

6 EDMONDSTONE ROAD, BOWEN HILLS

PROPOSED MIXED USE DEVELOPMENT

TRAFFIC IMPACT ASSESSMENT

FOR

PELLICANO GROUP

**PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL**

Approval no: DEV2018/982

Date: 13 March 2019



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Government

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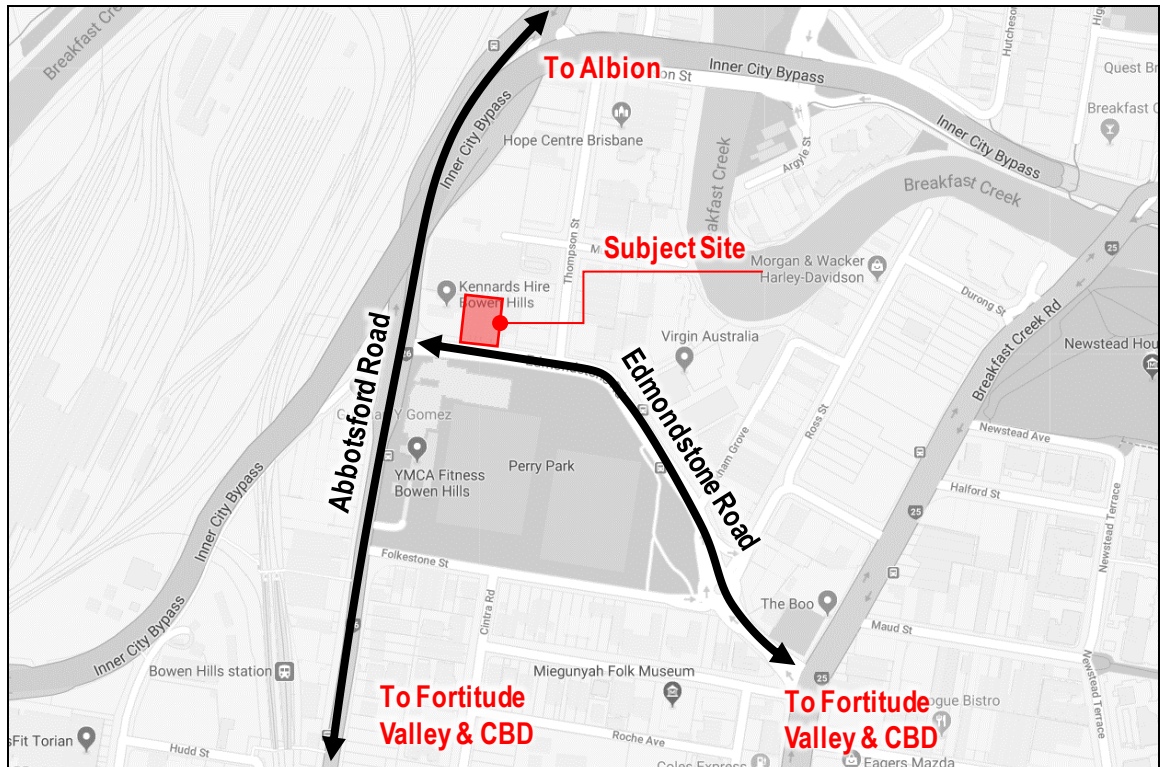
1. INTRODUCTION

1.1 OVERVIEW

Bitzios Consulting (Bitzios) has been commissioned by Pellicano Group (applicant) to prepare a traffic impact assessment (TIA) for a proposed mixed-use development to be located at 6 Edmondstone Road, Bowen Hills (subject site). The subject site is also referred as Lots 32, 34, 58 and 59 on RP9382.

The site is located within the Bowen Hills Urban Development Area (UDA) and the Brisbane City Council (Council) local government area. Accordingly, the development is subject to the requirements of the Bowen Hills UDA Development Scheme and where not covered by the Scheme, the Brisbane City Plan 2014.

The location of the subject site is identified on Figure 1.1.



SOURCE: Google Maps

Figure 1.1: Subject Site Location

1.2 DEVELOPMENT DETAILS

The proposed development includes the following traffic engineering related elements:

- **land use / yield:** 77 multiple dwellings, and 215m² GFA business / office / shop;
- **vehicular access:** single driveway crossover on Edmondstone Road;
- **car parking:** 86 spaces across two (2) basement levels, including:
 - 78 resident spaces; and
 - eight (8) retail / residential visitor spaces, of which one (1) is a Persons with Disability (PWD) space.
- **bicycle parking:** 92 spaces across two (2) basement levels, including:
 - 77 spaces for residents;
 - 13 spaces for residential visitors and business / office / shop customers; and
 - two (2) business / office / shop staff spaces.
- **refuse collection / servicing:** accommodated on-site.

It is noted that the existing commercial office building that is located on the site will be demolished.

A copy of the development plans is included at **Appendix A**.

1.3 SCOPE OF ASSESSMENT

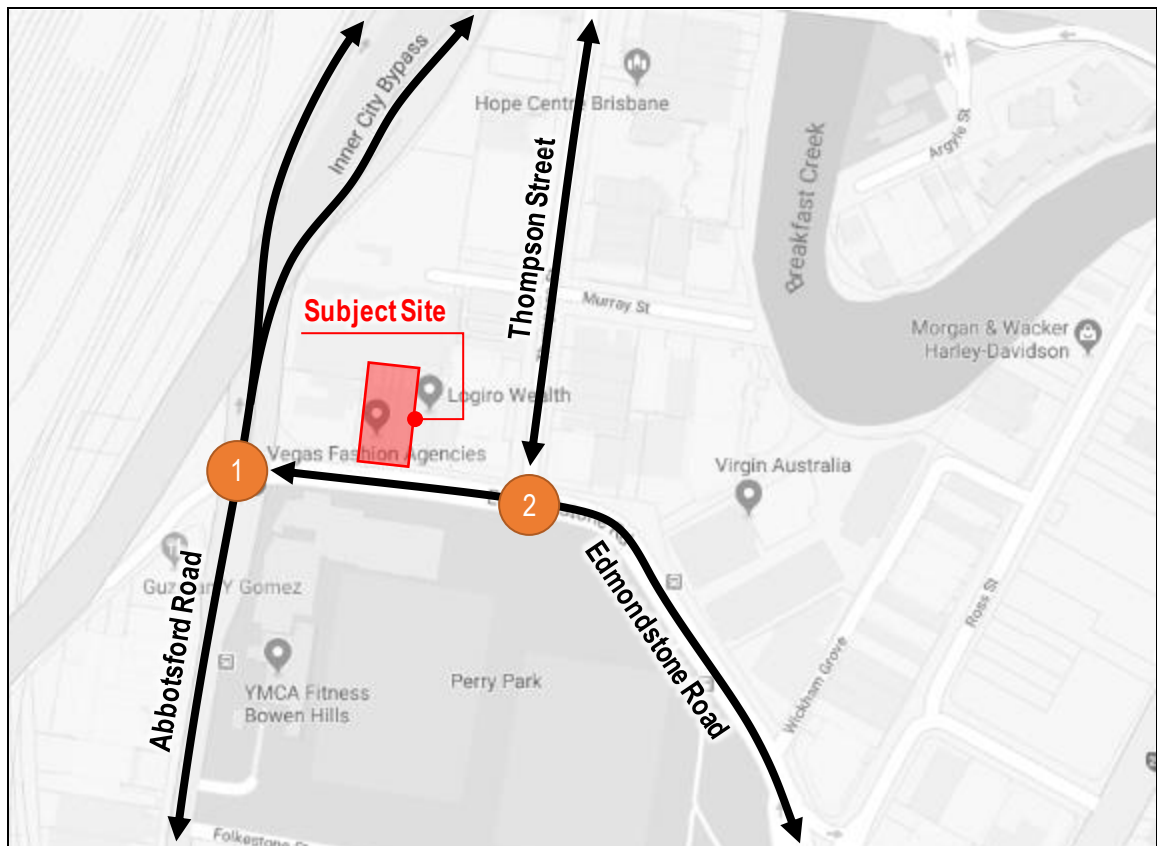
The scope of this TIA included completing the following key tasks:

- confirming adequate site access arrangements in accordance with Council's 'Transport, Access, Parking and Servicing Planning Scheme Policy' (TAPS Policy) and Australian Standard (AS2890);
- confirming adequate parking provisions in accordance with Bowen Hills UDA Development Scheme;
- reviewing the proposed car parking layout against TAPS Policy and AS2890 requirements;
- confirming adequate on-site servicing provisions including preparation of swept path diagrams;
- estimating the traffic generation for the proposed development based on typical industry rates;
- estimating the distribution of development generated traffic onto the surrounding road network;
- undertaking a qualitative assessment of potential impacts on the surrounding road network; and
- preparing a formal response to Council's TAPS Code.

2. EXISTING CONDITIONS

2.1 ROAD NETWORK

Figure 2.1 illustrates key roads and intersections surrounding the subject site.



SOURCE: Nearmap

Figure 2.1: Existing Road Network

Table 2.1 provides a summary of the key roads surrounding the site.

Table 2.1: Key Roads

Road Name	Jurisdiction	Hierarchy	No. of Lanes	Speed Limit
Abbotsford Road	Council	Arterial Road	6 lanes divided	60km/h
Edmondstone Road	Council	District Road	2 lanes divided	60km/h
Thompson Street	Council	District Road	2 lanes divided	50km/h ¹

¹ Where a posted speed limit is not provided, the road is subject to the default urban speed limit of 50km/h.

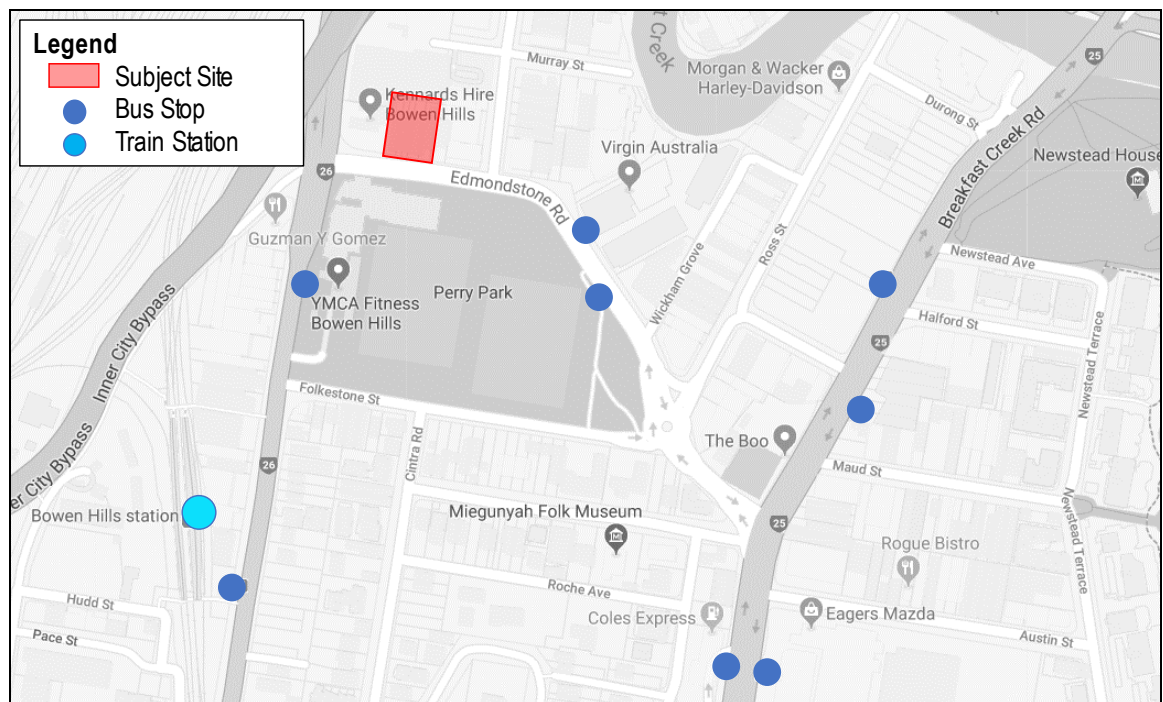
Table 2.2 provides a summary of the key intersections surrounding the site.

