Ref: 0536r03v02

30/01/2024

Rob Miller
20 The Serpentine
Bilgola Beach NSW 2107

RE: 18 – 20 THE SERPENTINE, BILGOLA BEACH
MODIFICATION APPLICATION FOR THE CONSTRUCTION OF A STUDIO AND CAR PARKING STRUCTURE
PARKING DESIGN STATEMENT

Dear Rob,

PDC Consultants has been commissioned to provide traffic consultancy advice for a Section 4.55 Modification Application (S4.55 Application) relating to the construction of a car parking structure (the Proposal) at an existing residential dwelling at 18 – 20 The Serpentine, Bilgola Beach. The S4.55 Application relates to the approved PAN 319081 issued by Northern Beaches Council (Council).

Sight Distance Assessment

PDC has previously assessed the car parking access and design and made the following sight distance assessment along The Serpentine:

- The Serpentine is sign posted as a 40 km/h carriageway and therefore requires a stopping sight distance (SSD) of 35 metres.
- Sight distance to the northeast: The Proposal achieves a sight distance of 35 metres, measured to the kerbside of The Serpentine
- Sight distance to the southwest: The Proposal achieves a sight distance in excess of 35 metres, measured to the centreline of The Serpentine.

As demonstrated by the architectural drawings included as **Attachment 1**, and the S4.55 Application will include pruning of the underside of the trees and removal of shrubs and any other visual obstacles to the northeast of the driveway along the site frontage, resulting in improved sight lines along The Serpentine to the northeast of the proposed vehicle access.

Access Design

- With two User Class 1A car parking spaces, the proposal requires a Category 1 Driveway under Table 3.1 of AS 2890.1, being an entry / exit driveway of width 3.0 metres to 5.5 metres. In response, the development proposes a combined entry / exit driveway with a width of 5.5 metres onto The Serpentine, which satisfies the requirements of AS 2890.1.
- Swept path analysis was undertaken of the proposed driveway access in accordance with AS 2890.1, using a B85 Design Vehicle. The results of the analysis are provided in **Attachment 2** demonstrate that the width of the driveway access ensures that left in / left out movements, being the most critical turns, can be performed adequately.

- Vehicle manoeuvring requires at least one reverse manoeuvre into, or out of, the double garage car parking space onto The Serpentine. Council's Development Control Plan (DCP) does not strictly prohibit this and further, the RTA Guide to Traffic Generating Developments (RTA Guide) provides guidance that reverse movements into or out of public streets can be permitted for individual dwelling houses.
- By way of design, the curved road alignment of The Serpentine and presence of multiple driveways and garages fronting the road would result in slower travel speeds and alert drivers anticipating emerging vehicles from driveways. There are numerous other examples along The Serpentine (examples listed below) where reverse manoeuvring to or from a garage is being permitted, which is in part a reflection of the low volume of movements from low density dwellings and low risk of delay or incident along The Serpentine
    - Number 2, The Serpentine
    - Number 14, The Serpentine
    - Number 15, The Serpentine
    - Number 16, The Serpentine
    - Number 23, The Serpentine
    - Number 28, The Serpentine
    - Number 32, The Serpentine
    - Number 44, The Serpentine

Internal Design

The proposed internal parking arrangements comply with the relevant requirements of AS 2890.1, with the following design aspects considered noteworthy:

- The driveway has a maximum grade of 7.5 % to 12.5 % designed in accordance with Council's standard driveway profiles. The profile has been reviewed using the B85 Design Vehicle and is deemed to be satisfactory.
- The car parking spaces are provided in the form of a double vehicle carport, having an opening width of 5.7 metres, an internal width of 5.7 metres and internal length of 6.5 metres, therefore complying with the relevant requirements of Clause 5.4 of AS 2890.1.
- The proposed double carport is provided with a minimum clear head height of 2.4 metres with satisfies the requirements of Clause 5.3.1 of AS 2890.1.
- All walls are located outside of the space design envelope, as required under Figure 5.2 of AS 2890.1.
- Swept path analysis was undertaken of the proposed carport arrangements using a B85 Design Vehicle as defined under AS 2890.1. The results are provided as **Attachment 2** and the following movements were tested:
    - Forward entry movements from The Serpentine.
    - Reverse exit movements to The Serpentine.
- It is evident from the swept path analysis that the forward entry and reverse exit movements to / from the proposed double carport can be achieved with satisfactory clearance provided on both sides of the vehicle.

In summary, the proposed car parking platform have been designed in accordance with AS 2890.1. Any minor amendments considered necessary (if any) can be dealt with prior to the release of a Construction Certificate.

Please contact the undersigned should you have any queries or require anything further.

