AJT 6550

Please quote our ref: 6550_116 PlanningProposal

29 October 2021

Kempsey Shire Council PO Box 3078 WEST KEMPSEY NSW 2440

Via email: <u>peter.orr@kempsey.nsw.gov.au</u>;

steve.schwartz@kempsey.nsw.gov.au

ATTENTION: Mr Steve Schwartz & Mr Peter Orr

Dear Steve & Peter

RE: SEASCAPE GROVE ESTATE

LOT 801 DP1270742 RESIDENTIAL SUBDIVISION (MP 05_0018 & MP 07_0129) ROSEDALE AVENUE & BURRAWONG DRIVE, SOUTH WEST ROCKS

Reference is made to Council's email dated 25 October 2021 that confirmed:

- Council is currently undertaking a review of its Local Growth Management Strategy(s)
- As part of this project Council is producing a background report focused on the review of
 its current scenic protection layer. The first draft of the background report is expected to
 be received from Council's consultants in February/March 2022 and that the report would
 then be subject to review and endorsement by Council.
- Council's preferred pathway for reviewing the zone boundaries at Seascape Grove would be through the recommendations contained in the final scenic protection layer report.

The advice provided with respect to Council's preferred pathway is acknowledged.

The purpose of this correspondence is to seek a pre-planning proposal meeting with Kempsey Shire Council strategic planners to discuss an alternate planning pathway that specifically deals with the unique circumstances and the time constraints applicable to the proposed realignment of the existing boundary between the R1 General Residential and E3 Environmental Management zones at Seascape Grove Estate as follows:

1. Existing Approvals MP 05_0018 and MP 07_0129

Attachment 1 shows the extent of residential subdivision approved at Seascape Grove Estate. The plan also shows:

• The extent of the land within the footprint of the approved residential subdivisions that is currently zoned E3 Environmental Management.

KING + CAMPBELL

urban design
civil engineering
architecture
town planning
landscape architecture
surveying

directors

Anthony Thorne

B Surv, MIS Aust Grad Dip Planning (UTS) Registered Surveyor

David Tooby

B L Arch, AAILA Registered Landscape Architect

Scott Marchant

B Surv (Hons) Registered Surveyor

Nigel Swift

B Arch, BA Arch, AIA Nominated Architect NSW Architects Registration Board No 7025 QLD Architects Registration Board No 3957

Craig Campbell

B Eng (Civil) MBA MIEAust CPEng NER

Scott Kahler

B SST Surv. (USQ) & B Nat Res Hons. (UNE)

King & Campbell Pty Ltd 1st Floor, Colonial Arcade 25-27 Hay Street Port Macquarie

PO Box 243 Port Macquarie, NSW, 2444

ABN 44 564 476 716

T: 02 6586 2555 F: 02 6583 4064

info@kingcampbell.com.au www.kingcampbell.com.au • The extent of the stages (nominated as Stages 1 & 2) of Seascape Grove Estate for which construction is proposed to commence in the next 2-3 weeks. The construction of Stages 1 & 2 will result in approximately 12 residential lots, the extension of the local collector road Burrawong Drive and the associated water supply, sewerage, stormwater drainage, electrical and telecommunication services all being partly located in the E3 Environmental Management Zone.

The subject Proposal seeks to adjust the zone boundary to ensure all of the above approved residential uses and infrastructure are contained within the R1 zoned land. It is important that this minor boundary change is able to be dealt with in the relatively short term to ensure that residential lots within Seascape Grove are not unnecessarily constrained or subject to more complex approval processes for standard residential uses.

The location of the existing fire trail constructed in 2020 within Lot 800 DP 1270742 pursuant to MP 07_0129. The fire trail is immediately adjacent to the approved footprint of the residential subdivision of Seascape Grove and will be required to be maintained as part of that approval.

The proposed realignment of the zone boundary will result in the fire trail remaining in the E3 Environmental Management zoned land and located between the approved residential subdivision to the north and the existing Revegetation/Regeneration areas referred to below to the south and therefore on the northern edge of the future bushfire hazard.

 The location of the existing Revegetation/Regeneration areas established in 2020 in accordance with the Vegetation Management Plan approved pursuant to MP 07_0129. The ongoing management of these areas is being monitored in conjunction with Kempsey Shire in accordance with the approved VMP and the development consent MP 07_0129.

The proposed realignment of the zone boundary will result in the existing Revegetation/Regeneration areas remaining in the E3 Environmental Management zoned land.

The location of the existing Building Envelope and Bushfire Asset Protection Zone
established in 2020 within Lot 800 DP 1270742 pursuant to MP 07_0129. The
imminent construction of Stages 1 & 2 of Seascape Grove Estate will provide
alternate public road access and reticulated sewerage, water supply, stormwater
drainage, electrical and communication services to Lot 800.

The proposed realignment of the zone boundary will result in the existing Building Envelope and Bushfire Asset Protection Zone for Lot 800 remaining in the E3 Environmental Management zoned land.

2. Existing Approvals for the Vegetation Management Plan and Fire Trail

Attachments 2 & 3 are the existing approvals for the Lot 800 Vegetation Management Plan and Fire Trail construction. These approved plans were implemented in 2020 and have already through the works on the ground consolidated the approved boundary between the

Environmental Management Lands to the south within Lot 800 DP 1270742 and Seascape Grove residential estate to the north.

The Planning Proposal intends to make minor adjustments to the zone boundary to match the existing approved and implemented management of land for environmental and scenic protection purposes in Lot 800 and the Seascape Grove residential estate within Lot 801 DP1270742. The result will be land zones for residential and environmental management/scenic protection land uses in locations consistent with existing land use and management.

3. Existing Subdivision Works Construction Certificate and Stages 1 & 2 subdivision works Construction Certificate Application

Attachment 4 is the approved Construction Certificate Plans for Bulk Earthworks, Services Strategy and Tree Management Plan for Seascape Grove Estate. The bulk earthworks construction for the whole estate is proposed to be undertaken in conjunction with the civil works for Stages 1 & 2 of the Estate. The Tree Management works have been completed in preparation for the commencement of the subdivision works pursuant to development consents MP 05_0018 and MP 07_0129.

Attachment 5 contains the Roads and Drainage Plans, the detailed Earthworks and the Sewer and Water Plans from the Stages 1 & 2 Construction Certificate set of plans. The Subdivision Works Construction Certificate Application was lodged with Kempsey Shire Council on 20 August 2021. Council have provided feedback following their initial review and the amended plans have been resubmitted for final determination by Council.

The plans show the location of the existing zone boundary between the E3 Environmental Management and R1 General Residential lands in a red dashed line. The extent of residential infrastructure to be soon constructed in land currently zoned E3 Environmental Management emphasises the need to make what is essentially an administrative adjustment to the zone boundary to match the approved residential land uses some of which are literally to be set in concrete.

The design of water supply infrastructure for Stages 1 and 2 of Seascape Grove Estate has confirmed that the existing zone boundary does not relate to any restriction imposed by water supply. Residential zone boundaries are in some locations located to reflect the Reduced Level to which water supply can be provided with appropriate service levels.

The water supply design process has confirmed that water supply is available to future residential lots below the RL 34m AHD contour. The location of the RL 34m AHD contour is shown in a blue line on Attachment 1 within the adjoining Lot 800 DP 1270742 and will remain in the E3 Environmental Management zoned land on the southern side of the existing fire trail following the proposed zone boundary adjustment.

Given the minor nature of the zone boundary adjustment, the lack of servicing constraint and the imminent implementation of the existing development consents Council's support for a standalone Planning Proposal is sought.

4. Previous Submissions

Consultation has been undertaken with Mr Peter Hadlow of Hadlow Design Services of South West Rocks who has provided advice with respect to the subject property for the last 35 years. Attachment 6 is a copy of a submission made in June 1985 by Blyth Hadlow and Associates in relation Draft LEP 17 and the subject property.

The 1985 submission proposed that the zone boundary between the 7(d) Scenic Protection and 1(c) rural residential (now residential) to align with the RL 30m AHD contour.

Mr Hadlow recently provided the following additional advice:

The submission in 1985 that was accepted by Kempsey Shire and in turn NSW Planning, was precise enough in the 1(c)/1(d) split by creating sufficient area for 8 x 1ha lots – as has taken place over the past 35 years.

The 7(d)/1(d) split, despite being a curved line, was also precise in that the zone common boundary was designated to follow the 30m AHD natural surface contour – refer our 1985 plan.

Since 1985 with the various LEPs and zoning definition changes, I can find no evidence to suggest the current zone split E3/R1 is or should be other than the 30m contour.

Attachment 1 shows the location of the RL 30m AHD contour which is located either within Lot 800 DP 1270742 or apart from approved residential lot 614 located within the bushfire APZ or front building setbacks to the other approved residential lots.

5. Planning Issues

The subject proposal is to undertake a minor realignment of the existing boundary between the R1 General Residential and E3 Environmental Management zones at Seascape Grove Estate. The minor amendment will reflect the existing approved land uses and current land management and land use and has substantive planning merit as follows:

- The objective of the Proposal is to align the zone boundary with existing approved and established land uses without impacting on the scenic protection objectives of the E3 Environmental Management zoned land within Lot 800 DP 1270742. This will be achieved through the retention of all existing native vegetation on the land and retaining residential land uses within the approved residential footprint.
- The Proposal is consistent with North Coast Regional Plan and is within the Urban Growth Area boundary of the existing Local Growth Management Strategy for South West Rocks. (Refer Attachment 7)
- The Proposal does not include any land of high environmental value. The proposed realignment of the existing zone boundary to match the approved residential subdivision footprint of Seascape Grove will not require the removal of any native vegetation.
- The Proposal does not include land of high cultural value. The MP 07_0129 and MP 05_0018 documentation included archaeological assessments that concluded there was no impact on Aboriginal Heritage as a result of the residential subdivision. The approvals include conditions requiring ongoing consultation with the Kempsey Local Aboriginal Land Council at the commencement of works and such consultation has been and will continue to be undertaken.
- The Proposal promotes the orderly and efficient provision of essential services through the development of the approved residential subdivisions at Seascape

Grove. The existing mixed zoning of the residential lots is detrimental to dealing with the land in an orderly and efficient manner.

- The Proposal is consistent with the local management of bushfire aligning the approved residential subdivision and proposed zone boundary with the existing recently constructed fire trail adjacent to the existing boundary between Lot 800 DP 1270742 and Seascape Grove estate.
- There are no contamination, geotechnical, stormwater management, traffic or parking issues associated with the Proposal.
- The Planning Proposal will include a Visual Impact Assessment which will
 demonstrate there will be no discernible change as a result of the zone boundary
 realignment to the visual qualities of the landscape once Seascape Grove Estate is
 developed. The photo below provides an example of the view from Athena Parade
 with all of the trees within Lot 800 to be retained and none of the existing
 vegetation shown proposed to be removed.



• The Proposal will have positive social and economic impacts by removing unnecessary restrictions on approved residential lots in Seascape Grove Estate so that future residents are able to use their properties for residential purposes.

6. Concluding Comments

The purpose of this correspondence is to seek a pre-planning proposal meeting with Kempsey Shire Council strategic planners to discuss a planning pathway for the subject Planning Proposal that specifically deals with the unique circumstances applicable to the proposed minor realignment of the existing boundary between the R1 General Residential and E3 Environmental Management zones at Seascape Grove Estate

Given the advanced stage of the implementation of the existing development consents for residential subdivision at Seascape Grove Estate and the establishment of Lot 800 DP 1270742 as environmental management land, the support of Council is sought to recognise the merit in dealing with this matter as a minor adjustment of an existing zone boundary that will align the future zone boundaries with the current and approved land uses.

The proposal to submit a Planning Proposal for a minor adjustment to the existing zone boundary does not undermine or interfere with the current broader strategic planning initiatives currently being undertaken by the Council.

The timeframes typically associated with the broader strategic planning initiatives are often incompatible with "housekeeping" minor zone boundary realignments such as that proposed at Seascape Grove Estate. The proposed minor realignment of the existing zone boundary is proposed to facilitate consistency between land zones and the current implementation of existing consents for residential dwellings.

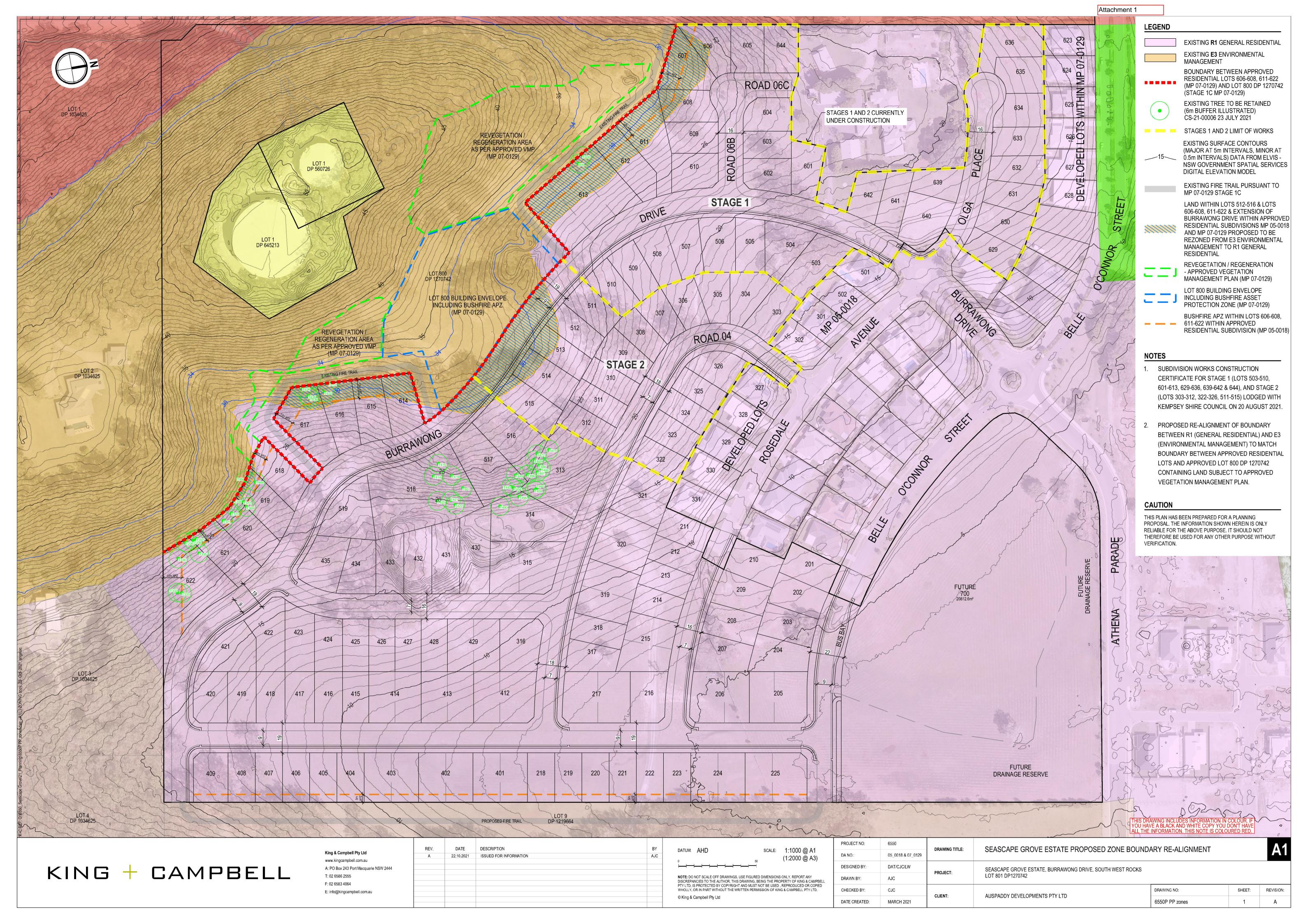
We would appreciate the opportunity to meet with Kempsey Shire Council staff to discuss the alternative planning proposal pathway at a time of your convenience. Please do not hesitate to contact the writer or Craig Campbell should you require any additional information.

Yours sincerely King & Campbell Pty Ltd

Author Thomas

Anthony Thorne

encl As listed cc Client







LEADING THE WAY
IN ENVIRONMENTAL
MANAGEMENT



Contents

Dod	cument (Control Page	5
	Version C	ontrol	5
	Distributio	n Control	5
1.	Backgr	ound Information	6
	1.1	Introduction	
	1.2	Location of the Subject Land	6
	1.3	Approved Subdivision and Lot 800 DA	6
	1.4	Requirements for the VMP	6
2.	Existing	g Site Conditions	11
	2.1	Topography, Soils and Geology	11
	2.2	Vegetation Communities	11
	2.3	Weed Cover	15
	2.4	Fauna Habitat and Threatened Species	18
3.	VMP O	ojectives and Performance Criteria	20
	3.1	VMP Objectives	20
	3.2	Performance Criteria	20
4.	Propos	ed Environmental Works	21
	4.1	Identification of Management Zones	21
	4.2	Management Zone 1 – Regeneration Area	23
	4.2.1	Description	
	4.2.2	Management Issues	
	4.2.3 4.2.4	Zone ObjectivesRequired Works	
	4.3	Management Zone 2 – APZ and Fire Trail	
	4.3.1	Description	
	4.3.2	Management Issues	
	4.3.3	Zone Objectives	
	4.3.4	Required Works	
	4.4	Management Zone 3 – Intact Forest	
	4.4.1 4.4.2	Description Management Issues	
	4.4.2	Zone Objectives	
	4.4.4	Required Works	
	4.5	Other VMP Requirements	34
	4.5.1	Qualifications of Bush Regeneration Contractors	34
	4.5.2	Ecological Fire Regime	
	4.5.3	Fauna Crossings Feral Animal Control	
	4.5.4 4.5.5	Hygiene Protocols	
5.		entation Plan	38
- A-		\	****



6.	Monitor	ing, Costing Reporting and Compliance	. 41
	6.1	Monitoring Requirements	41
	6.1.1	Pest Monitoring	
	6.1.2	Regeneration and Weed Monitoring	
	6.1.3 6.1.4	Photo Point Monitoring	
	6.1.4 6.1.5	Nest Box Monitoring VMP Compliance and Management Issues	
	6.2	Reporting Requirements	
	6.3	Protection of the Offset Area	
	6.4	Compliance	
	6.5	Provisional VMP Costing	
7.	Conclus	sion	
8.	Referen	ices	. 47
App	pendix 1	- Monitoring Proforma	. 48
Lis	t of Fig	gures	
Figu	re 1: Location	on of the subject land	8
Figu	re 2: Develo	ppment layout plan	9
Figu	re 3: Location	on of Lot 800 and VMP area	10
Figu	re 4: Soil pr	ocesses	13
Figu	re 5: Update	ed site vegetation mapping	14
Figu	re 6: Weed	cover and locations	17
Figu	re 7: Location	on of management zones	22
Figu	re 8: Fencin	ng and signage	32
Figu	re 9: Fauna	crossing points	35
Figu	re 10: Reco	mmended location of regeneration monitoring and photo	points 43
Lis	at of Ta	bles	
Table	e 1: VMP re	equirements	7
		ist for Lot 800	
		and potentially occurring species	
		mended species for planting	
		control techniques	
		mended weed control techniques for Biosecurity Act listed	
		, , , , , , , , , , , , , , , , , , , ,	
Table	e 7: Implem	entation plan	38
Table	e 8: Provisio	onal costing for planting and weed control	45



List of Photos

Photo 1: Pasture Grassland	11
Photo 2: Derived Woodland	12
Photo 3: Dry sclerophyll forest	12
Photo 4: Blackberry	16
Photo 5: Natural regeneration occurring on edge of forested area	24
Photo 6: Waste piles in Lot 800	29



Document Control Page

Version Control

Version	Purpose			Date
Rev 0.1	Draft Report	Will Steggall	Will Steggall	22/01/2020
Rev 1.0	Final Report	Will Steggall	Will Steggall	05/02/2020

Distribution Control

					Date
1	File Copy	Electronic/Email	Biodiversity Australia	Chantal Sargeant	22/01/2020
2	Client Review	Electronic/Email	King and Campbell	Terrance Stafford	22/01/2020
3	File Copy	Electronic/Email	Biodiversity Australia	Chantal Sargeant	05/02/2020
4	Client Copy	Electronic/Email	King and Campbell	Terrance Stafford	05/02/2020

Project Number: EC3802

Our Document Reference: EC3802-BEC-REP-SeascapeGrove_VMP-rev1.0

This document has been prepared to the requirements of the client identified on the cover page and no representation is made to any third party. It may be cited for the purposes of scientific research or other fair use, but it may not be reproduced or distributed to any third party by any physical or electronic means without the express permission of the client for whom it was prepared or Biodiversity Australia Pty Ltd.



1. Background Information

1.1 Introduction

Biodiversity Australia Pty Ltd was commissioned by B&M Walls ('the client') to prepare a Vegetation Management Plan (VMP) for Seascape Grove Estate, Belle O'Connor Street, South West Rocks.

This VMP has been prepared to address the requirements of Stage 1C of the major project (approval no 07_0129) and provides required works and actions plans for vegetation management and monitoring works across all stages of the approved development.

1.2 Location of the Subject Land

The subject land comprises a 30ha parcel of land located at South West Rocks and is accessed from Belle O'Connor Street (Figure 1).

The subject land is the location of an approved residential subdivision over an area of 23ha. The subdivision commenced in 2004 and a number of Lots in the north have been developed along with roads and landscaping.

A development application has been recently approved for creation of a dwelling envelope and APZ in Lot 800 which is located in the southwest of the subject land. The application is referred to as T6-19-266.

1.3 Approved Subdivision and Lot 800 DA

In 2004, Lot 2 DP645213 (Waldel Park) was granted approval by Kempsey Shire Council under the provisions of *State Environmental Planning Policy No. 71 – Coastal Protection* for a 23 Lot residential subdivision. All approved Lots were released in 2006 and are currently occupied by residential dwellings.

A master plan was approved by the Minister for Planning in March 2006 and confirmed via the approval of two separate Major Projects.

Major Project 05_0018 granted consent to a further 108 Lots in six separate stages, primarily located within the north-eastern portion of the site. The Lots granted under this consent were identified as Stage 1B.

Major Project 07_0129 granted consent to a further 54 residential Lots., one lot for integrated housing and one lot for environmental protection (being Lot 800). This Stage was identified as Stage 1C and was granted to occur in several separate stages. Stage one of the subdivision has been completed, with Stage 2 to commence shortly. The subdivision layout plan is shown in Figure 2.

The R1 General Residential zone covers an area of 22.8ha. The on-site conservation areas contained within the E3 Environmental Management Zone (Lot 800) cover an area of 5.9ha.

The development includes establishment of roads, site drainage and stormwater retention basins, and Asset Protection Zones (APZ).

1.4 Requirements for the VMP

Condition B21 of the Major Project 07_0129 approval for the subdivision requires preparation of a Vegetation Management Plan (VMP). The requirements of the VMP are listed in the following table along with the section within the plan that they are addressed.

The VMP largely applies to Lot 800 in the southwest of the site, however some requirements apply to Stage 2 of the subdivision.



