

Proposed Seniors Living & Commercial Development

**Lot 1, 5 Skyline Place,
Frenchs Forest**

TRAFFIC AND PARKING ASSESSMENT REPORT

24 February 2021

Ref 20672

TABLE OF CONTENTS

1. INTRODUCTION	1
2. PROPOSED DEVELOPMENT	5
3. TRAFFIC ASSESSMENT	14
4. PARKING ASSESSMENT	25

APPENDIX A	TRAFFIC SURVEY DATA
APPENDIX B	ROAD UPGRADE PLANS

LIST OF ILLUSTRATIONS

Figure 1	Location
Figure 2	Site
Figure 3	Road Hierarchy
Figure 4	Existing Traffic Controls
Figure 5	Public Transport

1. INTRODUCTION

This report has been prepared to accompany a development application to Council for a seniors living and commercial development proposal to be located at Lot 1, 5 Skyline Place, Frenchs Forest (Figures 1 and 2).

Development consent has previously been issued for the subdivision of the site into two lots, the demolition of the existing light industrial buildings on “Lot 2” and the construction of a new building comprising approximately 1,750m² of commercial space, 55 independent seniors living apartments (ILUs), 130 car parking spaces and associated common and ancillary areas (DA2018/0995). Vehicular access to the site was approved to be provided via Skyline Place. Construction of Stage 1 is scheduled to commence early 2021.

This application involves the demolition of the existing light industrial buildings on “Lot 1” and the construction of a new building comprising 941m² of commercial space, 133 ILUs (including approximately 10% affordable/disability housing), 232 car parking spaces and associated common and ancillary areas. Vehicular access to the Lot 1 development is also to be provided via Skyline Place.

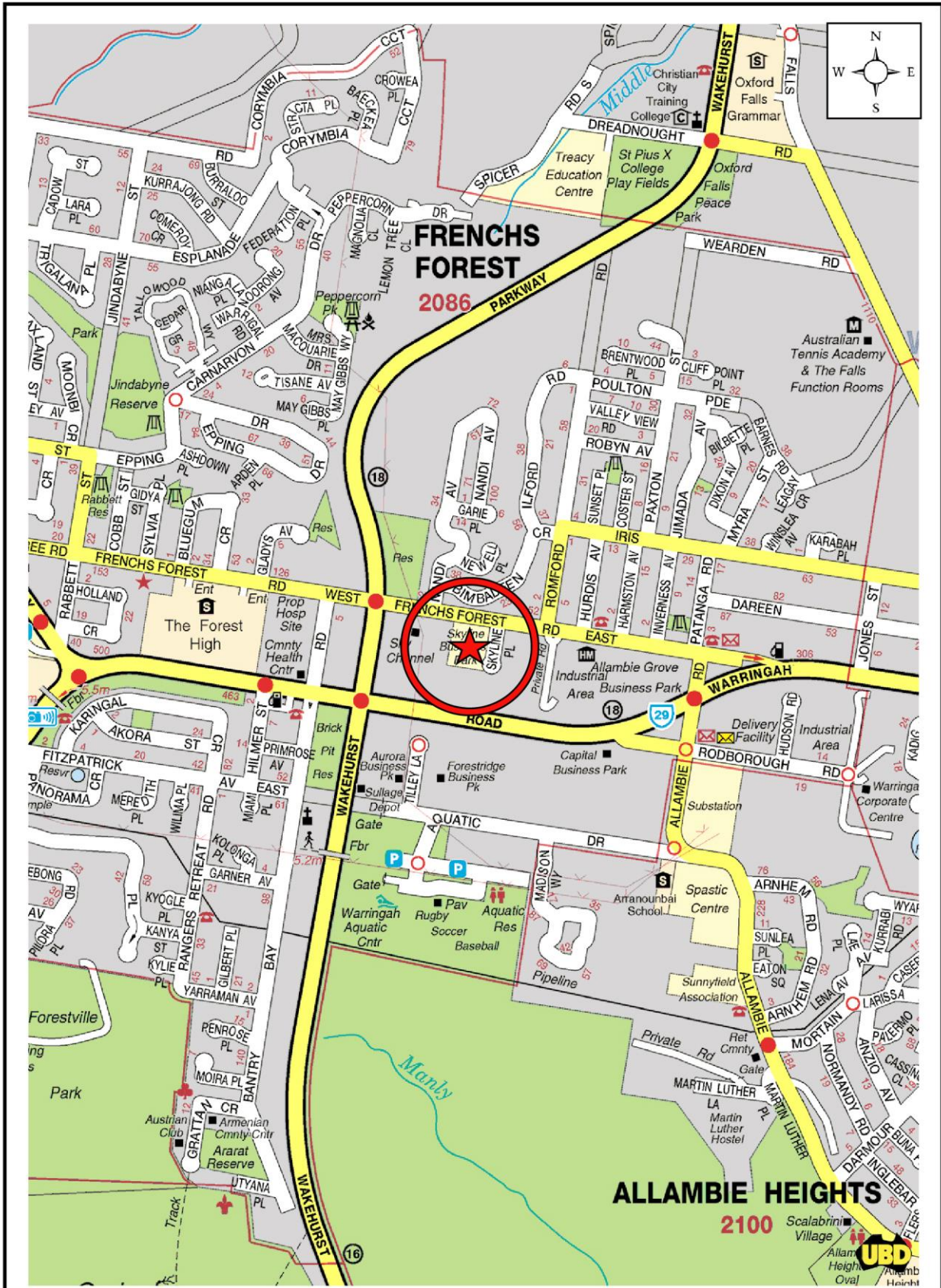
The RMS has recently completed upgrading the road network in the vicinity of the new Northern Beaches Hospital, including widening Frenchs Forest Road from two to four lanes between Forest Way and Allambie Road, with new traffic lights and signalised pedestrian crossings to be installed at key intersections. Details of the road improvements are provided in Chapter 3 of this report.

The site is located in close proximity to a range of alternative transport options, including bus stops along Frenchs Forest Road East, as well as being with walking distance to the new hospital and nearby shops and services, including within the adjoining Lot 2 development. This invariably has the potential to reduce the traffic and parking demands that may be generated by the site.

In essence, the site is ideally located to discourage private car ownership and usage, and to encourage greater use of alternate forms of transport such as walking, cycling or public transport. Given the site's proximity to the new Northern Beaches Hospital, the site is considered to be located in a prime location for a seniors living development.

The purpose of this report is to assess the traffic and parking implications of the development proposal and to that end this report:

- describes the site and provides details of the development proposal
- reviews the road network in the vicinity of the site, and the traffic conditions on that road network
- reviews the public transport services available in the vicinity of the site
- estimates the traffic generation potential of the development proposal based on the rates used for the Stage 1 development, and compares it to the existing development
- assesses the traffic implications of the development proposal in terms of road network capacity
- assesses the adequacy and suitability of the quantum of off-street car parking and loading provided on the site.



VARGA TRAFFIC PLANNING Pty Ltd
Traffic and Parking Consultants

LOCATION
FIGURE 1



2. PROPOSED DEVELOPMENT

Site

The subject site is located on the south-western corner of the Frenchs Forest Road East and Skyline Place intersection and is known as No.5 Skyline Place. The site has street frontages of 104m in length to Frenchs Forest Road East, approximately 120m in length to Skyline Place and occupies a site area of 12,627m².

A recent aerial image of the site and its surroundings (taken in December 2020) is reproduced below, which illustrates the completed upgrade works occurring along Frenchs Forest Road East.



The existing warehouse and commercial office buildings on the site have a cumulative floor area of approximately 6,475m², as set out in the table on the following page.

Off-street parking is currently provided for approximately 170 cars in a large at-grade car parking area on the northern portion of the site. Vehicular access to the site is provided via an existing entry/exit driveway located midway along the Skyline Place site frontage.

EXISTING DEVELOPMENT	Building A	Building B	Building C	Building D	Building E	TOTAL
FLOOR SPACE						
Ground Floor	1,102	778	762	829	738	4,209
First Floor	447	292	284	377	433	1,833
Second Floor					433	433
TOTAL BUILDING AREA	1,549	1,070	1,046	1,206	1,604	6,475

USES	A	B	C	D	E	
Ground Floor - Office/Showroom	447	145	141	189		921
First Floor - Offices	447	292	284	377	433	1,833
Second Floor - Offices					433	433
TOTAL OFFICES	894	437	425	566	866	3,187
TOTAL WAREHOUSE / GYM	655	633	622	641	738	3,288
TOTAL BUILDING	1,549	1,070	1,046	1,206	1,604	6,475

Surveys of peak hour traffic activity (Appendix A) undertaken in November 2016, have found that at the time, the existing uses on the site generated 98 vehicles per hour (vph) during the morning peak period and 82 vph during the afternoon peak period.

It is understood however, that approximately 10% of the existing tenancies on the site at the time of the surveys were *vacant* and accordingly, the existing uses of the site could be expected to generate up to 108 vph and 90 vph during the morning and afternoon peak periods respectively, if all the tenancies were fully occupied.

Approved Development – DA2018/0995

As noted in the foregoing, development consent has previously been issued for the subdivision of the site into two lots, as follows:

Lot 1:	7,811m ²
Lot 2:	4,759m ²
TOTAL AREA:	12,568m²

The approved works also included the demolition of the existing commercial and warehouse building on Lot 2 – i.e. Building E – and the construction of a new seniors living and commercial building, comprising 55 seniors living residential apartments (ILUs), 1,750m² of commercial space and associated common and ancillary areas.

Off-street parking for the Lot 2 development was approved to be provided for a total of 130 spaces, in accordance with Council's *DCP* and *State Environmental Planning Policy (Housing for Senior or People with a Disability) 2004* requirements.

The majority of parking was approved to be provided in a new two-level basement car parking area, with vehicular access provided via a new entry/exit driveway located off Skyline Place. A small number of parking spaces were approved to be provided along a new at-grade private access road, constructed along Lot 2's southern boundary. The private access road was designed with a roadway width of 6m and a cul-de-sac turning head at the far western end with a diameter of 15m. In addition, the approved design included a drop-off area located directly outside the main entrance to the seniors living buildings. Vehicular access to the private access road was approved to be provided via a new entry/exit driveway located at the southern end of Lot 2's Skyline Place site frontage, adjacent to the basement access driveway.

Loading/servicing for the Lot 2 development was approved to be undertaken by a variety of light commercial vehicles such as vans, utilities and the like, which are capable of fitting into a conventional parking space. Garbage collection was to be undertaken by Council's waste contractor and collected from the private access road. The private road turning head was designed sufficiently large enough to allow all vehicles up to and including an 8.8m long MRV trucks the ability to turn around and exit the site in a forward direction.

Proposed Development – Lot 1

This application involves the demolition of the existing light industrial buildings on "Lot 1" and the construction of a new building integrated with the Lot 2 building. In this regard, the Lot 1 development includes a total of 133 seniors living residential apartments (including approximately 10% affordable/disability housing), as follows:

Project independence:	10 rooms
Studio apartments:	4
1 bedroom apartments:	5
2 bedroom apartments:	41 (inc. 18 with study)
3 bedroom apartments:	73
TOTAL APARTMENTS:	133

The proposed Lot 1 development also includes a number of commercial tenancies with a cumulative floor area of approximately 941m². Similar to Lot 2, the commercial space is expected to comprise Allied Health, restaurant, co-working space, dentistry, hospital support, home care provision, day care/respice, etc.

Off-street parking for the Lot 1 development is proposed to be provided for a total of 232 cars in a new two-level basement parking area, in accordance with Council's *DCP* and *State Environmental Planning Policy (Housing for Senior or People with a Disability) 2004* requirements.

Vehicular access to the Lot 1 basement car park is to be provided via the Lot 2 basement access driveway located off the Skyline Place site frontage. Additional vehicular egress from the Lot 1 basement car park is also proposed to be provided via a new exit-only driveway located off the Skyline Place cul-de-sac turning head. It is pertinent to note that ingress and egress movements for the Lot 2 development remain *unchanged*.

In addition to the car parking provided in the two basement levels, 3 at-grade parking spaces are also proposed to be provided on Lot 1, in addition to 5 approved (albeit reconfigured) at-grade parking spaces on Lot 2, all of which are accessed via Lot 2's approved entry/exit driveway off Skyline Place.

Similar to the approved development on Lot 2, loading/servicing for the proposed development on Lot 1 is also expected to be undertaken by a variety of light commercial vehicles such as vans, utilities and the like. In this regard, a dedicated van loading bay is proposed to be provided within the upper level basement, adjacent to the passenger lifts.

Garbage collection is also expected to be undertaken by Council's waste contractor. A dedicated on-site bin collection area is proposed in the south-eastern corner of the ground floor level, adjacent to Lot 1's proposed exit-only driveway, whereby trucks will reverse off the cul-de-sac onto the site. Once loaded, the truck will exit the site in a forward direction.

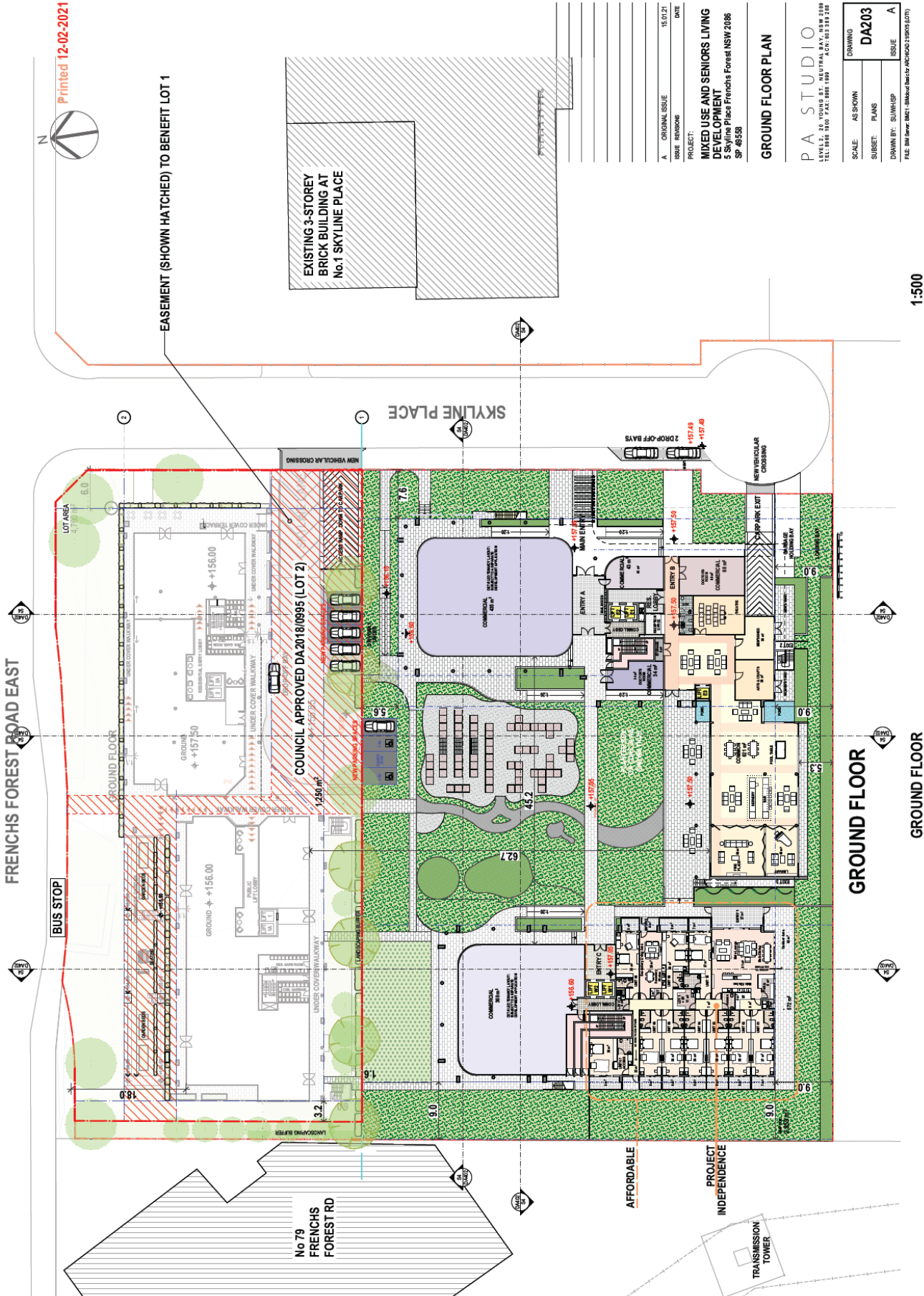
Plans of the proposed development on Lot 1 have been prepared by *PA Studio* and are reproduced in the following pages.

