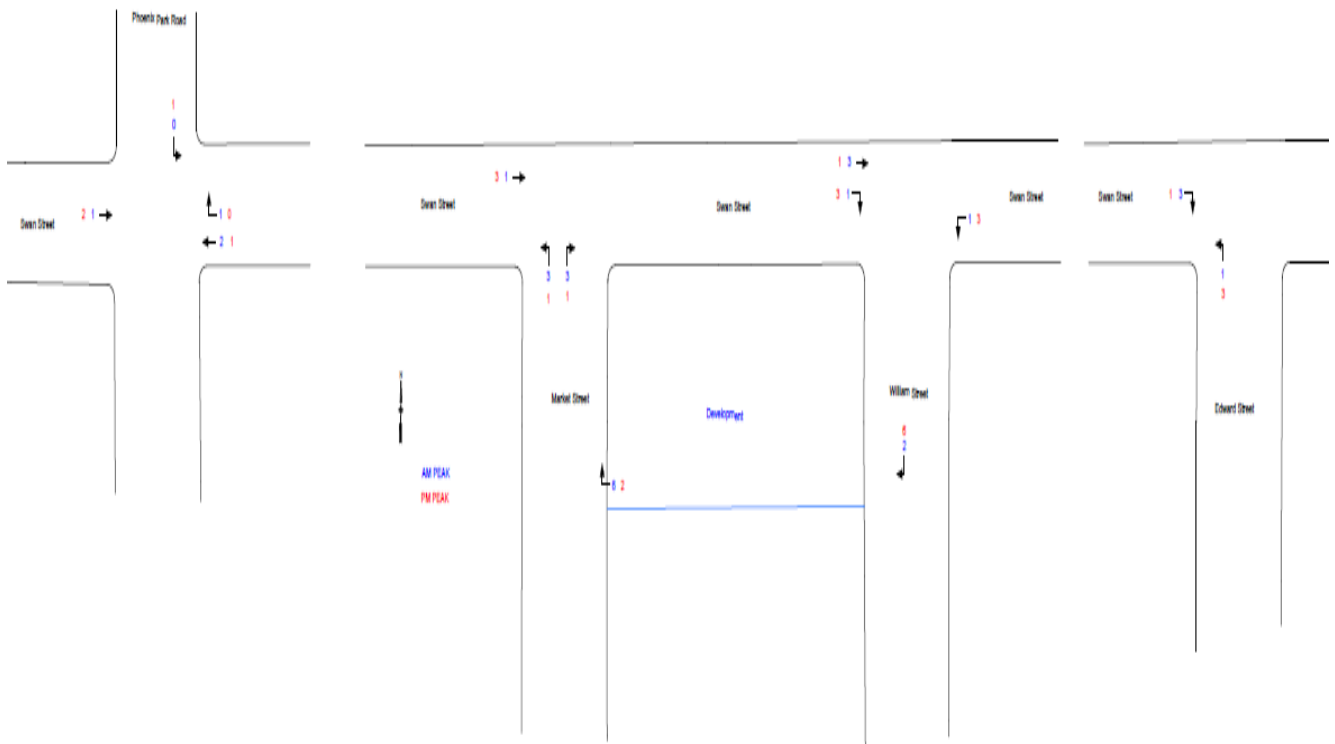


Figure 2 – Trip Distribution

2.5 Traffic Impacts and Considerations

2.5.1 Road Network Capacity

The capacity of the road network is generally determined by the capacity of intersections. However, Table 4.3 of the RTA’s *Guide to Traffic Generating Developments* provide some guidance on mid-block capacities for urban roads for a LoS C. This table is reproduced below.

Table 4.3
Typical mid-block capacities for urban roads with interrupted flow

| Type of Road | One-Way Mid-block Lane Capacity (pcu/hr) | |
|-----------------------|------------------------------------------|-------|
| Median or inner lane: | Divided Road | 1,000 |
| | Undivided Road | 900 |
| Outer or kerb lane: | With Adjacent Parking Lane | 900 |
| | Clearway Conditions | 900 |
| | Occasional Parked Cars | 600 |
| 4 lane undivided: | Occasional Parked Cars | 1,500 |
| | Clearway Conditions | 1,800 |
| 4 lane divided: | Clearway Conditions | 1,900 |

Source: - RTA’s *Guide to Traffic Generating Developments* (2002).

Urban road capacity at the site is therefore calculated based on Table 4.3 and noting the road network is a two-way two-lane network generally with parking lanes, therefore Swan Street, Phoenix Park Road, Northumberland Street and Edward Road all would have two-way mid-block capacities of 1,800 vph.

However, Northumberland Street as a local collector road and William Street and Market Street as local access roads, all with mainly residential properties along their lengths, would also be subject to assessment against their roads’ environmental capacity based on the Environmental Capacity thresholds provided within Table 4.6 of the RTA’s *Guide to Traffic Generating Developments* which is reproduced below.

Table 4.6
Environmental capacity performance standards on residential streets

| Road class | Road type | Maximum Speed (km/hr) | Maximum peak hour volume (veh/hr) |
|-------------|------------|-----------------------|-----------------------------------|
| Local | Access way | 25 | 100 |
| | Street | 40 | 200 environmental goal |
| 300 maximum | | | |
| Collector | Street | 50 | 300 environmental goal |
| | | | 500 maximum |

Note: Maximum speed relates to the appropriate design maximum speeds in new residential developments. In existing areas maximum speed relates to 85th percentile speed.

Source: - RTA’s *Guide to Traffic Generating Developments* (2002)

The adopted environmental road capacities (two-way) within this assessment are, therefore, Northumberland Street as a local collector road - 300 vph and William Street and Market Street as

access ways – 100 vtp; and a technical two-way mid-block road capacity of Swan Street and Phoenix Park Road – 1,800 vtp.

It can be seen that the local road network is currently operating well within its technical or environmental capacity. The addition of a maximum of 8 vtp in the AM or PM peak hours, resulting from this development, distributed as per **Figure 2** above, will not result in the technical or environmental mid-block two way road capacity thresholds being reached. This is demonstrated in **Table 2** below.

Table 2 – Two-way Mid-Block Road Capacity (2021 and 2031)

| Road | Section | Capacity vtp | 2021 | | 2031 | | Development traffic | |
|-----------------------|-------------------------------|-----------------|----------|----------|----------|----------|---------------------|----|
| | | | AM (vtp) | PM (vtp) | AM (vtp) | PM (vtp) | AM | PM |
| Phoenix Park Road | north of Swan Street | 1800 | 476 | 587 | 552 | 681 | 1 | 1 |
| Northumberland Street | south of Swan Street | 300 | 115 | 138 | 134 | 160 | 0 | 0 |
| Swan Street | east of Northumberland Street | 1800 | 263 | 244 | 305 | 283 | 4 | 4 |
| Swan Street | west of Northumberland Street | 1800 | 526 | 592 | 610 | 687 | 3 | 3 |

It is therefore reasonable to conclude that subject to satisfactory intersection performance at the major road connections the development will not adversely impact on the local and state road network.