Table 1: VMP requirements

VMP Requirement as per Approval	Section Addressed
The mechanism by which the regeneration area will be delivered and upheld in perpetuity	6.3
Specific environmental objectives	3.1
The measurable environmental outcomes that will be achieved	3.2
Gantt chart or similar clearly outlining the activity, costing and timing of vegetation management actions monitoring and review details	5 and 6.5
Details of an appropriate ecological fire regime (in consultation with the RFS)	4.3.2
Details for the control of feral and domestic animals, as well as disease such as <i>Phytophthora cinnamomi</i>	4.3.4 and 4.3.5
Nest box location and management	4.2.6.4.1
Details of methods for the protection of fauna from cars along Burrawong Drive	4.3.3
Specifications for ongoing protection of the vegetation from impacts associated with adjacent residential areas (including human visitation)	4.3.4.3
Mapping and photographs of vegetation condition/weed cover as a baseline from which site rehabilitation/management can be measured	2.2 and 2.3
Educational/regulatory style signage	4.3.4.3
A bush regeneration plan including: - a requirement to retain all standing and fallen timber - details on how weeds will be controlled details on the supplementary planting of local indigenous native vegetation species. - the period and methodology for bush regeneration	4.2
Performance criteria by which compliance will be measured for the implementation of the above.	3.2 and 4.2.3
Monitoring requirements	6.1



Figure 1: Location of the subject land

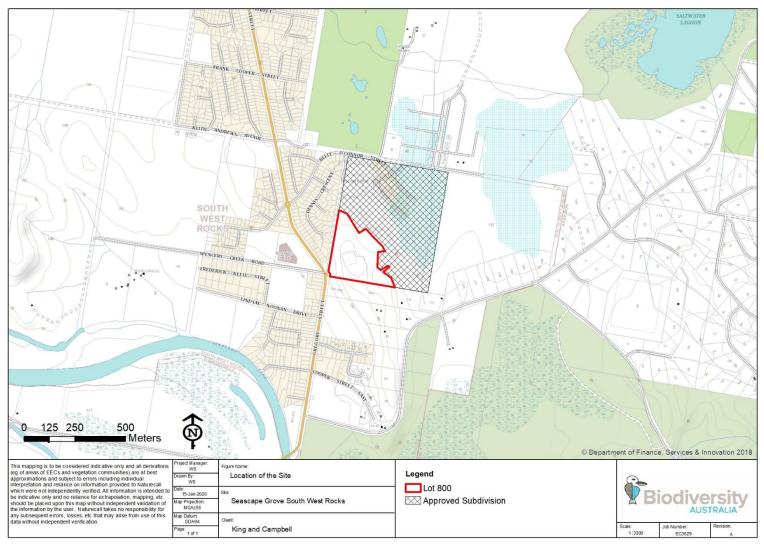




Figure 2: Development layout plan

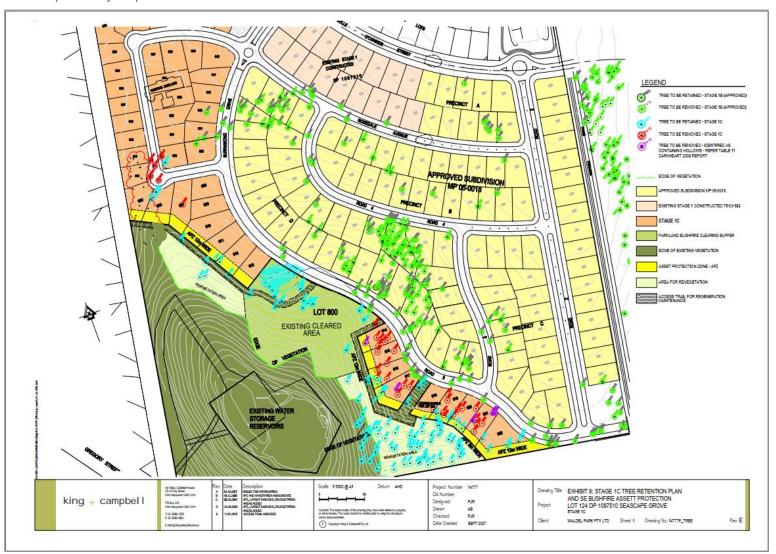
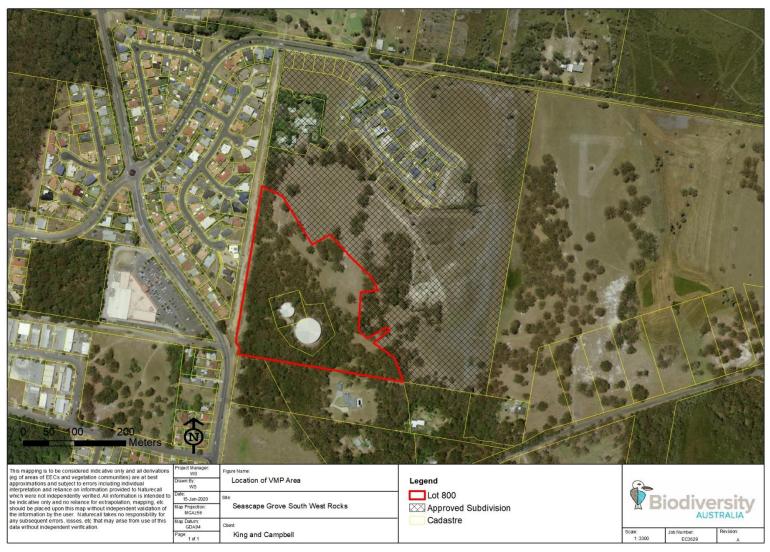




Figure 3: Location of Lot 800 and VMP area





2. Existing Site Conditions

2.1 Topography, Soils and Geology

The site is located in a northeast facing hillslope and ranges in elevation form <10 in the north to 40m in the southwest. The north eastern part of the site is generally level and drains to the north.

Soil landscape mapping shows that the site is underlain by Swamp and Aeolian soils in the low lying areas to Residual and Erosional soils in elevated areas in the south. These form part of the Clybucca, Korogoro and Big Smoky soil landscapes (Atkinson 1990), as shown in Figure 4.

2.2 Vegetation Communities

The subject land predominantly comprises cleared grazing land and scattered trees. The southwestern portion of the site including Lot 800 contains a derived woodland and a dry sclerophyll forest community dominated by Scribbly Gum, Large-fruited Blackbutt and Needlebark Stringybark. This aligns with the NSW Plant Community Type Scribbly Gum - Needlebark Stringybark heathy open forest of coastal lowlands of the northern NSW.

Parts of this community have been underscrubbed and are grazed by horses, while other areas are in a more natural state and contain intact understorey, shrubs and ground cover layers. An updated vegetation community map for Lot 800 has been produced and is shown in Figure 5 below. Photos 1-3 illustrate the site vegetation communities and their current condition.

Photo 1: Pasture Grassland





Photo 2: Derived Woodland



Photo 3: Dry sclerophyll forest





Figure 4: Soil processes

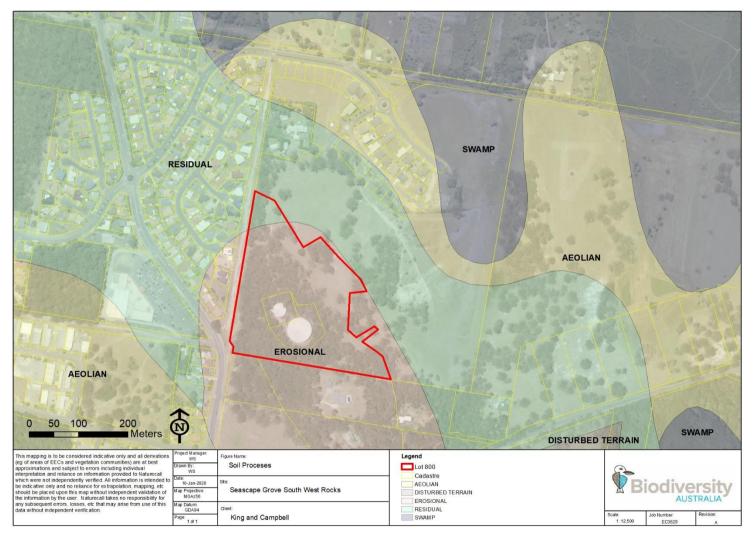




Figure 5: Updated site vegetation mapping





2.3 Weed Cover

Weed cover across the site is generally low and limited to common pasture weeds, exotic grasses and occasional patches of Lantana and Blackberry.

The areas of pasture grassland and woodland have a moderate to high cover of exotic species including Common Paspalum, Catsear, Quaking Grass, Fleabane, Fireweed, Cobblers Pegs and Coolatai Grass. Grassland areas also contain occasional patches of Blackberry and Lantana which have been supressed through grazing horses (Photo 4).

The intact bushland areas within Lot 800 have a low level of weed cover. The only weeds noted in these areas comprised occasional patches of Lantana and Bitou Bush and a few Camphor Laurel saplings.

The weeds recorded within Lot 800 are listed within table 2. Current weed cover mapping for the site is shown in Figure 6.

The following Biosecurity Act listed weeds were recorded on the site:

- Lantana
- Blackberry
- Bitou Bush
- Fireweed
- Coolatai Grass
- Whiskey Grass

Table 2: Weed list for Lot 800

Abundance key: D Dominant at least in some areas,

- C Common,
- O Occasional,
- U Uncommon,
- R Rare on site, few specimens.

Common Name	Scientific Name	Abundance		
Trees and shrubs				
Camphor Laurel	Cinnamomum camphora	R		
Bitou Bush	Chrysanthemoides monilifera	R		
	Groundcovers			
Fleabane	Conyza bonariensis	0		
Cudweed	Gnaphalium gymnocephalum	0		
Fireweed	Senecio madagascariensis	U		
Catsear	Hypochaeris radicata	С		
-	Richardia stellaris	0		
Paddy's Lucerne	Sida rhombifolia	0		
Purpletop	Verbena bonariensis	0		
Balloon Cotton Bush	Gomphocarpus physocarpus	0		
Cobblers Pegs	Bidens pilosa	U		
Pennywort	Hydrocotyle bonariensis	U		



VEGETATION MANAGEMENT PLAN FOR SEASCAPE GROVE | SOUTH WEST ROCKS | FEBRUARY 2020

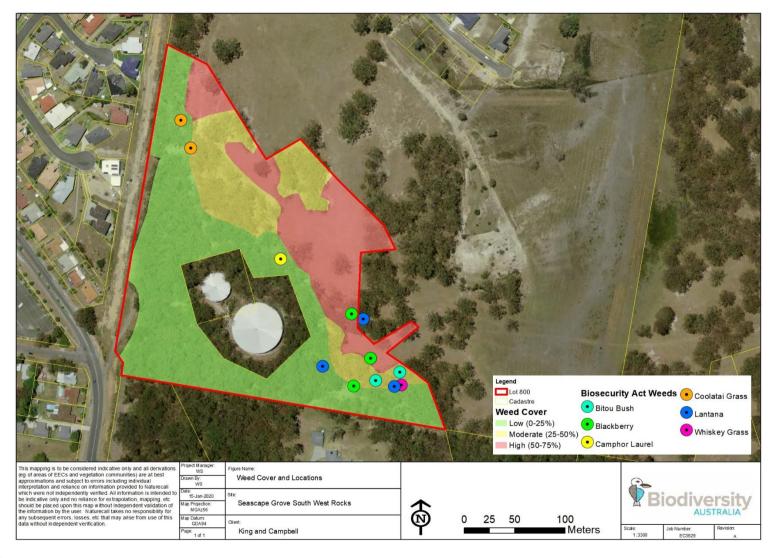
Common Name	Scientific Name	Abundance			
	Grasses				
Common Paspalum	Paspalum dilatatum	D			
Broad-leaf Paspalum	Paspalum mandiocanum	0			
Carpet Grass	Axonopus fissifolius	С			
Quaking Grass	Briza minor	0			
Coolatai Grass	Hyparrhenia hirta	0			
Whiskey Grass	Andropogon virginicus	U			
Vines and Scramblers					
Lantana	Lantana camara	0			
Blackberry	Rubus fruticosus	С			

Photo 4: Blackberry





Figure 6: Weed cover and locations





2.4 Fauna Habitat and Threatened Species

The woodland and forested habitats within Lot 800 would provide habitat for a range of fauna species. There are numerous hollow-bearing trees present which would provide potential breeding and denning habitat for a range of threatened species such as the Squirrel Glider, Brushtailed Phascogale, Microbats, Little Lorikeet and Powerful Owl.

The site is only likely to provide secondary habitat for the Koala and there is unlikely to be a resident Koala population within the site. It may however provide other functions for Koalas such as movement corridors and secondary foraging habitat.

There is limited habitat for small terrestrial species dependant on continuous cover as most of the site and Lot 800 have been underscrubbed and are grazed. Less disturbed areas in the southwest of lot 800 do provide some areas of dense cover and rocky outcrops which may provide habitat for small terrestrial species and reptiles.

There are no creeks, drainage lines or permanent aquatic habitat within Lot 800. A farm dam is located on the edge of lot 800 adjoining the approved subdivision land which may provide a small area of aquatic habitat. It was noted to be dry during a site inspection in December 2019.

Targeted threatened species surveys were undertaken by Darkheart Eco-consultancy in 2007. This survey recorded several threatened fauna species. No threatened flora species or Endangered Ecological Communities were recorded. Threatened flora and fauna species that are known or potentially occurring within the site are listed in Table 3.

Table 3: Known and potentially occurring species

Common Name	Scientific Name	BC Act Status	EPBC Act Status	Likelihood of Occurrence
	Mammal	s		
Squirrel Glider	Petaurus norfolcensis	V	-	Known
Brushtailed Phascogale	Phascogale tapoatafa	V	-	Highly likely
Spotted-tailed Quoll	Dasyurus maculatus	V	Е	Fair to moderate
Grey-headed Flying Fox	Pteropus poliocephalus	V	V	Known
Little-bent-wing Bat	Miniopterus australis	V	-	Known
Large Bent-wing Bat	Miniopterus orianae oceanensis	V	-	Highly likely
Eastern Freetail bat	Micronomus norfolkensis	V	-	Known
Greater Broad-nosed Bat	Scoteanax rueppellii	V	-	Highly likely
Hoary Wattled bat	Chalinolobus nigrogriseus	V	-	Highly likely
	Birds			
Square-tailed Kite	Lophoictinia isura	V	-	Known
Glossy Black Cockatoo	Calyptorhynchus lathami	V	-	Highly likely
Little Lorikeet	Glossopsitta pusilla	V	-	Moderate
Swift Parrot	Lathamus discolor	Е	Е	Fair



VEGETATION MANAGEMENT PLAN FOR SEASCAPE GROVE | SOUTH WEST ROCKS | FEBRUARY 2020

Common Name	Scientific Name	BC Act Status	EPBC Act Status	Likelihood of Occurrence	
Dusky Woodswallow	Artamus cyanopterus	V	-	Moderate	
White-throated Needletail	Hirundapus caudacutus	-	V	Moderate	
Powerful Owl	Ninox strenua	V	-	Highly likely	
Masked Owl	Tyto novaehollandiae	V	-	Moderate	
Reptiles					
Stephens Banded Snake	<u>Hoplocephalus</u> <u>stephensii</u>	V	-	Fair to moderate	



3. VMP Objectives and Performance Criteria

3.1 VMP Objectives

The primary objective of the VMP is to ensure that rehabilitation measures and other ecological ameliorative measures are effectively implemented to achieve positive environmental outcomes for the site and broader area, and that conservation measures are maintained in perpetuity.

3.2 Performance Criteria

The overall performance criteria for the VMP comprise the following. Specific performance criteria for each management zone have also been produced.

- Weed cover reduced to levels which do not threaten regeneration success and no new invasive weeds introduced to the site.
- Achieve fully structured forest within currently cleared and disturbed areas
- Increase in fauna habitat structure and complexity
- Human access to conservation area managed through fencing and signage
- Pest animals reduced to a level that do not impact on known and potentially occurring threatened species
- Fire managed appropriately
- Fauna connectivity maintained
- No fauna mortality as a result of vehicle collisions
- Tree removal in APZ limited to the minimum extent necessary and key habitat features retained where possible
- No damage to retained vegetation and habitat features during clearing and earthworks.
- Hygiene procedures effectively implemented and no pathogens introduced to the site.



4. Proposed Environmental Works

4.1 Identification of Management Zones

To assist in the implementation of the VMP, the site has been stratified into three management zones as follows:

- Zone 1: Regeneration area
- Zone 2: APZ's and fire trail
- Zone 3: Intact forest

This section provides the details and management issues, objectives and scope of environmental works/ameliorative measures proposed for each zone. The location of the management zones is shown in Figure 7.



Figure 7: Location of management zones



4.2 Management Zone 1 – Regeneration Area

4.2.1 Description

This zone is 0.9ha in area and comprises the areas of cleared pasture grassland woodland with no understorey or shrub layers. It contains scattered mature eucalypts and is currently grazed to supress regrowth.

The zone will be subject to tubestock planting, facilitated natural regeneration and weed management. The zone will be subject to formal maintenance (weeding, watering, replacement planting) for 3 years.

4.2.2 Management Issues

This zone has been partially cleared and has been grazed by horses for many years. The soil is likely to be heavily compacted which may impact regeneration success.

It has a moderate to high weed cover of pasture weeds and exotic grasses in the ground layer. Weeds will need to be controlled and monitored regularly to determine if follow-up control is required.

4.2.3 Zone Objectives

- 1. Tubestock planting and facilitated natural regeneration to create a fully structured forest
- Create ground layer vegetation and provide habitat features (bushrock and hollow logs) for terrestrial fauna
- 3. Reduce weed cover to less than 5% of the projected cover of each stratum after 2 years
- 4. Removal of all Biosecurity Act listed weeds after 3 years

4.2.4 Required Works

4.2.4.1 Natural Regeneration

Natural regeneration with desirable species is occurring throughout some areas of the regeneration area, especially in areas directly adjacent to intact forest or with existing canopy trees. It was noted that a number of Scribbly Gum saplings are regenerating along with occasional shrub species (Photo 5). These areas are recommended to be allowed to regenerate naturally, with weed control used to remove and control invasive weeds that also are likely to regenerate once grazing has ceased.





Photo 5: Natural regeneration occurring on edge of forested area

4.2.4.2 Tubestock Planting

Tubestock planting is proposed to commence in Year 1 of the VMP and will involve the planting of canopy trees and understorey trees/shrubs to eventually create a fully structured forest in the 3000m² regeneration planting area. Planting of groundcover species is unlikely to be required as native grasses, sedges and herbs are likely to regenerate naturally.

Canopy trees are to be planted at a density of one tree per 100m² (10x10m spacing) to ensure a mature canopy is achieved. Mid storey trees and shrubs can be planted at a higher density to fill in gaps between the canopy trees. Recommended planting densities are 1 plant/50m² (7x7 spacing) for mid storey and shrubs.

Within the 3000m² planting area, this spacing will require the following number of plants:

- 30 canopy trees
- 60 understorey trees and shrubs

Tubestock is to be sourced locally (e.g. Port Macquarie Landcare Nursery, Bluedale Wholesale Nursery) and be comprised of the species listed in Table 4. Planting specifications are provided in the following section.



Table 4: Recommended species for planting

Common Name	Scientific Name	Suggested Ratio		
Canopy Trees				
Scribbly Gum	Eucalyptus signata	50%		
Red Bloodwood	Corymbia gummifera	20%		
Needlebark Stringybark	Eucalyptus planchoniana	10%		
Tallowwood	Eucalyptus microcorys	20%		
U	Understorey Trees and Shrubs			
Cherry Ballart	Exocarpus cupressiformis	10%		
Forest Oak	Allocasuarina torulosa	25%		
Hickory Wattle	Acacia binervata	10%		
Hard Quandong	Elaeocarpus obovatus	10%		
Willow Bottlebrush	Callistemon salignus	20%		
Coastal Banksia	Banksia integrifolia	25%		

4.2.4.2.1 Planting Specifications

The following provides details on recommended tubestock planting methods:

- 90 replacement trees (comprising species listed in table 4) will be planted at 10m spacing for canopy trees and 7m spacing for understorey trees and shrubs.
- Plantings are to be protected with tree guards.
- Remove any and all weed species including exotic grasses using environmentally acceptable methods (i.e. hand pulling and selective herbicide spraying) from nominated planting areas
- Fertiliser and water crystals are to be used for each plant
- Each tree is to be provided with a mulch bed of native materials with a minimum 1m radius and 100m depth. This mulch material is recommended to be sourced from chipping of trees removed for the proposal (as per condition D23 of the issued consent).
- Water at planting and regularly (at least once per month or if insufficient rain every 2 weeks) for first 3 months
- The plantings are required to have a 100% survival rate, with replacements of any failures made within 3 months using the same size or larger tree.
- Slashing is to cease in the revegetation area once trees are planted

4.2.4.3 Salvage and Placement of Bush Rock and Habitat Logs

During clearing operations within the subdivision footprint, it is recommended that hollow limbs and logs are salvaged and placed within management Zone 1 as ground habitat for fauna.



If any bush rock requires removal for the subdivision or fire trail, this is also recommend to be salvaged and relocated to Zone 1.

Salvage and relocation of habitat logs and hollow limbs is to be undertaken by an arborist under the supervision of a qualified ecologist. Placement of bush rock in Zone 1 is to be supervised by an ecologist.

4.2.4.4 Weed Control

Weed cover within Management Zone 1 is currently moderate to high. Weed control will be required to treat infestations of exotic weeds to achieve the weed cover objectives and reduce competition with tubestock plantings. An initial control event plus regular follow-up control sessions over 5 years will be required to adequately treat weeds. Recommended timing for weed control is provided in the implementation plan.

High volume spraying should be limited to weed densities of 75% cover or more, with preference given to manual removal and regeneration techniques. A splatter gun may also be used to treat high density Lantana.

4.2.4.4.1 Treatment Methods

The following table describes recognised weed treatment methods that may be used on the site.

Table 5: Weed control techniques

Weed Treatment Techniques		
Physical Removal	The plant is grasped firmly at the base close to the soil surface and gently but firmly pulled from the soil ensuring that tap roots or tubers are removed to reduce the potential for regrowth. Herbaceous weeds and grasses are most effectively treated using this method. Once the weed is removed it is left exposed on the soil where it dies. No vegetative reproducing species are treated in this manner. If one of these species is removed it is placed in a heavy duty plastic bag and disposed of through appropriate council waste disposal.	
	This method is employed when working in close proximity with native species when chemical treatments are unacceptable due to the risk of spray drift. The hand removal method allows for the selective clearing of weeds within rehabilitation plantings and natural rehabilitation areas. This treatment is often employed during rain when chemical treatments are ineffective.	
	A knapsack spray unit or vehicle mounted unit is used to apply a water diluted glyphosate and dye mixture (1L:100L) over all the foliage of a plant. It is essential that as much of the foliage is covered as possible to ensure an effective treatment.	
Foliar spraying	This method kills the invasive species but leaves the majority of the plant standing. This is effective when treating stands of Lantana (Lantana camara) or other woody weeds. The standing remains of these weeds provide shelter for establishing native species by reducing the effects of adverse weather conditions and preventing physical damage by reducing access to the area.	
Cut scrape and paint (CSP)	Cut and scrape the bark of vines and saplings along one side only for up to 100 cm if possible before continuing on the other side moving up the stem leaving a 5 cm gap between each scrape. Within 7 seconds of scraping the stem a spray or applicator bottle is used to administer a concentrated herbicide solution (1:1) to the sap wood. Various vine and creeper species can be treated using this method with the vines	
	being left to die in the tree canopy before being pulled down and removed if required. This method involves the folling of the entire plant with the remaining rest steek and	
Cut stump	This method involves the felling of the entire plant with the remaining root stock and stump treated with herbicide. The plant is felled at ground level to avoid potential trip or puncture wound hazards to individuals moving within the site. A concentrated herbicide solution is applied immediately to the exposed surface at a ratio of generally	



Weed Treatment Techniques			
	1:1 with water. The remainder of the plant should die in place if treatment has been effective. Stumps can be left in place to reduce erosion and maintain soil structure and stability; or be removed once the plant is dead.		
Quick spray	The quick spray unit is an effective spray method used for large areas requiring extensive foliar spray application. The unit consists of a 600L tank of mixed solution at rate of 1:100 (glyphosate to water) that is applied manually from a high distribution spray gun connected to a petrol driven water pump producing a high pressure spray extending 10m+ with adjustable delivery. The increased herbicide coverage area provided by this method makes it preferable for the treatment of grasses and broadleaf weed species.		
Skirting	Vine stems are cut using loppers or secateurs approximately 30cm from the ground. These stems are treated using the CSP method. The remainder of the vine is left in place and will die in the tree or shrub canopy. Some species of vine support aerial tubers which may need to be collected at the time of treatment to prevent further spread.		
Splatter gun	A splatter gun is a modified spray unit which produces a solid stream of large droplets of concentrated herbicide mixture. This unit can be sprayed 6-10 metres from the area which requires treatment. Due to the concentrated nature of the herbicide (1:9) only a small fraction of the total foliage of each plant requires treatment to provide an effective result. This method is employed in dense woody weed thickets and other areas of limited access.		
Spot spraying	Spot spraying is conducted using a low pressure spray 15 Litre knapsack. Each knapsack is only filled to 10 Litres to comply with WHS weight recommendations. A water diluted glyphosate and dye mixture (1:100) in short bursts is applied to small herbaceous plants and juvenile woody weeds. Regrowth areas where isolated plants have established are best treated using this method.		

