

**PROPOSED RACF & ILU
DEVELOPMENT**

LAITOKI ROAD, TERREY HILLS

***Assessment of Traffic and
Parking Implications***

December 2016
(Rev H)

Reference 15244

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1. INTRODUCTION

This report has been prepared to accompany a request for a Site Compatibility Certificate from the Department of Planning for a proposed new aged care and accommodation complex on a large site on the corner of Laitoki Road and Cooyong Road at Terrey Hills (Figure 1).

There is an increasing need to provide care and accommodation for the aging population particularly in established urban areas. The large landholding at Terrey Hills is ideally located in quiet and peaceful surrounds with access to public transport services. The envisaged development scheme comprises:

- 102 RACF beds
- 60 ILU's
- internal access road system
- extensive landscaped areas

The purpose of this report is to:

- * describe the site, its context and the envisaged development scheme
- * describe the road network serving the site and the prevailing traffic conditions
- * assess the adequacy of the envisaged parking provision
- * assess the potential traffic implications
- * assess the suitability of the envisaged access, internal circulation and servicing arrangements

2. ENVISAGED DEVELOPMENT SCHEME

2.1 SITE, CONTEXT AND EXISTING USE

The development site (Figure 2) is Lot 368 in DP752017 which occupies a generally rectangular area of 19,545m² with frontages to Laitoki Road and Cooyong Road.

The surrounding area comprises:

- * residential dwellings extending to the east
- * rural residential to the south and adjoining to the north and west
- * Katz Stables to the north
- * Kallaroy Park Equestrian Centre to the west

The site is currently a rural residential property with a large dwelling and stables/horse arena with vehicle accesses on the Cooyong Road frontage.

2.2 ENVISAGED DEVELOPMENT

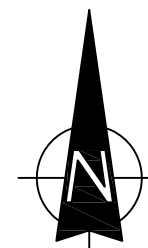
It is proposed to demolish the existing buildings, clear the site and undertake some earthworks to provide for basement parking, level building platforms and the access road and hardstand areas. The envisaged development comprises:

Independent Living Units	25 x Two-bed 31 x Two-bed + Study 4 x Three-bed Total: 60 ILU's
Residential Aged Care Facility	102 beds
Administration	30 staff (maximum shift)
Ancillary Facilities	
Carparking	Basement and at-grade
Vehicle Access	Cooyong Road

Architectural details of the envisaged development are provided on the plans prepared by Calder Flower which accompany the Development Application and are reproduced in part in Appendix A.



LEGEND



LOCATION

FIG 2

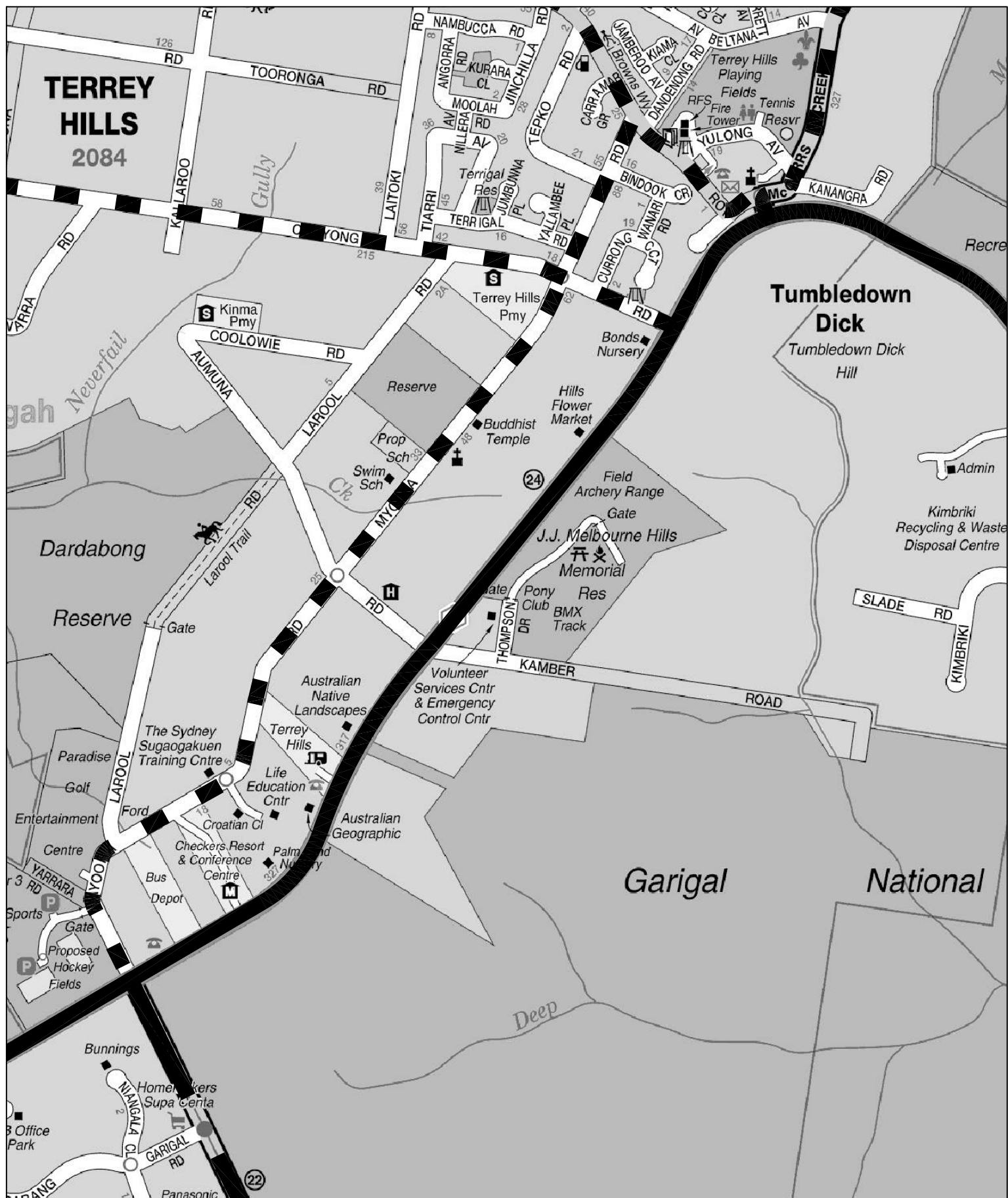
3. ROAD NETWORK AND TRAFFIC CONDITIONS

3.1 ROAD NETWORK

The road network serving the site (Figure 3) comprises:

- * *Mona Vale Road* – a State Road and arterial route connecting between the Pacific Highway at Gordon and Pittwater Road at Mona Vale
- * *Forest Way* – a State Road and arterial route connecting between Mona Vale Road and Warringah Road
- * *McCarrs Creek Road* – a State Road and major collector route linking between Terrey Hills and Church Point
- * *Booralie Road* – a collector road providing access to Terrey Hills and Duffys Forest
- * *Myoora Road* – a collector road connecting between Mona Vale Road at Forest Way and Booralie Road
- * *Cooyong Road* – a minor collector road which runs to the west of Mona Vale Road

Cooyong Road has a relatively straight alignment with levels falling to the west with one traffic lane in each direction while Laitoki Road is a local access road with a traffic lane in each direction.



