Traffic Engineers and Transport Planners

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Our Reference: G23310L1B

27 September 2017

Golden Age Glen Pty Ltd
C/- Time&Place Property Pty Ltd
Level 26, 35 Collins Street
MELBOURNE VIC 3001

Attention: Mr Thomas Thieu

Dear Thomas,

The Glen Residential Towers – Amended Residential Scheme
Planning Permit TPA/43692/B - Traffic Engineering Assessment

Background

In August 2015, Monash City Council issued a permit (TPA/43692) for the redevelopment of The Glen Shopping Centre, allowing a retail expansion of 17,079 square metres and development of three (3) residential towers providing 515 residential apartments, subject to conditions.

Most recently, in September 2017, Council approved and endorsed amended plans and the Car Parking Management Plan (pursuant to Condition 25 of the permit), subject to conditions. The approval related to an amendment in the number of dwellings (to a total of 532) and a relocation of the residential access from the eastern end of O'Sullivan Road to be via the shopping centre car park.

Traffix Group has been providing ongoing traffic engineering advice as part of The Glen Redevelopment Project and reference is made to the most recent correspondence by Traffix Group relating to a traffic assessment of the proposed amendments (G16211L6C dated July 2017) and the endorsed Car Parking Management Plan (G16211R5 dated August 2017).

Through agreement with Vicinity Centres (the owner of the land and developer of the shopping centre), Golden Age Glen Pty Ltd proposes to develop the residential component of the permit. An amended scheme has been prepared for the residential component by Rothelowman, including a revised basement car park layout and revised residential tower/apartment plans.

This application relates to the proposed amendment and substitution of plans for endorsement relating to the residential scheme. With regard to car parking and traffic, the amended plans propose a total of 555 dwellings (an increase of 23 dwellings) and an associated increase in the on-site residential basement car parking to provide 612 car spaces.

We are advised that this application does not intend to change retail floor areas previously approved.

A traffic engineering assessment of the proposed changes to the residential component is provided as follows.

Proposal

The amended application relates to changes in the apartment numbers and resident car parking provisions.

The amended plans propose a total of 555 apartments, inclusive of 57 three-bedroom apartments.

Amended basement plans have been prepared demonstrating the provision of 612 car parking spaces for residents.

Access to the basement car park remains consistent with the approved plans and is proposed via the internal shopping centre car park.

This application does not include any changes to the proposed retail access, parking, loading or other retail items shown on the endorsed plans.

Car Parking Considerations

Statutory Requirements

The statutory car parking requirements are set out in Clause 52.06 of the Planning Scheme and applied in Table 1.

As there is no change to the proposed retail parking arrangements as part of this application, only the proposed residential scheme has been assessed.

Table 1: Statutory Car Parking Requirements

Use	Floor Area / No.	Rate	Requirement
1 & 2-bedroom	498 No.	1 space / apartment	498 spaces
3-bedroom	57 No.	2 spaces / apartment	114 spaces
Visitors	555 No.	0.2 spaces / apartment	111 spaces
Total		**723 spaces**	

The proposal requires a minimum of 723 parking spaces associated with the residential use, being 612 resident spaces and 111 residential visitor spaces.

The proposed provision of 612 spaces within the residential basement meets the statutory requirements for residents.

A total of 51 tandem parking pairs are provided which will all be allocated to a single three-bedroom dwelling (each).

We note that the previous assessment of the parking requirements relating to the commercial component (retail, supermarkets and office) required the provision of 3,193 spaces. Consistent with the existing approvals, residential visitors are proposed to share the retail parking and therefore the provision of 3,585 spaces within the retail parking area (as per the endorsed plans) will continue to adequately accommodate the visitor requirements above.

Car Park Layout Access Arrangements

We have reviewed the amended residential basement car park plan against the requirements of Clause 52.06 of the Planning Scheme and/or AS2890.1:2004 where appropriate. The following is noted:

- The majority of parking spaces within the residential car park are provided with dimensions in accordance with the table at Clause 52.06 of the Planning Scheme. Those spaces are typically 2.6 metres wide, 4.9 metres long and accessed via an aisle of minimum 6.4 metres width (where angled) or 2.3 metres wide and 6.7 metres long (where parallel).
- A small proportion of car parking spaces in the car park are proposed with dimensions that comply with the requirements of AS2890.1:2004 – User Class 1A, being a minimum 2.4 metres wide, 5.4 metres long and accessed via an aisle of minimum 5.8 metres width (where angled) or 2.1 metres wide and 2.7 metres long (where parallel).

  Whilst it is acknowledged that Clause 52.06 preferences the dimensions for parking at Table 1 in the Clause, it does not preclude the use of AS2890.1:2004. The proposed arrangements are therefore acceptable.
- Some circulation and parking aisles are provided with additional width to provide more comfort for circulating vehicles and accessibility to parking spaces.
- For Planning Scheme dimensioned spaces, column locations generally conform to the car parking envelope at Clause 52.06-8 and additional clearance is generally provided to bays adjacent walls or high obstructions which sit within door opening areas and/or access paths.
- For AS2890.1:2004 dimensioned spaces, column locations also generally conform to the relevant parking envelope at AS2890.1:2004.
- Where spaces are located adjacent a continuous high wall or obstruction, or the column sits within door opening areas, all spaces are provided within a minimum width of 2.7 metres to meet the minimum width requirements for residents under AS2890.1:2004.
- It is noted that whilst some columns sit adjacent to the access aisle, in these areas the access aisle exceeds the minimum relevant width and therefore negates the need for the column to be setback from the aisle.
- The location of columns within the residential basement car park will result in a small number of car spaces (along the southern wall in the western car parking area) which have columns slightly encroaching on the door opening envelope (by up to 100mm) on one side only. As these spaces are allocated to residents, who will become accustomed with the most convenient access arrangements for their car parking space, and the encroachment is on one side only, this arrangement is considered acceptable and will continue to provide appropriate accessibility for future residents.

  This arrangement is consistent with the endorsed plans.
- A minimum clear height of 2.2 metres is provided in new parking areas for passenger vehicles as per AS2890.1:2004.
- Tandem parking bays are provided with a minimum length of 10.3 metres to meet the requirements of Clause 52.06.

- Grades on ramps do not exceed 1 in 8 within the residential car park.
- Dead end aisle extensions are generally provided to assist with accessibility to end spaces.

  We note that in some instances, a dead end aisle has not been provided, or only a reduced dead end aisle is provided. In these areas, widened access aisles are provided to facilitate vehicle accessibility.

