CR Bushfire.

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Bushfire Assessment Report

41 Milham Crescent
Forestville NSW 2087

Prepared by: Lynette Liston, updated by Catherine Ryland
Date: 12 September 2022, updated 27 June 2023
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E: catherine@crbushfire.au

Report Status	Prepared By	Updates	Date
Original	Lynette Liston	-	12 September 2022
Revision 1	Catherine Ryland	Final Plans Inserted	10 May 2023
Revision 2	Catherine Ryland	Change to BFAA Model Addition of 5.3.1 Shielding Addition of 5.3.2 Flame Length	28 June 2023

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Bushfire Assessment Certificate

This certificate provides confirmation that the development conforms to the relevant specifications and requirements of *Planning for Bush Fire Protection 2019* (PBP), pursuant to Section 4.14(1)(b) of the *Environmental, Planning and Assessment Act 1979*. It also provides a summary of the report findings for ease of reference.

Type of Development	Alterations/additions to the existing dwelling consisting of internal modifications and alterations to the ground and first floor. Alterations to the ground floor include a new window to the proposed Bedroom 3 and new glazed doors to the proposed Rumpus. Alterations to the first floor include a new terrace to the front of the property and glazed doors to the living area and new windows to the proposed kitchen, dining, sitting and bathroom.
Development Plans	See Attached Plans – JAH Design Services
Relevant section of *Planning for Bush Fire Protection 2019* (PBP)	Section 7 'Residential Infill Development'.
Does the development rely on acceptable or performance solutions?	The development complies with the performance criteria and acceptable solutions provided within Section 7.4 and 7.5 of PBP.
Does the proposal demonstrate compliance with the relevant specifications and requirements of PBP?	Yes
Report prepared by: Lynette Liston, Principal Bushfire Consultant BPAD Level 3 No.58431	 BPAD Bushfire Planning & Design Accredited Practitioner Level 3 (Recognised by the NSW RFS as a qualified consultant in bush fire risk assessment)

1. Introduction

CR Bushfire has been engaged by the client to prepare a bushfire assessment report for proposed alterations/additions to the existing dwelling at 41 Milham, Crescent, Forestville NSW 2087 (Lot 4 Section 42 DP 239939).

The subject site has been identified as being located on bushfire prone land and as such the legislative requirements of *Planning for Bush Fire Protection 2019* (PBP) are applicable.

The aim of PBP is to *provide for the protection of human life and minimise impacts on property from the threat of bushfire, while having due regard to development potential, site characteristics and protection of the environment*.

By implementing a suitable suite of bushfire protection measures as listed within this report, that meet the necessary performance criteria of asset protection zones, landscaping, access/egress, construction siting and design, and water and utility services, the vulnerability of the proposed development to bushfire should be minimised and the ability to safely defend increased.

The proposed development is an infill development as defined within PBP and as such this report has been prepared in accordance with the requirements of *Section 4.14 of the Environmental Planning and Assessment Act 1979*.

A site inspection was undertaken on the 1 September 2022 to assess the bushfire potential impacting the site. An assessment of the vegetation to a distance of 140m and the effective slope to a distance of 100m was conducted. Findings were assessed against PBP and AS3959 *Construction of buildings in bushfire prone areas*. The results are described within this report.

2. The Proposal

The proposed alterations/additions to the existing dwelling include:

- Internal modifications and alterations to the ground and first floor.
- Alterations to the ground floor include a new window to the proposed Bedroom 3 and new glazed doors to the proposed Rumpus.
- Alterations to the first floor include a new terrace to the front of the property and glazed doors to the living area and new windows to the proposed kitchen, dining, sitting and bathroom (Figure 1).

For a full set of plans see Appendix 1.

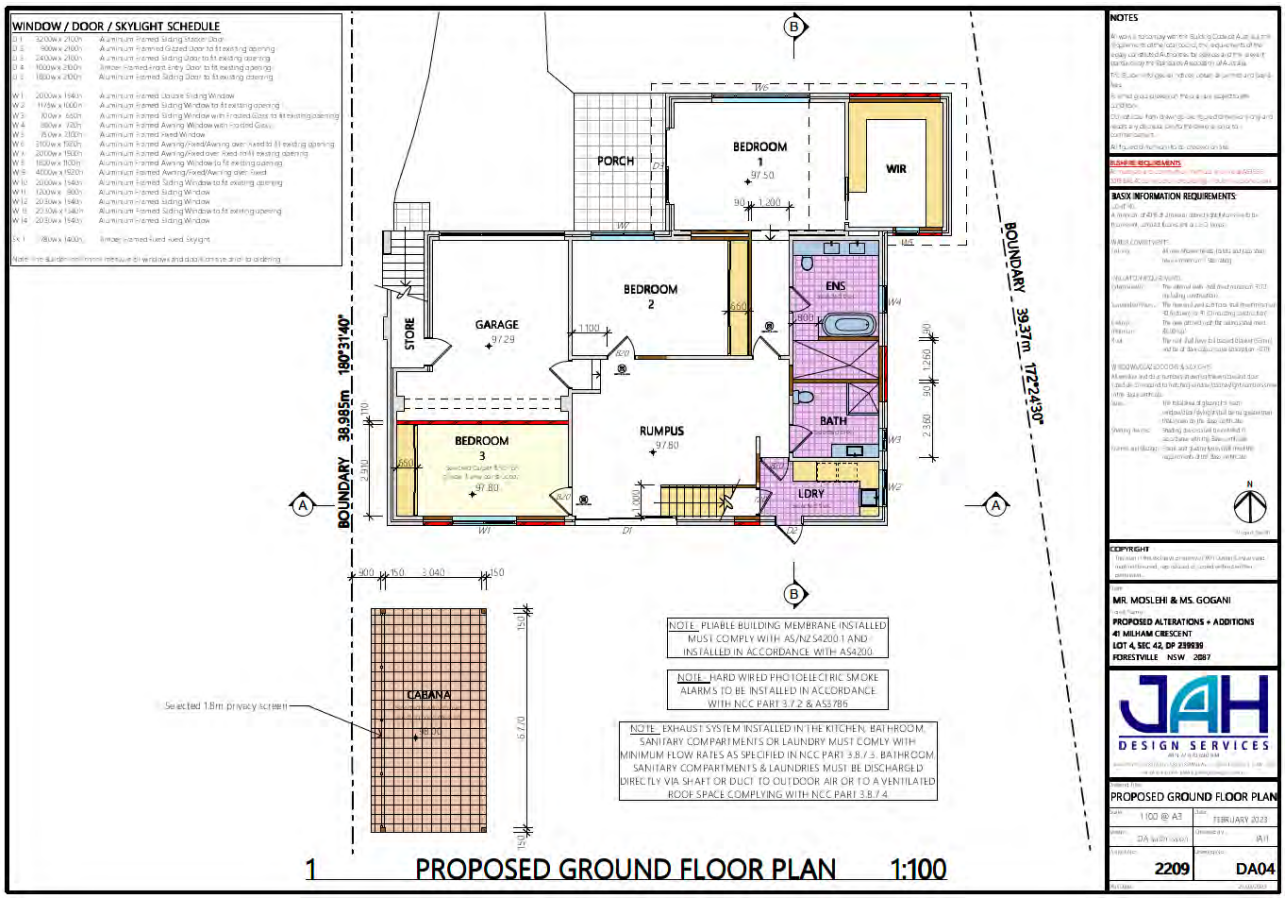


Figure 1: Proposed Ground Floor Plan

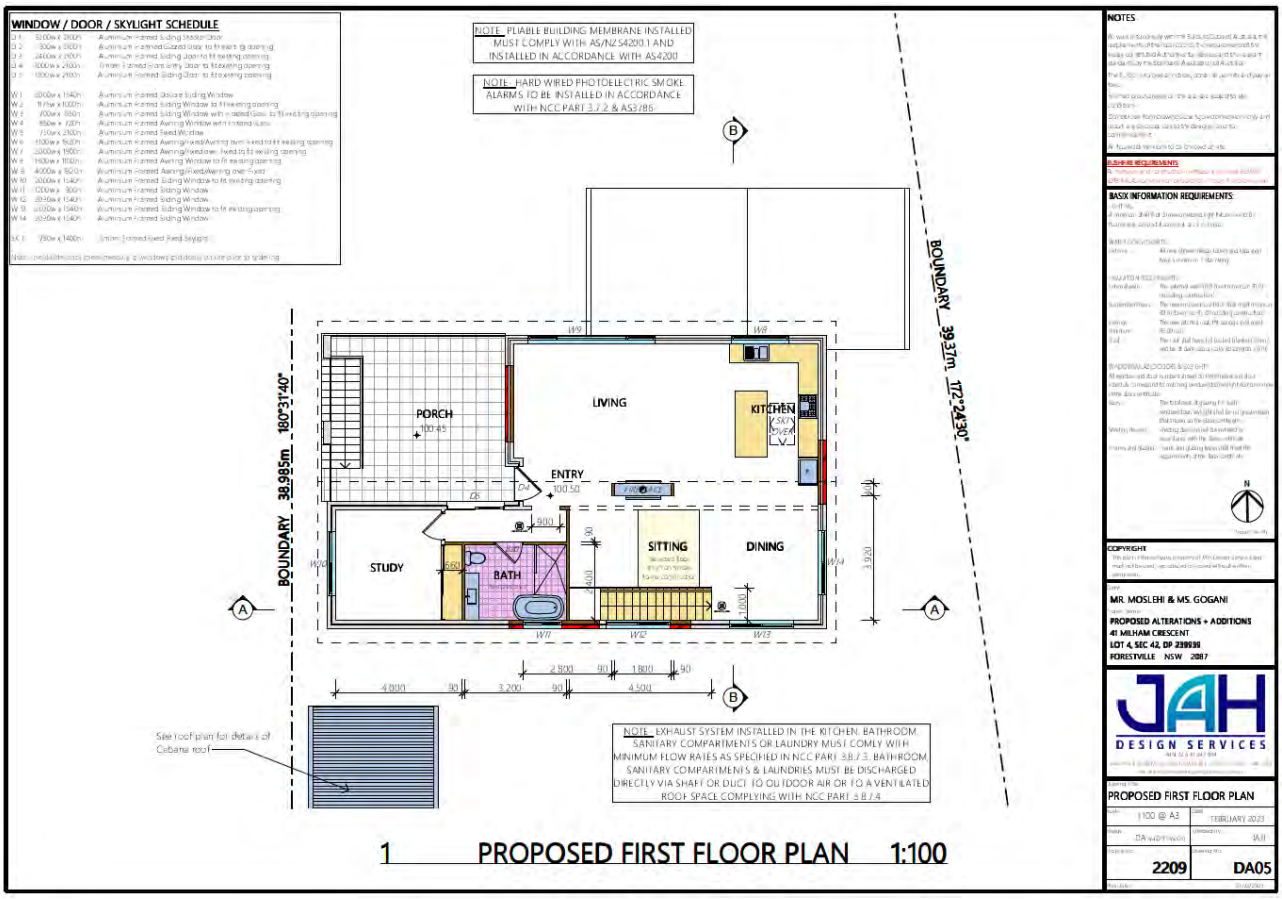


Figure 2: Proposed First Floor Plan

3. Site Description

The site is bound to the east, south and west by adjoining residential allotments and to the north by Milham Crescent. Bushland impacting the site is located further north of houses along Milham Crescent within Garigal National Park (Figure 2).

