

583 Ferntree Gully Road, Glen Waverley

Proposed Residential Development
Transport Impact Assessment

Prepared by: Stantec Australia Pty Ltd for Glen Ferntree Gully Development Pty Ltd

on 13/08/2021

Reference: V200270 / 301400570

Issue #: D



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Quality Record

Issue	Date	Description	Prepared By	Checked By	Approved By	Signed
A	26/03/2021	Final	David Graham	-	David Graham	DG
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1. INTRODUCTION

1.1. Background & Proposal

Planning approval is currently being sought for a proposed residential development at 583 Ferntree Gully Road, Glen Waverley. The proposed involves the demolition of the existing buildings on the site and the construction of 77 two or three-storey townhouses on the site. A summary of the proposed land uses is provided in Table 1.1.

Table 1.1: Development Summary

Type	Size	Height	Number
A1, A2 & A3	3 bedrooms	3 storeys	19
B1 & B4	3 bedrooms	3 storeys	23
B6	4 bedrooms	2 storeys	13
C1, C2 & C3	3 bedrooms	3 storeys	22
Total			77

Each of the townhouses will have two on-site car parking spaces. The Type A townhouses will have a single garage with space for a second vehicle to park on the driveway in front of the garage. The Type B and Type C townhouses will have either double garages or tandem garages. In addition, there will be 15 on-street visitor car parking spaces throughout the development.

Vehicular access to the site will be via a left-in / left-out access point to Ferntree Gully Road, in a similar configuration to the existing site access point, but shifted to the east.

Pedestrians will be able to access the site from Ferntree Gully Road via a footpath adjacent to the site access point and a separate connection to the internal lane near the southwest corner of the site. The roads within the site will have a footpath on one side, whilst the laneways will be shared areas for pedestrians and vehicles.

Waste collection is proposed to occur kerbside from along the streets within the site.

1.2. Purpose & Structure of this Report

The report sets out an assessment of the anticipated parking, traffic and transport implications of the development proposal, including consideration of the:

1. the adequacy of the proposed car and bicycle parking provision
2. the adequacy of the proposed site access arrangements and car parking layout
3. the adequacy of the proposed arrangements for loading and waste collection
4. the acceptability of the traffic impacts of the proposed development.

1.3. References

In preparing this report, reference has been made to the following:

- Monash Planning Scheme
- plans for the proposed development prepared by Rothe Lowman
- Australian Standard / New Zealand Standard, Parking Facilities (AS2890)
- an inspection of the site and its surrounds
- other documents as nominated.

2. EXISTING CONDITIONS

2.1. Subject Site

The subject site forms the southern section of 583 Ferntree Gully Road in Glen Waverley. The site of approximately 16,450m² has a frontage of 161m to Ferntree Gully Road. The overall site at 583 Ferntree Gully Road was recently subdivided into two lots, and the northern section of the site is not part of this application.

The site is located within the General Residential Zone 2 (GR22) and is currently occupied by various buildings which are used as a specialist school and for other community purposes.

The surrounding properties are mostly residential to the north of Ferntree Gully Road and commercial to the south of Ferntree Gully Road.

The location of the site and the surrounding environs is shown in Figure 2.1, and the land zoning is shown in Figure 2.2.

Figure 2.1: Subject Site and its Environs

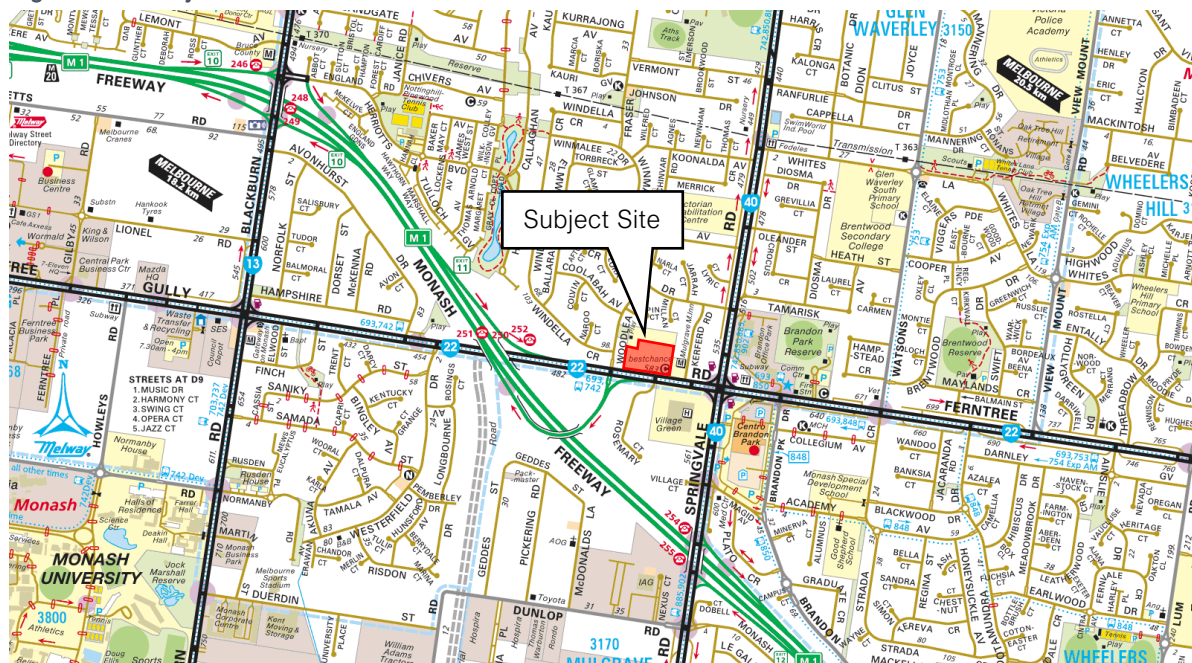
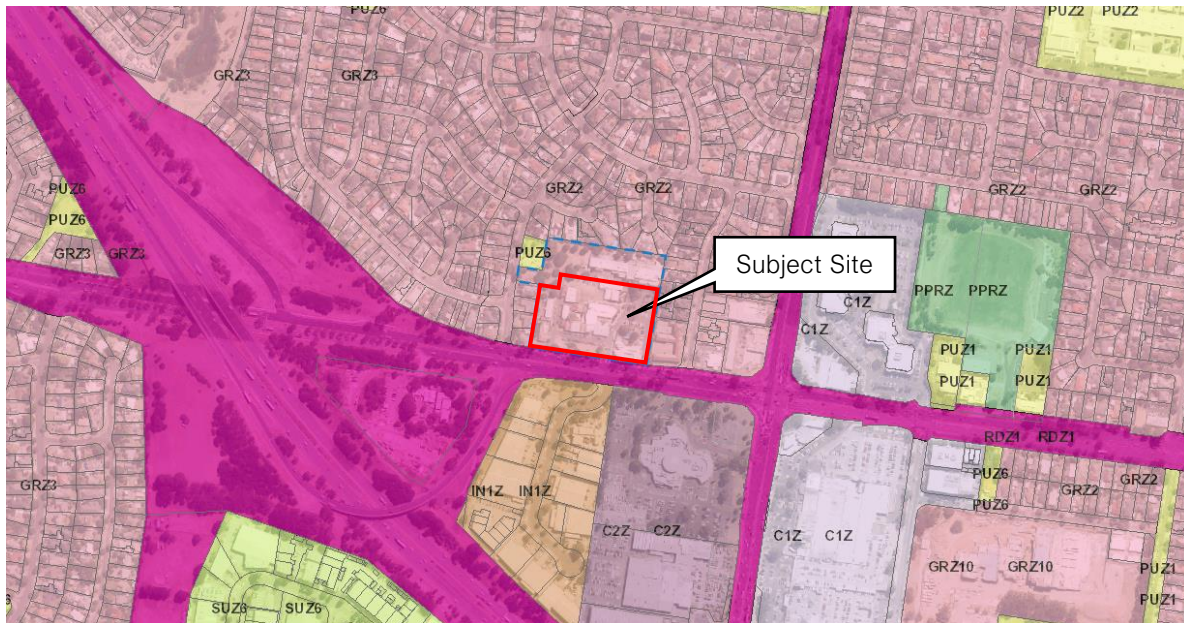


Figure 2.2: Land Zoning



2.2. Road Network

2.2.1. Nearby or Adjoining Roads

Ferntree Gully Road

Ferntree Gully Road functions as a primary arterial road. It is a two-way road aligned in an east-west direction with divided carriageways with three through lanes in each direction, set within a 36 metre wide road reserve (approx.). Kerbside parking is permitted but rarely occurs.

