HUME CITY COUNCIL

Office Use Only

Application No.: Date Lodged: / /

Application for
Planning Permit

Planning Enquiries
Phone: 03 9205 2200
Web: http://www.hume.vic.gov.au

If you need help to complete this form, read How to complete the Application for Planning Permit form.

⚠ Any material submitted with this application, including plans and personal information, will be made available for public viewing, including electronically, and copies may be made for interested parties for the purpose of enabling consideration and review as part of a planning process under the *Planning and Environment Act 1987.* If you have any concerns, please contact Council's planning department.

⚠ **Questions marked with an asterisk (*) are mandatory and must be completed.**

⚠ **If the space provided on the form is insufficient, attach a separate sheet.**

Clear Form

The Land i

1 Address of the land. Complete the Street Address and one of the Formal Land Descriptions.

Street Address *

Unit No.: | St. No.: 22 | St. Name: BEACON HILLS CRESCENT,

Suburb/Locality: CRAIGIEBURN | Postcode:3064

Formal Land Description *
Complete either A or B.

⚠ This information can be found on the certificate of title.

A Lot No.: ○ Lodged Plan ○ Title Plan ◉ Plan of Subdivision No.: 054592

OR

B Crown Allotment No.: | Section No.:

Parish/Township Name:

If this application relates to more than one address, please click this button and enter relevant details. Add Address

The Proposal

⚠ You must give full details of your proposal and attach the information required to assess the application. Insufficient or unclear information will delay your application.

2 i **For what use, development or other matter do you require a permit? ***

If you need help about the proposal, read: How to Complete the Application for Planning Permit Form

SINGLE STOREY DUAL OCCUPANCY

Provide additional information on the proposal, including: plans and elevations; any information required by the planning scheme, requested by Council or outlined in a Council planning permit checklist; and if required, a description of the likely effect of the proposal.

3 i **Estimated cost of development for which the permit is required ***

Cost $600000

⚠ You may be required to verify this estimate. Insert `0' if no development is proposed.

If the application is for land within **metropolitan Melbourne** (as defined in section 3 of the *Planning and Environment Act 1987*) and the estimated cost of the development exceeds $1 million (adjusted annually by CPI) the Metropolitan Planning Levy **must** be paid to the State Revenue Office and a current levy certificate **must** be submitted with the application.
Visit www.sro.vic.gov.au for information.

Existing Conditions i

4 **Describe how the land is used and developed now ***

eg. vacant, three dwellings, medical centre with two practitioners, licensed restaurant with 80 seats, grazing.

SINGLE STOREY DWELLING

Provide a plan of the existing conditions. Photos are also helpful.

Title Information

5 **Encumbrances on title** *

If you need help about the title, read: How to complete the Application for Planning Permit form

Does the proposal breach, in any way, an encumbrance on title such as a restrictrive covenant, section 173 agreement or other obligation such as an easement or building envelope?

- ○ Yes. (If 'yes' contact Council for advice on how to proceed before continuing with this application.)
- ○ No
- ◉ Not applicable (no such encumbrance applies).

Provide a full, current copy of the title for each individual parcel of land forming the subject site. (The title includes: the covering 'register search statement', the title diagram and the associated title documents, known as 'instruments', eg. restrictive covenants.)

Applicant and Owner Details

6 Provide details of the applicant and the owner of the land.

Applicant *

The person who wants the permit.

Where the preferred contact person for the application is different from the applicant, provide the details of that person.

Please provide at least one contact phone number *

Owner *

The person or organisation who owns the land

Where the owner is different from the applicant, provide the details of that person or organisation.

[redacted]

Declaration

7 **This form must be signed by the applicant** *

Remember it is against the law to provide false or misleading information, which could result in a heavy fine and cancellation of the permit.

I declare that I am the applicant; and that all the information in this application is true and correct; and the owner (if not myself) has been notified of the permit application.

[redacted]

Date: 4 Aug 2023

day / month / year

Need help with the Application?

If you need help to complete this form, read How to complete the Application for Planning Permit form
General information about the planning process is available at www.delwp.vic.gov.au/planning

Contact Council's planning department to discuss the specific requirements for this application and obtain a planning permit checklist. Insufficient or unclear information may delay your application.

8 **Has there been a pre-application meeting with a Council planning officer?**

(•) No ( ) Yes

Checklist

9 **Have you:**

- [ ] Filled in the form completely?
- [ ] Paid or included the application fee?

Most applications require a fee to be paid. Contact Council to determine the appropriate fee.

- [x] Provided all necessary supporting information and documents?
  - [ ] A full, current copy of title information for each individual parcel of land forming the subject site
  - [ ] A plan of existing conditions.
  - [ ] Plans showing the layout and details of the proposal
  - [ ] Any information required by the planning scheme, requested by council or outlined in a council planning permit checklist.
  - [ ] If required, a description of the likely effect of the proposal (eg traffic, noise, environmental impacts).
  - [ ] If applicable, a current Metropolitan Planning Levy certificate (a levy certificate expires 90 days after the day on which it is issued by the State Revenue Office and then cannot be used). Failure to comply means the application is void.

- [ ] Completed the relevant Council planning permit checklist?
- [ ] Signed the declaration (section 7)?

Lodgement

Lodge the completed and signed form, the fee payment and all documents with:

Hume City Council
PO Box 119 Dallas VIC 3047
Pascoe Vale Road Broadmeadows VIC 3047

Contact information:

Telephone: 61 03 9205 2200
Email: email@hume.vic.gov.au
DX: 94718
Translation: 03 9205 2200 for connection to Hume Link's multilingual telephone information service

Deliver application in person, by fax, or by post:

Print Form

Make sure you deliver any required supporting information and necessary payment when you deliver this form to the above mentioned address. This is usually your local council but can sometimes be the Minister for Planning or another body.

Save Form:

Save Form To Your Computer

You can save this application form to your computer to complete or review later or email it to others to complete relevant sections.

REGISTER SEARCH STATEMENT (Title Search) Transfer of Land Act 1958

VOLUME 08328 FOLIO 446

Security no : 124108156828J
Produced 07/08/2023 02:47 PM

LAND DESCRIPTION

Lot 325 on Plan of Subdivision 054592.
PARENT TITLE Volume 07993 Folio 138
Created by instrument B166400 19/12/1961

REGISTERED PROPRIETOR

Estate Fee Simple

[redacted]

ENCUMBRANCES, CAVEATS AND NOTICES

MORTGAGE AS754553W 28/11/2019
COMMONWEALTH BANK OF AUSTRALIA

Any encumbrances created by Section 98 Transfer of Land Act 1958 or Section 24 Subdivision Act 1988 and any other encumbrances shown or entered on the plan or imaged folio set out under DIAGRAM LOCATION below.

DIAGRAM LOCATION

SEE LP054592 FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

NIL

----------END OF REGISTER SEARCH STATEMENT----------

Additional information: (not part of the Register Search Statement)

Street Address: 22 BEACON HILLS CRESCENT CRAIGIEBURN VIC 3064

ADMINISTRATIVE NOTICES

NIL

eCT Control 15940N COMMONWEALTH BANK OF AUSTRALIA
Effective from 28/11/2019

DOCUMENT END

Imaged Document Cover Sheet

The document following this cover sheet is an imaged document supplied by LANDATA®, Secure Electronic Registries Victoria.

Document Type	**Plan**
Document Identification	**LP054592**
Number of Pages (excluding this cover sheet)	**12**
Document Assembled	**05/08/2023 22:34**

PLAN OF SUBDIVISION

PART OF CROWN ALLOTMENT A – SEC 23

PARISH OF YUROKE

COUNTY OF BOURKE

VOL.7993 FOL.138

DEPTH LIMITATION: 50 FEET

Measurements are in Feet & Inches

Conversion Factor

FEET X 0.3048 = METRES

LP 54592

EDITION 2

PLAN MAY BE LODGED 20-10-61

11 SHEETS

SHEET 1

COLOUR CODE

E-1 = BLUE

R1, R2, R3 & R4 = BROWN

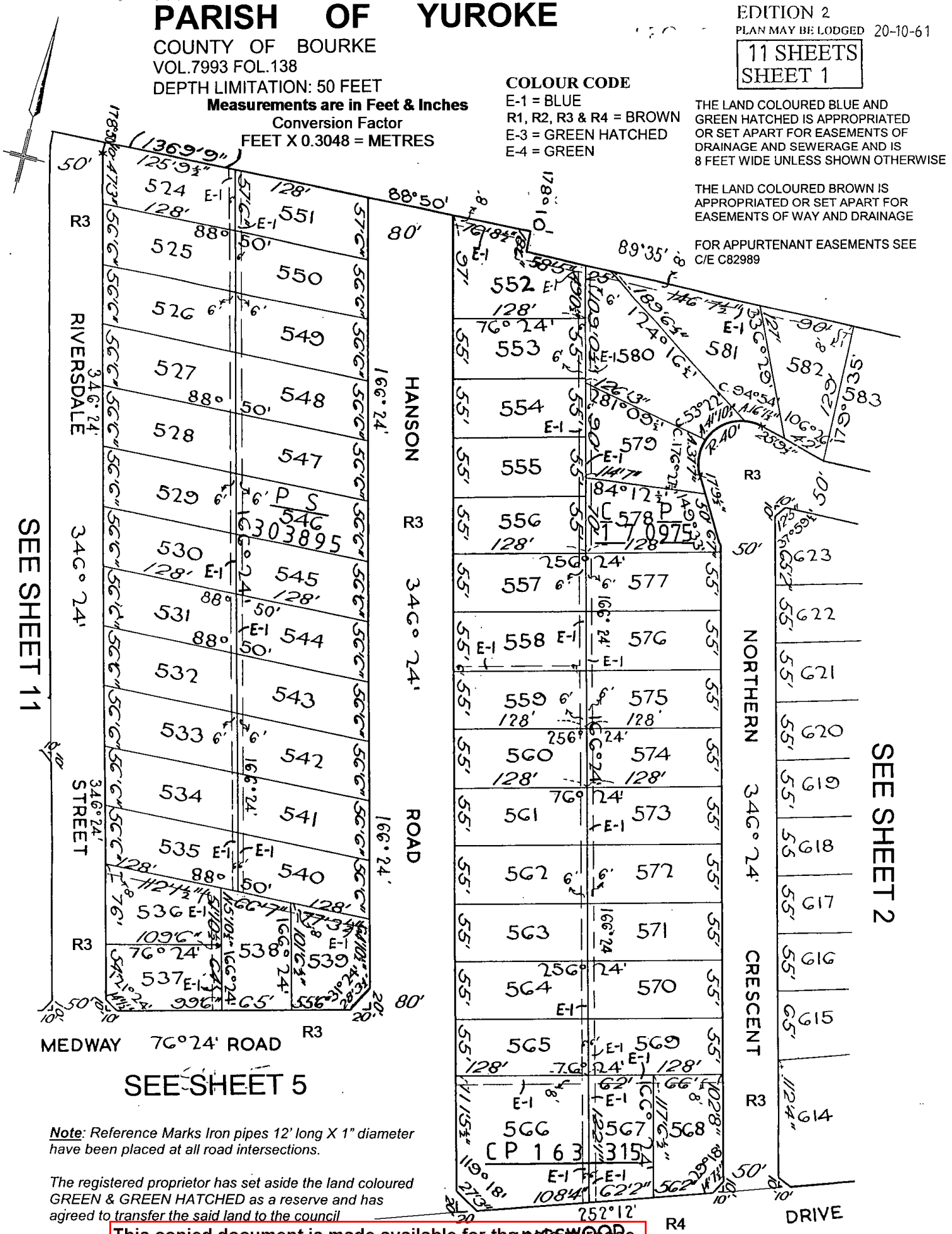
E-3 = GREEN HATCHED

E-4 = GREEN

THE LAND COLOURED BLUE AND GREEN HATCHED IS APPROPRIATED OR SET APART FOR EASEMENTS OF DRAINAGE AND SEWERAGE AND IS 8 FEET WIDE UNLESS SHOWN OTHERWISE

THE LAND COLOURED BROWN IS APPROPRIATED OR SET APART FOR EASEMENTS OF WAY AND DRAINAGE

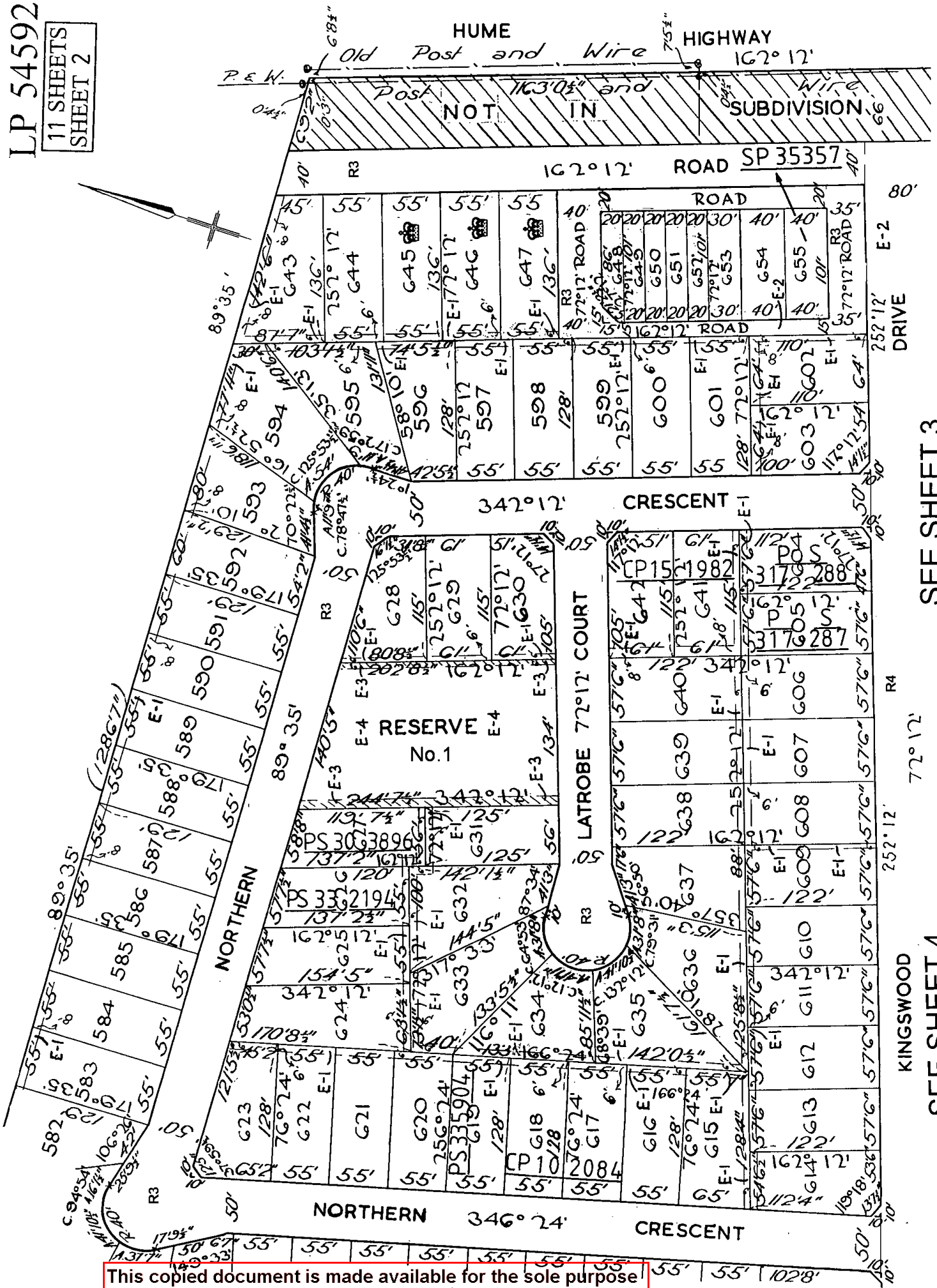
FOR APPURTENANT EASEMENTS SEE C/E C82989



Note: Reference Marks Iron pipes 12' long X 1" diameter have been placed at all road intersections.

The registered proprietor has set aside the land coloured GREEN & GREEN HATCHED as a reserve and has agreed to transfer the said land to the council