Table 2.2: Key Intersections

ID	Name	Jurisdiction	Control
Intersection 1	Edmondstone Road / Abbotsford Road	Council	Traffic Signals
Intersection 2	Edmondstone Road / Thompson Street	Council	Priority

2.2 PUBLIC TRANSPORT NETWORK

Figure 2.2 illustrates the public transport network within 800m (i.e. 10-minute walk) of the subject site.



SOURCE: Google Maps

Figure 2.2: Public Transport Network

It is noted that the Bowen Hills Train Station is located approximately 500m from the site, which provides convenient and high frequency access to the Brisbane CBD and surrounding suburbs.

Table 2.3 provides an overview of the bus routes that service nearby bus stops.

Table 2.3: Public Transport Network (Bus Services)

Route	Areas Served	Peak Frequency	Off-Peak Frequency
300	Toombul, Clayfield, Hendra, Ascot, Hamilton, Newstead, Fortitude Valley, City, Cultural Centre	10 minutes	30 minutes
301	Toombul, Clayfield, Hendra, Ascot, Albion, Bowen Hills, Fortitude Valley, Spring Hill, City, Cultural Centre	30 minutes	60 minutes
302	Pinkenba, Eagle Farm, Hamilton, Newstead, Fortitude Valley, City	20 minutes	-
305	Ascot, Hamilton, Newstead, Fortitude Valley, City	10 minutes	-
306	Nudgee, Banyo, Virginia, Northgate, Nundah, Toombul, Clayfield, Fortitude Valley, City	30 minutes	60 minutes
320	Chermside, Wavell Heights, Woolloowin, Clayfield, Bowen Hills, Fortitude Valley, City	15 minutes	30 minutes
322	Chermside, Wavell Heights, Nundah, Toombul, Clayfield, Fortitude Valley, City	30 minutes	60 minutes
393	Teneriffe, Newstead, Fortitude Valley, Bowen Hills, Herston, Kelvin Grove, RBWH, Bowen Hills, Newstead	20 minutes	60 minutes
N310	City, Fortitude Valley, Clayfield, Toombul, Nundah, Virginia, Boondall, Deagon, Sandgate	-	75 minutes

As highlighted above, the subject site is well serviced by the existing public transport network. Importantly, the development will not trigger the need for any modifications to the existing public transport network.

2.3 ACTIVE TRANSPORT NETWORK

The subject site is located within a well-established urban network and as such, it benefits from access to an existing comprehensive active transport network. Most higher order roads within 800m of the subject site (i.e. 10-minute walking distance) have concrete footpaths on both sides, which connect the subject site to surrounding public transport services. Furthermore, there are signalised pedestrian crossings at the Intersection 1 to assist those wanting to cross.

In summary, the subject site is well serviced by the existing active transport network. Importantly, the development will not trigger the need for any modifications to the existing external active transport network.

2.4 ROAD NETWORK PLANNING

2.4.1 Local Government Infrastructure Plan (LGIP)

A review of Council's Local Government Infrastructure Plan (LGIP) confirmed there are no committed road projects in South Townsville in the foreseeable future.

2.4.2 Queensland Transport and Roads Investment Program (QTRIP)

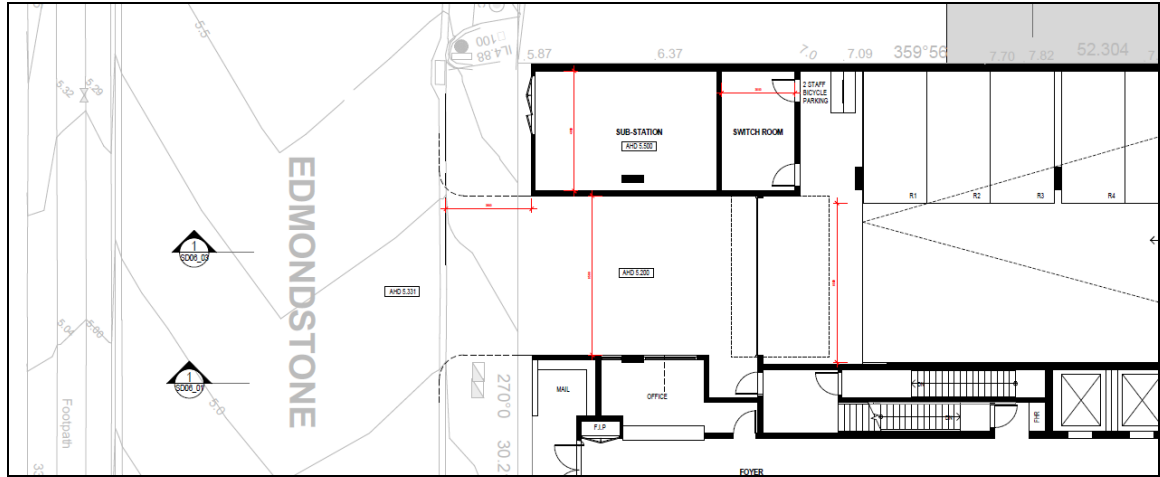
A review of the Queensland Transport and Roads Investment Program (QTRIP) for the Metropolitan District confirmed that there are no committed road projects in proximity to the site within the next four (4) years.

3. TRAFFIC DESIGN REVIEW

3.1 VEHICULAR ACCESS

3.1.1 Proposed Arrangements

As illustrated on Figure 3.1, vehicular access is proposed via a single crossover on Edmondstone Road.



SOURCE: SJB Architects

Figure 3.1: Proposed Vehicular Access Arrangement

3.1.2 Review

Based on the type of service vehicles proposed to access the development, Council's TAPS Policy identifies that a 6.5m Type B2 driveway crossover is required. Our review indicates that the driveway could be accommodated without impacting existing power poles, drainage structures etc. We note that a condition requiring the provision of a 6.5m Type B2 could be imposed as part of approving the development application.

We also reviewed available sight distances at the proposed access location against TAPS Policy requirements as summarised below:

- posted speed limit: 60km/h;
- desirable sight distance: 110m;
- available sight distance to the east: greater than 110m; and
- available sight distance to the west: approximately 50m to the adjacent Edmondstone Road / Abbotsford Road intersection.

Our review indicates that sight distances to/from the east comply with TAPS Policy requirements. However, given the proximity of the site access to the adjacent Edmondstone Road / Abbotsford Road intersection, sight distances to/from the west do not strictly comply. Notwithstanding this, we believe available sight distance will be sufficient noting that:

- motorists slow when traversing the adjacent Edmondstone Road / Abbotsford Road intersection;
- motorists travelling eastbound on Edmondstone Road are likely to be travelling less than 60km/h in proximity to the site access; and
- in most instances, motorists are expected to be travelling at significantly less than 60km/h (i.e. after stopping at the intersection prior to turning into Edmondstone Road).

In summary, the proposed driveway configuration complies with TAPS Policy requirements, and available sight distances are expected to be adequate. The proposed access arrangements are therefore considered acceptable from a traffic engineering perspective.

3.2 PEDESTRIAN ACCESS

Pedestrian paths are proposed to connect the development to the surrounding active transport network. In addition, we understand that accessible pathways within the site connect to elevators enabling equitable access to all levels. As such, the proposed pedestrian provisions are considered acceptable.

3.3 BICYCLE PARKING

3.3.1 Proposed Arrangements

The development proposes a total of 92 bicycle parking spaces including:

- 77 spaces for residents;
- 13 spaces for residential visitors and business / office / shop customers; and
- two (2) business / office / shop staff spaces.

3.3.2 Review

As summarised in Table 3.1, the proposed development bicycle parking provisions comply with the Bowen Hills UDA Development Scheme requirements .

Table 3.1: Bicycle Parking Provision Review – Development Scheme

Land Use	Yield	Provision Rate	Required	Proposed	Difference
Multiple Dwelling – Resident	77 units	1 space per dwelling	77 spaces	77 spaces	0 spaces
Multiple Dwelling – Visitor	Approx. 5,200m ²	1 space per 400m ²	13 spaces	13 spaces	0 spaces
Shop – Staff	215m ² GFA	1 space per 200m ² NLA	1.1 spaces	2 spaces	0 spaces
Shop – Visitor		1 space per 1,000m ² NLA	0.2 spaces		
Total	-	-	92 spaces	92 spaces	0 spaces

3.4 CAR PARKING

3.4.1 Proposed Arrangements

The development proposes a total of 86 car parking spaces including:

- 78 resident spaces; and
- eight (8) retail / residential visitor spaces, of which one (1) is a Persons with Disability (PWD) space.

3.4.2 Review

As summarised in Table 3.2, the proposed development car parking provisions comply with the Bowen Hills UDA Development Scheme requirements .

Table 3.2: Car Parking Provision Review – Development Scheme

Land Use	Yield	Provision Rate	Required	Proposed	Difference
Multiple Dwelling	77 units	An average of 1 space per dwelling including visitor parking	77 spaces	81 spaces	+4 space
Business / Office / Shop	215m ² GFA	1 space per 50m ² GFA	5 spaces	5 spaces	+0 spaces
Total	-	-	82 spaces	86 spaces	+4 spaces

3.5 CAR PARK LAYOUT

The proposed car park layout was reviewed against TAPS Policy or where noted, relevant Australian Standards (AS2890.1 and AS2890.6) requirements as summarised in Table 3.3.

Table 3.3: Car Park Layout Review

Design Element	Required	Proposed	Compliant
Car Parking Space (resident)	2.6m x 5.4m (TAPS)	2.6m x 5.4m	Yes
Car Parking Space (retail)	2.6m x 5.4m (TAPS)	2.6m x 5.4m	Yes
Car Parking Space (PWD)	2.4m x 5.4m with 2.4 shared area (AS2890.6)	2.5m x 5.4m with 2.4 shared area	Yes
Clearance to Obstructions	0.3m (TAPS & AS2890.1)	0.3m	Yes
Car Park Aisle Width	6.2m (TAPS)	6.2m	Yes
Driveway / Service Aisle Width	6.5m (TAPS & AS2890.2)	6.5m	Yes
Ramp Width	6.1m – 5.5m plus 0.3m clearance to obstructions (AS2890.1)	6.1m – 5.5m plus 0.3m clearance to obstructions	Yes
Ramp Gradient	Max 1:5 (AS2890.1)	Max 1:5	Yes
Ramp Transition	1:10 (AS2890.1)	1:10	Yes
Height Clearance – PWD Space	2.5m (AS2890.6)	4.0m	Yes
Height Clearance – Car Park	2.2m (AS2890.1)	2.2m	Yes

As highlighted above, the internal car park layout is configured generally in accordance with the TAPS Policy and/or AS2890 requirements. It is important to note that design elements that only comply with AS2890 have been reviewed by a RPEQ traffic engineer (RPEQ15031) to confirm their suitability.

3.6 SERVICING

3.6.1 Proposed Arrangements

The development layout makes provision for on-site servicing by:

- rear loading refuse collection vehicles (RCVs); and
- medium rigid vehicles (MRVs).

