



BUSHFIRE THREAT ASSESSMENT

FOR
A PROPOSED
CHILDCARE CENTRE
AT

33 STEAM STREET, MAITLAND
NSW 2320

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Prepared for:	Brown Commercial Building
Reference No.	Maitland – Brown Commercial Building – April 2025
Document Status & Date:	15/04/2025
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Executive Summary

A Bushfire Threat Assessment Report (BTA) has been prepared by Firebird ecoSultants Pty Ltd at the request of Brown Commercial Building for a proposed Childcare at 33 Steam Street, Maitland NSW 2320. The report forms part of the supporting documentation for a Development Application to be submitted to Maitland City Council (MCC).

The proposal is for a childcare centre and, as such, must meet the requirements of a Special Fire Protection Purposes (SFPP) development in accordance with Planning for Bushfire Protection 2019 (PBP 2019) (NSW RFS, 2019). Under RF Act s.100B, a BFSA from the NSW RFS is required for SFPP development. As such, an Integrated Development approval may be required under of the EP&A Act s.4.46. The report demonstrates compliance with PBP 2019 and AS3959-2018 Construction of Buildings in Bush Fire Prone Areas as well as **Appendix B of PBP Addendum November 2022**.

This assessment aims to consider and assess the bushfire hazard and associated potential threats relevant to the proposal. Recommendations are provided with regard to fuel management, access, provision of emergency services, building protection and construction standards to facilitate an acceptable level of bushfire protection.

In summary, the following is recommended to enable the proposal to meet the relevant legislative requirements for the proposed childcare centre:

1. Asset Protection Zones (APZ)

An APZ of >64m to the West is provided between the proposed childcare building and the vegetation surrounding the site in order to get a radiant heat of <10kw/m². This is based on Table A1.12.1 in Appendix 1 of Planning for Bushfire Protection 2019.

The APZ is partly established by the maintained road reserve of Allan Walsh Drive. It is recommended that the entire site outside the development footprint is managed to the standards in Appendix 4 of Planning for Bushfire Protection 2019 (see Appendix B of this report).

2. Bushfire Attack Level (BAL)

The BAL relates to a set of construction specifications listed within Australian Standard AS 3959-2018 Constructions of buildings in bushfire-prone areas (AS 3959) and the NSW variation to AS 3959 listed at Section 7.5.2 of PBP.

The BAL for the childcare centre has been determined as **BAL-12.5** in accordance with Table A1.12.1 of PBP 2019. However, in accordance with Appendix B of PBP Addendum November 2022, the constructions requirements must comply with BAL-19 must be applied as the Acceptable Solution.



3. Access

PBP 2019 requires an access design that enables safe evacuation whilst facilitating adequate emergency and operational response. The Performance based criteria in accordance with Appendix B of PBP Addendum November 2022 states:

“Firefighting vehicles are provided with safe, all-weather access to structures and hazardous vegetation”.

- The vegetation that has been considered a hazard occurs >64m from the proposed childcare centre. Allan Walsh Drive provides sufficient separation between the assessed vegetation to the West and Steam Street provides additional separation to the Northwest. No other hazards considered to be a bushfire threat occur within 140m.
- Steam Street, which is a public road, provides satisfactory access for evacuation and emergency response in the opposite direction of a bushfire threat through an existing public road system. The proposed carpark gives firefighting vehicles and residents direct access to the public road system. Firefighters will be able to enter the site from the public road and maneuver around the entire building.

4. Water Supply and Utilities

The site is connected to the reticulated water and a hydrant exists within 70m of the proposed childcare centre in accordance with the Acceptable Solution of PBP 2019 and Appendix B of PBP Addendum November 2022.

5. Emergency Management and Evacuation

An emergency evacuation plan is to be prepared in accordance with RFS, 2014, ‘Development Planning – A Guide to developing a Bush Fire Emergency Management and Evacuation Plan’.



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Terms & Abbreviations

Abbreviation	Meaning
APZ	Asset Protection Zone
AS2419-2017	Australian Standard – Fire Hydrant Installations
AS3959-2018	Australian Standard – Construction of Buildings in Bush Fire Prone Areas
BCA	Building Code of Australia
BPA	Bush Fire Prone Area (Also Bushfire Prone Land)
BFPL Map	Bush Fire Prone Land Map
BPMs	Bush Fire Protection Measures
BFSA	Bush Fire Safety Authority
CC	Construction Certificate
<i>EPA Act</i>	<i>NSW Environmental Planning and Assessment Act 1979</i>
FFDI	Forest Fire Danger Index
FMP	Fuel Management Plan
ha	hectare
IPA	Inner Protection Area
LGA	Local Government Area
MCC	Maitland City Council
OPA	Outer Protection Area
PBP	Planning for Bushfire Protection 2019
PoM	Plan of Management
RF Act	Rural Fires Act 1997
RF Regulation	Rural Fires Regulation



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I INTRODUCTION

A Bushfire Threat Assessment Report (BTA) has been prepared by Firebird ecoSultants Pty Ltd at the request of Brown Commercial Building for a proposed Childcare at 33 Steam Street, Maitland NSW 2320, hereafter referred to as the “site” (refer to Figure 1-1 for site locality). Refer to Appendix A for proposed site plans.

This BTA is suitable for submission with a DA and provides information on measures that will enable the development to comply with ‘Planning for Bushfire Protection’ (NSW RFS, 2019), hereafter referred to as PBP (RFS, 2019).

This assessment aims to consider and assess the bushfire hazard and associated potential threats relevant to such a proposal, and to outline the minimum mitigative measures which would be required in accordance with the provisions of the Environmental Planning and Assessment Amendment (Planning for Bushfire Protection) Regulation 2007 and the Rural Fires Amendment Regulation 2007 (RF Amendment Regulation 2007).

I.1 Site Particulars

Locality:	33 Steam Street, Maitland NSW 2320
LGA:	Maitland City Council
Current Land Use:	MU1: Mixed Use – Vacant lot
Forest Danger Index:	100 FFDI



Legend

- Building Outline
- Subject Land
- Assessment Area
- 100m
- 140m
- Cadastral

Scale 1: 2,000



0 20 40 60 Metres



Client: Brown Commercial Building

Project: 33 Steam Street, Maitland NSW 2320

Figure 1-1: Site Location

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I.2 Description of the Proposal

This Section DA relates to the proposal for a childcare centre. Refer to Appendix A for proposed plans.

I.3 Legislative Requirements

The site has been mapped as Bush Fire Prone Land Map (BFPLM) by MCC.

This report forms part of the supporting documentation for a DA to be submitted to MCC.

This BTA has been prepared using current legislative requirements and associated guidelines for assessment of bushfire protection, these being:

- PBP (RFS, 2019); and
- AS3959-2018 Construction of Buildings in Bushfire Prone Area.

I.4 Objectives of Assessment

This report has been prepared to address the requirements of Clause 44 of the Rural Fires Regulation. This BTA also addresses the six key Bush Fire Protection Measures (BFRMs) in a development assessment context being:

- The provision of clear separation of buildings and bush fire hazards, in the form of fuel-reduced APZ (and their components being Inner Protection Areas (IPA's) and Outer Protection Areas (OPA's);
- Sitting and design of the proposal;
- Construction standards;
- Appropriate access standards for residents, fire-fighters, emergency workers and those involved in evacuation;
- Adequate water supply and pressure, and utility services; and
- Suitable landscaping, to limit fire spreading to a building.



