Reference number 4044

Member of the Fire Protection Association of Australia

Lot 30, DP 25654, 57 Cutler Road, Clontarf, NSW 2093.

Wednesday, 10 August 2022

Prepared and certified by:	Matthew Willis *BPAD – Level 3 Certified Practitioner* Certification No: BPD-PA 09337		10/08/2022
Can this proposal comply with AS3959-2018 (inc section 7.5, 7.5.1,7.5.2, 7.5.3, 7.5.4 (where applicable) of the Rural Fire Services document Planning for Bushfire Protection 2019)?		Yes	
What is the recommended AS 3959-2018 level of compliance?		BAL-19 and BAL-12.5	
Is referral to the RFS required?		Yes	
Can this development comply with the requirements of PBP?		Yes	
Plans by "Gartner Trovato Architects" (Appendix 1) dated.		2/8/22	

Bushfire Planning Services

15 Parkcrest Place

Kenthurst NSW 2156

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0428408577

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Bushfire Risk Assessment

Wednesday, 10 August 2022

Contact

Luke Trovato

Gartner Trovato Architects

PO Box 1122

Mona Vale NSW 2103

9979 4111

Subject Property

Lot 30, DP 25654

57 Cutler Road

Clontarf NSW 2093

BUSHFIRE RISK ASSESSMENT CERTIFICATE

THIS FORM IS TO BE COMPLETED BY A RECOGNISED CONSULTANT IN BUSHFIRE RISK ASSESSMENT IN ACCORDANCE WITH SECTION 4.14 OF THE ENVIRONMENTAL PLANNING AND ASSESSMENT ACT.

Property Address	Lot 30, DP 25654, number 57 Cutler Road Clontarf
Description of the Proposal	Alterations and additions to an existing dwelling
Plan Reference	2/8/22
BAL Rating	BAL-19 and BAL-12.5
Does the Proposal Rely on Alternate Solutions?	**Yes**

I, Matthew Willis of Bushfire Planning Services Pty Ltd have carried out a bushfire risk assessment on the above-mentioned proposal and property. A detailed Bushfire Assessment Report is attached which includes the submission requirements set out in Planning for Bushfire Protection 2019 together with recommendations as to how the relevant Specifications and requirements are to be achieved.

I hereby advise, in accordance with Section 4.14 of the Environmental Planning and Assessment Act 1979 No 203:

1. That I am a person recognised by the NSW Rural Fire Service as a qualified consultant in bushfire risk assessment; and

2. That subject to the recommendations contained in the attached Bushfire Risk Assessment Report the proposed development conforms to the relevant specifications and requirements*

*The relevant specifications and requirements being specifications and requirements of the document entitled Planning for Bush Fire Protection prepared by the NSW Rural Fire Service in co-operation with the Department of Planning and any other document as prescribed by Section 4.14 of the Environmental Planning and Assessment Act 1979 No 203.

I am aware that the Bushfire Assessment Report, prepared for the above-mentioned site is to be submitted in support of a development application for this site and will be relied upon by Northern Beaches Council as the basis for ensuring that the bushfire risk management aspects of the proposed development have been addressed in accordance with Planning for Bushfire Protection 2019.

REPORT REFERENCE	*Wednesday, 10 August 2022*
REPORT DATE	*Wednesday, 10 August 2022*
CERTIFICATION NO/ACCREDITED SCHEME	*FPAA BPAD A BPD-PA 09337*

Attachments:

- Bushfire Risk Assessment Report
- Recommendations

SIGNATURE: ---  ------ ***DATE:*** -----*Wednesday, 10 August 2022*

Contents.

1 Executive Summary.

Bushfire Planning Services has been requested by Mr Luke Trovato from Gartner Trovato Architects to supply a bushfire compliance report on lot 30, DP 25654, 57 Cutler Road, Clontarf.

The works proposed for the subject lot are for the alterations and additions to an existing dwelling, see attached plans for details.

There are two mapped hazards to this proposal, one to the south and one to the east. The eastern hazard, mapped as a category 2 hazard, has been considered however it has been discounted as a secondary hazard to the southern hazard.

Assessment of this proposal by the “normal” methodology that is generally used in bushfire assessments results in an unrealistic and onerous outcome.

There are several reasons for this;

- The first is that the hazard to the south is on land that arguably has a slope of 38 degrees downhill away from the proposal resulting in a modelled flame length of in excess of 240m if the vegetation is considered forest. To expect a flame of this length to be produced from a run of fire of 60-70m is unrealistic and will not occur,
- Secondly, the southern hazard is mapped as category 1 vegetation, in this case Sydney Coastal Foreshores Forest. The area of vegetation does not meet the criteria for downgrading to “remnant” under the provisions of Planning for Bushfire Protection as it is larger than 1 hectare and has the potential provide a run of fire in excess of 50m towards the subject lot.

Notwithstanding the above, the vegetation to the south is considered a remnant area of vegetation and is considered that it is highly unlikely to support a significant fire. As such it is considered that the vegetation meets the intent of a remnant if not the strict definition as per Planning for Bushfire Protection. As such remnant/rainforest has been used as the hazard in this assessment, this is subjective.

There are various slopes within the mapped hazard that could be used for assessment. The slope chosen for assessment is not the steepest available slope. The slope of 24.44 degrees has been used which is along a small gully. This run has been used as the gully will potentially have a “funnelling” effect and that the end of the fire run is well “below” the level of the subject lot. The steeper runs generally end higher than the run used and the lot is shielded by the topography and surrounding development which could reasonably be expected to not directly impact the proposal, again, this is subjective.

Using the above variables/assumptions and the other variables as outlined in this assessment the resulting BAL of 19 for the fire prone aspects and 12.5 for the non-fire prone aspect is considered to provide a building standard commensurate with the actual risk to the building.

2 General.

This proposal relates to the alterations and additions to an existing dwelling on the subject lot and its ability to comply with the rules and regulations for building in a bushfire prone area.

The methodology used on this report is based on Planning for Bushfire Protection 2019 (PBP) as published by the New South Wales Rural Fire Service.

Any wording that appears in *blue italics* is quotes from Planning for Bushfire Protection 2019. Some of the measurements used in this report have been taken from aerial photographs and as such are approximate only.

The subject lot is on the southern side of Cutler Road and at its closest point to the hazard the proposed new work has a separation distance to the south of approximately 65.5m.

The vegetation that is considered to be the hazard to this proposal is situated on land that slopes down slope away from the property at an angle of approximately 24.44°.

For the purposes of this assessment this vegetation is considered to be remnant (rainforest equivelant).

The remaining vegetation within the study area is contained within the boundaries of established allotments and is managed land and of low threat to this proposal.

The calculations and assumptions outlined in this report show that the development will be required to comply with the construction requirements of AS 3959-2018 BAL-19 on its exposed southern, eastern and western aspects, and BAL-12.5 on the northern aspects and any additional construction requirements contained within section 7.5, 7.5.1,7.5.2, 7.5.3, 7.5.4 (where applicable) of the Rural Fire Services document Planning for Bushfire Protection 2019.

The following table is a summary of the pertinent findings of this assessment.

Aspect	North	East	South	West
Vegetation type	Managed land	Managed land	Managed land/remnant	Managed land
Slope	N/A	N/A	Greater than 20 degrees downslope	N/A
Setback within lot 30	N/A	N/A	7m	N/A
Setback outside lot 30	N/A	N/A	58.5m	N/A
Total setback	N/A	N/A	65.5m	N/A

Aspect	North	East	South	West
Bal level	N/A	N/A	19[1]	N/A

Note: The above table is a summary of the significant variables used to determine the highest BAL for this proposal. THIS TABLE IS NOT INTENDED FOR CONSTRUCTION! Only the highest BAL level is shown, aspects marked as N/A will still have a BAL. Refer to section 11 for construction requirements for these other aspects.

3 Block Description.

The subject block is situated on the southern side of Cutler Road in an established area of Clontarf.

The lot currently contains a multi-level class 1 dwelling.

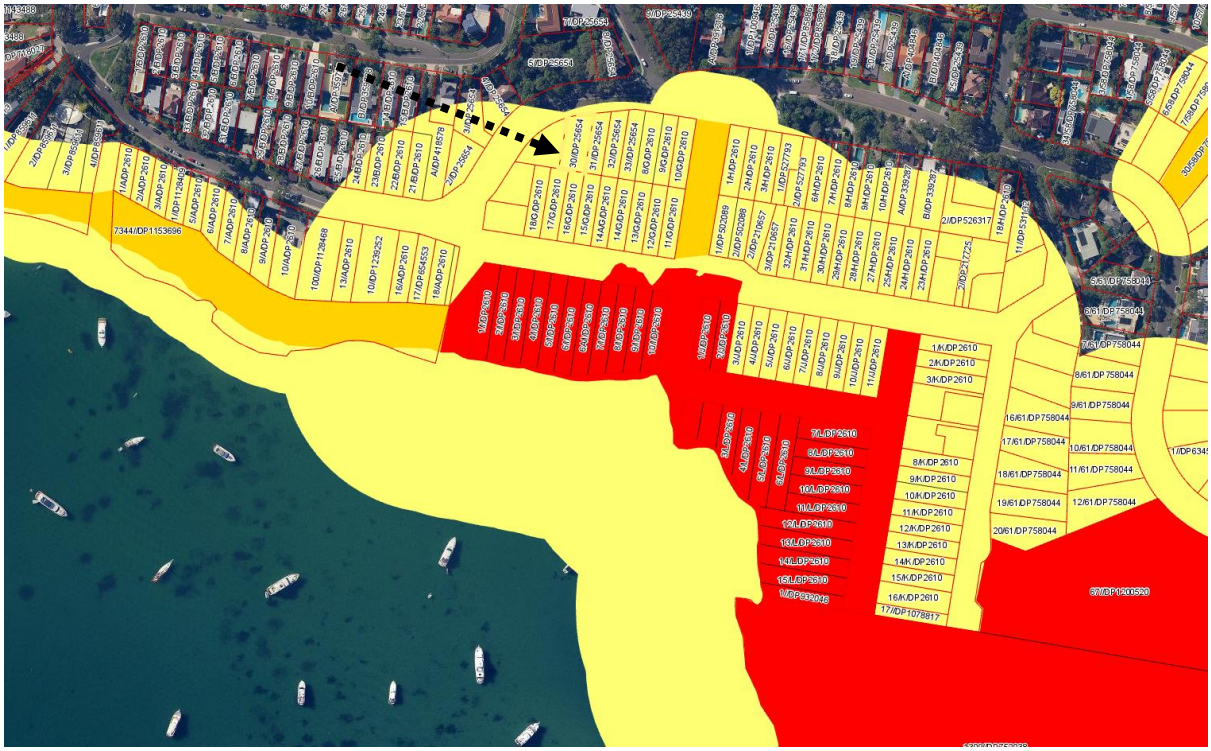
The lands surrounding the proposed site on the subject lot to a distance of at least 65.5m contain existing development or land that is otherwise not considered to be a significant bushfire hazard.

