KOALA HABITAT ASSESSMENT

Road Network Extension, Mitchell Road, Bromelton

Last Revision:
23.06.25

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Document Control Sheet

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1. INTRODUCTION

1.1. Preamble

The planning framework for Koala conservation in south-east Queensland (SEQ) aims to address a key threat to koala populations in South East Queensland—loss of habitat.

The Queensland Government has assumed responsibility for assessing developments that propose the clearing of koala habitat areas outside koala priority areas, against the *State code for Development in South East Queensland Koala Habitat Areas* [(SDAP 25) 2020a]. This code is underpinned by the provisions of the *Nature Conservation (Koala) Conservation Plan 2017* and other ancillary legislation including *The Nature Conservation and Other Legislation (Koala Protection) Amendment Regulation, the Environmental Offsets Regulation 2014, Planning Regulation 2017,* and *Vegetation Management Regulation 2012.*

The main purpose of the *Nature Conservation (Koala) Conservation Plan 2017* is to prevent the decline of koala habitats and promote the persistence of viable wild koala populations. These objectives are achieved by prescribing Koala districts and associated objectives, determining Koala priority areas and koala habitat areas and related vegetation clearing requirements, and attempting to limit the grant of particular animal authorities for koalas that allow the release of koalas into the wild.

Koala Priority Areas are large and connected areas that have the highest potential for supporting the long-term survival of koalas and are the focus for habitat protection, restoration, and threat management efforts. A Koala Habitat Area in the context of this report means an area shown on the Koala Conservation Plan Map that has been determined to be a Koala habitat area due to the combination of biophysical measures and suitable vegetation of the area. The koala habitat mapping uses regional ecosystem and high-value regrowth mapping provided by the Queensland Herbarium. Koala habitat areas are considered as a Matter of State Environmental Significance. Koala habitat areas are further defined as core koala habitat, locally refined koala habitat, and koala restoration areas.

The following definitions were derived from the Department of Environment and Science (DES) SEQ *Koala Habitat Mapping Factsheet* (2020b).

Core Koala Habitat is defined as areas that identify the best quality koala habitat areas. These areas were identified using koala sighting records, as well as areas that have suitable food and shelter vegetation and other biophysical measures, for instance climate. Development within core koala habitat areas may be prohibited, require a development approval, or be exempt from requirements.

Locally refined koala habitat areas are areas of mature vegetation that might not meet the Queensland Government's criteria for core koala habitat, but may contain locally important vegetation for koalas, including some areas previously protected under local government planning schemes. Locally refined koala habitat areas are subject to the same level of protections as core koala habitat areas. Development may be prohibited, require a development approval, or be exempt from requirements.

Koala habitat restoration areas identify parcels of land that could be restored and established as koala habitat areas. These areas particularly feature high conservation opportunities and low threats.

Interfering with koala habitat means:

1. to remove, cut down, ringbark, push over, poison or destroy vegetation in any way including by burning, flooding, or draining, native vegetation in a mapped koala habitat area; but

2. does not include destroying standing vegetation by stock or lopping a tree.

Koala habitat values refers to habitat that:

1. includes koala habitat trees which allows koalas to feed, rest and move around;
2. achieves permeability for koalas through the landscape to ensure the safe movement of koalas within and across a site; and
3. reduces threats to resident and transient koalas.

It is noted that the proposed works are in the Bromelton State Development Area. State Development Areas (SDAs) are clearly defined areas of land established by the Coordinator-General to promote economic development in Queensland. As environmental impacts are considered for development within an SDA under the *State Development and Public Works Organisation Act 1971*, development within an SDA is exempted development. In this instance the Bromelton SDA development scheme requires that:

"Development avoids significant adverse environmental impacts on matters of national or State significance, or where significant impacts cannot be reasonably avoided, they are minimised. Any residual significant adverse impacts are offset in accordance with the relevant commonwealth or Queensland environmental offset framework."

1.2. Brief

Envirosphere Consulting (ENSC) was engaged by ACS Engineers on behalf of SoilCo Developments Pty Ltd to prepare a Koala Habitat Assessment (KHA) Report for the proposed upgrade of Mitchell Road with the area of proposed disturbance in the road reserve hereafter referred to in this report as 'the site 'or 'the subject site'. This report has been prepared in response to the Information Request from the Coordinator-General D24/202645.

1.3. Objectives

The broad objective of this report is to address the requirements of *State Code 25: Development in South East Queensland koala habitat areas*. Specifically, the report aims to:

- To demonstrate that interference with koala habitat as part of the development has:
  - been reasonably avoided; or
  - been reasonably minimised where it cannot be reasonably avoided; and
- To quantify impacts to non-juvenile Koala habitat trees and offsets that may be required.

1.4. Validity of Document

The *Guideline: Assessment Benchmarks in relation to Koala Habitat in South East Queensland* (DES, 2020) states repots shall be compiled by authors with the following experience:

- "Suitably qualified and experienced ecologists that has knowledge of koala ecology and experience developing management plans".

On this basis the following Envirosphere staff were utilised in the preparation of this report:

Table 1. Personnel preparing this report.

Name	Qualification (s)	Role
Steve Towner	- Bachelor of Science - Diploma of Conservation and land management - Certificate IV in Project Management - Accredited Spot Assessment Technique (SAT)	Principal environmental scientist, project oversight.
David Conder	- Bachelor of Applied Science	Field botanist
Simon Muirhead	- Bachelor Environmental Science - Honours in Science	Senior environmental consultant, spatial data specialist, GIS analysis and mapping.
Envirosphere Consulting	- DAFF Animal Ethics Permit - DES Scientific Purposes Permit - DES "Spotter-catcher" Permit	

1.5. Site Background & Land Use

The cumulative proposed disturbance area is approximately 29,662 m^2 or 3 ha, and is in the suburb Bromelton, which is within the Local Government Area (LGA) of the Scenic Rim Regional Council (SRRC). The proposal seeks to upgrade an existing road to facilitate usage by heavy vehicles that forms part of a proposal for a new facility to the west with the road as the singular legal point of access to the proposed facility. The proposed Plan of Development (POD) drawing is presented in **Appendix E**.

Refer to **Figure 1** for a graphical overview of the subject site in context of its placement in the landscape.

FIGURE 1

CONTEXT & OVERVIEW

LEGEND

- 1 m contours
- Watercourses
- Cadastral data
- Impact area from construction

ADDRESS: 260 MITCHELL ROAD, BROMELTON

CLIENT: SoilCo Developments Pty Ltd

AUTHOR: Simon Muirhead

DATE: 16.06.25

PAGE SIZE: A3

SCALE: 1:3500

COORDINATE SYSTEM: GDA94 MGA56

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2. DESKTOP ASSESSMENT

2.1. Mapped Regional Ecosystems and Koala Habitat

A desktop assessment was undertaken to examine existing information on vegetation within the study area, as well as mapped koala habitat. The assessment utilised several resources, including Koala habitat mapping, remnant regional ecosystem mapping, preclearing regional ecosystem mapping, regulated vegetation mapping, the Development Assessment Mapping System, regional ecosystem reports, vegetation management property reports, and matters of state environment significance (MSES) reports.

2.1.1. Regional Ecosystem Mapping

Regional ecosystems are vegetation communities in a bioregion that are consistently associated with a particular combination of geology, landform, and soil.

Regional ecosystem mapping identifies two (2) individual Regional Ecosystems along the road alignment and smaller Category X areas.

Refer to **Table 2** and **Figure 2** over page.

Table 2. Regional ecosystems mapped as occurring within the study area.

RE	Description	Vegetation Management Status
12.8.24	*Corymbia citriodora subsp. variegata*, *Eucalyptus crebra* +/- E. moluccana open forest. Occurs on Cainozoic igneous rocks especially lower slopes of rhyolite and trachyte hills (e.g. Moogerah Peaks). Not a Wetland.	Endangered
12.9-10.3	*Eucalyptus moluccana* open forest. Other canopy species include *Eucalyptus siderophloia* or *E. crebra, E. tereticornis* and *Corymbia citriodora subsp. variegata*. Understorey generally sparse but can become shrubby in absence of fire. Occurs on Cainozoic and Mesozoic sediments, especially shales. Prefers lower slopes. Not a Wetland.	Of Concern

2.1.2. Essential Habitat Mapping

Essential habitat for protected wildlife includes suitable habitat, or where a species has been known to occur on which there is assessable vegetation and is compiled from a combination of species habitat models and buffered species records. Essential habitat, for protected wildlife, means an area of vegetation shown on the Regulated Vegetation Management Map -

1. That has at least three (3) essential habitat factors for the protected wildlife that must include any essential habitat factors that are stated as mandatory for the protected wildlife in the essential habitat database. Essential habitat factors are comprised of -regional ecosystem (mandatory for most species), vegetation community, altitude, soils, position in landscape; or
2. Habitat in which the protected wildlife, at any stage of its life cycle, is located.

For the subject site, essential habitat is mapped analogous to Regional Ecosystem**s.** Refer to **Figure 2**.

FIGURE 2

REGIONAL ECOSYSTEMS & ESSENTIAL HABITAT

LEGEND

- 1 m contours
- Watercourses
- Cadastral data
- Category A or B area containing endangered
- Category A or B area containing of concern
- Essential habitat
- Impact area from construction

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2.1.3. Pre-clearing Regional Ecosystem Mapping

Pre-clearing Regional Ecosystems identifies the original extent of vegetation communities before anthropogenic clearing occurred. The Pre-clearing Map classifies vegetation communities into regional ecosystems as per the regional ecosystems descriptions database. Pre-clearing Regional Ecosystems can be particularly useful when identifying restorative actions for the site.

Additional to the regional ecosystems identified in **Section 2.1.1**, additional regional ecosystems were present pre- anthropogenic clearing as shown in **Table 3**. Refer to **Figure 3** which shows the extent of the Pre-clearing Regional Ecosystems.

Table 3. Regional ecosystems mapped as occurring within the study area.