Legend

- Building Outline
- Subject Land
- Assessment Area
 - 100m
 - 140m
- Cadastre
- Bushfire Prone Land
 - Vegetation Category 3
 - Vegetation Buffer

Scale 1: 2,000



0 20 40 60 Metres



Client: Brown Commercial Building

Project: 33 Steam Street, Maitland NSW 2320

Figure 1-2: Bushfire Prone Land

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2 METHODOLOGY

2.1 Vegetation Assessment

Vegetation surveys and vegetation mapping carried out on the site has been undertaken as follows:

- Aerial Photograph Interpretation to map vegetation cover and extent
- Confirmation of the vegetation assemblage typology present.

2.2 Slope Assessment

Slope assessment has been undertaken as follows:

- Aerial Photograph Interpretation in conjunction with analysis of electronic contour maps with a contour interval of 2m.



3 SITE ASSESSMENT

The following assessment has been undertaken in accordance with the requirements of PBP (RFS, 2019).

3.1 Vegetation & Slope Assessment

In accordance with PBP (RFS 2019), an assessment of the vegetation over a distance of 140m in all directions from the site was undertaken. Vegetation that may be considered a bushfire hazard was identified in all directions from the site. This assessment is depicted in Table 3-1 and Figure 3-1 that shows the vegetation post development.

Table 3-1: Vegetation Classification

Proposed Childcare Centre		
Direction	Vegetation Type	Slope
North	Managed Land –Residential Development	N/A
East	Managed Land – Residential development	N/A
South	Managed Land – Residential development	N/A
West	Grassland	Flat ground



Legend

- Line Distance
- Building Outline
- Subject Land
- Assessment Area
 - 100m
 - 140m
- Classified Vegetation
 - Grassland
- Elevation Contours
- Cadastre

Scale 1: 2,000



0 20 40 60 Metres



Client: Brown Commercial Building

Project: 33 Steam Street, Maitland NSW 2320

Figure 3-1: Vegetation Map

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4 BUSHFIRE PROTECTION MEASURES

PBP 2019 requires the assessment of a suite of bushfire protection measures that in total provide an adequate level of protection for SFPP development. The measures required to be assessed are listed in Table 4-1 below

Table 4-1 Bushfire Protection Measures

Bushfire Protection Measures	Performance Criteria	Acceptable Solution
Asset Protection Zones (APZ)	The proposed building can withstand bush fire attack in the form of wind, embers, radiant heat and flame contact.	APZs are established in accordance with the Acceptable solution APZs within Table A1.12.1 in PBP 2019.
Construction Standards (BALs)	The proposed building can withstand bush fire attack in the form of wind, embers, radiant heat and flame contact. Compliance with Appendix B of PBP Addendum November 2022.	A construction level of BAL-19 or greater under AS 3959 and section 7.5 of PBP is applied. Compliance with acceptable solution in Appendix B of PBP Addendum November 2022.
Access	Firefighting vehicles are provided with safe, all-weather access to structures and hazardous vegetation.	› Steam Street and proposed carpark provide direct access to the proposed childcare centre from the existing public road network. Evacuation will occur in the opposite direction of the bushfire threat. › Firefighters have a defensible space around the entire building. › Additionally, Allan Walsh Drive provides an alternative access/egress route to the subject site. Compliance with performance criteria in Appendix B of PBP Addendum November 2022.

Bushfire Protection Measures	Performance Criteria	Acceptable Solution
Water supply and other utilities	An adequate water supply for firefighting purposes is installed and maintained. Compliance with Appendix B of PBP Addendum November 2022	Reticulated water is to be provided to the development, where available; and Water for firefighting purposes must be made available and consist of – › A fire hydrant system installed in accordance with AS2419.1; or › Where no reticulated water is available, a static water supply consisting of tanks, swimming pools, dams or the like, or a combination of these, together with suitable pumps, hoses and fittings, determined in consultation with NSW RFS that – › is capable of providing the required flow rate for a period of not less than 4 hours or › has a volume of 10,000 litres for each occupied building. Compliance with Appendix B of PBP Addendum November 2022.
Emergency and evacuation management		Preparation of 'Bushfire Emergency Management & Evacuation Plan'.

4.1 Asset Protection Zones

Using the vegetation and slope information presented in Section 3-1 and mapped on Figure 3-1, it has been determined that a specific APZs are required to comply with PBP 2019.



Table 4-2: Determination of APZs for Proposed Childcare

Vegetation Type & Direction	Slope	APZ Provided
Managed land to the North	N/A	N/A
Managed Land to the East	N/A	N/A
Managed Land to the South	N/A	N/A
Grassland to the West	Flat ground	>64m

4.2 Bushfire Attack Assessment

Building design and the materials used for construction of future dwellings should be chosen based on the information contained within AS3959-2018, and accordingly the designer / architect should be made aware of this recommendation. It may be necessary to have dwelling plans checked by the architect involved to ensure that the proposed dwellings meet the relevant Bushfire Attack Level (BAL) as detailed in AS3959-2018.

The determinations of the appropriate BAL are based upon parameters such as weather modelling, fire-line intensity, flame length calculations, as well as vegetation and fuel load analysis. The determination of the construction level is derived by assessing the:

- Relevant FFDI = e.g. 100
- Flame temperature
- Slope
- Vegetation classification; and
- Building location.

The following BAL, based on heat flux exposure thresholds, are used in the standard:

- (a) **BAL – LOW** The risk is considered to be **VERY LOW**
There is insufficient risk to warrant any specific construction requirements but there are still some risks.
- (b) **BAL – 12.5** The risk is considered to be **LOW**
There is a risk of ember attack.
The construction elements are expected to be exposed to a heat flux not greater than 12.5 k/m².
- (c) **BAL – 19** The risk is considered to be **MODERATE**
There is a risk of ember attack and burning debris ignited by wind borne embers and a likelihood of exposure to radiant heat.



The construction elements are expected to be exposed to a heat flux not greater than 19 kW/m².

(d) **BAL-29** The risk is considered to be **HIGH**

There is an increased risk of ember attack and burning debris ignited by windborne embers and a likelihood of exposure to an increased level of radiant heat.

The construction elements are expected to be exposed to a heat flux no greater than 29 kW/m².

(e) **BAL-40** The risk is considered to be **VERY HIGH**

There is much increased risk of ember attack and burning debris ignited by windborne embers, a likelihood of exposure to a high level of radiant heat and some likelihood of direct exposure to flames from the fire front.

The construction elements are expected to be exposed to a heat flux no greater than 40 kW/m².

(f) **BAL-FZ** The risk is considered to be **EXTREME**

There is an extremely high risk of ember attack and burning debris ignited by windborne embers, a likelihood of exposure to an extreme level of radiant heat and direct exposure to flames from the fire front.

The construction elements are expected to be exposed to a heat flux greater than 40 kW/m².

