appendix e

landscape concept plan

(Emerge Associates)

DRAFT

TREEBY STRUCTURE PLAN

TREEBY, WESTERN AUSTRALIA



LANDSCAPE STRATEGY

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LWP
bringing communities to life

Government of Western Australia
Department of Communities

emerge ASSOCIATES

Overview

The landscape strategy and design of the Public Open Space for LWP Property and the Department of Communities' joint venture 'Treeby Structure Plan' project at Lot 703 Ghostgum Avenue, Treeby has its landscape design response anchored by a central public open space acting as the heart of the approximate 300 lot development, with supplementary smaller passive open areas and ecologically important Bush Forever and Conservation public open space outcomes supporting the wider green space systems of the Banjup locale.

The centre of the site has very little vegetation or topography of significance due to the site's former land use as quarry site. As a result, public open space location and function has been located, sized and designed to provide the maximum benefit as a communal hub to the development's needs.

Entry POS

Located at the entry into the project off the existing roundabout at Ghostgum Avenue and Clementine Boulevard, two (2) POS areas are proposed to frame the entry boulevard into the development. Taking advantage of the site's topography and one of its highest points, these two POS areas will have commanding views over the development to the east and beyond to the Darling Range.

At approximately 0.55ha and 0.22ha in size, the open spaces provide the opportunity for grand entry statements in the form of signage and / or a landmark sculptural public art elements combined with useable open space that provides a strong greenlink connection to the existing open space network of the adjacent Calleya development. The POS areas will serve primarily as passive open space opportunities coupled with the retention of existing Banksia woodland, forming a backdrop to both the open space and the overall development. All retained bushland will be managed in accordance with the project's bushfire management requirements. The retained bushland will reinforce green linkages to both the Bush Forever site to the north of the project and the Conservation POS running along the project's western boundary interface with Ghostgum Avenue.

These POS areas are not proposed to receive any stormwater drainage given their locations at the highest points of the project site. Where levels permit and in consultation with the Civil Engineer regards the development's engineering and finished levels design, existing trees will be retained to provide these two POS areas with instant shade amenity.

Central POS

Proposed as the key piece of public infrastructure for the development, the creation of a green central public open space corridor with multiple functions that runs almost the length of the development in an east west orientation is to be the development's centrepiece. The Central POS has been designed to include a community focal point or hub, provide public access to a range of recreation opportunities, form a stormwater receival and quality management function, all within a walkable catchment for all residents in the development.
Generally, the theme behind the provision of open space amenity within the Central POS will have a focus on :

- Community gathering – inside/outside around the hub.
- Wellness and mindfulness
- Whole of family fitness
- Intergenerational interaction – mixing young children with retirees

At the western end of the Central POS, located on axial vista views from the development's entry road off Ghostgum Avenue a proposed 'Community Hub' is to act as the development's heart. It's associated outdoor space is to cater for al fresco opportunities and community events. The community hub is to be an architecturally designed building which in close proximity to the Senior's Living site, may include activities such as:

1. Art classes
2. Art displays on walls
3. Sculpture classes,
4. Sculpture displays in park,
5. Food classes tailored over a few weeks to each purchaser profile (new families, retirees, busy dinks)
6. Programmed retiree and toddler interactions
7. Dance classes

East of the Community Hub, amenity that is also proposed to be included in the open space includes:

1. Six Seasons Native Garden and a Community Garden set into an informal parkland setting with associated furniture and picnic facilities.
2. A themed childrens playground, to be located close to the hub to maximise CPTED responses, passive surveillance and comfortable parents supervision.
3. A secluded lawn that provides opportunity for Yoga/Pilates/Tai Chi area associated in close proximity to the Senior Living site. This space is to act as an informal semi hidden quieter space. Noting the older generations preference for quiet contemplative spaces, shade elements and the use low bounding walls to define space.
4. Fitness area which is semi enclosed by shade trees and also considers an innovative design approach to any equipment and room for programmed personal training, targeting both younger and older generations through careful equipment selection.
5. A central open grass area to suit a variety of activities and functions (outdoor cinema etc). The grass area is approximately 60 x 30m in size which acts as a suitable space for informal active kickabout.
6. Community Tennis Courts and associated shelters and facilities, which are lockable for management reasons.
7. The most eastern point of the open space is required to cater for the 1:1 year and 1: 5 year drainage requirements. A 'constructed wetland' response will include an elevated boardwalk over the drainage area providing interpretative opportunity to address flora and fauna.

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POS Planting will consist of predominantly native waterwise species, with hydrozoned irrigation design to the City of Cockburn's standards. Select exotic trees will be placed at key locations within POS areas to emphasise focal points and key user spaces.

Biofiltration areas for water quality treatment of the first 15mm of stormwater runoff will be provided within the POS areas relative to each drainage catchment. All other storage and attenuation of stormwater flows will be accommodated in roadside swales on the project's periphery.

Interconnected paths linking POS areas will provide safe and direct access to/from and between POS areas for residents and visitors. Playgrounds and shelter nodes will form key focal points with the POS network, providing opportunity for community gatherings and informal recreation.

The typical suite of parkland furniture will be provided with an acknowledgement to creating a public open space that is future proofed for a smart and sustainable city. The inclusion of designated WIFI areas, smart poles, smart bins and electric vehicle charging stations will be considered as apart of the smart city response. Solar or wind power electrical poles will be preferred for lighting the open space and providing power outlets for community event pop up infrastructure such as food trucks, power for stages and lighting. It is also envisaged that a public art program will be key to the Central POS landscape outcomes.

