Traffic Impact Assessment

Proposed Aged Care Facility
181 Forest Way, Belrose

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Document Verification

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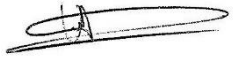
Project:	Belrose Manor Aged Care Facility – 181 Forest Way, Belrose			
Client:	Chriroseph Pty Ltd			
Revision	**Date**	**Prepared by**	**Checked by**	**Signature**
v03	20-09-2018	Neil Caga	Vince Doan	

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Contents

Appendices

1. Introduction

TRAFFIX has been commissioned by Chriroseph Pty Ltd to undertake a Traffic Impact Assessment (TIA) for a senior housing development at 181 Forest Way in Belrose. Approval is sought to construct an aged care facility containing 138 beds. The proposed development is located within the Northern Beaches Local Government Area and has been assessed under that Council's controls, as well as those of *State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004*.

This report documents the findings of our investigations and should be read in the context of the Statement of Environmental Effects prepared separately. The location of the site is such that the vehicular access will be provided from Forest Way being a Roads and Maritime Services (RMS) State Road (MR 529). As such, the proposed vehicular access is referred to RMS for consideration.

The report is structured as follows:

- Section 2: Describes the site and its location
- Section 3: Documents existing traffic conditions
- Section 4: Describes the proposed development
- Section 5: Assesses the parking requirements
- Section 6: Assesses traffic impacts
- Section 7: Discusses the access and internal design aspects
- Section 8: Presents the overall study conclusions.

2. Location and Site

The site is located at 181 Forest Way, Belrose and is situated approximately 3.0 kilometres north of Frenchs Forest Shopping Centre and approximately 21.0 kilometres north of the Sydney CBD. More specifically, it is situated on the eastern part of Forest Way between Oates Place in the north and Perentie Road in the south.

The site has a western street frontage to Forest Way Street that measures approximately 100 metres and a northern frontage to a right of way measures approximately 240 metres. The eastern and southern boundary neighbour's residential properties.

Vehicular access to the site is currently provided via a driveway from the right of way to the north of the site which accommodates a single residential dwelling.

A Location Plan is presented in **Figure 1**, with a Site Plan presented in **Figure 2**.

Figure 1: Location Plan

Figure 2: Site Plan

3. Existing Traffic Conditions

3.1 Road Network

The road hierarchy in the vicinity of the site is shown in **Figure 3** with the following roads of particular interest:

- Forest Way: an RMS State Road (MR 529) that traverses in a north-south direction between Mona Vale Road in the north and Warringah Road in the south, carrying approximately 45,000 vehicles per day. It is generally subject to 70km/hr speed zoning. Forest Way carries two (2) lanes of traffic as well as one (1) bicycle lane in either direction within a divided carriageway of width 9.5 metres. It is also noted that Forest Way carries three (3) lanes of traffic at the southern part of the development where the access driveway is proposed.

- Ralston Avenue: a collector road that runs in an east-west direction between Forest Way Road in the east and forming a cul-de-sac to the west. It has a posted speed limit of 50 km/h and accommodates a single lane of traffic in either direction within an undivided carriageway. Raston Avenue forms a priority control intersection with Forest Way Road with all movements permissible.

It can be seen from Figure 3 that the site is conveniently located with respect to the state and arterial road systems serving the region.

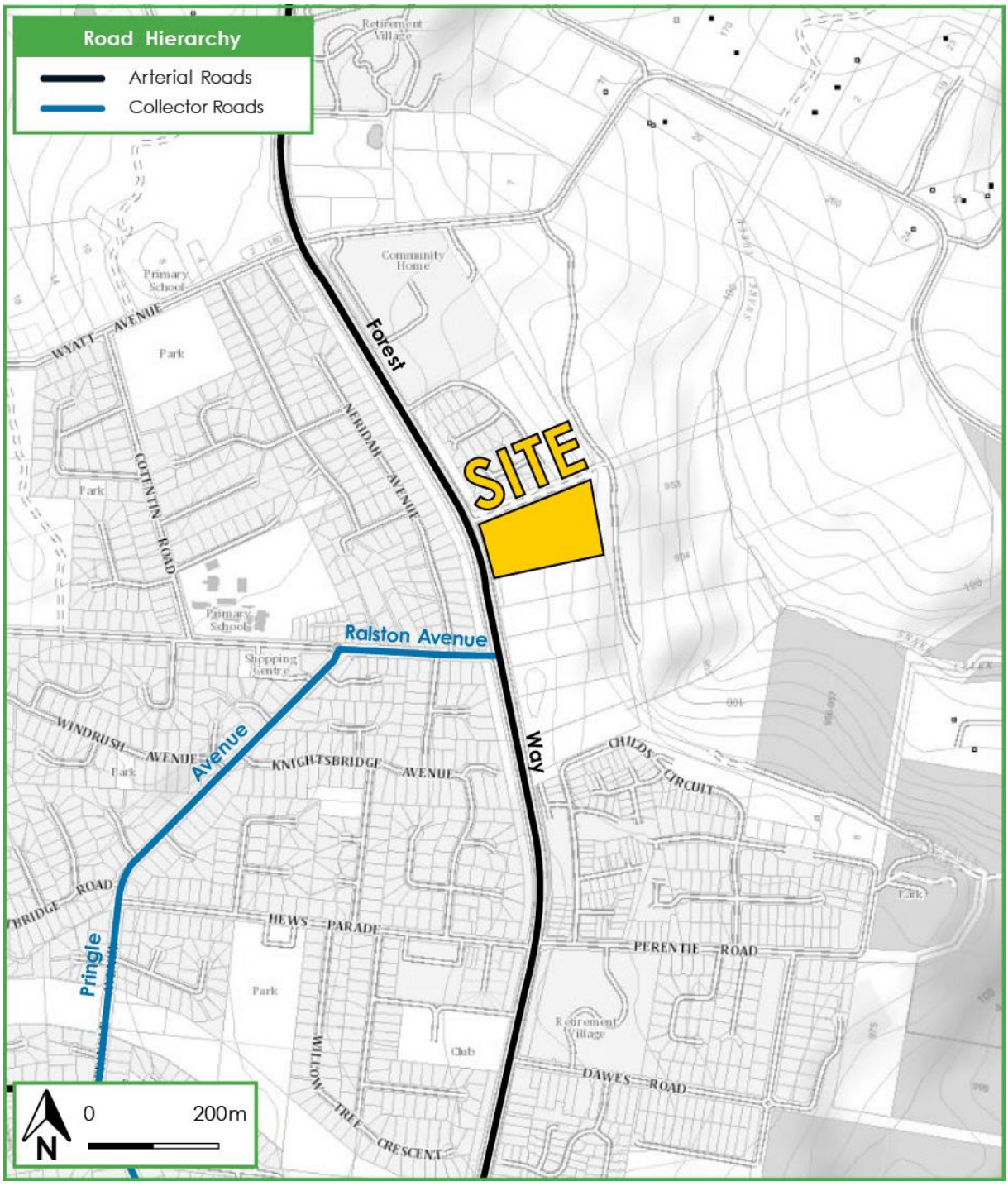

Figure 3: Road Hierarchy

3.2 Public Transport

The existing public transport services that operate in the locality are shown in **Figure 4**. It is evident that the site is within 400 metres of bus stops on Forest Way that is serviced by the following routes:

- 260: Terry Hills – North Sydney
- 270: Terry Hills – City QVB
- 284: Duffys Forest – Terry Hills
- L70: Terry Hills – City QVB
- 271: Belrose – City QVB
- 282: Davidson & Belrose – Chatswood
- 283: Belrose – Chatswood

3.3 Existing Site Generation

As previously mentioned, the subject site is currently occupied by a single dwelling house. Current RMS guidance recommends an average trip generation rate of 0.95 vehicle trips per dwelling during the AM peak hourly period and 0.99 vehicle trips per hour during the PM peak hourly period. By applying these trip rates to the existing dwelling house, it is estimated that the site currently generates approximately one (1) vehicle trip during the morning peak hour (outbound), and one (1) vehicle trip during the evening peak hour (inbound).

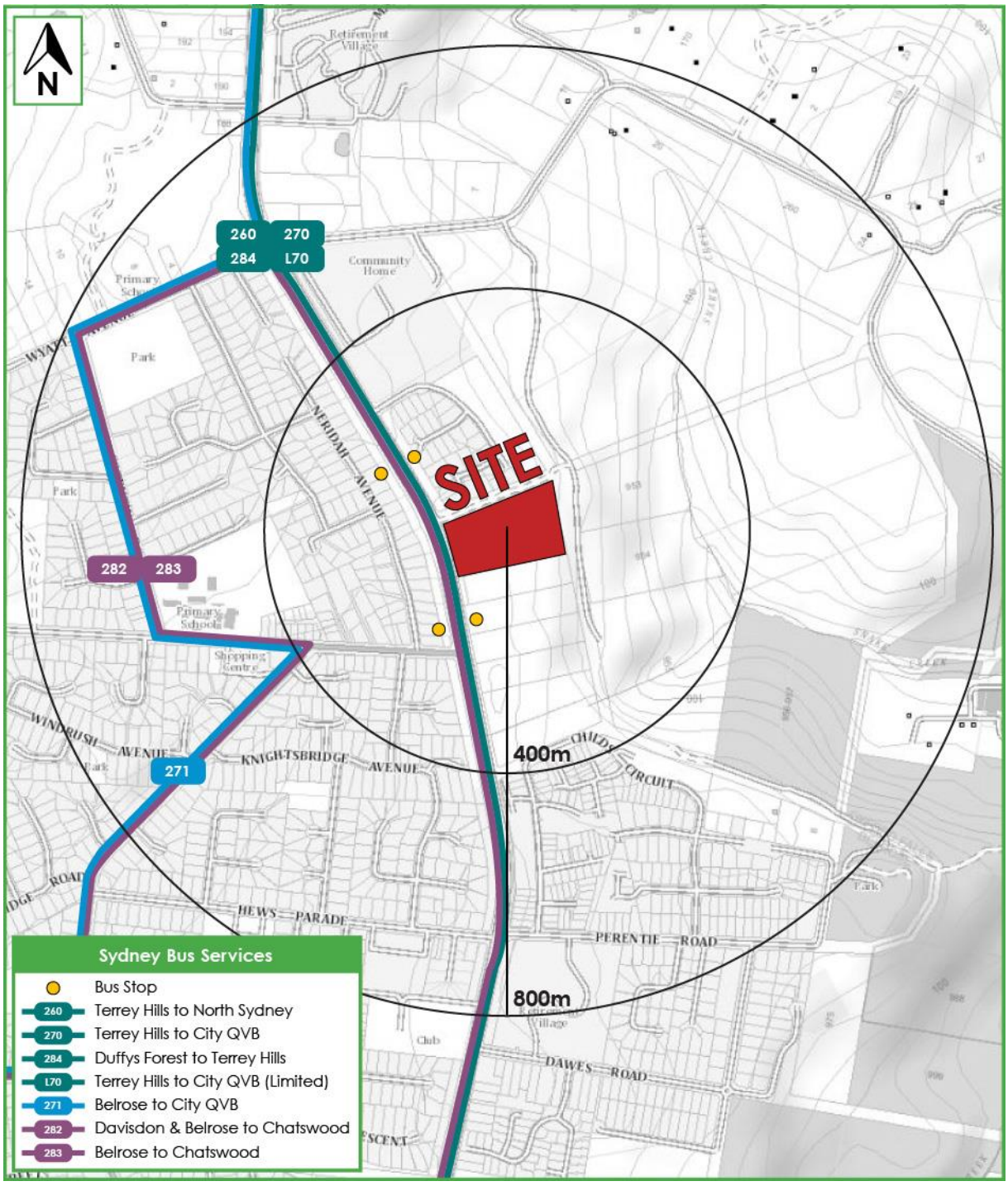

Figure 4: Public Transport

4. Description of Proposed Development

A detailed description of the proposed development is provided in the Statement of Environmental Effects prepared separately. In summary, the development for which approval is sought comprises:

- The demolition of all existing buildings;
- Construction of a two-storey aged care facility with capacity for 138 beds, of which, 20 beds are allocated for dementia patients;
- Construction of a porte-cochere which has been designed to accommodate the following services:
  - Drop-off / pick-up
  - A 23-seater mini-bus (Mitsubishi Rosa); and
  - A 6.4m SRV which is similar in nature to NSW largest ambulance vehicle;
- Construction of a ground level and basement level 1 car park, containing a total of 50 car parking spaces with the following allocation:
  - 16 car parking spaces for the RACF users (residents and visitors) on basement level 1;
  - 30 car parking spaces for staff on basement level 1; and
  - Four (4) car parking spaces for the visitors of the aged care facility on the ground level;
- Provision for service vehicles on-site as follows:
  - Fire truck access to two (2) designated areas;
  - A single mini-bus parking space; and
  - A single loading bay suitable for use by a 10.24m garbage truck on basement level 1.
- Construction of a vehicular access driveway with a deceleration lane off Forest Way.

The traffic and parking impacts arising from the development are discussed in **Sections 5** and **Section 6**. Reference should be made to the plans submitted separately to Council which are presented at reduced scale in **Appendix A.**

5. Parking Requirements

5.1 Car Parking

The Northern Beaches Council (Warringah Development Control Plan 2011) does not prescribe specific car parking rates for seniors housing. The application has therefore been assessed in accordance with SEPP Housing for Seniors or Persons with a Disability 2004 (SEPP Seniors). SEPP Seniors states that a consent authority must not refuse consent to a development application proposing a residential care facility on parking related grounds should the development provide parking in accordance with the following minimum rates:

Table 1: SEPP Seniors Parking Rates and Provision

Type	Number of Beds	SEPP Seniors Parking Rates	Spaces Required	Spaces Provided
Residential Aged Care Facility Dementia Beds	20	1 space per 15 beds	1	20 in total (16 on Basement Level 1 and 4 on Ground Level)
Residential Aged Care Facility Beds	118	1 spacer per 10 beds	12	
Residential Aged Care Facility Employees	30	1 space per 2 employees	15	30
		Totals	**28**	**50**

It can be seen from **Table 1** that there is a requirement to provide a minimum of 28 spaces for the proposed development. In response, the development proposes a total of 50 parking spaces being 20 spaces for residents / visitors and 30 spaces for staff. Therefore, the proposed parking provision complies with the minimum requirements of SEPP Seniors.

5.2 Ambulance Parking

SEPP Seniors requires a single space suitable for use by NSW Ambulance. In this regard, a porte-cochere area located in-front of the main access to the development has been designed in accordance with AS 2890.2 (2002) for a 6.4m long SRV which is similar in nature (albeit it slightly larger) to NSW largest ambulance vehicle.

The provision of one (1) space suitable for use by a NSW Ambulance vehicle is compliant with the minimum requirements of SEPP Seniors.

5.3 Accessible Parking

The development proposes two (2) accessible parking spaces. All accessible parking spaces are designed in accordance with AS2890.6 (2009).

5.4 Bicycle Facilities

The Warringah Development Control Plan 2011 requires bicycle parking to be provided for senior housing developments in accordance with the following minimum rates:

- 1 bicycle space per 15 beds in the form of a locker or within a secure enclosure; and
- 1 bicycle space per 30 beds in the form of a rail for visitors.

Application of the above results in the proposed development requiring a minimum of 15 bicycle parking spaces, including 10 spaces in the form of a locker or within a secure enclosure and five (5) spaces in the form of a bicycle rail. The proposed development is committed to promoting alternate modes of transport and it is considered that this requirement can be readily provided on-site in response to a suitable condition of consent.

5.5 Refuse Collection and Servicing

5.5.1 Waste Collection

Garbage collection will be undertaken from within the site using Council's 10.24 metre waste collection vehicle. A waste collection / loading bay has been provided for this purpose. A turning area has also been provided adjacent to the loading bay which will be used by the servicing vehicle to reverse into the loading bay and exit the basement carpark in a forward direction. A swept path analysis has been undertaken for this manoeuvre and is provided in **Appendix B.**

5.5.2 Mini-bus Parking

A mini-bus parking area is provided within the ground level of the subject development. The parking bay is designed to accommodate a Mitsubishi Rosa (23 seater bus). A swept path analysis has been undertaken for this manoeuvre and is provided in Appendix B.

5.5.3 Fire Truck Access

A fire trail is required for emergency fire vehicles to access the site with the following recommendations / requirements.

- A 4.0 metre wide fire trail is recommended to start from the entry driveway, that runs parallel to the southern boundary and extends to the rear of the allotment;
- A second 4.0 metre wide fire trail is recommended extending from the existing easement in the north, towards the north-eastern aspect of the building; and
- A turning area is required for each fire trail that is able to accommodate a three-point turn of a Category 1 Tanker (7.8m long and 2.4m wide).

In response, the proposed development has provided two (2) separate fire trails that provide access to the rear of the allotment and the north-eastern aspect of the building. These fire trails also provide sufficient space for a 7.8 metre Category 1 Tanker to make a three-point turn and egress in a forward direction.

6. Traffic Impacts

6.1 Trip Generation

The RMS Guide to Traffic Generating Developments (2002) and the RMS Technical Direction (TDT 2013/04a) recommends a housing for seniors peak hour vehicle trip rate of 0.4 trips per dwelling during the PM peak period, noting that the AM peak does not coincide with the network peak hour. The above rate is considered an unrepresentative traffic generation rate with consideration for the proposed use which will serve residents requiring a higher level of care (non-independent living). It should also be noted that the RMS TDT 2013/04a rate is derived from data which includes a large proportion of Independent Living Units (ILU's), in most cases where residents can drive themselves. This is not consistent or comparable with the proposed aged care facility, which caters for residents generally requiring a higher level of care than that of ILU's.

In this regard, a trip rate of 0.2 trips per bed is appropriate for the subject facility, which has historically been used for residential aged care facilities and is in line with the RMS Guide to Traffic Generating Developments. Application of this rate to the proposed 138 bed facility results in a trip generation of 28 vehicle trips per hour during the offset AM peak hour (which does not coincide with the AM road network peak) and PM peak hour.

6.2 Traffic Impacts

The proposed development will result in one additional trip every two minutes during peak periods. This includes all movements (staff and visitors) and accordingly is not expected to create any unacceptable impacts. In a more general context, the proposed development would not contribute significant traffic volumes to the external road network, with the majority of trips associated with visitor attendance during off peak periods during weekends.

The increases in traffic volumes at the intersections in the vicinity of the site are expected to be marginal, and in any case, well within typical fluctuations in background traffic volumes. As a result, no external road improvements are considered to be required to support the proposed development from a capacity or an amenity perspective.

7. Access & Internal Design Aspects

7.1 Deceleration Lane

The vehicular access of the proposed development would be via Forest Way being an RMS State Road (MR 529). As such, RMS requires the construction of a deceleration lane for vehicular access onto the site for the proposed development. Reference should be made to the RMS Correspondence which is provided in **Appendix C**, with the relevant conditions summarised below:

- A deceleration lane is required, along with suitable adjustments to the property boundary;
- Redundant driveway(s) on the Forest Way boundary shall be removed and replaced with kerb and gutter to match the existing;
- All vehicles are to enter and exit the site in a forward direction;
- All vehicles are to wholly be contained on site before being required to stop; and
- The deceleration lane and access shall be designed to meet RMS requirements.

In response, the proposed development will provide a deceleration lane that starts from the northwest corner of the property boundary (south of the bitumen driveway). This deceleration lane will traverse along the entire length of the western boundary, parallel to Forest Way, and extend to the southwest corner of the vehicular access of the subject site. It is noted that the deceleration lane has been designed in conjunction with several correspondences with RMS and in consideration with AUSTROADS requirements, as the dimensions are limited by the length of the western property boundary. As such, the proposed concept plan of the deceleration lane has been provided in **Appendix D**, with the following characteristics noteworthy:

- A minimum width of 3.5 metres;
- A taper length of 25 metres, using a design speed of 80km/hr (posted speed limit); and
- A length of 57.6 metres (between the end of the taper to the start of the vehicle crossing), which spans the entire frontage length of the western property boundary, as per RMS recommendations.

7.2 Vehicular Access

The proposed development will provide a total of 50 parking spaces (20 parking spaces for User Class 1A, 50 parking spaces for User Class 2) with access to an arterial road. In accordance with AS 2890.1, the development requires a Category 2 access being a combined entry-exit driveway of width 6.0m to 9.0m.

In response, the development proposes a combined entry-exit driveway that is 6.2 metres wide with access to Forest Way via a proposed deceleration lane, thereby satisfying the minimum requirements of AS 2890.1 (2004). It should also be noted that the access is suitable for use by a 6.4m SRV, a 7.8m fire truck and 10.24m garbage truck.

A swept path analysis has been undertaken for the key manoeuvres of each design vehicle that demonstrate satisfactory ingress and egress movements on the access driveway. This swept path analysis is provided in Appendix B.

7.3 Internal Design

The internal at-grade and basement car park has been assessed in accordance with AS 2890.1 (2004), AS 2890.2 (2002) and AS 2890.6 (2009). The following characteristics are noteworthy:

7.3.1 Parking Modules

- All residential aged care visitor parking spaces have been designed in accordance with User Class 2 and are provided with a minimum space length of 5.4m, a minimum width of 2.5m and a minimum aisle width of 5.8m.
- All staff parking spaces have been designed in accordance with User Class 1A and are provided with a minimum space length of 5.4 metres, a minimum width of 2.4 metres and a minimum aisle width of 5.8 metres
- All spaces located adjacent to obstructions of greater than 150mm in height are provided with an additional width of 300mm.
- Dead-end aisles are provided with the required 1.0m aisle extension in accordance with Figure 2.3 of AS2890.1.