4.3 Determination of Bushfire Attack Levels

Using a FFDI of 100, the information relating to vegetation, slope and according to Table A1.12.1 of PBP 2019 that determined the appropriate BAL. The results from this bush fire risk assessment are detailed below in Table 4-1–Bush Fire Attack Assessment and Figure 3-1 shows the vegetation and required APZ.



Table 4-3: Determination of BALs for the Proposed Childcare Centre

Vegetation Type & Direction	APZ Provided	Bushfire Attack Level (BAL)
Managed Land to the North	>100m	BAL-LOW*
Managed Land to the East	>100m	BAL-LOW*
Managed Land to the South	>100m	BAL-LOW*
Grassland to the West	>64m	BAL-12.5*

*The above BAL rating is based on Table A1.12.1 of PBP 2019 showing compliance with minimum APZ distances for SFPP developments to achieve $<10\text{kW}/\text{m}^2$ and calculated at 1200K.

In accordance with Appendix B of PBP Addendum November 2022, childcare centres must meet a construction level of BAL-19 or greater under AS3959 and Section 7.5 of PBP is applied as the acceptable solution.



5 COMPLIANCE

The proposal is for a childcare centre and therefore development standards apply. Table 5-1 details the compliance with Development Standards for Special Fire Protection Purpose Developments and Compliance with Appendix B of PBP Addendum November 2022.

Table 5-1: Proposed Childcare Centre Compliance with Special Fire Protection Purpose Development Standards

Acceptable Solutions	Performance Criteria	Compliance
ASSET PROTECTION ZONES		
› the building is provided with an APZ in accordance with PBP 2019 (Table A1.12.1 in Appendix 1).	› radiant heat levels of greater than 10kW/m² (calculated at 1200K) will not be experienced on any part of the building.	Complies with Acceptable Solution – The proposed childcare centre has been provided an APZ in accordance with Table A1.12.1 in Appendix 1 of PBP 2019.
› APZs are located on lands with a slope less than 18 degrees.	› APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised.	Complies with Acceptable Solution – APZs do not occur on steep land.
› the APZ is managed in accordance with the requirements of Appendix 4 of this document, and is wholly within the boundaries of the development site; › APZ are wholly within the boundaries of the development site; and › other structures located within the APZ need to be located further than 6m from the refuge building.	› APZs are managed and maintained to prevent the spread of fire to the building. › the APZ is provided in perpetuity	Complies with Acceptable Solution – An APZ of >64m has been provided to the West of the site partly established by managed road reserve of Allan Walsh Drive. The entire site is to be managed as an IPA.



LANDSCAPING		
› landscaping is in accordance with Appendix 4; and › fencing is constructed in accordance with section 7.6.	› landscaping is designed and managed to minimise flame contact and radiant heat to buildings, and the potential for wind-driven embers to cause ignitions	Complies with Acceptable Solution – the site is to be managed to the requirements of PBP Appendix 4 (summarised in Appendix B here).
CONSTRUCTION STANDARDS		
› a construction level of BAL-19 or greater under AS 3959 or NASH Standard and section 7.5 of PBP is applied.	› the proposed building can withstand bush fire attack in the form of wind, embers, radiant heat and flame contact.	Complies with Acceptable Solution – The proposed childcare centre has been assessed as BAL-12.5 in accordance with Appendix 1 of PBP 2019 however in accordance with Appendix B of PBP 2019 Addendum 2022, a construction level of BAL-19 or greater is applied.
ACCESS		
› vehicular access must be capable of providing continuous access for emergency vehicles to enable travel in a forward direction from a public road around the entire building; and › must have a minimum unobstructed width of 6m with no part of its furthest boundary more than 18m from the building and in no part of the 6m width be built upon or used for any purpose other vehicular or pedestrian movement; and › must provide reasonable pedestrian access from the vehicular access to the building; and › must have a load bearing capacity and unobstructed height to permit the operation and passage of fire fighting vehicles; and	› firefighting vehicles are provided with safe, all-weather access to structures and hazard vegetation.	Complies with Performance Criteria – All roads surrounding the site provide safe, all-weather access to structures and hazard vegetation. The vegetation that has been considered a hazard occurs >64m from the proposed childcare centre. Steam Street, which is a public road, provides satisfactory access for evacuation and emergency response in the opposite direction of a bushfire threat through an existing public road system. The proposed carpark gives firefighting vehicles and residents direct access to the public road system. Firefighters are able to traverse around the entire building. Additionally, Allan Walsh Drive to the South



› must be wholly within the allotment except that a public road complying with the above may serve as the vehicular access or part thereof.		provides an alternative access/egress to the subject site in an emergency or evacuation situation
PERIMETER ROADS		
› there are two-way sealed roads; › minimum 8m carriageway width kerb to kerb; › parking is provided outside of the carriageway width; › hydrants are to be located clear of parking areas; › there are through roads, and these are linked to the internal road system at an interval of no greater than 500m; › curves of roads have a minimum inner radius of 6m; › the maximum grade road is 15 degrees and average grade of not more than 10 degrees; › the road crossfall does not exceed 3 degrees; and › a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided.	› perimeter access roads are designed to allow safe access and egress for firefighting vehicles while occupants are evacuating as well as providing a safe operational environment for emergency service personnel during firefighting and emergency management on the interface.	N/A – Perimeter roads are not proposed. The public road system is already existing.



NON-PERIMETER ROADS

› minimum 5.5m carriageway width kerb to kerb; › parking is provided outside of the carriageway width; › hydrants are located clear of parking areas; › there are through roads, and these are linked to the internal road system at an interval of no greater than 500m; › curves of roads have a minimum inner radius of 6m; › the maximum grade road is 15 degrees and average grade of not more than 10 degrees; › the road crossfall does not exceed 3 degrees; and › a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided.	› non-perimeter access roads are designed to allow safe access and egress for firefighting vehicles while occupants are evacuating.	N/A – Non-perimeter roads are not proposed. The public road system is already existing.
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WATER SUPPLY

› reticulated water is to be provided to the development, where available; or › a 10,000 litres minimum static water supply for firefighting purposes is provided for each occupied building where no reticulated water is available.	› an adequate water supply for firefighting purposes is installed and maintained.	Complies with Acceptable Solution – The site is connected to reticulated water.
› fire hydrant spacing, design and sizing comply with the relevant clauses of AS 2419.1:2017; › hydrants are not located within any road carriageway; and	› water supplies are located at regular intervals; and › the water supply is accessible and reliable for firefighting operations.	Complies with Acceptable Solution – a hydrant is located within 70m of the proposed childcare centre.



› reticulated water supply to urban subdivisions uses a ring main system for areas with perimeter roads.		
fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2017.	flows and pressure are appropriate.	Complies with Acceptable Solution – Flow and pressure compliant with AS 2419.1:2017
all above-ground water service pipes external to the building are metal, including and up to any taps.	the integrity of the water supply is maintained.	Complies with Acceptable Solution – All above ground pipes will comply with requirements
› where no reticulated water supply is available, water for firefighting purposes is provided in accordance with Table 5.3d.	a static water supply is provided for firefighting purposes in areas where reticulated water is not available.	Complies with Acceptable Solution – The site is connected to reticulated water
ELECTRICITY SERVICES		
› where practicable, electrical transmission lines are underground; › where overhead, electrical transmission lines are proposed as follow: ○ lines are installed with short pole spacing (30m), unless crossing gullies, gorges or riparian areas; and ○ no part of a tree is closer to a power line than the distance set out in accordance with the specifications in ISSC3 Guideline for Managing Vegetation Near Power Lines.	› location of electricity services limits the possibility of ignition of surrounding bush land or the fabric of buildings.	Complies with Acceptable Solution – Electrical transmission lines are to comply with the acceptable solution.



