

Terraffic Pty Ltd

Traffic and Parking Consultants

ABN 83 078 415 871

5th March 2024
Ref 23049

The General Manager
Northern Beaches Council
PO Box 82
Manly NSW 1655 Australia

Attn: Brittany Harrison

Dear Brittany,

DA2023/1206 – 6 NET ROAD, AVALON BEACH PROPOSED RESIDENTIAL DEVELOPMENT

I refer to the Traffic Engineer Referral Response dated 8th September 2023 which has been reproduced in **Annexure A** for convenience.

Existing Site Development

The existing site development comprises a residential dwelling with an at-grade parking area that gains vehicular access to both Gunyah Place and Net Road. As can be seen on the site survey reproduced in **Annexure B**, the accessway to this parking area connects to both Gunyah Place and Net Road.

The existing dwelling is also served by a double width carport located above a studio. This carport gains direct access to Net Road via a single width concrete driveway.

An additional parking space in the south-eastern corner of the site gains access off Net Road via a concrete driveway located adjacent to the eastern site boundary.

Proposed Site Development

Plans and sections of the proposed development are reproduced in **Annexure C**. As can be seen, the proposed development comprises alterations and additions to the existing dwelling and construction of a new secondary dwelling that will replace the existing studio/carport off Net Road. The existing access driveways to the carport and off-street space will be closed and replaced to Council's satisfaction. In doing so, the new secondary dwelling will not be served by any off-street parking.

The existing dwelling is to be served by a new double width garage that will gain access via the accessway connecting to Gunyah Place. A manoeuvring area in front of the new garage will have a maximum grade of 5% to enhance safety.

The dwelling will also be served by a single width carport that will retain the westernmost access driveway to Net Road. The driveway is to be reconstructed to Council's specifications.

Access from Gunyah Place

As noted above, it is proposed to retain the existing accessway and construct a new double width garage. The manoeuvring area in front of the garage is to be levelled to provide a maximum gradient of 5% in the turning area.

The proposed double garage satisfies the dimensional requirements of the Australian Standard AS/NZS890.1:2004 with a minimum length of 6.1m and width of 5.8m. Swept paths of the B85 vehicle (Ford Falcon) accessing both spaces are reproduced in **Annexure D**. As can be seen, these vehicles can enter and exit the property in a forward direction with a maximum of 3 manoeuvres.

Council's Engineer has raised a concern with regards to the gradient of the Gunyah Place accessway. As can be seen on the longitudinal section in Annexure B, the existing accessway is 38.5m in length and has an average grade of 27.8% (1 in 3.6) from RL22.03 at the boundary to RL32.67 prior to the manoeuvring area.

By maintaining the existing accessway, the proposal is consistent with Clause B6.2 of the Pittwater DCP which states:

Variations

For existing Internal Driveways on steeply sloping or difficult sites proposing dual occupancies, dwelling houses, secondary dwellings, exhibition homes, rural works dwellings and tourist and visitor accommodation, gradients up to a maximum of 1:3 (V:H) may be maintained subject to demonstration through a Traffic Assessment Report and the relevant certification that the Internal Driveway including surface finish is safe for its intended use.

Photographs of the existing accessway are reproduced in **Annexure E** showing the concrete surface that has been operating safely for many years.

Access from Net Road

As noted in the foregoing, the central driveway serving the carport and easternmost driveway will be closed and replaced to Council's specifications.

The existing western driveway is to be retained to provide access to a single width carport. The new carport will be at RL37.85 which is similar to the existing boundary level. The driveway will be located 900mm from the existing power pole on Net Road and will be constructed in accordance with Council's Driveway requirements. A copy of the Council's "Normal Low Profile" is reproduced in Annexure F which is likely to be adopted in this case.

In the circumstances, the vehicle access arrangements to serve the proposed development are considered satisfactory and satisfy the relevant DCP and Australian Standard requirements.

Should you require any further assistance, please do not hesitate in contacting Michael Logan on 0411 129 346 during normal business hours.

Yours faithfully

A handwritten signature in black ink, appearing to read 'M Logan', with a horizontal line extending to the right.

Michael Logan *MTraff* (*Monash University*)
Director
Terraffic Pty Ltd

ANNEXURE A

TRAFFIC ENGINEERS REFERRAL RESPONSE

Engineering Referral Response

Application Number:	DA2023/1206
Proposed Development:	Alterations and additions to a dwelling house including secondary dwelling
Date:	08/09/2023
To:	Brittany Harrison
Land to be developed (Address):	Lot 8 DP 232257 , 6 Net Road AVALON BEACH NSW 2107

Reasons for referral

This application seeks consent for the following:

- New Dwellings or
- Applications that require OSD where additional impervious area exceeds 50m² or
- Alterations to existing or new driveways or
- Where proposals affect or are adjacent to Council drainage infrastructure incl. watercourses and drainage channels or
- Torrens, Stratum and Community Title Subdivisions or
- All new Commercial and Industrial and RFB Development with the exception of signage or
- Works/uses in flood affected areas

And as such, Council's development engineers are required to consider the likely impacts on drainage regimes.

Officer comments

8/09/23:

The applicant proposes "proposing alterations and additions to the existing dwelling as well as a new secondary dwelling".

Access:

There are 4 existing driveways which service the property.

The site has dual frontage access to both Net Rd and Gunyah Pl.

The proposal removes 2 driveways on Net Rd, totaling 2 proposed driveways post development.

This is in accordance with Clause B6.1 of P21DCP.

Access from Gunyah Pl:

The proposed garage levels are at RL34.50 and the proposal is to use the existing driveway.

The existing driveway is extremely steep, with some sections exceeding grades of 30%.

Should the existing driveway be used, there does not seem to be sufficient transitions to prevent scraping.

The parking facilities and driveway gradients need to be designed in accordance with AS 2890.1:2004:

Parking facilities -

Off-street car parking. Provide 2 longitudinal cross sections on both ends of the driveway, showing existing and

proposed levels commenced from the existing driveway to the end of the parking

facility. The profile must show that a B85 vertical clearance model can safely access the site.

Access from Net Rd:

The proposed garage levels is RL37.85, which is approximately the same level as the boundary. There would be significant fill within the boundary to meet these levels. Details are required to be provided.

There are no proposed levels or longitudinal sections for the driveway.

Requesting 2 longitudinal cross sections on both ends of the driveway, showing existing and proposed levels commenced from the existing driveway to the end of the parking facility.

The driveway shall maintain 900mm of clearance to the Power Pole.

There should be a dish drain at the edge of the bitumen to keep runoff on the road

There are retaining walls in the road reserve, up to 1.2m high. The removal of the redundant elevated driveway may create a fall hazard in the road reserve.

Requesting that the geotechnical report certifies the existing retaining wall is structurally sound.

Note to planner: Please refer this to Road Assets Team regarding the retaining walls in the road reserve, suitability of on street parking in the road reserve and the suitability of a dish drain for the driveway on Net Road.

