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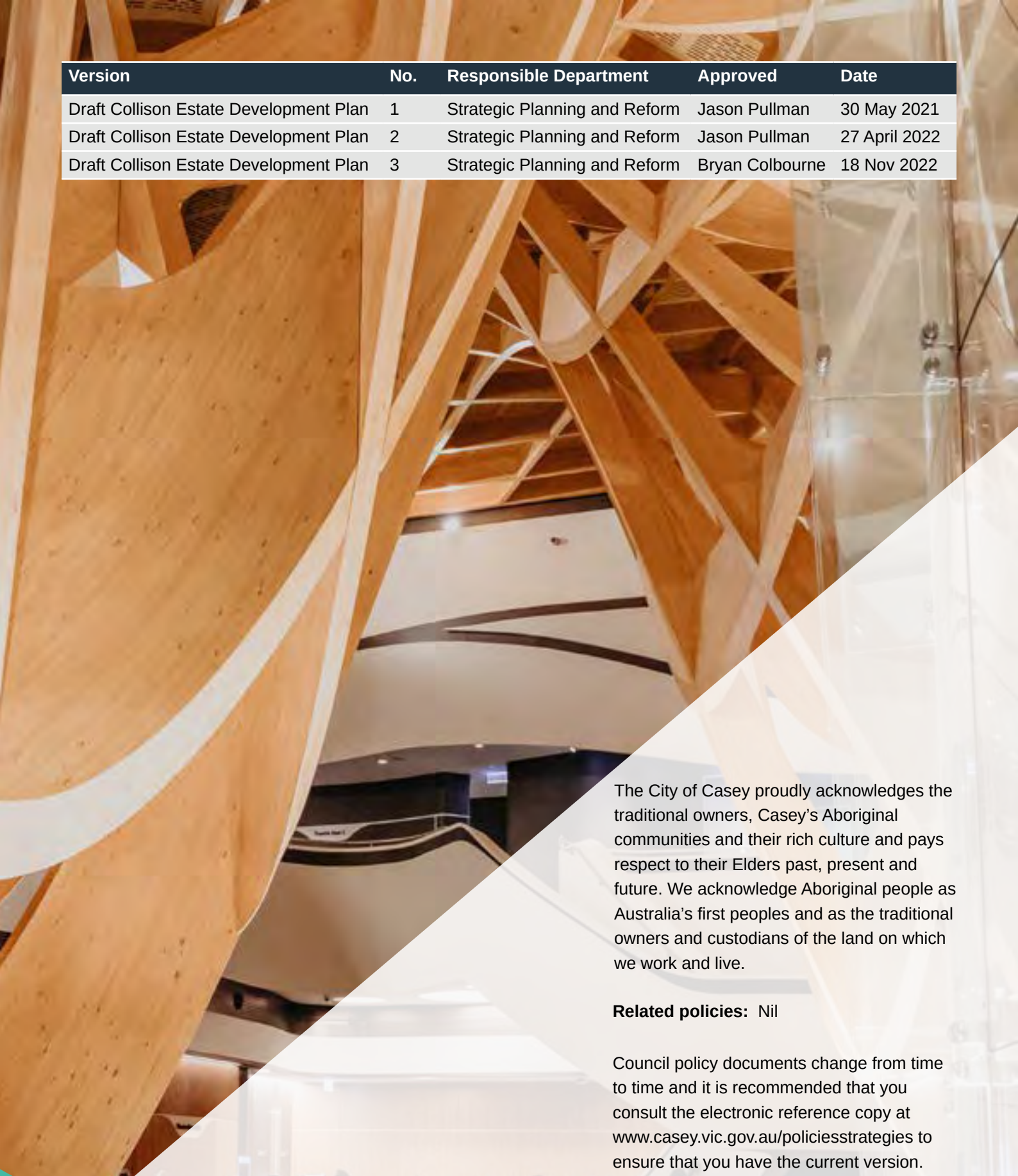
COLLISON ESTATE
DEVELOPMENT PLAN

DECEMBER 2022

City of Casey

Version	No.	Responsible Department	Approved	Date
Draft Collison Estate Development Plan	1	Strategic Planning and Reform	Jason Pullman	30 May 2021
Draft Collison Estate Development Plan	2	Strategic Planning and Reform	Jason Pullman	27 April 2022
Draft Collison Estate Development Plan	3	Strategic Planning and Reform	Bryan Colbourne	18 Nov 2022



The City of Casey proudly acknowledges the traditional owners, Casey's Aboriginal communities and their rich culture and pays respect to their Elders past, present and future. We acknowledge Aboriginal people as Australia's first peoples and as the traditional owners and custodians of the land on which we work and live.

Related policies: Nil

Council policy documents change from time to time and it is recommended that you consult the electronic reference copy at www.casey.vic.gov.au/policiesstrategies to ensure that you have the current version. Alternatively you may contact Customer Service on (03) 9705 5200.

Image:
Bunjil Place, 2019.

PREPARED BY:

KLM SPATIAL
LAND DEVELOPMENT INTELLIGENCE

City of Casey

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Definitions

Activity Centre	A multi-purpose precinct and community focal point that comprises a selection of retail goods and services, business and administrative services, community facilities, medium density housing, education facilities, and entertainment, recreation, arts, cultural facilities and services.
Arterial Road	A road whose function is to form the principal avenue of communication for municipal, regional and metropolitan traffic movements.
(Building) Articulation	The many street frontage design elements, both horizontal and vertical, that help create a streetscape of interest. The articulation of a building reveals how the parts fit into the whole by emphasizing each part separately.
Collector Road	A higher order local road whose primary function is to distribute traffic between arterial roads and the local road network.
Connectivity	The number of connecting routes within a particular area, often measured by counting the number of intersection equivalents per unit of area. An area may be measured for its 'connectivity' for different travel modes – vehicle, cyclist or pedestrian. An area with high connectivity has an open street network that provides multiple routes to and from destinations.
Controlled Intersection	Road intersections whereby traffic signals or a roundabout have been installed for traffic safety and management purposes.
Council	Casey City Council, being a body corporate constituted as a municipal Council under the *Local Government Act 2020*.
Crime Prevention Through Environmental Design (CPTED)	Specific public space design responses aimed at promoting personal safety and reducing people's fear of and vulnerability to crime. Design actions focus on improving safety in places by increasing informal surveillance and community usage of public spaces, reducing opportunities for crime and antisocial behaviour, and creating connected and integrated streets and public places.
Deflected Street Alignment	A street with curves in them to encourage a speed reduction.

Development Contributions Plan	A document that sets cash contribution rates for community and development infrastructure and identifies cash credit entitlements that is spread equitably across all landowners. A Development Contributions Plan outlines for landowners how future residents, visitors and workers will be provided with timely access to the services and infrastructure they need within a designated area.
Development Plan	Provides an overall concept plan of how an area could be developed and can set development requirements in addition to normal planning requirements. Any future planning application for subdivision and development must be generally in accordance with the approved Development Plan.
Encumbered Land	Land that is affected by any easement, landscape features, lease or other condition that limits its function, use or availability to the public.
Fine Grain	Consists of several small blocks in close proximity. Within each block are several buildings, most with narrow frontages, frequent store fronts, and minimal setbacks from the street. Streets and opportunities to turn corners are frequent, and as a result, so are store fronts.
Gun Barrel Driveway	A long and straight driveway with little to no landscaping and usually used to access battleaxe blocks.
Internal Loop Road	A road forming a circuit and is used to access properties (usually from the rear) that generally front an arterial road and have no access to the front of the property.
Legible Street Network	The ease with which a person is able to see, understand and find their way around an area, building or development. A ‘legible’ layout is one that people find easy to navigate and move through.
Local Access Street	A road or street whose primary function is to provide access to abutting properties.
Main Street	The principal retail and small business street in an area, a focus of many local trips, and accommodating higher volumes of pedestrians.
Net Community Benefit	An assessment of the costs and/or benefits to the local community from the development of economic or social infrastructure designed to the serve the defined community.

Non-Residential Uses in a Residential Zone	Any land use other than a residential use, which includes (but is not limited to) retail, restricted retail, office, medical/health, gymnasium, place of worship, place of assembly, place of entertainment, education centre, sports and recreation facility, community use, and the like, which are section 1 or 2 uses under the applicable residential zone provisions.
Paper Road	A road that appears on maps but has not been built, which is legally public right of way though usually undriveable.
Passive Surveillance	Observation, from the street or from adjacent buildings, provided by ordinary people as they go about their daily activities. This kind of observation can deter criminal activity or anti-social behaviour and make places feel safer.
Permeability	The extent to which the urban structure permits, or restricts, the movement of people or vehicles through an area, and the capacity of the network to carry people or vehicles.
Planning Scheme Amendment	The process for making a change to a planning scheme through a formal preparation, exhibition and approvals process which is overseen by the Minister for Planning.
Section 173 Agreement	A legal Agreement made between a landowner and a Council (in this instance – the City of Casey) under Section 173 of the Planning and Environment Act 1987. Section 173 Agreements typically set out restrictions, conditions or obligations between the landowner and Council.
Sense of Enclosure	Where the building frontage height, street width and street tree canopy creates a feeling of a contained space within the street.
Service Road	A road whose primary function is to provide access to properties abutting arterial roads. A service road (with appropriate landscaping) also serves to enhance the visual interface between arterial roads and adjoining residential areas.
Rear Loaded	The garage is located at the rear of the lot and is accessed via a rear laneway or internal loop road.
Unencumbered Land	Land (primarily referred to when referring to Public Open Space) that is not affected by any easement, landscape features, lease or other condition that limits its function, use or availability to the public.

Visual Interest	Variance in the form of the building, the external materials and finishes, the pattern of windows and balconies, and the addition of architectural features such as projecting ‘frames’ and shading devices.
Zero Setback	Development that is setback zero metres from the frontage of the property boundary.

1.0 INTRODUCTION

Image: Aerial Imagery of Collison Estate and surrounding area, 1991.

1.1 Context

The Collison Estate is an existing semi-rural area located in the outer south-east region of Melbourne in the City of Casey. Collison Estate is surrounded by new greenfield residential estates more intensive urban development on all sides. Collison Estate is approximately 83.0778 hectares of land, generally bounded by Linsell Boulevard to the north, Casey Fields Boulevard/Mayfield Road to the west, Berwick-Cranbourne Road to the south and the Cranbourne East Precinct Structure Plan to the east as shown in *Figure 1*. The Collison Estate Development Plan applies to all land within Schedule 22 of the Development Plan Overlay (DPO22).

1.2 Purpose

The purpose of the Collison Estate Development Plan is to provide a high-level framework which provides guidance on land use, built form, scale, connectivity and servicing provision. It is under this framework that more detailed site planning, subdivision and engineering design can take place.

In accordance with the Decision Guidelines in DPO22, the Collison Estate Development Plan seeks to provide for an integrated residential development with diversity in dwelling types and sizes, whilst optimising the Estate's proximity to existing services and open spaces. It seeks to provide for an activity centre and community facilities within the Estate which will facilitate a greater level of amenity services for the Estate and the wider community.

1.3 Development Outcomes

The Collison Estate Development Plan intends to build on the opportunities of the Collison Estate to deliver a high quality residential area that contributes to its surrounds in the Cranbourne East area. The preparation of the Collison Estate Development Plan has been guided by the requirements in DPO22, which include a range of landscape, infrastructure and planning policy considerations.

It is expected that the Estate will result:

- Up to approximately 1,635 dwellings;
- Mix of conventional and medium density lots with a variety in housing;
- In areas that are not designated as medium density, the standard density is 20 dwellings per hectare with a hard cap of 21.5 dwellings per hectare;
- Within the medium density areas, the maximum density is 30 dwellings per hectare;
- An average density of 24 dwellings per hectare across the Estate;
- Population of up to 5,346 persons based on an average household of 3.27 persons;
- An activity centre to service the local convenience needs;
- A community facility to service the estate's kindergarten and maternal child health needs;
- 1.93 hectares of public open space reserves (minimum to be provided);
- 11 kilometres of pathways and pedestrian/cyclist connections; and
- Upgraded and permeable local road network including pedestrian pathways and landscaping.
- Upgraded drainage scheme alleviating the localised flooding issues'

1.4 Preparation of Documents

Source: Nearmap, 2021.

The Collison Estate Development Plan (the 'Development Plan') has been prepared by KLM Spatial on behalf of the Collison Estate Group Incorporated in conjunction with the City of Casey.

The plan has been informed and guided by various specialist assessments (separate to this document), as follows:

- Existing Conditions Plan: KLM Spatial;
- Assessment against the Planning Policy and Strategy Frameworks: KLM Spatial;
- Aboriginal Cultural Heritage assessment/ archaeological survey: Archaeology at Tardis;
- Arboricultural Assessment: Sustainable Tree Management;
- Flora and Fauna Assessment: Nature Advisory (formerly Brett Lane and Associates);
- Environmental Report: DRC Environmental;
- Stormwater Management Strategy: Incitus;
- Geomorphological Study: Archaeology at Tardis;
- Landscape Assessment: KLM Spatial;
- Post-Contact Heritage Assessment: Archaeology at Tardis;
- Housing Needs Assessment: KLM Spatial;
- Activity Centre Economic Analysis: SGS;
- Transport Assessment (existing and proposed): Traffix Group;
- Utilities Capacity Assessment: KLM Spatial; and
- Social Infrastructure Requirements for Collison Estate: C Change Sustainable Solutions.

These matters are addressed throughout this Development Plan.

1.5 Background

The Collison Estate was originally identified for standard residential development as part of the Local Structure Plan Area 3 (later replaced by the Cranbourne East Development Plan) approved by the Minister for Planning in 1994. This plan was reinforced by State policy, the South East Corridor Growth Framework Plan.

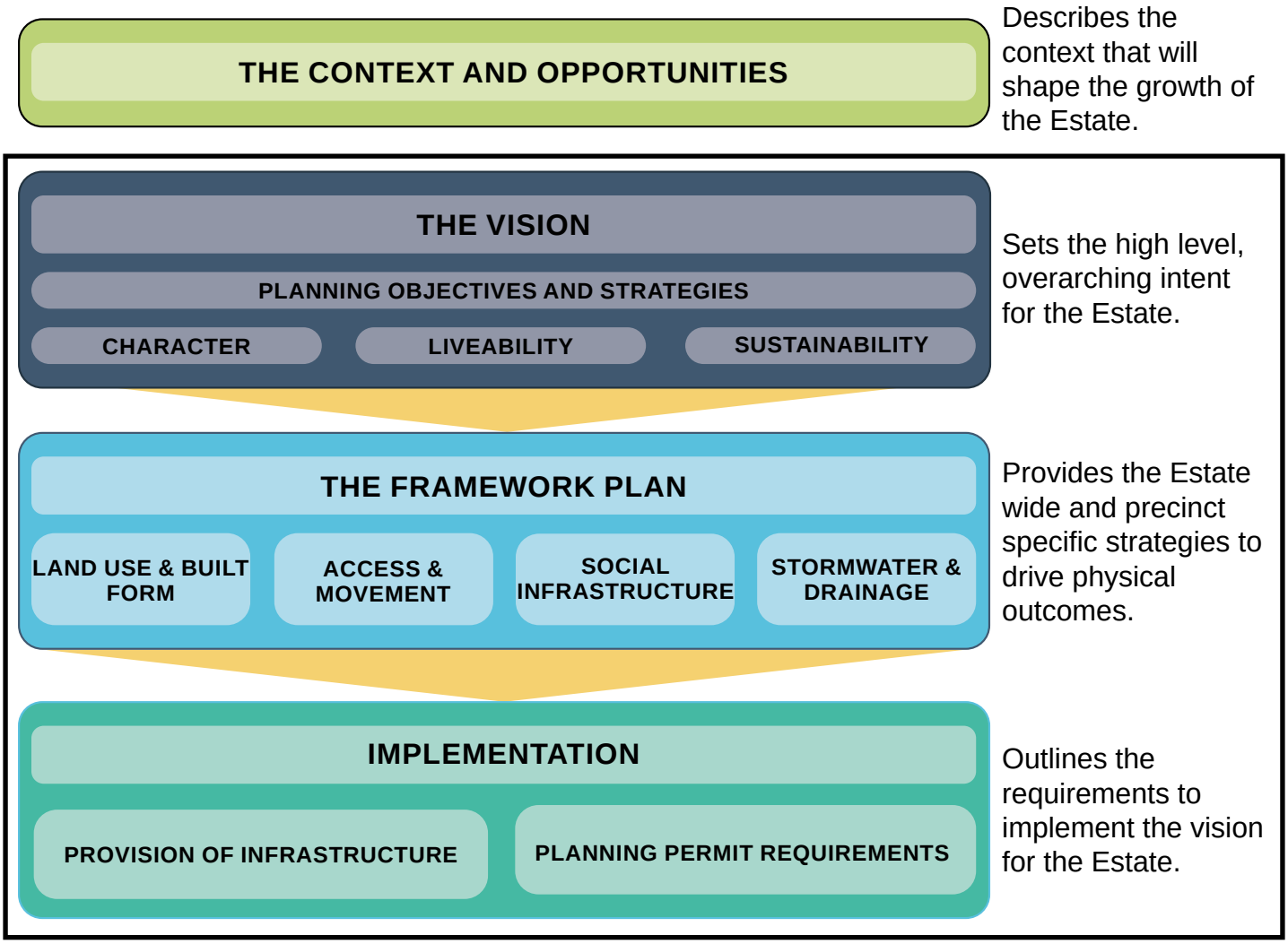
The Collison Estate was rezoned to the Urban Growth Zone (UGZ) from Low Density Residential Zone (LDRZ) in 2010 through Planning Scheme Amendment C119. The amendment also approved the Cranbourne East Precinct Structure Plan (PSP) and associated documents.

Despite the land being part of the initial Cranbourne East PSP area and being considered in the preparation of the PSP as well, the gazetted PSP did not include the Estate due to community sentiment from land owners within the Estate at that time.

More recently, Amendment C220 resulted in the rezoning of the land to General Residential Zone (GRZ) and application of Schedule 22 to the Development Plan Overlay (DPO22) to land within the Estate in 2017. The DPO22 was the most appropriate mechanism to provide development guidance compared to preparing a PSP required under the former UGZ due to the cost constraints. The DPO22 was retained.

No development contributions or other controls were sought to be applied at that time. In July 2020, Council resolved to prepare a development contribution plan and apply the Development Contribution Plan Overlay (DCPO) to the Estate as the most appropriate mechanism to faciliate key infrastructure delivery via development contributions.

1.6 The Development Plan Components



1.7 How to Read the Development Plan

As an assessment tool, this Development Plan outlines the following which needs to be considered as part of any future planning applications:

Objectives: an objective describes the desired outcome to be achieved. Objectives must be met.

Planning and Design Guidelines: outlines the requirements which;

» Must be met, or

» Should be met.

Where a planning and design guideline is listed as “must be met” no alternative shall be considered.

Where a planning and design guideline is listed as “should be met” an application for an alternative design solution or outcome envisaged by the planning and design guideline, which meets the objectives, may be considered to the satisfaction of the Responsible Authority.

This approach ensures a robust framework for future development is adopted.

1.8 Development Contributions Plan

Development within the Collison Estate Development Plan is bound by the Collison Estate Development Contributions Plan (DCP).

The DCP sets out requirements for funding infrastructure across the Estate and wider Cranbourne East region, and priorities delivery of the infrastructure it funds, and has been prepared separately to the Development Plan.

The DCP sets out the requirements for development proponents to make contributions toward infrastructure required to support the development of the Estate.

The DCP is a separate document incorporated into the *Casey Planning Scheme* and implemented through Schedule 22 to Development Contributions Plan Overlay (DCPO) at Clause 45.06. The DCPO is the preferred mechanism for collecting development contributions as it offers a fair and equitable process for all landowners. An Infrastructure Contributions Overlay (ICO) cannot apply to infill areas.

1.9 Planning Controls

1.9.1 General Residential Zone - Schedule 1 (GRZ1)

The GRZ1 is applied in residential areas where there are minimal constraints to residential development. It provides for moderate growth and housing diversity. The Urban Growth Zone (UGZ) is shown to the east, and public open space is shown as Public Park and Recreation Zone (PPRZ).

1.9.2 Development Plan Overlay - Schedule 22 (DPO22)

The DPO22 outlines what must be included in the Development Plan for the Collison Estate before subdivision can occur. This Development Plan has been prepared under these requirements.

Figure 2: Zoning

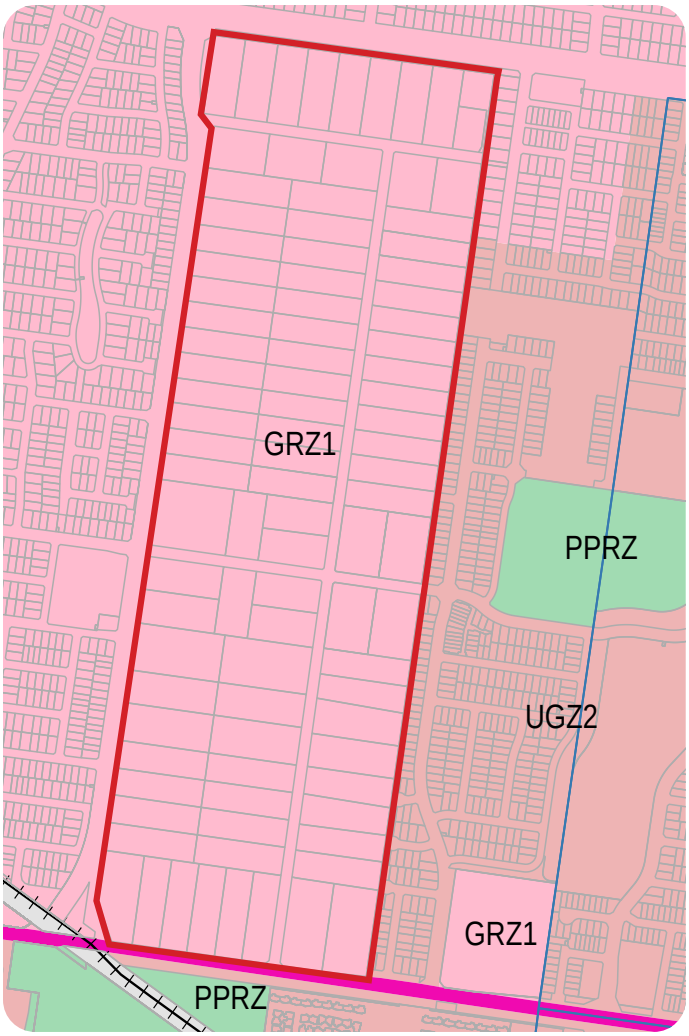
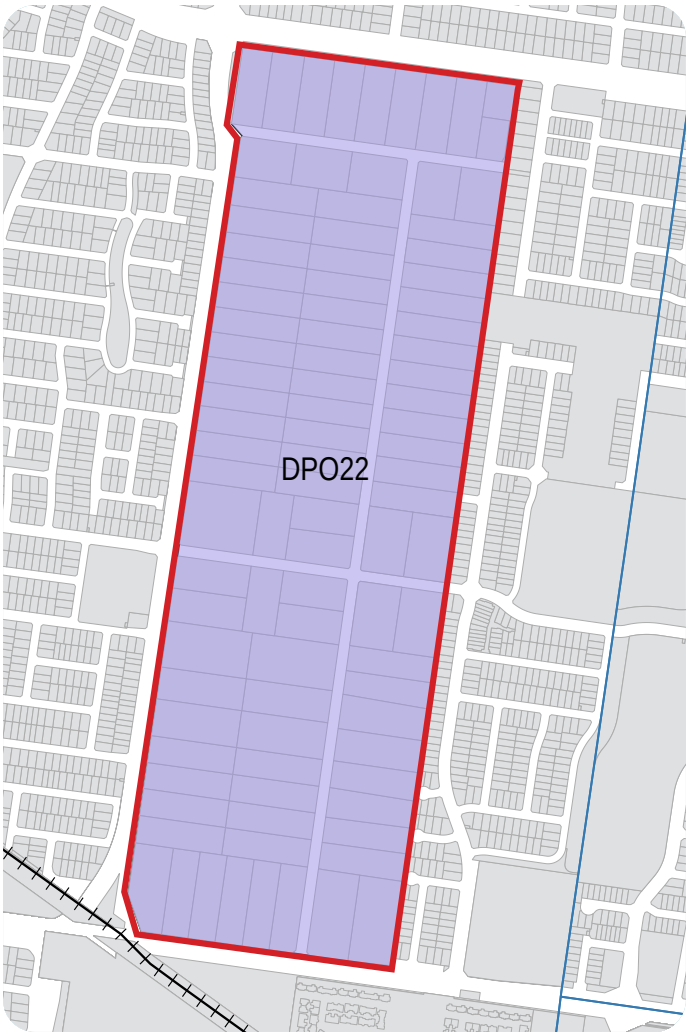


Figure 3: DPO22



1.9.3 Land Subject to Inundation Overlay (LSIO)

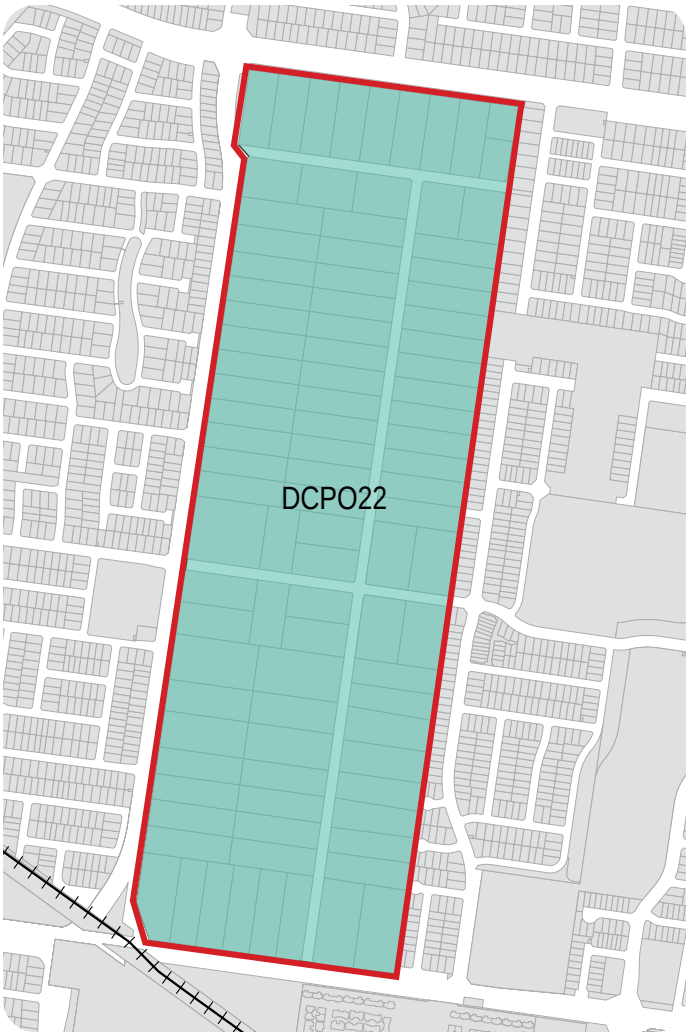
The LSIO applies to land that is subject to inundation, but is not part of the primary floodway. A minor tributary runs along the northern boundary of the LSIO from the west to the east towards Clyde Creek.

1.9.4 Development Contribution Plan Overlay (DCPO22)

The DCPO22 is proposed to apply to the entire Estate through a future Planning Scheme Amendment. It implements the Development Contribution Plan for the Collison Estate by outlining the costs associated with each development item such as roads, community facilities, and drainage and what each land will need to contribute for those items.

Figure 4: LSIO

Figure 5: DCPO22



1.10 Surrounding Context

Collison Estate is located within an establishing urban context with ready access to:

- Primary and secondary schools including Wilandra Rise Primary School, St Peter's College, St Thomas the Apostle Catholic Primary School and Cranbourne East Secondary College;
- Recreation facilities such as Casey Fields regional playing fields, Casey Recreation and Aquatic Centre and a network of local level public open spaces;
- The proposed Cranbourne East Railway Station and several existing and proposed bus routes; and
- Two Medium Neighbourhood Activity Centres; Selandra Rise and Clyde Village.

This is shown in *Figure 6*.

New growth fronts have been opened up to the west of the Estate as part of the implementation of the *Cranbourne East Development Plan 2014* (generally complete). A second growth front exists to the east through the *Cranbourne East Precinct Structure Plan 2010* (generally complete).

A Estate analysis can be found in *Appendix 1*.

Image: Casey RACE Complex, 2020.