GAS SERVICES

› reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 and the requirements of relevant authorities, and metal piping is used; › all fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side; › connections to and from gas cylinders are metal; › if gas cylinders need to be kept close to the building, safety valves are directed away from the building and at least 2m away from any combustible material, so they do not act as a catalyst to combustion; › polymer-sheathed flexible gas supply lines to gas meters adjacent to buildings are not to be used; and › above-ground gas service pipes external to the building are metal, including and up to any outlets.	› location and design of gas services will not lead to ignition of surrounding bushland or the fabric of buildings.	Complies with Acceptable Solution – Gas services are to comply with the acceptable solution.
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EMERGENCY MANAGEMENT

› Bush Fire Emergency Management and Evacuation Plan is prepared consistent with the: ○ The NSW RFS document: A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan; ○ NSW RFS Schools Program Guide;	› a Bush Fire Emergency Management and Evacuation Plan is prepared.	Complies with Acceptable Solution – An emergency evacuation plan shall be prepared for the childcare centre.
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○ Australian Standard AS 3745:2010 Planning for emergencies in facilities; and ○ Australian Standard AS 4083:2010 Planning for emergencies – Health care facilities (where applicable). ○ the Bush Fire Emergency Management and Evacuation Plan should include planning for the early relocation of occupants Note: A copy of the Bush Fire Emergency Management and Evacuation Plan should be provided to the Local Emergency Management Committee for its information prior to occupation of the development.		
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6 CONCLUSION & RECOMMENDATIONS

In summary, a Bushfire Risk Assessment has been undertaken for a proposed childcare centre at 33 Steam Street, Maitland NSW 2320. The report forms part of the supporting documentation for a DA to be submitted to MCC.

If the recommendations contained within this report are duly considered and incorporated, it is considered that the fire hazard present is containable to a level necessary to provide an adequate level of protection to life and property on the site. In summary, the following is recommended to enable the proposal to meet the relevant legislative requirements for the proposed childcare centre:

- The proposed childcare centre has been assessed as **BAL-12.5** based on Table A1.12.1 in Appendix 1 of PBP 2019. In accordance with Appendix B of PBP 2019 Addendum November 2022, a **construction level of BAL-19** will be applied to the buildings as childcare centres are required to comply with specific criteria for SFPP Development.
- The areas of the site outside the development area should be managed as an Inner Protection Area (IPA). The APZs are already established by managed land to the West and North.
- The site is connected to reticulated water and hydrants exist within 70m of the proposed childcare centre.
- PBP 2019 requires an access design that enables safe evacuation whilst facilitating adequate emergency and operational response. The Performance based criteria in accordance with Appendix B of PBP Addendum November 2022 states:

“Firefighting vehicles are provided with safe, all-weather access to structures and hazardous vegetation”.

- The vegetation that has been considered a hazard occurs >64m from the proposed childcare centre. Allan Walsh Drive provides sufficient separation between the assessed vegetation to the West and Steam Street provides additional separation to the Northwest. No other hazards considered to be a bushfire threat occur within 140m.
- Steam Street, which is a public road, provides satisfactory access for evacuation and emergency response in the opposite direction of a bushfire threat through an existing public road system. The proposed carpark gives firefighting vehicles and residents direct access to the public road system. Firefighters will be able to enter the site from the public road and maneuver around the entire building.
- An emergency evacuation plan is to be prepared in accordance with RFS, 2014, ‘Development Planning – A Guide to developing a Bush Fire Emergency Management and Evacuation Plan’.



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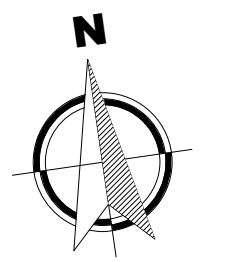
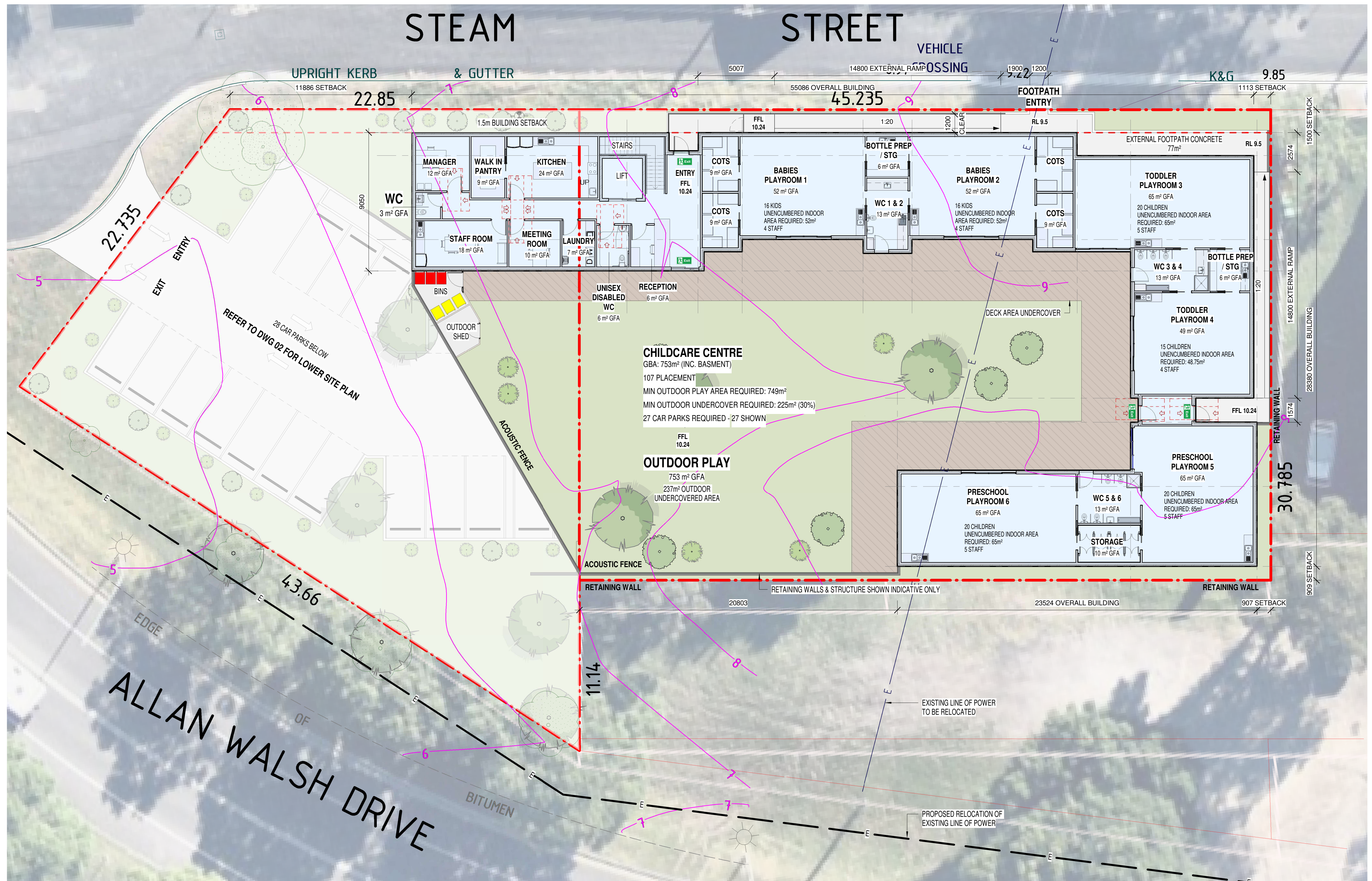
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Ramsay, GC and Dawkins, D (1993). *Building in Bushfire-prone Areas – Information and Advice*. CSIRO and Standards Australia.

