



8.7 Attachment 7

DEVELOPMENT ASSESSMENT SERVICE

Your Ref: Preliminary Advice LD
Our Ref: Adelaide Hills DA
Please refer to: 20180704 - 01cs

4 July 2018

URPS
Suite 12 / 154 Fullarton Rd
Rose Park SA 5067

ATTN: Philip Harnett

Dear Philip,

**RE: PRELIMINARY ASSESSMENT OF PROPOSED LAND DIVISION
20 POMONARD, STIRLING**

Thank you for the opportunity to provide preliminary advice for the proposed land division at 20 Pomona Rd, Stirling.

An officer of the SA Country Fire Service [SA CFS] Development Assessment Service has assessed the proposed development site, allotment and adjoining areas and provides the following advice:

The subject land is located within a bushfire protection area categorised as 'Medium' in the Adelaide Hills Council Development Plan.

Minister's Code 2009 "Undertaking development in Bushfire Protection Areas" (as amended October 2012) [The Code] as published under Regulation 106 of the *Development Regulations 2008* applies.

In accordance with the Medium Bushfire Protection Area provisions, mandatory referral to SA Country Fire Service is not required, therefore future applications for residential development on the allotments need to address the mandatory conditions of the Minister's Code, and the appropriate conditions applied to the development consent.

The SA Country Fire Service has no objection to the proposal to create 10 allotments for residential development providing the mandatory conditions of the Minister's Code are addressed.

ACCESS

Public access created by a land division to and from the proposed allotments shall be in accordance with the Minister's Code Part 2.2.2.

SA CFS notes that no public roads are being created as a result of this land division.

Access on and off the allotment shall be in accordance with Minister's Code Part 2.3.3.1

The Minister's Code Undertaking development in Bushfire Protection Areas Part 2.3.3.1 describes the mandatory provision that 'Private' roads and driveways to buildings shall provide safe and convenient



access/egress for large bushfire fighting vehicles, where the furthest point to the building from the nearest public road is more than 30 metres.

SA CFS notes that the proposed access meets the following mandatory requirements of The Code:

- Access to the building site shall be of all-weather construction, with a minimum formed road surface width of 3 metres and must allow forward entry and exit for large fire-fighting vehicles.
- The all-weather road shall allow fire-fighting vehicles to safely enter and exit the allotment in a forward direction by incorporating either –
 - i. A loop road around the building, OR
 - ii. A turning area with a minimum radius of 12.5 metres, OR
 - iii. A 'T' or 'Y' shaped turning area with a minimum formed length of 11 metres and minimum internal radii of 9.5 metres.
- Private access shall have minimum internal radii of 9.5 metres on all bends.
- The gradient of the access road shall not exceed 16 degrees (29%), in steep terrain the construction of the public road or driveway shall be a sealed surface.

WATER SUPPLY

A supply of water to the land division shall be available at all times for fire-fighting purposes. Ministers Specification SA78 prescribes the dedicated water supply to each allotment for bushfire fighting for the bushfire zone.

- Either 5,000 litres static water supply independent of mains supply or 2,000 litres static water supply connected to mains supply in accordance with Ministers Specification SA78 and the Medium Bushfire zone prescribed for these allotments.

VEGETATION

The Code Part 2.3.5 mandates that landscaping should include Bushfire Protection features that will prevent or inhibit the spread of bushfire and minimise the risk to life and/or damage to buildings and property.

SA CFS recommends the following vegetation management zone be applied to each residential allotment for development:

- A vegetation management zone (VMZ) should be maintained within 20 metres of the dwelling (or to the property boundaries – whichever comes first) as follows:
 - i. Trees and shrubs should not be planted closer to the building(s) than the distance equivalent to their mature height.
 - ii. Trees and shrubs must not overhang the roofline of the building, touch walls, windows or other elements of the building.
 - iii. Shrubs must not be planted under trees and must be separated by at least 1.5 times their mature height.
 - iv. Grasses within the zone should be reduced to a maximum height of 10cm during the Fire Danger Season.
 - vi. No understorey vegetation should be established within 1 metre of the dwelling (understorey is defined as plants and bushes up to 2 metres in height).
 - vii. Flammable objects such as plants, mulches and fences must not be located adjacent to vulnerable parts of the building such as windows, decks and eaves
 - viii. The VMZ should be maintained to be free of accumulated dead vegetation during the fire danger season.

CFS Mission

To protect life, property and the environment from fire and other emergencies whilst protecting and supporting our personnel and continuously improving.

SITING

The Code Part 2.3.2 describes the requirements for buildings to be sited away from areas that pose an unacceptable bushfire risk. This includes areas with rugged terrain or hazardous vegetation.

SA CFS notes that vegetation on the property is currently well managed and consists of cultivated gardens and scattered trees, which pose little bushfire risk.

However, taking into account the type and density of vegetation on neighbouring properties, the following setbacks of future dwellings are recommended:

- Allotments 4 and 10: a minimum setback of 5m from the eastern boundary.
- Allotments 5, 6, 7, 8, 9, 10: a minimum setback of 5m from the southern boundary.

BUILDING CONSIDERATIONS

For construction requirements and performance provisions, refer to the NCC Part 3.7 "FIRE SAFETY" Australian Standard TM3959 (AS3959) "Construction of Buildings in Bushfire Prone Areas".

In accordance with NCC Part 3.7.4, Category of Bushfire Attack Level as defined by the Bushfire Zone in councils development plan:	(MEDIUM) BAL 12.5
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Compliance with the fire protection requirements is not a guarantee the dwelling will not burn, but its intent is to provide a 'measure of protection' from the approach, impact and passing of a bushfire.

Should there be any need for further information please contact the undersigned at the SA CFS Development Assessment Service on (08) 8115 3372

Yours faithfully



CAREN SIEGFRIEDT

BUSHFIRE SAFETY OFFICER
DEVELOPMENT ASSESSMENT SERVICE



URPS

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154 Fullarton Road
ROSE PARK SA 5067

08 8333 7999
www.urps.com.au
ABN 55 640 546 010

Ref: 2018-0030

8 May 2020

Ms Melanie Scott
Senior Statutory Planner
Adelaide Hills Council
PO Box 44
Woodside SA 5244

Dear Melanie

**Response to further information request – Development Application Number 19/322/473 –
20 Pomona Road, Stirling**

Thank you for meeting with us regarding the above application. We also appreciate your colleagues attending the meeting.

As you are aware, this is an important project for our client, and significant financial investment has been put towards this application with expert advice sought in town planning, architecture, landscape design, engineering (civil, traffic, stormwater and acoustic), surveying, and arboriculture.

We believe, as a collective team, that this is a well-considered and planned development that delivers on the important Zone objectives which specifically seek for a:

“range of dwelling types (such as townhouses, semi-detached dwellings, and residential flat buildings) at densities which take advantage of nearby public transport and the services available within the adjacent centre zones”

That being said, we have listened to the concerns you expressed and have, we believe, made a number of further compromises that provide you an opportunity to support the application. These additional amendments are discussed below.

Further Amendments Offered

During our meeting you outlined a few remaining concerns which we now attempt to address. This follows several concessions and supporting material we have provided in respect to this project to date.

In doing so, I now attach the following:

- **Attachment 1**
 - > Boundary identification plan by Michael Grear Surveys.
 - > A plan showing the levels of nearby dwellings by Michael Grear Surveys.

- **Attachment 2**
 - > Updated plans by Alexander Brown Architects.
- **Attachment 3**
 - > Civil and Earthworks Plan, Issue E dated 19/03/2020 by KP Squared Engineering.
- **Attachment 4**
 - > External Traffic Noise Assessment by Sonus Acoustic Engineers dated March 2020.
- **Attachment 5**
 - > Updated Landscape Concept Plan by Clover Greenspace dated 31 March 2020.
 - > Sections 1 and 2 by Clover Greenspace dated 31 March 2020.
- **Attachment 6**
 - > 3D render by Tree House.
- **Attachment 7**
 - > Email from Adam Schutz of the Native Vegetation Council dated 21 February 2020.
- **Attachment 8**
 - > Scattered Tree Assessment' prepared by 'Ecosphere Ecological Solutions' dated 30 September 2019.
- **Attachment 9**
 - > Email from Arborman Tree Solutions regarding discussion with Council's arborist.

Our response to each of your concerns is provided below.

1. Levels of adjacent dwellings

You have previously stated:

“(we should) Provide a plan showing the location and levels of adjacent dwellings at 18 & 24 Pomona Road and 10 & 13 Alta Crescent in relation to the proposed development”.

We now attach the following plans prepared by Michael Grear Surveys:

- Boundary identification plan.
- A plan showing the levels of those nearby dwellings requested.

These plans show the levels of the adjacent dwellings.

2. Amendments to Fencing and Retaining Walls

The view of 18 Pomona Road from the subject land is pictured below in Image 1.

Notably, the subject land already sits a lot higher than 18 Pomona Road. Moreover, the neighbouring dwelling:

- Does not have any side facing windows looking towards the subject land from a habitable room.
- Does not feature any of its primary private open spaces adjacent the shared side boundary with the subject land.

- Has large private open space areas in any case and there would be minimal overall impact upon that land owner given the sheer size of their private open space areas.
- Is situated in the same zone as the subject land and could be developed to a higher density.

Image 1: Dwelling at 18 Pomona Road as viewed from the subject land.



That is not to say that the proposal will not change the outlook from their land in some way, however this is to be expected noting the proposal delivers a form of development clearly sought by the Zone.

Therefore, to expect otherwise, or for there to be some significant buffer, is counter to the important Zone objectives that are pertinent to this land and a substantial portion of the locality.

However, to better manage the potential for visual impact upon 18 Pomona Road, the applicant has worked with KP Squared Engineering to adjust the retaining wall arrangements on the shared boundary between the properties.

As such, we now attach 'Issue E' of the 'Civil and Earthworks Plan' which shows the south-western retaining wall setback 1 metre from the side boundary shared with 18 Pomona Road.

In-turn, this will allow some of the boundary trees to be preserved, or replaced to better screen the proposed retaining walls. These trees are pictured below in Image 2.

Image 2: View of the to-be-retained boundary landscaping features



The updated landscaping plans (as discussed below) also reflect this adjustment.

In addition, we note that:

- All setbacks along this western boundary comply with the Development Plan.
- External walls feature articulation and variation in wall lines to reduce mass.
- The height of retaining walls has been stepped where able.

In respect to the visual impacts of the proposal upon the land to the east at 24 Pomona Road or 10 Alta Crescent, we note the following:

- 24 Pomona Road and 10 Alta Crescent have an elevation which is much higher than the subject land (at least 2.3 metres higher).
- Proposed dwellings on lots 01 and 09 will have a floor level excavated below the natural ground level of the eastern boundary, meaning they will sit even lower thus further reducing their visual impact. Any boundary retaining walls will only be visible from within the subject land.
- Proposed dwellings on lots 01 and 09 are setback 2 and 3.1 metres from the eastern boundary respectively. These setbacks satisfy the Development Plan and allow tall shrubs and some small trees to be planted along the eastern boundary.

For the reasons explained above, we are of the opinion that the proposed development, including retaining walls and fencing, will not have an unreasonable impact upon neighbouring amenity or the locality generally.

3. Traffic Noise

You have previously stated:

“With regards to private open space (POS), particularly for proposed lots 2 and 3 please demonstrate how these spaces will be private and not be unreasonably impacted by noise or traffic. It is recommended you engage an acoustic engineer to support this proposed location of POS”.

We understand that your concern relates to traffic noise from the South Eastern Freeway.

As attached, the applicant has now engaged Sonus Acoustic Engineers to undertake an ‘External Traffic Noise’ assessment which explains the following:

“There are no established external noise criteria for private open spaces in the vicinity of a road corridor.

There are many existing dwellings which exist adjacent a major road corridor without any specific consideration of acoustic amenity.

The World Health Organisation guidelines can be adapted to apply an average noise level of 55 decibels during the day as a conservative indication that traffic noise does not unreasonably impact on the amenity of the space.

The average noise level during the day is approximately 65 decibels at the closest portion of the site to the freeway and 62 decibels at the rear.

The traffic noise levels at the location shielded by the existing dwelling were 15 decibels lower than those with direct line of sight.

Private open space areas with direct line of sight from the South Eastern Freeway will exceed World Health Organisation guidelines. However, this arrangement is not unusual for a residence.

In this case, each of the dwellings is provided with an area of private open space with an average noise level of 50 decibels to comply with the World Health Organisation guideline”

(Underlining added)

In this circumstance it is important to acknowledge that technically there is no guideline in relation to noise impact upon private open space areas and that a qualified acoustic engineer (Sonus) is satisfied that each proposed dwelling will not be subject to unreasonable noise levels.

As previously explained, the subject land is approximately 90 metres away from the formed portion of the Stirling off-ramp of the South-Eastern Freeway.

Between the subject land and the South-Eastern Freeway is Pomona Road, vegetation and private properties, many of which comprise established dwellings. Many of these private properties are situated in the Mixed Residential Zone and could be developed for denser residential purposes, as per the subject land.

The portion of the 'Mixed Residential Zone', in which the subject land is situated and nearby the South Eastern Freeway, was consolidated into the Adelaide Hills Development Plan on 24 October 2017. This land was previously zoned 'Watershed (Primary Production) Zone'.

It would seem unusual to re-zone the land for denser residential purposes if it were subject to unreasonable noise impacts – this would/must have been a policy consideration by the writers of the Development Plan. These types of studies are normally undertaken prior to re-zoning to determine the suitability of the land for its re-zoned purpose. On this basis alone, it is reasonable to accept that the land and other surrounding properties in the Mixed Residential Zone are not subject to unreasonable noise impacts from traffic upon a well-established and known freeway.

In addition to this, we note that a land division application has been lodged and approved at 21 Pomona Road for 7 residential allotments (473/D054/18). All of these allotments are much closer to the South Eastern Freeway than 20 Pomona Road.

If this does not provide the Council sufficient comfort, I also note the following:

- The private open space areas of dwellings proposed on Lots 1, 4, 5, 6, 7, 8 and 9 are all sheltered from traffic noise due to their position on the southern side of their respective dwellings. These spaces achieve the World Health Organisation guideline as confirmed by Sonus Acoustic Engineers.
- The dwellings proposed on Lots 2 and 3 will have the following private open space areas:
 - > Outdoor decking area of 18.7 square metres beside each dwelling. These spaces are sheltered from traffic noise by their respective dwelling and achieve the World Health Organisation guideline as confirmed by Sonus Acoustic Engineers.
 - > Outdoor grassed and fenced areas of 22 or 33.8 square metres beside each dwelling. These spaces will be sheltered by fencing.
 - > Upper level balconies each being 12.5 square metres. These spaces will be surrounded by a balustrade.
 - > Unfenced outdoor grassed areas of 82.8 or 95.7 square metres forward of each dwelling. These spaces will remain open to retain a spacious streetscape character.

Ultimately, each dwelling is provided with at least 24 square metres of private open space area in accordance with Principle 12 of the Zone, most of which achieves adapted noise levels. Each dwelling is considered to have a sufficient amount of private open space that will not be susceptible to traffic noise.

4. Vegetation Removal

As previously noted, an application to clear native vegetation from the site has been made to the 'Native Vegetation Council'. This included a 'Scattered Tree Assessment' prepared by 'Ecosphere Ecological Solutions' which is attached and concluded the following:

- The trees are of moderate ecological value in the context of the broader local environment.
- The trees proposed for removal are not critical habitat for any species of national conservation significance.
- The habitat structure is unsuitable for national and significant fauna species due to the lack of multi layers and understorey complexity.

In determining the clearance application, the 'Native Vegetation Council' must be satisfied that the proposed clearance will result in a positive impact on the environment that is over and above the negative impact of the clearance. As such, a 'Significant Environmental Benefit' (SEB) obligation has been calculated in which the applicant would make a significant financial contribution of \$76,260.35 to offset the calculated value of the trees to the environment.

This SEB would then be invested by the Native Vegetation Council into projects elsewhere to ensure positive environmental benefits above those provided by the trees on the subject land, and in areas which are more suitable and not earmarked for denser residential development in accordance with the Development Plan.

I now attach email correspondence from Mr Adam Schutz (Native Vegetation Council), who specifically states:

"Should development approval not be granted, then the Native Vegetation Regulations would not be applicable. Therefore, your application has been put on hold until the development application has been resolved".

"Should the development application be approved... it is possible that... in its current form, all the trees on the site would be permitted to be cleared".

On this basis and pending Development Approval of a land division application, the Native Vegetation Council would further assess the application already lodged and potentially approve the clearance application subject to payment of the SEB.

With respect to the Development Plan, Council Wide Natural Resources Principle 39 states:

39 Native vegetation should be conserved and its conservation value and function not compromised by development if the native vegetation does any of the following:

(a) provides an important habitat for wildlife or shade and shelter for livestock

(b) has a high plant species diversity or includes rare, vulnerable or endangered plant species or plant associations and communities

(c) provides an important seed bank for locally indigenous vegetation

(d) has high amenity value and/or significantly contributes to the landscape quality of an area, including the screening of buildings and unsightly views

(e) has high value as a remnant of vegetation associations characteristic of a district or region prior to extensive clearance for agriculture

(f) is growing in, or is characteristically associated with a wetland environment.

The 'Scattered Tree Assessment', as attached, confirms that existing native vegetation on the land does not achieve Principle 39 to warrant its conservation. That is, the native vegetation proposed for removal does not achieve matters (a) to (f).

Further, the proposed clearing and subsequent development will not cause any matters explained within Council Wide Natural Resources Principle 41 which states:

41 Native vegetation should not be cleared if such clearing is likely to lead to, cause or exacerbate any of the following:

(a) erosion or sediment within water catchments

(b) decreased soil stability

(c) soil or land slip

(d) deterioration in the quality of water in a watercourse or surface water runoff

(e) a local or regional salinity problem

(f) the occurrence or intensity of local or regional flooding.

Despite the proposed clearance, a positive environmental benefit will be achieved through payment of the SEB to the Native Vegetation Council and in a more suitable location where denser residential development is not anticipated. Such payments are not unusual and are commonly accepted.

In addition, the proposal will achieve the intent of the Mixed Residential Zone to increase residential densities that can take advantage of nearby public transport and services. On this basis, and with respect to the Development Plan, the proposed vegetation clearance is appropriate and justified.

5. Landscaping/Street Appearance

The applicant previously engaged 'Clover Green Space' who have now prepared an updated Landscape Concept Plan and associated Sections within **Attachment 5**.

Each of these have been carefully prepared and demonstrate that the proposal will blend with the landscaped appearance of the locality.

In addition, we have advice from Marcus Lodge (Arborman). Marcus has liaised with Council's arborist and indicated that some significant landscaping elements within the road reserve in front of the land are able to be retained meaning the site will have an attractive and landscaped appearance to the street. This is additional to the landscape Concept Plan prepared by Clover Green Space.

In addition, we have commissioned for a 3D visualisation to be prepared by Tree House and shown in Image 3 below. This demonstrates in our view the high quality presentation of the development.

Image 3: 3D visualisation to be prepared by Tree House



6. General Comments

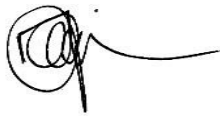
I note that we have previously addressed the following matters in which we understand you are now generally satisfied:

- Desired Character.
- Allotment site areas.
- Allotment frontages.
- Density.
- Variety of dwelling types, shapes and sizes.
- Design and appearance.
- Building height.
- Bulk, scale, mass and building articulation.
- Materials, finishes and glare.
- Fencing and retaining walls.
- Visual separation and views.
- Overlooking.
- Overshadowing.
- Safe and convenient vehicle movements which satisfy Australian Standards and accommodate firefighting vehicles.
- Onsite car parking.
- Storage.
- Bushfire safety.
- Bin collection.
- Stormwater discharge, overland flow and flooding.

In our view the proposal satisfies the vast majority of quantitative and qualitative guidelines within the Development Plan and as such Development Plan Consent is warranted.

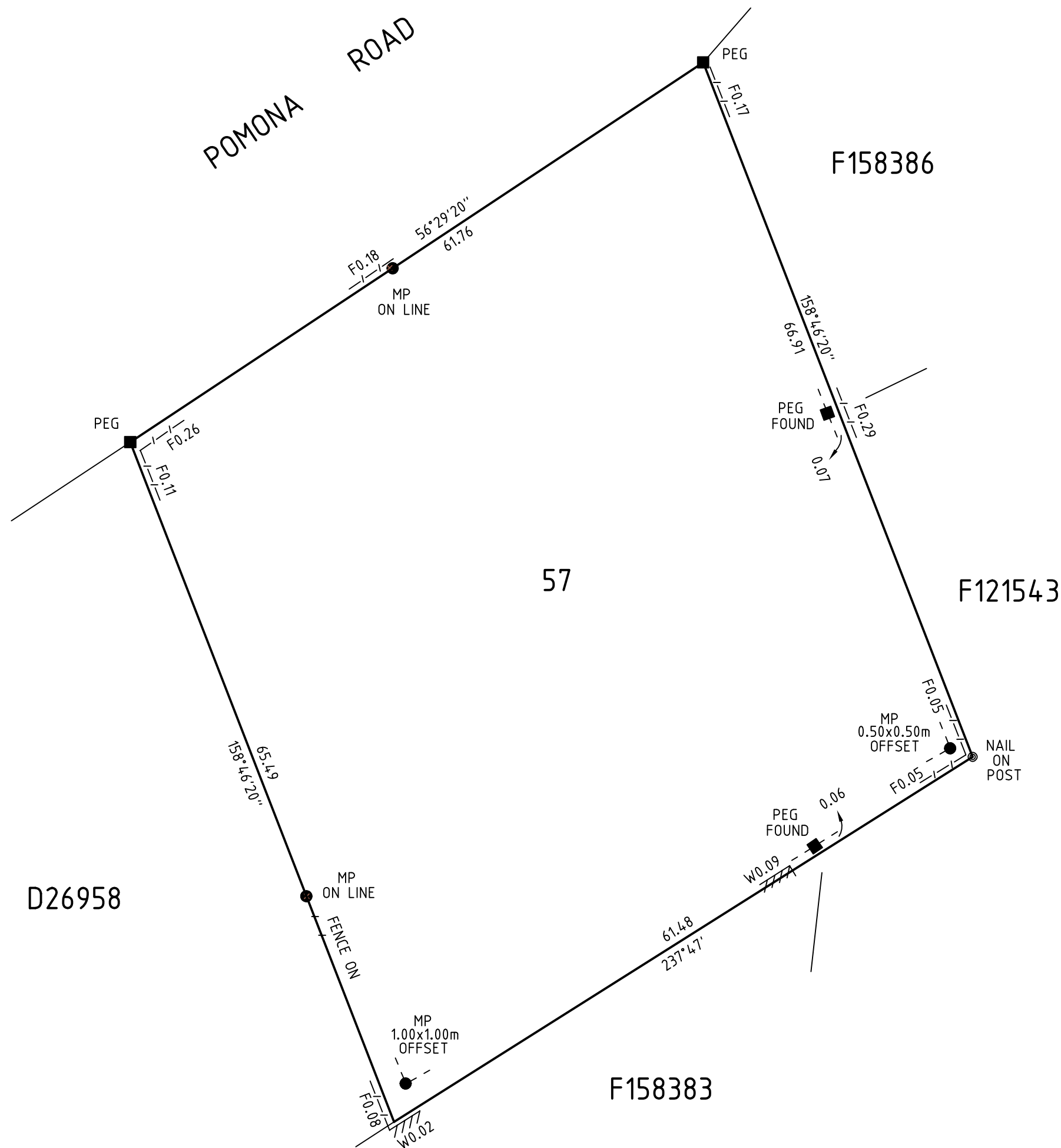
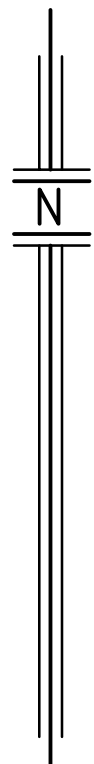
Feel free to call me on 0417 080 596 if you have any queries.

Yours sincerely

A handwritten signature in black ink, consisting of a circular scribble followed by a horizontal line extending to the right.

Matthew King RPIA
Managing Director

Attachment 1 – Boundary Identification Survey and Levels of Neighbouring Properties.