- Lot; 30
- DP; 25654.
- LGA; Northern Beaches.
- Area; 576.5m2.
- Address; 57 Cutler Road, Clontarf.

This section has been left blank.

[1] *By method 2 calculations*

Map 1 shows the cadastral layout around the subject lot.



Map 2 is an extract from the councils' bushfire prone land map. The map shows lot 30 to be within the buffer zone of category 1 bushfire vegetation.

4 Vegetation.

The study area for the vegetation is 140m surrounding the subject block.

The vegetation within the study area for this development is considered to be largely managed land.

The major potential hazard to this development is the vegetation within an area of undeveloped land to the south.

This area of vegetation has been identified as Sydney Coastal Foreshores Forest.

The mapped hazard, in the larger area, consists of a narrow strip of foreshore vegetation to the south-west that joins into a larger area to the south and then that area is connected by a narrow band to another zone to the south-west, see map 2 on the previous page.

The only area of the hazard that could directly impact the site is the area directly to the south. This area measures approximately 1.3ha, slightly more than the area required for downgrading to remnant under the provisions of Planning for Bushfire Protection.

In addition to the area being slightly larger than 1ha, the area could provide a potential fire run of slightly longer than 50m towards the proposal, again, this is marginally beyond the requirements for remnant classification under Planning for Bushfire Protection.

Notwithstanding the above, the area is considered to be In keeping with the intent of the remnant provision of Planning for Bushfire Protection of identifying areas that *"have less opportunity to support fully developed bushfires because of their limited size" .*

Given the above, for the purpose of this assessment and compliance with Planning for Bushfire Protection, this area of undeveloped land is considered to be remnant (rainforest equivelant) and is the hazard to this proposal.

Photo 1 - An overview of the vegetation within the general area.

Photo 2 is a closer view of the vegetation in the area.

Table 1 outlines the vegetation orientation and distance from the development area.

Aspect	North	East	South	West
Vegetation type	Managed land	Managed land	Managed land/remnant	Managed land
Setback within lot 30	N/A	N/A	7m	N/A
Off-site setback	N/A	N/A	58.5m	N/A
Total setback	N/A	N/A	65.5m	N/A

Table 1 - Any aspect marked with "N/A" in the table above indicates that it is considered there is none or only a secondary hazard in that direction.

5 Known constraints on subject block.

I have not been informed or know of any places of cultural or environmental significance within the boundaries of the subject block.

Given the nature of the surrounding land it is considered highly unlikely that anything of significance will be affected by this development.

This area has been left intentionally blank.

6 Slope.

The slope of the land beneath the hazard that is most likely to influence bushfire behaviour has been calculated by topographical map analysis to a distance of 100m from the subject lot.

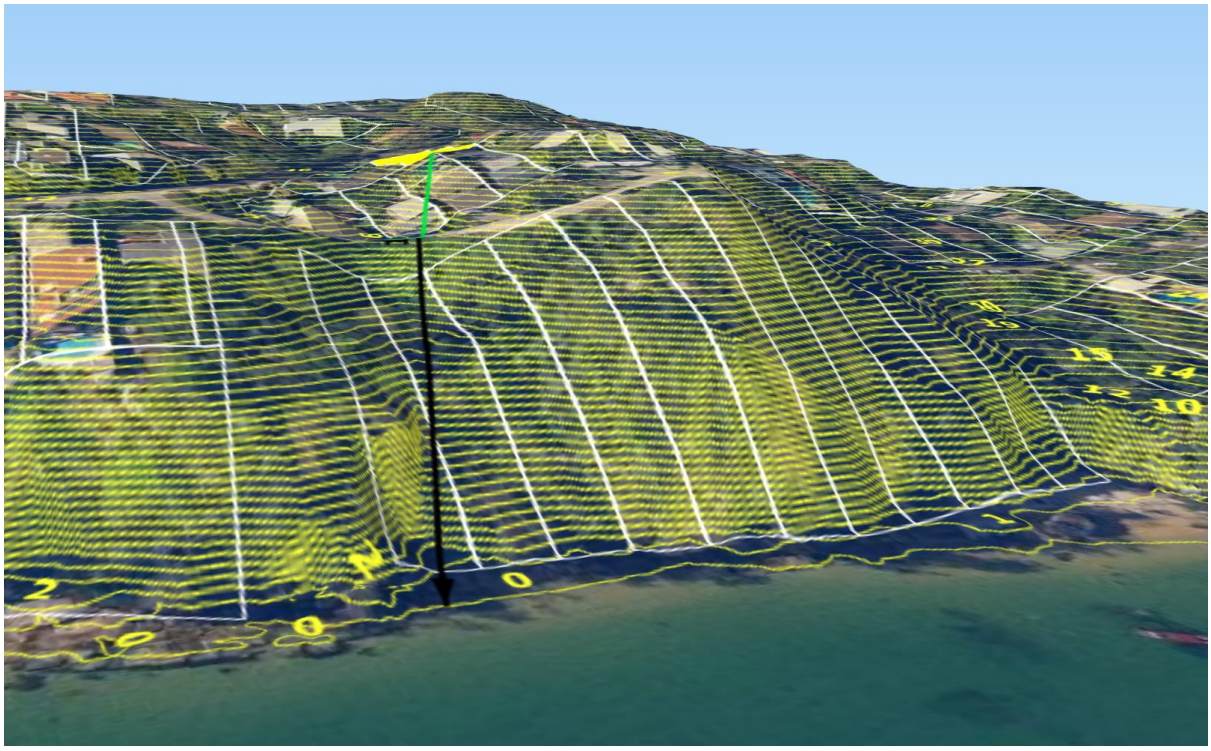
An extract of the topographical map for the area is shown below and the relevant slope analysis is shown in Table 2 below.

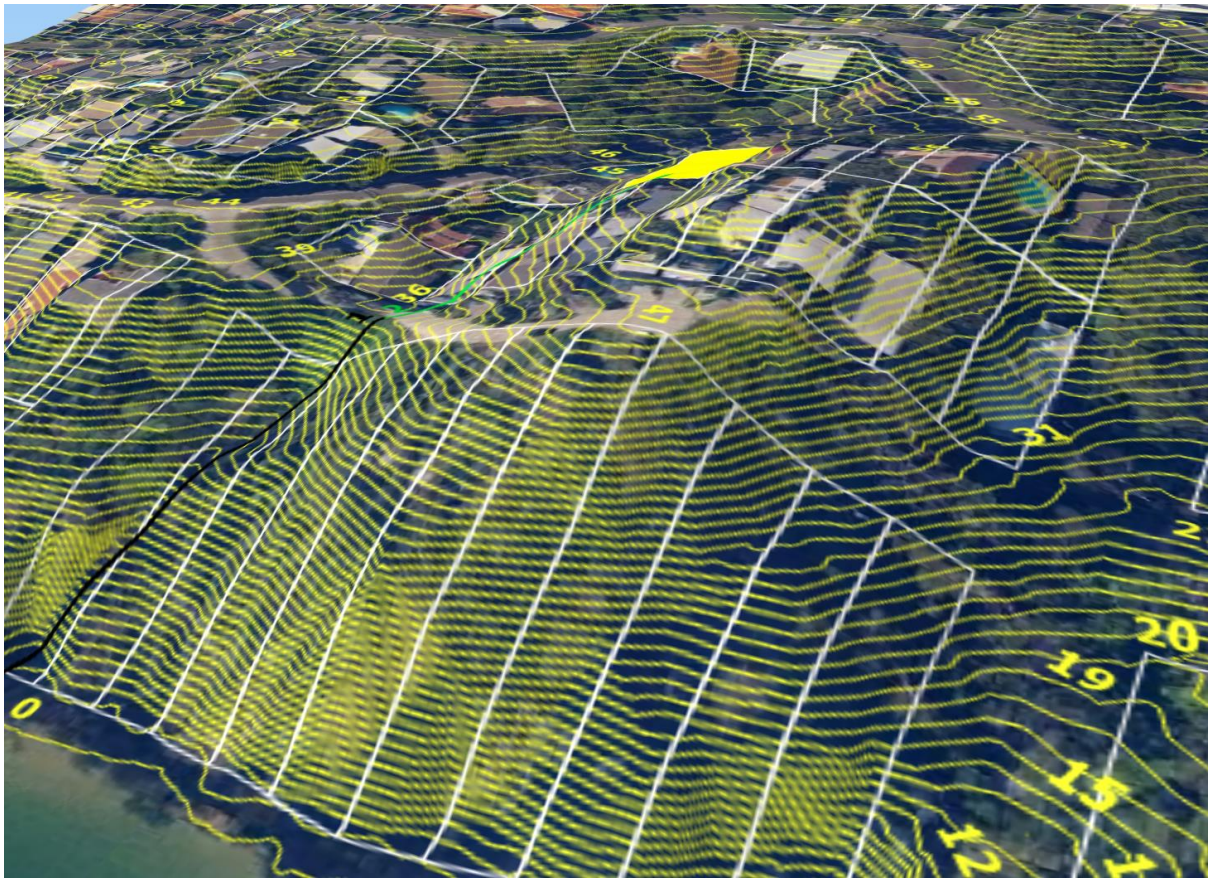
ID	Start	End	Length	Diff	Degrees
1	36.57	0.28	79.85	-36.29	-24.44
2	36.57	50.07	65.51	13.50	11.64

