APPENDIX E K&C - Pre Planning Proposal Submission to KSC - 29 Oct 21

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AJT 6550
Please quote our ref: 6550_116 PlanningProposal

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29 October 2021

Kempsey Shire Council
PO Box 3078
WEST KEMPSEY NSW 2440

Via email: peter.orr@kempsey.nsw.gov.au;
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.

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- 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.

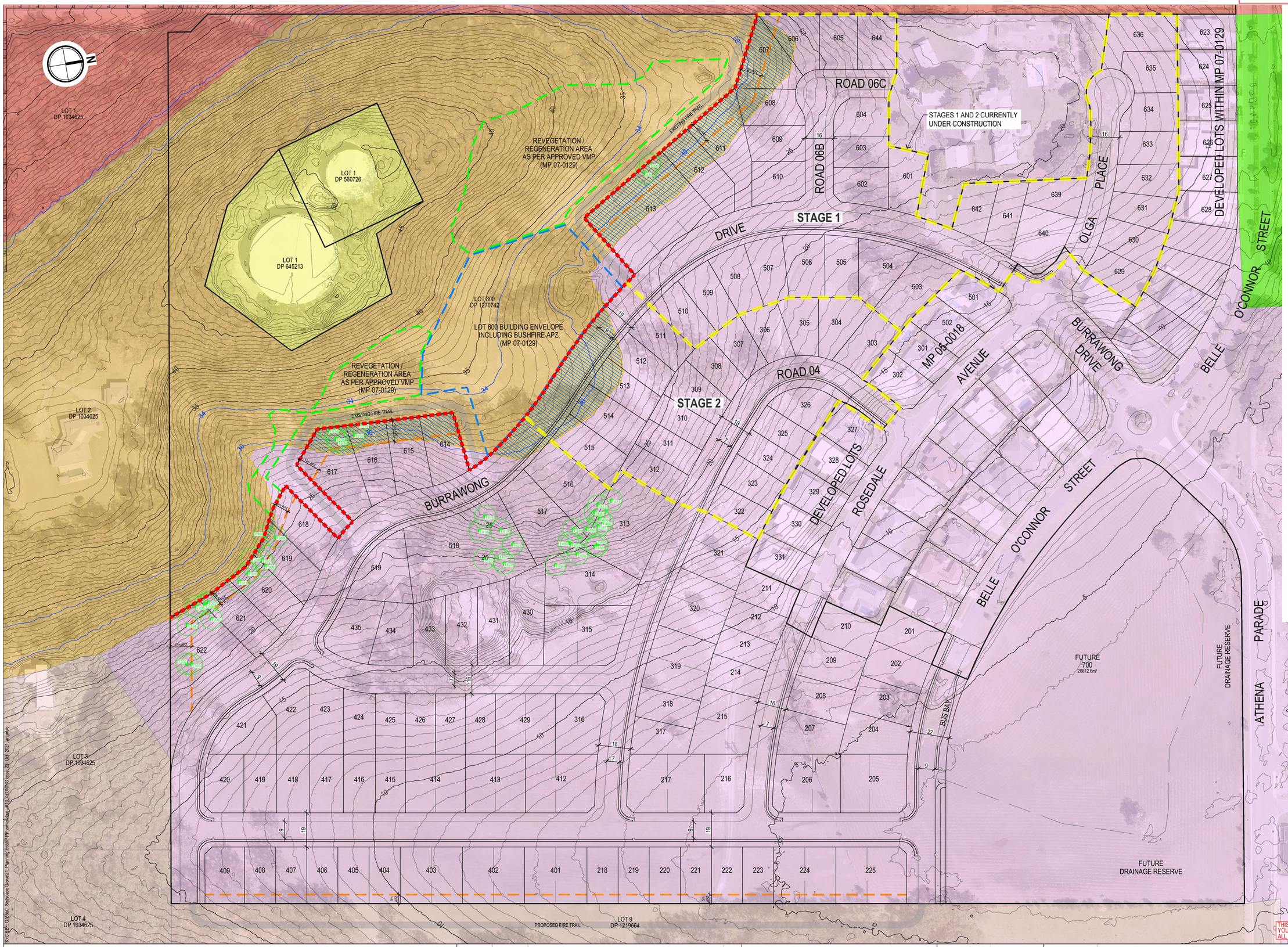
Yours sincerely
King & Campbell Pty Ltd



Anthony Thorne

encl As listed
cc Client

Attachment 1



LEGEND

- EXISTING **R1** GENERAL RESIDENTIAL
- EXISTING **E3** ENVIRONMENTAL MANAGEMENT
- BOUNDARY BETWEEN APPROVED RESIDENTIAL LOTS 606-608, 611-622 (MP 07-0129) AND LOT 800 DP 1270742 (STAGE 1C MP 07-0129)
- EXISTING TREE TO BE RETAINED (6m BUFFER ILLUSTRATED) CS-21-00006 23 JULY 2021
- STAGES 1 AND 2 LIMIT OF WORKS
- EXISTING SURFACE CONTOURS (MAJOR AT 5m INTERVALS, MINOR AT 0.5m INTERVALS) DATA FROM ELVIS - NSW GOVERNMENT SPATIAL SERVICES DIGITAL ELEVATION MODEL
- EXISTING FIRE TRAIL PURSUANT TO MP 07-0129 STAGE 1C
- LAND WITHIN LOTS 512-516 & LOTS 606-608, 611-622 & EXTENSION OF BURRAWONG DRIVE WITHIN APPROVED RESIDENTIAL SUBDIVISIONS MP 05-0018 AND MP 07-0129 PROPOSED TO BE REZONED FROM E3 ENVIRONMENTAL MANAGEMENT TO R1 GENERAL RESIDENTIAL
- REVEGETATION / REGENERATION - APPROVED VEGETATION MANAGEMENT PLAN (MP 07-0129)
- LOT 800 BUILDING ENVELOPE INCLUDING BUSHFIRE ASSET PROTECTION ZONE (MP 07-0129)
- BUSHFIRE APZ WITHIN LOTS 606-608, 611-622 WITHIN APPROVED RESIDENTIAL SUBDIVISION (MP 05-0018)

NOTES

1. SUBDIVISION WORKS CONSTRUCTION CERTIFICATE FOR STAGE 1 (LOTS 503-510, 601-613, 629-636, 639-642 & 644), AND STAGE 2 (LOTS 303-312, 322-326, 511-515) LODGED WITH KEMPSEY SHIRE COUNCIL ON 20 AUGUST 2021.
2. PROPOSED RE-ALIGNMENT OF BOUNDARY BETWEEN R1 (GENERAL RESIDENTIAL) AND E3 (ENVIRONMENTAL MANAGEMENT) TO MATCH BOUNDARY BETWEEN APPROVED RESIDENTIAL LOTS AND APPROVED LOT 800 DP 1270742 CONTAINING LAND SUBJECT TO APPROVED VEGETATION MANAGEMENT PLAN.

CAUTION

THIS PLAN HAS BEEN PREPARED FOR A PLANNING PROPOSAL. THE INFORMATION SHOWN HEREIN IS ONLY RELIABLE FOR THE ABOVE PURPOSE. IT SHOULD NOT THEREFORE BE USED FOR ANY OTHER PURPOSE WITHOUT VERIFICATION.

THIS DRAWING INCLUDES INFORMATION IN COLOUR. IF YOU HAVE A BLACK AND WHITE COPY YOU DONT HAVE ALL THE INFORMATION. THIS NOTE IS COLOURED RED.

K:\C-DEP\ O:\6500_Seascape Grove\2 L Planning\6500PP\PP zones\6550P ZONING.dwg, Zoning, 22 Oct 2021 ajmpdc

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REV.	DATE	DESCRIPTION	BY
A	22.10.2021	ISSUED FOR INFORMATION	AJC

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

0 60

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PROJECT NO:	6550
DA NO.:	05_0018 & 07_0129
DESIGNED BY:	DAT/CJC/LW
DRAWN BY:	AJC
CHECKED BY:	CJC
DATE CREATED:	MARCH 2021

DRAWING TITLE:	SEASCAPE GROVE ESTATE PROPOSED ZONE BOUNDARY RE-ALIGNMENT			**A1**
PROJECT:	SEASCAPE GROVE ESTATE, BURRAWONG DRIVE, SOUTH WEST ROCKS LOT 801 DP1270742			
CLIENT:	AUSPADDY DEVELOPMENTS PTY LTD	DRAWING NO:	SHEET:	REVISION:
		6550P PP zones	1	A

Attachment 2

Biodiversity AUSTRALIA

SUSTAINABLE PARTNERSHIPS
DEDICATED TO ACHIEVING
ECOLOGICAL AND ECONOMICAL BALANCE

LEADING THE WAY
IN ENVIRONMENTAL
MANAGEMENT



VEGETATION MANAGEMENT PLAN FOR SEASCAPE GROVE

SOUTH WEST ROCKS

February 2020

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ABN 81 127 154 787

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Version Control

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Rev 1.0	Final Report	Will Steggall	Will Steggall	05/02/2020

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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 *Phytophthora cinnamomi*	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

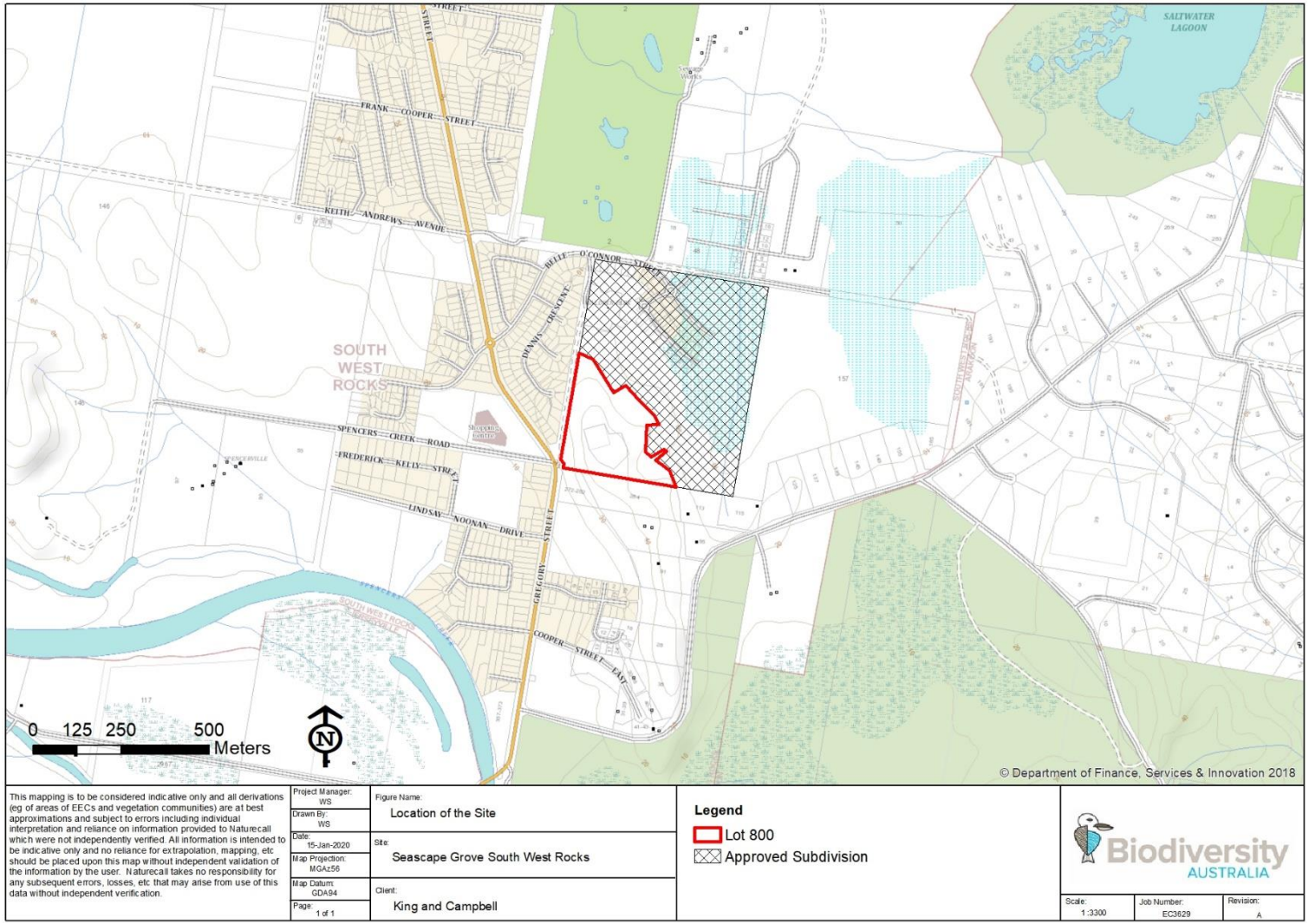


Figure 2: Development layout plan

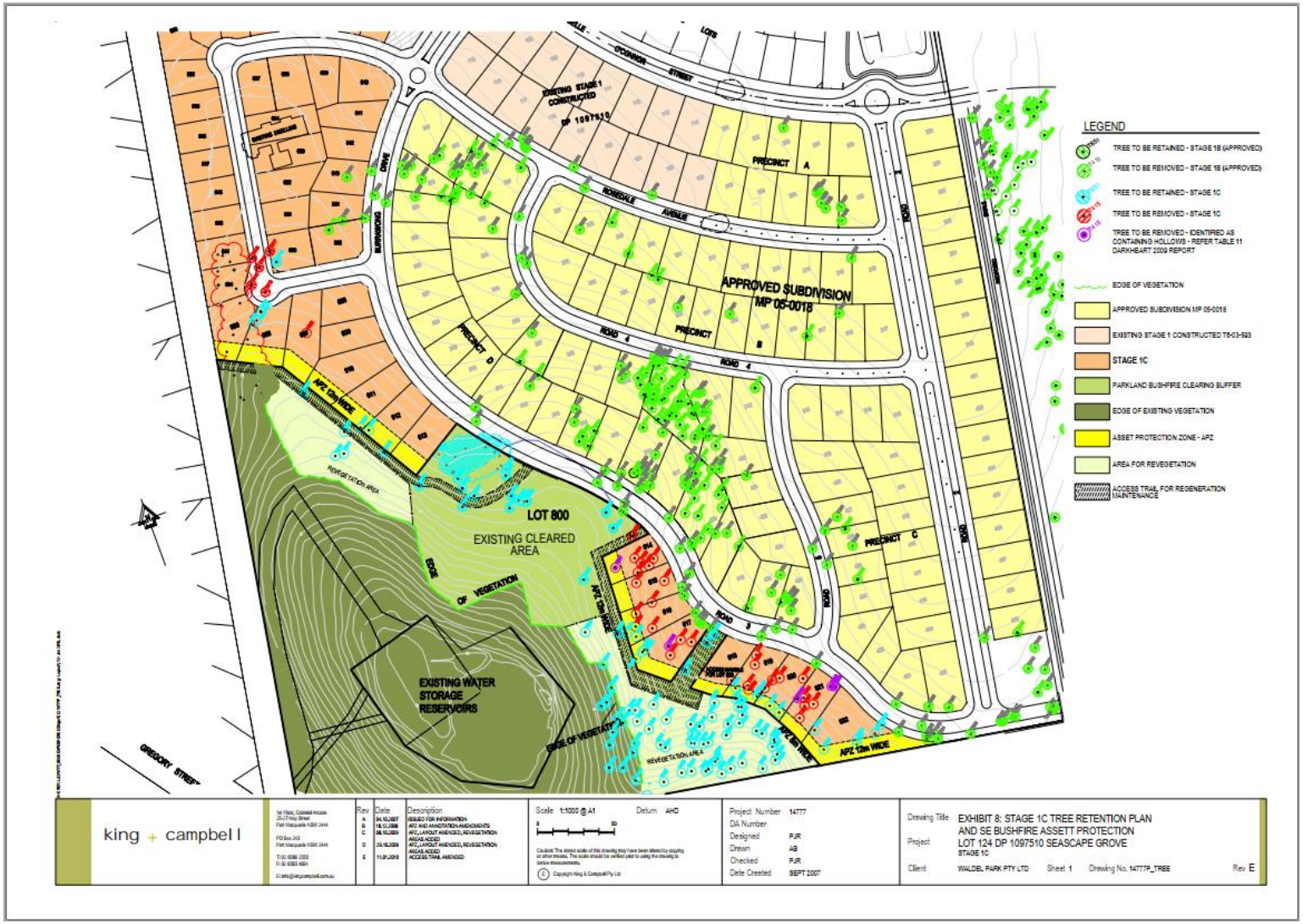
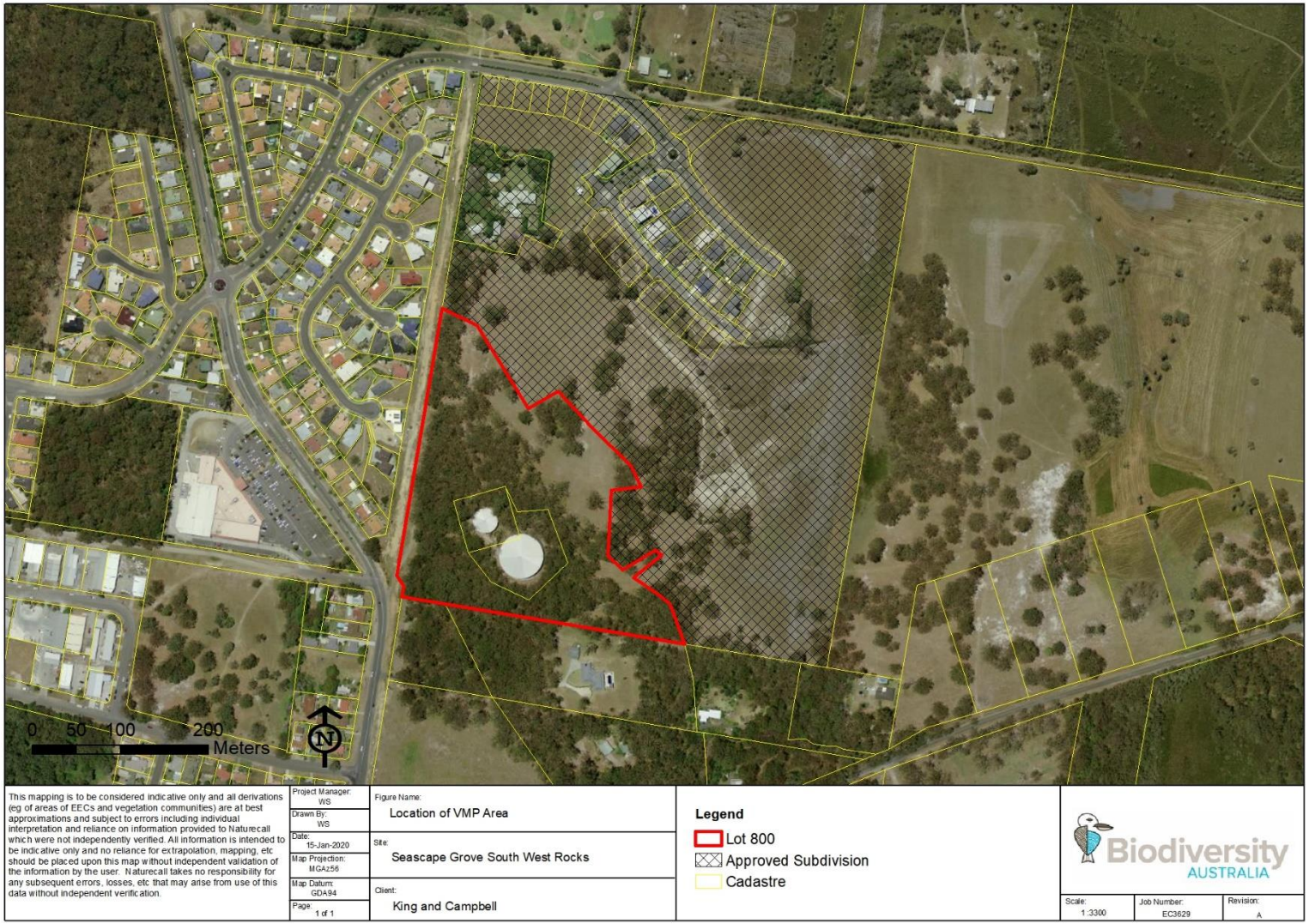


Figure 3: Location of Lot 800 and VMP area



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

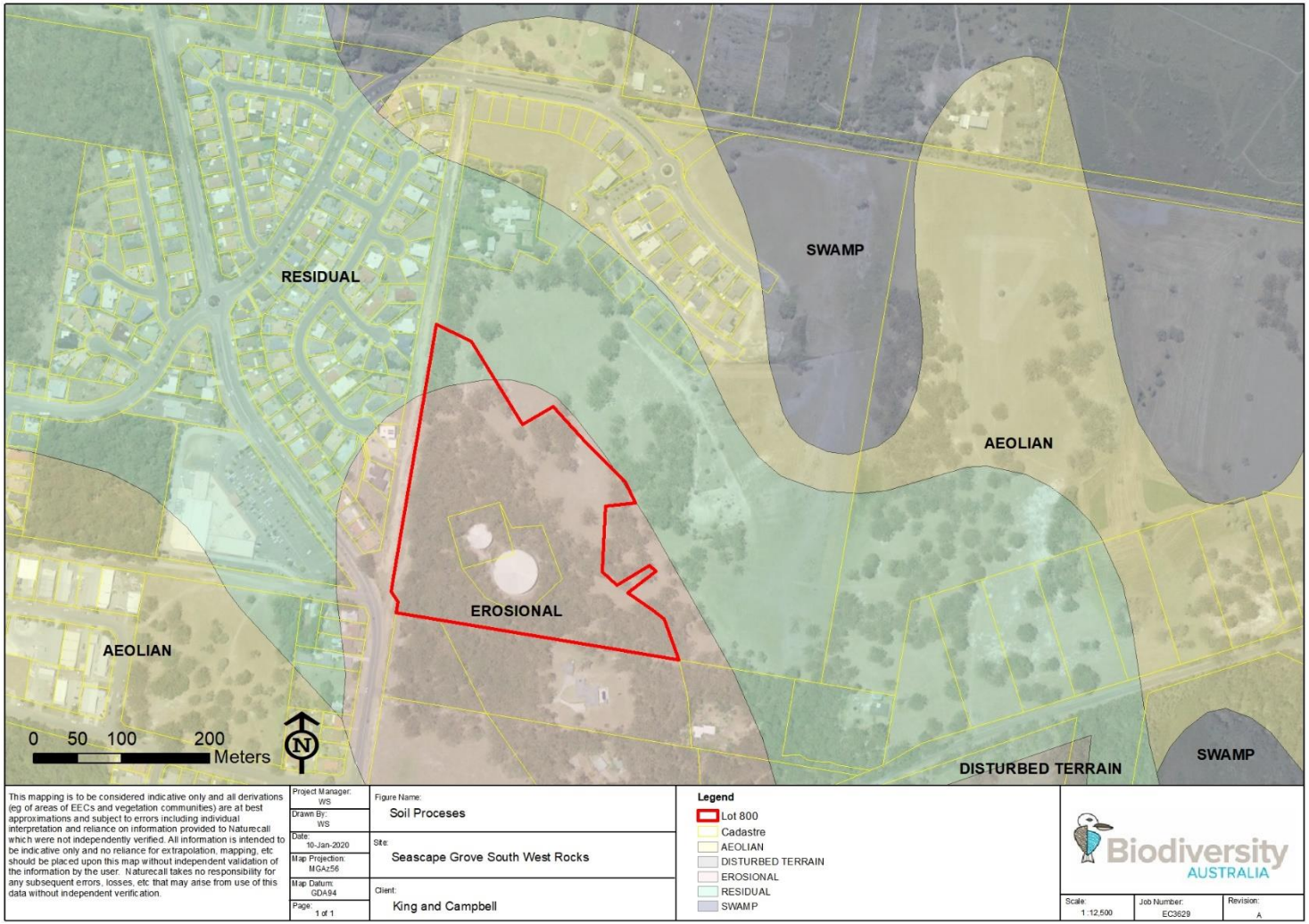


Figure 5: Updated site vegetation mapping



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.

