

# Proposed Residential Development & Subdivision

43, 45 & 49 Warriewood Road, Warriewood NSW

## Development Application - Landscape Concept

Revision A  
24 April 2020



CPS

CREATIVE PLANNING SOLUTIONS

Photo by Doug Beckers (<https://www.flickr.com/people/37103729@N02>)

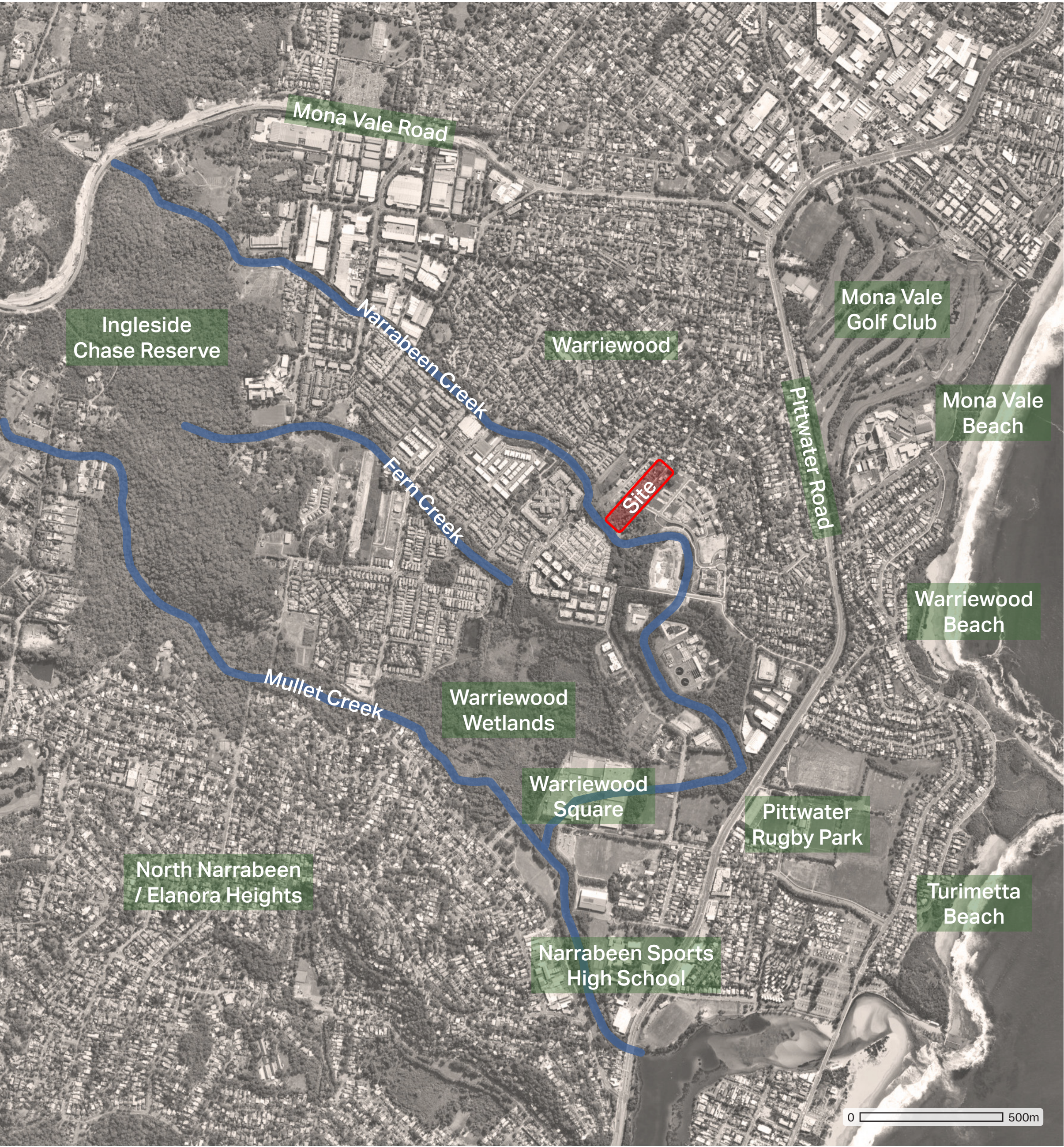


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# Context



## Warriewood Valley

Warriewood Valley is situated at the base of the escarpment, known as Ingleside Chase Reserve, between Mona Vale and Warriewood. It comprises of land known as “Stage 1 Release” and land identified as the Warriewood Valley Release Area (WVRA). WVRA is primarily a residential area expected to provide a total of 2,451 new dwellings and anticipated to accommodate 6,618 residents once completed. The Warriewood Valley locality is characterised by a mix of residential, retail, commercial, industrial, recreational, and educational land uses. WVRA continues to be developed as a desirable urban community in accordance with the adopted planning strategy for the area, and will include a mix of low to medium density housing, industrial/commercial development, open space and community services. The creek line corridors, roads and open space areas form the backbone of the new community, complemented with innovative water management systems, the natural environment, pedestrian/cycle path network, public transport, and recreation facilities.



## Local Context

The subject site is located on the southern side of Warriewood Road and is known as 43, 45 and 49 Warriewood Road, Warriewood (Lot 2, DP 972209, Lot 2, DP 349085 and Lot 1, DP 349085 respectively). Combined, the three allotments have an area of approximately 22,187m². The site contains a progressive north-to-south (i.e. front-to-rear) slope of approximately 9.2 metres. The subject site is located within the suburb of Warriewood, which is located within the Northern Beaches (formerly Pittwater) Local Government Area. The site is approximately 850 metres south of the Mona Vale town centre and 21 kilometres northeast of the Sydney Central Business District. Development within the surrounding area is varied, however it consists predominately of residential development. Sites adjoining both to the east and west consist of recently approved subdivision developments containing both single dwelling house allotments and residential flat buildings of single, two and three storeys. Development to the south of Narrabeen Creek is part of the Warriewood Valley Urban Release area, and contains a wide variety of predominately residential development. Such development includes low, medium and high-density residential developments in addition to seniors living developments (Angicare Warriewood Brook). Linking the adjoining sites, Narrabeen Creek and the associated bushland corridor form the rear boundary of the site which also provides a pedestrian through-site link. This link is in the form of a 2.5m wide shared pathway and runs discontinuously from Jubilee Avenue in the North to Macpherson Street in the south. This bushland corridor is noted as containing an important Endangered Ecological Community being Swamp Sclerophyll Forest on Coastal Floodplains.



# Analysis



## Topography

The previously occupied portion of the subject site, being the northern half, has a moderately steep but even grade sloping approximately 7.5 metres from the footpath at Warriewood Road to the rear of the existing built structures on site. From this point, the site topography continues to fall southwards at a more subtle grade towards the densely vegetated area at the rear.

The landform within the rear portion of the site generally slopes toward the south eastern corner at the site's interface with Narrabeen Creek however a significant feature of this area is a localised depression/swamp that occupies the central portion of the space and drains in a more easterly direction.



## Access

The site is currently accessed via multiple points on Warriewood Road and contains one central haul road running in a north-south direction which then turns to follow the western and rear boundary. Future access to the site is planned via connection to a partially completed roadway (Lorikeet Grove) which forms the southern extent of built form for subdivisions fronting Warriewood Road. Newly created streets have been created for adjoining sites which run in a north south direction perpendicular to Warriewood Road. Connection points to a shared pathway / through-site link exist on the eastern and western boundaries which form a public pedestrian access along the Narrabeen Creek corridor.



## Existing Land Uses & Vegetation

The subject site is distinctly divided in terms of both land use and vegetation. The northern (upper) portion of the site has been generally cleared of native vegetation and contains generally planted exotics surrounding the existing dwelling houses. This portion of the site has a history of use as agricultural land and market gardens stemming from the rich topsoil occurring on the site. Dilapidated glass houses are located down the slope towards the middle portion of the site which is now dominated by significant weed regrowth.

The southern (lower) portion of the site adjoining Narrabeen Creek contains remnant bushland with an Endangered Ecological Community being Swamp Sclerophyll Forest on Coastal Floodplains. This portion of the site has generally been retained as existing however is heavily dominated by weed growth with remnant canopy cover.



# Landscape Concept Masterplan

The landscape and open space components of the proposed development fall into distinct zones associated with intended land use. The northern portion of the site is to include vacant allotments fronting Warriewood Road and Lorikeet Grove to be developed in the future as single dwelling houses, and a large central communal open space associated with the central residential flat buildings. The southern portion of the site includes a new roadway connection (Lorikeet Grove) and natural bushland vegetation to the rear of the site associated with the creek line corridor. The southern portion forms an important landscape component adjoining Narrabeen Creek and creating a link with the existing adjoining public creek line corridor. This area is to have extensive weed management, restoration and revegetation of the Endangered Ecological Community (EEC).

The objective of the landscaping scheme across the site is to create a harmonious living environment that provides opportunity for high level recreation in a functional landscape setting of excellent visual amenity. This has been achieved through expression of planting, materiality, design forms and the connection with natural environment setting of Warriewood Valley.





# Landscape Concept: North

The northern portion of the site is to contain four (4) individual allotments with direct access fronting Warriewood Road, a central lot containing two (2) residential flat buildings containing a total of thirty-four (34) dwellings, central communal open space and seven (7) individual allotments facing the newly created Lorikeet Grove. The individual allotments are to be developed as single dwelling houses as part of future separate development applications. The central portion of the central lot is to be dedicated as a large communal open space for the residential flat buildings and is to contain for passive and active recreational pursuits. Each of the ground floor units of the residential flat buildings are to include generous private open space courtyards containing paved patios, open lawns and garden surrounds. The communal open space also serves as the primary pedestrian circulation providing equitable access from Warriewood Road to Lorikeet Grove and the through-site link at the rear creek line corridor.



## LEGEND

	Existing trees retained* <i>Refer Arboricultural Impact Assessment</i>		Hardwood timber decking
	Existing trees removed* <i>Refer Arboricultural Impact Assessment</i>		Softfall area & play equipment
	Large canopy trees		Stone steppers & river gravel
	Small-medium tress		Raised planter
	Palms		Timber bench seating
	Screen planting		Pod-style composite seating
	Shrub & accent planting		Timber/steel shade structure & BBQ area
	Groundcovers		Clothesline
	Lawn		1.8m high timber fencing to POS areas
	Coloured concrete type 1		1.2m high AS compliant pool fencing & gate
	Stone paving type 1		Line of basement
	Stone paving type 2		Site boundary

