



**South Coast**  
48b Princes Highway  
Fairy Meadow NSW 2519

**Macarthur**  
Suite 1, 39 Elyard Street  
Narellan NSW 2567

**Southern Highlands**  
Shop 3, 184 Bong Bong Road  
Bowral NSW 2576

**P 1300 368 534**  
e bushfire@localgroup.com.au  
w http://www.localgroup.com.au  
abn 30 735 368 565

**Sutherland**  
Suite 5, 15 Surf Road  
Cronulla NSW 2230

**Central Coast**  
Suite 1, 21 Babilla Close  
Beresfield NSW 2322

**Norwest**  
Suite 21, 5 Inglewood Place  
Baulkham Hills NSW 2153

**Northside**  
Shop 2A, 20 Waterloo Street  
Narabeen NSW 2101



## BUSHFIRE RISK ASSESSMENT REPORT

### SITE ADDRESS

Lot 30 DP 16478  
House No.: 4  
Inkerman Road  
EMU HEIGHTS NSW 2750

### OWNER/S

### BUILDER

Rawson Homes  
Level 7, 5 Rider Boulevard  
RHODES NSW 2138

### ASPECT

West

### PROPOSAL

Construction of a two storey duplex

yours locally

# CONTENTS

<b>1.0</b>	<b>EXECUTIVE SUMMARY .....</b>	<b>3</b>
<b>2.0</b>	<b>PROJECT BRIEF .....</b>	<b>4</b>
<b>3.0</b>	<b>THE PROPOSED DEVELOPMENT .....</b>	<b>4</b>
<b>4.0</b>	<b>SITE ASSESSMENT.....</b>	<b>4</b>
4.1	ASSET PROTECTION ZONES.....	6
4.1.1	<i>Vegetation Type.....</i>	<i>6</i>
4.1.2	<i>Effective Slope.....</i>	<i>12</i>
4.1.3	<i>Fire Danger Index.....</i>	<i>12</i>
4.1.4	<i>Detemination of Asset Protection Zones.....</i>	<i>12</i>
4.2	BUSHFIRE ATTACK LEVEL .....	13
4.2.1	<i>Vegetation Types .....</i>	<i>13</i>
4.2.2	<i>Effective Slope.....</i>	<i>13</i>
4.2.3	<i>Fire Danger Index.....</i>	<i>13</i>
4.2.4	<i>Determination of Bushfire Attack Level.....</i>	<i>13</i>
4.2.5	<i>Construction standards.....</i>	<i>14</i>
<b>5.0</b>	<b>SPECIFICATIONS AND REQUIREMENTS.....</b>	<b>14</b>
5.1	ASSET PROTECTION ZONES.....	14
5.2	ACCESS REQUIREMENTS .....	14
5.3	WATER REQUIREMENTS .....	15
5.4	CONSTRUCTION STANDARDS .....	16
5.5	LANDSCAPING AND MAINTENANCE .....	16
<b>6.0</b>	<b>RECOMMENDATIONS .....</b>	<b>16</b>
<b>7.0</b>	<b>CONCLUSION .....</b>	<b>18</b>
<b>8.0</b>	<b>REFERENCES.....</b>	<b>19</b>
<b>9.0</b>	<b>APPENDICES.....</b>	<b>19</b>

## 1.0 EXECUTIVE SUMMARY

As required by Penrith City Council a bushfire risk assessment of the proposed development has been carried out in accordance with the procedures and requirements outlined in the documents *Planning for Bushfire Protection* (2019) as issued by the NSW Rural Fire Service. A summary of the findings of this assessment is provided below. Subject to the recommendations proposed in this report, the proposed development has the potential to reasonably address and comply with the aims and objectives of *Planning for Bushfire Protection* (2019).

SITE ADDRESS				
				Lot 30 DP 16478 House No.: 4 Inkerman Road EMU HEIGHTS NSW 2750
IDENTIFIERS				
				Latitude: -33.684236 Longitude: 150.897916
ASPECT				
				West
VEGETATION TYPE				
NORTH	Forest	EAST	Managed Land	SOUTH Managed Land WEST Forest
EFFECTIVE SLOPE				
NORTH	0-5° Downslope	EAST	N/A	SOUTH N/A WEST Flat / Upslope
FIRE DANGER INDEX				
				100
ASSET PROTECTION ZONE SETBACKS				
ELEVATION	ASSET PROTECTION ZONE		INNER PROTECTION AREA	OUTER PROTECTION AREA
NORTH	29m		19m	10m
EAST	24m		14m	10m
SOUTH	24m		14m	10m
WEST	24m		14m	10m
SETBACK TO VEGETATION				
NORTH	86m	EAST	140m	SOUTH 140m WEST 66m
BUSHFIRE ATTACK LEVEL				
NORTH	BAL-12.5	EAST	BAL-12.5	SOUTH BAL-12.5 WEST BAL-12.5

## 2.0 PROJECT BRIEF

We have been engaged by Rawson Homes Pty Ltd to assess the threat posed to the subject development in the event of a bushfire. Current fire maps prepared by Penrith City Council in accordance with the requirements of Section 10.3 of the *Environmental Planning and Assessment Act 1979* (as amended) (EPAA) indicate that the proposed development is situated within a 'Bushfire Prone Area' (BPA).

The aims of this report are:

- To identify the Bushfire Attack Level (BAL) to which the proposed development may be exposed;
- To determine the construction requirements associated with the assessed BAL as defined in *AS3959-2018: Construction of buildings in bushfire prone areas*; and
- To recommend 'deemed-to-satisfy' solutions for meeting the performance criteria of bush fire protection measures indicated in *Planning for Bush Fire Protection* (2019)

This report will supplement the Statement of Environmental Effects submitted to Penrith City Council as part of the Development Application. It has been prepared in accordance with the procedures and requirements contained within the NSW Rural Fire Service (RFS) document *Planning for Bushfire Protection* (2019).

The report relies upon the following information:

- Inspection of the site;
- Details of the proposed development provided by Rawson Homes Pty Ltd (See Appendices)

## 3.0 THE PROPOSED DEVELOPMENT

The proposed development is a two storey duplex that are identical internally. They each include a family room, dining area, lounge room, kitchen, media room, study, four bedrooms with three bathrooms and garage. The construction of the development will include a reinforced concrete slab, with timber frames and roof covering on timber trusses. A brick veneer with colorbond sheet roof covering with metal fascia and guttering will form the façade of the development.

A rainwater tank is to be located on site to collect rainwater from the roof area. This water will be used in accordance with the requirements of the BASIX certificate prepared for the development.

## 4.0 SITE ASSESSMENT

The site is located in suburb of Emu Heights within Penrith City Local Government Area and is situated on Inkerman Road, that will provide access to the property. The site immediately borders onto similar sized, managed allotments on the northern and southern boundaries of the allotment. The eastern boundary is adjacent to the public roadway. The western boundary is adjacent to a maintained easement. The vegetation to the west of the allotment was measured to be within 100m, and poses a significant threat in the event of a bushfire.

The subject allotment is rectangular in shape, with the site having a downward slope from the rear of the property to the front. At the time of the site inspection there were no existing structures on the site, with the plans supplied being consistent with the conditions on the allotment.



All aspects of the site are adjacent to similar allotments that will be built on or public infrastructure assets such as roadways and footpaths. These properties and assets present reduced vegetation forms (i.e. maintained lawns and gardens) as well as areas of non-vegetation (i.e. dwellings, roads, paths, ancillary structures) and as such, are not considered to harbour any predominant vegetation formations which are described in the *Planning for Bushfire Protection* (2019). Any future developments within this area should also come under the relevant planning codes and restrictions in accordance with the appropriate planning policy and should present similar landscaping to the surrounding developments with ongoing management by the property owners.

An aerial photograph of the vegetation which affects the proposed development is shown in Figure 1. This immediate vegetation encompasses an area over multiple hectares. Figure 2 shows the allotment boundaries of the subject lot in the context of the subdivision.



Figure 1 – Predominant Surrounding Vegetation Area Mapping (NearMap 2020)



Figure 2 – Boundaries of the subject allotment and the larger subdivision context (SixMaps 2020)

## 4.1 Asset Protection Zones

*Planning for Bushfire Protection (2019)* recommends that an Asset Protection Zone (APZ) be established and maintained on the hazard side of buildings in bushfire prone areas. As the proposed development will be near vegetation that poses a risk to the development, APZs will be required to be put into place and maintained around certain elevations of the proposed development, with the sizes of these APZs based on vegetation composition, effective slope and fire danger index.

### 4.1.1 Vegetation Type

The predominant vegetation formations located within 140m of the proposed development have been determined in accordance with the provisions of Appendix A1.2 of the *NSW RFS Planning for Bushfire Protection (2019)* and Keith (2004) and are provided in Table 4.11.1.

Table 4.1.1 Vegetation Type							
NORTH		Forest	EAST		Managed Land	SOUTH	
					Managed Land	WEST	
						Forest	

The predominant vegetation affecting the subject allotment is present to the western boundary of the site, and was first classified using Keith (2004). The classification of 'best fit' using the Key *An identification key to the vegetation formations of New South Wales and the Australian Capital Territory* was determined to be a 'Sydney Coastal Dry Sclerophyll Forest' (Keith 2004, pp.146-147). This opinion is based on observations at the time of the site inspection that the vegetation is being dominated by eucalyptus trees with a prominent layer of sclerophyllous shrubs in the understorey. A sparse ground cover of grasses was present.

As given in *Clause A1.2 of Planning for Bushfire Protection (2019)* 'Determining Vegetation Formation' this vegetation is classified as a 'Dry Sclerophyll Forest with shrub sub-formation'. This is due to the vegetation composition being dominated by eucalypts 10-30m tall with crowns that touch or overlap that has 20-50% foliage cover. There is also a sparse distribution of shrubs which is predicted to be composed of a surface fuel load of 22 tonnes per hectare [t/ha], and an overall fuel load of 36.1 t/ha (*Table A1.12.8 NSW RFS Planning for Bushfire Protection (2019)*).

Figures 11 and 12 were taken during the site inspection on 23<sup>rd</sup> September 2021 and support the opinion provided above. Figures 3-10 of this report show all aspects of the subject allotment, and were also taken at the time of the site inspection.

The fuel categories in the *Planning for Bushfires Protection (2019)* are described using botanical terminology, such as "Forest" and "Grassy Woodland". It should be noted that when used for bushfire hazard assessment these terms refer to the fuel production capacity and flammability of different vegetation types. Therefore, their meaning and application for bushfire hazard assessment may differ from their use in a strictly botanical context.





*Figure 3: Northern aspect*



*Figure 4: North-Eastern Aspect*





*Figure 5: Eastern Aspect*



*Figure 6: South-Eastern Aspect*





*Figure 7: Southern Aspect*



*Figure 8: South-Western Aspect*





*Figure 9: Western Aspect*



*Figure 10: North-Western Aspect*





*Figure 11: Vegetation to the west of the allotment*



*Figure 12: Vegetation to the west of the allotment*



#### 4.1.2 Effective Slope

The intensity and rate spread of fires burning uphill increases markedly with increasing slope. This is reflected in an increase in the fire hazard index for a particular fuel type with an increasing slope. Similarly the rate of spread and intensity of fires decreases when they burn downhill.

Table 4.1.2 below outlines the general slope for 100m underneath the vegetation which affects proposed development. The slope measurements are based on the measurements taken during the site inspection on the 23<sup>rd</sup> September 2021 and plans prepared by Rawson Homes Pty Ltd (Job No. A009923, Issue C, dated 13<sup>th</sup> September 2021). The western slope, being the elevation presenting the highest bushfire risk, has a downward sloping gradient that was measured to fall within the 0-5° range.

Table 4.1.2 Effective Slope					
NORTH	0-5° Downslope	EAST	N/A	SOUTH	N/A
				WEST	Flat / Upslope

#### 4.1.3 Fire Danger Index

The fire danger index (FDI) for the subject site has been determined in accordance with the provisions of Appendix A1.6 of *Planning for Bushfire Protection (2019)* and is provided in Table 4.1.3. This subject site is located within the 'Greater Sydney Region', being within the Penrith City Local Government Area (LGA).

Table 4.1.3 Fire Danger Index	
	100

#### 4.1.4 Determination of Asset Protection Zones

The APZ around the proposed development is required to be made up of Inner Protection Area (IPA) and Outer Protection Area (OPA) as determined by Appendix 1, Table A1.12.2 of *Planning for Bushfire Protection (2019)* and is designed to provide a safe defendable space in the event of bushfire for the property owner and fire fighters. As such, the recommendation is that the APZ be provided in accordance with those outlined in Table A1.12.2 of Appendix 1 of *Planning for Bushfire Protection (2019)*. These APZ's are outlined in Table 4.14.1 below:

Table 4.1.4 Asset Protection Zone Setbacks			
ELEVATION	ASSET PROTECTION ZONE	INNER PROTECTION AREA	OUTER PROTECTION AREA
NORTH	29m	19m	10m
EAST	24m	14m	10m
SOUTH	24m	14m	10m
WEST	24m	14m	10m

The recommended APZ can not be established within the boundaries of the allotment to any elevation. Similar, managed allotments to the north and south, Inkerman Road to the east and a managed easement to the west all present with areas that were considered 'managed land' at the time of inspection. These managed areas would provide a safe, operational space for emergency services in the event of a bushfire. The space between the proposed development and allotment boundaries should be maintained as as IPA in perpetuity.

Landscaping within the APZ should aim to achieve a state that results in the fuel source being discontinuous and of low flammability in the event of a bushfire. General requirements for an APZ are listed in Section 7.4. of *NSW RFS Planning for Bushfire Protection (2019)*, Appendix 1 and Appendix 4 of *Planning for Bushfire Protection (2019)* and the NSW RFS document 'Standards for Asset Protection Zones' (2005) (See Report Appendices); in particular 'Step 6: Ongoing Management and Landscaping'. These requirements should also be adhered to around the property where possible.

**The on-going maintenance of the property's APZ should continue throughout the life of the development to ensure that the landscaping does not contribute to the spread of bushfires.**

## 4.2 Bushfire Attack Level

### 4.2.1 Vegetation Types

The methodology for the classification of the vegetation type used for determining the bushfire attack level is the same as that used in the assessment of the Asset Protection Zone. As such reference is drawn to Section 4.1.1 of this report. The results of this assessment are provided in Table 4.1.1.

### 4.2.2 Effective Slope

The methodology for the identification of the effective slope beneath the vegetation used for determining the bushfire attack level is the same as that used in the assessment of the Asset Protection Zone. As such reference is drawn to Section 4.1.2 of this report. The results of this assessment are provided in Table 4.1.2.

### 4.2.3 Fire Danger Index

The methodology for the classification of the Fire Danger Index used for determining the bushfire attack level is the same as that used in the assessment of the Asset Protection Zone. As such reference is drawn to Section 4.1.3 of this report. The results of this assessment are provided in Table 4.1.3.

### 4.2.4 Determination of Bushfire Attack Level

The setbacks to the predominant vegetation at each elevation is indicated in Table 4.2.4.

These distances were measured at the time of undertaking the site inspection using a laser measuring unit and measuring wheel, then subsequently validated against plans provided as part of the application.

**Table 4.2.4 Setback to Vegetation**

<b>NORTH</b>	86m	<b>EAST</b>	140m	<b>SOUTH</b>	140m	<b>WEST</b>	66m
--------------	-----	-------------	------	--------------	------	-------------	-----

In accordance with the Table A1.12.5 of *Planning for Bushfire Protection (2019)*, the all elevations of the proposed development have been determined as being located within an area where attack by burning debris is significant with radiant heat levels not greater than 12.5kW/m<sup>2</sup>. Radiant heat is unlikely to threaten building elements. Specific construction requirements relating to ember protection and accumulation of debris are warranted. All elevations of the proposed development must be built to Bushfire Attack Level 12.5 (BAL-12.5) construction requirements.

**Table 4.2.5 Bushfire Attack Level**

<b>NORTH</b>	BAL-12.5	<b>EAST</b>	BAL-12.5	<b>SOUTH</b>	BAL-12.5	<b>WEST</b>	BAL-12.5
--------------	----------	-------------	----------	--------------	----------	-------------	----------

#### 4.2.5 Construction standards

**Table 4.2.5 Bushfire Attack Level**

<b>NORTH</b>	BAL-12.5	<b>EAST</b>	BAL-12.5	<b>SOUTH</b>	BAL-12.5	<b>WEST</b>	BAL-12.5
--------------	----------	-------------	----------	--------------	----------	-------------	----------

Section 7.5 of *Planning for Bush Fire Protection (2019)* adopts additional construction requirements relevant to the BAL-12.5 elevations of this development. The requirements to be adhered to, where relevant, are in table 7.4b.

The construction requirements for a BAL-12.5 rating are given within Sections 3 and 5 of AS 3959-2018: *Construction of Buildings in Bushfire Prone Areas (2018)* and where relevant, Section 7.5 of *Planning for Bush Fire Protection (2019)*.

**The assessed BAL requires compliance with Construction Guidelines outlined in Sections 3 and 5 of AS 3959-2018: Construction of buildings in bushfire-prone areas/the Nash Standard, incorporating any relevation variations from Section 7.5 of Planning for Bush Fire Protection (2019).**

## 5.0 SPECIFICATIONS AND REQUIREMENTS

In order to minimise the risk of bush fire attack and provide protection for emergency services, personnel, residents and others assisting fire fighting activities, a number of protection measures should be integrated into the development. These specifications and requirements are to be provided in accordance with the requirements of Clause 7.4 of the NSW Rural Fire Service document *Planning for Bushfire Protection (2019)*.

### 5.1 Asset Protection Zones

The performance criteria for asset protection zones are satisfied if the area is provided in accordance with *Appendix 1* and managed in accordance with *Appendix 4* of *Planning for Bush Fire Protection (2019)*. Recommendations related to asset protection zones are outlined in Section 6.

### 5.2 Access Requirements

#### Public Road Access



Figure 13 – Access route for fire fighting vehicles and evacuation route for occupants (NearMap 2020)



The route of travel for the Rural Fire Service or the NSW Fire Brigade to reach the subject site is an all weather two-way access road that is 8 metres wide. The road is capable of carrying loads of 15 tonnes. Streets are clearly sign posted and the subject site will be clearly identifiable by numbering. Figure 13 shows that potential access and egress to the site can be found along Wedmore Road, Balaclava Road, Trafalgar Road and Inkerman Road. These roadways are deemed to provide safe operational access and egress for emergency service personnel and residents, and meet the access requirements of *Appendix 3 of NSW RFS Planning for Bushfire Protection (2019)*.

### Property Access

The proposed development has ready access to the public roadway. The driveway access is proposed to be sealed concrete, which will provide a non-combustible all weather access way to allow reasonable vehicular access (including fire fighting vehicles) to the premises with suitable turning areas in accordance with the requirements of *Appendix 3 of NSW RFS Planning for Bushfire Protection (2019)*.

## 5.3 Water Requirements

### Water Supply

The site has access to a reticulated water system, with access to a hydrant point for firefighting services within 60m of the proposed development. The installed system is assumed to have been assessed and installed as per NSW Rural Fire Service requirements as given within *Planning for Bushfire Protection (2019)*, including appropriate pressurizing and access points. Figure 14 displays the location of the closest hydrant point in relation to the subject site.



*Figure 14 – Closest hydrant point location in relation to the subject site.*

### Electrical Services

It is the intention of the proposed development to be serviced by registered electrical providers who have appropriate means of servicing bushfire prone areas. All electrical transmission lines were noted to be underground.

### Gas Services

The location of gas services shall not lead to the ignition of surrounding bush land or the fabric of buildings. Metal connections are only to be used.

## 5.4 Construction Standards

This proposed development is located within an area that has been determined as being bushfire prone. Based off setback measurements and vegetation classification acquired during the site inspection on the 23<sup>rd</sup> September 2021, and plans for the development as supplied by Rawson Homes Pty Ltd, a Bushfire Attack Level of **BAL-12.5** has been assigned for **all elevations** of the proposed development.

Section 7.5 of *Planning for Bush Fire Protection (2019)* adopts additional construction requirements relevant to the BAL-12.5 elevations of this development. The requirements to be adhered to, where relevant, are in table 7.4b.

The construction requirements for a BAL-12.5 rating are given within Sections 3 and 5 of AS 3959-2018: *Construction of Buildings in Bushfire Prone Areas (2018)*, incorporating any relevation variations from Section 7.5 of *Planning for Bush Fire Protection (2019)*.

## 5.5 Landscaping and Maintenance

Landscaping will be designed and managed to minimise flame contact and radiant heat to buildings and the potential for wind driven embers to cause ignition. In addition to maintaining the vegetation onsite, the site should be prepared and maintained in readiness for a bushfire. All landscaping should be carried out on the site in accordance with the NSW RFS publication '*Standards for Asset Protection Zones*' which is given as an Appendix in this report.

## 6.0 RECOMMENDATIONS

### 6.1 Asset Protection Zones

1. Landscaping within the Asset Protection and/or defensible space around the development should aim to provide a low flammability, avoid continuity of vegetation (horizontally and vertically), and on-going maintenance. Any plant species can ignite under the right conditions; however, some plants are considered to be less flammable than others. Plants that have a lower flammability have the following features:
  - High moisture content
  - High levels of salt
  - Low volatile oil content of leaves
  - Smooth barks
  - Dense crown and elevated branches.
2. Plants that have a loose stringy bark should be avoided; these plants encourage ground fire and are easily ignited. Noxious weeds should be avoided from being introduced to the garden and should be removed.
3. Consideration should be given to the layout of the garden ensuring that the vegetation does not provide a continuous path to the structure, or placed under vulnerable parts of the building façade such as windows and glazing. To avoid this, plants should be arranged in 'clumps' rather than rows and should be located far enough away from the asset so that if a fire were to ignite in the vegetation, the risk of flame contact and radiant heat ignition of the asset would be reduced. Other aspects that should be considered with designing the layout of a garden within an APZ are as follows:
  - Short green grass located around the asset will reduce an impending fire's intensity and slow the fire and to provide unimpeded access for fire fighters.
  - Branches two (2) metres from the ground should be pruned to prevent the spread of ground fire.
  - Woodpiles, wooden sheds, combustible material, storage areas, large quantities of garden mulch should be stored in a designated area, cleared of vegetation, with no direct contact with the bushfire hazard.

- Fire trails, gravel paths, dams, creeks, swimming pools, tennis courts and vegetable gardens can be incorporated into part of the property's APZ
- 4 Maintenance of the site should involve:
- Maintaining a low cut lawn.
  - Keeping areas under fences, gates and trees raked and clear of fuel.
  - Using non-combustible fencing and retaining walls
  - Not using organic mulch.
  - Ensuring trees to not overhang the roof.

## 6.2 Access Requirements

8. Residents of this site should consider participating in community early response programs with the Rural Fire Service and education programs.
9. The unnecessary occupation of the street and driveway by vehicles; trailers and the like should be avoided.
10. It is recommended that any proposed rainwater tanks of tanks required by BASIX be repositioned to the rear of the site to avoid any obstruction to personal gaining access to the rear yard.
11. Any proposed gas cylinders should be located to maximize the distance from any heat source and to remove the tanks from presenting an unnecessary obstacle.

