

27 LANG DRIVE BOLWARRA HEIGHTS, NSW

LANDSCAPE ARCHITECTURE DOCUMENTATION
DEVELOPMENT APPLICATION

SNL BUILDING



LANDSCAPE ARCHITECTURE



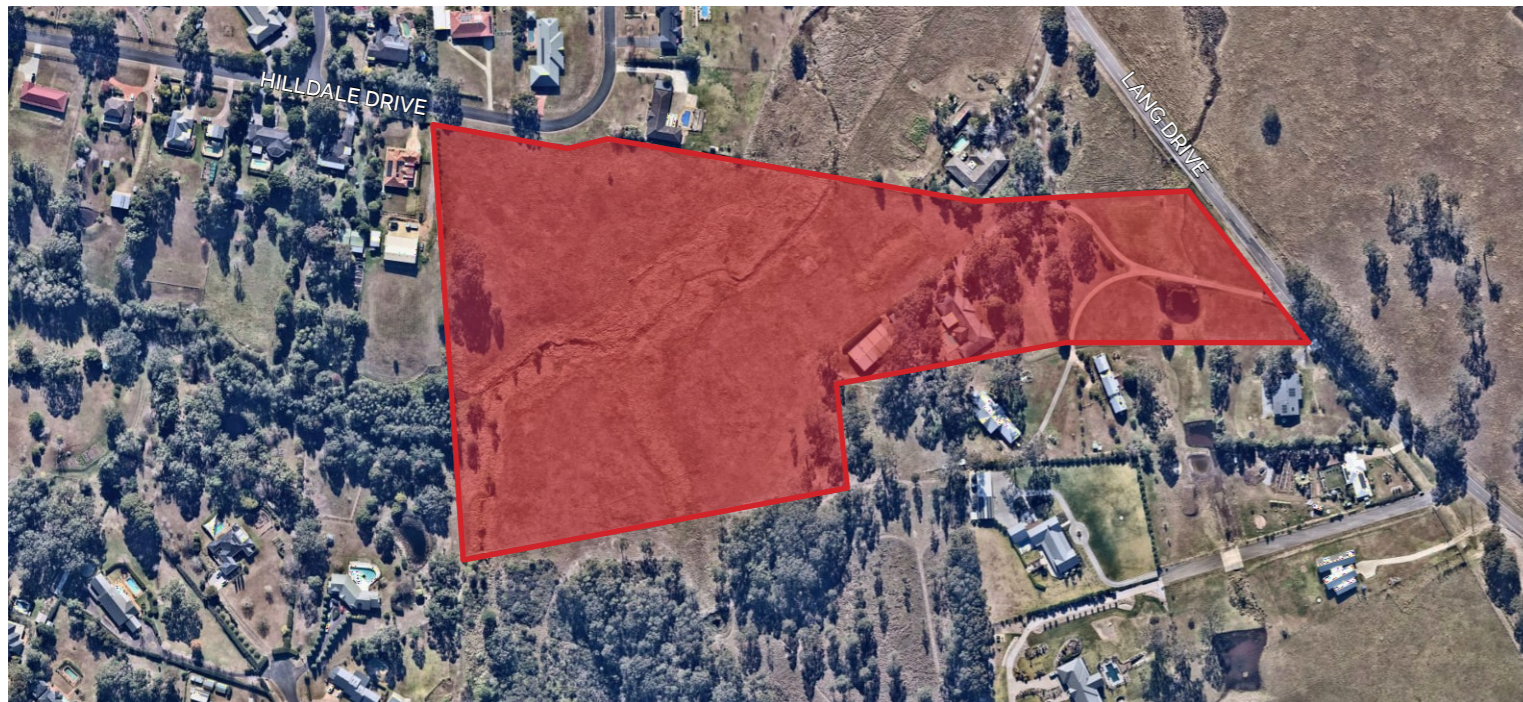


FIGURE 1: Site Locality Plan (Source Six Maps, May 2023)



PROJECT OVERVIEW

ADW Johnson Landscape Architects has been engaged by SNL Building to prepare Landscape Architecture documentation to support the Development Application for the proposed development located at Lot 1 DP1156433, 27 Lang Drive, Bolwarra heights, NSW 2320. (Refer to Figure 1). This document provides relevant layouts and details prepared in accordance with Maitland Council requirements.

The documentation identifies the landscape treatment for the proposed 14 Torrens title residential allotments at Lot 1 DP1156433, 27 Lang Drive, Bolwarra heights, NSW 2320.

The landscape concept includes the integration of;

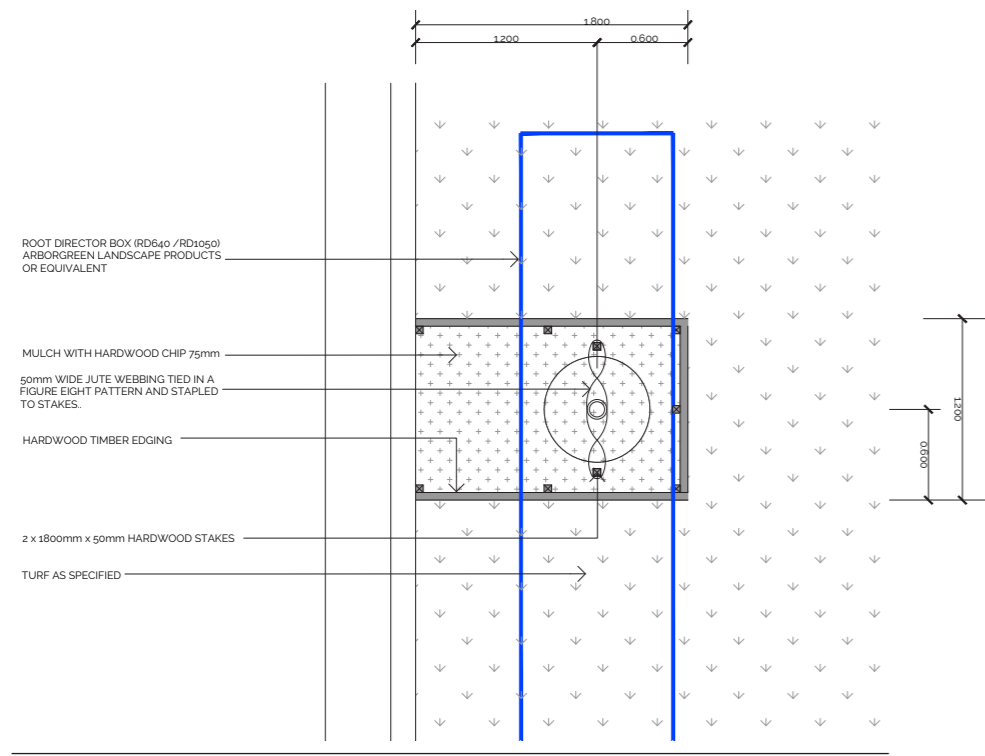
- Street Trees;
- Bioretention Basins
- APZ Planting
- Landscape Buffer Planting