2.5.2 Intersection Capacity

The main intersection impacted by the development will be the Phoenix Park Road / Swan Street / Northumberland Street stop sign priority controlled 4 way cross-intersection. If the development does not adversely impact on this intersection, it is also reasonable to conclude that as the traffic is further distributed through the road network it will not adversely impact on intersections on the wider local and state road network.

The additional traffic generated by the development represents a maximum increase of 4 vtp AM or 4 vtp PM which is 0.6% or less of the 2021 or 2031 traffic volumes through the Phoenix Park Road / Swan Street / Northumberland Street 3-way stop sign controlled 4 way cross-intersection during peak traffic periods. This is well below the normal daily, weekly and seasonal variations (approximately 10%) associated with peak hour traffic volumes. It is generally accepted that when traffic volume increases through an intersection are less than 10 vtp there will be no loss of LoS at the intersection and no further intersection analysis is required. Therefore, the impact of the development on this intersection will be unnoticeable and will not contribute to a need to upgrade the intersection.

To assess the performance of the Swan Street / Edward Street T-intersection, the Swan Street / Market Street T-intersection, the Swan Street / William Street T- intersection and the new development access T-intersections with William Street and Market Street the below table, taken from Austroads *Guide to Traffic Management – Part 6 – Intersections, Interchanges & Crossings (2009)* for which the guide states a detailed analysis to demonstrate adequate capacity is available is unlikely to be necessary as uninterrupted flow conditions would prevail, is utilised.

| Major road type ¹ | Major road flow (vph) ² | Minor road flow (vph) ³ |
|------------------------------|------------------------------------|------------------------------------|
| Two-lane | 400 | 250 |
| | 500 | 200 |
| | 650 | 100 |
| Four-lane | 1000 | 100 |
| | 1500 | 50 |
| | 2000 | 25 |

Notes:

1. Major road is through road (i.e. has priority).
2. Major road flow includes all major road traffic with priority over minor road traffic.
3. Minor road design volumes include through and turning volumes.

Source: - Austroads Guide to Traffic Management – Part 6 – Intersections, Interchanges & Crossings (2009)

it is noted that the two-way traffic in the peak hour periods in 2031 for each of the streets in each intersection is estimated to be a maximum of:

- ◆ Swan Street - 305 vtp / Edward Street - 305 vtp,
- ◆ Swan Street 305 vtp / Market Street 10 vtp, and
- ◆ Swan Street 306 vtp / William Street 10 vtp,
- ◆ William Street 10 vtp / Access 6 vtp, and
- ◆ Market Street 10 vtp / Access 6 vtp.

The traffic volumes predicted for the intersections are within the thresholds for traffic volumes contained in the table above and therefore these intersections would continue to be operating with uninterrupted flow conditions. It can therefore be concluded that post development the Swan Street / Edward Street, Swan Street / Market Street, Swan Street / William Street, T-intersections will continue to operate with uninterrupted flow conditions therefore the existing intersections will be satisfactory for the development. The proposed property accesses can be constructed as a normal private property urban access, subject to Australian Standards *AS2890.1-2004 Parking facilities – Part 1 - Off-street car parking* requirements described below.

Overall, the additional traffic will not have any adverse impact on the operation of Phoenix Park Road / Swan Street / Northumberland Street stop sign priority controlled 4-way cross-intersection, nor at any other intersections near the development or on the road network.

2.5.3 Site Access and Parking

The site will operate with an ingress from William Street and an egress at Market Street, representing a one-way traffic flow within the driveway from east to west. Post development the site access will service a car parking area containing 23 cars and under Table 3.1 of Australian Standard *AS2890.1-2004 Parking facilities – Part 1 - Off-street car parking* a car park with between 1 to 25 car parking spaces accessed via a local road providing long term parking (Class 1A) is required to have a Category 1 access facility. A Category 1 access facility is a combined entry / exit driveway between 3.0 metres and 5.5 metres wide, however Maitland DCP (2011) requires 3.0 metres to 6.0 metres. The minimum access width at each boundary gate is 4 metres, therefore the proposed vehicular accesses comply with the DCP and Australian Standards.

The available sight distance at the vehicular access at Market or William Street is required to comply with Australian Standard (*AS2890.1 – 2004 Parking facilities – Part 1 Off street car parking*) for the minimum safe sight distance at an access, which is 45 metres for a 50 km/h speed environment on the local road network. From observation on site, it has been determined that the available sight distance to or from the Market Street or the William Street accesses is 40 metres.

This is compliant as approach speeds would be in the order of a maximum of 25 km/h for which a 5 second gap represents 35 metres.

Maitland Development Control Plan (2011) under *Section C - Design Guidelines C11 Vehicular Access & Car Parking* sets out the requirements for on-site car parking to be provided for new developments. The relevant rates for this development proposal taken from *Appendix A within Section C11* of the DCP are:

Multi dwellings

- ◆ 1 car space per 1 or 2 bedroom unit, plus
- ◆ 2 car spaces per more than 2 bedroom unit, plus
- ◆ 1 visitor car space for the first 3 units and 1 car space per 5 dwellings thereafter or part thereafter.

Therefore, the on-site car parking requirement for the development based on the Maitland Council DCP (rounded up) is as follows:

$$\begin{aligned}\text{Car parking} &= 10 \times 2 \text{ (residents)} + 1 \text{ (per first 3 units)} + 10 \text{ (units)} / 5 \text{ (visitors)} \\ &= 20 \text{ residents} + 3 \text{ visitors} \\ &= 23 \text{ spaces.}\end{aligned}$$

As the site is providing 23 spaces (20 garage spaces and 3 parallel visitor spaces) the development complies with the Maitland Council DCP in relation to quantity of parking provided.

The carparking layout also needs to be in accordance with Australian Standard AS2890.1-2004 which requires a minimum of the following:

- ◆ Car space size:
 - 90° parking – 5.4 metres x 2.4 metres,
 - Parallel parking with an obstructed end – 6.6 metres x 2.1 metres, and
 - 0.3 metres extra width adjacent to a wall.
- ◆ Aisle width – 5.8 metres
- ◆ Blind aisle extension – 1 metre

A review of the plans indicates minimum car space widths – 2.4 metres with 300 mm clearance to columns, car park lengths are a minimum 5.4 metres and minimum aisle widths - 5.8 metres wide and blind aisles extensions - 1 metre.