The following table below contains the recommended weed control techniques specific to the Biosecurity Act listed weed species recorded on site.

Table 6: Recommended weed control techniques for Biosecurity Act listed weeds on site

(Source: NSW Dept. of Primary Industries: Noxious and environmental weed control handbook)

Weed Species	Chemical and Concentration	
Lantana (<i>Lantana camara</i>)	Glyphosate360g 100 ml/10 L water foliar spray Glyphosate 360g 9:1 Splatter Gun	 Overall foliar spray with chemical or; Basal bark or Cut stump (Glyphosate undiluted) Thoroughly wet all foliage and stems. Avoid summer stress Slashing or manual removal can be effective Splatter Gun application
Blackberry (<i>Rubus fruticosus</i> aggregate)	300g/L Triclopyr, 100g/L Picloram, 8g/L Aminopyralid at 350ml or 500ml/ 100l of water depending on infestation characteristics.	Foliar spraySlashing of juvenile bushes



Bitou Bush (Chrysanthemoides monilifera subsp. rotundata)	Glyphosate 5 or 10 ml/ 1 L water	 Handgun or knapsack. Spray to wet all foliage. Apply at peak flowering to actively growing bushes during winter. Do not apply during periods of drought stress Use the higher rate for plants over 1.5m Hand removal of young plants
Coolatai Grass	Glyphosate 360g/L Rate: 200 mL glyphosate plus 20 mL flupropanate per 10 L of water	Spot spray application between July and October
Fireweed (Senecio madagascariensis)	Metsulfuron-methyl 600 g/kg (Brush-off®) 10 g in 100 L of water Spot spray application	 Spot spray application. Hand weeding - Pull out individual plants in small, isolated patches or sensitive environmental areas.

4.2.4.4.2 Target Areas

The locations of weed infestations over the site are shown in Figure 6. These areas are to be targeted by a bush regeneration contractor using the weed control methods outlined in Table 5 and 6. Individual plants or small infestations are recommended to be hand-pulled where possible to minimise the use of herbicides.

Any weed infestations that arise throughout the life of the VMP are to be treated using appropriate control methods.

4.2.4.4.3 Weed Disposal

Weeds removed from the site are to be bagged and taken to a licenced landfill facility.

All weed material encountered during clearing/thinning within the clearing footprint and APZ is to be separated from native vegetation and taken to a licensed landfill facility for disposal. Weeds are not to be mulched with native vegetation or re-spread over the site. Burying of weeds on site will not be permitted.

Any topsoil that is infested with weeds and/or weed seed is to be disposed of at a landfill and not stockpiled or used on site.

4.2.4.5 Removal of Rubbish and Construction Waste

There are several piles of rubbish and construction waste within the north-western corner of Lot 800 (Photo 6). These should be removed and taken to landfill.







4.3 Management Zone 2 – APZ and Fire Trail

4.3.1 Description

This zone is 1.1ha in area and comprises the 12m wide APZ for precinct C and D of the subdivision, as well as the adjoining Fire trail/access road and APZ for Lot 800. Engineering plans for the fire trail have been prepared by King and Campbell. This zone contains scattered mature eucalypts with no understorey or shrub layer and is currently grazed to supress regrowth.

The zone will be subject to APZ maintenance to maintain low fuel load. As it forms the interface between the subdivision and the Lot 800 conservation area, it will need to be fenced and posted with signage.

4.3.2 Management Issues

This zone occurs on the boundary of the subdivision footprint and the conservation zone and there is potential for adjoining residents to dump garden clippings or extend their backyards into this zone.

It also forms the Asset Protection Zone for the subdivision and will need to be continually managed to supress regrowth and keep fuel loads low.

4.3.3 Zone Objectives

- 1. Significant trees selectively retained and protected in APZ
- 2. Fuel loads maintained at low levels to reduce fire risk



- 3. Human access controlled via fencing and signage
- 4. No significant weed infestations and weed cover in the groundcover reduced to <5%

4.3.4 Required Works

4.3.4.1 Retention of Habitat Features in APZ

Vegetation removal required for the Asset Protection Zone must be to the minimum extent necessary and must avoid removing any hollow-bearing trees. Tree canopy cover within the inner protection area should be thinned to approximately 15% cover and 30% cover in the outer protection area.

Canopy separation/thinning requirements are to be achieved via pruning limbs where possible (to avoid entire tree removal), and removing understorey vegetation and non-hollow-bearing trees.

Trees to be retained are to be clearly marked with distinctive temporary taping by an ecologist. An ecologist must be present when clearing/thinning is taking place to ensure tree retention procedures are adhered to.

4.3.4.2 APZ Management, Slashing and Fuel Reduction

Regular slashing and maintenance of the APZ and fire trail will be required to prevent regrowth and dense groundcover. Grass should be kept mown to a height of less than 100mm (PBP 2019). Stick raking and collection of debris may also be required as Eucalypts in adjoining areas will continually drop leaves and branches.

The management of the site's APZ will also be guided by Planning for Bushfire Protection 2019.

4.3.4.3 Restriction of Access - Fencing and Signage

Access to the conservation area within Lot 800 is to be restricted to bush regenerators, Rural Fire Service and Ecologists carrying out monitoring.

Residents in adjoining residential land and the public are to be excluded from the conservation area via fencing and signage. Horses are likely to remain on the subject land for a number of years until it is fully developed and these are to be excluded from Lot 800.

Fencing is recommended to comprise simple post and rail or post and plain wire. The fencing must be designed to allow free fauna access and not pose a risk of entanglement. Dense plantings of groundcover sedges such as Lomandra and Carex may also be used to deter human access.

Fencing between Lot 800 and future residential areas will only need to be temporary (e.g. star picket and wire) until new Lots are established and permanent boundary fencing such as lapped and capped timber fencing or Colorbond will be constructed.

Locked gates will be required at designated entry/exit points to allow for personnel and RFS to access Lot 800.

Signs are to be erected at four points along the fence line. Suggested content for the signs is as follows:

Conservation Area
No access permitted
No dumping of garden waste
Please report any breaches to Kempsey Shire Council



The recommended location of fencing and signs is shown in Figure 8.

4.3.4.4 Weed Control

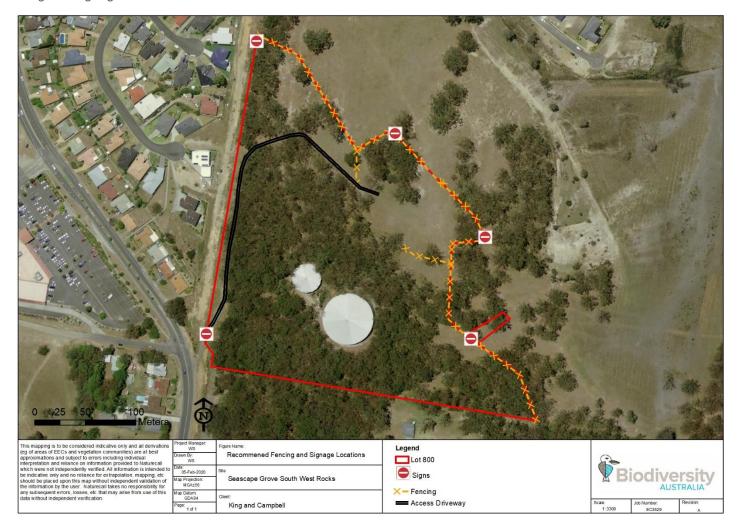
Weed control will be required to remove any existing weed infestations within this zone. Effective control and follow-up maintenance within this area will reduce the potential for weed spread into the adjoining conservation areas.

Weed cover is currently at a low to moderate level and primarily consists of exotic grasses and pasture weeds. It is likely to take some time for these species to be removed and replaced with native groundcover species.

The most effective weed control methods are likely to comprise manual removal for scattered herbs and shrubs (eg Fireweed, Lantana) and spot spraying with suitable herbicide for pasture weeds and grasses.



Figure 8: Fencing and signage





4.4 Management Zone 3 – Intact Forest

4.4.1 Description

This zone comprises the areas of existing dry sclerophyll forest which occur in a natural state. This covers 3.3ha and comprises more than half of the conservation area on Lot 800. Two water reservoirs and an access road are located within this zone which do not form part of Lot 800 or the VMP. The vegetation has some scattered weeds throughout including Lantana and Camphor Laurel.

This zone will require less management than the other management zones and will only require a minor level of weed control. Fauna nesting boxes are recommended to be installed on trees within this zone. Fencing and restriction of access will also be required.

4.4.2 Management Issues

This zone has a 1627m perimeter and adjoins a variety of land uses. There is high potential for unauthorised access and creation of trails, dumping of rubbish etc. Access to the zone will need to be controlled via signage and fencing.

This zone has some existing weed issues. There are several patches of Lantana present as well as occasional Camphor Laurel saplings.

Given the large perimeter, this zone also has potential to be impacted by edge effects such as light, wind and weeds. Ongoing monitoring will identify the need for any edge treatments such as additional plantings or screening.

4.4.3 Zone Objectives

- 1. Dry sclerophyll forest community maintained in a natural state
- 2. Reduce weed cover to less than 5% of the projected cover of each stratum after two years
- 3. Removal of all Biosecurity Act listed weeds after 3 years
- 4. Human access controlled via fencing/gates and signage

4.4.4 Required Works

4.4.4.1 Fauna Nesting Boxes

The instillation of fauna nesting boxes to offset the loss of tree hollows are a requirement of the subdivision approval. The required nest boxes are recommended to be installed on mature trees within this zone.

The ecological report and development plans associated with the approved Major Projects have identified six trees containing hollows as being approved for removal. According to table 11 of the Darkheart 2007 report, these trees contain approximately 16 hollows, however the exact number is unclear as many of the hollow entrances are not visible from the ground.

The following guidelines are provided to meet nest box requirements:

- One nest box should be provided per hollow lost as part of the development. The number of hollows within the six identified hollow-bearing trees is to be quantified by an ecologist during clearing operations once the trees have been felled.
- A variety of nest box types are recommended to target a range of fauna, especially threatened species. The size and type of hollows lost as part of the development should also be a



consideration in nest box type. Next boxes are recommended to include those specifically designed for the Squirrel Glider, Brushtailed Phascogale, Microbats, Little Lorikeet and Powerful Owl.

- Nest boxes are to be installed prior to removal of hollow-bearing trees
- Nest boxes are to be installed by a qualified ecologist or an arborist under the supervision of and ecologist
- Nest boxes are to use plastic coated wire to reduce impact on host trees
- Boxes should be constructed of ACQ treated timber and finished with a non-toxic stain/varnish for longevity
- Boxes should be installed on mature trees which do not contain hollows at a height of 10m for owls and 4-6m for other species.
- Boxes are to be inspected annually to document fauna occupation and if there are any maintenance issues
- If European bees or other feral species (e.g. Indian Mynah) are recorded using nest boxes, they
 are to be removed

4.4.4.2 Fencing and Access

Fencing around the western and southern perimeter of Lot 800 will need to be constructed where required and maintained. Access should be restricted to personnel accessing the water storage reservoir and ecologists/bush regenerators undertaking environmental works.

4.4.4.3 Weed Control

Weed control will be required to remove any existing weed infestations within this zone. Effective control and follow-up maintenance within this area will reduce the potential for weed spread.

Weed cover is currently at a low level and primarily consists of patches of Lantana. Hand pulling is likely to be the most effective control method for this zone. Cut and paint methods may be needed for Camphor Laurel saplings if they are too large to be removed by hand.

4.5 Other VMP Requirements

4.5.1 Qualifications of Bush Regeneration Contractors

All bush regeneration works involving tree planting, weed control and monitoring is to be supervised by an appropriately qualified and experienced person with, as a minimum, qualifications of TAFE Certificate III in Bush Regeneration or Conservation and Land Management – Natural Area Restoration and 4 years bush regeneration experience.

Monitoring works described in Section 6 are to be undertaken by a qualified ecologist with a degree in Environmental Science/Natural Resource management or similar and at least 5 years' experience in the industry. This also applies to installation of nest boxes and supervision of bush rock and habitat log placement.

4.5.2 Ecological Fire Regime

The VMP area contains a dry sclerophyll forest which is bushfire prone. The Scribbly Gums and Blackbutt in this community regularly shed bark and limbs which leads to high fuel load accumulations of up to 10t/ha within 2-5 years of a low intensity fire (Kenny et al. 2004).



The previous fire history of the site is not known, however there is no evidence of a recent fire on the site. The ecological report for the development stated that the property appeared to not have been burnt for at least 10 years at the time of the surveys in 2007 (Darkheart 2007). It is likely that the site has not been burnt since these surveys were carried out.

The Guidelines for Ecologically Sustainable Fire Management (Kenny et al. 2004) provide fire interval guidelines for various broad vegetation types. For Dry Sclerophyll Forest (shrubby) vegetation, the recommended interval is 7-30 years, with the higher end of this range more desirable.

The vegetation within zones 1 and 3 should be managed to exclude bushfire. It is recommended that low intensity hazard reduction burns are undertaken in consultation with NSW Rural Fire Service as required depending on bushfire risk and fuel loads. This will reduce leaf litter accumulations and the risk of hot destructive fires.

4.5.3 Fauna Crossings

Burrawong Drive is the main road through the subdivision and runs off Belle O'Connor Street in the north-west of the subdivision. It is currently only partially developed, but will eventually extend southwards and run between the subdivision area and Lot 800.

A large number of mature trees will be retained within precinct D of the subdivision footprint. Once Burrawong Drive is developed it will bisect these trees from retained habitat within Lot 800 and the new road will pose a risk of road strike to fauna, especially Koalas, possums and small terrestrial mammals. Figure 9 below shows the areas of retained trees and likely location of fauna movements.

Red circles shown areas of retained trees and arrows depict likely fauna crossing points

| Part | P

Figure 9: Fauna crossing points

To mitigate the risk of vehicle strike on fauna, several measures are proposed. The most effective method would consist of a fauna underpass in the form of a large concrete box culvert, ideally with dimensions of 3x3 metres (VicRoads 2012). This may also be used as part of a stormwater drainage system, however should not retain water after heavy rain. The underpass can be fitted with logs and railings to encourage use by fauna.

Regardless of whether a fauna underpass is constructed, traffic calming devices and fauna crossing signage is to be installed on Burrawong Drive. Traffic calming methods may include speed bumps, rumble strips and road narrowing. Signage should include roadside signs indicating a wildlife crossing point and reduced speed limit.

Signage and traffic calming devices are recommended to be installed on Burrawong Drive between Lots 516 and 518.

4.5.4 Feral Animal Control

No feral animals have been previously recorded within the site during the subsequent ecological assessments. There is potential for feral predators such as the Fox and Feral Cat to occur. These species pose a significant risk to native fauna via predation and competition.

Domestic cats and dogs can also pose a risk of predation to native fauna, especially if they are not contained in dwellings and yards and are allowed to roam in bushland areas. Condition E2(f) requires a restriction as to user for Lot 800, prohibiting the ownership of cats or dogs, with the exception of assistance animals as defined by the *Companion Animals Act 1998*. In addition, Condition E2(a) requires the creation of a restriction as to user to be created over all lots within the development requiring cats to be confined indoors between sunset and sunrise. If enforced, these requirements would significantly reduce the risk of fauna predation from domestic animals.

The need for feral animal control is recommend to be determined through a baseline monitoring program. This would use a range of techniques such as Passive Infra-Red (PIR) trail cameras, scat and track surveys and spotlighting to record the presence and abundance of any feral species present.

If the feral animal monitoring surveys determine there is a population of feral species present, this would trigger the requirement for feral animal control. Depending on the target species, control methods may include shooting, baiting and trapping by a qualified and licenced vertebrate pest controller.

4.5.5 Hygiene Protocols

4.5.5.1 Exclusion Zones

During clearing and construction works, exclusion zones are to be established around areas of retained vegetation within Lot 800. This is to be achieved via temporary fencing and signage.

Vehicles and machinery are to be restricted to designated tracks, trails and parking areas to minimise the spread of weeds over the site.

4.5.5.2 Imported Fill

Any imported materials including topsoil, fill or mulch products are to be certified as weed free.

4.5.5.3 Vehicle and Machinery Washdown

Under the NSW Biosecurity Act 2015, all persons have an obligation to take reasonable and practical measures to prevent or minimise the biosecurity risks associated with their activities or dealings with the carriers of invasive plants. All types of vehicles and machinery are capable of being carriers of



invasive plants and plant diseases. All machinery and vehicles entering the site are to be free of mud, soil and organic matter before entering.

To reduce the potential for spread of weeds, and pathogens including Myrtle Rush and Phytopthora, a washdown station with high pressure cleaners is to be established at the entrance to the site. This is to be used by all vehicles and machinery that are required to work in or near areas of native vegetation on the site. Machinery/vehicles leaving the site must also be washed down. The washdown station is to be clearly posted and include instructional signage. Wash down water must not be allowed to drain into the site.

The washdown station must include a spray bottle for disinfecting footwear of all persons entering the construction site. This should contain a solution of 70% ethanol or methylated spirits in 30% water.

Clearing and construction contractors are to be inducted on Phytopthora and Myrtle Rust identification and management.

Should any plant diseases or pathogens be identified on the site during works, an exclusion zone must be established around the contaminated area to prevent further spread. Hygiene protocols are to be reviewed and additional measures are to be implemented if required.



5. Implementation Plan

The following table provides the implementation plan for the VMP. Its details the required actions along with responsibilities and timing.

Table 7: Implementation plan

Mgt Zone	Requirement	Actions	Timing	Responsibility
	Natural Regeneration	Delineate natural regeneration area from planting area	Year 1	Surveyor
		Exclude grazing and slashing	Upon commencement of VMP	Landowner/project manager
	Tubestock planting	Offset planting area surveyed and pegged.	Year 1	Surveyor
1		Out-planting of tubestock: Holes dug with tree planter or tractor mounted auger Fertiliser and water crystals used for each plant Tree guards placed around each plant All plants watered immediately after planting	Year 1	Bush regeneration/horticultural contractor
		Plants watered every month in dry weather until established.	Year 1	Bush regeneration/horticultural contractor
		Any tubestock losses replaced.	Year 2-5	Bush regeneration contractor
	Hollow and bushrock	Salvage of hollow logs/limbs and bushrock	During clearing	Clearing contractor/ecologist
	salvage	Placement of salvaged rocks/logs in conservation area	During clearing	Clearing or civil contractor under supervision of ecologist
	Weed Control	Initial weed control	Year 1 prior to tubestock planting	Bush regeneration contractor
		Follow-up weed control	6 monthly intervals for 5 years	Bush regeneration contractor

VEGETATION MANAGEMENT PLAN FOR SEASCAPE GROVE | SOUTH WEST ROCKS | FEBRUARY 2020

	Waste Removal	Removal of rubbish and construction waste	Year 1	Civil contractor
	Selective retention of	Habitat feature mark-up	Prior to clearing	Ecologist
	habitat features in APZ	Contractor briefing and clearing supervision, protection of retained trees during clearing	Prior to clearing	Ecologist/clearing contractor
	APZ maintenance	Slashing and collection of sticks and debris	Ongoing at 3 monthly intervals	Contractor
	Fencing and signage	Survey and pegging of fence lines	Year 1	Surveyor
2		Construction of fence	Year 1	Fencing contractor
		Instillation of signage at specified locations	Year 1	Fencing contractor
		Maintenance of fencing	Year 2- ongoing	Fencing contractor
	Weed Control	Initial weed control	Year 1	Bush regeneration contractor
		Follow-up weed control	6 monthly intervals for 5 years	Bush regeneration contractor
3	Fauna nesting boxes	Source required number and type of nest boxes	Prior to removal of hollow-bearing trees	Ecologist
		Install nest boxes on site	Prior to removal of hollow-bearing trees	Ecologist
		Monitoring of nest boxes	Annually for 5 years in conjunction with annual monitoring	Ecologist
	Fencing and access	Survey and pegging of fence lines	Year 1	Surveyor
		Construction of fence	Year 1	Fencing contractor
	Weed Control	Initial weed control	Year 1	Bush regeneration contractor
		Follow-up weed control	6 monthly intervals for 5 years	Bush regeneration contractor
All	Fire management	Hazard reduction burns	As required to manage fuel loads	Rural Fire service



VEGETATION MANAGEMENT PLAN FOR SEASCAPE GROVE | SOUTH WEST ROCKS | FEBRUARY 2020

Approved subdivision	Fauna crossings	Incorporation of fauna crossings into road design	Detailed subdivision design phase	Engineer
		Construction of fauna crossings	Construction phase – precinct D	Civil contractor
All	Feral animals	Control of feral animals if determined to be required by monitoring	As required	Licenced vertebrate pest controller
All	Brief Constituction Dersonnel		During clearing and construction phase	Ecologist/clearing and civil contractors
All			In conjunction with first monitoring event	Ecologist
All	Monitoring and reporting	Vegetation monitoring survey Photo point monitoring VMP compliance inspections	Annually until all works completed and objectives achieved	Ecologist
		Monitoring report	Annually until all works completed and objectives achieved	Ecologist
All	Protection of conservation area	VMP registered on title of Lot 800	Prior to issue of subdivision certificates	Planner/Conveyancer
		Restriction as to user for Lot 800 prohibiting ownership of cats or dogs	Prior to issue of subdivision certificates	Planner/Conveyancer
		Positive covenant on Lot 800 requiring that the land within Lot 800 is to be managed in perpetuity for conservation and in accordance with the VMP	Prior to issue of subdivision certificates	Planner/Conveyancer



Monitoring, Costing Reporting and Compliance

6.1 Monitoring Requirements

Monitoring will be required to be undertaken annually for at least 5 years and may need to continue depending on the success of regeneration. Monitoring will no longer be required when all works have been completed and Council deems that the VMP provisions have been successfully implemented.

6.1.1 Pest Monitoring

A baseline pest monitoring survey is recommended to be undertaken in conjunction with the first monitoring event. This would use a range of techniques such as Passive Infra-Red (PIR) trail cameras, scat and track surveys and spotlighting to record the presence and abundance of any feral species present.

If the feral animal monitoring surveys determine there is a population of feral species present, this would trigger the requirement for feral animal control.

6.1.2 Regeneration and Weed Monitoring

To monitor the success of regeneration within the conservation zone, a number of permanent vegetation monitoring points are recommended to be established. This will both monitor the success of regeneration over time and highlight any issues. Vegetation data collected in the field is to be compared to published benchmarks for each community monitored. Points are to be marked with a star picked and recorded via GPS.

Recommended locations for permanent monitoring points are shown in Figure 10. Actual locations are to be established during the first monitoring event. These points should be monitored annually by a qualified ecologist.

6.1.3 Photo Point Monitoring

Photo points are recommended to be established throughout the conservation lands to monitor the progress of regeneration. Photo points should be established at each permanent vegetation monitoring point as well as supplementary locations throughout the subject land. Recommended locations are shown in Figure 10.

The photos are to be taken at a consistent height and direction so as to allow comparison to previous years.

6.1.4 Nest Box Monitoring

All nest boxes installed within Lot 800 are to be monitored annually by an ecologist. Monitoring will consist of inspecting each box, ideally with an inspection camera, to determine if they are being utilised by fauna. Any maintenance issues with the nest boxes and follow-up actions required shall be noted.



6.1.5 VMP Compliance and Management Issues

General site inspections are to be undertaken to note any issues in the VMP area including:

- Dumping of rubbish or garden clippings
- Unauthorised access
- Evidence of feral species and need for feral animal control
- Compliance with actions and environmental works specified in the VMP



Legend Lot 800 Vegetation Monitoring and Photo Points Supplementary Photo Points Lot 800 Duilding Envelope Zone 1 - Planting Zone 1 - Natural Regeneration Zone 2 - Access Road/Fire Trail Zone 2 - Subdivision and Lot 800 APZ Zone 3 - Intact Forest This mapping is to be considered indicalive only and all derivations (eg of areas of EECs and vegetation communities) are at best approximations and subject to errors including individual interpretation and reliance on information provided to Naturecall which were not independently verified. All information is intended to be indicalive only and no reliance for extrapolation, mapping, etc should be placed upon this map without independent validation of the information by the user. Naturecall takes no responsibility for any subsequent errors, losses, etc that may arise from use of this data without independent verification. Recommended Monitoring Locations ate: 05-Feb-2020 Seascape Grove South West Rocks ap Projection MGAz56 0 25 50 100 ap Datum: GDA94 Meters King and Campbell

Figure 10: Recommended location of regeneration monitoring and photo points

6.2 Reporting Requirements

Monitoring reports will be required annually for at least 5 years and may need to continue depending on the success of regeneration. These will essentially address/detail the following matters where relevant as follows:

- Details on success of tubestock planting and natural regeneration, including vegetation assessment results and photo points
- Status of weeds and recommendations for further control where required
- Details on nest box inspections
- Details on any feral predator sightings, weed infestations, and any controls
- Details of any management or maintenance issues that need to be addressed
- Details on APZ maintenance
- Details on compliance/implementation of other measures detailed in this VMP to date eg fencing, tree protection and retention and recommendations for compliance enforcement.
- Recommendations for improvements that will have to be implemented (with appropriate time lines to allow compliance). Implementation of these measures is to be detailed in the subsequent reports.

