

11-19 Frenchmans Road, Randwick

Residential Aged Care Facility
Transport Impact Assessment



Prepared by: GTA Consultants (NSW) Pty Ltd for SummitCare

on 27/08/2020

Reference: N164680

Issue #: A

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Quality Record

Issue	Date	Description	Prepared By	Checked By	Approved By	Signed
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- A. Survey Results
- B. SIDRA Intersection Results
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1. INTRODUCTION

01

1.1. Background & Proposal

SummitCare is preparing a development application to redevelop an existing Residential Aged Care Facility (RACF) on a site of 2,710 square metres located between Frenchmans Road and McLennan Avenue in Randwick. The development application comprises of the demolition of a 94 bed RACF and construction of a new facility including the following:

- 78 high and mid-care RACF rooms (86 beds)
- Two independent living units (ILU) (2 beds)
- 88 beds in total (RACF and ILU)
- ancillary retail, commercial, medical consulting rooms and theatre/ multi-purpose rooms.

SummitCare commissioned GTA Consultants (GTA) to undertake a transport impact assessment to accompany the development application.

1.2. Purpose of this Report

This report sets out an assessment of the anticipated transport implications of the proposed development, including consideration of the following:

- existing traffic and parking conditions surrounding the site
- suitability of the proposed parking in terms of supply (quantum) and layout
- service and emergency vehicle requirements
- pedestrian and bicycle requirements
- suitability of the proposed access arrangements for the site
- the traffic generating characteristics of the proposed development
- the transport impact of the development proposal on the surrounding road network.

1.3. References

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

- an inspection of the site and its surrounds
- Randwick Development Control Plan (DCP) 2013
- Randwick Local Environmental Plan (LEP) 2012
- Australian Standard/ New Zealand Standard, Parking Facilities, Part 1: Off-Street Car Parking AS/NZS 2890.1:2004
- Australian Standard, Parking Facilities, Part 2: Off-Street Commercial Vehicle Facilities AS 2890.2:2018
- Australian Standard / New Zealand Standard, Parking Facilities, Part 6: Off-Street Parking for People with Disabilities AS/NZS 2890.6:2009
- traffic and car parking surveys undertaken by Matrix on 20 February 2019 as referenced in the context of this report
- site layout plans for the proposed development prepared by Boffa Robertson Group
- other documents and data as referenced in this report.

2. EXISTING CONDITIONS

02

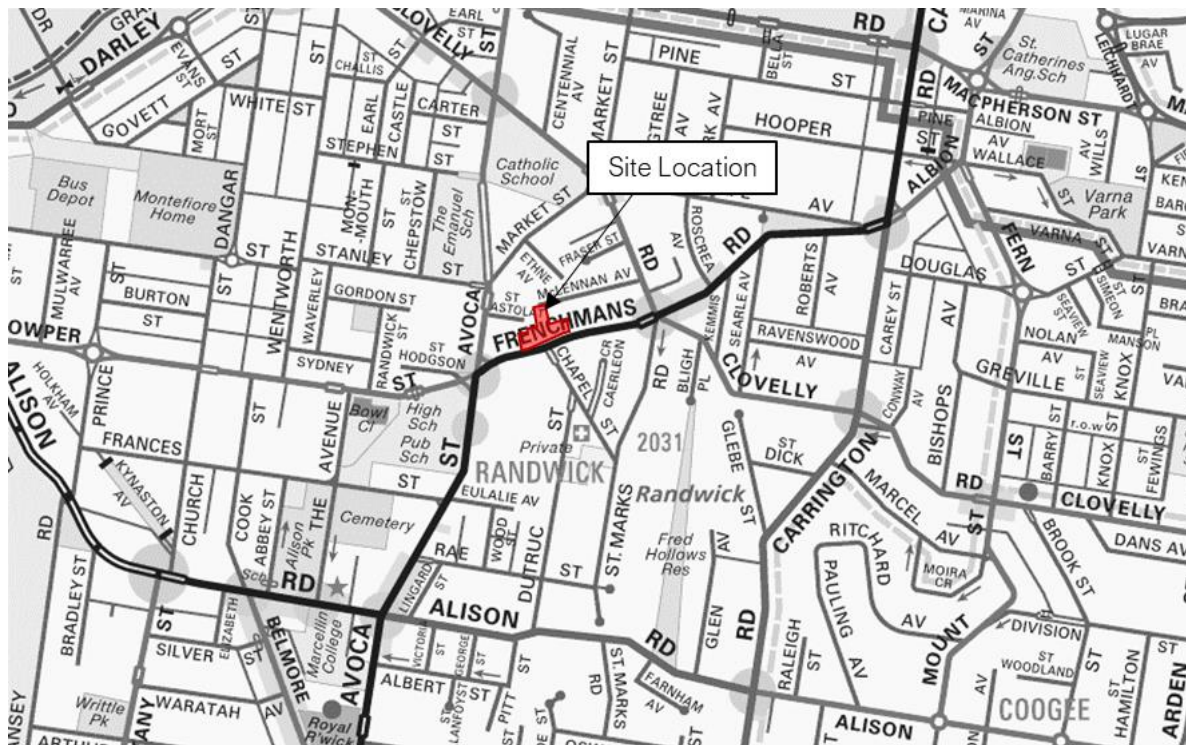
2.1. Site Context

The site is located at 11-19 Frenchmans Road, Randwick. The site of approximately 2,700 square metres has frontages of 76 metres to Frenchmans Road and 20 metres to McLennan Avenue. The site is currently occupied by the existing 94-bed RACF and has a land use zoning of Medium Density Residential (R3).

The surrounding properties predominantly include medium density residential and educational uses and seniors housing to the north and south-west of the site as well as neighbourhood centres to the east.

The location of the subject site and its surrounding environs is shown in Figure 2.1 and Figure 2.2 while the land zoning map is shown in Figure 2.3.

Figure 2.1: Subject site and its environs



Base image source: Sydney

EXISTING CONDITIONS

Figure 2.2: Aerial photo of subject site and its environs

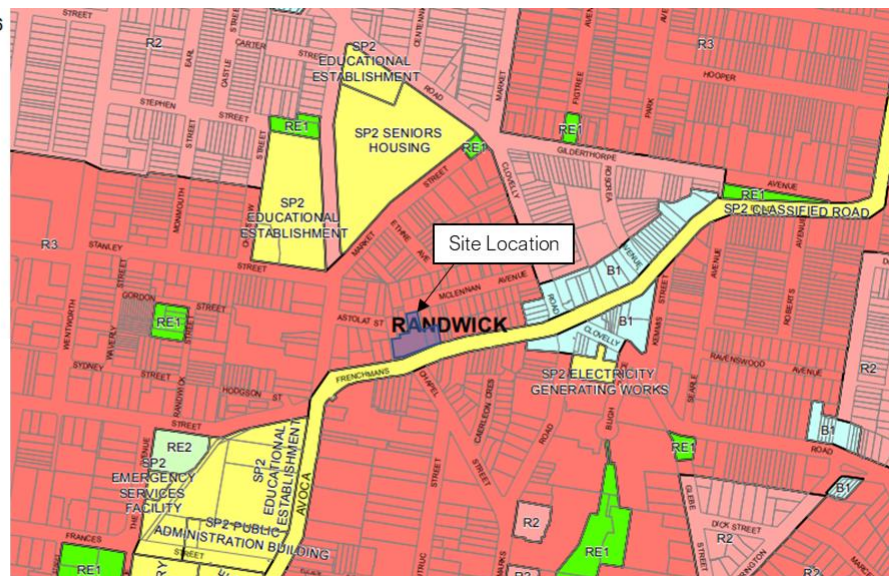


Base image source: Nearmaps

Figure 2.3: Land zoning map

Land Zoning Map - Sheet LZN_006

Zone	
B1	Neighbourhood Centre
B2	Local Centre
E1	National Parks and Nature Reserves
E2	Environmental Conservation
I2	Light Industrial
R1	General Residential
R2	Low Density Residential
R3	Medium Density Residential
RE1	Public Recreation
RE2	Private Recreation
RU4	Primary Production Small Lots
SP1	Special Activities
SP2	Infrastructure
MD	SEPP (Major Development) 2005



Base image source: Randwick City Council LEP 2012

2.2. Transport Network

2.2.1. Road Hierarchy

Roads are classified according to the functions they perform. The main purpose of defining a road's functional class is to provide a basis for establishing the policies which guide the management of the road according to their intended service or qualities.

In terms of functional road classification, State roads are strategically important as they form the primary network used for the movement of people and goods between regions, and throughout the State. Transport for NSW (formerly Roads and Maritime Services) is responsible for funding, prioritising and carrying out works on State roads. State roads generally include roads classified as freeways, state highways, and main roads under the Roads Act 1993, and the regulation to manage the road system is stated in the Australian Road Rules.

Transport for NSW defines four levels in a typical functional road hierarchy, ranking from high mobility and low accessibility, to high accessibility and low mobility. These road classes are:

Arterial Roads – Controlled by Transport for NSW, typically no limit in flow and designed to carry vehicles long distance between regional centres.

Sub-Arterial Roads – Managed by either Council or Transport for NSW under a joint agreement. Typically, their operating capacity ranges between 10,000 and 20,000 vehicles per day, and their aim is to carry through traffic between specific areas in a sub region or provide connectivity from arterial road routes (regional links).

Collector Roads – Provide connectivity between local sites and the sub-arterial road network, and typically carry between 2,000 and 10,000 vehicles per day.