Overall, it is concluded the proposed on-site car parking complies with Australian Standard AS2890.1-2004.

In addition, the apron aisle widths for right angled access for single vehicle garages are specified in *AS 2890.1-2004 Figure 5.4*. In affect the width of turning gap in the 5.4 metre wide entrance of a double garage without a central column, for a single vehicle is 3.0 metres (2.7 + 0.3). **Figure 5.4** requires an apron width of 5.6 metres for a minimum opening of 3.0 metres.

The proposed aisle width is 6.34 metres and is therefore considered suitable for the development and subject to it being constructed to Council's current standards (full width concrete or seal) would comply with the minimum requirements of *Australian Standard (AS2890.1-2004)* and Maitland DCP (2011).

2.5.4 Alternative Transport Modes

Hunter Valley Buses provide public transport services in the area. A review of the route maps for the service indicates that the site has access to a public bus service as shown in the bus route extract shown in **Figure 3** below.

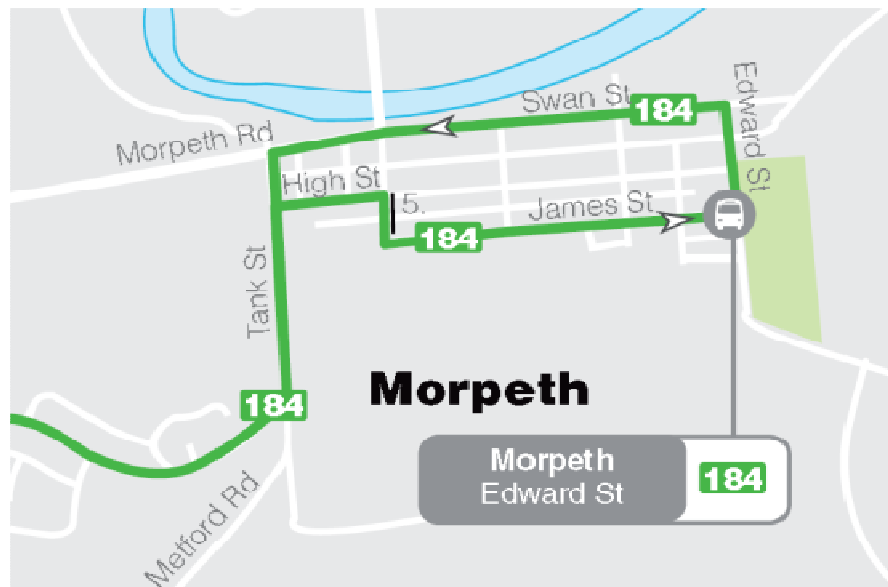


Figure 3 – Extract from Hunter Valley Buses bus route map

Route 184 (Morpeth – Tenambit - East Maitland – Greenhills Gardens) including Victoria Street Station). This bus service provides daily services for the local residential areas, the CBD, and with connection to other bus services, further connections to nearby suburbs and regions including a number of railway stations. The nearest bus stop is located approximately 50 metres west of the site in Swan Street as shown in **Photograph 9**, below.



Photograph 9 – Bus Stop near the site

The development is likely to generate a small additional demand for public transport travel. However, no additional public transport services or infrastructure is required in the area as the existing services and infrastructure are considered suitable even with the small additional demand generated by the development.

Pedestrians currently use the existing concrete footpath (predominantly approximately 1.0 metre wide) along the southern side of Swan Street, which runs from Edward Street past the site frontage to Northumberland Street. West of this intersection a mixture of 1 metre to full width 3.7 metres wide concrete and paved footpaths exist on both sides of Swan Street to Tank Street. The Swan Street footpaths connect to a number of footpaths of adjoining residential streets.

Cycleways from Tank Street, marked, on-road and 1.5 metre wide exist along both sides of Morpeth Road running to East Maitland and beyond and would be suitable for use by experienced cyclists. Elsewhere there are few other cycleways, however the wide roads, low speed limits and / or low traffic numbers in streets surrounding the development allow for relatively safe travel for cyclists wishing to access the site. The development may generate some bicycle traffic however the additional demand will not be significant.

The existing footpath and cycleway network is considered a good facility for the pedestrian and cyclist activity in the area including the additional demand resulting from the development. Therefore no nexus exists for additional pedestrian or cycleway facilities for the area as a result of this development. **Photographs 10, 11 & 12** below show some of the existing pedestrian or cyclist facilities servicing the site.



Photograph 10 – Swan Street footpath near Market Street, fronting and west of the site



Photograph 11 – Full width footpath Swan Street west of Northumberland Street



Photograph 12 – wide low speed low trafficked residential street suitable for cyclists

2.5.5 Servicing

The development has been designed for on-site waste servicing via a contractor from the internal access or a kerbside collection from Swan Street via Council with residents using internal accessways to the northern boundary of the site to move their bins to and from the street. On site waste servicing would be via small rigid vehicles (SRV – up to 6.4 metre wheelbase) waste collection vehicle) which will utilise the existing on-site service and waste bin area at the southern boundary of the development. Waste collection will occur in non-peak operating times with service vehicles entering and exiting the site in a forward direction and would be of little if any inconvenience to residents and visitors. Overall, servicing arrangements for the site are considered satisfactory.



3. CONCLUSIONS

This traffic impact assessment for the proposed development of a multi-dwelling residential development on Lots 1 & 3 in DP 538510, Lot 321 in DP 1226898 and Lot 1 in DP 521620, 107 – 117 Swan Street, Morpeth has concluded:

- ◆ Swan Street, Phoenix Park Road, Northumberland Street, Edward Street, William Street and Market Street have sufficient available spare two-way mid-block technical or environmental capacity to cater for the development.
- ◆ The proposal may generate up to an additional 8 vtpm in the AM and 8 vtpm in the PM peak periods on the local and state road network and this additional volume will not have an adverse impact on the operation of the Swan Street / Phoenix Park Road / Northumberland stop sign priority controlled 4 way cross-intersection as the increase in traffic volumes through the intersection will be less than 1% or 10 vtpm.
- ◆ The Swan Street / Edward Street, Swan Street / Market Street, Swan Street / William Street T-intersections will all continue to operate with uninterrupted flow conditions post development.
- ◆ The site accesses constructed to Council requirements would comply with the site access requirements of *Australian Standard AS2890.1-2004* and Maitland DCP.
- ◆ The on-site car parking provision complies with Maitland Council's DCP.
- ◆ The layout of the car parking complies with the requirements of *Australian Standard AS2890.1-2004*.
- ◆ Servicing arrangements for the site are considered satisfactory.
- ◆ As the existing pedestrian infrastructure around the site is considered suitable for the level of additional pedestrian demand resulting from the development no nexus exists for additional pedestrian facilities in the area resulting from this development.
- ◆ The development may generate some bicycle traffic however the additional demand will not be significant enough to provide a nexus for the provision of additional facilities adjacent to the site, and
- ◆ No additional public transport services or infrastructure is required in the area as the existing services and infrastructure are considered suitable even with the additional demand generated by the development.

