



Mr John Ellery  
18ADL-0030  
03 April 2019



## Land Division and Dwellings Planning Report

20 Pomona Road, Stirling



03 April 2019

**Prepared by** URPS

**Prepared for** Mr John Ellery

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**URPS Ref** 18ADL-0030

***Document history and status***

Revision	Date	Reviewed	Approved	Details
1	26/02/2019	PH	PH	First Read – General Improvements
2	26/02/2019	PH	PH	Amended Plan Details
3	27/02/2019	PH	PH	General Improvements
4	06/03/2019	Client	PH	Minor Amendments
5	07/03/2019	MK	MK	Minor Amendments
6	03/04/2019	PH	MK	Minor Amendments

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# 1.0 Application overview

Land Division and Dwellings	
Property location	20 (Allotment 57) Pomona Road, Stirling (CT – 5428/116)
Site area	3,991 square metres
Development Plan	Adelaide Hills Council Development Plan (consolidated 24 October 2017)
Zone	Mixed Residential Zone
Policy Area	Not Applicable
Heritage	Not Applicable
Current land use	Residential
Description of development	<p>The proposal is for:</p> <ul style="list-style-type: none"><li>• Land division (1 allotment into 9 along with common land). Proposed allotments will range from an average of 415.08 square metres for “flat dwellings” up to 501.3 square metres for group dwellings.</li><li>• 3 group dwellings situated on allotments 1, 2 and 3. Each will gain access from the proposed common driveway.</li><li>• 1 residential flat building comprising 6 dwellings on allotments 4, 5, 6, 7, 8 and 9. Each dwelling will gain access from the proposed common driveway.</li></ul>
Assessment Pathway	Merit
Public notification	Category 2
Relevant Authority	Adelaide Hills Council
Related applications	Not Applicable
Contact person	Matthew King, URPS, 8333 7999





## 2.0 Introduction

URPS has been engaged by Mr and Mrs Ellery to assist with the land division and residential development of 20 Pomona Road, Stirling.

I have attached the following together with this supporting planning assessment.

- Certificate of title (**Attachment 1**).
- Plans prepared by Alexander Brown Architects (**Attachment 2**).
  - > Location Plan and Site Survey – Revision C.
  - > Allotment Sub-Division Plan – Revision C.
  - > Site Plan – Revision D.
  - > Individual Floor Plans Lot 01 – 03 – Revision D.
  - > Individual Floor Plans Lot 04 – 09 – Revision C.
  - > Elevations (North, North) – Revision C.
  - > Elevations (West, South) – Revision B.
  - > Elevations (East) – Revision B.
  - > Perspectives – Revision C.
- Civil and Earthworks Plan (Revision C) prepared by KP Squared Engineering (**Attachment 3**).
- Plan of Community Division for Development Approval (Ref: 2019049-1) prepared by Michael Gear Surveyors (**Attachment 4**).
- Phil Weaver and Associates Traffic and Parking Report dated 8 March 2019 (**Attachment 5**).
- Tree Assessment from Mr Dean Nicolle (Arborist) dated 8 February 2019 (**Attachment 6**).
- Preliminary Assessment by the South Australian CFS (Country Fire Service) dated 4 July 2018 (**Attachment 7**).

This report has been prepared following our review of the above documents, review of the Development Act 1993 and Development Regulations 2008, inspection of the land and locality and meeting with Council's Sam Clements.

A detailed assessment against the pertinent planning policies affecting the land is provided below. For the reasons set out below we conclude this is a high quality development outcome that satisfies the majority of the pertinent Development Plan provisions to warrant Development Plan Consent.



## 3.0 Subject land and locality

The subject land is 20 (allotment 57) Pomona Road, Stirling within Certificate of Title 5428/116.

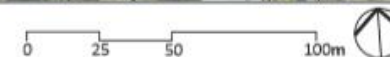
The land is situated on the southern side of Pomona Road in Stirling. The land has a 61.76 metre frontage and is approximately 3,991 square metres in area. The land slopes up from Pomona Road with its highest point being in its south-eastern corner. The land presently contains a detached dwelling accessed via a crossover in its north-eastern corner and does not comprise any easements.

The locality surrounding the land features generally large land holdings comprising detached dwellings, both single and two storeys in height. Sites are typically sloping and feature both formal and naturally landscaped grounds.

An exception to this character is the commercial main street fronting Mount Barker Road as well as non-residential uses such as 'Duxton Asset Management' and 'Hills Yoga School', situated diagonally adjacent the land at 7 Pomona Road.

As shown in Image 1 below, the land is approximately 25 metres from District Centre Zone and is approximately 330 metres from a bus stop which is an approximate 5-minute walk.

In reviewing the locality, we noted that a land division application is currently proposed adjacent the subject land at 21 Pomona Road, Stirling. The application number for the land division is 473/D054/18 and proposes division from 1 allotment into 7 allotments. This land division will modify the character of the locality.

**LOCALITY PLAN** 20 POMONA ROAD, STIRLING

JOB REF. 18ADL-0030  
PREPARED BY: ML  
DATE: 02.05.18  
REVISION: 1  
DATA SOURCE: Property Location Browser,  
Adelaide Hills DP

**LEGEND**  
 Site boundary  
 Cadastre  
 Zone Boundary

**ZONES**  
**CL** Country Living Zone  
**DCe** District Centre Zone  
**MR** Mixed Residential Zone  
**PP** Public Purpose Zone  
**W(PP)** Watershed (Primary Production) Zone





## 4.0 Proposal

The proposal is for:

- Land division (1 allotment into 9 along with common land). Proposed allotments will range from an average of 415.08 square metres per “flat dwelling” up to 501.3 square metres for group dwellings.
- 3 group dwellings situated on allotments 1, 2 and 3. Each will gain access from the proposed common driveway.
- 1 residential flat building comprising 6 dwellings on allotments 4, 5, 6, 7, 8 and 9. Each dwelling will gain access from the proposed common driveway.

Each dwelling will have a striking modern appearance with hard edge lines that are emphasised by a light colour to provide architectural flare and contrast to the more subdued with dark grey and brown colouring of main walls that blends with the natural earthy tones of the land.

The different components of each dwelling will be textured using brick, vertical and horizontal cladding lines and textured render.

Save for the projecting box elements, materials and finishes have been specifically selected to blend with the surrounding character so that each dwelling appears discreet. Images 1, 2, 3 and 4 below display the appearance of the proposed dwellings.

**Image 1: Dwelling on lot 3 as viewed from Pomona Road.**







**Image 2: Dwelling on lot 3 as viewed from proposed common road.**



**Image 3: Rear of dwelling on lot 3 as viewed from common road.**



**Image 4: Dwelling on lots 4, 5, 6 and 7 as viewed from proposed common road.**



To facilitate the reasonable and expected development of the land, it is envisaged that 6 regulated/significant trees will be removed along with other vegetation. However, the common land around the driveway will feature landscaping areas wherein shrubs and trees can be planted.

All dwelling sites will be accessed via a common driveway which has been designed in accordance with relevant Australian Standards and bushfire safety guidelines. Three visitor car parking spaces will also be provided in the common driveway.

Several retaining walls are required given the sloping nature of the subject land. Where possible, retaining walls have been terraced to distribute their height, rather than having one large retaining wall. This enables additional landscaping and a reduced visual impact. The height of retaining walls will vary from 0.6 metres up to 2.8 metres.



## 5.0 Procedural matters

The land is situated within the Mixed Residential Zone and Policy Area 29 - Country Living (Stirling and Aldgate). We have been informed by the council that the Policy Area is an error in the drafting of the Development Plan and therefore only the Zone policies are applicable. This report has been written on this understanding.

### 5.1 Assessment Process

Land division for the purpose of a dwelling is non-complying in the Zone except where it achieves one of the following:

- It is not less than 500 square metres.
- It is for a group dwelling and is not less than 500 square metres.
- It is for a residential flat building and it is not less than an average of 300 square metres per flat dwelling.

The ERD (Environment, Resources and Development) Court has provided more insight into how site areas are to be determined (see Gregory & Noor v City of Charles Sturt & George Majda & Associated on 13 August 2018). The following noteworthy remarks were made by Commissioner Rumsby:

*"It was generally agreed that density can be expressed in many ways and that the term must be calibrated against the various numeric values and policy provisions of each applicable residential zone and policy areas.*

*... Dwellings in the nature of a group dwelling or residential flat building are expected to achieve an average...*

*... the key feature distinguishing dwellings in the nature of a residential flat building or group dwelling from the listed dwelling types is that they do not occupy exclusive, street fronting, dwelling sites but functionally rely on common areas – typically the driveway and associated landscape areas and often visitor parking. In these circumstances, the term 'average' serves little purpose if the common land is excluded from the calculations.*

*Moreover, some residential flat buildings can involve dwellings which do not have any at-ground 'site' i.e. where occupying floor levels exclusively above the at-ground floor level. It would be a nullity in these circumstances if the common land is excluded from the calculation of average dwelling site areas".*

(my emphasis)

Lots 1, 2 and 3 will accommodate group dwellings and each will have a respective allotment size exceeding 500 square metres, excluding common land.



Lots 4, 5, 6, 7, 8 and 9 will each accommodate a dwelling within a residential flat building. Including common land, each “flat dwelling” will have an average allotment size of 415.08 square metres. Excluding common land, each flat dwelling will have an average allotment size of 301.8 square metres.

On this basis, the proposed land division arrangement is clearly *not* non-complying.

In addition, dwellings, removal of regulated/significant trees, retaining walls, excavation and fill are not deemed complying or non-complying in the Zone.

For the reasons explained above, the proposal is to be assessed on its merits.

## 5.2 Public Notification

For the following reasons, the proposal is a Category 2 form of development for public notification purposes:

- The proposal includes retaining walls with a maximum height exceeding 1.5 metres above natural ground level in accordance with the Category 2 criteria of the Zone.
- In parts, the proposal will have a combined fence and retaining wall height exceeding 3 metres measured from the lower of the two adjoining finished ground levels. The proposal is therefore Category 2 in accordance with the Zone.
- The proposal includes a building of two-storeys comprising dwellings in accordance with the criteria of Schedule 9 of the Development Regulations 2008.
- The proposal includes 2 or more dwellings on the same site where at least 1 of the dwellings is two-storeys in accordance with the criteria of Schedule 9 of the Development Regulations 2008.





## 6.0 Planning assessment

In our view, the most pertinent planning considerations can be summarised under the following headings:

- Zone and Desired Character.
- Site Area and Frontage.
- Native Vegetation, Significant and Regulated Trees.
- Vehicular Access and Parking.

In addition, we have also undertaken assessment against the following matters:

- Design and Appearance.
- Building Height.
- Setbacks.
- Private Open Space.
- Site Coverage.
- Overshadowing and overlooking.
- Crime Prevention.
- Bushfire Hazard.
- Excavation and Fill.
- Storage.
- Bin Collection.
- Orderly and Sustainable Development.

### 6.1 Zone and Desired Character

The Desired Character of the zone states:

**Development within the zone will comprise a range of dwelling types (such as townhouses, semi-detached dwellings, and residential flat buildings) at densities that take advantage of nearby public transport and adjacent centre zones.**

**Development will reflect the built-form character and spacious landscaped appearance of adjoining residential areas, to blend the dwelling density forms in this area with the highly regarded character of the surrounding locality.**

**Buildings will be set relatively close to the primary street frontage to create a compact urban streetscape while also achieving visual privacy to dwellings from the street.**

**The design of buildings will promote a high level of residential amenity by facilitating natural ventilation and access to sunlight.**

**Access points onto public roads will be minimised through the use of common driveways...**

With reference to the Desired Character it is important to note that:

- The land is approximately 25 metres from district centre zone.
- The land is approximately 330 metres from a bus stop which is an approximate 5-minute walk.



In accordance with the Desired Character, the proposal will:

- Increase densities to take advantage of nearby public transport and the adjacent centre zone.
- Increase the range and variety of dwelling types within the locality to cater to a broader demographic than what the existing housing supply may.
- Minimise access points onto Pomona Road via a shared communal road.

The Desired Character aims to strike a balance between:

- The built-form character and spacious landscape appearance of adjoining residential areas.
- The creation of a compact urban streetscape with opportunities for a relatively close front setback.

The proposed sites fronting Pomona Road are wide (16.5 up to 19.5 metres) to satisfy this balance and provide opportunities for landscaping and tree retention. The front setback pattern proposed along Pomona Road is also reflective of that desired by the Zone which seeks a compact urban form with a spacious landscaped appearance. This is because dwellings will have staggered facades and varied setbacks that satisfy those expressed by the Zone.

In addition, proposed buildings have been designed to suit the slope of the land with a total building height consistent with that of a two-storey building. All dwellings will be highly articulated with varied facades which feature balconies, increased upper level setbacks and a range of materials in order to create visual interest and reduce the scale of buildings.

The 3 group dwellings situated on allotments 1, 2 and 3 will be sufficiently separated to allow views between each respective dwelling and reinforce the streetscape appeal with further landscaping.

## 6.2 Site Area and Frontage

Principle 19 of the Zone specifies the following minimum or average site areas.

Dwelling type	Site area (square metres)	Minimum frontage (metres)
Detached	500 minimum	12
Semi-detached	450 minimum	10
Group dwelling	500 minimum (average)	15
Residential flat building	300 minimum (average)	15
Row dwelling	300 minimum	7

With respect to the above table:

- Allotments 1, 2 and 3 are designed to accommodate group dwellings and would have an average minimum site area of 500 square metres which satisfies Zone Principle 19. Individually, allotments 1, 2 and 3 would have respective allotment areas of 501.3, 500.1 and 501 square metres.
- Allotments 4, 5, 6, 7, 8 and 9 are intended to accommodate a residential flat building comprising 6 dwellings. Including common land, each “flat dwelling” will have an average allotment size of 415.08



square metres. Excluding common land, each “flat dwelling” will have an average allotment size of 301.8 square metres. The proposal satisfies Zone Principle 19 irrespective of the calculation method.

Overall, the allotments have an average area of 443.44 square metres including common property. This is a comfortable density when compared to the land’s potential, where it is possible, in simple density terms, to accommodate average allotments of 300 square metres (i.e. 13 allotments in total).

The frontage width of the land comfortably exceeds 15 metres meaning Zone Principle 19 is also satisfied with respect to frontage width.

### 6.3 Native Vegetation, Significant and Regulated Trees

Dean Nicolle (Arborist) has undertaken an ‘Arboricultural Impact Assessment’ of the proposed development upon the 53 remaining trees situated on site. The arborist report is attached.

The arborist recommends that tree retention on the site be directed by the overall retention value of each tree. This value has been determined using the following:

- Legal status (trunk circumference, species, proximity to a dwelling).
- Tree origin.
- Current health.
- Further life expectancy.
- Biodiversity value.
- Landscape value.
- Tree structure.
- Risk to safety.

Overall, 7 trees can be retained with 46 proposed for removal.

Of these trees to be removed, 5 are regulated and 1 is significant.

It is clear the Development Plan generally seeks to retain and protect regulated trees however this desire must be balanced against consideration of their health and condition but also their contribution to the local area aesthetically or environmentally.

Further, and importantly in the context of this matter, their retention must also be balanced against the reasonable and expected development of the land as per the Development Plan.

The following policies are pertinent in respect to evaluating a trees aesthetic and environmental contribution:

**1 The conservation of regulated trees that provide important aesthetic and environmental benefit.**

**2 Development in balance with preserving regulated trees that demonstrate one or more of the following attributes:**

**(a) significantly contributes to the character or visual amenity of the local area**

**(b) indigenous to the local area**



**(c) a rare or endangered species**

**(d) an important habitat for native fauna.**

Therefore, prior to any judgement, consideration must first be given to a trees attributes and whether a particular tree is worthy of preservation.

In the matter of Savoy Development Pty Ltd v Town of Gawler (2013) – SAERDC 32, the court delivered the following statement with respect to habitat:

*“In my view, for habitat to be raised to the level of ‘important’ (as sought by Objective 2(d)), it must be beyond that likely to be expected in any mature tree of indigenous origins – that is, it is beyond the normal level that might be expected or that it is so unique or special that it may be considered important. From the evidence before me I do not consider the trees to provide ‘important habitat for native fauna’.”*

This view of “importance” as being “beyond the normal level that might be expected” can also be applied when considering other aspects.

While we accept some trees exhibit positive and beneficial environmental qualities, we query whether many of the trees make an “important” or “significant” contribution to the character or amenity of the local area and whether the trees form a notable visual element to the landscape and locality.

Council Wide, Significant Trees Objective 2 provides guidance by stating:

**2 The conservation of significant trees in balance with achieving appropriate development.**

Objective 2 suggests that the development potential of the land and intent of the Zone must also be considered when determining tree removal. As explained above, the proposal satisfies the Zone by providing:

- Increased densities and dwellings types.
- Appropriate site areas and frontages.
- Excellent design and appearance that works with the natural slope of the land.
- Appropriate boundary setbacks, some of which are larger than necessary.
- Appropriate private open spaces and site coverage.
- Sufficient on-site car parking.

Retention of trees on the subject land would significantly constrain development on the land given:

- The density of the development would be considerably lower than what is proposed and not in line with the Zone. The desired character, which seeks densities that take advantage of nearby public transport and services, would not be met in terms of increasing dwelling densities if the trees in question were kept.
- The positioning of trees on the subject land – following our detailed analysis in consultation with the architects and engineers, it would be very difficult to keep trees yet provide safe and convenient access and position dwellings at a higher density as desired by the zone.





- The Medium Bushfire Risk and the 120-metre setback from the High Bushfire Risk Area. It would be very difficult to provide higher densities on the site as desired by the zone while satisfying bushfire safety requirements namely on site turn around areas for a fire truck.

The proposal is a well-considered and appropriate form of development on the subject land and its design approach, functionality and yield should not, in our view, be compromised by the retention of trees. This approach is satisfactory and consistent with Objective 2 as quoted above.

## 6.4 Vehicular Access and Parking

Council Wide, Transportation and Access Objective 2 states:

**Development that:**

- (a) **provides safe and efficient movement for all transport modes**
- (b) **ensures access for vehicles including emergency services, public infrastructure maintenance and commercial vehicles**
- (c) **provides off street parking**
- (d) **is appropriately located so that it supports and makes best use of existing transport facilities and networks**
- (e) **provides convenient and safe access to public transport stops.**

Council Wide, Transportation and Access Principles 34 and 35 states:

**34 Development should provide off-street vehicle parking and specifically marked accessible car parking places to meet anticipated demand in accordance with [Table AdHi/4 – Off Street Vehicle Parking Requirements](#) unless all the following conditions are met:**

- (a) **an agreement is reached between the Council and the applicant for a reduced number of parking spaces**
- (b) **a financial contribution is paid into the Council Car Parking Fund specified by the Council, in accordance with the gazetted rate per car park.**

**35 Development should be consistent with Australian Standard AS 2890 Parking facilities.**

Pomona Road is not an arterial road and is speed limited to 50km/h. Each allotment would receive vehicular access from the common driveway as anticipated by the Desired Character Statement within the Zone.

As opposed to the existing crossover, the proposed driveway has been positioned to provide maximum visibility for motorists and ensures the safe and efficient movement of all transport modes along Pomona Road and when entering and exiting the subject land.

I understand that the council has already authorised a driveway extending from Pomona Road in the proposed location.

The proposed common driveway has been designed in accordance with Australian Standards and in accordance with bushfire safety guidelines. The proposal therefore ensures safe and efficient access for emergency service vehicles and some commercial vehicles.



Table AdHi/4 prescribes that 3 spaces (at least 1 covered) should be provided for a dwelling comprising 3 or more bedrooms. In addition, 1 visitor space per 4 dwellings should be provided.

Each dwelling is provided with a double garage that provides 2 undercover spaces.

Dwellings on lots 1, 4 and 8 will have garages setback more than 5.5 metres from respective boundaries to the common driveway. As such, an additional 2 cars can be parked on these allotments, in front of respective garages.

Three visitor spaces are available within the common driveway, to be used in association with any dwelling on an ad-hoc basis. Sufficient visitor parking is therefore available on the subject land to comply with Table AdHi/4.

On this basis, dwellings on lots 2, 3, 5, 6, 7 and 8 each have an on-site car parking shortfall of 1 space. This is acceptable because:

- Each dwelling is still provided with 2 on-site undercover car parking spaces.
- The car parking rate is unusually high in the context of other Development Plans in South Australia.
- Aurecon - Parking Spaces for Urban Places: Car Parking Study Guideline for Greater Adelaide prescribes that 3 bedroom dwellings should be provided with 2 car parking spaces. The proposal satisfies this guideline.
- The subject land is approximately 26 metres from the District Centre Zone of Stirling. Each proposed dwelling will therefore have excellent access to a range of services, including shops, entertainment and employment opportunities.
- The subject land is approximately 280 metres from a public bus stop which provides access to/from the Adelaide CBD and other nearby suburbs. Each dwelling will therefore have excellent access to public transport within a walkable distance.

Further, the applicant has engaged Phil Weaver and Associates to undertake a review of traffic and parking. This report is attached and concludes:

- The design of the on-site car parking areas would conform to the relevant off-street car parking standard (AS/NZS 2890.1:2004).
- The location of the proposed access point at the western boundary of the site is in an ideal location to provide the greatest possible sight distance.
- Trip generation is well within the capacity of the adjoining road network and would represent an increase in traffic on Pomona Road of only 1.25%.
- Two dedicated resident parking spaces for each dwelling would be sufficient to meet the anticipated resident car parking rate for each of the nine dwellings as proposed by the subject development.

As such, proposed parking and access arrangements are appropriate.

## 6.5 Design and Appearance

Council Wide, Design and Appearance Principle 1 states:

**Buildings should reflect the desired character of the locality while incorporating contemporary designs that have regard to the following:**

- (a) **building height, mass and proportion**



- (b) external materials, patterns, colours and decorative elements
- (c) roof form and pitch
- (d) façade articulation and detailing
- (e) verandahs, eaves, parapets and window screens.

Each dwelling has an attractive, pleasing and contemporary design with the height and mass minimised using low pitched roof forms that follows the land slope and articulation to each elevation, therefore is in accordance with Principle 1.

In addition, each dwelling will have a split floor level to work with the slope of the land and further minimise visual height yet provide a high-quality living environment for its occupants.

Windows, doors and detailing are all proportionate to respective dwellings, and the whole development, to provide cohesion. Materials, patterns and colours have been specifically selected to blend with the surrounding character and appear discreet.

Principle 16 of the zone states:

**Walls and fences along public streets should be designed to contribute positively to the streetscape through variation in materials, landscaping, positioning and articulation.**

The sloping nature of the subject land inevitably requires retaining walls. The architect and engineer have worked collaboratively to minimise the visual impact of retaining walls upon the streetscape and neighbouring dwellings.

In doing so, several retaining walls have been terraced. This means that walls, which would otherwise exceed 2 metres, have been divided into 2 or 3 individual retaining walls with much lower heights.

This approach minimises the visual impact of retaining walls by providing a gradual height transition. In addition, this approach enables further opportunity for landscaping in between retaining walls, within terraces. This landscaping will grow in front of respective retaining walls further minimising their visual impact.

As such, all retaining walls have been designed to positively contribute to the streetscape and enable maximum provision of landscaping. Furthermore, retaining walls will be constructed of an earthy material that blends with the natural character of the locality.

Principle 17 of the zone states:

**Garages, carports and support structures facing the street (other than an access lane way) should be designed with a maximum width of 6 metres or 50 per cent of the allotment or building site frontage width, whichever is the lesser distance.**

No garages, carports or support structures will face Pomona Road in accordance with Principle 17. In addition, the garages which face the proposed common driveway will have a maximum width of 6 metres and will not dominate the appearance or character of the development.



## 6.6 Building Height

The Desired Character of the Zone states:

**Buildings up to two-storeys in height will be developed within the policy area where potential impacts on adjoining properties such as overlooking, overshadowing and traffic movements have been appropriately addressed.**

Principle 6 of the Zone guides that dwellings should have a maximum building height of 2 storeys or 8 metres, whichever is less, when measured from natural ground level.

The natural ground level of the subject land elevates steeply upward from Pomona Road. This natural gradient means that modification to the natural landform is inevitable to achieve increased densities and take realistic advantage of public transport options and the nearby District Centre Zone of Stirling.

Each dwelling has been designed with split floor levels that gradually rise in line with the natural slope of the land.

The natural gradient of the land and the provision of level building platforms for each dwelling has meant that some components of the development will have a height exceeding 8 metres above the natural ground level. However, no dwelling will exceed 8 metres above the level of its respective building platform.

Dwellings proposed to be situated on lots 1, 2 and 3 will be 2 storey in accordance with the Desired Character and Principle 6.

Dwellings proposed to be situated on lots 4, 5, 6, 7, 8 and 9 will have 3 distinct levels however, in accordance with the Desired Character and Principle 6, no part of any dwelling will be more than 2 storey's above the proposed respective building platform level, directly below.

In addition, as discussed below, the proposed building heights will not impact adjoining properties by way of overlooking, overshadowing and traffic movements.

## 6.7 Setbacks

Principle 6 within the Zone guides that dwellings should be designed with the following setback parameters:

Parameter	Value
Minimum setback from primary road frontage	3 metres
Minimum setback from secondary road frontage	2 metres
Minimum setback from side boundaries	1 metres
Minimum setback from back boundary	4 metres

Dwellings proposed to be situated on lots 1, 2 and 3 will have direct frontage to Pomona Road (primary road frontage) with all other dwellings situated behind.

The setback from the primary road frontage is intentionally staggered to provide variation, articulation and an excellent and engaging presentation when viewed from Pomona Road. In accordance with Principle 6, the proposed building setbacks from Pomona Road range from 4.2 metres (open sided balcony) up to 8.5 metres. This increased setback also enables enhanced protection and setback from existing trees on the subject land.

Proposed side and rear setbacks vary considerably throughout the development. These setbacks are considered appropriate for the following reasons:

- The dwellings proposed to be situated on lots 1, 2 and 3 have setbacks that will present a spacious landscaped appearance conducive to the natural gradient of the land and in accordance with the Desired Character of the Zone.
- Group dwellings, as proposed on lots 1, 2 and 3 are specifically envisaged within the Zone as per Principle 1. The setbacks as proposed by dwellings on lots 1, 2 and 3 are anticipated.
- Residential flat buildings are specifically envisaged within the Zone as per Principle 1. As defined by Schedule 1 of the Development Regulations 2008, residential flat buildings by their very nature are “a single building”. This generally means limited, or no setback in part. As such, the proposed side setbacks as presented by dwellings on lots 4, 5, 6, 7, 8 and 9 are anticipated within the Zone.
- All dwellings on lots 4, 5, 6, 7, 8 and 9 will have a minimum side setback of 1.7 metres to at least 1 side boundary. Any portion of these dwellings on the boundary is considered acceptable given residential flat buildings are, by definition, a single or physically connected building.
- All dwellings satisfy minimum private open space guidelines as discussed further below.
- All dwellings, and the total development, satisfy site coverage guidelines as discussed below.
- Each dwelling ensures sufficient sunlight to neighbouring dwellings and proposed dwellings in accordance with the relevant overshadowing guidelines as discussed further below.

## 6.8 Private Open Space

Principle 12 within the Zone guides that group dwellings, and dwellings within a residential flat building, should satisfy minimum private open space guidelines as shown in the table below.

Configuration	Open space requirement, other than for affordable housing (square metres)
Studio (without separate bedroom)	11
One-bedroom	15
Two-bedroom	18
Three-bedroom or greater	24

Each dwelling will have 3 bedrooms and therefore should be provided with at least 24 square metres of private open space.



Each dwelling has a different floor plan and thus private open space is configured differently for each respective dwelling. Some dwellings have private open space areas distributed amongst balconies, decks and ground level private open spaces.

Regardless, private open spaces satisfy Principle 12 as displayed in **Table 1** below.

**Table 1: Proposed Private Open Space**

Lot Number	Private Open Space
1	87.7m <sup>2</sup>
2	130.6m <sup>2</sup>
3	148.2m <sup>2</sup>
4	97.7m <sup>2</sup>
5	84.5m <sup>2</sup>
6	83.8m <sup>2</sup>
7	83.8m <sup>2</sup>
8	66m <sup>2</sup>
9	43m <sup>2</sup>

In addition, proposed private open spaces will:

- Be of a suitable shape, area and gradient to be highly useable and functional.
- Be directly accessible from internal living areas.
- Be predominantly at ground level, but also distributed amongst balconies.
- Not result in overlooking upon neighbouring private spaces.
- Partly have a northerly aspect, wherever possible.
- Partly be shaded in summer.
- Receive sufficient sunlight in winter months.
- Not be unreasonably impacted by noise or traffic.
- Balconies of dwellings on lots 1, 2 and 3 will provide casual surveillance to Pomona Road.

The proposed private open space arrangements are suitable in providing a high-quality living environment for future occupants. In addition, proposed private open spaces will not unreasonably impact upon the amenity of existing and other proposed dwellings.





## 6.9 Site Coverage

Principle 6 within the Zone guides that dwellings should have a maximum site coverage of 60 percent. Proposed site coverages satisfy Principle 6 and are displayed in **Table 2** below.

**Table 2: Proposed Site Coverage**

Lot Number	Site Coverage
1	41.2%
2	41%
3	41.1%
4	36%
5	52.4%
6	53.2%
7	53.2%
8	49.9%
9	46.6%
<b>Total</b>	<b>41.8%</b>

Council Wide, Residential Development Principle 17 states:

**17 Site coverage should ensure sufficient space is provided for:**

- (a) pedestrian and vehicle access and vehicle parking**
- (b) domestic storage**
- (c) outdoor clothes drying**
- (d) rainwater tanks**
- (e) private open space and landscaping**
- (f) convenient storage of household waste and recycling receptacles.**

Each dwelling has sufficient space to provide those items specified in Principle 17.



## 6.10 Overshadowing and Overlooking

Council Wide, Design and Appearance Principle 17 states:

**17 The design and location of buildings should enable direct winter sunlight into adjacent dwellings and private open space and minimise the overshadowing of:**

- (a) windows of main internal living areas**
- (b) upper-level private balconies that provide the primary open space area for a dwelling**
- (c) solar collectors (such as solar hot water systems and photovoltaic cells).**

Proposed dwellings, and neighbouring dwellings, primarily face north towards Pomona Road. Given the northern path of the sun, this means that private open spaces to the rear of respective dwellings are somewhat overshadowed during particular times of the day. However, as the sun moves throughout the day, from east to west, the shadow cast by the proposal will move so that neighbouring properties are not affected for an extended period of time.

In any case, neighbouring properties are large in size and any overshadowing will only be a small percentage of the overall allotment size.

On this basis, the proposal will not have a detrimental impact by way of overshadowing. In particular, the proposal will not overshadow windows, private balconies or solar collectors.

In terms of overlooking, Council Wide, Residential Development Principle 27 states:

**Except for buildings of 4 or more storeys, upper level windows, balconies, terraces and decks that overlook habitable room windows or private open space of dwellings should maximise visual privacy through the use of measures such as sill heights of not less than 1.5 metres or permanent screens having a height of 1.5 metres above finished floor level.**

Council Wide, Design and Appearance Principle 18 states:

**18 Development should minimise direct overlooking of the main internal living areas and private open spaces of dwellings through measures such as:**

- (a) off-setting the location of balconies and windows of habitable rooms with those of other buildings so that views are oblique rather than direct**
- (b) building setbacks from boundaries (including building boundary to boundary where appropriate) that interrupt views or that provide a spatial separation between balconies or windows of habitable rooms**
- (c) permanent screening devices (including fencing, obscure glazing, screens, external ventilation blinds, window hoods and shutters) that are integrated into the building design and have minimal negative effect on residents' or neighbours' amenity.**

North and south facing windows, balconies and decks are not considered to overlook habitable room windows or private open spaces. This is because:

- The natural slope of the land and the proposed finished floor levels mean that all southern elevations are looking up hill.