3.6.2 Review

The proposed servicing arrangements have been reviewed against TAPS Policy requirements. Council's TAPS Policy identifies the following service vehicle provision requirements for the proposed land uses:

- Multiple Dwelling:
 - occasional access: Large Rigid Vehicle (LRV); and
 - regular access: RCV.
- Shop:
 - occasional access: VAN; and
 - regular access: MRV.

Provision for occasional LRV access is not considered necessary for several reasons including:

- given the size of the proposed multiple dwellings, residents are unlikely to need such a large removalist vehicle (i.e. their furniture, whitegoods etc. are unlikely to fill an LRV);
- smaller delivery / removal vehicles are used in inner city areas noting that roads can be narrow, there is limited area for manoeuvring, existing developments do not have on-site loading areas etc.;
- residents often choose to move themselves. The majority of which are unlikely to have a licence allowing them to drive LRV's.

Accordingly, we believe that proposed arrangements which allows RCVs and MRVs to service the development are appropriate.

It is noted that 4.0m height clearance is proposed above loading and service vehicle manoeuvring areas. Whilst the proposed height clearance falls short of the 4.5m required by the TAPS Policy, we believe it is acceptable for several reasons including:

- most MRV's used in inner city areas are less than 4.0m high;
- existing developments including developments that are much larger than the subject proposal operate acceptably with service areas that have 4.0m height clearance or less; and
- the Brisbane City Plan 2014, Part 7.2.6.4 Fortitude Valley Neighbourhood Plan Code (FVNPC) identifies that service vehicle openings are to be 'no higher than 3.5m, to allow entry to a vehicle 3m in height'. It is reasonable to assume that Council expects developments within the FVNPC area to operate acceptably whilst only being serviced by vehicles 3.5m high or less.

Swept path analysis has been undertaken which indicates that rear loading RCV's and MRV's can enter the site in a forward gear, service the site and also exit the site in a forward gear. Importantly, we do not expect that development servicing will significantly impact access and car park operations.

A copy of our swept path analysis is included at **Appendix B**.

In summary, the proposed servicing arrangements are acceptable from a traffic engineering perspective.

4. TRAFFIC IMPACT REVIEW

4.1 DEVELOPMENT TRAFFIC GENERATION

Table 4.1 provides a summary of the estimated traffic demands likely to be generated by the development.

It is important to note the following:

- the 'critical peak' for the subject site is likely to be during a weekday evening road network peak; and
- the adopted traffic generation rates were sourced from the Roads and Maritime Services (RMS) 'Guide to Traffic Generating Developments' (2014).

Table 4.1: Development Traffic Generation Estimates

Land Use	Yield	Adopted Traffic Generation Rate	Direction (IN / OUT)	Peak Hour Trips		
				IN	OUT	Total
Multiple Dwelling	77 units	0.19 trips per unit	70% / 30%	10	5	15
Retail Shop	215m ²	12.4 trips per 100m ² GFA	50% / 50%	14	13	27
Total	-	-	-	24	18	42

4.2 QUALITATIVE IMPACT ASSESSMENT

The proposed development may generate in the order of 40 peak hour trips which equates to less than one (1) trip per minute on average during peak periods. This quantum of trips is considered low.

Furthermore, it is important to note that the proposed development is generally consistent with what is envisaged by the zoning of the subject site. Accordingly, we expect that the estimated development traffic generation would be generally consistent with previous planning for the area.

In summary, we are of the view that the development will have negligible impacts on the surrounding road network. As such, no road network upgrades works are required to offset development impacts.

5. **TAPS CODE RESPONSE**

A copy of our response to the TAPS code is included in **Appendix C**.

6. SUMMARY

The key findings from the traffic impact assessment are as follows:

- Pellicano Group proposed to develop a mixed-use building at 6 Edmondstone Road, Bowen Hills;
- the development includes 77 residential units and 215m² GFA business / office / shop;
- the subject site is well serviced by the existing active and public transport networks, and will not trigger the need for any modifications or additions to the existing networks;
- vehicular access to the development is via a single crossover located on Edmondstone Road;
- the development requires a 6.5m Type B2 driveway crossover to comply with Brisbane City Council's (Council's) 'Transport, Access, Parking and Servicing Planning Scheme Policy' (TAPS Policy). A condition requiring the provision of this type of driveway crossover could be imposed as part of approving the development application;
- available sight distances at the driveway crossover are expected to be acceptable;
- proposed pedestrian connectivity to/from the development is considered acceptable;
- a total of 92 bicycle parking spaces are proposed to be provided which meets Bowen Hills Urban Development Area (UDA), Development Scheme requirements;
- a total of 86 car parking spaces are proposed to be provided which exceeds Bowen Hills UDA, Development Scheme requirements;
- the proposed car parking layout complies with Council's TAPS Policy and/or relevant Australian Standards (i.e. AS2890.1, AS2890.2 and AS2890.6);
- the proposed servicing provisions are considered acceptable; and
- the development will have negligible impacts on the surrounding road network.

Based on the findings of this report, we are of the view that there are no traffic engineering related matters to preclude approval of this development application.

APPENDIX A

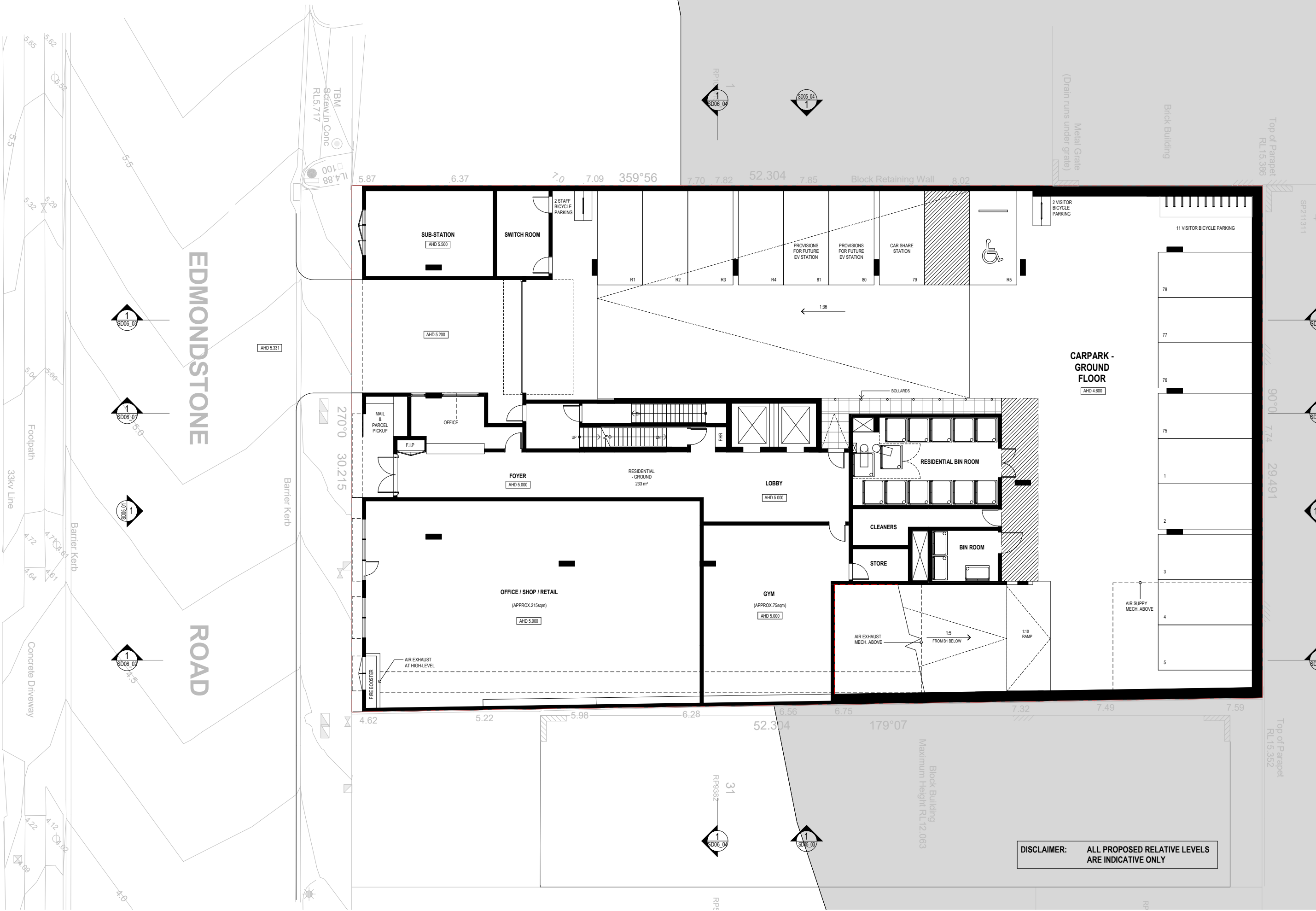
DEVELOPMENT PLANS





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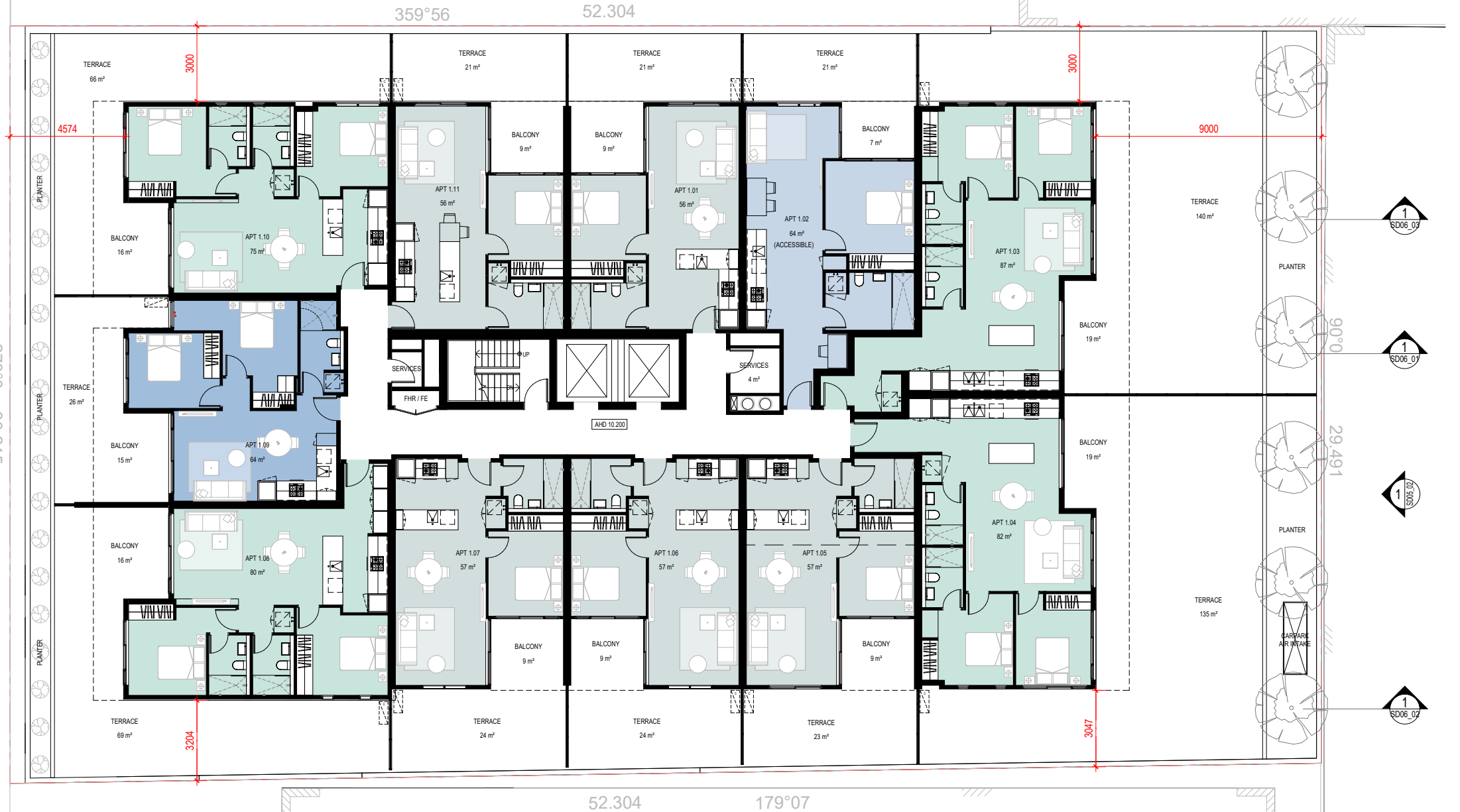