Local Roads – Provide direct access to properties and the collector road system and typically carry between 500 and 4,000 vehicles per day.

2.2.2. Surrounding Road Network

Frenchmans Road

Frenchmans Road functions as a sub-arterial which is managed by Transport for NSW and is aligned in an east-west direction. It is a two-way road configured with one lane in each direction, set within an approximately 13-metre-wide carriageway. The posted speed limit is 60km/h with 40km/h during school zone hours. Kerbside parking is permitted outside of clearway times on both sides of the road. Frenchmans Road is shown in Figure 2.4 and Figure 2.5.

Figure 2.4: Frenchmans Road (looking east)



Figure 2.5: Frenchmans Road (looking west)



Chapel Street

Chapel Street functions as a local road and is aligned in north-south direction. It is a two-way road configured with one lane in each direction, set within an approximately 13-metre-wide carriageway. Chapel Street has a posted speed limit of 50km/h. Unrestricted kerbside parking is permitted on both sides of the road. Chapel Street is shown in Figure 2.6.

Figure 2.6: Chapel Street (looking south)



McLennan Avenue

McLennan Avenue functions as a local road aligned in an east-west direction and ends in a cul-de-sac at its western end, located north of the site. It is a two-way road configured with one lane in each direction, set within an approximately 12-metre-wide carriageway. Unrestricted kerbside parking is permitted on both sides of the road. McLennan Avenue is shown in Figure 2.7 and Figure 2.8.

Figure 2.7: McLennan Avenue (looking east)



Figure 2.8: McLennan Avenue (looking west)



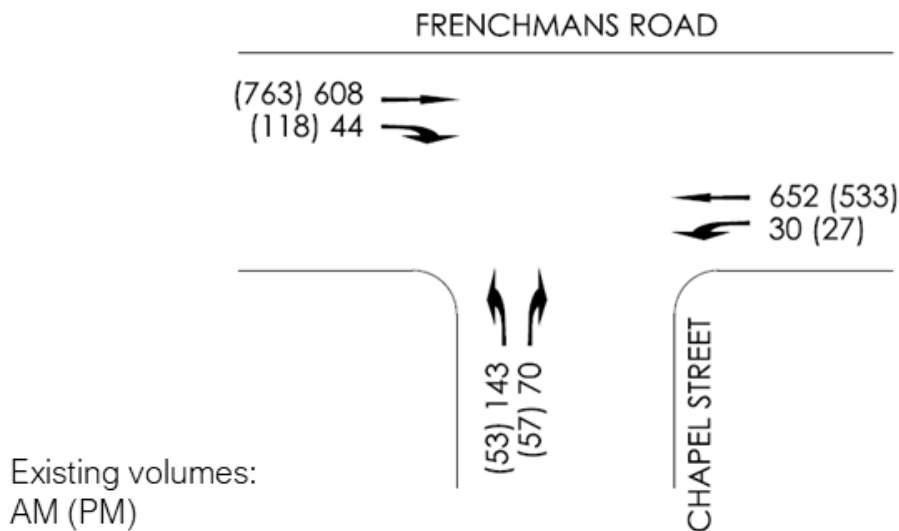
2.3. Traffic Volumes

GTA commissioned traffic survey at the Frenchmans Road/ Chapel Street priority-controlled intersection near the site on Wednesday 20 February 2019 during the peak periods of 7:00am to 10:00am and 3:00pm to 6:00pm. The traffic survey indicates the following peak hours:

- AM Peak: 7:45am to 8:45am
- PM Peak: 4:45pm to 5:45pm.

The traffic volumes are summarised in Figure 2.9, with the full survey results contained in Appendix A.

Figure 2.9: Existing AM and PM peak hour traffic volumes



2.4. Intersection Operation

The operation of the study intersection has been assessed using SIDRA INTERSECTION¹ (SIDRA), a computer-based modelling package which calculates intersection performance.

The commonly used measure of intersection performance, as defined by the Transport for NSW, is vehicle delay. SIDRA determines the average delay that vehicles encounter and provides a measure of the level of service. Table 2.1 shows the criteria that SIDRA adopts in assessing the level of service.

Table 2.1: SIDRA INTERSECTION Level of Service criteria

Level of Service (LoS)	Average Delay per vehicle (secs/veh)	Traffic Signals, Roundabout	Give Way & Stop Sign
A	Less than 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Near capacity	Near capacity, accident study required
E	57 to 70	At capacity, at signals incidents will cause excessive delays	At capacity, requires other control mode
F	Greater than 70	Extra capacity required	Extreme delay, major treatment required

Table 2.2 presents a summary of the existing intersection operation, with full results presented in Appendix B.

Table 2.2: Existing operating conditions (2019)

Intersection	Peak	Leg	Degree of Saturation (DoS)	Average Delay (sec)	95th Percentile Queue (m)	Level of Service (LoS)
Frenchmans Road/ Chapel Street	AM	South	0.76	84	24	F
		East	0.02	6	0	A
		West	0.36	13	10	A
	PM	South	0.74	94	20	F
		East	0.02	6	0	A
		West	0.50	12	25	A

Table 2.2 indicates that the south approach, right turn movement experiences notable delays during both the weekday peak periods, which is relative to the traffic volume along Frenchmans Road with limited gaps to make a right turn. There is acceptable delay on the west approach of Frenchmans Road associated with vehicles turning right into Chapel Street.

¹ Program used under license from Akcelik & Associates Pty Ltd.

2.5. Car Parking

Kerbside car parking is permitted along the surrounding roads with the following restrictions:

- Frenchmans Road – kerbside parking is permitted on the northern side with the exception of a section opposite the intersection of Chapel Street which has no parking restrictions between 7:00am to 9:00am and 4:00pm to 6:00pm Monday to Friday and on the southern side there are also no parking restrictions between 7:00am to 9:00am Monday to Friday near the intersection of Chapel Street. There is also no stopping restrictions at the bend of the road on the southeast corner.
- McLennan Avenue – unrestricted kerbside parking is permitted on both sides of the road.

2.6. Public Transport

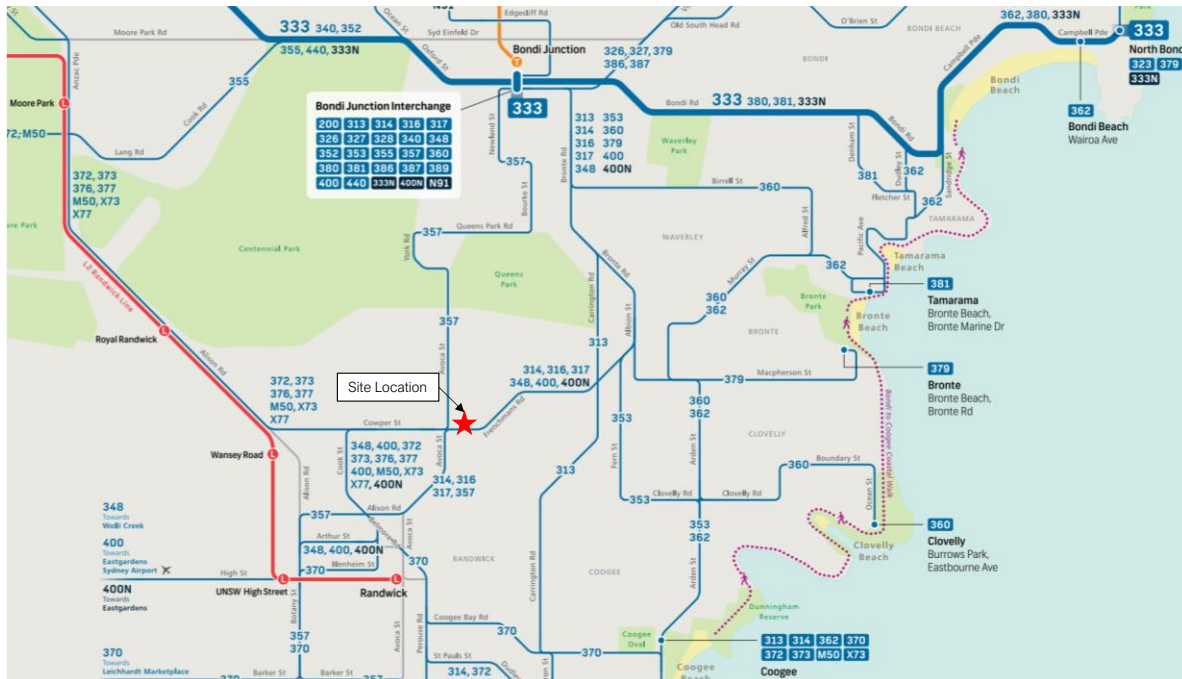
The site has frequent access to bus services with bus stops on Frenchmans Road and on Clovelly Road.

A review of the available bus services near the site is summarised in Table 2.3 and shown indicatively in Figure 2.10.