- The northern elevations of dwellings on lots 1, 2 and 3 will overlook Pomona Road, public land.
- Dwellings on lots 4, 5, 6, 7, 8 and 9 are separated by the common driveway with their upper levels set well back in to their respective allotments. This prevents overlooking into the private open spaces of dwellings on lots 1, 2 and 3.

Therefore, it is not considered appropriate to require permanent screening devices to north and south elevations.

Side facing upper level windows have intentionally been limited yet will comprise fixed obscured glass where appropriate.

Decks to the side of particular dwellings are off-set and suitably setback from neighbouring private open spaces and habitable room windows. This ensures no undue impact upon neighbouring privacy.

## 6.11 Crime Prevention

Council Wide, Crime Prevention Principles 1 and 2 state:

**1 Development should be designed to maximise surveillance of public spaces through the incorporation of clear lines of sight, appropriate lighting and the use of visible permeable barriers wherever practicable.**

**2 Buildings should be designed to overlook public and communal streets and public open space to allow casual surveillance.**

Dwellings to be situated on lots 1, 2 and 3 will all have large street facing windows, balconies and living rooms that will all overlook Pomona Road to provide casual surveillance with clear lines of site and intermittent ambient light when lights are turned on.

Dwellings proposed to be situated on lots 4, 5, 6, 7, 8 and 9 will have upper level balconies and large bedrooms windows that will overlook the proposed common driveway.

In addition, the proposal does not include:

- Areas that will be prone to graffiti. The proposal does not include extensive flat walls or surfaces that are out of view.
- Entrapment spots. The proposal does not include areas in which a person may become cornered.
- Areas for hiding. The proposal does not include areas that may unusually allow someone to hide.

The proposal satisfies the relevant crime prevention policies of the Development Plan.

## 6.12 Bushfire Hazard

The land is situated within a Medium Bushfire Risk Area.

The client has engaged with the CFS prior to submitting the development application. The CFS provided a preliminary assessment dated 4 July 2018, as attached. This assessment was based upon a preliminary land division layout for 10 additional allotments. The applicant has since revised the proposed development to provide 9 additional allotments.

Subject to some recommendations, the CFS “has no objection” for a proposal to create 10 allotments for residential development on the subject land.

Council Wide, Hazards Principle 7 states:

**Development in a Bushfire Protection Area should be in accordance with those provisions of the *Minister's Code: Undertaking development in Bushfire Protection Areas* that are designated as mandatory for Development Plan Consent purposes.**

The communal driveway has been designed to satisfy the minimum requirements of the *Minister's Code: Undertaking Development in Bushfire Protection Areas*. As such, a firefighting vehicle is capable of entering and leaving the land in a forward direction.

In addition, the subject land is connected to mains water and each allotment is capable of accommodating a 2,000 litre rainwater tank dedicated to fire fighting. In addition, hoses will be able to reach all areas of the land.

The majority of the land has an approximate maximum gradient of 1:5.4 to satisfy bushfire guidelines (i.e. a maximum slope of 1:3.5).

Each dwelling will be constructed in accordance with the relevant requirements for constructing buildings in bushfire prone areas.

## 6.13 Excavation and Fill

The natural ground level of the subject land elevates steeply upward from Pomona Road. This natural gradient means that modification to the natural landform is inevitable to achieve increased densities and take realistic advantage of public transport options and the nearby District Centre Zone of Stirling.

Each dwelling has been designed with split floor levels that gradually rise in line with the natural slope of the land.

Council Wide, Siting and Visibility Principle 4 states:

### **4 The excavation and/or filling of land should:**

**(a) be kept to a minimum and be limited to no greater than 1.5 metres in height to preserve the natural form of the land and the native vegetation unless the built form obscures views of the earthworks from adjoining land...**

The sloping nature of the subject land inevitably requires retaining walls. The architect and engineer have worked collaboratively to minimise the visual impact of retaining walls upon the streetscape and neighbouring dwellings. In doing so, several retaining walls have been terraced. This means that walls, which would otherwise be in excess of 2 metres, have been divided into 2 or 3 individual retaining walls with much lower heights.

This approach minimises the visual impact of retaining walls by providing a gradual height transition. In addition, this approach enables further opportunity for landscaping in between retaining walls, within terraces. This landscaping will grow in front of respective retaining walls further minimising their visual impact.

Any retaining walls exceeding 1.5 metres in height are considered acceptable because:

- They will be obscured from view of adjoining land as per Principle 4(a).



- They are not situated on the boundaries of the subject land so as to have an unreasonable visual impact upon adjoining occupants. Any retaining walls exceeding 1.5 metres on a boundary will retain the neighbours land, rather than the subject land. This means any visual impact is upon the proposed dwelling rather than adjoining land.
- They will be positioned internal to the subject land and screened by the proposed built form or existing/proposed landscaping.

General Section, Land Division Principle 2 states:

**Land should not be divided if... the natural slope of those parts of any proposed allotment reasonably available for construction of a residence and/or outbuilding(s) and direct access to a road is steeper than a gradient of 1-in-4,**

The majority of the land has an approximate maximum gradient of 1-in-5.4, in accordance with Principle 2. Dwellings have been carefully designed to minimise impact upon the natural land form as discussed throughout this report.

## 6.14 Storage

Council Wide, Medium Density Development, Principle 11 states:

**11 Dwellings should provide a covered storage area of not less than 8 cubic metres in one or more of the following areas:**

**(a) in the dwelling (but not including a habitable room)**

**(b) in a garage, carport or outbuilding**

**(c) within an on-site communal facility.**

Each dwelling has sufficient storage space in accordance with Principle 11 as displayed in **Table 3** below.

**Table 3: Proposed Storage**

Lot Number	Site Coverage (cubic metres)
1	12.4m <sup>3</sup>
2	14m <sup>3</sup>
3	14m <sup>3</sup>
4	20.5m <sup>3</sup>
5	20.5m <sup>3</sup>
6	20.5m <sup>3</sup>
7	20.5m <sup>3</sup>
8	20.5m <sup>3</sup>



9

20.5m<sup>3</sup>

## 6.15 Bin Collection

Domestic bins will be stored within each respective allotment with ample space available in each garage, out of public view.

The subject land has a frontage to Pomona Road of 53 metres, excluding the proposed driveway entrance from Pomona Road. As such, future occupants will be able to wheel their bins to Pomona Road and place in front of the subject land for weekly council collection. This can be achieved without compromising the safety of occupants or motorists using Pomona Road.

## 6.16 Orderly and Sustainable Development

Council Wide, Orderly and Sustainable Development Objectives 3, 4 and 7 state:

**3 Development that does not jeopardise the continuance of adjoining authorised land uses.**

**4 Development that does not prejudice the achievement of the provisions of the Development Plan.**

**7 Urban development contained within existing townships and settlements and located only in zones designated for such development.**

The proposal is situated within the Mixed Residential Zone and the existing township of Stirling. The Zone is designated for a range of dwelling types including group dwellings and residential flat buildings. The proposal therefore satisfies Principles 7 and will not prejudice the achievement of the Development Plan in accordance with Principle 4.

As explained above, the proposal also satisfies Principle 3 in that it will not jeopardise the continuance of adjoining land uses.





## 7.0 Conclusion

We are of the opinion that the proposal has substantial planning merit to warrant Development Plan Consent. We hold this view because:

- Group dwellings and residential flat buildings are specifically envisaged within the Zone. Further in respect to the form of development proposed:
  - > It comprises a range of dwellings types at densities which take advantage of nearby public transport and services available within the nearby District Centre Zone.
  - > Each dwelling will have a respective site area and frontage that satisfies the Development Plan.
- The proposed tree removal on the land is appropriate given the proposal is reasonable and expected within the Zone and retaining trees on the land would prevent the proposal from delivering a high quality, functional development that achieves the kind of yields expected.
- Safe and convenient vehicle access will be provided to each dwelling for all anticipated traffic modes, including emergency vehicles.
- The development has been designed to minimise the visual impact of garaging and parking which have all be discreetly positioned to gain safe and convenient access from a common driveway.
- Each dwelling is provided with private open space of a suitable shape and area so as to be functional.
- The development has a total site coverage that is 18.2 percent less than that allowable within the Zone. In addition, each individual dwelling has a site coverage less than that allowable within the Zone for its respective allotment size.
- Each dwelling has adequate domestic storage space in accordance with the Development Plan.
- Bins can be discreetly stored within each proposed allotment and be efficiently collected.
- The proposal will satisfy the Minister's Code: Undertaking development in Bushfire Protection Areas
- Proposed dwellings have been designed to suit the gradient of the subject land with split floor levels and a total height above respective building platforms immediately below, which does not exceed 2 storeys or 8 metres.
- The proposal will not jeopardise existing authorised land uses.
- The proposal will not prejudice the achievement of the Development Plan.

For these reasons, the proposal has substantial planning merit and warrants Development Plan Consent.

Please call Matthew King if you have any questions on 8333 7999.

Yours sincerely

Matthew King RPIA  
**Director**

Phil Harnett  
**Associate**



## 8.0 Attachments

### 8.1 Attachment 1



REAL PROPERTY ACT, 1886



The Registrar-General certifies that this Title Register Search displays the records maintained in the Register Book and other notations at the time of searching.



## Certificate of Title - Volume 5428 Folio 116

Parent Title(s)	CT 4349/629		
Creating Dealing(s)	CONVERTED TITLE		
Title Issued	19/06/1997	Edition 8	Edition Issued 06/03/2012

## Estate Type

FEE SIMPLE

## Registered Proprietor

JOHN JAMES ELLERY  
LISA ELLERY  
OF 20 POMONA ROAD STIRLING SA 5152  
AS JOINT TENANTS

## Description of Land

ALLOTMENT 57 DEPOSITED PLAN 26958  
IN THE AREA NAMED STIRLING  
HUNDRED OF NOARLUNGA

## Easements

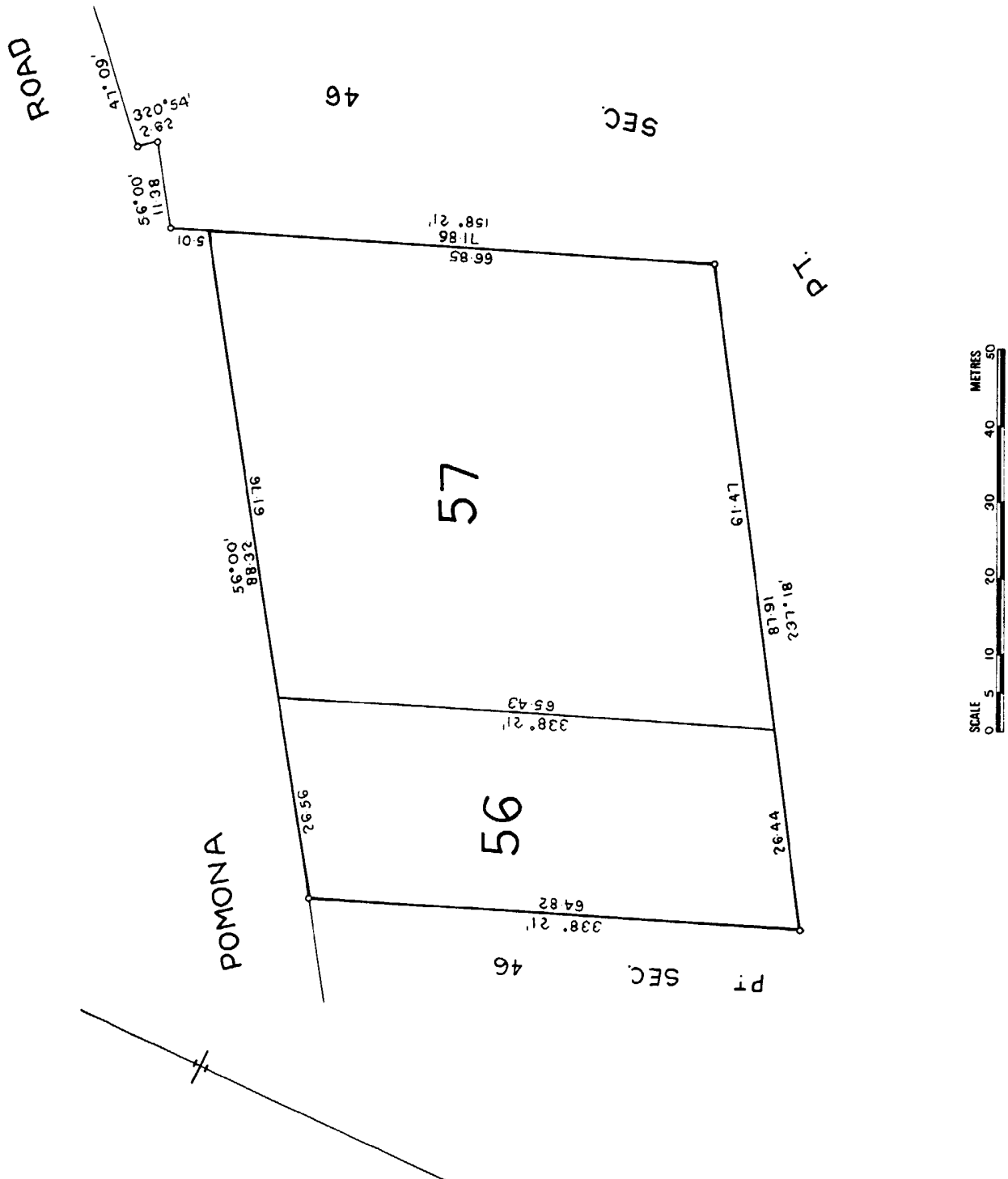
NIL

## Schedule of Dealings

Dealing Number	Description
11716369	MORTGAGE TO AUSTRALIA & NEW ZEALAND BANKING GROUP LTD.

## Notations

Dealings Affecting Title	NIL
Priority Notices	NIL
Notations on Plan	NIL
Registrar-General's Notes	NIL
Administrative Interests	NIL



## 8.2 Attachment 2



FOR ILLUSTRATIVE PURPOSES ONLY

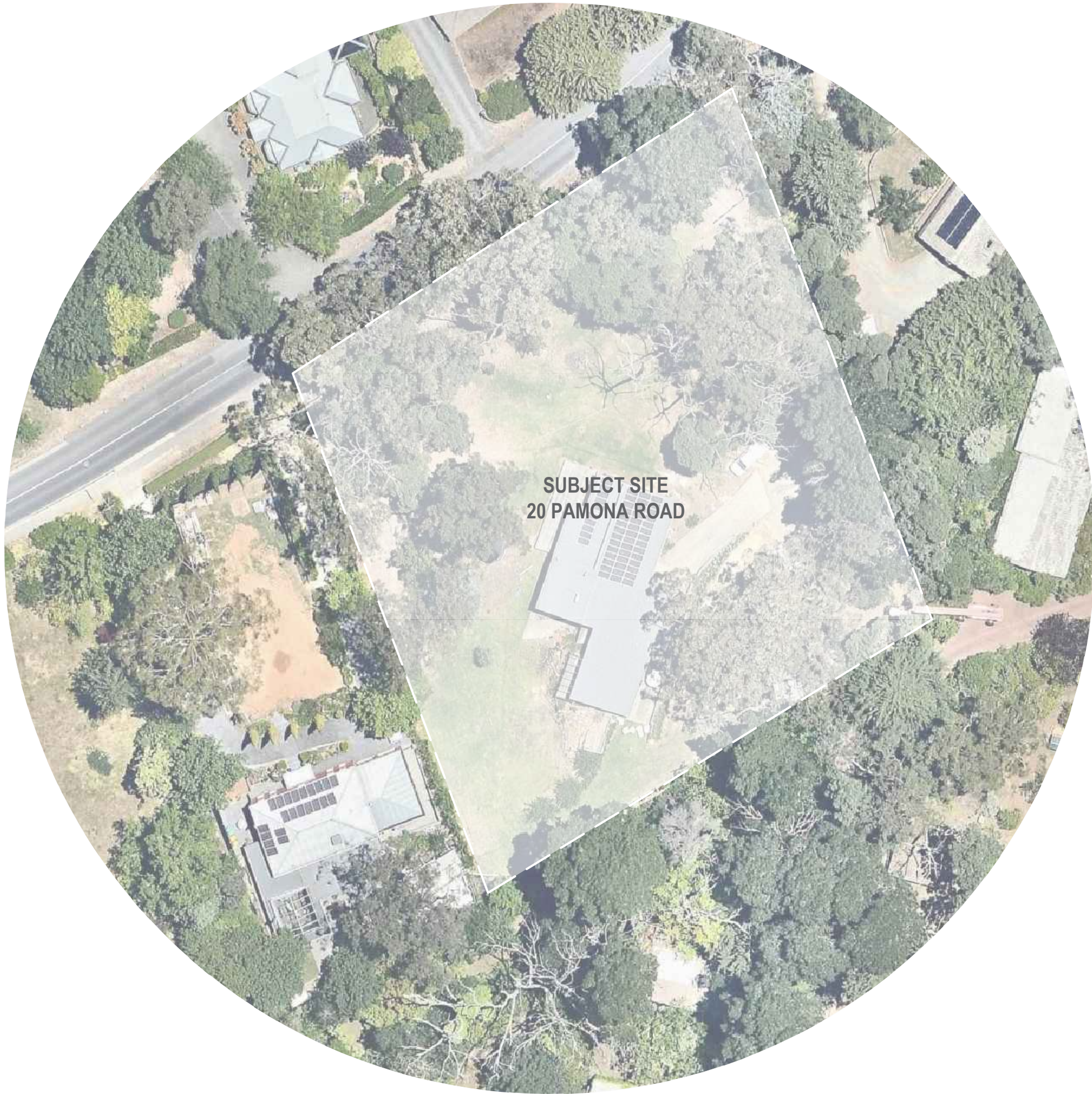
ALEXANDER  
BROWN  
ARCHITECTS

Suite 6, 609 - 611 Magill Road, Magill, S.A. 5072  
p 8364 4447 www.alexanderbrown.com.au

## POMONA ROAD DEVELOPMENT - 20 POMONA ROAD, STIRLING

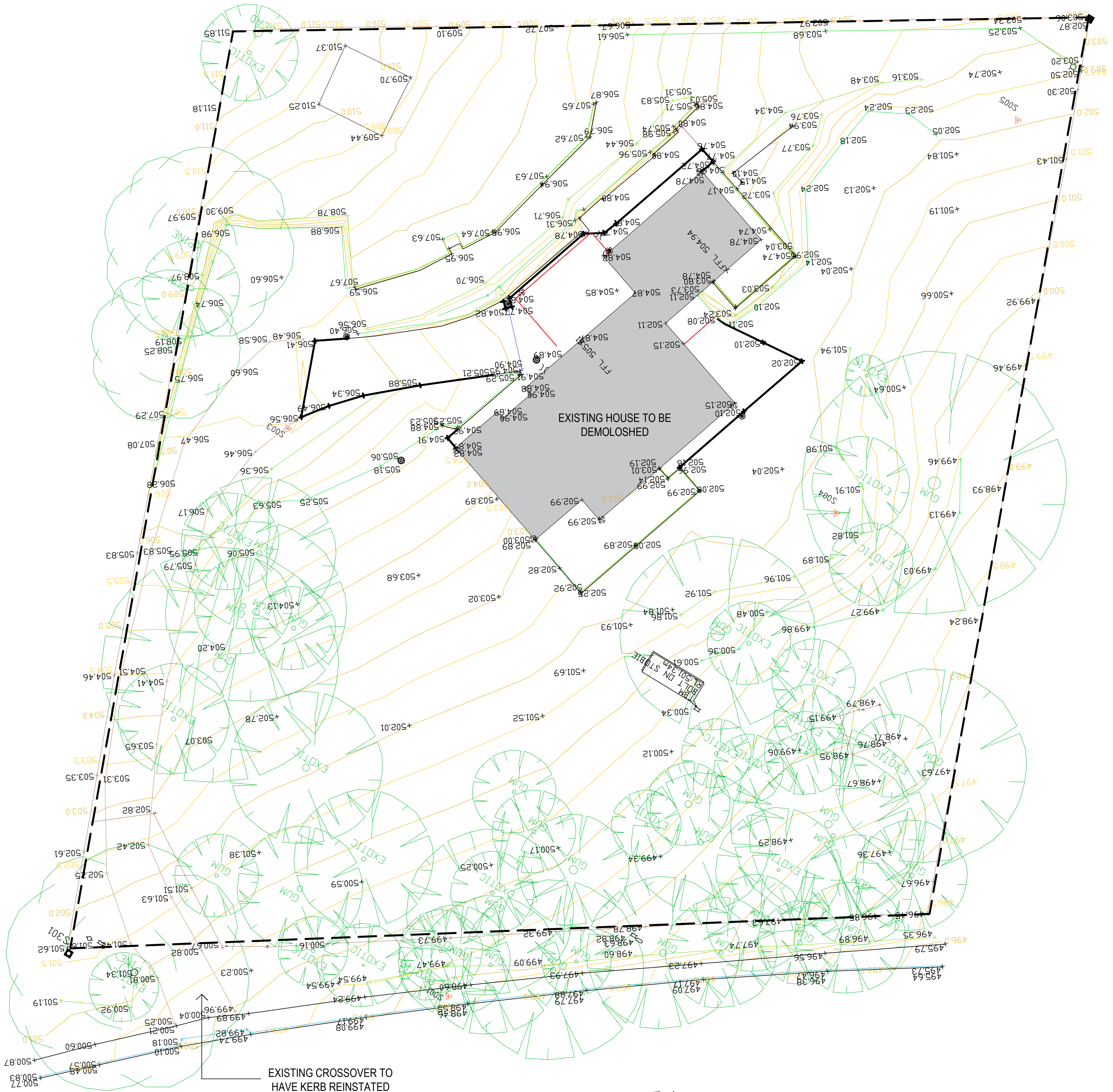
PL01	LOCATION PLAN & SITE SURVEY
PL02	ALLOTMENT SUBDIVISION PLAN
PL03	SITE PLAN
PL04	INDIVIDUAL FLOOR PLANS, LOT 01 - 03
PL05	INDIVIDUAL FLOOR PLANS, LOT 04 - 09
PL06	ELEVATIONS
PL07	ELEVATIONS
PL08	ELEVATIONS
PL09	PERSPECTIVES





SUBJECT SITE  
20 PAMONA ROAD

LOCATION PLAN  
1:500 @ A1



EXISTING CROSSOVER TO  
HAVE KERB REINSTATED

POMONA  
ROAD

SITE SURVEY  
1:200 @ A1



C	15.02.2019	PLANNING ISSUE
B	15.01.2019	PLANNING ISSUE
A	15.01.2019	PLANNING ISSUE

## PLANNING

### 18-015.PL01.B

PROJECT  
**Pomona Rd Development**  
Lot 1-9, 20 Pomona Road STIRLING SA

CLIENT  
**John Ellery**  
DRAWING TITLE  
**Location Plan + Site Survey**

DETAILS  
Drawn **BM / NF**  
Scale **REFER TO PLANS**  
Date **FEBRUARY 2019**

ABA



AREA SCHEDULE

TOTAL SITE	3992.1m <sup>2</sup>
SITE COVERAGE	1669.8m <sup>2</sup>
SITE COVERAGE %	41.8%



C	04.03.2019	PLANNING ISSUE
B	15.02.2019	PLANNING ISSUE
A	15.01.2019	PLANNING ISSUE

PLANNING

18-015.PL02.C

PROJECT  
**Pomona Rd Development**  
Lot 1-9, 20 Pomona Road STIRLING SA

CLIENT  
**John Ellery**

DRAWING TITLE  
**Allotment Subdivision Plan**

DETAILS  
Drawn **BM / NF**  
Scale **1:200 @ A1**  
Date **FEBRUARY 2019**

ABA



AREA SCHEDULE

TOTAL SITE	3992.1m <sup>2</sup>
SITE COVERAGE	1669.8m <sup>2</sup>
SITE COVERAGE %	41.8%

FINISHES SCHEDULE

RW 01	RETAINING WALL TYPE 01 AUSSIE BLOCK COLOUR : OATMEAL
RW 02	RETAINING WALL TYPE 02 CONCRETE SLEEPERS WITH BEDROCK TEXTURE COLOUR : SANDSTONE
FE.01	FENCE 01 COLORBOND GOOD NEIGHBOUR FENCE COLOUR : CB MONUMENT
SCREEN.01	PRIVACY SCREEN 01 REV ROOFING VICTORY FENC STOCKADE SLAT SCREEN 70mm SLATS WITH 10mm GAP COLOUR : MONUMENT / CEDA
PV 01	PAVING TYPE 1 BEST BRICKS & PAVERS BEST LOCK PAVER 60 COLOUR : NATURAL
PV 02	PAVING TYPE 2 BEST BRICKS & PAVERS BEST LOCK PAVER 60 COLOUR : CHARCOAL



D	04.03.2019	PLANNING ISSUE
C	15.02.2019	PLANNING ISSUE
B	15.01.2019	PLANNING ISSUE
A	15.01.2019	PLANNING ISSUE

PLANNING

18-015.PL03.D

PROJECT  
**Pomona Rd Development**  
Lot 1-9, 20 Pomona Road STIRLING SA

CLIENT  
**John Ellery**

DRAWING TITLE  
**Site Plan**

DETAILS  
Drawn **BM / NF**  
Scale **1: 200 @ A1**  
Date **FEBRUARY 2019**

ABA



## AREA SCHEDULE

TOTAL AREA LOTS 01 - 03 1500.5m<sup>2</sup>

### LOT 01

LOT AREA 501.3m<sup>2</sup>  
SITE COVERAGE 206.5m<sup>2</sup>  
SITE COVERAGE % 41.2%  
PRIVATE OPEN SPACE 87.7m<sup>2</sup>

LOWER GROUND FLOOR 94.7m<sup>2</sup>  
VERANDAH 21.9m<sup>2</sup>  
UPPER GROUND FLOOR 185.8m<sup>2</sup>  
PORCH 7.8m<sup>2</sup>  
BALCONY 20.5m<sup>2</sup>  
DECK 21.1m<sup>2</sup>

### LOT 02

LOT AREA 500.1m<sup>2</sup>  
SITE COVERAGE 205.1m<sup>2</sup>  
SITE COVERAGE % 41.0%  
PRIVATE OPEN SPACE 130.6m<sup>2</sup>

LOWER GROUND FLOOR 127.1m<sup>2</sup>  
VERANDAH 14.5m<sup>2</sup>  
UPPER GROUND FLOOR 172.1m<sup>2</sup>  
PORCH 8.1m<sup>2</sup>  
BALCONY 12.6m<sup>2</sup>  
DECK 18.8m<sup>2</sup>

### LOT 03

LOT AREA 501.0m<sup>2</sup>  
SITE COVERAGE 205.1m<sup>2</sup>  
SITE COVERAGE % 40.9%  
PRIVATE OPEN SPACE 148.2m<sup>2</sup>

LOWER GROUND FLOOR 127.1m<sup>2</sup>  
VERANDAH 14.5m<sup>2</sup>  
UPPER GROUND FLOOR 172.1m<sup>2</sup>  
PORCH 8.1m<sup>2</sup>  
BALCONY 12.6m<sup>2</sup>  
DECK 18.8m<sup>2</sup>

## STORAGE

LOT 01  
LINEN 4.3m<sup>3</sup>  
LAUNDRY 2.9m<sup>3</sup>  
PANTRY 5.2m<sup>3</sup>  
TOTAL STORAGE 12.4m<sup>3</sup>

LOT 02 - 03  
LINEN 5.9m<sup>3</sup>  
LAUNDRY 3.8m<sup>3</sup>  
PANTRY 4.3m<sup>3</sup>  
TOTAL STORAGE 14.0m<sup>3</sup>

D	04.03.2019	PLANNING ISSUE
C	15.02.2019	PLANNING ISSUE
B	15.01.2019	PLANNING ISSUE
A	15.01.2019	PLANNING ISSUE

## PLANNING

### 18-015.PL04.D

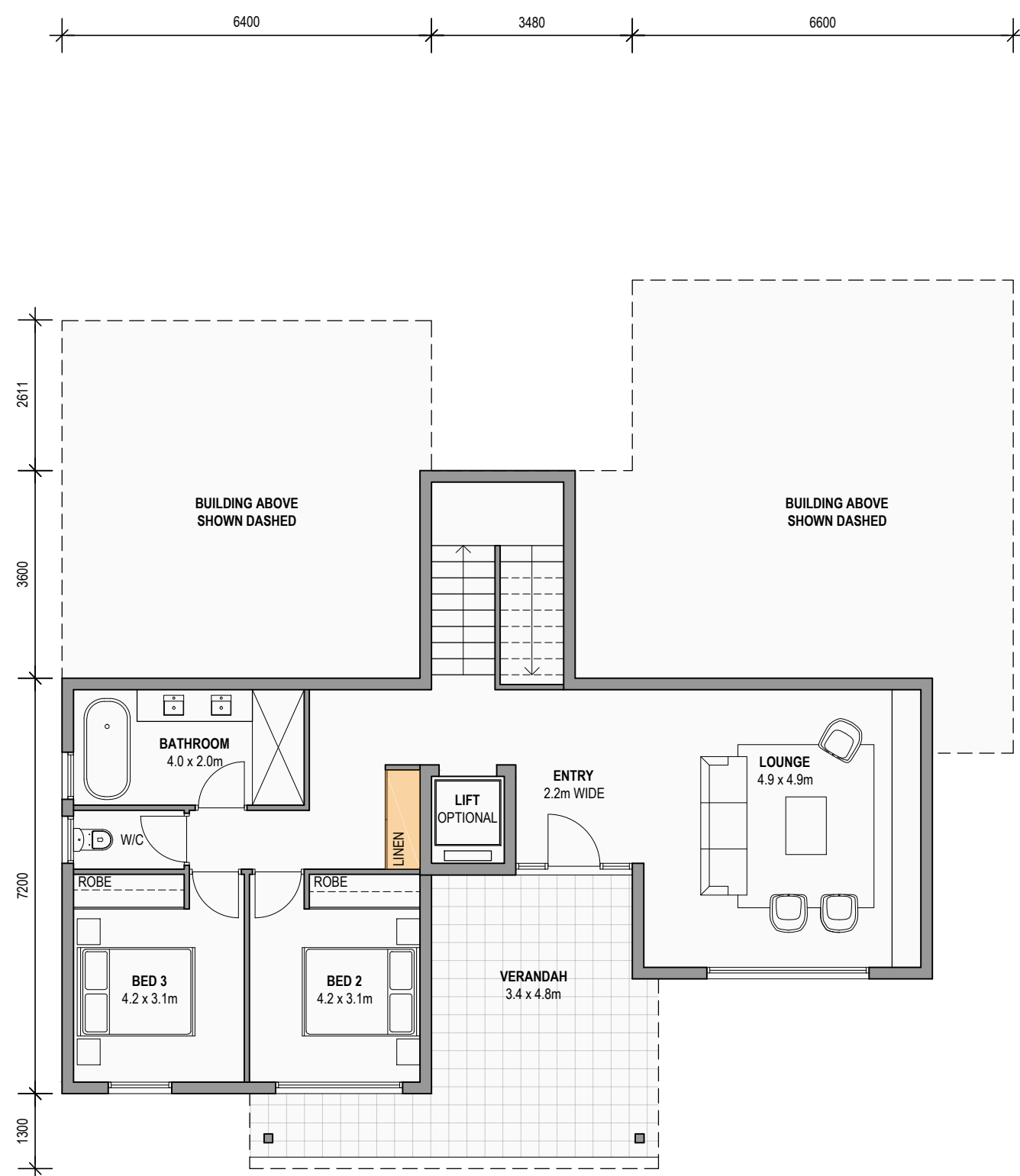
PROJECT  
**Pomona Rd Development**  
Lot 1-9, 20 Pomona Road STIRLING SA