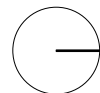
EDMONDSTONE

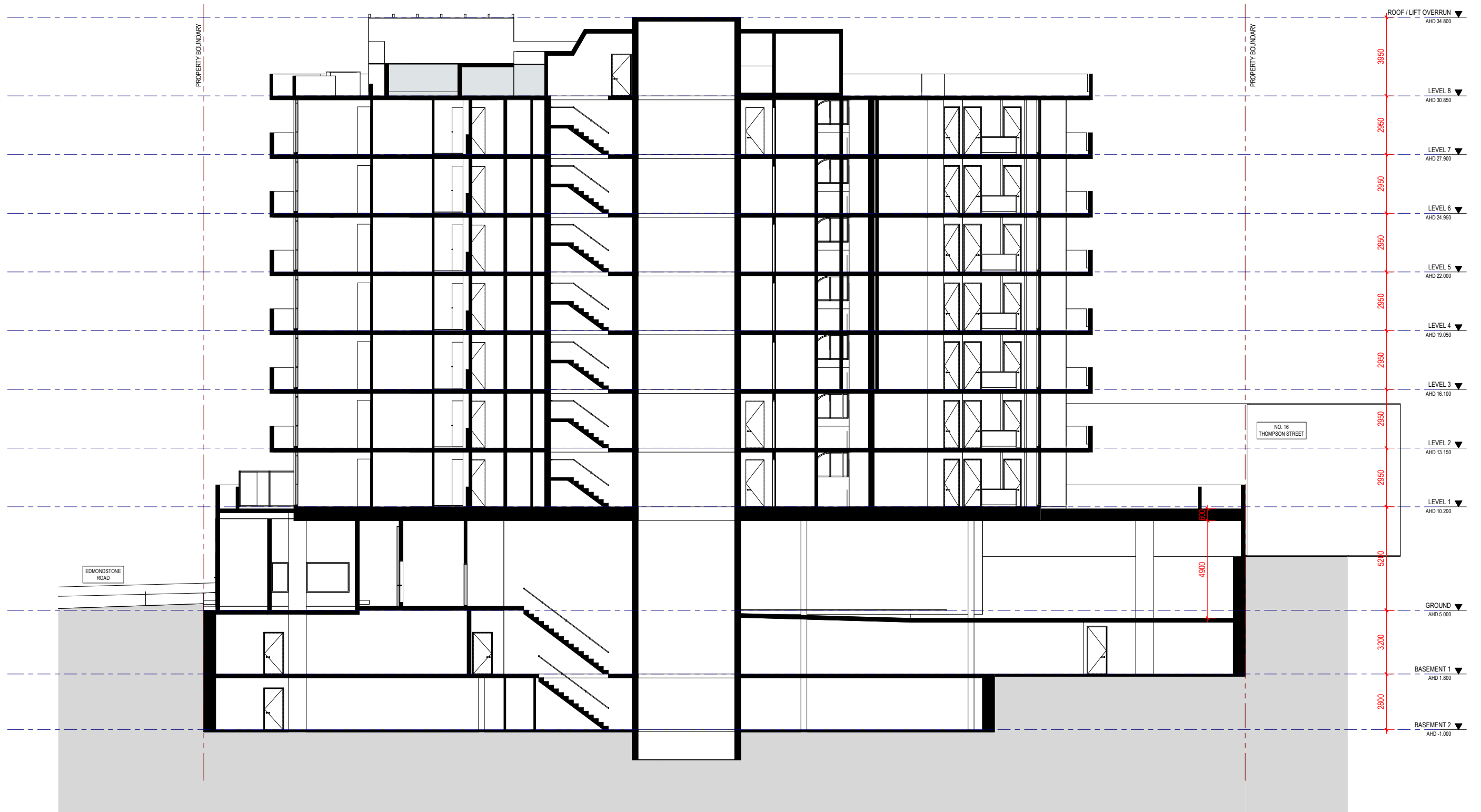
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270°0 30.215

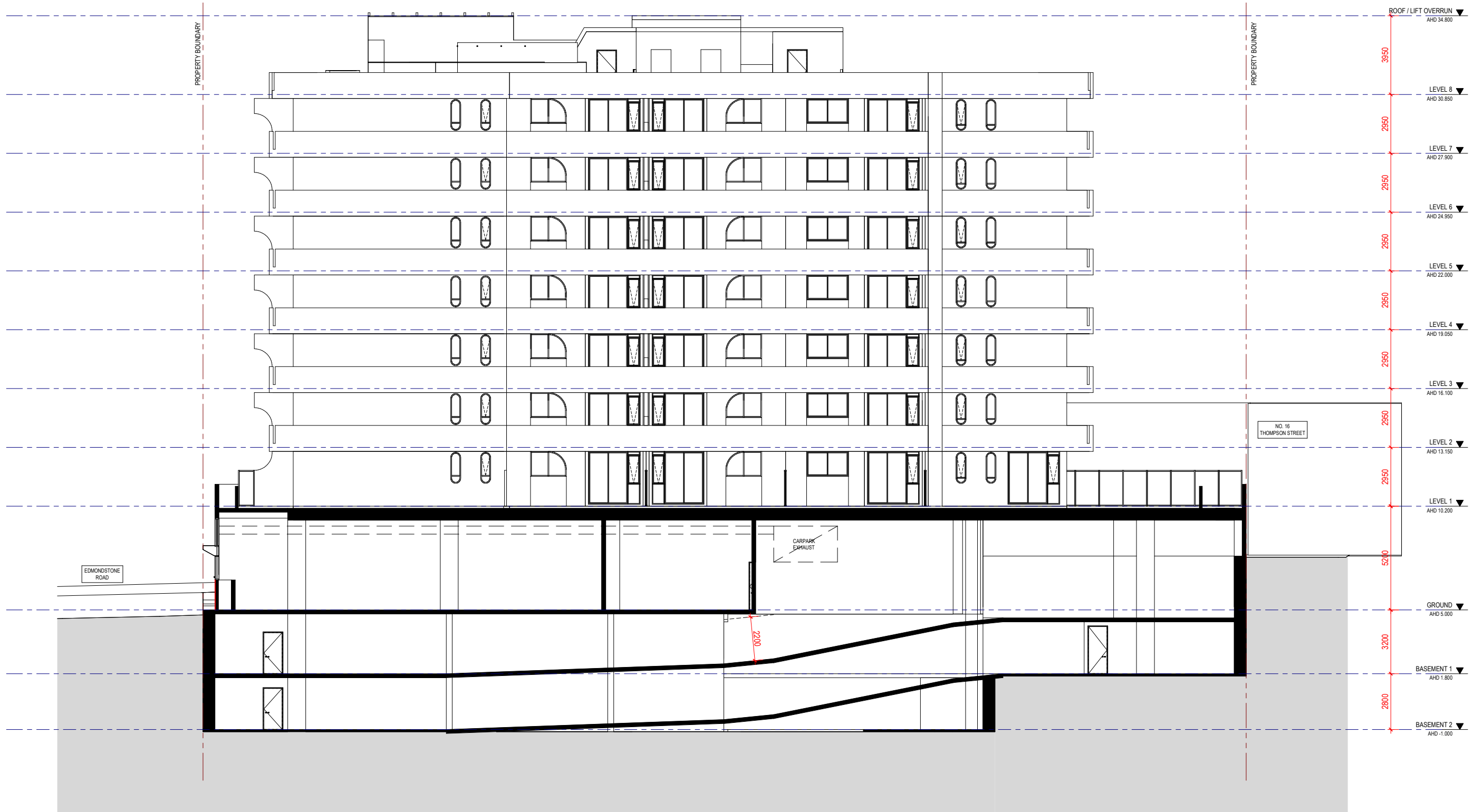


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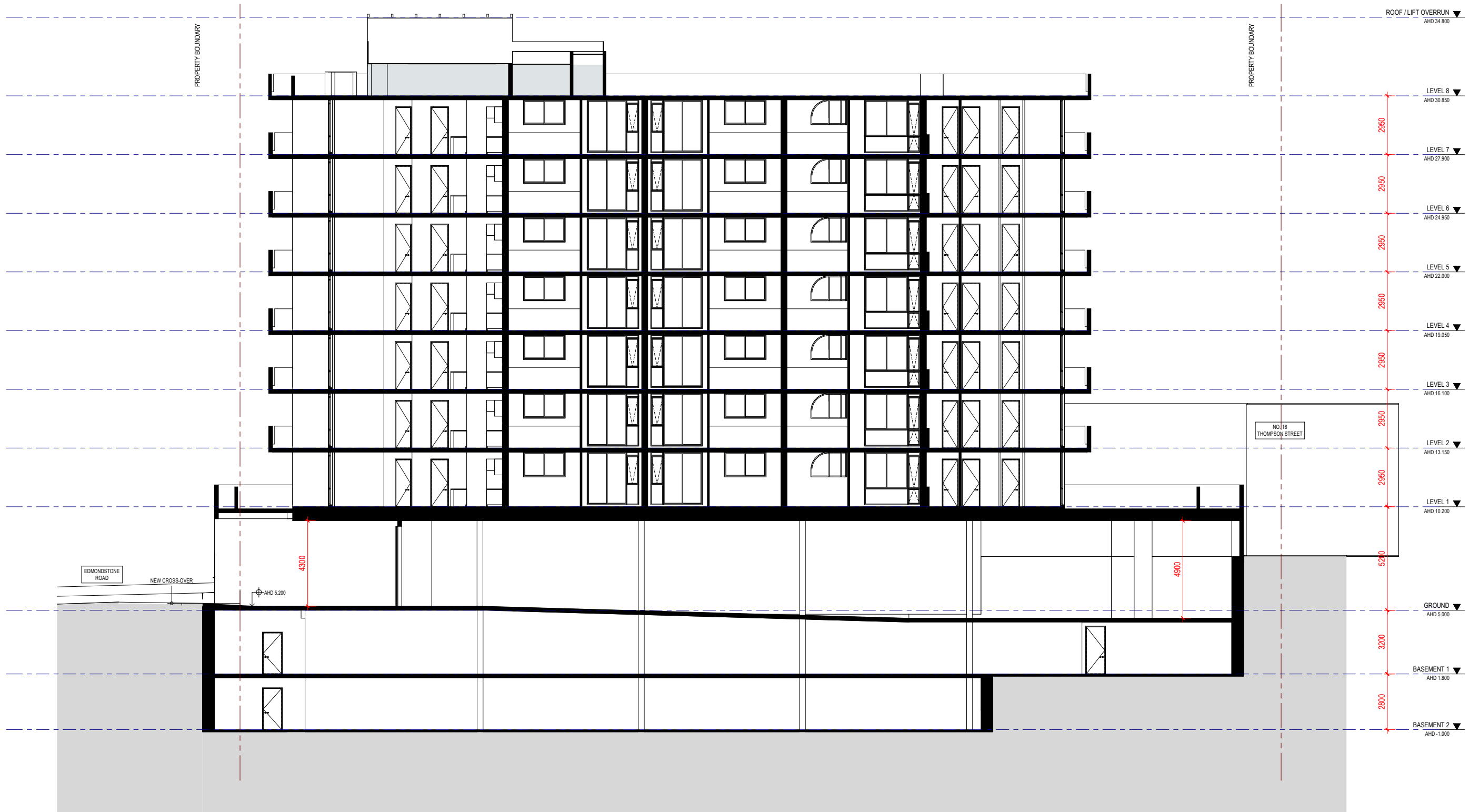