Printed 12-02-2021



EASEMENT (SHOWN HATCHED) TO BENEFIT LOT 1

EXISTING 3-STORY BRICK BUILDING AT No.1 SKYLINE PLACE



1:500

A	ORIGINAL ISSUE	15.01.21	DATE
ISSUE REVISIONS			
PROJECT:			
MIXED USE AND SENIORS LIVING DEVELOPMENT			
5 Skyline Place Frenchs Forest NSW 2086			
SP 461538			

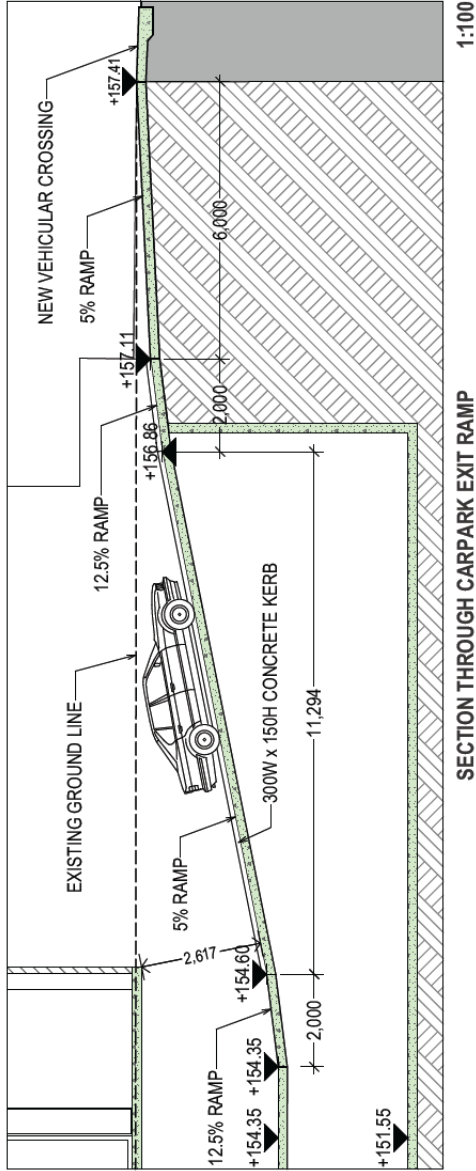
GROUND FLOOR PLAN

PA STUDIO
 LEVELS: 30 YONGE ST., NUTRAL BAY, NSW 2038
 TEL: 0025 0100 FAX: 0065 1199 ACN: 603 339 238

DRAWING	DA203
SCALE:	AS SHOWN
SUBSET:	PLANS
DRAWN BY:	SU/WHIP
ISSUE	A

GROUND FLOOR

Printed 12-02-2021



SECTION THROUGH CARPARK EXIT RAMP

1:100

ORIGINAL ISSUE	15.01.21
ISSUE REMOVED	DATE
PROJECT:	
MIXED USE AND SENIORS LIVING DEVELOPMENT	
9 Skyline Place Friends Forest NSW 2086	
SP 4855B	

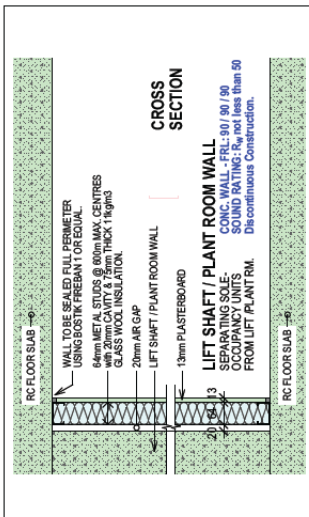
DETAILS & SECTION THROUGH EXIT RAMP

PA STUDIO
 LEVEL 2, 20 YOUNG ST. NEUTRAL BAY, NSW 2086
 TEL: 002 9393 1900 FAX: 002 9393 1900 ACH: 002 9393 2000

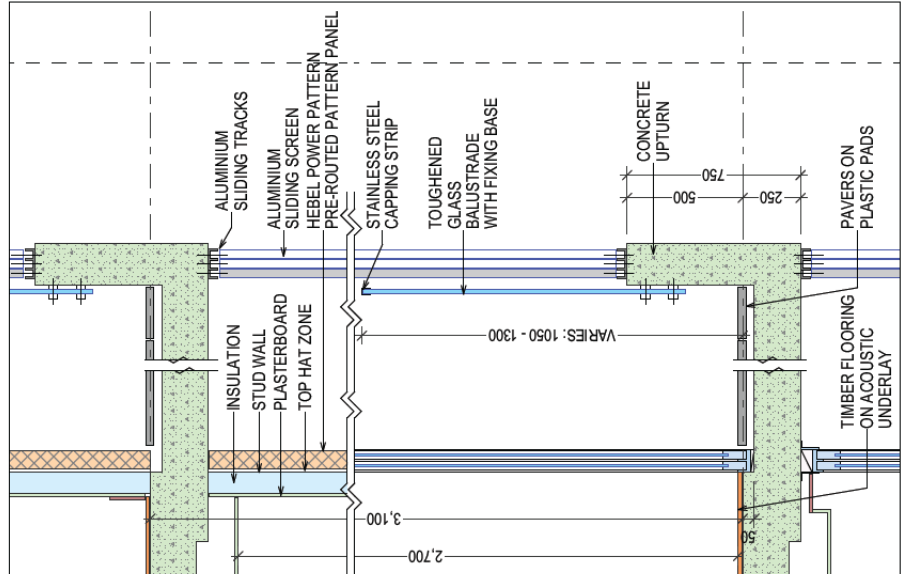
SCALE:	AS SHOWN
SUBSET:	ACCESS RAMPS TO CARPARK
DRAWING:	DA601
ISSUE:	A

DRAWN BY: SU/WH/SP
 FILE: BM Lower BMAT - Mixed Use for APC/KD2 (K070).LOTT1

- Concrete Upturn**
- eliminates feelings of vertigo when standing on balcony and
 - hides untidy washing and pot plants from street
- Balconies and Narrow Balconies to most rooms**
- provide sun shading
 - provide cover allowing windows and doors to be left open in light rain
 - create additional impression of space by extending bedrooms
 - allow for pots and landscape in front of most habitable rooms
 - allow for convenient relocation and adjustment of sliding screens
 - allow access for window cleaning (eliminating requirement for abseil access)
- Sliding Screens**
- provide shade from western and eastern sun
 - will provide 60% shade factor
 - when not required to provide shade, can be parked so they do not block aspect and views from within apartments
 - are securely top hung to ensure they cannot fall out of tracks
- Clear toughened Glass Balustrading**
- will be 1.05m high above balcony floor on lower levels
 - will be 1.3m high above balcony floor on upper levels (above level 6) to provide screening from wind.



SOUND INSULATION DETAIL: LIFT/PLANT TO HABITABLE ROOM



BALCONY DETAILS

1:20

3. TRAFFIC ASSESSMENT

Road Hierarchy

The road hierarchy allocated to the road network in the vicinity of the site by the Roads and Maritime Services is illustrated on Figure 3.

Warringah Road is classified by the RMS as a *State Road* and provides the key east-west road link in the area, linking Roseville to Brookvale. It has recently completed a significant upgrade in the vicinity of the site and typically carries three traffic lanes in each direction in the vicinity of the site, with turning bays provided at key locations.

Wakehurst Parkway is also classified by the RMS as a *State Road* and provides the key north-south road link in the area, linking Seaforth to North Narrabeen. It also has recently completed a significant upgrade in the vicinity of the site. It remains with typically one traffic lane in each direction in the vicinity of the site, however carries multiple lanes in each direction in the vicinity of the Frenchs Forest Road and Warringah Road intersections.

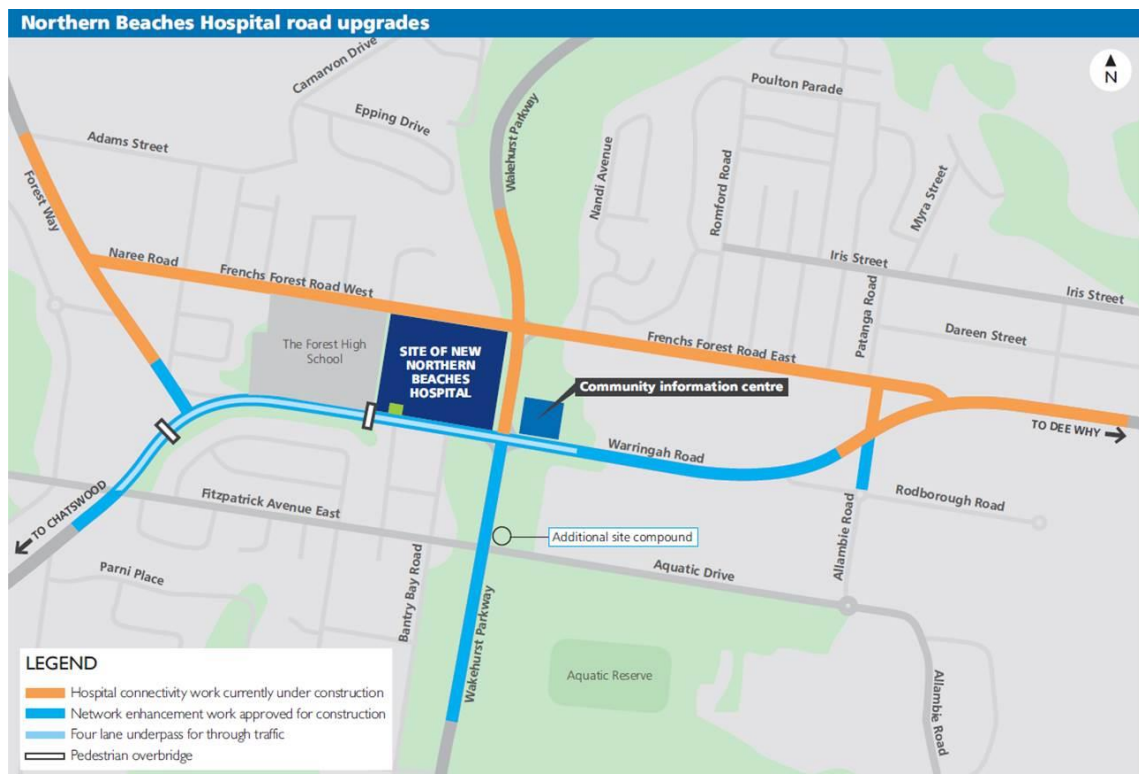
Frenchs Forest Road (East & West) is a local, unclassified road which performs the function of an east-west *collector route* through the area, linking Warringah Road to Naree Road/Forest Way. It has also been upgraded and now typically carries two traffic lanes in each direction, with kerbside parking generally prohibited during peak periods.

Skyline Place is a local, unclassified road which is primarily used to provide vehicular and pedestrian access to frontage properties. Kerbside parking is generally permitted on both sides of the road.

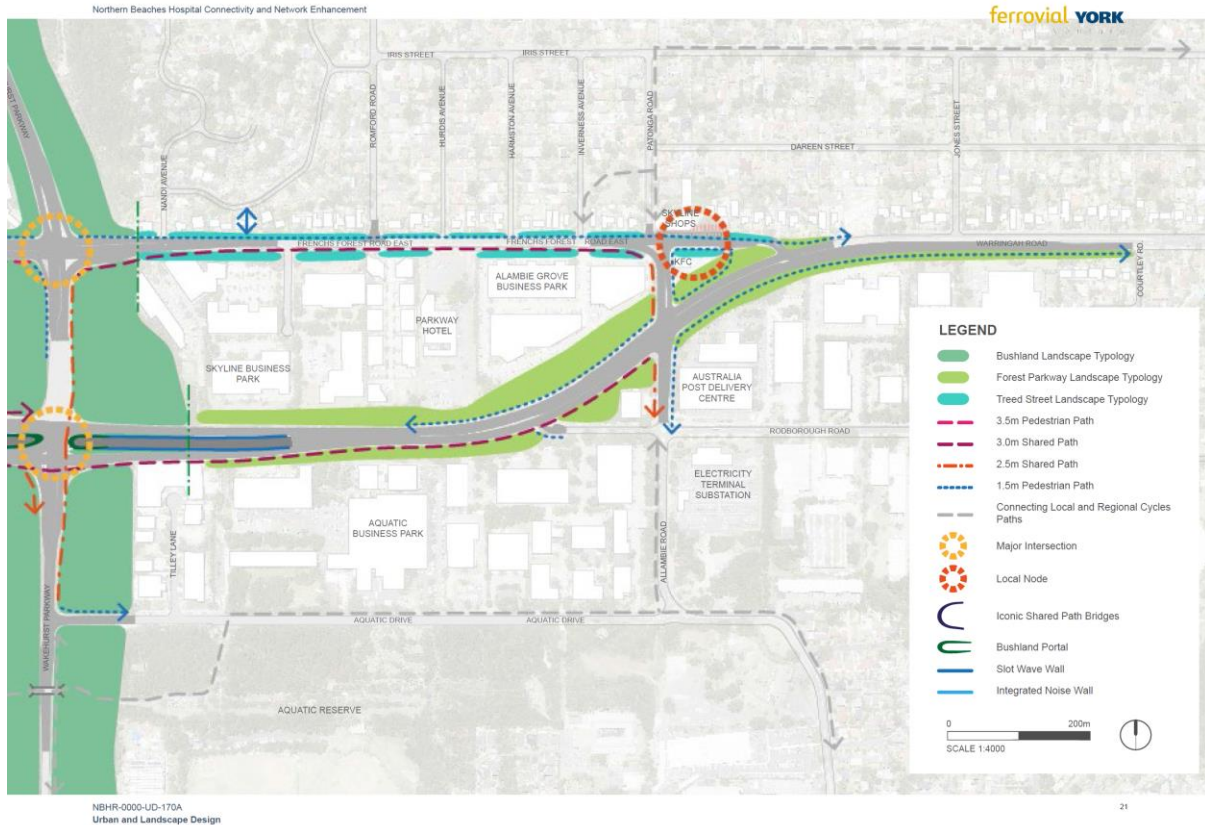
Road Network Upgrades

As mentioned in the foregoing, the RMS has recently completed significant upgrade works to the road network in the vicinity of the new Northern Beaches Hospital, including along Frenchs Forest Road East. Details of the proposed works are illustrated on the following figures and include:

- widening Frenchs Forest Road from two to four lanes between Forest Way and Allambie Road, with new traffic lights and signalised pedestrian crossings installed at key intersections
- widening and upgrading the intersection of Frenchs Forest Road with Wakehurst Parkway which now allows a right turn from Wakehurst Parkway into Frenchs Forest Road West to access the new hospital
- widening and intersection upgrades along sections of Forest Way, between Warringah Road and south of Adams Street, including a right turn bay for traffic turning from Forest Way into Naree Road
- providing four additional lanes on Warringah Road, with grade separated intersections at Forest Way, Hilmer Street and Wakehurst Parkway
- two new shared pedestrian/bicycle bridges across Warringah Road near Forest Way and Hilmer Street and new shared paths and footpaths on sections of Warringah Road, Wakehurst Parkway, Forest Way, Aquatic Drive and Allambie Road.



Source: <http://www.rms.nsw.gov.au/projects/sydney-north/northern-beaches-hospital/>

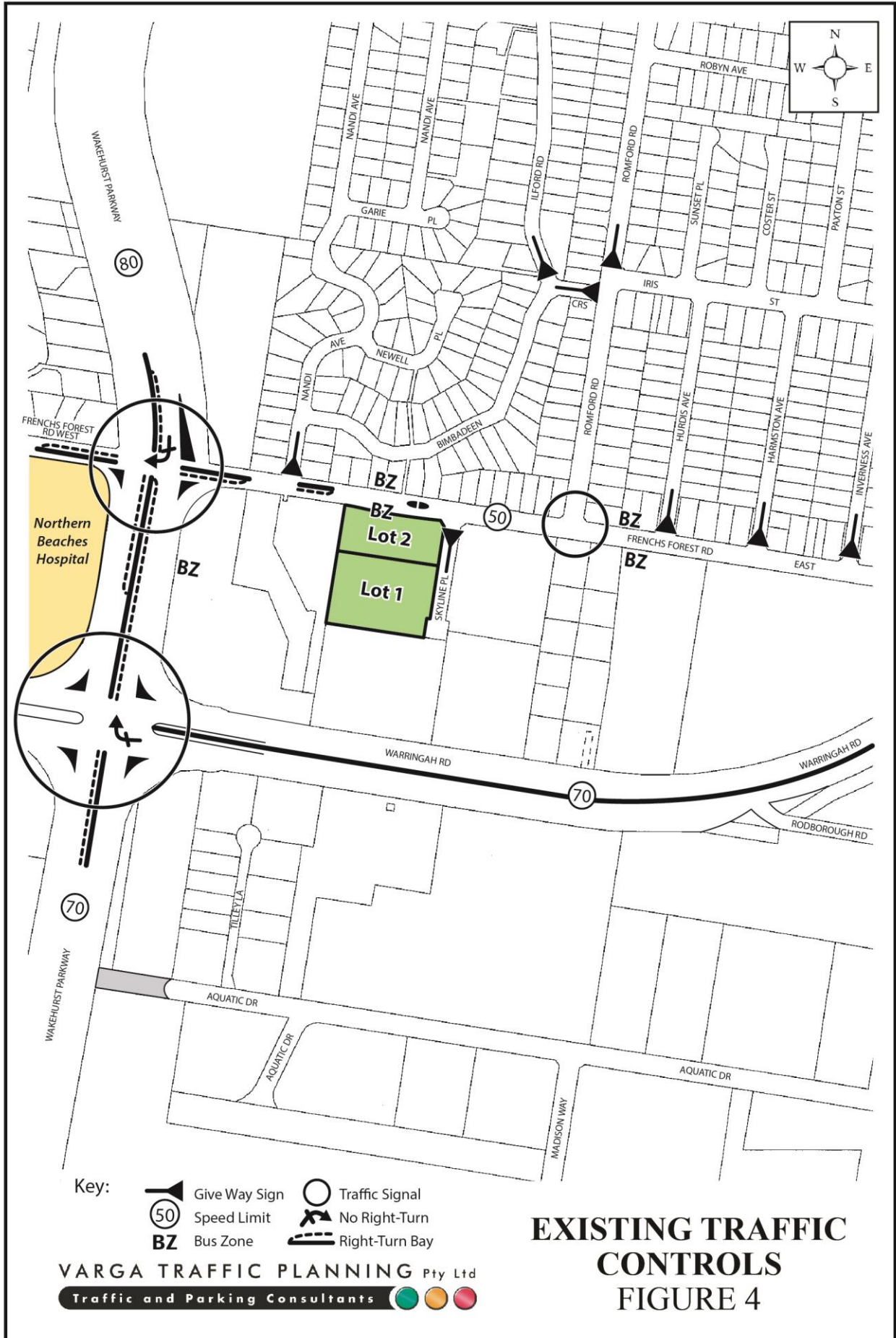


Additional plans of the road network upgrades in the vicinity of the site, as included in the *Northern Beaches Hospital Connectivity and Network Enhancement Project Urban Design and Landscape Report (June 2016)* prepared by *AECOM Australia Pty Ltd* and *Ferrovial York Joint Venture*, are reproduced in Appendix B.