Stormwater:

The site has dual frontages and is located in Region 1 of the Water Management for Development Policy.

Councils records indicate from February 1996, the proposal is reducing the impervious area. As such, no OSD is required.

The DP plan suggests there is an easement to drain water via 2 Gunyah Place.

There is an opportunity to divert water from the site to the driveway which leads to Gunyah Place as it is currently.

The existing driveway on the western end of Net Road falls directly from the centerline of the road to the boundary.

However, stormwater runoff follows the driveway through to Gunyah Place and does not affect the property.

The proposal now leads the new driveway to a 2 storey garage.

In minor and major storm events, the garage would be flooded.

Requesting plans and a solution to prevent stormwater runoff from affecting the property.

Geotech:

A geotechnical report prepared by White Geotechnical Group has been provided along with Form 1 and 1a in accordance with Appendix 5 - Geotechnical Risk Management Policy for Pittwater.

Geotech proposal is supported subject to conditions.

As such, development engineering cannot support the application due to insufficient evidence to address B5.15 and B6 of the P21DCP.

The proposal is therefore unsupported.

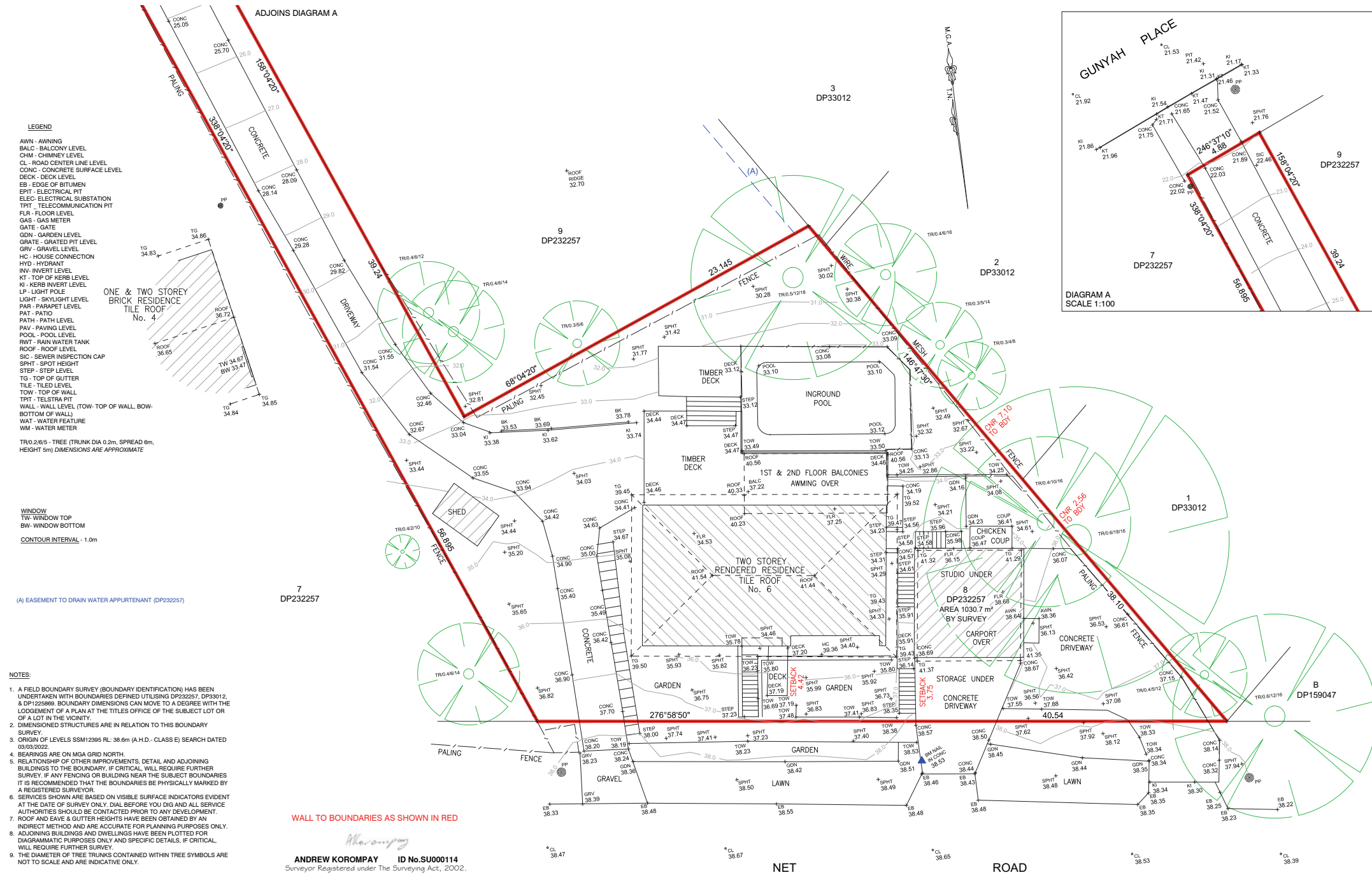
Note: Should you have any concerns with the referral comments above, please discuss these with the Responsible Officer.

Recommended Engineering Conditions:

Nil.

ANNEXURE B

SITE SURVEY



1	AK	REMOVED VEGETATION UPDATED	20/12/22
0	AK	INITIAL ISSUE	15/03/22
REVISION	BY	REVISION DESCRIPTION	DATE

PLAN OF DETAIL OVER
No. 6 NET ROAD
AVALON BEACH, NSW, 2107.