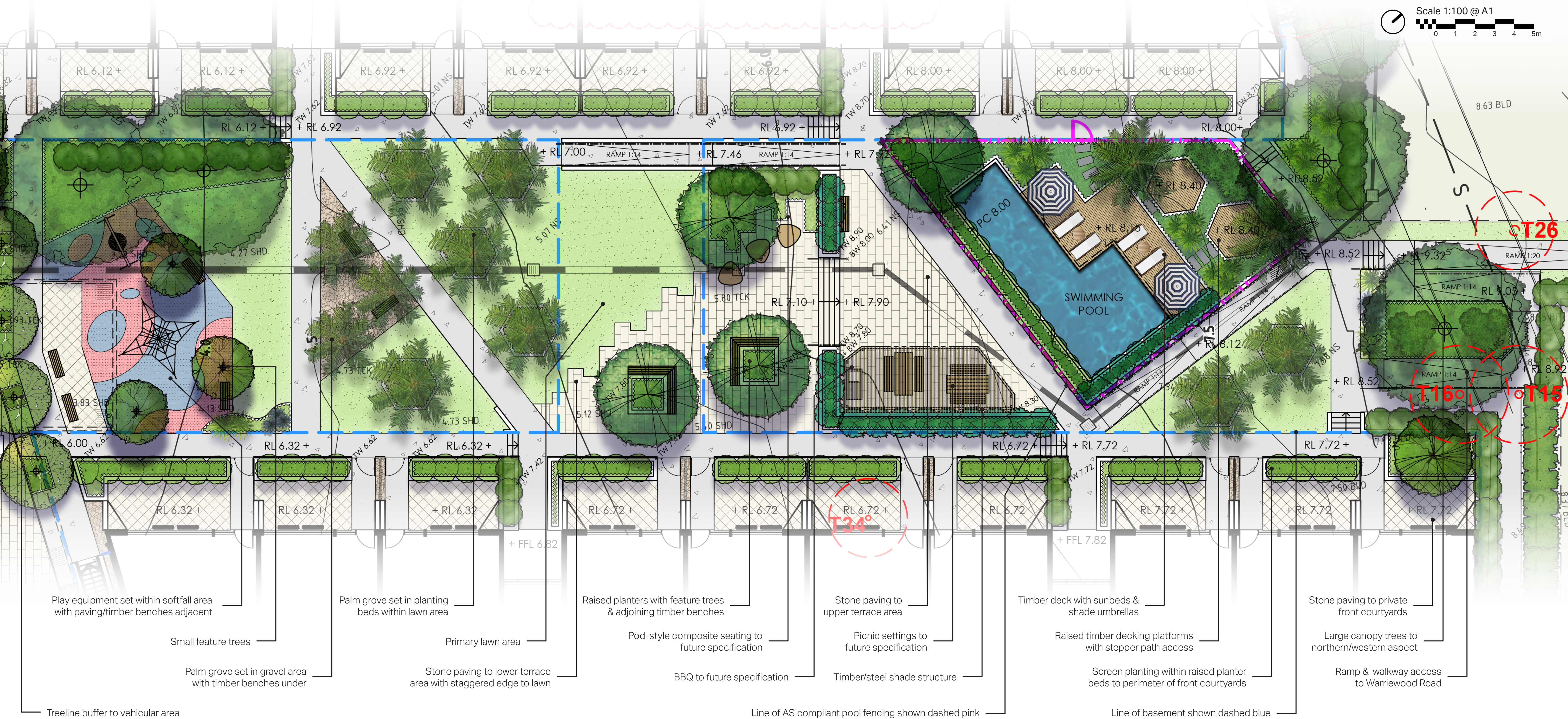
## KEY

- 1** Vehicular Entry  
*coloured concrete driveway with ramped entry to basement*
- 2** Subdivision Allotments  
*lots to be cleared and spray seeded with a native grass seed mix*
- 3** Play Space Area  
*climbing structures, softfall, seating & small trees*
- 4** Central Terrace  
*palm grove, primary lawn area & seating plaza*
- 5** Upper Terrace  
*functional paved area with seating, fixed shade & BBQ facilities*
- 6** Swimming Pool Area  
*12m x 3.5m lap pool, decking, seating areas & shade umbrellas within lush planting surrounds*
- 7** Warriewood Road Pedestrian Entry  
*accessible concrete pathway providing access from street frontage to communal open space*
- 8** Private Open Space  
*paved patios adjacent to open lawn areas with screen planting, accent plants & feature trees*



# Detail Plan: Communal Open Space

The central green communal open space provides options for journey, activity, group leisure and privacy. The activation of the spaces is encouraged through the provision of key design elements including swimming and lap pool, sun decks, outdoor shade, cooking facilities, seating, expansive open lawns, play equipment and various forms of seating. Careful design selection of materiality and planting has been undertaken to ensure spaces of high quality that are durable, long lasting and create a safe user experience. Careful consideration has also been given to pedestrian movement through the communal open space to ensure ease of access, clear sightlines and direct circulation. Where possible, large tracts of deep soil have been maintained centrally to enable the provision of large canopy trees and palm plantings to give the communal open space a sense of scale, diminish the built form and provide a high level of natural shade and cooling to dwellings. The external environment of the communal open space is one that encourages a strong sense of community, calm and refuge within highly useable and naturalistic setting.





# Section AA: Communal Open Space



KEY PLAN (not to scale)

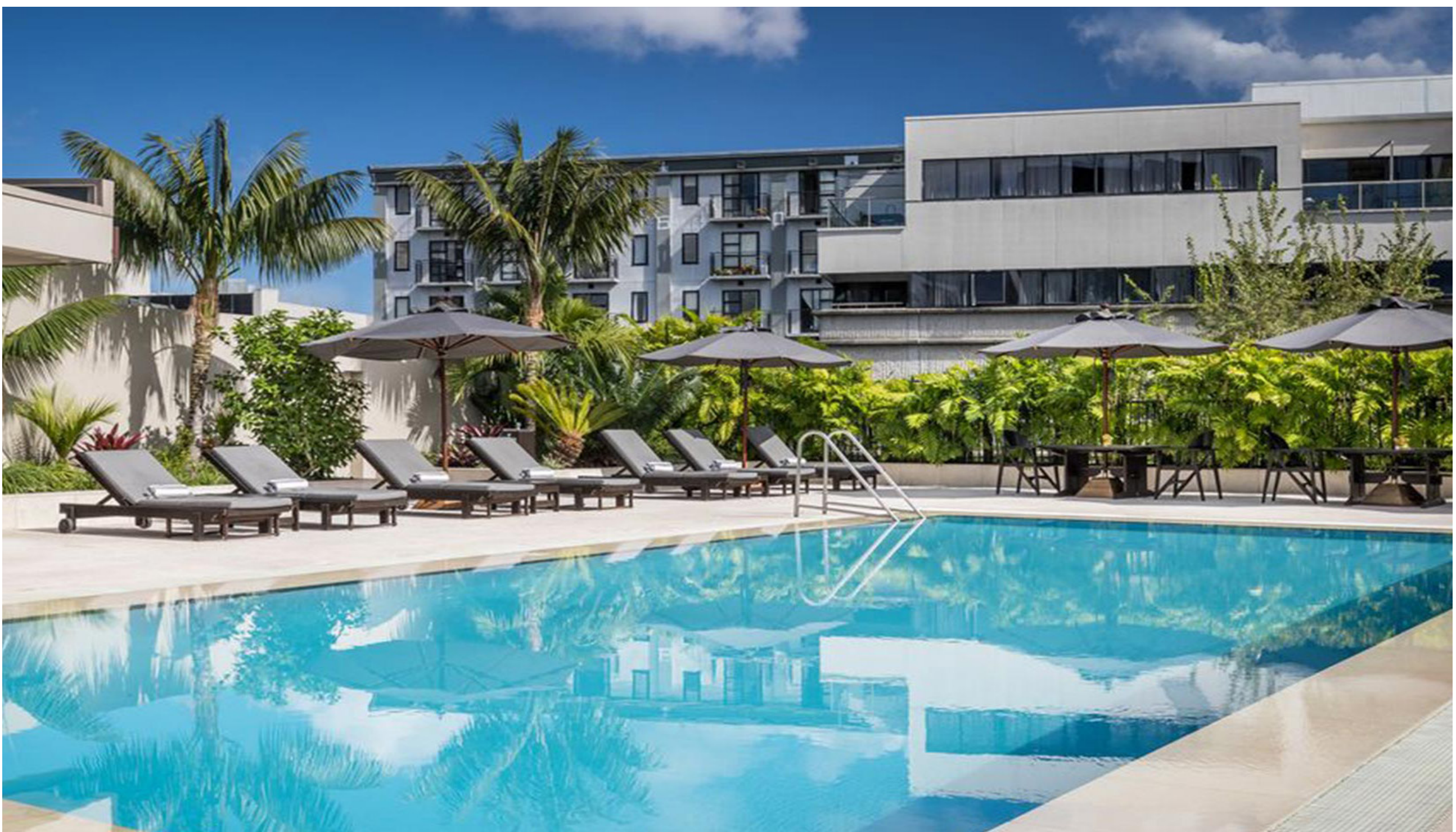


## KEY

- |   |   |  |
|---|---|--|
| <b>1</b> Play Space Area<br><i>climbing structures, softfall, seating, small trees</i>  | <b>5</b> Seating Plaza<br><i>paved plaza with multiple seating types overlooking primary lawn area</i>            | <b>8</b> Timber Deck<br><i>timber deck surrounds to pool for provision of sun beds and umbrellas</i>                     |
| <b>2</b> Passive Seating Area<br><i>timber bench seating, Livistona palm plantings, decomposed granite/ crushed sandstone</i> | <b>6</b> Upper Terrace<br><i>functional paved area with seating, shade &amp; BBQs</i>                             | <b>9</b> Timber Platforms<br><i>raised timber platforms for sun bathing &amp; seating within lush planting surrounds</i> |
| <b>3</b> Palm Grove<br><i>palm plantings set in lawn area with low shrub planting beds to base</i>                            | <b>7</b> Swimming Pool<br><i>lap pool 12m x 3-5m surrounded by multiple seating areas, lawn and soft planting</i> | <b>10</b> Warriewood Rd Pedestrian Entry<br><i>accessible pedestrian entry from Warriewood Road</i>                      |
| <b>4</b> Primary Lawn<br><i>large open central lawn area for active recreation</i>  |   |  |



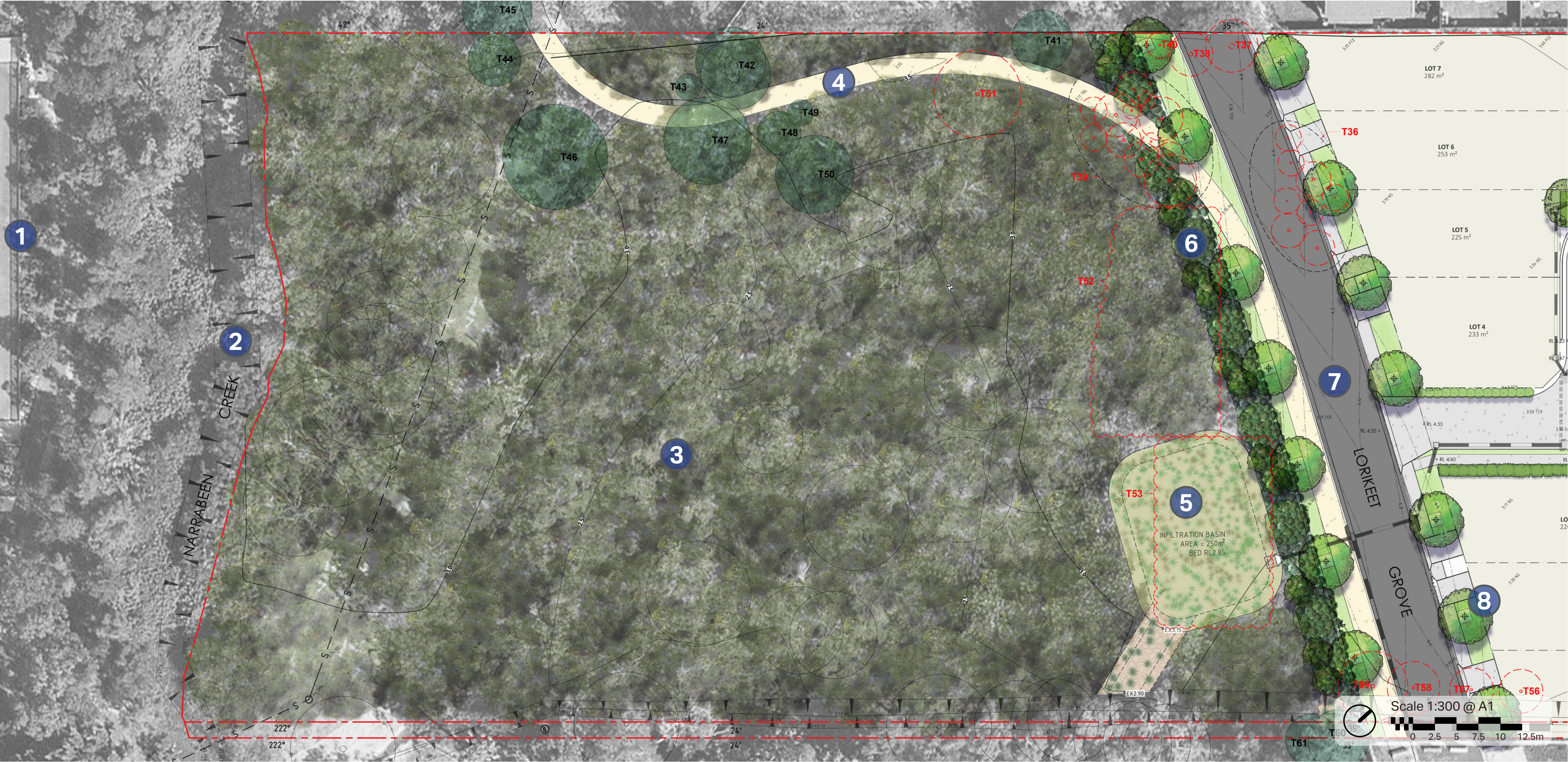
# Design Vision: Communal Open Space





# Landscape Concept: South

The southern portion of the site primarily contains the creekline corridor regeneration area as well as a planted stormwater infiltration basin, landscaper buffer, Lorikeet Grove roadway connection and pedestrian through-site link. A Biodiversity Management Plan (BMP) has been prepared to inform conservation, restoration and enhancement of the degraded Endangered Ecological Community (Swamp Sclerophyll Forest on Coastal Floodplains) within the creek line corridor. Elsewhere, the landscape buffer is to contribute to providing a defined edge and transition between the built and natural portions of the site. The creekline corridor is also to include a pedestrian 'through-site link' in the form of a 2.5m shared pathway for both public and private use. The pathway is to link to the recently constructed shared pathway on adjoining developments to the east and west and is to be constructed above the 20% AEP flood level. The location and alignment of the pathway has been carefully considered to meander through existing trees nominated for retention in a sensitive manner to avoid any impact to root zones.