Rural Fires and Environmental Assessment Legislation Amendment Act 2002.

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APPENDIX A PROPOSED SITE PLANS



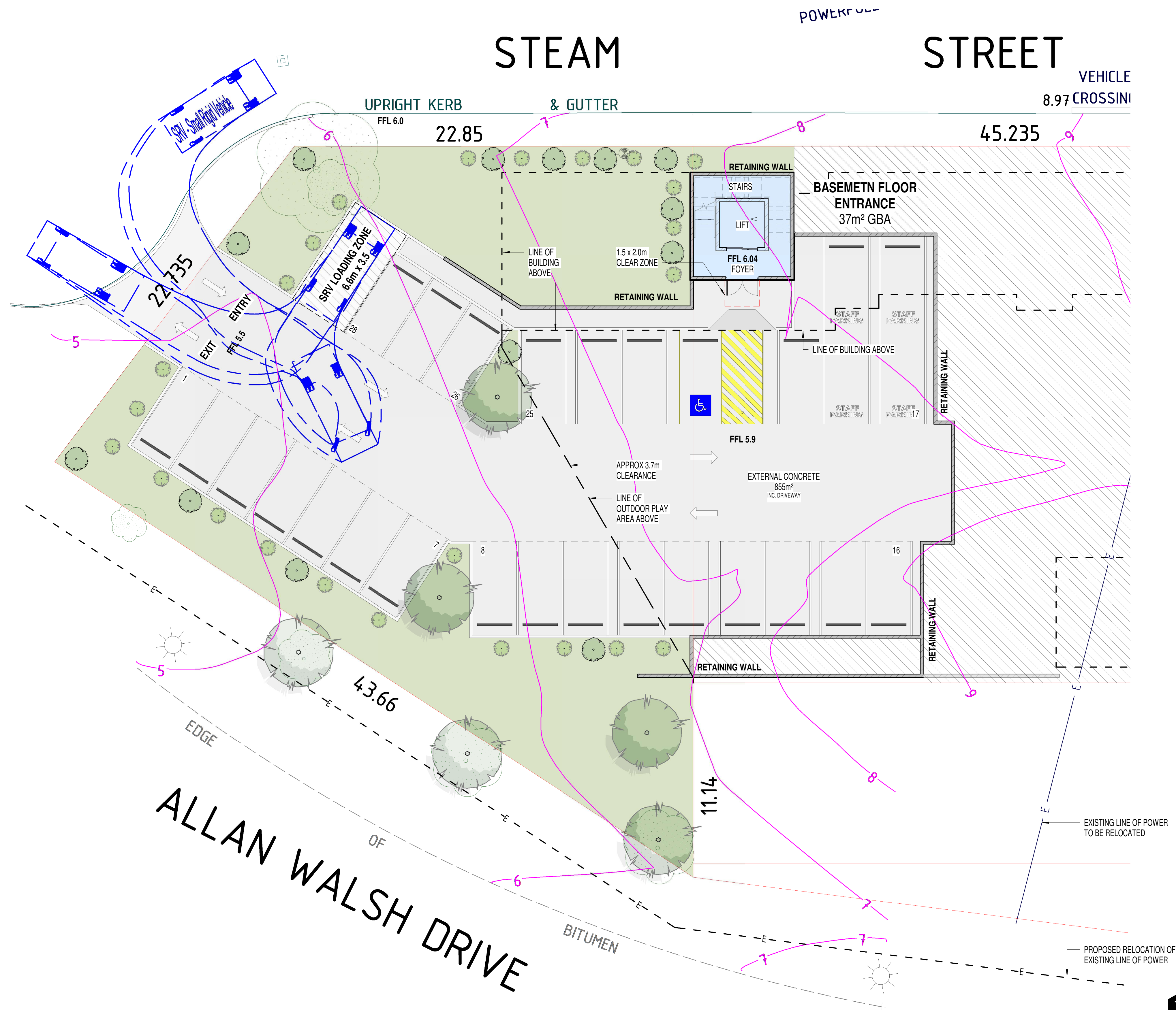
1 Site Plan
1:125

Rev.	Description	Date	Issued by
11	DRAFT REVIEW	21.10.24	M.Marshall
12	DRAFT REVIEW	21.10.24	M.Marshall
13	DRAFT REVIEW	22.10.24	M.Marshall
14	DRAFT REVIEW	23.10.24	M.Marshall
15	DRAFT REVIEW	20.11.24	M.Marshall
16	DRAFT REVIEW	21.11.24	M.Marshall
17	SITE REDRAWN	17.01.25	LT

0 1 2 4 6m

NOTES:
1. All dimensions, levels, and setbacks are to be verified on site prior to fabrication or construction.
2. Written dimensions take precedence over scaled ones.

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SRV - Small Rigid Vehicle	
Overall Length	6.400m
Overall Width	2.330m
Overall Body Height	3.500m
Min Body Ground Clearance	0.395m
Track Width	2.330m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	7.100m



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Project: CHILD CARE CENTRE

Lot: 33 - 32DP: 1193849 **No:** 27-33 **Street:** STEAM STREET **Suburb:** MAITLAND

Client: BROWN COMMERCIAL **Project Status:** CONCEPT PLANS ONLY

Sheet Title: LOWER SITE PLAN

Scale: 1 : 125 on A1

Project No: BCO503

DWG No: 02

Revision: 17

APPENDIX B ASSET PROTECTION ZONES

APPENDIX 4

ASSET PROTECTION ZONE REQUIREMENTS

In combination with other BPMS, a bush fire hazard can be reduced by implementing simple steps to reduce vegetation levels. This can be done by designing and managing landscaping to implement an APZ around the property.

Careful attention should be paid to species selection, their location relative to their flammability, minimising continuity of vegetation (horizontally and vertically), and ongoing maintenance to remove flammable fuels (leaf litter, twigs and debris).

This Appendix sets the standards which need to be met within an APZ.

A4.1 Asset Protection Zones

An APZ is a fuel-reduced area surrounding a building or structure. It is located between the building or structure and the bush fire hazard.

For a complete guide to APZs and landscaping, download the NSW RFS document *Standards for Asset Protection Zones* at the NSW RFS Website www.rfs.nsw.gov.au.

