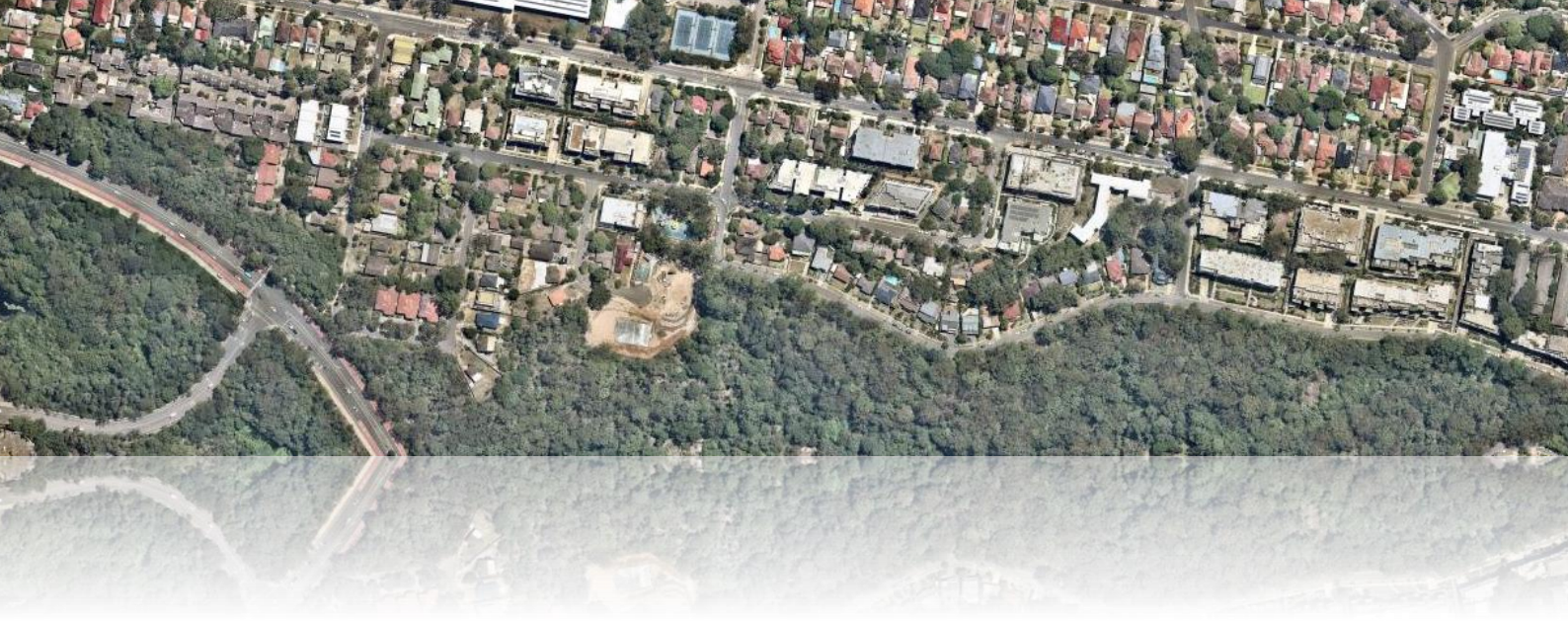


TRAFFIC AND PARKING IMPACT ASSESSMENT OF THE RESIDENTIAL DEVELOPMENT AT 20-22 MINDARIE STREET & 30 PINAROO PLACE, LANE COVE NORTH

Address: Shop 7, 720 Old Princes Highway Sutherland NSW 2232
Postal: P.O Box 66 Sutherland NSW 1499

Telephone: +61 2 8355 2440
Fax: +61 2 9521 7199
Web: www.mclarentraffic.com.au
Email: admin@mclarentraffic.com.au

Division of RAMTRANS Australia ABN: 45067491678 RPEQ: 19457

Transport Planning, Traffic Impact Assessments, Road Safety Audits, Expert Witness

200846.01FB - 11th March 2021

Development Type: **Residential Development**

Site Address: **20-22 Mindarie Street & 30 Pinaroo Place, Lane Cove North**

Prepared for: **BlueCHP Limited**

Document reference: **200846.01FB**

Status	Issue	Prepared By	Checked By	Date
Draft	A	LS/DF	DF	17th November 2020
Final	A	LS/DF	DF	14th December 2020
Draft	B	LS/DF	DF	2nd March 2021
Final	B	DF	DF	11th March 2021

TABLE OF CONTENTS

1 INTRODUCTION

M^CLaren Traffic Engineering was commissioned by *BlueCHP Limited* to provide a Traffic and Parking Impact Assessment of the Residential Development at 20-22 Mindarie Street & 30 Pinaroo Place, Lane Cove North as depicted in **Annexure A**.

1.1 Description and Scale of Development

The proposed development has the following characteristics relevant to traffic and parking:

- A total of 30 units including six (6) adaptable units consisting of:
    - 5 x one-bedroom apartments;
    - 20 x two-bedroom apartments;
    - 5 x three-bedroom apartments;
- Nine (9) of the proposed units are in-fill affordable housing units as defined by the State Environmental Planning Policy (Affordable Rental Housing) 2009;
- Two (2) basement parking levels with vehicular access via a proposed two-way driveway from Pinaroo Place, accommodating a total of 43 car spaces including seven (7) disabled spaces:
    - 38 residential car spaces including six (6) disabled spaces;
    - Four (4) visitor car spaces, including one (1) disabled space;
    - One (1) car wash bay shared with a visitor parking space.

1.2 State Environmental Planning Policy (Infrastructure) 2007

The proposed development does not qualify as a traffic generating development with relevant size and/or capacity under Clause 104 of the State Environmental Planning Policy (Infrastructure) 2007. Accordingly, formal referral to the Roads and Maritime Services (RMS) is unnecessary and the application can be assessed by Lane Cove Council officers accordingly.

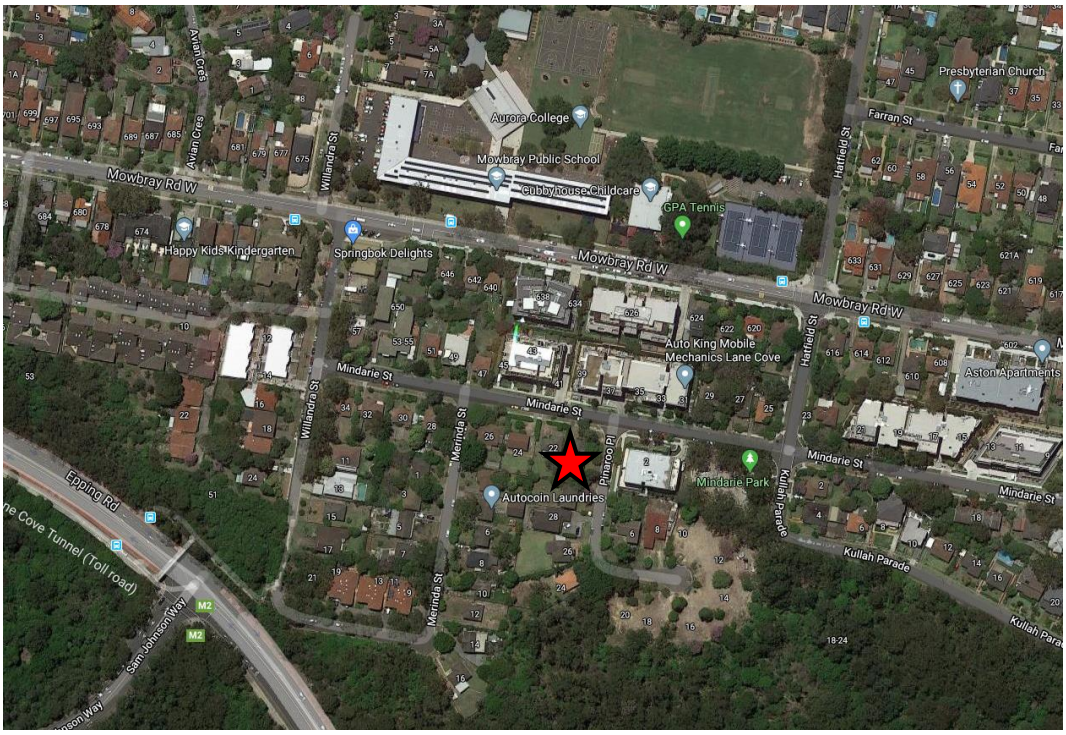
1.3 Site Description

The subject site consists of three lots which are currently zoned *R4 – High Density Residential* under the Lane Cove Council's Local Environmental Plan (LEP) 2009. The three lots of the subject site are currently occupied by three separate residential dwellings, with one on each lot. The site has frontages to Mindarie Street to the North and Pinaroo Place to the east.

The site is generally surrounded by low to high-density residential developments with Mindarie Park located to the east and Mowbray Public School located 120m to the north of the subject site. The site is located within 220m walking distance of bus stops located on Mowbray Road to the north of the site.

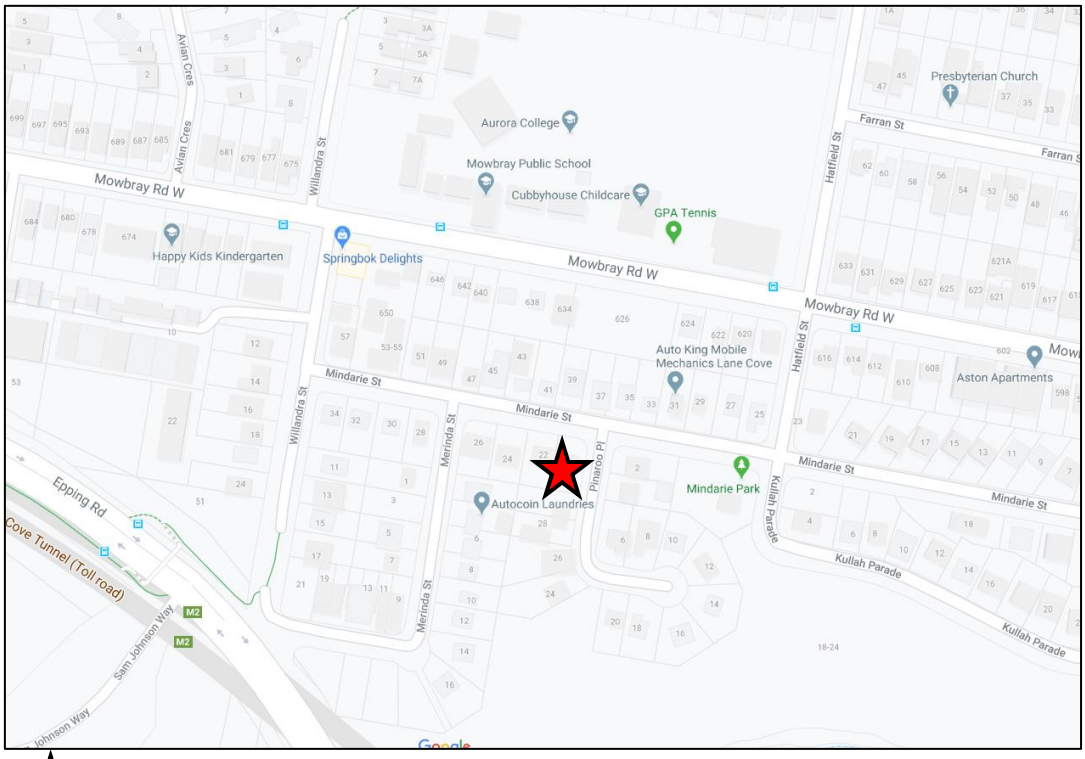
1.4 Site Context

The sites location is shown on an aerial photo and a street map in **Figure 1** and **Figure 2** respectively.



Site Location

FIGURE 1: SITE CONTEXT – AERIAL PHOTO



Site Location

FIGURE 2: SITE CONTEXT – STREET MAP

2 EXISTING TRAFFIC AND PARKING CONDITIONS

2.1 Road Hierarchy

The road network servicing the site has characteristics as described in the following sub-sections within close proximity of the site.