LP 54592
11 SHEETS
SHEET 2

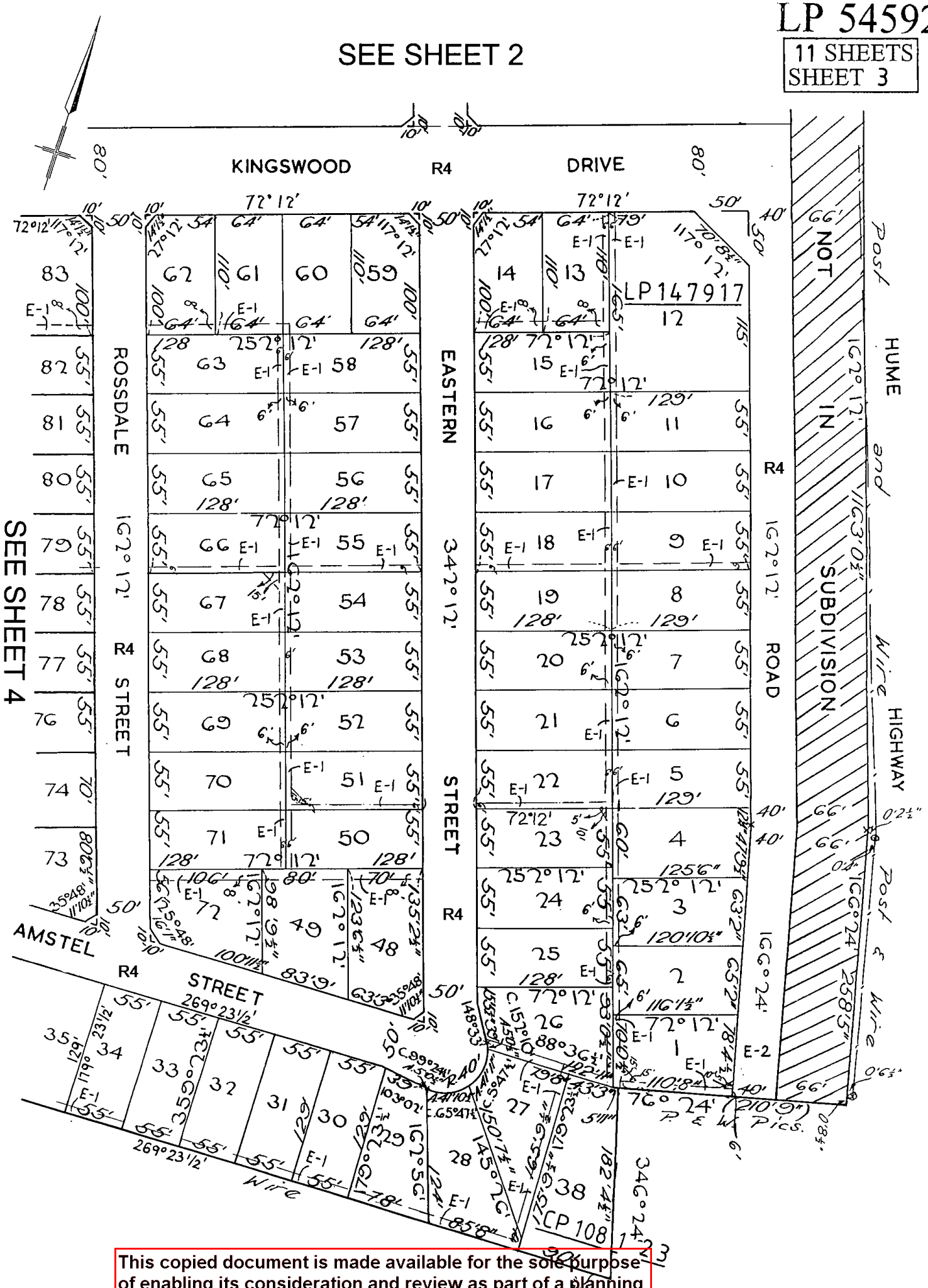


LP 54592

11 SHEETS
SHEET 3

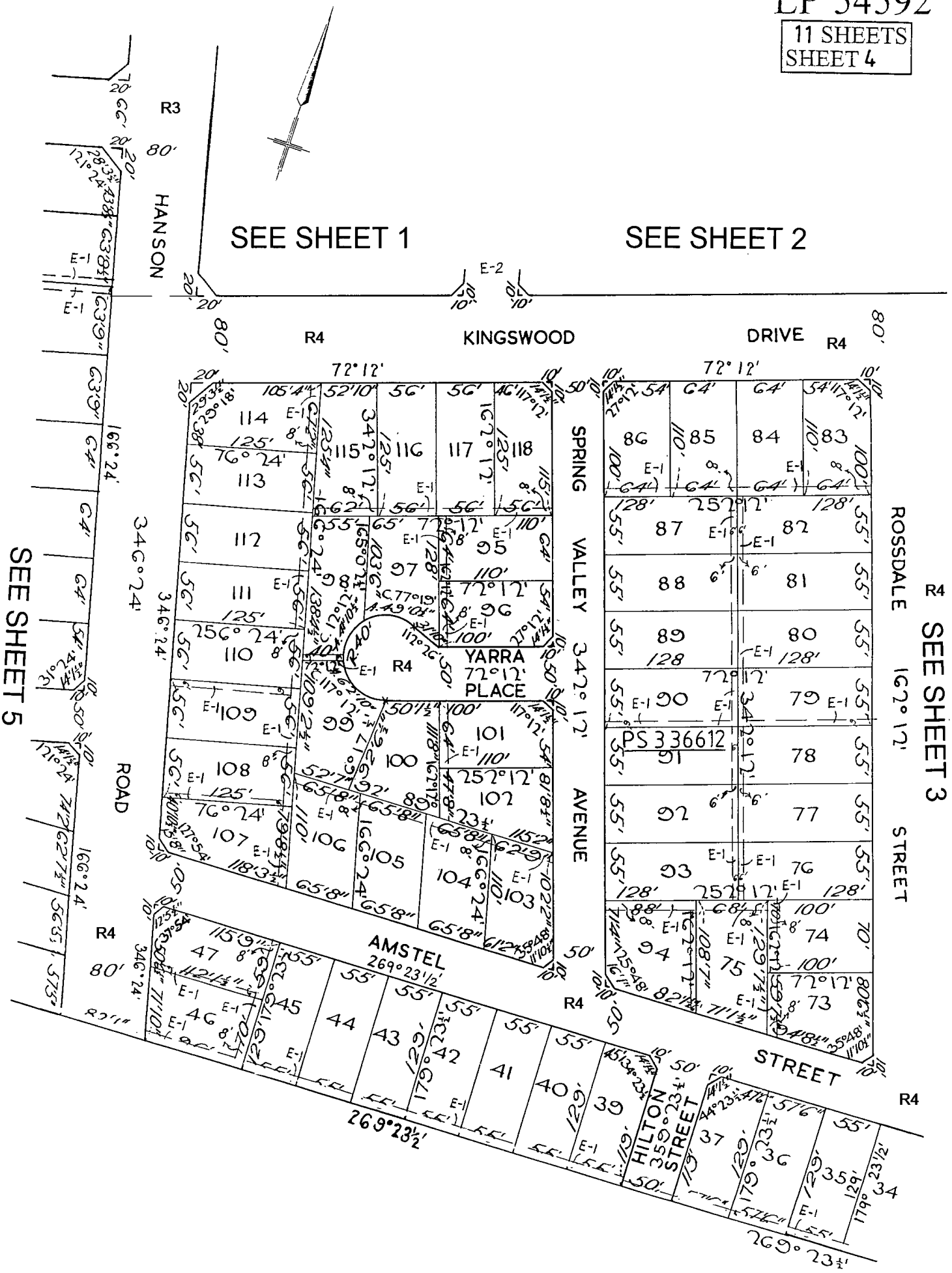
SEE SHEET 2

SEE SHEET 4



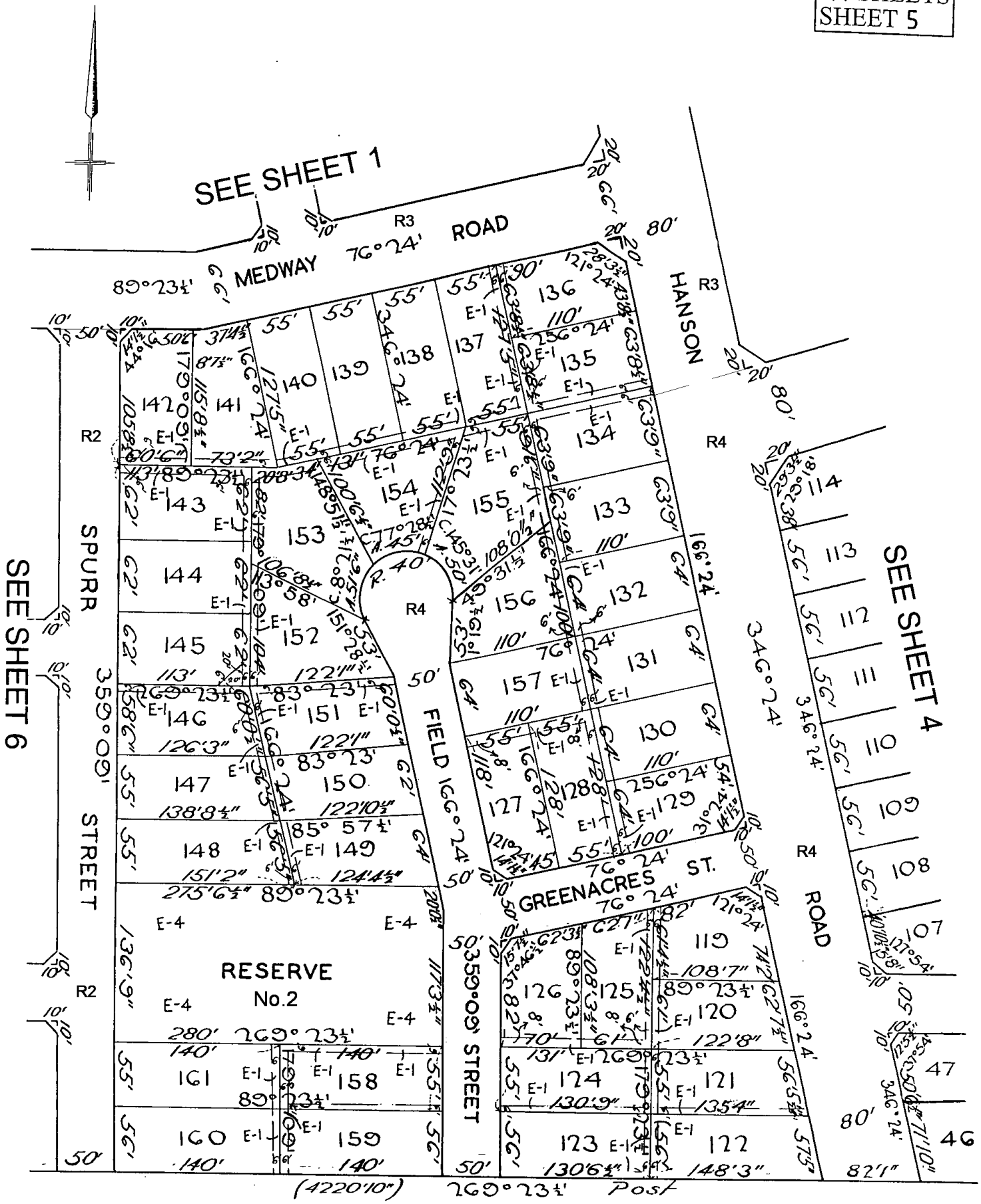
LP 54592

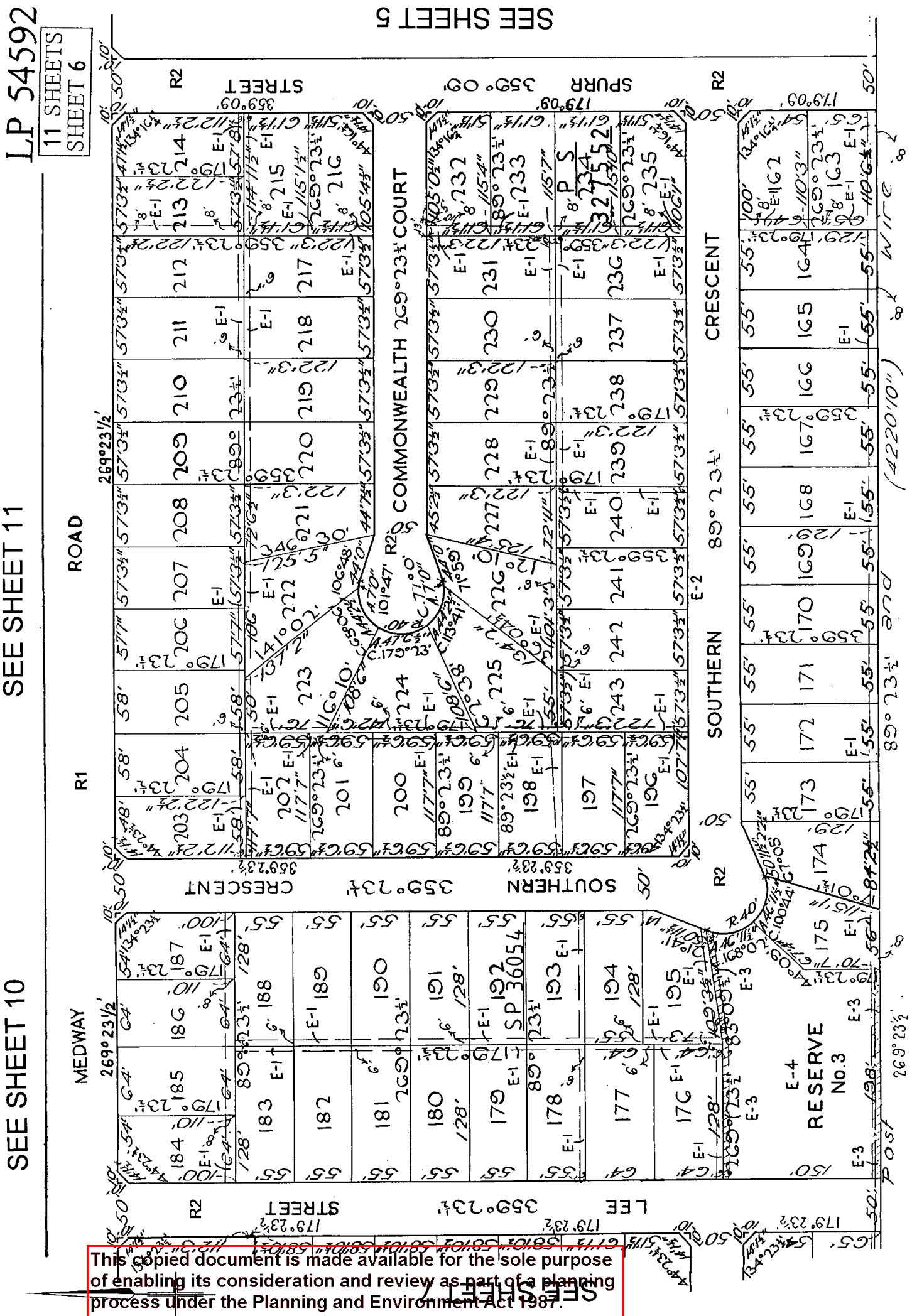
11 SHEETS
SHEET 4

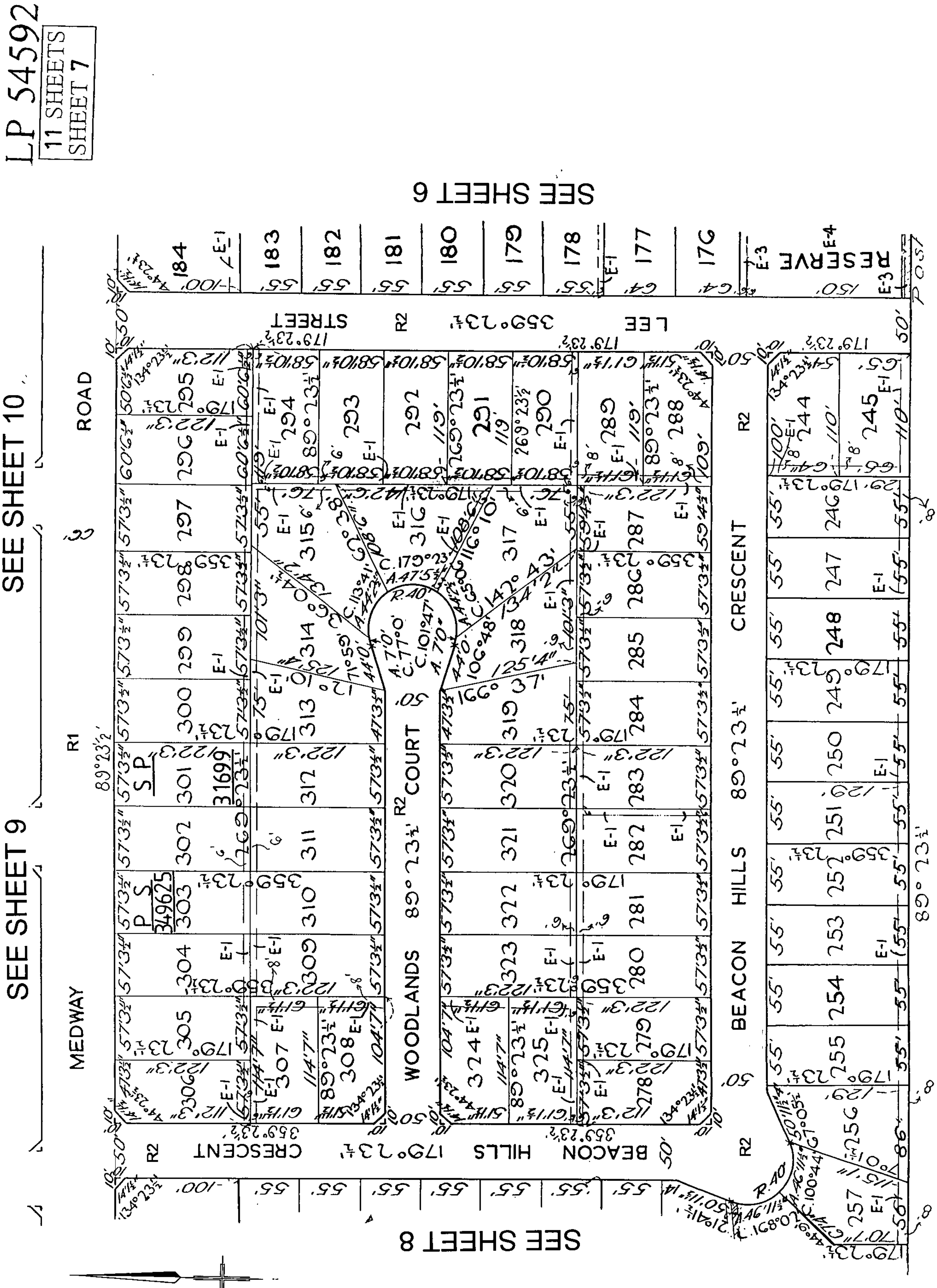


LP 54592

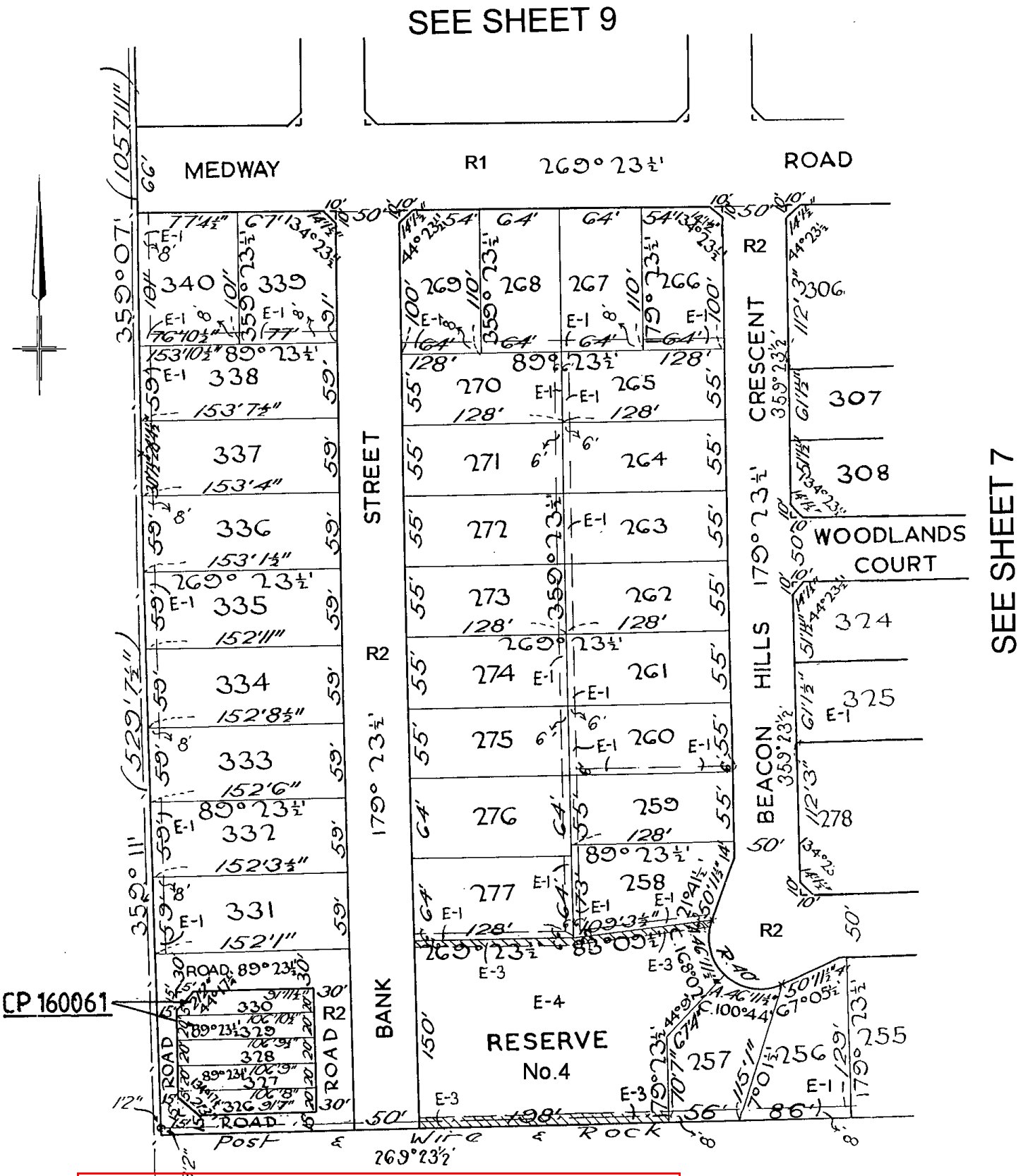
11 SHEETS
SHEET 5



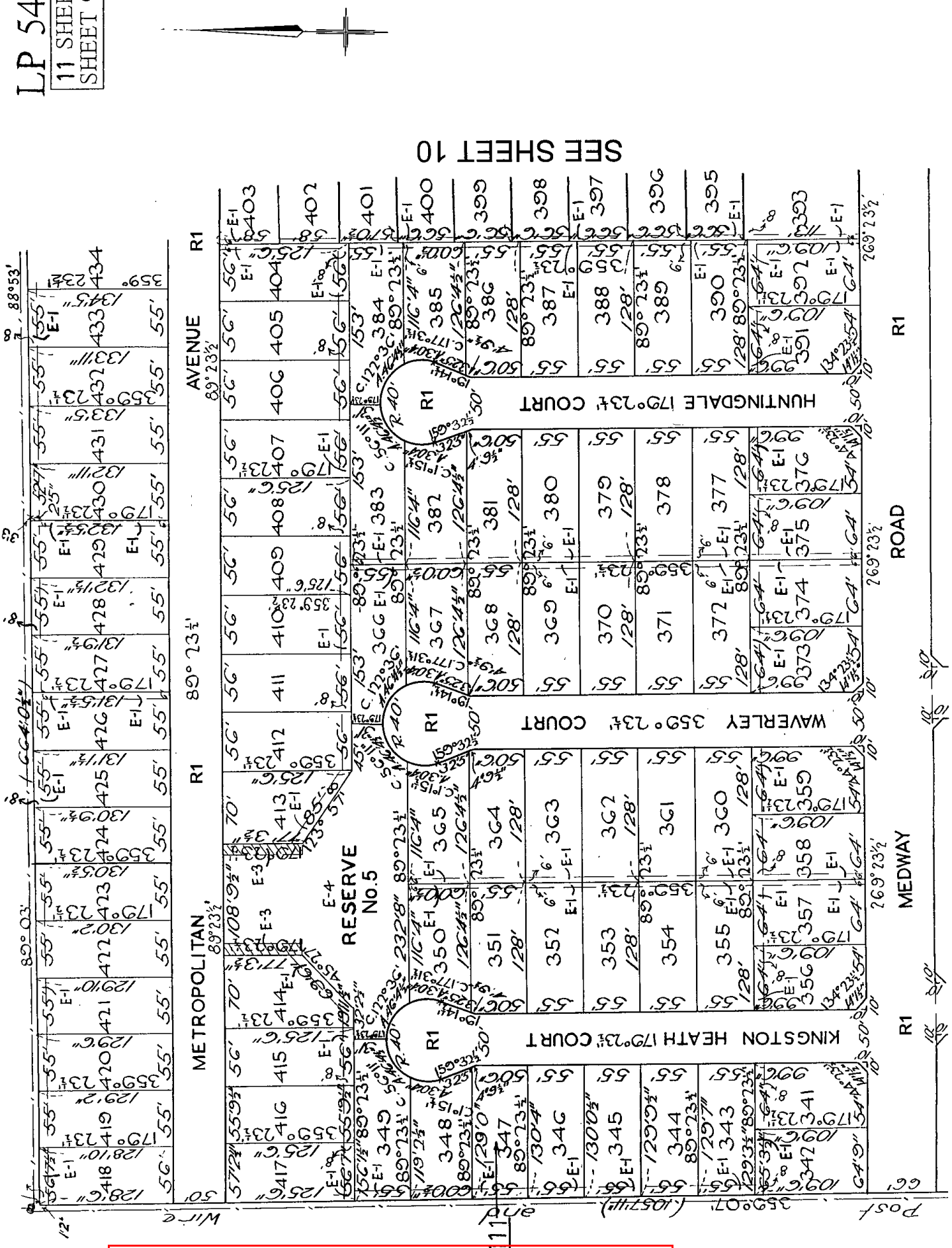




LP 54592
11 SHEETS
SHEET 8

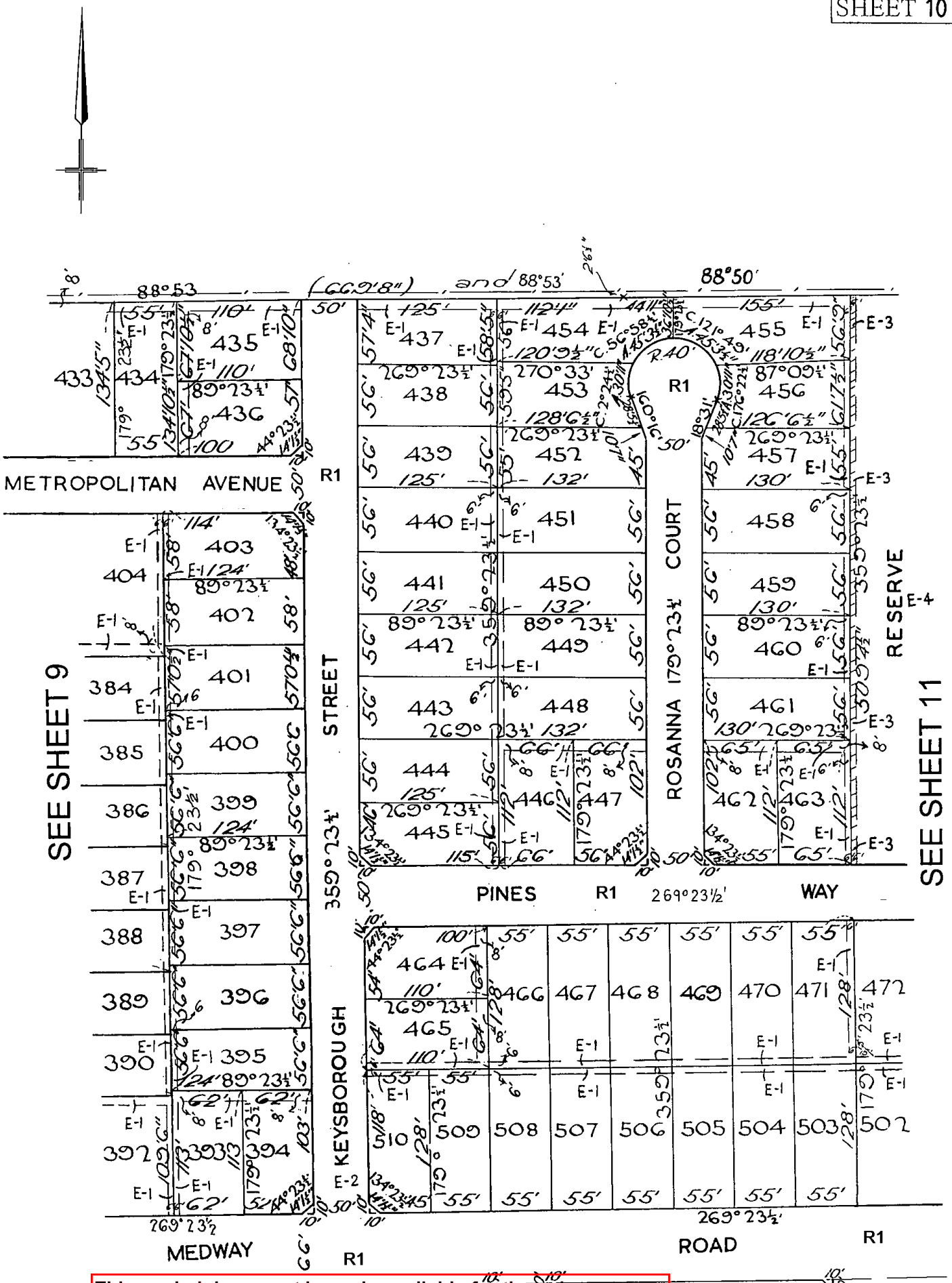


LP 54592
11 SHEETS
SHEET 9

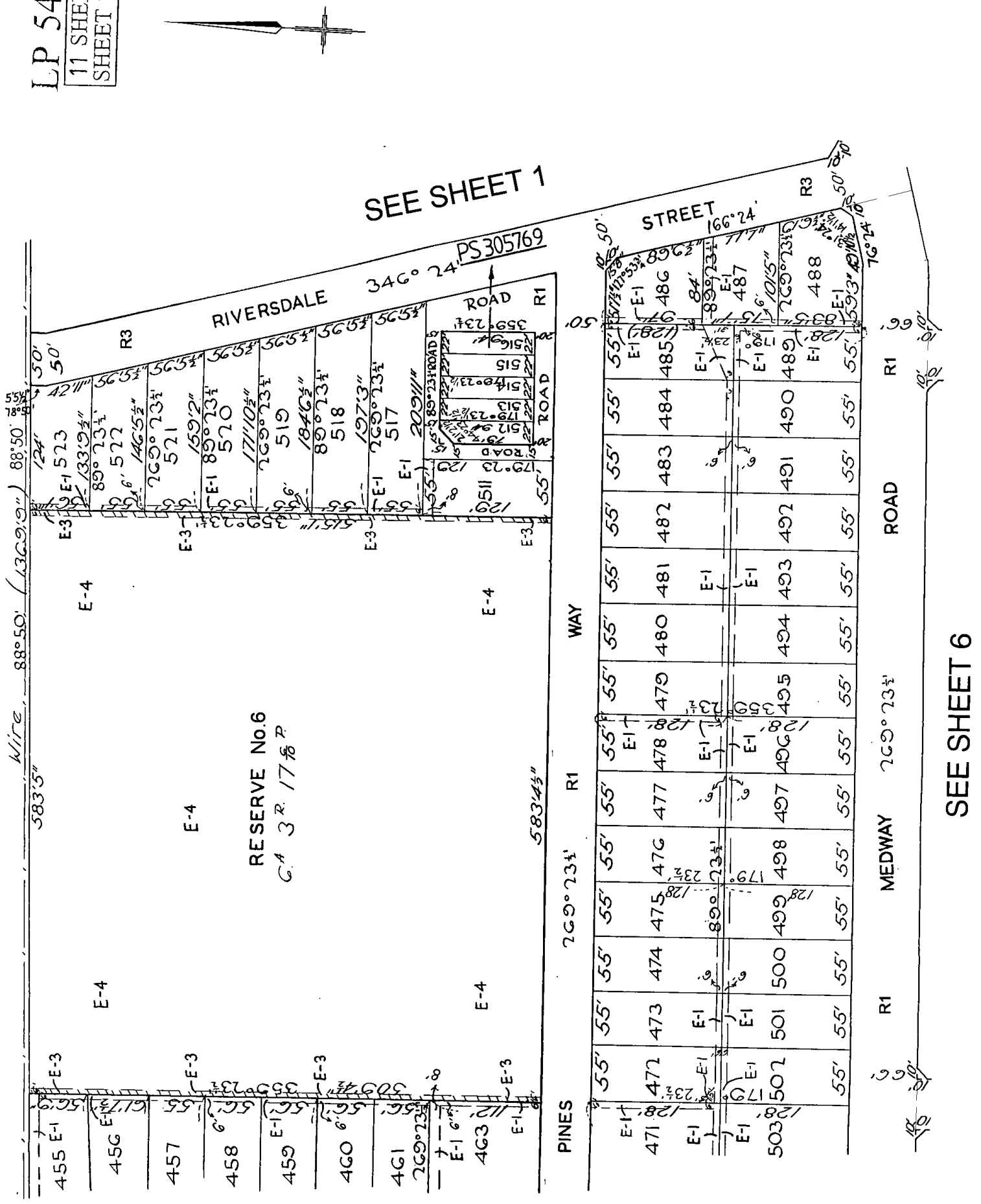


LP 54592

11 SHEETS
SHEET 10



LP 54592
11 SHEETS
SHEET 11



MODIFICATION TABLE

RECORD OF ALL ADDITIONS OR CHANGES TO THE PLAN

PLAN NUMBER

LP54592

AFFECTED LAND PARCEL	LAND / PARCEL / IDENTIFIER CREATED	MODIFICATION	DEALING NUMBER	DATE	TIME	EDITION NUMBER	ASSISTANT REGISTRAR OF TITLES
Lot 645		TRANSFER TO CROWN	G788484			2	mLB
Lot 28 & 29		RECTIFICATION	SB12159B			2	mLB
Lot 59 & 60		EASEMENT REMOVED	AP 2008/SEC. 73			2	mLB
Lot 646 & 647		TRANSFER TO CROWN	B412330			2	mLB

Department of Environment, Land, Water & Planning

Electronic Instrument Statement

The Victorian Government acknowledges the Traditional Owners of Victoria and pays respects to their ongoing connection to their Country, History and Culture. The Victorian Government extends this respect to their Elders, past, present and emerging.

Produced 05/08/2023 10:34:05 PM

Status	Registered	Dealing Number	[redacted]
Date and Time Lodged	28/11/2019 02:24:08 PM		

Lodger Details

- Lodger Code
- Name
- Address
- Lodger Box
- Phone
- Email
- Reference

[redacted]

TRANSFER

Jurisdiction VICTORIA

Privacy Collection Statement
The information in this form is collected under statutory authority and used for the purpose of maintaining publicly searchable registers and indexes.

Land Title Reference
8328/446

Transferor(s)

- Given Name(s)
- Family Name

[redacted]

Estate and/or Interest being transferred
Fee Simple

Consideration
$AUD 473000.00

Transferee(s)

Tenancy (inc. share)

- Given Name(s)
- Family Name
- Address
  - Street Number
  - Street Name

[redacted]

Electronic Instrument Statement

Street Type
Locality
State
Postcode
[redacted]

Duty Transaction ID
4713766

The transferor transfers to the transferee their estate and/or interest in the land specified for the consideration, subject to any restrictive covenant set out or referred to in this transfer.

Execution

1. The Certifier has taken reasonable steps to verify the identity of the transferee or his, her or its administrator or attorney.
2. The Certifier holds a properly completed Client Authorisation for the Conveyancing Transaction including this Registry Instrument or Document.
3. The Certifier has retained the evidence supporting this Registry Instrument or Document.
4. The Certifier has taken reasonable steps to ensure that this Registry Instrument or Document is correct and compliant with relevant legislation and any Prescribed Requirement.