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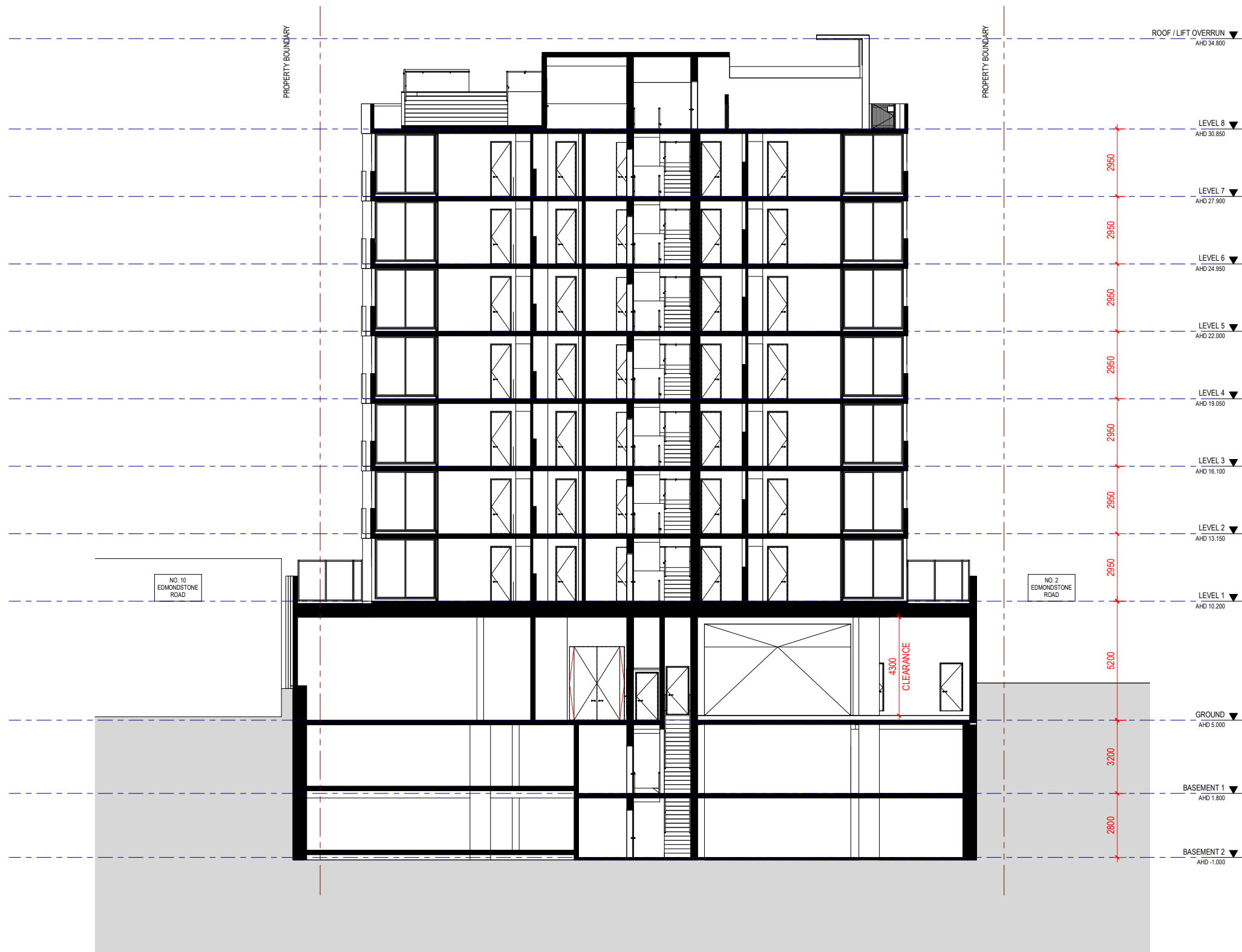


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Development Summary



Date: 14/09/2019
Rev: 01

Project
6 Edmondstone
Road
Bowen Hills,
Brisbane

Job No.
21211

File No.
4.3

LEVEL	GFA (UDA)	No. APT	CAR no	BIKE no
Basement 02	m²	0	29	48
Basement 01	m²	0	40	29
Ground	448 m²	0	17	15
Level 01	803.0 m²	11		
Level 02	803.0 m²	11		
Level 03	803.0 m²	11		
Level 04	803.0 m²	11		
Level 05	803.0 m²	11		
Level 06	803.0 m²	11		
Level 07	803.0 m²	11		
Level 08	10.0 m²			
TOTAL	6079.0 m²	77	86	92

1 BED/1 BATH	2 BED/1BATH	2 BED/2 BED
42	7	28
54.5%	9.1%	36.4%

LEGEND

NLA Net Lettable Area

Note: 1. *GFA definition in the Bowen Hills UDA Development Scheme as follows:*
The total floor area of all storeys of a building, including mezzanines,
measured from the outside of external walls or the centre of a common wall, excluding areas used for:

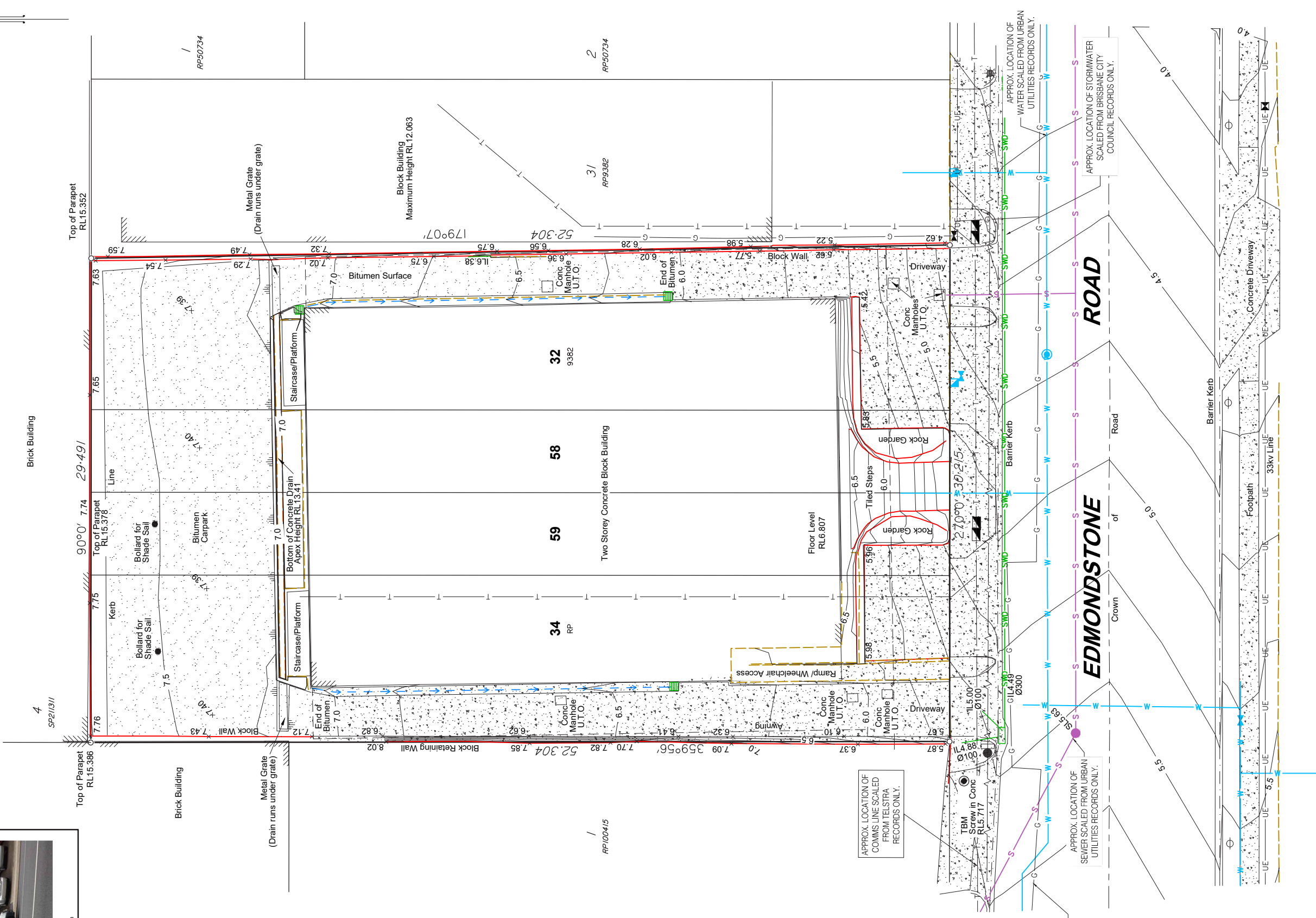
building services
ground floor public
lobby a public mall in a shopping complex
the parking, loading and manoeuvring of motor vehicles
private balconies whether roofed or not.



Site Photo
Standing on Edmondstone Road Looking North

Legend

- CAG — Comms Above Ground
- COMK — Comms Marker
- COMP — Comms Pit
- CUG — Comms Under Ground
- SWD — Drainage Swug
- SWMH — Stormwater MH
- SWGT — Stormwater Gully Trap
- SWFI — Field Inlet Pit
- SWKA — Stormwater Kerb Adaptor
- UE — Power Line Under Ground
- ELMK — Electrical Marker
- ELP — Electrical Pillar
- ELPI — Electrical Pit
- GW — Guy Wire Anchor
- LAMP — Lamp Post
- LP — Light Pole
- PP # — Power Pole
- PPL — Power Pole with Light
- PPLT — PP with Light & Transformer
- PPT — Power Pole with Transformer
- G — Gas Main
- GM — Gas Meter
- GV — Gas Valve
- — Road Crown
- — Edge of Bitumen
- — Edge Track
- — Guide Post
- — Guard Rail
- — Road Kerb Invert
- S — Sewer Main
- SMH — Sewer Manhole
- SMK — Sewer Marker
- SVE — Sewer Vent
- — Awning / Top of Gutter
- BH — Bore Hole
- BOL — Bollard
- — Edge Garden
- — Fence
- IO — Inspection Opening
- MH — Unidentified Manhole
- PO — Post
- SI — Sign
- TBM — Temporary Bench Mark
- — Telecom Line
- TEL — Telecom Pit
- TELBOX — Telecom Telbox
- TEM — Telecom Marker
- TP — Telecom Pole
- — Bottom of Bank
- — Top of Bank
- — Change of Grade
- — Water Line
- — Edge of Vegetation
- TR 0306 — Tree - 0.3m Dia Trunk & 6m Canopy Spread
- W — Water Main
- HR — Fire Hose Reel
- HY — Water Hydrant
- SPR — Water Sprinkler
- SV — Water Valve
- TAP — Water Tap
- WBE — Hydrant Booster
- WM — Water Meter
- WMK — Water Marker
- Bitumen
- Concrete
- Dirt
- Garden
- Gravel / Rock
- Pavers
- Tiles



Drawn:	ML	Date:	12/06/2015
Surveyed:	JB	Date:	09/06/15
Checked:	DH	Date:	15/06/15

Associated Consultants

Local Authority:	Brisbane City Council
File Ref. No:	RP Description:
RP Description:	Lots 32, 34, 58 & 59 on RP9382
Original Portion:	ESA 65
Parish/County:	North Brisbane/Stanley
Date of Survey:	09/06/15
Level Datum:	AHD (der)
Origin:	OPM136554 (RL3.811m)
Level Bk / Fid Bk:	N/A
Horizontal Datum:	Lot 2 on RP50734: (S156014)
Contour Interval:	0.25m

Disclaimer

Any licence, expressed or implied, to use this document for any purpose whatsoever is restricted to the terms of the agreement or implied agreement between Jensen Bowers and the instructing party.