4. RECOMMENDATION

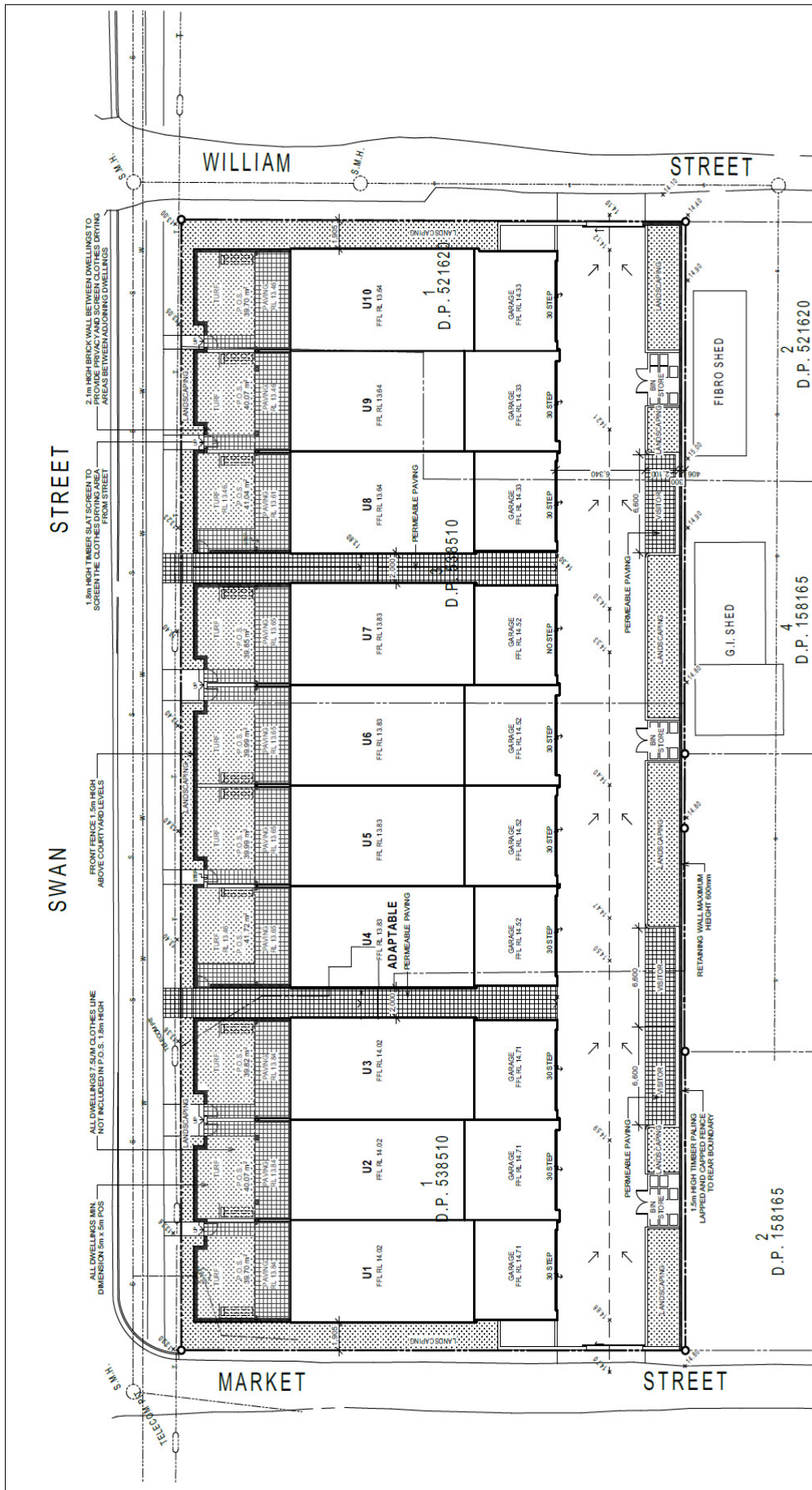
Having carried out this traffic impact assessment for a proposed multi-dwelling residential development on Lots 1 & 3 in DP 538510, Lot 321 in DP 1226898 and Lot 1 in DP 521620, 107 – 117 Swan Street, Morpeth it is recommended that the proposal can be supported as it is considered it would not adversely impact on the local and state road network and could meet all the requirements of Maitland City Council, TfNSW RMS and Australian Standards.



JR Garry BE (Civil), Masters of Traffic
Director
Intersect Traffic Pty Ltd

ATTACHMENT A

DEVELOPMENT PLANS



PROJECT: PROPOSED RESIDENCES AT 107-117 SWAN STREET MORPETH
 CLIENT: UNICOMB
 TITLE: SITE PLAN
 FILE: 2003016 DATE: 23/11/2021 SHEET: 2 OF 22
 THESE PLANS ARE SUBJECT TO COPYRIGHT

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 DESIGN & PLANNING

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 General Enquiries
 Group Enquiries
 Group Enquiries

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 Suite 4/10 Vicarula Street
 Nelson Bay NSW 2265

MORPETH OFFICE
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 Singleton Office
 Ph: (02) 4981 5904

| ISSUE | DETAILS |
|-------|-------------------------------------------------|
| D | GROUND LIFT REMOVED, CONFIG CHANGED TO 4.5.3.50 |
| C | CONTRACT REVISIONS TO BE MADE |
| B | 2000021 - DA ISSUE |
| A | 2000021 - DA ISSUE |

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GROUND FLOOR / SITE PLAN

SITE ANALYSIS AREAS

| | |
|--------------------|----------------------|
| SITE AREA | 2712.4m ² |
| BUILDING FOOTPRINT | 1309.1m ² |
| HARDSTAND PAVING | 562.0m ² |
| LANDSCAPED AREA | 331.1m ² |
| PRIVATE OPEN SPACE | 394.0m ² |
| SITE COVERAGE | 69% |

