Vosloo
Consulting Engineers

Appendix C:
Traffic impact assessment by Jaiden Patel Traffic Consulting

JAIDEN PATEL
TRAFFIC CONSULTING

TRAFFIC IMPACT ASSESSMENT

4 THOMAS STREET TOOWOOMBA CITY

MAY 7, 2026

PREPARED FOR: ZHONGYU LIU & YANG ZHOU

Jaiden Patel Traffic Consulting Pty Ltd
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Version History

Issue	Date	Description	Prepared By	Approved By
0.1	4 April 2026	Draft Issue	Jaiden Patel	-
1.0	7 May 2026	Initial Issue	Jaiden Patel	Jaiden Patel | RPEQ #33098

Contents

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Attachments

1 Introduction

1.1 Background

Jaiden Patel Traffic Consulting Pty Ltd has been engaged by Zhongyu Liu & Yang Zhou (the client) to prepare a traffic impact assessment for a 3-unit residential development at 4 Thomas Street, Toowoomba City (subject site). The subject site is located in the Toowoomba Regional Council local government area.

Figure 1 illustrates the location of the subject site with respect to the surrounding road network.

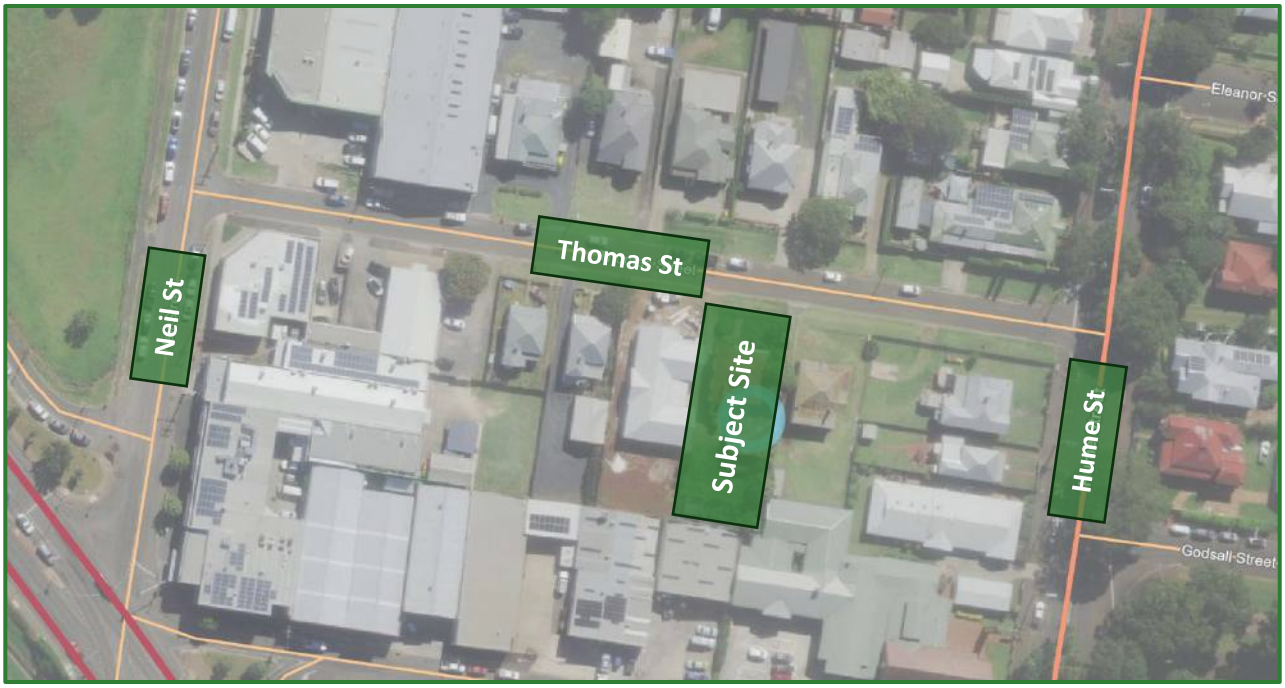


Figure 1: *Subject Site Location*

1.2 Development overview

The proposed development details are summarised below:

- **Dwellings:**
  - Removal and reconstruction of the existing dwelling at the front of the subject site (Unit 1)
  - Construction of two (2) new attached multiple dwellings at the rear of the subject site (Unit 2 & 3)
- **Access:**
  - Unit 1: Proposed 2.4 m wide access near the eastern boundary of the subject site
  - Unit 2 & 3: Upgraded 5 m wide access near the western boundary of the subject site
- **Parking:**
  - Unit 1: 2 parking spaces arranged in tandem; one (1) enclosed 3 m x 6 m, one (1) outdoor on 8 m of private, fenced driveway
  - Unit 2 & 3: 2 parking spaces per unit under 7.1 m x 6.8 m carports, and one (1) visitor parking space behind the carports, measuring 2.7 m x 5.4 m
- **Servicing:**
  - Kerbside waste and recycling serviced by traditional Council refuse collection

1.3 Scope of work

This traffic impact assessment has been prepared in accordance with the following scope of work:

- Reviewing the surrounding road network information, including hierarchy, speed environment, geometry, and constraints
- Reviewing the proposed access and parking arrangements against Council's planning scheme requirements and AS 2890
- Preparation of swept path diagrams using AutoTURN software to demonstrate suitability of the proposed access and parking arrangements
- Estimating the developments peak traffic generation
- Undertaking a qualitative assessment of the traffic safety and efficiency impacts arising from the proposed development

2 Transport network assessment

2.1 Road network

The relevant road network information is summarised in Table 1.

Table 1: *Road Network Information*

Road Name	Council Hierarchy	Speed Limit	Geometry	Relevant Constraints
Thomas Street	Local	50 km/h	Straight, flat	Nearby parking restrictions
Neil Street	Local	50 km/h	Straight, flat	Nil
Hume Street	Distributor	50 – 60 km/h	Straight, flat	Nil

In summary, the proposed development is located within an established low-speed area, consistent with the proposed use.

2.2 Active transport

No existing active transport facilities are provided on Thomas Street. Footpaths are provided on the adjacent Neil Street and Hume Street, providing paved walking and cycling access to the Toowoomba CBD and nearby attractors.

The proposed development includes dedicated paved pedestrian walkways to each of the three (3) units.

In summary, the proposed active transport arrangements are considered suitable and compatible with the proposed development.

2.3 Public transport

Several public transport stops, including bus stops and train stations, are located within less than a 15-minute walk of the subject site.

Figure 2 illustrates the serviceability of public transport within walking distance of the subject site.

***Figure 2**: TravelTime Walkability Assessment (15 min)*

An overview of nearby bus routes is included in Attachment 1.

In summary, the subject site is adequately serviced by existing public transport facilities.

3 Access, parking, and internal layout

3.1 Access

3.1.1 Access overview

Figure 3 illustrates the proposed access locations.