Yours sincerely,

Hayden Calvey
Principal Traffic Engineer, PDC Consultants

Email: hayden@pdcconsultants.com.au

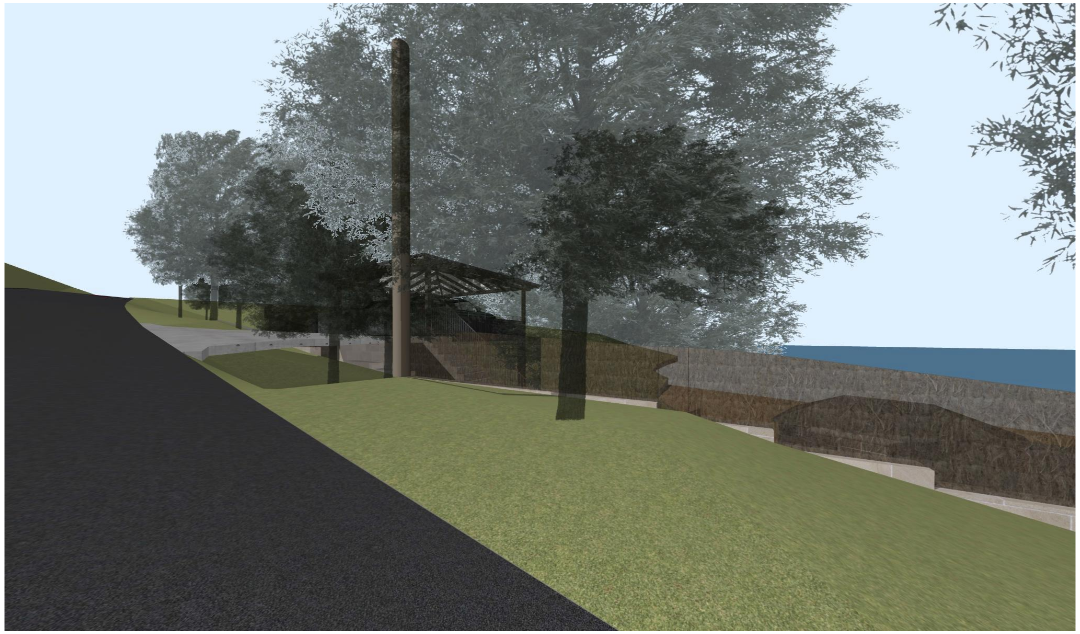
Attachments:
1) Architectural Drawing
2) *Swept Path Drawings*

