



landscape design report

sawtell park estate - stage two

project no.: **7924.5**
date: **22.08.2012**
revision: **G**



project no: 7924.5
date: 22.08.2012
site: Lyons Rd, North Bonville, NSW
client: Utila Pty. Ltd.
council: Coffs Harbour City Council

landscape design report

sawtell park estate - stage two

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1 general description

The following landscape design report has been prepared in accordance with the requirements of the updated Director-General's Environmental Assessment Requirements (2010-07-08) and Coffs Harbour City Council's *Subdivision Development Control Plan* (2008), including associated guidelines, by virtue of the proposal being a 'Residential Subdivision'.

2 the site

The subject site is Lot 112, DP 1073791 and covers an area of approximately 39ha of which a large area has been extensively cleared and used for cattle grazing. A partially vegetated wetland extends along a drainage line running from the north-west and south-west.

The site adjoins the Bongil Bongil National Park.

The site covers the following land use zones:

- 2(a) Residential – Low Density
- 6(a) Open space – Public Recreation; and
- 7(a) Environmental Protection – Habitat & Catchment.

The site's topography is sloping to the south.

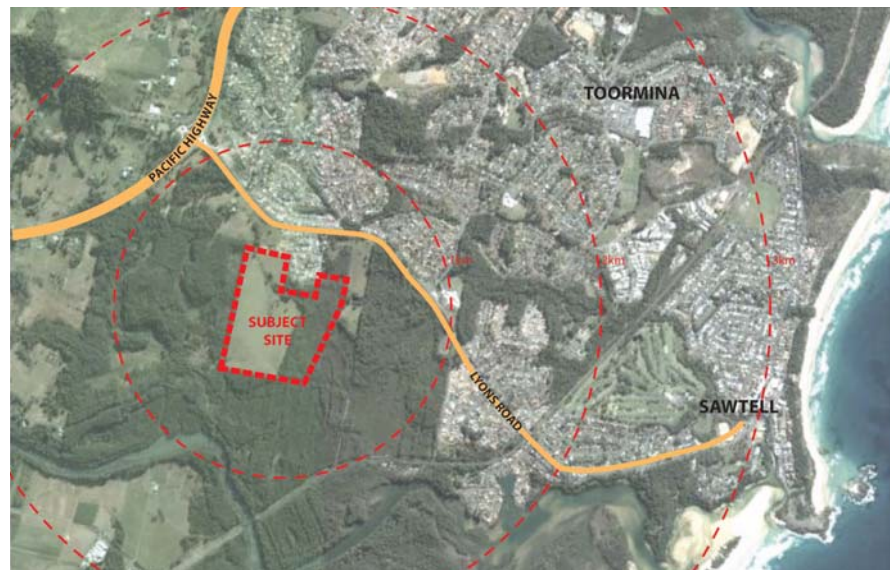


FIGURE 1: locality map

(Source: Google Earth)

3 existing landscape character & vegetation

The existing landscape character is influenced by the adjoining Bongil Bongil National Park, the forested wetland and cleared land for grazing. Native vegetation has been modified with the clearing of the site and grazing activities.

To the north the site is adjoined by residential development spreading along Lyons Road. Sawtell is a Coastal Town (as defined in the *Coastal Design Guidelines for NSW*) with the coastline being just 3.2km away from the site. The site itself has, however, no direct viewlines to the coast.



The Vegetation Management Plan [VMP] (Warren, 2012) identifies six vegetation communities present on the site:

- 1 - Tall open swamp sclerophyll forest (*Eucalyptus robusta*)
- 2 - Tall open/closed swamp sclerophyll forests (*Melaluca quinquenervia*)
- 3 - Tall open dry sclerophyll forest (Mixed species)
- 4 - Low closed sedgeland/wet pasture (*Juncus usitatus* +/- *Chorizandra cymbaria* / *Philydrum lanuginosum*)
- 5 - Low closed grassland with scattered trees
- 6 - Dams

4 visual amenity

The site is currently comprised of cleared pastures with remnant vegetation of trees and shrubs occurring along drainage lines. The majority of the site is surrounded by vegetation comprised of forest, some of which belongs to the Bongil Bongil National Park. Sections of the National Park occurring to the west of the site was once dairy pasture; however, it was reafforested in c.1971 with the aim of providing plantation trees of *Eucalyptus pilularis* (Blackbutt) and *E. saligna* (Sydney Blue Gum) for pulpwood. Although some adjoining forests are artificially created along with the site's pastures, they are both perceived as being natural and therefore they are considered as being visually appealing and have a moderate to high scenic quality rating.

Between the site and Lyons Road and spreading east, burgeoning residential development occurs, comprising usually single, and sometimes double storey, brick and tile, detached houses. This development acts in contrast to the natural setting that occurs nearby and rates visually lower than the nearby vegetated areas. The proposed subdivision will be seen as an extension of the current residential development and will result in a reduction in the visual quality of the locality.