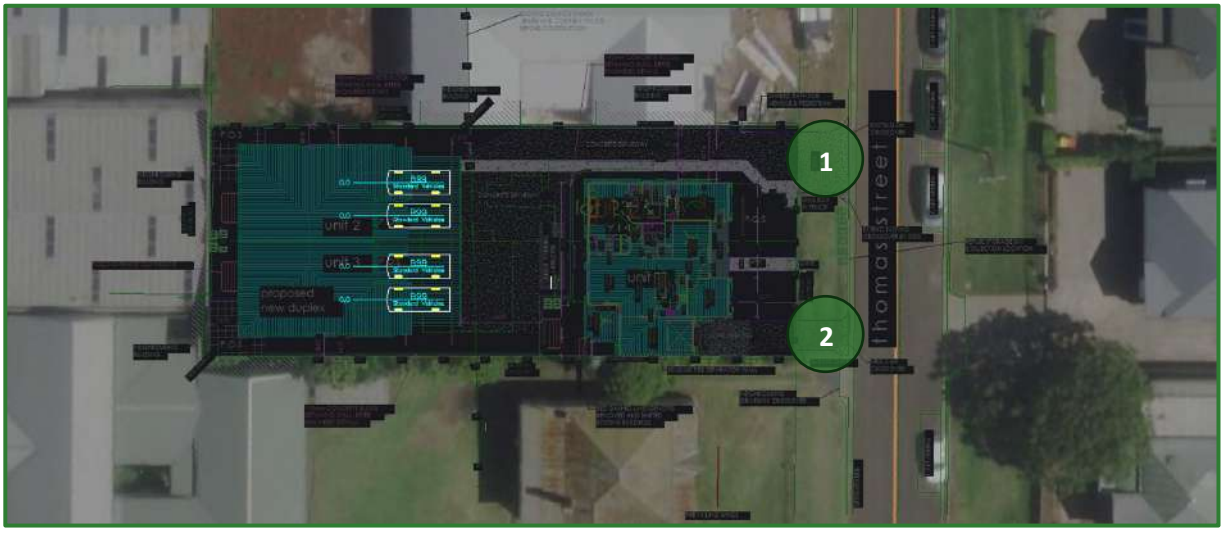


***Figure 3**: Proposed Access Locations*

The following sections assess the proposed access arrangements against the requirements of Council's Transport, Access and Parking Code and relevant standards.

3.1.2 Access width and location

Table 2 summarises the width and location of the proposed accesses.

Table 2: *Access Width and Location Assessment*

Access	Proposed Width	Infrastructure Conflicts	Suitability
1	5 m	Nil	Suitable
2	2.4 m	Proposed location appears to conflict with a No Stopping sign. The development can be conditioned to relocate this sign to be 1 m clear of any existing or proposed access.	Suitable

It is noted that Access 2 is proposed immediately adjacent the access servicing the property to the east, however:

- AS 1906.1 does not require a minimum separation between residential driveways
- A lack of separation will not affect the performance of either access
- The proposed location is opposite a section of Thomas Street which does not permit on-street parking, therefore providing for safer and more efficient entry and egress
- Only a very small number of vehicle movements are expected both in peak hour, and daily
- The proposed arrangement is not uncommon or intrusive

Swept path diagrams demonstrating appropriate B99 access and egress are included in Attachment 2.

In summary, the proposed access widths and locations are suitable from a traffic engineering perspective and adequately accommodate B99 vehicles in accordance with AS 2890.1.

3.1.3 Access sight distances

Table 3 summarises access sight distance compliance against AS 1906.1 for residential driveways.

Table 3: *Access Sight Distance Assessment*

Access	Direction	Speed Limit	AS 1906.1 Requirement	Available	Compliance
1	East	50 km/h	40 m	> 75 m	Compliant
	West			> 110 m	Compliant
2	East			> 60 m	Compliant
	West			> 120 m	Compliant

In summary, sight distances at the proposed access locations are compliant and suitable from a traffic engineering perspective.

3.2 Parking

The development proposes seven (7) on-site car parking spaces, assessed against Council's planning scheme in Table 4.

***Table 4**: Car Parking Review*

Land Use	Units	Required Rate	Required Spaces	Proposed Spaces	Compliance
Multiple Dwelling	3	Two (2) spaces for each dwelling with two (2) or more bedrooms One (1) visitor space for every four (4) dwellings.	Resident: 6 spaces Visitor: 1 space	Resident: 6 spaces Visitor: 1 space	Compliant

In summary, the proposed car parking provision complies with Council's planning scheme requirements and is considered suitable for the proposed development.

3.3 Servicing

Refuse servicing is proposed to be undertaken by kerbside collection, with sufficient frontage available to store the six (6) required kerbside bins.

Under councils planning scheme policy, a multiple dwelling development of 10 units or less does not have a specific service vehicle provision requirement.

Regular servicing of the multiple dwelling (other than refuse collection) is not required, however it is acknowledged that removalist trucks will occasionally service the dwellings on an irregular, as-needed basis.

Swept path diagrams included in Attachment 2 demonstrate safe and efficient access arrangements for occasional Small Rigid Vehicle (SRV) and Medium Rigid Vehicle (MRV) vehicle access, which is considered an appropriate performance outcome in line with Council's planning scheme and from a traffic engineering perspective.

In summary, the proposed development is able to be safety serviced by Medium Rigid Vehicles (MRV) on an as-needed basis.

4 Development traffic

4.1 Trip generation rates

Table 5 summarises the weekday peak trip generation rates for the proposed development, noting that these are higher than the expected weekend rates.

***Table 5**: Trip Generation Rates*

Land Use	AM Peak	PM Peak	Daily	Unit	Source
Residential	0.83	0.84	7.53	trips / dwelling	TfNSW Guide to Transport Impact Assessment

In summary, each unit is expected to generate negligible peak hour and daily trips.

4.2 Trip generation

Table 6 summarises the net trip generation of the proposed development.

Table 6: Trip Generation

Trip Source	Land Use	Yield	AM Peak Trips	PM Peak Trips	Daily Trips
Development	Residential	3 units	3	3	23
Existing		1 unit	1	1	8
Net (Development - Existing)		**2 units**	**2**	**2**	**15**

In summary, the proposed development is expected to result in two (2) additional peak hour trips in both the AM and PM peak periods, and 15 additional daily trips.

Given the net increase of only two (2) peak-hour trips, SIDRA modelling is not warranted and would not meaningfully change the assessment outcome.

4.3 Impacts

The proposed development is expected to generate a very low number of additional peak hour and daily trips. Generated trips are expected to be reasonably well distributed across the local grid-style network.

As such, detailed traffic analysis (e.g., SIDRA) is not considered necessary, noting that the existing road network is well developed and suitable to accommodate the trips.

No adverse safety or operational impacts are expected to occur, including with respect to Thomas Street's intersection with Neil Street and Hume Street.

4.4 Summary

In summary, the development trip generation is compatible with the existing road network and surrounding land uses, further analysis is not warranted from a traffic engineering perspective, and the subject site's walkability and proximity to bus and rail connections is expected to be advantageous to occupants seeking to minimise or avoid private vehicle use. No net worsening to traffic efficiency or safety is expected as a result of the proposed development.

5 Mitigation measures

5.1 Required upgrades

Based on the trip generation and qualitative traffic analysis, no upgrades to traffic and transport infrastructure are considered necessary, nor appropriate, as a result of the proposed development.

5.2 Recommended conditions

As noted above in Table 2, the proposed access on the eastern side of the subject side may impact an existing parking control sign. If not already removed or relocated, the proposed development can reasonably be conditioned to relocate the parking control signs to the nearest location such that it is appropriately offset from any accesses.

6 Conclusion

6.1 Summary of impacts

In summary, the proposed development results in negligible impact to the operation and safety of the surrounding road network, requiring only very minor infrastructure relocation (see Section 5).

6.2 Compliance statement

This traffic impact assessment has been prepared in accordance with all relevant transport, traffic engineering and planning requirements as applicable to the subject site and proposed development. The analysis, design inputs and recommendations are based on the applicable State and Local Government guidelines, including Council's planning scheme. All methodologies, assumptions and design parameters reflect current industry practice and the standards referenced throughout this report.