  Swept path analyses have been provided to demonstrate appropriate accessibility for residents and are attached as Appendix A.
- Consistent with the endorsed plans, a roller door is proposed to be provided at the top of the residential car park ramp which will be located set back from the main car parking circulation aisle. Signage and linemarking will be provided on approach to this area to make customers aware that access is restricted to residents. Each resident will be provided with a remote control or swipe card access to activate the access control and enter the resident only car park.

  Visitor parking is intended to be facilitated within the retail car parking areas and therefore no intercom access is required.
- Internal circulation within the residential parking areas and at critical turning and ramping points has been checked for the relevant vehicles under AS2890.1:2004 and are considered appropriate.
- Two-lane accessways are provided in excess of 6.1 metres in accordance with AS2890.1:2004.
- One-lane accessways are provided in excess of 3.6 metres width in accordance with AS2890.1:2004 and are located in areas which will serve only a limited number of parking spaces.
- Appropriate opportunities for passing are provided within the residential car park.

Swept path analysis is provided at Appendix A to this report demonstrating appropriate access for resident vehicles and typical end car spaces.

Car Parking Management Plan

We note that Council has endorsed a Car Parking Management Plan (G16211R5 dated August 2017) pursuant to Condition 25 of the permit which outlines the proposed access operations and parking allocations.

The proposed changes, in our view, do not materially change the proposed Car Parking Management Plan and will not impact significantly on the operation, allocation or use of parking within the shopping centre.

Traffic Considerations

The current permit allows for the redevelopment of the site to include a total of 532 dwellings.

The proposed application intends to increase the total dwelling numbers to 555, representing an increase of 23 dwellings.

The Traffic Management Plan and adopted traffic generation rates accepted by VicRoads and Council for the redevelopment of the site contemplated a rate of 0.4 vehicle movements per dwelling in the peak hours.

The proposed increase of 23 dwellings could therefore be expected to generate an additional nine vehicle movements in the peak hours.

This is equivalent to an average of less than one vehicle every six minutes in the peak hours. This is low in traffic engineering terms and will have no noticeable impact on the operation of the road network.

That is, there will be no material impact to the traffic assessment approved as part of the permit or considered as part of the microsimulation.

The analysis provided within the previous Traffix correspondence (G16211L6C dated July 2017) included a summary of the expected operation of the proposed Snedden Drive traffic signals at the centre's southern access. It contemplated an average cycle time of around 55 seconds during the afternoon peak hour.

The analysis identified that the intersection is expected to operate under 'good' conditions with a degree of saturation of approximately 0.71 in the Friday afternoon peak hour.

The additional traffic generated by the increase will result in an average of one vehicle movement generated to the intersection each seven cycles. This will be further dispersed between inbound and outbound movements arriving and departing to/from the north and south.

Once dispersed, the traffic generated by the increase in dwellings will be indiscernible to the general motorist and will have limited, if any, impact on the operation of the signals.

Loading & Waste Considerations

Dedicated residential loading areas will continue to be provided at Lower Ground, accessed from the Snedden Drive access consistent with the endorsed plans.

The loading areas for the southern towers will accommodate passenger vehicles and vans of up to 2.2 metres in height, including waste collection via a private contractor using a mini-waste wise vehicle.

A Waste Management Plan has been prepared by onemilegrid which demonstrates access swept paths for the relevant waste collection vehicle.

Consistent with the endorsed plans, a single lane loading tunnel will be provided between the main retail loading area and the southern residential loading area. A signalling system will be incorporated into the design and management of this loading tunnel to manage opposing vehicles accessing the southern residential tower loading areas. A waiting bay has been provided on approach to the tunnel to allow vehicles to wait independent of the retail loading area.

Bicycle Parking Considerations

Clause 52.34 of the Planning Scheme sets out the relevant statutory bicycle parking requirements for the proposed development.

As there is no change to the proposed retail parking arrangements as part of this application, only the proposed residential scheme has been assessed.

The required number of bicycle parking spaces for the proposal is summarised in Table 2.

Table 2: Statutory Bicycle Parking Requirement

Component		No. / Area	Statutory Bicycle Parking Rate	No. of Spaces Req.
Dwellings	Residents	555	1 space to each 5 apartments	111 spaces
	Visitors		1 space to each 10 apartments	56 spaces

Based on the above assessment, the application has a statutory requirement to provide a minimum 111 resident and 56 visitor spaces.

A total of 111 bicycle parking spaces are provided for the residential use in addition to bicycle parking along O'Sullivan Road in the form of horizontal rails.

Similar to the sharing of retail and residential visitor car parking, it is expected that visitors will make use of bicycle parking spaces which are being provided at ground level along O'Sullivan Road.

Response to Relevant Conditions

A summary of the relevant conditions of permit, relating specifically to the residential component of the proposal and the changes proposed by this application, and a response to each condition are provided at Table 3.

Table 3: Response to Relevant Conditions (Residential Scheme)

Condition	Requirement	Response
Condition 1g	*Provision of 3 (or more) bedroom apartments equating to no less than 10% of the overall dwelling makeup.*	The provision of 555 apartments, including 57 three-bedroom apartments, exceeds the minimum 10% provision.
Condition 1k	*The provision of bike facilities in accordance with the requirements of Clause 52.34. Bike facilities [sic] should be located at convenient locations within the site including adjacent to the outdoor square and pedestrian entrances.*	Resident bicycle parking is provided in accordance with the rates at Clause 52.34. Consistent with the endorsed plans, residential visitor parking demands will be accommodated at street level and within retail bicycle parking areas.
Condition 1m	*Visitor drop-off/pick-up parking bays on O'Sullivan road and Snedden Drive in close proximity of entrances to the apartment buildings*	No changes to the endorsed plans or location of visitor pick-up/drop-off bays are proposed as part of this application.
Condition 16	*The layout of the development shall follow the Design Standards for car parking set out in Clause 52.06-8 of the Monash Planning Scheme to the satisfaction of the Responsible Authority*	The proposed car parking arrangements have been reviewed and are considered acceptable.
Condition 17	*No less than 1 car space must be provided on the land for each one and two bedroom dwelling. No less than 2 car spaces must be provided on the land for each three bedroom dwelling. Any future subdivision of the approved development must provide allocation of 1 car space per dwelling on Title to the satisfaction of the Responsible Authority*	The provision of 612 car parking spaces meets the minimum requirements and allows for the allocation of one space to each one & two-bedroom apartment and two spaces to each three-bedroom apartment.

