

drawing schedule

sawtell park estate stg. 2 - north bonville

00

may 2010



masterplan

01

collector road section

02

detention basin 1+2

03

plant schedule & section basin 1+2

04

detention basin 3+6

05

concept images

06

national park boundary fence

07

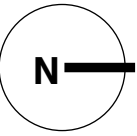
site details:
lyons rd, north bonville, nsw
client:
utila pty. ltd.
date:
09/07/10
job number:
7924.5
scale:
as shown
revision:
F - FINAL

masterplan

sawtell park estate stg. 2 - north bonville

01

may 2010



- 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. 07)
 - stormwater detention basins, indicative only
 - extensive revegetation in accordance with VMP and bushfire assessment
 - APZ, supplementary planting according to bushfire assessment
 - approx. location of existing watercourse
 - proposed location for busstops

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- street trees***
- Lophostemon confertus*
 - Backhousia citrodora*
 - Buckinghamia celsissima*
 - Syzygium luehmannii*
 - Melaleuca quinquenervia*
 - indigenous trees (*Allocasuarina torulosa*, *Eucalyptus saligna* (APZ))
 - supplementary planting for revegetation
 - * trees adopted from Coffs Harbour Street Tree Masterplan, 1999 refer to plant schedule on sheet 04

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.

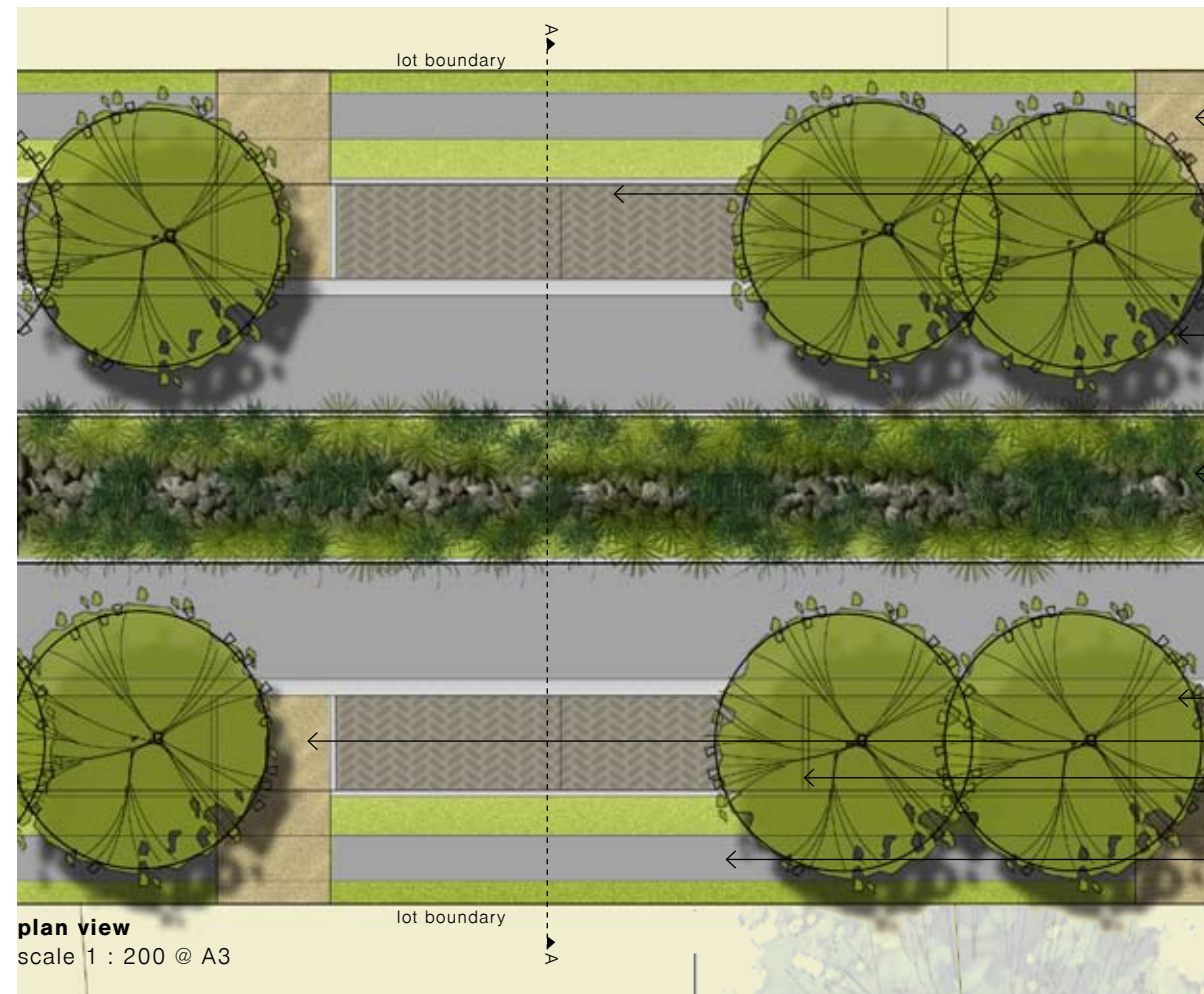
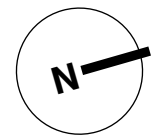