CLIENT  
**John Ellery**

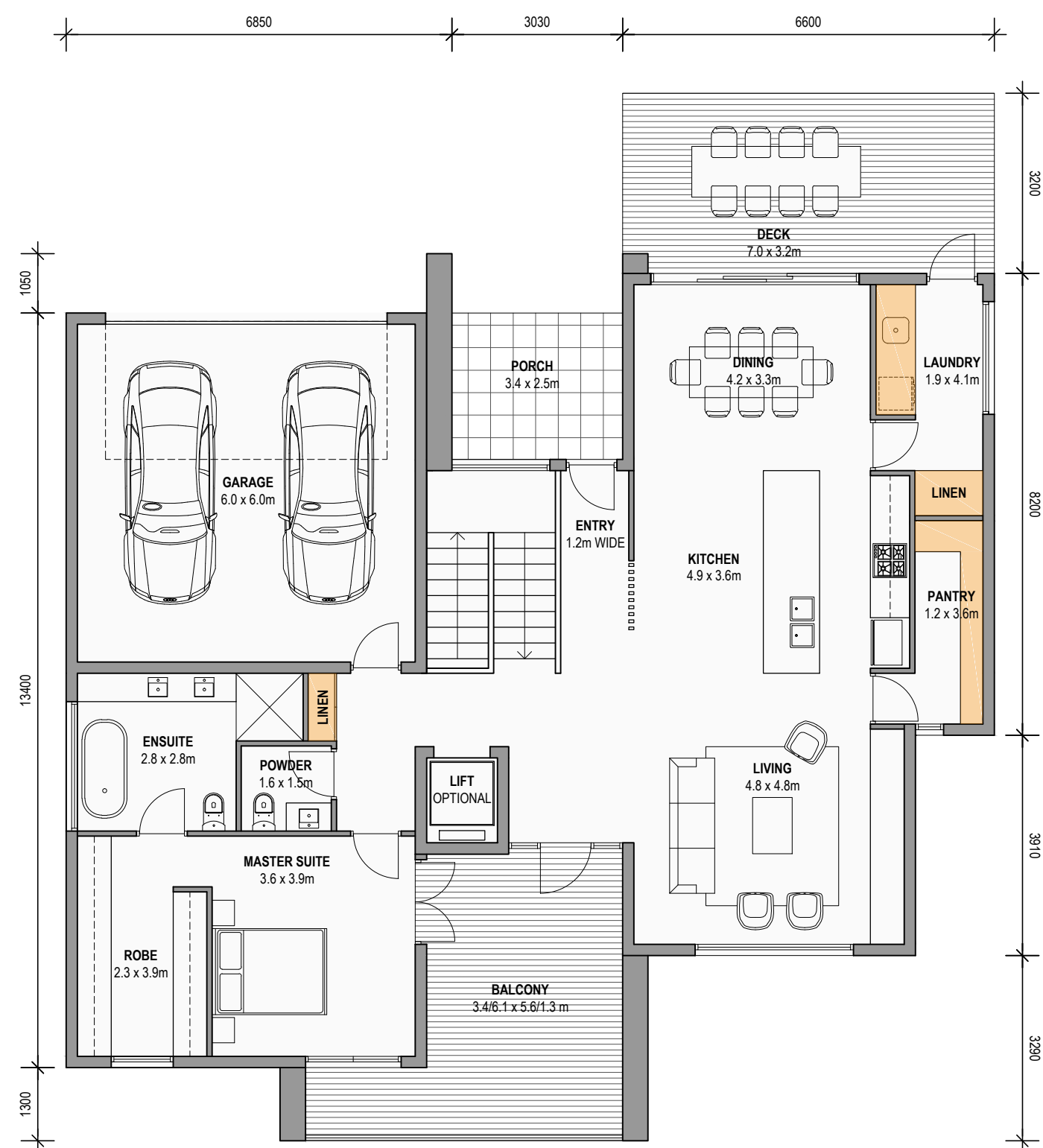
DRAWING TITLE  
**Individual Floorplans**  
Lot 01 - 03

DETAILS  
Drawn **BM / NF**  
Scale **1:100 @ A1**  
Date **FEBRUARY 2019**

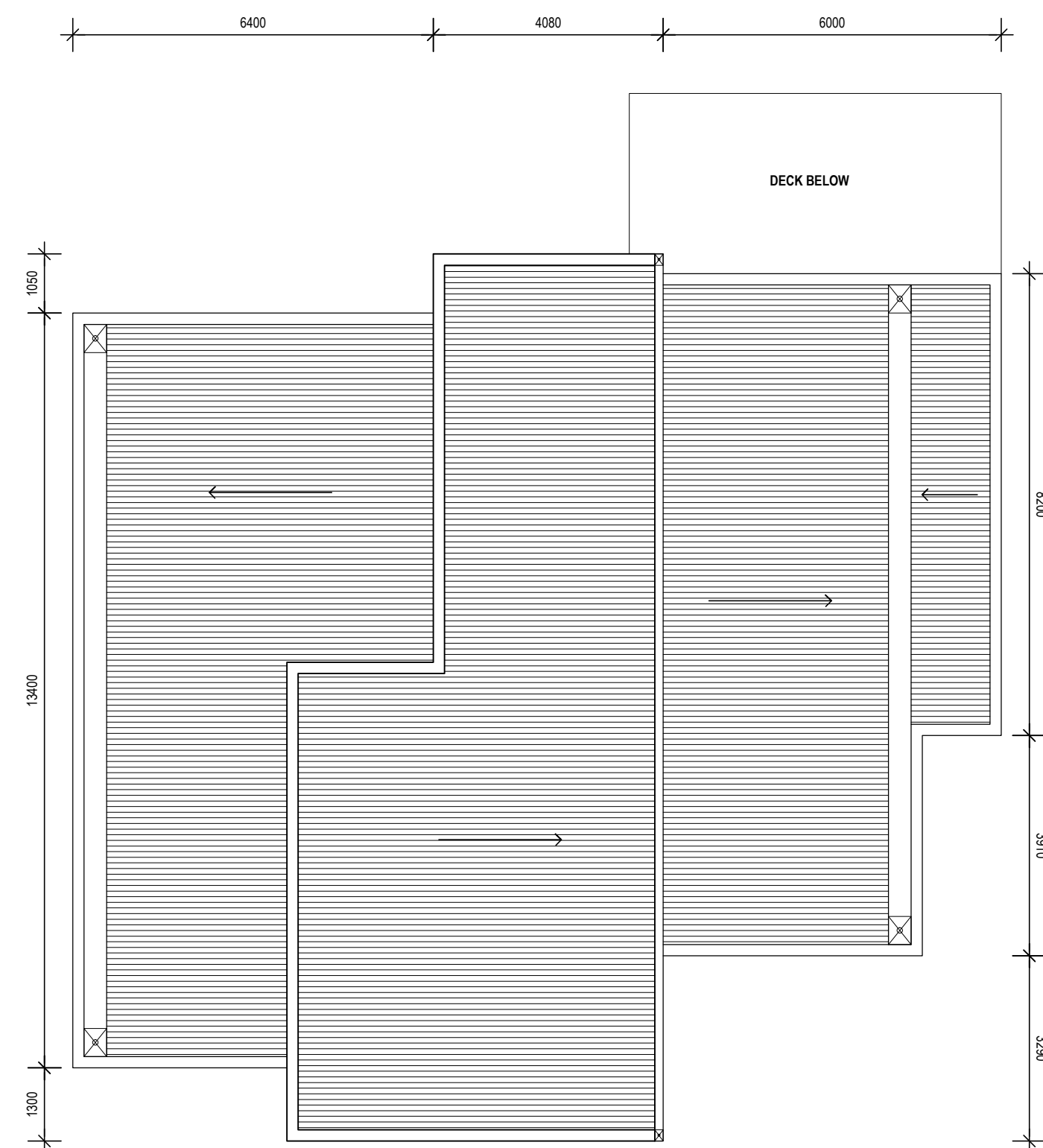
ABA



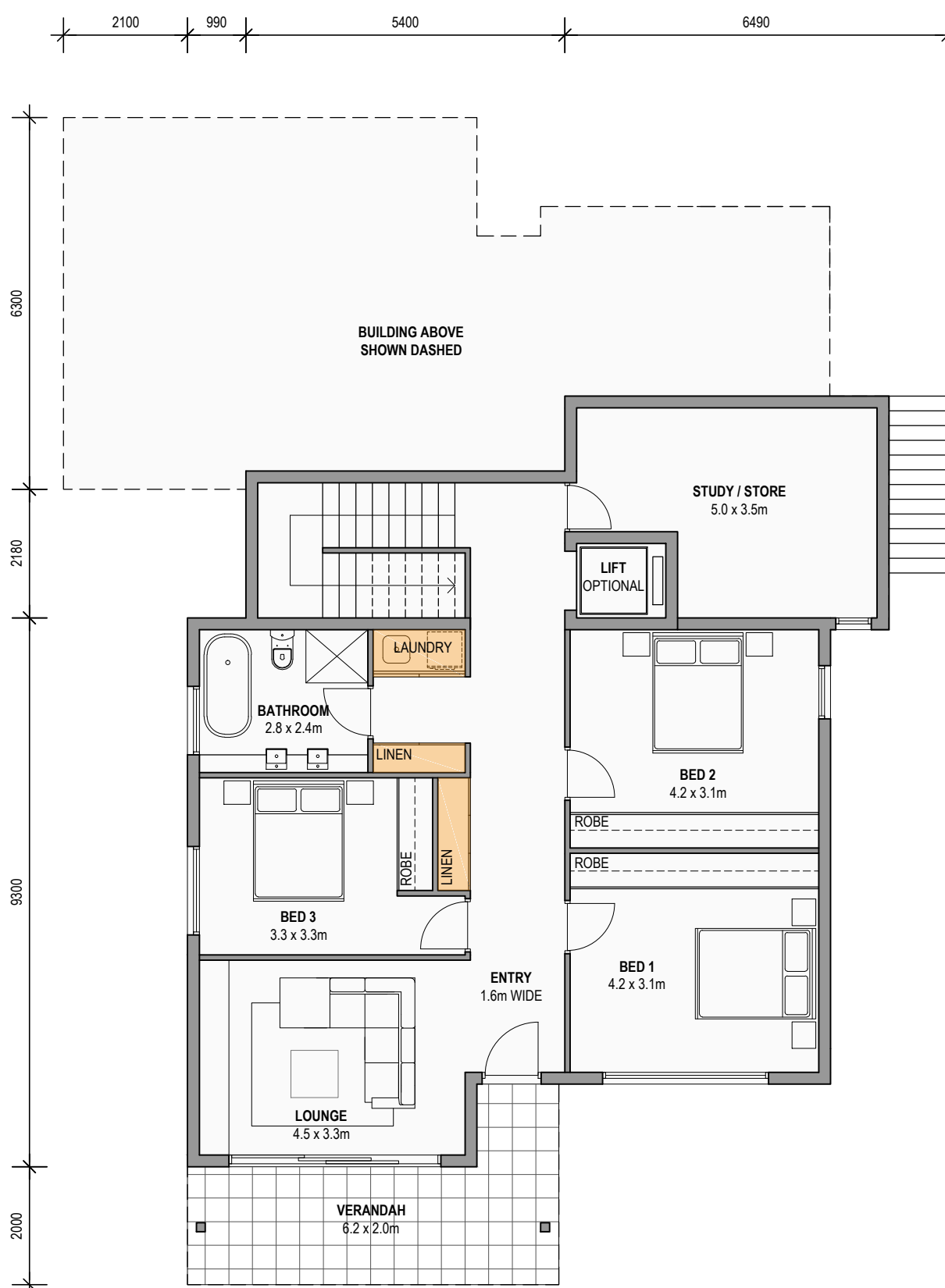
LOT 1  
LOWER GROUND FLOOR PLAN



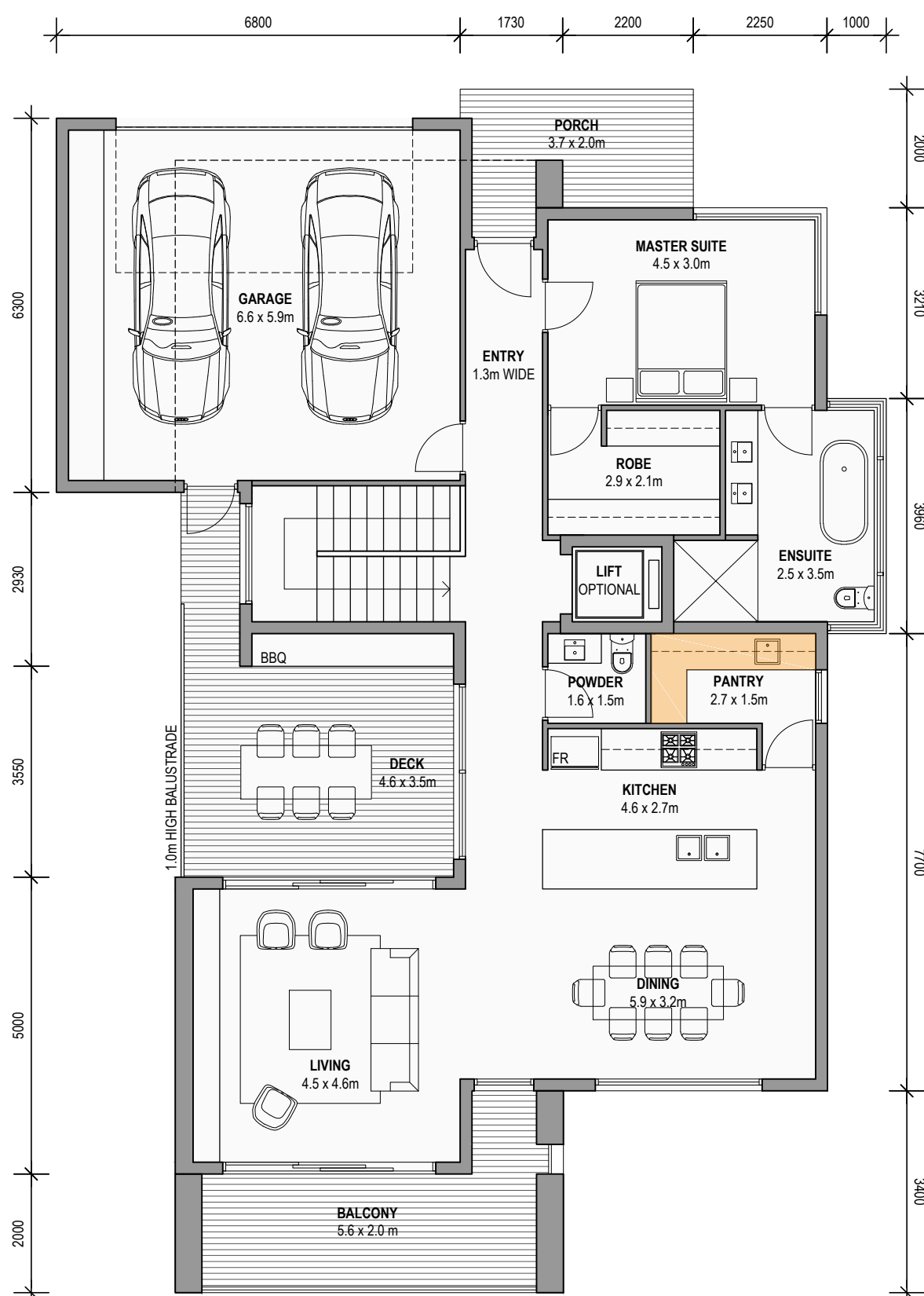
LOT 1  
UPPER GROUND FLOOR PLAN



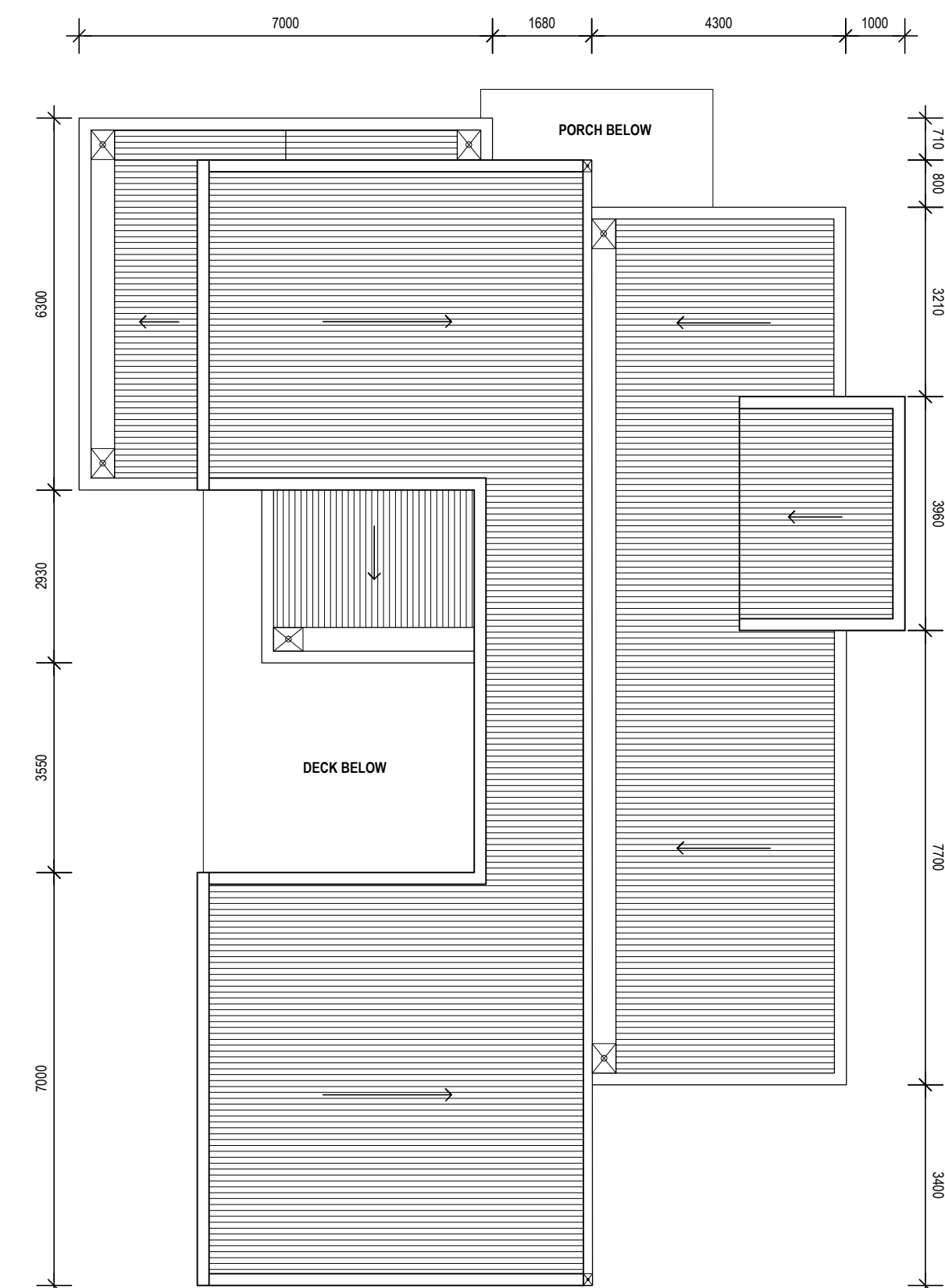
LOT 1  
ROOFTOP PLAN



LOT 2 - 3  
LOWER GROUND FLOOR PLAN



LOT 2 - 3  
UPPER GROUND FLOOR PLAN



LOT 2 - 3  
ROOFTOP PLAN

AREA SCHEDULE

TOTAL AREA LOTS 04 - 09 1811.2m<sup>2</sup>

LOT 04

LOT AREA 414.0m<sup>2</sup>  
SITE COVERAGE 148.9m<sup>2</sup>  
SITE COVERAGE % 36.0%  
PRIVATE OPEN SPACE 97.7m<sup>2</sup>

LOWER GROUND FLOOR 75.5m<sup>2</sup>  
UPPER GROUND FLOOR 137.9m<sup>2</sup>  
BALCONY 6.4m<sup>2</sup>  
DECK 18.4m<sup>2</sup>  
FIRST FLOOR 80.6m<sup>2</sup>

LOT 05

LOT AREA 284.3m<sup>2</sup>  
SITE COVERAGE 148.9m<sup>2</sup>  
SITE COVERAGE % 52.4%  
PRIVATE OPEN SPACE 84.5m<sup>2</sup>

LOWER GROUND FLOOR 75.5m<sup>2</sup>  
UPPER GROUND FLOOR 137.9m<sup>2</sup>  
BALCONY 6.4m<sup>2</sup>  
DECK 18.4m<sup>2</sup>  
FIRST FLOOR 80.6m<sup>2</sup>

LOT 06

LOT AREA 280.1m<sup>2</sup>  
SITE COVERAGE 148.9m<sup>2</sup>  
SITE COVERAGE % 53.2%  
PRIVATE OPEN SPACE 83.8m<sup>2</sup>

LOWER GROUND FLOOR 75.5m<sup>2</sup>  
UPPER GROUND FLOOR 137.9m<sup>2</sup>  
BALCONY 6.4m<sup>2</sup>  
DECK 18.4m<sup>2</sup>  
FIRST FLOOR 80.6m<sup>2</sup>

LOT 07

LOT AREA 280.1m<sup>2</sup>  
SITE COVERAGE 148.9m<sup>2</sup>  
SITE COVERAGE % 53.2%  
PRIVATE OPEN SPACE 83.8m<sup>2</sup>

LOWER GROUND FLOOR 75.5m<sup>2</sup>  
UPPER GROUND FLOOR 137.9m<sup>2</sup>  
BALCONY 6.4m<sup>2</sup>  
DECK 18.4m<sup>2</sup>  
FIRST FLOOR 80.6m<sup>2</sup>

LOT 08

LOT AREA 267.1m<sup>2</sup>  
SITE COVERAGE 133.2m<sup>2</sup>  
SITE COVERAGE % 49.9%  
PRIVATE OPEN SPACE 66.0m<sup>2</sup>

LOWER GROUND FLOOR 75.5m<sup>2</sup>  
UPPER GROUND FLOOR 127.3m<sup>2</sup>  
BALCONY 6.4m<sup>2</sup>  
FIRST FLOOR 80.6m<sup>2</sup>

LOT 09

LOT AREA 285.6m<sup>2</sup>  
SITE COVERAGE 133.2m<sup>2</sup>  
SITE COVERAGE % 46.6%  
PRIVATE OPEN SPACE 43m<sup>2</sup>

LOWER GROUND FLOOR 75.5m<sup>2</sup>  
UPPER GROUND FLOOR 127.3m<sup>2</sup>  
BALCONY 6.4m<sup>2</sup>  
FIRST FLOOR 80.6m<sup>2</sup>

STORAGE

LOT 04 - 07  
LINEN 3.2m<sup>3</sup>  
LAUNDRY 4.3m<sup>3</sup>  
STORAGE 8.0m<sup>3</sup>  
PANTRY 5.0m<sup>3</sup>  
TOTAL STORAGE 20.5m<sup>3</sup>

LOT 08 - 09  
LINEN 3.2m<sup>3</sup>  
LAUNDRY 4.3m<sup>3</sup>  
STORAGE 7.3m<sup>3</sup>  
PANTRY 5.7m<sup>3</sup>  
TOTAL STORAGE 20.5m<sup>3</sup>

PLANNING

18-015.PL05.C

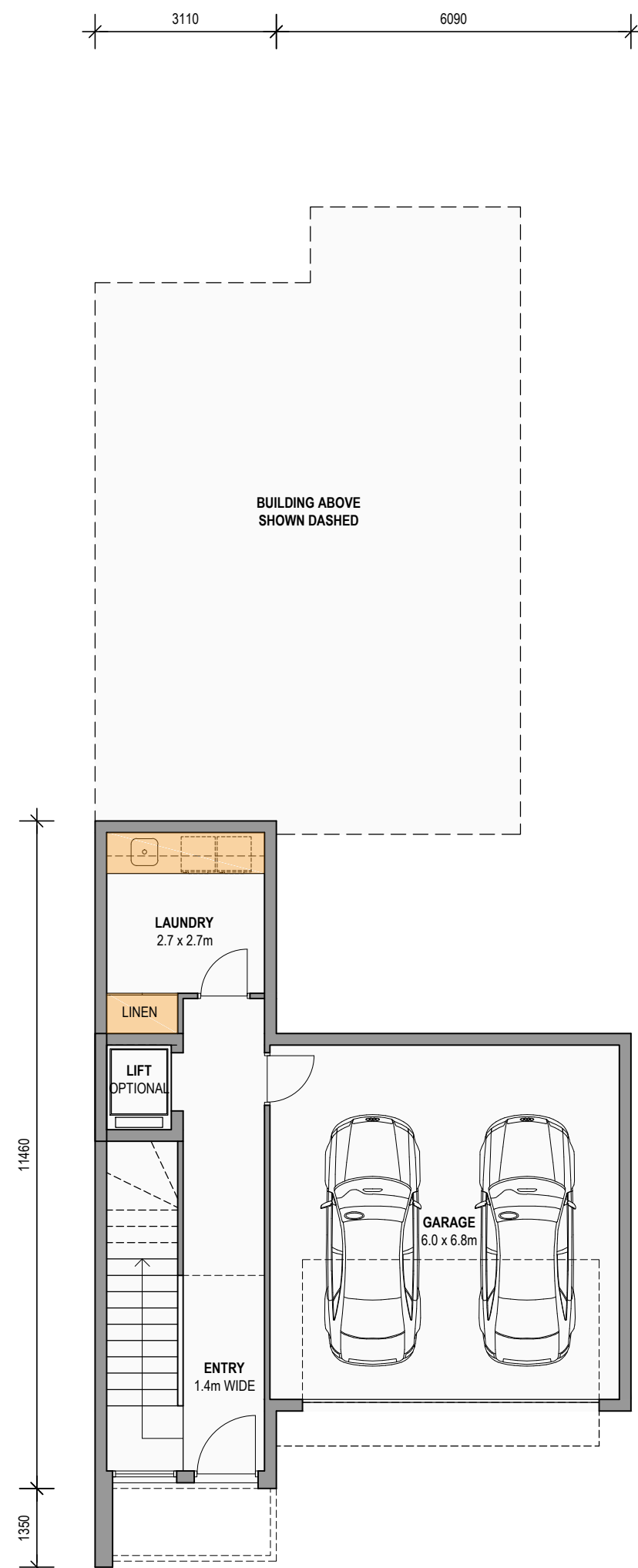
PROJECT  
Pomona Rd Development  
Lot 1-9, 20 Pomona Road STIRLING SA

CLIENT  
John Ellery

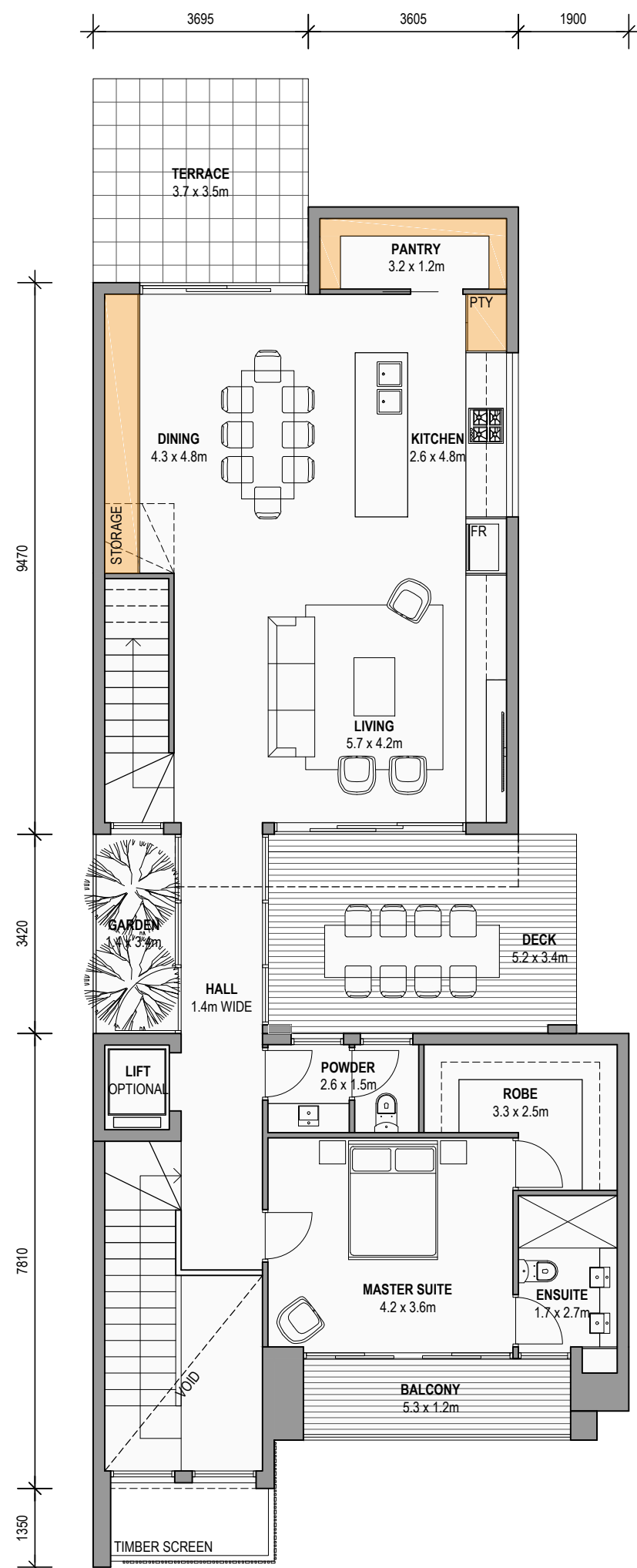
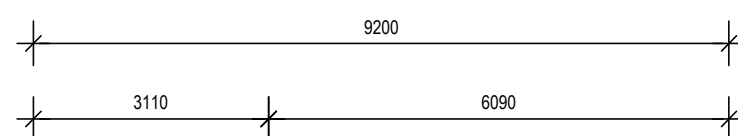
DRAWING TITLE  
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Lots 04 - 09