Conclusions

Based on the preceding, it is concluded that:

a) The proposal meets the statutory requirements under Clause 52.06 for resident car parking, and consistent with the permit, residential visitors will utilise The Glen's retail car park.

b) The layout of the on-site parking areas is acceptable and generally accords with the relevant requirements of Clause 52.06-8 and AS2890.1-2004 (where relevant).

c) The increase of only 23 dwellings will generate only an additional nine vehicle movements in the peak hours.

d) This level of traffic generation is low in traffic engineering terms, equal to an average of less than one vehicle movement every six minutes in the peak hour generated to the network, and will have

no discernible impact on the operation of the Snedden Drive signals (proposed) or the overall network from what has been approved by the permit and agreed as part of the microsimulation.

e) Loading and waste collection arrangements are generally in accordance with the endorsed scheme.

f) The amendment plans include bicycle parking provisions that meet the statutory requirements of Clause 52.34 for resident bicycle parking.

Overall, we are satisfied that there are no traffic engineering reasons why the proposed amendment to the residential scheme for The Glen Residential Towers should not be approved.

Naturally, should you have any queries, please do not hesitate to contact me directly.

Yours faithfully,

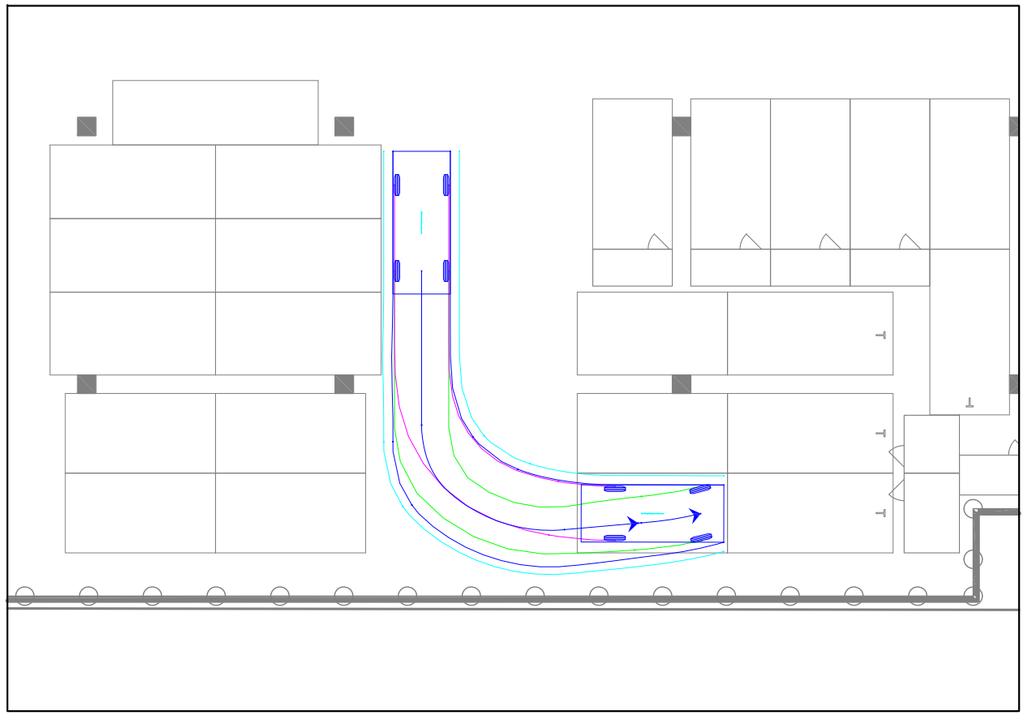
TRAFFIX GROUP PTY LTD

CARLO MORELLO

Senior Associate

Appendix A:
Swept Path Analysis

CAR SPACE 1 - INGRESS



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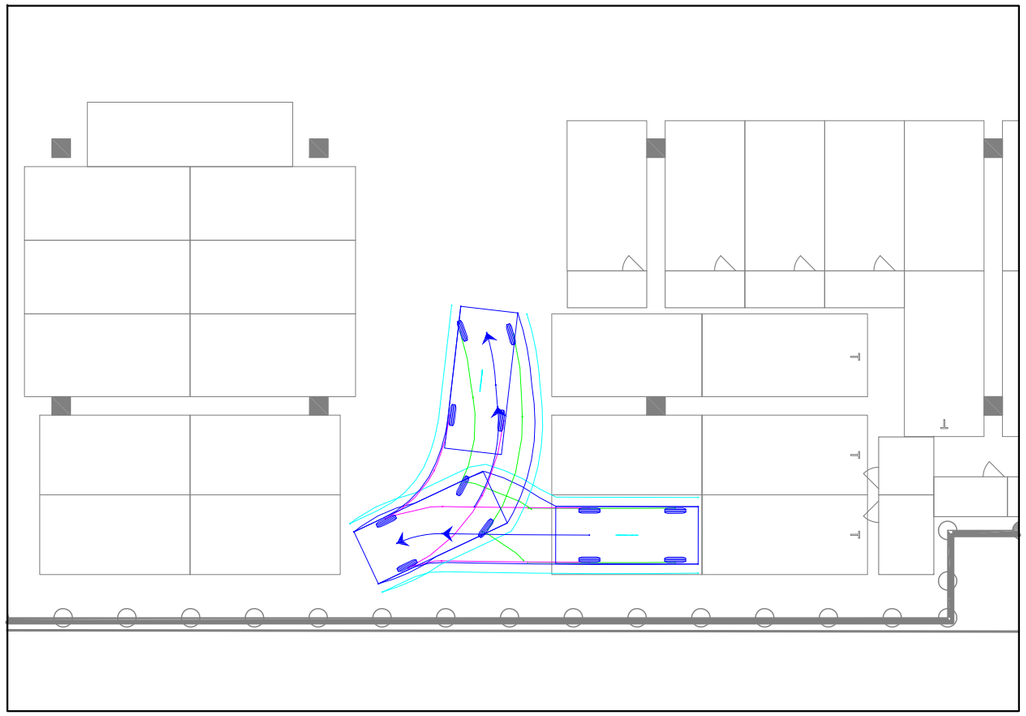

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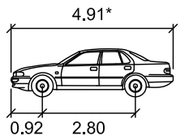

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(AS/NZS 2890.1:2004)

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Track	:	1.77m
Kerb to Kerb Radius	:	11.5m

* actual template based on 'relevant longitudinal dimensions that affect swept path' as set out in Section B2.1 of AS/NZS 2890.1:2004