Executed on behalf of
Signer Name
Signer Organisation
Signer Role
Execution Date
[redacted]

Execution

1. The Certifier has taken reasonable steps to verify the identity of the transferor or his, her or its administrator or attorney.
2. The Certifier holds a properly completed Client Authorisation for the Conveyancing Transaction including this Registry Instrument or Document.
3. The Certifier has retained the evidence supporting this Registry Instrument or Document.
4. The Certifier has taken reasonable steps to ensure that this Registry Instrument or Document is correct and compliant with relevant legislation and any Prescribed Requirement.

Executed on behalf of
Signer Name
Signer Organisation
Signer Role
Execution Date
[redacted]

File Notes:
NIL

This is a representation of the digitally signed Electronic Instrument or Document certified by Land Use Victoria.

Statement End.

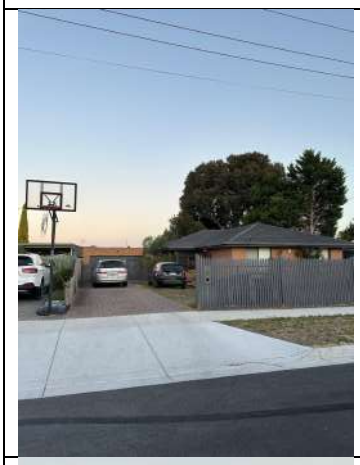
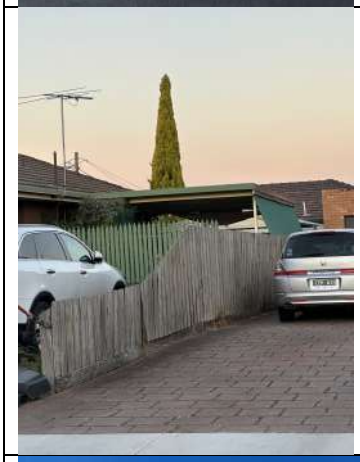
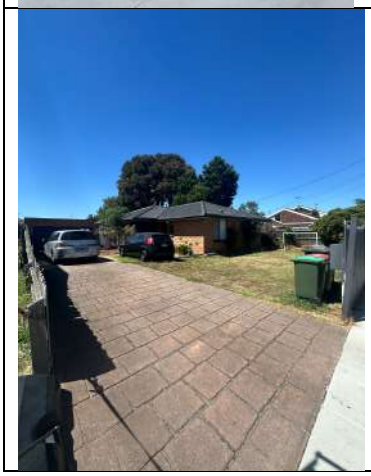
Reference :
Secure Electronic Registries Victoria (SERV), Level 13, 697 Collins Street Docklands 3008
Locked bag 20005, Melbourne 3001, DX 210189
ABN 86 627 986 396

[redacted]

Hi [redacted]

Please find enclosed our response to your RFI. This is fulfilling Point 9.

1. Please find enclosed the SDA and Stormwater Management Report from Above & Beyond Energy Solutions.
2. Same as above.
3. We are respectfully requesting that this be a condition on the permit.
4. Please find below site photos.

Site Photo	Description
	Front view of subject site, 22 Beacon Hills Crescent, Craigieburn.
	Condition of current northern boundary fencing, shared with neighbouring property 24 Beacon Hills, Craigieburn.
	Site photo at north-western corner of the subject site.

	View to the southern corner of the site.

5. Neighbourhood and Site Description Plan

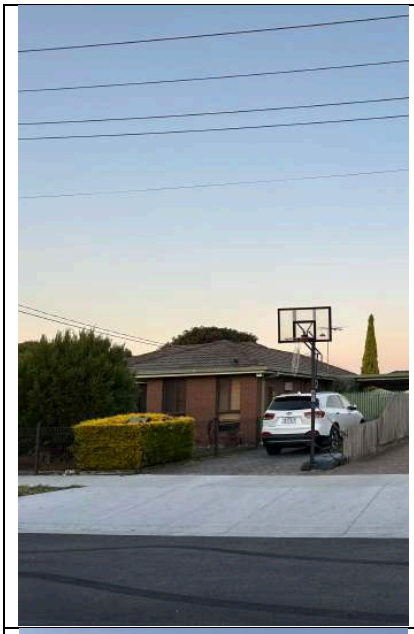
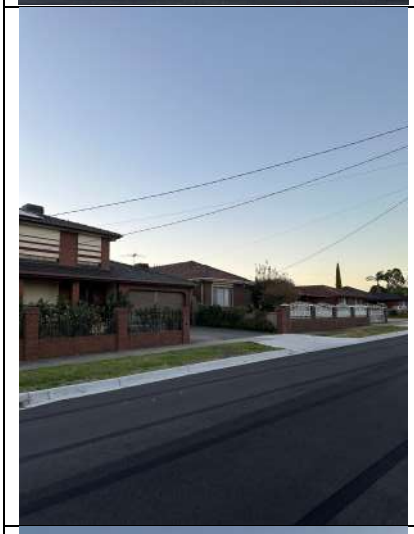
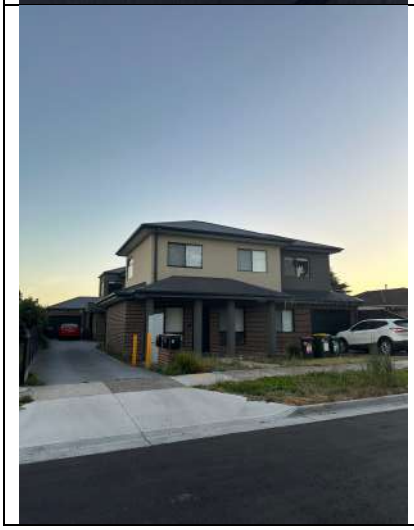
NEIGHBOURHOOD

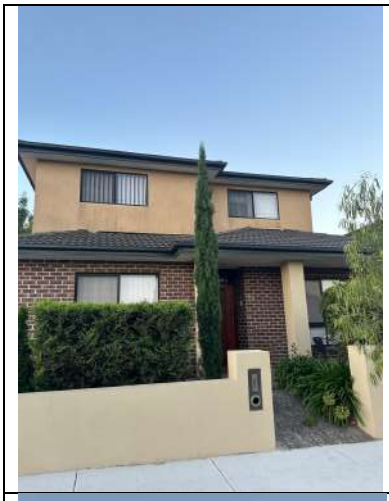
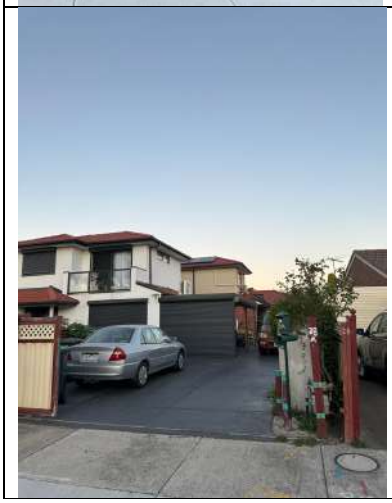
Neighbourhood Characteristics

Surrounding properties are composed mostly of established homes, with newer developments for multi-unit sites emerging within the neighbourhood. The neighbourhood features dwellings constructed during the 80s and 90s with brick veneer being the dominant building material used. Pitched roofs and large gardens within the front and back are observed.

More recently, there have been unit developments in the vicinity, with a more contemporary architectural style. These developments have utilised building materials such as render and colourbond. There is a mixture of single and double storey-built forms. Older dwellings, such as the subject site, feature timber paling fencing at various heights.

To complement the existing characteristics of the neighbourhood, the proposal incorporates elements such as brick veneer and render materials, and low scale front fencing.
An example of such developments and existing dwellings are:

	24 Beacon Hills Crescent, featuring an existing single-storey, brick veneer dwelling.
	31 & 33 Beacon Hills Crescent, featuring an existing double-storey brick veneer dwelling on number 31 and a single-storey brick veneer dwelling at number 33. Both properties feature front fencing.
	Newer development observed in the surrounding streets, featuring double-storey, brick veneer and rendered townhouse dwellings.

	Newer development observed in the surrounding streets, featuring double-storey, brick veneer and rendered townhouse dwellings.
	Newer development observed in the surrounding streets, featuring double-storey, brick veneer and rendered townhouse dwellings.

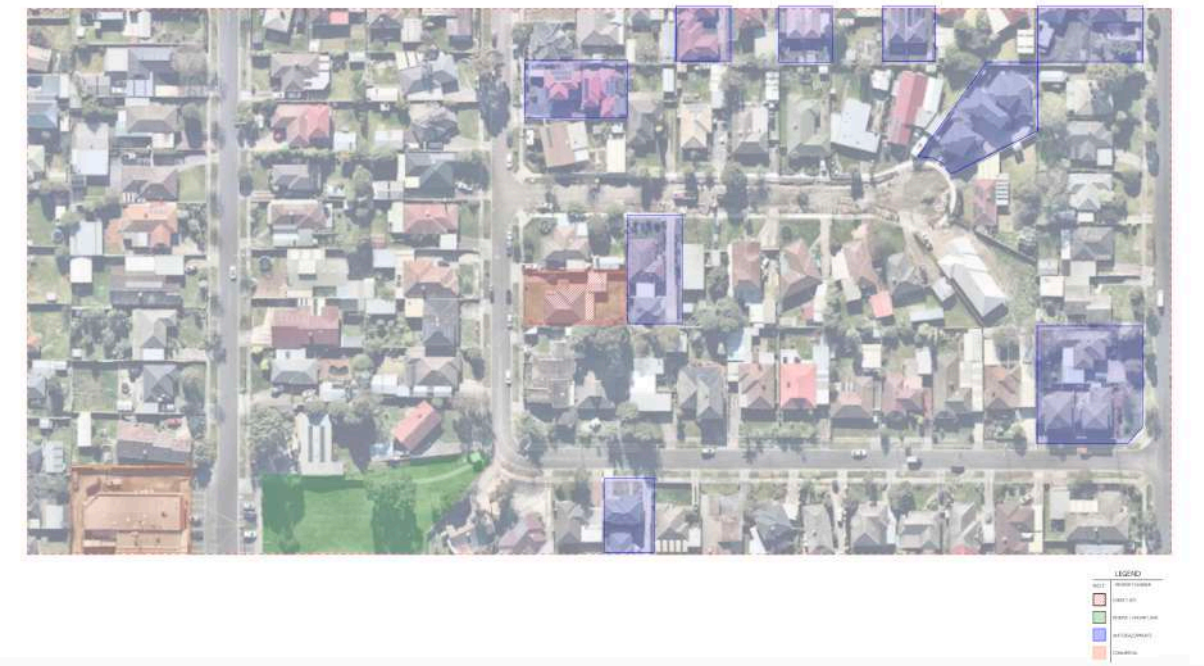
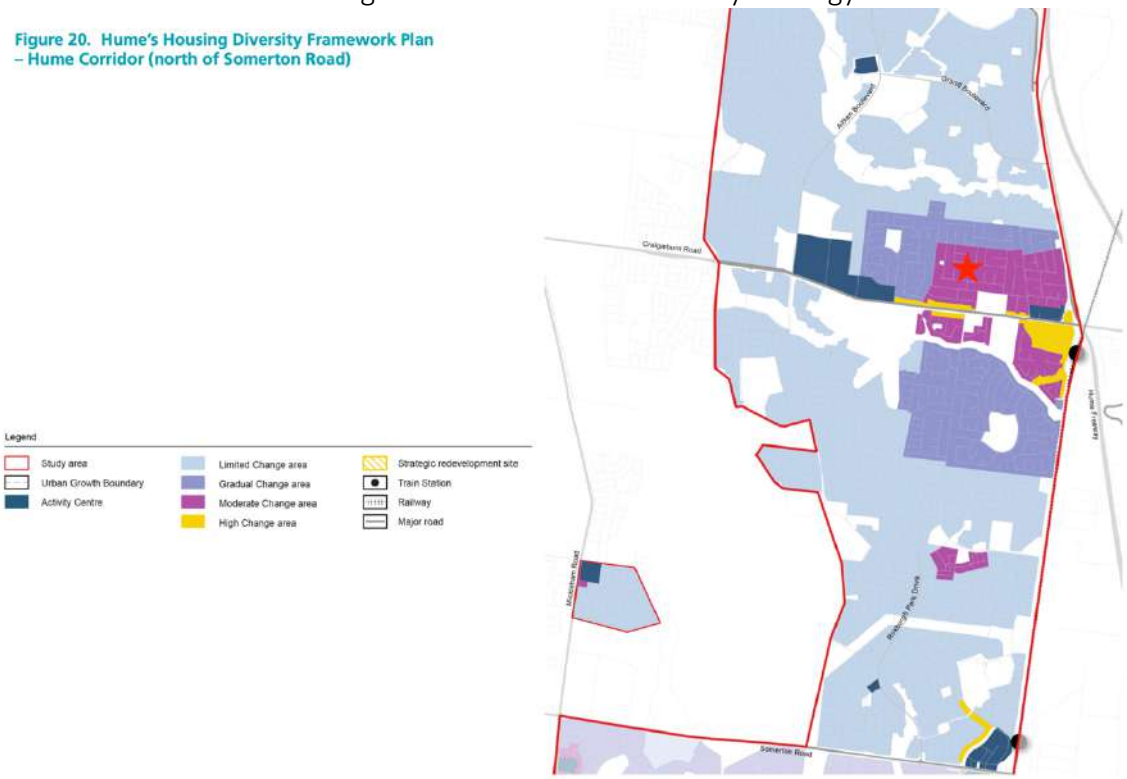


FIGURE 1: EXCERPT FROM PLANS, LOCATING SIMILAR UNIT DEVELOPMENTS WITHIN SUBJECT SITE VICINITY

Site Context & Pattern of Development

The site is located at 22 Beacon Hills Crescent, Craigieburn. The location of the site has been identified as a Moderate Change Area in the Hume Diversity Strategy.

Figure 20. Hume's Housing Diversity Framework Plan – Hume Corridor (north of Somerton Road)



According to the Strategy, Moderate Change has been applied to areas that are in walkable distance of amenities, and due to this, new housing and housing diversity is encouraged. As stated in the Strategy, it is preferred that these areas provide housing change and diversity in the form of "a mix of one and two storey units and townhouses". The Strategy continues to emphasise that "this range of housing typologies means that the pattern, scale and dwelling styles in Moderate Change areas is expected to be more mixed." The proposal complements this strategy with the design of two single storey dwellings.

SITE

Subject Site

22 Beacon Hills Crescent is a rectangular lot, west-facing, with a sewerage easement along the south and eastern boundaries. The total site area is 651m2. There is currently an existing single storey dwelling and detached garage which will be removed to facilitate the proposal.

Location of Existing Buildings

As provided by [redacted] in the initial application, the location of the existing buildings on site are as follows:

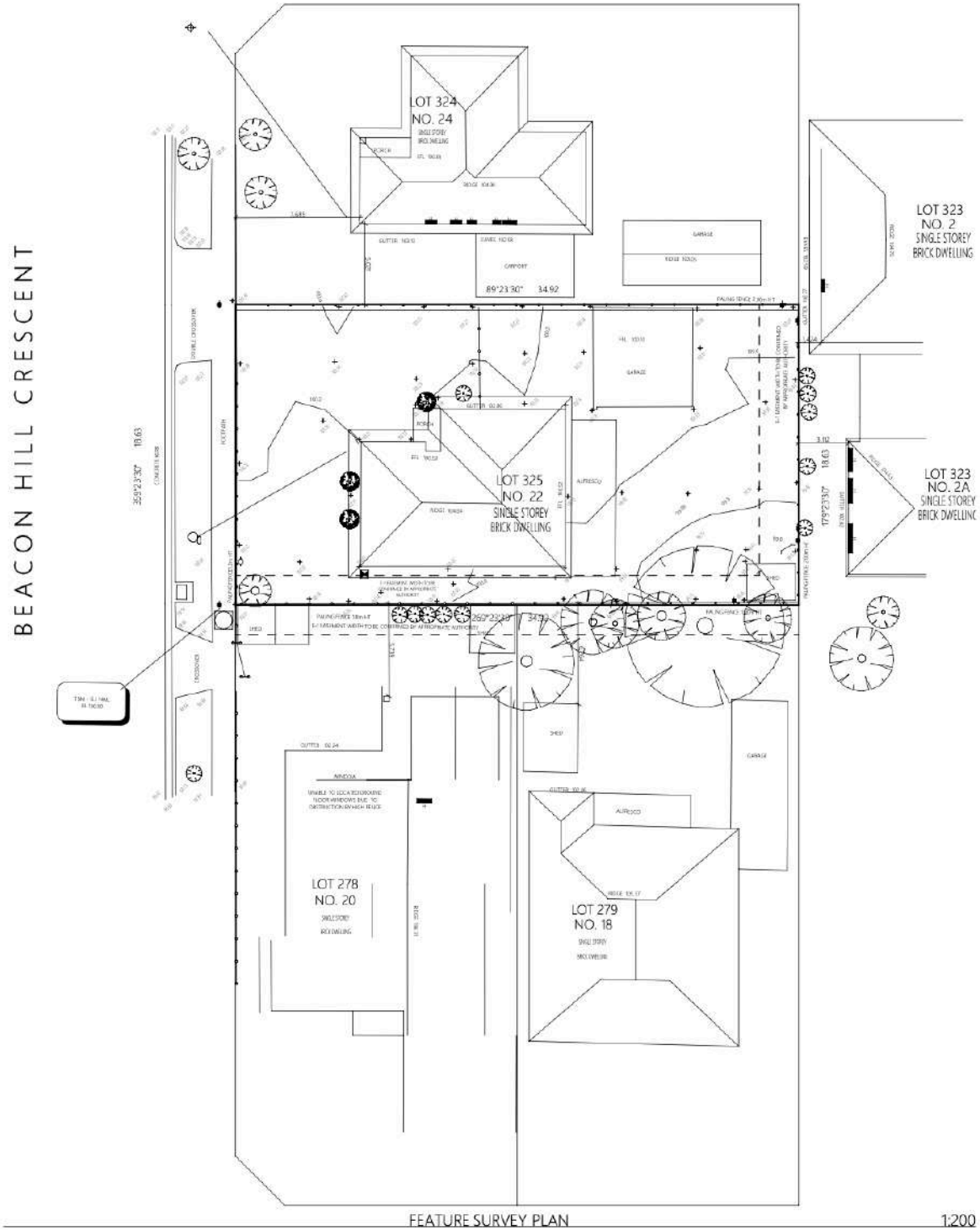


FIGURE 2: FEATURE SURVEY PLAN LOCATED ON PAGE 4 OF THE PLANS

There are no current walls on boundaries on all sides, however there are outbuildings (such as sheds) built near the southern and northern boundaries of the site.

Use of Surrounding Buildings

Neighbouring properties are all General Residential.

Location of Windows on Neighbouring Properties

As indicated on Page 6 of the plans, the closest north-facing window is the lot to the south (20 Beacon Hills Crescent). Their north-facing window is 5.5m to their northern boundary fence. The proposal will have a 1.891m setback from this boundary (total 7.4m). Due to the proposal being single-storey dwellings, there is no concern of overlooking or overshadowing to any property.

Location of Significant Trees

There is no native vegetation on site. All vegetation on site to be cleared and new plantings are proposed in line with a landscape plan. There is a large tree close to the southern boundary however this is within the neighbouring site at 27 Beacon Hills Crescent.

Contaminated Soil

There is no known contaminated soil or fill on site. The site has always been utilised as residential.

Views to and From the Site

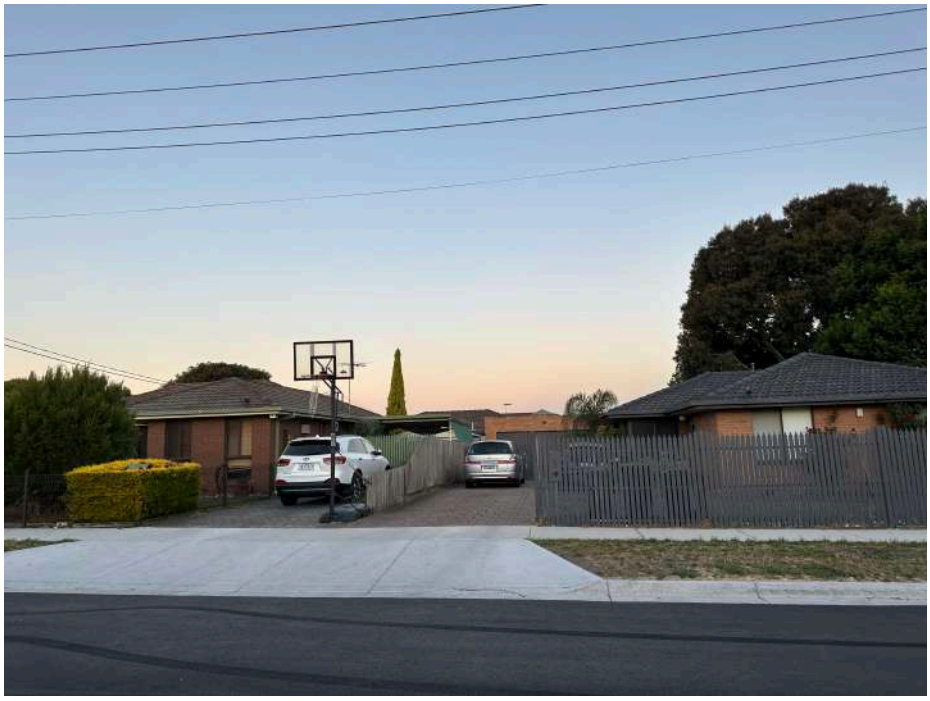


FIGURE 3: VIEW OF 22 BEACON HILLS CRESCENT AND NEIGHBOURING PROPERTY

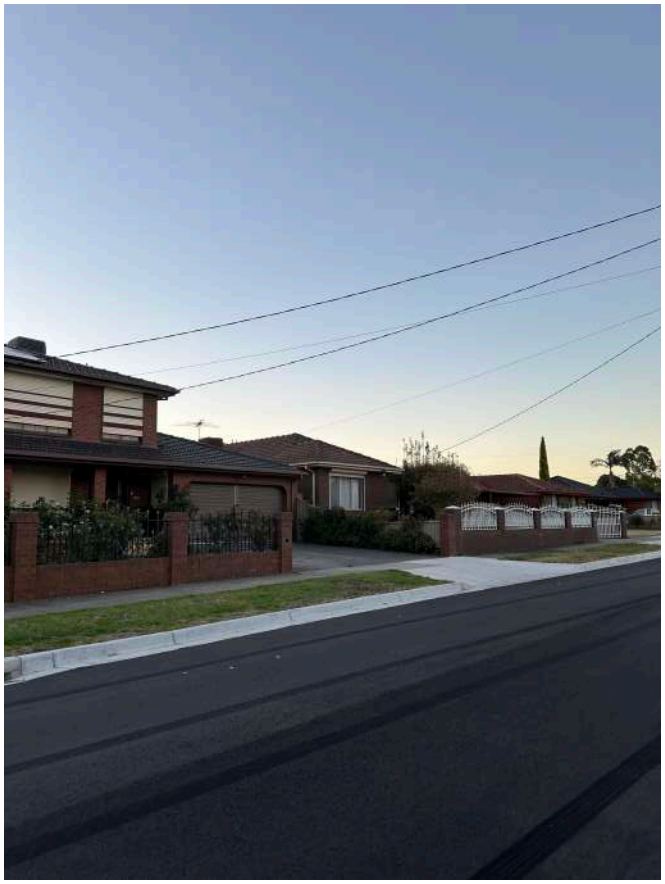


FIGURE 4: VIEW FROM 22 BEACON HILLS CRESCENT

There are no distinctive features on the nature strip in front of 22 Beacon Hills Crescent, Craigieburn.

Location of Walkable Amenities

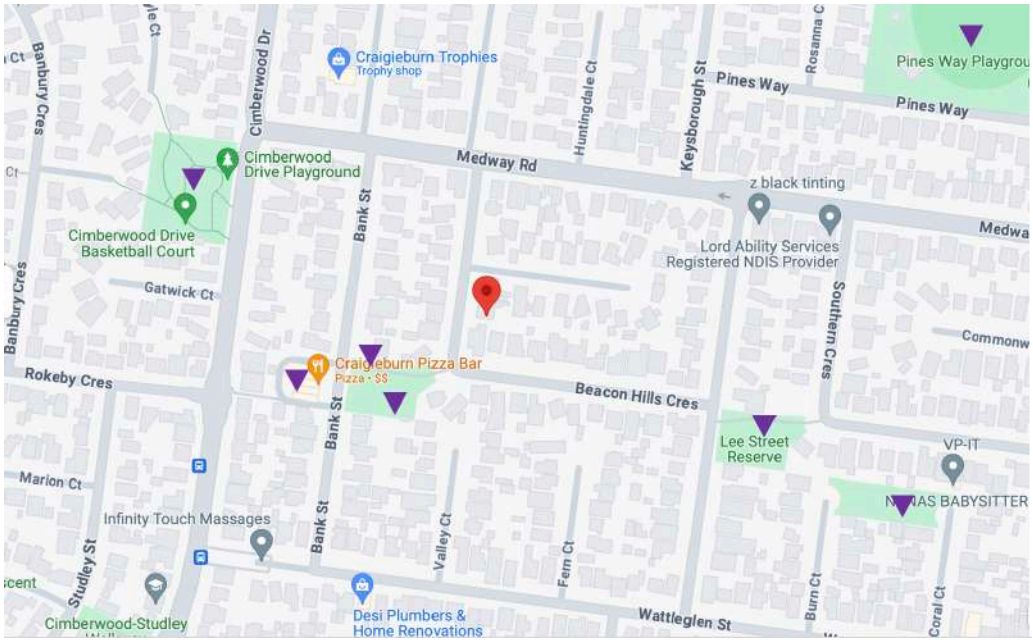


FIGURE 5: LOCATION OF AMENITIES WITHIN WALKABLE DISTANCE

Amenities that are within walkable distance include a range of parks, reserves and local shops.

Parks & Reserves
Bank Street Reserve
Lee Street Reserve
Cimberwood Drive Playground

Local Shops
Craigieburn Convenience Store

Schools
Bank Street Preschool
In addition to these walkable amenities, the following infrastructure surrounds the site:
DS Aitken Reserve: 1.1km
Craigieburn Plaza: 1.6km
Craigieburn Central Shopping Centre: 1.5km
Our Lady's Parish: 1.0km
Wilmott Park Primary School: 1.0km

The site is also within walkable distance to bus stops on Cimberwood Drive, Bus Route 537 to Craigieburn Railway Station (distance to station is 1.5km).