DOCUMENT CONTENTS

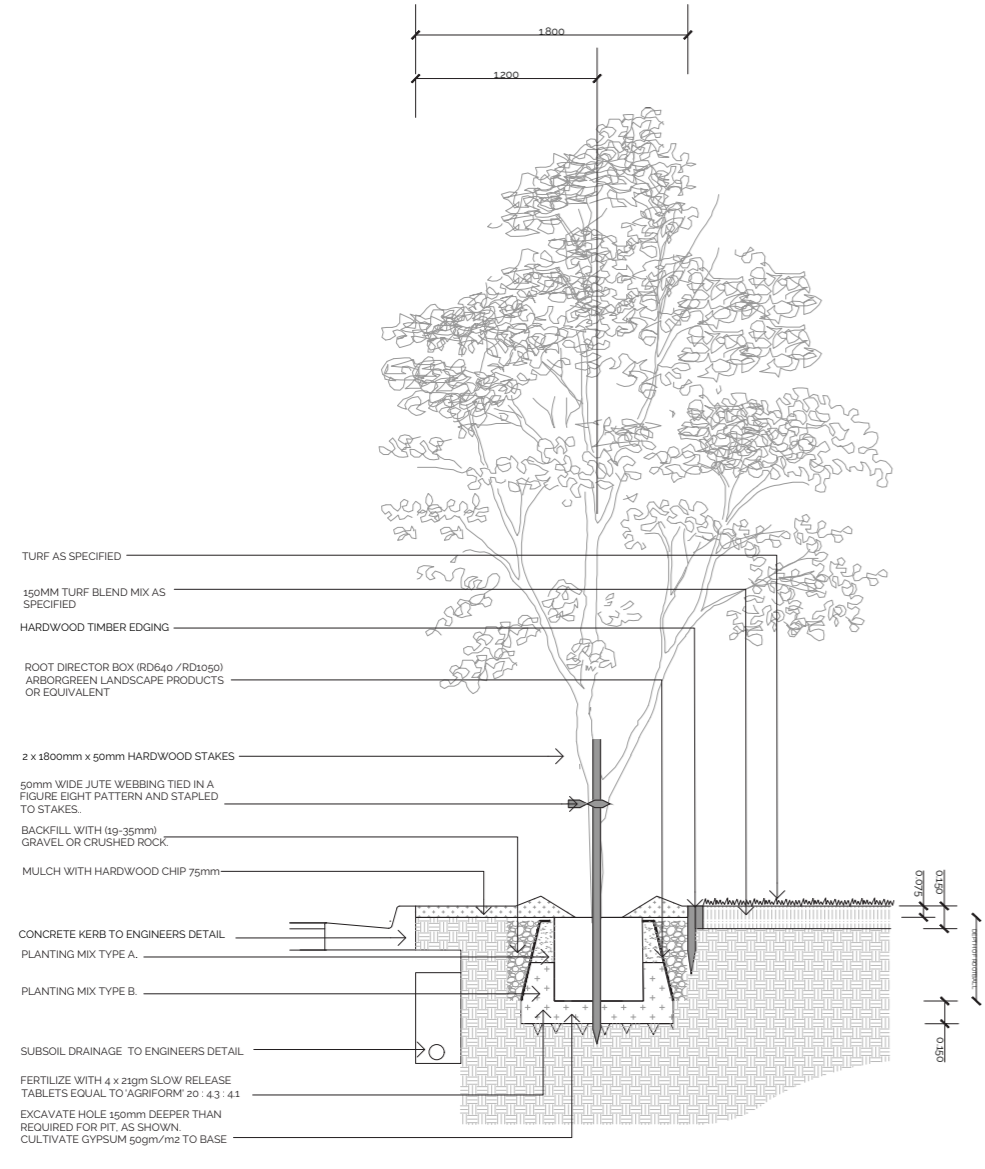
DRAWING NUMBER	TITLE NAME	DRAWING SIZE	SCALE
	Cover Sheet	A3	NTS
	Project Overview	A3	NTS
240373 - DA - LA101	General Arrangement Plan	A3	NTS
240373 - DA - LA102	Street Tree Planting	A3	NTS
240373 - DA - LA103	Screen Buffer Planting	A3	NTS
240373 - DA - LA104	APZ Planting	A3	NTS
240373 - DA - LA105	APZ Bioretention Basin	A3	NTS
240373 - DA - LA200	Specification	A3	NTS