- Visitor parking area provides a turning bay at the end of the aisle in the event that all visitor parking spaces are occupied, vehicles are able to exit in a forward direction.

- All accessible parking spaces are designed in accordance with AS2890.6. Spaces are provided with a clear width of 2.4m and located adjacent to a minimum shared area of 2.4m.

7.3.2 Ramps

- The ramp accessing the ground level and basement is designed with a gradient of 1:8 (12.5%) with transitions of 1:16 (6.25%) at either end. The ramp has been designed in accordance with AS 2890.2.

7.3.3 Clear Head heights

- It has been confirmed by Morrison Design Partnership Architects that a minimum clear head height of 3.5m is provided for all areas within the basement car park. Furthermore, a clear head height of 2.5m is provided above disabled spaces as required by AS2890.6 and a clear head height of 3.5m is achieved above all service vehicle manoeuvring areas.

7.3.4 Other Considerations

- All columns are located outside of the parking space design envelope shown in Figure 5.2 of AS 2890.1 (2004).

- Appropriate visual splays are provided in accordance with the requirements of Figure 3.3 of AS2890.1 at the vehicular access.

- A swept path analysis of all critical movements has been undertaken to confirm geometry and compliance with the relevant standards. The swept path assessment is included in Appendix B.

7.3.5 Service Areas

- The internal design of the truck bay service area has been undertaken for the maximum length vehicle permissible on-site being a 10.24m for Councils waste collection vehicle.

- A swept path analysis for a 6.4m long SRV has been undertaken for an ambulance vehicle ingress and egress the site as well as circulation around the porte-cochere. The swept path assessment is included in Appendix B. It should be noted that the tallest head height of the NSW Ambulance vehicle fleet is 3.2metres. The porte-cochere provides a 3.5m head height clearance as confirmed by the architect and is therefore appropriate for use. It is noted that the fire truck does not traverse within the porte-cochere area.

- The internal design of the bus bay provided at-grade has been undertaken for a Mitsubishi Rosa (23 seater mini bus).

In summary, the internal configuration of the at-grade and the basement car park, loading areas and porte-cochere have been designed in accordance with AS2890.1, AS2890.2 and AS2890.6. It is however envisaged that a condition of consent would be imposed requiring compliance with these standards and as such any minor amendments considered necessary (if any) can be dealt with prior to the release of a Construction Certificate.

8. Conclusions

In summary:

- The proposed development seeks approval for the construction of an aged care facility, accommodating a total of 138 beds and a maximum of 30 staff. The development is situated at 181 Forest Way, Belrose.

- The proposed development under SEPP Senior Housing is required to provide a minimum of 28 car parking spaces. In response, the development proposes a total of 50 parking spaces being 20 spaces for residents / visitors, 30 spaces for staff. Therefore, the proposed parking provision complies with the minimum requirements.

- The traffic generation arising from the proposed development results in a trip generation of 28 vehicle trips per hour during the offset AM peak hour (which does not coincide with the AM road network peak) and PM peak hour. The proposed development will result in one additional trip every two minutes during peak periods. This includes all movements (staff and visitors) and accordingly is not expected to create any unacceptable impacts. As a result, no external road improvements are considered to be required to support the proposed development from a capacity or an amenity perspective.

- The proposed deceleration lane has been designed with RMS recommendations and in consideration with AUSTROADS requirements.

- The proposed car park complies with the requirements of both AS 2890.1 (2004), AS2890.2 (2002) and AS2890.6 (2009). The car park has also been assessed using the computer program Auto Track, as permitted by AS 2890.1 and AS 2890.2 and operates safely and efficiently.

- All servicing will be undertaken on site and the loading / service facilities have been designed in accordance with AS 2890.2.

It can therefore be concluded that the proposed development is supportable on traffic planning grounds embracing the policies of Council and SEPP Housing for Seniors or People with a Disability (2004).

Appendix A

Reduced Plans

Revision	Date	Details	Initials	Checked
A	20170626	DEVELOPMENT APPLICATION	JM/DT	VC

SURVEY NOTES

Survey data included in this drawing is based on survey drawing and is provided for preliminary design purposes only.
As this drawing is based on information supplied by others, reference must be made to original survey drawings verified against site conditions.

GENERAL NOTES

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Figured dimensions shall be taken in preference to scaling.
All level, datum points and dimensions on this drawing shall be verified by the builder on site.
All discrepancies shall be referred to the architect for direction before proceeding with any work. **DO NOT SCALE THIS DRAWING.**

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- NEW TREE — REFER TO LANDSCAPE DOCUMENTATION
- EXISTING TREE TO REMAIN — REFER TO ARBORIST REPORT
- EXTENT OF PLANTING — REFER TO LANDSCAPE DOCUMENTATION
- STORMWATER PIT, REFER TO CIVIL DOCUMENTATION
- JUNCTION PIT, REFER TO CIVIL DOCUMENTATION
- EXISTING SERVICES, REFER TO SURVEY

NOTES:
APZ ASSEST PROTECTION ZONE.
REFER TO BUSH FIRE REPORT FOR DETAILS.

1. STORMWATER ENGINEERING, REFER TO ENGINEER DESIGN DOCUMENTS FOR DETAILS.

N

DEVELOPMENT APPLICATION

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PROJECT:

BELROSE MANOR

RESIDENTIAL AGED CARE FACILITY
181 FOREST WAY
BELROSE NSW 2085

DRAWING:

SITE PLAN

PROJECT NO. 2951	REVISION NO. A
DRAWING NO. DA050	
SCALE: 1 : 200 @ A1	ARCHITECT: VEE CHIN
DATE: APRIL 2017	
PROJECT DIRECTOR: MARKAM RALPH	

Morrison Design Partnership ARCHITECTS Since 1969

1 LOWER GROUND FLOOR PLAN
SCALE 1 : 200

Revision	Date	Details	Initials	Checked
A	20170626	DEVELOPMENT APPLICATION	JM/DT	VC

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NEW TREE
REFER TO LANDSCAPE DOCUMENTATION

EXISTING TREE TO REMAIN
REFER TO ARBORIST REPORT

EXTENT OF PLANTING
REFER TO LANDSCAPE DOCUMENTATION

STORMWATER PIT.
REFER TO CIVIL DOCUMENTATION

JUNCTION PIT.
REFER TO CIVIL DOCUMENTATION

EXISTING BUILDINGS TO BE DEMOLISHED ROOF OUTLINE

EXTERNAL WALL:300MM OVERALL (OR LESS)
TYPE 1: BRICK VENEER
TYPE 2: FRAMED WALL- FIBRE CEMENT/METAL CLADDING
TYPE 3: CONCRETE

INTERNAL WALL:
TYPE A: STRUCTURAL BLOCK WALL 200/300MM
TYPE B: FRAMED WALL- PLASTERBOARD 120/150MM

N

DEVELOPMENT APPLICATION

APPLICANT:

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PROJECT:

BELROSE MANOR

RESIDENTIAL AGED CARE FACILITY
181 FOREST WAY
BELROSE NSW 2085

DRAWING:

LOWER GROUND FLOOR PLAN

PROJECT NO. **2951**	REVISION NO. **A**
DRAWING NO. *DA101*	
SCALE: **1 : 200 @ A1**	ARCHITECT: VEE CHIN
DATE: **APRIL 2017**	
PROJECT DIRECTOR: **MARKAM RALPH**	

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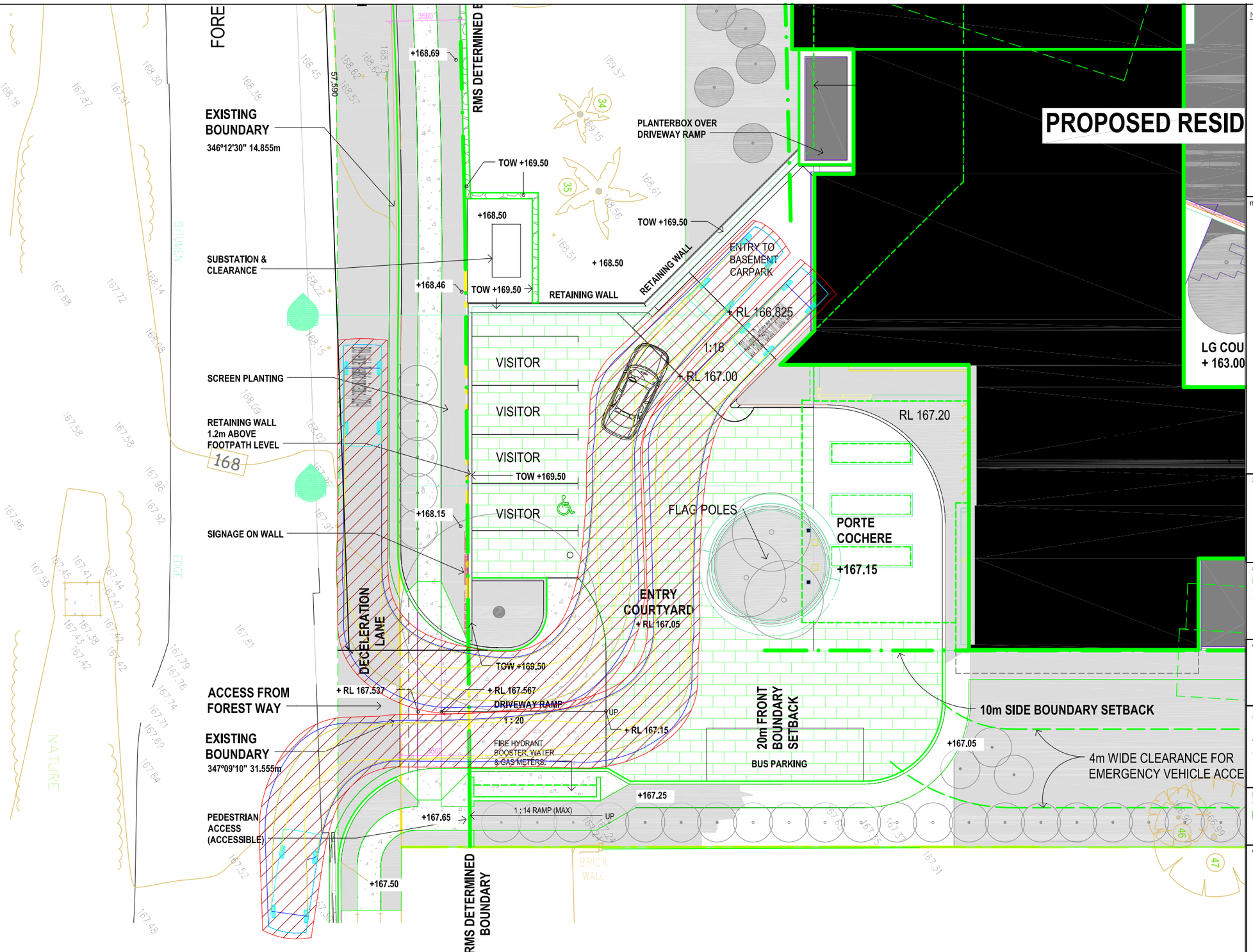
Appendix B

Swept path Analysis



Notes

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TRAFFIX is responsible for vehicle swept path diagrams and/or drawing mark-ups only. Base drawing prepared by others.