collector road section

sawtell park estate stg. 2 - north bonville

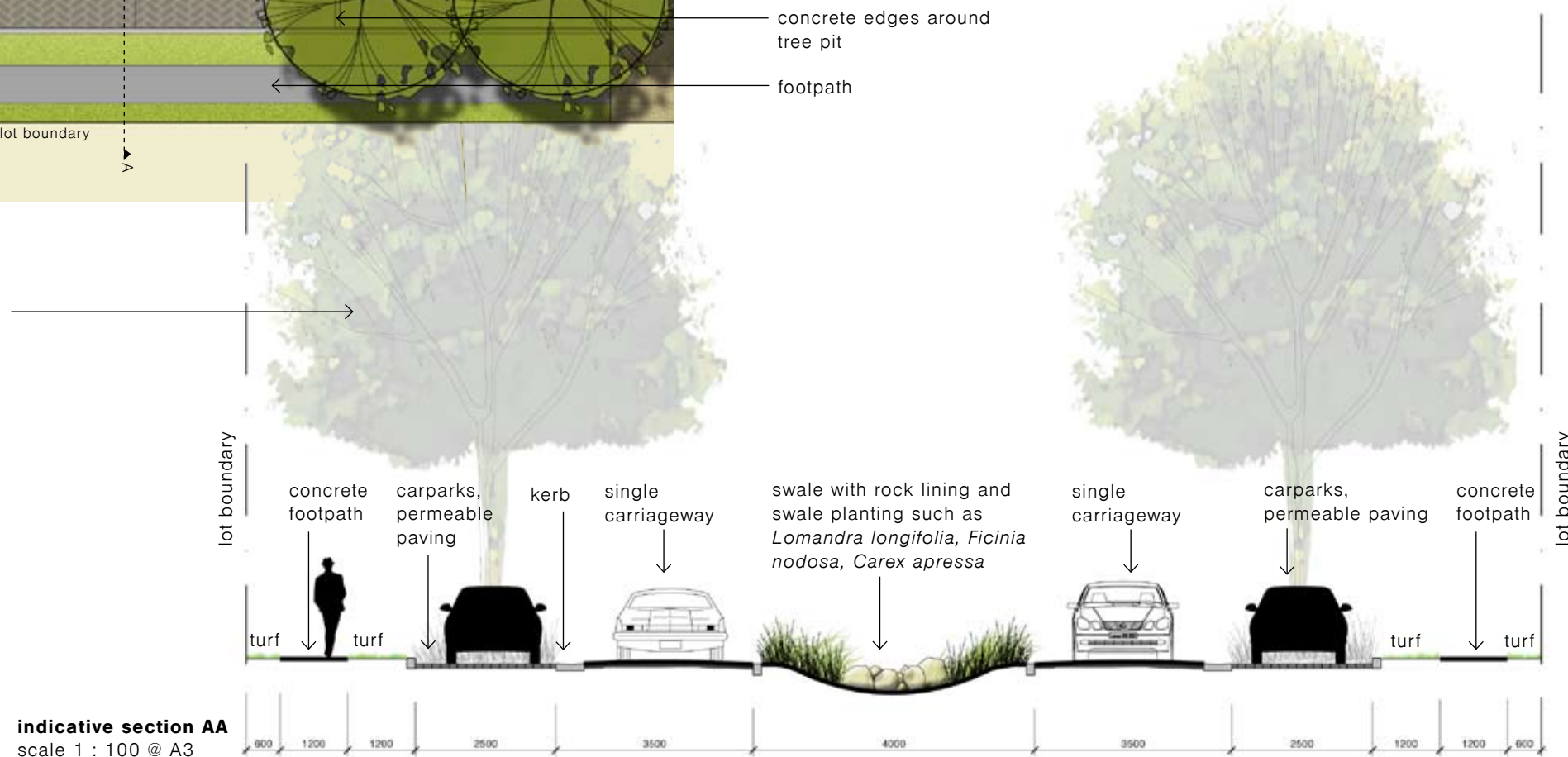
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plan view
scale 1 : 200 @ A3