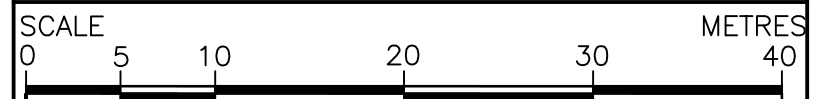
BOUNDARY IDENTIFICATION PLAN

ALLOTMENT 57 IN D26958
 IN THE AREA NAMED STIRLING
 HUNDRED OF NOARLUNGA
 CT: 5428/116

DRAWING REF: 2019049-2

LEGEND

■	PEG	BDY	BOUNDARY
⊙	GI NAIL	PROD	PRODUCTION
⊙	MASONRY NAIL (MN)	BRK	BRICK
●	METAL PIN (MP)	RET	RETAINING
●	SPIKE	CBF	COLORBOND FENCE
- - -	FENCE (F)		
~~~~~	GI FENCE (GIF)		
////	WALL (W)		
///	BUILDING CORNER		
┌┐	OFFSETS TO BOUNDARY		
	F0.12		OFFSET FROM FENCE TO BOUNDARY
	W0.23		OFFSET FROM WALL TO BOUNDARY
	B1.60		OFFSET FROM BUILDING TO BOUNDARY



STATEMENTS CONCERNING EASEMENTS, ANNOTATIONS AND AMMENDMENTS:  
 ALL OFFSETS ARE FROM THE BOUNDARY UNLESS STATED OTHERWISE.  
 DIAGRAM MAY BE SCALED FOR CLARITY.

NOTE: This plan is of an identification survey only and as such is not registered at the Registrar General's Office. Subsequent registered or other surveys in this area may affect the boundary definition shown on this plan. Any differences so caused to the boundary definition shown on this plan are beyond the control of Michael Gear Surveys who can accept no responsibility for such differences.

CERTIFIED CORRECT  
 2-3-2020 Date PAUL EITERNICK Licensed Surveyor

**Michael Gear Surveys**  
 Licensed & Engineering Surveyors

5 Gulfview Road Blackwood SA 5051 Phone: 8278 8732  
 17B-19A Darling Tce Whyalla SA 5600 Phone: 8644 2040



DEVELOPMENT No

**PLAN OF COMMUNITY DIVISION FOR DEVELOPMENT APPROVAL  
AND LAND USE APPLICATION FOR NEW DWELLINGS**

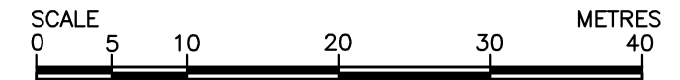
HUNDRED OF NOARLUNGA  
ALLOTMENT 57 IN D26958

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

NEIGHBOURING STRUCTURES HAVE BEEN PLOTTED FROM  
AERIAL IMAGERY AND ARE INDICATIVE ONLY.

LEVELS SHOWN NEAR NEIGHBOURING STRUCTURES ARE AT  
GROUND LEVEL.

ALL STRUCTURES ARE TO BE REMOVED  
TREES ARE NOT REGULATED OR SIGNIFICANT  
UNLESS SHOWN OTHERWISE

REGULATED TREES SHOWN IN BLUE

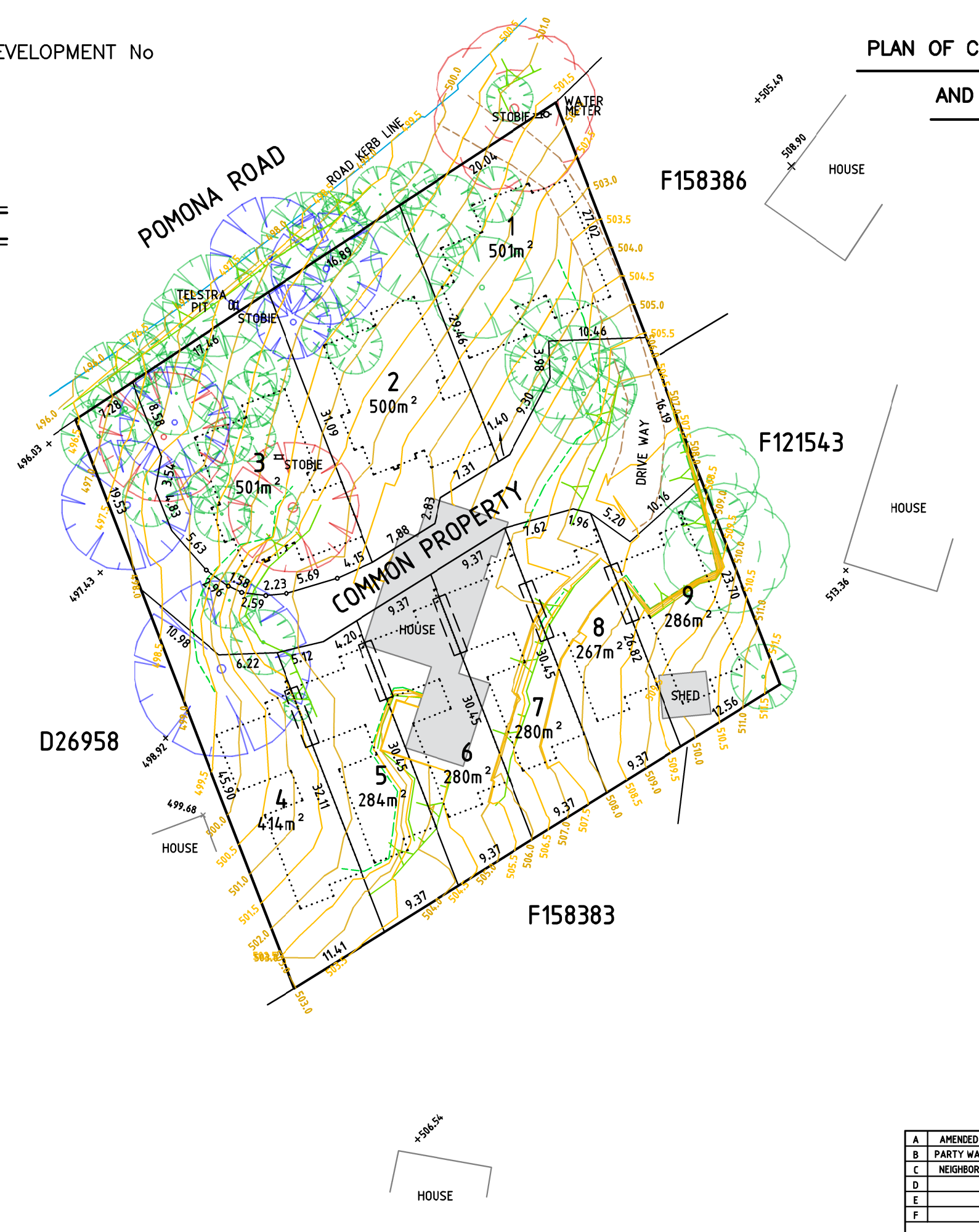
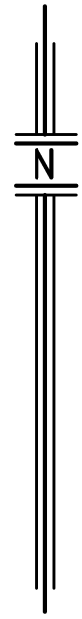


SIGNIFICANT TREES SHOWN IN RED



— — — INDICATES POSITION OF PARTY WALLS  
- - - - - INDICATES POSITION OF PROPOSED DWELLINGS

PLEASE NOTE: THIS DOCUMENT IS FOR PLANNING PURPOSES ONLY



REF: 2019049-1C

REVISIONS	BY	DATE
A	AMENDED PLAN TITLE	PE 5/4/19
B	PARTY WALLS ADDED	BM 23/5/19
C	NEIGHBORING LEVELS	PE 3/3/20
D		
E		
F		

**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:93205344714

**Attachment 2 – Updated Architectural Plans from Alexander Brown Architects.**





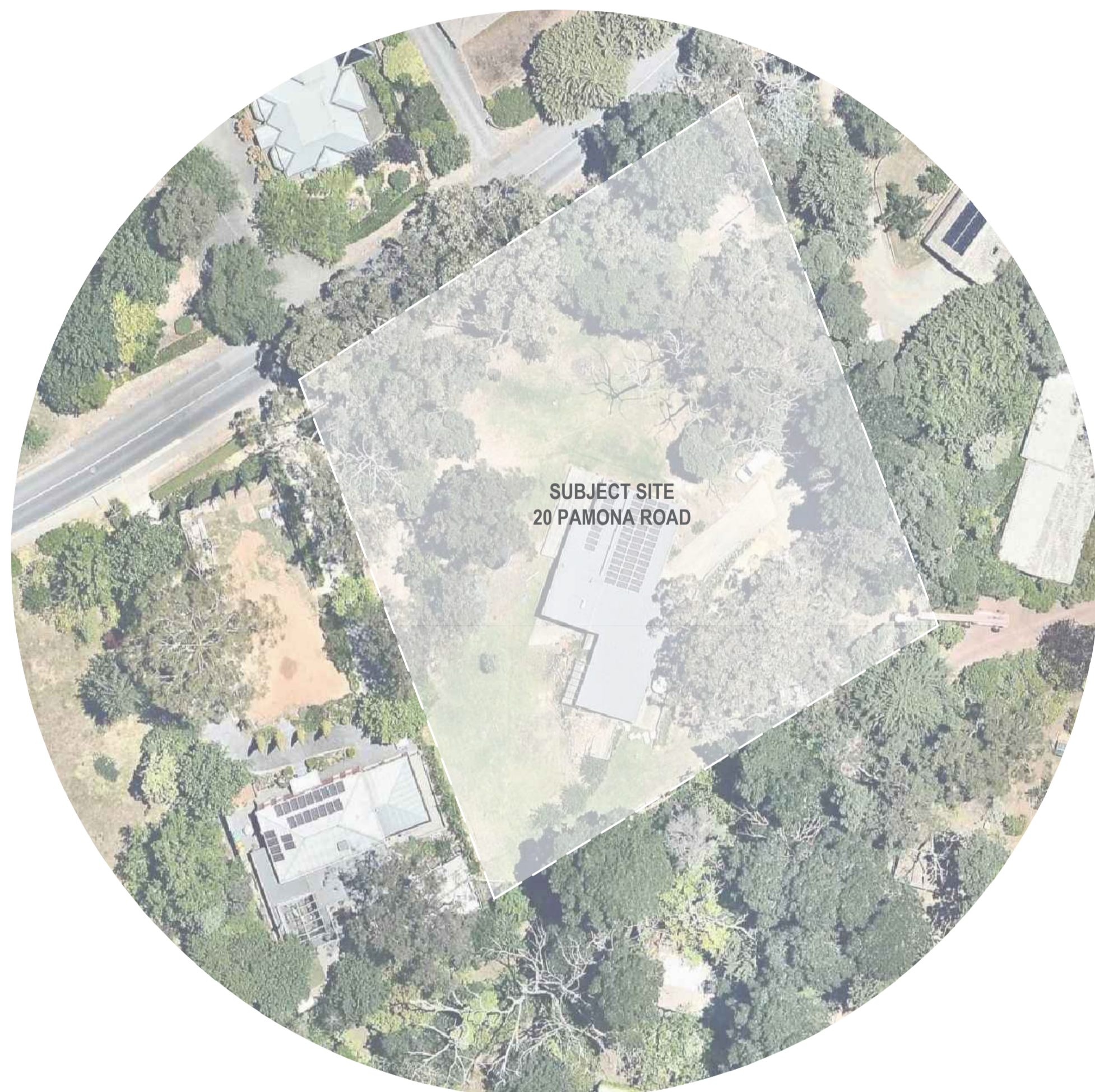
FOR ILLUSTRATIVE PURPOSES ONLY

**ALEXANDER  
BROWN  
ARCHITECTS**

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

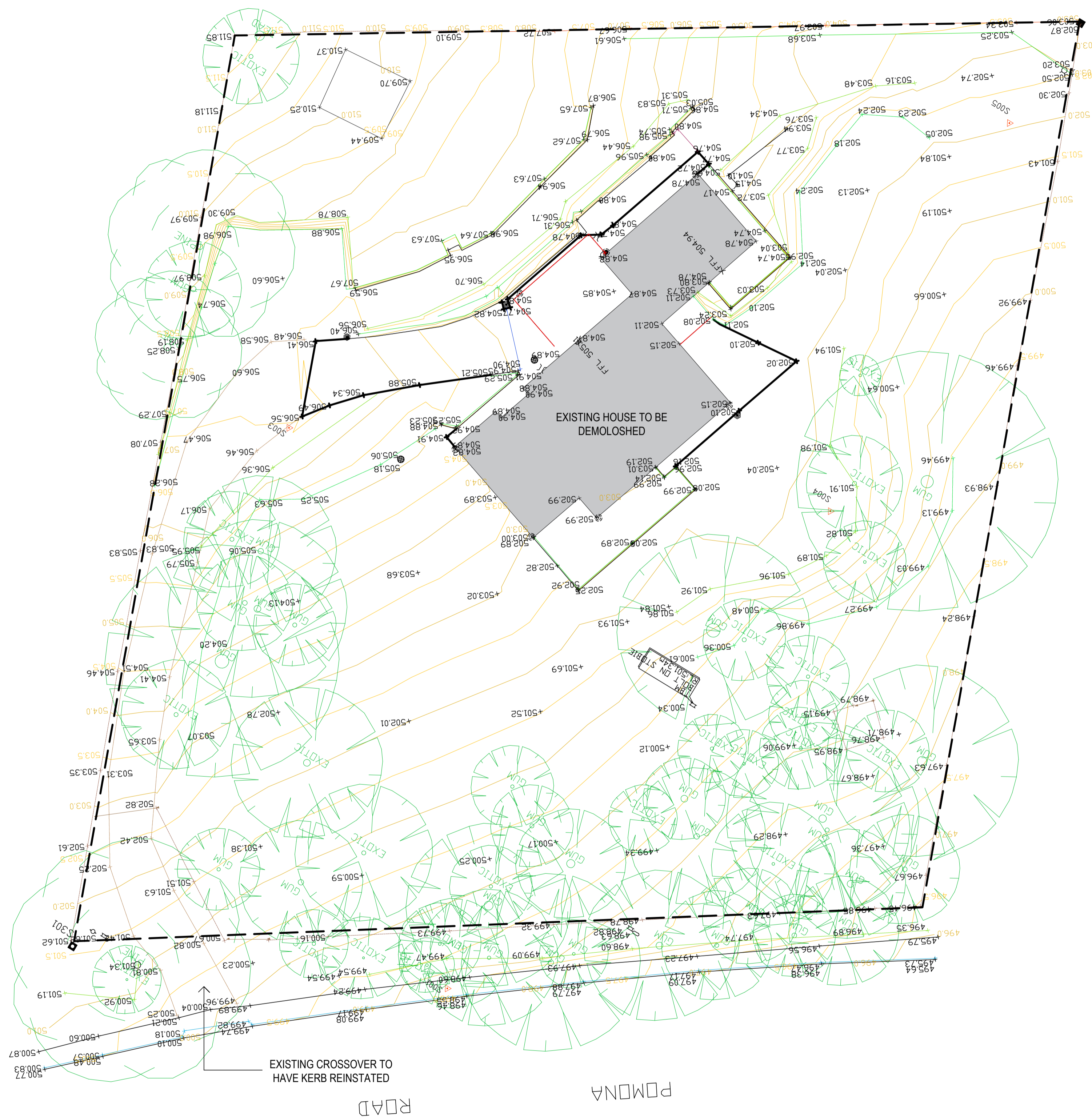
POMONA ROAD DEVELOPMENT - 20 POMONA ROAD, STIRLING

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



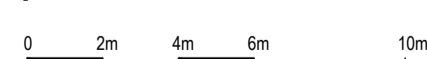
**SUBJECT SITE  
20 PAMONA ROAD**

**LOCATION PLAN**  
1:500 @ A1



**SITE SURVEY**

1:200 @ A1



1:200 SCALE BAR



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

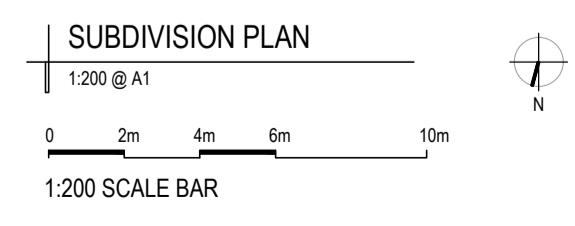
CLIENT  
**John Ellery**  
DRAWING TITLE  
**Location Plan + Site Survey**

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



## AREA SCHEDULE

TOTAL SITE	3992.1m ²
SITE COVERAGE	1669.8m ²
SITE COVERAGE %	41.8%



F	28.08.2019	PLANNING ISSUE
E	02.08.2019	PLANNING ISSUE
D	15.05.2019	PLANNING ISSUE
C	04.03.2019	PLANNING ISSUE
B	15.02.2019	PLANNING ISSUE
A	15.01.2019	PLANNING ISSUE

## PLANNING

**18-015.PL02.F**

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 **AUGUST 2019**



## AREA SCHEDULE

TOTAL SITE	3992.1m ²
SITE COVERAGE	1668.8m ²
SITE COVERAGE %	41.8%

## FINISHES SCHEDULE

<b>RW 01</b>	<b>RETAINING WALL TYPE 01</b> AUSSIE BLOCK COLOUR : OATMEAL
<b>RW 02</b>	<b>RETAINING WALL TYPE 02</b> CONCRETE SLEEPERS WITH BEDROCK TEXTURE COLOUR : SANDSTONE
<b>FE.01</b>	<b>FENCE 01</b> COLORBOND GOOD NEIGHBOUR FENCE COLOUR : CB MONUMENT
<b>FE 02</b>	<b>FENCE 2</b> 1.8m HIGH TIMBER SLAT FENCE WITH NO GAPS AND STEEL POSTS POST : CB MONUMENT SPECIES : WESTERN RED CEDAR
<b>SCREEN.01</b>	<b>PRIVACY SCREEN 01</b> REV ROOFING VICTORY FENCING STOCKADE SLAT SCREEN 70mm SLATS WITH 10mm GAP COLOUR : MONUMENT / CEDAR
<b>PV 01</b>	<b>PAVING TYPE 1</b> BEST BRICKS & PAVERS BEST LOCK PAVER 60 COLOUR : NATURAL
<b>PV 02</b>	<b>PAVING TYPE 2</b> BEST BRICKS & PAVERS BEST LOCK PAVER 60 COLOUR : CHARCOAL



G	06.04.2020	PLANNING ISSUE
F	28.08.2019	PLANNING ISSUE
E	02.08.2019	PLANNING ISSUE
D	04.03.2019	PLANNING ISSUE
C	15.02.2019	PLANNING ISSUE
B	15.01.2019	PLANNING ISSUE
A	15.01.2019	PLANNING ISSUE

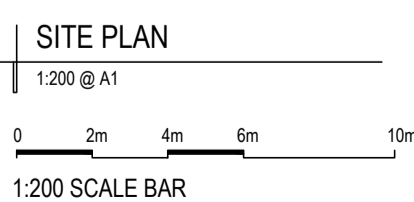
## PLANNING

### 18-015.PL03.G

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 **APRIL 2020**



## AREA SCHEDULE

TOTAL AREA LOTS 01 - 03 1500.5m²

**LOT 01**  
 LOT AREA 501.3m²  
 SITE COVERAGE 206.5m²  
 SITE COVERAGE % 41.2%  
 PRIVATE OPEN SPACE 73.2m²

LOWER GROUND FLOOR 94.7m²  
 VERANDAH 21.9m²  
 UPPER GROUND FLOOR 185.8m²  
 PORCH 7.8m²  
 BALCONY 20.5m²  
 DECK 21.1m²

**LOT 02**  
 LOT AREA 500.1m²  
 SITE COVERAGE 205.1m²  
 SITE COVERAGE % 41.0%  
 PRIVATE OPEN SPACE 136m²

LOWER GROUND FLOOR 127.1m²  
 VERANDAH 14.5m²  
 UPPER GROUND FLOOR 172.1m²  
 PORCH 8.1m²  
 BALCONY 12.6m²  
 DECK 18.8m²

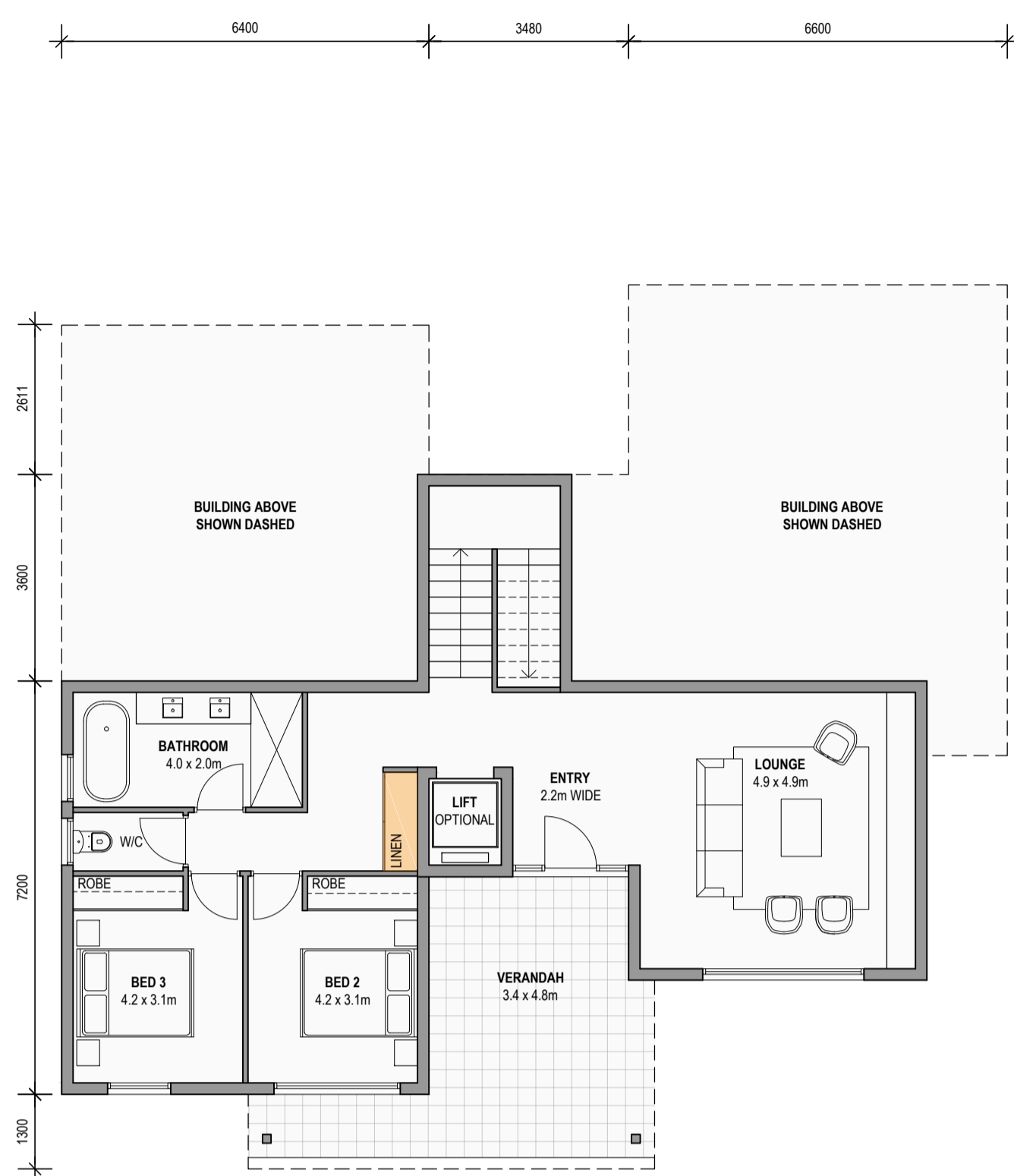
**LOT 03**  
 LOT AREA 501.0m²  
 SITE COVERAGE 205.1m²  
 SITE COVERAGE % 40.9%  
 PRIVATE OPEN SPACE 160.7m²

LOWER GROUND FLOOR 127.1m²  
 VERANDAH 14.5m²  
 UPPER GROUND FLOOR 172.1m²  
 PORCH 8.1m²  
 BALCONY 12.6m²  
 DECK 18.8m²

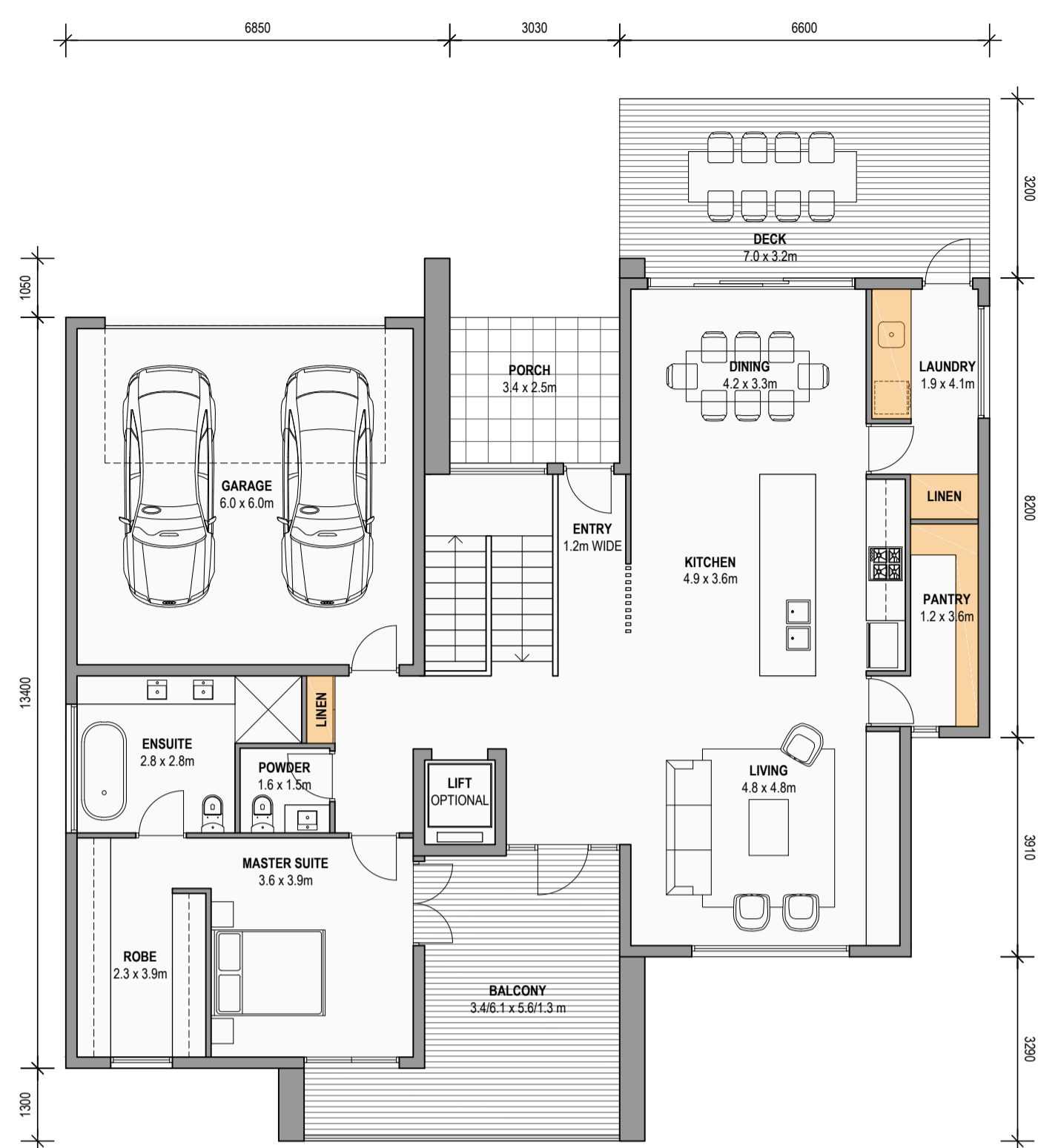
## STORAGE

**LOT 01**  
 LINEN 4.3m³  
 LAUNDRY 2.9m³  
 PANTRY 5.2m³  
**TOTAL STORAGE 12.4m³**

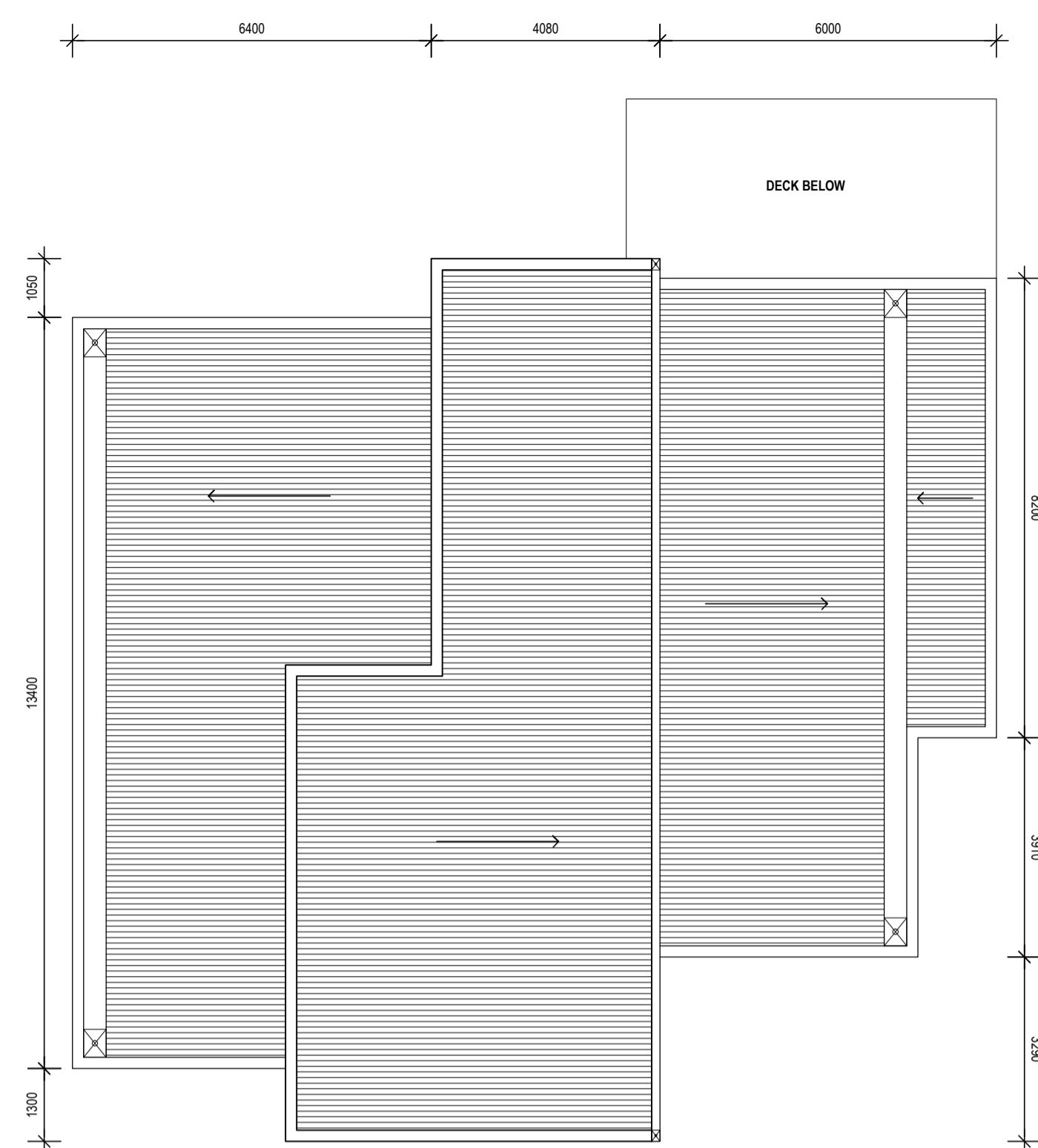
**LOT 02 - 03**  
 LINEN 5.9m³  
 LAUNDRY 3.8m³  
 PANTRY 4.3m³  
**TOTAL STORAGE 14.0m³**



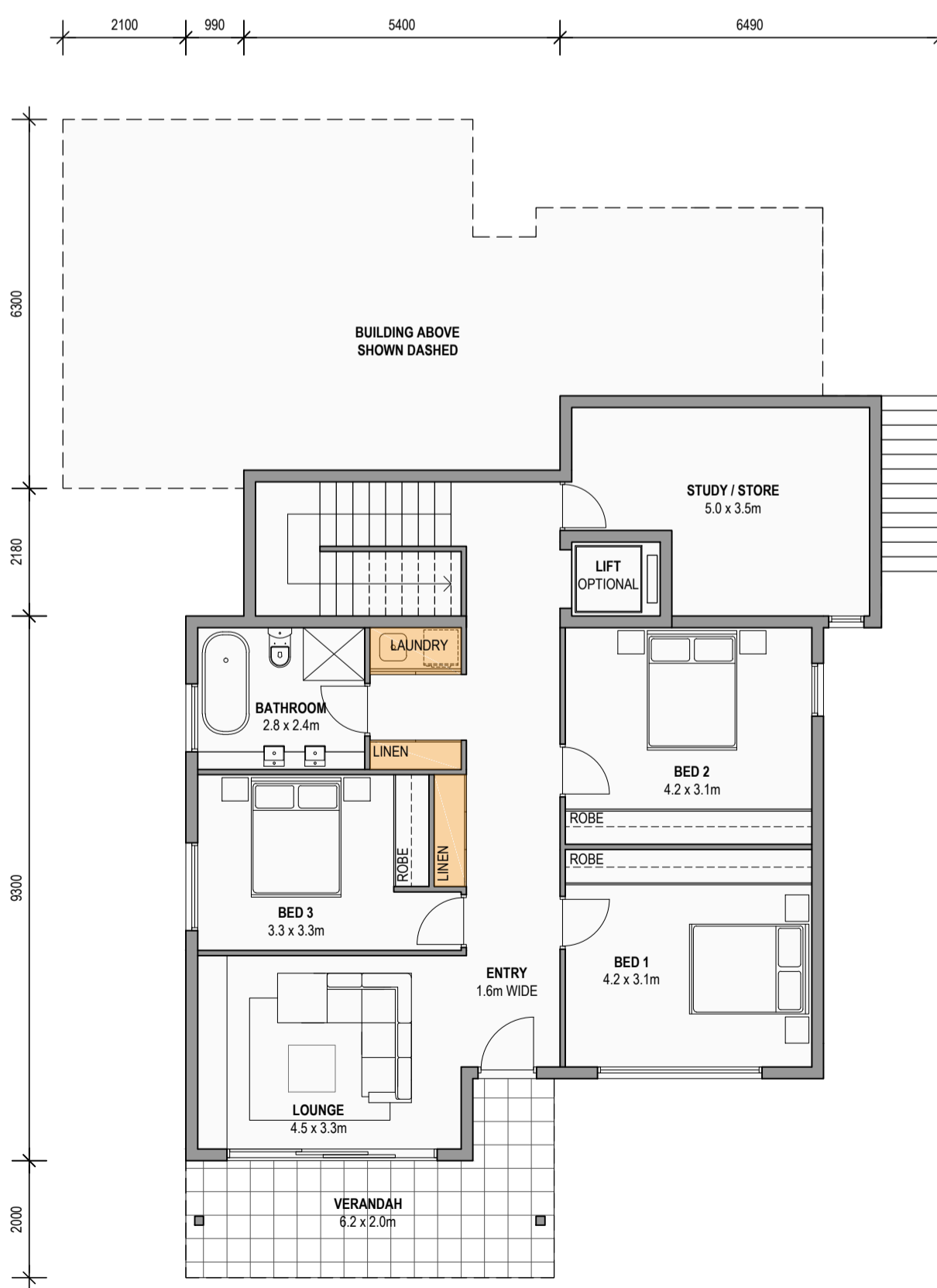
**LOT 1**  
LOWER GROUND FLOOR PLAN



**LOT 1**  
UPPER GROUND FLOOR PLAN



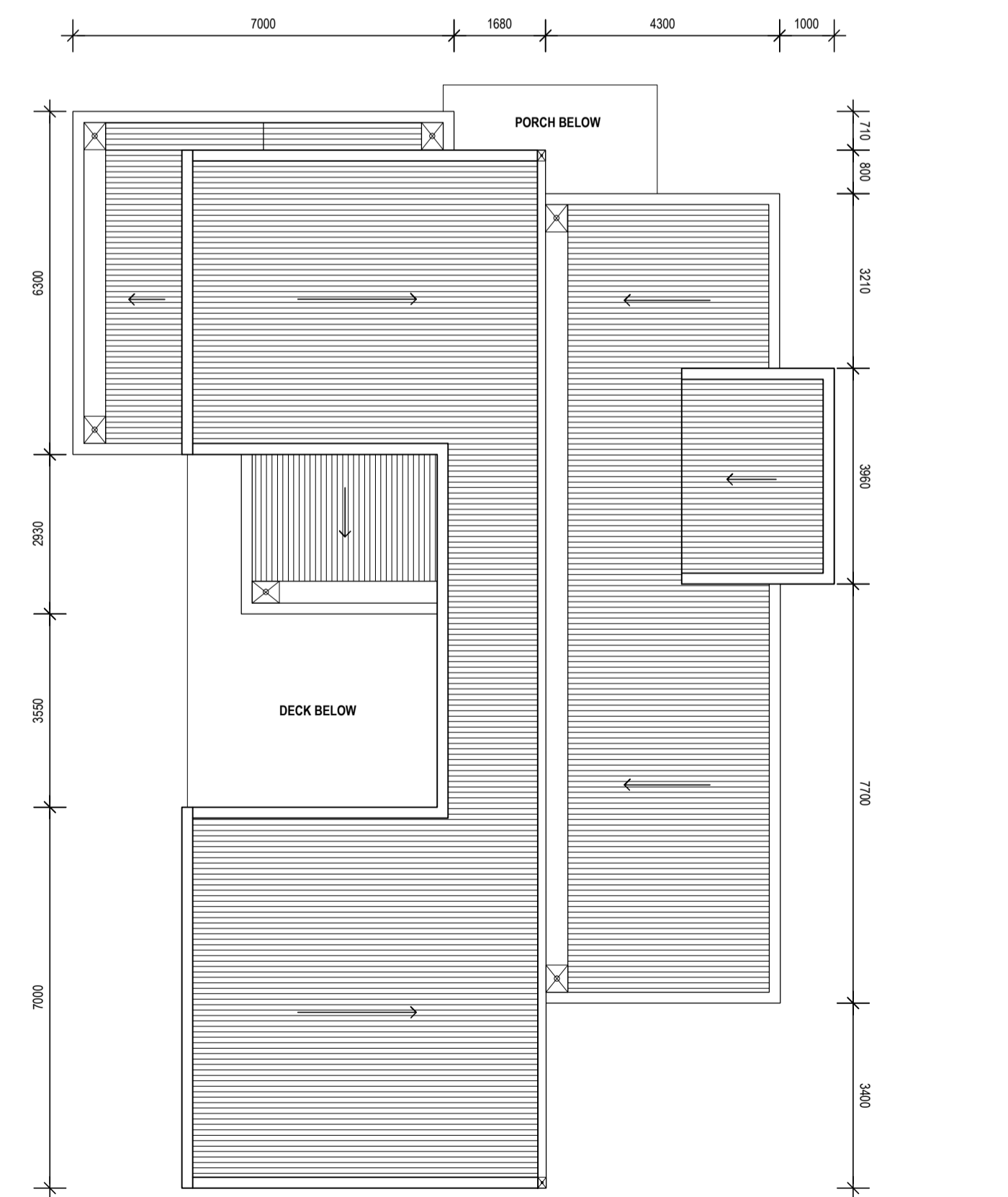
**LOT 1**  
ROOFTOP PLAN



**LOT 2 - 3**  
LOWER GROUND FLOOR PLAN



**LOT 2 - 3**  
UPPER GROUND FLOOR PLAN



**LOT 2 - 3**  
ROOFTOP PLAN

E	28.08.2019	PLANNING ISSUE
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.E**

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 **AUGUST 2019**



## AREA SCHEDULE

TOTAL AREA LOTS 04 - 09 1811.2m²

**LOT 04**  
 LOT AREA 414.0m²  
 SITE COVERAGE 148.9m²  
 SITE COVERAGE % 36.0%  
 PRIVATE OPEN SPACE 97.7m²

LOWER GROUND FLOOR 75.5m²  
 UPPER GROUND FLOOR 137.9m²  
 BALCONY 6.4m²  
 DECK 18.4m²  
 FIRST FLOOR 80.6m²

**LOT 05**  
 LOT AREA 284.3m²  
 SITE COVERAGE 148.9m²  
 SITE COVERAGE % 52.4%  
 PRIVATE OPEN SPACE 84.5m²

LOWER GROUND FLOOR 75.5m²  
 UPPER GROUND FLOOR 137.9m²  
 BALCONY 6.4m²  
 DECK 18.4m²  
 FIRST FLOOR 80.6m²

**LOT 06**  
 LOT AREA 280.1m²  
 SITE COVERAGE 148.9m²  
 SITE COVERAGE % 53.2%  
 PRIVATE OPEN SPACE 83.8m²

LOWER GROUND FLOOR 75.5m²  
 UPPER GROUND FLOOR 137.9m²  
 BALCONY 6.4m²  
 DECK 18.4m²  
 FIRST FLOOR 80.6m²

**LOT 07**  
 LOT AREA 280.1m²  
 SITE COVERAGE 148.9m²  
 SITE COVERAGE % 53.2%  
 PRIVATE OPEN SPACE 83.8m²

LOWER GROUND FLOOR 75.5m²  
 UPPER GROUND FLOOR 137.9m²  
 BALCONY 6.4m²  
 DECK 18.4m²  
 FIRST FLOOR 80.6m²

**LOT 08**  
 LOT AREA 267.1m²  
 SITE COVERAGE 133.2m²  
 SITE COVERAGE % 49.9%  
 PRIVATE OPEN SPACE 66.0m²

LOWER GROUND FLOOR 75.5m²  
 UPPER GROUND FLOOR 127.3m²  
 BALCONY 6.4m²  
 FIRST FLOOR 80.6m²

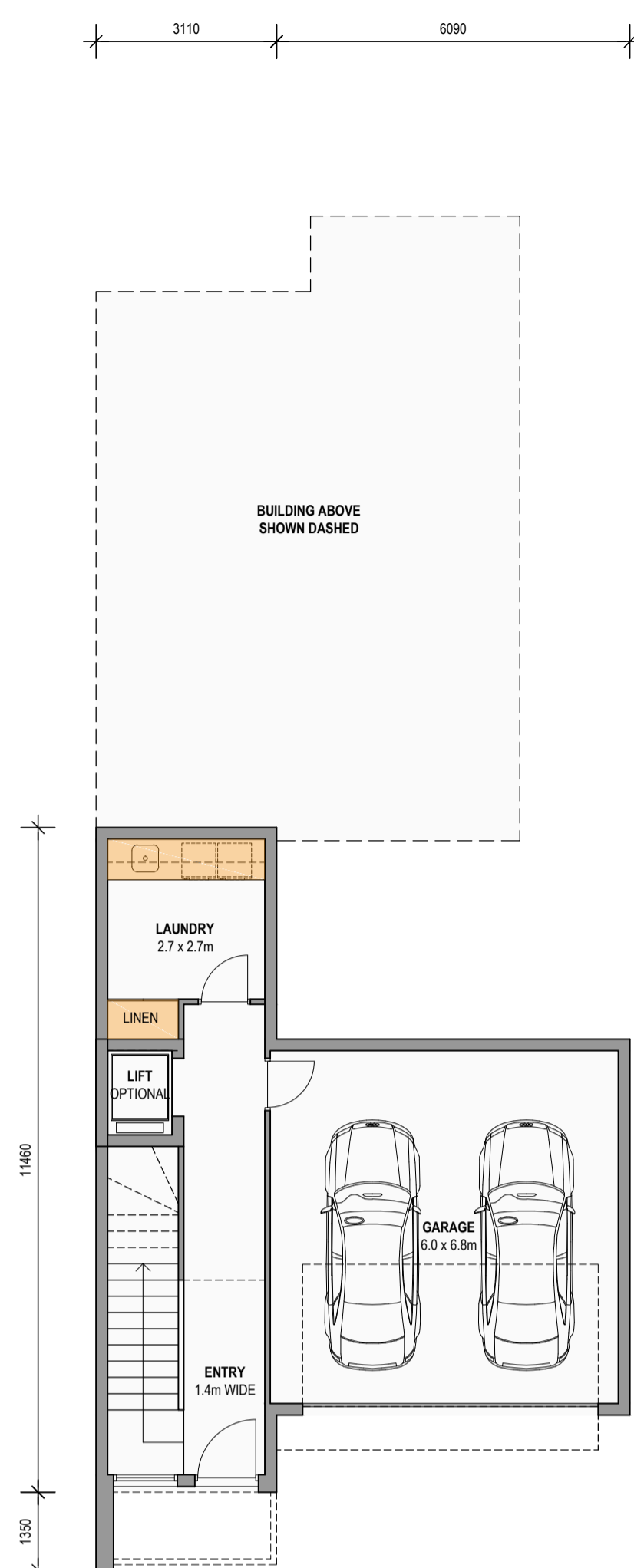
**LOT 09**  
 LOT AREA 285.6m²  
 SITE COVERAGE 133.2m²  
 SITE COVERAGE % 46.6%  
 PRIVATE OPEN SPACE 43m²

LOWER GROUND FLOOR 75.5m²  
 UPPER GROUND FLOOR 127.3m²  
 BALCONY 6.4m²  
 FIRST FLOOR 80.6m²

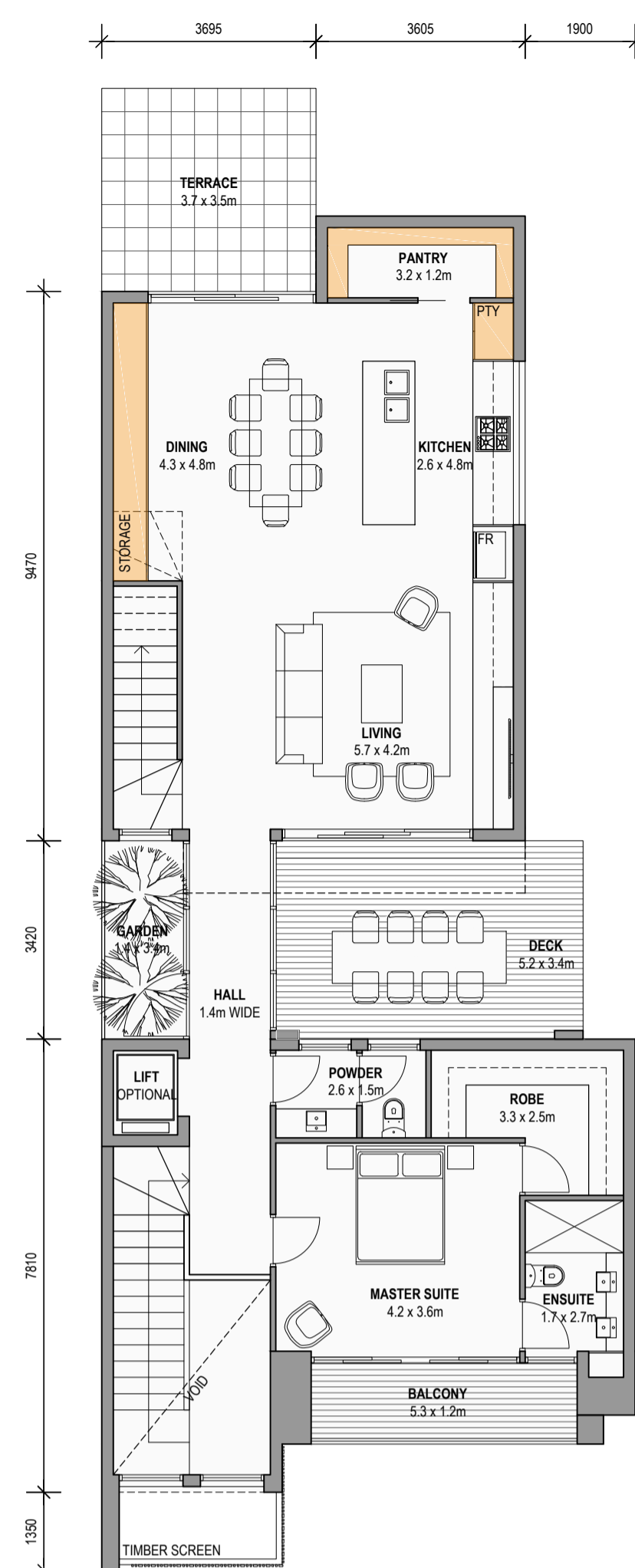
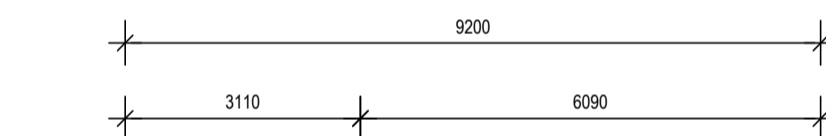
## STORAGE

**LOT 04 - 07**  
 LINEN 3.2m³  
 LAUNDRY 4.3m³  
 STORAGE 8.0m³  
 PANTRY 5.0m³  
**TOTAL STORAGE 20.5m³**

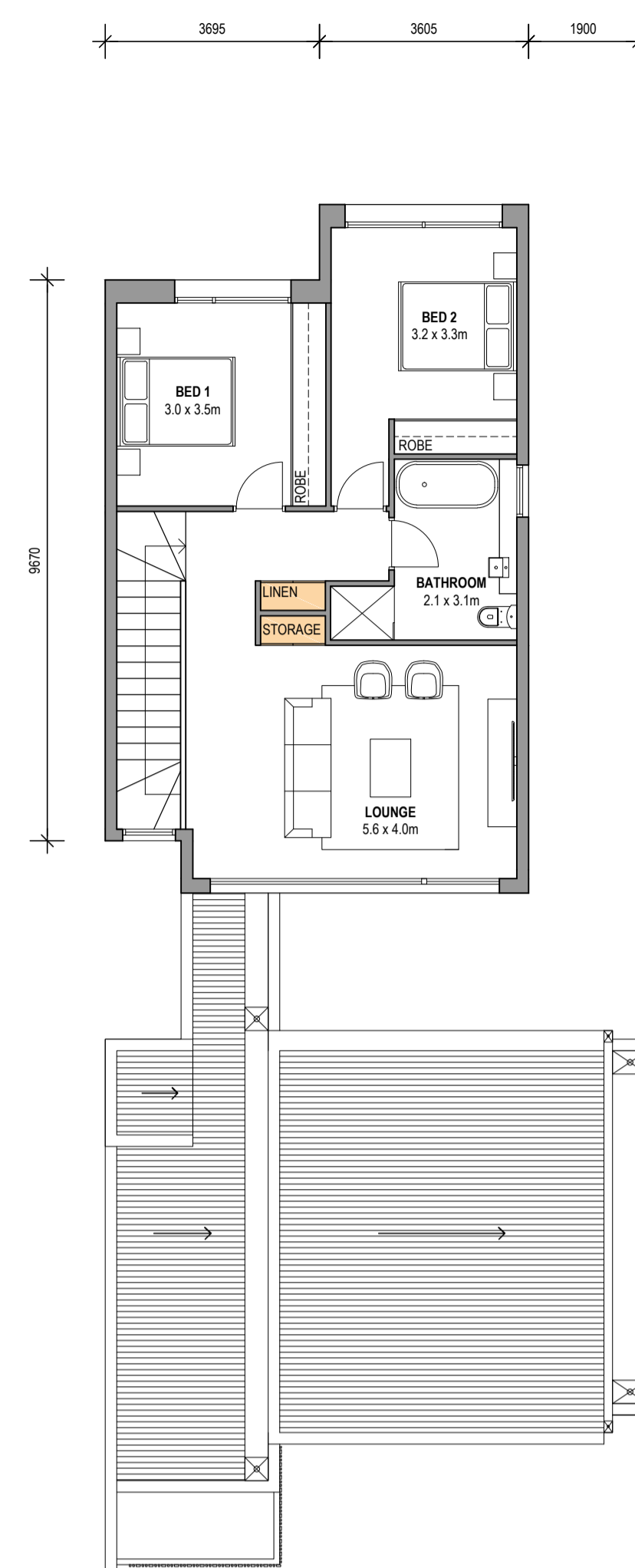
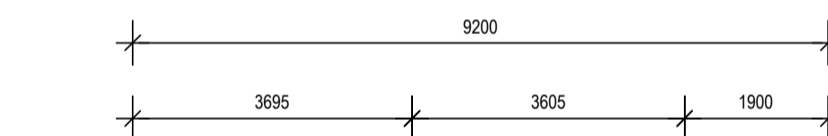
**LOT 08 - 09**  
 LINEN 3.2m³  
 LAUNDRY 4.3m³  
 STORAGE 7.3m³  
 PANTRY 5.7m³  
**TOTAL STORAGE 20.5m³**



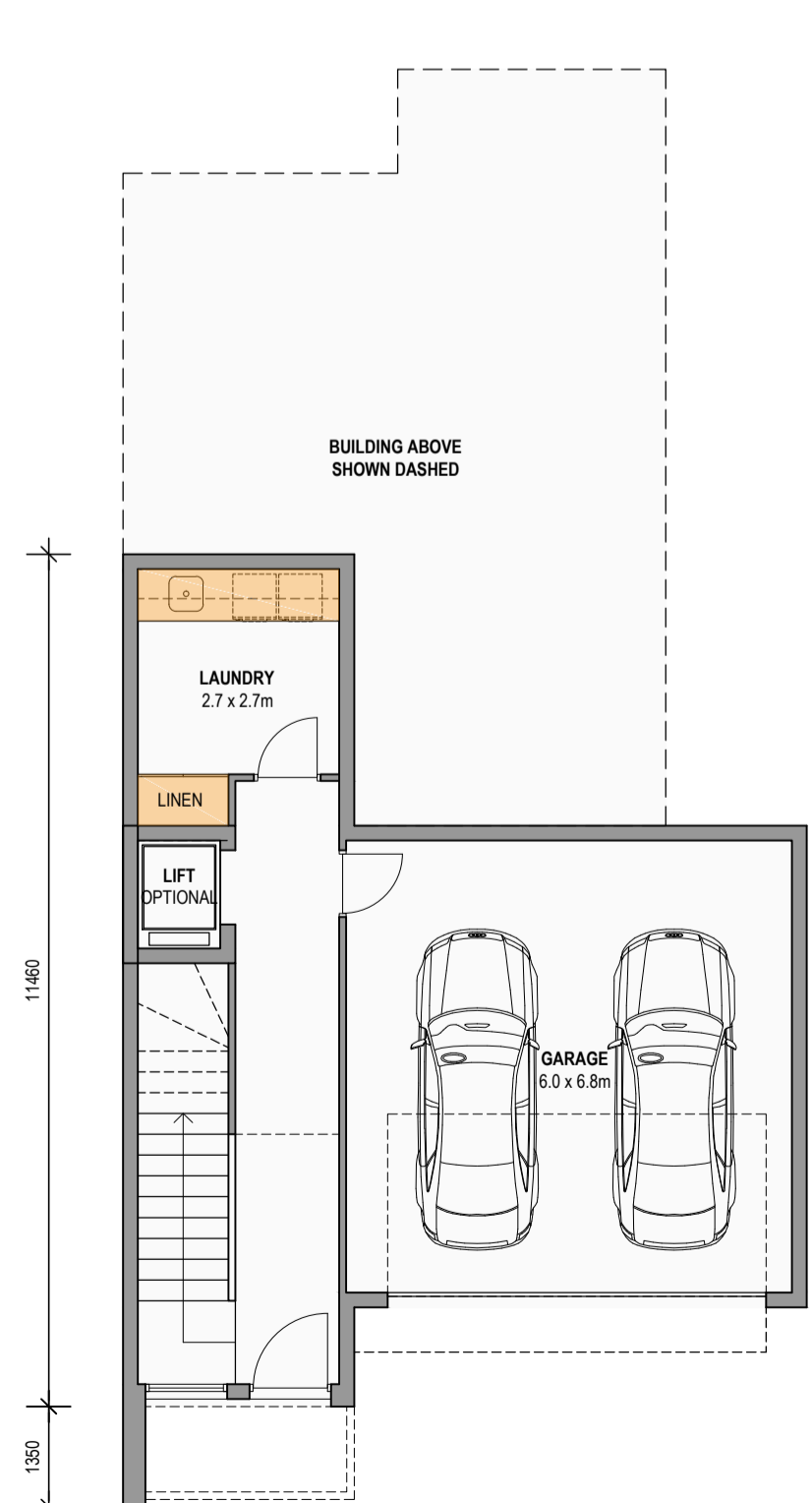
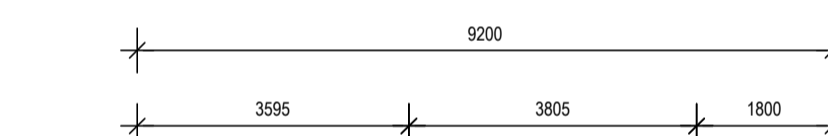
**LOT 4 - 7**  
LOWER GROUND FLOOR PLAN



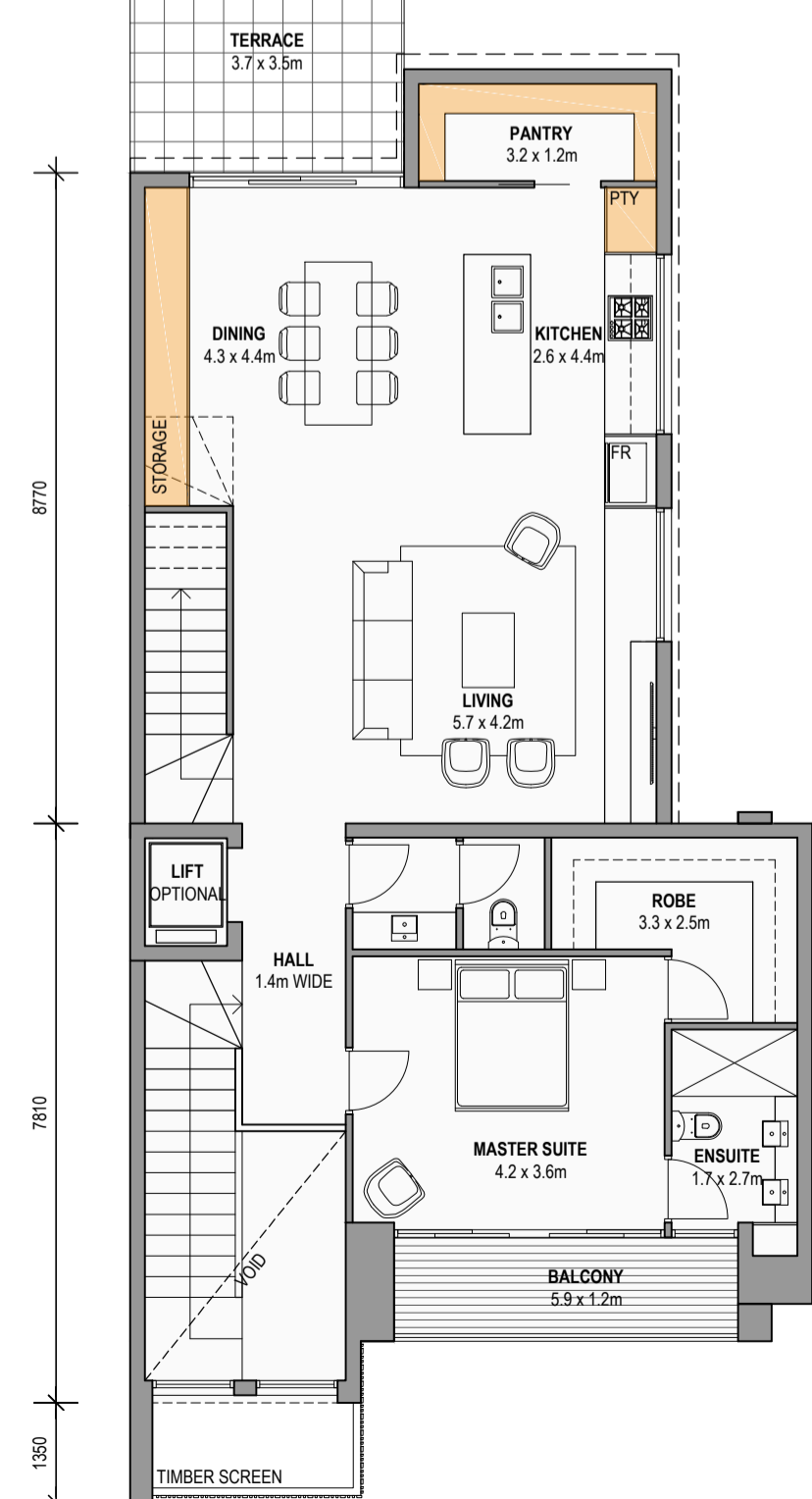
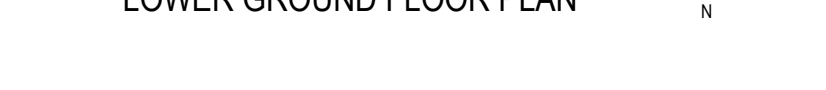
**LOT 4 - 7**  
UPPER GROUND FLOOR PLAN



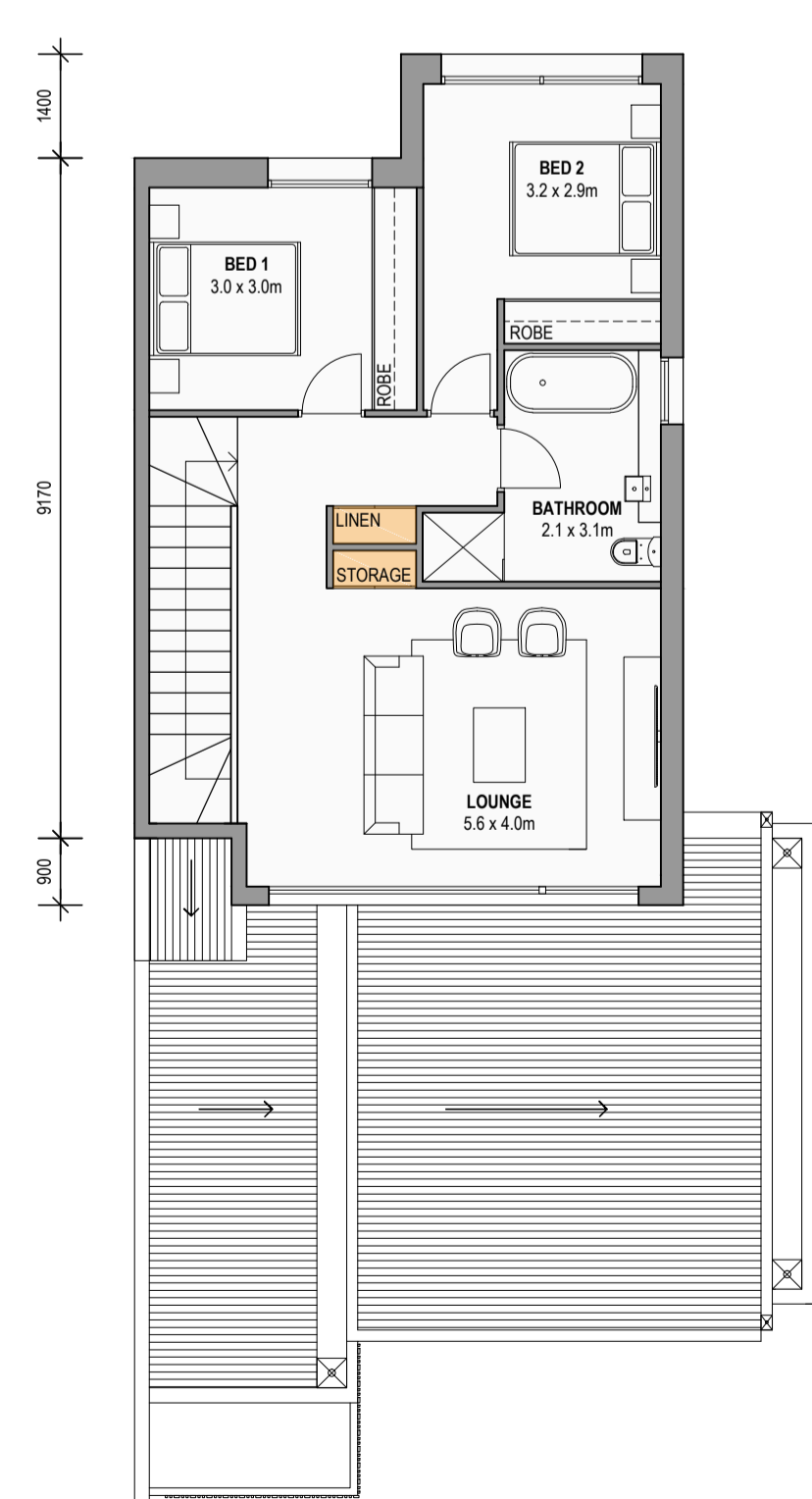
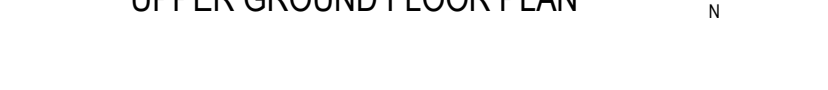
**LOT 4 - 7**  
FIRST FLOOR PLAN



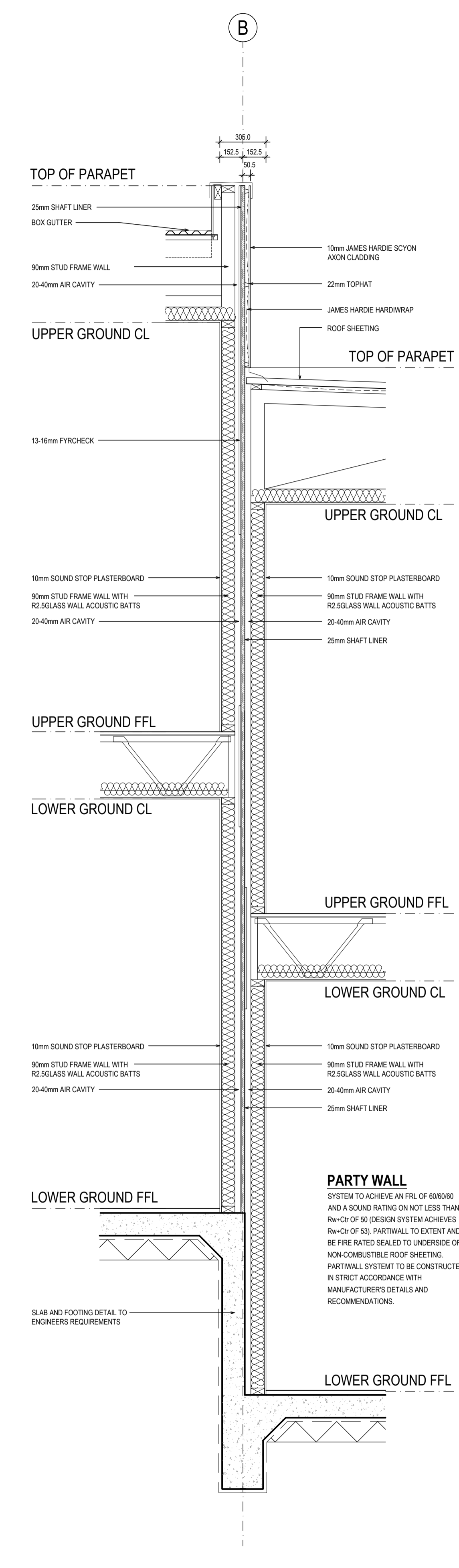
**LOT 8 - 9**  
LOWER GROUND FLOOR PLAN



**LOT 8 - 9**  
UPPER GROUND FLOOR PLAN



**LOT 8 - 9**  
FIRST FLOOR PLAN



**LOT 04 - 09**  
TYPICAL PARTY WALL DETAIL

Code	Date	Issue
D	15.05.2019	PLANNING ISSUE
C	15.02.2019	PLANNING ISSUE
B	15.01.2019	PLANNING ISSUE
A	15.01.2019	PLANNING ISSUE

## PLANNING

### 18-015.PL05.D

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

CLIENT  
John Ellery

DRAWING TITLE  
Individual Floorplans  
Lots 04 - 09

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







ELEVATION 01 - NORTH / POMONA ROAD  
1:100 @ A1



ELEVATION 02 - NORTH  
1:100 @ A1

## FINISHES SCHEDULE

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

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

- 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

- FE.02 FENCE 2**  
1.8m HIGH TIMBER SLAT FENCE  
WITH NO GAPS AND STEEL POSTS  
POST : CB MONUMENT  
SPECIES : WESTERN RED CEDAR

- SCREEN.01 PRIVACY SCREEN 01**  
REV ROOFING VICTORY FENCING  
STOCKADE SLAT SCREEN  
70mm SLATS WITH 10mm GAP  
COLOUR : MONUMENT / CEDAR

- 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

## 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

D	28.08.2019	PLANNING ISSUE
C	04.03.2019	PLANNING ISSUE
B	15.02.2019	PLANNING ISSUE
A	15.01.2019	PLANNING ISSUE

## PLANNING

**18-015.PL06.D**  
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 AUGUST 2019



## FINISHES SCHEDULE

- WF.01 WALL FINISH 01**  
REVOLUTION ROOFING  
TRUE OAK SUPER 5  
AND FLASHING  
CLADDING : SURFMIST
  - WF.02 WALL FINISH 02**  
WALL FINISH 02  
JAMES HARDIE  
SCYON AXON CLADDING  
PAINTED : CB MONUMENT
  - WF.03 WALL FINISH 03**  
WALL FINISH 03  
AUSTRAL BRICKS  
MELBOURNE  
COLOUR : HAWTHORN
  - WF.04 WALL FINISH 04**  
WALL FINISH 04  
CFC SHEET  
PAINTED : MONUMENT
  - WF.05 WALL FINISH 05**  
WALL FINISH 05  
CFC SHEET  
PAINTED : SURFMIST
- TIMBER SCREEN**  
30x30 - 30x70 mm  
TIMBER BATTENS  
SPECIES : SPOTTED GUM
- 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
  - FE.02 FENCE 2**  
1.8m HIGH TIMBER SLAT FENCE  
WITH NO GAPS AND STEEL POSTS  
POST : CB MONUMENT  
SPECIES : WESTERN RED CEDAR
- SCREEN.01 PRIVACY SCREEN 01**  
REV ROOFING VICTORY FENCING  
STOCKADE SLAT SCREEN  
70mm SLATS WITH 10mm GAP  
COLOUR : MONUMENT / CEDAR
- 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

## GENERAL LEGEND

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

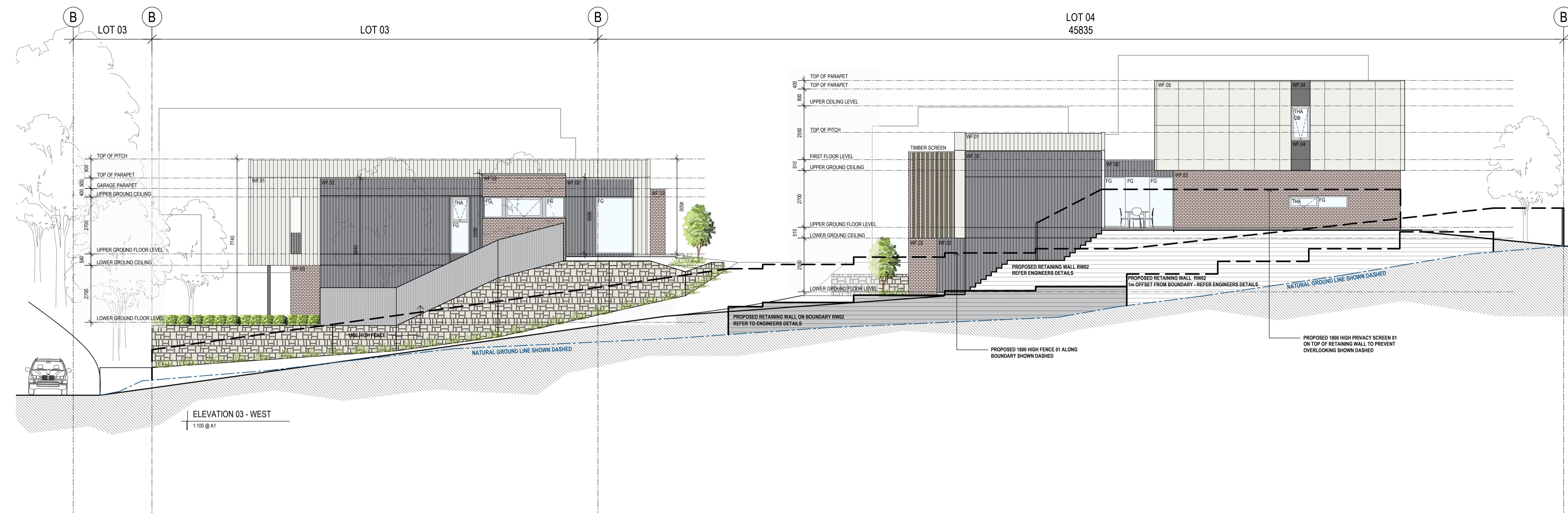
- ED** ENTRY DOOR
- TGD** TILT UP GARAGE DOOR
- FG** FIXED GLAZING
- THA** TOP HUNG AWNING
- GSD** GLASS SLIDING DOOR
- OB** OBSCURE GLAZING

D	06.04.2020	PLANNING ISSUE
C	28.08.2019	PLANNING ISSUE
B	15.02.2019	PLANNING ISSUE
A	15.01.2019	PLANNING ISSUE

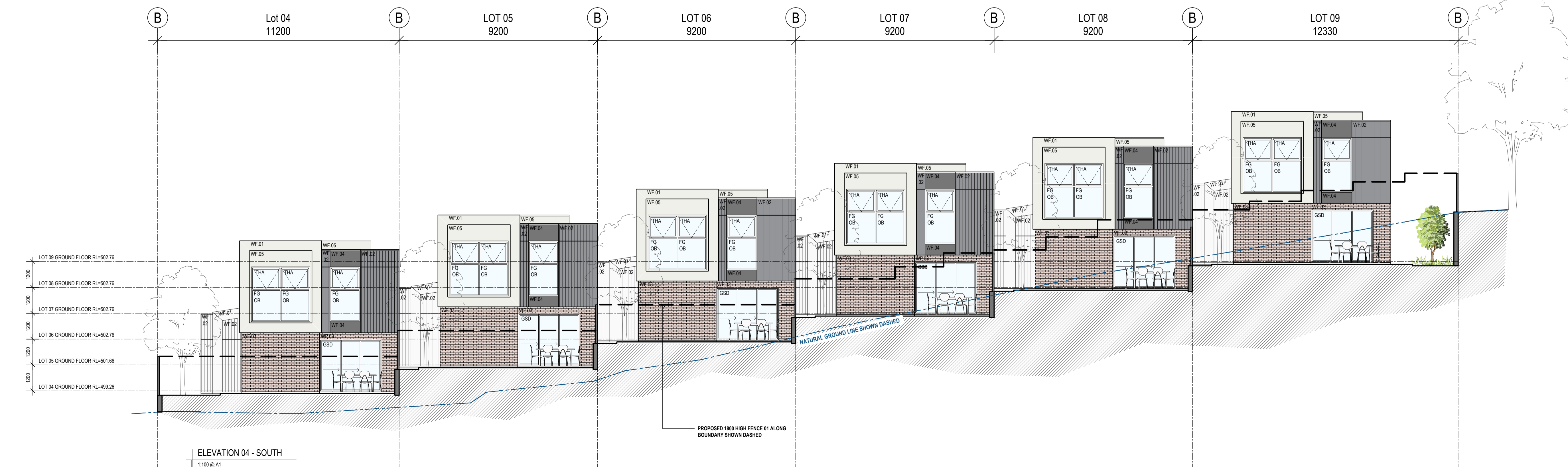
## PLANNING

**18-015.PL07.D**  
PROJECT  