DETAILS

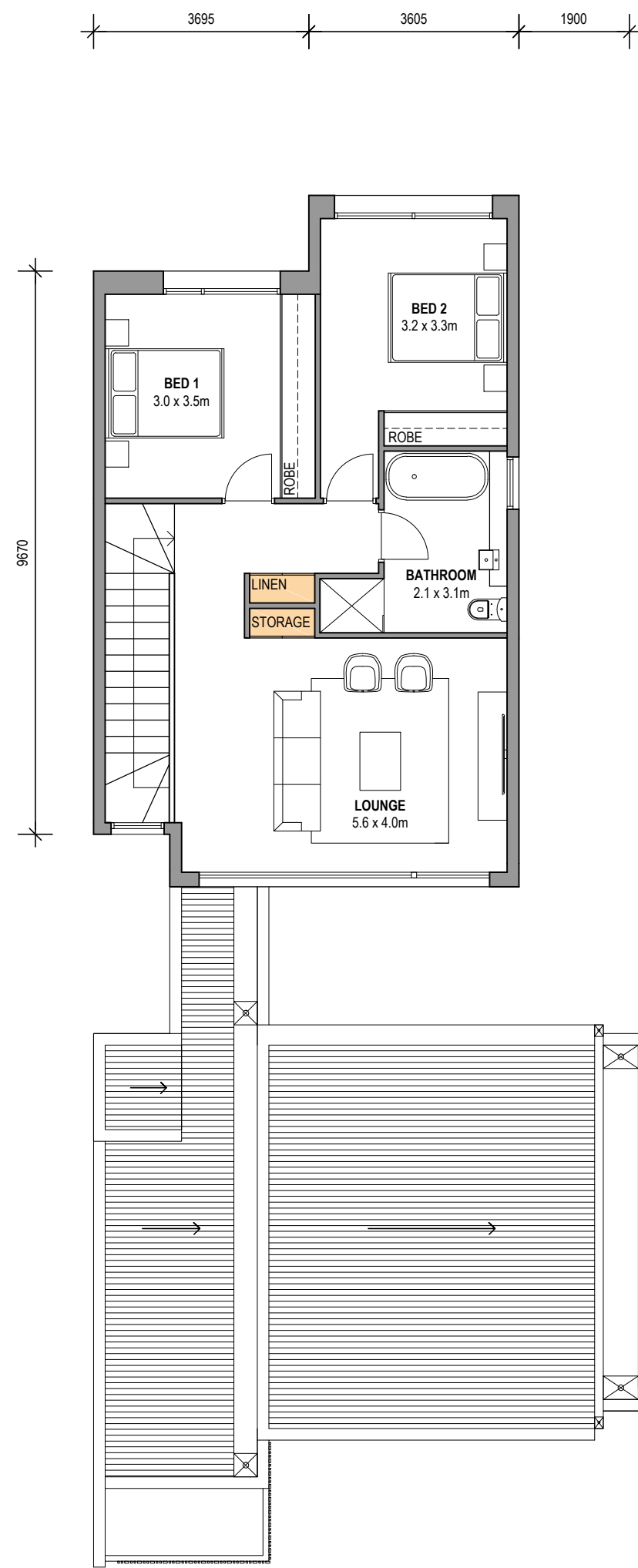
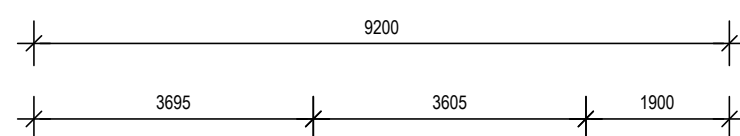
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Date FEBRUARY 2019



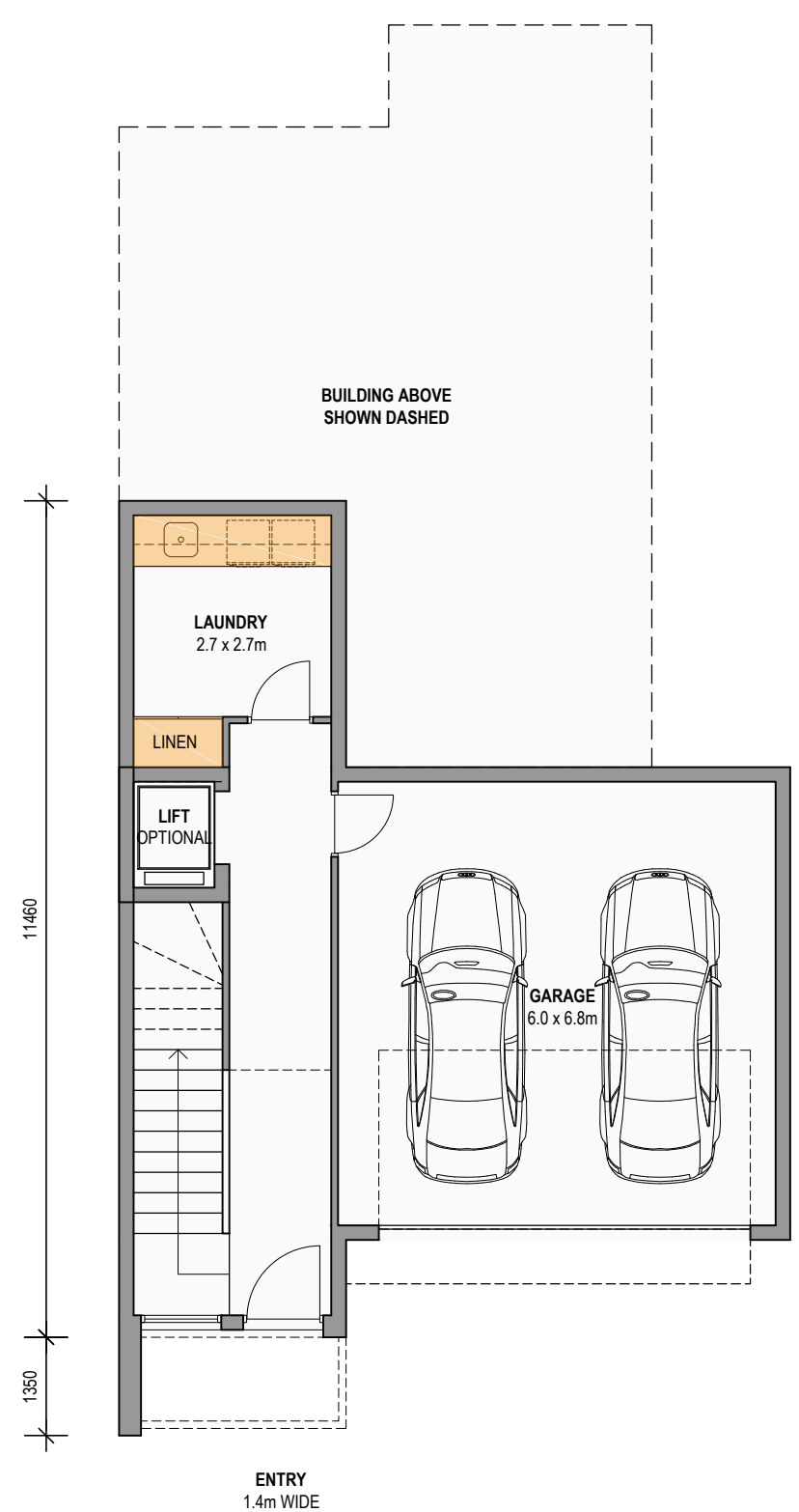
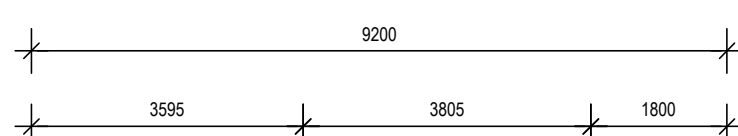
LOT 4 - 7  
LOWER GROUND FLOOR PLAN



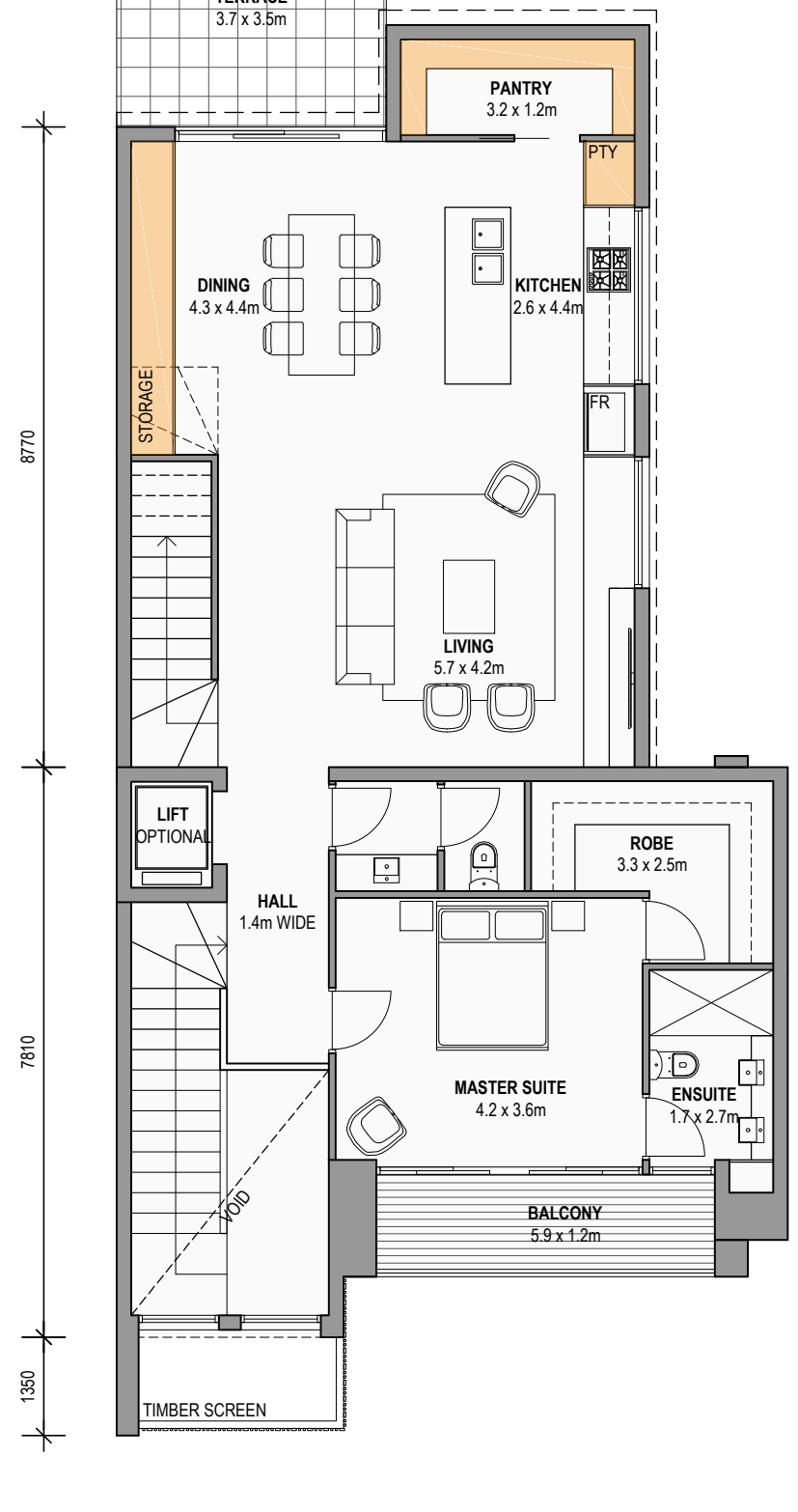
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UPPER GROUND FLOOR PLAN



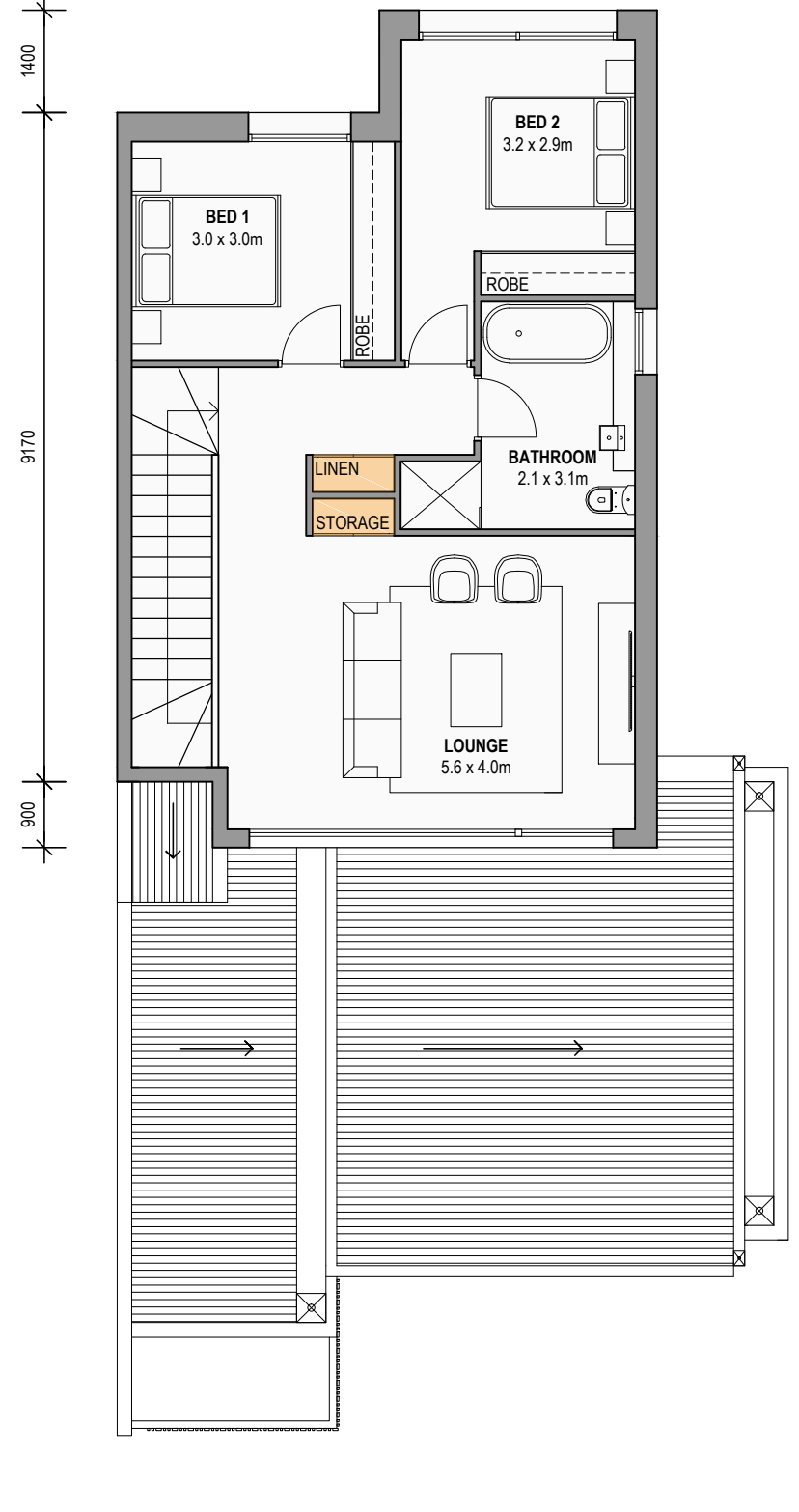
LOT 4 - 7  
FIRST FLOOR PLAN



LOT 8 - 9  
LOWER GROUND FLOOR PLAN



LOT 8 - 9  
UPPER GROUND FLOOR PLAN



LOT 8 - 9  
FIRST FLOOR PLAN





FINISHES SCHEDULE

WF.01	<b>WALL FINISH 01</b> REVOLUTION ROOFING TRUE OAK SUPER 5 AND FLASHING CLADDING : SURFMIST
WF.02	<b>WALL FINISH 02</b> JAMES HARDIE SCYON AXON CLADDING PAINTED : CB MONUMENT
WF.03	<b>WALL FINISH 03</b> AUSTRAL BRICKS MELBOURNE COLOUR : HAWTHORN
WF.04	<b>WALL FINISH 04</b> CFC SHEET PAINTED : MONUMENT
WF.05	<b>WALL FINISH 05</b> CFC SHEET PAINTED : SURFMIST

**TIMBER SCREEN**  
30x30 + 30x70 mm  
TIMBER BATTENS  
SPECIES : SPOTTED GUM

GENERAL LEGEND

**GLAZING SUITE**  
COMMERCIAL GLAZING WITH  
BLACK POWDER COAT FRAMES

ED	ENTRY DOOR
TGD	TILT UP GARAGE DOOR
FG	FIXED GLAZING
THA	TOP HUNG AWNING
GSD	GLASS SLIDING DOOR
OB	OBSCURE GLAZING



C	04.03.2019	PLANNING ISSUE
B	15.02.2019	PLANNING ISSUE
A	15.01.2019	PLANNING ISSUE

PLANNING

18-015.PL06.C

PROJECT  
**Pomona Rd Development**

Lot 1-9, 20 Pomona Road STIRLING SA

CLIENT

John Ellery

DRAWING TITLE

Elevations

DETAILS

Drawn BM / NF

Scale 1:100 @ A1

Date FEBRUARY 2019



The architect takes no responsibility for dimensions noted from drawings  
confronted to any other dimensioning. Dimensions, levels and all measurements  
shall be verified by the builder prior to construction on site, any discrepancy  
thereafter is the client's responsibility. Errors are not being undertaken. Drawing  
18-015.PL06.C

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FINISHES SCHEDULE

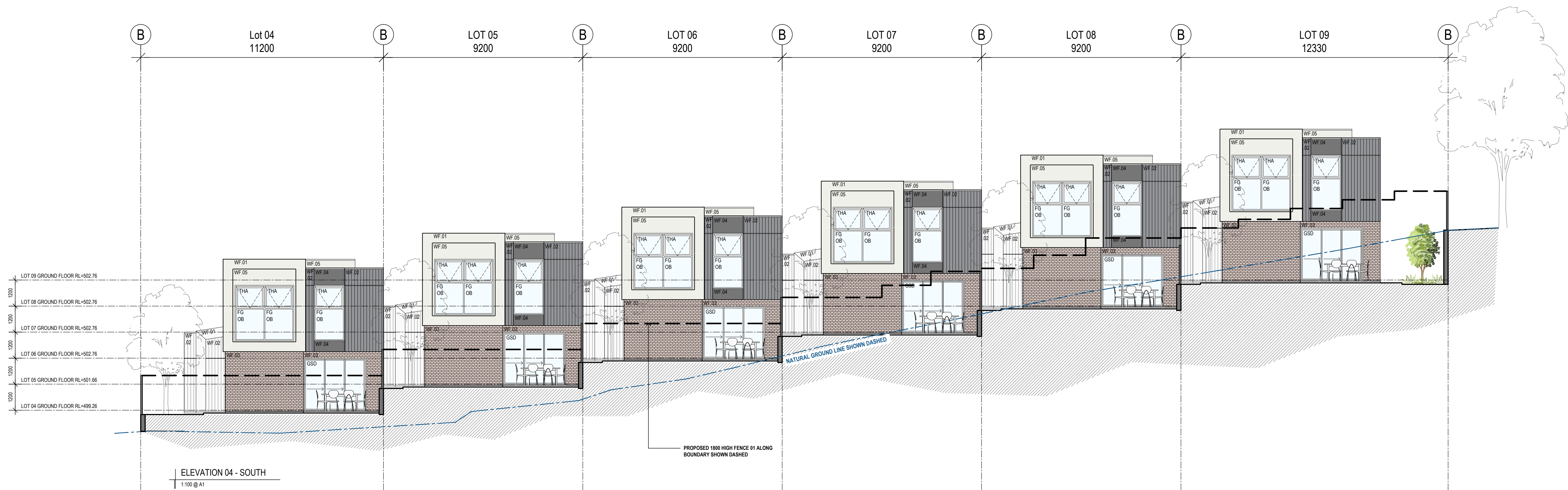
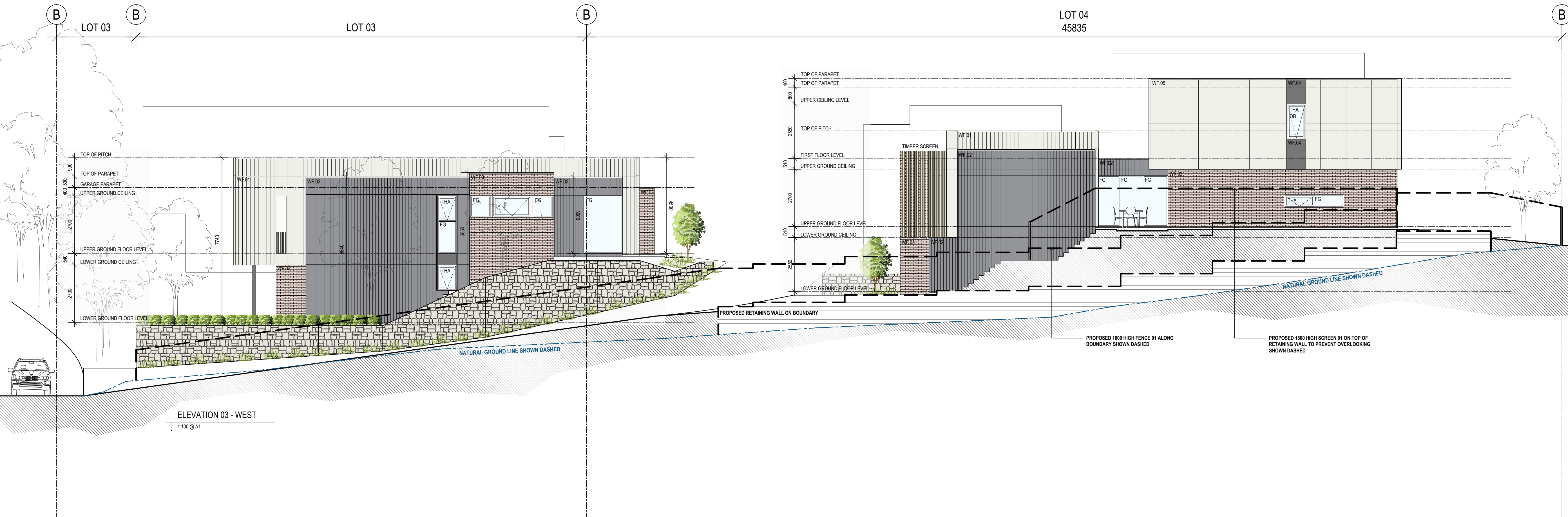
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WF.02	<b>WALL FINISH 02</b> JAMES HARDIE SCYON AXON CLADDING PAINTED : CB MONUMENT
WF.03	<b>WALL FINISH 03</b> AUSTRAL BRICKS MELBOURNE COLOUR : HAWTHORN
WF.04	<b>WALL FINISH 04</b> CFC SHEET PAINTED : MONUMENT
WF.05	<b>WALL FINISH 05</b> CFC SHEET PAINTED : SURFMIST

**TIMBER SCREEN**  
30x30 + 30x70 mm  
TIMBER BATTENS  
SPECIES : SPOTTED GUM

GENERAL LEGEND

**GLAZING SUITE**  
COMMERCIAL GLAZING WITH  
BLACK POWDER COAT FRAMES

ED	ENTRY DOOR
TGD	TILT UP GARAGE DOOR
FG	FIXED GLAZING
THA	TOP HUNG AWNING
GSD	GLASS SLIDING DOOR
OB	OBSCURE GLAZING



B	15.02.2019	PLANNING ISSUE
A	15.01.2019	PLANNING ISSUE

PLANNING

**18-015.PL07.B**

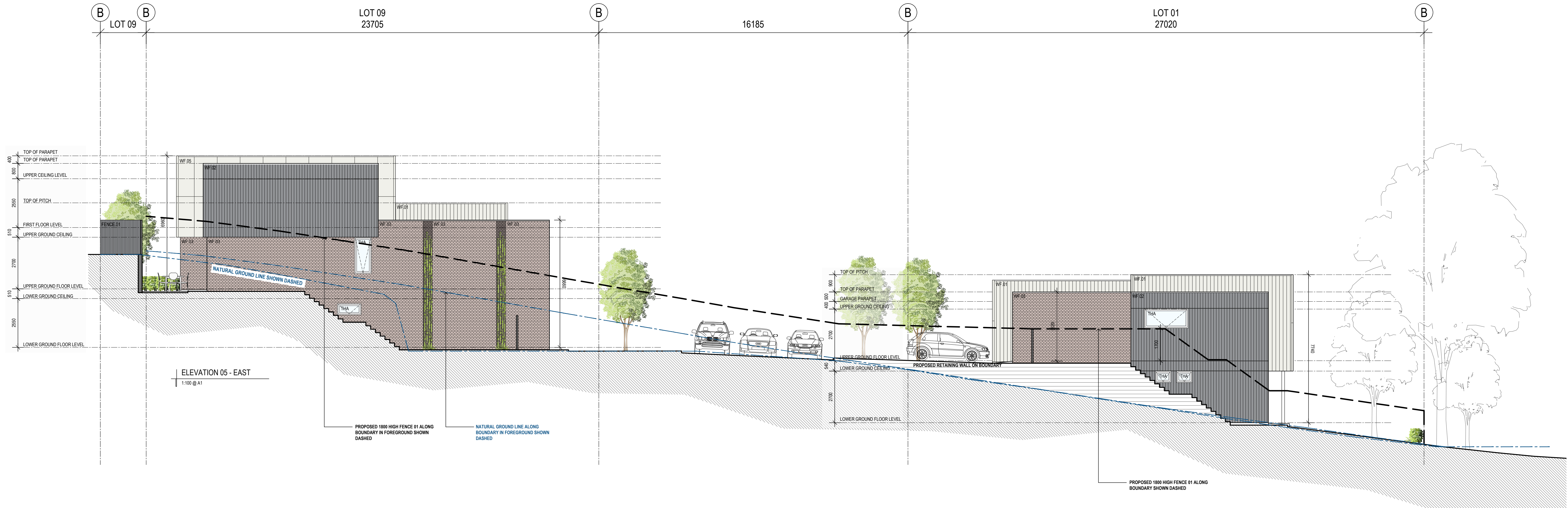
**PROJECT**  
**Pomona Rd Development**  
Lot 1-9, 20 Pomona Road STIRLING SA

**CLIENT**  
**John Ellery**  
**DRAWING TITLE**  
**Elevations**

**DETAILS**  
Drawn **BM / NF**  
Scale **1:100 @ A1**  
Date **FEBRUARY 2019**







#### FINISHES SCHEDULE

WF.01	<b>WALL FINISH 01</b> REVOLUTION ROOFING TRUE OAK SUPER 5 AND FLASHING CLADDING : SURFMIST
WF.02	<b>WALL FINISH 02</b> JAMES HARDIE SCYON AXON CLADDING PAINTED : CB MONUMENT
WF.03	<b>WALL FINISH 03</b> AUSTRAL BRICKS MELBOURNE COLOUR : HAWTHORN
WF.04	<b>WALL FINISH 04</b> CFC SHEET PAINTED : MONUMENT
WF.05	<b>WALL FINISH 05</b> CFC SHEET PAINTED : SURFMIST

**TIMBER SCREEN**  
30x30 + 30x70 mm  
TIMBER BATTENS  
SPECIES : SPOTTED GUM

#### GENERAL LEGEND

**GLAZING SUITE**  
COMMERCIAL GLAZING WITH  
BLACK POWDER COAT FRAMES

ED	ENTRY DOOR
TGD	TILT UP GARAGE DOOR
FG	FIXED GLAZING
THA	TOP HUNG AWNING
GSD	GLASS SLIDING DOOR
OB	OBSCURE GLAZING

B	15.02.2019	PLANNING ISSUE
A	15.01.2019	PLANNING ISSUE

#### PLANNING

**18-015.PL08.B**

PROJECT  
**Pomona Rd Development**  
Lot 1-9, 20 Pomona Road STIRLING SA

CLIENT  
**John Ellery**

DRAWING TITLE  
**Elevations**

DETAILS  
Drawn **BM / NF**  
Scale **1:100 @ A1**  
Date **FEBRUARY 2019**







PERSPECTIVE 01 - LOT 03



PERSPECTIVE 02 - LOT 03



PERSPECTIVE 03 - LOT 03



PERSPECTIVE 04 - LOT 04, 05, 06 & 07

C	15.02.2019	PLANNING ISSUE
B	15.01.2019	PLANNING ISSUE
A	15.01.2019	PLANNING ISSUE

PLANNING

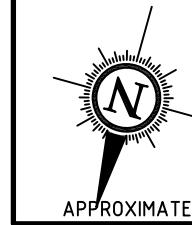
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PROJECT  
**Pomona Rd Development**  
Lot 1-9, 20 Pomona Road STIRLING SA  
CLIENT  
**John Ellery**  
DRAWING TITLE  
**Perspectives**

Drawn	BM / NF
Scale	@ A1
Date	FEBRUARY 2019





## 8.3 Attachment 3



## 1:20

- NOTES:**
1. REFER TO 'STORMWATER PIT SCHEDULE' FOR PIT DIMENSIONS.
  2. PENETRATION FOR PIPES SHALL BE APPROX. 50mm GREATER THAN THE OVERALL DIAMETER OF PIPE. PIPES SHALL BE FINISHED FLUSH WITH THE INTERNAL FACE OF THE SUMP. A STIFF MORTAR MIX SHALL BE PACKED INTO THE SPACE FROM BOTH SIDES OF STRUCTURE. THE INTERNAL FACE SHALL BE FINISHED SMOOTH AND A 150mm THICK BAND ON CONCRETE SHALL BE POURED OUTSIDE THE SUMP TO SEA THE PENETRATION.
  3. WHERE SUMPS CONSIST OF MORE THAN ONE PRECAST UNIT, THE JOINTS SHALL BE SEALED WITH BUTYL MASTIC FLEXIBLE PIPE SEALANT AROUND THE OUTSIDE AND A 1:3 SAND CEMENT GROUT ON THE INSIDE OF THE SUMP.



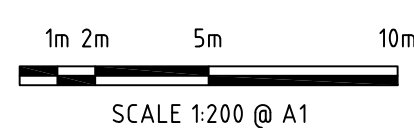
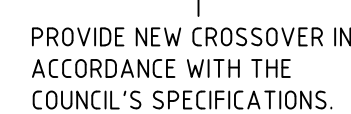
- NOTE:**  
PROVIDE 10mm WIDE x 20mm DEEP TOOLED JOINTS AT 3.0m CRS (MAX.)  
FORCE A TROWEL THOUGH JOINTS TO SEPARATE AGGREGATES AND INFLUENCE  
CRACKING AT THESE LOCATIONS.



- NOTE:**  
PROVIDE 10mm WIDE x 20mm DEEP TOOLED JOINTS AT 3.0m CRS (MAX.)  
FORCE A TROWEL THOUGH JOINTS DURING CONCRETE POUR TO SEPARATE  
AGGREGATES AND INFLUENCE CRACKING AT THESE LOCATIONS.



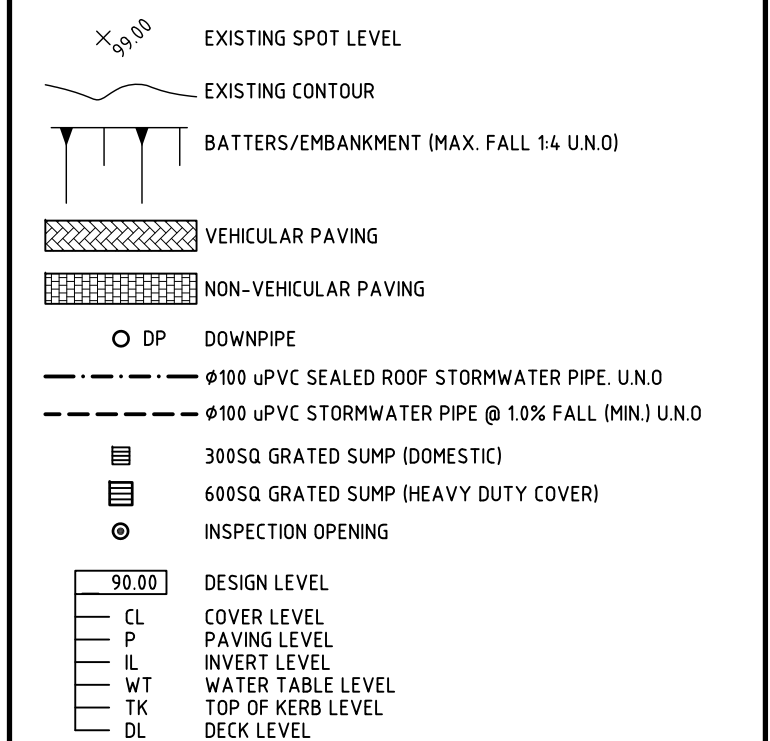
- NOTE:**  
PROVIDE 10mm WIDE x 20mm DEEP TOOLED JOINTS AT 3.0m CRS (MAX.)  
FORCE A TROWEL THOUGH JOINTS TO SEPARATE AGGREGATES AND INFLUENCE  
CRACKING AT THESE LOCATIONS.