DWELLING AREAS

| | |
|-------------|---------------------|
| DWELLING 1 | 144.1m ² |
| DWELLING 2 | 172.8m ² |
| DWELLING 3 | 172.8m ² |
| DWELLING 4 | 144.1m ² |
| DWELLING 5 | 144.8m ² |
| DWELLING 6 | 172.2m ² |
| DWELLING 7 | 144.8m ² |
| DWELLING 8 | 144.1m ² |
| DWELLING 9 | 172.8m ² |
| DWELLING 10 | 172.8m ² |
| DWELLING 11 | 144.1m ² |

| | |
|--------|--------------------|
| GARAGE | 40.8m ² |
| GARAGE | 37.5m ² |
| GARAGE | 37.5m ² |
| GARAGE | 37.5m ² |
| GARAGE | 40.8m ² |
| GARAGE | 40.8m ² |
| GARAGE | 40.8m ² |
| GARAGE | 40.8m ² |
| GARAGE | 40.8m ² |
| GARAGE | 37.5m ² |
| GARAGE | 37.5m ² |

PROJECT: PROPOSED RESIDENCES AT 107-117 SWAN STREET MORPETH
 CLIENT: UNICOMB
 TITLE: GROUND FLOOR PLAN
 FILE: 2003016 DATE: 23/11/2021 SHEET: 4 OF 22
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| | |
|-------|-----------------------------------------------------|
| D | ISSUE 1 - INF REMOVAL, CONFG CHANGED TO 3.4.3. SIDE |
| C | ISSUE 2 - REVISIONS TO ISSUE |
| B | ISSUE 3 - REVISIONS TO ISSUE |
| A | ISSUE 4 - REVISIONS TO ISSUE |
| ISSUE | DETAILS |

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FIRST FLOOR PLAN
1:200



ISSUE

D: DWELL - INT REMOVED. CONFIG CHANGED TO 3, 4, 3, SIDE
 C: DWELL - INT REMOVED. CONFIG CHANGED TO 3, 4, 3, SIDE
 B: DWELL - INT REMOVED. CONFIG CHANGED TO 3, 4, 3, SIDE
 A: DWELL - INT REMOVED. CONFIG CHANGED TO 3, 4, 3, SIDE

PROJECT: PROPOSED RESIDENCES AT 107-117 SWAN STREET MORPETH

CLIENT: UNICOMB

TITLE: FIRST FLOOR PLAN

FILE: 2003016 DATE: 23/11/2021 SHEET: 5 OF 22

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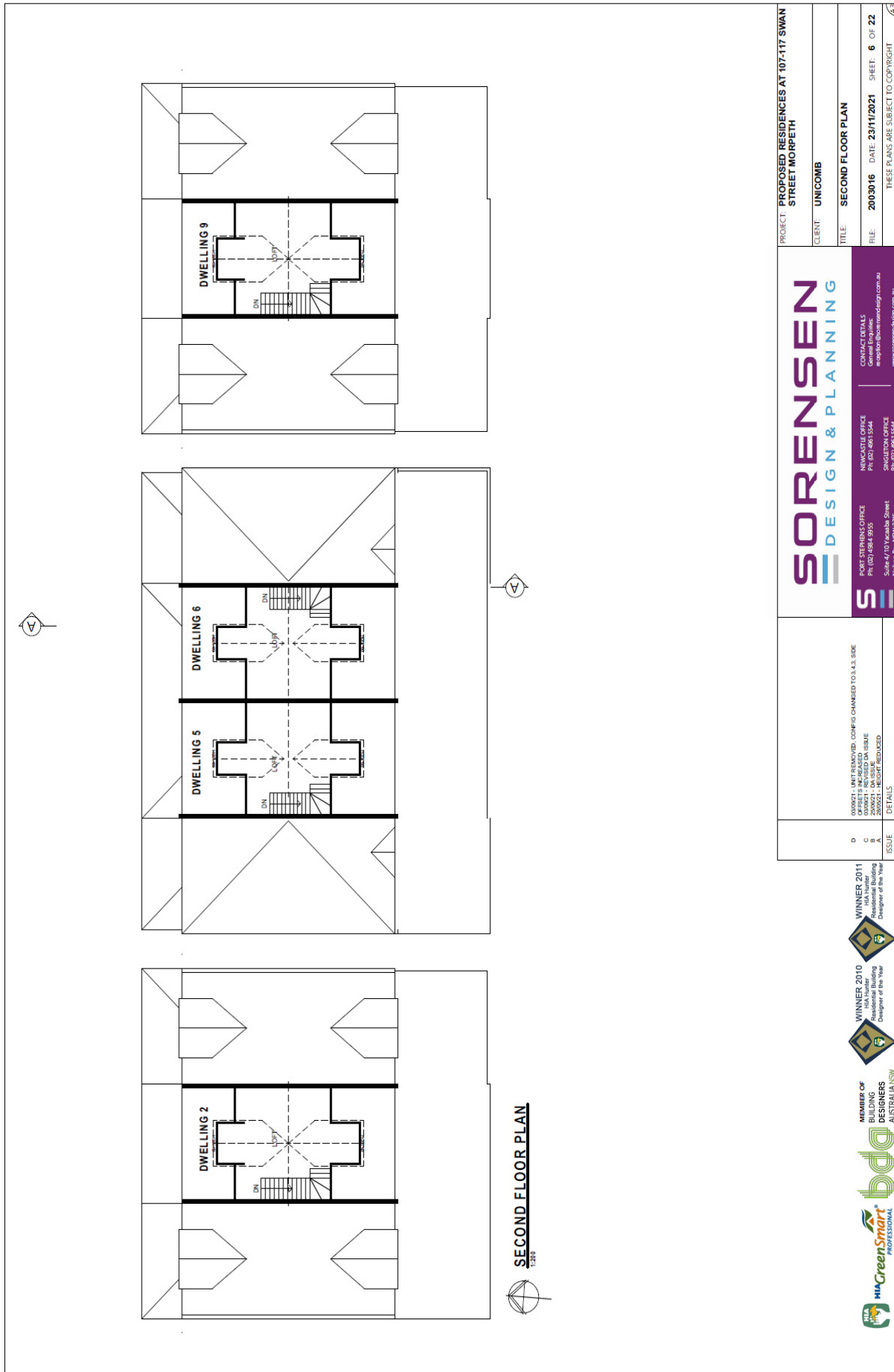
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PROJECT: PROPOSED RESIDENCES AT 107-117 SWAN STREET MORPETH
 CLIENT: UNICOMB
 TITLE: SECOND FLOOR PLAN
 FILE: 2003016 DATE: 23/11/2021 SHEET: 6 OF 22
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03/03/21 - UNIT REMOVED, CONFIG CHANGED TO 3, 4, 5 SIDE
 03/03/21 - AMENDED DA ISSUE
 23/03/21 - DA ISSUE
 23/03/21 - DA ISSUE REJECTED
 DETAILS