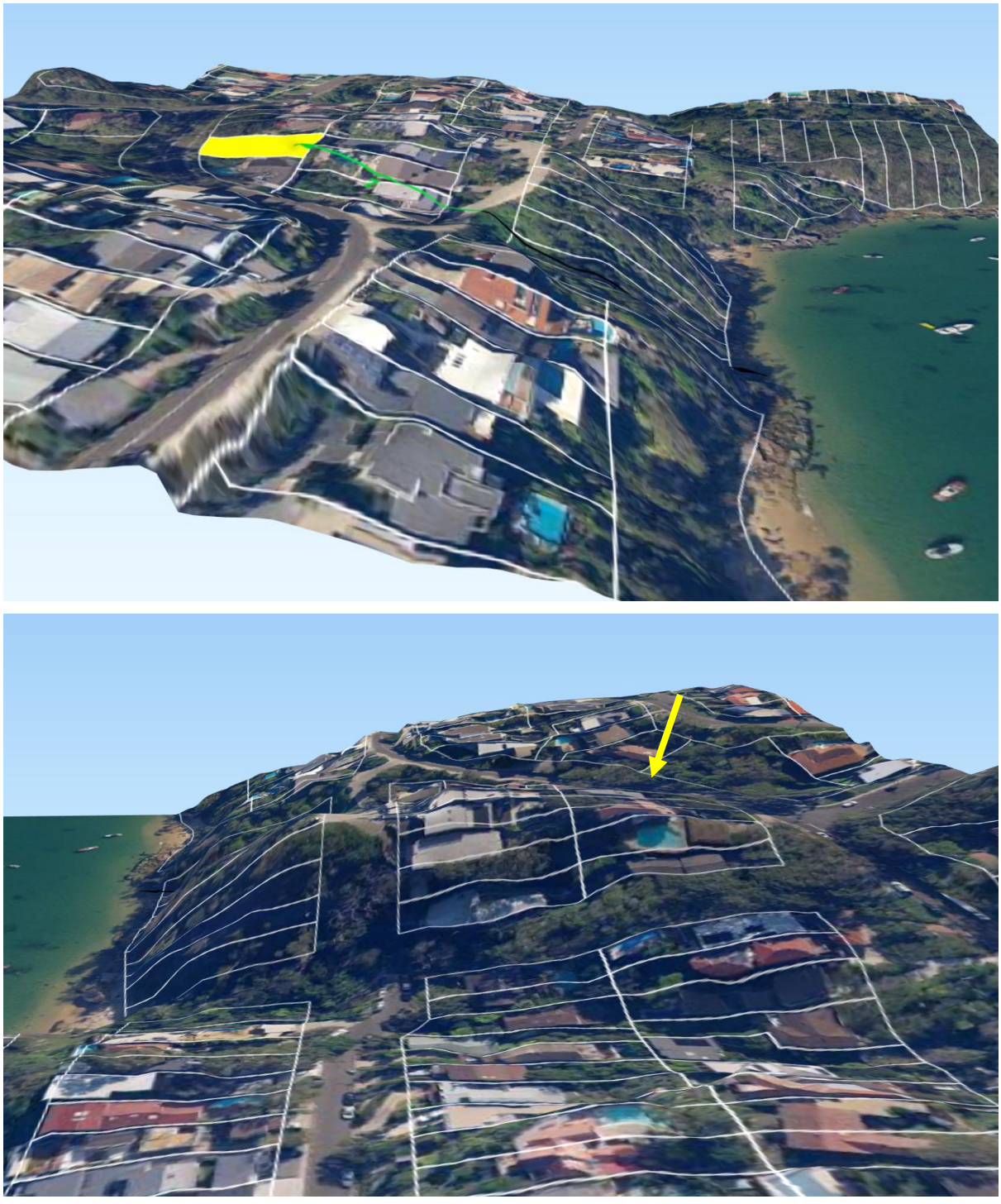
Table 2. Table 3 - Any aspect marked with "N/A" in the table above indicates that it is considered there is no hazard in that direction.

The following 3d images show the run used in this assessment as a black line, the subject lot is highlighted in yellow. This run has been chosen due to it ending at the head of a “gully” and that it is well below the site.

Other, steeper runs are available however the run chosen is considered to provide the run of fire most likely to directly impact the proposal in the unlikely event of a fire.







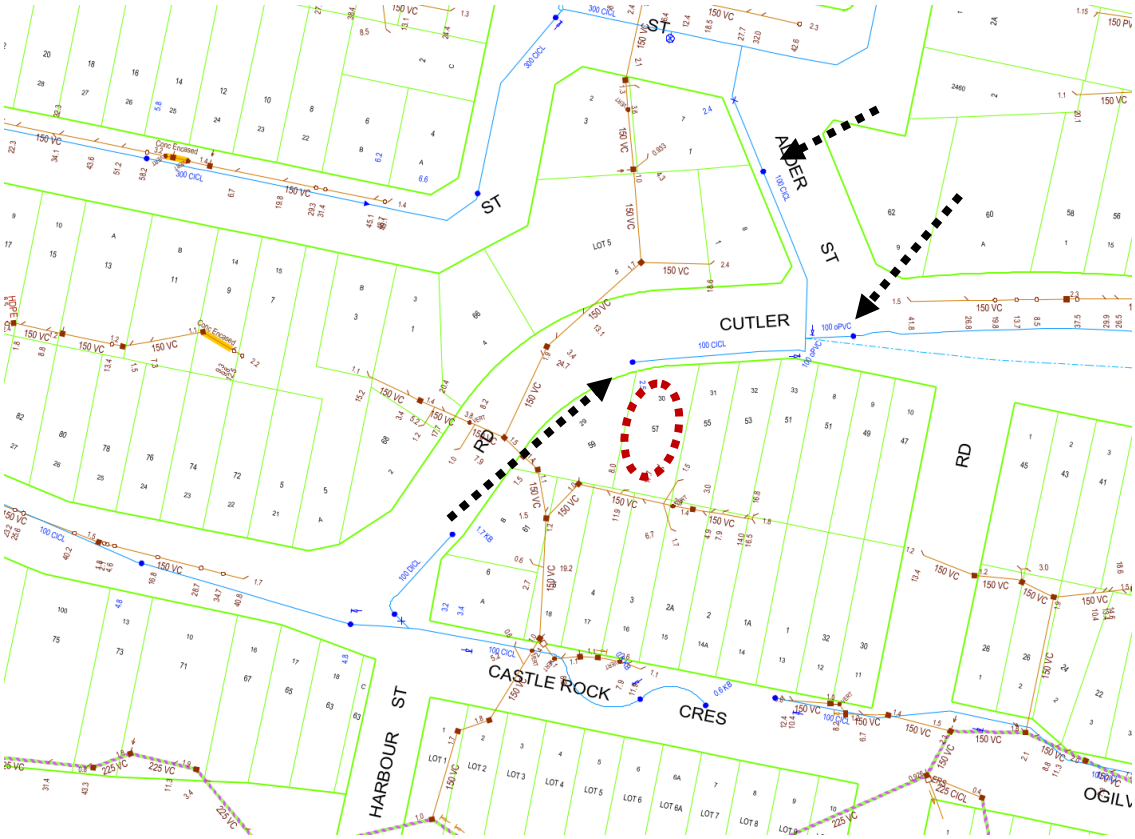
Map 3. The yellow arow indicates the subject lot which is shielded from view by the hill.

7 Utilities.

7.1 Water.

The subject block will be serviced by a reticulated water supply.

The following map is an extract from Sydney waters hydrant map. Hydrants are indicated by a blue dot on a blue line. As can be seen there is at least one hydrant point indicated within close proximity of the property.



7.2 Electricity

Main's electricity is available to the block.

7.3 Gas

It is unknown if either bottled or mains gas is to be altered or installed in this proposal.

8 Access/Egress.

Access to the development site will be via a short private driveway from Cutler Road.

All roads in the vicinity are considered to be capable of carrying emergency services vehicles and pedestrian access onto the lot is also considered to be adequate.

Analysis of development and recommendation.

9 Compliance with Planning for Bushfire Protection setbacks.

Planning for Bushfire Protection gives Deemed to Satisfy (DTS) tables to calculate Bushfire Attack Levels (BAL's) for slopes up to 20 degrees downslope.

As the slope beneath the hazard for this proposal exceeds 20 degrees a performance based calculation using method 2 of AS2959-2018 is required.

Based on the variables, assumptions and the methodology as outlined in this assessment the following table shows the variables and outcomes of the method 2 assessment.

Equations Used

Transmissivity: Fuss and Hammins, 2002
Flame Length: RFS PBP, 2001/Vesta/Catchpole
Rate of Fire Spread: Noble et al., 1980
Radiant Heat: Drysdale, 1985; Sullivan et al., 2003; Tan et al., 2005
Peak Elevation of Receiver: Tan et al., 2005
Peak Flame Angle: Tan et al., 2005

Run Description:	south		
Vegetation Information			
Vegetation Type:	Rainforest		
Vegetation Group:	Forest and Woodland		
Vegetation Slope:	24.44 Degrees	**Vegetation Slope Type:**	Downslope
Surface Fuel Load(t/ha):	10	**Overall Fuel Load(t/ha):**	13.2
Vegetation Height(m):	2	Only Applicable to Shrub/Scrub and Vesta	
Site Information			
Site Slope	11.64 Degrees	**Site Slope Type:**	Downslope
Elevation of Receiver(m)	Default	**APZ/Separation(m):**	65.5
Fire Inputs			
Veg./Flame Width(m):	100	**Flame Temp(K):**	1090
Calculation Parameters			
Flame Emissivity:	95	**Relative Humidity(%):**	25
Heat of Combustion(kJ/kg	18600	**Ambient Temp(K):**	308
Moisture Factor:	5	**FDI:**	100
Program Outputs			
Level of Construction:	BAL 19	**Peak Elevation of Receiver(m):**	7.36
Radiant Heat(kW/m2):	13.64	**Flame Angle (degrees):**	73
Flame Length(m):	43.7	**Maximum View Factor:**	0.237
Rate Of Spread (km/h):	6.48	**Inner Protection Area(m):**	66
Transmissivity:	0.756	**Outer Protection Area(m):**	0
Fire Intensity(kW/m):	44192		

10 Siting.

The current site provides adequate separation between the proposed building and surrounding vegetation for a compliant structure to be built.

Recommendation;

Nil.

11 Construction and design.

All new work is to be undertaken in accordance with the relevant requirements of the NCC and AS3959 2018. The following recommendations are a minimum level of construction. Constructing the proposal to a higher level than that recommended is allowable under AS3959.

Recommendation; all new work to the southern, eastern and western aspects.

1. New construction on the southern, eastern and western aspects shall comply with the requirements of section 3 of Australian Standard AS3959-2018 "Construction of buildings in bush fire-prone areas" and,
2. New construction on the southern, eastern and western aspects shall also comply with the requirements of BAL-19 Australian Standard AS3959-2018 "Construction of buildings in bush fire-prone areas" or NASH Standard “National Standard Steel Framed Construction in Bushfire Areas” and any additional construction requirements contained within section 7.5, 7.5.1,7.5.2, 7.5.3, 7.5.4 (where applicable) of the Rural Fire Services document Planning for Bushfire Protection 2019.