**Pomona Rd Development**  
Lot 1-9, 20 Pomona Road STIRLING SA  
CLIENT  
John Ellery  
DRAWING TITLE  
Elevations

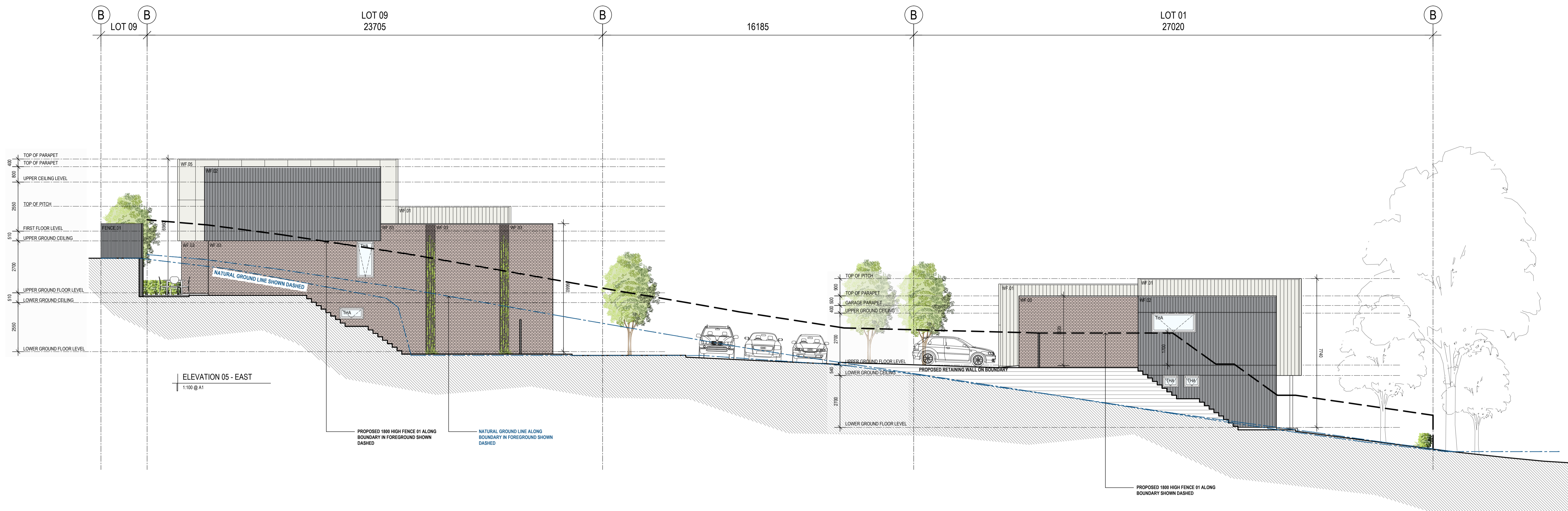
DETAILS  
Drawn BM / NF  
Scale 1:100 @ A1  
Date APRIL 2020



ELEVATION 03 - WEST  
1:100 @ A1



ELEVATION 04 - SOUTH  
1:100 @ A1



## FINISHES SCHEDULE

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

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

- FE.01 FENCE 01**  
COLORBOND GOOD  
NEIGHBOUR FENCE  
COLOUR : CB MONUMENT
- FE.02 FENCE 2**  
1.8m HIGH TIMBER SLAT FENCE  
WITH NO GAPS AND STEEL POSTS  
POST : CB MONUMENT  
SPECIES : WESTERN RED CEDAR

## 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





FOR ILLUSTRATIVE PURPOSES ONLY

PERSPECTIVE 01 - LOT 03



FOR ILLUSTRATIVE PURPOSES ONLY

PERSPECTIVE 02 - LOT 03



FOR ILLUSTRATIVE PURPOSES ONLY

PERSPECTIVE 03 - LOT 03



FOR ILLUSTRATIVE PURPOSES ONLY

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**

**18-015.PL09.C**

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

**CLIENT**  
John Ellery

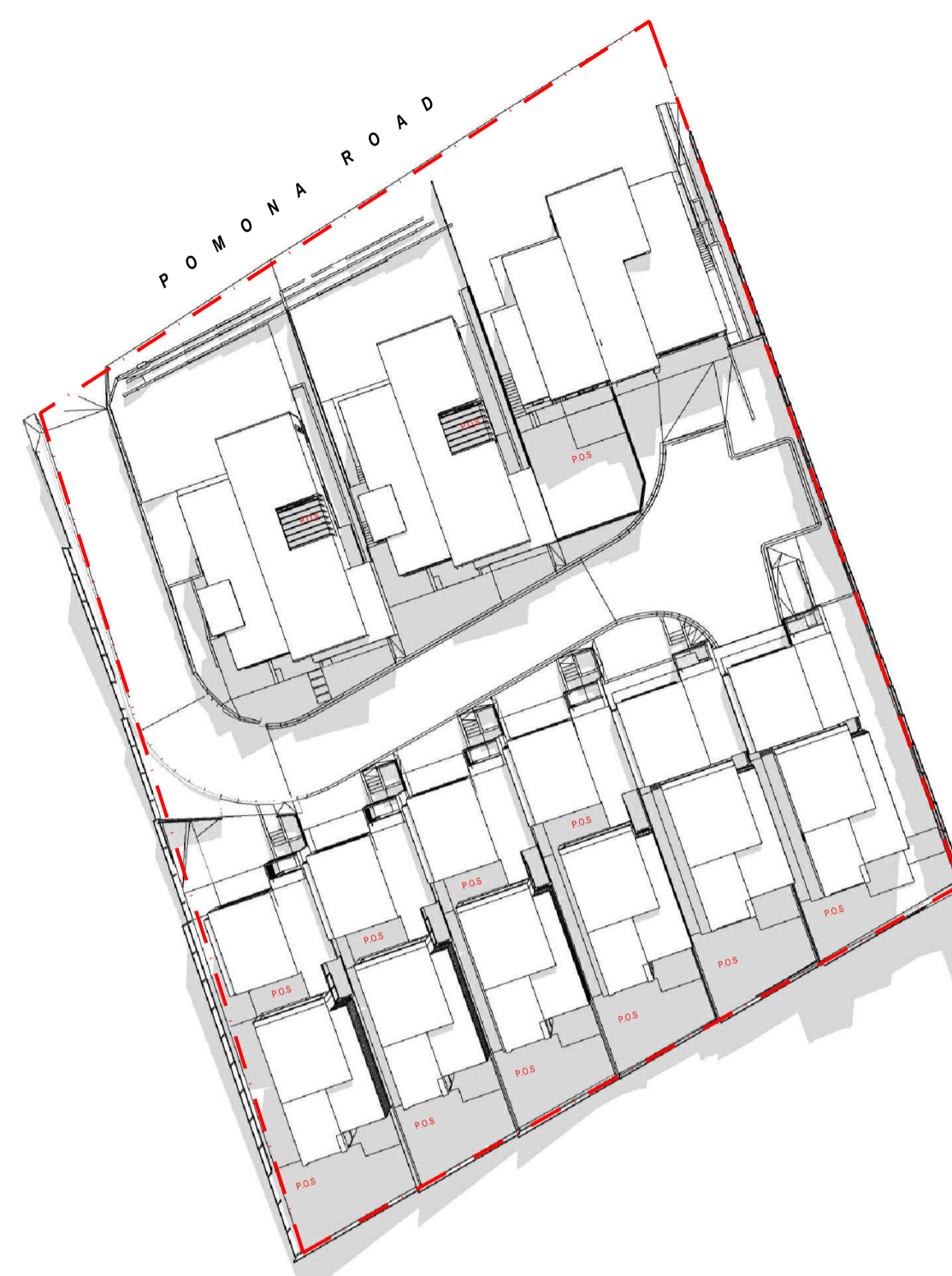
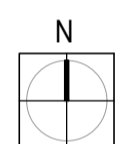
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Perspectives

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

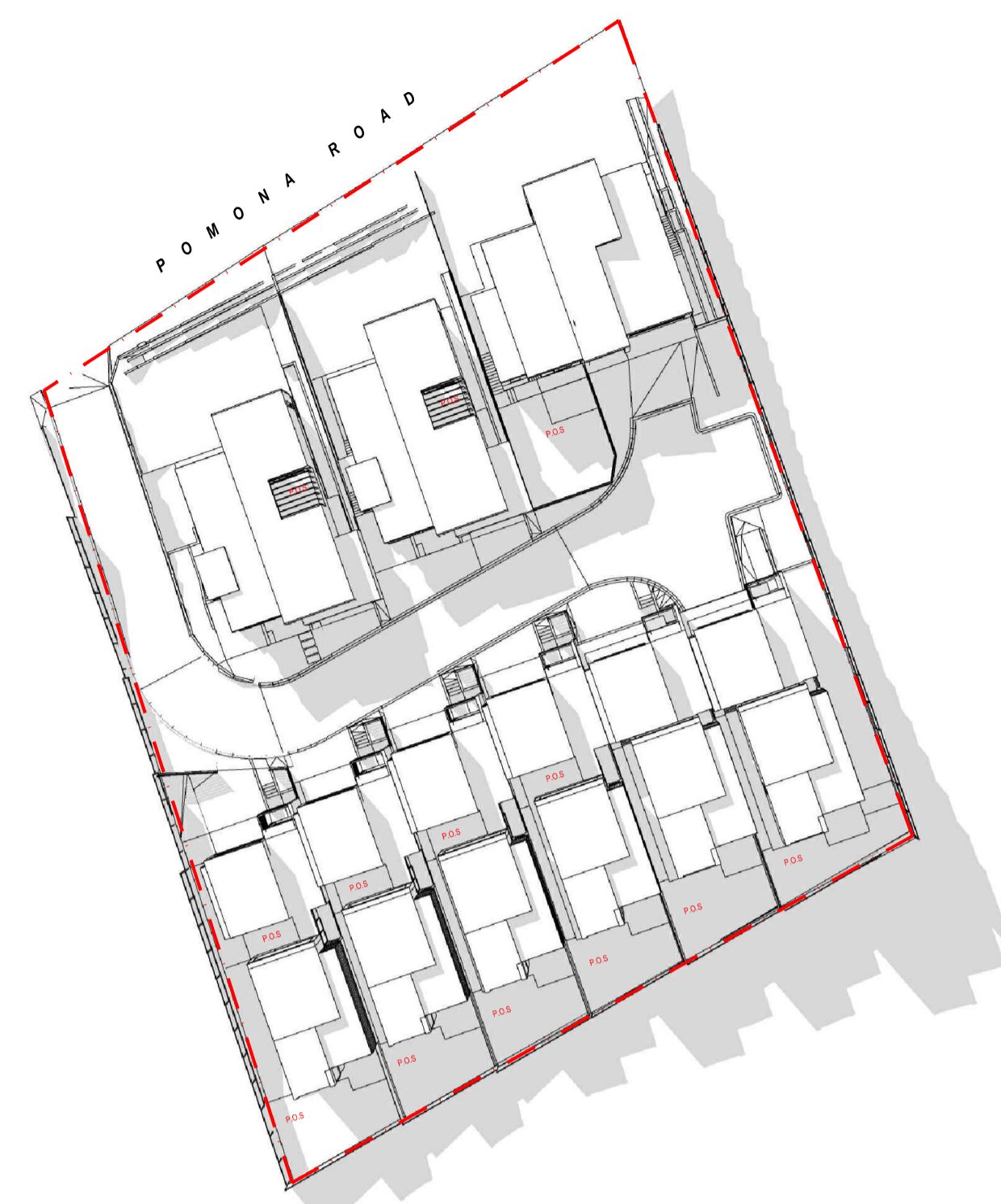
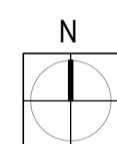




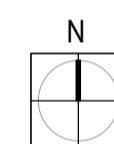
WINTER SOLSTICE  
9AM



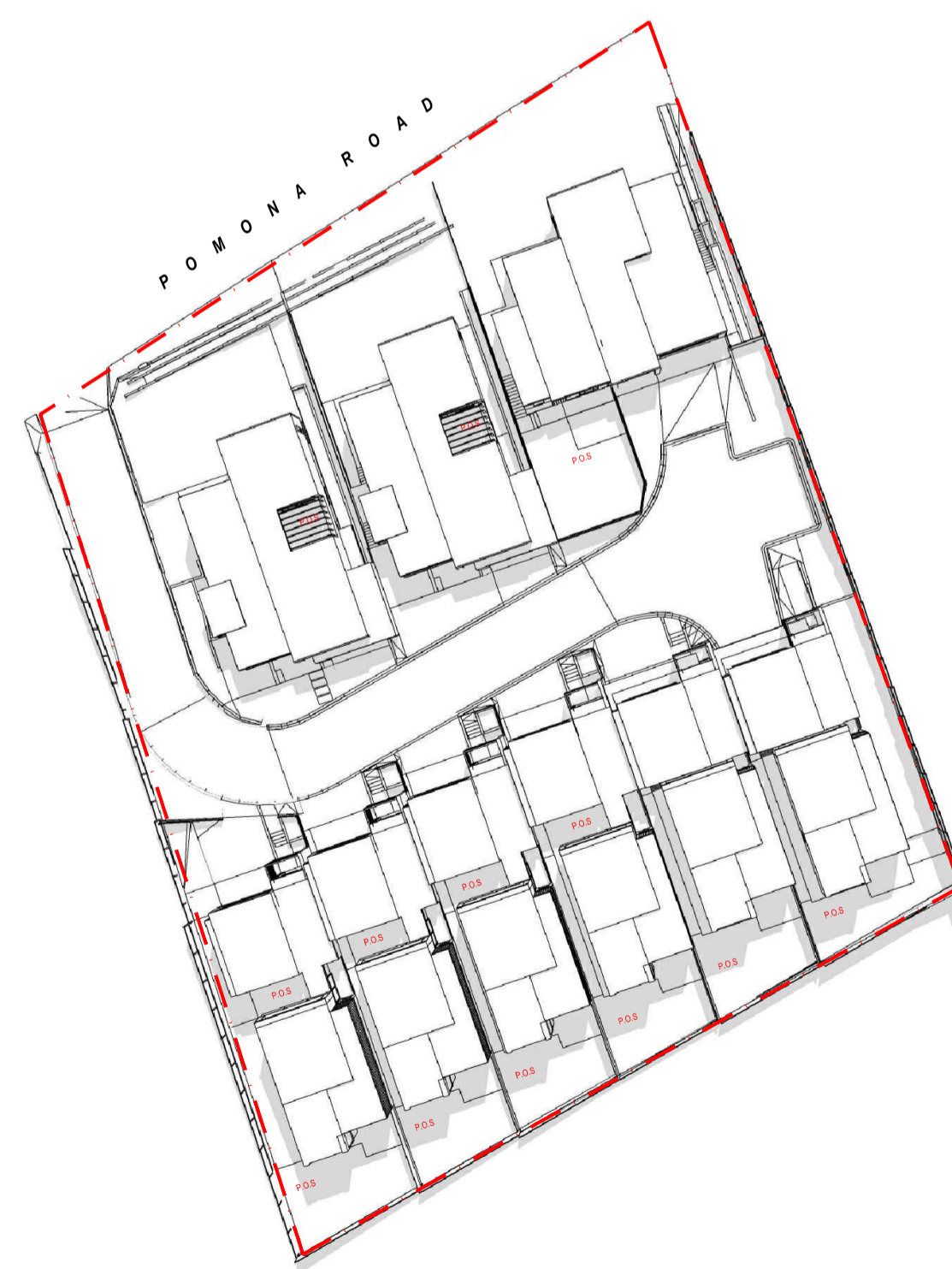
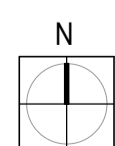
WINTER SOLSTICE  
12PM



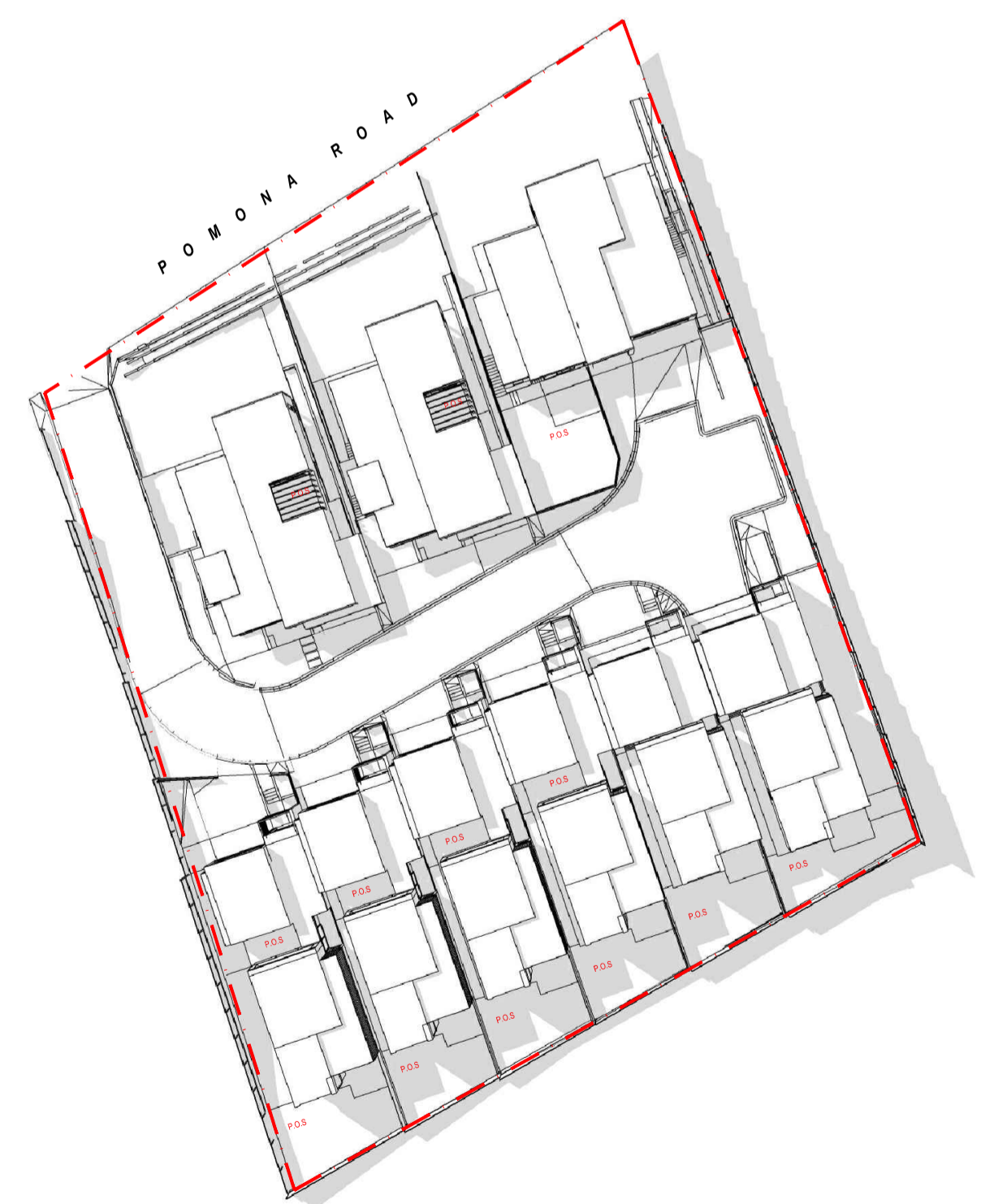
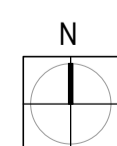
WINTER SOLSTICE  
3PM



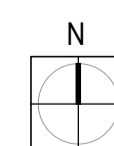
EQUINOX  
9AM



EQUINOX  
12PM



EQUINOX  
3PM



A 22.07.2019 PLANNING ISSUE

**PLANNING**

**18-015.PL10.A**

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

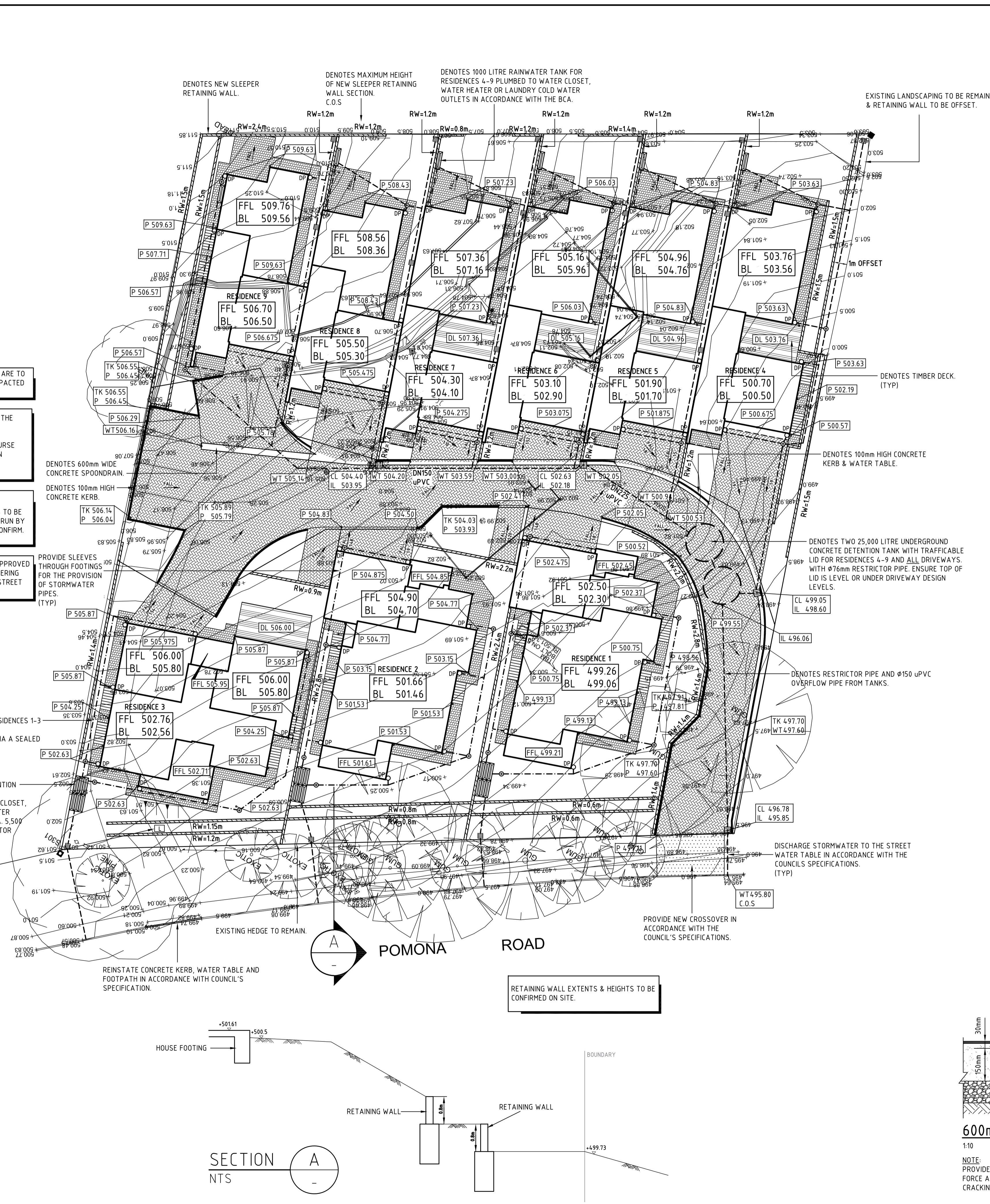
CLIENT  
**John Ellery**

DRAWING TITLE  
**Shadow Diagrams**

DETAILS  
Drawn **BM / NF**  
Scale **@ A1**  
Date **JULY 2019**



**Attachment 3 – Updated Civil and Earthworks Plans from KP Squared Engineering.**



WHERE TREES WITHIN THE SITE BOUNDARIES ARE TO BE REMOVED BACKFILL THE VOIDS WITH COMPACTED SATURATED SOIL. REFER TO C1.

FINISHED FLOOR LEVEL HAS BEEN BASED ON THE FOLLOWING:

- 100mm THICK SLAB ON
- 100mm THICK QUARRY RUBBLE BASECOURSE REFER TO FOOTING PLAN AND CONSTRUCTION REPORT TO VERIFY. ASSUMED REBATE - 50mm

FINISHED FLOOR LEVELS ARE DESIGNED FOR STORMWATER ONLY. ALL FINAL SITE LEVELS TO BE DETERMINED UPON CONFIRMATION OF SEWER RUN BY OTHERS. PLEASE CONTACT THIS OFFICE TO CONFIRM.

PROVIDE 'ACO DRAIN WARDEN' OR SIMILAR APPROVED TO ALL GRATED SUMPS TO LIMIT DEBRIS ENTERING THE UNDERGROUND DETENTION TANKS AND STREET WATER TABLE.

DENOTES 600mm WIDE CONCRETE SPOONDRAIN.

DENOTES 100mm HIGH CONCRETE KERB.

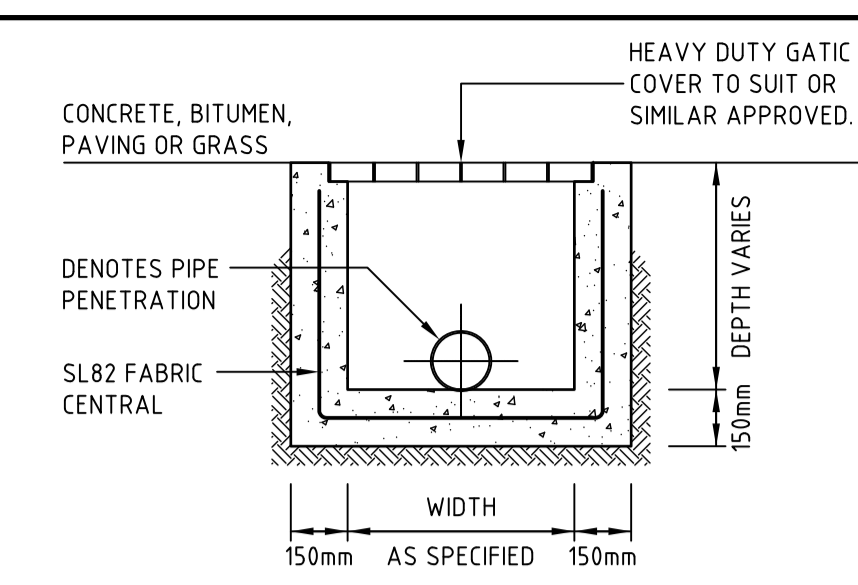
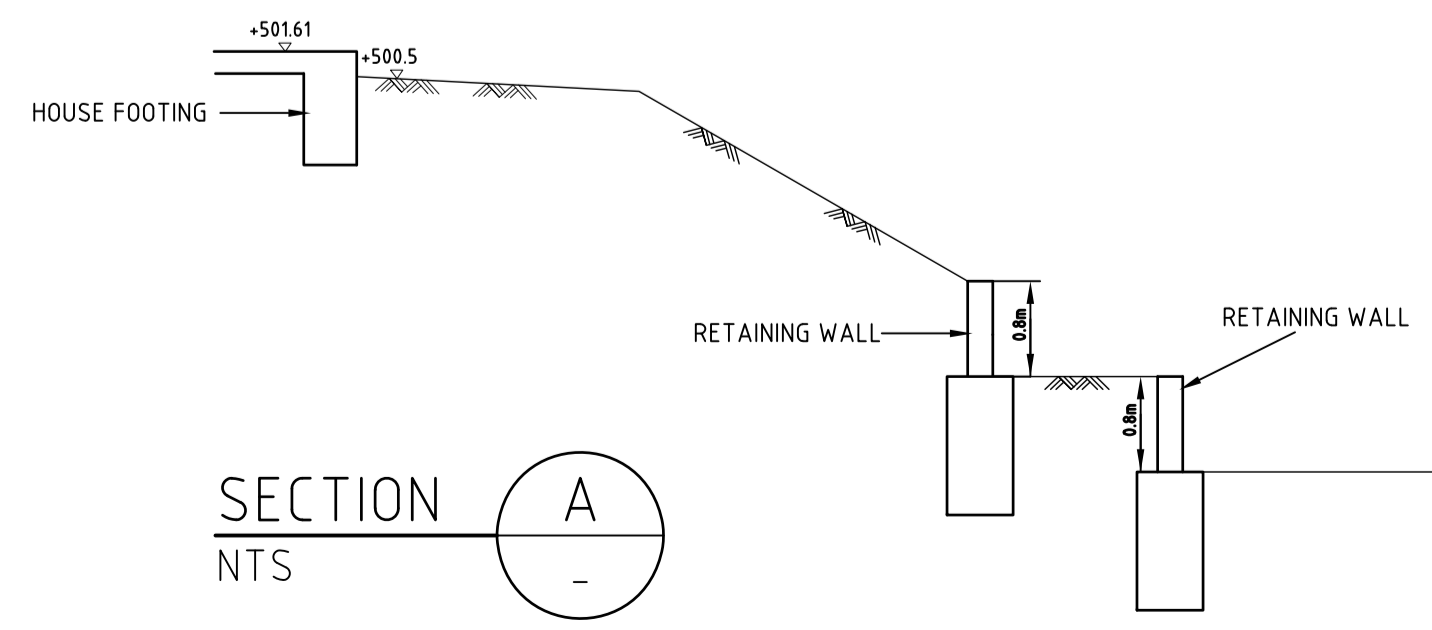
PROVIDE SLEEVES THROUGH FOOTINGS FOR THE PROVISION OF STORMWATER PIPES. (TYP)

ALL ROOF STORMWATER FOR RESIDENCES 1-3 IS TO BE DISCHARGED TO THE DETENTION/RETENTION TANKS VIA A SEALED SYSTEM. (TYP)

DENOTES 6,500 LITRE DETENTION/RETENTION TANK FOR RESIDENCES 1-3. 1,000 LITRE RAINWATER TANK PLUMBED TO WATER CLOSET, WATER HEATER OR LAUNDRY COLD WATER OUTLETS IN ACCORDANCE WITH THE BCA. 5,500 LITRE DETENTION WITH Ø34mm RESTRICTOR PIPE.

REINSTATE CONCRETE KERB, WATER TABLE AND FOOTPATH IN ACCORDANCE WITH COUNCIL'S SPECIFICATION.

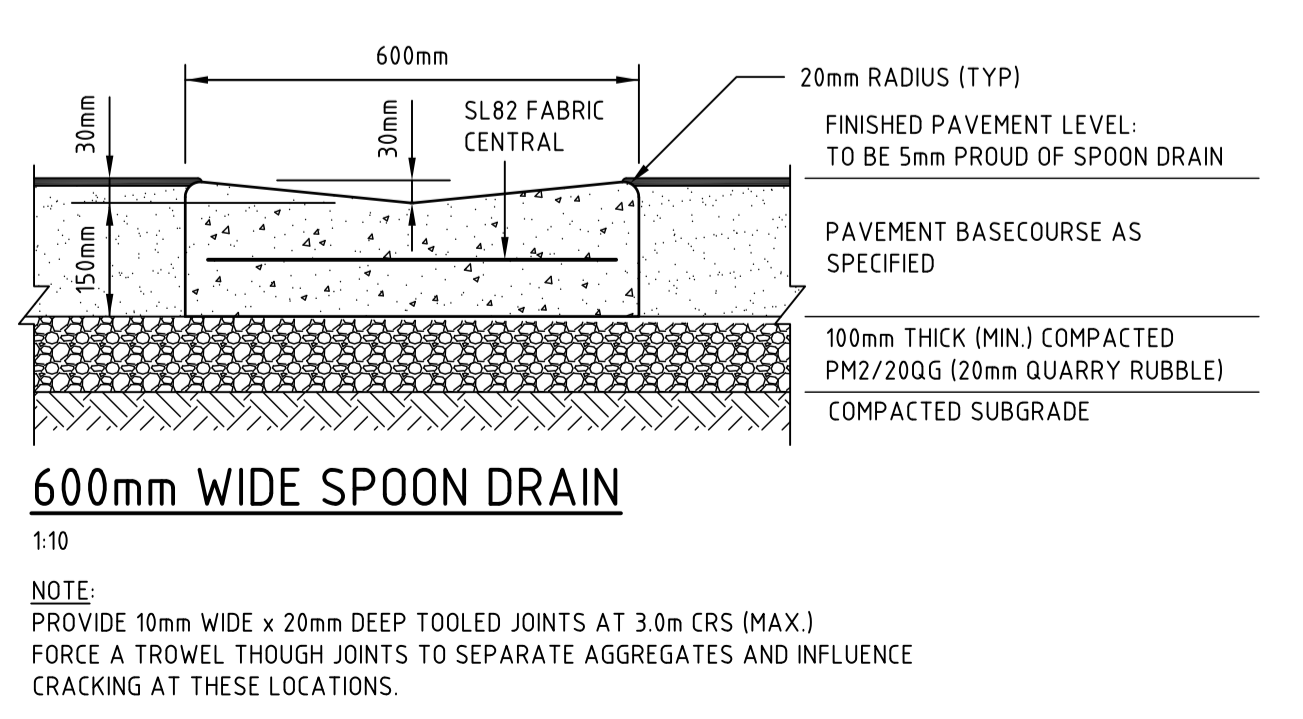
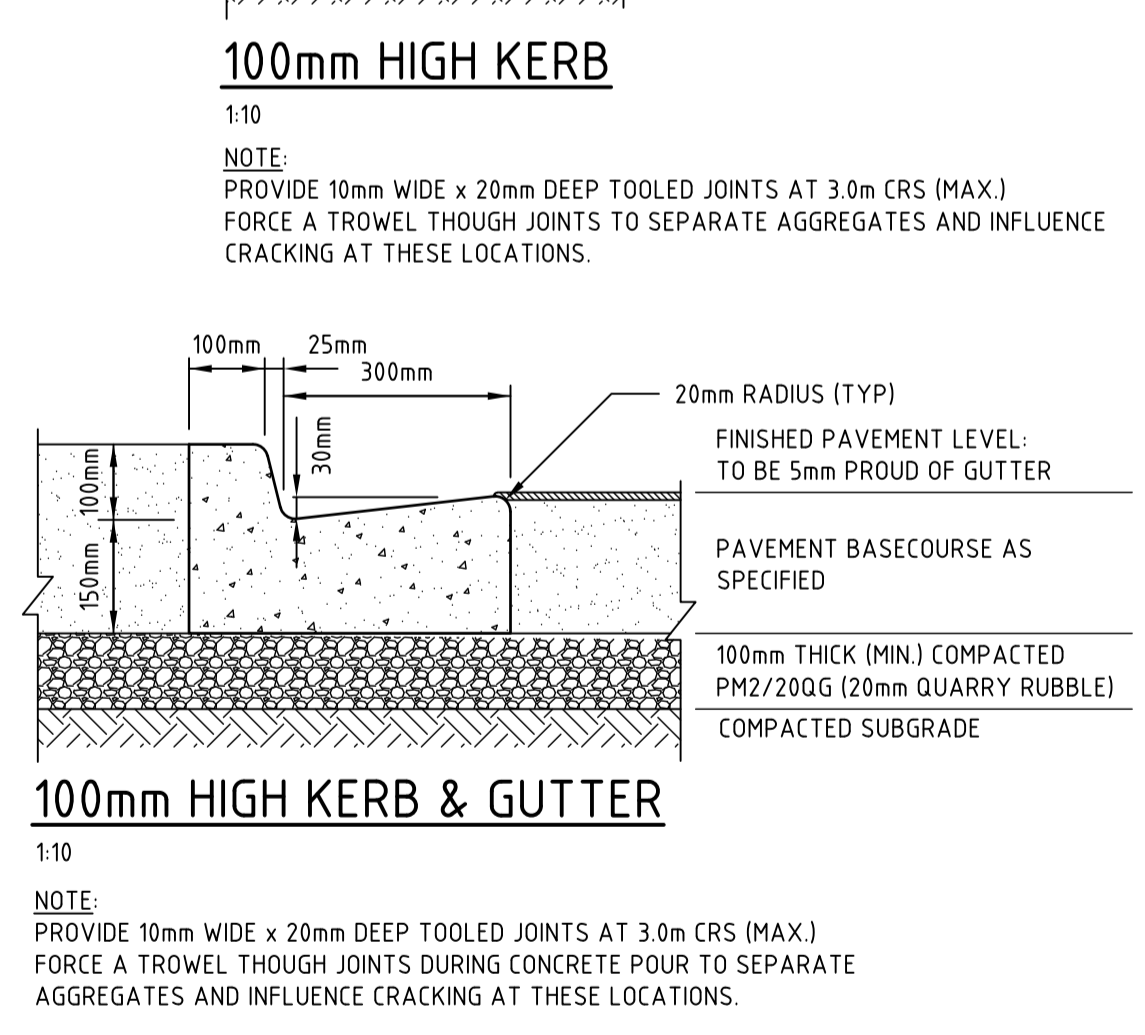
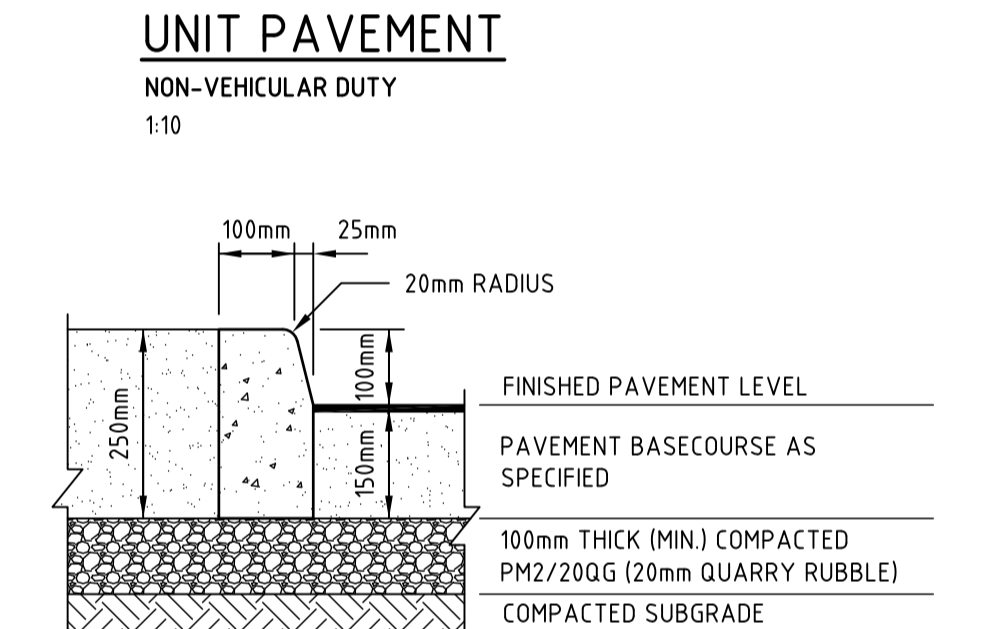
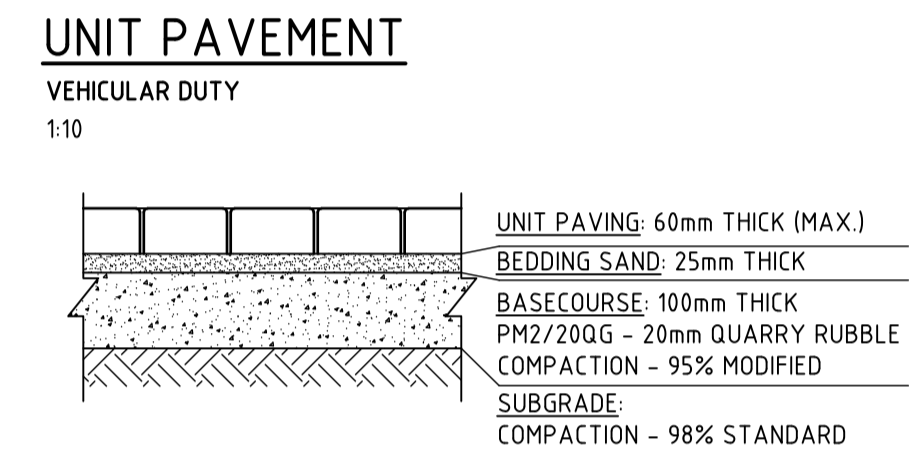
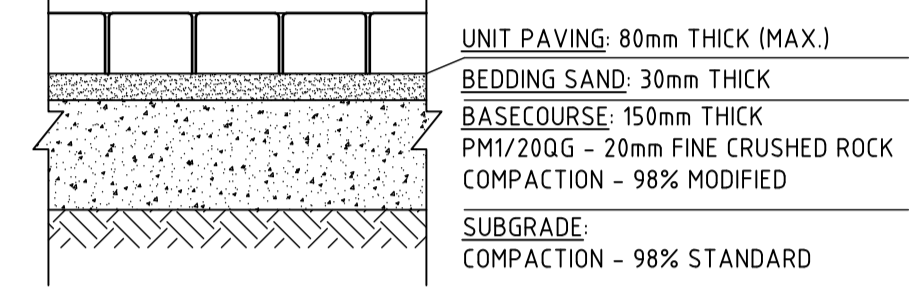
RETAINING WALL EXTENTS & HEIGHTS TO BE CONFIRMED ON SITE.



**GRATED SUMP**  
1:20

NOTES:

- REFER TO 'STORMWATER PIT SCHEDULE' FOR PIT DIMENSIONS.
- 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.
- 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.



**GENERAL NOTES:**

- 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.
- 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. 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.
- THE CONTRACTOR IS TO ALLOW AND ADJUST HEIGHTS OF COVERS TO EXISTING SERVICES, PITS & GRATES ETC TO SUIT NEW PROPOSED LEVELS.
- WHERE TREES ARE TO BE REMOVED, BACKFILL THE VOIDS WITH COMPACTED PM2/20 QUARRY RUBBLE. 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.
- 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). THE CONTRACTOR IS TO ALLOW FOR AND REINSTATE ANY SURFACE NOT INCLUDED IN THE WORKS BUT WHICH HAS BEEN DISTURBED DURING CONSTRUCTION.
- ALL MINOR CONCRETE ITEMS (KERBS, GUTTER, SPOON DRAINS, ETC) TO BE GRADE H25 CONCRETE UNLESS NOTED OTHERWISE.
- ALL KERBS & PATHS IN LANDSCAPING AREAS ARE TO BE BACKFILLED WITH TOPSOIL APPROVED BY THE ARCHITECT/LANDSCAPER.
- ALL LINEMARKING AND SIGNAGE TO BE INSTALLED IN ACCORDANCE WITH AS1742.

**LEGEND:**

- EXISTING SPOT LEVEL
- EXISTING CONTOUR
- BATTERS/EMBANKMENT (MAX. FALL 1:4 UNO)
- VEHICULAR PAVING
- NON-VEHICULAR PAVING
- DP DOWNPIPE
- Ø100 uPVC SEALED ROOF STORMWATER PIPE UNO
- Ø100 uPVC STORMWATER PIPE @ 10% FALL (MIN) UNO
- 300SQ GRATED SUMP (DOMESTIC)
- 600SQ GRATED SUMP (HEAVY DUTY COVER)
- INSPECTION OPENING
- DESIGN LEVEL
- COVER LEVEL
- PAVING LEVEL
- INVERT LEVEL
- WATER TABLE LEVEL
- TOP OF KERB LEVEL
- DECK LEVEL

K P Q U E D A ENGINEERING				
ISSUE		DATE	AMENDMENT	APPROVED
E	19.03.20	REVISED RETAINING WALLS	KP	
D	11.09.19	REVISED DRIVEWAY & CARPARKING	BM	
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 <b>PROPOSED RESIDENCES</b>				
AT: 20 PANOMA ROAD STIRLING FOR: JOHN & LISA ELLERY				
DRAWING TITLE <b>CIVIL &amp; EARTHWORKS PLAN</b>				
SCALE	DRAWN	ENGINEER	DATE	
1:200 @ A1	B.M	B.M	19/03/2020	
SURVEYED BY OTHERS	PROJECT No.	DRAWING No.	ISSUE	SHEET
	181116	C2	E	A1

6 CRITTENDEN ROAD,  
FINDON, SA, 5023.  
PH: (08) 8448 2900

**Attachment 4 – Acoustic Assessment from Sonus.**





20 Pomona Road

External Traffic Noise

March 2020

S5751.1C2

sonus.

**Contact: Jason Turner**

Associate

Phone: +61 (0) 410 920 122

Email: [jturner@sonus.com.au](mailto:jturner@sonus.com.au)

[www.sonus.com.au](http://www.sonus.com.au)

**Document Title** : 20 Pomona Road  
External Traffic Noise  
**Document Reference** : S5751.1C2  
**Date** : March 2020  
**Author** : Brent Poland  
**Reviewer** : Jason Turner, MAAS

---

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## 1 INTRODUCTION

An assessment of traffic noise in the private open spaces of the proposed residential development at 20 Pomona Road Stirling has been conducted in response to the following request from the Adelaide Hills Council:

*With regards to private open space (POS), particularly for proposed lots 2 and 3 please demonstrate how these spaces will be private and not be unreasonably impacted by noise or traffic. It is recommended you engage an acoustic engineer to support this proposed location of POS.*

The proposed development comprises the subdivision of land and construction of nine new lots. The arrangement provides for a range of private open space options as generally depicted below:



The subject land is located amongst other residential land uses and is approximately 90 metres from the South Eastern Freeway which is the main influence on the acoustic environment at the site. The subject site locality is shown in Appendix A.

The assessment of traffic noise in the private open spaces in response to the request from the Adelaide Hills Council has been based on the following:

- *Alexander Brown Architects* drawing set for “Pomona Rd Development”, reference “18-015”, including drawings “PL.01” through “PL.09”, dated February 2019;
- Inspection and noise measurements conducted at the site on 28 February 2020; and
- Noise measurements conducted over a 24 hour period in the vicinity of the proposed development and the South Eastern Freeway on 28-29 August 2018.

## 2 CRITERIA

### 2.1 Development Plan

The Adelaide Hills Council Development Plan¹ has been reviewed and the following provisions are considered relevant to the traffic noise assessment of private open spaces:

#### **General Section – Residential Development**

##### *Noise Generating Activities*

**PDC 18**            *Private open space (available for exclusive use by residents of each dwelling) should be provided for each dwelling and should be sited and designed:*

- (i) to minimise noise or air quality impacts that may arise from traffic, industry or other business activities within the locality*

PDC 18 is consistent with the Adelaide Hills Council request.

### 2.2 WHO Guidelines

There are no established external noise criteria for private open spaces in the vicinity of a road corridor and there are many dwellings which exist adjacent a major road corridor without any specific consideration of the acoustic amenity of private open space.

In the absence of any established approach, reference is made to the *World Health Organisation Guidelines for Community Noise* (the **WHO Guidelines**). The WHO Guidelines are based on preventing annoyance and unreasonable interference on the amenity of an area and are utilised as a *conservative indication* that an appropriate level of acoustic amenity is achieved. If a private open space is exposed to noise levels that exceed the WHO Guidelines, it does not necessarily follow that the amenity is adversely compromised as this would preclude appropriate residential development in many metropolitan areas or locations adjacent road corridors.

The WHO Guidelines can be adapted to apply an average ( $L_{eq,15hrs}$ ) noise level of 55 dB(A) or less during the day (between 7:00am and 10:00pm) within private open spaces as a *conservative indication* that traffic noise does not *unreasonably impact* on the amenity of the space and its impacts are *minimised*.

---

¹ Consolidated 8 August 2019.

### 3 ASSESSMENT

#### 3.1 Existing Acoustic Environment

The traffic noise levels at the subject site have been determined from site measurements conducted during the peak traffic period of 5pm to 6pm. The site measurements were conducted at three locations (refer Appendix A) across the site – at an unshielded location towards the freeway, immediately in front of the existing dwelling on the site and behind the existing dwelling.

The site measurements were supplemented with continuous traffic noise monitoring conducted between 28 and 29 August 2018 over a 24 hour period at the location shown in Appendix A.

The site measurements were correlated with the monitoring results to determine the variation in traffic noise level across the site.

The site measurements and monitoring indicate that:

- the average ( $L_{eq,15hrs}$ ) noise level during the day is in the order of 65 dB(A) at the closest portion of the site to the freeway and 62 dB(A) at the rear of the site;
- there are intermittent peaks during short periods of higher traffic intensity. At the closest portion of the site with direct line of sight to the freeway these peaks can approach 68 dB(A);
- the peaks will typically occur between 5:00pm and 6:00pm and 8:30am and 9:00am;
- the traffic noise levels at the location shielded by the existing dwelling were 15 dB(A) lower than those with direct line of sight albeit at a comparable distance to the freeway; and