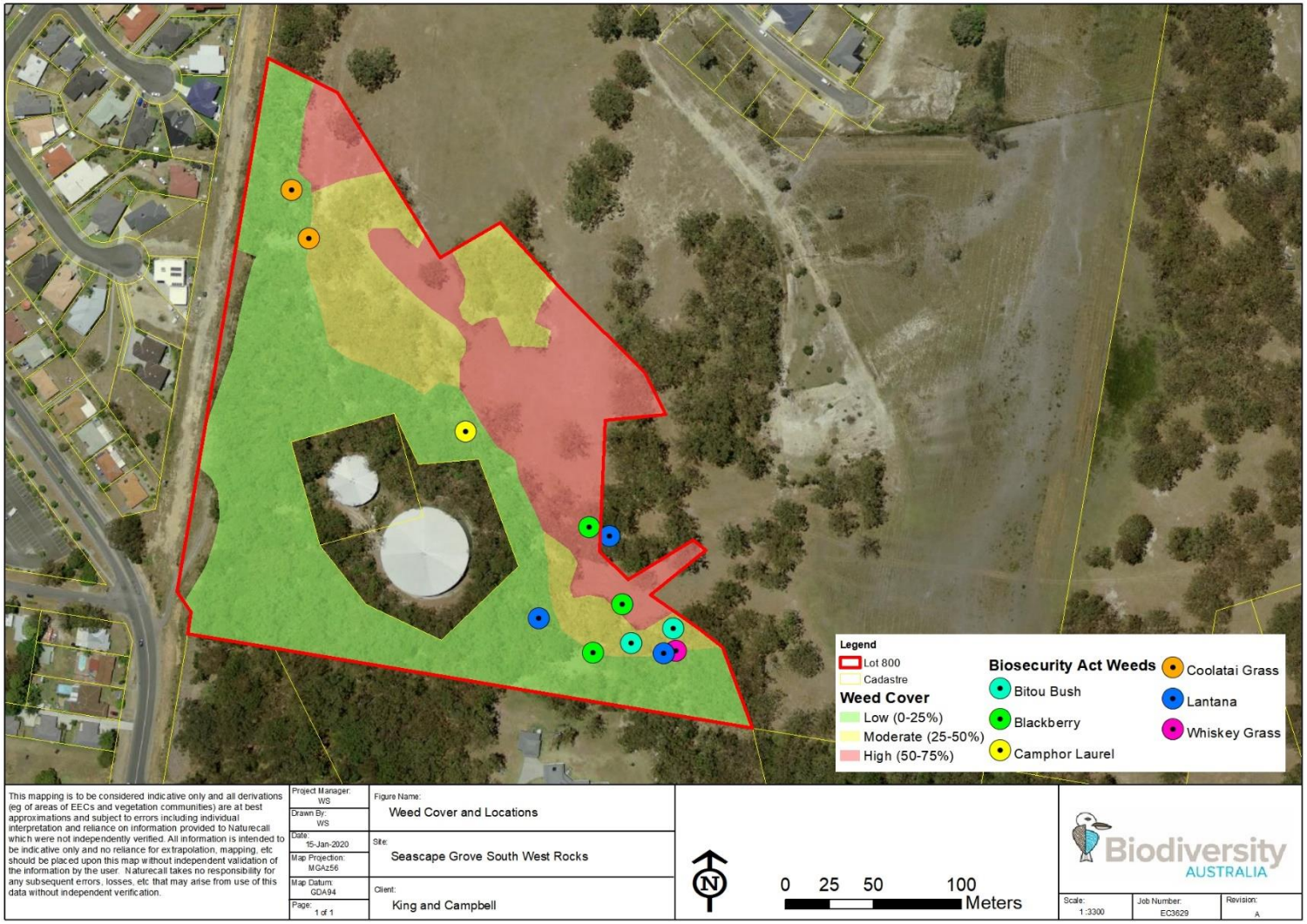
Common Name	Scientific Name	Abundance
Trees and shrubs		
Camphor Laurel	*Cinnamomum camphora*	R
Bitou Bush	*Chrysanthemoides monilifera*	R
Groundcovers		
Fleabane	*Conyza bonariensis*	O
Cudweed	*Gnaphalium gymnocephalum*	O
Fireweed	*Senecio madagascariensis*	U
Catsear	*Hypochaeris radicata*	C
-	*Richardia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

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

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
Mammals				
Squirrel Glider	*Petaurus norfolcensis*	V	-	**Known**
Brushtailed Phascogale	*Phascogale tapoatafa*	V	-	Highly likely
Spotted-tailed Quoll	*Dasyurus maculatus*	V	E	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*	E	E	Fair

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	*Hoplocephalus stephensii*	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

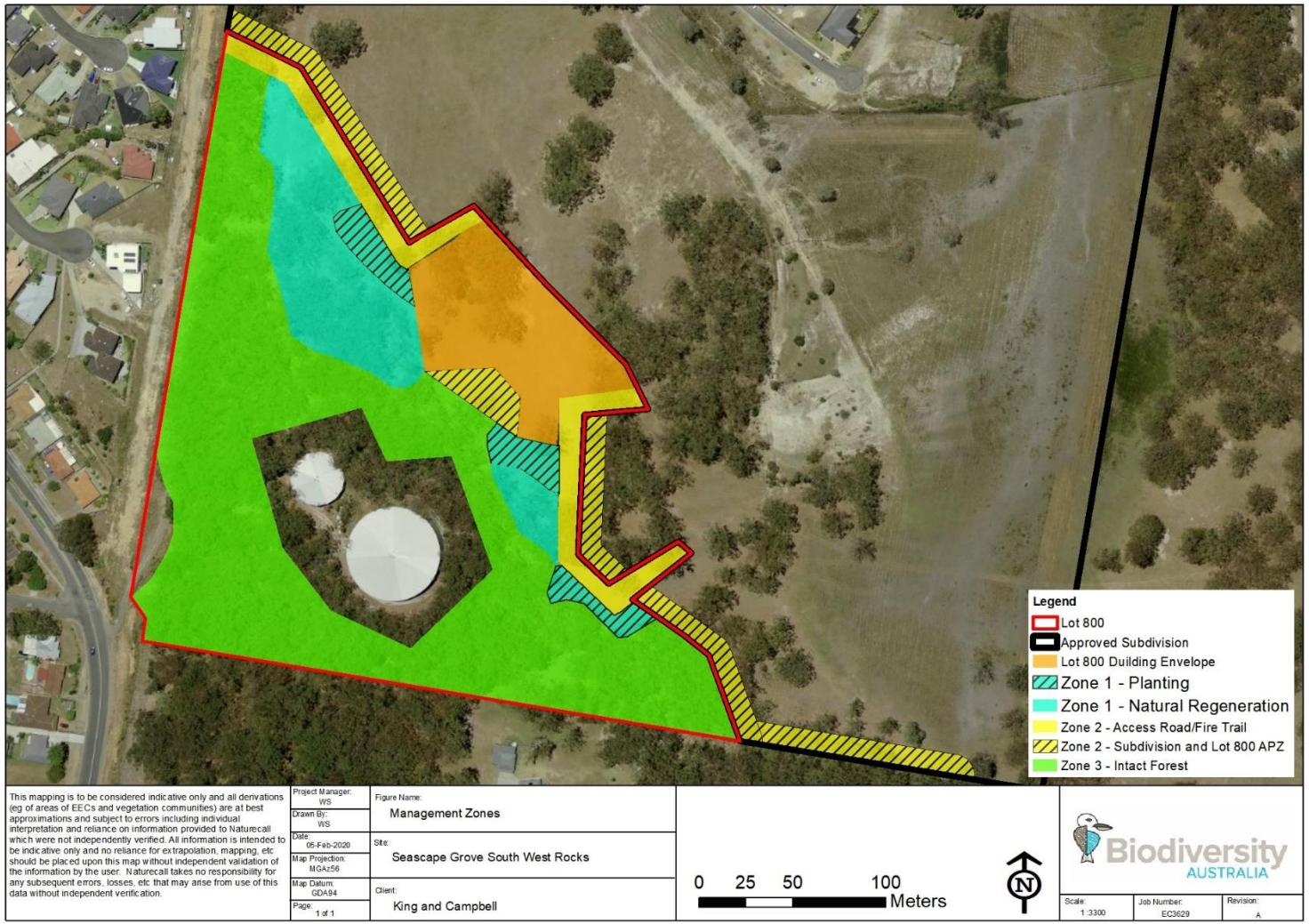
4.1 Identification of Management Zones

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
2. 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 3000m^2 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 100m^2 (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/50m^2 (7x7 spacing) for mid storey and shrubs.

Within the 3000m^2 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%
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.
Foliar spraying	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. 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.
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	Technique
Lantana (*Lantana camara*)	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 (*Rubus fruticosus aggregate*)	300g/L Triclopyr, 100g/L Picloram, 8g/L Aminopyralid at 350ml or 500ml/ 100l of water depending on infestation characteristics.	• Foliar spray • Slashing 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.

Photo 6: Waste piles in Lot 800



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:

<u>Conservation Area</u>
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.

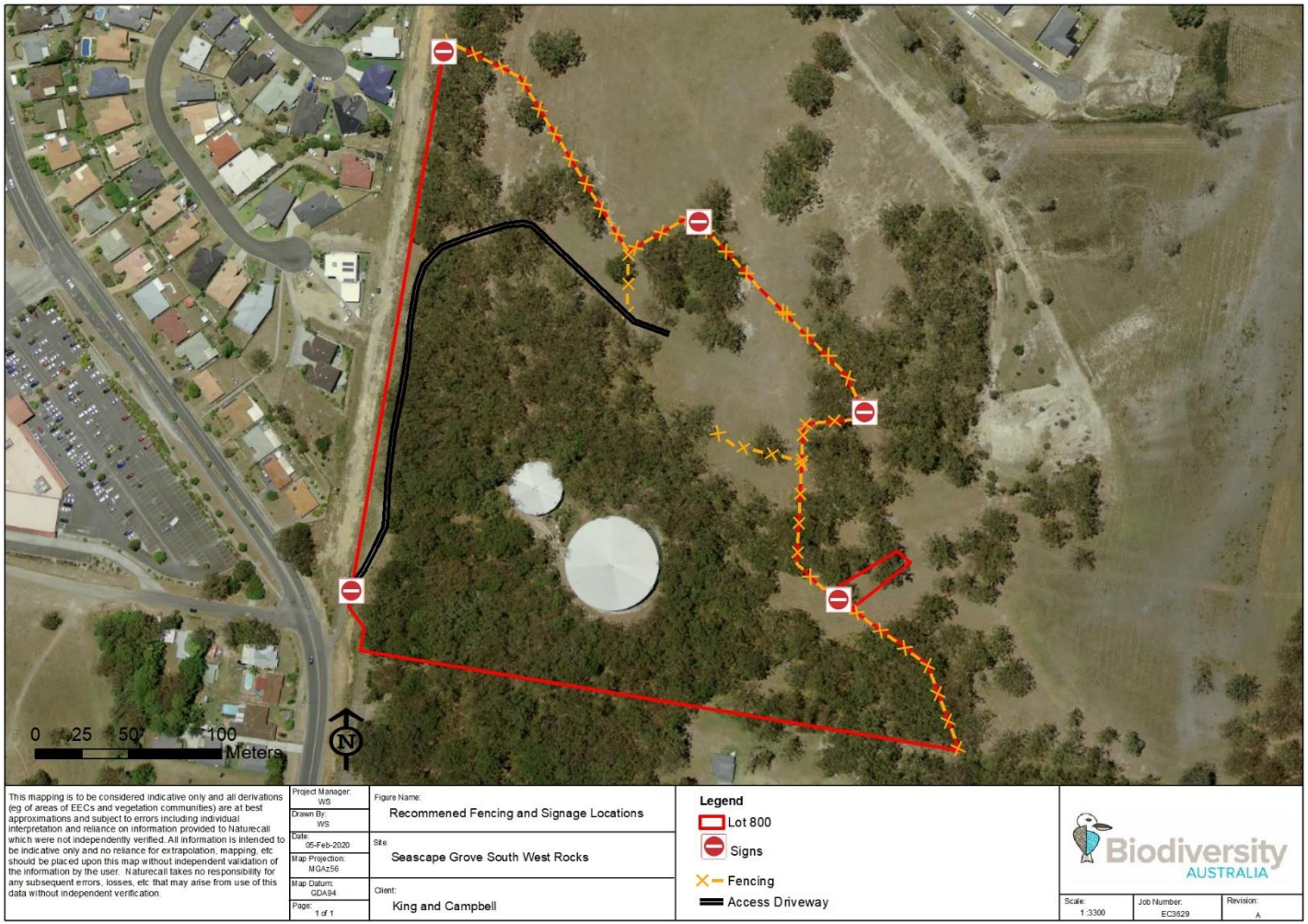
4.3.4.4 Weed Control

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.

Figure 9: Fauna crossing points

Red circles shown areas of retained trees and arrows depict likely 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
1	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
		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	Salvage of hollow logs/limbs and bushrock	During clearing	Clearing contractor/ecologist
		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

	Waste Removal	Removal of rubbish and construction waste	Year 1	Civil contractor
2	Selective retention of habitat features in APZ	Habitat feature mark-up	Prior to clearing	Ecologist
		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
		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

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	Hygiene protocols	Establish exclusion zones and access points Brief construction personnel Establish washdown points	During clearing and construction phase	Ecologist/clearing and civil contractors
All	Baseline pest survey	Carry out survey for pest animals	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

6. 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

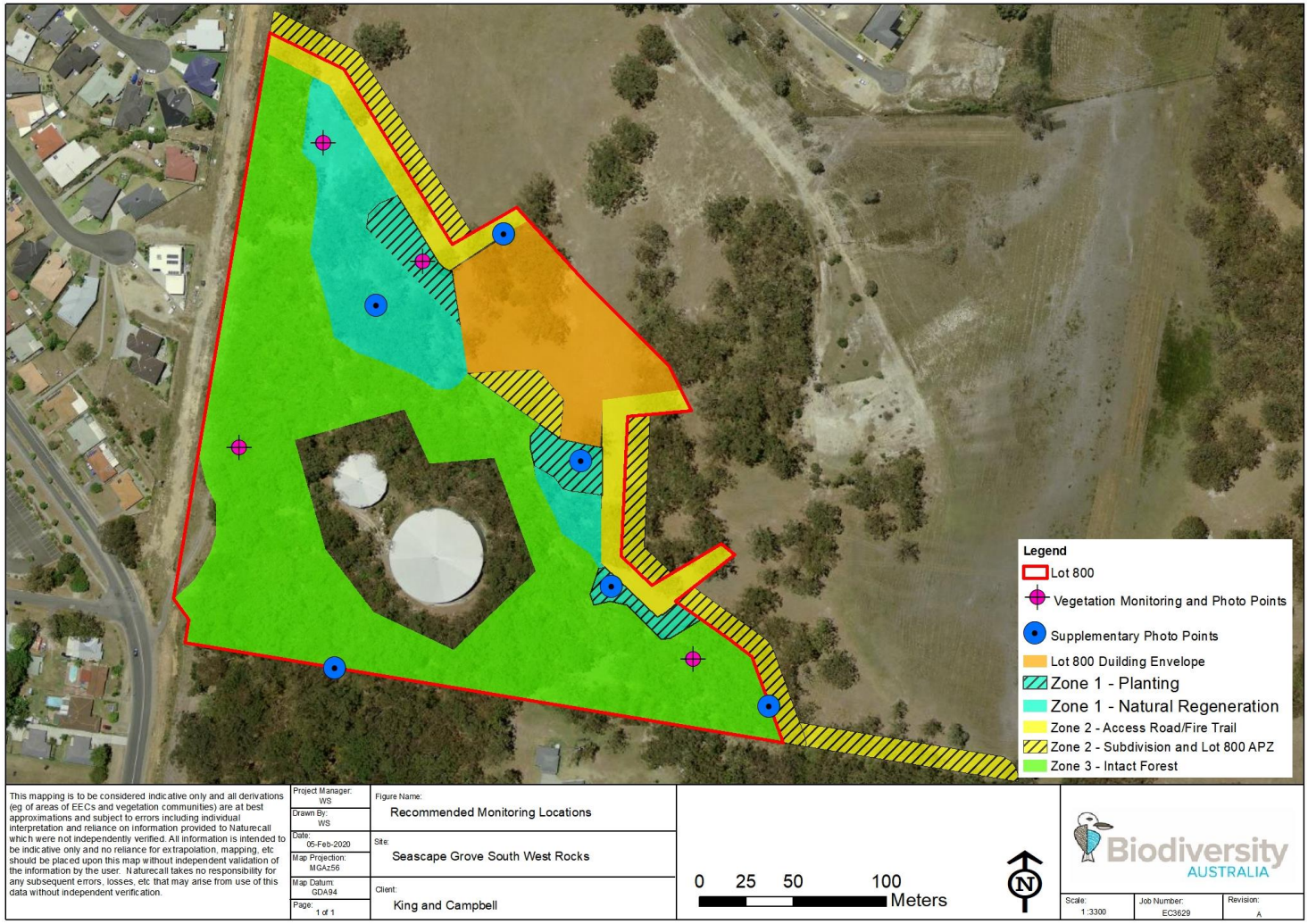
All nest boxes installed within Lot 800 are to be monitored annually by an ecologist. Monitoring will consist of inspecting each box, ideally with an inspection camera, to determine if they are being utilised by fauna. Any maintenance issues with the nest boxes and follow-up actions required shall be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

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. NW corner	
Vegetation Community:		
Vegetation Condition:	**EEC:** Y / N	

Record easting and northing from the starting plot marker.

Attribute (20x20m plot)		**Sum values**
Count of **Native Richness**	**Trees**	
	Shrubs	
	Grasses etc.	
	Forbs	
	Ferns	
	Other	
Sum of **Cover o**f native vascular plants by growth form group	**Trees**	
	Shrubs	
	Grasses etc.	
	Forbs	
	Ferns	
	Other	
Native Species Cover %		
Weed Species Cover %		
High Threat Weed 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						
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42						
43						
44						
45						
46						
47						

Cover: 0.1, 0.2, 0.3, …, 1, 2, 3, …, 10, 15, 20, 25, …100% (foliage cover). **Note:** 0.1% cover represents an area of approx.. 63 x 63 cm or a circle about 71 cm across, 0.5% cover represents an area of approx.. 1.4 x 1.4 m, and 1% = 2 x 2 m, 5% = 4 x 5 m, 25% = 10 x10 m. **Abundance:** 1, 2, 3, …, 10, 20, 30, …, 100, 200, …, 1000, …

Attachment 3

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

NO.	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	A
06.	ACCESS TRAIL 01 CROSS SECTIONS CH 160.00 TO 200.00	A
07.	ACCESS TRAIL 02 CROSS SECTIONS CH 0.00 TO 70.00	A
08.	ACCESS TRAIL 02 CROSS SECTIONS CH 80.00 TO 150.00	A
09.	ACCESS TRAIL 02 CROSS SECTIONS CH 160.00 TO 180.00	A



LOCALITY PLAN
NOT TO SCALE

NOT TO BE USED FOR CONSTRUCTION UNLESS CONSTRUCTION CERTIFICATE ISSUED FOR THE WORKS

KEMPSEY SHIRE COUNCIL

Plans and Specifications are approved in relation to the

Certificate No. CB-20-37

Signed: ..... Date: 7.2.20

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

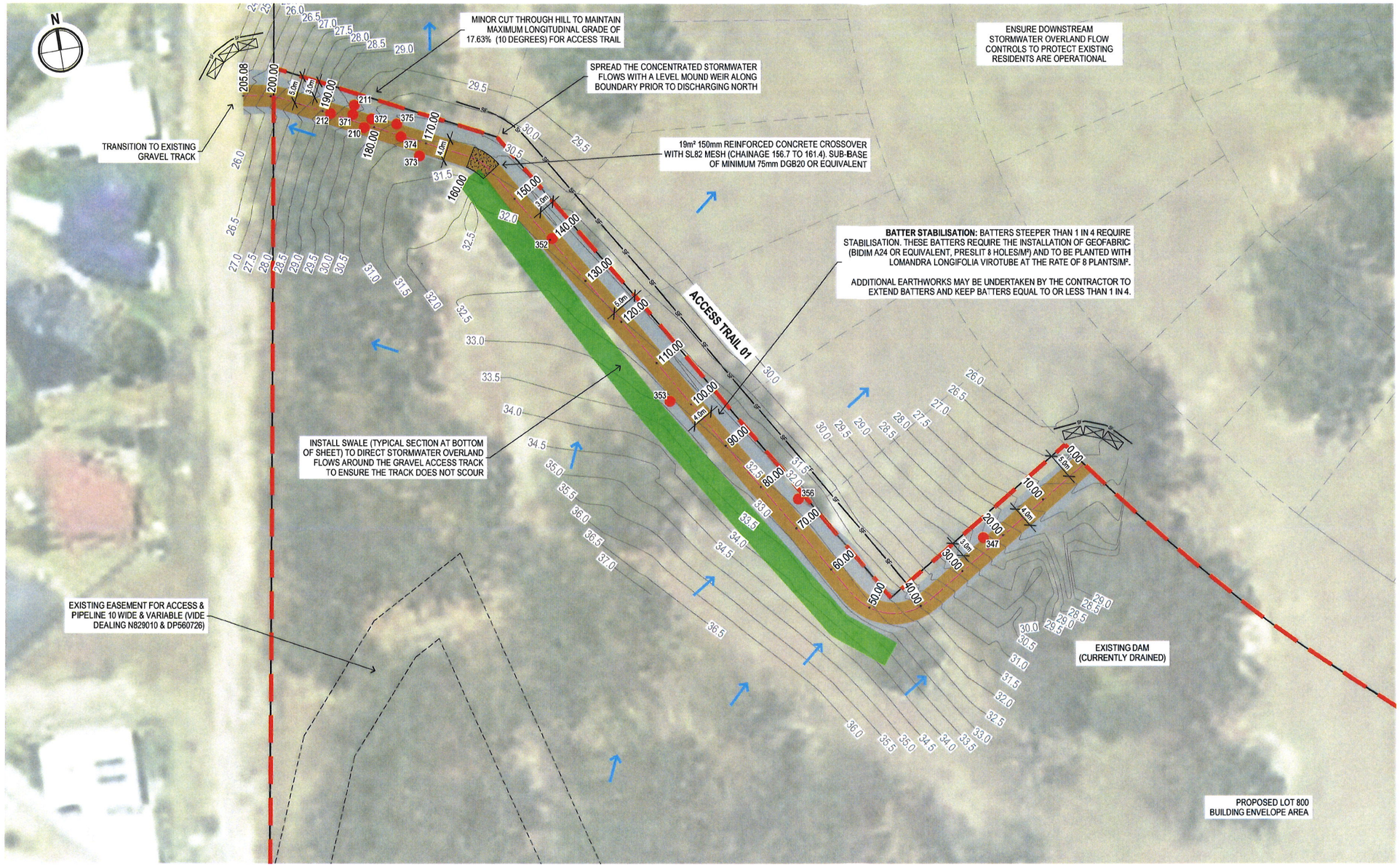
PO Box 243
Port Macquarie 2444

T: 02 6586 2555
F: 02 6583 4064

E: info@kingcampbell.com.au

A1

K:\C-REF\ O:\5268_Waldel\Engineering\5268E_CC-Fire Trail.dwg, A1(LJ-TITLE 03-Feb-2020, craigc



LEGEND

- PROPOSED LOT 800 LOCATED WITHIN LOT 332 DP1220901
- 31.0 DESIGN CONTOURS (0.5m INTERVALS)
- GRAVEL ACCESS TRACK CENTRELINE
- PROPOSED 4M WIDE GRAVEL ACCESS TRAIL
- EARTHWORKS BATTERS
- PROPOSED SWALE TO DIVERT OVERLAND FLOWS
- 352 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

- 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 800
- IF THE LOT 800 BOUNDARY IS FENCED THEN PROVISION MUST BE MADE FOR GATES AT THE FIRE TRAILS WHICH ARE LOCKED WITH A KEY/LOCK SYSTEM AUTHORIZED BY THE LOCAL RFS

KEMPSEY SHIRE COUNCIL

Plans and Specifications are approved in relation to the Certificate No. CB-20-37

Signed: ..... Date: 7.2.20

In accordance with the authority delegated by the General Manager

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)]

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

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

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

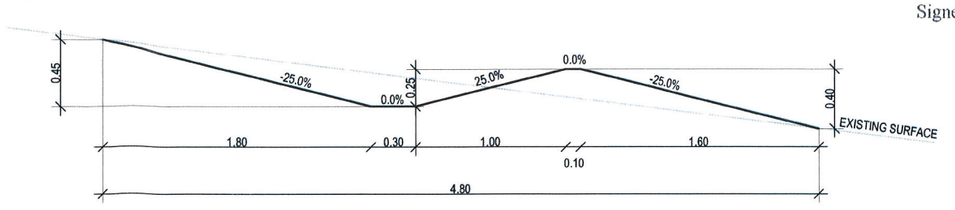
CONTRACTOR TO TAKE APPROPRIATE DUST SUPPRESSION MEASURES AS NECESSARY TO PREVENT DISTURBANCE TO ADJOINING RESIDENTS.