## 6.3 Water Requirements

12. The following notations be included on the architectural plans submitted to the Certifying Authority as part of any application for a Construction Certificate or Complying Development Certificate;
  - Hydrant spacing, design and sizing comply with *AS2419.1:2005*.
  - Hydrant flows and pressures comply with *Table 2.2 of AS2419.1:2005*
  - All above-ground water service pipes external to the building are metal, including up to any taps.
  - Reticulated and bottled gas shall be installed and maintained in accordance with AS 1596.
  - Metal piping shall be used, including connections to and from cylinders.
  - All fixed gas cylinders shall be kept clear of all flammable materials to on distance of 10 meters and shielded on the hazard side of the installation.
  - Release valves to gas cylinders are to be directed away from the building.
  - If the gas cylinders need to be kept close to the building, the release valves shall be directed away from the building. Notwithstanding this fact the proposed location of the gas cylinder should be reconsidered and positioned at the least vulnerable position along the development.
  - Polymer sheathed flexible gas supply lines to gas meters adjacent to the building are not to be used.

## 6.4 Construction Standards

13. Garage doors (if applicable) should be tight fitting to the doorframe and jambs with gaps no greater than 3mm when closed.
14. All fencing and gates are to be constructed in accordance with the requirements of Section 7.8 of *Planning for Bushfire Protection (2019)*.
15. All windows are required to be screened internally or externally with screens which comply with Clause 5.5.2 of AS 3959-2018.
16. Any external timber on the development or within landscaping features of the property should be of a species listed within *Appendix F of AS 3959-2018*.

## 6.5 Landscaping & Maintenance

17. All landscaping should comply with the requirements of the NSW RFS 'Asset Protection Zone Standards' contained in Appendix 4 of *NSW RFS Planning for Bushfire Protection (2019)*
18. All fencing and retaining walls are to be constructed in accordance with the requirements of Section 7.8.
19. Remove litter from roof and gardens and ensure the roof materials are in good condition.
20. Ensure painted surfaces are in good condition.
21. Ensure water supplies and any required sprinkler systems are in good working order.
22. Ensure trees and vegetation does not provide an obstruction in the access to the property.

23. Flyscreens should be checked for any damage and replaced if necessary.
24. Ensure draught seals are maintained.
25. Non-combustible gutter and valley guards should be installed on the development to inhibit the accumulation of debris in the gutter system, particularly as the development is within 100m of bushfire threatening vegetation with a high level of tree and leaf debris accumulation over time possible.

## 6.6 Siting And Design

26. Keep the bulk of the building as small as possible to minimise the extent of exposed surfaces to the threat of bushfire.
27. Minimise the glazing within the building facades or any proposed courtyards.
28. Include gutter guarding to all gutters and any gutter valleys if provided.
29. Ensure that defensible space is provided around the full perimeter of the building.

## 7.0 CONCLUSION

In conclusion, construction standards for building within bushfire-prone areas are set out in Australian Standard AS 3959–2018: *Construction of Buildings in Bushfire Prone Areas*. *Planning for Bushfire Protection* (2019) provides a procedure for determining the category of bushfire attack and the appropriate level of construction. It is considered that the proposed development is at potential risk warranting a **BAL-12.5 construction**; hence the following requirements should be adhered to:

- All of the elevations of the proposed development are to be constructed so as to comply with a **BAL-12.5 rating** as defined by AS 3959-2018, incorporating any variations outlined in *Section 7.5 of Planning for Bushfire Protection* (2019).
- The implementation of an APZ to the site as recommended within, and to be maintained in accordance with *Standards for Asset Protection Zones* (2005)

Further, the following recommendations are also provided to the development:

- The installation of non-combustible gutter and valley guards on the development to inhibit the accumulation of debris in the gutter system.

Table 7.0 Bushfire Attack Level							
NORTH	BAL-12.5	EAST	BAL-12.5	SOUTH	BAL-12.5	WEST	BAL-12.5

In making any determination under Section 4.14 of the Environmental Planning and Assessment Act, 1979 (as amended) it is recommended that the Consent Authority should give consideration to the recommendations contained in this report.

### Craig Hardy

MBA

M.App.Sc.(Env.Toxicology)

B.App.Sc.(Env.Health)

Accredited Certifier – Building Surveying A2 – 0167

BPAD-D Certified Practitioner – 24168

### ASSOCIATIONS

Fire Protection Association of Australia

Association of Accredited Certifiers

Australian Institute of Building Surveyors

October 2021



## 8.0 REFERENCES

- Keith, D.A, & New South Wales. Department of Environment and Conservation & New South Wales. National Parks and Wildlife Service (2004) *Ocean shores to desert dunes : the native vegetation of New South Wales and the ACT*, Hurstville, NSW Dept. of Environment and Conservation (NSW)
- Nearmap Pty Ltd (2020) *PhotoMaps by Nearmap*. Available: <http://maps.au.nearmap.com/>. Last accessed 18<sup>th</sup> October 2021
- NSW Rural Fire Service (2005) *Standards for Asset Protection Zones*. NSW Rural Fire Service, Lidcombe NSW – Available: [http://www.rfs.nsw.gov.au/\\_\\_data/assets/pdf\\_file/0010/13321/Standards-for-Asset-Protection-Zones.pdf](http://www.rfs.nsw.gov.au/__data/assets/pdf_file/0010/13321/Standards-for-Asset-Protection-Zones.pdf)
- NSW Rural Fire Service (2019) *Planning for Bushfire Protection; A Guide for Councils, Planners, Fire Authorities, Developers and Home Owners*. NSW Rural Fire Service, Lidcombe NSW.
- NSW State Government. (2020). *SixMaps*. Available: <https://maps.six.nsw.gov.au/>. Last accessed 18<sup>th</sup> October 2021
- Standards Australia (2018) *Australian Standard AS 3959–2018: Construction of Buildings in Bushfire-Prone Areas*. SAI Global Ltd, Sydney.

## 9.0 APPENDICES

1. Plans prepared by Rawson Homes Pty Ltd, job no. A009923, Issue C, Dated 13/09/2021.
2. Standards for Asset Protection Zones as issued by the NSW Rural Fire Service in 2005.

THIS DRAWING IS SUBJECT TO COPYRIGHT LAWS AND  
MAY NOT BE COPIED WITHOUT THE WRITTEN PERMISSION  
OF RAWSON HOMES PTY LTD-ACN 053 733 841



### NOTES:

\* ALL DIMENSIONS ARE IN MILLIMETERS

\* DO NOT SCALE THE DRAWING - USE WRITTEN  
DIMENSIONS

\* IT IS THE RESPONSIBILITY OF THE OWNER TO  
ENSURE THAT THE LAYOUT AND ALL SPECIAL  
INCLUSIONS ARE CORRECT

\* RAWSON HOMES PTY. LIMITED WILL TAKE NO  
RESPONSIBILITY FOR ANY VERBAL DISCUSSIONS OR  
INSTRUCTIONS. ALL CHANGES AND SPECIAL  
INCLUSIONS MUST BE DOCUMENTED IN WRITING.

\* THIS DRAWING IS SUBJECT TO COPYRIGHT LAWS  
AND MAY NOT BE COPIED WITHOUT THE WRITTEN  
PERMISSION OF RAWSON HOMES PTY. LIMITED - ACN  
053 733 841

### SCHEDULE OF DRAWINGS:

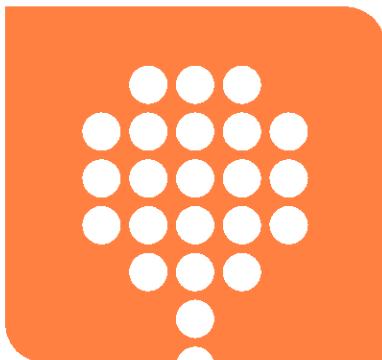
SHEET	CONTENTS
1	COVER SHEET
2	DEMOLITION PLAN
3	OVERALL SITE
4	SITE PLAN
5	GROUND FLOOR
6	FIRST FLOOR
7	ELEVATIONS 1-2
8	ELEVATIONS 3-4
9	SECTIONS
10	WET AREA PLANS (A)
11	WET AREAS PLAN (B)
12	SLAB SETOUT PLAN (NOT IN SET)
13	SEDIMENT/ANALYSIS PLAN
14	SHADOW DIAGRAM
15	BASIX COMMITMENT
D250	TYPICAL PARTY WALL DETAILS DUPLEX HOMES
KD1	KITCHEN PLAN (A)
KD2	KITCHEN PLAN (B)

### AMENDMENTS

ISS	DESCRIPTION	BY	DATE
A	APPLICATION PLANS (VARI:1-31)(TV:1)	TF	15.07.21
B	SUBMISSION PLANS(TV:1-4)	SM	19.08.21
C	AMENDED SUBMISSION PLANS(BASIX REQUIREMENTS)	SM	13.09.21

### AMENDED SUBMISSION PLANS - DA

SIGNATURE: _____			
DRAWN BY: SM	DATE DRAWN: 16.08.21	CHECKED BY: MS	APPROVED FOR CONSTRUCTION:
COUNCIL AREA: PENRITH		SCALE:	
JOB No: A009923	DRWG No: 1	ISSUE: C	



RAWSON  
HOMES

- EST 1978 -

DUPLEX

### NOTES:

PLEASE NOTE: DETAILS SHOWN ON THESE PLANS ARE INTENDED  
TO BE ACCURATE - HOWEVER INFORMATION WRITTEN INTO  
INDIVIDUAL CONTRACTS WILL TAKE PRECEDENCE OVER PLANS  
\* ALL DIMENSIONS ARE IN MILLIMETERS  
\* DO NOT SCALE - USE WRITTEN DIMENSIONS  
\* ALL DIMENSIONS STATED ON THE PLANS, SPECIFICATIONS,  
VARIATIONS AND UPGRADES ARE TO STRUCTURAL FRAMES ONLY AND  
EXCLUDE FINISHED SURFACES

### RAWSON HOMES

5 RIDER BOULEVARD  
LEVEL 7  
RHODES NSW 2138  
TELEPHONE 02 8765 5500  
FAX 02 8765 8099  
Builder's licence No. 33493C



SITE ADDRESS:  
LOT 30 (DP 16478)  
(NO. 4) INKERMANN ROAD  
EMU HEIGHTS, NSW 2750

HOUSE TYPE  
MODEL: CUSTOM  
FACADE: CUSTOM  
TYPE: DOUBLE GARAGE  
SPECIFICATION: CUSTOM COLLECTIONS

DRAWING TITLE:  
COVER SHEET



S:\17. DRAFTING\RAWSON HOMES\CONTRACTS AND JOB FILES\A009923 Provic - Lot 30, 4 Inkerman Rd Emu Heights\A009923 Amended Submission Plans.rvt

LEGEND	
DT - DENOTES DEAD TREE	PP - POWER POLE
EB - ELECTRICAL BOX	SMH - SEWER MAN HOLE
EM - ELECTRICAL METER	SIO - SEWER INSPECTION OPENING
G - GAS METER	SV - SEWER VENT PIPE STOP VALVE
H - HYDRANT	S - DENOTES TREE STUMP
R - HYDRANT RECYCLED	SWO - DENOTES STORM WATER PIT
KO - DENOTES KERB OUTLET	T - DENOTES TREE
LP - LIGHT POLE	TP - TELESTRA PIT
LH - LAMP POLE	WT - WATER TAG
MH - MAN HOLE	WM - WATER METER
△ - BENCH MARK	— - GULLY PIT
① - PHOTO POINT	— - VEHICULAR CROSSING

#### GENERAL SITING NOTES

- ALL PROPOSED FINISH FLOOR LEVELS AND CUT/FILL REQUIREMENTS SUBJECT TO CONFORMATION UPON COMPLETION OF ARCHITECTURAL PLANS.
- ALL PROPOSED FINISH FLOOR LEVELS ARE SUBJECT TO CONFORMATION WITH STEP-DOWNS NOMINATED PRIOR TO EXCAVATION BY BUILDER, EXCAVATOR AND/OR CONCRETOR.
- ALL AREA CALCULATIONS ARE TO BE CONFIRMED UPON THE COMPLETION OF FINAL ARCHITECTURAL PLANS.
- ALL ALLOWANCES FOR STEPS/STAIRS THAT MAY BE REQUIRED ARE SUBJECT TO FINAL ARCHITECTURAL PLANS.
- NO ALLOWANCE HAS BEEN MADE FOR RETAINING WALLS, BY OWNER AFTER HANDOVER IF REQUIRED

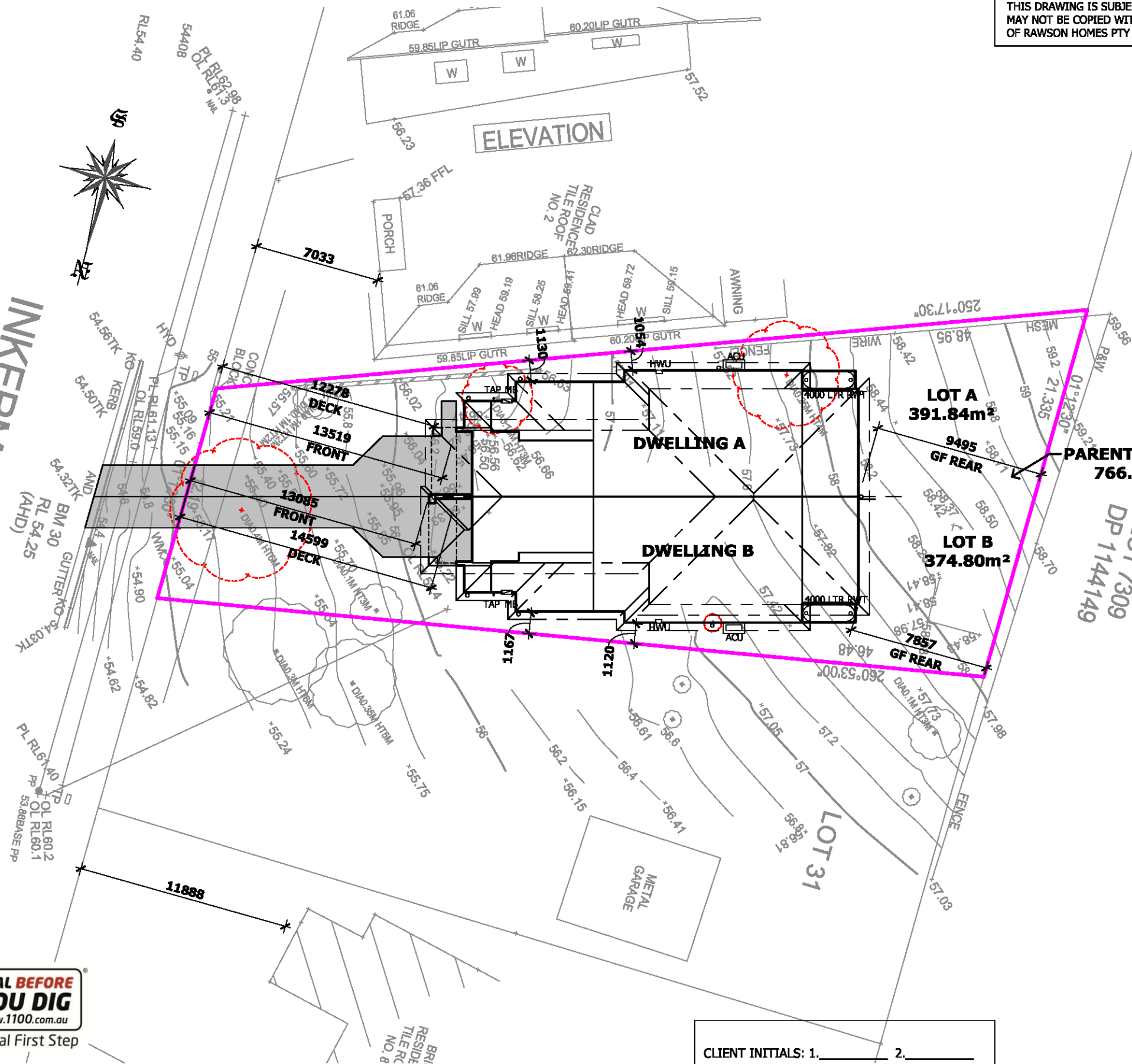
EXISTING TREES GREATER THAN 8m IN HEIGHT WITHIN 3m OF THE PROPOSED BUILDING OR ANY TREES WITHIN PROPOSED DRIVEWAY TO BE REMOVED BY OWNER PRIOR TO CONSTRUCTION

#### GENERAL SURVEY NOTES

- CONTOURS SHOWN HAVE BEEN INTERPOLATED FROM SPOT LEVELS TAKEN ON-SITE AND ARE A REPRESENTATION OF THE TOPOGRAPHY ONLY.
- DIMENSIONS SHOWN (BEARINGS & DISTANCES) HAVE BEEN DETERMINED BY NSW LAND REGISTRY SERVICES PLANS ONLY. BOUNDARIES HAVE NOT BEEN ACCURATELY DETERMINED. BUILDINGS AND FENCES ARE SHOWN IN APPROXIMATE POSITIONS ONLY AND COULD VARY + OR - 100MM.
- SERVICES SHOWN HAVE BEEN LOCATED WHERE POSSIBLE BY FIELD SURVEY. PRIOR TO ANY SITE WORKS, THE RELEVANT AUTHORITY SHOULD BE CONTACTED TO DETERMINE EXACT POSITION OF ANY UNDERGROUND PIPES, CABLES ETC.
- DIMENSIONS OF ANY TREES SHOWN ON THE PLAN ARE APPROXIMATE.



INKERMAN ROAD



THIS DRAWING IS SUBJECT TO COPYRIGHT LAWS AND MAY NOT BE COPIED WITHOUT THE WRITTEN PERMISSION OF RAWSON HOMES PTY LTD-ACN 053 733 841



#### NOTES:

PLEASE NOTE: DETAILS SHOWN ON THESE PLANS ARE INTENDED TO BE ACCURATE - HOWEVER INFORMATION WRITTEN INTO INDIVIDUAL CONTRACTS WILL TAKE PRECEDENCE OVER PLANS

- \* ALL DIMENSIONS ARE IN MILLIMETRES
- \* DO NOT SCALE - USE WRITTEN DIMENSIONS
- \* ALL DIMENSIONS STATED ON THE PLANS, SPECIFICATIONS, VARIATIONS AND UPGRADES ARE TO STRUCTURAL FRAMES ONLY AND EXCLUDE FINISHED SURFACES

**RAWSON HOMES**  
5 RIDER BOULEVARD  
LEVEL 7  
RHODES NSW 2138  
TELEPHONE 02 8765 5500  
FAX 02 8765 8099  
Builder's licence No. 33493C



SITE ADDRESS:  
LOT 30 (DP 16478)  
(NO. 4) INKERMAN ROAD  
EMU HEIGHTS, NSW 2750

HOUSE TYPE  
MODEL: CUSTOM  
FACADE: CUSTOM  
TYPE: DOUBLE GARAGE  
SPECIFICATION: CUSTOM COLLECTIONS

DRAWING TITLE:  
**OVERALL SITE**

DRAWN BY: SM	DATE DRAWN: 16.08.21	CHECKED BY: MS	APPROVED FOR CONSTRUCTION
COUNCIL AREA: PENRITH		SCALE: 1 : 250	
JOB No: A009923	DRWG No: 3	ISSUE: C	



RETAINING WALL BY OWNER IF REQUIRED.  
RETAINING WALLS  
GREATER THAN 600mm IN HEIGHT, THE OWNER  
IS TO ORGANISE THE RETAINING WALLS TO BE  
STRUCTURALLY ENGINEER DESIGNED,  
CONSTRUCTED AND INSPECTED AFTER HANDOVE

**SUGGESTED  
BAL 40**

156mm CUT TO ACHIEVE 12.5%  
MAX GRADIENT FOR CROSS  
OVER, ALL DUE CARE BY  
RAWSON

PROVIDE NEW 3.5m  
WIDE NEW LAYBACK  
TO ROAD/COUNCIL  
VERGE IN LIEU OF  
OLD KERB AND  
GUTTER AND  
RETIFICATION  
OF KERB & GUTTER

## SITE NOTES:

BEFORE STARTING WORK ON SITE CHECK FOLLOWING:

1. SERVICE LOCATIONS
  2. SEWER CONNECTION POSITION
  3. DRIVEWAY ALIGNMENT & LEVELS
- \*N2 WIND CATEGORY**

DP o INDICATES DOWNPIPE LOCATION

### SITE CALCULATIONS DA A

GROUND FLOOR	97.92	m <sup>2</sup>
FIRST FLOOR	110.59	m <sup>2</sup>
GARAGE AREA	22.78	m <sup>2</sup>
TOTAL LIVING AREA	208.51	m <sup>2</sup>
SITE AREA	391.84	m <sup>2</sup>
BUILDING FOOTPRINT (INCLUDING UNENCLOSED AREA)	141.95	m <sup>2</sup>
DRIVEWAY & PATH	38.75	m <sup>2</sup>
CROSSOVER	9.02	m <sup>2</sup>
TOTAL FRONT AREA	94.50	m <sup>2</sup>
FRONT LANDSCAPE AREA	58.99	%
TOTAL LANDSCAPE AREA	211.14	m <sup>2</sup>
LANDSCAPE AREA (%)	53.88	%
TOTAL BUILT UPON AREA	40.69	%
SITE COVERAGE	36.23	%



The Essential First Step

**RAWSON HOMES**  
5 RIDER BOULEVARD  
LEVEL 7  
RHODES NSW 2138  
TELEPHONE 02 8765 5500  
FAX 02 8765 8099  
Builder's licence No. 33493C

SITE ADDRESS:  
LOT 30 (DP 16478)  
(NO. 4) INKERMANN ROAD  
EMU HEIGHTS, NSW 2750

HOUSE TYPE  
MODEL: CUSTOM  
FACADE: CUSTOM  
TYPE: DOUBLE GARAGE  
SPECIFICATION: CUSTOM COLLECTIONS  
DRAWING TITLE:  
**SITE PLAN**

DRAWN BY: SM	DATE DRAWN: 16.08.21	CHECKED BY: MS	APPROVED FOR CONSTRUCTION
COUNCIL AREA: PENRITH		SCALE: 1 : 200	
JOB No: A009923		DRWG No: 4	ISSUE: C

### SITE CALCULATIONS DA B

GROUND FLOOR	97.92	m <sup>2</sup>
FIRST FLOOR	110.59	m <sup>2</sup>
GARAGE AREA	22.78	m <sup>2</sup>
TOTAL LIVING AREA	208.51	m <sup>2</sup>
SITE AREA	374.80	m <sup>2</sup>
BUILDING FOOTPRINT (INCLUDING UNENCLOSED AREA)	141.95	m <sup>2</sup>
DRIVEWAY & PATH	38.42	m <sup>2</sup>
CROSSOVER	9.02	m <sup>2</sup>
TOTAL FRONT AREA	103.99	m <sup>2</sup>
FRONT LANDSCAPE AREA	63.06	%
TOTAL LANDSCAPE AREA	194.44	m <sup>2</sup>
LANDSCAPE AREA (%)	51.88	%
TOTAL BUILT UPON AREA	42.45	%
SITE COVERAGE	37.87	%

CONSUMER POLE LOCATION TO BE DETERMINED  
ON SITE

**NOTE:** BATTER GRATER THAN  
600mm TO COMPLY WITH BCA  
C13.1.1

1.98m OF FALL ACROSS BUILDING ENVELOPE

FRONT SETBACK  
NEIGHBOUR 8 : 11888mm  
NEIGHBOUR 2 : 7033mm  
AVERAGE : 9461mm

RETAINING WALL BY OWNER IF  
REQUIRED

THIS DRAWING IS SUBJECT TO COPYRIGHT LAWS AND  
MAY NOT BE COPIED WITHOUT THE WRITTEN PERMISSION  
OF RAWSON HOMES PTY LTD-ACN 053 733 841

(6m x 5m) PRINCIPAL  
PRIVATE OPEN SPACE .