- existing residences in the vicinity of the subject site are exposed to noise levels in excess of the WHO Guidelines.

#### 3.2 Predicted Noise Levels

Based on the above, the noise levels within private open space with direct line of sight to the South Eastern Freeway at the front of the site (Lots 1, 2, and 3) will be an average ( $L_{eq,15hrs}$ ) in the order of 65 dB(A) with peaks over short periods approaching 68 dB(A). This exceeds the recommended 55 dB(A) criterion within the WHO Guidelines; however, this arrangement is not unusual for a residence whereby a portion of the outdoor space is exposed to a higher noise environment than another portion.

In the circumstance of Lots 1, 2, and 3, the design includes a specific location which is shielded by surrounding structures.

That is, Lots 1, 2 and 3 will provide an area of private open space with an average ( $L_{eq,15hrs}$ ) in the order of 50 dB(A) (being 65 dB(A) minus 15 dB(A) for the measured influence of structures) with peaks over short periods less than 55 dB(A), thereby achieving compliance with the WHO guidelines.

Similarly, the design of Lots 4 through 9 also include a specific location which is shielded by surrounding structures so as to provide an area of private open space with an average ( $L_{eq,15hrs}$ ) less than 50 dB(A) with peaks over short periods less than 55 dB(A), thereby achieving compliance with the WHO guidelines.

#### 4 CONCLUSION

A traffic noise assessment to the private open space of the proposed residential development at 20 Pomona Road, Stirling has been made.

The assessment is in response to the request from the Adelaide Hills Council relating to the noise impacts on the amenity of private open space. The request is consistent with PDC 18 of the Development Plan.

The proposed development has implemented design features to provide private open space which is shielded from traffic noise from the South Eastern Freeway.

Based on measurements of traffic noise at and near the site, the noise levels within the shielded private open spaces will achieve the WHO Guidelines. The WHO Guidelines are based on preventing annoyance and unreasonable interference on the amenity of an area and are utilised as a *conservative indication* that an appropriate level of acoustic amenity is achieved.

It is therefore considered that the development provides private open space designed to *minimise noise impacts that may arise from traffic* and not be *unreasonably impacted* by traffic noise, thereby achieving the relevant provisions of the Development Plan and the Council request related to noise impacts on private open space.



APPENDIX A

Figure 1: Site locality.

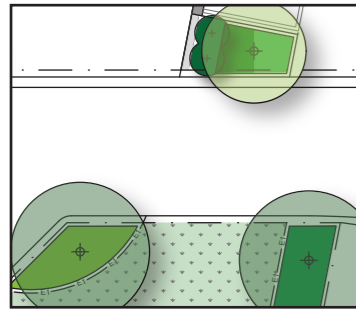


## Attachment 5 – Landscaping Plans and Sections from Clover Green Space

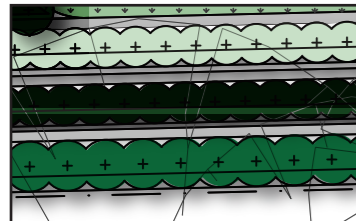
**20 POMONA ROAD  
LANDSCAPE CONCEPT PLAN**

FOR APPROVAL  
20.04.20 1:300@A3 rev F

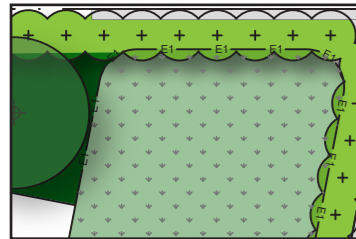
**LEGEND**



**Tree Planting**  
Plantings along internal driveway to provide shade and amenity.



**Shrubs and cascading species**  
Shrub and cascading groundcover planting to soften retaining walls and buffer between properties



**Private Open Space**  
Private garden spaces with turf, perimeter plantings and small trees



**Garden Areas**  
Localised boulder retaining walls with cascading plants, shrubs and informal trees.



It is proposed that a diverse range of plants will be used to give a high amenity feel but also complement the landscape character of Pomona Road and Stirling. Contemporary native species will be contrasted against neat informal hedges and shade tolerant plants in narrow areas. Contrasts in coloured foliage and flowering species will be used to provide interest throughout the year. The planting palette will complement the contemporary architectural built form and be easily maintained for future residents.

A contemporary native character is proposed with small Eucalypts and layered shrubs and groundcovers to give privacy and screening between dwellings. These plants will be highly resilient once established.

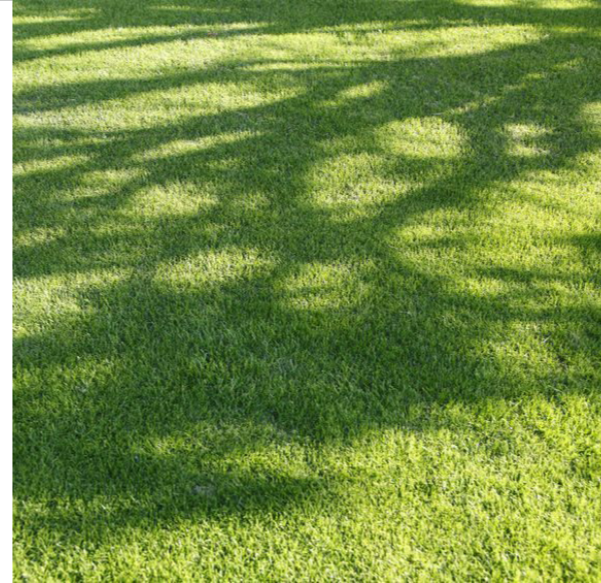
Localised rockwork and boulder retaining walls will be incorporated within garden areas to manage erosion and give structure. Groundcovers and shrubs plantings to cascade over and give a natural feel.

Lawn areas will be consolidated into private courtyard areas only to limit maintenance demands and provide passive recreation opportunities. Borders of plantings and informal hedges will screen walls and fences and not encroach into valuable open space.

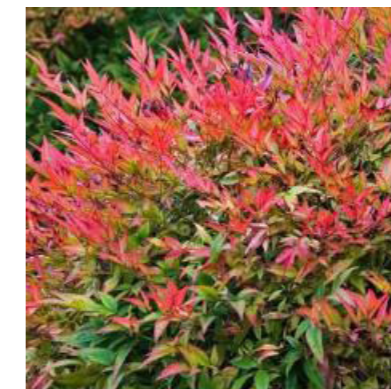
Semi-formal and structured plantings in smaller spaces to create defined edges and high amenity. These plants will complement the contemporary architectural built form.

Cascading groundcovers will be planted at the top of retaining walls to spill over and soften their appearance. Contrasts of colour, flowers and forms will create variation throughout the site.

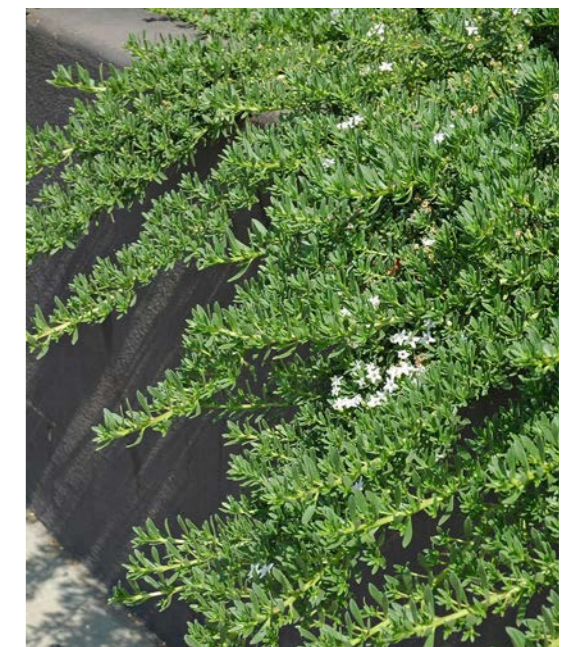
**PLANTING AND LANDSCAPE CHARACTER**



**STRUCTURE**



**CASCADING PLANTS**



**20 POMONA ROAD**

**PLANTING PALETTE**

PROPOSED  
26/11/19 rev D

PLANT SCHEDULE		
CODE	SPECIES	SIZE
<b>TREES</b>		
COR Sce	CORYMBIA citriodora 'Scentuous'	45L
EUC cae	EUCALYPTUS caesia 'Silver Princess'	45L
EUC ED	EUCALYPTUS leucoxyton 'Euky Dwarf'	45L
LAG Tus	LAGERSTROEMIA 'Tuscarora'	45L
TRI lau	TRISTANIOPSIS laurina 'Luscious'	45L
<b>SHRUBS &amp; GROUNDCOVERS</b>		
ACA bai	ACACIA baileyana 'Prostrate'	140mm
ACM FS	ACMENA smithii 'Firescreen'	140mm
CAL GJ	CALLISTEMON viminalis 'Green John'	140mm
CAS CI	CASUARINA 'Cousin It'	140mm
CHO ter	CHOISYA ternata	140mm
DIA bre	DIANELLA 'Breeze'	140mm
ERE mac	EREMOPHILA maculata	140mm
GOO ova	GOODENIA ovata prostrate	140mm
HAR BB	HARDENBERGIA 'Bushy Blue'	140mm
HAR vio	HARDENBERGIA violacea	140mm
LOM tan	LOMANDRA tanika	140mm
MYO par	MYOPORUM parvifolium	140mm
NAN GS	NANDINA 'Gulf Stream'	140mm
PIT gp	PITTOSPORUM 'Green Pillar'	140mm
RAP CW	RAPHIOLEPSIS 'Crimson White'	140mm
RAP SM	RAPHIOLEPSIS 'Snow Maiden'	140mm
RAP ST	RAPHIOLEPSIS 'Spring Time'	140mm
ROS off	ROSMARINUS officinalis	140mm
ROS pro	ROSMARINUS officinalis 'Prostratus'	140mm
WES smo	WESTRINGIA fruticosa 'Smokey'	140mm
WES WG	WESTRINGIA 'Wynnyabbie Gem'	140mm

**TREES**



CORYMBIA citriodora 'Scentuous' EUCALYPTUS leucoxyton 'Euky Dwarf' EUCALYPTUS caesia 'Silver Princess' LAGERSTROEMIA 'Tuscarora' TRISTANIOPSIS laurina

**SHRUBS / INFORMAL HEDGE**

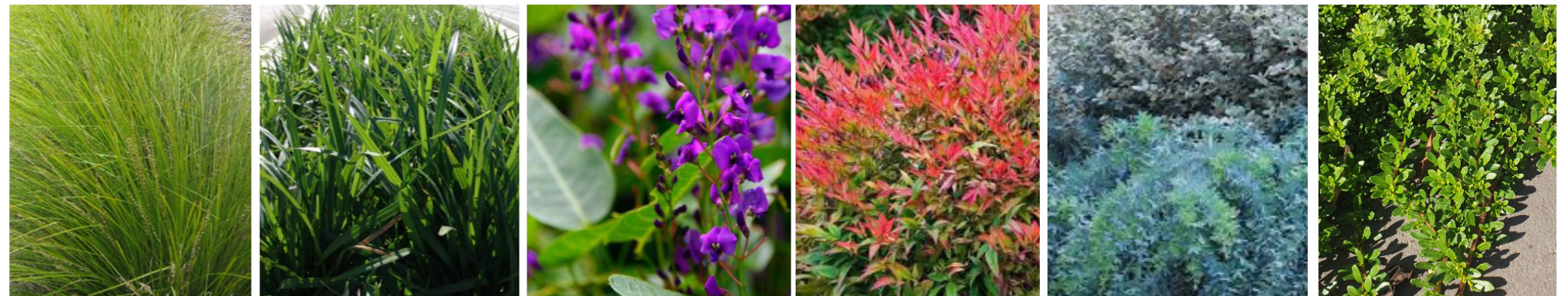


ACMENA smithii 'Firescreen' WESTRINGIA 'Wynnyabbie Gem' CHOISYA ternata (shady areas) PITTOSPORUM 'Green Pillar' (shady areas) WESTRINGIA 'Smokey'



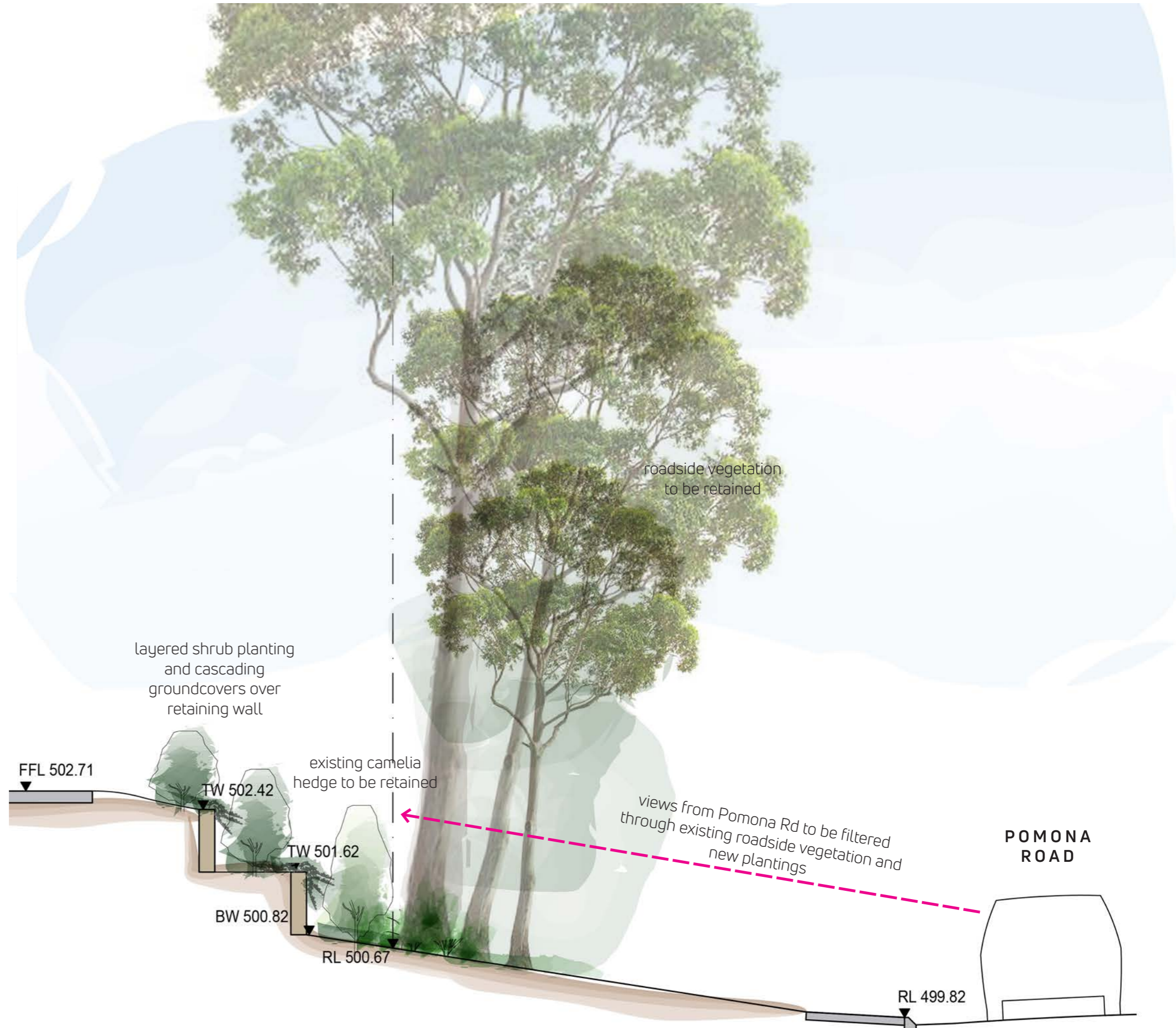
RHAPHIOLEPSIS 'Snow Maiden' RHAPHIOLEPSIS 'Spring Time' ROSMARINUS officinalis EREMOPHILA maculata CALLISTEMON 'Green John'

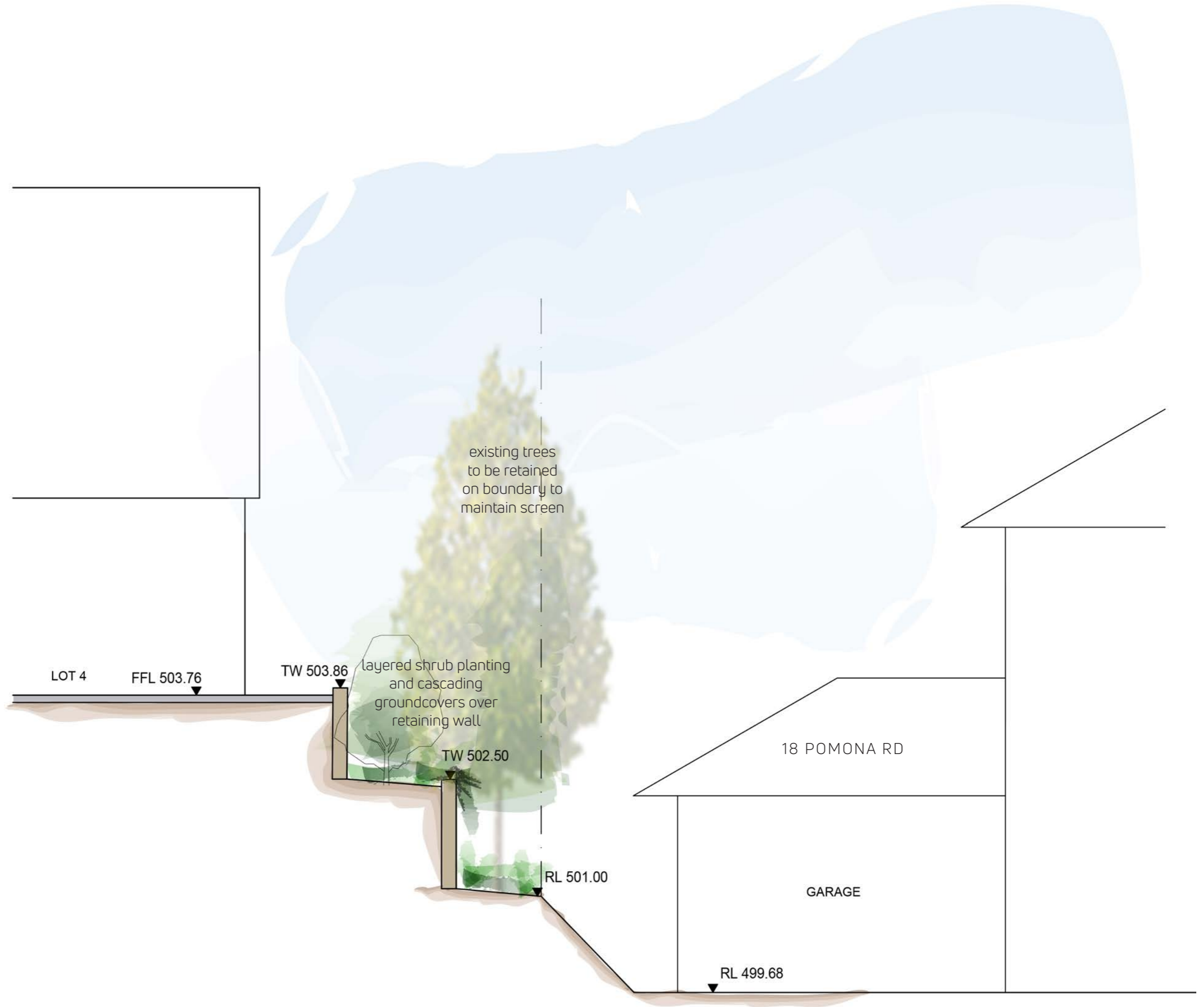
**GROUNDCOVERS**



LOMANDRA 'Tanika' DIANELLA 'Breeze' HARDENBERGIA 'Bushy Blue' NANDINA 'Firescreen' ACACIA baileyana 'Prostrate' MYOPORUM parvifolium

**20 POMONA ROAD**  
**SECTION 1 - PROPOSED**  
20/04/20 rev B





**Attachment 6 – 3D Render from Tree House.**







**Attachment 7 – Email Correspondence from the Native Vegetation Council.**

**From:** [Schutz, Adam \(DEW\)](#)  
**To:** [Philip Harnett](#)  
**Cc:** [Groom, Andrew \(DEW\)](#); [Matthew King](#)  
**Subject:** RE: Application to Native Vegetation Council - 20 Pomona Road, Stirling [DLM=For-Official-Use-Only]  
**Date:** Friday, February 21, 2020 3:01:57 PM  
**Attachments:** [image004.png](#)  
[image005.png](#)  
[image006.png](#)  
[image007.png](#)

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## For Official Use Only

Hi Phil

I refer to your application on behalf of Mr John Ellery (application 2019/3181) to clear 34 native trees at 20 Pomona Road, Stirling. The application is seeking to remove the trees to facilitate the development of a Residential subdivision.

The application will be considered under Native Vegetation Regulation 12, Schedule 1 Clause 35 – residential subdivisions. In order to undertake clearance under this regulation, development authorisation for the land division must have been obtained. As I understand it, the development application is currently under consideration and may not be supported in its current form by the Adelaide Hills Council. Should development approval not be granted, then the Native Vegetation Regulations would not be applicable. Therefore, your application has been put on hold until the development application has been resolved.

Should the development application be approved, then the native vegetation application will be considered against the requirements of the Native Vegetation Regulations, which particularly relates to the requirements to avoid and minimise impacts on native vegetation. Given the proposed design of the subdivision, there is unlikely to be any real opportunities to retain any trees on the site, therefore it is possible that should the development application be approved in its current form, all the trees on the site would be permitted to be cleared.

Please note however, this does not mean that the Native Vegetation Council support the proposed development or subsequent removal of trees, nor does it make any comment in relation to the value of the trees and whether they should be retained or not. These are matters that should be considered and determined by the relevant planning authority in accordance with the Development Plan. Rather it simply indicates that there is a legislative path available to remove the trees, should the Development application be approved.

Kind regards

**Adam Schutz**

**Coordinator, Assessments and Stakeholder Liaison**

**Native Vegetation Branch**

**Department of Environment and Water**

**T: 08 8207 7713 | M: 0429 705 082 | E: [adam.schutz@sa.gov.au](mailto:adam.schutz@sa.gov.au)**

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---

**From:** Philip Harnett <philip@urps.com.au>  
**Sent:** Friday, 21 February, 2020 7:53 AM  
**To:** Schutz, Adam (DEW) <Adam.Schutz@sa.gov.au>  
**Cc:** Falcone, Tina (DEW) <Tina.Falcone@sa.gov.au>; Farmer, Peter (DEW) <Peter.Farmer@sa.gov.au>; Matthew King <matthew@urps.com.au>  
**Subject:** FW: Application to Native Vegetation Council - 20 Pomona Road, Stirling [DLM=For-Official-Use-Only]

Hi Adam

Can you please respond to the email below.

Kind Regards

**Phil Harnett**

Associate



**ADELAIDE** | MELBOURNE

12 / 154 Fullarton Road, ROSE PARK SA 5067

4 Brunswick Place, FITZROY VIC 3065

**ADELAIDE OFFICE** 08 8333 7999 **MOBILE** 0451 118 577 **EMAIL** [philip@urps.com.au](mailto:philip@urps.com.au)

**WEB** [www.urps.com.au](http://www.urps.com.au) **LINKEDIN** [www.linkedin.com/urps](http://www.linkedin.com/urps)

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---

**From:** Philip Harnett  
**Sent:** Thursday, February 20, 2020 9:40 AM  
**To:** 'Schutz, Adam (DEW)' <[Adam.Schutz@sa.gov.au](mailto:Adam.Schutz@sa.gov.au)>  
**Cc:** Falcone, Tina (DEW) <[Tina.Falcone@sa.gov.au](mailto:Tina.Falcone@sa.gov.au)>; 'Farmer, Peter (DEW)'

<[Peter.Farmer@sa.gov.au](mailto:Peter.Farmer@sa.gov.au)>; Matthew King <[matthew@urps.com.au](mailto:matthew@urps.com.au)>