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 COMPLETION, USING TURF OR THE FOLLOWING SEED AND FERTILISER MIXTURE :

	SPRING/SUMMER		AUTUMN/WINTER	
JAPANESE MILLET	15	kg/ha	5	kg/ha
RYECORN/OATES	5	kg/ha	15	kg/ha
COUCH GRASS	10	kg/ha	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 FERTILISER (FOLLOWING SPRING / AUTUMN)	100	kg/ha	100	kg/ha

NOT USED ADJACENT TO BUSHLAND AREAS



STORMWATER SWALE TYPICAL SECTION

DIAGRAM SCALE 1:20 @ A1

DIAL BEFORE YOU DIG www.1100.com.au

Look up and live
For safety tips visit essentialenergy.com.au/safety or in an emergency call 13 20 80
essential energy

NOT TO BE USED FOR CONSTRUCTION UNLESS CONSTRUCTION CERTIFICATE ISSUED FOR THE WORKS

KING + CAMPBELL

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www.kingcampbell.com.au
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T: 02 6586 2555
F: 02 6583 4064
E: info@kingcampbell.com.au

REV.	DATE	DESCRIPTION	BY
A	25.11.2019	ISSUED FOR SITE INSPECTION WITH CLIENT	CJC
B	02.12.2019	ISSUED TO CLIENT	CJC
C	16.12.2019	ISSUED FOR CC APPROVAL	CJC
D	07.01.2020	TREE TAGS & CONTOURS UPDATED	CJC

DATUM: AHD SCALE: 1:400 @ A1 (1:800 @ A3)

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PROJECT NO:	5268
DA NO.:	MP 07_0129
DESIGNED BY:	CJC
DRAWN BY:	CJC / LW
CHECKED BY:	SM / CJC
DATE CREATED:	11.2019

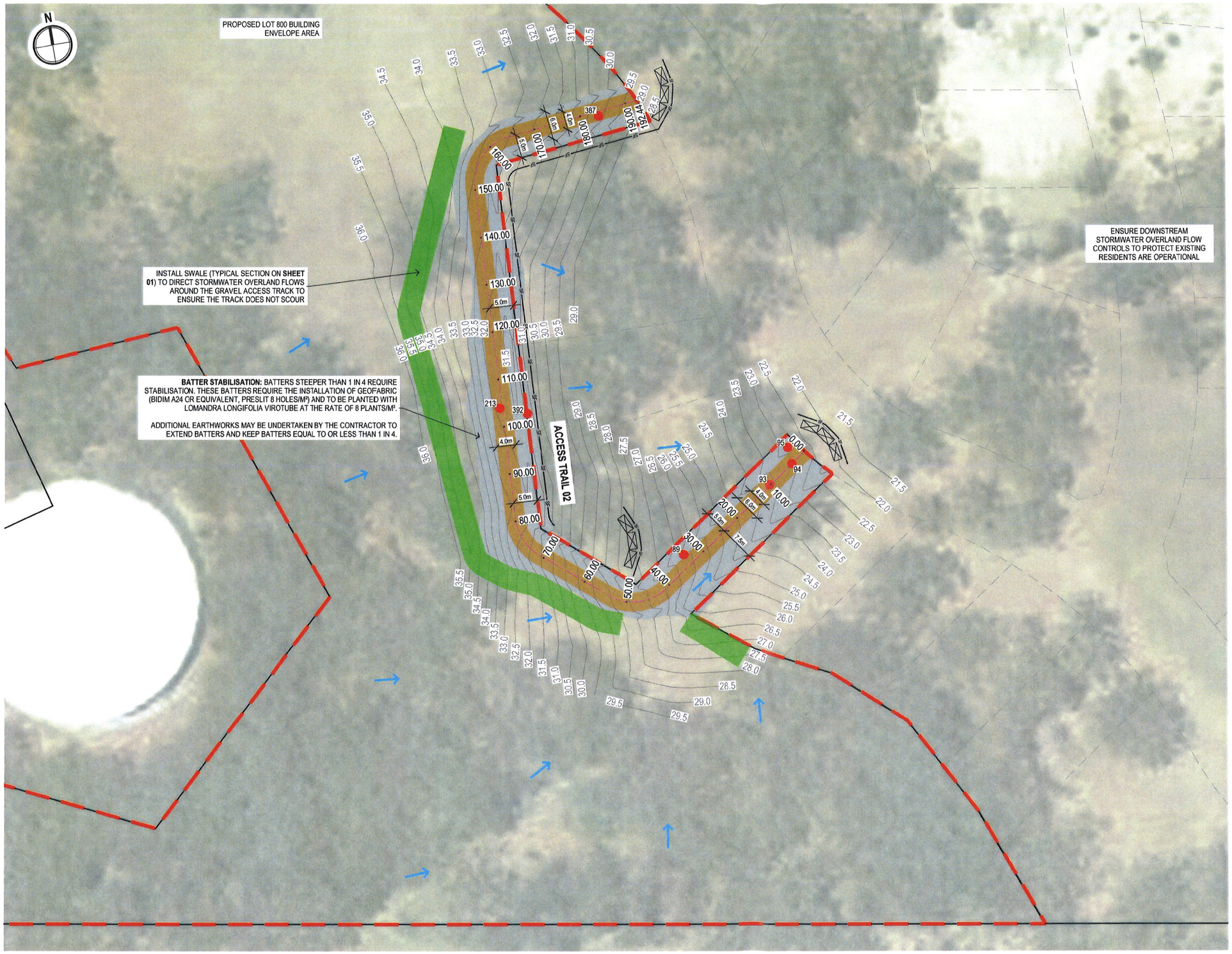
DRAWING TITLE: LOT 800 ACCESS TRAIL 01 PLAN — A1

PROJECT: PROPOSED LOT 800 OF SEASCAPE GROVE ESTATE LOT 332 DP1220901

CLIENT: WALDEL PARK PTY LTD

DRAWING NO	SHEET:	REVISION
5268E_CC Fire Trail	01	D

K:\C:\REF: O\5268_Walls\Engineering\5268E_CC Fire Trail.dwg - A1(L)-TRAIL 01 03- Feb 2020, cmpc



LEGEND

- PROPOSED LOT 800 LOCATED WITHIN LOT 332 DP1220901
- 31.0 DESIGN CONTOURS (0.5m INTERVALS)
- GRAVEL ACCESS TRACK CENTRELINE
- PROPOSED 4M WIDE GRAVEL ACCESS TRAIL
- EARTHWORKS BATTERS
- PROPOSED SWALE TO DIVERT OVERLAND FLOWS
- 352 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

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PLANNING FOR BUSH FIRE PROTECTION (2006)

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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 800
- IF THE LOT 800 BOUNDARY IS FENCED THEN PROVISION MUST BE MADE FOR GATES AT THE FIRE TRAILS WHICH ARE LOCKED WITH A KEY/LOCK SYSTEM AUTHORIZED BY THE LOCAL RFS.

LAKE MACQUARIE COUNCIL

Plans and Specifications are approved in relation to the Certificate No. CB-20-37

Signed: ..... Date: 7.2.20

In accordance with the authority delegated by the General Manager

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essential energy

NOT TO BE USED FOR CONSTRUCTION UNLESS CONSTRUCTION CERTIFICATE ISSUED FOR THE WORKS

K:\C REF\ O:\5268_Waldel\Engineering\5268E_CC Fire Trail.dwg - A1(L)-TRAIL 02, 03-Feb-2020, cmqc

KING + CAMPBELL

King & Campbell Pty Ltd
www.kingcampbell.com.au
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T: 02 6586 2555
F: 02 6583 4064
E: info@kingcampbell.com.au

REV.	DATE	DESCRIPTION	BY
A	25.11.2019	ISSUED FOR SITE INSPECTION WITH CLIENT	CJC
B	02.12.2019	ISSUED TO CLIENT	CJC
C	16.12.2019	ISSUED FOR CC APPROVAL	CJC
D	07.01.2020	TREE TAGS & CONTOURS UPDATED	CJC

DATUM: AHD SCALE: 1:400 @ A1 (1:800 @ A3)

0 20m

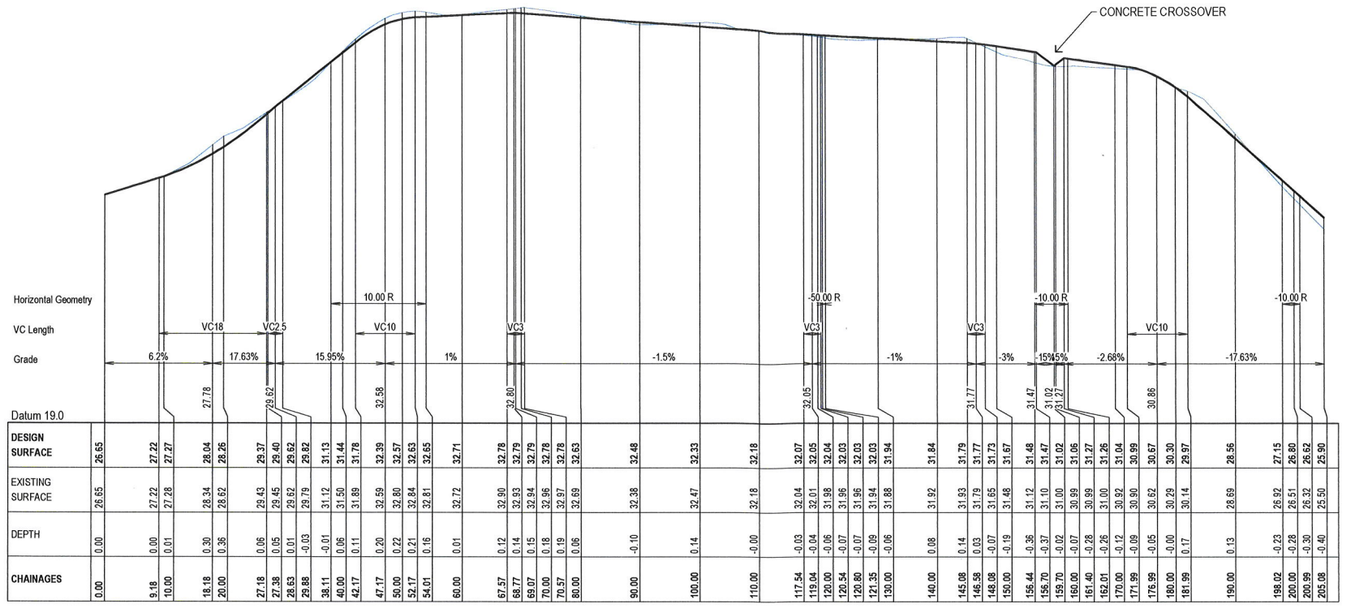
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PROJECT NO:	5268
DA NO.:	MP 07_0129
DESIGNED BY:	CJC
DRAWN BY:	CJC / LW
CHECKED BY:	SM / CJC
DATE CREATED:	11.2019

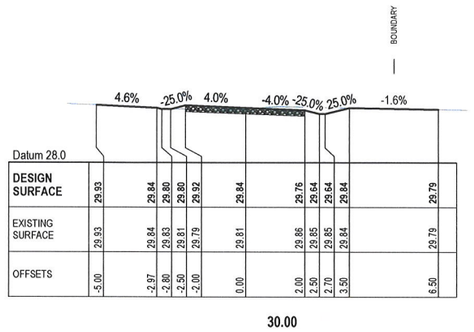
DRAWING TITLE:	LOT 800 ACCESS TRAIL 02 PLAN
PROJECT:	PROPOSED LOT 800 OF SEASCAPE GROVE ESTATE LOT 332 DP1220901
CLIENT:	WALDEL PARK PTY LTD

A1

DRAWING NO:	SHEET:	REVISION:
5268E_CC Fire Trail	02	D


CONCRETE CROSSOVER

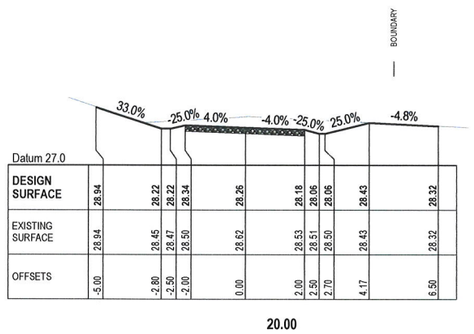
| | | |



Datum 28.0

DESIGN SURFACE	29.93		29.84	29.80	29.80	29.92	29.84		29.76	29.64	29.64	29.84		29.79
EXISTING SURFACE	29.93		29.84	29.83	29.81	29.79	29.81		29.86	29.85	29.85	29.84		29.79
OFFSETS	-5.00		-2.97	-2.80	-2.50	-2.00	0.00		2.00	2.50	2.70	3.50		6.50

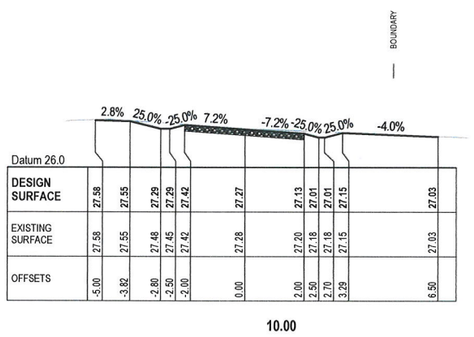
30.00



Datum 27.0

DESIGN SURFACE	28.94		28.22	28.22	28.34		28.26		28.18	28.36	28.36	28.43		28.32
EXISTING SURFACE	28.94		28.45	28.47	28.50		28.62		28.53	28.51	28.50	28.43		28.32
OFFSETS	-5.00		-2.80	-2.50	-2.00		0.00		2.00	2.50	2.70	4.17		6.50

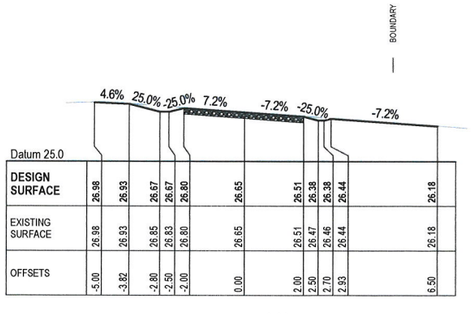
20.00



Datum 26.0

DESIGN SURFACE	27.58	27.55	27.29	27.42		27.27		27.13	27.01	27.01	27.15		27.03
EXISTING SURFACE	27.58	27.55	27.48	27.45	27.42	27.28		27.20	27.18	27.18	27.15		27.03
OFFSETS	-5.00	-3.82	-2.80	-2.50	-2.00	0.00		2.00	2.50	2.70	3.29		6.50

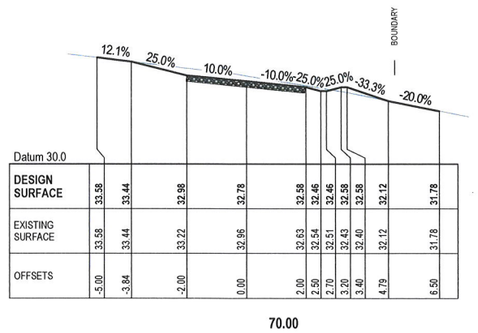
10.00



Datum 25.0

DESIGN SURFACE	26.98	26.93	26.67	26.67	26.80		26.65		26.51	26.38	26.38	26.44		26.18
EXISTING SURFACE	26.98	26.93	26.85	26.83	26.80		26.65		26.51	26.47	26.46	26.44		26.18
OFFSETS	-5.00	-3.82	-2.80	-2.50	-2.00		0.00		2.00	2.50	2.70	2.93		6.50

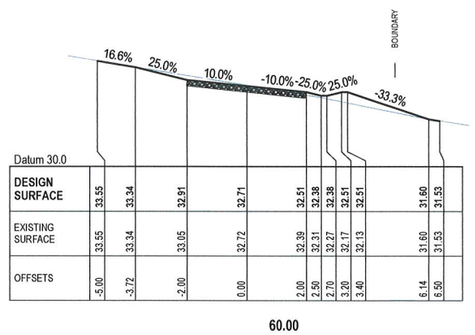
0.00



Datum 30.0

DESIGN SURFACE	33.58	33.44		32.98		32.78		32.58	32.46	32.46	32.58	32.12	31.78
EXISTING SURFACE	33.58	33.44		33.22		32.96		32.63	32.54	32.51	32.43	32.40	32.12	31.78
OFFSETS	-5.00	-3.84		-2.00		0.00		2.00	2.50	2.70	3.20	3.40	4.79	6.50

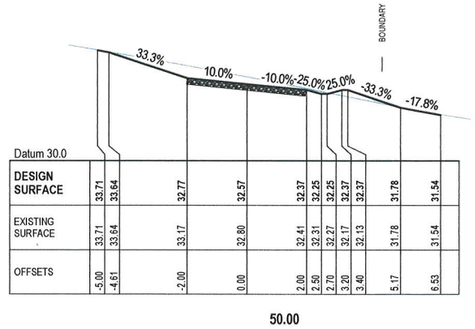
70.00



Datum 30.0

DESIGN SURFACE	33.55	33.34		32.91		32.71		32.51	32.38	32.38	32.51		31.60	31.53
EXISTING SURFACE	33.55	33.34		33.05		32.72		32.39	32.31	32.27	32.17	32.13	31.60	31.53
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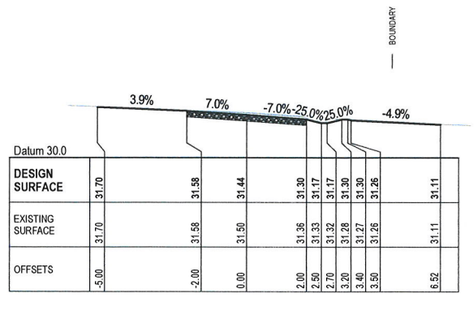
60.00



Datum 30.0

DESIGN SURFACE	33.71	33.64		32.77		32.57		32.37	32.25	32.25	32.37		31.78	31.54
EXISTING SURFACE	33.71	33.64		33.17		32.80		32.41	32.31	32.27	32.17	32.13	31.78	31.54
OFFSETS	-5.00	-4.61		-2.00		0.00		2.00	2.50	2.70	3.20	3.40	5.17	6.53

50.00



Datum 30.0

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	

40.00

KEMPSEY SHIRE COUNCIL

Plans and Specifications are approved in relation to the

Certificate No. CB-20-37

Signed: ..... Date: 7.2.20

In accordance with the authority delegated by the General Manager

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 10 20 30 40 50m
HORIZONTAL SCALE 1:100 @ A1

0 10 20 30 40 50m
VERTICAL SCALE 1:100 @ A1

NOT TO BE USED FOR CONSTRUCTION UNLESS CONSTRUCTION CERTIFICATE ISSUED FOR THE WORKS

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K:\C-REF O:\5268_WaldelEngineering\5268E_CC Fire Trail.dwg, A1(LJV3 01: 03- Feb- 2020, craigc

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F: 02 6583 4064
E: info@kingcampbell.com.au

REV	DATE	DESCRIPTION	BY
A	07.01.2020	ISSUED FOR APPROVAL	CJC

DATUM AHD SCALE AS SHOWN @ A1

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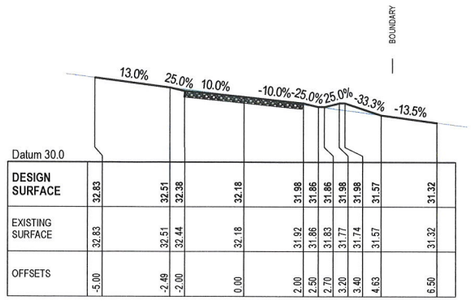
PROJECT NO:	5268
DA NO:	MP 07_0129
DESIGNED BY:	CJC
DRAWN BY:	LW / CJC
CHECKED BY:	SM / CJC
DATE CREATED:	11.2019

DRAWING TITLE: ACCESS TRAIL 01 CROSS SECTIONS CH 0.00 TO 70.00 **A1**

PROJECT: PROPOSED LOT 800 OF SEASCAPE GROVE ESTATE
LOT 332 DP1220901

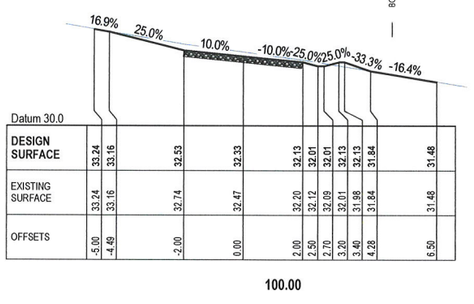
CLIENT: WALDEL PARK PTY LTD

DRAWING NO	SHEET	REVISION
5268E_CC Fire Trail	04	A



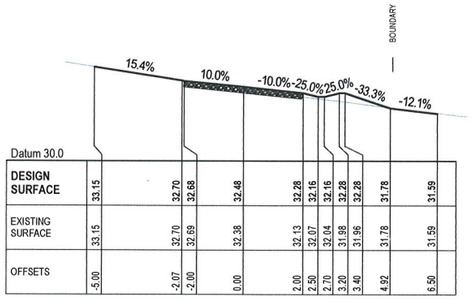
Datum 30.0												
DESIGN SURFACE	32.83		32.51	32.38	32.18		31.98	31.86	31.86	31.98	31.57	31.32
EXISTING SURFACE	32.83		32.51	32.44	32.18		31.92	31.86	31.83	31.77	31.74	31.57	31.32
OFFSETS	-5.00		-2.49	-2.00	0.00		2.00	2.50	2.70	3.20	3.40	4.63	6.50

110.00



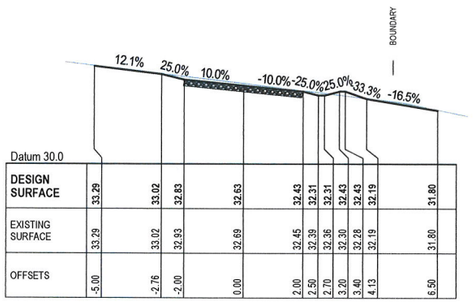
Datum 30.0												
DESIGN SURFACE	33.24	33.16		32.53	32.33		32.13	32.01	32.01	32.13	31.84	31.48
EXISTING SURFACE	33.24	33.16		32.74	32.47		32.20	32.12	32.09	32.01	31.98	31.84	31.48
OFFSETS	-5.00	-4.49		-2.00	0.00		2.00	2.50	2.70	3.20	3.40	4.28	6.50

100.00



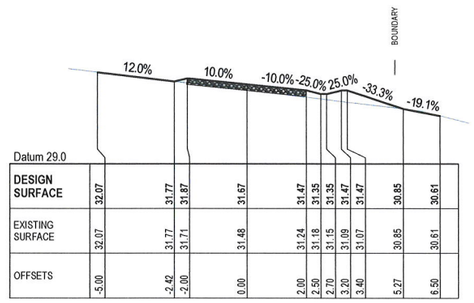
Datum 30.0												
DESIGN SURFACE	33.15		32.70	32.68	32.48		32.28	32.16	32.16	32.28	31.78	31.59
EXISTING SURFACE	33.15		32.70	32.69	32.38		32.13	32.07	32.04	31.98	31.78	31.59
OFFSETS	-5.00		-2.07	-2.00	0.00		2.00	2.50	2.70	3.20	3.40	4.92	6.50

90.00



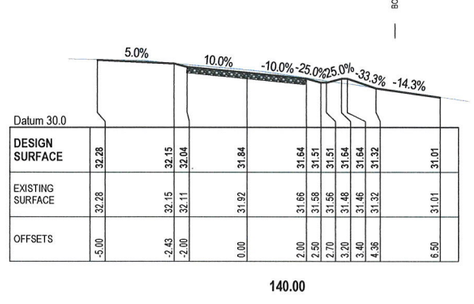
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DESIGN SURFACE	33.29		33.02	32.83	32.63		32.43	32.31	32.31	32.43	32.19	31.80
EXISTING SURFACE	33.29		33.02	32.83	32.69		32.45	32.39	32.36	32.30	32.28	32.19	31.80
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80.00



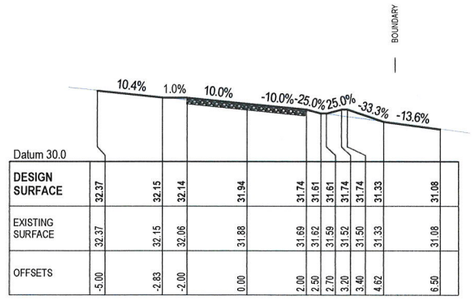
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DESIGN SURFACE	32.07		31.77	31.87	31.67		31.47	31.35	31.35	31.47	30.85	30.61
EXISTING SURFACE	32.07		31.77	31.71	31.48		31.24	31.18	31.15	31.09	30.85	30.61
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150.00



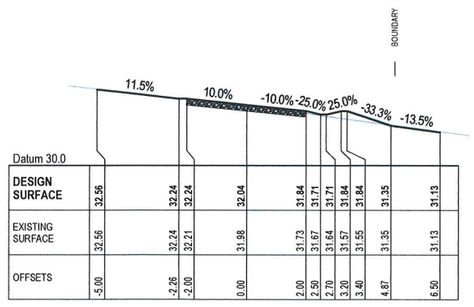
Datum 30.0												
DESIGN SURFACE	32.28		32.15	32.04	31.84		31.64	31.51	31.51	31.64	31.32	31.01
EXISTING SURFACE	32.28		32.15	32.11	31.92		31.65	31.58	31.56	31.48	31.46	31.32	31.01
OFFSETS	-5.00		-2.43	-2.00	0.00		2.00	2.50	2.70	3.20	3.40	4.36	6.50

140.00



Datum 30.0												
DESIGN SURFACE	32.37		32.15	32.14	31.94		31.74	31.61	31.61	31.74	31.33	31.08
EXISTING SURFACE	32.37		32.15	32.06	31.88		31.69	31.62	31.59	31.52	31.50	31.33	31.08
OFFSETS	-5.00		-2.83	-2.00	0.00		2.00	2.50	2.70	3.20	3.40	4.62	6.50

130.00



Datum 30.0												
DESIGN SURFACE	32.56		32.24	32.24	32.04		31.84	31.71	31.71	31.84	31.35	31.13
EXISTING SURFACE	32.56		32.24	32.21	31.98		31.73	31.67	31.64	31.57	31.55	31.35	31.13
OFFSETS	-5.00		-2.26	-2.00	0.00		2.00	2.50	2.70	3.20	3.40	4.87	6.50

120.00

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 10 20 30 40 50m
HORIZONTAL SCALE 1:100 @ A1

0 10 20 30 40 50m
VERTICAL SCALE 1:100 @ A1

KEMPSEY SHIRE COUNCIL

Plans and Specifications are approved in relation to the Certificate No. CB-20-37