RE	Description	Biodiversity Status
12.9-10.2	*Corymbia citriodora subsp. variegata* open forest or woodland usually with *Eucalyptus crebra*. Other species such as *Eucalyptus tereticornis, E. moluccana, E. acmenoides and E. siderophloia* may be present in scattered patches or in low densities. Understorey can be grassy or shrubby. Shrubby understorey of *Lophostemon confertus* (whipstick form) often present in northern parts of bioregion.	No concern at present
12.9-10.7	*Eucalyptus crebra* +/- *E. tereticornis*, *Corymbia tessellaris*, *Angophora* spp. and *E. melanophloia* woodland on sedimentary rocks	Of Concern
12.9-10.17a	*Lophostemon confertus* or *L. suaveolens* dominated open forest usually with emergent Eucalyptus and/or Corymbia species. Occurs in gullies and southern slopes on Cainozoic and Mesozoic sediments. Not a Wetland.	No concern at present

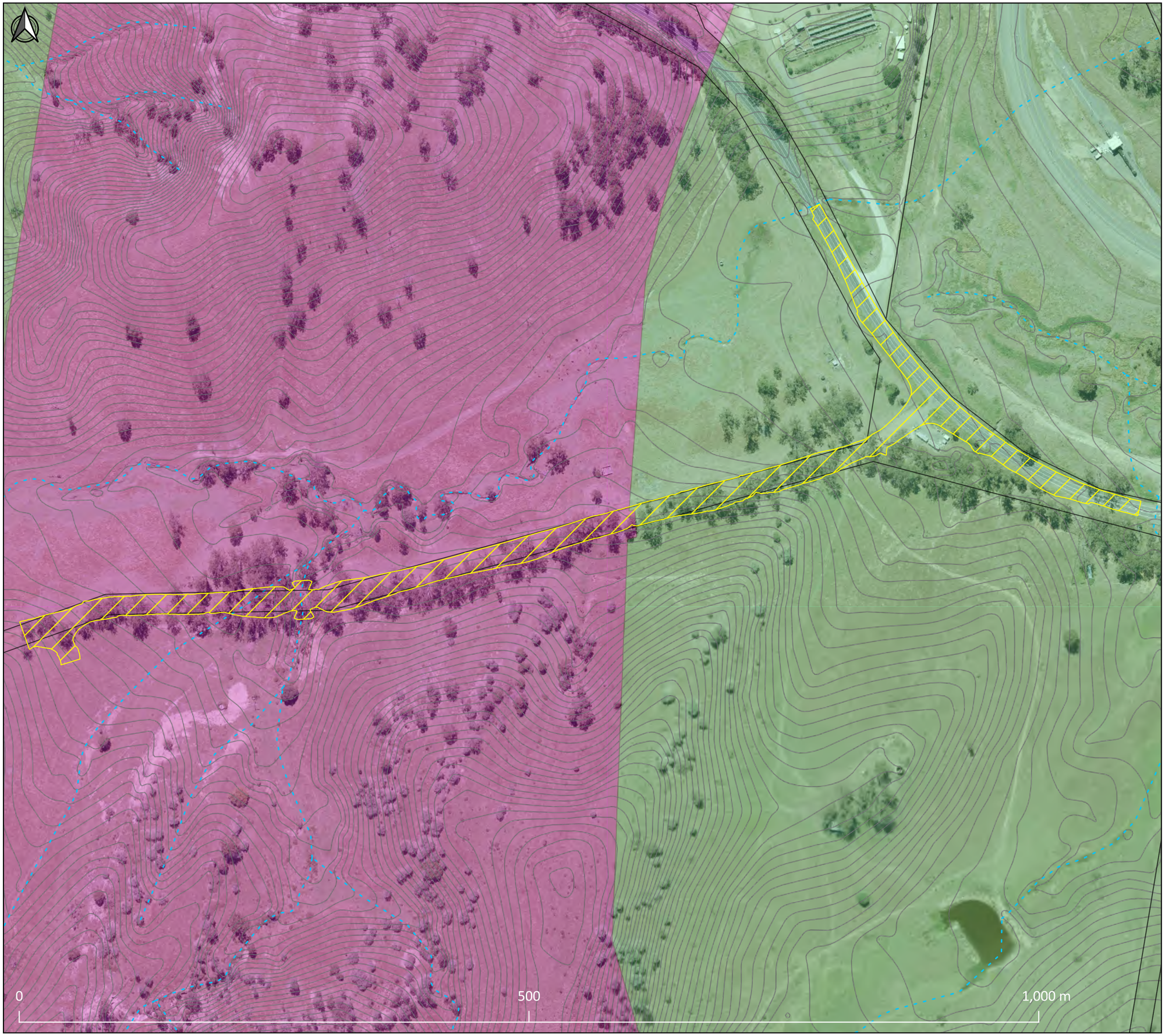

FIGURE 3

PRE-CLEARING REGIONAL ECOSYSTEMS

LEGEND

- 1 m contours
- Watercourses
- Cadastral data
- Category A or B area containing endangered
- Category A or B area that is least concern
- Impact area from construction

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2.1.4. South East Queensland Koala Conservation Strategy

Koala Priority Areas (KPA) are large, connected areas that have been determined to have the highest likelihood of achieving conservation outcomes for koalas based on the combination of habitat suitability, biophysical variables with known relationships to koala habitat and a koala conservation cost benefit analysis. No areas on or adjacent to the subject site have this designation.

Koala Habitat Areas (KHA's) are areas of vegetation that have been determined to contain Koala habitat that is essential for the conservation of a viable koala population in the wild based on the combination of habitat suitability and biophysical variables with known relationships to Koala habitat such as landcover, soil, terrain, climate and ground water. To protect this important koala habitat, clearing controls have been introduced into the *Planning Regulation 2017* for development in koala habitat areas. Core Koala habitat areas represent the best quality koala habitat areas, based on modelling of biophysical measures including climate, suitable vegetation for both food and shelter, and koala sighting records. Locally refined Koala habitat areas include areas of mature vegetation that might not meet the Queensland Government's criteria for core koala habitat areas.

The map presented in **Figure 4** below indicates much of the road reserve is mapped as a core Koala habitat Area and is generally analogous to the mapped Regional Ecosystems. The site is not mapped as a Koala Priority Area.

FIGURE 4

CORE KOALA HABITAT AREA

LEGEND

- 1 m contours
- Watercourses
- Cadastral data
- Core koala habitat area
- Impact area from construction

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2.2. Koala Records

The WildNet database provides spatial information on more than 21,000 species of animals, plants and fungi in Queensland including Koalas. The location of the historical records within 3 km of the subject site are overlayed with mapped core Koala habitat and presented in **Figure 5**. Core Koala habitat mapping shows a fragmented landscape due to historical clearing associated with the farming in the regions. Only three (3) records have been identified in the vicinity of the subject site, but this number seems small given this report and the Ecological Assessment Report (Redleaf Environmental, 2021) both recording signs of Koala activity though in each case no Koalas have been directly sited, despite multiple site visits.

FIGURE 5

HISTORICAL WILDNET KOALA RECORDS

LEGEND

- WildNet records
- 1 m contours
- Watercourses
- Cadastral data
- Core koala habitat area
- Impact area from construction

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CLIENT: SoilCo Developments Pty Ltd

AUTHOR: Simon Muirhead

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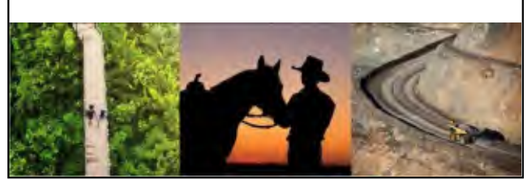

3. KOALA HABITAT ASSESSMENT

3.1. Methodology

Two site assessment visits were undertaken in June and July 2024, which assessed the presence of Koala habitat trees, scratches on trees, and other signs of Koala presence. A Koala-specific site visit was undertaken by ENSC ecologists on the 26 June 2024 to capture all potential non-juvenile Koala habitat trees across the property, further assess and ground truth existing vegetation communities, and to address the following:

- Use or potential use of the site or parts of the site by Koalas.
- The location of Koala habitat trees being used by Koalas.
- Existing and potential connectivity between Koala habitat areas within and beyond the site.

3.1.1. Spot Analysis Technique (SAT) Surveys

Koala presence and activity was primarily assessed using the Spot Analysis Technique (SAT), and opportunistic searches of individual trees during a whole of site tree survey, which recorded all non-juvenile Koala habitat trees across the impact area and interface. This methodology is used to estimate site occupancy (that is the presence of koala scat under at least one tree), within a 1 m radius of the base of a central tree and its nearest 29 neighbouring trees. Koala activity levels are determined by the proportion of trees under which scats are observed relative to the total number of trees sampled. Refer to **Figure 6** for SAT locations. Koala activity via the presence of scats was recorded at both SAT locations as shown in **Appendix A**. At SAT location 1, a high number of scats were recorded, but were identified as not fresh. At SAT location 2, less scats were recorded but were fresher which the Envirosphere ecologist describing them as 'sticky' but not 'wet'.

Searches for other indirect signs of Koala presence (scratch marks on smooth-barked *Eucalyptus* and *Corymbia*) were also conducted during the tree survey, along with opportunistic searches for Koala scat around trees not included in the SATs.

3.1.2. Direct and Indirect Signs of Presence

Detailed locational information was gathered for non-juvenile koala habitat trees (NJKHT) that were proximal to the proposed impact area. As per **Section 3.1.1** above, trees were scanned for any sitting koalas during the tree survey, and a short search for koala scat, which is distinctive from other potentially co-occurring species, was undertaken around the base of the tree. In addition, smooth-barked *Eucalyptus* and *Corymbia* individuals were searched for koala scratches. Scratches were recorded but neither this report nor previous reporting directly sighted Koalas during their site assessment period.

3.1.3. Non-Juvenile Koala Habitat Tree Survey

Tree data for the subject site were recorded and are presented in **Appendix C**. This included GPS location, species name, diameter at breast height (DBH), height, canopy spread, and health.

3.1.4. Koala Tree Utility

Koala habitat trees as defined under the *Nature Conservation (Koala) Conservation Plan 2017* as a tree of the *Corymbia, Melaleuca, Lophostemon* or *Eucalyptus* genera that is edible by koalas or a tree typically used for shelter, for example, a tree of the *Angophora, Allocasuarina* and *Acacia* genera.

Spatial modelling for koalas in South East Queensland v3.0 (DES 2022) provides a tree species utility value which ranks the usefulness to koalas for many tree species occurring in South East Queensland.

Table 3 outlines the tree species which were recorded within the study area, and their utility for koalas according to *Appendix 4* of *Spatial modelling for koalas in South East Queensland v3.0*.

Table 4. Koala utility of tree species occurring within the study area.

Species	Common name	Species utility
Corymbia citriodora	Spotted gum	Medium
Corymbia intermedia	Pink bloodwood	Medium
Eucalyptus crebra	Narrow-leaved ironbark	Medium
Eucalyptus moluccana	Gum-topped box	
Eucalyptus tereticornis	Queensland blue gum	Higher

Trees from the *Eucalyptus* genera were the numerically dominant species recorded with Gum-topped box *Eucalyptus moluccana* the dominant species present along the alignment.

FIGURE 6

SAT LOCATIONS

LEGEND

SAT locations

Cadastral data

Impact area from construction

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CLIENT: SoilCo Developments Pty Ltd

AUTHOR: Simon Muirhead

DATE: 16.06.25

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3.2. Vegetation Assessment

The site assessment for the flora survey by Envirosphere was undertaken in July 2024 and June 2025 in accordance with the *Scenic Rim Planning Scheme - SC6.2.5 PSP 5 - Ecological Assessments (2020*) and in conjunction with established methods used by the Queensland Herbarium. This comprised a higher-level assessment of the vegetation found in all areas across the site, noting the type of vegetation, the species composition and the health of the vegetation and level of weed infestation via repeated random meanders through each identified vegetation community. Ground-truthed vegetation communities are described below.