An APZ provides:

- a buffer zone between a bush fire hazard and an asset;
- an area of reduced bush fire fuel that allows for suppression of fire;
- an area from which backburning or hazard reduction can 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.

Bush fire fuels should be minimised within an APZ. This is so that the vegetation within the zone does not provide a path for the spread of fire to the building, either from the ground level or through the tree canopy.

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

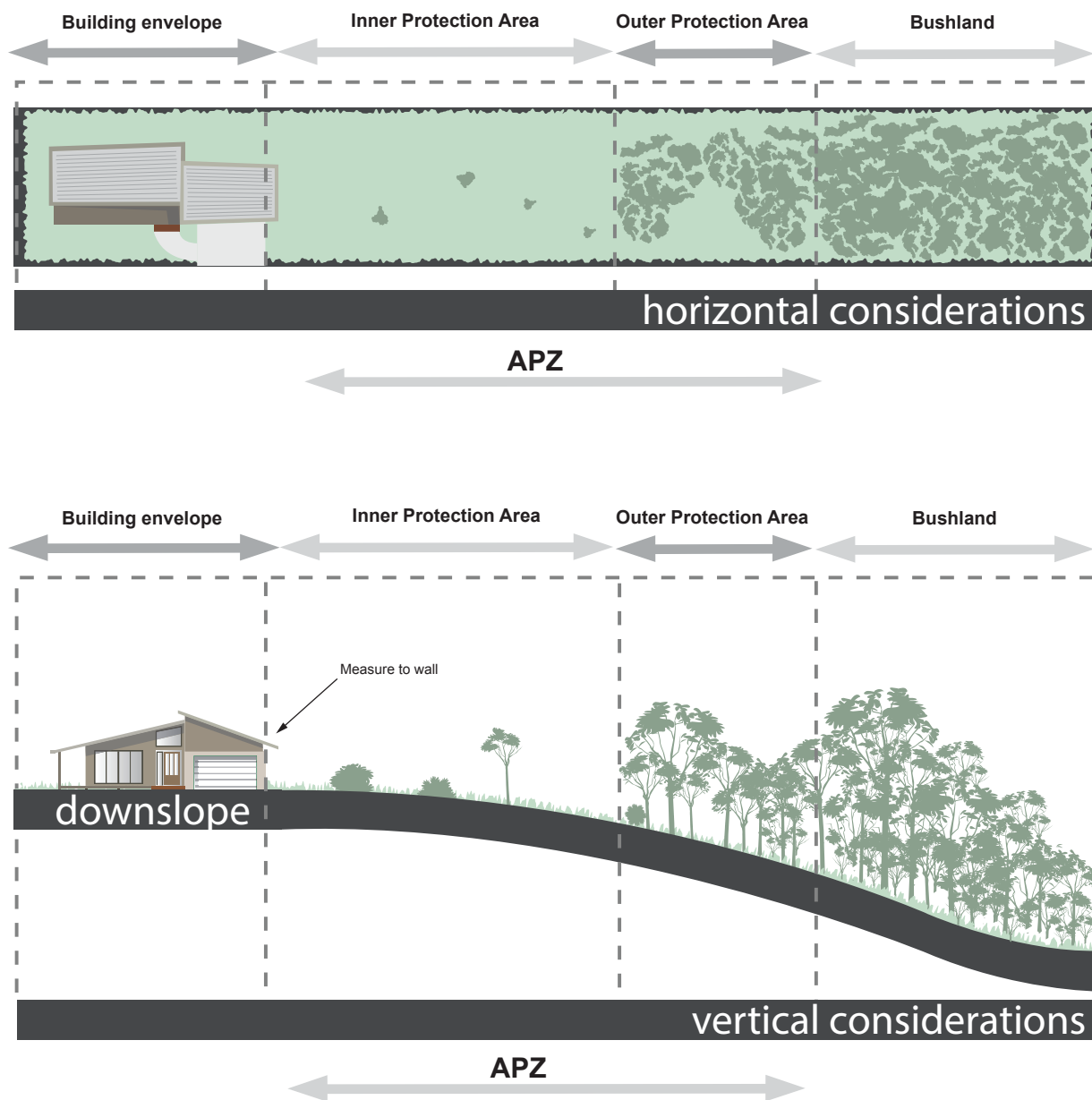
- direct flame contact on the building;
- damage to the building asset from intense radiant heat; and
- ember attack.

The methodology for calculating the required APZ distance is contained within Appendix 1. The width of the APZ required will depend upon the development type and bush fire threat. APZs for new development are set out within Chapters 5, 6 and 7 of this document.

In forest vegetation, the APZ can be made up of an Inner Protection Area (IPA) and an Outer Protection Area (OPA).

Figure A4.1

Typical Inner and Outer Protection Areas.



A4.1.1 Inner Protection Areas (IPAs)

The IPA is the area closest to the building and creates a fuel-managed area which can minimise the impact of direct flame contact and radiant heat on the development and act as a defensible space. Vegetation within the IPA should be kept to a minimum level. Litter fuels within the IPA should be kept below 1cm in height and be discontinuous.

In practical terms the IPA is typically the curtilage around the building, consisting of a mown lawn and well maintained gardens.

When establishing and maintaining an IPA the following requirements apply:

Trees

- tree canopy cover should be less than 15% at maturity;
- trees at maturity should not touch or overhang the building;
- lower limbs should be removed up to a height of 2m above the ground;
- tree canopies should be separated by 2 to 5m; and
- preference should be given to smooth barked and evergreen trees.

Shrubs

- create large discontinuities or gaps in the vegetation to slow down or break the progress of fire towards buildings should be provided;
- shrubs should not be located under trees;
- shrubs should not form more than 10% ground cover; and
- clumps of shrubs should be separated from exposed windows and doors by a distance of at least twice the height of the vegetation.

Grass

- grass should be kept mown (as a guide grass should be kept to no more than 100mm in height); and
- leaves and vegetation debris should be removed.

A4.1.2 Outer Protection Areas (OPAs)

An OPA is located between the IPA and the unmanaged vegetation. It is an area where there is maintenance of the understorey and some separation in the canopy. The reduction of fuel in this area aims to decrease the intensity of an approaching fire and restricts the potential for fire spread from crowns; reducing the level of direct flame, radiant heat and ember attack on the IPA.

Because of the nature of an OPA, they are only applicable in forest vegetation.

When establishing and maintaining an OPA the following requirements apply:

Trees

- tree canopy cover should be less than 30%; and
- canopies should be separated by 2 to 5m.

Shrubs

- shrubs should not form a continuous canopy; and
- shrubs should form no more than 20% of ground cover.

Grass

- grass should be kept mown to a height of less than 100mm; and
- leaf and other debris should be removed.

An APZ should be maintained in perpetuity to ensure ongoing protection from the impact of bush fires. Maintenance of the IPA and OPA as described above should be undertaken regularly, particularly in advance of the bush fire season.