Table 2.3: Bus service provision

Route number	Route description	Location of stop	Distance to nearest stop	Frequency on/off-peak
314	Coogee to Bondi Junction	Frenchmans Road (westbound)	130m	30 min
316	Eastgardens to Bondi Junction			30 min/ 1 hour
317	Eastgardens to Bondi Junction			30 min/ 1 hour
348	Wolli Creek to Bondi Junction	Frenchmans Road (eastbound)	150m	20 min/ 30 min
400	Bondi Junction to Sydney airport			5 - 10 min/ 30 min
400N	Eastgardens to Bondi Junction (Night Service)			30 min (from 12:29am to 5:50am only)

Figure 2.10: Surrounding public transport network



Base image source: <https://transportnsw.info>, accessed July 2020

2.7. Walking and Cycling Infrastructure

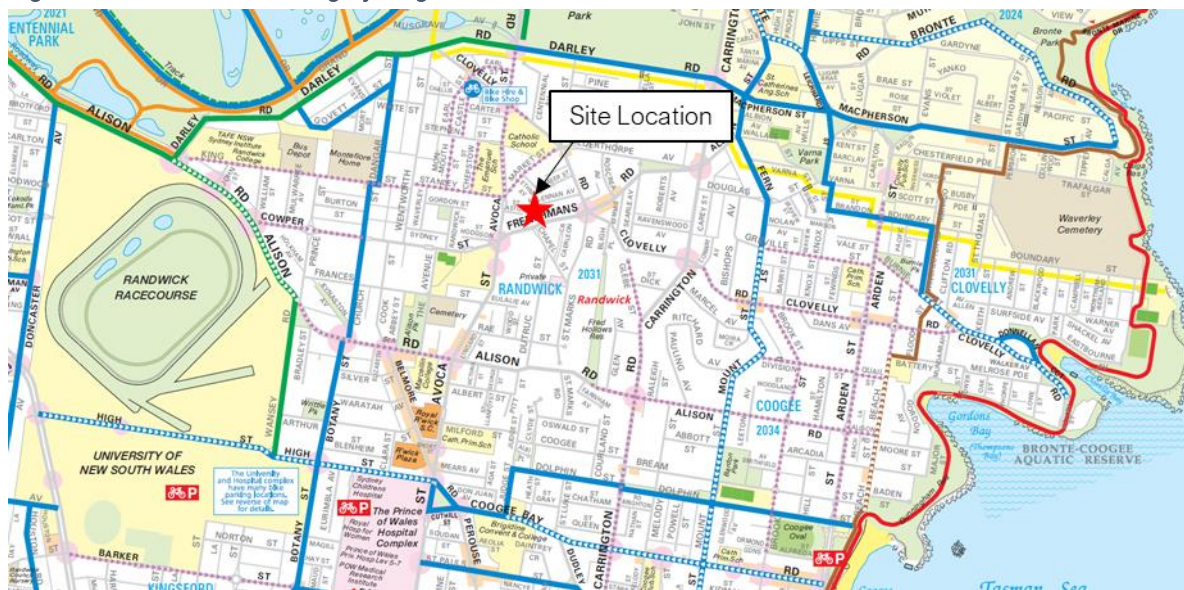
Footpaths near the site are well developed and located on both sides of the surrounding roads as follows:

- Frenchmans Road
- McLennan Avenue
- Chapel Road.

Safe crossing points are provided at the signalised pedestrian crossings at all approaches of the Frenchmans Road/ St Marks Road/ Clovelly Road intersection and the Frenchmans Road/ Avoca Street intersection.

The nearest cycling infrastructure is around 650 metres from the site on Darley Road to the north, Botany Street to the south, Dolphin Street to the south and Fern Street to the east as shown in Figure 2.11.

Figure 2.11: Surrounding cycling network



Base image source: <https://www.randwick.nsw.gov.au>, accessed February 2019

3. DEVELOPMENT PROPOSAL

03

3.1. Land Use

The proposal includes the redevelopment of the existing 94-bed RACF, with a new RACF as summarised in Table 3.1. The proposal also includes ancillary retail, commercial, medical consulting rooms, and theatre/ multi-purpose rooms on the ground floor. The proposal includes a total of 88 beds. This includes 78 RACF rooms and two ILU units.

Table 3.1: Development schedule

Use	Description	Number of Rooms/ Units	Number of Beds
RACF Rooms	1 bed	70	70
	2 beds	8	16
RACF Subtotal		78	86
ILU Units	1 bedroom	2	2
Total		80	88

The proposal includes a total of 88 beds. This includes 78 RACF rooms and two ILU units.

The potential maximum number of staff onsite at any given time is expected to be 16.

3.2. Parking and Access

Vehicle access will remain as per the existing arrangements to/ from Frenchmans Road, with a two-way ramp to the basement car park.

The basement car park includes a total of 20 parking spaces, including the following:

- 17 car parking spaces
- one accessible parking space for the ILU
- one ambulance bay
- one service vehicle bay.

The service vehicle bay can accommodate vehicles up to 8.8 metres long, however, the service bay area is restricted to a height clearance of 3.8 metres and this will need to be considered when allowing service vehicle access.

The development does not propose a pickup/ set-down parking area via a porte cochere. Notwithstanding, consideration is given towards the unrestricted kerbside parking on Frenchmans Road as it currently exists for the existing SummitCare RACF.

4. PARKING AND LOADING ASSESSMENT

04

4.1. Car Parking

The statutory car parking requirements for different development types are set out in Randwick DCP 2013, which also references State Environment Planning Policy – Housing for Seniors or People with a Disability (SEPP Seniors) 2004 for senior housing car parking rate, including for staff and an ambulance space. For visitor parking requirements, the Transport for NSW *Guide to Traffic Generating Developments* (2002) has also been referenced. A summary of the relevant minimum parking requirements is provided in Table 4.1 and Table 4.2.

Table 4.1: SEPP Seniors Car parking requirements

Description	SEPP Seniors minimum parking rate
RACF	1 visitor space per 10 beds (or 1 space per 15 beds if the facility provides care only for persons with dementia)
	1 staff space per 2 staff
	1 ambulance space
ILU	0.5 spaces per bedroom

Table 4.2: Transport for NSW Guide car parking requirements

Use	Transport for NSW minimum parking rate
Self-contained units (resident funded development)	1 visitor space per 5 units
Self-contained units (subsidised development)	1 visitor space per 10 units
Nursing homes	1 visitor space per 10 beds

Based on the review of the SEPP Seniors and Transport for NSW Guide car parking requirement rates, it is recommended that the following minimum car parking rates be applied for the proposal:

- Residential Aged Care Facilities (high-care and mid-care) (RACF):
 - one visitor car space for each 10 beds
 - one car space for each 2 residential care facility staff
 - one ambulance space.
- Independent Living Units (ILU):
 - 0.5 resident car spaces per one-bedroom unit
 - 0.2 visitor spaces per unit.

PARKING AND LOADING ASSESSMENT

Based on the above, the recommended car parking requirements are summarised in Table 4.3.

Table 4.3: SEPP Seniors and Transport for NSW Guide parking requirements

Description	Use	Parking rate	Quantity	Parking requirement
RACF	Visitor	1/ 10 beds	86 beds	9
	Staff	1/ 2 staff	16 staff	8
	Ambulance	1 ambulance space	-	1
RACF Subtotal				18 spaces
ILU	One-bedroom	0.5/ bedroom	2 units	1
	Visitor	0.2/ unit	2 units	1
Total				20 spaces

Table 4.3 indicates that the proposal would require a minimum of 19 car parking spaces and one ambulance space.

The proposal includes provision of 20 parking spaces, which includes 18 car parking spaces, one ambulance bay and one service bay. These spaces will be provided on the basement level with access from Frenchmans Road. Such a location would allow for quick and efficient entry and departure from the site.

Whilst there is a minor shortfall against the requirements, it is expected that the available visitor parking will adequately cater for the anticipated demand. It is recommended that spaces 1 to 9 in the car park are allocated to visitors, space 10 for the ILU and spaces 11 to 18 for the RACF staff.

4.2. Motorcycle Parking

DCP 2013 requires motorcycle parking to be provided for all residential development at a rate of one motorcycle space per 100 car parking spaces. This would result in a requirement to provide one motorcycle space based on the 18 car parking spaces required.

Motorcycle bays are to measure 2.5 metres long by 1.2 metres wide, in accordance with the DCP 2013 and are to be located away from vehicle manoeuvring areas to avoid motorcycles being damaged.

4.3. Bicycle Parking

Whilst DCP 2013 identifies bicycle parking space requirement, consideration should be given to whether the aged care resident profile for this development would use this mode of transport.

Notwithstanding, one bicycle parking space per 10 car parking spaces which results in a total requirement of two bicycle parking spaces. In addition, two unisex showers are required based on the total of 16 staff.

Long term bicycle parking for staff could be provided in a secure location (i.e. individual locker of secure room/ enclosure) and bicycle parking for visitors could be provided in an easily accessible location that provides protection from weather which enables frames and wheels to be secured to a high-quality rail.

Bicycle parking spaces would be designed in accordance with relevant Australian Standard (AS2890.3 – Bicycle Parking Facilities).

4.4. Loading and Waste Collection

DCP 2013 does not specify the number of spaces required for service vehicles for an aged-care facility. Notwithstanding, one service vehicle space per 2,000 square metres GFA is required for other uses. The proposal includes a service area on the Basement Floor.

4.5. Layout & Access

The access and car park layouts have been reviewed against the requirements of the Australian Standard for Off Street Car Parking (AS/NZS2890.1:2004 and AS/NZS2890.6:2009) and Off-Street Commercial Vehicle Facilities (AS/NZS2890.2:2002). This assessment included a review of the following:

- bay and aisle width
- adjacent structures
- turnaround facilities
- circulation roads and ramps
- ramp grades
- height clearances
- internal queuing
- parking for persons with disabilities
- ambulance parking.