2.1.1 Mindarie Street

- Unclassified LOCAL Road;
- Approximately 7.5m wide carriageway facilitating one traffic lane in each direction and kerbside parking along the southern side of the road.
- Signposted 50km/h speed limit;
- Unrestricted kerbside parking permitted the southern side of the road, with the northern side of the road restricted via “No Stopping” signage.

2.1.2 Pinaroo Place

- Unclassified LOCAL Road;
- Approximately 7.5m wide carriageway facilitating one traffic-flow lane with two-way passing available at driveways, and kerbside parking along both sides of the road;
- No speed limit signposted, 50km/h speed limit applies;
- Unrestricted kerbside parking permitted along both sides of the road.

2.1.3 Hatfield Street / Kullah Parade

- Road known as Hatfield Street to the north of its intersection with Mindarie Street and Kullah Parade to the south of the intersection;
- Unclassified LOCAL Road;
- Approximately 7m wide carriageway facilitating the following on each section of street:
    - Hatfield Street: One traffic lane in each direction with no kerbside parking;
    - Kullah Parade: One traffic flow lane with two-way passing available at driveways, and kerbside parking along both sides of the road.
- Signposted 50km/h speed limit;
- Signpost restricted “NO STOPPING” along both sides of Hatfield Street, and unrestricted kerbside parking available on both sides of Kullah Parade

2.2 Existing Traffic Management

- Priority controlled intersection of Pinaroo Place / Mindarie Street;
- Priority controlled intersection of Mindarie Street / Willandra Street;
- “STOP” controlled intersection of Mindarie Street / Hatfield Street / Kullah Parade;
- Signalised intersection of Hatfield Street / Mowbray Road W.

2.3 Public Transport

The subject site has access to existing bus stop (ID: 2066180) located approximately 120m walking distance from the site on Mowbray Road. The bus stop services existing bus route 292 (Marsfield to Sydney City [Erskine Street] via Macquarie Park) and 533 (Sydney Olympic Park to Chatswood via Rhodes and North Ryde) provided by State Transit.

The sites location subject to the surrounding public transport network is shown in **Figure 3** below.

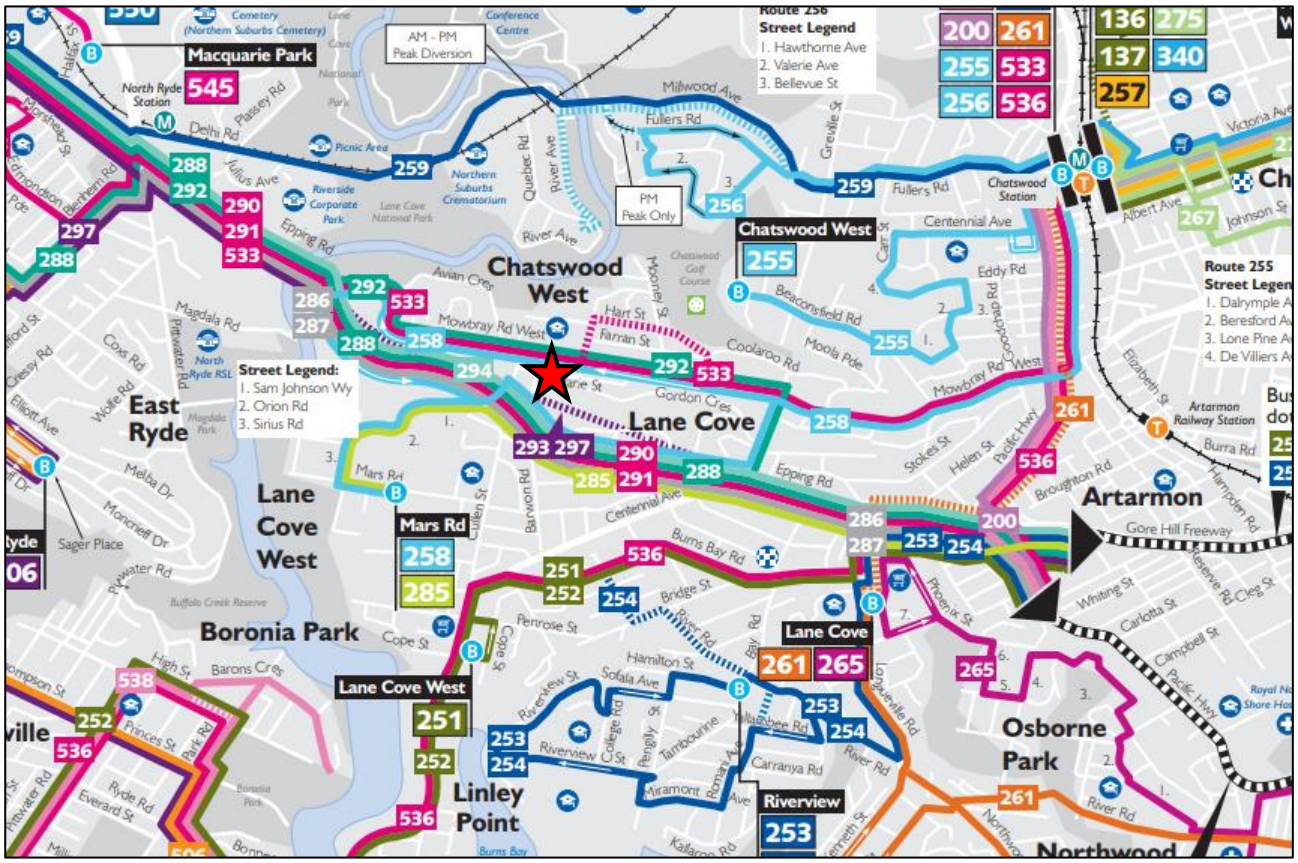


FIGURE 3: PUBLIC TRANSPORT NETWORK MAP

2.4 Future Road and Infrastructure Upgrades

From Lane Cove Council's Development Application tracker and website, it appears that there are no future planned road or public transport changes that will affect traffic conditions within the immediate vicinity of the subject site.

3 PARKING ASSESSMENT

3.1 Car Parking Requirement

Reference is made to the *State Environmental Planning Policy (Affordable Rental Housing) 2009* referred to as SEPP (ARH) 2009 hereafter, which designates the following car parking rates applicable to the affordable renting housing portion of the proposed development:

> *(14) Standards that cannot be used to refuse consent*
>
> *(2) General*
>
> *(a) parking*
>
> *(i) in the case of a development application made by a social housing provider for development on land in an accessible area – at least 0.4 parking spaces are provided for each dwelling containing 1 bedroom, at least 0.5 parking spaces are provided for each dwelling containing 2 bedrooms and at least 1 parking space is provided for each dwelling containing 3 or more bedrooms, or…*

It must be noted that the development application is made on behalf of a social housing provider, therefore the above rates apply for the ten (10) total affordable housing units.

The proposed development provides a combination of both Affordable Renting Housing and traditional units. Reference is made to *Lane Cove Development Control Plan* (DCP) *Part R-Traffic, Transport and Parking* which designates the following car parking rates applicable to the proposed development:

> ***Residential Flat Buildings***
>
> *Residents*
>
> *0.5 spaces per studio*
>
> *1 space per 1-bedroom*
>
> *1.5 spaces per 2-bedroom*
>
> *2 spaces per 3+ bedroom*
>
> *1 disabled space for each adaptable unit…*
>
> *1 car wash bay per 50 units for developments over 20 units*
>
> *Visitors*
>
> *1 space per 4 units*
>
> *1 disabled space per 50 visitor spaces (minimum 1 disabled space)*
>
> *Calculations are to be rounded up to the nearest whole number.*

The car parking requirements of the proposal with application of both SEPP (ARH) 2009 rates and Council's DCP rates are outline in **Table 1**.

TABLE 1: CAR PARKING REQUIREMENTS SUMMARY

Land Use	Authority	Scale	Type	Rate	Parking Required
Residential Flat Buildings	SEPP (ARH) 2009	3	1-bedroom	0.4 per dwelling	1.2
		6	2-bedroom	0.5 per dwelling	3
		Subtotal			4.2 (**5**)
	Lane Cove Council DCP	2	1-bedroom	1 per dwelling	2
		14	2-bedroom	1.5 per dwelling	21
		5	3-bedroom	2 per dwelling	10
		Subtotal			**33**
		21	Visitor	1 per 4 dwellings	5.25 (5)
		21	Car wash bay	1 bay per 50 units	0.42 (1)
		Subtotal			5.25 + car wash bay
Total	**-**		**-**	**-**	**43.25 (44) + car wash bay**

As shown above with strict application of both SEPP (ARH) 2009 and Council's DCP, the proposed development requires a total of **44** car parking spaces and a car wash bay including 5.25 visitor spaces. The proposed plans detail the provision of a total of **43** car parking spaces including a car wash bay which is shared with visitors and four other (4) visitor spaces.

This total car parking provision complies with the requirements of the relevant authorities for residential buildings, however, there is a shortfall of 0.25 visitor parking spaces. The car wash bay could be used by visitors, which would satisfy this parking shortfall. The shortfall of 0.25 visitor spaces is justified using Council's DCP objectives as summarised in the following subsection.

3.1.1 Visitor Parking Space Shortfall

Reference is made to the Lane Cove DCP Part R Section 2.2 which states the following:

> *Lesser parking rates will only be considered if two or more of the following circumstances apply:*

- *There are realistic transport alternatives to the private car in the locality.*
- *The applicant can demonstrate a low demand for parking eg. Car ownership survey data in the vicinity or relevant examples of similar developments where reduced parking rates have been successfully implemented;*
- *In locations where there is no risk of overspill parking from the development impacting on the local streets;*
- *There are exceptional site constraints which limit available on-site parking and appropriate mitigation measures and/or financial contributions are suggested in lieu;*
- *There is an overriding community benefit arising from the development.*

The shortfall is less than one space (0.25) and is therefore very minor. The proposal is surrounded by low traffic local roads. The site has approximately 65m of frontage to public roads (38m on Pinaroo Place + 27m on Mindarie Street). This is enough space for approximately ten (10) kerbside parallel parking spaces. A main purpose of on-street parking in local residential roads is for short term visitors.

As discussed previously, the site is located within 200m walking distance of bus stops along Mowbray Road, which provide frequent services to Sydney City, Chatswood, Olympic Park and Marsfield. Chatswood and Sydney City have major train stations and are destinations for commuters. Additionally, the site is within 400m walking distance to bus stops along Epping Road, which provide services between Epping and Sydney City every 10 minutes. The public transportation service within the surrounding area is a satisfactory and efficient alternative to private car reliance.

In addition to the above, Australian Bureau of Statistics provides car ownership data of various areas around Australia following the 2016 Census, with data located in their *Census TableBuilder* website. As such, the car ownership rates of dwellings within the Lane Cove North suburb have been compared to that of the wider Lane Cove Local Government Area (LGA), with detailed results from the *Census TableBuilder* provided in **Annexure B** and a summary provided in **Table 2**.

TABLE 2: CAR OWNERSHIP SUMMARY

	Lane Cove North (suburb)	**Lane Cove (LGA)**
Total Number of Cars	5989	19714
Total Number of Dwellings	4487	13350
Average Cars per Dwelling	**1.33**	**1.48**

As shown in **Table 2**, the average dwelling of Lane Cove North owns less cars than that over the wider LGA of Lane Cove. As such, there is likely to be a lower demand for parking per dwelling in the vicinity of the site in the suburb, compared to that of the wider LGA which the DCP car parking rates would be based upon.

Therefore, as a result of no expected adverse impact on local streets for on-street parking of one (1) space and the likely lower parking demand within the vicinity of the Lane Cove North suburb, the proposed numerical shortfall of 0.25 (1) visitor parking space is considered acceptable.

3.2 Disabled Parking

As quoted in **Section 3.1**, Council's *DCP Part R* requires disabled parking for residential flat buildings at the rate of one (1) disabled space for each adaptable unit, and one (1) disabled space per 50 visitor spaces (minimum one (1) disabled space). However, the SEPP (ARH) 2009 does not provide rates of disabled parking for the affordable rental housing portion of the proposed development. Best practice for residential disabled car parking provision is to provide parking at a rate of one (1) disabled space for every adaptable dwelling.