## GENERAL NOTES:

1. THIS IS AN ENGINEERING SURVEY ONLY AND SHALL NOT BE TAKEN AS A BOUNDARY IDENTIFICATION SURVEY. THE BOUNDARY DATA SHOWN IS TO BE TAKEN AS A GUIDE ONLY. REFER TO ARCHITECTURAL DRAWINGS FOR CORRECT DIMENSIONS AND SET-OUT POINTS.
2. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ANY CIVIL, STRUCTURAL, ARCHITECTURAL AND SERVICES DRAWINGS AND SPECIFICATIONS FOR COORDINATION AND CONSTRUCTION. ANY DISCREPANCIES IN SITE CONDITIONS AND/OR DOCUMENTATION TO BE IMMEDIATELY REPORTED TO THE ARCHITECT PRIOR TO COMMENCEMENT OF WORKS.
3. THE CONTRACTOR IS TO CONTACT 'DIAL BEFORE YOU DIG' PRIOR TO THE COMMENCEMENT OF WORKS AND VERIFY THE LOCATION AND DEPTH OF ALL EXISTING SERVICES.
4. THE CONTRACTOR IS TO ALLOW AND ADJUST HEIGHTS OF COVERS TO EXISTING SERVICES, PITS & GRATES ETC TO SUIT NEW PROPOSED LEVELS.
5. WHERE TREES ARE TO BE REMOVED, BACKFILL THE Voids WITH COMPACTED PM2/20 QUARRY RUBBLE.
6. REFER TO THE STRUCTURAL ENGINEERS DRAWINGS FOR THE BUILDINGS PROPOSED SLAB, RUBBLE AND FOOTING DEPTH AS WELL AS INTERNAL SETDOWNS TO WET AREAS AND THE LIKE.
7. FLEXIBLE CONNECTIONS FOR SEWER AND STORMWATER PIPES ARE REQUIRED FOR SOIL CLASS 'H-D' & 'E-D' SITES (REFER TO THE GEOTECHNICAL/CONSTRUCTION REPORT TO VERIFY).
8. THE CONTRACTOR IS TO ALLOW FOR AND REINSTATE ANY SURFACE NOT INCLUDED IN THE WORKS BUT WHICH HAS BEEN DISTURBED DURING CONSTRUCTION. ALL CONCRETE ITEMS (KERBS, GUTTER, SPOON DRAINS, ETC) TO BE GRADE NZS CONCRETE UNLESS NOTED OTHERWISE.
9. ALL KERBS AND PATHS IN LANDSCAPING AREAS ARE TO BE BACKFILLED WITH TOPSOIL APPROVED BY THE ARCHITECT/LANDSCAPER.
10. ALL LINEMARKING AND SIGNAGETO BE INSTALLED IN ACCORDANCE WITH AS1742.

LEGEND:



ISSUE		AMENDMENT		PR 0415 991 N8	
				APPROVED	
C	13.02.19	REVISED RETAINING WALLS & TREES			BM
B	23.01.19	REVISED RETAINING WALLS & TREES			BM
A	11.12.18	FOR PLANNING APPROVAL			BM
PROJECT					
PROPOSED RESIDENCES					
AT: 20 PANOMA ROAD					
STIRLING					
FOR: JOHN & LISA ELLERY					
DRAWING TITLE					
CIVIL & EARTHWORKS PLAN					
SCALE		DRAWN		ENGINEER	
1:200 @A1		B.M		B.M	
DATE		13.02.2019			
BY SURVEYED		PROJECT No.		ISSUE	
181116		C2		C	
SHEET SIZE		A1			

## 8.4 Attachment 4



DEVELOPMENT No

PLAN OF COMMUNITY DIVISION FOR DEVELOPMENT APPROVAL

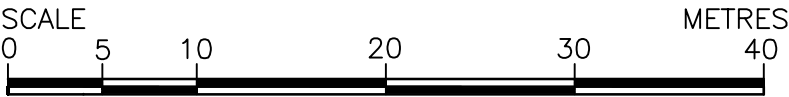
HUNDRED OF NOARLUNGA  
ALLOTMENT 57 IN D26958

IN THE AREA NAMED STIRLING  
IN ADELAIDE HILLS COUNCIL

CT 5428/116

SUBJECT TO SURVEY

APPLICANT: J.J & L ELLERY  
AGENT: MICHAEL GREAR SURVEYS  
REGISTERED PROPRIETORS: J.J & L ELLERY



CONTOURS ARE DERIVED FROM SURVEY  
CONTOUR INTERVAL 0.5m  
HEIGHT DATUM IS AHD  
ALL STRUCTURES ARE TO BE REMOVED  
TREES ARE NOT REGULATED OR SIGNIFICANT  
UNLESS SHOWN OTHERWISE

REGULATED TREES SHOWN IN BLUE



SIGNIFICANT TREES SHOWN IN RED

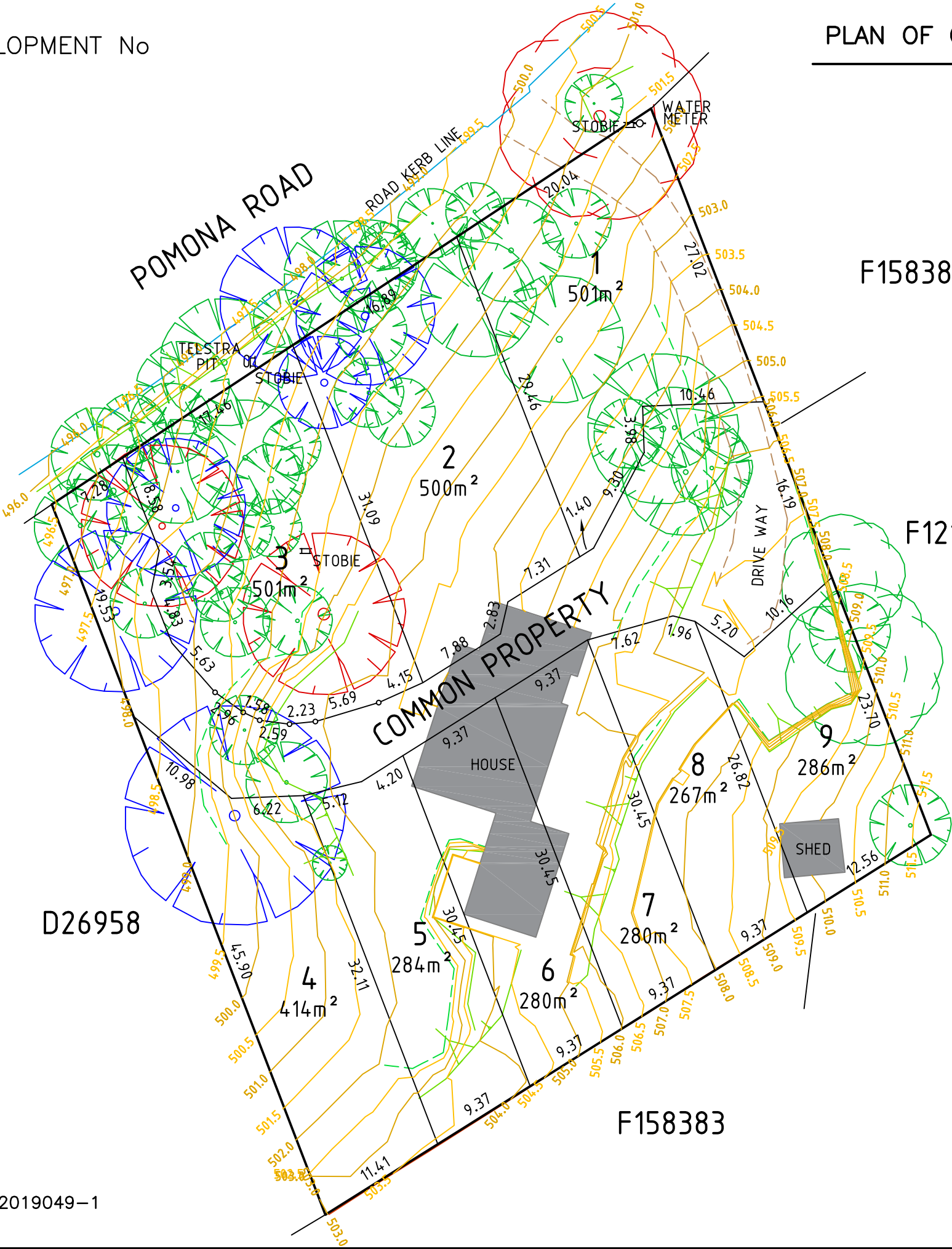
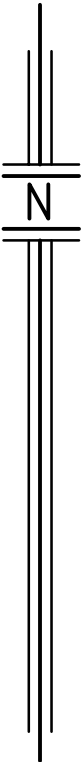


PLEASE NOTE: THIS DOCUMENT IS FOR PLANNING PURPOSES ONLY

A		
B		
C		
D		
E		
F		
REVISIONS		BY DATE

**MICHAEL GREAR SURVEYS**  
5 GULFVIEW ROAD  
BLACKWOOD SA 5051  
PHONE: (08) 8278 8732  
FAX: (08) 8278 8050

17B-19A DARLING TERRACE  
WHYALLA SA 5600  
PHONE: (08) 8644 2040  
FAX: (08) 8278 8050  
ABN:9320534714



REF: 2019049-1



## 8.5 Attachment 5

**Consultant Traffic Engineers**

ABN 67 093 665 680

204 Young Street  
Unley SA 5061**P: 08 8271 5999****F: 08 8271 5666****E: [mail@philweaver.com.au](mailto:mail@philweaver.com.au)**

File: 18-192

8 March 2019

Mr John Ellery  
C/- URPS  
Suite 12 / 154 Fullarton Road  
ROSE PARK SA 5067

Attention: Mr Matthew King

Dear Sir,

**PROPOSED RESIDENTIAL DEVELOPMENT – 20 POMONA ROAD, STIRLING – TRAFFIC AND PARKING ASSESSMENT**

I refer to our recent discussions with respect to the proposed development on the above site. I understand that it is proposed to construct a total of nine residential dwellings with vehicular access provided by means of a common driveway.

As requested, I have undertaken the following review of the traffic and parking related aspects of the subject development.

**EXISTING SITUATION**

The subject site is located on the southern side of Pomona Road, Stirling, approximately midblock between Mount Barker Road and Merrion Terrace. The site is located within a 'Mixed Residential Zone' as identified on *Zone Map AdHi/28* within the Adelaide Hills Council Development Plan as consolidated 24 October 2017.

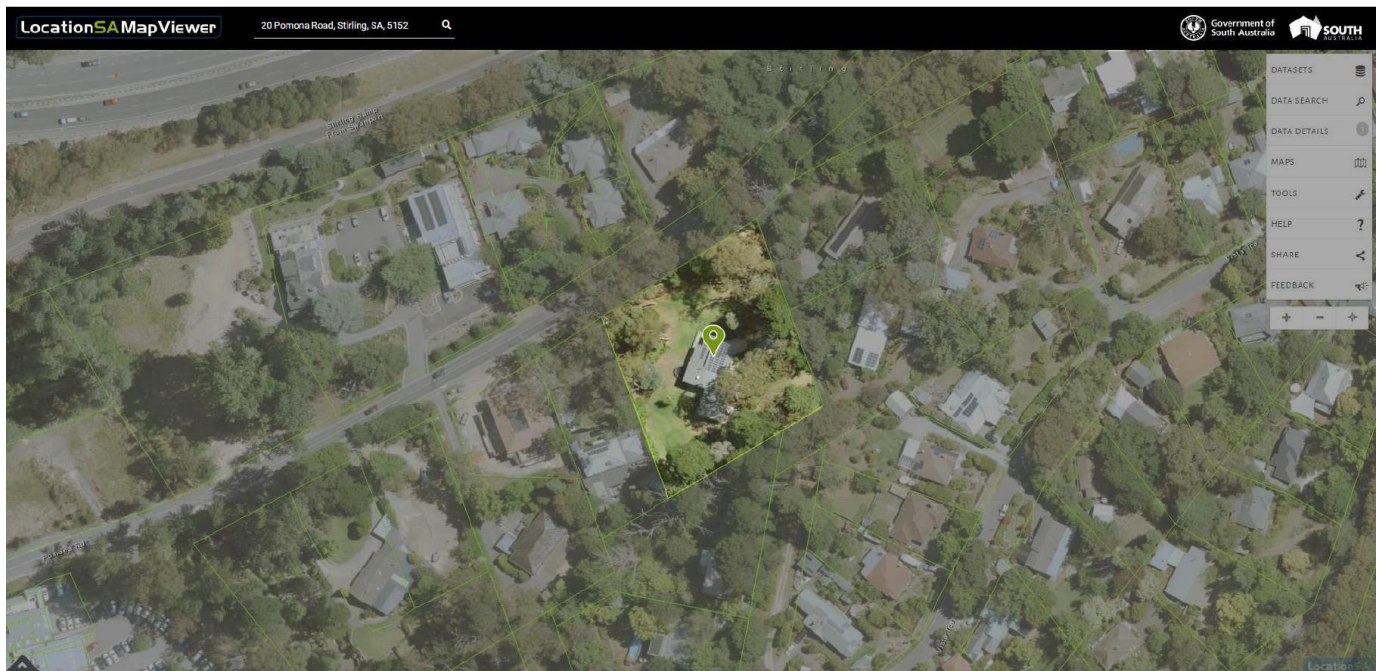
The subject site currently accommodates a single residential dwelling and has a frontage of approximately 63m to Pomona Road. Aerial imagery of the subject site and surrounding locality is identified in *Figure 1* below.

There is one existing vehicular access point associated with the subject land which is located adjacent to the eastern boundary of the site.

Pomona Road is a two-lane two-way roadway separated by a solid centre line with a width of approximately 6m. On-street parking is therefore restricted on Pomona Road adjacent to the subject site.

The speed limit on Pomona Road is 50km/h.

Data obtained from a traffic survey undertaken by the Department of Planning, Transport and Infrastructure (DPTI) on 18<sup>th</sup> June 2015 at the intersection of Pomona Road with Mount Barker Road and Avenue Road identified an estimated AADT of 4000 vehicles on Pomona Road.



**Figure 1: 20 Pomona Road, Stirling and surrounding locality**

## PROPOSED DEVELOPMENT

The proposed development is identified on a series of Concept Plans prepared by Alexander Brown Architects including Site and Floor Plans as amended 4<sup>th</sup> March 2019.

The proposed development will provide:

- Two 4-bedroom dwellings and seven 3-bedroom dwellings;
- A 2-car garage for each dwelling and 3 additional on-site visitor parking spaces; and
- A common driveway providing access to all on-site parking areas.

The parking spaces will have the following dimensions:

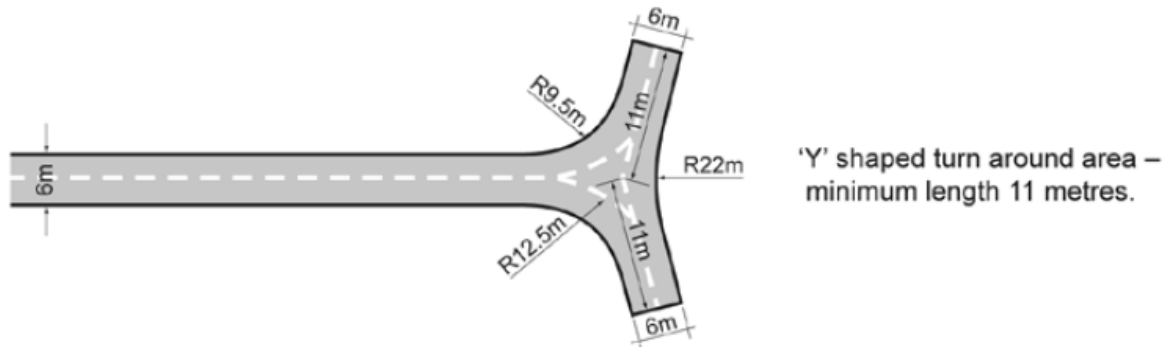
- Dwellings 1 and 2 garages: 5.9m in length and 6.6m in width;
- Dwelling 3 garage: 6.0m in length and 6.0m in width;
- Dwellings 4 to 9 garages: 6.0m in length and 6.8m in width; and



- Visitor spaces: 5.4m in length and 2.6m in width.

As such, I consider that the design of the on-site car parking areas would conform to the relevant off-street car parking standard (AS/NZS 2890.1:2004).

The shared driveway will provide a width of 6.2m for the first 8m into the site. This driveway then enters an 'elbow' with widths varying between 4.0m (at the ends) and 5.3m (at the apex), before widening to 6.0m at the eastern end of the site. The end of the common driveway is designed in a 'Y-formation' as per *Figure 2* within the '**Minister's Code for Undertaking development in Bushfire Protection Areas**', identified below. Such an arrangement is designed to allow CFS vehicles to turn on-site.



**Figure 2: 'Y' shaped turn around area as per Minister's Code**

Swept path diagrams are attached as an appendix to this report identifying:

- *Figure 4* – Heavy Rigid Vehicle (HRV) site entry movement;
- *Figure 5* – HRV '3-point turn' in the proposed 'Y-formation' area;
- *Figure 6* – HRV exiting the site;
- *Figure 7* – Simultaneous B99 entry and B85 exit movements; and
- *Figure 8* – Simultaneous B85 entry and B99 exit movements.

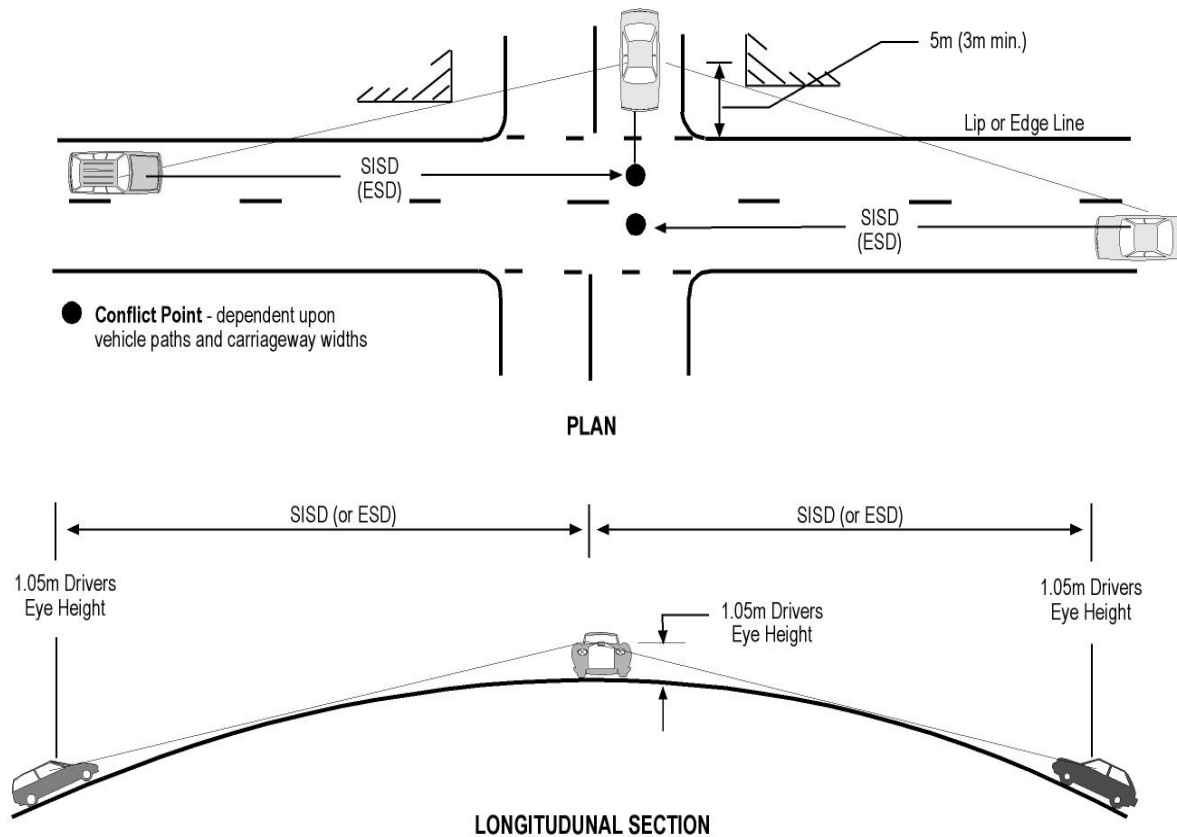
## SAFE INTERSECTION SIGHT DISTANCE

The proposed development will result in closure of the existing access point adjacent to the eastern boundary of the site and creation of a two-way access point adjacent to the western boundary of the site. As such, a review of sight distance has been undertaken on Pomona Road from the location of the proposed access point.

Measurements taken on site identified that sight distance to the west of the proposed access point is approximately 180m. Sight distance to the east of the proposed access point was measured as approximately 140m.

Sight distance requirements associated with a residential driveway are provided within a number of standards including the Austroads Publications '**Guide to Road Design - Part 4A: Unsignalised and Signalised Intersections**' and the '**Guide Traffic Engineering Practice - Part 5: Intersection at Grade.**'

The general concept of measuring sight distance is identified within *Figure 3* below. While this figure specifically refers to Entering Sight Distance and Safe Intersection Sight Distance (SISD), the figure is applicable in that sight distance should be measured at a distance of between 3m and 5m from the edge of the major road. For the purpose of this assessment, the minimum 3m distance has been used.



**Figure 3: Safe Intersection Sight Distance (SISD)**

SISD is calculated using the equation below.

$$SISD = \frac{D_T \times V}{3.6} + \frac{V^2}{254 \times (d + 0.01 \times a)}$$

Where:

- $D_T$  = decision time (s) = observation time (3s) + reaction time (s)
- $V$  = operating (85<sup>th</sup> percentile) speed (km/h)
- $d$  = coefficient of deceleration
- $a$  = longitudinal grade in %

These parameters were applied as follows:

- $D_T$  = 5s (for reaction time of 2s)
- $V$  = 60 km/h (Speed limit + 10km/h)

- $d = 0.36$  (90<sup>th</sup> percentile value for braking on wet, sealed roads – desirable maximum value for stopping sight distance for most urban and rural road types)
- $a = +5\%$  for eastbound traffic and  $-5\%$  for westbound traffic (estimated averages)

On the above basis, SISD is calculated as follows:

$$SISD(W) = \frac{5 * 60}{3.6} + \frac{60^2}{254 * (0.36 + 0.01 * 5)} = 118m$$

SISD of 118m to the west has therefore comfortably been satisfied with an approximately 180m available sight line in this direction.

$$SISD(E) = \frac{5 * 60}{3.6} + \frac{60^2}{254 * (0.36 + 0.01 * -5)} = 129m$$

SISD of 129m to the east has also been satisfied with an approximately 140m available sight line in this direction.

The existing access point is located approximately 50m east of the proposed access point. Measurements of sight distance at the existing access point location identified that SISD is not currently satisfied to the east using the parameters identified above. I therefore consider the the location of the proposed access point at the western boundary of the site is in an ideal location to provide the greatest possible sight distance in the more restricted easterly direction.

I note that the nature of the verge area in the location of the access point is subject to change as a result of the proposed civil works (i.e. the existing embankment will be altered to accommodate the access point). Assuming that no new visual obstructions are located within 3m of the road edge (e.g. fencing, vegetation etc.), the above SISD assessment should remain relevant.

## TRAFFIC ASSESSMENT

The ***Guide to Traffic Generating Developments*** report produced by the (former) Roads and Traffic Authority of NSW identifies the following trip generation rates associated with the relevant residential developments:

Form of Development	Daily vehicle trips (per dwelling)	Weekday peak hour vehicle trips (per dwelling)	20 Pomona Road, Stirling
Dwelling house	9.0	0.85	1 Existing
<i>Medium density residential flat buildings</i>			
Larger units and town houses (three or more bedrooms)	5.0 – 6.5	0.5 – 0.65	9 Proposed



Hence, the existing residential development would generate the equivalent of 9 trips on a weekday including typically the equivalent of one trip movement in both the am and pm peak hour.

The proposed development would generate at most an estimated 60 trips on a weekday including typically the equivalent of 6 trip movements in both the am and pm peak hour.

On the above basis, the proposed development would result in approximately 50 additional daily vehicle trips including 5 peak hour vehicle trips. Such an increase in trip generation is well within the capacity of the adjoining road network and would represent an increase in traffic on Pomona Road of only 1.25%, noting that a majority of existing traffic on this roadway is not directly associated with properties located on Pomona Road. The increase in traffic on this road would be significantly less than the day to day variation in weekday traffic which is typically plus or minus 5%.

A significant portion of traffic generated by the subject site would likely travel to / from the nearby freeway entrance / exit or locally to / from the Stirling District Centre Zone, which are both within close proximity of the subject site.

It is my understanding that waste associated with the subject site will be collected by Council's waste contractor via kerbside collection. Although such movements are not anticipated, the design of the subject development would be able to accommodate waste collection vehicles (MRV's) on-site given the swept path assessment completed in relation to larger HRV's.

## **PARKING ASSESSMENT**

**Table AdHi/4 - Off Street Vehicle Parking Requirements** within the Adelaide Hills Council Development Plan identifies car parking provisions as follows:

<b><i>Form of Development</i></b>	<b><i>Number of Required Car Parking Spaces</i></b>
<i>Dwelling</i>	<i>3 spaces (at least one covered) for a dwelling comprising 3 or more bedrooms or rooms able to be used a (sic) bedroom plus:</i> <ul style="list-style-type: none"><li><i>1 visitor space per 4 dwellings for dwellings on a site sharing a common driveway with at least 2 other dwellings.</i></li></ul>

On the above basis, the proposed development would theoretically require a total of 30 car parking spaces, comprising 3 spaces per dwelling for use by residents and 2.25 (rounded up to 3) visitor spaces.

The proposed development will provide 21 car parking spaces, comprising 2 (covered) spaces per dwelling plus 3 visitor spaces. Importantly, the on-site visitor parking requirement has been met for this proposed development.

In relation to demand for resident car parking, two on-site parking spaces would typically be sufficient for resident parking associated with the types of dwellings proposed by the subject development. I consider this especially relevant to the subject site which is located within 400m of a frequent bus service on Mount Barker Road.

Such a provision in Metropolitan areas would generally classify the site as within a 'designated area', which typically have lower car parking requirements due to this reliable public transport availability.

Furthermore, I note that at least two of the driveways (associated with allotments 4 and 8) would permit two cars to park in front of the garages without these vehicles extending onto the common driveway.

In relation to the design of the on-site car parking, I note that Objective 2 for Mixed Residential Zones as identified within Council's Development Plan is listed as follows:

2. *"Development that minimises the potential impact of garaging and parking of vehicles on the character of the area."*

The proposed development is designed so that all garages and visitor parking spaces will be accessed via the common driveway to the south of dwellings 1 to 3. As such, garages and on-site car parking will not be visible from the street so that this objective is satisfied.

A requirement for 3 resident parking spaces per dwelling is therefore considered excessive, as the provision of an additional 9 on-site car parking spaces would likely result in the design of a residential development on the subject site failing Objective 2.

I have reviewed various traffic and parking standards relating to residential dwellings such as those proposed on-site and have identified the following:

- The ***Land Use Parking Generation Report*** prepared on behalf of the then Director-General of Transport South Australia by traffic and parking consultant Shane P Foley identified an average car parking demand equivalent to 1.37 spaces per 3-bedroom dwelling associated with private residential developments similar to that proposed on-site; and
- The RTA ***Guide to Traffic Generating Development*** report includes car parking rates associated with 'Medium density residential flat buildings' (Such developments are defined as a building containing at least 2 but less than 20 dwellings, including villas, town houses, flats, semi-detached houses, terrace or row houses and other medium density developments). This rate would therefore be applicable to Allotments 4 to 9 of the subject development, which identifies resident parking requirements for 1.5 spaces per 3-bedroom dwelling plus 1 visitor parking space for every five dwellings (i.e. two for the subject site).
- The RTA guide also includes car parking rates for stand-alone 'Dwelling houses'. The applicable car parking rate is identified as: *"A minimum of one parking space (preferably two) is recommended for dwelling houses. If there is dual occupancy on a residential lot, a minimum of two parking spaces is recommended."* This rate of two spaces per dwelling would be relevant to Allotments 1 to 3.

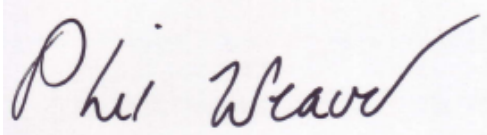
On the basis of the above, I consider that two dedicated resident parking spaces for each dwelling would be sufficient to meet the anticipated resident car parking rate for each of the nine dwellings as proposed by the subject development. I therefore consider that the proposed car parking provision, both in respect to both resident and visitor requirements, would be suitable for the proposed development.

## SUMMARY AND CONCLUSIONS

In summary, I consider that the proposed development will:

- Satisfy SISD requirements in both directions along Pomona Road from the proposed access point;
- Provide two on-site car parking spaces per dwelling for use by residents and satisfy Council's Development Plan requirements for visitor parking with provision of 3 on-site spaces. I consider that such a level of car parking would be appropriate for the proposed development;
- Not result in adverse traffic impacts on the adjacent road network;
- Provide a design standard which would allow an HRV design vehicle to access the site, turn on-site, and exit the site. On this basis it is considered that the requirement for CFS access will be met by the proposed design; and
- Provide a design standard which is appropriate and essentially meets the requirement of the relevant Australian / New Zealand Standard for off-street car parking areas.

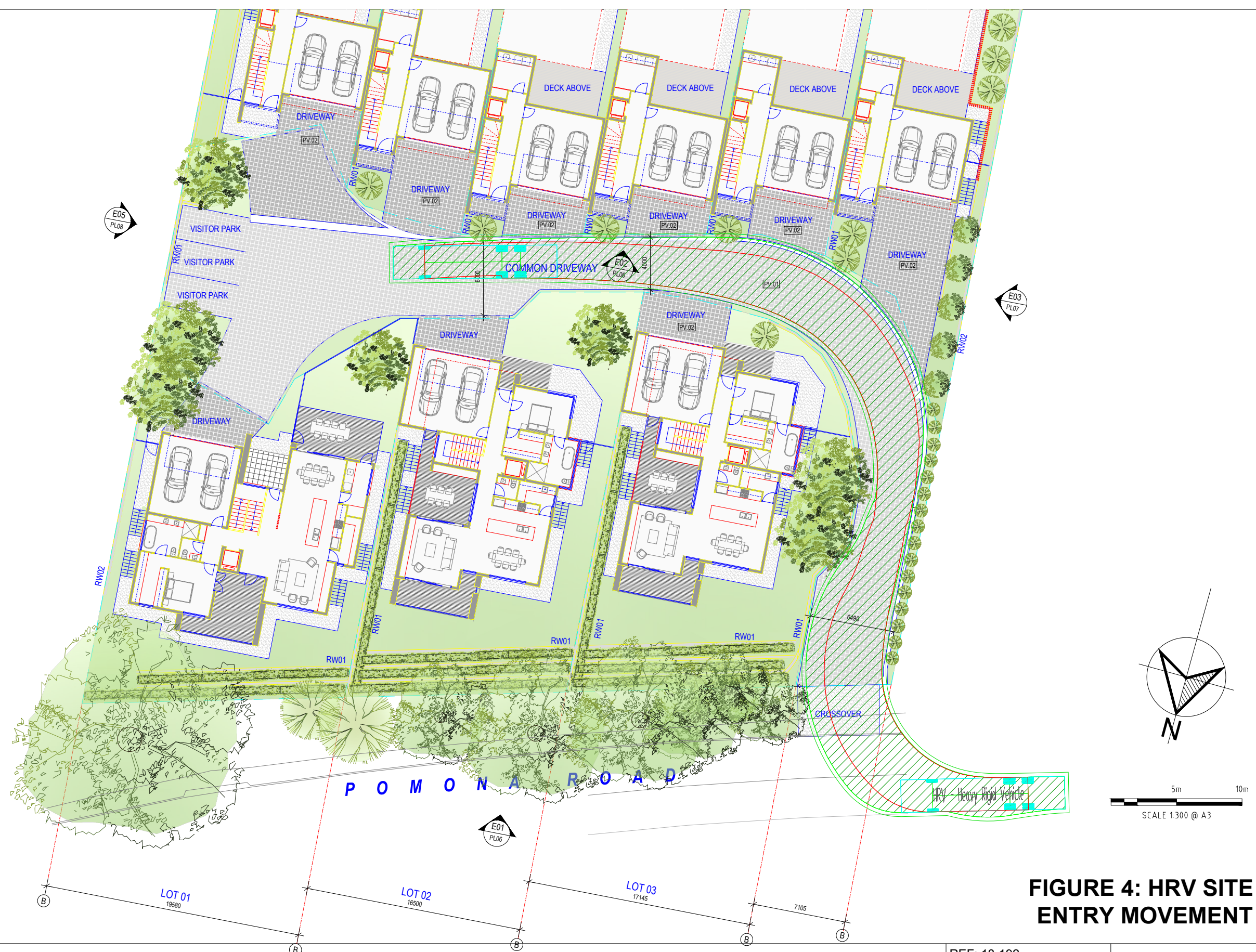
Yours sincerely,

A handwritten signature in dark ink, reading "Phil Weaver", with a stylized flourish at the end.