Table 1: Site Description

Address	41 Milham Crescent, Forestville NSW 2087
Title	Lot 4 Section 42 DP 239939
Land Use Zone	R2 Low Density Residential (Warringah LEP 2011)
LGA	Northern Beaches Council
Lot Size	818 m2
Bushfire Prone Land	Buffer - Category 1 Vegetation
Forest Fire Danger Index	100

Figure 2: Aerial of the Site and Surrounding Landscape

4. Bushfire Context

Located on the bushland-urban interface the site at No. 41 Milham Crescent, Forestville is situated on a ridgetop with bushland (Garigal National Park) to the north, west and south.

Should a fire occur within Garigal National Park it would more than likely follow the contours spreading upslope from Middle Harbour Creek to Milham Crescent. There have been a number of wildfires recorded within the area over the last 20 years, in particular to the north of Milham Road in 2003 and north of Carroll Creek in 2013.

Vegetation impacting the site is dry sclerophyll forest with predominant Red Bloodwoods and Scribbly Gum and a scattered heath understorey and groundcover of sedges and grasses.

The Northern Beaches Bushfire Prone Land Map shows the site to be within the Buffer (yellow) for Category 1 vegetation (red). Category 1 vegetation is considered to have the highest combustibility of fire and includes areas of forest, woodland, heaths (tall and short), forested wetlands and timber plantations (Figure 3).

Figure 3: Bushfire Prone Land

5. Bushfire Attack Assessment

The bushfire attack assessment was undertaken using the site methodology outlined in Appendix 1 of PBP to determine appropriate APZs and associated construction levels.

5.1 Vegetation Assessment

A site inspection was conducted on 1 September 2022. The vegetation was assessed for a distance of 140 metres from the dwelling to the north (Transect 1) (Figure 5). Photographs of the vegetation are illustrated below in Figure 4.

The vegetation class mapped as occurring north-east of the site is Sydney Coastal Dry Sclerophyll Forest. Its structure is described as an open eucalypt forest and woodland, 10-30m tall with a prominent and diverse sclerophyll shrub understorey and open groundcover of sclerophyll sedges. The foliage cover is 30-70% and is dominated by Red Bloodwood *Corymbia gummifera* and Scribbly Gum *Eucalyptus haemastoma.*

Figure 4: Typical Vegetation North of the Site

Figure 5: Vegetation Assessment Area (140m buffer)

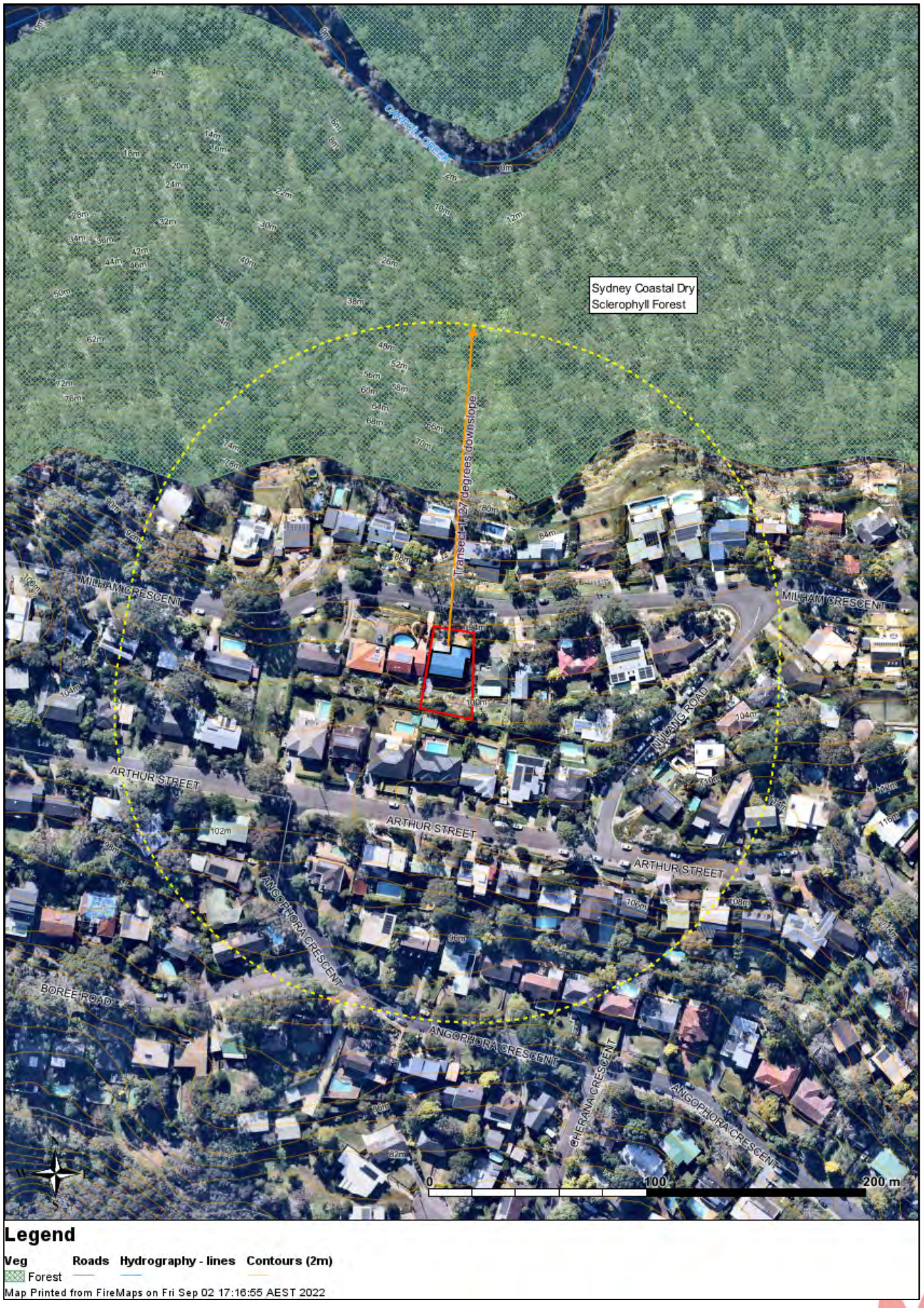


Table 2 summarises vegetation formations and classifications identified during preliminary desktop studies and on site. It also identifies available separation distances from the building footprint to the bushfire hazardous vegetation.

Table 2: Vegetation Assessment

Preliminary Desktop Assessment		**Site Assessment as per Appendix 1 PBP**		
Transect	**Vegetation Classes of NSW Version 3.03 (Keith and Simpson) VIS_ID 3848****	**Vegetation Formation (PBP 2019)**	**Overall Fuel Loads DSF (surface, elevated, bark and canopy)***	**Separation distance from the bushfire hazardous vegetation to the proposed alterations/additions**
1 (north)	Sydney Coastal Dry Sclerophyll Forest	Forest	27.3 tonnes/ha	72 metres

* Extracted from NSW RFS Comprehensive vegetation fuel loads, 2019

** Extracted from the Central Resource of Sharing and Enabling Environmental Data in NSW – The NSW Government SEED Portal

5.2 Slope Assessment

The effective slope (that which is located under the bushfire hazardous vegetation and most likely to influence bushfire behaviour) was assessed for a distance of 100 metres. The results are summarised below in Table 3.

Table 3: Slope Assessment

Transect	**Effective Slope**	**Direction**
1 (north)	27 Degrees	Downslope

5.3 Category of Bushfire Attack

The Bushfire Attack Level (BAL) of the proposed development was determined using a Forest Fire Danger Index (FFDI) of 100. The FFDI measures the degree of danger using a 1:50 year fire weather scenario.

The determination of the Bushfire Attack Level (BAL) is based on a worst-case scenario and a calculation derived from maximum fuel loads, rate of fire spread and anticipated radiant heat (kW/m^2) at the receiver or building.

The inputs which determine this calculation are derived from Table 2 and 3 above and include the vegetation formations, effective slope and the separation distance between the bushfire hazardous vegetation and the closest external wall of the proposed development. Table 4 provides the bushfire attack summary.

It should be noted that as the effective slope to the north is steeper than 20 degrees fire behaviour modelling using *AS3959-2018 Appendix B - Method 2* has been undertaken to ascertain predicted radiant heat levels at the building surface. The Bushfire Attack Assessment Report is attached in Appendix 2.

Table 4: Bushfire Attack Summary, FFDI 100

Transect	**Vegetation Formation**	**Effective Slope**	**Separation distance from the bushfire hazardous vegetation to the alterations/additions**	**Bushfire Attack Level**
1 (north)	Forest	27 Degrees Downslope	72 metres	BAL 40

5.3.1 Flame Length

Section A1.4 of PBP 2019 requires consideration of flame length. The modelling shows excessive flame lengths which are unrealistic. NSW RFS Development Planning and Policy Practice Note *Application of Shielding Provisions (PBP 2019, A1.8)* October 2022 states that "*unless buildings…are in immediate proximity to bush fire hazards and/or are on top of extremely steep slopes (in the order of being vertical in nature), prolonged flame contact is not expected to occur*". The publication goes on to say that *"it should be noted that neither the criteria in AS3959, including Method 2, nor PBP 2019 consider flame length in terms of flame contact for determining BAL-40 or BAL-FZ"*. In this context it is not considered appropriate to determine the BAL based on flame length, but on the radiant heat calculation provided within the BFAA modelling as per Table 4 above.

5.3.2 Shielding

According to the principles of "Shielding" in Section A1.8 of PBP, where an elevation is shielded from direct radiant heat arising from bushfire attack, then the construction requirements for that elevation can be reduced to the next lower level.

An elevation is considered to not be exposed to the source of bushfire attack if the line of sight is obstructed by another part of the building. The shielding of an elevation shall apply to all the elements of a wall but shall not apply to subfloors or roofs.