Conservation POS & Bush Forever

A Conservation POS is proposed along the project's western boundary which interfaces with the existing Ghostgum Avenue. This POS contains rare and endangered Spider Orchids (Caladenia heugelii). The area containing the Spider Orchids has previously been fenced by the Department of Biodiversity, Conservation and Atrractions (DBCA). No further works are proposed to be undertaken within the fenced area.

A pedestrian link through the Conservation POS will be created on an existing cleared track to provide permeability to the urban design by allowing pedestrian access from the development out onto the existing Ghostgum Avenue and Armadale Road footpath network. Level difference of the Conservation POS to the proposed development ranges between heights of less than 1m, up to 3m in height above the development. The proposed interface to the development will require retaining structures, proposed to be either limestone or granite boulder walling no higher 0.9m high which will be softened with pockets of native species low height planting in accordance with bushfire management plan requirements.

No works are proposed within the Bush Forever site located on the projects northern boundary other than possible internal pedestrian paths that utilise existing tracks and clearings to connect to the existing footpaths within the Fraser Road road reserve. Any proposed paths in the Bush Forever will be subject to discussion and agreement with the appropriate management agency and the City of Cockburn. Perimeter fencing will be installed in accordance with the City's standard conservation fencing detail. A widened road reserve exists to the entire interface of the development with the Bush Forever site. This interface will contain stormwater retention basins landscaped to satisfy bushfire management plan requirements.

Street Trees & Streetscapes

Streetscapes throughout the development shall incorporate a variety of treatments in response to the road hierarchy system. In all cases landscape works shall incorporate tree planting in accordance with accepted traffic standards on the standard street tree alignment in relation to the service utility corridor. Treatments may include soft works such as street trees, hedge planting and groundcovers.

Final tree species are yet to be agreed however an indicative street tree plan has been included and consists of a mix of Exotic, Australian native and West Australian native species to define road hierarchy. On verge areas immediately adjacent Bush Forever or Conservation POS areas, only Swan Coastal Plain native trees will be used.

The timing of installation will be to occur at the completion of civil engineering works, prior to the construction of homes. Street trees shall be allocated at one per lot for standard lots and three per lot for corner blocks. Trees will be placed typically centre of lot and in accordance with the corridor provided by utility service providers, being 2.7m from lot boundary.

Due to the site's former land uses resulting in a generally degraded site state, there are no significant trees worthy of retention in road reserves.

Irrigation Strategy

It is proposed that a maximum of two (2) groundwater bores will be required to irrigate all the proposed public open space and streetscape landscaping within the development. Groundwater Licences have been provided by the Department of Waters, Environment and Regulation (DWER) for a groundwater extraction amount of 19,182kL per annum to serve the project's total landscape requirements.

The irrigation system will be designed and constructed in accordance with the City of Cockburn's Irrigation Specifications. Water Quality results will be provided to the City for review and comment following drilling of groundwater bores. Should iron levels within the groundwater drawn from the bore be sufficiently elevated to cause iron staining to landscape infrastructure, discussions will be held with the City regarding the implementation of iron filtration systems.

Maintenance

The industry accepted standard Developer funded and managed landscape and irrigation maintenance period is typically two (2) summers as outlined in standard WAPC subdivision conditions. Following this period, the landscape and irrigation maintenance will be handed over to the City of Cockburn to manage, unless otherwise negotiated.

Typically the first year is an establishment period, followed by a second year of consolidation. Irrigation requirements are to be scheduled to be wound back during this period to a point of almost self sufficiency at the time of handover to the Council.

As part of the ongoing approval process, every public open space landscape and irrigation design will be submitted to and approved by the City of Cockburn prior to construction commencing. The landscape design will incorporate recreation and environmental requirements, whilst focusing on maintenance minimisation principles and techniques. The developer is committed to working with the local authority to deliver outcomes in this process to reflect best practice throughout the development.