CONTEXT PLAN 06

- Study Area
- Neighbourhood Activity Centres
- Active Public Open Space Reserves
- Local Public Open Space
- Passive Public Open Space Reserves and Waterways
- Regional Public Open Space (Casey Fields)
- Existing Reserves
- Government School
- Non-Government School
- Principal Activity Centres within 15 kilometres
- Major Activity Centres within 12 kilometres
- Rail Line
- Bus Stop

0m 160m 320m 480m 640m 800m

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2.0 DEVELOPMENT PLAN

Image: Hunt Club Wetlands, 2021.

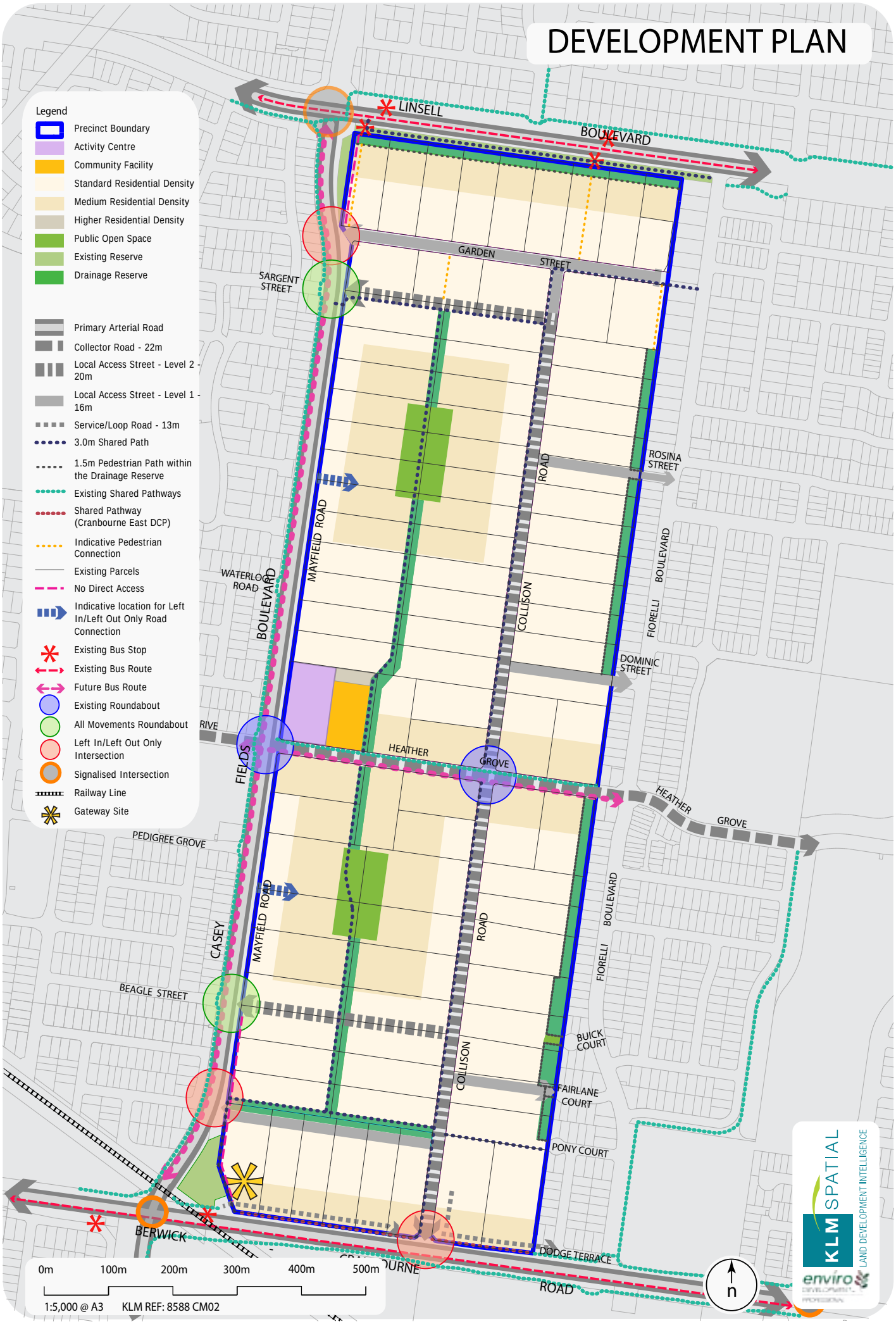
DEVELOPMENT PLAN
Legend
Precinct Boundary
Activity Centre
Community Facility
Standard Residential Density
Medium Residential Density
Higher Residential Density
Public Open Space
Existing Reserve
Drainage Reserve
Primary Arterial Road
Collector Road - 22m
Local Access Street - Level 2 - 20m
Local Access Street - Level 1 - 16m
Service/Loop Road - 13m
3.0m Shared Path
1.5m Pedestrian Path within the Drainage Reserve
Existing Shared Pathways
Shared Pathway (Cranbourne East DCP)
Indicative Pedestrian Connection
Existing Parcels
No Direct Access
Indicative location for Left In/Left Out Only Road Connection
Existing Bus Stop
Existing Bus Route
Future Bus Route
Existing Roundabout
All Movements Roundabout
Left In/Left Out Only Intersection
Signalised Intersection
Railway Line
Gateway Site
LINSELL BOULEVARD
GARDEN STREET
SARGENT STREET
ROSINA STREET
MAYFIELD ROAD
COLLISON ROAD
BOULEVARD
FIORELLI
DOMINIC STREET
WATERLOO ROAD
FIELDS
HEATHER GROVE
PEDIGREE GROVE
CASEY
BEAGLE STREET
BUICK COURT
FAIRLANE COURT
PONY COURT
DODGE TERRACE
BERWICK
ROAD
0m 100m 200m 300m 400m 500m
1:5,000 @ A3 KLM REF: 8588 CM02
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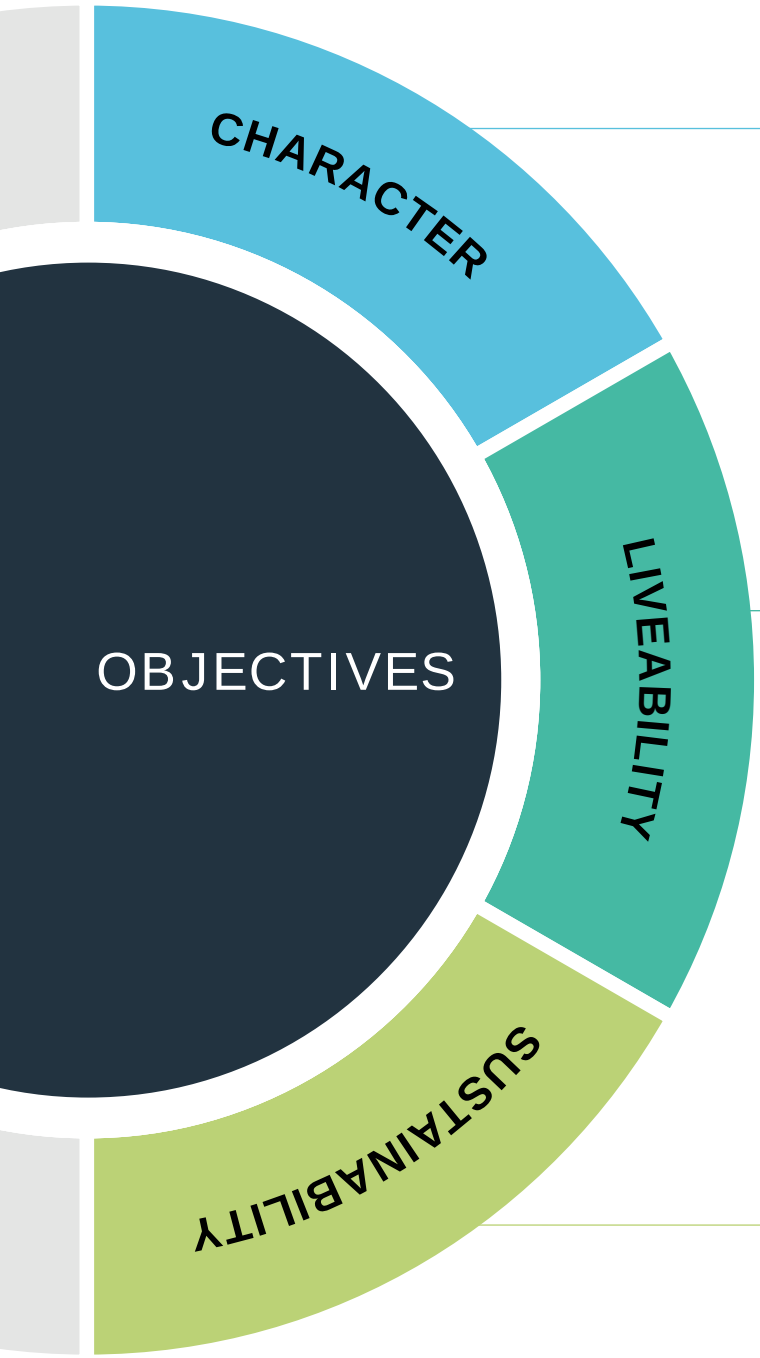
Image: National Tree Planting Day, 2019

VISION

COLLISON ESTATE HAS A STRONG SENSE OF PLACE FOR ALL RESIDENTS BY CREATING A LIVEABLE, SUSTAINABLE AND ATTRACTIVE URBAN CHARACTER.

2.1 Objectives



- To create an attractive urban environment.
- To cater for a diverse population whilst providing affordable housing options.
- To integrate the Estate with the broader Cranbourne East community.
- To ensure the development layout considers the potential development of adjoining lots.
- To ensure the gateway site is identifiable and augments a sense of place on arrival to the Estate.
- To provide high quality, iconic and contemporary built form.

- To maximise linkages and physical connections to open spaces, schools, community facilities and activity centres within the Estate and surrounding network.
- To create safe and efficient access through the provision of new pedestrian and cycle pathways and a permeable street network.
- To promote a strong sense of place for all residents.

- To encourage building design which is guided by environmental and infrastructure considerations such as vegetation, passive surveillance and energy efficiency.
- To encourage the coordinated delivery of a new drainage scheme and upgraded road infrastructure
- To encourage the integration of water sensitive urban design into new development.
- To encourage the capture and reuse of water.
- To ensure that the Development Plan is consistent with any Development Contribution Plan so that infrastructure can be delivered in a sustainable way.

2.2 Overarching Strategies

The following strategies underpin the Development Plan and will guide any future planning permit applications for subdivision and development.

1. Establish a built environment that is functional, safe, sustainable, aesthetically pleasing, specifically:
   - (a) The future urban layout is convenient and easy to manoeuvre for all residents for all transport modes;
   - (b) Sustainable initiatives are incorporated into future built form and the urban fabric;
   - (c) Complementary landscaping with the built form create a strong sense of neighbourhood character;
   - (d) Provide a variety of lot sizes, housing densities and built form typologies including detached, dual occupancy/ duplex, multi dwelling, terrace and apartments; and
   - (e) The built form uses innovative and quality design.
2. Encourage medium density development where land is within 80 metres walking distance to public open space and within 50 metres bus capable roads as shown in *Figure 7*.
3. Ensure that urban form, lot sizes and orientation respond to Estate topography, opportunities for solar access, passive surveillance, existing character and existing vegetation.
4. Collison Road and Heather Grove should be developed as green, landscaped boulevards with generous planting in the public and private realms.
5. Provide direct vehicle and pedestrian connections to the surrounds.
6. Ensure land parcels are developed in a cohesive manner to enable the coordination and delivery of key shared infrastructure, particularly road and drainage infrastructure.
7. Support the development of a medium-neighbourhood activity centre within the vicinity of Heather Grove and Casey Fields Boulevard/Mayfield Road.
8. Develop a community facility in or adjacent to the activity centre.
9. Support non-residential uses where there is a demonstrated net community benefit and where a conglomeration of non-residential uses does not adversely affect the future and orderly operation of the activity centre.
10. Demonstrate that the non-residential use does not adversely impact residential amenity.
11. Ensure an appropriate transition to existing residential properties to the east abutting the Estate.
12. Create a sense of enclosure to the public realm, activating street frontages and civic spaces by maximising the extent of building frontages onto Main Street and secondary streets and providing physical and visual permeability between public and private domains.
13. Enhance streetscapes by creating diverse and deflected street alignments of visual interest and character.
14. Ensure vibrant, safe and attractive streets and public spaces.

2.3 Land Use Budget

The vision will be realised through the future urban structure illustrated in *Figure 7*. The plan illustrates and outlines the key land use, development and subdivision requirements of the Development Plan.

Dwelling densities shown do not include any shop-top housing within the Activity Centre. Any shop-top housing will be in addition to the 1,635 dwellings shown in *Table 2*.

Table 1: Land Use Budget

Description	Hectares (Ha)	Percentage of total area (%)
Total Precinct Area	83.0778	100.0
Transport		
Existing roads	4.9900	6.0
Land required for roads	1.3429	1.6
Land required for intersections	0.0024	0.0
Open Space		
Unencumbered public open space	1.9332	2.3
Drainage		
Land required for drainage	4.9309	5.9
Community Facilities		
Land required for community facilities	0.6000	0.
Net Developable Area	**69.2784**	**83.4**
Activity centre	0.8000	1.0
Net Developable Area - Residential	**68.4784**	**82.4**

Table 2: Lot Yield

Lot Yield	No. of Dwellings	Area (Ha)	Percentage (%)
Higher Density (**Note:** No cap proposed. The outcome is calculated at 60 dph to show an indicative outcome only)	7	0.12	0.44
Medium Density (max 30 dph)	617	20.57	37.75
Conventional Density (20 dph with a hard cap of 21.5 dph)	1010	46.99	61.80
Total Yield	**1635**	**67.68**	**100.00**

3.0
FRAMEWORK

Image: Housing Frame in Cranbourne, 2020.

This section establishes the overarching Framework Plan to realise the vision and strategic objectives for the Estate. The following plan summarises the approach through the planning and design guidelines for land use, built form, sustainability and infrastructure.

3.1 Land Uses and Activities

3.1.1 Non-Residential Land Uses in a Residential Zone

Non-residential land uses in a Residential Zone can be considered in accordance with the requirements of the General Residential Zone (GRZ).

Planning and Design Guidelines

All proposals for non-residential use and development must comply with the Non-Residential Uses in a Residential Zone policy in the *Casey Planning Scheme* and the requirements under the GRZ to demonstrate that the non-residential use does not adversely affect residential amenity and the use results in a net community benefit. In addition, the following planning and design guidelines apply:

Land Use

1. The scale and intensity of non-residential uses must not detract from the role of designated activity centres and the Activity Centre in the Estate.

Built Form

1. A high-quality and attractive public realm with active frontages must be provided.
2. Built form must be of a scale and siting which is commensurate with existing and future adjoining residential development.
3. The design of buildings must respond to the site context, including variations in building setbacks, avoidance of bulky and box-like built form and blank façades, and suitable setbacks from sensitive land uses.
4. Retail, commercial and community buildings must address Council's Design Excellence Guide and 'City of Design' aspirations and targets where applicable.
5. Environmentally sustainable development principles must be incorporated throughout the development including water sensitive urban design.
6. Signage must be incorporated into the building design.
7. Free standing and externally illuminated signage are strongly discouraged.
8. Loading areas, back of house functions and plant and equipment must be sensitively located and screened from the public realm and adjoining residential uses.
9. Any fencing should be a low height and permeable except where it is a boundary fence with an abutting property.

Car Parking and Bicycle Provisions

1. Car parking areas must be designed so that all vehicles can enter and exit the site in a forward direction.
2. Car parking areas must be designed and configured to not dominate the street frontage by being located to the side or rear of the development.
3. Connections, both pedestrian and vehicular, must be provided to create linkages between properties.

4. Bicycle parking and end-of-trip facilities must be included in all non-residential developments to the satisfaction of the Responsible Authority.

Landscaping

1. Areas for landscaping must be clearly identified before any development occurring.
2. All car parking areas must include designated landscaping.
3. Permeable paving and alternate stormwater management strategies can be considered where best practice is exceeded.
4. Pedestrian connections from the public road network to the development entry must be clear and direct with low height planting along pathways to support passive surveillance.
5. Appropriate buffer treatments must be applied at the interface with any non-residential uses on adjoining properties.
6. Existing native vegetation should be retained, where possible.

3.1.2 Activity Centre

A Medium Neighbourhood Activity Centre of between 0.7 and 1.1 hectares is supported within the vicinity of Heather Grove and Casey Fields Boulevard/Mayfield Road.

A Medium Neighbourhood Activity Centre provides for day-to-day and weekly retail and service needs at a neighbourhood level. The following table is an indicative range of potential businesses.

Table 3: Indicative Range of Businesses

Category	Supported Businesses	Unsupported Businesses
Supermarket	Small Supermarket/ Grocer/Food Store	Full-line Supermarket, Superstores
Specialty Shop	Butcher, Bakery, Fruit/ Vegetables, Deli, Apparel, Bookstore	Bulky Goods, Discount Department Store, Department Stores
Hospitality	Cafe, Restaurant, Takeaway	Bars, Nightclubs, Hotels, Entertainment venues
Non-Retail **Note:** based on larger floor space requirements and not on the type of company.	Accountant, Conveyancer, Shared Workspaces, Medical Practice, Real Estate, Child Care Centre, Community facility	Major Commercial Office Tenants, Multi-National Corporations, Major Institutions

Planning and Design Guidelines

1. The location, size, function and design of the activity centre must be consistent with the requirements of the *City of Casey Activity Centres Strategy 2019* and Activity Centres Policy in the *Casey Planning Scheme*.
2. Non-retail commercial and community uses should make up at least 25 percent the floor area for the whole of the centre, this should be located above or at the rear of the retail uses.

3. A mix of a small format supermarket, specialty retail, hospitality uses, and medium density is encouraged.
4. Shop-top housing is encouraged within the Activity Centre.
5. Heather Grove must be treated as a 'main street' from Casey Fields Boulevard to the drainage channel.

Built Form

1. Building heights should be at least two storeys.
2. Fine grain specialty activities should sleeve in front of the anchor tenant along Heather Grove.
3. Built form at ground level of Heather Grove Main Street must:
   (a) Provide highly active frontages with windows and main entrances as the predominant elements of the ground floor façade with any secondary entry points from adjoining car parks;
   (b) Maximise opportunities to enhance passive surveillance of the public realm;
   (c) Have a zero setback to create a defined edge and provide adequate all weather protection above pedestrian pavements; and
   (d) Limit blank walls.
4. Built form must respond to the primary interfaces/active frontages along Mayfield Road/Casey Fields Boulevard and Heather Grove.
5. Built form must be designed to ensure anchor tenants and the car park are accessible from Heather Grove without being the dominant feature.
6. Any access (for example drive-thru) requirement for any pad site must not be located along Heather Grove. Service Station(s) and/or pad sites proposed in proximity must demonstrate an exemplar architectural style.
7. Verandas and canopies must be provided along Heather Grove Main Street to ensure continuous weather protection.
8. Building façades along Heather Grove main Street must provide texture rich materials and/or clear glazed windows to facilitate passive surveillance.
9. Signage in the form of branding and colours must not cover the entire façade.
10. Loading bays and waste collection areas should be located to the side or rear of the building and must be screened from view.
11. Development within the activity centre should use a light colour material palette, it should be in non-reflective materials to reduce heat absorption and urban heat island formation.
12. Recycled materials should be used where possible for development within the activity centre.

Access and Movement

1. Heather Grove Main Street must accommodate wide pedestrian pavements that deliver a high level of amenity and activation through landscaping, street furniture, al fresco dining, street lighting and high quality public realm features that create a comfortable, safe and a pedestrian friendly environment.

2. Pedestrian crossings, on-road cycling lane and bicycle parking must be provided along Heather Grove Main Street.
3. Heather Grove Main Street should maximise short term on-street car parking to allow for convenient car parking opportunities in front of retail uses.
4. Heather Street Main Street should not be used for heavy vehicle movements to ensure it is a pedestrian friendly environment. Access for heavy vehicles should be provided from Mayfield Road.
5. Heather Grove Main Street design should demonstrate water sensitive urban design initiatives which integrate storm water, groundwater and waste water management and water supply to minimise environmental impact and create an aesthetically pleasing environment.
6. Heather Grove Main Street speed should be maximum of 40 km/h.
7. The secondary street network should provide alternate entry points to the centre and encourage walking and cycling.
8. There should be no vehicular entry on Heather Grove Main Street within the fine grain retail based activity zone.
9. Vehicular access to the car park areas on Heather Grove Main Street should be provided away from the core and off the secondary street network.
10. Pedestrian and cycling access must be provided to the Activity Centre.
11. Ensure good walkability within the Activity Centre.

Landscaping

1. A community and family friendly environment should be created through appropriate plantations and street furniture.

3.2 Built Form and Landscape

3.2.1 Image, Heritage and Character

Planning and Design Guidelines

1. Provide a high quality residential environment that:
   - (a) Offers a range of housing typologies and densities as shown in *Table 4*;
   - (b) Integrates with its broader surrounds to optimise resident access to existing community facilities;
   - (c) Provides residents with quality spaces and pedestrian connections for recreation and socialisation; and
   - (d) Addresses Council's Design Excellence Guide and 'City of Design' aspirations and targets.
2. Works for drainage infrastructure and development purposes within areas of high sensitivity for aboriginal cultural heritage should minimise disturbance of the area.

3.2.2 Residential Typologies

A range of lot sizes is encouraged to ensure that a variety of housing typologies in terms of type, tenure, size and cost can be provided in accordance with Council's *Housing Strategy 2019.*

Lot sizes will generally complement the densities that have been established in the

Table 4: Housing Typologies

Lot size category	Housing typologies that may be supported									
	Detached Houses	Attached Houses	Semi-attached Houses	Townhouses	Dual Occupancies	Duplexes	Terraces	Row Houses	Villas	Apartments
<300m²	✓	✓	✓	✓	✓	✓				
301m² - 500m²	✓				✓	✓				
>501m²	✓				✓	✓	✓	✓	✓	✓

broader area as well as introducing opportunities for medium density development.

Table 4 provides an indication of the typical range of lots sizes that support the delivery of a broad range of housing types.

Planning and Design Guidelines

1. Unless an area has been designated as higher or medium density, the preferred maximum density per hectare is 20 dwellings with a hard cap of 21.5 dwellings.
2. Where medium density has been designated there is a maximum of 30 dwellings per hectare.
3. Where higher density has been designated there is a no dwelling cap per hectare.
4. Medium and higher density development includes terrace/townhouses and apartments.
5. Larger lots and single dwellings should be provided outside the designated medium and higher density areas.
6. Specialised housing types such as retirement/lifestyle and aged care villages should be integrated into the community and must not be permanently gated. Where there is a through road connection with an abutting property, this road connection must be maintained.
7. Specialised housing is encouraged to be located in the designated medium and high density areas.
8. Dwelling composition should incorporate a mix of 1 and 2 bedroom dwelling types to attract a more diverse population in developments of 10 or more dwellings.

3.2.3 Layout Requirements

1. Create a permeable network of high amenity, safe and pedestrian friendly streets that connects to the existing pedestrian network.
2. Residential lots must front (in order of priority where a lot fronts multiple elements):

(a) Waterways (including drainage channels) and public open space;

(b) Local access streets;

(c) Connector roads; and/or

(d) Arterial roads (future).

3. Where a residential lot fronts onto a drainage channel or waterway, a local road should be provided at the front of the property, where possible.

4. Where a residential lot fronts onto a drainage channel or waterway and is rear loaded, a paper road must be provided along the frontage.

5. Where a residential lot fronts public open space, a local road must be provided along the frontage.

6. Where residential lots are rear loaded, they must have a pedestrian break every six units (40 metres) and the break must be no longer than 100 metres.

7. Mid-block pedestrian connections should be at least 3 metres in width and landscaped.

8. Development must be orientated to optimise its street frontage, solar access and maximise opportunities for casual surveillance of the public realm.

9. Gun barrel driveways and battle axe configured allotments will not be supported, unless it results in:

(a) A high level amenity outcome; and

(b) Will not prejudice the development of abutting land or it is an interim access arrangement.

10. Common property and private roads are not supported in any residential development except where all of the following can be demonstrated:

(a) The road layout integrates with abutting properties and does not result in a gated development;

(b) The roads are designed to provide for emergency and waste vehicle access; and

(c) The proposal results in a high quality urban design outcome that utilises treatments to define that it is not a public road.

11. Where a road connection is proposed through abutting properties, or lots are developed independent of each other, a road layout cell plan must be provided demonstrating how the road network will connect with the broader surrounds within that cell and how it connects to the nearest existing road as shown in *Figure 8*.

12. A sub-cell road layout plan may be considered for cells 1, 4, 5, 8, 9 and 10 where is can be demonstrated that:

a. The road network will connect to a road that runs between the existing road network and the drainage channel; and

b. It will not prejudice the development potential of lots outside of the sub-cell plan.

13. Where development seeks to retain/alter an existing dwelling, it must be demonstrated, that the proposed layout does not prejudice the future development of surrounding land, to the satisfaction of the Responsible Authority.

14. An appropriate transition in built form and lot sizes must be provided from the existing subdivision layout to the east including both lot size and lot orientation.

15. Where a proposed lot is 6 metres or less in width, vehicle access must be via a rear laneway, unless otherwise approved by the Responsible Authority.

3.2.4 Built Form Requirements

This section provides overarching built form requirements for all development with Collison Estate.

Planning and Design Guidelines

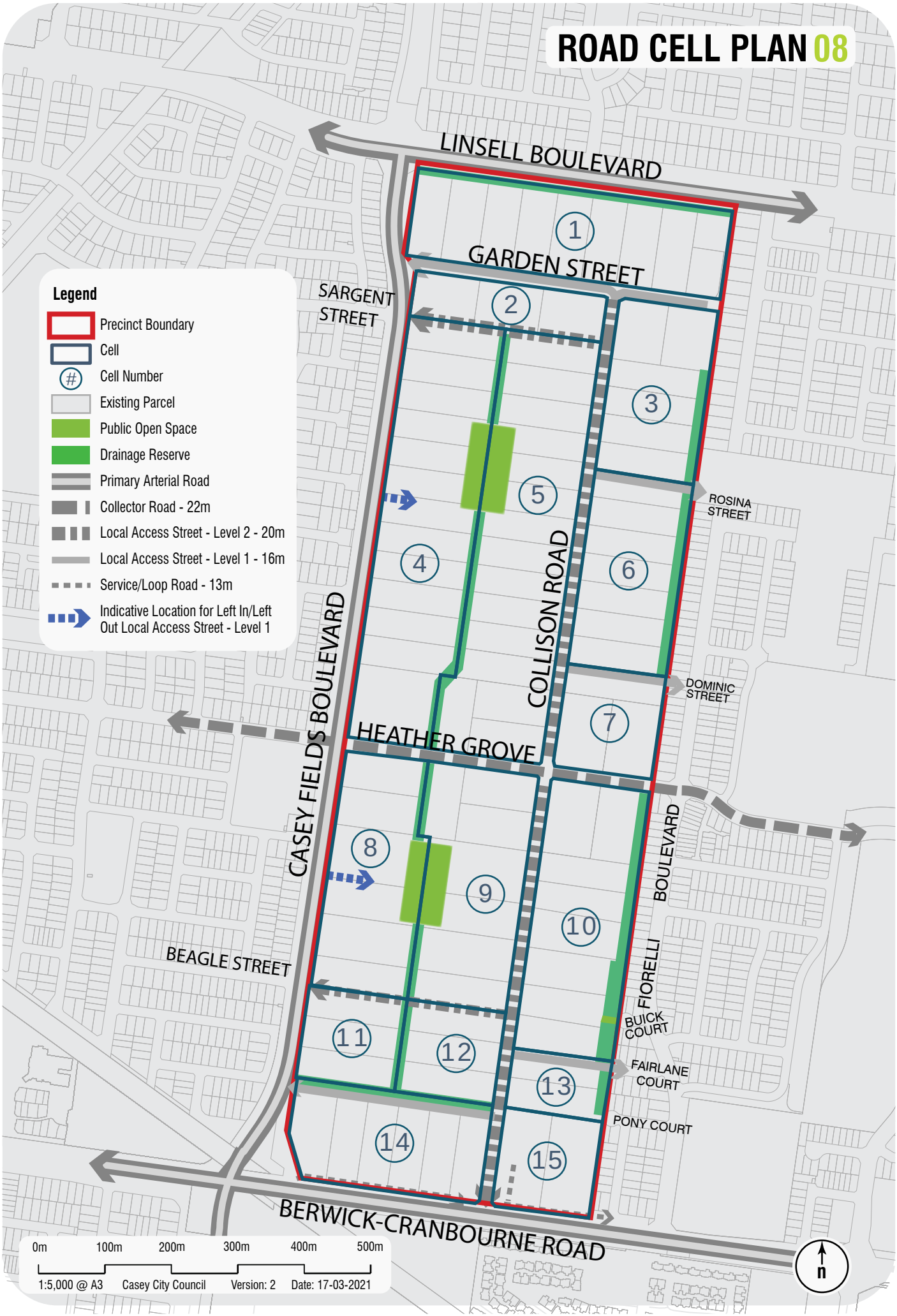
1. Building heights must be no higher than 2 storeys (9 metres) along the eastern interface.
2. Where the residential land has a frontage to a local access street level 2, garages must have a minimum front setback of 5 metres to allow for tandem car spaces, except where rear loaded.
3. Future residential dwellings fronting a drainage reserve must include:
   (a) Low height and transparent fencing; and
   (b) Built form with dwellings designed to overlook the reserve.
4. Blank façades and solid front high front fencing must not be provided for in any development.
5. All development façades must be articulated to create visual interest.
6. Front fencing for dwellings must be at least 50 percent transparent to provide for passive surveillance and low scale (less than 1.5 metres).
7. Medium density developments, higher density developments and non-residential uses must nominate designated areas for waste collection and building services, ensure they are appropriately integrated into the development and generally screened from the public realm.
8. Where a townhouse is on a corner site, the townhouse must allow a side setback to allow for landscaping and windows overlooking the street.
9. If a lot is not within a designated medium or higher density area, and is smaller than 400m^2, a minimum of 25 percent garden area must be provided.
10. All development abutting open space must be well articulated and facilitate passive surveillance with windows, balconies, and pedestrian access points.
11. Development should avoid the rear of properties or blank walls abutting open space.
12. Rear laneways must incorporate opportunities for lighting and explore opportunities to increase permeability through the use of landscape treatments.