Signed: ..... Date: 7.2.20

In accordance with the authority delegated by the General Manager

NOT TO BE USED FOR CONSTRUCTION UNLESS CONSTRUCTION CERTIFICATE ISSUED FOR THE WORKS

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KING + CAMPBELL

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www.kingcampbell.com.au
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T: 02 6586 2565
F: 02 6583 4064
E: info@kingcampbell.com.au

REV	DATE	DESCRIPTION	BY
A	07.01.2020	ISSUED FOR APPROVAL	CJC

DATUM AHD SCALE AS SHOWN @ A1

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PROJECT NO.	5268
DA NO.	MP 07_0129
DESIGNED BY	CJC
DRAWN BY	LW / CJC
CHECKED BY	SM / CJC
DATE CREATED	11.2019

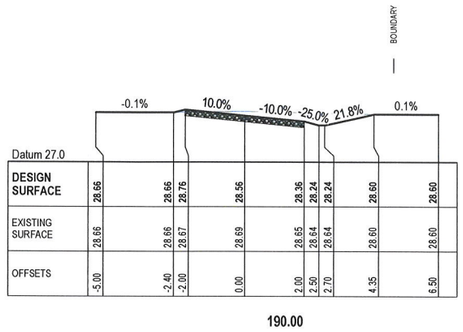
DRAWING TITLE: ACCESS TRAIL 01 CROSS SECTIONS CH 80.00 TO 150.00 — **A1**

PROJECT: PROPOSED LOT 800 OF SEASCAPE GROVE ESTATE
LOT 332 DP1220901

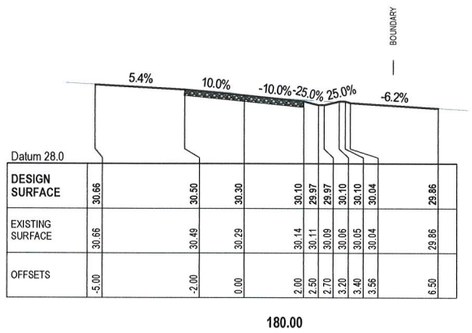
CLIENT: WALDEL PARK PTY LTD

DRAWING NO.	SHEET	REVISION
5268E_CC Fire Trail	05	A

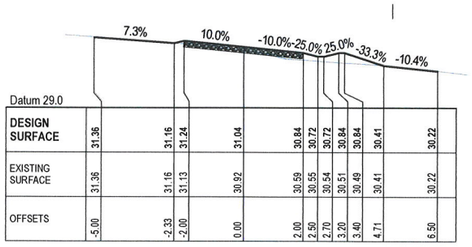
K:\C-REF\ 0 5268_Waldl\Engineering\ 5268E_CC Fire Trail.dwg, A1(L) A3 02, 03-Feb-2020, craigc



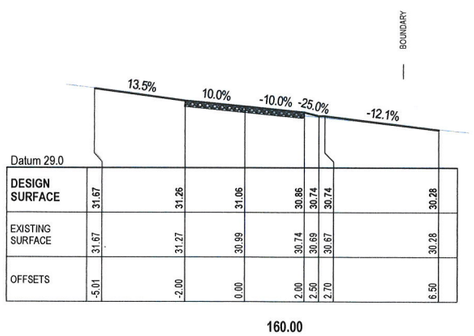
190.00



180.00



170.00



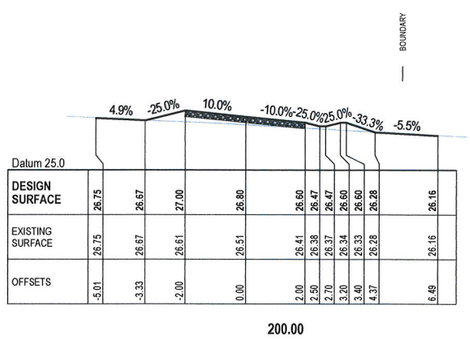
160.00

KEMPSEY SHIRE COUNCIL

Plans and Specifications are approved in relation to the Certificate No. CB-20-37

Signed: ..... Date: 7.2.20

In accordance with the authority delegated by the General Manager



200.00

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 10 20 30 40 50m
HORIZONTAL SCALE 1:100 @ A1

0 10 20 30 40 50m
VERTICAL SCALE 1:100 @ A1

NOT TO BE USED FOR CONSTRUCTION UNLESS CONSTRUCTION CERTIFICATE ISSUED FOR THE WORKS

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essential energy

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K:\<CREF O:\5268_Waldr\Engineering\5268E_CC Fire Trail.dwg - A1(L)-XS 02, 03 Feb 2020, craigc

KING + CAMPBELL

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T: 02 6586 2555
F: 02 6583 4064
E: info@kingcampbell.com.au

REV	DATE	DESCRIPTION	BY
A	07.01.2020	ISSUED FOR APPROVAL	CJC

DATUM AHD SCALE AS SHOWN @ A1

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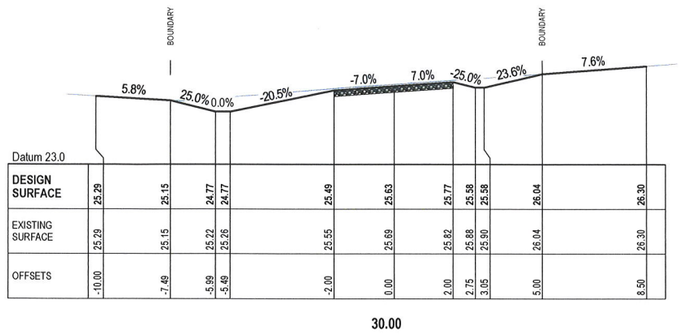
PROJECT NO	5268
DA NO	MP 07_0129
DESIGNED BY	CJC
DRAWN BY	LW / CJC
CHECKED BY	SM / CJC
DATE CREATED	11.2019

DRAWING TITLE: ACCESS TRAIL 01 CROSS SECTIONS CH 160.00 TO 200.00 — **A1**

PROJECT: PROPOSED LOT 800 OF SEASCAPE GROVE ESTATE
LOT 332 DP1220901

CLIENT: WALDEL PARK PTY LTD

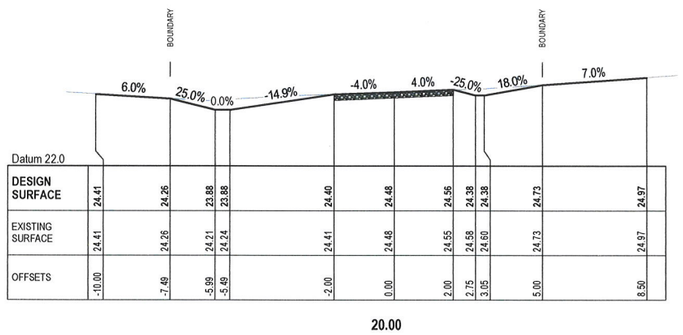
DRAWING NO	SHEET	REVISION
5268E_CC Fire Trail	06	A



Datum 23.0

DESIGN SURFACE	25.29	25.15	24.77	24.77	25.49	25.63	25.77	25.58	25.58	26.04	26.30
EXISTING SURFACE	25.29	25.15	25.22	25.26	25.55	25.69	25.82	25.88	25.90	26.04	26.30
OFFSETS	-10.00	-7.49	-5.99	-5.49	-2.00	0.00	2.00	2.75	3.05	5.00	8.50

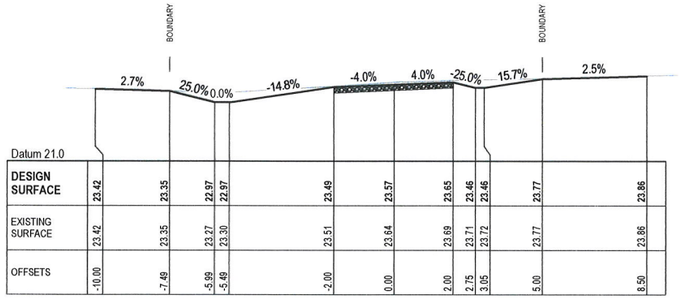
30.00



Datum 22.0

DESIGN SURFACE	24.41	24.26	23.88	23.88	24.40	24.48	24.56	24.38	24.38	24.73	24.97
EXISTING SURFACE	24.41	24.26	24.21	24.24	24.41	24.48	24.55	24.58	24.60	24.73	24.97
OFFSETS	-10.00	-7.49	-5.99	-5.49	-2.00	0.00	2.00	2.75	3.05	5.00	8.50

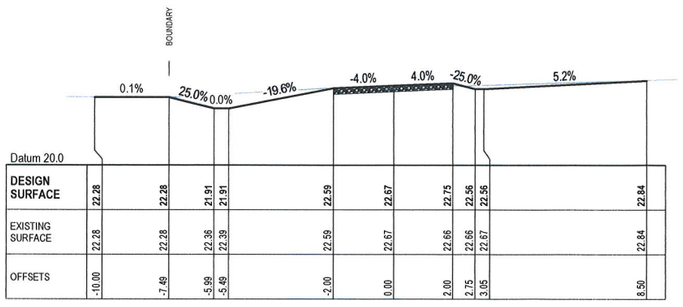
20.00



Datum 21.0

DESIGN SURFACE	23.42	23.35	22.97	22.97	23.49	23.57	23.65	23.46	23.46	23.77	23.86
EXISTING SURFACE	23.42	23.35	23.27	23.30	23.51	23.64	23.69	23.71	23.72	23.77	23.86
OFFSETS	-10.00	-7.49	-5.99	-5.49	-2.00	0.00	2.00	2.75	3.05	5.00	8.50

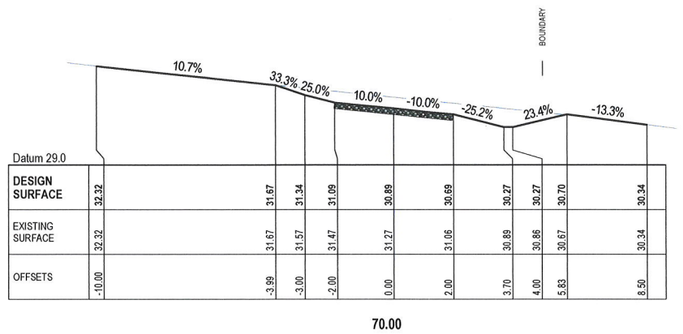
10.00



Datum 20.0

DESIGN SURFACE	22.28	22.28	21.91	21.91	22.59	22.67	22.75	22.56	22.56	22.84	22.84
EXISTING SURFACE	22.28	22.28	22.36	22.39	22.59	22.67	22.66	22.66	22.67	22.84	22.84
OFFSETS	-10.00	-7.49	-5.99	-5.49	-2.00	0.00	2.00	2.75	3.05	8.50	8.50

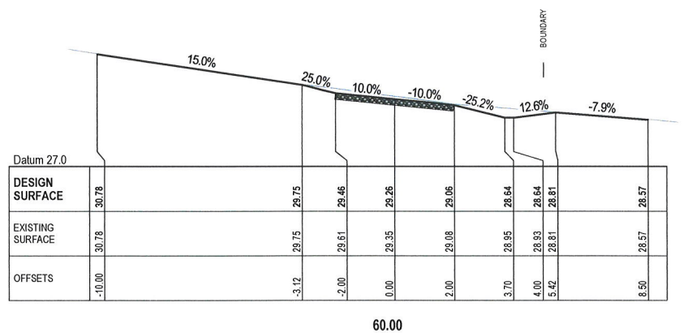
0.00



Datum 29.0

DESIGN SURFACE	32.32	31.67	31.34	31.09	30.89	30.69	30.27	30.27	30.70	30.34	30.34
EXISTING SURFACE	32.32	31.67	31.57	31.47	31.27	31.06	30.89	30.86	30.67	30.34	30.34
OFFSETS	-10.00	-3.99	-3.00	-2.00	0.00	2.00	3.70	4.00	5.83	8.50	8.50

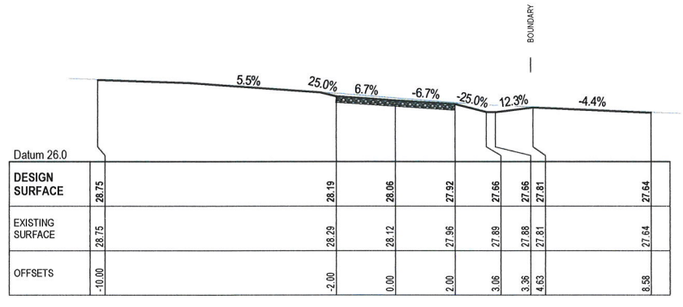
70.00



Datum 27.0

DESIGN SURFACE	30.78	29.75	29.46	29.26	29.06	28.64	28.64	28.81	28.57	28.57	28.57
EXISTING SURFACE	30.78	29.75	29.61	29.35	29.08	28.95	28.93	28.81	28.57	28.57	28.57
OFFSETS	-10.00	-3.12	-2.00	0.00	2.00	3.70	4.00	5.42	8.50	8.50	8.50

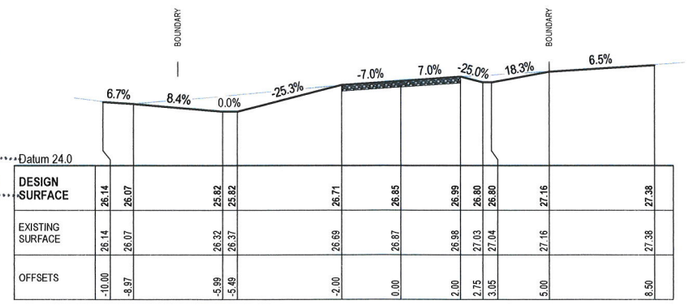
60.00



Datum 26.0

DESIGN SURFACE	28.75	28.19	28.06	27.92	27.66	27.66	27.81	27.64	27.64	27.64	27.64
EXISTING SURFACE	28.75	28.29	28.12	27.96	27.89	27.88	27.81	27.64	27.64	27.64	27.64
OFFSETS	-10.00	-2.00	0.00	2.00	3.06	3.36	4.63	8.58	8.58	8.58	8.58

50.00



Datum 24.0

DESIGN SURFACE	26.14	26.07	25.82	25.82	26.71	26.85	26.99	26.80	26.80	27.16	27.38
EXISTING SURFACE	26.14	26.07	26.32	26.37	26.69	26.87	26.98	27.03	27.04	27.16	27.38
OFFSETS	-10.00	-8.97	-5.99	-5.49	-2.00	0.00	2.00	2.75	3.05	5.00	8.50

40.00

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 10 20 30 40 50m
HORIZONTAL SCALE 1:100 @ A1

0 10 20 30 40 50m
VERTICAL SCALE 1:100 @ A1

KEMPSEY SHIRE COUNCIL

Plans and Specifications are approved in relation to the Certificate No. CB-20-37

Signed: ..... Date: 7.2.20

In accordance with the authority delegated by the General Manager

NOT TO BE USED FOR CONSTRUCTION UNLESS CONSTRUCTION CERTIFICATE ISSUED FOR THE WORKS

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essential energy

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K:\C-REF\ 0\5268_Waldel\Engineering\5268E_CC Fire Trail.dwg - A1(L)-XS 04, 03-Feb-2020, craigc

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T: 02 6586 2555
F: 02 6583 4064
E: info@kingcampbell.com.au

REV	DATE	DESCRIPTION	BY
A	07.01.2020	ISSUED FOR APPROVAL	CJC

DATUM: AHD SCALE: AS SHOWN @ A1

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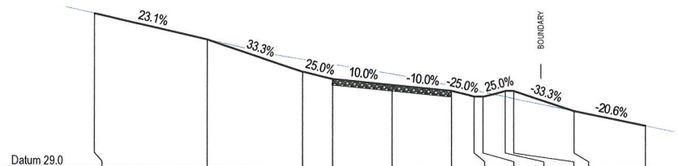
PROJECT NO	5268
DA NO	MP 07_0129
DESIGNED BY	CJC
DRAWN BY	LW / CJC
CHECKED BY	SM / CJC
DATE CREATED	11.2019

DRAWING TITLE: ACCESS TRAIL 02 CROSS SECTIONS CH 0.00 TO 70.00 — **A1**

PROJECT: PROPOSED LOT 800 OF SEASCAPE GROVE ESTATE
LOT 332 DP1220901

CLIENT: WALDEL PARK PTY LTD

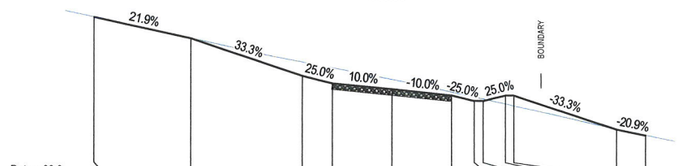
DRAWING NO	SHEET	REVISION
5268E_CC Fire Trail	07	A



Datum 29.0

DESIGN SURFACE	34.17	33.30	32.23	31.98	31.78	31.58	31.39	31.39	31.58	31.58	30.91	30.42
EXISTING SURFACE	34.17	33.30	32.64	32.47	32.14	31.76	31.60	31.54	31.38	31.32	30.91	30.42
OFFSETS	-10.00	-6.22	-3.00	-2.00	0.00	2.00	2.75	3.05	3.80	4.10	6.12	8.50

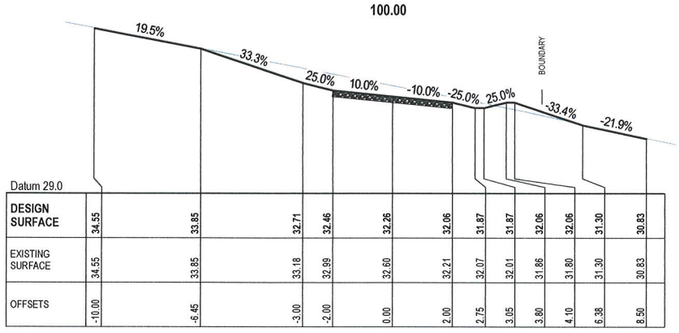
110.00



Datum 29.0

DESIGN SURFACE	34.37	33.66	32.41	32.16	31.96	31.76	31.57	31.57	31.76	31.76	30.61	30.41
EXISTING SURFACE	34.37	33.66	32.86	32.67	32.28	31.86	31.69	31.62	31.46	31.39	30.61	30.41
OFFSETS	-10.00	-6.77	-3.00	-2.00	0.00	2.00	2.75	3.05	3.80	4.10	7.53	8.50

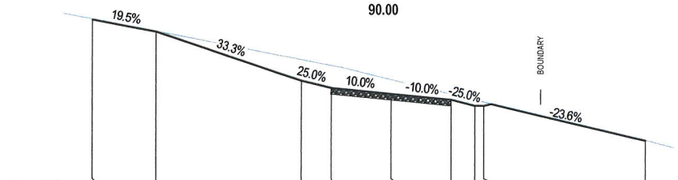
100.00



Datum 29.0

DESIGN SURFACE	34.55	33.85	32.71	32.46	32.26	32.06	31.87	31.87	32.06	32.06	31.30	30.83
EXISTING SURFACE	34.55	33.85	33.18	32.99	32.60	32.21	32.07	32.01	31.86	31.80	31.30	30.83
OFFSETS	-10.00	-6.45	-3.00	-2.00	0.00	2.00	2.75	3.05	3.80	4.10	6.38	8.50

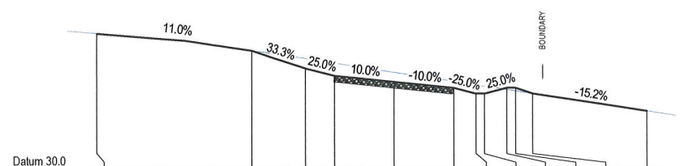
90.00



Datum 29.0

DESIGN SURFACE	34.84	34.43	32.80	32.55	32.35	32.15	31.95	31.95	30.78
EXISTING SURFACE	34.84	34.43	33.47	33.28	32.81	32.33	32.14	32.07	30.78
OFFSETS	-10.00	-7.89	-3.00	-2.00	0.00	2.00	2.78	3.08	8.51

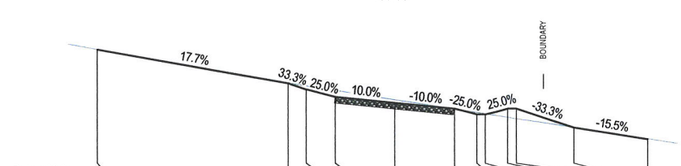
80.00



Datum 30.0

DESIGN SURFACE	34.53	33.95	33.35	33.10	32.90	32.70	32.52	32.52	32.70	32.70	32.51	31.93
EXISTING SURFACE	34.53	33.95	33.68	33.53	33.22	32.92	32.80	32.76	32.65	32.60	32.51	31.93
OFFSETS	-10.00	-4.79	-3.00	-2.00	0.00	2.00	2.75	3.05	3.80	4.10	4.68	8.50

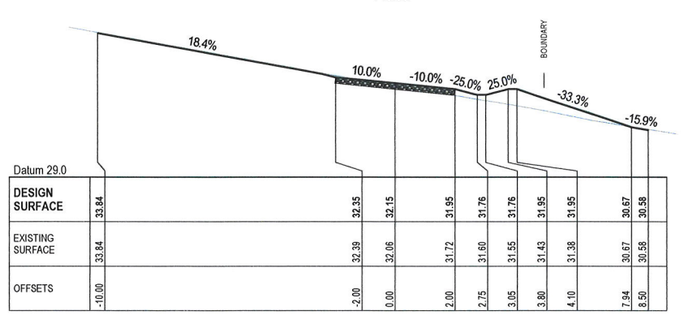
150.00



Datum 30.0

DESIGN SURFACE	34.31	33.18	32.98	32.73	32.53	32.33	32.14	32.14	32.33	32.33	31.69	31.30
EXISTING SURFACE	34.31	33.18	33.08	32.93	32.62	32.31	32.19	32.15	32.03	31.98	31.69	31.30
OFFSETS	-10.00	-3.60	-3.00	-2.00	0.00	2.00	2.75	3.05	3.80	4.10	6.02	8.50

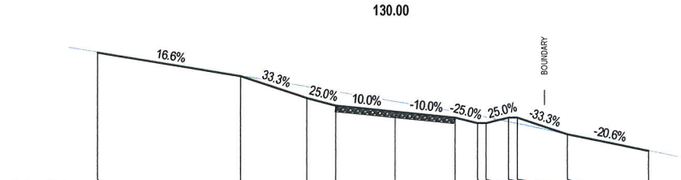
140.00



Datum 29.0

DESIGN SURFACE	33.84	32.35	32.15	31.95	31.76	31.76	31.95	31.95	30.67	30.58
EXISTING SURFACE	33.84	32.39	32.06	31.72	31.60	31.55	31.43	31.38	30.67	30.58
OFFSETS	-10.00	-2.00	0.00	2.00	2.75	3.05	3.80	4.10	7.94	8.50

130.00



Datum 29.0

DESIGN SURFACE	33.76	32.96	32.22	31.97	31.77	31.57	31.39	31.39	31.57	31.57	31.01	30.45
EXISTING SURFACE	33.76	32.96	32.60	32.43	32.10	31.77	31.64	31.58	31.42	31.36	31.01	30.45
OFFSETS	-10.00	-5.22	-3.00	-2.00	0.00	2.00	2.75	3.05	3.80	4.10	5.78	8.50

120.00

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 10 20 30 40 50m
HORIZONTAL SCALE 1:100 @ A1

0 10 20 30 40 50m
VERTICAL SCALE 1:100 @ A1

KEMPSEY SHIRE COUNCIL

Plans and Specifications are approved in relation to the Certificate No. CC-20-37

Signed: ..... Date: 7.2.20

In accordance with the authority delegated by the General Manager

NOT TO BE USED FOR CONSTRUCTION UNLESS CONSTRUCTION CERTIFICATE ISSUED FOR THE WORKS

Look up and live
For safety tips visit essentialenergy.com.au/safety or in an emergency call 13 20 80
essential energy

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K:\C:\REF\ O:\5268_Wallis\Engineering\5268E_CC Fire Trail.dwg - A1(L).XS 05. 03- Feb- 2020, craigc

KING + CAMPBELL

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E: info@kingcampbell.com.au

REV.	DATE	DESCRIPTION	BY
A	07.01.2020	ISSUED FOR APPROVAL	CJC

DATUM: AHD SCALE: AS SHOWN @ A1

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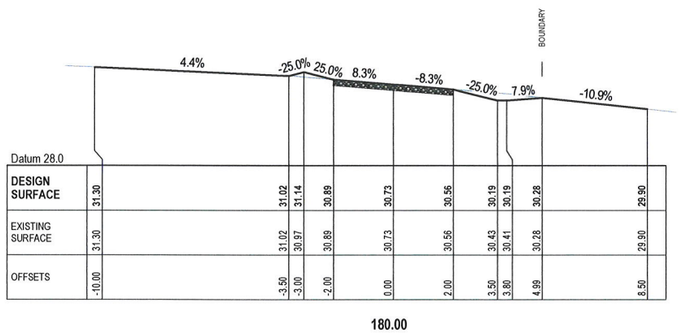
PROJECT NO.	5268
DA NO.	MP 07_0129
DESIGNED BY	CJC
DRAWN BY	LW / CJC
CHECKED BY	SM / CJC
DATE CREATED	11 2019