**LOT A**  
391.84m<sup>2</sup>

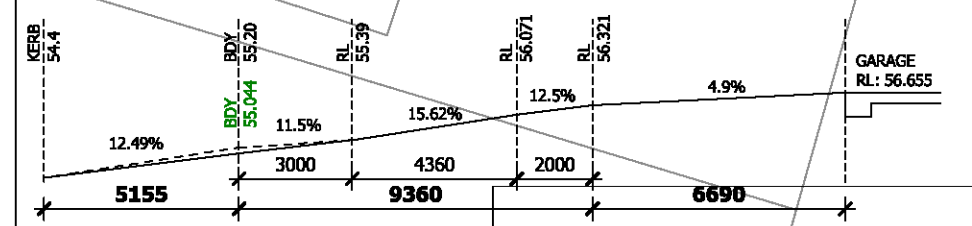
**PARENT LOT 30**  
766.6m<sup>2</sup>

**LOT B**  
374.80m<sup>2</sup>

(6m x 5m) PRINCIPAL  
PRIVATE OPEN SPACE .

DRIVEWAY & FRONT PATH TO COMPLY WITH AS2890

### DRIVEWAY GRADIENT



CLIENT INITIALS: 1. 2.

## NOTES:

PLEASE NOTE: DETAILS SHOWN ON THESE PLANS ARE INTENDED  
TO BE ACCURATE - HOWEVER INFORMATION WRITTEN INTO  
INDIVIDUAL CONTRACTS WILL TAKE PRECEDENCE OVER PLANS  
\* ALL DIMENSIONS ARE IN MILLIMETRES  
\* DO NOT SCALE - USE WRITTEN DIMENSIONS  
\* ALL DIMENSIONS STATED ON THE PLANS, SPECIFICATIONS, VARIATIONS  
AND UPGRADES ARE TO STRUCTURAL FRAMES ONLY AND EXCLUDE  
FINISHED SURFACES

- NOTES:**
- ALL EXTERNAL DOORS TO BE FITTED WITH DRAFT EXCLUSION DEVICE
  - WC DOORS TO BE FITTED WITH LIFT-OFF HINGES
  - WINDOW OPENING SIZES TO BE CHECKED BEFORE FRAMES ARE CONSTRUCTED
  - FRAMES & TRUSSES TO SATISFY AS 1684 SAA TIMBER FRAMING CODE
  - ROOF TO BE VENTILATED BY EAVE VENTS
  - 2040H INTERNAL DOORS
  - 2150H SQ. SET OPENINGS

**NOTE:** EI POSITION BY ELECT

**POR**  
75mm :  
BRUSHED  
TIMBER BI  
3 x 900mm  
CAST CON  
BY RAWSO

FIRE RATED PARTY WALL  
SYSTEM AS PER  
MANUFACTURER'S  
DETAILS  
FRL 60/60/60 TO BCA  
REQUIREMENTS

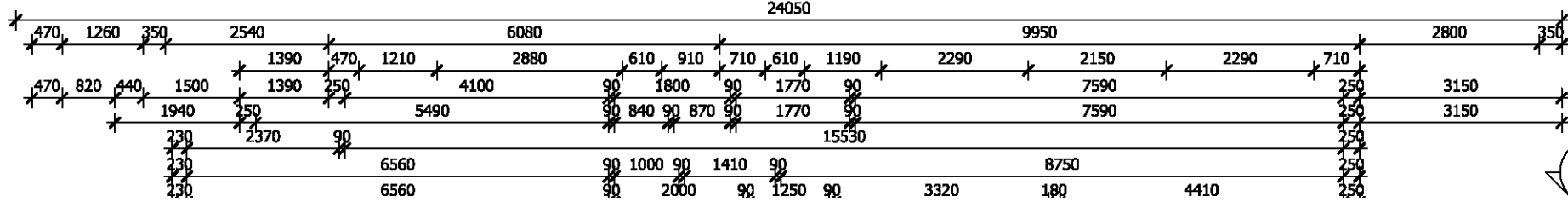
**B**  
9

**POR**  
75mm STEI  
BRUSHED  
4 x 900mm  
PRE-CAE  
BY RAW  
T.

**1**  
**2**

**NOTE:** ELECTRICAL & GAS METER  
POSITIONS ARE TO BE CONFIRMED ON SITE  
BY ELECTRICAL CONTRACTOR

**NOTE:** 6mm TOUGHENED GLASS TO  
WINDOWS AND EXTERNAL SLIDING  
DOORS

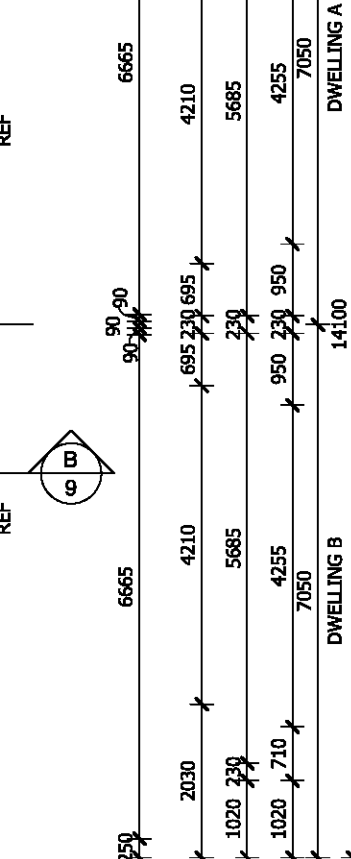
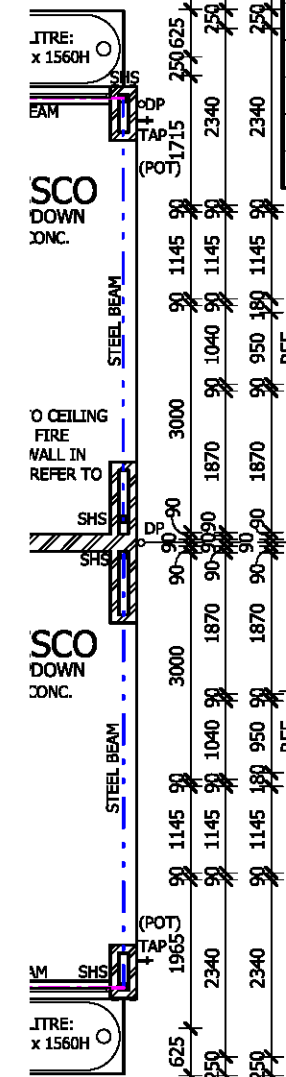


THIS DRAWING IS SUBJECT TO COPYRIGHT LAWS AND  
MAY NOT BE COPIED WITHOUT THE WRITTEN PERMISSION  
OF RAWSON HOMES PTY LTD-ACN 053 733 841

POSITIONS OF OUTLETS, RETURN AIR AND NUMBER OF  
DROPPERS IS DETERMINED BY AIR CONDITIONING  
CONTRACTOR

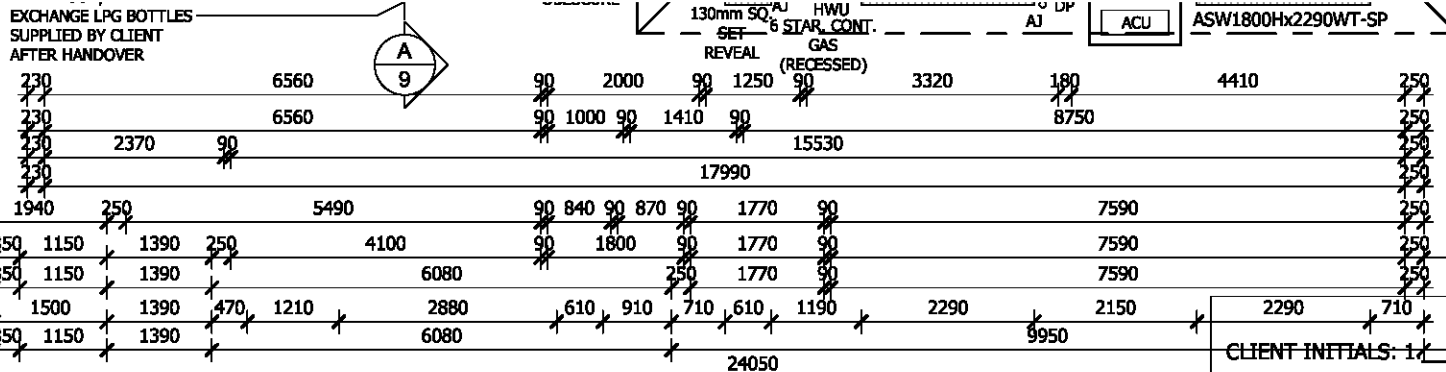
### FLOOR AREAS DWELLING A

FIRST FLOOR	110.59 m <sup>2</sup>
LIVING	97.92 m <sup>2</sup>
GARAGE	22.78 m <sup>2</sup>
ALFRESCO	18.99 m <sup>2</sup>
DECK	3.31 m <sup>2</sup>
PORCH	2.24 m <sup>2</sup>
<b>TOTAL</b>	<b>255.85 m<sup>2</sup></b>



### FLOOR AREAS DWELLING B

FIRST FLOOR	110.59 m <sup>2</sup>
LIVING	97.92 m <sup>2</sup>
GARAGE	22.78 m <sup>2</sup>
ALFRESCO	18.99 m <sup>2</sup>
DECK	4.98 m <sup>2</sup>
PORCH	2.24 m <sup>2</sup>
<b>TOTAL</b>	<b>257.52 m<sup>2</sup></b>



#### NOTES:

PLEASE NOTE: DETAILS SHOWN ON THESE PLANS ARE INTENDED  
TO BE ACCURATE - HOWEVER INFORMATION WRITTEN INTO  
INDIVIDUAL CONTRACTS WILL TAKE PRECEDENCE OVER PLANS

- \* ALL DIMENSIONS ARE IN MILLIMETRES
- \* DO NOT SCALE - USE WRITTEN DIMENSIONS
- \* ALL DIMENSIONS STATED ON THE PLANS, SPECIFICATIONS, VARIATIONS  
AND UPGRADES ARE TO STRUCTURAL FRAMES ONLY AND EXCLUDE  
FINISHED SURFACES

**RAWSON HOMES**  
5 RIDER BOULEVARD  
LEVEL 7  
RHODES NSW 2138  
TELEPHONE 02 8765 5500  
FAX 02 8765 8099  
Builder's licence No. 33493C



SITE ADDRESS:  
LOT 30 (DP 16478)  
(NO. 4) INKERMANN ROAD  
EMU HEIGHTS, NSW 2750

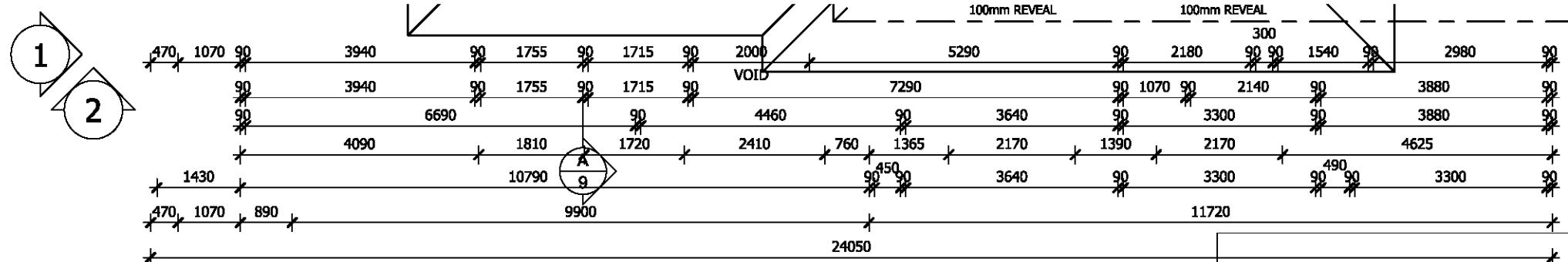
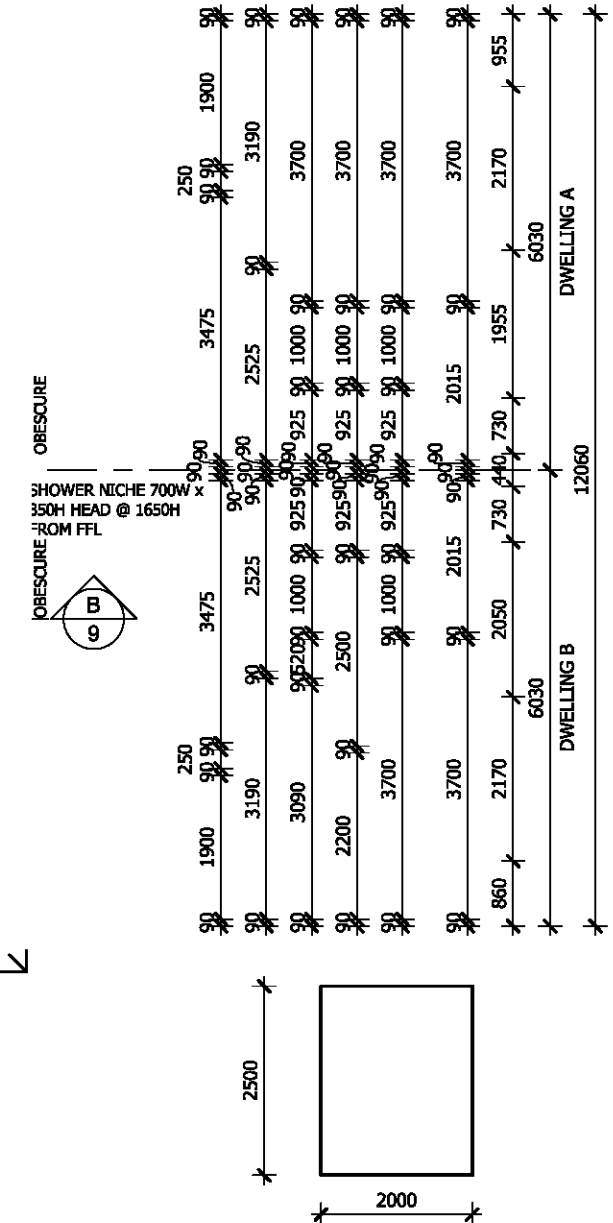
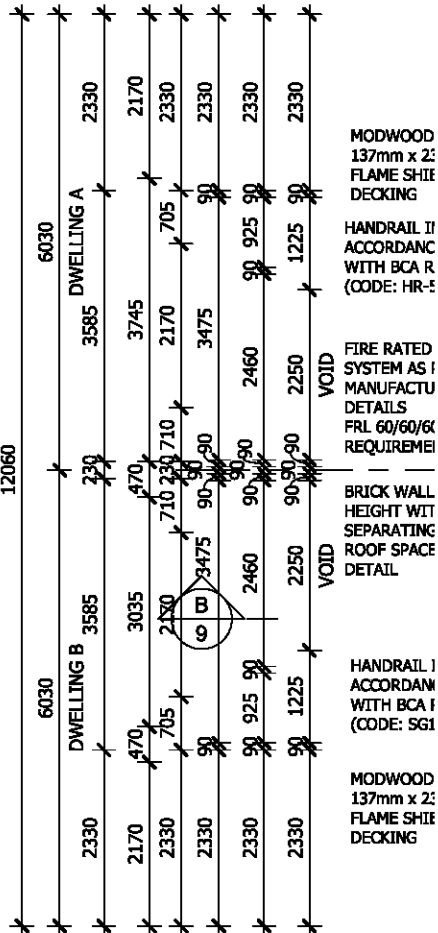
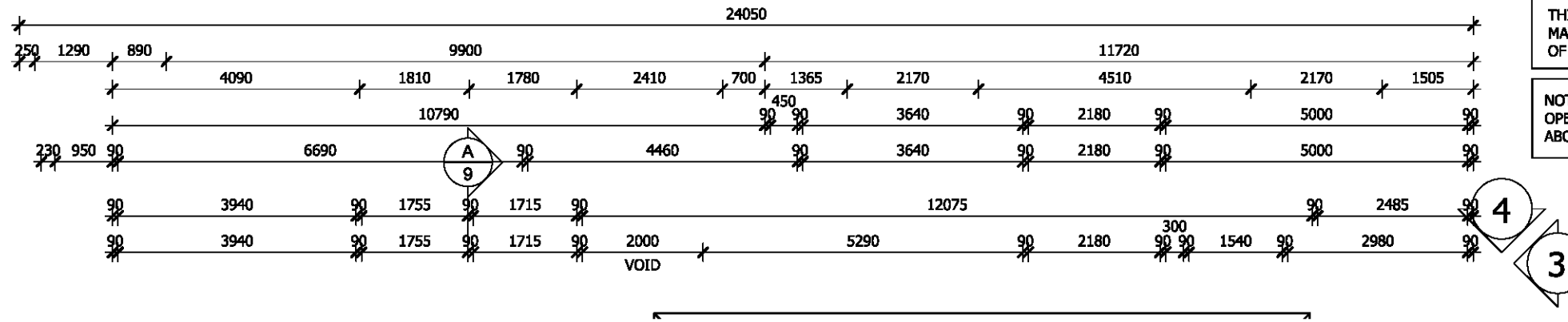
HOUSE TYPE  
MODEL: CUSTOM  
FACADE: CUSTOM  
TYPE: DOUBLE GARAGE  
SPECIFICATION: CUSTOM COLLECTIONS

DRAWING TITLE:  
**GROUND FLOOR**

DRAWN BY: SM	DATE DRAWN: 16.08.21	CHECKED BY: MS	APPROVED FOR CONSTRUCTION
COUNCIL AREA: PENRITH		SCALE: 1 : 100	
JOB No: A009923		DRWG No: 5	ISSUE: C

- ALL EXTERNAL DOORS TO BE FITTED WITH DRAFT EXCLUSION DEVICE
- WC DOORS TO BE FITTED WITH LIFT-OFF HINGES
- WINDOW OPENING SIZES TO BE CHECKED BEFORE FRAMES ARE CONSTRUCTED
- FRAMES & TRUSSES TO SATISFY AS 1684 SAA TIMBER FRAMING CODE
- ROOF TO BE VENTILATED BY EAVE VENTS

**NOTE: RESTRICTORS TO BE FITTED TO ALL 1ST FLOOR OPENABLE WINDOWS WITH A SILL HEIGHT LESS THAN 1.7m ABOVE FFL. IN ACCORDANCE WITH BCA CLAUSE 3.9.2.5**



HOUSE TYPE  
MODEL: CUSTOM  
FACADE: CUSTOM  
TYPE: DOUBLE GARAGE  
SPECIFICATION: CUSTOM COLLECTIONS

DRAWING TITLE:  
**FIRST FLOOR**

DRAWN BY: SM	DATE DRAWN: 16.08.21	CHECKED BY: MS	APPROVED FOR CONSTRUCTION
COUNCIL AREA: PENRITH		SCALE: 1 : 100	
JOB No: A009923		DRWG No: 6	ISSUE: C

PLEASE NOTE: DETAILS SHOWN ON THESE PLANS ARE INTENDED TO BE ACCURATE - HOWEVER INFORMATION WRITTEN INTO INDIVIDUAL CONTRACTS WILL TAKE PRECEDENCE OVER PLANS

- \* ALL DIMENSIONS ARE IN MILLIMETRES
- \* DO NOT SCALE - USE WRITTEN DIMENSIONS
- \* ALL DIMENSIONS STATED ON THE PLANS, SPECIFICATIONS, VARIATIONS AND UPGRADES ARE TO STRUCTURAL FRAMES ONLY AND EXCLUDE FINISHED SURFACES

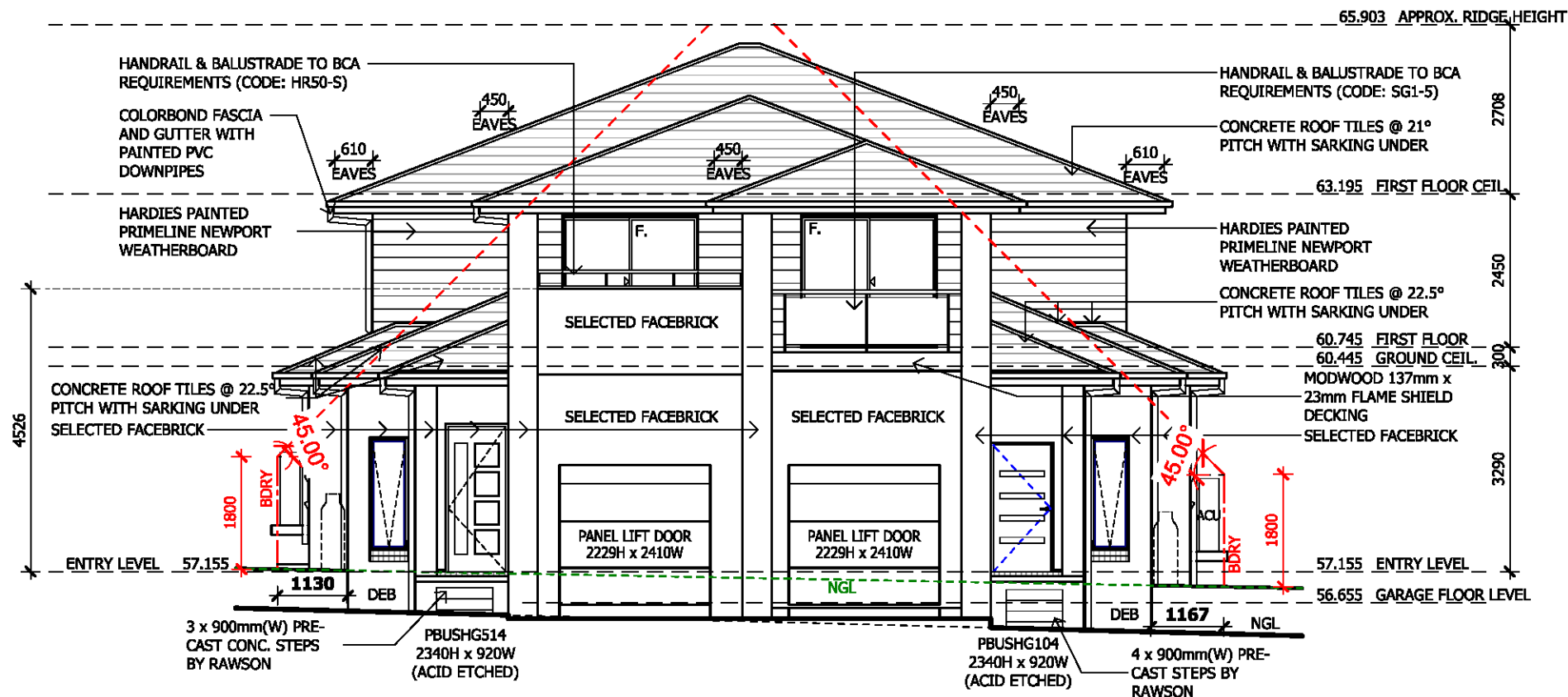
**RAWSON HOMES**  
5 RIDER BOULEVARD  
LEVEL 7  
RHODES NSW 2138  
TELEPHONE 02 8765 5500  
FAX 02 8765 8099  
Builder's licence No. 33493C