3.2.5 Specific Precinct Guidelines

Based on the attributes of the Collison Estate, three precincts exist that have distinct requirements:

» Berwick – Cranbourne Road – properties with a direct interface to this road;

ROAD CELL PLAN 08



- Linsell Boulevard / Garden Street interface – properties with a direct interface to these roads; and
- Heather Grove– properties with a direct interface to this road.

These precincts are shown in *Figure 9*.

Berwick-Cranbourne Road Precinct

Gateway Site

1. The corner of Casey Fields Boulevard and Berwick-Cranbourne Road is to be treated as a gateway site.
2. The gateway site should provide high quality, iconic and contemporary built form through a building that is proportionate to its surrounds, have a strong architectural presence and include façades with visual interest.
3. Built form on the gateway site (as identified in *Figure 7*) should be designed to address and engage with both the primary and secondary interfaces (streets and/or public open space).
4. The gateway site should use a light colour material palette, it should be in non-reflective materials to reduce heat absorption and urban heat island formation.
5. Recycled materials should be used where possible.
6. The gateway site should be landscaped to include large canopy trees.
7. Verandas, balconies, and canopies must be provided along the northern and western aspect to reduce indoor overheating.

Access

8. No direct vehicle access to Berwick-Cranbourne Road is to be permitted, except with the written consent of the relevant road management authority or as an approved interim arrangement. Vehicle access is to be achieved through a service lane to the satisfaction of the Responsible Authority and relevant road management authority.
9. No direct access to Mayfield Road is permitted for at least 300 metres north of Berwick-Cranbourne Road, except with the written consent of the relevant road management authority or as approved as an interim arrangement.
10. A new east-west level 1 local access street should be provided along the northern boundary of the properties fronting Berwick-Cranbourne Road from Casey Fields Boulvard/Mayfield Road to Collison Road. It must be a left in/left out intersection only at Casey Fields Boulvard/Mayfield Road.
11. No direct vehicle access to Berwick-Cranbourne Road is to be permitted for the lots 205 & 215 Berwick-Cranbourne Road, except with the written consent of the relevant road management authority or as an approved interim arrangement. The local access street connecting the two lots from Collison Road must be formed as a loop road.

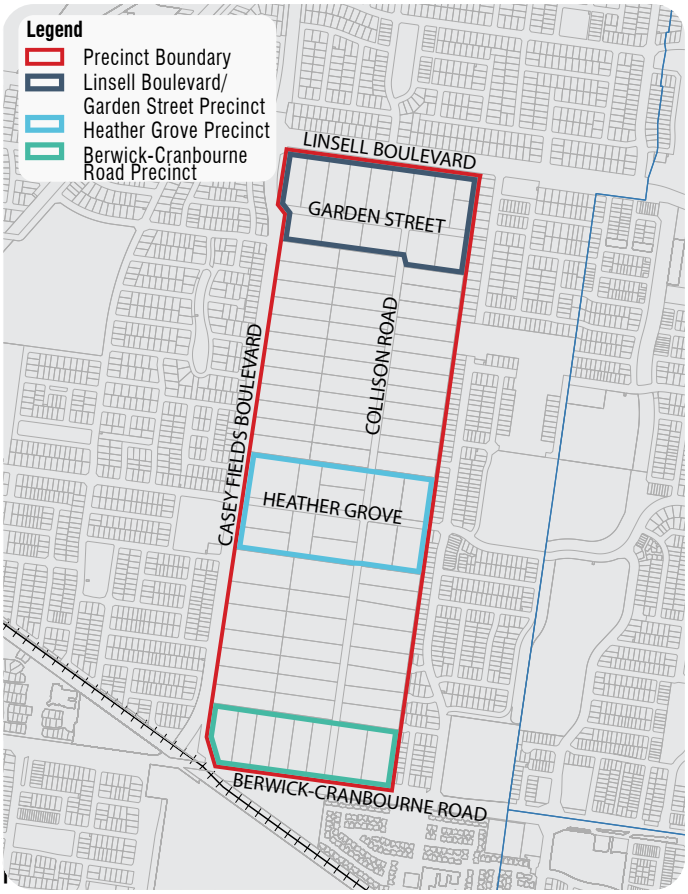
Linsell Boulevard/Garden Street Precinct

1. Dwellings should be designed to present to Linsell Boulevard to create an active frontage and provide opportunities for passive surveillance.
2. Dwellings fronting Linsell Boulevard must be rear loaded and/or be provided with a sideage to this interface.

Heather Grove Precinct

1. Discourage direct driveway access to Mayfield Road where higher and medium densities are permitted, lots should be rear loaded or accessed via a service road.
2. Front fencing is discouraged for the Activity Centre and community facility.

Figure 9: Specific Precincts



Sustainable Development (ESD) outcomes.

A combination of the following initiatives must be incorporated into any future planning permit application:

- **Energy Conservation** - Reduce green house gas emissions and energy demand through subdivision and design measures including appropriate building orientation, shading to glazed surfaces, optimise glazing to exposed surfaces, roof standards and space allocation for solar panels and external heating/cooling systems).
- **Materials** - Provide information about the materials including use of low embodied energy materials with recycled content. Show how the future life cycle and recycleability of materials have been considered.

Planning and Design Guidelines

1. New development must use energy efficient features (E.g. solar panels, energy saving light globes).
2. Dwellings/lots must be orientated to optimise access to natural light and cross-flow ventilation, where possible.
3. Support the use of alternate energy forms.
4. Discourage connections to natural gas.
5. Minimise light pollution.
6. Minimise noise levels and noise transfer within and between buildings and associated external areas.

Water Conservation and Stormwater Quality

1. Capture and reuse water where practicable.
2. Reduce the reliance on mains water for fit for purposes uses such as irrigation and toilet flushing.
3. Reduce stormwater flow by providing

permeable open spaces.

4. Water Sensitive Urban Design (WSUD) principles must be integrated into new development.

Waste Management

1. Construction and demolition waste should be diverted from landfill.
2. Provide options for recycling of materials.

Landscaping

1. Encourage the use of native and indigenous plantings.
2. Utilise permeable spaces for both recreation and aesthetic purposes.
3. Trees should be retained and existing vegetation incorporated, where deemed appropriate, in the streetscape and private realm.
4. Utilise canopy plantings within the streetscape to reduce the heat island effect and provide shade.
5. Encourage the provision of space for productive gardens, particularly in larger residential developments.

Transport

1. Ensure that the built environment is designed to promote the use of walking, cycling and public transport, in that order.
2. Minimise car dependency.
3. Promote the use of low emissions vehicle by providing supporting infrastructure.

Image: Public Open Space in the Hunt Club Estate, 2021.

3.4 Landscaping

Landscaping makes an important contribution to an area's liveability, amenity and environment. In addition, the landscaping will provide sustainability benefits by reducing the heat island effect.

Level 2 local access streets and collector roads should become green boulevards, with extensive tree plantings and green space proposed in the road reserves. This will be complemented and strengthened through additional landscaping within the front setbacks of new development.

Planning and Design Guidelines

1. Landscaping should be consistent with the *Casey City Council Landscape Guidelines as amended*.
2. Landscape treatments must be provided to enhance the amenity of trails including through streetscapes, wetlands, curtilages and utility easements.
3. Efficient lighting must be provided on key pedestrian thorough fares to encourage safe pedestrian movement.

Street Trees

4. Street trees and vegetation should be primarily indigenous, keeping with the emerging vegetation character of the development to the east as well as the broader character influenced by the Cranbourne Gardens, to the satisfaction of the Responsible Authority. Specifically, street trees should:
   - (a) Be suitable to the scale of the street and the planting space available, with larger tree species chosen for wider roads;
   - (b) Form strong avenues and canopies to provide shade and definition to streetscapes;
   - (c) Be suitable for local soil and climatic conditions;
   - (d) Be selected to provide visual cues and definition to different classes of roads, park frontages and key intersections and entrances;
   - (e) Be appropriate indigenous trees species suitable for the urban environment, particularly where a street links with, or adjoins conservation areas; and
   - (f) Match tree species that have already been approved or planted in roads linking to adjoining development parcels.
5. Up to 10 percent encroachment into Tree Protection Zones (TPZs) may still occur provided that proposed works are approved and supervised by a qualified arborist.
6. Street trees must be provided on both sides of all roads and streets (excluding rear laneways) at regular intervals appropriate to the tree size at maturity and to the satisfaction of the Responsible Authority.
7. Trees in parks and streets must be suitable for the local conditions.
8. Large canopy trees should be incorporated along Heather Grove, Collison Road and along cycle and pedestrian lanes within the Collison Estate.

Private Realm

1. The private realm is to include one deep soil zone and a minimum of 1 canopy tree for each 4 metres width of street frontage.

3.5 Transport and Movement

The Development Plan builds on the existing road network of the Estate with new local access streets required to create a permeable road network which is critical to ensure land parcels do not develop in isolation and to connect the Estate to its surrounds.

All level 2 local access streets, collector roads and intersections are included in the Development Contribution Plan. Garden Street is not included in the DCP as it is a level 2 local access street.

Planning and Design Guidelines

1. Convenient and direct access to the connector road network must be provided through neighbouring properties where a property does not otherwise have access to the connector network or signalised access to the arterial road network, as appropriate.
2. New access streets are to be staggered in an east-west direction at intervals no greater than 240 metres between streets.
3. Traffic management devices will be required along Collison Road at intervals of 150 metres.
4. The existing intersection with Collison Road and Berwick-Cranbourne Road must be converted to a left in and left out only intersection prior to or as part of any new lot with access to/from Collison Road being created.
5. Direct vehicle access to Berwick-Cranbourne Road must not be provided, except where interim access has been agreed with the relevant road management authority. Vehicle access to lots fronting this road must be from an internal road or service road, to the satisfaction of the Responsible Authority or road management authority.
6. The eastern end of Garden Street (east of Collison Road) can be reduced in width. The eastern end must provide a dead end turning area for waste and emergency vehicles to ensure vehicles can exit in a forward direction.
7. Where there is an existing road connection which has been established by the development to the east (excluding Pony Court), this connection must be extended through to Collison Road, including:
   (a) Rosina Street
   (b) Dominic Street; and
   (c) Fairlane Court.
8. Direct vehicle access with Casey Fields Boulevard/upgraded Mayfield Road is discouraged.
9. Through connections from the Casey Fields Boulevard to Collison Road are encouraged where the land is in close proximity to the following existing roads:
   (d) Waterloo Road; and
   (e) Pedigree Grove.
10. Through connections from Casey Fields Boulevard to Collison Road must be provided with:
    (a) Sargent Street; and
    (b) Beagle Street.
11. Appropriate intersection treatment measures (i.e. roundabouts) are required at these locations to the satisfaction of the

Responsible Authority.

12. Provide for intersections of local connector streets and arterial roads which facilitate the safe and convenient movement of all transport modes.

13. Where internal roads are private roads or common property roads, all waste collection must be by a private waste contractor.

14. Any street abutting a kindergarten or child care centre must be designed to achieve slow vehicle speeds and provide designated pedestrian crossing points.

Image: Collison Road North, 2019.

Table 5: Road Hierarchy

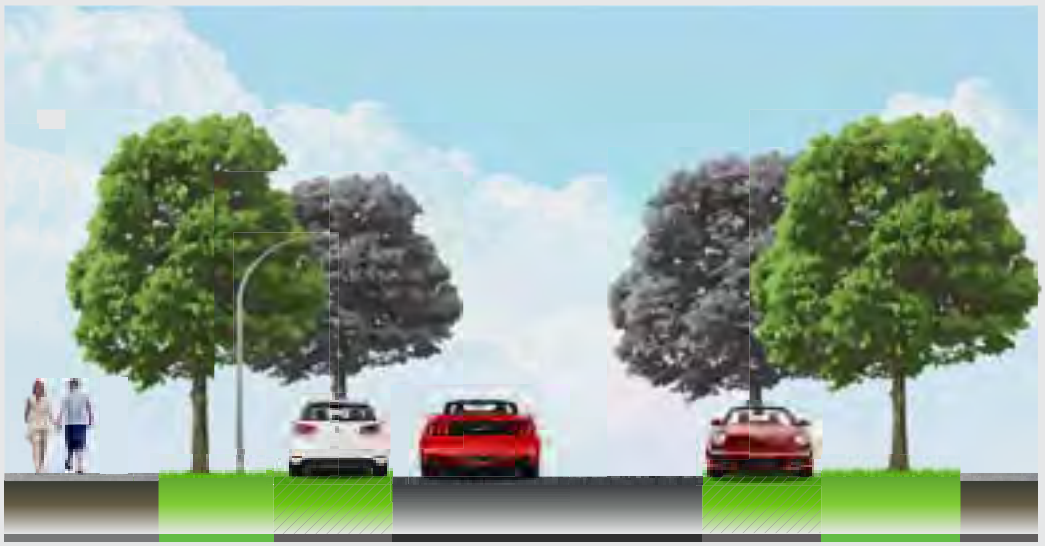
Road Name	Proposed Road Hierarchy	Existing Road Reservation Width	Required Road Reservation Widening	Ultimate Road Reservation Width	Service Road Requirement
Berwick-Cranbourne Road	Primary Arterial	20-44m	0m (addressed in Cranbourne East DCP)	41m	Yes
Linsell Boulevard	Secondary Arterial	50-61m	0m	34m	Lots fronting Linsell Boulevard should be accessed via a rear laneway or an internal loop road.
Casey Fields Boulevard/ Mayfield Road	Secondary Arterial	37m	0m	37m	Lots fronting Mayfield Road should be accessed via a rear laneway or a service road.
Heather Grove	Collector Road	20m	2m	22m	No
Collison Road	Local Access - Level 2	20m	0m	20m	No
Proposed Beagle Street extension	Local Access - Level 2	0m	20m	20m	No
Proposed Sargent Street extension	Local Access - Level 2	0m	20m	20m	No
Garden Street	Local Access - Level 1	20m	0m	20m	No
Local Streets	Local Access - Level 1	0m	16m	16m	No

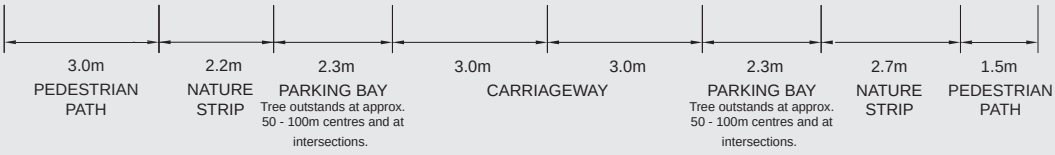
3.5.1 Road Cross Sections

1. Roads are to be designed to council standards, ensuring that street tree planting can occur within the verge and that emergency and waste collections vehicles can access properties.
2. All roads identified within the Development Contribution Plan must have consistent cross sections.
3. Where a single level 1 local access street spans across multiple properties that street should have a consistent cross section width.
4. Any proposed laneways (either Council or private) are to be provided with a minimum road reserve width of 8 metres including a 5.5 metre wide carriageway, unless otherwise agreed with the Responsible Authority.
5. Roads abutting public open space and/or drainage reserves can be reduced in width with an appropriate indicative cross section to be provided to the satisfaction of the Responsible Authority.
6. Service lanes and internal loop roads can be reduced to 12 metres width with an appropriate indicative cross section to be provided to the satisfaction of the Responsible Authority.
7. The cross sections (*Figure 10* to *Figure 19*) are to be utilised for the road network except with the consent of Responsible Authority.

Image: Shared Pathway alongside Drainage Infrastructure, 2021.

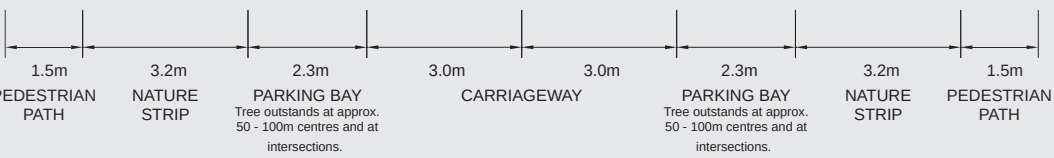
SARGENT STREET 10



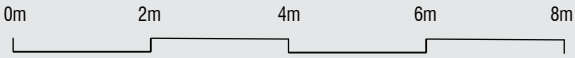


Sargent Street (Access Level 2) 20m

BEAGLE STREET 11



Beagle Street (Access Level 2) 20m



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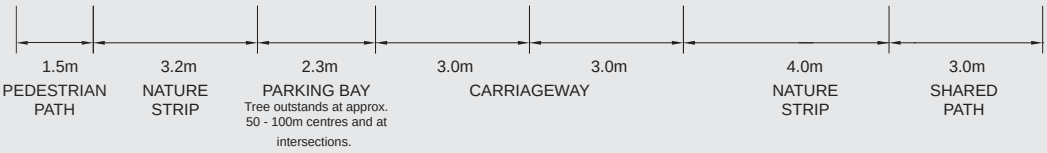
LAND DEVELOPMENT INTELLIGENCE

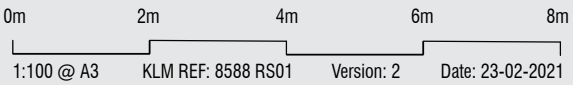
COLLISON ROAD 12



Collison Road (Access Level 2) 20m

GARDEN STREET 13

Garden Street 20m



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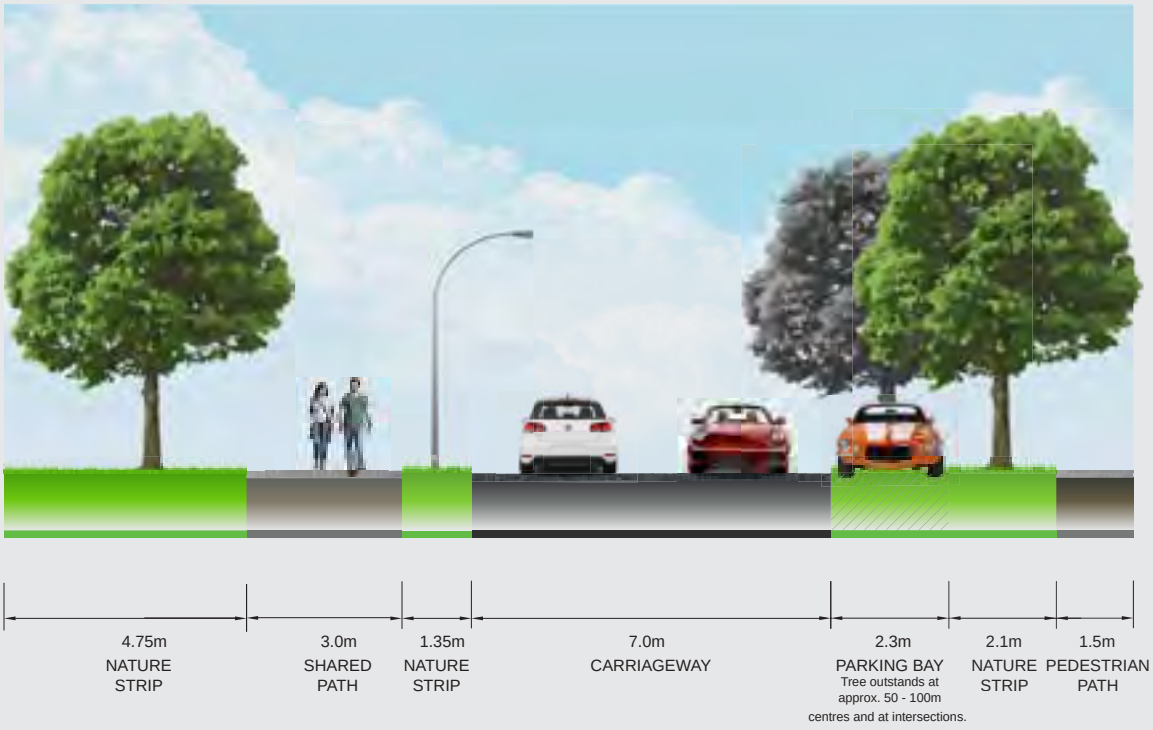
LAND DEVELOPMENT INTELLIGENCE

HEATHER GROVE 14



Heather Grove 22m

LEVEL 1 LOCAL ACCESS STREET 15

Local Access Level 1 16m

0m 2m 4m 6m 8m

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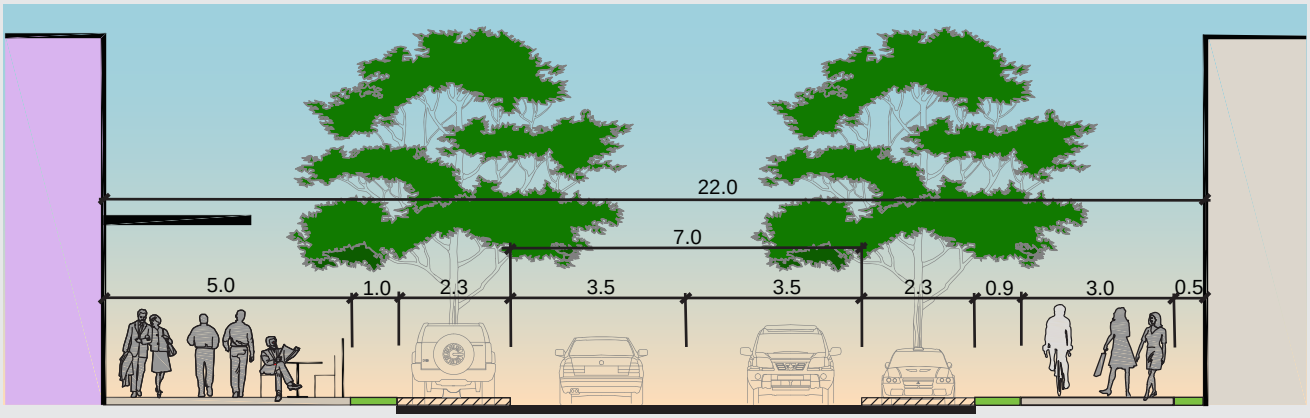
KLM SPATIAL
LAND DEVELOPMENT INTELLIGENCE

HEATHER GROVE 'MAIN STREET' CROSS SECTION 16



0m 2m 4m 6m 8m 10m

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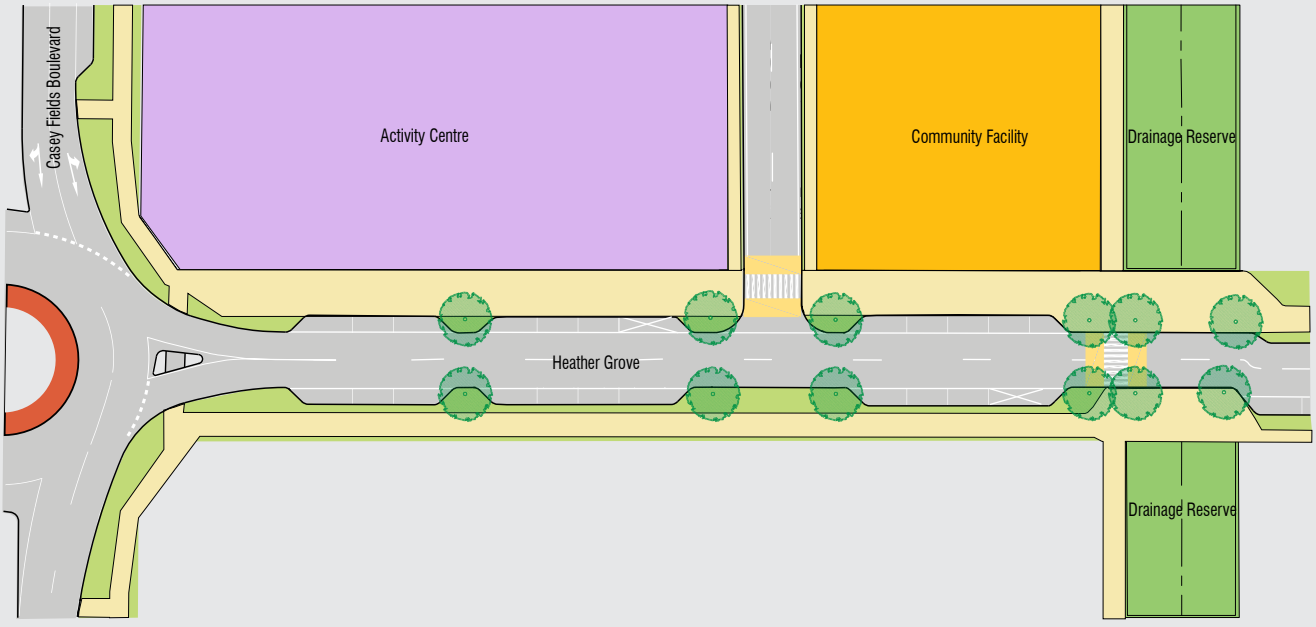
HEATHER GROVE 'MAIN STREET' CONCEPT 17



Note 1
The road between the community facility and the activity centre is indicative only. At the time of a planning permit application the position of internal street network will be determined.

Note 2
The road network reverts to the Heather Grove cross section after the drainage reserve.

Note 3
Road access for 18 Mayfield Road (as of 2021) is not shown. At the time of a planning permit application, the position of an internal street network will be determined. This may be via Mayfield Road or via Heather Grove.