**Subject:** FW: Application to Native Vegetation Council - 20 Pomona Road, Stirling [DLM=For-Official-Use-Only]

Hi Adam, hope all is well.

Thanks for your time on the phone yesterday, I am just following up our discussion.

I understand that the Native Vegetation Council would approve our application (2019/3181/473) once Council issue Development Plan Consent for the associated Development Application and subject to the payment of the already calculated SEB. Can you please confirm that is understanding is correct.

Feel free to call me if you would like to discuss in more detail.

Kind Regards

**Phil Harnett**

Associate



**ADELAIDE** | MELBOURNE

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**Sent:** Wednesday, February 19, 2020 7:35 AM

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**Subject:** FW: Application to Native Vegetation Council - 20 Pomona Road, Stirling [DLM=For-Official-Use-Only]

## Attachment 8 – Scattered Tree Assessment from Ecosphere.



**ECOSPHERE**  
Ecological Solutions

# Native Vegetation Clearance Proposal

## 20 Pomona Road Stirling Scattered Tree Assessment

Data Report

Clearance under Native Vegetation Regulations 2017

30 September 2019

**PREPARED BY:**

Andrew Sinel, NVC Accredited Consultant

Ecosphere Ecological Solutions

ABN: 18634151223

**PREPARED FOR:**

Philip Harnett

Associate, URPS

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# 1 Applicant Information

Table 1. Applicant information.

<b>Applicant:</b>	Mr. John Ellery		
<b>Key contact:</b>	Philip Harnett, Associate URPS. Phone: 0451 118 577 Email: <a href="mailto:philip@urps.com.au">philip@urps.com.au</a> Address: Suite 12 / 154 Fullarton Road, ROSE PARK SA 5067		
<b>Landowner:</b>	Mr. John Ellery		
<b>Site address:</b>	20 Pomona Road, Stirling SA 5152		
<b>Local Government Area:</b>	Adelaide Hills Council	<b>Hundred:</b>	Noarlunga
<b>Certificate of Title:</b>	CT/5428/116	<b>Section/Allotment:</b>	D26958 A57
<b>Summary of Application</b>			
<b>Proposed clearance area:</b>	0.409 ha containing 34 scattered indigenous trees with modified understorey		
<b>Applicable regulation and purpose of clearance:</b>	<p>12 (35) Residential subdivision</p> <p>(1) Clearance of vegetation in connection with the division of land for use for residential purposes (including clearance for the construction of roads and other infrastructure), provided that—</p> <p>(a) any development authorisation for the division of the land and for the use of the land for residential purposes required by or under the Development Act 1993 has been obtained; and</p> <p>(b) the Council has been given written notification of the full extent of the clearance expected to occur in connection with the division of the land.</p> <ul style="list-style-type: none"> <li>• Project includes 9 dwellings and shared driveway.</li> </ul>		
<b>Level of risk:</b>	3		
<b>Proposed SEB offset:</b>	Payment into the fund		

## 2 Background

Ecosphere Ecological Solutions (Ecosphere) was engaged by URPS to undertake an assessment of 34 scattered trees at 20 Pomona Road, Stirling (the Project site) (Figure 1). The Project is to enable the development of nine dwellings (6 group dwellings and 3 individual dwellings) with a common driveway (Figure 2). The site has been previously subjected to an arboriculture assessment undertaken by Calyptra Pty Ltd for the purpose of council approvals under the *Development Act 1993* (Dev Act) pertaining to regulated and significant trees. The arboriculture assessment highlighted several trees that were subject to provisions of the *Native Vegetation Act 1991* (NV Act) (Figure 3).

The objectives of the scattered tree assessment were to;

- Conduct a desktop assessment of the area and determine the likelihood of presence of specific species;
- Undertake a field assessment and determine whether there is any specific habitat that relates to species of national and state conservation significance and;
- Assess indigenous scattered trees and calculate a Significant Environmental Benefit (SEB) offset value.

Following the vegetation assessment Arborman tree solutions were engaged to undertake a tree assessment to determine which trees could be retained based on expert arboriculture assessment including tree protection zones and Structural root zone measurements. This refined the clearance requirement negating the clearance of seven trees along the road reserve.

## 2.1 General location map

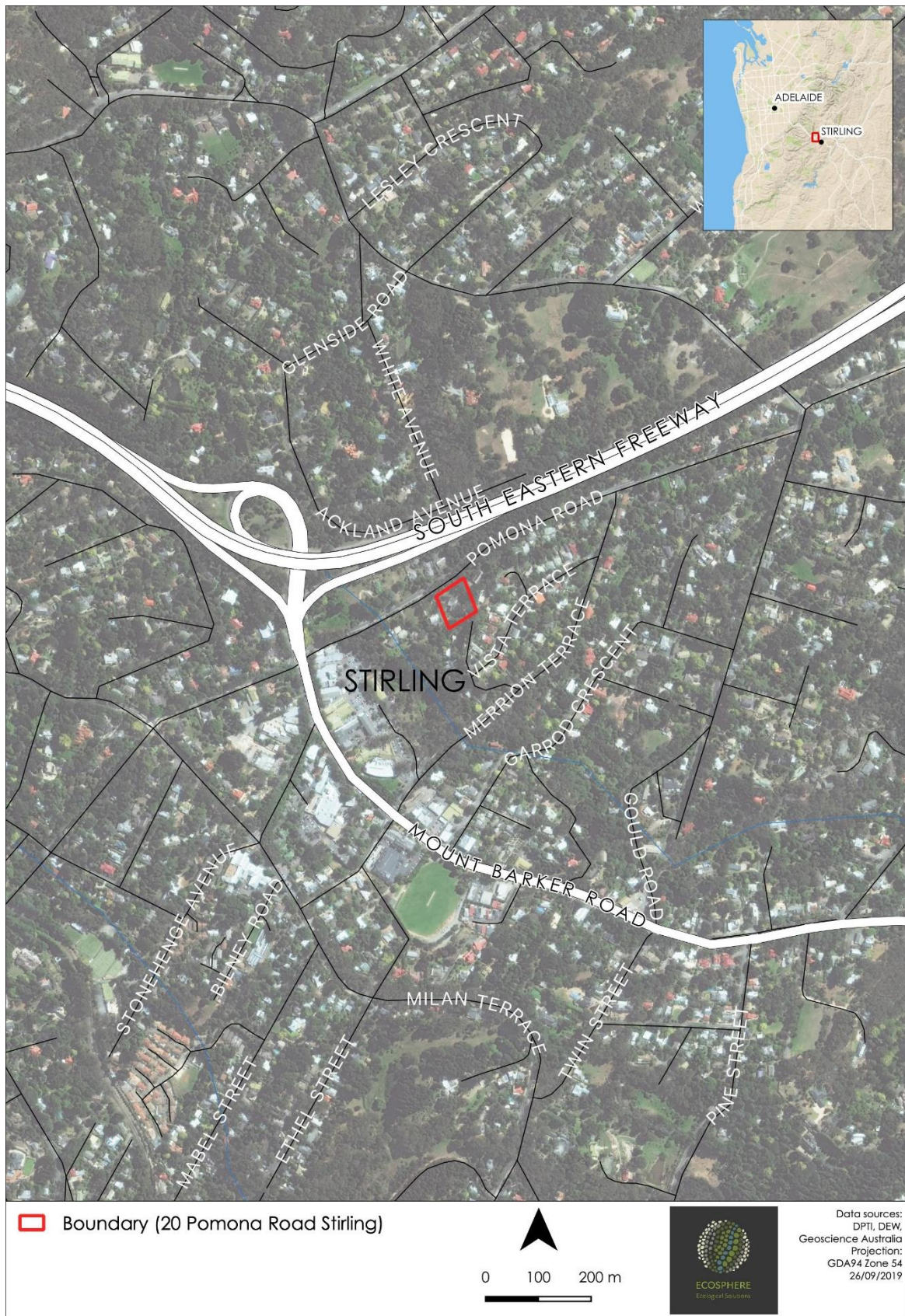


Figure 1. Project site boundary and location in relation to Stirling commercial precinct.



Figure 2. Civil drawing showing planned dwellings and shared driveway.

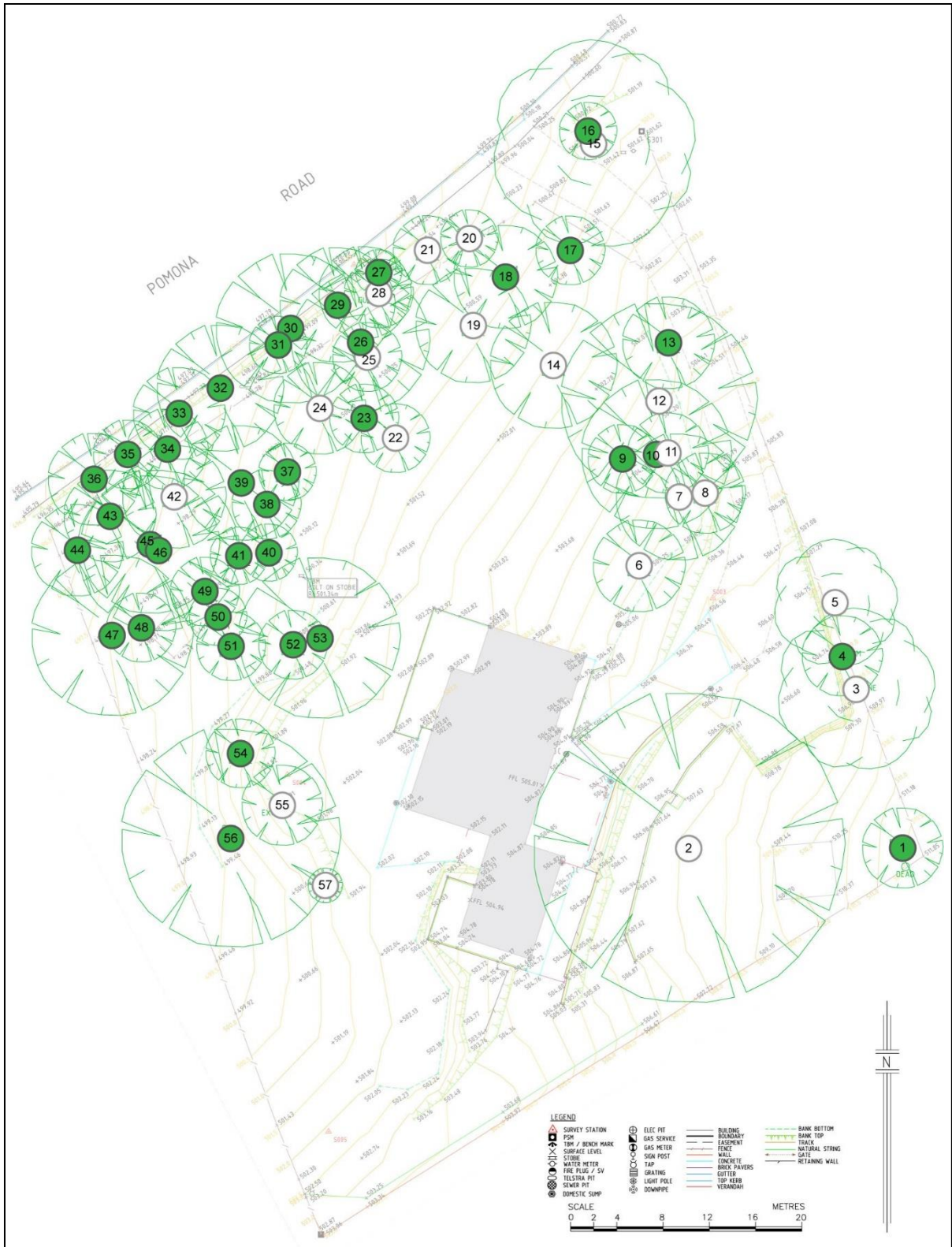


Figure 3. Trees subject to NV Act (marked green) taken from Calyptra arborist report.

## 2.2 Relevant legislation

### 2.2.1 *Native Vegetation Act 1991*

Native vegetation within the Project site is protected under the NV Act and *Native Vegetation Regulations 2017* (NV Regs). Any proposed clearance of native vegetation in South Australia requires approval from the Native Vegetation Council (NVC). A net environmental benefit is generally conditional on an approval being granted.

The Project site falls under Native Vegetation Regulation 12(35) – Residential subdivision - To allow clearance of vegetation in connection with residential subdivision, associated house sites, roads and other associated infrastructure.

In determining the SEB, the NVC must be provided with written notification of the entire clearance footprint at the allotment scale which includes clearance for the dwelling and any associated structures; clearance within 10 metres of a building for maintenance; fences; vehicle tracks; and any additional clearance for fire safety. Individual regulations for these clearance activities will not apply in connection to new subdivisions and must be considered at this stage.

Clearance can only occur once development approval has been granted and the NVC have approved the clearance and the SEB.

# 3 Method

The scattered tree assessment was conducted on Monday September 23, 2019 by NVC accredited consultant Andrew Sinel.

## 3.1 Vegetation survey

The vegetation survey was performed in accordance with the scattered tree assessment manual (NVC 2019). The NVC scattered tree assessment method is suitable for assessing scattered trees in the following instances:

- Individual scattered trees (i.e. canopy does not overlap). Spatial distribution of trees may vary from approach what would be considered their original distribution (Pre-European) through to single isolated trees in the middle of a paddock or;
- Dead trees (when a dead tree is considered native vegetation) or;
- Clumps of trees (contiguous overlapping canopies) if the clump is small ( $\sim < 0.1$  ha) and;
- For both scattered trees and clumps;
  - the ground layer comprising wholly or largely of introduced species
  - some scattered colonising native species may be present, but represents  $< 5\%$  of the ground cover
  - the area around the trees consists of introduced pasture or crops.

The native vegetation survey was additional to a previous arborist report undertaken by Calyptra Pty Ltd. For consistency, the tree numbers from the arborist report were maintained for this survey. The arborist report highlighted 36 trees as being of indigenous origin and remnant (or semi-remnant) and therefore subject to the provisions of the NV Act.

## 3.2 Fauna survey

All fauna species were observed opportunistically during the Pomona Road survey. The resultant level of risk was 3, which requires a documented fauna survey. The project site was close to high disturbance areas such as the South Eastern Freeway and built residential and commercial precincts. Given this, a reasonable assumption as to the species which are likely to utilise the project area, which is essentially a fenced yard, can be made without the requirement for significant fauna survey effort. In this instance, existing records and knowledge of species habitat preferences have been used to determine the numbers of species likely to use the scattered trees as habitat.



At the time of the scattered tree assessment, a significant development directly opposite the project site on Pomona Road was in the process of tree removal and chipping. Demolition of built infrastructure on the site had been undertaken, causing significant disturbance. This was likely to significantly alter the natural movements of fauna species within the immediate area in the lead up to and during the assessment period.

# 4 Assessment outcomes

## 4.1 Vegetation assessment

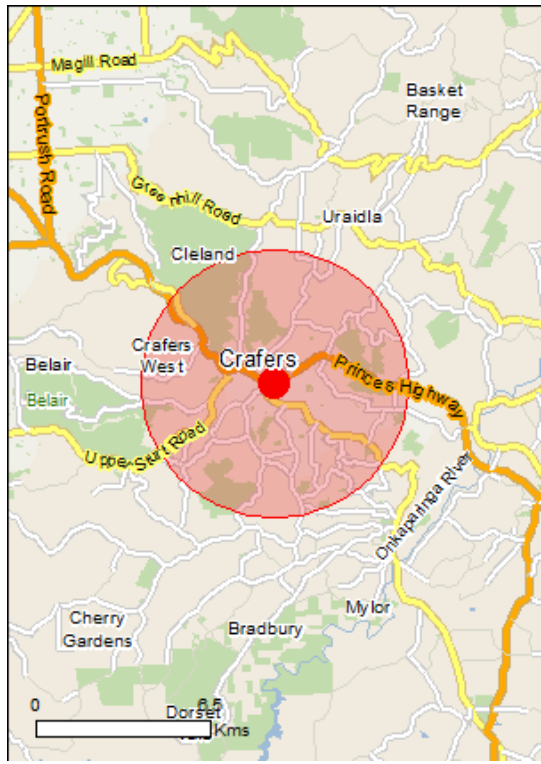
### 4.1.1 General observations

The site was located on a relatively steep slope with the lowest point being the north western corner of the allotment adjacent to Pomona Road (Figure 3). The existing allotment consisted of a permanent dwelling and associated infrastructure such as sheds and access / parking. The remainder of the allotment was largely scattered planted and remnant indigenous trees with an exotic grass understorey maintained as lawn. Sparsely scattered remnant grass tussocks of indigenous origin such as *Microlaena stipoides* (Weeping Rice Grass) were observed within the allotment. Sparsely scattered *Lomandra multiflora* subsp. (Stiff Mat-rush) and *L. fibrata* (Mt. Lofty Mat-rush) were present within the road reserve growing mainly on the cutting adjacent to the road edge. A hedge of *Camellia* 'Sasanqua' was planted internal to the boundary and driveway entrance. The overall biodiversity of the allotment was low and typical of semi-urbanised areas.

### 4.1.2 Nationally threatened species

The results of the EPBC Act Protected Matters Search Tool (PMST) report are summarised in Table 2 (DoEE, 2019). One threatened species was identified in the PMST as possibly occurring or having suitable habitat potentially occurring within 5 km of the Project area (Table 3). Listed marine species were omitted as the Project site and potential impacts are confined to the terrestrial environment, and the marine birds identified in the PMST were considered unlikely to occur or have suitable habitat within 5 km of the Project site.

Table 2. EPBC Protected Matters Search Tool results summary.

Search area (5 km buffer)	Matters of National Environmental Significance	Number
	World Heritage Properties	None
	National Heritage Places	None
	Wetlands of International Importance	None
	Great Barrier Reef Marine Park	None
	Commonwealth Marine Areas	None
	Listed Threatened Ecological Communities	None
	Listed Threatened Species	31
	Listed Migratory Species	14
	<b>Other Matters Protected by the EPBC Act</b>	
	Commonwealth Land	2
	Commonwealth Heritage Places	None
	Critical Habitats	None
	Commonwealth Reserves Terrestrial	None
	Commonwealth Reserves Marine	None
<b>Extra Information</b>		
State and Territory Reserves	32	
Regional Forest Agreements	None	
Invasive Species	44	
Nationally Important Wetlands	1	
Key Ecological Features (Marine)	None	