The proposed layout is considered to operate satisfactorily and is expected to be able to accommodate the intended parking provision, subject to the adoption of recommendations discussed below and shown graphically at Appendix C. Swept path analysis of relevant design vehicles are also included in Appendix C.

All car parking spaces are at least 2.4 metres wide and 5.4 metres long, with an accessible space (with adjacent 2.4 metre wide shared area) allocated for ILU use. All parking spaces have a minimum of 5.8 metre wide aisles.

Clear sight lines at the property line will be provided to ensure adequate visibility to pedestrian for exiting vehicles and a convex mirror following the curvature of the ramp would be required. This is particularly important as entering vehicles will be required to manoeuvre to the right side of the ramp to access the intercom/ swipe card reader before entering. Also, because service vehicles will encroach into the opposite lane when entering and exiting the basement. This is considered acceptable given the size of the car park and anticipated turnover of vehicles.

The loading area is generally in accordance with Australian Standard (AS2890.2:2002) and allows for access by one service vehicle or waste collection vehicle at a time. The loading area will have a height clearance of 3.8 metres to any services or structure with the design based on a standard ambulance vehicle. The loading bay is suitable for vehicles up to 8.8 metres long, with less than 3.8 metres travel or operating height.

PARKING AND LOADING ASSESSMENT

This includes 6.4 metre small rigid vehicles and waste collection vehicles with up to 15 cubic metres of capacity based on the Operational Waste Management Plan². Vehicles larger than 6.4 metres long will slightly protrude into the circulation aisle when loading/ unloading which is considered acceptable based on the car park size and anticipated vehicle turnover. Management will be required to advise delivery drivers and waste contractors of the height restriction and any on-site peak traffic periods to avoid.

The adjacent ambulance bay would need to be vacant for a service vehicle to depart the loading area as it requires a three-point manoeuvre. The likelihood of such conflict is considered low, with management able to reschedule deliveries if an ambulance is on site and/ or a service vehicle already in the loading area required to wait for the ambulance to depart before egressing.

² Elephants Foot, Summit Care -11-19 Frenchmans Road, Randwick – Operational Waste Management Plan, 17 August 2020

5. TRAFFIC ASSESSMENT

05

5.1. Overview

The traffic impact assessment for the proposed development has been completed with consideration for the following:

- Identifying the traffic generation characteristics associated with the proposed uses.
- Assessing the net change in traffic on the surrounding road network.

5.2. Trip Generation

Traffic generation estimates for the existing development and the proposal have been sourced from the Transport for NSW *Guide to Traffic Generating Developments* (2002) and Technical Direction (TDT 2013/04a).

RACF

For the mid and high care units, the Transport for NSW Guide recommends a rate of 0.2 vehicle trips per dwelling for PM peak hours for housing for aged and disabled persons, which includes the trips generated by staff and visitors.

The directional split of traffic is assumed to be 80:20 between inbound and outbound traffic in the AM peak. The reverse directional split is assumed in the PM peak. This is associated with the arrival of staff and visitors in the morning and departure in the afternoon.

ILU

TDT 2013/04a recommends a rate of 0.4 vehicle trips per occupied dwelling during the weekday PM peak period for housing for seniors. It is noted that the AM site peak hour does not generally coincide with the general network AM peak hour. As such, a rate of 0.2 vehicle trips per dwelling has been adopted for the AM peak hour.

The directional split of traffic (i.e. the ratio between the inbound and outbound traffic movements) is assumed to be 20:80 in the AM peak. The reverse directional split is assumed in the PM peak.

Table 5.1 illustrates the anticipated traffic generation of the proposal.

Table 5.1: Traffic generation estimates

Use	Size	Traffic generation rate (trips/ hour)		Traffic generation estimates (trips/ hour)			
		Weekday AM	Weekday PM	Weekday AM		Weekday PM	
				In	Out	In	Out
RACF	78 rooms	0.2 trips/ room		13	3	3	13
ILU	2 units	0.2 trips/ unit	0.4 trips/ unit	1	1	1	1
Total				14	4	4	14
				18		18	

Table 5.1 indicates that the site could potentially generate up to 18 vehicle trips in the weekday AM and PM peak hours, respectively. This is compared to 19 vehicle trips during the same peak hours that would be generated by the existing 94-bed RACF. As such, the proposal is not expected to generate any additional traffic compared the existing facility. Therefore, the proposal is not expected to have any impact on the surrounding road network and can be supported from a traffic and transport perspective.

6. CONCLUSION

06

6.1. Conclusion

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

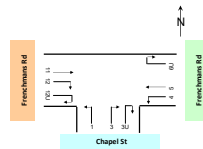
1. A development application is to be lodged to redevelop an existing 94-bed Residential Aged Care Facility development on a site of 2,710 square metres located between Frenchmans Road and McLennan Avenue in Randwick, with an 88-bed facility.
2. The proposal generates a SEPP Seniors and Transport for NSW Guide parking requirement of 20 parking spaces, including 19 car spaces and one ambulance bay. The proposed parking provision of 20 spaces, including 18 car spaces, one ambulance bay and one service vehicle bay, is considered appropriate to accommodate the anticipated demand generated by the proposal.
3. The site is required to provide for two bicycle parking spaces and one motorcycle space.
4. The proposed parking and loading layout is considered generally consistent with the dimensional requirements as set out in the Australian/New Zealand Standard for Parking Facilities.
5. The site is expected to generate up to 18 vehicle movements in the weekday peak hours, which is no net change compared to the existing facility (19 vehicle movements).
6. Therefore, the proposal would have no additional impact on the surrounding road network and can be supported from a traffic and transport perspective.

A.SURVEY RESULTS



Job No. : N4793
Client : GTA
Suburb : Frenchmans Road
Location : 1. Frenchmans Rd / Chapel St
Day/Date : Wed, 20th Feb 2019
Weather : Fine
Description : Classified Intersection Count
: 15 mins Data

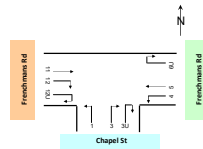
Class 1 : Class 2
Light : Heavy



Approach		Chapel St										Frenchmans Rd									
Direction	Direction 1 (Left Turn)	Direction 3 (Right Turn)			Direction 3U (U Turn)			Direction 4 (Left Turn)			Direction 5 (Through)			Direction 6U (U Turn)							
Time Period	lights	heavy	total	lights	heavy	total	lights	heavy	total	lights	heavy	total	lights	heavy	total	lights	heavy	total			
7:00 to 7:15	44	0	44	15	0	15	0	0	0	6	0	6	121	4	125	0	0	0			
7:15 to 7:30	32	0	32	18	0	18	0	0	0	5	0	5	123	17	140	0	0	0			
7:30 to 7:45	42	0	42	20	2	22	0	0	0	4	0	4	127	6	133	0	0	0			
7:45 to 8:00	38	0	38	14	1	15	0	0	0	4	0	4	123	4	127	0	0	0			
8:00 to 8:05	29	0	29	19	0	19	0	0	11	0	11	16	16	32	0	0	0				
8:05 to 8:30	31	2	33	14	0	14	0	16	0	3	0	3	120	6	126	0	0	0			
8:30 to 8:45	43	0	43	19	1	20	0	0	10	0	10	175	10	185	0	0	0				
8:45 to 9:00	36	2	38	10	0	10	0	0	6	0	6	134	15	149	0	0	0				
9:00 to 9:05	21	0	21	18	0	18	0	0	8	0	8	142	11	153	0	0	0				
9:05 to 9:30	34	0	34	15	1	16	0	10	0	4	0	4	134	7	141	0	0	0			
9:30 to 9:45	11	0	11	13	1	14	0	0	0	5	0	5	138	13	151	0	0	0			
9:45 to 10:00	14	0	14	10	1	11	0	0	3	0	3	134	11	145	0	0	0				
AM Totals	369	4	373	187	7	194	0	0	71	0	71	1,489	105	1,594	0	0	0				
10:00 to 10:15	14	1	15	12	0	12	0	0	12	0	12	102	9	111	0	0	0				
10:15 to 10:30	19	1	20	19	0	19	0	0	5	0	5	99	8	107	0	0	0				
10:30 to 10:45	13	0	13	14	0	14	0	0	8	0	8	140	14	154	0	0	0				
10:45 to 10:50	16	0	16	10	0	10	0	0	5	0	5	121	10	131	0	0	0				
10:50 to 10:55	9	0	9	10	0	10	0	0	9	0	9	121	10	131	0	0	0				
10:55 to 11:00	8	0	8	14	1	15	0	0	7	1	8	104	11	115	0	0	0				
11:00 to 11:05	10	0	10	18	0	18	0	0	8	0	8	107	9	116	0	0	0				
11:05 to 11:30	13	0	13	19	0	19	0	0	9	0	9	100	10	110	1	0	1				
11:30 to 11:35	16	0	16	11	0	11	0	0	6	0	6	130	5	135	0	0	0				
11:35 to 11:39	8	0	8	10	0	10	1	0	5	0	5	112	5	117	0	0	0				
11:39 to 11:45	16	0	16	17	0	17	0	0	7	0	7	145	6	151	0	0	0				
11:45 to 12:00	14	1	15	9	0	9	0	0	8	0	8	102	7	109	0	0	0				
PM Totals	100	2	102	349	1	350	1	0	1	83	1	84	1,487	104	1,591	2	0	2			