3.2.1. Dry open woodland consistent with RE's 12.8.24 and 12.9-10.3

The site assessment determined that the vegetated areas of the subject site are generally consistent with the mapped Regional Ecosystems with the site having likely been historically cleared resulting in a canopy which this report considers to be mostly advanced regrowth with *E. moluccana generally dominant in the areas identified* as RE 12.9-10.3 and C*orymbia citriodora subsp. variegata* dominant in the areas mapped as RE 12.8.24. The shrub layer is generally absent with weed incursion an ongoing process in the ground layer.

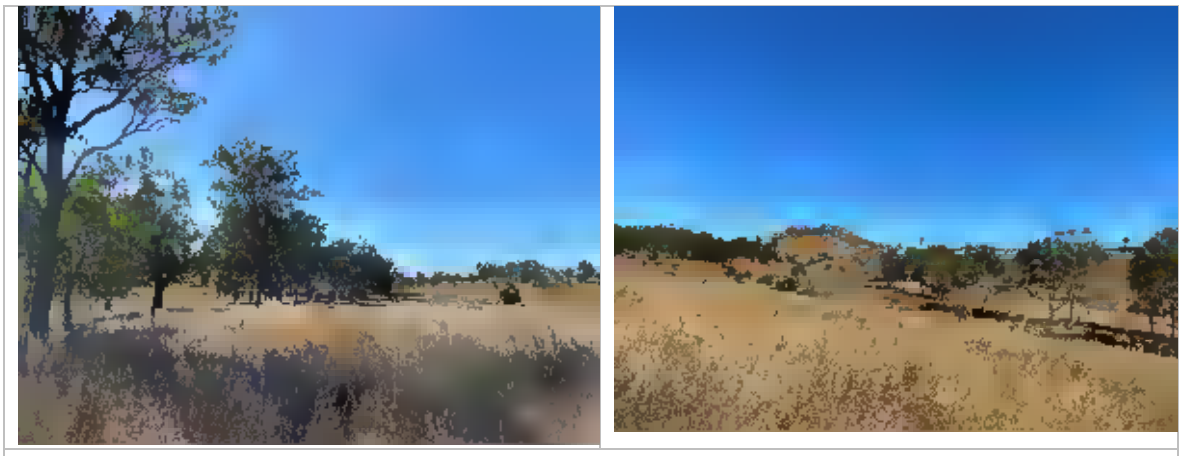

Plate 1. Views of the dry open woodland along the road alignment

3.3. Summary of Koala Habitat and Activity

1. During site assessments in 2024 and 2025 no direct sighting were recorded by ecologists from Envirosphere, nor in 2021 by ecologists from Redleaf Environmental.
2. Scats and scratches were recorded in 2025 and 2021.
3. Non-juvenile Koala habitat trees are present along a linear corridor approximately 30 m wide and 1000 m in length fragmented from other patches of mapped core koala habitat.
4. In the wider landscape, mapped core Koala habitat is heavily fragmented due to historical clearing for agricultural purposes with aerial photography indicating trees are scattered throughout farm paddocks in the landscape. It cannot be determined from aerial photography alone of these scattered trees are NJKHT, but it is likely.
5. The linear corridor is not a large enough area on its own to provide a foraging home range, but due to the recorded Koala activity it is providing some form of foraging opportunities for Koalas moving through the larger landscape.

4. IMPACTS

Impacts on Koalas can be measured and quantified by the number of non-juvenile Koala habitat trees (NJKHT) proposed to be removed or through measurement of removed mapped Koala habitat. Trees shown as 'possibly be retained' are subject to the project arborists assessment as works progress

4.1. Impacts to NJKHT's Inside Mapped Koala Habitat

Refer to **Appendix D** for a graphical representation of the NKHT proposed for removal within core Koala habitat.

Table 5. Summary table of impacts to NJKHT within core Koala habitat

Impact area*	Remove	Retain	Possible retain	Total
Proposed road alignment upgrade	124	1	2	127

4.2. Impacts to Core Koala Habitat

Refer to **Appendix D** for a graphical representation of the core Koala habitat proposed for removal.

Table 6. Summary table of impacts to mapped core Koala habitat.

Impact area	Removed core habitat	Retained core habitat	Total
Proposed road alignment upgrade impact area	1.734 ha	1.8766	3.6106

4.3. Impacts to NJKHT Outside of Mapped Koala Habitat

Refer to **Appendix D** for a graphical representation of the NKHT proposed for removal outside of mapped core Koala habitat.

Table 7. Summary table of impacts to NJKHT within core Koala habitat

Impact area*	Remove	Retain	Possible retain	Total
Proposed road alignment upgrade impact area	73	7	1	81

4.4. Barriers to Koala Movement

The proposed upgrade to the road will not create direct barriers but will create an indirect hardscaped barrier that Koalas will need to cross over to move through the landscape. There is also a potential for deleterious interactions such as road strike due to increased traffic post completion of the road upgrade.

4.5. Analysis of Alternatives

It is noted that the existing road is the singular point of access to the site where a large-scale organics recovery facility has been proposed. The road upgrade has been conditioned by Scenic Rim Regional Council to allow for the movement of larger vehicles to and from the facility.

5. AVOIDANCE, MINIMISATION AND MITIGATION

5.1. Avoidance and Minimisation on KHA's and NJKHT's

As described in **Section 4.5**, It is noted that the existing road is the singular point of access to the site where a organics recovery facility has been proposed. The road upgrade has been conditioned by Scenic Rim Regional Council to allow for the movement of larger vehicles to and from the facility. No alternative for vehicular access is available due to surrounding freehold land with the proposed earthworks minimised to the greatest extent possible to achieve the required road standard.

5.2. Analysis of Alternatives

No other iteration of the development proposal are presented in this document as described in **Section 5.1**.

5.3. Mitigation Measures

Mitigation measures will include the use of fauna friendly fencing where appropriate.

5.3.1. Rehabilitation

No rehabilitation has been proposed at this stage but is recommended where possible for suitable NJKHT to be replanted along the road alignment where possible.

5.3.2. Signage

Signage shall be provided by the proponent that notifies vehicles along Mitchell Road of Koalas present in the landscape.

5.3.3. Environmental Offsets

Offsets will be required to be provided to the state for the removal of NJKHT and will likely be in the form of an onsite planting as stated above in Section 5.3.1.

5.4. Further Requirements

A Koala and Fauna Management Plan (KFMP) will be required to be submitted for approval by any relevant authorities prior to any operational works being undertaken.

6. OFFSETS

As shown is **Sections 4.1** and **4.2**, the proposal will result in a Significant Residual Impact (SRI) to 124 NJKHT withing the core Koala habitat polygon with 1.734 ha of the polygon to be impacted by the road upgrade. This report has identified a further 73 NJKHT in an area that is not mapped as habitat, but which contains, or is known to contain koalas. Therefore, a total of 197 NJKHT is proposed to be offset.

With 197 NJKHT requiring to be offset, the proponent intends to provide a proponent driven offset with the planting 591 Koala habitat trees at the site shown in **Figure 8:**

"as close as possible to the impact site, where the offset site contains habitat suitable for restoration; will create or improve connectivity between koala habitat or Koala Priority Areas; can be protected from koala threats and secured for the duration of the impact – usually in perpetuity."

The proposed offset site is bound by mapped core koala habitat on the eastern boundary on and the planting of 591 trees will enlarge the patch and aid in providing resilience to weed incursion. The proposed offset area is also in proximity to the impact area.

FIGURE 7

PPROPOSED OFFSET LOCATION

LEGEND

- 1 m contours
- Watercourses
- Cadastral data
- Core koala habitat area
- Impact area from construction
- Offset area

ADDRESS: 260 MITCHELL ROAD, BROMELTON

CLIENT: SoilCo Developments Pty Ltd

AUTHOR: Simon Muirhead

DATE: 27.08.24

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COORDINATE SYSTEM: GDA94 MGA56

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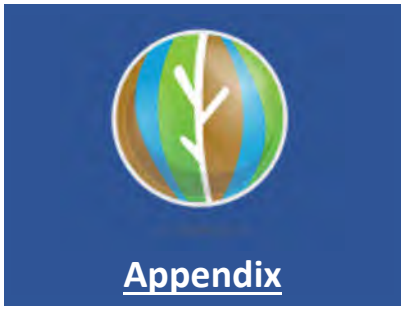


8. APPENDIX A: SAT DATA SHEETS

KOALA HABITAT SPOT ASSESSMENT

SAT No: 2 **Recorder:** D. Conder **Date:** 23.06.25

Project/Location: Mitchell Road

Latitude: **Longitude:** **Datum**: GDA94 **GPS error**: ± 5 m

	TSP	DBH (cm)	K*	FP^
1	E. mol		N	N
2	E. mol		N	N
3	E. mol		N	N
4	E. mol		N	N
5	E. mol		N	N
6	E. mol		N	N
7	C. Cit		N	N
8	E. mol		N	Y
9	E. mol		N	Y
10	E. mol		N	Y
11	E. mol		N	N
12	E. mol		N	Y
13	E. mol		N	N
14	E. mol		N	Y
15	E. mol		N	Y
16	E. mol		N	Y
17	E. mol		N	N
18	E. mol		N	Y
19	E. mol		N	N
20	C. Cit		N	N
21	E. cre		N	N
22	C. Cit		N	N
23	E. ter		N	N
24	E. mol		N	Y
25	C. cit		N	N
26	C. cit		N	N
27	C. cit		N	Y
28	E. mol		N	Y
29	E. mol		N	Y
30	E. mol		N	Y

K = Koala presence; FP = Faecal pellet; n= no; y = yes

1. Soil Landscape:

2. SAT Criteria: 1 2 3

2

3. Age of pellets:

NEAR FRESH

4. A/Level: / 30 **= 12/30**

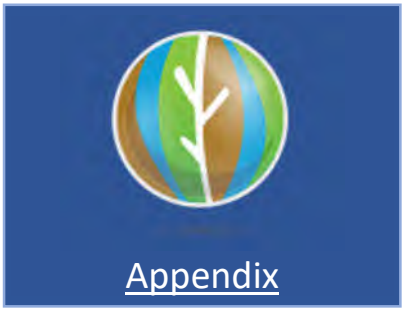
5. Mean % groundcover in search area:

< 30% 30 – 70% >70%

6. Comments:

7. No Koalas within 25m of CT:

TSP (Tree Species)	**SAT Criteria**
ccit = *Corymbia citriodora* chen = *Corymbia henryi* cint = *Corymbia intermedia* ecar = *Eucalyptus carnea* ecreb = *Eucalyptus crebra* emic = *Eucalyptus microcorys* epro = *Eucalyptus propinqua* eter = *Eucalyptus tereticornis* etin = *Eucalyptus tindaliae* lcon = *Lophostemon confertus*	1 = Koala observed in tree 2 = Koala scat observed under tree 3 = Known Koala habitat tree species



9. APPENDIX B: DATABASE QUERIES

Vegetation management report

For Lot: 4 Plan: RP85497
19/06/2025

nrmmrrd.qld.gov.au

Queensland Government

This publication has been compiled by Operations Support, Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development.