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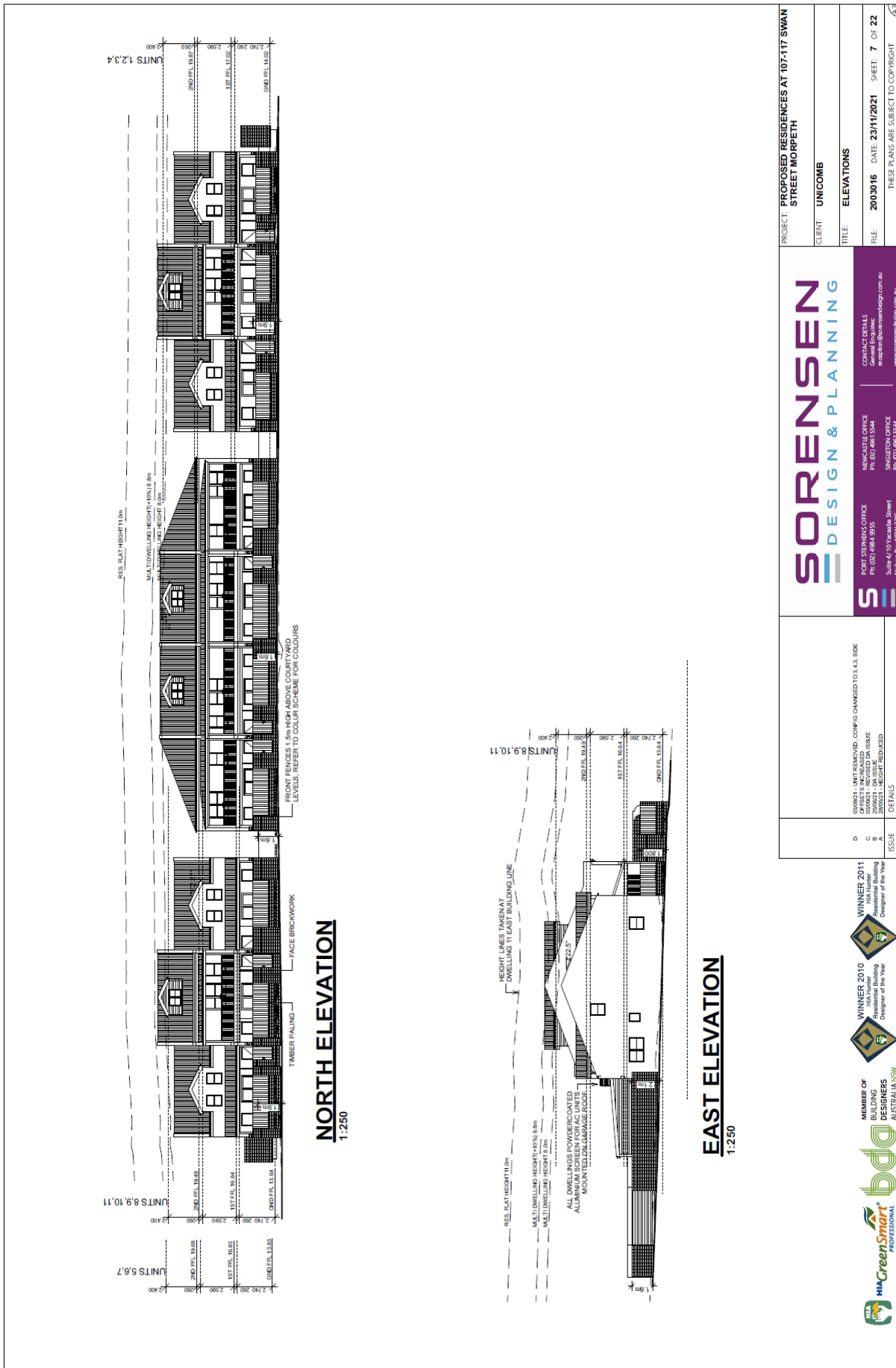
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|--------------------------------------|----------------------------------------------------|
| PROJECT: | PROPOSED RESIDENCES AT 107-117 SWAN STREET MORPETH |
| CLIENT: | UNICOMB |
| TITLE: | ELEVATIONS |
| FILE: | 2003016 DATE: 23/11/2021 SHEET: 7 OF 22 |
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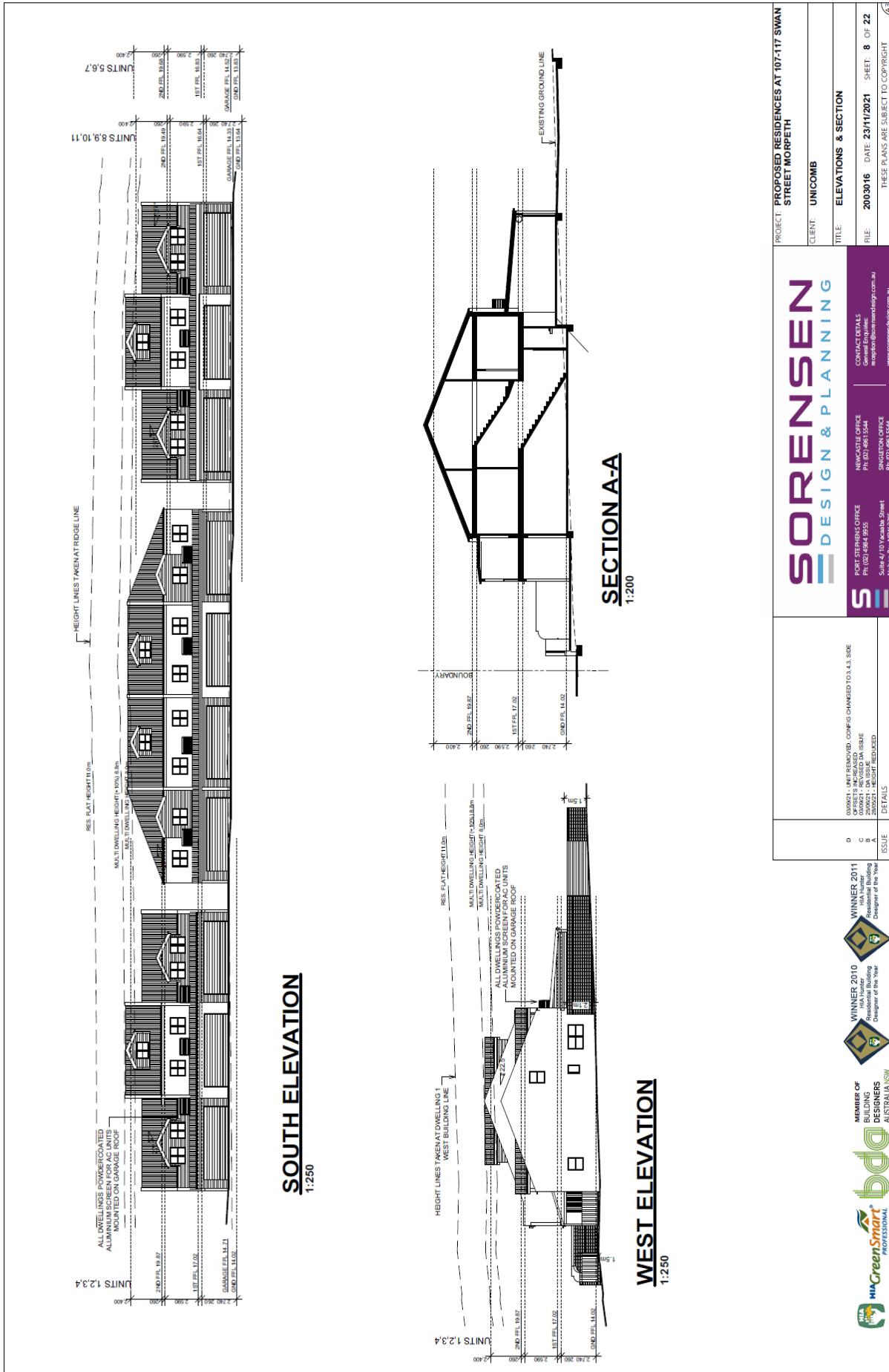
| | |
|-------|--------------------------------------------------|
| D | GROUND LIFT REMOVED, CONFS CHANGED TO 3.4.3. SOE |
| C | CONTRACT REVISIONS |
| B | 2009/11 - 04 ISSUE |
| A | 2009/11 - 04 ISSUE |
| ISSUE | DETAILS |