Existing Traffic Controls

The existing traffic controls which apply to the road network in the vicinity of the site (prior to current roadworks) are illustrated on Figure 4. Key features of those traffic controls are:

- an 80 km/h SPEED LIMIT which applies to Wakehurst Parkway, north of Frenchs Forest Road
- a 70 km/h SPEED LIMIT which applies to Wakehurst Parkway, south of Frenchs Forest Road, and also Warringah Road



- a 50 km/h SPEED LIMIT which applies to Frenchs Forest Road, Skyline Place and all other local roads in the area
- a GRADE SEPARATED SIGNALISED INTERCHANGE at the intersection of Wakehurst Parkway and Warringah Road
- TRAFFIC SIGNALS in Forest Road where it intersects with Wakehurst Parkway and also Romford Road, with pedestrian crossings on all approaches.

Existing Public Transport Services

There are currently five bus routes which operate within approximately 400m walking distance of the site along Frenchs Forest Road East, as illustrated on Figure 5.

Bus route 141 operates between Austlink and Manly via Balgowlah, Seaforth, Northern Beaches Hospital, Frenchs Forest, Glenrose Shopping Centre and Belrose, 7 days per week.

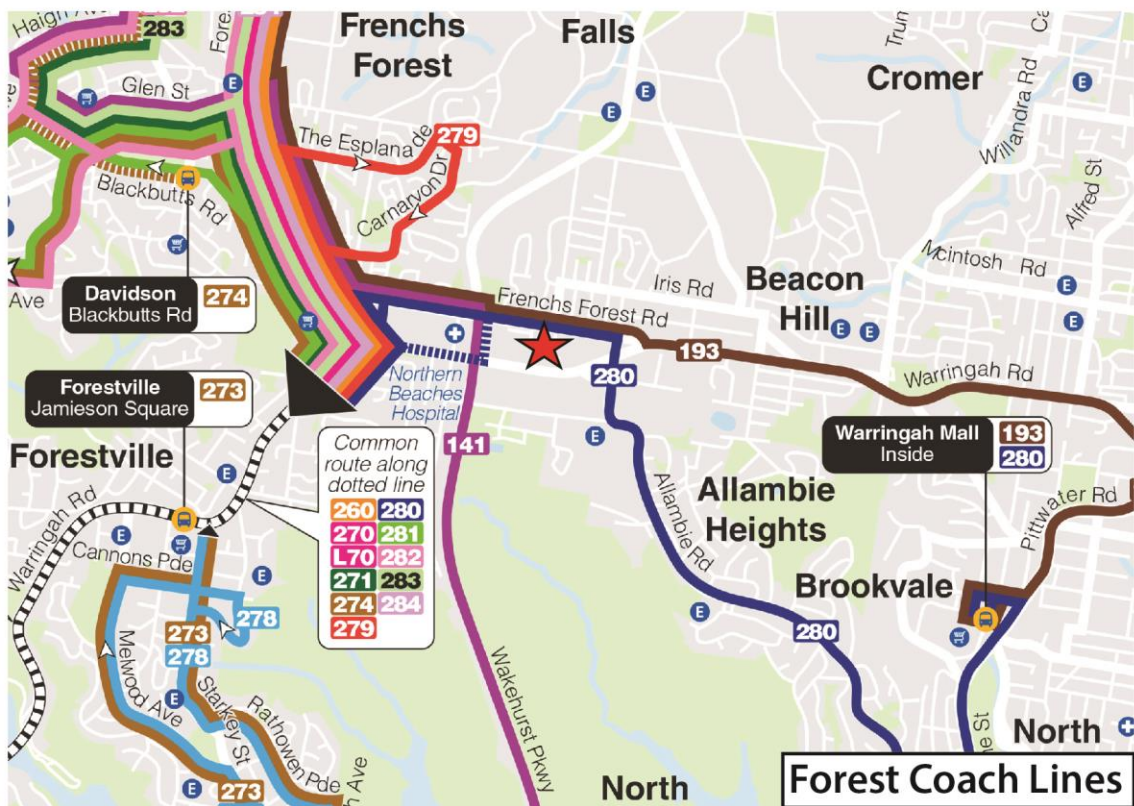
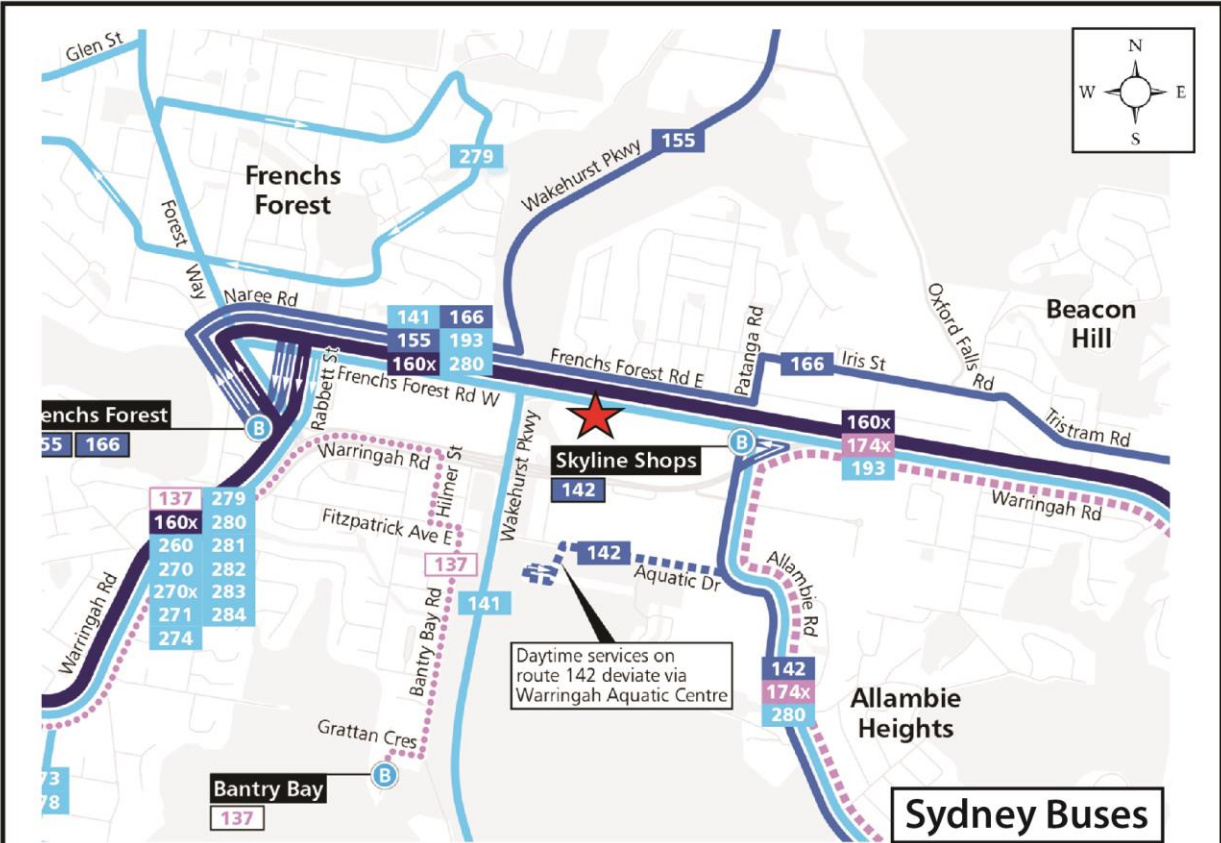
Bus route 160X operates express services between Chatswood and Dee Why via Frenchs Forest, 7 days per week.

Bus route 166 operates between Frenchs Forest and Manly via Dee Why Beach, 7 days per week.

Bus route 193 operates between Austlink and Warringah Mall via Brookvale, Narraweena, Beacon Hill, Northern Beaches Hospital, Frenchs Forest and Belrose, 7 days per week.

Bus route 280 operates between Chatswood and Warringah Mall via Roseville, Forestville, Frenchs Forest and Allambie, 7 days per week.

Now that the Frenchs Forest Road upgrades are complete, bus stops are now located at regular intervals along both sides of the road, including directly outside the site. The site is therefore considered to be well served by public transport services.



Existing Essential Services

“Skyline Shops” are located approximately 550m walking distance east of the site along Frenchs Forest Road East which includes a range of essential shops and services including a post office, pharmacy, Subway, mini-market, fish & chips, Thai & Chinese restaurants, newsagent, bakery, café & hairdresser.

Parkway Hotel is located approximately 200m walking distance east of the site along Frenchs Forest Road East which includes a bottle shop. The Organic Food Markets operate from the hotel car park on Sundays which offer a range of organic produce for sale.

Forest Way Shopping Centre is located approximately 1.5km west of the site which includes Woolworths & Aldi supermarkets, banks, restaurants/cafés, fruit market, butchery, bakery, seafood shop, bottle shop, pharmacy, optometrist, newsagency, hair dresser and beautician.

In addition, the new Northern Beaches Hospital is located approximately 400m walking distance west of the site along Frenchs Forest Road.

The site is therefore considered to be highly accessible to essential services and public transport options.

Projected Traffic Generation

The traffic implications of development proposals primarily concern the effects of the *additional* traffic flows generated as a result of a development and its impact on the operational performance of the adjacent road network, particularly during the weekday morning and afternoon road network peak periods.

An indication of the traffic generation potential of the development proposal is provided by reference to the Roads and Maritime Services publication *Guide to Traffic Generating Developments, Section 3 - Landuse Traffic Generation (October 2002)* and the updated traffic generation rates in the RMS’s *Technical Direction (TDT 2013/04a)* document, which are based on extensive surveys of a wide range of land uses.

The RMS *Guidelines* and TDT 2013/04a nominates the following traffic generation rates which are applicable to the development proposal:

Commercial Premises

2.0 peak hour vehicle trips per 100m² GFA

Housing for Seniors

0.4 peak hour vehicle trips per dwelling

It is also pertinent to note that the morning site peak for seniors independent living units does *not* coincide with the morning network peak, therefore for the purposes of this assessment, a traffic generation rate of *0.1 peak hour vehicle trips per dwelling* has been adopted for the AM network peak period (i.e. 25% of the PM network peak period). Furthermore, the proposed development is also expected to provide permanent on-site medical support staff as well as providing a shuttle bus and car share service. As such, the *actual* traffic generation rate is expected to be *less* than the rate suggested by the RMS. For the purposes of this assessment, an afternoon traffic generation rate of *0.3 peak hour vehicle trips per dwelling* has been adopted, consistent with the approved Lot 2 traffic assessment.

Application of the above traffic generation rates to the commercial and residential components of the Lot 1 development proposal yields a traffic generation potential of approximately 32 vph during the weekday morning peak period and 59 vph during the weekday afternoon peak period, as set out below:

Projected Future Traffic Generation – Lot 1

	AM	PM
Seniors living apartments (133 dwellings):	13 vph	40 vph
Commercial tenancies (941m ²):	19 vph	19 vph
TOTAL TRAFFIC GENERATION POTENTIAL:	32 vph	59 vph

That projected future level of traffic generation potential should however, be offset or *discounted* by the volume of traffic which could reasonably be expected to be generated by the existing uses of Lot 1, in order to determine the *nett increase (or decrease)* in traffic generation potential expected to occur as a consequence of the development proposal.

As noted in the foregoing, surveys of peak hour traffic activity at the site's existing access driveway, undertaken in November 2016, found that the existing uses of the site (Lots 1 & 2) generated in the order of 98 vph during the morning peak period and 82 vph during the afternoon peak period.

It is understood however, that approximately 10% of the existing tenancies on the site at the time of the surveys were *vacant* and accordingly, the existing uses of the site could be expected to generate up to 108 vph and 90 vph during the morning and afternoon peak periods respectively, if all the tenancies were fully occupied.

Based on the cumulative floor area of the existing buildings on the site – i.e. 6,475m² – the site has an existing traffic generation potential of *1.67 peak hour vehicle trips per 100m²* during the morning peak period, and *1.39 peak hour vehicle trips per 100m²* during the afternoon peak period.

Application of the above *actual* traffic generation rates to the floor area of Buildings A-D (4,871m²) yields a traffic generation potential of approximately 27 vph during the morning peak period and 22 vph during the afternoon peak period.

Accordingly, it is likely that the proposed development will result in a *nett reduction* in the traffic generation potential of the site of approximately 49 vph and 9 vph during the morning and afternoon peak periods respectively (IN and OUT combined), when compared to its *existing uses*, as set out below:

**Projected Nett Reduction in Peak Hour Traffic Generation Potential
of the site as a consequence of the Development Proposal**

	AM	PM
Projected Future Traffic Generation Potential:	32 vph	59 vph
Less Existing Traffic Generation Potential:	-81 vph	-68 vph
NETT DECREASE IN TRAFFIC GENERATION POTENTIAL:	-49 vph	-9 vph

Furthermore, the proposed development is also considering implementing a number of alternate transport options for future residents and employees within the building including a shuttle bus service, on-site concierge with driver and a car share service.

In addition, the residents will have access to in-house visits by health care practitioners, thereby not requiring them to visit a facility elsewhere. Services such as these will *further reduce* the traffic generation potential of the proposed development.

In 2015 *Arup* was engaged by Northern Beaches Council (formerly Warringah Council), Roads and Maritime Services (RMS) and Transport for NSW (TfNSW) to undertake a detailed transport assessment of the road network surrounding the *Northern Beaches Hospital* to inform the finalisation of the *Hospital Precinct Structure Plan*.

The *Northern Beaches Hospital Transport Study (Arup 22 November 2016)* identified a preferred growth scenario which included the following two refinements:

- relocation of the Forest High School to the Warringah Aquatic Centre site, and
- adjustment to the urban density along the southern boundary of the RMS road improvements.

The *Arup* traffic assessment found that the preferred scenario could be accommodated by the RMS Road Upgrade Project and in particular, that Frenchs Forest Road West would accommodate the strategic centre's traffic.

The development proposal, which is the subject of this report, is therefore consistent with the findings of the *Northern Beaches Hospital Transport Study* in that it will generate *less* traffic than the existing uses on the site.

In the circumstances, it is clear that the development proposal will not have any unacceptable traffic implications in terms of road network capacity and that no road improvements or intersection upgrades will be required as a consequence of the proposed development.

4. PARKING IMPLICATIONS

Existing Kerbside Parking Restrictions

The kerbside parking restrictions which apply to the road network in the vicinity of the site comprise:

- CLEARWAY restrictions along both sides of Frenchs Forest Road East, in the vicinity of the site, including along the site frontage
- statutory NO STOPPING restrictions in the vicinity of the Frenchs Forest Road East and Skyline Place intersection
- generally UNRESTRICTED kerbside parking along both sides of Skyline Place, including along the site frontage
- BUS ZONES located at regular intervals along both sides of Frenchs Forest Road East, including directly outside the site.

Off-Street Parking Requirements – Lot 1

The off-street parking rates applicable to the non-residential component of the Lot 1 development proposal are specified in Council's *Warringah Development Control Plan 2011, Appendix 1 – Car Parking Requirements* document in the following terms:

Office Premises

1 space per 40m²

The off-street parking rates applicable to the residential component of the Lot 1 development proposal are specified in the *State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004* which specifies the following off-street car parking requirements:

Division 4 Self-contained dwellings

50 Standards that cannot be used to refuse development consent for self-contained dwellings

(2) A consent authority must not refuse consent to a development application made pursuant to this Chapter for the carrying out of a development for the purpose of a self-contained dwelling (including in-fill self-care housing and serviced self-care housing) on any of the following grounds:

(h) **Parking:** if at least the following is provided:

- (i) 0.5 car spaces for each bedroom where the development application is made by a person other than a social housing provider, or
- (ii) 1 car space for each 5 dwellings where the development application is made by, or is made by a person jointly with, a social housing provider.

It is pertinent to note that the *SEPP* does *not* require parking to be provided for seniors living visitors. Notwithstanding, for the purposes of this assessment, the visitor parking rate of *1 space per 5 dwellings* nominated in Council's *WDCP 2011* for residential flat buildings has been adopted, consistent with the approved Stage 1 development.

Furthermore, in order to provide a more rigorous assessment, the two-bedroom-plus-study apartments have been assumed to be three bedroom dwellings.

Application of the above parking rates to the various components of the Lot 1 development proposal yields an off-street car parking requirement of 220 spaces, as set out below:

Lot 1 Parking Requirements

Seniors living residents (133 dwellings):	169 spaces (SEPP)
Seniors living visitors:	27 spaces (DCP)
Commercial tenancies (941m ²):	24 spaces (DCP)
TOTAL:	220 spaces

The proposed development makes provision for a total of 232 off-street car parking spaces, comprising 172 residential spaces, 34 visitor spaces and 26 commercial spaces, thereby satisfying Council's requirements for commercial and visitors and also *SEPP* requirements for seniors living.