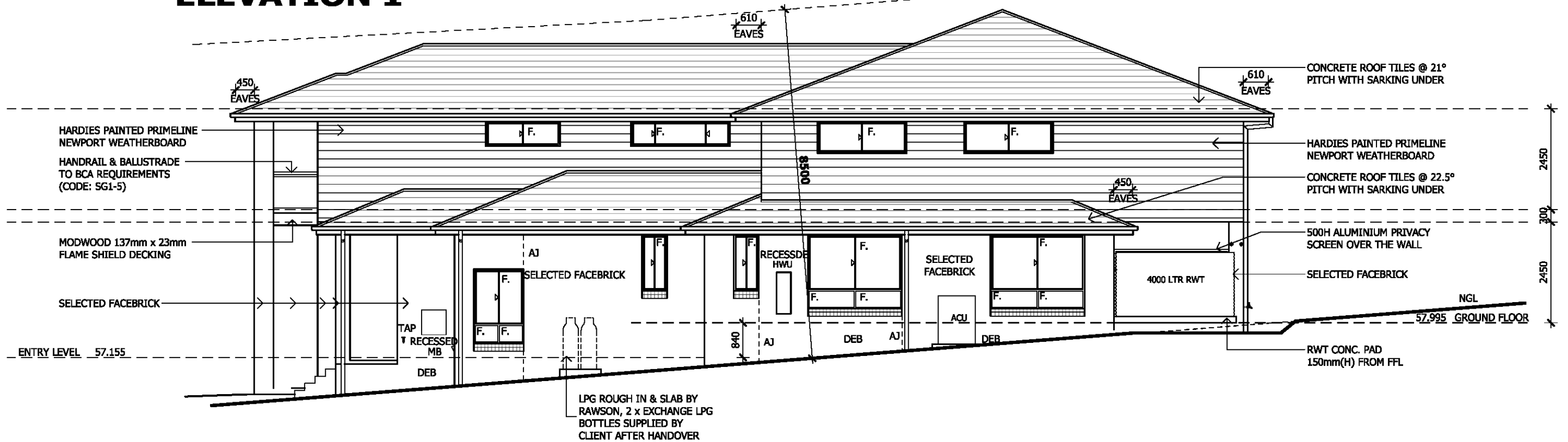
**SITE ADDRESS:**  
**LOT 30 (DP 16478)**  
**(NO. 4) INKERMAN ROAD**  
**EMU HEIGHTS, NSW 2750**



S:\17. DRAFTING\RAWSON HOMES\CONTRACTS AND JOB FILES\A009923 Provic - Lot 30, 4 Inkerman Rd Emu Heights\A009923 Amended Submission Plans.rvt



ELEVATION 1



ELEVATION 2

THIS DRAWING IS SUBJECT TO COPYRIGHT LAWS AND MAY NOT BE COPIED WITHOUT THE WRITTEN PERMISSION OF RAWSON HOMES PTY LTD-ACN 053 733 841

CORROSION-RESISTANT STEEL MESH FLYSCREENS TO ALL OPENING WINDOWS, SLIDING AND STACKER DOORS (INCLUDING FRONT ENTRY DOORS)

CSR WALL WRAP TO EXTERNAL WALLS THROUGHOUT

NOTES:

PLEASE NOTE: DETAILS SHOWN ON THESE PLANS ARE INTENDED TO BE ACCURATE - HOWEVER INFORMATION WRITTEN INTO INDIVIDUAL CONTRACTS WILL TAKE PRECEDENCE OVER PLANS

- \* ALL DIMENSIONS ARE IN MILLIMETRES
- \* DO NOT SCALE - USE WRITTEN DIMENSIONS
- \* ALL DIMENSIONS STATED ON THE PLANS, SPECIFICATIONS, VARIATIONS AND UPGRADES ARE TO STRUCTURAL FRAMES ONLY AND EXCLUDE FINISHED SURFACES

**RAWSON HOMES**  
5 RIDER BOULEVARD  
LEVEL 7  
RHODES NSW 2138  
TELEPHONE 02 8765 5500  
FAX 02 8765 8099  
Builder's licence No. 33493C



SITE ADDRESS:  
LOT 30 (DP 16478)  
(NO. 4) INKERMANN ROAD  
EMU HEIGHTS, NSW 2750

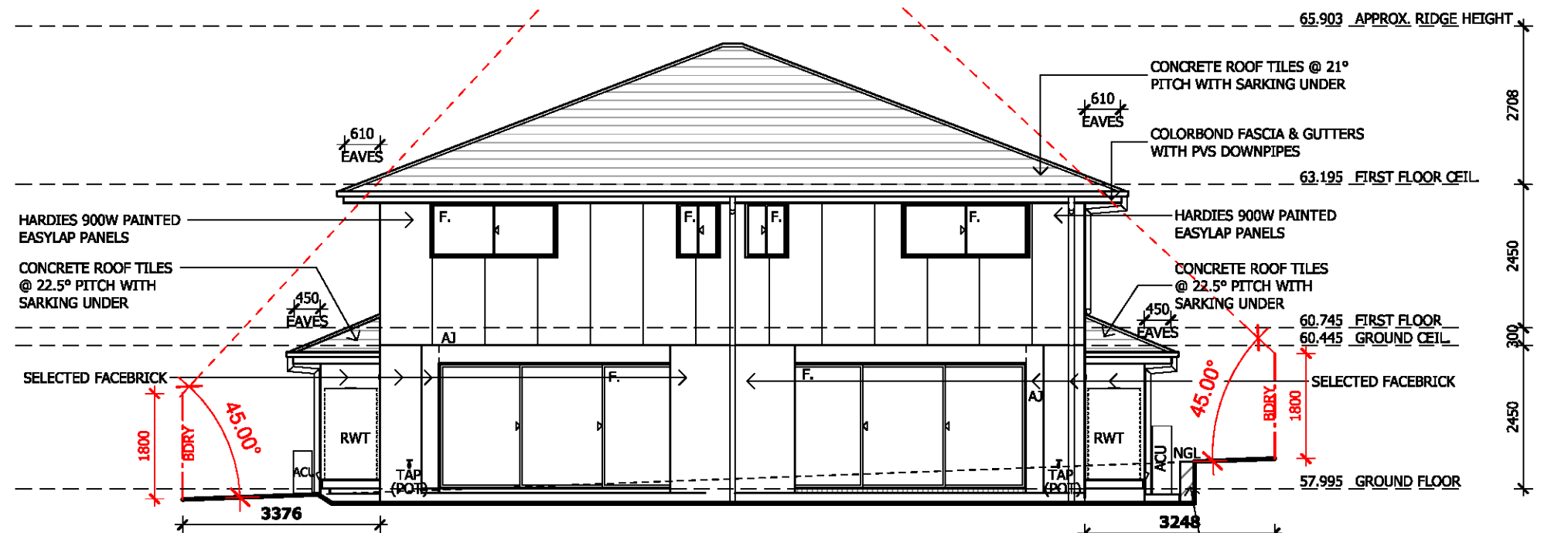
CLIENT INITIALS: 1. \_\_\_\_\_ 2. \_\_\_\_\_

HOUSE TYPE  
MODEL: CUSTOM  
FACADE: CUSTOM  
TYPE: DOUBLE GARAGE  
SPECIFICATION: CUSTOM COLLECTIONS

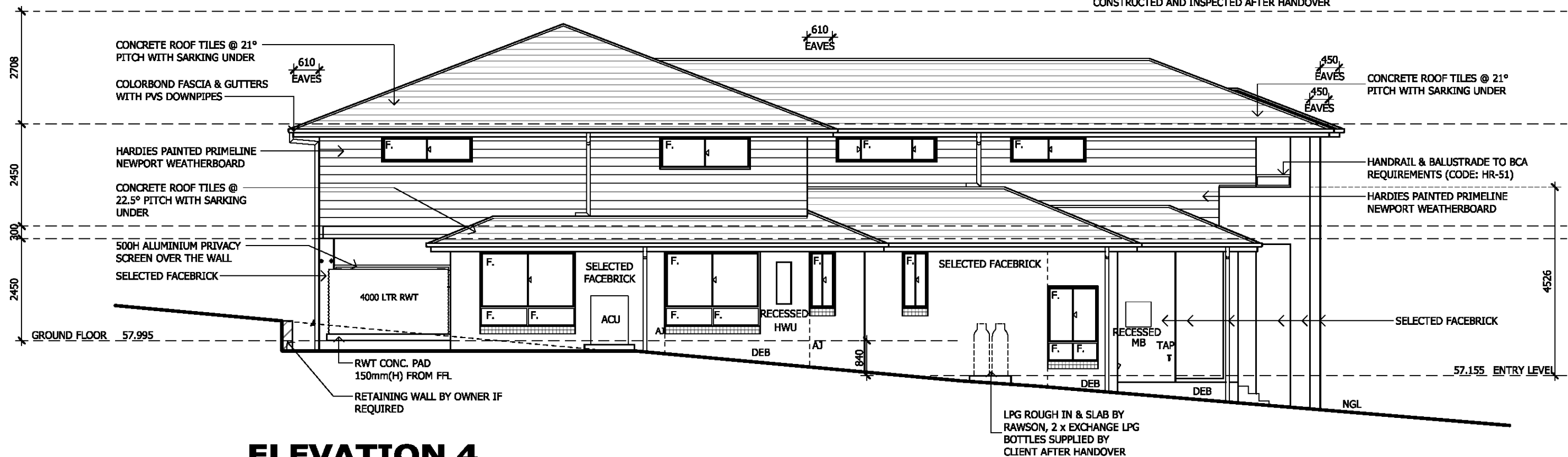
DRAWING TITLE:  
ELEVATIONS 1-2

DRAWN BY: SM	DATE DRAWN: 16.08.21	CHECKED BY: MS	APPROVED FOR CONSTRUCTION
COUNCIL AREA: PENRITH		SCALE: 1 : 100	
JOB No: A009923		DRWG No: 7	ISSUE: C

S:\17. DRAFTING\RAWSON HOMES\CONTRACTS AND JOB FILES\A009923 Provic - Lot 30, 4 Inkerman Rd Emu Heights\A009923 Amended Submission Plans.rvt



ELEVATION 3



ELEVATION 4

THIS DRAWING IS SUBJECT TO COPYRIGHT LAWS AND MAY NOT BE COPIED WITHOUT THE WRITTEN PERMISSION OF RAWSON HOMES PTY LTD-ACN 053 733 841

CORROSION-RESISTANT STEEL MESH FLYSCREENS TO ALL OPENING WINDOWS, SLIDING AND STACKER DOORS (INCLUDING FRONT ENTRY DOORS)

CSR WALL WRAP TO EXTERNAL WALLS THROUGHOUT

RETAINING WALL BY OWNER IF REQUIRED. RETAINING WALLS GREATER THAN 600mm IN HEIGHT, THE OWNER IS TO ORGANISE THE RETAINING WALLS TO BE STRUCTURALLY ENGINEER DESIGNED, CONSTRUCTED AND INSPECTED AFTER HANDOVER

CLIENT INITIALS: 1. \_\_\_\_\_ 2. \_\_\_\_\_

NOTES:

PLEASE NOTE: DETAILS SHOWN ON THESE PLANS ARE INTENDED TO BE ACCURATE - HOWEVER INFORMATION WRITTEN INTO INDIVIDUAL CONTRACTS WILL TAKE PRECEDENCE OVER PLANS  
\* ALL DIMENSIONS ARE IN MILLIMETRES  
\* DO NOT SCALE - USE WRITTEN DIMENSIONS  
\* ALL DIMENSIONS STATED ON THE PLANS, SPECIFICATIONS, VARIATIONS AND UPGRADES ARE TO STRUCTURAL FRAMES ONLY AND EXCLUDE FINISHED SURFACES

**RAWSON HOMES**  
5 RIDER BOULEVARD  
LEVEL 7  
RHODES NSW 2138  
TELEPHONE 02 8765 5500  
FAX 02 8765 8099  
Builder's licence No. 33493C

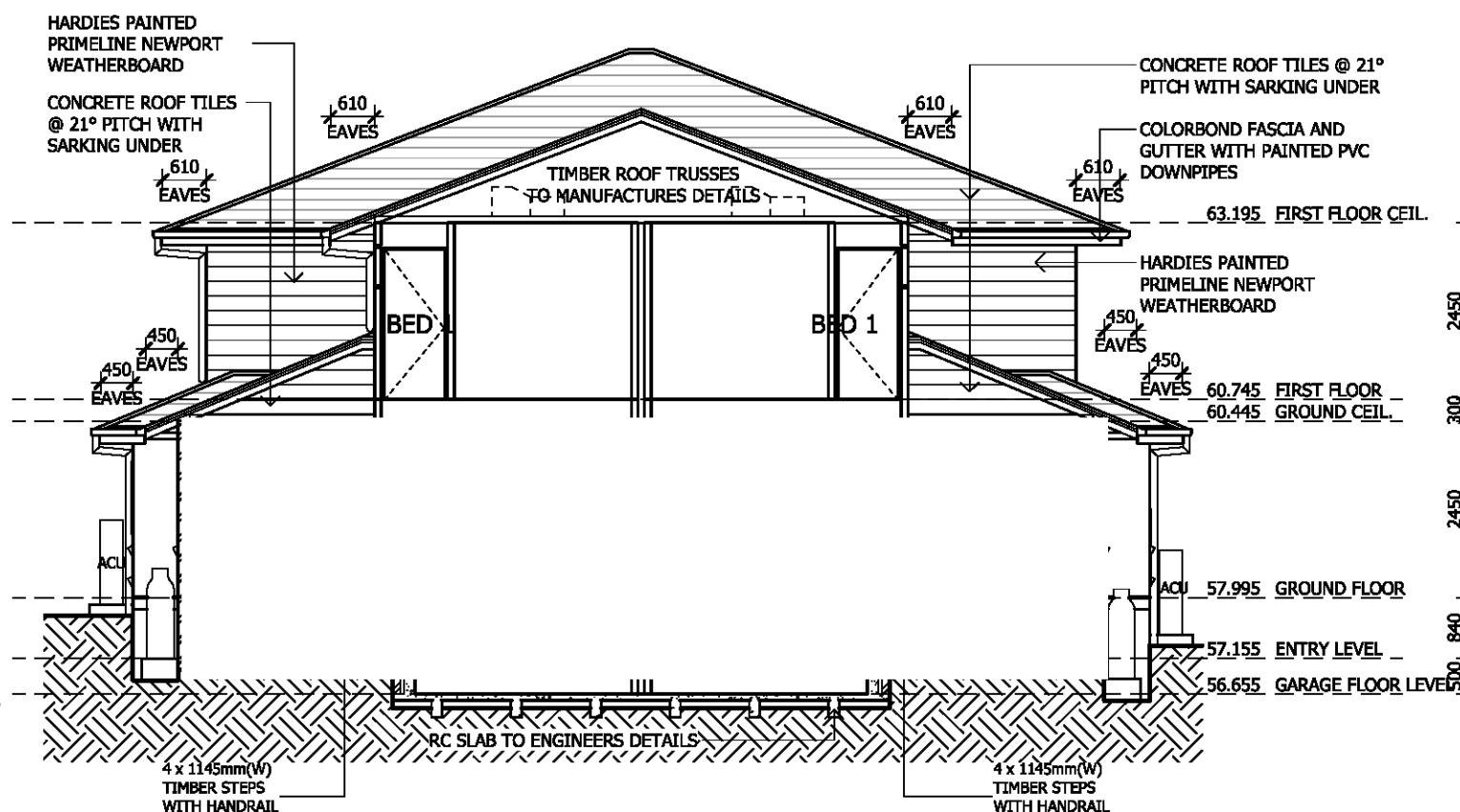


SITE ADDRESS:  
LOT 30 (DP 16478)  
(NO. 4) INKERMANS ROAD  
EMU HEIGHTS, NSW 2750

HOUSE TYPE  
MODEL: CUSTOM  
FACADE: CUSTOM  
TYPE: DOUBLE GARAGE  
SPECIFICATION: CUSTOM COLLECTIONS  
DRAWING TITLE:  
**ELEVATIONS 3-4**

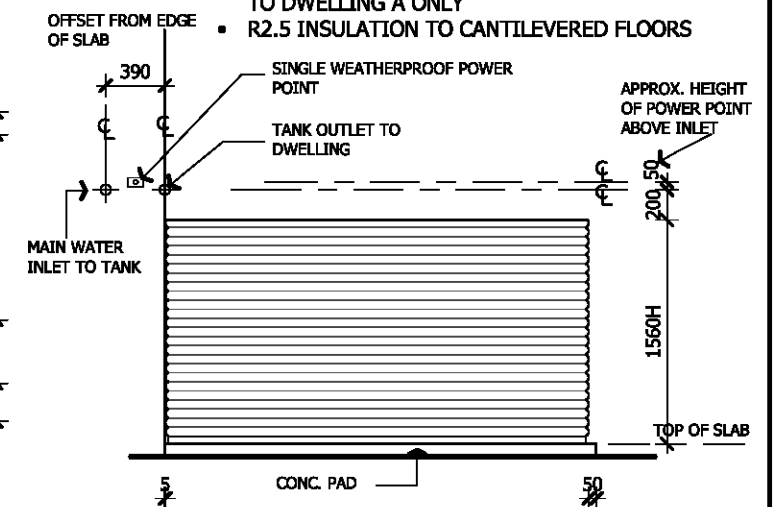
DRAWN BY: SM	DATE DRAWN: 16.08.21	CHECKED BY: MS	APPROVED FOR CONSTRUCTION
COUNCIL AREA: PENRITH		SCALE: 1 : 100	
JOB No: A009923		DRWG No: 8	ISSUE: C

- Provide a bushfire assessment report by an Independent qualified consultant.
- If colorbond roof option is selected a 60mm anticon blanket is required to the underside of colorbond roof, including (hips, ridge and valleys) in lieu of standard sarking.
- Provide all windows (Both openable and fixed portions) to be fitted with corrosion-resistant steel mesh screens with a maximum aperture size of 2mm as per AS3959 - Construction of buildings in bushfire-prone areas.
- Provide 600 thick Hardiflex external eave sheets in lieu of 4.5mm as per AS3959 - Construction of buildings in bushfire-prone areas.
- Provide minimum 9mm thick wall cladding (Primeline Newport and Easylap in lieu of standard) as per AS3959 - Construction of buildings in bushfire-prone areas.
- Provide all external doors to be fitted with weather strips as per AS3959 - Construction of buildings in bushfire-prone areas.
- Provide 45x19 Sycor Accent timber eave trims, Hardiflex joining strip, decking and timber trims in lieu of standard pine as per AS3959 - Construction of buildings in bushfire-prone areas.
- Provide Sycor Acent Trim Smooth 89mm x 38mm to windows (where applicable).
- Provide fascia to be fixed at 450mm centres (including additional timber to end of trusses, trusses to remain at 600mm centres) as per AS3959 - Construction of building in bushfire-prone areas.
- Provide 6mm toughened glass in lieu of standard glass to windows and external sliding doors as per AS3959 - Construction of buildings in bushfire-prone areas.
- Provide all external hinged door frames to be certified as per AS3959 - Construction of buildings in bushfire-prone areas.
- Provide all external doors to be fitted with weather strips as per AS3959 - Construction of buildings in bushfire-prone areas.
- Provide all external hung doors to be fitted with corrosion-resistant steel mesh screens with a maximum aperture size of 2mm as per AS3959 - Construction of buildings in bushfire-prone areas.
- Provide all external sliding doors (Both the fixed and openable portion) to be fitted with corrosion-resistant steel mesh screens with a maximum aperture size of 2mm as per AS3959 - Construction of buildings in bushfire-prone areas.
- Provide ember seal Garage door kit as per AS3959 - Construction of buildings in bushfire-prone areas.
- Provide all weep holes and vents to be fitted with spark guards made from corrosion-resistant aluminium with a maximum aperture size of 2mm as per AS3959 - Construction of buildings in bushfire-prone areas.
- Provide Midwood 137mm x 23mm Flame shield decking to deck (where applicable) in lieu of standard treated pine. Note: Includes underside of deck, Maximum 3mm spacing as per AS3959 - Construction of buildings in bushfire-prone areas.
- Provide standard range facebrick piers in lieu of timber posts (where applicable).
- Provide corner aluminium window mullion in lieu of silicone jointed window (where applicable)
- Provide corner brick support in lieu of aluminium corner stacker door (where applicable)
- Provide metal gutter protection to standard gutter and valleys - Construction of buildings in bushfire-prone areas.
- **Note:** Selection of Front Entry Door is to be chosen within Corinthian and Rawson Homes standard range to comply with Bushfire Requirements.



THIS DRAWING IS SUBJECT TO COPYRIGHT LAWS AND  
MAY NOT BE COPIED WITHOUT THE WRITTEN PERMISSION  
OF RAWSON HOMES PTY LTD-ACN 053 733 841

- R2.5 THERMAL BATTS TO EXTERNAL WALLS INCLUDING INTERNAL WALL BETWEEN GARAGE & WALLS (EXCLUDES EXTERNAL WALLS OF GARAGE).
- R4.1 THERMAL BATTS TO CEILINGS WITH ROOF OVER (EXCLUDING CEILINGS OVER GARAGE, PORCH, ALFRESCO & DECK).
- R2.5 INSULATION ABOVE GARAGE TO ROOM ABOVE TO DWELLING A ONLY
- R2.5 INSULATION TO CANTILEVERED FLOORS



Architectural elevation drawing of a building facade. The drawing shows a gabled roof structure with a central ridge. The roof is labeled with "CONCRETE ROOF TILES @ 21° PITCH WITH SARKING UNDER" and "TIMBER ROOF TRUSSES TO MANUFACTURES DETAILS". The roof height is indicated as "65.903 APPROX. RIDGE HEIGHT". The eaves on the left are labeled "450 EAVES" and on the right "610 EAVES". The first floor level is marked as "63.195 FIRST FLOOR CEIL." and the ground floor level as "60.445 GROUND CEIL.". The wall is labeled "MODWOOD 137mm x 23mm FLAME SHIELD DECKING" and "HANDRAIL & BALUSTRADE TO BCA REQUIREMENTS (CODE: SG1-5)". The ground floor level is marked as "57.995 GROUND FLOOR". The drawing also shows a "COLORBOND FASCIA AND GUTTER WITH PAINTED PVC DOWNPIPES" and "SELECTED FACEBRICK". The ground level is marked as "GARAGE FLOOR LEVEL 56.655".

**CLIENT INITIALS:** 1.                      2.

PLEASE NOTE: DETAILS SHOWN ON THESE PLANS ARE INTENDED TO BE ACCURATE - HOWEVER INFORMATION WRITTEN INTO INDIVIDUAL CONTRACTS WILL TAKE PRECEDENCE OVER PLANS

- \* ALL DIMENSIONS ARE IN MILLIMETRES
- \* DO NOT SCALE - USE WRITTEN DIMENSIONS
- \* ALL DIMENSIONS STATED ON THE PLANS, SPECIFICATIONS, VARIATIONS AND UPGRADES ARE TO STRUCTURAL FRAMES ONLY AND EXCLUDE FINISHED SURFACES

**RAWSON HOMES**  
5 RIDER BOULEVARD  
LEVEL 7  
RHODES NSW 2138  
TELEPHONE 02 8765 5500  
FAX 02 8765 8099  
Builder's licence No. 33493C



**SITE ADDRESS:**  
**LOT 30 (DP 16478)**  
**(NO. 4) INKERMAN ROAD**  
**EMU HEIGHTS, NSW 2750**

HOUSE TYPE  
MODEL: CUSTOM  
FACADE: CUSTOM  
TYPE: DOUBLE GARAGE  
SPECIFICATION: CUSTOM COLLECTIONS

---

DRAWING TITLE:  
**SECTIONS**

DRAWN BY: SM	DATE DRAWN: 17.08.21	CHECKED BY: MS	APPROVED FOR CONSTRUCTION
COUNCIL AREA: PENRITH		SCALE: As indicated	
JOB No: A009923		DRWG No: 9	ISSUE: C

## LAUNDRY / WC

- PROVIDE SKIRTING TILE TO PERIMETER WALLS OF LAUNDRY
- TILED SPLASHBACK OVER LAUNDRY TUB & BENCH @ 300mm HIGH

## BATHROOM

- 1900H SHOWER HEAD FROM FFL TO UNDERSIDE OF SHOWER HEAD
- FLOATING VANITIES
- TILED SPLASHBACKS ABOVE VANITIES WITH FLOATING MIRROR OVER ON 32mm BOARD, 130mm FROM SIDE OF VANITY, MAX. HEIGHT 880mm
- PROVIDE KICKER TO BATH HOB 140H x 70W
- WALL MOUNTED TAPS & SPOUT TO VANITIES & BATH
- SQUARE SET WALL/CEILING JUNCTION TO MAIN BATHROOM, ENSUITE AND POWDER ROOM (INCLUDING SEPARATE WC ONLY WHEN WITHIN BATHROOM OR ENSUITE)
- SQ. SET WINDOW TO MAIN BATHROOM ENSUITE, POWDER ROOM AND WC
- 20mm CAESARSTONE BENCHTOP TO VANITIES
- GRANGE SEMI FRAMELESS SHOWER SCREENS

458 10

SHOWER NICHE 600W x

TOILET PAPER  
HOLDER @ 700H  
FROM FFL

DUCTED MECH.  
VENT TO BCA. REQ.