This having been stated, the impact to the area will be small for the following main reasons:

- the visual catchment containing the site is relatively small (680ha approx);
- views of the site are limited to a combined stretch of approximately 300m of Lyons Road and scattered locations within the existing subdivision;
- Stage 1 of the subdivision, which is currently under development, is located between Lyons Road and the site which will further restrict views of the site from Lyons Road and will have a greater visual impact to motorists than the proposed subdivision;
- the presence of the adjoining native vegetation will still make a strong contribution to the overall scenic quality of the visual catchment and so compensating to some extent for the residential development;
- the proposed landscaping of the site will result in improved landscaping to the main east-west drainage line which will assist in screening the development. All streets within the proposed subdivision shall be planted with native trees in accordance with the recommendations of the *Coffs Harbour Street Tree Masterplan*, 1999.



5 proposed development & landscape design

The proposed development consists of 157 low density lots to the south of the existing watercourse, 8 small lots to the north of the watercourse, kerbed and sealed roads, associated infrastructure, stormwater collection basins, improvements to a riparian corridor and street landscaping.

The landscape design addresses the street tree selection, the treatment of bio-retention swales and stormwater detention basins, pedestrian access and walking trails, as well as outlining long term management and maintenance issues.

5.1. Street tree selection

The trees suggested for the Sawtell Park Estate Stage 2 have been adopted from the *Coffs Harbour Street Tree Masterplan* 1999 using the selection for Coastal Villages and street tree selection as included in Appendix 3 of this document.

The main road will continue the street tree planting of *Lophostemon confertus* as a continuation of the theme established in the adjoining subdivision. In addition to supplementing the existing canopy cover it will assist in visually linking the proposed and existing subdivisions together. Street tree spacings shall be increased from the front boundary to the second road junction within the site to comply with the bushfire requirements in this area. The nominated species are determined to be of low flammability, therefore suitable for planting within asset protection zones. Other nominated street trees include; *Backhousia citrodora*, *Buckinghamia celsissima*, *Syzygium leuhmannii* and *Melaleuca quinquenervia*.

5.2. Bio-retention swales and stormwater detention basins

The main road bio-retention swale is a rocklined swale with native grass planting including *Lomandra longifolia*, *Ficinia nodosa* and *Carex apressa*. The swale and the street tree planting along the main road add to the generous open feel when entering the subdivision.

There are five stormwater detention basins proposed within the subdivision. The extent of each basin shown in the landscape plans are indicative only as their final design will depend on a more detailed survey of site conditions with the intention of retaining existing trees where possible.

While Basins 4 and 5 are located within the southern portion of the subdivision, Basins 1, 2 and 3 are more central and therefore have a greater opportunity for acting as open space within the subject site. The turfed sections of the basins will also allow these areas to be used as casual open play and kick around areas.

The existing riparian zone contains some remnant canopy trees, with a disturbed understorey due to cattle grazing. The construction of a rural style fence offset approximately 4m from the top of the banks will restrict access to the critical area, thus facilitating the regeneration of understorey vegetation. Occasional supplementary canopy tree planting is also



proposed for this area, with consideration given to the asset protection zone requirements. This includes spacing trees to form a discontinuous canopy and ensuring no additional canopy trees are located within the vicinity of the main entry road.

The revegetation of constructed banks with shrubs, groundcovers and indigenous trees will form part of the general revegetation program in accordance with the VMP that has been prepared for the site.

This work in addition to landscaping undertaken within the road reserves, will not only assist in maintaining improved water quality for site run-off, but it will also assist in improving the visual amenity of the area generally.

5.3. pedestrian access

The proximity of the site to the Bongil Bongil National Park is a major incentive for the subdivision's pedestrian network to be linked with existing walking trails. The pedestrian network consists of footpaths as part of all road sections as well as walking trails and supplementary boardwalks to allow controlled access to the National Park and riparian zone. Fire access trails have an additional function as pedestrian walking trails. Lockable gates will allow the fire brigade to access fire trails. Additional bollards to the fire trails will permit pedestrian access but prevent motorbikes from entering the National Park.

5.4. revegetation (riparian zone)

While some areas of revegetation can be nominated at this stage, others will fall into the adaptive management scheme as outlined in the VMP. The landscape masterplan identifies all banks constructed as part of the stormwater detention works to be revegetated. Plants for revegetation are to be selected natives from local nurseries using stock of local provenance where available. A list of species is shown on Sheet 03 in the landscape masterplan package.

The extent of all revegetation and regeneration is to be determined in consultation with a certified bush regenerator and in accordance with the VMP.

5.5. bushfire management

The outer extent of the subdivision forms part of required Asset Protection Zones (APZs) as outlined in the Bushfire Assessment Report (HCBS, 2012). It is intended that these areas will be landscaped with the inclusion of additional tree planting using the same species as occurring in the adjoining National Park (e.g. *E. pilularis* – Blackbutt, *Angophora costata* – Smooth-Barked Apple); however, the pasture grasses will be retained and routinely slashed in compliance with APZ requirements as specified in Standards for Asset Protection Zones (NSW RFS, 2006). The trees will be planted in small groupings to achieve no greater than a 30% canopy cover with no interconnecting canopies between groupings. Preference shall be given to smooth-barked trees with high-forming canopies to limit the spread of fire from the ground.