Recommendation; all new work to the northern aspect.

3. New construction on the northern aspects shall comply with the requirements of section 3 of Australian Standard AS3959-2018 "Construction of buildings in bush fire-prone areas" and,
4. New construction on the northern aspects shall also comply with the requirements of and BAL-12.5 Australian Standard AS3959-2018 "Construction of buildings in bush fire-prone areas" or NASH Standard “National Standard Steel Framed Construction in Bushfire Areas” and any additional construction requirements contained within section 7.5, 7.5.1,7.5.2, 7.5.3, 7.5.4 (where applicable) of the Rural Fire Services document Planning for Bushfire Protection 2019.
5. New roofing valleys and guttering should be fitted with a non-combustible leaf protection to stop the accumulation of debris.

AS-3959 2018 is available as PDF from;

https://infostore.saiglobal.com/en-au/standards/as-3959-2018-122340_saig_as_as_2685241/

12 Utilities.

12.1 Water.

The proposed development will have access to a reticulated water supply. There is at least one hydrant indicated within the required distance from the dwelling.

Recommendation;

Nil.

12.2 Electricity and Gas.

Recommendation;

6. Any new electricity or gas connections are to comply with the requirements of table 7.4a of Planning for Bushfire Protection.

13 Asset Protection Zone (APZ).

The Asset Protection Zone is *"An area surrounding a development managed to reduce the bushfire hazard to an acceptable level. The width of an APZ will vary with slope, vegetation and construction level".*

Recommendation;

7. At the commencement of building works and in perpetuity the entire property shall be managed as an Asset Protection Zone in accordance with the requirements of Planning for Bushfire Protection, the RFS document Standards for Asset Protection Zones and in a manner that does not create a bushfire hazard to the property.

14 Landscaping.

Recommendation;

8. Any new fencing is to be constructed in accordance with section 7.6 of Planning for Bushfire Protection 2019.
9. Any new landscaping to the site is to comply with the principles of Appendix 4 and section 3.7 of Planning for Bush Fire Protection 2019. In this regard the following landscaping principles are, where applicable, to be incorporated into the development[2]:
    - Suitable impervious areas being provided immediately surrounding the building such as courtyards, paths and driveways;

[2]*Refer to referenced documents for a complete description.*

- Grassed areas/mowed lawns/ or ground cover plantings being provided in close proximity to the building;
- Restrict planting in the immediate vicinity of the building which may over time and if not properly maintained come in contact with the building;
- Maximum tree cover should be less than 30%, and maximum shrub cover less than 20%;
- Planting should not provide a continuous canopy to the building (i.e. trees or shrubs should be isolated or located in small clusters);
- When considering landscape species consideration needs to be given to estimated size of the plant at maturity;
- Avoid species with rough fibrous bark, or which retain/shed bark in long strips or retain dead material in their canopies;
- Use smooth bark species of trees species which generally do not carry a fire up the bark into the crown;
- Avoid planting of deciduous species that may increase fuel at surface/ ground level (i.e. leaf litter);
- Avoid climbing species to walls and pergolas;
- Locate combustible materials such as woodchips/mulch, flammable fuel stores away from the building;
- Locate combustible structures such as garden sheds, pergolas and materials such timber garden furniture way from the building; and
- Use of low flammability vegetation species.

15 Constraints on the subject block.

None known.

Recommendation;

Nil

16 Access/Egress.

All roads in the area are considered to be capable of handling emergency service vehicles. Access from the roadway onto the property is also considered to be adequate for firefighting purposes.

Recommendation

Nil

17 Compliance or non compliance with the specifications and requirements for bushfire protection measures.

APZ A defendable space is provided onsite. An APZ is provided and maintained for the life of the development.	Achievable with the implementation of the recommendations in section 13
SITING AND DESIGN: Buildings are sited and designed to minimise the risk of bush fire attack.	Achievable with the implementation of the recommendations in section 10
CONSTRUCTION STANDARDS: It is demonstrated that the proposed building can withstand bush fire attack in the form of wind, smoke, embers, radiant heat and flame contact.	Achievable with the implementation of the recommendations in section 11
ACCESS Safe, operational access is provided (and maintained) for emergency services personnel in suppressing a bush fire while residents are seeking to relocate, in advance of a bush fire, (satisfying the intent and performance criteria for access roads in sections 4.1.3 and 4.2.7).	Achievable with the implementation of the recommendations in section 16
WATER AND UTILITY SERVICES: • adequate water and electricity services are provided for firefighting operations • Gas and electricity services are located so as not to contribute to the risk of fire to a building.	Achievable with the implementation of the recommendations in section 12
LANDSCAPING: • it is designed and managed to minimise flame contact and radiant heat to buildings, and the potential for wind driven embers to cause Ignitions.	Achievable with the implementation of the recommendations in section 14

18 Conclusions.

Based on the above report and with the implementation of the recommendation contained within this report the consent authority should determine that this development can comply with the requirements of AS 3959-2018 and 'Planning for Bushfire Protection' guidelines.

The recommendations contained within this report are to be implemented in their entirety. Changing one aspect may have an adverse effect on the rest of the recommendations.

Bushfires are affected by many external influences such as climactic conditions, vegetation type, moisture content of the fuel, slope of the land and human intervention to name a few and are difficult to predict.

This report does not intend to provide a guarantee that the subject property will survive if a bushfire should impact the surrounding area. The purpose of this report is to show the developments level of compliance or in some cases non-compliance with the New South Wales legislation regarding building in bushfire prone areas.

Where non-compliance is found measures will be suggested that should make the building less susceptible to the various attack mechanisms of a bushfire and comply with the performance requirements of the Building Code of Australia.

The opinions expressed in this report are based on the writers' experience and interpretation of the relevant guidelines and standards. Notwithstanding the above, these guidelines and standards are open to interpretation. All care has been taken to ensure that the opinions expressed in this report are consistent with past successful outcomes.

Some of the information used in the compilation of this assessment has been provided by the proponent or the proponent's representatives. While we believe this information to be true and have accepted the information in good faith however this company or its representatives will not accept any responsibility if the provided information is determined to be incorrect.

This document is to assist the consenting authorities with their assessment of this proposal. The recommendations contained in this assessment reflect the normal conditions that are typically applied by the consent authority for a proposal such as this however the conditions of consent for the proposal will be supplied by the certifying authority on approval of the development and may not necessarily be the same as the recommendations of this assessment.

The recommendations in this assessment are for planning guidance only, construction details and compliance with all building requirements are the responsibility of the Architect/Designer, Builder and Certifier.

To avoid confusion, unless specifically referenced by the consenting authority, it is strongly recommended that once this proposal has been approved that this document is no longer referenced and that only the official conditions of consent as reflected in documentation by the certifying body are used for construction guidance.

If any further clarification is required for this report, please do not hesitate to contact me using the details above.

Yours Sincerely

Matthew Willis
Grad Dip Planning for Bushfire Prone Areas
Bushfire Planning Services Pty Limited

19 References.

- *Australian Building Codes Board (2019). National Construction Code Volume One - Building Code of Australia. ABCB*
- *Australian Building Codes Board (2019). National Construction Code Volume two - Building Code of Australia. ABCB.*
- *Keith, D.A. (2004). Ocean Shores to Desert Dunes: The Native Vegetation of New South Wales and the ACT. NSW Department of Environment and Conservation.*
- *National Association of Steel Framed Housing (2014). "Steel Framed Construction in Bush Fire Areas. NASH*
- *Ramsay, C and Rudolph, L (2003) "Landscape and Building Design for Bush fire Areas". CSIRO Publishing, Collingwood.*
- *Resources and Energy NSW (2016). ISSC 3 Guide for the Managing Vegetation in the Vicinity of Electrical Assets. NSW Government*
- *Rural Fire Service NSW (2005) "Standards for Asset Protection Zones"*
- *Standards Australia (2018). "AS 3959, Construction of buildings in bush fire prone areas".*
- *Standards Australia (2018). "AS/NZS 1530.8.1 Methods for fire tests on building materials, components and structures - Tests on elements of construction for buildings exposed to simulated bush fire attack - Radiant heat and small flaming sources".*
- *Standards Australia (2018). "AS/NZS 1530.8.2 Methods for fire tests on building materials, components and structures - Tests on elements of construction for buildings exposed to simulated bush fire attack - Large flaming sources".*
- *Standards Australia (2014). "AS/NZS 1596 The storage and handling of LP Gas".*

20 Appendix 1 - Plans .

DEVELOPMENT APPLICATION
Alterations & Additions + Pool
57 CUTLER RD, CLONTARF

DRAWING LIST	
DWG No:	**DESCRIPTION**
A.00	COVER SHEET
A.01	SITE PLAN + SITE ANALYSIS
A.02	LOWER GROUND
A.03	GROUND FLOOR
A.04	FIRST FLOOR
A.05	NORTH + EAST ELEVATION
A.06	SOUTH + WEST ELEVATION
A.07	SECTIONS
A.08	SITE CALCULATIONS
A.09	SHADOW DIAGRAMS

WINDOW SCHEDULE				
	Width	**Height**	**Sill**	**Area**
W1	1,300	2,700	0	3.51
W2	5,700	2,700	0	15.39
W3	2,510	2,700	0	6.78
W4	5,000	2,700	0	13.50
W5	2,800	1,800	900	5.04
W6	900	1,800	0	1.62
W7	900	1,800	900	1.62
W8	900	1,200	1,200	1.08
W9	2,400	1,200	1,200	2.88
W10	3,875	2,400	0	9.30
W11	3,910	2,700	0	10.56
W12	1,800	2,700	0	4.86
W13	4,000	2,200	500	8.80
W14	1,150	2,200	500	2.53
W15	3,200	1,500	1,200	4.80
W16	4,000	2,700	0	10.80
W17a	900	2,200	500	1.98
W17b	2,250	2,200	500	4.95
W18	1,800	1,200	1,500	2.16
W19	800	1,200	1,500	0.96
W20	800	1,200	1,500	0.96
W21	1,100	1,200	1,500	1.32
W22	1,100	1,200	1,500	1.32
W23	2,350	2,700	0	6.35
W24a	2,150	2,700	0	5.81
W24b	3,400	2,700	0	9.18
W25	1,235	2,200	500	2.72
W26	3,100	2,400	170	7.44
				148.22 m²