DRAWING TITLE: ACCESS TRAIL 02 CROSS SECTIONS CH 80.00 TO 150.00 — **A1**

PROJECT: PROPOSED LOT 800 OF SEASCAPE GROVE ESTATE LOT 332 DP1220901

CLIENT: WALDEL PARK PTY LTD

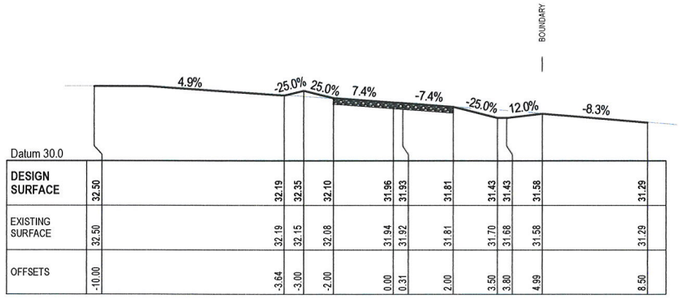
DRAWING NO.	SHEET	REVISION
5268E_CC Fire Trail	08	A



Datum 28.0

DESIGN SURFACE	31.30	31.02	31.14	30.89	30.73	30.56	30.19	30.19	30.28	29.90
EXISTING SURFACE	31.30	31.02	30.97	30.89	30.73	30.56	30.43	30.41	30.28	29.90
OFFSETS	-10.00	-3.50	-3.00	-2.00	0.00	2.00	3.50	3.80	4.99	8.50

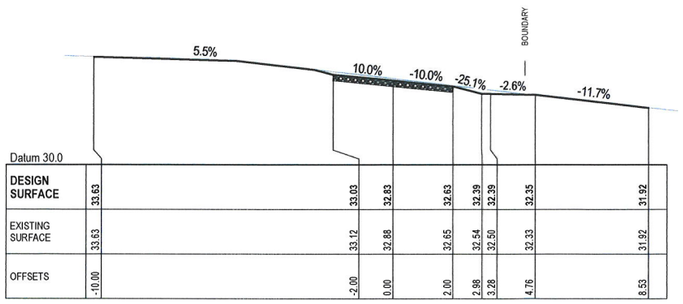
180.00



Datum 30.0

DESIGN SURFACE	32.50	32.19	32.35	32.10	31.96	31.93	31.81	31.43	31.58	31.29
EXISTING SURFACE	32.50	32.19	32.15	32.08	31.94	31.92	31.81	31.70	31.58	31.29
OFFSETS	-10.00	-3.64	-3.00	-2.00	0.00	0.31	2.00	3.50	3.80	4.99	8.50

170.00



Datum 30.0

DESIGN SURFACE	33.63	33.03	32.83	32.63	32.39	32.39	32.35	31.92
EXISTING SURFACE	33.63	33.12	32.88	32.65	32.54	32.50	32.33	31.92
OFFSETS	-10.00	-2.00	0.00	2.00	2.88	3.28	4.76	8.53

160.00

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 10 20 30 40 50m
HORIZONTAL SCALE 1:100 @ A1

0 10 20 30 40 50m
VERTICAL SCALE 1:100 @ A1

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

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K:\2 REF O\5268_WaldEngineering\5268E_CC Fire Trail.dwg , A1(L)-XS 06 03-Feb-2020, craigc

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REV	DATE	DESCRIPTION	BY
A	07.01.2020	ISSUED FOR APPROVAL	CJC

DATUM: AHD SCALE: AS SHOWN @ A1

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PROJECT NO:	5268
DA NO.:	MP 07_0129
DESIGNED BY:	CJC
DRAWN BY:	LW / CJC
CHECKED BY:	SM / CJC
DATE CREATED:	11.2019

DRAWING TITLE: ACCESS TRAIL 02 CROSS SECTIONS CH 160.00 TO 180.00 **A1**

PROJECT: PROPOSED LOT 800 OF SEASCAPE GROVE ESTATE
LOT 332 DP1220901

CLIENT: WALDEL PARK PTY LTD

DRAWING NO.	SHEET	REVISION
5268E_CC Fire Trail	09	A

Attachment 4

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	C
01	FILLING WORKS PROPOSED LOT 700 PLAN	C
02	ENGINEERING NOTES	C
03	FILLING WORKS PROPOSED LOT 700	C
04	FUTURE ROAD EW01 LONGITUDINAL SECTION	C
05	BULK EARTHWORKS, SERVICES STRATEGY & TREE MANAGEMENT PLAN	C

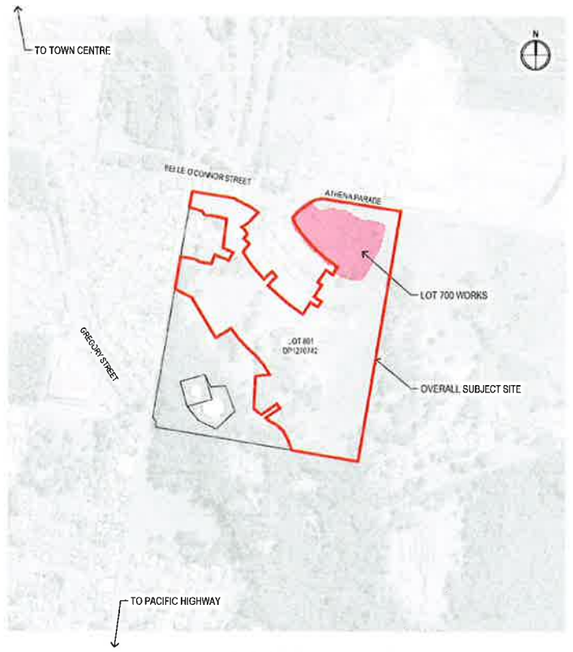
KEMPSEY SHIRE COUNCIL

Plans and Specifications are approved in relation to the

Certificate No. CS-21-00086

Signed: ..... Date: 23 JUL 2021

In accordance with the authority delegated by the General Manager



LOCALITY PLAN

NOT TO SCALE

IMAGE: METROMAP 2020

NOT TO BE USED FOR CONSTRUCTION UNLESS CONSTRUCTION CERTIFICATE ISSUED FOR THE WORKS

prepared for

AUSPADDY DEVELOPMENTS PTY LTD

KING + CAMPBELL

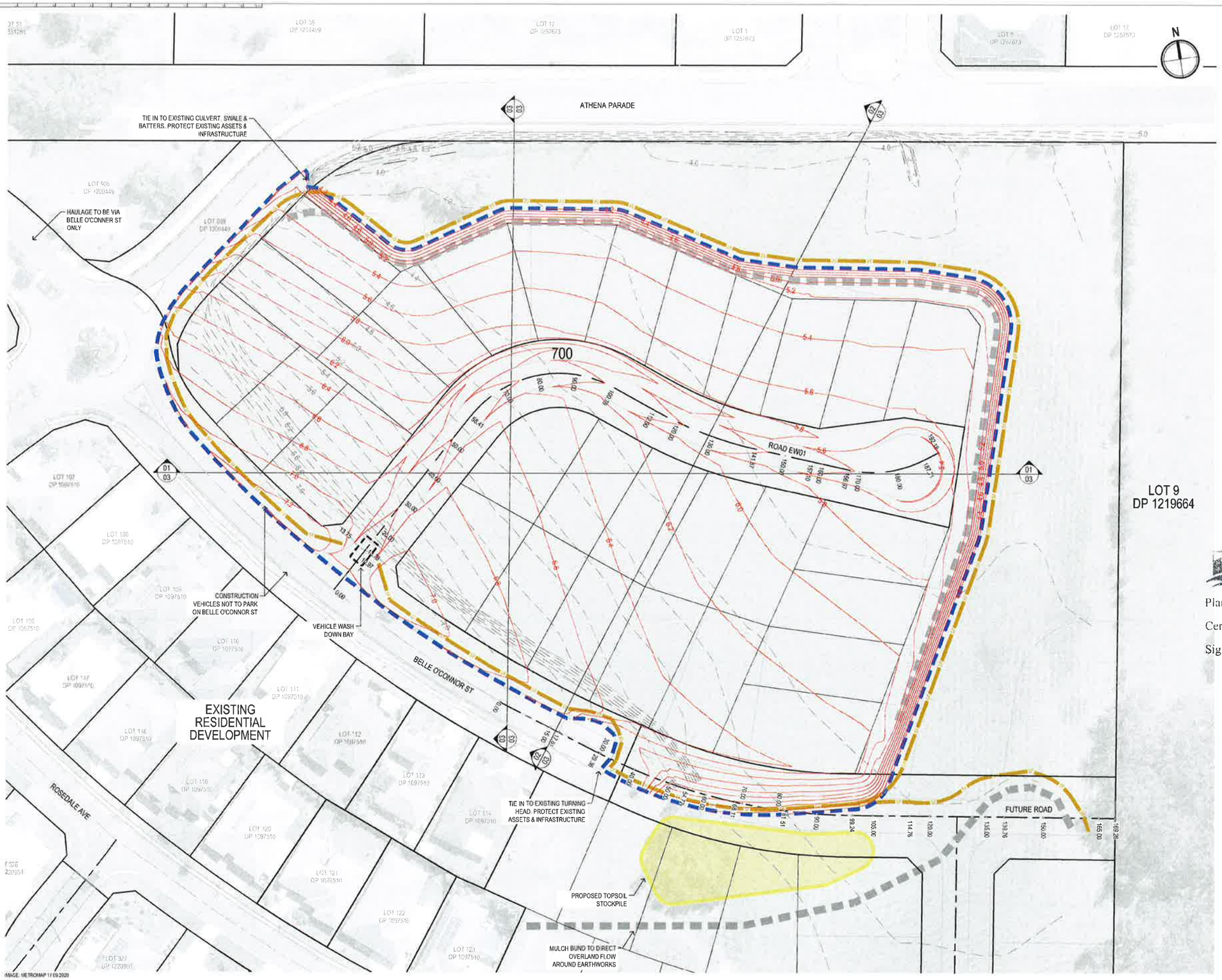
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Port Macquarie NSW 2444

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Port Macquarie 2444

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E: info@kingcampbell.com.au

K:\C:\REF: O:\6550_seascape grove\02_engineering\bulk earthworks\PLANS\6550E_BulkEarthworks.dwg - A1(Lb-Cover, 02-Jul-2021 lachlanw



LEGEND

- EXISTING CADASTRE
- PROPOSED LOT BOUNDARIES
- EXISTING SURFACE CONTOUR (0.2m INTERVALS)
- DESIGN SURFACE CONTOURS (0.2m INTERVALS)
- EXTENT OF DESIGN EARTHWORKS
- SEDIMENT FENCE
- MULCH BUNDS
- PROPOSED TOPSOIL STOCKPILE EXTENTS

NOTES

1. ALL VEGETATION WITHIN THE EXTENT OF DESIGN EARTHWORKS TO BE CLEARED & DISPOSED OF OFFSITE PRIOR TO COMMENCEMENT OF EARTHWORKS.
2. **REFER TO SHEET 05 FOR TREE REMOVAL**
3. ALL AREAS WITHIN THE EXTENT OF BULK EARTHWORKS TO BE SEEDED IN ACCORDANCE WITH EROSION CONTROL NOTES SHEET 02 FOLLOWING COMPLETION OF BULK EARTHWORKS.

KEMPSEY SHIRE COUNCIL

Plans and Specifications are approved in relation to the Certificate No. CS-21-00006

Signed: ..... Date: 23 JUL 2021

In accordance with the authority delegated by the General Manager

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

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REV.	DATE	DESCRIPTION	BY
A	23.04.2021	ISSUED FOR COUNCIL APPROVAL	LW
B	13.05.2021	MINOR AMENDMENTS	CJC
C	02.07.2021	ISSUED FOR COUNCIL APPROVAL	LW

DATUM AHD SCALE: 1:500 @ A1 (1:1000 @ A3)

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PROJECT NO:	6550
MP NO:	CS 0018 & 07 0129
DESIGNED BY:	DAT/CJC/LW
DRAWN BY:	CJC/LW
CHECKED BY:	CJC
DATE CREATED:	MARCH 2021

DRAWING TITLE:	FILLING WORKS PROPOSED LOT 700 PLAN
PROJECT:	SEASCAPE GROVE ESTATE, SOUTH WEST ROCKS LOT 801 DP1270742
CLIENT:	AUSPADDY DEVELOPMENTS PTY LTD

A1

DRAWING NO.	SHEET	REVISION
6550E_BulkEarthworks	01 OF 05	C

CAUTION

1. UNDERGROUND SERVICES HAVE BEEN LOCATED BY SURFACE INVESTIGATION ONLY & MAY NOT BE EXHAUSTIVE OR CURRENT AT TIME OF CONSTRUCTION.

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 AUS-SPEC DESIGN AND CONSTRUCTION GUIDELINES - PORT MACQUARIE HASTINGS COUNCIL VERSION.

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 & ASD 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 ARCHITECT.

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 PRAM RAMPS 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 DESIGN SPEC D6.

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 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 AT ALL 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 ECOLOGICAL REPORT.

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

EROSION CONTROL NOTES

1. 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 & SEEDED WITHIN 15 DAYS AFTER BACKFILL.

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

5. ALL TEMPORARY EARTH 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 REQUIRED.

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

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	kg/ha	5	kg/ha
RYECORN/OATES	5	kg/ha	15	kg/ha
COUCH GRASS	10	kg/ha	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 FERTILISER (FOLLOWING SPRING / AUTUMN)	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 UNDERTAKEN UNTIL THE NSW POLICE PROVIDE WRITTEN ADVICE. IF THE REMAINS ARE DEEMED TO REQUIRE ARCHAEOLOGICAL INVESTIGATION BY THE NSW POLICE OR NSW CORONER, 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 NSW REGIONAL ARCHAEOLOGIST AND ENVIROLINE 131 555 SHOULD BE GIVEN TO ALL SITE WORKERS AND PERSONNEL, IN CASE UNKNOWN OBJECTS OR ITEMS ARE UNCOVERED DURING EXCAVATION.

GENERAL INFORMATION

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), UNDER 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 NSW FOR IT TO BE ENTERED ON THE ABORIGINAL HERITAGE INFORMATION MANAGEMENT SYSTEMS (AHIMS).

KEMPSEY SHIRE COUNCIL

Plans and Specifications are approved in relation to the Certificate No. CS-21-00006

Signed: ..... Date: 23 JUL 2021

In accordance with the authority delegated by the General Manager

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REV.	DATE	DESCRIPTION	
A	23.04.2021	ISSUED FOR COUNCIL APPROVAL	LW
B	13.05.2021	MINOR AMENDMENTS	CJC
C	02.07.2021	ISSUED FOR COUNCIL APPROVAL	LW

DATUM: AHD SCALE:

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PROJECT NO:	6550
MP NO.:	05 0018 & 07 0129
DESIGNED BY:	DAT/CJC/LW
DRAWN BY:	CJC/LW
CHECKED BY:	CJC
DATE CREATED:	MARCH 2021

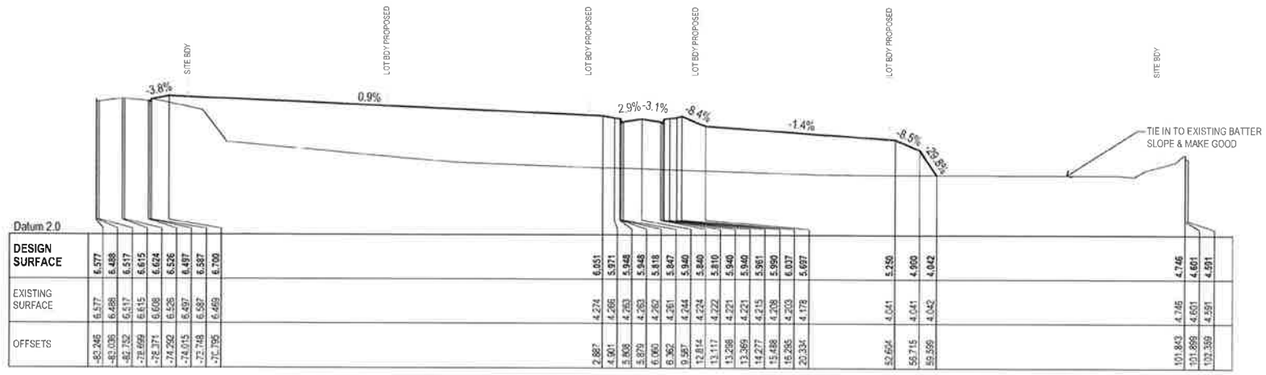
DRAWING TITLE: ENGINEERING NOTES — A1

PROJECT: SEASCAPE GROVE ESTATE, SOUTH WEST ROCKS
LOT 801 DP1270742

CLIENT: AUSPADDY DEVELOPMENTS PTY LTD

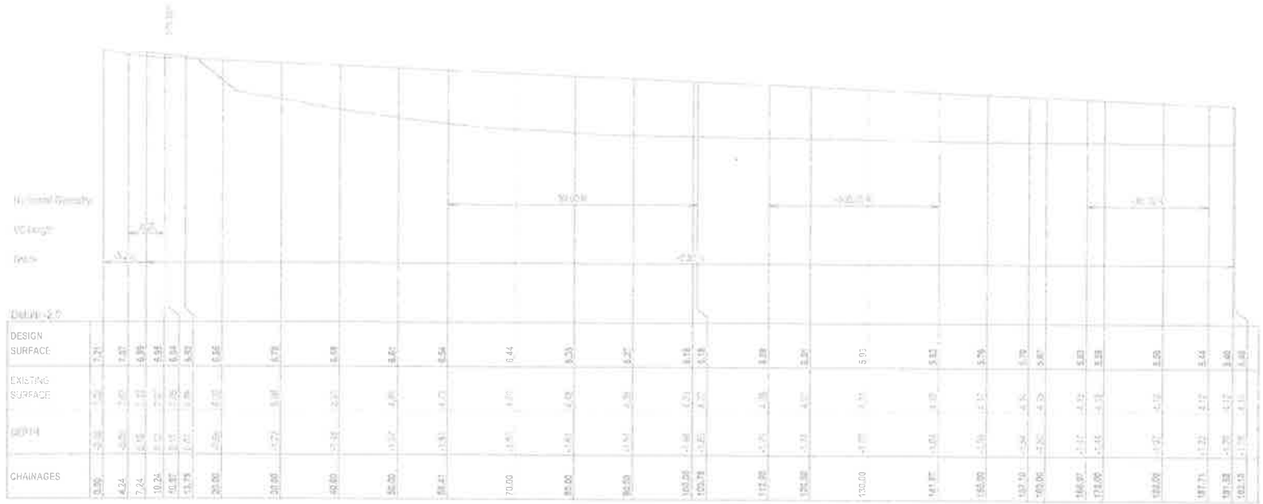
DRAWING NO.	SHEET.	REVISION
6550E_BulkEarthworks	02 OF 05	C

K:\C-REF\ 6550_seascape grove\22_engineering\dwg\earthworks\6550E_BulkEarthworks.dwg, A1(L)Eng, www.mylotex, 02 Jul 2021, lachlanw


SITE BDY
LOT BDY PROPOSED
LOT BDY PROPOSED
LOT BDY PROPOSED
LOT BDY PROPOSED
SITE BDY
-3.8%
0.9%
2.9%
-3.1%
-8.4%
-1.4%
-8.5%
-29.8%
TIE IN TO EXISTING BATTER SLOPE & MAKE GOOD

Datum 2.0

| | | |



LONGITUDINAL SECTION ROAD EW01

KEMPSEY SHIRE COUNCIL

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Certificate No. CS-21-00006
Signed: ..... Date: 23 JUL 2021
In accordance with the authority delegated by
the General Manager

VERTICAL SCALE 1:100 @ A1

HORIZONTAL SCALE 1:500 @ A1

K:\C:REF\ 6550_seascape ph2_engineering\4 submissions\DA\6550E_BulkEarthworks_RoadEW01&Services.dwg , A1-L-RoadEW01_Sht1 (2 Jul 2021 3:08pm)

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REV.	DATE	DESCRIPTION	
A	23.04.2021	ISSUED FOR COUNCIL APPROVAL	LW
B	13.05.2021	MINOR AMENDMENTS	CJC
C	02.07.2021	ISSUED FOR COUNCIL APPROVAL	LW

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

0 50

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MP NO.:	05 0018 & 07 0129
DESIGNED BY:	DAT/CJC/LW
DRAWN BY:	CJC/LW
CHECKED BY:	CJC
DATE CREATED:	MARCH 2021

DRAWING TITLE: FUTURE ROAD EW01 LONGITUDINAL SECTION — A1

PROJECT: SEASCAPE GROVE ESTATE, SOUTH WEST ROCKS
LOT 801 DP1270742

CLIENT: AUSPADDY DEVELOPMENTS PTY LTD

DRAWING NO.	SHEET.	REVISION.
6550E_BulkEarthworks_RoadEW01SectionDF	05	C

KEMPSEY SHIRE COUNCIL

Plans and Specifications are approved in relation to the

Certificate No. CS-21-00006

Signed: ..... Date: 23 JUL 2021

In accordance with the authority delegated by the General Manager

LOT 1 DP 1034625

LOT 1 DP 560726

LOT 1 DP 645213

LOT 800 DP 1270742

LOT 2 DP 1034625

LOT 3 DP 1034625

LOT 4 DP 1034625

LOT 9 DP 1219664

BELLE O'CONNOR STREET

BURRAWONG DRIVE

AVENUE

ROSEDALE

BELLE O'CONNOR STREET

ATHENA PARADE

DRAINAGE RESERVE

LEGEND

- EXISTING SURFACE (0.5m CONTOUR INTERVAL)
- 10.5 PROPOSED BULK EARTHWORKS (0.5m CONTOUR INTERVAL)
- EXTENT OF BULK EARTHWORKS
- SW PROPOSED STORMWATER
- S PROPOSED GRAVITY SEWER RETICULATION
- W PROPOSED POTABLE WATER RETICULATION
- W PROPOSED NON-POTABLE WATER RETICULATION
- 85 PROPOSED LOT NUMBER
- EXISTING TREE TO BE RETAINED (6m BUFFER ILLUSTRATED)
- TREE REMOVAL:
  - MP05_0018 EXISTING TREE DETAIL
  - MP07_0129 EXHIBIT 08 (REV E)
- TREE REMOVAL FOR THE PROVISION OF:
  - INFRASTRUCTURE
  - SERVICES
  - EARTHWORKS
  - RESIDENTIAL SETTING
- SEDIMENT FENCE
- MULCH BUNDS

CAUTION

THIS OVERALL BULK EARTHWORKS, SERVICES STRATEGY & TREE MANAGEMENT PLAN HAS BEEN PREPARED FOR KEMPSEY SHIRE COUNCIL ENDORSEMENT AND CONSTRUCTION CERTIFICATE APPROVAL. THE INFORMATION SHOWN HEREIN IS ONLY RELIABLE FOR THE ABOVE PURPOSE. IT SHOULD NOT THEREFORE BE USED FOR ANY OTHER PURPOSE WITHOUT VERIFICATION. ALL MEASUREMENTS AND AREAS ARE SUBJECT TO COUNCIL DEVELOPMENT APPROVAL, ENGINEERING DESIGN, FINAL SURVEY AND REGISTRATION OF A DEPOSITED PLAN. EASEMENTS & SERVICES ARE NOT SHOWN ON THIS PLAN AND ARE SUBJECT TO COMPLETION OF ENGINEERING DESIGN & CONSTRUCTION AND APPROVAL BY COUNCIL.