#### 4.1.3 Nationally threatened fauna

Thirty-one nationally threatened species were highlighted within the Protected Matters database via the search tool. One species of national conservation significance was regarded as possibly utilising the Project site for part of their habitat requirements: The Grey-headed Flying-fox (*Pteropus poliocephalus*). A summary of the species-specific requirements is provided below.

##### **Grey-headed Flying-fox**

The Grey-headed Flying Fox (*Pteropus poliocephalus*) is federally listed as Vulnerable and based upon the desktop assessment was considered to possibly utilise trees within the Project site as foraging habitat. The species roosts are located within Botanic Park, adjacent to the Torrens River in Adelaide.

The distribution of the Grey-headed Flying Fox has contracted in the north of Australia, and expanded in the south, with the roosting colony at Botanic Park first recorded in 2010. It has been hypothesised that the Grey-headed Flying Fox may be a climate change migrant, with the increase in average temperature, leading to their presence in more temperate regions

(Williams et al. 2006). The current population estimate at Botanic Park is 10,000 individuals, however, the increasing population is not caused by successful breeding, but rather by the arrival of individuals from populations on the east coast of Australia. Breeding events within the colony in the Botanic Park have largely been unsuccessful, with young individuals succumbing to heat stress.

Urban environments, in particularly botanic parks, are regularly utilised by Grey-headed Flying Foxes due to the diversity of non-indigenous food plants that offer suitable food resources year-round, which allows colonies to remain sedentary. For example, within the Melbourne metropolitan area, there are only 13 indigenous tree species that are part of the diet of the Grey-headed Flying Fox, however a further 87 species of exotic food trees have been planted along streets (Williams et al. 2006).

Grey-headed Flying Foxes forage over a wide area, with individuals capable of travelling 40 km between their roost and feeding sites in a night (Eby and Law, 2008), which puts the Project site well within their range, being located 14 km away from the Botanic Park. Grey-headed Flying Foxes consume fleshy fruits and blossoms, and within the Botanic Park area they have been observed feeding on the fruits of the Morton Bay Fig (*Ficus macrophylla*) and the blossoms of eucalypts (*Eucalyptus* subsp.).

*Eucalyptus obliqua* (Messmate Stringybark) is known to flower across several months however is not a preferred nectar providing species for Flying Foxes. There are several other more preferred food resource species of the Grey-headed Flying Fox, particularly sub-tropical fruiting trees such as Moreton Bay Fig, which grow widely throughout the Adelaide metropolitan and close hills area. Other large gum tree species listed as preferred nectar resources such as *Corymbia maculata* (Spotted Gum) and *Corymbia citriodora* (Lemon Scented Gum) also flower throughout this period and are extensively planted as amenity trees throughout much of the Adelaide Hills. *Eucalyptus leucoxylon* ssp. *leucoxylon* (South Australian Blue-gum) generally flower through winter / spring so may have a higher value in terms of providing nectar resources at a period when other resources are low. Based on the Project site being at the mid-range foraging distance range and flowering periods coinciding with many other food resource species, this proposed tree removals are not deemed to be a high risk for this species.

Table 3. Summary of EPBC listed species highlighted from the EPBC database via the PMST within 5km of the Project site.

Scientific name	Common name	Conservation status ¹		Likelihood of Occurrence
		EPBC Act	NPW Act	
<i>Apus pacificus</i>	Fork Tailed Swift	Mi.		Possible, as flyover only
<i>Actitis hypoleucos</i>	Common Sandpiper	Mi	R	Possible, as flyover only
<i>Botaurus poiciloptilus</i>	Australasian Bittern	EN	V	Unlikely
<i>Calidris acuminata</i>	Saherp-tailed Sandpiper	Mi		Possible, as flyover only
<i>Calidris melanotos</i>	Pectoral Sandpiper	Mi	R	Possible, as flyover only
<i>Calidris ferruginea</i>	Curllew Sandpiper	CE, Mi		Possible, as flyover only
<i>Cincoloma punctatum anachoreta</i>	Spotted Quail-thrush,	CE	E	Unlikely
<i>Gallinago hardwickii</i>	Latham's Snipe	Mi	R	Possible, as flyover only
<i>Grantiella picta</i>	Painted Honeyeater	VU	V	Unlikely
<i>Hirundapus caudacutus</i>	White-throated needletail	VU, Mi		Possible, as flyover only
<i>Leipoa ocellata</i>	Malleefowl	VU	V	Unlikely
<i>Motacilla cinerea</i>	Grey Wagtail	Mi		Unlikely
<i>Motacilla flava</i>	Yellow Wagtail	Mi		Unlikely
<i>Myiagra cyanoleuca</i>	Satin Flycatcher	Mi	E	Unlikely
<i>Numenius madagascariensis</i>	Eastern Curlew	CE	V	Possible, as flyover only
<i>Pandion haliaetus</i>	Osprey	Mi	E	Unlikely
<i>Pedionomus torquatus</i>	Plains Wanderer	CE	E	Unlikely
<i>Rhipidura rufifrons</i>	Rufous Fantail	Mi		Unlikely
<i>Rostratula australis</i>	Australian Painted Snipe	EN	V	Unlikely
<i>Tringa nebularia</i>	Common Greenshank	Mi		Unlikely
<i>Thinornis rubricollis rubricollis</i>	Hooded Plover	VU	V	Unlikely
<i>Zoothera lunulata halmaturina</i>	Bassian Thrush	VU		Unlikely
<i>Litoria raniformis</i>	Southern Bell Frog	VU	V	Unlikely

Scientific name	Common name	Conservation status ¹		Likelihood of Occurrence
		EPBC Act	NPW Act	
<i>Dasyurus maculatus maculatus</i>	Spotted-tail Quoll,	EN	E	Unlikely
<i>Isodon obesulus obesulus</i>	Southern Brown Bandicoot	EN	V	Unlikely
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	VU	R	Possible

#### 4.1.4 State threatened fauna

One hundred and fifty-one fauna species with records within 5 km and the previous 30 years were recorded from the BDBSA Supertable search (Appendix 1). Nineteen of these were threatened at state or federal level (Table 4). Of the nineteen species, four were deemed as likely to utilise the scattered trees as habitat. Black-chinned Honeyeater (*Melithreptus gularis*), Jacky Winter (*Microeca fascinans*), Scarlet Robin (*Petroica boodang boodang*) and Common Brush-tail Possum (*Trichosurus vulpecula*) were listed within the scattered tree manual as utilising this habitat type. Brushtail Possum scats were observed in high density throughout the tree understorey within the Project site. Four other species listed as uncommon were deemed likely to utilise the scattered trees within the project site as habitat. Australian Owlet-nightjar (*Aegotheles cristatus*), Spotted Pardalote (*Pardalotus punctatus*), Sulphur-crested Cockatoo (*Cacatua galerita*) and Yellow Thornbill (*Acanthiza nana*).

Table 4. Threatened flora species listed under the EPBC Act and NPW Act identified in the BDBSA Supertable search within 5 km of the Project site.

Species	Common	AUS	SA	Regional rating	Most recent sighting date	Likelihood of presence within project area.
<i>Pseudophryne bibronii</i>	Brown Toadlet		R	VU	3/08/2009	Unlikely
<i>Anhinga novaehollandiae</i>	Australasian Darter		R	VU	16/10/2018	Unlikely
<i>Falco peregrinus</i>	Peregrine Falcon		R	RA	21/09/2006	Unlikely
<i>Hylacola pyrrhopygius parkeri</i>	Chestnut-rumped Heathwren (ML Ranges)		E	EN	8/04/2010	Unlikely
<i>Lewinia pectoralis</i>	Lewin's Rail		V	EN	7/09/2010	Unlikely
<i>Lophoictinia isura</i>	Square-tailed Kite		E	CR	1/02/2015	Unlikely
<i>Melithreptus gularis</i>	Black-chinned Honeyeater		V	CR	3/10/2002	Likely
<i>Microeca fascians</i>	Jacky Winter		R	CR	21/09/2000	Likely
<i>Petroica boodang boodang</i>	Scarlet Robin (SE, MLR, FR, EP)		R	VU	28/02/2018	Likely
<i>Turnix varius</i>	Painted Buttonquail		R	VU	8/06/2009	Unlikely
<i>Zanda (Calyptorhynchus) funerea whiteae</i>	Yellow-tailed Black Cockatoo		V	VU	27/01/2019	Possible
<i>Zapornia tabuensis tabuensis</i>	Spotless Crake		R	EN	7/09/2010	Unlikely
<i>Zoothera lunulata halmaturina</i>	Bassian Thrush	VU			9/08/2018	Unlikely
<i>Antechinus flavipes</i>	Yellow-footed Antechinus		V	RA	13/02/2019	Unlikely
<i>Isodon obesulus obesulus</i>	Southern Brown Bandicoot (SA mainland and KI)	EN	V	EN	20/12/2018	Unlikely
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	VU	R	RA	6/05/2010	Unlikely
<i>Trichosurus vulpecula</i>	Common Brushtail Possum		R	RA	6/12/2017	Likely
<i>Varanus rosenbergi</i>	Heath Goanna		V	CR	1/01/2014	Unlikely
<i>Varanus varius</i>	Lace Monitor		R		31/12/2013	Unlikely

Conservation status: Aus: Australia (*Environment Protection and Biodiversity Conservation Act 1999*). SA: South Australia (*National Parks and Wildlife Act 1972*). Conservation codes: CE/CR: Critically Endangered. EN/E: Endangered. VU/V: Vulnerable. R/RA: Rare.



#### 4.1.5 Scattered trees

34 scattered trees were assessed within the allotment and on the adjoining road reserve. Two trees (16 and 18) recorded within the previous arboriculture survey were no longer present. Tree 16 had been removed from the verge (assumedly by council) for sight line requirements given the construction site and heavy machinery coming and going on the opposite side of Pomona Road. Tree 18 was damaged by Tree 12 (Figure 4) and removed.



Figure 4. Previous tree 12 showing storm damage.

An aerial map showing the individual tree locations is provide in Figure 5. A summary of the physical values of each tree is provided below in Table 5. The tree number that corresponds with the arboriculture report is shown in the unique ID column. A summary and photo of each individual tree is provided below.

Following the arboriculture assessment, a total of 27 trees were requiring clearance to allow the project to proceed.



Figure 5. Tree locations on aerial image with project site boundary.

Table 5. Scattered tree data table summary from project area.

Tree	Species	Number	Height (m)	Dia. (cm)	Dieback (%)	Hollows Lge	Hollows Med	Hollows Sml	Uncommon species	No. of NP&W Act listed species	No. of EPBC Act listed species	Unique ID
1	<i>Acacia melanoxylon</i>	1	7	27	10	0	0	0	4	4	0	1
2	<i>Eucalyptus obliqua</i>	1	9	36	90	0	0	0	4	4	0	4
3	<i>Eucalyptus obliqua</i>	1	12.5	60	80	0	0	0	4	4	0	9
4	<i>Eucalyptus obliqua</i>	1	17.5	37	90	0	0	0	4	4	0	10
5	<i>Eucalyptus obliqua</i>	1	14.5	44	60	0	0	0	4	4	0	18
6	<i>Eucalyptus obliqua</i>	1	8.5	27	50	0	0	0	4	4	0	23
7	<i>Eucalyptus obliqua</i>	1	16.5	69	20	0	0	0	4	4	0	26
8	<i>Eucalyptus obliqua</i>	1	10.5	50	10	0	0	0	4	4	0	32
9	<i>Eucalyptus obliqua</i>	1	17	55	20	0	0	0	4	4	0	36
10	<i>Acacia melanoxylon</i>	1	10	31	10	0	0	0	4	4	0	37
11	<i>Eucalyptus obliqua</i>	1	14	53	30	0	0	0	4	4	0	38
12	<i>Eucalyptus obliqua</i>	1	13	40	20	0	0	0	4	4	0	39
13	<i>Acacia melanoxylon</i>	1	9.5	24	10	0	0	0	4	4	0	40
14	<i>Acacia melanoxylon</i>	1	10	21	5	0	0	0	4	4	0	41
15	<i>Eucalyptus obliqua</i>	1	16	51	60	0	0	0	4	4	0	43
16	<i>Eucalyptus obliqua</i>	1	10	38	80	0	0	0	4	4	0	44
17	<i>Eucalyptus obliqua</i>	1	21.5	103	20	0	0	0	4	4	0	45
18	<i>Eucalyptus obliqua</i>	1	20.5	104	40	0	0	0	4	4	0	46
19	<i>Eucalyptus obliqua</i>	1	19	79	30	0	0	0	4	4	0	47
20	<i>Acacia melanoxylon</i>	1	9.5	29	10	0	0	0	4	4	0	48
21	<i>Acacia melanoxylon</i>	1	9	22	10	0	0	0	4	4	0	49
22	<i>Acacia melanoxylon</i>	1	9	20	10	0	0	0	4	4	0	50