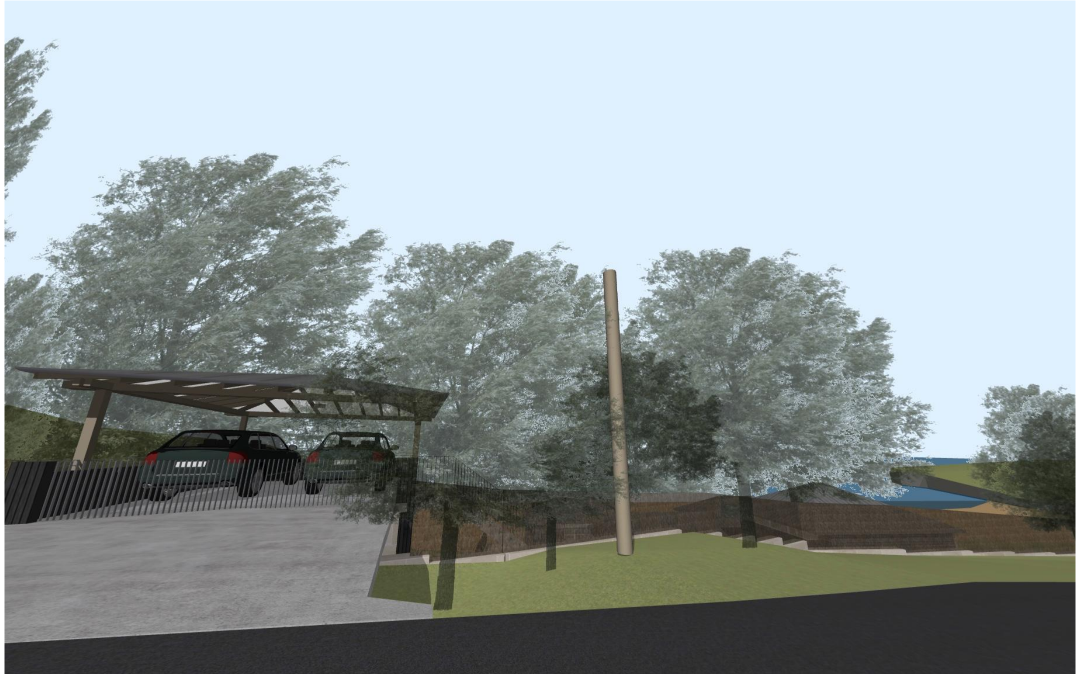
Attachment 1

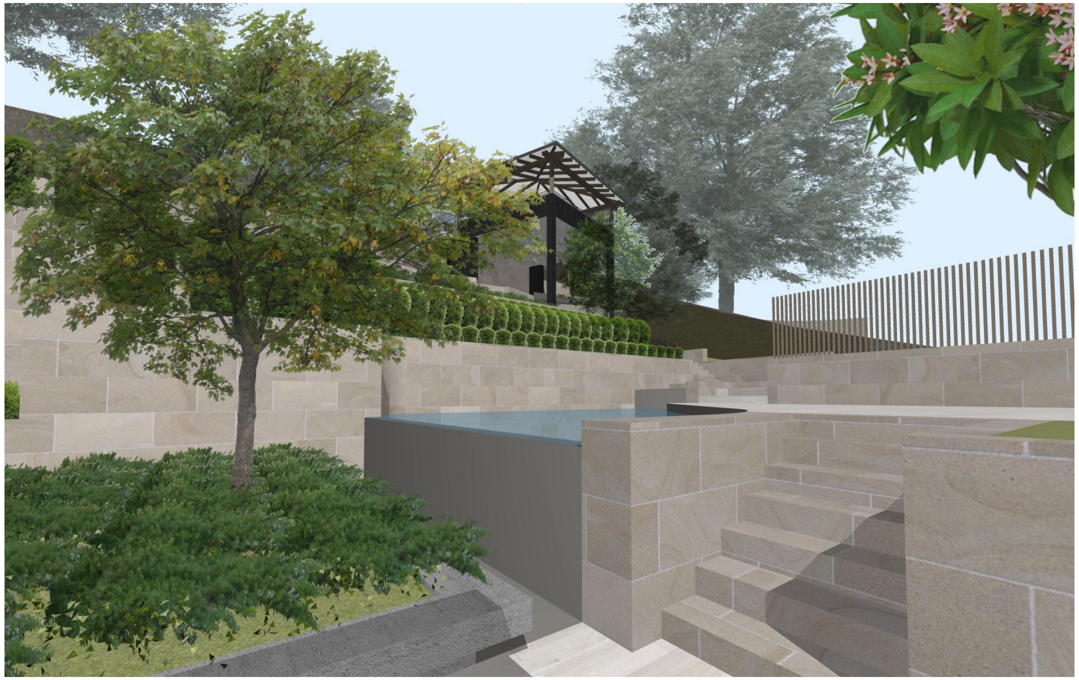
DEVELOPMENT APPLICATION
Studio + Car Platform

18 - 20 THE SERPENTINE, BILGOLA BEACH

DRAWING LIST	
DWG No:	**DESCRIPTION**
A.00	COVER SHEET
A.01	SITE PLAN + SITE ANALYSIS
A.02	FLOOR PLANS + SECTION
A.03	NW + SW ELEVATION
A.04	NE + SE ELEVATION
A.05	SITE CALCULATIONS
A.06	SHADOW DIAGRAMS







GARTNERTROVATO
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L1/13 10 PARK STREET
PO BOX 1122
MONA VALE, NSW 2103
P +61 2 9979 4411
E GTA@G-T.COM.AU

DATE	REV	DESCRIPTION
11/04/2023	A	DA
08/11/2023	B	AMENDED DA
22/01/2024	D	AMENDED DA

PROJECT
New Studio + Car Parking Structure
18-20 The Serpentine, Bilgola Beach
NSW 2107
Lots 4a, 4b, & 5 DP 361236

FOR Rob & Cheryl Miller

DRAWING TITLE
COVER SHEET

PROJECT NO. 2236
DRAWN BY AB / SG
PLOT DATE 22/1/24
SCALE @ A1
DRAWING NO. A.00
REVISION D

Site Calculations

Total Site Area = 1977m²

Landscape area

Required = 1186m² or 60%

Existing = 1045.94m² or 52.9%

Proposed = 992.02m² or 50.17%

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DATE	REV	DESCRIPTION
11/04/2023	A	DA
28/07/2023	B	ADDITIONAL INFORMATION
08/11/2023	C	AMENDED DA
22/01/2024	D	AMENDED DA

PROJECT
New Studio + Car Parking Structure
18-20 The Serpentine, Bilgola Beach
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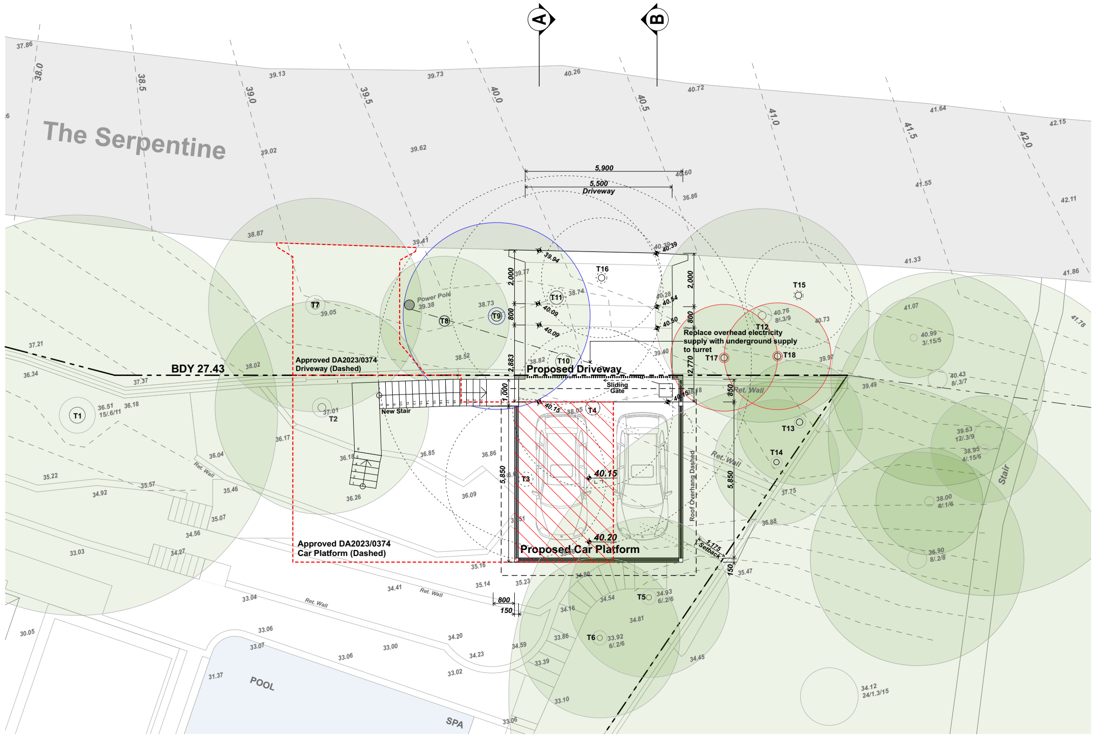
Lots 4a, 4b, & 5 DP 361236