Recent changes

Updated mapping

Updated vegetation mapping was released on 22 November 2023 and includes the most recent Queensland Herbarium scientific updates to the Regulated Vegetation Management Map, regional ecosystems, essential habitat, wetland and high-value regrowth mapping.

The Department of the Environment, Tourism, Science and Innovation have also updated their koala protection mapping to align with the Queensland Herbarium scientific updates.

The latest version (v10) of the Protected Plants Flora Survey Trigger Map (trigger map) was released on 6 September 2023.

Overview

Based on the lot on plan details you have supplied, this report provides the following detailed information:
Property details - information about the specified Lot on Plan, lot size, local government area, bioregion(s), subregion(s) and catchment(s);

Vegetation management framework - an explanation of the application of the framework and contact details for the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development who administer the framework;

Vegetation management framework details for the specified Lot on Plan including:

- the vegetation management categories on the property;
- the vegetation management regional ecosystems on the property;
- vegetation management watercourses or drainage features on the property;
- vegetation management wetlands on the property;
- vegetation management essential habitat on the property;
- whether any area management plans are associated with the property;
- whether the property is coastal or non-coastal; and
- whether the property is mapped as Agricultural Land Class A or B;

Protected plant framework - an explanation of the application of the framework and contact details for the Department of the Environment, Tourism, Science and Innovation who administer the framework, including:

- high risk areas on the protected plant flora survey trigger map for the property;

Koala protection framework - an explanation of the application of the framework and contact details for the Department of the Environment, Tourism, Science and Innovation who administer the framework; and

Koala protection framework details for the specified Lot on Plan including:

- the koala district the property is located in;
- koala priority areas on the property;
- core and locally refined koala habitat areas on the property;
- whether the lot is located in an identified koala broad-hectare area; and
- koala habitat regional ecosystems on the property for core koala habitat areas.

This information will assist you to determine your options for managing vegetation under:
- the vegetation management framework, which may include:

- exempt clearing work;
- accepted development vegetation clearing code;
- an area management plan;
- a development approval;

- the protected plant framework, which may include:

- the need to undertake a flora survey;
- exempt clearing;
- a protected plant clearing permit;

- the koala protection framework, which may include:

- exempted development;
- a development approval;
- the need to undertake clearing sequentially and in the presence of a koala spotter.

Other laws

The clearing of native vegetation is regulated by both Queensland and Australian legislation, and some local governments also regulate native vegetation clearing. You may need to obtain an approval or permit under another Act, such as the Commonwealth Government's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Section 8 of this guide provides contact details of other agencies you should confirm requirements with, before commencing vegetation clearing.

Table of Contents

1. Property details

1.1 Tenure and title area

All of the lot, plan, tenure and title area information associated with property Lot: 4 Plan: RP85497 are listed in Table 1.

Table 1: Lot, plan, tenure and title area information for the property

Lot	Plan	Tenure	Property title area (sq metres)
4	RP85497	Freehold	1,192,790

The tenure of the land may affect whether clearing is considered exempt clearing work or may be carried out under an accepted development vegetation clearing code.

Does the property Lot: 4 Plan: RP85497 have a freehold tenure and is in the Wet Tropics of Queensland World Heritage Area?

No, this property is not located in the Wet Tropics of Queensland World Heritage Area.

1.2 Property location

Table 2 provides a summary of the locations for property Lot: 4 Plan: RP85497, in relation to natural and administrative boundaries.

Table 2: Property location details

Local Government(s)	Catchment(s)	Bioregion(s)	Subregion(s)
Scenic Rim Regional	Logan-Albert	Southeast Queensland	Moreton Basin

2. Vegetation management framework (administered by the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development)

The *Vegetation Management Act 1999* (VMA), the Vegetation Management Regulation 2023, the *Planning Act 2016* and the Planning Regulation 2017, in conjunction with associated policies and codes, form the Vegetation Management Framework.

The VMA does not apply to all land tenures or vegetation types. State forests, national parks, forest reserves and some tenures under the *Forestry Act 1959* and *Nature Conservation Act 1992* are not regulated by the VMA. Managing or clearing vegetation on these tenures may require approvals under these laws.

The following native vegetation is not regulated under the VMA but may require permit(s) under other laws:

- grass or non-woody herbage;
- a plant within a grassland regional ecosystem identified in the Vegetation Management Regional Ecosystem Description Database (VM REDD) as having a grassland structure; and
- a mangrove.

2.1 Exempt clearing work

Exempt clearing work is an activity for which you do not need to notify the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development or obtain an approval under the vegetation management framework. Exempt clearing work was previously known as exemptions.

In areas that are mapped as Category X (white in colour) on the regulated vegetation management map (see section 4.1), and where the land tenure is freehold, indigenous land and leasehold land for agriculture and grazing purposes, the clearing of vegetation is considered exempt clearing work and does not require notification or development approval under the vegetation management framework. For all other land tenures, contact the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development before commencing clearing to ensure that the proposed activity is exempt clearing work.

A range of routine property management activities are considered exempt clearing work. A list of exempt clearing work is available at

https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/exemptions/.

Exempt clearing work may be affected if the proposed clearing area is subject to development approval conditions, a covenant, an environmental offset, an exchange area, a restoration notice, or an area mapped as Category A. Exempt clearing work may require approval under other Commonwealth, State or Local Government laws, or local government planning schemes. Contact the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development prior to clearing in any of these areas.

2.2 Accepted development vegetation clearing codes

Some clearing activities can be undertaken under an accepted development vegetation clearing code. The codes can be downloaded at

https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/codes/

If you intend to clear vegetation under an accepted development vegetation clearing code, you must notify the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development before commencing. The information in this report will assist you to complete the online notification form.

You can complete the online form at
https://vegetation-apps.dnrm.qld.gov.au

2.3 Area management plans

Area Management Plans (AMP) provide an alternative approval system for vegetation clearing under the vegetation management framework. They list the purposes and clearing conditions that have been approved for the areas covered by the plan. It is not necessary to use an AMP, even when an AMP applies to your property.

On 8 March 2020, AMPs ended for fodder harvesting, managing thickened vegetation and managing encroachment. New notifications cannot be made for these AMPs. You will need to consider options for fodder harvesting, managing thickened vegetation or encroachment under a relevant accepted development vegetation clearing code or apply for a development approval.

New notifications can be made for all other AMPs. These will continue to apply until their nominated end date.

If an Area Management Plan applies to your property for which you can make a new notification, it will be listed in Section 3.6 of this report. Before clearing under one of these AMPs, you must first notify the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development and then follow the conditions and requirements listed in the AMP.

https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/area-management-plans

2.4 Development approvals

If under the vegetation management framework your proposed clearing is not exempt clearing work, or is not permitted under an accepted development vegetation clearing code, or an AMP, you may be able to apply for a development approval. Information on how to apply for a development approval is available at

https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/development

2.5. Contact information for the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development

For further information on the vegetation management framework:

Phone 135VEG (135 834)

Email vegetation@resources.qld.gov.au

Visit https://www.resources.qld.gov.au/?contact=vegetation to submit an online enquiry.

3. Vegetation management framework for Lot: 4 Plan: RP85497

3.1 Vegetation categories

The vegetation categories on your property are shown on the regulated vegetation management map in section 4.1 of this report. A summary of vegetation categories on the subject lot are listed in Table 3. Descriptions for these categories are shown in Table 4.

Table 3: Vegetation categories for subject property

Vegetation category	Area (ha)
Category B	1.22
Category C	2.01
Category X	116.22

Table 4: Description of vegetation categories

Category	Colour on Map	Description	Requirements / options under the vegetation management framework
A	red	Compliance areas, environmental offset areas and voluntary declaration areas	Special conditions apply to Category A areas. Before clearing, contact the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development to confirm any requirements in a Category A area.
B	dark blue	Remnant vegetation areas	Exempt clearing work, or notification and compliance with accepted development vegetation clearing codes, area management plans or development approval.
C	light blue	High-value regrowth areas	Exempt clearing work, or notification and compliance with managing Category C regrowth vegetation accepted development vegetation clearing code.
R	yellow	Regrowth within 50m of a watercourse or drainage feature in the Great Barrier Reef catchment areas	Exempt clearing work, or notification and compliance with managing Category R regrowth accepted development vegetation clearing code or area management plans.
X	white	Clearing on freehold land, indigenous land and leasehold land for agriculture and grazing purposes is considered exempt clearing work under the vegetation management framework. Contact the Department to clarify whether a development approval is required for other State land tenures.	No permit or notification required on freehold land, indigenous land and leasehold land for agriculture and grazing. A development approval may be required for some State land tenures.

Property Map of Assessable Vegetation (PMAV)

There is no Property Map of Assessable Vegetation (PMAV) present on this property.

3.2 Regional ecosystems

The endangered, of concern and least concern regional ecosystems on your property are shown on the vegetation management supporting map in section 4.2 and are listed in Table 5.

A description of regional ecosystems can be accessed online at
https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/descriptions/

Table 5: Regional ecosystems present on subject property

Regional Ecosystem	VMA Status	Category	Area (Ha)	Short Description	Structure Category
12.8.24	Endangered	B	0.59	Corymbia citriodora subsp. variegata open forest on Cainozoic igneous rocks especially trachyte	Mid-dense
12.8.24	Endangered	C	0.15	Corymbia citriodora subsp. variegata open forest on Cainozoic igneous rocks especially trachyte	Mid-dense
12.9-10.17	Least concern	C	0.19	Eucalyptus acmenoides, E. major, E. siderophloia +/- Corymbia citriodora subsp. variegata open forest on sedimentary rocks	Mid-dense
12.9-10.2	Least concern	B	0.03	Corymbia citriodora subsp. variegata +/- Eucalyptus crebra open forest on sedimentary rocks	Mid-dense
12.9-10.2	Least concern	C	1.30	Corymbia citriodora subsp. variegata +/- Eucalyptus crebra open forest on sedimentary rocks	Mid-dense
12.9-10.3	Of concern	B	0.60	Eucalyptus moluccana open forest on sedimentary rocks	Mid-dense
12.9-10.3	Of concern	C	0.19	Eucalyptus moluccana open forest on sedimentary rocks	Mid-dense
12.9-10.7	Of concern	C	0.19	Eucalyptus crebra +/- E. tereticornis, Corymbia tessellaris, Angophora spp. and E. melanophloia woodland on sedimentary rocks	Sparse
non-rem	None	X	116.22	None	None

Please note:
1. All area and area derived figures included in this table have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 1994). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.
2. If Table 5 contains a Category 'plant', please be aware that this refers to 'plantations' such as forestry, and these areas are considered non-remnant under the VMA.

The VMA status of the regional ecosystem (whether it is endangered, of concern or least concern) also determines if any of the following are applicable:

- exempt clearing work;
- accepted development vegetation clearing codes;
- performance outcomes in State Code 16 of the State Development Assessment Provisions (SDAP).