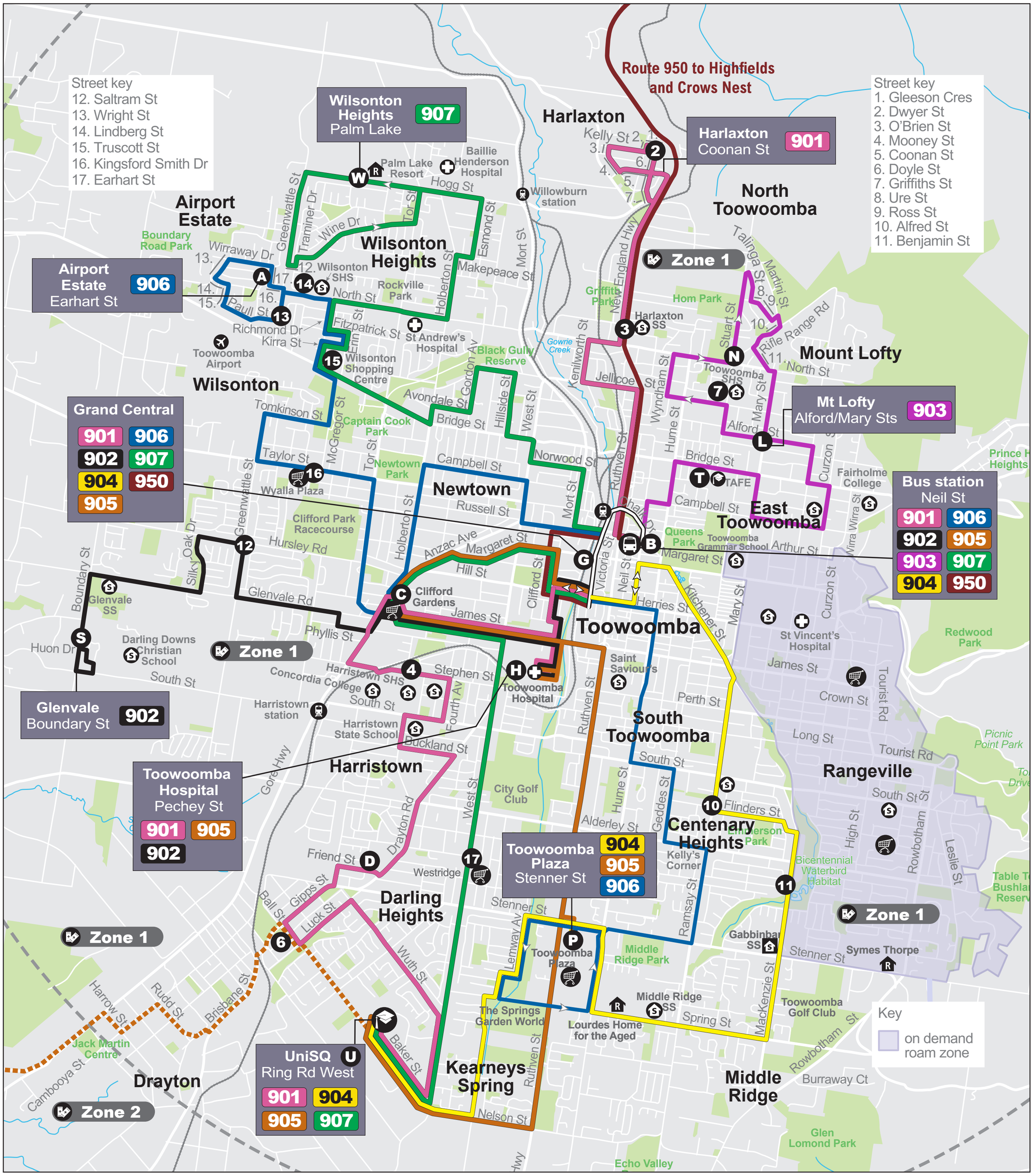
6.3 Recommendations

This Traffic Impact Assessment demonstrates that the proposed development can be supported from a traffic engineering perspective, subject to the recommended conclusions outlined herein. The findings are considered to be accurate, robust and suitable to inform Council's development assessment process.

ATTACHMENT 1: BUS ROUTES

Toowoomba bus routes

Effective 25 September 2023



Route 905 to Westbrook

Key

- route 901
- route 902
- route 903
- route 904
- route 905
- route 905 occasional
- route 906
- route 907
- route 950
- common route in cbd
- train line and station
- shopping centre
- retirement community
- school
- educational institution
- hospital
- airport
- fare zone boundary
- 16 G map reference - see timetable

N

Scale

Metres 750 1500

ATTACHMENT 2: SWEPT PATH DIAGRAMS

NG COUNCIL'S MAIN
ER LINE. CONFIRM ON SITE
RE CONSTRUCTION

NEIGHBOURING BUILDING

SHARED PATH FOR VEHICLE & PEDESTRIAN

600 RWH

CONCRETE DRIVEWAY

B99 Standard Vehicles

MAIL BOX IN FENCE

unit 1

P.O.S.

PERVIOUS VISITOR PARKING 5400x2400

PATH

GATE

REFUSE STORAGE BIN COLLECTION LOCATION

CAR PARKING

PROPERTY BOUNDARY

60/60/60 FIRE SEPARATION WALL

NEW 3.4m CROSSOVER

500 RWH

2100 MAX. HEIGHT FENCE

NEIGHBOURING DRIVEWAY CROSSOVER

RED DASHED LINES DENOTES REMOVED AND SHIFTED EXISTING BUILDINGS

UPRIGHT KERB

CARPARKING

PREVAILING WINDS

Thomas Street

NG COUNCIL'S MAIN
ER LINE. CONFIRM ON SITE
RE CONSTRUCTION

NEIGHBOURING BUILDING

SHARED PATH FOR VEHICLE & PEDESTRIAN

600 RWH

CONCRETE DRIVEWAY

B99 Standard Vehicles

MAIL BOX IN FENCE

unit 1

P.O.S.

PERVIOUS VISITOR PARKING 5400x2400

PATH

GATE

REFUSE STORAGE BIN COLLECTION LOCATION

CAR PARKING

PROPERTY BOUNDARY

60/60/60 FIRE SEPARATION WALL

NEW 3.4m CROSSOVER

500 RWH

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RED DASHED LINES DENOTES REMOVED AND SHIFTED EXISTING BUILDINGS

UPRIGHT KERB

CARPARKING

PREVAILING WINDS

Thomas Street

PROJECT:

4 THOMAS STREET TOOWOOMBA CITY TIA

Rev.	AMENDMENT DESCRIPTION	DATE
A	INITIAL ISSUE	07/05/2026

ACCESS 1
SWEPT PATH DIAGRAMS
B99 | ENTRY & EXIT

SCALE 2 0 2 4 6m
SCALE 1:200

DRAWN JAIDEN PATEL | RPEQ 33098

JOB-DRAWING No. DWG 1

REVISION A

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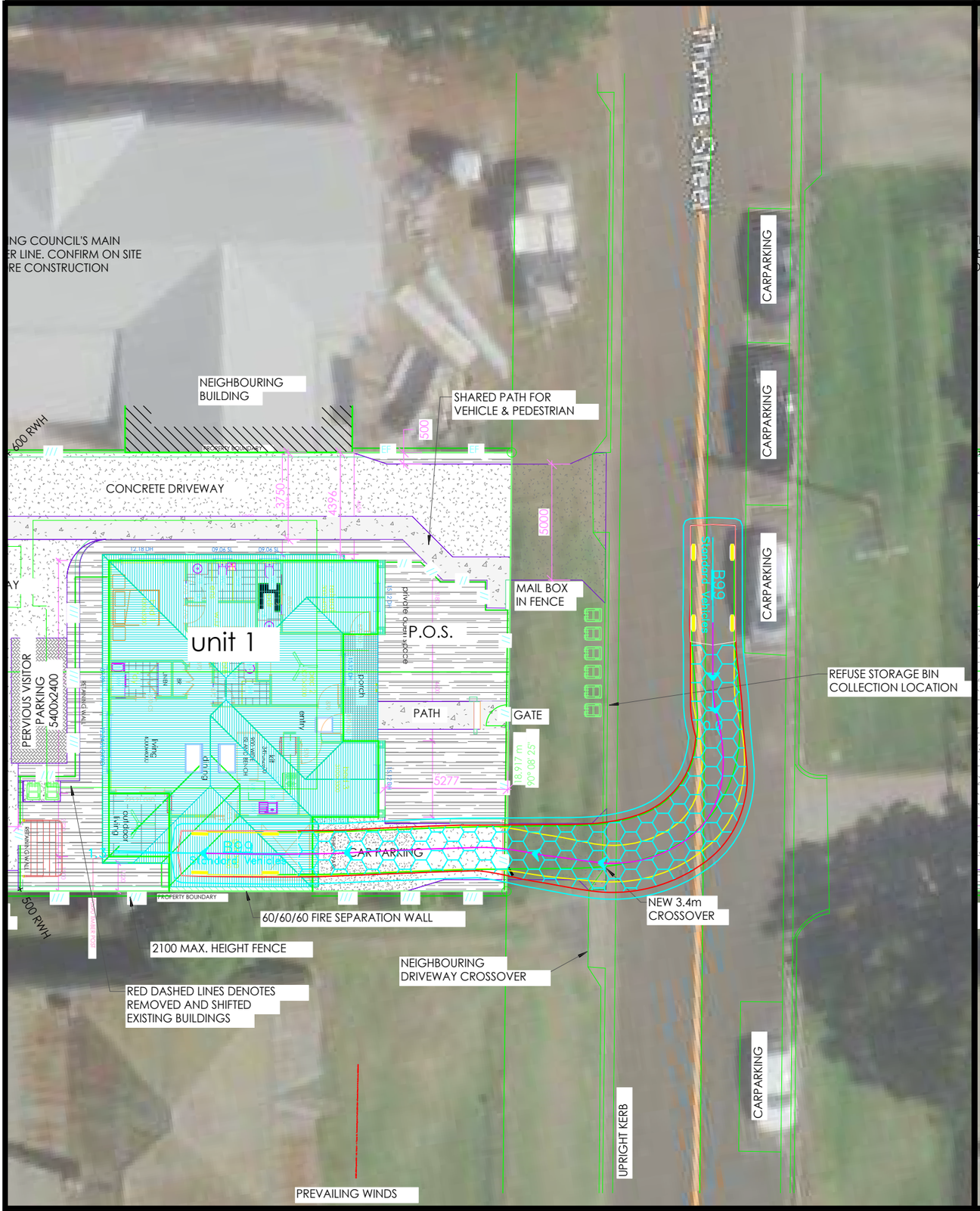

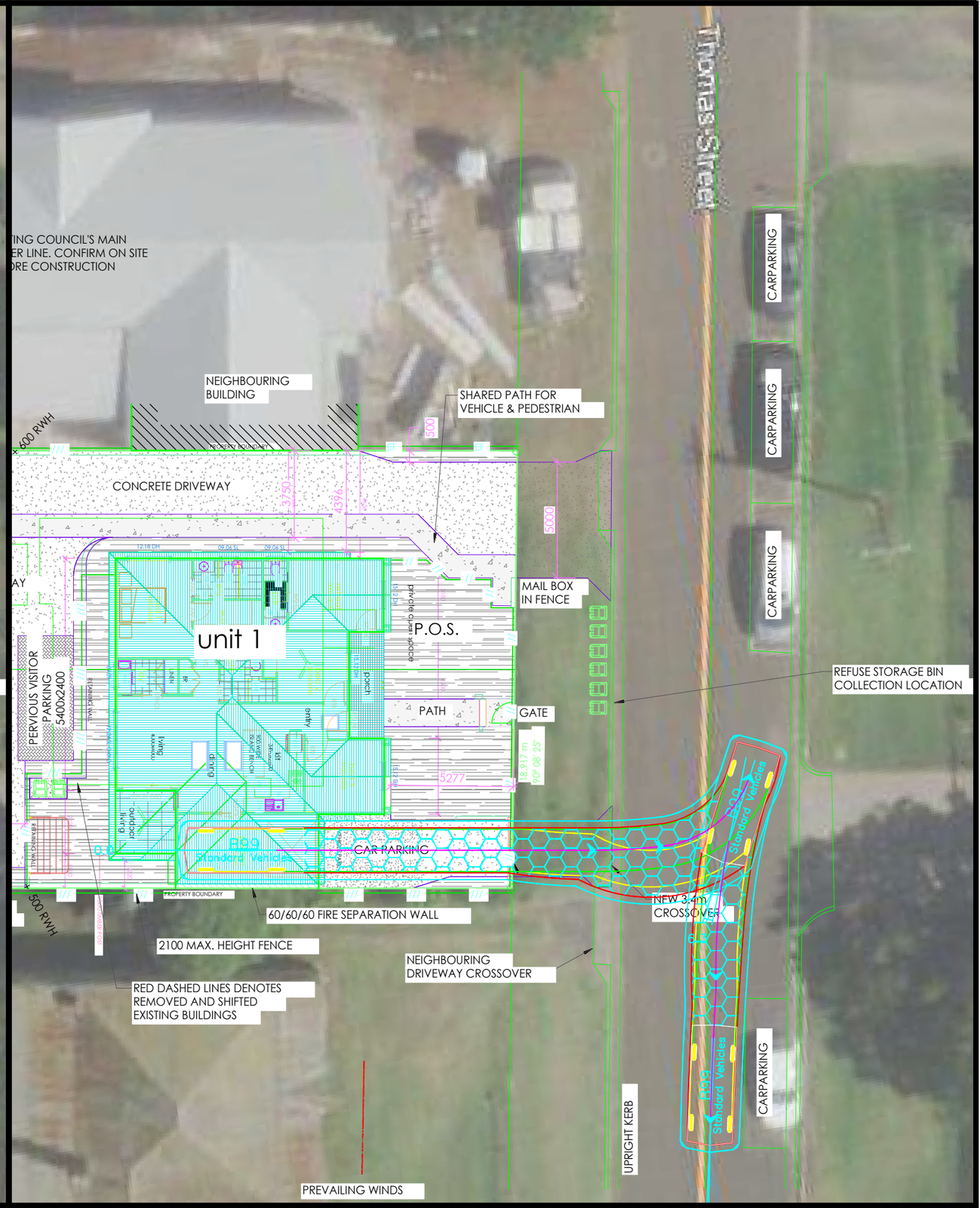

PROJECT:

4 THOMAS STREET TOOWOOMBA CITY TIA

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A	INITIAL ISSUE	07/05/2026

ACCESS 2
SWEPT PATH DIAGRAMS
B99 | ENTRY & EXIT

SCALE 2 0 2 4 6m
SCALE 1:200

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JOB-DRAWING No. DWG 2

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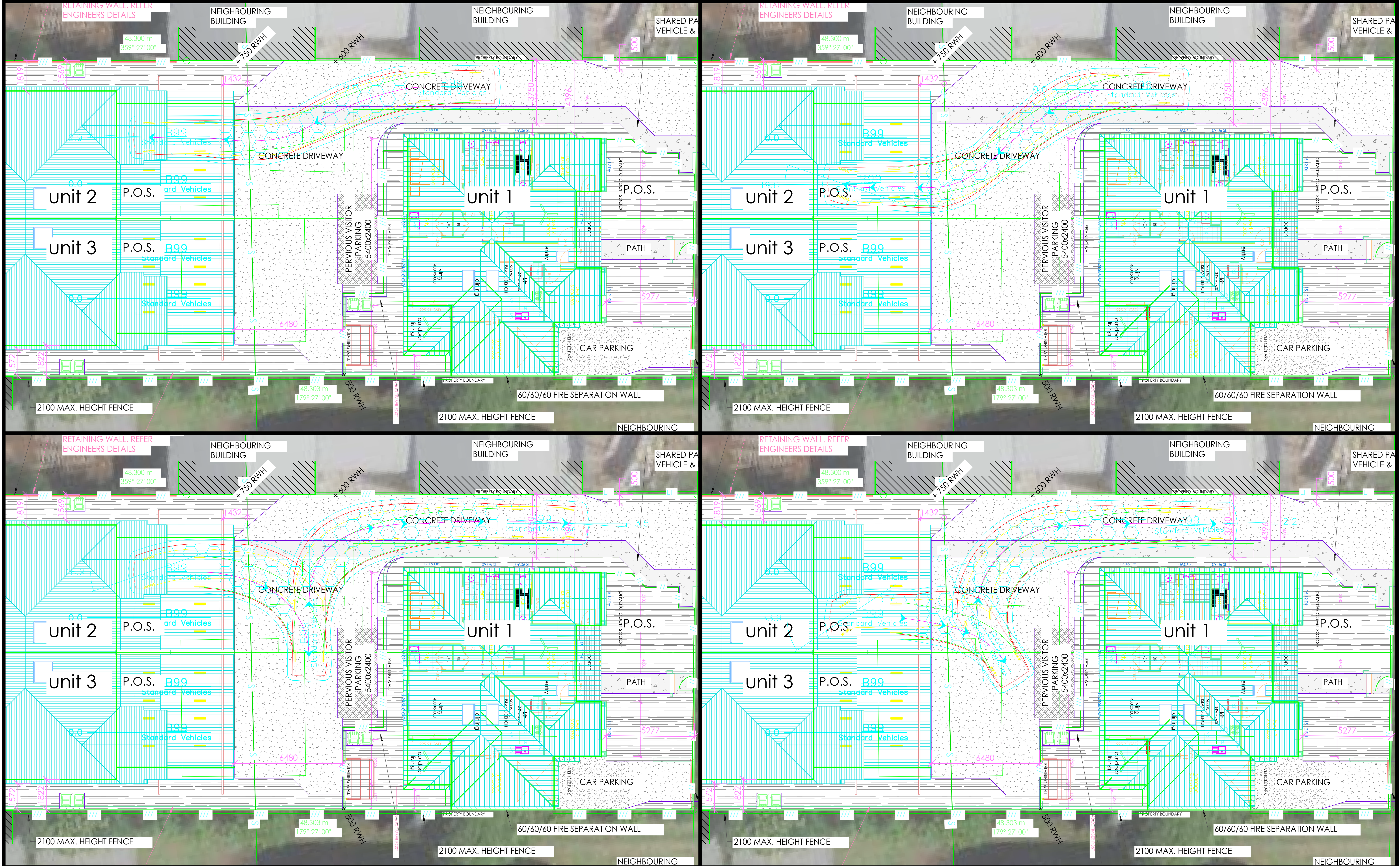