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PROJECT: PROPOSED RESIDENCES AT 107-117 SWAN STREET MORPETH
 CLIENT: UNICOMB
 TITLE: ELEVATIONS & SECTION
 FILE: 2003016 DATE: 23/11/2021 SHEET: 8 OF 22
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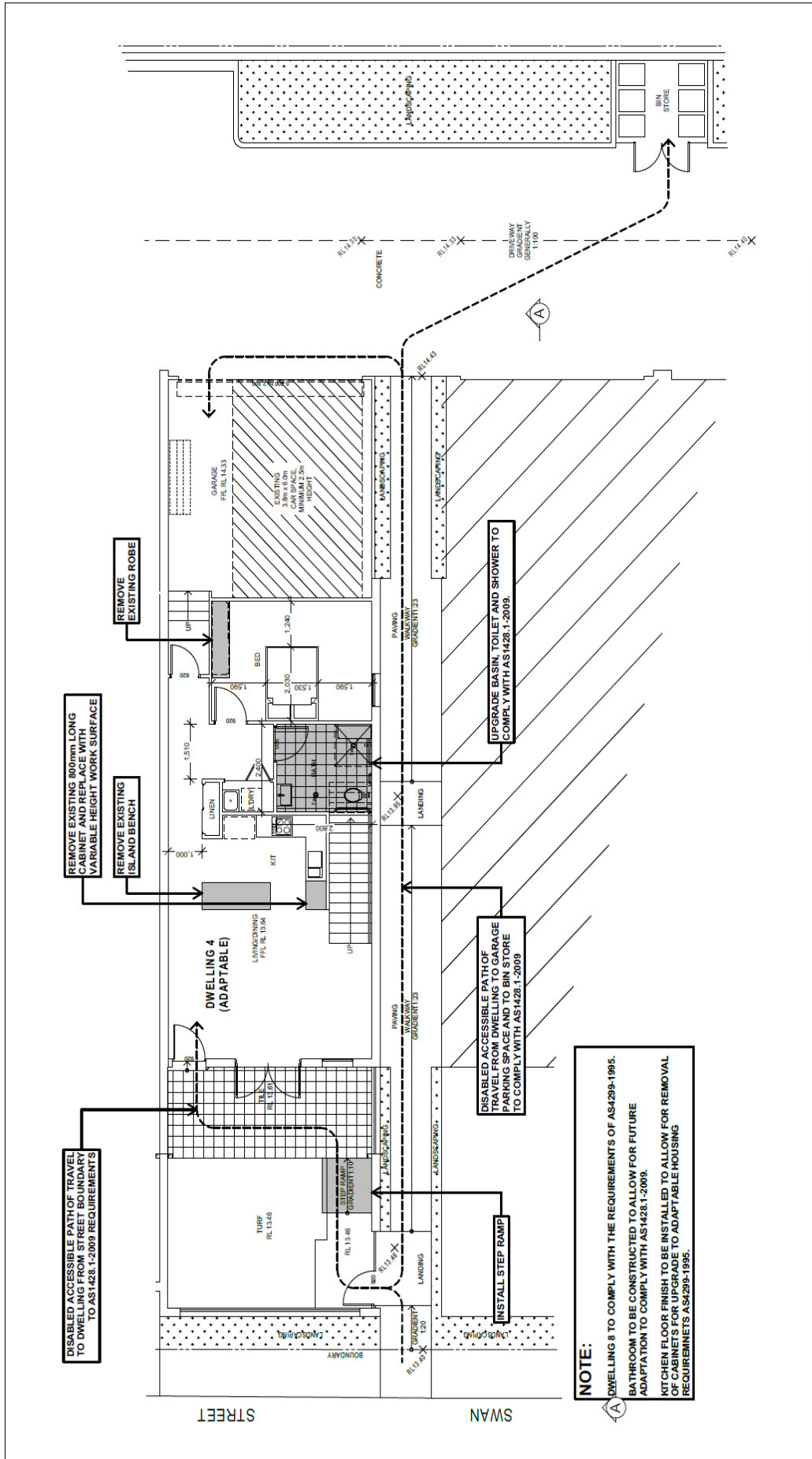
| ISSUE | DETAILS |
|-------|---------------------------------------------------------|
| D | 03/09/21 - UNIT REMOVED, CONFIG CHANGED TO 3, 4, 5 SIDE |
| C | 03/09/21 - REVISED DA ISSUE |
| B | 28/03/21 - REVISED DA ISSUE |
| A | 28/03/21 - REVISED DA ISSUE |

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NOTE:
 DWELLING 8 TO COMPLY WITH THE REQUIREMENTS OF AS4299-1995.
 BATHROOM TO BE CONSTRUCTED TO ALLOW FOR FUTURE ADAPTATION TO COMPLY WITH AS1428.1:2009.
 KITCHEN FLOOR FINISH TO BE INSTALLED TO ALLOW FOR REMOVAL OF CABINETS FOR UPGRADE TO ADAPTABLE HOUSING REQUIREMENTS AS4299-1995.