Vehicle swept path diagrams prepared using computer generated turning path software and associated CAD drawing platforms. Vehicle data based upon relevant Australian Standards (*AS/NZS 2890.1-2004 Parking facilities - Off-street car parking*, and/or *AS 2890.2-2002 Parking facilities - Off-street commercial vehicle facilities*). These standards embody a degree of tolerance, however the vehicle characteristics in these standards represent a suitable design vehicle and do not account for all variations in vehicle dimensions / specifications and/or driver ability or behaviour.

no.	revision note	by.	date

Swept Path Legend:

- Wheel Path
- Vehicle Body Envelope
- Clearance Envelope (300mm)

architect

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scale

1:200 @ A3

0m 2 4 6 8

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181 Forest Way
Belrose NSW 2085

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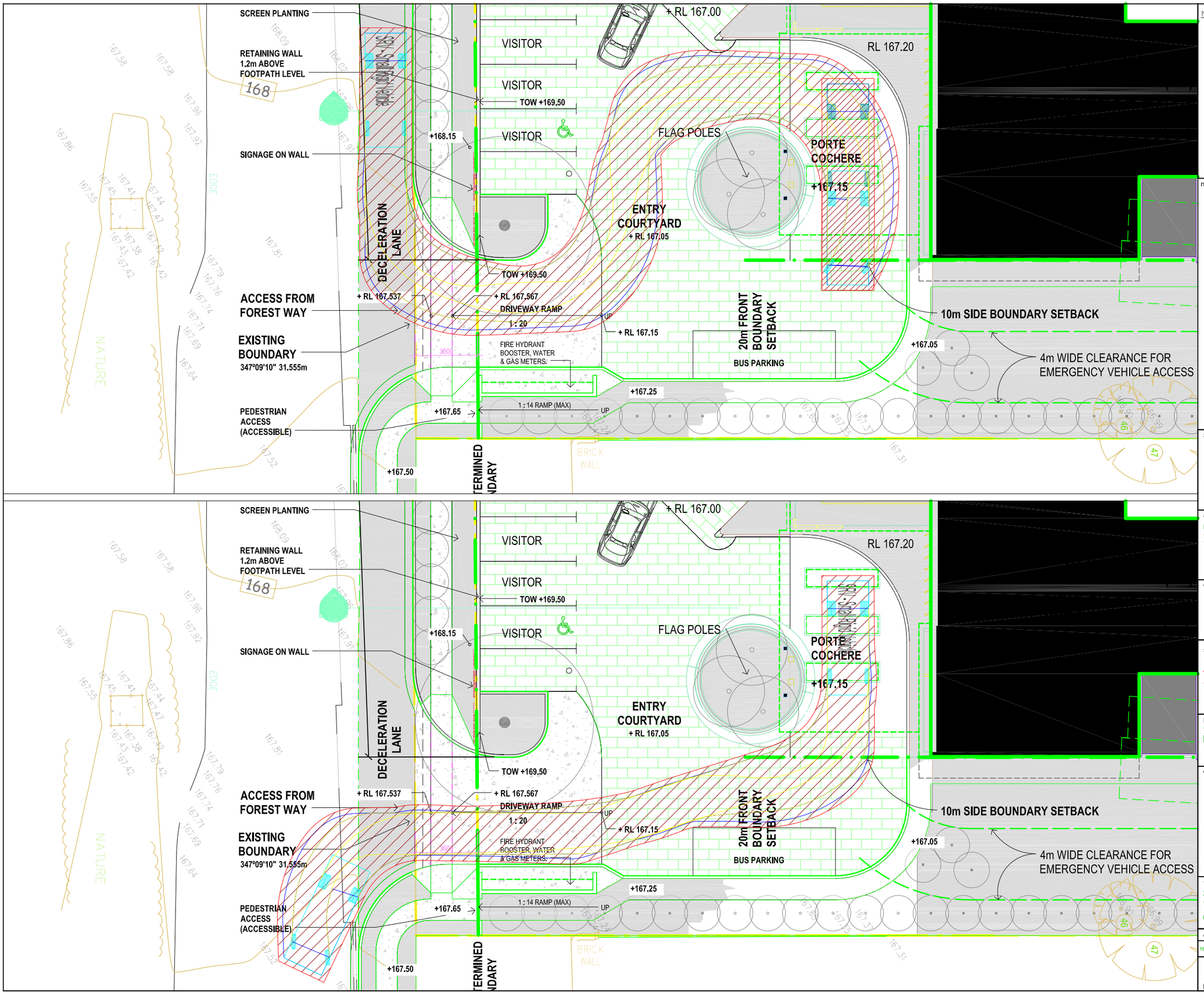
drawing title

Swept Path Analysis
Vehicle Access - Ingress and Egress
B99 Design Vehicle

drawn:	checked:	date:
NC	VD	28-08-2018

16.480d07v01 TRAFFIX [2018-08-28] - Design Review.dwg

project no.	drawing phase.	drawing no.	rev
16.480	-	TX.01	A



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traffix
traffic & transport planners

drawing title

Swept Path Analysis
Vehicle Access - Ingress and Egress
6.4m SRV (Ambulance) Design Vehicle

drawn:	checked:	date:
NC	VD	28-08-2018

16.480d07v01 TRAFFIX [2018-08-28] - Design Review.dwg

project no.	drawing phase.	drawing no.	rev
16.480	-	TX.02	A

SCREEN PLANTING

RETAINING WALL 1.2m ABOVE FOOTPATH LEVEL

SIGNAGE ON WALL

ACCESS FROM FOREST WAY

EXISTING BOUNDARY
347°09'10" 31.555m

PEDESTRIAN ACCESS (ACCESSIBLE)

25 Seat Fuso Rosa

VISITOR

VISITOR

TOW +169.50

VISITOR

+168.15

DECELERATION LANE

+ RL 167.00

RL 167.20

FLAG POLES

PORTE COCHERE

+167.15

ENTRY COURTYARD
+ RL 167.05

TOW +169.50

+ RL 167.537

+ RL 167.567

DRIVEWAY RAMP
1 : 20

UP

+ RL 167.15

FIRE HYDRANT BOOSTER, WATER & GAS METERS.

20m FRONT BOUNDARY SETBACK

BUS PARKING

10m SIDE BOUNDARY SETBACK

+167.05

4m WIDE CLEARANCE FOR EMERGENCY VEHICLE ACCESS

+167.25

1 : 14 RAMP (MAX)

UP

+167.65

+167.50

BRICK WALL

TERMINED NDARY

EDGE

NATURE

SCREEN PLANTING

RETAINING WALL 1.2m ABOVE FOOTPATH LEVEL

SIGNAGE ON WALL

ACCESS FROM FOREST WAY

EXISTING BOUNDARY
347°09'10" 31.555m

PEDESTRIAN ACCESS (ACCESSIBLE)

25 Seat Fuso Rosa

VISITOR

VISITOR

TOW +169.50

VISITOR

+168.15

DECELERATION LANE

+ RL 167.00

RL 167.20

FLAG POLES

PORTE COCHERE

+167.15

ENTRY COURTYARD
+ RL 167.05

TOW +169.50

+ RL 167.537

+ RL 167.567

DRIVEWAY RAMP
1 : 20

UP

+ RL 167.15

FIRE HYDRANT BOOSTER, WATER & GAS METERS.

20m FRONT BOUNDARY SETBACK

BUS PARKING

10m SIDE BOUNDARY SETBACK

+167.05

4m WIDE CLEARANCE FOR EMERGENCY VEHICLE ACCESS

+167.25

1 : 14 RAMP (MAX)

UP

+167.65

+167.50

BRICK WALL

TERMINED NDARY

EDGE

NATURE

Notes

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TRAFFIX is responsible for vehicle swept path diagrams and/or drawing mark-ups only. Base drawing prepared by others.

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no.	revision note	by.	date

Swept Path Legend:

- Wheel Path
- Vehicle Body Envelope
- Clearance Envelope (300mm)

architect

Morrison Design Partnership Pty Ltd
Suite 302, 69 Christie Street
St. Leonards NSW 2065

client

scale

1:200 @ A3

0m 2 4 6 8

project

181 Forest Way
Belrose NSW 2085

drawing prepared by

TRAFFIX
traffic and transport planners

Suite 2.08, 50 Holt Street
Surry Hills NSW 2010

PO Box 1124
Strawberry Hills NSW 2012

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f: +61 2 9380 4481
e: info@traffix.com.au