## POWDER/L'DRY-A

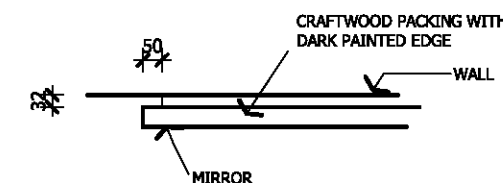
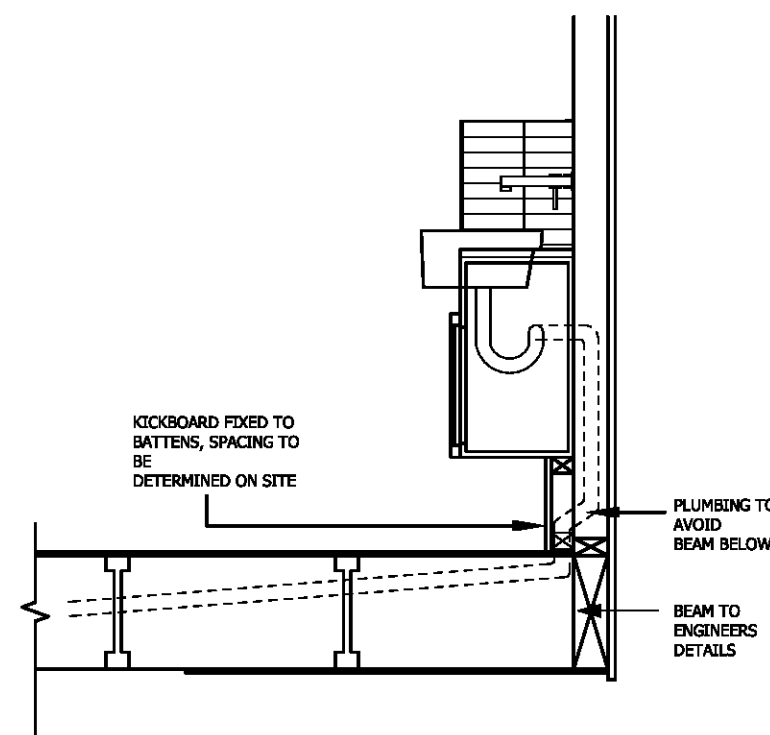
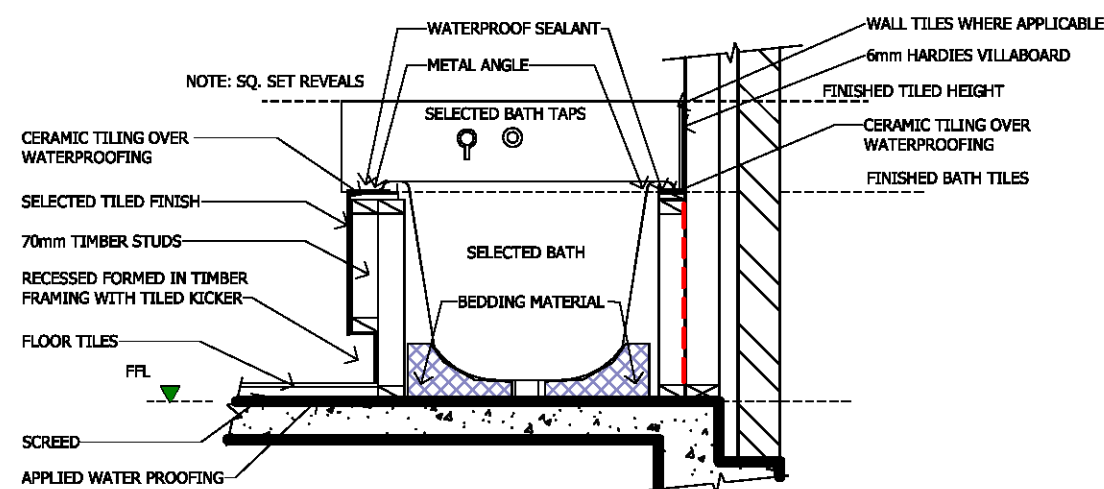
SCALE: 1 : 50

## ENSUITE-A

SCALE: 1 : 50

## BATH/WC-A

SCALE: 1 : 50



## MIRROR EDGE PLAN DETAIL

SCALE: 1 : 20

## BATH HOB - GROUND AT WALL-A

SCALE: 1 : 20

## VANITY DETAIL - OVER BEAM

SCALE: 1 : 20

### NOTES:

PLEASE NOTE: DETAILS SHOWN ON THESE PLANS ARE INTENDED TO BE ACCURATE - HOWEVER INFORMATION WRITTEN INTO INDIVIDUAL CONTRACTS WILL TAKE PRECEDENCE OVER PLANS

- \* ALL DIMENSIONS ARE IN MILLIMETRES
- \* DO NOT SCALE - USE WRITTEN DIMENSIONS
- \* ALL DIMENSIONS STATED ON THE PLANS, SPECIFICATIONS, VARIATIONS AND UPGRADES ARE TO STRUCTURAL FRAMES ONLY AND EXCLUDE FINISHED SURFACES

**RAWSON HOMES**  
5 RIDER BOULEVARD  
LEVEL 7  
RHODES NSW 2138  
TELEPHONE 02 8765 5500  
FAX 02 8765 8099  
Builder's licence No. 33493C



SITE ADDRESS:  
LOT 30 (DP 16478)  
(NO. 4) INKERMANN ROAD  
EMU HEIGHTS, NSW 2750

CLIENT INITIALS: 1. \_\_\_\_\_ 2. \_\_\_\_\_

HOUSE TYPE  
MODEL: CUSTOM  
FACADE: CUSTOM  
TYPE: DOUBLE GARAGE  
SPECIFICATION: CUSTOM COLLECTIONS

DRAWING TITLE:  
**WET AREA PLANS (A)**

DRAWN BY: SM	DATE DRAWN: 17.08.21	CHECKED BY: MS	APPROVED FOR CONSTRUCTION
COUNCIL AREA: PENRITH		SCALE: As indicated	
JOB No: A009923	DRWG No: 10	ISSUE: C	



LAUNDRY / WC

- PROVIDE SKIRTING TILE TO PERIMETER WALLS OF LAUNDRY
- TILED SPLASHBACK OVER LAUNDRY TUB & BENCH @ 300mm HIGH

BATHROOM

- 1900H SHOWER HEAD FROM FFL TO UNDERSIDE OF SHOWER HEAD
- FLOATING VANITIES
- TILED SPLASHBACKS ABOVE VANITIES WITH FLOATING MIRROR OVER ON 32mm BOARD, 130mm FROM SIDE OF VANITY, MAX. HEIGHT 880mm
- PROVIDE KICKER TO BATH HOB 140H x 70W
- WALL MOUNTED TAPS & SPOUT TO VANITIES & BATH
- SQUARE SET WALL/CEILING JUNCTION TO MAIN BATHROOM, ENSUITE AND POWDER ROOM (INCLUDING SEPARATE WC ONLY WHEN WITHIN BATHROOM OR ENSUITE)
- SQ. SET WINDOW TO MAIN BATHROOM ENSUITE, POWDER ROOM AND WC
- 20mm CAESARSTONE BENCHTOP TO VANITIES
- GRANGE SEMI FRAMELESS SHOWER SCREENS

PWDER/L'DRY-B

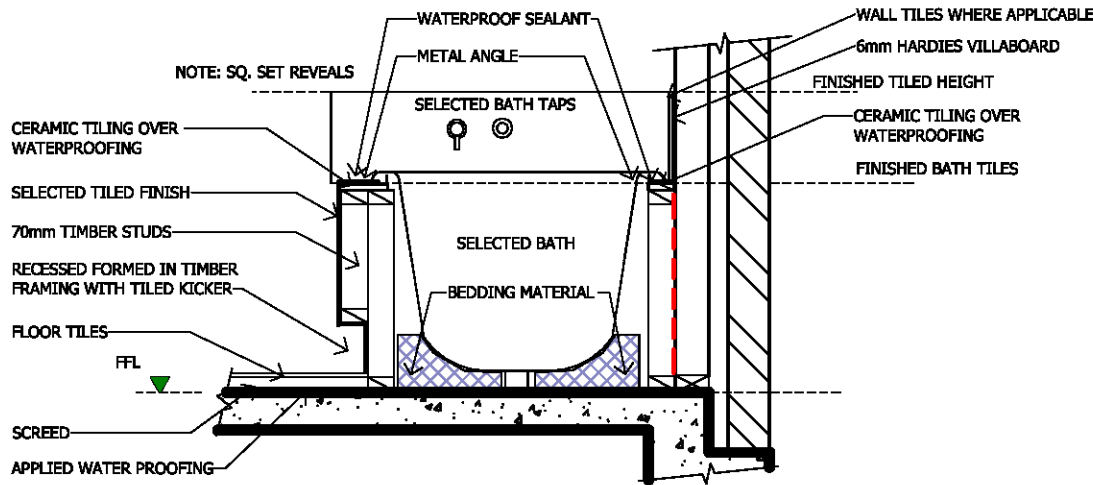
SCALE: 1 : 50

ENSUITE-B

SCALE: 1 : 50

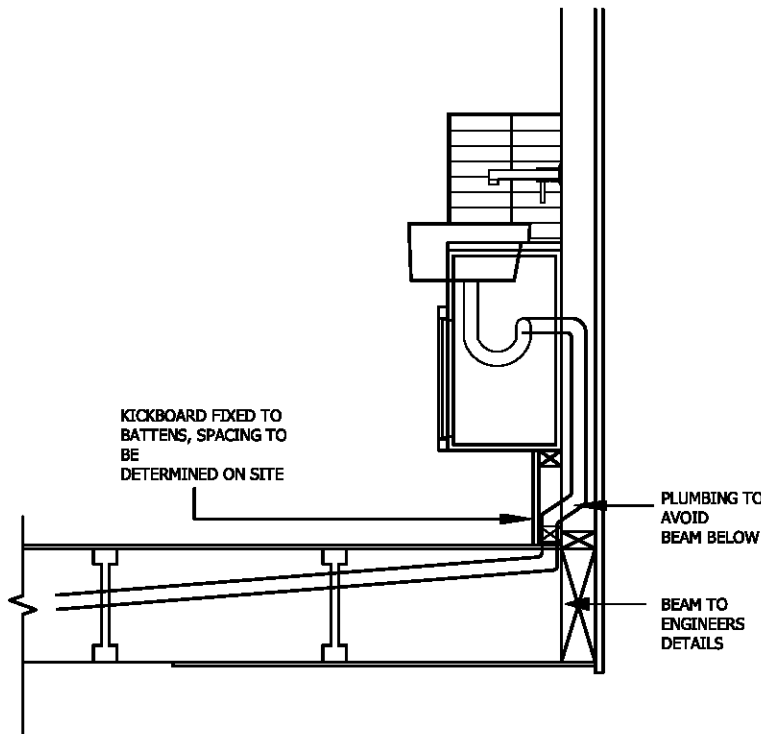
BATH/WC-B

SCALE: 1 : 50



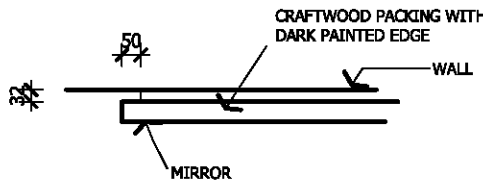
BATH HOB - GROUND AT WALL-A

SCALE: 1 : 20



VANITY DETAIL - OVER BEAM

SCALE: 1 : 20



MIRROR EDGE PLAN DETAIL

SCALE: 1 : 20

NOTES:

PLEASE NOTE: DETAILS SHOWN ON THESE PLANS ARE INTENDED TO BE ACCURATE - HOWEVER INFORMATION WRITTEN INTO INDIVIDUAL CONTRACTS WILL TAKE PRECEDENCE OVER PLANS

- \* ALL DIMENSIONS ARE IN MILLIMETRES
- \* DO NOT SCALE - USE WRITTEN DIMENSIONS
- \* ALL DIMENSIONS STATED ON THE PLANS, SPECIFICATIONS, VARIATIONS AND UPGRADES ARE TO STRUCTURAL FRAMES ONLY AND EXCLUDE FINISHED SURFACES

**RAWSON HOMES**  
5 RIDER BOULEVARD  
LEVEL 7  
RHODES NSW 2138  
TELEPHONE 02 8765 5500  
FAX 02 8765 8099  
Builder's licence No. 33493C



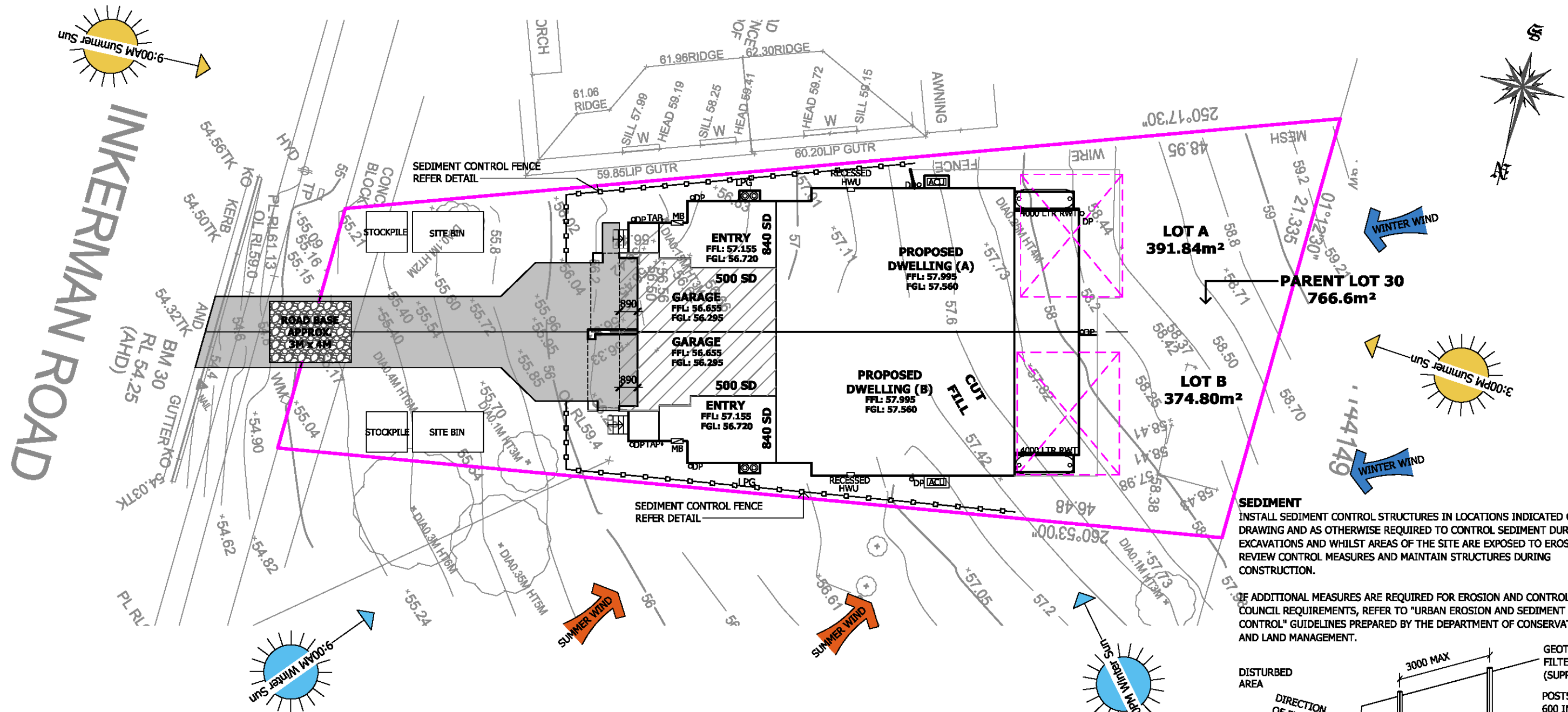
SITE ADDRESS:  
LOT 30 (DP 16478)  
(NO. 4) INKERMANN ROAD  
EMU HEIGHTS, NSW 2750

CLIENT INITIALS: 1. \_\_\_\_\_ 2. \_\_\_\_\_

HOUSE TYPE  
MODEL: CUSTOM  
FACADE: CUSTOM  
TYPE: DOUBLE GARAGE  
SPECIFICATION: CUSTOM COLLECTIONS

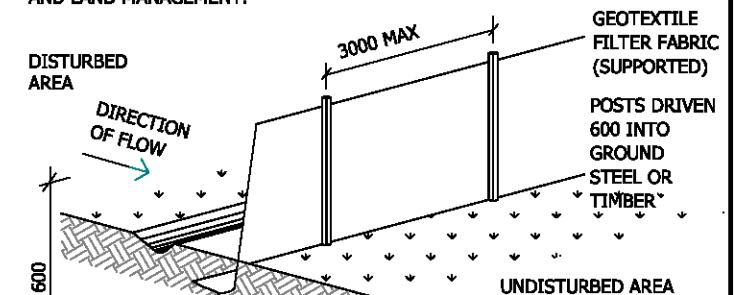
DRAWING TITLE:  
**WET AREAS PLAN (B)**

DRAWN BY:	DATE DRAWN:	CHECKED BY:	APPROVED FOR CONSTRUCTION
SM	17.08.21	MS	
COUNCIL AREA:		SCALE:	
PENRITH		As indicated	
JOB No:	DRWG No:	ISSUE:	
A009923	11	C	



**SEDIMENT**  
INSTALL SEDIMENT CONTROL STRUCTURES IN LOCATIONS INDICATED ON THIS  
DRAWING AND AS OTHERWISE REQUIRED TO CONTROL SEDIMENT DURING ALL  
EXCAVATIONS AND WHILST AREAS OF THE SITE ARE EXPOSED TO EROSION.  
REVIEW CONTROL MEASURES AND MAINTAIN STRUCTURES DURING  
CONSTRUCTION.

IF ADDITIONAL MEASURES ARE REQUIRED FOR EROSION AND CONTROL OR BY  
COUNCIL REQUIREMENTS, REFER TO "URBAN EROSION AND SEDIMENT  
CONTROL" GUIDELINES PREPARED BY THE DEPARTMENT OF CONSERVATION  
AND LAND MANAGEMENT.



#### SEDIMENT FENCE DETAIL

SUITABLE FOR DRAINAGE AREA OF 0.6HA MAX AND  
SLOPE GRADIENT OF 1:2 MAX WITH LENGTH OF 60M MAX



#### NOTES:

PLEASE NOTE: DETAILS SHOWN ON THESE PLANS ARE INTENDED  
TO BE ACCURATE - HOWEVER INFORMATION WRITTEN INTO  
INDIVIDUAL CONTRACTS WILL TAKE PRECEDENCE OVER PLANS  
\* ALL DIMENSIONS ARE IN MILLIMETRES  
\* DO NOT SCALE - USE WRITTEN DIMENSIONS  
\* ALL DIMENSIONS STATED ON THE PLANS, SPECIFICATIONS, VARIATIONS  
AND UPGRADES ARE TO STRUCTURAL FRAMES ONLY AND EXCLUDE  
FINISHED SURFACES

**RAWSON HOMES**  
5 RIDER BOULEVARD  
LEVEL 7  
RHODES NSW 2138  
TELEPHONE 02 8765 5500  
FAX 02 8765 8099  
Builder's licence No. 33493C



SITE ADDRESS:  
LOT 30 (DP 16478)  
(NO. 4) INKERMAN ROAD  
EMU HEIGHTS, NSW 2750

CLIENT INITIALS: 1. \_\_\_\_\_ 2. \_\_\_\_\_

HOUSE TYPE  
MODEL: CUSTOM  
FACADE: CUSTOM  
TYPE: DOUBLE GARAGE  
SPECIFICATION: CUSTOM COLLECTIONS

DRAWING TITLE:  
**SEDIMENT/ANALYSIS PLAN**

DRAWN BY: SM	DATE DRAWN: 17.08.21	CHECKED BY: MS	APPROVED FOR CONSTRUCTION
COUNCIL AREA: PENRITH		SCALE: 1 : 200	
JOB No: A009923	DRWG No: 13	ISSUE: C	

©



## The Essential First Step

**NOTES:**

PLEASE NOTE: DETAILS SHOWN ON THESE PLANS ARE INTENDED TO BE ACCURATE - HOWEVER INFORMATION WRITTEN INTO INDIVIDUAL CONTRACTS WILL TAKE PRECEDENCE OVER PLANS

- \* ALL DIMENSIONS ARE IN MILLIMETRES
- \* DO NOT SCALE - USE WRITTEN DIMENSIONS
- \* ALL DIMENSIONS STATED ON THE PLANS, SPECIFICATIONS, VARIATIONS AND UPGRADES ARE TO STRUCTURAL FRAMES ONLY AND EXCLUDE FINISHED SURFACES



**SITE ADDRESS:**  
**LOT 30 (DP 16478)**  
**(NO. 4) INKERMANN ROAD**  
**EMU HEIGHTS, NSW 2750**

CLIENT INITIALS: 1. \_\_\_\_\_ 2. \_\_\_\_\_

HOUSE TYPE  
MODEL: CUSTOM  
FACADE: CUSTOM  
TYPE: DOUBLE GARAGE  
SPECIFICATION: CUSTOM COLLECTIONS

DRAWING TITLE:  
**SHADOW DIAGRAM**

DRAWN BY:	DATE DRAWN:	CHECKED BY:	APPROVED FOR CONSTRUCTION
SM	17.08.21	MS	

COUNCIL AREA:	SCALE:
PENRITH	1 : 200

JOB No: <b>A009923</b>	DRWG No: <b>14</b>	ISSUE: <b>C</b>
---------------------------	-----------------------	--------------------