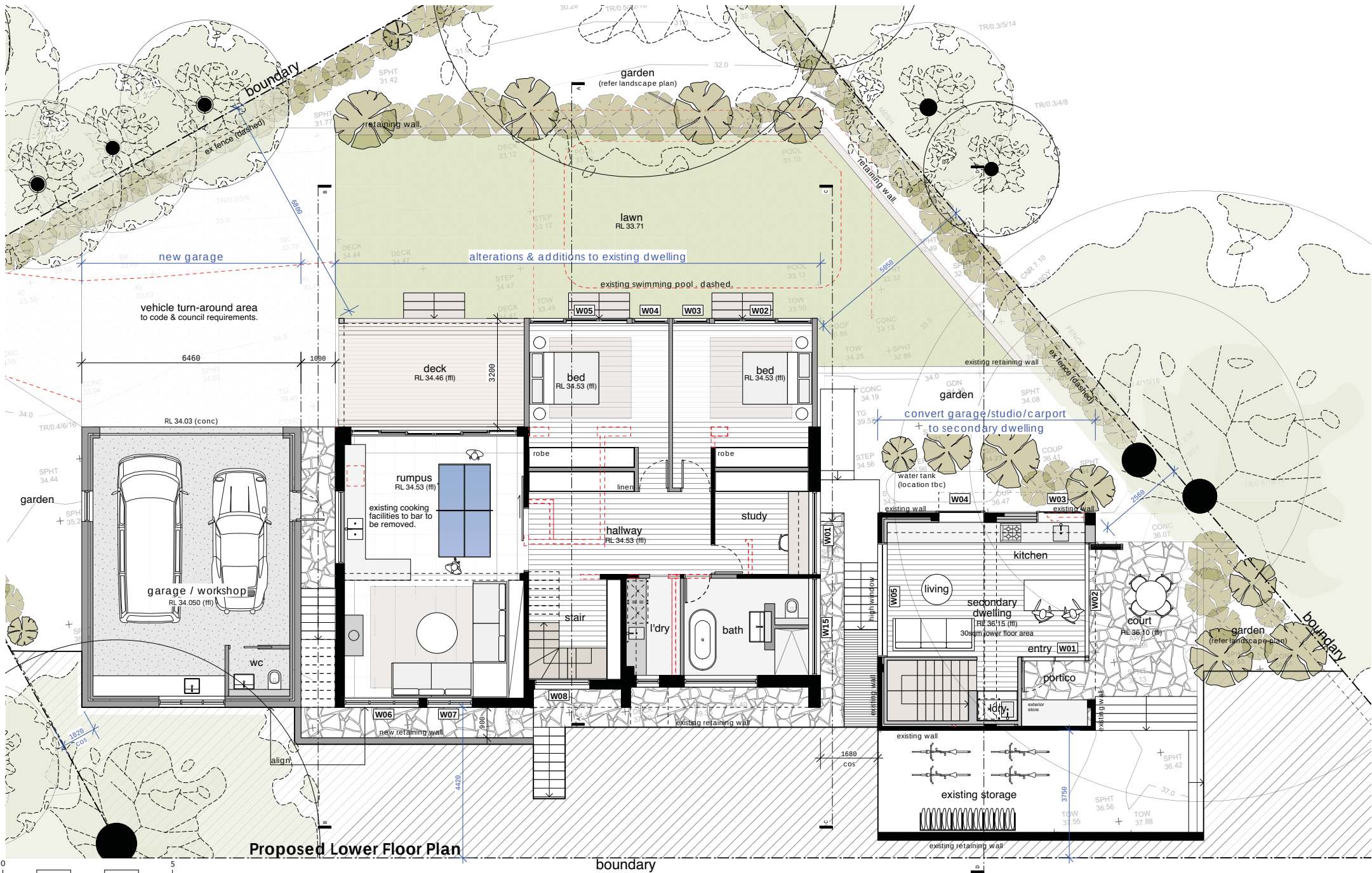


TRUENORTH SURVEY GROUP
A.B.N. 97 106 447 198
Registered Consulting Surveyors
16/9 Narabang Way
Belrose NSW 2085
Tel : (02) 9450 0868
Mob : (0412) 353 784
Email : andrew@truenorthsurveyors.com.au

SCALE: 1:100 @ A1 : 1:200 @ A3		DATE: 20/12/2022
CLIENT: DANIEL & MELISSA MUSSETT		DATUM: AHD
JOB No. 2470		PAGE 1 OF 1
DRAWN	CHECKED	APPROVED
NC	GP	AK
DRAWING No. 2470		REVISION 1