Therefore, as the proposed development proposes six (**6**) adaptable dwellings (all affordable/social units) and five (**5**) visitor car spaces, it is considered that the proposed development requires a total of seven (**7**) disabled accessible car parking spaces. Six (**6**) disabled accessible spaces are provided and one (**1**) disabled visitor space is provided with the proposed plans, satisfying the relevant DCP requirements for adaptable units and visitor parking.

3.3 Bicycle & Motorcycle Parking Requirements

The *SEPP (ARH) 2009* does not provide bicycle nor motorbike parking requirements for In-fill affordable housing. Reference is made to *Lane Cove Development Control Plan Part R* which designates the following requirement for bicycle and motorcycle parking:

> ***Table 3 – Bicycle parking rates***
>
> *Residential flat buildings*
>
> *Residents: 1 per 4 dwellings;*
>
> *Visitors: 1 rack + 1 per 10 dwellings;*
>
> ***2.7 Motorcycle parking***
>
> *a) Developers shall provide 1 motorcycle parking space per 15 car spaces for all types of development.*

3.3.1 Bicycle Parking Requirement

The bicycle parking requirement for the proposed development is summarised in **Table 3**. Although the SEPP (ARH) 2009 does not provide bicycle parking requirements, the Council DCP rates have been applied to the affordable rental housing units for a conservative assessment.

TABLE 3: BICYCLE PARKING SUMMARY

Land Use	Type	Scale	Type	Rate	Parking Required
Residential	Affordable Rental Housing	9	Residents	1 per 4 units	2.25
			Visitors	1+1 per 10 units	1.9
	Residential Flat Building	21	Residents	1 per 4 units	5.25
			Visitors	1 per 10 units	2.1
Total	**-**	**30**	**Residents**	**-**	7.5 **(8)**
			Visitors		**4**

As shown above, Council's DCP requires eight (**8**) residential bicycle parking spaces and four (**4**) visitor parking spaces, assuming the affordable rental housing units are provided with bicycle parking at the same rate as the LDCP. The proposed plans detail a total of **22** bicycle parking spaces, exceeding the minimum requirements of the DCP by 10 spaces. The bicycle room shall be made available for visitors.

3.3.2 Motorcycle Parking Requirement

Although the SEPP (ARH) 2009 does not provide motorcycle parking requirements, the Council DCP rates for motorcycle parking (1 per 15 car spaces) have been applied to the affordable rental housing units for a conservative assessment. The provision of **43** car parking spaces results in the required provision of three (**3**) motorcycle parking spaces. The proposed plans detail three (**3**) motorcycle parking spaces, satisfying the Council's DCP requirements.

3.4 Servicing & Loading

Reference is made to *Lane Cove Development Control Plan* (DCP) *Part R-Traffic, Transport and Parking* which states the following requirements regarding servicing and loading applicable to the proposed development:

> ***2.10 Parking and access for service vehicles***
>
> *Provisions*
>
> *a) Parking areas shall be provided and designed to allow for access and loading by Council's waste collection contractor.*
>
> *b) All parking areas for delivery and service vehicles must be designed in accordance with AS 2890.2:2002 Parking facilities—Off-street commercial vehicle facilities. On site delivery and service areas for residential flat buildings must be large enough to accommodate removal trucks.*
>
> *c) Developers should refer to Part Q - Waste Management & Minimisation for relevant dimensions and requirements.*
>
> ***6.6 Servicing operations***

Details issues related to servicing operations (delivery vehicle loading and unloading).

Provisions

a) Loading and servicing areas shall be clearly shown on plans and must comply with AS 2890.2: 2002 - Off-street commercial vehicle facilities and Council's DCP Part Q: Waste Management and Minimisation.

b) Waste collection arrangements must be clearly explained and swept paths of Council's waste collection vehicle must be shown for all internal manoeuvres. Refer to DCP Part Q – Waste Management & Minimisation.

It has been advised that waste collection will take place on site. Council's 6.64m length waste collection vehicle (or smaller) will enter the site in a forward direction before stopping near the waiting bay. Whilst the waste vehicle is located here, passenger vehicles can still circulate the site successfully. Waste collection will be completed outside of peak commuter hours to limit conflict as much as possible. Given this, a separate loading bay is unnecessary. Once completed, the waste vehicle will turn around at the end of the parking aisle and exit the site in a forward direction. This operation is shown in **Annexure B**.

MTE has completed an undercarriage clearance test on a longsection of the driveway ramp. Annexure B shows that Council's 6.64m length waste collection vehicle can successfully navigate the ramp without undercarriage scraping.

The headroom is a minimum of 2.6m in the basement. The waste collection vehicle is therefore limited to 2.4m in height in accordance with the requirements of *AS2890.2:2018*.

It is proposed that servicing or loading by vehicles up to and including Australian 99.8th percentile light vehicle (B99) in accordance with *AS2890.1:2004*, can be undertaken within vacant visitor parking bays outside of peak visitor peaks. For vehicles larger than a B99, it is proposed that servicing or loading is undertaken via on-street parking.

3.5 Car Park Design & Compliance

The car parking layout as depicted in **Annexure A,** have been assessed to achieve the relevant clauses and objectives of *AS2890.1:2004* and *AS2890.6:2009*, subject to any variations outlined in subsections below.

The proposed car park design achieves:

- Compliant ramp grades not exceeding 25% for private developments;
- Minimum 5.4m length, 2.4m width spaces;
- Minimum 5.4m length, 2.4m width disabled accessible spaces with adjacent shared spaces of the same dimensions;

- Minimum headroom of 2.2m for general circulation and 2.5m headroom clearance provided over disabled and adaptable parking areas;
- Minimum width of 6.1m between walls and 5.5m between kerbs on all ramps;
- Minimum 1.2m width, 2.5m length motorcycle spaces;
- Minimum bicycle parking envelope of 0.5m width, 1.8m length with a 1.5m aisle width.

3.5.1 5% Grade Across Property Boundary

Clause 3.3 of *AS2890.1:2004* requires that the gradient of an access driveway from the property boundary be a maximum of 5% for a minimum distance of 6m into the site. The proposal includes a 5% gradient for the first 4m into the site, rather than 6m. This requirement outlined above is preceded by the following statement: "*At entry and exit points, the access driveway should be graded to minimize problems associated with crossing the footpath and entering the traffic in the frontage road.*" As such, it is widely considered that the requirement for the 5% grade for a minimum of 6m is to provide drivers with sufficient visibility to pedestrians walking along a footpath outside the property boundary to minimise the risk of potential conflicts.

Reference is made to *Figure B1* of *A2890.1:2004* which indicates that the distance from the front bumper of a B99 vehicle to the rear axle is a distance of 4000mm. As such, for the proposed gradient of 5% for 4m from the property boundary, vehicles covered under *AS2890.1:2004* can have all wheels located on a gradient of 5% without crossing the property boundary. Therefore, this will allow drivers sufficient visibility to pedestrians such that this variation from the standards is considered acceptable.

3.5.2 Ramp Signal System

Swept paths have been undertaken and are reproduced in **Annexure C** for reference. It should be noted that due to the ramp and parking aisle arrangements it is recommended to provide a red signal control and signage detailing "*Give Way to Entering Vehicles"* in view of exiting vehicles that activates upon a vehicle entering such that vehicles exiting can give way in most circumstances.

Whilst the plans have been assessed to generally comply with the relevant standards, subject to any variations outlined above, it is usual and expected that a design certificate be required at the Construction Certificate stage to account for any changes following the development application.

4 TRAFFIC ASSESSMENT

The impact of the expected traffic generation levels associated with the subject proposal is discussed in the following sub-sections.

4.1 Traffic Generation

Traffic generation rates for the relevant land uses are provided in the *Roads and Maritime Services (RMS) Updated Traffic Surveys (TDT 2013/04a)* and are as follows:

TDT 2013/04a

High density residential flat dwellings

AM peak (1 hour) vehicle trips per unit *0.19*

PM peak (1 hour) vehicle trips per unit *0.15*

The resulting traffic generation is summarised in **Table 4**.

TABLE 4: ESTIMATED TRAFFIC GENERATION

Use	Time	Scale	Peak Hour Traffic Generation Rate	Peak Hour Split
High density Residential	AM	30 units	0.19 trips per unit	5.7 (6)
	PM		0.15 trips per unit	4.5 (5)
Total	**AM**	**-**	**-**	**1 IN; 5 OUT**
	PM			**4 IN; 1 OUT**

Note: (1) Assumes 20% inbound & 80% outbound during AM peak: Vice versa for PM.

As shown, the maximum traffic generation associated with the proposed development is in the order of six (**6**) (1 IN; 5 OUT for AM Peak) vehicle trips. The *Metropolitan Sub-Regional Centres* rate from the *RMS' Updated Traffic Surveys (TDT 2013/04a)* rate has been used to calculate traffic generation as the subject site is not within immediate proximity of a train station. Note that this traffic generation is considered to be conservative as it does not incorporate the traffic generation of the existing site use.

4.2 Trip Assignment

Reference is made to the *Austroads Guide to Traffic Management Part 12: Figure 4.1* which states the following about the likely impact of traffic generating developments: Likely impact of development:

Low Impact (<10 Trips): No Detailed Assessment Required

Moderate Impact (10-100 Trips): Traffic Impact Statement Required

High Impact (>100 Trips): Traffic Impact Assessment Required

The traffic generation of the site is below 10 trips and therefore no detailed assessment of traffic impacts is required. This low volume of vehicles is likely within the daily fluctuations in traffic on the surrounding roads and will not have a noticeable effect on conditions.

5 CONCLUSION

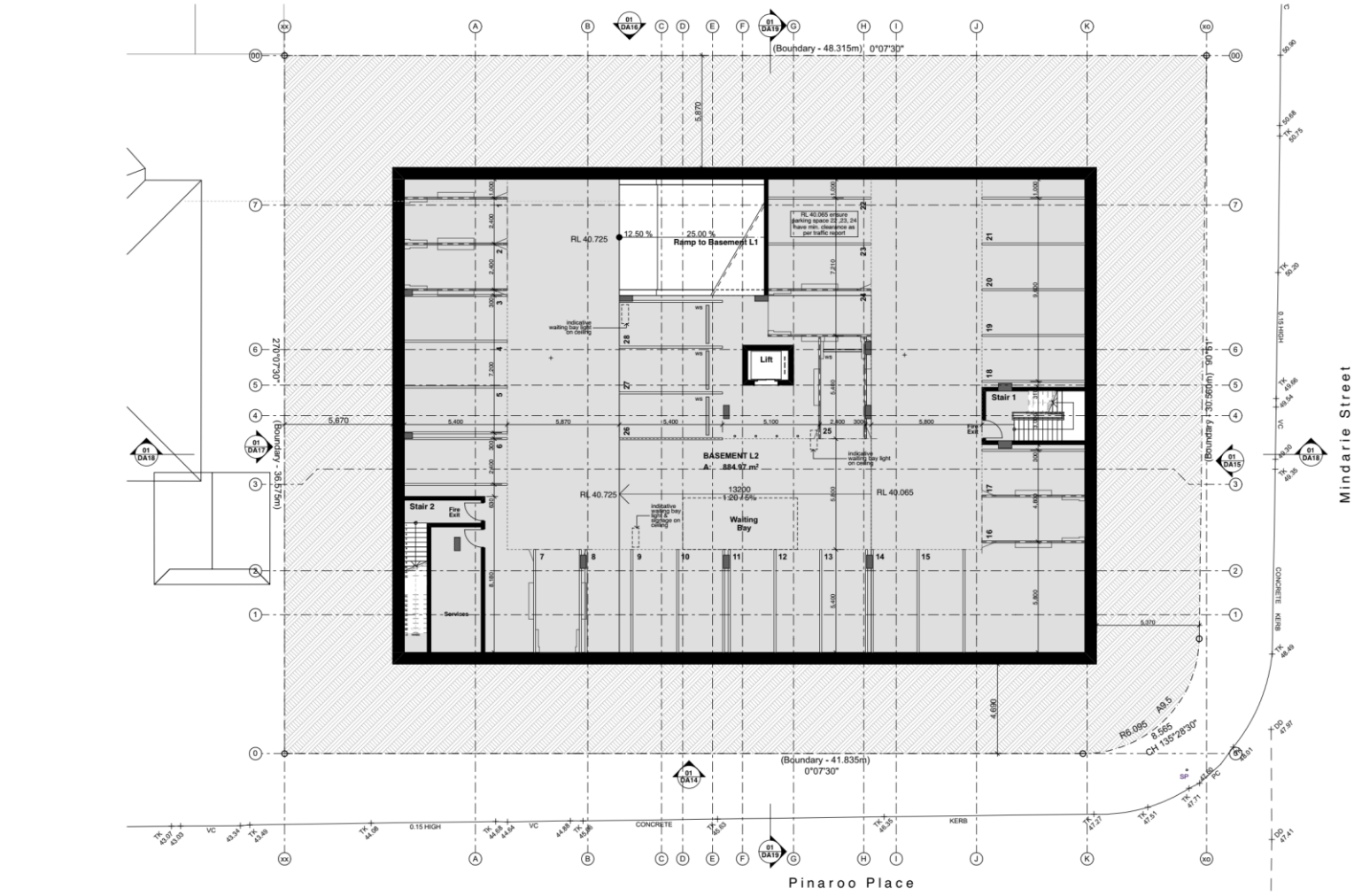
. The following outcomes of this traffic and parking impact assessment are relevant to note:

- The relevant controls applicable to the development, including SEPP (ARH) 2009 and Lane Cove Council's DCP requirements, require a car parking provision of **43.25** car parking spaces. The proposal includes a total of **43** car parking spaces, complying with the relevant controls applicable to the development, except for a 0.25 visitor space shortfall.
- The shortfall of 0.25 visitor car parking spaces can be satisfied by utilizing on-street car parking and/or sharing the car wash space with visitors.
- Council's DCP requires eight (**8**) residential bicycle parking spaces and four (**4**) visitor parking spaces, assuming the affordable rental housing units are provided with bicycle parking at the same rate as the LDCP. The proposed plans detail a total of **22** bicycle parking spaces, exceeding the minimum requirements of the relevant authorities by 10 spaces.
- The parking areas of the site have been assessed against the relevant sections of *AS2890.1*, *AS2890.3* and *AS2890.6* and have been found to satisfy the clauses and objectives of each standard, subject to any variations listed in **Section 3.5**.
- Waste collection will take place within the aisle in Basement 1. **Annexure B** shows that the vehicle can be stationed within the aisle and still allow successful circulation throughout the basements for light vehicles.
- Servicing and loading by vehicles up to B99 will be undertaken via vacant visitor parking spaces outside of peak periods. Servicing by larger vehicles is proposed to be undertaken via on-street parking.
- The estimated traffic generation of the site is a peak of six (**6**) trips, which is below 10 trips and therefore no detailed assessment of traffic impacts is required in accordance with *Austroads Guide to Traffic Management Part 12: Figure 4.1*. This low volume of vehicles is likely within the daily fluctuations in traffic on the surrounding roads and will not have a noticeable effect on conditions.

In view of the foregoing, the subject Residential Development proposal at 20-22 Mindarie Street & 30 Pinaroo Place, Lane Cove North (as depicted in **Annexure A**) is fully supportable in terms of its traffic and parking impacts.

ANNEXURE A: PROPOSED PLANS

(3 SHEETS)



01 **Basement L2**
1:100

Legend
(floor plans)
note: drawing may not contain all items listed below

(xx)	door numbers (as scheduled) (prefix ex. for existing door)
(ww)	window numbers (as scheduled) (prefix ex. for existing window)
(a) →	wall type (as scheduled)
ac	air conditioner condenser
acc	accessible

adhc	ageing, disability & home care	comms	communication cabinet
amb	ambulant	cpt(1)	carpet (type)
ap	access panel	ct	cooktop
bal(1)	balustrade (type)	dp	downpipe
bfc	broom finish concrete	dcp	dowpcel
bol	bollard	edb	electrical distribution box
brm	broom cupboard	ex.	existing
bsn	basin	fb(1)	face brickwork (type)
clt(1)	ceramic floor tile (type)	fhr	fire hose reel
cj	control joint	fm	floor mat
cl	clothes line	fr	fridge space
col	column	fp	feature panel
fw	floor waste	ofc	off form concrete
gb	garbage bin	pmp	permeable paving
gt	gate	ps	privacy screen
grd	grated drain	pty	pantry
hr(1)	handrail (type)	robe	wardrobe
ht	hose tap	rw(1)	retaining wall (type)
hwu	hot water unit	rwt	rainwater tank
hyd	hydrant	snk	sink
kr	kerb ramp	sc	steel column
lb	letter box	sfc	steel float concrete
lin	linen cupboard	shr	shower
mw	microwave	sk	skylight/skylube
sl	sliding door		
st	stone		
sv(1)	sheet vinyl (type)		
swp	storm water pit		
tgsi	tactile ground surface indicators		
vp	vent pipe		
wfc	wood float concrete		
wm	washing machine space		
wo	wall oven		
ws	wheel stop		
wcs	window casing		

Stanton Dahl Architects
PO Box 833, Epping, NSW 1710, Australia
Tel +61 2 8876 5300
www.stantondahl.com.au

Rev	Issue	Date
01	Issue for Development Application	01/12/20

Stanton Dahl Architects

BlueCHP Limited
AFFORDABLE HOUSING - FOUNDATION FOR LIFE

BlueCHP

Residential Apartments

20 & 22 Mindarie Street &
30 Pinaroo Place,
Lane Cove North, NSW

Drawn; AA
Checked; AT
Plot date; 1/12/20

Scale;1:100 as noted @ A1

Project No;
2088.16

Drawing No; DA05
Revision#; 01

Floor Plans- Basement L2

01 Basement L1
1:100

Legend
(floor plans)
note: drawing may not contain all items listed below

(DN)	door numbers (as scheduled) (prefix ex. for existing door)
(WN)	window numbers (as scheduled) (prefix ex. for existing window)
(a) →	wall type (as scheduled)
ac	air conditioner condenser
acc	accessible

adhc	ageing, disability & home care	comms	communication cabinet	fw	floor waste	olc	off form concrete	sl	sliding door
amb	ambulant	cpt(1)	carpet (type)	gb	garbage bin	pmp	permeable paving	st	store
ap	access panel	ct	cooktop	gt	gate	ps	privacy screen	sv(1)	sheet vinyl (type)
bal(1)	balustrade (type)	dp	downpipe	gtd	grated drain	pty	pantry	swp	storm water pit
blc	broom finish concrete	drp	doorpost	hr(1)	handrail (type)	robe	wardrobe	tgsi	tactile ground surface indicators
bol	bollard	edb	electrical distribution box	ht	hose tap	rw(1)	retaining wall (type)	vp	vent pipe
brm	broom cupboard	ex.	existing	hwu	hot water unit	rwt	rainwater tank	wfc	wood float concrete
bsn	basin	fb(1)	face brickwork (type)	hyd	hydrant	snk	sink	wm	washing machine space
cfl(1)	ceramic floor tile (type)	frr	fire hose reel	kr	kerb ramp	sc	steel column	wo	wall oven
cj	control joint	frm	floor mat	lb	letter box	sfc	steel float concrete	ws	wheel stop
cl	clothes line	fs	fridge space	lin	linen cupboard	shr	shower	wcs	window casing
col	column	fp	feature panel	mw	microwave	sk	skylight/skylytube		

Stanton Dahl Architects
PO Box 833, Epping, NSW 1710, Australia
Tel +61 2 8876 5300
www.stantondahl.com.au

Rev	Issue	Date
01	Issue for Development Application	01/12/20

Stanton Dahl Architects

BlueCHP Limited
AFFORDABLE HOUSING - FOUNDATION FOR LIFE

BlueCHP

Residential Apartments

20 & 22 Mindarie Street &
30 Pinaroo Place,
Lane Cove North, NSW

Drawn; AA
Checked; AT
Plot date; 1/12/20

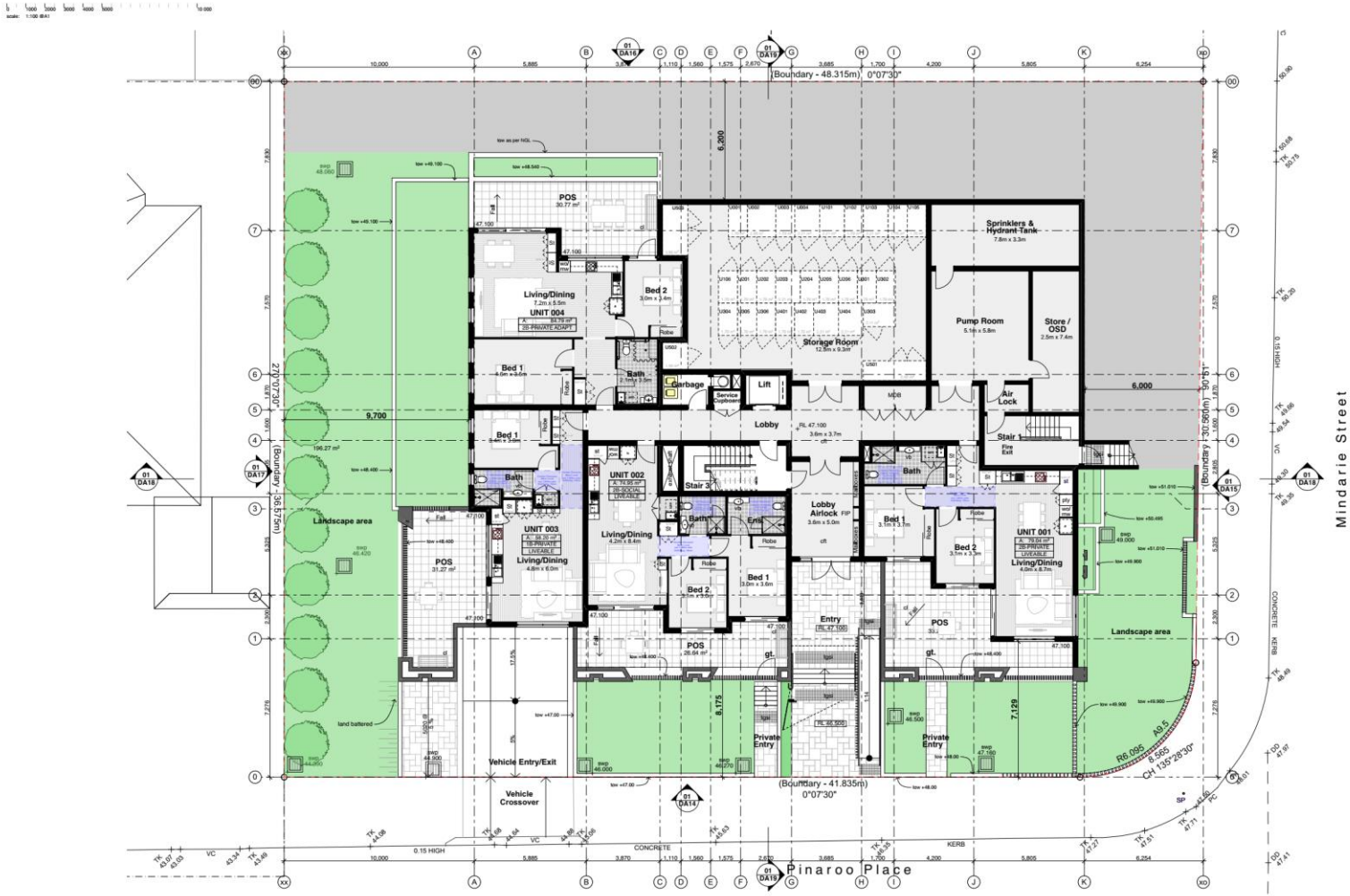
Scale;1:100 as noted @ A1

Project No;
2088.16

Drawing No; DA06

Revision#; 01

Floor Plans- Basement L1



01 Ground Flooor Plan
1:100

Legend (floor plans)
note: drawing may not contain all items listed below

(dr)	door numbers (as scheduled) (prefix ex. for existing door)
(WIN)	window numbers (as scheduled) (prefix ex. for existing window)
(a) →	wall type (as scheduled)
ac	air conditioner condenser
accc	accessible

adhc	ageing, disability & home care	comms	communication cabinet
amb	ambulant	cpt(1)	carpet (type)
ap	access panel	ct	cooktop
bal(1)	balustrade (type)	dp	downpipe
bfc	broom finish concrete	drp	doorpost
bol	bollard	edb	electrical distribution box
brm	broom cupboard	ex.	existing
bsn	basin	fb(1)	face brickwork (type)
cft(1)	ceramic floor tile (type)	fhr	fire hose reel
cj	control joint	fm	floor mat
cl	clothes line	fs	fridge space
col	column	fp	feature panel
fw	floor waste	clc	off form concrete
gb	garbage bin	pmp	permeable paving
gt	gate	ps	privacy screen
grd	grated drain	pty	pantry
hr(1)	handrail (type)	robe	wardrobe
ht	hose tap	rw(1)	retaining wall (type)
hwu	hot water unit	rwt	rainwater tank
hyd	hydrant	snk	sink
kr	kerb ramp	sc	steel column
lb	letter box	sfc	steel float concrete
lin	linen cupboard	shr	shower
mw	microwave	sk	skylight/skytube
sl	sliding door		
st	store		
sw(1)	sheet vinyl (type)		
swp	storm water pit		
tgsi	tactile ground surface indicators		
vp	vent pipe		
wfc	wood float concrete		
wm	washing machine space		
wo	wall oven		
ws	wheel stop		
wcs	window casing		