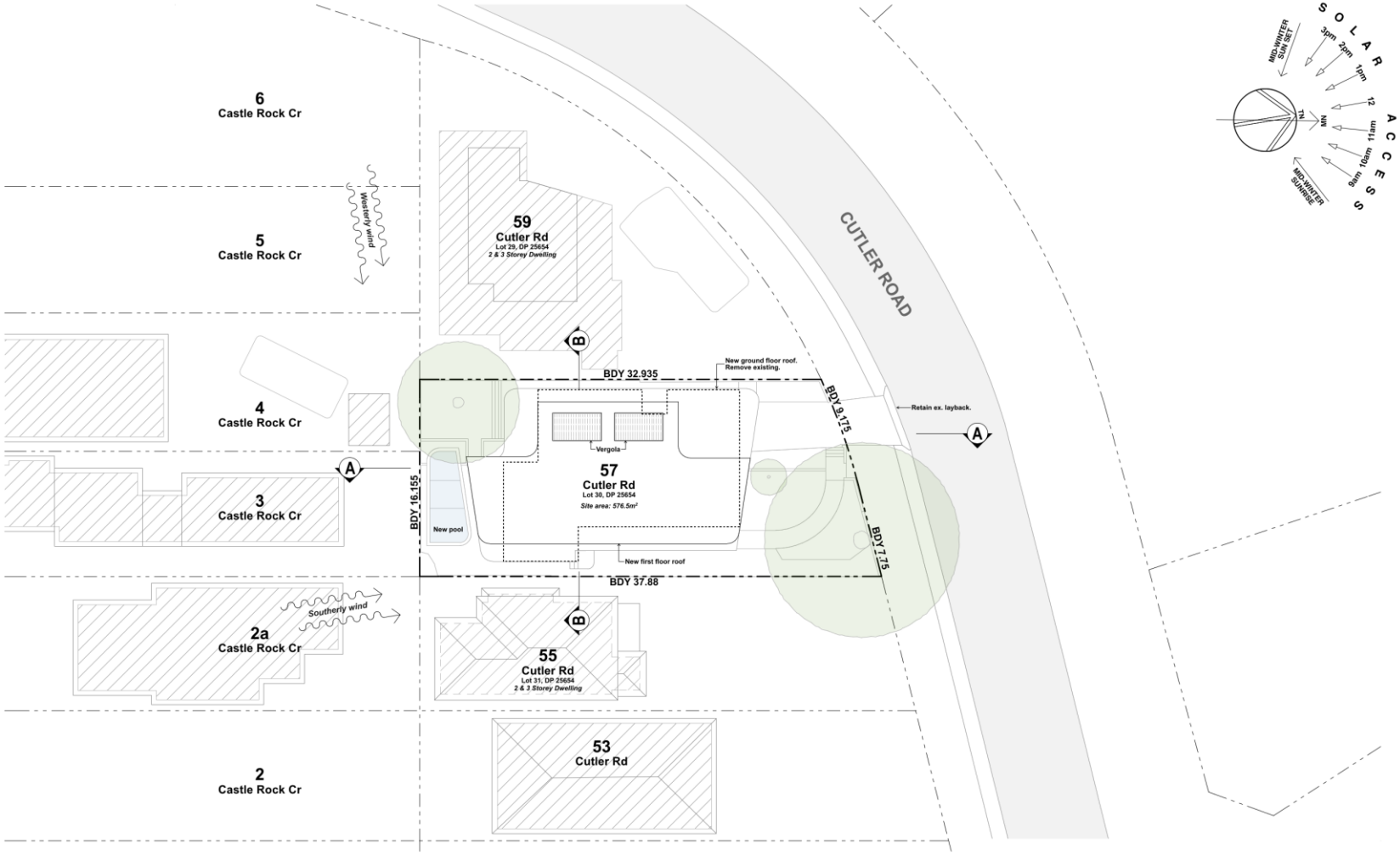
VIEW FROM DRIVEWAY

GARTNERTROVATO ARCHITECTS

DATE	REV	DESCRIPTION
2/8/22	A	DA

PROJECT: ALTERATIONS & ADDITIONS
57 CUTLER RD, CLONTARF, NSW 2093
LOT 30, DP 25654
FOR POPOVAC

DRAWING TITLE: COVER SHEET
PROJECT NO.: 2212
DRAWN BY: LT/AB
PLOT DATE: 2/8/22
SCALE: @ A2
DRAWING NO.: A.00
REVISION: A



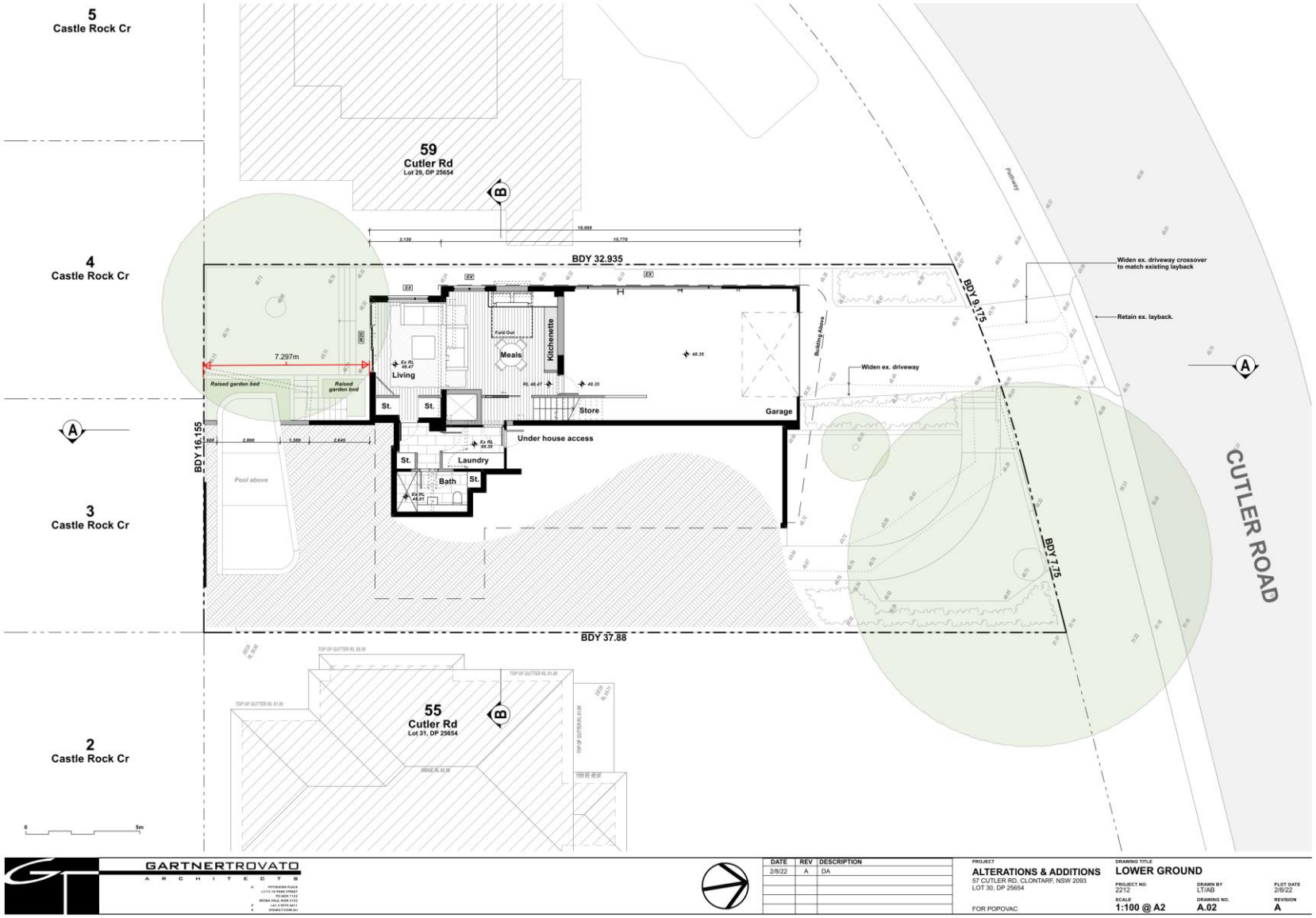
GARTNERTROVATO ARCHITECTS

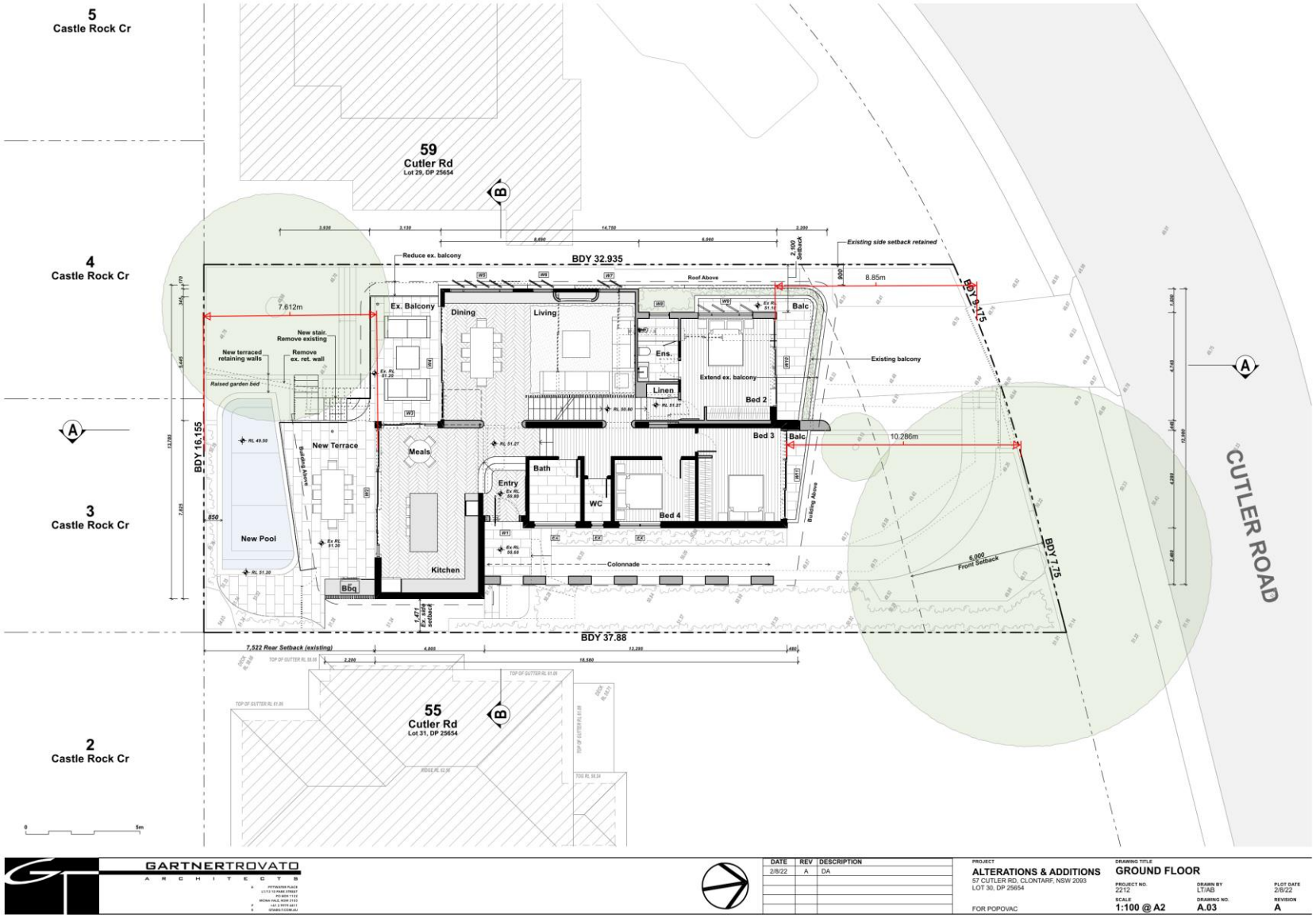
DATE	REV	DESCRIPTION
2/8/22	A	DA

PROJECT
ALTERATIONS & ADDITIONS
57 CUTLER RD, CLONTARF, NSW 2093
LOT 30, DP 25654
FOR POPOVAC

DRAWING TITLE
SITE PLAN + SITE ANALYSIS

PROJECT NO.	DRAWN BY	PLOT DATE
2212	LT/AB	2/8/22
SCALE	DRAWING NO.	REVISION
1:200 @ A2	A.01	A


5
Castle Rock Cr
4
Castle Rock Cr
3
Castle Rock Cr
2
Castle Rock Cr
59
Cutler Rd
Lot 29, DP 25654
55
Cutler Rd
Lot 31, DP 25654
BDY 32.935
BDY 16.155
BDY 9.175
BDY 7.75
BDY 37.88
7.297m
Raised garden bed
Raised garden bed
Pool above
Living
Meals
Kitchenette
Fold Out
Store
Garage
Under house access
Laundry
Bath
St.
Building Above
Widen ex. driveway crossover to match existing layback
Retain ex. layback.
Widen ex. driveway
Pathway
CUTLER ROAD
GARTNERTROVATO
ARCHITECTS
DATE REV DESCRIPTION
2/8/22 A DA
PROJECT
ALTERATIONS & ADDITIONS
57 CUTLER RD, CLONTARF, NSW 2093
LOT 30, DP 25654
FOR POPOVAC
DRAWING TITLE
LOWER GROUND
PROJECT NO. 2212
DRAWN BY LT/AB
PLOT DATE 2/8/22
SCALE 1:100 @ A2
DRAWING NO. A.02
REVISION A