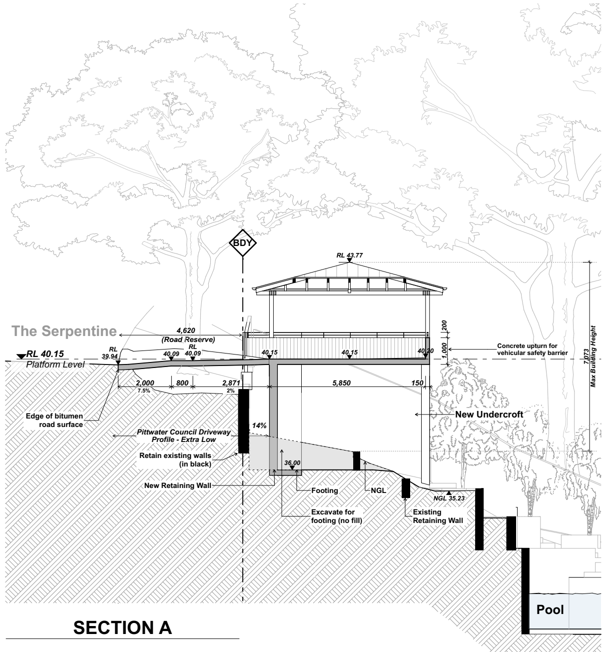
FOR Rob & Cheryl Miller

DRAWING TITLE
SITE PLAN + SITE ANALYSIS

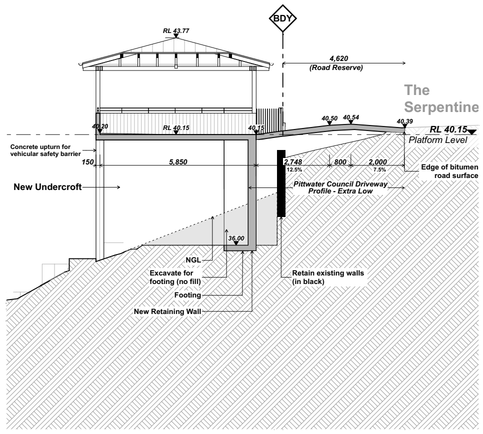
PROJECT NO. 2236
DRAWN BY AB / SG
PLOT DATE 22/1/24
SCALE **1:200 @ A1**
DRAWING NO. **A.01**
REVISION **D**



CAR PLATFORM



SECTION A



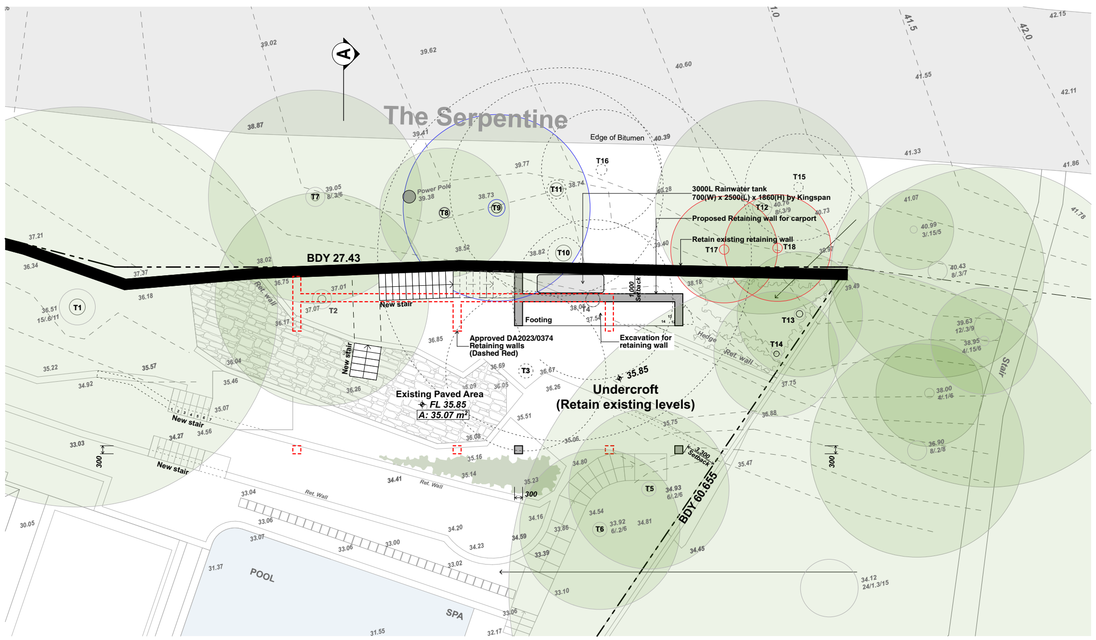
SECTION B

EXISTING TREES		
No	Species	Status
T01	Pinus halepensis	Retain
T02	Banksia integrifolia	Retain
T03	Casuarina glauca	Remove
T04	Casuarina glauca	Remove
T05	Casuarina glauca	Retain
T06	Casuarina glauca	Retain
T07	Cupaniopsis Anacardioides	Retain
T08	Casuarina glauca	Retain
T09	Casuarina glauca	Retain
T10	Lagunaria patersonia	Remove
T11	Casuarina glauca	Retain
T12	Casuarina glauca	Retain
T13	Casuarina glauca	Retain
T14	Casuarina glauca	Retain