## LEGEND

- Existing trees retained\*  
*Refer Arboricultural Impact Assessment*
- Existing trees removed\*  
*Refer Arboricultural Impact Assessment*
- Street trees
- Creekline corridor regeneration area
- Buffer planting
- Rush & sedge planting
- Rush & sedge planting in rock rubble
- Lawn
- Coloured concrete type 1
- Coloured concrete type 2
- Site boundary

## KEY

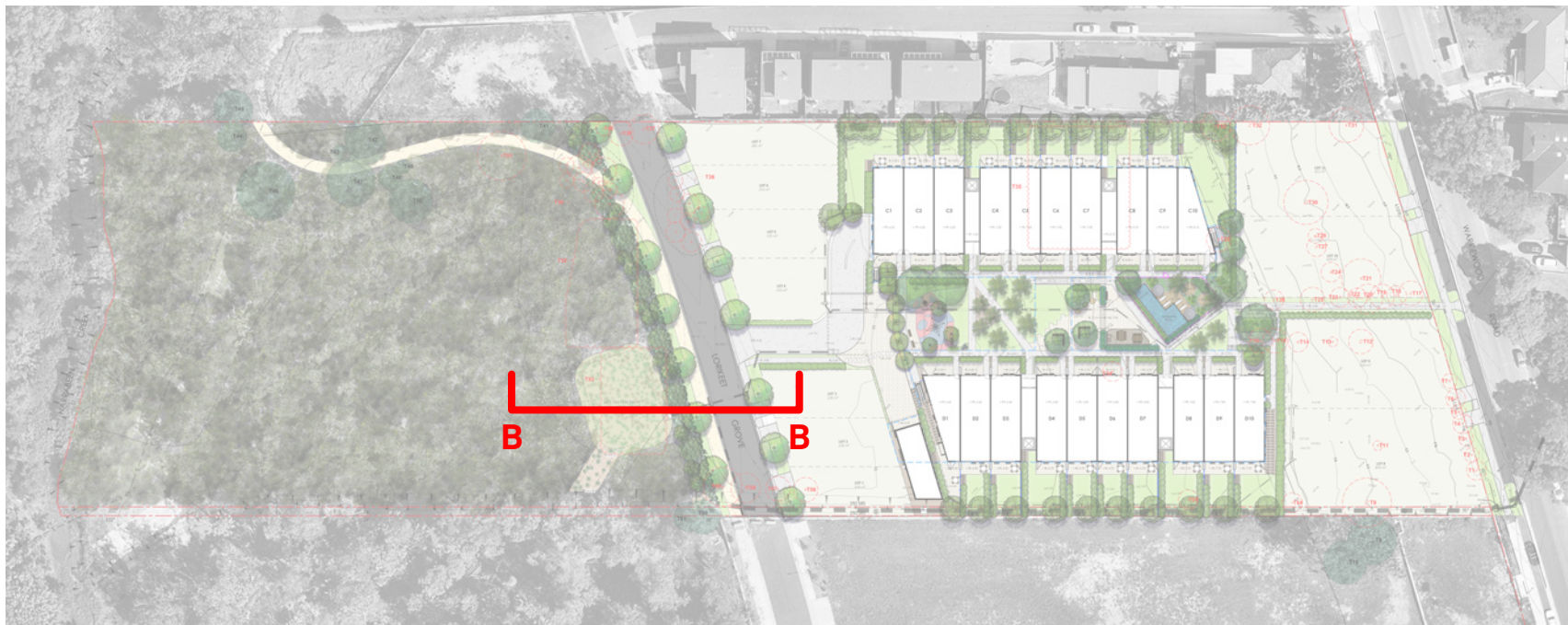
- 1** Adjoining Allotment  
*adjoining allotment to south: Anglicare Warriewood Brook*
- 2** Narrabeen Creek  
*creekline adjoining rear boundary of subject site*
- 3** Creekline Corridor  
*bushland restoration of existing weed infested EEC Swamp Sclerophyll Forest on Coastal Floodplains*
- 4** Shared Pathway  
*2.5m shared pedestrian/cycleway path to connect to adjoining developments*
- 5** Stormwater Basin  
*300mm deep stormwater infiltration basin with sedges & rushes suitable for periodic inundation*
- 6** Landscape Batter  
*max 1:5 landscaped batter with buffer planting to Lorikeet Grove*
- 7** Lorikeet Grove  
*new sealed vehicular carriageway*
- 8** Street Tree Planting  
*Street tree planting in accordance with Warriewood Valley Landscape Masterplan*



# Section BB: Lorikeet Grove



KEY PLAN (not to scale)



## KEY

- 1** Future Lot  
*single allotment to be developed in future*
- 2** Pedestrian Pathway  
*1.5m pedestrian pathway to northern side of Lorikeet Grove*
- 3** Street Tree Planting  
*street tree planting in accordance with Warriewood Valley Landscape Masterplan*
- 4** Lorikeet Grove  
*road carriageway of Lorikeet Grove*
- 5** 2.5m Shared Pathway  
*shared pedestrian/cycleway path to connect to adjoining developments*
- 6** Landscape Batter  
*max. 1:5 landscaped batter to interface with Lorikeet Grove*
- 7** Buffer Planting  
*buffer landscape planting to Lorikeet Grove interface*
- 8** Stormwater Basin  
*300mm deep stormwater infiltration basin with sedges & rushes suitable for periodic inundation*
- 9** Creekline Corridor  
*restoration of native vegetation corridor adjacent to Narrabeen Creek*



# Design Vision: Lorikeet Grove





# Sections CC: Creekline Corridor



**KEY PLAN** (not to scale)



## KEY

- 1** Adjoining Allotment  
*adjoining allotment to south: Anglicare Warriewood Brook*
- 2** Narrabeen Creek  
*Narrabeen Creek adjoining rear boundary of subject site*
- 3** Riparian Zone  
*creekline bank rehabilitation, stabilisation and regrading as required, max. 1:3 grade*
- 4** 50m Public Creekline Corridor  
*bushland restoration of existing weed infested EEC Swamp Sclerophyll Forest on Coastal Floodplains*
- 5** Native Flora & Fauna Corridor  
*bushland restoration of existing weed infested EEC Swamp Sclerophyll Forest on Coastal Floodplains*
- 6** Landscape Edge  
*shared pathway and pathway edge to be raised above existing ground levels to mitigate impact to existing retained trees*
- 7** 2.5m Shared Pathway  
*shared pedestrian/cycleway path to connect to adjoining developments, above 20% AEP flood level*
- 8** Transition Buffer  
*vegetation transition/buffer to adjoining residential allotments*



# Design Vision: Creekline Corridor





# Planting Scheme

The planting palette and species selection has been informed by the local context and landscape character of the Warriewood Valley including the Endangered Ecological Community located on the site. Planting to the communal and open space areas is to consist of hardy, low-water use species requiring little maintenance. A focus on species with foliage and flower interest complimented by unique forms will ensure a high level of visual amenity is afforded to the communal and private open spaces. Street trees and buffer planting along Lorikeet Grove is to provide a defined edge and transition to the built portion of the site and ensure provision of natural shade, softening of the streetscape and contribution to the canopy cover of the site. Planting for the riparian / creek line corridor is to be informed by the Biodiversity Management Plan prepared for the site and will focus on weed removal and establishment of species consistent with Swamp Sclerophyll Forest on Coastal Floodplains. Preparation of detailed planting plans is to be completed as part of detailed design development for each part of the site.



*\*Note: Native spray seed mix to be applied to all proposed vacant subdivision allotments*



# Planting: Creek Corridor

Planting Schedule: Creek Corridor - Management Zone 1

Botanical Name	Common Name	Height	Spacing	Pot Size
Trees				
<i>Acacia parramattensis</i>	Parramatta Wattle	15m	1/20m²	200mm
<i>Allocasuarina torulosa</i>	Rose She-Oak	8m	1/20m²	200mm
<i>Banksia integrifolia</i>	Coast Banksia	8m	1/20m²	200mm
<i>Casuarina glauca</i>	Swamp Oak	15m	1/20m²	200mm
<i>Elaeocarpus reticulatus</i>	Blueberry Ash	8m	1/20m²	200mm
<i>Eucalyptus robusta</i>	Swamp Mahogany	20m	1/20m²	200mm
<i>Glochidion ferdinandi</i>	Cheese Tree	10m	1/20m²	200mm
<i>Livistona australis</i>	Cabbage Tree Palm	15m	1/20m²	200mm
<i>Melaleuca ericifolia</i>	Swamp Paperbark	8m	1/20m²	200mm
<i>Melaleuca linariifolia</i>	Snow-in-summer	8m	1/20m²	200mm
<i>Notelaea longifolia</i>	Large Mock-olive	9m	1/20m²	200mm
<i>Pittosporum undulatum</i>	Sweet Pittosporum	8m	1/20m²	200mm
Shrubs & Perennials				
<i>Acacia longifolia</i>	Sydney Golden Wattle	6m	1/20m²	viro tube
<i>Dodonaea triquetra</i>	Large-leaf Hop Bush	3m	1/20m²	viro tube
<i>Hibiscus diversifolius</i>	Swamp Hibiscus	2m	1/20m²	viro tube
<i>Homalanthus populifolius</i>	Bleeding Heart	6m	1/20m²	viro tube
<i>Polyscias sambucifolia</i>	Elderberry Ash	2m	1/20m²	140mm
Grasses & Groundcovers				
<i>Blechnum camfieldii</i>	Eared Swamp Fern	1m	2/m²	viro tube
<i>Blechnum indicum</i>	Swamp Water Fern	0.8m	2/m²	viro tube
<i>Calochlaena dubia</i>	Rainbow Fern	1.5m	2/m²	viro tube
<i>Carex appressa</i>	Tall Sedge	0.8m	2/m²	viro tube
<i>Dianella caerulea</i>	Blue Flax Lily	0.5m	2/m²	viro tube
<i>Gahnia clarkei</i>	Tall Saw Sedge	2m	2/m²	viro tube
<i>Gahnia sieberiana</i>	Red-fruit Saw Sedge	1m	2/m²	viro tube
<i>Imperata cylindrica</i>	Blady Grass	1.2m	2/m²	viro tube
<i>Lomandra longifolia</i>	Spiney-head Mat-rush	1m	2/m²	viro tube
<i>Pteridium esculentum</i>	Bracken Fern	1m	2/m²	viro tube
<i>Typha orientalis</i>	Broadleaf Cumbungi	2m	2/m²	viro tube

**Note:** All planting and weed management within the creekline corridor is to be undertaken in accordance with the recommendations provided for Management Zones 1 & 2 as stipulated within the Biodiversity Management Plan prepared by Land Eco Consulting dated 24.04.2020

Key Plan (not to scale)