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GHOSTGUM AVENUE

ARMADALE ROAD

TREEBY LSP

LANDSCAPE MASTERPLAN

DWG **TRB-01**
REV **A**
DATE **191015**

0 10 20 30 40 50 m

SCALE **1 : 1000 @ A1**

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COMMUNITY BUILDING AND OUTDOOR PLAY SPACE

SEMI ENCLOSED FITNESS EQUIPMENT AREA

COMMUNITY EVENT LAWN AND INFORMAL KICKABOUT SPACE 60m X 30m

PLANTED DRAINAGE BASIN CONTAINS 1:1 AND 1:5

+30.0

+29.5

+29.5

+29.5

+30.0

+29.15

SIX SEASONS NATIVE GARDEN AND COMMUNITY VEGETABLE GARDEN SET INTO SHADY INFORMAL PARKLAND WITH PUBLIC SCULPTURES

+30.0

+29.5

SECLUDED YOGA LAWN

22 BAY CARPARK

THEMED PLAYGROUND TO BE ASSOCIATED WITH COMMUNITY BUILDINGS

PUBLIC TENNIS COURTS AND ASSOCIATED SHELTERS

+30.0

TREEBY LSP

CENTRAL PUBLIC OPEN SPACE CONCEPT PLAN

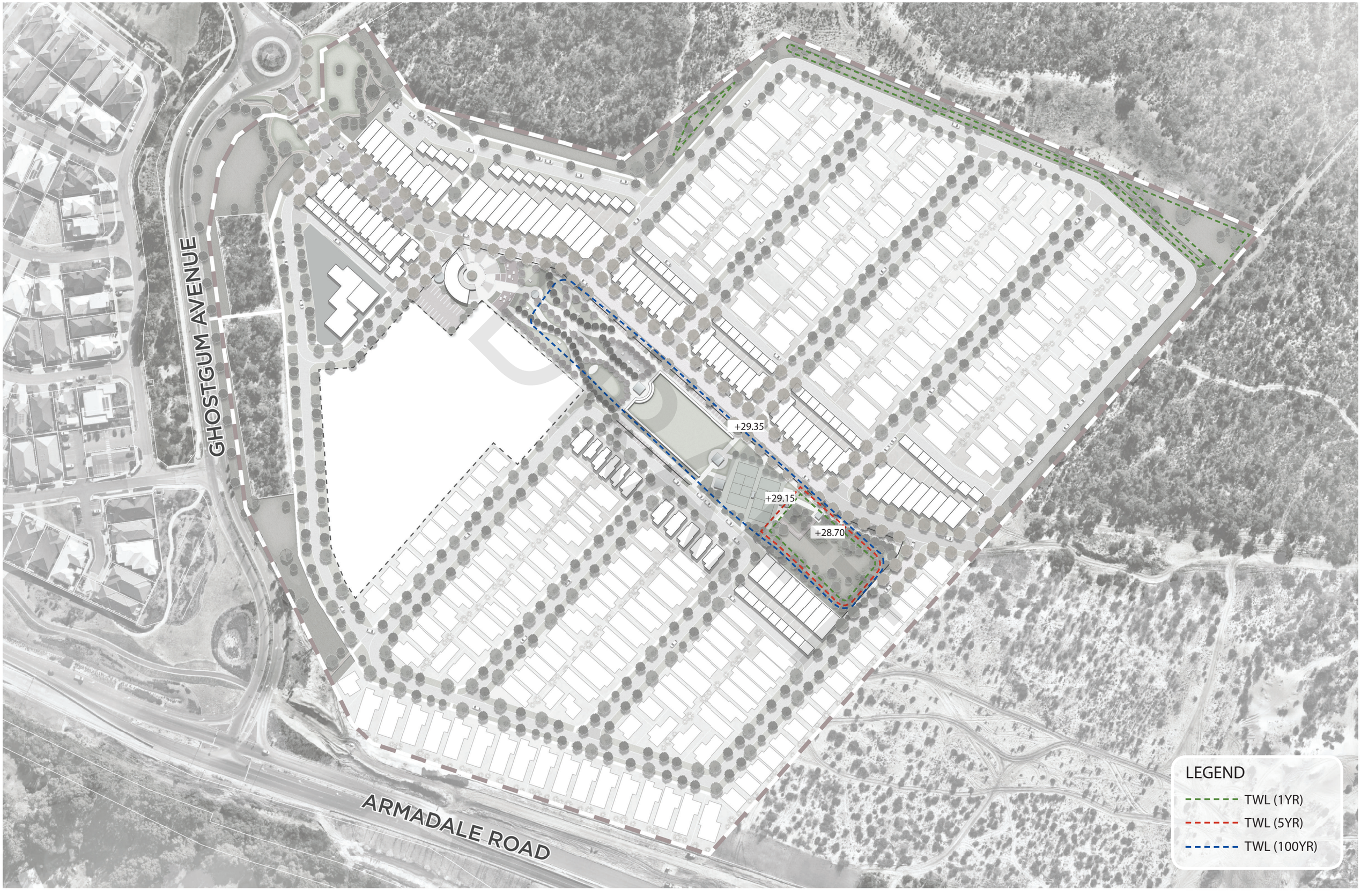
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PUBLIC OPEN SPACE DRAINAGE LAYOUT