LEGEND

- ARTERIAL
- SUB-ARTERIAL
- COLLECTOR



ROAD NETWORK

FIG 3



3.2 TRAFFIC CONTROLS

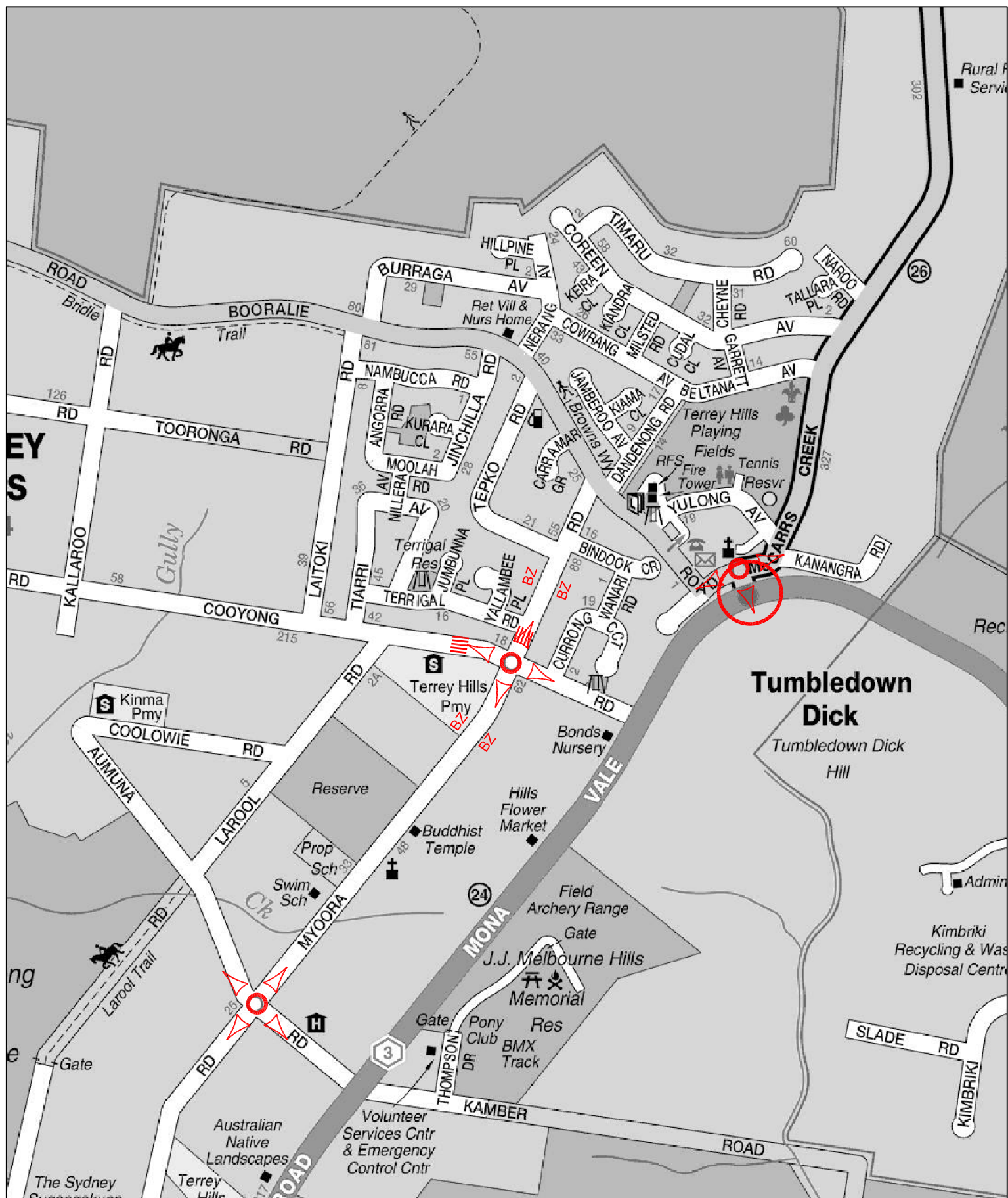
The existing traffic controls which have been applied to the roads in the vicinity of the site (Figure 4) include:

- * traffic signals at the Mona Vale Road, Forest Way and Myoora Road intersection which incorporate the prohibition of the right-turn movement from Mona Vale Road to Myoora Road
- * the traffic signals at the Mona Vale Road and McCarrs Creek Road intersection
- * the roundabout at the Booralie Road and McCarrs Creek Road intersection
- * the roundabout at the Myoora Road and Cooyong Road intersection
- * the bus stops on both sides of Myoora Road to the north and south of Cooyong Road
- * the marked pedestrian crossings on Cooyong Road and Myoora Road near the intersections of those roads
- * the 50kmph speed restriction on Myoora Road, Cooyong Road and Laitoki Road with sections of 40 kph school speed zone on the two former road at the Primary School frontage






3.3 TRAFFIC CONDITIONS

An indication of the existing traffic conditions in the vicinity of the site is provided by data published by the RMS and surveys undertaken as part of this assessment. The data published by the RMS is expressed in terms of Annual Average Daily Traffic (AADT) and the most recently available data is summarised in the following:

Location	AADT
Mona Vale Road west of Forest Way	32,812



LEGEND

-  TRAFFIC SIGNAL CONTROL
-  ROUNDABOUT
-  RESTRICTED TURNING MOVEMENT
-  PEDESTRIAN CROSSING
-  BUS ZONE



TRAFFIC CONTROLS

FIG 4

Surveys during the morning and afternoon peak periods in the vicinity of the site reveal the following details:

		AM	PM
Booralie Road	Eastbound	320	120
	Westbound	110	290
Cooyong Road	Eastbound	90	30
	Westbound	34	75
Laitoki Road	Northbound	10	20
	Southbound	6	6

No undue delays were observed to occur on the road system serving the site and there are regular lengthy gaps available in traffic flows on Cooyong Road and Laitoki Road.

4. TRANSPORT SERVICES

A mini bus will be provided, maintained and operated by the development as an “on demand” service as well as providing for organised outings for residents etc. This service will be available from 7am to 7pm and this will include transporting residents and staff to/from the bus stops in Myora Road and the Terry Hills retail facilities.

There are a total of 7 bus routes operated along Myora Road terminating at Booralie Road (except for 1 route which continues to Duffys Forest and 2 which continue to Mona Vale) as indicated on the route maps provided in Appendix B.

These services comprise:

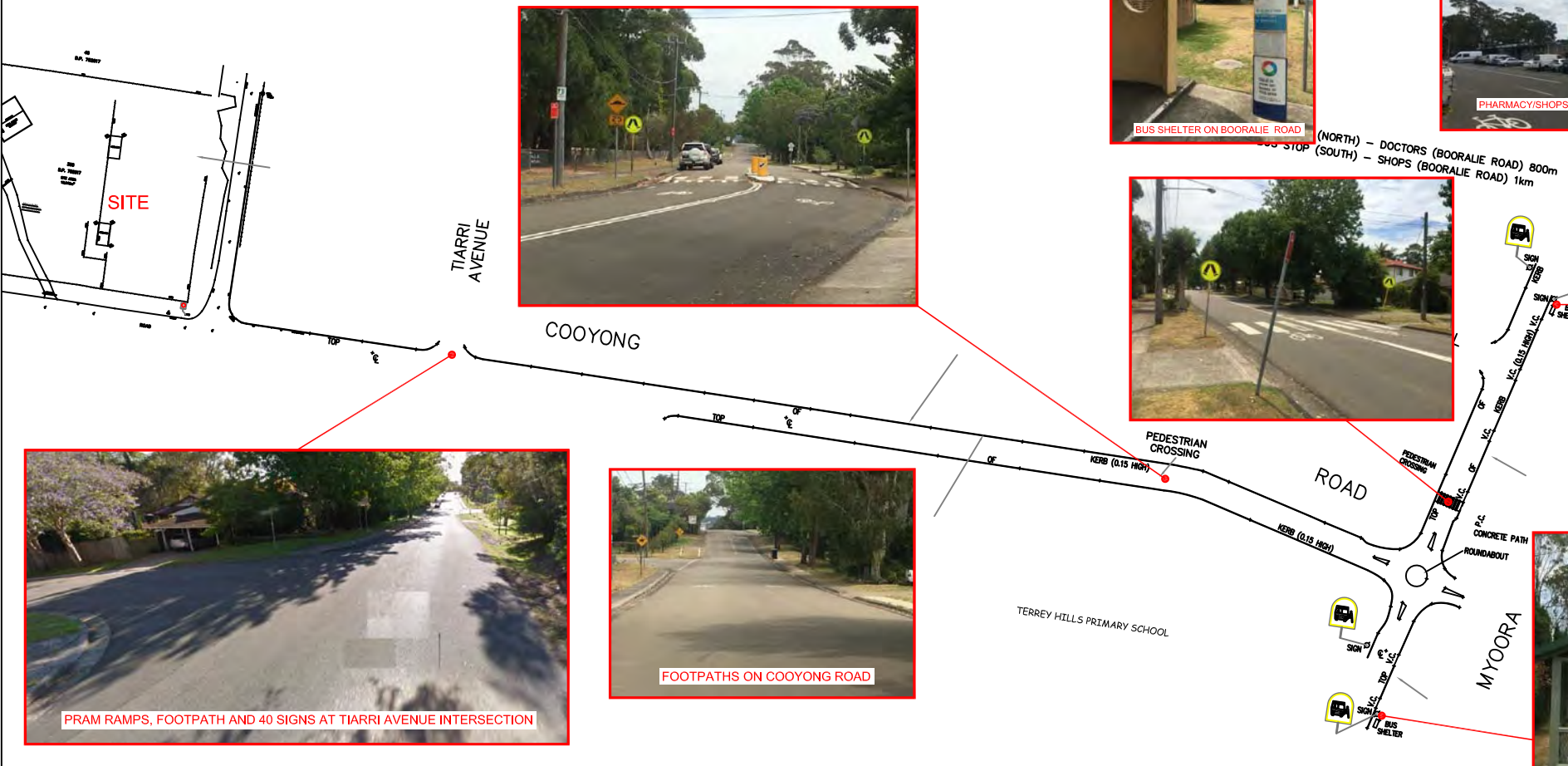
		Frequency
Route 196	Mona Vale to Gordon	20 min & 60 min
Route 197	Mona Vale to Macquarie University	30 min & 60 min
Route 260	Terrey Hills to North Sydney	20 min AM & PM
Route 270	Terrey Hills to City	30 min
Route L70	Terrey Hills to City	20 min AM
Route 271	Terrey Hills to City	30 min early & late
Route 284	Duffy Forest to Chatswood	2 AM & PM

The frequency of these routes varies significantly, however they are arranged to provide a consistent arrival and departure (e.g. 271 is for the early morning and late evening periods only).