Other Roads

Other roads within the vicinity of the site include Kerferd Road, Rosemary Court and Woodlea Drive.

2.2.2. Surrounding Intersections

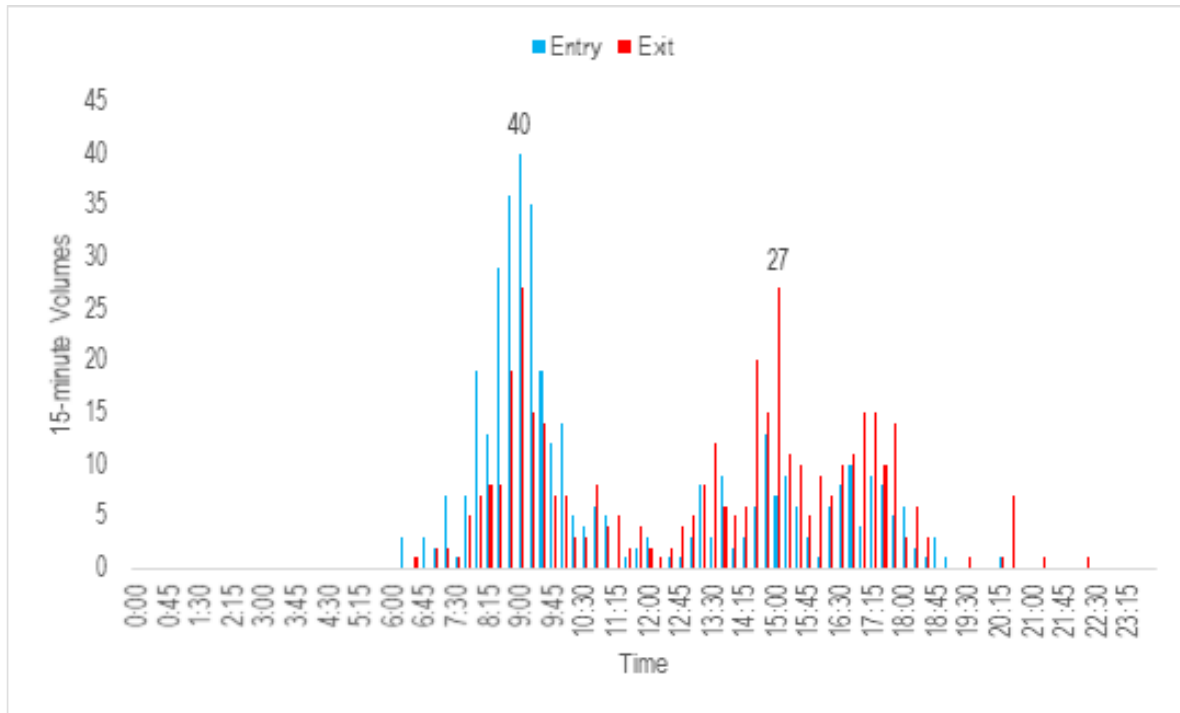
Key intersections in the vicinity of the site include:

- Ferntree Gully Road / Monash Freeway Exit Ramp (signalised T-intersection)
- Ferntree Gully Road / Woodlea Drive / Monash Freeway Entry Ramp (unsignalised X-intersection)
- Ferntree Gully Road / Rosemary Court (unsignalised T-intersection)
- Ferntree Gully Road / Kerferd Road (unsignalised T-intersection)
- Ferntree Gully Road / Springvale Road (signalised X-intersection).

2.2.3. Traffic Volumes

GTA, now Stantec undertook traffic movement counts at the existing site access intersections to Ferntree Gully Road on Wednesday 4 September 2019. The total volumes using the access intersections to Ferntree Gully Road are shown in Figure 2.3 at 15-minute intervals.

Figure 2.3: Existing Site-Generated Traffic Volumes



These surveys found a total of 140 vehicles entered the site and 76 vehicles exited the site during the AM peak hour, and 35 vehicles entered the site, and 73 vehicles exited the site during the PM peak hour.

2.3. Active Travel Network

2.3.1. Pedestrian Infrastructure

Pedestrian paths are located along both sides of the roads within the vicinity of the site.

Pedestrians can cross Ferntree Gully Road at the signalised intersection with Springvale Road.

2.3.2. Cycle Infrastructure

There are minimal dedicated bicycle lanes or paths within close proximity of the subject site.

2.4. Public Transport Network

Figure 2.4 shows the subject site in relation to existing public transport routes within its vicinity.

3. CAR & BICYCLE PARKING PROVISION

3.1. Statutory Car Parking Requirements

Statutory requirements for the provision of car parking are set out in Clause 52.06 of the Monash Planning Scheme, with parking rates specified in Table 1 to Clause 52.06-5. As the site is within the Principal Public Transport Network Area, the rates in Column B of the table apply to this site.

This Clause requires that dwellings with more than two bedrooms have at least two on-site car parking spaces. There is no requirement for visitor car parking.

3.2. Adequacy of Car Parking Provision

The proposed provision of two car parking spaces for each dwelling is in accordance with the statutory requirement.

Whilst there is no statutory requirement for visitor parking, the proposed provision of 15 visitor spaces at a rate of approximately 0.2 spaces per dwelling is considered appropriate, and would meet the statutory visitor car parking requirements were the site not located within the PPTN area.

3.3. Bicycle Parking

Statutory requirements for the provision of bicycle parking are set out in Clause 52.34 of the Monash Planning Scheme. However, as the dwellings will be less than four storeys in height, there is no statutory requirement for bicycle parking.

Residents will be able to park bicycles within the garages for each dwelling in dedicated bicycle parking racks.

4. SITE ACCESS, CAR PARKING & ROAD LAYOUT

4.1. Site Access

The site currently has two access points. The existing main access point, located near the centre of the site, provides left-in / left-out access to Ferntree Gully Road. There is also a left-out only exit to Ferntree Gully Road near the western end of the site.

Access to the development is proposed to occur through a new left-in / left-out access point to Ferntree Gully Road, which will have a similar configuration to the existing main access point, but will be shifted further to the east, and include a larger island to improve pedestrian safety and consequential changes to the splays. The new location has been proposed after consultation with DoT, and will physically prevent motorists from turning right into the site, whilst maximising the separation from nearby U-turn locations on Ferntree Gully Road. Motorists wishing to access the site from the east will be able to undertake a U-turn at the intersection of Ferntree Gully Road and Woodlea Drive whilst those wishing to exit the site to the west will be able to undertake a U-turn using the U-turn slot in the median of Ferntree Gully Road just east of Kerferd Road.