<b>Tree</b>	<b>Species</b>	<b>Number</b>	<b>Height (m)</b>	<b>Dia. (cm)</b>	<b>Dieback (%)</b>	<b>Hollows Lge</b>	<b>Hollows Med</b>	<b>Hollows Sml</b>	<b>Uncommon species</b>	<b>No. of NP&amp;W Act listed species</b>	<b>No. of EPBC Act listed species</b>	<b>Unique ID</b>
23	<i>Acacia melanoxylon</i>	1	9	28	10	0	0	0	4	4	0	51
24	<i>Acacia melanoxylon</i>	1	10	36	10	0	0	0	4	4	0	52
25	<i>Eucalyptus obliqua</i>	1	19.5	115	20	0	0	0	4	4	0	53
26	<i>Exocarpos cupressiformis</i>	1	7.5	23	5	0	0	0	4	4	0	54
27	<i>Eucalyptus obliqua</i>	1	21	87	20	0	0	0	4	4	0	56

Tree 1: *Acacia melanoxylon* (Blackwood)

Height: 7m

Diameter: single stem, 27cm

Dieback: 10



Tree 4: *Eucalyptus obliqua* (Messmate Stringybark)

Height: 9m

Diameter: single stem, 36cm

Dieback: 90 %



Tree 9: *Eucalyptus obliqua* (Messmate Stringybark)

Height: 12.5m

Diameter: Single stem 37cm

Dieback: 80%



Tree 10: *Eucalyptus obliqua* (Messmate Stringybark)

Height: 17.5m

Diameter: Single stem, 60cm

Dieback: 90%





Tree 18: *Eucalyptus obliqua* (Messmate Stringybark)

Height: 14.5m

Diameter: Single stem 44cm

Dieback: 60%



Tree 23: *Eucalyptus obliqua* (Messmate Stringybark)

Height: 8.5m

Diameter: Single stem, 20cm

Dieback: 50%



Tree 26: *Eucalyptus obliqua* (Messmate Stringybark)

Height: 16.5m

Diameter: Single stem, 69cm

Dieback: 20%



Tree 32: *Eucalyptus obliqua* (Messmate Stringybark)

Height: 10.5 m

Diameter: Single stem, 50cm

Dieback: 10%



Tree 36: *Eucalyptus obliqua* (Messmate Stringybark)

Height: 17 m

Diameter: Single stem, 55cm

Dieback: 20%



Tree 36: *Acacia melanoxylon* (Blackwood)

Height: 10 m

Diameter: Single stem, 31 cm

Dieback: 10%



Tree 38: *Eucalyptus obliqua* (Messmate Stringybark)

Height: 14 m

Diameter: Single stem, 53cm

Dieback: 30%



Tree 39: *Eucalyptus obliqua* (Messmate Stringybark)

Height: 13 m

Diameter: Single stem, 40cm

Dieback: 20%





Tree 40: *Acacia melanoxylon* (Blackwood)

Height: 9.5 m

Diameter: Single stem, 24cm

Dieback: 10%



Tree 41: *Acacia melanoxylon* (Blackwood)

Height: 10 m

Diameter: Single stem, 21 cm

Dieback: 5%



Tree 43: *Eucalyptus obliqua* (Messmate Stringybark)

Height: 16 m

Diameter: Single stem, 51 cm

Dieback: 60%



Tree 44: *Eucalyptus obliqua* (Messmate Stringybark)

Height: 10 m

Diameter: Single stem, 38cm

Dieback: 80%



Tree 45: *Eucalyptus obliqua* (Messmate Stringybark)

Height: 21.5 m

Diameter: Multi stem, total 103cm

Dieback: 20%



Tree 46: *Eucalyptus obliqua* (Messmate Stringybark)

Height: 20.5 m

Diameter: Multi stem, total 104cm

Dieback: 40%



Tree 47: *Eucalyptus obliqua* (Messmate Stringybark)

Height: 19 m

Diameter: Multi stem, Total 79 cm

Dieback: 30%



Tree 48: *Acacia melanoxylon* (Blackwood)

Height: 9.5 m

Diameter: Single stem, 29cm

Dieback: 10%





Tree 49: *Acacia melanoxylon* (Blackwood)

Height: 9 m

Diameter: Single stem, 22 cm

Dieback: 10%



Tree 50: *Acacia melanoxylon* (Blackwood)

Height: 9 m

Diameter: Single stem, 20cm

Dieback: 10%



Tree 51: *Acacia melanoxylon* (Blackwood)

Height: 9 m

Diameter: Single stem, 28cm

Dieback: 10%



Tree 52: *Acacia melanoxylon* (Blackwood)

Height: 10 m

Diameter: Single stem, 36cm

Dieback: 10%



Tree 53: *Eucalyptus obliqua* (Messmate Stringybark)

Height: 19.5 m

Diameter: Multi stem, Total 115 cm

Dieback: 20%



Tree 54: *Exocarpos cupressiformis* (Native Cherry)

Height: 7.5m

Diameter: Single stem, 23cm

Dieback: 5%



Tree 53: *Eucalyptus obliqua* (Messmate Stringybark)

Height: 21 m

Diameter: Single stem 87 cm

Dieback: 20%



## 4.2 Requirements of the regulation

Division 5 of the NV Regs allows for the clearance of native vegetation in relation to specific activities as set out in Schedule 1, Parts 4, 5 or 6 of the Regulations.

The proposed vegetation clearance is applicable under Regulation 12(35) – Residential subdivision. The requirements of the regulation are:

1. Development authorisation for the division of land and construction of roads and other infrastructure under the *Development Act 1993* must have been obtained; and
2. The NVC must be given written notification of the full extent of the clearance expected to occur in connection with the division of land, to determine the required SEB.

The project has been through the development planning process. The Council Development Application Number is 19/322/473. The Land Division Application Number is 473/C020/19.

The site is set within a Medium Risk Bushfire zone (approximately 110 metres from High Risk).

## 4.3 Mitigation hierarchy

When exercising a power or making a decision under Division 5 of the NV Regs, the NVC must have regard to the mitigation hierarchy. The NVC will assess the measures taken to avoid and minimise impacts on biodiversity and rare or threatened species or ecological communities within the property or immediate vicinity of the development.

### 4.3.1 Avoidance

The project will include the removal of scattered remnant trees in place of residential dwellings and access which was reviewed at the Development Plan stage as the most efficient layout. The nature of the development as well as ongoing asset management means that much of the vegetation is unable to be avoided. However, retention of many of the trees within the road reserve (specifically tree numbers 27-35) would reduce the loss of mixed age trees, reduce the required SEB and retain some of the existing amenity value these trees currently provide.

### 4.3.2 Minimisation

There is little scope to minimise the clearance of scattered trees. Clearance pertains to entire removal or retention in all cases. It may be possible to potentially minimise the clearance by retaining Trees 1, 37 & 39 if possible however tree protection zone limitations as well as cutting



and filling is required for construction and may limit the ability to minimise clearance in this instance.

Minimisation of the impacts to fauna will be considered. For general fauna management, the following principles will apply:

- Primarily avoid periods of nesting, however in the event of interaction with breeding birds, nests with eggs should not be relocated. A new exclusion zone should be created and reported on, particularly for nests with young chicks. These areas/nests may not be disturbed until the chicks are fledged;
- Should any fauna be found injured on the site during the works, Fauna Rescue SA, the RSPCA or a veterinarian must be contacted to provide advice and treatment if required.

#### 4.3.3 Rehabilitation or restoration

There is little scope for the rehabilitation of areas within the project footprint as the project is considered long term. Landscaping plans for the development should consider the use of appropriate local indigenous shrubs and perennial herbaceous species. Many urbanised areas can provide significant resources for indigenous species when planted en-masse, particularly honeyeaters and granivorous birds. State flora nurseries are valuable resources for this type of planning.

#### 4.3.4 Offset

Any adverse impact on native vegetation or ecosystems that cannot be avoided or minimised should be offset by implementing a SEB that outweighs that impact.

Biodiversity offsets address any residual impacts after prevention and mitigation measures have been implemented.

# 5 Significant Environmental Benefit

The NVC must be satisfied that as a result of the loss of vegetation from the clearance that a SEB will result in a positive impact on the environment that is over and above the negative impact of the clearance.

## 5.1 Determination of the SEB obligation

The SEB obligation is quantified by multiplication factors resulting in a tree score and SEB points requirement (Table 6). This calculates to a SEB total based on rainfall factor and economies of scale. (Table 7). Table 8 shows the individual species contributions to the clearance requirement while Table 9 shows the overall SEB requirement for the 34 scattered trees.

Table 6. SEB obligation summary.

Unique tree ID	Total Individual Tree score (Max 15)	Total biodiversity score	Loss Factor	SEB Points Req.	Total SEB Payment \$
1.00	0.64	0.64	1.0	0.67	\$936.90
4.00	0.29	0.29	1.0	0.30	\$419.47
9.00	0.42	0.42	1.0	0.44	\$621.80
10.00	1.09	1.09	1.0	1.14	\$1,601.74
18.00	0.98	0.98	1.0	1.03	\$1,444.79
23.00	0.33	0.33	1.0	0.34	\$482.14
26.00	2.56	2.56	1.0	2.69	\$3,768.93
32.00	1.26	1.26	1.0	1.33	\$1,854.98
36.00	2.31	2.31	1.0	2.42	\$3,387.72
37.00	1.42	1.42	1.0	1.49	\$2,080.64
38.00	1.35	1.35	1.0	1.41	\$1,979.92
39.00	1.20	1.20	1.0	1.26	\$1,768.47
40.00	1.16	1.16	1.0	1.22	\$1,709.34
41.00	1.19	1.19	1.0	1.25	\$1,755.04
43.00	1.16	1.16	1.0	1.22	\$1,705.09
44.00	0.36	0.36	1.0	0.38	\$535.02
45.00	4.86	4.86	1.0	5.10	\$7,141.69
46.00	4.13	4.13	1.0	4.34	\$6,073.50
47.00	3.69	3.69	1.0	3.87	\$5,415.84
48.00	1.29	1.29	1.0	1.36	\$1,901.98
49.00	1.06	1.06	1.0	1.11	\$1,552.94
50.00	1.01	1.01	1.0	1.06	\$1,484.25

Unique tree ID	Total Individual Tree score (Max 15)	Total biodiversity score	Loss Factor	SEB Points Req.	Total SEB Payment \$
51.00	1.21	1.21	1.0	1.27	\$1,771.64
52.00	2.09	2.09	1.0	2.19	\$3,066.34
53.00	6.59	6.59	1.0	6.92	\$9,683.81
54.00	2.28	2.28	1.0	2.39	\$3,346.21
56.00	5.97	5.97	1.0	6.27	\$8,770.17

Table 7. Rainfall factor and Economies of scale.

<b>NRM Region</b>	<b>AMLR</b>
<b>Mean Annual Rainfall (mm)</b>	<b>1025</b>
<b>Economies of Scale factor</b>	<b>0.5</b>

Table 8. Individual species contribution.

Species	Number of Trees	Total SEB Points required	Payment in NV Fund (GST Exclusive)	Administration fee (GST Inclusive)	Total
<i>Acacia melanoxylon</i>	9	11.62	\$15,484.83	\$774.24	\$16,259.07
<i>Eucalyptus obliqua</i>	17	40.48	\$53,957.22	\$2,697.86	\$56,655.08
<i>Exocarpos cupressiformis</i>	1	2.39	\$3,186.87	\$159.34	\$3,346.21

Table 9. Total SEB requirement.

<b>Total Biodiversity Score</b>	<b>51.90</b>
<b>Total SEB Points required</b>	<b>54.49</b>
<b>Total SEB \$ required</b>	<b>\$76,260.35</b>

## 5.2 Achieving SEB

The proponent wishes to achieve the SEB via payment into the fund.

## 6 Discussion

The trees assessed and described within this report are of moderate ecological value in the context of the broader local environment. The trees earmarked for removal were not deemed to be critical habitat for any species of national conservation significance.

One EPBC listed species, the Grey-headed Flying Fox was considered to potentially utilise the Project site for foraging habitat. This species is a recent introduction to South Australia and the one population that is based in the Botanic Park in the city of Adelaide is expected to be near or exceeding carrying capacity. Based on the low potential for *Eucalyptus obliqua* (Messmate Stringybark) to supply nectar feeding habitat at a period when resources are limited from other preferred nectar producing tree species, it is highly unlikely that the assessed trees provide critical habitat, or that these trees are utilised under current existing circumstances.

The habitat structure of the assessed trees also deems them unsuitable for several other national and state significant fauna species due to the lack of multi layers and understorey complexity within the Project site. No hollow bearing limbs were observed within the trees. All state and locally uncommon species recognised as likely to utilise the trees were species which forage within scattered tree environments and are resident species that potentially occur throughout the year.