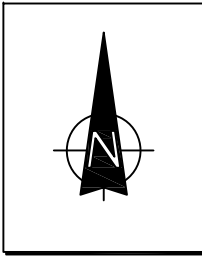
In combination however they provide very frequent services particularly to/from the City. Apart from the “on demand” mini bus service to/from the bus stops in Myora Road residents will be readily able to walk to/from the bus stops and particular features of this alternative are as follows:

- there is/will be a paved footpaths along Cooyong Road and Booralie Road between the site access and the bus stops which is level and in good condition
- there are bus shelters and seating provided at the outbound bus stops
- there are marked pedestrian crossing across Cooyong Road and Booralie Road
- there are kerb ramps provided at all road crossings
- there are “splitter” islands at the Myoora Road and Cooyong Road intersection roundabout which act as “refuge” islands for pedestrians who choose to cross at this intersection
- there is good street lighting
- the speed limit is 50 kmph with 40 kmph school zone restrictions on Myoora Road and Cooyong Road

Details of these considerations are provided on the survey diagram provided overleaf.



LEGEND



**PEDESTRIAN
CONSIDERATIONS**

5. TRAFFIC

The RMS Development Guidelines (TDT 2013-46) provide traffic generation criteria in relation to aged persons accommodation however unfortunately the data results are aggregated between the different classes of accommodation (i.e. RACF, ILU's, etc.) and do not provide an accurate definition in relation to the proposed development.

TTPA have undertaken survey and assessment of numerous RACF and Independent Living Unit developments particularly for major developers including Baptist Community Services and Anglican Retirement Villages.

The results of recent comprehensive surveys undertaken by TTPA indicate the following generation rates:

	AM	PM
RACF	0.17 vtph/bed	0.22 vtph/bed
ILU homes (separate/attached)	0.25 vtph/dwelling	0.25 vtph/dwelling
ILU apartments	0.20 vph/apartment	0.20 vtph/apartment

Application of this criteria to the envisaged development scheme elements would indicate the following:

	AM	PM
102 beds	18 vtph	23 vtph
60 ILUs	15 vtph	15 vtph
Total:	33 vtph	38 vtph

The projected distribution of movements during the peak periods is as follows:

AM		PM	
IN	OUT	IN	OUT
23	10	10	28

These access movements will be distributed over the proposed to access driveways and virtually all movements will be to/from the east (i.e. Myoora Road and Mona Vale Road). This projected traffic generation would be discounted by that of the existing uses on the site (albeit relatively minor).

The projected traffic movements will not present any adverse access, delay or capacity implications and the traffic outcome will be entirely compatible with the existing road network particularly as a result of the traffic signal controlled access intersections on Mona Vale Road.

A mini bus service will be provided to transport residents, staff and visitors between the site and destinations for transport connections, shopping and recreation.

6. PARKING

The SEPP document specifies a parking provision for Independent Living Unit and RACF developments as follows:

ILU	0.5 space per bedroom
RACF	1 space per 2 staff
	1 space per 10 beds (15 dementia)

Application of this criteria to the envisaged development would indicate the following:

ILU's – 124 bedrooms	62 spaces
RACF – 102 beds	11 spaces
30 staff	15 spaces
Total:	88 spaces

It is envisaged that 26 spaces would be provided for the RACF at-grade including 2 accessible spaces while parking for the ILU's will comprise 62 basement spaces including accessible spaces.

The envisaged total parking provision of 88 spaces will be compliant with the SEPP criteria and will be quite adequate for the parking demands of the development. For the future Development Application the parking spaces (not staff spaces will comply with the requirements for parking for persons with a disability set out in AS 2890 with 5% of the total number of car parking spaces (or at least one space if there are fewer than 20 spaces) must be designed to enable the width of the spaces to be increased to 3.8 metres.

7. ACCESS, INTERNAL CIRCULATION AND SERVICING

ACCESS

Vehicle access will be provided by two 6m wide combined ingress/egress driveways on the Cooyong Road frontage located towards the centre of the site. The design of the driveways complies with the requirements of AS2890.1 and there will be satisfactory sight distances available due to the straight alignment of the roadway.

INTERNAL CIRCULATION

The carparking areas have been designed to accord with AS2890.1 and AS2890.6 and the simple two-way arrangements within the basement carpark and access driveway system will provide a very flexible and accessible outcome.

SERVICING

Deliveries and refuse removal will be undertaken in the loading dock provided. Provision is made for vehicles up to 12.5 metre HRV to access the loading bay while any requirements for the occasional larger vehicles will involve standing along the access driveway.

Service personnel and small delivery vehicles will also be able to utilise the visitor spaces.

Details of turning path assessments are provided in Appendix C.

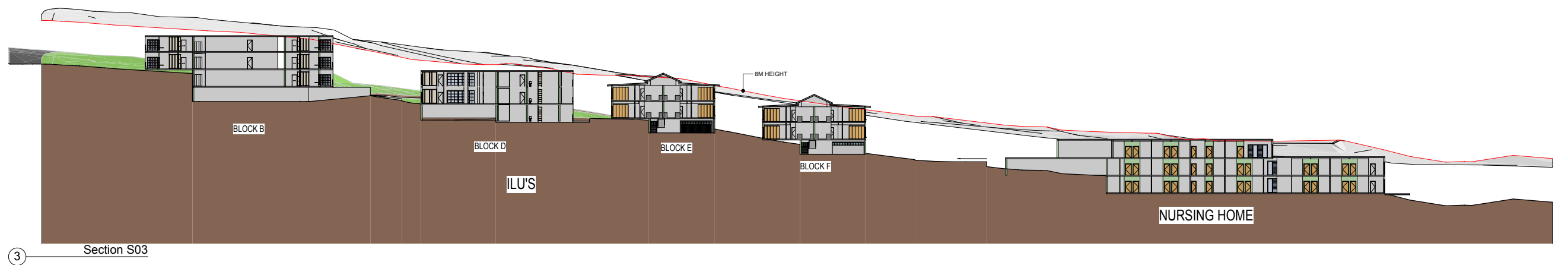
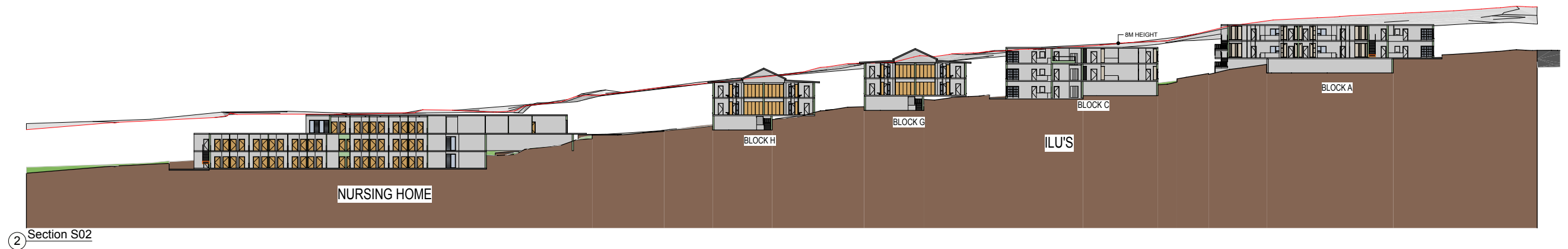
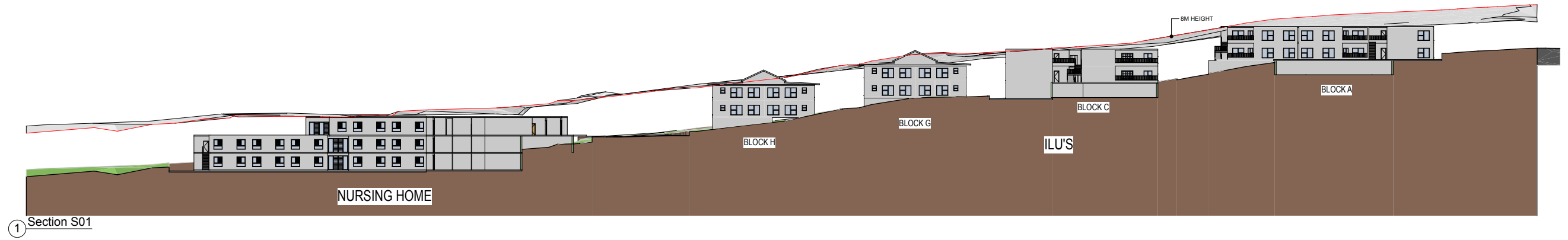
8. CONCLUSION