Trees



*Allocasaruina torulosa*



*Banksia integrifolia*



*Casuarina glauca*



*Eucalyptus robusta*



*Glochidion ferdinandi*



*Livistona australis*



*Melaleuca ericifolia*

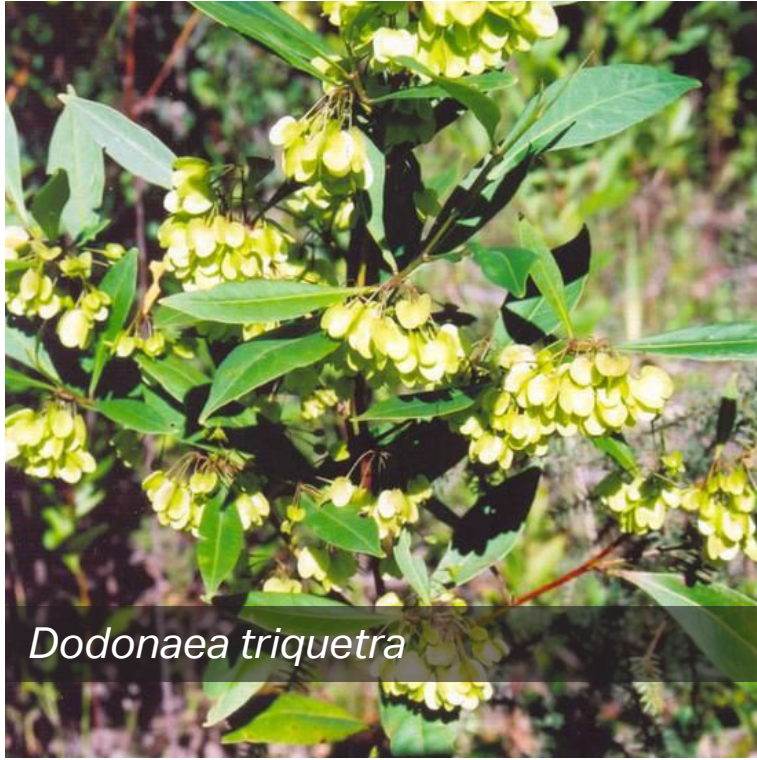


*Pittosporum undulatum*

Shrubs & Perennials



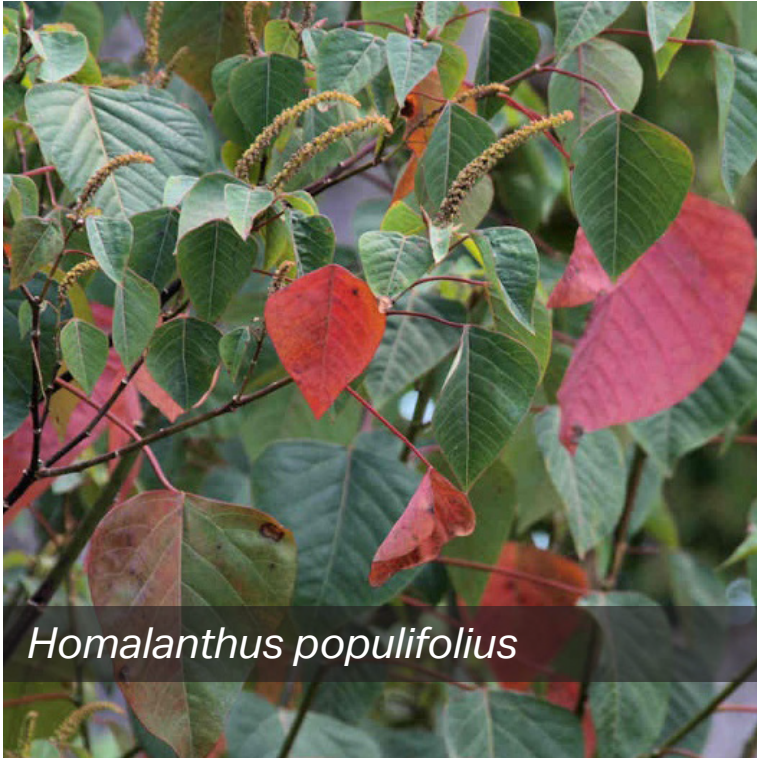
*Acacia longifolia*



*Dodonaea triquetra*



*Hibiscus diversifolius*



*Homalanthus populifolius*

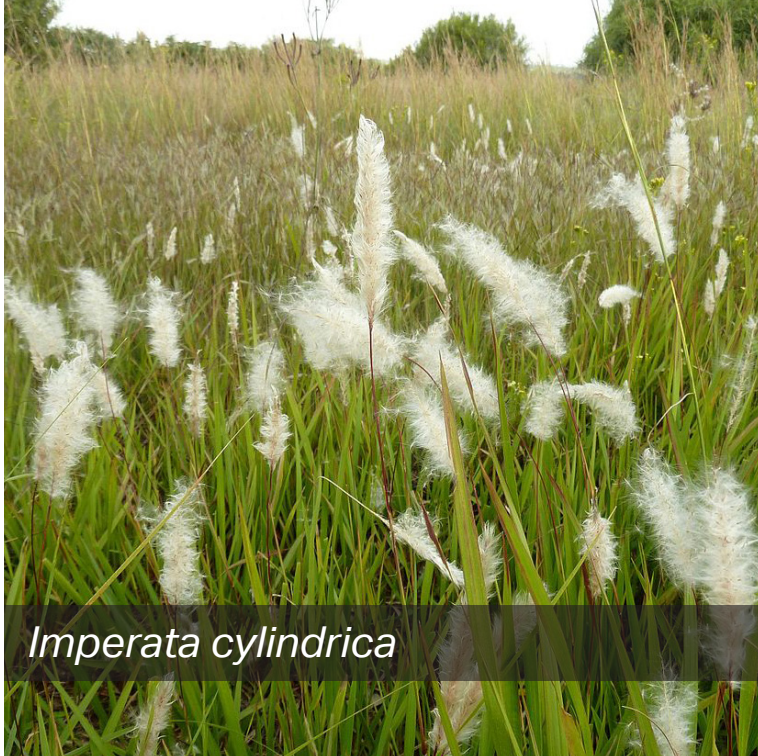
Grasses & Groundcovers



*Dianella caerulea*



*Gahnia sieberiana*



*Imperata cylindrica*



*Pteridium esculentum*



# Planting: Stormwater Basin, Landscape Batter & Lorikeet Grove

## Planting Schedule: Stormwater Basin

Botanical Name	Common Name	Height	Spacing	Pot Size
<b>Rushes &amp; Sedges</b>				
<i>Baumea juncea</i>	Bare Twig-rsuh	1m	4/m <sup>2</sup>	viro tube
<i>Bolboschoenus fluviatilis</i>	Marsh Club-rush	1.5m	4/m <sup>2</sup>	viro tube
<i>Carex appressa</i>	Tall Sedge	0.8m	4/m <sup>2</sup>	viro tube
<i>Ficinia nodosa</i>	Knobby Club-rush	1m	4/m <sup>2</sup>	viro tube
<i>Juncus usitatus</i>	Common Rush	1m	4/m <sup>2</sup>	viro tube
<i>Leptocarpus tenax</i>	Slender Twine-rush	1m	4/m <sup>2</sup>	viro tube

**Note:** All planting within the stormwater basin is to be undertaken in accordance with the recommendations provided within the Biodiversity Management Plan prepared by Land Eco Consulting dated 24.04.2020

## Planting Schedule: Landscape Batter

Botanical Name	Common Name	Height	Spacing	Pot Size
<b>Trees</b>				
<i>Eucalyptus botryoides</i>	Bangalay	20m	10m	200mm
<i>Eucalyptus resinifera</i>	Red Mahogany	25m	10m	200mm
<i>Melaleuca linariifolia</i>	Snow-in-summer	10m	8m	200mm
<i>Glochidion ferdinandi</i>	Cheese Tree	10m	6m	200mm
<b>Shrubs &amp; Perennials</b>				
<i>Acacia irrorata</i>	Green Wattle	6m	4m	140mm
<i>Dodonaea triquetra</i>	Large-leaf Hop Bush	3m	2m	140mm
<i>Leptospermum polygalifolium</i> subsp.	Tantoon	3m	4m	140mm
<i>Melaleuca linariifolia</i> 'Claret Tops'	Honey Myrtle	1.5m	2m	140mm
<i>Polyscias sambucifolia</i>	Elderberry Ash	2m	2m	140mm
<b>Grasses</b>				
<i>Lomandra longifolia</i>	Spiny-head Mat-rush	1m	2/m <sup>2</sup>	viro tube
<i>Themeda triandra</i>	Kangaroo Grass	1m	2/m <sup>2</sup>	viro tube

## Planting Schedule: Lorikeet Grove

Botanical Name	Common Name	Height	Spacing	Pot Size
<b>Street Trees</b>				
<i>Eucalyptus robusta</i>	Swamp Mahogany	20m	As Shown	75L
<i>Lophostemon confertus</i>	Brush Box	15m	As Shown	75L
<i>Tristaniopsis laurina</i>	Water Gum	10m	As Shown	75L
<i>Waterhousea floribunda</i>	Weeping Lilly Pilly	20m	As Shown	75L
<b>Turf</b>				
<i>Stenotaphrum</i> 'Sapphire'	Sapphire Buffalo	-	-	-

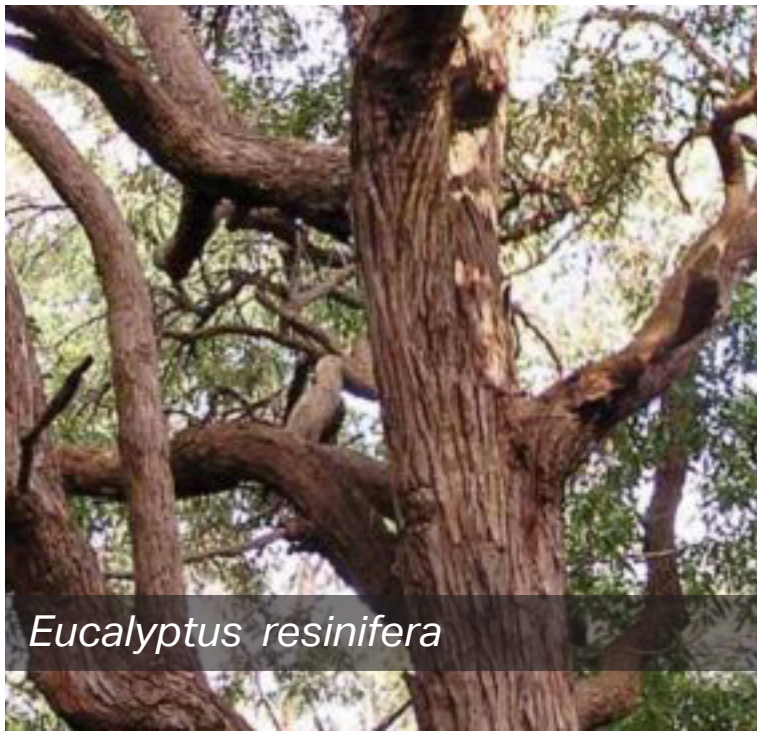
Key Plan (not to scale)



Trees



*Eucalyptus botryoides*



*Eucalyptus resinifera*



*Glochidion ferdinandi*



*Tristaniopsis laurina*

Shrubs & Perennials



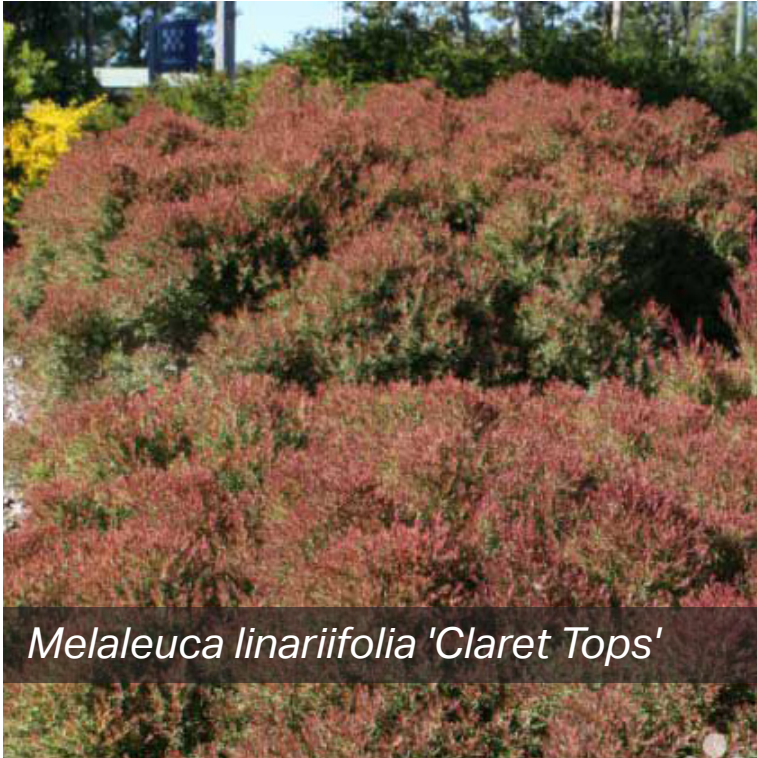
*Acacia irrorata*



*Dodonaea triquetra*



*Leptospermum polygalifolium* subsp.