In this instance downgrading of the southern elevation of the dwelling is considered appropriate based on the following:

- There is no clear line of sight to the bushfire hazardous vegetation on the southern elevation of the dwelling.

With this in mind it is proposed that the new construction on the southern elevation of the dwelling be constructed to BAL-29.

6. Recommendations

6.1 Asset Protection Zones

An Asset Protection Zone (APZ) is an area surrounding a development that provides sufficient space and is managed to reduce fuel loads to ensure radiant heat levels at buildings are kept below critical limits and prevent direct flame contact. An APZ can consist of both an Inner Protection Area (IPA) and an Outer Protection Area (OPA).

It is recommended that the entire property at 41 Milham Crescent be managed as an IPA in accordance with performance criteria outlined within Section 7.4 of PBP, that is:

- The APZ is provided commensurate with the construction of the new building and a defendable space is provided.
- The APZ is managed to prevent the spread of a fire to the building.
- The APZ is provided and maintained in perpetuity.
- APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimized.

6.1.1 Inner Protection Area

The IPA is designed to minimise direct flame contact and radiant heat and provide residents and emergency service personnel with a defendable space to work within.

The IPA shall have the following attributes in accordance with Appendix 4 of PBP:

- Tree canopy cover should be less than 15%, with canopies separated by 2 to 5m.
- Trees should not touch or overhang any buildings.
- Lower limbs should be removed up to a height of 2m above the ground.
- Shrubs shall be separated or planted and maintained in discontinuous clumps or garden beds.
- Shrubs shall be separated from buildings in particular windows and doors by a minimum 2 metres.
- Grass shall be kept mown (as a guide less than 100mm).
- Fallen leaves, barks, branches, and debris shall be raked up and removed from site.

In terms of the built environment within the IPA:

- Any new fences and gates shall be constructed of non-combustible material.
- Existing and proposed impervious areas such as pavements, pathways and driveways shall be kept clear of vegetation and debris in order to provide a defendable space. There shall also be no storage of flammable or combustible materials or structures within this area.

6.1.2 New Plantings

Any new plantings proposed, shall be in line with the following landscaping measures:

- Restrict planting in the immediate vicinity of buildings.
- When considering landscape species, the size of the plant at maturity and its proximity to the dwelling and other vegetation should be considered.
- 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 which generally do not carry a fire up the bark and into the crown.
- Avoid planting of deciduous species that may increase fuel at surface/ground level,
- Avoid climbing species to walls and pergolas.
- Use low flammability species, that is species which display large glossy leaves, high moisture content, low level of volatile oils, smooth bark and no accumulation of dead leaves and stem material held within or around the plant.

6.2 Construction Standards

New construction on the northern, eastern and western elevations shall comply with Section 3 'Construction general' and Section 8 'BAL-40' of AS3959-2018 *Construction of buildings in bushfire prone areas* or the NASH Standard (1.7.14 updated) *National Standard Steel Framed Construction in Bushfire Area* 2014 as appropriate for BAL-40 construction.

New construction on the southern elevation shall comply with Section 3 'Construction general' and Section 7 'BAL-29' of AS3959-2018 *Construction of buildings in bushfire prone areas* or the NASH Standard (1.7.14 updated) *National Standard Steel Framed Construction in Bushfire Area* 2014 as appropriate for BAL-29 construction.

The additional construction requirements detailed within Section 7.5, 7.5.1, 7.5.2, 7.5.3 and 7.5.4 of PBP are also applicable to the new building works.

6.3 Access

Access to the site shall be in accordance with Section 7.4 of PBP, that is it shall provide safe all-weather access for fire fighting vehicles to structures and water supply and allow for the safe evacuation of residents.

Access to the site is from Milham Crescent, which is a sealed, two-lane, all-weather road. There are no traffic management devices that prohibit access by emergency service vehicles. Maximum grades do not exceed 10 degrees with a carriageway width in excess of 5.5 metres and minimum vertical clearance of 4 metres to overhanging obstructions and tree branches. The capacity of the road is sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes).

Being a suburban block, the existing dwelling is located only 10m from Milham Crescent. Under a fire situation, fire fighting vehicles will operate from the street. Unrestricted pedestrian access shall be provided around all elevations of the dwelling and to the Asset Protection Zone to the rear of the property.

6.4 Water Supply, Gas and Electricity Services

Water supply, gas and electricity shall be in accordance with Section 7.4 of PBP, that is to provide adequate water supply for firefighting purposes and to ensure gas and electricity does not contribute to the risk of fire to the building.

6.4.1 Water

The site is serviced by a mains reticulated water supply, The closest hydrant, identified at the time of site inspection, was located on the footpath out the front of No. 56 Milham Crescent.

6.4.2 Gas and Electricity

Electricity from Milham Crecent to the site is via an overhead power line. Where possible any overhanging tree branches within 1 metre should be pruned away from the power line as per the *ISSC3 Guide for the Management of Vegetation in the Vicinity lines of Electricity Assets*.

At the time of this report, it was not known if connection to a gas supply currently exists. Any new connections to either mains or bottled gas supply should be in line with the following requirements:

- Reticulated or bottled gas is to be installed and maintained in accordance with AS/NZS 1596:2014 and the requirements of relevant authorities and metal piping is to be used.
- All fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side.
- Connections to and from gas cylinders are to be metal.
- Polymer-sheathed flexible gas supply lines are not used.
- Above-ground gas service pipes are metal, including and up to any outlets.

7. PBP 2019 Compliance Summary

The following table provides a summary of the proposal's compliance with PBP 2019.

Table 6: PBP 2019 Compliance

Bush Fire Protection Measure	PBP 2019 Performance Criteria	Compliance with Acceptable Solutions	Compliance with specifications and requirements of PBP.
APZs	• APZs are provided commensurate with the construction of the building; and • A defendable space is provided. • APZs are managed and maintained to prevent the spread of a fire to the building. • The APZ is provided in perpetuity. • APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised.	• As part of the consent, the subject lot can be required to be maintained as an Inner Protection Area (IPA) in perpetuity. • The IPA will be managed in accordance with the requirements of Appendix 4 of PBP. • The IPA required to be managed within the consent for the works is wholly within the boundaries of the development site. • The IPA is located on slopes less than 18 degrees. • The APZ is provided in accordance with the calculated BAL within Appendix 1 of PBP.	YES.
Access	• Firefighting vehicles are provided with safe, all-weather access to structures and hazard vegetation. • The capacity of access roads is adequate for firefighting vehicles. • There is appropriate access to water supply. • Firefighting vehicles can access the dwelling and exit the property safely.	• Milham Crescent is a two-wheel drive, all weather road. • The capacity of the road surface of Milham Crescent is sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes). There are no bridges or causeways in the immediate vicinity. • There is a hydrant which meets AS2419.1:2005. • There is an unobstructed path 28m long from the public access road to the most distant part of the existing dwelling.	YES.
Water Supply	• An adequate water supply is provided for firefighting purposes. • Water supplies are located at regular intervals. • The water supply is accessible and reliable for firefighting operations. • Flows and pressures are appropriate. • The integrity of the water supply is maintained.	• Reticulated water is provided in Milham Crescent with the nearest hydrant located on the footpath out the front of No.56. • As a reticulated system, the water supply is accessible, reliable and has appropriate flows and pressures. The integrity of the water supply will also be maintained.	YES

Electricity and Gas	• Location of electricity services limits the possibility of ignition of surrounding bush land or the fabric of buildings. • Location and design of gas services will not lead to ignition of surrounding bushland or the fabric of buildings.	• The existing electricity supply is compliant. • Any proposed gas supply will need to be compliant with PBP.	YES
Construction Standards	• The proposed building can withstand bush fire attack in the form of embers, radiant heat and flame contact. • Proposed fences and gates are designed to minimise the spread of bush fire. • Proposed Class 10a buildings are designed to minimise the spread of bush fire.	• New construction on the northern, eastern and western elevations shall comply with Section 3 and Section 8 (BAL-40) of AS3959-2018 or the NASH Standard. • New construction on the southern elevation shall comply with Section 3 and Section 7 (BAL-29) of AS3959-2018 or the NASH Standard. • All new construction will also comply with the 'Additional Construction Requirements' detailed within Section 7.5 of PBP.	YES
Landscaping	• Landscaping is designed and managed to minimise flame contact and radiant heat to buildings, and the potential for wind-driven embers to cause ignitions.	• The property can be managed as an Inner Protection Area in accordance with Appendix 4 of PBP.	YES

8. Conclusion

The proposal meets the specifications and requirements of PBP pursuant to S4.14 of the *Environmental Planning and Assessment Act 1979*. As such, there is no objection to the development occurring with the following conditions recommended:

- At the commencement of construction and in perpetuity the property will be managed as an IPA in perpetuity as detailed within Section 6.1 of this report.
- New construction on the northern, eastern and western elevations shall comply with Section 3 'Construction general' and Section 8 'BAL-40' of AS3959-2018 *Construction of buildings in bushfire prone areas* or the NASH Standard (1.7.14 updated) *National Standard Steel Framed Construction in Bushfire Area* 2014 as appropriate for BAL-40 construction.
- New construction on the southern elevation shall comply with Section 3 'Construction general' and Section 7 'BAL-29' of AS3959-2018 *Construction of buildings in bushfire prone areas* or the NASH Standard (1.7.14 updated) *National Standard Steel Framed Construction in Bushfire Area* 2014 as appropriate for BAL-29 construction.
- The additional construction requirements detailed within Section 7.5, 7.5.1, 7.5.2, 7.5.3 and 7.5.4 of PBP are also applicable to the new construction.
- The existing access to the site shall be maintained in accordance with Section 6.3 of this report. Unrestricted pedestrian access shall be provided around all elevations of the dwelling and Asset Protection Zone.
- Water supply shall be installed and maintained in accordance with Section 6.4.1 of this report.
- Gas and Electricity services shall be installed and maintained in accordance with Section 6.4.2 of this report.

It is recommended that the residents complete a Bushfire Survival Plan. A copy of which can be downloaded from the Rural Fire Service website (https://www.rfs.nsw.gov.au).

9. References

Australian Building Codes Board (2005) *National Construction Code Volume 2*.

ISSC3 Guide for the Management of Vegetation in the Vicinity lines of Electricity Assets. 2016.

Keith D (2004) *Ocean Shores to Desert Dunes*, Department of Environment and Conservations Sydney.

NSW Government Planning Portal, *Eplanning Spatial Viewer* *https://www.planningportal.nsw.gov.au/spatialviewer/#/find-a-property/address*

NSW Rural Fire Service (2019) *Comprehensive vegetation fuel loads*, NSW Rural Fire Service.