# 7 References

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# 8 Appendices

Appendix 1. BDBSA Supertable fauna records within 5km

Class	Species	Common	EPBC Act	NPW Act	Regional rating	Most recent sighting date
AVES	<i>Acanthiza chrysorrhoa</i>	Yellow-rumped Thornbill			NT	28/03/2017
AVES	<i>Acanthiza lineata</i>	Striated Thornbill			LC	6/12/2017
AVES	<i>Acanthiza lineata clelandi</i>	Striated Thornbill (MLR, SE)				1/10/2014
AVES	<i>Acanthiza nana</i>	Yellow Thornbill			NT	6/12/2017
AVES	<i>Acanthiza pusilla</i>	Brown Thornbill			VU	13/08/2017
AVES	<i>Acanthiza pusilla samueli</i>	Brown Thornbill (MLR)				21/09/2006
AVES	<i>Acanthiza reguloides</i>	Buff-rumped Thornbill			NT	9/09/2006
AVES	<i>Acanthiza sp.</i>	thornbills				6/11/2001
AVES	<i>Acanthorhynchus tenuirostris</i>	Eastern Spinebill			LC	12/10/2017
AVES	<i>Acanthorhynchus tenuirostris halmaturinus</i>	Eastern Spinebill (Ki, MLR, southern FR)				6/12/2017
AVES	<i>Accipiter fasciatus</i>	Brown Goshawk			LC	6/12/2017
AVES	<i>Aegotheles cristatus</i>	Australian Owlet-nightjar			RA	14/09/2010
AVES	<i>Anas platyrhynchos</i>	Mallard (Northern Mallard)				19/02/2004
AVES	<i>Anas superciliosa</i>	Pacific Black Duck			VU	21/09/2006
AVES	<i>Anhinga novaehollandiae</i>	Australasian Darter		R	VU	16/10/2018
MAMMALIA	<i>Antechinus flavipes</i>	Yellow-footed Antechinus		V	RA	13/02/2019
AVES	<i>Anthochaera carunculata</i>	Red Wattlebird			LC	6/12/2017
AVES	<i>Aquila audax</i>	Wedge-tailed Eagle			LC	9/09/2006
AVES	<i>Artamus cyanopterus</i>	Dusky Woodswallow			RA	9/02/2017

Class	Species	Common	EPBC Act	NPW Act	Regional rating	Most recent sighting date
REPTILIA	<i>Austrelaps labialis</i>	Pygmy Copperhead			RA	22/11/2017
AVES	<i>Aythya australis</i>	Hardhead			LC	21/09/2006
AVES	<i>Cacatua galerita</i>	Sulphur-crested Cockatoo			LC	6/12/2017
AVES	<i>Cacomantis flabelliformis</i>	Fan-tailed Cuckoo			NT	12/10/2017
AVES	<i>Caligavis chrysops</i>	Yellow-faced Honeyeater			LC	4/04/2017
AVES	<i>Caligavis chrysops samueli</i>	Yellow-faced Honeyeater (MLR, southern FR)				15/12/2014
AVES	<i>Carduelis carduelis</i>	European Goldfinch				18/01/2001
MAMMALIA	<i>Cervus dama</i>	Fallow Deer				6/12/2017
AVES	<i>Chalcites basalis</i>	Horsfield's Bronze Cuckoo			NT	11/09/2016
AVES	<i>Chalcites lucidus</i>	Shining Bronze Cuckoo			RA	1/12/2016
REPTILIA	<i>Chelodina longicollis</i>	Eastern Long-necked Turtle			DD	28/02/2019
AVES	<i>Chenonetta jubata</i>	Maned Duck			LC	8/11/2017
REPTILIA	<i>Christinus marmoratus</i>	Marbled Gecko			LC	30/11/2000
AVES	<i>Colluricincla harmonica</i>	Grey Shrikethrush			LC	6/12/2017
AVES	<i>Columba livia</i>	Feral Pigeon				15/08/2002
AVES	<i>Coracina novaehollandiae</i>	Black-faced Cuckooshrike			LC	18/01/2001
AVES	<i>Cormobates leucophaea</i>	White-throated Treecreeper			NT	6/12/2017
AVES	<i>Cormobates leucophaea griseus</i>	White-throated Treecreeper (MLR)				7/09/2010
AVES	<i>Corvus coronoides</i>	Australian Raven				12/10/2016
AVES	<i>Corvus mellori</i>	Little Raven			LC	6/12/2017
AVES	<i>Corvus sp.</i>	crows				29/11/2000
AMPHIBIA	<i>Crinia signifera</i>	Common Froglet			LC	17/03/2012
REPTILIA	<i>Ctenotus spaldingi</i>	Eastern Striped Skink			RA	30/11/2000
AVES	<i>Cygnus atratus</i>	Black Swan			RA	21/09/2006

Class	Species	Common	EPBC Act	NPW Act	Regional rating	Most recent sighting date
AVES	<i>Dacelo novaeguineae</i>	Laughing Kookaburra			LC	6/12/2017
AVES	<i>Daphoenositta chrysoptera</i>	Varied Sittella			VU	5/03/2018
AVES	<i>Dicaeum hirundinaceum</i>	Mistletoebird			LC	19/05/2005
AVES	<i>Dromaius novaehollandiae</i>	Emu			VU	22/11/2000
AVES	<i>Egretta novaehollandiae</i>	White-faced Heron			LC	21/09/2006
AVES	<i>Eolophus roseicapilla</i>	Galah			LC	6/12/2017
AVES	<i>Falco cenchroides</i>	Nankeen Kestrel			LC	21/09/2000
AVES	<i>Falco peregrinus</i>	Peregrine Falcon		R	RA	21/09/2006
AVES	<i>Fulica atra</i>	Eurasian Coot			LC	11/09/2016
ACTINOPTERI	<i>Galaxias brevipinnis</i>	Climbing Galaxias			VU	16/03/2003
ACTINOPTERI	<i>Galaxias olidus (NC)</i>	Mountain Galaxias				16/03/2003
ACTINOPTERI	<i>Galaxias olidus (revised)</i>	Mountain Galaxias				7/03/2018
AVES	<i>Gallinula tenebrosa</i>	Dusky Moorhen			LC	21/09/2006
ACTINOPTERI	<i>Gambusia holbrooki</i>	Eastern Gambusia				28/11/2002
AVES	<i>Glossopsitta concinna</i>	Musk Lorikeet			LC	19/05/2005
AVES	<i>Grallina cyanoleuca</i>	Magpielark			LC	29/01/2017
AVES	<i>Gymnorhina tibicen</i>	Australian Magpie			LC	6/12/2017
REPTILIA	<i>Hemiergus decresiensis</i>	Three-toed Earless Skink			LC	17/03/2012
AVES	<i>Hirundo neoxena</i>	Welcome Swallow			LC	21/09/2006
MAMMALIA	<i>Hydromys chrysogaster</i>	Water Rat			RA	7/03/2018
AVES	<i>Hylacola pyrrhopygius parkeri</i>	Chestnut-rumped Heathwren (ML Ranges)		E	EN	8/04/2010
MAMMALIA	<i>Isodon obesulus</i>	Southern Brown Bandicoot	EN	VU		7/10/2017
MAMMALIA	<i>Isodon obesulus obesulus</i>	Southern Brown Bandicoot (SA mainland and KI)	EN	V	EN	20/12/2018
REPTILIA	<i>Lampropholis guichenoti</i>	Garden Skink			LC	6/12/2017



Class	Species	Common	EPBC Act	NPW Act	Regional rating	Most recent sighting date
MAMMALIA	<i>Lepus europaeus</i>	European Brown Hare				23/01/2019
REPTILIA	<i>Lerista bougainvillii</i>	Bougainville's Skink			LC	12/01/2019
AVES	<i>Lewinia pectoralis</i>	Lewin's Rail		V	EN	7/09/2010
AMPHIBIA	<i>Limnodynastes dumerilii</i>	Banjo Frog			LC	3/10/2005
AMPHIBIA	<i>Limnodynastes tasmaniensis</i>	Spotted Marsh Frog			LC	27/09/2005
REPTILIA	<i>Liopholis whitii</i>	White's Skink			LC	19/12/2001
AMPHIBIA	<i>Litoria ewingii</i>	Brown Tree Frog			RA	12/08/2009
AVES	<i>Lophoictinia isura</i>	Square-tailed Kite		E	CR	1/02/2015
MAMMALIA	<i>Macropus fuliginosus</i>	Western Grey Kangaroo			LC	2/03/2019
AVES	<i>Malurus cyaneus</i>	Superb Fairywren			LC	6/12/2017
AVES	<i>Malurus cyaneus leggei</i>	Superb Fairywren (Mainland SA)				1/10/2014
AVES	<i>Melithreptus brevirostris</i>	Brown-headed Honeyeater			NT	29/11/2000
AVES	<i>Melithreptus gularis</i>	Black-chinned Honeyeater		V	CR	3/10/2002
AVES	<i>Melithreptus lunatus</i>	White-naped Honeyeater			VU	9/09/2006
AVES	<i>Microcarbo melanoleucos melanoleucos</i>	Little Pied Cormorant			LC	19/05/2005
AVES	<i>Microeca fascinans</i>	Jacky Winter		R	CR	21/09/2000
AVES	<i>Myiagra rubecula</i>	Leaden Flycatcher				11/11/2000
AVES	<i>Neochmia temporalis</i>	Red-browed Finch			NT	29/05/2014
AVES	<i>Ninox boobook</i>	Southern Boobook			NT	27/11/2000
MAMMALIA	<i>Oryctolagus cuniculus</i>	Rabbit (European Rabbit)				6/12/2017
AVES	<i>Pachycephala pectoralis</i>	Golden Whistler			LC	12/10/2017
AVES	<i>Pachycephala rufiventris rufiventris</i>	Rufous Whistler				29/11/2000
REPTILIA	<i>Parasuta flagellum</i>	Little Whip Snake			LC	15/10/2013
AVES	<i>Pardalotus punctatus</i>	Spotted Pardalote			NT	1/12/2016

Class	Species	Common	EPBC Act	NPW Act	Regional rating	Most recent sighting date
AVES	<i>Pardalotus sp.</i>	pardalotus				7/12/2002
AVES	<i>Pardalotus striatus</i>	Striated Pardalote			LC	28/08/2016
AVES	<i>Parvipsitta porphyrocephala</i>	Purple-crowned Lorikeet			NT	2/02/2017
AVES	<i>Passer domesticus</i>	House Sparrow				21/09/2006
AVES	<i>Pelecanus conspicillatus</i>	Australian Pelican			RA	18/01/2001
ACTINOPTERI	<i>Perca fluviatilis</i>	Redfin Perch				28/11/2002
AVES	<i>Petrochelidon nigricans</i>	Tree Martin			NT	18/01/2001
AVES	<i>Petrochelidon sp.</i>	martins				14/10/2001
AVES	<i>Petroica boodang boodang</i>	Scarlet Robin (SE, MLR, FR, EP)		R	VU	28/02/2018
AVES	<i>Petroica rosea</i>	Rose Robin			RA	2/08/2010
AVES	<i>Petroica sp.</i>					3/09/2017
AVES	PETROICIDAE sp.	Australasian Robins				30/04/2012
AVES	<i>Phalacrocorax sulcirostris</i>	Little Black Cormorant			LC	18/01/2001
AVES	<i>Phalacrocorax varius</i>	Great Pied Cormorant			LC	19/05/2005
AVES	<i>Phaps chalcoptera</i>	Common Bronzewing			LC	12/10/2017
AVES	<i>Phaps elegans</i>	Brush Bronzewing			RA	1/12/2016
AVES	<i>Phaps sp.</i>	bronzewings				29/11/2000
MAMMALIA	<i>Phascolarctos cinereus</i>	Koala			LC	13/02/2019
AVES	<i>Phylidonyris novaehollandiae</i>	New Holland Honeyeater			LC	6/12/2017
AVES	<i>Phylidonyris novaehollandiae novaehollandiae</i>	New Holland Honeyeater (mainland SA)				21/09/2006
AVES	<i>Phylidonyris pyrrhopterus</i>	Crescent Honeyeater			LC	6/12/2017
AVES	<i>Phylidonyris pyrrhopterus halmaturinus</i>	Crescent Honeyeater (KI and MLR)				20/01/2015
AVES	<i>Platycercus elegans</i>	Crimson Rosella			LC	8/11/2017
AVES	<i>Platycercus elegans fleurieuensis</i>	Adelaide Rosella (southern MLR)				6/12/2016

Class	Species	Common	EPBC Act	NPW Act	Regional rating	Most recent sighting date
AVES	<i>Platycercus elegans subadelaidae</i>	Adelaide Rosella (southern FR)				6/12/2017
AVES	<i>Podargus strigoides</i>	Tawny Frogmouth			NT	14/08/2004
AVES	<i>Poliocephalus poliocephalus</i>	Hoary-headed Grebe			NT	11/09/2016
MAMMALIA	<i>Pseudocheirus peregrinus</i>	Common Ringtail Possum			RA	4/06/2018
REPTILIA	<i>Pseudonaja textilis</i>	Eastern Brown Snake			LC	26/02/2018
AMPHIBIA	<i>Pseudophryne bibronii</i>	Brown Toadlet		R	VU	3/08/2009
MAMMALIA	<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	VU	R	RA	6/05/2010
AVES	<i>Ptilotula penicillata</i>	White-plumed Honeyeater			LC	19/05/2005
REPTILIA	<i>Pygopus lepidopodus</i>	Common Scaly-foot			RA	8/02/2016
MAMMALIA	<i>Rattus fuscipes</i>	Bush Rat			RA	1/12/2000
MAMMALIA	<i>Rattus rattus</i>	Black Rat (Ship Rat, Roof Rat)				29/11/2000
AVES	<i>Rhipidura albiscapa</i>	Grey Fantail			LC	6/12/2017
AVES	<i>Rhipidura leucophrys</i>	Willie Wagtail			NT	19/02/2004
REPTILIA	SCINCIDAE sp.	skinks				4/04/2017
AVES	<i>Sericornis frontalis</i>	White-browed Scrubwren			LC	6/12/2017
AVES	<i>Strepera versicolor melanoptera</i>	Black-winged Currawong (SE, MLR, MM)				7/09/2010
AVES	<i>Sturnus vulgaris</i>	Common Starling				14/08/2004
AVES	<i>Tachybaptus novaehollandiae</i>	Australasian Grebe			LC	11/09/2016
AVES	<i>Taeniopygia guttata</i>	Zebra Finch			VU	12/10/2016
AVES	<i>Threskiornis moluccus</i>	Australian White Ibis			LC	21/09/2006
REPTILIA	<i>Tiliqua rugosa</i>	Sleepy Lizard			LC	25/02/2019
REPTILIA	<i>Tiliqua scincoides</i>	Eastern Bluetongue			LC	10/01/2019
AVES	<i>Todiramphus sanctus</i>	Sacred Kingfisher			NT	4/11/2016
AVES	<i>Trichoglossus haematodus</i>	Rainbow Lorikeet			LC	6/12/2017

Class	Species	Common	EPBC Act	NPW Act	Regional rating	Most recent sighting date
MAMMALIA	<i>Trichosurus vulpecula</i>	Common Brushtail Possum		R	RA	6/12/2017
AVES	<i>Turdus merula</i>	Common Blackbird				8/11/2017
AVES	<i>Turnix varius</i>	Painted Buttonquail		R	VU	8/06/2009
AVES	<i>Vanellus miles</i>	Masked Lapwing			LC	21/09/2006
REPTILIA	<i>Varanus rosenbergi</i>	Heath Goanna		V	CR	1/01/2014
REPTILIA	<i>Varanus varius</i>	Lace Monitor		R		31/12/2013
MAMMALIA	<i>Vulpes vulpes</i>	Fox (Red Fox)				6/12/2017
AVES	<i>Zanda (Calyptorhynchus) funerea whiteae</i>	Yellow-tailed Black Cockatoo		V	VU	27/01/2019
AVES	<i>Zapornia tabuensis tabuensis</i>	Spotless Crake		R	EN	7/09/2010
AVES	<i>Zoothera lunulata</i>	Bassian Thrush		R	EN	14/05/2017
AVES	<i>Zoothera lunulata halmaturina</i>	Bassian Thrush	VU			9/08/2018
AVES	<i>Zosterops lateralis</i>	Silvereeye			VU	6/12/2017