5.6. ownership and maintenance funding

A maintenance period of 52 weeks for all proposed public reserve areas will be undertaken by the contractor engaged by the developer before handing over to Council. The system adopted by Council is for the land to be dedicated as public reserve at the time of release of the linen plan and that a maintenance bond (bank guarantee) be allocated for the maintenance period. At the completion of the 52 week period, if all work is deemed to be acceptable, the maintenance bond will then be returned.

In order for the easement area of the subject property zoned 7(a) Environmental Protection to be added to the Bongil Bongil National Park, there is no maintenance to be undertaken by the developer. The land will be handed over to the Office of Environment and Heritage (National Parks and Wildlife Service) at an agreed time.

6 conclusion

The landscape masterplan for Sawtell Park Estate Stage 2 proposes a scheme for an attractive subdivision benefitting from the amenity of the adjoining National Park and reflecting the street tree character of other coastal towns within the Coffs Harbour City Council area. The use of native species to supplement existing vegetation will strengthen the local character and minimise irrigation and maintenance requirements.

7 references

Coffs Harbour City Council, 1999: *Coffs Harbour Street Tree Masterplan*.

Coffs Harbour City Council, 2000: *Subdivision Development Control Plan*.

Holiday Coast Bushfire Solutions (HCBS), 2012: *Bushfire Hazard Assessment Report, Lot 112, DP 1073791*, unpublished report.

NSW Dept of Planning, 2010: *Director General's Environmental Assessment Requirements (Application No.08-0080)*, letter (08/07/2010).

NSW Rural Fire Service, 2006: *Standards for Asset Protection Zones*.

James Warren & Assocs, 2012: *Vegetation Management Plan, Lot 112, DP 1073791*, unpublished report

drawing schedule

sawtell park estate stg. 2 - north bonville

00

august 2012



masterplan

01

collector road section

02

riparian zone section & plant schedules

03

detention basin 3+6

04

concept images

05

national park boundary fence

06

site details:
lyons rd, north bonville, nsw
client:
utila pty. ltd.
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masterplan

sawtell park estate stg. 2 - north bonville

01

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legend

- residential lots
- bio-retention swales
- 1200mm footpaths
- 4000mm fire trails
- walking trail/boardwalk
- access to bushfire trail with lockable gate & pedestrian access to Bongil Bongil National Park boundary fence (ref. 06)
- stormwater detention basins, indicative only
- revegetation in accordance with VMP and bushfire assessment
- APZ, supplementary planting according to bushfire assessment
- approx. location of existing watercourse
- proposed location for bus stops

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tree legend*

- Lophostemon confertus*
- Backhousia citrodora*
- Buckinghamia celsissima*
- Syzygium luehmannii*
- Melaleuca quinquenervia*
- supplementary trees to riparian zone: *Eucalyptus robusta*, *Eucalyptus pilularis*, *Melaleuca quinquenervia*
- endemic trees (*Allocasuarina torulosa*, *Eucalyptus saligna*) (APZ)
- supplementary understorey planting for revegetation
- * trees adopted from Coffs Harbour Street Tree Masterplan, 1999 refer to plant schedule on sheet 03

STORMWATER MANAGEMENT:
refer to engineer's drawings and to details on sheet 03 - 06. Shape of basins is depending on site conditions and potential retention of trees.

REVEGETATION:
Extent of revegetation and required fencing with educational signage to be determined in consultation with bush regenerator and in accordance with VMP.