3.3 Watercourses

Vegetation management watercourses and drainage features for this property are shown on the vegetation management supporting map in section 4.2.

3.4 Wetlands

There are no vegetation management wetlands present on this property.

3.5 Essential habitat

Under the VMA, essential habitat for protected wildlife is native wildlife prescribed under the *Nature Conservation Act 1992* (NCA) as critically endangered, endangered, vulnerable or near-threatened wildlife.

Essential habitat for protected wildlife includes suitable habitat on the lot, or where a species has been known to occur up to 1.1 kilometres from a lot on which there is assessable vegetation. These important habitat areas are protected under the VMA.

Any essential habitat on this property will be shown as blue hatching on the vegetation supporting map in section 4.2.

If essential habitat is identified on the lot, information about the protected wildlife species is provided in Table 6 below. The numeric labels on the vegetation management supporting map can be cross referenced with Table 6 to outline the essential habitat factors for that particular species. There may be essential habitat for more than one species on each lot, and areas of Category A, Category B and Category C can be mapped as Essential Habitat.

Essential habitat is compiled from a combination of species habitat models and buffered species records. Regional ecosystem is a mandatory essential habitat factor, unless otherwise stated. Essential habitat, for protected wildlife, means an area of vegetation shown on the Regulated Vegetation Management Map -

1) that has at least 3 essential habitat factors for the protected wildlife that must include any essential habitat factors that are stated as mandatory for the protected wildlife in the essential habitat database. Essential habitat factors are comprised of - regional ecosystem (mandatory for most species), vegetation community, altitude, soils, position in landscape; or
2) in which the protected wildlife, at any stage of its life cycle, is located.

If there is no essential habitat mapping shown on the vegetation management supporting map for this lot, and there is no table in the sections below, it confirms that there is no essential habitat on the lot.

Category A and/or Category B and/or Category C

Table 6: Essential habitat in Category A and/or Category B and/or Category C

Label	Scientific Name	Common Name	NCA Status	Vegetation Community	Altitude	Soils	Position in Landscape
860	Phascolarctos cinereus	koala	E	Open forests and woodlands containing Eucalyptus, Corymbia, Lophostemon or Melaleuca trees having a trunk of a diameter of more than 10cm at 1.3m above the ground. Tree species used for food and habitat varies across the state and can include: Corymbia citriodora, Corymbia henryi, Corymbia intermedia, Eucalyptus acmenoides, Eucalyptus bancroftii, Eucalyptus biturbinata, Eucalyptus blakelyi, Eucalyptus brownii, Eucalyptus camaldulensis, Eucalyptus carnea, Eucalyptus chloroclada, Eucalyptus coolabah, Eucalyptus crebra, Eucalyptus dealbata, Eucalyptus drepanophylla, Eucalyptus dunnii, Eucalyptus eugenioides, Eucalyptus exserta, Eucalyptus fibrosa, Eucalyptus grandis, Eucalyptus helidonica, Eucalyptus latisinensis, Eucalyptus longirostrata, Eucalyptus major, Eucalyptus melanophloia, Eucalyptus melliodora, Eucalyptus microcarpa, Eucalyptus microcorys, Eucalyptus microtheca, Eucalyptus moluccana, Eucalyptus montivaga, Eucalyptus orgadophila, Eucalyptus papuana, Eucalyptus pilularis, Eucalyptus platyphylla, Eucalyptus populnea, Eucalyptus portuensis, Eucalyptus propinqua, Eucalyptus racemosa, Eucalyptus resinifera, Eucalyptus robusta, Eucalyptus saligna, Eucalyptus seeana, Eucalyptus siderophloia, Eucalyptus sideroxylon, Eucalyptus tereticornis, Eucalyptus thozetiana, Eucalyptus tindaliae, Eucalyptus umbra, Lophostemon confertus, Melaleuca leucadendra, Melaleuca quinquenervia.	Sea level to 1000m.		Riparian areas, plains and hill/escarpment slopes.

Label	Regional Ecosystem (mandatory unless otherwise specified)
860	4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.3.5, 4.3.6, 4.3.8, 4.3.10, 4.3.11, 4.5.3, 4.5.5, 4.5.6, 4.5.8, 4.5.9, 4.7.1, 4.7.7, 4.7.8, 4.9.6, 4.9.10, 4.9.12, 4.9.17, 6.3.1, 6.3.2, 6.3.3, 6.3.4, 6.3.5, 6.3.7, 6.3.8, 6.3.9, 6.3.11, 6.3.12, 6.3.17, 6.3.18, 6.3.22, 6.3.24, 6.3.25, 6.4.1, 6.4.2, 6.4.3, 6.4.4, 6.5.1, 6.5.2, 6.5.3, 6.5.5, 6.5.6, 6.5.7, 6.5.8, 6.5.9, 6.5.10, 6.5.11, 6.5.13, 6.5.14, 6.5.15, 6.5.16, 6.5.17, 6.5.18, 6.5.19, 6.6.2, 6.7.1, 6.7.2, 6.7.5, 6.7.6, 6.7.7, 6.7.9, 6.7.11, 6.7.12, 6.7.13, 6.7.14, 6.7.17, 6.9.3, 7.2.3, 7.2.4, 7.2.7, 7.2.11, 7.3.7, 7.3.8, 7.3.9, 7.3.12, 7.3.13, 7.3.14, 7.3.16, 7.3.19, 7.3.20, 7.3.21, 7.3.25, 7.3.26, 7.3.39, 7.3.40, 7.3.42, 7.3.43, 7.3.44, 7.3.45, 7.3.47, 7.3.48, 7.3.50, 7.5.1, 7.5.2, 7.5.3, 7.5.4, 7.8.7, 7.8.8, 7.8.10, 7.8.15, 7.8.16, 7.8.17, 7.8.18, 7.8.19, 7.11.5, 7.11.6, 7.11.13, 7.11.14, 7.11.16, 7.11.18, 7.11.19, 7.11.20, 7.11.21, 7.11.31, 7.11.32, 7.11.33, 7.11.34, 7.11.35, 7.11.37, 7.11.41, 7.11.42, 7.11.43, 7.11.44, 7.11.45, 7.11.46, 7.11.47, 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3.6 Area Management Plan(s)

Nil

3.7 Coastal or non-coastal

For the purposes of the accepted development vegetation clearing codes and State Code 16 of the State Development Assessment Provisions (SDAP), this property is regarded as*

Coastal

*See also Map 4.3

3.8 Agricultural Land Class A or B

The following can be used to identify Agricultural Land Class A or B areas under the "Managing regulated regrowth vegetation" accepted development vegetation clearing code:

Does this lot contain land that is mapped as Agricultural Land Class A or B in the State Planning Interactive Mapping System?

Class A (with urban areas masked as per SPP): 34.86 ha

No Class B

Note - This confirms Agricultural Land Classes as per the State Planning Interactive Mapping System only. This response does not include Agricultural Land Classes identified under local government planning schemes. For further information, check the Planning Scheme for your local government area.

See Map 4.4 to identify the location and extent of Class A and/or Class B Agricultural land on Lot: 4 Plan: RP85497.

4. Vegetation management framework maps

Vegetation management maps included in this report may also be requested individually at:
https://www.qld.gov.au/environment/land/management/vegetation/maps/map-request

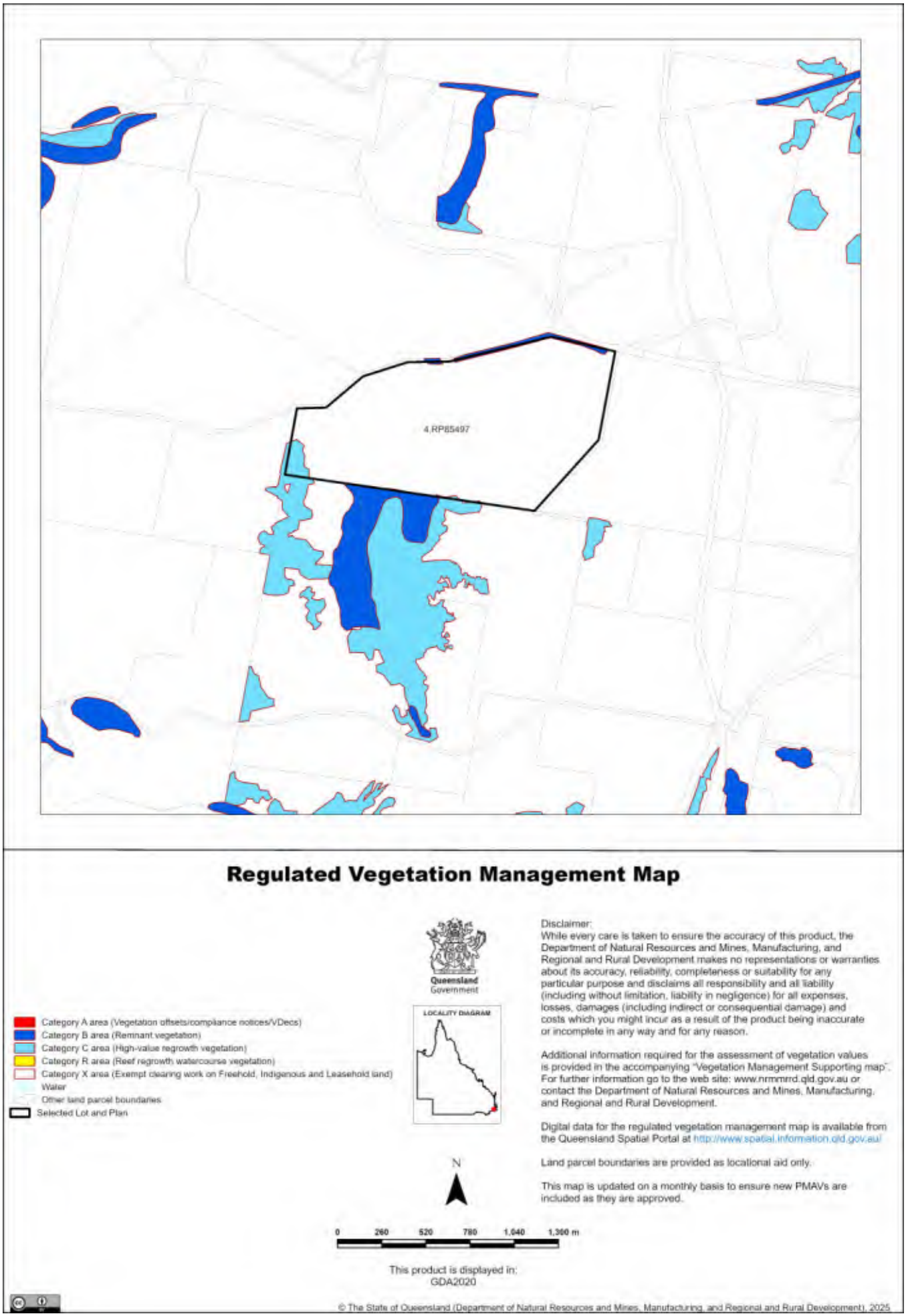
Regulated vegetation management map
The regulated vegetation management map shows vegetation categories needed to determine clearing requirements. These maps are updated monthly to show new property maps of assessable vegetation (PMAV).