Appendix 1 contains a proforma monitoring sheet which has been adapted from the Biodiversity Assessment Method (BAM) field plot. These or similar are to be used at yearly monitoring intervals to undertake an assessment of the implementation of the planting and habitat management measures specified in this VMP.

6.3 Protection of the Offset Area

The conservation area within Lot 800 will be afforded permanent protection via a title restriction as per the provisions of Condition E2 of the issued consent.

Condition E2(g) requires a positive covenant requiring that the land on 800 (with the exception of land marked as existing cleared area, between the two access trails for regeneration maintenance) is to be managed in perpetuity by the owner of the lot for conservation and in accordance with the approved VMP. Management of Lot 800 must include maintenance of fencing and signage in perpetuity.

6.4 Compliance

The implementation plan listed in this document sets out the specific actions required to be undertaken by responsible authorities to implement the recommendations of the VMP; responsible authorities; and thresholds for completions to monitor implementation of the VMP.

Annual monitoring over a minimum of 5 years will also ensure plantings are effectively established and require little maintenance after this period. Compliance check will be undertaken with each monitoring event and results, including the need for follow-up action or contingency measures, will be detailed in the annual reports.

The VMP will be deemed successful if monitoring determines that the objectives stated in section 3.0 are achieved as per the listed specified performance criteria.



6.5 Provisional VMP Costing

An estimate of the costing for carrying out the regeneration works is detailed in the following table:

Table 8: Provisional costing for planting and weed control

Item/ Activity	Time/ Labour	Materials	Cost \$
Planting costs		90 plants @ \$2.50 ea	\$225.00
Tree guards		90 small plastic guards	\$60.00
Stakes		270 stakes	\$70.00
Planting	12 hrs @ \$180/hr (2 people)		\$2160.00
Fertiliser/ water crystals		Fertiliser + crystals for 90 plants	\$50.00
Initial weed removal and spraying	8hrs @ \$180 p/h (2 people)	Herbicide	\$1140.00
Maintenance/watering as required	4 hrs every month for 1 year = 48 hrs @ \$90 p/h		\$4320.00
Weed control	4hrs every 6 months for 5 years = 40hrs @ \$90 p/h	Herbicide	\$3600.00
		Total Cost (ex GST)	\$11,625.00



7. Conclusion

This Vegetation Management Plan has been prepared to guide future management action, restoration activities and monitoring across the conservation area within Lot 800. It has been prepared as per the requirement of Condition B21 of the major project approval for Seascape Grove subdivision at South West Rocks.

A number of management actions have been listed which aim to achieve positive environmental outcomes and the listed performance criteria for the conservation area. These include tubestock planting, weed control, instillation of nest boxes, fencing and provision of fauna crossings. An implementation plan has been prepared to guide the timing and completion of the required actions.

Implementation of these actions will allow potential threats to the conservation areas to be effectively managed. Ongoing monitoring and reporting will provide feedback as to the success of the management actions and whether and changes in management techniques are required.



8. References

Atkinson, G. (1999). Soil Landscapes of the Kempsey - Korogoro Point 1:100,000 Sheet map and report. NSW Department of Land and Water Conservation, Sydney.

Darkheart Eco-Consultancy (2007) Statutory Ecological Impact Assessments of Proposed Residential Subdivision of Lot 124, DP 1097510, Belle O'Connor St, South West Rocks. Darkheart Eco-Consultancy, Kew.

Kenny, B., Sutherland, E., Tasker, E. and Bradstock, R. (2012). Guidelines for Ecologically Sustainable Fire Management. NSW National Parks and Wildlife Service, Hurstville, NSW.

VicRoads (2012). Fauna Sensitive Road Design Guidelines. VicRoads, Cobram, Victoria.



Appendix 1 – Monitoring Proforma



Vegetation Field Survey Form (20x20m Plot)



Project Name:	Date:		Plot #:	
Project Description:				
Surveyors:		Position of start marker in plot: e.g.		e.g. NW corner
Vegetation Community:				
Vegetation Condition:		EEC: Y / N	1	
Record easting and northing from the starting plot marker.				

January States

Attribute (20x	Attribute (20x20m plot)		
	Trees		
	Shrubs		
Count of Native	Grasses etc.		
Richness	Forbs		
	Ferns		
	Other		
	Trees		
Sum of Cover of	Shrubs		
native vascular	Grasses etc.		
plants by	Forbs		
growth form group	Ferns		
	Other		
Native Specie			
Weed Species			
High Threat V	Veed Cover %		

Plot Attributes	None (tick)	Minimal (tick)	Major (tick)	Comments
Pollution, litter				
Soil erosion				
Adjacent weeds (likely to impact rehab area)				
Plant pests or diseases				
Feral animals				
Clearing				
Grazing				
Fire damage				
Storm damage				
	Good (tick)	Fair (tick)	Poor (tick)	Comments
Tree hollows				
Natural recruitment				
Macrofauna use (scats, tracks)				
Microfauna use (insects, lizards)				
Overall habitat value				

Vegetation Structure

Strata	Form	Height range	Cover	Species 1	Species 2	Species 3
Emergent						
Canopy						
Midstory 1						
Midstory 2						
Shrub						
Ground						

Form Key - Tree, Fern, Shrub, Sedge, Forb, Vine, Grass

Additional Notes:		

Survey Name:	Date:
Surveyors:	Plot:



#	GF Code	Species Name	N, E or HTE	Cover	Abund	Dominant top 3 in each stra.
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						_
13						-
14						
15 16						
17						
18						
19 20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						
33						
34						
35						
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						
ovor:	_	1 2 3 10 15 20 25 100% (foliage cover) Note: 0.1% cover represents an area of approx. 63 v				

SEASCAPE GROVE ESTATE ACCESS TRAILS OF PROPOSED LOT 800 WITHIN LOT 332 DP1220901

CONSTRUCTION DOCUMENTATION

Job No. 5268

JANUARY 2020

MP 07_0129

DRAWING SCHEDULE

N	D. DRAWING TITLE	REVISION
01.	LOT 800 ACCESS TRAIL 01 PLAN	D
02.	LOT 800 ACCESS TRAIL 02 PLAN	D
03.	LOT 800 ACCESS TRAIL LONGITUDINAL SECTIONS	D
04.	ACCESS TRAIL 01 CROSS SECTIONS CH 0.00 TO 70.00	A
05.	ACCESS TRAIL 01 CROSS SECTIONS CH 80.00 TO 150.00	Α
06.	ACCESS TRAIL 01 CROSS SECTIONS CH 160.00 TO 200.00	Α
07.	ACCESS TRAIL 02 CROSS SECTIONS CH 0.00 TO 70.00	Α
08.	ACCESS TRAIL 02 CROSS SECTIONS CH 80.00 TO 150.00	Α
09.	ACCESS TRAIL 02 CROSS SECTIONS CH 160.00 TO 180.00	A



LOCALITY PLAN

NOT TO SCALE

KEMPSEY SHIRE COUNCIL
Plans and Specifications are approved in relation to the

Certificate No. CB - 20 - 37

In accordance with the authority delegated by the General Manager

prepared for

WALDEL PARK PTY LTD

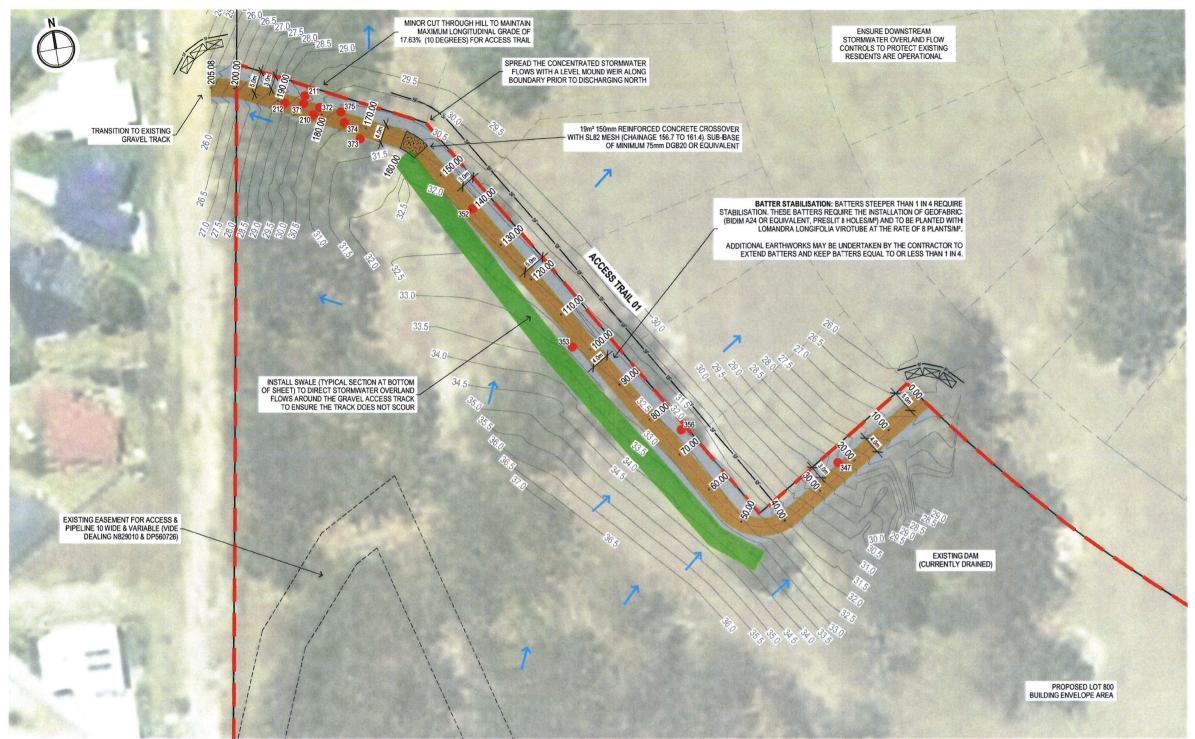
KING + CAMPBELL

1st Floor, Colonial Arcade 25-27 Hay Street Port Macquarie NSW 2444

> PO Box 243 Port Macquarie 2444

T: 02 6586 2555 F: 02 6583 4064

E: info@kingcampbell.com.au



EROSION CONTROL NOTES

ALL EROSION & SEDIMENTATION CONTROL MEASURES ARE TO BE CARRIED OUT IN ACCORDANCE WITH AUS-SPEC DESIGN SPEC D7 & CONSTRUCTION SPEC C211 [FROM "SOILS & CONSTRUCTION - VOL 1" (BLUE BOOK)]

2 2 2 4 4 4 4 4 4 2 2 2 2

ALL EROSION & SILTATION CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE

ALL FILLS ARE TO BE LEFT WITH A LIP AT THE TOP OF THE SLOPE AT THE END OF EACH DAY'S

ALL CUT & FILL SLOPES ARE TO BE SEEDED & MULCHED IMMEDIATELY UPON COMPLETION OF GRADING AND AFTER TOPSOILING

CONTRACTOR TO TAKE APPROPRIATE DUST SUPPRESSION MEASURES AS NECESSARY TO PREVENT DISTURBANCE TO ADJOINING RESIDENTS.

ALL AREAS PROPOSED TO HAVE EITHER TEMPORARY OR PERMANENT VEGETATION COVER ESTABLISHED, ARE TO BE TOPSOILED PRIOR TO CARRYING OUT THE REVEGETATION.

ALL DISTURBED AREAS TO BE STABILISED AND/OR REVEGETATED WITHIN 14 DAYS OF EARTHWORKS

	SPRING	SUMMER	AUTUMN/WINTE		
JAPANESE MILLET	15	kg/ha	5	kg/ha	
RYECORN/OATES	5	kg/ha	15	kg/ha	
COUCH GRASS	10	kg/ha	8	kg/h	
RHODES GRASS#	10	kg/ha	8	kg/h	
PERENNIAL RYEGRASS	5	kg/ha	10	kg/ha	
STARTER FERTILISER (SOWING)	300	kg/ha	300	kg/ha	
MAINTENANCE FERTILIS (FOLLOWING SPRING / A		kg/ha	100	kg/ha	

NOT USED ADJACENT TO BUSHLAND AREAS

EXISTING SURFACE 0.10

STORMWATER SWALE TYPICAL SECTION

ON	DIAGRAM SCALE
268	T
MP 07_0129	DRAWING TITLE:

— PROPOSED LOT 800 LOCATED WITHIN LOT 332 DP1220901

DESIGN CONTOURS (0.5m INTERVALS)

GRAVEL ACCESS TRACK CENTRELINE

PROPOSED 4M WIDE GRAVEL ACCESS TRAIL

EARTHWORKS BATTERS

PROPOSED SWALE TO DIVERT OVERLAND FLOWS EXISTING TREE (WITH TAG) TO BE REMOVED DUE TO FIRE TRAIL WORKS

EXISTING STORMWATER OVERLAND FLOWS DIRECTION

PROPOSED HAY BALE BARRIERS AND SEDIMENT FENCE DURING WORKS (MULCH BUNDS MAY BE UTILISED)

FUTURE APPROVED LOT LAYOUT

NOTES

LEGEND

- IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN CURRENT INFORMATION WITH REGARD TO ALL UNDERGROUND SERVICES & TO LOCATE THEM PRIOR TO COMMENCEMENT OF CONSTRUCTION.

- SUITABLE & UNSUITABLE STOCKPILES OF ANY EXCESS FILL WON DURING EXCAVATION IS TO BE RETAINED & STOCKPILED NEARBY UNDER THE DIRECTION OF THE SUPERINTENDENT

- DRAINAGE OF THE TRAILS DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE NSW RFS FIRE TRAIL DESIGN MANUAL, CONSTRUCTION AND MAINTENANCE MANUAL (AUGUST 2017)

- EASEMENT DETAILS TO BE PROVIDED AT THE SUBDIVISION CERTIFICATE STAGE AND CORRESPONDING REGISTRATION WITH LAND REGISTRY SERVICES

PLANNING FOR BUSH FIRE PROTECTION (2006)

ACCESS TRAIL (OR FIRE TRAILS) TO BE DESIGNED & CONSTRUCTED IN ACCORDANCE WITH THE CURRENTLY ADOPTED PLANNING FOR BUSH FIRE PROTECTION (NSW RURAL FIRE SERVICE, 2006), SECTION 4.1.3. STANDARDS FOR BUSH FIRE PROTECTION MEASURES FOR RESIDENTIAL AND RURAL RESIDENTIAL SUBDIVISIONS.

ACCESS (3) - FIRE TRAILS:

- TRAIL GRAVEL CARRIAGEWAY MINIMUM 4M WIDE WITH AN ADDITIONAL 1M WIDE STRIP ON EACH SIDE OF THE TRAIL (CLEAR OF BUSHES AND LONG GRASS)
- MAXIMUM GRADES FOR UNSEALED TRAILS DO NOT EXCEED 10 DEGREES (17.63 PERCENT)
- MINIMUM VERTICAL CLEARANCE OF 4M TO ANY OVERHANGING OBSTRUCTIONS, INCLUDING TREE BRANCHES
- TRAIL PASSING BAYS ARE DEEMED NOT TO BE REQUIRED
- SHORT CONSTRICTIONS IN THE ACCESS MAY BE ACCEPTED (NEAR). EXISTING TREES) WHERE THEY ARE NOT LESS THAN THE MINIMUM (3.5M), EXTEND FOR NO MORE THAN 30M AND WHERE THE OBSTRUCTION CANNOT BE REASONABLY AVOIDED OR REMOVED
- THE TRAILS MUST BE KEPT ACCESSIBLE TO FIRE FIGHTERS AND MAINTAINED IN A SERVICEABLE CONDITION BY THE OWNER OF LOT
- IF THE LOT 800 BOUNDARY IS FENCED THEN PROVISION MUST BE MADE FOR GATES AT THE FIRE TRAILS WHICH ARE LOCKED WITH A

Plans and Specifications are approved in relation to the

Certificate No. CB-20-37

In accordance with the authority delegated by the General Manager













King & Campbell Ptv Ltd A: PO Box 243 Port Macquarie NSW 244 F: 02 6583 4064

SCALE: 1:400 @ A1 (1:800 @ A3) © King & Campbell Pty Ltd

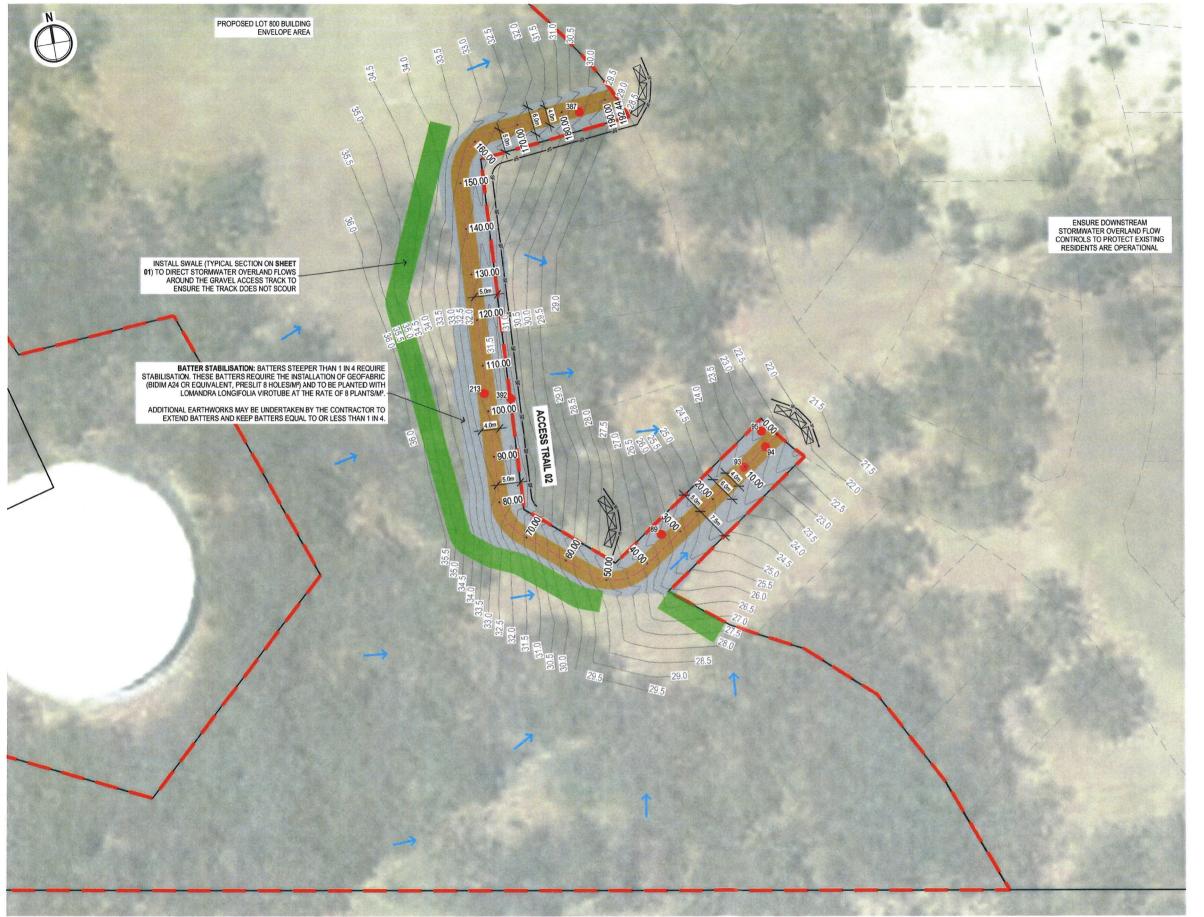
PROJECT NO: CJC /LV

LOT 800 ACCESS TRAIL 01 PLAN

WALDEL PARK PTY LTD

PROPOSED LOT 800 OF SEASCAPE GROVE ESTATE

REVISION 5268E CC Fire Trai



LEGEND - PROPOSED LOT 800 LOCATED WITHIN LOT 332 DP1220901 DESIGN CONTOURS (0.5m INTERVALS) GRAVEL ACCESS TRACK CENTRELINE PROPOSED 4M WIDE GRAVEL ACCESS TRAIL EARTHWORKS BATTERS PROPOSED SWALE TO DIVERT OVERLAND FLOWS EXISTING TREE (WITH TAG) TO BE REMOVED DUE TO FIRE EXISTING STORMWATER OVERLAND FLOWS DIRECTION PROPOSED HAY BALE BARRIERS AND SEDIMENT FENCE DURING WORKS (MULCH BUNDS MAY BE UTILISED)

FUTURE APPROVED LOT LAYOUT

NOTES

- IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN CURRENT INFORMATION WITH REGARD TO ALL UNDERGROUND SERVICES & TO LOCATE THEM PRIOR TO COMMENCEMENT OF CONSTRUCTION.

- SUITABLE & UNSUITABLE STOCKPILES OF ANY EXCESS FILL WON DURING EXCAVATION IS TO BE RETAINED & STOCKPILED NEARBY UNDER THE DIRECTION OF THE SUPERINTENDENT

- DRAINAGE OF THE TRAILS DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE NSW RFS FIRE TRAIL DESIGN MANUAL, CONSTRUCTION AND MAINTENANCE MANUAL (AUGUST 2017)

- EASEMENT DETAILS TO BE PROVIDED AT THE SUBDIVISION CERTIFICATE STAGE AND CORRESPONDING REGISTRATION WITH LAND REGISTRY SERVICES

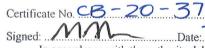
PLANNING FOR BUSH FIRE PROTECTION (2006)

ACCESS TRAIL (OR FIRE TRAILS) TO BE DESIGNED & CONSTRUCTED IN ACCORDANCE WITH THE CURRENTLY ADOPTED PLANNING FOR BUSH FIRE PROTECTION (NSW RURAL FIRE SERVICE, 2006), SECTION 4.1.3. STANDARDS FOR BUSH FIRE PROTECTION MEASURES FOR RESIDENTIAL AND RURAL RESIDENTIAL SUBDIVISIONS.