The new access point has been designed to accommodate vehicles up to the size of an 8.8m long Medium Rigid Vehicle (MRV). This has been checked using AutoTURN swept path software (see Appendix A).

The existing western exit point to Ferntree Gully Road is proposed to be deleted, with the crossover removed and reinstated with kerb and channel.

4.2. Car Parking Layout

The proposed car parking layout has been designed to be generally in accordance with Clause 52.06-9 of the Monash Planning Scheme and / or AS2890 as follows:

Type A1, A2 & A3

- The single garages will all have internal dimensions of at least 6m length x 3.5m width, in accordance with Clause 52.06-9 of the Monash Planning Scheme.
- Some waste bins are proposed to be stored within the garages. However, these have been located so as to not impact vehicle access or car door opening.
- The clothes line and bicycle rack within each garage will be above the vehicle bonnet, and so not impact on usable space for vehicle parking.
- A minimum 5.4m x 3.0m space is provided on the driveway for second vehicle to park in front of the garage. This meets the dimensional requirements of both Clause 52.06-9 of the Monash Planning Scheme and AS/NZS 2890.1:2004.

Type B1 & B4

SITE ACCESS, CAR PARKING & ROAD LAYOUT

- The tandem garages will be at least 10.85m in length. There is no specified standard for the length of tandem garages. However, this is adequate for 2 x B85 vehicles, with at least 300mm at each end and between the vehicles, which is considered appropriate.
- A width of 3.5m will be provided for one vehicle in accordance with Clause 52.06-9 of the Monash Planning Scheme.
- A width of 3.0m will generally be provided for the other vehicle, in accordance with Clause 5.4(a) of AS/NZS 2890.1:2004. In some locations this width is slightly reduced. However, this has been designed to not impact car door opening, based on Figure 5.2 of AS/NZS 2890.1:2004.
- Some waste bins are proposed to be stored within the garages. However, these have been located so as to not impact vehicle access or car door opening.
- The bicycle rack within each garage will be above the vehicle bonnet, and so not impact on usable space for vehicle parking.

Type B6

- The double garages will have internal dimensions of at least 6m length x 5.5m width in accordance with Clause 52.06-9 of the Monash Planning Scheme.
- The bicycle rack within each garage will be wall mounted, and so not impact on usable space for vehicle parking.

Type C1 & C2

- The tandem garages will be at least 10.9m in length. There is no specified standard for the length of tandem garages. However, this is adequate for 2 x B85 vehicles, with at least 300mm at each end and between the vehicles, which is considered appropriate.
- A width of 3.5m will be provided for one vehicle in accordance with Clause 52.06-9 of the Monash Planning Scheme.
- A width of 3.0m will generally be provided for the other vehicle, in accordance with Clause 5.4(a) of AS/NZS 2890.1:2004. In some locations this width is slightly reduced. However, this has been designed to not impact car door opening, based on Figure 5.2 of AS/NZS 2890.1:2004.
- Some waste bins are proposed to be stored within the garages. However, these have been located so as to not impact vehicle access or car door opening.
- The bicycle rack within each garage will be above the vehicle bonnet, and so not impact on usable space for vehicle parking.

Type C3

- The double garages will have internal dimensions of at least 6m length x 5.5m width in accordance with Clause 52.06-9 of the Monash Planning Scheme.
- The bicycle rack within each garage will be wall mounted, and so not impact on usable space for vehicle parking.
- Some waste bins are proposed to be stored within the garages. However, these can be shifted so as to not impact vehicle access or car door opening.

On-Street

- The indented visitor parking spaces will be at least 6.7m long x 2.3m wide, in accordance with Clause 52.06-9 of the Monash Planning Scheme.

Swept path checks confirm that cars will be able to access each of the different garage types appropriately (see Appendix A).

4.3. Internal Road Layout

The roads within the site are proposed to be managed by the Owners' Corporation and are not intended to be vested to Monash City Council.

All the roads will have a carriageway width of 5.5m. Whilst the requirements of Clause 56.06-8 of the Monash Planning Scheme do not strictly apply to this proposal, this is in accordance with the required carriageway width for an Access Lane, Access Place or Access Street – Level 1. The provision of indented parking bays on one side of the key roads within the site is also consistent with the design standards for an Access Street – Level 1.

Swept path checks confirm that the roads will be able to be used by vehicles up to the size of an 8.8m long Medium Rigid Vehicle (MRV) (see Appendix A).

5. LOADING & WASTE COLLECTION

5.1. Loading

Clause 65 of the Melbourne Planning Scheme states that:

“Before deciding on an application or approval of a plan, the responsible authority must consider, as appropriate:

- *“The adequacy of loading and unloading facilities and any associated amenity, traffic flow and road safety impacts”*

The proposed development is expected to generate minimal demand for loading, with deliveries using vans and small trucks, occasional furniture moving using larger trucks.

Loading can occur from within the indented parking bays within the development. Swept path checks confirm that the roads will be able to be used by vehicles up to the size of an 8.8m long Medium Rigid Vehicle (MRV) (see Appendix A).

5.2. Waste Collection

Bins will be collected kerbside within the site by a private contractor. Further details of the proposed waste collection arrangements are provided in the Waste Management Plan prepared by Leigh Design.

6. TRAFFIC IMPACT

6.1. Overview

A single house on a standard lot in an outer metropolitan area will typically generate up to 1 vehicle movement in the peak hour and 8 to 10 movements per day. Medium density dwellings generally exhibit a lower traffic generation rate. In the outer metropolitan areas, where public transport accessibility is relatively low, the rate for medium density units is typically in the order of 6 to 8 movements per day. Closer to the Melbourne CAD the rate reduces to in the order of 3 to 6 movements per day depending on dwelling size, parking provisions and accessibility to public transport and local amenities, among other things. Peak hour rates are typically 10–12% of daily rates.

Having consideration to the size of dwellings and their location, among other things, it is likely that the proposed townhouses will generate in the order of an average of 7 daily vehicle movements per dwelling, including 0.7 vehicle movements in each peak hour. This equates to a total site generation of up to 539 vehicle movements per day, including 54 vehicle movements in each peak hour.

6.2. Traffic Distribution

As the site will only have one access point, all traffic will utilise this access point. The directional split of traffic (i.e. the ratio between the inbound and outbound traffic movements) is expected to be in the order of 20% in / 80% out in the AM peak hour and 67% in / 33% out in the PM peak hour, in accordance with surveyed directional splits for other residential developments. This would equate to approximately 11 entry and 43 exit movements in the AM peak hour, and 36 entry and 18 exit movements in the PM peak hour.

Given that the site access point will accommodate left-in and left-out movements only, all vehicles will access the site from the west and exit to the east. Motorists wishing to access the site from the east will be able to undertake a U-turn at the intersection of Ferntree Gully Road and Woodlea Drive whilst those wanting to exit the site to the west will be able to undertake a U-turn using the gap in the median in Ferntree Gully Road just east of Kerferd Road. Both of these U-turn locations are within 200m of the proposed site access point.

6.3. Traffic Impact

The moderate volume of traffic generated by the proposed development is not expected to adversely impact the safety or operation of Ferntree Gully Road noting that it will be significantly less traffic than was previously generated by the site during weekday peak periods.