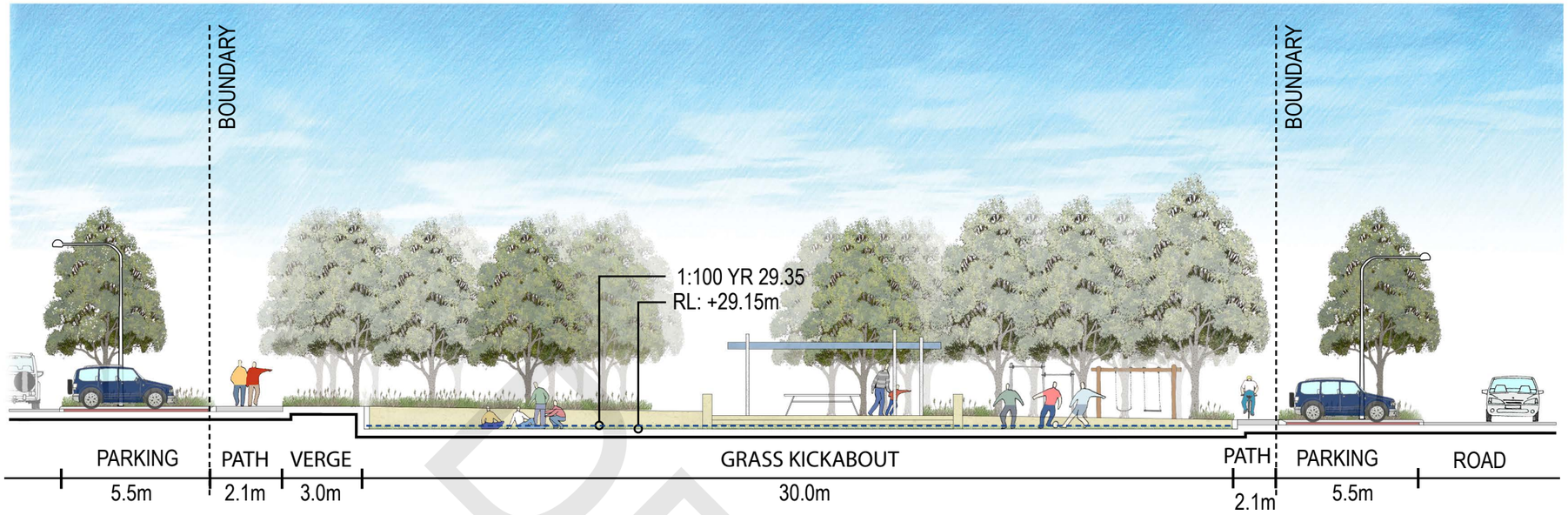
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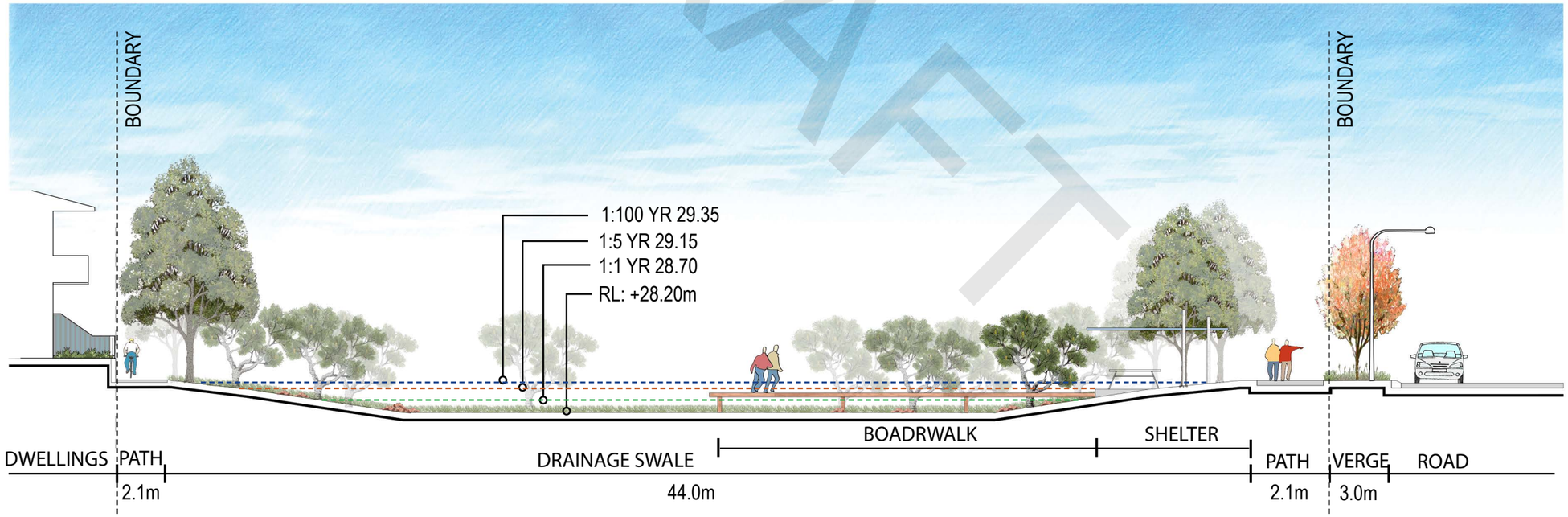
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TREEBY FOR LWP