Scale	0 2.5 5 7.5m
1 : 250@A3	(Before Reduction)

Approved:

J. Jensen

Issue	Description	Date	Appd.
A	Original Issue	22/06/15	DH

Notes
The services shown hereon have been located where possible by field survey. Whilst due care and attention have been exercised, T.H. Jensen and Bowers Pty. Ltd. does not warrant that the services have been located in their entirety.

The boundaries shown hereon are for plotting purposes only and are subject to final survey.

The location of underground service lines are approximate only and have been plotted from field survey observations and/or service searches. Should their accurate location be critical to detail design we recommend further investigation.

Client
Pellicano Builders Pty Ltd

6 Edmonstone Road
Bowen Hills Qld 4006

Detail Survey

Drawing No	Issue	Original Size
S-8122-001	A	A3

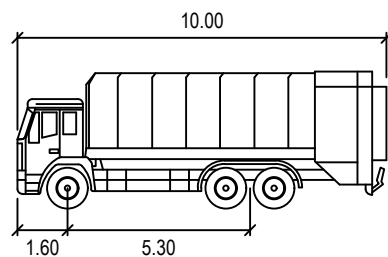
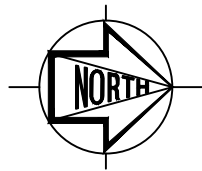


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T.H. Jensen & Bowers Pty. Ltd. (Consulting Surveyors)
ABN 52 010 972 607
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APPENDIX B

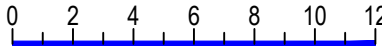
SERVICE VEHICLE SWEEP PATH ANALYSIS



BCC RCV meters
Width : 2.50
Track : 2.50
Lock to Lock Time : 6.0
Steering Angle : 33.9

DESIGN VEHICLE

REVISIONS		Drawn	Date
Issue	Revisions/Descriptions		
001	DA Issue	A.L	05.10.2018

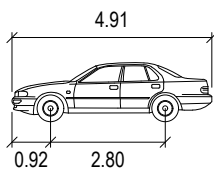
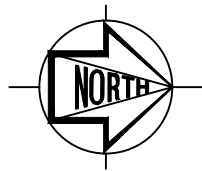
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Project
6 Edmondstone Road, Bowen
Hills Traffic Impact Assessment

Title
Rear Load Refuse Collection
Vehicle Swept Path Analysis

Design A.L	Drawn A.L	Checked N.E
CONCEPT ONLY		
Project Number P3728	Sheet Number 1	Date 05.10.2018
		Issue 001





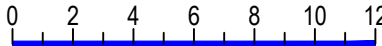
B85 meters
Width : 1.87
Track : 1.77
Lock to Lock Time : 6.0
Steering Angle : 38.5

DESIGN VEHICLE

BITZIOS
consulting
traffic engineering ■ transport planning

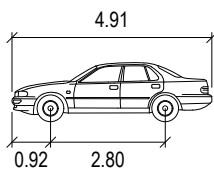
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Brisbane
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Sydney
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REVISIONS			
Issue	Revisions/Descriptions	Drawn	Date
001	DA Issue	A.L	05.10.2018

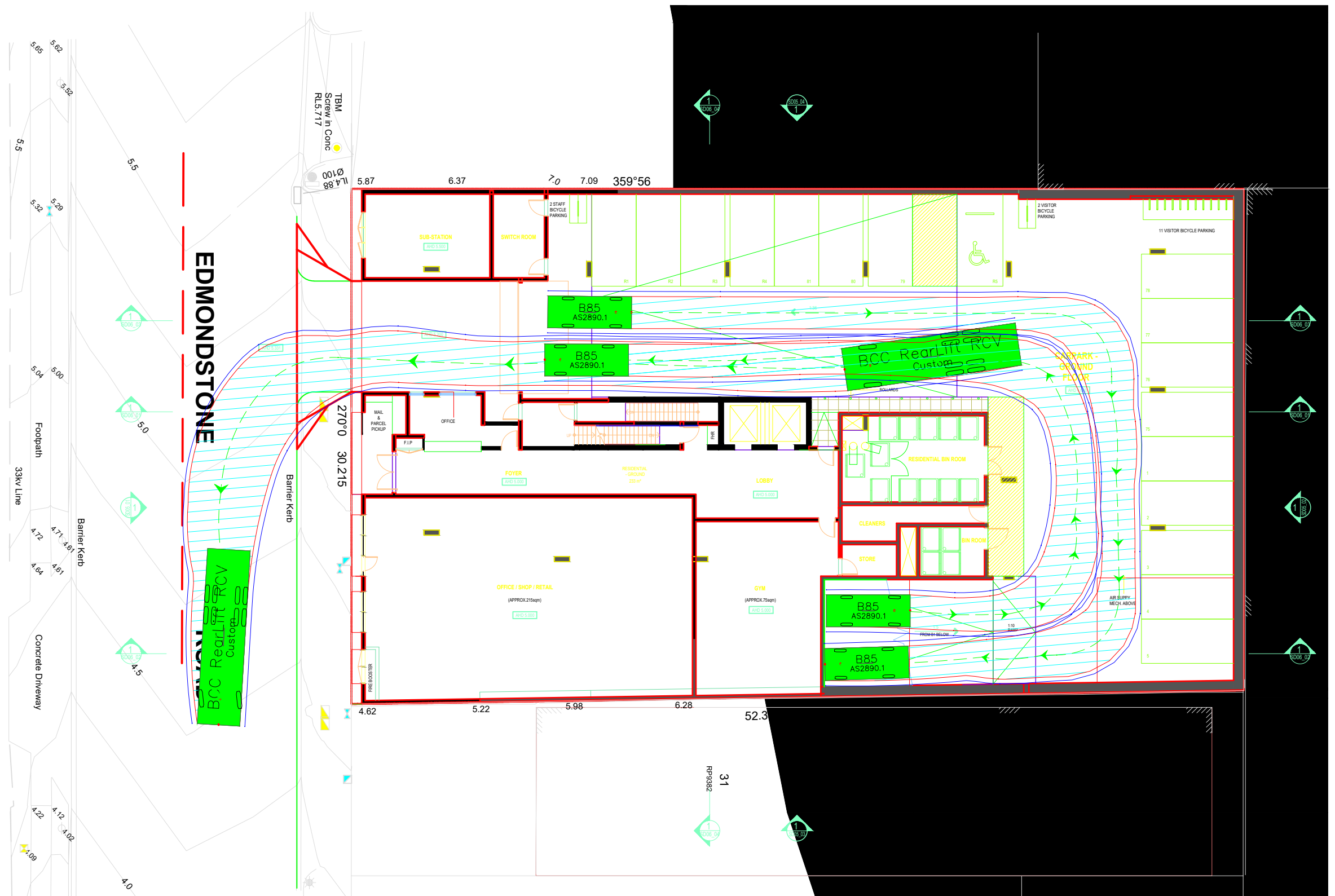
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Project 6 Edmondstone Road, Bowen Hills Traffic Impact Assessment	Design A.L	Drawn A.L	Checked N.E
	CONCEPT ONLY		
Title B85 Swept Path Analysis - Ground Level Carpark	Project Number P3728	Sheet Number 2	Date 05.10.2018
			Issue 001





DESIGN VEHICLE



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— consulting
traffic engineering ■ transport planning

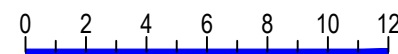
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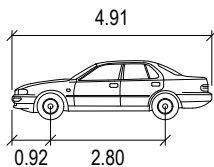
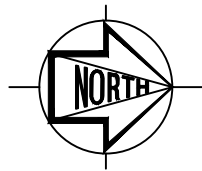
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Scale @ A3



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Project 6 Edmondstone Road, Bowen Hills Traffic Impact Assessment	Design	Drawn	Checked
	A.L	A.L	N.E
	CONCEPT ONLY		Date
Title B85 Swept Path Analysis - Basement Carpark			05.10.2018
	Project Number	Sheet Number	Issue
	P3728	3	001

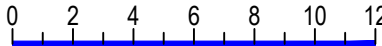


B85 meters

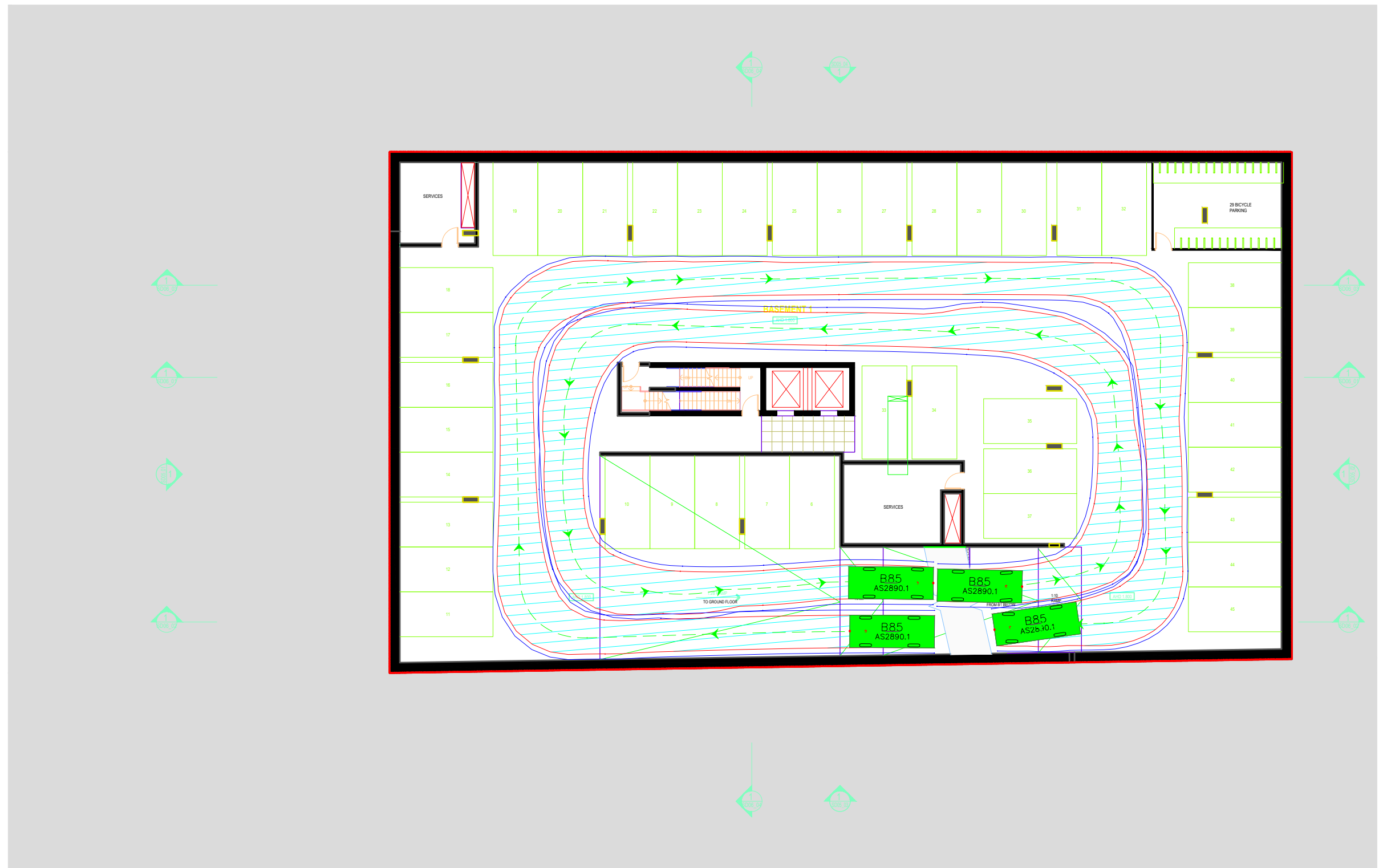
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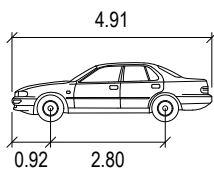
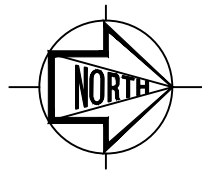
DESIGN VEHICLE