traffix
traffic & transport planners

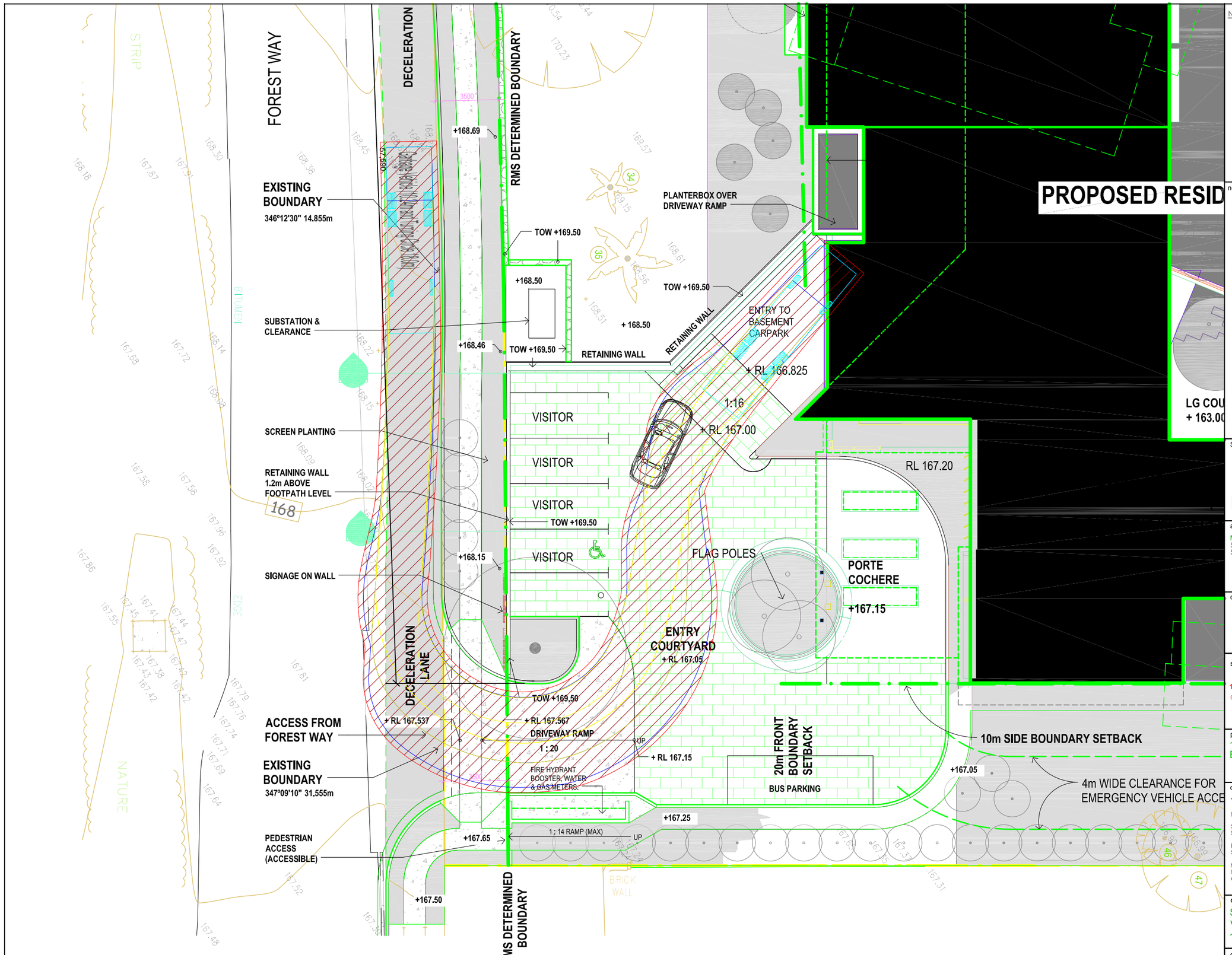
drawing title

Swept Path Analysis
Vehicle Access - Ingress and Egress
Bus (25-Seat Fuso Rosa) Design Vehicle

drawn:	checked:	date:
NC	VD	28-08-2018

16.480d07v01 TRAFFIX [2018-08-28] - Design Review.dwg

project no.	drawing phase.	drawing no.	rev
16.480	-	TX.03	A



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no.	revision note	by.	date

Swept Path Legend:

- Wheel Path
- Vehicle Body Envelope
- Clearance Envelope (300mm)

architect

Morrison Design Partnership Pty Ltd
Suite 302, 69 Christie Street
St. Leonards NSW 2065

client

scale

1:200 @ A3

0m 2 4 6 8

project

181 Forest Way
Belrose NSW 2085

drawing prepared by

TRAFFIX
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Surry Hills NSW 2010

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Strawberry Hills NSW 2012

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f: +61 2 9380 4481
e: info@traffix.com.au

traffix
traffic & transport planners

drawing title

Swept Path Analysis
Vehicle Access - Ingress
10.24m Garbage Truck Design Vehicle

drawn:	checked:	date:
NC	VD	28-08-2018

16.480d07v01 TRAFFIX [2018-08-28] - Design Review.dwg

project no.	drawing phase.	drawing no.	rev
16.480	-	TX.04	A

FOREST WAY

DECELERATION

RMS DETERMINED BOUNDARY

EXISTING BOUNDARY
346°12'30" 14.855m

SUBSTATION & CLEARANCE

SCREEN PLANTING

RETAINING WALL 1.2m ABOVE FOOTPATH LEVEL

SIGNAGE ON WALL

ACCESS FROM FOREST WAY

EXISTING BOUNDARY
347°09'10" 31.555m

PEDESTRIAN ACCESS (ACCESSIBLE)

DECELERATION LANE

RMS DETERMINED BOUNDARY

PLANTERBOX OVER DRIVEWAY RAMP

TOW +169.50

+168.69

+168.50

+168.46

+168.15

+167.50

+167.65

+167.25

+167.05

+ RL 167.537

+ RL 167.567

+ RL 167.15

+ RL 166.825

+ RL 167.00

RL 167.20

+167.15

DRIVEWAY RAMP
1 : 20

1 : 14 RAMP (MAX)

UP

RETAINING WALL

ENTRY TO BASEMENT CARPARK

VISITOR

VISITOR

VISITOR

VISITOR

FLAG POLES

PORTE COCHERE

ENTRY COURTYARD
+ RL 167.05

FIRE HYDRANT BOOSTER, WATER & GAS METERS

20m FRONT BOUNDARY SETBACK

BUS PARKING

10m SIDE BOUNDARY SETBACK

4m WIDE CLEARANCE FOR EMERGENCY VEHICLE ACCE

PROPOSED RESID

LG COU
+ 163.00

BRICK WALL

STRIP

BITUMEN

EDGE

NATURE

Notes

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no.	revision note	by.	date

Swept Path Legend:

- Wheel Path
- Vehicle Body Envelope
- Clearance Envelope (300mm)

architect

Morrison Design Partnership Pty Ltd
Suite 302, 69 Christie Street
St. Leonards NSW 2065

client

scale

1:200 @ A3

0m 2 4 6 8

project

181 Forest Way
Belrose NSW 2085

drawing prepared by

TRAFFIX
traffic and transport planners

Suite 2.08, 50 Holt Street
Surry Hills NSW 2010

PO Box 1124
Strawberry Hills NSW 2012

t: +61 2 8324 8700
f: +61 2 9380 4481
e: info@traffix.com.au

traffix
traffic & transport planners

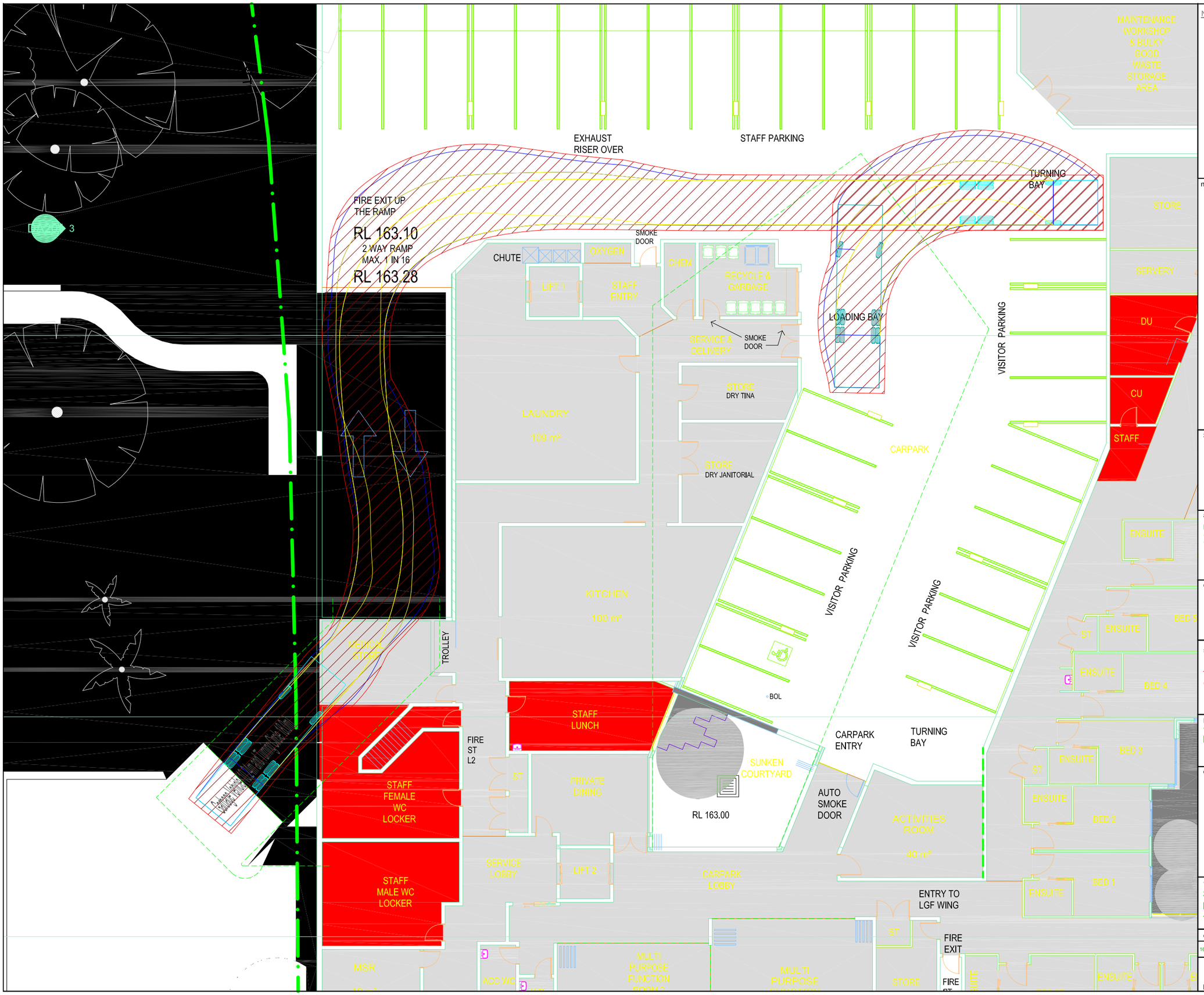
drawing title

Swept Path Analysis
Vehicle Access - Egress
10.24m Garbage Truck Design Vehicle

drawn:	checked:	date:
NC	VD	28-08-2018

16.480d07v01 TRAFFIX [2018-08-28] - Design Review.dwg

project no.	drawing phase.	drawing no.	rev
16.480	-	TX.05	A



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no.	revision note	by.	date

Swept Path Legend:

- Wheel Path
- Vehicle Body Envelope
- Clearance Envelope (300mm)

architect

Morrison Design Partnership Pty Ltd
Suite 302, 69 Christie Street
St. Leonards NSW 2065

client

scale

1:200 @ A3

0m 2 4 6 8

project

181 Forest Way
Belrose NSW 2085

drawing prepared by

TRAFFIX
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Strawberry Hills NSW 2012