0m 16m 32m 48m 64m 80m

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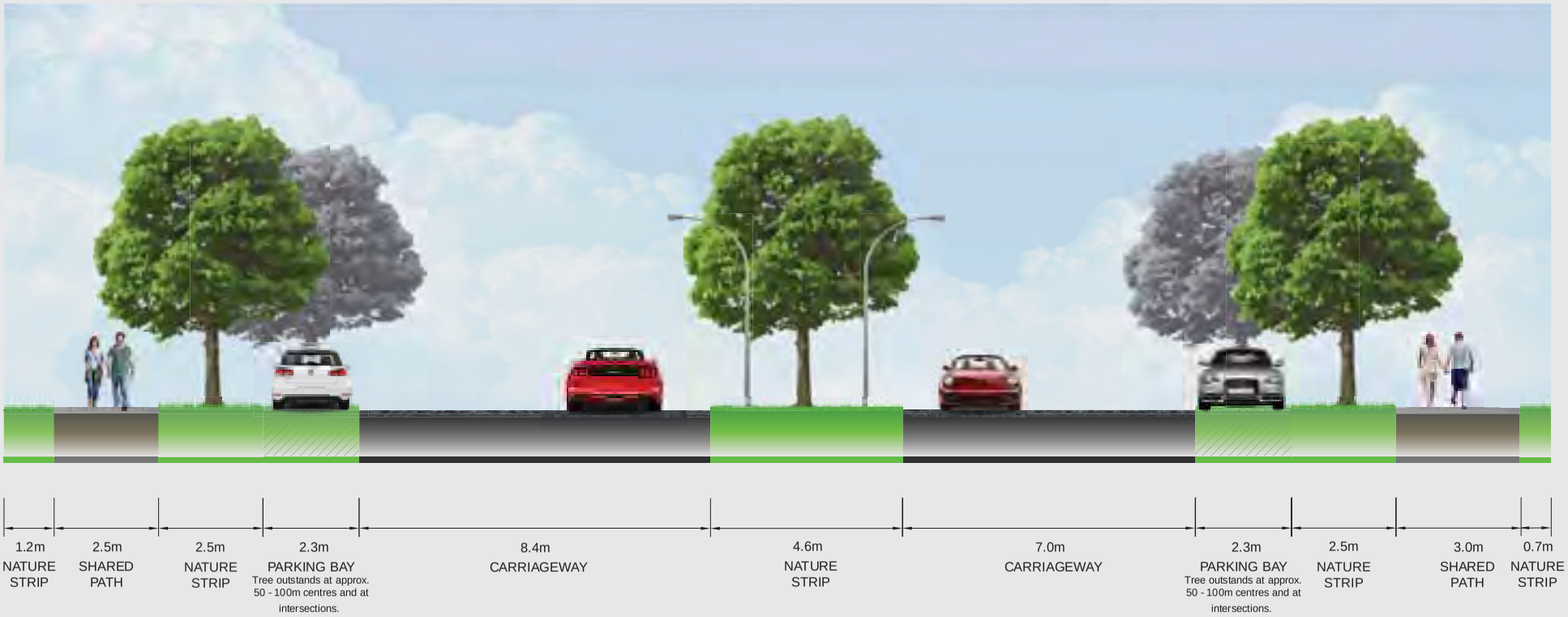
KLM SPATIAL
LAND DEVELOPMENT INTELLIGENCE

CASEY FIELDS BOULEVARD 18

Casey Fields Boulevard | Mayfield Road



Casey Fields Boulevard - Mayfield Road 37m

0m 2m 4m 6m 8m

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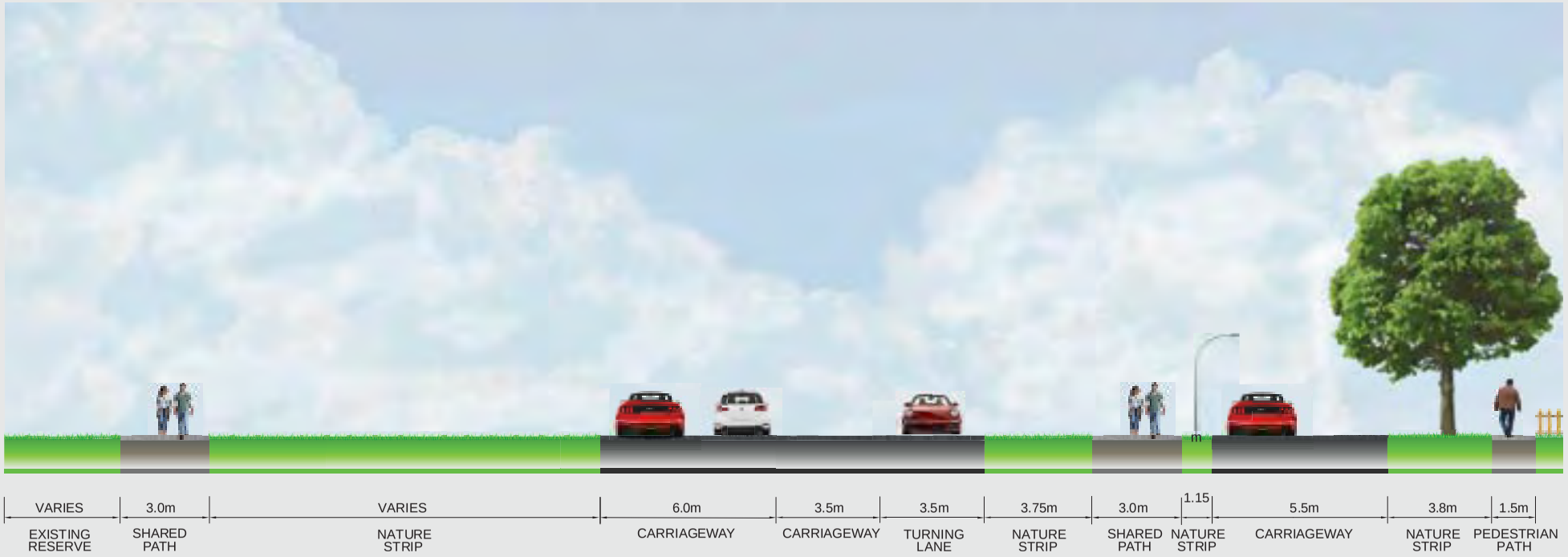
KLM SPATIAL
LAND DEVELOPMENT INTELLIGENCE

Berwick - Cranbourne Road

Service Road



Berwick-Cranbourne Road (41m) with Service Road

0m 2m 4m 6m 8m

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3.6 Walking, Cycling and Public Transport

The Development Plan seeks to provide an integrated pedestrian and bicycle network with connections both internally and externally to the surrounding road network, public transport and adjoining public open space.

Berwick-Cranbourne Road and Linsell Boulevard are identified as key public transport network routes and Heather Grove is a designated future bus capable road in the Cranbourne East PSP.

A bus stop is located directly in front of the Estate on Berwick Cranbourne Road (route 897 - Lynbrook Station to Clyde). Bus services utilise Linsell Boulevard with three bus stops located directly north of the Estate (route 798 – Cranbourne Park Shopping Centre to Selandra Rise). It will be at the discretion of Transport for Victoria to identify the location of a suitable bus stop along Heather Grove.

The future Cranbourne East train station is located within 800 metres of the western part of the Estate.

Planning and Design Guidelines

1. Shared paths or bicycle paths must connect with the established street network.
2. Facilitate efficient and direct pedestrian, cyclist and vehicle movement including efficiently linking pedestrians and cyclists to public transport and linear reserves/open space in accordance with the Connectivity Plan shown in *Figure 20*.
3. Pedestrian pathways should connect to the existing pedestrian network to the east.
4. Shared paths should be minimum 3.0 metres wide except with the consent of the responsible authority.
5. Footpaths should be a minimum of 1.5 metres wide for the local road network and be provided on both sides of the street, where possible.
6. Location of pedestrian and cycle paths should make the best use of opportunities for passive surveillance.
7. Lighting and canopy cover should be installed along shared, pedestrian and cycle paths linking key destinations, unless otherwise approved by the responsible authority.
8. Any pedestrian and cycle links through a drainage reserve or adjoining the road network should include provision of park seating every 400 metres.
9. Safe, accessible and convenient pedestrian and cycle crossing points must be provided at all intersections, key desire lines and locations of high amenity.
10. All lots are to be connected to the pedestrian and/or shared path network in the ultimate development form. Where necessary, applicants will need to demonstrate interim access arrangements. These must be designed and constructed to the satisfaction of the responsible authority.

Linsell Boulevard Precinct

11. The eastern extension of Garden Street (through the South East Water drainage reserve) must be a pedestrian connection which connects Collison Estate to Selandra Rise Activity Centre.

12. A series of north-south pedestrian connections from Garden Street through to Linsell Boulevard must be provided.
13. A north-south pedestrian link must be provided between Garden Street and the Sargent Street extension. It must link up to the shared path along the drainage channel.
14. A north-south pedestrian link must be provided between Garden Street and the drainage channel running along the eastern interface to the south of Garden Street. It must link up to the pathway along the drainage channel. It can be provided as:
    (a) Public open space that runs from the drainage channel to Garden Street; or
    (b) 10 metre wide accessway that connects the drainage channel to a local road that runs north-south.

Berwick-Cranbourne Precinct

15. North-south pedestrian connections must be provided between Berwick-Cranbourne Road and the future level 1 local access street.
16. The western extension of Pony Court is to be a pedestrian connection only and not for vehicle movements.

Image: Playground in Cranbourne East, 2021**.**


CONNECTIVITY PLAN 20
Legend
Precinct Boundary
Activity Centre
Community Facility
Standard Residential Density
Medium Residential Density
Higher Residential Density
Public Open Space
Existing Reserve
Drainage Reserve
Primary Arterial Road
Collector Road - 22m
Local Access Street - Level 2 - 20m
Local Access Street - Level 1 - 16m
Service/Loop Road - 13m
Existing Shared Path
Existing on-road Bicycle Lanes
3.0m Shared Path
3.0m Shared Path (Cranbourne East DCP)
Existing Shared Path
1.5m Pedestrian Path within the Drainage Reserve
Indicative Pedestrian Connection
Existing Parcels
No Direct Access
Indicative location for Left In/Left Out Only Road Connection
Existing Bus Stop
Existing Bus Route
Future Bus Route
Existing Roundabout
All Movements Roundabout
Left In/Left Out Only Intersection
Signalised Intersection
800m Train Station Catchment
1000m Train Staion Catchment
Railway Line
Future Train Platform
Bus Route 798
LINSELL
BOULEVARD
GARDEN
STREET
SARGENT
STREET
ROSINA
STREET
BOULEVARD
ROAD
COLLISON
ROAD
WATERLOO
ROAD
FIELDS
MAYFIELD
DOMINIC
STREET
FIORELLI
BOULEVARD
HEATHER
GROVE
CASEY
BEAGLE STREET
BUICK
COURT
FAIRLANE
COURT
PONY COURT
DODGE TERRACE
Bus Route 897
BERWICK
CRANBOURNE
ROAD
Proposed Train
Event Platform
0m
100m
200m
300m
400m
500m
1:5,000 @ A3
KLM REF: 8588 CM02
Version: 1
Date: 05-11-2020
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3.7 Public Open Space

Two public open space reserves must be provided within the Collison Estate, one to the north of Heather Grove and one to the south of Heather Grove.

These reserves have been sited so as to:

- Ensure as many dwellings/lots as possible are within 400 metres walking distance of designated open space; and
- Minimise the impacts of open space land take on impacted land parcels.

The parks will be connected through a series of linear drainage reserves as part of the broader drainage strategy.

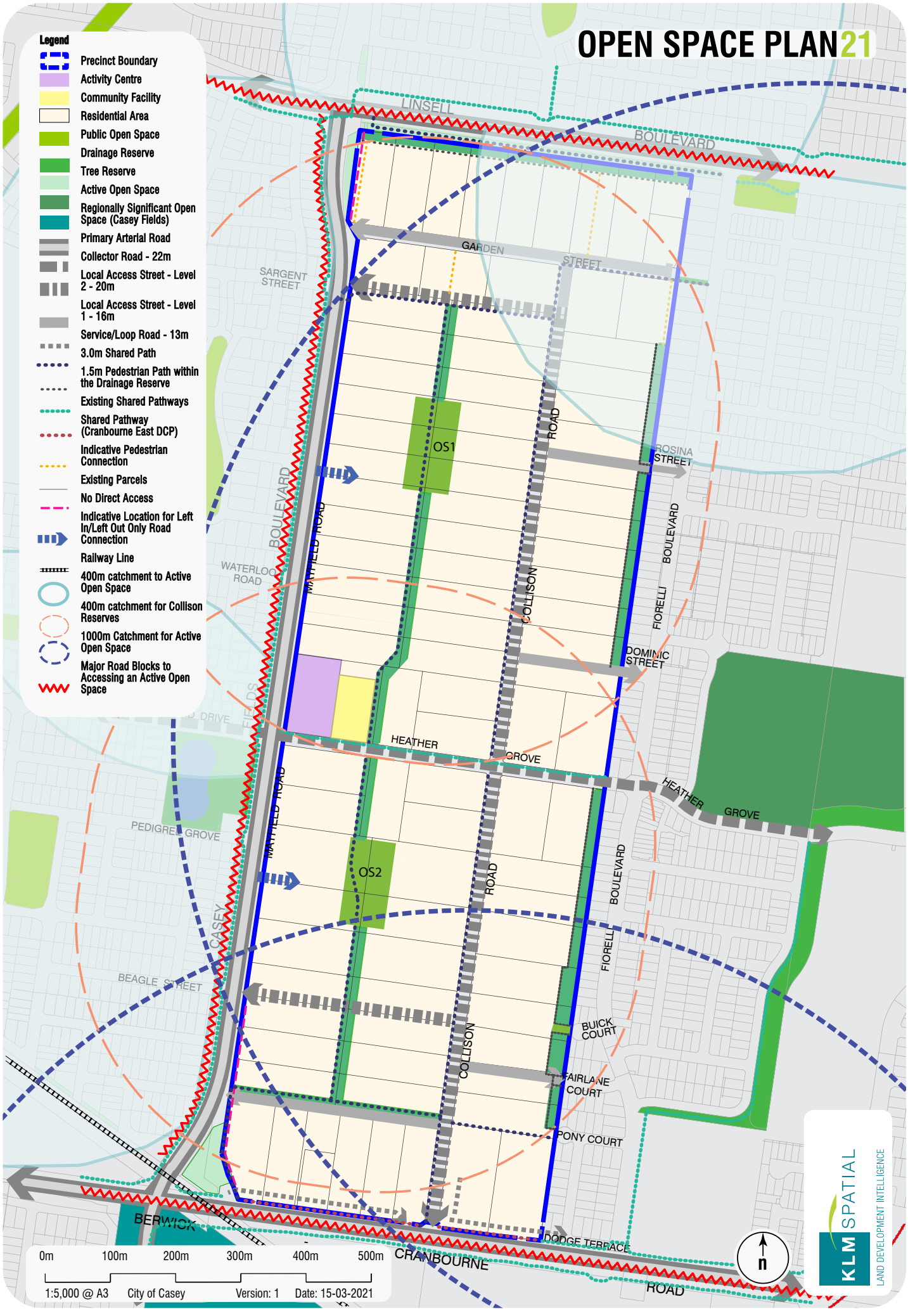
Planning and Design Guidelines

1. The open space reserves will each have a minimum dimension of 70 metres in width and length, unless otherwise agreed by the responsible authority.

Note: While the Casey Open Space Strategy also specifies a minimum area of 1.0 hectares per open space reserve. Council has agreed to the provision of a 1.0 hectare open space reserve and a 0.93 hectare open space reserve within Collison Estate.

2. Open spaces must have a road frontage to all edges except where these are otherwise addressed by active frontage from careful design of residential, commercial or community facility development or adjoin a drainage channel.
3. Streetscape planting and paths should complement and integrate with the adjoining parkland design.
4. The open space reserves must be on unencumbered land.
5. Kiosk substations must not be sited on public open space reserves.

Image: Casey Fields Reserve, 2021.


OPEN SPACE PLAN21
Legend
Precinct Boundary
Activity Centre
Community Facility
Residential Area
Public Open Space
Drainage Reserve
Tree Reserve
Active Open Space
Regionally Significant Open Space (Casey Fields)
Primary Arterial Road
Collector Road - 22m
Local Access Street - Level 2 - 20m
Local Access Street - Level 1 - 16m
Service/Loop Road - 13m
3.0m Shared Path
1.5m Pedestrian Path within the Drainage Reserve
Existing Shared Pathways
Shared Pathway (Cranbourne East DCP)
Indicative Pedestrian Connection
Existing Parcels
No Direct Access
Indicative Location for Left In/Left Out Only Road Connection
Railway Line
400m catchment to Active Open Space
400m catchment for Collison Reserves
1000m Catchment for Active Open Space
Major Road Blocks to Accessing an Active Open Space
LINSELL BOULEVARD
GARDEN STREET
SARGENT STREET
WATERLOO ROAD
BOULEVARD
MAYFIELD ROAD
COLLISON ROAD
ROSINA STREET
FIORELLI BOULEVARD
DOMINIC STREET
HEATHER GROVE
PEDIGREE GROVE
CASEY
BEAGLE STREET
BUICK COURT
FAIRLANE COURT
PONY COURT
DODGE TERRACE
BERWICK CRANBOURNE ROAD
OS1
OS2
0m 100m 200m 300m 400m 500m
1:5,000 @ A3 City of Casey Version: 1 Date: 15-03-2021
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3.8 Community Facilities

The community facility within the Collison Estate will:

- Provide a network of community facilities across the wider Cranbourne east locality as focal points for community activity and interaction within each neighbourhood, co-located with activity centres, open space, and transport facilities;
- Provide a range of community facilities and services to meet the varying needs of local residents;
- Promote high quality architecture and flexible design and use of community facilities to accommodate changing community needs over time;
- Maximise access to community facilities especially by public transport, walking and cycling; and
- Provide spaces for programs and services that are delivered by government and non-government organisations.

Planning and Design Guidelines

Location

1. The community facility must be located where it can be easily accessible by walking, cycling or public transport.
2. Community facilities which are located in an activity centre should be designed to maximise efficiency of land use through the sharing and overall reduction of car parking.

Built Form

1. Ensure that the building proportion, scale and character are appropriate to their urban context.
2. Ensure the principal entrances of buildings front onto streets and/or public spaces.
3. The community facility should:
   - (a) Front Heather Grove and/or have a strong physical link to it;
   - (b) Provide consistent seating, signage, and street furniture to present a robust image for the precinct;
   - (c) Provide pedestrian scale lighting along walkways that are close to a seating area, bus stop and open space;
   - (d) Include public art element that is functional and relevant to the character of the neighbourhood;
   - (e) Must demonstrate Environmentally Sustainable Design (ESD) and Water Sensitive Urban Design (WSUD) initiatives; and
   - (f) Provide ample canopy tree cover.
4. Design community facilities so that they:
   - (a) Provide for the multi-use of facilities by different groups within the community;
   - (b) Facilitate the efficient and shared use of resources and facilities;
   - (c) Provide for disability access and comply with DDA requirements; and
   - (d) Incorporate Crime Prevention Through Environmental Design Safe Design Principles where appropriate.

Siting

1. For sites of 0.4 hectares or above, siting of the building should ensure there is space for a north facing playground.
2. Ensure there is limited conflict with uses that may impact on the safety of children, increase noise levels or loss of amenity, such as roads with high traffic volumes,

proximity to loading bays, etc.

Carparking

1. The parking layout should provide a safe environment for all users and be pedestrian friendly in terms of safe and accessible pathways.
2. The design of the car park and surrounding landscape should provide clear sightlines into and throughout the car park.
3. One way car parking design layout with pedestrian friendly walkways is preferred.
4. Dedicated bus parking space or drop off space should be located near facility entrances.

Image: Selandra Family and Community Centre, 2021.

3.9 Drainage and Stormwater Management

The vision for the drainage channels, in line with the innovative stormwater drainage management solution, is that the aesthetic values of the proposal hold equal weight with the functional drainage requirements.

Management of scale, attention to detail, overall layout and ongoing maintenance are all key components of this urban billabong solution.

Ultimately the landscape outcome will be extremely vital to the overall success of this project.

The Estate is divisible into three distinct catchments (shown in *Figure 22*):

- The smaller northern catchment discharging to Linsell Boulevard;
- The middle catchment to Heather Grove discharging east towards Clyde Creek; and
- The southern catchment between Heather Grove and Berwick-Cranbourne Road discharging east towards the upper reach of Clyde Creek.

There are ten sub-catchments each with its own linear channel for retardation which includes raingardens for treatment.

The distributed management drainage model ensures all retardation and treatment can occur within the Estate itself.

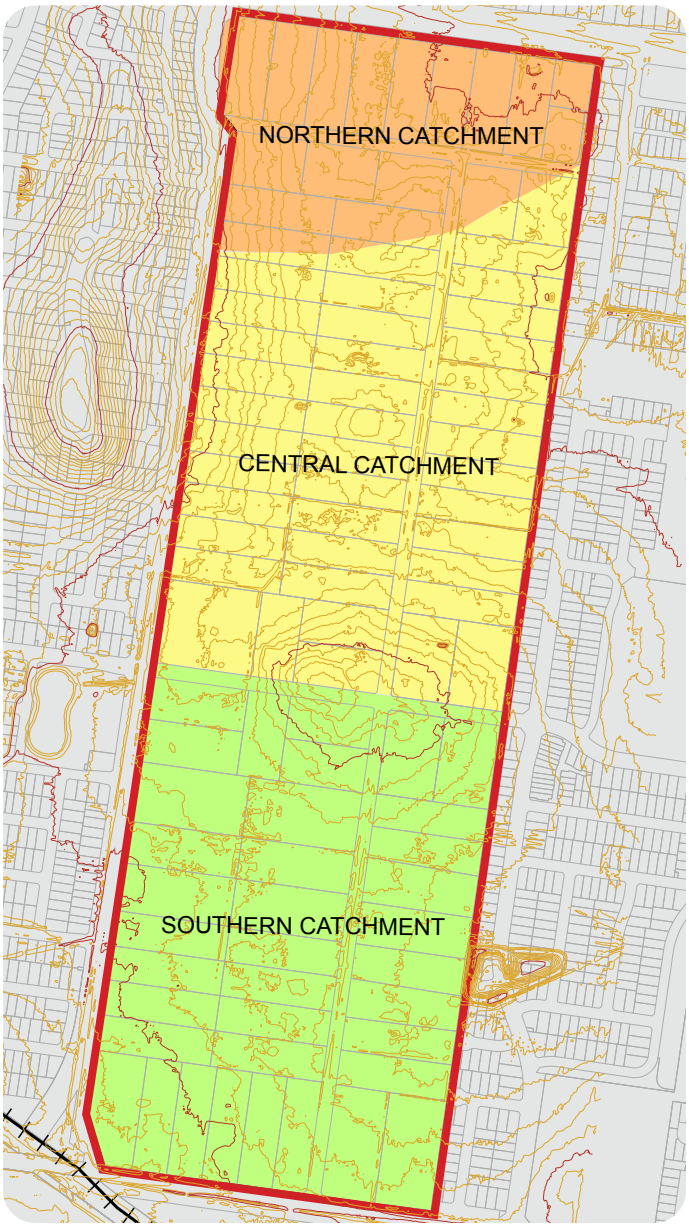
The land for drainage and the cost of the drainage infrastructure is incorporated into the Development Contribution Plan and the associated Section 173 Agreements.

The Drainage Plan in *Figure 23* illustrates the provision of approximately:

- 3km of green, linear drainage reserves and detention channels;
- 11,087m^3 of detention storage; and
- 1627m^2 of raingarden treatment area

Reserve widths are shown in *Figure 24*.

Figure 22: Drainage Catchments




DRAINAGE PLAN23
Legend
Drainage Sub-Catchment
Sub-Catchment Number
4.265Ha Sub-Catchment Size
Existing Parcel
Public Open Space
Existing Reserve
Drainage Reserve
Drainage Channel
Rainwater Garden
Drainage Pool
Contour Line
10m Contour Line
50 Contour Heights
Drainage Flow
Culvert under Road
Underground Pipes
1050Ø Undergound Pipe Size
Road Network
Road Connections
Roundabout Treatments
Railway Line
3.0m Shared Pathway
1.5m Footpath
Outfall
Existing Pipe Connection
Service Pits
LINSELL BOULEVARD
GARDEN STREET
SARGENT STREET
BOULEVARD
WATERLOO ROAD
FIELDS
BRADFORD DRIVE
HEATHER GROVE
PEDIGREE GROVE
CASEY
BEAGLE STREET
COLLISON ROAD
FIORELLI BOULEVARD
BUICK COURT
FAIRLANE COURT
PONY COURT
DODGE TERRACE
BERWICK - CRANBOURNE ROAD
A1 7.359ha
A2 5.252ha
B 4.714ha
C 17.074ha
D 3.499ha
E 8.617ha
F 6.659ha
G 10.309ha
H 6.713ha
I 5.845ha
J 5.397ha
600Ø
1050Ø
900Ø
750Ø
525Ø
Connect to existing drain
Connect to existing drain
Connect to existing drain
Connect to existing drain
0m 100m 200m 300m 400m 500m
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Planning and Design Guidelines – Overall

1. Development is to meet or exceed best practice stormwater quality treatment standards prior to discharge to receiving waterways.
2. Development must include integrated water management initiatives to diversify water supply, reduce reliance on potable water and increase the utilisation of storm and waste water contributing to a sustainable and green urban environment.
3. Runoff and peak flows must be reduced by the use of infiltration, local storage, reuse, landscape areas and other porous surfaces.
4. Integrated water management systems should be designed to enable future harvesting and/or treatment and re-use of stormwater.

Planning and Design Guidelines

1. All systems must, as a minimum;
   - (a) Have a typical storage capacity of 0.5 metres in depth and the length of the property frontage (subject to detailed design based on the area of pervious surfaces and anticipated re-use/ harvesting of stormwater);
   - (b) Deliver outfall infrastructure as required (see indicative cross sections – *Figure 24*);
   - (c) Seek to undertake works as well as make good the site outfall with the abutting property (see indicative cross sections – *Figure 24*);
   - (d) Have a maximum gradient of 1:6 batters, unless otherwise agreed by the responsible authority. Batters must be designed to enable efficient maintenance by the responsible authority;
   - (e) Be designed to the satisfaction of the responsible authority and demonstrate that the proposal does not prejudice the development of abutting undeveloped land parcels or other community infrastructure (i.e. roads, paths, public open space) to develop. Any interim or temporary strategies are strongly discouraged, except at drainage outfall points to the satisfaction of the responsible authority.
   - (f) Provide 3 metre wide shared path on Drainage channels B, C, F, G, and J or maintenance track incorporated into Drainage Channels A, D, E, H and I to provide access to the drainage channel;
   - (g) Provide culverts and crossings to the satisfaction of council;
   - (h) Delineate between the land which is needed for drainage and the land which is above the 1 percent AEP flood line;
   - (i) Drainage strategies for an individual site must demonstrate how they consider and co-ordinate with an ultimate consolidated approach applying to a minimum catchment of 10 hectares; and
   - (j) All drainage infrastructure downstream of the development must be in place prior to the development being completed. This includes the drainage channels, rain gardens and a free draining outfall.
2. All dwellings to include a minimum 2kl rain water tank connected to toilets and outdoors for irrigation use. Thirty percent of the tank

must be dedicated for detention storage.

3.9.1 Treatment

Planning and Design Guidelines

1. The treatment of stormwater must be done in a coordinated way. This could include, but is not limited to:
   - (a) The mandatory provision of domestic water tanks for all dwellings;
   - (b) Permeable paving for development;
   - (c) Irrigation of landscaped areas (both public and private realms);
   - (d) Wetland treatments and landscaping such as rock beaching;
   - (e) Series of raingardens and swales; and
   - (f) Other measures where it is demonstrated that best practice is exceeded.
2. Consolidation of treatment measures is required where:
   - (a) The applicable catchment is less than 10 hectares;
   - (b) More than one land parcel is developed; and
   - (c) Upgrades/alterations to an existing treatment measure to enhance its functionality and operation can occur in lieu of a new measure.

Image: Example of landscaping along a drainage reserve.

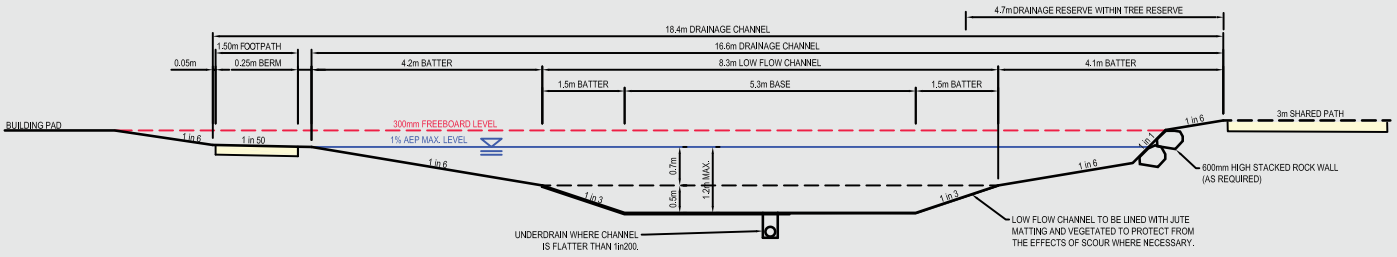
3.9.2 Drainage Channel Landscaping

The vision is that the aesthetic values of the drainage corridor holds equal weight with the functional drainage requirements.

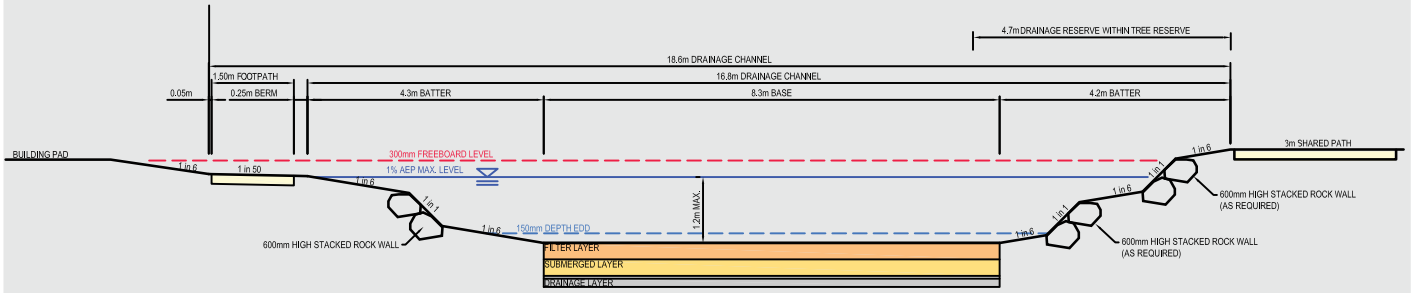
As these spaces are not just functional, the landscape objectives need to be seen as equally important to the drainage function.