Plan Detail - Typical Street tree planting



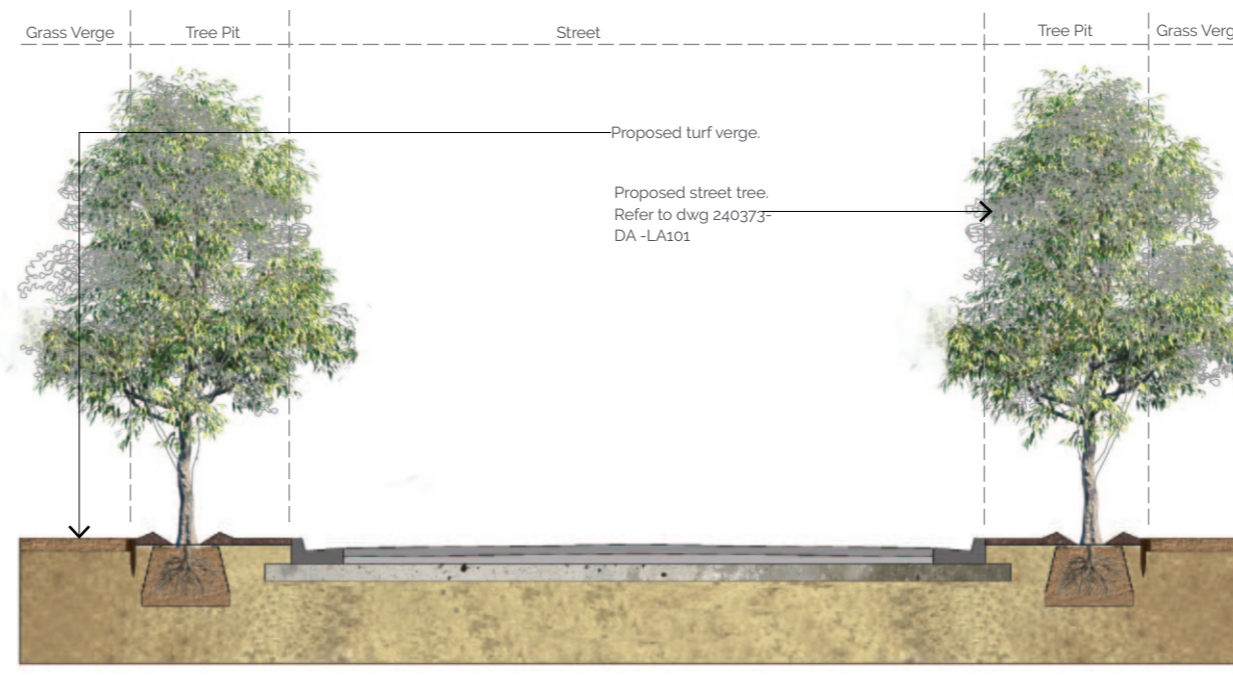
Section Detail - Typical Street tree planting

Street Trees

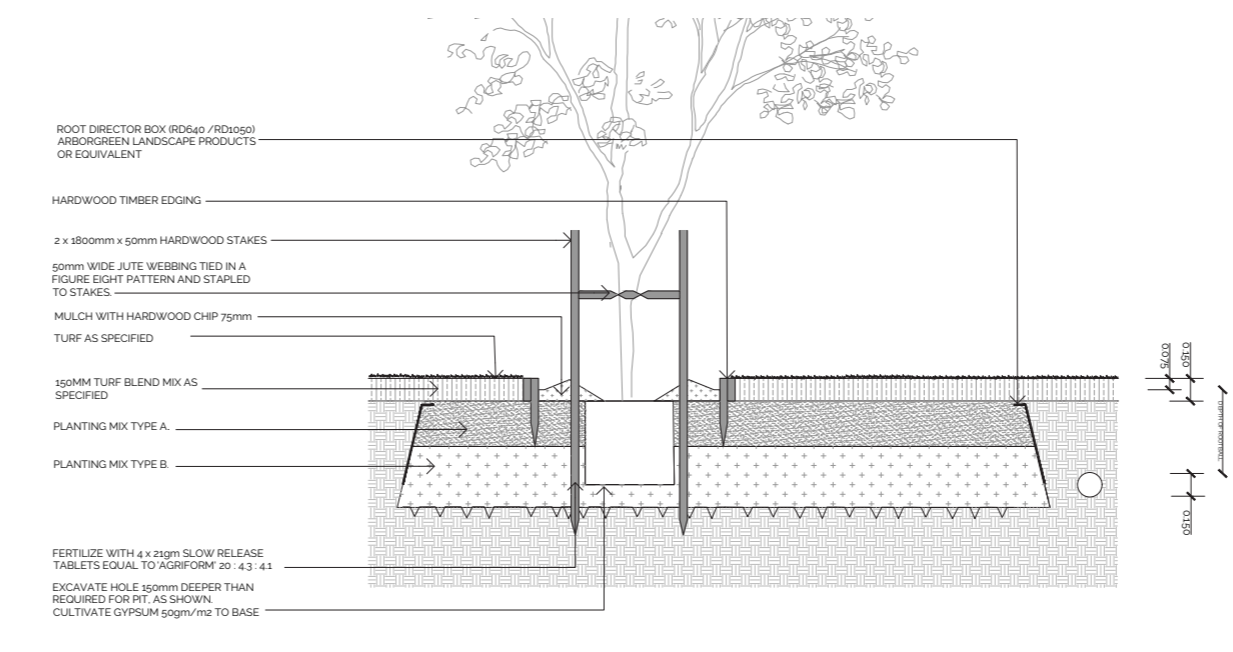


Elaeocarpus eumundi Backhousia citriodora Waterhousea floribunda Magnolia grandiflora

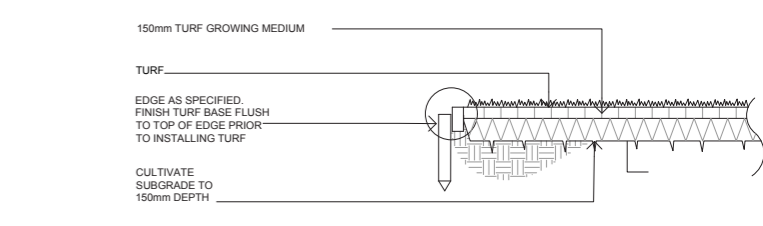
Street Trees					
Botanical Name	Common Name	Height(m)	Width(m)	Pot Size	Planting Density
Backhousia citriodora	Weeping Bottlebrush	10	5	100ltr	Spec
Elaeocarpus eumundi	Eumundi	7	2	100ltr	Spec
Magnolia grandiflora	Exmouth	15	8	200ltr	Spec
Waterhousea floribunda	Weeping Lilly Pilly	10	5	100ltr	Spec