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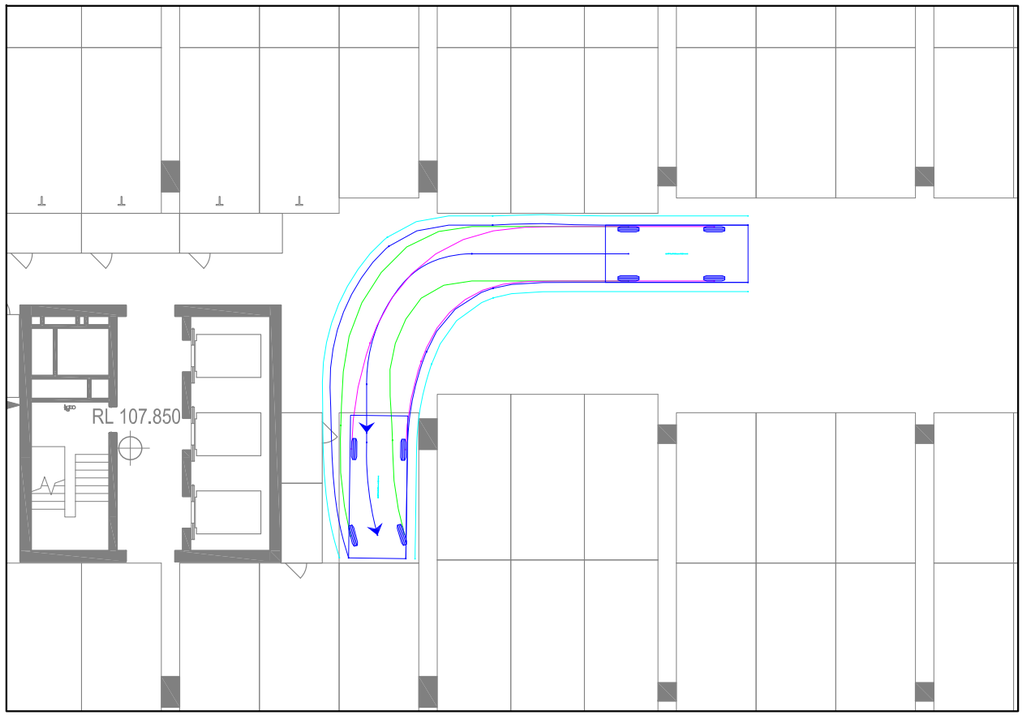

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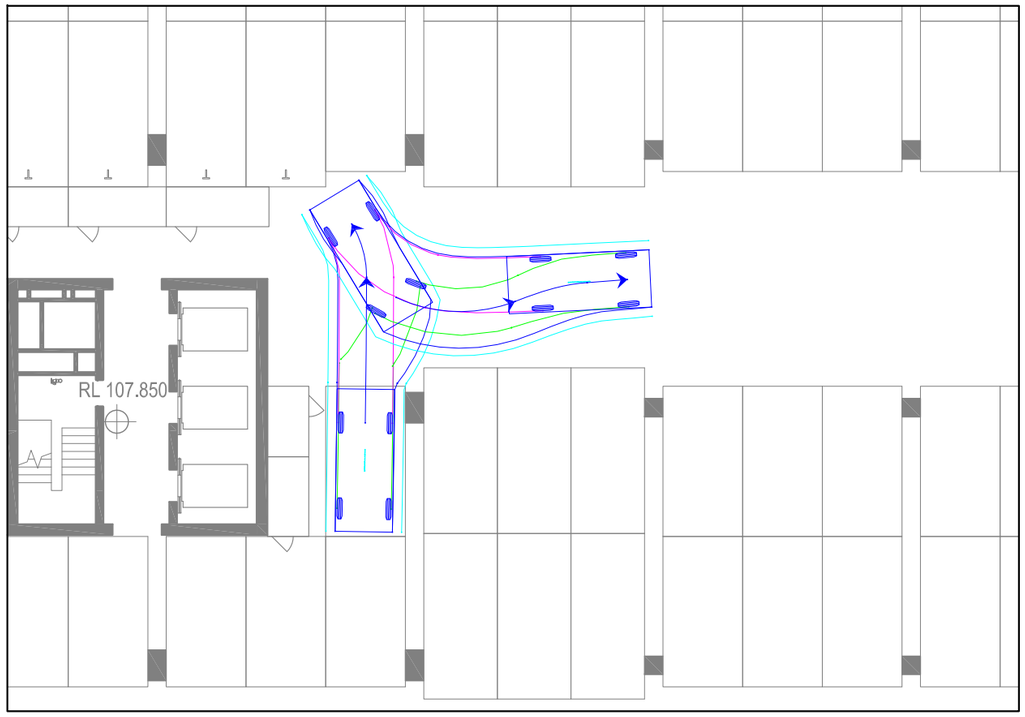

LEGEND

- REAR WHEELS
- FRONT WHEELS
- VEHICLE BODY
- BODY CLEARANCE

N

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REV.	REVISION NOTES	REVISION DATE
A	AMENDED PLANS	26/09/2017

GENERAL NOTES:
BASEMENT PLANS BY ROTHELOWMAN PROVIDED 26/09/2017

DESIGNED BY: T. AMANATIDIS 26/09/2017
CHECKED BY: C. MORELLO 26/09/2017
FILE NAME: G23310_TFX_20170926
ISSUE: A

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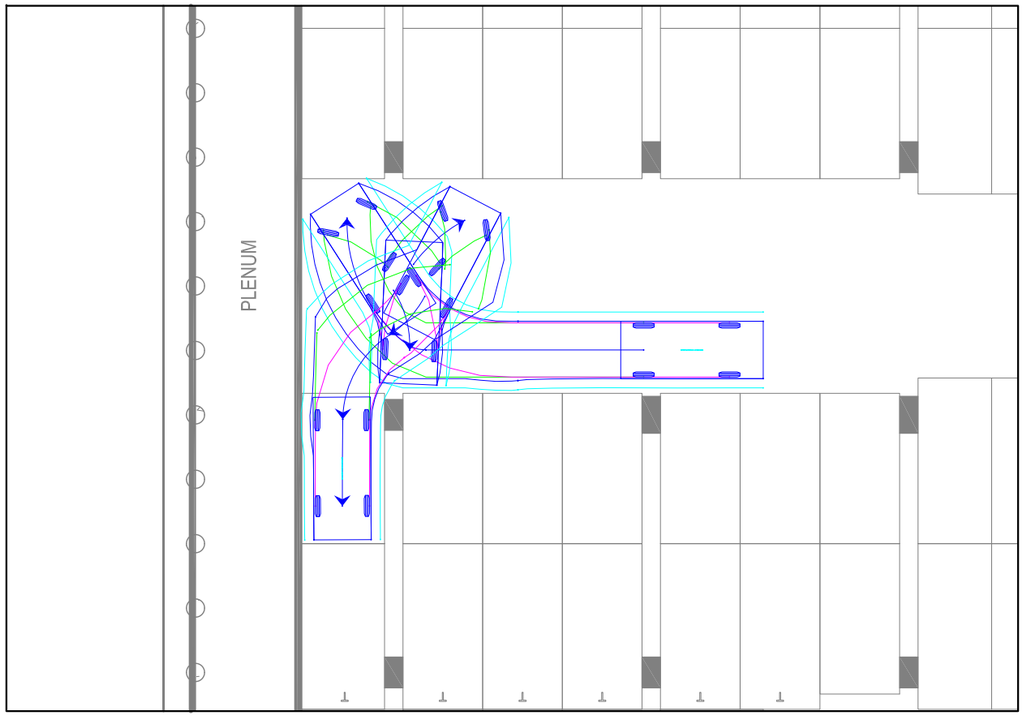
PROPOSED RESIDENTIAL DEVELOPMENT