Stanton Dahl Architects
PO Box 833, Epping, NSW 1710, Australia
Tel +61 2 8876 5300
www.stantondahl.com.au

Rev	Issue	Date
01	Issue for Development Application	01/12/20

Stanton Dahl Architects

BlueCHP Limited

BlueCHP

Residential Apartments

20 & 22 Mindarie Street &
30 Pinaroo Place,
Lane Cove North, NSW

Drawn; AA
Checked; AT
Plot date; 1/12/20

Scale;1:100 as noted @ A1

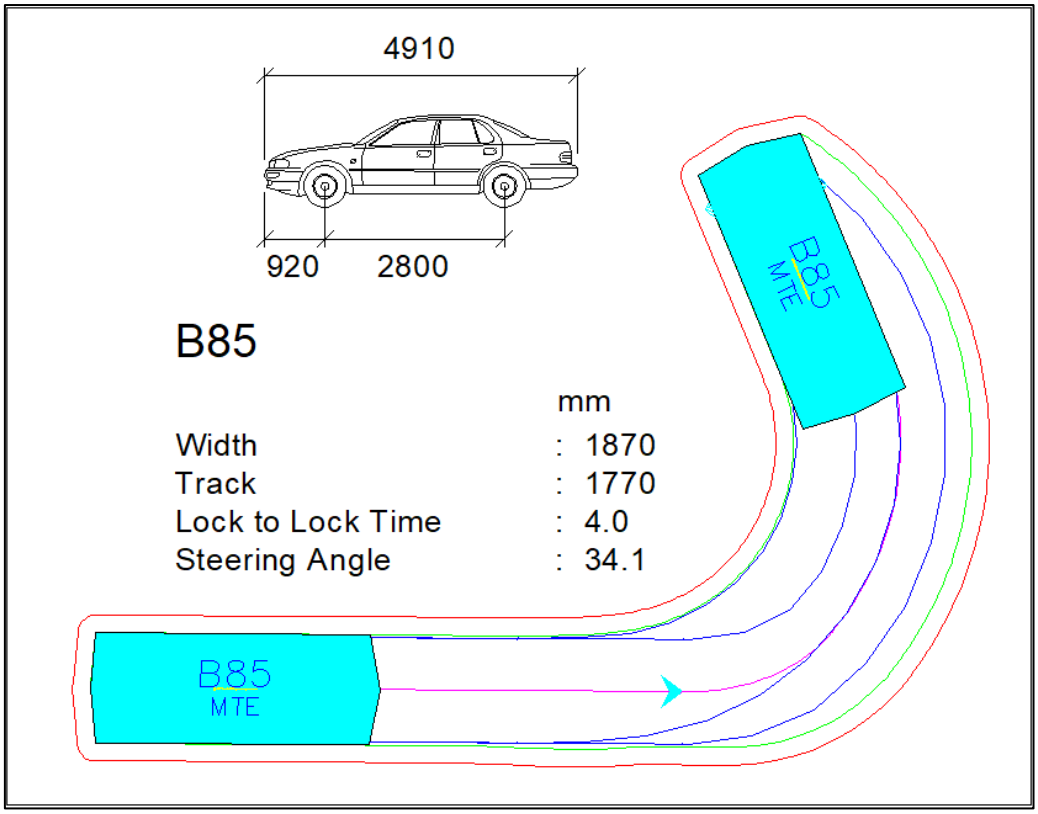
Project No;
2088.16

Drawing No; DA07

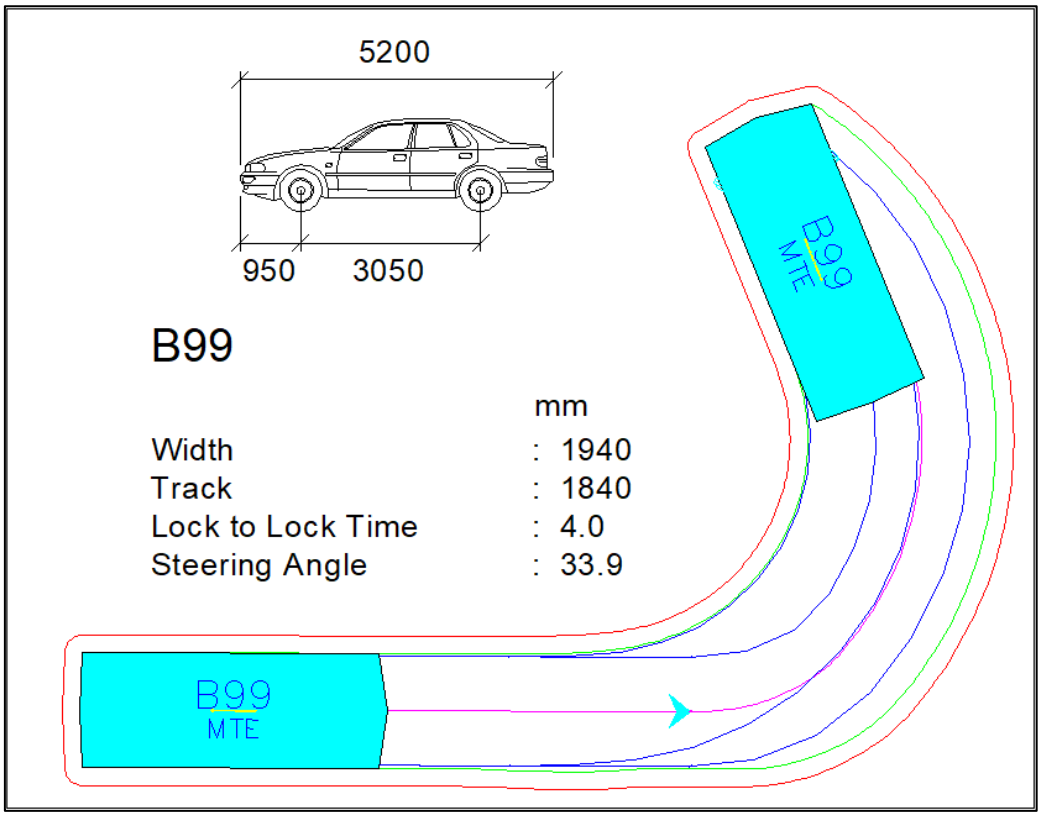
Revision#; 01

Floor Plans- Ground Level

ANNEXURE C: SWEPT PATH TESTING
(4 SHEETS)



AUSTRALIAN STANDARD 85TH PERCENTILE SIZE VEHICLE (B85)

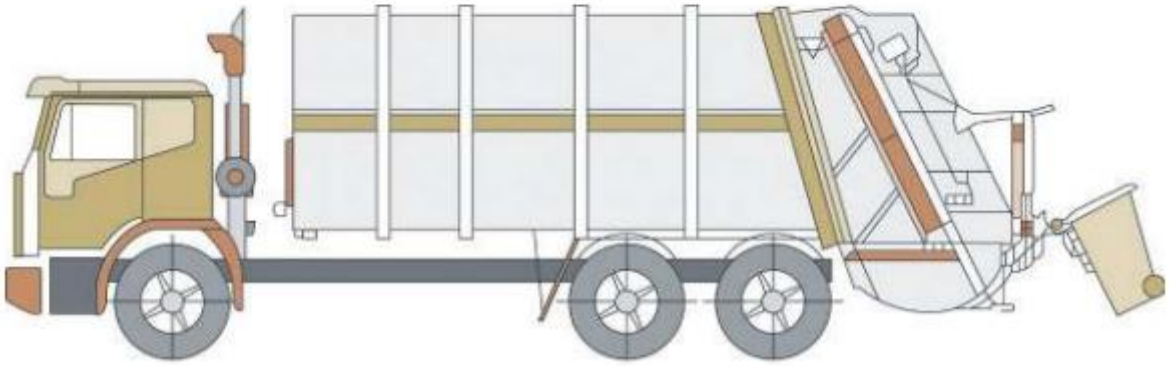


AUSTRALIAN STANDARD 99.8TH PERCENTILE SIZE VEHICLE (B99)

Blue – Tyre Path
Green – Vehicle Body
Red – 300mm Clearance

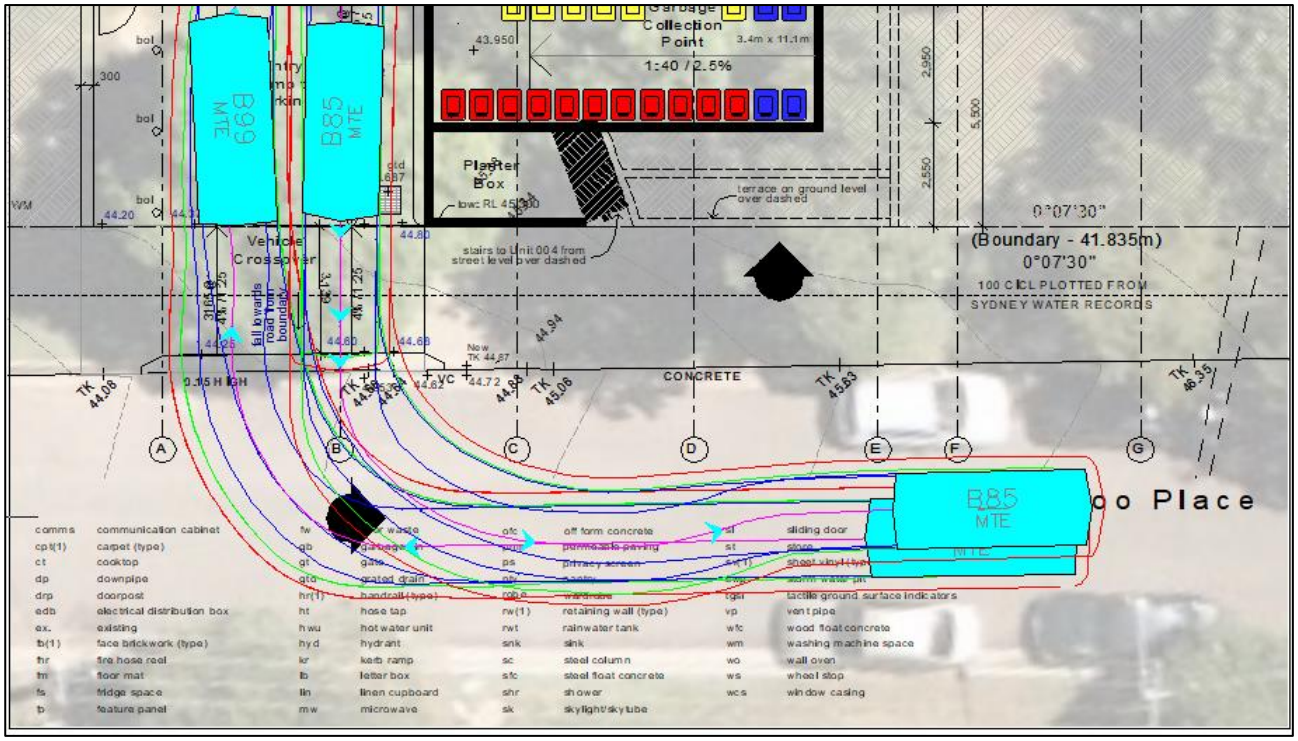
- **The Smallest Council Garbage Truck used for Domestic Waste Collection – Rear Load**