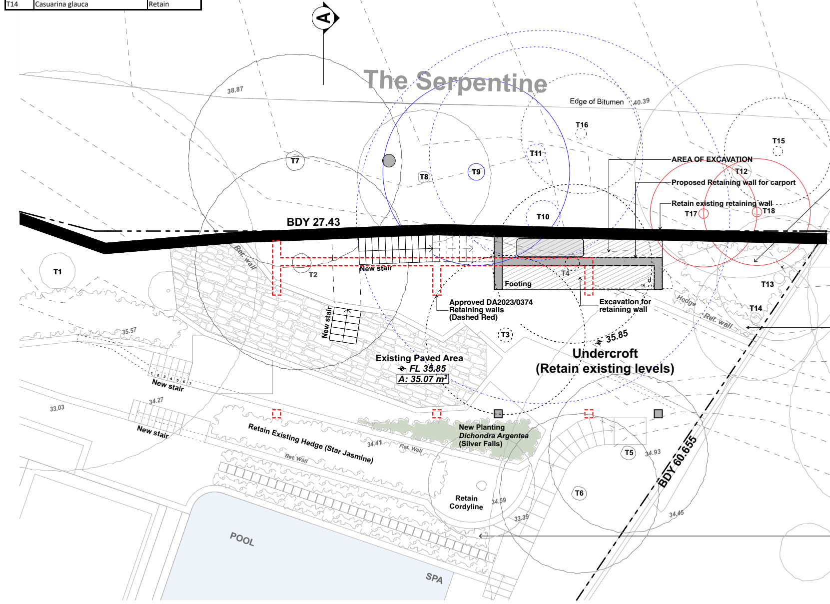
Plant Schedule

Key	Botanical name	Common name	Mature size (h x w)m	Pot Size (mm)
Trees				
Ee	*Elaeocarppus eumundi*	Bush quandong	8m (h) x 4m (w)	300mm
Er	*Elaeocarppus reticulatus*	Blueberry ash	8m (h) x 4m (w)	330mm
Ground covers				
Tj	*Trachelospermum jasminoides*	Star Jasmine	0.5 (h) x 1m (w)	75mm
Dar	*Dichondra argentea*	Silver falls dichondra	0.1m (h) x 1.8m (w)	75mm
Turf				
Turf	*Stenotaphrum secundatum*	Sir Walter Buffalo		

WINDOW SCHEDULE				
	Width	Height	Sill	Area
W1	1,450	2,200	500	3.19
W2	1,800	2,700	0	4.86
W3	2,400	2,200	500	5.28
W4	2,400	2,200	500	5.28
W5	2,400	1,800	900	4.32
W6	1,800	2,700	0	4.86
				27.79 m²



UNDERCROFT PLAN



LANDSCAPE PLAN & EXCAVATION / FILL PLAN

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DATE	REV	DESCRIPTION
11/04/2023	A	DA
28/06/2023	B	DA - REVISED DRIVEWAY
08/11/2023	C	AMENDED DA
22/01/2024	D	AMENDED DA

PROJECT
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NSW 2107
Lots 4a, 4b, & 5 DP 361236