SCALE: 0 2 4
SHEET NO.: 01/04
JOB NO.: G22310

TYPICAL END SPACE - INGRESS



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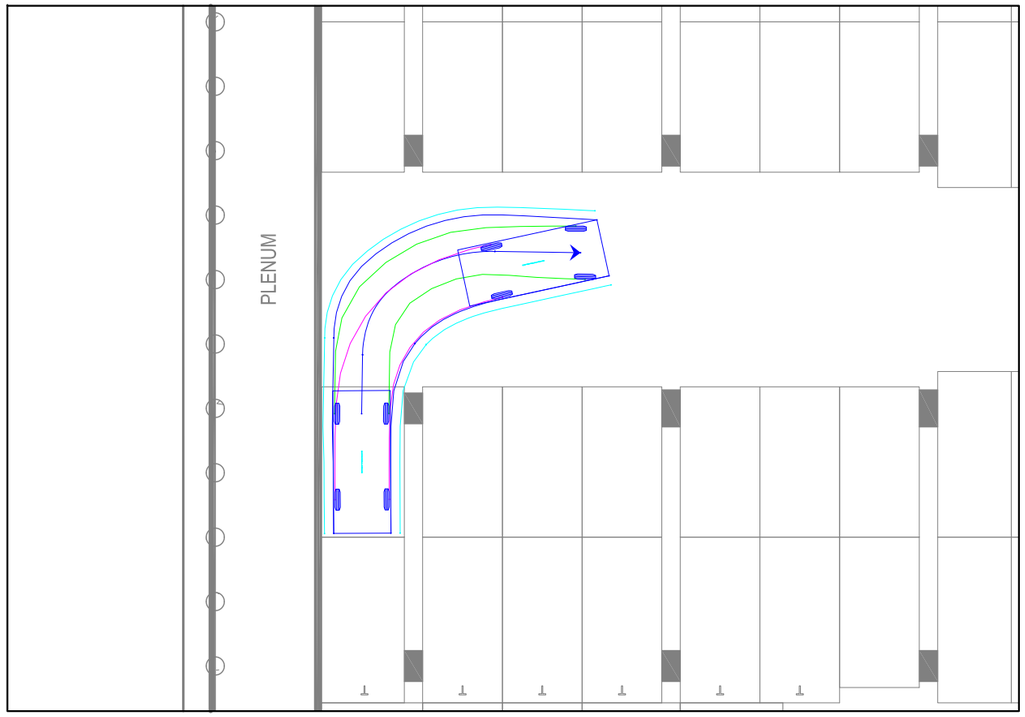

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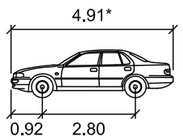

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Kerb to Kerb Radius	:	11.5m

* actual template based on 'relevant longitudinal dimensions that affect swept path' as set out in Section B2.1 of AS/NZS 2890.1:2004

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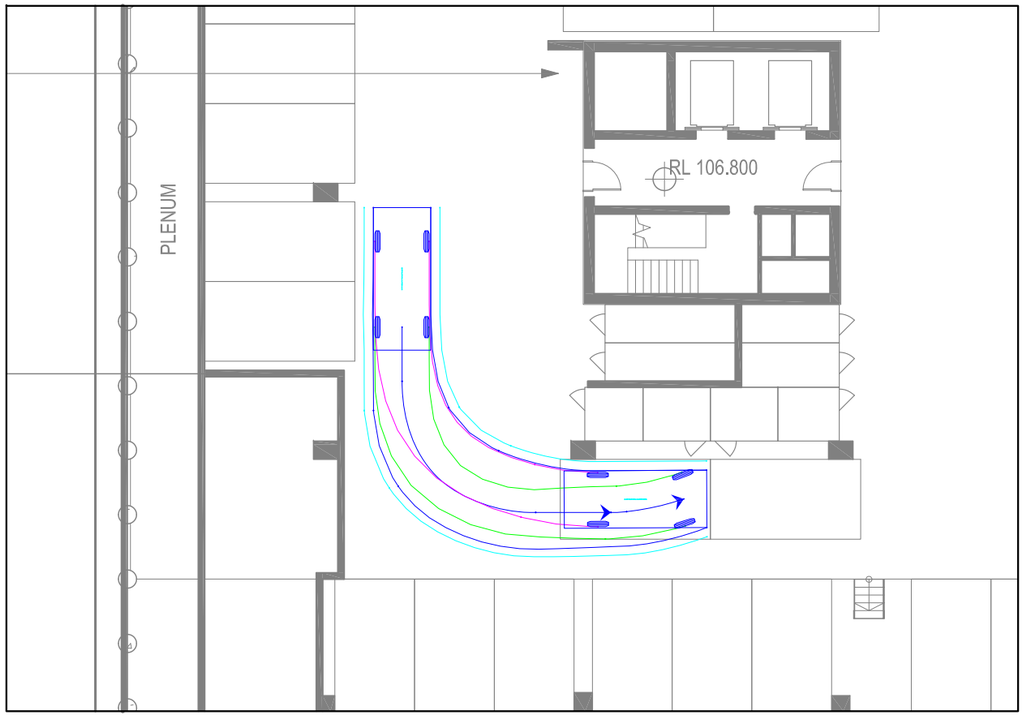