NSW Government, ePlanning Spatial Viewer, https://www.planningportal.nsw.gov.au/spatialviewer/#/find-a-property/address

Planning NSW in conjunction with NSW Rural Fire Service (2019) *Planning for Bush Fire Protection*. NSW Rural Fire Service.

Standards Australia and Australian Building Codes Board (2018) *AS 3959 Construction of buildings in bushfire prone areas.*

The Central Resource of Sharing and Enabling Environmental Data in NSW – NSW Government SEED Portal https://geo.seed.nsw.gov.au/Public_Viewer/index.html?viewer=Public_Viewer&locale=en-AU

The Warringah Pittwater Bush Fire Management Committee (2010) *The Warringah Pittwater Bush Fire Management Committee Bush Fire Risk Management Plan*. NSW Rural Fire Service.

10. Appendix 1 – The Proposal

MILHAM CRESCENT

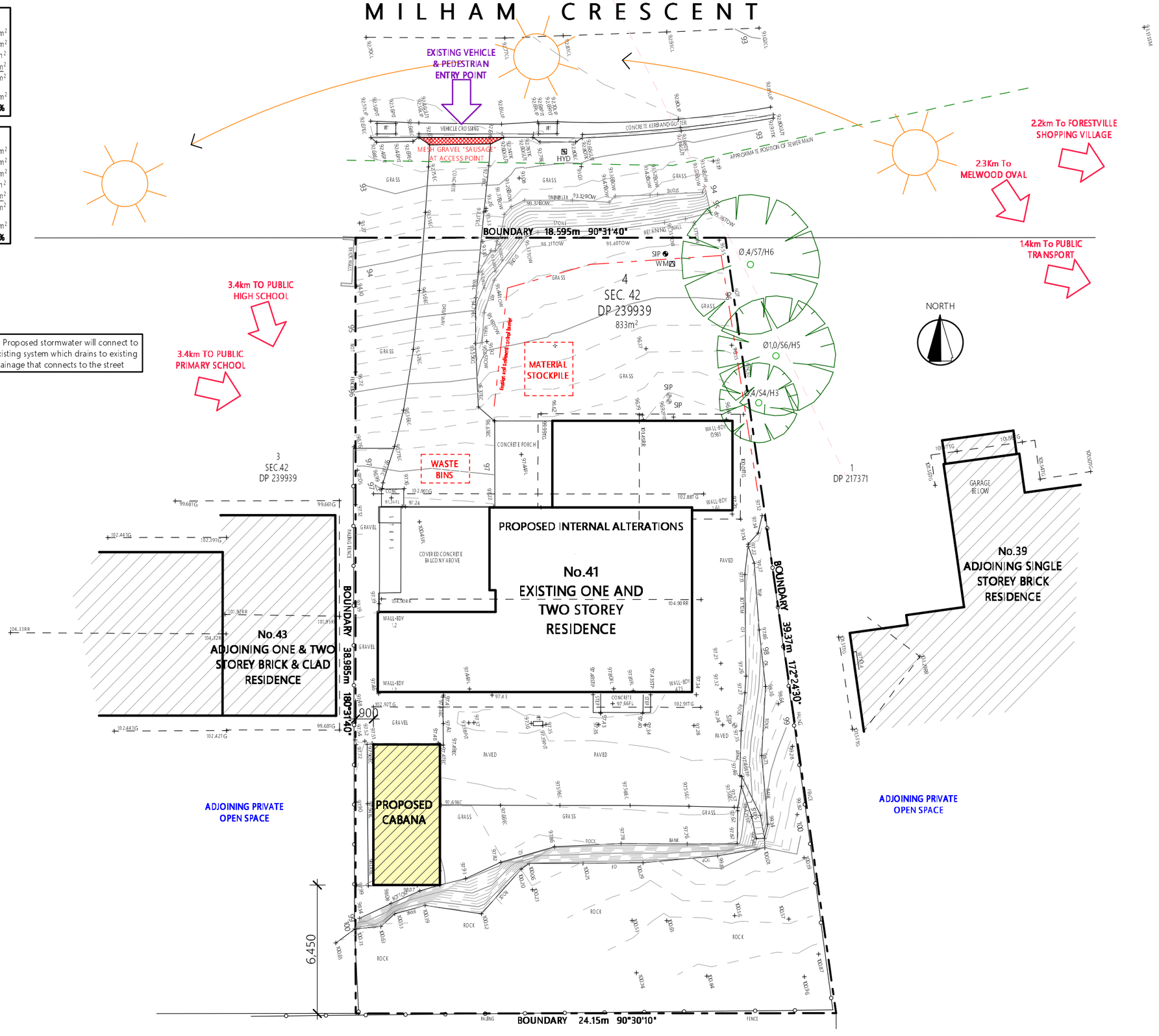
SITE RATIOS - EXISTING:

SITE AREA	833.00m²
BUILDING FOOTPRINT	200.29m²
PAVED AREAS AND DRIVEWAY	189.87m²
AREAS UNDER 2m WIDE	20.42m²
SUM TOTAL	410.00m²
EXISTING LANDSCAPED AREA	423.00m²
	50.78%

SITE RATIOS - PROPOSED:

SITE AREA	833.00m²
BUILDING FOOTPRINT	200.29m²
PROPOSED CABANA	23.62m²
PAVED AREAS AND DRIVEWAY	166.25m²
AREAS UNDER 2m WIDE	20.42m²
SUM TOTAL	410.00m²
PROPOSED LANDSCAPED AREA	423.00m²
	50.78%

Note- Proposed stormwater will connect to the existing system which drains to existing drainage that connects to the street



NOTES

All work is to comply with the Building Code of Australia, the requirements of the local council, the requirements of the legally constituted Authorities for services and the relevant standards by the Standards Association of Australia.

The Builder is to give all notices, obtain all permits and pay all fees.

Finished ground levels on the plan are subject to site conditions.

Do not scale from drawings. Use figured dimensions only and report any discrepancies to the designer prior to commencement.

All figured dimensions to be checked on site.

BUSHFIRE REQUIREMENTS
All materials and construction methods shall meet AS3959-2018 BAL40 construction of buildings in bush fire prone areas.

BASIX INFORMATION REQUIREMENTS:

LIGHTING:
A minimum of 40% of all new or altered light fixtures are to be fluorescent, compact fluorescent or L.E.D. lamps

WATER COMMITMENTS:

Fixtures:	All new Shower heads, toilets and taps shall have a minimum 3 Star rating

INSULATION REQUIREMENTS:

External walls:	The external walls shall meet minimum R1.70 (including construction)
Suspended Floors:	The new enclosed sub-floor shall meet minimum R0.6 (down) (or R1.30 including construction).
Ceilings: minimum	The new pitched roof, flat ceilings shall meet R3.00 (up).
Roof:	The roof shall have foil backed blanket (55mm) and be of dark colour (solar absorption >0.70)

WINDOWS/GLAZED DOORS & SKYLIGHTS:
All window and door numbers shown on the window and door schedule correspond to matching window/doorskylight numbers show in the Basix certificate,

Sizes:	The total area of glazing for each window/door/skylight shall be no greater than that shown on the Basix certificate
Shading devices:	Shading devices shall be installed in accordance with the Basix certificate
Frames and glazing:	Frame and glazing types shall meet the requirements of the Basix certificate

N
Project North

Client
MR. MOSLEHI & MS. GOGANI
Project Name
PROPOSED ALTERATIONS + ADDITIONS
41 MILHAM CRESCENT
LOT 4, SEC 42, DP 239939
FORESTVILLE NSW 2087

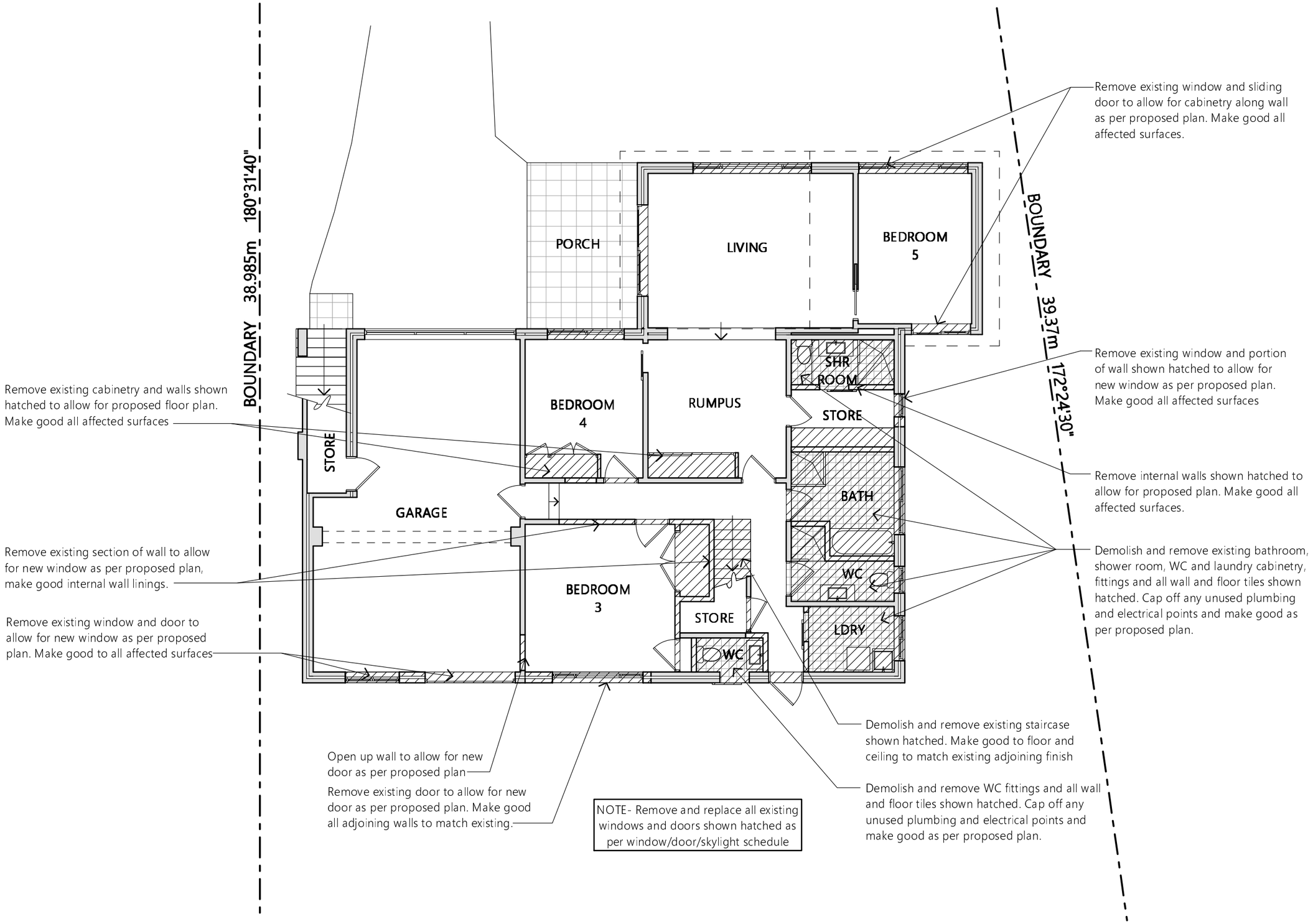
JAH DESIGN SERVICES
ABN 22 630 690 834
BUILDING 6, 49 FRENCHS FOREST ROAD EAST, FRENCHS FOREST NSW 2086
PH. 0410 410 064 EMAIL julie@jahdesigns.com.au