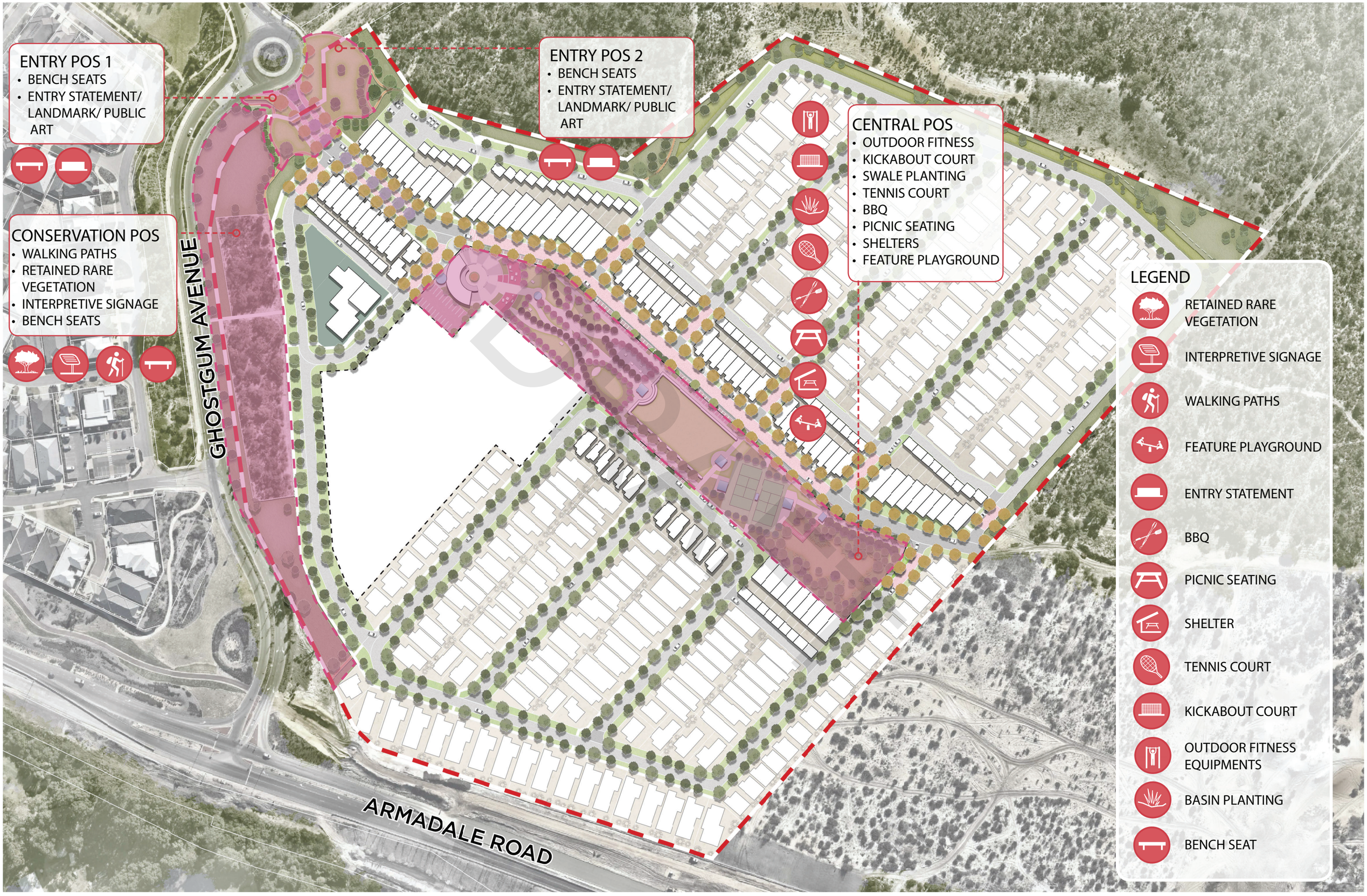
PUBLIC OPEN SPACE DRAINAGE SWALE CROSS SECTIONS

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DATE OCT 2019
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TREEBY LSP