Section - Typical Screen buffer planting



Elevation Detail - Typical street tree planting



Section Detail - Typical turf detail

Buffer Planting					
Botanical Name	Common Name	Height(m)	Width(m)	Pot Size	Planting Density
Trees					
Callistemon salignus	Weeping Bottlebrush	10	5	75ltr	Spec
Glochidion ferdinandi	Cheese Tree	8	5	75ltr	Spec
Melaleuca linariifolia	Flax-leaved Paperbark	10	5	75ltr	Spec
Shrubs					
Breynia oblongifolia	Coffee Bush	3	2	150mm	3 per m2
Daviesia ulicifolia	Gorse bitter pea	2	2	150mm	3 per m2
Leucopogon juniperinus	Prickley Beard heath	1	2	150mm	3 per m2
Jacksonia scoparia	Dogwood	4	2	150mm	3 per m2
Grasses					
Imperata cylindrica	Cogon Grass	1.2	1	150mm	3 per m2
Lomandra confertifolia	Matt Rush	0.5	1	150mm	3 per m2
Lomandra filiformis	Wattle Mat Rush	0.5	1	150mm	3 per m2
Microlaena stipoides	Burra weeping Grass	0.7	1	150mm	3 per m2
Ground cover					
Dichondra repens	Kidney Weed	0.3	1	150mm	3 per m2
Oplismenus aemulus	Creeping beard grass	0.3	1	150mm	3 per m2