proposed street trees
Lophostemon confertus



indicative section AA
scale 1 : 100 @ A3

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detention basin 1 + 2

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03

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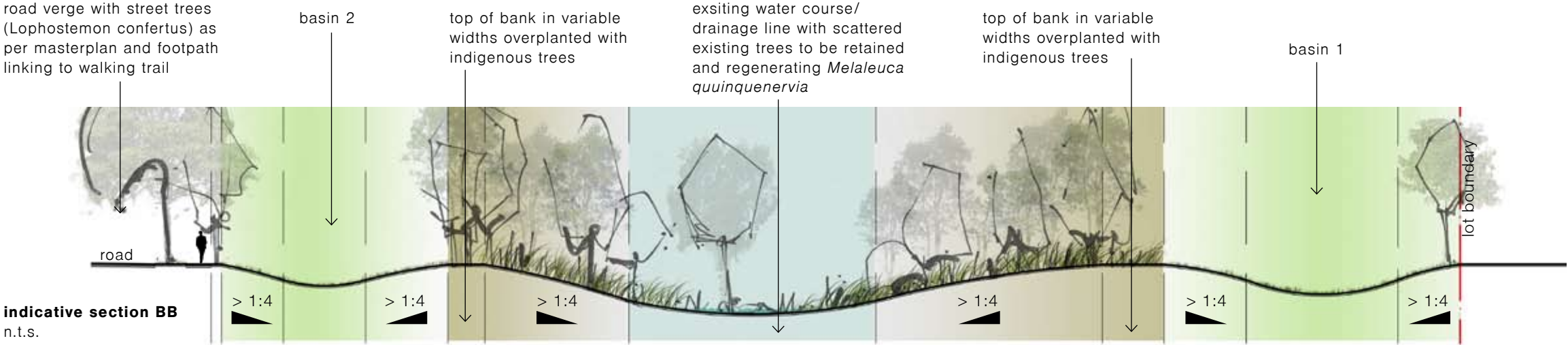


section basin 1 + 2 & plant schedules

sawtell park estate stg. 2 - north bonville

04

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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 qinquenervia</i>	Broad-leaved Paperbark	12m
SWALE 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 fluvialis</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

REVEGATATON 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 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>	Braod-leaved Paperbark	12m
GRASSES & GROUNDCOVERS		
<i>Carex appressa</i> (+)	Tussock Sedge	1m
<i>Baumea rubiginosa</i> ~	Twig Rush	1m
<i>Bolboschoenus fluvialis</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 clarkei</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 australis</i> (+)	Kangaroo Paw	0.3m
<i>Viola hederacea</i>	Ivy-leaved Violet	GC