The geometric design layout of the proposed Lot 1 car parking facilities has been designed to comply with the relevant requirements specified in the Standards Australia publication *Parking Facilities Part 1 - Off-Street Car Parking AS2890.1* and *Parking Facilities Part 6 - Off-Street Parking for People with Disabilities AS2890.6* in respect of parking bay dimensions, ramp gradients and aisle widths.

Furthermore, the proposed layout provides a range of oversized parking spaces, comprising 184 x 2.6m wide spaces, 36 x 3.2m wide spaces and 12 x 3.8m wide spaces.

Seniors independent living units are typically occupied by one or two people with a comparatively low car ownership rate as many residents do not have a driver's licence. Notwithstanding, each apartment will have at least one parking spaces that is a minimum 2.6m wide. Many of the larger apartments with a second parking space will be allocated a 3.2m wide space in addition to their 2.6m wide parking space.

The proposed arrangement is considered acceptable as many residents are capable drivers who do not require a larger parking space. Furthermore, the proposed seniors living development will not be strata titled but under a *Loan Lease arrangement* such that the management will have the ability to re-allocate parking spaces, as required.

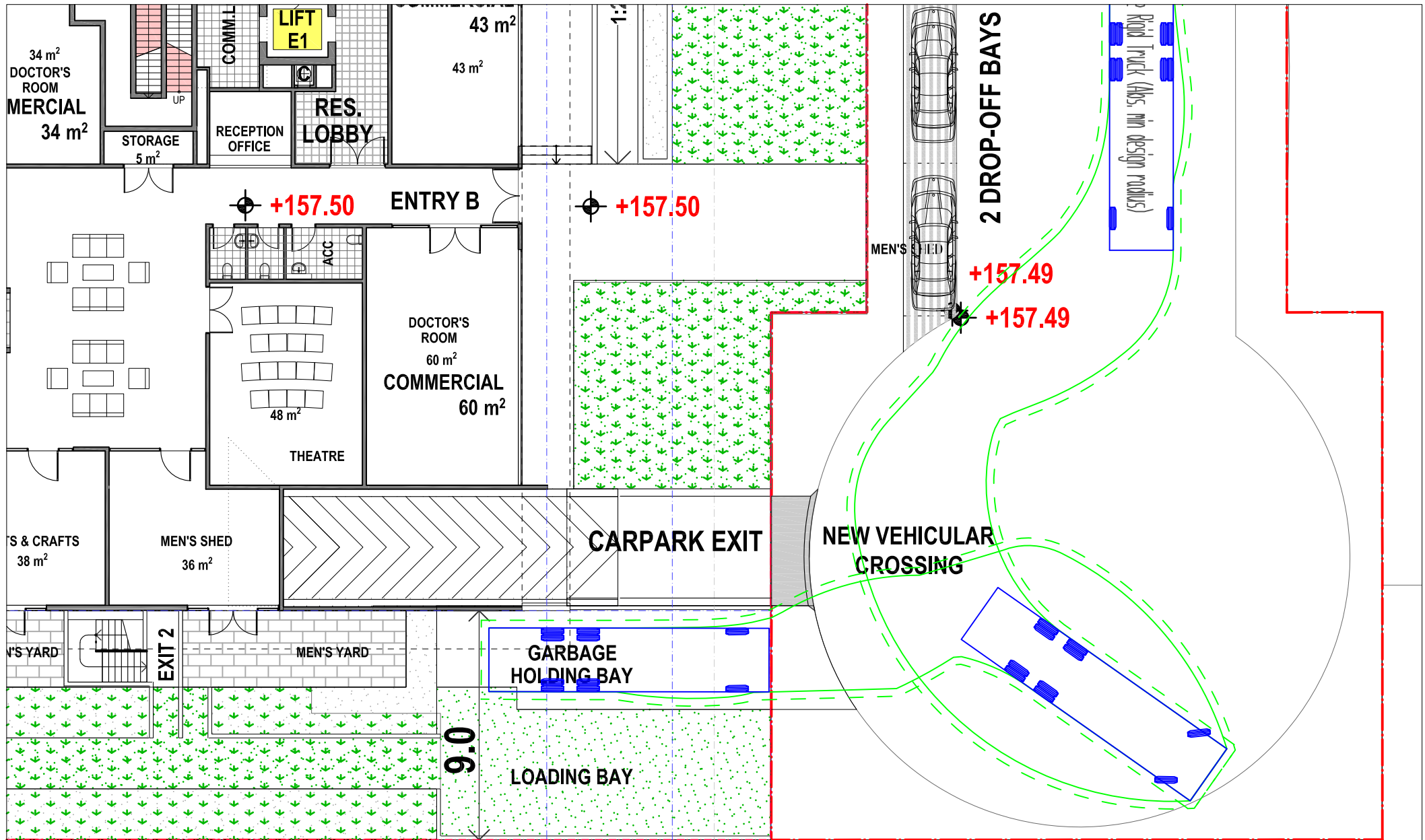
Conclusion

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

- when compared to the existing uses on the site, the proposed development on Lot 1 is expected to result in a *nett reduction* of 49 vph during the morning peak period and 9 vph during the afternoon peak period (IN and OUT combined)
- the Lot 1 development proposal is consistent with the findings of the *Northern Beaches Hospital Transport Study* in that it will generate *less* traffic than the existing uses on the site, therefore it is clear that the development proposal will not have any unacceptable traffic implications in terms of road network capacity and that no road improvements or intersection upgrades will be required

- the proposed access, parking and loading facilities satisfy the relevant requirements specified in Council's *DCP 2011*, the *SEPP* as well as the Australian Standards

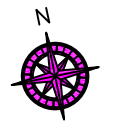
It is therefore reasonable to conclude that the proposed development on Lot 1 will not have any unacceptable implications in terms of road network capacity or off-street parking/loading/access requirements.



VARGA TRAFFIC PLANNING Pty Ltd
 ADM 68 071 762 537
 Suite 6, Level 1
 20 Young Street
 Neutral Bay, NSW 2089

Phone +61 2 9904 3224
 PO Box 1989
 Neutral Bay, NSW 2089
 www.vargatraffic.com.au
 Sydney, Australia

PROJECT
 SENIORS LIVING & COMMERCIAL DEVELOPMENT



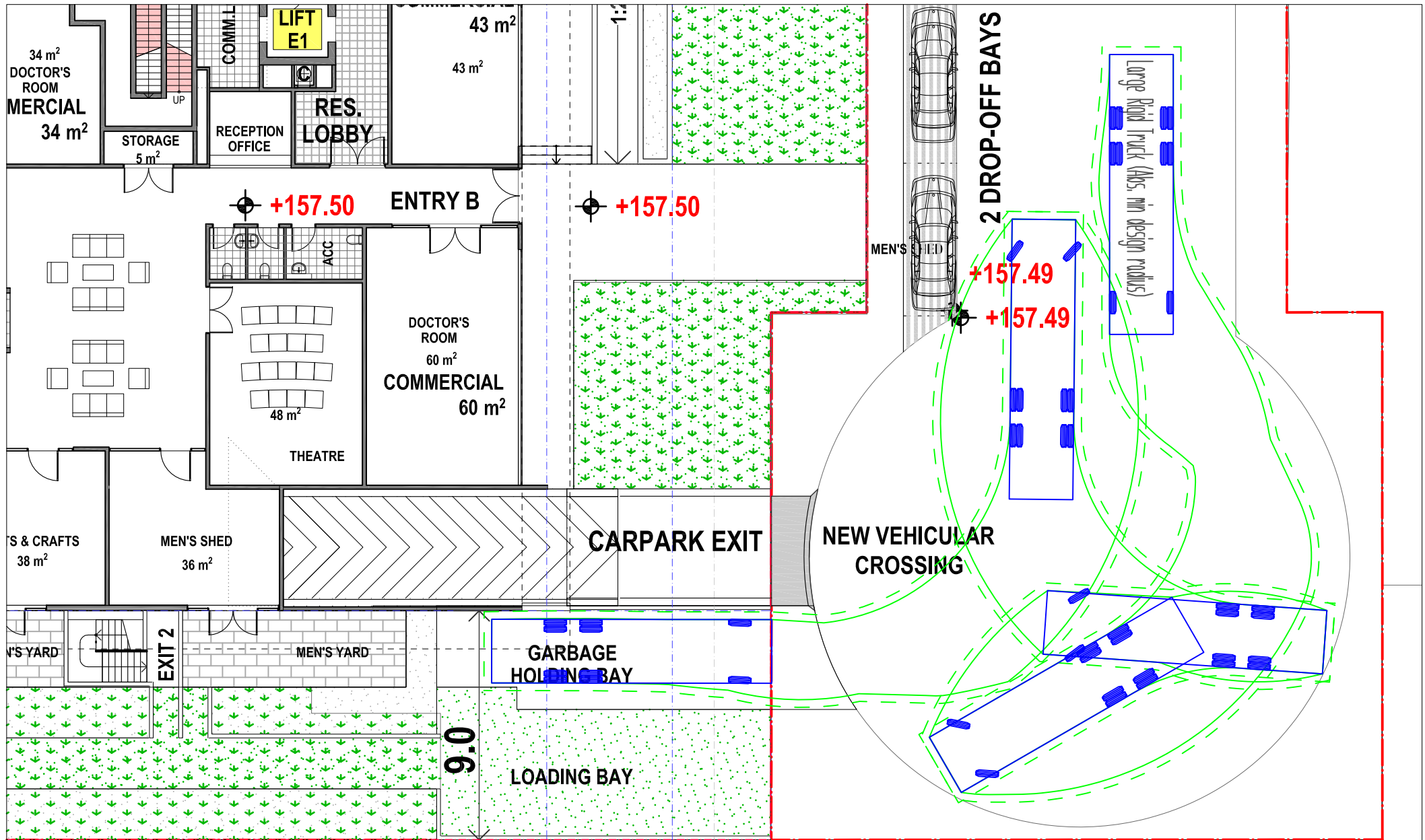
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 Ground Floor: 11m Rigid Truck Entry 1:200 e A4
 Swept Turning Path

ADDRESS
 5 Skyline Place,
 Frenchs Forest

PROJECT NO.
 20672
 REVIEWED
 CP

DATE DRAWN
 2021-2-19
 PREPARED
 TN

VARGA TRAFFIC PLANNING Pty Ltd
 Transport, Traffic and Parking Consultants



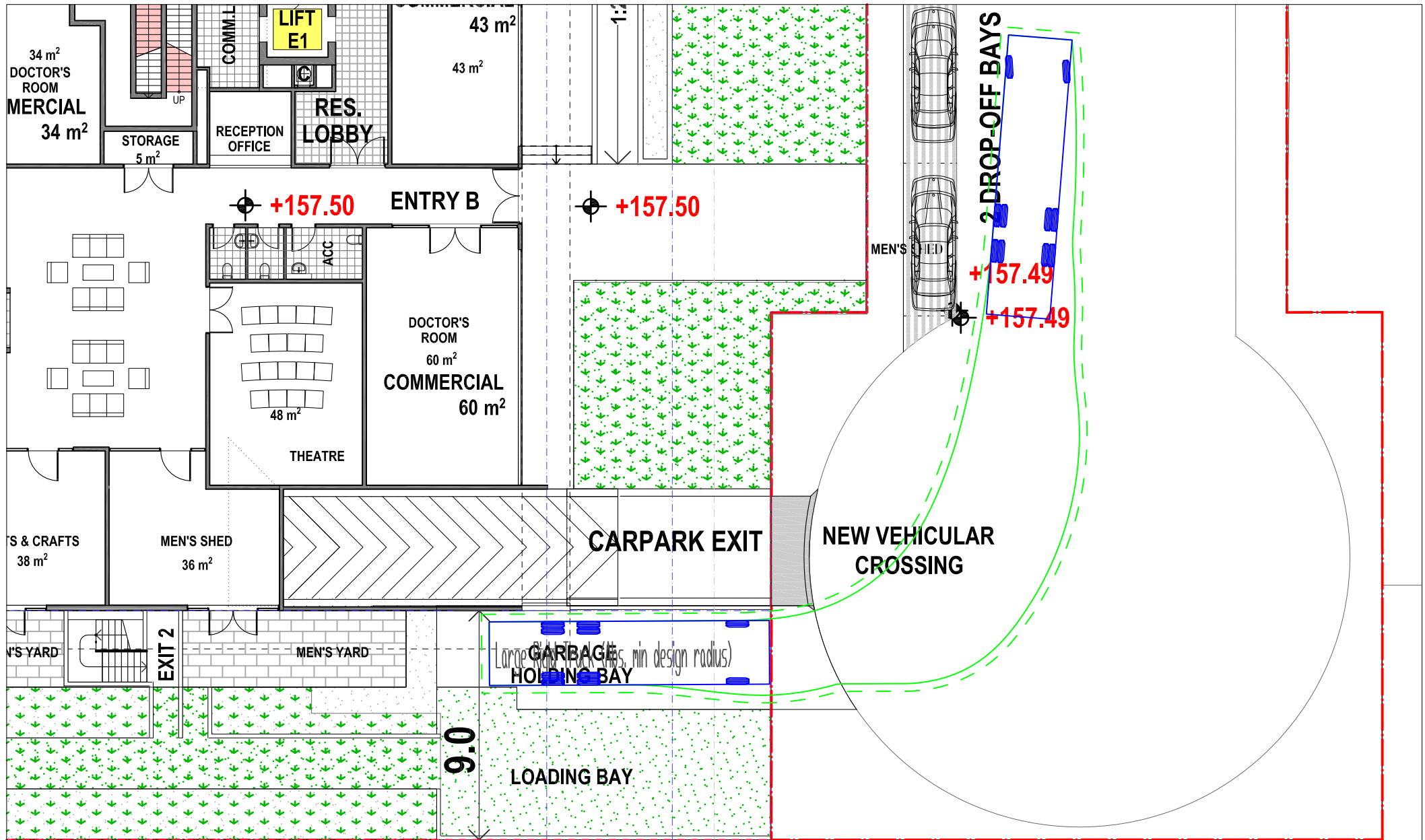
VARGA TRAFFIC PLANNING Pty Ltd Phone +61 2 9904 3224
 ADM 68 071 762 537 PO Box 1989
 Suite 6, Level 1 Neutral Bay, NSW 2089
 20 Young Street www.vargatraffic.com.au
 Neutral Bay, NSW 2089 Sydney, Australia

PROJECT
 SENIORS LIVING & COMMERCIAL DEVELOPMENT



DRAWING TITLE
 Ground Floor: 11m Rigid Truck Entry 1:200 e A4
 Swept Turning Path
 ADDRESS
 5 Skyline Place,
 Frenchs Forest
 PROJECT NO.
 20672
 REVIEWED
 CP
 DATE DRAWN
 2021-2-19
 PREPARED
 TN

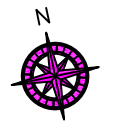
VARGA TRAFFIC PLANNING Pty Ltd
 Transport, Traffic and Parking Consultants



VARGA TRAFFIC PLANNING Pty Ltd
 ABN 68 071 762 537
 20 Young Street
 Neutral Bay, NSW 2089

Phone +61 2 9504 3224
 PO Box 1989
 Neutral Bay, NSW 2089
 www.vargatraffic.com.au
 Sydney, Australia