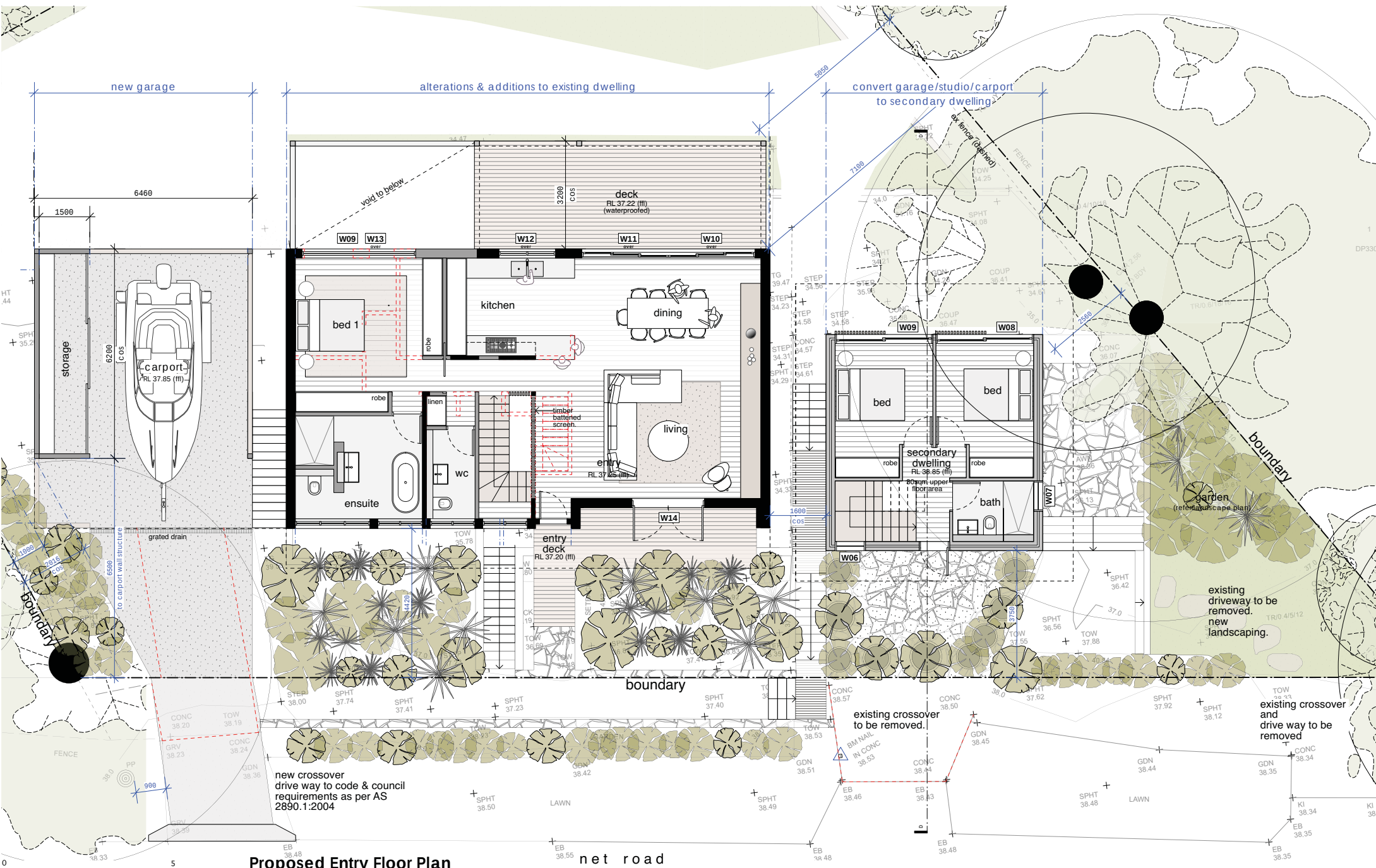
ANNEXURE C

PLAN OF THE PROPOSED DEVELOPMENT



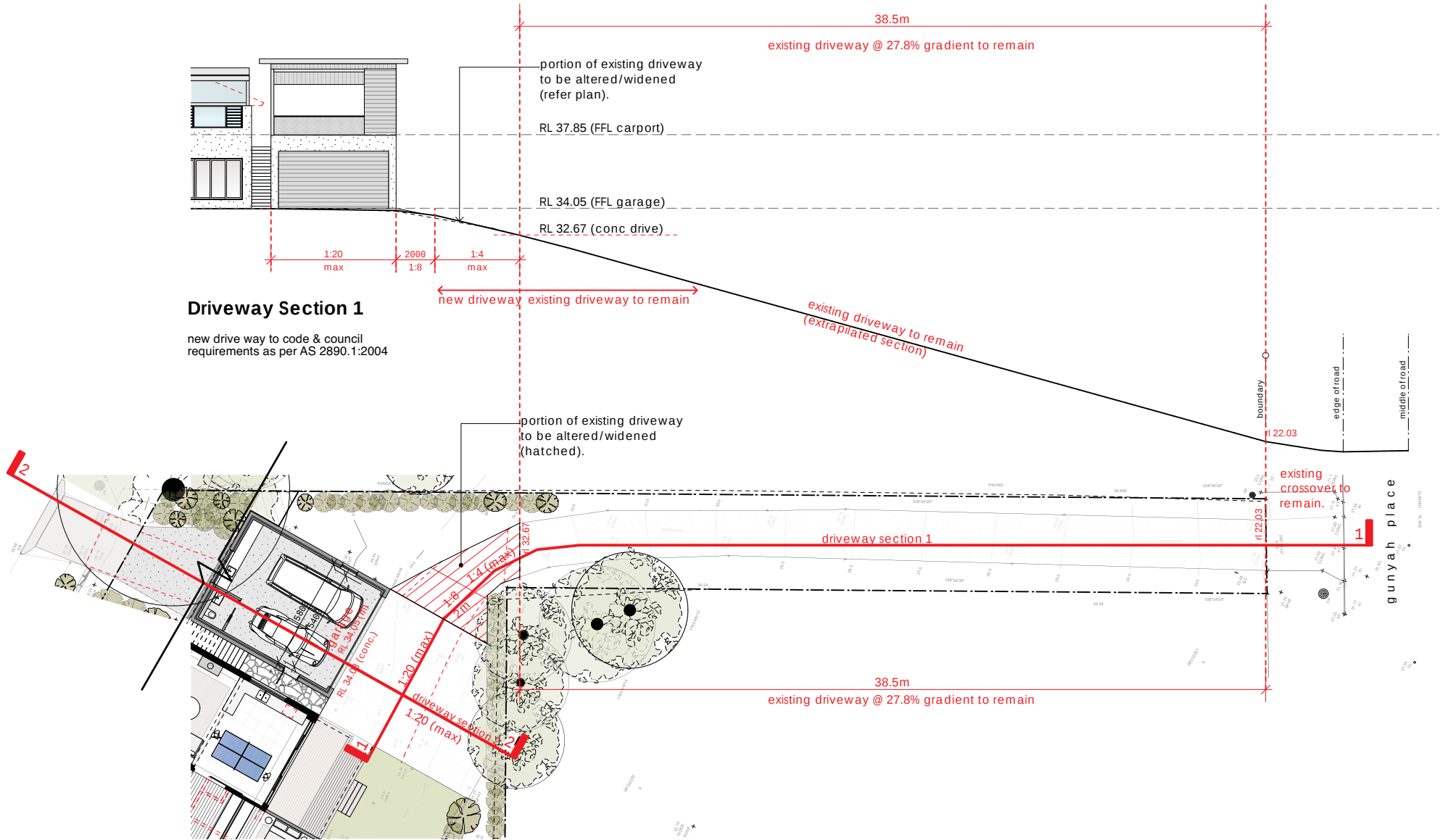
Proposed Lower Floor Plan

Note: All footings, slabs, structural beams, etc. to future engineers details. All wall/roof connections + member sizes to NCC & future engineers details. Rainwater from gutters to connect to stormwater system to relevant Building Codes, Council requirements. All wastewater/sewage to connect to existing sewer system to all relevant NCC, Building Codes + Council requirements. All materials to comply with BAL12.5 requirements. All works to comply with all relevant NCC, Building Codes + Council requirements.		MATERIALS: BAL BALUSTRADE CONC. CONCRETE COS CONFIRM ON SITE DP DOWNPIPE FG FIXED GLAZING HWD HARDWOOD LC LIGHTWEIGHT CLADDING M MASONRY MRS METAL ROOF SHEETING NGL NATURAL GROUND LEVEL		— EXISTING WALL - - - TO BE REMOVED — NEW WALL	Daniel & Mel Mussett 6 Net Road Avalon Beach NSW 2107 LOT 8 DP 232257, Site Area 1030.7m² PROJECT Alterations & Additions DRAWING Proposed Lower Floor Plan NOTES Please print in A3 or A1. This drawing is copyright and is for Development Application purposes only. Do not measure off drawings.	ANDY LEHMAN DESIGN Tel. 0414 466 665 Email: andy@andylehman.com.au If in doubt ask.		DWG. NO. 10	SCALE 1:100@A3	DATE Jan 2024	ISSUE A
--	--	---	--	---	--	--	--	--------------------	-----------------------	----------------------	----------------