| | |
|-------------------------------------------------------------|--------------------------------------|
| PROJECT: PROPOSED RESIDENCES AT 107-117 SWAN STREET MORPETH | |
| CLIENT: UNICOMB | TITLE: ADAPTABLE |
| FILE: 2003016 | DATE: 23/11/2021 |
| SHEET: 22 OF 22 | THESE PLANS ARE SUBJECT TO COPYRIGHT |

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| <p>SORENSEN DESIGN & PLANNING</p> <p>CONTACT DETAILS NEWCASTLE OFFICE Ph: 081 450 1544 n.soren@soresendesign.com.au www.soresendesign.com.au</p> | |
| <p>PORT STEPHENS OFFICE Ph: 081 454 1953 S. Soren@soresendesign.com.au www.soresendesign.com.au</p> | |

| ISSUE | DETAILS |
|-------|-------------------------------------------------------|
| D | 000021 - UNIT REMOVED. COMP. CHANGED TO 3.4.3.3.3.006 |
| C | 000020 - REVISED DA NAME |
| B | 000019 - REVISED DA NAME |
| A | 200021 - HEIGHT REDUCED |

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

ATTACHMENT B

TRAFFIC COUNT DATA

Intersect Traffic
 PO Box 268
 East Maitland, Nsw, 2323
 0423324188

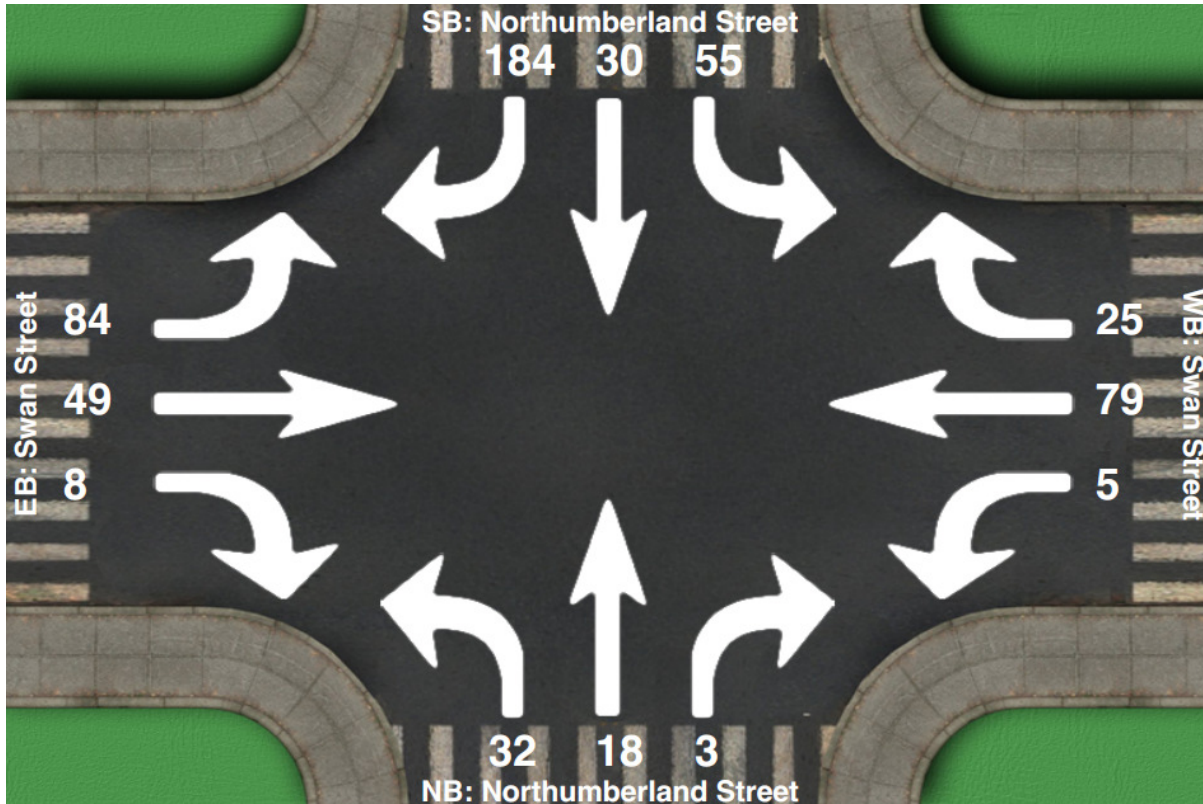
Intersection Peak Hour 08:00 - 09:00

Turn Count Summary

Location: Northumberland Street at Swan Street,
 GPS Coordinates:
 Date: 2021-10-21
 Day of week: Thursday
 Weather:
 Analyst: Jeff

Total vehicle traffic

| Interval starts | SouthBound | | | Westbound | | | Northbound | | | Eastbound | | | Total |
|-----------------|------------|------|-------|-----------|------|-------|------------|------|-------|-----------|------|-------|-------|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| 08:00 | 16 | 7 | 47 | 0 | 12 | 4 | 4 | 4 | 2 | 15 | 14 | 1 | 126 |
| 08:15 | 17 | 11 | 48 | 2 | 18 | 2 | 5 | 5 | 0 | 24 | 13 | 2 | 147 |
| 08:30 | 10 | 6 | 49 | 0 | 24 | 8 | 11 | 4 | 0 | 19 | 14 | 2 | 147 |
| 08:45 | 12 | 6 | 40 | 3 | 25 | 11 | 12 | 5 | 1 | 26 | 8 | 3 | 152 |
| 09:00 | 0 | 1 | 1 | 0 | 2 | 1 | 0 | 0 | 0 | 1 | 3 | 0 | 9 |



Intersect Traffic
 PO Box 268
 East Maitland, NSW, 2323
 0423324188

Intersection Peak Hour 15:00 - 16:00 Turn Count Summary

Location: Northumberland Street at Swan Street , Morpeth
GPS Coordinates: Lat=-32.662983, Lon=151.646792
Date: 2021-10-20
Day of week: Wednesday
Weather: Cloudy
Analyst: Peter

Total vehicle traffic

| Interval starts | SouthBound | | | Westbound | | | Northbound | | | Eastbound | | | Total |
|-----------------|------------|------|-------|-----------|------|-------|------------|------|-------|-----------|------|-------|-------|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| 14:59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15:00 | 7 | 11 | 34 | 2 | 25 | 16 | 8 | 20 | 1 | 63 | 10 | 3 | 200 |
| 15:15 | 6 | 2 | 33 | 3 | 13 | 14 | 11 | 12 | 0 | 46 | 10 | 2 | 152 |
| 15:30 | 7 | 2 | 35 | 0 | 12 | 11 | 4 | 10 | 0 | 44 | 16 | 1 | 142 |
| 15:45 | 11 | 5 | 43 | 2 | 18 | 8 | 8 | 6 | 0 | 42 | 8 | 2 | 153 |