*Melaleuca linariifolia* 'Claret Tops'

Grasses & Groundcovers



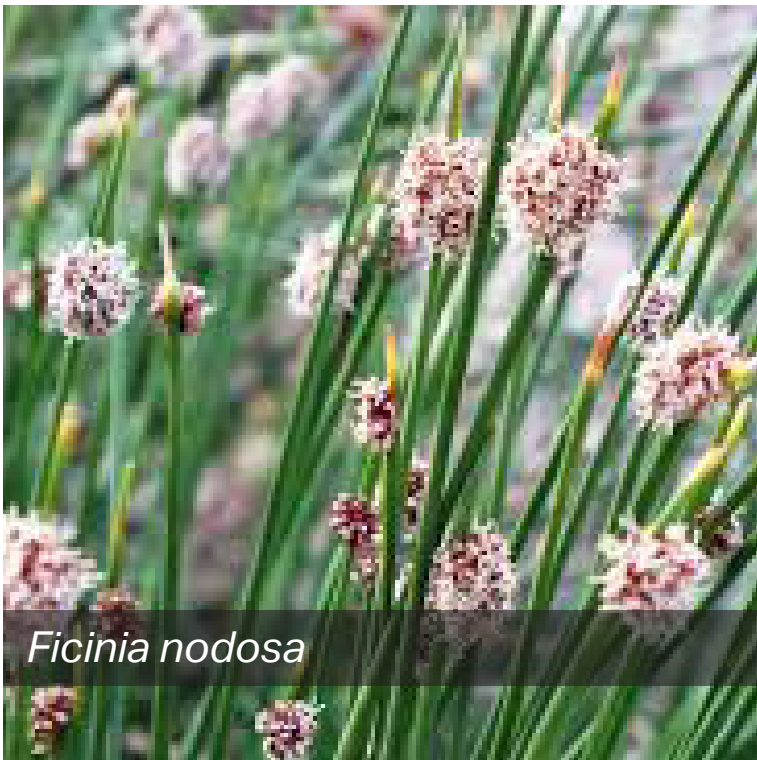
*Baumea juncea*



*Bolboschoenus fluviatilis*



*Carex appressa*



*Ficinia nodosa*



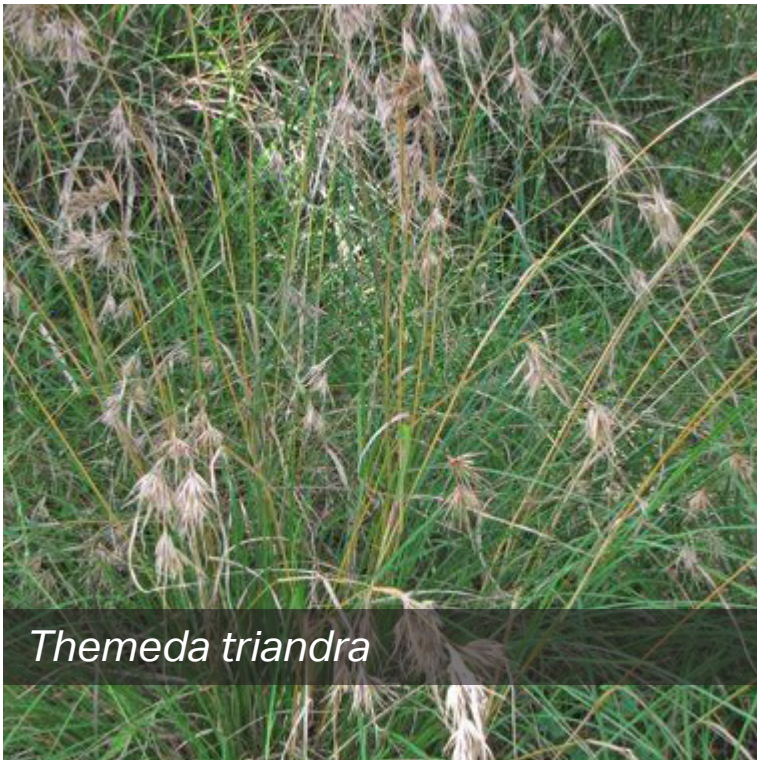
*Juncus usitatus*



*Leptocarpus tenax*



*Lomandra longifolia*



*Themeda triandra*



# Planting: Communal Open Space

## Planting Schedule: Communal Open Space

Botanical Name	Common Name	Height	Spacing	Pot Size
Trees				
<i>Angophora floribunda</i>	Rough-barked Apple	15m	As Shown	100L
<i>Banksia integrifolia</i>	Cosat Banksia	8m	As Shown	75L
<i>Cupaniopsis anacardioides</i>	Tuckeroo	10m	As Shown	75L
<i>Elaeocarpus reticulatus</i>	Blueberry Ash	8m	As Shown	75L
<i>Eucalyptus robusta</i>	Swamp Mahogany	20m	As Shown	75L
<i>Howea forsteriana</i>	Kentia Palm	8m	As Shown	100L
<i>Livistona australis</i>	Cabbage Tree Palm	15m	As Shown	75L
<i>Plumeria acutifolia</i>	Frangipani	6m	As Shown	45L
<i>Waterhousea floribunda</i> 'Sweeper'	Weeping Lilly Pilly	8m	As Shown	75L
Shrubs & Perennials				
<i>Acmena smithii</i> 'Red Tips'	Lilly Pilly	3m	1.5m	200mm
<i>Agave attenuata</i>	Foxtail agave	1m	As Shown	200mm
<i>Alcantarea imperialis</i>	Bromeliad	1m	As Shown	300mm
<i>Alpinia zerumbet</i>	Shell Ginger	2m	2m	200mm
<i>Anigozanthos</i> 'Bush Ballad'	Kangaroo Paw	1m	500mm	200mm
<i>Asplenium australasicum</i>	Bird's Nest Fern	0.5m	2m	200mm
<i>Callistemon viminalis</i> 'Better John'	Bottlebrush	1.2m	500mm	200mm
<i>Cordyline stricta</i>	Slender Palm Lily	2m	1m	200mm
<i>Crassula ovata</i> 'Bluebird'	Crassula	1m	1m	200mm
<i>Cycas revoluta</i>	Sago Palm	1.5m	As Shown	45L
<i>Doryanthes excelsa</i>	Gynea Lily	1.5m	2m	300mm
<i>Dracaena draco</i>	Dragon Tree	5m	As Shown	45L
<i>Echium</i> X 'Cobolt Towers'	Echium	2m	1.5m	200mm
<i>Furcraea foetida</i> 'Mediopicta'	Mauritius Hemp	1.5m	As Shown	200mm
<i>Philodendron</i> 'Xanadu'	Philodendron	0.5m	1m	200mm
<i>Phormium tenax</i>	New Zealand Flax	1.5m	As Shown	200mm
<i>Raphiolepis indica</i> 'Snow Maiden'	Indian Hawthorn	1m	500mm	200mm
<i>Rhapis excelsa</i>	Lady Palm	3m	1.5m	300mm
<i>Viburnum</i> 'Emerald Lustre'	Viburnum	3m	800mm	200mm
<i>Westringia fruticosa</i> 'Wynyabbie Gem'	Coast Rosemary	1.5m	1m	200mm
Grasses & Groundcovers				
<i>Alternanthera dentata</i> 'Little Ruby'	Alternanthera	0.3m	2/m <sup>2</sup>	140mm
<i>Casuarina glauca</i> 'Cousin It'	Prostrate She-Oak	0.2m	2/m <sup>2</sup>	140mm
<i>Dichondra repens</i>	Kidneyweed	0.1m	4/m <sup>2</sup>	viro tube
<i>Liriope muscari</i> 'Evergreen Giant'	Liriope	0.5m	2/m <sup>2</sup>	140mm
<i>Lomandra longifolia</i> 'Tanika'	Mat Rush	0.5m	2/m <sup>2</sup>	140mm
<i>Hibbertia scandens</i>	Snake Vine	0.3m	1/m <sup>2</sup>	140mm
<i>Trachelospermum jasminoides</i>	Star Jasmine	0.3m	1/m <sup>2</sup>	140mm
<i>Trachelospermum jasminoides</i> 'Tricolor'	Tricolour Star Jasmine	0.3m	1/m <sup>2</sup>	140mm
<i>Grevillea</i> 'Poorinda Royal Mantle'	Grevillea	0.2m	1/m <sup>2</sup>	140mm
<i>Viola hederaceae</i>	Native Violet	0.2m	4/m <sup>2</sup>	viro tube
<i>Senecio mandraliscae</i> 'Blue Chalksticks'	Blue Chalksticks	0.3m	2/m <sup>2</sup>	140mm
Turf				
<i>Stenotaphrum</i> 'Sapphire'	Sapphire Buffalo	-	-	-

Key Plan (not to scale)



Trees



Shrubs & Perennials



Grasses & Groundcovers





# Planting: Private Open Space

Planting Schedule: Private Open Space

Botanical Name	Common Name	Height	Spacing	Pot Size
<b>Trees</b>				
<i>Buckinghamia celsissima</i>	Ivory Curl Tree	8m	As Shown	75L
<i>Cupaniopsis anacardioides</i>	Tuckeroo	10m	As Shown	75L
<i>Hymenosporum flavum</i>	Native Frangipani	10m	As Shown	75L
<i>Stenocarpus sinuatus</i>	Firewheel Tree	15m	As Shown	75L
<i>Tristaniopsis laurina</i>	Water Gum	10m	As Shown	75L
<i>Waterhousea floribunda</i> 'Sweeper'	Weeping Lilly Pilly	8m	As Shown	75L
<i>Xanthostemon chrysanthus</i>	Golden Penda	10m	As Shown	75L
<b>Shrubs &amp; Perennials</b>				
<i>Acmena smithii</i> 'Sublime'	Lilly Pilly	4m	1.2m	300mm
<i>Agave attenuata</i>	Foxtail agave	1m	As Shown	200mm
<i>Crinum pedunculatum</i>	Swamp Lily	1m	1m	200mm
<i>Dodonaea viscosa</i>	Sticky Hop Bush	2m	1.5m	200mm
<i>Magnolia grandiflora</i> 'Teddy Bear'	Magnolia	4m	1.5m	300mm
<i>Murraya paniculata</i>	Orange Jessamine	4m	1.5mm	200mm
<i>Phormium tenax</i>	New Zealand Flax	1.5m	As Shown	200mm
<i>Raphiolepis indica</i> 'Oriental Pearl'	Indian Hawthorn	1m	1.2m	200mm
<i>Syzygium australe</i> 'Resilience'	Brush Cherry	4m	1.2m	300mm
<i>Zamia furfuracea</i>	Cardboard Cycad	1m	1m	200mm
<b>Grasses &amp; Groundcovers</b>				
<i>Carpobrotus glaucescens</i>	Pigface	0.3m	1/m <sup>2</sup>	140mm
<i>Dietes bicolor</i>	Bicolor Iris	1m	2/m <sup>2</sup>	140mm
<i>Dichondra repens</i>	Kidneyweed	0.1m	4/m <sup>2</sup>	viro tube
<i>Grevillea</i> 'Bronze Rambler'	Grevillea	0.3m	2/m <sup>2</sup>	140mm
<i>Liriope muscari</i> 'Evergreen Giant'	Liriope	0.5m	2/m <sup>2</sup>	140mm
<i>Myoporum parvifolium</i>	Boobialla	0.1m	1/m <sup>2</sup>	140mm
<b>Turf</b>				
<i>Stenotaphrum</i> 'Sapphire'	Sapphire Buffalo	-	-	-

Key Plan (not to scale)