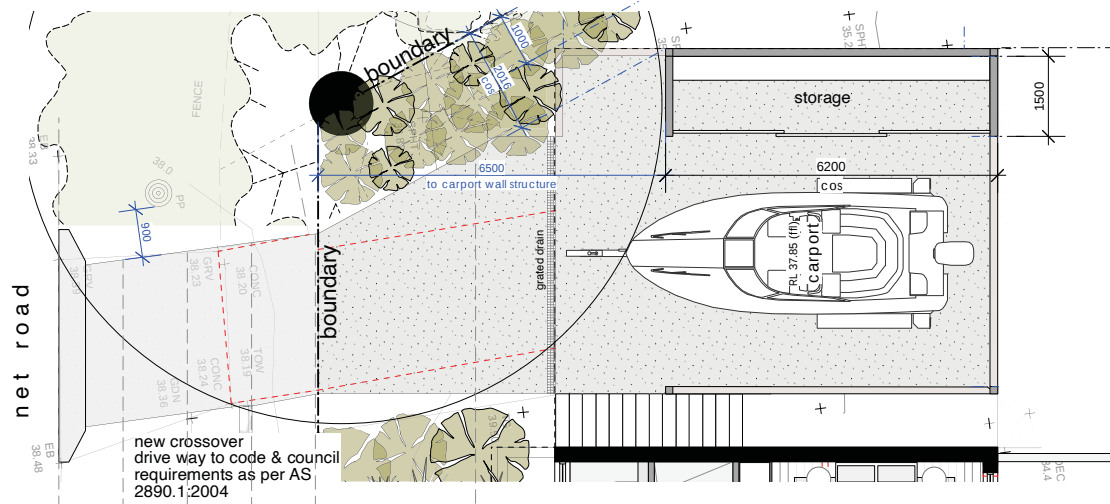


Proposed Entry Floor Plan

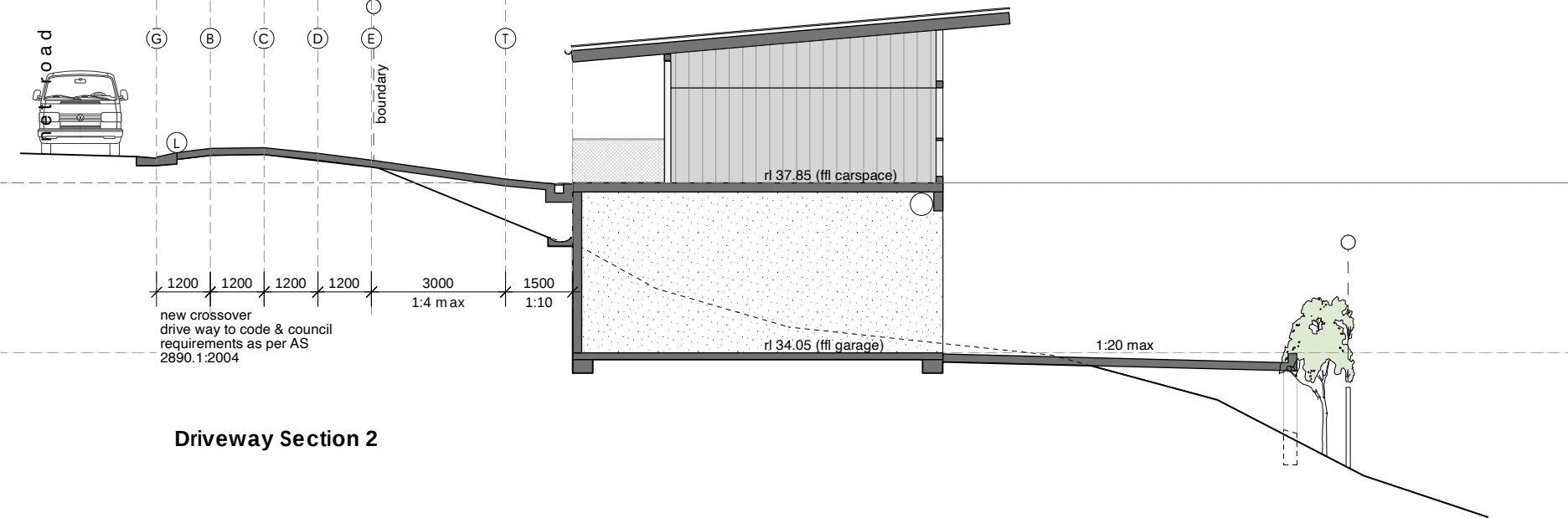
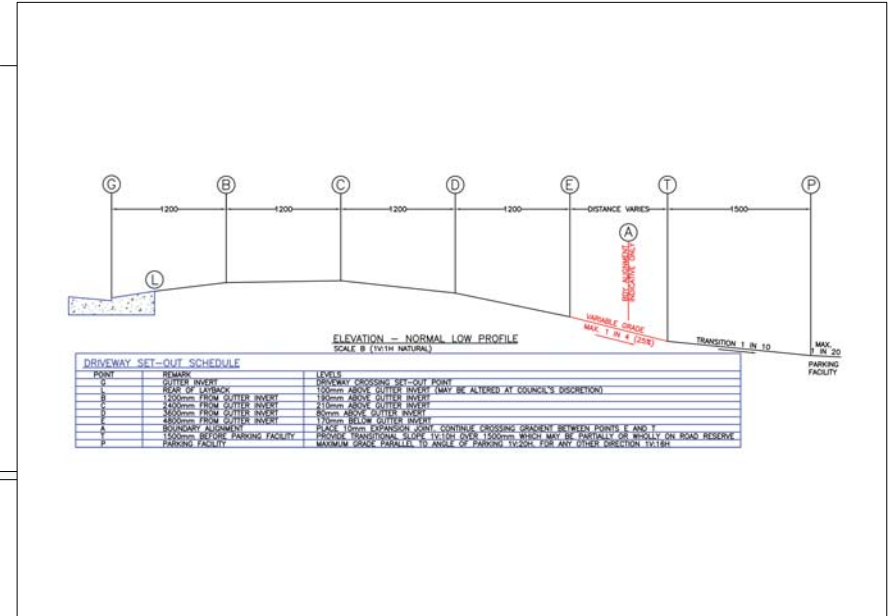
Note: All footings, slabs, structural beams, etc. to future engineers details. All wall/roof connections + member sizes to NCC + future engineers details. Rainwater from gutters to connect to stormwater system to relevant Building Codes, Council requirements. All wastewater/sewage to connect to existing sewer system to all relevant NCC, Building Codes + Council requirements. All materials to comply with BAL12.5 requirements. All works to comply with all relevant NCC, Building Codes + Council requirements.		MATERIALS: BAL BALUSTRADE CONC. CONCRETE COS CONFIRM ON SITE DP DOWNPIPE FG FIXED GLAZING HWD HARDWOOD LC LIGHTWEIGHT CLADDING M MASONRY MRS METAL ROOF SHEETING NGL NATURAL GROUND LEVEL		— EXISTING WALL - - - TO BE REMOVED — NEW WALL		Daniel & Mel Mussett 6 Net Road Avalon Beach NSW 2107 LOT 8 DP 232257, Site Area 1030.7m² PROJECT Alterations & Additions DRAWING Proposed Entry Floor Plan NOTES Please print in A3 or A1. This drawing is copyright and is for Development Application purposes only. Do not measure off drawings.		ANDY LEHMAN DESIGN Tel. 0414 466 665 Email: andy@andylehman.com.au If in doubt ask.		DWG. NO.	DA. 11
						SCALE 1:100@A3		DATE Jan 2024		ISSUE A	



Note: All footings, slabs, structural beams, etc, to future engineers details. All wall/roof connections + member sizes to NCC & future engineers details. Rainwater from gutters to connect to stormwater system to relevant Building Codes, Council requirements. All wastewater/sewage to connect to existing sewer system to all relevant NCC, Building Codes + Council requirements. All materials to comply with BAL12.5 requirements. All works to comply with all relevant NCC, Building Codes + Council requirements.		MATERIALS: BAL BALUSTRADE CONC. CONCRETE COS CONFIRM ON SITE DP DOWNPIPE FG FIXED GLAZING HWD HARDWOOD LC LIGHTWEIGHT CLADDING M MASONRY MRS METAL ROOF SHEETING NGL NATURAL GROUND LEVEL	EXISTING WALL TO BE REMOVED NEW WALL	Daniel & Mel Mussett 6 Net Road Avalon Beach NSW 2107 LOT 8 DP 232257, Site Area 1030.7m ²	Alterations & Additions ANDY LEHMAN DESIGN		DWG. NO.	DA. 27
DRAWING Driveway Plan & Section 1		Tel: 8414 466 665 Email: andy@andylehman.com.au		SCALE		DATE		Jan 2024
NOTES Please print in A3 or A1. This drawing is copyright and is for Development Application purposes only. Do not measure off drawings.		If in doubt ask.		ISSUE		A		