BASIX COMMITMENTS																	
PROJECT DETAILS				Dwelling 1		RAINWATER	Dwelling 2		ENERGY		LIGHTING						
Site area	766.6		m²	Rainwater to have a capacity of at least 4000L		Rainwater to have a capacity of at least 4000L		<b>ACTIVE COOLING/HEATING TO DWELLING 1&amp;2</b>				Applicant must provide a window or skylight for natural lighting to 2 bathrooms/toilets and kitchen to both dwellings					
Roof area	268.4		m²	Collect rain runoff of at least 134.2m² of the roof area & connected to all toilets, cold water taps connected to cotes & one tap		Collect rain runoff of at least 134.2m² of the roof area & connected to all toilets, cold water taps connected to cotes & one tap		Provide fully ducted reverse cycle 3 phase air conditioner with EER rating of 3.0-3.5 for cooling to both dwellings									
ABSA Certificate Number (if applicable)	0006445090							Provide fully ducted reverse cycle 3 phase air conditioner with EER rating of 3.0-3.5 for heating to both dwellings				Applicant must provide artificial lighting to all bedrooms/study, 5 of living/dining, kitchen, laundry, all bathroom/toilets and all hallways for both dwellings					
Total Area of Vegetation (garden & lawn)	422.58		m²	Dwelling 1		Dwelling 2											
				Dwelling 1		HOT WATER		Dwelling 2									
Number of bedrooms	3		4	Gas Instantaneous hot water system with performance of 6 stars		Gas Instantaneous hot water system with performance of 6 stars		Provide day/night zoning between living areas and bedrooms				<b>COOKING (KITCHEN APPLIANCES)</b>					
Net conditioned floor area	172		172	m²				<b>VENTILATION DWELLING 1 &amp; 2</b>				Install a gas cooktop and electric oven to both dwellings					
Net unconditioned floor area	12		12	m²		<b>WATER</b>		Exhaust systems to all kitchens and all bathrooms with manual switch on/off ducted to roof or facade				<b>DESIGN ENHANCEMENTS</b>					
Cooling load (if applicable)	31.5		26.5	MJ/m²/yr		All showers with in the development are to have a minimum rating of 3 stars shower head		Natural Ventilation to laundry or no laundry				Install an outdoor clothes drying line to both dwellings					
Heating load (if applicable)	54		49.5	MJ/m²/yr		Each toilet is to have a flushing system of no less than a 4 star rating		Provide window(s) and/or skylight to 3 bathroom(s) / toilet(s) and kitchens				Install an indoor or sheltd clothes drying line to both dwellings					
Area of garden & lawn	211.14		211.44	m²		All taps in the kitchen and bathrooms are to have a minimum rating of 4 star											
												Dwelling 1		<b>INSULATION</b>		Dwelling 2	
												External wall R2.5 [excluding garage]		External wall R2.5 [excluding garage]			
												Ceiling R4.1		Ceiling R4.1			
												Garage Ceiling R2.5		[excluding garage]			

NOTES:

PLEASE NOTE: DETAILS SHOWN ON THESE PLANS ARE INTENDED TO BE ACCURATE - HOWEVER INFORMATION WRITTEN INTO INDIVIDUAL CONTRACTS WILL TAKE PRECEDENCE OVER PLANS

- \* ALL DIMENSIONS ARE IN MILLIMETRES
- \* DO NOT SCALE - USE WRITTEN DIMENSIONS
- \* ALL DIMENSIONS STATED ON THE PLANS, SPECIFICATIONS, VARIATIONS AND UPGRADES ARE TO STRUCTURAL FRAMES ONLY AND EXCLUDE FINISHED SURFACES

RAWSON HOMES

5 RIDER BOULEVARD

LEVEL 7

RHODES NSW 2138

TELEPHONE 02 8765 5500

FAX 02 8765 8099

Builder's licence No. 33493C



SITE ADDRESS:  
LOT 30 (DP 16478)  
(NO. 4) INKERMANS ROAD  
EMU HEIGHTS, NSW 2750

CLIENT INITIALS: 1. \_\_\_\_\_ 2. \_\_\_\_\_

HOUSE TYPE

MODEL: CUSTOM

FACADE: CUSTOM

TYPE: DOUBLE GARAGE

SPECIFICATION: CUSTOM COLLECTIONS

DRAWING TITLE:

BASIX COMMITMENT

DRAWN BY: SM

DATE DRAWN: 13.09.21

CHECKED BY: Checker

APPROVED FOR CONSTRUCTION

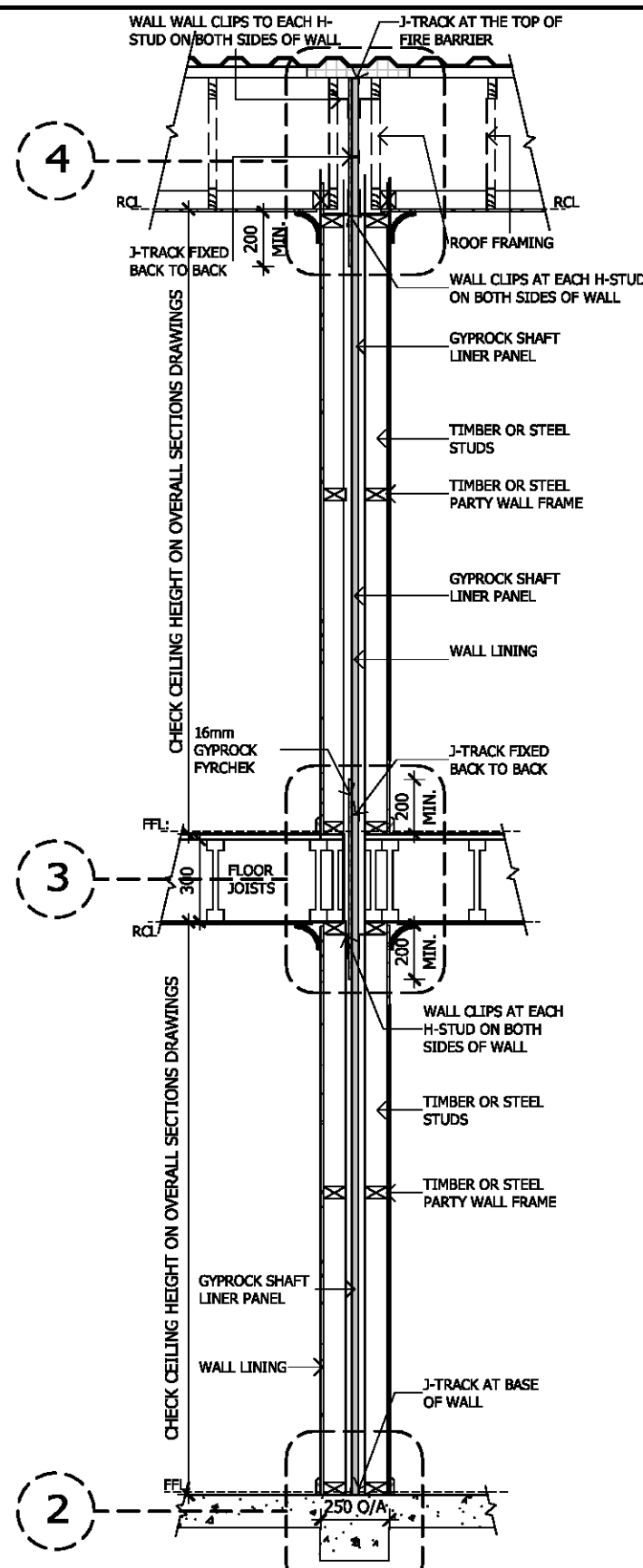
COUNCIL AREA: PENRITH

SCALE:

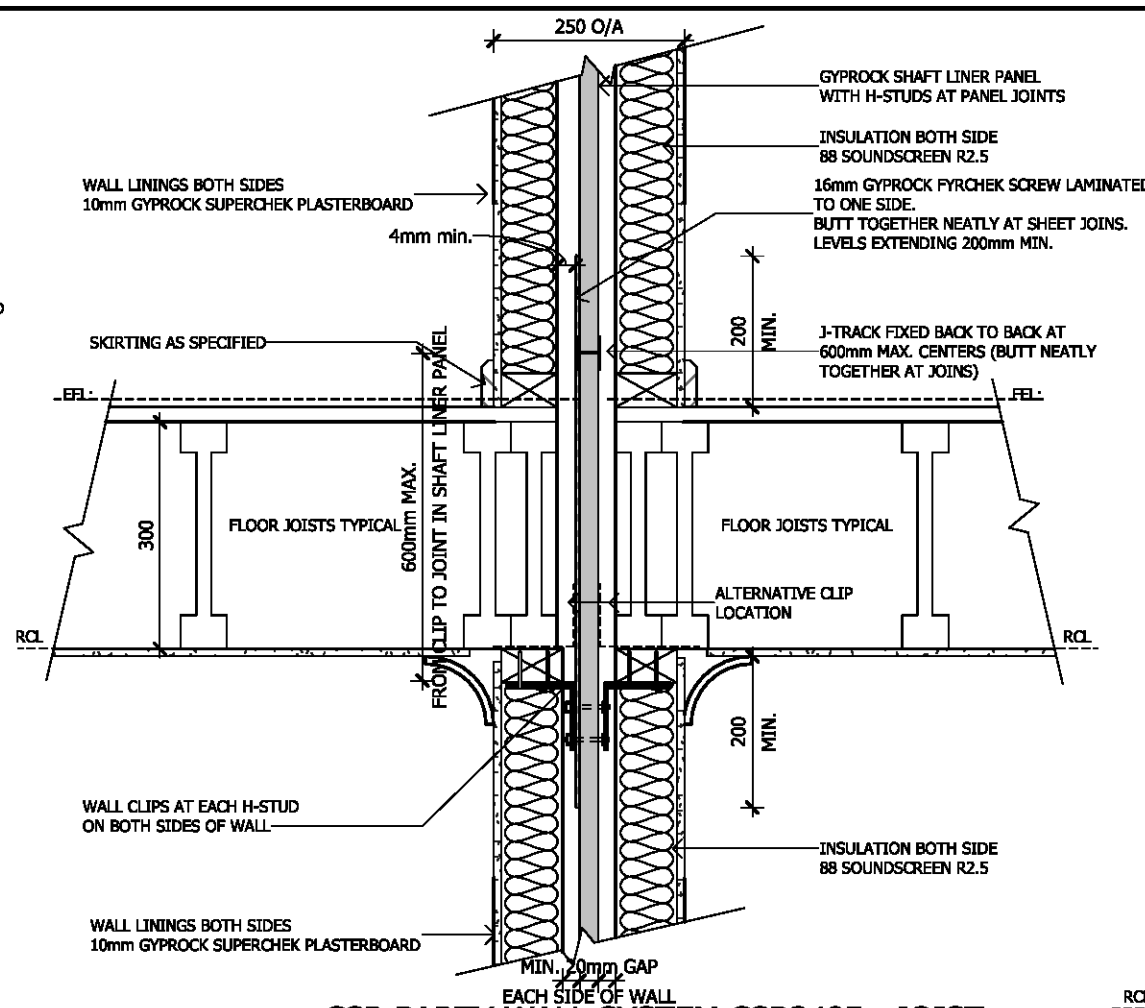
JOB No: A009923

DRWG No: 15

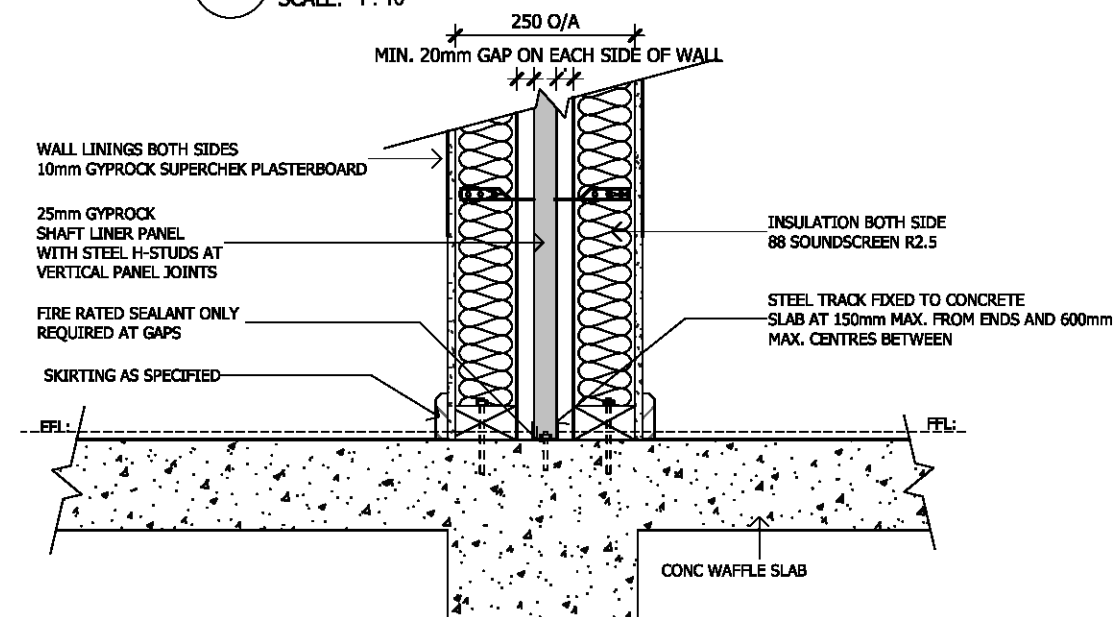
ISSUE: C



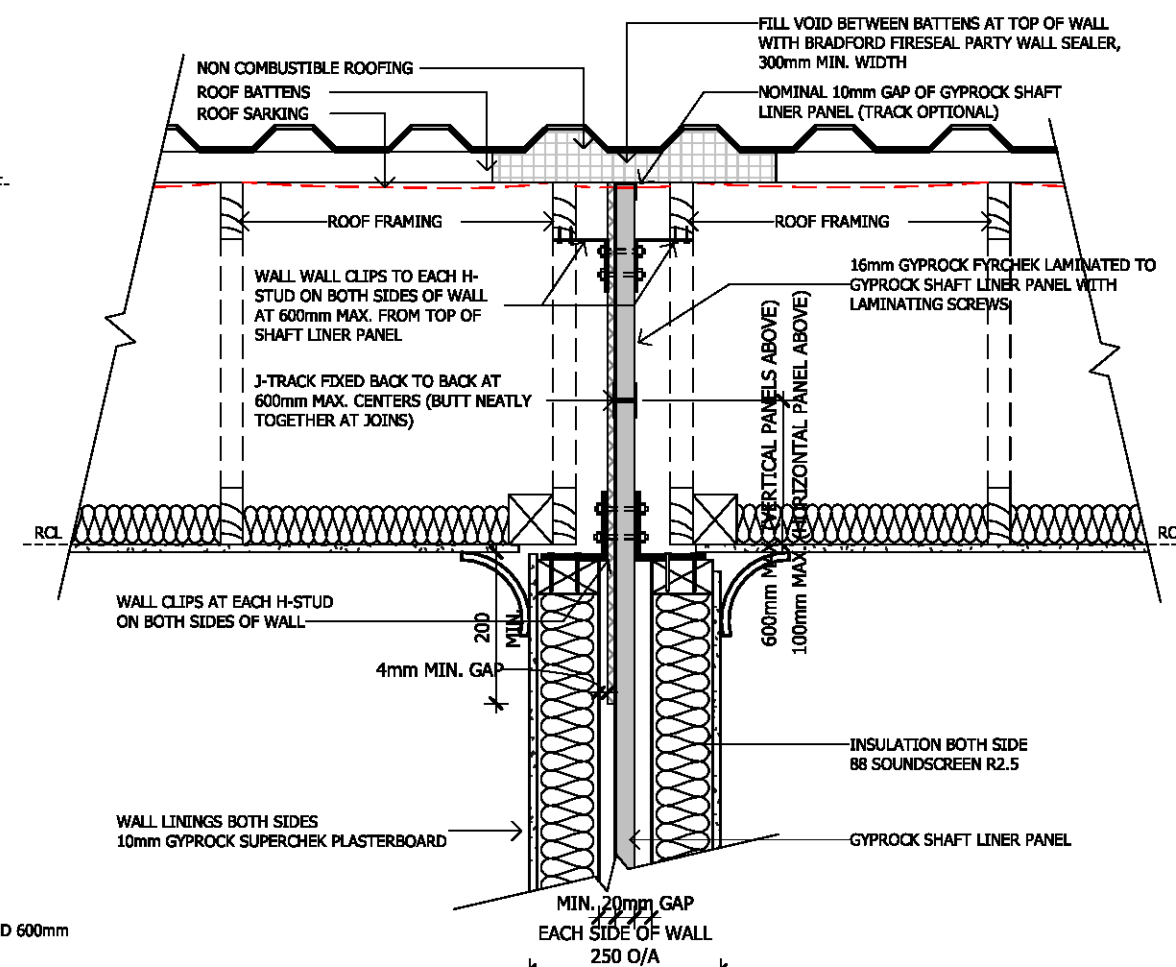
**1** CSR PARTY WALL SYSTEM CSR2405 - TYPICAL  
SCALE: 1:25



**3** CSR PARTY WALL SYSTEM CSR2405 - JOIST  
SCALE: 1:10



**2** CSR PARTY WALL SYSTEM CSR2405 - BASE LEVEL  
SCALE: 1:10



**4** CSR PARTY WALL SYSTEM CSR2405 - ROOF  
SCALE: 1:10

**RAWSON HOMES**  
5 RIDER BOULEVARD  
LEVEL 7  
RHODES NSW 2138  
TELEPHONE 02 8765 5500  
FAX 02 8765 8099  
Builder's licence No. 33493C



LOT 50 (DP 10478)  
(NO. 4) INKERMANN ROAD  
EMU HEIGHTS, NSW 2750

DRAWING TITLE:

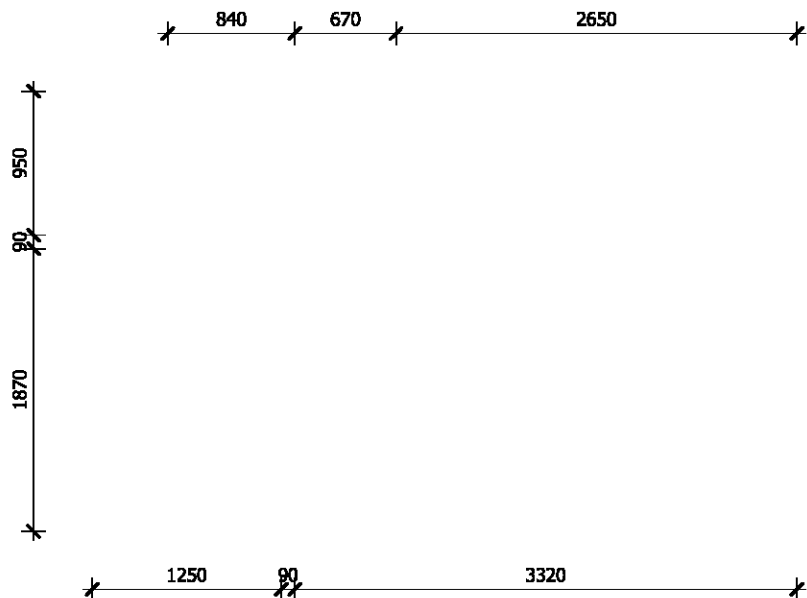
## TYPICAL PARTY WALL DETAILS DUPLEX HOMES

DRAWN BY: Author	CHECKED BY: Checker
SCALE: As indicated	DATE: 19.08.21
DRWG No: <b>D250</b>	ISSUE: <b>B</b>

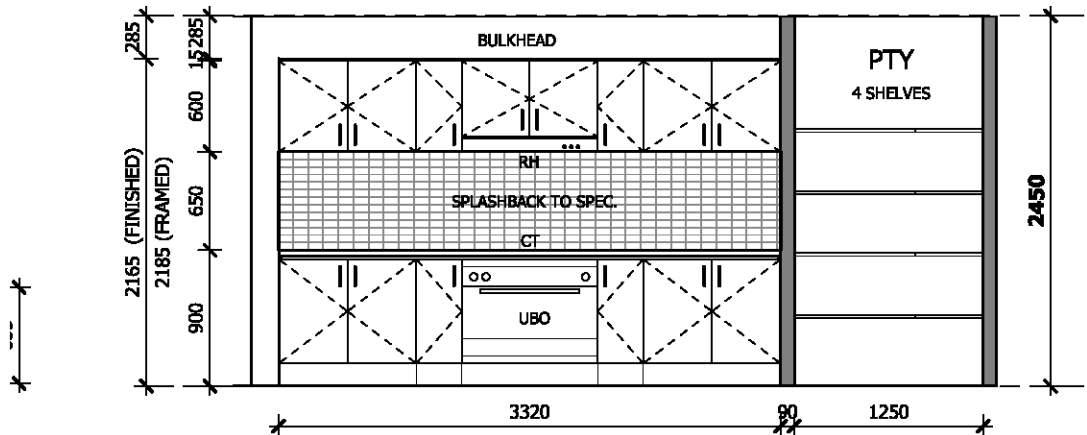
NOTE: PERSPECTIVE IS FOR DIAGRAMATIC PURPOSES ONLY

THE KITCHEN LAYOUT SHOWN IS ONLY DIAGRAMATIC  
ALL DETAILS AND DIMENSIONS TO BE CONFIRMED BY  
THE MAKER PRIOR TO MANUFACTURE

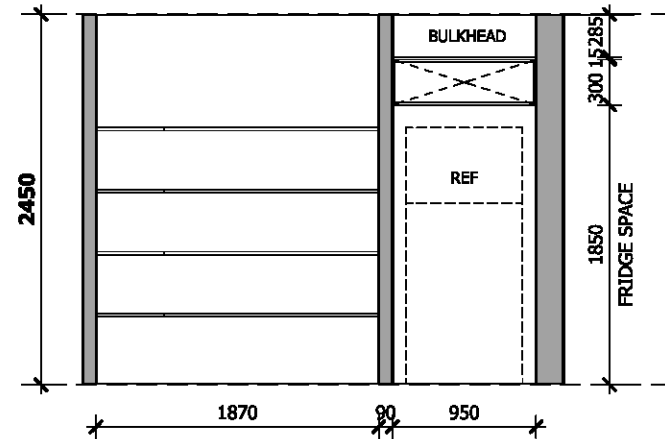
THIS DRAWING IS SUBJECT TO COPYRIGHT LAWS AND  
MAY NOT BE COPIED WITHOUT THE WRITTEN PERMISSION  
OF RAWSON HOMES PTY LTD-ACN 053 733 841