Buffer Tree Planting



Callistemon salignus

Glochidion ferdinandi

Melaleuca linariifolia

Buffer Shrub Planting



Breynia oblongifolia

Daviesia ulicifolia

Leucopogon juniperinus

Jacksonia scoparia

Buffer Grass Planting



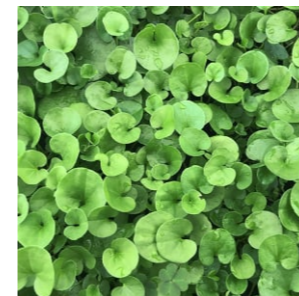
Imperata cylindrica

Lomandra confertifolia

Lomandra filiformis

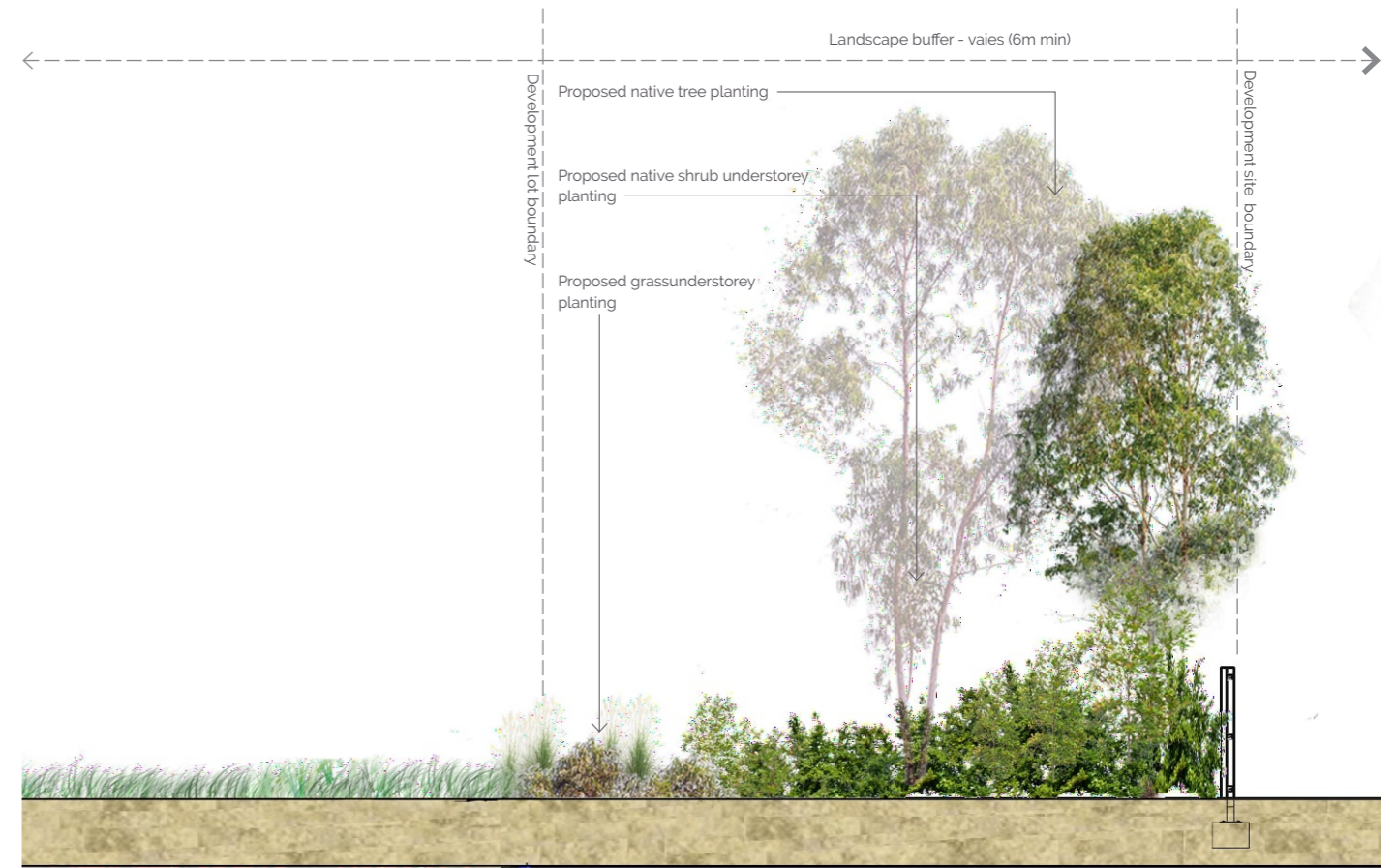
Microlaena stipoides

Buffer Ground Cover Planting

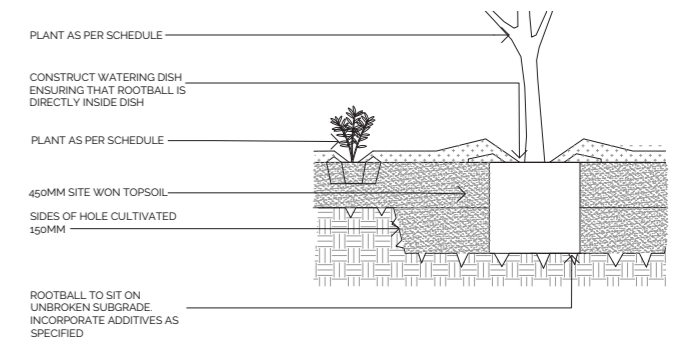


Dichondra repens

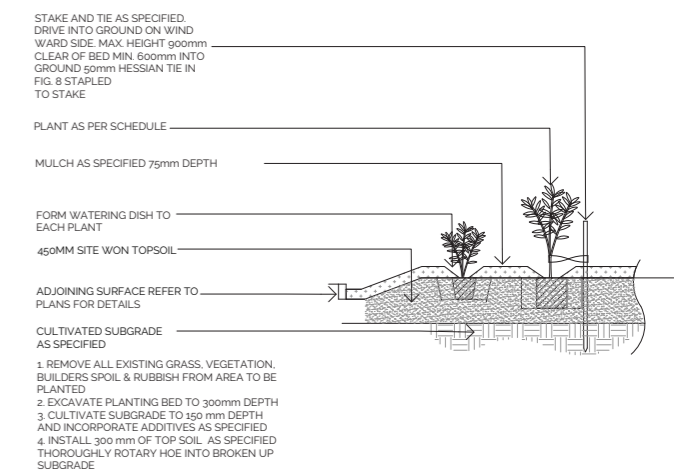
Oplismenus aemulus



Section - Typical screen buffer planting



Section Detail - Typical tree planting in mass planting



Section Detail - Typical mass planting

APZ Planting					
Botanical Name	Common Name	Height(m)	Width(m)	Pot Size	Planting Density
Trees					
<i>Acmena smithii</i>	Lilly Pilly	12	6	45ltr	Spec
<i>Acacia melanoxylon</i>	Blackwood Wattle	12	5	45ltr	Spec
<i>Angophora costata</i>	Rusty Gum	20	12	45ltr	Spec
<i>Banksia integrifolia</i>	Coastal Banksia	15	6	45ltr	Spec
<i>Brachychiton populneum</i>	Kurrajong Tree	8	10	45ltr	Spec
<i>Eucalyptus pauciflora</i>	Snow Gum	12	7	45ltr	Spec
Shrubs					
<i>Atriplex</i>	Creeping Saltbush	1.5	0.5	150mm	Spec
<i>Bursaria spinosa</i>	Sweet Bursaria	3	1.5	150mm	Spec
<i>Hakea suaveolens</i>	Sweet Hakea	4	3	150mm	Spec
<i>Jacksonia scoparia</i>	Dogwood	12	5	150mm	Spec
<i>Rhagodia baccata</i>	Berry Salt Bush	1	2	150mm	Spec
Ground cover					
<i>Ajuga australis</i>	Australian Bugle	0.3	0.6	150mm	Spec
<i>Dichondra repens</i>	Kidney Weed	0.3	1	150mm	Spec
<i>Einadia nutans</i>	Nodding Saltbush	0.3	1	150mm	Spec
<i>Scaevola Aemula</i>	Fan Flower	0.4	1	150mm	Spec

APZ Tree Planting



Acmena smithii *Angophora costata* *Acacia melanoxylon* *Banksia integrifolia* *Brachychiton populneum* *Eucalyptus pauciflora*

APZ Shrub Planting

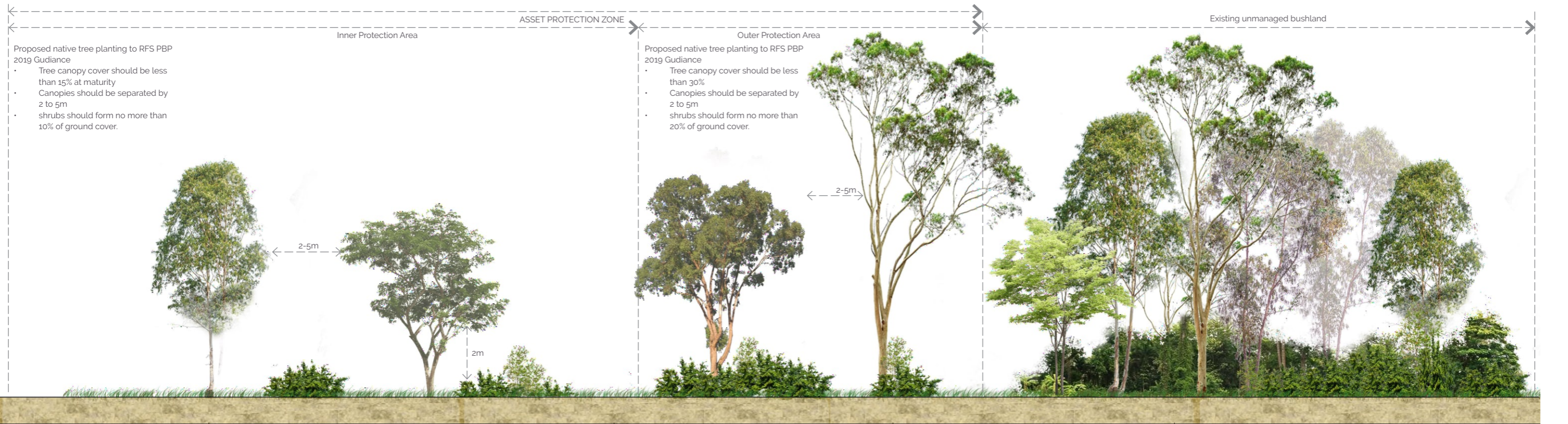


Atriplex *Bursaria spinosa* *Hakea suaveolens* *Jacksonia scoparia* *Rhagodia baccata*