Vegetation management supporting map
The vegetation management supporting map provides information on regional ecosystems, wetlands, watercourses and essential habitat.

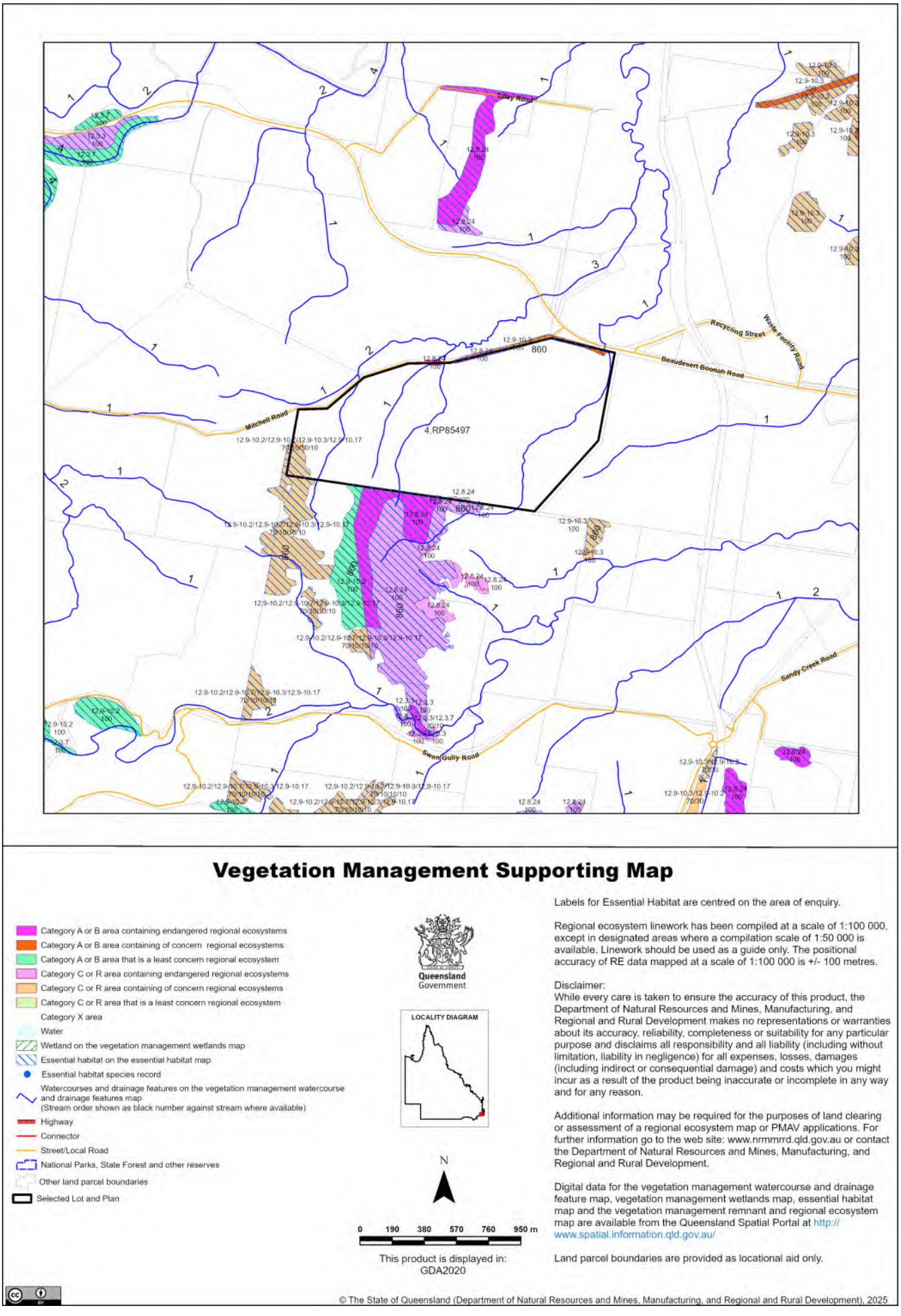
Coastal/non-coastal map
The coastal/non-coastal map confirms whether the lot, or which parts of the lot, are considered coastal or non-coastal for the purposes of the accepted development vegetation clearing codes and State Code 16 of the State Development Assessment Provisions (SDAP).

Agricultural Land Class A or B as per State Planning Policy: State Interest for Agriculture
The Agricultural Land Class map confirms the location and extent of land mapped as Agricultural Land Classes A or B as identified on the State Planning Interactive Mapping System. Please note that this map does not include areas identified as Agricultural Land Class A or B in local government planning schemes. This map can be used to identify Agricultural Land Class A or B areas under the "Managing regulated regrowth vegetation" accepted development vegetation clearing code.

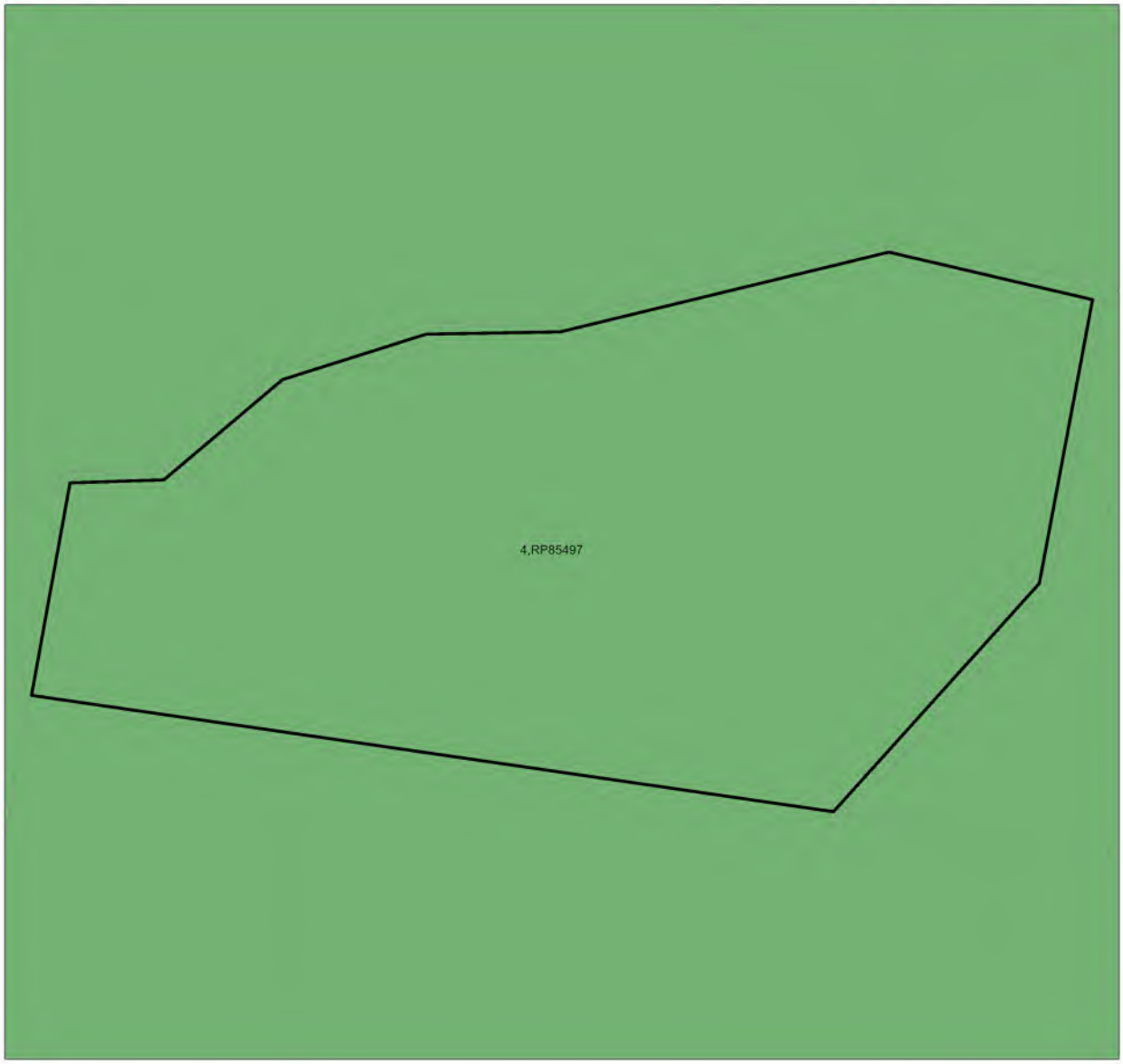
4.1 Regulated vegetation management map



4.2 Vegetation management supporting map



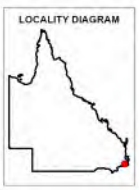
4.3 Coastal/non-coastal map



Coastal/Non Coastal Map

Coastal
Non Coastal
Other land parcel boundaries
Selected Lot and Plan

LOCALITY DIAGRAM



Disclaimer:
While every care is taken to ensure the accuracy of this product, the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which you might incur as a result of the product being inaccurate or incomplete in any way and for any reason.

Land parcel boundaries shown are provided as a locational aid only.