Driveway P\lan (Net Road)



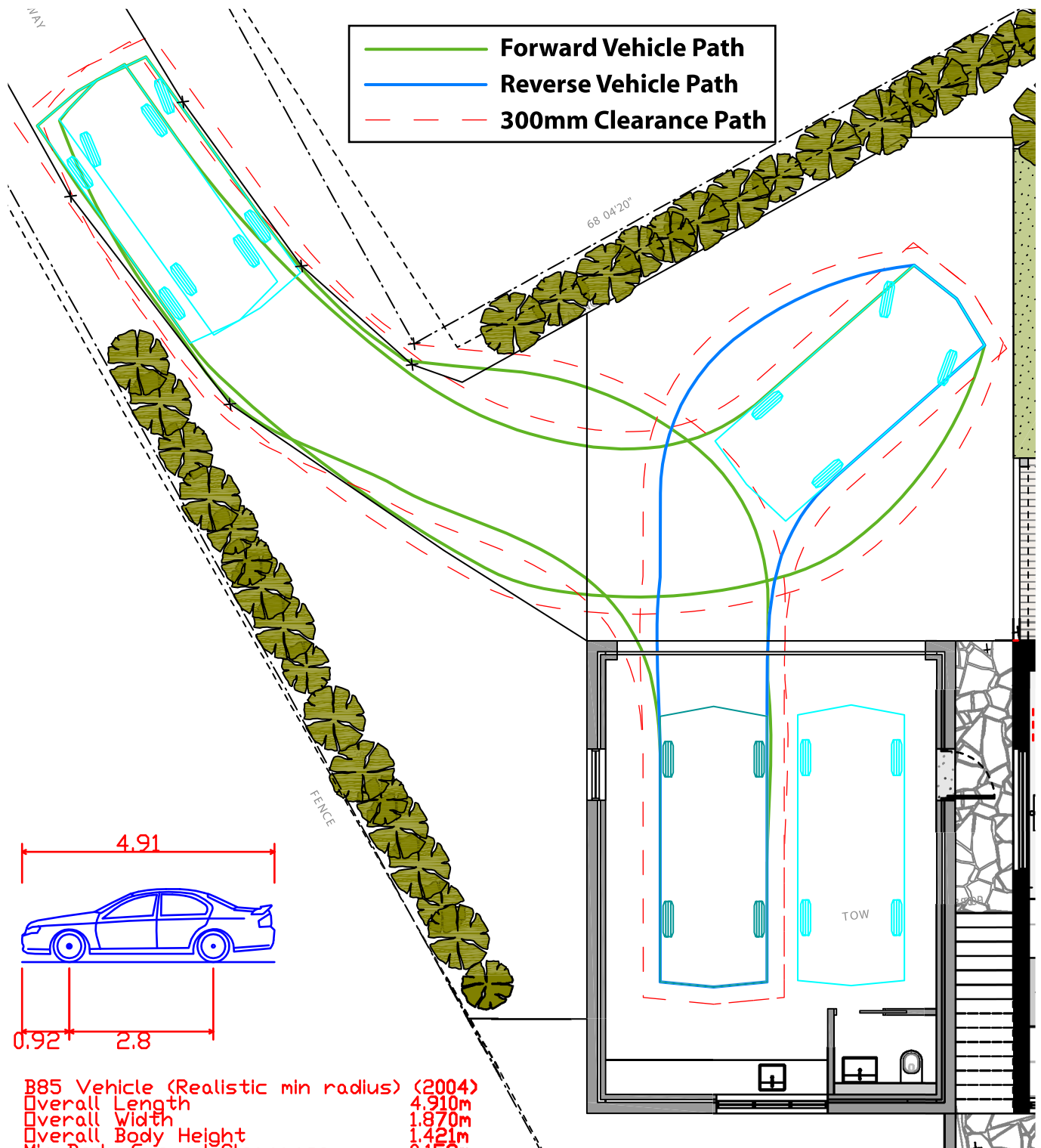
Driveway Section 2

ANNEXURE D

SWEPT PATH ANALYSIS

Path prepared using
Autodesk Vehicle Tracking

0 1 2 3 4 5 10
METRES
SCALE 1:100



B85 Vehicle (Realistic min radius) (2004)
Overall Length 4.910m
Overall Width 1.870m
Overall Body Height 1.421m
Min Body Ground Clearance 0.159m
Track Width 1.770m
Lock to Lock Time 4.00s
Curb to Curb Turning Radius 5.750m