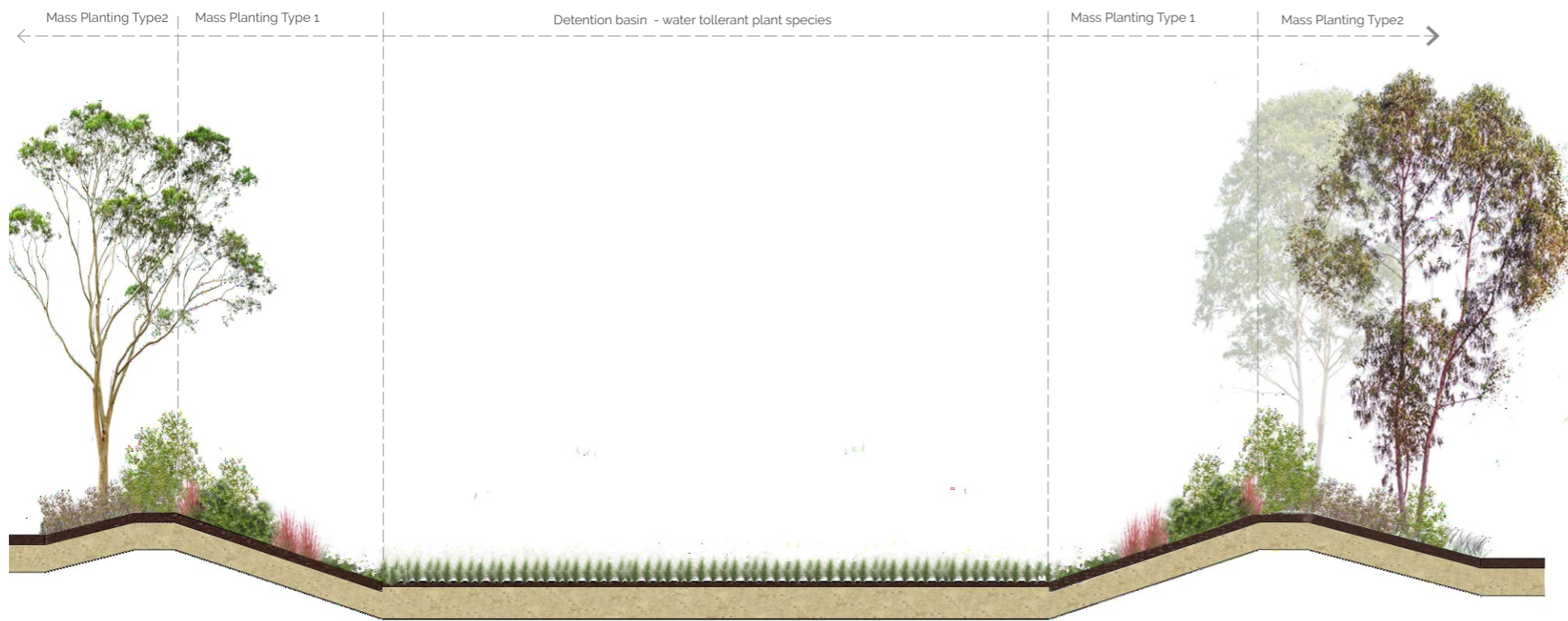
APZ Ground Cover Planting



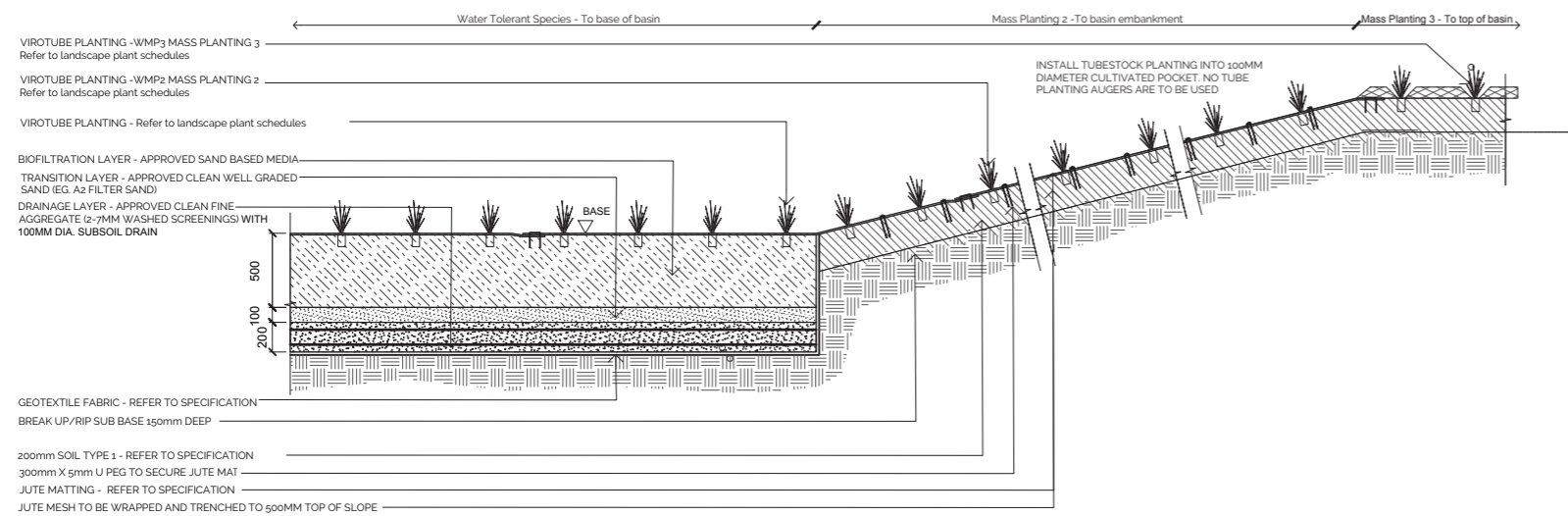
Ajuga australis *Dichondra repens* *Einadia nutans* *Scaevola Aemula*



Section - Typical APZ planting



Section - Typical bioretention basin



Section Detail - Typical bio retention basin planting detail

Basin Mass Planting 1					
Botanical Name	Common Name	Height(m)	Width(m)	Pot Size	Planting Density
Shrubs					
Melaleuca quinquenervia	Paper Bark Tea Tree	3	2	Viotube	1 per 2m2
Melaleuca linariifolia	Snow-in-summer	2	2	Viotube	1 per 2m2
Acacia longifolia	Long-leaved Wattle	5	2	Viotube	1 per 2m2
Groundcovers					
Adiantum aethiopicum	Maidenhair Fern	0.5	1	Viotube	3 per m2
Dianella caerulea	Blue Flax-lily	0.3	1	Viotube	4 per m2