-  Turfed basin with variable grade batters (>1:4)
-  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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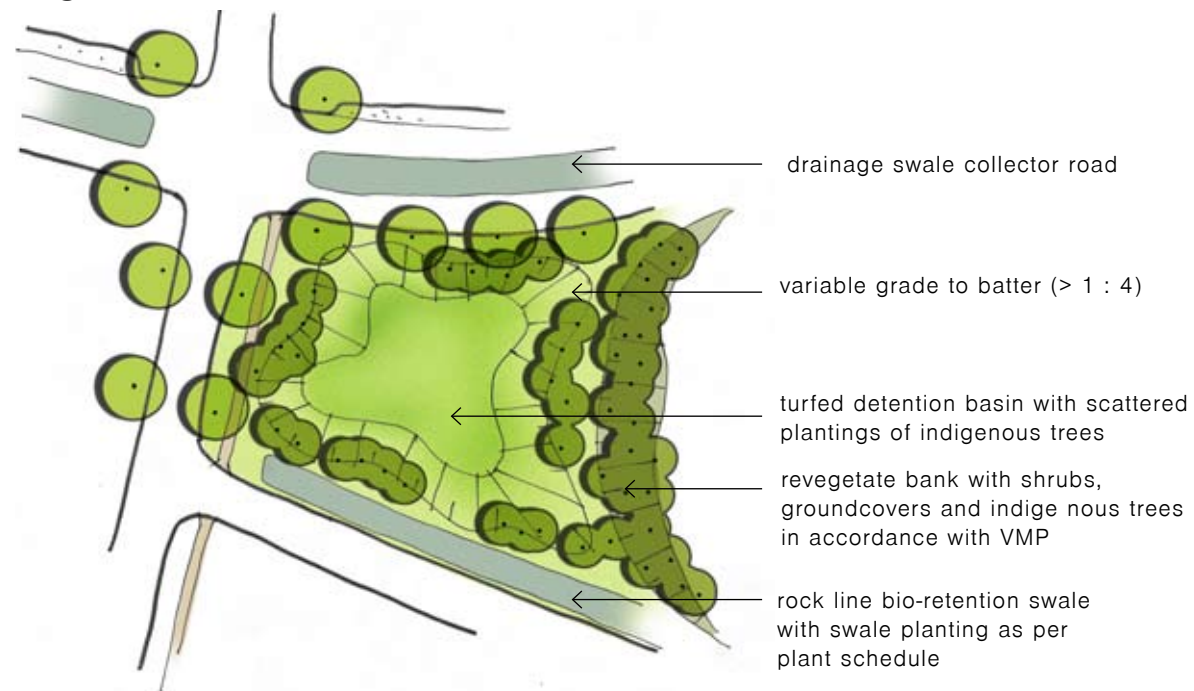
detention basin 3 + 6