7. CONCLUSIONS

Based on the analysis and discussions presented within this report, the following conclusions are made:

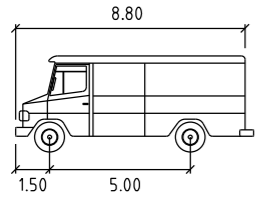
1. Each dwelling will have two on-site car parking spaces in accordance with the statutory requirements.
2. Whilst there is no statutory requirement to provide on-site visitor parking, it is proposed to provide a total of 15 visitor parking spaces within the development at a rate of approximately 0.2 spaces per dwelling.
3. There is no statutory bicycle parking requirement for the proposed development. Residents will be able to park bicycles within their garage.
4. Access to the development is proposed to occur through a new left-in / left-out access point to Ferntree Gully Road, which will be essentially similar to the existing main access point, but shifted to the east. The existing access points to Ferntree Gully Road are proposed to be deleted, with the crossover removed and reinstated with kerb and channel.
5. The proposed car parking layout has been designed to be generally in accordance with Clause 52.06-9 of the Monash Planning Scheme and/or AS2890.
6. The roads within the site are proposed to be managed by the Owners' Corporation and are not intended to be vested to Monash City Council. All the roads will have a carriageway width of 5.5m, which is in accordance with the carriageway width for an Access Lane, Access Place or Access Street – Level 1 in Clause 56.06-8 of the Monash Planning Scheme.
7. The roads within the development will be able to accommodate vehicles up to the size of 8.8m long medium rigid vehicles (MRVs). Any loading can occur from within the indented parking bays.
8. Waste collection is proposed to occur kerbside within the site by a private contractor.
9. The development is expected to generate up to 54 vehicle movements in the weekday AM and PM peak hours respectively.
10. The traffic generated by the proposed development is not expected to adversely impact the safety or operation of Ferntree Gully Road, noting that it will be significantly less traffic than was previously generated by the site during weekday peak periods.

A. SWEEP PATH DIAGRAMS



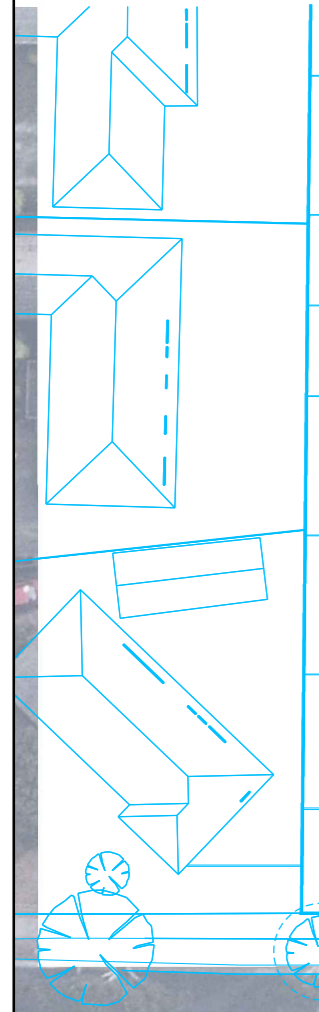
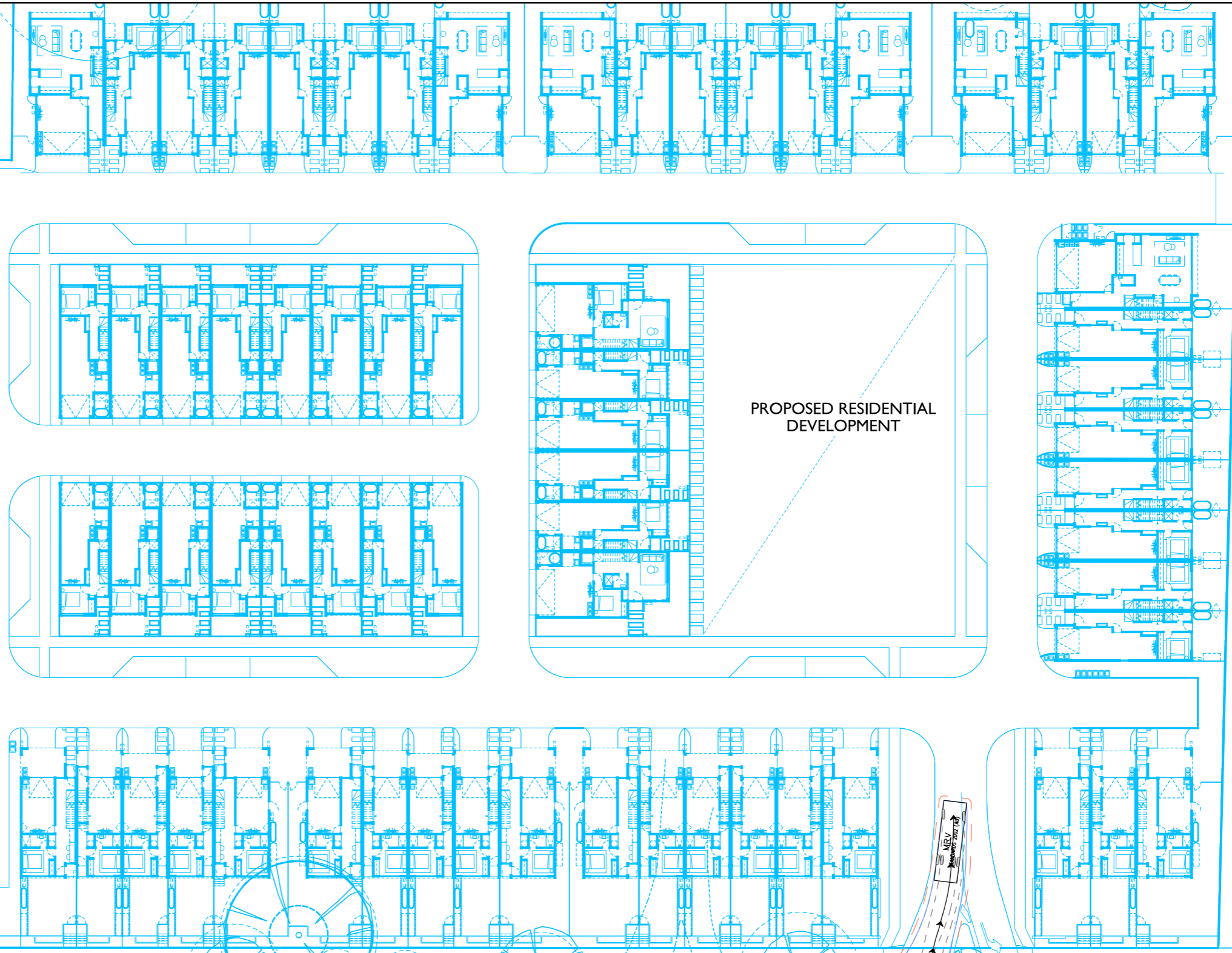
SWEPT PATH KEY

- VEHICLE CENTRE LINE
 - - VEHICLE TYRE PATH
 - VEHICLE BODY PATH
 - 500mm CLEARANCE FROM VEHICLE BODY
- ASSUMED SPEED 5km/h



MRV AS2890.2 metres

Width : 2.50
 Track : 2.50
 Lock to Lock Time : 6.0
 Steering Angle : 34.0



FERNTREE ROAD

ROAD



MAP REF 71/B8

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PRELIMINARY PLAN
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WARNING
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 THE LOCATIONS OF UNDERGROUND SERVICES ARE
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DESIGNED
 R. ABRAHAM