REVISIONS			
Issue	Revisions/Descriptions	Drawn	Date
001	DA Issue	A.L	05.10.2018

Scale @ A3  1:250

Project 6 Edmondstone Road, Bowen Hills Traffic Impact Assessment	Design A.L	Drawn A.L	Checked N.E
	CONCEPT ONLY		
	Title B85 Swept Path Analysis - Basement Carpark	Project Number P3728	Sheet Number 4
		Date 05.10.2018	Issue 001





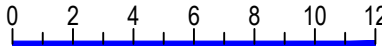
B85 meters
Width : 1.87
Track : 1.77
Lock to Lock Time : 6.0
Steering Angle : 38.5

DESIGN VEHICLE

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	REVISIONS				
Issue	Revisions/Descriptions			Drawn	Date
001	DA Issue			A.L	05.10.2018

Scale @ A3  1:250

Project 6 Edmondstone Road, Bowen Hills Traffic Impact Assessment	Design A.L	Drawn A.L	Checked N.E
	CONCEPT ONLY		
	Project Number P3728	Sheet Number 5	Date 05.10.2018
Title B85 Swept Path Analysis - Basement Carpark	Issue 001		



APPENDIX C

TAPS CODE RESPONSE

Performance outcomes	Acceptable outcomes	Response
PO1 Development is designed: (a) to include a technically competent and accurate response to the transport and traffic elements of the development; (b) in accordance with the standards in the Transport, access, parking and servicing planning scheme policy; (c) to ensure the efficient operation and safety of the development and its surrounds. Note—The acceptable outcome and performance outcome can be demonstrated through a development application that: ▪ is accompanied by sufficient information, including computer modelling input and output data, to allow the proposed development to be properly assessed against the requirements of this code and the standards and guidelines of the Transport, access, parking and servicing planning scheme policy; ▪ is certified by a Registered Professional Engineer Queensland that all plans, documents and dimensioned drawings comply with the requirements of this code and the standards and guidelines of the Transport, access, parking and servicing planning scheme policy; ▪ ensures that any computer modelling input and output data are accurate, reasonable and carried out in accordance with sound traffic engineering practices.	AO1 Development complies with the standards in the Transport, access, parking and servicing planning scheme policy.	Can Comply with Acceptable Outcome 1 Access Refer Section 3.1 of the Traffic Impact Assessment (TIA). The Brisbane City Plan 2014, 'Transport, Access, Parking and Servicing Planning Scheme Policy' (TAPS Policy) identifies that a 6.5m Type B2 driveway crossover is required to support the development. We note that a condition requiring the provision of a 6.5m Type B2 could be imposed as part of approving the development application. Available sight distances at the driveway are expected to be sufficient. Car Parking Refer Section 3.4 of the TIA. The proposed car parking provisions comply with Bowen Hills Urban Development Area (UDA), Development Scheme requirements. Car Park Layout Refer Section 3.5 of the TIA. The internal car park layout is configured generally in accordance with the TAPS Policy and/or AS2890 requirements. It is important to note that car parking design elements that only comply with AS2890 have been reviewed by a RPEQ traffic engineer (RPEQ15031) to confirm their suitability. Servicing Refer Section 3.6 of the TIA. The proposed servicing arrangements are considered acceptable from a traffic engineering perspective. Qualifications The TIA has been prepared suitably qualified traffic engineers. Furthermore, the TIA has been reviewed by a RPEQ traffic engineer.

Performance outcomes	Acceptable outcomes	Response
PO2 Development of a major size incorporates on-site provision for integration with the public transport network and the management of vehicles, public transport, pedestrians and cyclists, including providing appropriate pedestrian and cyclist linkages to adjoining uses, public areas and the transport network consistent with the planning by the State Government and Council.	AO2 No acceptable outcome is prescribed.	Acceptable Outcome 1 – Not Applicable Development is not of a major size.
PO3 Development provides vehicle access that is located and designed so as to have no significant impact on the safety, efficiency, function, convenience of use or capacity of the road network.	AO3.1 Development provides site access that is located and designed in compliance with the standards in the Transport, access, parking and servicing planning scheme policy.	Can Comply with Acceptable Outcome 3.1 Refer Section 3.1 of the TIA. The TAPS Policy identifies that a 6.5m Type B2 driveway crossover is required to support the development. We note that a condition requiring the provision of a 6.5m Type B2 could be imposed as part of approving the development application. Available sight distances at the driveway are expected to be sufficient. Acceptable Outcome 3.2 – Not Applicable
	AO3.2 Development provides an easement for a vehicular access benefiting all adjoining landowners and the Council if the vehicular access services more than an individual development or premises.	
PO4 Development provides walking and cycle routes through the site which: (a) link to the external network and pedestrian and cyclist destinations such as schools, shopping centres, open space, public transport stations, shops and local activity centres along the safest, most direct and convenient routes; (b) encourage walking and cycling; (c) encourage walking and cycling; (d) provide a direct and legible network; Note—The Infrastructure design planning scheme policy provides additional guidance on how to comply with this performance	AO4.1 Development provides walking and cycle routes which are constructed on the carriageway or through the site to: (a) create a walking or cycle route along the full frontage of the site; (b) connect to public transport and existing cycle and walking routes at the frontage or boundary of the site.	Complies with Acceptable Outcome 4.1 Refer Section 2.2, 2.3 and 3.2 of the TIA. As part of the development, connections are proposed to be provided to surrounding walking and cycling routes. Beyond the verge fronting the site, we do not believe that upgrades to existing walking and cycling routes surrounding the site are required. Complies with Acceptable Outcome 4.2 Upgrades to the existing verge fronting the site, are proposed to be constructed generally in accordance with TAPS Policy and Infrastructure Design Policy requirements.
	AO4.2 Development provides walking and cycle routes that are constructed in compliance with the standards in the Transport, access, parking and	

Performance outcomes	Acceptable outcomes	Response
outcome.	servicing planning scheme policy and the Infrastructure design planning scheme policy.	Complies with Acceptable Outcome 4.3 Refer Section 2.3 and 3.2 of the TIA.
	AO4.3 Development provides walking and cycle routes which do not include a potential entrapment area, blind corner or sudden change in level that restrict sightlines.	Beyond the verge fronting the site, we do not believe that upgrades to existing walking and cycling routes surrounding the site are required.
PO5 Development provides secure and convenient bicycle parking which: (a) for visitors is obvious and located close to the building's main entrance; (b) for employees is conveniently located to provide secure and convenient access between the bicycle storage area, end-of-trip facilities and the main area of the building; (c) is easily and safely accessible from outside the site; (d) does not impact adversely on visual amenity; (e) does not impede the movement of pedestrians or other vehicles; (f) is designed to comply with a recognised standard for the construction of bicycle facilities. Note—For a performance outcome relating to the number of bicycle parking spaces provided, the application must demonstrate how the needs of the intended users of the site differ from the standard rates in the Transport, access, parking and servicing planning scheme policy.	AO5.1 Development provides on-site bicycle parking spaces in compliance with the standards in the standards in the Transport, access, parking and servicing planning scheme policy.	Complies with Acceptable Outcome 5.1 Refer Section 3.3 of the TIA. The proposed bicycle parking provisions comply with Bowen Hills UDA, Development Scheme requirements.
	AO5.2 Development provides bicycle parking spaces for employees which are co-located with end-of-trip facilities (shower cubicles and lockers) in compliance with the Transport, access, parking and servicing planning scheme policy and AS 2890.3-1993 Bicycle parking facilities.	Complies with Acceptable Outcome 5.2 Refer Section 3.3 of the TIA. The proposed bicycle parking provisions comply with Bowen Hills UDA, Development Scheme requirements. No end-of-trip facilities are required by the TAPS Policy.
	AO5.3 Development ensures that the location of visitor bicycle parking is discernible either by direct view or using signs from the street.	Complies with Acceptable Outcome 5.3 Refer Section 3.3 of the TIA and to the proposed development plans. It is expected that visitor bicycle spaces will be sufficiently visible, being located adjacent to visitor car parking areas. Council could condition signage to be provided as part of approving the proposed development application.
	AO5.4 Development provides visitor bicycle parking which does not impede pedestrian movement.	Complies with Acceptable Outcome 5.4 Visitor bicycle parking does not impede pedestrian movement.
	AO5.5 Development provides bicycle parking which is constructed in compliance with the standards in the Transport, access, parking and servicing planning scheme policy.	Complies with Acceptable Outcome 5.5 Refer Section 3.3 of the TIA and to the proposed development plans. The proposed bicycle parking arrangements are considered acceptable. In any case it is noted that Council could condition specific bicycle parking arrangements as part of approving the

Performance outcomes	Acceptable outcomes	Response
		proposed development application.
PO6 Development provides shower cubicles and lockers in sufficient numbers to meet the needs and volume of predicted pedestrian and cyclist users. Note—For a performance outcome the application must demonstrate how the needs of the intended users of the site differ from the standard rates in the Transport, access, parking and servicing planning scheme policy.	AO6 Development provides shower cubicles and lockers for pedestrians and cyclists in compliance with the standards in the Transport, access, parking and servicing planning scheme policy.	Acceptable Outcome 6 – Not Applicable No end-of-trip facilities are required by the TAPS Policy.
PO7 Development provides pedestrian and cyclist access to the site which is designed to provide safe movement and avoid unnecessary conflict between pedestrians, cyclists and motor vehicles.	AO7 Development provides pedestrian and cycle access that is designed and constructed in compliance with the site access design guidelines, pedestrian facilities standards and cyclist facilities standards in the Transport, access, parking and servicing planning scheme policy.	Complies with Acceptable Outcome 7.0 Refer Section 2.3 and 3.2 of the TIA. As part of the development, connections are proposed to be provided to surrounding walking and cycling routes.
PO8 Development provides pedestrian and cyclist access to and from the site which is located to take advantage of safe crossing points of the adjacent road system, key destinations and public transport facilities.	AO8 No acceptable outcome is prescribed.	Complies with Performance Outcome 8.0 Refer to response to PO7
PO9 Development provides access driveways in the road area that are located, designed and controlled to: (a) minimise adverse impacts on the safety and operation of the transport network, including the movement of pedestrians and cyclists; (b) ensure the amenity of adjacent premises, from impacts such as noise and light.	AO9.1 No acceptable outcome for access is prescribed, for a major development (as described in the Transport, access, parking and servicing planning scheme policy). AO9.2 Development which is not a major development (as described in the Transport, access, parking and servicing planning scheme policy) provides a	Can Comply with Acceptable Outcome 9.1 Refer Section 3.1 of the TIA. The TAPS Policy identifies that a 6.5m Type B2 driveway crossover is required to support the development. We note that a condition requiring the provision of a 6.5m Type B2 could be imposed as part of approving the development application. Available sight distances at the driveway are expected to be sufficient.

