Genesis Traffic

Traffic Impact Assessment

116-120 Frenchs Forest West and 11 Gladys Avenue, Frenchs Forest

Proposed Residential Development

GT23018

Prepared for

Young Assets Holding Pty Ltd

8 April 2024

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Document Information

Report	Traffic Impact Assessment
Client	Young Assets Holding Pty Ltd
Proposal	Proposed Residential Development
Architects	Brewster Murray
Project Location	116-120 Frenchs Forest West and 11 Gladys Avenue, Frenchs Forest
Council	Northern Beaches Council
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Document History

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1	11/09/2023	Draft	Lamone Ng	Bernard Lo
2	12/12/2023	Final	Lamone Ng	Bernard Lo
3	8/04/2024	Amended Plans – For Issue	Nathaniel Borja	Bernard Lo

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Attachments

Tables

Figures

1 Introduction

1.1 Background

This report has been prepared to accompany a Development Application to Northern Beaches Council for a proposed residential development at 116-120 Frenchs Forest West and 11 Gladys Avenue, Frenchs Forest (Figure 1-1).

Figure 1-1 Site

Source: Mecone (modified by Genesis Traffic)

The proposed development involves a multi-storey residential complex with associated basement car park.

1.2 Scope of Works

The purpose of this report is to:

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

1.3 Reference Documents

Reference has been made to the following documents when preparing this report:

- AS2890 (Australian/NZ Standards, 2004)
- Development Control Plan (Northern Beaches Council, 2011)
- RMS Guide to Traffic Generating Developments, RTA, 2002

2 Existing Conditions

2.1 Site and Surrounding Context

The development site (Figure 2-1) is a consolidation of Lots 1, 2, 14 and 24 in DP 213608 and DP 25713 located at 116-120 Frenchs Forest West and 11 Gladys Avenue, Frenchs Forest. The site occupies an irregular-shaped area of 5,740m² and is bounded by Frenchs Forest Road West to the south and Gladys Avenue to the north.

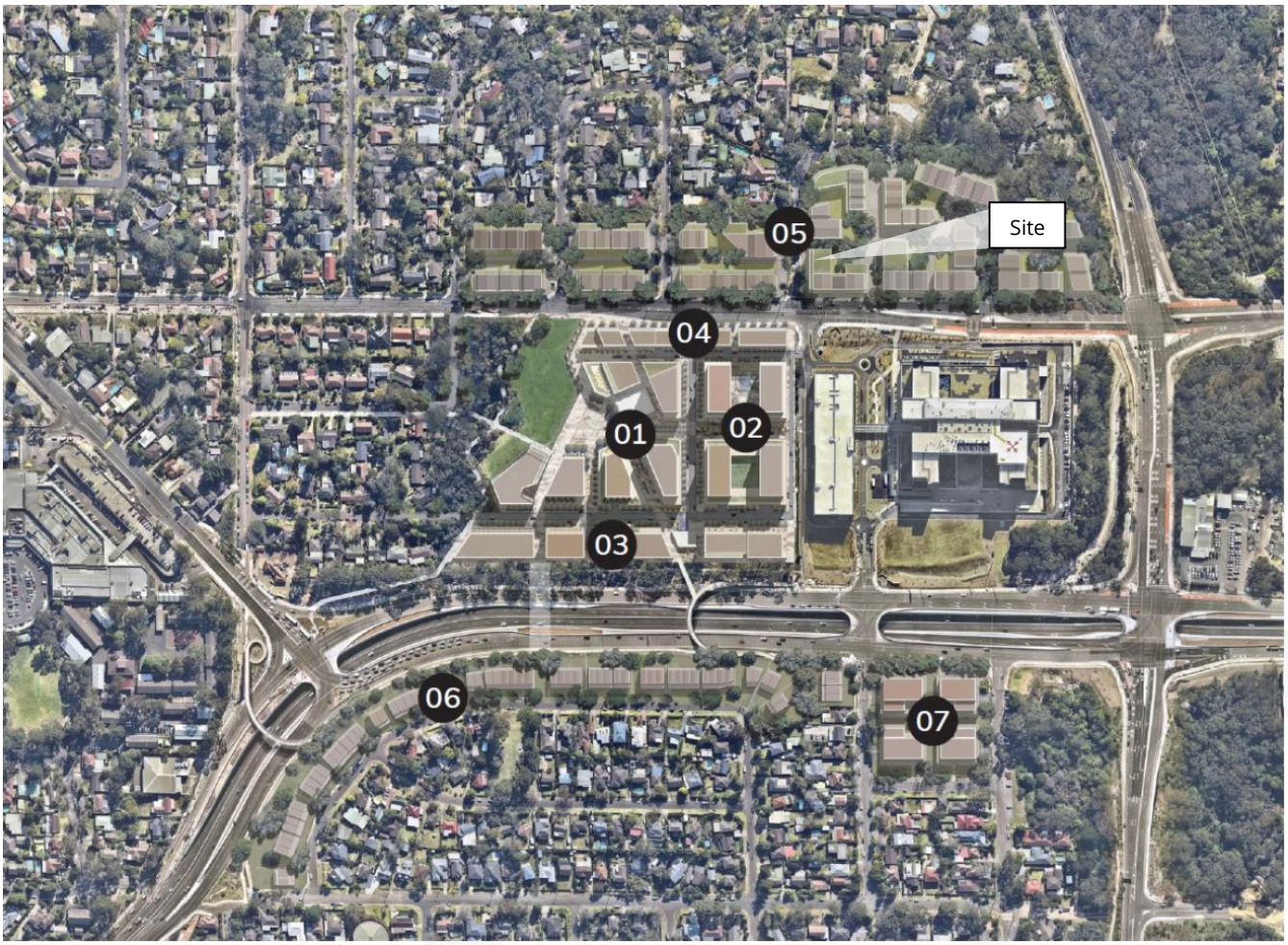
Figure 2-1 Site Context

Source: Nearmap (Modified by Genesis Traffic)

Four (4) residential dwellings occupy the site at present, with vehicle accesses located at French Forest Road West and Gladys Avenue. Surrounding the site are predominantly residential developments. The Northern Beaches Hospital and The Forest High School are on the southern side of Frenchs Forest Road.

The subject site is located within the Frenchs Forest Town Centre - a new town centre accommodating multiple land uses including retail, medium and high-density residential blocks, and commercial zonings. An indicative layout plan published by the Northern Beaches Council in the Warringah DCP, G9 Frenchs Forest Town Centre is illustrated in Figure 2-2.

Figure 2-2 Indicative Layout Plan for Frenchs Forest Town Centre

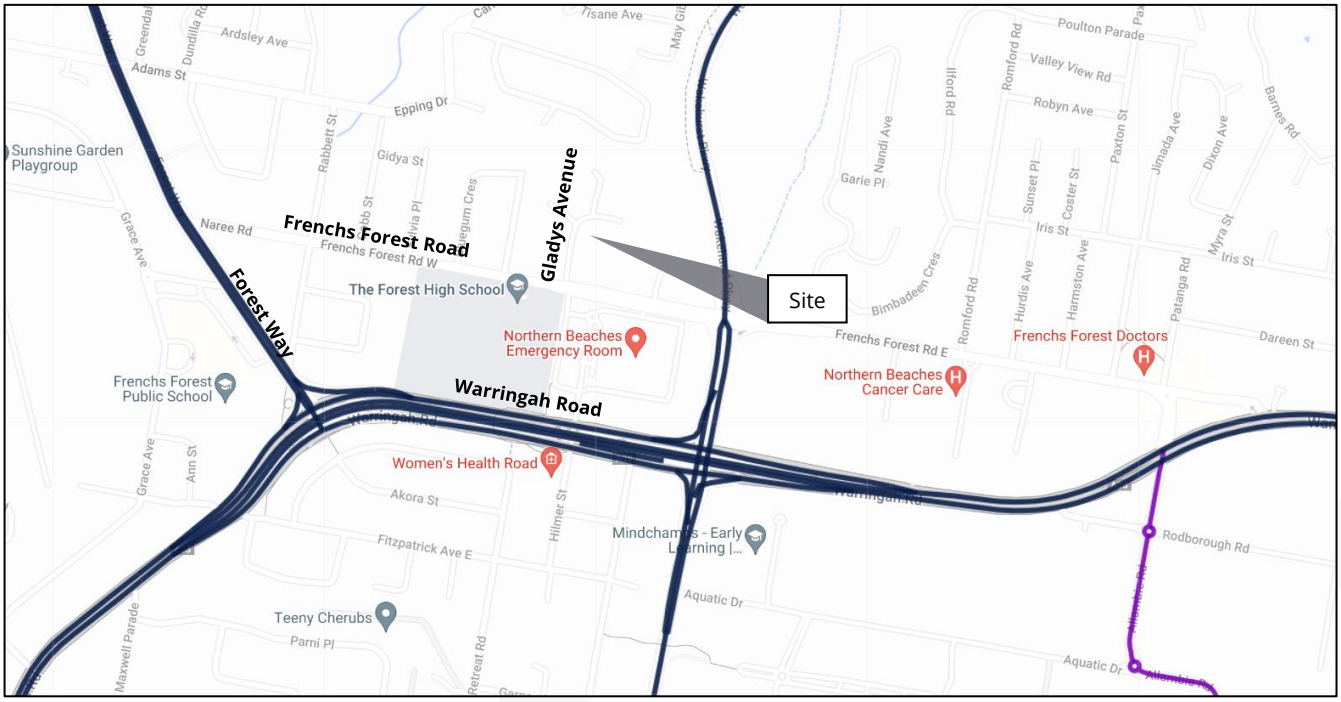


Source: Northern Beaches Council

2.2 Road Network

The road network serving the site area (Figure 2-3) comprises:

Figure 2-3 Road Network



Source: Mecone (modified by Genesis Traffic)

- Warringah Road – an east-west Classified Main Road (MR 328) connecting Pittwater Road in the east and Babbage Road in the west. It is subject to a 70km/h speed limit and generally consists of 3 traffic lanes in either direction on a divided carriageway. On-street parking is not permitted along the outer lanes in both directions.
- Frenchs Forest Road West – an east-west local road between Warringah Road in the east and Naree Road in the west. It is subject to a 50km/h speed limit near the site. At the intersection of Frenchs Forest Road and Gladys Avenue, Frenchs Forest Road consists of 2 eastbound lanes and 3 westbound lanes. The outer lanes operate as Bus Lanes.
- Gladys Avenue – a deadend cul-de-sac and a local road that connects to Frenchs Forest Road. It is subject to a 50km/h speed limit and permits a single traffic lane in either direction with a carriageway width of 7m. On-street parking is permitted along the western side of the street.

2.3 Traffic Controls

The traffic controls on the road system in the vicinity of the site comprise:

- the traffic control signal along Frenchs Forest Road (including the intersection at Gladys Avenue and Frenchs Forest Road)
- the Bus Lane at French Forest Road West between Wakehurst Parkway and Gladys Avenue
- the 40km/h School Zone speed restriction along Frenchs Forest Road between Gladys Avenue and Bluegum Crescent

2.4 Public Transport Services

The nearest bus stop (Frenchs Forest Road opposite Northern Beaches Hospital) is located at the site frontage, providing several bus services in the locality. These bus services are tabulated in Table 2-1.

Table 2-1 Bus Services Provision

Bus Line	Bus Route
141	Austlink to Manly via Frenchs Forest & Seaforth
155	Bayview Garden Village to Narrabeen and Frenchs Forest
160X	Dee Why to Chatswood via Frenchs Forest (Express Service)
166	Frenchs Forest to Manly via Dee Why Beach
193	Warringah Mall to Austlink via Frenchs Forest
280	Warringah Mall to Chatswood

2.5 Existing Traffic Conditions

Traffic surveys were commissioned as part of this assessment to record the AM peak and PM peak traffic flows at the intersection of Gladys Avenue and Frenchs Forest West.

The traffic survey data is reproduced in **Attachment 1**.

The existing intersection's operation has been assessed using SIDRA traffic modelling program. SIDRA is a micro-analytical tool for individual and network intersection modelling based on collected traffic survey data. SIDRA provides a few performance indicators, as follows:

- Degree of Saturation – the total usage of the intersection expressed as a factor of 1, with 1 representing 100% use/saturation.
- Average Delay – the average delay encountered by all vehicles passing through the intersection.

- 95% Queue Length (Q95) – is defined to be the queue length in metres that has only a 5% probability of being exceeded during the analysis period. It transforms the average delays into measurable distance units.
- Level of Service (LOS) – this is a categorisation of average delay, intended for simple reference. The RMS adopts the following bands (Table 2-2)

Table 2-2 Intersection Performance – Levels of Service

Level of Service	Average Delay (s/veh)	Traffic Signals, Roundabout	Give Way & Stop Signs
A	< 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays & spare capacity	Acceptable delays & Spare capacity
C	29 to 42	Satisfactory	Satisfactory but accident study required
D	43 to 56	Operating near capacity	Near capacity & accident study required
E	57 to 70	At capacity. At signals, incidents would cause excessive delays. Roundabouts require other control mode	At capacity and requires other mode of control
F	> 70	Extra capacity required	Extreme delay, major treatment required

An indication of prevailing traffic operations at these intersections is provided in the SIDRA assessment (Table 2-3).

Table 2-3 Existing Intersection Traffic Circumstance

Intersection	AM Peak		PM Peak	
	LOS	**AVD**	**LOS**	**AVD**
Gladys Avenue & Frenchs Forest West	A	11.4s	B	15.5s

Details of SIDRA results are reproduced in **Attachment 2**.

The assessment found the local road network operating with ample spare capacity under existing traffic demand (including the existing site's traffic movements).

3 Proposed Development

It is proposed to demolish the existing buildings and outbuildings on the site, undertake excavation to provide three (3) level basement car park and a level building platform on the site, on which a building will be constructed comprising:

- A total of 127 apartments in the following composition:
    - 9 x one-bedroom apartments
    - 85 x two-bedroom apartments
    - 33 x three-bedroom apartments
- Three (3) basement levels will be provided to accommodate 169 car parking spaces including 13 accessible parking spaces in the following composition:
    - 139 x Residents
    - 13 x Visitor (Including 3 car wash bay and 3 Electric Vehicle Charging Space)
    - 17 x Car Share

Vehicle access will be provided at Gladys Avenue.

Details of the proposal are indicated in the architectural plans prepared by Brewster Murray which accompany the submission and are reproduced in part in **Attachment 3**.

4 Parking Assessment

4.1 Car Parking Requirement

The Warringah DCP specifies the applicable car parking rates in Table 4-1.

Table 4-1 DCP Car Parking Rates

Development Type		Parking Rates (Maximum)
Residential	One-bedroom	0.6 spaces per dwelling
	Two-bedroom	1 space per dwelling
	Three-bedroom	1.5 spaces per dwelling
	Visitors	0.1 space per dwelling
		Parking Rates (Minimum)
	Car Share Dedicated Space	2 spaces per 15 dwellings
	Electric Vehicle Charging Space	2% of dwellings or 2 per development (whichever is greater)
	Car Wash Bay	1 bay per 50 dwellings, up to a maximum of 4 spaces per building

Application of the proposal using the above criteria would indicate the following requirements in Table 4-2.

Table 4-2 Number of Required Car Parking Spaces

Element	No	Requirement	Provision
One-bedroom units	9	5	**139 spaces**
Two-bedroom units	85	85	
Three-bedroom units	33	50	
Total (Maximum)		**140 spaces (Max)**	
Residential visitors (Maximum)	127	13	13
Car Share (Minimum)	127	17	17
Electric Vehicle (Minimum)	127	3	3
Car Wash Bay	127	3	3

* *The DCP requires numerical decimals to be rounded up to the next integer.*

Accordingly, the maximum car parking requirement for residents and visitors is 153 spaces and the minimum car parking requirement for car share is 17 spaces.

It is proposed to provide 169 parking spaces in the basement to comply with the above criteria. These spaces will include:

- 139 x Residents
- 13 x Visitors (Including 3 car wash bay and 3 Electric Vehicle Charging Space)
- 17 x Car Share

4.2 Motorcycle Parking Requirements

The Warringah DCP provides motorcycle parking rates of 0.5 spaces per dwelling. Applying this rate would indicate a minimum of 50 spaces and the proposal to provide 64 motorcycle spaces meets the above criteria.

4.3 Bicycle Parking Requirements

The Warringah DCP provides the applicable minimum parking rates in Table 4-3.

Table 4-3 DCP Bicycle Parking Rates

Element		Rates	Requirement
Bicycle	Residents	2 spaces per dwelling	254 spaces
	Visitors	0.25 spaces per dwelling	32 spaces
		Total	**286 spaces**

Accordingly, to meet the DCP requirement, the minimum bicycle requirement is 286 spaces. Thirty-two (32) bicycle spaces for visitors will be provided in the basement while all bicycle spaces for residents will be provided within the individual enclosed storage spaces.

5 Access and Circulation Design

5.1 Access

An 8.2m wide two-way driveway will be provided at the Gladys Avenue cul-de-sac to provide access to the at-grade loading bay and basement car park. The access driveway has been designed in accordance with the AS2890.1 criteria and has regard to the minor road and infrequent servicing access design criteria contained in the AS2890.2. Details of a swept path analysis demonstrating the above are provided in **Attachment 4**.

5.2 Design Assessment and Internal Circulation

A detailed review of the carpark has been undertaken to assess its conformance with AS2890.1 design criteria. The assessment is summarised in Table 5-1.