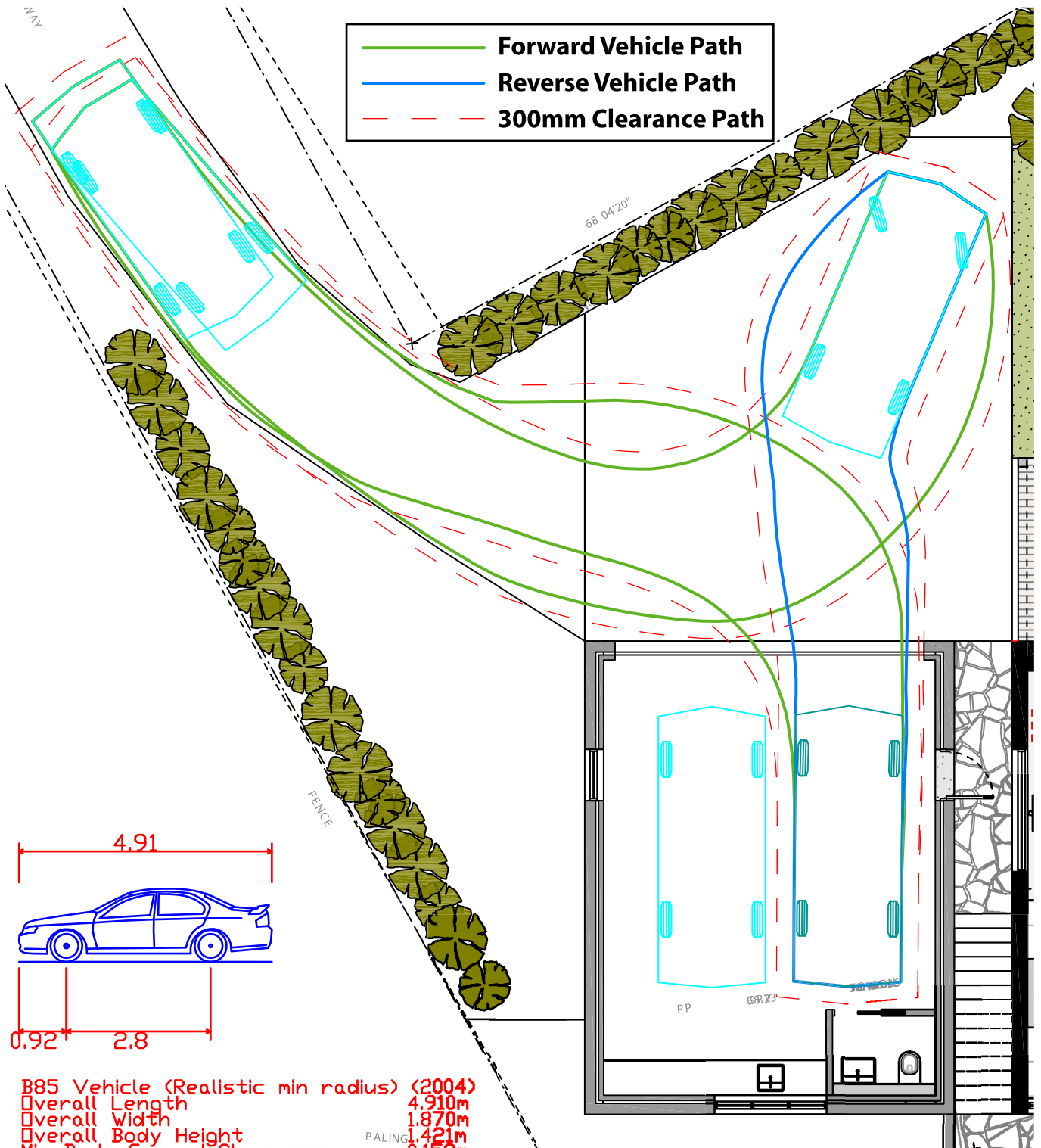
Terraflow Pty Ltd
TRAFFIC & PARKING CONSULTANTS

**Manoeuvring Path of Australian
Standard AS/NZS2890.1:2004
B85 Vehicle Accessing Space A**

Path prepared using
Autodesk Vehicle Tracking

0 1 2 3 4 5 10
METRES
SCALE 1:100

— Forward Vehicle Path
— Reverse Vehicle Path
- - - 300mm Clearance Path



B85 Vehicle (Realistic min radius) (2004)
Overall Length 4.910m
Overall Width 1.870m
Overall Body Height 1.421m
Min Body Ground Clearance 0.159m
Track Width 1.770m
Lock to Lock Time 4.00s
Curb to Curb Turning Radius 5.750m



Terraflow Pty Ltd
TRAFFIC & PARKING CONSULTANTS

**Manoeuvring Path of Australian
Standard AS/NZS2890.1:2004
B85 Vehicle Accessing Space B**

ANNEXURE E

GUNYAH PLACE ACCESSWAY PHOTOGRAPHS







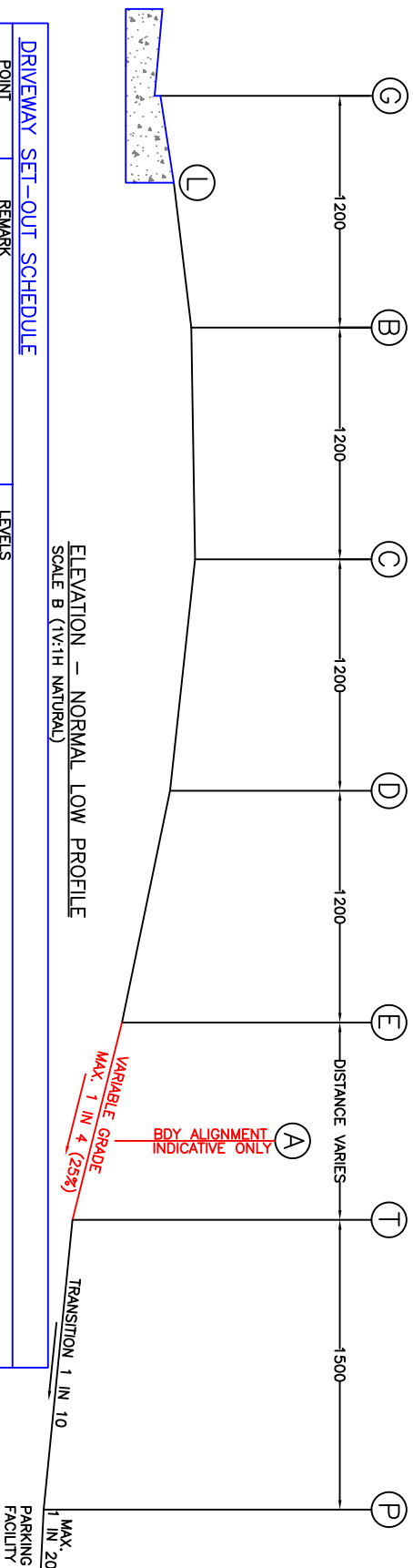






ANNEXURE F

NORTHERN BEACHES COUNCIL'S NORMAL LOW DRIVEWAY PROFILE



DRIVEWAY SET-OUT SCHEDULE	
POINT	REMARK
G	GUTTER INVERT
L	REAR OF LAYBACK
B	1200mm FROM GUTTER INVERT
C	2400mm FROM GUTTER INVERT
D	3600mm FROM GUTTER INVERT
E	4800mm FROM GUTTER INVERT
T	BOUNDARY ALIGNMENT
A	1500mm BEFORE PARKING FACILITY
P	PARKING FACILITY

LEVELS	
DRIVEWAY CROSSING SET-OUT POINT	
100mm ABOVE GUTTER INVERT (MAY BE ALTERED AT COUNCIL'S DISCRETION)	
190mm ABOVE GUTTER INVERT	
210mm ABOVE GUTTER INVERT	
80mm ABOVE GUTTER INVERT	
170mm BELOW GUTTER INVERT	
PLACE 10mm EXPANSION JOINT, CONTINUE CROSSING GRADIENT BETWEEN POINTS E AND T	
PROVIDE TRANSITIONAL SLOPE 1X:10H OVER 1500mm WHICH MAY BE PARTIALLY OR WHOLLY ON ROAD RESERVE	
MAXIMUM GRADE PARALLEL TO ANGLE OF PARKING 1V:20H, FOR ANY OTHER DIRECTION 1V:16H	