• Length overall	• 6.64 metres
• Width overall	• 2.37 metres
• Operational height	• 2.40 metres
• Travel height	• 2.60 metres
• Weight (vehicle and load)	• 7.50 tonnes
• Weight (vehicle only)	• 5.48 tonnes
• Turning Circle	• 10.70 metres



rearloader garbage truck

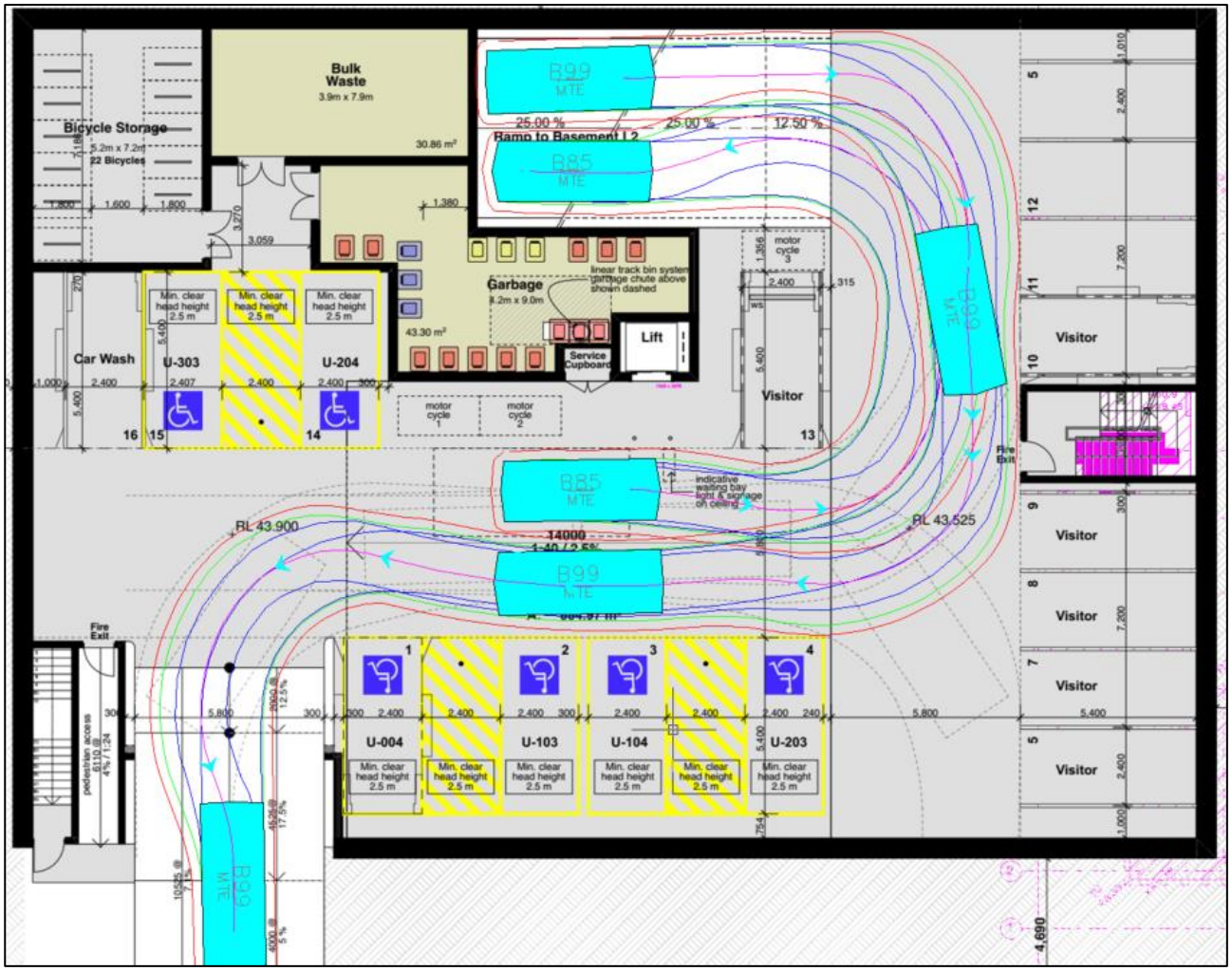
COUNCIL WASTE VEHICLE



B99 and B85 Two-Way Passing at Driveway

B99 Right Turn IN / B85 Left Turn OUT

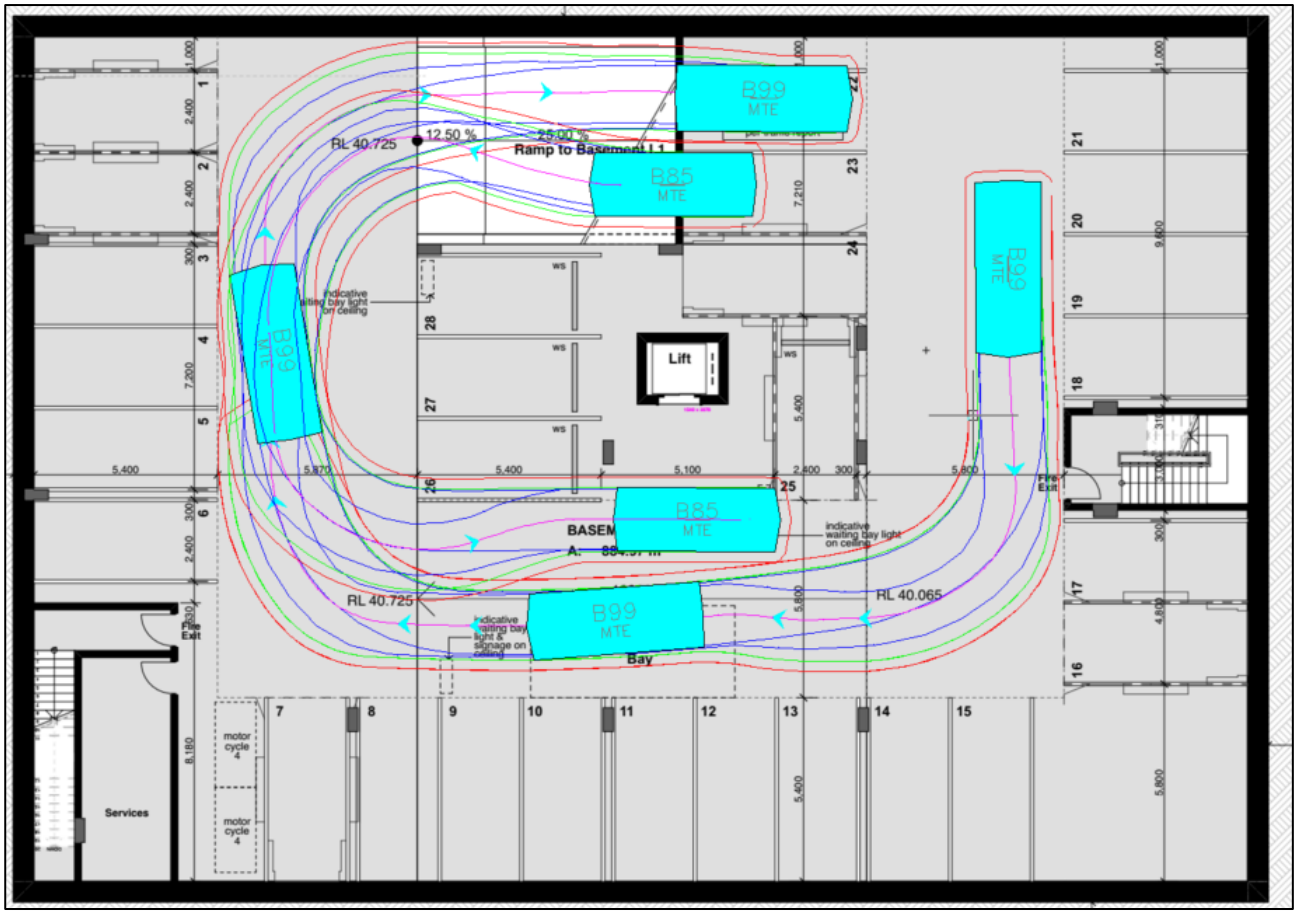
Successful



Basement 1 Two Way Passing at Waiting Bay

B85 entering / B99 exiting

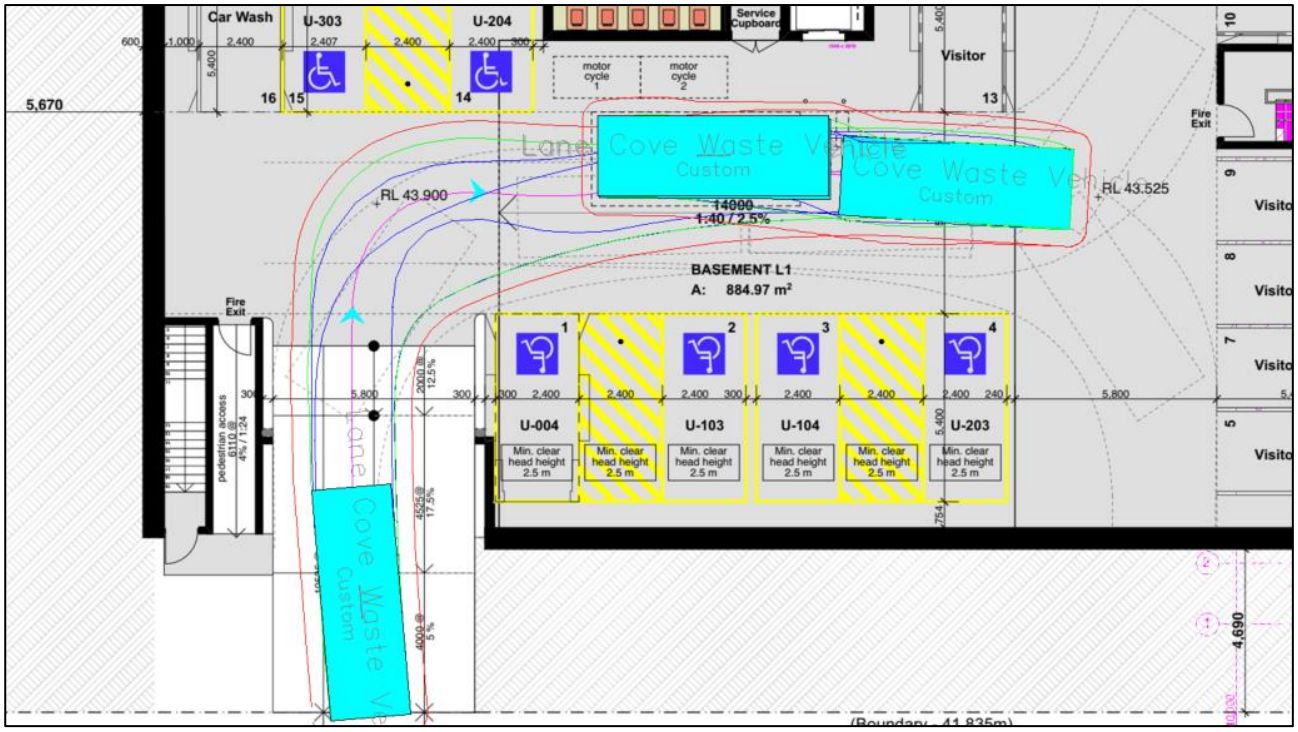
Successful



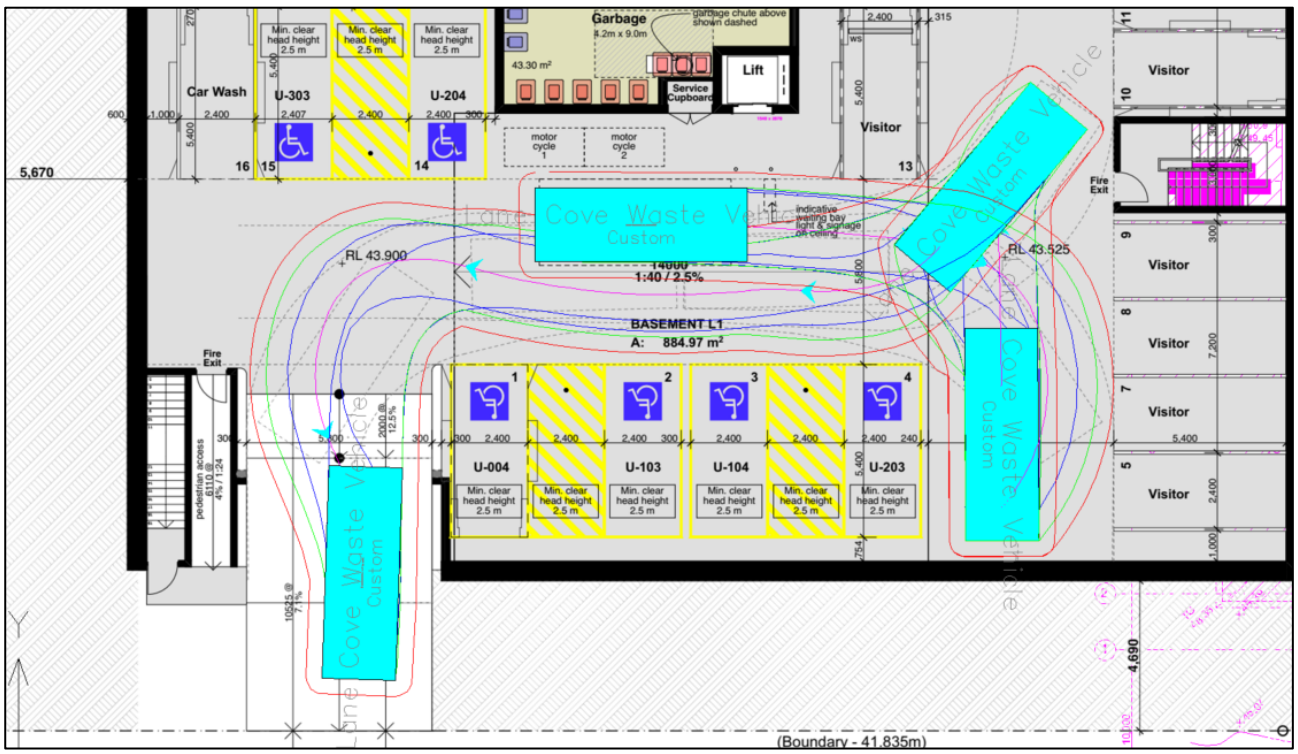
Basement 2 Two Way Passing at Waiting Bay