Drawing Title:
SITE PLAN

Scale: 1:200 @ A3	Date: FEBRUARY 2023
Status: DA submission	Checked By: JAH
Project No: 2209	Drawing No.: DA01
Plot Date: 21/03/2023	

1 SITE PLAN 1:200

& SITE ANALYSIS / ENVIRONMENTAL SITE MANAGEMENT



1 EXISTING GROUND FLOOR PLAN 1:100

NOTES

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BUSHFIRE REQUIREMENTS

All materials and construction methods shall meet AS3959-2018 BAL40 construction of buildings in bush fire prone areas.

BASIX INFORMATION REQUIREMENTS:

LIGHTING:
A minimum of 40% of all new or altered light fixtures are to be fluorescent, compact fluorescent or L.E.D. lamps

WATER COMMITMENTS:

Fixtures:	All new Shower heads, toilets and taps shall have a minimum 3 Star rating

INSULATION REQUIREMENTS:

External walls:	The external walls shall meet minimum R1.70 (including construction)
Suspended Floors:	The new enclosed sub-floor shall meet minimum R0.6 (down) (or R1.30 including construction).
Ceilings: minimum	The new pitched roof, flat ceilings shall meet R3.00 (up).
Roof:	The roof shall have foil backed blanket (55mm) and be of dark colour (solar absorption >0.70)

WINDOWS/GLAZED DOORS & SKLYIGHTS:
All window and door numbers shown on the window and door schedule correspond to matching window/doorskylight numbers show in the Basix certificate,

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N
Project North

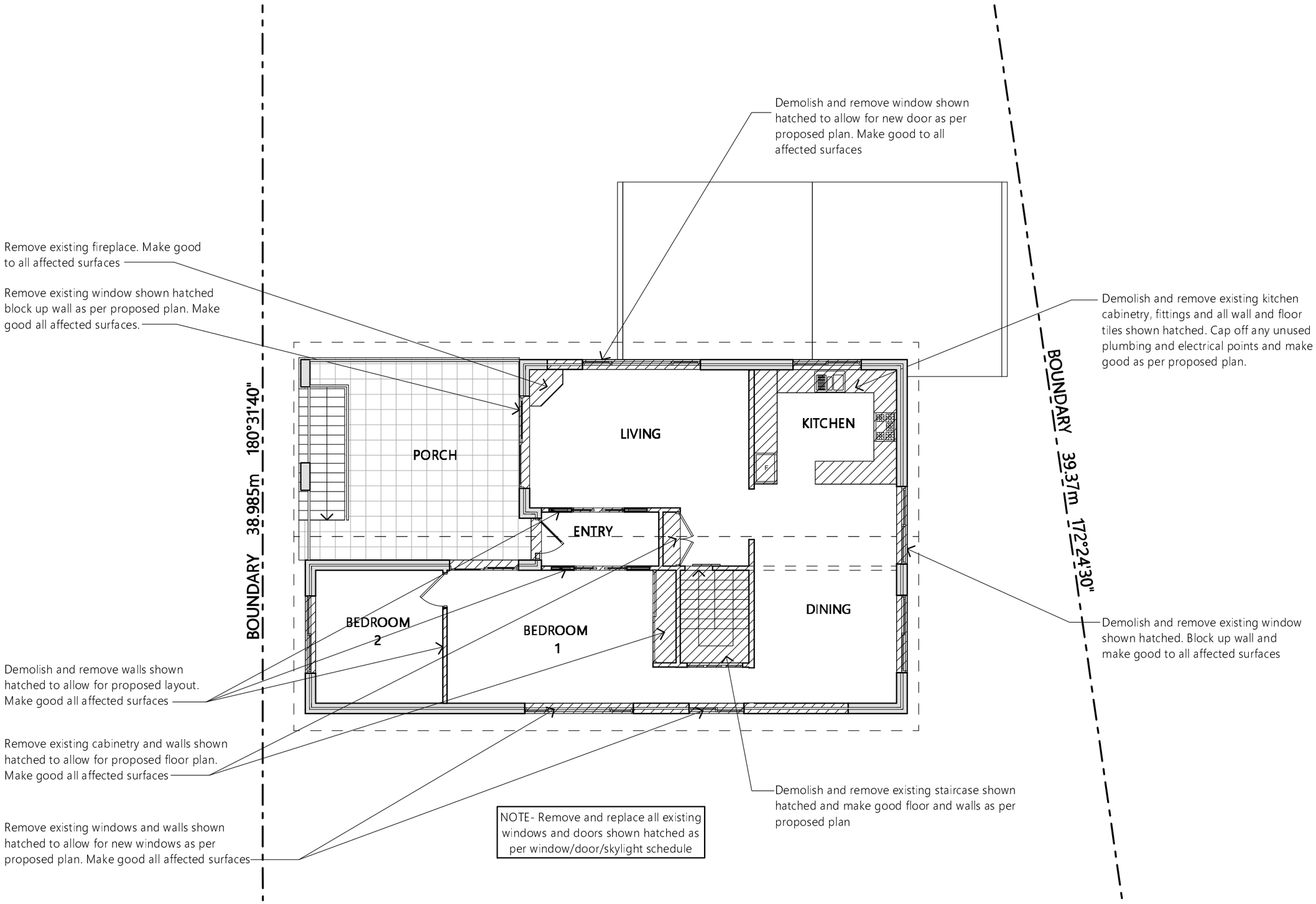
Client
MR. MOSLEHI & MS. GOGANI

Project Name
PROPOSED ALTERATIONS + ADDITIONS
41 MILHAM CRESCENT
LOT 4, SEC 42, DP 239939
FORESTVILLE NSW 2087

JAH DESIGN SERVICES
ABN 22 630 690 834
BUILDING 6, 49 FRENCHS FOREST ROAD EAST, FRENCHS FOREST NSW 2086
PH. 0410 410 064 EMAIL:julie@jahdesigns.com.au

Drawing Title:
EXISTING GROUND FLOOR

Scale: 1:100 @ A3	Date: FEBRUARY 2023
Status: DA submission	Checked By: JAH
Project No: 2209	Drawing No.: DA02
Plot Date: 21/03/2023	



1 EXISTING FIRST FLOOR PLAN 1:100

NOTES

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N
Project North

Client
MR. MOSLEHI & MS. GOGANI
Project Name
PROPOSED ALTERATIONS + ADDITIONS
41 MILHAM CRESCENT
LOT 4, SEC 42, DP 239939
FORESTVILLE NSW 2087

JAH DESIGN SERVICES
ABN 22 630 690 834
BUILDING 6, 49 FRENCHS FOREST ROAD EAST, FRENCHS FOREST NSW 2086
PH. 0410 410 064 EMAIL julie@jahdesigns.com.au

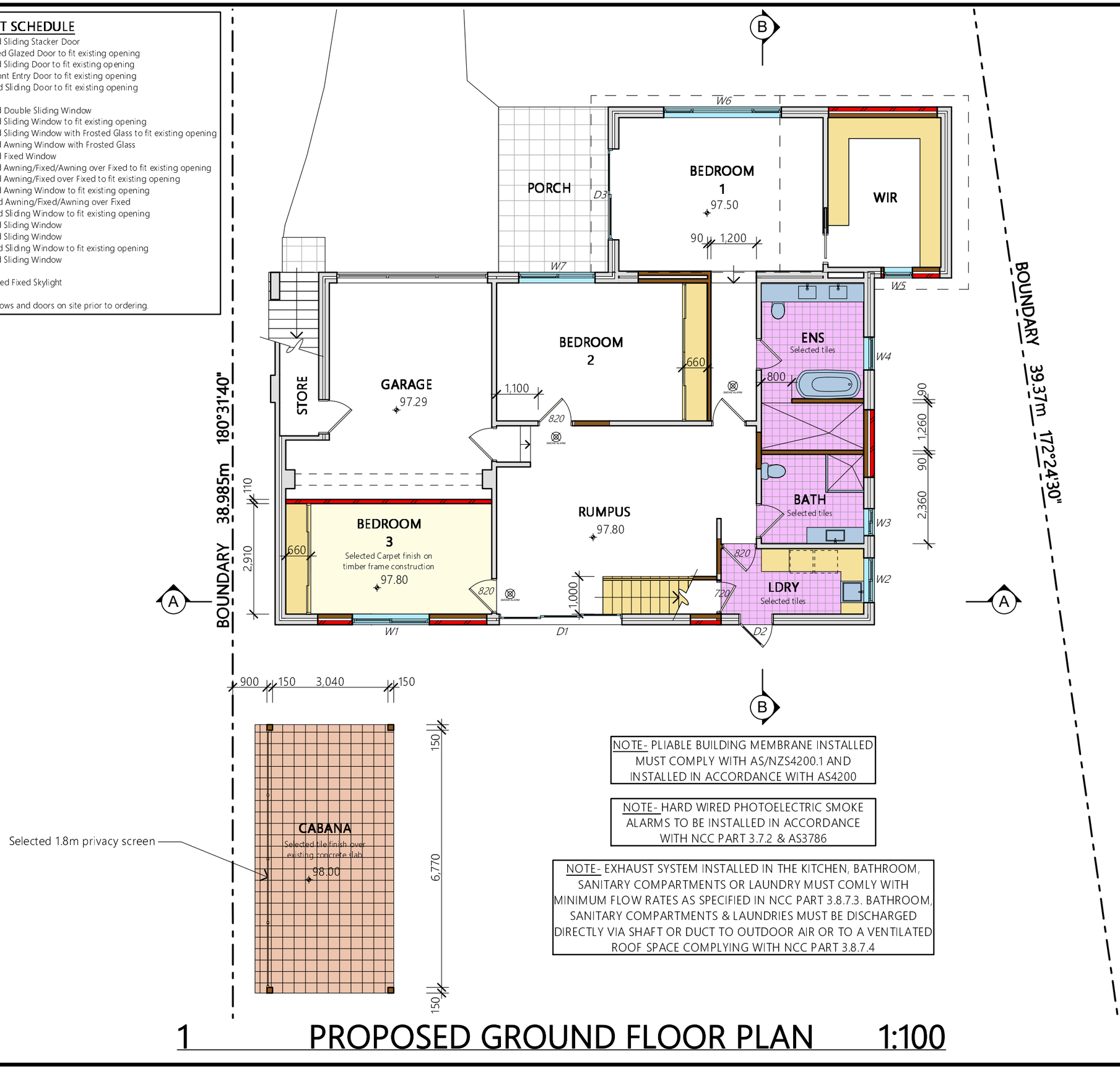
Drawing Title:
EXISTING FIRST FLOOR

Scale: 1:100 @ A3	Date: FEBRUARY 2023
Status: DA submission	Checked By: JAH
Project No: 2209	Drawing No.: DA03
Plot Date: 21/03/2023	