PUBLIC OPEN SPACE AMENITY PLAN

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POS

POS

BUSH FOREVER

DRAINAGE

DRAINAGE

GHOSTGUM AVENUE

CONSERVATION POS

POS

DRAINAGE

ARMADALE ROAD

LEGEND



PYRUS CALLERYANA BRADFORD

BRADFORD PEAR



CORYMBIA CALOPHYLLA

MARRI



CORYMBIA FICIFOLIA GRAFTED

SUMMER RED CORYMBIA



EUCALYPTUS LAELIAE

DARLING RANGE GHOST GUM



SAPIUM SEBIFERUM

CHINESE TALLOW TREE

TREEBY FOR LWP

STREET TREE MASTERPLAN

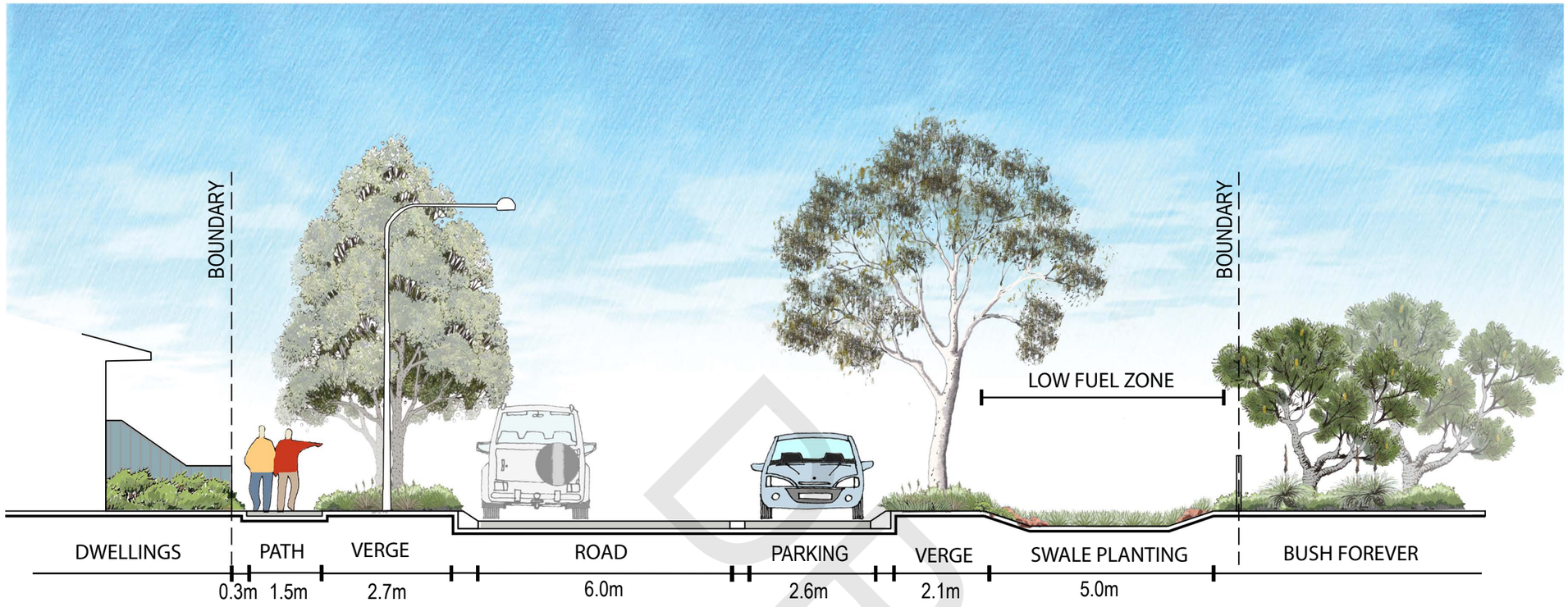
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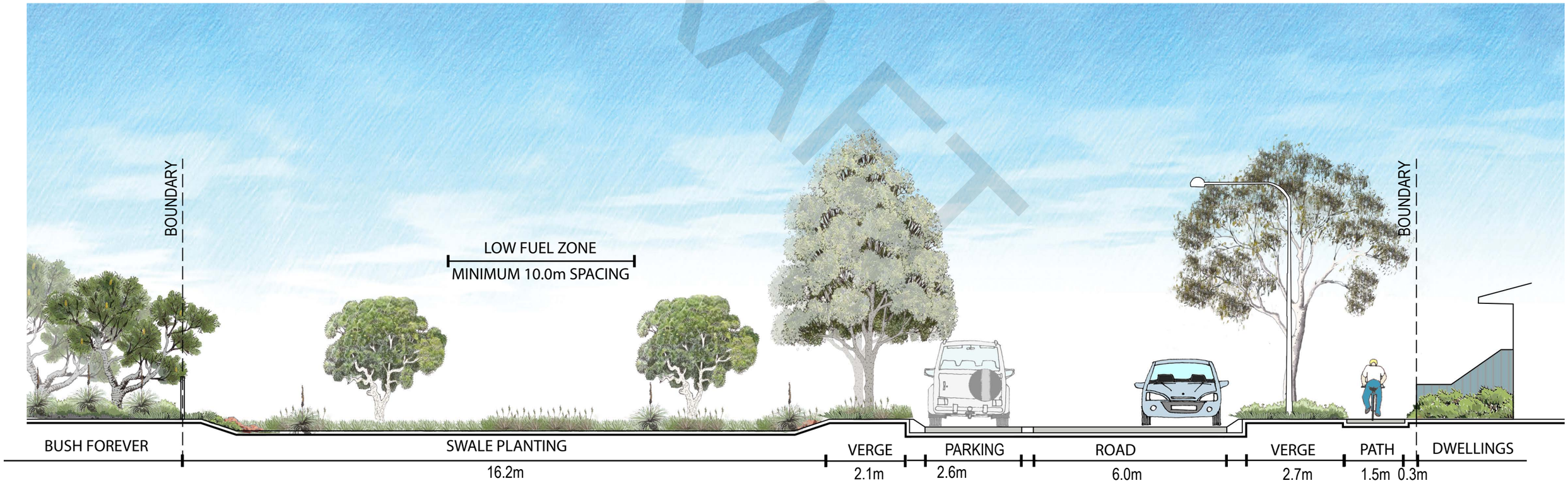
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20M ROAD RESERVE BUSH FOREVER + DRAINAGE INTERFACE