Approach		Frenchmans Rd									
Direction		Direction 11 (Through)			Direction 12 (Right Turn)			Direction 12U (U Turn)			
Time Period		lights	heavy	total	lights	heavy	total	lights	heavy	total	
7:00 to 7:30		119	20	139	14	0	14	15	0	15	0
7:30 to 7:45		124	14	138	12	1	13	0	0	0	0
7:45 to 7:55		123	18	141	14	0	14	0	0	0	0
7:55 to 8:00		119	18	137	8	0	8	0	0	0	0
8:00 to 8:05		145	17	162	14	0	14	0	0	0	0
8:05 to 8:30		128	11	139	12	0	12	0	0	0	0
8:30 to 8:45		115	9	124	10	0	10	0	0	0	0
8:45 to 9:00		110	8	118	23	1	24	0	0	0	0
9:00 to 9:05		114	11	125	17	1	18	0	0	0	0
9:05 to 9:30		98	12	110	13	0	13	0	0	0	0
9:30 to 9:45		100	14	114	5	0	5	0	0	0	0
9:45 to 10:00		115	7	122	10	0	10	0	0	0	0
AM Totals		1,458	160	1,618	102	4	106	0	0	0	0
10:00 to 10:15		109	13	122	12	0	12	0	0	0	0
10:15 to 10:30		101	8	109	23	0	23	0	0	0	0
10:30 to 10:45		112	15	127	25	0	25	0	0	0	0
10:45 to 10:50		101	6	107	26	0	26	0	0	0	0
10:50 to 10:55		118	8	126	21	0	21	0	0	0	0
10:55 to 11:00		172	6	178	28	0	28	0	0	0	0
11:00 to 11:05		101	10	111	24	0	24	0	0	0	0
11:05 to 11:30		104	7	111	36	0	36	0	0	0	0
11:30 to 11:35		101	4	105	18	1	19	0	0	0	0
11:35 to 11:39		171	7	178	12	0	12	0	0	0	0
11:39 to 11:45		191	6	197	21	0	21	0	0	0	0
11:45 to 12:00		104	5	109	30	0	30	0	0	0	0
PM Totals		2,009	90	2,100	240	1	241	0	0	0	0

Job No. : N4793
Client : GTA
Suburb : Frenchmans Road
Location : 1. Frenchmans Rd / Chapel St
Day/Date : Wed, 20th Feb 2019
Weather : Fine
Description : Classified Intersection Count
: Hourly Summary



Approach		Chapel St										Frenchmans Rd									
Direction		Direction 1 (Left Turn)			Direction 3 (Right Turn)			Direction 3U (U Turn)			Direction 4 (Left Turn)			Direction 5 (Through)			Direction 6U (U Turn)				
Time Period		lights	heavy	total	lights	heavy	total	lights	heavy	total	lights	heavy	total	lights	heavy	total	lights	heavy	total		
7:00 to 8:30		104	0	104	69	3	72	0	0	0	21	0	21	159	11	170	0	0	0		
7:30 to 8:45		141	0	141	73	3	76	0	0	0	26	0	26	178	36	214	0	0	0		
7:45 to 8:50		140	2	142	69	3	72	0	0	0	24	0	24	165	25	190	0	0	0		
8:00 to 8:30		141	2	143	68	2	70	0	10	10	48	0	48	273	32	305	0	0	0		
8:30 to 9:00		130	4	134	62	1	63	0	0	0	30	0	30	123	40	163	0	0	0		
9:00 to 9:30		131	4	135	61	1	62	0	16	16	27	0	27	103	42	145	0	0	0		
9:30 to 9:45		119	2	121	62	2	64	0	0	0	26	0	26	107	43	150	0	0	0		
9:45 to 10:00		87	2	89	56	2	58	0	0	0	23	0	23	108	46	154	0	0	0		
10:00 to 10:30		65	0	65	56	3	59	0	0	0	20	0	20	89	42	130	0	0	0		
AM Totals		369	4	373	187	7	194	0	0	0	71	0	71	1,489	105	1,594	0	0	0		
10:30 to 10:45		42	1	43	50	0	50	0	0	0	20	0	20	68	41	109	0	0	0		
10:45 to 10:50		27	1	28	52	0	52	0	0	0	21	0	21	89	42	130	0	0	0		
10:50 to 10:55		46	0	46	48	1	49	0	0	0	23	1	24	100	45	145	1	0	1		
10:55 to 11:00		43	0	43	52	1	53	0	0	0	23	1	24	101	40	141	1	0	1		
11:00 to 11:30		40	0	40	61	1	62	0	0	0	27	1	28	100	40	140	2	0	2		
11:30 to 11:35		47	0	47	62	1	63	0	0	0	30	1	31	141	35	176	1	0	1		
11:35 to 11:39		47	0	47	58	0	58	1	0	1	28	0	28	109	29	138	1	0	1		
11:39 to 11:45		53	0	53	57	0	57	1	0	1	37	0	37	107	36	143	0	0	0		
11:45 to 12:00		54	1	55	47	0	47	1	0	1	26	0	26	104	23	127	0	0	0		
PM Totals		100	2	102	349	1	350	1	0	1	83	1	84	1,487	104	1,591	2	0	2		

Approach		Frenchmans Rd									
Direction		Direction 11 (Through)			Direction 12 (Right Turn)			Direction 12U (U Turn)			
Time Period		lights	heavy	total	lights	heavy	total	lights	heavy	total	
7:00 to 7:30		123	21	144	48	0	48	55	0	55	0
7:15 to 8:00		145	18	163	48	1	49	0	0	0	0
7:30 to 8:00		160	45	205	48	0	48	0	0	0	0
7:45 to 8:45		132	35	167	48	0	48	0	0	0	0
8:00 to 8:30		154	41	195	39	1	40	0	0	0	0
8:15 to 9:00		143	39	182	42	2	44	0	0	0	0
8:30 to 9:00		437	46	477	53	2	55	0	0	0	0
9:00 to 9:45		422	45	467	38	0	38	0	0	0	0
9:45 to 10:00		427	45	472	45	1	46	0	0	0	0
AM Totals		2,465	383	2,848	282	3	285	0	0	0	0
10:00 to 10:30		613	43	655	336	0	336	0	0	0	0
10:15 to 10:45		622	37	659	355	0	355	0	0	0	0
10:30 to 10:45		613	35	648	330	0	330	0	0	0	0
10:45 to 11:00		667	39	706	345	0	345	0	0	0	0
11:00 to 11:30		667	38	705	333	0	333	0	0	0	0
11:15 to 17:15		730	27	757	535	1	536	0	0	0	0
16:30 to 17:30		729	28	757	514	1	515	0	0	0	0
17:00 to 17:45		739	26	765	517	1	518	0	0	0	0
17:00 to 18:00		739	27	766	513	1	514	0	0	0	0
PM Totals		2,809	40	2,849	340	1	341	0	0	0	0

B.SIDRA INTERSECTION RESULTS

B

USER REPORT FOR SITE

 **Project: 200728sid-N164680 11-19 Frenchmans Road, Randwick**

Template: Default Site User Report

Site: 1 [1 Frenchmans/Chapel AM - Ex]

Site Category: -
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Chapel Street												
1	L2	151	1.4	0.268	10.2	LOS A	1.0	7.3	0.65	0.86	0.74	35.7
3	R2	74	2.9	0.764	84.1	LOS F	3.3	23.5	0.98	1.20	1.75	13.4
Approach		224	1.9	0.764	34.5	LOS C	3.3	23.5	0.76	0.97	1.07	22.2
East: Frenchmans Road												
4	L2	32	0.0	0.017	5.5	LOS A	0.0	0.0	0.00	0.58	0.00	46.9
5	T1	686	4.4	0.362	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		718	4.3	0.362	0.3	NA	0.0	0.0	0.00	0.03	0.00	58.9
West: Frenchmans Road												
11	T1	640	9.0	0.359	1.2	LOS A	1.4	10.2	0.17	0.05	0.23	54.4
12	R2	46	0.0	0.359	12.8	LOS A	1.4	10.2	0.22	0.06	0.29	46.6
Approach		686	8.4	0.359	2.0	NA	1.4	10.2	0.18	0.05	0.23	53.7
All Vehicles		1628	5.7	0.764	5.7	NA	3.3	23.5	0.18	0.17	0.25	45.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Site: 1 [1 Frenchmans/Chapel AM - Dev]

Site Category: -
 Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Chapel Street												
1	L2	151	1.4	0.270	10.2	LOS A	1.0	7.4	0.65	0.87	0.74	35.7
3	R2	74	2.9	0.782	88.9	LOS F	3.4	24.5	0.98	1.21	1.80	12.9
Approach		224	1.9	0.782	36.1	LOS C	3.4	24.5	0.76	0.98	1.09	21.7
East: Frenchmans Road												
4	L2	32	0.0	0.017	5.5	LOS A	0.0	0.0	0.00	0.58	0.00	46.9
5	T1	689	4.4	0.364	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		721	4.2	0.364	0.3	NA	0.0	0.0	0.00	0.03	0.00	58.9
West: Frenchmans Road												
11	T1	647	8.9	0.362	1.2	LOS A	1.4	10.3	0.17	0.05	0.23	54.4
12	R2	46	0.0	0.362	12.9	LOS A	1.4	10.3	0.22	0.06	0.29	46.6
Approach		694	8.3	0.362	2.0	NA	1.4	10.3	0.18	0.05	0.23	53.7
All Vehicles		1639	5.7	0.782	5.9	NA	3.4	24.5	0.18	0.17	0.25	44.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Site: 1 [1 Frenchmans/Chapel PM - Ex]