1. Drainage channels must be landscaped.
2. Vegetation selection should be comprised of a mix of indigenous and non-indigenous vegetation and be low maintenance.
3. A naturalistic feel should be achieved.
4. A high percentage of indigenous grass, sedge and rush species at high planting densities to give good coverage and bank stability should be used.
5. Planting should include wild flowers through the planting mix in appropriate numbers.
6. Areas planted below the Q100 must be planted in accordance with the *Melbourne Water Planting Guidelines* and at a high density of 8-10 plants per square metre.
7. Ensure use of high quality rock to provide access down the bank and as large stepping stones to cross the waterway.
8. Flat grassed areas to stop and appreciate the space should be provided.
9. Large shade trees along the pathways at appropriate intervals should be provided to the satisfaction of the responsible authority.
10. Use a wider range of aquatic and riparian species than might normally be used in more functional wetland landscape treatments.
11. Waterways and pipe tracks should not be fenced spaces (where appropriate and safe). Where fencing is required it should be low scale and permeable. Semi-transparent fencing to be provided where residential development backs onto utility easements and wetlands.
12. Street furniture and lighting should be provided along the shared pathways (refer to sections 3.4 and 3.6).

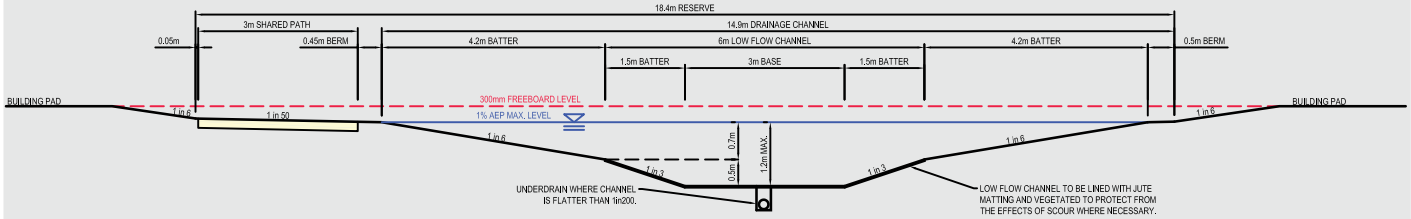
DRAINAGE CROSS SECTIONS 24



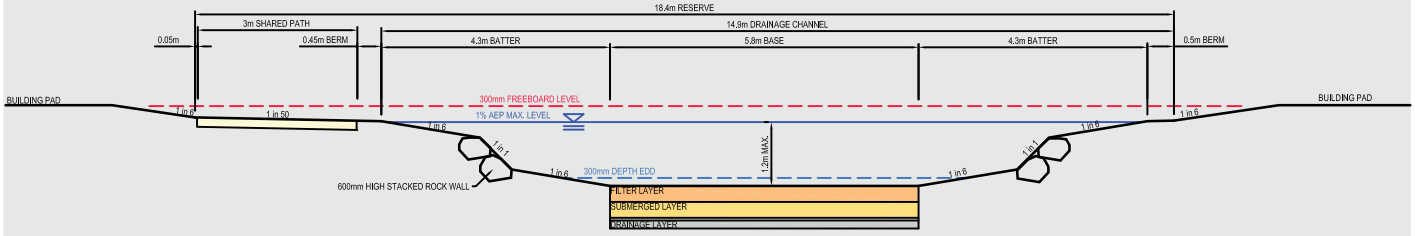
TYPICAL SECTION - DRAINAGE CHANNEL (A)



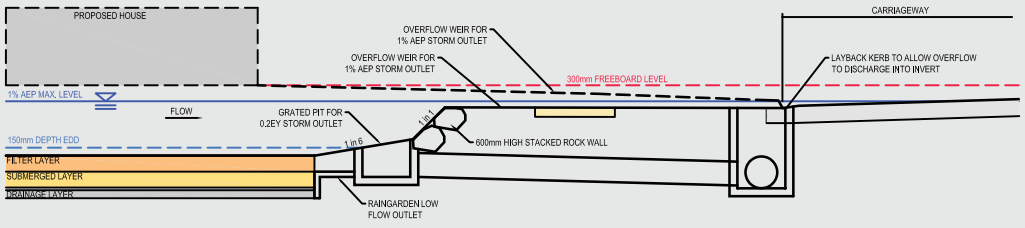
TYPICAL SECTION - DRAINAGE CHANNEL (A)



TYPICAL SECTION - DRAINAGE CHANNEL (B, C, F, G, J)



TYPICAL SECTION - DRAINAGE CHANNEL WITH RAINGARDEN (B, C, F, G, J)



TYPICAL SECTION - DRAINAGE CHANNEL OUTFALL - (B, C, F, G, J)

0m 1m 2m 3m 4m 5m

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Version: 3 Date: 10-03-2021

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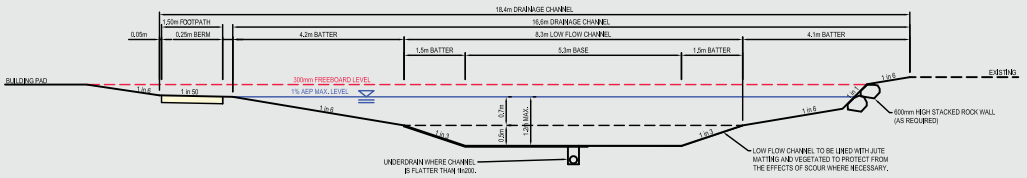
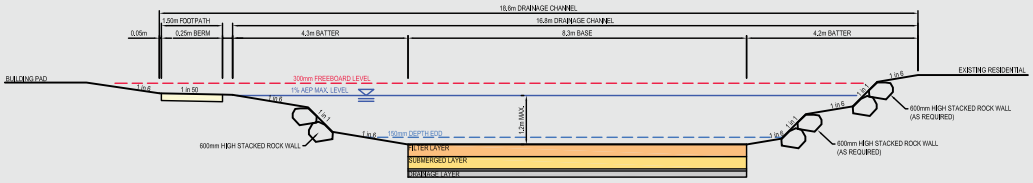
DRAINAGE CROSS SECTIONS 25



TYPICAL SECTION - DRAINAGE CHANNEL (D, E, H, I)



TYPICAL SECTION - DRAINAGE CHANNEL (D, E)

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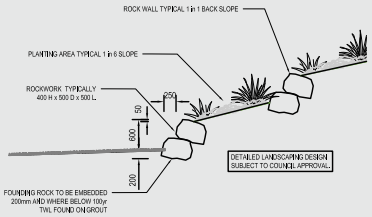
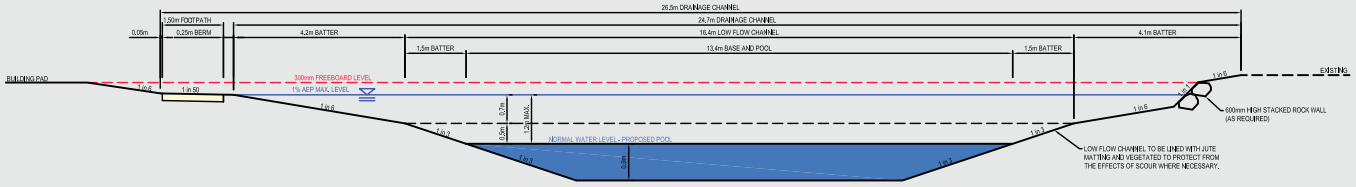
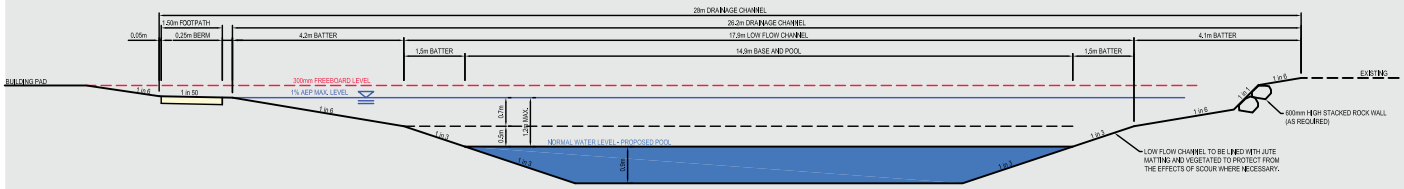
Version: 3 Date: 10-03-2021



TYPICAL SECTION - STACKED ROCK WALL



TYPICAL SECTION - DRAINAGE CHANNEL WIDENING (H)



TYPICAL SECTION - DRAINAGE CHANNEL WIDENING (I)

0m 1m 2m 3m 4m 5m

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Version: 3 Date: 10-03-2021

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3.10 Utilities

The utilities and development staging objectives are:

- To ensure development occurs in an orderly and sustainable manner and makes best use of existing infrastructure; and
- To provide all developed lots, to the satisfaction of the relevant authority, with:
  - A potable water service;
  - Electricity;
  - Reticulated sewerage service;
  - Drainage; and
  - Telecommunications.

Planning and Design Guidelines

1. Development must occur in an orderly and sustainable manner and make best use of existing infrastructure.
2. Delivery of underground services must be coordinated, located and bundled (utilising common trenching) to facilitate planting of trees and other vegetation within road verges.
3. All existing above ground electricity cables of less than 66kv voltage must be placed underground as part of the upgrade of existing roads – to the satisfaction of the relevant electrical authority.
4. All new electricity supply infrastructure (excluding sub stations) must be provided underground.
5. New substations must be identified at the subdivision design response stage to ensure effective integration with the surrounding neighbourhood and to minimise amenity impacts.
6. Above ground utilities should only be provided where outside of key view lines and screened from public view.
7. Substations and other services must not be placed in public spaces unless otherwise agreed by the Responsible Authority.

3.11 Development Staging

Generally, staging will be determined by the development program of developers within the precinct and the availability of infrastructure services.

Planning and Design Guidelines

1. Development staging must not create circumstances in which residents will be unreasonably isolated from commercial and community facilities or public transport.
2. Development staging must be integrated with adjoining developments, including the timely provision of connecting roads and walkway / cycling paths.
3. Access to each new lot must be provided via a sealed road.
4. All drainage infrastructure downstream of the development must be in place prior to the development being completed.
5. The intersection at Collison Road/Berwick-Cranbourne Road must be a left/left out intersection prior to any development being completed.

4.0 INFRASTRUCTURE PLAN

Image: Selandra Community Hub, 2020.

This infrastructure plan sets out infrastructure and services required to meet the needs of development of the precinct, and who is responsible for the delivery of works. Both Development Contributions and Public Open Space Contributions are collected to ensure the provision of major infrastructure and open space items.

4.1 Provision of Infrastructure

The infrastructure and services are to be provided through a number of mechanisms including:

- Subdivision construction works by developers;
- Development contributions (development infrastructure levy);
- Utility service provider requirements; and
- Capital works projects by Council, State Government Agencies and Non-Government Organisations.

4.2 Subdivision Construction Works by Developers

As part of subdivision construction works, all lots should be able to be connected to reticulated drainage, sewerage, water, electricity, and telecommunications services. Unless provided for in the applicable Development Contributions Plan, a Public Acquisition Overlay or other Agreement, the following infrastructure works should be provided for, either in full or in part, by the developer to the satisfaction of the City of Casey and/or other relevant Responsible Authorities:

- Connector streets and local streets, including culverts;
- Local bus stop infrastructure;
- Landscaping of all existing and future roads and local streets;
- Intersection works and traffic management measures along arterial roads, connector streets and local streets;

  Note: Subject to the approval of the collecting agency, part or all of the cost of works on intersections included in a Development Contributions Plan may be able to be provided as in-kind works in lieu of cash payment.
- Council approved fencing and landscaping (where required) along arterial roads;
- Street lighting;
- Local pedestrian and bicycle paths along local arterial roads, connector roads and local streets, and local drainage systems, except those in the DCP;
- Local drainage systems connected to the ultimate drainage outfall point; and
- Infrastructure as required by utility services providers including water, sewerage, drainage, electricity, and telecommunications.

It is not proposed to use the Public Acquisition Overlay as an initial mechanism to provide land for infrastructure.

4.3 Development Contribution Plan

A Development Contributions Plan has been prepared for Collison Estate in conjunction with this Development Plan. The Development Contribution Plan is an incorporated document of the Casey Planning Scheme.

4.4 Public Open Space Contributions

Public open space contributions are required under Clause 53.01 of the *Casey Planning Scheme* as a 5 percent contribution of the net developable area (NDA). Land must be provided in accordance with the development plan.

Only 1.9332 hectares required under Clause 53.01 (Public Open Space Contribution and Subdivision) for the Collison Estate will be delivered through the provision of two parks (one is 1.0 hectares in size, the other is 0.93 hectares). The remaining contributions will be received through cash contributions to the Responsible Authority which must supplement the embellishment of the proposed public open spaces.

A contribution must be made as follows;

- Where public open space is identified on a land parcel and is equal to 5% of the land parcel's NDA, that land must be transferred to Council at no cost to Council;
- Where public open space is shown on a land parcel and is less than 5% of the lot's NDA:
  - The relevant land must be transferred to Council at no cost to Council; or
  - A cash contribution is to be made to Council to bring the total public open space contribution to a value equal to 5% of NDA.
- Where public open space is shown on a land parcel that is greater than 5% of the lot's NDA, the relevant land must be transferred to Council at no cost of Council. Council will compensate the landowner, at a time to be agreed, for the amount of land provided in excess of 5% but no greater than the difference between 5% and the amount of land nominated in the land budget tables; or
- Where no public open space is shown on a parcel, a cash contribution is to be made to Council to the value of 5% NDA.

The Responsible Authority may alter the distribution of public open space as shown on the Development Plan provided the relevant vision and objectives of this Development Plan are met.

A developer may provide additional public open space in a subdivision to the satisfaction of the Responsible Authority.

Table 6: North Pubic Open Space Contributions

Property	Length (m)	Width (m)	Area (m^2)
35 Collison Road	9.3	35	327
37 Collison Road	47.1	35	1649
39 Collison Road	46.6	35	1630
41 Collison Road	39.9	35	1393
34 Mayfield Road	9.3	35	327
36 Mayfield Road	47.1	35	1648
38 Mayfield Road	46.6	35	1629
40 Mayfield Road	39.9	35	1397
Overall Dimensions	142.9	70	10000

Table 7: South Pubic Open Space Contributions

Property	Length (m)	Width (m)	Area (m^2)
14 Mayfield Road	54.0	35	1891
16 Mayfield Road	80.1	35	2802
13 Collison Road	54	35	1866
15 Collison Road	80.1	35	2773
Overall Dimensions	133.3	70	9332

Note: Length and width dimensions for individual lots may vary slightly depending on the lot dimensions. Public

open space contributions area shown in Table 6 and 7 includes both encumbered and unencumbered public open space.

4.5 Public Open Space Delivery

The vesting of reserves to Council as individual land parcels develop is acceptable.

Where land is vested to Council it must be accessible by vehicle to enable its maintenance and unrestricted access.

Land vested to the Responsible Authority is to be vested in a condition that enables safe public use and access, and safe mowing using standard Council machinery.

All public open space must be finished to a standard that satisfies the requirements of the Responsible Authority prior to the transfer of the public open space, including but not limited to:

- Removal of all existing and disused structures, foundations, pipelines, protruding rocks and stockpiles;
- Clearing of rubbish, environmental weeds, rocks and loose surface;
- Levelling of Public Open Space;
- Bare, patchy and newly graded areas being seeded and top-dressed with warm climate grass (unless conservation reserve requirements dictate otherwise);
- Provision of vehicular exclusion devices (fence, bollards, or other suitable method) with the exception of maintenance vehicle access; and
- Utilities are provided to the public open space.

Where there is existing vegetation on the land that is to be vested to Council, a preferred outcome will need to be agreed regarding the retention of trees. This will depend on where the open space is to be located and extent of vegetation. An arborist report will be required to determine the retention value of any vegetation within a future open space reserve.

4.6 Infrastructure and Services Required to Support Development of the Precinct

Table 8 sets out the list of infrastructure and services required to support development, including details of:

- Infrastructure Group and Category;
- Project Title and Description;
- Lead Agency (the agency responsible for the coordination and approval of the project. Other agencies and / or developers may have an involvement in the project); and
- Timing.

4.7 Project Coordination

Where practical and compatible, infrastructure projects should be grouped and delivered in a coordinated manner.

4.8 Section 173 Agreements

A Section 173 Agreement should be placed on title for land to be vested to Council for drainage infrastructure purposes. This will affect landowners with drainage infrastructure shown on their land (see *Figure 23*). If land is unable to be vested in Council for drainage infrastructure purposes, then land assembly will be left to the market to coordinate. The timing of the delivery of the infrastructure will be left to the market as set out in the Development Contributions Plan.

4.9 Maintenance

A minimum 2 year maintenance period will be required prior to the hand-over of a drainage asset to the responsible authority. This will form a condition on any planning permit granted.

Table 8: Infrastructure and Services Required to Support Development of the Estate

Project Ref.	Project Description	Lead Agency	Indicative Timing	Indicative Costs (2021)
Roads				
RD01	Sargent Street - Construction of Sargent Street as a Local Access - Level 2 road.	Relevant development proponent	S	$1,711,908.00
RD02	Heather Grove - 2m widening of Heather Grove to a Collector Road standard.	Relevant development proponent	S-M	$427,884.00
RD03	Heather Grove - Upgrade of Heather Grove fronting 1 Heather Grove to a 'Main Street.'	Relevant development proponent	S-M	$1,331,709.88
RD04	Beagle Street - Construction of Beagle Street as a Local Access - Level 2 road standard.	Relevant development proponent	M	$1,707,139.00
RD05	Collison Road North - Upgrade of Collison Road North to a Local Access - Level 2 road standard.	Council	S	$4,231,763.00
RD06	Collison Road South - Upgrade of Collison Road South to a Local Access - Level 2 road standard.	Council	M	$3,912,558.00
RD07	Sargent Street - Land required to achieve a 20m road reserve for Sargent Street extension including intersection flaring (0.5873 hectares).	Council	S	$1,846,675.00
RD08	Heather Grove - Land required to a achieve a 22m road reserve for Heather Grove including intersection flaring (0.1006 hectares).	Council	S-M	$318,189.73
RD09	Beagle Street - Land required to achieve a 20m road reserve for Beagle Street extension including intersection flaring (0.6567 hectares).	Council	M	$2,027,302.00

Project Ref.	Project Description	Lead Agency	Indicative Timing	Indicative Costs (2021)
Intersections				
IN01	Linsell Boulevard and Casey Fields Boulevard - Construction of signalised intersection. (Total cost shown in brackets).	Council/DoT	M (or prior to Statement of Compliance for the 680th lot within the Estate or at Council's discretion having regard to the timing of funds available from the Cranbourne East DCP to deliver the item).	$209,436.00 ($3,871,345.63)
IN02	Sargent Road and Casey Fields Boulevard - Construction of a roundabout.	Council	S	$1,200,592.00
IN03	Beagle Street and Casey Fields Boulevard - Construction of a roundabout	Council	M	$1,450,189.00
IN04	Collison Road and Berwick-Cranbourne Road - left in/left out intersection.	Council/DoT	M (or once Collison Road South is upgraded and requiring connection to Berwick -Cranbourne Road).	$643,635.00

Project Ref.	Project Description	Lead Agency	Indicative Timing	Indicative Costs (2021)
IN05	Land required to achieve lane duplication. 0.0006 Hectares required.	Council	M (at the same time as IN01)	$2,003.00
Community Facilities				
CF01	Community Facility - Land required for a community facility (0.6 hectares).	Council	S-M (at the same time as CF02)	$3,300,000.00
CF02	Community Facility - Construction of centre to include a double kindergarten, two maternal and child health rooms and flexible community rooms.	Council	S-M (or prior to the 800th household in the Estate or 500th household south of Heather Road whichever comes first).	$4,662,000.00 ($5,180,000.00)
Public Open Space (Not included within the Development Contribution Plan will be achieved through Public Open Space Contributions*)				
OS01	Land for public open space (North) (1.00 hectares).	Council	S-L	$1,454,064.47
OS02	Land for public open space (South) (0.93 hectares).	Council	S-L	$1,323,315.11
OS03	Basic improvements to open space including earthworks, grading, seeding, garden beds, paths and trails, local playground construction.	Council	L	$6,541,264.45
Drainage				
DR01	Drainage channel A - Construction of drainage channel.	Relevant development proponent	S	$1,133,712.89
DR02	Drainage channel B - Construction of drainage channel.	Relevant development proponent	S	$279,754.90
DR03	Drainage channel C - Construction of drainage channel.	Relevant development proponent	S	$775,023.27

Project Ref.	Project Description	Lead Agency	Indicative Timing	Indicative Costs (2021)
DR04	Drainage channel D - Construction of drainage channel.	Relevant development proponent	S	$431,180.41
DR05	Drainage channel E - Construction of drainage channel.	Relevant development proponent	S	$779,845.15
DR06	Drainage channel F - Construction of drainage channel.	Relevant development proponent	S	$249,244.51
DR07	Drainage channel G - Construction of drainage channel.	Relevant development proponent	S	$475,137.96
DR08	Drainage channel H - Construction of drainage channel.	Relevant development proponent	S	$840,214.26
DR09	Drainage channel I - Construction of drainage channel.	Relevant development proponent	S	$358,720.84
DR10	Drainage channel J - Construction of drainage channel.	Relevant development proponent	S	$568,791.96
DR11	Underground pipes - Channel B to outfall (1050Ø @ 391.6 linear metres).	Council/relevant development proponent	S	$281,952.00
DR12	Underground pipes - Channel C to Channel B pipe (750Ø @ 148.9 linear metres).	Council/relevant development proponent	S	$92,318.00
DR13	Underground pipes - Channel A to outfall (600Ø @ 46.6m linear metres).	Council/relevant development proponent	S	$24,232.00
DR14	Underground pipes - South POS to outfall (750Ø @ 502.2 linear metres).	Council/relevant development proponent	S	$311,364.00

Project Ref.	Project Description	Lead Agency	Indicative Timing	Indicative Costs (2021)
DR15	Underground pipes - Channel F to South POS (525Ø @ 99.45 linear metres).	Council/relevant development proponent	S	$43,758.00
DR16	Underground pipes - Channel J to outfall (525Ø @259.2 linear metres).	Council/relevant development proponent	S	$114,048.00
DR17	Underground pipes - Channel G to South POS (525Ø @ 53.65 linear metres).	Council/relevant development proponent	S	$23,606.00
DR18	Land required for drainage channel A (0.7038 hectares).	Council	S	$2,214,143.00
DR19	Land required for drainage channel B (0.2706 hectares).	Council	S	$822,941.00
DR20	Land required for drainage channel C (0.7475 hectares).	Council	S	$2,532,403.00
DR21	Land required for drainage channel D (0.3394 hectares).	Council	S	$1,035,082.00
DR22	Land required for drainage channel E (0.5536 hectares).	Council	S	$1,637,925.00
DR23	Land required for drainage channel F (0.2323 hectares).	Council	S	$695,472.00
DR24	Land required for drainage channel G (0.4546 hectares).	Council	S	$1,422,783.00
DR25	Land required for drainage channel H (0.7384 hectares).	Council	S	$2,227,767.00
DR26	Land required for drainage channel I (0.2979 hectares).	Council	S	$908,741.00
DR27	Land required for drainage channel J (0.5927 hectares).	Council	S	$2,188,399.00

**Public Open Space Contributions are indicative only.*

Timing - S (1-5 years), M (5-10 years), L (10+ years).

5.0 FURTHER REQUIREMENTS

Image: Clyde Wetlands, 2021.

5.1 Planning Permit Application Requirements

Planning permit applications will be required to meet the relevant provisions of the Casey Planning Scheme. Application requirements are listed in Clause 43.04 Schedule 22 to the Development Plan Overlay. In addition, the following information should be provided with any permit application:

- For subdivision applications which include a "superlot", an indicative building / future subdivision layout of the superlot;
- An environmental assessment prepared by an appropriately qualified person for those land parcels known to have been used for non-residential purposes and may be potentially contaminated;
- A stormwater management strategy outlining;
  - Proposed retardation requirements;
  - Proposed treatment measures demonstrating best practice is achieved;
  - Integration of drainage solutions with abutting land owners/properties;
  - Public works to be undertaken and impacted land owners/properties; and
  - The impacts of the strategy on abutting land parcels or other community infrastructure (i.e. roads, paths, public open space) to develop, and demonstrating that the proposal will not prejudice their ability to develop.
- Planning applications for subdivision and development must demonstrate compliance with Clause 56.07 (Integrated Water Management) and Clause 53.18 (Stormwater Management in Urban Development) of the *Casey Planning Scheme*, as applicable;
- Landscape concept plan consistent with the *Casey City Council Landscape Guidelines* as amended indicating:
  - Street trees; and
  - Any landscaping within the private realm.
- Public infrastructure plan identifying:
  - Public works to be delivered;
  - Timing for the delivery of the works; and
  - Stage sequencing plans (where applicable).
- Before development commences/certification, functional layout plans must be submitted showing how the roads will connect with the broader surrounds and the location of all:
  - Underground services;
  - Driveways and crossovers;
  - Street lights;
  - Street trees; and
  - Services and street lights so as to achieve the road reserve width consistent with the cross sections nominated and accommodate the minimum level of street tree planting.
- Where a drainage reserve is shown and spans across multiple properties, an indicative landscaping concept master plan for the entire reserve must be prepared. It must be consistent with the *Casey City Council Landscape Guidelines* as amended and to the satisfaction of the responsible authority unless otherwise agreed by the responsible authority;
- A Waste Management Plan is required as part of any application where private or common property roads are proposed;
- Where non-residential uses are proposed, the applicant must provide:
  - An assessment of whether the proposed non residential use(s) and an increase in existing non residential uses adversely

affects the future and orderly operation of the Collison Estate activity centre.

- The nature of the proposed use;
- Floor area of the proposed use;
- Access and movement plan including pedestrian connectivity and bicycle facilities;
- Appropriate buffers between the non-residential use and residential uses (current and future);
- Carparking plan; and
- Landscaping plan.

- Sustainable development report or statement, as outlined below:
  - Either a Sustainable Design Assessment or a Sustainability Management Plan as specified in Table 9, as appropriate:
    - A Sustainable Design Assessment will usually not need to be prepared by a suitably qualified professional. It should:
      - Provide a simple assessment of the development. It may use relevant tools from the examples listed in the table or an alternative assessment approach to the satisfaction of the responsible authority; and
      - Identify environmentally sustainable development measures proposed in response to policy objectives, having regard to the site's opportunities and constraints.
    - A Sustainability Management Plan should:
      - Provide a detailed assessment of the development. It may use relevant tools from the examples listed in the table or an alternative assessment approach to the satisfaction of the responsible authority; and
      - Identify achievable environmental performance outcomes having regard to the objectives of this policy (as appropriate);
      - Demonstrate that the building has the design potential to achieve the relevant environmental performance outcomes, having regard to the site's opportunities and constraints; and
      - Document the means by which the performance outcomes can be achieved.
  - A Sustainable Subdivision Design Statement should provide a simple sustainability assessment of how the subdivision address the above initiatives and following outcomes:
    - Optimised solar orientation to public open space and dwellings;
    - Reduction of impervious surfaces;
    - Reduction in construction waste and high use of recycled materials;
    - Provision of pedestrian and cycle access and appropriate pedestrian weather protection;
    - Diversity of street / pathway designs;
    - Retention of mature trees and use of drought tolerant and indigenous planting;
    - Use of low-energy street lighting; and
    - Various assessment tools have been listed in Table 9 which may be used to assess how the proposed development addresses the objectives of this policy, as appropriate.

The responsible authority may waive the need to provide any of the information detailed above that is not relevant to a particular application.

Table 9: Sustainable Development Assessment Tools

Type of Development	Application Requirements	Example Tools
All Development		
» 2-9 dwellings; or » Development of a building other than dwellings with a gross floor area between 50m^2 and 1000m^2	Sustainable Design Assessment (SDA)	BESS STORM MUSIC
» Development of 10 or more dwellings. » Development of a building with a gross floor area of more than 1000m^2.	Sustainability Management Plan (SMP)	BESS Green Star MUSIC STORM
All Subdivision	Sustainable Subdivision Design Statement	

» Demonstrate how development will achieve a minimum Green Star 6 star rating or equivalent;

» Traffic impact assessment;

Note: Interim turning areas must be shown as part of any planning application demonstrating how interim solutions will be available to ensure the safe and efficient movement of waste vehicles and emergency vehicles. Bonds for interim access arrangements may be requested, at the discretion of the Responsible Authority.