FOR Rob & Cheryl Miller

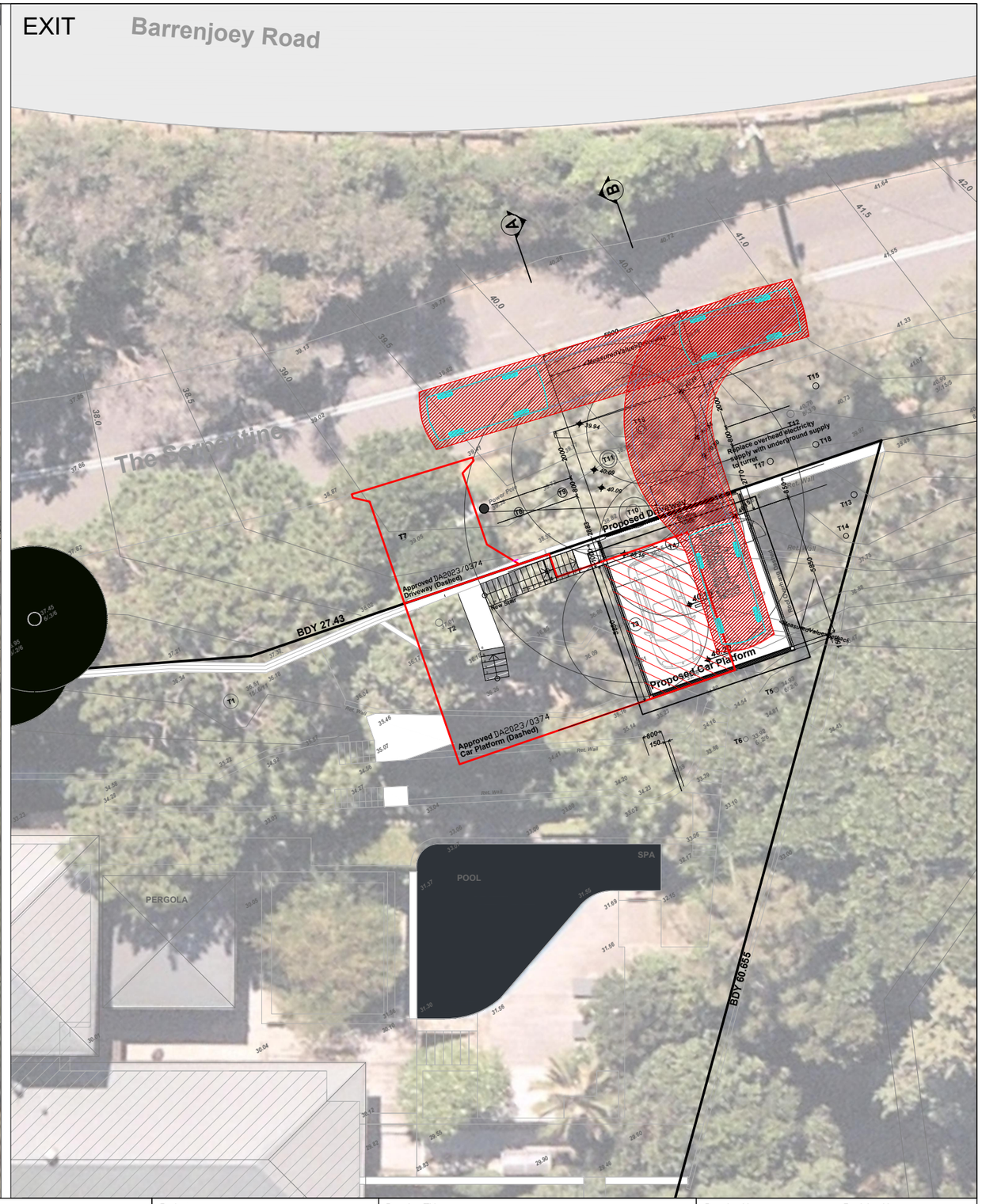
DRAWING TITLE
FLOOR PLANS + SECTION

PROJECT NO. 2236
DRAWN BY AB / SG
PLOT DATE 22/1/24
SCALE 1:100 @ A1
DRAWING NO. A.02
REVISION D

Attachment 2

ENTRY

EXIT



No.	Date	Description

Swept Path Key

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

North

Drawing Prepared By

PDC Consultants
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ABN: 70 615 064 670

Architect: GARTNER TROVATO ARCHITECTS	Project: 20 The Serpentine	Drawing Title: Car Platform B85 Swept Path Analysis Entry / Exit Movement Space 2	Drawing No.: 001 / Revision No.: -
Client: Ron Miller	Project No: 0536	Sheet Status: NOT FOR CONSTRUCTION	Drawn By: HC / Date: 25/01/2024
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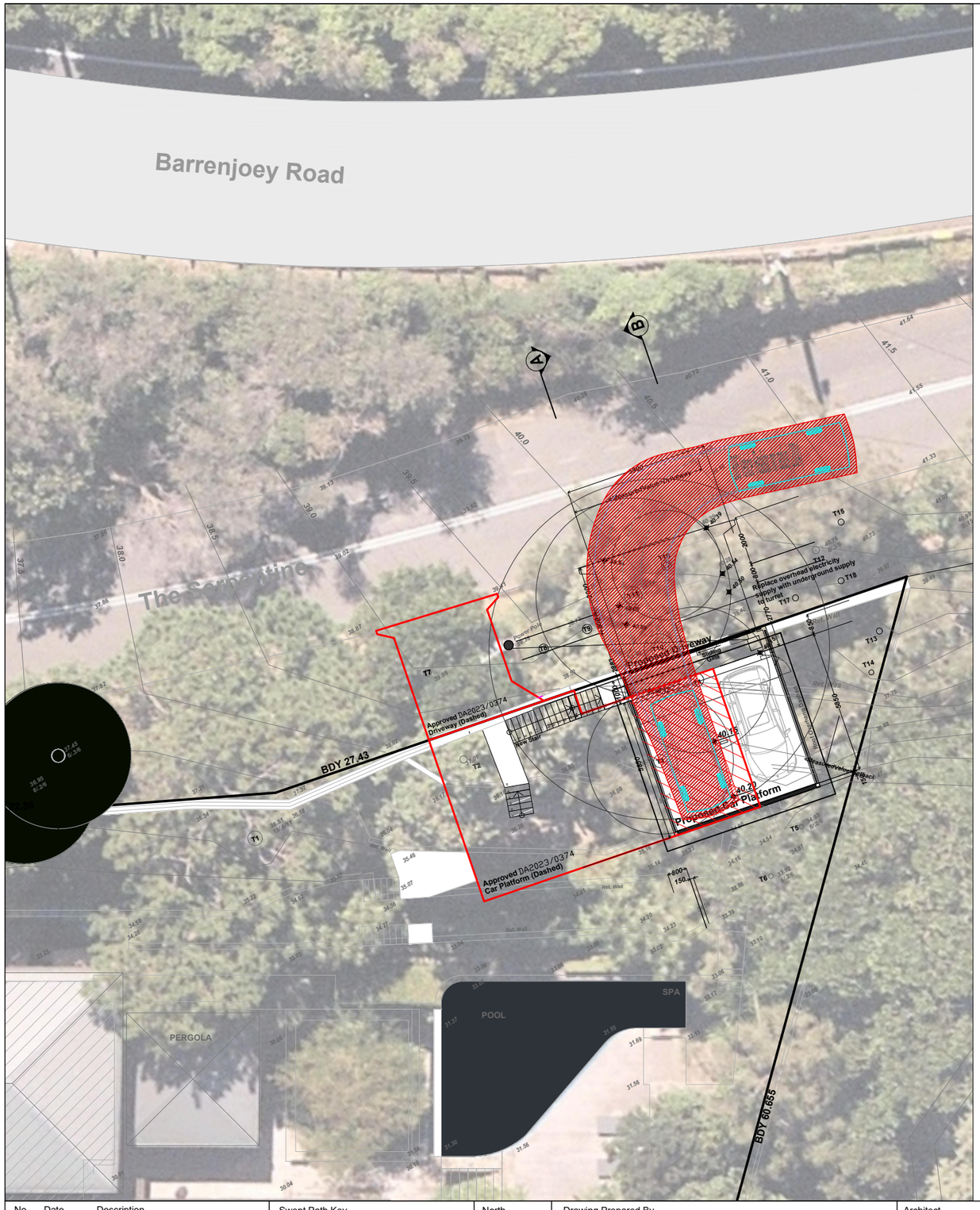