GARTNERTROVATO ARCHITECTS

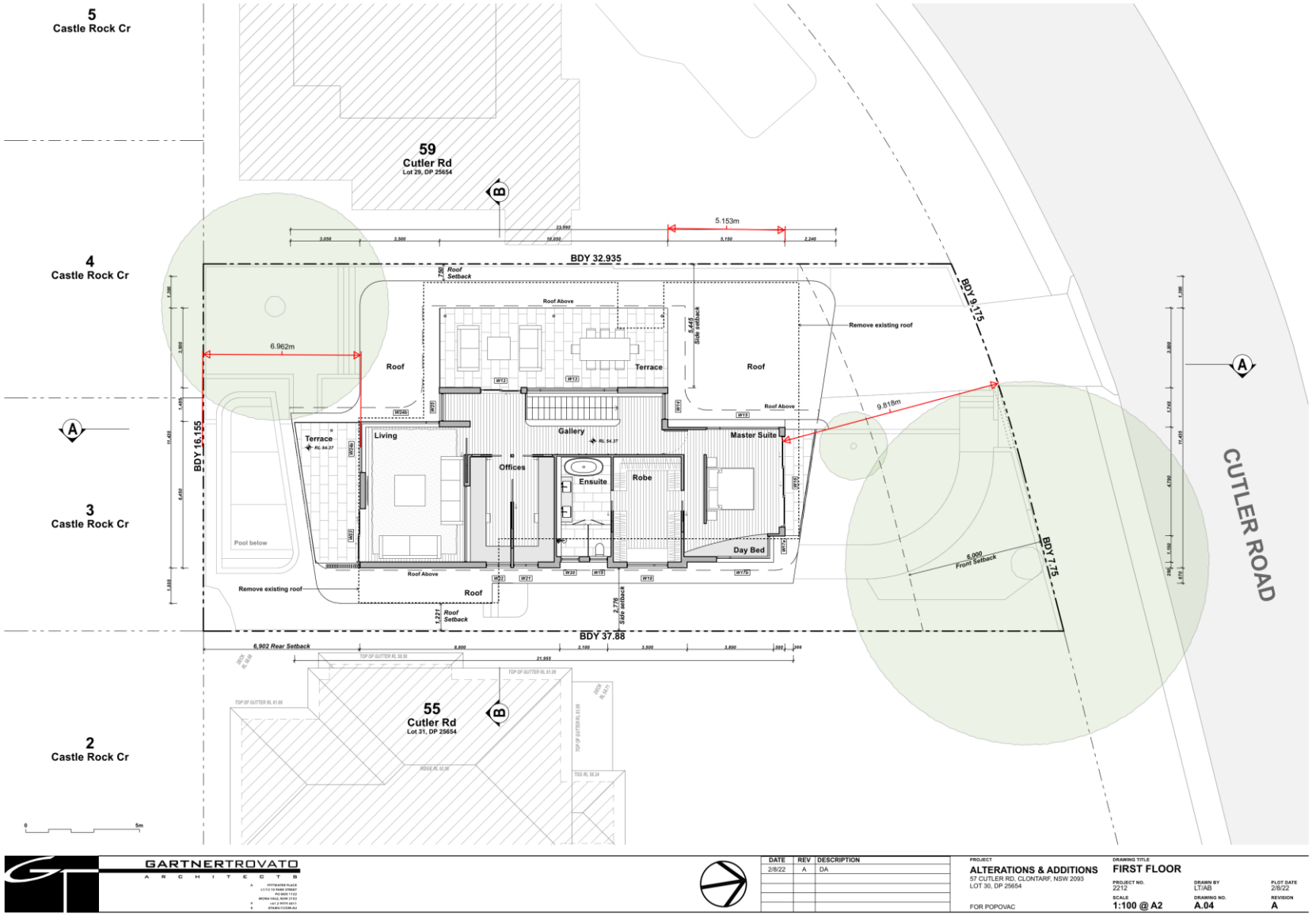
DATE	REV	DESCRIPTION
2/8/22	A	DA

PROJECT
ALTERATIONS & ADDITIONS
57 CUTLER RD, CLONTARF, NSW 2093
LOT 30, DP 25654

FOR POPOVAC

DRAWING TITLE
GROUND FLOOR

PROJECT NO.	DRAWN BY	PLOT DATE
2212	LT/AB	2/8/22
SCALE	DRAWING NO.	REVISION
1:100 @ A2	A.03	A



GARTNERTROVATO ARCHITECTS

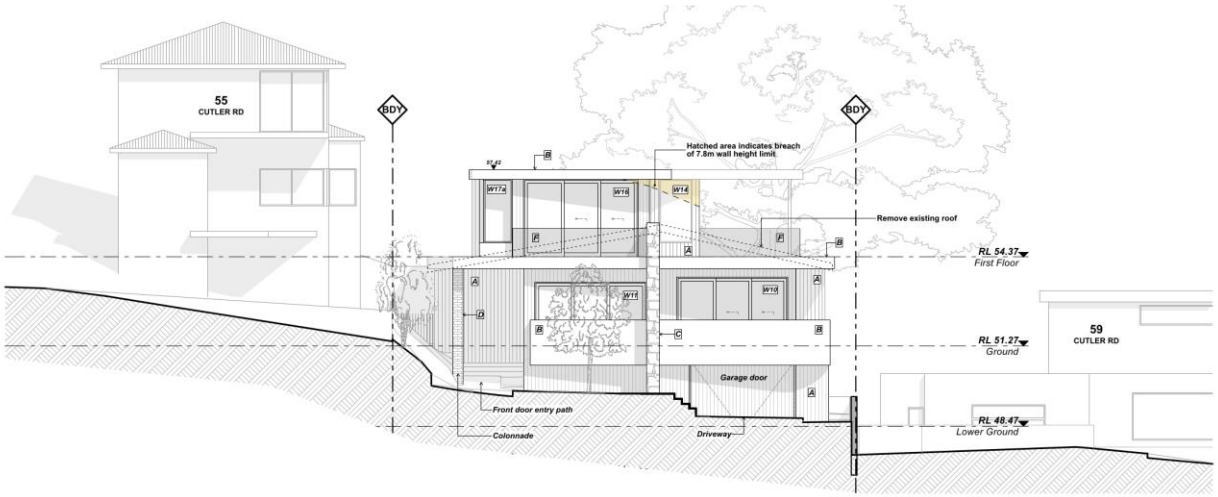
DATE	REV	DESCRIPTION
2/8/22	A	DA

PROJECT
ALTERATIONS & ADDITIONS
57 CUTLER RD, CLONTARF, NSW 2093
LOT 30, DP 25654

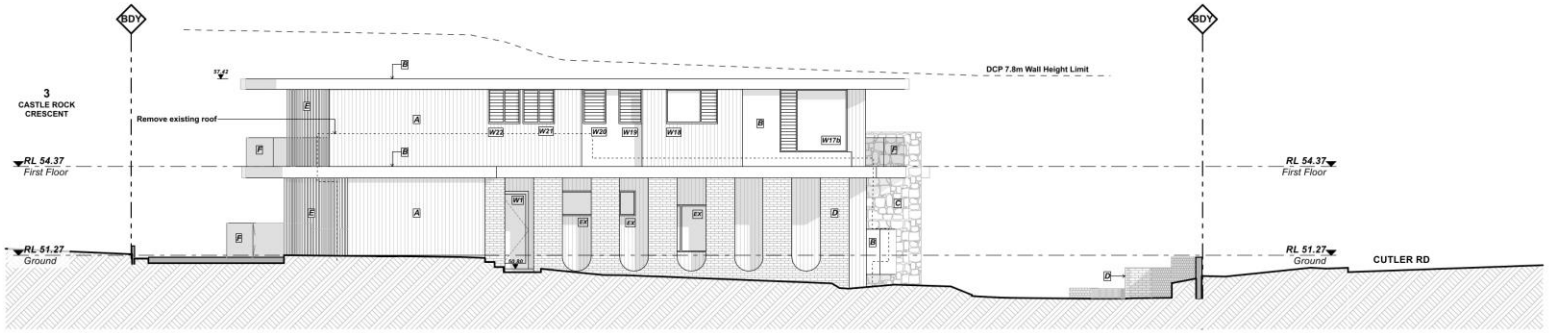
FOR POPOVAC

DRAWING TITLE
FIRST FLOOR

PROJECT NO.	DRAWN BY	PLOT DATE
2212	LT/AB	2/8/22
SCALE	DRAWING NO.	REVISION
1:100 @ A2	A.04	A



NORTH ELEVATION



EAST ELEVATION

EXTERIOR FINISHES LEGEND

- A TIMBER CLADDING, vertical
- B RENDER, white
- C SANDSTONE CLADDING
- D BRICK, off white
- E TIMBER SCREEN, vertical
- F GLASS

GARTNERTROVATO ARCHITECTS

DATE	REV	DESCRIPTION
2/8/22	A	DA

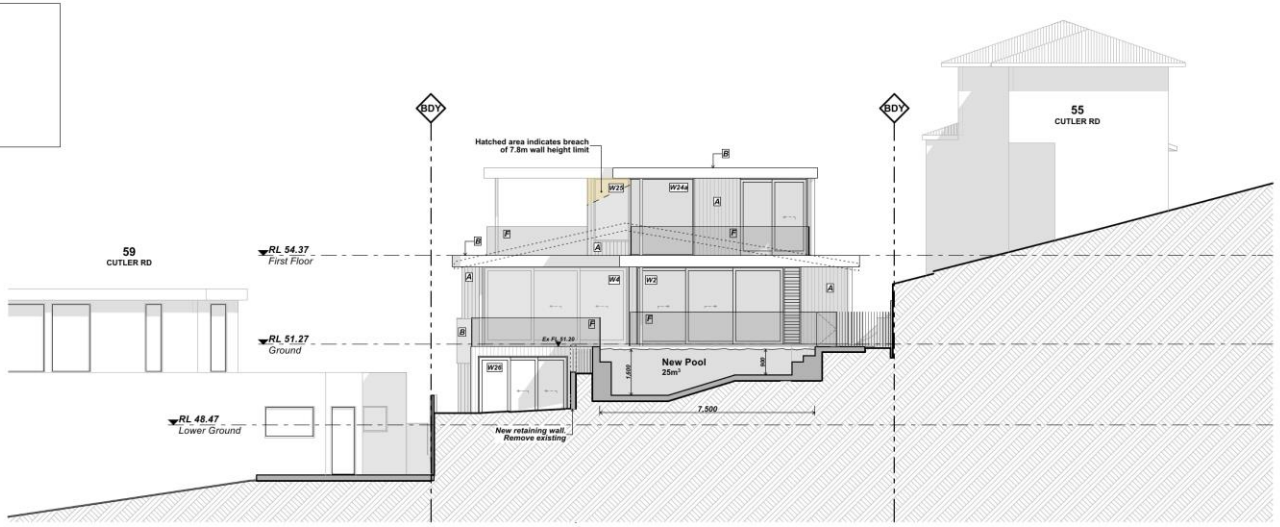
PROJECT
ALTERATIONS & ADDITIONS
57 CUTLER RD, CLONTARF, NSW 2093
LOT 30, DP 25654
FOR POPOVAC

DRAWING TITLE
NORTH + EAST ELEVATION

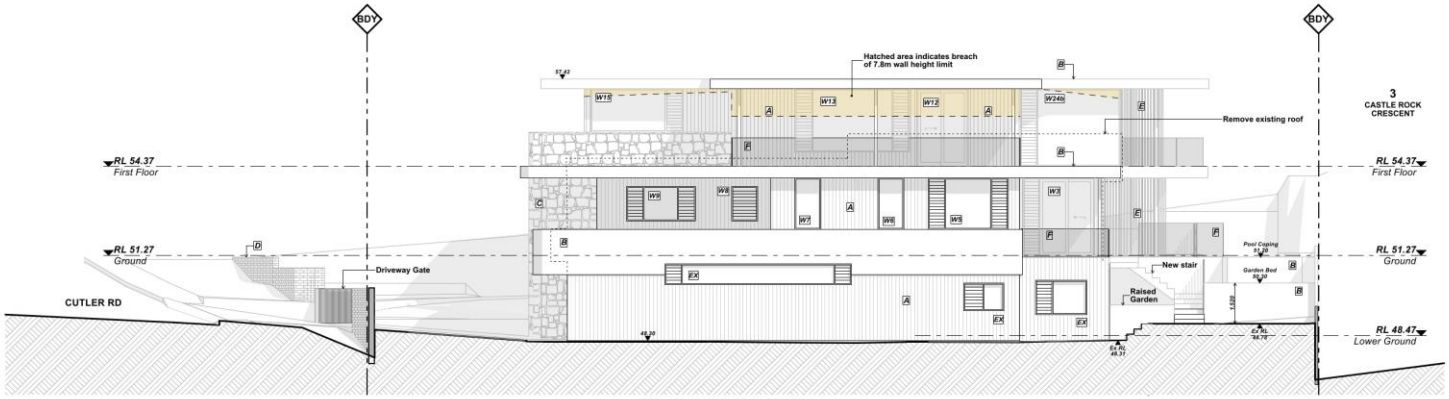
PROJECT NO.	DRAWN BY	PLOT DATE
2212	LT/AB	2/8/22
SCALE	DRAWING NO.	REVISION
1:100 @ A2	A.05	A

EXTERIOR FINISHES LEGEND

- A TIMBER CLADDING, vertical
- B RENDER, white
- C SANDSTONE CLADDING
- D BRICK, off white
- E TIMBER SCREEN, vertical
- F GLASS