PROJECT
 SENIORS LIVING & COMMERCIAL DEVELOPMENT



DRAWING TITLE
 Ground Floor: 11m Rigid Truck Exit
 Swept Turning Path

1:200 @ A4

ADDRESS
 5 Skyline Place,
 Frenchs Forest

PROJECT NO.
 20672

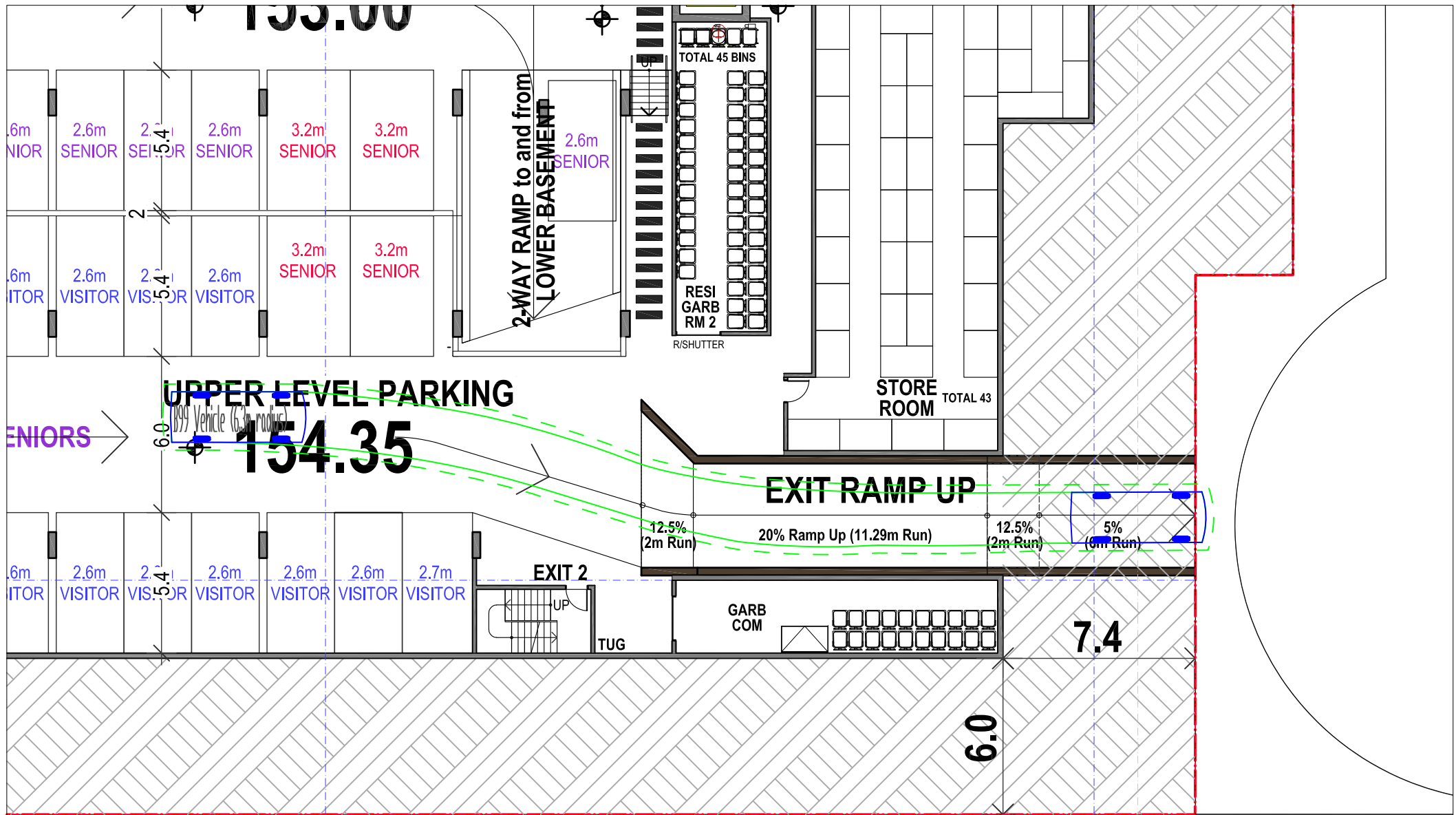
REVIEWED
 CP

DATE DRAWN
 2021-2-19

PREPARED
 TN

VARGA TRAFFIC PLANNING Pty Ltd

Transport, Traffic and Parking Consultants



VARGA TRAFFIC PLANNING Pty Ltd
 ABN 68 071 762 537
 Suite 6, Level 1
 20 Young Street
 Neutral Bay, NSW 2089

Phone +61 2 9904 3224
 PO Box 1889
 Neutral Bay, NSW 2089
 www.vargatraffic.com.au
 Sydney, Australia

PROJECT
 SENIORS LIVING & COMMERCIAL DEVELOPMENT



DRAWING TITLE
 Basement: B99 Vehicle Exit
 Swept Turning Path

ADDRESS
 5 Skyline Place,
 Frenchs Forest

PROJECT NO.
 20672
 REVIEWED
 CP

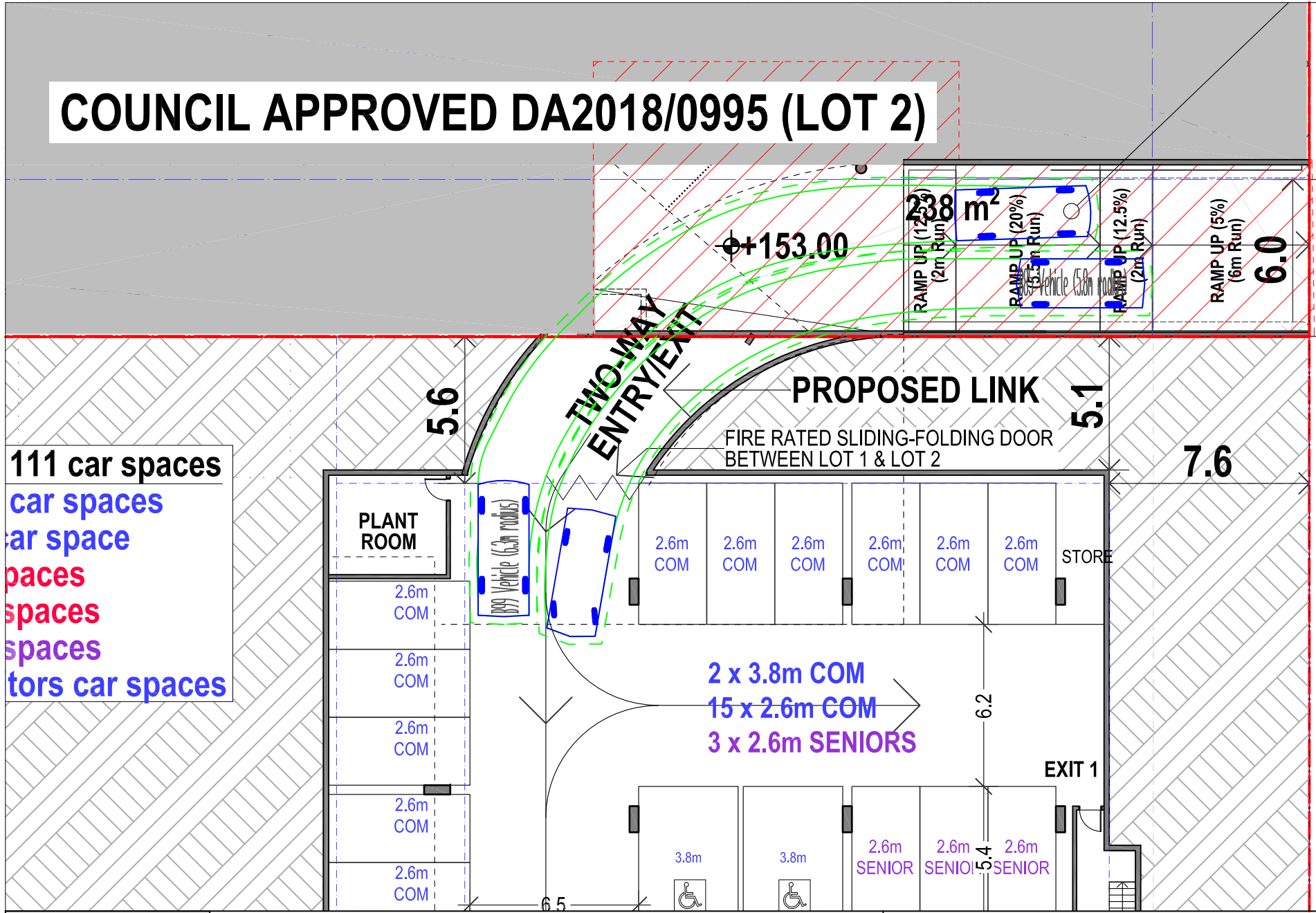
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DATE DRAWN
 2021-2-19
 PREPARED
 TN

VARGA TRAFFIC PLANNING Pty Ltd
 Transport, Traffic and Parking Consultants



COUNCIL APPROVED DA2018/0995 (LOT 2)



VARGA TRAFFIC PLANNING Pty Ltd
 ABN 68 071 762 537
 Suite 6, Level 1
 20 Young Street
 Neutral Bay, NSW 2089

Phone +61 2 9904 3254
 PO Box 1888
 Neutral Bay, NSW 2089
 www.vargatransport.com.au
 Sydney, Australia

PROJECT
 SENIORS LIVING & COMMERCIAL DEVELOPMENT



DRAWING TITLE
 Basement: B99 & B85 Vehicle
 Swept Turning Paths

ADDRESS
 5 Skyline Place,
 Frenchs Forest

PROJECT NO.
 20672

REVIEWED
 CP

1:200 @ A4

DATE DRAWN
 2021-2-19

PREPARED
 TN

VARGA TRAFFIC PLANNING Pty Ltd

Transport, Traffic and Parking Consultants

APPENDIX A

TRAFFIC SURVEY DATA



R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Mob.0418-239019

Client : Varga Traffic Planning
 Job No/Name : 6306 FRENCH'S FOREST Skyline PI
 Day/Date : Thursday 24th November 2016

AM

Time Per	MID ACCESS		TOT
	N-bound Left Out	S-bound Right In	
0630 - 0645	3	7	10
0645 - 0700	4	5	9
0700 - 0715	3	5	8
0715 - 0730	4	5	9
0730 - 0745	6	5	11
0745 - 0800	4	9	13
0800 - 0815	6	9	15
0815 - 0830	2	8	10
0830 - 0845	3	14	17
0845 - 0900	8	24	32
0900 - 0915	11	21	32
0915 - 0930	3	13	16
Per End	57	125	182

Time Per	MID ACCESS		TOT
	N-bound Left Out	S-bound Right In	
0630 - 0645	0	0	0
0645 - 0700	0	0	0
0700 - 0715	0	0	0
0715 - 0730	0	0	0
0730 - 0745	0	0	0
0745 - 0800	0	0	0
0800 - 0815	0	1	1
0815 - 0830	0	0	0
0830 - 0845	1	0	1
0845 - 0900	0	0	0
0900 - 0915	0	0	0
0915 - 0930	0	0	0
Per End	1	1	2

Time Per	MID ACCESS		TOT
	N-bound Left Out	S-bound Right In	
0630 - 0645	3	7	10
0645 - 0700	4	5	9
0700 - 0715	3	5	8
0715 - 0730	4	5	9
0730 - 0745	6	5	11
0745 - 0800	4	9	13
0800 - 0815	6	10	16
0815 - 0830	2	8	10
0830 - 0845	4	14	18
0845 - 0900	8	24	32
0900 - 0915	11	21	32
0915 - 0930	3	13	16
Per End	58	126	184

Peak Per	MID ACCESS		TOT
	N-bound Left Out	S-bound Right In	
0630 - 0730	14	22	36
0645 - 0745	17	20	37
0700 - 0800	17	24	41
0715 - 0815	20	28	48
0730 - 0830	18	31	49
0745 - 0845	15	40	55
0800 - 0900	19	55	74
0815 - 0915	24	67	91
0830 - 0930	25	72	97

Peak Per	MID ACCESS		TOT
	N-bound Left Out	S-bound Right In	
0630 - 0730	0	0	0
0645 - 0745	0	0	0
0700 - 0800	0	0	0
0715 - 0815	0	1	1
0730 - 0830	0	1	1
0745 - 0845	1	1	2
0800 - 0900	1	1	2
0815 - 0915	1	0	1
0830 - 0930	1	0	1

Peak Per	MID ACCESS		TOT
	N-bound Left Out	S-bound Right In	
0630 - 0730	14	22	36
0645 - 0745	17	20	37
0700 - 0800	17	24	41
0715 - 0815	20	29	49
0730 - 0830	18	32	50
0745 - 0845	16	41	57
0800 - 0900	20	56	76
0815 - 0915	25	67	92
0830 - 0930	26	72	98

PEAK HR	25	72	97
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PEAK HR	1	0	1
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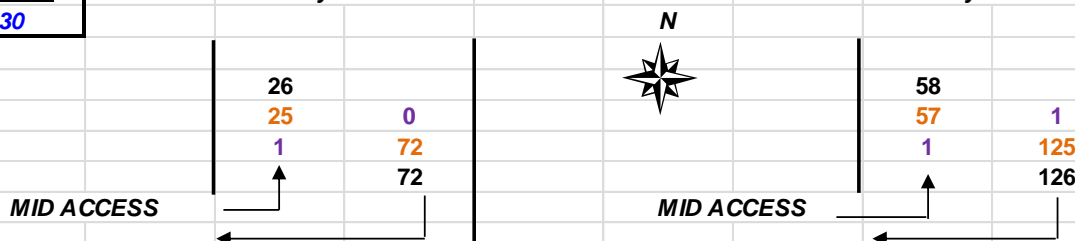
PEAK HR	26	72	98
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AM PEAK HOUR
0830 - 0930

Skyline PI

Skyline PI

**TOTAL VOLUMES
FOR COUNT
PERIOD**





R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Mob.0418-239019

Client : Varga Traffic Planning
 Job No/Name : 6306 FRENCH'S FOREST Skyline PI
 Day/Date : Thursday 24th November 2016

PM

Lights

Time Per	MID ACCESS		TOT
	N-bound Left Out	S-bound Right In	
1530 - 1545	6	7	13
1545 - 1600	5	8	13
1600 - 1615	5	6	11
1615 - 1630	9	5	14
1630 - 1645	15	2	17
1645 - 1700	15	7	22
1700 - 1715	16	5	21
1715 - 1730	11	10	21
1730 - 1745	10	7	17
1745 - 1800	14	4	18
1800 - 1815	5	8	13
1815 - 1830	10	6	16
Per End	121	75	196

Heavies

Time Per	MID ACCESS		TOT
	N-bound Left Out	S-bound Right In	
1530 - 1545	0	0	0
1545 - 1600	0	0	0
1600 - 1615	0	0	0
1615 - 1630	0	0	0
1630 - 1645	0	0	0
1645 - 1700	0	1	1
1700 - 1715	0	0	0
1715 - 1730	0	0	0
1730 - 1745	0	0	0
1745 - 1800	1	0	1
1800 - 1815	0	0	0
1815 - 1830	0	0	0
Per End	1	1	2

Combined

Time Per	MID ACCESS		TOT
	N-bound Left Out	S-bound Right In	
1530 - 1545	6	7	13
1545 - 1600	5	8	13
1600 - 1615	5	6	11
1615 - 1630	9	5	14
1630 - 1645	15	2	17
1645 - 1700	15	8	23
1700 - 1715	16	5	21
1715 - 1730	11	10	21
1730 - 1745	10	7	17
1745 - 1800	15	4	19
1800 - 1815	5	8	13
1815 - 1830	10	6	16
Per End	122	76	198

Lights

Peak Per	MID ACCESS		TOT
	N-bound Left Out	S-bound Right In	
1530 - 1630	25	26	51
1545 - 1645	34	21	55
1600 - 1700	44	20	64
1615 - 1715	55	19	74
1630 - 1730	57	24	81
1645 - 1745	52	29	81
1700 - 1800	51	26	77
1715 - 1815	40	29	69
1730 - 1830	39	25	64

Heavies

Peak Per	MID ACCESS		TOT
	N-bound Left Out	S-bound Right In	
1530 - 1630	0	0	0
1545 - 1645	0	0	0
1600 - 1700	0	1	1
1615 - 1715	0	1	1
1630 - 1730	0	1	1
1645 - 1745	0	1	1
1700 - 1800	1	0	1
1715 - 1815	1	0	1
1730 - 1830	1	0	1

Combined

Peak Per	MID ACCESS		TOT
	N-bound Left Out	S-bound Right In	
1530 - 1630	25	26	51
1545 - 1645	34	21	55
1600 - 1700	44	21	65
1615 - 1715	55	20	75
1630 - 1730	57	25	82
1645 - 1745	52	30	82
1700 - 1800	52	26	78
1715 - 1815	41	29	70
1730 - 1830	40	25	65

PEAK HR	52	29	81
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PEAK HR	0	1	1
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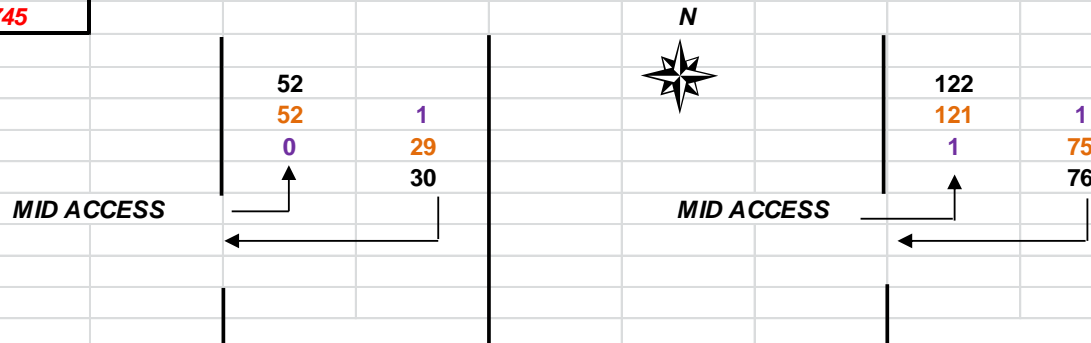
PEAK HR	52	30	82
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PM PEAK HOUR
1645 - 1745

Skyline PI

Skyline PI

**TOTAL VOLUMES
FOR COUNT
PERIOD**



APPENDIX B

ROAD UPGRADE PLANS

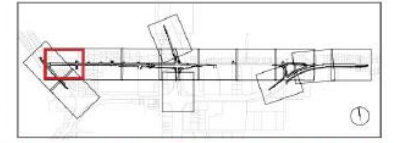
START STAGE 1

- NOTES:
 1. ANY STREET TREE PLANTING NEAR INTERSECTIONS WILL BE ASSESSED FOR IMPACTS ON SIGHT LINES
 2. TREE PLANTING EXTENT AND NUMBERS IS INDICATIVE ONLY AND SUBJECT TO DETAILED DESIGN AND COORDINATION



LEGEND

- Approximate Extent of Works Line
- Proposed Roadworks Extents
- Proposed 1.5m Wide Footpath
- Proposed 2.5m Wide Shared Path
- Proposed 3.0 / 3.5m Wide Shared Path
- Proposed Roadside Retaining Wall in Cut
- Proposed Roadside Retaining Wall in Fill
- Proposed Safety Fence on Central Slot Retaining Wall
- Proposed Noise Wall
- Proposed Fauna Fence
- Relocated or Proposed Bus Stop
- Existing Driveways Retained (Residential / Non-residential)
- Existing Tree to be Removed
- Existing Tree to be Retained
- Proposed Street Tree or Buffer Planting Tree
- Proposed Tree Planting in Private Property
- Proposed Turf
- Proposed Verge & Median Planting
- Proposed Revegetation



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AS ORIGINAL
0 10 20 30 40 50 60 70 80 90 100

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CO	21.03.2016	UPDATE TO FINAL DESIGN (FROM CONCEPT DESIGN)	UD-170A	TE
DO	27.04.2016	UPDATE TO FINAL DESIGN (FROM CONCEPT DESIGN)	UD-170A	TE

DESIGN MODEL FILES USED FOR DOCUMENTATION OF THIS DRAWING

COORDINATE SYSTEM: MGA ZONE 56
 HEIGHT DATUM: A.H.D.