sawtell park estate stg. 2 - north bonville

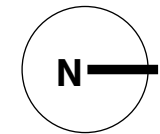
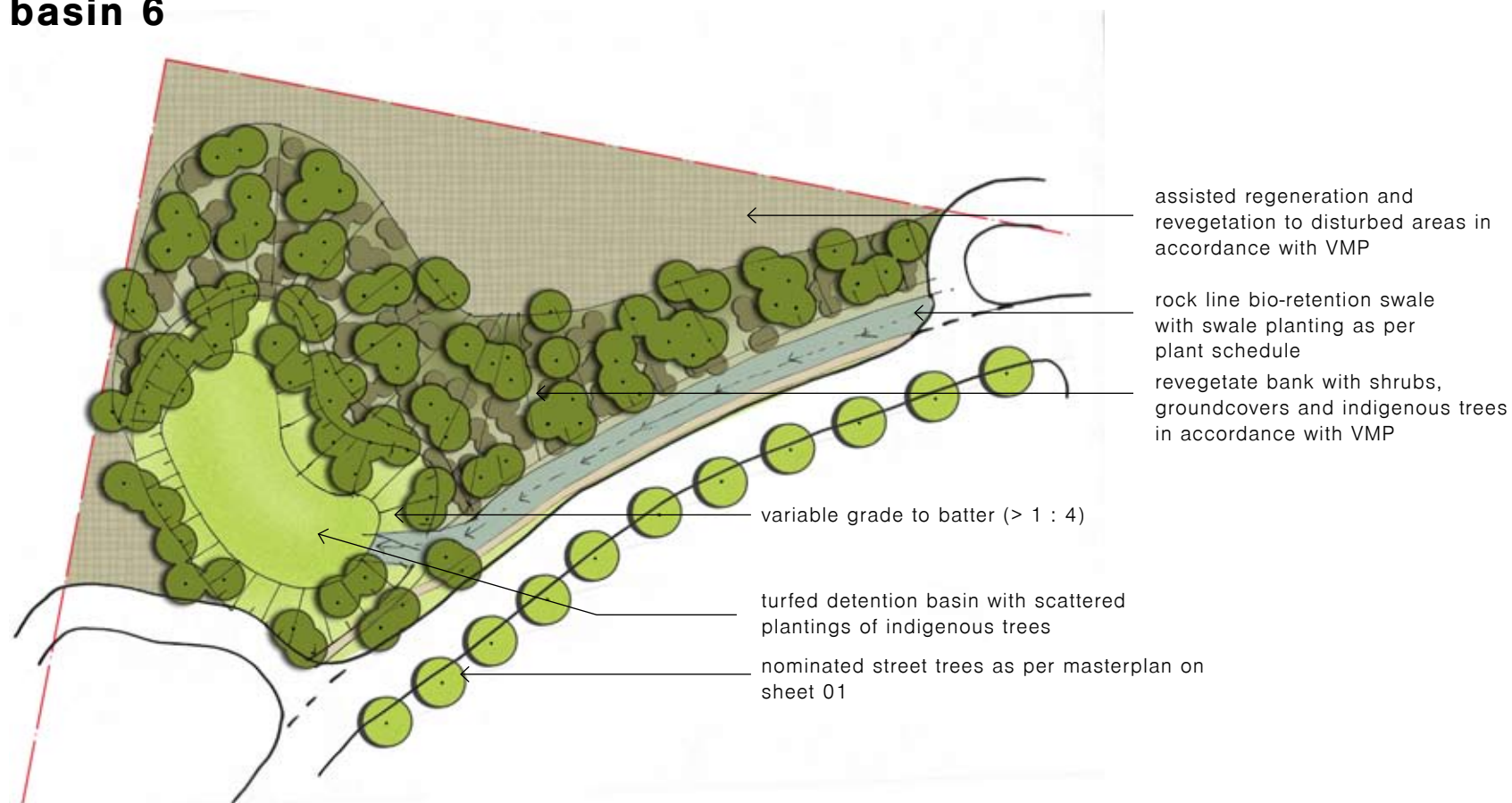
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basin 3



basin 6



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concept images

sawtell park estate stg. 2 - north bonville

06

may 2010



01



02



03



08 - parking on permeable paving ("HydroSton")



04



05



06



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



07

tree selection:

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

11 - boardwalk



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national park boundary fence