Site Category: -
 Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Chapel Street												
1	L2	56	0.0	0.080	7.8	LOS A	0.3	1.9	0.52	0.73	0.52	38.3
3	R2	60	0.0	0.740	93.6	LOS F	2.9	20.3	0.98	1.16	1.61	12.4
Approach		116	0.0	0.740	52.3	LOS D	2.9	20.3	0.76	0.95	1.09	17.7
East: Frenchmans Road												
4	L2	28	0.0	0.015	5.5	LOS A	0.0	0.0	0.00	0.58	0.00	46.9
5	T1	561	4.9	0.297	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		589	4.6	0.297	0.3	NA	0.0	0.0	0.00	0.03	0.00	58.9
West: Frenchmans Road												
11	T1	803	3.1	0.501	2.0	LOS A	3.5	25.0	0.30	0.11	0.44	51.3
12	R2	124	0.8	0.501	12.1	LOS A	3.5	25.0	0.39	0.14	0.58	43.8
Approach		927	2.8	0.501	3.3	NA	3.5	25.0	0.31	0.11	0.46	50.1
All Vehicles		1633	3.3	0.740	5.7	NA	3.5	25.0	0.23	0.14	0.34	45.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Site: 1 [1 Frenchmans/Chapel PM - Dev]

Site Category: -
 Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Chapel Street												
1	L2	56	0.0	0.081	7.9	LOS A	0.3	1.9	0.52	0.74	0.52	38.2
3	R2	60	0.0	0.758	98.6	LOS F	3.0	21.0	0.98	1.17	1.65	11.9
Approach		116	0.0	0.758	54.9	LOS D	3.0	21.0	0.76	0.96	1.11	17.1
East: Frenchmans Road												
4	L2	28	0.0	0.015	5.5	LOS A	0.0	0.0	0.00	0.58	0.00	46.9
5	T1	568	4.8	0.301	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		597	4.6	0.301	0.3	NA	0.0	0.0	0.00	0.03	0.00	58.9
West: Frenchmans Road												
11	T1	806	3.1	0.503	2.0	LOS A	3.5	25.4	0.30	0.11	0.45	51.2
12	R2	124	0.8	0.503	12.2	LOS A	3.5	25.4	0.39	0.14	0.59	43.7
Approach		931	2.8	0.503	3.4	NA	3.5	25.4	0.31	0.11	0.47	49.9
All Vehicles		1643	3.3	0.758	5.9	NA	3.5	25.4	0.23	0.14	0.34	45.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

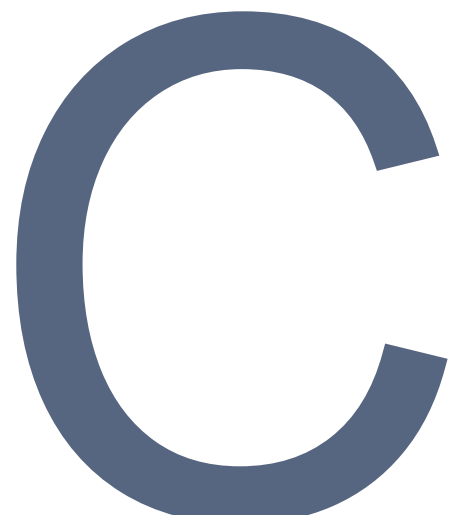
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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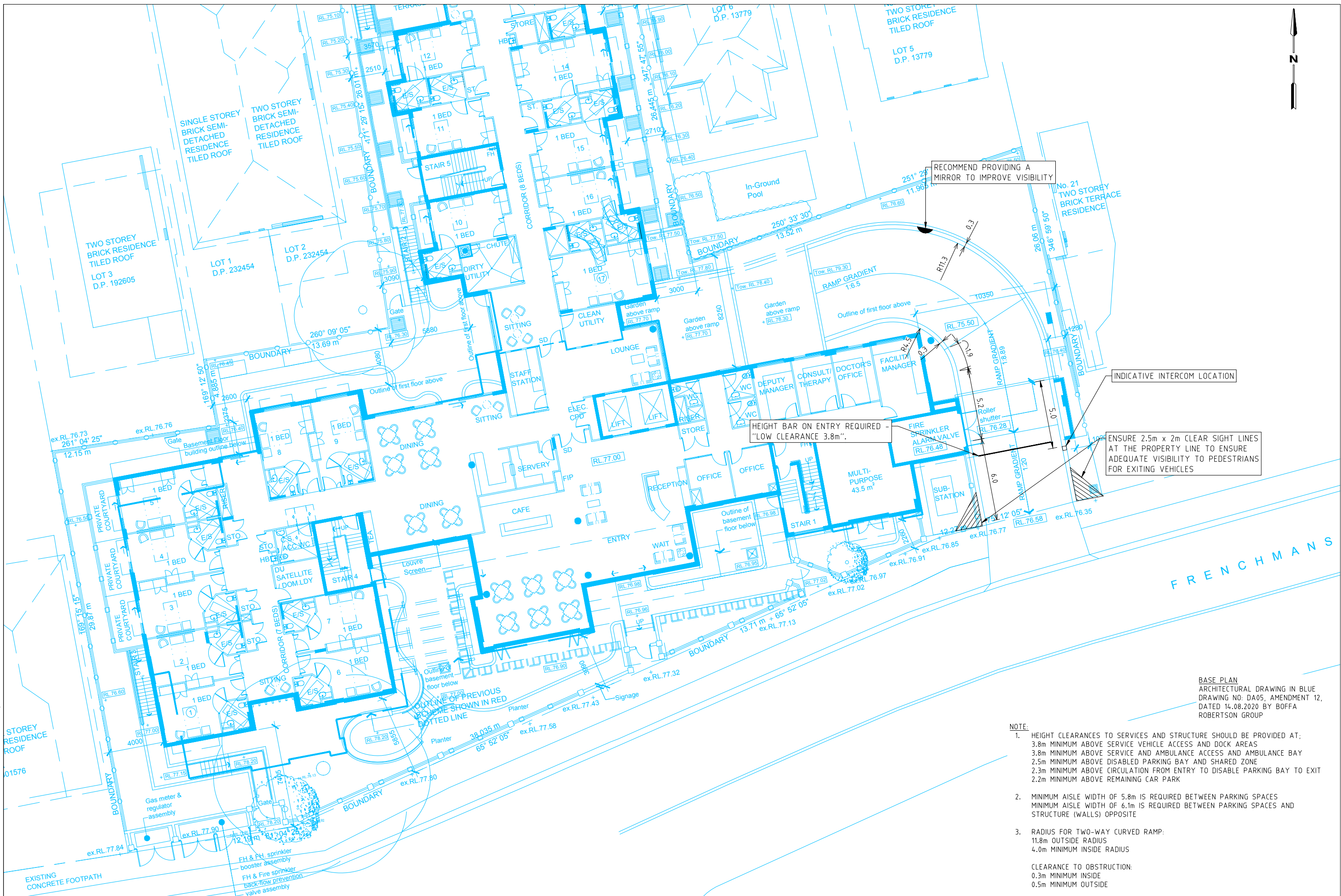
Organisation: GTA CONSULTANTS | Created: Tuesday, 28 July 2020 12:29:26 PM

Project: \\gta.com.au\projectfiles\ProjectFilesSyd\N16400-16499\N164680 11-19 Frenchmans Rd, Randwick\Modelling\200728sid-N164680 11-19 Frenchmans Road, Randwick.sip8

C. SWEPT PATH ASSESSMENT



\\GTA.COM.AU\PROJECTFILES\PROJECTFILES\N164680-164680-01-P5.DWG PLOTTED BY RAYMOND ZHANG ON 25/08/2020 AT 16:10



BASE PLAN
ARCHITECTURAL DRAWING IN BLUE
DRAWING NO: DA05, AMENDMENT 12,
DATED 14.08.2020 BY BOFFA
ROBERTSON GROUP

- NOTE:
- HEIGHT CLEARANCES TO SERVICES AND STRUCTURE SHOULD BE PROVIDED AT:
3.8m MINIMUM ABOVE SERVICE VEHICLE ACCESS AND DOCK AREAS
3.8m MINIMUM ABOVE SERVICE AND AMBULANCE ACCESS AND AMBULANCE BAY
2.5m MINIMUM ABOVE DISABLED PARKING BAY AND SHARED ZONE
2.3m MINIMUM ABOVE CIRCULATION FROM ENTRY TO DISABLE PARKING BAY TO EXIT
2.2m MINIMUM ABOVE REMAINING CAR PARK
 - MINIMUM AISLE WIDTH OF 5.8m IS REQUIRED BETWEEN PARKING SPACES
MINIMUM AISLE WIDTH OF 6.1m IS REQUIRED BETWEEN PARKING SPACES AND
STRUCTURE (WALLS) OPPOSITE
 - RADIUS FOR TWO-WAY CURVED RAMP:
11.8m OUTSIDE RADIUS
4.0m MINIMUM INSIDE RADIUS
- CLEARANCE TO OBSTRUCTION:
0.3m MINIMUM INSIDE
0.5m MINIMUM OUTSIDE



Melbourne 03 9651 9600
Sydney 02 8448 1800
Brisbane 07 3113 5000
Adelaide 08 8334 3600
Perth 08 6169 1000