SOUTH ELEVATION



WEST ELEVATION

GARTNERTROVATO ARCHITECTS

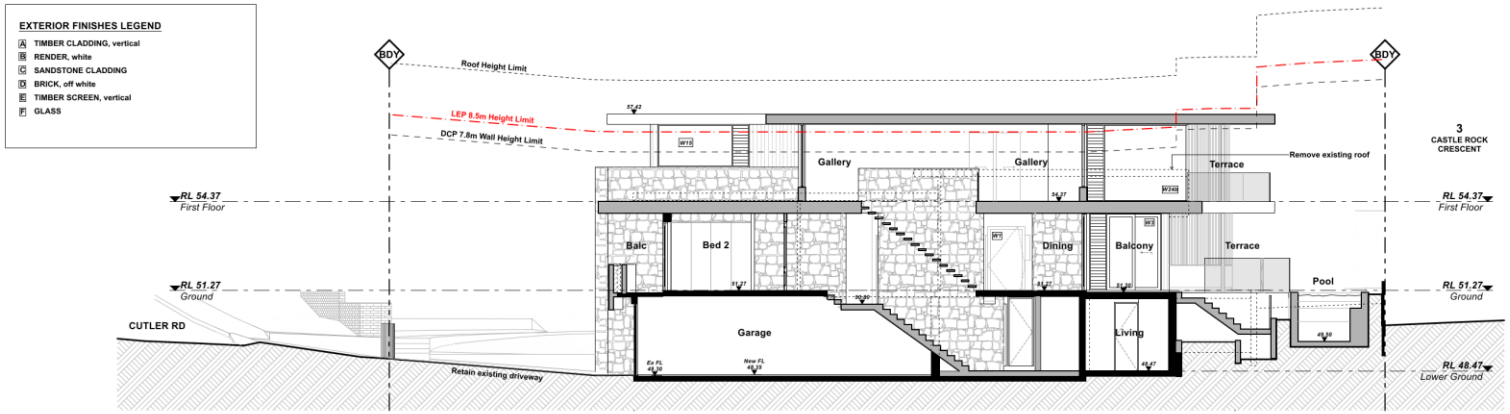
DATE	REV	DESCRIPTION
2/8/22	A	DA

PROJECT
ALTERATIONS & ADDITIONS
57 CUTLER RD, CLONTARF, NSW 2093
LOT 30, DP 25654

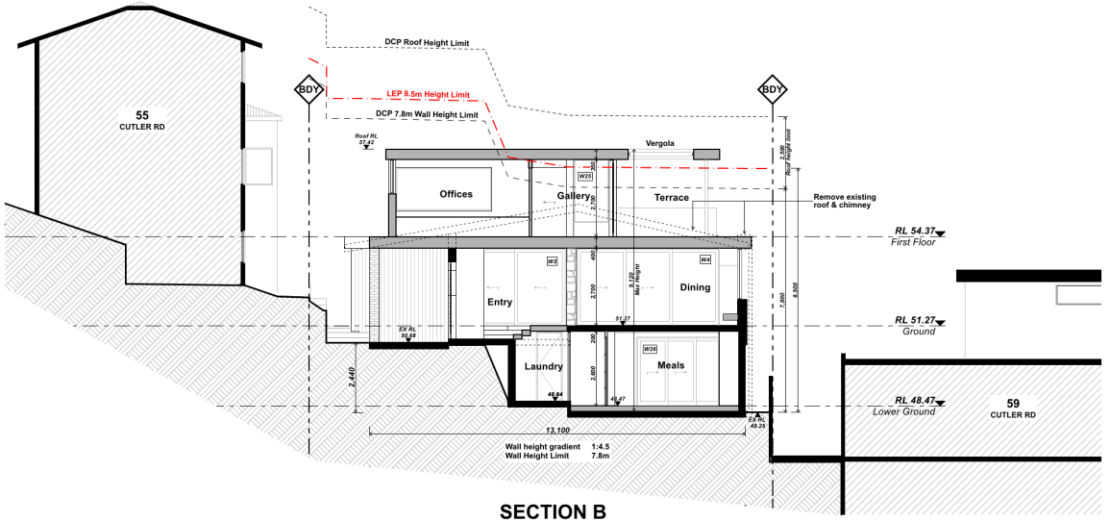
FOR POPOVAC

DRAWING TITLE
SOUTH + WEST ELEVATION

PROJECT NO.	DRAWN BY	PLOT DATE
2212	LT/AB	2/8/22
SCALE	DRAWING NO.	REVISION
1:100 @ A2	A.06	A



SECTION A



SECTION B

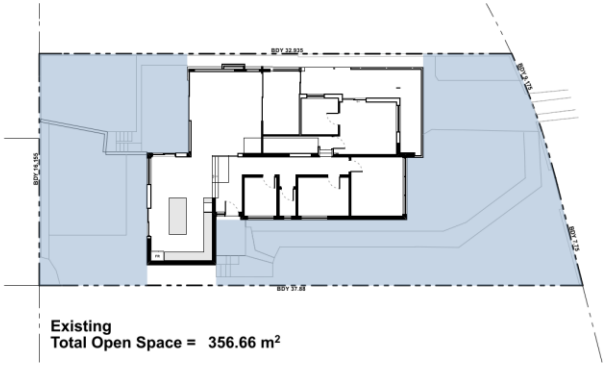
GARTNERTROVATO ARCHITECTS

DATE	REV	DESCRIPTION
2/8/22	A	DA

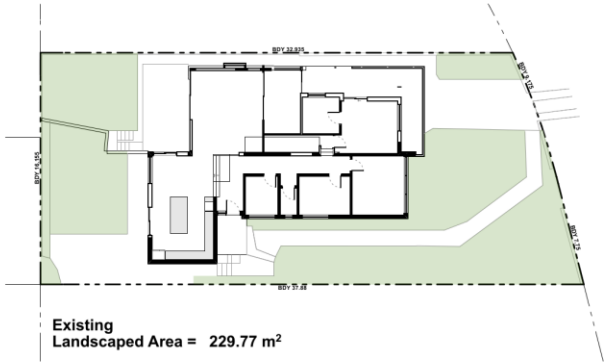
PROJECT
ALTERATIONS & ADDITIONS
57 CUTLER RD, CLONTARF, NSW 2093
LOT 30, DP 25654
FOR POPOVAC

DRAWING TITLE
SECTIONS

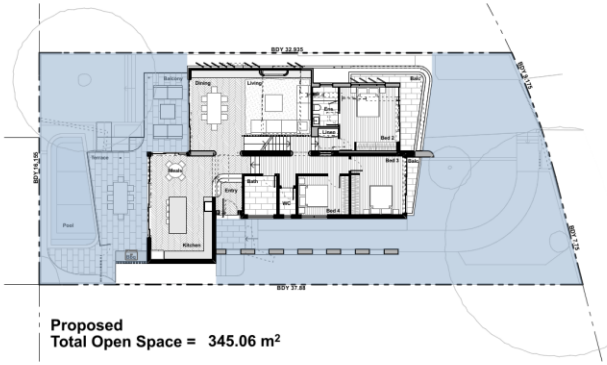
PROJECT NO.	DRAWN BY	PLOT DATE
2212	LT/AB	2/8/22
SCALE	DRAWING NO.	REVISION
1:100 @ A2	A.07	A



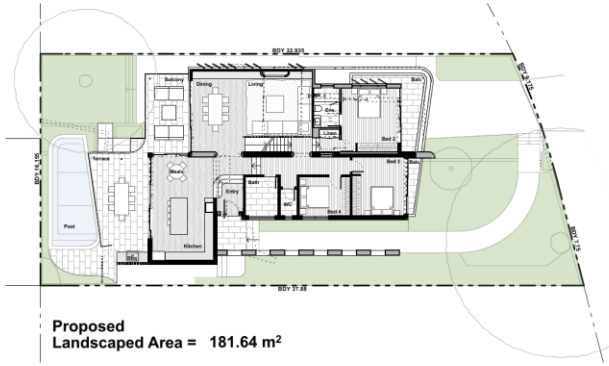
Existing
Total Open Space = 356.66 m²



Existing
Landscaped Area = 229.77 m²



Proposed
Total Open Space = 345.06 m²



Proposed
Landscaped Area = 181.64 m²

Total Site Area = 576.5m²

Total Open Space (OS4):