SCALES AT A3 SIZE DRAWING:
 1:1000 @ A3
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CONTRACTOR: **ferrovial YORK**
 Joint Venture
 DESIGNER: **AECOM**



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NORTHERN BEACHES HOSPITAL CONNECTIVITY AND NETWORK ENHANCEMENT LANDSCAPE & URBAN DESIGN ZONE 1000 - STAGE 1 LANDSCAPE & URBAN DESIGN PLAN			
RMS PLAN REGISTRATION No. OF PLANS			
ISSUE STATUS	FINAL DESIGN	SHEET No.	ISSUE FD



ANY STREET TREE PLANTING NEAR INTERSECTIONS HAS BEEN ASSESSED FOR IMPACTS ON SIGHT LINES

STREET LIGHTS AND O/H POWER TO RESIDENTS ON NORTHERN AND SOUTHERN SIDE OF FRENCHS FOREST ROAD WEST

LOW GROWING TREES SPECIES TO NORTHERN SIDE OF FRENCHS FOREST ROAD WEST

1.5M WIDE PEDESTRIAN PATH

UPGRADE DRIVEWAY ENTRY TO WESTERN CARPARK

3.5M WIDE PATH

OPPORTUNITY FOR TREE PLANTING WITHIN PRIVATE PROPERTY AS PART OF PROPERTY ADJUSTMENT WORKS (SUBJECT TO CONSULTATION WITH OWNER)

UPGRADED WESTERN CARPARK

EMERGENCY AND MAINTENANCE ACCESS TO SCHOOL OVAL

EXTENT OF PROPERTY WORKS AT FOREST HIGH SCHOOL TO BE CONFIRMED BY RMS

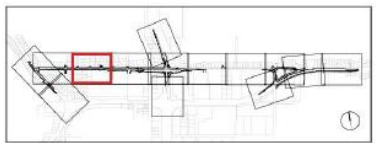
THE FOREST HIGH SCHOOL

RETAIN EXISTING ANGOPHORA COSTATA SPECIMEN

SCHOOL OVAL

LEGEND

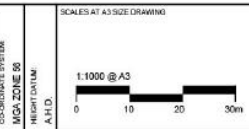
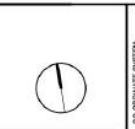
- Approximate Extent of Works Line
- Proposed Roadworks Extents
- Proposed 1.5m Wide Footpath
- Proposed 2.5m Wide Shared Path
- Proposed 3.0 / 3.5m Wide Shared Path
- Proposed Roadside Retaining Wall in Cut
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- Proposed Noise Wall
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- Existing Tree to be Removed
- Existing Tree to be Retained
- Proposed Street Tree or Buffer Planting Tree
- Proposed Tree Planting in Private Property
- Proposed Turf
- Proposed Verge & Median Planting
- Proposed Revegetation



NOT FOR CONSTRUCTION

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60
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40
30
20
10
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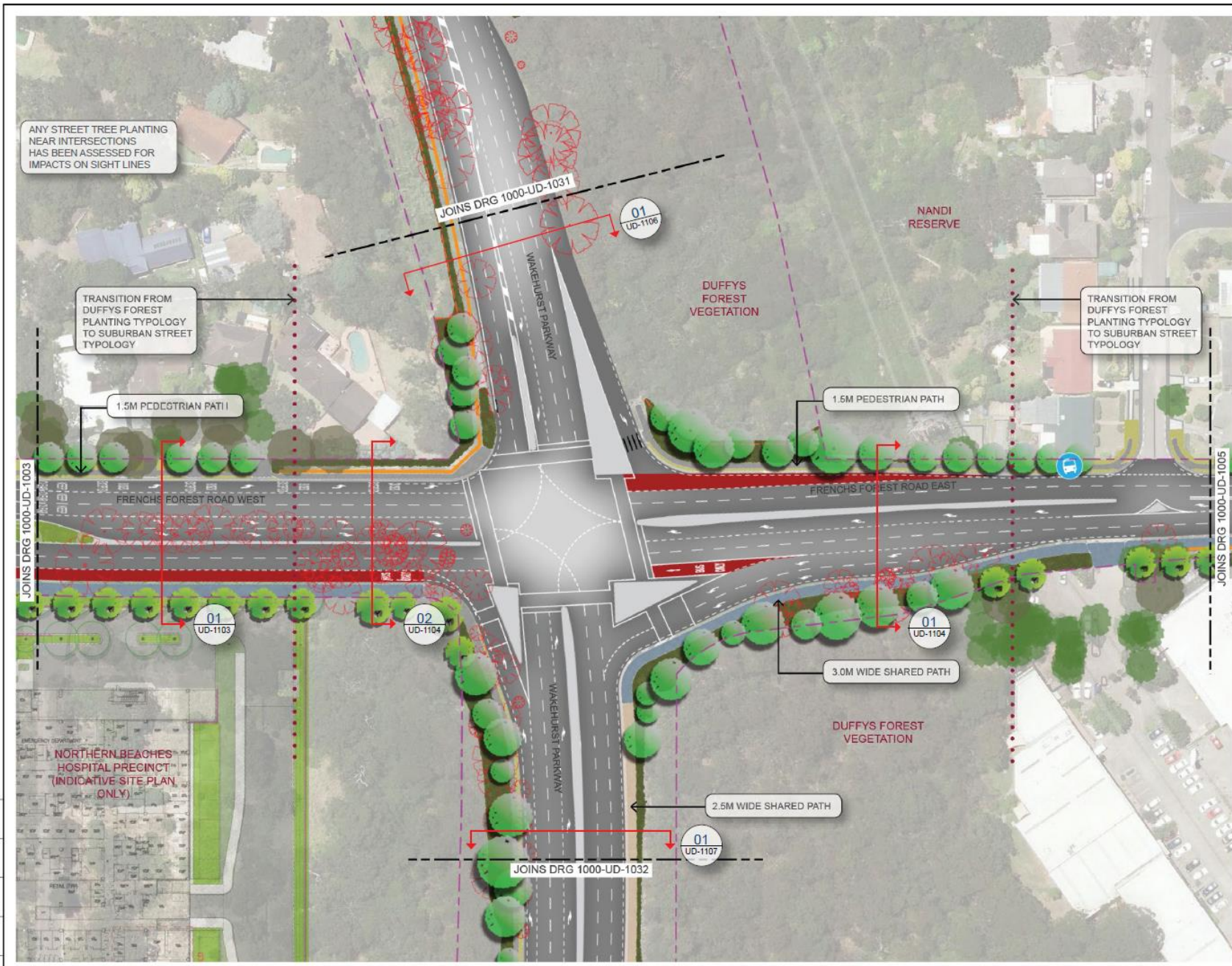
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DD	27.04.2016	UPDATE TO FINAL DESIGN (FROM CONCEPT DESIGN)	UD-170A	TE	



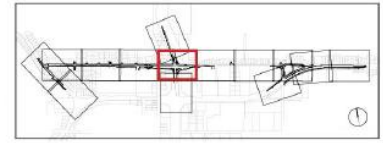
CONTRACTOR:
ferrovial YORK
Joint Venture
DESIGNER:
AECOM



PROJECT DRAWING NUMBER	NBHR-SHT-1000-UD-1002	REVISION	D00
NORTHERN BEACHES HOSPITAL CONNECTIVITY AND NETWORK ENHANCEMENT			
LANDSCAPE & URBAN DESIGN			
ZONE 1000 - STAGE 1			
LANDSCAPE & URBAN DESIGN PLAN			
RMS PLAN REGISTRATION No. OF PLANS			
ISSUE STATUS	FINAL DESIGN	SHEET No	ISSUE
			FD



- LEGEND**
- - - Approximate Extent of Works Line
 - █ Proposed Roadworks Extents
 - Proposed 1.5m Wide Footpath
 - █ Proposed 2.5m Wide Shared Path
 - █ Proposed 3.0 / 3.5m Wide Shared Path
 - █ Proposed Roadside Retaining Wall in Cut
 - █ Proposed Roadside Retaining Wall in Fill
 - █ Proposed Safety Fence on Central Slot Retaining Wall
 - █ Proposed Noise Wall
 - █ Proposed Fauna Fence
 - 🚌 Relocated or Proposed Bus Stop
 - 🏠 Existing Driveways Retained (Residential / Non-residential)
 - 🕒 Existing Tree to be Removed
 - 🌳 Existing Tree to be Retained
 - 🌳 Proposed Street Tree or Buffer Planting Tree
 - 🌳 Proposed Tree Planting in Private Property
 - 🌱 Proposed Turf
 - 🌱 Proposed Verge & Median Planting
 - 🌱 Proposed Revegetation



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86 mm ON ORIGINAL
AS ORIGINAL

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EXTERNAL REFERENCE FILES					<table border="1"> <thead> <tr> <th>REV</th> <th>DATE</th> <th>AMENDMENT / REVISION DESCRIPTION</th> <th>LOT NO</th> <th>APPROVAL</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>18.09.2015</td> <td>UPDATE TO CONCEPT DESIGN (FROM TENDER DESIGN)</td> <td>UD-170A</td> <td>TE</td> </tr> <tr> <td>CD</td> <td>21.03.2016</td> <td>UPDATE TO FINAL DESIGN (FROM CONCEPT DESIGN)</td> <td>UD-170A</td> <td>TE</td> </tr> <tr> <td>DD</td> <td>27.04.2016</td> <td>UPDATE TO FINAL DESIGN (FROM CONCEPT DESIGN)</td> <td>UD-170A</td> <td>TE</td> </tr> </tbody> </table>					REV	DATE	AMENDMENT / REVISION DESCRIPTION	LOT NO	APPROVAL	A	18.09.2015	UPDATE TO CONCEPT DESIGN (FROM TENDER DESIGN)	UD-170A	TE	CD	21.03.2016	UPDATE TO FINAL DESIGN (FROM CONCEPT DESIGN)	UD-170A	TE	DD	27.04.2016	UPDATE TO FINAL DESIGN (FROM CONCEPT DESIGN)	UD-170A	TE			CO-ORDINATE SYSTEM MGR ZONE 56 HEIGHT DATUM AHD		SCALES AT A3 SIZE DRAWING 1:1000 @ A3 		CONTRACTOR ferrovial YORK Joint Venture DESIGNER AECOM <small>AECOM NUMBER: UD-A-14-2010-00102</small>		Transport Roads & Maritime Services		NORTHERN BEACHES HOSPITAL CONNECTIVITY AND NETWORK ENHANCEMENT LANDSCAPE & URBAN DESIGN ZONE 1000 - STAGE 1 LANDSCAPE & URBAN DESIGN PLAN	
REV	DATE	AMENDMENT / REVISION DESCRIPTION	LOT NO	APPROVAL																																					
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DD	27.04.2016	UPDATE TO FINAL DESIGN (FROM CONCEPT DESIGN)	UD-170A	TE																																					
PMS PLAN REGISTRATION NO OF PLANS										ISSUE STATUS FINAL DESIGN		SHEET No FD																													

ANY STREET TREE PLANTING NEAR INTERSECTIONS HAS BEEN ASSESSED FOR IMPACTS ON SIGHT LINES

STREET LIGHTS AND O/H POWER TO RESIDENTS ON NORTHERN AND SOUTHERN SIDE OF FRENCHS FOREST ROAD WEST

EXISTING PEDESTRIAN CONNECTION

MATCH NEW FOOTPATH INTO EXISTING

LOW GROWING TREES SPECIES TO NORTHERN SIDE OF FRENCHS FOREST ROAD WEST

3.0M WIDE SHARED PATH

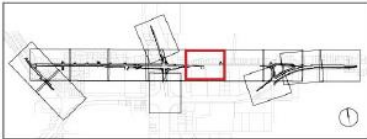
1.5M PEDESTRIAN PATH

NEW SIGNALISED INTERSECTION

OPPORTUNITY FOR TREE PLANTING WITHIN PRIVATE PROPERTY AS PART OF PROPERTY ADJUSTMENT WORKS (SUBJECT TO CONSULTATION WITH OWNER)

SKYLINE BUSINESS PARK

- LEGEND**
- - - Approximate Extent of Works Line
 - █ Proposed Roadworks Extents
 - █ Proposed 1.5m Wide Footpath
 - █ Proposed 2.5m Wide Shared Path
 - █ Proposed 3.0 / 3.5m Wide Shared Path
 - █ Proposed Roadside Retaining Wall in Cut
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 - 🚌 Relocated or Proposed Bus Stop
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 - 🌳 Existing Tree to be Removed
 - 🌳 Existing Tree to be Retained
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 - 🌳 Proposed Tree Planting in Private Property
 - 🌱 Proposed Turf
 - 🌱 Proposed Verge & Median Planting
 - 🌱 Proposed Revegetation



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80mm ON ORIGINAL
AS ORIGINAL

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COORDINATE SYSTEM: MGA ZONE 56
HEIGHT DATUM: A.H.D.

SCALES AT A3 SIZE DRAWING

1:1000 @A3

CONTRACTOR:
ferrovial YORK
Joint Venture

DESIGNER:
AECOM

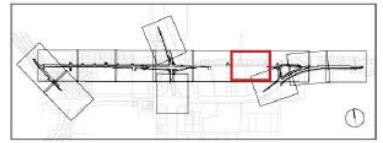
AECOM AUSTRALIA PTY LTD A.B.N. 20 850 689 632

NSW Government
Transport Roads & Maritime Services

PROJECT DRAWING NUMBER	NBHR-SHT-1000-UD-1005	REVISION	D00
NORTHERN BEACHES HOSPITAL CONNECTIVITY AND NETWORK ENHANCEMENT LANDSCAPE & URBAN DESIGN ZONE 1000 - STAGE 1 LANDSCAPE & URBAN DESIGN PLAN			
IBMS PLAN REGISTRATION No. OF PLANS			
ISSUE STATUS	FINAL DESIGN	SHEET No	ISSUE
			FD



- LEGEND**
- - - Approximate Extent of Works Line
 - █ Proposed Roadworks Extents
 - █ Proposed 1.5m Wide Footpath
 - █ Proposed 2.5m Wide Shared Path
 - █ Proposed 3.0 / 3.5m Wide Shared Path
 - █ Proposed Roadside Retaining Wall in Cut
 - █ Proposed Roadside Retaining Wall in Fill
 - █ Proposed Safety Fence on Central Slot Retaining Wall
 - █ Proposed Noise Wall
 - █ Proposed Fauna Fence
 - 🚌 Relocated or Proposed Bus Stop
 - 🏠 Existing Driveways Retained (Residential / Non-residential)
 - 🌳 Existing Tree to be Removed
 - 🌳 Existing Tree to be Retained
 - 🌳 Proposed Street Tree or Buffer Planting Tree
 - 🌳 Proposed Tree Planting in Private Property
 - 🌱 Proposed Turf
 - 🌱 Proposed Verge & Median Planting
 - 🌱 Proposed Revegetation



NOT FOR CONSTRUCTION

AS ORIGINAL
80mm ON ORIGINAL
0 10 20 30 40 50 60 70 80

DRAWING FILE LOCATION / NAME		DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING				
EXTERNAL REFERENCE FILES		REV	DATE	AMENDMENT / REVISION DESCRIPTION	LOT NO	APPROVAL
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		000	21.03.2016	UPDATE TO FINAL DESIGN (FROM CONCEPT DESIGN)	UD-170A	TE
		000	27.04.2016	UPDATE TO FINAL DESIGN (FROM CONCEPT DESIGN)	UD-170A	TE

COORDINATE SYSTEM:
MGA ZONE 56
HEIGHT DATUM:
A.H.D.