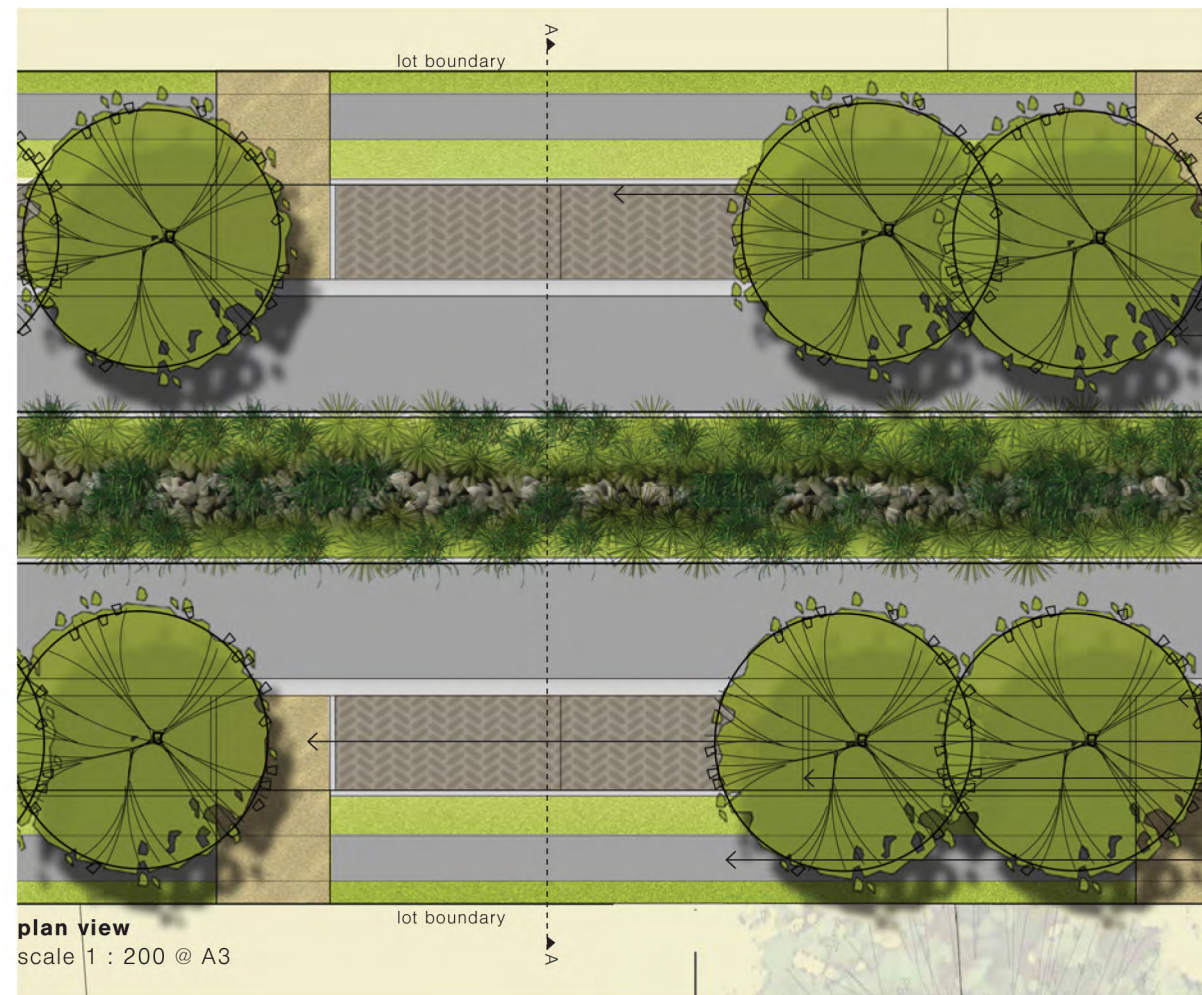


collector road section

sawtell park estate stg. 2 - north bonville

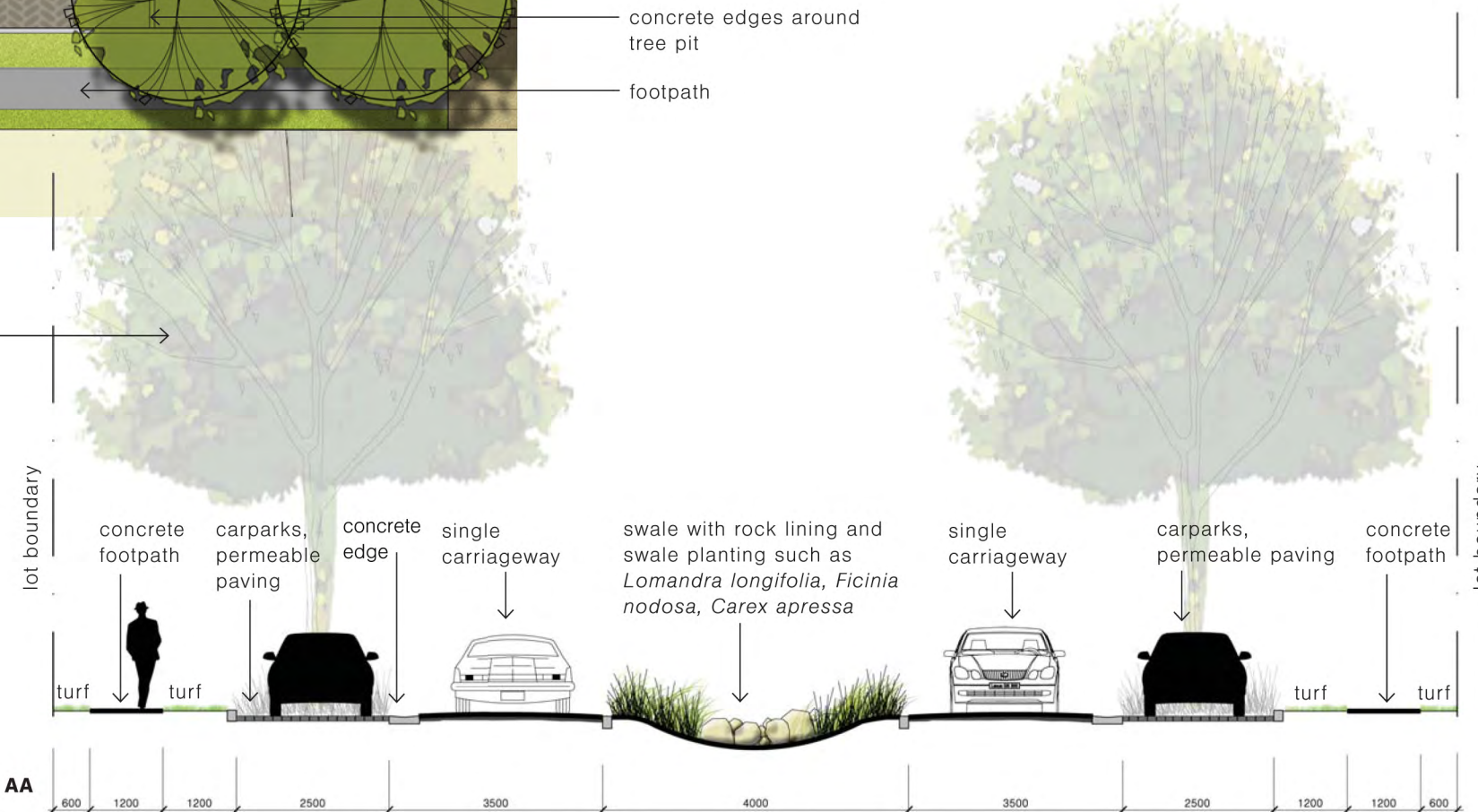
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proposed street trees
Lophostemon confertus