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K:\C-REF\ O\6550_Seascape Grove\01_Planning\06GP Base Plan.dwg - A1\LOVERALL EARTHWORKS 02 Jul 2021, wsilsbee

KING + CAMPBELL

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REV	DATE	DESCRIPTION	BY
B	13.05.2021	ISSUED FOR COUNCIL APPROVAL	CJC LW
C	02.07.2021	ISSUED FOR COUNCIL APPROVAL	

DATUM: AHD

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

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PROJECT NO:	6550
DA NO:	DS 0018 & 07 0129
DESIGNED BY:	CJC/DAT
DRAWN BY:	CJC/LW
CHECKED BY:	CJC/AJT
DATE CREATED:	JAN 2021

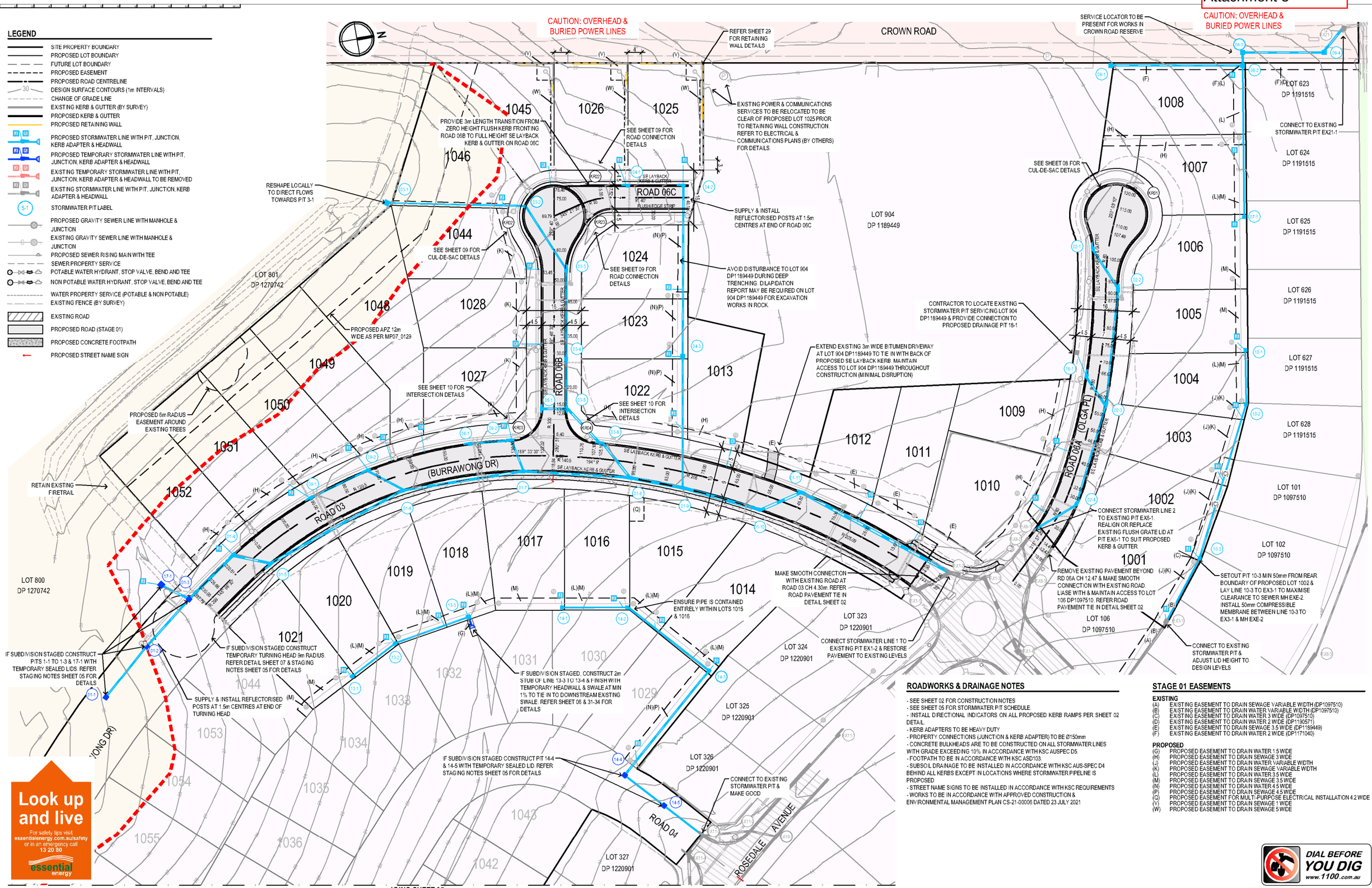
DRAWING TITLE: BULK EARTHWORKS, SERVICES STRATEGY & TREE MANAGEMENT PLAN — A1

PROJECT: SEASCAPE GROVE ESTATE
LOT 601 DP1270742

CLIENT: AUSPADDY DEVELOPMENTS PTY LTD

DRAWING NO.	SHEET	REVISION
6550P Base Plan	05 OF 05	C

Attachment 5



ROADWORKS & DRAINAGE NOTES

- SEE SHEET 02 FOR CONSTRUCTION NOTES
- SEE SHEET 05 FOR STORMWATER PIT SCHEDULE.
- INSTALL DIRECTIONAL INDICATORS ON ALL PROPOSED KERB RAMPS PER SHEET 02 DETAIL.
- KERB ADAPTERS TO BE HEAVY DUTY
- PROPERTY CONNECTIONS (JUNCTION & KERB ADAPTER) TO BE Ø150mm
- CONCRETE BULKHEADS ARE TO BE CONSTRUCTED ON ALL STORMWATER LINES WITH GRADE EXCEEDING 10% IN ACCORDANCE WITH KSC AUSPEC D5.
- FOOTPATH TO BE IN ACCORDANCE WITH KSC ASD103.
- SUBSOIL DRAINAGE TO BE INSTALLED IN ACCORDANCE WITH KSC AUS-SPEC D4 BEHIND ALL KERBS EXCEPT IN LOCATIONS WHERE STORMWATER PIPELINE IS PROPOSED
- STREET NAME SIGNS TO BE INSTALLED IN ACCORDANCE WITH KSC REQUIREMENTS
- WORKS TO BE IN ACCORDANCE WITH APPROVED CONSTRUCTION & ENVIRONMENTAL MANAGEMENT PLAN CS-21-00006 DATED 23 JULY 2021

STAGE 01 EASEMENTS

EXISTING

(A) EXISTING EASEMENT TO DRAIN SEWAGE VARIABLE WIDTH (DP1097510)
(B) EXISTING EASEMENT TO DRAIN WATER VARIABLE WIDTH (DP1097510)
(C) EXISTING EASEMENT TO DRAIN WATER 3 WIDE (DP1097510)
(D) EXISTING EASEMENT TO DRAIN WATER 2 WIDE (DP1190571)
(E) EXISTING EASEMENT TO DRAIN SEWAGE 3.5 WIDE (DP1189449)
(F) EXISTING EASEMENT TO DRAIN WATER 2 WIDE (DP1171040)

PROPOSED

(G) PROPOSED EASEMENT TO DRAIN WATER 1.5 WIDE
(H) PROPOSED EASEMENT TO DRAIN SEWAGE 3 WIDE
(J) PROPOSED EASEMENT TO DRAIN WATER VARIABLE WIDTH
(K) PROPOSED EASEMENT TO DRAIN SEWAGE VARIABLE WIDTH
(L) PROPOSED EASEMENT TO DRAIN WATER 3.5 WIDE
(M) PROPOSED EASEMENT TO DRAIN SEWAGE 3.5 WIDE
(N) PROPOSED EASEMENT TO DRAIN WATER 4.5 WIDE
(P) PROPOSED EASEMENT TO DRAIN SEWAGE 4.5 WIDE
(Q) PROPOSED EASEMENT FOR MULTI-PURPOSE ELECTRICAL INSTALLATION 4.2 WIDE
(V) PROPOSED EASEMENT TO DRAIN SEWAGE 1 WIDE
(W) PROPOSED EASEMENT TO DRAIN SEWAGE 5 WIDE

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K:\C REF\ C-6550_seascape grove\22 Engineering\Stage 01\6550E_Stage1_CC.dwg - ATILL-ROADS DRAINAGE, 29 Oct 2021, c. mapp

K:\C REF: C-6550_seascape grove\22 Engineering\Stage 01\6550E_Stage1_CC.dwg - ATILL-ROADS DRAINAGE, 29 Oct 2021, c. mapp

K:\C ORIGIN OF LEVELS: PM 73699 RL 20.87 AHD (SCIMS 11.03.2021)

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REV.	DATE	DESCRIPTION	BY
A	20.08.2021	ISSUED FOR APPROVAL	LW
B	19.10.2021	REISSUED FOR CC APPROVAL	LW
C	28.10.2021	MINOR AMENDMENTS	LW

DATUM: AHD SCALE: 1:500 @ A1 (1:1000 @ A3)

0 25

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NOMINATED ARCHITECT: NIGEL SWIFT - NSW ARB NO 7025 / QLD ARB NO 3957

PROJECT NO:	6550
MP NO.:	05_0018 & 07_0129
DESIGNED BY:	CJC, LW
DRAWN BY:	LW, CJC
CHECKED BY:	CJC, DAT, LW
DATE CREATED:	MARCH 2021

DRAWING TITLE: ROADS & DRAINAGE PLAN - STAGE 01 — A1

PROJECT: SEASCAPE GROVE ESTATE, SOUTH WEST ROCKS
STAGE 1 & STAGE 2 - LOT 801 DP1270742

CLIENT: AUSPADDY DEVELOPMENTS PTY LTD

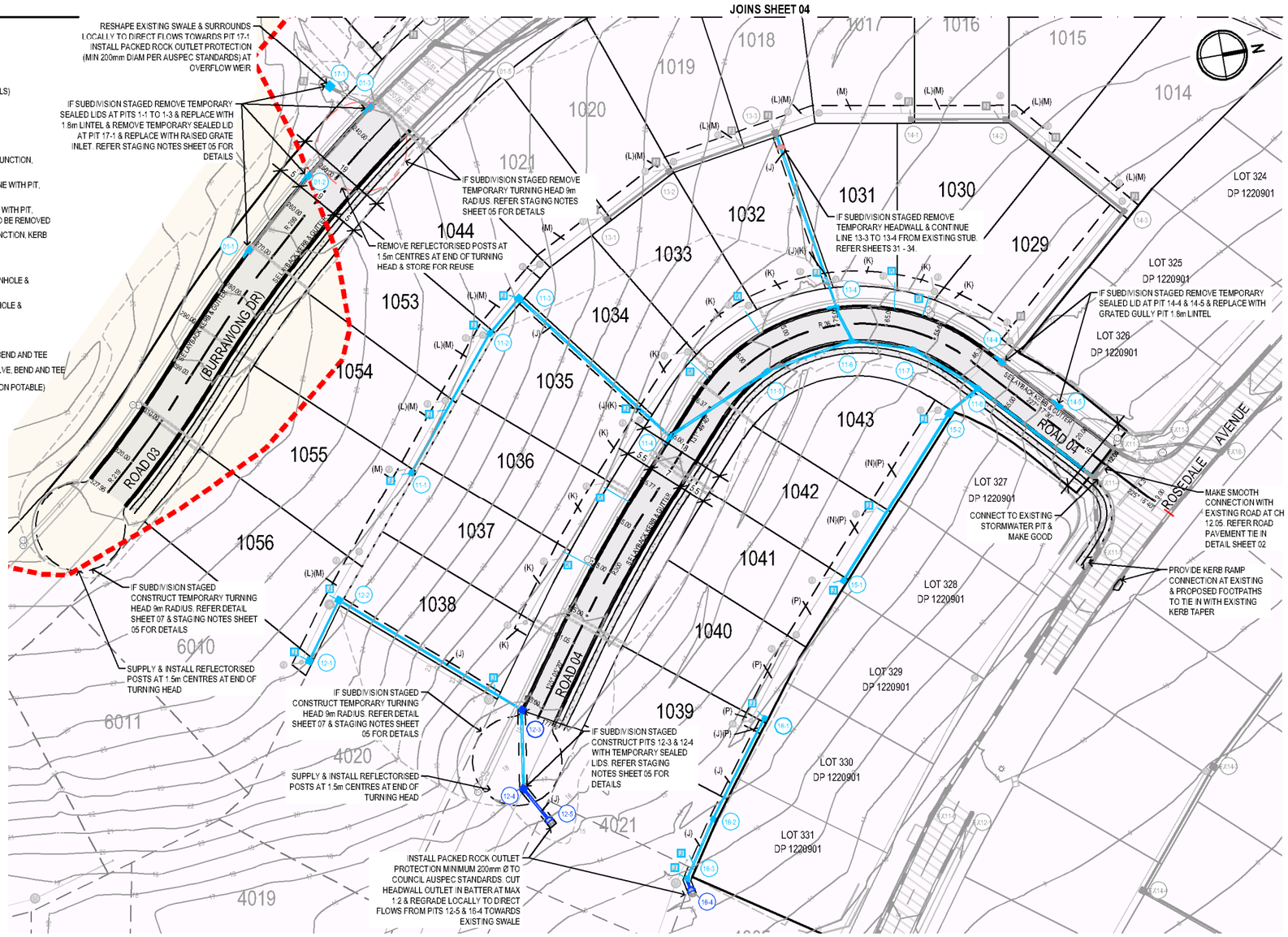
DRAWING NO:	SHEET:	REVISION:
6550E_Stage1_CC	04 OF 59	C

LEGEND

- SITE PROPERTY BOUNDARY
- PROPOSED LOT BOUNDARY
- FUTURE LOT BOUNDARY
- PROPOSED EASEMENT
- PROPOSED ROAD CENTRELINE
- DESIGN SURFACE CONTOURS (1m INTERVALS)
- CHANGE OF GRADE LINE
- EXISTING KERB & GUTTER (BY SURVEY)
- PROPOSED KERB & GUTTER
- PROPOSED RETAINING WALL
- PROPOSED STORMWATER LINE WITH PIT, JUNCTION, KERB ADAPTER & HEADWALL
- PROPOSED TEMPORARY STORMWATER LINE WITH PIT, JUNCTION, KERB ADAPTER & HEADWALL
- EXISTING TEMPORARY STORMWATER LINE WITH PIT, JUNCTION, KERB ADAPTER & HEADWALL TO BE REMOVED
- EXISTING STORMWATER LINE WITH PIT, JUNCTION, KERB ADAPTER & HEADWALL
- STORMWATER PIT LABEL
- PROPOSED GRAVITY SEWER LINE WITH MANHOLE & JUNCTION
- EXISTING GRAVITY SEWER LINE WITH MANHOLE & JUNCTION
- PROPOSED SEWER RISING MAIN WITH TEE
- SEWER PROPERTY SERVICE
- POTABLE WATER HYDRANT, STOP VALVE, BEND AND TEE
- NON POTABLE WATER HYDRANT, STOP VALVE, BEND AND TEE
- WATER PROPERTY SERVICE (POTABLE & NON POTABLE)
- EXISTING FENCE (BY SURVEY)
- EXISTING ROAD
- PROPOSED ROAD (STAGE 02)
- PROPOSED CONCRETE FOOTPATH
- PROPOSED STREET NAME SIGN

ROADWORKS & DRAINAGE NOTES

- SEE SHEET 02 FOR CONSTRUCTION NOTES
- SEE SHEET 05 FOR STORMWATER PIT SCHEDULE.
- INSTALL DIRECTIONAL INDICATORS ON ALL PROPOSED KERB RAMPS PER SHEET 02 DETAIL.
- KERB ADAPTERS TO BE HEAVY DUTY
- PROPERTY CONNECTIONS (JUNCTION & KERB ADAPTER) TO BE Ø150mm
- CONCRETE BULKHEADS ARE TO BE CONSTRUCTED ON ALL STORMWATER LINES WITH GRADE EXCEEDING 10% IN ACCORDANCE WITH KSC AUSPEC D5.
- FOOTPATH TO BE IN ACCORDANCE WITH KSC ASD103.
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- WORKS TO BE IN ACCORDANCE WITH APPROVED CONSTRUCTION & ENVIRONMENTAL MANAGEMENT PLAN CS-21-00006 DATED 23 JULY 2021



STORMWATER PIT SCHEDULE

NO.	ROAD	CHAINAGE	TYPE	
01-1	RD 03	271.915	Grated Gully Pit 1.8m Lintel	
01-2	RD 03	253.157	Grated Gully Pit 1.8m Lintel	
01-3	RD 03	235.000	Grated Gully Pit 1.8m Lintel	
01-4	RD 03	217.000	Grated Gully Pit 1.8m Lintel	
01-5	RD 03	210.920	Grated Gully Pit 1.8m Lintel	
01-6	RD 03	164.682	Grated Gully Pit 1.8m Lintel	
01-7	RD 03	127.668	Grated Gully Pit 1.8m Lintel	
01-8	RD 03	96.194	Grated Gully Pit 1.8m Lintel	
01-9	RD 03	79.973	Grated Gully Pit 1.8m Lintel	
01-10	RD 03	56.239	Grated Gully Pit 1.8m Lintel	
01-11	RD 03	46.011	Grated Gully Pit 1.8m Lintel	
02-1	RD 06A	102.278	Grated Gully Pit 1.8m Lintel	
02-2	RD 06A	90.955	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	
03-1	AT PEG		Raised Grate Surface Inlet Pit 1.2m x 1.2m	SAG
03-2	RD 06B	72.635	Grate Only Gully Pit	
03-3	RD 06B	53.952	Grated Gully Pit 1.8m Lintel	
03-4	RD 06B	28.286	Grated Gully Pit 1.8m Lintel	
03-5	RD 06B	13.688	Grated Gully Pit 1.8m Lintel	SAG
03-6	RD 03	105.193	Grated Gully Pit 1.8m Lintel	
04-1	RD 06C	22.531	Grated Gully Pit 1.8m Lintel	
04-2	RD 06C	38.667	Grated Gully Pit 1.8m Lintel	
04-3	AT PEG		Flush Grate Surface Inlet Pit 0.9m x 0.9m	
05-1	RD 06B	13.688	Grated Gully Pit 1.8m Lintel	SAG
06-1	AT PEG		Flush Grate Surface Inlet Pit 0.9m x 0.9m	
06-2	AT PEG		Flush Grate Surface Inlet Pit 0.9m x 0.9m	
06-3	AT PEG		Junction Pit	
06-4	AT PEG		Junction Pit	
07-1	AT PEG		Flush Grate Surface Inlet Pit 0.6m x 0.6m	
08-1	RD 03	142.541	Grated Gully Pit 1.8m Lintel	
08-2	RD 03	130.711	Grated Gully Pit 1.8m Lintel	
09-1	RD 03	189.946	Grated Gully Pit 1.8m Lintel	
09-2	RD 03	172.038	Grated Gully Pit 1.8m Lintel	
10-1	AT PEG		Flush Grate Surface Inlet Pit 0.6m x 0.6m	
10-2	AT PEG		Flush Grate Surface Inlet Pit 0.6m x 0.6m	
10-3	AT PEG		Flush Grate Surface Inlet Pit 0.6m x 0.6m	
11-1	AT PEG		Flush Grate Surface Inlet Pit 0.6m x 0.6m	
11-2	AT PEG		Flush Grate Surface Inlet Pit 0.6m x 0.6m	
11-3	RD 04	108.195	Flush Grate Surface Inlet Pit 0.9m x 0.9m	
11-4	RD 04	115.447	Grated Gully Pit 1.8m Lintel	
11-5	RD 04	92.439	Grated Gully Pit 1.8m Lintel	
11-6	RD 04	72.219	Grated Gully Pit 1.8m Lintel	
11-7	RD 04	58.302	Grated Gully Pit 1.8m Lintel	
11-8	RD 04	41.985	Grated Gully Pit 1.8m Lintel	
12-1	AT PEG		Flush Grate Surface Inlet Pit 0.6m x 0.6m	
12-2	AT PEG		Flush Grate Surface Inlet Pit 0.9m x 0.9m	
12-3	AT PEG	177.524	Grated Gully Pit 1.8m Lintel	
12-4	RD 04	191.805	Grated Gully Pit 1.8m Lintel	
12-5	AT PEG		Headwall	
13-1	AT PEG		Flush Grate Surface Inlet Pit 0.6m x 0.6m	
13-2	AT PEG		Flush Grate Surface Inlet Pit 0.6m x 0.6m	
13-3	AT PEG		Flush Grate Surface Inlet Pit 0.9m x 0.9m	
13-4	RD 04	74.693	Grated Gully Pit 1.8m Lintel	
14-1	AT PEG		Flush Grate Surface Inlet Pit 0.6m x 0.6m	
14-2	AT PEG		Flush Grate Surface Inlet Pit 0.6m x 0.6m	
14-3	AT PEG		Flush Grate Surface Inlet Pit 0.9m x 0.9m	
14-4	RD 04	41.291	Grated Gully Pit 1.8m Lintel	
14-5	RD 04	26.895	Grated Gully Pit 1.8m Lintel	
15-1	AT PEG		Flush Grate Surface Inlet Pit 0.6m x 0.6m	
15-2	AT PEG		Flush Grate Surface Inlet Pit 0.9m x 0.9m	
16-1	AT PEG		Flush Grate Surface Inlet Pit 0.6m x 0.6m	
16-2	AT PEG		Flush Grate Surface Inlet Pit 0.6m x 0.6m	
16-3	AT PEG		Flush Grate Surface Inlet Pit 0.6m x 0.6m	
16-4	AT PEG		Headwall	
17-1	AT PEG		Raised Grate Surface Inlet Pit 1.2m x 1.2m	SAG
18-1	RD 06A	65.210	Grated Gully Pit 1.8m Lintel	
EX1-1	RD 03	3.147	Grated Gully Pit 2.4m Lintel	
EX1-2	RD 03	0.000	Grated Gully Pit 1.8m Lintel	
EX3-1	AT PEG		Junction Pit	
EX6-1	RD 06A	3.396	Grate Only Gully Pit	
EX6-2	RD 06A	0.000	Grated Gully Pit 3.0m Lintel	
EX11-3	RD 04	12.500	Grated Gully Pit 1.8m Lintel	SAG
EX11-4	RD 04	12.538	Grated Gully Pit 2.4m Lintel	
EX21-1	AT PEG		Flush Grate Surface Inlet Pit 0.9m x 0.9m	

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 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. PITS 1-1 TO 1-3, 14-4, 14-5 & 17-1 TO BE CONSTRUCTED WITH A TEMPORARY SEALED LID. REFER SHEETS 06 & 31 - 34 FOR DETAILS.

- PROPERTY JUNCTIONS TO BE CONSTRUCTED FOR LOTS 1001-1006, 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 FROM PROPOSED NETWORK.

-SEWER PROPERTY CONNECTIONS TO BE CONSTRUCTED FOR LOTS 1001-1036. REFER SHEET 36 FOR DETAILS.

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

STAGE 02 (LOTS 2001 - 2020)

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

- 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 DURING STAGE 02.

- 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 DETAILS.

- TIE IN TO & CONTINUE FROM STAGE 01 POTABLE & NON-POTABLE WATER MAINS AT ROAD 03 & TERMINATE PAST THE STAGE 02 TEMPORARY TURNING CIRCLE. TIE 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
(K) 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) PROPOSED EASEMENT TO DRAIN WATER 4.5 WIDE
(P) PROPOSED EASEMENT TO DRAIN SEWAGE 4.5 WIDE

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

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K:\C REF: Cv\6550_seascape grove\22\dgn\working\Stage 01\6550E_Stage1_CC.dwg, A1\[ROADS DRAINAGE 2.2]6 Oct 2021 - cmag

KING + CAMPBELL

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REV.	DATE	DESCRIPTION	BY
A	20.08.2021	ISSUED FOR APPROVAL	LW
B	19.10.2021	REISSUED FOR CC APPROVAL	LW
C	26.10.2021	MINOR AMENDMENTS	LW

DATUM: AHD SCALE: 1:500 @ A1 (1:1000 @ A3)

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NOMINATED ARCHITECT: NIGEL SWIFT - NSW ARB NO 7025 / QLD ARB NO 3957

PROJECT NO:	6550
MP NO.:	05_0018 & 07_0129
DESIGNED BY:	CJC, LW
DRAWN BY:	LW, CJC
CHECKED BY:	CJC, DAT, LW
DATE CREATED:	MARCH 2021

DRAWING TITLE: ROADS & DRAINAGE PLAN - STAGE 02 — A1

PROJECT: SEASCAPE GROVE ESTATE, SOUTH WEST ROCKS
STAGE 1 & STAGE 2 - LOT 801 DP1270742

CLIENT: AUSPADDY DEVELOPMENTS PTY LTD

DRAWING NO:	SHEET:	REVISION:
6550E_Stage1_CC	05 OF 59	C

LEGEND

- PROPOSED STAGING BOUNDARY
- SITE PROPERTY BOUNDARY
- EXISTING LOT BOUNDARY
- PROPOSED LOT BOUNDARY
- FUTURE LOT BOUNDARY
- FINISHED SURFACE CONTOURS WITHIN EXTENT OF EARTHWORKS (1.0m INTERVALS)
- EXISTING SURFACE CONTOURS OUTSIDE EXTENT OF EARTHWORKS (1.0m INTERVALS)
- EXISTING SURFACE CONTOURS WITHIN EXTENT OF EARTHWORKS (1.0m INTERVALS)
- PROPOSED ROAD CENTRELINE
- EXISTING ROAD INVERT
- PROPOSED ROAD INVERT
- PROPOSED RETAINING WALL
- EXTENT OF EARTHWORKS
- PROPOSED STOCKPILE LOCATION
- EXISTING TREE TO BE RETAINED & PROTECTED

EARTHWORKS CONTROLS
REFER SHEET 07 FOR DETAILS

- PROPOSED SANDBAG KERB INLET SEDIMENT TRAP
- PROPOSED SEDIMENT FENCE
- PROPOSED MULCH BALE SEDIMENT FILTER
- EXISTING SWALE - AT THE COMPLETION OF ROADS THE CONTRACTOR IS TO REMOVE/FILL-IN THE EXISTING SWALE FROM THE LOTS IN ACCORDANCE WITH SITE GEOTECHNICAL ADVICE
- STABLISED CONSTRUCTION EXIT & VEHICLE WASH DOWN BAY

NOTES

- WORKS TO BE IN ACCORDANCE WITH APPROVED CONSTRUCTION & ENVIRONMENTAL MANAGEMENT PLAN CS-21-00006 DATED 23 JULY 2021
- SEE SHEET 02 FOR CONSTRUCTION NOTES
- FOR EARTHWORKS SETOUT, REFER TO MACHINE CONTROL DIGITAL STRINGS

GRADE MIN 1m WIDE DRAINAGE SWALE MIN 0.3m DEPTH AT MIN 1% GRADE FOR ENTIRE LENGTH OF PROPOSED LOT 1030 & LOT 801 DP1270742 SHARED BOUNDARY TO DIRECT STORMWATER FLOWS TOWARDS CROWN ROAD

CROWN ROAD

REGRADE LOCALLY & EXTEND BANK TO DIRECT ANY SURCHARGE FLOWS AWAY FROM PRIVATE PROPERTY & TOWARDS BELLE O'CONNOR ROAD

DIRECT STORMWATER FLOWS AWAY FROM ADJACENT DEVELOPED LOTS

DIRECT STORMWATER FLOWS AWAY FROM LOT 904 DP1189449

RETAIN & PROTECT EXISTING TREES

PROPOSED TOPSOIL STOCKPILE LOCATION

SUPPLY & INSTALL MULCH BALE SEDIMENT TRAP ALONG KERB

SUPPLY & INSTALL SANDBAG SEDIMENT TRAP UPSTREAM OF EXISTING PITS

CONSTRUCT TEMPORARY STABILISED CONSTRUCTION EXIT - REFER DETAIL SHEET 07

IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE SEDIMENT DOES NOT ESCAPE FROM THE SITE. CONCENTRATED STORMWATER FLOWS WILL OCCUR AT THIS LOCATION IF EARTHWORKS ARE EXPOSED & HEAVY RAINFALL OCCURS. THE CONTRACTOR IS TO MANAGE THE SITE TO ENSURE THIS IS ADEQUATELY CONTROLLED, THROUGH THE USE OF SUCH DEVICES AS MULCH BUNDS, HAY BALES & FILTER FENCES.