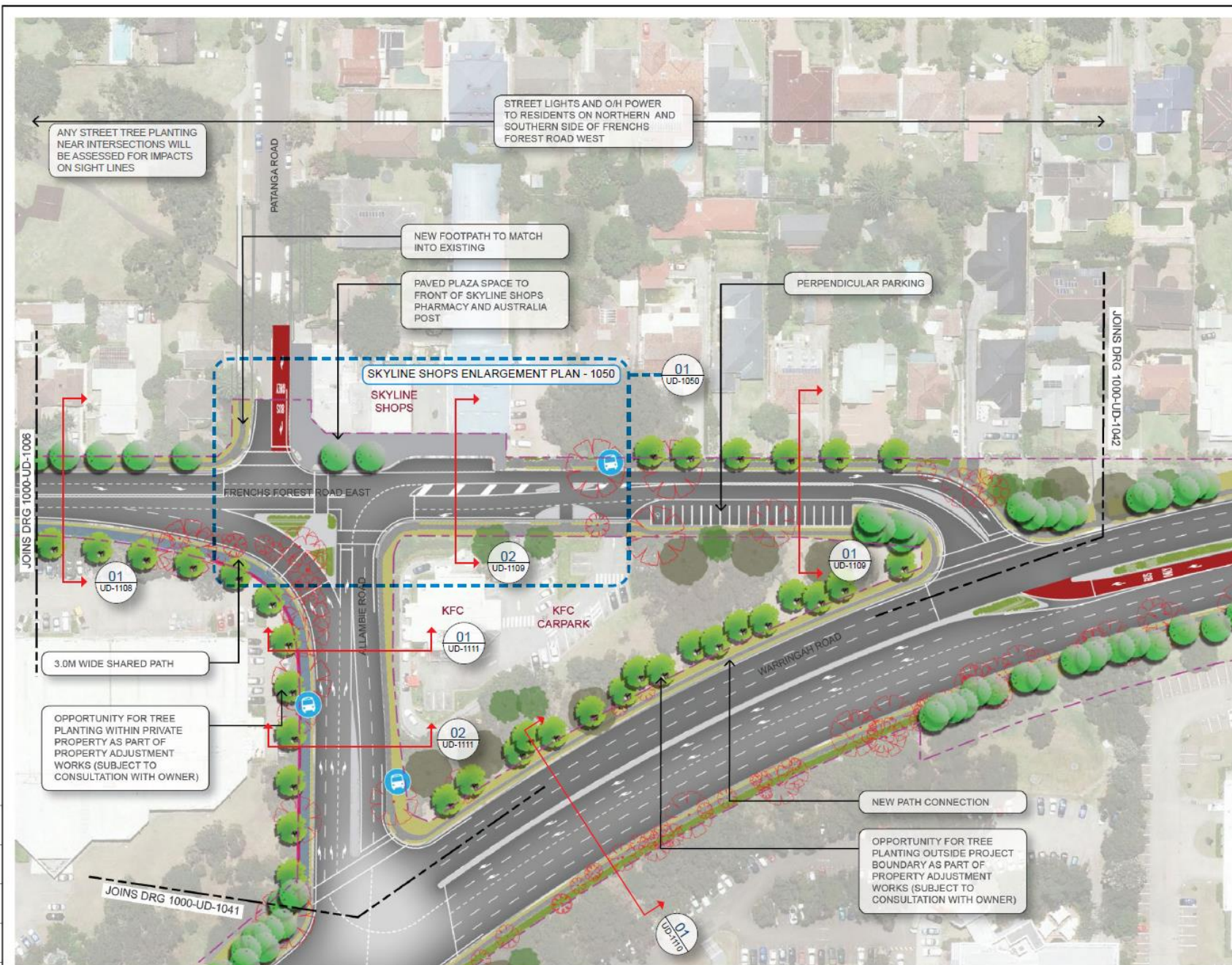
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CONTRACTOR:
ferrovial YORK
Joint Venture
DESIGNER:
AECOM

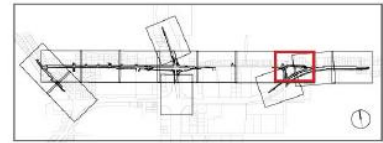
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NSW GOVERNMENT
Transport Roads & Maritime Services

PROJECT DRAWING NUMBER: NBHR-SHT-1000-UD-1006	REVISION: D00
NORTHERN BEACHES LANDSCAPE CONNECTIVITY AND NETWORK ENHANCEMENT LANDSCAPE & URBAN DESIGN ZONE 1000 - STAGE 1 LANDSCAPE & URBAN DESIGN PLAN	
FIMS PLAN REGISTRATION NO OF PLANS	
ISSUE STATUS: FINAL DESIGN	SHEET No: FD



- LEGEND**
- - - Approximate Extent of Works Line
 - █ Proposed Roadworks Extents
 - █ Proposed 1.5m Wide Footpath
 - █ Proposed 2.5m Wide Shared Path
 - █ Proposed 3.0 / 3.5m Wide Shared Path
 - █ Proposed Roadside Retaining Wall in Cut
 - █ Proposed Roadside Retaining Wall in Fill
 - █ Proposed Safety Fence on Central Slot Retaining Wall
 - █ Proposed Noise Wall
 - █ Proposed Fauna Fence
 - 🚌 Relocated or Proposed Bus Stop
 - 🏠 Existing Driveways Retained (Residential / Non-residential)
 - 🌳 Existing Tree to be Removed
 - 🌳 Existing Tree to be Retained
 - 🌳 Proposed Street Tree or Buffer Planting Tree
 - 🌳 Proposed Tree Planting in Private Property
 - 🌱 Proposed Turf
 - 🌱 Proposed Verge & Median Planting
 - 🌱 Proposed Revegetation



NOT FOR CONSTRUCTION

AS ORIGINAL
0 10 20 30 40 50 60 70 80

DRAWING FILE LOCATION / NAME		DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING	
EXTERNAL REFERENCE FILES			
REV	DATE	AMENDMENT / REVISION DESCRIPTION	LOT No APPROVAL
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D00	27.04.2016	UPDATE TO FINAL DESIGN (FROM CONCEPT DESIGN)	UD-170A TE

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HEIGHT DATUM: AFD

SCALE: 1:1000 @ A3

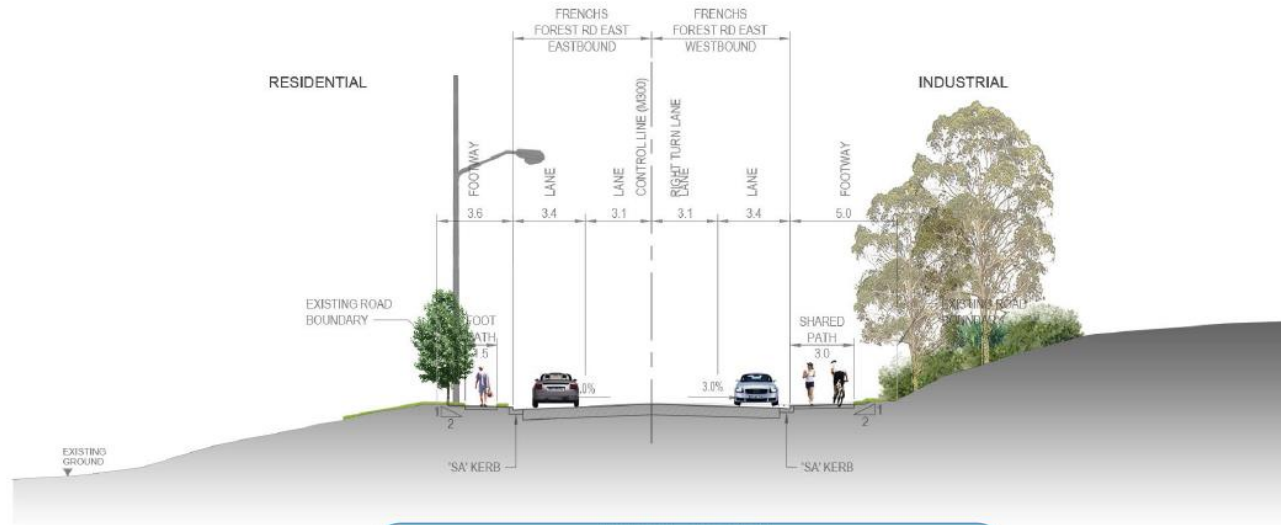
CONTRACTOR: **ferrovial YORK**
Joint Venture

DESIGNER: **AECOM**

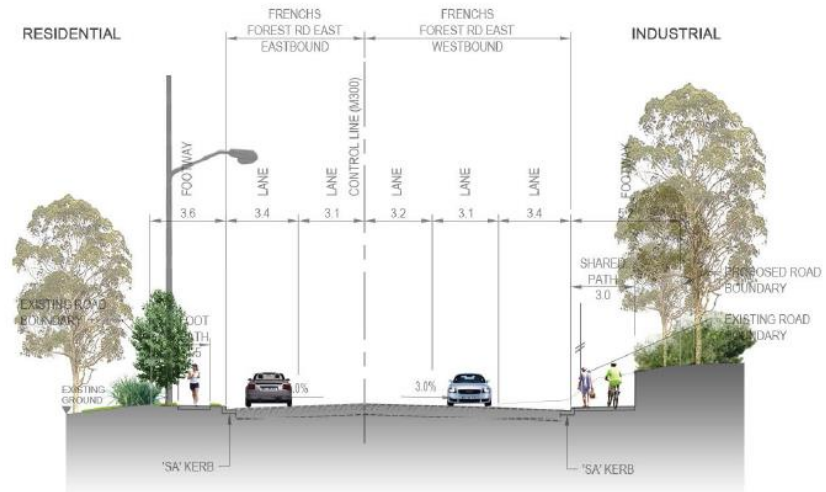
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NSW GOVERNMENT | **Transport Roads & Maritime Services**

PROJECT DRAWING NUMBER	NBHR-SHT-1000-UD-1007	REVISION	D00
NORTHERN BEACHES HOSPITAL CONNECTIVITY AND NETWORK ENHANCEMENT LANDSCAPE & URBAN DESIGN ZONE 1000 - STAGE 1 LANDSCAPE & URBAN DESIGN PLAN			
PMS PLAN REGISTRATION NO. OF PLANS			
ISSUE STATUS	FINAL DESIGN	SHEET No.	ISSUE
			FD



01 TYPICAL SECTION
FRENCHS FOREST ROAD EAST EXISTING CARRIAGEWAY
SCALE 1:250



02 TYPICAL SECTION
FRENCHS FOREST ROAD EAST EXISTING CARRIAGEWAY
SCALE 1:250

- NOTES:
1. PAVEMENT EXTENTS AND EDGE DETAILS SHOWN ARE INDICATIVE ONLY. REFER TO PAVEMENT DRAWINGS ("PV" SERIES).
 2. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
 3. LOCATION OF ROAD SAFETY BARRIERS VARY. REFER TO ROAD ALIGNMENT PLANS FOR EXTENT.

NOT FOR CONSTRUCTION

80 mm ON ORIGINAL
70
60
50
40
30
20
10
0
AS ORIGINAL

REV	DATE	AMENDMENT / REVISION DESCRIPTION	LOT No	APPROVAL
A	18.09.2015	UPDATE TO CONCEPT DESIGN (FROM TENDER DESIGN)	LD-170A	TE
C00	21.03.2016	UPDATE TO FINAL DESIGN (FROM CONCEPT DESIGN)	LD-170A	TE
D00	27.01.2016	UPDATE TO FINAL DESIGN (FROM CONCEPT DESIGN)	LD-170A	TE

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING

CO-ORDINATE SYSTEM:
MGA ZONE 56
HORIZONTAL
A.H.D.

SCALES AT A3 SIZE DRAWING

1:1000 @ A3

0 10 20 30m

CONTRACTOR:
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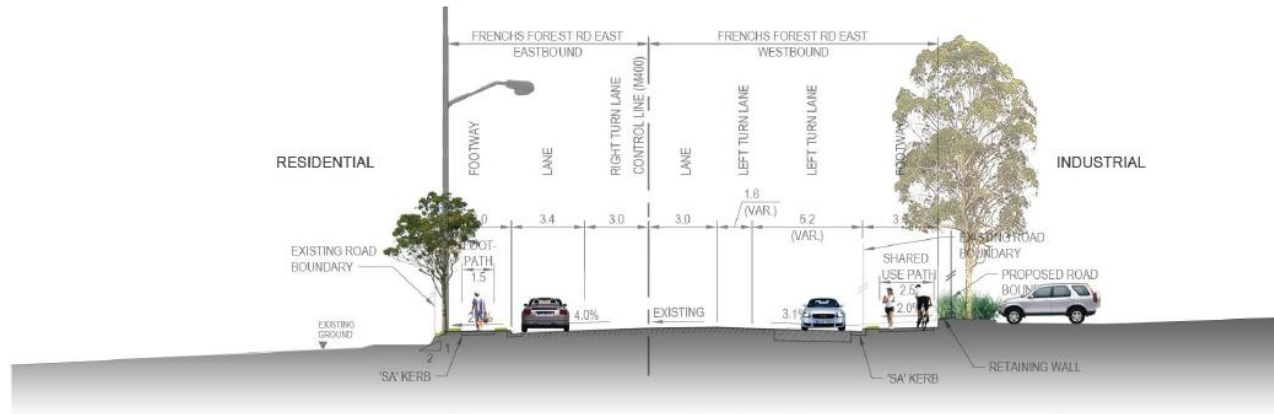
DESIGNER:
AECOM

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NSW GOVERNMENT

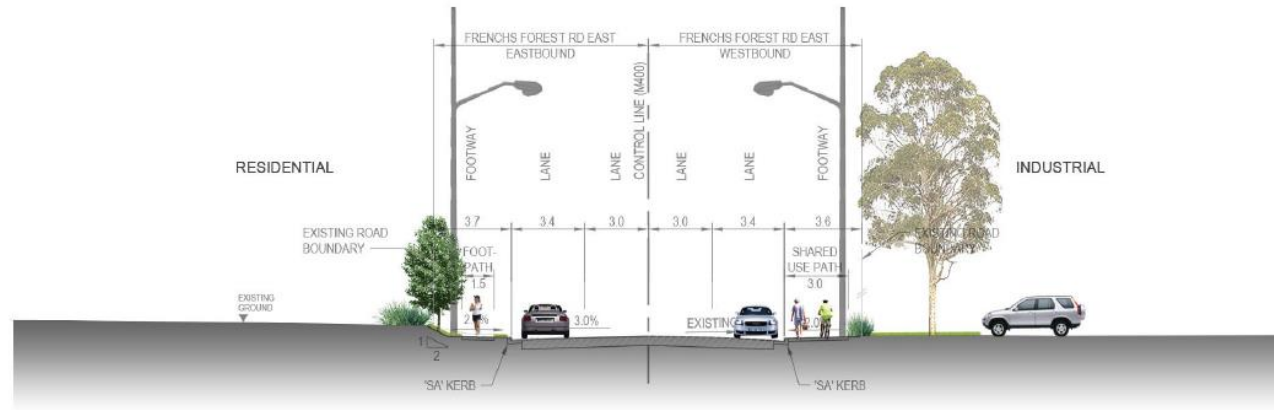
Transport Roads & Maritime Services

PROJECT DRAWING NUMBER	NBHR-SHT-1000-UD-1105	REVISION	D00
NORTHERN BEACHES HOSPITAL CONNECTIVITY AND NETWORK ENHANCEMENT			
LANDSCAPE & URBAN DESIGN			
ZONE 1000 - STAGE 1			
LANDSCAPE & URBAN DESIGN SECTIONS			
RMS PLAN REGISTRATION NO OF PLANS			
ISSUE STATUS	FINAL DESIGN	SHEET No	ISSUE
			FD



01

TYPICAL SECTION
FRENCHS FOREST ROAD EAST
SCALE 1:250



02

TYPICAL SECTION
FRENCHS FOREST ROAD EAST
SCALE 1:250

- NOTES:
1. PAVEMENT EXTENTS AND EDGE DETAILS SHOWN ARE INDICATIVE ONLY.
 2. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
 3. LOCATION OF ROAD SAFETY BARRIERS VARY. REFER TO ROAD ALIGNMENT PLANS FOR EXTENT.

NOT FOR CONSTRUCTION

80 mm ON ORIGINAL
A3 ORIGINAL
0 10 20 30 40 50 60 70 80

DRAWING FILE LOCATION / NAME		DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING				
EXTERNAL REFERENCE FILES		REV	DATE	AMENDMENT / REVISION DESCRIPTION	LOT No	APPROVAL
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		C00	21.03.2016	UPDATE TO FINAL DESIGN (FROM CONCEPT DESIGN)	LD-170A	TE
		D00	27.04.2016	UPDATE TO FINAL DESIGN (FROM CONCEPT DESIGN)	LD-170A	TE

CONCRETE SYSTEM
MGA ZONE 95
HEIGHT DATA
A.H.D.