Table 5-1 Compliance Check against Off-street Car Parking (AS2890.1:2004)

Features	Requirement	Provision	Compliance	Notes
Access Driveways				
Access Width	**(Category 2)** 6.0m - 9.0m	8.2m	Yes	
Sight Triangle (Pedestrian)	2.5m long x 2.0m wide	Provided	Yes	
First 6m Ramp Grade	Max 5% (1:20)	Provided	Yes	
Vehicular Control Point	Max 5% (1:20)	<5%	Yes	
Type of Vehicular Control Point	Island with Intercom / Security Gate	Provided	Yes	
Circulation Roadways / Ramp				
Ramp Grade	Max 25% (1:4)	1:5	Yes	
Transitions	Min 2.0m	2.0m	Yes	
Grade Transitions	Max 12.5% (1:8)	1:8	Yes	
Roadways Width (Two-way)	Min 5.5m	5.5m	Yes	
Kerbs	300mm on both sides	Provided	Yes	
Headroom Clearance	Min 2.2m	>2.2m	Yes	
Parking Modules				
Car Space Dimension	**User Class 1A** 5.4m long x 2.4m wide	5.4m long x 2.4m wide	Yes	

Aisle Width	**User Class 1A** 5.8m	>5.8m	Yes	
Door Clearance	300mm	Provided	Yes	
Blind Aisle	Min 1.0m	<1.0m	No	See Note 1
Height Clearance	Min 2.2m	>2.2m	Yes	
Gradient	Max 5% (1:20)	Level	Yes	
Motorcycle Space Dimension	2.5m long x 1.2m wide	2.5m long x 1.2m wide	Yes	

Table 5-2 Compliance Check against Bicycle Parking (AS2890.3:2015)

Features	Requirement	Provision	Compliance	Notes
Space Dimension for Visitor	1.8m long x 0.5m wide	1.8m long x 0.5m wide	Yes	
Aisle	1.5m	>1.5m	Yes	
Gradient	Max 5% (1:20)	Level	Yes	
Height Clearance	Min 2.2m	>2.2m	Yes	

Note 1:

The AS2890.1:2004 requires the aisle to be extended by a minimum extension of 1m beyond the last car space. The provision of 0.7m blind aisle does not comply with the design requirement. However, a swept path analysis has been undertaken and it is confirmed that a B85 car can enter and exit the last car space satisfactorily. This is in part due to the 6.2m wide aisle to facilitate easier turning manoeuvres. On this basis, the proposed arrangement is adequate and acceptable. Details of a swept path diagram demonstrating the associated B85 movement are provided in **Attachment 4**.

In summary, the design provisions in relation to the access, parking circulation and arrangement generally comply with AS2890.1 and AS2890.2. A swept path analysis has been provided to demonstrate satisfactory vehicle manoeuvres and circulation within the carpark. Details of the swept path analysis outcome are provided in **Attachment 4**.

5.3 Servicing Arrangement

Refuse collection will occur on-site in the provided loading bay which will be accessed via Gladys Avenue. Council waste trucks will enter the loading area in a reverse manner and exit the site in a forward direction.

A swept path analysis has been undertaken to demonstrate the intended vehicle circulation movements within the site. These swept path diagrams are provided in **Attachment 4**.

6 Traffic Assessment

6.1 Existing Traffic Generation

The updated Technical Direction TDT 2013/04a[1] provides revised trip generation rates for low-density residential dwellings during peak hours. The relevant trip rates are as follows:

- 0.95 vtph per unit during the morning peak hour
- 0.99 vtph per unit during the evening peak hour

Applying these trip rates to four (4) existing dwellings would indicate a peak hour traffic generation outcome of four (4) vtph during AM and PM peaks.

6.2 Development Traffic Generation

Residential

The updated Technical Direction TDT 2013/04a also provides trip generation rates for high-density residential apartment blocks. The relevant trip rates are as follows:

- 0.19 vtph per unit during the morning peak hour
- 0.15 vtph per unit during the evening peak hour

Application of these trip rates to the 127 proposed residential units would indicate a peak hour traffic generation outcome in Table 6-1.

Table 6-1 Traffic Generation During Peak Hour

Period	Total	In	Out
AM peak	24 vtph	5 vtph	19 vtph
PM peak	19 vtph	15 vtph	4 vtph

[1] NSW Government Roads and Maritime Services 2013, Guide to Traffic Generating Developments: Updated traffic surveys

6.3 Overall Traffic Generation and Distribution

Having regard to the above, the net traffic generation outcome is tabulated in Table 6-2 as follows:

Table 6-2 Net Peak Hour Traffic Generation

	AM Peak (vtph)		PM Peak (vtph)	
Period	In	Out	In	Out
(Existing)	0	-4	-4	0
Residential	5	19	15	4
Net Traffic	**5**	**15**	**11**	**4**

The projected development traffic movements are then added onto the surveyed background traffic and reanalysed using SIDRA. The assessment considers the existing state, the existing state with the subject development to provide an objective comparison in terms of traffic generation impact on the network. The assessed model outcome is summarised in Table 6-3.

Table 6-3 Existing and Post-Development SIDRA Assessment Outcome

Intersection	AM Peak		PM Peak	
	LOS	AVD	LOS	AVD
Pre-Development				
Gladys Avenue & Frenchs Forest West	A	11.4s	B	15.5s
Post Development				
Gladys Avenue & Frenchs Forest West	A	12.4s	B	16.3s

**WRT = West approach Right Turn movement*

The SIDRA output is reproduced in **Attachment 2**.

The assessment found the existing road network operate with ample spare capacity and the road network levels of service will be maintained following the addition of the subject development.

On this basis, the assessment concludes that the development would not adversely impact the existing road network.

7 Conclusion

The traffic and parking assessment undertaken for the proposed residential development at 116-120 Frenchs Forest West and 11 Gladys Avenue, Frenchs Forest has concluded that:

- the traffic generation of the proposed development will not present any adverse traffic implications
- the proposed parking provision will comply with the Council's DCP criteria and will adequately serve the development
- the proposed access, internal circulation and parking arrangements will be appropriate to AS design criteria

Attachment 1

Traffic Data

Location	Gladys Avenue		Duration	7:00	-	9:00
	Frenchs Forest Road West			16:00	-	18:00
	Gladys Avenue				-	
	Frenchs Forest Road West		Day/Date	Thursday, 30 November 2023		
Suburb	FRENCH FOREST		Weather		-	

All Vehicles Time Per 15 Mins			NORTH *Gladys Avenue*										EAST *Frenchs Forest Road West*												
			L			T			R				L			T			R				TOTAL		TOTAL
			LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	
7:00	-	7:15	0	0	0	2	0	2	2	0	2	4	23	0	23	74	6	80	0	0	0	103	186	15	201
7:15	-	7:30	1	0	1	1	0	1	1	0	1	3	38	0	38	81	9	90	3	0	3	131	260	13	273
7:30	-	7:45	4	0	4	0	0	0	2	0	2	6	56	0	56	108	11	119	4	0	4	179	311	16	327
7:45	-	8:00	3	0	3	4	0	4	2	0	2	9	66	0	66	107	10	117	7	0	7	190	396	17	413
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8:45	-	9:00	2	0	2	5	0	5	2	0	2	9	43	0	43	153	9	162	4	0	4	209	377	19	396
Period End			22	1	23	14	0	14	17	0	17	54	353	0	353	909	62	971	24	0	24	1348	2761	124	2885
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17:45	-	18:00	2	0	2	0	0	0	2	0	2	4	12	0	12	102	4	106	3	0	3	121	286	8	294
Period End			19	0	19	3	0	3	15	1	16	38	129	0	129	999	56	1055	24	0	24	1208	2752	112	2864

All Vehicles Time Per 15 Mins			SOUTH *Gladys Avenue*										WEST *Frenchs Forest Road West*												
			L			T			R				L			T			R				TOTAL		TOTAL
			LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	
7:00	-	7:15	3	0	3	0	0	0	6	1	7	10	0	0	0	66	7	73	10	1	11	84	186	15	201
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Period End			48	0	48	4	0	4	86	1	87	139	8	1	9	1160	56	1216	116	3	119	1344	2761	124	2885
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17:30	-	17:45	16	0	16	1	0	1	33	0	33	50	0	0	0	116	7	123	4	0	4	127	323	13	336
17:45	-	18:00	10	0	10	0	0	0	36	0	36	46	3	0	3	112	4	116	4	0	4	123	286	8	294
Period End			156	0	156	10	0	10	354	0	354	520	14	0	14	984	55	1039	45	0	45	1098	2752	112	2864

Location	Gladys Avenue			**Duration**	7:00	-	9:00
	Frenchs Forest Road West				16:00	-	18:00
	Gladys Avenue						
	Frenchs Forest Road West			**Day/Date**	Thursday, 30 November 2023		
Suburb	FRENCH FOREST			**Weather**	-		

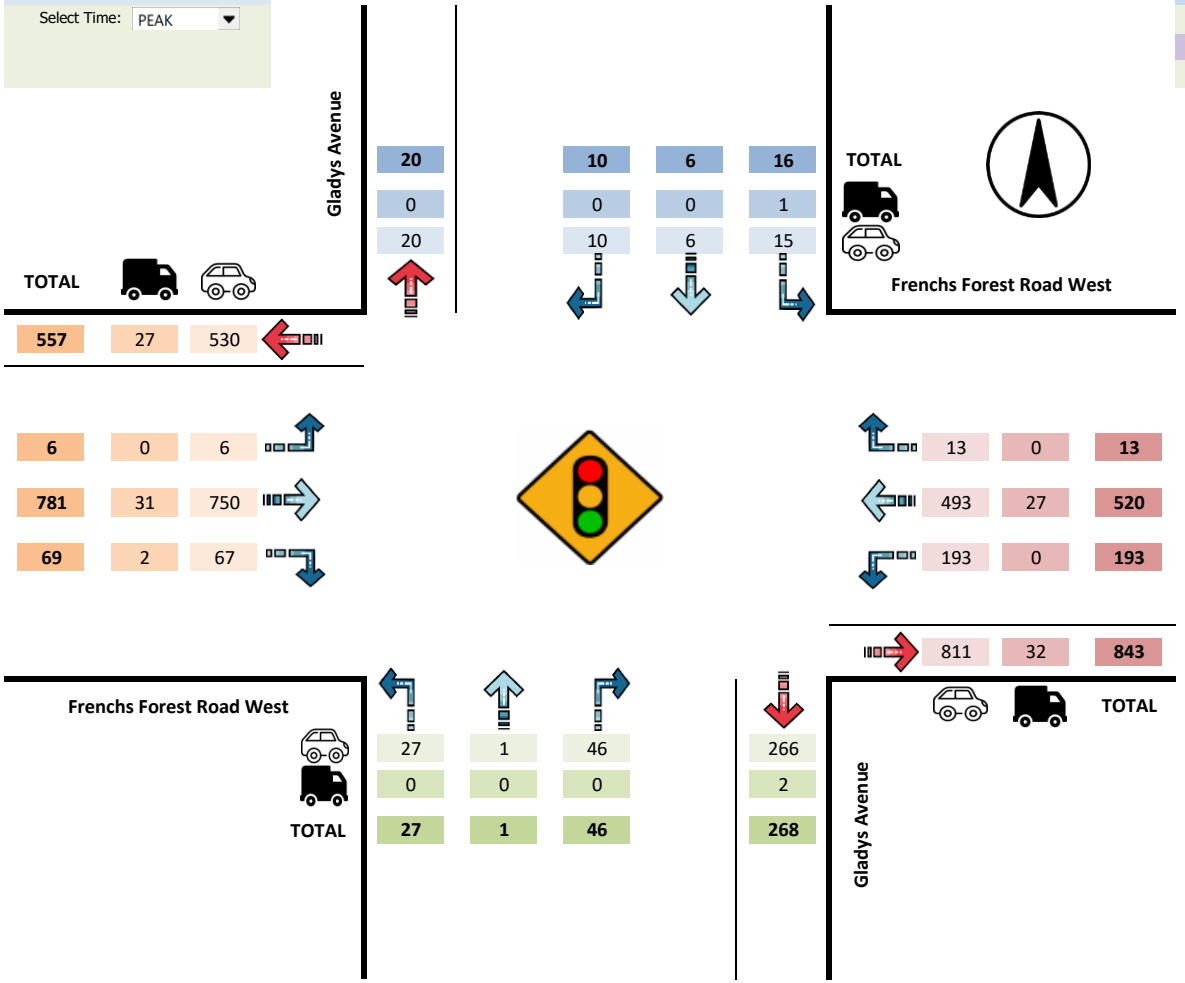
All Vehicles Time Per Hour			NORTH *Gladys Avenue*										EAST *Frenchs Forest Road West*											
			L			T			R				L			T			R				TOTAL		TOTAL
			LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	
7:00	-	**8:00**	8	0	**8**	7	0	**7**	7	0	**7**	**22**	183	0	**183**	370	36	**406**	14	0	**14**	**603**	1153	61	**1214**
7:15	-	**8:15**	11	0	**11**	5	0	**5**	7	0	**7**	**23**	200	0	**200**	396	41	**437**	16	0	**16**	**653**	1338	64	**1402**
7:30	-	**8:30**	13	0	**13**	5	0	**5**	9	0	**9**	**27**	202	0	**202**	445	32	**477**	14	0	**14**	**693**	1491	61	**1552**
7:45	-	**8:45**	15	1	**16**	6	0	**6**	10	0	**10**	**32**	193	0	**193**	493	27	**520**	13	0	**13**	**726**	1627	61	**1688**
8:00	-	**9:00**	14	1	**15**	7	0	**7**	10	0	**10**	**32**	170	0	**170**	539	26	**565**	10	0	**10**	**745**	1608	63	**1671**
Period End																									
16:00	-	**17:00**	11	0	**11**	2	0	**2**	9	1	**10**	**23**	71	0	**71**	476	31	**507**	13	0	**13**	**591**	1400	62	**1462**
16:15	-	**17:15**	13	0	**13**	1	0	**1**	9	0	**9**	**23**	74	0	**74**	475	27	**502**	11	0	**11**	**587**	1397	53	**1450**
16:30	-	**17:30**	11	0	**11**	2	0	**2**	5	0	**5**	**18**	62	0	**62**	531	29	**560**	11	0	**11**	**633**	1434	54	**1488**
16:45	-	**17:45**	8	0	**8**	1	0	**1**	6	0	**6**	**15**	62	0	**62**	550	29	**579**	9	0	**9**	**650**	1422	56	**1478**
17:00	-	**18:00**	8	0	**8**	1	0	**1**	6	0	**6**	**15**	58	0	**58**	523	25	**548**	11	0	**11**	**617**	1352	50	**1402**
Period End																									

All Vehicles Time Per Hour			SOUTH *Gladys Avenue*										WEST *Frenchs Forest Road West*											
			L			T			R				L			T			R				TOTAL		TOTAL
			LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	
7:00	-	**8:00**	25	0	**25**	0	0	**0**	39	1	**40**	**65**	2	1	**3**	434	22	**456**	64	1	**65**	**524**	1153	61	**1214**
7:15	-	**8:15**	29	0	**29**	1	0	**1**	44	0	**44**	**74**	3	1	**4**	557	21	**578**	69	1	**70**	**652**	1338	64	**1402**
7:30	-	**8:30**	28	0	**28**	1	0	**1**	41	0	**41**	**70**	4	1	**5**	662	27	**689**	67	1	**68**	**762**	1491	61	**1552**
7:45	-	**8:45**	27	0	**27**	1	0	**1**	46	0	**46**	**74**	6	0	**6**	750	31	**781**	67	2	**69**	**856**	1627	61	**1688**
8:00	-	**9:00**	23	0	**23**	4	0	**4**	47	0	**47**	**74**	6	0	**6**	726	34	**760**	52	2	**54**	**820**	1608	63	**1671**
Period End																									
16:00	-	**17:00**	94	0	**94**	7	0	**7**	200	0	**200**	**301**	5	0	**5**	487	30	**517**	25	0	**25**	**547**	1400	62	**1462**
16:15	-	**17:15**	77	0	**77**	7	0	**7**	188	0	**188**	**272**	6	0	**6**	510	26	**536**	26	0	**26**	**568**	1397	53	**1450**
16:30	-	**17:30**	77	0	**77**	7	0	**7**	176	0	**176**	**260**	10	0	**10**	517	25	**542**	25	0	**25**	**577**	1434	54	**1488**
16:45	-	**17:45**	77	0	**77**	7	0	**7**	150	0	**150**	**234**	8	0	**8**	523	27	**550**	21	0	**21**	**579**	1422	56	**1478**
17:00	-	**18:00**	62	0	**62**	3	0	**3**	154	0	**154**	**219**	9	0	**9**	497	25	**522**	20	0	**20**	**551**	1352	50	**1402**
Period End																									

Location	Gladys Avenue	Duration	7:00 - 9:00
	Frenchs Forest Road West		16:00 - 18:00
	Gladys Avenue		-
	Frenchs Forest Road West	Day/Date	Thursday, 30 November 2023
Suburb	FRENCH FOREST	Weather	-