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e: info@traffix.com.au

traffix
traffic & transport planners

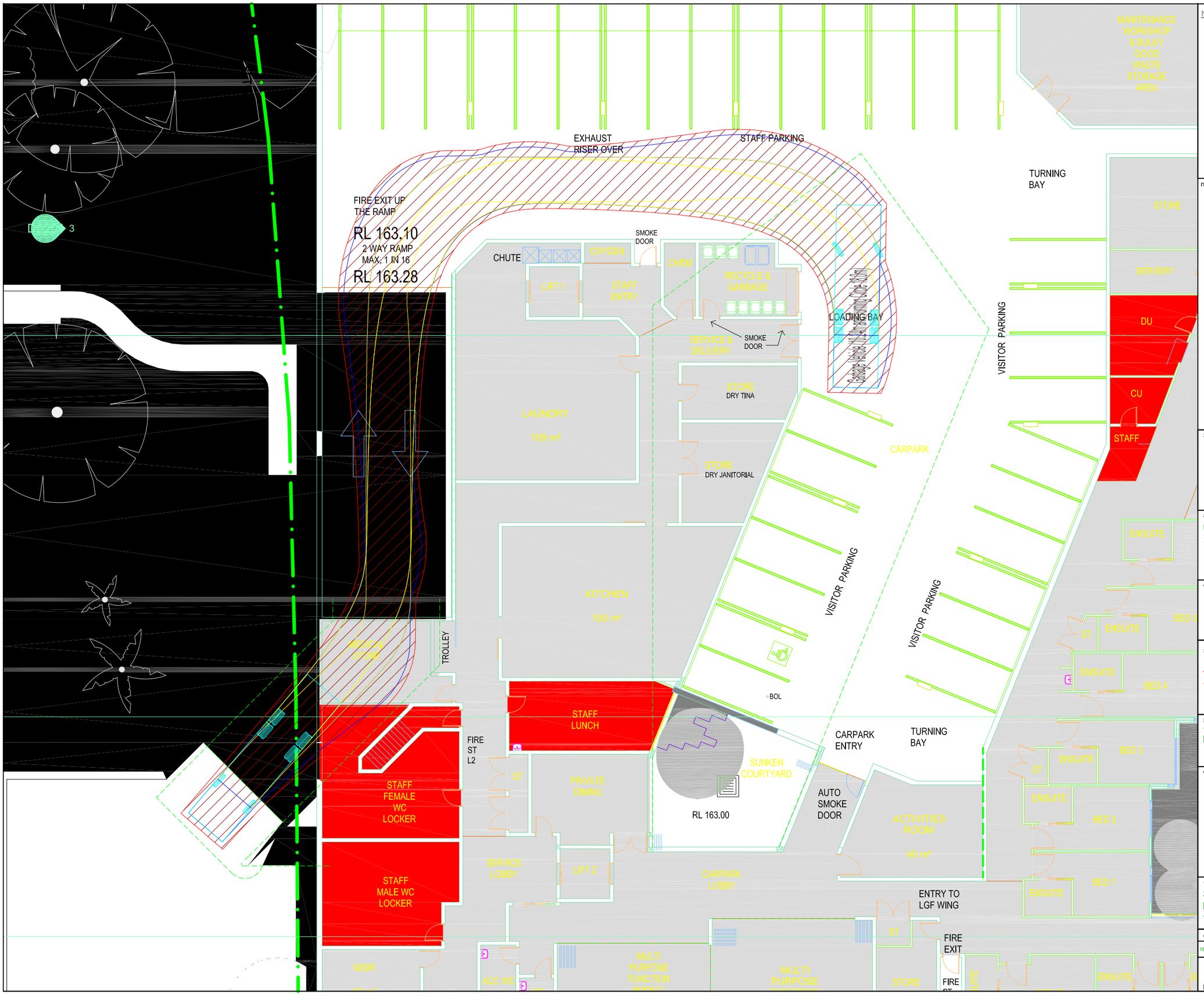
drawing title

Swept Path Analysis
Basement Level 1 - Egress and Circulation
10.24m Garbage Truck Design Vehicle

drawn:	checked:	date:
NC	VD	28-08-2018

16.480d07v01 TRAFFIX [2018-08-28] - Design Review.dwg

project no.	drawing phase.	drawing no.	rev
16.480	-	TX.06	A



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no.	revision note	by.	date

Swept Path Legend:

- Wheel Path
- Vehicle Body Envelope
- Clearance Envelope (300mm)

architect

Morrison Design Partnership Pty Ltd
Suite 302, 69 Christie Street
St. Leonards NSW 2065

client

scale

1:200 @ A3

0m 2 4 6 8

project

181 Forest Way
Belrose NSW 2085

drawing prepared by

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Surry Hills NSW 2010

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Strawberry Hills NSW 2012

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f: +61 2 9380 4481
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traffix
traffic & transport planners

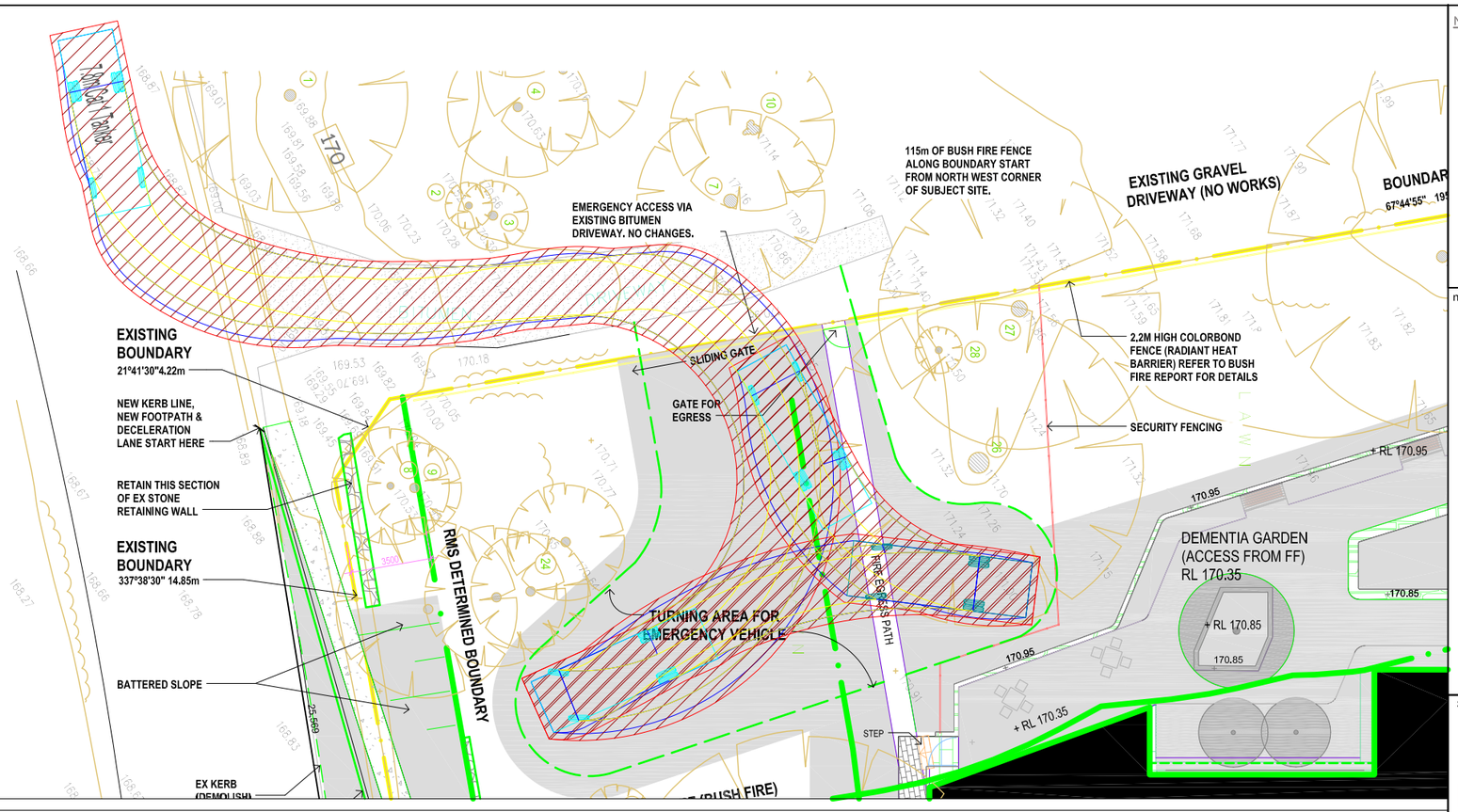
drawing title

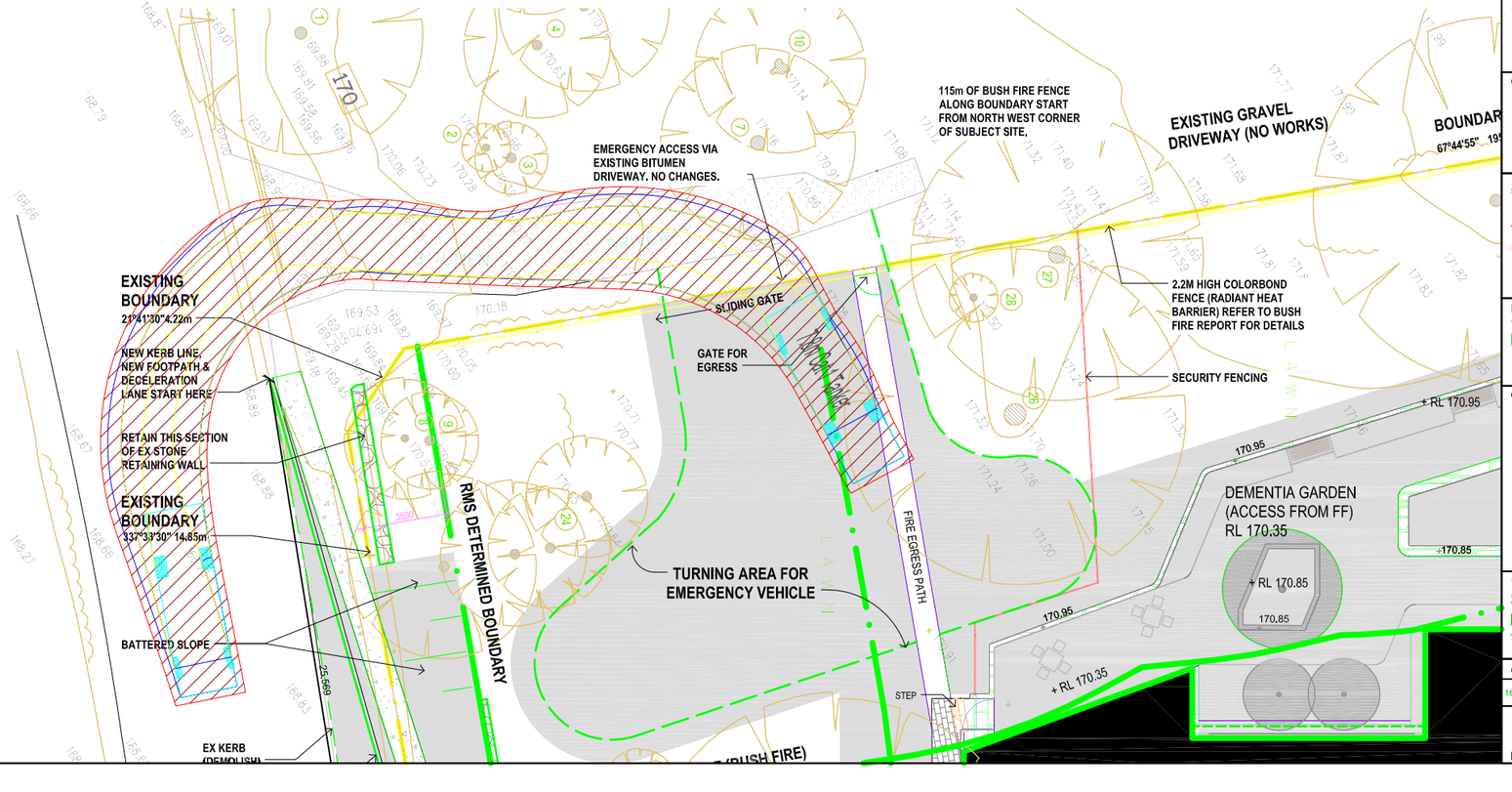
Swept Path Analysis
Basement Level 1 - Circulation and Egress
10.24m Garbage Truck Design Vehicle

drawn:	checked:	date:
NC	VD	28-08-2018

16.480d07v01 TRAFFIX [2018-08-28] - Design Review.dwg

project no.	drawing phase.	drawing no.	rev
16.480	-	TX.07	A





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no.	revision note	by.	date

Swept Path Legend:

- Wheel Path
- Vehicle Body Envelope
- Clearance Envelope (300mm)

architect

Morrison Design Partnership Pty Ltd
Suite 302, 69 Christie Street
St. Leonards NSW 2065

client

scale

1:250 @ A3

0m 2 4 6 8

project

181 Forest Way
Belrose NSW 2085

drawing prepared by

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e: info@traffix.com.au

traffix
traffic & transport planners

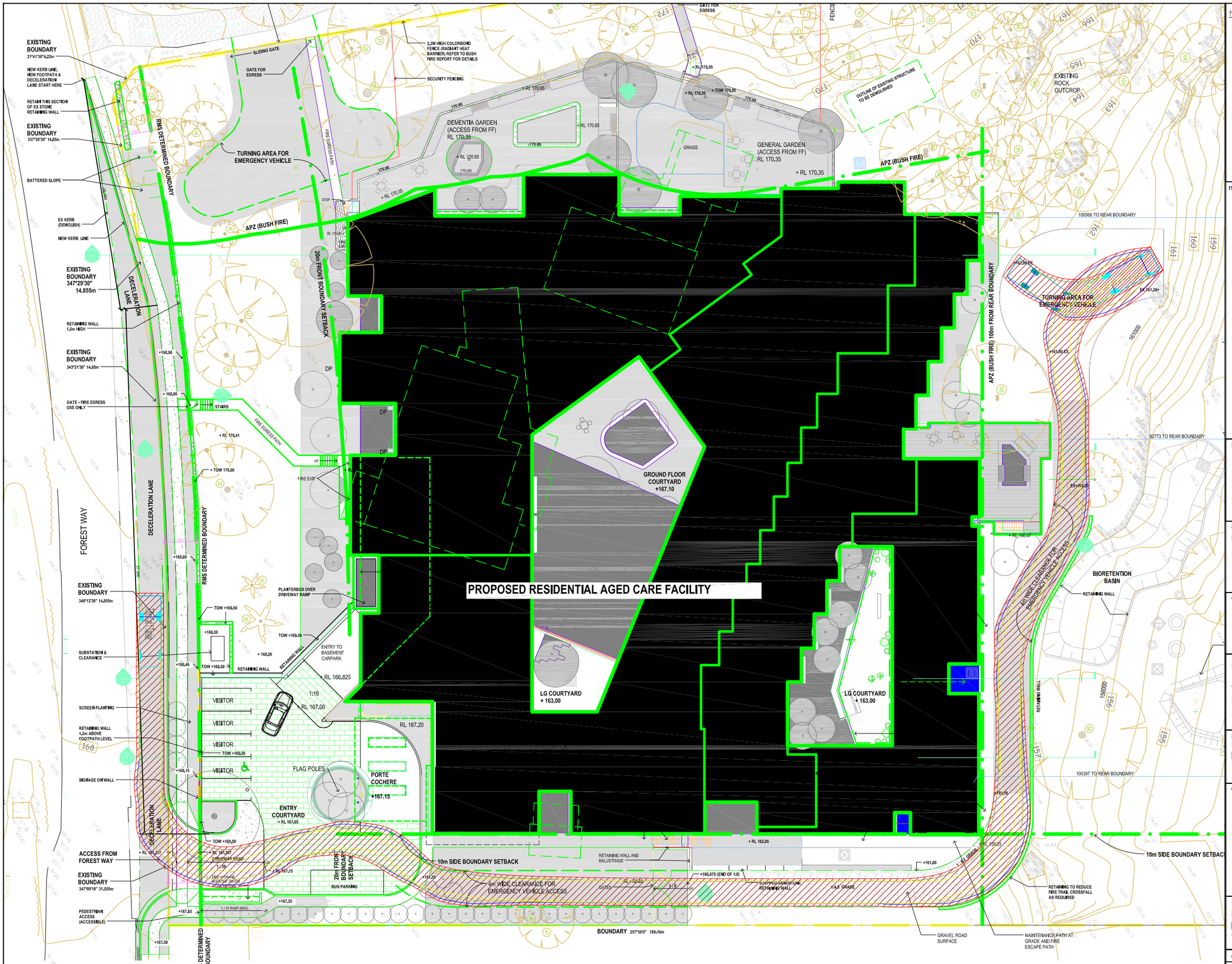
drawing title

Swept Path Analysis
Fire Trail (Northeast Area) - Ingress and Egress
7.8m Category 1 (Fire Truck) Design Vehicle

drawn:	checked:	date:
NC	VD	28-08-2018

16.480d07v01 TRAFFIX [2018-08-28] - Design Review.dwg

project no.	drawing phase.	drawing no.	rev
16.480	-	TX.08	A



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no.	revision note	by.	date

Swept Path Legend:

- Wheel Path
- Vehicle Body Envelope
- Clearance Envelope (300mm)

architect

Morrison Design Partnership Pty Ltd
Suite 302, 69 Christie Street
St. Leonards NSW 2065

client

scale

1:400 @ A3

0m 4 8 12 16

project

181 Forest Way
Belrose NSW 2085

drawing prepared by

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traffic and transport planners

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Surry Hills NSW 2010

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Strawberry Hills NSW 2012

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f: +61 2 9380 4481
e: info@traffix.com.au

traffix
traffic & transport planners

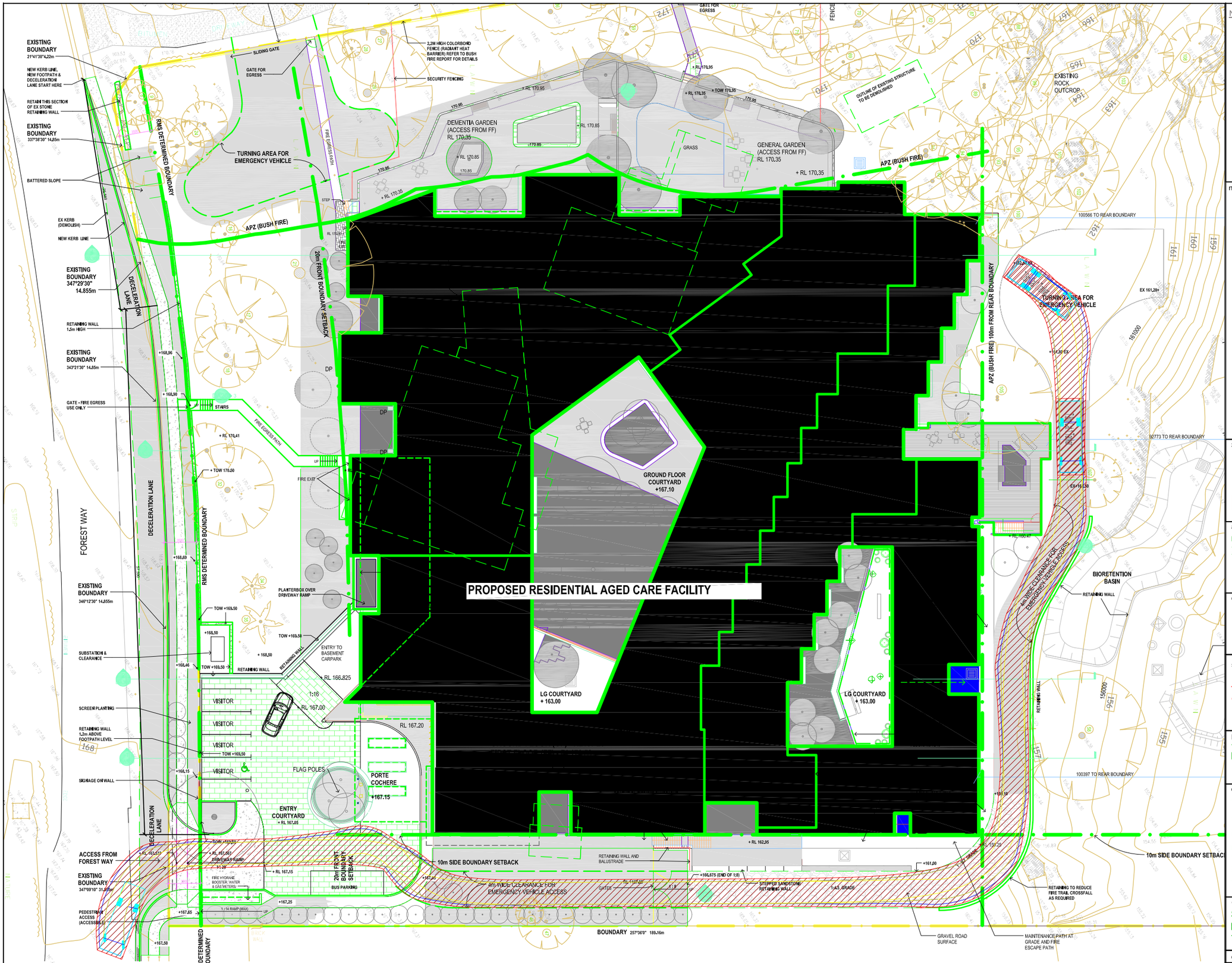
drawing title

Swept Path Analysis
Fire Trail (Rear Area) - Ingress
7.8m Category 1 (Fire Truck) Design Vehicle

drawn:	checked:	date:
NC	VD	28-08-2018

16.480d07v01 TRAFFIX [2018-08-28] - Design Review.dwg

project no.	drawing phase.	drawing no.	rev
16.480	-	TX.09	A



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no.	revision note	by.	date

Swept Path Legend:

- Wheel Path
- Vehicle Body Envelope
- Clearance Envelope (300mm)

architect

Morrison Design Partnership Pty Ltd
Suite 302, 69 Christie Street
St. Leonards NSW 2065

client

scale

1:400 @ A3

0m 4 8 12 16

project

181 Forest Way
Belrose NSW 2085

drawing prepared by

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traffic and transport planners

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PO Box 1124
Strawberry Hills NSW 2012

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f: +61 2 9380 4481
e: info@traffix.com.au

traffix
traffic & transport planners

drawing title

Swept Path Analysis
Fire Trail (Rear Area) - Egress
7.8m Category 1 (Fire-Truck) Design Vehicle

drawn:	checked:	date:
NC	VD	28-08-2018

16.480d07v01 TRAFFIX [2018-08-28] - Design Review.dwg

project no.	drawing phase.	drawing no.	rev
16.480	-	TX.10	A

Appendix C

RMS Correspondence

6 June 2018

Our Reference: SYD17/01004/09 (A22630902)
Council Ref: DA2017/0697

The General Manager
Northern Beaches Council
PO Box 1336
Dee Why NSW 2099

Attention: Luke Perry

Dear Sir/Madam,

PROPOSED AGED CARE FACILITY
181 FOREST WAY, BELROSE

Reference is made to Council's correspondence dated 27 July 2017, regarding the abovementioned Application which was referred to Roads and Maritime Services (Roads and Maritime) for concurrence under Section 138 of the *Roads Act, 1993*.