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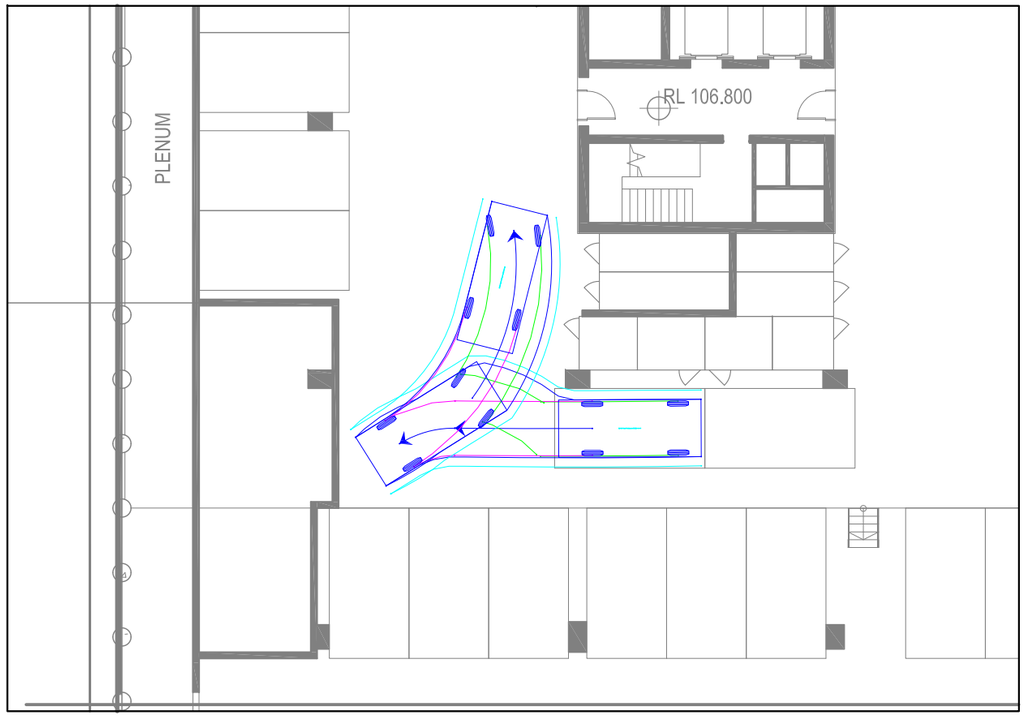

LEGEND

- REAR WHEELS
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- VEHICLE BODY
- BODY CLEARANCE

N

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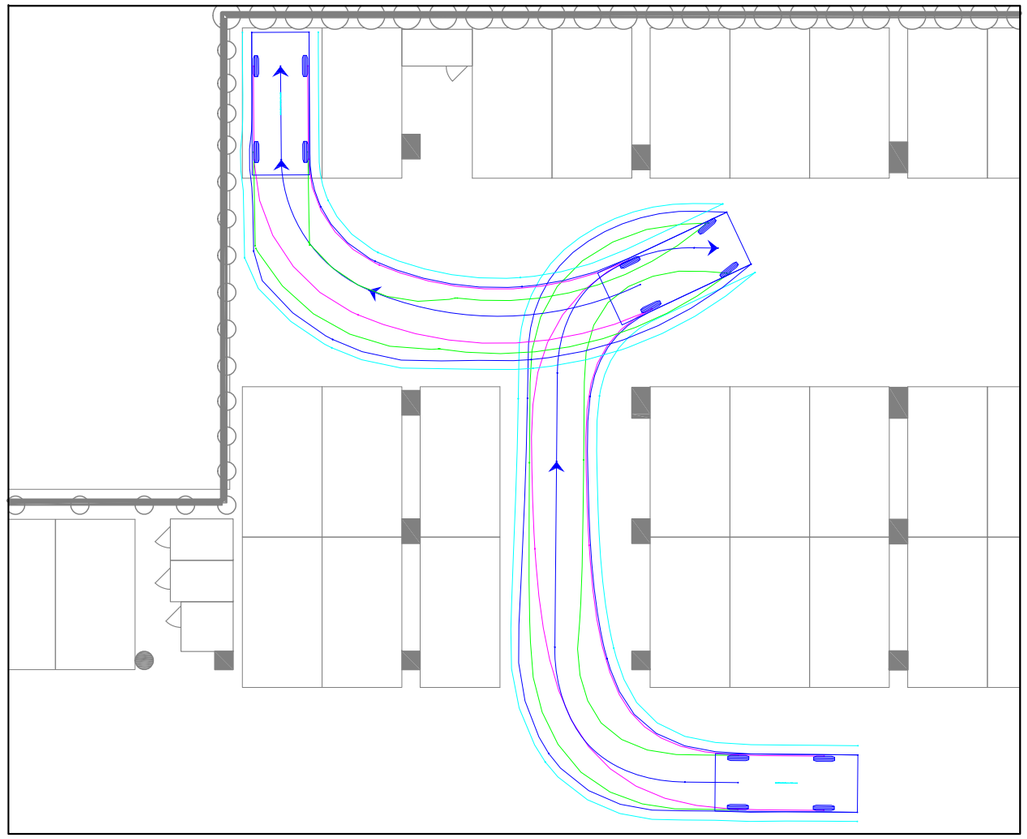

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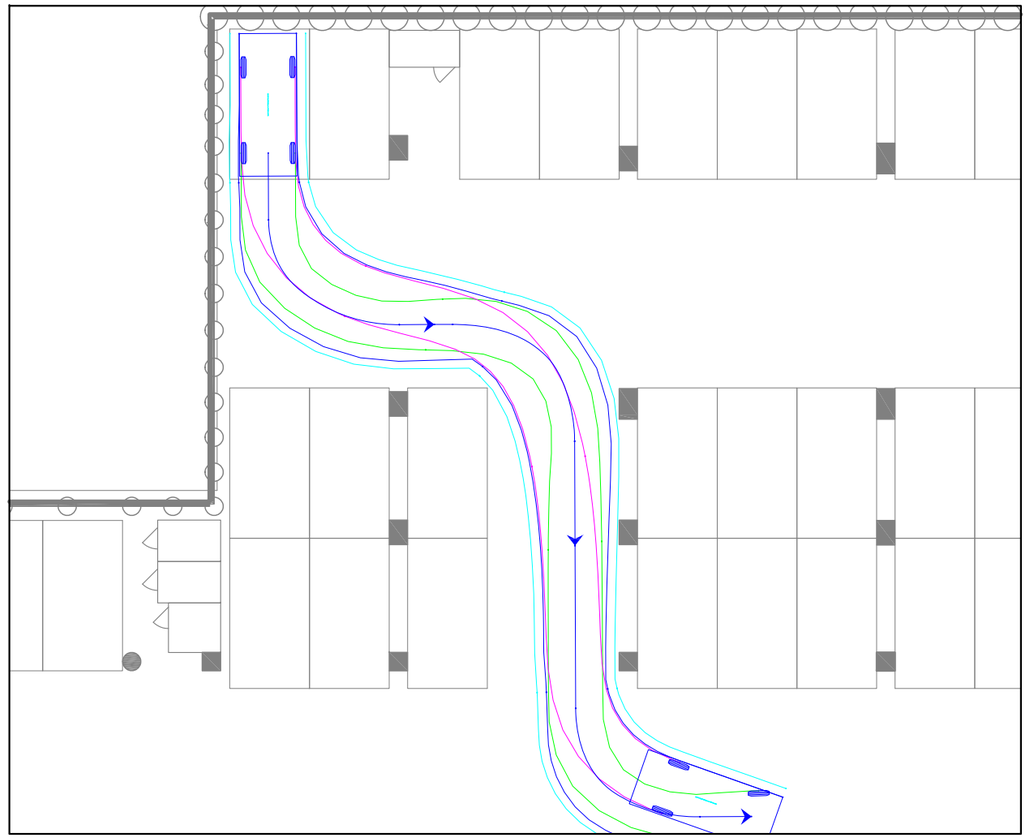