DATA SELECTION
Select Time: PEAK

TIME RANGE		
PEAK	-	AM
PEAK		
7:45	-	8:45



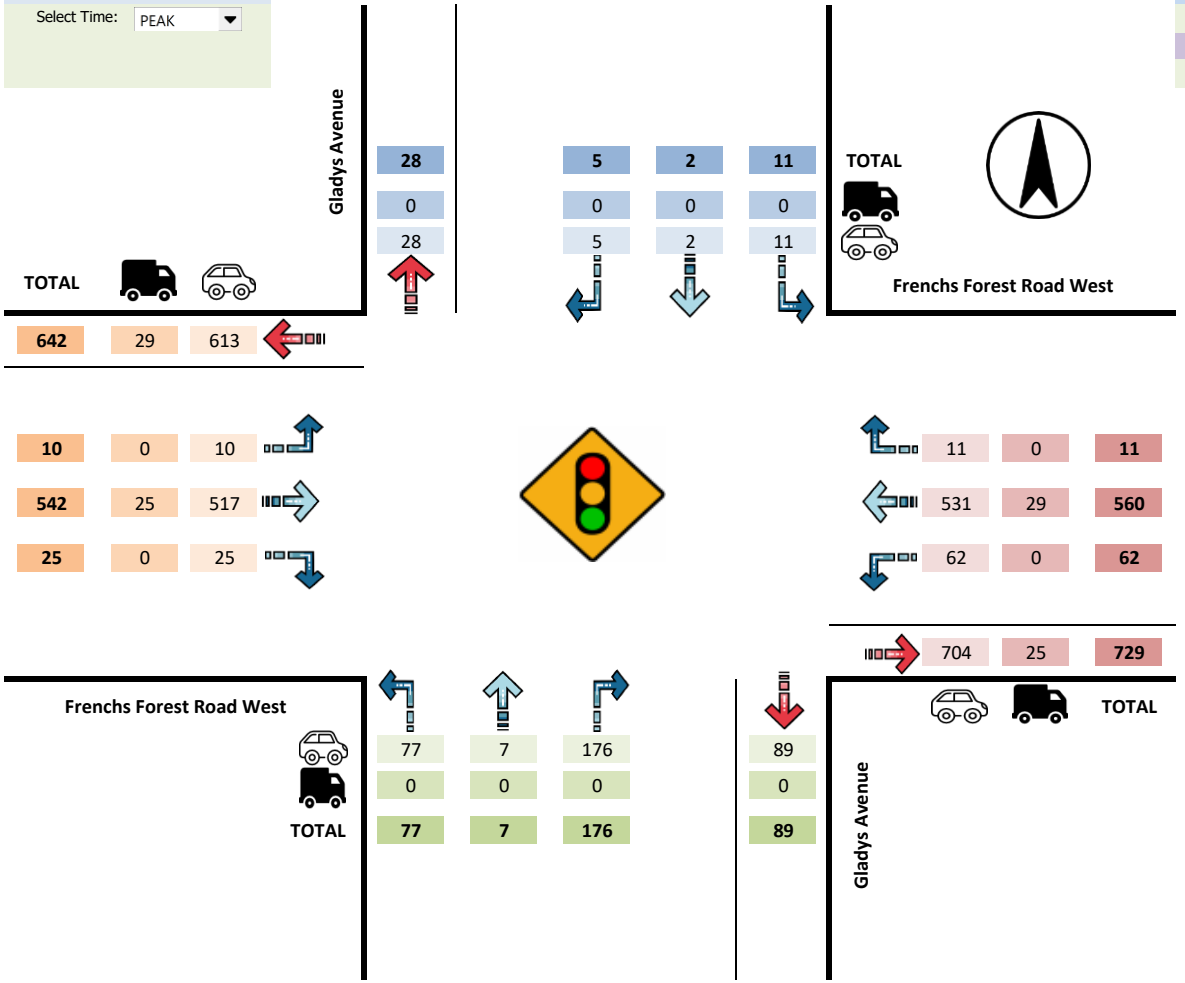
Traffic Information Specialist
ABN: 42 613 389 923
Email info@tistraffic.com.au

Location	Gladys Avenue	Duration	7:00 - 9:00
	Frenchs Forest Road West		16:00 - 18:00
	Gladys Avenue		-
	Frenchs Forest Road West	Day/Date	Thursday, 30 November 2023
Suburb	FRENCH FOREST	Weather	-

DATA SELECTION

Select Time: PEAK

TIME RANGE		
PEAK	-	PM
PEAK		
16:30	-	17:30



Traffic Information Specialist

ABN: 42 613 389 923

Email info@tistraffic.com.au

Attachment 2

SIDRA Results

MOVEMENT SUMMARY

Site: 101 [AM Peak - Gladys Avenue | Frenchs Forest Road West | Hospital Access (Site Folder: Existing Traffic)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

7:45am - 8:45am
Site Category: Base Year
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Hospital Access															
1	L2	All MCs	28	0.0	28	0.0	0.044	28.1	LOS B	1.1	7.5	0.66	0.64	0.66	30.2
2	T1	All MCs	1	0.0	1	0.0	0.044	38.4	LOS C	1.1	7.5	0.66	0.64	0.66	30.5
3	R2	All MCs	48	0.0	48	0.0	0.120	43.9	LOS D	2.3	16.0	0.84	0.71	0.84	26.9
Approach			78	0.0	78	0.0	0.120	38.1	LOS C	2.3	16.0	0.77	0.68	0.77	28.1
East: Frenchs Forest Road West															
4	L2	All MCs	203	0.0	203	0.0	* 0.262	9.1	LOS A	1.8	13.8	0.19	0.76	0.19	15.5
5	T1	All MCs	547	5.2	547	5.2	0.313	11.5	LOS A	5.6	39.3	0.39	0.36	0.39	35.5
6	R2	All MCs	14	0.0	14	0.0	0.295	71.1	LOS F	0.9	6.1	1.00	0.68	1.00	22.3
Approach			764	3.7	764	3.7	0.313	11.9	LOS A	5.6	39.3	0.35	0.47	0.35	26.3
North: Gladys Avenue															
7	L2	All MCs	17	6.3	17	6.3	* 0.295	27.4	LOS B	1.3	9.5	0.99	0.72	0.99	27.7
8	T1	All MCs	6	0.0	6	0.0	* 0.295	55.1	LOS D	1.3	9.5	0.99	0.72	0.99	13.8
9	R2	All MCs	11	0.0	11	0.0	0.295	49.4	LOS D	1.3	9.5	0.99	0.72	0.99	27.7
Approach			34	3.1	34	3.1	0.295	39.5	LOS C	1.3	9.5	0.99	0.72	0.99	23.3
West: Frenchs Forest Road West															
10	L2	All MCs	6	0.0	6	0.0	0.409	5.6	LOS A	3.7	26.5	0.17	0.15	0.17	38.3
11	T1	All MCs	822	4.0	822	4.0	* 0.409	3.3	LOS A	4.2	30.1	0.18	0.16	0.18	38.6
12	R2	All MCs	73	2.9	73	2.9	0.319	56.0	LOS D	3.7	26.6	0.89	0.77	0.89	13.0
Approach			901	3.9	901	3.9	0.409	7.6	LOS A	4.2	30.1	0.23	0.21	0.23	33.3
All Vehicles			1777	3.6	1777	3.6	0.409	11.4	LOS A	5.6	39.3	0.32	0.35	0.32	29.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Hospital Access												
P1	Full	50	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96

East: Frenchs Forest Road West												
P2	Full	50	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
North: Gladys Avenue												
P3	Full	50	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
West: Frenchs Forest Road West												
P4	Full	50	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
All Pedestrians		200	211	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 101 [PM Peak - Gladys Avenue | Frenchs Forest Road West | Hospital Access (Site Folder: Existing Traffic)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

4:30pm-5:30pm
Site Category: Base Year
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Hospital Access															
1	L2	All MCs	81	0.0	81	0.0	0.132	30.4	LOS C	3.4	23.5	0.69	0.70	0.69	34.7
2	T1	All MCs	7	0.0	7	0.0	0.132	30.1	LOS C	3.4	23.5	0.69	0.70	0.69	35.3
3	R2	All MCs	185	0.0	185	0.0	*0.333	39.6	LOS C	8.4	58.9	0.82	0.77	0.82	32.0
Approach			274	0.0	274	0.0	0.333	36.6	LOS C	8.4	58.9	0.78	0.75	0.78	32.9
East: Frenchs Forest Road West															
4	L2	All MCs	65	0.0	65	0.0	0.127	9.4	LOS A	1.0	8.8	0.23	0.70	0.23	16.1
5	T1	All MCs	589	5.2	589	5.2	0.313	9.0	LOS A	5.0	35.0	0.33	0.31	0.33	44.6
6	R2	All MCs	12	0.0	12	0.0	0.125	64.3	LOS E	0.7	4.6	0.95	0.67	0.95	26.2
Approach			666	4.6	666	4.6	0.313	10.0	LOS A	5.0	35.0	0.33	0.35	0.33	37.6
North: Gladys Avenue															
7	L2	All MCs	12	0.0	12	0.0	0.128	25.8	LOS B	0.6	4.5	0.96	0.69	0.96	33.0
8	T1	All MCs	2	0.0	2	0.0	*0.128	56.1	LOS D	0.6	4.5	0.96	0.69	0.96	14.5
9	R2	All MCs	5	0.0	5	0.0	0.128	50.4	LOS D	0.6	4.5	0.96	0.69	0.96	33.0
Approach			19	0.0	19	0.0	0.128	36.0	LOS C	0.6	4.5	0.96	0.69	0.96	28.9
West: Frenchs Forest Road West															
10	L2	All MCs	11	0.0	11	0.0	0.335	11.4	LOS A	5.0	36.6	0.32	0.29	0.32	43.9
11	T1	All MCs	571	4.6	571	4.6	*0.335	8.6	LOS A	5.3	38.8	0.33	0.29	0.33	44.7
12	R2	All MCs	26	0.0	26	0.0	*0.283	70.2	LOS E	1.5	10.8	0.97	0.72	0.97	12.8
Approach			607	4.3	607	4.3	0.335	11.3	LOS A	5.3	38.8	0.36	0.31	0.36	40.3
All Vehicles			1566	3.6	1566	3.6	0.335	15.5	LOS B	8.4	58.9	0.43	0.41	0.43	37.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Hospital Access												
P1	Full	50	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96

East: Frenchs Forest Road West												
P2	Full	50	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
North: Gladys Avenue												
P3	Full	50	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
West: Frenchs Forest Road West												
P4	Full	50	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
All Pedestrians		200	211	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 101 [AM Peak - Gladys Avenue | Frenchs Forest Road West | Hospital Access (Site Folder: Post Development Traffic)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

7:45am - 8:45am
Site Category: Base Year
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Hospital Access															
1	L2	All MCs	28	0.0	28	0.0	0.051	32.4	LOS C	1.2	8.2	0.71	0.66	0.71	29.2
2	T1	All MCs	1	0.0	1	0.0	0.051	43.7	LOS D	1.2	8.2	0.71	0.66	0.71	29.4
3	R2	All MCs	48	0.0	48	0.0	0.156	49.7	LOS D	2.4	17.1	0.89	0.72	0.89	25.8
Approach			78	0.0	78	0.0	0.156	43.3	LOS D	2.4	17.1	0.83	0.70	0.83	27.0
East: Frenchs Forest Road West															
4	L2	All MCs	203	0.0	203	0.0	* 0.262	9.1	LOS A	1.7	12.9	0.19	0.76	0.19	15.5
5	T1	All MCs	547	5.2	547	5.2	0.307	10.7	LOS A	5.3	37.4	0.37	0.35	0.37	35.8
6	R2	All MCs	17	0.0	17	0.0	0.181	63.7	LOS E	1.0	6.8	0.96	0.69	0.96	23.4
Approach			767	3.7	767	3.7	0.307	11.4	LOS A	5.3	37.4	0.34	0.46	0.34	26.4
North: Gladys Avenue															
7	L2	All MCs	25	4.2	25	4.2	* 0.337	26.2	LOS B	2.0	14.3	0.98	0.74	0.98	27.9
8	T1	All MCs	6	0.0	6	0.0	* 0.337	54.9	LOS D	2.0	14.3	0.98	0.74	0.98	13.8
9	R2	All MCs	19	0.0	19	0.0	0.337	49.1	LOS D	2.0	14.3	0.98	0.74	0.98	28.0
Approach			51	2.1	51	2.1	0.337	38.4	LOS C	2.0	14.3	0.98	0.74	0.98	24.8
West: Frenchs Forest Road West															
10	L2	All MCs	9	0.0	9	0.0	0.431	6.8	LOS A	5.3	38.2	0.24	0.22	0.24	37.6
11	T1	All MCs	822	4.0	822	4.0	* 0.431	5.0	LOS A	5.8	41.7	0.25	0.22	0.25	37.9
12	R2	All MCs	73	2.9	73	2.9	0.319	56.0	LOS D	3.7	26.6	0.89	0.77	0.89	13.0
Approach			904	3.8	904	3.8	0.431	9.1	LOS A	5.8	41.7	0.30	0.27	0.30	32.8
All Vehicles			1800	3.6	1800	3.6	0.431	12.4	LOS A	5.8	41.7	0.36	0.38	0.36	29.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Hospital Access												
P1	Full	50	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96

East: Frenchs Forest Road West												
P2	Full	50	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
North: Gladys Avenue												
P3	Full	50	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
West: Frenchs Forest Road West												
P4	Full	50	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
All Pedestrians		200	211	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 101 [PM Peak - Gladys Avenue | Frenchs Forest Road West | Hospital Access (Site Folder: Post Development Traffic)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

4:30pm-5:30pm
Site Category: Base Year
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Hospital Access															
1	L2	All MCs	81	0.0	81	0.0	0.134	31.2	LOS C	3.4	23.8	0.70	0.71	0.70	34.5
2	T1	All MCs	7	0.0	7	0.0	0.134	30.2	LOS C	3.4	23.8	0.70	0.71	0.70	35.1
3	R2	All MCs	185	0.0	185	0.0	*0.333	39.6	LOS C	8.4	58.9	0.82	0.77	0.82	32.0
Approach			274	0.0	274	0.0	0.333	36.8	LOS C	8.4	58.9	0.78	0.75	0.78	32.8
East: Frenchs Forest Road West															
4	L2	All MCs	65	0.0	65	0.0	0.129	9.5	LOS A	1.0	9.1	0.24	0.70	0.24	16.1
5	T1	All MCs	589	5.2	589	5.2	0.318	9.6	LOS A	5.3	37.1	0.34	0.32	0.34	44.2
6	R2	All MCs	14	0.0	14	0.0	0.177	66.7	LOS E	0.8	5.7	0.97	0.68	0.97	25.8
Approach			668	4.6	668	4.6	0.318	10.8	LOS A	5.3	37.1	0.35	0.37	0.35	37.3
North: Gladys Avenue															
7	L2	All MCs	18	0.0	18	0.0	0.224	25.6	LOS B	1.1	7.6	0.97	0.72	0.97	32.9
8	T1	All MCs	2	0.0	2	0.0	*0.224	55.1	LOS D	1.1	7.6	0.97	0.72	0.97	14.4
9	R2	All MCs	12	0.0	12	0.0	0.224	49.4	LOS D	1.1	7.6	0.97	0.72	0.97	32.9
Approach			32	0.0	32	0.0	0.224	36.3	LOS C	1.1	7.6	0.97	0.72	0.97	30.3
West: Frenchs Forest Road West															
10	L2	All MCs	13	0.0	13	0.0	0.343	11.7	LOS A	5.4	39.1	0.34	0.31	0.34	43.5
11	T1	All MCs	571	4.6	571	4.6	*0.343	9.3	LOS A	5.7	41.3	0.35	0.31	0.35	44.3
12	R2	All MCs	26	0.0	26	0.0	*0.340	72.4	LOS F	1.6	11.1	0.98	0.71	0.98	12.7
Approach			609	4.3	609	4.3	0.343	12.1	LOS A	5.7	41.3	0.38	0.33	0.38	40.0
All Vehicles			1583	3.6	1583	3.6	0.343	16.3	LOS B	8.4	58.9	0.45	0.42	0.45	37.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

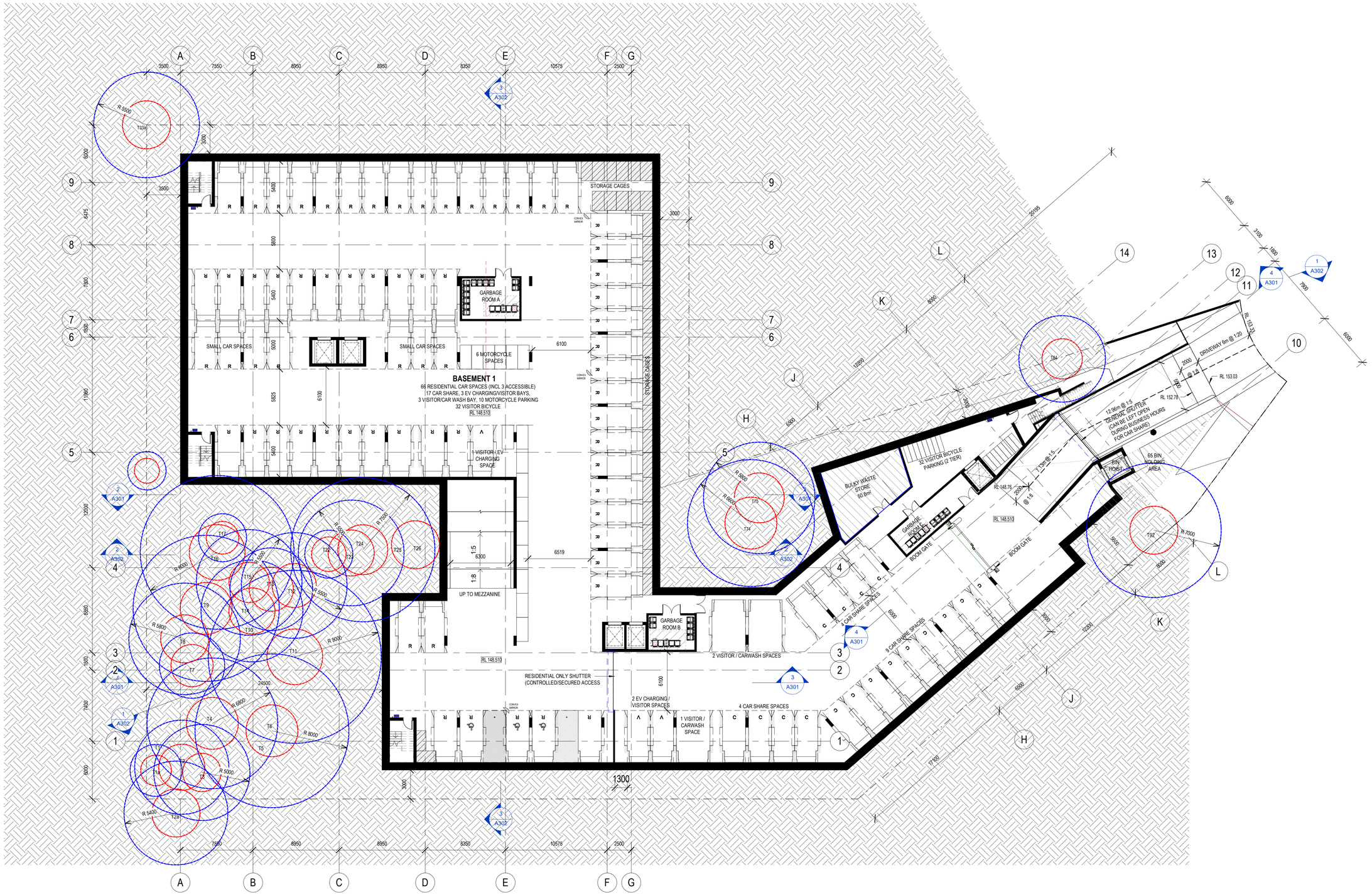
Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Hospital Access												
P1	Full	50	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96