ACCESS (3) - FIRE TRAILS:

- TRAIL GRAVEL CARRIAGEWAY MINIMUM 4M WIDE WITH AN ADDITIONAL 1M WIDE STRIP ON EACH SIDE OF THE TRAIL (CLEAR OF BUSHES AND LONG GRASS)
- MAXIMUM GRADES FOR UNSEALED TRAILS DO NOT EXCEED 10 DEGREES (17.63 PERCENT)
- MINIMUM VERTICAL CLEARANCE OF 4M TO ANY OVERHANGING OBSTRUCTIONS, INCLUDING TREE BRANCHES
- TRAIL PASSING BAYS ARE DEEMED NOT TO BE REQUIRED
- SHORT CONSTRICTIONS IN THE ACCESS MAY BE ACCEPTED (NEAR EXISTING TREES) WHERE THEY ARE NOT LESS THAN THE MINIMUM (3.5M), EXTEND FOR NO MORE THAN 30M AND WHERE THE OBSTRUCTION CANNOT BE REASONABLY AVOIDED OR REMOVED
- THE TRAILS MUST BE KEPT ACCESSIBLE TO FIRE FIGHTERS AND MAINTAINED IN A SERVICEABLE CONDITION BY THE OWNER OF LOT
- IF THE LOT 800 BOUNDARY IS FENCED THEN PROVISION MUST BE MADE FOR GATES AT THE FIRE TRAILS WHICH ARE LOCKED WITH A LEVLOCK SYSTEM NOTH PROPERTY HESTER REFERENCE COUNCIL

Plans and Specifications are approved in relation to the



Date: 7 · 2 · 20 2

In accordance with the authority delegated by the General Manager



and live

DIAL BEFORE YOU DIG

KING + CAMPBELL

nd ad ad ad ad ad ad ad ad ad an ad an an

A: PO Box 243 Port Magnuarie NSW 244 T: 02 6586 2555 F: 02 6583 4064

E: info@kingcampbell.com.au

CJC CICIIW SM / CJC CHECKED BY

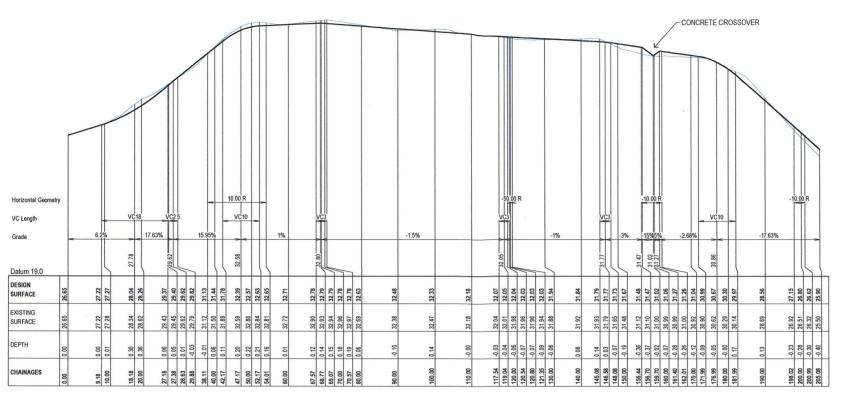
(1:800 @ A3)

5268 MP 07_0129

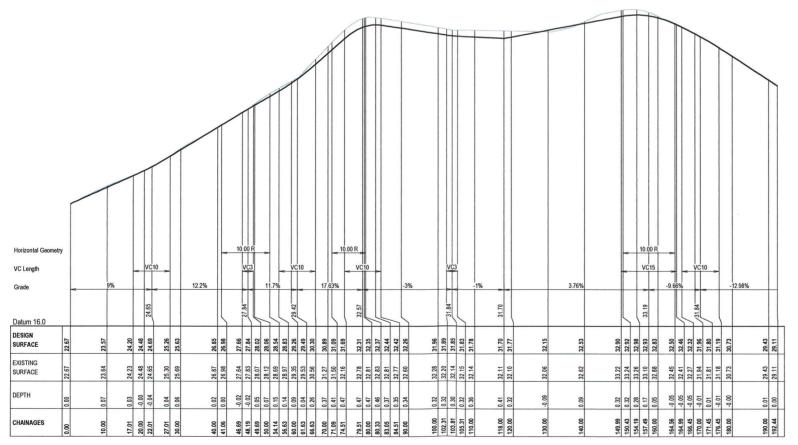
LOT 800 ACCESS TRAIL 02 PLAN

PROPOSED LOT 800 OF SEASCAPE GROVE ESTATE LOT 332 DP1220901 WALDEL PARK PTY LTD

DRAWING NO 5268E CC Fire Trai



ACCESS TRAIL 01 LONGITUDINAL SECTION



KEMPSEY SHIRE COUNCIL Plans and Specifications are approved in relation to the Certificate No. CB - 20 - 37 In accordance with the authority delegated by the General Manager



ACCESS TRAIL 02 LONGITUDINAL SECTION





A1

REVISION



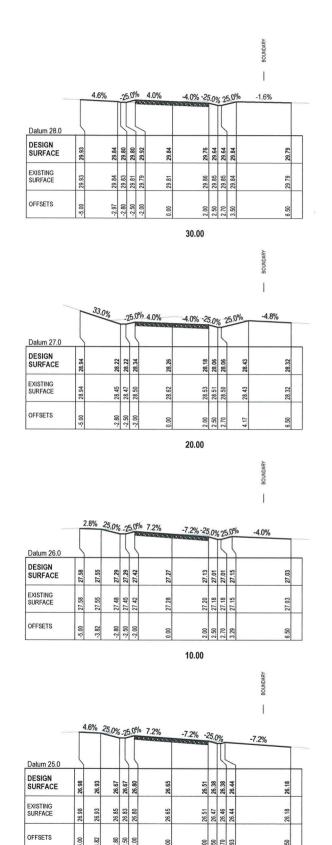
9 2 2 9 9 9 2 1 1 1 2 2 2 2 2 2

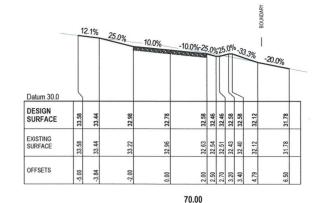
King & Campbell Ptv Ltd www.kingcampbell.com.au A: PO Box 243 Port Macquarie NSW 2444 T. 02 6586 2555 F. 02 6583 4064

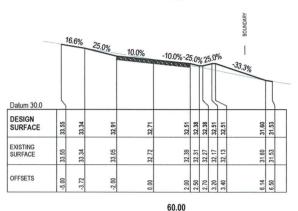
SCALE 1:1000 @ A1 (1:2000 @ A3) © King & Campbell Pty Ltd

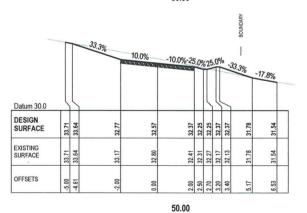
MP 07_0129 CJC SM / CJC CHECKED BY

LOT 800 ACCESS TRAIL LONGITUDINAL SECTIONS PROPOSED LOT 800 OF SEASCAPE GROVE ESTATE LOT 332 DP1220901 DRAWING NO WALDEL PARK PTY LTD









-	Г	3.9%	100	7.0%	-7.0%-25	.0%	25	.0%	,	-4	1.9%
Datum 30.0	_						J	U		_	
DESIGN SURFACE	31.70		31.58	31.44	31.30	31.17	31.17	31.30	31.30	31.26	31.11
EXISTING SURFACE	31.70		31.58	31.50	31.36	31.33	31.32	31.28	31.27	31.26	31.11
OFFSETS	-5.00		-2.00	0.00	2.00	2.50	2.70	3.20	3.40	3.50	6.52

DRAINAGE OF THE TRAILS DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE NSW RFS FIRE TRAIL DESIGN MANUAL, CONSTRUCTION AND MAINTENANCE MANUAL (AUGUST 2017)

IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE ABOVE SPECIFICATION, THE BELOW SHOULD BE ADOPTED:

- FILL & CUT BATTERS TO BE MAXIMUM 1:3 (33.33%)
- TRAIL CROSSFALL NOT TO EXCEED

1:10 (10%) FOR SAFETY REASONS

4m WIDE ACCESS TRACK TO BE 200mm THICK GRAVEL DGB20, OR USE OF EXISTING ROCK ON SITE TO FORM THE TRACK TO THE SATISFACTION OF KEMPSEY SHIRE COUNCIL

0	1.0	2.0	3.0	4.0	5.0m
НО	RIZONT	AL SCA	LE	1:100 (2) A1

0	1.0	20	3.0	4.0
VEI	RTICAL	SCALE	-	1:100 @

BE USED FOR CONSTRUCTION UNLESS CONSTRUCTION CERTIFICATE ISSUED FOR THE WORKS Look up and live



King & Campbell Pty Ltd www.kingcampbell.com.au A: PO Box 243 Port Macquarie NSW 2444 T: 02 6586 2555 F: 02 6583 4064

0.00

DATE 07.01.2020

Date: 7 · 2 · 20

KEMPSEY SHIRE COUNCIL

Plans and Specifications are approved in relation to the

In accordance with the authority delegated by the General Manager

Certificate No. CB-20-37

SCALE AS SHOWN @ A1

MP 07_0129 CJC LW / CJC SM / CJC CHECKED BY

ACCESS TRAIL 01 CROSS SECTIONS CH 0.00 TO 70.00 PROPOSED LOT 800 OF SEASCAPE GROVE ESTATE LOT 332 DP1220901

WALDEL PARK PTY LTD

RAWING NO SHEET REVISION



KING + CAMPBELL

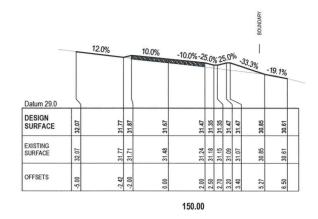
© King & Campbell Pty Ltd



BE USED FOR CONSTRUCTION UNLESS CONSTRUCTION CERTIFICATE ISSUED FOR THE WORKS

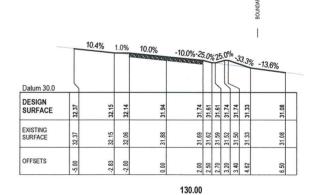
NOTES

DRAINAGE OF THE TRAILS DESIGNED AND CONSTRUCTED IN ACCORDANCE
WITH THE NSW RFS FIRE TRAIL DESIGN MANUAL, CONSTRUCTION AND MAINTENANCE MANUAL (AUGUST 2017)



Datum 30.0 DESIGN SURFACE OFFSETS

140.00

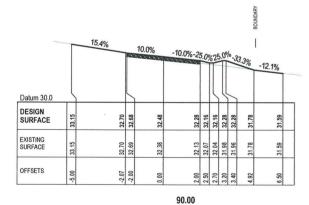


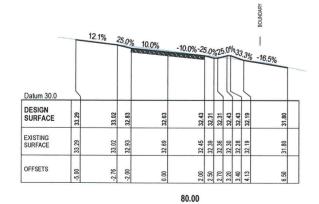
Datum 30.0 DESIGN SURFACE EXISTING SURFACE OFFSETS

											BOUNDA
Datum 30.0		13.0% 2	5.0	% 10.0%	-10.0%-2	5.09	625	100.0	10-3	3.3%	6 -13.5%
DESIGN SURFACE	32.83	32.51	32.38	32.18	33	31.86	31.86	31.98	31.98	31.57	31.32
EXISTING SURFACE	32.83	32.51	32.44	32.18	31.92	31.86	31.83	31.77	31.74	31.57	31.32
OFFSETS	-5.00	-2.49	-2.00	0.00	2 00	2.50	2.70	3.20	3.40	4.63	6.50
					110.00						

											BOUNDARY	
_	16.	9%		10.0%	-10.00/ 04			-01			1	
				10.0%	-10.0%-28	0.0%	25	0%	-3	3.39	6 -16.4%	1
Datum 30.0	ļ	7					5	L		1		L
DESIGN SURFACE	33.24	33.16	32.53	32.33	32.13	32.01	32.01	32.13	32.13	31.84	31.48	
EXISTING SURFACE	33.24	33.16	32.74	32.47	32.20	32.12	32.09	32.01	31.98	31.84	31.48	
OFFSETS	-5.00	-4.49	-2.00	0.00	2.00	2.50	2.70	3.20	3.40	4.28	050	

100.00





KEMPSEY SHIRE COUNCIL

Plans and Specifications are approved in relation to the

Certificate No. CB - 20 - 37 Signed: MM Date: 7:2:20

In accordance with the authority delegated by the General Manager

KING	+	CAMPBELL

King & Campbell Pty Ltd www.kingcampbell.com.au A: PO Box 243 Port Macquarie NSW 2444 T: 02 6586 2565 F: 02 6583 4064 E: info@kingcampbell.com.au

07.01.2020

PROJECT NO. SCALE: AS SHOWN @ A1

DA NO.: MP 07_0129 CJC DRAWN BY LW / CJC CHECKED BY. SM / CJC

WALDEL PARK PTY LTD

PROPOSED LOT 800 OF SEASCAPE GROVE ESTATE LOT 332 DP1220901

DRAWING NO SHEET REVISION

© King & Campbell Pty Ltd

5268

120.00

ACCESS TRAIL 01 CROSS SECTIONS CH 80.00 TO 150.00

DIAL BEFORE

YOU DIG

4m WIDE ACCESS TRACK TO BE 200mm THICK GRAVEL DGB20, OR USE OF EXISTING ROCK ON SITE TO FORM THE TRACK TO THE SATISFACTION OF KEMPSEY VERTICAL SCALE 1:100 @ A1

BE USED FOR CONSTRUCTION UNLESS CONSTRUCTION CERTIFICATE ISSUED FOR THE WORKS

NOTES

DRAINAGE OF THE TRAILS DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE NSW RFS FIRE TRAIL DESIGN MANUAL, CONSTRUCTION AND MAINTENANCE MANUAL (AUGUST 2017)

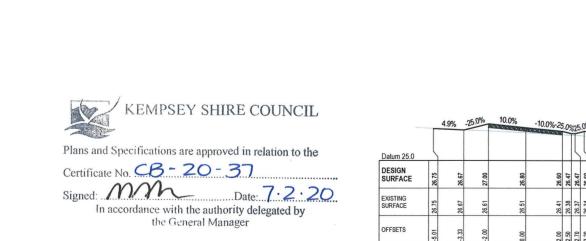
- FILL & CUT BATTERS TO BE MAXIMUM

1:3 (33.33%)
- TRAIL CROSSFALL NOT TO EXCEED 1:10 (10%) FOR SAFETY REASONS

IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE ABOVE SPECIFICATION, THE BELOW SHOULD

BE ADOPTED:

SHIRE COUNCIL



200.00



King & Campbell Pty Ltd www.kingcampbell.com.au A: PO Box 243 Port Macquarie NSW 2444 T: 02 6586 2555

E: info@kingcampbell.com.au

160.00

170.00

-10.0% -25.0%

10.0%

-10.0% -25.0% 21.8%

190.00

-10.0%-25.0% 25.0%

Datum 27.0

EXISTING SURFACE

OFFSETS

DESIGN SURFACE

EXISTING SURFACE

OFFSETS

Datum 29.0 DESIGN SURFACE

OFFSETS

Datum 29.0

DESIGN SURFACE

EXISTING SURFACE

OFFSETS

DATE DESCRIPTION 07.01.2020 ISSUED FOR APPROVAL

DATUM AHD SCALE AS SHOWN @ A1 © King & Campbell Pty Ltd

DA NO.: MP 07_0129 CJC LW / CJC CHECKED BY SM / CJC

ACCESS TRAIL 01 CROSS SECTIONS CH 160.00 TO 200.00 PROPOSED LOT 800 OF SEASCAPE GROVE ESTATE LOT 332 DP1220901

WALDEL PARK PTY LTD

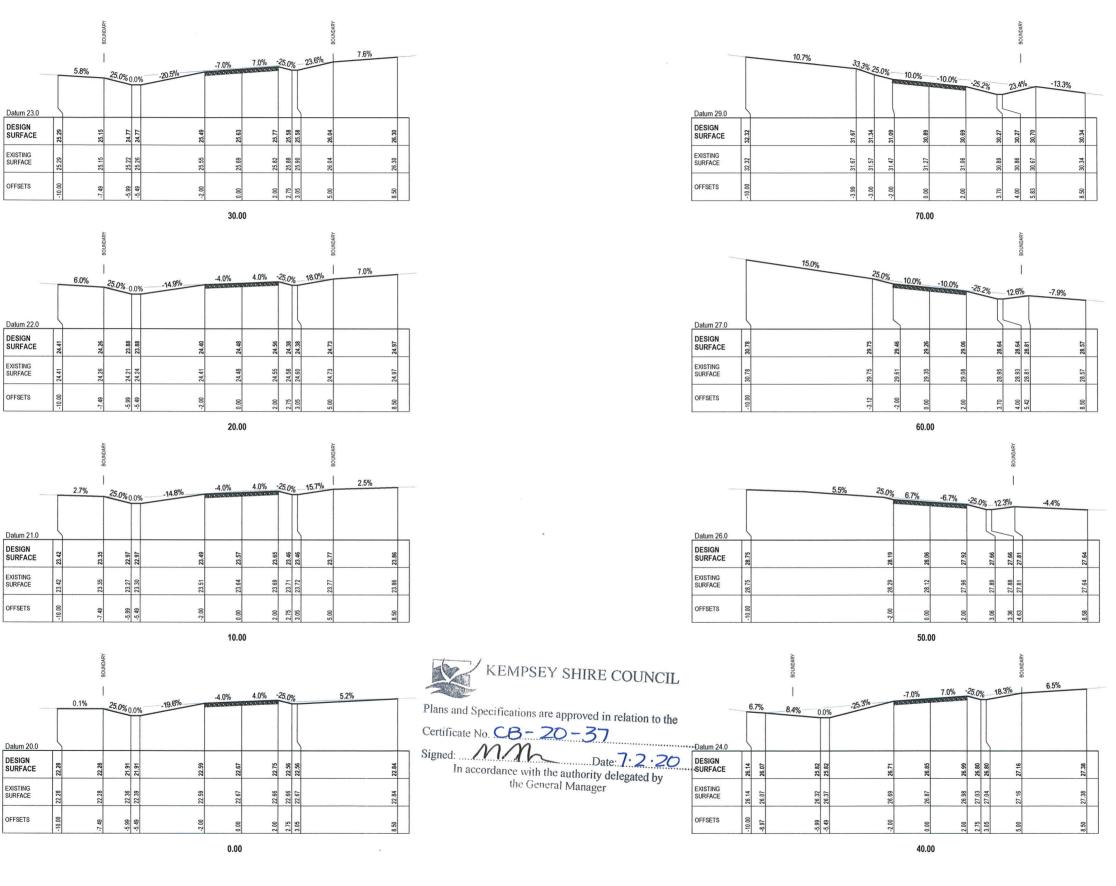
YOU DIG

DRAWING NO SHEET REVISION

Look up

and live

DIAL BEFORE



07.01.2020 ISSUED FOR APPROVAL

www.kingcampbell.com.au
A: PO Box 243 Port Macquarie NSW 2444

F 02 6583 4064

KING + CAMPBELL

_ N X X 4 9 4 A 1 1 1 2 N 2 N 4 N

NOTES

DRAINAGE OF THE TRAILS DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE NSW RFS FIRE TRAIL DESIGN MANUAL, CONSTRUCTION AND MAINTENANCE MANUAL (AUGUST 2017)

IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE ABOVE SPECIFICATION, THE BELOW SHOULD BE ADOPTED:

- FILL & CUT BATTERS TO BE MAXIMUM 1:3 (33.33%)

- TRAIL CROSSFALL NOT TO EXCEED 1:10 (10%) FOR SAFETY REASONS

4m WIDE ACCESS TRACK TO BE 200mm THICK GRAVEL DGB20, OR USE OF EXISTING ROCK ON SITE TO FORM THE TRACK TO THE SATISFACTION OF KEMPSEY SHIRE COUNCIL

0	1.0	20	3.0	4.0	5.0m
НО	RIZONT	AL SCA	LE	1:100 (D A1

0	1.0	20	3.0	4.0	5.1
VE	STICAL	SCALE		1:100 6	η Δ1

BE USED FOR CONSTRUCTION UNLESS CONSTRUCTION CERTIFICATE ISSUED FOR THE WORKS Look up and live

SHEET

REVISION



DRAWING NO.

ACCESS TRAIL 02 CROSS SECTIONS CH 0.00 TO 70.00

PROPOSED LOT 800 OF SEASCAPE GROVE ESTATE LOT 332 DP1220901

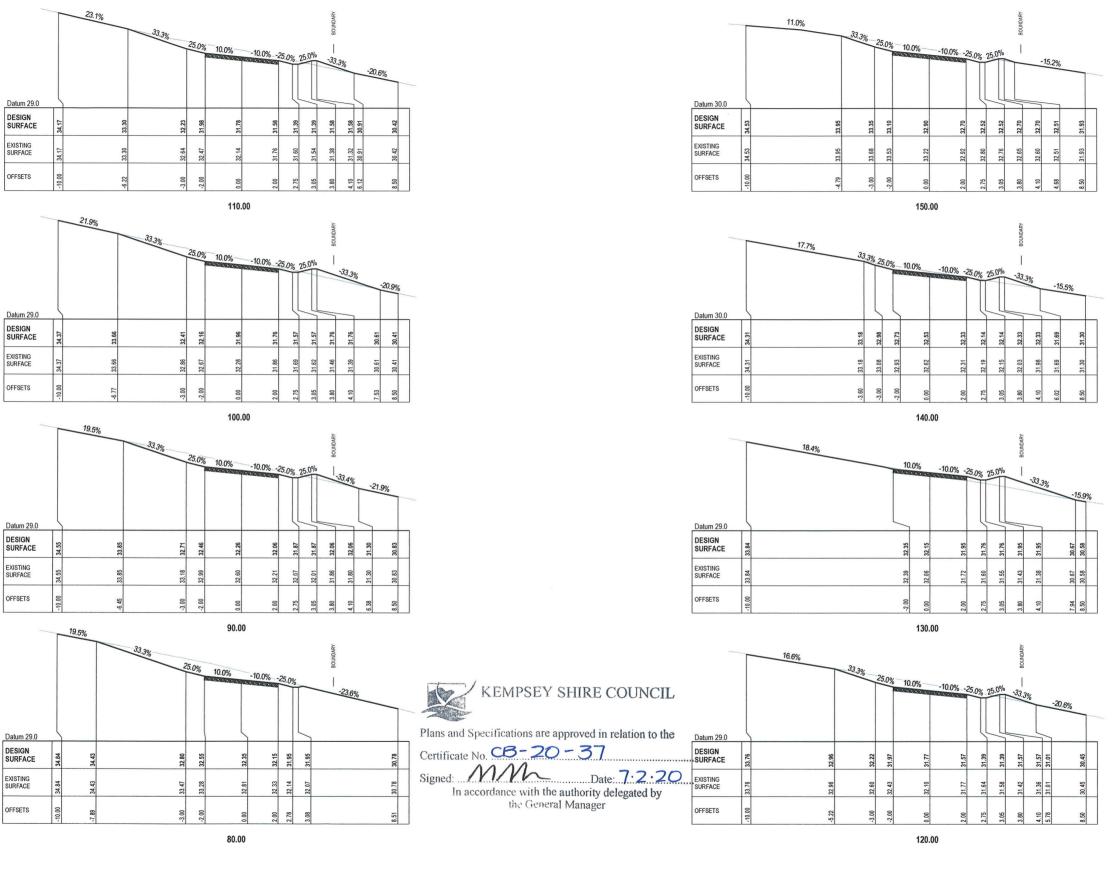
WALDEL PARK PTY LTD

MP 07 0129

CJC

SM / CJC

CHECKED BY



NOTES

DRAINAGE OF THE TRAILS DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE NSW RFS FIRE TRAIL DESIGN MANUAL, CONSTRUCTION AND MAINTENANCE MANUAL (AUGUST 2017)

IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE ABOVE SPECIFICATION, THE BELOW SHOULD BE ADOPTED:

- FILL & CUT BATTERS TO BE MAXIMUM 1:3 (33.33%) - TRAIL CROSSFALL NOT TO EXCEED

TRAIL CROSSFALL NOT TO EXCEE
 1:10 (10%) FOR SAFETY REASONS

4m WIDE ACCESS TRACK TO BE 200mm THICK GRAVEL DGB20, OR USE OF EXISTING ROCK ON SITE TO FORM THE TRACK TO THE SATISFACTION OF KEMPSEY SHIRE COUNCIL

0	1.0	20	3.0	4.0	5.0m		
но	RIZONT	AL SCA	LE	1:100 @ A1			

0 10 20 30 40 5.0m VERTICAL SCALE 1:100 @ A1

BE USED FOR CONSTRUCTION UNLESS CONSTRUCTION CERTIFICATE ISSUED FOR THE WORKS Look up and live



KING + CAMPBELL

King & Campbell Pty Ltd www.kingcampbell.com.au A: PO Box 243 Port Macquarie NSW 2444 T. 02 6586 2555 F: 02 6583 4064

 Id
 REV.
 DATE
 DESCRIPTION

 au
 A
 0701 2020
 ISSUED FOR APPROVAL

 au
 A
 0701 2020
 ISSUED FOR APPROVAL

ON R APPROVAL BY DATUM: AHD

NOTE: DO NOT SCALE OFF DRAWINGS
DISCREDANCES TO THE AUTHOR THE

© King & Campbell Pty Ltd

SCALE AS SHOWN @ A1

DE MENSIONS ONLY, REPORT ANY
G THE PROPERTY OF KING & CAMPBELL

DE MENSIONS ONLY, REPORT ANY

 DA NO.
 MP 07_0129

 DESIGNED BY
 CJC

 DRAWN BY
 LW / CJC

 CHECKED BY
 SM / CJC

ACCESS TRAIL 02 CROSS SECTIONS CH 80.00 TO 150.00

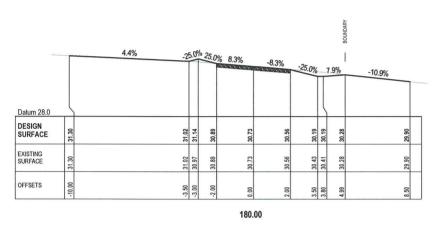
PROPOSED LOT 800 OF SEASCAPE GROVE ESTATE
LOT 332 DP1220901

WALDEL PARK PTY LTD

DRAWING NO. SHEET

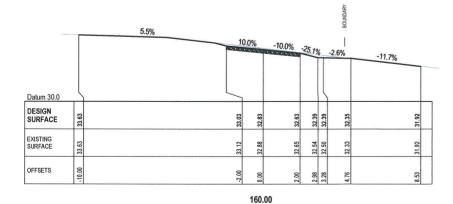
SHEET REVISION

08 A



Datum 30.0 DESIGN SURFACE OFFSETS

170.00



DRAINAGE OF THE TRAILS DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE NSW RFS FIRE TRAIL DESIGN MANUAL, CONSTRUCTION AND MAINTENANCE MANUAL (AUGUST 2017)

IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE ABOVE SPECIFICATION, THE BELOW SHOULD BE ADOPTED:

- FILL & CUT BATTERS TO BE MAXIMUM 1:3 (33.33%) - TRAIL CROSSFALL NOT TO EXCEED

1:10 (10%) FOR SAFETY REASONS

4m WIDE ACCESS TRACK TO BE 200mm THICK GRAVEL DGB20, OR **USE OF EXISTING ROCK ON SITE** TO FORM THE TRACK TO THE SATISFACTION OF KEMPSEY SHIRE COUNCIL

0	1.0	20	3.0	4.0	5.0m
Н	RIZONT	AL SCA	ALE .	1:100 (D) A1

0	1.0	20	3.0	4.0	5
VE	RTICAL	1:100 @ A1			



Plans and Specifications are approved in relation to the

Certificate No. CB-20-37 Signed: MM Date: 7.2.20

In accordance with the authority delegated by the General Manager







www.kingcampbell.com.au A: PO Box 243 Port Macquarie NSW 2444 F: 02 6583 4064

DATE DESCRIPTION
07.01.2020 ISSUED FOR APPROVAL

SCALE AS SHOWN @ A1

MP 07_0129 LW / CJC SM / CJC CHECKED BY:

ACCESS TRAIL 02 CROSS SECTIONS CH 160.00 TO 180.00 PROPOSED LOT 800 OF SEASCAPE GROVE ESTATE LOT 332 DP1220901 WALDEL PARK PTY LTD

DRAWING NO.