Trees



Shrubs & Perennials

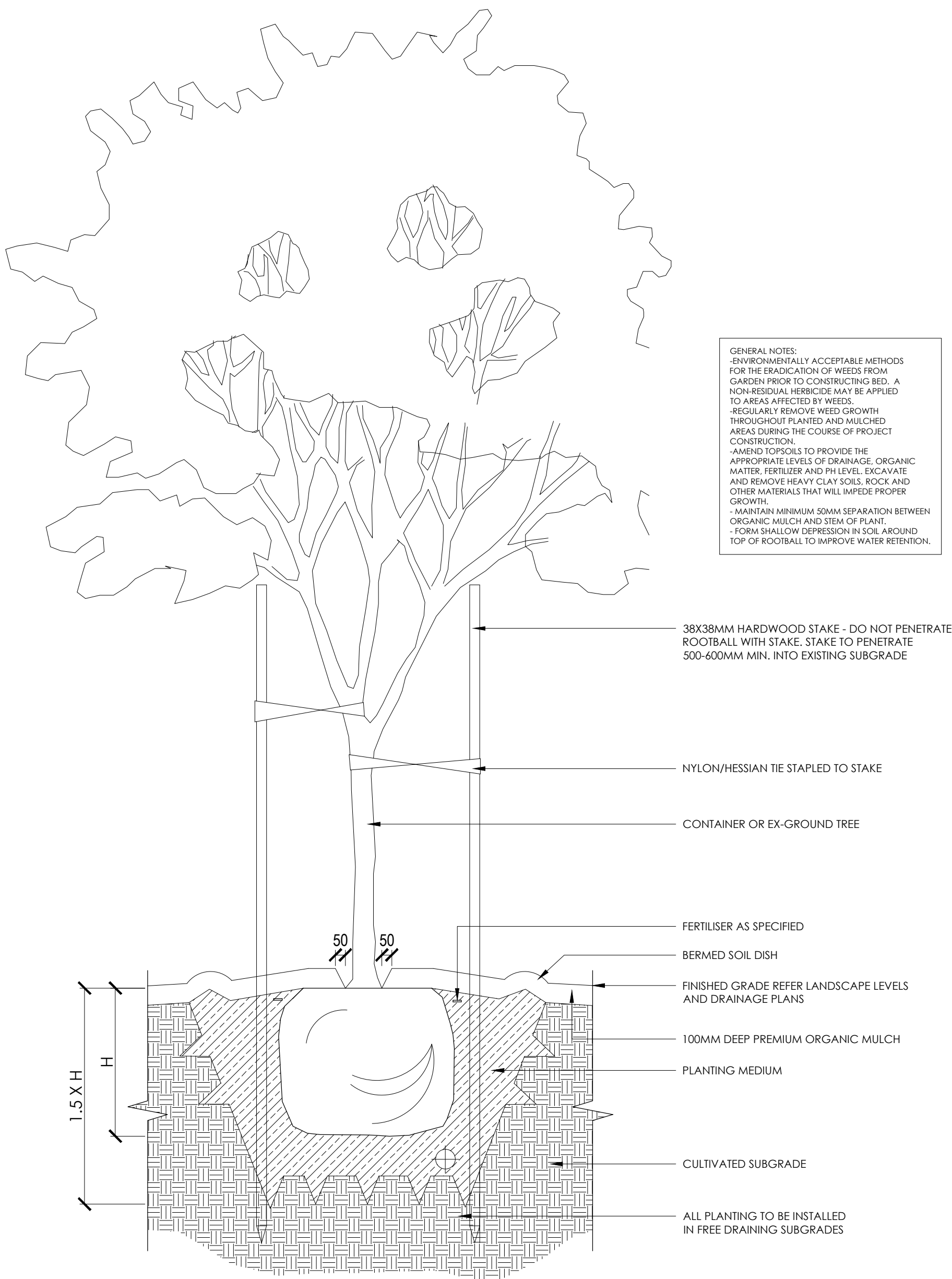


Grasses & Groundcovers

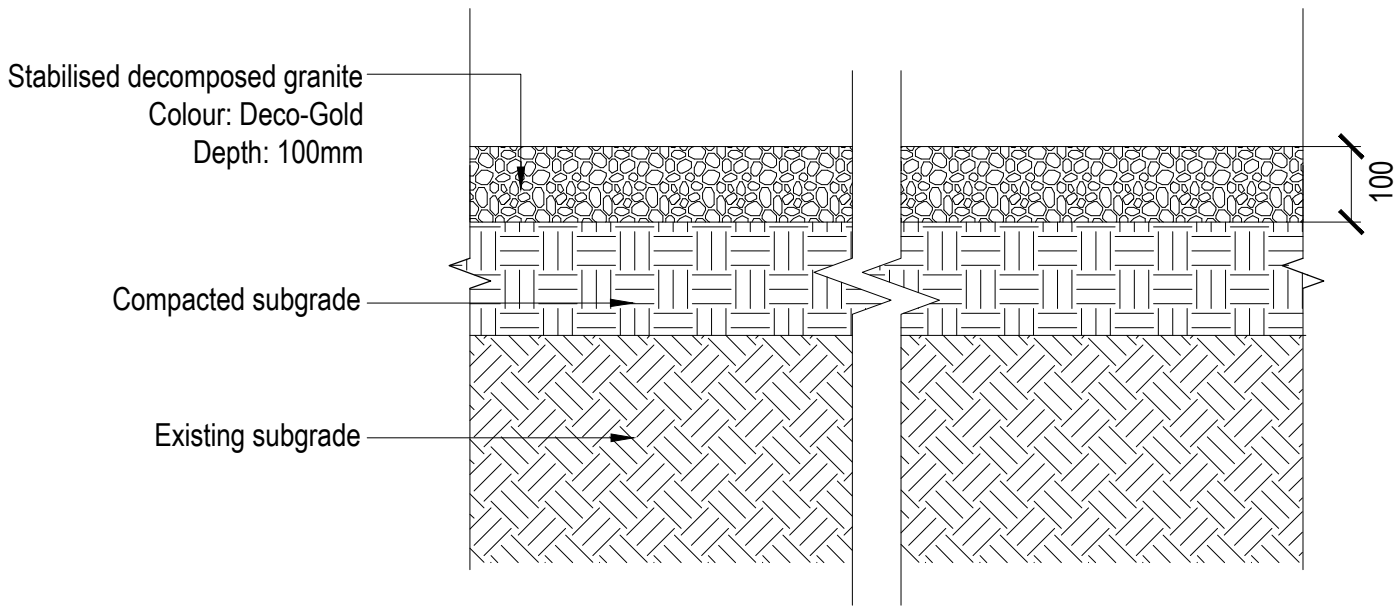




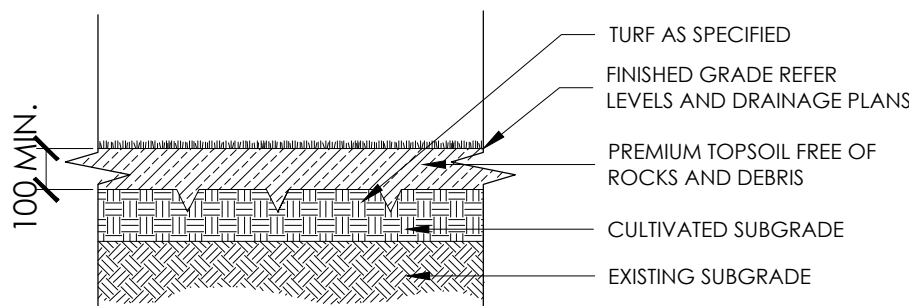
# Typical Construction Details



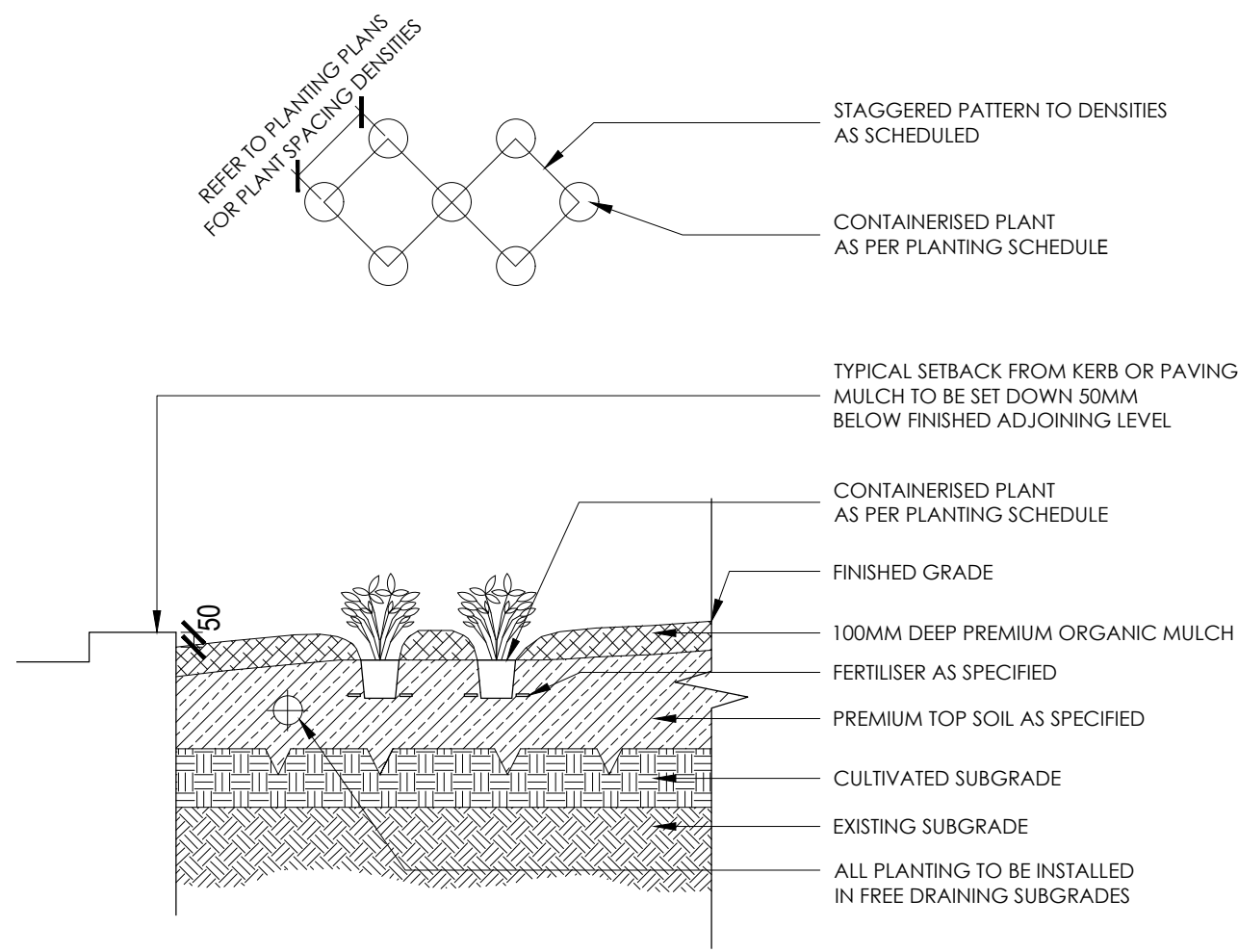
TREE PLANTING ON GRADE DETAIL  
SCALE 1:20 @ A1