Basin Mass Planting 2					
Botanical Name	Common Name	Height(m)	Width(m)	Pot Size	Planting Density
Trees					
Glochidion ferdinandi	Cheese Tree	8	5	75ltr	Spec
Callistemon salignus	Weeping Bottlebrush	10	5	75ltr	Spec
Shrubs					
Melaleuca nodosa	Prickly-leaved Paperbark	1	2	Viotube	1 per 2m2
Melaleuca sieberi	Sieberi Paperbark	4	2	Viotube	1 per 2m2
Acacia longifolia	Long-leaved Wattle	5	2	Viotube	1 per 2m2
Groundcovers					
Dianella caerulea	Blue Flax-lily	0.3	1	Viotube	4 per m2
Dichondra repens	Kidney Weed	0.3	1	150mm	3 per m2
Oplismenus aemulus	Creeping beard grass	0.3	1	150mm	3 per m2

Basin Water Tolerant					
Botanical Name	Common Name	Height(m)	Width(m)	Pot Size	Planting Density
Shoreline					
Juncus usitatus	Common Rush	0.5	0.5	Viotube	4 per m2
Triglochin procera	Water Ribbons	0.5	0.6	140cm	4 per m2
Paspalum distichum	Water couch	0.5	0.5	150mm	3 per m2

Basin (Water tollerant)



Juncus usitatus



Triglochin procera

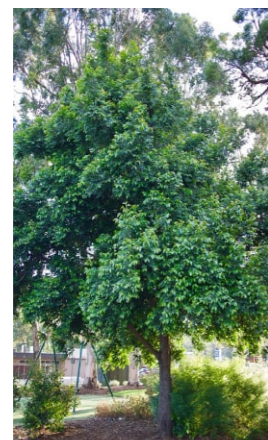


Triglochin procera

Basin Tree Planting



Callistemon salignus



Glochidion ferdinandi

Basin Shrub Planting



Melaleuca sieberi



Acacia longifolia



Melaleuca quinquenervia



Melaleuca linariifolia

Basin Ground Cover Planting



Dianella caerulea



Dichondra repens



Adiantum aethiopicum

SPECIFICATION NOTES

1.0 SERVICES

Before landscape work is commenced the Landscape Contractor is to establish the position of all service lines and ensure tree planting is to be carried out at least 3 metres away from these services. 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.

Dial Before You Dig - It is the landscape contractor's full responsibility to complete a full services search and take all required measures to ensure protection of these services including potholing to confirm locations. The client in no way will be held responsible for any damage caused to services as a result of the contract works.

Excavation

Do not excavate by machine within 1m of existing underground services.

2.0 SOILS

Soil used for the landscape works shall be either Ameliorated stripped site soil or imported soil.

Where site soil is proposed to be used the topsoil shall be sprayed with herbicide prior to stripping and stockpiling.

Stockpiled soil must be tested by a soil laboratory (Sydney Environmental soil lab) and ameliorated in accordance with the test results. A copy of these soil test results must be Issued to ADW and written certification provided by the Contractor that the ameliorants have been added.

Provide a one (1)kg sample of imported topsoil mixes, if required, for approval. No imported topsoil shall be delivered to site prior to approval of the sample provided.

TURF

Turf Underlay shall be a mix of 40% Double washed river sand, 20% composted Greenwaste, 20% nitro humus, 20% soil equivalent to Greenlife Lawn Top Dressing & Turf Underlay as produced by Australian Native Landscapes or approved equivalent. Spread 100mm of Turf Underlay as specified and finish flush with adjacent finished surface levels.

Provide a one (1)kg sample of imported topsoil mixes, if required, for approval. No imported topsoil shall be delivered to site prior to approval of the sample provided.

TOPDRESSING

Topdress material shall be as specified in AS 4419 - 1999. Topdress material shall be clean washed river sand, free from any clay lumps, clods, weeds, tree roots, sticks, organic matter, rubbish and material toxic to plant growth and the like, and shall have a neutral pH and minimal salt content (measured oven dry of 0.1%).

3.0 MULCH

APPLICATION: Place mulch to the required depth, (refer to drawings clear of plant stems, and rake to an even surface finishing 25mm below adjoining levels. Ensure mulch is watered in and tamped down during installation.

MULCH TYPE:

- Brush chippings and leaf litter: approved vegetative material (which may include leaf matter and tree loppings from Eucalyptus, Tristania, Pinus or other suitable species, but not privet, camphor laurel, coral tree, poplar, willow, or noxious weeds), processed through a chipper to pieces not larger than 74x50x15mm.
- Hardwood chip: 25mm size brown hardwood chips from purpose grown hardwood plantations.
- Pine flake: Pinus species sapwood slivers of size range 200x25mm to 30x5mm, including fragments of pine bark.
- Pine bark: From mature trees, graded in size from 15mm to 30mm, free form wood slivers. Dark brown in colour and texture.
- River pebble: Uniform size or graded material in size range 6mm to 10mm. Equal to Nepean River Gravel in colour and texture.
- Eucalyptus mulch: ("Euca Mulch"): fine brown chip to 15mm size.
- Decomposed granite gravel: Uniform size or graded material in size range 5mm to 20mm, uniform colour and plasticity. Pink to light brown colour.
- Scoria: Uniform size or graded material. Claret coloured volcanic pebble (10-20mm size)

Mulch Type: Shall be COTTAGE MULCH. Available from Soilco, Ph (02) 4272 9944

4.0 PLANTS

SUPPLY

The Landscape Contractor is responsible for organising the purchase and delivery of plant stock to site and checking plant stock prior to accepting delivery on site to ensure the plants supply possess the following characteristics:

- Large healthy root systems, with no evidence of root curl, restriction or damage.
- Vigorous, well established, free from disease and pests, of good form consistent with the species or variety.
- Hardened off, not soft or forced, and suitable for planting in the natural climatic conditions prevailing at the site.
- Trees must, unless required to be multi-stemmed, have a single leading shoot
- Any plants or trees that are accepted by the landscape contractor that do not meet this specification will be replaced at the contractor's expense.

Replacement: Replace damaged or failed plants with plants of the same type and size.

PLANTING

Do not plant in unsuitable weather conditions such as extremes of heat or cold, wind or rain. Before planting begins, complete cultivation, soil placement, fertilisation etc as previously specified.

Before plants are installed all pot sizes shall have their roots pruned with an appropriate, clean, sharp instrument to eliminate any root confusion occurring at edge of pot zone.

Before planting begins, thoroughly water the plants and the planting area. Keep the area and plants moist during planting. Water the plants immediately after planting, and thereafter as required to maintain growth rates free of stress.