DESIGN CHECK
 D. GRAHAM

APPROVED BY
 D. GRAHAM

DATE ISSUED
 29 JULY 2021

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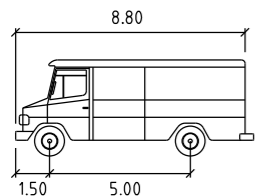
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PROPOSED RESIDENTIAL DEVELOPMENT
 583 FERNTREE GULLY ROAD, GLEN WAVERLEY
 8.8m MRV SITE ACCESS & CIRCULATION
 SWEPT PATH ASSESSMENT

DRAWING NO. V200270-AT01-01 SHEET 01 OF 07 ISSUE P5

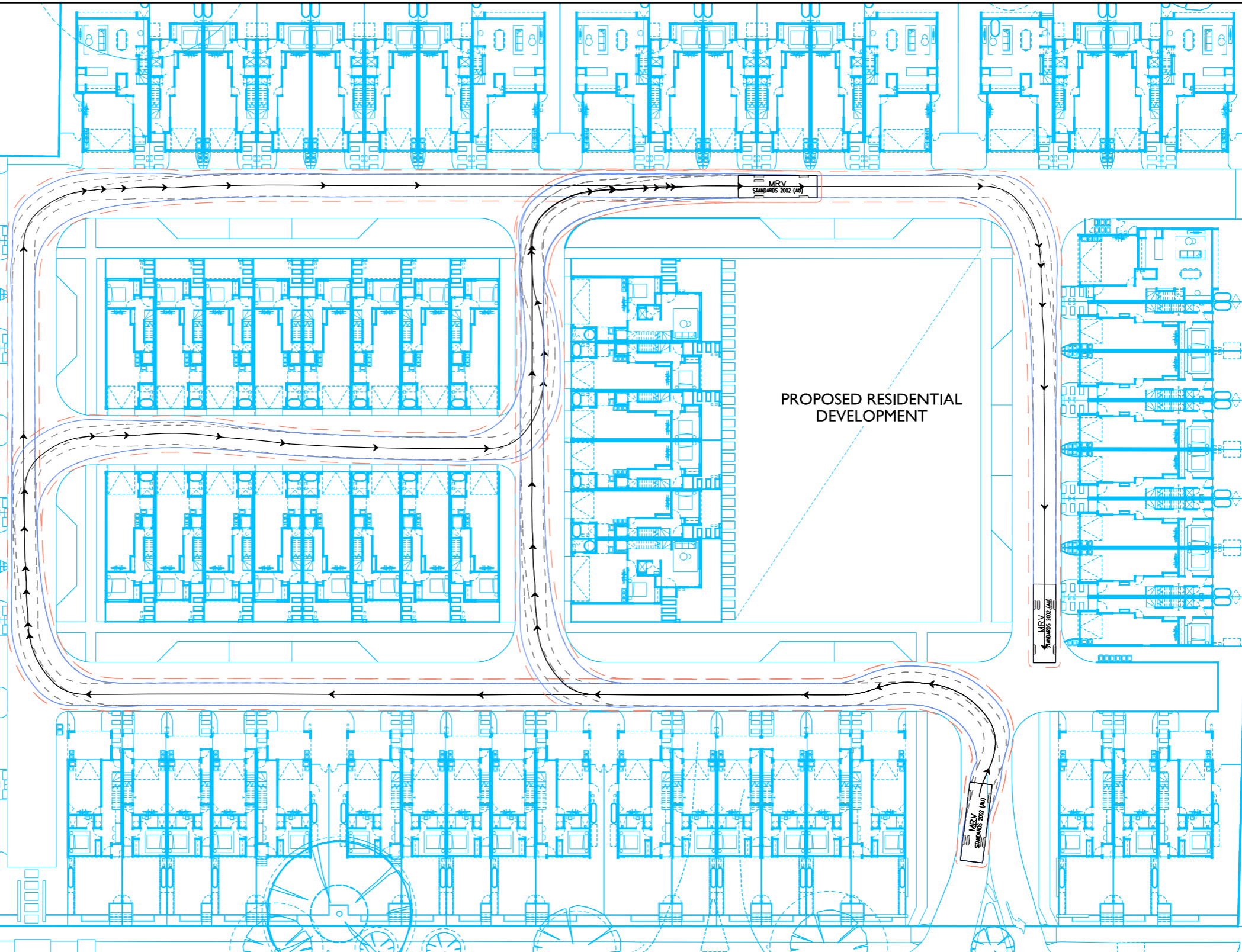
SWEPT PATH KEY

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 - - VEHICLE TYRE PATH
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- ASSUMED SPEED 5km/h



MRV AS2890.2 metres

Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 34.0



PROPOSED RESIDENTIAL DEVELOPMENT

FERNTREE ROAD

ROAD

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PROPOSED RESIDENTIAL DEVELOPMENT
 583 FERNTREE GULLY ROAD, GLEN WAVERLEY
 8.8m MRV SITE ACCESS & CIRCULATION
 SWEPT PATH ASSESSMENT

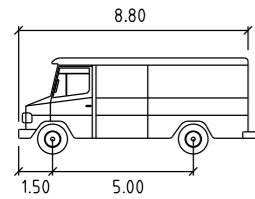
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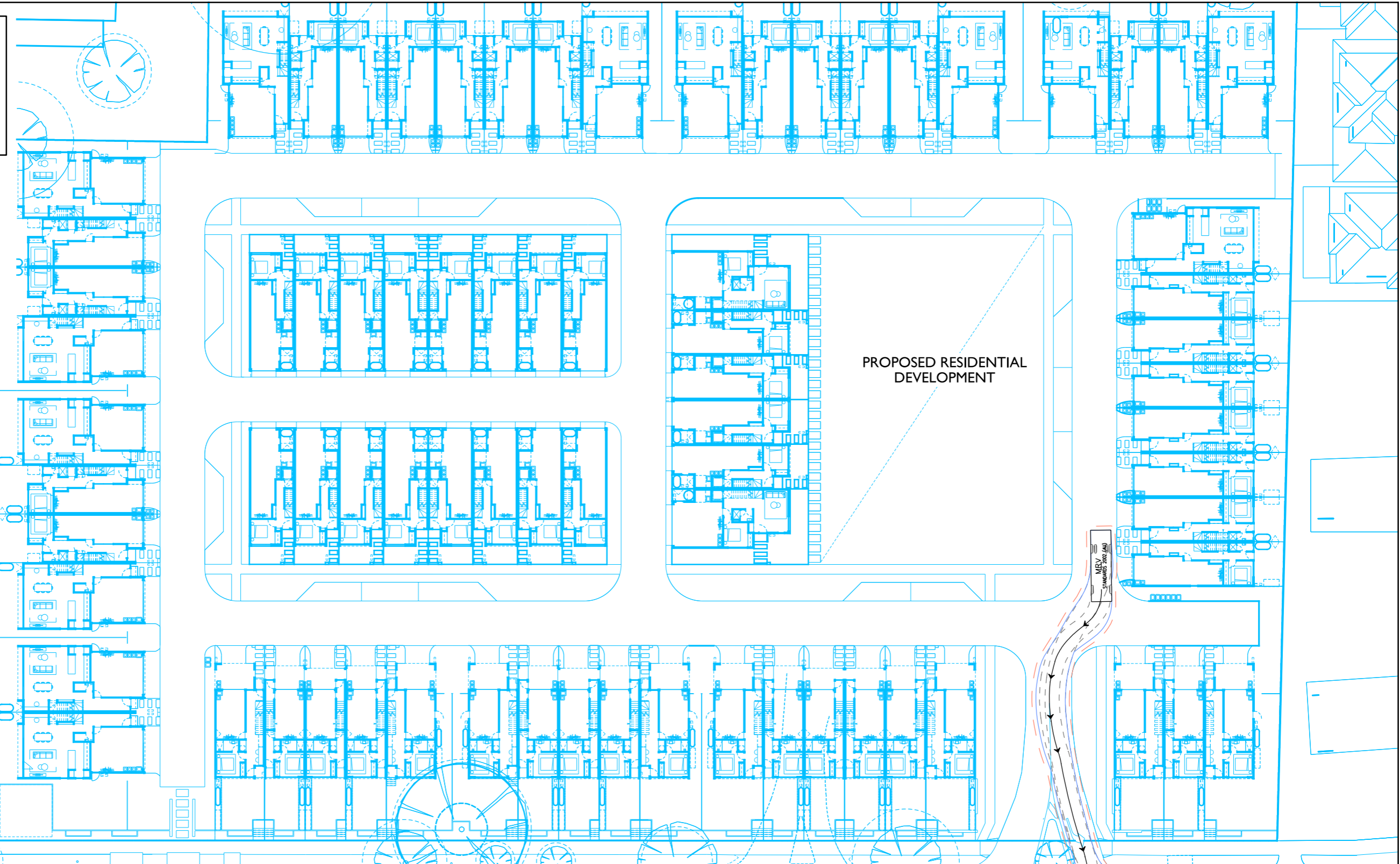
SWEPT PATH KEY