20M ROAD RESERVE BUSH FOREVER + DRAINAGE INTERFACE

TREEBY FOR LWP

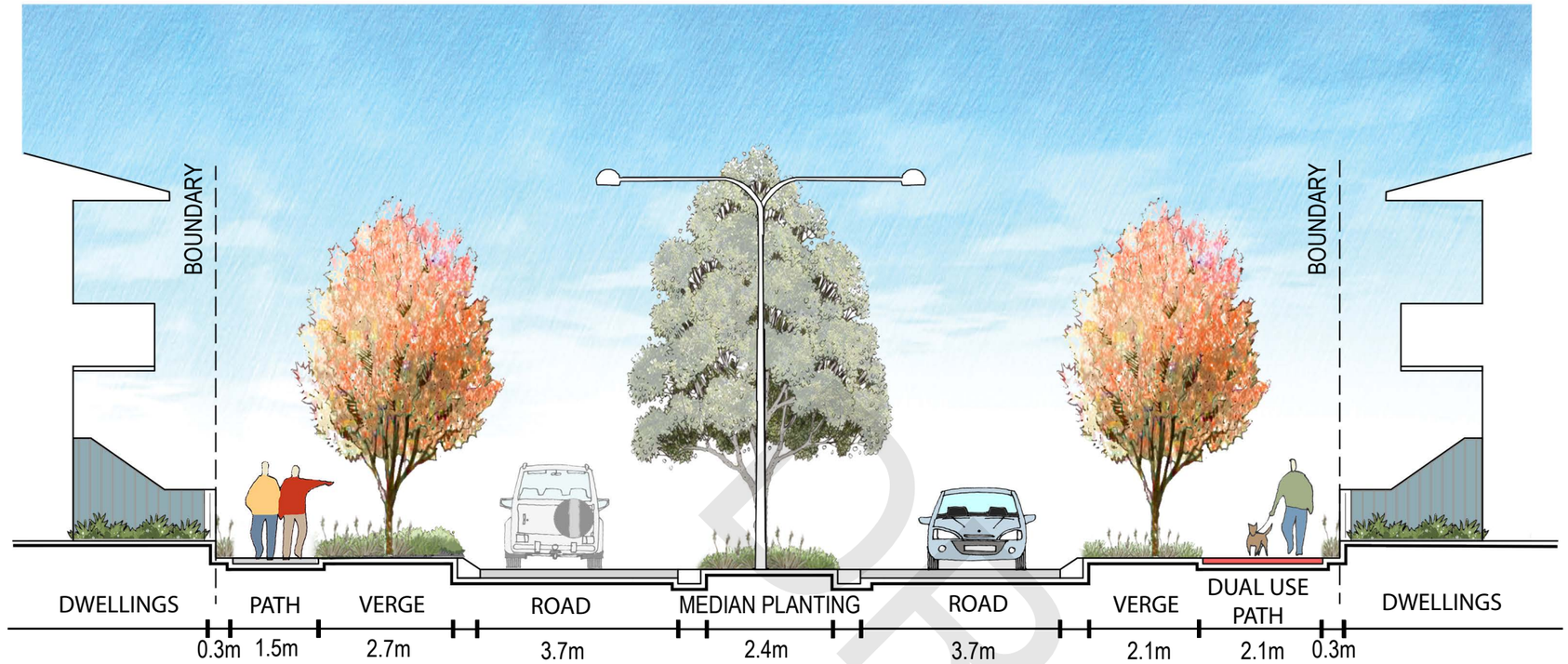
TYPICAL STREET CROSS SECTIONS

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DATE OCT 2019
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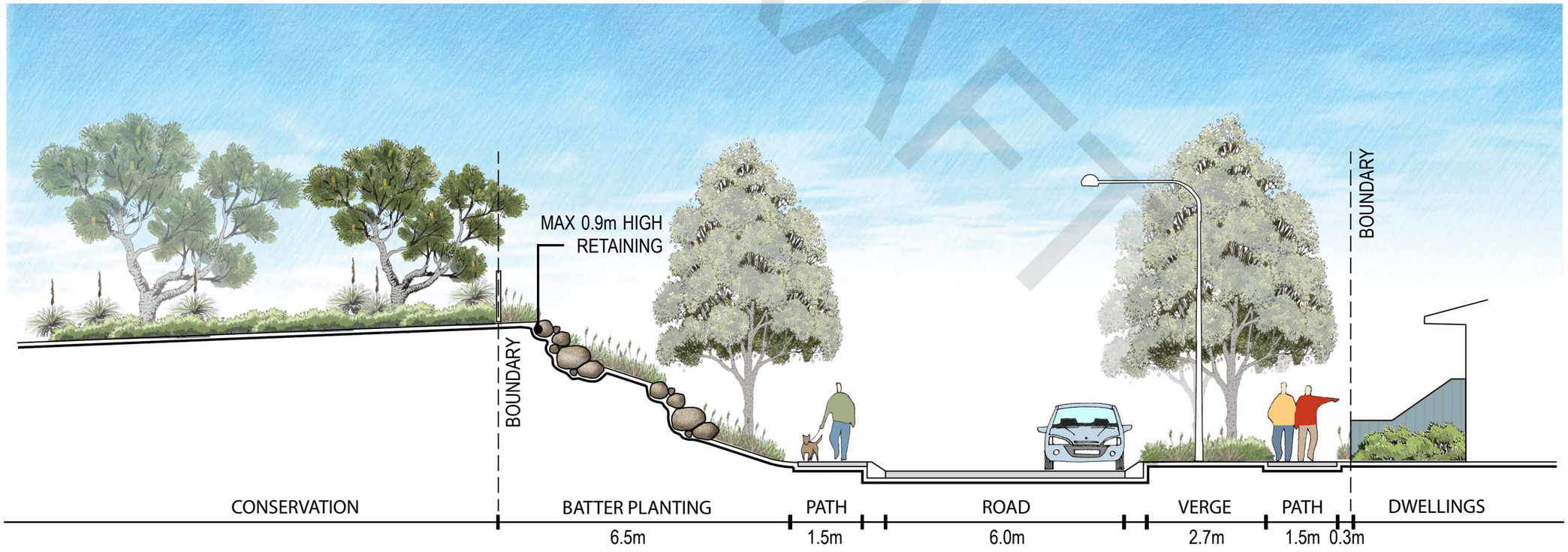
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20M BOULEVARD ENTRY ROAD