No.	Date	Description

Swept Path Key
- Vehicle Wheel Path
- Vehicle Body Envelope
- 300mm Vehicle Clearance

North

Drawing Prepared By

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Architect: GARTNER TROVATO ARCHITECTS	Project: 20 The Serpentine	Drawing Title: Car Platform B85 Swept Path Analysis Entry / Exit Movement Space 1	Drawing No.: 002 Revision No.: -
Client: Ron Miller	Project No: 0536	Sheet Status: NOT FOR CONSTRUCTION	Drawn By: HC Date: 25/01/2024
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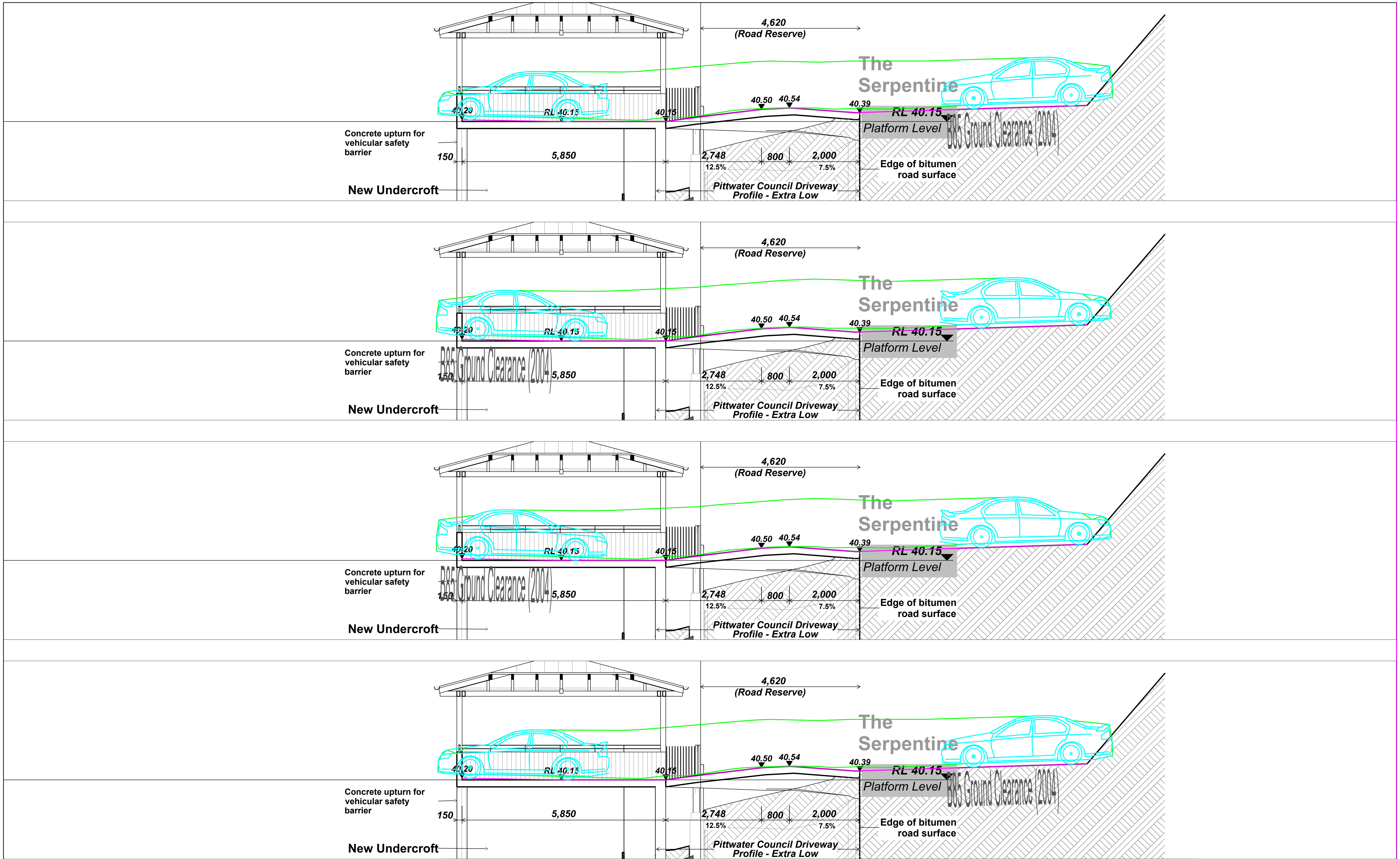