WINDOW / DOOR / SKYLIGHT SCHEDULE

D 1	3200w x 2100h	Aluminium Framed Sliding Stacker Door
D 2	900w x 2100h	Aluminium Framned Glazed Door to fit existing opening
D 3	2400w x 2100h	Aluminium Framed Sliding Door to fit existing opening
D 4	1000w x 2100h	Timber Framed Front Entry Door to fit existing opening
D 5	1800w x 2100h	Aluminium Framed Sliding Door to fit existing opening
W 1	2000w x 1540h	Aluminium Framed Double Sliding Window
W 2	1175w x 1000h	Aluminium Framed Sliding Window to fit existing opening
W 3	700w x 650h	Aluminium Framed Sliding Window with Frosted Glass to fit existing opening
W 4	860w x 720h	Aluminium Framed Awning Window with Frosted Glass
W 5	750w x 2100h	Aluminium Framed Fixed Window
W 6	3100w x 1920h	Aluminium Framed Awning/Fixed/Awning over Fixed to fit existing opening
W 7	2000w x 1900h	Aluminium Framed Awning/Fixed over Fixed to fit existing opening
W 8	1800w x 1100h	Aluminium Framed Awning Window to fit existing opening
W 9	4000w x 1920h	Aluminium Framed Awning/Fixed/Awning over Fixed
W 10	2000w x 1540h	Aluminium Framed Sliding Window to fit existing opening
W 11	1200w x 900h	Aluminium Framed Sliding Window
W 12	2030w x 1540h	Aluminium Framed Sliding Window
W 13	2030w x 1540h	Aluminium Framed Sliding Window to fit existing opening
W 14	2030w x 1540h	Aluminium Framed Sliding Window
SK 1	780w x 1400h	Timber Framed Fixed Fixed Skylight

Note: The Builder shall check measure all windows and doors on site prior to ordering.



NOTE- PLIABLE BUILDING MEMBRANE INSTALLED MUST COMPLY WITH AS/NZS4200.1 AND INSTALLED IN ACCORDANCE WITH AS4200

NOTE- HARD WIRED PHOTOELECTRIC SMOKE ALARMS TO BE INSTALLED IN ACCORDANCE WITH NCC PART 3.7.2 & AS3786

NOTE- EXHAUST SYSTEM INSTALLED IN THE KITCHEN, BATHROOM, SANITARY COMPARTMENTS OR LAUNDRY MUST COMLY WITH MINIMUM FLOW RATES AS SPECIFIED IN NCC PART 3.8.7.3. BATHROOM, SANITARY COMPARTMENTS & LAUNDRIES MUST BE DISCHARGED DIRECTLY VIA SHAFT OR DUCT TO OUTDOOR AIR OR TO A VENTILATED ROOF SPACE COMPLYING WITH NCC PART 3.8.7.4

1 PROPOSED GROUND FLOOR PLAN 1:100

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PROPOSED ALTERATIONS + ADDITIONS
41 MILHAM CRESCENT
LOT 4, SEC 42, DP 239939
FORESTVILLE NSW 2087

JAH DESIGN SERVICES
ABN 22 630 690 834
BUILDING 6, 49 FRENCHS FOREST ROAD EAST, FRENCHS FOREST NSW 2086
PH. 0410 410 064 EMAIL julie@jahdesigns.com.au

Drawing Title:
PROPOSED GROUND FLOOR PLAN

Scale: 1:100 @ A3	Date: FEBRUARY 2023
Status: DA submission	Checked By: JAH
Project No: 2209	Drawing No.: DA04
Plot Date: 21/03/2023	

WINDOW / DOOR / SKYLIGHT SCHEDULE

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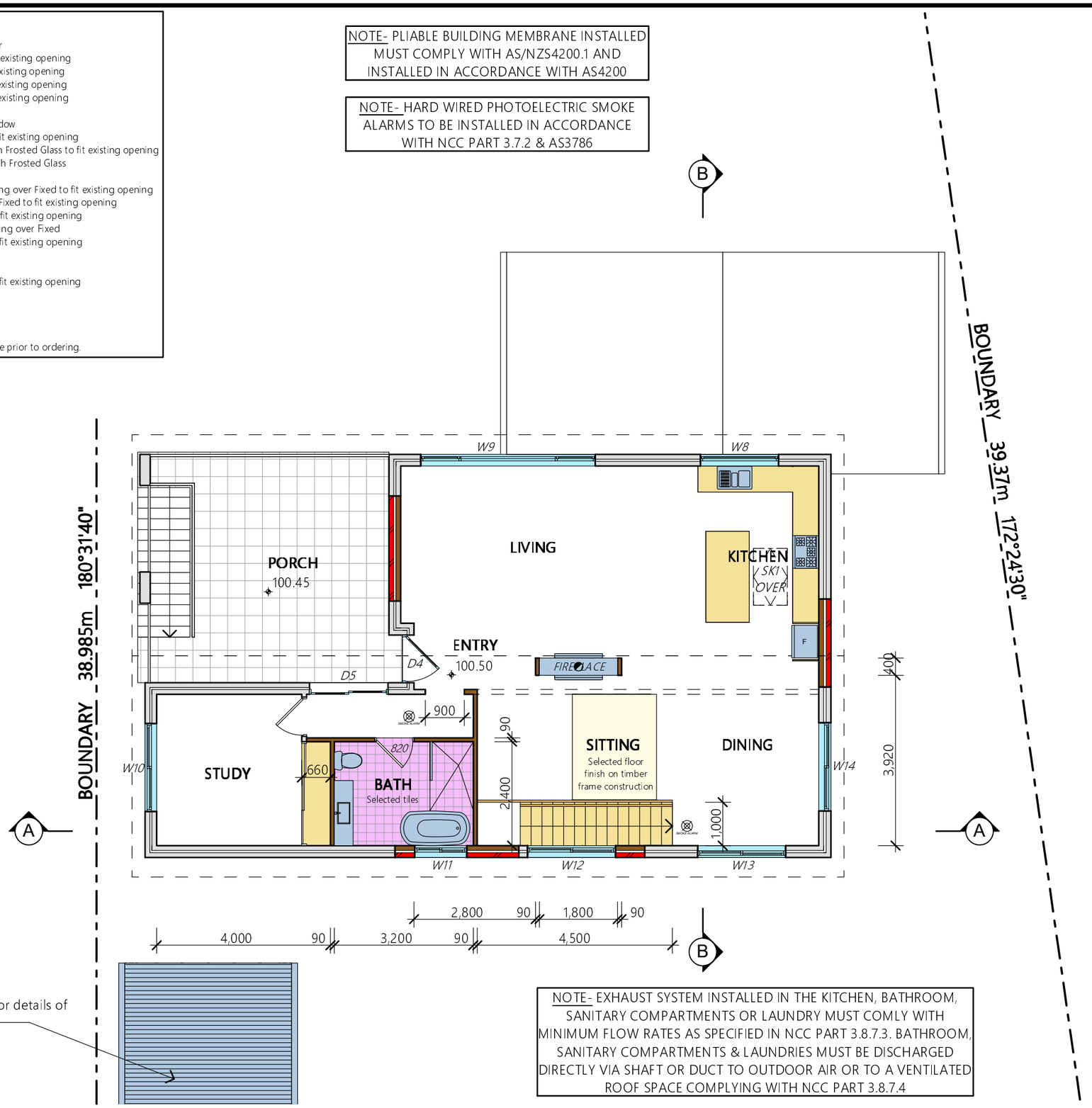

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N
Project North

Client
MR. MOSLEHI & MS. GOGANI
Project Name
PROPOSED ALTERATIONS + ADDITIONS
41 MILHAM CRESCENT
LOT 4, SEC 42, DP 239939
FORESTVILLE NSW 2087

JAH DESIGN SERVICES
ABN 22 630 690 834
BUILDING 6, 49 FRENCHS FOREST ROAD EAST, FRENCHS FOREST NSW 2086
PH. 0410 410 064 EMAIL julie@jahdesigns.com.au