B85 entering / B99 exiting

Successful

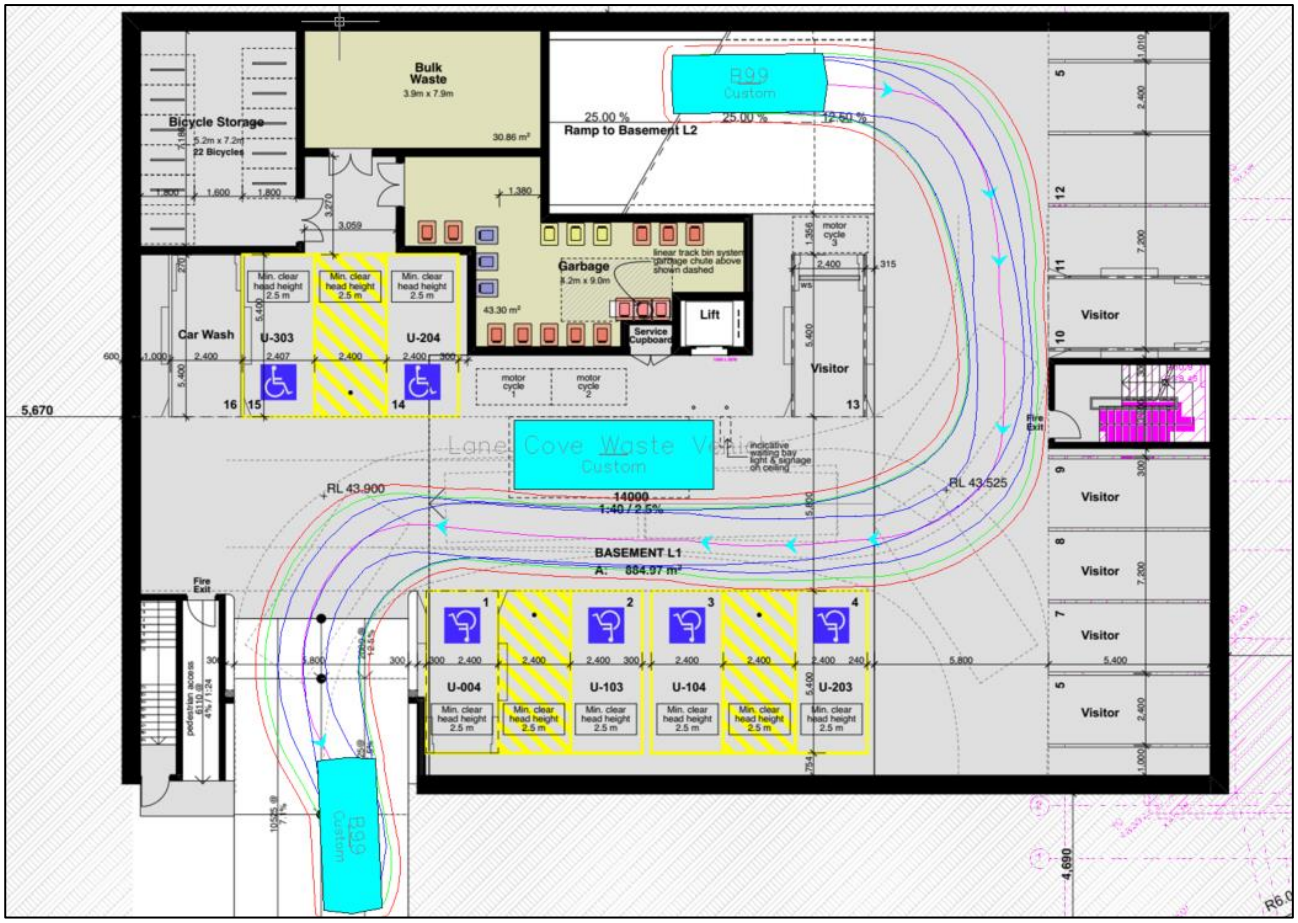


COUNCIL WASTE VEHICLE ENTRANCE INTO WAITING BAY

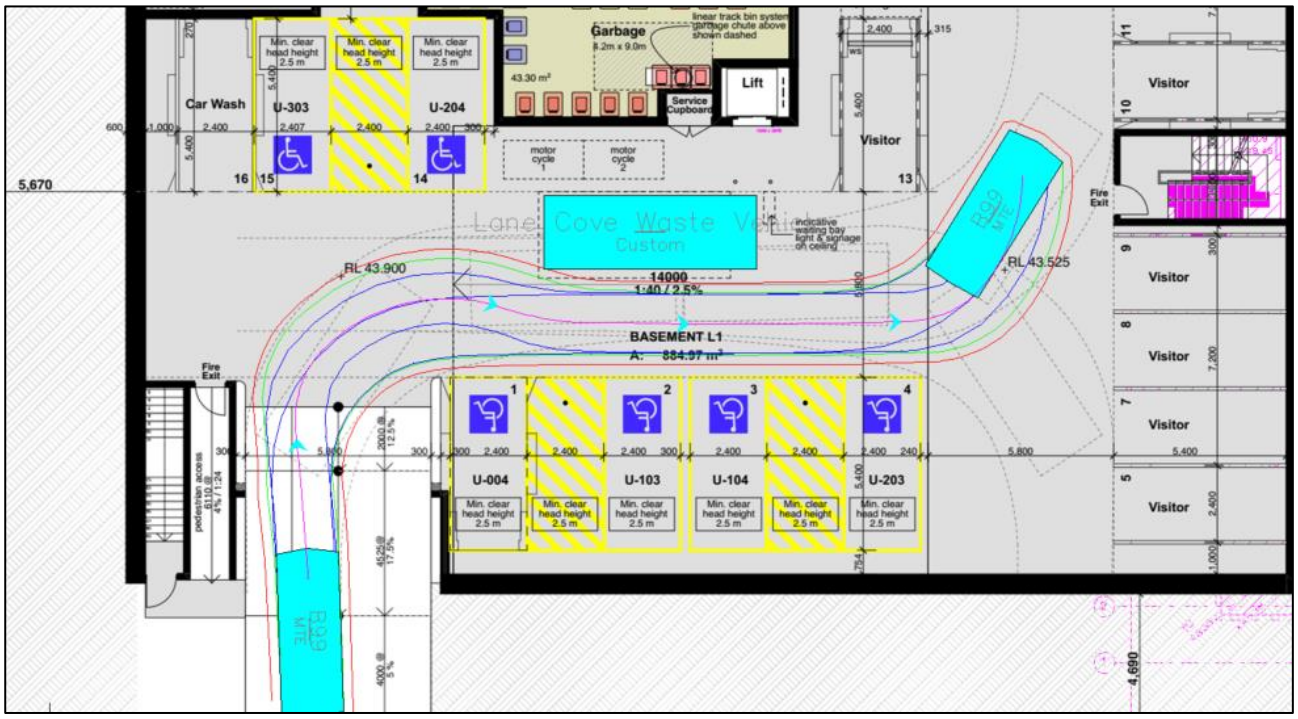


COUNCIL WASTE VEHICLE EXIT FROM SITE

SUCCESSFUL

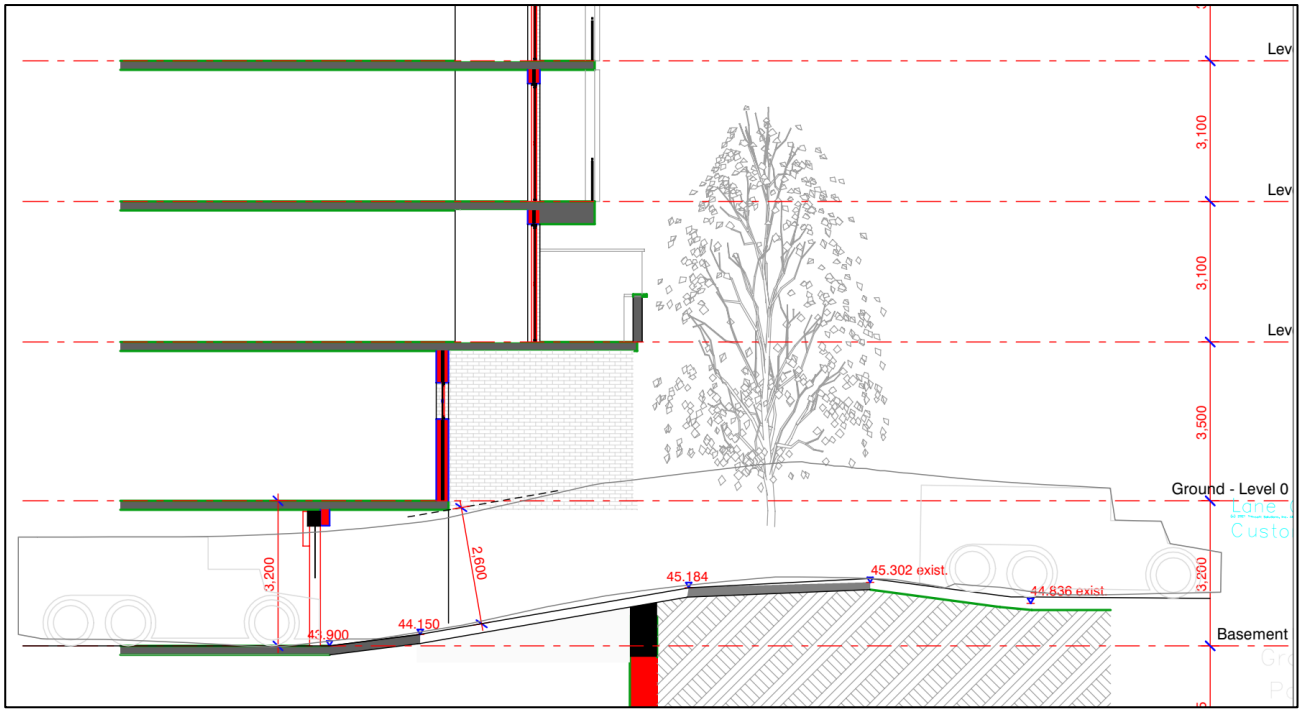


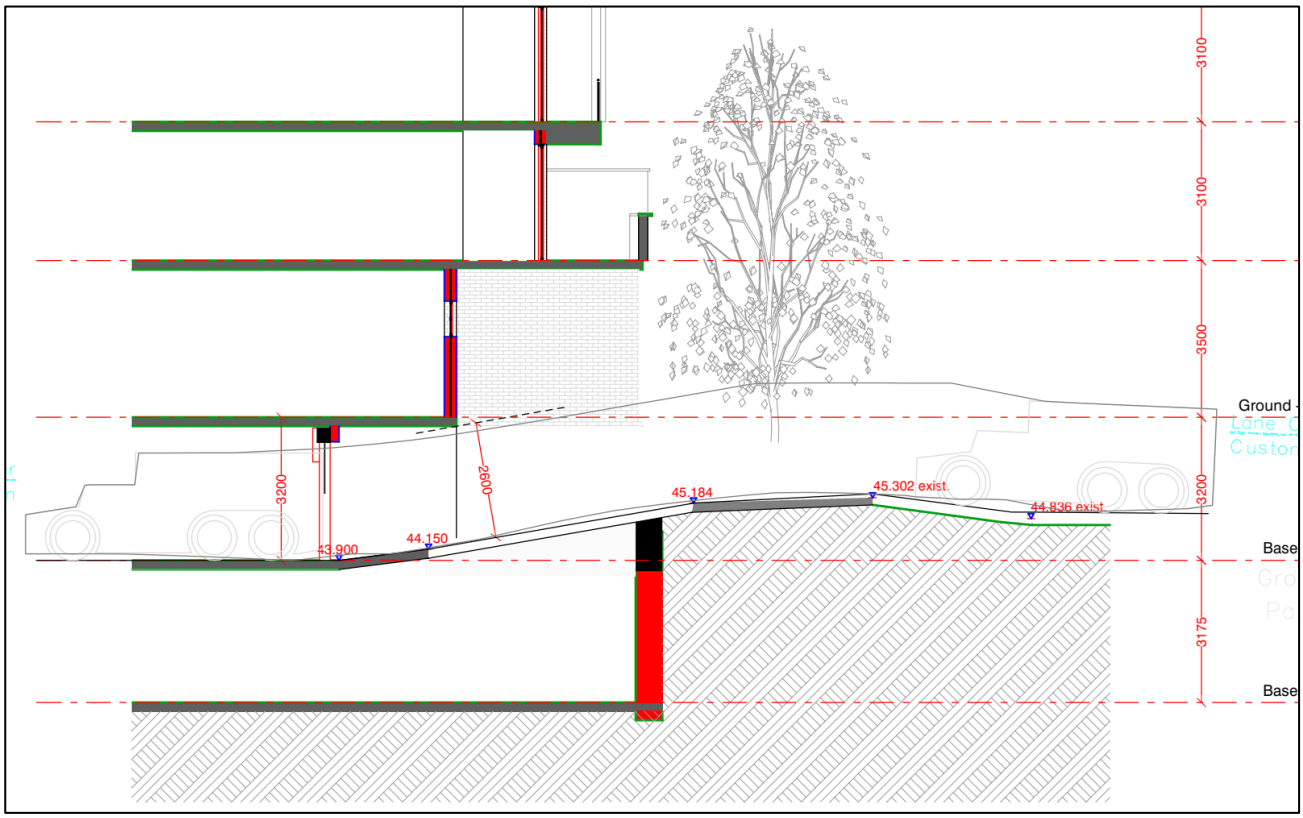
B99 PASSING AROUND COUNCIL WASTE VEHICLE IN PLACE



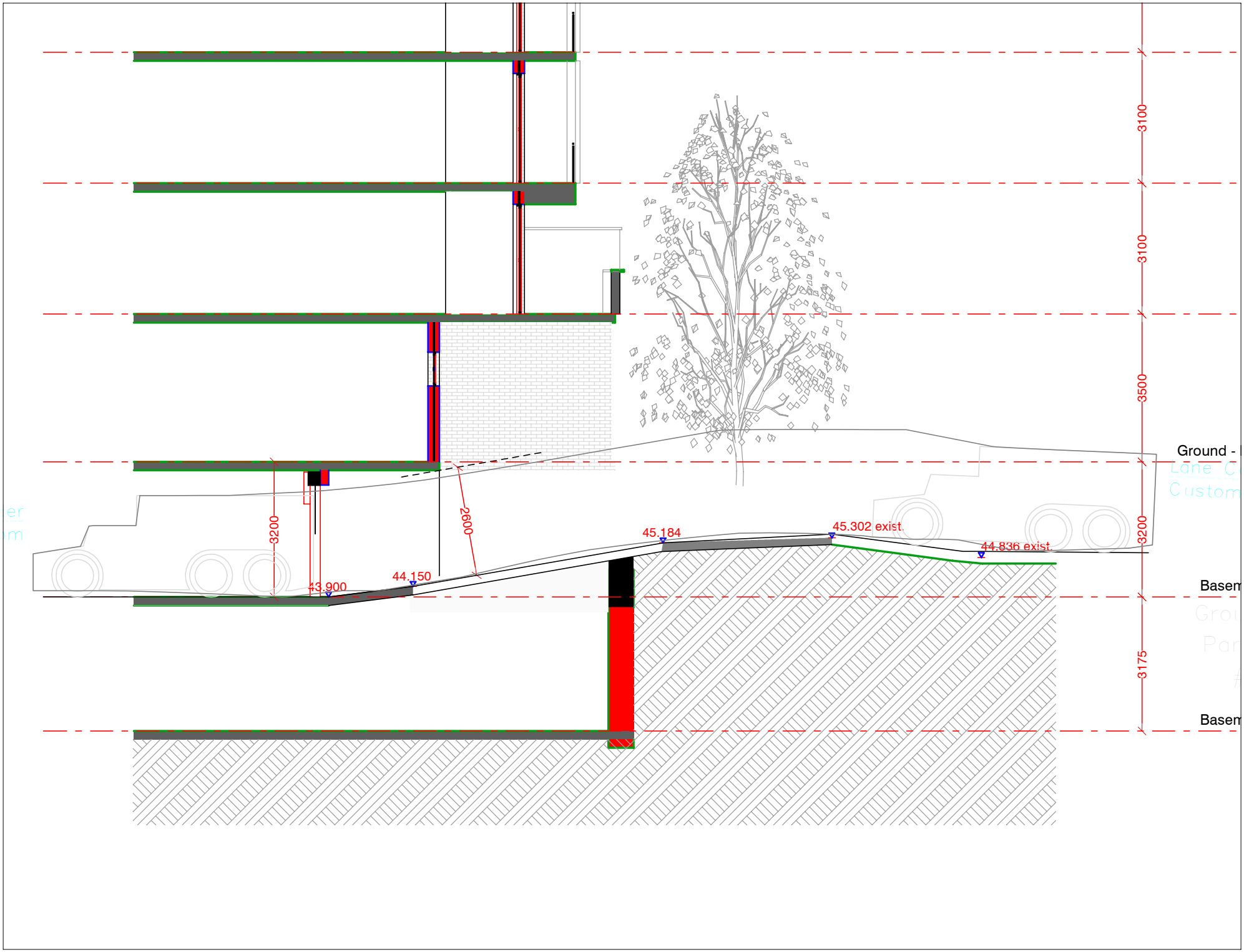