APPENDIX C WATER AND HYDRANT INFORMATION



Before You Dig Australia (BYDA)

Location Information

Hunter Water Corporation
36 Honeysuckle Drive
NEWCASTLE NSW 2300

To:

Azmina Shafie
97 Scott Street
Newcastle NSW 2300

Enquiry Details	
Utility ID	80220
Job Number	50022817
Sequence Number	254035856
Enquiry Date	23/04/2025 12:59
Response	AFFECTED
Address	33 Steam St Maitland
Location in Road	
Activity	Planning and Design

Enquirer Details	
Customer ID	3473355
Contact	Azmina Shafie
Company	
Email	azmina@firebirdeco.com.au
Phone	+61422344481

Enquirer Responsibilities

HWC's provision, and your access to and use, of the data, maps and other information contained in HWC's response to your Before You Dig Australia (BYDA) enquiry (Information) are subject to the following terms and conditions and any additional disclaimers contained in HWC's response.

1. Nature of HWC's assets

You acknowledge and accept that:

- (a) water in HWC mains is under pressure and may cause injury or damage if a main is damaged;
- (b) HWC sewer mains can be under pressure and may cause injury or damage if a main is damaged;
- (c) HWC recycled water mains can be under pressure and may cause injury or damage if a main is damaged;
- (d) HWC services are laid at varying depths;
- (e) the Information does not include data related to property services;
- (f) HWC will seek recovery of repair costs if an HWC asset is damaged; and
- (g) all electrical services are to be considered live.

Accordingly, all persons must exercise extreme care and only use hand excavation until the exact location of all assets within a work area is established.

2. Your use of Information

You acknowledge and accept that:

- (a) neither HWC nor BYDA make any representation or give any guarantee, warranty or undertaking (express or implied) as to the currency, accuracy, completeness, effectiveness or reliability of the Information;
- (b) all Information is:
 - i. generated by an automated system based on the information you submit to the BYDA website and it is your responsibility to ensure that the dig site is properly defined in your enquiry;
 - ii. approximate, intended to be of general application and may not be suitable for your specific requirements;
 - iii. unsuitable for scaling purposes; and
 - iv. based on information available to HWC and may not show all existing structures. For example, the location of Private Sewer/Water Mains is the initial indicative location supplied to HWC. This may not be the current location of such mains and not all private mains have been supplied to HWC;
- (c) you must not solely rely on the Information when undertaking underground works;
- (d) all Information is provided for the sole purpose of assisting you to locate HWC assets before excavation (Permitted Purpose) and you must not copy, translate, modify, distribute or make derivative works of the Information except as directly required to achieve the Permitted Purpose;
- (e) all Information must be used and kept together;
- (f) your access to and use of the Information does not grant you any ownership of or intellectual property rights in the Information;
- (g) in identifying in the Information the presence or potential presence of hazardous or potentially hazardous materials in HWC assets, HWC is not representing or warranting that other HWC assets not identified in the Information as containing or potentially containing hazardous materials do not also contain such materials; and
- (h) in excavating and conducting underground works, you must do so having regard to the fact that asbestos cement pipelines may form part of HWC's water and sewer reticulation systems.

3. Your other obligations

You are responsible for, amongst other things:

- (a) exposing underground structures, including HWC assets, by pot-holing using hand-held tools or vacuum techniques to determine the precise location and extent of structures before any mechanical means of excavation are used;
- (b) protecting underground structures, including HWC assets, from damage and interference;
- (c) maintaining acceptable clearances between HWC assets and structures belonging to others;
- (d) ensuring that backfilling in the vicinity of HWC assets complies with HWC's requirements (as set out on HWC's website or otherwise communicated to you by HWC);
- (e) notifying HWC immediately of any damage caused or threat of damage to any HWC asset; and
- (f) ensuring that plans are approved by HWC (usually by stamping) prior to landscaping or building over or in the vicinity of any HWC asset.

Enquirer Responsibilities Continued

4. Disclaimer

While HWC takes reasonable care in providing details of its underground assets, due to changes in road and footway alignments and levels, the age and incompleteness of some records and the general nature of the Information, it is not possible to conclusively specify the location of all HWC underground assets, including pipes that contain or may contain hazardous materials.

ALL INFORMATION IS PROVIDED AS GENERAL GUIDANCE ONLY AND SHOULD NOT BE USED OR RELIED UPON IN SUBSTITUTION FOR SPECIALISED PROFESSIONAL INDEPENDENT ADVICE. YOU ACKNOWLEDGE AND AGREE THAT YOUR USE OF THE INFORMATION IS AT YOUR OWN RISK.

If you have any questions or concerns about the appropriateness, reliability or application of any Information you must seek advice from a relevantly qualified professional. Further, dealing with hazardous materials is potentially dangerous, and you must always seek advice where the Information provides that HWC's assets contain or may contain hazardous materials.

HWC makes no representation and gives no warranty or undertaking (express or implied) as to the currency, accuracy, completeness, effectiveness or reliability of the Information or that the Information can be used for any purpose in substitution for specialised, professional and independent advice.

5. Limitation of liability

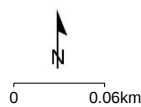
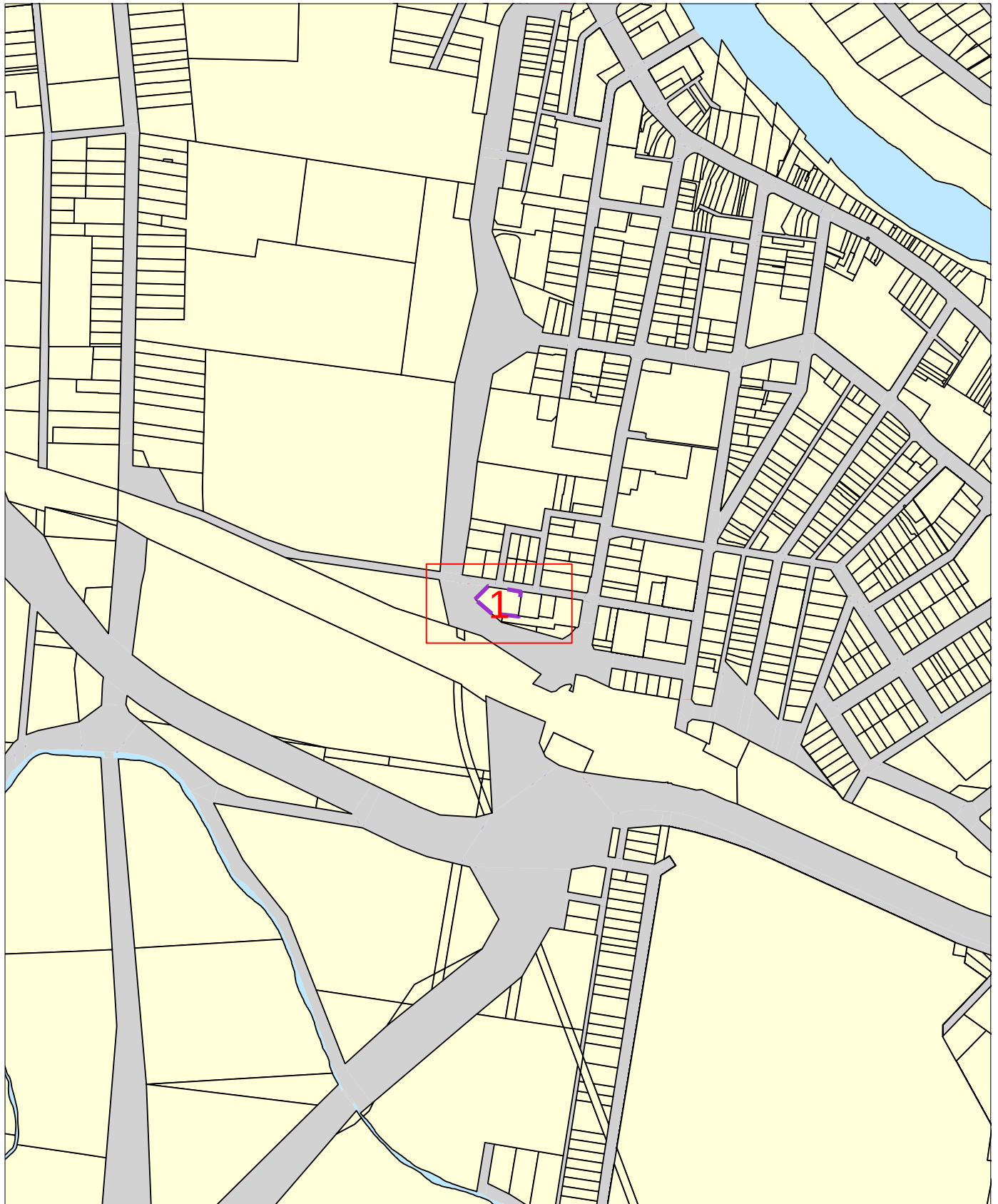
To the fullest extent permitted by law:

- (a) all conditions and guarantees concerning the Information (whether as to quality, outcome, fitness, care, skill or otherwise) expressed or implied by statute, common law, equity, trade, custom, usage or otherwise are expressly excluded and to the extent such conditions and guarantees cannot be excluded, HWC's liability is limited to either of the following (as nominated by HWC):
 - i. HWC supplying the Information to you again; or
 - ii. HWC paying you the cost of having the Information supplied to you again.
- (b) HWC is not responsible for and you release HWC from any actions, liabilities, losses, damages, costs, claims, expenses, injuries or other claims whatsoever (including loss of revenue, use, production, goodwill, profit, business, contract, anticipated savings, financing costs, increased operating costs or other purely financial, economic, special or indirect loss or damage) arising out of:
 - i. your access to or use of the Information;
 - ii. any delay in HWC providing you with Information;
 - iii. your reliance on the Information or its inability to meet your needs;
 - iv. your failure to correctly or accurately:
 - (1) submit relevant or valid data to BYDA; or
 - (2) use or interpret Information provided to you by HWC; or
 - v. any failure, interruption or corruption of any Information;
- (c) you must indemnify HWC and its employees, agents and officers from and against all actions, liabilities, losses, damages, costs, claims, expenses, injuries and other claims arising out of or in connection with HWC providing you with incorrect or incomplete Information; and you assume all risk associated with your use of BYDA and HWC's websites and you release BYDA and HWC from and against all actions, liabilities, losses, damages, costs, claims, expenses, injuries or other claims which may arise in respect of such usage.



Overview Map

Sequence No: 254035856
33 Steam St Maitland



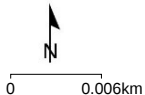
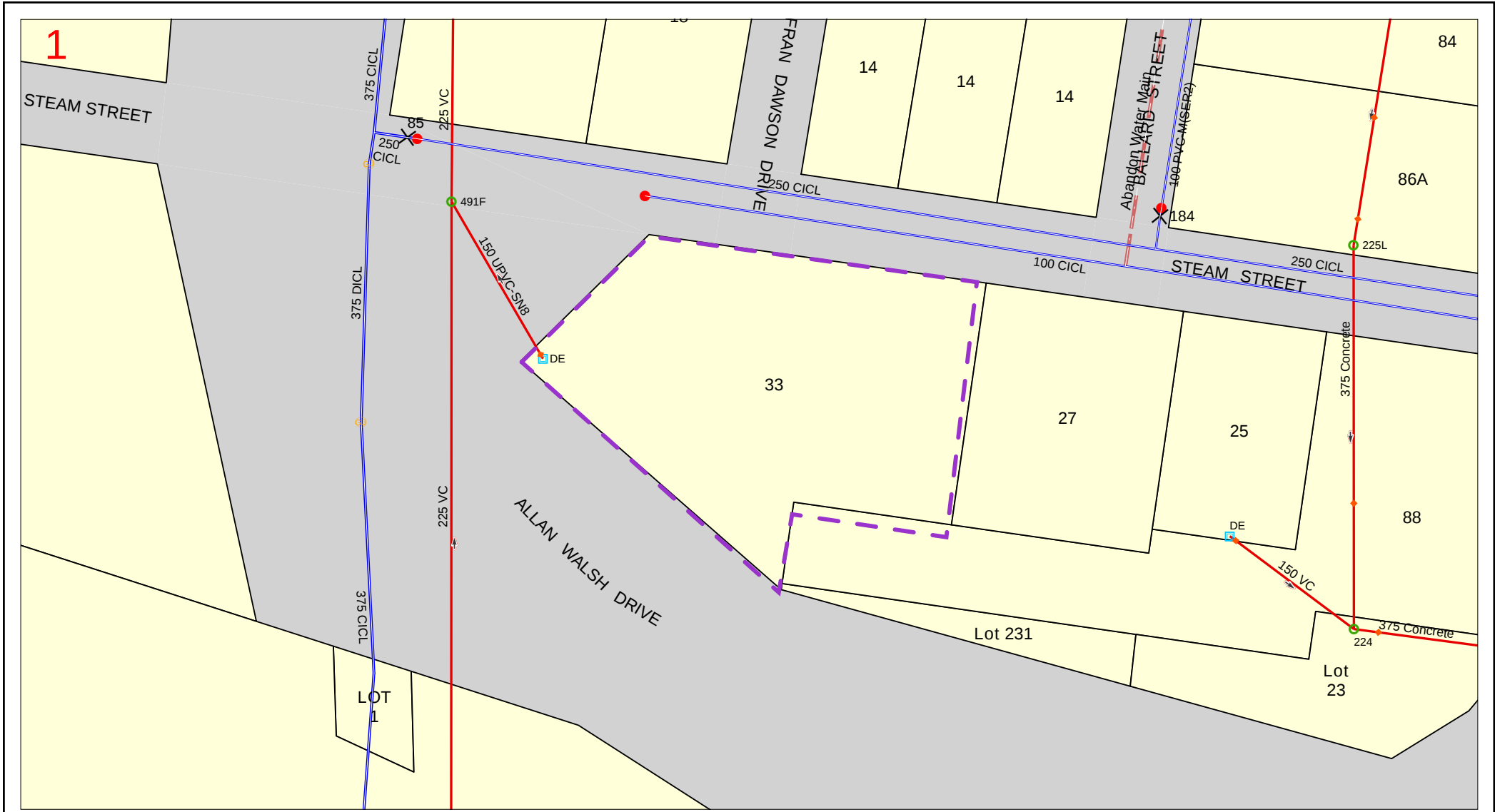
LEGEND:





Map 1

Sequence No: 254035856



IMPORTANT

THIS PLAN IS NOT TO BE USED FOR CONVEYANCING

THIS INFORMATION IS VALID FOR 30 DAYS FROM THE DATE OF ISSUE

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