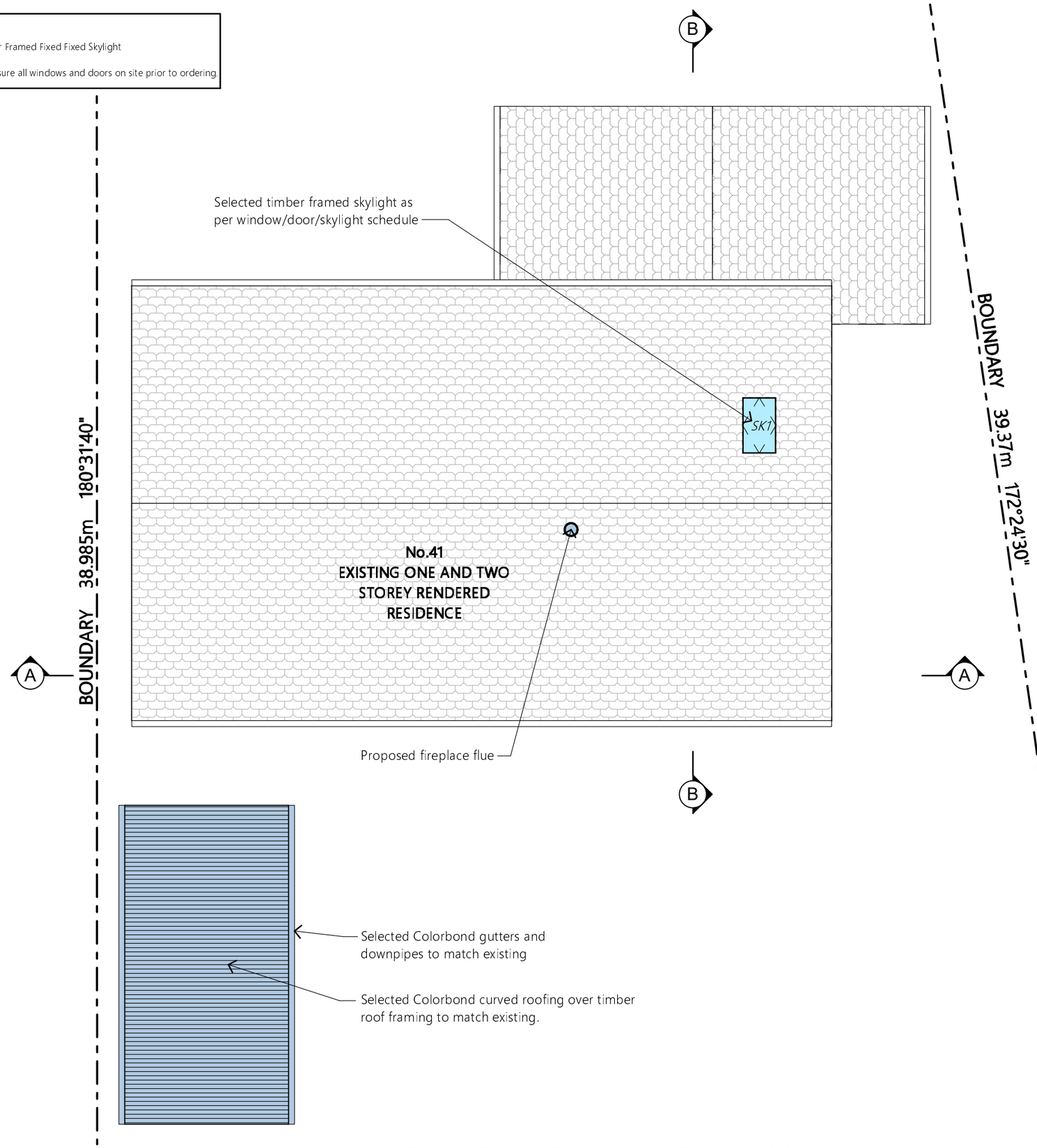
Drawing Title:
PROPOSED FIRST FLOOR PLAN

Scale: 1:100 @ A3	Date: FEBRUARY 2023
Status: DA submission	Checked By: JAH
Project No: 2209	Drawing No.: DA05
Plot Date: 21/03/2023	

SKYLIGHT SCHEDULE

SK 1 780w x 1400h Timber Framed Fixed Fixed Skylight

Note: The Builder shall check measure all windows and doors on site prior to ordering.



1 PROPOSED ROOF PLAN 1:100

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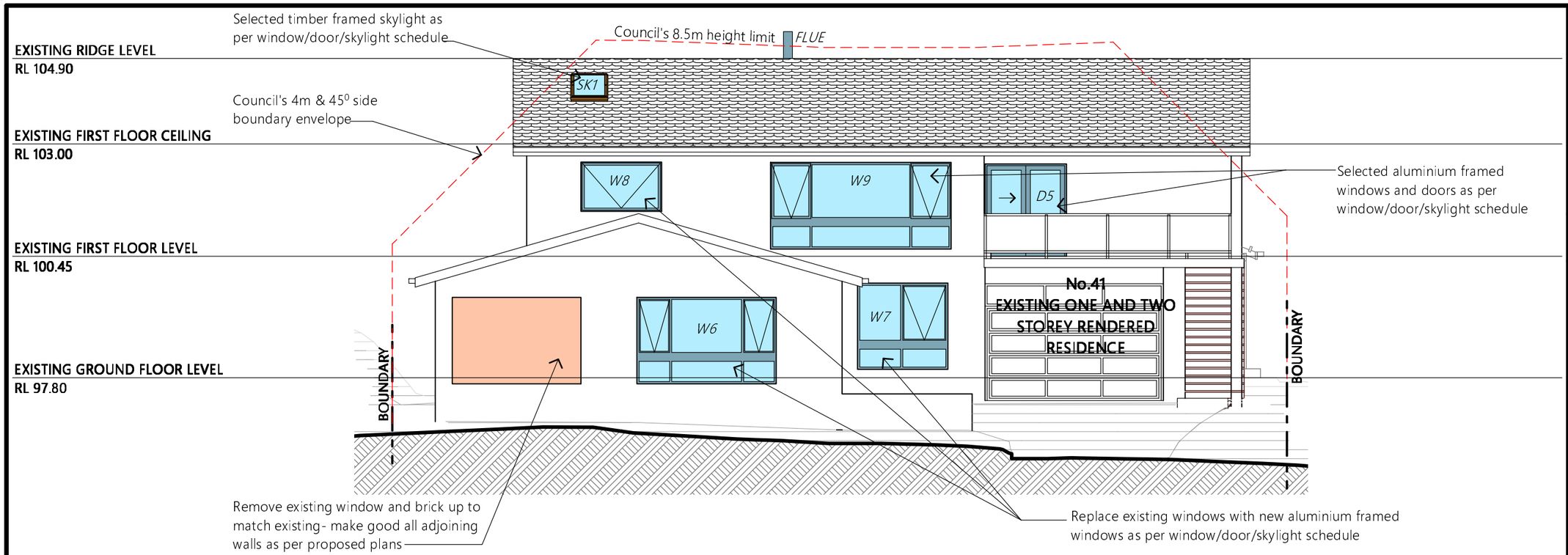
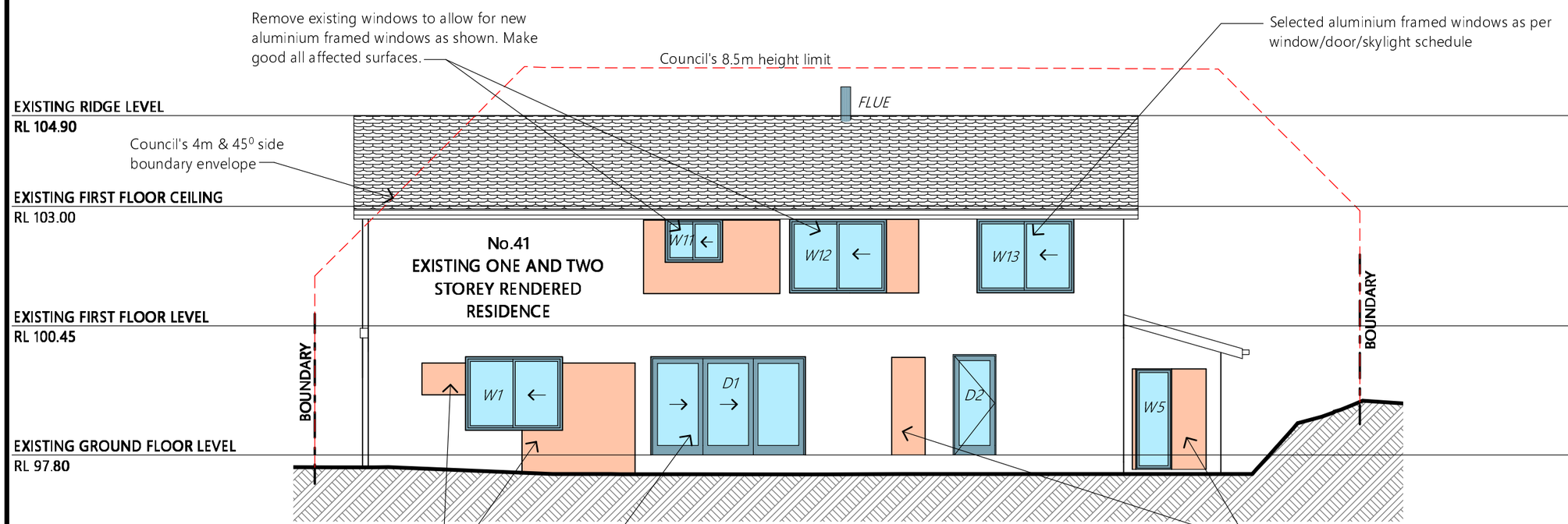
PH. 0410 410 064 EMAIL julie@jahdesigns.com.au

Drawing Title:
PROPOSED ROOF PLAN

Scale: 1:100 @ A3	Date: FEBRUARY 2023
Status: DA submission	Checked By: JAH
Project No: 2209	Drawing No.: DA06
Plot Date: 21/03/2023	