- VEHICLE CENTRE LINE
 - VEHICLE TYRE PATH
 - VEHICLE BODY PATH
 - 500mm CLEARANCE FROM VEHICLE BODY
- ASSUMED SPEED 5km/h



MRV AS2890.2 metres

Width : 2.50
 Track : 2.50
 Lock to Lock Time : 6.0
 Steering Angle : 34.0



PROPOSED RESIDENTIAL DEVELOPMENT

FERNTREE ROAD

ROAD

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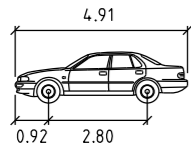
PROPOSED RESIDENTIAL DEVELOPMENT
 583 FERNTREE GULLY ROAD, GLEN WAVERLEY
 8.8m MRV SITE ACCESS & CIRCULATION
 SWEPT PATH ASSESSMENT
 DRAWING NO. V200270-AT01-03 SHEET 03 OF 07 ISSUE P5



MAP REF 71/B8

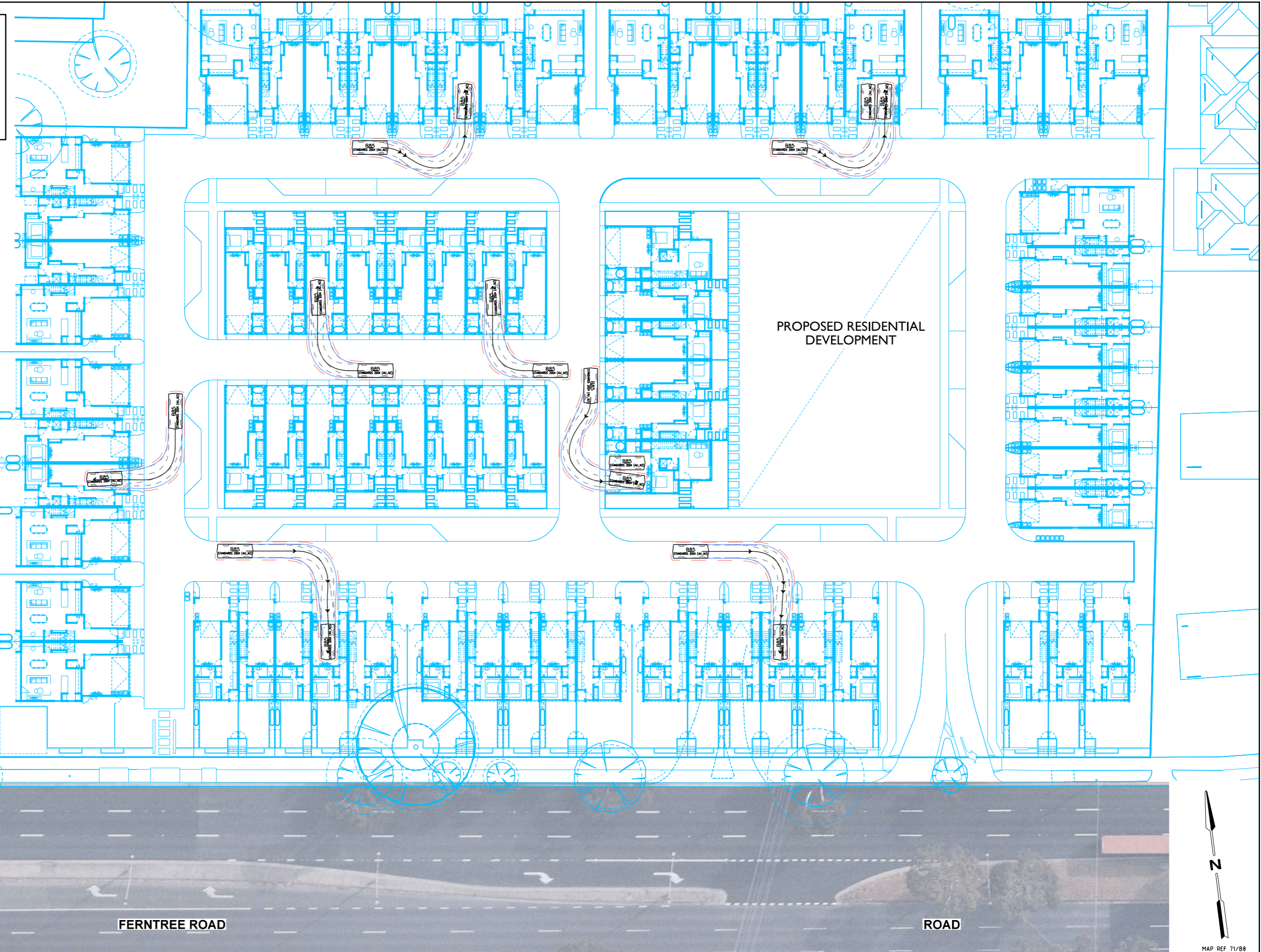
SWEPT PATH KEY

- VEHICLE CENTRE LINE
 - - VEHICLE TYRE PATH
 - VEHICLE BODY PATH
 - 300mm CLEARANCE FROM VEHICLE BODY
- ASSUMED SPEED 5km/h