6. Please find attached updated site plans which include points b to f as notes and changes on the plans. In response to point (a), there appears to be a solar device on the roof of 2A Woodlands Court, however due to the proposal being single storey, this will have no effect on the solar device.
7. These are included as notes and changes on the updated plans.
8. (a) Please find attached in the Appendices.
   (b) Please find attached in the Appendices.
   (c) This has now been rectified and is reflected in the attached plans.
9. As initially stated.
10. We are respectfully requesting that this point be waived based on the submitted shadow plans, no lots are effected from the 9am and 12pm plans. The only slight overshadowing is from 3pm. The shadow diagrams cannot generate later than 3pm and won't have any bearing on overshadowing concerns. As the proposal is for single storey dwellings, there are no overshadowing or overlooking concerns.

APPENDICES

RESPONSE TO PLANNING POLICY FRAMEWORK

Clause 15 – Built Environment and Heritage

Planning is to recognise the role of urban design, building design, heritage and energy and resource efficiency in delivering liveable and sustainable cities, towns and neighbourhoods. Planning should ensure all land use and development appropriately responds to its surrounding landscape, character, valued built form and cultural context.

Planning should protect places and sites with significant heritage, architectural, aesthetic, scientific and cultural value.

Planning must support the establishment and maintenance of communities by delivering functional, accessible, safe and diverse physical and social environments, through the appropriate location of use and development and through high quality buildings and urban design.

Planning should promote development that is environmentally sustainable and should minimise detrimental impacts on the built and natural environment.
Planning should promote excellence in the built form environment and create places that:

- Are enjoyable, engaging and comfortable to be in.
- Accommodate people of all abilities, ages and cultures.
- Contribute positively to local character and sense of place.
- Reflect the particular characteristics and cultural identity of the community.
- Enhance the function, amenity and safety of the public realm.

Clause	Strategy	Response
Cl 15.01-1S – Urban design	To create urban environments that are safe, healthy, functional and enjoyable and that contribute to a sense of place and cultural identity.	√ Complies
Cl 15.01-1R – Urban design – Metropolitan Melbourne	To create a distinctive and liveable city with quality design and amenity.	√ Complies
Cl 15.01-2S – Building design	To achieve building design outcomes that contribute positively to the local context and enhance the public realm.	√ Complies

Cl 15.01-4S – Healthy neighbourhoods	To achieve neighbourhoods that foster healthy and active living and community wellbeing.	√ Complies
Cl 15.01-5S – Neighbourhood character	To recognise, support and protect neighbourhood character, cultural identity and sense of place.	√ Complies

RESPONSE TO MUNICIPAL PLANNING STRATEGY

Clause 16 – Housing

Planning should provide for housing diversity and ensure the efficient provision of supporting infrastructure.

Planning should ensure the long-term sustainability of new housing, including access to services, walkability to activity centres, public transport, schools and open space.
Planning for housing should include the provision of land for affordable housing.

Clause	Strategy	Response
Cl 16.01-1S – Housing supply	To facilitate well-located, integrated and diverse housing that meets community needs.	√ Complies
Cl 16.01-2S – Housing affordability	To deliver more affordable housing closer to jobs and transport.	√ Complies

RESPONSE TO RESCODE CLAUSE 55

Clause	Standard	Response
Cl 55.02-1 Neighbourhood character	B1 *The design response must be appropriate to the neighbourhood and the site.* *The proposed design must respect the existing or preferred neighbourhood character and respond to the features of the site.*	√ Complies The proposed design complements the existing neighbourhood characteristics. There are predominantly existing dwellings with brick veneer utilised. Properties in the vicinity feature front fencing. New development surrounding site utilise render and brick veneer finishes. The proposed design addresses and respects the existing character and streetscape.

Cl 55.02-2 Residential policy	B2 *An application must be accompanied by a written statement to the satisfaction of the responsible authority that describes how the development is consistent with any relevant policy for housing in the Municipal Planning Strategy and the Planning Policy Framework.*	√ Complies
Cl 55.02-3 Dwelling diversity	B3 *Developments of ten or more dwellings should provide a range of dwelling sizes and types, including:* • *Dwellings with a different number of bedrooms.* • *At least one dwelling that contains a kitchen, bath or shower, and a toilet and wash basin at ground floor level.*	Not Applicable – less than 10 dwellings
Cl 55.02-4 Infrastructure	B4 *Development should be connected to reticulated services, including reticulated sewerage, drainage and electricity, if available.* *Development should not unreasonably exceed the capacity of utility services and infrastructure, including reticulated services and roads.* *In areas where utility services or infrastructure have little or no spare capacity, developments should provide for the upgrading of or*	√ Complies

	mitigation of the impact on services or infrastructure.	
Cl 55.02-5 Integration with street	B5 *Developments should provide adequate vehicle and pedestrian links that maintain or enhance local accessibility.* *Development should be oriented to front existing and proposed streets.* *High fencing in front of dwellings should be avoided if practicable.* *Development next to existing public open space should be laid out to complement the open space.*	√ Complies
Cl 55.03-1 Street setback	B6 *Walls of buildings should be set back from streets:* • *At least the distance specified in a schedule to the zone, or* • *If no distance is specified in a schedule to the zone, the distance specified in Table B1.* *Porches, pergolas and verandahs that are less than 3.6 metres high and eaves may encroach not more than 2.5 metres into the setbacks of this standard.*	√ Complies
Cl 55.03-2 Building height	B7 *The maximum building height should not exceed the maximum height specified in the zone, schedule to the*	√ Complies

	zone or an overlay that applies to the land. *If no maximum height is specified in the zone, schedule to the zone or an overlay, the maximum building height should not exceed 9 metres, unless the slope of the natural ground level at any cross section wider than 8 metres of the site of the building is 2.5 degrees or more, in which case the maximum building height should not exceed 10 metres.*	
Cl 55.03-3 Site coverage	B8 *The site area covered by buildings should not exceed:* • *The maximum site coverage specified in a schedule to the zone, or* • *If no maximum site coverage is specified in a schedule to the zone, 60 per cent.*	√ Complies Site coverage totals 55.98%.
Cl 55.03-4 Permeability and stormwater management	B9 *The site area covered by the pervious surfaces should be at least:* • *The minimum area specified in a schedule to the zone, or* • *If no minimum is specified in a schedule to the zone, 20 percent of the site.*	√ Complies These can be found in the attached SDA and Stormwater Reports. 37.76% of the site is permeable area.

	The stormwater management system should be designed to: • *Meet the current best practice performance objectives for stormwater quality as contained in the* Urban Stormwater - Best Practice Environmental Management Guidelines *(Victorian Stormwater Committee, 1999).* • *Contribute to cooling, improving local habitat and providing attractive and enjoyable spaces.*	
Cl 55.03-5 Energy efficiency	B10 *Buildings should be:* • *Oriented to make appropriate use of solar energy.* • *Sited and designed to ensure that the energy efficiency of existing dwellings or small second dwellings on adjoining lots is not unreasonably reduced.* • *Sited and designed to ensure that the performance of existing rooftop solar energy systems on dwellings or small second dwellings on adjoining lots in a*	√ Complies The proposed dwellings are provided with an open plan living which will gain solar access. Additional skylights have been introduced to maximise the northern sunlight for proposed dwelling 2. The layout has been designed so it is not to unreasonably reduce the energy efficiency of adjoining lots, and oriented to gain appropriate use of solar energy. Considering the site is orientated to the west, the proposed private open

	General Residential Zone, Neighbourhood Residential Zone or Township Zone are not unreasonably reduced. The existing rooftop solar energy system must exist at the date the application is lodged. *Living areas and private open space should be located on the north side of the development, if practicable.* *Developments should be designed so that solar access to north-facing windows is maximised.*	space receives a large amount of northern sunlight.
Cl 55.03-6 Open space	B11 *If any public or communal open space is provided on site, it should:* • *Be substantially fronted by dwellings, where appropriate.* • *Provide outlook for as many dwellings as practicable.* • *Be designed to protect any natural features on the site.* • *Be accessible and useable.*	Not Applicable
Cl 55.03-7 Safety	B12 *Entrances to dwellings and residential buildings should not be obscured or isolated from the street and internal accessways.* *Planting which creates unsafe spaces along streets and*	√ Complies

	accessways should be avoided. *Developments should be designed to provide good lighting, visibility and surveillance of car parks and internal accessways.* *Private spaces within developments should be protected from inappropriate use as public thoroughfares.*	
Cl 55.03-8 Landscaping	B13 *The landscape layout and design should:* • *Protect any predominant landscape features of the neighbourhood.* • *Take into account the soil type and drainage patterns of the site.* • *Allow for intended vegetation growth and structural protection of buildings.* • *In locations of habitat importance, maintain existing habitat and provide for new habitat for plants and animals.* • *Provide a safe, attractive and functional environment for residents.* *Development should provide for the retention or planting of trees, where these are part*	We are respectfully requesting that this be a condition on the permit.

	of the character of the neighbourhood. *Development should provide for the replacement of any significant trees that have been removed in the 12 months prior to the application being made.* *The landscape design should specify landscape themes, vegetation (location and species), paving and lighting.* *Development should meet any additional landscape requirements specified in a schedule to the zone.*	
Cl 55.03-9 Access	B14 *The width of accessways or car spaces should not exceed:* • *33 per cent of the street frontage, or* • *if the width of the street frontage is less than 20 metres, 40 per cent of the street frontage.* *No more than one single-width crossover should be provided for each dwelling fronting a street.* *The location of crossovers should maximise the retention of on-street car parking spaces.* *The number of access points to a road in a Transport Zone 2 or a Transport Zone 3 should be minimised.*	√ Complies The existing crossover is being removed. Shared crossover is proposed. The subject site consists of an 18.63metre width frontage. Therefore, 40% of vehicle access way is permitted.

	Developments must provide for access for service, emergency and delivery vehicles.	
Cl 55.03.10 Parking location	B15 *Car parking facilities should:* • *Be reasonably close and convenient to dwellings and residential buildings.* • *Be secure.* • *Be well ventilated if enclosed.* *Shared accessways or car parks of other dwellings and residential buildings should be located at least 1.5 metres from the windows of habitable rooms. This setback may be reduced to 1 metre where there is a fence at least 1.5 metres high or where window sills are at least 1.4 metres above the accessway.*	√ Complies Car parking facilities are convenient to dwellings and secure, allow surveillance from windows and do not obscure the view between the street and the front windows. The internal layout of the dwellings and the location of the proposed garages ensure that the emission of noise from the occupants and their vehicles will be minimal. The access ways are located directly off the front street and allows easy movements. It is designed to be in keeping with the architectural style of the neighbourhood.
Cl 55.04-1 Side and rear setbacks	B17 *A new building not on or within 200mm of a boundary should be set back from side or rear boundaries:* • *At least the distance specified in a schedule to the zone, or* • *If no distance is specified in a schedule to the zone, 1 metre, plus 0.3 metres for every metre of height over 3.6 metres up to 6.9 metres, plus 1 metre for every metre*	√ Complies

	of height over 6.9 metres. *Sunblinds, verandahs, porches, eaves, fascias, gutters, masonry chimneys, flues, pipes, domestic fuel or water tanks, and heating or cooling equipment or other services may encroach not more than 0.5 metres into the setbacks of this standard.* *Landings having an area of not more than 2 square metres and less than 1 metre high, stairways, ramps, pergolas, shade sails and carports may encroach into the setbacks of this standard.*	

Cl 55.04-2 Walls on boundaries	B18
	A new wall constructed on or within 200mm of a side or rear boundary of a lot or a carport constructed on or within 1 metre of a side or rear boundary of lot should not abut the boundary:
	
	• *For a length of more than the distance specified in a schedule to the zone; or*
	• *If no distance is specified in a schedule to the zone, for a length of more than:*
	  ○ *10 metres plus 25 per cent of the remaining length of the boundary of an adjoining lot, or*
	  ○ *Where there are existing or simultaneously*
		√ Complies

	constructed walls or carports abutting the boundary on an abutting lot, the length of the existing or simultaneously constructed walls or carports whichever is the greater. *A new wall or carport may fully abut a side or rear boundary where slope and retaining walls or fences would result in the effective height of the wall or carport being less than 2 metres on the abutting property boundary.* *A building on a boundary includes a building set back up to 200mm from a boundary.* *The height of a new wall constructed on or within 200mm of a side or rear boundary or a carport constructed on or within 1 metre of a side or rear boundary should not exceed an average of 3.2 metres with no part higher than 3.6 metres unless abutting a higher existing or simultaneously constructed wall.*	
Cl 55.04-3 Daylight to existing windows	B19 *Buildings opposite an existing habitable room window*	√ Complies

	should provide for a light court to the existing window that has a minimum area of 3 square metres and minimum dimension of 1 metre clear to the sky. The calculation of the area may include land on the abutting lot. *Walls or carports more than 3 metres in height opposite an existing habitable room window should be set back from the window at least 50 per cent of the height of the new wall if the wall is within a 55 degree arc from the centre of the existing window. The arc may be swung to within 35 degrees of the plane of the wall containing the existing window.* *Where the existing window is above ground floor level, the wall height is measured from the floor level of the room containing the window.*	
Cl 55.04-4 North-facing windows	B20 *If a north-facing habitable room window of an existing dwelling or small second dwelling is within 3 metres of a boundary on an abutting lot, a building should be setback from the boundary 1 metre, plus 0.6 metres for every metre of height over 3.6 metres up to 6.9 metres, plus 1 metre for every metre of height over 6.9 metres, for a distance of 3 metres from the edge of each side of the window. A north-facing window is a window with an*	√ Complies

	axis perpendicular to its surface oriented north 20 degrees west to north 30 degrees east.	
Cl 55.04-5 Overshadowing	B21 *Where sunlight to the secluded private open space of an existing dwelling or small second dwelling is reduced, at least 75 per cent, or 40 square metres with minimum dimension of 3 metres, whichever is the lesser area, of the secluded private open space should receive a minimum of five hours of sunlight between 9 am and 3 pm on 22 September.* *If existing sunlight to the secluded private open space of an existing dwelling or small second dwelling is less than the requirements of this standard, the amount of sunlight should not be further reduced.*	√ Complies The adjoining properties will not be affected by the 9am-3pm shadows, the existing paling fences will cast as much shadows as the existing development. Overshadowing to adjoining properties will be minimal. As such, the habitable room windows on adjacent land to the north and south are provided with clear access to sunlight or daylight of at least 1 metre to the sky.
Cl 55.04-6 Overlooking	B22 *A habitable room window, balcony, terrace, deck or patio should be located and designed to avoid direct views into the secluded private open space of an existing dwelling or small second dwelling within a horizontal distance of 9 metres (measured at ground level) of the window, balcony, terrace, deck or patio. Views should be measured within a 45 degree angle from the plane of the window or perimeter of the balcony, terrace, deck or*	√ Complies Properties on either side are not affected by the 9.0 metre / 45 degree arch of any of the windows from this proposed development. Existing dwellings opposite the site present limited privacy overlooking problems, essentially too far away to be protected from overlooking. There are no overlooking concerns from the ground floor level habitable room windows.

	patio, and from a height of 1.7 metres above floor level. *A habitable room window, balcony, terrace, deck or patio with a direct view into a habitable room window of an existing dwelling or small second dwelling within a horizontal distance of 9 metres (measured at ground level) of the window, balcony, terrace, deck or patio should be either:* • *Offset a minimum of 1.5 metres from the edge of one window to the edge of the other.* • *Have sill heights of at least 1.7 metres above floor level.* • *Have fixed, obscure glazing in any part of the window below 1.7 metre above floor level.* • *Have permanently fixed external screens to at least 1.7 metres above floor level and be no more than 25 per cent transparent.* *Obscure glazing in any part of the window below 1.7 metres above floor level may be openable provided that there are no direct views as specified in this standard.* *Screens used to obscure a view should be:* • *Perforated panels or trellis with a*	All side and rear existing fences at a height below 1.8 metres to be proposed to timber paling fences at a height of 1.8m in order to achieve compliance with overlooking objectives. Please see elevation drawings in the enclosed architectural plans for further details.

	maximum of 25 per cent openings or solid translucent panels. • *Permanent, fixed and durable.* • *Designed and coloured to blend in with the development.* *This standard does not apply to a new habitable room window, balcony, terrace, deck or patio which faces a property boundary where there is a visual barrier at least 1.8 metres high and the floor level of the habitable room, balcony, terrace, deck or patio is less than 0.8 metres above ground level at the boundary.*	
Cl 55.04-7 Internal views	B23 *Windows and balconies should be designed to prevent overlooking of more than 50 per cent of the secluded private open space of a lower-level dwelling or residential building directly below and within the same development.*	√ Complies The proposed development has been designed to limit views into the secluded private open space and habitable room windows of each of the dwellings on the property. Overlooking within the site has been restricted. There are no habitable room windows with direct outlooks to the principal private open space within the development.
Cl 55.04-8 Noise impacts objectives	B24 *Noise sources, such as mechanical plant, should not be located near bedrooms of immediately adjacent existing dwellings or small second dwellings.* *Noise sensitive rooms and secluded private open spaces*	√ Complies The proposed development has been designed to keep noise sources within the development and to protect residents from external noise. The proposed development will be constructed in brick cladding. This will

	of new dwellings and residential buildings should take account of noise sources on immediately adjacent properties. *Dwellings and residential buildings close to busy roads, railway lines or industry should be designed to limit noise levels in habitable rooms.*	accommodate for any noise concerns and construction will comply with F(5) of the Building Code of Australia. There are no mechanical plants proposed adjacent to or located near bedrooms of immediate adjacent existing dwellings. Noise sensitive rooms and secluded private open space of the proposed developments have been designed and suited to take into consideration noise sources on immediately adjacent properties.
Cl 55.05-1 Accessibility	B25 *The dwelling entries of the ground floor of dwellings and residential buildings should be accessible or able to be easily made accessible to people with limited mobility.*	√ Complies
Cl 55.05-2 Dwelling entry	B26 *Entries to dwellings and residential buildings should:* • *Be visible and easily identifiable from streets and other public areas.* • *Provide shelter, a sense of personal address and a transitional space around the entry.*	√ Complies The entry to the proposed dwellings are visible and easily identifiable from the street. The dwellings have their own sense of identity, address and interface from Beacon Hills. The development ensures that the dwellings allow for the observation of the adjacent street. The entrances are not obscured or isolated.
Cl 55.05-3 Daylight to new windows	B27 *A window in a habitable room should be located to face:* • *An outdoor space clear to the sky or a light court with a minimum area of 3 square metres and*	√ Complies The proposed development has been designed to provide adequate daylight into new habitable room windows. Habitable room windows of the proposed dwellings have northern

	minimum dimension of 1 metre clear to the sky, not including land on an abutting lot, or • *A verandah provided it is open for at least one third of its perimeter, or* • *A carport provided it has two or more open sides and is open for at least one third of its perimeter.*	orientation wherever possible. Habitable room windows of the proposed development have been designed to face outdoor open space covering in excess more than 40 square metres.
Cl 55.05-4 Private open space	B28 *A dwelling or residential building should have private open space of an area and dimensions specified in a schedule to the zone.* *If no area or dimensions are specified in a schedule to the zone, a dwelling or residential building should have private open space consisting of:* • *An area of 40 square metres, with one part of the private open space to consist of secluded private open space at the side or rear of the dwelling or residential building with a minimum area of 25 square metres, a minimum dimension of 3 metres and convenient access from a living room, or* • *A balcony of 8 square metres with a minimum width of 1.6 metres and convenient access from a living room, or*	√ Complies Dwelling 1 of the proposed developments has a total private open space of 70.61 square metres of which 42.12 square metres is secluded private open space. Dwelling 2 of the proposed developments has a total private open space of 88.52 square metres of which 50.23 square metres is secluded private open space. The dwellings also have dimensions of a minimum of 3 metres which are provided with convenient access from a living room.

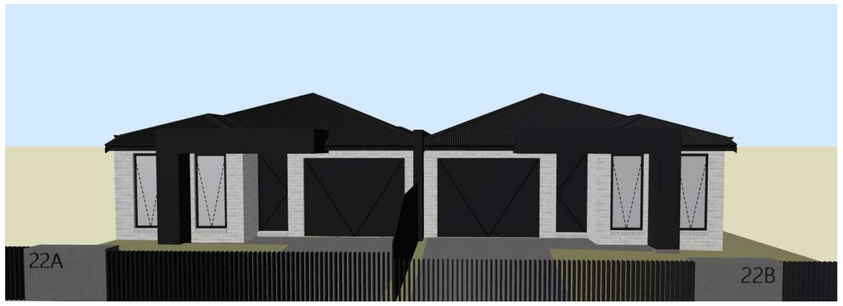
	• *A roof-top area of 10 square metres with a minimum width of 2 metres and convenient access from a living room.* *The balcony requirements in Clause 55.05-4 do not apply to an apartment development.*	
Cl 55.05-5 Solar access to open space	B29 *The private open space should be located on the north side of the dwelling or residential building, if appropriate.* *The southern boundary of secluded private open space should be set back from any wall on the north of the space at least (2 + 0.9h) metres, where 'h' is the height of the wall.*	√ Complies
Cl 55.05-6 Storage	B30 *Each dwelling should have convenient access to at least 6 cubic metres of externally accessible, secure storage space.*	√ Complies
Cl 55.06-1 Design detail	B31 *The design of buildings, including:* • *Facade articulation and detailing,* • *Window and door proportions,* • *Roof form, and* • *Verandahs, eaves and parapets,* *should respect the existing or preferred neighbourhood character.*	√ Complies

	Garages and carports should be visually compatible with the development and the existing or preferred neighbourhood character.	
Cl 55.06-2 Front fence	B32 *A front fence within 3 metres of a street should not exceed:* • *The maximum height specified in a schedule to the zone, or* • *If no maximum height is specified in a schedule to the zone, the maximum height specified in Table B3.*	√ Complies The proposal includes a 1.2 metre vertically slatted fence for the front of dwelling 1 and 2.
Cl 55.06-3 Common property	B33 *Developments should clearly delineate public, communal and private areas.* *Common property, where provided, should be functional and capable of efficient management.*	√ Complies
Cl 55.06-4 Site services	B34 *The design and layout of dwellings and residential buildings should provide sufficient space (including easements where required) and facilities for services to be installed and maintained efficiently and economically.* *Bin and recycling enclosures, mailboxes and other site facilities should be adequate in size, durable, waterproof and blend in with the development.*	√ Complies Site services can be installed and easily maintained. Site facilities have been designed to be accessible, adequate and attractive. Bins will be kept in the rear yard of the proposed dwellings and will be located to the front of the property on bin collection days only. The open space of the proposed dwellings are accessible from the inside of the dwellings. Open spaces are at an adequate

	Bin and recycling enclosures should be located for convenient access by residents. *Mailboxes should be provided and located for convenient access as required by Australia Post.*	size to accommodate an open air cloths-drying facility, not visible from the street. All site facilities will be physically convenient and visually unobtrusive. Ample area is available for secure storage in the private open space area for the proposed dwellings. A proposed prefabricated mailbox will be installed along the frontage of the site. The mailboxes will be in accordance with Australia Post requirements.

[redacted]

PROPOSAL: DUAL OCCUPANCY
SITE ADDRESS: 22 BEACON HILLS CRESCENT CRAIGIEBURN
DRAWING ISSUE: TOWN PLANNING DRAWINGS
CLIENT: [redacted]
JOB NO:
REV:



PERSPECTIVE 1

PERSPECTIVE 2

PERSPECTIVE 3

PROPOSAL:

DUAL OCCUPANCY

TP DRAWING LIST

LEGEND

NO.7	PROPERTY NUMBER
	SUBJECT SITE
	RESERVE / VACANT LAND
	UNIT DEVELOPMENTS
	COMMERCIAL

N

PROPERTY DETAILS

Address:	**22 BEACON HILLS CRESCENT CRAIGIEBURN 3064**
Lot and Plan Number:	**Lot 325 LP54592**
Standard Parcel Identifier (SPI):	**325\LP54592**
Local Government Area (Council):	**HUME** www.hume.vic.gov.au
Council Property Number:	**400410**
Planning Scheme:	**Hume** Planning Scheme - Hume
Directory Reference:	**Melway 386 K8**

UTILITIES

Rural Water Corporation:	**Southern Rural Water**
Melbourne Water Retailer:	**Yarra Valley Water**
Melbourne Water:	**Inside drainage boundary**
Power Distributor:	**JEMENA**

STATE ELECTORATES

Legislative Council:	**NORTHERN METROPOLITAN**
Legislative Assembly:	**KALKALLO**

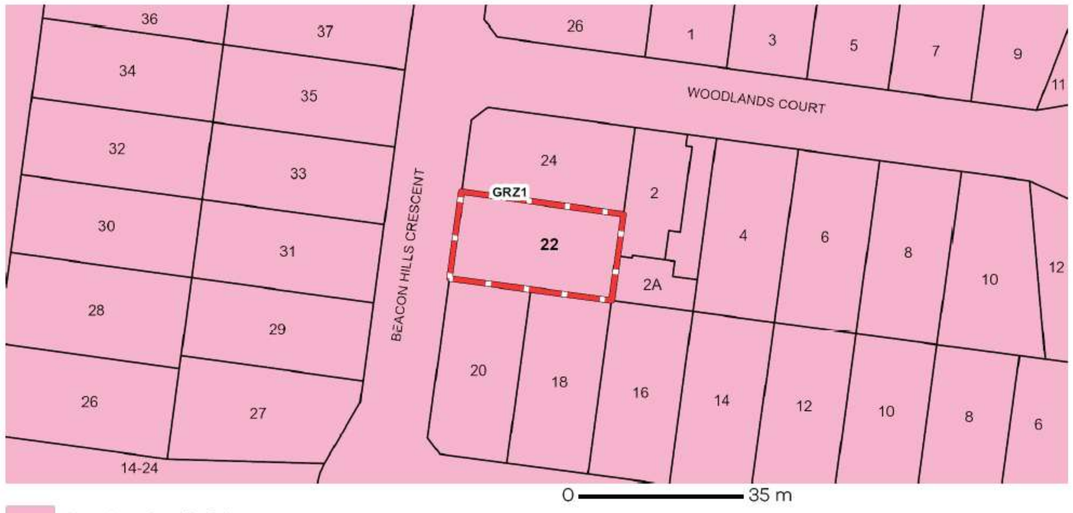
OTHER

Registered Aboriginal Party:	**Wurundjeri Woi Wurrung Cultural Heritage Aboriginal Corporation**

View location in VicPlan

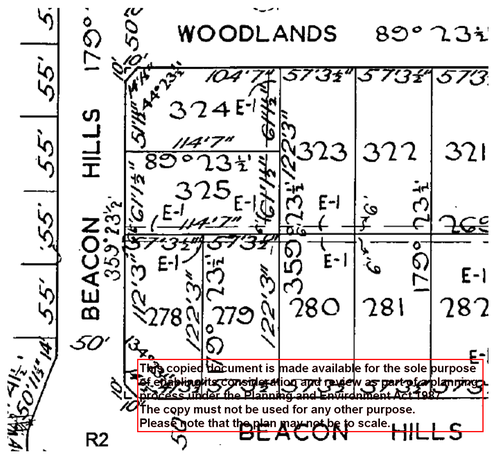
Planning Zones

GENERAL RESIDENTIAL ZONE (GRZ)
GENERAL RESIDENTIAL ZONE - SCHEDULE 1 (GRZ1)



GRZ - General Residential

Note: labels for zones may appear outside the actual zone - please compare the labels with the legend.