The envisaged aged persons complex at Terrey Hills is providing for the aging population in the Northern Beaches Peninsula. Assessment of the potential vehicle access, parking, traffic and transport implications of the development scheme has concluded that:

- * there will be no adverse or unsatisfactory traffic implications
- * the proposed parking provision will be adequate and appropriate
- * the provision and accessibility of public transport services will be satisfactory
- * the proposed vehicle access, internal circulation and servicing provisions will be quite suitable and appropriate
- * the transport needs of residents, visitors and staff will be adequately catered for by the “on demand” mini bus service operated by the development and the nearby bus services

APPENDIX A

DEVELOPMENT PLANS





SITE AREA: 19 537 m²

Schedule of Accommodation
Nursing Home = 102 bed

ILU BED TYPES	
Zone Category	Quantity
ILU 2 Bed	25
ILU 2 Bed + Study	31
ILU 3 Bed	4
	60

RACF FSR	
Level	Area
Level 1	1,880.08
Level 2	2,392.27
Level 3	1,576.66
	5,849.01 m²
ILU FSR	
Level	Area
Level 2	1,955.97
Level 3	3,044.89
Level 4	2,462.51
	7,463.37 m²

NOTE : FSR MEASURED TO
OUTSIDE FACE OF EXTERNAL
WALLS. DOES NOT INCLUDE LIFTS,
STAIRS, CORRIDOR & TERRACES.



1 Level 1 - Floor Plan



2 Level 2 - Floor Plan

NOTES

-Do not scale from this drawing. Use figured dimensions only.
-Contact the architect for clarifications if required.
-Calder Flower Architects are not liable for any loss, damage, claim, cost demand as a result of the use or receipt of drawings issued in DWG format.

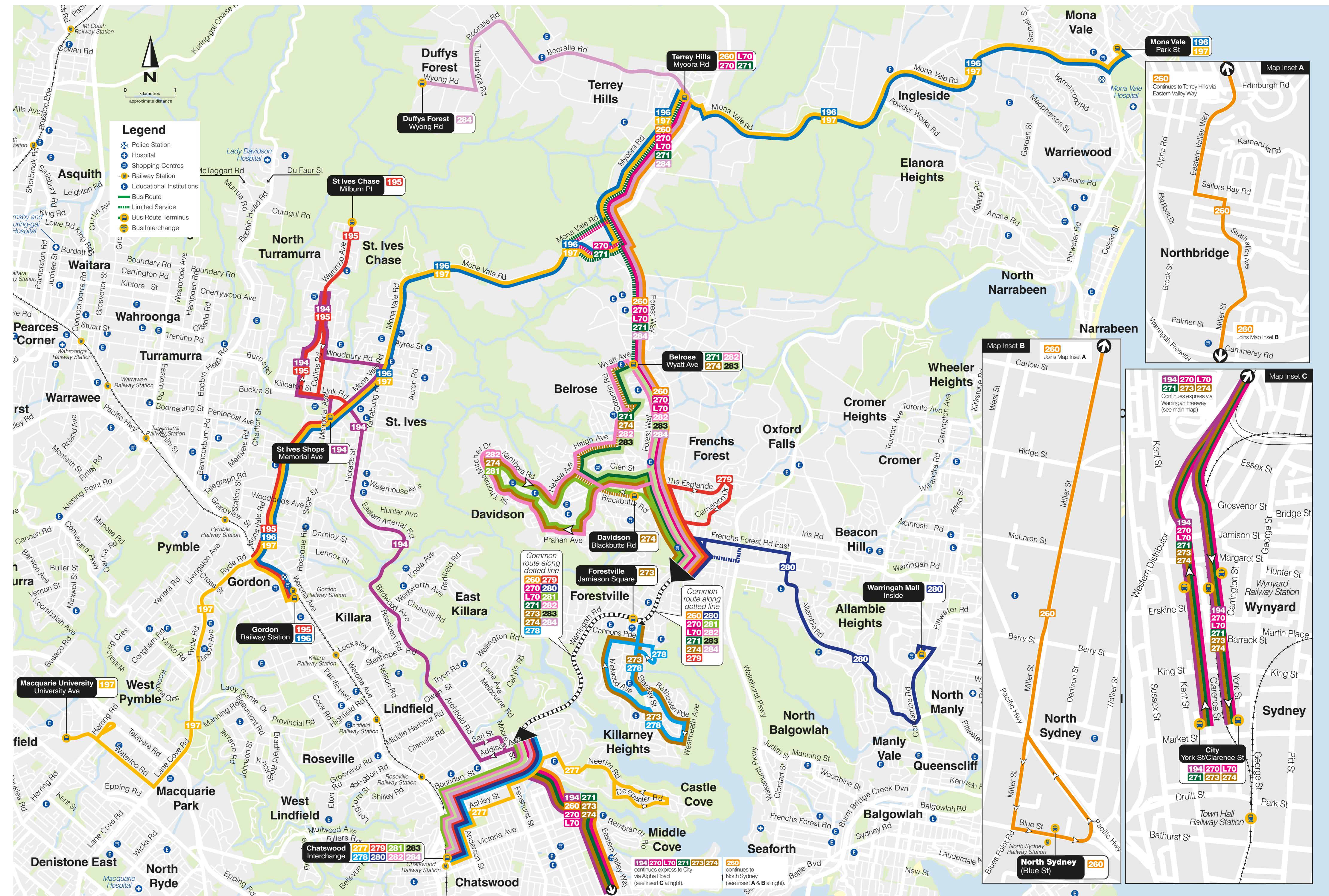
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JOB NO: 15140
DATE: 29.08.2016
DWG NO: SD 06



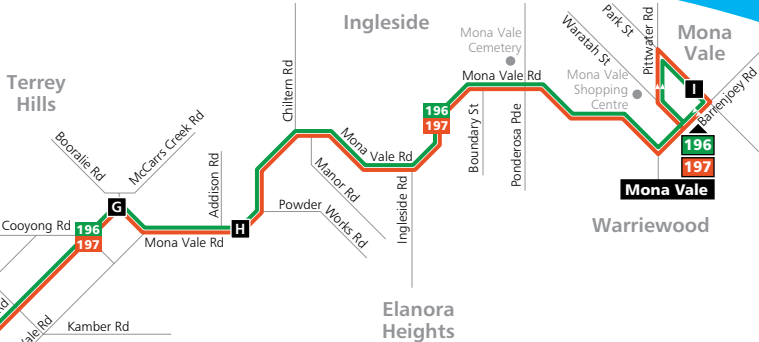
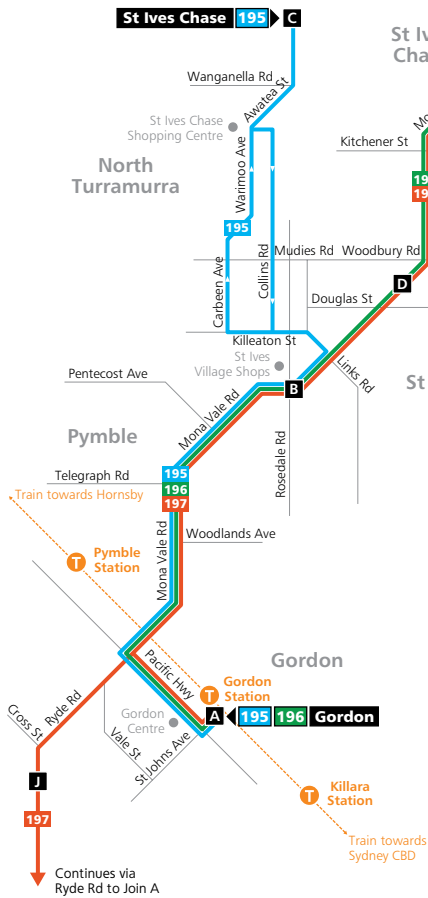
APPENDIX B

BUS ROUTE DETAILS



Explanation of definitions and symbols

- A Journey diverts via Link Road, Killeaton Street, Carbeen Avenue and Warrimoo Avenue to St Ives Chase before proceeding to Gordon.
- C Journey continues beyond Dalton Road to Milburn Place only if required, then travels to Austlink before returning to Gordon Station.
- D Change buses for travel to Duffys Forest.
- S Bus operates on school days only.
- X Change buses for travel to Gordon.
- ... Bus does not stop at this timing point.