indicative section AA
scale 1 : 100 @ A3



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riparian zone section & plant schedules

sawtell park estate stg. 2 - north bonville

03

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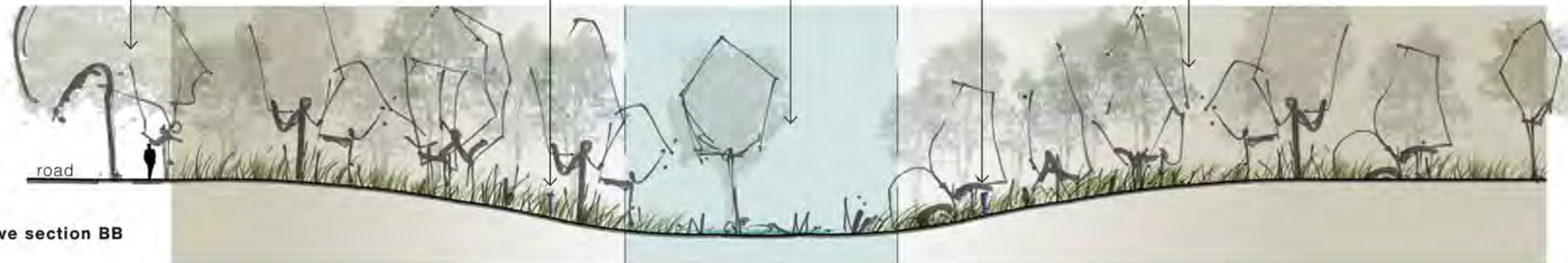
road verge with street trees
(*Lophostemon confertus*) as
per masterplan and footpath
linking to walking trail

rural fence offset approx.
4m from top of bank (as
surveyed) to restrict access
and enable creekline to
rehabilitate unhindered.

existing water course/
drainage line with scattered
existing trees to be retained
and regenerating *Melaleuca*
quinquenervia

rural fence

provide some
supplementary
tree planting with
consideration to apz
requirements.



indicative section BB
n.t.s.

GENERAL PLANT SCHEDULE

*Species to be sourced from local nurseries using stock of local provenance where available to be continuant with local gene pool.

BOTANICAL NAME	COMMON NAME	MAT. HEIGHT
TREES		
<i>Lophostemon confertus</i>	Brush Box	15m
<i>Backhousia citrodora</i>	Lemon Scented Myrtle	8m
<i>Buckinghamia celsissima</i>	Ivory Curl Tree	10m
<i>Syzygium luehmannii</i>	Riberry	15m
<i>Allocasuarina torulosa</i> (APZ)	Forest Oak	15m
<i>Eucalyptus saligna</i> (APZ)	Sydney Blue Gum	25m
<i>Melaleuca quinquenervia</i>	Broad-Leaved Paperbark	12m

BASIN PLANTING

<i>Carex appressa</i>	Tussock Sedge	1 x 1m
<i>Ficinia nodosa</i>	Knobby Club Rush	0.8 x 0.7m
<i>Juncus usitatus</i>	Common Rush	1 x 1m
<i>Lomandra longifolia</i>	Mat Rush	1 x 1m
<i>Lomandra fluviatilis</i> 'Shara'	Dwarf Mat Rush	0.4 x 0.5m
<i>Themeda australis</i>	Kangaroo Paw	0.3 x 0.3m
<i>Carex appressa</i>	Tall sedge	0.8