East: Frenchs Forest Road West												
P2	Full	50	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
North: Gladys Avenue												
P3	Full	50	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
West: Frenchs Forest Road West												
P4	Full	50	53	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
All Pedestrians		200	211	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

Attachment 3

Architectural Plans



TREE LEGEND

DESCRIPTION:

SRZ

TPZ

brewster murray

Architecture
Interiors
Urban Design
Project Management

ABN 63 804 200 206
99 York Street
Sydney NSW 2000
Australia
+612 9299 0988
brewstermurray.com.au

Rev	Date	Description
-	12.03.2024	DA LODGEMENT

Client: Young Assets Holding Pty Ltd

Project: 116-120 Frenchs Forest Rd West &11 Gladys Ave Frenchs Forest

Drawing: BASEMENT 1

North | Scale: 1 : 200@A1 | Date: 2023 | Job No.: 23_6514 | Drawing No.: A101 / -

Issued for: FOR DA

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3/04/2024 3:59:24 PM

STORAGE CAGES

2 MOTORCYCLE SPACES

6 MOTORCYCLE SPACES

4 SMALL CAR SPACES

3 SMALL CAR SPACES

MEZZANINE PARKING
53 RESIDENTIAL CAR SPACES
7 VISITOR (SMALL CAR SPACES)
22 MOTORCYCLE PARKING
RL 151.610

BUILDING A LOWER GROUND LINE ABOVE

WAITING BAY

2m @ 1:8 RAMP FROM BASEMENT

13m @ 1:5

13m @ 1:5 LOWER GROUND

2m @ 1:8 RAMP UP TO LOWER GROUND

LOWER GROUND B
REFER TO [A103]
RL 152.85

TREE LEGEND

DESCRIPTION:

SRZ

TPZ

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brewster murray

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+612 9299 0988
brewstermurray.com.au

Rev

Issue	Date	Description
-	12.03.2024	DA LODGEMENT

Client
Young Assets Holding Pty Ltd

Project
116-120 Frenchs Forest Rd West &11 Gladys Ave Frenchs Forest

Drawing
MEZZANINE

North

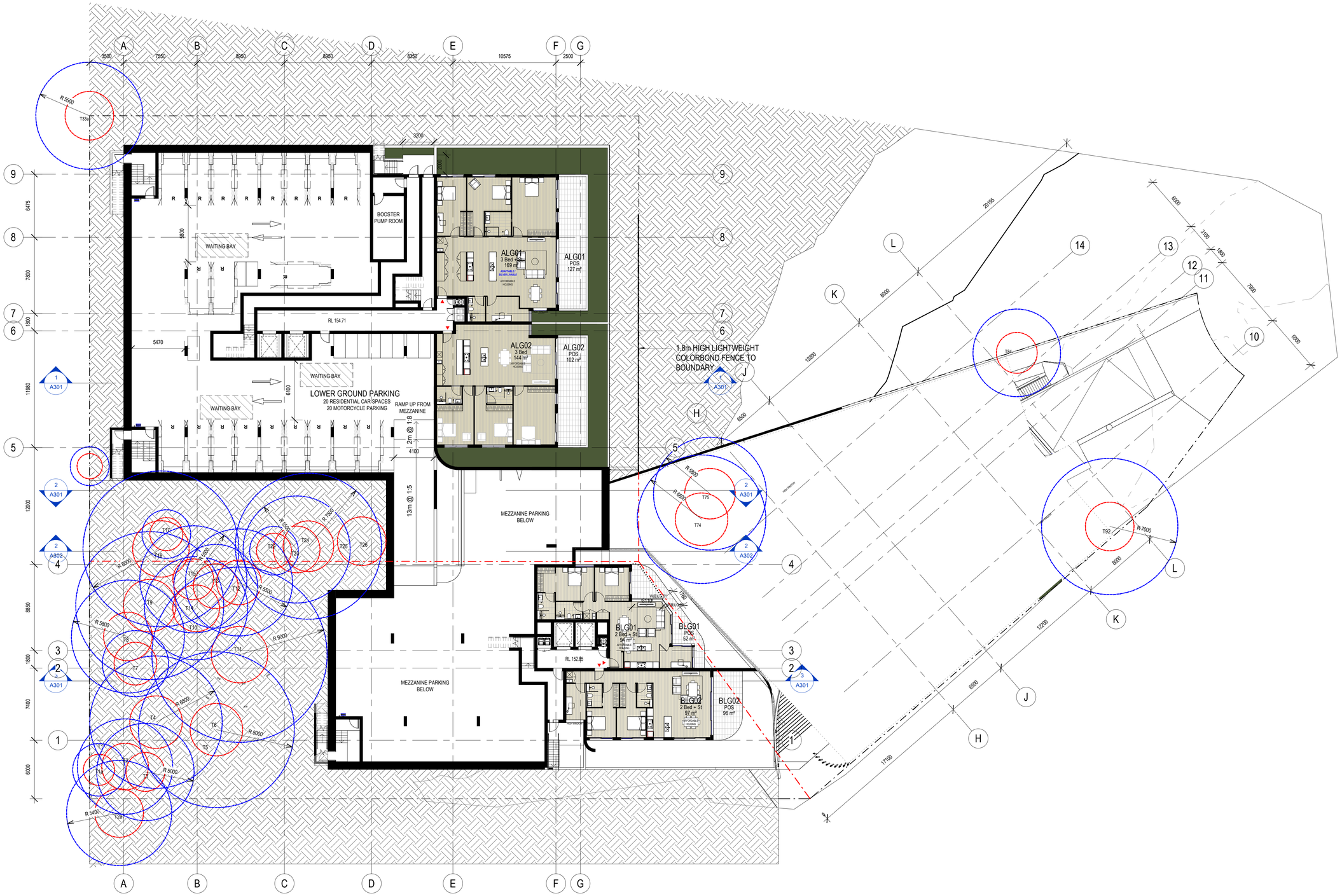
Scale
1 : 200@A1

Date
2023

Job No.
23_6514

Drawing No.
A102 / -

Issued for
FOR DA



TREE LEGEND

DESCRIPTION:

SRZ

TPZ

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Architecture
Interiors
Urban Design
Project Management

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Sydney NSW 2000
Australia
+612 9299 0988
brewstermurray.com.au

Rev

Issue	Date	Description
-	12.03.2024	DA LODGEMENT

Consultants

Client

Young Assets Holding Pty Ltd

Project

116-120 Frenchs Forest Rd West &11 Gladys Ave Frenchs Forest

Drawing

LOWER GROUND

North

Scale: 1 : 200@A1

Date: 2023

Job No.: 23_6514

Drawing No.: A103 / -

Issued for

FOR DA

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TREE LEGEND

DESCRIPTION:

SRZ

TPZ

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Architecture
Interiors
Urban Design
Project Management

ABN 63 804 200 206
99 York Street
Sydney NSW 2000
Australia
+612 9299 0988
brewstermurray.com.au

Rev

Issue	Date	Description
-	12.03.2024	DA LODGEMENT

Client: Young Assets Holding Pty Ltd

Project: 116-120 Frenchs Forest Rd West &11 Gladys Ave Frenchs Forest

Drawing: GROUND FLOOR

North

Scale: 1 : 200@A1

Date: 2023

Job No.: 23_6514

Drawing No.: A104 / -

Issued for: FOR DA

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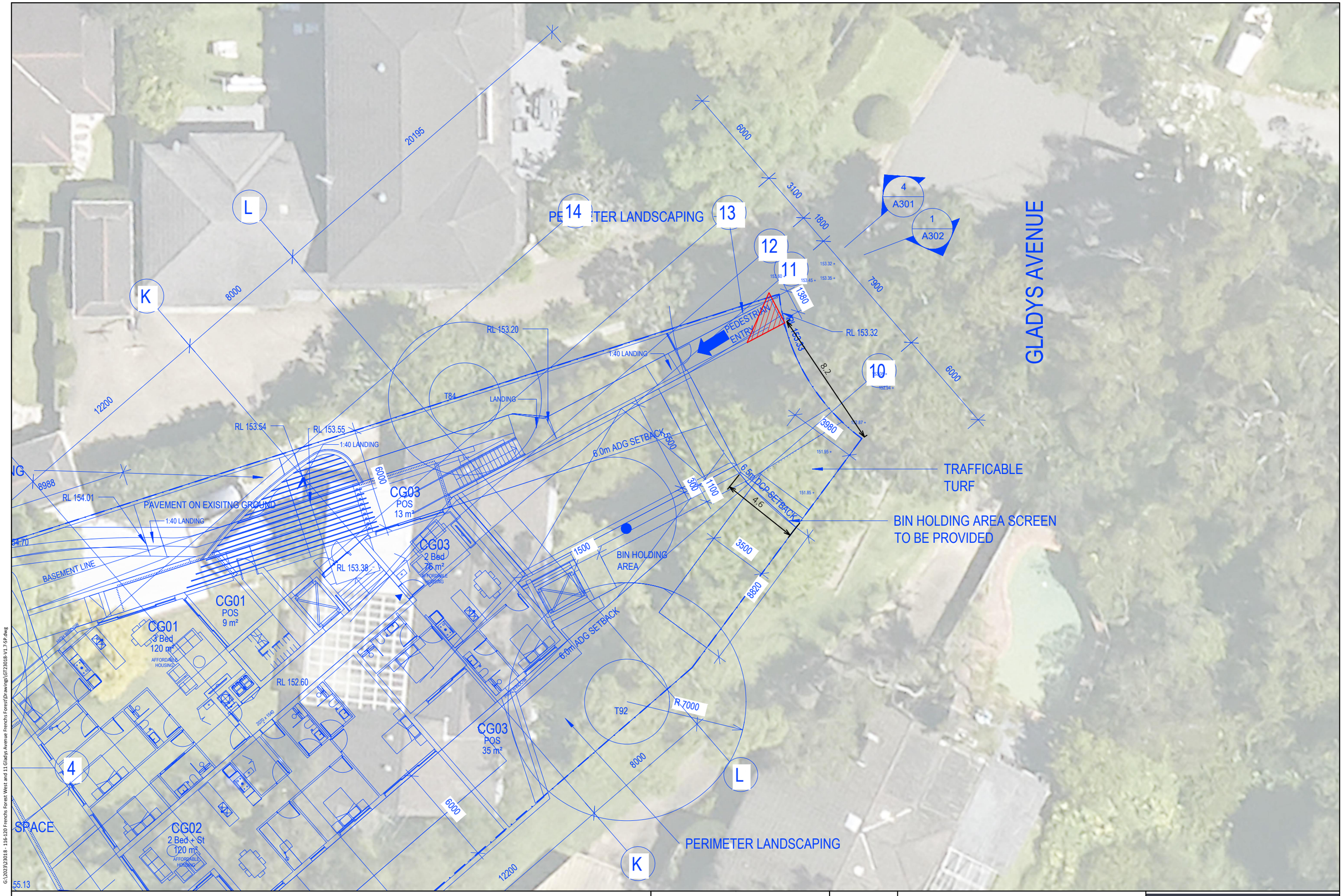
Attachment 4

Turning Path Assessment



116-120 FRENCHS FOREST WEST AND 11 GLADYS AVENUE FRENCHS FOREST
PROPOSED RESIDENTIAL DEVELOPMENT - GROUND FLOOR
COMPLIANCE CHECK

DRAWING REF NO. GT23018-V1.7-SP SHEET NO. 01 OF 13 ISSUE DATE 8 April 2024

DESIGNED BY L.NG / N.LO / N.BORJA
REVIEWED BY B.LO
SCALE A3 1:200

DRAWING REFERENCE (SOURCE)
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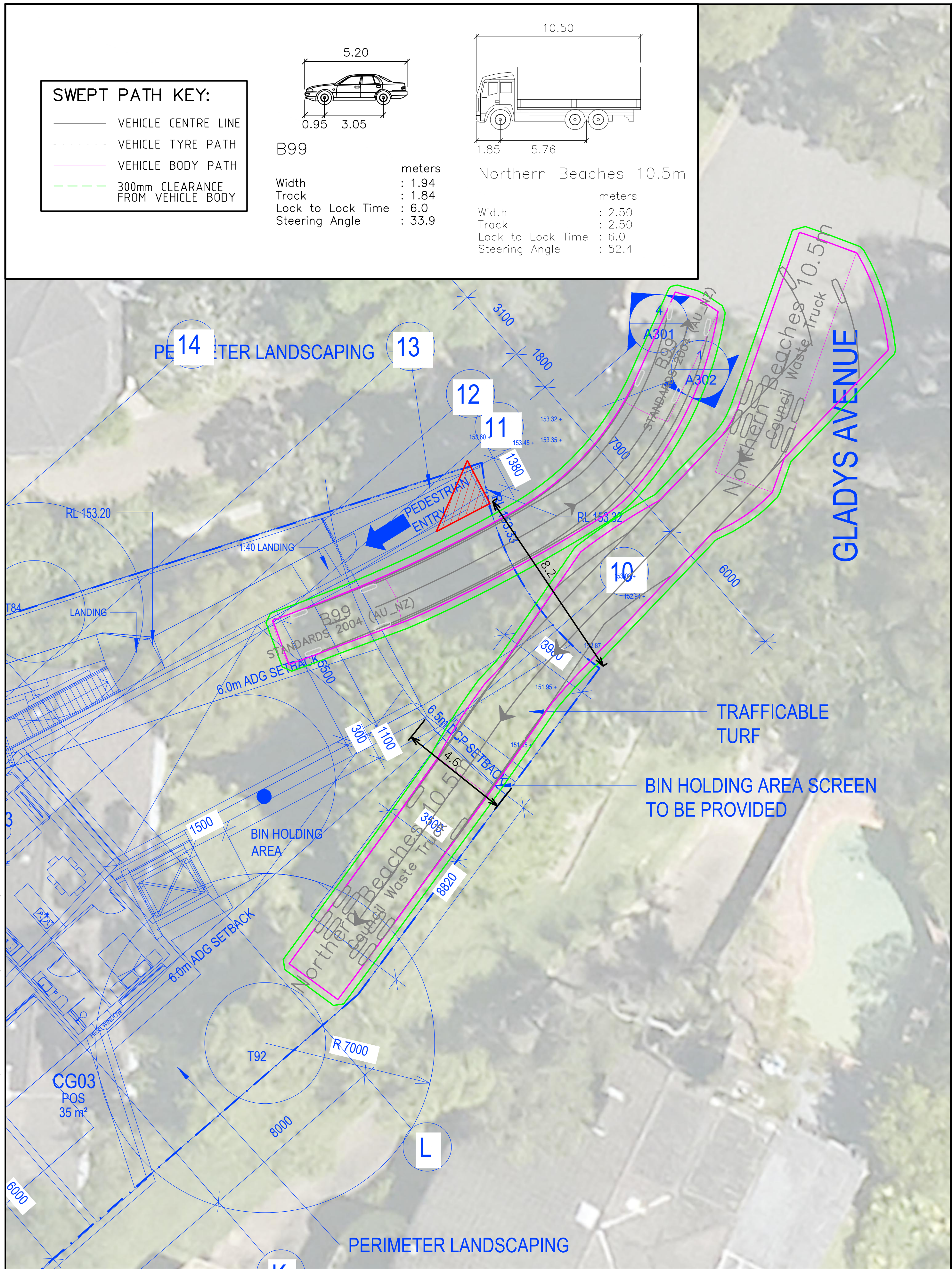
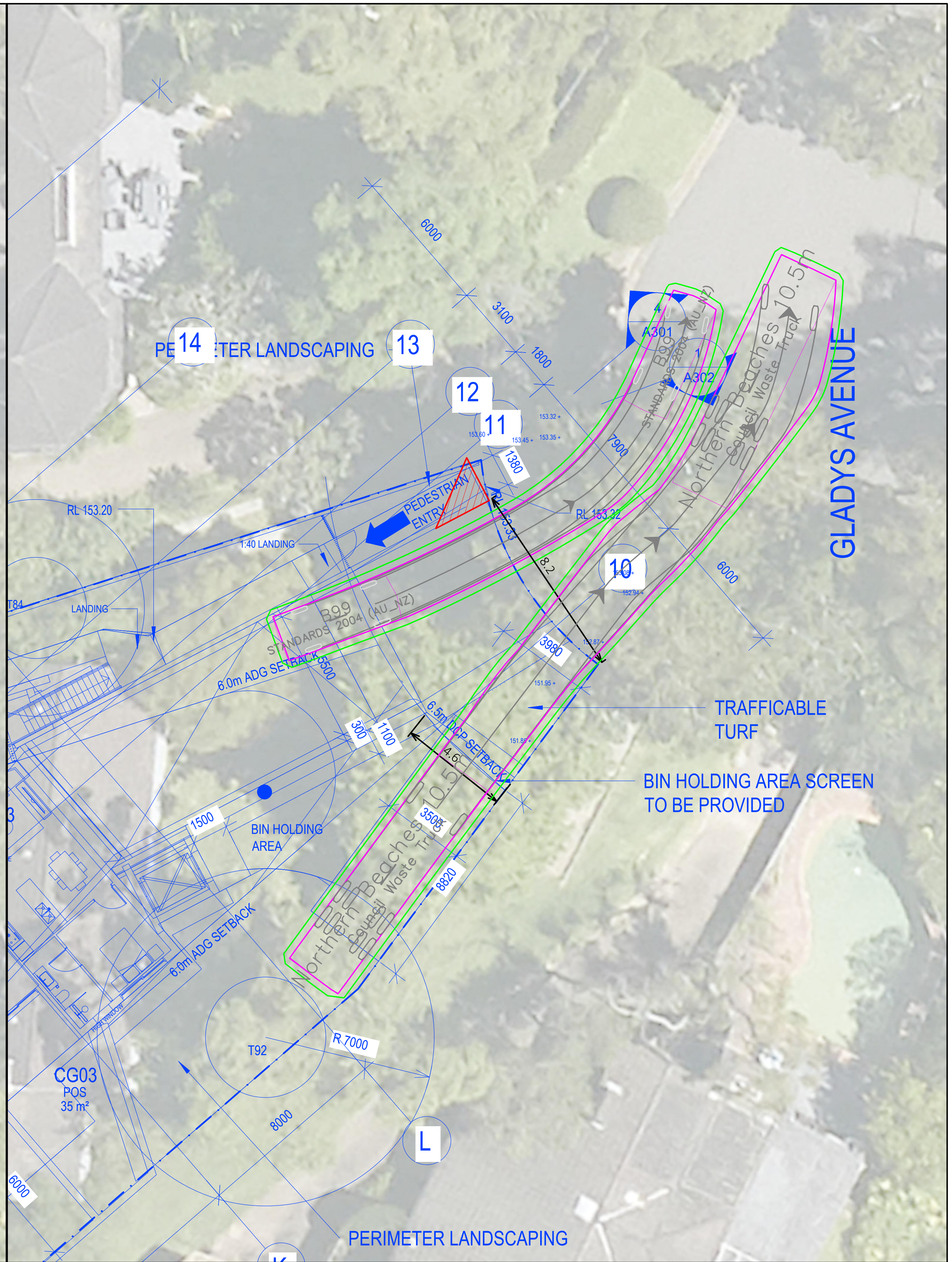
Genesis Traffic