No.	Date	Description

Swept Path Key
- Vehicle Wheel Path
- Vehicle Body Envelope
- 300mm Vehicle Clearance

North

Drawing Prepared By

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Architect
GARTNER TROVATO ARCHITECTS

Client
Ron Miller

Project
20 The Serpentine

Project No
0536

Drawing Title
Car Platform Vertical Clearance

Sheet Status
NOT FOR CONSTRUCTION

Drawing No.
003

Revision No.
-

Drawn By
HC

Date
25/01/2024

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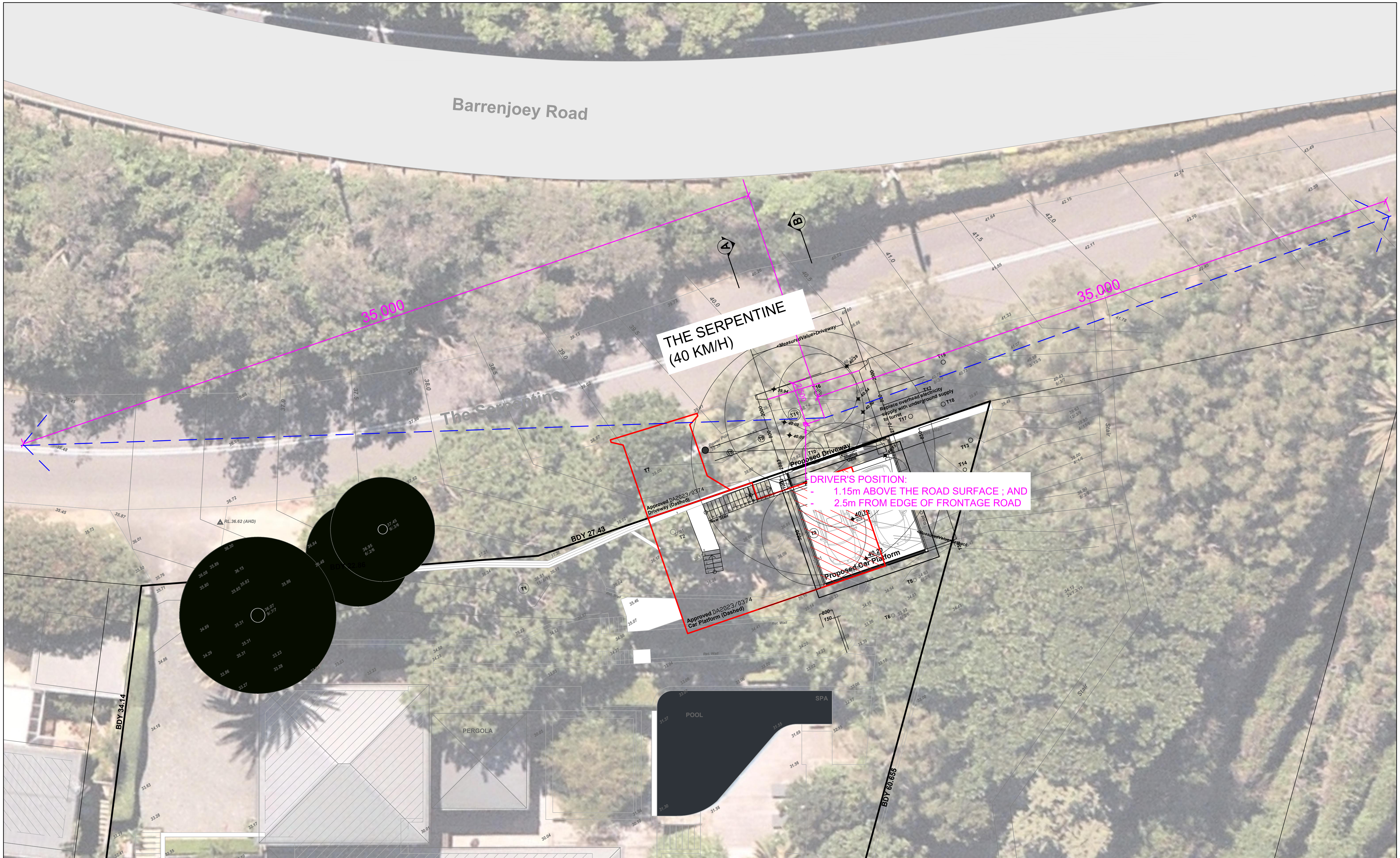

No.	Date	Description

Swept Path Key
- Vehicle Wheel Path
- Vehicle Body Envelope
- 300mm Vehicle Clearance

North

N

Drawing Prepared By

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ABN: 70 615 064 670

Architect	GARTNER TROVATO ARCHITECTS
Client	Ron Miller
Project	20 The Serpentine
Project No	0536
Drawing Title	Car Platform Driveway Sight Distance Analysis
Sheet Status	NOT FOR CONSTRUCTION
Drawing No.	S.001
Revision No.	-
Drawn By	HC
Date	25/01/2024
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