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4 THOMAS STREET TOOWOOMBA CITY TIA

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UNIT 2
SWEPT PATH DIAGRAMS
B99 | CAR PARKS 1 & 2

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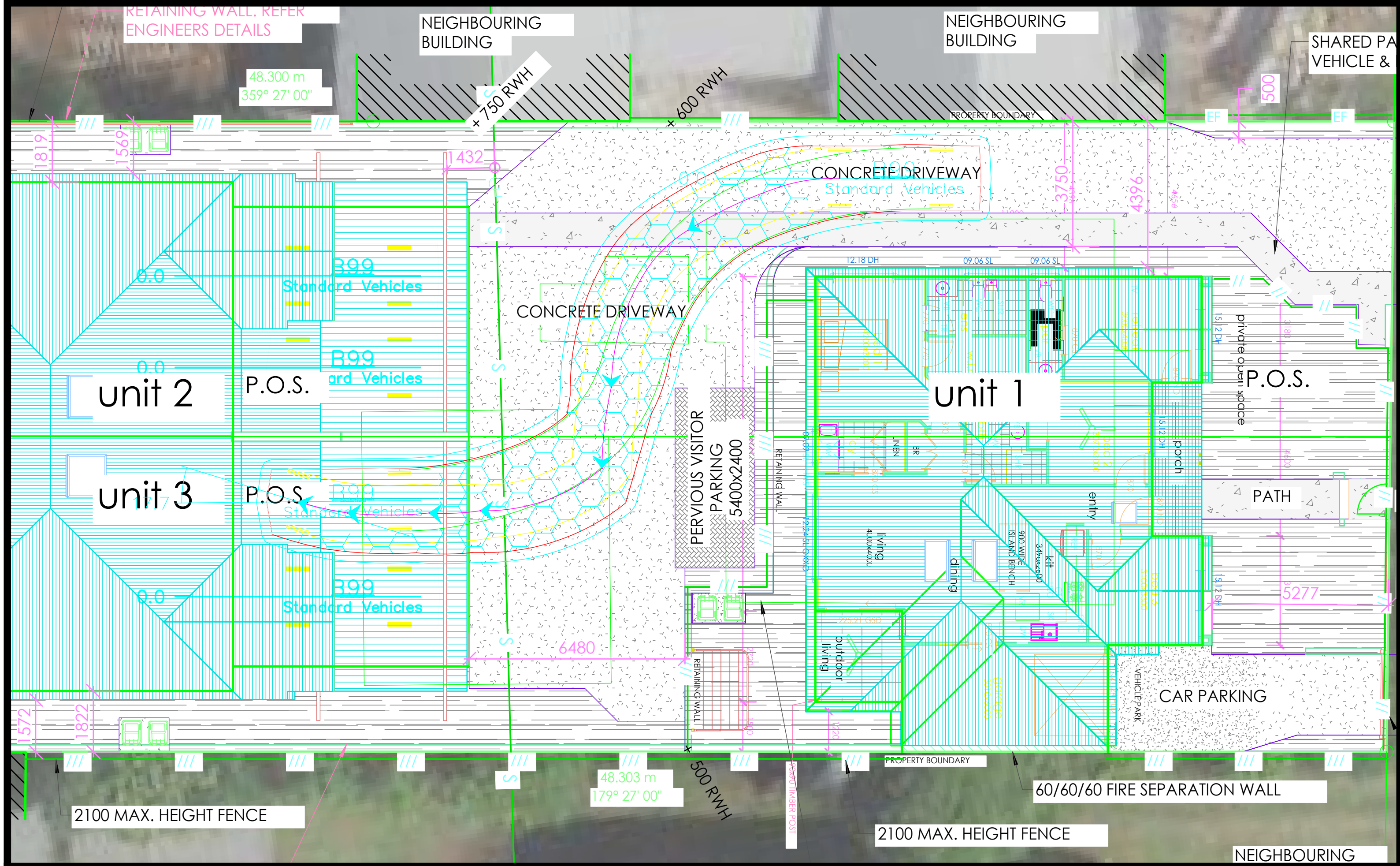
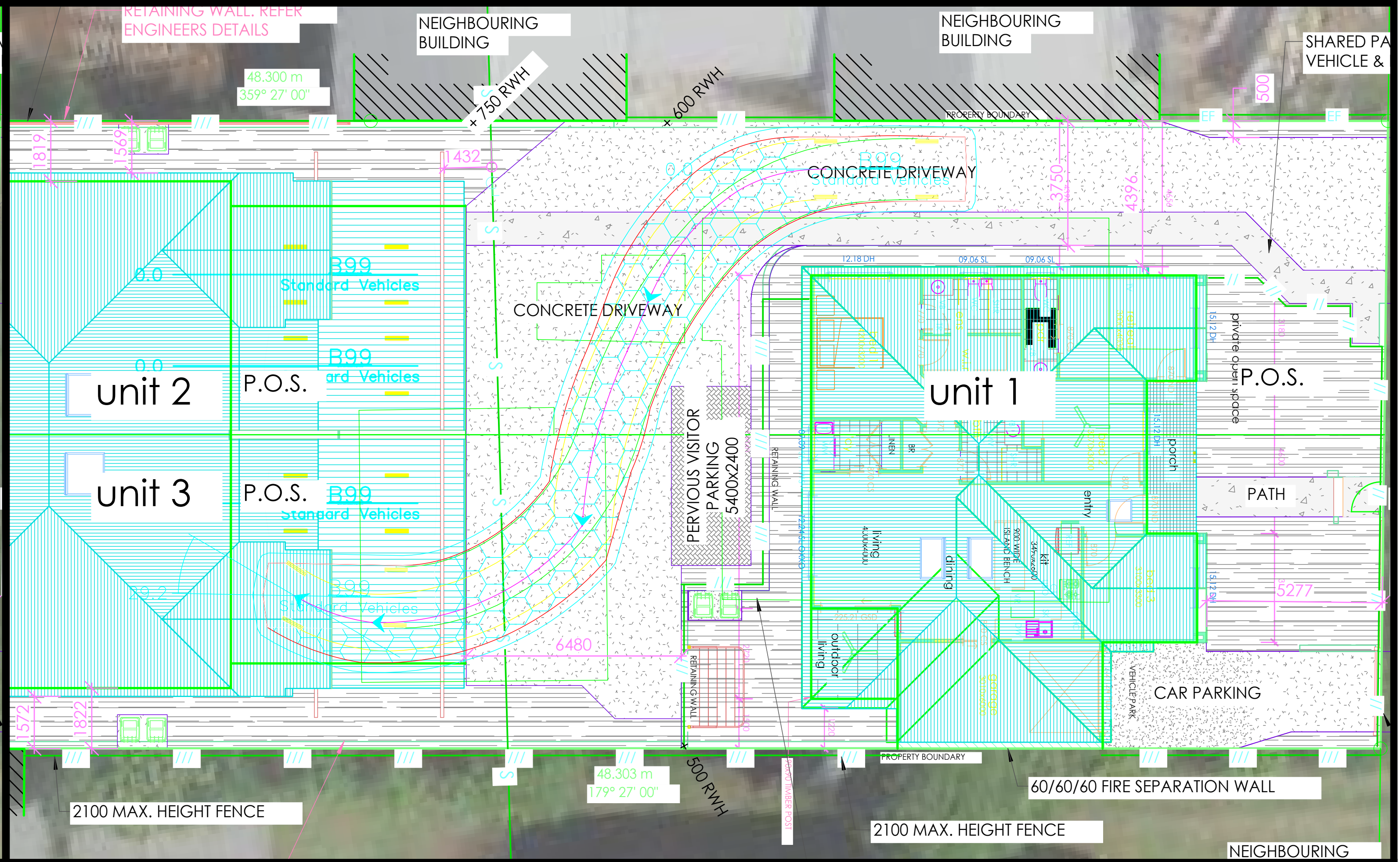
SCALE: 2 0 2 4 6m — SCALE 1:200