PRELIMINARY PLAN
FOR DISCUSSION PURPOSES ONLY
SUBJECT TO CHANGE WITHOUT
NOTIFICATION

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

DESIGNED
R. ZHANG

APPROVED BY
K. MCNATTY

DESIGN CHECK
A. MODESSA

DATE ISSUED
25 AUGUST 2020

SCALE
A3 0 1.25 2.5 5 1:250

CAD FILE NO.
N164680-01-P5.DWG

11-19 FRENCHMANS ROAD, RANDWICK

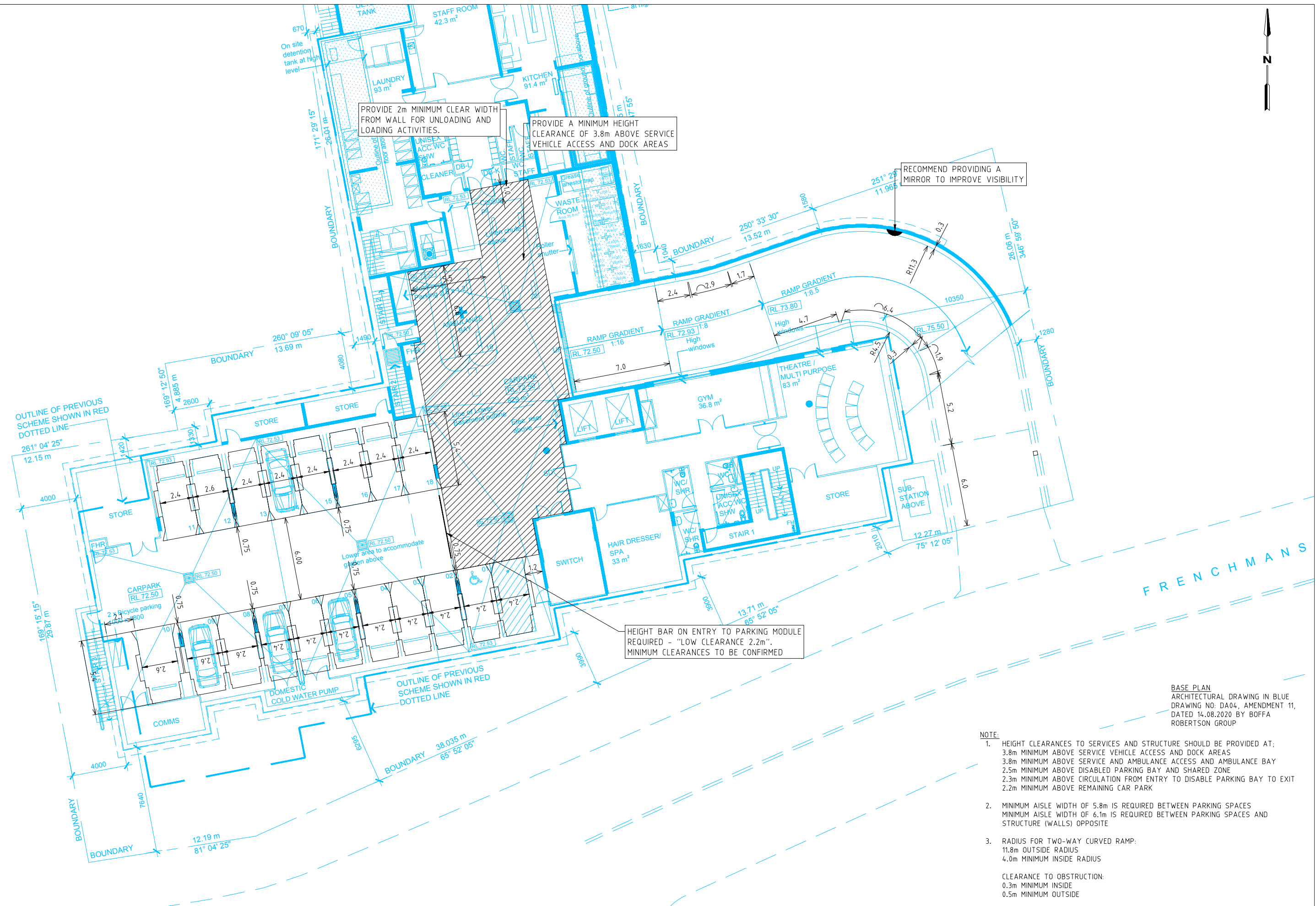
**GROUND FLOOR
COMPLIANCE REVIEW**

DRAWING NO. N164680-01

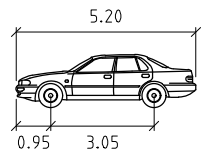
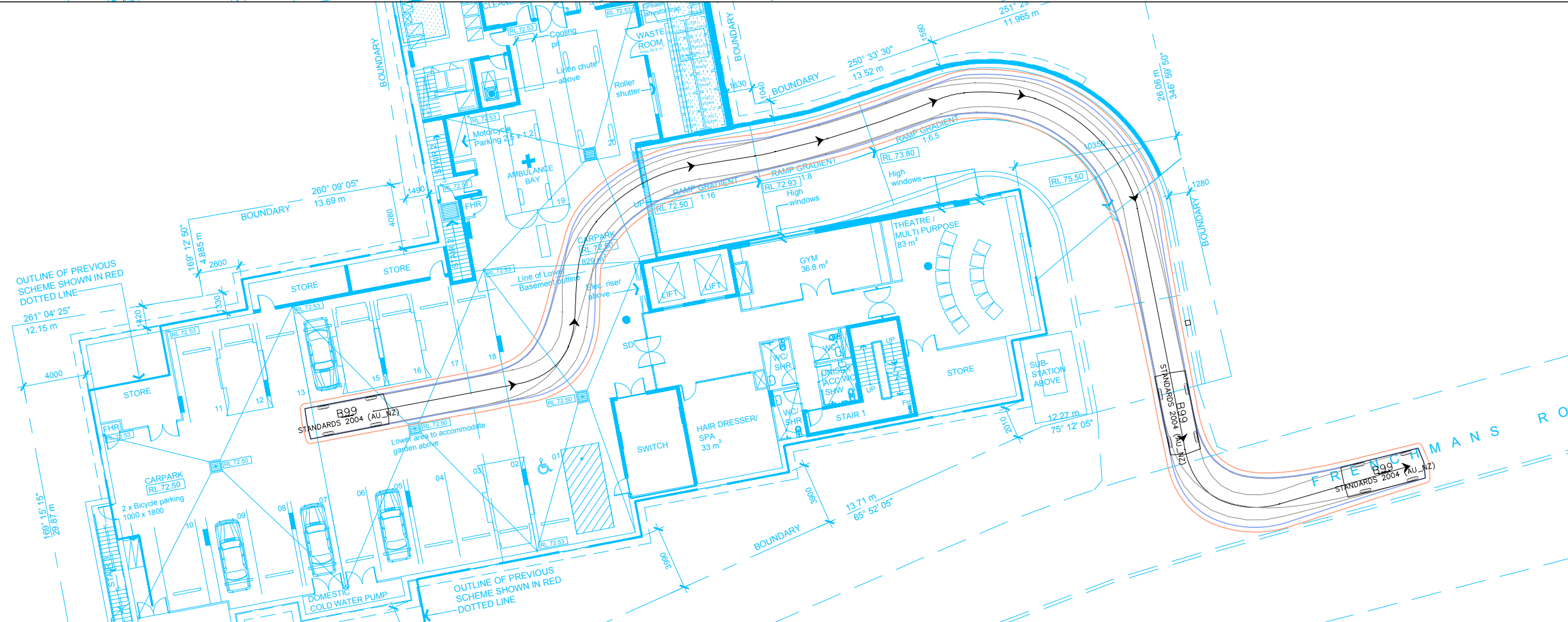
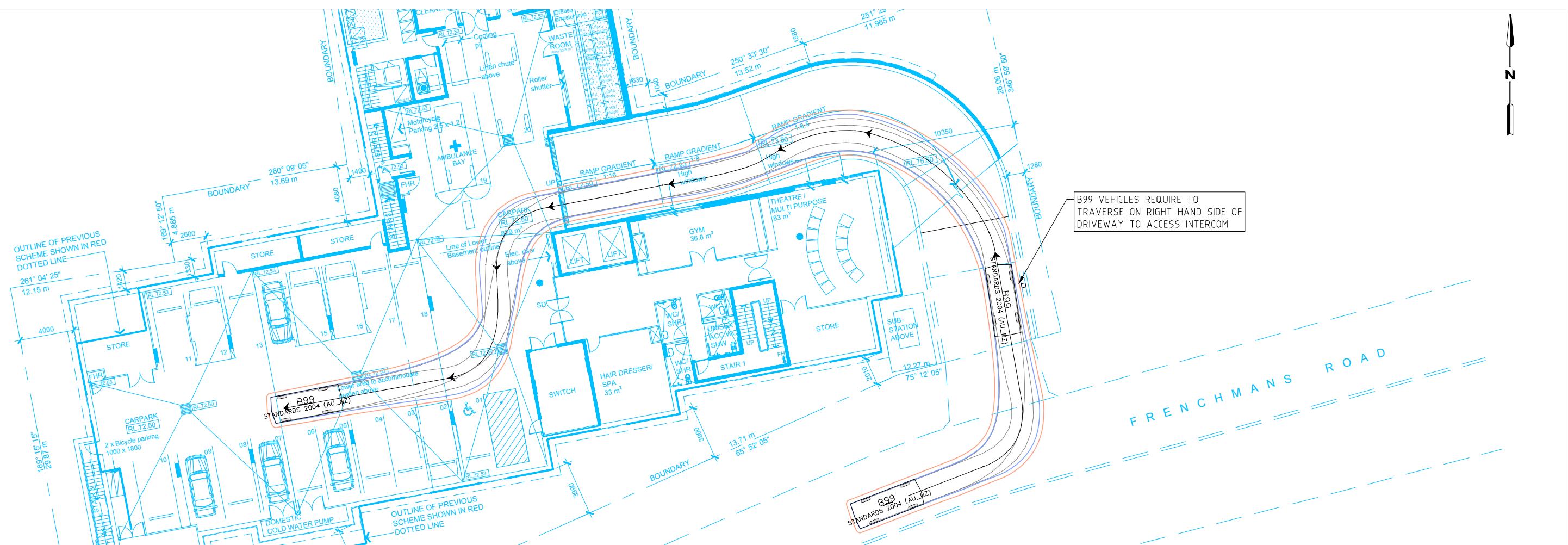
SHEET 01 OF 05