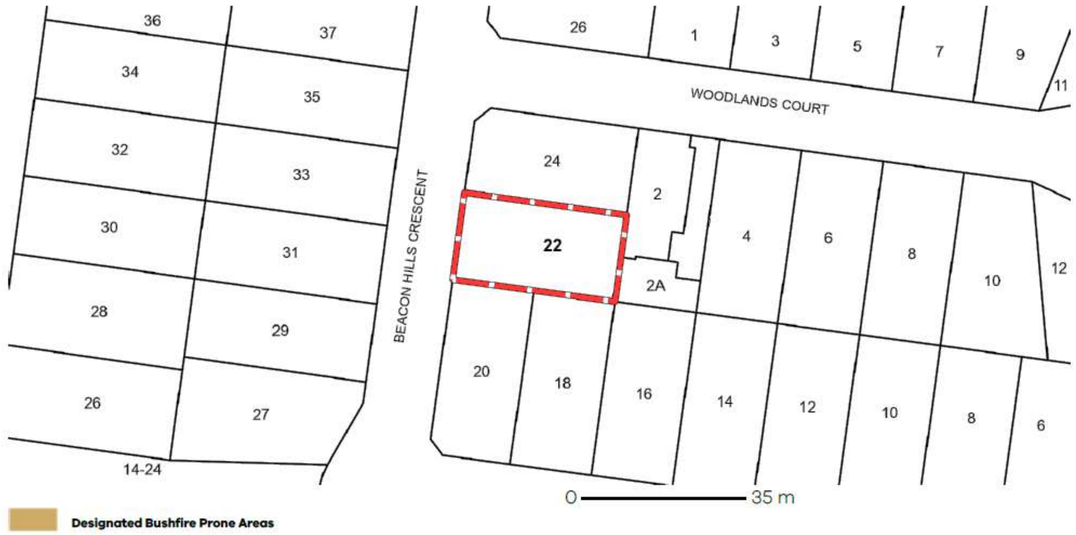


Designated Bushfire Prone Areas

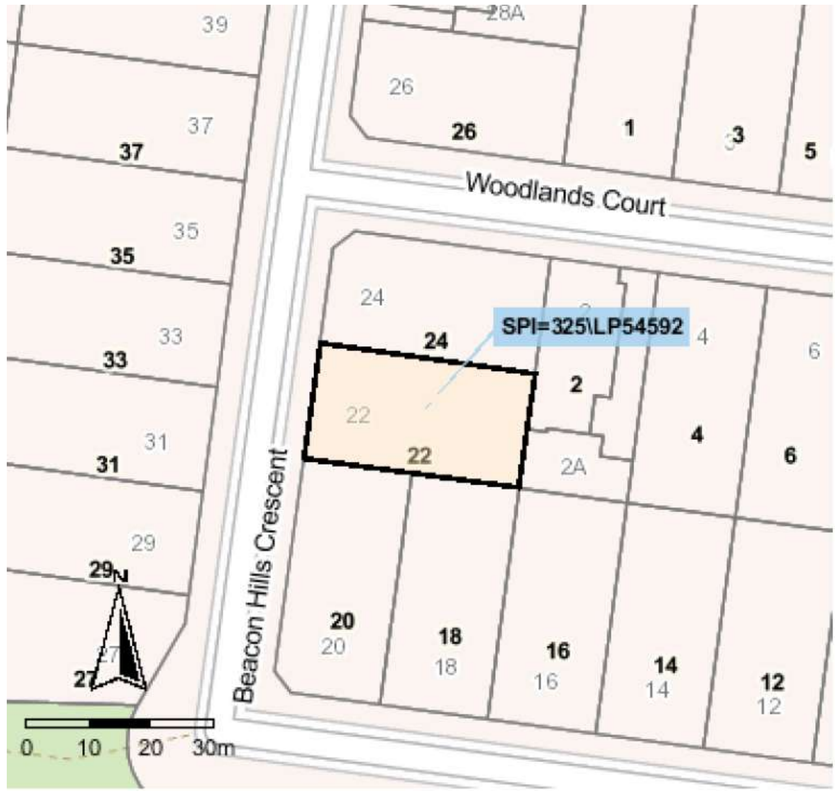
This property is not in a designated bushfire prone area.
No special bushfire construction requirements apply. Planning provisions may apply.

Where part of the property is mapped as BPA, if no part of the building envelope or footprint falls within the BPA area, the BPA construction requirements do not apply.

Note: the relevant building surveyor determines the need for compliance with the bushfire construction requirements.



Designated Bushfire Prone Areas



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FEATURE SURVEY & DEMOLITION PLAN

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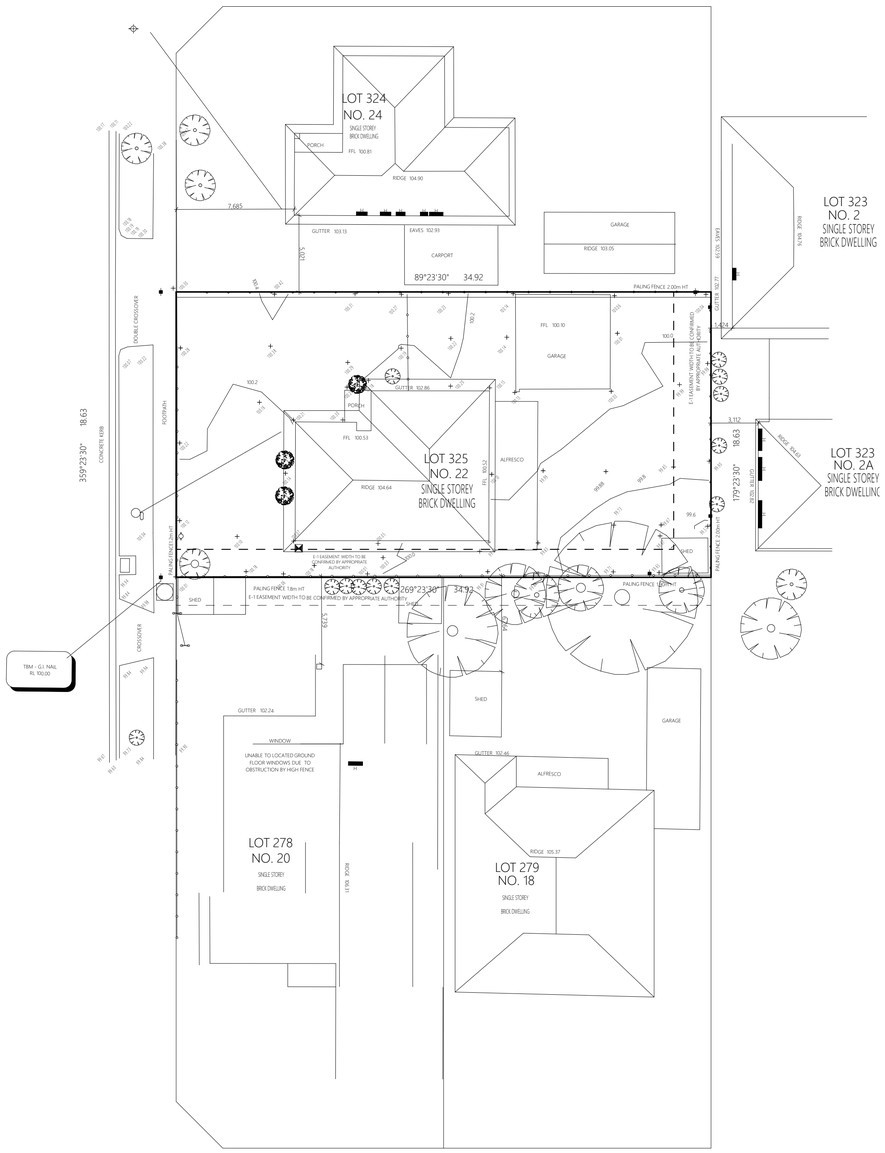
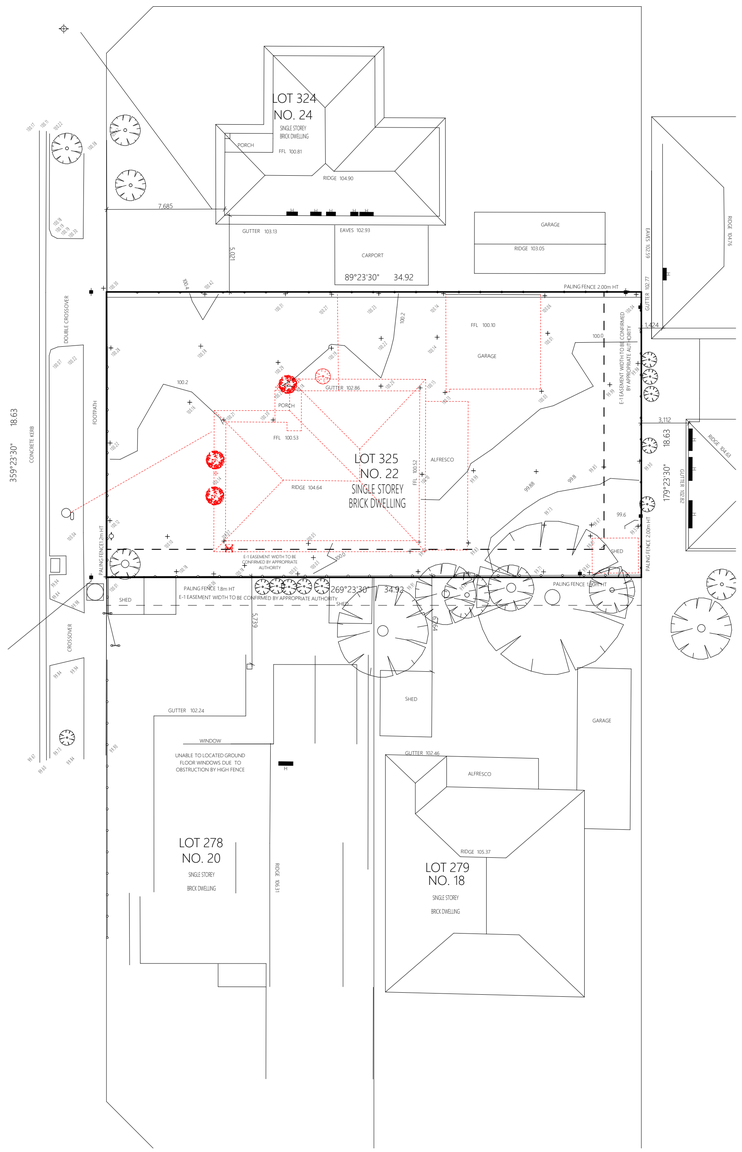
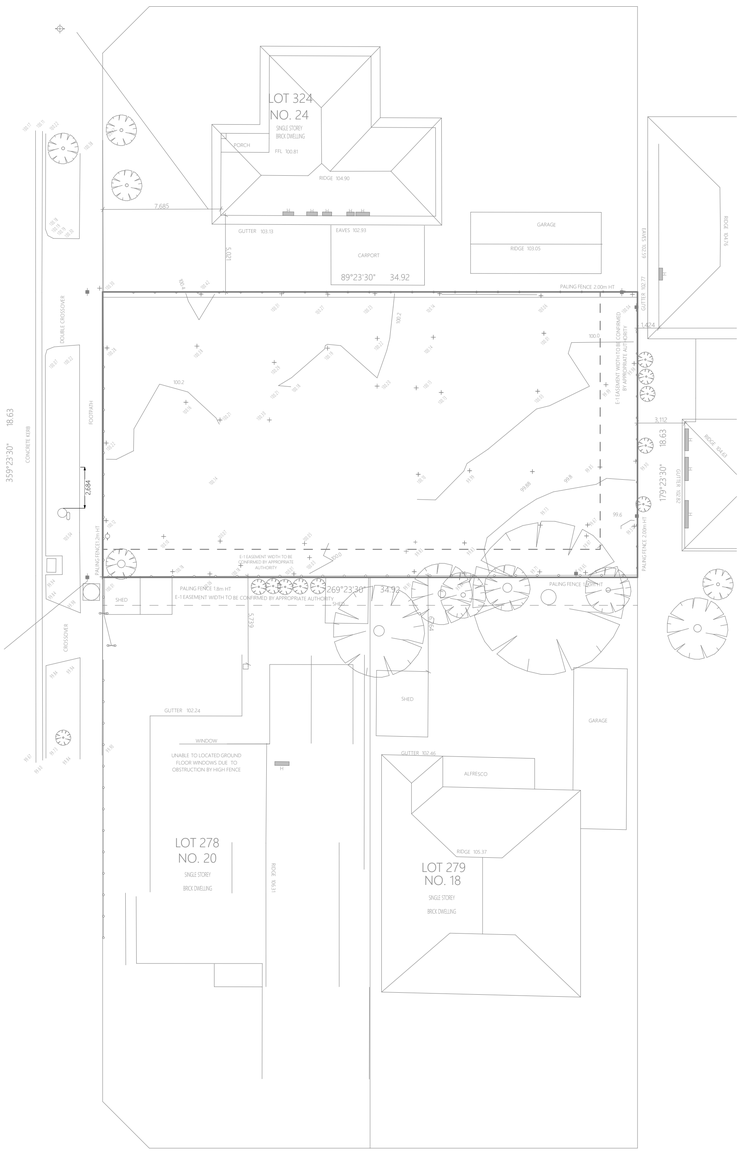
BEACON HILL CRESCENT



FEATURE SURVEY PLAN 1:200



DEMOLITION PLAN 1:200



AFTER DEMOLITION 1:200

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DESIGN RESPONSE

[redacted]

[redacted]

TOWN PLANNING DRAWINGS ONLY

DESIGN RESPONSE 1:1000

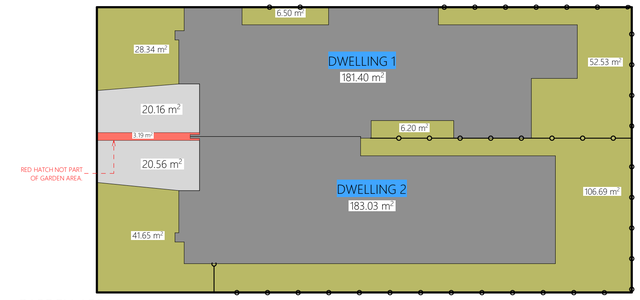
AREA SUMMARY

	U1	U2
GROUND FLOOR LIVING	145.41m²	147.16m²
GARAGE	22.73m²	23.45m²
PORCH	2.76m²	2.71m²
ALFRESCO	10.50m²	9.72m²
G/F TOTAL:	181.4m²	183.04m²
SQ	19.5 SQ	19.7 SQ

TOTAL BUILT AREA	364.44m²	
% SITE COVERAGE		55.98%
% IMPERMEABLE AREA	405.16m²	62.24%
% PERMEABLE AREA	245.84m²	37.76%
TOTAL GARDEN AREA	280.98m²	
GARDEN AREA	241.91m²	37.16%
TOTAL SITE AREA:	651m²	

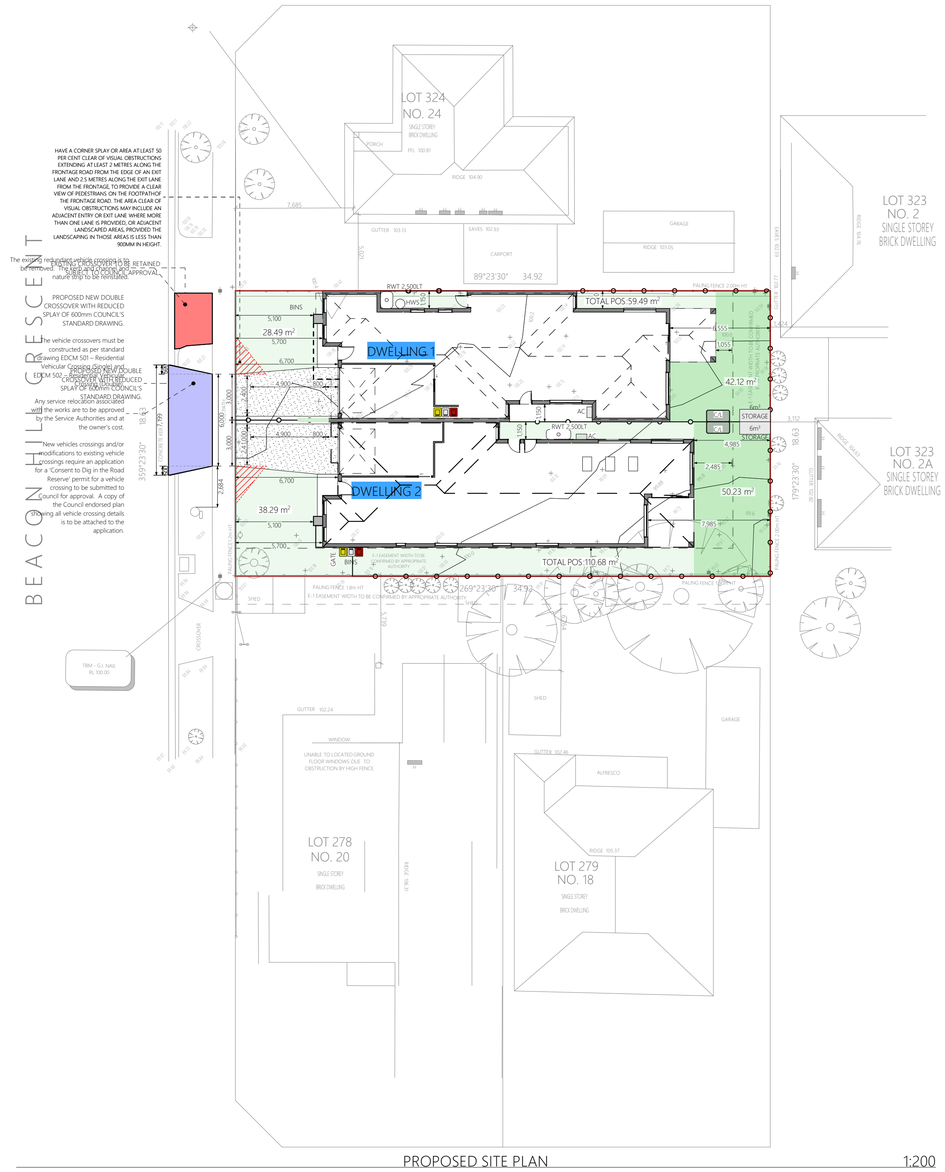
LEGEND

- GARDEN AREA
- GARDEN AREA(NOT INCLUDED)
- DWELLING OUTLINE
- CONCRETE DRIVEWAY



GARDEN AREA 1:200

DESIGN RESPONSE 1:200



PROPOSED SITE PLAN 1:200

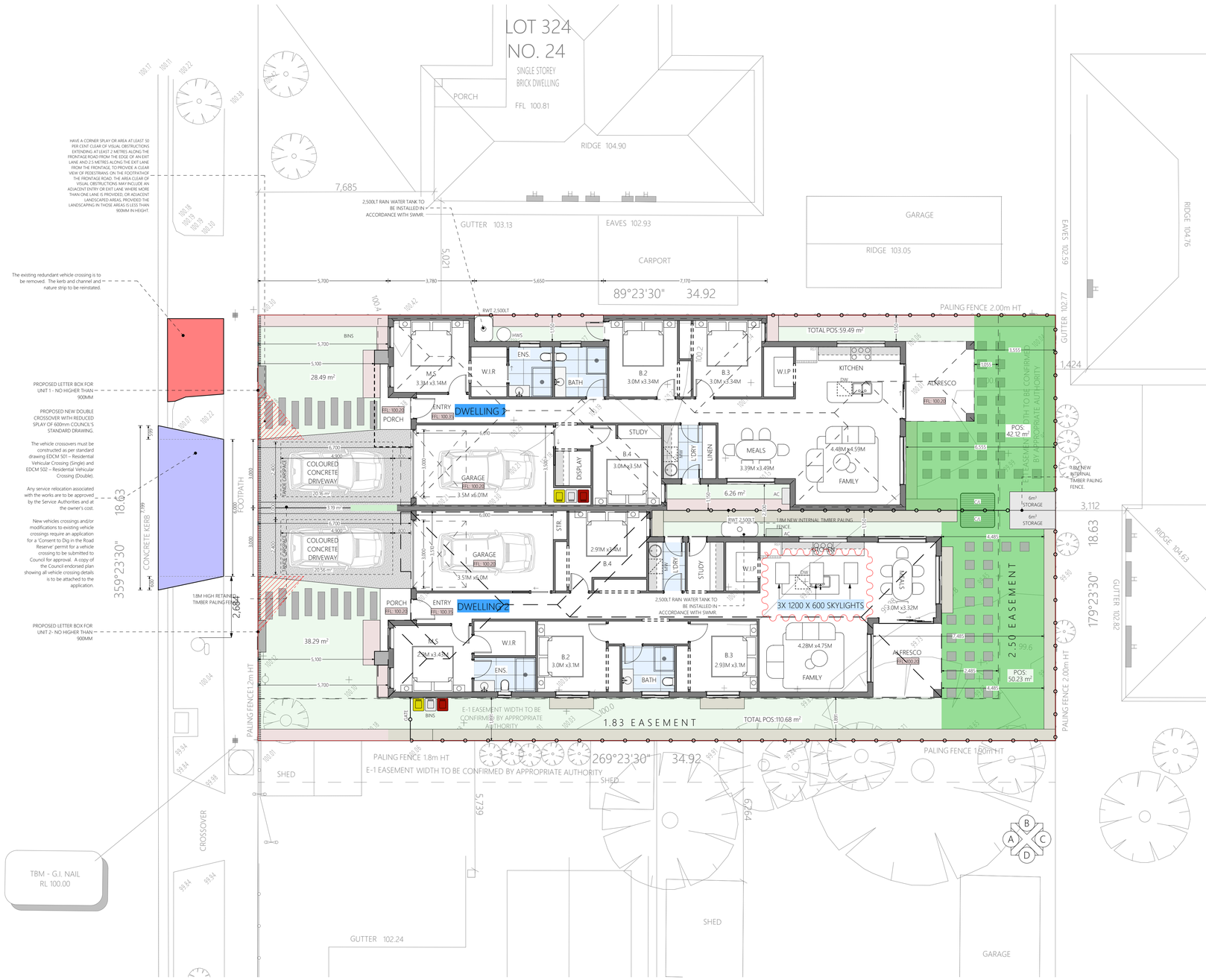
[redacted]

GROUND FLOOR PLAN

[redacted]

[redacted]

BEACON HILL CRESCENT



VELUX SKYLIGHTS TO BE USED

AREA SUMMARY

	U1	U2
GROUND FLOOR LIVING	145.41m²	147.16m²
GARAGE	22.73m²	23.45m²
PORCH	2.76m²	2.71m²
ALFRESCO	10.50m²	9.72m²
G/F TOTAL:	181.4m²	183.04m²
SQ	19.5 SQ	19.7 SQ
TOTAL BUILT AREA	364.44m²	
% SITE COVERAGE	55.98%	
% IMPERMEABLE AREA	405.16m²	62.24%
% PERMEABLE AREA	245.84m²	37.76%
TOTAL GARDEN AREA	280.98m²	
GARDEN AREA	241.91m²	37.16%
TOTAL SITE AREA:	651m²	

ELEVATIONS

MATERIALS SCHEDULE

FACE BRICKWORK - 'INDUSTRIAL STEEL'
BY AUSTRAL

FEATURE RENDER FINISH - 'MONUMENT'
COLOUR BY COLORBOND

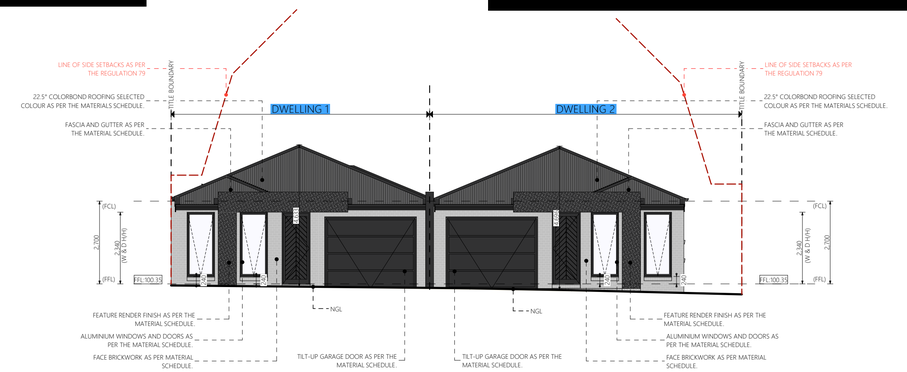
'MONUMENT' FINISH TO THE FOLLOWING BY COLORBOND OR SIMILAR;

22.5° COLORBOND ROOFING-
KLIP-LOK ROOFING-
ALUMINIUM FRAMED WINDOW & DOORS-
FASCIA & GUTTER & CAPPING-
LETTER BOX-

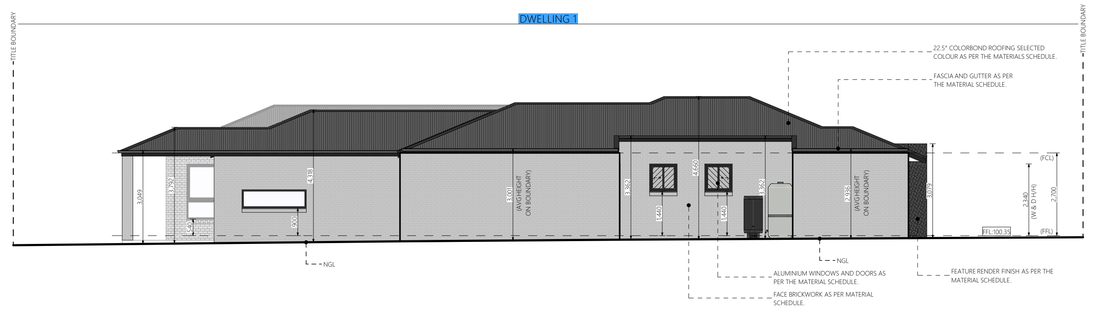
'SHALE GREY' FINISH BY COLORBOND TO THE FOLLOWING;