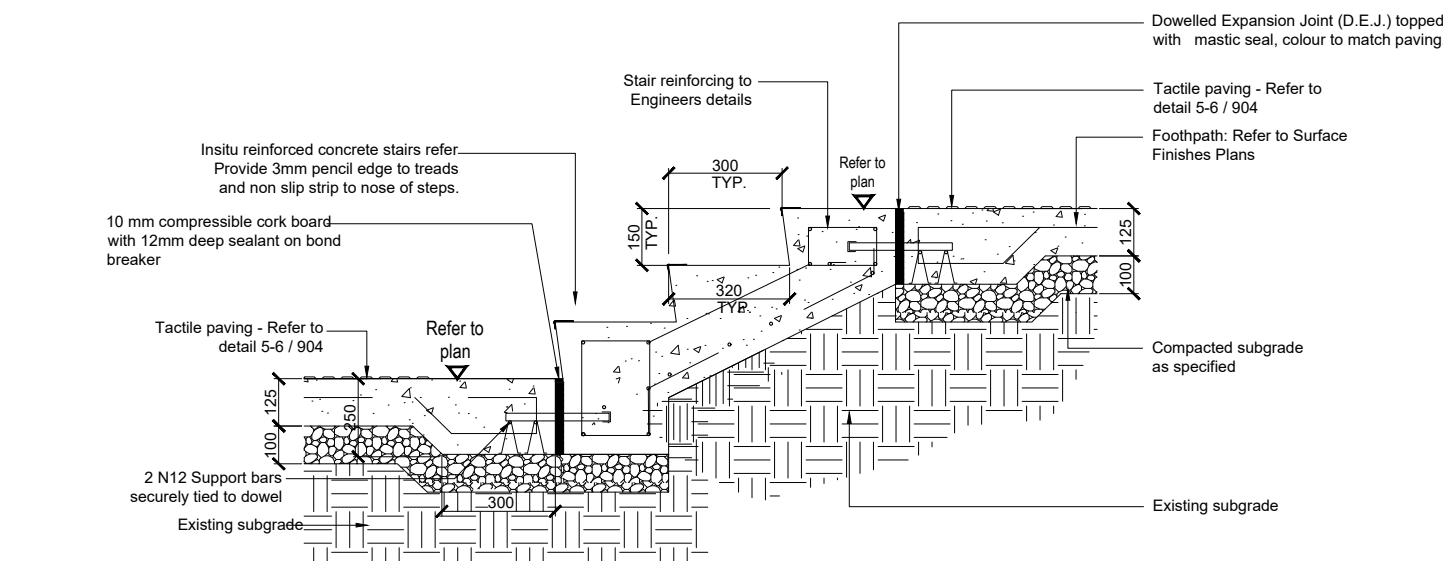
DECOMPOSED GRANITE DETAIL  
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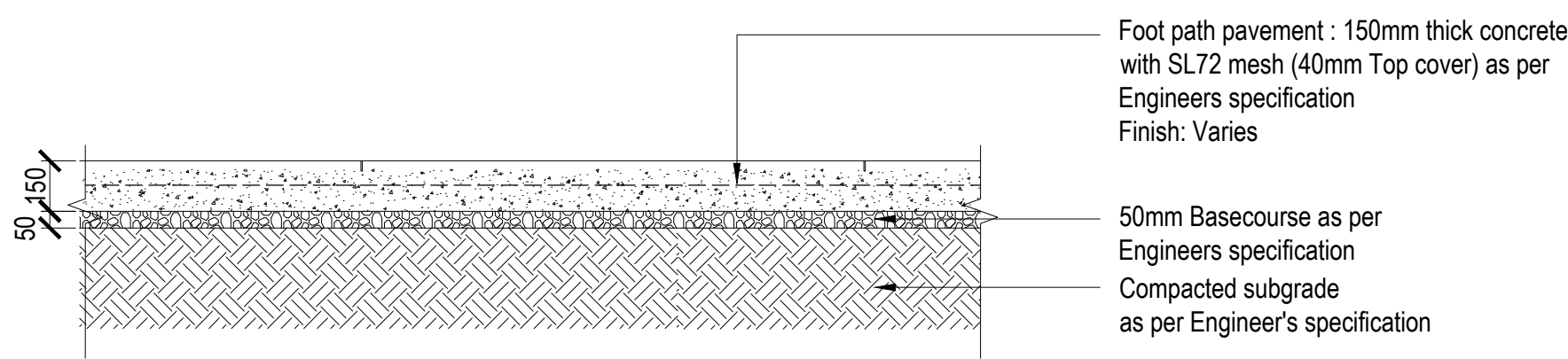
TURF PLANTING DETAIL  
SCALE 1:25 @ A1



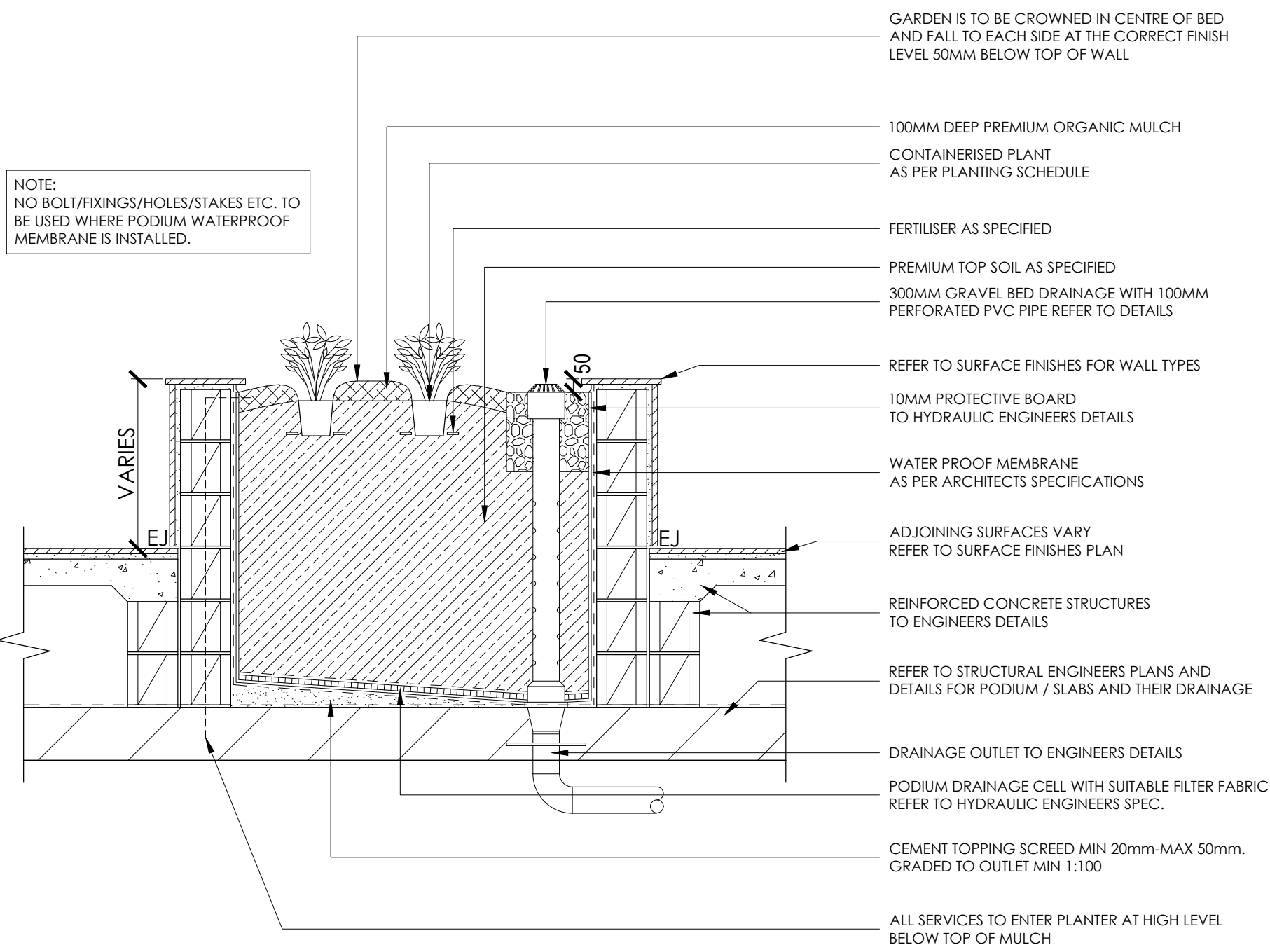
SHRUB PLANTING DETAIL  
SCALE 1:25 @ A1



STAIR DETAIL  
SCALE 1:20 @ A1



CONCRETE PATHWAY DETAIL  
SCALE 1:20 @ A1



SHRUB PLANTER ON PODIUM DETAIL  
SCALE 1:20 @ A1



# General Specifications

## Preliminary Specification

**SERVICES**  
BEFORE LANDSCAPE WORK IS COMMENCED THE LANDSCAPE CONTRACTOR IS TO ESTABLISH THE POSITION OF ALL SERVICE LINES AND ENSURE TREE PLANTING IS CARRIED OUT A SUFFICIENT DISTANCE AWAY FROM THESE SERVICES TO AVOID CONFLICT. SERVICE LIDS, VENTS AND HYDRANTS SHALL BE LEFT EXPOSED AND NOT COVERED BY ANY LANDSCAPE FINISHES (TURFING, PAVING, GARDEN BEDS ETC.) FINISH ADJOINING SURFACES FLUSH WITH PIT LIDS.

**ARBORIST MANAGEMENT OF TREE PROTECTION**  
AN ARBORIST WITH MINIMUM AQF5 QUALIFICATIONS IS TO BE CONTRACTED TO UNDERTAKE OR MANAGE THE INSTALLATION OF PROTECTIVE FENCING AND TO UNDERTAKE SUCH MEASURES AS THEY DEEM APPROPRIATE TO PRESERVE THE SUBJECT TREES TO BE RETAINED. THE ARBORIST IS TO BE RETAINED FOR THE ENTIRE CONTRACT PERIOD TO UNDERTAKE ONGOING MANAGEMENT AND REVIEW OF THE TREES.

**PODIUM PLANTING**  
ENSURE AN ADEQUATE WATERPROOFING MEMBRANE TO ENGINEER'S DETAIL TO HAS BEEN APPLIED ALL PODIUM PLANTERS ON SITE. FOLLOWING APPLICATION OF THE MEMBRANE, CORFLUTE SHEETING IS TO BE APPLIED TO THE BOTTOM AND SIDES OF ALL PLANTERS TO PREVENT FUTURE RUPTURING. PODIUM PLANTERS ARE TO THEN INCLUDE AN APPROVED 'DRAINAGE CELL' PRODUCT TO COMPREHENSIVELY COVER THE BOTTOM OF THE STRUCTURE. OVER THE DRAINAGE CELL, A GEOTEXTILE LINING IS TO BE INSTALLED, TURNED UP 300MM AND TAPED TO THE PLANTER SIDES TO ENSURE SOIL MIX DOES NOT ESCAPE INTO DRAINAGE OUTLETS/HOLES. INSTALL MIN. 50MM COARSE RIVER SAND OVER ALL GEOTEXTILE LINING PRIOR TO INSTALLATION OF A SUITABLE PLANTER SOIL MIX.

**RETAINING WALLS**  
RETAINING WALLS AND ASSOCIATED DRAINAGE MATERIAL IS TO BE CONSTRUCTED TO THE STRUCTURAL ENGINEER'S DETAIL.

**EXISTING SUB-GRADE IN PLANTING AREAS**  
TEST SUBSOIL DRAINAGE TO ALL TREE PLANTING POSITIONS AND PLANTING AREAS. IF NECESSARY EXCAVATE UNDER TREE PLANTING POSITION DOWN THROUGH IMPERMEABLE MATERIAL TO A PERMEABLE SUB-GRADE DEPTH. REMOVE EXCAVATED MATERIAL FROM SITE AND REPLACE WITH A POROUS MATERIAL AND SUITABLE GROWING MEDIUM FOR NOMINATED SPECIES. SETTLE BACKFILL TO PREVENT SUBSIDENCE.

**FINISHED LEVELS AND GRADES**  
CONSTRUCT FINISHED GRADES TO THE FINISHED LEVELS SHOWN ON THE CIVIL DRAWINGS. ENSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS. PLANTED AREAS AND PATHWAYS ARE TO DRAIN TO SPECIFIED DRAINAGE COLLECTION POINTS AS INDICATED ON THE HYDRAULIC ENGINEER'S DRAWINGS. ENSURE A MAXIMUM GRADE OF 1:4 TO ALL PLANTED AND TURFED AREAS.

**DRAINAGE PITS**  
INSTALL METAL GRATE, PVC BODY DRAINAGE PITS AS INDICATED ON THE HYDRAULIC ENGINEER'S DRAWINGS. CONNECT PITS TO STORMWATER SYSTEM - BY PLUMBER.

**PAVING**  
PAVEMENT SETOUT AS PER SETOUT PLAN. FINISHED LEVELS, MATERIALS AND PAVING INSTALLATION TO ARCHITECT'S SPECIFICATION.

**SOIL**  
CULTIVATE ALL PLANTING AREAS AND SET DOWN SUB-GRADE TO ACCOMMODATE IMPORTED TOPSOIL TO BE INSTALLED TO A MINIMUM 300MM DEPTH. IF DEEMED SUITABLE BY THE LANDSCAPE ARCHITECT, IMPROVED SITE SOIL MAY BE USED IN PLACE OF IMPORTED TOPSOIL PENDING COMPLIANCE WITH THE PROVISIONS OUTLINED IN AS4419.

**MULCH**  
APPLY APPROVED ORGANIC MULCH (ANL 'FOREST FINES' OR SIMILAR) TO A DEPTH OF 75MM TO ALL PLANTED AREAS. ENSURE CLEARANCE TO PLANT STEMS AND RAKE TO AN EVEN SURFACE FINISHING 25MM BELOW ADJOINING LEVELS. ENSURE MULCH IS WATERED IN DURING INSTALLATION.