Performance outcomes	Acceptable outcomes	Response
	single site access driveway in the road area to the lowest order road to which the site has frontage.	Complies with Acceptable Outcome 9.2 Refer Section 3.1 of the TIA.
	A09.3 Development ensures that sight distances to and from all proposed access driveways in the road area and intersections are in compliance with the standards in the Transport, access, parking and servicing planning scheme policy.	The proposed development only has frontage to Edmondstone Road. Complies with Acceptable Outcome 9.3 Refer Section 3.1 of the TIA. Available sight distances at the proposed driveway crossover are expected to be sufficient.
	A09.4 Development provides access driveways in the road area which (a) are located, designed and controlled in compliance with the standards in the Transport, access, parking and servicing planning scheme policy; (b) are not provided through a bus stop, taxi rank or pedestrian crossing or refuge.	Complies with Acceptable Outcome 9.4 Refer Section 3.1 of the TIA. The proposed driveway location is considered acceptable from a traffic engineering perspective. It is not provided through a bus stop, taxi rank or, a pedestrian crossing or refuge. Acceptable Outcome 9.5 – Not Applicable Shared access arrangements are not possible in this instance due to the configuration of surrounding lots.
	A09.5 Development makes provision for shared access arrangements particularly where it is necessary to limit access points to a major road.	
PO10 Redevelopment provides for: (a) the closure of all access driveways in the road area that no longer comply with the standards in the Transport, access, parking and servicing planning scheme policy; (b) the reinstatement of adjacent footpaths.	A010 No acceptable outcome is prescribed.	Complies with Performance Outcome 10 All existing driveways are proposed to be closed and adjacent footpaths reinstated.

Performance outcomes	Acceptable outcomes	Response
PO11 Development provides that an internal approach to an access driveway in the road area is designed and located to provide for the safety of pedestrians and cyclists using paths adjacent to the frontage of the site, and motorists.	AO11.1 Development provides sight distances to and from all proposed access driveways in the road area and intersections which are in compliance with the standards in the Transport, access, parking and servicing planning scheme policy.	Complies with Acceptable Outcome 11.1 Refer Section 3.1 of the TIA. Available sight distances at the proposed driveway crossover are expected to be sufficient. Acceptable Outcome 11.2 – Not Applicable Convex mirrors are not considered to be required.
	AO11.2 Development ensures that convex mirrors are only used in a site: (a) as a secondary support at access driveways; (b) in addition to acceptable sight splays that comply with the sight distances standards in the Transport, access, parking and servicing planning scheme policy.	
PO12 Development in the City core and City frame as identified in Figure a provides car parking spaces at rates to discourage private car use and encourage walking, cycling and the use of public transport.	AO12 Development in the City core and City frame as identified in Figure a provides maximum car-parking rates in compliance with the standards in the Transport, access, parking and servicing planning scheme policy. Note—For self-assessable development including an existing premises, no reduction to existing car parking is required to comply with a maximum car-parking rate in the Transport, access, parking and servicing planning scheme policy.	Complies with Acceptable Outcome 12 Refer Section 3.4 of the TIA. The proposed car parking provisions comply with Bowen Hills UDA, Development Scheme requirements.
PO13 Development outside of the City core and City frame as identified in Figure a provides on-site car parking spaces to accommodate the design peak parking demand without any overflow of car parking to an adjacent premises or adjacent street.	AO13 Development outside of the City core and City frame as identified in Figure a: (a) provides on-site car parking spaces in compliance with the standards in the Transport, access, parking and servicing planning scheme policy; or	Acceptable Outcome 11.2 – Not Applicable The development is located within the City frame.

Performance outcomes	Acceptable outcomes	Response
	(b) for self-assessable development does not result in on-street car parking if no parking standard is identified in the Transport, access, parking and servicing planning scheme policy. Note—For self-assessable development including an existing premises, no reduction to existing car parking is required to comply with a maximum car-parking rate in the Transport, access, parking and servicing planning scheme policy.	
PO14 Development ensures that the number of car parking spaces and design of the car parking area: (a) meet the combined design peak parking demand for residential, visitor and business parking; (b) allow for the temporal sharing of car-parking spaces for uses with different peak parking demands. Note—In order to demonstrate that adequate car parking is provided, a traffic impact assessment prepared in compliance with the Transport, access, parking and servicing planning scheme policy is to identify the appropriate number of car parking spaces to be provided.	AO14.1 Development provides a number of car parking spaces on site equalling the sum of the maximum design peak parking demand for the individual uses at any point in time. AO14.2 Development involving mixed use provides a non-residential car parking area with shared parking for all the businesses in the development.	Complies with Acceptable Outcome 14.1 Refer Section 3.4 of the TIA. The proposed car parking provisions comply with Bowen Hills UDA, Development Scheme requirements. Complies with Acceptable Outcome 14.2 Refer Section 3.4 of the TIA. The proposed car parking provisions comply with Bowen Hills UDA, Development Scheme requirements.
PO15 Development provides a car park layout which allows for on-site vehicle parking that: (a) is clearly defined, safe and easily accessible; (b) is designed to contain potential adverse impacts within the site; (c) does not detract from the aesthetics or amenity of an area; (d) discourages on-street parking if parking has an adverse traffic management safety or amenity impact;	AO15 Development provides parking bays, queue areas and manoeuvring areas which are designed for the design service vehicle to the standards in the Transport, access, parking and servicing planning scheme policy.	Complies with Acceptable Outcome 15 The internal car park layout is configured generally in accordance with the TAPS Policy and/or AS2890 requirements. It is important to note that car parking design elements that only comply with AS2890 have been reviewed by a RPEQ traffic engineer (RPEQ15031) to confirm their suitability.

Performance outcomes	Acceptable outcomes	Response
(e) is consistent with safe and convenient pedestrian and cyclist movement.		
PO16 Development creates a safe environment by incorporating the key elements of crime prevention through environmental design.	AO16 Development incorporates the key elements of crime prevention through environmental design in its layout, building and structure design and landscaping by: (a) facilitating casual surveillance opportunities and including good sightlines to publicly accessible areas such as car parks, pathways, public toilets and communal areas; (b) defining different uses and ownerships through design and restricting access from non-residential uses into private residential dwellings; (c) promoting safety and minimising opportunities for graffiti and vandalism through exterior building design and orientation of buildings and use of active frontages; (d) ensuring publicly accessible areas such as car parks, pathways, public toilets and communal areas are well lit; (e) including way-finding cues; (f) minimising predictable routes and entrapment locations near public spaces such as car parks, public toilets, ATMs and communal areas. Note—For guidance in achieving the key elements of crime prevention through environmental design, refer to the Crime prevention through environmental design planning scheme policy.	Please refer to the architecture and planning reports.
PO17	AO17	Please refer to the architecture and planning reports.

Performance outcomes	Acceptable outcomes	Response
Development minimises the potential for graffiti and vandalism through access control, canvas reduction and easy maintenance selection.	Development incorporates graffiti and vandalism prevention techniques in its layout, building and structure design and landscaping, by: (a) denying access to potential canvas through access control techniques; (b) reducing potential canvases through canvas reduction techniques; (c) ensuring graffiti can be readily and quickly removed through easy maintenance selection techniques. For guidance on graffiti and vandalism prevention techniques, refer to the Graffiti prevention planning scheme policy.	
PO18 Development is serviced by an adequate number and size of service vehicles.	AO18 Development ensures that the number and size of design service vehicles selected for the site is in compliance with the standards in the Transport, access, parking and servicing planning scheme policy.	Complies with Performance Outcome 18 Refer Section 3.6 of the TIA. The proposed servicing arrangements are considered acceptable from a traffic engineering perspective.
PO19 Development layout provides for services which: (a) are wholly within the site; (b) are clearly defined, safe and easily accessible; (c) are designed to contain potential adverse impacts of servicing within the site; (d) do not detract from the aesthetics or amenity of the surrounding area.	AO19.1 Development ensures that a service bay provided on site: (a) is provided and designed to comply with the design vehicle table and service area design standards in the Transport, access, parking and servicing planning scheme policy; (b) is located away from street frontages and screened from adjoining premises.	Complies with Performance Outcome 19 Refer Section 3.6 of the TIA. The proposed servicing and refuse collection arrangements are considered acceptable from a traffic engineering perspective.
	AO19.2 Development provides on-site servicing facilities and associated on-site vehicle manoeuvring areas which are designed in compliance with the service	

Performance outcomes	Acceptable outcomes	Response
	area design standards in the Transport, access, parking and servicing planning scheme policy. AO19.3 Development provides service areas for refuse collection in compliance with the standards in the Refuse planning scheme policy, Transport, access, parking and servicing planning scheme policy and the Infrastructure design planning scheme policy.	
PO20 Development provides service vehicle access routes to and from the site which minimise the impact on: (a) amenity and safety in residential areas; (b) streets not constructed to a standard that accommodate increased heavy vehicle movements.	AO20 Development ensures that service vehicles use the shortest and most direct route to the major road network in compliance with the heavy vehicle standards in the Transport, access, parking and servicing planning scheme policy.	Complies with Acceptable Outcome 20 Refer Section 3.1 of the TIA. The site access is located on a major road.
If for development which is required to be serviced by a b-double (Austroad class 10 vehicle), multi-combination vehicle, over-dimensional vehicle or any on vehicle identified by the Queensland Government as requiring a permit to operate on the road (freight-dependent development)		
PO21 Development which is freight-dependent development ensures that the traffic generated by the development does not impact on: (a) the operation of the transport network; (b) the safety and amenity of a residential area; (c) a road not constructed to accommodate a non-standard vehicle such as a road only constructed to accommodate a vehicle that has a legal right of access to all roads including Austroads vehicles classes 1–9.	AO21.1 Development which is freight-dependent development is located on a site which: (a) has frontage to or direct access to the freight network in the Road hierarchy overlay via roads in a zone in the Industry zones category; or (b) can be serviced by a route that can act as a primary freight access route and connect to an existing primary freight route without impacting on the safe operation of the road	Performance Outcome 21 – Not Applicable The development will not require B-Double access.

Performance outcomes	Acceptable outcomes	Response
	network in compliance with the heavy vehicle standards in the Transport, access, parking and servicing planning scheme policy.	
	AO21.2 Development which is freight-dependent development provides any necessary upgrade to a road used as an access route in compliance with the Infrastructure design planning scheme policy.	