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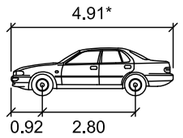

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Kerb to Kerb Radius	:	11.5m

* actual template based on 'relevant longitudinal dimensions that affect swept path' as set out in Section B2.1 of AS/NZS 2890.1:2004

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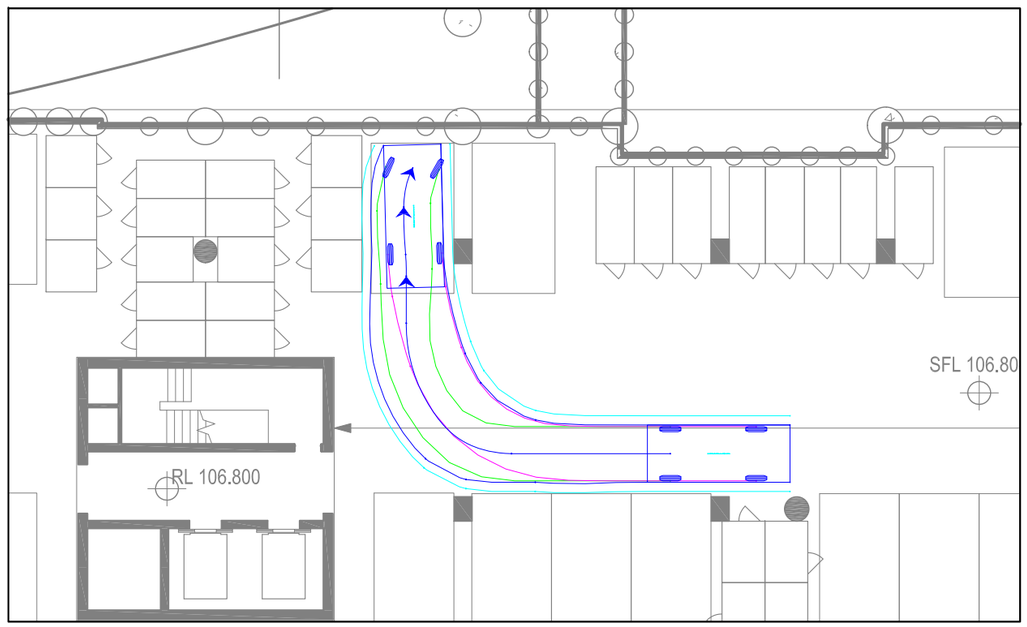

CAR SPACE 5 - EGRESS

LEGEND

- REAR WHEELS
- FRONT WHEELS
- VEHICLE BODY
- BODY CLEARANCE

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B85 DESIGN CAR SWEPT PATHS
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SCALE: 0 2 4 | SHEET NO.: 03/04 | JOB NO.: G22310

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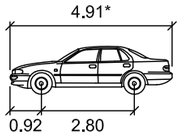
(VEHICLE SPEED - 5KM/H)



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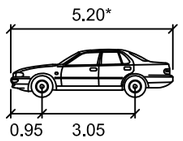
Kerb to Kerb Radius	:	11.5m

* actual template based on 'relevant longitudinal dimensions that affect swept path' as set out in Section B2.1 of AS/NZS 2890.1:2004

VEHICLE USED IN SIMULATION

(VEHICLE SPEED - 5KM/H)



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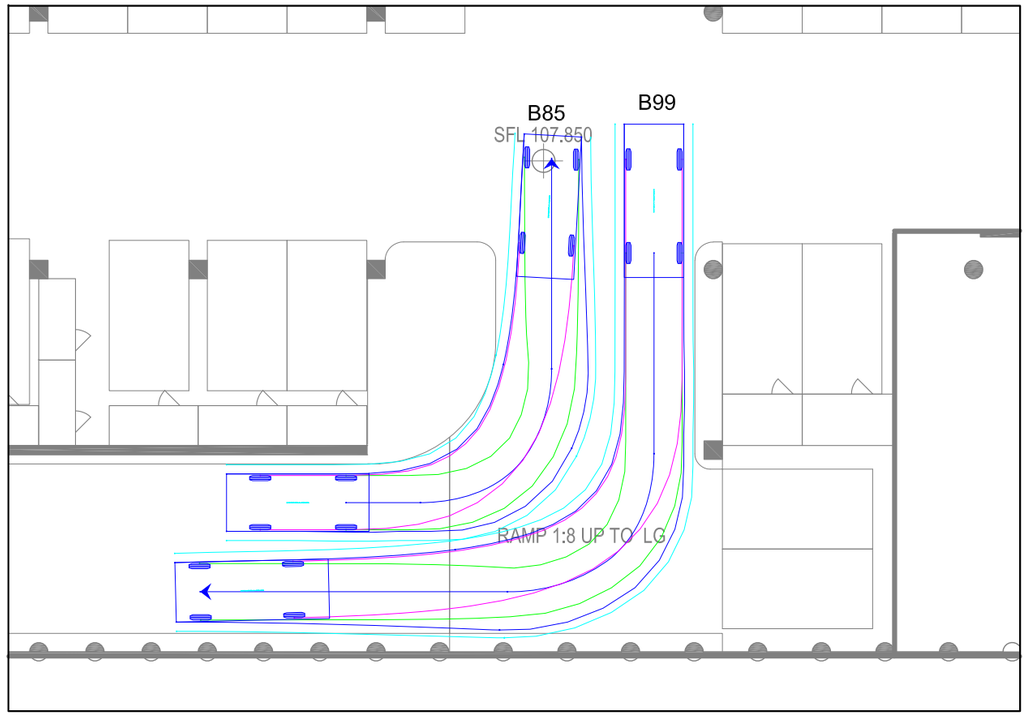
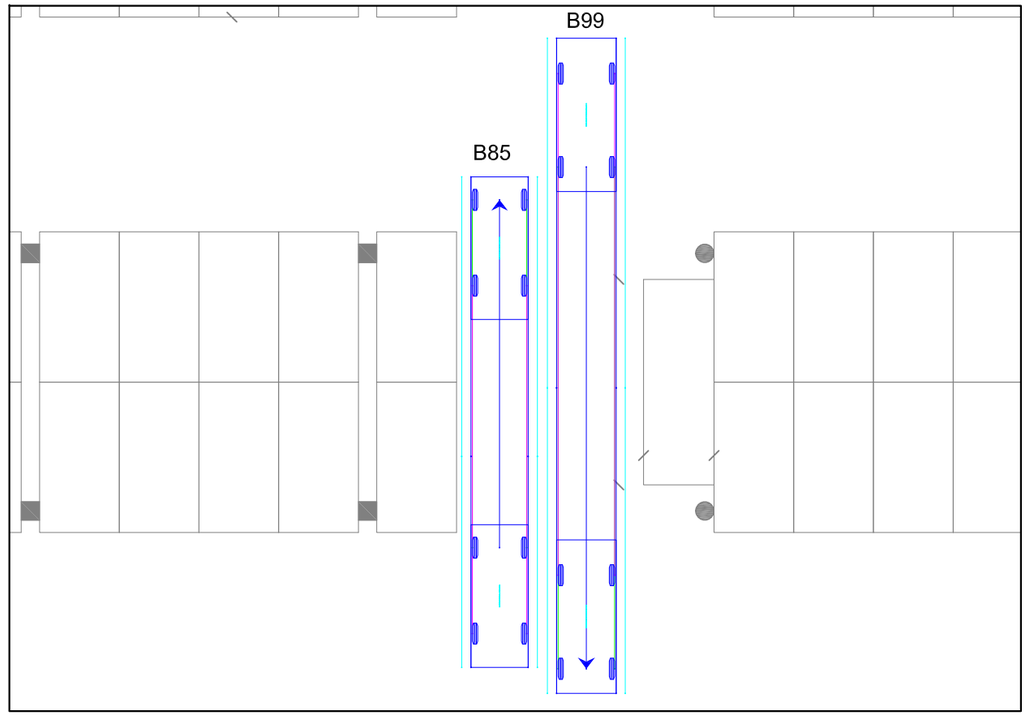
B85 & B99 RAMP PASSING