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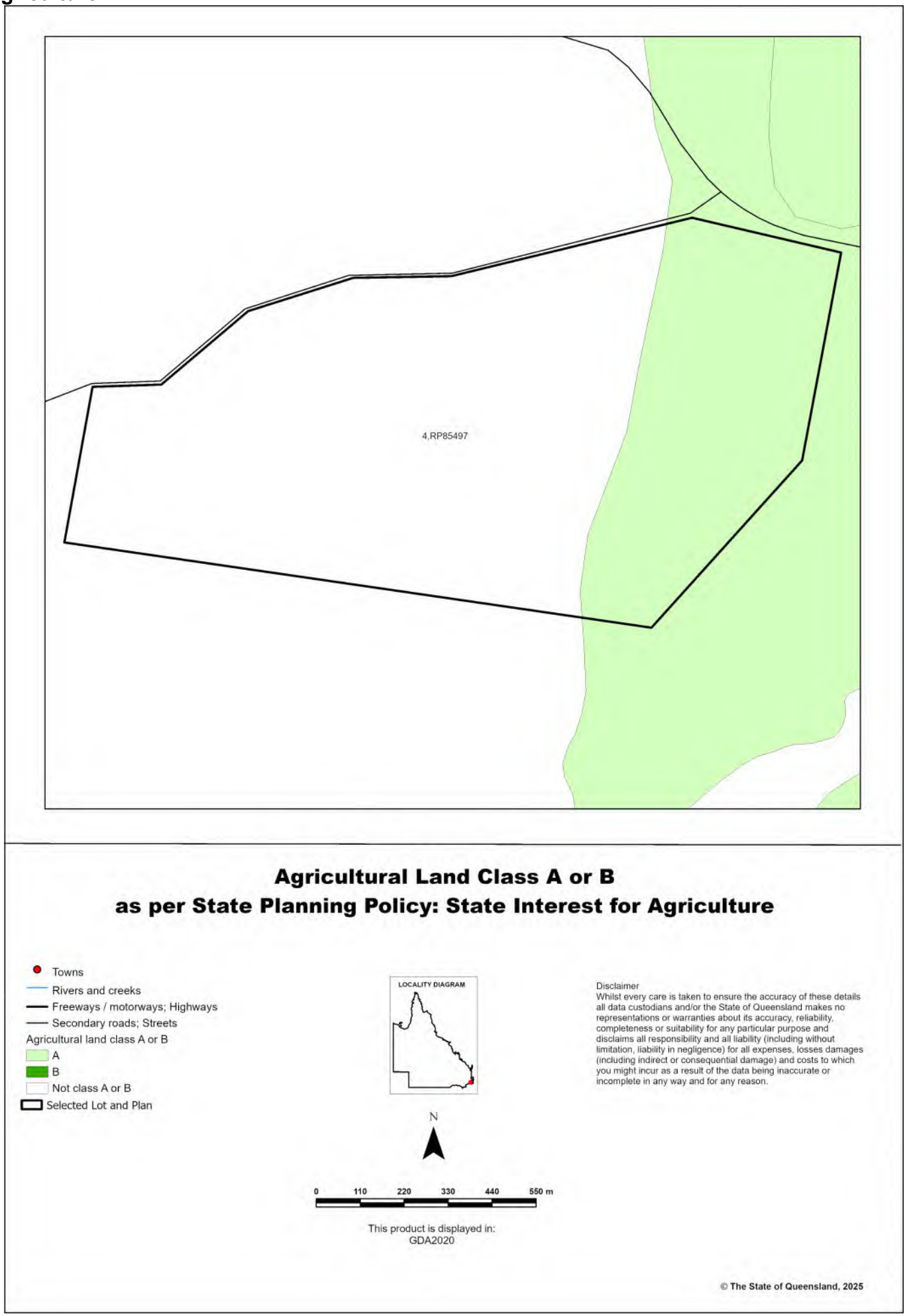
4.4 Agricultural Land Class A or B as per State Planning Policy: State Interest for Agriculture



5. Protected plants framework (administered by the Department of the Environment, Tourism, Science and Innovation (DETSI))

In Queensland, all plants that are native to Australia are protected plants under the *Nature Conservation Act 1992* (NCA). The NCA regulates the clearing of protected plants 'in the wild' (see Operational policy: When a protected plant in Queensland is considered to be 'in the wild') that are listed as critically endangered, endangered, vulnerable or near threatened under the Act.

Please note that the protected plant clearing framework applies irrespective of the classification of the vegetation under the *Vegetation Management Act 1999* and any approval or exemptions given under another Act, for example, the *Vegetation Management Act 1999* or *Planning Regulation 2017*.

5.1 Clearing in high risk areas on the flora survey trigger map

The flora survey trigger map identifies high-risk areas for threatened and near threatened plants. These are areas where threatened or near threatened plants are known to exist or are likely to exist based on the habitat present. The flora survey trigger map for this property is provided in section 5.5.

If you are proposing to clear an area shown as high risk on the flora survey trigger map, a flora survey of the clearing impact area must be undertaken by a suitably qualified person in accordance with the Flora survey guidelines. The main objective of a flora survey is to locate any threatened or near threatened plants that may be present in the clearing impact area.

If the flora survey identifies that threatened or near threatened plants are not present within the clearing impact area or clearing within 100m of Endangered, Vulnerable, Near-Threatened (EVNT) plants can be avoided, the clearing activity is exempt from a permit. An exempt clearing notification form must be submitted to the Department of the Environment, Tourism, Science and Innovation, with a copy of the flora survey report, at least one week prior to clearing.

If the flora survey identifies that threatened or near threatened plants are present in, or within 100m of, the area to be cleared, a clearing permit is required before any clearing is undertaken. The flora survey report, as well as an impact management report, must be submitted with the clearing permit application form.

5.2 Clearing outside high risk areas on the flora survey trigger map

In an area other than a high risk area, a clearing permit is only required where a person is, or becomes aware that threatened or near threatened plantsare present in, or within 100m of, the area to be cleared. You must keep a copy of the flora survey trigger map for the area subject to clearing for five years from the day the clearing starts. If you do not clear within the 12 month period that the flora survey trigger map was printed, you need to print and check a new flora survey trigger map.

5.3 Exemptions

Many activities are 'exempt' under the protected plant clearing framework, which means that clearing of native plants that are in the wild can be undertaken for these activities with no need for a flora survey or a protected plant clearing permit. The Information sheet - General exemptions for the take of protected plants provides some of these exemptions.

Some exemptions under the NCA are the same as exempt clearing work (formerly known as exemptions) under the *Vegetation Management Act 1999* (i.e. listed in Schedule 21 of the Planning Regulations 2017) while some are different.

5.4 Contact information for DETSI

For further information on the protected plants framework:
Phone 1300 130 372 (and select option four)
Email palm@des.qld.gov.au
Visit https://www.qld.gov.au/environment/plants-animals/plants/protected-plants

5.5 Protected plants flora survey trigger map

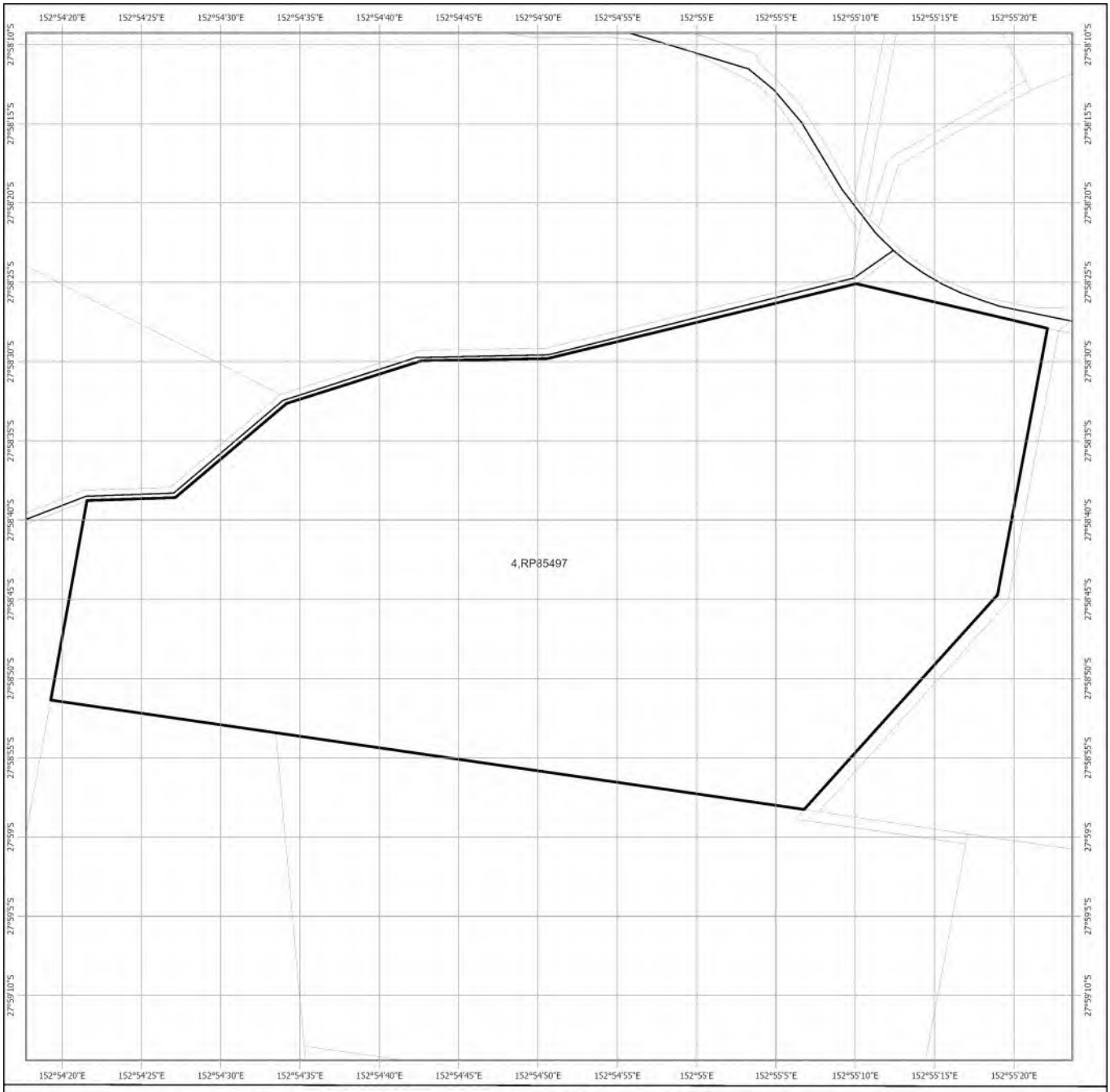
This map included may also be requested individually at: https://apps.des.qld.gov.au/map-request/flora-survey-trigger/.

Updates to the data informing the flora survey trigger map

The flora survey trigger map will be reviewed, and updated if necessary, at least every 12 months to ensure the map reflects the most up-to-date and accurate data available.

Species information

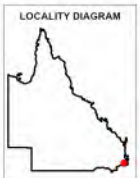
Please note that flora survey trigger maps do not identify species associated with 'high risk areas'. While some species information may be publicly available, for example via the Queensland Spatial Catalogue, the Department of the Environment, Tourism, Science and Innovation does not provide species information on request. Regardless of whether species information is available for a particular high risk area, clearing plants in a high risk area may require a flora survey and/or clearing permit. Please see the Department of the Environment, Tourism, Science and Innovation webpage on the clearing of protected plants for more information.



Protected Plants Flora Survey Trigger Map

High risk area
Other land parcel boundaries
Freeways / motorways / highways
Secondary roads / streets
Selected Lot and Plan

LOCALITY DIAGRAM



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This map shows areas where particular provisions of the Nature Conservation Act 1992 apply to the clearing of protected plants.

Land parcel boundaries are provided as locational aid only.

This map is produced at a scale relevant to the size of the area selected and should be printed as A4 size in portrait orientation.

For further information or assistance with interpretation of this product, please contact the Department of the Environment, Tourism, Science and Innovation at palm@des.qld.gov.au

Disclaimer: While every care is taken to ensure the accuracy of the data used to generate this product, the Queensland Government makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaim all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damages) and costs which might be incurred as a consequence of reliance on the data, or as a result of the data being inaccurate or incomplete in any way and for any reason.

6. Koala protection framework (administered by the Department of the Environment, Tourism, Science and Innovation (DETSI))

The koala (*Phascolarctos cinereus*) is listed in Queensland as endangered by the Queensland Government under *Nature Conservation Act 1992* and by the Australian Government under the *Environment Protection and Biodiversity Conservation Act 1999*.