IF SUBDIVISION STAGED CONSTRUCT TEMPORARY TURNING HEAD 9m RADIUS. PLACE MULCH BUNDING & REGRADE LOCALLY TO DIRECT OVERLAND FLOWS AWAY FROM TEMPORARY TURNING HEAD & TOWARDS EXISTING DOWNSTREAM SWALE REFER EARTHWORKS DETAILS SHEET 07 & STAGING NOTES SHEET 05 FOR DETAILS

AT THE COMPLETION OF ROADS THE CONTRACTOR IS TO REMOVE/FILL-IN THE EXISTING SWALE FROM THE LOTS IN ACCORDANCE WITH SITE GEOTECHNICAL ADVICE

REPLACE EXISTING SEDIMENT FENCE

ROAD 06C
ROAD 06B
ROAD 06A (OLGA PL)
(BURRAWONG DR)
ROAD 03
ROAD 04
ROSEDALE AVENUE

STAGE 01
STAGE 02

LOT 801 DP 1270742
LOT 800 DP 1270742
LOT 904 DP 1189449
LOT 623 DP 1191515
LOT 624 DP 1191515
LOT 625 DP 1191515
LOT 626 DP 1191515
LOT 627 DP 1191515
LOT 628 DP 1191515
LOT 101 DP 1097510
LOT 102 DP 1097510
LOT 103 DP 1097510
LOT 104 DP 1097510
LOT 106 DP 1097510
LOT 323 DP 1220901
LOT 324 DP 1220901
LOT 325 DP 1220901
LOT 326 DP 1220901
LOT 327 DP 1220901

JOINS SHEET 07

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

NOT TO BE USED FOR CONSTRUCTION UNLESS CONSTRUCTION CERTIFICATE ISSUED FOR THE WORKS

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K:\C REF\ Cv6550_seascape grove\22 sg\drawing\Stage 01\6550E_Stage1_CC.dwg - A1\LE-EARTHWORKS ST01 - 29 Oct 2021 - Lorag

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REV.	DATE	DESCRIPTION	BY
A	20.06.2021	ISSUED FOR APPROVAL	LW
B	19.10.2021	REISSUED FOR CC APPROVAL	LW
C	28.10.2021	MINOR AMENDMENTS	LW

DATUM: AHD SCALE: 1:500 @ A1 (1:1000 @ A3)

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NOMINATED ARCHITECT: NIGEL SWIFT - NSW ARB NO 7025 QLD ARB NO 3957

PROJECT NO:	6550
MP NO.:	05_0018 & 07_0129
DESIGNED BY:	CJC, LW
DRAWN BY:	LW, CJC
CHECKED BY:	CJC, DAT, LW
DATE CREATED:	MARCH 2021

DRAWING TITLE: EARTHWORKS PLAN - STAGE 01 — A1

PROJECT: SEASCAPE GROVE ESTATE, SOUTH WEST ROCKS
STAGE 1 & STAGE 2 - LOT 801 DP1270742

CLIENT: AUSPADDY DEVELOPMENTS PTY LTD

DRAWING NO:	SHEET:	REVISION:
6550E_Stage1_CC	06 OF 59	C

LEGEND

- PROPOSED STAGING BOUNDARY
- SITE PROPERTY BOUNDARY
- EXISTING LOT BOUNDARY
- PROPOSED LOT BOUNDARY
- FUTURE LOT BOUNDARY
- 24 — FINISHED SURFACE CONTOURS WITHIN EXTENT OF EARTHWORKS (1.0m INTERVALS)
- 24 — EXISTING SURFACE CONTOURS OUTSIDE EXTENT OF EARTHWORKS (1.0m INTERVALS)
- 24 — EXISTING SURFACE CONTOURS WITHIN EXTENT OF EARTHWORKS (1.0m INTERVALS)
- PROPOSED ROAD CENTRELINE
- EXISTING ROAD INVERT
- PROPOSED ROAD INVERT
- EXTENT OF EARTHWORKS
- EXISTING TREE TO BE RETAINED & PROTECTED

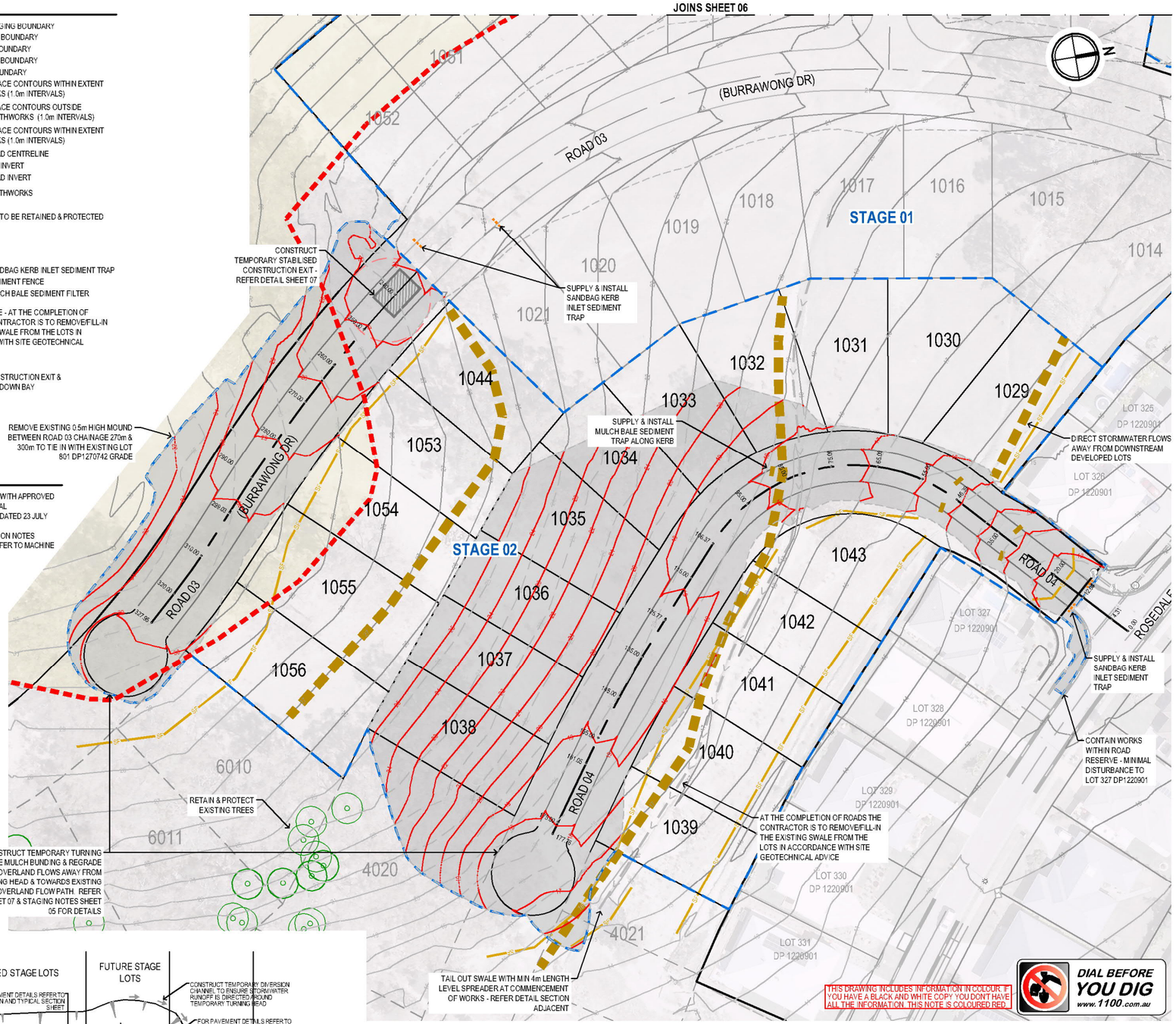
EARTHWORKS CONTROLS
REFER SHEET 07 FOR DETAILS

- PROPOSED SANDBAG KERB INLET SEDIMENT TRAP
- SF — PROPOSED SEDIMENT FENCE
- PROPOSED MULCH BALE SEDIMENT FILTER
- EXISTING SWALE - AT THE COMPLETION OF ROADS THE CONTRACTOR IS TO REMOVE/FILL-IN THE EXISTING SWALE FROM THE LOTS IN ACCORDANCE WITH SITE GEOTECHNICAL ADVICE
- STABILISED CONSTRUCTION EXIT & VEHICLE WASH DOWN BAY

NOTES

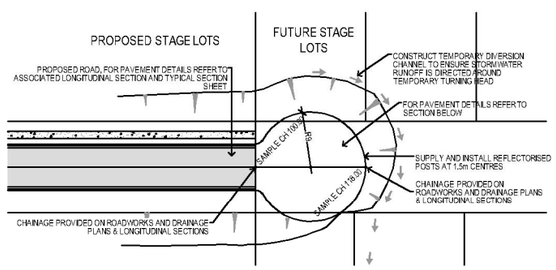
- WORKS TO BE IN ACCORDANCE WITH APPROVED CONSTRUCTION & ENVIRONMENTAL MANAGEMENT PLAN CS-21-00006 DATED 23 JULY 2021
- SEE SHEET 02 FOR CONSTRUCTION NOTES
- FOR EARTHWORKS SETOUT, REFER TO MACHINE CONTROL DIGITAL STRINGS

JOINS SHEET 06

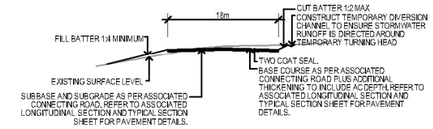


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essential energy

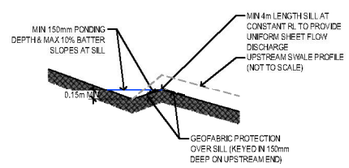
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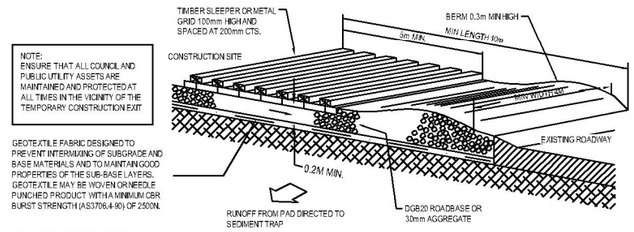
TYPICAL TEMPORARY TURNING HEAD DETAIL 1:500 @ A1



TYPICAL TEMPORARY TURNING HEAD SECTION 1:500 @ A1



LEVEL SPREADER DETAIL SECTION NOT TO SCALE



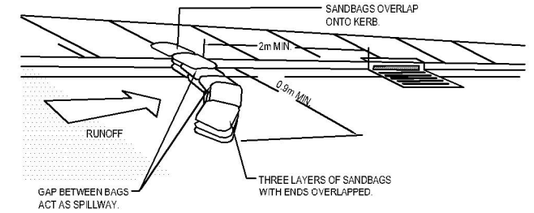
CONSTRUCTION NOTES

1. STRIP TOPSOIL AND LEVEL SITE.
2. COMPACT SUBGRADE.
3. COVER AREA WITH NEEDLE-PUNCHED GEOTEXTILE.
4. CONSTRUCT 200MM THICK PAD OVER GEOTEXTILE USING ROADBASE OR 30MM AGGREGATE.
5. CONSTRUCT HUMP IMMEDIATELY WITHIN BOUNDARY TO DIVERT WATER TO A SEDIMENT FENCE OR OTHER SEDIMENT TRAP WHERE THE SEDIMENT IS COLLECTED AND REMOVED.

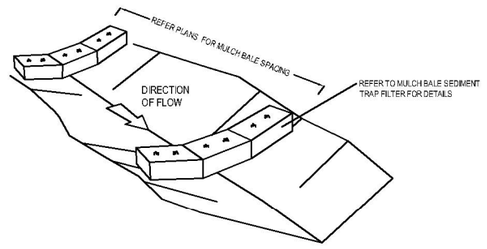
MAINTENANCE NOTES

THE EXIT SHALL BE MAINTAINED IN A CONDITION WHICH PREVENTS TRACKING OR FLOWING OF SEDIMENT OFF THE CONSTRUCTION SITE. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL GRAVEL AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED OFF THE CONSTRUCTION SITE MUST BE REMOVED IMMEDIATELY.

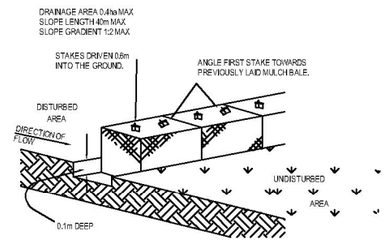
TEMPORARY STABILISED CONSTRUCTION EXIT NOT TO SCALE



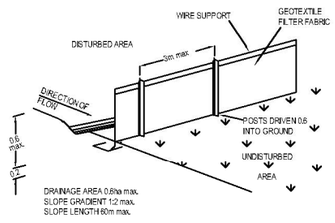
SANDBAG KERB INLET SEDIMENT TRAP NOT TO SCALE



MULCH BALE SEDIMENT TRAP FILTER IN SWALE NOT TO SCALE



MULCH BALE SEDIMENT TRAP FILTER NOT TO SCALE



NOTE: REINFORCE SEDIMENT FENCE AT LOW POINTS WITH STRAW BALES.

SEDIMENT FENCE NOT TO SCALE

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

NOT TO BE USED FOR CONSTRUCTION UNLESS CONSTRUCTION CERTIFICATE ISSUED FOR THE WORKS

K:\C-REF\C-Civil\6550_seascape grove\02 engineering\Stage 01\6550E_Stage1_CC.dwg - A1LE-EARTHWORKS ST02.plt Oct 2021, Lmadge

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REV.	DATE	DESCRIPTION	BY
A	20.08.2021	ISSUED FOR APPROVAL	LW
B	19.10.2021	REISSUED FOR CC APPROVAL	LW
C	26.10.2021	MINOR AMENDMENTS	LW

DATUM: AHD SCALE: 1:500 @ A1 (1:1000 @ A3)

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NOMINATED ARCHITECT: NIGEL SWIFT - NSW ARB NO 7925 / QLD ARB NO 3957

PROJECT NO:	6550
MP NO.:	05_0018 & 07_0129
DESIGNED BY:	CJC, LW
DRAWN BY:	LW, CJC
CHECKED BY:	CJC, DAT, LW
DATE CREATED:	MARCH 2021

DRAWING TITLE:	EARTHWORKS PLAN - STAGE 02 & DETAILS
PROJECT:	SEASCAPE GROVE ESTATE, SOUTH WEST ROCKS STAGE 1 & STAGE 2 - LOT 801 DP1270742
CLIENT:	AUSPADDY DEVELOPMENTS PTY LTD

A1

DRAWING NO:	SHEET:	REVISION:
6550E_Stage1_CC	07 OF 59	C

LEGEND

- SITE PROPERTY BOUNDARY
- PROPOSED LOT BOUNDARY
- FUTURE LOT BOUNDARY
- PROPOSED EASEMENT
- PROPOSED ROAD CENTRELINE
- EXISTING KERB & GUTTER (BY SURVEY)
- PROPOSED KERB & GUTTER
- PROPOSED RETAINING WALL
- PROPOSED STORMWATER LINE WITH PIT, JUNCTION & HEADWALL
- EXISTING STORMWATER LINE WITH PIT
- PROPOSED 150mm DIA. 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 VALVE AND TEE
- PROPOSED NON POTABLE WATER MAIN **(PE100 PN16)** WITH BENDS 90°
- NON POTABLE WATER HYDRANT, STOP VALVE AND TEE
- TEMPORARY POTABLE & NON POTABLE WATER HYDRANTS
- 25mm POTABLE & NON POTABLE SINGLE WATER PROPERTY SERVICE (PE PIPE) INC TAPPING BANDS AND PROVISION FOR FUTURE METERS. TO BE IN 100mm CONDUIT WHERE UNDER ROAD PAVEMENT. PROVIDE PATH BOXES FOR SERVICES UNDER FOOTPATHS.
- 100mm CONDUIT FOR WATER PROPERTY SERVICE WHERE UNDER ROAD PAVEMENT
- PROPOSED PRESSURE SEWER LINE **(PE100 PN16)** WITH FLUSH POINT - REFER SHEET 41 FOR DETAILS
- PROPOSED SEWER LATERAL, PROPERTY BOUNDARY KIT, GRINDER PUMP STATION & TOP OF PUMP RL - REFER NOTES THIS SHEET & SHEET 41 FOR DETAILS

CROWN ROAD

ROAD 06C

ROAD 06B

ROAD 06A (OLGA PL)

ROAD 03

(BURRAWONG DR)

ROAD 04

LOT 801 DP 1270742

LOT 800 DP 1270742

LOT 904 DP 1189449

LOT 623 DP 1191515

LOT 624 DP 1191515

LOT 625 DP 1191515

LOT 626 DP 1191515

LOT 627 DP 1191515

LOT 628 DP 1191515

LOT 101 DP 1097510

LOT 106 DP 1097510

LOT 104 DP 1097510

LOT 324 DP 1220901

LOT 325 DP 1220901

LOT 326 DP 1220901

LOT 327 DP 1220901

PRESSURE SEWER TO DISCHARGE INTO GRAVITY SEWER SYSTEM AT MANHOLE E-1

WATER MAINS P06C & NP06C TO TERMINATE WITH TERMINAL LOOP PAST HYDRANTS. REFER PHOTO 1 ADJACENT FOR DETAILS.

PROVIDE GRAVITY SEWER CONNECTION & 25mm POTABLE WATER CONNECTION (PE PIPE) INCLUDING TAPPING BANDS & PROVISION FOR FUTURE METER TO EXISTING LOT 904 DP1189449. SERVICES TO BE CONNECTED ONCE RETICULATED NETWORKS ARE COMMISSIONED & ACCEPTED BY COUNCIL. TEMPORARY ARRANGEMENTS FOR SERVICING LOT 34 DP1167775 ARE TO BE ARRANGED AND REMAIN IN PLACE UNTIL THIS FINAL CONNECTION CAN BE MADE.

EXISTING NON-POTABLE SERVICE CONNECTION TO LOT 904 DP1189449 TO BE RETAINED & PROTECTED DURING CONSTRUCTION

100mm x 100mm TEE POTABLE 100mm x 100mm TEE NON POTABLE

REMOVE EXISTING RETAINING WALL FOR CONSTRUCTION OF SEWER LINE C-2 TO C-3 THEN REPLACE RETAINING WALL TO BRIDGE SEWER LINE & RESHAPE EARTH LOCALLY AROUND MANHOLE C-2.

CONNECT PROPOSED GRAVITY SEWER LINE TO EXISTING MANHOLE EXB-1 & ADJUST BENCHING TO SUIT

REMOVE EXISTING DUCKSFOOT HYDRANT & STORE FOR REUSE ON SITE. REPLACE WITH STANDARD HYDRANT & ARRANGE WITH COUNCIL FOR CONNECTION TO EXISTING WATER MAINS

CONFIRM EXISTING SEWER JUNCTION PROVIDED TO LOT 1001 & PROVIDE CONNECTION IF NONE FOUND

CONNECT PROPOSED GRAVITY SEWER LINE TO EXISTING SEWER LINE AT MH EXE-2 & ADJUST BENCHING TO SUIT

150mm x 100mm TEE POTABLE 100mm x 100mm TEE NON POTABLE

PROVIDE PATH BOXES FOR SERVICES UNDER FOOTPATHS

IF SUBDIVISION STAGED, TERMINATE POTABLE & NON-POTABLE WATER MAINS BEYOND TEMPORARY TURNING HEAD & CAP AFTER HYDRANTS FOR FUTURE CONNECTION

ENSURE NO DAMAGE TO EXISTING STRUCTURES WHEN UNDERTAKING DEEP EXCAVATION WORKS

CONSTRUCT PROPOSED SEWER LINE G-7 TO EXF-1 TO TIE IN TO LEVEL & GRADE OF EXISTING SEWER LINE. REFER SHEETS 38-41 FOR DETAILS

JOINS SHEET 37

PRESSURE SEWER NOTES

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 & CAMPBELL**
2. **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.**

SEWER & WATER NOTES

- 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 Ø150mm
- PATH BOXES TO BE INSTALLED WHERE WATER SERVICE CONNECTION IS OFF THE MAIN UNDER 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%.
- SEE SHEET 37 FOR WATER CONNECTION DETAILS WHEN CLEAR OR OBSTRUCTED BY ELECTRICAL & COMMUNICATIONS SERVICES
- PROPERTY BOUNDARY KIT & GRINDER PUMP STATION TO BE SUPPLIED BY AQUATEC (WSAA 07 TYPICAL DETAILS PSS1102 & PSS1101, INSTALLED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS) - REDUCED LEVEL SHOWN ON PLAN FOR TOP OF GRINDER PUMP STATION.
- ADJUST BENCHING WITHIN EXISTING MANHOLES AS APPLICABLE AT ALL POINTS OF CONNECTION BETWEEN PROPOSED & EXISTING SEWER NETWORKS

STAGE 01 EASEMENTS

EXISTING

(A) EXISTING EASEMENT TO DRAIN SEWAGE VARIABLE WIDTH (DP1097510)
(B) EXISTING EASEMENT TO DRAIN WATER VARIABLE WIDTH (DP1097510)
(C) EXISTING EASEMENT TO DRAIN WATER 3 WIDE (DP1097510)
(D) EXISTING EASEMENT TO DRAIN WATER 2 WIDE (DP1190571)
(E) EXISTING EASEMENT TO DRAIN SEWAGE 3.5 WIDE (DP1189449)
(F) EXISTING EASEMENT TO DRAIN WATER 2 WIDE (DP1171040)

PROPOSED

(G) PROPOSED EASEMENT TO DRAIN WATER 1.5 WIDE
(H) PROPOSED EASEMENT TO DRAIN SEWAGE 3 WIDE
(J) PROPOSED EASEMENT TO DRAIN WATER VARIABLE WIDTH
(K) PROPOSED EASEMENT TO DRAIN SEWAGE VARIABLE WIDTH
(L) PROPOSED EASEMENT TO DRAIN WATER 3.5 WIDE
(M) PROPOSED EASEMENT TO DRAIN SEWAGE 3.5 WIDE
(N) PROPOSED EASEMENT TO DRAIN WATER 4.5 WIDE
(P) PROPOSED EASEMENT TO DRAIN SEWAGE 4.5 WIDE
(Q) PROPOSED EASEMENT FOR MULTI-PURPOSE ELECTRICAL INSTALLATION 4.2 WIDE
(V) PROPOSED EASEMENT TO DRAIN SEWAGE 1 WIDE
(W) PROPOSED EASEMENT TO DRAIN SEWAGE 5 WIDE

PHOTO 1 - TERMINAL LOOP



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

KING + CAMPBELL

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NOMINATED ARCHITECT: NIGEL SWIFT - NSW ARB NO 7025 QLD ARB NO 3957

PROJECT NO:	6550
MP NO.:	05_0018 & 07_0129
DESIGNED BY:	CJC, LW
DRAWN BY:	LW, CJC
CHECKED BY:	CJC, DAT, LW
DATE CREATED:	MARCH 2021