REVISION SHEET

FILLING WORKS FOR PROPOSED LOT 700 OVERALL BULK EARTHWORKS, SERVICING STRATEGY & TREE MANAGEMENT PLAN SEASCAPE GROVE ESTATE, SOUTH WEST ROCKS LOT 801 DP1270742

CONSTRUCTION DOCUMENTATION

Job No. 6550

JUNE 2021

MP 05_0018 & 07_0129

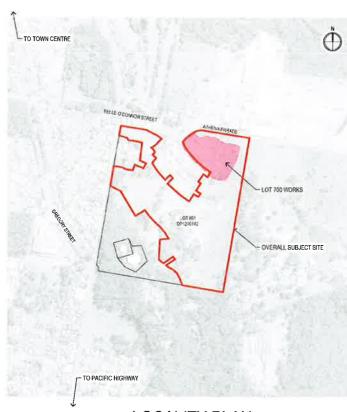
DRAWING SCHEDULE

NO. DRAWING TITLE	REVISION	
00 - COVER SHEET	С	
01 - FILLING WORKS PROPOSED LOT 700 PLAN	С	
02 - ENGINEERING NOTES	С	
03 - FILLING WORKS PROPOSED LOT 700	С	
04 - FUTURE ROAD EW01 LONGITUDINAL SECTION	С	
05 - BULK EARTHWORKS, SERVICES STRATEGY & TREE MANAGEMENT PLAN	С	

KEMPSEY SHIRE COUNCIL

Plans and Specifications are approved in relation to the Certificate No. CS-21-0006

Signed: Date: 2 3 JUL 2021
In accordance with the authority delegated by the General Manager



NOT TO SCALE

prepared for

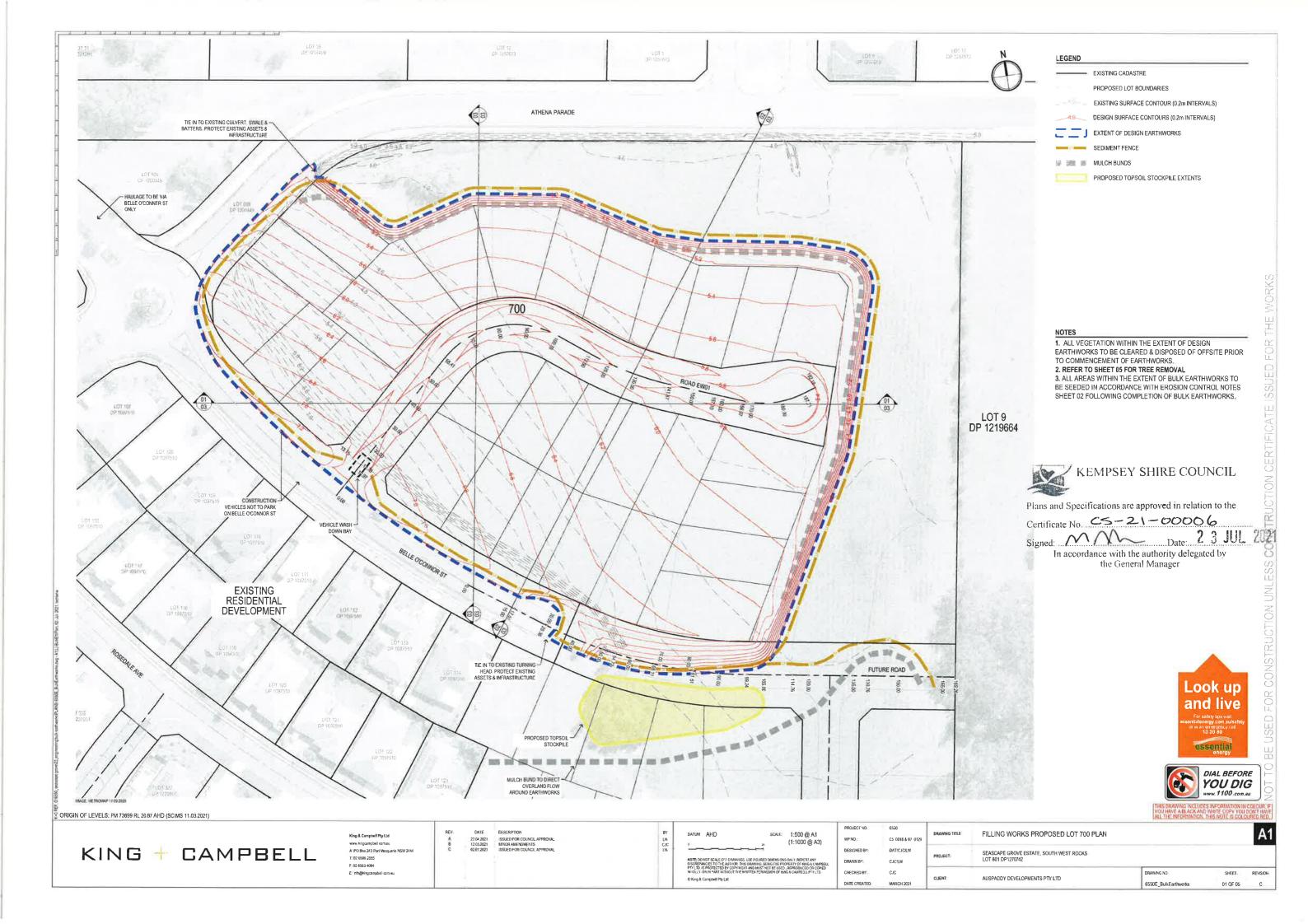
AUSPADDY DEVELOPMENTS PTY LTD

KING + CAMPBELL

1st Floor, Colonial Arcade 25-27 Hay Street Port Macquaire NSW 2444

PO Box 243 Port Macquarie 2444 T: 02 6586 2555

E: into@kingcampbell.com.au



2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN CURRENT INFORMATION WITH REGARD TO ALL UNDERGROUND SERVICES & TO LOCATE THEM PRIOR TO COMMENCEMENT OF CONSTRUCTION.

3. WHERE LOCATION IS CRITICAL TO THE DESIGN IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND LEVEL THE APPROPRIATE SERVICE PRIOR TO CONSTRUCTION

4. ANY DIFFERENCES WITH SERVICES SHOWN ON THE DESIGN ARE TO BE REFERRED TO THE SUPERINTENDENT.

GENERAL NOTES

1, ALL WORK TO BE CARRIED OUT TO THE REQUIREMENTS AND SPECIFICATIONS OF

2. SUBSOIL DRAINAGE SHALL BE PROVIDED AS SHOWN ON THE PLAN AS DIRECTED BY THE SUPERINTENDENTS REPRESENTATIVE AND OTHERWISE GENERALLY WHERE THE SUBGRADE LEVEL IS MORE THAN 400mm BELOW NATURAL SURFACE LEVELS, AS PER D4 05 & A50 305.

3. PROVIDE TURFING TO A MINIMUM OF 900mm BEHIND KERB WHERE NOT SPECIFIED ON LANDSCAPING PLANS.

4. ALL LANDSCAPING IS TO BE TO THE SATISFACTION OF THE LANDSCAPE

5. ALL TRENCHING & CONDUIT WORK FOR ESSENTIAL ENERGY IS TO BE IN ACCORDANCE WITH THE ESSENTIAL ENERGY MANUAL FOR NON-ELECTRICAL WORKS REQUIREMENTS.

6. PUBLIC LIGHTING TO BE IN ACCORDANCE WITH AS1158 - PUBLIC LIGHTING CODE.

7. TRAFFIC CONTROL PLAN (IN ACCORDANCE WITH AS1742.3) TO BE PREPARED, SUBMITTED AND APPROVED BY COUNCIL PRIOR TO CONSTRUCTION

8. PROVIDE TACTILE INDICATORS ON FOOTPATHS ABOVE PRAMIRAMPS IN ACCORDANCE WITH AS 1428 4 2002 AND AS SHOWN ON THIS PAGE

9. EXISTING ACCESS TO BE MAINTAINED DURING CONSTRUCTION.

10, PERMISSION TO ENTER PROPERTIES TO BE SOUGHT FROM OWNERS BEFORE CONSTRUCTION WORK BEGINS.

SITE REGRADING NOTES

1. ALL SITE REGRADING IS TO BE CARRIED OUT IN ACCORDANCE WITH AUS-SPEC

2. TOPSOIL TO BE STRIPPED, STOCKPILED AND TO BE USED ON SITE AS DIRECTED. NO TOPSOIL TO BE REMOVED FROM SITE

3. CUT AND FILL SITE COMPACT FILL TO ACHIEVE A RELATIVE DENSITY IN 3. GO I AND FILL STIE, COMPACT FILL TO ACHIEVE A RELATIVE DENSITY IN ACCORDANCE WITH AS3798 GUIDELINES ON EARTHWORKS FOR COMMERCIAL AND RESIDENTIAL DEVELOPMENTS.

4. ENSURE EROSION CONTROL AND FILTER FENCES MAINTAINED AT ALL TIMES.

5. SUBSOIL DRAINAGE REQUIREMENTS ARE TO BE VERIFIED WITH THE GEOTECHNICAL ENGINEER PRIOR TO FILLING WORK COMMENCING.

6. NO WORK TO COMMENCE UNTIL CONTRACTOR HAS DISCUSSED REQUIREMENTS WITH APPOINTED GEOTECHNICAL ENGINEER.

ADDITIONAL NOTES

1. FOR EARTHWORKS SETOUT. REFER TO MACHINE CONTROL DIGITAL STRINGS

TREE PROTECTION NOTES

1,ALL TREES RETAINED TO BE ADEQUATELY PROTECTED BY APPROPRIATE BARRIER FENCING CONSTRUCTED FROM STAR PICKETS AND FLUORESCENT FENCING A TAL TIMES DURING CONSTRUCTION THE BARRIER FENCING SHOULD EXTEND TO THE EXTENT OF THE DRIP LINE OF THE TREE WHERE PRACTICABLE.

2,WHERE PRACTICABLE NO COMPACTION OF THE ROOTS IS TO BE PERMITTED DURING THE COURSE OF CONSTRUCTION

3,THE EXISTING LEVEL AT THE BASE OF THE TRUNK OF ALL THE LISTED TREES IS TO BE MAINTAINED FOR AT LEAST 1.5m FROM THE BASE OF THE TREES.

4,THE REMOVAL OF ANY TREE IS TO FOLLOW THE RECOMMENDATIONS CONTAINED WITHIN THE ECOLOGICAL REPORT AND ASSOCIATED REVIEW OF ENVIRONMENTAL FACTORS, OFFSET PLANTING TO BE UNDERTAKEN IN ACCORDANCE WITH THE

5 PRIOR TO ANY TREE REMOVAL PRE-CLEARING CHECKS ARE TO BE UNDERTAKEN BY A SUITABILITY QUALIFIED FCOI OGIST.

EROSION CONTROL NOTES

ALL EROSION & SEDIMENTATION CONTROL MEASURES ARE TO BE CARRIED OUT IN ACCORDANCE WITH AUS-SPEC DESIGN SPEC D7 & CONSTRUCTION SPEC C211 [FROM "SOILS & CONSTRUCTION - VOL. 1" (BLUE BOOK)]

2, ALL EROSION & SILTATION CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN GRADING.

3. ALL STORMWATER & SEWER LINES NOT IN STREETS ARE TO BE MULCHED &

4, ELECTRIC POWER & TELEPHONE TRENCHES ARE TO BE COMPACTED. SEEDED & MULCHED WITHIN 15 DAYS AFTER BACKFILL

5. ALL TEMPORARY FARTH BANKS, DIVERSIONS & SEDIMENT DAM EMBANKMENTS ARE TO BE MACHINE COMPACTED, SEEDED & MULCHED FOR TEMPORARY VEGETATIVE COVER WITHIN 10 DAYS AFTER GRADING. STRAW OR HAY MULCH IS

 $\mathbf{6}_{\scriptscriptstyle{\parallel}}$ ALL FILLS ARE TO BE LEFT WITH A LIP AT THE TOP OF THE SLOPE AT THE END OF

7. ALL CUT & FILL SLOPES ARE TO BE SEEDED & MULCHED IMMEDIATELY UPON COMPLETION OF GRADING AND AFTER TOPSOILING MAXIMUM BATTER SLOPES TO BE 1: 3.

8. CONTRACTOR TO TAKE APPROPRIATE DUST SUPPRESSION MEASURES AS NECESSARY TO PREVENT DISTURBANCE TO ADJOINING RESIDENTS,

9, ALL AREAS PROPOSED TO HAVE EITHER TEMPORARY OR PERMANENT VEGETATION COVER ESTABLISHED, ARE TO BE TOPSOILED PRIOR TO CARRYING OUT THE REVEGETATION.

10, ALL DISTURBED AREAS TO BE STABILISED AND/OR REVEGETATED WITHIN 14 DAYS OF EARTHWORKS COMPLETION, USING TURF OR THE FOLLOWING SEED AND FERTILISER MIXTURE:

	SPRING SUMMER		AUTUMN/WINTER	
JAPANESE MILLET	15	kgiha	5	kg/ha
RYECORN/OATES	5	kg ha	15	kg/ha
COUCH GRASS	10	kgiha	8	kg/ha
RHODES GRASS #	10	kg ha	8	kg/ha
PERENNIAL RYEGRASS	5	kg ha	10	kg/ha
STARTER FERTILISER (SOWING)	300	kg/ha	300	kg/ha
MAINTENANCE FERTILISE (FOLLOWING SPRING / AUTUMN)	R 100	kg/ha	100	kg/ha

NOT USED ADJACENT TO BUSHLAND AREAS

ABORIGINAL HERITAGE NOTES

1. IF ABORIGINAL OBJECTS ARE UNCOVERED DURING GROUND SURFACE WORKS. ALL WORKS MUST CEASE AND HERITAGE NSW SHOULD BE CONTACTED TO DETERMINE A COURSE OF ACTION

2. IF SUSPECTED HUMAN REMAINS ARE FOUND ALL WORK MUST CEASE, THE SITE SHOULD BE SECURED AND THE NSW POLICE NOTIFIED, NO FURTHER WORKS CAN BE UNDERTRAKEN UNTIL THE NSW POLICE PROVIDE WRITTEN ADVICE. IF THE REMAINS ARE DEEMED TO REQUIRE ARCHAEOLOGICAL INVESTIGATION BY THE NSW POLICE OR NSW CURROWER, THEN THE NSW HERITAGE AND THE RELEVANT ABORIGINAL PARTIES MUST BE NOTIFIED.

3. AS PART OF ANY SITE INDUCTION, THE CONTACT TELEPHONE NUMBERS OF HERITAGE INSW REGIONAL ARCHAEOLOGIST AND ENWIROLINE 131 555 SHOULD BE GIVEN TO ALL SITE WORKERS AND FERSONNEL, IN CASE UNKNOWN OBJECTS OR ITEMS ARE UNCOVERED DURING EXCAVATION.

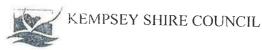
THE NATIONAL PARKS AND WILDLIFE ACT 1974 (NPW ACT) PROTECTS ABORIGINAL OBJECTS AND ABORIGINAL PLACES IN NSW. IT HAS BEEN AMENDED BY THE NATIONAL PARKS AND WILDLIFE REGULATION 2009 (NPW REGULATION), LINDER THE NPW ACT, THE FOLLOWING ARE OFFENCES UNLESS AN EXEMPTION OR DEFENCE IS PROVIDED FOR UNDER THE ACT:

- A PERSON MUST NOT KNOWINGLY HARM OR DESECRATE AN ABORIGINAL
- OBJECT (KNOWING OFFENCE)

 A PERSON MUST NOT HARM OR DESECRATE AN ABORIGINAL OBJECT OR ABORIGINAL PLACE (STRICT LIABILITY OFFENCE)

HARM INCLUDES ACTS OR OMISSIONS THAT 'DESTROY, DEFACE OR DAMAGE' AN ABORIGINAL OBJECT OR ABORIGINAL PLACE, AND IN RELATION TO AN OBJECT, MOVE THE OBJECT FROM THE LAND ON WHICH IT HAS BEEN SITUATED

SECTION 91 OF THE ACT ALSO OBLIGES ANY PERSON WHO DISCOVERS AN ABORIGINAL OBJECT TO REPORT IT TO THE HERITAGE INSW FOR IT TO BE ENTERED ON THE ABORIGINAL HERITAGE INFORMATION MANAGEMENT SYSTEMS (AHIMS).



Plans and Specifications are approved in relation to the

Certificate No. C5-21-0006 Signed: MM ______ Date: 2 3 JUL 2021

In accordance with the authority delegated by the General Manager

BE USED FOR CONSTRUCTION UNLESS CONSTRUCTION CERTIFICATE ISSUED FOR THE WORKS DIAL BEFORE **YOU DIG** www. 1100 com.au



www.kinacampheli.com.au T: 02 6586 2555

F 02 6583 4064

E info@kingcampbell.com a

DATUM AHD

PROJECT NO

MP NO.: DAT/CJC/LW DRAWN BY: CJCLW CJC CHECKED BY DATE CREATED MARCH 2021

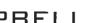
6550 G5 0018 & 07 012

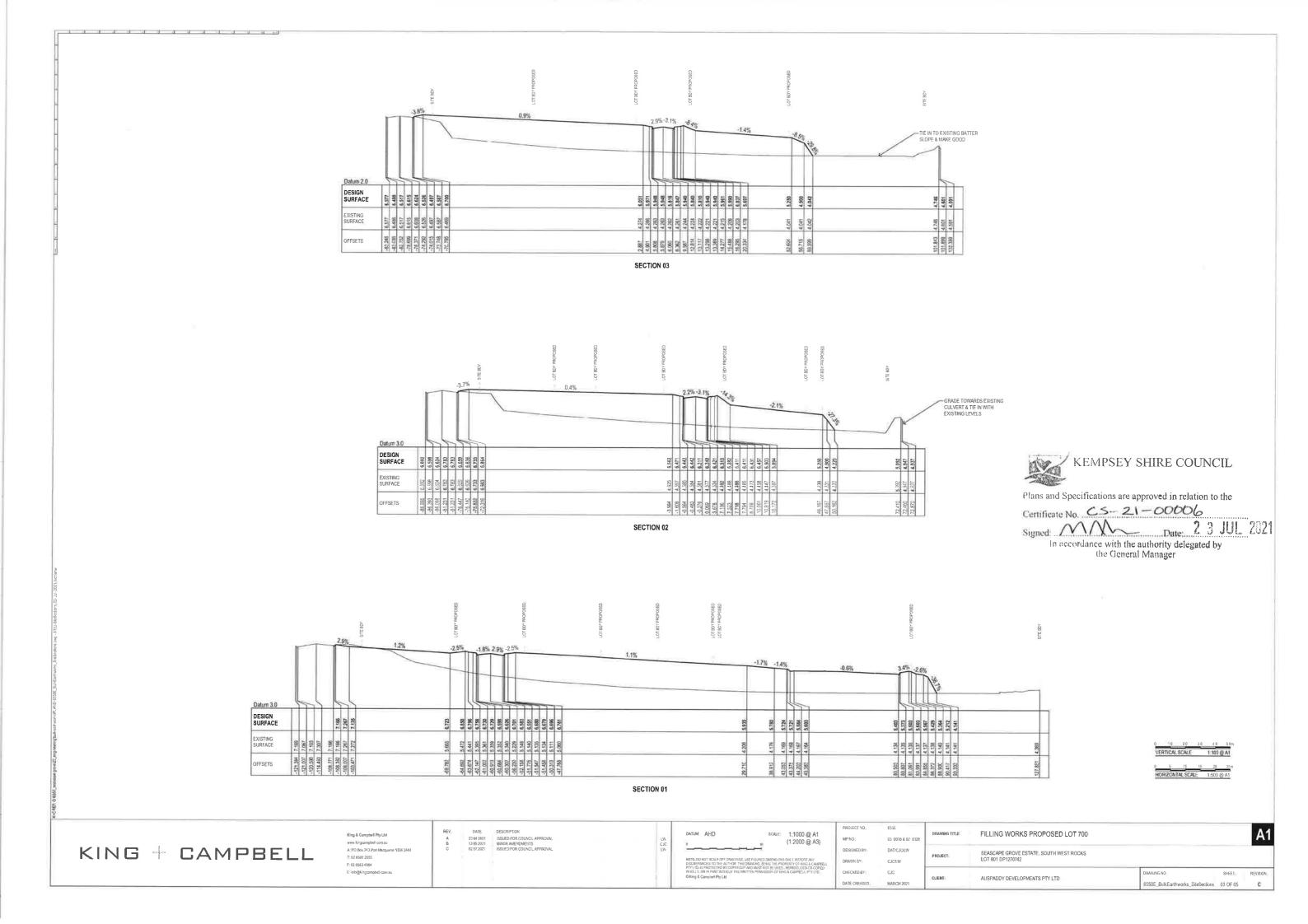
DRAWING TITLE ENGINEERING NOTES SEASCAPE GROVE ESTATE, SOUTH WEST ROCKS LOT 801 DP1270742 CLIENT AUSPADDY DEVELOPMENTS PTY LTD