ISSUE P5

\\GTA.COM.AU\PROJECTFILES\PROJECTFILES\N164680-164680-01-P5.DWG PLOTTED BY RAYMOND ZHANG ON 25/08/2020 AT 16:10



\\GTA.COM.AU\PROJECTFILES\PROJECTFILES\11-19 FRENCHMANS RD. RANDWICK\CAD\N164680-01-P5.DWG PLOTTED BY RAYMOND ZHANG ON 25/08/2020 AT 16:10



B99	METERS
WIDTH	: 1.94
TRACK	: 1.84
LOCK TO LOCK TIME	: 6.0
STEERING ANGLE	: 33.9

SWEPT PATH KEY

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY

ASSUMED SPEED 5km/h

PRELIMINARY PLAN

FOR DISCUSSION PURPOSES ONLY
SUBJECT TO CHANGE WITHOUT
NOTIFICATION

WARNING

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

DESIGNED
R. ZHANG

APPROVED BY
K. MCNATTY

DESIGN CHECK
A. MODESSA

DATE ISSUED
25 AUGUST 2020

SCALE
A3 - N/A

CAD FILE NO.
N164680-01-P5.DWG

11-19 FRENCHMANS ROAD, RANDWICK

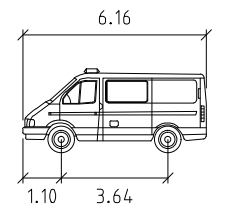
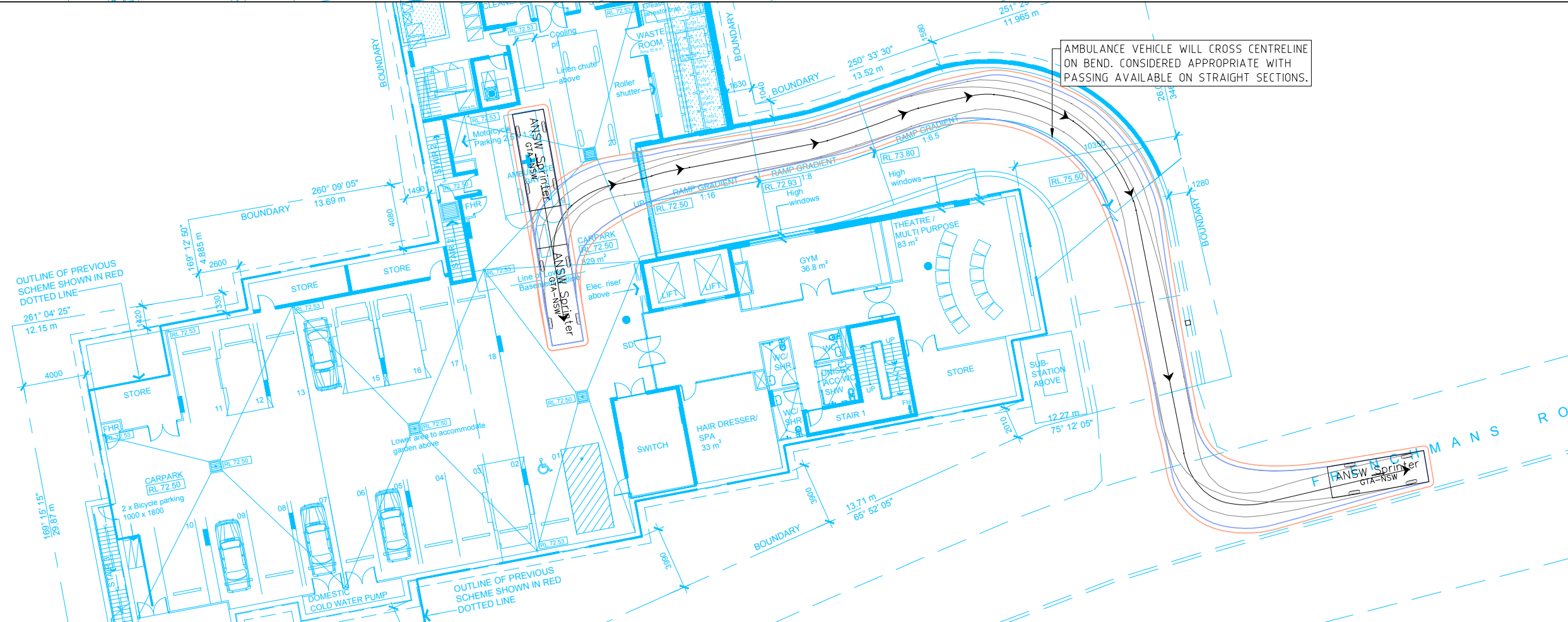
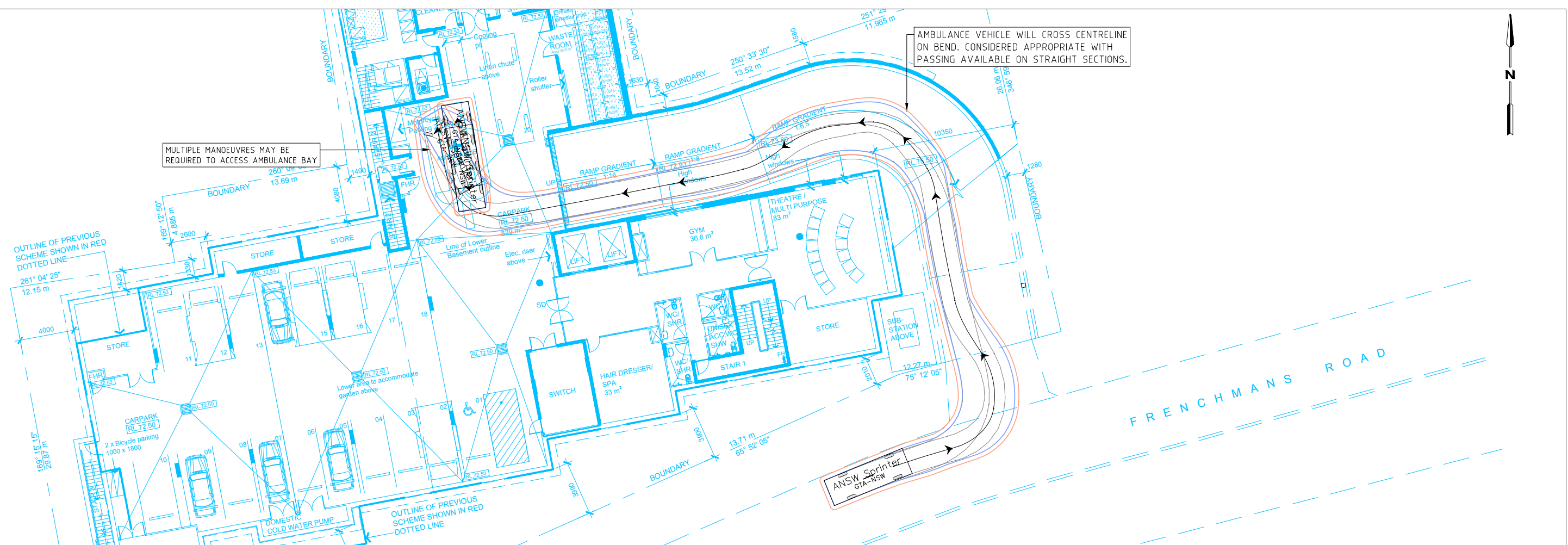
BASEMENT FLOOR
SWEPT PATH ASSESSMENT - B99

DRAWING NO. N164680-03

SHEET 03 OF 05

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ANSW Sprinter	
Width	1.98 meters
Track	1.95
Lock to Lock Time	6.0
Steering Angle	41.2

SWEPT PATH KEY

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY

ASSUMED SPEED 5km/h

PRELIMINARY PLAN

FOR DISCUSSION PURPOSES ONLY
SUBJECT TO CHANGE WITHOUT
NOTIFICATION

WARNING

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

DESIGNED
R. ZHANG

APPROVED BY
K. MCNATTY

DESIGN CHECK
A. MODESSA

DATE ISSUED
25 AUGUST 2020

SCALE
A3 - N/A

CAD FILE NO.
N164680-01-P5.DWG

11-19 FRENCHMANS ROAD, RANDWICK

BASEMENT FLOOR
SWEPT PATH ASSESSMENT - NSW SPRINTER

DRAWING NO. N164680-04

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