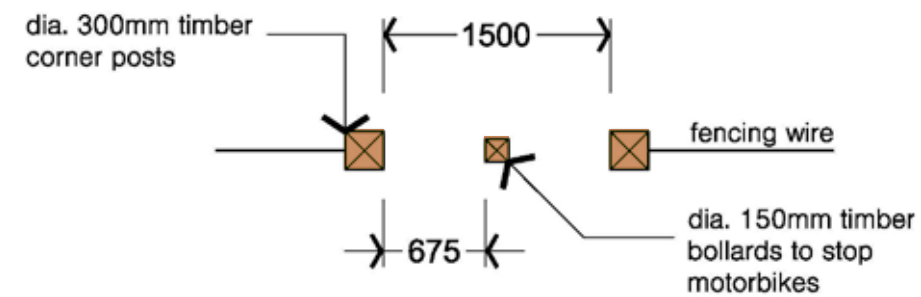
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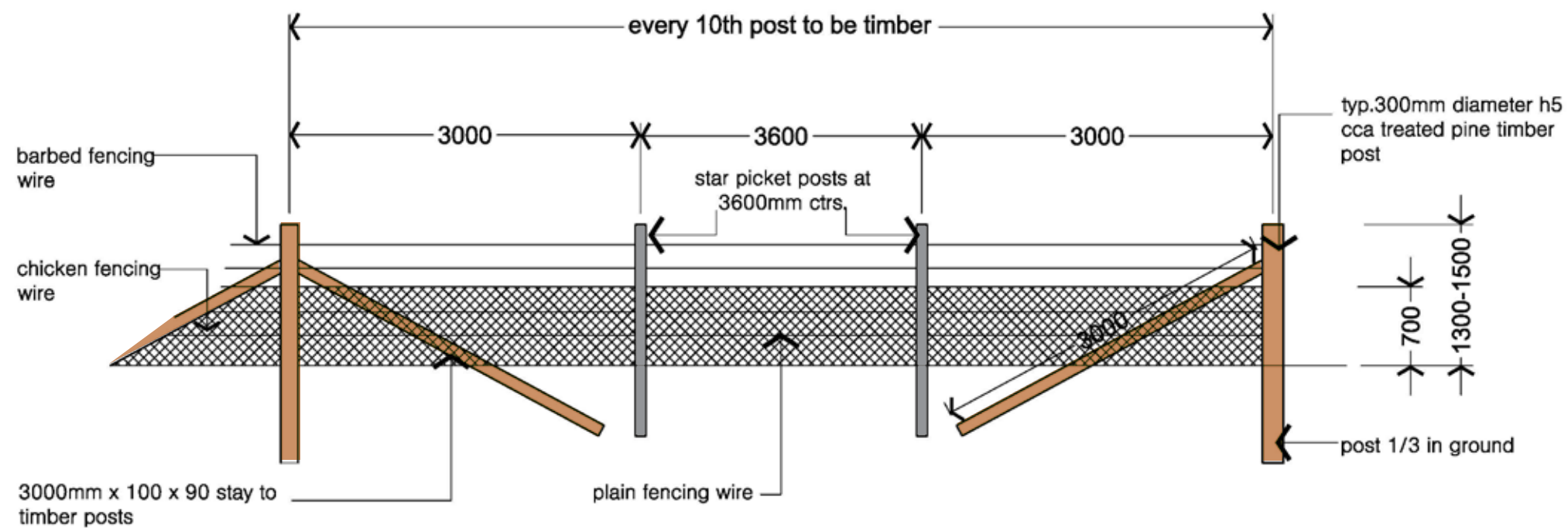


Rural boundary fence to National Park boundary



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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landscape design report

sawtell park estate - stage two

project no.: **7924.5**
date: **Wednesday, 06 October 2010**
revision: **final**



project no: 7924.5
date: Wednesday, 06 October 2010
site: Lyons Rd, Sawtell, 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.