The contractor shall give notice, of not less than 24 hours, for inspections as nominated in inspect and hold point schedule

ROOT PRUNING OF TREES

Remove tree from container and root prune 20mm on sides and bottom to ensure all circling roots have been either severed or aligned

radially into the surrounding soil. Plant as per detail.

5.0 TURF

Turf shall be of even thickness free from weeds and other foreign matter, lay in stretcher pattern with joints staggered and close butted. Deliver turf on site within 24 hours of being cut, and lay within 36 hours or being cut. Prevent it from drying out between cutting and laying.

Establishment

Watering: Water as necessary to keep soil moist to a depth of 100mm.

Protection: Protect newly turfed areas against traffic until grass is established.

Making Good: Lift failed turf and relay with new turf.

Fertilising: Two weeks after laying, fertilise turf as specified.

Topdressing : When the turf is established, lightly topdress to a depth of 10mm with topdress material as specified. Rub the dressing well into the joints and correct any unevenness of surface

Mowing: When the turf is established, mow at regular intervals to maintain an average height of 50mm.

- TURF TYPE: Greenlees Park Couch
- TURF TYPE: Kikuyu
- TURF TYPE: Buffalo "Sir Walter"

Recommended Supplier: A registered Turf grower to be approved by the Landscape Architect.

6.0 FERTILISER

MASS PLANTING AREAS

Type: Nutricote Standard Black 270 Day (16: 4.4: 8.3)

Installation: Evenly distribute 5g per litre (rootball size) of fertiliser onto backfill area around rootball prior to placing mulch.

TREE PLANTING

Type: Nutricote Standard Brown 360 Day blend (16: 4.4: 8.3)

Installation: Distribute 5g per litre (rootball size)of fertiliser into backfill around rootball. Apply in 3 evenly spread layers as hole is filled.

First layer is to be half way up the rootball, second layer 3/4 up the rootball and third layer 50-100mm from the soil finished surface level. This application ensures that the nutrients leeches evenly downwards into the soil profile and encourages outward root system growth.

TURF

Kikuyu: Yates Dynamic Lifter Turf Lifter (10: 4: 6)

Installation: Evenly spread and mix 50g of fertiliser per m2 into topsoil prior to placing turf.

7.0 STAKING AND TYING

Stakes shall be straight plantation grown hardwood, free from knots and twists, pointed at one end and sized according to size of plants to be staked.

- 5-15 litre size plant 1x(1200x25x25mm)
- 35-75 litre size plant 2x(1500x38x38mm)
- 100-greater than 200 litre 3x(1800x50x50mm)

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.

8.0 TREE PROTECTION

TYPE: Root Stop Root Barrier

PRODUCT CODE: RS600

LOCATION: Street tree plantings

SIZE: 600mm deep roll

SUPPLIER: Arbor Green (Tel: 1300 760 642)

INSTALLATION: The top of root control barrier to be located 150mm closer to the street tree trunk than the base of the root control barrier. The angling of the root control barrier encourages root growth in a downward direction.

MAINTENANCE PROGRAM

Maintenance shall mean the care and maintenance of the landscape works by accepted horticultural practice as rectifying any defects that become apparent in the landscape works under normal use. This shall include, but shall not be limited to, watering, mowing, fertilising, reseeding, returning, weeding, pest and disease control, staking and tying, replanting and plant replacement, cultivation, pruning, aerating, renovating, topdressing, maintaining the site in a neat and tidy condition as follows:

1.0 GENERAL

The Landscape Contractor shall maintain the landscape works for the term of the maintenance (or plant establishment) period to the satisfaction of the Landscape Architect and Client. The Landscape Contractor shall attend to the site on a weekly basis. The maintenance period shall commence at practical completion and continue for a period of twenty Six (26) weeks.

2.0 WATERING

Grass and trees shall be watered regularly so as to ensure continuous healthy growth. Street trees and larger plant stock are to be watered through the top of the rootball to ensure a thorough soaking of the plant rootball. Watering of street trees shall be carried out on a weekly basis throughout the maintenance period regardless of rainfall.

3.0 RUBBISH REMOVAL

During the term of the maintenance period the Landscape Contractor shall remove rubbish that may occur and reoccur throughout the maintenance period. This work shall be carried out regularly so that at weekly intervals the area may be observed in a completely clean and tidy condition.

4.0 REPLACEMENTS

The Landscape Contractor shall replace all plants that are missing, unhealthy or dead at the Landscape 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. The landscape contractor is to report any evidence of theft or vandalism to the Landscape Architect within one day of them occurring.

5.0 STAKES AND TIES

The Landscape 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.

6.0 PRUNING

Trees and shrubs shall be pruned as directed by the Landscape Architect. Pruning will be directed at the maintenance of the dense foliage or miscellaneous pruning beneficial to the condition of the plants. Any damaged growth shall be pruned. All pruned material shall be removed from the site.

7.0 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.

8.0 PEST AND DISEASE CONTROL

The Landscape 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 that they are detected) to the Landscape Architect prior to spraying.

9.0 GRASS AND TURF AREAS

The Landscape Contractor shall maintain all grass and turf areas by watering, weeding, reseeding, rolling, mowing, trimming or other operations as necessary.

Apply lawn fertiliser as specified in fertilisers at the completion of the first and the last mowing, and at times as necessary to maintain healthy grass cover. Carry out last mowing and fertilisation not less than seven (7) days before the end of the maintenance period. Remove grass clippings from site. 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.

No fertiliser is to be used on turf areas.



PROJECT NAME 27 Lang Drive, Bolwarra Heights	DATE Sept 2023		DOCUMENT HISTORY					
PROJECT CODE 240373	STATUS For Information		HUNTER OFFICE 7/335 Hillsborough Road, Warners Bay NSW 2282 (02) 4978 5100	VERSION	EFFECTIVE DATE	DESCRIPTION OF REVISION	PREPARED BY	REVIEWED BY
DOCUMENT NAME Landscape DA Documentation	PREPARED BY Mark Ashmead		SYDNEY OFFICE Level 35, One International Towers 100 Barangaroo Avenue, Sydney NSW 2000 (02) 8046 7412	A	07/09/23	Draft Issue	Mark Ashmead	Mark Ashmead
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