B85 metres

Width : 1.87
 Track : 1.77
 Lock to Lock Time : 6.0
 Steering Angle : 34.0



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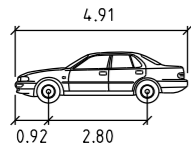
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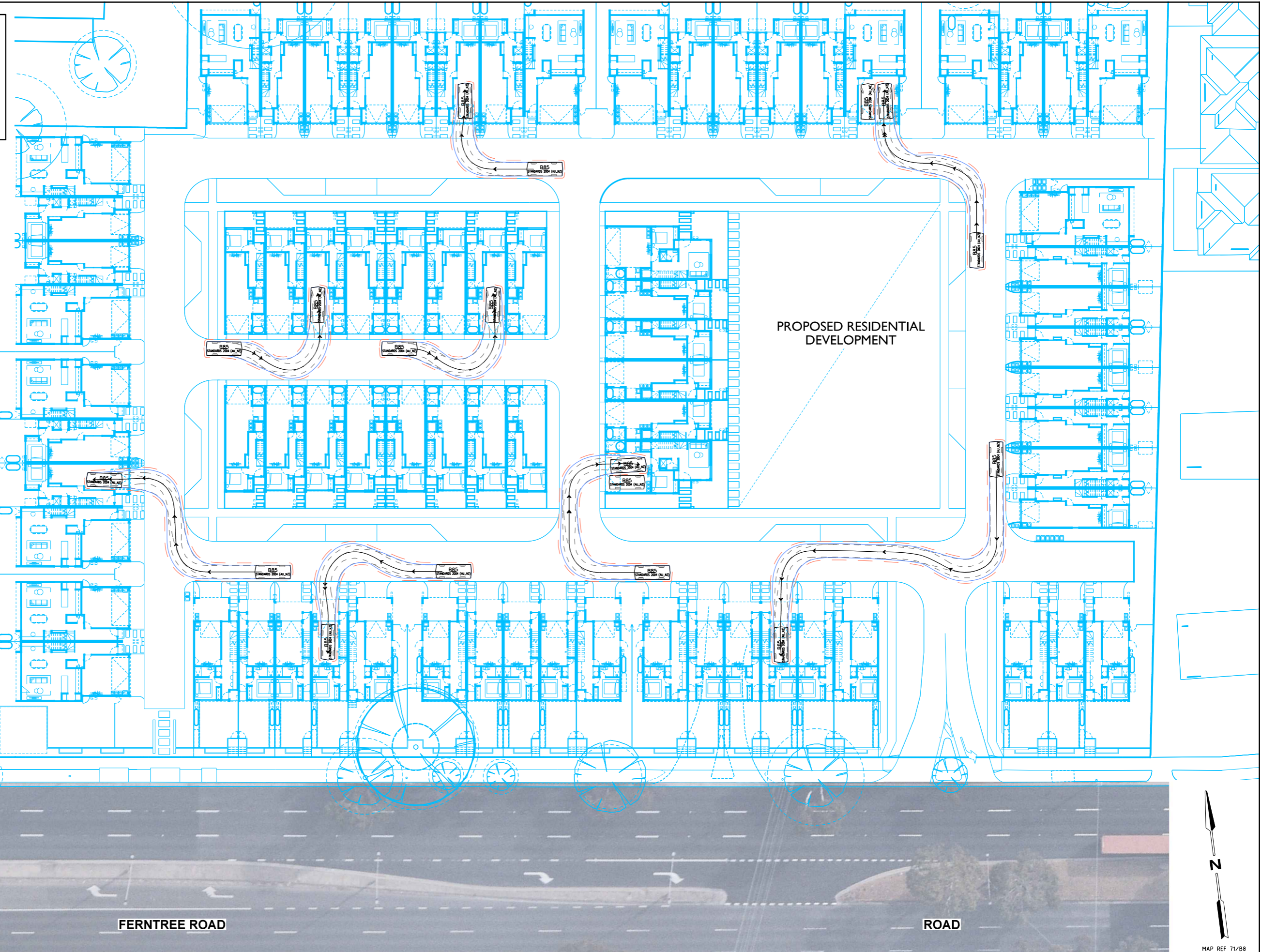
PROPOSED RESIDENTIAL DEVELOPMENT
 583 FERNTREE GULLY ROAD, GLEN WAVERLEY
 B85 GARAGE INGRESS
 SWEPT PATH ASSESSMENT
 DRAWING NO. V200270-AT01-04 SHEET 04 OF 07 ISSUE P5

SWEPT PATH KEY

- VEHICLE CENTRE LINE
- - VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY
- ASSUMED SPEED 5km/h



B85 metres
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ROAD

MAP REF 71/B8

PLOTTED BY : r.abraham ON 29/7/2021 AT 3:16:49 PM



Melbourne 03 9851 9600
 Sydney 02 8448 1800
 Brisbane 07 3113 5000
 Adelaide 08 8334 3600
 Perth 08 6169 1000



PRELIMINARY PLAN
 FOR DISCUSSION PURPOSES
 ONLY SUBJECT TO CHANGE
 WITHOUT NOTIFICATION

WARNING
 BEWARE OF UNDERGROUND SERVICES
 THE LOCATIONS OF UNDERGROUND SERVICES ARE
 APPROXIMATE ONLY AND THEIR EXACT POSITION
 SHOULD BE PROVEN ON SITE. NO GUARANTEE IS
 GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

DESIGNED
 R. ABRAHAM

DESIGN CHECK
 D. GRAHAM

APPROVED BY
 D. GRAHAM

DATE ISSUED
 29 JULY 2021

SCALE
 A3 0 5 10 1:500

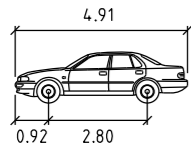
CAD FILE NO.
 V200270-AT01-P5.dgn

PROPOSED RESIDENTIAL DEVELOPMENT
 583 FERNTREE GULLY ROAD, GLEN WAVERLEY
 B85 GARAGE INGRESS
 SWEPT PATH ASSESSMENT

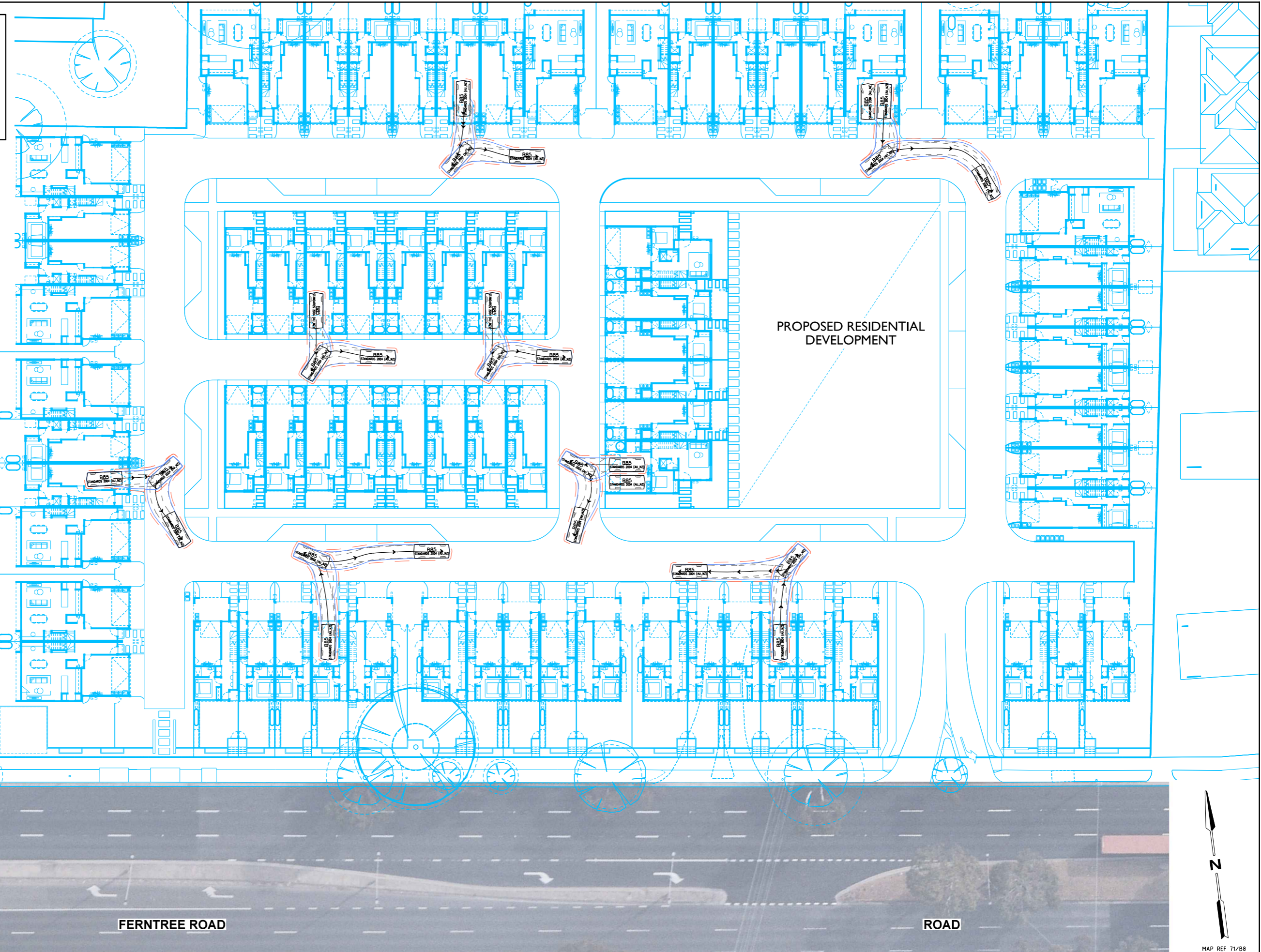
DRAWING NO. V200270-AT01-05 SHEET 05 OF 07 ISSUE P5