DOWNPIPES-
METER BOX-

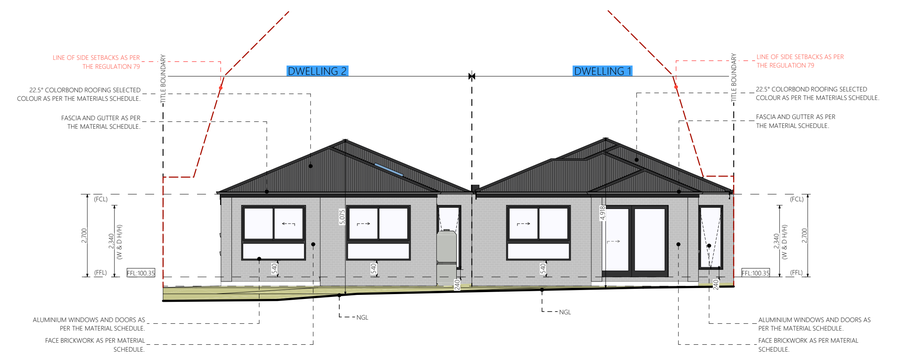
'SUNDOWN' EXPOSED CONCRETE
DRIVEWAY BY BORAL OR SIMILAR



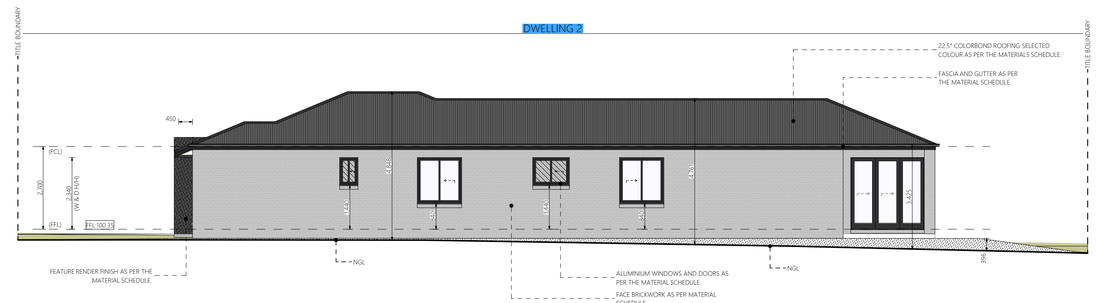
A WEST ELEVATION 1:100



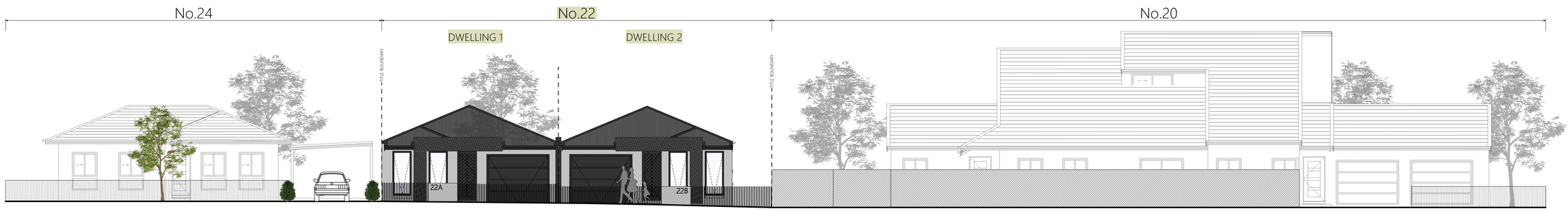
B NORTH ELEVATION 1:100



C EAST ELEVATION 1:100

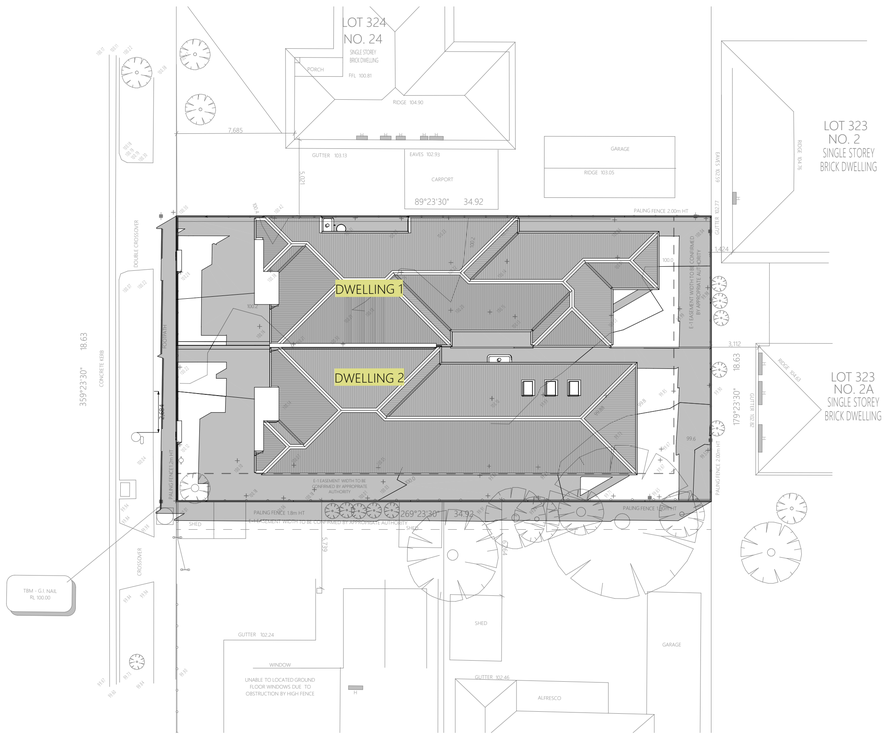


D SOUTH ELEVATION 1:100

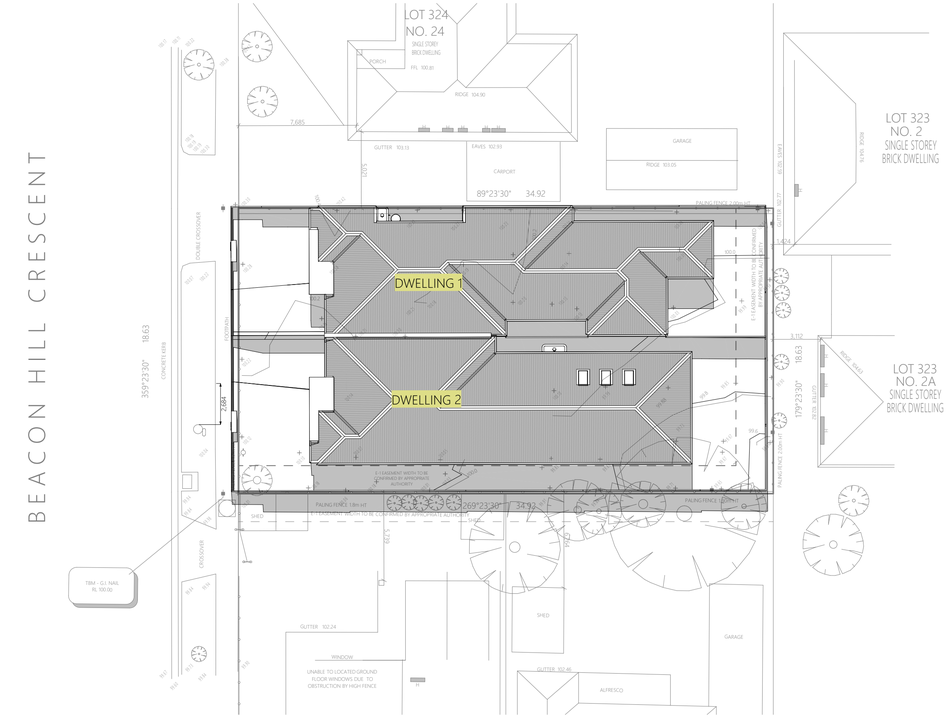


BEACON HILLS CRESCENT (STREETSCAPE)

(SCALE: 1:100)



2 9AM SHADOW DIAGRAM 1:200



12PM SHADOW DIAGRAM 1:200

Length of shadow on 22 September

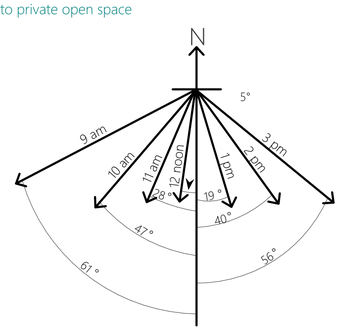
TIME	SUN ALTITUDE (DEGREES)	SHADOW LENGTH OF A 1 METRE HIGH POST (m)
9.00 am	32°	1.60
10.00 am	41°	1.15
11.00 am	49°	0.87
12.00 noon	52°	0.78
1.00 pm	50°	0.84
2.00 pm	45°	1.00
3.00 pm	36°	1.38

As a simple guide, the table opposite gives an indication of shadow lengths at various times of the day based on the height of a 1 metre post and assuming flat ground.

To roughly calculate the length of shadow cast by a 4.5 metre high wall at 9:00 am, you simply multiply 4.5 metres x 1.6 metres = 7.2 metres (shadow length).

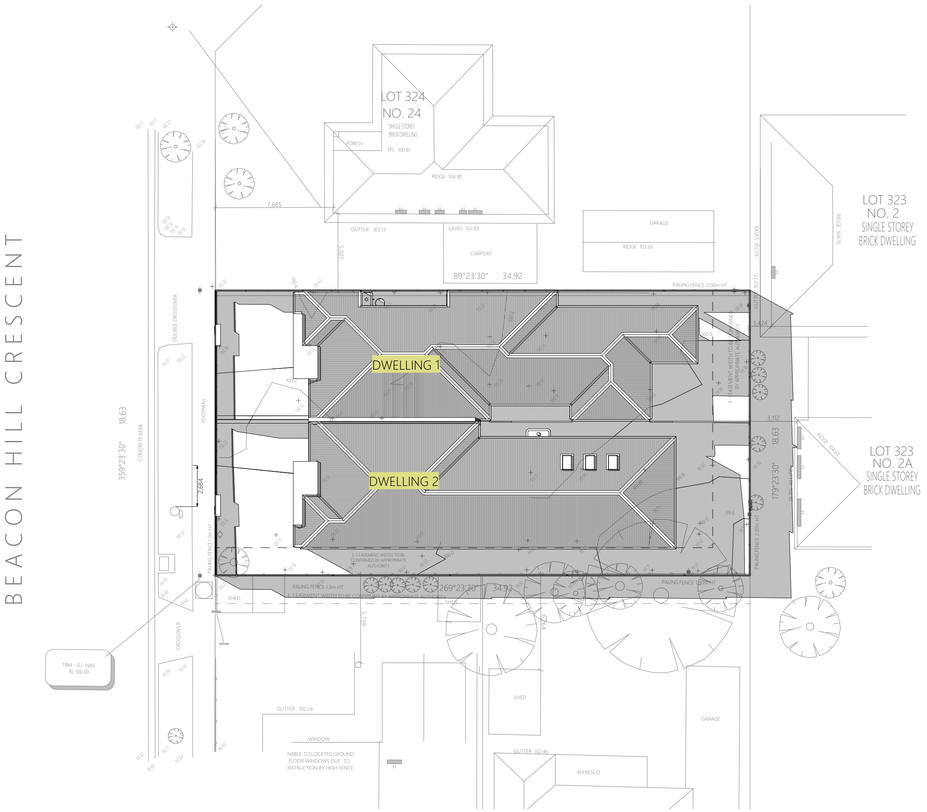
To work out approximately the direction where the shadow will fall, refer to the figure below.

Sunlight to private open space



There are a range of commercial packages available to assist in measuring and producing overshadowing diagrams.

Angle of shadow 22 September



3PM SHADOW DIAGRAM 1:200

[redacted]

Environmentally Sustainable Development (ESD)

Proposed Unit Development for:

22 Beacon Hills Crescent,
Craigieburn VIC
3064

[redacted]

[redacted]

[redacted]

Table of Contents

[redacted]

[redacted]

About this Document

This document outlines how the key Environmentally Sustainable requirements within the Hume City Council will be addressed. An ESD is a simple sustainability assessment of a proposed design at the planning stage. The assessment will support the planning application by showing how the 10 Key Sustainable Building Categories will be addressed:

1. Energy Performance
2. Water Efficiency
3. Stormwater Management
4. Indoor Environment Quality
5. Transport
6. Waste Management
7. Urban Ecology
8. Building Materials
9. Construction and Building Management
10. Innovation

How to use this document

This document is not designed to set a minimum standard or to provide a definitive list of environmentally sustainable design (ESD) initiatives to be included in a development. ESD should be integrated into the design of a new building from the earliest stage. The best ESD response will depend on many site-specific factors.

Project Information

Municipality	Hume City Council	Total Site Area	651 sq/m
Project Name	2X Single Storey Dwelling	Residential GFA	292.57 m2
Project Address	22 Beacon Hills Crescent,Craigieburn VIC	No. of Res.Dwellings	2
		Zoning	General Residential Zone (GRZ)

[redacted]

[redacted]

[redacted]

Built Environment Sustainable Scoreboard (BESS)

The development has been assessed using the BESS assessment tool (www.bess.net.au).
A summary of the results is shown in the table below. For the full BESS Report refer to Appendix.

BESS score: 56%

% of Total	Category	Score	Pass
5	Management	*0*	PASS
9	Water	*50*	PASS
28	Energy	*50*	PASS
14	Stormwater	*100*	PASS
17	IEQ	*100*	PASS
9	Transport	*50*	-
6	Waste	*0*	-
6	Urban Ecology	*28*	-
9	Innovation	*20*	-

1.0 Energy Performance

Objectives:

- To improve the efficient use of energy, by ensuring development demonstrates design potential for ESD initiatives at the planning stage.
- To reduce total operating greenhouse gas emissions.
- To reduce energy peak demand through particular design measures (eg. appropriate building orientation, shading to glazed surfaces, optimise glazing to exposed surfaces, space allocation for solar panels and external heating and cooling systems).

Considerations:

- Energy rating of building fabric in excess of minimum BCA requirements

[redacted]

[redacted]

- Heating and Cooling system types and associated energy-efficiency rating/benchmark

Proposed heating system: D reverse cycle space (5 stars)
Proposed Cooling system: Evaporative Central (4 stars)

- Hot water system type and associated energy-efficiency rating/benchmark

Hot water system: Gas Instantaneous (6 star)

- Location of fixed clothes drying lines/ racks

A private outdoor clothesline will be provided to each dwelling refer to attached working drawings.

- Lighting strategy

LED downlight will be installed in all habitable areas to reduce energy consumption. Illumination power density calculations can be found on the Working drawings.

2.0 Water Resources

Objectives:

- To improve water efficiency.
- To reduce total operating potable water use.
- To encourage the collection and reuse of stormwater.
- To encourage the appropriate use of alternative water sources (eg. greywater).

Considerations:

- Water-efficiency rating of fixtures within one star of the best available
  Description of fixtures for both dwellings:

Shower head	4 Star WELS (>=7.5 but=<9.0)
Kitchen Taps	>=5 Star WELS
Bathroom Taps	>=5 Star WELS
WC	>=4 Star WELS

[redacted]

[redacted]

- Size, capacity, and location of rainwater tanks

Using rainwater can reduce water bills, provide an alternative supply during water restrictions. Depending on tank size and climate, mains water use can be reduced by up to 100%. This in turn can help:

- reduce the need for new dams or desalination plants
- protect remaining environmental flows in rivers
- reduce infrastructure operating costs.

Rainwater harvesting also decreases stormwater runoff, thereby helping to reduce local flooding and scouring of creeks.

Size of rainwater tanks are two smart water tanks, refer to Working Drawings for location.

- Provisions for a more water efficient landscaping

Rainwater will be transferred from the roof and collected in the rainwater tank for toilet flushing.

3.0 Stormwater Management

Objectives:

- To reduce the impact of stormwater run-off.
- To improve the water quality of stormwater run-off.
- To achieve best practice stormwater quality outcomes.
- To incorporate the use of water sensitive urban design, including stormwater re-use.

Considerations:

- Rainwater tank capacity for whole development. All sanitary flushing to operate using rainwater tanks.

[redacted]

[redacted]

Melbourne Water **STORM Rating Report**

TransactionID: 1623608
Municipality: HUME
Rainfall Station: HUME
Address: 22 Beacon Hills
Craigieburn
VIC 3064
Assessor:
Development Type: Residential - Multiunit
Allotment Site (m2): 651.00
STORM Rating %: 108

Description	Impervious Area (m2)	Treatment Type	Treatment Area/Volume (m2 or L)	Occupants / Number Of Bedrooms	Treatment %	Tank Water Supply Reliability (%)
U1 Roof Area	181.40	Rainwater Tank	2,500.00	4	105.30	88.90
U2 Roof Area	113.03	Rainwater Tank	2,500.00	4	141.20	87.20
U2 Roof Area	70.00	Raingarden 300mm	1.00	0	127.00	0.00
U1 Driveway	20.16	None	0.00	0	0.00	0.00
U2 Driveway	20.56	None	0.00	0	0.00	0.00

4.0 Indoor Environment Quality

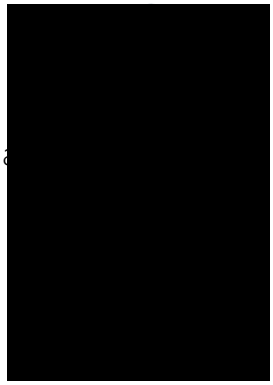
Objectives:

- To achieve a healthy indoor environment quality for the wellbeing of building occupants, including the provision of fresh air intake, cross ventilation, and natural daylight.
- To achieve thermal comfort levels with minimised need for mechanical heating, ventilation and cooling.
- To reduce indoor air pollutants by encouraging use of materials with low toxic chemicals.
- To reduce reliance on mechanical heating, ventilation, cooling and lighting systems.
- To minimise noise levels and noise transfer within and between buildings and associated external areas.

Considerations:

- Access to daylight

[redacted]



All living areas receive a good amount of daylight, exceeding the minimum a
daylight required under the Planning scheme.

- Access to natural ventilation

The majority of habitable rooms receive cross ventilation, helping to moderate internal temperatures.

- Thermal Comfort
    - R4.0 insulation is nominated for ceilings and R2.5 for the walls
    - The roof will be a medium grey colour (anti glare foil will help reduce solar heat gain)

- Indoor air quality
    - Low VOC, water based and non-toxic paints to be specified- please refer to attached table
    - Timber used at the site will be either reused, post-consumer recycled or certified under the forest certification scheme where applicable.

- Urban Heat Island Impact
    - Medium colored roof and driveway to reduce Urban Heat Island Impact. Roof selected to have a Solar reflectance of more than 0.15.

5.0 Transport

Objectives:

- To ensure that the built environment is designed to promote the use of walking, cycling and public transport, in that order.
- To minimise car dependency.
- To promote the use of low emissions vehicle technologies and supporting infrastructure.

Considerations:

- Bicycle rack
    - A bicycle rack will be provided to the dwelling, encouraging sustainable transport habits.

6.0 Waste Management

[redacted]

Objectives:

- To promote waste avoidance, reuse and recycling during the design, construction and operation stages of development.
- To ensure durability and long term reusability of building materials.
- To ensure sufficient space is allocated for future change in waste management needs, including (where possible) composting and green waste facilities.

Considerations:

- Materials selections Recommendations
  - Avoidance of materials that contain toxic substances.
  - Durable materials
  - Low embodied materials
  - Material selection are as follows:
    - Concrete slab
    - Timber wall framing
    - Walls- Brickveener + Cladding
    - Roof structure and cladding-Tiles

7.0 Urban Ecology

Objectives:

- To protect and enhance biodiversity within the municipality.
- To provide environmentally sustainable landscapes and natural habitats, and minimise the urban heat island effect.
- To encourage the retention of significant trees.
- To encourage the planting of indigenous vegetation.
- To encourage the provision of space for productive gardens, particularly in larger residential developments.

Considerations:

To Encourage plant growth a tap is provided in Private open spaces.

[redacted]

[redacted]

8.0 Building Materials

Objectives:

- To reduce the embodied energy and CO2 impact of materials.
- To maximise the responsible sourcing materials.
- To maximise the use of recycled material.
- To maximise the reuse of materials.
- To reduce the use of material that contains high levels of VOC (or other toxic elements).

Considerations:

- All timber used in the development should be Forest Stewardship Council (FSC) or Program for the Endorsement of Forest Certification (PEFC) certified or recycled / reused.
- Materials must be carefully stored to reduce waste and facilitate recycling. A dedicated storage space to be allowed on site for the separation of waste and recyclables

9.0 Construction and Building Management

Objectives:

- Best practice for building management means that sustainability is integrated from concept design through the construction process. Good decisions made early will always deliver the maximum benefit for the lowest cost.
- Best practice building management also means giving future occupants the information they need to be able to run their buildings in the most efficient way.

Considerations:

- Not applicable

10.0 Innovation and ESD Excellence

Objectives:

- To encourage innovative technology, design and processes in all development, so as to positively influence the sustainability of buildings.

[redacted]

Considerations:

- a power point located in the garage for each dwelling to accommodate infrastructure in future to charge electric vehicles.

Conclusion

This ESD report is a detailed sustainability assessment of the proposed design which demonstrates compliance with the key requirements of *Planning Clause 22.01 Environmentally Sustainable Development*.

In conclusion, the proposed development meets the Built Environment Sustainability Scoreboard (BESS) and National construction code requirements.

[redacted]

Appendices

[redacted]

Melbourne Water STORM Rating Report

TransactionID: 1623608
Municipality: HUME
Rainfall Station: HUME
Address: 22 Beacon Hills

Craigieburn
VIC 3064

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U2 Roof Area	70.00	Raingarden 300mm	1.00	0	127.00	0.00
U1 Driveway	20.16	None	0.00	0	0.00	0.00
U2 Driveway	20.56	None	0.00	0	0.00	0.00

T [redacted]
E [redacted]

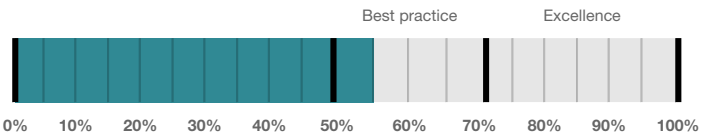
BESS Report

Built Environment Sustainability Scorecard

This BESS report outlines the sustainable design commitments of the proposed development at 22 Beacon Hills Crescent Craigieburn Victoria 3064. The BESS report and accompanying documents and evidence are submitted in response to the requirement for a Sustainable Design Assessment or Sustainability Management Plan at Hume City Council.

Note that where a Sustainability Management Plan is required, the BESS report must be accompanied by a report that further demonstrates the development's potential to achieve the relevant environmental performance outcomes and documents the means by which the performance outcomes can be achieved.

Your BESS Score

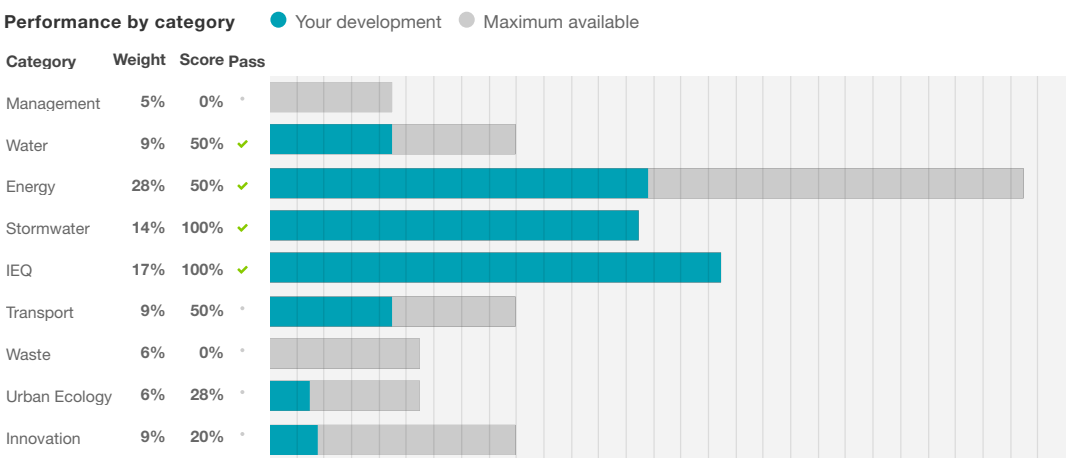


56%

Project details

Address	22 Beacon Hills Crescent Craigieburn Victoria 3064
Project no	CA19DFE2-R1
BESS Version	BESS-7
Site type	Multi dwelling (dual occupancy, townhouse, villa unit etc)
Account	[redacted]
Application no.	
Site area	651.00 m²
Building floor area	292.57 m²
Date	02 August 2023
Software version	1.8.0-B.401

Performance by category



Dwellings & Non Res Spaces

Dwellings

Name	Quantity	Area	% of total area
Detached dwelling			
Townhouse 2	1	147 m²	50%
Townhouse 1	1	145 m²	49%
Total	**2**	**292 m²**	**100%**

Supporting information

Floorplans & elevation notes

Credit	Requirement	Response	Status
Water 3.1	Annotation: Water efficient garden details		-
Energy 3.3	Annotation: External lighting controlled by motion sensors		-
Energy 3.4	Location of clothes line (if proposed)		-
Stormwater 1.1	Location of any stormwater management systems (rainwater tanks, raingardens, buffer strips)		-
IEQ 2.2	Annotation: Dwellings designed for 'natural cross flow ventilation' (If not all dwellings, include a list of compliant dwellings)		-
IEQ 3.1	Annotation: Glazing specification (U-value, SHGC)		-
IEQ 3.2	Adjustable shading systems		-
IEQ 3.3	North-facing living areas		-
Transport 1.1	Location of residential bicycle parking spaces		-
Urban Ecology 2.1	Location and size of vegetated areas		-

Supporting evidence

Credit	Requirement	Response	Status
Energy 3.5	Average lighting power density and lighting type(s) to be used		-
Stormwater 1.1	STORM report or MUSIC model		-
IEQ 2.2	A list of dwellings with natural cross flow ventilation		-
IEQ 3.1	Reference to floor plans or energy modelling showing the glazing specification (U-value and Solar Heat Gain Coefficient, SHGC)		-
IEQ 3.2	Reference to floor plans and elevations showing shading devices		-
IEQ 3.3	Reference to the floor plans showing living areas orientated to the north		-

Credit summary

Management Overall contribution 4.5%

	0%

1.1 Pre-Application Meeting	0%
2.1 Thermal Performance Modelling - Single Dwelling	0%

Water Overall contribution 9.0%

	Minimum required 50%	50%	Pass
1.1 Potable Water Use Reduction		40%	
3.1 Water Efficient Landscaping		100%	

Energy Overall contribution 27.5%

	Minimum required 50%	50%	Pass
1.2 Thermal Performance Rating - Residential		16%	
2.1 Greenhouse Gas Emissions		100%	
2.2 Peak Demand		0%	
2.3 Electricity Consumption		100%	
2.4 Gas Consumption		100%	
2.5 Wood Consumption		N/A	Scoped Out
		No wood heating system present	
2.6 Electrification		0%	Disabled
		Credit is available when project is declared to have no gas connection.	
3.2 Hot Water		100%	
3.3 External Lighting		100%	
3.4 Clothes Drying		100%	
3.5 Internal Lighting - Houses and Townhouses		100%	
4.4 Renewable Energy Systems - Other		0%	Disabled
		No other (non-solar PV) renewable energy is in use.	
4.5 Solar PV - Houses and Townhouses		0%	Disabled
		No solar PV renewable energy is in use.	