B99 PASSING AROUND COUNCIL WASTE VEHICLE IN PLACE

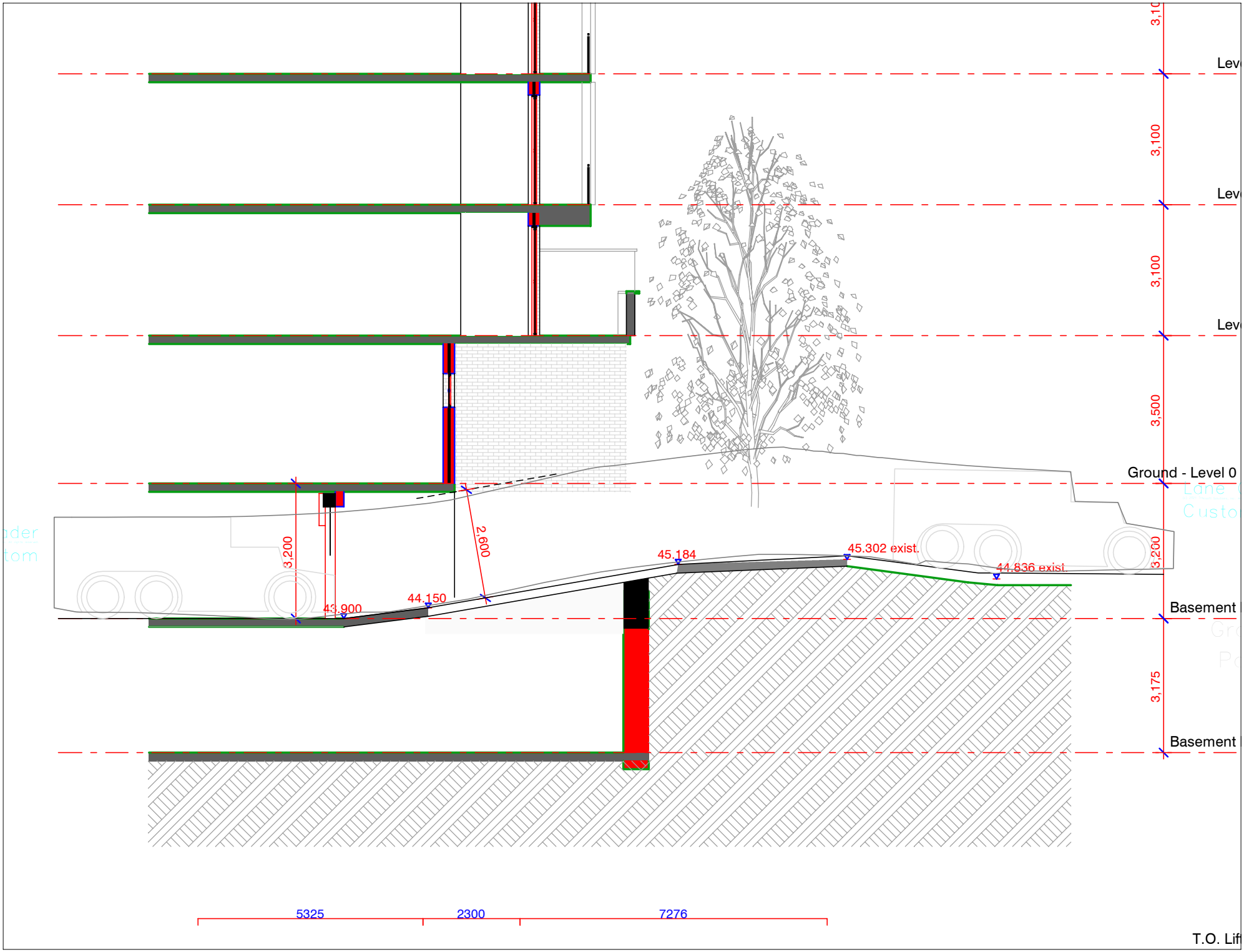
SUCCESSFUL





VERTICAL CLEARANCE TEST – COUNCIL'S WASTE COLLECTION VEHICLE SUCCESSFUL


3100
3100
3500
3200
3175
Ground -
Basem
Basem
3200
2600
45.184
45.302 exist.
44.836 exist.
44.150
43.900


3,100
3,100
3,500
3,200
3,175
Ground - Level 0
Basement
Basement
3,200
2,600
43.900
44.150
45.184
45.302 exist.
44.836 exist.
5325
2300
7276