Phil Weaver  
Phil Weaver and Associates Pty Ltd

Enc: Vehicle turning path diagrams (*Figures 4 to 8*).





**FIGURE 4: HRV SITE ENTRY MOVEMENT**





**FIGURE 5: HRV  
ON-SITE TURN AROUND**





**FIGURE 6: HRV  
SITE EXIT MOVEMENT**





**FIGURE 7: SIMULTANEOUS  
B99 ENTRY / B85 EXIT**



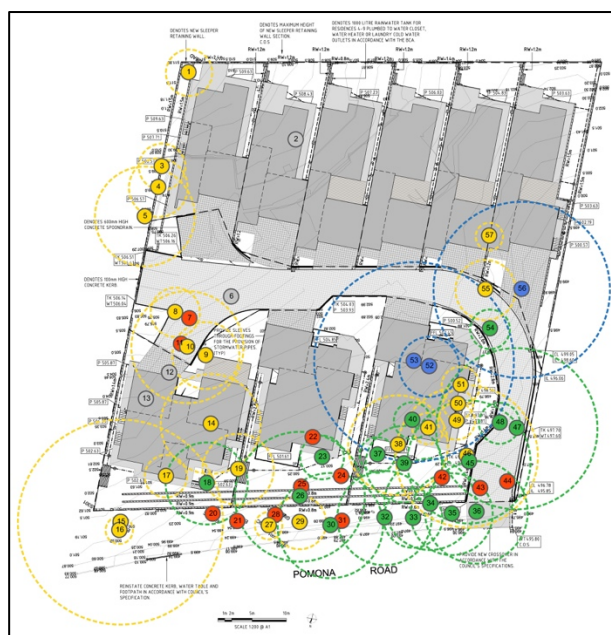


**FIGURE 8: SIMULTANEOUS  
B85 ENTRY / B99 EXIT**

## 8.6 Attachment 6

## **Tree Assessment – 20 Pomona Road, Stirling, SA**

### **Arboricultural impact assessment of a proposed development on 53 trees**



Arboricultural impact report requested by Philip Harnett of *URPS*, on the 31<sup>st</sup> of January 2019.

Arboricultural report prepared by Dean Nicolle following a site inspection and tree assessments on the 14<sup>th</sup> of February 2018 and review of the proposed civil and architectural plans on the 7<sup>th</sup> and 8<sup>th</sup> of February 2019.

**Arboricultural report dated the 8<sup>th</sup> of February 2019.**

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## 1.0 BACKGROUND

The proposed residential subdivision of 20 Pomona Road in Stirling, South Australia, has the potential to impact on a number of trees that occur on the site. This report summarises the arboricultural assessment of the 54 trees on the site (see Figure 1) and assesses the arboricultural impact of the proposed development on these trees.

This report builds on my earlier assessment of the trees, in a report dated the 14<sup>th</sup> February 2018 (prior to development of the civil and architectural plans for the site). This report now considers the arboricultural impact of the proposed development, considering the proposed civil and architectural plans (see Figure 5).

## 2.0 METHODOLOGY

The assessment of the 53 trees subject of this report was undertaken on the 14<sup>th</sup> of February 2018. The location and numbering of the 53 trees included in this assessment is indicated on the survey plan of the site in Figure 1. My February 2018 report included the assessment of 57 trees on the site, however, *Trees 2, 6, 12 and 13* are no longer present on the site (as of February 2019). Assessed trees were not physically marked or labelled in the field.

### 2.1 Australian Standard AS 4970-2009

This tree assessment was conducted in accordance with Australian Standard *AS4970-2009 Protection of Trees on Development Sites* (2009), which provides best practices for the planning and protection of trees on development sites. The Standard provides guidance on how to determine which trees are appropriate for retention, and on the means of protecting those trees during construction.

Tree Protection Zones (TPZs) have been calculated using a method which conforms to *AS 4970*, as detailed in Section 14 (*Tree Protection Zones*) of this report. Information and recommendations provided in the report concerning variations to the calculated TPZ and allowable encroachments within the TPZ are in accordance with the guidelines provided in the Australian Standard (*AS 4970*).

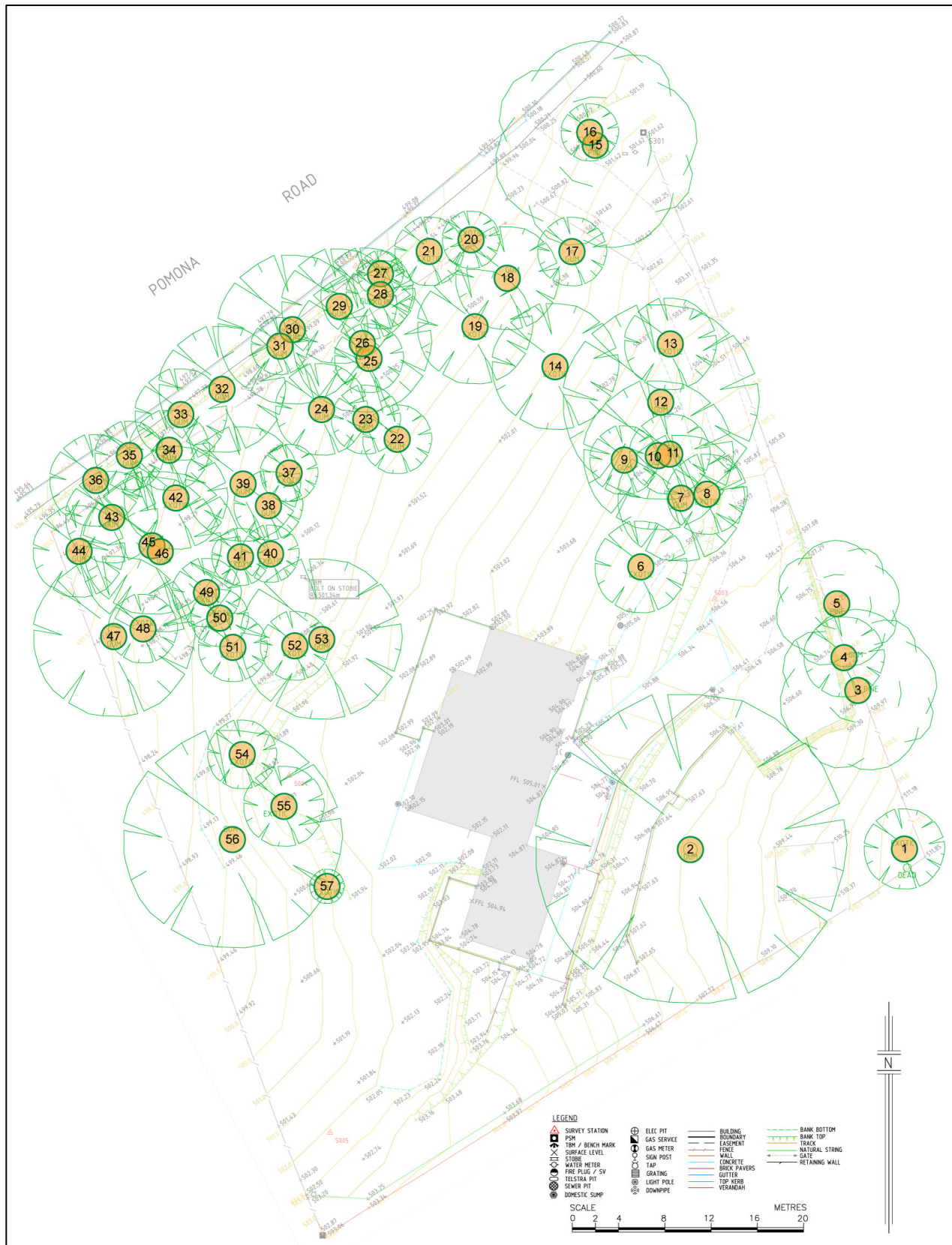


## **2.2     Scope of this tree assessment and report**

The purpose of the tree assessment is to provide quantitative and qualitative information on surveyed trees plotted on the subject site.

For the 53 trees assessed, the following data were recorded:

- Tree identification (label) number
- Scientific name (species, subspecies, variety, cultivar)
- Common name
- Trunk circumference(s) at one metre above ground level
- Status as defined by the *Development Act 1993*
- Status as defined by the *Native Vegetation Act 1991*
- Age (estimated; in years)
- Origin (remnant, planted, self-seeded weed, etc.)
- Current health status
- Projected further life expectancy
- Tree structure
- Biodiversity value
- Landscape value
- Retention value
- Tree Protection Zone (TPZ) and associated data used to calculate the TPZ
- High Use Setback (HUS)
- Impact of proposed development on the tree



**Figure 1. Site Plan.** Extract from survey plan of the subject site (Michael Grear Surveys), indicating the location and labelling of the 57 trees included in my February 2018 arboricultural assessment. Trees 2, 6, 12 and 13 are no longer present on the site.

### 3.0 TREE SPECIES

The 53 trees represent 14 different species (see Table 1), indicating a moderate level of tree diversity on the site. The two most numerous species assessed are briefly described below.

1) *Eucalyptus obliqua* (messmate stringybark) - 27 trees.

A locally indigenous species, widespread on more fertile soils in the cooler, higher rainfall parts of south-eastern Australia, from near the Queensland-New South Wales border southwards to Tasmania and westwards to the Mount Lofty Ranges and Kangaroo Island in South Australia. The species is indigenous to the Stirling area, where it grows as a single-trunked forest tree in sclerophyll forest. The species is relatively drought sensitive and is susceptible to waterlogged soils. The species is also susceptible to the *Phytophthora* root rot fungus.

All 27 trees of *E. obliqua* included in this assessment represent remnant or semi-remnant trees.

*Key references:*

Nicolle (2013) *Native Eucalypts of South Australia*, pp. 214–215.

Boland *et al.* (2006) *Forest Trees of Australia 5<sup>th</sup> edition*, pp. 560–561.

2) *Acacia melanoxylon* (blackwood) - 9 trees.

A locally indigenous species, widespread on more fertile soils in the cooler, higher rainfall parts of south-eastern Australia, from the Atherton Tableland in north Queensland southwards to Tasmania and westwards to the Mount Lofty Ranges in South Australia. The species is indigenous to the Stirling area, where it grows as a secondary-storey species in sclerophyll forest. The species is long-lived for an *Acacia* species.

All 9 trees of *A. melanoxylon* included in this assessment likely represent remnant or semi-remnant trees.

*Key references:*

Cowan & Maslin (2001) *Acacia melanoxylon*, *Flora of Australia*, 11B, pp. 141–142.

Boland *et al.* (2006) *Forest Trees of Australia 5<sup>th</sup> edition*, pp. 168–169.

The remaining 12 species were each represented by three or fewer trees each.

#### **4.0 DEVELOPMENT ACT 1993**

In accordance with the *Development (Regulated Trees) Variation Regulations 2011* under the *Development Act 1993*:

- Only one of the trees is significant, having a trunk circumference or a combined trunk circumference of *greater than three metres* at one metre above ground level and not being exempt by virtue of their species or by the bushfire rating of the locality and the distance to a residential dwelling.
- A further 5 of the trees are regulated, having a trunk circumference or combined trunk circumference of *between two and three metres* at one metre above ground level and not being exempt by virtue of their species or by the bushfire rating of the locality and the distance to a residential dwelling.
- The remaining 47 trees on the site are non-regulated, having a trunk circumference or combined trunk circumference of *less than two metres* at one metre above ground level, or being exempt by virtue of their species or by the bushfire rating of the locality and the distance to a residential dwelling.

The legal status of the trees according to the *Development (Regulated Trees) Variation Regulations 2011* under the *Development Act 1993* is indicated in Table 1 and is graphically indicated in Figure 2. Trees defined as significant or regulated by the *Act* cannot be removed, damaged or pruned by more than 30% of the crown area without local government (Council) development approval.

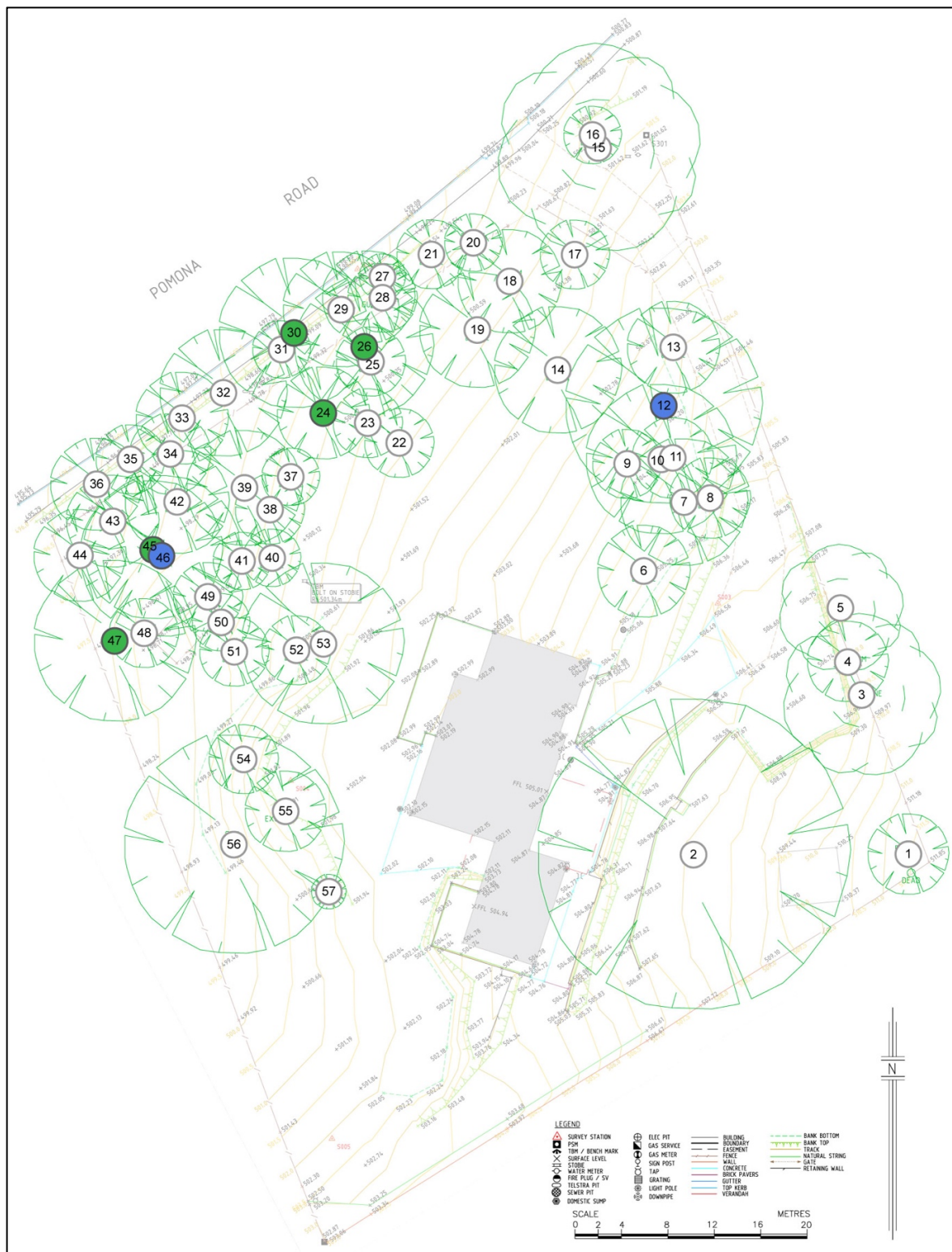
The legal status of the tree (significant, regulated or non-regulated) does not necessarily equate to the crown size, aesthetic value or visibility of the tree in the landscape, but is merely based on the trunk circumference, species and bushfire classification of the locality, as inferred from the *Development (Regulated Trees) Variation Regulations 2011* under the *Development Act 1993*.

**Table 1. Species and Development Act 1993.** The 53 trees, indicating the tree number, scientific name, common name, Trunk circumference at one metre above ground level, and legal status (as defined by the Development Act 1993) of each tree as of February 2018.

Tree	Scientific name	Common name	Trunk circ. at one metre	Legal status (Development Act 1993)
1	<i>Acacia melanoxylon</i>	blackwood	0.90 m	Not controlled
3	<i>Cupressus macrocarpa</i>	Monterey cypress	Approx. 1.2 m	Not controlled
4	<i>Eucalyptus obliqua</i>	messmate stringybark	Approx. 1.0 m	Not controlled
5	<i>Pinus radiata</i>	Monterey pine	Approx. 1.7 m	Not controlled
7	<i>Eucalyptus obliqua</i>	messmate stringybark	1.60 m	Not controlled
8	<i>Acacia elata</i>	cedar wattle	0.98 m	Not controlled
9	<i>Eucalyptus obliqua</i>	messmate stringybark	1.16 m	Not controlled
10	<i>Eucalyptus obliqua</i>	messmate stringybark	1.93 m	Not controlled
11	<i>Eucalyptus obliqua</i>	messmate stringybark	1.10 m	Not controlled
14	<i>Acacia floribunda</i>	gossamer wattle	1.74 m	Not controlled
15	<i>Pinus radiata</i>	Monterey pine	3.50 m*	*Not controlled due to the species being listed as exempt
16	<i>Exocarpos cupressiformis</i>	native cherry	0.40 m	Not controlled
17	<i>Eucalyptus obliqua</i>	messmate stringybark	0.83 m	Not controlled
18	<i>Eucalyptus obliqua</i>	messmate stringybark	1.42 m	Not controlled
19	<i>Acacia floribunda</i>	gossamer wattle	1.21 m	Not controlled
20	<i>Acacia howittii</i>	sticky wattle	0.89 m	Not controlled
21	<i>Pittosporum undulatum</i>	sweet pittosporum	0.38 m	Not controlled
22	<i>Eucalyptus kitsoniana</i>	Gippsland mallee	0.81 m	Not controlled
23	<i>Eucalyptus obliqua</i>	messmate stringybark	0.86 m	Not controlled
24	<i>Eucalyptus obliqua</i>	messmate stringybark	2.17 m	<b>Regulated</b>
25	<i>Acacia baileyana</i>	Cootamundra wattle	0.83 m	Not controlled
26	<i>Eucalyptus obliqua</i>	messmate stringybark	2.25 m	<b>Regulated</b>
27	<i>Exocarpos cupressiformis</i>	native cherry	0.55 m	Not controlled
28	<i>Acacia fimbriata</i>	fringed wattle	0.55 m	Not controlled
29	<i>Eucalyptus obliqua</i>	messmate stringybark	0.94 m	Not controlled
30	<i>Eucalyptus obliqua</i>	messmate stringybark	1.40 + 1.10 = 2.50 m	<b>Regulated</b>
31	<i>Eucalyptus obliqua</i>	messmate stringybark	0.73 m	Not controlled
32	<i>Eucalyptus obliqua</i>	messmate stringybark	1.65 m	Not controlled
33	<i>Eucalyptus obliqua</i>	messmate stringybark	1.01 m	Not controlled
34	<i>Eucalyptus obliqua</i>	messmate stringybark	1.60 m	Not controlled
35	<i>Eucalyptus obliqua</i>	messmate stringybark	1.45 m	Not controlled
36	<i>Eucalyptus obliqua</i>	messmate stringybark	1.80 m	Not controlled
37	<i>Acacia melanoxylon</i>	blackwood	0.60 + 0.49 = 1.09 m	Not controlled
38	<i>Eucalyptus obliqua</i>	messmate stringybark	1.71 m	Not controlled
39	<i>Eucalyptus obliqua</i>	messmate stringybark	1.33 m	Not controlled
40	<i>Acacia melanoxylon</i>	blackwood	0.84 m	Not controlled
41	<i>Acacia melanoxylon</i>	blackwood	0.71 m	Not controlled
42	<i>Pittosporum undulatum</i>	sweet pittosporum	0.64 + 0.56 = 1.20 m	Not controlled
43	<i>Eucalyptus obliqua</i>	messmate stringybark	1.70 m	Not controlled
44	<i>Eucalyptus obliqua</i>	messmate stringybark	1.23 m	Not controlled
45	<i>Eucalyptus obliqua</i>	messmate stringybark	2.15 m	<b>Regulated</b>
46	<i>Eucalyptus obliqua</i>	messmate stringybark	2.02 + 1.35 = 3.37 m	<b>Significant</b>
47	<i>Eucalyptus obliqua</i>	messmate stringybark	2.77 m	<b>Regulated</b>



Tree	Scientific name	Common name	Trunk circ. at one metre	Legal status ( <i>Development Act 1993</i> )
48	<i>Acacia melanoxylon</i>	blackwood	0.91 m	Not controlled
49	<i>Acacia melanoxylon</i>	blackwood	0.87 m	Not controlled
50	<i>Acacia melanoxylon</i>	blackwood	0.65 m	Not controlled
51	<i>Acacia melanoxylon</i>	blackwood	0.87 m	Not controlled
52	<i>Acacia melanoxylon</i>	blackwood	1.17 m	Not controlled
53	<i>Eucalyptus obliqua</i>	messmate stringybark	3.55 m*	*Not controlled due to the Medium Bushfire Risk of the locality and the distance between the tree and a dwelling being <20 metres
54	<i>Exocarpos cupressiformis</i>	native cherry	0.79 m	Not controlled
55	<i>Acacia dealbata</i>	silver wattle	1.18 m	Not controlled
56	<i>Eucalyptus obliqua</i>	messmate stringybark	Approx. 3.40 m*	*Not controlled due to the Medium Bushfire Risk of the locality and the distance between the tree and a dwelling being <20 metres
57	<i>Cordyline australis</i>	cabbage tree	Multi-stemmed	Not controlled



**Figure 2. Significant & regulated trees.** The 57 assessed trees included in my February 2018 arboricultural assessment, indicating their legal status as defined by the Development Act 1993 (also see Table 1). Trees 2, 6, 12 and 13 are no longer present on the site.

**Blue** = **Significant** as defined by the Development Act 1993.

**Green** = **Regulated** as defined by the Development Act 1993.

**Clear** = **Non-controlled** as defined by the Development Act 1993.

## 5.0 NATIVE VEGETATION ACT 1991

In accordance with the *Native Vegetation Regulations 2017* under the *Native Vegetation Act 1991*:

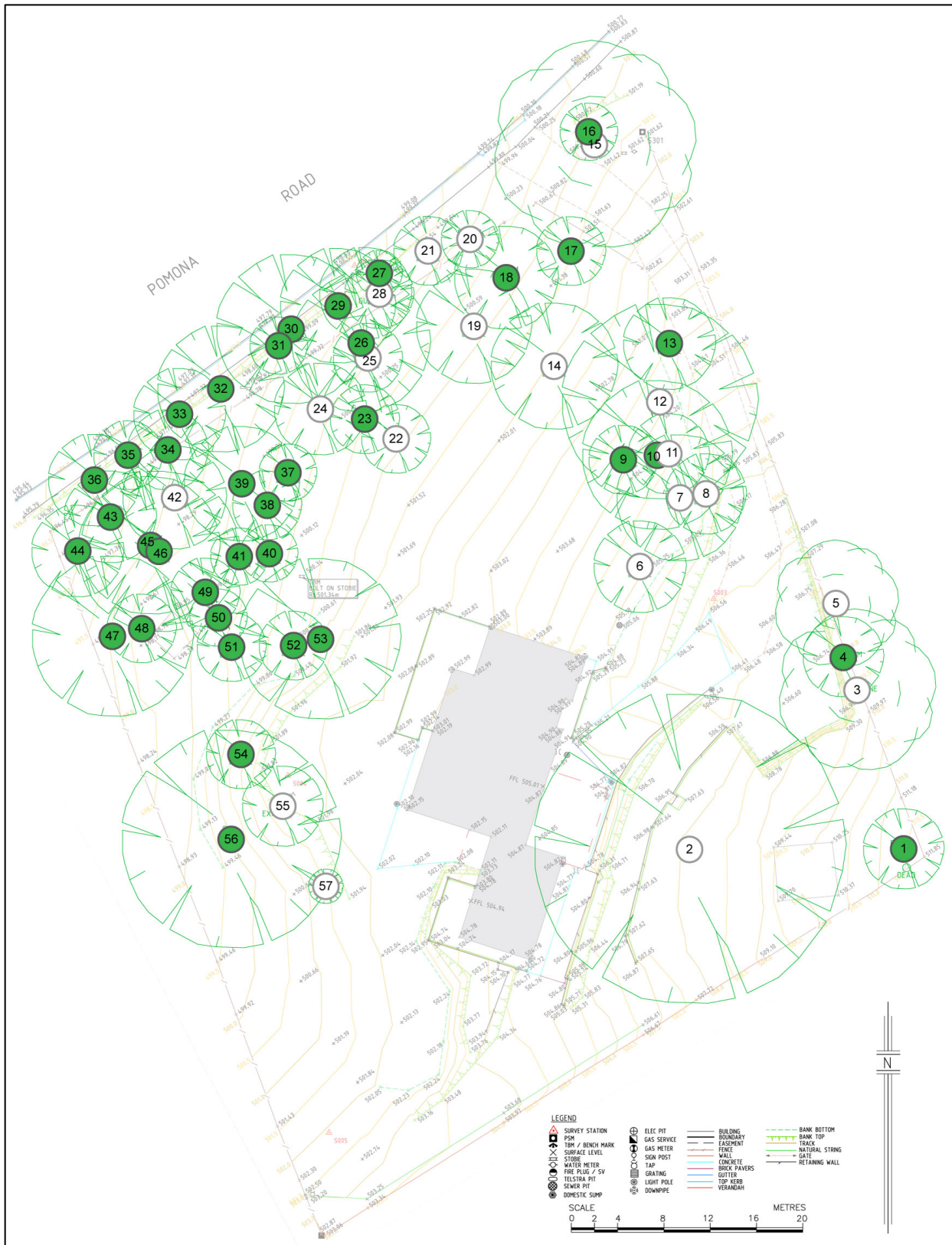
- A total of 36 of the trees are protected under the *Native Vegetation Act 1991*, being remnant or semi-remnant trees of species indigenous to the site, and not being exempt by virtue of their dead status and trunk circumference, or their distance to a building.
- The remaining 17 trees on the site are not protected under the *Native Vegetation Act 1991*, being planted or self-seeded trees of species that are not indigenous to the site, or being exempt by virtue of their dead status and trunk circumference, or their distance to a building.

The protected status of the trees according to the *Native Vegetation Regulations 2017* under the *Native Vegetation Act 1991* is indicated in Table 2 and is graphically indicated in Figure 3. The removal of trees protected under the *Act* may require Council notification or approval.

**Table 2. Origin, age Native Vegetation Act 1991.** The 53 trees, indicating the tree number, scientific name, natural distribution of the species, tree origin, estimated tree age (as of 2018), and legal protection of the tree under the *Native Vegetation Act 1991* as of February 2018.