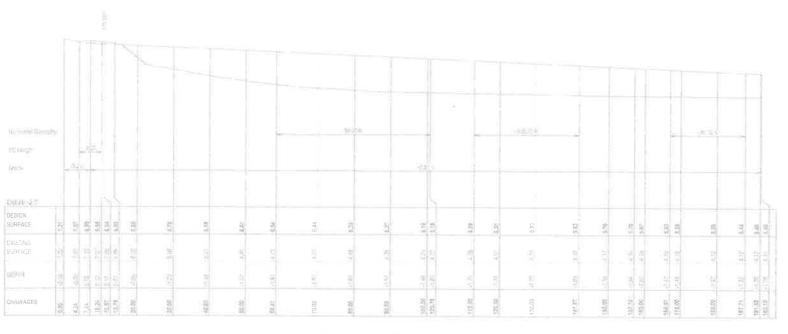
RAWING NO

6550E_BulkEarthworks

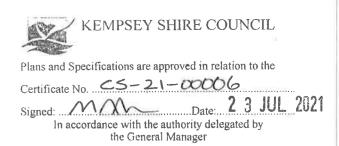
SHEET. REVISION 02 OF 05







LONGITUDINAL SECTION ROAD EW01



KING + CAMPBELL

www. Kingcampbell contail A: PO Box 243 Fort Meoquarie NSW 2444 T: 02 6586 2555 F: 02 6583 4064 E: info@kingcampbell com au

SCALE: 1:1000 @ A1 (1:2000 @ A3) DATUM AHD

6550 MP NO.: C5 0018 8 07 0129 DAT/CJC/LW CJC4.W CJC CHECKED BY.

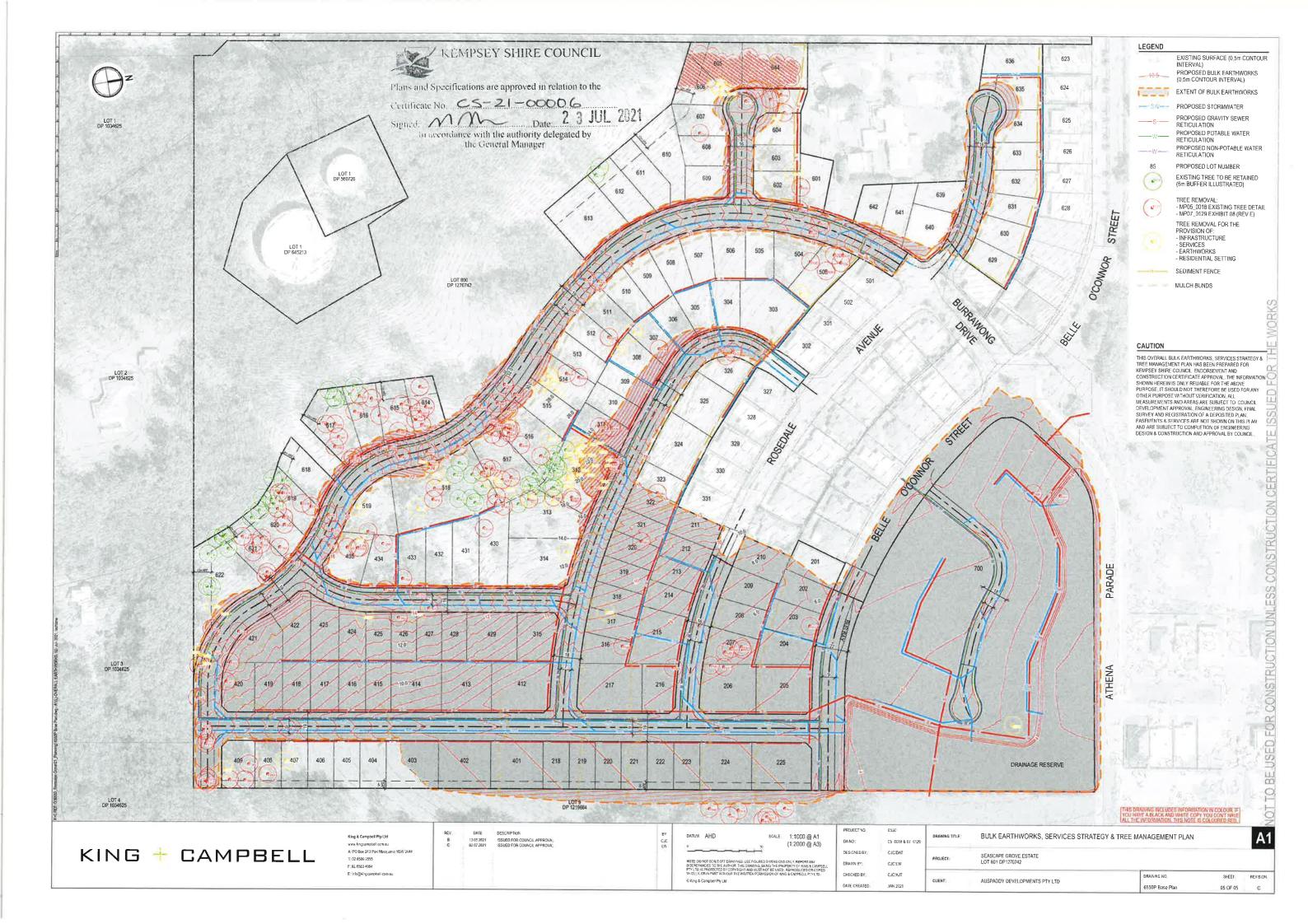
DRAWING TITLE:

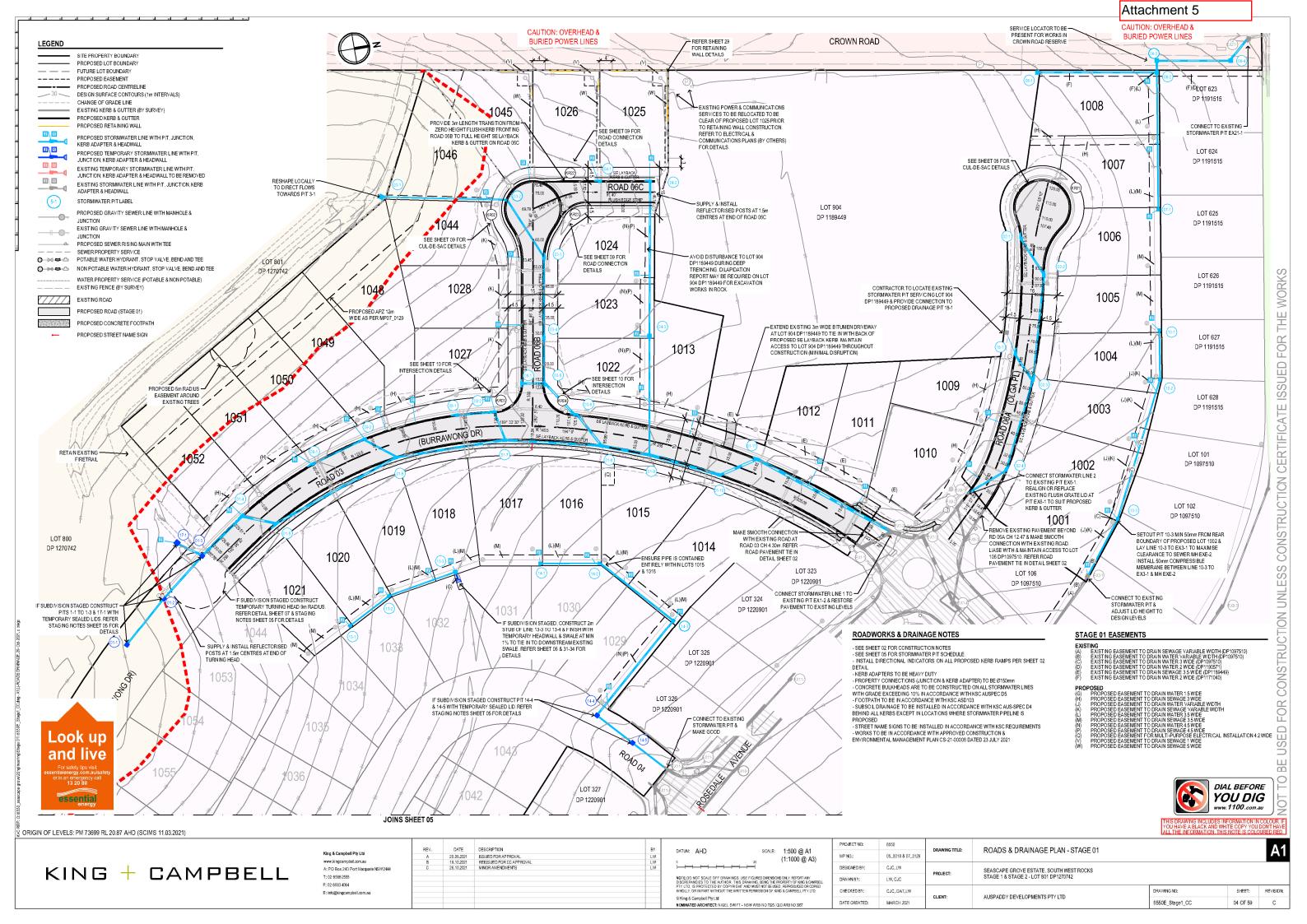
FUTURE ROAD EW01 LONGITUDINAL SECTION SEASCAPE GROVE ESTATE, SOUTH WEST ROCKS LOT 801 DP1270742

AUSPADDY DEVELOPMENTS PTY LTD

DRAWING NO 6550E_BulkEarlhworks_RoadEW01\$ec@m@F 05

A1





BE USED FOR CONSTRUCTION UNLESS CONSTRUCTION CERTIFICATE ISSUED FOR THE

WORKS

STORMWATER PIT SCHEDULE

253.157 Grated Gully Pit 1.8m Lintel

235.000 Grated Gully Pit 1.8m Lintel

217.000 Grated Gully Pit 1.8m Lintel

210.920 Grated Gully Pit 1.8m Lintel

164.682 Grated Gully Pit 1.8m Lintel

96.194 Grated Gully Pit 1.8m Lintel

56.239 Grated Gully Pit 1.8m Lintel

102.278 Grated Gully Pit 1.8m Lintel

90.955 Grated Gully Pit 1.8m Lintel

Grate Only Gully Pit

Grated Gully Pit 1.8m Lintel

Grated Gully Pit 1.8m Lintel

Grated Gully Pit 1.8m Lintel

108.195 Flush Grate Surface Inlet Pit 0.9m x 0.9m

Grated Gully Pit 1.8m Lintel

53.952 Grated Gully Pit 1.8m Lintel

22.531 Grated Gully Pit 1.8m Lintel

38.667 Grated Gully Pit 1.8m Linte

Junction Pit

189.946 Grated Gully Pit 1.8m Lintel

172.038 Grated Gully Pit 1.8m Untel

72.219 Grated Gully Pit 1.8m Lintel

58.302 Grated Gully Pit 1.8m Lintel

41.985 Grated Gully Pit 1.8m Lintel

74.693 Grated Gully Pit 1.8m Lintel

Raised Grate Surface Inlet Pit 1.2m x 1.2m

Flush Grate Surface Inlet Pit 0.9m x 0.9m

Flush Grate Surface Inlet Pit 0 9m x 0 9m

Flush Grate Surface Inlet Pit 0.9m x 0.9m

Flush Grate Surface Inlet Pit 0.6m x 0.6m

Flush Grate Surface Injet Pit 0 6m x 0 6m

Flush Grate Surface Inlet Pit 0.6m x 0.6m

Flush Grate Surface Inlet Pit 0.6m x 0.6m

Flush Grate Surface Inlet Pit 0.9m x 0.9m

Flush Grate Surface Inlet Pit 0.6m x 0.6m

Flush Grate Surface Inlet Pit 0.6m x 0.6m

Flush Grate Surface Inlet Pit 0.9m x 0.9m

Flush Grate Surface Inlet Pit 0.6m x 0.6m

Flush Grate Surface Inlet Pit 0.6m x 0.6m

Flush Grate Surface Inlet Pit 0.9m x 0.9m Grated Gully Pit 1.8m Lintel

Flush Grate Surface Inlet Pit 0.6m x 0.6m

Flush Grate Surface Inlet Pit 0.9m x 0.9m

Flush Grate Surface Inlet Pit 0.6m x 0.6m

Flush Grate Surface Inlet Pit 0.6m x 0.6m

Flush Grate Surface Inlet Pit 0.6m x 0.6m

Raised Grate Surface Inlet Pit 1.2m x 1.2m

Grated Gully Pit 1.8m Lintel

Grated Gully Pit 1.8m Lintel

Grated Gully Pit 3.0m Lin

SAG

46.011 Grated Gully Pit 1.8m Lintel

01-1 RD 03 271.915 Grated Gully Pit 1.8m Lintel

01-7 RD 03 127.668 Grated Gully Pit 1.8m Lintel

01-9 RD 03 79.973 Grated Gully Pit 1.8m Lintel

02-3 RD 06A 57.970 Grated Gully Pit 1.8m Lintel

02-4 RD 06A 28.528 Grated Gully Pit 1.8m Lintel

03-6 RD 03 105.193 Grated Gully Pit 1.8m Lintel

72 635

13.688

130.711

115.447

11-5 RD 04 92.439 Grated Gully Pit 1.8m Lintel

12-3 AT PEG 177.524 Grated Gully Pit 1.8m Lintel

12-4 RD 04 191.805 Grated Gully Pit 1.8m Lintel

26.895

0.000

NO. ROAD CHAINAGE

RD 03

RD 03

RD 03

RD 03

RD 03

RD 06A

RD 068

RD 06B

RD 06B

RD 060

AT PEG

AT PEG

AT PEG

RD 03 RD 03

RD 03

AT PEG

AT PEG

RD 04

RD 04

RD 04

AT PEG

RD 04

RD 04

AT PEG

AT PEG

AT PEG

12-5 AT PEG

13-1 AT PEG

14-1 AT PEG

14-2 AT PEG

14-3 AT PEG

15-2 AT PEG

16-1 AT PEG

06-2 AT PEG

06-3 AT PEG

06-4 AT PEG

09-2 RD 03

10-1 AT PEG

10-2 AT PEG

01-8 RD 03

02-2 RD 06A

03-1 AT PEG 03.2

01-3

01-5

01-6

01-11

02-1

03-3

03-5

04.2

04-3

06-1

07-1

08-1

09-1

11-1

11-2

11-3

11-6

11-8

12-1

13-2

13-3

13-4

14-5

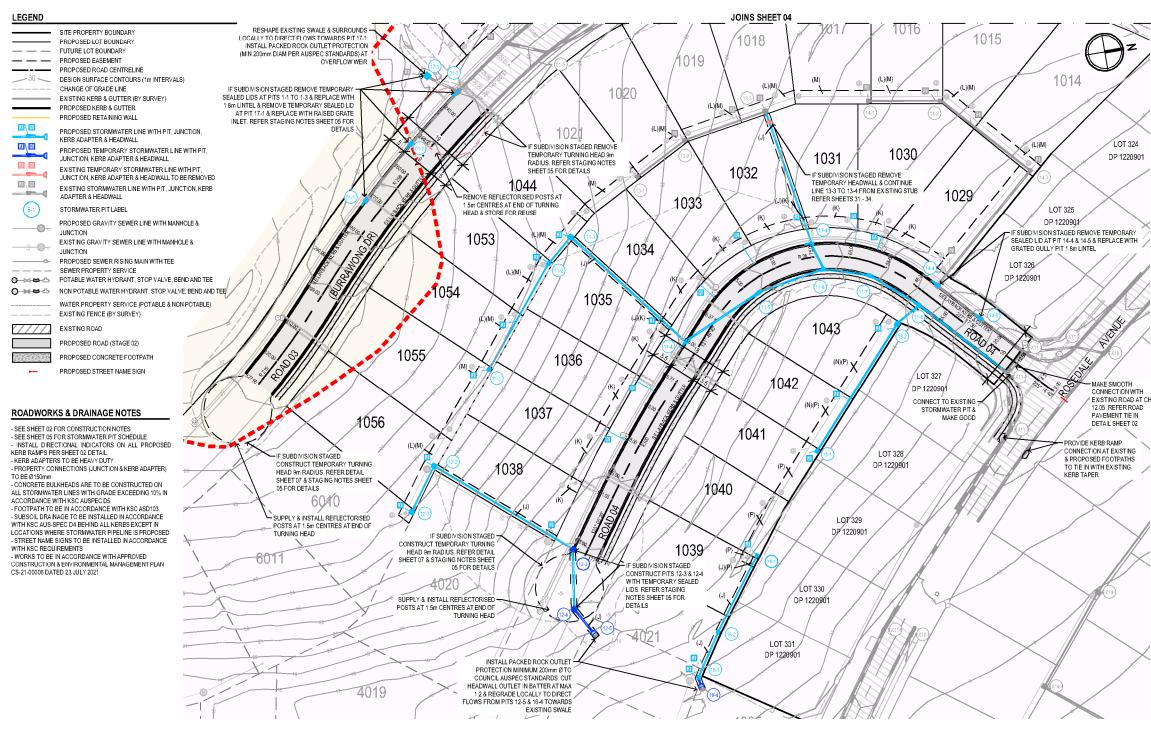
15-1

16-2

16-3

17-1

18-1



STAGING NOTES

IF SUBDIVISION IS TO BE STAGED THEN

STAGE 01 (LOTS 1001 - 1034)

CONSTRUCT 9m RADIUS TEMPORARY TURNING HEAD AT ROAD 03 CHAINAGE 232,79m TO PROPOSED PAVEMENT DETAILS (REFER SHEET 11) FINISHED WITH FROM PROPOSED NETWORK 14 / 7 TWO COAT SEAL DURING STAGE 01

STORMWATER LINES 1 TO 10, 13-1 TO 13-3, 14, 17 & 18 TO BE CONSTRUCTED DURING STAGE 01, CONSTRUCT 2m STUB FROM 13-3 TO DISCHARGE FROM TEMPORARY HEADWALL WITH RIPRAP SCOUR PROTECTION PTS 1-1TO 13, 14-4, 14-5 & 17-1 TO BE CONSTRUCTED WITH A TEMPORARY SEALED LID. REFER SHEET 36 FOR DETAILS.

LANDSCAPING TO BE STAGED IN ACCORDANCE WITH LOT STAGING BOUNDARY, REFER TO SHEET 52 FOR DETAILS.

- PROPERTY JUNCTIONS TO BE CONSTRUCTED FOR LOTS 1001-1008, 1011-1012. 1014-1027, 1030, 1034, 1036 & 2001 IN STAGE 01 ONLY, STORMWATER HEAVY DUTY KERB ADAPTER (REFER TO SHEET 02) TO BE CONSTRUCTED FOR LOTS 1009, 1010, 1013, 1028, 1029, 1031 - 1033 & 1035 IN STAGE 01 ONLY.

TERMINATE POTABLE & NON-POTABLE WATER MAINS AT ROAD 03 BEYOND THE TEMPORARY TURNING HEAD & CAP BEYOND HYDRANTS FOR FUTURE

CONNECTION REFER SHEET 36 FOR DETAILS.

- SEWER LINES A TO F & G-7 TO EXF-1 TO BE CONSTRUCTED IN STAGE 01.
MATCH EXISTING GRADE & LEVELS AT EXF-1. REFER SHEETS 38 - 41 FOR
DETAILS, ADJUST BENCHING AT EXISTING MANHOLES WHERE CONNECTING TO

SEWER PROPERTY CONNECTIONS TO BE CONSTRUCTED FOR LOTS 1001-1038. DETAILS

STAGE 02 (LOTS 2001 - 2020)

- REMOVE ALL TEMPORARY MEASURES OUTLINED ABOVE FOR STAGE 01 & COMMENCE CONSTRUCTION OF STAGE 02 IN ACCORDANCE WITH CERTIFIED

- CONSTRUCT 9m RADIUS TEMPORARY TURNING HEAD AT ROAD 03 CHAINAGE 327.95m & ROAD 04 CHAINAGE 177.76m TO PROPOSED PAVEMENT DETAILS

(REFER SHEETS 11 & 19 FOR DETAILS) FINISHED WITH 14 / 7 TWO COAT SEAL

- PROPERTY JUNCTIONS TO BE CONSTRUCTED FOR LOTS 2004, 2007, 2010, 2011-2015, 2016-2020 IN STAGE 02 ONLY. STORMWATER HEAVY DUTY KERB ADAPTER (REFER SHEET 02 FOR DETAILS) TO BE CONSTRUCTED FOR LOTS 2002-2003, 2005-2006 & 2008-2009 IN STAGE 02 ONLY. REFER SHEET 05 FOR

- TIE IN TO & CONTINUE FROM STAGE 01 POTABLE & NON-POTABLE WATER MAINS AT ROAD 03 & TERMINATE PAST THE STAGE 02 TEMPORARY TURNING CIRCLE TE IN TO & CONTINUE FROM EXISTING POTABLE & NON-POTABLE WATER MAINS AT ROAD 04 & TERMINATE PAST THE STAGE 02 TEMPORARY TURNING CIRCLE FINISH WITH TEMPORARY DUCKSFOOT HYDRANTS. REFER SHEET 37 FOR DETAILS.

- CONNECT TO STAGE 01 SEWER LINE AT MH F-6 & CONSTRUCT LINE F-1 TO F-6 IN STAGE 02. CONNECT TO STAGE 01 SEWER LINE AT MH G-7 & CONSTRUCT LINES G & H IN STAGE 02. REFER SHEET 37 FOR DETAILS.