Stormwater Overall contribution 13.5%

	Minimum required 100%	100%	Pass
1.1 Stormwater Treatment		100%	

IEQ Overall contribution 16.5%

	Minimum required 50%	100%	Pass
2.2 Cross Flow Ventilation		100%	
3.1 Thermal comfort - Double Glazing		100%	
3.2 Thermal Comfort - External Shading		100%	
3.3 Thermal Comfort - Orientation		100%	

Transport Overall contribution 9.0%

	50%
1.1 Bicycle Parking - Residential	100%
2.1 Electric Vehicle Infrastructure	0%

Waste Overall contribution 5.5%

	0%
1.1 - Construction Waste - Building Re-Use	0%
2.1 - Operational Waste - Food & Garden Waste	0%

Urban Ecology Overall contribution 5.5%

	28%
2.1 Vegetation	50%
2.2 Green Roofs	0%
2.3 Green Walls and Facades	0%
3.1 Food Production - Residential	0%

Innovation Overall contribution 9.0%

	20%
1.1 Innovation	20%

Credit breakdown

Management Overall contribution 0%

1.1 Pre-Application Meeting		0%
Score Contribution	This credit contributes 60.0% towards the category score.	
Criteria	Has an ESD professional been engaged to provide sustainability advice from schematic design to construction? AND Has the ESD professional been involved in a pre-application meeting with Council?	
Question	Criteria Achieved ?	
Project	No	

2.1 Thermal Performance Modelling - Single Dwelling		0%
Score Contribution	This credit contributes 40.0% towards the category score.	
Criteria	Has a preliminary NatHERS rating been undertaken?	
Question	Criteria Achieved ?	
Project	No	

Water

Overall contribution 4% Minimum required 50%

Water Approach	
What approach do you want to use for Water?:	Use the built in calculation tools
Project Water Profile Question	
Do you have a reticulated third pipe or an on-site water recycling system?:	No
Are you installing a swimming pool?:	No
Are you installing a rainwater tank?:	Yes
Water fixtures, fittings and connections	
Showerhead: All	4 Star WELS (>= 6.0 but <= 7.5)
Bath: All	Default or unrated
Kitchen Taps: All	>= 5 Star WELS rating
Bathroom Taps: All	>= 5 Star WELS rating
Dishwashers: All	Default or unrated
WC: All	>= 4 Star WELS rating
Urinals: All	Scope out
Washing Machine Water Efficiency: All	Default or unrated
Which non-potable water source is the dwelling/space connected to?:	
Townhouse 1	RWT1
Townhouse 2	RWT2
Non-potable water source connected to Toilets: All	Yes
Non-potable water source connected to Laundry (washing machine): All	No
Non-potable water source connected to Hot Water System: All	No
Rainwater Tanks	
What is the total roof area connected to the rainwater tank?:	
RWT1	181 m²
RWT2	1,133 m²
Tank Size:	
RWT1	2,500 Litres
RWT2	2,500 Litres
Irrigation area connected to tank:	
RWT1	0.0 m²
RWT2	0.0 m²
Is connected irrigation area a water efficient garden?:	
RWT1	Yes
RWT2	Yes
Other external water demand connected to tank?:	
RWT1	0.0 Litres/Day
RWT2	0.0 Litres/Day

1.1 Potable Water Use Reduction	40%
Score Contribution	This credit contributes 83.3% towards the category score.
Criteria	What is the reduction in total potable water use due to efficient fixtures, appliances, rainwater use and recycled water use? To achieve points in this credit there must be >25% potable water reduction.
Output	Reference
Project	402 kL
Output	Proposed (excluding rainwater and recycled water use)
Project	336 kL
Output	Proposed (including rainwater and recycled water use)
Project	300 kL
Output	% Reduction in Potable Water Consumption
Project	25 %
Output	% of connected demand met by rainwater
Project	100 %
Output	How often does the tank overflow?
Project	Very Often
Output	Opportunity for additional rainwater connection
Project	148 kL

3.1 Water Efficient Landscaping	100%
Score Contribution	This credit contributes 16.7% towards the category score.
Criteria	Will water efficient landscaping be installed?
Question	Criteria Achieved ?
Project	Yes

Energy

Overall contribution 14% Minimum required 50%

Dwellings Energy Approach	
What approach do you want to use for Energy?:	Use the built in calculation tools

Project Energy Profile Question	
Are you installing any solar photovoltaic (PV) system(s)?:	No
Are you installing any other renewable energy system(s)?:	No
Energy Supply:	Electricity & Natural Gas

Dwelling Energy Profiles	
Below the floor is: All	Ground or Carpark
Above the ceiling is: All	Outside
Exposed sides: All	3
NatHERS Annual Energy Loads - Heat: All	110 MJ/sqm
NatHERS Annual Energy Loads - Cool: All	15.0 MJ/sqm
NatHERS star rating: All	6.5
Type of Heating System: All	D Reverse cycle space
Heating System Efficiency: All	5 Star
Type of Cooling System: All	Evaporative central
Cooling System Efficiency: All	4 Stars
Type of Hot Water System: All	J Gas Instantaneous 6 star
% Contribution from solar hot water system: All	0 %
Clothes Line: All	D Private outdoor clothesline
Clothes Dryer: All	A No clothes dryer

1.2 Thermal Performance Rating - Residential 16%

Score Contribution	This credit contributes 27.3% towards the category score.
Criteria	What is the average NatHERS rating?
Output	Average NATHERS Rating (Weighted)
Detached dwelling	6.4 Stars

2.1 Greenhouse Gas Emissions 100%

Score Contribution	This credit contributes 9.1% towards the category score.
Criteria	What is the % reduction in annual greenhouse gas emissions against the benchmark?
Output	Reference Building with Reference Services (BCA only)
Detached dwelling	13,734 kg CO2
Output	Proposed Building with Proposed Services (Actual Building)
Detached dwelling	6,853 kg CO2
Output	% Reduction in GHG Emissions
Detached dwelling	50 %

2.2 Peak Demand		0%	
Score Contribution	This credit contributes 4.5% towards the category score.		
Criteria	What is the % reduction in the instantaneous (peak-hour) demand against the benchmark?		
Output	Peak Thermal Cooling Load - Baseline		
Detached dwelling	27.3 kW		
Output	Peak Thermal Cooling Load - Proposed		
Detached dwelling	28.9 kW		
Output	Peak Thermal Cooling Load - % Reduction		
Detached dwelling	-6 %		
2.3 Electricity Consumption		100%	
Score Contribution	This credit contributes 9.1% towards the category score.		
Criteria	What is the % reduction in annual electricity consumption against the benchmark?		
Output	Reference		
Detached dwelling	11,592 kWh		
Output	Proposed		
Detached dwelling	5,355 kWh		
Output	Improvement		
Detached dwelling	53 %		
2.4 Gas Consumption		100%	
Score Contribution	This credit contributes 9.1% towards the category score.		
Criteria	What is the % reduction in annual gas consumption against the benchmark?		
Output	Reference		
Detached dwelling	37,153 MJ		
Output	Proposed		
Detached dwelling	27,072 MJ		
Output	Improvement		
Detached dwelling	27 %		
2.5 Wood Consumption		N/A	Scoped Out
This credit was scoped out	No wood heating system present		
2.6 Electrification		0%	Disabled
This credit is disabled	Credit is available when project is declared to have no gas connection.		

3.2 Hot Water		100%	
Score Contribution	This credit contributes 4.5% towards the category score.		
Criteria	What is the % reduction in annual energy consumption (gas and electricity) of the hot water system against the benchmark?		
Output	Reference		
Detached dwelling	37,153 MJ		
Output	Proposed		
Detached dwelling	27,407 MJ		
Output	Improvement		
Detached dwelling	26 %		
3.3 External Lighting		100%	
Score Contribution	This credit contributes 4.5% towards the category score.		
Criteria	Is the external lighting controlled by a motion detector?		
Question	Criteria Achieved ?		
Detached dwelling	Yes		
3.4 Clothes Drying		100%	
Score Contribution	This credit contributes 4.5% towards the category score.		
Criteria	What is the % reduction in annual energy consumption (gas and electricity) from a combination of clothes lines and efficient driers against the benchmark?		
Output	Reference		
Detached dwelling	1,332 kWh		
Output	Proposed		
Detached dwelling	266 kWh		
Output	Improvement		
Detached dwelling	80 %		
3.5 Internal Lighting - Houses and Townhouses		100%	
Score Contribution	This credit contributes 4.5% towards the category score.		
Criteria	Does the development achieve a maximum illumination power density of 4W/sqm or less?		
Question	Criteria Achieved?		
Detached dwelling	Yes		
4.4 Renewable Energy Systems - Other		0%	⊘ Disabled
This credit is disabled	No other (non-solar PV) renewable energy is in use.		
4.5 Solar PV - Houses and Townhouses		0%	⊘ Disabled
This credit is disabled	No solar PV renewable energy is in use.		

Stormwater

Overall contribution 14% Minimum required 100%

Which stormwater modelling are you using?:	Melbourne Water STORM tool
1.1 Stormwater Treatment	100%
Score Contribution	This credit contributes 100.0% towards the category score.
Criteria	Has best practice stormwater management been demonstrated?
Question	STORM score achieved
Project	108
Output	Min STORM Score
Project	100

IEQ

Overall contribution 16% Minimum required 50%

2.2 Cross Flow Ventilation	100%
Score Contribution	This credit contributes 20.0% towards the category score.
Criteria	Are all habitable rooms designed to achieve natural cross flow ventilation?
Question	Criteria Achieved ?
Detached dwelling	Yes

3.1 Thermal comfort - Double Glazing	100%
Score Contribution	This credit contributes 40.0% towards the category score.
Criteria	Is double glazing (or better) used to all habitable areas?
Question	Criteria Achieved ?
Detached dwelling	Yes

3.2 Thermal Comfort - External Shading	100%
Score Contribution	This credit contributes 20.0% towards the category score.
Criteria	Is appropriate external shading provided to east, west and north facing glazing?
Question	Criteria Achieved ?
Detached dwelling	Yes

3.3 Thermal Comfort - Orientation	100%
Score Contribution	This credit contributes 20.0% towards the category score.
Criteria	Are at least 50% of living areas orientated to the north?
Question	Criteria Achieved ?
Detached dwelling	Yes

Transport Overall contribution 4%

1.1 Bicycle Parking - Residential	100%
Score Contribution	This credit contributes 50.0% towards the category score.
Criteria	How many secure and undercover bicycle spaces are there per dwelling for residents?
Question	Bicycle Spaces Provided ?
Detached dwelling	2
Output	Min Bicycle Spaces Required
Detached dwelling	2

2.1 Electric Vehicle Infrastructure	0%
Score Contribution	This credit contributes 50.0% towards the category score.
Criteria	Are facilities provided for the charging of electric vehicles?
Question	Criteria Achieved ?
Project	No

Waste Overall contribution 0%

1.1 - Construction Waste - Building Re-Use	0%
Score Contribution	This credit contributes 50.0% towards the category score.
Criteria	If the development is on a site that has been previously developed, has at least 30% of the existing building been re-used?
Question	Criteria Achieved ?
Project	No

2.1 - Operational Waste - Food & Garden Waste	0%
Score Contribution	This credit contributes 50.0% towards the category score.
Criteria	Are facilities provided for on-site management of food and garden waste?
Question	Criteria Achieved ?
Project	No

Urban Ecology Overall contribution 2%

2.1 Vegetation		50%
Score Contribution	This credit contributes 57.1% towards the category score.	
Criteria	How much of the site is covered with vegetation, expressed as a percentage of the total site area?	
Question	Percentage Achieved ?	
Project	15 %	
2.2 Green Roofs		0%
Score Contribution	This credit contributes 14.3% towards the category score.	
Criteria	Does the development incorporate a green roof?	
Question	Criteria Achieved ?	
Project	No	
2.3 Green Walls and Facades		0%
Score Contribution	This credit contributes 14.3% towards the category score.	
Criteria	Does the development incorporate a green wall or green façade?	
Question	Criteria Achieved ?	
Project	No	
3.1 Food Production - Residential		0%
Score Contribution	This credit contributes 14.3% towards the category score.	
Criteria	What area of space per resident is dedicated to food production?	
Question	Food Production Area	
Detached dwelling	-	
Output	Min Food Production Area	
Detached dwelling	2 m^2	

Innovation Overall contribution 2%

Innovation		
Description: Electric Vechichle	Power point in garage for future electric vechicle infrastructure	
Points Targeted: Electric Vechichle	2	
1.1 Innovation		20%
Score Contribution	This credit contributes 100.0% towards the category score.	
Criteria	What percentage of the Innovation points have been claimed (10 points maximum)?	

Disclaimer

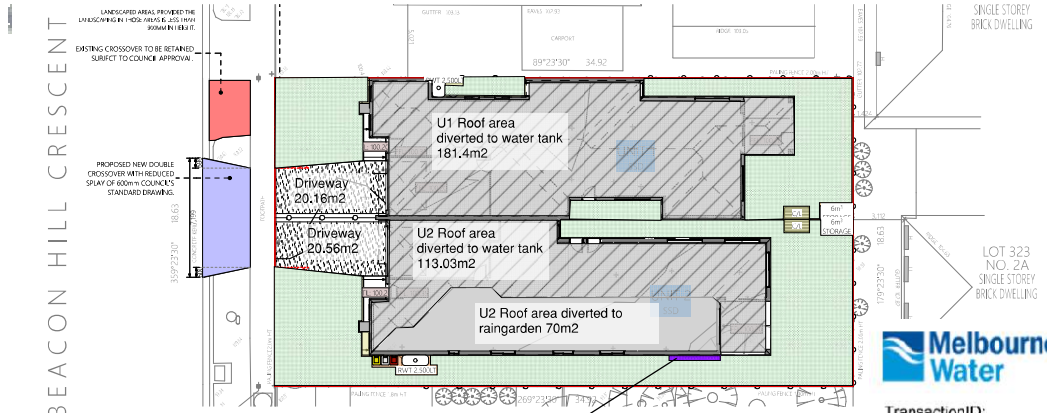
WSUD LEGEND

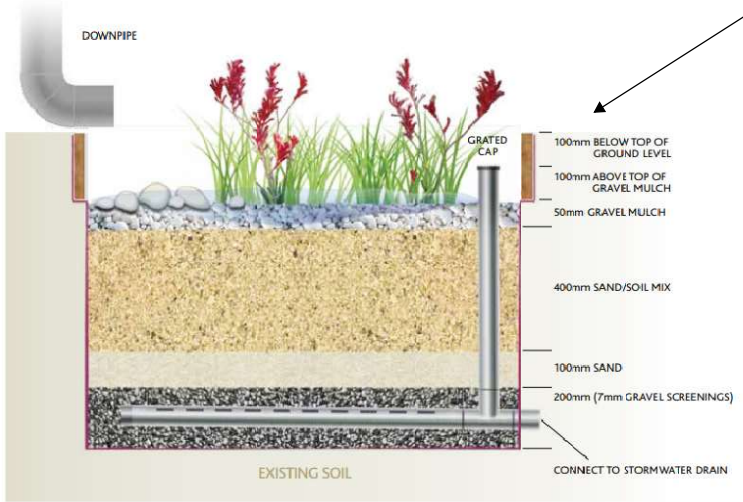
IMPERVIOUS

- Roof Area connected to Water Tank
- Roof Area connected to storm water
- Concrete Driveway
- RWT — 2500L Rainwater Tank

PERVIOUS

- Garden Area
- 300mm Raingarden





Melbourne Water

STORM Rating Report

TransactionID:	1623608
Municipality:	HUME
Rainfall Station:	HUME
Address:	22 Beacon Hills
	Craigieburn
	VIC 3064
Assessor:	
Development Type:	Residential - Multiunit
Allotment Site (m2):	651.00
STORM Rating %:	108

Description	Impervious Area (m2)	Treatment Type	Treatment Area/Volume (m2 or L)	Occupants / Number Of Bedrooms	Treatment %	Alternate Water Supply Reliability (%)
U1 Roof Area	181.40	Rainwater Tank	2,500.00	4	105.30	88.90
U2 Roof Area	113.03	Rainwater Tank	2,500.00	4	141.20	87.20
U2 Roof Area	70.00	Raingarden 300mm	1.00	0	127.00	0.00
U1 Driveway	20.16	None	0.00	0	0.00	0.00
U2 Driveway	20.56	None	0.00	0	0.00	0.00

Maintenance Requirements

Tips for undertaking maintenance

Things to look for and how to fix them.

Leaf litter / debris in gutters	**Pump not working**
Regularly clear your gutters. Make sure you cover the tank inlet if you're rinsing down the gutters to avoid debris entering the tank.	Check operating instructions for your pump. Check that pumps are kept clear of surface water (flooding), vegetation, and have adequate ventilation. Pumps should be serviced every few years to prolong the pump life.
Blocked downpipe	**Mains backup or pump not working**
If you see water spilling from the edge of the gutters check that the downpipe is not blocked, removing any debris.	Have you heard the pump operating? If the mains backup switching device fails many people do not notice for a long time. Consider a manual system if the switching device is problematic and you don't mind operating it manually.
First flush diverter clogging	**Overflow**
To clean out, unscrew the cap at the base of the diverter and remove the filter. Wash the filter with clean water and the flow restrictor inside the cap.	Check that the overflow is not blocked and that there is a clear path for water to safely spill from the tank through the overflow pipe when full. Check that a clean mesh screen is safely in place to prevent mosquitoes entering the tank.
Debris on the mesh cover over inlets / outlets	**Sediment / debris build-up in tank (more than 20mm thick)**
The fine stainless steel mesh is similar to fly screen mesh. It should be cleaned regularly to ensure it does not become blocked with leaves and other material.	Over time a small amount of fine sediment will collect in the bottom of your tank and this is harmless and natural. It should not be disturbed until it is approx 20 mm thick which may take many years. To clean your tank out simply empty your tank and wash out with a high-pressure washer or hose.
Dirt and debris around the tank base or side.	**Base area**
Keep leaf build-up, sticks, pot plants and other items off the lid of your tank. Use a hose to remove dust and dirt from the outside of the rainwater tank and ensure there is no debris on the base, bottom lip and walls of your tank.	Tanks must be fully supported by a flat and level base. Check for any movement, cracks or damage to the slab or pavers. If damage is observed, empty the tank to remove the weight and have the fault corrected to prevent damage to the tank. There is no warranty from suppliers for damage to a rainwater tank if the base has failed.
Smelly water or mosquitos	**Monitoring the water level**
Rainwater tanks can smell if there is debris in the gutters. Check the gutters and leaf strainers are clean. Mosquitos or wrigglers can make their way into your tank if they are small enough to pass through the inlet strainer. A very small amount of chlorine (approx 4 parts per million) can be put in the tank to kill off mosquitos or the bacteria causing odours. The chlorine will disinfect the water and then evaporate. Chlorine tablets from a pool supplier can be used (but check the recommended dose based on your tank capacity).	A range of devices are available to monitor water level. Some simple float systems can be used effectively.

Acknowledgement: Information from PJT Green Plumbing's 'Maintenance Guide for Your Rainwater Tank' was used to develop this fact sheet.

Maintenance manual

Rainwater tanks

Site address: _____

Planning permit number: _____

Rainwater tank maintenance

This manual lists the key tasks required to maintain a domestic rainwater tank and the recommended frequency of each task. This manual can be submitted with planning permit applications for developments that include the installation of a domestic rainwater tank. Once endorsed, the property owner is responsible for continuous implementation of rainwater tank maintenance, in accordance with the guidance in this manual.

Rainwater tanks are an exceptional tool for environmental protection. They collect and store roofwater for use inside and outside the home. This simultaneously reduces the demand on our precious potable mains water and limits the amount of stormwater pollutants that enter our sensitive Bay.

Maintenance of rainwater tanks is relatively easy however it is important to do the following key tasks to ensure the quality of water is high:

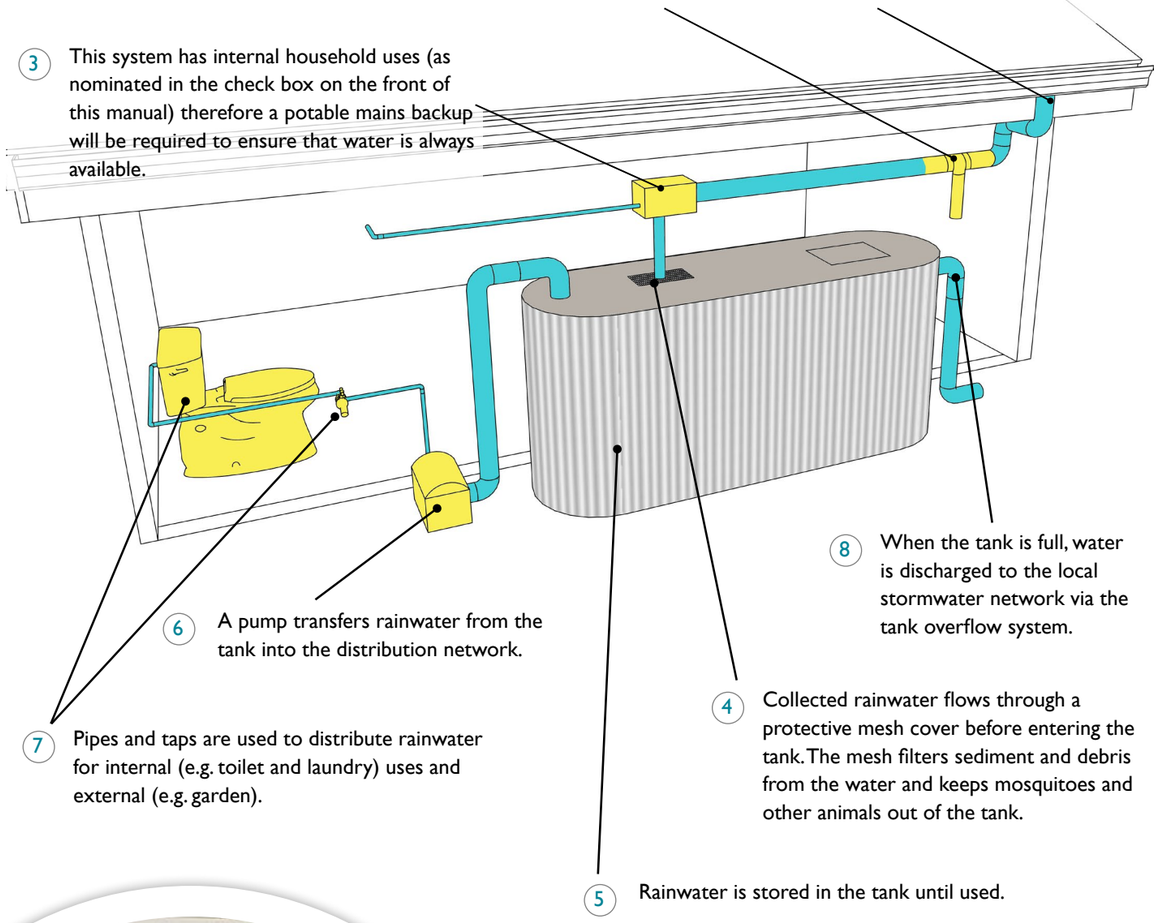
- stop leaf litter and debris entering the tank.
- prevent bird droppings and dust building up in the gutters.
- prevent mosquitos and other animals entering the tank.

Tank connected to	toilet only ☐ toilet & irrigation ☐ toilet & laundry & irrigation ☐ toilet & laundry & hot water & irrigation ☐
Rainwater tank location	
Planning drawing number showing rainwater tank location	
Rainwater tank construction date	
Date of final building inspection	
Tank volume (litres)	
Area or percentage of the roof that is connected to the tank via gutters and downpipes	

Maintenance Overview

Rainwater Tank Maintenance

The following diagram identifies the key items which are important for rainwater tanks and their maintenance.



Maintenance Checklist

The property owner is responsible for checking the maintenance items in this checklist at the recommended frequency at the bottom of the table. The maintenance log at the bottom of the page should be filled in once each maintenance check is complete. Upkeep of this maintenance log should continue throughout the life of the rainwater tank.

Item	Rainwater tank element	Inspection item	Y/N	Likely maintenance task
1	Roof gutters and downpipes	Is there leaf litter or debris in the gutters?		Remove by hand and dispose responsibly.
2	First flush diverter	Is there anything blocking the first flush diverter (leaves etc)?		Remove by hand and dispose responsibly.
3	Potable mains back up device	Is the potable mains back up switch operating correctly?		Repair or replace device. Consider a manual switching device.
4	Mesh cover	Has the mesh cover deteroriated or have any holes in it?		Replace mesh cover.
5	Tank volume	Is there large amounts of sediment or debris sitting in the bottom of the tank, reducing the volume available in the tank to store water?		Remove sediment and dispose responsibly.
6	Pump	Is the pump working effectively? Have you heard it on a regular basis?		Check the potable mains back up is not permanently on. Repair or replace pump.
7	Pipes and taps	Are pipes and taps leaking?		Repair as needed.
8	Overflow	Is the overflow clear and connected to the stormwater network?		Remove blockages and/or restore connections to stormwater network.
9	Supporting base	Are there any cracks or movement of pavers?		Empty the tank to reduce weight then repair any damage to the base.

Maintenance frequency

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
All tasks	x			x			x			x		

Regular maintenance will improve the water quality and extend the life of your system. A well maintained tank isn't likely to need to be cleaned out for up to ten years (when there is more than 20mm of accumulated sediment).

Maintenance Log

Maintenance date	Maintenance undertaken

INSTRUCTION SHEET

Building a planter box raingarden (lined)

healthy waterways
Raingardens

What is a planter box raingarden?