B85 & B99 AISLE PASSING



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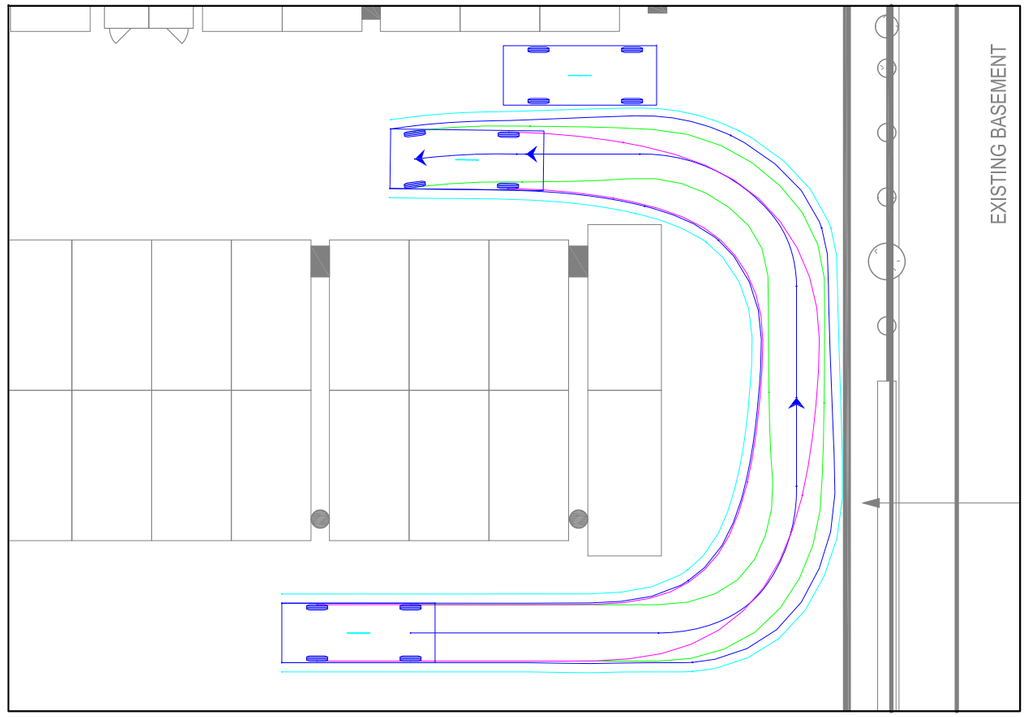

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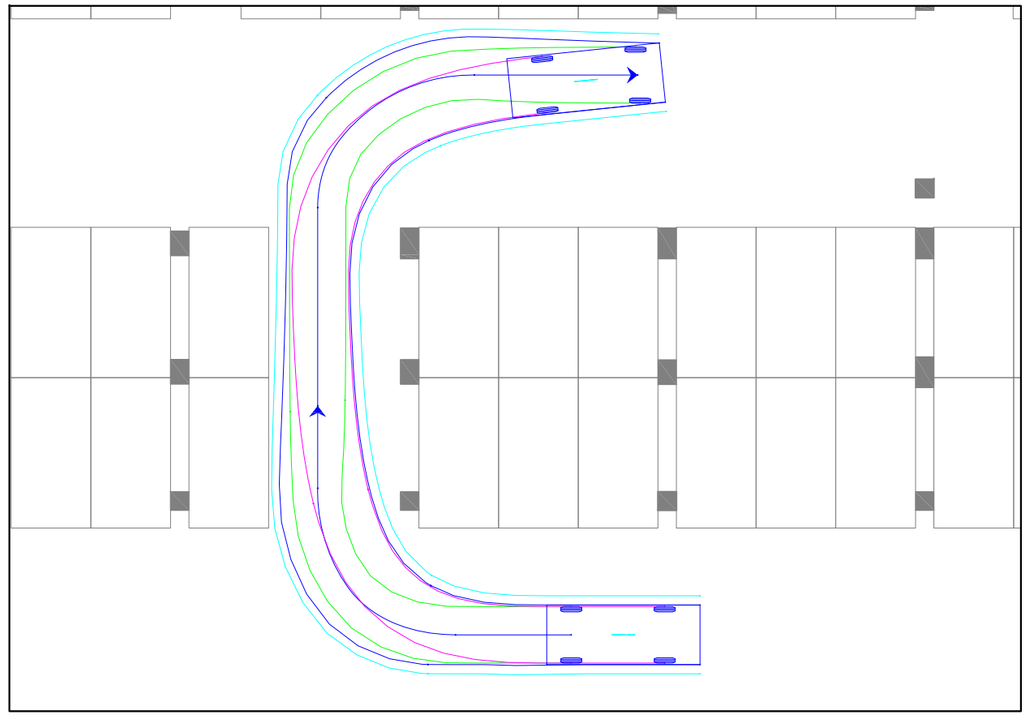

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