REVEGETATION SPECIES(not exclusive) for Swamp Sclerophyll Forest

** Revegetation to be in consultation with bush regenerator and in accordance with VMP.

BOTANICAL NAME	COMMON NAME	MAT. HEIGHT
TREES & SHRUBS		
<i>Acmena smithii</i>	Lilly Pilly	15m
<i>Allocasuarina littoralis</i>	Black She-Oak	8m
<i>Allocasuarina torulosa</i> +	Forest Oak	15m
<i>Banksia spinulosa</i> +	Hairpin Banksia	1-3m
<i>Callistemon salignus</i>	Crimson Bottlebrush	7m
<i>Casuarina glauca</i>	Swam Oak	8-15m
<i>Eucalyptus pilularis</i>	Blackbutt	30m
<i>Eucalyptus resinifera</i> +	Red Mahogany	45m
<i>Eucalyptus robusta</i>	Swamp Mahogany	25m
<i>Leptospermum juniperinum</i>	Prickly Tea Tree	3m
<i>Lophostemon confertus</i> +	Brushbox	15m
<i>Melaleuca ericifolia</i>	Swamp Paperbark	4m
<i>Melaleuca sieberi</i>	Sieber's Paperbark	5m
<i>Melaleuca quinquenervia</i>	Broad-leaved Paperbark	12m

GRASSES & GROUNDCOVERS

<i>Carex appressa</i> (+)	Tussock Sedge	1m
<i>Baumea rubiginosa</i> ~	Twig Rush	1m
<i>Bolboschoenus fluviatilis</i> ~	Marsh Club Rush	2.5m
<i>Dianella caerulea</i>	Blue Flax Lily	0.2-1m
<i>Eleocharis minuta</i> ~	A Spike Sedge	0.2m
<i>Gahnia sieberiana</i>	Tall Saw-Sedge	0.8-2m
<i>Juncus usitatus</i> ~	Common Rush	1m
<i>Lomandra longifolia</i>	Mat Rush	1m
<i>Persicaria decipiens</i> ~	Slender Knotweed	0.3m
<i>Schoenoplectus mucronatus</i> ~	A Club-Sedge	0.5-1m
<i>Schoenoplectus validus</i> ~	River Club Sedge	1-2m
<i>Themeda triandra</i> (+)	Kangaroo Grass	0.3m
<i>Viola hederacea</i>	Native Violet	GC

+ higher areas of CRZ (Core Riparian Zone) ~ Freshwater Wetland Areas

Revegetation of batters
with groundcovers, shrubs
and trees (community 2 -
Tall open/closed swamp
sclerophyll forest) in
accordance with VMP.
Variable grade batters(>1:4)
to meet existing levels.

Assisted regeneration and
revegetation of existing
drainage line where
disturbed with sedges and
grasses from community 4
- Low closed sedgeland/wet
pasture) in accordance with
VMP. Retain existing trees
and regrowth to allow for
natural regeneration.

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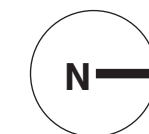
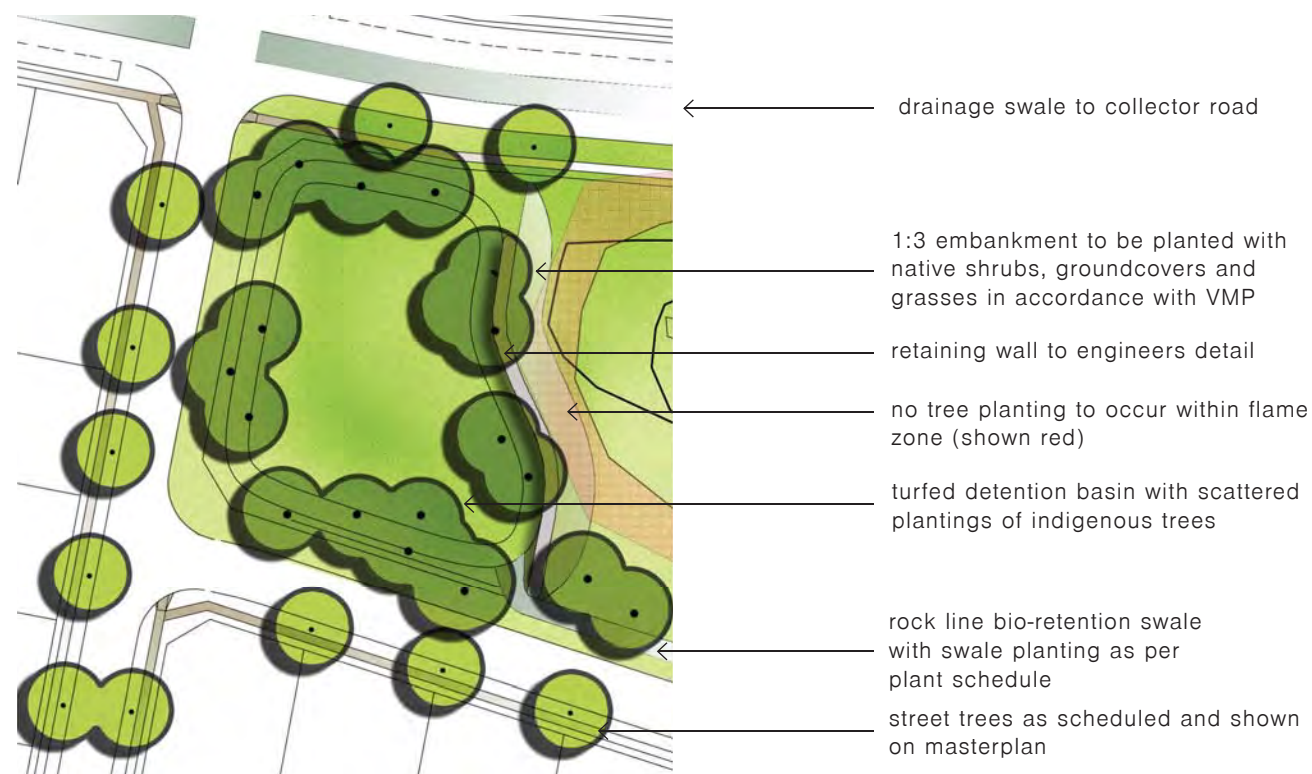
detention basin 3 + 6