Route 195, 196 & 197 services

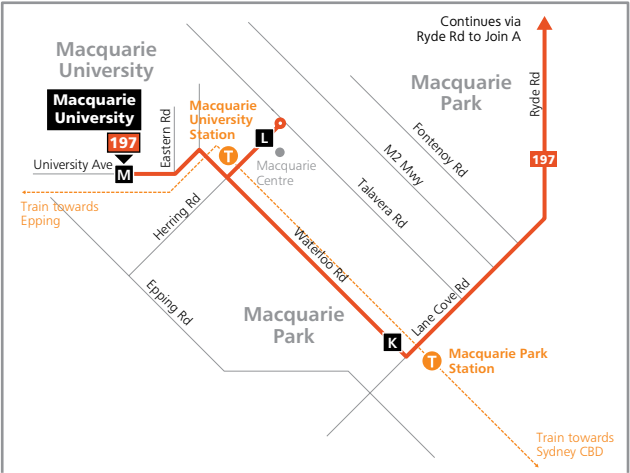
The **Routes 195, 196 & 197** service the corridor of Monvale Road and Ryde Road providing a link with the North Shore Railway at Gordon Station.

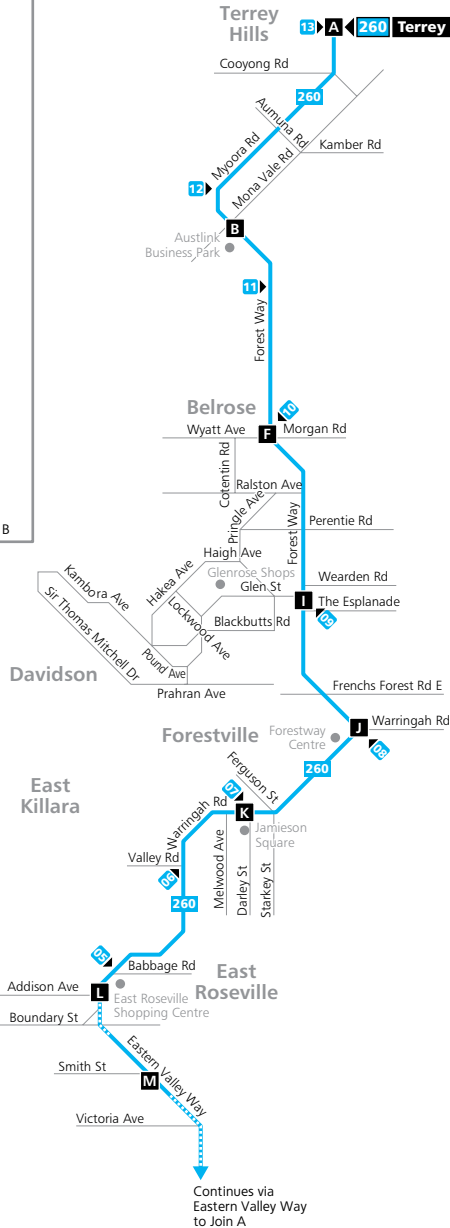
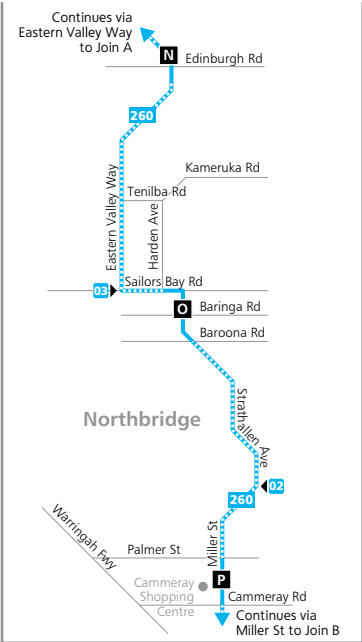
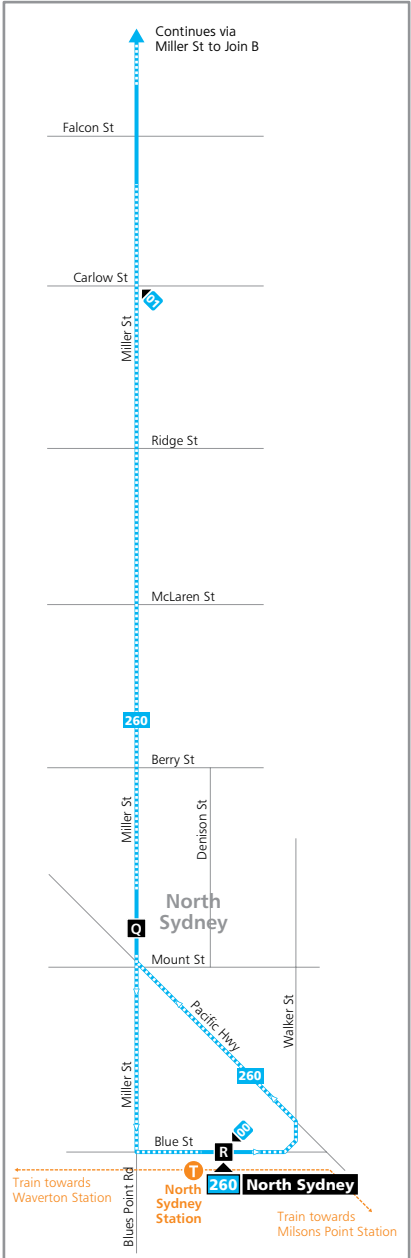
The **Route 195** operates between St Ives Chase and Gordon Station via St Ives Village Shops. It joins Monvale Road at Link Road and forms a common route with the Route 196.

The **Route 196** operates between Monvale and Gordon Station via Austlink Business Park and St Ives Village Shops. Services at Monvale stop at a common point with State Transit services to facilitate transfers with other services along Pittwater Road.

The **Route 197** operates between Monvale and Macquarie University via Austlink Business Park, St Ives Village Shops and Gordon Station. Services at Monvale stop at a common point with State Transit services to facilitate transfers with other services along Pittwater Road.

The **Route 194** City Express information is available on a separate timetable.





- Legend**
- Bus route
 - Express route
 - Connecting route
 - Bus route number
 - Timing point
 - Section point
 - Train line/station