DRAWING TITLE: SEWER & WATER PLAN - STAGE 01 — A1

PROJECT: SEASCAPE GROVE ESTATE, SOUTH WEST ROCKS
STAGE 1 & STAGE 2 - LOT 801 DP1270742

CLIENT: AUSPADDY DEVELOPMENTS PTY LTD

DRAWING NO:	SHEET:	REVISION:
6550E_Stage1_CC	36 OF 59	C

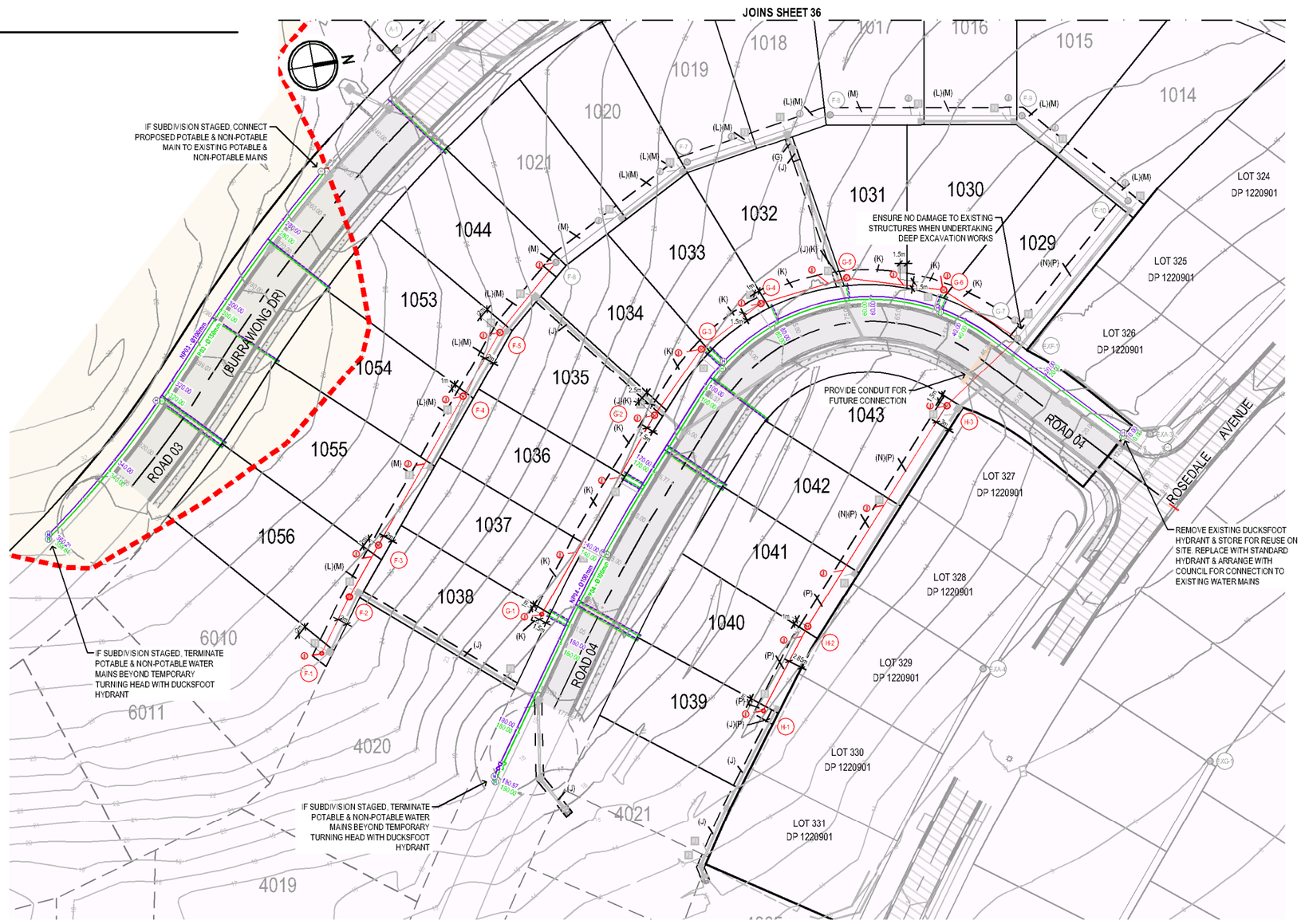
K:\C-REF\Dr\6550_seascape grove\02\drawing\Stage 01\6550E_Stage1_CC.dwg - A1(L)SEWER WATER, 26 Oct 2021, cmag.pc

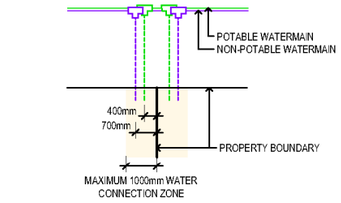
LEGEND

- SITE PROPERTY BOUNDARY
- PROPOSED LOT BOUNDARY
- FUTURE LOT BOUNDARY
- PROPOSED EASEMENT
- PROPOSED ROAD CENTRELINE
- EXISTING KERB & GUTTER (BY SURVEY)
- PROPOSED KERB & GUTTER
- PROPOSED STORMWATER LINE WITH PIT, JUNCTION & HEADWALL
- EXISTING STORMWATER LINE WITH PIT
- 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 VALVE AND TEE
- PROPOSED NON POTABLE WATER MAIN **(PE100 PN16)** WITH BENDS 90°
- NON POTABLE WATER HYDRANT, STOP VALVE AND TEE
- TEMPORARY POTABLE & NON POTABLE WATER HYDRANTS
- 25mm POTABLE & NON POTABLE SINGLE WATER PROPERTY SERVICE (PE PIPE) INC TAPPING BANDS AND PROVISION FOR FUTURE METERS. TO BE IN 100mm CONDUIT WHERE UNDER ROAD PAVEMENT
- 100mm CONDUIT FOR WATER PROPERTY SERVICE WHERE UNDER ROAD PAVEMENT

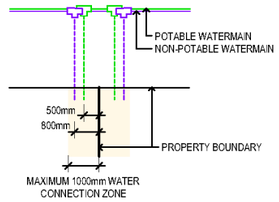
SEWER & WATER NOTES

- 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 Ø150mm
- PATH BOXES TO BE INSTALLED WHERE WATER SERVICE CONNECTION IS OFF THE MAIN UNDER 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%.
- SEE SHEET 37 FOR WATER CONNECTION DETAILS WHEN CLEAR OR OBSTRUCTED BY ELECTRICAL & COMMUNICATIONS SERVICES
- PROPERTY BOUNDARY KIT & GRINDER PUMP STATION TO BE SUPPLIED BY AQUATECH (WSAA 07 TYPICAL DETAILS PSS1102 & PSS1101, INSTALLED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS) - REDUCED LEVEL SHOWN ON PLAN FOR TOP OF GRINDER PUMP STATION.
- ADJUST BENCHING WITHIN EXISTING MANHOLES AS APPLICABLE AT ALL POINTS OF CONNECTION BETWEEN PROPOSED & EXISTING SEWER NETWORKS





WATER CONNECTION
CLEAR OF ELECTRICAL AND COMMUNICATIONS
NTS



WATER CONNECTION
OBSTRUCTED BY ELECTRICAL AND COMMUNICATIONS
NTS

STAGE 02 EASEMENTS

PROPOSED

(J) PROPOSED EASEMENT TO DRAIN WATER 1.5 WIDE
(K) 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) PROPOSED EASEMENT TO DRAIN WATER 4.5 WIDE
(P) PROPOSED EASEMENT TO DRAIN SEWAGE 4.5 WIDE

PRESSURE SEWER NOTES

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 & CAMPBELL**
2. **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 and live
For safety tips visit essentialenergy.com.au/safety or in an emergency call 13 20 80
essential energy

DIAL BEFORE YOU DIG www.1100.com.au

THIS DRAWING INCLUDES INFORMATION IN COLOUR. IF YOU HAVE A BLACK AND WHITE COPY YOU DON'T HAVE ALL THE INFORMATION. THIS NOTE IS COLOURED RED.

NOT TO BE USED FOR CONSTRUCTION UNLESS CONSTRUCTION CERTIFICATE ISSUED FOR THE WORKS

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

KING + CAMPBELL

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

REV.	DATE	DESCRIPTION	BY
A	20.08.2021	ISSUED FOR APPROVAL	LW
B	19.10.2021	REISSUED FOR CC APPROVAL	LW
C	26.10.2021	MINOR AMENDMENTS	LW

DATUM: AHD SCALE: 1:500 @ A1 (1:1000 @ A3)

0 25

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NOMINATED ARCHITECT: NIGEL SWIFT - NSW ARB NO 7025 QLD ARB NO 3997

PROJECT NO:	6550
MP NO.:	05_0018 & 07_0129
DESIGNED BY:	CJC, LW
DRAWN BY:	LW, CJC
CHECKED BY:	CJC, DAT, LW
DATE CREATED:	MARCH 2021

DRAWING TITLE: SEWER & WATER PLAN - STAGE 02 — A1

PROJECT: SEASCAPE GROVE ESTATE, SOUTH WEST ROCKS
STAGE 1 & STAGE 2 - LOT 801 DP1270742

CLIENT: AUSPADDY DEVELOPMENTS PTY LTD

DRAWING NO:	SHEET:	REVISION:
6550E_Stage1_CC	37 OF 59	C

I:\C-REF\6550_seascape grove\02\sewering\Stage 01\6550E_Stage1_CC.dwg - A1(L)SEWER WATER2, 26 Oct 2021, cr - wgs

Attachment 6

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.

BY

BLYTH, HADLOW & ASSOCIATES

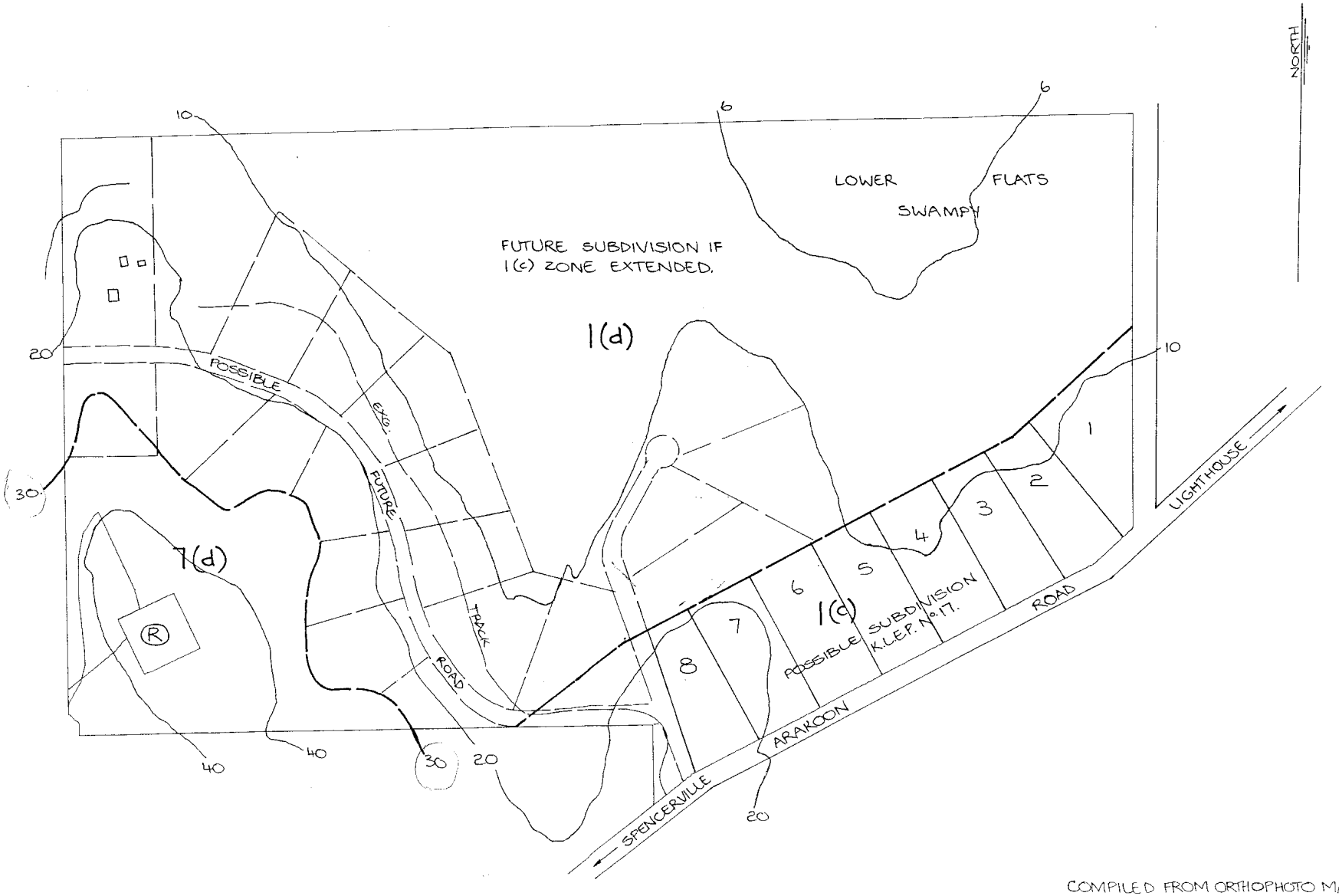
SURVEYORS, ENGINEERS & PLANNERS

39 ELBOW STREET, WEST KEMPSEY

REF.9437 JULY,1985

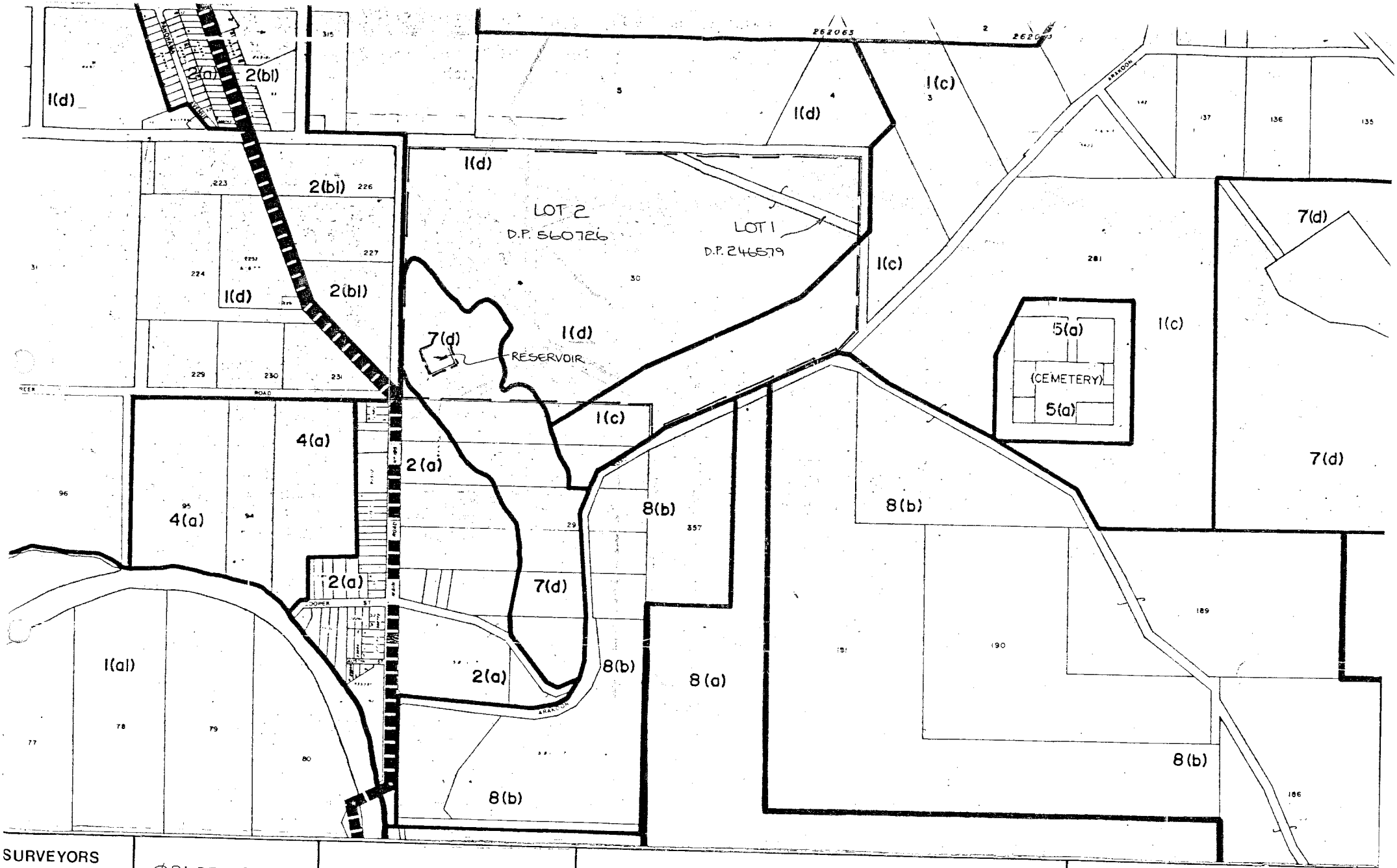
This submission has been prepared on my behalf by Blyth, Hadlow & Associates and the contents thereof have been made known to me.

.....
for Waldel Pty. Ltd.



COMPILED FROM ORTHOPHOTO MAP.

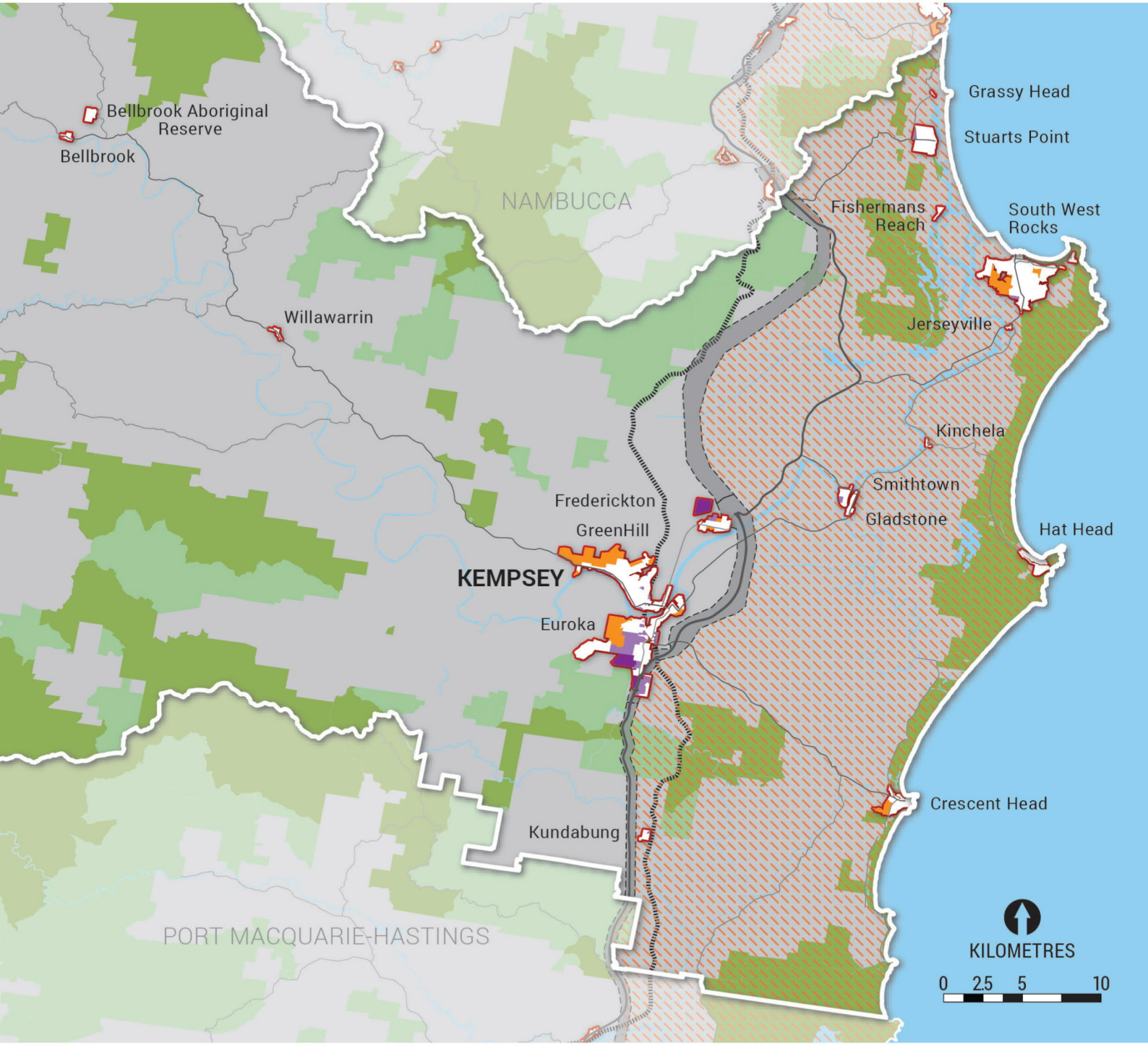
SURVEYORS REFERENCE	Ø 9437 - 05	1:4000 METRIC	PLAN OF LOT 2 D.P. 560726 & LOT 1 D.P. 246579 AT SOUTH WEST ROCKS & POSSIBLE SUBDIVISION.	**BLYTH, HADLOW & ASSOC.** Surveyors, Engineers & Planners, P.O. Box 139 W. Kempsey 2440. Phone: 065-62-6688.
SHIRE OF KEMPSEY		DATE: 11 JUNE 1985	PLAN "B".	
		DATUM: A.H.D.		



SURVEYORS REFERENCE	Ø9437 - 05	1:8000 METRIC	PLANE SHOWING PROPOSED ZONING OF LOT 2 D.P. 560726 & LOT 1 D.P. 246579. AT SOUTH WEST ROCKS.
SHIRE OF KEMPSEY		DATE: 11 JUNE	
		DATUM:	PLAN "C"

BLYTH, HADLOW & ASSOC
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**



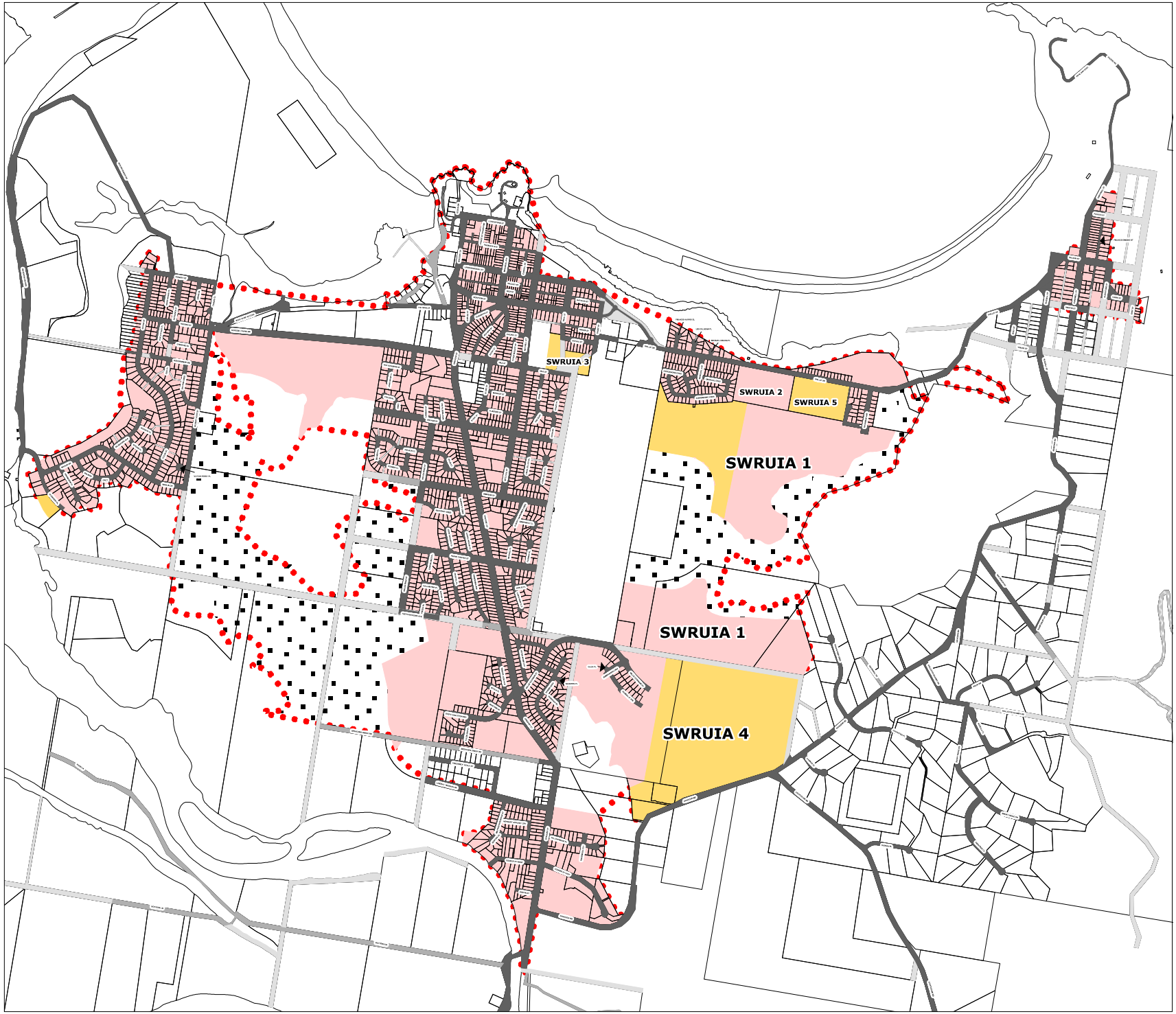
- Urban Growth Area
- Investigation Area – Urban Land
- Investigation Area – Employment Land
- Existing Employment Land
- Coastal Strip
- LGA Boundary
- Railway
- Highway
- Proposed Highway Upgrade Corridor
- National Park and Reserve
- State Forest
- Waterway

Growth areas show the boundaries of urban areas and, as such, identify both existing and proposed urban lands.

Not all land identified within the growth areas can be developed for urban uses. All sites will be subject to more detailed investigations to determine capability and future yield. Land that is subject to significant natural hazards and/or environmental constraints will be excluded from development.

Kempsey Shire Council

South West Rocks



Legend

- New Release Area
- Existing Residential
- Lodged Rezoning Application (not part of the Mid North Coast Regional Strategy)
- Growth Area
- Cadastre
- From Mid North Coast Regional Strategy Kempsey Growth Area map. Indicative areas of high level constraints within proposed future urban release areas and potential employment lands

N
W E
S

0 500 1000

Meters

Scale: 1:25,000

ISCLAIMER

here is no warranty that the data on this map does
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iffered by the user or any other person consequent
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