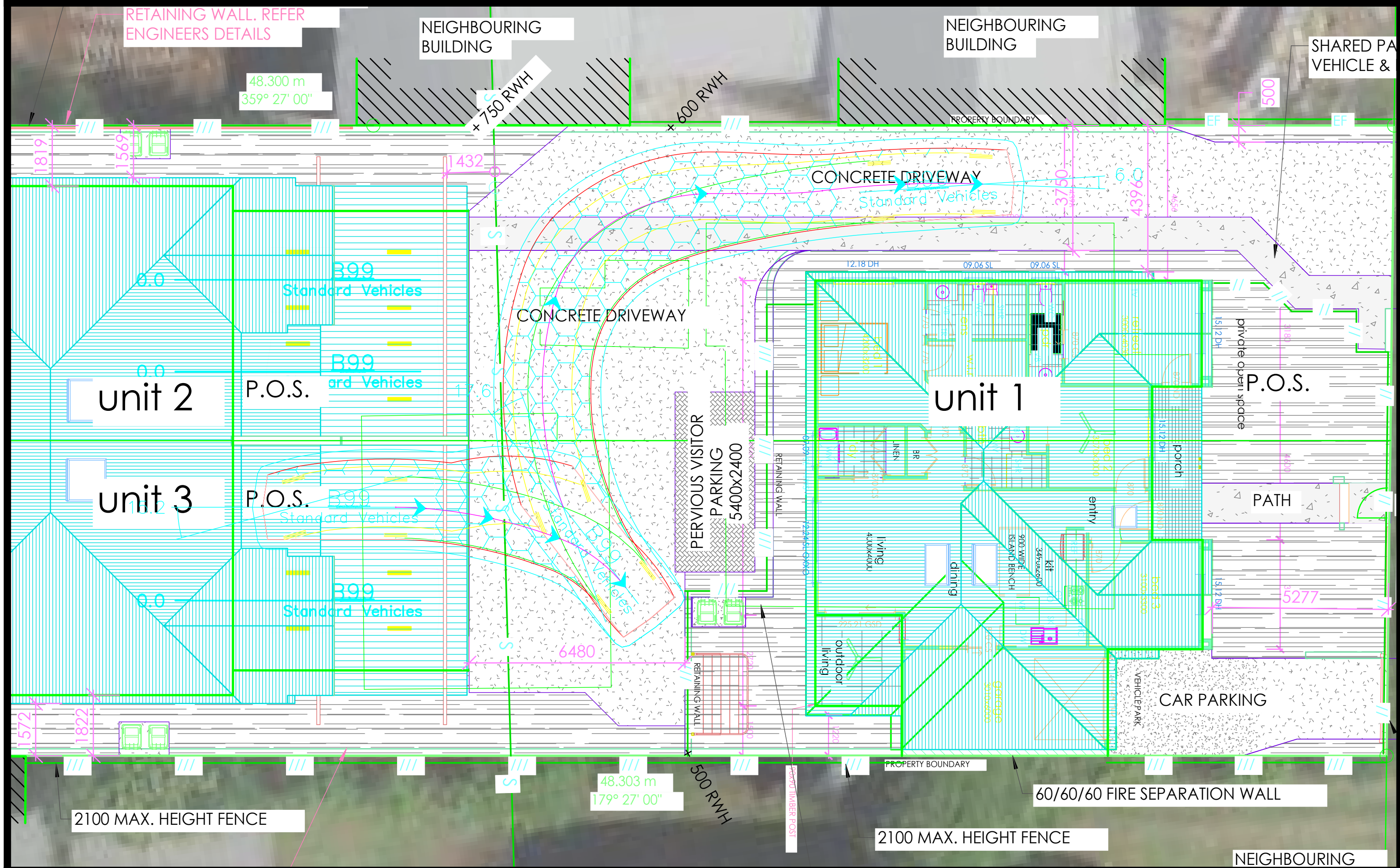
DRAWN: JAIDEN PATEL | RPEQ 33098

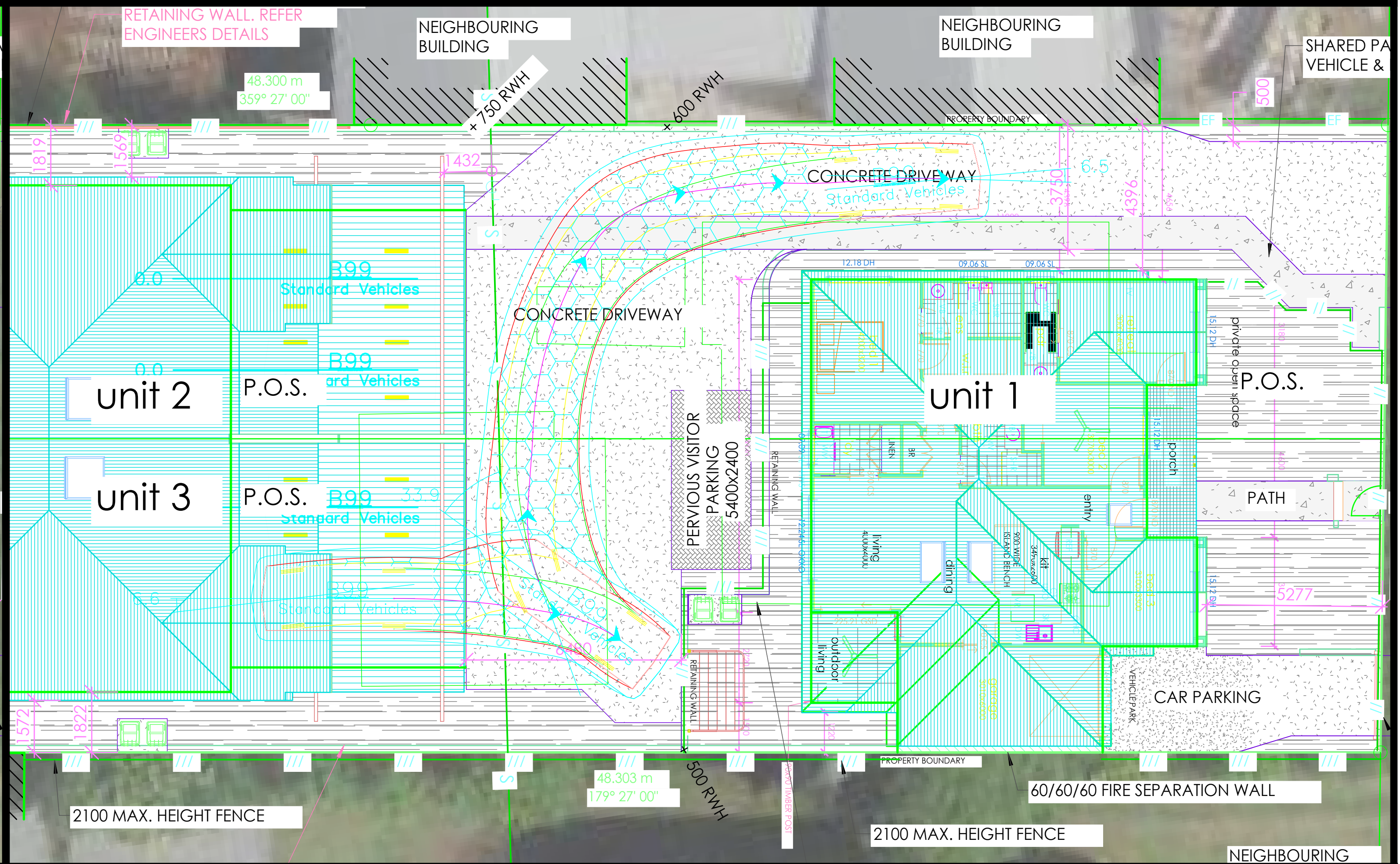
JOB-DRAWING No.: DWG 3

REVISION: A









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4 THOMAS STREET TOOWOOMBA CITY TIA

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UNIT 3
SWEPT PATH DIAGRAMS
B99 | CAR PARKS 1 & 2

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SCALE: 2 0 2 4 6m — SCALE 1:200

DRAWN: JAIDEN PATEL | RPEQ 33098

JOB-DRAWING No.: DWG 4

REVISION: A

EXISTING COUNCIL'S MAIN SEWER LINE. CONFIRM ON SITE BEFORE CONSTRUCTION

AX. HEIGHT FENCE

mm CONCRETE BLOCK AINING WALL. REFER GINEERS DETAILS

NEIGHBOURING BUILDING

NEIGHBOURING BUILDING

SHARED PATH FOR VEHICLE & PEDESTRIAN

48.300 m 359° 27' 00"

+750 RWH

+600 RWH

500

EF

5000

1432

CONCRETE DRIVEWAY

B99 Standard Vehicles

CONCRETE DRIVEWAY

MAIL BOX IN FENCE

t 2

P.O.S.

unit 1

P.O.S.

t 3

P.O.S.

B99 Standard Vehicles

PERVIOUS VISITOR PARKING AREA

5400x2400

PATH

GATE

18.917 m 90° 08' 25"

5277

6480

CAR PARKING

PROPERTY BOUNDARY

48.303 m 179° 27' 00"

500 RWH

60/60/60 FIRE SEPARATION WALL

. HEIGHT FENCE

2100 MAX. HEIGHT FENCE

NEIGHBOURING DRIVEWAY CROSSOVER

CRETE BLOCK LL. REFER TAILS

RED DASHED LINES DENOTES REMOVED AND SHIFTED EXISTING BUILDINGS

PREVAILING WINDS

EXISTING COUNCIL'S MAIN SEWER LINE. CONFIRM ON SITE BEFORE CONSTRUCTION

AX. HEIGHT FENCE

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RETE BLOCK LL. REFER TAILS

RED DASHED LINES DENOTES REMOVED AND SHIFTED EXISTING BUILDINGS

PREVAILING WINDS

B99 STANDARDS, 2004 (AU, NZ)

Visitor Parking Exit. Short Reverse Followed by a 3-Point Turn - Considered Suitable

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VISITOR CAR PARK
SWEPT PATH DIAGRAMS
B99 | ENTRY & EXIT

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SCALE 2 0 2 4 6m
SCALE 1:200