Required	345.9m² or 60%
Existing	356.66m or 61.8%

Proposed Total Open Space = 345.06 m² or 59.85%

Landscape areas:

Required	138.02m² or 40% of Total Open Space
Existing	229.77m or 66.5%

Total Proposed Landscape area = 181.64m² or 52.64%

GARTNERTROVATO
ARCHITECTS

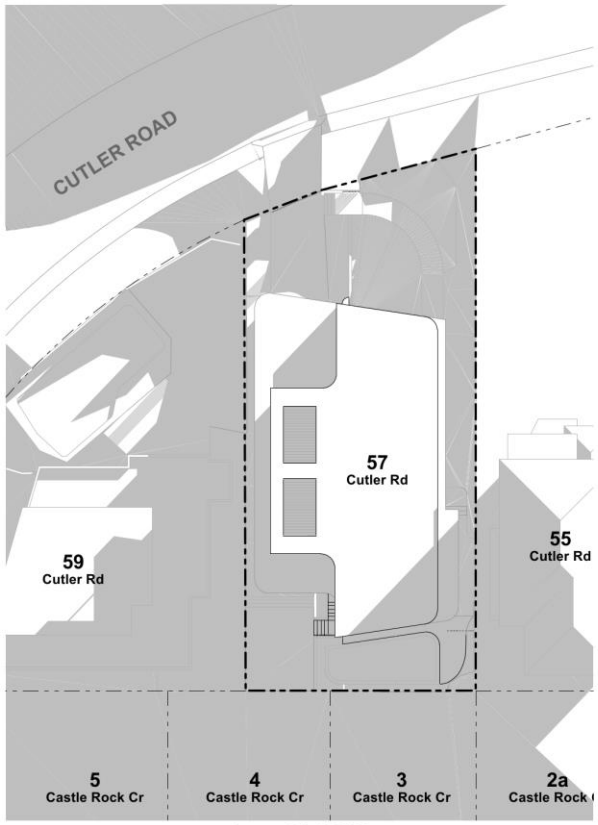
DATE	REV	DESCRIPTION
2/8/22	A	DA

PROJECT
ALTERATIONS & ADDITIONS
57 CUTLER RD, CLONTARF, NSW 2093
LOT 30, DP 25654

FOR POPOVAC

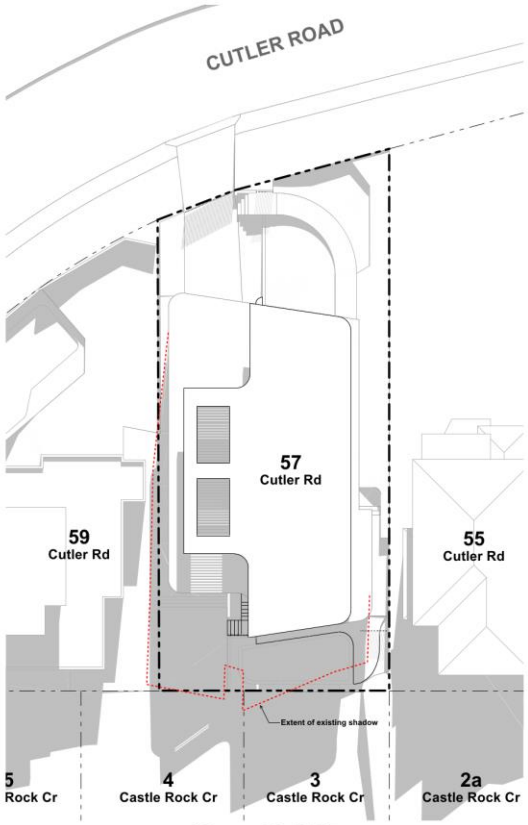
DRAWING TITLE
SITE CALCULATIONS

PROJECT NO.	DRAWN BY	PLOT DATE
2212	LT/AB	2/8/22
SCALE	DRAWING NO.	REVISION
1:200 @ A2	A.08	A

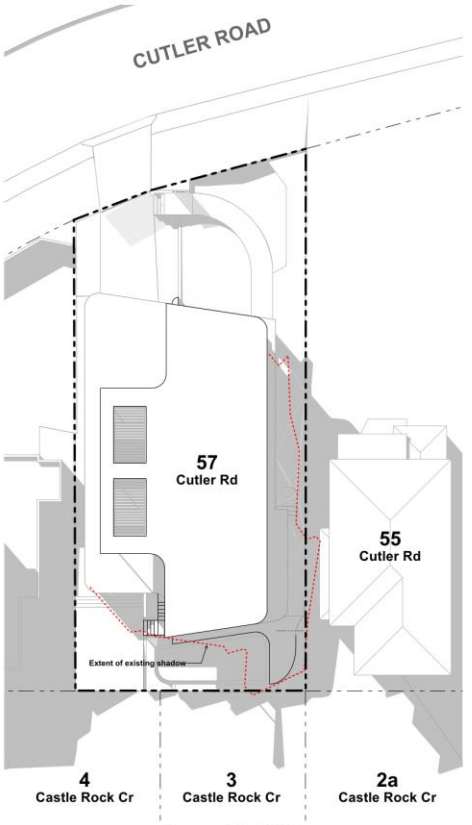


9am - 21 JUNE

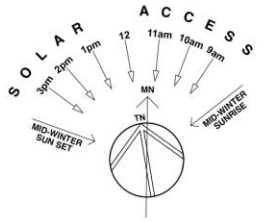
No additional shadow due to topography



12pm - 21 JUNE



3pm - 21 JUNE



GARTNERTROVATO ARCHITECTS

DATE	REV	DESCRIPTION
2/8/22	A	DA

PROJECT
ALTERATIONS & ADDITIONS
57 CUTLER RD, CLONTARF, NSW 2093
LOT 30, DP 25654

FOR POPOVAC

DRAWING TITLE
SHADOW DIAGRAMS

PROJECT NO.	DRAWN BY	PLOT DATE
2212	LT/AB	2/8/22
SCALE	DRAWING NO.	REVISION
1:200 @ A2	A.09	A