SWEPT PATH KEY:
VEHICLE CENTRE LINE
VEHICLE TYRE PATH
VEHICLE BODY PATH
300mm CLEARANCE FROM VEHICLE BODY
5.20
0.95 3.05
B99
meters
Width : 1.94
Track : 1.84
Lock to Lock Time : 6.0
Steering Angle : 33.9
10.50
1.85 5.76
Northern Beaches 10.5m
meters
Width : 2.50
Track : 2.50
Lock to Lock Time : 6.0
Steering Angle : 52.4
PERIMETER LANDSCAPING
14
13
12
11
10
A301
A302
PEDESTRIAN ENTRY
RL 153.20
RL 153.32
1.40 LANDING
LANDING
GLADYS AVENUE
TRAFFICABLE TURF
BIN HOLDING AREA SCREEN TO BE PROVIDED
BIN HOLDING AREA
6.0m ADG SETBACK
6.5m DCP SETBACK
8.2
4.6
R 7000
T92
CG03
POS
35 m²
L
PERIMETER LANDSCAPING



PERIMETER LANDSCAPING
14
13
12
11
10
A301
A302
PEDESTRIAN ENTRY
RL 153.20
RL 153.32
1.40 LANDING
LANDING
GLADYS AVENUE
TRAFFICABLE TURF
BIN HOLDING AREA SCREEN TO BE PROVIDED
BIN HOLDING AREA
6.0m ADG SETBACK
6.5m DCP SETBACK
8.2
4.6
R 7000
T92
CG03
POS
35 m²
L
PERIMETER LANDSCAPING

116-120 FRENCHS FOREST WEST AND 11 GLADYS AVENUE FRENCHS FOREST
PROPOSED RESIDENTIAL DEVELOPMENT - GROUND FLOOR
SWEPT PATH ASSESSMENT - MRV AND COUNCIL WASTE TRUCK ENTER THE LOADING BAY WHILST B99 PASSING

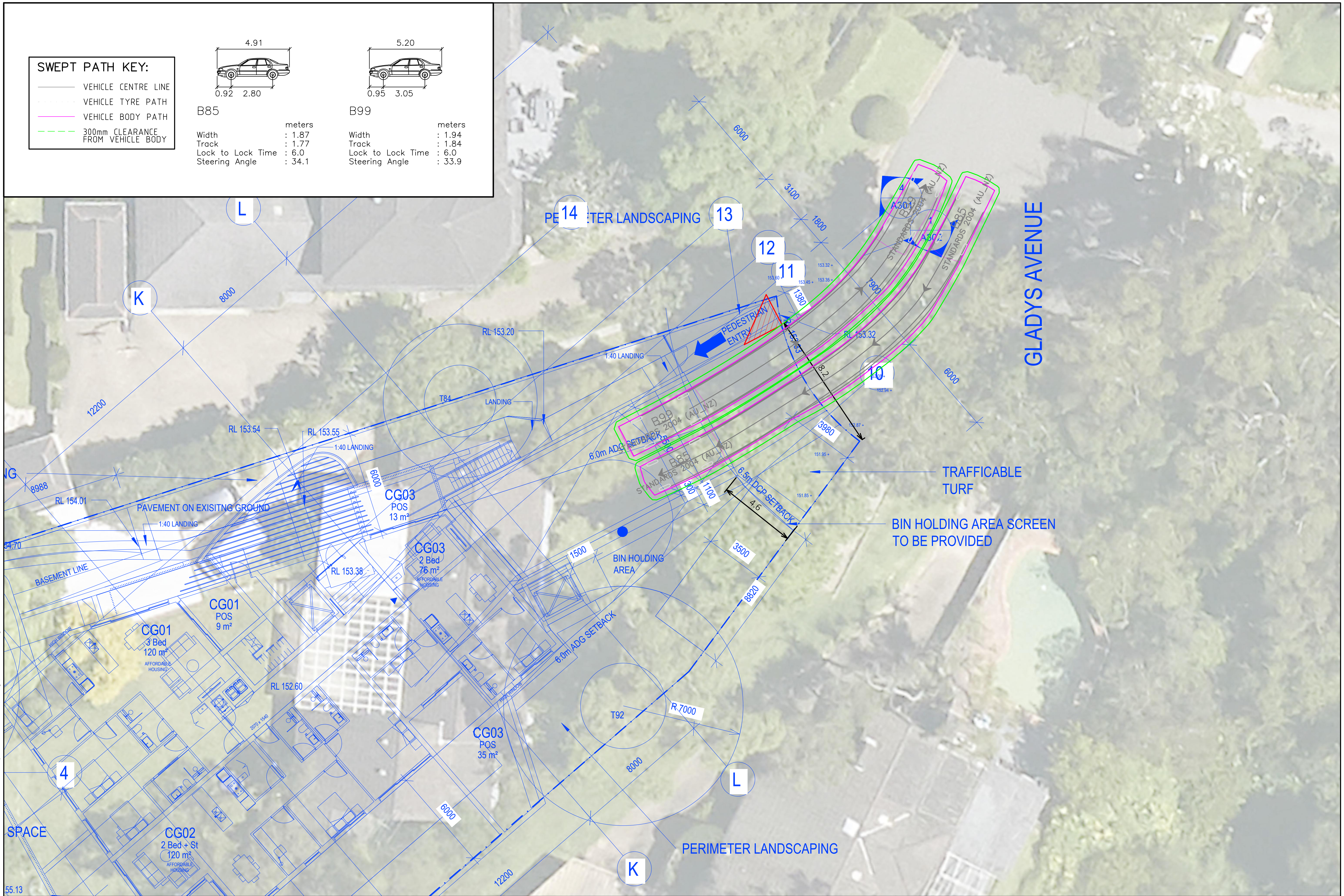
DRAWING REF NO. GT23018-V1.7-SP　SHEET NO. 02 OF 13

DESIGNED BY: L.NG / N.LO / N.BORJA
REVIEWED BY: B.LO
SCALE A3 1:200

DRAWING REFERENCE (SOURCE)
G:\2023\23018 - 116-120 FRENCHS FOREST WEST AND 11 GLADYS AVENUE FRENCHS FOREST\DRAWINGS\20240403\240403 DA SET

Genesis Traffic

G:\2023\23018 - 116-120 Frenchs Forest West and 11 Gladys Avenue Frenchs Forest\Drawings\GT23018-V1.7-SP.dwg
Plotted by GenesisDS



SWEPT PATH KEY:
VEHICLE CENTRE LINE
VEHICLE TYRE PATH
VEHICLE BODY PATH
300mm CLEARANCE FROM VEHICLE BODY
4.91
0.92 2.80
B85
meters
Width : 1.87
Track : 1.77
Lock to Lock Time : 6.0
Steering Angle : 34.1
5.20
0.95 3.05
B99
meters
Width : 1.94
Track : 1.84
Lock to Lock Time : 6.0
Steering Angle : 33.9
GLADYS AVENUE
PERIMETER LANDSCAPING
PEDESTRIAN ENTRY
1:40 LANDING
LANDING
RL 153.20
RL 153.32
RL 153.54
RL 153.55
RL 154.01
RL 153.38
RL 152.60
T84
T92
6.0m ADG SETBACK
6.5m DCP SETBACK
TRAFFICABLE TURF
BIN HOLDING AREA SCREEN TO BE PROVIDED
BIN HOLDING AREA
PAVEMENT ON EXISITNG GROUND
BASEMENT LINE
CG01
POS
9 m²
CG01
3 Bed
120 m²
CG02
2 Bed + St
120 m²
CG03
POS
13 m²
CG03
2 Bed
76 m²
CG03
POS
35 m²
SPACE
R 7000
B99
B85

116-120 FRENCHS FOREST WEST AND 11 GLADYS AVENUE FRENCHS FOREST
PROPOSED RESIDENTIAL DEVELOPMENT - GROUND FLOOR
SWEPT PATH ASSESSMENT

DRAWING REF NO. GT23018-V1.7-SP

SHEET NO. 03 OF 13

ISSUE DATE 8 April 2024

DESIGNED BY L.NG / N.LO / N.BORJA

REVIEWED BY B.LO

SCALE A3 1:200

DRAWING REFERENCE (SOURCE)
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GenesisTraffic.

Plotted by GenesisDS

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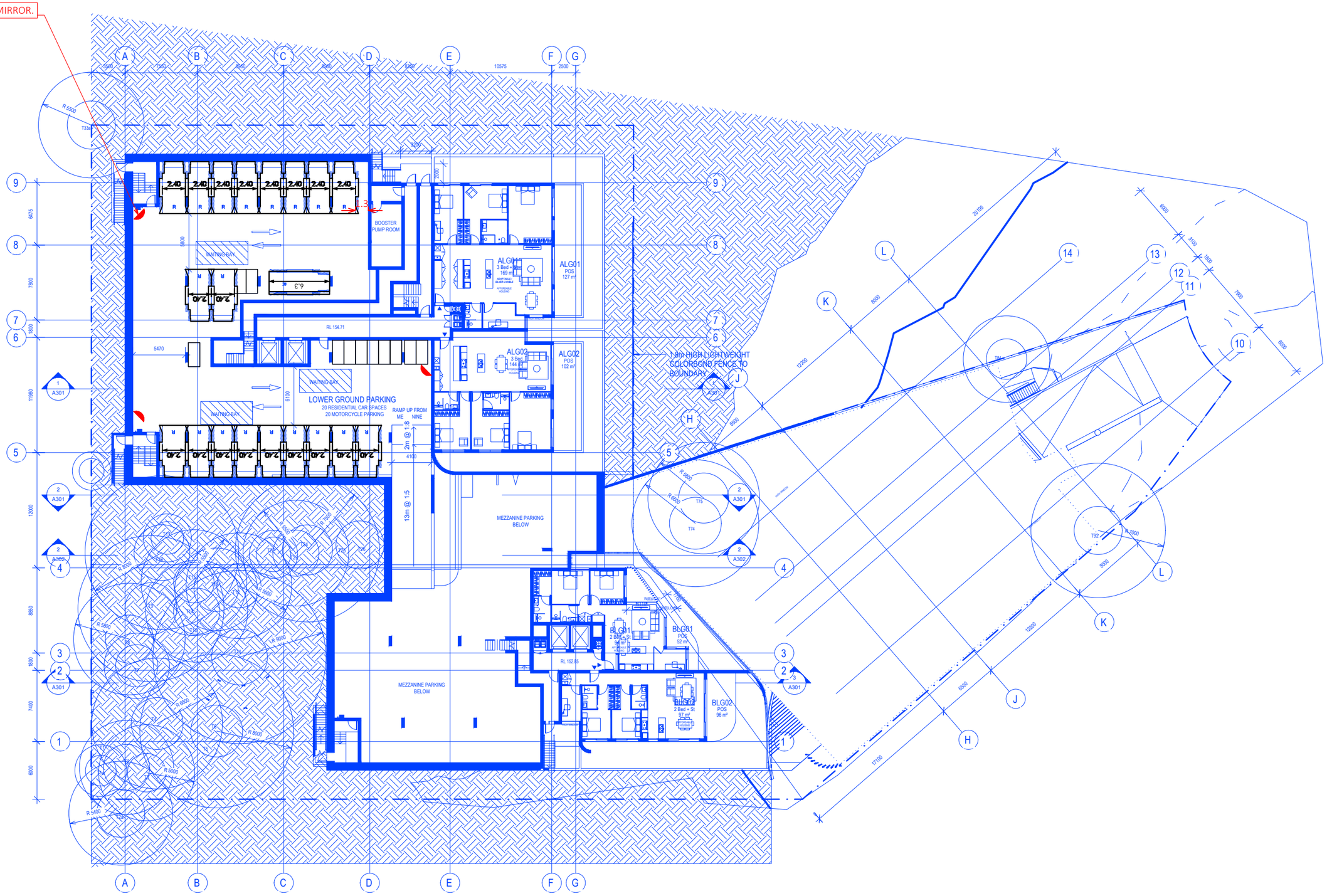
PROVIDE CONVEX MIRROR.



116-120 FRENCHS FOREST WEST AND 11 GLADYS AVENUE FRENCHS FOREST
PROPOSED RESIDENTIAL DEVELOPMENT - LOWER GROUND
COMPLIANCE CHECK

DRAWING REF NO. GT23018-V1.7-SP

SHEET NO. 04 OF 13

ISSUE DATE 8 April 2024

DESIGNED BY L.NG / N.LO / N.BORJA

REVIEWED BY B.LO

SCALE A3 1:400

DRAWING REFERENCE (SOURCE)
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Genesis Traffic

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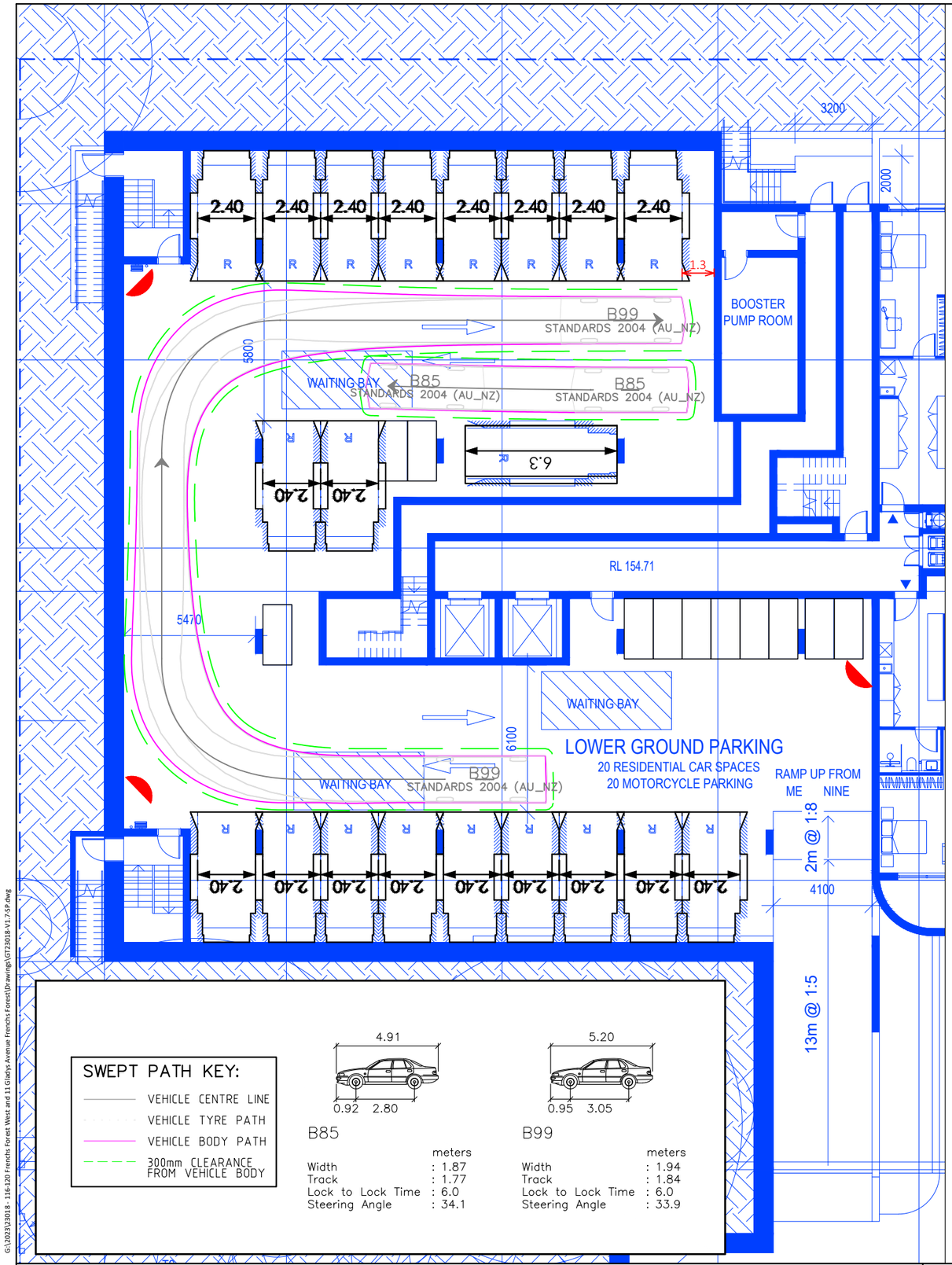
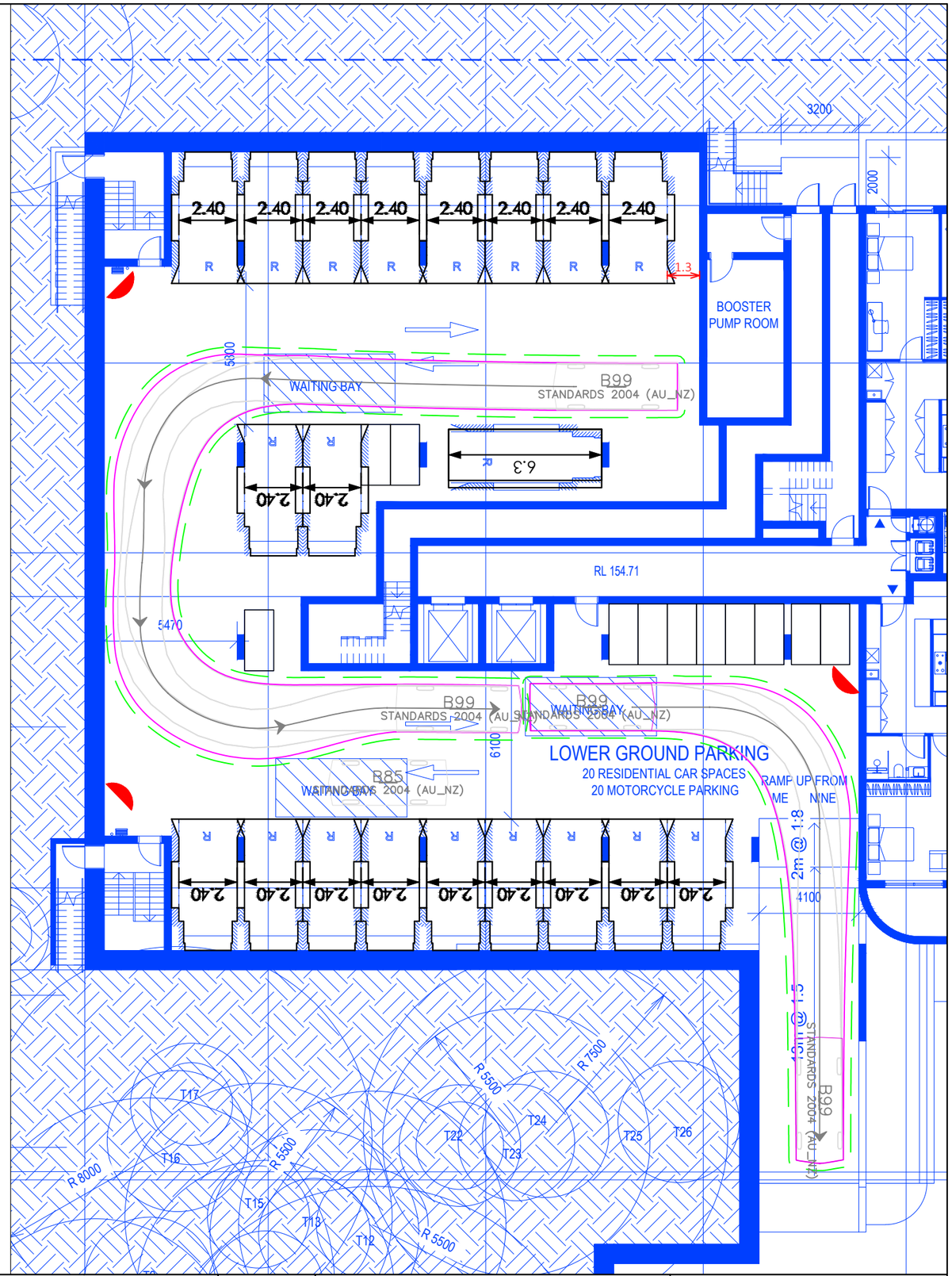
Plotted by Genesis05