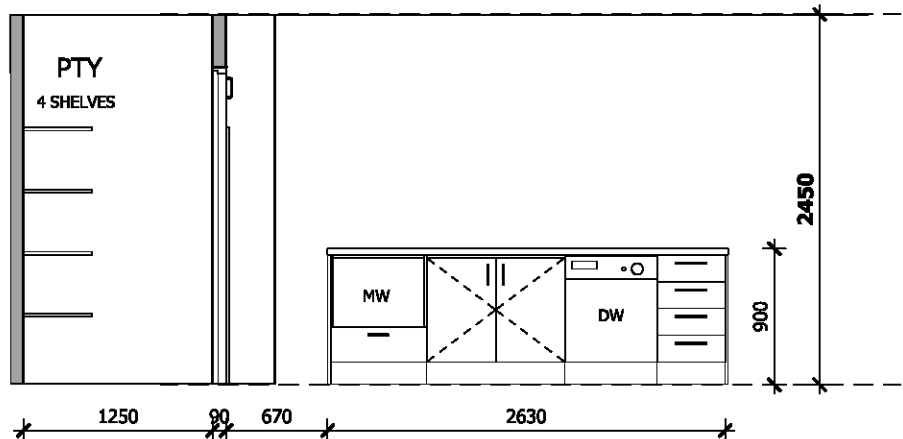
KITCHEN LAYOUT-A



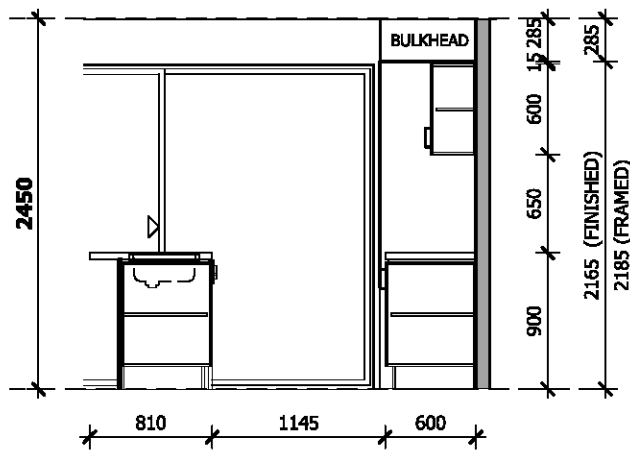
ELAVATION K1-A



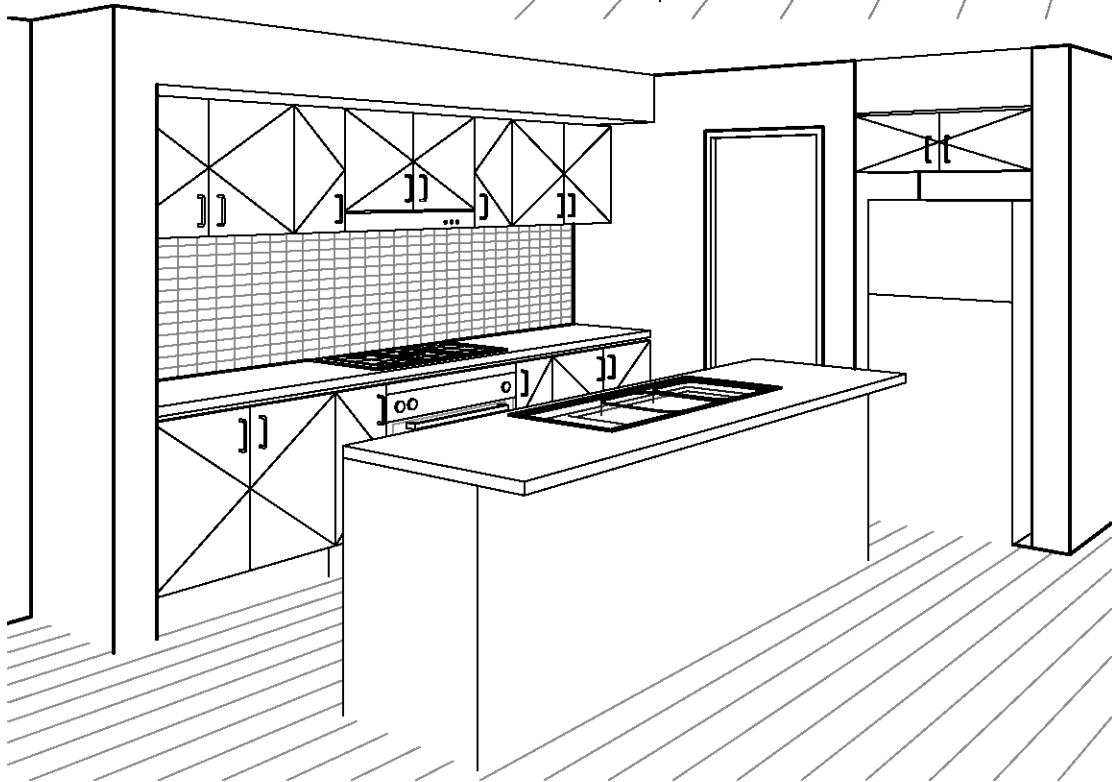
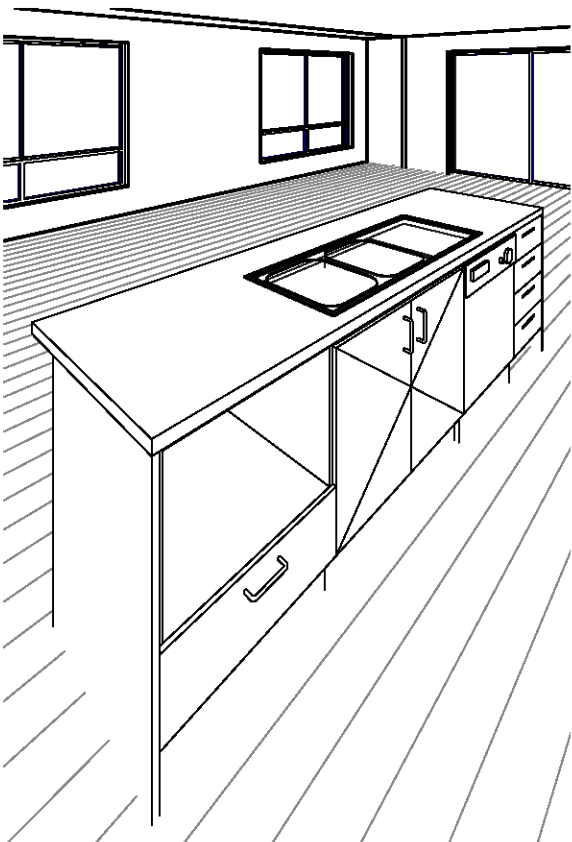
ELEVATION K2-A



ELEVATION K3-A



ELEVATION K4-A



CLIENT INITIALS: 1. \_\_\_\_\_ 2. \_\_\_\_\_

NOTES:

PLEASE NOTE: DETAILS SHOWN ON THESE PLANS ARE INTENDED  
TO BE ACCURATE - HOWEVER INFORMATION WRITTEN INTO  
INDIVIDUAL CONTRACTS WILL TAKE PRECEDENCE OVER PLANS  
\* ALL DIMENSIONS ARE IN MILLIMETRES  
\* DO NOT SCALE - USE WRITTEN DIMENSIONS  
\* ALL DIMENSIONS STATED ON THE PLANS, SPECIFICATIONS, VARIATIONS  
AND UPGRADES ARE TO STRUCTURAL FRAMES ONLY AND EXCLUDE  
FINISHED SURFACES

**RAWSON HOMES**  
5 RIDER BOULEVARD  
LEVEL 7  
RHODES NSW 2138  
TELEPHONE 02 8765 5500  
FAX 02 8765 8099  
Builder's licence No. 33493C



SITE ADDRESS:  
LOT 30 (DP 16478)  
(NO. 4) INKERMANN ROAD  
EMU HEIGHTS, NSW 2750

HOUSE TYPE  
MODEL: CUSTOM  
FACADE: CUSTOM  
TYPE: DOUBLE GARAGE  
SPECIFICATION: CUSTOM COLLECTIONS

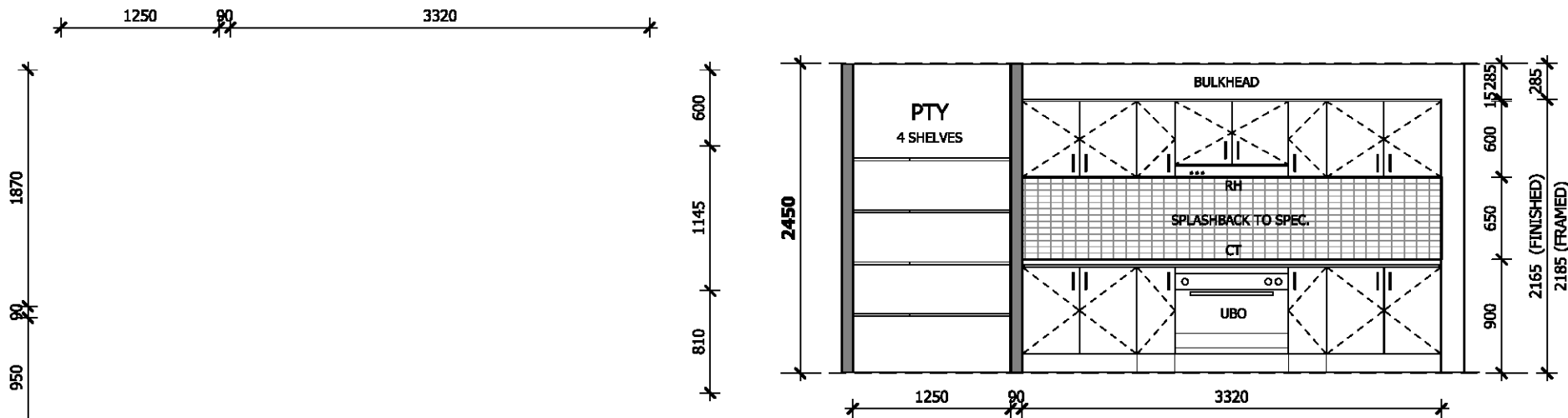
DRAWING TITLE:  
**KITCHEN PLAN (A)**

DRAWN BY: SM	DATE DRAWN: 17.08.21	CHECKED BY: MS	APPROVED FOR CONSTRUCTION
COUNCIL AREA: PENRITH		SCALE: 1 : 50	
JOB No: A009923		DRWG No: KD1	ISSUE: C

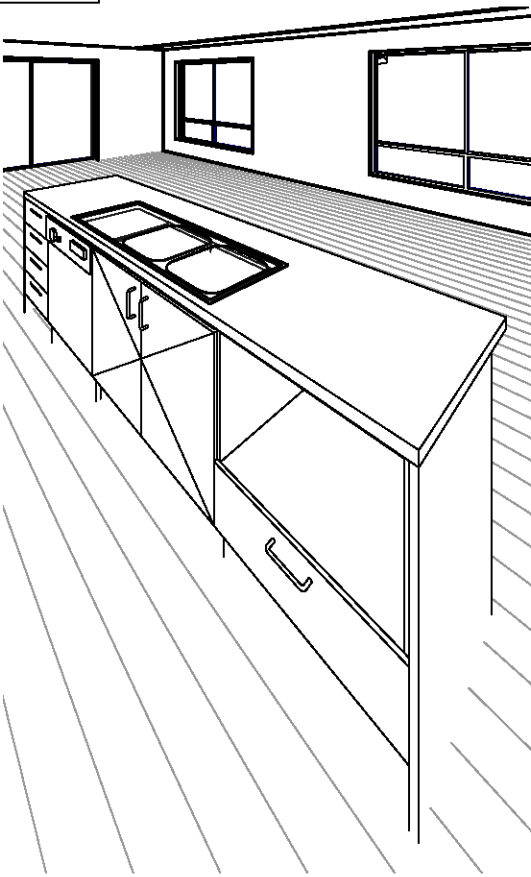
NOTE: PERSPECTIVE IS FOR DIAGRAMATIC PURPOSES ONLY

THE KITCHEN LAYOUT SHOWN IS ONLY DIAGRAMATIC  
ALL DETAILS AND DIMENSIONS TO BE CONFIRMED BY  
THE MAKER PRIOR TO MANUFACTURE

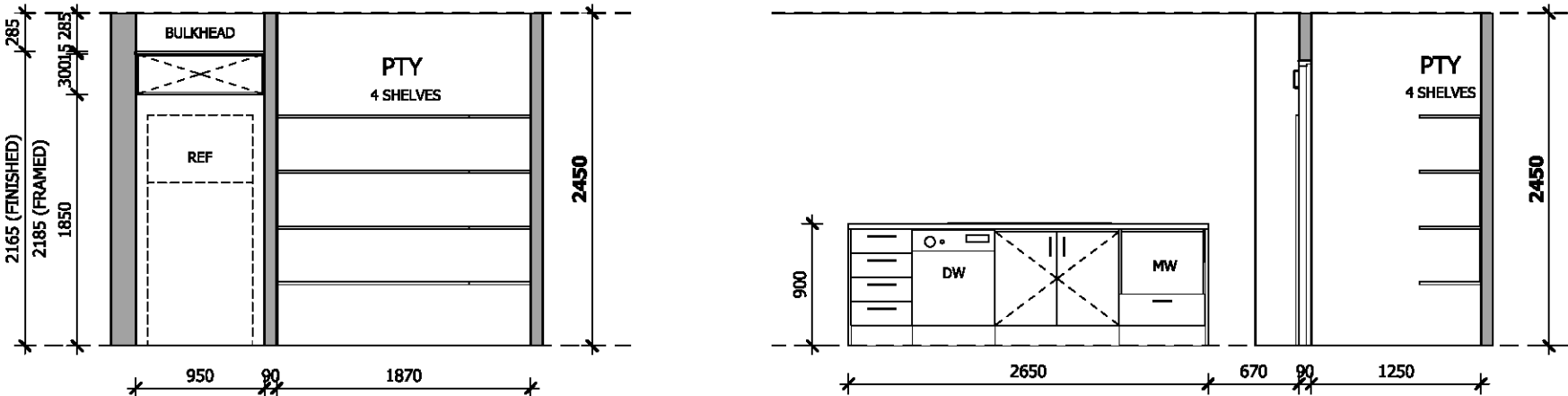
THIS DRAWING IS SUBJECT TO COPYRIGHT LAWS AND  
MAY NOT BE COPIED WITHOUT THE WRITTEN PERMISSION  
OF RAWSON HOMES PTY LTD-ACN 053 733 841



ELEVATION K1-B

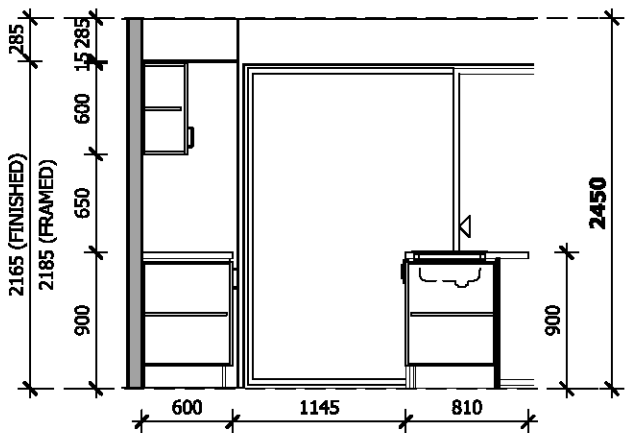


KITCHEN LAYOUT-B

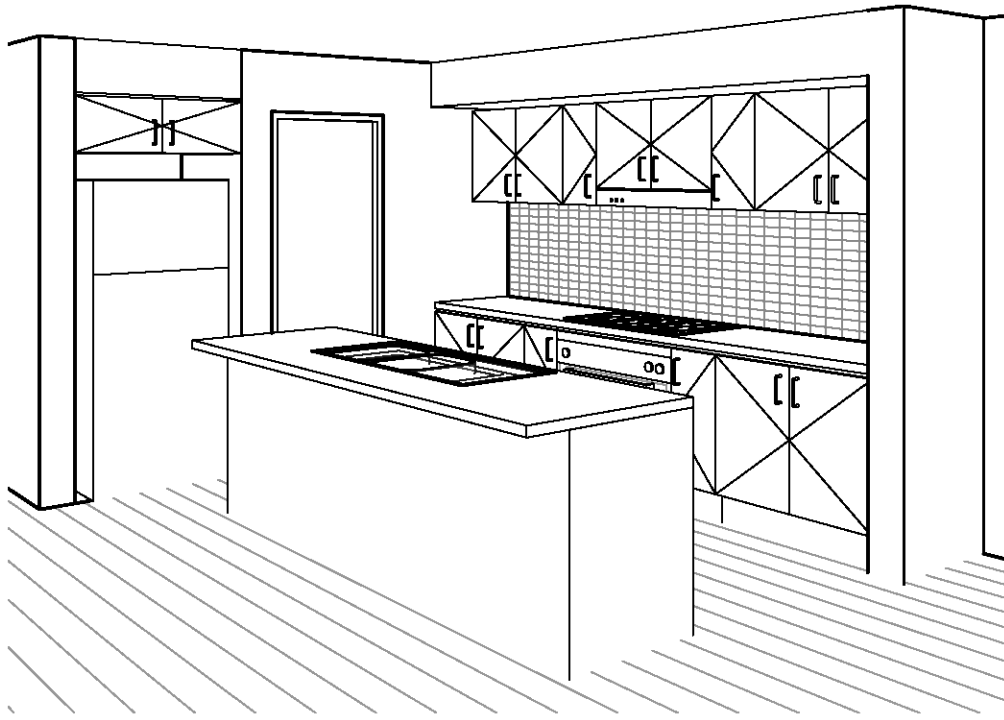


ELEVATION K2-B

ELEVATION K3-B



ELEVATION K4-B



NOTES:

PLEASE NOTE: DETAILS SHOWN ON THESE PLANS ARE INTENDED  
TO BE ACCURATE - HOWEVER INFORMATION WRITTEN INTO  
INDIVIDUAL CONTRACTS WILL TAKE PRECEDENCE OVER PLANS  
\* ALL DIMENSIONS ARE IN MILLIMETRES  
\* DO NOT SCALE - USE WRITTEN DIMENSIONS  
\* ALL DIMENSIONS STATED ON THE PLANS, SPECIFICATIONS, VARIATIONS  
AND UPGRADES ARE TO STRUCTURAL FRAMES ONLY AND EXCLUDE  
FINISHED SURFACES

**RAWSON HOMES**  
5 RIDER BOULEVARD  
LEVEL 7  
RHODES NSW 2138  
TELEPHONE 02 8765 5500  
FAX 02 8765 8099  
Builder's licence No. 33493C



SITE ADDRESS:  
LOT 30 (DP 16478)  
(NO. 4) INKERMANN ROAD  
EMU HEIGHTS, NSW 2750

CLIENT INITIALS: 1. \_\_\_\_\_ 2. \_\_\_\_\_

HOUSE TYPE  
MODEL: CUSTOM  
FACADE: CUSTOM  
TYPE: DOUBLE GARAGE  
SPECIFICATION: CUSTOM COLLECTIONS

DRAWING TITLE:  
**KITCHEN PLAN (B)**

DRAWN BY: SM	DATE DRAWN: 17.08.21	CHECKED BY: MS	APPROVED FOR CONSTRUCTION
COUNCIL AREA: PENRITH		SCALE: 1 : 50	
JOB No: A009923	DRWG No: KD2	ISSUE: C	

# protection

NSW RURAL FIRE SERVICE





## STANDARDS FOR ASSET PROTECTION ZONES

INTRODUCTION .....	3
WHAT IS AN ASSET PROTECTION ZONE? .....	3
WHAT WILL THE APZ DO? .....	3
WHERE SHOULD I PUT AN APZ? .....	4
STEP 1. DETERMINE IF AN APZ IS REQUIRED .....	4
STEP 2. DETERMINE WHAT APPROVALS ARE REQUIRED FOR CONSTRUCTING YOUR APZ .....	5
STEP 3. DETERMINE ASSET PROTECTION ZONE WIDTH .....	5
STEP 4. DETERMINE WHAT HAZARD REDUCTION METHOD IS REQUIRED TO REDUCE BUSH FIRE FUEL IN YOUR APZ .....	6
STEP 5. TAKE MEASURES TO PREVENT SOIL EROSION .....	9
STEP 6. ONGOING MANAGEMENT AND LANDSCAPING .....	10
PLANTS FOR BUSH FIRE PRONE GARDENS.....	10
WIND BREAKS.....	11

## INTRODUCTION

For thousands of years bush fires have been a natural part of the Australian landscape. They are inevitable and essential, as many Australian plants and animals have adapted to fire as part of their life cycle.

In recent years developments in bushland areas have increased the risk of bush fires harming people and their homes and property. But landowners can significantly reduce the impact of bush fires on their property by identifying and minimising bush fire hazards. There are a number of ways to reduce the level of hazard to your property, but one of the most important is the creation and maintenance of an Asset Protection Zone (APZ).

A well located and maintained APZ should be used in conjunction with other preparations such as good property maintenance, appropriate building materials and developing a family action plan.

## WHAT IS AN ASSET PROTECTION ZONE?

An Asset Protection Zone (APZ) is a fuel reduced area surrounding a built asset or structure. This can include any residential building or major building such as farm and machinery sheds, or industrial, commercial or heritage buildings.

An APZ provides:

- a buffer zone between a bush fire hazard and an asset;
- an area of reduced bush fire fuel that allows suppression of fire;
- an area from which backburning may be conducted; and
- an area which allows emergency services access and provides a relatively safe area for firefighters and home owners to defend their property.

Potential bush fire fuels should be minimised within an APZ. This is so that the vegetation within the planned zone does not provide a path for the transfer of fire to the asset either from the ground level or through the tree canopy.

## WHAT WILL THE APZ DO?

An APZ, if designed correctly and maintained regularly, will reduce the risk of:

- direct flame contact on the asset;
- damage to the built asset from intense radiant heat; and
- ember attack on the asset.



## WHERE SHOULD I PUT AN APZ?

An APZ is located between an asset and a bush fire hazard.

The APZ should be located wholly within your land. You cannot undertake any clearing of vegetation on a neighbour's property, including National Park estate, Crown land or land under the management of your local council, unless you have written approval.

If you believe that the land adjacent to your property is a bush fire hazard and should be part of an APZ, you can have the matter investigated by contacting the NSW Rural Fire Service (RFS).

There are six steps to creating and maintaining an APZ. These are:

1. Determine if an APZ is required;
2. Determine what approvals are required for constructing your APZ;
3. Determine the APZ width required;
4. Determine what hazard reduction method is required to reduce bush fire fuel in your APZ;
5. Take measures to prevent soil erosion in your APZ; and
6. Landscape and regularly monitor in your APZ for fuel regrowth.

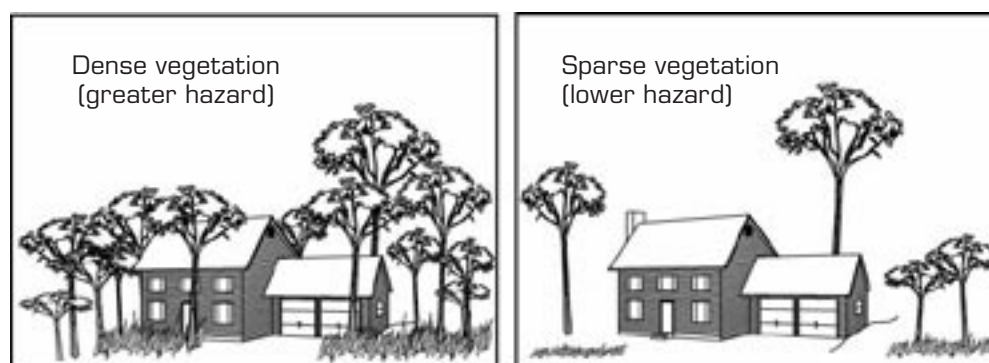
## STEP 1. DETERMINE IF AN APZ IS REQUIRED

Recognising that a bush fire hazard exists is the first step in developing an APZ for your property.

If you have vegetation close to your asset and you live in a bush fire prone or high risk area, you should consider creating and maintaining an APZ.

Generally, the more flammable and dense the vegetation, the greater the hazard will be. However, the hazard potential is also influenced by factors such as slope.

- A large area of continuous vegetation on sloping land may increase the potential bush fire hazard.
- The amount of vegetation around a house will influence the intensity and severity of a bush fire.
- The higher the available fuel the more intense a fire will be.



Isolated areas of vegetation are generally not a bush fire hazard, as they are not large enough to produce fire of an intensity that will threaten dwellings.

This includes:

- bushland areas of less than one hectare that are isolated from large bushland areas; and
- narrow strips of vegetation along road and river corridors.

If you are not sure if there is a bush fire hazard in or around your property, contact your local NSW Rural Fire Service Fire Control Centre or your local council for advice.