**FERTILISER:**  
FOR GENERAL PLANTED AREAS; APPLY APPROVED FERTILISER INTENDED FOR SLOW RELEASE OF PLANT NUTRIENTS OVER A PERIOD OF APPROXIMATELY NINE (9) MONTHS. THOROUGHLY MIX FERTILISER WITH PLANTING MIXTURE AT THE RECOMMENDED RATE AND IN ACCORDANCE WITH RECOGNISED HORTICULTURAL PRACTICE PRIOR TO INSTALLING PLANTS. FOR LAWN AREAS; APPROVED 'LAWN FOOD' OR EQUIVALENT SHALL BE THOROUGHLY MIXED THROUGH TOPSOIL PRIOR TO PLACING TURF. FOR ESTABLISHED TREE PLANTING; 'AGRIFORM PLANTING TABLETS' OR EQUIVALENT ARE TO BE APPLIED AT THE RECOMMENDED RATE WITHIN THE PLANTING MEDIUM ADJACENT TO THE BASE OF THE ROOT BALL AT TIME OF PLANTING.

**PLANT MATERIAL**  
ALL PLANTS SUPPLIED ARE TO CONFORM WITH THOSE SPECIES LISTED IN THE PLANT SCHEDULE ON THE LANDSCAPE DRAWINGS. GENERALLY PLANTS SHALL BE; VIGOROUS, WELL ESTABLISHED, HARDENED OFF, OF GOOD FORM CONSISTENT WITH SPECIES OR VARIETY, NOT SOFT OR FORCED, FREE FROM DISEASE OR PESTS, HAVE LARGE HEALTHY ROOT SYSTEMS AND NO EVIDENCE OF HAVING BEEN RESTRICTED OR DAMAGED. TREES SHALL HAVE A LEADING SHOOT. IMMEDIATELY REJECT DRIED OUT, DAMAGED OR UNHEALTHY PLANT MATERIAL BEFORE PLANTING. ALL STOCK IS TO BE CONTAINER GROWN FOR A MINIMUM OF SIX (6) MONTHS PRIOR TO DELIVERY TO SITE

**STAKING AND TYING**  
STAKES SHALL BE STRAIGHT, UNPAINTED HARDWOOD FREE FROM KNOTS AND TWISTS, POINTED AT ONE END AND SIZED ACCORDING TO SIZE OF PLANTS TO BE STAKED.  
A. 5-15 LIRTE SIZE PLANT: 1 x (1200x25x25)  
B. 35-75 LIRTE SIZE PLANT: 2 x (1500x38x38)  
C. 100->200 LIRTE SIZE PLANT: 3 x (1800x50x50)  
TIES SHALL BE 50MM WIDE HESSIAN WEBBING OR APPROVED EQUIVALENT NAILED OR STAPLED TO STAKE. DRIVE STAKES A MINIMUM ONE THIRD OF THEIR LENGTH (AVOIDING DAMAGE TO THE ROOT SYSTEM) ON THE WINDWARD SIDE OF THE PLANT.

**TURF**  
TURF IS TO BE OF A SPECIES CONSISTENT WITH THAT SHOWN ON THE LANDSCAPE DRAWINGS AND IS TO HAVE AN EVEN THICKNESS OF NOT LESS THAN 25MM. OBTAIN TURF FROM AN APPROVED GROWER, DELIVER TO SITE WITHIN TWENTY FOUR (24) HOURS OF BEING CUT, AND LAY WITHIN TWENTY FOUR (24) HOURS OF BEING DELIVERED. TO PREPARE GRADED AREAS TO RECEIVE TURF, EXCAVATE THE AREA AND CULTIVATE SO AS TO ALLOW FOR IMPORTING OF 100MM OF TURF UNDERLAY SOIL. REMOVE ALL STONES OVER 20MM Ø AS WELL AS ALL WEEDS AND FOREIGN MATTER. SPREAD TURF UNDERLAY SOIL TO A DEPTH OF 100MM AND GRADE TO APPROPRIATE LEVELS TO ACHIEVE GENERAL EVEN GRADES TO DRAINAGE OUTLETS INSTALLED BY OTHERS - TURF AREAS ARE TO HAVE MINIMUM 1:50 CROSSFALL TO ENSURE MINIMUM DRAINAGE REQUIREMENTS. TURF IS TO BE LAID ALONG RESOLVED LAND CONTOURS WITH STAGGERED, CLOSE BUTTED, JOINTS SO THAT THE FINISHED TURF SURFACE IS FLUSH WITH ADJACENT FINISHED SURFACES OF PAVING AND THE LIKE. AS SOON AS PRACTICABLE AFTER LAYING, ROLL THE TURF WITH A ROLLER WEIGHING NOT MORE THAN 90KG PER METRE OF WIDTH. WATER AS NECESSARY TO KEEP THE SOIL MOIST TO A DEPTH OF 100MM. PROTECT NEWLY TURFED AREAS AGAINST TRAFFIC UNTIL GRASS IS ESTABLISHED. TWO (2) WEEKS AFTER INSTALLATION, APPLY APPROVED ORGANIC TOP DRESSING SOIL (ANL 'ORGANIC TOP DRESSING' OR SIMILAR) TO A DEPTH OF 15MM TO ALL TURFED AREAS. RUB THE DRESSING WELL INTO THE JOINTS AND CORRECT ANY UNEVENNESS IN THE TURF SURFACES.

**TREATED PINE TIMBER EDGING**  
TIMBER EDGE: 100 X 25MM H4 TREATED PINE.  
TIMBER STAKES: 50 X 50 X 500MM H4 TREATED PINE-SHARPENED AT ONE END.  
INSTALL IN LOCATIONS SHOWN ON THE DRAWINGS FLUSH TO FINISHED SURFACE LEVELS.

**TREES TO BE RETAINED**  
MARK TREES AND SHRUBS TO BE RETAINED WITH SUITABLE NON-INJURIOUS, EASILY VISIBLE AND REMOVABLE MEANS OF IDENTIFICATION CONSISTENT WITH THE TREE NUMBERING SYSTEM INDICATED ON THE LANDSCAPE DRAWINGS.

## Landscape Maintenance Program

**GENERAL**  
THE LANDSCAPE MAINTENANCE CONTRACTOR SHALL MAINTAIN THE LANDSCAPE WORKS FOR THE TERM OF THE MAINTENANCE (OR PLANT ESTABLISHMENT) PERIOD TO THE SATISFACTION OF THE COUNCIL. THE LANDSCAPE MAINTENANCE CONTRACTOR SHALL ATTEND TO THE SITE ON A FORTNIGHTLY BASIS. THE MAINTENANCE PERIOD SHALL COMMENCE AT PRACTICAL COMPLETION AND CONTINUE FOR A PERIOD OF TWENTY SIX (26) WEEKS.

**WATERING**  
GRASS, TREES AND GARDEN AREAS SHALL BE WATERED REGULARLY SO AS TO ENSURE CONTINUOUS HEALTHY GROWTH.

**RUBBISH REMOVAL**  
DURING THE TERM OF THE MAINTENANCE PERIOD THE LANDSCAPE MAINTENANCE CONTRACTOR SHALL REMOVE RUBBISH THAT MAY OCCUR AND REOCCUR THROUGHOUT THE MAINTENANCE PERIOD. THIS WORK SHALL BE CARRIED OUT REGULARLY SO THAT AT FORTNIGHTLY INTERVALS THE AREA MAY BE OBSERVED IN A COMPLETELY CLEAN AND TIDY CONDITION.

**REPLACEMENTS**  
THE LANDSCAPE MAINTENANCE CONTRACTOR SHALL REPLACE ALL PLANTS THAT ARE MISSING, UNHEALTHY OR DEAD AT THE LANDSCAPE MAINTENANCE CONTRACTOR'S COST. REPLACEMENTS SHALL BE OF THE SAME SIZE, QUALITY AND SPECIES AS THE PLANT THAT HAS FAILED UNLESS OTHERWISE DIRECTED BY THE LANDSCAPE ARCHITECT. REPLACEMENTS SHALL BE MADE ON A CONTINUING BASIS, NOT EXCEEDING TWO (2) WEEKS AFTER THE PLANT HAS DIED OR IS SEEN TO BE MISSING, UNTIL THE END OF THE MAINTENANCE PERIOD .

**STAKES AND TIES**  
THE LANDSCAPE MAINTENANCE CONTRACTOR SHALL REPLACE OR ADJUST PLANT STAKES, AND TREE GUARDS AS NECESSARY OR AS DIRECTED BY THE LANDSCAPE ARCHITECT. REMOVE STAKES AND TIES AT THE END OF THE MAINTENANCE PERIOD IF SO DIRECTED.

**PRUNING**  
TREES AND SHRUBS SHALL BE PRUNED AS DIRECTED BY THE LANDSCAPE ARCHITECT AND PROJECT ARBORIST. PRUNING WILL BE DIRECTED AT THE MAINTENANCE OF THE DENSE FOLIAGE OR MISCELLANEOUS PRUNING AND BENEFICIAL TO THE CONDITION OF THE PLANTS. ANY DAMAGED GROWTH SHALL BE PRUNED. ALL PRUNED MATERIAL SHALL BE REMOVED FROM THE SITE.

**MULCHED SURFACES**  
ALL MULCHED SURFACES SHALL BE MAINTAINED IN A CLEAN AND TIDY CONDITION AND BE REINSTATED IF NECESSARY TO ENSURE THAT A DEPTH OF 75MM IS MAINTAINED. ENSURE MULCH IS KEPT CLEAR OF PLANT STEMS AT ALL TIMES.

**PEST AND DISEASE CONTROL**  
THE LANDSCAPE MAINTENANCE CONTRACTOR SHALL SPRAY AGAINST INSECT AND FUNGUS INFESTATION WITH ALL SPRAYING TO BE CARRIED OUT IN ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS. REPORT ALL INSTANCES OF PESTS AND DISEASES (IMMEDIATELY AS THEY ARE DETECTED) TO THE LANDSCAPE ARCHITECT.

**GRASS AND TURF AREAS**  
THE LANDSCAPE MAINTENANCE CONTRACTOR SHALL MAINTAIN ALL GRASS AND TURF AREAS BY WATERING, WEEDING, DRESSING, ROLLING, MOWING, TRIMMING OR OTHER OPERATIONS AS NECESSARY. SEED AND TURF SPECIES SHALL BE THE SAME AS THE ORIGINAL SPECIFIED MIXTURE. GRASS AND TURF AREAS SHALL BE SPRAYED WITH APPROVED SELECTIVE HERBICIDE AGAINST BROAD LEAFED WEEDS AS REQUIRED BY THE LANDSCAPE ARCHITECT AND IN ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS. GRASS AND TURF AREAS SHALL BE FERTILISED ONCE A YEAR IN AUTUMN WITH "DYNAMIC LIFTER" (OR SIMILAR) FOR LAWNS AT A RATE OF 20KG PER 100M2. FERTILISER SHALL BE WATERED IN IMMEDIATELY AFTER APPLICATION. IRREGULARITIES IN THE GRASS AND TURF SHALL BE WATERED IN IMMEDIATELY AFTER APPLICATION. GRASS AND TURF AREAS SHALL BE KEPT MOWN TO MAINTAIN A HEALTHY AND VIGOROUS SWARD. MOWING HEIGHT: 30-50MM.

**WEED ERADICATION**  
ERADICATE WEEDS BY ENVIRONMENTALLY ACCEPTABLE METHODS USING A NON-RESIDUAL GLYPHOSATE HERBICIDE (EG. 'ROUNDUP') IN ANY OF ITS REGISTERED FORMULAE, AT THE RECOMMENDED MAXIMUM RATE. REGULARLY REMOVE BY HAND, WEED GROWTH THAT MAY OCCUR OR RECUR THROUGHOUT GRASSED, PLANTED AND MULCHED AREAS. REMOVE WEED GROWTH FROM AN AREA 750MM DIAMETER AROUND THE BASE OF TREES IN GRASSED AREAS. CONTINUE ERADICATION THROUGHOUT THE COURSE OF THE WORKS AND DURING THE MAINTENANCE PERIOD.

**SOIL SUBSIDENCE**  
ANY SOIL SUBSIDENCE OR EROSION WHICH MAY OCCUR AFTER THE SOIL FILLING AND PREPARATION OPERATIONS SHALL BE MADE GOOD BY THE LANDSCAPE CONTRACTOR AT NO COST TO THE CLIENT.



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