STAGE 02 EASEMENTS

PROPOSED	
(J)	PROPOSED EASEMENT TO DRAIN WATER 1.5 WIDE
(5) (X) (M)	PROPOSED EASEMENT TO DRAIN SEWAGE 3 WIDE
(L)	PROPOSED EASEMENT TO DRAIN WATER 3.5 WIDE
(M)	PROPOSED EASEMENT TO DRAIN SEWAGE 3.5 WIDE
(N) (P)	PROPOSED EASEMENT TO DRAIN WATER 4.5 WIDE
(P)	PROPOSED EASEMENT TO DRAIN SEWAGE 4.5 WIDE

DIAL BEFORE YOU DIG

SHEET:

05 OF 59

REVISION



ORIGIN OF LEVELS: PM 73699 RL 20.87 AHD (SCIMS 11.03.2021

Look ur

and live

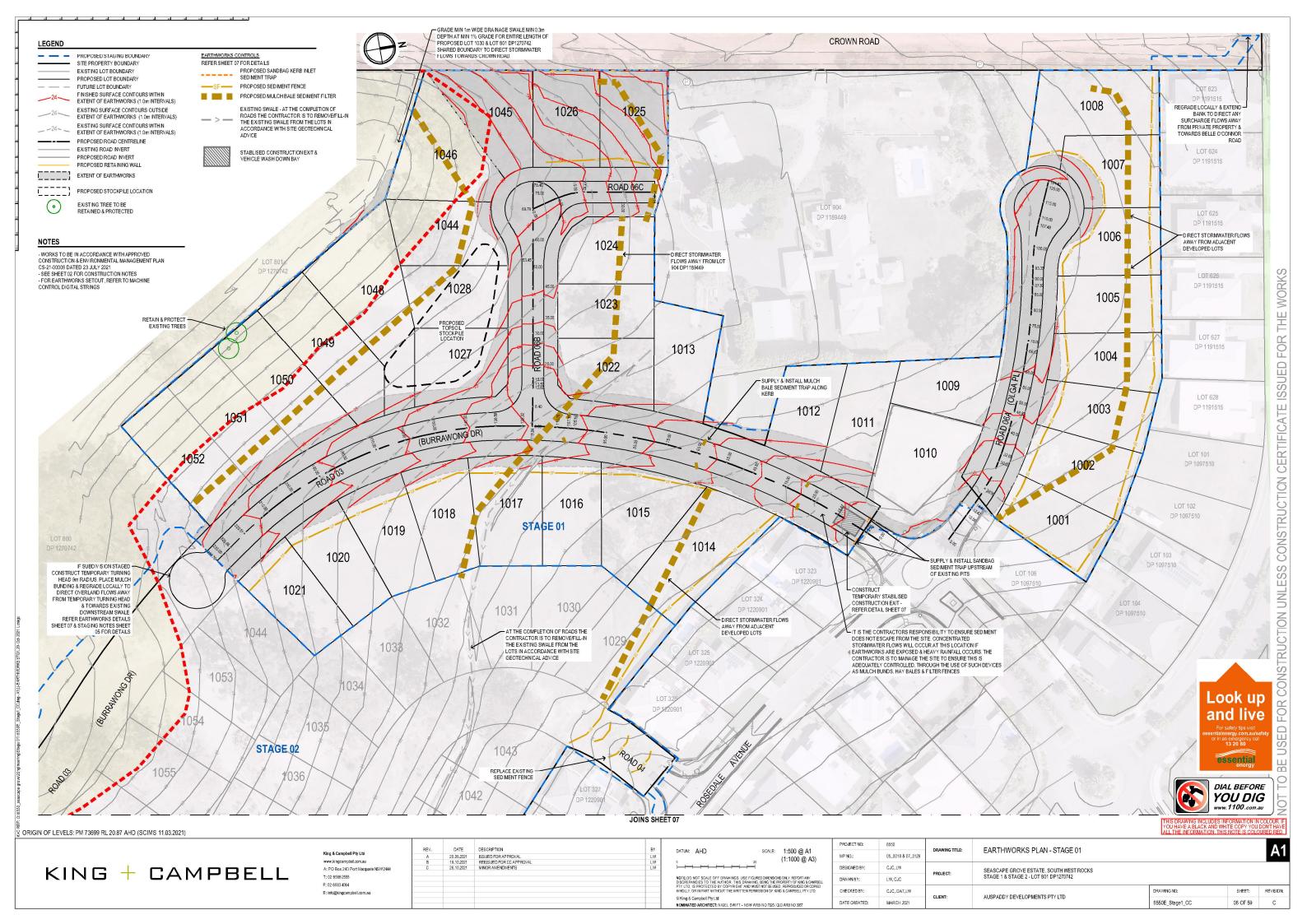


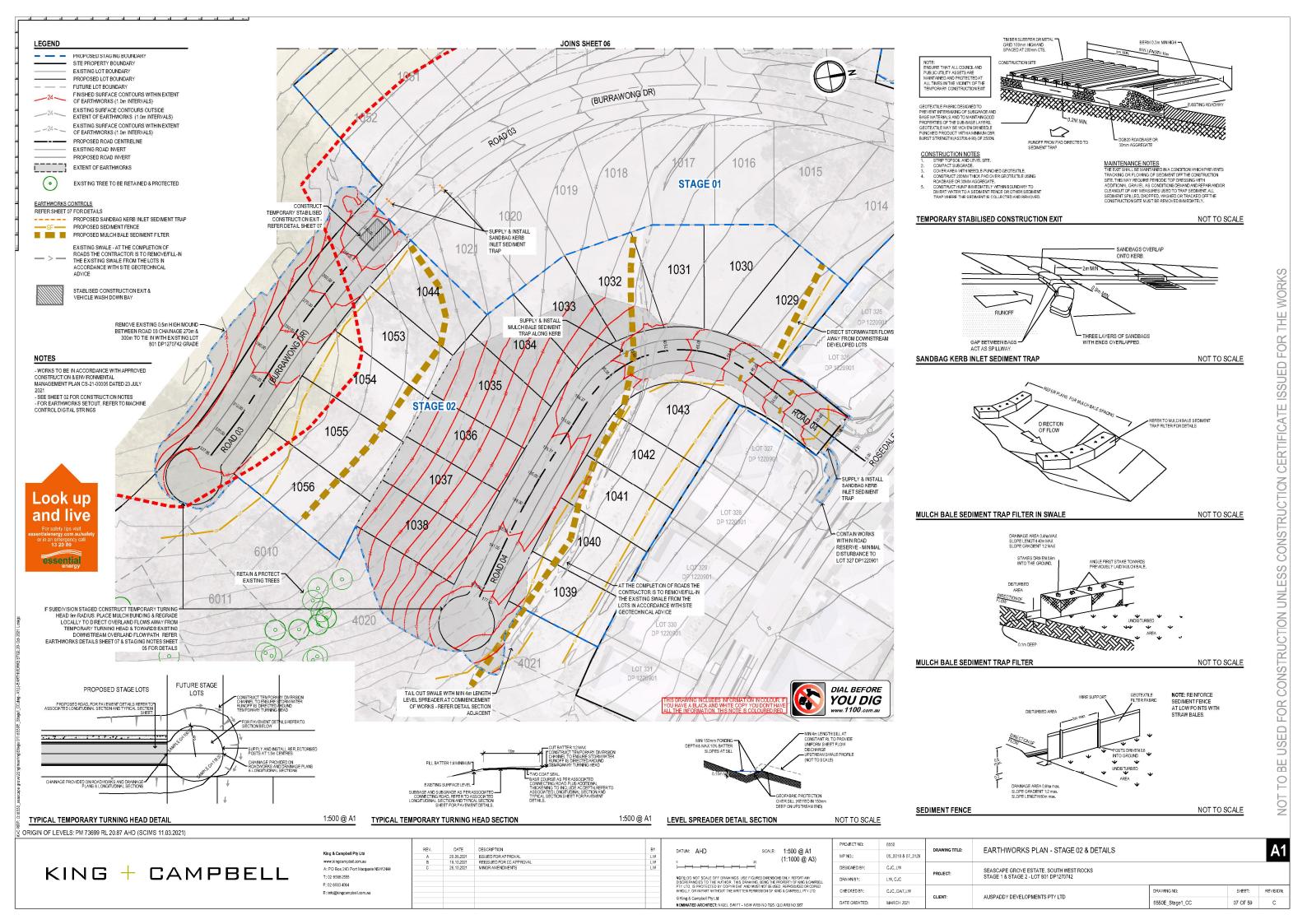
DESCRIPTION www.kingcampbell.com.au T: 02 6586 2555 F: 02 6583 4064

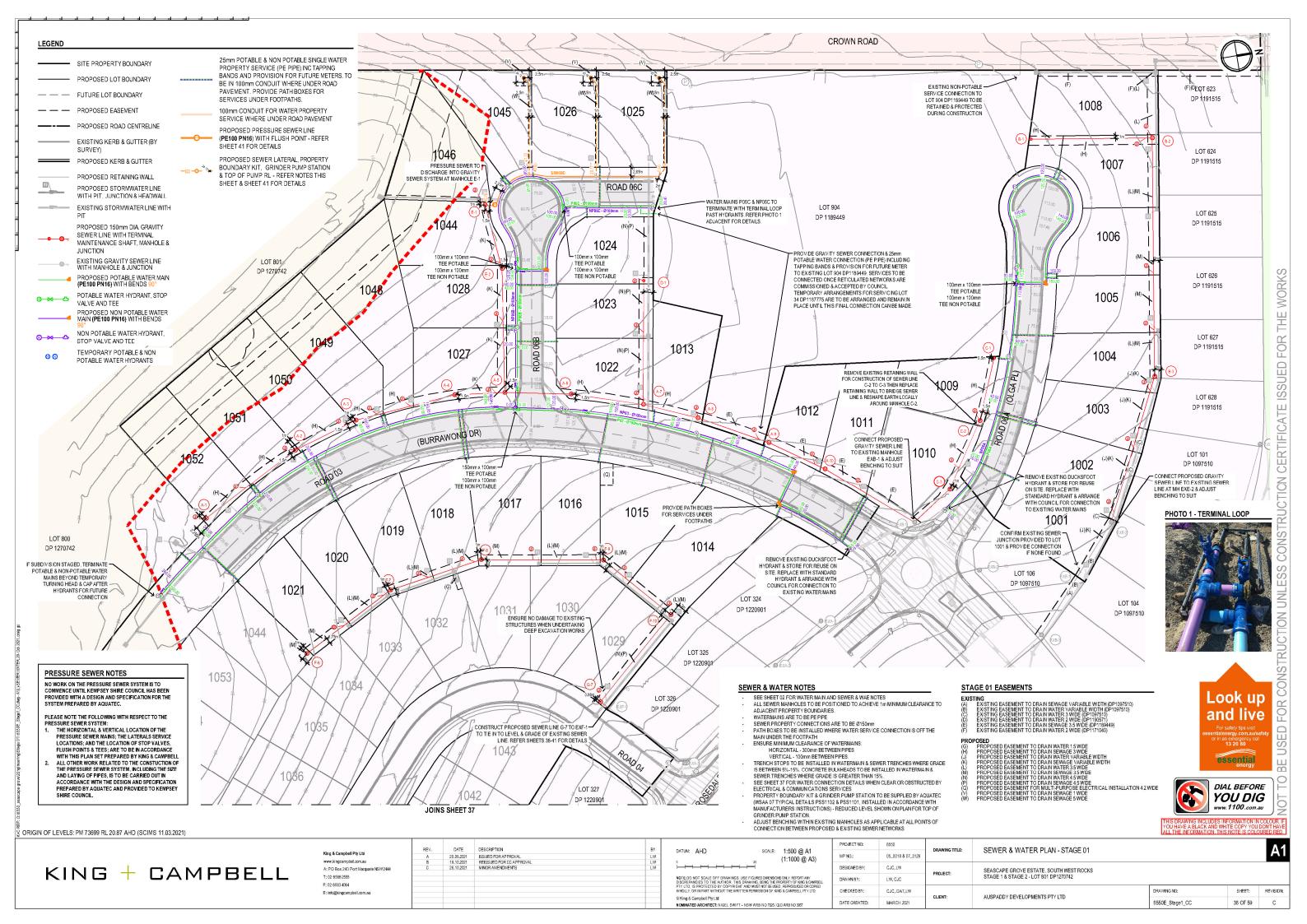
SCALE: 1:500 @ A1 DATUM: AHD © King & Campbell Phyl td

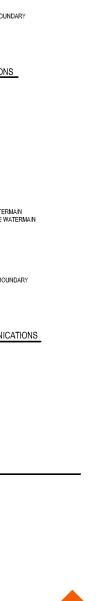
PROJECT NO: 05_0018 & 07_012 DESIGNED BY CJC.TW PROJECT DRAWN BY LW, CJC CHECKED BY CJC, DAT, LW

ROADS & DRAINAGE PLAN - STAGE 02 SEASCAPE GROVE ESTATE. SOUTH WEST ROCKS STAGE 1 & STAGE 2 - LOT 801 DP1270742 RAWING NO AUSPADDY DEVELOPMENTS PTY LTD 6550E Stage1 CC

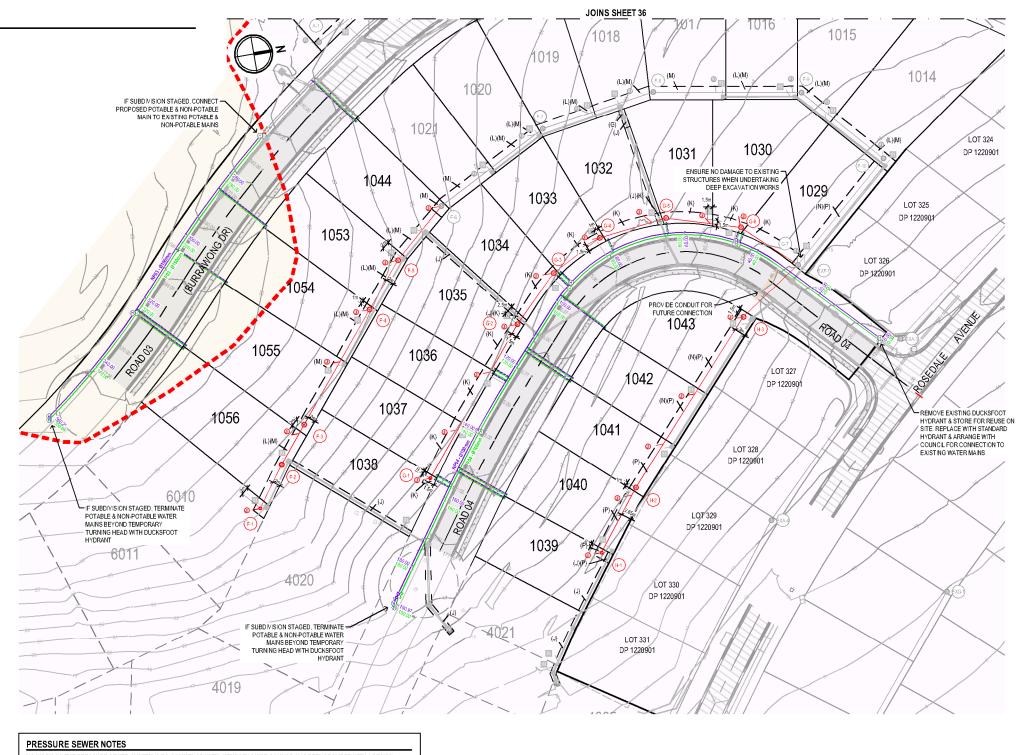






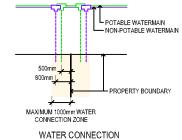


CONSTRUCTION UNLESS CONSTRUCTION CERTIFICATE ISSUED FOR THE WORKS



POTABLE WATERMAIN - NON-POTABLE WATERMAIN PROPERTY BOUNDARY MAXIMUM 1000mm WATER CONNECTION ZONE

WATER CONNECTION
CLEAR OF ELECTRICAL AND COMMUNICATIONS



OBSTRUCTED BY ELECTRICAL AND COMMUNICATIONS

STAGE 02 EASEMENTS

PROPOSED EASEMENT TO DRAIN WATER 1.5 WDE PROPOSED EASEMENT TO DRAIN SEWAGE 3 WDE PROPOSED EASEMENT TO DRAIN NATER 3.5 WDE PROPOSED EASEMENT TO DRAIN SEWAGE 3.5 WDE

NO WORK ON THE PRESSURE SEWER SYSTEM IS TO COMMENCE UNTIL KEMPSEY SHIRE COUNCIL HAS BEEN PROVIDED WITH A DESIGN AND SPECIFICATION FOR THE SYSTEM PREPARED BY AQUATEC.

PLEASE NOTE THE FOLLOWING WITH RESPECT TO THE PRESSURE SEWER SYSTEM:

1. THE HORIZONTAL & VERTICAL LOCATION OF THE PRESSURE SEWER MAINS; THE LATERALS SERVICE LOCATIONS; AND THE LOCATION OF STOP VALVES, FLUSH POINTS & TEES; ARE TO BE IN ACCORDANCE WITH THIS PLAN SET PREPARED BY KING &

ALL OTHER WORK RELATED TO THE CONSTUCTION OF THE PRESSURE SEWER SYSTEM, INCLUDING THE SIZE AND LAYING OF PIPES, IS TO BE CARRIED OUT IN ACCORDANCE WITH THE DESIGN AND SPECIFICATION PREPARED BY AQUATEC AND PROVIDED TO KEMPSEY SHIRE COUNCIL.

Look up essential

DIAL BEFORE YOU DIG

SHEET:

37 OF 59

REVISION:

NETWORKS

LEGEND

SITE PROPERTY BOUNDARY

PROPOSED LOT BOUNDARY

PROPOSED ROAD CENTRELINE

EXISTING KERB & GUTTER (BY

PROPOSED KERB & GUTTER

PROPOSED STORMWATER LINE

WITH PIT, JUNCTION & HEADWALL

PROPOSED GRAVITY SEWER LINE WITH TERMINAL MAINTENANCE

SHAFT, MANHOLE & JUNCTION

EXISTING GRAVITY SEWER LINE WITH MANHOLE & JUNCTION

PROPOSED POTABLE WATER MAIN (PE100 PN16) WITH BENDS 90°

POTABLE WATER HYDRANT, STOP

PROPOSED NON POTABLE WATER MAIN (PE100 PN16) WITH BENDS NON POTABLE WATER HYDRANT,

VALVE AND TEE

STOP VALVE AND TEE TEMPORARY POTABLE & NON

POTABLE WATER HYDRANTS

SINGLE WATER PROPERTY

25mm POTABLE & NON POTABLE

SERVICE (PE PIPE) INC TAPPING BANDS AND PROVISION FOR

CONDUIT WHERE UNDER ROAD PAVEMENT

100mm CONDUIT FOR WATER PROPERTY SERVICE WHERE

UNDER ROAD PAVEMENT

SEE SHEET 02 FOR WATER MAIN AND SEWER & WAE NOTES

ALL SEWER MANHOLES TO BE POSITIONED TO

ACHIEVE 1m MINIMUM CLEARANCE TO ADJACENT PROPERTY BOUNDARIES.
WATERMAINS ARE TO BE PE PIPE SEWER PROPERTY CONNECTIONS ARE TO BE

PATH BOXES TO BE INSTALLED WHERE WATER SERVICE CONNECTION IS OFF THE MAIN UNDER THE FOOTPATH

THE FOOTPATH
ENSURE MINIMUM CLEARANCE OF WATERMAINS:
HORIZONTAL - 300mm BETWEEN PIPES
VERTICAL - 100mm BETWEEN PIPES,
TRENCH STOPS TO BE INSTALLED IN WATERMAIN &

SEWER TRENCHES WHERE GRADE IS BETWEEN 5%-15%. CONCRETE BULKHEADS TO BE INSTALLED IN WATERMAIN & SEWER TRENCHES WHERE GRADE IS GREATER THAN 15%.

GRADE IS GREATER I HAM 15%.
SEE SHEET 37 FOR WATER CONNECTION DETAILS
WHEN CLEAR OR OBSTRUCTED BY ELECTRICAL &
COMMUNICATIONS SERVICES
COMMUNICATIONS SERVICES
PROPERTY BOUNDARY KIT & GRINDER PUMP
STATION TO BE SUPPLIED BY AGUATECH MSAA 07
TYPICAL DETAILS PSS1102, BPS31101, INSTALLED
IN ACCORDANCE WITH MANUFACTURERS

IN ACCORDANCE WITH MANUFACTURERS
INSTRUCTIONS). REDUCED LEVEL SHOWN ON
PLAN FOR TOP OF GRINDER PUMP STATION.
ADJUST BENCHING WITHIN EXISTING MANIOLES
AS APPLICABLE AT ALL POINTS OF CONNECTION
BETWEEN PROPOSED & EXISTING SEWER
METHORIES.

SEWER & WATER NOTES

EXISTING STORMWATER LINE WITH

— FUTURE LOT BOUNDARY

PROPOSED EASEMENT

SURVEY)



DESCRIPTION www.kingcampbell.com.au T: 02 6586 2555 F: 02 6583 4064

SCALE: 1:500 @ A1 © King & Campbell Phyl td

PROJECT NO: 05_0018 & 07_012 DESIGNED BY CJC, LW PROJECT LW, CJC CJC, DAT, LW

SEWER & WATER PLAN - STAGE 02 SEASCAPE GROVE ESTATE, SOUTH WEST ROCKS STAGE 1 & STAGE 2 - LOT 801 DP1270742 DRAWING NO AUSPADDY DEVELOPMENTS PTY LTD 6550E_Stage1_CC

ORIGIN OF LEVELS: PM 73699 RL 20.87 AHD (SCIMS 11.03.2021

(MON)97.15.'85 14:00 ,85.07.15 HC.2 PAGE 1 13:36

SUBMISSION ON

DRAFT L.E.P. NO. 17
KEMPSEY SHIRE

IN RELATION TO

LOT 1 D.P.246579 & LOT 2 D.P.560726

ARAKOON ROAD

SOUTH WEST ROCKS

FOR

WALDEL PTY. LTD.

ΒY

BLYTH, HADLOW & ASSOCIATES

SURVEYORS, ENGINEERS & PLANNERS

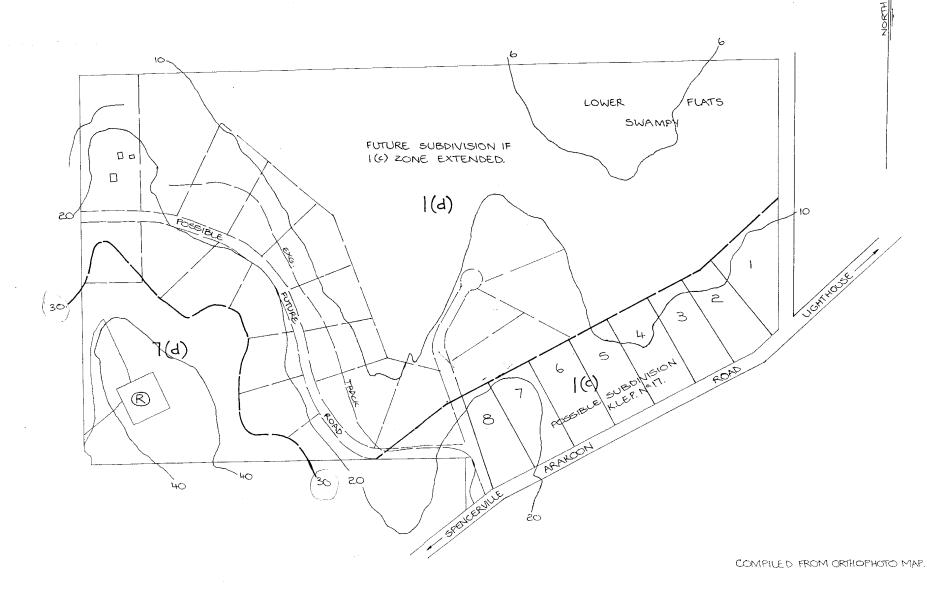
39 ELBOW STREET, WEST KEMPSEY

This submission has been prepared on my behalf by Blyth, Hadlow & Associates and the contents thereof have been made known to me.

for Waldel Pty. Ltd.

DEE 943

JULY,198:



URVEYORS

EFERENCE

1:400 METRIC

PLAN OF LOT 2 D.P. 560726 + LOT 1 D.P. 246579

AT SOUTH WEST ROCKS + POSSIBLE
SUBDIVISION.

PLAN OF LOT 2 D.P. 560726 + LOT 1 D.P. 246579

AT SOUTH WEST ROCKS + POSSIBLE
SURVEYORS, Engineers & Planners,
P.O. Box 139 W. Kempsey 2440.

Phone: 065-62-6688.

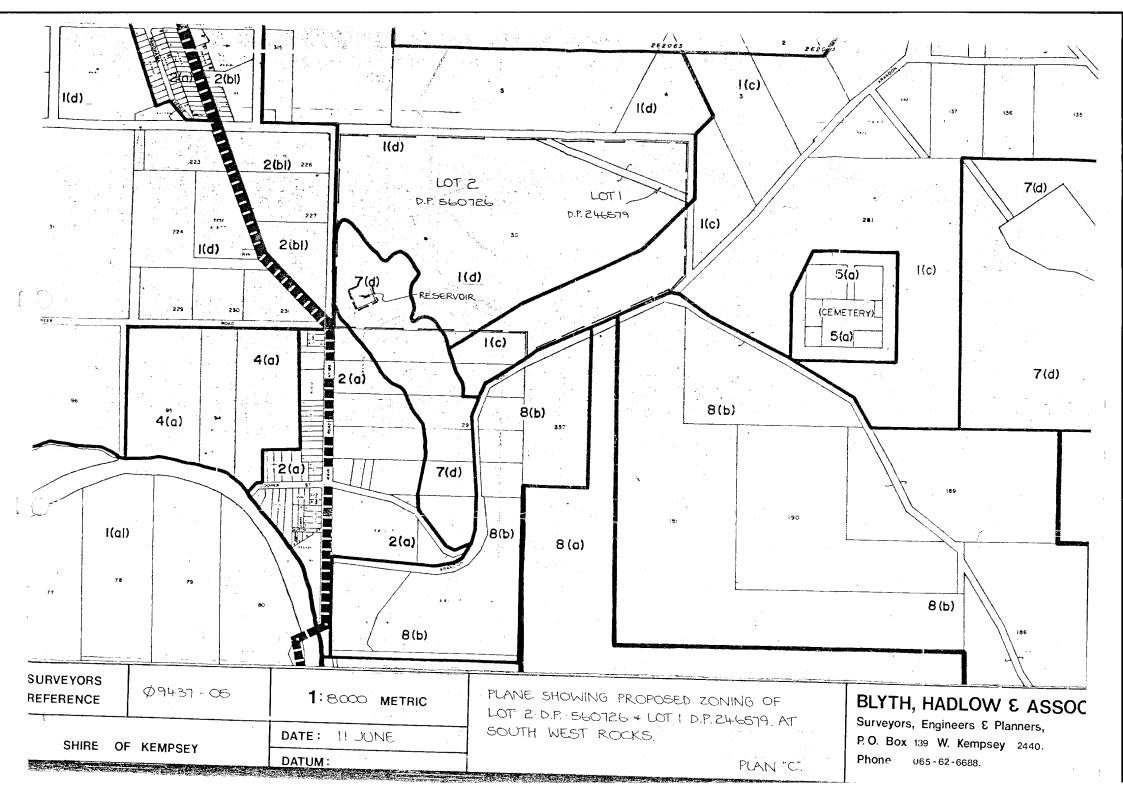


Figure 22: Urban growth area map for Kempsey Local Government Area