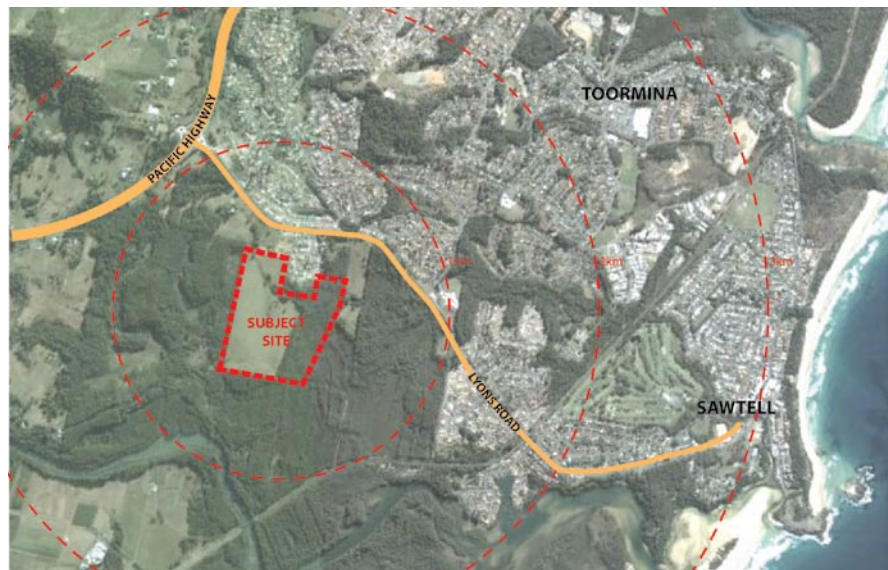


FIGURE 1: locality map

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 (see references) 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 were once dairy land; 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 is occurring comprised of 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 of the visually quality of the current state 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 stretch 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 proposed development with all streets within the proposed subdivision being 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 approximately 151 low density lots south of the existing watercourse, 42 small lot building lots north of the watercourse, kerbed and sealed roads, associated infrastructure, stormwater collection basins, improvements to a riparian corridor, street landscaping and provision for a future park.

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 the adjoining subdivision being *Lophostemon confertus* and linking proposed and existing subdivision together. Other street trees chosen are *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 swale planting such as *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 six stormwater detention basins set out for 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 incentive of retaining existing trees where possible.

While Basins 4, 5 and 6 are located to the eastern and southern side of the subdivision, Basins 1, 2 and 3 are more central and therefore have a larger obligation 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.

Basins 1 and 2, that are associated with the riparian zone, have been carefully designed to be integrated with the existing drainage line and associated vegetation. The detailed design of these basins will need to be carefully considered to ensure the retention of existing trees and to maintain the natural line of the watercourse where possible.

The revegetation of constructed banks with shrubs, groundcovers and indigenous trees



will form part of the general revegetation program in accordance with the Vegetation Management Plan [VMP] that has been prepared for the site.

This work along with 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 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 the further function of 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

While some areas of revegetation can be nominated at this stage, others will fall into the adaptive management scheme as outlined in the Vegetation Management Plan. 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 04 in the landscape masterplan package.

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

5.5. bushfire management

The outer extent of the subdivision forms part of the APZ as defined in the bushfire assessment report. For planting within the APZ and future maintenance, the following points are to be implemented:

1. selection of plants suitable within fire prone areas
2. removal of limbs and manage understorey by regular slashing
3. supplement existing vegetation with indigenous trees and groundcovers and low grasses in accordance with bushfire assessment and VMP. Allow a minimum 2m gap between canopies of nearby trees to avoid the transfer of fire.

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 time of the 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 NSW Department of Environment, Climate Change and Water (National Parks and Wildlife Service) at an agreed time.

6 conclusion

The landscape masterplan for Sawtell Park Estate Stage 2 puts together 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 keep irrigation and maintenance issues to a minimum.

7 references

Bushfire Hazard Assessment Report. (2010). Holiday Coast Bushfire Solutions, Macksville.

Director-General's Environmental Assessment Requirements (Application No.08_0080), NSW Department of Planning (updated 8 July 2010)

Coffs Harbour Street Tree Masterplan. (1999). Coffs Harbour City Council, Coffs Harbour.

Subdivision Development Control Plan. (2000). Coffs Harbour City Council, Coffs Harbour.

Vegetation Management Plan. (2009). James Warren & Associates Pty. Ltd.