1 NORTH ELEVATION 1:100



2 SOUTH ELEVATION 1:100

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FORESTVILLE NSW 2087

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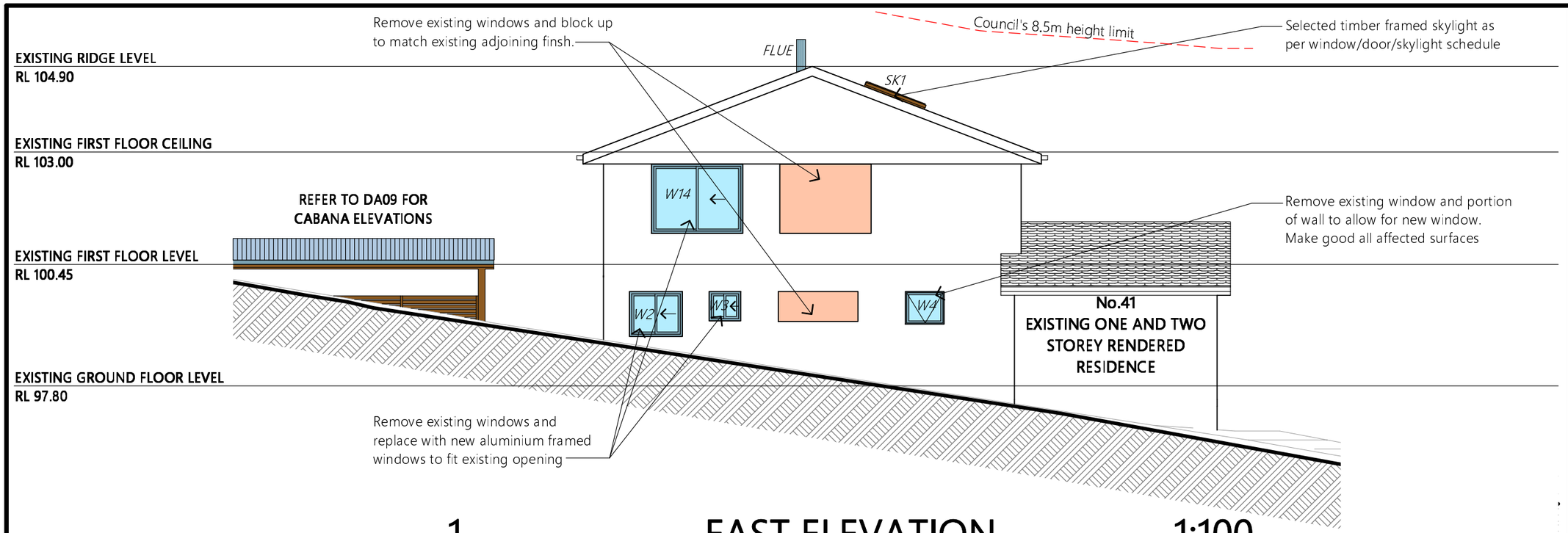
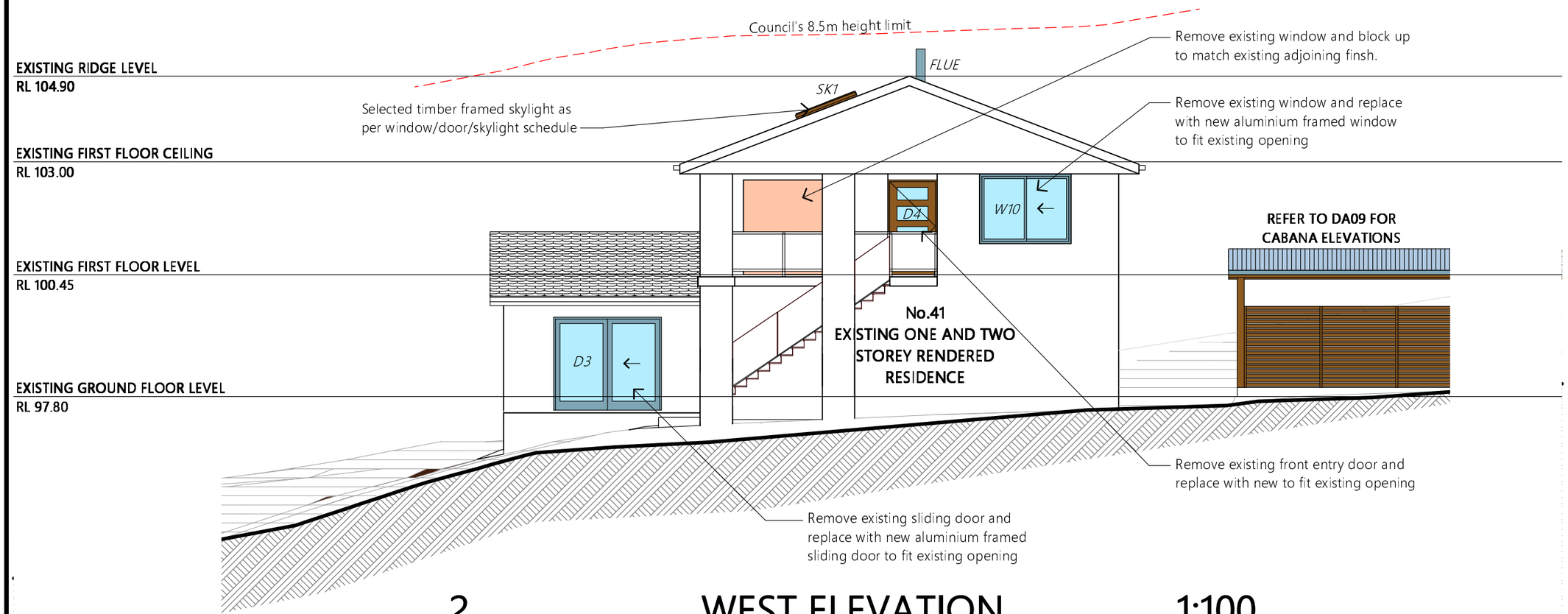
ABN 22 630 690 834
BUILDING 6, 49 FRENCHS FOREST ROAD EAST, FRENCHS FOREST NSW 2086
PH: 0410 410 064 EMAIL:julie@jahdesigns.com.au

Drawing Title:
NORTH & SOUTH ELEVATIONS

Scale: 1:100 @ A3	Date: FEBRUARY 2023
Status: DA submission	Checked By: JAH
Project No: 2209	Drawing No.: DA07
Plot Date: 21/03/2023	



1 EAST ELEVATION 1:100



2 WEST ELEVATION 1:100

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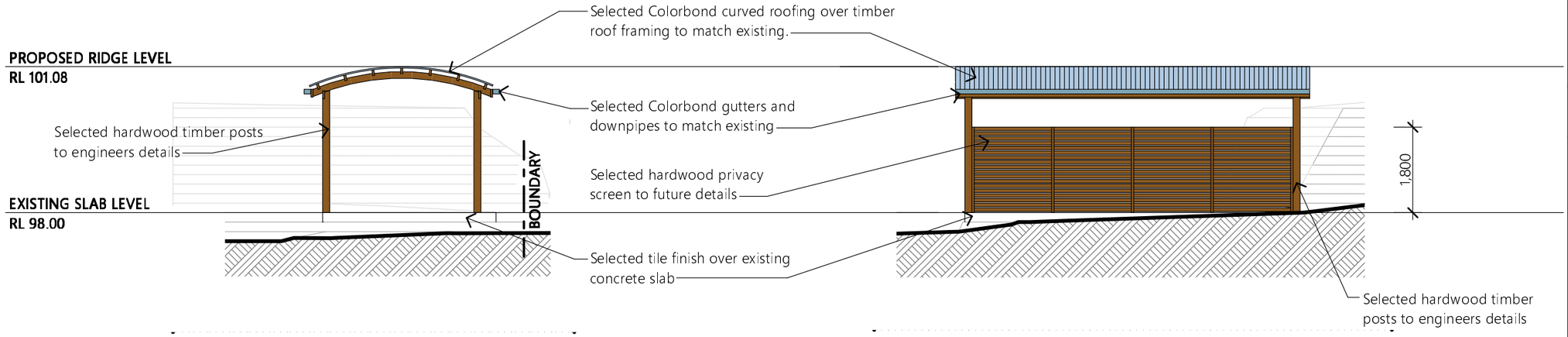
ABN 22 630 690 834
BUILDING 6, 4-9 FRENCHS FOREST ROAD EAST, FRENCHS FOREST NSW 2086
PH: 0410 410 064 EMAIL:julie@jahdesigns.com.au

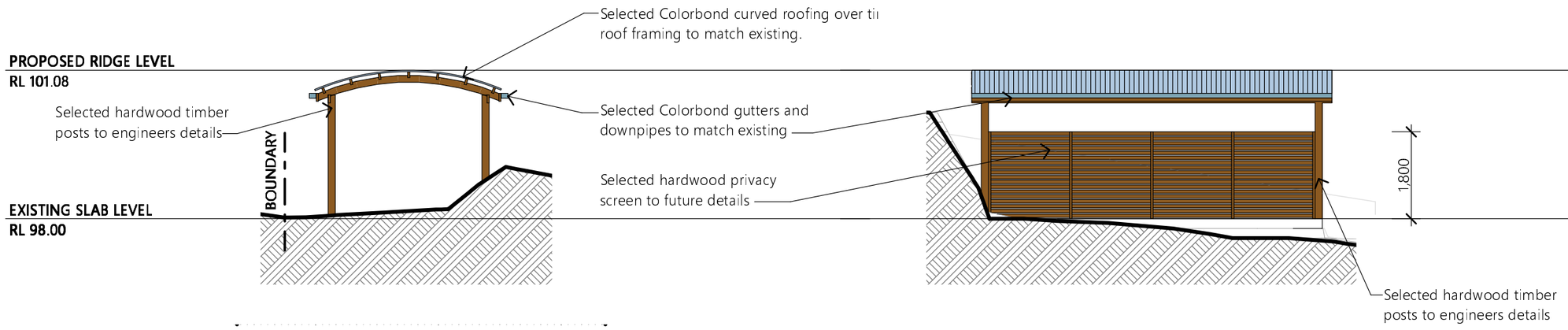
Drawing Title:
EAST & WEST ELEVATIONS

Scale: 1:100 @ A3	Date: FEBRUARY 2023
Status: DA submission	Checked By: JAH
Project No: 2209	Drawing No.: DA08
Plot Date: 21/03/2023	



1 NORTH ELEVATION 1:100

2 WEST ELEVATION 1:100



3 SOUTH ELEVATION 1:100

4 EAST ELEVATION 1:100

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ABN 22 630 690 834
BUILDING 6, 4-9 FRENCHS FOREST ROAD EAST, FRENCHS FOREST NSW 2086
PH: 0410 410 064 EMAIL:julie@jahdesigns.com.au

Drawing Title:
CABANA ELEVATIONS

Scale: 1:100 @ A3	Date: FEBRUARY 2023
Status: DA submission	Checked By: JAH
Project No: 2209	Drawing No.: DA09
Plot Date: 21/03/2023	

11. Appendix 2 – Bushfire Attack Assessment Report

NBC Bushfire Attack Assessment Report V4.1

AS3959 (2018) Appendix B - Detailed Method 2

Print Date: 28/06/2023 **Assessment Date:** 28/06/2023

Site Street Address: 41 Milham Crescent, Forestville

Assessor: Catherine Ryland; CR Bushfire

Local Government Area: Northern Beaches **Alpine Area:** No

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: Design Fire Model

Vegetation Information

Vegetation Type: Sydney Coastal DSF

Vegetation Group: Dry Sclerophyll Forests (Shrubby)

Vegetation Slope: 27 Degrees **Vegetation Slope Type:** Downslope

Surface Fuel Load(t/ha): 21.3 **Overall Fuel Load(t/ha):** 27.3

Vegetation Height(m): 1.4 Only Applicable to Shrub/Scrub and Vesta

Site Information

Site Slope: 11 Degrees **Site Slope Type:** Downslope

Elevation of Receiver(m): Default **APZ/Separation(m):** 72

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 40 **Peak Elevation of Receiver(m):** 22.91

Radiant Heat(kW/m2): 38.08 **Flame Angle (degrees):** 42

Flame Length(m): 110.32 **Maximum View Factor:** 0.624

Rate Of Spread (km/h): 16.47 **Inner Protection Area(m):** 40

Transmissivity: 0.803 **Outer Protection Area(m):** 32

Fire Intensity(kW/m): 232287