» An indicative road layout cell plan to demonstrate how the proposal integrates with the surrounding lots (where lots are developed one by one);

» Where medium density or higher density is proposed, a plan confirming the walkability of the development to either open space or bus capable roads must be provided;

» Where the activity centre or community facility is proposed, a concept plan showing both areas must be provided. It should address:

  » Landscaping that demonstrates how overland flow paths are considered as part of public realm design to optimise efficient water use and long-term viability of vegetation;

  » Pedestrian connectivity;

  » Car parking;

  » Bicycle facilities;

  » Loading bays;

  » How it integrates with the abutting activity centre or community facility, the drainage channel and shared pathway;

  » Waste management; and

  » Urban design framework which includes a cross section for a Main Street concept.

5.2 Administrative Updates

It is recognised that, from time to time, circumstances may change leading to the need for minor administrative changes to this document. Where an update does not materially alter this document, such a change may be made administratively. Examples include a change to the name of a Council department, a change to the name of a Federal or State Government department, and a minor update to legislation which does not have a material impact. However, any change or update which materially alters this document must be by resolution of Council.

APPENDIX 1
ESTATE ANALYSIS

Image: Selandra Rise Neighbourhood Activity Centre, 2021.

A1.1 Existing Estate Features

Table 10 provides a snapshot of key elements of the Estate.

Table 10: Existing Estate Features

Area	83.0778 Hectares
Land Parcels	94 individual land parcels.
Existing Lot Mix	Low density residential development with a mix of vacant lots and lots developed with a single dwelling in a landscaped or agricultural setting. Lot sizes across the Estate range from 4,000 to 16,000 square metres. Most lots are regular in configuration and are around 8000m^2 in size.
Land Uses	The only property that has, until recently, been used for commercial use is Bramley's Wholesale Nursery at 4 Mayfield Road, a Medical Centre currently operates at 201 Berwick-Cranbourne Road. The balance of the Estate is used for residential purposes. There are also a number of home businesses within the estate and some vacant lots as well.
Topography	The land form is relatively flat at an elevation of approximately 40m above sea level. The Estate has a modest fall from west to east of approximately 6.5 metres (RL 41.5 to the west to RL 35 to the east). The highest point of the Estate is close to the corner of Heather Grove and Collison Road as RL 42.0. Given the generally "flat" nature of the land, there are no key view lines or vistas to be considered from a topographic perspective.
Geology	The majority of the Estate is underlain by Tertiary aged Baxter Sandstone which is described as ferruginous sandstone, sand, sandy clay with occasional gravels. There is a small section in the north of the Estate underlain by Quaternary aged peaty clay and clay (mainly swap deposits).
Waterways	No designated waterways dissect the Estate. There is a minor drainage tributary that runs in a north-easterly direction north of Heather Grove.
Hydrogeology	A groundwater database search identified a total of 91 bores within the Estate, and of these, 89 were used for extractive purposes. The existing bores are not an impediment to the future development of the land.

A1.2 Constraints and Opportunities

A1.2.5 Cultural Heritage

The north-eastern corner of the land is within an area of cultural heritage sensitivity (see *Figure 26*). There are registered Aboriginal sites to the west and south of the estate. The registered site near Fable Way in the Hunt Club Estate is within 50 metres of the Estate sites, adjacent properties will be required to have a Cultural Heritage Management Plan prepared, where a high impact activity is proposed.

Recorded Aboriginal sites near the Collison Estate indicate that for the area, Aboriginal cultural heritage is likely to be present on elevated land forms in a surface and subsurface context.

A Cultural Heritage Management Plan is required to be undertaken prior to a planning permit being granted, in accordance with the *Aboriginal Heritage Act 2006* and supporting Regulations in instances listed above.

A1.2.6 Post-contact European Heritage

Based on a historical review of European land use, Heritage Victoria's Online Database (Hermes) and previous historic reports it was concluded that there are no recorded historic sites in the activity area and significant historic heritage is unlikely to be present.

A1.2.7 Flora and Fauna

Collison Estate lies within the Gippsland Plain bioregion and falls within the Port Phillip and Westernport Catchment Management Authority.

There is moderate vegetation coverage throughout the Collison Estate that would provide roosting and foraging habitat for native birds and arboreal mammals. None of the trees recorded were of a sufficient age and maturity to have developed nesting hollows for native fauna.

As the Estate is isolated from any other areas of treed habitat it is not part of a habitat corridor or a direct connection.

Any development proposing to remove, destory or lop native vegetation including dead native vegetation would need to be considered against Clause 52.17 (Native Vegetation) where the particular provision applies.

A1.2.8 Environmental Risk

All properties except for 4 Mayfield Road, have a "low risk" of potential contamination. Due to its previous use as a plant nursery, further investigations into 4 Mayfield Road are required prior to the use of the land for residential purposes.

Other potential risks of contamination are considered readily managed such as septic tanks/wastewater fields, asbestos in building and minor inert waste.

A1.2.9 Bushfire Risk

The land is not within a bushfire prone area, all land to the north, east and west is developed and managed. Land to the south is used as a recreation facility and has eastern and western interfaces with residential development, and as such the land is managed to reduce grassfire risk. The land is also separated by Berwick-Cranbourne Road.

A1.2.10 Flood Risk

Areas through the centre of the estate (north of Heather Grove) are prone to flooding due to the topography of the land.

A1.2.11 Existing Roads and Public Transport

Collison and Mayfield Roads and Garden Street are presently unsealed roads.

Street Network

The existing road network will form the basis for the redevelopment of Collison Estate. New local access streets will be required to provide a legible and permeable road network. Recognising the fragmented land ownership, and ensuring local access streets provide broader connections will be critical to any development occurring holistically rather than on a 'site by site' basis.

Arterial Roads

Berwick-Cranbourne Road

Berwick Cranbourne Road is a declared road managed by the Department of Transport. It serves a primary arterial road in the east-west direction.

Existing lots currently have direct access onto Berwick-Cranbourne Road. A service road will be required for access to future lots.

Linsell Boulevard

Linsell Boulevard does not provide direct vehicle access to Collison Estate as it was built after the estate was established.

Casey Fields Boulevard/Mayfield Road

Casey Fields Boulevard has been constructed in its interim configuration and provides for direct vehicle access for lots to the west. Mayfield Road runs parallel to Casey Fields Boulevard and is currently unmade.

Mayfield Road will form part of Casey Fields Boulevard in its ultimate configuration. The existing road reserves are of a width sufficient to accommodate the upgrades. Mayfield Road is currently unsealed and will be required to be upgraded to an urban standard.

Heather Grove

Heather Grove has recently been constructed to a sealed road providing east-west connections. Further upgrades to Heather Grove will be required to be bus capable. Heather Grove is identified as a future collector road.

Controlled Intersections

Linsell Boulevard/Casey Fields Boulevard

The Linsell Boulevard/Casey Fields Boulevard intersection is currently an uncontrolled three way intersection. In its ultimate configuration, it will be a four way signalised intersection with the northern leg extending Casey Fields Boulevard through to Thompsons Road.

This development plan and development contribution plan will fund the southern leg duplication and contribute towards the ultimate signalisation of the intersection.

The *Cranbourne East DCP* will fund the duplication of Linsell Boulevard at the intersection and the interim signalisation of the intersection. It is anticipated that the northern leg will be apportioned to the future *Croskells PSP*.

When 680 dwellings have been developed within the Collison Estate Development Plan

area, the intersection must be signalised.

Casey Fields Boulevard/Berwick-Cranbourne Road

The intersection of Berwick-Cranbourne Road and Casey Fields Boulevard is signalised. It requires no further upgrades.

Heather Grove/Casey Fields Boulevard

There is an existing roundabout at the intersection of Heather Grove and Casey Fields Boulevard, modifications are required for the ultimate scenario when Mayfield Road will act as a southbound lane for Casey Fields Boulevard in the future.

Beagle Street/Casey Fields Boulevard and Sargent Street/Casey Fields Boulevard

A roundabout will be required at both intersections to control traffic flow in all four directions at the intersection.

Local Roads

Collison Road

Collison Road is an unsealed road. The urbanisation of this Estate will require the upgrade of this road to an urban standard. The existing road reserve is of a sufficient width to accommodate the upgrade.

Collison Road is identified as a future level 2 local access street.

The intersection with Berwick-Cranbourne Road is proposed to be upgraded to a left in/left out intersection.

Council proposes to upgrade this road prior to development occurring to unlock development potential. Funds will be recouped through the DCP.

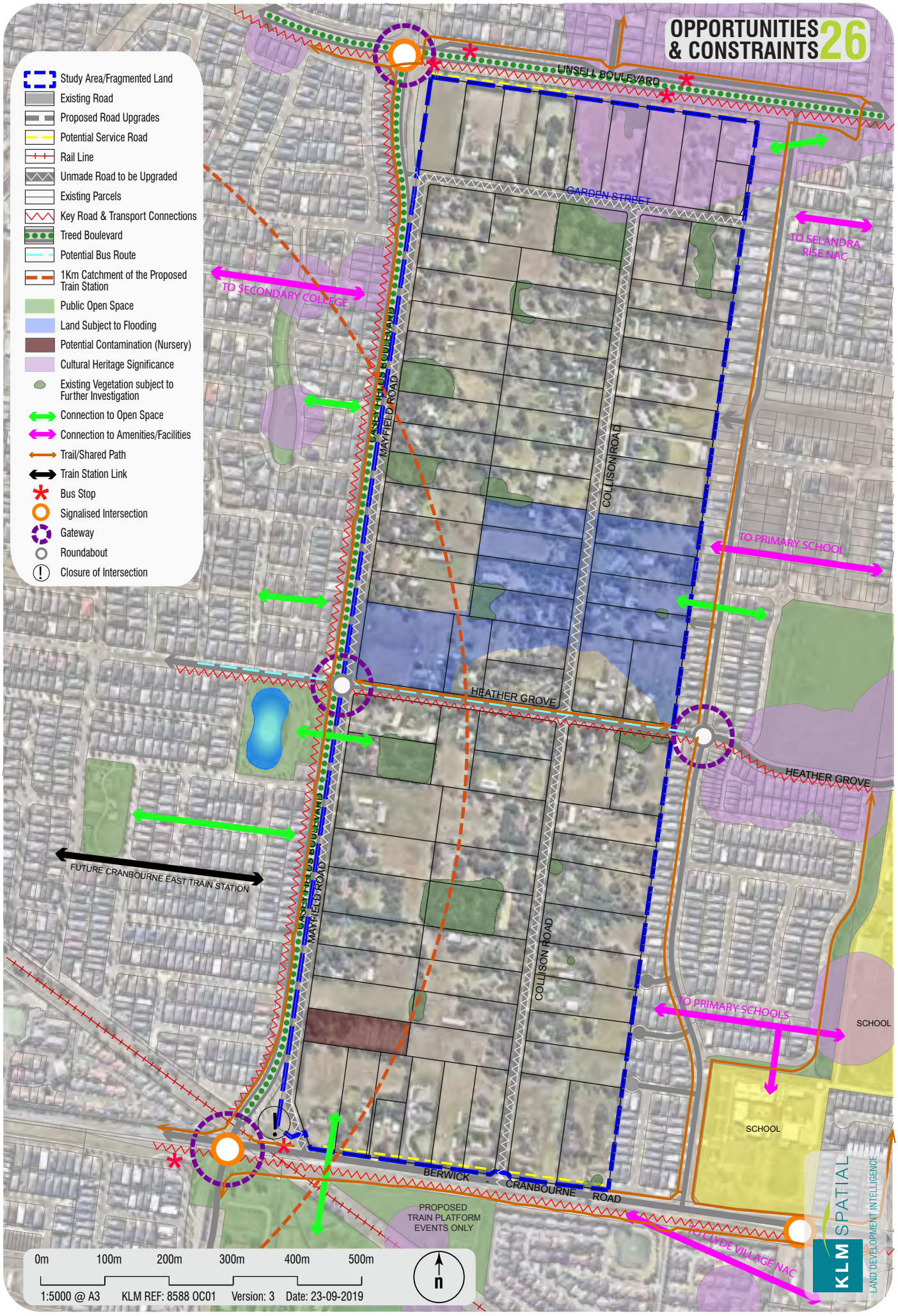
Garden Street

Garden Street is an unsealed road. The urbanisation of this Estate will require the upgrade of this road to an urban standard. The existing road reserve is of a sufficient width to accommodate the upgrade.

Garden Street is identified as a future level 1 local access street, however, it has an existing 20 metre road reserve.

The intersection with Casey Fields Boulevard is proposed to be upgraded to a left in/left out intersection.

The Department of Transport was contacted and inputted into the preparation of the DP about how the Mayfield Road intersection with Berwick-Cranbourne Road will operate in the interim period before it forms part of Casey Fields Boulevard.


OPPORTUNITIES & CONSTRAINTS 26
Study Area/Fragmented Land
Existing Road
Proposed Road Upgrades
Potential Service Road
Rail Line
Unmade Road to be Upgraded
Existing Parcels
Key Road & Transport Connections
Treed Boulevard
Potential Bus Route
1Km Catchment of the Proposed Train Station
Public Open Space
Land Subject to Flooding
Potential Contamination (Nursery)
Cultural Heritage Significance
Existing Vegetation subject to Further Investigation
Connection to Open Space
Connection to Amenities/Facilities
Trail/Shared Path
Train Station Link
Bus Stop
Signalised Intersection
Gateway
Roundabout
Closure of Intersection
LINSELL BOULEVARD
CARDEN STREET
TO SECONDARY COLLEGE
TO SELANDRA RISE NAC
CASEY FIELDS BOULEVARD
MAYFIELD ROAD
COLLISON ROAD
TO PRIMARY SCHOOL
HEATHER GROVE
FUTURE CRANBOURNE EAST TRAIN STATION
TO PRIMARY SCHOOLS
SCHOOL
BERWICK - CRANBOURNE ROAD
PROPOSED TRAIN PLATFORM EVENTS ONLY
TO CLYDE VILLAGE NAC
0m 100m 200m 300m 400m 500m
1:5000 @ A3 KLM REF: 8588 OC01 Version: 3 Date: 23-09-2019
n
KLM SPATIAL
LAND DEVELOPMENT INTELLIGENCE

A1.3 Existing Servicing and Infrastructure Provision

Collison Estate's infrastructure was built to service a rural, rather than urban standard. The majority of the existing infrastructure runs along existing road reserves.

Beyond the upgrade of these services and infrastructure from a rural standard, there are no servicing constraints which restrict the further development of the Estate. It is acknowledged that stormwater and drainage issues may restrict further development if the delivery of the associated infrastructure is not planned and coordinated.

A1.3.1 Stormwater and Drainage

Melbourne Water is the main drainage authority responsible for floodplains and waterways in the area. Clyde Creek runs to the south and east of the Estate and is treated through wetlands off Linsell Boulevard to the north east.

City of Casey is responsible for local drainage.

The Estate is within Melbourne Water's Collison Road Development Services Scheme (DSS) and Collison Road Drainage Contribution Scheme. However, the re-development of the Estate was not planned for within the DSS for the conveyance and management of stormwater run-off generated by redevelopment. As a result, redevelopment of the Estate will require:

- The construction of all stormwater assets for the Estate;
- Maintenance of existing peak flows discharging from the Estate for all storm events up to and including the 1 percent Annual Exceedance Probability (AEP) storm;
- Best practice water quality objectives for the stormwater run off generated;
- Allowance for safe conveyance of gap flows through the Estate utilizing road reserves; and
- There shall be no increase in flood flow up to and including the 1 percent AEP flood as a result of this development.

In lieu of the payment of contributions to the Melbourne Water Drainage Scheme, all retardation is to be provided for within Collison Estate itself, except with the further consent of Melbourne Water. Water quality treatment is also proposed wholly within Collison itself.

The Collison drainage scheme will connect to the large drains that have been constructed along Linsell Boulevard, Heather Grove and Corvette Avenue.

A1.3.2 Sewerage Reticulation

This estate is under the management of South East Water for its sewerage services. There are two catchments for the purpose of sewer assessment:

- Sewer connection to the north of Heather Grove will connect with the 225dia sewer on Linsell Boulevard; and
- Sewer connection to the south of Heather Grove will connect to the 300dia in the rear easement of properties to the north side of Buick Court, which has been sized to allow for the future development of Collison Estate.

Minimal headworks or upgrades are required for these connections.

A1.3.3 Potable Water Reticulation

This estate is under the management of South East Water for its water services.

Relatively recent upgrades to the potable and recycled water network have meant that there is a good supply of water from large supply mains through all roads in and around the development. Further extensions to the reticulation network will be possible with little headworks or augmentation, as such further development within the estate will not require major upgrades to the water network.

A1.3.4 Electricity

Ausnet is the electrical distribution provider in this area. Overhead High Voltage (HV) electrical infrastructure is available along Collison Road, Heather Grove, and for most of the perimeter of the development. Low Voltage (LV) power is also supplied on the overhead lines.

All new development will require the installation of underground pits and cabling for both HV and LV power, in accordance with current standards.

It is likely a number of new kiosk substations will be required, which have a typical footprint of 8 metres by 5 metres (subject to authority guidelines of the time and substation size).

A1.3.5 Gas Supply

Gas supply to the Estate is under the management of APA Gas. An existing 125mm diameter gas main runs along Collison Road and to the eastern arms of Heather Grove and Garden Street.

180mm diameter mains run along both Berwick-Cranbourne Road and Linsell Boulevard, and a 63mm dia main runs along Casey Fields Boulevard.

While it is considered likely that the capacity of these existing gas mains will provide sufficient supply for the proposed development of Collison Estate, connection to natural gas is not encouraged.

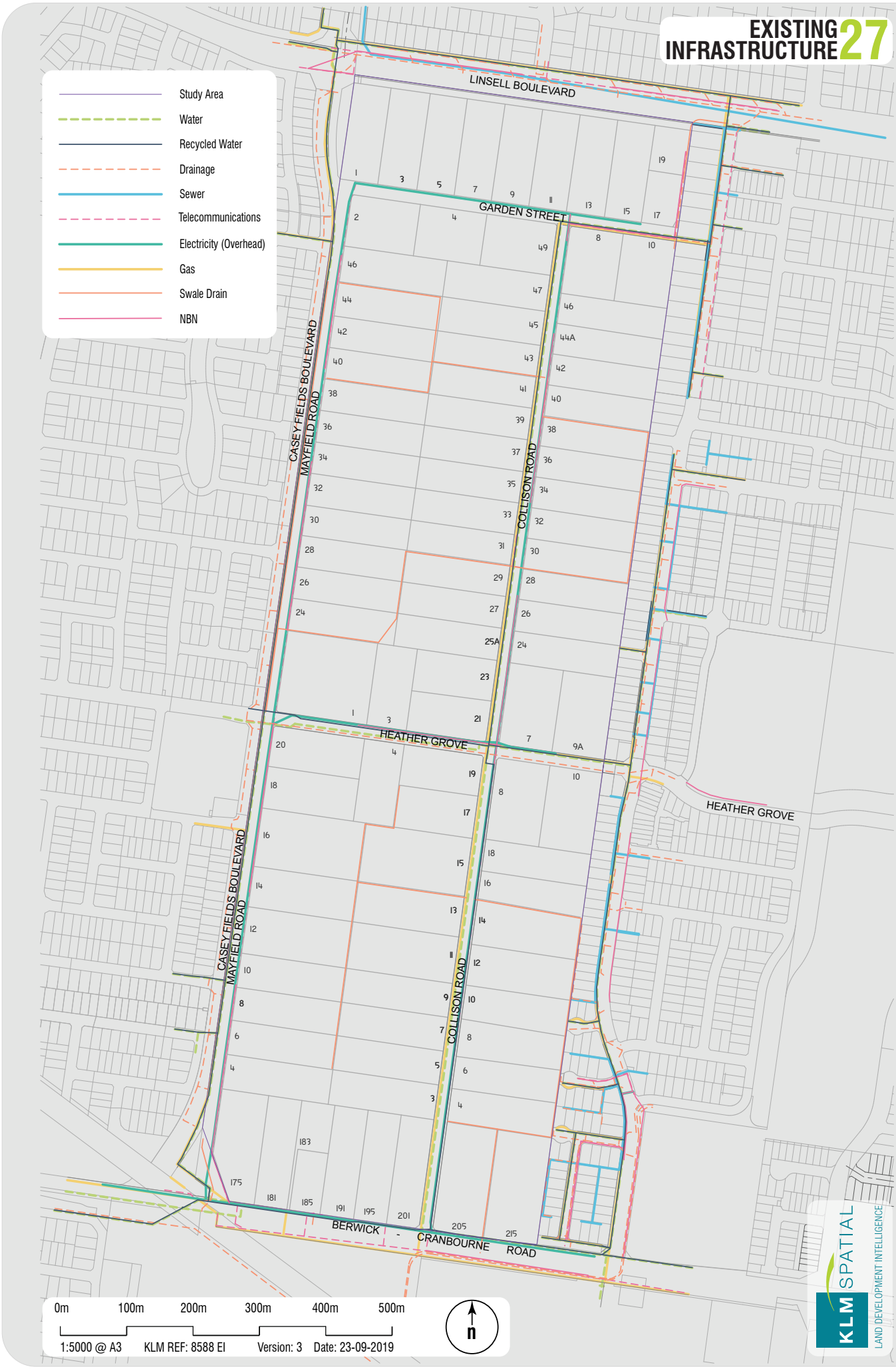
A1.3.6 Telecommunications

There is optic fibre infrastructure for NBN, Telstra, Optus and Opticomm adjacent to the Estate.

Primarily, the NBN network has been installed to connect to existing properties in existing roads.

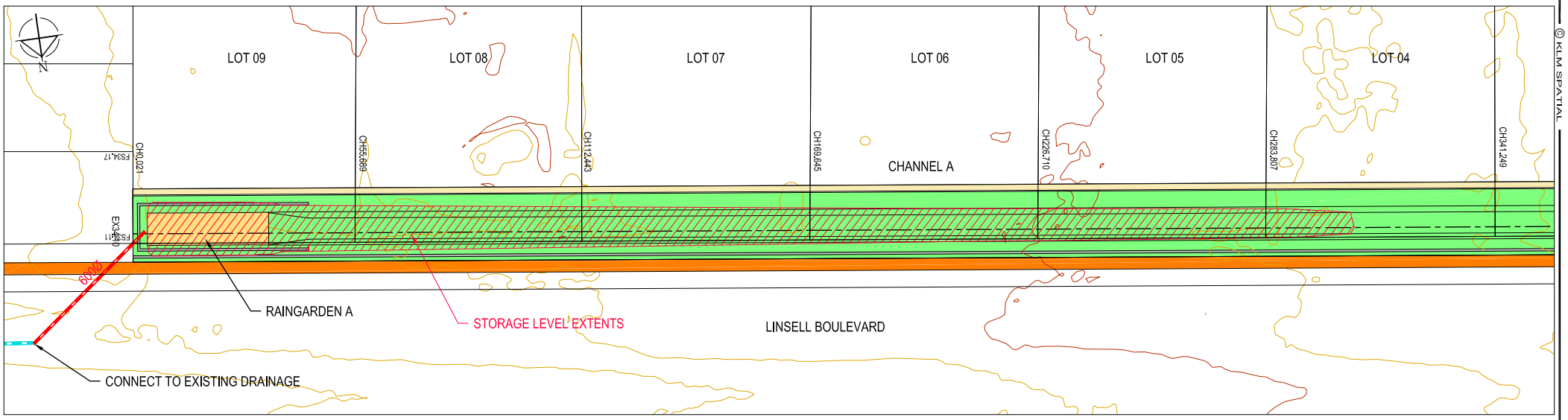
New development will be required to install pit and conduit infrastructure to service all lots within new subdivisions, however it is unlikely any additional augmentation will be required.

EXISTING INFRASTRUCTURE 27



APPENDIX 2
DRAINAGE CONCEPT PLANS

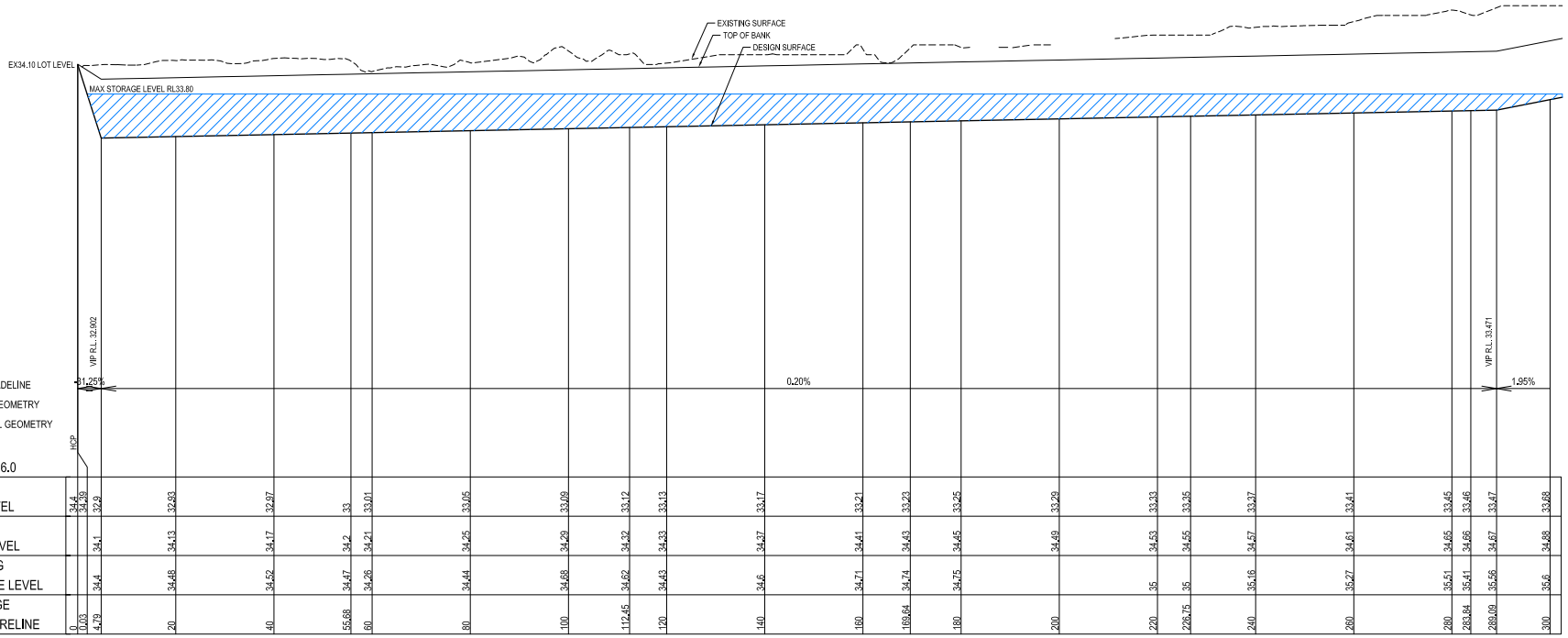
Image: An example of a drainage landscaping outcome, Royal Park Wetland, **Source:** Rush Wright.



DETAIL PLAN - CHANNEL A

HORIZ 0 5 10 20 30 40

SCALE 1:500H AT A1 SIZE
1:1000H AT A3 SIZE



LONGITUDINAL SECTION - CHANNEL A

HORIZ 0 10 20 40 60 80
VERT 0 1 2 4 6 8

SCALE 1:1000H 1:100V AT A1 SIZE
1:2000H 1:200V AT A3 SIZE

Rev	Reason	Drawn	Des.	Chk.	Date
D	COUNCIL COMMENTS	S.Y	S.Y	R.F	02/03/2021
C	COUNCIL COMMENTS	S.Y	S.Y	R.F	04/12/2020
B	COUNCIL COMMENT	S.Y	S.Y	R.F	01/09/2020
A	PRELIMINARY ISSUE	S.Y.	S.Y.	R.F.	17/05/2020

PRELIMINARY

CLIENT:
COLLISON ESTATE GROUP INC.