Tree	Scientific name	Natural distribution of species	Origin	Age (years)	Protected under <i>Native Vegetation Act (1991)</i>
1	<i>Acacia melanoxylon</i>	Locally indigenous	Remnant / semi-remnant	30 - 60	Yes
3	<i>Cupressus macrocarpa</i>	North America	Planted / self-seeded weed	15 - 25	No
4	<i>Eucalyptus obliqua</i>	Locally indigenous	Semi-remnant	25 - 50	Yes
5	<i>Pinus radiata</i>	North America	Planted / self-seeded weed	25 - 45	No
7	<i>Eucalyptus obliqua</i>	Locally indigenous	Semi-remnant	25 - 50	No (dead, trunk circ. <2 m)
8	<i>Acacia elata</i>	Eastern Australia	Planted	25 - 50	No
9	<i>Eucalyptus obliqua</i>	Locally indigenous	Semi-remnant	25 - 50	Yes
10	<i>Eucalyptus obliqua</i>	Locally indigenous	Remnant / semi-remnant	30 - 60	Yes
11	<i>Eucalyptus obliqua</i>	Locally indigenous	Semi-remnant	25 - 50	No (dead, trunk circ. <2 m)
14	<i>Acacia floribunda</i>	Qld, NSW & Vic, Australia	Planted	25 - 50	No
15	<i>Pinus radiata</i>	North America	Planted / self-seeded weed	30 - 60	No
16	<i>Exocarpos cupressiformis</i>	Locally indigenous	Remnant / semi-remnant	30 - 60	Yes
17	<i>Eucalyptus obliqua</i>	Locally indigenous	Semi-remnant	20 - 40	Yes
18	<i>Eucalyptus obliqua</i>	Locally indigenous	Semi-remnant	25 - 50	Yes
19	<i>Acacia floribunda</i>	Qld, NSW & Vic, Australia	Planted	25 - 50	No
20	<i>Acacia howittii</i>	Vic, Australia	Planted	20 - 40	No
21	<i>Pittosporum undulatum</i>	Qld, NSW & Vic, Australia	Planted / self-seeded weed	12 - 25	No

Tree	Scientific name	Natural distribution of species	Origin	Age (years)	Protected under <i>Native Vegetation Act (1991)</i>
22	<i>Eucalyptus kitsoniana</i>	Vic, Australia	Planted	20 - 40	No
23	<i>Eucalyptus obliqua</i>	<b>Locally indigenous</b>	Semi-remnant	20 - 40	<b>Yes</b>
24	<i>Eucalyptus obliqua</i>	<b>Locally indigenous</b>	Remnant / semi-remnant	30 - 60	No (moderate to high risk to safety)
25	<i>Acacia baileyana</i>	NSW, Australia	Planted	20 - 40	No
26	<i>Eucalyptus obliqua</i>	<b>Locally indigenous</b>	Semi-remnant	30 - 60	<b>Yes</b>
27	<i>Exocarpos cupressiformis</i>	<b>Locally indigenous</b>	Semi-remnant	25 - 50	<b>Yes</b>
28	<i>Acacia fimbriata</i>	Qld & NSW, Australia	Planted	25 - 50	No
29	<i>Eucalyptus obliqua</i>	<b>Locally indigenous</b>	Semi-remnant	25 - 50	<b>Yes</b>
30	<i>Eucalyptus obliqua</i>	<b>Locally indigenous</b>	Semi-remnant	25 - 50	<b>Yes</b>
31	<i>Eucalyptus obliqua</i>	<b>Locally indigenous</b>	Semi-remnant	25 - 50	<b>Yes</b>
32	<i>Eucalyptus obliqua</i>	<b>Locally indigenous</b>	Semi-remnant	25 - 50	<b>Yes</b>
33	<i>Eucalyptus obliqua</i>	<b>Locally indigenous</b>	Semi-remnant	25 - 50	<b>Yes</b>
34	<i>Eucalyptus obliqua</i>	<b>Locally indigenous</b>	Semi-remnant	25 - 50	<b>Yes</b>
35	<i>Eucalyptus obliqua</i>	<b>Locally indigenous</b>	Semi-remnant	25 - 50	<b>Yes</b>
36	<i>Eucalyptus obliqua</i>	<b>Locally indigenous</b>	Semi-remnant	25 - 50	<b>Yes</b>
37	<i>Acacia melanoxylon</i>	<b>Locally indigenous</b>	Semi-remnant	25 - 50	<b>Yes</b>
38	<i>Eucalyptus obliqua</i>	<b>Locally indigenous</b>	Remnant / semi-remnant	35 - 70	<b>Yes</b>
39	<i>Eucalyptus obliqua</i>	<b>Locally indigenous</b>	Semi-remnant	25 - 50	<b>Yes</b>
40	<i>Acacia melanoxylon</i>	<b>Locally indigenous</b>	Semi-remnant	25 - 50	<b>Yes</b>
41	<i>Acacia melanoxylon</i>	<b>Locally indigenous</b>	Semi-remnant	25 - 50	<b>Yes</b>
42	<i>Pittosporum undulatum</i>	Qld, NSW & Vic, Australia	Planted / self-seeded weed	25 - 50	No
43	<i>Eucalyptus obliqua</i>	<b>Locally indigenous</b>	Semi-remnant	30 - 60	<b>Yes</b>
44	<i>Eucalyptus obliqua</i>	<b>Locally indigenous</b>	Semi-remnant	30 - 60	<b>Yes</b>
45	<i>Eucalyptus obliqua</i>	<b>Locally indigenous</b>	Semi-remnant	30 - 60	<b>Yes</b>
46	<i>Eucalyptus obliqua</i>	<b>Locally indigenous</b>	Semi-remnant	30 - 60	<b>Yes</b>
47	<i>Eucalyptus obliqua</i>	<b>Locally indigenous</b>	Remnant / semi-remnant	35 - 70	<b>Yes</b>
48	<i>Acacia melanoxylon</i>	<b>Locally indigenous</b>	Semi-remnant	25 - 50	<b>Yes</b>
49	<i>Acacia melanoxylon</i>	<b>Locally indigenous</b>	Semi-remnant	25 - 50	<b>Yes</b>
50	<i>Acacia melanoxylon</i>	<b>Locally indigenous</b>	Semi-remnant	25 - 50	<b>Yes</b>
51	<i>Acacia melanoxylon</i>	<b>Locally indigenous</b>	Semi-remnant	25 - 50	<b>Yes</b>
52	<i>Acacia melanoxylon</i>	<b>Locally indigenous</b>	Remnant / semi-remnant	30 - 60	<b>Yes</b>
53	<i>Eucalyptus obliqua</i>	<b>Locally indigenous</b>	Remnant / semi-remnant	35 - 70	<b>Yes</b>
54	<i>Exocarpos cupressiformis</i>	<b>Locally indigenous</b>	Semi-remnant	25 - 50	<b>Yes</b>
55	<i>Acacia dealbata</i>	NSW, Vic & Tas, Australia	Planted / self-seeded weed	18 - 35	No
56	<i>Eucalyptus obliqua</i>	<b>Locally indigenous</b>	Remnant / semi-remnant	35 - 70	<b>Yes</b>
57	<i>Cordyline australis</i>	New Zealand	Planted	20 - 40	No



**Figure 3. Protected native vegetation.** The 57 assessed trees included in my February 2018 arboricultural assessment, indicating their status as defined by the Native Vegetation Act 1991. Trees 2, 6, 12 and 13 are no longer present on the site.

**Green** = Protected under the Native Vegetation Act 1991.

**Clear** = Not protected under the Native Vegetation Act 1991.



## 6.0 TREE ORIGIN and AGE

The origin and estimated age (in years) of each of the 53 trees is indicated in Table 2 and is graphically indicated in Figure 3. The natural distribution for the species of each tree is also provided in Table 2. The following categories of tree origin were assigned to each tree:

### Remnant – No trees

Defined as trees that *certainly* pre-date European settlement and development of the site.

### Remnant/semi-remnant – 9 trees

Trees which are locally indigenous and *may* pre-date European settlement and development of the locality.

The 10 trees represent the species *Acacia melanoxylon* (blackwood), *Exocarpos cupressiformis* (native cherry) and *Eucalyptus obliqua* (messmate stringybark). They range in age from 30 to 70 years old.

### Semi-remnant – 30 trees

Defined as trees that are naturally seeded but probably post-date European settlement and development of the site.

The 31 trees represent the species *Acacia melanoxylon* (blackwood), *Exocarpos cupressiformis* (native cherry) and *Eucalyptus obliqua* (messmate stringybark). They range in age from 20 to 60 years old.

### Planted – 8 trees

Purposefully planted trees.

Planted trees included in this report range in estimated age from 20 to 50 years old.

### Planted / Self-seeded weed – 6 trees

Trees that are exotic to the locality and have either been planted or have self-established in a weedy manner.

### Self-seeded weed – No trees

Trees that are exotic to the locality and have certainly self-established in a weedy manner.

## 7.0 TREE HEALTH

All assessed trees were given an overall current health rating, relating to the health status, health trend, and vigour of the tree (see Table 3).

Excellent: No trees.

Above average: 14 trees.

Average: 22 trees.

Below average: 6 trees.

Poor: 8 trees.

Dead: 3 trees.

The current health status of the tree does not necessarily directly relate to the life expectancy of the tree, especially where tree health is related to seasonal factors or recent climatic conditions.

## 8.0 FURTHER USEFUL LIFE EXPECTANCY

The further Useful Life Expectancy is based on the characteristics and growing requirements of different species and the current health and health trend of each individual. Life expectancy figures are of projected years of useful life from now onwards, not of total tree life-span.

Eight of the trees have a further life expectancy of a minimum of 20 years (20+ years).

23 of the trees have a further life expectancy of less than 20 years.

The remaining 22 trees have a further life expectancy of potentially more than 20 years but possibly much less, depending on future environmental conditions.

## 9.0 BIODIVERSITY VALUE

The 53 trees were each assigned an overall biodiversity value (see Table 3), relating to the direct biodiversity value of the tree itself (its species, rarity in the region, etc.) and relating to indirect biodiversity value of the tree (habitat value, presence of habitable faunal hollows, etc.). The following values were assigned to each tree:

### Very high – No trees

Reproductively mature, remnant trees of species indigenous to the site and with habitable faunal hollows have been assigned a high biodiversity value.

### High – 36 trees

Reproductively mature trees of species indigenous to the site have been assigned a high biodiversity value.

These 36 trees represent mature individuals of *Acacia melanoxylon* (blackwood), *Exocarpos cupressiformis* (native cherry) and *Eucalyptus obliqua* (messmate stringybark) that lack avian-habitable hollows.

### Moderate – 11 trees

Locally exotic Australian native species have been assigned a moderate biodiversity value. Reproductively immature trees of species indigenous to the site have also been assigned a moderate biodiversity value.

### Low – 1 tree (*Tree 57*)

Non-Australian native species with some value as feed trees to native fauna have been assigned a low biodiversity value.

### Negligible – No trees

Most conifers and winter-deciduous trees originating from the northern hemisphere have been assigned a negligible biodiversity value.

### Invasive – 5 trees

Trees have been designated invasive if the species is known to be weedy in natural environment in the local area.

These 5 trees represent individuals of the species *Cupressus macrocarpa* (Monterey cypress), *Pinus radiata* (Monterey pine) and *Pittosporum undulatum* (sweet pittosporum).

## 10.0 LANDSCAPE VALUE

The 53 audited trees were each assigned an overall landscape value (see Table 3), relating to the conspicuousness of the tree in the landscape and the more subjective aesthetic appeal of the tree. The following landscape values were assigned to each tree:

Very high: 1 trees (*Tree 15*).

High: 7 trees.

Moderate to high: 6 trees.

Moderate: 13 trees.

Low to moderate: 12 trees.

Low: 14 trees

**Table 3. Health, life expectancy, biodiversity and landscape values.** The 53 trees assessed, indicating the tree number, scientific name, origin, age, current health, projected further Useful Life Expectancy, biodiversity value and landscape value of each tree, as of February 2018.

Tree	Scientific name	Health	Useful Life Expectancy (years)	Biodiversity value	Landscape value
1	<i>Acacia melanoxylon</i>	Average	10 - 20+	High	Low to moderate
3	<i>Cupressus macrocarpa</i>	Above average	20+	Invasive	Moderate
4	<i>Eucalyptus obliqua</i>	Poor	< 5	High	Moderate
5	<i>Pinus radiata</i>	Above average	< 20	Invasive	High
7	<i>Eucalyptus obliqua</i>	Dead	0	Moderate	Low
8	<i>Acacia elata</i>	Average	10 - 20	Moderate	Low to moderate
9	<i>Eucalyptus obliqua</i>	Poor	<5 - 10	High	Moderate
10	<i>Eucalyptus obliqua</i>	Poor	<5 - 10	High	High
11	<i>Eucalyptus obliqua</i>	Dead	0	Moderate	Low
14	<i>Acacia floribunda</i>	Average	<10 - 20	Moderate	Moderate
15	<i>Pinus radiata</i>	Above average	<20	Invasive	Very high
16	<i>Exocarpos cupressiformis</i>	Above average	10 - 20+	High	Low
17	<i>Eucalyptus obliqua</i>	Average	10 - 20+	High	Moderate
18	<i>Eucalyptus obliqua</i>	Average	10 - 20+	High	Moderate to high
19	<i>Acacia floribunda</i>	Average	<10 - 20	Moderate	Moderate
20	<i>Acacia howittii</i>	Poor	<2	Moderate	Low
21	<i>Pittosporum undulatum</i>	Above average	10 - 20+	Invasive	Low
22	<i>Eucalyptus kitsoniana</i>	Below average	<5	Moderate	Low to moderate
23	<i>Eucalyptus obliqua</i>	Average	10 - 20+	High	Low to moderate
24	<i>Eucalyptus obliqua</i>	Dead	0	Moderate	Moderate
25	<i>Acacia baileyana</i>	Below average	<5	Moderate	Low to moderate
26	<i>Eucalyptus obliqua</i>	Average	10 - 20+	High	Moderate to high



Tree	Scientific name	Health	Useful Life Expectancy (years)	Biodiversity value	Landscape value
27	<i>Exocarpos cupressiformis</i>	Average	20+	High	Low
28	<i>Acacia fimbriata</i>	Poor	0	Moderate	Low
29	<i>Eucalyptus obliqua</i>	Below average	<10 - 20	High	Low to moderate
30	<i>Eucalyptus obliqua</i>	Average	10 - 20+	High	Moderate to high
31	<i>Eucalyptus obliqua</i>	Below average	<5 - 10	High	Low
32	<i>Eucalyptus obliqua</i>	Below average	10 - 20+	High	Moderate to high
33	<i>Eucalyptus obliqua</i>	Above average	10 - 20+	High	Moderate
34	<i>Eucalyptus obliqua</i>	Average	10 - 20+	High	Moderate to high
35	<i>Eucalyptus obliqua</i>	Average	10 - 20+	High	Moderate
36	<i>Eucalyptus obliqua</i>	Above average	10 - 20+	High	High
37	<i>Acacia melanoxylon</i>	Average	10 - 20+	High	Low to moderate
38	<i>Eucalyptus obliqua</i>	Below average	<10 - 20	High	Moderate to high
39	<i>Eucalyptus obliqua</i>	Average	10 - 20+	High	Moderate
40	<i>Acacia melanoxylon</i>	Above average	20+	High	Low to moderate
41	<i>Acacia melanoxylon</i>	Average	20+	High	Low
42	<i>Pittosporum undulatum</i>	Average	0	Invasive	Low
43	<i>Eucalyptus obliqua</i>	Poor	<2 - 5	High	Moderate to high
44	<i>Eucalyptus obliqua</i>	Poor	<10 - 20	High	Low to moderate
45	<i>Eucalyptus obliqua</i>	Average	10 - 20+	High	High
46	<i>Eucalyptus obliqua</i>	Poor	<5 - 10	High	Moderate to high
47	<i>Eucalyptus obliqua</i>	Average	10 - 20+	High	High
48	<i>Acacia melanoxylon</i>	Above average	20+	High	Low to moderate
49	<i>Acacia melanoxylon</i>	Average	20+	High	Low
50	<i>Acacia melanoxylon</i>	Average	10 - 20+	High	Low
51	<i>Acacia melanoxylon</i>	Average	10 - 20+	High	Low
52	<i>Acacia melanoxylon</i>	Above average	20+	High	Low to moderate
53	<i>Eucalyptus obliqua</i>	Average	10 - 20+	High	High
54	<i>Exocarpos cupressiformis</i>	Above average	20+	High	Low to moderate
55	<i>Acacia dealbata</i>	Above average	<5 - 10	Moderate	Moderate
56	<i>Eucalyptus obliqua</i>	Above average	10 - 20+	High	High
57	<i>Cordyline australis</i>	Above average	10 - 20+	Low	Low

## 11.0 TREE STRUCTURE

A rating of the overall structure of each tree is provided in Table 4. Tree structure considers the trunk lean and crown weighting, significant structural defects, atypical basal and trunk characteristics, undesirable or atypical crown characteristics, and dead material present in the crown of the trees, among other attributes. The breakdown of tree structure categories follows:

<u>Excellent:</u>	No trees
<u>Above average</u>	9 trees
<u>Average</u>	23 trees
<u>Below average</u>	13 trees
<u>Poor</u>	6 trees
<u>Very poor</u>	2 trees

The general tree structure does not always directly relate to the risk that the tree represents to personal safety. This is partly because the risk that the tree represents is correlated to the under-crown utilisation of the site as well as the structure of the tree.

Some of the structural defects and undesirable crown characteristics can be mitigated or managed through appropriate maintenance pruning and/or selective crown pruning.

## 12.0 RISK to PERSONAL SAFETY

The 53 trees were assessed for their current risk to personal safety. The risk associated with each tree is determined by assessing the *likelihood* of structural failure of the tree and parts of the tree, and determining the *consequence* in the case of structural failure of the tree or part of the tree.

The risk to personal safety and to damage property associated with each tree is partly related to tree structure, although some trees of poor structure may have a relatively low risk (especially in small trees or where the under-crown utilisation of the site is low), and some trees of sound structure may have a relatively higher risk (especially in very large trees, where the under-crown utilisation is high, and in species subject to sudden branch failure events). One of the following risk categories was assigned to each tree (see Table 4):

<u>Very low:</u>	3 trees	Acceptable
<u>Low:</u>	21 trees	↓
<u>Low to moderate:</u>	23 trees	
<u>Moderate:</u>	4 trees	
<u>Moderate to high:</u>	2 trees	
<u>High:</u>	No trees	Unacceptable

Trees with an elevated risk to safety do not necessarily require removal. Risk reduction techniques, which may include selective crown pruning, branch cabling, personal exclusion zones and engineering solutions, may in some cases adequately reduce the risk of some trees to a lower and/or an acceptable level.

**Table 4. Structure and risk.** The 53 trees, indicating the tree number, abbreviated scientific name, tree structure, and current risk to personal safety, as of February 2018.

Tree	Scientific name	Tree structure	Current risk to personal safety
1	<i>Acacia melanoxylon</i>	Below average	Low
3	<i>Cupressus macrocarpa</i>	Above average	Low
4	<i>Eucalyptus obliqua</i>	Average	Low to moderate
5	<i>Pinus radiata</i>	Above average	Low to moderate
7	<i>Eucalyptus obliqua</i>	Poor	Moderate to high
8	<i>Acacia elata</i>	Below average	Low to moderate
9	<i>Eucalyptus obliqua</i>	Below average	Low to moderate
10	<i>Eucalyptus obliqua</i>	Below average	Low to moderate
11	<i>Eucalyptus obliqua</i>	Poor	Moderate
14	<i>Acacia floribunda</i>	Below average	Low to moderate
15	<i>Pinus radiata</i>	Above average	Low to moderate
16	<i>Exocarpos cupressiformis</i>	Below average	Low
17	<i>Eucalyptus obliqua</i>	Below average	Low
18	<i>Eucalyptus obliqua</i>	Average	Low to moderate
19	<i>Acacia floribunda</i>	Average	Low
20	<i>Acacia howittii</i>	Poor	Low to moderate
21	<i>Pittosporum undulatum</i>	Above average	Very low
22	<i>Eucalyptus kitsoniana</i>	Poor	Low
23	<i>Eucalyptus obliqua</i>	Average	Low
24	<i>Eucalyptus obliqua</i>	Poor	Moderate to high
25	<i>Acacia baileyana</i>	Below average	Low
26	<i>Eucalyptus obliqua</i>	Above average	Low to moderate
27	<i>Exocarpos cupressiformis</i>	Average	Very low
28	<i>Acacia fimbriata</i>	Very poor	Moderate
29	<i>Eucalyptus obliqua</i>	Below average	Low to moderate
30	<i>Eucalyptus obliqua</i>	Average	Low to moderate
31	<i>Eucalyptus obliqua</i>	Below average	Low
32	<i>Eucalyptus obliqua</i>	Average	Low to moderate
33	<i>Eucalyptus obliqua</i>	Average	Low to moderate
34	<i>Eucalyptus obliqua</i>	Average	Low to moderate
35	<i>Eucalyptus obliqua</i>	Average	Low
36	<i>Eucalyptus obliqua</i>	Average	Low to moderate
37	<i>Acacia melanoxylon</i>	Average	Low
38	<i>Eucalyptus obliqua</i>	Average	Low to moderate
39	<i>Eucalyptus obliqua</i>	Average	Low
40	<i>Acacia melanoxylon</i>	Above average	Low
41	<i>Acacia melanoxylon</i>	Average	Low
42	<i>Pittosporum undulatum</i>	Very poor	Low to moderate
43	<i>Eucalyptus obliqua</i>	Below average	Low to moderate
44	<i>Eucalyptus obliqua</i>	Poor	Moderate
45	<i>Eucalyptus obliqua</i>	Average	Low to moderate
46	<i>Eucalyptus obliqua</i>	Average	Moderate
47	<i>Eucalyptus obliqua</i>	Average	Low to moderate
48	<i>Acacia melanoxylon</i>	Above average	Low
49	<i>Acacia melanoxylon</i>	Average	Low



Tree	Scientific name	Tree structure	Current risk to personal safety
50	<i>Acacia melanoxylon</i>	Below average	Low
51	<i>Acacia melanoxylon</i>	Below average	Low
52	<i>Acacia melanoxylon</i>	Above average	Low
53	<i>Eucalyptus obliqua</i>	Average	Low to moderate
54	<i>Exocarpos cupressiformis</i>	Above average	Low

### 13.0 RETENTION VALUE

The retention value reflects the overall ‘value’ of the tree. The 53 trees were each included in one of five retention value categories based on the following data recorded for each tree:

- Legal status (*or* trunk circumference for trees exempted due to their species or proximity to a dwelling);
- Tree origin;
- Current health;
- Further life expectancy;
- Biodiversity value;
- Landscape value;
- Tree structure; and
- Risk to safety

Each tree was scored for each of these eight characteristics, as indicated in Table 5. The sum of scores for each tree provides a total score for each tree (see Table 6). The higher the total score, the more valuable the tree. Total score for each tree can vary from -110 (lowest point value for all eight characteristics) to 80 points (highest point value for all eight characteristics).

**Table 5. Scoring for retention value.** The characteristics and character states used to score each tree to determine its retention value.

Legal status	Significant Score: 10		Regulated Score: 5		Other Score: 0			
Origin	Remnant Score: 10	Remnant/semi Score: 8	Semi-remnant Score: 5	Semi- / planted Score: 3	Planted Score: 0	Planted / weed Score: -5	Weed Score: -10	
Health	Excellent Score: 10	Above average Score: 8	Average Score: 5	Below average Score: 3	Poor Score: 0		Very poor Score: -10	Dead Score: -20
Further life expectancy	30+ years Score: 10	20+ years Score: 8	10–20+ years Score: 5	10–20 years Score: 2	<10–20 yrs Score: 0	<5–10 yrs Score: -5	<5 years Score: -10	<2 yrs Score: -20
Biodiversity	Very high Score: 10	High Score: 8	Moderate Score: 5	Low Score: 2	Negligible Score: 0		Invasive Score: -10	
Landscape	Very high Score: 10	High Score: 8	Mod to high Score: 5	Moderate Score: 3	Low to mod Score: 0		Low Score: -10	
Structure	Excellent Score: 10		Above average Score: 5		Average Score: 0	Below average Score: -5	Poor Score: -10	Very poor Score: -20
Risk to safety	Very low Score: 10	Low Score: 7	Low to mod Score: 4		Moderate Score: 0	Mod to high Score: -5	High Score: -10	Very high Score: -20

### Priority 1A trees – Very highly worthy of retention

Total score of >60 points. Remnant or semi-remnant trees in sound health, with a long life expectancy, of superior structure, and with a significant biodiversity value and landscape value.

Priority 1A trees are relatively rare and should be retained by appropriate development design and construction.

*None of the trees are assessed as Priority 1A trees.*

### Priority 1 trees – Highly worthy of retention

Total score of 45 to 60 points. Trees in sound health and/or with a long life expectancy, of generally sound structure (or where defects can be practically mitigated or managed), and usually with a significant biodiversity value and/or landscape value.

Priority 1 trees should be retained by appropriate development design and construction.

*4 of the trees are assessed as Priority 1 trees.*

### Priority 2 trees – Moderately worthy of retention

Total score of 30 to 44 points. Trees in sound healthy and/or with an expected moderate to long-life expectancy, of reasonable structure (or where defects can be mostly mitigated or managed), and of moderate to high biodiversity value and/or landscape value.

Priority 2 trees should be retained wherever possible, by appropriate development design and construction.

*15 of the trees are assessed as Priority 2 trees, including 4 regulated trees as defined by the Development Act 1993.*

### Priority 3 trees – Scarcely worthy of retention

Total score of 10 to 29 points. Trees often of reduced health and/or having a short to moderate life expectancy, and/or may have some structural flaws, and are generally of lower biodiversity value and/or lower landscape value.

Priority 3 trees should not constrain site development but may be retained if the proposed design and construction allows.

*22 of the trees are assessed as Priority 3 trees, including 1 significant tree as defined by the Development Act 1993.*

## Priority 4 trees – Not worthy of retention

Total score of <10 points. Trees in poor health and/or having a short life expectancy, and/or have significant structural flaws that cannot be practically mitigated or managed, and/or are of no or little biodiversity value and/or landscape value.

Priority 4 trees should not constrain site development and should be removed in the case of site development, even if they do not constrain site development.

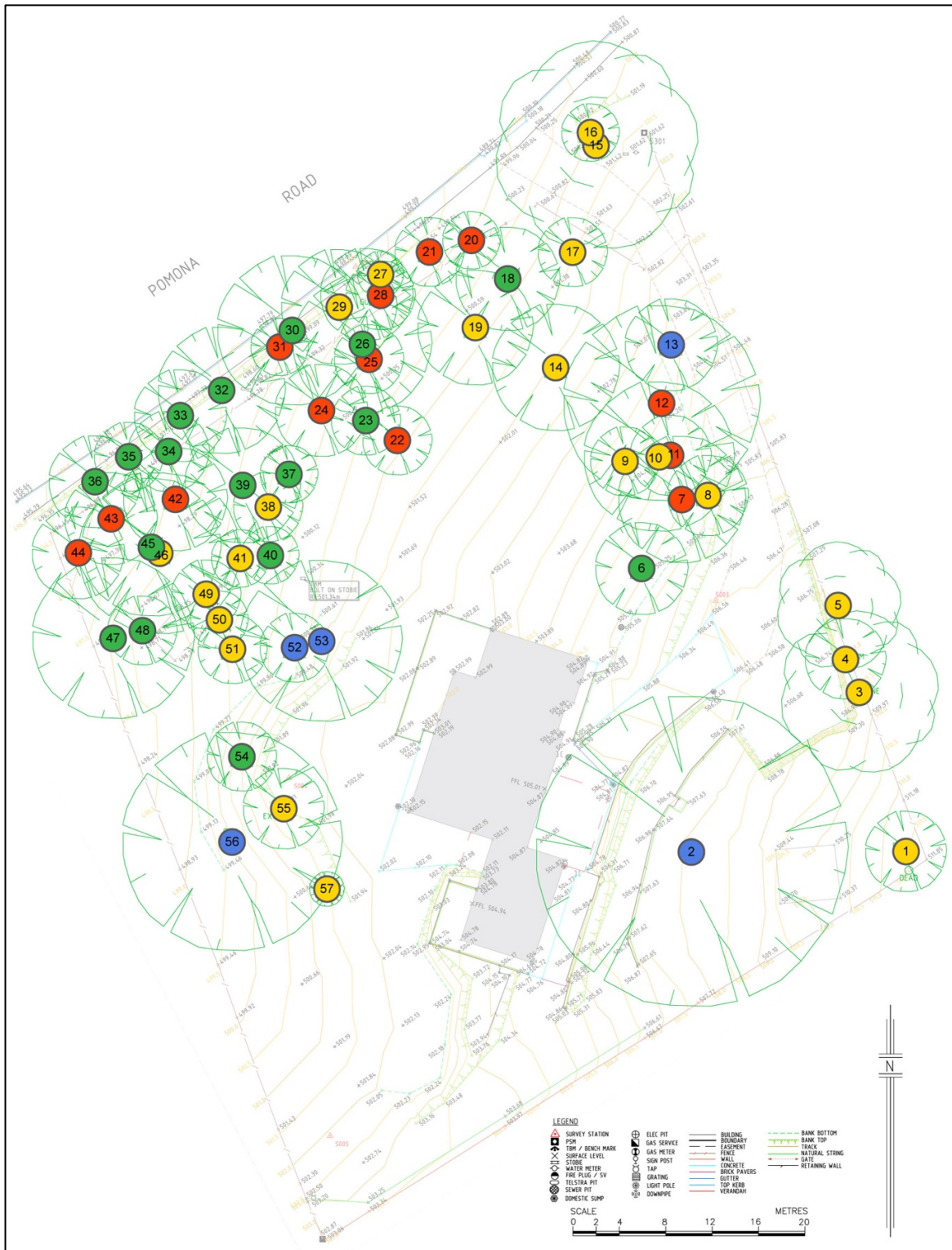
*12 of the trees are assessed as Priority 4 trees, including 1 significant tree and 1 regulated tree as defined by the Development Act 1993.*

**Table 6. Retention value.** The 53 trees, indicating the tree number, scientific name, scores for Legal status/trunk circumference, Origin, Health, Further Useful Life Expectancy, Structure, Risk to safety, Biodiversity Value and Landscape Value, Total score, and Retention Value (using total scores) for each tree, as of February 2018. Trees are colour-coded according to their retention value, and to match the tree mapping in Figure 4.

Tree	Scientific name	Scores for: Legal status/trunk circ., Origin, Health, Further Useful Life Expectancy, Structure, Risk to safety, Biodiversity value, Landscape value								Total score	Retention value (using the total score for each tree)
1	<i>Acacia melanoxylon</i>	0	8	5	5	-5	7	8	0	28	P3 - Scarcely worthy of retention
3	<i>Cupressus macrocarpa</i>	0	-5	8	8	5	7	-10	3	16	P3 - Scarcely worthy of retention
4	<i>Eucalyptus obliqua</i>	0	5	0	-10	0	4	8	3	10	P3 - Scarcely worthy of retention
5	<i>Pinus radiata</i>	0	-5	8	2	5	4	-10	8	12	P3 - Scarcely worthy of retention
7	<i>Eucalyptus obliqua</i>	0	5	-10	-20	-10	-5	5	-10	-45	P4 - Not worthy of retention
8	<i>Acacia elata</i>	0	0	5	2	-5	4	5	0	11	P3 - Scarcely worthy of retention
9	<i>Eucalyptus obliqua</i>	0	5	0	-5	-5	4	8	3	10	P3 - Scarcely worthy of retention
10	<i>Eucalyptus obliqua</i>	0	8	0	-5	-5	4	8	8	18	P3 - Scarcely worthy of retention
11	<i>Eucalyptus obliqua</i>	0	5	-10	-20	-10	0	5	-10	-40	P4 - Not worthy of retention
14	<i>Acacia floribunda</i>	0	0	5	0	-5	4	5	3	12	P3 - Scarcely worthy of retention
15	<i>Pinus radiata</i>	10	-5	8	2	5	4	-10	10	24	P3 - Scarcely worthy of retention
16	<i>Exocarpos cupressiformis</i>	0	8	8	5	-5	7	8	-10	21	P3 - Scarcely worthy of retention
17	<i>Eucalyptus obliqua</i>	0	5	5	5	-5	7	8	3	28	P3 - Scarcely worthy of retention
18	<i>Eucalyptus obliqua</i>	0	5	5	5	0	4	8	5	32	P2 - Moderately worthy of retention
19	<i>Acacia floribunda</i>	0	0	5	0	0	7	5	3	20	P3 - Scarcely worthy of retention
20	<i>Acacia howittii</i>	0	0	0	-20	-10	4	5	-10	-31	P4 - Not worthy of retention
21	<i>Pittosporum undulatum</i>	0	-5	8	5	5	10	-10	-10	3	P4 - Not worthy of retention
22	<i>Eucalyptus kitsoniana</i>	0	0	3	-10	-10	7	5	0	-5	P4 - Not worthy of retention
23	<i>Eucalyptus obliqua</i>	0	5	5	5	0	7	8	0	30	P2 - Moderately worthy of retention
24	<i>Eucalyptus obliqua</i>	5	8	-10	-20	-10	-5	5	3	-24	P4 - Not worthy of retention
25	<i>Acacia baileyana</i>	0	0	3	-10	-5	7	5	0	0	P4 - Not worthy of retention
26	<i>Eucalyptus obliqua</i>	5	5	5	5	5	4	8	5	42	P2 - Moderately worthy of retention
27	<i>Exocarpos cupressiformis</i>	0	5	5	8	0	10	8	-10	26	P3 - Scarcely worthy of retention
28	<i>Acacia fimbriata</i>	0	0	0	-20	-20	0	5	-10	-45	P4 - Not worthy of retention
29	<i>Eucalyptus obliqua</i>	0	5	3	0	-5	4	8	0	15	P3 - Scarcely worthy of retention
30	<i>Eucalyptus obliqua</i>	5	5	5	5	0	4	8	5	37	P2 - Moderately worthy of retention
31	<i>Eucalyptus obliqua</i>	0	5	3	-5	-5	7	8	-10	3	P4 - Not worthy of retention



Tree	Scientific name	Scores for: Legal status/trunk circ., Origin, Health, Further Useful Life Expectancy, Structure, Risk to safety, Biodiversity value, Landscape value								Total score	Retention value (using the total score for each tree)
32	<i>Eucalyptus obliqua</i>	0	5	3	5	0	4	8	5	30	P2 - Moderately worthy of retention
33	<i>Eucalyptus obliqua</i>	0	5	8	5	0	4	8	3	33	P2 - Moderately worthy of retention
34	<i>Eucalyptus obliqua</i>	0	5	5	5	0	4	8	5	32	P2 - Moderately worthy of retention
35	<i>Eucalyptus obliqua</i>	0	5	5	5	0	7	8	3	33	P2 - Moderately worthy of retention
36	<i>Eucalyptus obliqua</i>	0	5	8	5	0	4	8	8	38	P2 - Moderately worthy of retention
37	<i>Acacia melanoxylon</i>	0	5	5	5	0	7	8	0	30	P2 - Moderately worthy of retention
38	<i>Eucalyptus obliqua</i>	0	8	3	0	0	4	8	5	28	P3 - Scarcely worthy of retention
39	<i>Eucalyptus obliqua</i>	0	5	5	5	0	7	8	3	33	P2 - Moderately worthy of retention
40	<i>Acacia melanoxylon</i>	0	5	8	8	5	7	8	0	41	P2 - Moderately worthy of retention
41	<i>Acacia melanoxylon</i>	0	5	5	8	0	7	8	-10	23	P3 - Scarcely worthy of retention
42	<i>Pittosporum undulatum</i>	0	-5	5	-20	-20	4	-10	-10	-56	P4 - Not worthy of retention
43	<i>Eucalyptus obliqua</i>	0	5	0	-10	-5	4	8	5	7	P4 - Not worthy of retention
44	<i>Eucalyptus obliqua</i>	0	5	0	0	-10	0	8	0	3	P4 - Not worthy of retention
45	<i>Eucalyptus obliqua</i>	5	5	5	5	0	4	8	8	40	P2 - Moderately worthy of retention
46	<i>Eucalyptus obliqua</i>	10	5	0	-5	0	0	8	5	23	P3 - Scarcely worthy of retention
47	<i>Eucalyptus obliqua</i>	5	8	5	5	0	4	8	8	43	P2 - Moderately worthy of retention
48	<i>Acacia melanoxylon</i>	0	5	8	8	5	7	8	0	41	P2 - Moderately worthy of retention
49	<i>Acacia melanoxylon</i>	0	5	5	8	0	7	8	-10	23	P3 - Scarcely worthy of retention
50	<i>Acacia melanoxylon</i>	0	5	5	5	-5	7	8	-10	15	P3 - Scarcely worthy of retention
51	<i>Acacia melanoxylon</i>	0	5	5	5	-5	7	8	-10	15	P3 - Scarcely worthy of retention
52	<i>Acacia melanoxylon</i>	0	8	8	8	5	7	8	0	44	P1 - Highly worthy of retention
53	<i>Eucalyptus obliqua</i>	10	8	5	5	0	4	8	8	48	P1 - Highly worthy of retention
54	<i>Exocarpos cupressiformis</i>	0	5	8	8	5	7	8	0	41	P2 - Moderately worthy of retention
55	<i>Acacia dealbata</i>	0	-5	8	-5	0	7	5	3	13	P3 - Scarcely worthy of retention
56	<i>Eucalyptus obliqua</i>	10	8	8	5	0	4	8	8	51	P1 - Highly worthy of retention
57	<i>Cordyline australis</i>	0	0	8	5	0	10	2	-10	15	P3 - Scarcely worthy of retention



**Figure 4. Retention value.** The 57 assessed trees included in my February 2018 arboricultural assessment, colour-coded according to their retention value. Trees 2, 6, 12 and 13 are no longer present on the site.