CONCRETE DRIVEWAY NOTES

- LAYBACK AND GUTTER SHALL BE CONSTRUCTED IN PLAIN CONCRETE AND FINISHED WITH A STEEL TROWEL.
- THE MINIMUM COMPRESSIVE STRENGTH FOR DRIVEWAYS SHALL BE 25MPa AT 28 DAYS. FOR COMMERCIAL OR INDUSTRIAL DRIVEWAYS THE SLAB DEPTH SHALL BE INCREASED TO MINIMUM OF 180mm WITH SLB2 STEEL MESH AND TOP COVER OF 30mm.
- THE SUBGRADE SHALL BE EVENLY COMPACTED USING A VIBRATORY COMPACTION EQUIPMENT UNTIL IT SHOWS NO SIGNS OF MOVEMENT, OR AS DIRECTED BY COUNCIL.
- ALL VEHICLE CROSSINGS SHALL BE CONSTRUCTED IN ACCORDANCE WITH LEVELS AND SPECIFICATION ISSUED BY COUNCIL AND MUST COMPLY WITH AS/NZS 2890.1:2004 "OFF STREET CAR PARKING" CODE.
- ALL KERBING SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD DRAWINGS AND SPECIFICATION ISSUED BY COUNCIL.
- WHERE COUNCIL OR ITS REPRESENTATIVE DIRECTS THAT THE GUTTER IS TO BE RETAINED, THE CONTRACTOR IS TO PLACE A 75mm DEEP SAW CUT IN THE GUTTER INVERT AND REMOVE THE KERB AND/OR LAYBACK.
- WHERE COUNCIL OR ITS REPRESENTATIVE DIRECTS THAT THE GUTTER IS TO BE DETAINED PRIOR TO COMMENCEMENT OF WORKS, THE GUTTER IS TO BE DETAINED PRIOR TO COMMENCEMENT OF WORKS.
- THE CONSTRUCTION OF ALL VEHICLE CROSSINGS AND ASSOCIATED WORKS MUST BE PERFORMED BY A COUNCIL APPROVED CONTRACTOR.
- SAWCUT 500mm ASPHALT STRIP AND MATCH IN LAYBACK WITH ROAD SURFACE TO SMOOTH TRANSITION.

VEHICLE CROSSING CONSTRUCTION NOTES

- AT LEAST 48 HOURS' NOTICE OF INTENTION SHALL BE GIVEN TO COUNCIL ENGINEER TO POUR CONCRETE WITHIN THE ROAD RESERVE AND NO CONCRETE SHALL BE PLACED UNTIL THE CONTRACTOR HAS BEEN ADVISED AND AN INSPECTION NOTICE ISSUED.
- ALL VEHICLE CROSSINGS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE ROAD RESERVE AND FINISHED LEVEL WITH THE CONCRETE SURFACE. RAISED EDGES ARE UNACCEPTABLE.
- THE ROAD ADJOINING THE VEHICLE CROSSING SHALL BE BATTERED AND TURFED AT A MAXIMUM GRADIENT OF 1V:6H OR AS DIRECTED BY COUNCIL.
- CONCRETE FOOTPATH ADJUSTMENTS SHALL BE IN ACCORDANCE WITH COUNCIL'S SPECIFICATION AND SATISFACTION.
- THE SUBGRADE MUST BE THOROUGHLY COMPACTED BY THE USE OF VIBRATORY COMPACTION EQUIPMENT UNTIL IT SHOWS NO SIGNS OF MOVEMENT, OR AS DIRECTED BY COUNCIL.
- VEHICLE CROSSING SLABS MUST BE POURED IN PLAIN CONCRETE. SLAB SURFACE MUST BE COVE FINISHED (OR EQUIVALENT) AND EDGES TO BE FINISHED WITH A 50mm MARGIN.
- ALL CHANGES IN GRADE SHALL BE SCREENED TO ENSURE NO RIGID/SHARP TRANSITIONS.
- THE MINIMUM COMPRESSIVE STRENGTH OF CONCRETE SHALL BE 25MPa AT 28 DAYS.
- SINGLE RESIDENTIAL DWELLING: 130mm THICK REINFORCED WITH SL72 MESH PLACED 30mm BELOW TOP OF CONCRETE SLAB
- (g) MULTI-UNIT RESIDENTIAL: 150mm THICK REINFORCED WITH SL72 MESH PLACED 30mm BELOW TOP OF CONCRETE SLAB
- (g) COMMERCIAL OR INDUSTRIAL: 180mm THICK REINFORCED WITH SLB2 MESH PLACED 30mm BELOW TOP OF CONCRETE SLAB
- THE VEHICLE CROSSING UP TO 2400mm FROM THE GUTTER INVERT SHALL BE GRADED PARALLEL WITH THE ROAD CENTRELINE.
- THE VEHICLE CROSSING SHALL BE CONSTRUCTED PERPENDICULAR TO THE ROAD PAVEMENT UNLESS OTHERWISE INSTRUCTED BY COUNCIL.
- THE CONSTRUCTION OF ALL VEHICLE CROSSINGS AND ASSOCIATED WORKS ON THE ROAD RESERVE MUST BE COMPLETED BY A COUNCIL APPROVED CONTRACTOR.
- NO TREE ROOTS GREATER THAN 50mm IN DIAMETER ARE TO BE REMOVED UNLESS AUTHORISED BY A QUALIFIED ARBORIST.
- ANY ROOTS APPROVED FOR REMOVAL SHALL BE CLEAN CUT WITH SHARP TOOLS SUCH AS SECAUTURS, PRUNERS, HANDSAWS, CHAINSAWS OR SPECIALISED ROOT PRUNING EQUIPMENT.

IMPORTANT DRIVEWAY DESIGN NOTES:

- THE STANDARD DRIVEWAY PROFILES SHOWN MAY NOT SUIT ALL TERRAIN CONDITIONS.
- THESE STANDARD DRIVEWAY PROFILES MAY NEED TO BE MODIFIED TO SUIT.
- THE STANDARD DRIVEWAY PROFILES SHOWN MAY NOT TAKE INTO CONSIDERATION CONNECTING FOOTPATHS WHERE THE FOOTPATH MEETS THE DRIVEWAY. FOR DESIGNERS TO CONSIDERATION MAXIMUM 1:2.5% CROSS-FALL GRADED TOWARDS THE KERB OR ROAD SIDE. ALSO THE STANDARD DRIVEWAY PROFILES SHOWN HAS NOT BEEN DESIGNED TO ACCOMMODATE ANY SPECIAL NEEDS, FOR EXAMPLE, IN A FLOOD PLANNING AREA WHERE A MINIMUM FREE BOARD CREST IS REQUIRED TO PROTECT THE PARKING FACILITY.
- WHERE MODIFICATION OF THE DRIVEWAY IS REQUIRED TO MEET EXISTING OR PROPOSED CROSS FALLS OR LEVELS, THE FINAL DESIGN PROFILE MUST BE CHECKED AGAINST THE AUSTRALIAN STANDARD AS/NZS 2890.1:2004 "OFF STREET CAR PARKING" CODE FOR SCRAPING AND BOTTOMING USING THE 85th PERCENTILE PASSENGER VEHICLE.
- THE DESIGNER WILL NEED TO LIAISE WITH COUNCIL TO DEVELOP A SUITABLE DESIGN SOLUTION.