Building a raingarden is a simple way to help the environment and the health of our local waterways while providing a self-watering garden for your backyard.

A raingarden is a specially prepared garden designed to receive and filter rain run-off from roofs or hard surfaces such as driveways or paving. You can even create a raingarden in a planter box, positioning it to collect water from a diverted downpipe or rainwater tank overflow.

Featuring layers of soil for filtration, gravel for drainage, and plants that can tolerate periods without rain, a raingarden helps to protect our streams and rivers from stormwater pollutants.

With a slotted pipe beneath the soil to take away the filtered rainwater and an overflow pipe on the surface to prevent flooding, raingardens are designed to collect water from a diverted downpipe, rainwater tank overflow or pavement runoff.

Please note: A certified plumber must be used for stormwater connections and modifications.

Did you know that a raingarden is only wet during and immediately after rain, leaving it dry most of the time? This is due to the drainage and filtration properties of the soil combination used in the raingarden.

State Government Victoria

Melbourne Water

Building your raingarden

Step 1 – getting started

Location

Build your planter box as close as possible to the water source whether it be a downpipe or rainwater tank overflow. This will help minimise the additional plumbing needed to bring water to the raingarden. Your raingarden needs to sit at least 300mm away from your house.

Having decided on a location, it is important to determine the proximity of the existing stormwater pipe to make sure your raingarden is connected properly. Your local plumber can help with this and also how and when to divert your downpipe so that the area doesn't flood during construction.

Stormwater reconnection

All connections or modifications to existing stormwater pipes need to be done by a licensed plumber. The plumber should ensure that pipes are reconnected into the property's stormwater and not another services such as the sewer.

Underground services

Be aware of any underground services (gas, electricity, water) that run near your house as this may determine where you can build your raingarden. Raingardens should not be built over or in close proximity to a septic system.

Materials

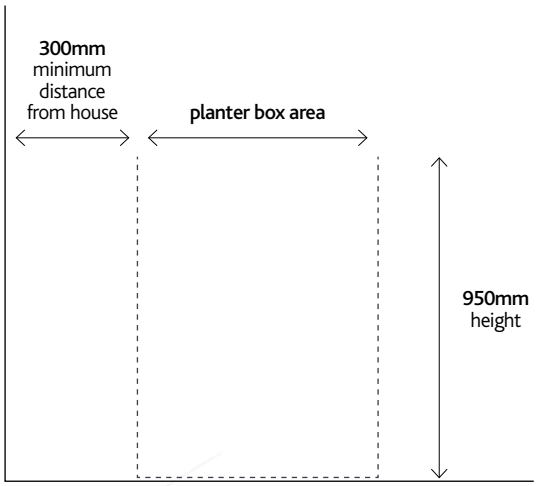
See *Materials List* for information about what you need to build a raingarden.

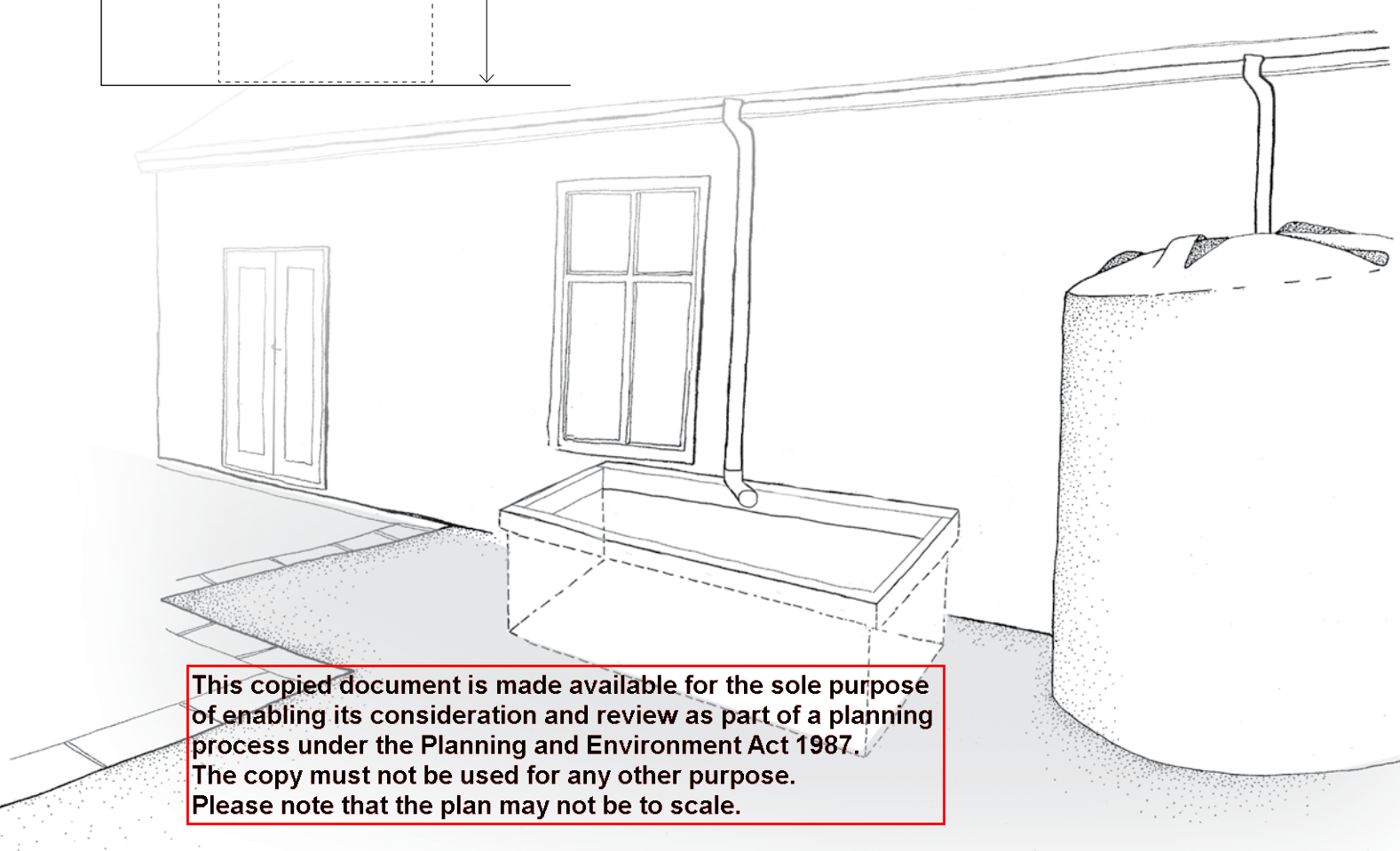
Size

You need to make sure that your raingarden is large enough to manage the amount of stormwater it will receive. If your raingarden is going to capture run-off from the roof via a downpipe, measure the area of roof that drains to that downpipe. Generally, the size of the raingarden should be approximately 2% of the run-off area. Table 1 will help you work out the correct size.

Table 1 – Raingarden sizing chart

AREA OF RUN-OFF (m²)	RAINGARDEN SIZE (m²)
50	1
100	2
150	3
200	4
250	5
300	6
350	7
400	8
450	9





Step 2 - planter box and pipe infrastructure

Preparing your planter box

You can create a planter box out of any material as long as it is strong enough to hold soil. This could be a corrugated iron 'tank', an old wine barrel, or you could build your own planter box using plantation hardwood or similar.

Line your planter box (sides and base) with a PVC liner. Overlap the sheets by 200mm and seal the joins with PVC tape.

Place the 7mm screenings (gravel) to a depth of 50mm. This will form a base for the slotted drainage pipe. Make sure the screenings are washed and cleaned of excess dirt as this can create blockages in the raingardens drainage.

Use the screenings to create a gentle slope towards the stormwater outlet (where the water will exit your planter box).

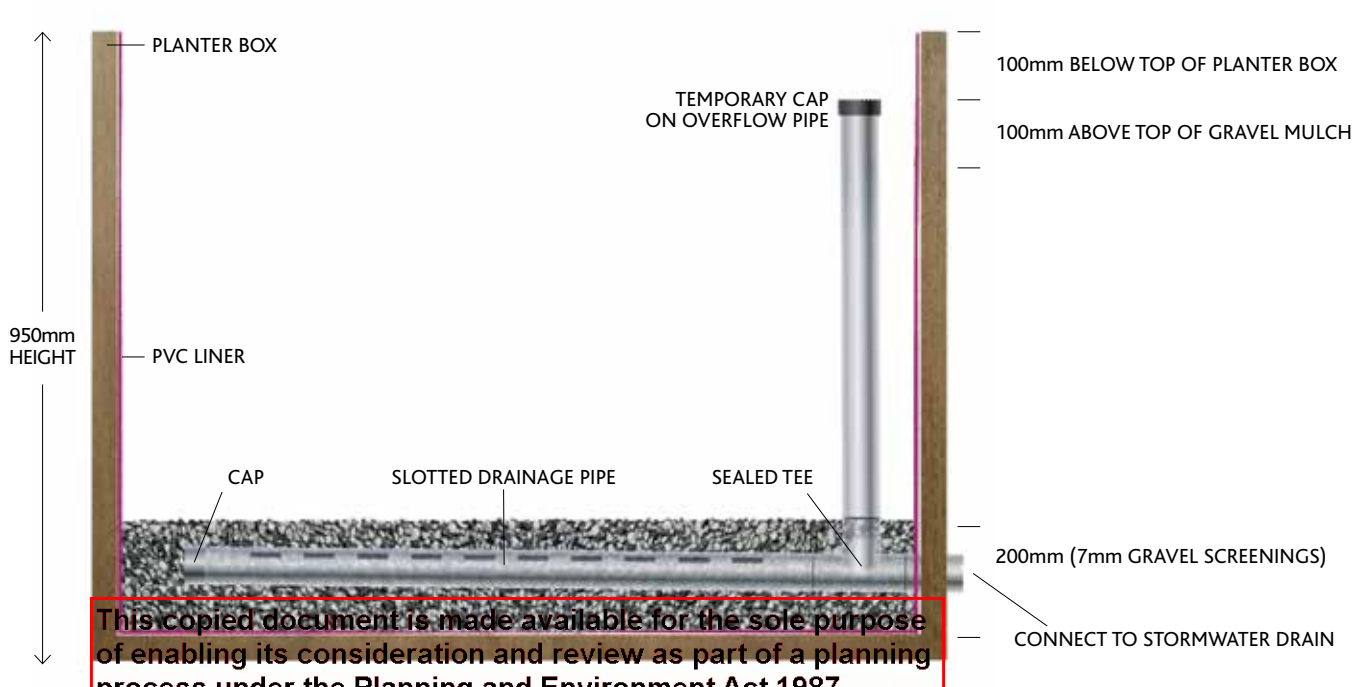
Pipe infrastructure

Lay a 90mm diametre slotted drainage pipe horizontally along the centre of the planter box base and cap one end of the slotted drainage pipe. Call your plumber to connect the drainage pipe back into the property's existing stormwater.

Handy Hint – If your raingarden is greater than 4m wide, you will need to install two slotted drainage pipes and two overflow pipes. These need to be evenly spaced across the planter box base to provide adequate drainage.

Connect the vertical 90mm diameter overflow pipe into the slotted drainage pipe using a 90 degree elbow pipe. When the raingarden is finished, the top of the overflow pipe should sit 100mm above the gravel mulch and 100mm below the top edge of the planter box.

Install a temporary cap on top of the overflow pipe to prevent materials dropping into it during construction. Some plastic taped across the top of the pipe will work fine.



Building your raingarden

Step 3 - soil layers

Screenings layer

Add 7mm screenings (gravel) to a depth of 150mm over the slotted drainage pipe in the base of your raingarden. This brings to total depth of screenings (gravel) to 200mm. Be careful when not to dislodge or damage the slotted drainage pipe when adding the additional screenings.

Sand layer

Place white washed sand to a depth of 100mm over the screenings (gravel) layer.

Sand/soil mix layer

Mix 4 parts white washed sand with 1 part topsoil. Add this mix to the raingarden to a depth of 400mm.

Handy Hint - Ensure you firmly pat down each layer of soil when building your raingarden to help reduce the layers from sinking.

Step 4 -pipe adjustments, plants and mulch

Pipe adjustments

Redirect your downpipe into the raingarden using pipe bends where required. If possible, use two 45 degree bends connected together as this will provide a much gentler and more even flow of water, reducing the risk of erosion and prevent blockages within the downpipe. A 90 degree elbow pipe will do as an alternative.

Plants

In general, plants that grow well in a raingarden:

- like dry conditions but can tolerate temporary wet periods
- are perennial rather than annual
- have an extensive fibrous root system.

A wide range of plants are suitable for raingardens and your local nursery will be able to guide you on what is right for your area.

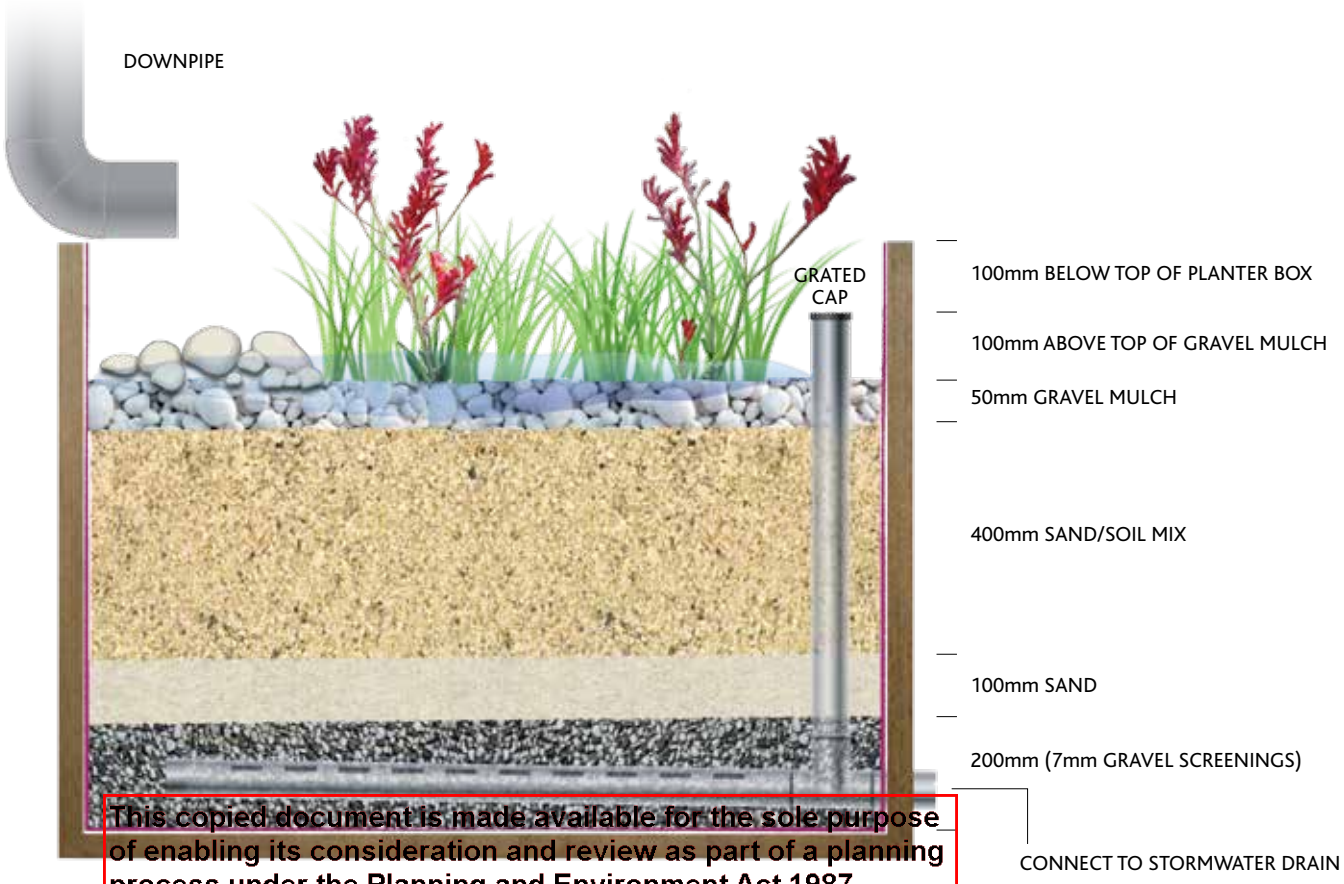
There are also particular plants that are really good at removing pollutants from stormwater. These include:

- *Carex appressa*
- *Lomandra longifolia*
- *Juncus flavidus*
- *Melaleuca ericifolia*
- *Goodenia ovate.*

50% of your raingarden should be planted with these species, the other 50% can be made up of plants that like a dry environment with intermittent wet periods. It is important that the plants you select are suitable for the amount of sun and shade on your raingarden. See the *Plant List* for a suggested list of suitable raingarden plants.

Regardless of the type of plants you select, it is important to plant densely to cover the raingarden. Set your plants out at roughly 6 plants per m². So for a 2m² raingarden, you will need to buy 12 plants. Now start planting.

(continued on next page)



Looking after your raingarden

Mulch

To allow the spread of water gently over the raingarden, place some large flat rocks where water flows from the downpipe. Place smaller rocks in between the large rocks to fill the gaps and help prevent erosion. Alternatively a flow spreading device can be fitted to the downpipe.

Spread gravel mulch to a depth of 50mm around the plants.

Remove the temporary end cap from overflow pipe and replace with a 90mm PVC finishing collar and domed pipe grate.

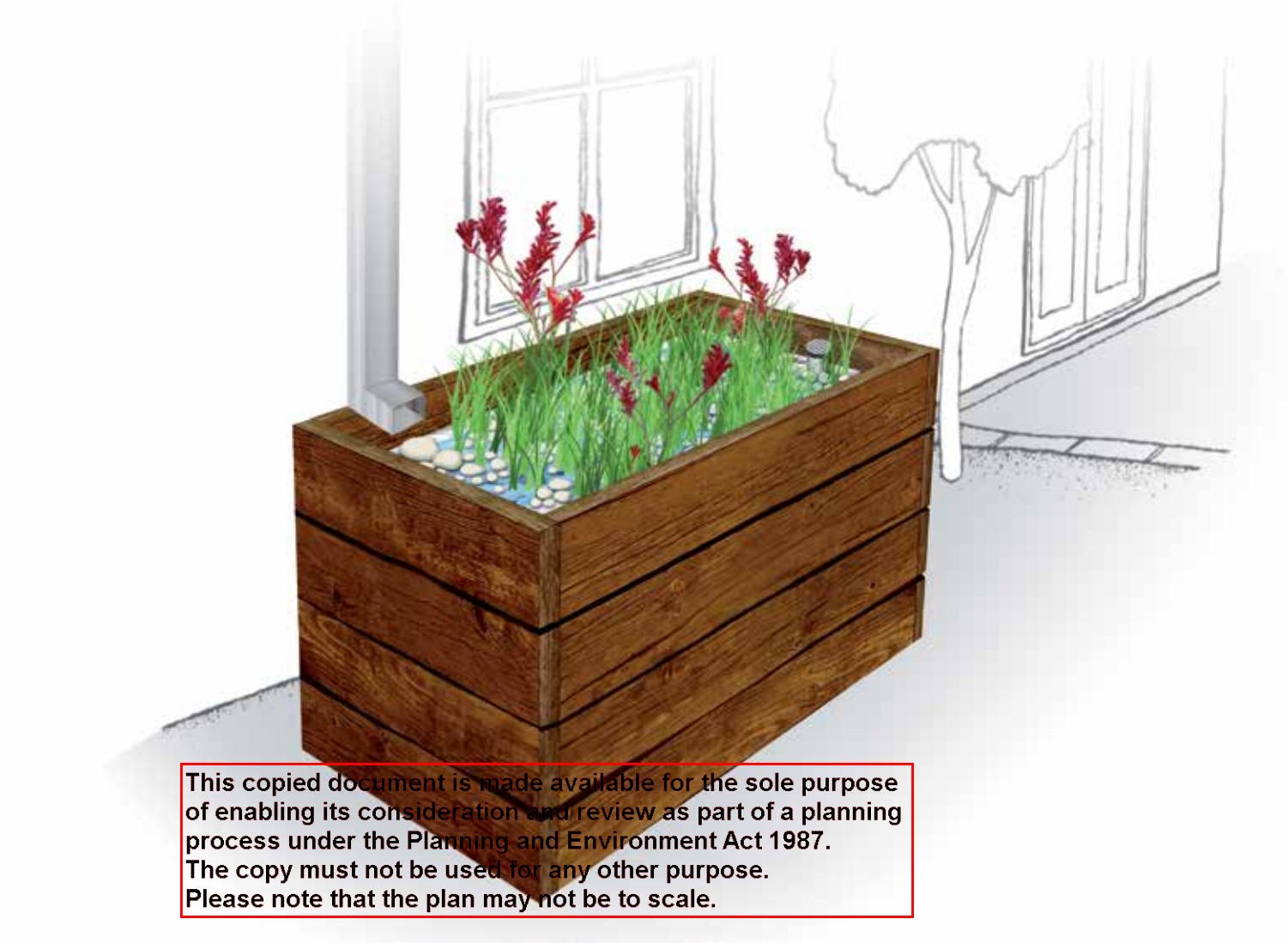
Water the plants in – complying with your local water restrictions.

Once established, raingardens are low maintenance especially when planted with native plant species. They don't need to be watered, mowed or fertilised. However, a few simple tips can help your raingarden mature and function well.

- Gravel mulch will help retain moisture in your raingarden and prevent weeds from growing.
- Ensure that the overflow is never blocked.
- Remove any sediment or build up from the downpipe.
- Some weeding may need to take place until plants have matured.
- Evenly distribute water flow into your garden to limit erosion from heavy rainfall. Strategically placed rocks may help with this.
- Inspect your garden regularly – replace plants and repair erosion when necessary.

Note – If necessary, water your raingarden until your plants have established in compliance with your local water restrictions.

Need help?
If you have questions about building a raingarden, your landscape gardener or local plumber may be able to help. For more information visit melbournewater.com.au/raingardens



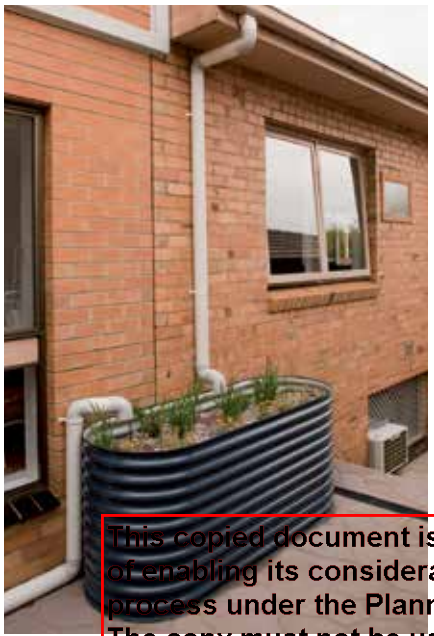
Materials List – what you need to build your raingarden

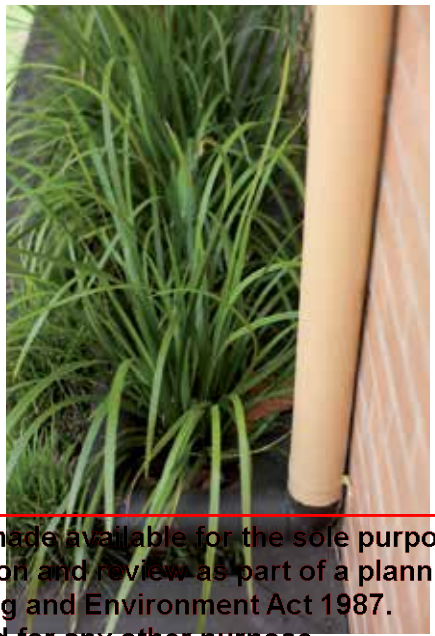
Table 2 details the materials required to create a 2m² raingarden. While item prices may vary depending on the materials you select, building a 2m² raingarden is likely to cost between $400 and $500 (plus the cost of a planter box and plumber).

QUANTITY	MATERIAL
2 l/m	90mm diameter slotted drainage pipe (Ag Pipe)
2 l/m	90mm diameter uPVC pipe*
0.4m³	7mm screenings
0.85m³	Sand (white washed)
0.15m³	Topsoil
12	Plants (150mm pots)
0.1m³	Gravel mulch
1	90mm diameter uPVC 90 degree bend or 2x 45 degree bends
1	PVC grate 90mm finishing collar
1	PVC 90mm diameter domed pipe grate
1	PVC 90mm tee
1	PVC 90mm cap
10m²	PVC liner
	PVC tape

**Costs per square meter will depend on the length of connections back to the existing stormwater drain.*

l/m = lineal metres m² = square metres m³ = cubic metres mm = millimetres





Plant List – the best plants for your raingarden

The following plants grow well in raingardens.

BOTANICAL NAME	COMMON NAME	CONDITIONS	SIZE (H x W) (cm)
Anigozanthos sp.	Kangaroo paw	Full sun	30-90 x 100-120
Blechnum nudum	Fishbone Water-fern	Full sun to partial shade	50-100 x 40-80
Calocephalus lacteus	Milky Beauty-heads	Full sun to partial shade	15-30 x 10-30
Carex Appressa	Tall Sedge	Full sun to partial shade	80-100 x 120
Carpobrotus modestus	Pigface	Full sun	20cm high and spreading
Chrysocephalum apiculatum	Common Everlasting	Full sun	30-90 x 10-30
Derwentia perfoliata	Digger's Speedwell	Full sun to partial shade	20-40 x 30-60
Dianella species		Full sun to partial shade	60-120 x 40-150
Ficinia nodosa	Knobby Club-rush	Full sun	50-150 x 60-200
Juncas amabilis	Hollow Rush	Full sun to partial shade	20-120 x 20-50
Juncas flavidus	Yellow Rush	Full sun to partial shade	40-120 x 20-100
Leucaphyta brownii	Cushion Bush	Full sun, salt tolerant	100 x 200
Lomandra species		Full sun to partial shade	60-120 x 50-100
Melaleuca ericifolia	Swamp paperback	Full sun to partial shade	4m high x 3m wide
Myoporum parvifolium	Creeping Boobialla	Full sun	20-30 x 300
Patersonia occidentalis	Native iris	Sun to partial shade	20-40 x 30-60
Pratia perdunculata	Matter Pratia	Partial shade	50-150 x 1.8-5
Wahlenbergia communis	Tufted Bluebell	Full sun	15-50 x 15

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Melbourne Water