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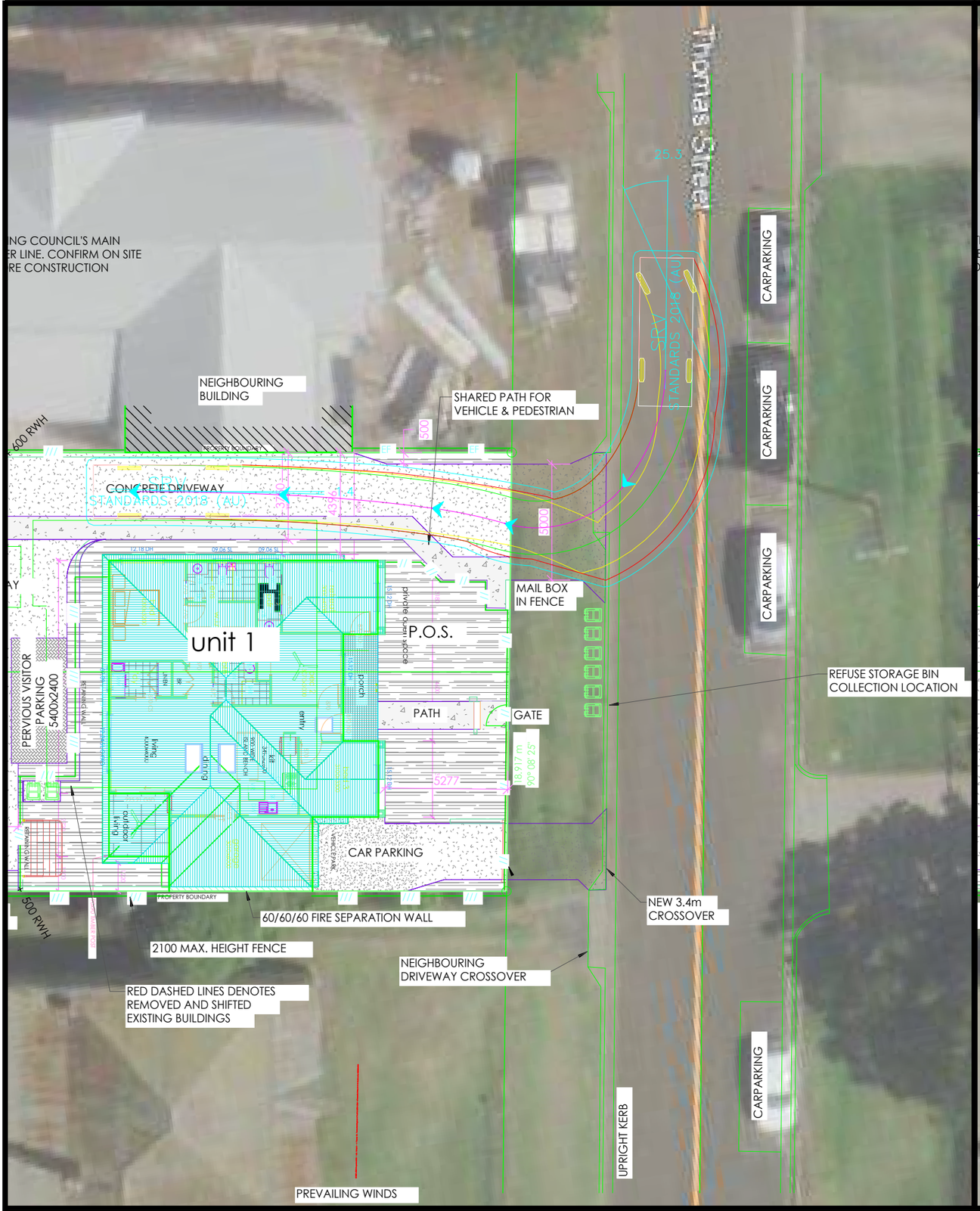

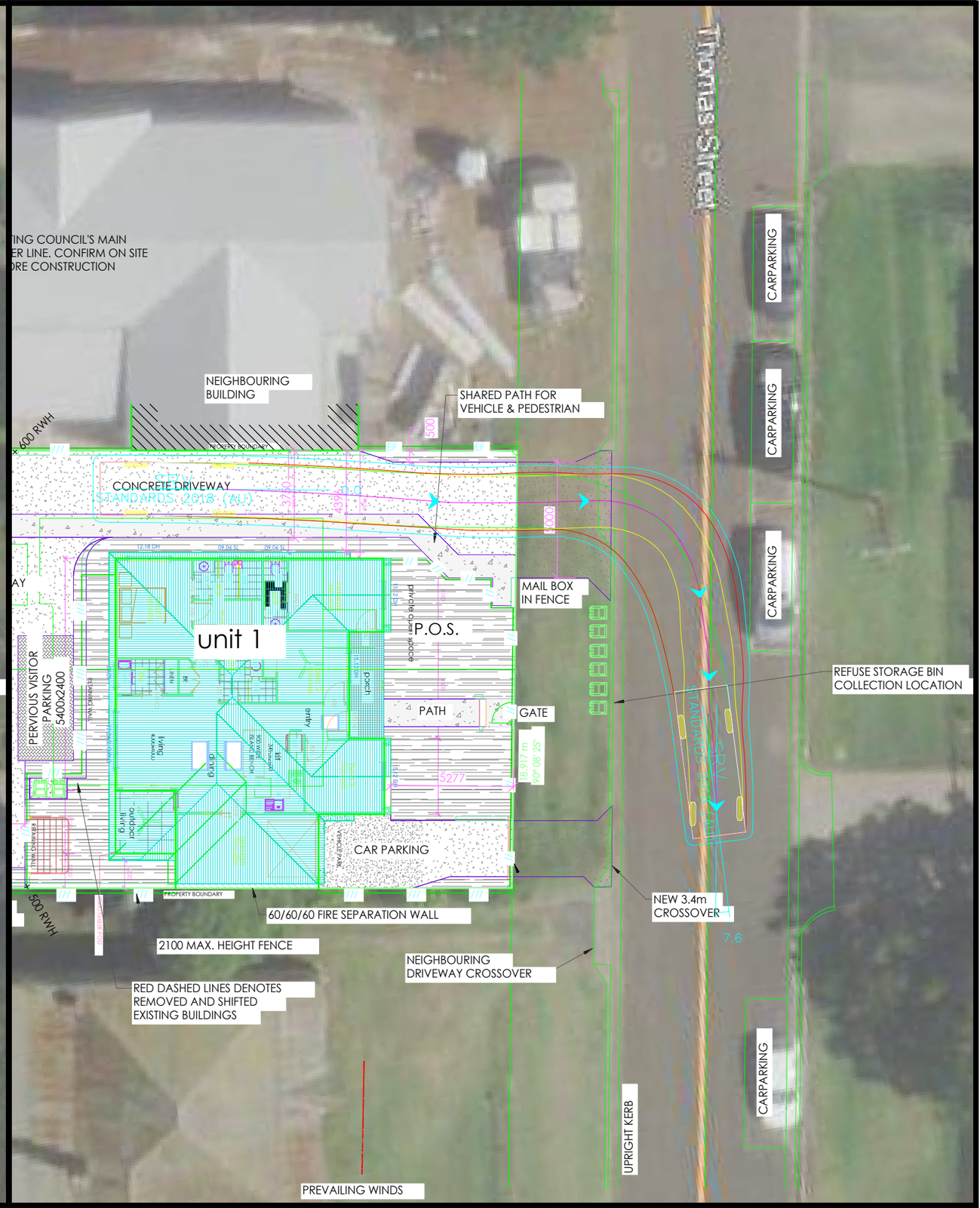

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SERVICING
SWEPT PATH DIAGRAMS
SRV | ENTRY & EXIT

SCALE 2 0 2 4 6m — SCALE 1:200

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REVISION A

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NG COUNCIL'S MAIN
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Thomas Street

NEIGHBOURING BUILDING

SHARED PATH FOR VEHICLE & PEDESTRIAN

600 RWH

CONCRETE DRIVEWAY

MRV STANDARDS 2018 (AU)

CARPARKING

CARPARKING

CARPARKING

MAIL BOX IN FENCE

unit 1

P.O.S.

PERVIOUS VISITOR PARKING 5400x2400

PATH

GATE

REFUSE STORAGE BIN COLLECTION LOCATION

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PROPERTY BOUNDARY

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SERVICING
SWEPT PATH DIAGRAMS
MRV | ENTRY & EXIT

SCALE 2 0 2 4 6m
SCALE 1:200

DRAWN JAIDEN PATEL | RPEQ 33098

JOB-DRAWING No. DWG 7

REVISION A