PROJECT:
COLLISON ESTATE
DRAINAGE STRATEGY

DETAIL PLAN

SHEET 01 OF 10

Job	Drawing	Revision
E8588.00	C_05	D

Sheet: 05 of 14
Scale: AS SHOWN @ A1
Municipality: CITY OF CASEY
Melway Ref. 134F6

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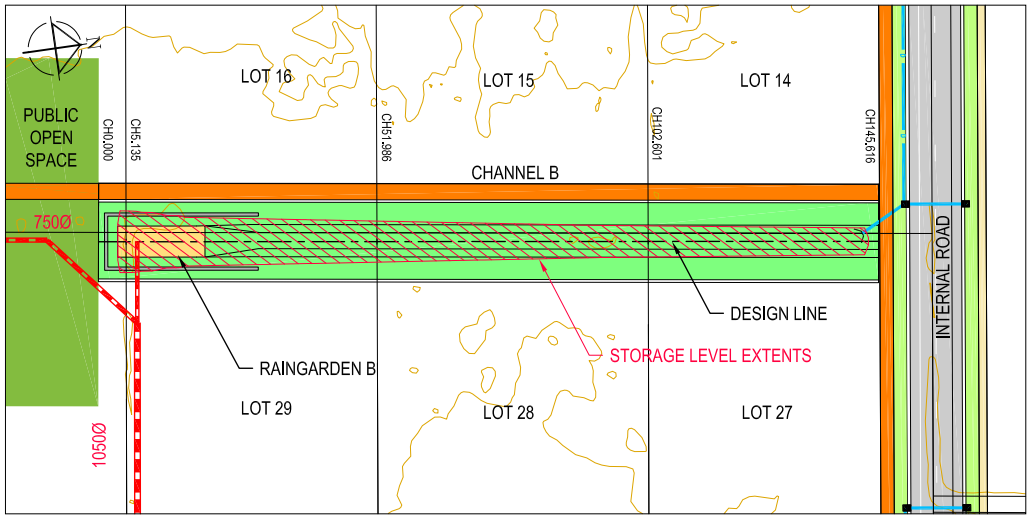
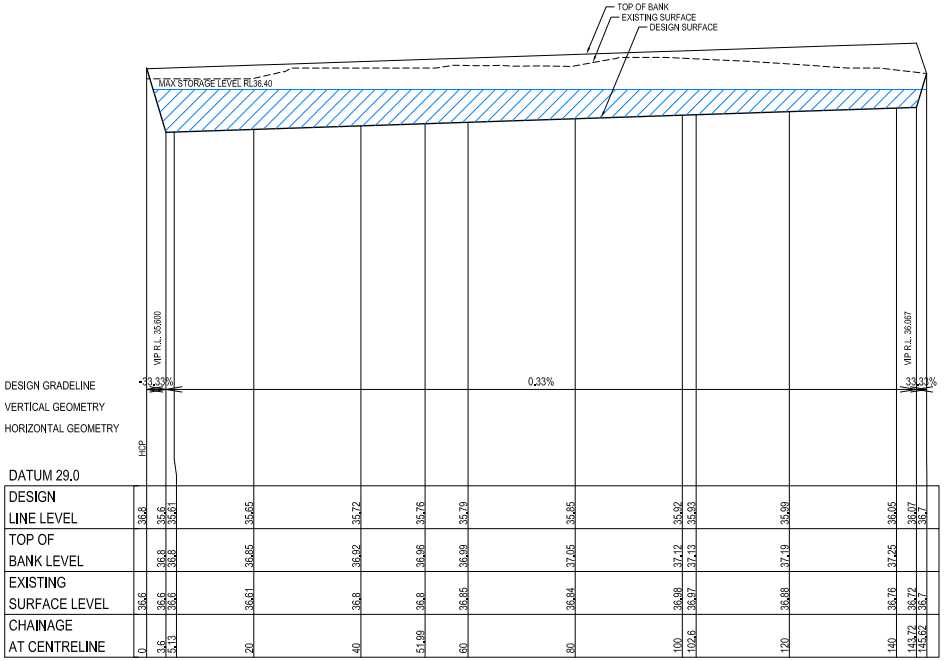


DETAIL PLAN - CHANNEL B

HORIZ 0 5 10 20 30 40

SCALE 1:500H AT A1 SIZE
1:1000H AT A3 SIZE



LONGITUDINAL SECTION - CHANNEL B

HORIZ 0 10 20 40 60 80

VERT 0 1 2 4 6 8

SCALE 1:1000H 1:100V AT A1 SIZE
1:2000H 1:200V AT A3 SIZE

Rev	Reason	Drawn	Des.	Chk.	Date
D	COUNCIL COMMENTS	S.Y	S.Y	R.F	02/03/2021
C	COUNCIL COMMENTS	S.Y	S.Y	R.F	04/12/2020
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A	PRELIMINARY ISSUE	S.Y.	S.Y.	R.F.	17/05/2020

PRELIMINARY

CLIENT:
COLLISON ESTATE GROUP INC.

PROJECT:
COLLISON ESTATE
DRAINAGE STRATEGY

DETAIL PLAN

SHEET 02 OF 10

Job	Drawing	Revision
E8588.00	C_06	D

Sheet: 06 of 14
Scale: AS SHOWN @ A1 Municipality: CITY OF CASEY Melway Ref. 134F6

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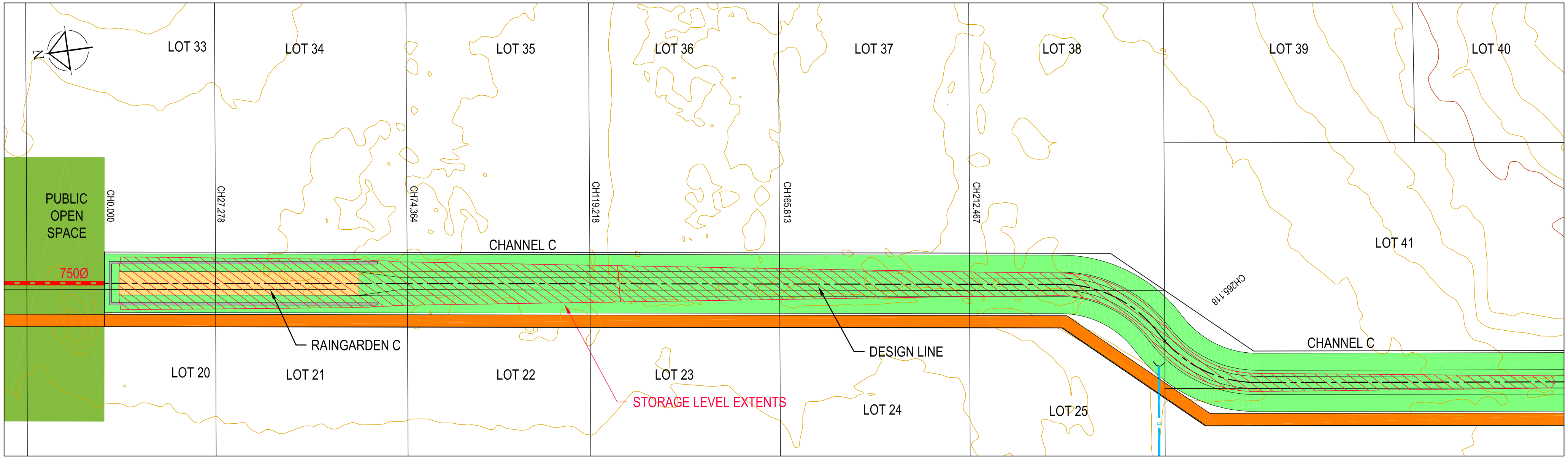
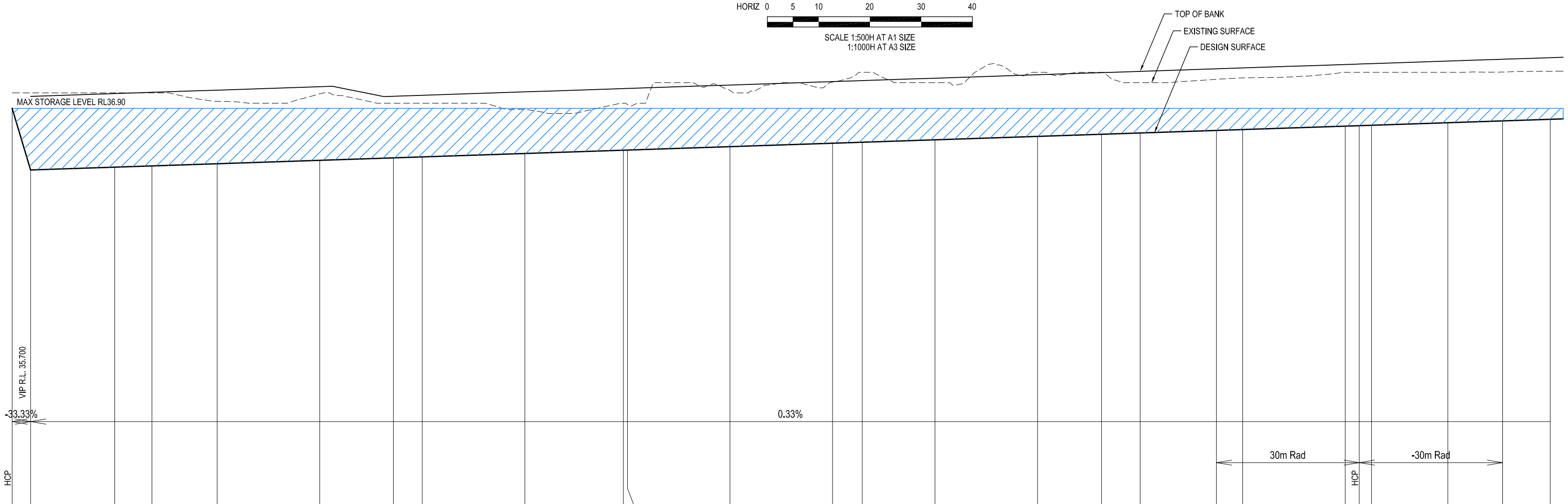


DETAIL PLAN - CHANNEL C

HORIZ 0 5 10 20 30 40

SCALE 1:500H AT A1 SIZE
1:1000H AT A3 SIZE



DESIGN GRADELINE: -33.33% ; 0.33%

VERTICAL GEOMETRY

HORIZONTAL GEOMETRY: HCP ; 30m Rad ; HCP ; -30m Rad

DATUM 29.0

CHAINAGE AT CENTRELINE	EXISTING SURFACE LEVEL	TOP OF BANK LEVEL	DESIGN LINE LEVEL
0	37.2		36.9
3.6	37.2	37.13	35.7
20	37.2	37.19	35.75
27.28	37.2	37.21	35.78
40	37.04	37.25	35.82
60	37.18	37.32	35.89
74.36	37	37.14	35.94
80	37	37.15	35.95
100	36.88	37.22	36.02
119.22	37	37.29	36.09
120	36.98	37.29	36.09
140	37.25	37.35	36.15
160	37.41	37.42	36.22
165.81	37.6	37.44	36.24
180	37.4	37.49	36.29
200	37.6	37.55	36.35
212.47	37.6	37.6	36.4
220	37.4	37.62	36.42
234.88	37.47	37.67	36.47
240	37.49	37.69	36.49
260	37.6	37.75	36.55
262.75	37.6	37.76	36.56
265.12	37.6	37.77	36.57
280	37.6	37.82	36.62
290.7	37.61	37.86	36.66
300	37.62	37.89	36.69

LONGITUDINAL SECTION - CHANNEL C

HORIZ 0 10 20 40 60 80

VERT 0 1 2 4 6 8

SCALE 1:1000H 1:100V AT A1 SIZE
1:2000H 1:200V AT A3 SIZE

Rev	Reason	Drawn.	Des.	Chk.	Date
D	COUNCIL COMMENTS	S.Y	S.Y	R.F	02/03/2021
C	COUNCIL COMMENTS	S.Y	S.Y	R.F	04/12/2020
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PRELIMINARY

CLIENT:
COLLISON ESTATE GROUP INC.

PROJECT:
COLLISON ESTATE
DRAINAGE STRATEGY

DETAIL PLAN

SHEET 03 OF 10

Job: E8588.00 Drawing: C_07 Revision: D

Sheet: 07 of 14

Scale: AS SHOWN @ A1 Municipality: CITY OF CASEY Melway Ref. 134F6

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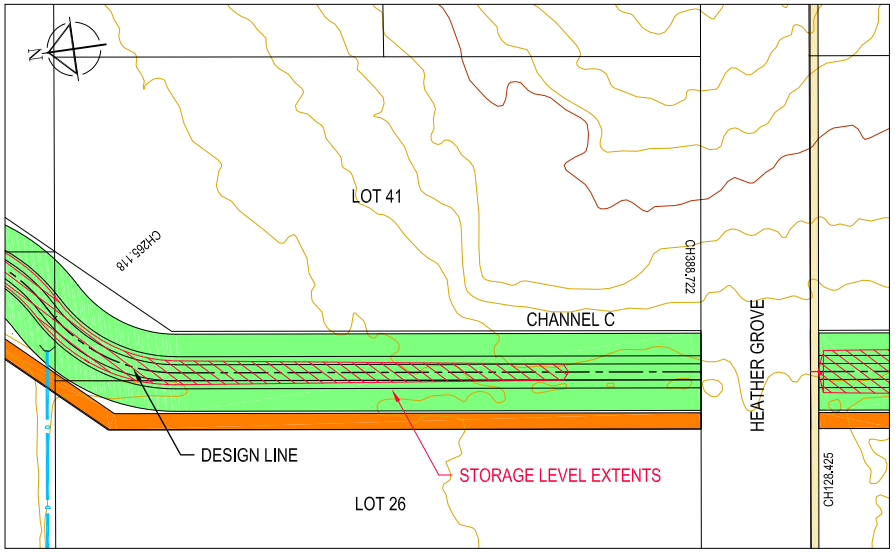
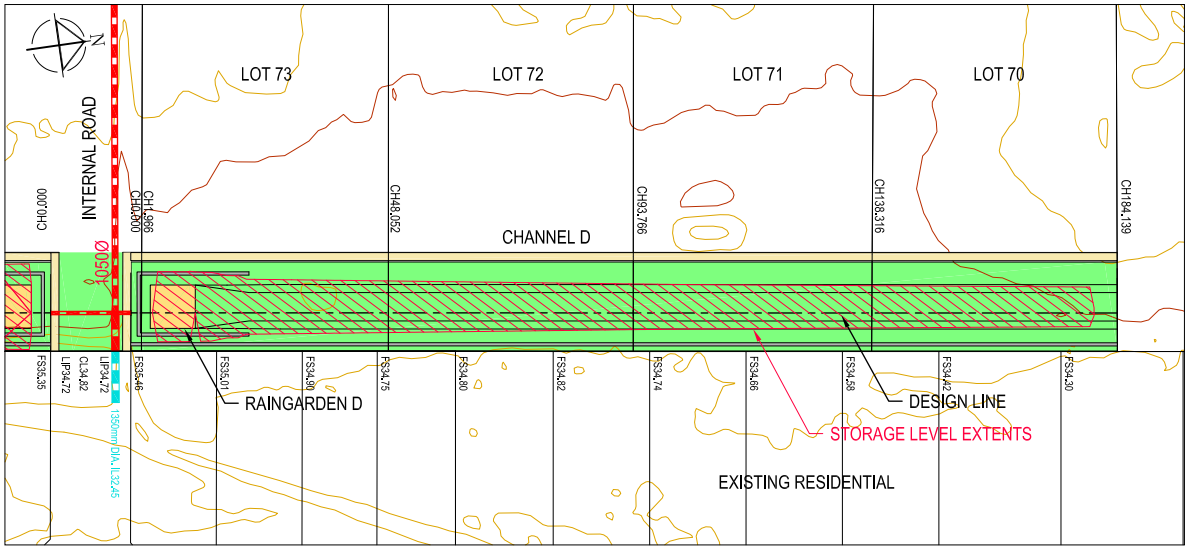


DETAIL PLAN - CHANNEL C

HORIZ 0 5 10 20 30 40

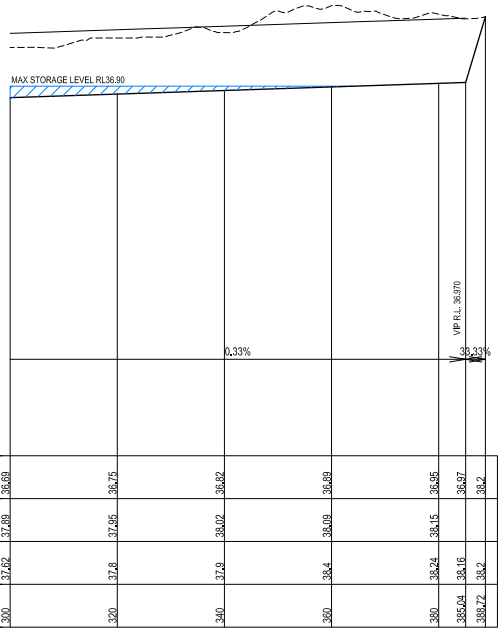
SCALE 1:500H AT A1 SIZE
1:1000H AT A3 SIZE



DETAIL PLAN - CHANNEL D

HORIZ 0 5 10 20 30 40

SCALE 1:500H AT A1 SIZE
1:1000H AT A3 SIZE

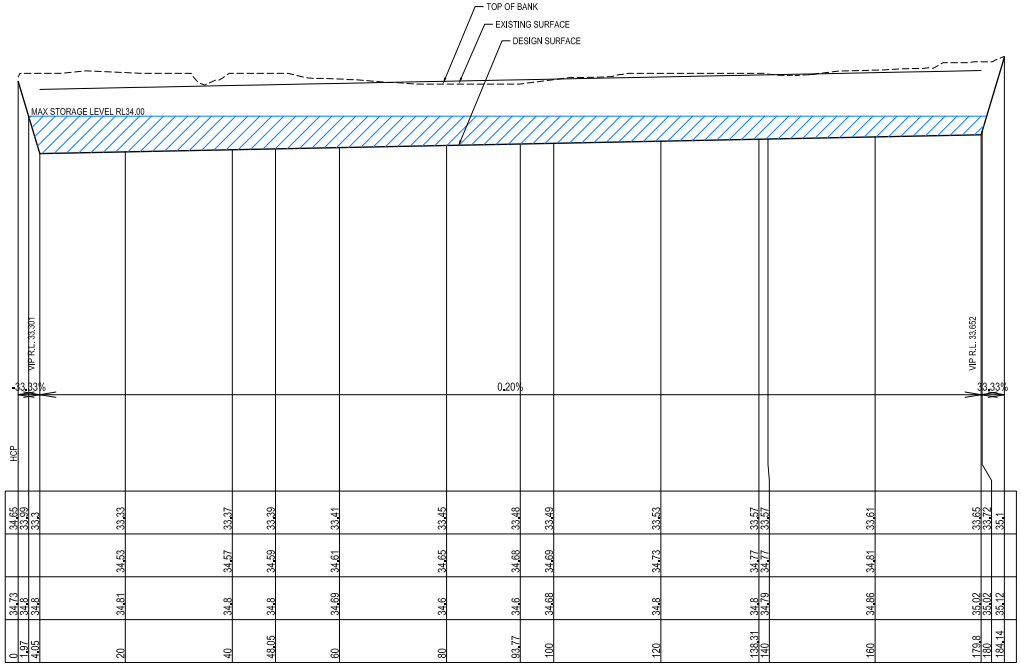


LONGITUDINAL SECTION - CHANNEL C

HORIZ 0 10 20 40 60 80

VERT 0 1 2 4 6 8

SCALE 1:1000H 1:100V AT A1 SIZE
1:2000H 1:200V AT A3 SIZE



LONGITUDINAL SECTION - CHANNEL D

HORIZ 0 10 20 40 60 80

VERT 0 1 2 4 6 8

SCALE 1:1000H 1:100V AT A1 SIZE
1:2000H 1:200V AT A3 SIZE

Rev	Reason	Drawn.	Des.	Chk.	Date
D	COUNCIL COMMENTS	S.Y	S.Y	R.F	02/03/2021
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A	PRELIMINARY ISSUE	S.Y.	S.Y.	R.F.	17/05/2020

PRELIMINARY

CLIENT:
COLLISON ESTATE GROUP INC.

PROJECT:
COLLISON ESTATE
DRAINAGE STRATEGY

DETAIL PLAN

SHEET 04 OF 10

Job	Drawing	Revision
E8588.00	C_08	D

Sheet: 08 of 14
Scale: AS SHOWN @ A1
Municipality: CITY OF CASEY
Melway Ref. 134F6

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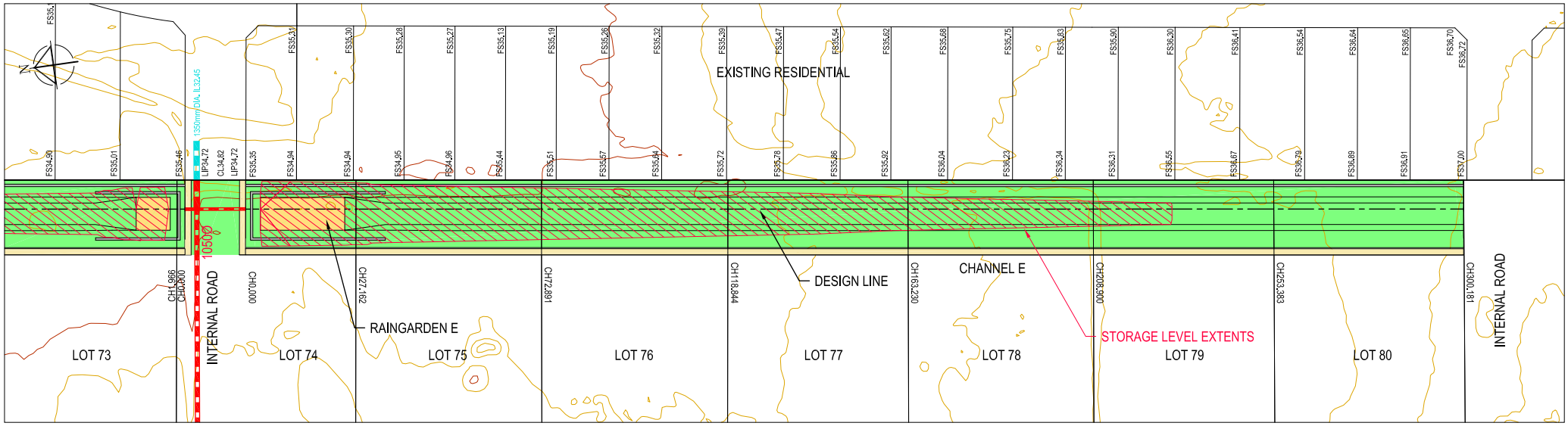
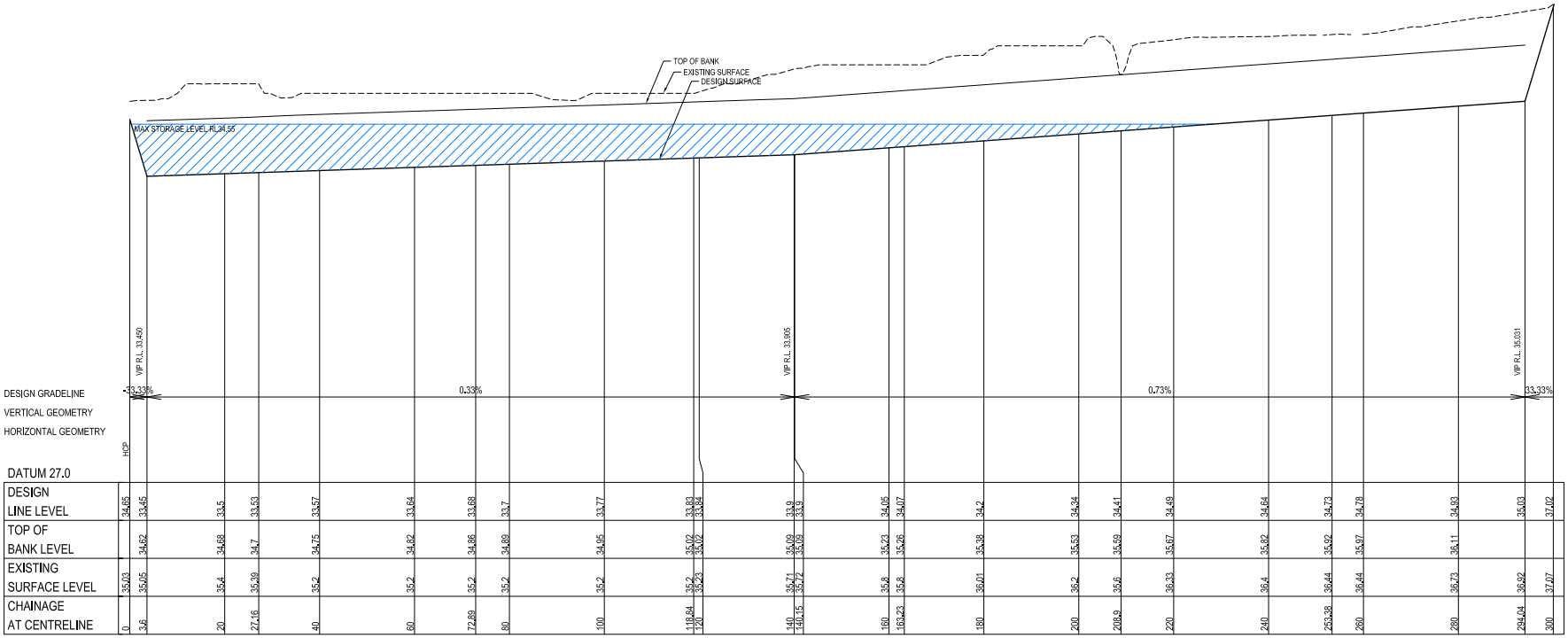


DETAIL PLAN - CHANNEL E

HORIZ 0 5 10 20 30 40

SCALE 1:500H AT A1 SIZE
1:1000H AT A3 SIZE



LONGITUDINAL SECTION - CHANNEL E

HORIZ 0 10 20 40 60 80

VERT 0 1 2 4 6 8

SCALE 1:1000H 1:100V AT A1 SIZE
1:2000H 1:200V AT A3 SIZE

Rev	Reason	Drawn	Des.	Chk.	Date
D	COUNCIL COMMENTS	S.Y	S.Y	R.F	02/03/2021
C	COUNCIL COMMENTS	S.Y	S.Y	R.F	04/12/2020
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A	PRELIMINARY ISSUE	S.Y.	S.Y.	R.F.	17/05/2020

PRELIMINARY

CLIENT:
COLLISON ESTATE GROUP INC.