Diagrammatic Map
Not to Scale

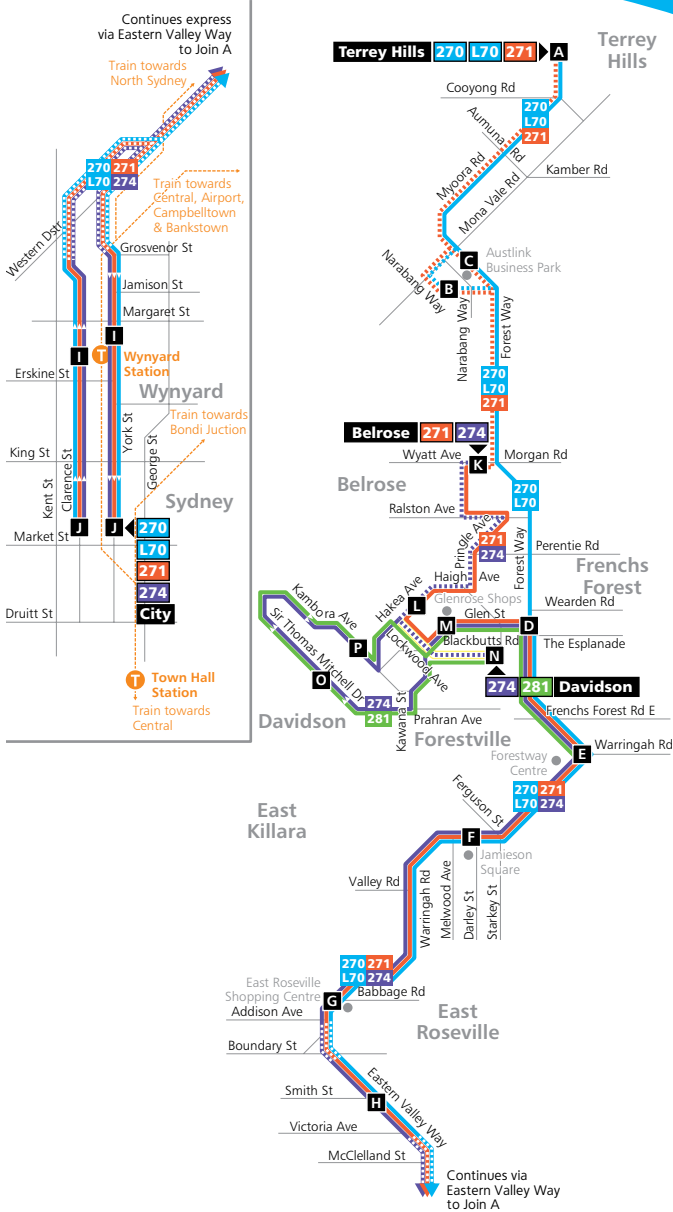


Timing Points

- A** Terrey Hills Myoora Rd & Booralie Rd
- B** Austlink Minna Close
- C** Austlink Forest Way
- D** Glen Street & Forest Way
- E** Frenchs Forest Forestway Centre
- F** Forestville Jamieson Square
- G** East Roseville Babbage Road
- H** Eastern Valley Way & Smith Street
- I** City - Wynyard
- J** City
- K** Belrose Wyatt Avenue
- L** Hakea Avenue & Haigh Avenue
- M** Glenrose Shops
- N** Blackbutts Road & Pringle Avenue
- O** Davidson Sir Thomas Mitchell Drive
- P** Frenchs Forest Cemetery

Bus route map

270, L70, 271, 274



Legend

- Bus route
- - - - - Express route
- 270 Bus route number
- A Timing point
- T — Train line/station
- Route 270 occasional journey, operating PM peak trips on weekdays only
- Route 271 occasional journey, operating early morning/late night only
- Route 274 occasional journey, operating AM peak trips on weekdays only
- Route 274 occasional journey, operating PM peak trips on weekdays only