- Purple** = Priority 1A trees – Very highly worthy of retention;
- Blue** = Priority 1 trees – Highly worthy of retention;
- Green** = Priority 2 trees – Moderately worthy of retention;
- Yellow** = Priority 3 trees – Scarcely worthy of retention;
- Red** = Priority 4 trees – Not worthy of retention.

## 14.0 TREE PROTECTION ZONES (TPZs)

The Tree Protection Zone (TPZ) relates to the *root system of a tree*, and is necessary to *maintain the health of the tree* during and following the proposed development of the site, by limiting construction activities and machinery access within the TPZ and limiting the root damage to the tree.

The Tree Protection Zone does not indicate the root extent (root spread) of a tree, as the root extent is usually greater than the TPZ for most trees. The TPZ merely designates the area in which soil disturbance must be minimised (and therefore root damage minimised) in order to maintain the health, longevity and stability of the tree.

A Tree Protection Zone is not a ‘sterile zone’ or an ‘exclusion zone’ for all activities and development, but instead defines the area around the tree in which tree-sensitive design and construction techniques *must* be employed, in order to maintain the health, longevity and structure of the tree.

The TPZs recommended here have been calculated using a method that conforms to the *Australian Standard for the Protection of Trees on Development Sites (AS 4970)*. The Australian Standard allows for the use of species- and tree-specific data to modify the factorial (up or down) to be more specific to the tree being assessed; i.e. relating to the tolerance of the species to soil disturbance and the age class of the tree for its species. The adjustment of the factorial from a minimum of 6 (for young trees of species highly tolerant of soil disturbance) to a maximum of 18 (for old trees of species highly susceptible to soil disturbance) will result in a larger or smaller TPZ for individual trees compared to the ‘standard’ factorial of 12 used where data on the species and individual tree have not been taken into account. The input data used to calculate the Tree Protection Zone for each of the 53 trees is detailed in Table 7.

Tree Protection Zones are capped at a minimum of 2.0 metres from the centre of the tree (in accordance with *AS 4970*), regardless of whether the calculated TPZ is actually smaller than this figure. Likewise, the TPZs have been capped at a maximum of 15.0 metres from the centre of the tree (in accordance with *AS 4970*), regardless of whether the calculated TPZ is actually larger than this figure. All TPZ distances are a minimum distance required (in metres) from the centre (trunk) of the tree at natural ground level.

*The capped Tree Protection Zone for each tree (except Priority 4 trees – Not worthy of retention) is provided in Table 7.*

Encroachment of up to 10% of the area of the TPZ is acceptable provided the encroached area of TPZ is gained elsewhere on the subject site and adjoining the outer edge of the TPZ. Encroachment within more than 10% of the area of the recommended TPZ may detrimentally affect the health of the tree by extensively severing or otherwise damaging the root system of the tree. Pre-existing developed areas within the calculated TPZ radius are also exempt from the effective TPZ area.



Activities that should be excluded from the TPZ include any mechanical soil removal (excavation), deposition (storage of fill) or cultivation (disturbance) associated with the proposed development, whether for earthworks, trenching, landscaping, or other associated works.

Non-linear fence or pylon footings (i.e. bored pier/post holes and screw-pile piers) are acceptable within the TPZ. As such, structures constructed using pier and beam footings are possible within the TPZ. Other structures and construction activities within the TPZ (such as residential driveways, footpaths, roadways, built-form structures, etc.) may be acceptable in some cases, provided tree-sensitive design and construction methods are employed, which may include:

1. Laying services within piping or conduits under the TPZ using directional under-boring.
2. Construction of hard surfaces (including roadways, driveways, footpaths and floors) over existing soil levels (to avoid the excavation of natural soil) and using structural soil as fill and open-sealed or permeable paving where necessary.
3. Pier & beam or screw-pile constructed structures that do not require area-excavation (cut) or linear-excavation (trenching) of soil.
4. Hand excavation in association with other root-sensitive excavation (e.g. a soil vacuum) to enable larger-sized roots to be retained in-situ. Such excavation is usually used as an exploratory method to ascertain the location and depth of larger-sized roots, which may dictate the required levels/positions of infrastructure.
5. Like-for-like replacement of any exiting surfaces or structures in the TPZ with new surfaces or structures constructed in the same position where within the TPZ.

## 15.0 HIGH USE SETBACKS (HUSs)

The High Use Setback (HUS) relates to the *crown of a tree*, and is recommended to *maintain an acceptable level of risk to property and to safety from the subject tree following* the development of the site.

Recommended minimum high use setbacks are formulated using numerous factors, including:

- Tree species and species characteristics including root structure, canopy characteristics and failure tendency;
- Current tree size and structure;
- Trunk habit and canopy weighting;
- Anticipated future tree size and structure under existing and proposed conditions;
- Anticipated site use.

*The High Use Setback for each tree (except Priority 4 trees – Not worthy of retention) is listed in Table 7.*

High Use Setbacks may vary from one side of a tree to the other due to the trunk lean, crown weighting and other crown characteristics of the tree, as well as the topography of the site.

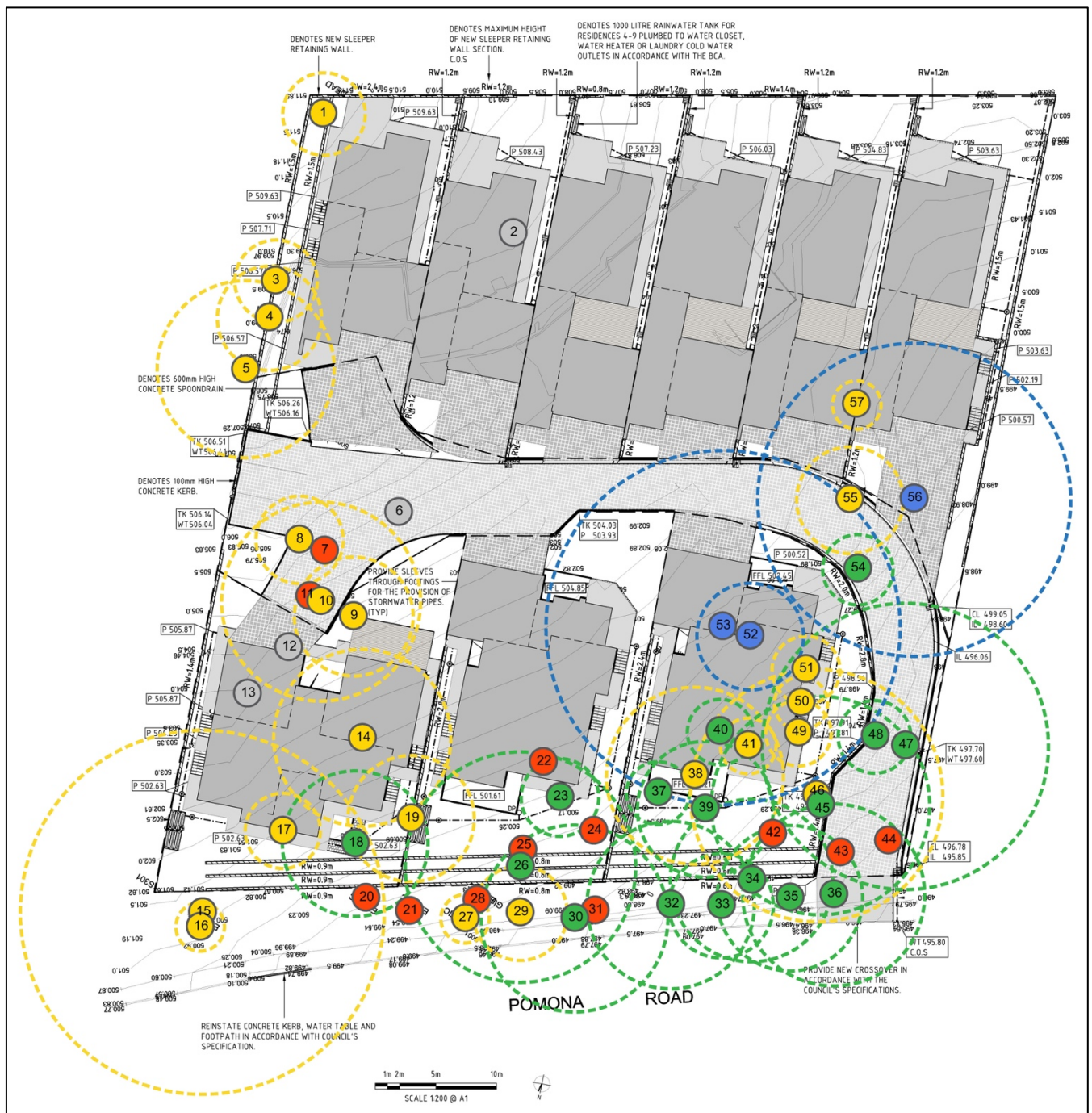
Encroachment of private open space and residential structures into the High Use Setback is likely to increase the risk to safety associated with a tree to an unacceptable level over the long-term (i.e. following any development of the site). All parts of residential dwellings, and at least 50% of the private open space for each residence, should occur outside of the HUS, with highest-use areas preferentially located outside of the HUS.

**Table 7. Tree Protection Zones & High Use Setbacks.** The 53 trees, indicating the abbreviated species name, retention worthiness, trunk Diameter at Breast Height (DBH, single-trunk equivalent), species soil disturbance tolerance, tree maturity, TPZ calculation factorial, Capped Tree Protection Zone (TPZ) and the High Use Setback (HUS) for each tree, as of February 2018. Trees are colour coded according to their retention worthiness, and to match the tree mapping in Figure 4.

Tree	Abbreviated species	Retention worthiness	DBH	Species soil disturbance tolerance	Tree maturity	TPZ factorial	Capped TPZ (TPZ)	High Use Setback (HUS)
1	<i>A. melanoxylon</i>	P3	0.280	Moderate	Mature	12	3.4 m radius	4.0 m radius to W hemi
3	<i>Cupressus</i>	P3	0.382	Moderate	Immature	9	3.4 m radius	10.0 m radius
4	<i>E. obliqua</i>	P3	0.318	Low	Immature to mature	13.5	4.3 m radius	10.0 m radius to W hemi
5	<i>Pinus radiata</i>	P3	0.541	Low	Immature to mature	13.5	7.3 m radius	18.0 m radius
7	<i>E. obliqua</i>	P4	N/a	N/a	N/a	N/a	N/a	N/a
8	<i>A. elata</i>	P3	0.302	Moderate	Mature	12	3.6 m radius	6.0 m radius
9	<i>E. obliqua</i>	P3	0.366	Low	Immature to mature	13.5	4.9 m radius	12.0 m radius to NE hemi, 5.0 m radius to SW hemi
10	<i>E. obliqua</i>	P3	0.605	Low	Immature to mature	13.5	8.2 m radius	15.0 m radius to E hemi, 5.0 m radius to W hemi
11	<i>E. obliqua</i>	P4	N/a	N/a	N/a	N/a	N/a	N/a
14	<i>A. floribunda</i>	P3	0.541	Moderate	Mature to old	13.5	7.3 m radius	10.0 m radius to N hemi, 6.0 m radius to S hemi
15	<i>Pinus radiata</i>	P3	1.114	Low	Mature	15	15.0 m radius	25.0 m radius
16	<i>Exocarpos</i>	P3	0.127	Moderate	Mature	12	2.0 m radius	Not required
17	<i>E. obliqua</i>	P3	0.255	Low	Immature	12	3.1 m radius	10.0 m radius to N hemi, 4.0 m radius to S hemi
18	<i>E. obliqua</i>	P2	0.446	Low	Immature to mature	13.5	6.0 m radius	9.0 m radius
19	<i>A. floribunda</i>	P3	0.382	Moderate	Mature to old	13.5	5.2 m radius	6.0 m radius to N hemi, 4.0 m radius to S hemi
20	<i>A. howittii</i>	P4	N/a	N/a	N/a	N/a	N/a	N/a
21	<i>P. undulatum</i>	P4	N/a	N/a	N/a	N/a	N/a	N/a
22	<i>E. kitsoniana</i>	P4	N/a	N/a	N/a	N/a	N/a	N/a
23	<i>E. obliqua</i>	P2	0.271	Low	Immature	12	3.2 m radius	8.0 m radius to N hemi, 4.0 m radius to S hemi
24	<i>E. obliqua</i>	P4	N/a	N/a	N/a	N/a	N/a	N/a
25	<i>A. baileyana</i>	P4	N/a	N/a	N/a	N/a	N/a	N/a
26	<i>E. obliqua</i>	P2	0.700	Low	Immature to mature	13.5	9.5 m radius	9.0 m radius
27	<i>Exocarpos</i>	P3	0.159	Moderate	Mature	12	2.0 m radius	2.0 m to S hemi
28	<i>A. fimbriata</i>	P4	N/a	N/a	N/a	N/a	N/a	N/a
29	<i>E. obliqua</i>	P3	0.286	Low	Immature to mature	13.5	3.9 m radius	Not required to S hemi
30	<i>E. obliqua</i>	P2	0.567	Low	Immature to mature	13.5	7.7 m radius	4.0 m to S hemi
31	<i>E. obliqua</i>	P4	N/a	N/a	N/a	N/a	N/a	N/a
32	<i>E. obliqua</i>	P2	0.509	Low	Immature to mature	13.5	6.9 m radius	4.0 m to S hemi
33	<i>E. obliqua</i>	P2	0.318	Low	Immature to mature	13.5	4.3 m radius	2.0 m to S hemi
34	<i>E. obliqua</i>	P2	0.493	Low	Immature to mature	13.5	6.7 m radius	6.0 m to S hemi
35	<i>E. obliqua</i>	P2	0.446	Low	Immature to mature	13.5	6.0 m radius	3.0 m to S hemi
36	<i>E. obliqua</i>	P2	0.557	Low	Immature to mature	13.5	7.5 m radius	7.0 m to S hemi



Tree	Abbreviated species	Retention worthiness	DBH	Species soil disturbance tolerance	Tree maturity	TPZ factorial	Capped TPZ (TPZ)	High Use Setback (HUS)
37	<i>A. melanoxylon</i>	P2	0.247	Moderate	Immature to mature	10.5	2.6 m radius	4.0 m radius
38	<i>E. obliqua</i>	P3	0.541	Low	Immature to mature	13.5	7.3 m radius	10.0 m radius to N hemi, 8.0 m radius to S hemi
39	<i>E. obliqua</i>	P2	0.414	Low	Immature to mature	13.5	5.6 m radius	10.0 m radius to N hemi, 6.0 m radius to S hemi
40	<i>A. melanoxylon</i>	P2	0.255	Moderate	Immature to mature	10.5	2.7 m radius	6.0 m radius
41	<i>A. melanoxylon</i>	P3	0.223	Moderate	Immature to mature	10.5	2.3 m radius	4.0 m radius
42	<i>P. undulatum</i>	P4	N/a	N/a	N/a	N/a	N/a	N/a
43	<i>E. obliqua</i>	P4	N/a	N/a	N/a	N/a	N/a	N/a
44	<i>E. obliqua</i>	P4	N/a	N/a	N/a	N/a	N/a	N/a
45	<i>E. obliqua</i>	P2	0.668	Low	Immature to mature	13.5	9.0 m radius	10.0 m radius
46	<i>E. obliqua</i>	P3	0.768	Low	Immature to mature	13.5	10.4 m radius	12.0 m radius
47	<i>E. obliqua</i>	P2	0.875	Low	Immature to mature	13.5	11.8 m radius	12.0 m radius
48	<i>A. melanoxylon</i>	P2	0.286	Moderate	Immature to mature	10.5	3.0 m radius	6.0 m radius
49	<i>A. melanoxylon</i>	P3	0.255	Moderate	Immature to mature	10.5	2.7 m radius	5.0 m radius
50	<i>A. melanoxylon</i>	P3	0.207	Moderate	Immature to mature	10.5	2.2 m radius	5.0 m radius
51	<i>A. melanoxylon</i>	P3	0.271	Moderate	Immature to mature	10.5	2.8 m radius	5.0 m radius
52	<i>A. melanoxylon</i>	P1	0.366	Moderate	Mature	12	4.4 m radius	6.0 m radius
53	<i>E. obliqua</i>	P1	1.082	Low	Immature to mature	13.5	14.6 m radius	11.0 m radius
54	<i>Exocarpos</i>	P2	0.239	Moderate	Mature	12	2.9 m radius	4.0 m radius
55	<i>A. dealbata</i>	P3	0.366	Moderate	Mature	12	4.4 m radius	6.0 m radius
56	<i>E. obliqua</i>	P1	0.955	Low	Immature to mature	13.5	12.9 m radius	12.0 m radius to NE hemi, 8.0 m radius to SW hemi
57	<i>Cordyline</i>	P3	0.127	High	Mature	9	2.0 m radius	Not required



**Figure 5. Arboricultural impact of the development.** The 57 assessed trees included in my February 2018 arboricultural assessment, colour-coded according to their retention value (note that Trees 2, 6, 12 and 13 are no longer present on the site). The perimeter of the calculated Tree Protection Zones are also indicated for Priority 1, 2 and 3 trees.

- Purple** = Priority 1A trees – Very highly worthy of retention;
- Blue** = Priority 1 trees – Highly worthy of retention;
- Green** = Priority 2 trees – Moderately worthy of retention;
- Yellow** = Priority 3 trees – Scarcely worthy of retention;
- Red** = Priority 4 trees – Not worthy of retention.

## 16.0 ARBORICULTURAL IMPACT of the DEVELOPMENT

Table 8 summarises the arboricultural impact of the development on each of the 53 trees, as assessed using data from my February 2018 arboricultural assessment report and the proposed civil plans indicated in Figure 5.

**Table 8. Arboricultural impact of the development.** The 53 trees, indicating the tree number, scientific name, retention value, and arboricultural impacts of the proposed development on each tree. Trees are colour-coded according to their retention value, and to match the tree mapping in Figures 4 and 5.

Tree	Scientific name	Retention value	Arboricultural impact of the development
1	<i>Acacia melanoxylon</i>	P3 - Scarcely worthy of retention	<b>Tree removal</b> required due to proposed retaining walls, soil fill, and structures impacting 100% of the TPZ
3	<i>Cupressus macrocarpa</i>	P3 - Scarcely worthy of retention	<b>Tree removal</b> required due to proposed retaining wall and soil cut/excavation at tree
4	<i>Eucalyptus obliqua</i>	P3 - Scarcely worthy of retention	<b>Tree removal</b> required due to proposed retaining wall and soil cut/excavation at tree
5	<i>Pinus radiata</i>	P3 - Scarcely worthy of retention	<b>Tree removal</b> required due to proposed retaining wall and soil cut/excavation encroaching into >10% of the TPZ
7	<i>Eucalyptus obliqua</i>	P4 - Not worthy of retention	<b>Tree removal</b> required due to proposed access roadway over tree
8	<i>Acacia elata</i>	P3 - Scarcely worthy of retention	<b>Tree removal</b> required due to proposed access roadway over tree
9	<i>Eucalyptus obliqua</i>	P3 - Scarcely worthy of retention	<b>Tree removal</b> required due to proposed level changes encroaching into >10% of the TPZ, associated with driveway and dwelling footprint
10	<i>Eucalyptus obliqua</i>	P3 - Scarcely worthy of retention	<b>Tree removal</b> required due to proposed access roadway over tree
11	<i>Eucalyptus obliqua</i>	P4 - Not worthy of retention	<b>Tree removal</b> required due to proposed access roadway over tree
14	<i>Acacia floribunda</i>	P3 - Scarcely worthy of retention	<b>Tree removal</b> required due to proposed dwelling footprint over tree
15	<i>Pinus radiata</i>	P3 - Scarcely worthy of retention	<b>Tree removal</b> required due to proposed retaining walls and soil fill encroaching into >10% of the TPZ
16	<i>Exocarpos cupressiformis</i>	P3 - Scarcely worthy of retention	<b>Tree retention.</b> No development is proposed within the TPZ
17	<i>Eucalyptus obliqua</i>	P3 - Scarcely worthy of retention	<b>Tree removal</b> required due to proposed dwelling footprint over tree
18	<i>Eucalyptus obliqua</i>	P2 - Moderately worthy of retention	<b>Tree removal</b> required due to proposed retaining walls, soil fill, and structures impacting 100% of the TPZ
19	<i>Acacia floribunda</i>	P3 - Scarcely worthy of retention	<b>Tree removal</b> required due to proposed retaining walls, soil fill, and structures impacting 100% of the TPZ
20	<i>Acacia howittii</i>	P4 - Not worthy of retention	Tree retention may be possible, but retention of tree not recommended
21	<i>Pittosporum undulatum</i>	P4 - Not worthy of retention	Tree retention may be possible, but retention of tree not recommended



Tree	Scientific name	Retention value	Arboricultural impact of the development
22	<i>Eucalyptus kitsoniana</i>	P4 - Not worthy of retention	<b>Tree removal</b> required due to proposed dwelling footprint over tree
23	<i>Eucalyptus obliqua</i>	P2 - Moderately worthy of retention	<b>Tree removal</b> required due to proposed retaining walls, soil fill, and structures impacting 100% of the TPZ
24	<i>Eucalyptus obliqua</i>	P4 - Not worthy of retention	<b>Tree removal</b> required due to proposed retaining walls, soil fill, and structures impacting 100% of the TPZ
25	<i>Acacia baileyana</i>	P4 - Not worthy of retention	<b>Tree removal</b> required due to proposed retaining walls, soil fill, and structures impacting 100% of the TPZ
26	<i>Eucalyptus obliqua</i>	P2 - Moderately worthy of retention	<b>Tree removal</b> required due to proposed retaining walls, soil fill, and structures impacting 100% of the TPZ
27	<i>Exocarpos cupressiformis</i>	P3 - Scarcely worthy of retention	<b>Tree retention.</b> No development is proposed within the TPZ
28	<i>Acacia fimbriata</i>	P4 - Not worthy of retention	Tree retention may be possible, but retention of tree not recommended
29	<i>Eucalyptus obliqua</i>	P3 - Scarcely worthy of retention	<b>Tree retention.</b> Development encroaches into <10% of the TPZ
30	<i>Eucalyptus obliqua</i>	P2 - Moderately worthy of retention	<b>Tree removal</b> required due to proposed retaining walls and soil fill, encroaching into >10% of the TPZ
31	<i>Eucalyptus obliqua</i>	P4 - Not worthy of retention	Tree retention may be possible, but retention of tree not recommended
32	<i>Eucalyptus obliqua</i>	P2 - Moderately worthy of retention	<b>Tree removal</b> required due to proposed retaining walls and soil fill, encroaching into >10% of the TPZ
33	<i>Eucalyptus obliqua</i>	P2 - Moderately worthy of retention	<b>Tree removal</b> required due to proposed retaining walls and soil fill, encroaching into >10% of the TPZ
34	<i>Eucalyptus obliqua</i>	P2 - Moderately worthy of retention	<b>Tree removal</b> required due to proposed retaining walls and soil fill, encroaching into >10% of the TPZ
35	<i>Eucalyptus obliqua</i>	P2 - Moderately worthy of retention	<b>Tree removal</b> required due to proposed retaining walls and soil fill, encroaching into >10% of the TPZ
36	<i>Eucalyptus obliqua</i>	P2 - Moderately worthy of retention	<b>Tree removal</b> required due to proposed retaining walls and soil fill, encroaching into >10% of the TPZ
37	<i>Acacia melanoxylon</i>	P2 - Moderately worthy of retention	<b>Tree removal</b> required due to proposed level changes encroaching into >10% of the TPZ, associated with retaining walls and dwelling footprint
38	<i>Eucalyptus obliqua</i>	P3 - Scarcely worthy of retention	<b>Tree removal</b> required due to proposed dwelling footprint over tree
39	<i>Eucalyptus obliqua</i>	P2 - Moderately worthy of retention	<b>Tree removal</b> required due to proposed level changes encroaching into >10% of the TPZ, associated with retaining walls and dwelling footprint
40	<i>Acacia melanoxylon</i>	P2 - Moderately worthy of retention	<b>Tree removal</b> required due to proposed dwelling footprint over tree
41	<i>Acacia melanoxylon</i>	P3 - Scarcely worthy of retention	<b>Tree removal</b> required due to proposed dwelling footprint over tree

Tree	Scientific name	Retention value	Arboricultural impact of the development
42	<i>Pittosporum undulatum</i>	P4 - Not worthy of retention	Tree retention may be possible, but retention of tree not recommended
43	<i>Eucalyptus obliqua</i>	P4 - Not worthy of retention	<b>Tree removal</b> required due to proposed access roadway over tree
44	<i>Eucalyptus obliqua</i>	P4 - Not worthy of retention	<b>Tree removal</b> required due to proposed access roadway over tree
45	<i>Eucalyptus obliqua</i>	P2 - Moderately worthy of retention	<b>Tree removal</b> required due to proposed level changes encroaching into >10% of the TPZ, associated with retaining walls, driveway and dwelling footprint
46	<i>Eucalyptus obliqua</i>	P3 - Scarcely worthy of retention	<b>Tree removal</b> required due to proposed level changes encroaching into >10% of the TPZ, associated with retaining walls, driveway and dwelling footprint
47	<i>Eucalyptus obliqua</i>	P2 - Moderately worthy of retention	<b>Tree removal</b> required due to proposed access roadway over tree
48	<i>Acacia melanoxylon</i>	P2 - Moderately worthy of retention	<b>Tree removal</b> required due to proposed access roadway over tree
49	<i>Acacia melanoxylon</i>	P3 - Scarcely worthy of retention	<b>Tree removal</b> required due to proposed dwelling footprint over tree
50	<i>Acacia melanoxylon</i>	P3 - Scarcely worthy of retention	<b>Tree removal</b> required due to proposed dwelling footprint over tree
51	<i>Acacia melanoxylon</i>	P3 - Scarcely worthy of retention	<b>Tree removal</b> required due to proposed dwelling footprint over tree
52	<i>Acacia melanoxylon</i>	P1 - Highly worthy of retention	<b>Tree removal</b> required due to proposed dwelling footprint over tree
53	<i>Eucalyptus obliqua</i>	P1 - Highly worthy of retention	<b>Tree removal</b> required due to proposed dwelling footprint over tree
54	<i>Exocarpos cupressiformis</i>	P2 - Moderately worthy of retention	<b>Tree removal</b> required due to proposed access roadway over tree
55	<i>Acacia dealbata</i>	P3 - Scarcely worthy of retention	<b>Tree removal</b> required due to proposed access roadway over tree
56	<i>Eucalyptus obliqua</i>	P1 - Highly worthy of retention	<b>Tree removal</b> required due to proposed access driveway over tree
57	<i>Cordyline australis</i>	P3 - Scarcely worthy of retention	<b>Tree removal</b> required due to proposed dwelling footprint over tree

## 17.0 SUMMARY of FINDINGS

Table 8 summarises the retention value of the trees and summarises how many trees can be retained as part of the proposed development, and how many would require removal.

It is recommended that tree retention on the site be directed by the overall value of each tree, as indicated by each tree's retention worthiness as assessed here. Figure 4A indicates the location and labelling of the 53 trees included in this assessment, with each tree colour-coded with regard to its retention worthiness.

In the case of site development, consideration should be given to the Tree Protection Zone (TPZ) and High Use Setback (HUS) for any retained trees, to ensure that the health, longevity, stability and risk to safety associated with retained trees is not compromised.

**Table 9. Summary Table.** A breakdown of the retention value of the 53 trees, indicating how many can be retained as part of the proposed development and how many require removal.

Retention value	Trees that could be retained as part of the proposed development	Trees requiring removal as part of the proposed development
All trees (53 trees)	7 of 53 trees (13%)	46 of 53 trees (87%)
Priority 1A trees – Very Highly worthy of retention (No trees)	-	-
Priority 1 trees – Highly worthy of retention (3 trees)	0 of 3 trees (0%)	3 of 3 trees (100%) None significant or regulated
Priority 2 trees – Moderately worthy of retention (16 trees)	0 of 16 trees (0%)	16 of 16 trees (100%) including 4 regulated trees
Priority 3 trees – Scarcely worthy of retention (22 trees)	3 of 22 trees (14%) None significant or regulated	19 of 22 trees (86%) including 1 significant tree
Priority 4 trees – Not worthy of retention (12 trees)	5 of 12 trees (42%) None significant or regulated. It is recommended that all Priority 4 trees be removed as part of any site redevelopment	7 of 12 trees (58%) including 1 regulated tree

I thank you for the opportunity to provide this arboricultural assessment and report.  
If you require further information or clarification please contact me for assistance.



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