SWEPT PATH KEY:

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

B85

	meters
Width	: 1.87
Track	: 1.77
Lock to Lock Time	: 6.0
Steering Angle	: 34.1

B99

	meters
Width	: 1.94
Track	: 1.84
Lock to Lock Time	: 6.0
Steering Angle	: 33.9

116-120 FRENCHS FOREST WEST AND 11 GLADYS AVENUE FRENCHS FOREST
PROPOSED RESIDENTIAL DEVELOPMENT - LOWER GROUND
SWEPT PATH ASSESSMENT

DRAWING REF NO. GT23018-V1.7-SP

SHEET NO. 05 OF 13

ISSUE DATE 8 April 2024

DESIGNED BY L.NG / N.LO / N.BORJA

REVIEWED BY B.LO

SCALE A3 0 2.0 4.0 1:200

N

DRAWING REFERENCE (SOURCE)
G:\2023\23018 - 116-120 FRENCHS FOREST WEST AND 11 GLADYS AVENUE FRENCHS FOREST\DRAWINGS\20240403\240403 DA SET

Genesis Traffic

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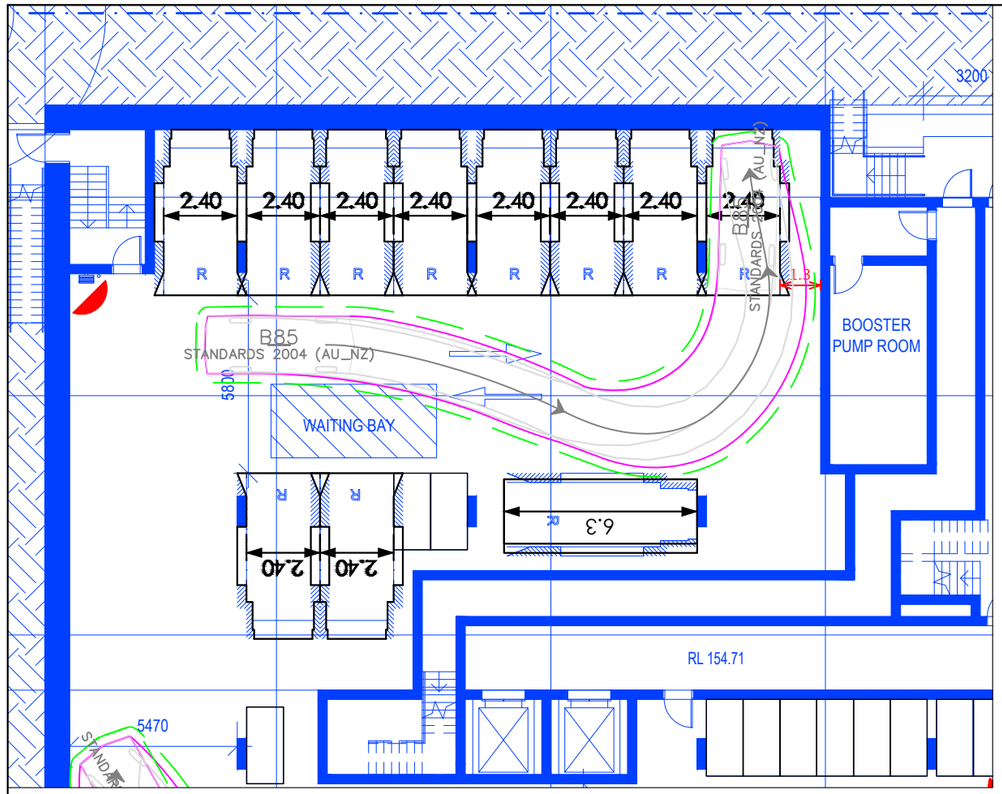
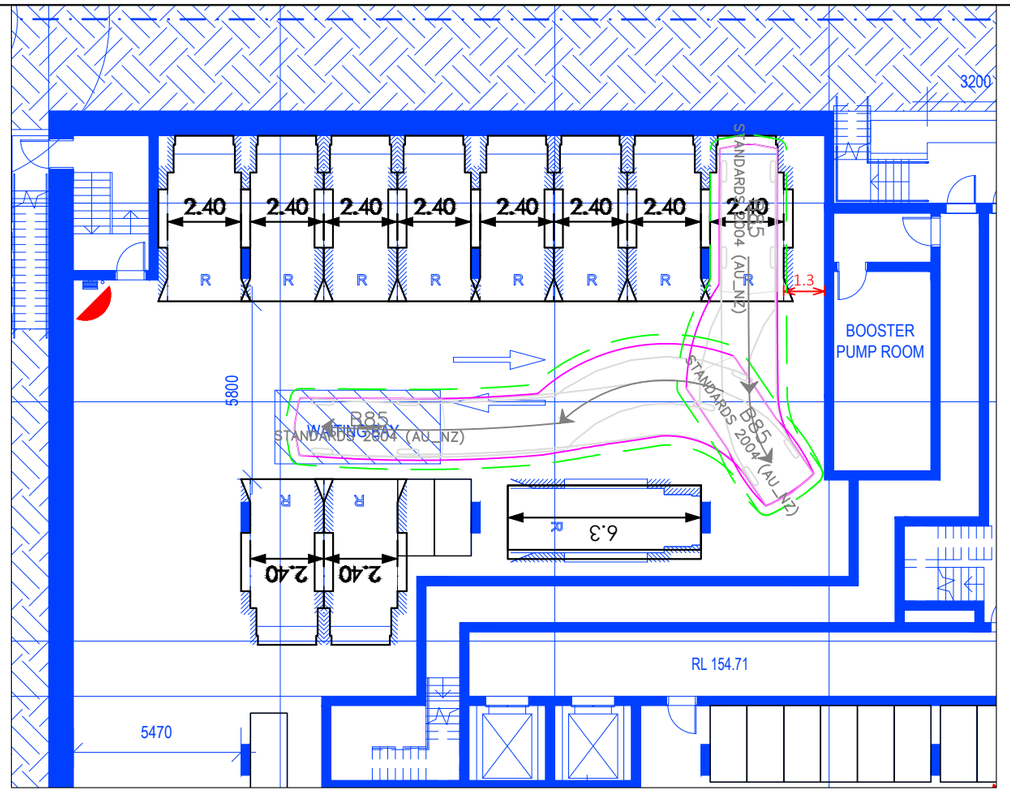
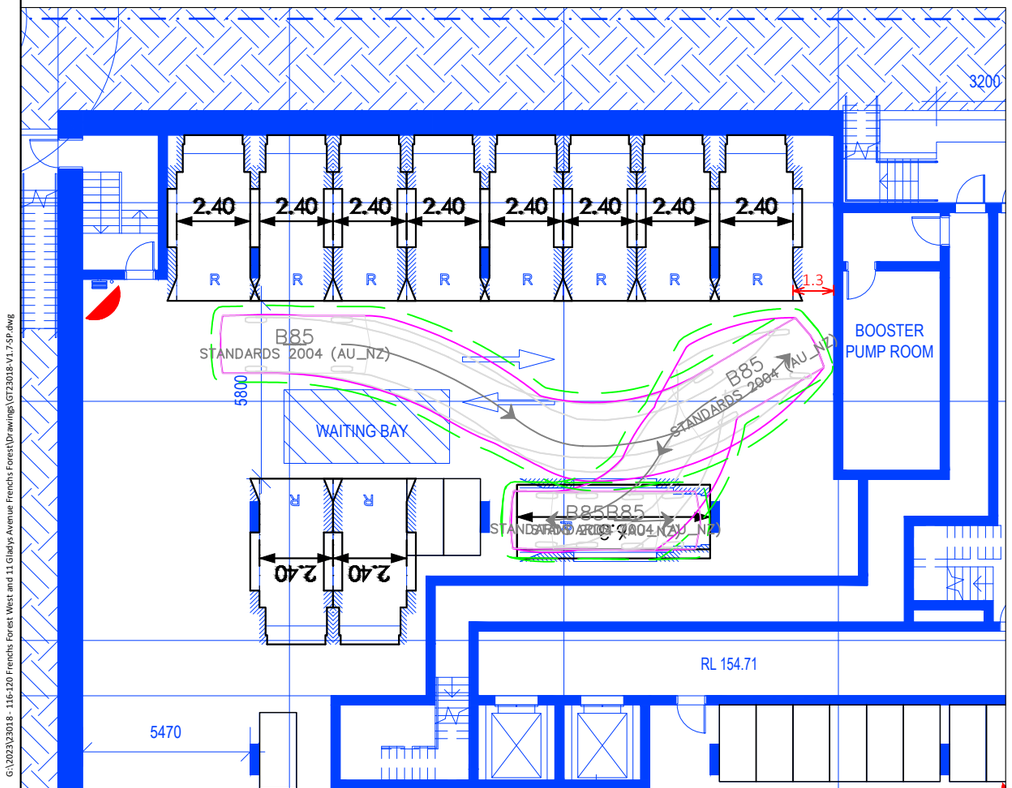
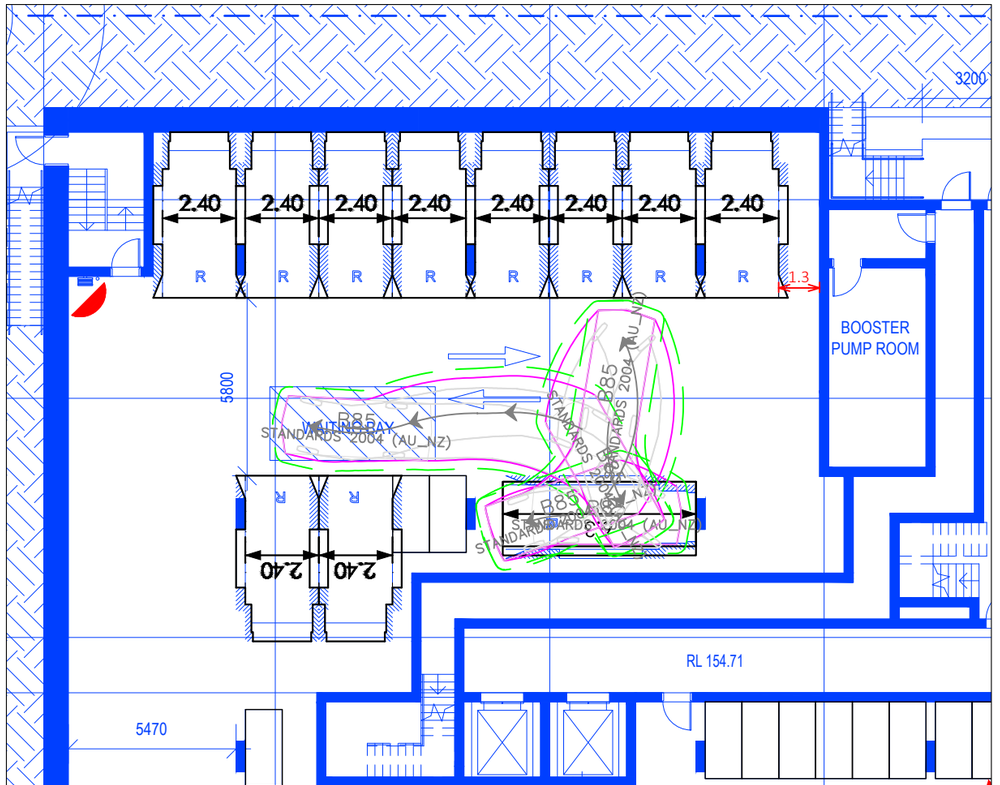
Plotted by Genesis05



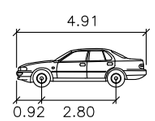






SWEPT PATH KEY:

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



B85

	meters
Width	: 1.87
Track	: 1.77
Lock to Lock Time	: 6.0
Steering Angle	: 34.1

116-120 FRENCHS FOREST WEST AND 11 GLADYS AVENUE FRENCHS FOREST
PROPOSED RESIDENTIAL DEVELOPMENT - LOWER GROUND
SWEPT PATH ASSESSMENT

DRAWING REF NO. GT23018-V1.7-SP

SHEET NO. 06 OF 13

ISSUE DATE 8 April 2024

DESIGNED BY L.NG / N.LO / N.BORJA

REVIEWED BY B.LO

SCALE A3 0 2.0 4.0 1:200

DRAWING REFERENCE (SOURCE)
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Genesis Traffic

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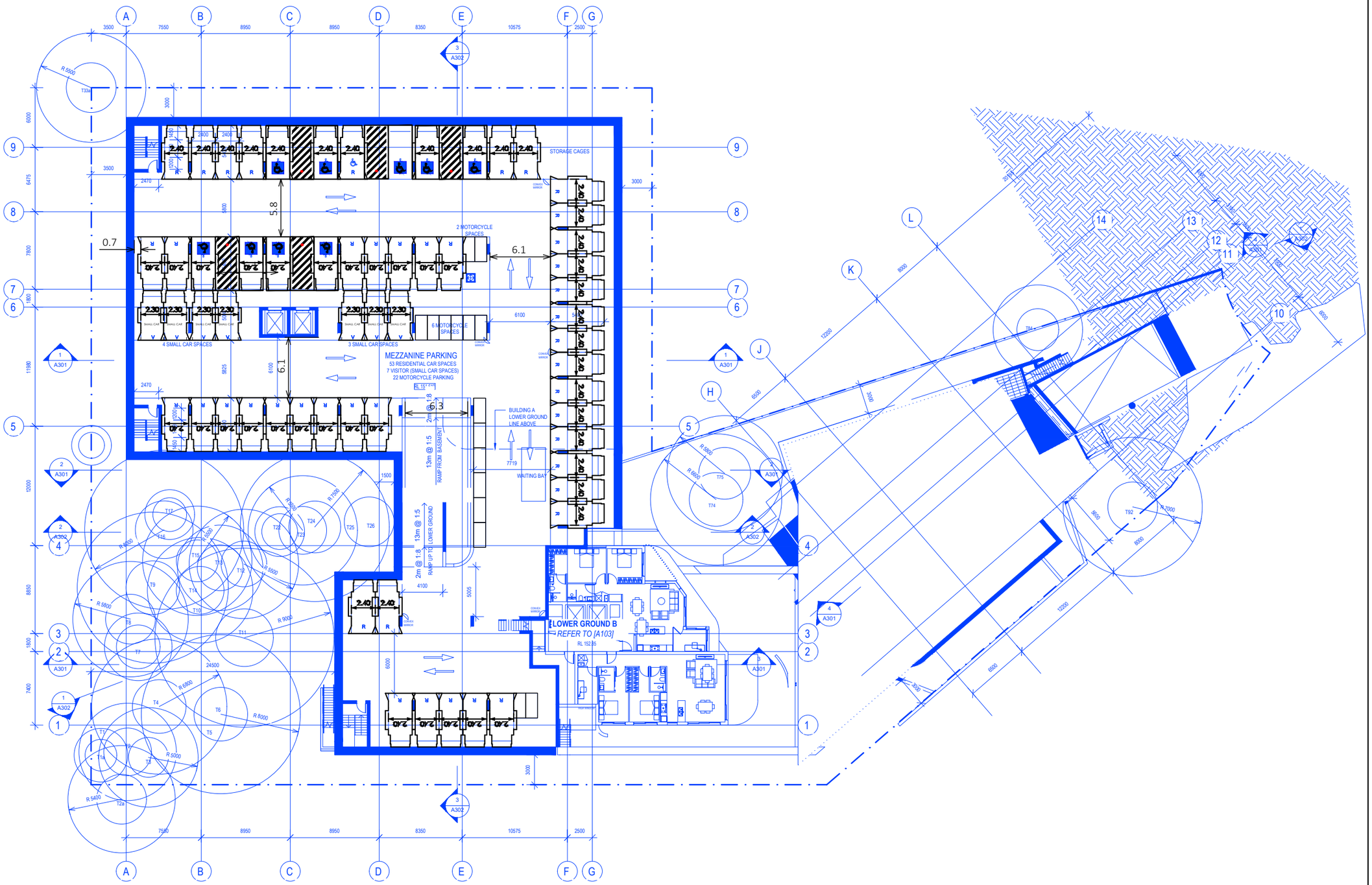
Plotted by Genesis05