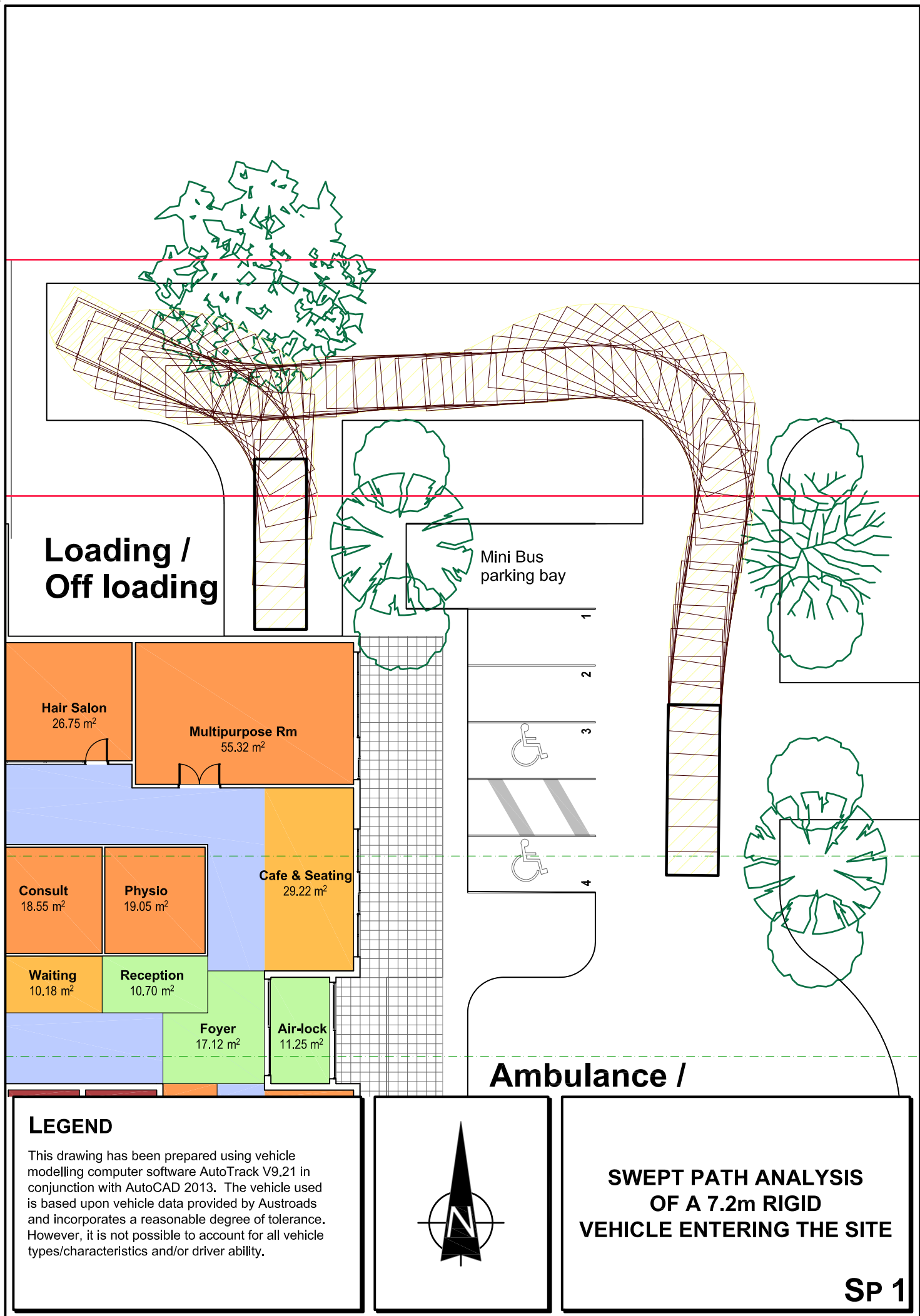
Diagrammatic Map
Not to Scale

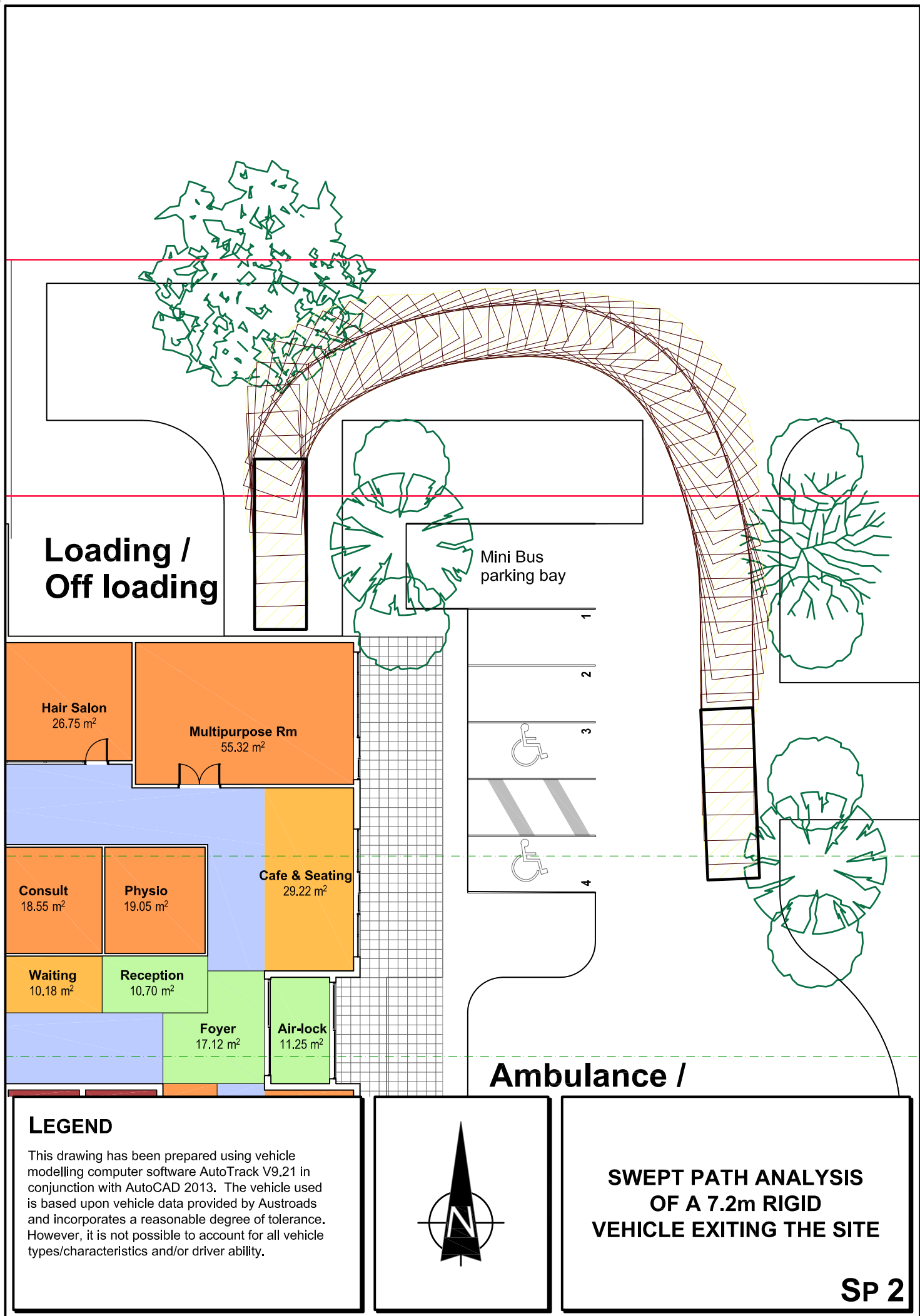


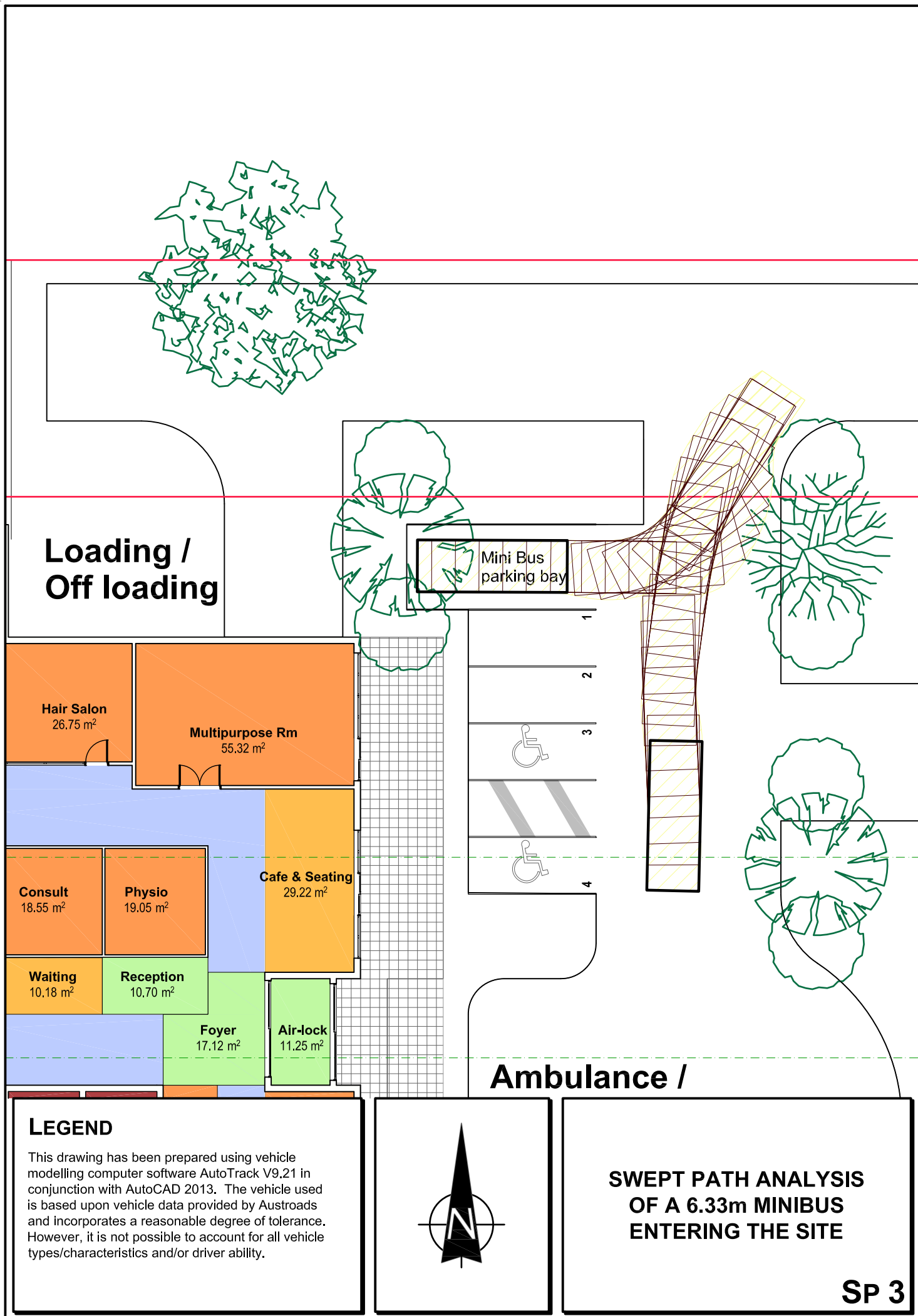


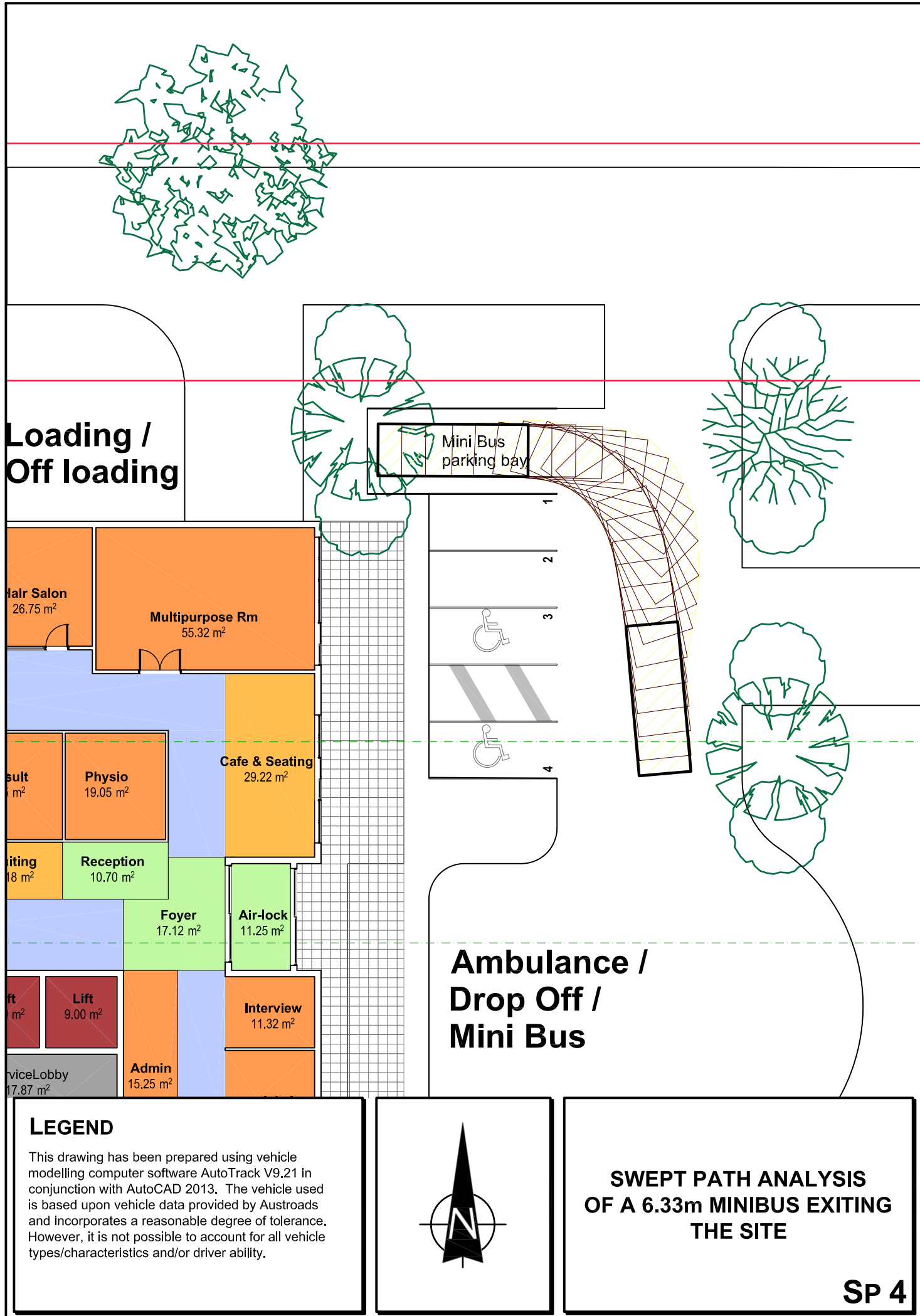
APPENDIX C

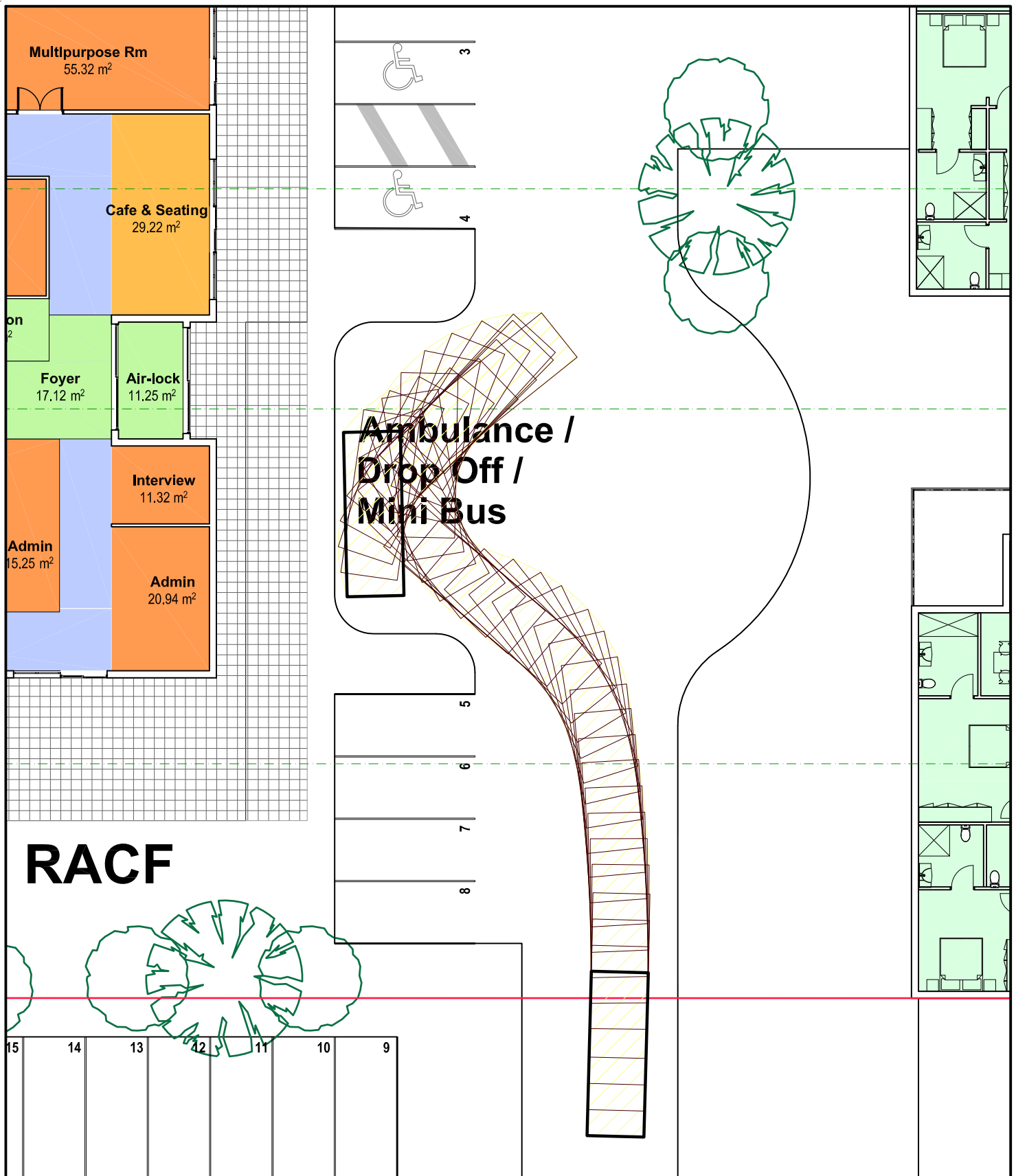
TURNING PATH ASSESSMENT











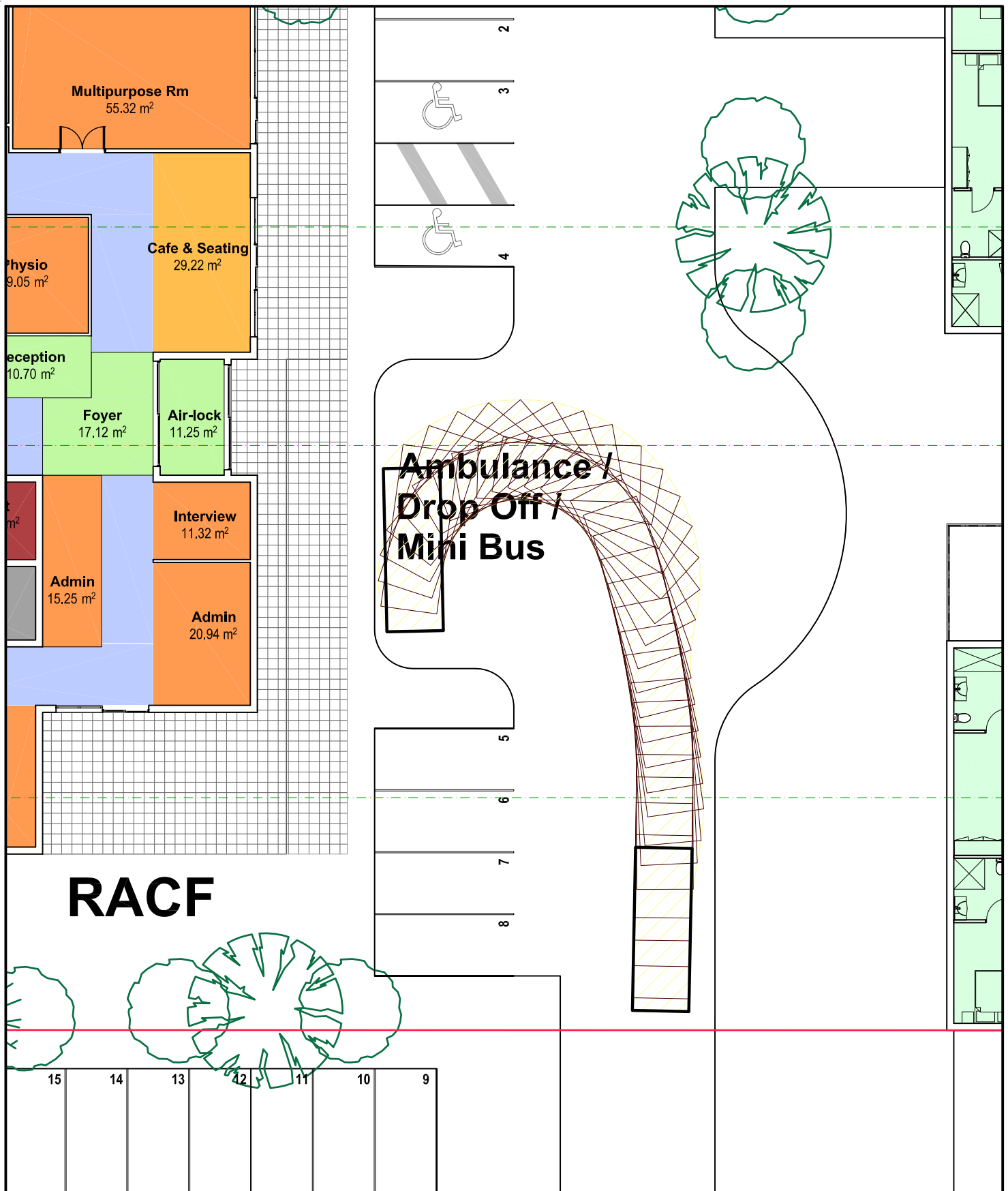
LEGEND

This drawing has been prepared using vehicle modelling computer software AutoTrack V9.21 in conjunction with AutoCAD 2013. The vehicle used is based upon vehicle data provided by Austroads and incorporates a reasonable degree of tolerance. However, it is not possible to account for all vehicle types/characteristics and/or driver ability.



**SWEPT PATH ANALYSIS
OF A 6.33m MINIBUS
ENTERING THE SITE**

SP 5



LEGEND

This drawing has been prepared using vehicle modelling computer software AutoTrack V9.21 in conjunction with AutoCAD 2013. The vehicle used is based upon vehicle data provided by Austroads and incorporates a reasonable degree of tolerance. However, it is not possible to account for all vehicle types/characteristics and/or driver ability.



**SWEPT PATH ANALYSIS
OF A 6.33m MINIBUS EXITING
THE SITE**

SP 6