sawtell park estate stg. 2 - north bonville

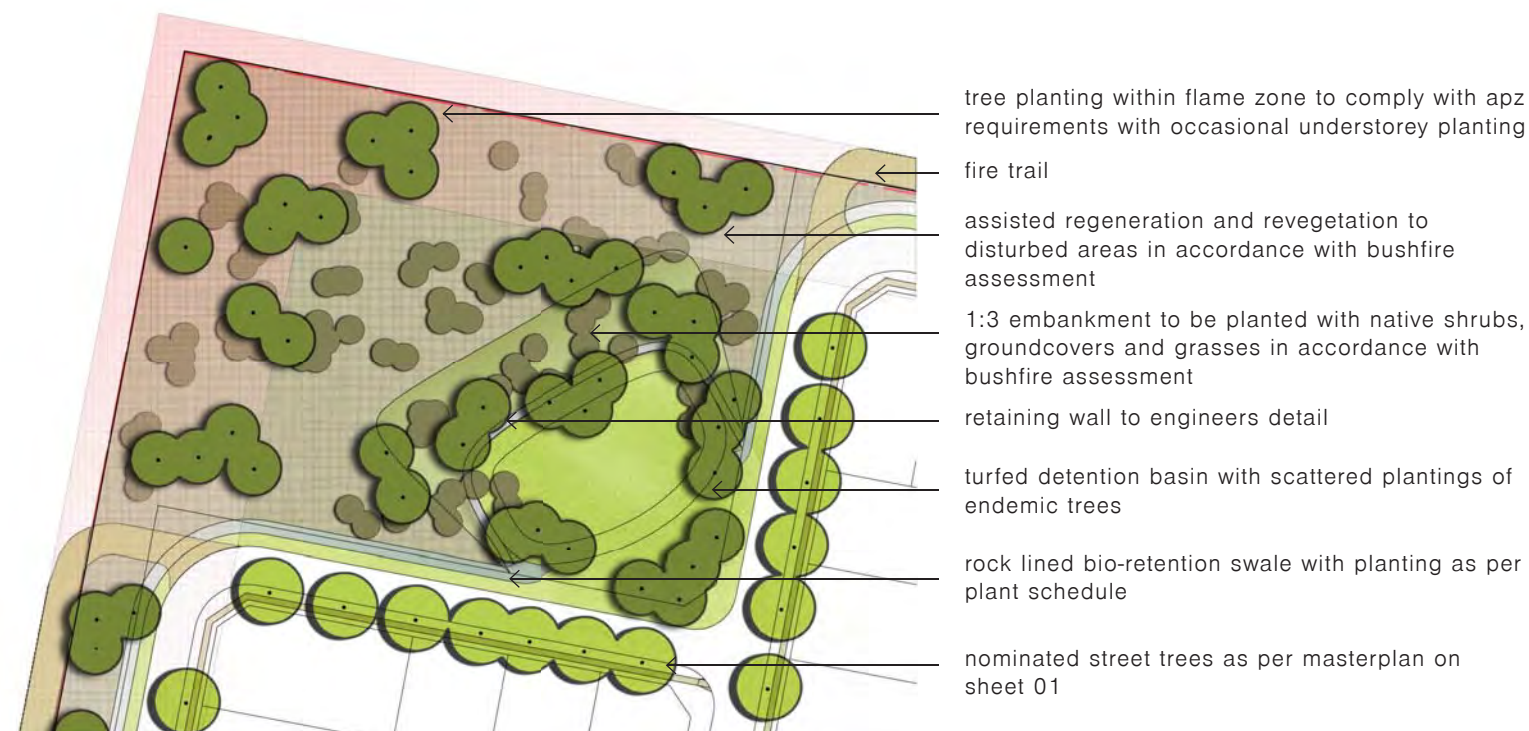
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basin 3



basin 6



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concept images

sawtell park estate stg. 2 - north bonville

05

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01



02



03



08 - parking on permeable paving ("HydroSton")