Roads and Maritime has reviewed the submitted application and has had multiple correspondences between the developer to work towards and access solution acceptable to Roads and Maritime. Roads and Maritime held a meeting with the developer on 19 March 2018 where it was agreed to provide a deceleration lane into the site for safe and efficient access. Roads and Maritime has since re-assessed the development application and would provide concurrence under Section 138 of the *Roads Act, 1993* to remove any redundant driveway(s) and to construct a deceleration lane on Forest Way subject to the following conditions being included in any determination issued by Council:

1. Roads and Maritime has previously resumed and dedicated a strip of land as road along the Forest Way frontage of the subject property, as shown by grey colour on the attached Aerial – "X"

   Therefore all buildings and structures, together with any improvements integral to the future use of the site are to be wholly within the freehold property (unlimited in height or depth), along the Forest Way boundary.

   However, the proponent should be advised that the Deceleration Lane and any associated works should be dedicated as public road. The property boundary should be suitably adjusted.

2. Any redundant driveway(s) on the Forest Way boundary shall be removed and replaced with kerb and gutter to match existing. The design and construction of the kerb and gutter on Forest Way shall be in accordance with roads and maritime requirements. Details of these requirements should be obtained from roads and maritime services, manager developer works, State Wide Delivery, Parramatta (telephone 9598 7798).

A plan checking fee (amount to be advised) and lodgement of a performance bond may be required from the applicant prior to the release of the approved road design plans by Roads and Maritime.

3. All vehicles are to enter and exit the site in a forward direction.

4. All vehicles are to be wholly contained on site before being required to stop.

5. Sight distances from the proposed vehicular crossing to vehicles on Warringah Road are to be in accordance with the Austroads '*Guide to Traffic Engineering Practice, Part 5: Intersections at Grade, Section 6.2 – Sight Distance'* and AS 2890. Vegetation and landscaping / fencing must not hinder sight lines to and from the vehicular crossings to motorists, pedestrians and cyclists.

6. The proposed deceleration lane and access into the site shall be designed to meet Roads and Maritime requirements, and endorsed by a suitably qualified practitioner. The design requirements shall be in accordance with AUSTROADS and other Australian Codes of Practice. The certified copies of the civil design plans shall be submitted to Roads and Maritime for consideration and approval prior to the release of the Construction Certificate by the Principal Certifying Authority and commencement of road works.

   The developer may be required to enter into a Works Authorisation Deed (WAD) for the abovementioned works. Please note that the WAD will need to be executed prior to Roads and Maritime assessment of the detailed civil design plans.

   Roads and Maritime fees for administration, plan checking, civil works inspections and project management shall be paid by the developer prior to the commencement of works.

7. The developer is to submit design drawings and documents relating to the excavation of the site and support structures to Roads and Maritime for assessment, in accordance with Technical Direction GTD2012/001.

   The developer is to submit all documentation at least six (6) weeks prior to commencement of construction and is to meet the full cost of the assessment by Roads and Maritime.

   Details and any enquiries should be forwarded to Mr Suppiah Thillai at Suppiah.Thillai@rms.nsw.gov.au or Phone at 8849 2114

   If it is necessary to excavate below the level of the base of the footings of the adjoining roadways, the person acting on the consent shall ensure that the owner/s of the roadway is/are given at least seven (7) day notice of the intention to excavate below the base of the footings. The notice is to include complete details of the work.

8. Detailed design plans and hydraulic calculations of any changes to the stormwater drainage system in Forest Way are to be submitted to Roads and Maritime for approval, prior to the commencement of any works.

   Details and any enquiries should be forwarded to Mr Suppiah Thillai at Suppiah.Thillai@rms.nsw.gov.au or Phone at 8849 2114.

   A plan checking fee will be payable and a performance bond may be required before Roads and Maritime approval is issued. With regard to the Civil Works requirement please contact the Roads and Maritime Project Engineer, External Works Ph: 8849 2114.

9. All demolition and construction vehicles are to be contained wholly within the site and vehicles must enter the site before stopping. A construction zone will not be permitted on Forest Way.

10. A Road Occupancy Licence should be obtained from Transport Management Centre for any works that may impact on traffic flows on Forest Way during construction activities.

Should you have any further inquiries in relation to this matter, please do not hesitate to contact Hans Pilly Mootanah on telephone 8849 2076 or by email at development.sydney@rms.nsw.gov.au.

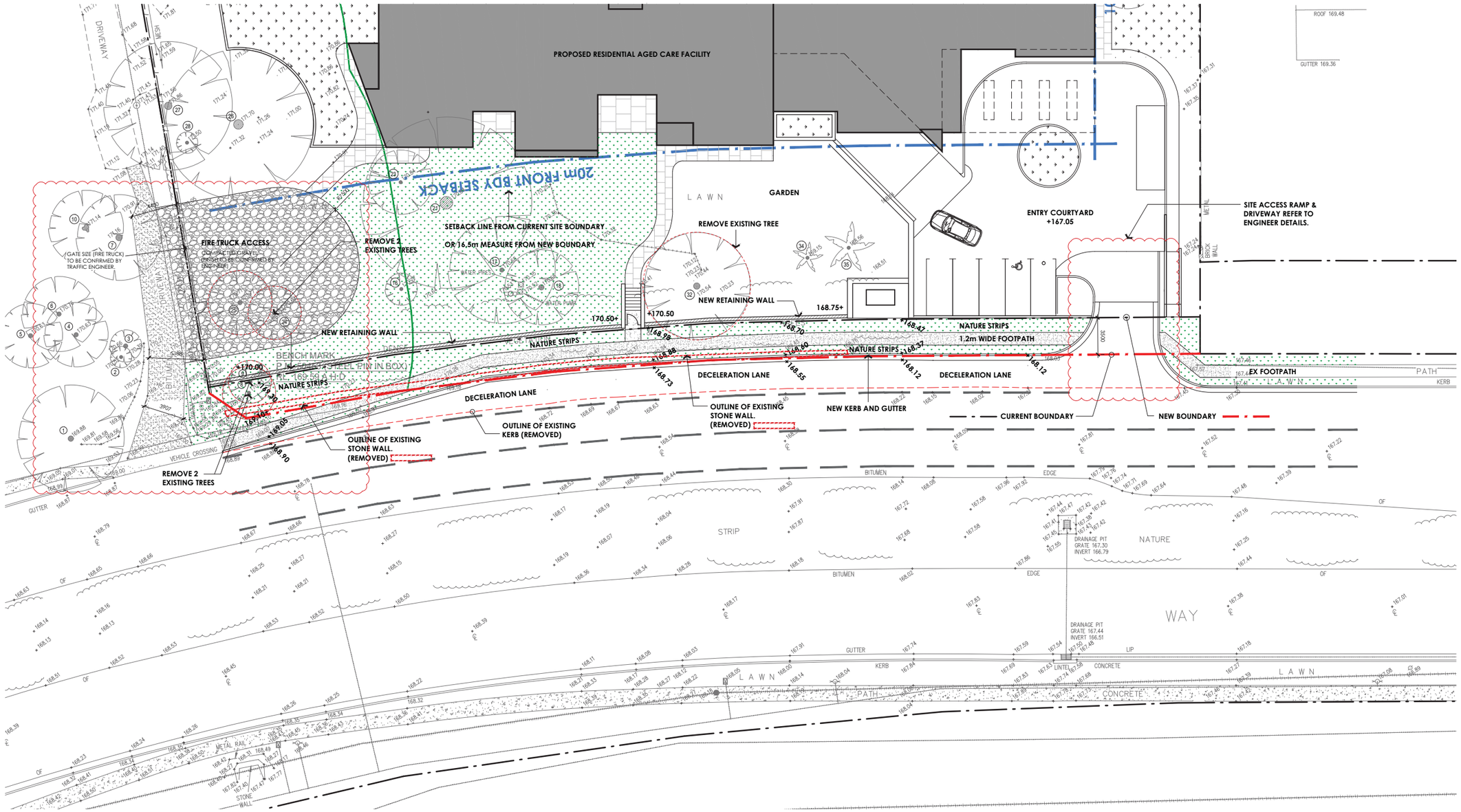
Yours sincerely,

Ahsanul Amin
A/Senior Land Use Planner
Sydney Division – North West Precinct


"X"
CALEYI WAY
LYNDHURST WAY
6
DP285490
OCEAN VIEW WAY
9
DP285490
FOREST WAY
FOREST WAY
12
DP737255
7
DP237377
90
DP587483
RALSTON AVE

Appendix D

Proposed Deceleration Lane



DECELERATION LANE
SCALE 1:200

LEGEND - SITE PLAN

- PROPOSED BUILDING
- SITE BOUNDARY (NEW)
- SITE BOUNDARY (CURRENT)
- LANDSCAPED AREA
- FOOTPATH
- FENCE

NOTES

APZ - ASSET PROTECTION ZONE. REFER TO BUSH FIRE REPORT FOR DETAILS

1. **STORMWATER ENGINEERING REFER TO ENGINEER DESIGN DOCUMENTS FOR DETAILS.**

architecture
interior design
project management

NSW ARB REG ARCHITECT: G. OLLERTON #7621
ACN: 001 595 268 ABN: 44 001 595 268 morrisondesign@mdpa.com.au
Suite 302 69 Christie Street St. Leonards NSW 2065 | 02 99665566 | www.mdpa.com.au

Thursday, 12 July 2018 5:29:58 PM

SKETCH PLANS

PRELIMINARY

PROJECT:

181 FOREST WAY
BELROSE, NSW

DRAWING TITLE:

SITE PLAN -
DECELERATION LANE & STREET FRONTAGE DETAILS

N

N:\2951 181 Forest Way BELROSE\WORKING\2951-ADD-SITE PLAN.dwg

REV	DATE	AMENDMENT	INITIALS	CHECK
A	2018-05-16	FOR COORDINATION	VC	
B	2018-07-12	FOR COORDINATION	VC	

PROJECT NO.	**DRAWING NO.**	**REVISION**	
2951	**DA051**	B	
SCALE	: 1:200@A1		
DRAWN	: VC		
PROJECT PRINCIPAL	: M RALPH		
DATE	: May 2018		

Morrison Design Partnership
ARCHITECTS
Since 1969