20M ROAD RESERVE CONSERVATION INTERFACE

TREEBY FOR LWP

TYPICAL STREET CROSS SECTIONS

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REV 1ST
DATE OCT 2019

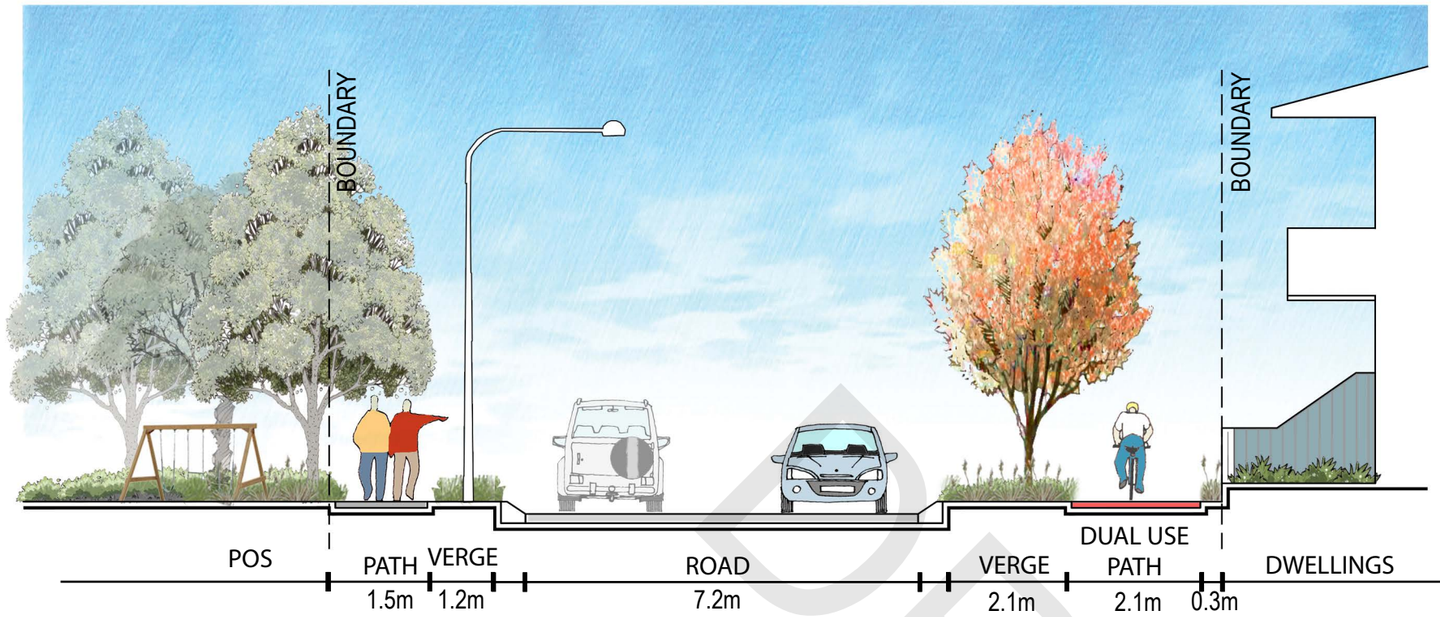
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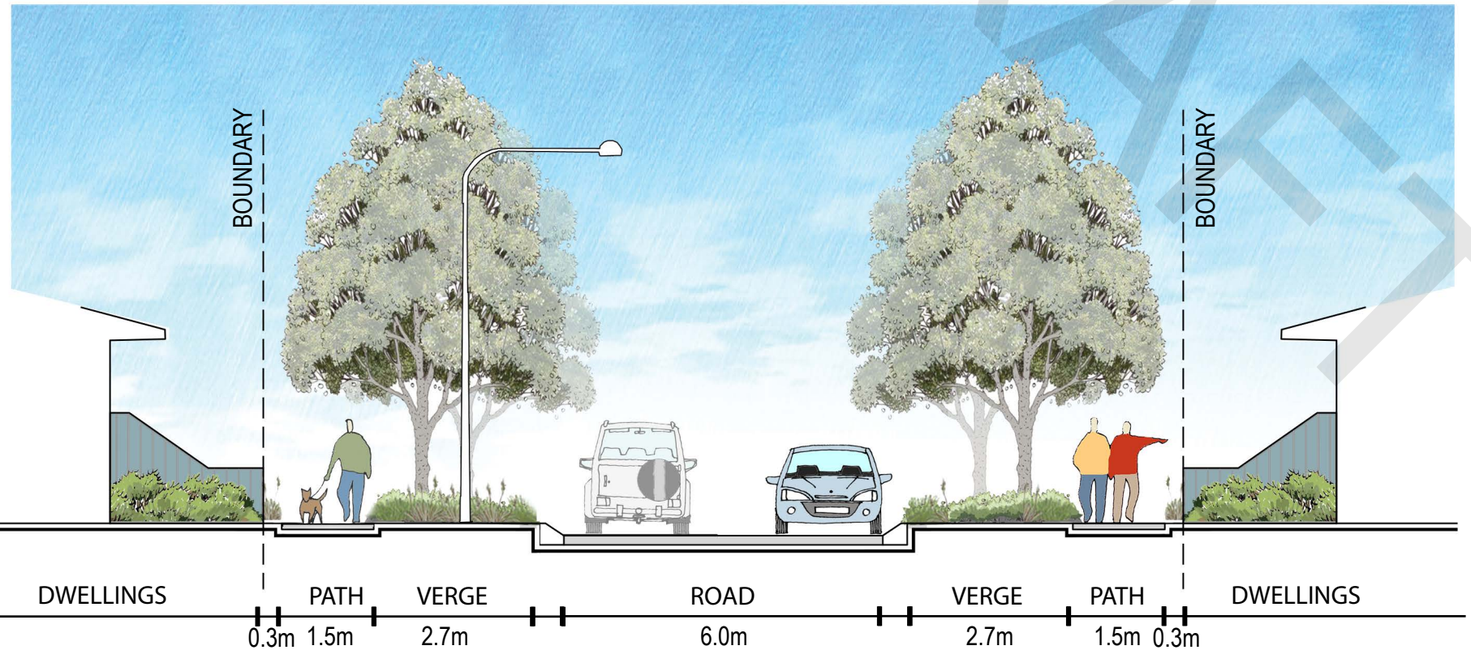
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15M ROAD RESERVE INTERFACE TO PUBLIC OPEN SPACE



15M ROAD RESERVE

TREEBY FOR LWP

TYPICAL STREET CROSS SECTIONS

DWG XX-XX-XX
REV 1ST
DATE OCT 2019

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SCALE 1 : 100 @ A3

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