SCALES AT A3 SIZE DRAWING

1:1000 @ A3

CONTRACTOR:

ferrovial YORK
Joint Venture

DESIGNER:

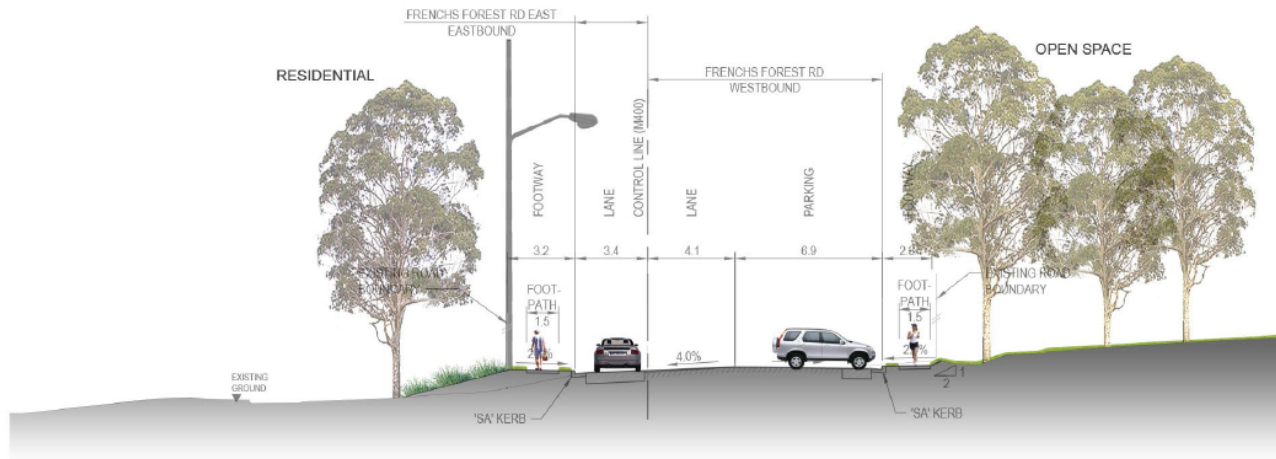
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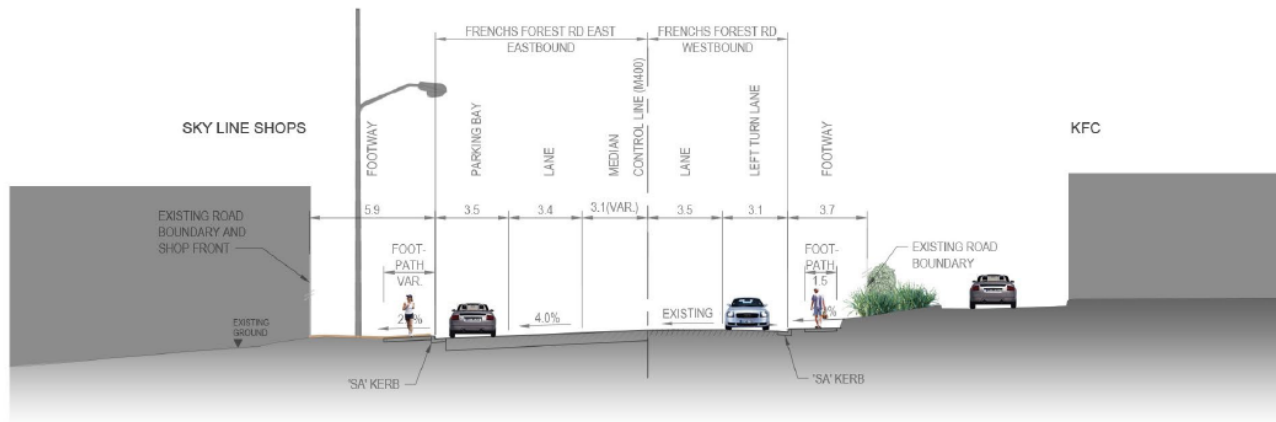
NSW GOVERNMENT

Transport Roads & Maritime Services

PROJECT DRAWING NUMBER	NBHR-SHT-1000-UD-1108	REVISION	D00
NORTHERN BEACHES HOSPITAL CONNECTIVITY AND NETWORK ENHANCEMENT LANDSCAPE & URBAN DESIGN ZONE 1000 - STAGE 1 LANDSCAPE & URBAN DESIGN SECTIONS			
RMS PLAN REGISTRATION No OF PLANS			
ISSUE STATUS	FINAL DESIGN	SHEET No	ISSUE FD



01 TYPICAL SECTION
FRENCHS FOREST ROAD EAST
SCALE 1:250



02 TYPICAL SECTION
FRENCHS FOREST ROAD EAST
SCALE 1:250

- NOTES:
1. PAVEMENT EXTENTS AND EDGE DETAILS SHOWN ARE INDICATIVE ONLY.
 2. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
 3. LOCATION OF ROAD SAFETY BARRIERS VARY. REFER TO ROAD ALIGNMENT PLANS FOR EXTENT.

NOT FOR CONSTRUCTION

A3 ORIGINAL
60 mm ON ORIGINAL

REV	DATE	AMENDMENT / REVISION DESCRIPTION	LOT No	APPROVAL
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C00	21.03.2016	UPDATE TO FINAL DESIGN (FROM CONCEPT DESIGN)	UD-170A	TE
D00	27.04.2016	UPDATE TO FINAL DESIGN (FROM CONCEPT DESIGN)	UD-170A	TE

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING

CO-ORDINATE SYSTEM: MGA ZONE 56
HEIGHT DATUM: A.H.D.

SCALES AT A3 SIZE DRAWING
1:1000 @ A3
0 10 20 30m

CONTRACTOR:
ferrovial YORK
Joint Venture

DESIGNER:
AECOM

AECOM Australia Pty Ltd ABN 6 20 000 946 92

NSW GOVERNMENT
Transport Roads & Maritime Services

PROJECT DRAWING NUMBER	NBHR-SHT-1000-UD-1109	REVISED BY	D00
NORTHERN BEACHES HOSPITAL CONNECTIVITY AND NETWORK ENHANCEMENT LANDSCAPE & URBAN DESIGN ZONE 1000 - STAGE 1 LANDSCAPE & URBAN DESIGN SECTIONS			
RMS PLAN REGISTRATION No OF PLANS			
ISSUE STATUS	FINAL DESIGN	SHEET No	ISSUE FD

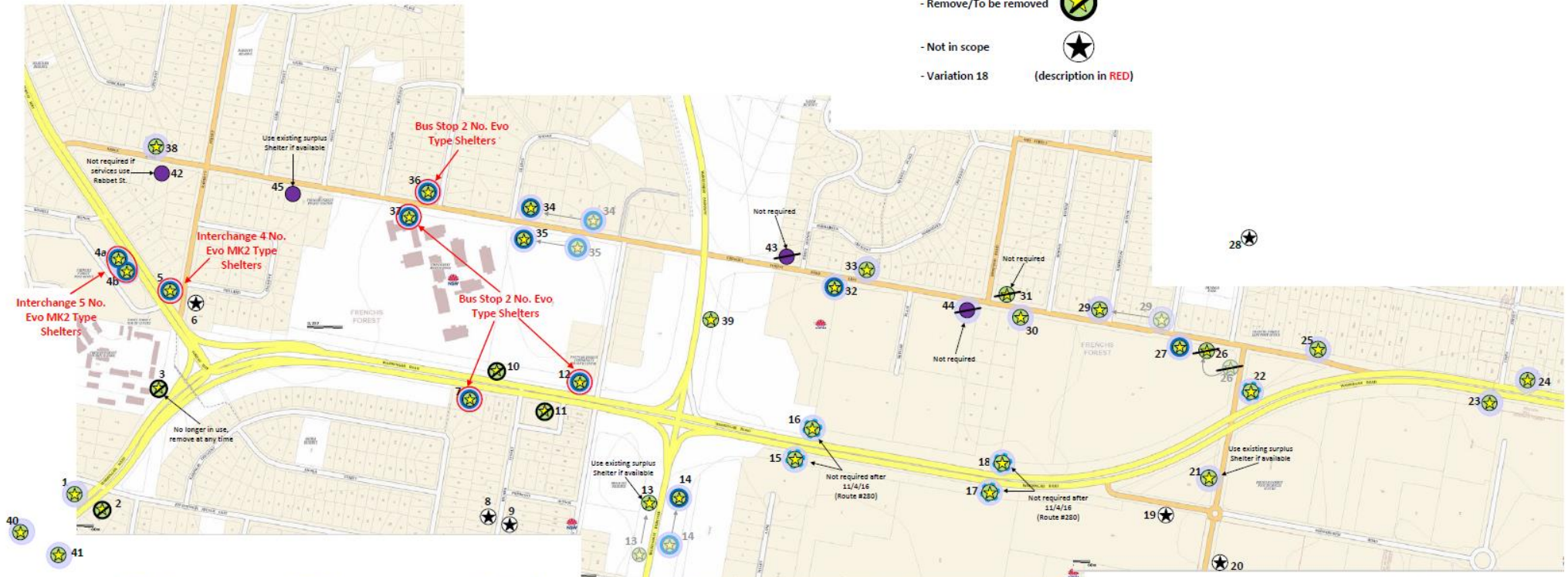
Site Map – Bus Stop Locations

Project: Northern Beaches Hospital Connectivity and Network Enhancements

Date: 3/6/2016

Key

- Scope
- Retain Existing Bus Stop - New/Proposed
- Replace - Resulting Shelter
- Relocate Laterally
- Remove/To be removed
- Not in scope
- Variation 18 (description in RED)



<p>1 Warringah Rd near Fitzpatrick Av (SR)</p> <p>Scope - Existing. Existing bus stop with Optimal type shelter. Scope: Retain existing stop with shelter - Final = Shelter</p>	<p>6 Isabella St near Holland Av (SR)</p> <p>Scope - Existing. Existing bus stop with Optimal type shelter. Scope: Retain existing stop with shelter - Final = Shelter</p>	<p>11 Warringah Rd near Barry Bay Rd (SR)</p> <p>Scope - Existing. Existing bus stop with Optimal type shelter. Scope: Retain existing stop with shelter - Final = Shelter</p> <p>NOT REQUIRED</p>	<p>16 Warringah Rd near Walewhard Pkwy (SR)</p> <p>Scope - Existing. Existing bus stop with Optimal type shelter. Scope: Replace existing stop with shelter - Final = Shelter</p> <p>NOT REQUIRED</p>	<p>21 Alanah Rd near Warringah Rd (SR)</p> <p>Scope - Existing. Existing bus stop without shelter. Scope: Retain existing stop without shelter - Final = Pole</p> <p>Use surplus existing shelter if available</p>	<p>26 Alanah Rd near Frenchs Forest Rd (SR)</p> <p>Scope - Existing. Existing bus stop without shelter. Scope: Retain existing stop without shelter - Final = Pole</p> <p>NOT REQUIRED</p>	<p>31 Frenchs Forest Rd near Bungalow Cr (SR)</p> <p>Scope - Existing. Existing bus stop without shelter. Scope: Retain existing stop without shelter - Final = Pole</p> <p>NOT REQUIRED</p>	<p>36 Frenchs Forest Rd near Bungalow Cr (SR)</p> <p>Scope - Existing. Existing bus stop without shelter. Scope: Replace existing - Final = Shelter</p>	<p>42 Newell Rd near Rabbit St (SR)</p> <p>Scope - Existing. New bus stop. Scope: New bus stop without shelter - Final = Pole</p> <p>Use required if shelter use Rabbit Street. Flag pole only.</p>
<p>2 Warringah Rd near Fitzpatrick Av (SR)</p> <p>Scope - Existing. Existing bus stop with Optimal type shelter. Scope: Retain existing stop with shelter - Final = Shelter</p>	<p>7 Warringah Rd near Forest High School (SR)</p> <p>Scope - Existing. Existing bus stop with Optimal type shelter. Scope: Replace existing - Final = 2 Evo Type Shelters</p>	<p>12 Warringah Rd near Barry Bay Rd (SR)</p> <p>Scope - Existing. Existing bus stop without shelter. Scope: Replace existing - Final = 2 Evo Type Shelters</p>	<p>17 Warringah Rd near Alanah Rd (SR)</p> <p>Scope - Existing. Existing bus stop with Optimal type shelter. Scope: Replace existing stop with shelter - Final = Shelter</p> <p>NOT REQUIRED</p>	<p>22 Alanah Rd near Warringah Rd (SR)</p> <p>Scope - Existing. Existing bus stop with Optimal type shelter. Scope: Replace existing stop with shelter - Final = Shelter</p>	<p>27 Frenchs Forest near Patonga Rd (SR)</p> <p>Scope - Existing. Existing bus stop with Optimal type shelter. Scope: Replace existing - Final = Shelter</p>	<p>32 Frenchs Forest near Skyline Pt (SR)</p> <p>Scope - Existing. Existing bus stop with Brink type shelter. Scope: Replace existing - Final = Shelter</p>	<p>37 Frenchs Forest near Forest High School (SR)</p> <p>Scope - Existing. Existing bus stop with Optimal type shelter. Scope: Replace existing - Final = Shelter</p>	<p>43 Frenchs Forest Rd near Newell Av (SR)</p> <p>Scope - Existing. New bus stop. Scope: New bus stop without shelter - Final = Pole</p> <p>NOT REQUIRED</p>
<p>3 Warringah Rd near Forest Way (SR)</p> <p>Scope - Existing. Existing bus stop without shelter. Scope: Retain existing stop without shelter - Final = Pole</p> <p>NOT REQUIRED</p>	<p>8 Newell Street near Warringah Rd (SR)</p> <p>Scope - Existing. Existing bus stop without shelter. Scope: Replace existing - Final = Pole</p> <p>NOT NEW CANE SCOPE</p>	<p>13 Walewhard Parkway near Warringah Rd (SR)</p> <p>Scope - Existing. Existing bus stop without shelter. Scope: Replace existing stop with shelter - Final = Pole</p> <p>Use surplus existing shelter if available</p> <p>NOT REQUIRED</p>	<p>18 Warringah Rd near Alanah Rd (SR)</p> <p>Scope - Existing. Existing bus stop with Optimal type shelter. Scope: Retain existing stop with shelter - Final = Shelter</p> <p>NOT REQUIRED</p>	<p>23 Alanah Rd near Jones St (SR)</p> <p>Scope - Existing. Existing bus stop with Optimal type shelter. Scope: Retain existing stop with shelter - Final = Shelter</p>	<p>28 Patonga Rd near Jones St (SR)</p> <p>Scope - Existing. Existing bus stop without shelter. Scope: Retain existing stop without shelter - Final = Pole</p> <p>NOT NEW CANE SCOPE</p>	<p>33 Frenchs Forest Rd near Skyline Pt (SR)</p> <p>Scope - Existing. Existing bus stop with Optimal type shelter. Scope: Retain existing stop with shelter - Final = Shelter</p>	<p>38 Newell Rd near Rabbit St (SR)</p> <p>Scope - Existing. Existing bus stop with Optimal type shelter. Scope: Replace existing - Final = Shelter</p>	<p>44 Frenchs Forest Rd near Newell Av (SR)</p> <p>Scope - Existing. Existing bus stop without shelter. Scope: Replace existing - Final = Pole</p> <p>NOT REQUIRED</p>
<p>4a Forest Way near Warringah Rd (SR)</p> <p>Scope - Existing. Existing bus stop with Optimal type shelter. Scope: Replace existing - Final = 3 Evo Type Shelters</p>	<p>9 Newell Street near Patonga Av (SR)</p> <p>Scope - Existing. Existing bus stop without shelter. Scope: Replace existing stop without shelter - Final = Pole</p> <p>NOT NEW CANE SCOPE</p>	<p>14 Walewhard Parkway near Warringah Rd (SR)</p> <p>Scope - Existing. Existing bus stop without shelter. Scope: Replace existing by reusing #11 - Final = Shelter</p>	<p>19 Southborough Rd near Alanah Rd (SR)</p> <p>Scope - Existing. Existing bus stop with Optimal type shelter. Scope: Retain existing stop with shelter - Final = Shelter</p> <p>NOT NEW CANE SCOPE</p>	<p>24 Warringah Rd near Jones St (SR)</p> <p>Scope - Existing. Existing bus stop with Optimal type shelter. Scope: Retain existing stop with shelter - Final = Shelter</p>	<p>29 Frenchs Forest Rd near Downes Av (SR)</p> <p>Scope - Existing. Existing bus stop with Optimal type shelter. Scope: Replace existing stop with shelter - Final = Shelter</p>	<p>34 Frenchs Forest Rd near Barry Bay Rd (SR)</p> <p>Scope - Existing. Existing bus stop without shelter. Scope: Replace existing - Final = 2 Evo Type Shelters</p>	<p>39 Walewhard Parkway near Frenchs Forest Rd (SR)</p> <p>Scope - Existing. Existing bus stop without shelter. Scope: Retain existing stop without shelter - Final = Pole</p>	<p>45 Frenchs Forest Rd near Skyline Pt (SR)</p> <p>Scope - Existing. Existing bus stop without shelter. Scope: Replace existing stop with shelter - Final = Shelter</p> <p>Use surplus existing shelter if available</p>
<p>4b Forest Way near Warringah Rd (SR)</p> <p>Scope - Existing. Existing bus stop with Optimal type shelter. Scope: Replace existing - Final = 4 Evo Type Shelters</p>	<p>10 Warringah Rd near Forest High School (SR)</p> <p>Scope - Existing. Existing bus stop without shelter. Scope: Replace existing - Final = Pole</p> <p>NOT REQUIRED</p> <p>Further investigation required</p>	<p>15 Warringah Rd near Walewhard Pkwy (SR)</p> <p>Scope - Existing. Existing bus stop with Optimal type shelter. Scope: Replace existing stop with shelter - Final = Shelter</p> <p>NOT REQUIRED</p>	<p>20 Alanah Rd near Southborough Rd (SR)</p> <p>Scope - Existing. Existing bus stop with Optimal type shelter. Scope: Retain existing stop with shelter - Final = Shelter</p> <p>NOT NEW CANE SCOPE</p>	<p>25 Frenchs Forest Rd near Patonga Rd (SR)</p> <p>Scope - Existing. Existing bus stop with Optimal type shelter. Scope: Retain existing stop with shelter - Final = Shelter</p>	<p>30 Frenchs Forest near Harold Av (SR)</p> <p>Scope - Existing. Existing bus stop with Optimal type shelter. Scope: Retain existing stop with shelter - Final = Shelter</p>	<p>35 Frenchs Forest near Barry Bay Rd (SR)</p> <p>Scope - Existing. Existing bus stop without shelter. Scope: Replace existing - Final = 2 Evo Type Shelters</p>	<p>40 Warringah Rd near Maxwell Parade (SR)</p> <p>Scope - Existing. Existing bus stop with Optimal type shelter. Scope: Retain existing stop with shelter - Final = Shelter</p>	<p>41 Warringah Rd near Maxwell Parade (SR)</p> <p>Scope - Existing. Existing bus stop with Optimal type shelter. Scope: Retain existing stop with shelter - Final = Shelter</p>

Figure 104 Bus stop locations and relevant actions within the project works (Source: RMS, 2016)