PROJECT:
COLLISON ESTATE
DRAINAGE STRATEGY

DETAIL PLAN

SHEET 05 OF 10

Job	Drawing	Revision
E8588.00	C_09	D

Sheet: 09 of 14
Scale: AS SHOWN @ A1
Municipality: CITY OF CASEY
Melway Ref. 134F6

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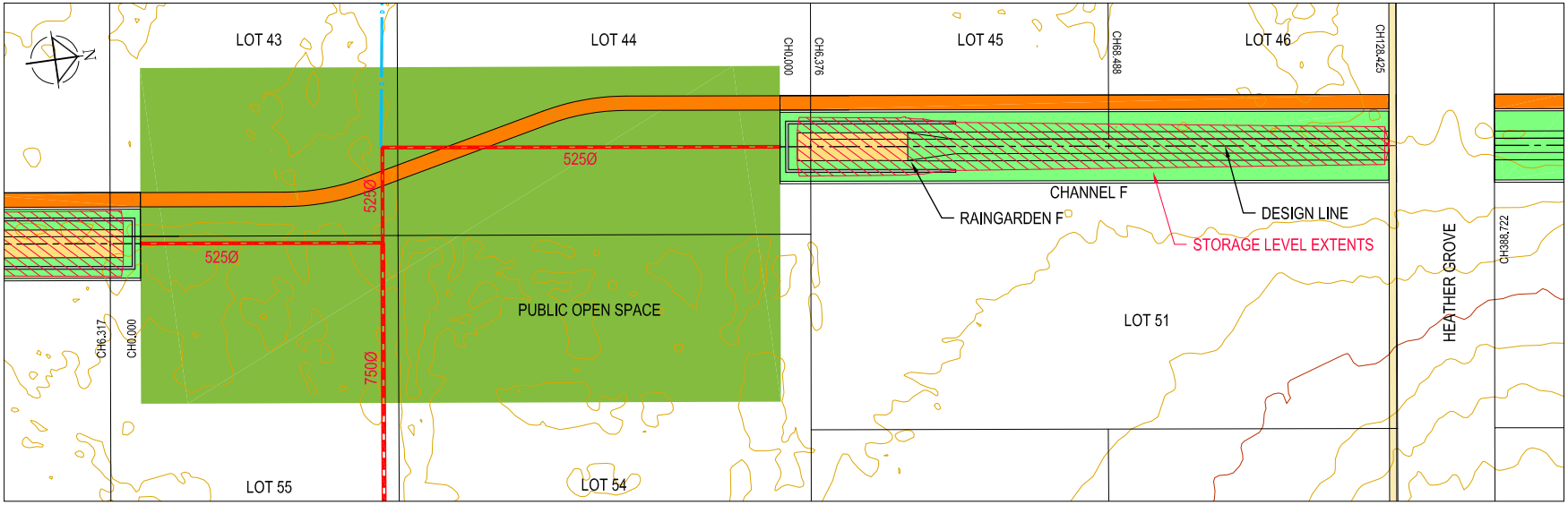
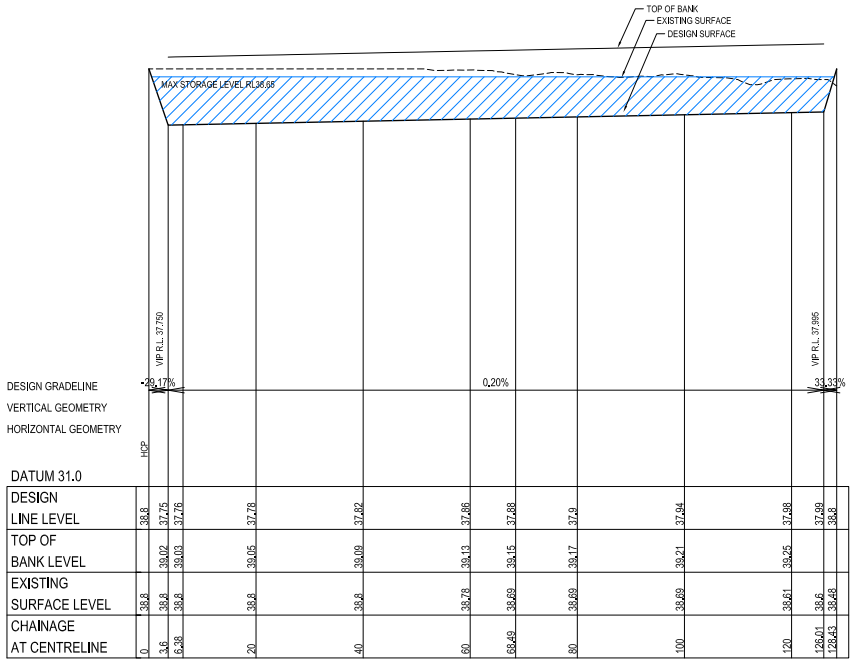


DETAIL PLAN - CHANNEL F

HORIZ 0 5 10 20 30 40

SCALE 1:500H AT A1 SIZE
1:1000H AT A3 SIZE



DESIGN LINE LEVEL	38.8	37.75	37.76	37.78	37.82	37.86	37.88	37.9	37.94	37.98	37.99	38.8		
TOP OF BANK LEVEL		39.02	39.03	39.05	39.09	39.13	39.15	39.17	39.21	39.25				
EXISTING SURFACE LEVEL	38.8	38.8	38.8	38.8	38.8	38.78	38.69	38.68	38.69	38.61	38.6	38.48		
CHAINAGE AT CENTRELINE	0	3.6	5.38	20	40	60	68.49	80	100	120	126.01	128.43		

LONGITUDINAL SECTION - CHANNEL F

HORIZ 0 10 20 40 60 80

VERT 0 1 2 4 6 8

SCALE 1:1000H 1:100V AT A1 SIZE
1:2000H 1:200V AT A3 SIZE

Rev	Reason	Drawn	Des.	Chk.	Date
D	COUNCIL COMMENTS	S.Y	S.Y	R.F	02/03/2021
C	COUNCIL COMMENTS	S.Y	S.Y	R.F	04/12/2020
B	COUNCIL COMMENTS	S.Y	S.Y	R.F	01/09/2020
A	PRELIMINARY ISSUE	S.Y.	S.Y.	R.F.	17/05/2020

PRELIMINARY

CLIENT:
COLLISON ESTATE GROUP INC.

PROJECT:
COLLISON ESTATE
DRAINAGE STRATEGY

DETAIL PLAN

SHEET 06 OF 10

Job: E8588.00
Drawing: C_10
Revision: D
Sheet: 10 of 14
Scale: AS SHOWN @ A1
Municipality: CITY OF CASEY
Melway Ref. 134F6

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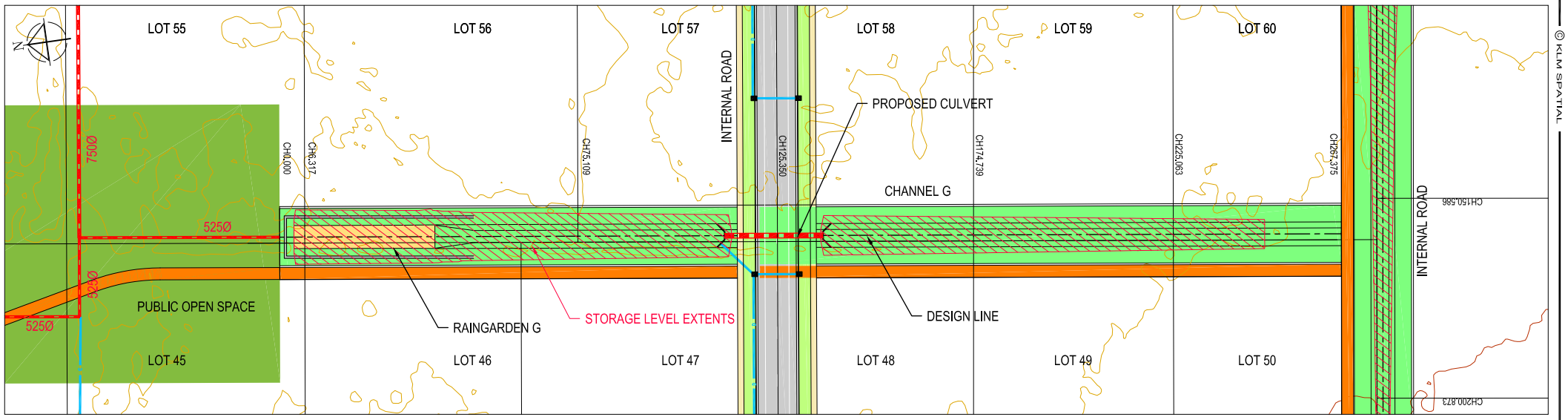
manager@klms.com.au

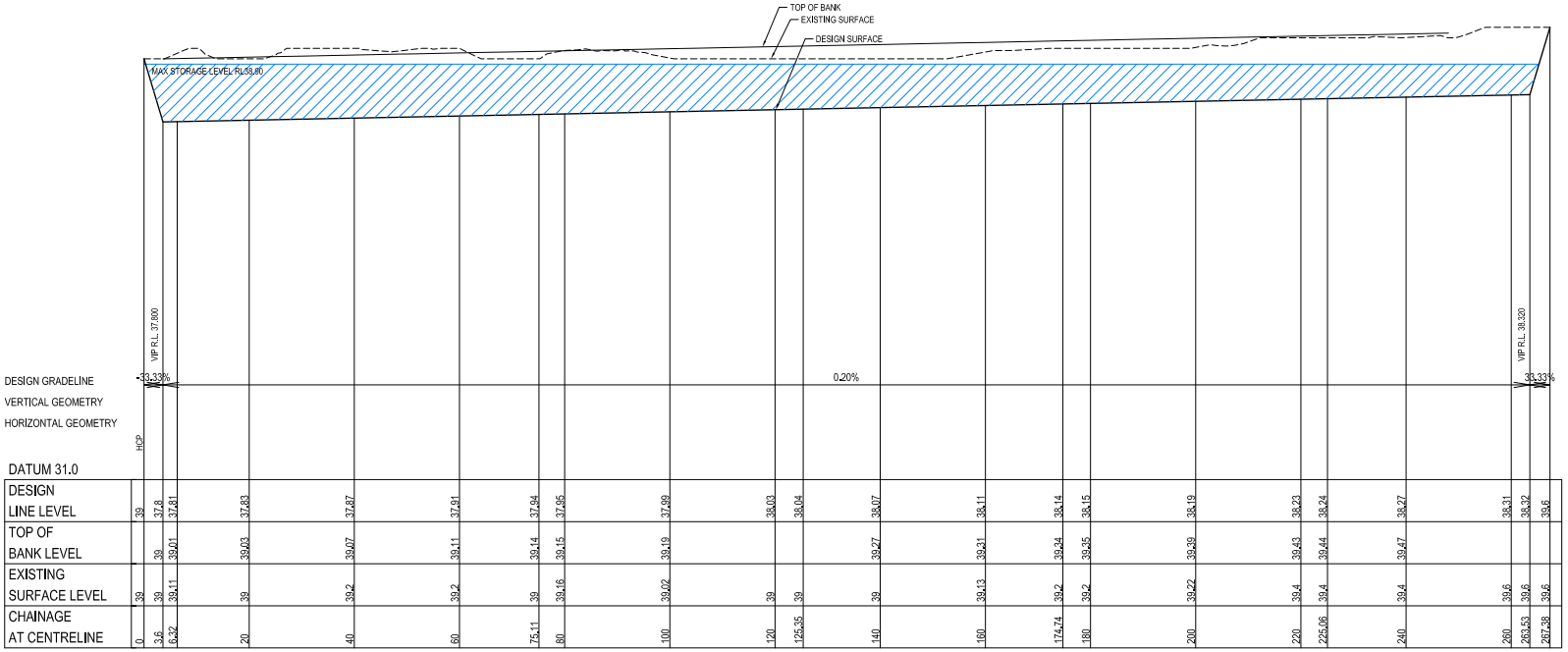
Verify all dimensions prior to construction - Do not scale



DETAIL PLAN - CHANNEL G

HORIZ 0 5 10 20 30 40

SCALE 1:500H AT A1 SIZE
1:1000H AT A3 SIZE



LONGITUDINAL SECTION - CHANNEL G

HORIZ 0 10 20 40 60 80

VERT 0 1 2 4 6 8

SCALE 1:1000H 1:100V AT A1 SIZE
1:2000H 1:200V AT A3 SIZE

Rev	Reason	Drawn	Des.	Chk.	Date
D	COUNCIL COMMENTS	S.Y	S.Y	R.F	02/03/2021
C	COUNCIL COMMENTS	S.Y	S.Y	R.F	04/12/2020
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A	PRELIMINARY ISSUE	S.Y.	S.Y.	R.F.	17/05/2020

PRELIMINARY

CLIENT:
COLLISON ESTATE GROUP INC.

PROJECT:
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DRAINAGE STRATEGY

DETAIL PLAN

SHEET 07 OF 10

Job E8588.00 | Drawing C_11 | Revision D

Sheet: 11 of 14

Scale: AS SHOWN @ A1 | Municipality: CITY OF CASEY | Melway Ref. 134F6

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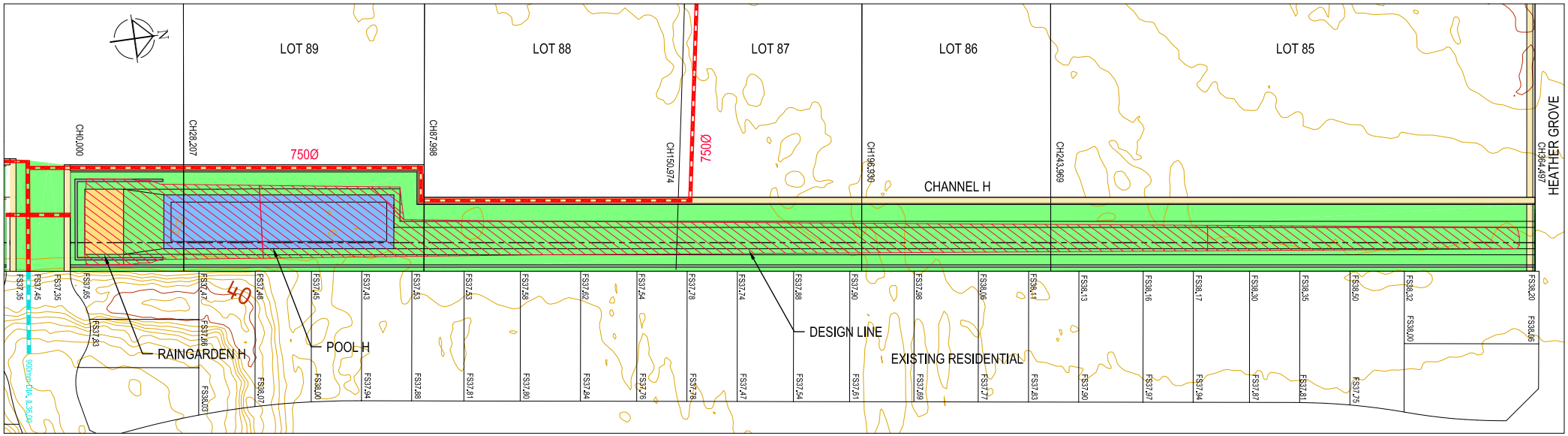
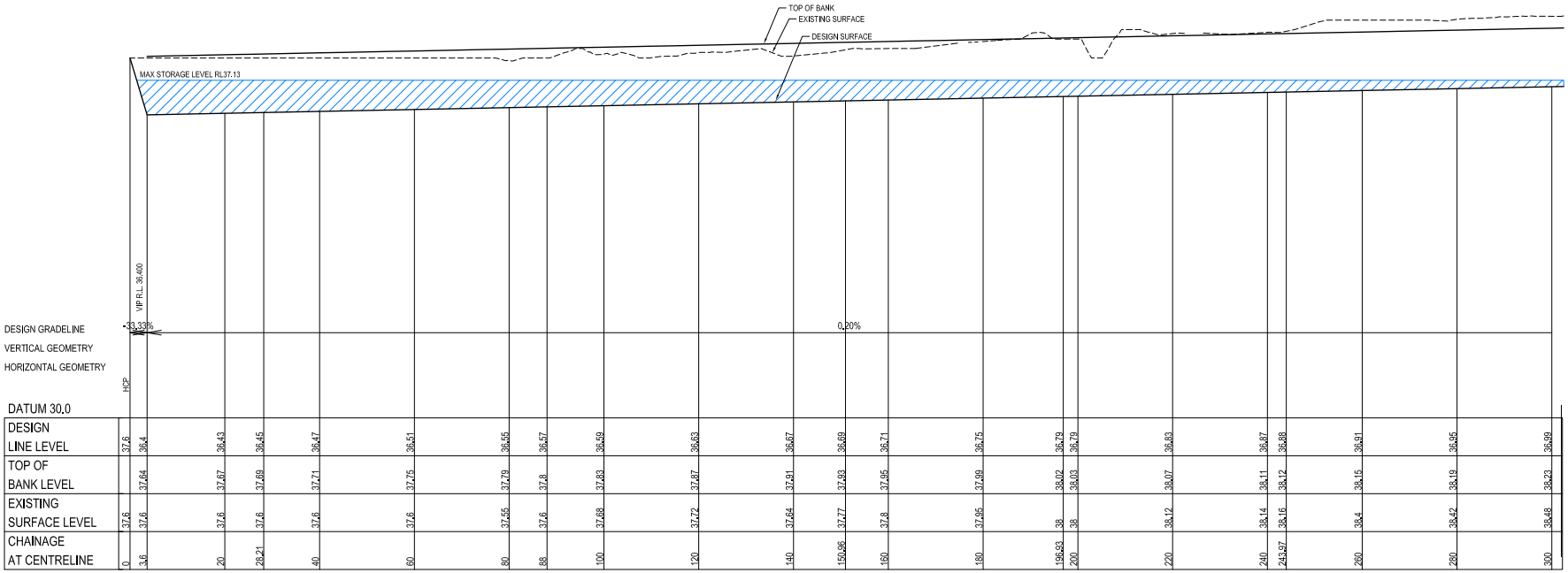


DETAIL PLAN - CHANNEL H

HORIZ 0 5 10 20 30 40

SCALE 1:500H AT A1 SIZE
1:1000H AT A3 SIZE



LONGITUDINAL SECTION - CHANNEL H

HORIZ 0 10 20 40 60 80
VERT 0 1 2 4 6 8

SCALE 1:1000H 1:100V AT A1 SIZE
1:2000H 1:200V AT A3 SIZE

Rev	Reason	Drawn	Des.	Chk.	Date
D	COUNCIL COMMENTS	S.Y	S.Y	R.F	02/03/2021
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A	PRELIMINARY ISSUE	S.Y.	S.Y.	R.F.	17/05/2020

PRELIMINARY

CLIENT:
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PROJECT:
COLLISON ESTATE
DRAINAGE STRATEGY

DETAIL PLAN

SHEET 08 OF 10

Job	Drawing	Revision
E8588.00	C_12	D

Sheet: 12 of 14
Scale: AS SHOWN @ A1
Municipality: CITY OF CASEY
Melway Ref. 134F6

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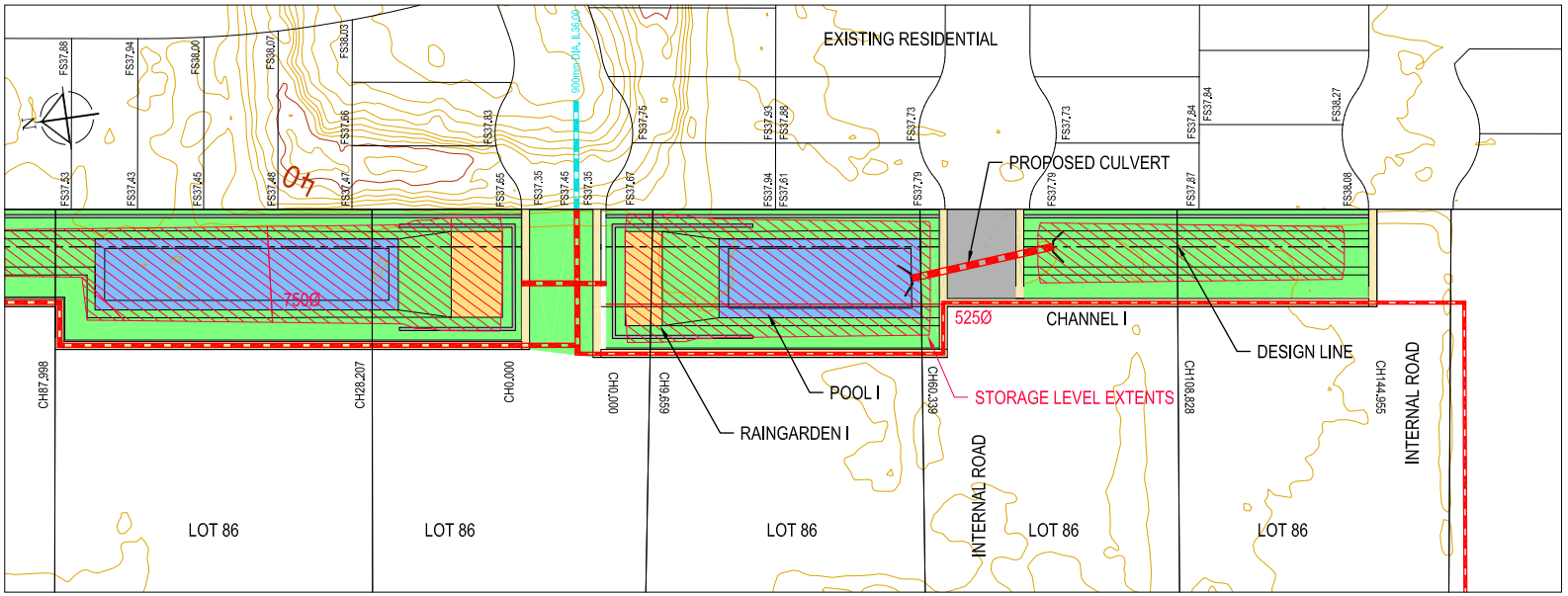
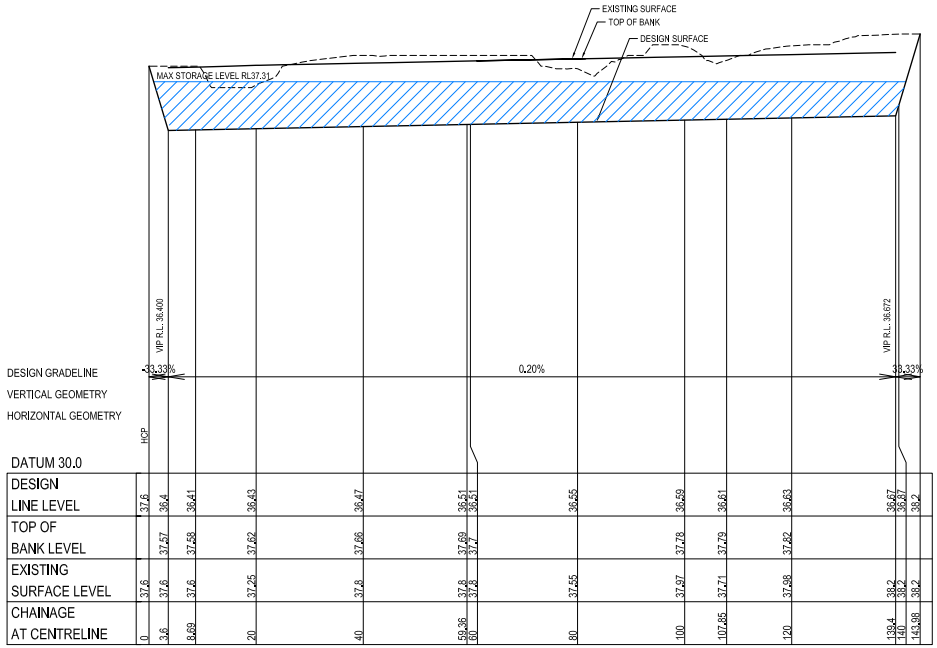


DETAIL PLAN - CHANNEL I

HORIZ 0 5 10 20 30 40

SCALE 1:500H AT A1 SIZE
1:1000H AT A3 SIZE



LONGITUDINAL SECTION - CHANNEL I

HORIZ 0 10 20 40 60 80

VERT 0 1 2 4 6 8

SCALE 1:1000H 1:100V AT A1 SIZE
1:2000H 1:200V AT A3 SIZE

Rev	Reason	Drawn	Des.	Chk.	Date
D	COUNCIL COMMENTS	S.Y	S.Y	R.F	02/03/2021
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CLIENT:
COLLISON ESTATE GROUP INC.

PROJECT:
COLLISON ESTATE
DRAINAGE STRATEGY

DETAIL PLAN

SHEET 09 OF 10

Job	Drawing	Revision
E8588.00	C_13	D

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Scale: AS SHOWN @ A1
Municipality: CITY OF CASEY
Melway Ref. 134F6

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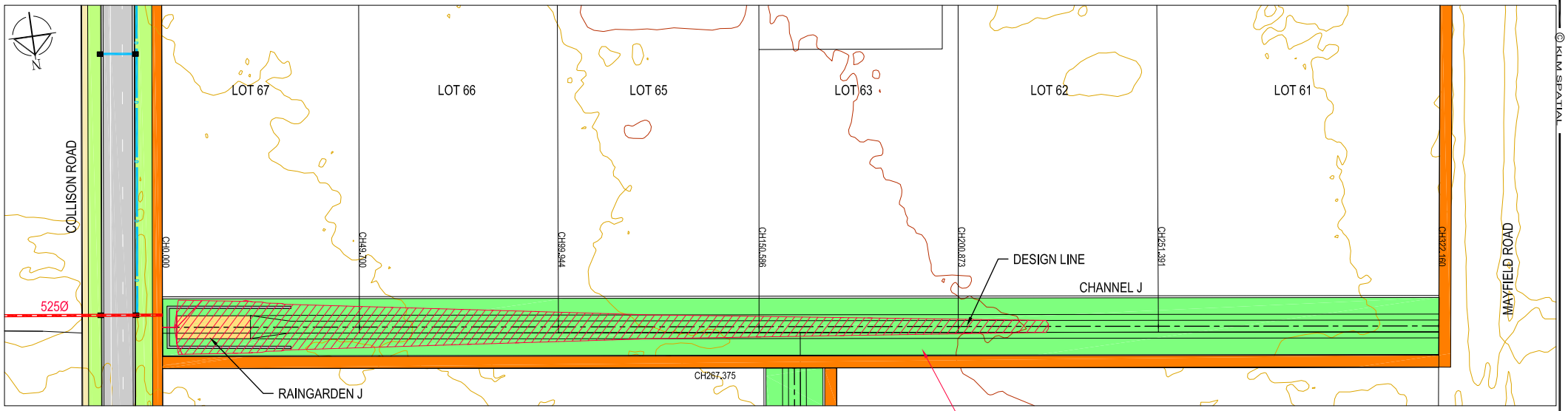
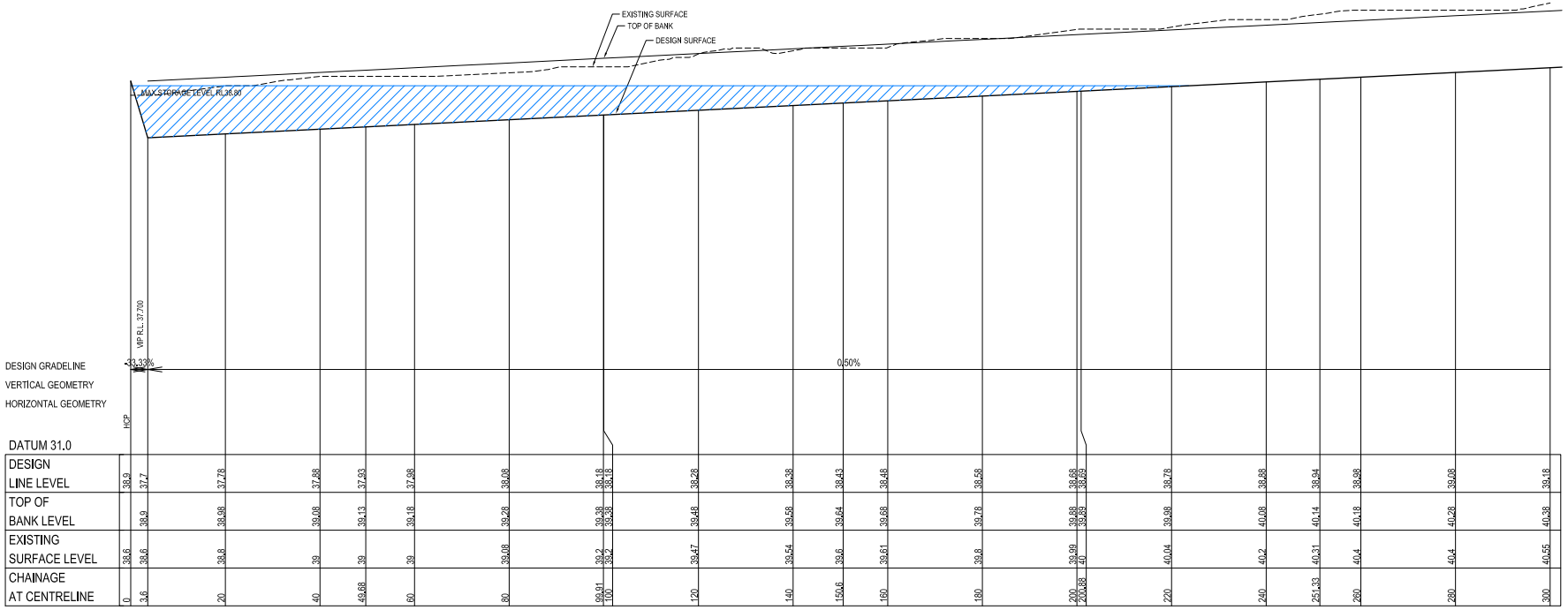


DETAIL PLAN - CHANNEL J

HORIZ 0 5 10 20 30 40

SCALE 1:500H AT A1 SIZE
1:1000H AT A3 SIZE



LONGITUDINAL SECTION - CHANNEL J

HORIZ 0 10 20 40 60 80

VERT 0 1 2 4 6 8

SCALE 1:1000H 1:100V AT A1 SIZE
1:2000H 1:200V AT A3 SIZE

Rev	Reason	Drawn	Des.	Chk.	Date
D	COUNCIL COMMENTS	S.Y	S.Y	R.F	02/03/2021
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DETAIL PLAN

SHEET 10 OF 10

Job	Drawing	Revision
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Sheet: 14 of 14
Scale: AS SHOWN @ A1
Municipality: CITY OF CASEY
Melway Ref. 134F6

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CASEY.VIC.GOV.AU

Image: Aerial over Cranbourne, 2020.

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Email: caseycc@casey.vic.gov.au
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NRS: 133 677 (for deaf, hearing or speech impaired)
TIS: 131 450 (Translating and Interpreting Service)
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Customer Service Centres

Narre Warren:
Bunjil Place,
Patrick Northeast Drive

Cranbourne:
Cranbourne Park Shopping Centre

City of Casey