SWEPT PATH KEY

- VEHICLE CENTRE LINE
 - - VEHICLE TYRE PATH
 - VEHICLE BODY PATH
 - 300mm CLEARANCE FROM VEHICLE BODY
- ASSUMED SPEED 5km/h



B85 metres
 Width : 1.87
 Track : 1.77
 Lock to Lock Time : 6.0
 Steering Angle : 34.0



PLOTTED BY : r.abraham
 ON 29/7/2021 AT 3:14:52 PM



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 Sydney 02 8448 1800
 Brisbane 07 3113 5000
 Adelaide 08 8334 3600
 Perth 08 6169 1000



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DATE ISSUED
 29 JULY 2021

SCALE
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CAD FILE NO.
 V200270-AT01-P5.dgn

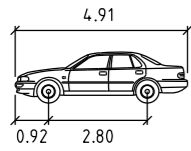
PROPOSED RESIDENTIAL DEVELOPMENT
 583 FERNTREE GULLY ROAD, GLEN WAVERLEY
 B85 GARAGE EGRESS
 SWEPT PATH ASSESSMENT

DRAWING NO. V200270-AT01-06 SHEET 06 OF 07 ISSUE P5

MAP REF 71/88

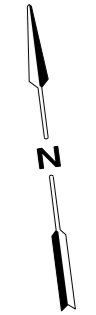
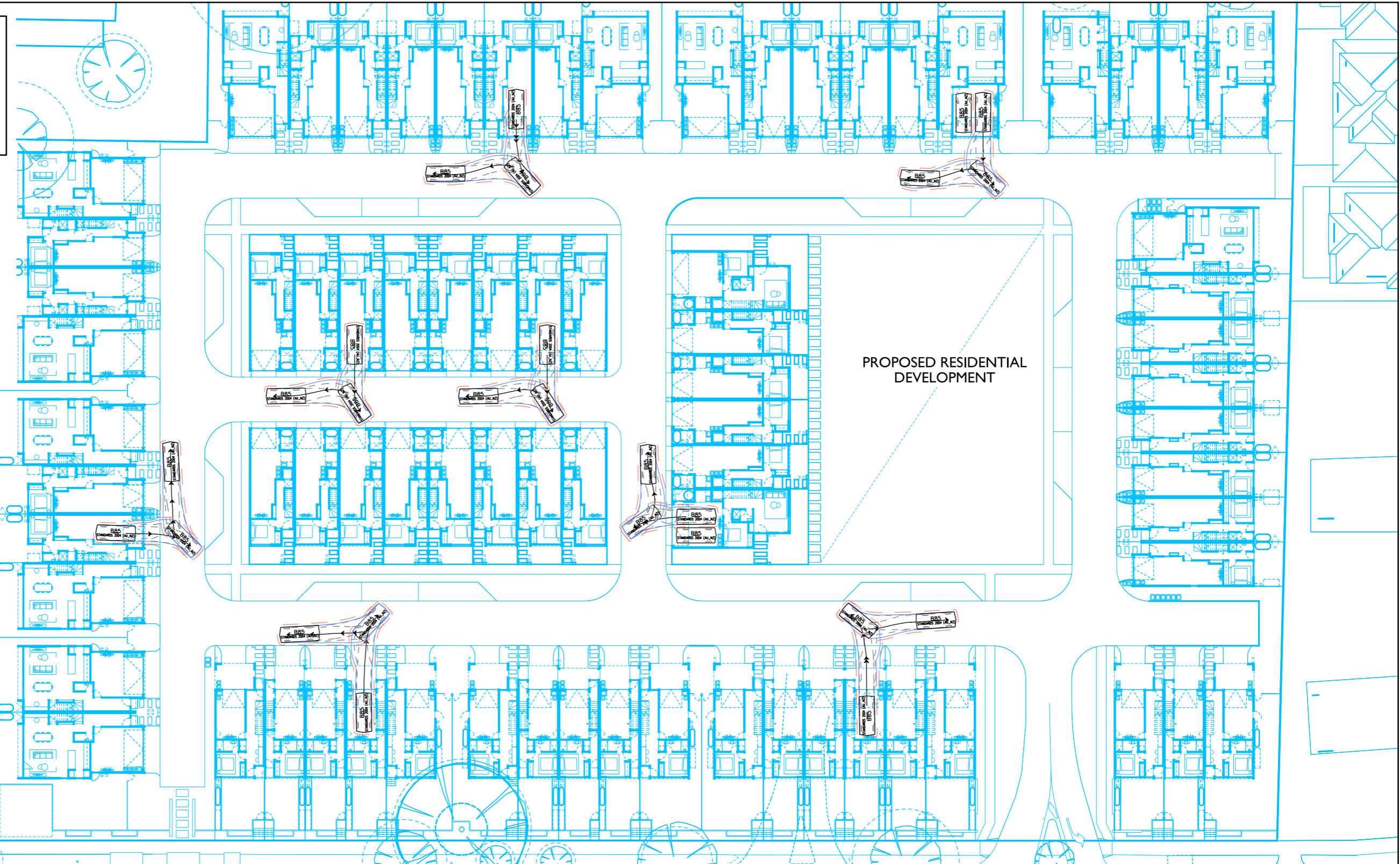
SWEPT PATH KEY

- VEHICLE CENTRE LINE
 - - VEHICLE TYRE PATH
 - VEHICLE BODY PATH
 - 300mm CLEARANCE FROM VEHICLE BODY
- ASSUMED SPEED 5km/h



B85 metres

Width	: 1.87
Track	: 1.77
Lock to Lock Time	: 6.0
Steering Angle	: 34.0



MAP REF 71/88

PLOTTED BY : r.abraham ON 29/7/2021 AT 3:14:55 PM



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DATE ISSUED
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SCALE
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CAD FILE NO.
 V200270-AT01-P5.dgn

PROPOSED RESIDENTIAL DEVELOPMENT
 583 FERNTREE GULLY ROAD, GLEN WAVERLEY
 B85 GARAGE EGRESS
 SWEPT PATH ASSESSMENT

DRAWING NO. V200270-AT01-07 SHEET 07 OF 07 ISSUE P5



now



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