## STEP 2. DETERMINE WHAT APPROVALS ARE REQUIRED FOR CONSTRUCTING YOUR APZ

If you intend to undertake bush fire hazard reduction works to create or maintain an APZ you must gain the written consent of the landowner.

### **Subdivided land or construction of a new dwelling**

If you are constructing an APZ for a new dwelling you will need to comply with the requirements in *Planning for Bushfire Protection*. Any approvals required will have to be obtained as part of the Development Application process.

### **Existing asset**

If you wish to create or maintain an APZ for an existing structure you may need to obtain an environmental approval. The RFS offers a free environmental assessment and certificate issuing service for essential hazard reduction works. For more information see the RFS document *Application Instructions for a Bush Fire Hazard Reduction Certificate* or contact your local RFS Fire Control Centre to determine if you can use this approval process.

Bear in mind that all work undertaken must be consistent with any existing land management agreements (e.g. a conservation agreement, or property vegetation plan) entered into by the property owner.

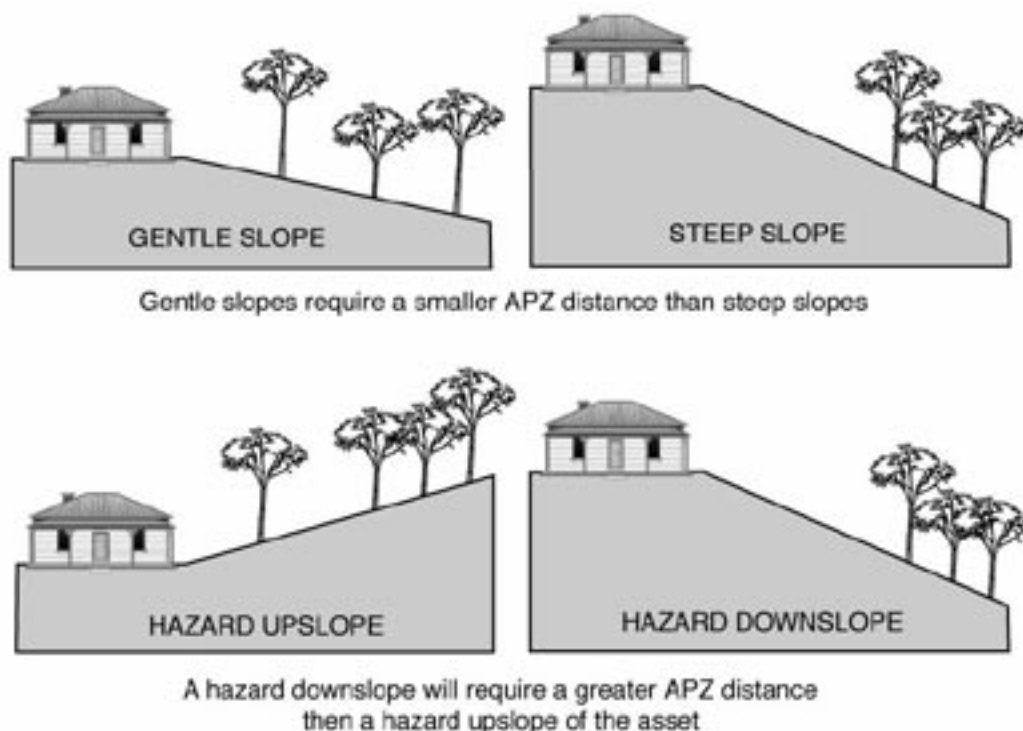
If your current development consent provides for an APZ, you do not need further approvals for works that are consistent with this consent.

If you intend to burn off to reduce fuel levels on your property you may also need to obtain a Fire Permit through the RFS or NSW Fire Brigades. See the RFS document *Before You Light That Fire* for an explanation of when a permit is required.

## STEP 3. DETERMINE THE APZ WIDTH

The size of the APZ required around your asset depends on the nature of the asset, the slope of the area, the type and structure of nearby vegetation and whether the vegetation is managed.

Fires burn faster uphill than downhill, so the APZ will need to be larger if the hazard is downslope of the asset.



Different types of vegetation (for example, forests, rainforests, woodlands, grasslands) behave differently during a bush fire. For example, a forest with shrubby understorey is likely to result in a higher intensity fire than a woodland with a grassy understorey and would therefore require a greater APZ width.

A key benefit of an APZ is that it reduces radiant heat and the potential for direct flame contact on homes and other buildings. Residential dwellings require a wider APZ than sheds or stockyards because the dwelling is more likely to be used as a refuge during bush fire.

#### **Subdivided land or construction of a new dwelling**

If you are constructing a new asset, the principles of *Planning for Bushfire Protection* should be applied. Your Development Application approval will detail the exact APZ distance required.

#### **Existing asset**

If you wish to create an APZ around an existing asset and you require environmental approval, the Bush Fire Environmental Assessment Code provides a streamlined assessment process. Your Bush Fire Hazard Reduction Certificate (or alternate environmental approval) will specify the maximum APZ width allowed.

For further information on APZ widths see *Planning for Bushfire Protection* or the *Bush Fire Environmental Assessment Code* (available on the RFS website), or contact your local RFS Fire Control Centre.

## **STEP 4. DETERMINE WHAT HAZARD REDUCTION METHOD IS REQUIRED TO REDUCE BUSH FIRE FUEL IN YOUR APZ**

The intensity of bush fires can be greatly reduced where there is little to no available fuel for burning. In order to control bush fire fuels you can reduce, remove or change the state of the fuel through several means.

Reduction of fuel does not require removal of all vegetation, which would cause environmental damage. Also, trees and plants can provide you with some bush fire protection from strong winds, intense heat and flying embers (by filtering embers) and changing wind patterns. Some ground cover is also needed to prevent soil erosion.

#### **Fuels can be controlled by:**

##### **1. raking or manual removal of fine fuels**

Ground fuels such as fallen leaves, twigs (less than 6 mm in diameter) and bark should be removed on a regular basis. This is fuel that burns quickly and increases the intensity of a fire.

Fine fuels can be removed by hand or with tools such as rakes, hoes and shovels.

##### **2. mowing or grazing of grass**

Grass needs to be kept short and, where possible, green.

##### **3. removal or pruning of trees, shrubs and understorey**

The control of existing vegetation involves both selective fuel reduction (removal, thinning and pruning) and the retention of vegetation.

Prune or remove trees so that you do not have a continuous tree canopy leading from the hazard to the asset. Separate tree crowns by two to five metres. A canopy should not overhang within two to five metres of a dwelling.

Native trees and shrubs should be retained as clumps or islands and should maintain a covering of no more than 20% of the area.



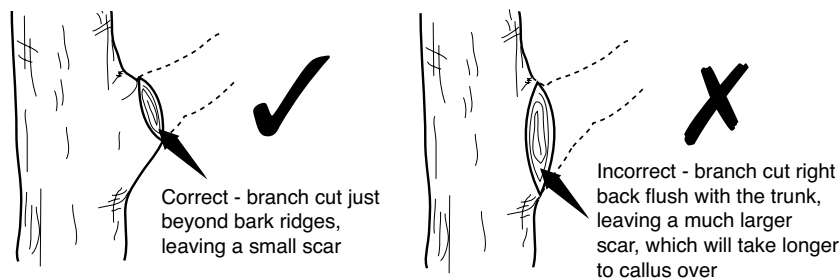
When choosing plants for removal, the following basic rules should be followed:

1. Remove noxious and environmental weeds first. Your local council can provide you with a list of environmental weeds or 'undesirable species'. Alternatively, a list of noxious weeds can be obtained at [www.agric.nsw.gov.au/noxweed/](http://www.agric.nsw.gov.au/noxweed/);
2. Remove more flammable species such as those with rough, flaky or stringy bark; and
3. Remove or thin understory plants, trees and shrubs less than three metres in height

The removal of significant native species should be avoided.

Prune in accordance with the following standards:

- Use sharp tools. These will enable clean cuts and will minimise damage to the tree.
- Decide which branches are to be removed before commencing work. Ensure that you maintain a balanced, natural distribution of foliage and branches.
- Remove only what is necessary.
- Cut branches just beyond bark ridges, leaving a small scar.
- Remove smaller branches and deadwood first.



There are three primary methods of pruning trees in APZs:

#### 1. Crown lifting (skirting)

Remove the lowest branches (up to two metres from the ground). Crown lifting may inhibit the transfer of fire between the ground fuel and the tree canopy.

#### 2. Thinning

Remove smaller secondary branches whilst retaining the main structural branches of the tree. Thinning may minimise the intensity of a fire.

#### 3. Selective pruning

Remove branches that are specifically identified as creating a bush fire hazard (such as those overhanging assets or those which create a continuous tree canopy). Selective pruning can be used to prevent direct flame contact between trees and assets.

Your Bush Fire Hazard Reduction Certificate or local council may restrict the amount or method of pruning allowed in your APZ.

See the *Australian Standard 4373 (Pruning of Amenity Trees)* for more information on tree pruning.

#### 4. Slashing and trittering

Slashing and trittering are economical methods of fuel reduction for large APZs that have good access. However, these methods may leave large amounts of slashed fuels (grass clippings etc) which, when dry, may become a fire hazard. For slashing or trittering to be effective, the cut material must be removed or allowed to decompose well before summer starts.

If clippings are removed, dispose of them in a green waste bin if available or compost on site (dumping clippings in the bush is illegal and it increases the bush fire hazard on your or your neighbour's property).

Although slashing and trittering are effective in inhibiting the growth of weeds, it is preferable that weeds are completely removed.

Care must be taken not to leave sharp stakes and stumps that may be a safety hazard.

## **5. Ploughing and grading**

Ploughing and grading can produce effective firebreaks. However, in areas where this method is applied, frequent maintenance may be required to minimise the potential for erosion. Loose soil from ploughed or graded ground may erode in steep areas, particularly where there is high rainfall and strong winds.

## **6. Burning (hazard reduction burning)**

Hazard reduction burning is a method of removing ground litter and fine fuels by fire. Hazard reduction burning of vegetation is often used by land management agencies for broad area bush fire control, or to provide a fuel reduced buffer around urban areas.

Any hazard reduction burning, including pile burns, must be planned carefully and carried out with extreme caution under correct weather conditions. Otherwise there is a real danger that the fire will become out of control. More bush fires result from escaped burning off work than from any other single cause.

**It is YOUR responsibility to contain any fire lit on your property. If the fire escapes your property boundaries you may be liable for the damage it causes.**

Hazard reduction burns must therefore be carefully planned to ensure that they are safe, controlled, effective and environmentally sound. There are many factors that need to be considered in a burn plan. These include smoke control, scorch height, frequency of burning and cut off points (or control lines) for the fire. For further information see the RFS document *Standards for Low Intensity Bush Fire Hazard Reduction Burning*, or contact your local RFS for advice.

## **7. Burning (pile burning)**

In some cases, where fuel removal is impractical due to the terrain, or where material cannot be disposed of by the normal garbage collection or composted on site, you may use pile burning to dispose of material that has been removed in creating or maintaining an APZ.

For further information on pile burning, see the RFS document *Standards for Pile Burning*.

In areas where smoke regulations control burning in the open, you will need to obtain a Bush Fire Hazard Reduction Certificate or written approval from Council for burning. During the bush fire danger period a Fire Permit will also be required. See the RFS document *Before You Light that Fire* for further details.

## STEP 5. TAKE MEASURES TO PREVENT SOIL EROSION

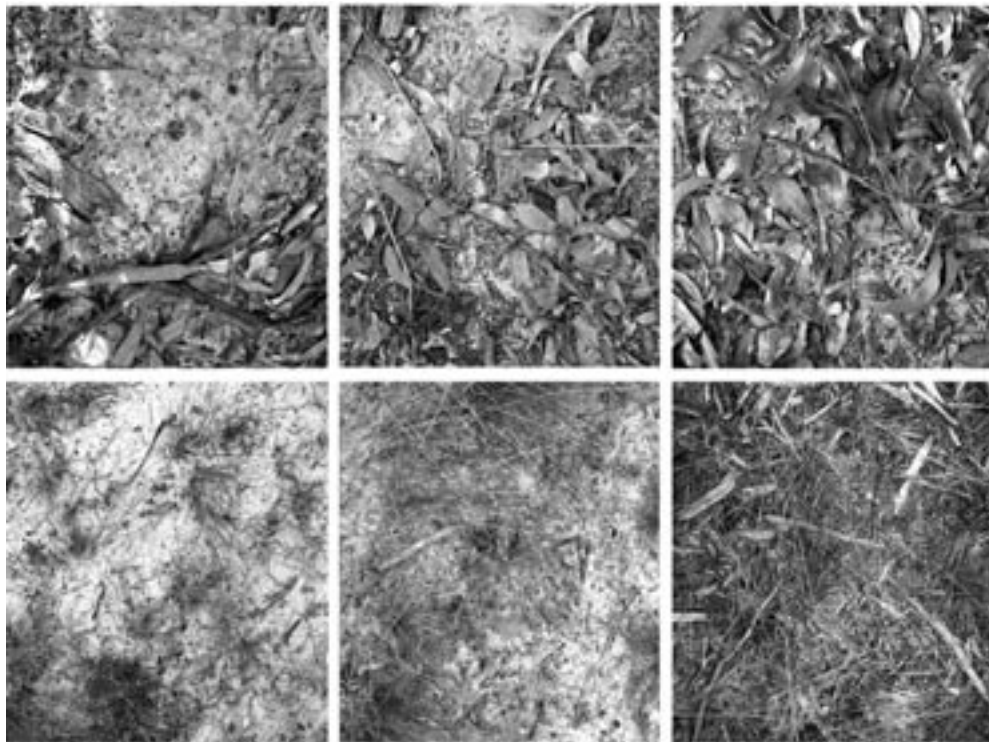
While the removal of fuel is necessary to reduce a bush fire hazard, you also need to consider soil stability, particularly on sloping areas.

Soil erosion can greatly reduce the quality of your land through:

- loss of top soil, nutrients, vegetation and seeds
- reduced soil structure, stability and quality
- blocking and polluting water courses and drainage lines

A small amount of ground cover can greatly improve soil stability and does not constitute a significant bush fire hazard. Ground cover includes any material which directly covers the soil surface such as vegetation, twigs, leaf litter, clippings or rocks. A permanent ground cover should be established (for example, short grass). This will provide an area that is easy to maintain and prevent soil erosion.

When using mechanical hazard reduction methods, you should retain a ground cover of at least 75% to prevent soil erosion. However, if your area is particularly susceptible to soil erosion, your Hazard Reduction Certificate may require that 90% ground cover be retained.



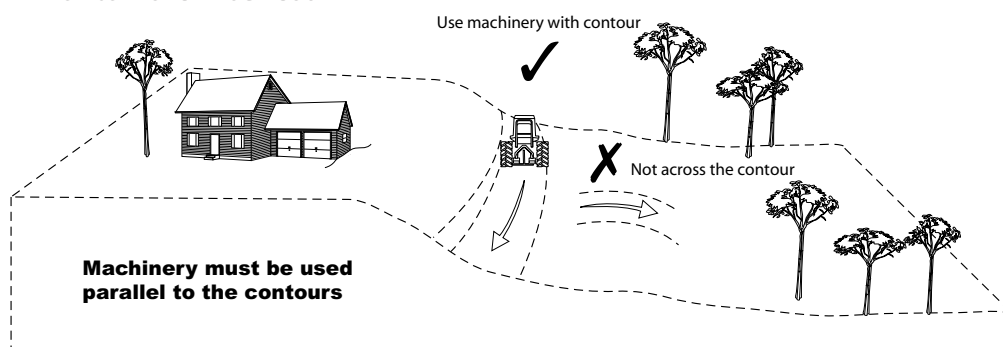
50%

75%

100%

Ground Cover

To reduce the incidence of soil erosion caused by the use of heavy machinery such as ploughs, dozers and graders, machinery must be used parallel to the contours. Vegetation should be allowed to regenerate, but be managed to maintain a low fuel load.





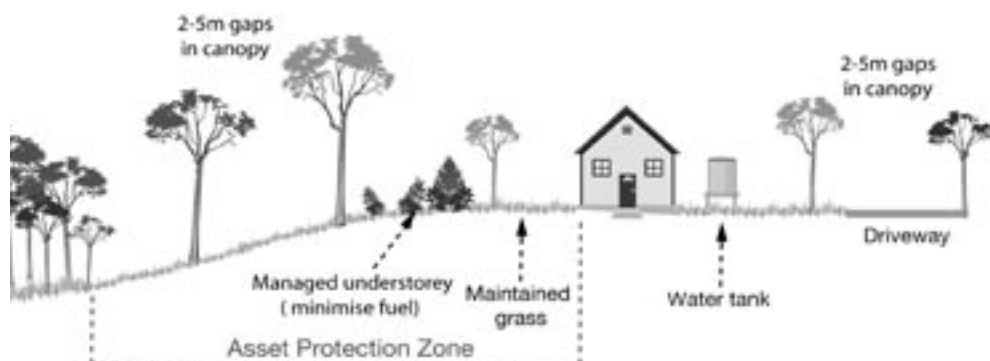
## STEP 6. ONGOING MANAGEMENT AND LANDSCAPING

Your home and garden can blend with the natural environment and be landscaped to minimise the impact of fire at the same time. To provide an effective APZ, you need to plan the layout of your garden to include features such as fire resistant plants, radiant heat barriers and windbreaks.

### Layout of gardens in an APZ

When creating and maintaining a garden that is part of an APZ you should:

- ensure that vegetation does not provide a continuous path to the house;
- remove all noxious and environmental weeds;
- plant or clear vegetation into clumps rather than continuous rows;
- prune low branches two metres from the ground to prevent a ground fire from spreading into trees;
- locate vegetation far enough away from the asset so that plants will not ignite the asset by direct flame contact or radiant heat emission;
- plant and maintain short green grass around the house as this will slow the fire and reduce fire intensity. Alternatively, provide non-flammable pathways directly around the dwelling;
- ensure that shrubs and other plants do not directly abut the dwelling. Where this does occur, gardens should contain low-flammability plants and non flammable ground cover such as pebbles and crush tile; and
- avoid erecting brush type fencing and planting “pencil pine” type trees next to buildings, as these are highly flammable.



### Removal of other materials

Woodpiles, wooden sheds, combustible material, storage areas, large quantities of garden mulch, stacked flammable building materials etc. should be located away from the house. These items should preferably be located in a designated cleared location with no direct contact with bush fire hazard vegetation.

### Other protective features

You can also take advantage of existing or proposed protective features such as fire trails, gravel paths, rows of trees, dams, creeks, swimming pools, tennis courts and vegetable gardens as part of the property's APZ.

## PLANTS FOR BUSH FIRE PRONE GARDENS

When designing your garden it is important to consider the type of plant species and their flammability as well as their placement and arrangement.

Given the right conditions, all plants will burn. However, some plants are less flammable than others.

Trees with loose, fibrous or stringy bark should be avoided. These trees can easily ignite and encourage the ground fire to spread up to, and then through, the crown of the trees.

Plants that are less flammable, have the following features:

- high moisture content
- high levels of salt
- low volatile oil content of leaves
- smooth barks without “ribbons” hanging from branches or trunks; and
- dense crown and elevated branches.

When choosing less flammable plants, be sure not to introduce noxious or environmental weed species into your garden that can cause greater long-term environmental damage.

For further information on appropriate plant species for your locality, contact your local council, plant nurseries or plant society.

If you require information on how to care for fire damaged trees, refer to the Firewise brochure *Trees and Fire Resistance; Regeneration and care of fire damaged trees*.

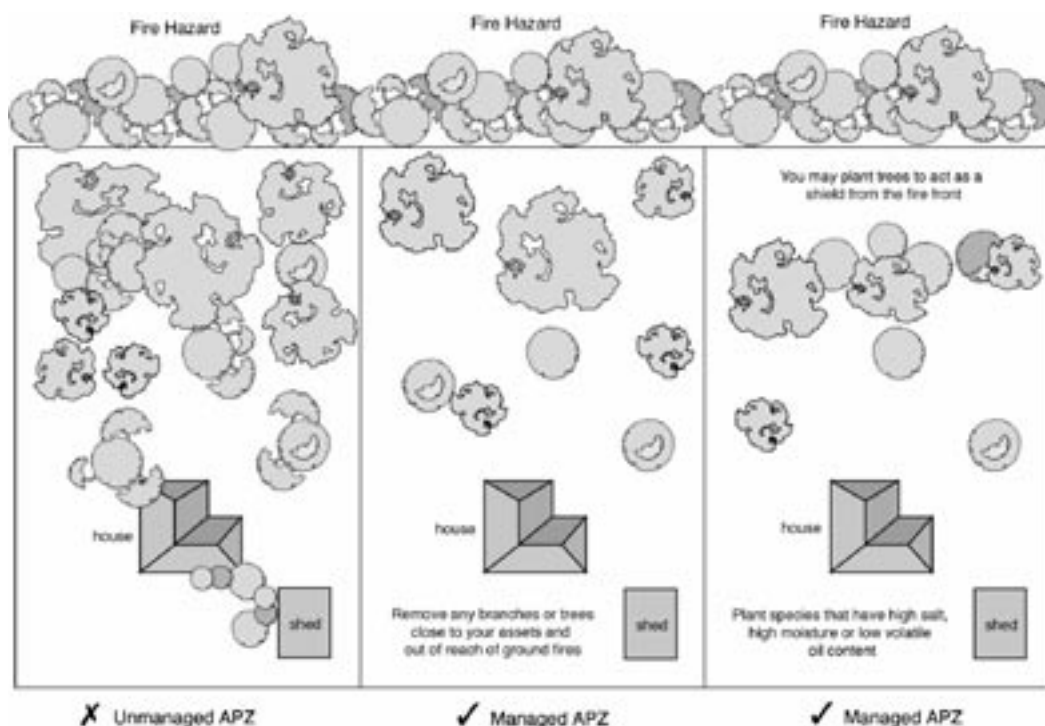
## WIND BREAKS

Rows of trees can provide a wind break to trap embers and flying debris that could otherwise reach the house or asset.

You need to be aware of local wind conditions associated with bush fires and position the wind break accordingly. Your local RFS Fire Control Centre can provide you with further advice.

When choosing trees and shrubs, make sure you seek advice as to their maximum height. Their height may vary depending on location of planting and local conditions. As a general rule, plant trees at the same distance away from the asset as their maximum height.

When creating a wind break, remember that the object is to slow the wind and to catch embers rather than trying to block the wind. In trying to block the wind, turbulence is created on both sides of the wind break making fire behaviour erratic.



## HOW CAN I FIND OUT MORE?

The following documents are available from your local Fire Control Centre and from the NSW RFS website at **[www.rfs.nsw.gov.au](http://www.rfs.nsw.gov.au)**.

- Before You Light That Fire
- Standards for Low Intensity Bush Fire Hazard Reduction Burning
- Standards for Pile Burning
- Application Instructions for a Bush Fire Hazard Reduction Certificate

If you require any further information please contact:

- your local NSW Rural Fire Service Fire Control Centre.  
Location details are available on the RFS website or
- call the NSW RFS Enquiry Line 1800 679 737  
(Monday to Friday, 9am to 5pm), or
- the NSW RFS website at **[www.rfs.nsw.gov.au](http://www.rfs.nsw.gov.au)**.

**Produced by the NSW Rural Fire Service, Locked Mail Bag 17,  
GRANVILLE, NSW 2142. Ph. 1800 679 737**

[www.rfs.nsw.gov.au](http://www.rfs.nsw.gov.au)

Printed on 100% Recycled Cyclus Offset paper.