116-120 FRENCHS FOREST WEST AND 11 GLADYS AVENUE FRENCHS FOREST
PROPOSED RESIDENTIAL DEVELOPMENT - MEZZANINE FLOOR
COMPLIANCE CHECK

DRAWING REF NO. GT23018-V1.7-SP

SHEET NO. 07 OF 13

ISSUE DATE 8 April 2024

DESIGNED BY L.NG / N.LO / N.BORJA

REVIEWED BY B.LO

SCALE A3 1:400

DRAWING REFERENCE (SOURCE)
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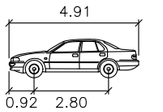
Genesis Traffic

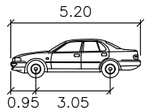
SWEPT PATH KEY:

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



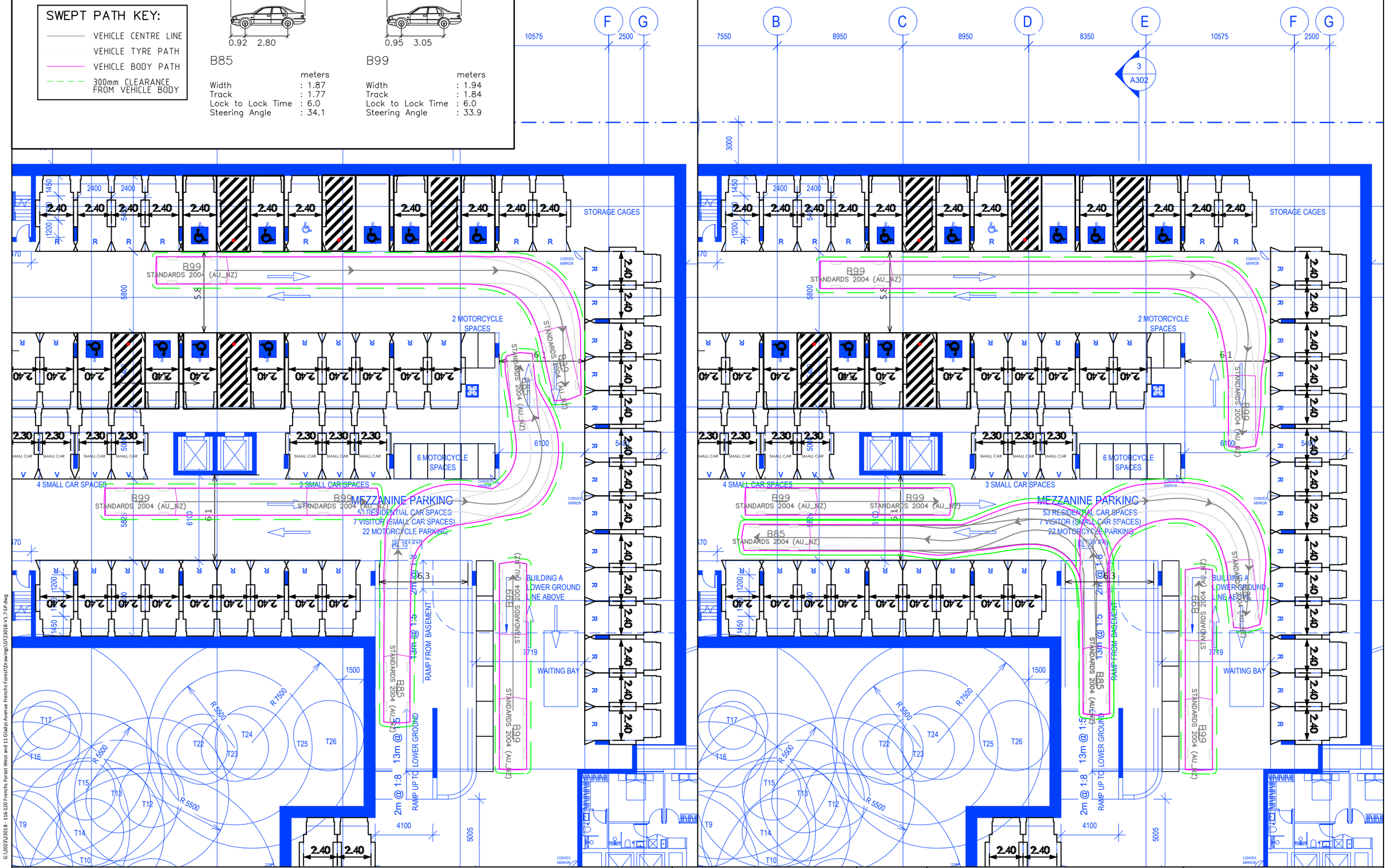
B85

	meters
Width	: 1.87
Track	: 1.77
Lock to Lock Time	: 6.0
Steering Angle	: 34.1



B99

	meters
Width	: 1.94
Track	: 1.84
Lock to Lock Time	: 6.0
Steering Angle	: 33.9



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Plotted by: GenesisD5

116-120 FRENCHS FOREST WEST AND 11 GLADYS AVENUE FRENCHS FOREST
PROPOSED RESIDENTIAL DEVELOPMENT - MEZZANINE FLOOR
SWEPT PATH ASSESSMENT

DRAWING REF NO. GT23018-V1.7-SP | SHEET NO. 08 OF 13 | ISSUE DATE 8 April 2024

DESIGNED BY L.NG / N.LO / N.BORJA | REVIEWED BY B.LO

SCALE A3 0 2.5 5.0 1:250

DRAWING REFERENCE (SOURCE)
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Genesis Traffic

SWEPT PATH KEY:

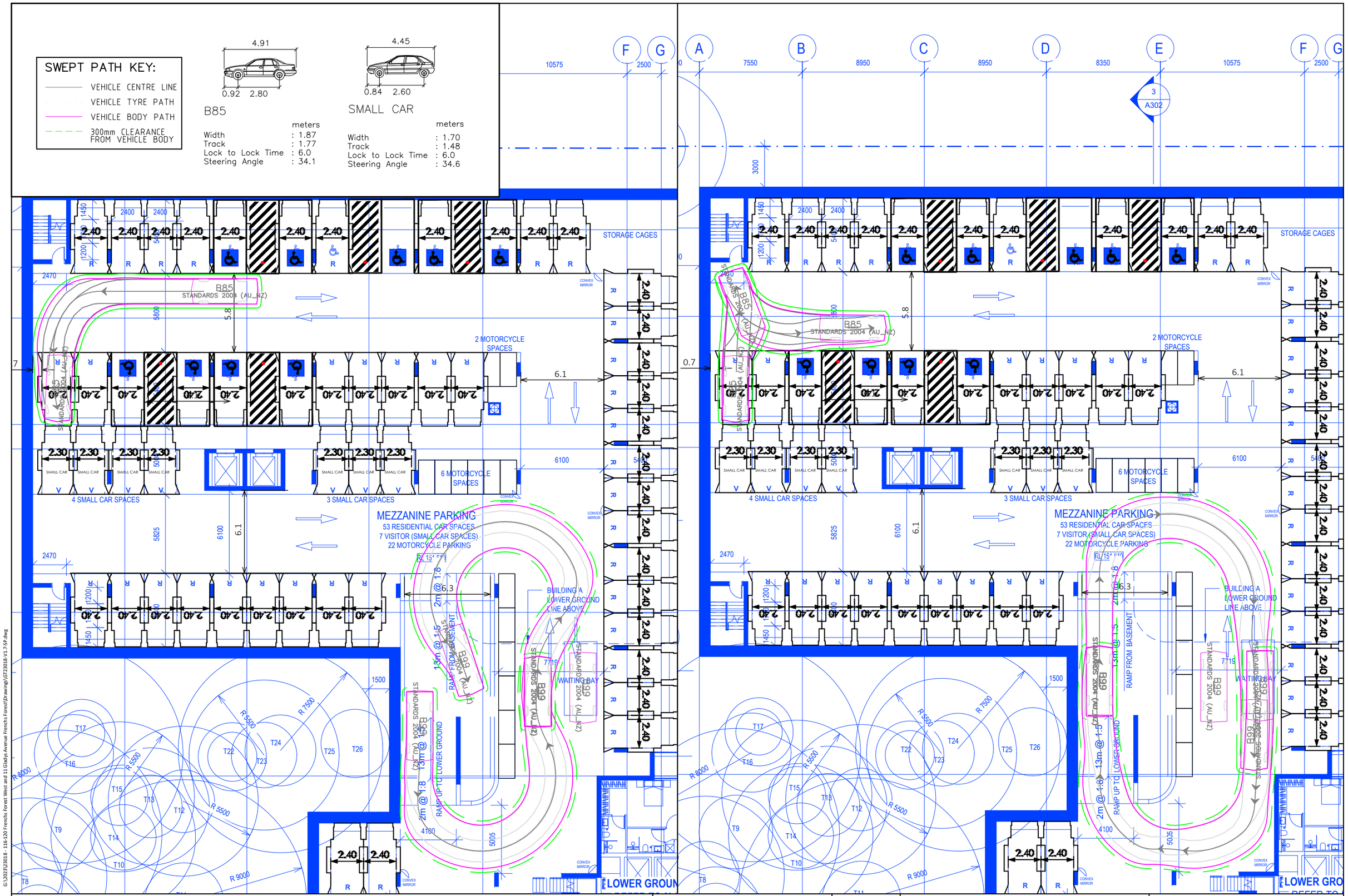
- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY

B85

	meters
Width	: 1.87
Track	: 1.77
Lock to Lock Time	: 6.0
Steering Angle	: 34.1

SMALL CAR

	meters
Width	: 1.70
Track	: 1.48
Lock to Lock Time	: 6.0
Steering Angle	: 34.6



116-120 FRENCHS FOREST WEST AND 11 GLADYS AVENUE FRENCHS FOREST
PROPOSED RESIDENTIAL DEVELOPMENT - MEZZANINE FLOOR
SWEPT PATH ASSESSMENT

DRAWING REF NO. GT23018-V1.7-SP SHEET NO. 09 OF 13 ISSUE DATE 8 April 2024

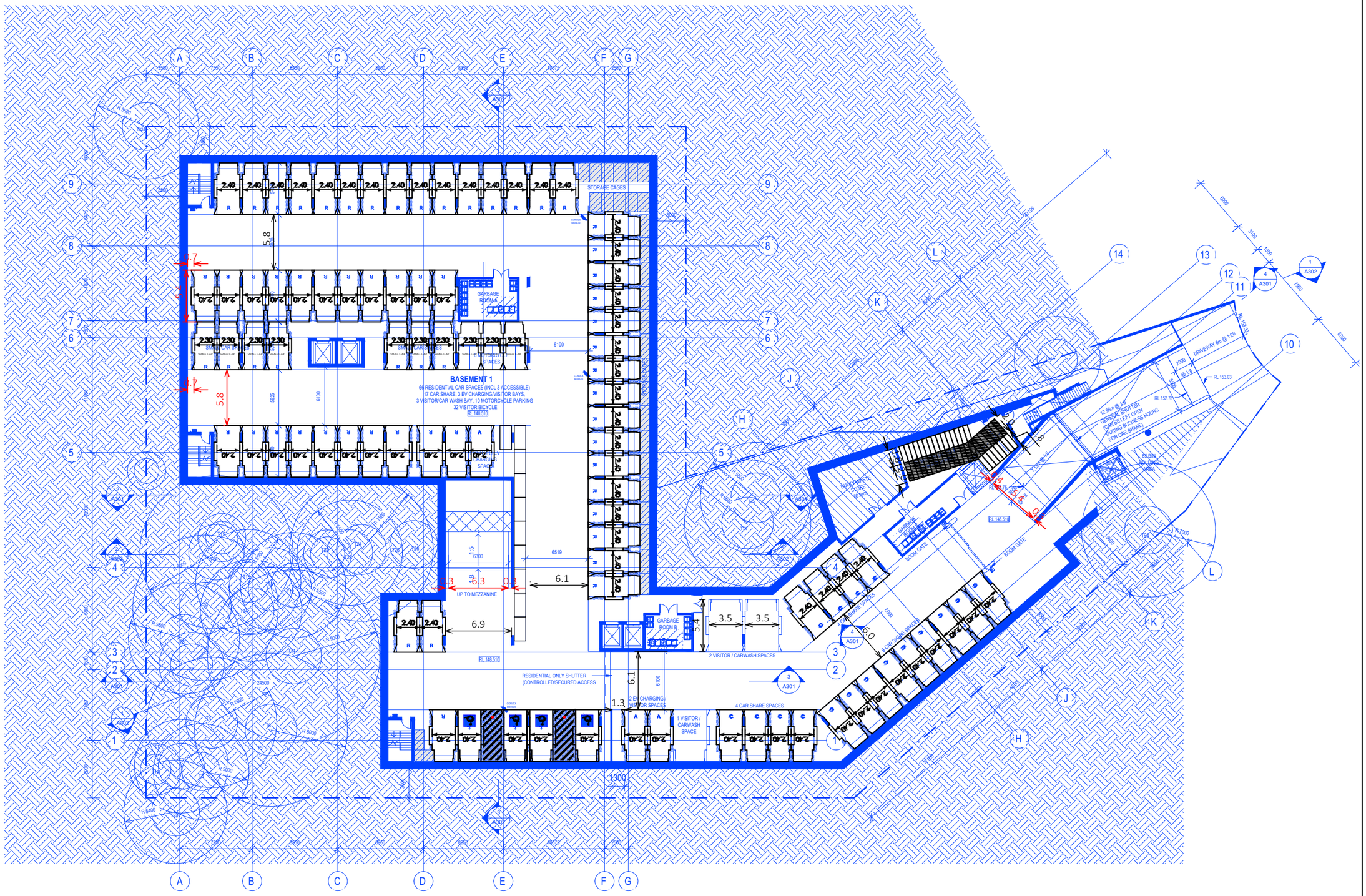
DESIGNED BY L.NG / N.LO / N.BORJA
REVIEWED BY B.LO
SCALE A3 1:250

DRAWING REFERENCE (SOURCE)
G:\2023\23018 - 116-120 FRENCHS FOREST WEST AND 11 GLADYS AVENUE FRENCHS FOREST\DRAWINGS\20240403\240403 DA SET

Genesis Traffic

G:\2023\23018 - 116-120 Frenchs Forest West and 11 Gladys Avenue Frenchs Forest\Drawings\GT23018-V1.7-SP.dwg

Plotted by Genesis05



116-120 FRENCHS FOREST WEST AND 11 GLADYS AVENUE FRENCHS FOREST
PROPOSED RESIDENTIAL DEVELOPMENT - BASEMENT LEVEL
COMPLIANCE CHECK

DRAWING REF NO. GT23018-V1.7-SP SHEET NO. 10 OF 13 ISSUE DATE 8 April 2024

DESIGNED BY L.NG / N.LO / N.BORJA
REVIEWED BY B.LO
SCALE A3 1:400

DRAWING REFERENCE (SOURCE)
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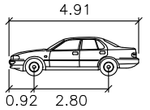
Genesis Traffic

Plotted by Genesis05 G:\2023\23018 - 116-120 Frenchs Forest West and 11 Gladys Avenue Frenchs Forest\Drawings\GT23018-V1.7-SP.dwg

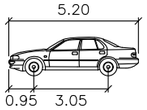
SWEPT PATH KEY:

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



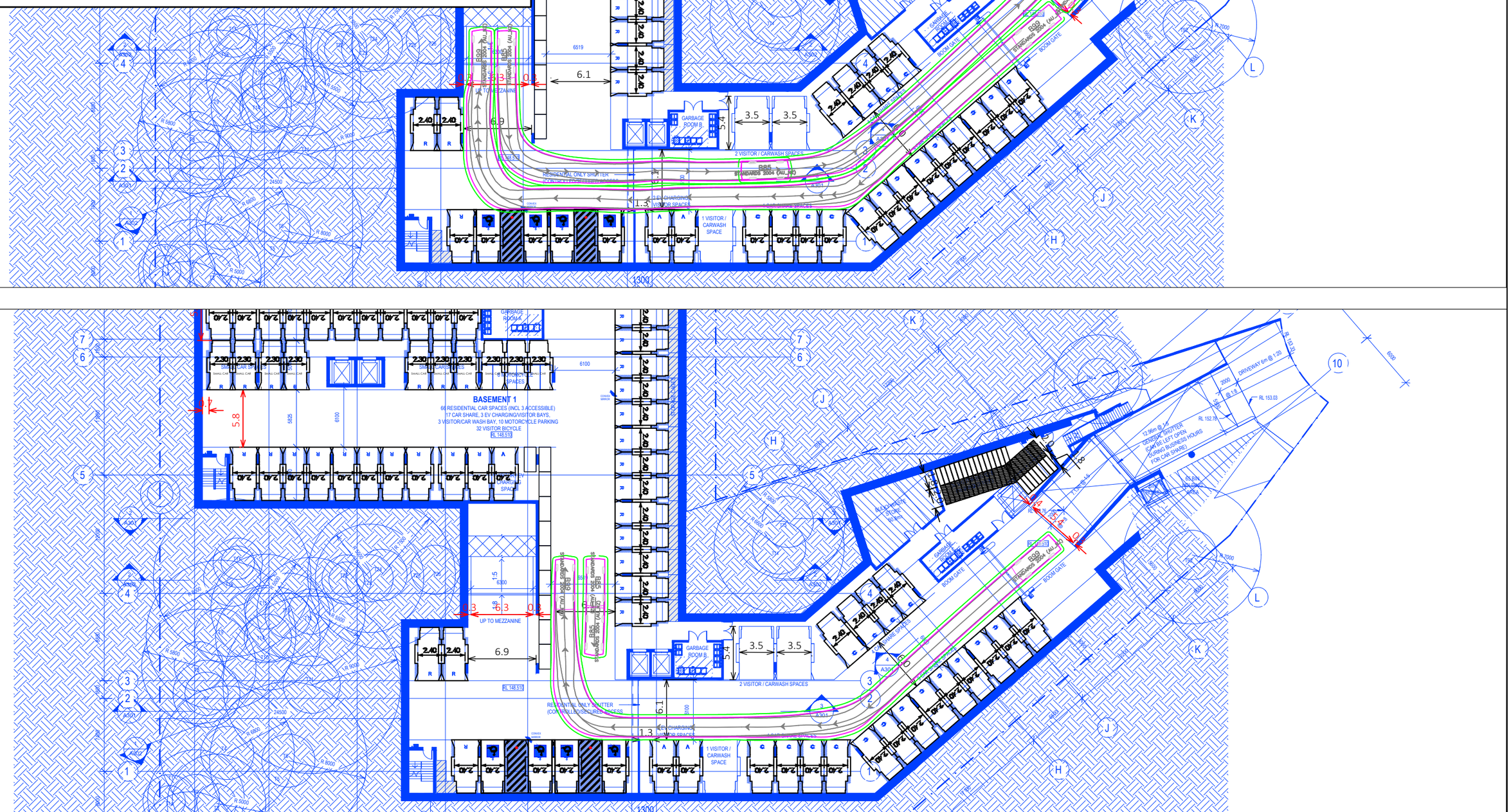
B85

	meters
Width	: 1.87
Track	: 1.77
Lock to Lock Time	: 6.0
Steering Angle	: 34.1



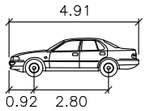
B99

	meters
Width	: 1.94
Track	: 1.84
Lock to Lock Time	: 6.0
Steering Angle	: 33.9



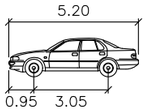
SWEPT PATH KEY:

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



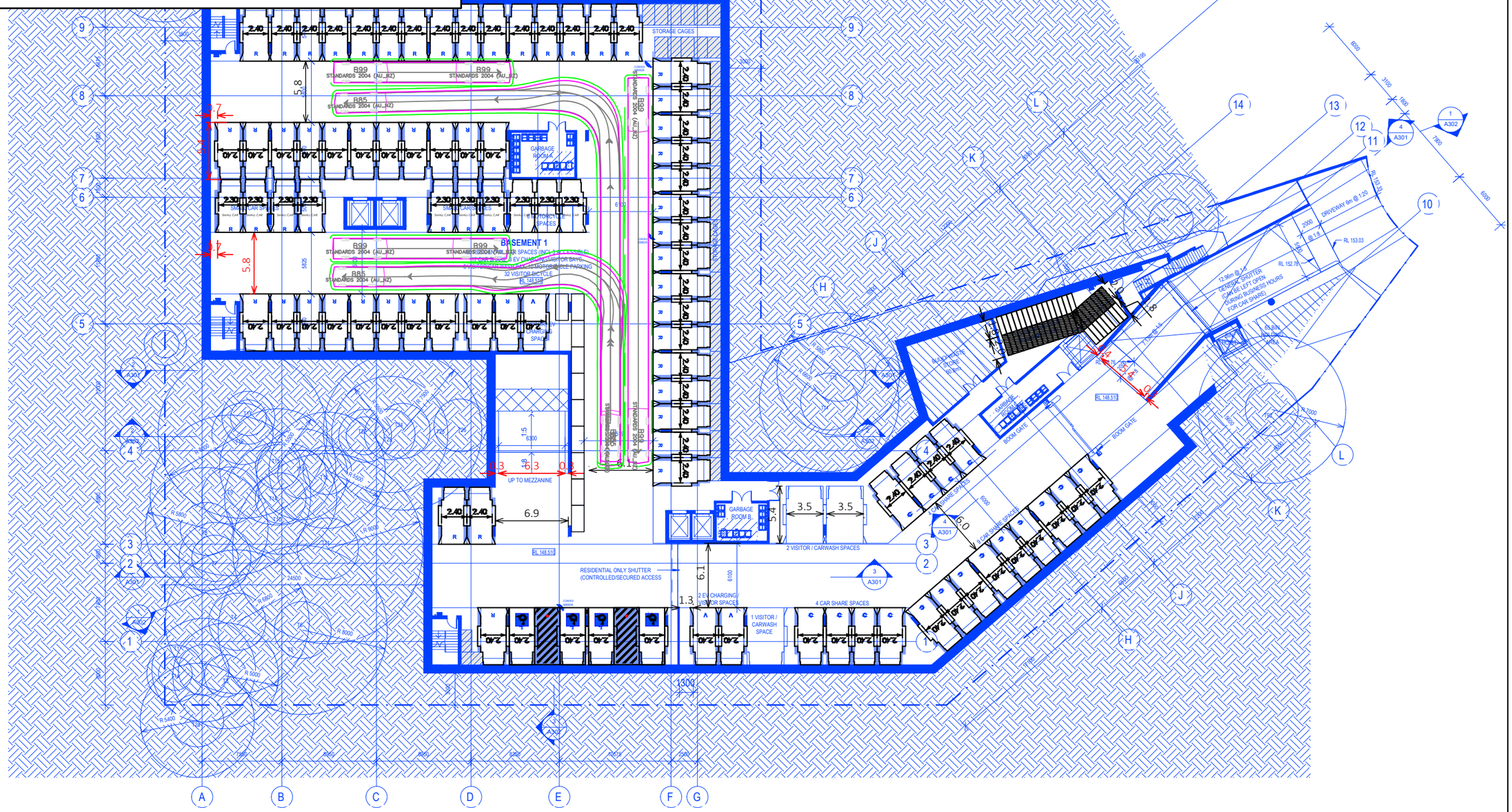
B85

	meters
Width	: 1.87
Track	: 1.77
Lock to Lock Time	: 6.0
Steering Angle	: 34.1



B99

	meters
Width	: 1.94
Track	: 1.84
Lock to Lock Time	: 6.0
Steering Angle	: 33.9



116-120 FRENCHS FOREST WEST AND 11 GLADYS AVENUE FRENCHS FOREST
PROPOSED RESIDENTIAL DEVELOPMENT - BASEMENT LEVEL
SWEPT PATH ASSESSMENT

DRAWING REF NO. GT23018-V1.7-SP SHEET NO. 12 OF 13 ISSUE DATE 8 April 2024

DESIGNED BY L.NG / N.LO / N.BORJA
REVIEWED BY B.LO
SCALE A3 1:400

DRAWING REFERENCE (SOURCE)
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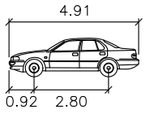
Genesis Traffic

SWEPT PATH KEY:

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

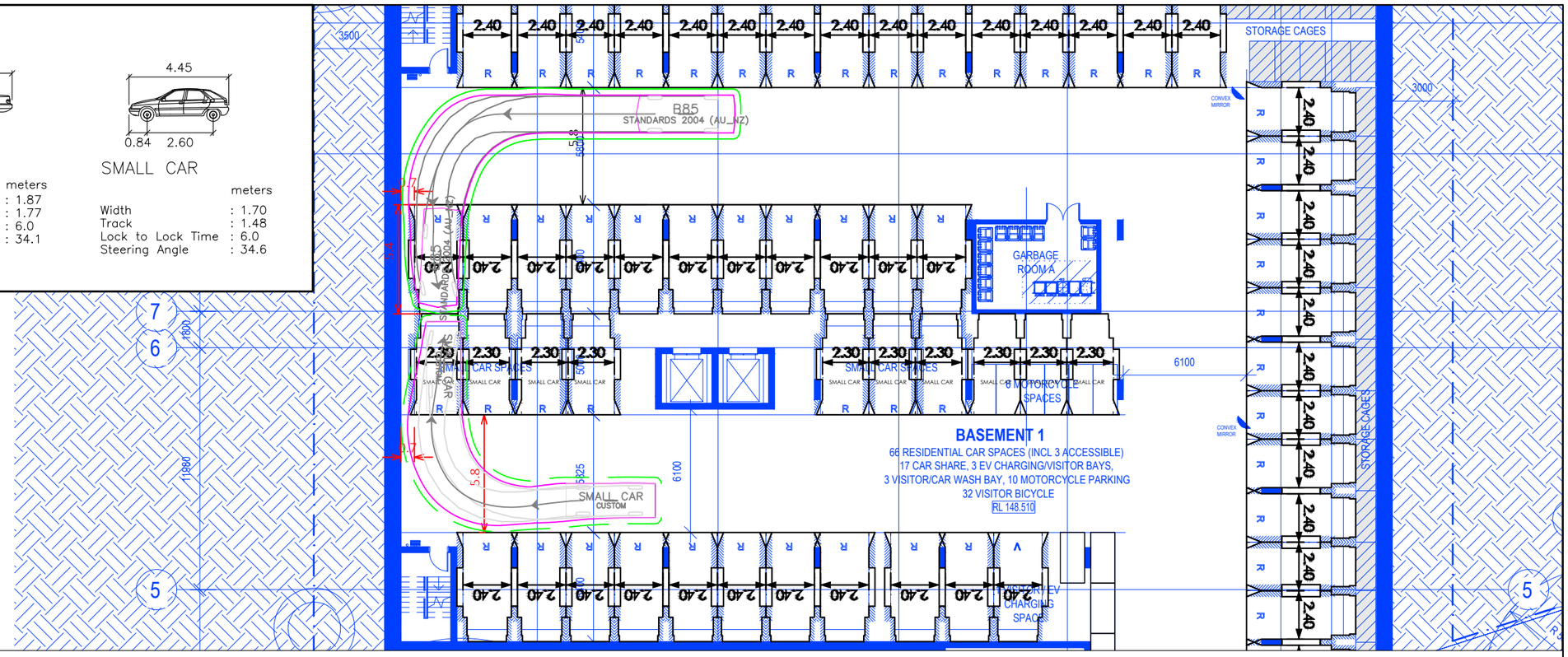


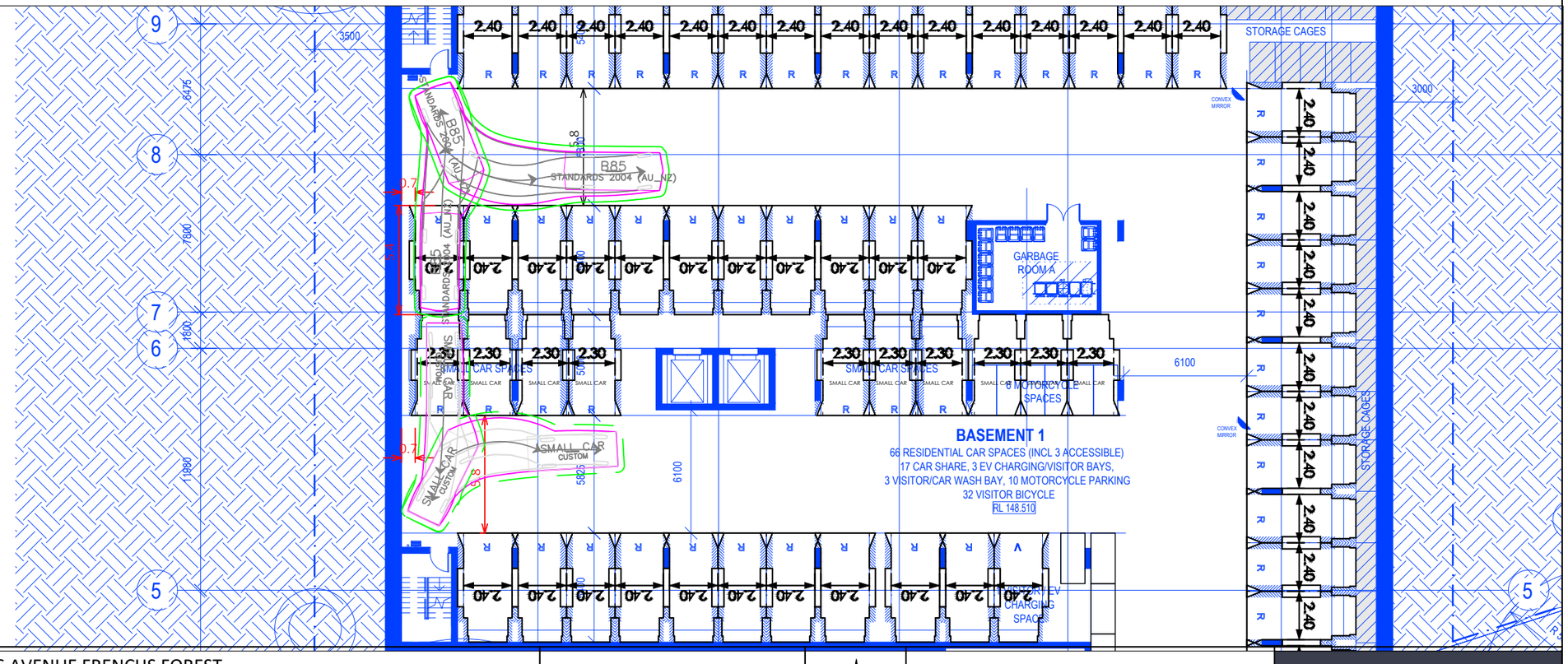
B85

	meters
Width	: 1.87
Track	: 1.77
Lock to Lock Time	: 6.0
Steering Angle	: 34.1

SMALL CAR

	meters
Width	: 1.70
Track	: 1.48
Lock to Lock Time	: 6.0
Steering Angle	: 34.6





116-120 FRENCHS FOREST WEST AND 11 GLADYS AVENUE FRENCHS FOREST
PROPOSED RESIDENTIAL DEVELOPMENT - BASEMENT LEVEL
SWEPT PATH ASSESSMENT

DRAWING REF NO. GT23018-V1.7-SP

SHEET NO. 13 OF 13

ISSUE DATE 8 April 2024

DESIGNED BY L.NG / N.LO / N.BORJA

REVIEWED BY B.LO

SCALE A3 1:250

DRAWING REFERENCE (SOURCE)
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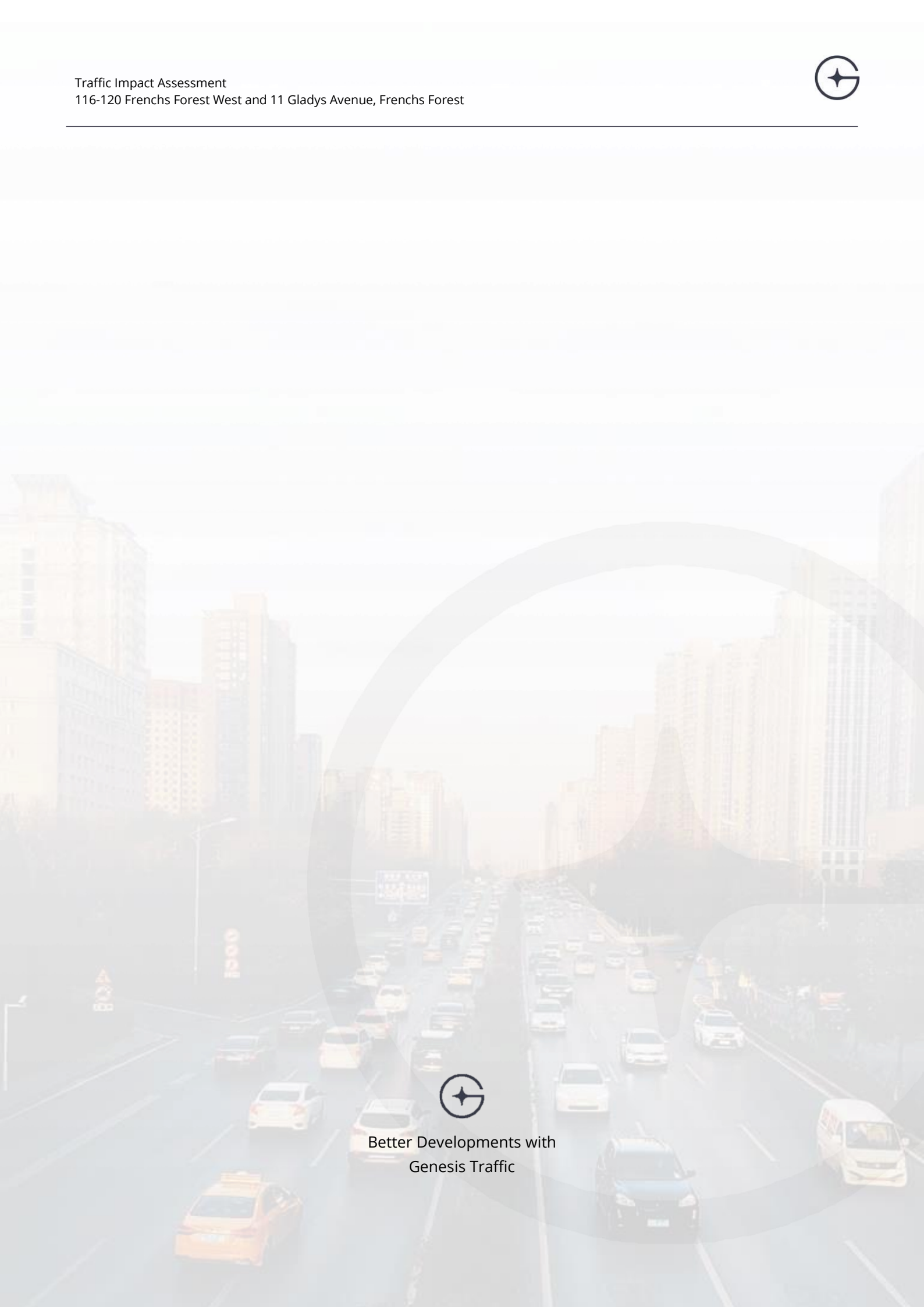
Genesis Traffic



Better Developments with
Genesis Traffic