04



05



06



09 (above) & 10 (below) - bioretention swale with sandstone spillings & swale planting



07

tree selection:

- 01 - *Lophostemon confertus* (Brush Box)
- 02 - *Melaleuca quinquenervia* (Broad Leafed Paperbark)
- 03 - *Allocasuarina torulosa* (Forest Oak)
- 04 - *Syzygium luehmannii* (Riberry)
- 05 - *Backhousia citrodora* (Lemon Scented Myrtle)
- 06 - *Buckinghamia celsissima* (Ivory Curl Tree)
- 07 - *Eucalyptus saligna* (Sydney Blue Gum)

11 - boardwalk



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national park boundary fence

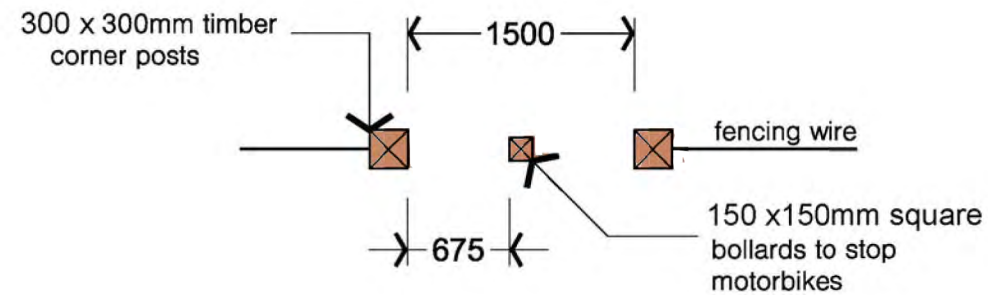
sawtell park estate stg. 2 - north bonville

06

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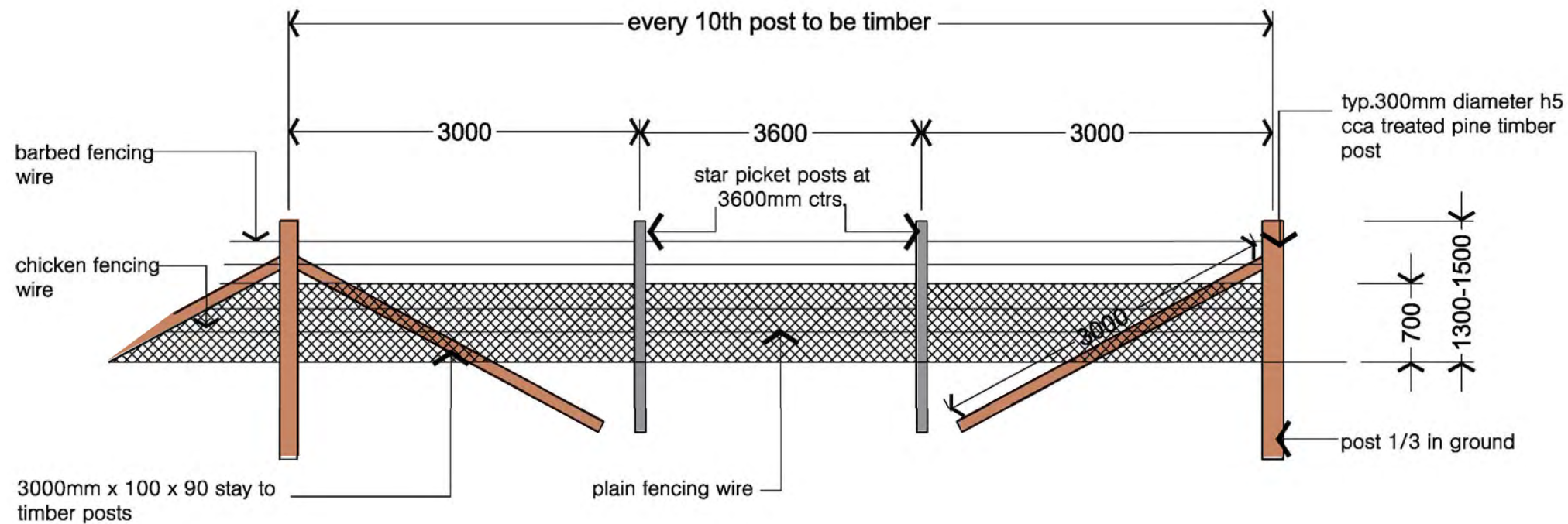


Rural boundary fence to National Park boundary



Plan view of pedestrian access.

Bollards to centre to prevent motorbike access.



Typical detail for rural boundary fence

elevation

scale 1 : 50 @A3

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