The Queensland Government's koala protection framework is comprised of the *Nature Conservation Act 1992*, the Nature Conservation (Animals) Regulation 2020, the Nature Conservation (Koala) Conservation Plan 2017, the *Planning Act 2016* and the Planning Regulation 2017.

6.1 Koala mapping

6.1.1 Koala districts

The parts of Queensland where koalas are known to occur has been divided into three koala districts - koala district A, koala district B and koala district C. Each koala district is made up of areas with comparable koala populations (e.g. density, extent and significance of threatening processes affecting the population) which require similar management regimes.

Section 7.1 identifies which koala district your property is located in.

6.1.2 Koala habitat areas

Koala habitat areas are areas of vegetation that have been determined to contain koala habitat that is essential for the conservation of a viable koala population in the wild based on the combination of habitat suitability and biophysical variables with known relationships to koala habitat (e.g. landcover, soil, terrain, climate and ground water). In order to protect this important koala habitat, clearing controls have been introduced into the Planning Regulation 2017 for development in koala habitat areas.

Please note that koala habitat areas only exist in koala district A which is the South East Queensland "Shaping SEQ" Regional Plan area. These areas include the local government areas of Brisbane, Gold Coast, Logan, Lockyer Valley, Ipswich, Moreton Bay, Noosa, Redland, Scenic Rim, Somerset, Sunshine Coast and Toowoomba (urban extent).

There are two different categories of koala habitat area (core koala habitat area and locally refined koala habitat), which have been determined using two different methodologies. These methodologies are described in the document Spatial modelling in South East Queensland.

Section 7.2 shows any koala habitat area that exists on your property.

Under the Nature Conservation (Koala) Conservation Plan 2017, an owner of land (or a person acting on the owner's behalf with written consent) can request to make, amend or revoke a koala habitat area determination if they believe, on reasonable grounds, that the existing determination for all or part of their property is incorrect.

More information on requests to make, amend or revoke a koala habitat area determination can be found in the document Guideline - Requests to make, amend or revoke a koala habitat area determination.

The koala habitat area map will be updated at least annually to include any koala habitat areas that have been made, amended or revoked.

Changes to the koala habitat area map which occur between annual updates because of a request to make, amend or revoke a koala habitat area determination can be viewed on the register of approved requests to make, amend or revoke a koala habitat area available at: https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/koalamaps. The register includes the lot on plan for the change, the date the decision was made and the map issued to the landholder that shows areas determined to be koala habitat areas.

6.1.3 Koala priority areas

Koala priority areas are large, connected areas that have been determined to have the highest likelihood of achieving conservation outcomes for koalas based on the combination of habitat suitability, biophysical variables with known relationships to koala habitat (e.g. landcover, soil, terrain, climate and ground water) and a koala conservation cost benefit analysis.

Conservation efforts will be prioritised in these areas to ensure the conservation of viable koala populations in the wild including a focus on management (e.g. habitat protection, habitat restoration and threat mitigation) and monitoring. This includes a prohibition on clearing in koala habitat areas that are in koala priority areas under the Planning Regulation 2017 (subject to some exemptions).

Please note that koala priority areas only exist in koala district A which is the South East Queensland "Shaping SEQ" Regional Plan area. These areas include the local government areas of Brisbane, Gold Coast, Logan, Lockyer Valley, Ipswich, Moreton Bay, Noosa, Redland, Scenic Rim, Somerset, Sunshine Coast and Toowoomba (urban extent).

Section 7.2 identifies if your property is in a koala priority area.

6.1.4 Identified koala broad-hectare areas

There are seven identified koala broad-hectare areas in SEQ. These are areas of koala habitat that are located in areas committed to meet development targets in the SEQ Regional Plan to accommodate SEQ's growing population including bring-forward Greenfield sites under the Queensland Housing Affordability Strategy and declared master planned areas under the repealed *Sustainable Planning Act 2009* and the repealed *Integrated Planning Act 1997*.

Specific assessment benchmarks apply to development applications for development proposed in identified koala broad-hectare areas to ensure koala conservation measures are incorporated into the proposed development.

Section 7.2 identifies if your property is in an identified koala broad-hectare area.

6.2 Koala habitat planning controls

On 7 February 2020, the Queensland Government introduced new planning controls to the Planning Regulation 2017 to strengthen the protection of koala habitat in South East Queensland (i.e. koala district A).

More information on these planning controls can be found here:
https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/legislation-policy.

As a high-level summary, the koala habitat planning controls make:

- development that involves interfering with koala habitat (defined below) in an area that is both a koala priority area and a koala habitat area, prohibited development (i.e. development for which a development application cannot be made);
- development that involves interfering with koala habitat (defined below) in an area that is a koala habitat area but is not a koala priority area, assessable development (i.e. development for which development approval is required); and
- development that is for extractive industries where the development involves interfering with koala habitat (defined below) in an area that is both a koala habitat area and a key resource area, assessable development (i.e. development for which development approval is required).

Interfering with koala habitat means:

1. Removing, cutting down, ringbarking, pushing over, poisoning or destroying in anyway, including by burning, flooding or draining native vegetation in a koala habitat area; but
2. Does not include destroying standing vegetation stock or lopping a tree.

However, these planning controls do not apply if the development is exempted development as defined in Schedule 24 of the Planning Regulation 2017. More information on exempted development can be found here:
https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/legislation-policy.

There are also assessment benchmarks that apply to development applications for:

- building works, operational works, material change of use or reconfiguration of a lot where:

  - the local government planning scheme makes the development assessable;
  - the premises includes an area that is both a koala priority area and a koala habitat area; and
  - the development does not involve interfering with koala habitat (defined above); and

- development in identified koala broad-hectare areas.

The Guideline - Assessment Benchmarks in relation to Koala Habitat in South East Queensland assessment benchmarks outlines these assessment benchmarks, the intent of these assessment benchmarks and advice on how proposed development may meet these assessment benchmarks.

6.3 Koala Conservation Plan clearing requirements

Section 10 and 11 of the Nature Conservation (Koala) Conservation Plan 2017 prescribes requirements that must be met when clearing koala habitat in koala district A and koala district B.

These clearing requirements are independent to the koala habitat planning controls introduced into the Planning Regulation 2017, which means they must be complied with irrespective of any approvals or exemptions offered under other legislation.

Unlike the clearing controls prescribed in the Planning Regulation 2017 that are to protect koala habitat, the clearing requirements prescribed in the Nature Conservation (Koala) Conservation Plan 2017 are in place to prevent the injury or death of koalas when koala habitat is being cleared.

6.4 Contact information for DETSI

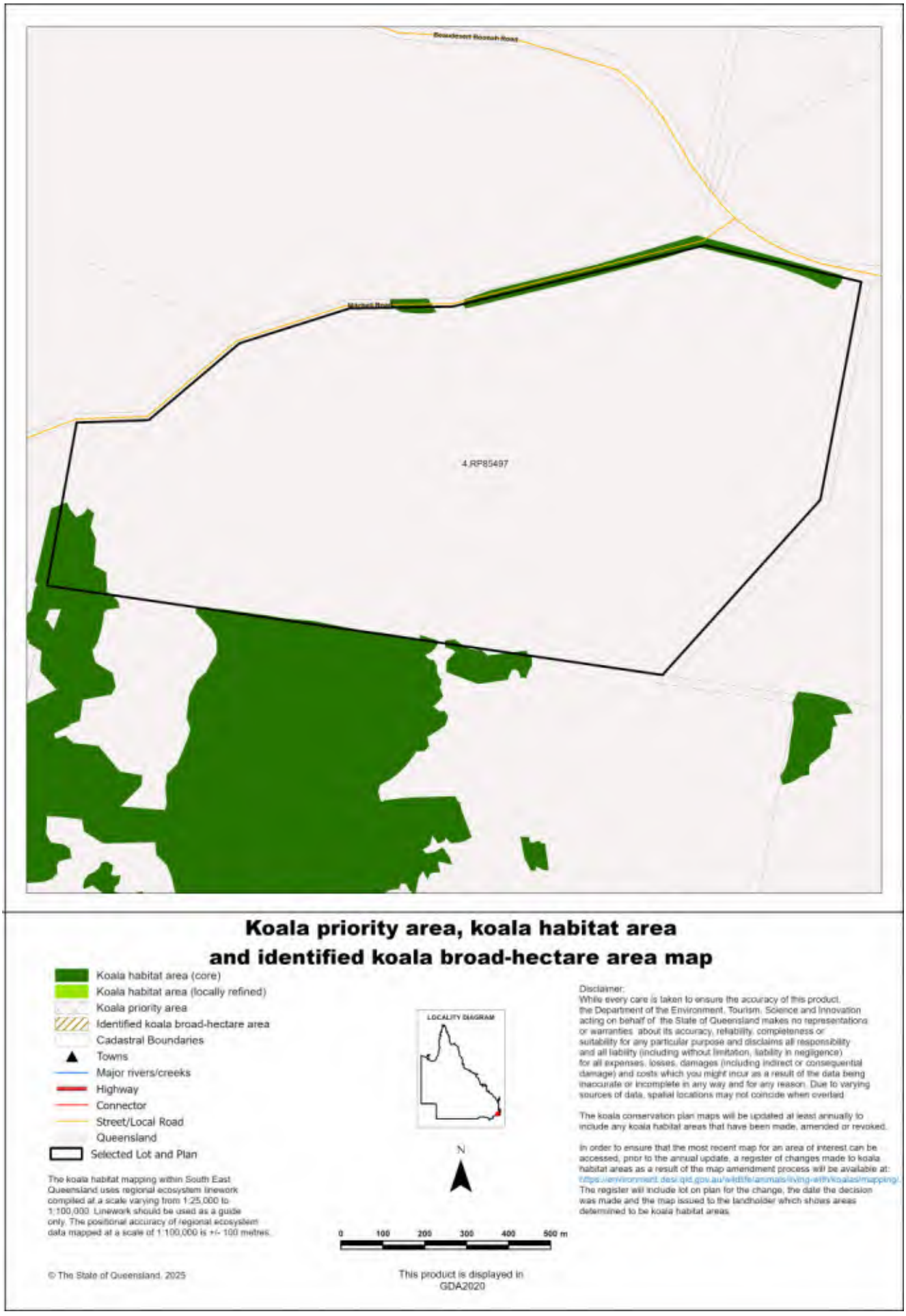
For further information on the koala protection framework:
Phone 13 QGOV (13 74 68)
Email koala.assessment@detsi.qld.gov.au
Visit https://environment.desi.qld.gov.au/wildlife/animals/living-with/koalas/mapping

7. Koala protection framework details for Lot: 4 Plan: RP85497

7.1 Koala districts

Koala District A

7.2 Koala priority area, koala habitat area and identified koala broad-hectare map



7.3 Koala habitat regional ecosystems for core koala habitat areas

8. Other relevant legislation contacts list

Activity	Legislation	Agency	Contact details
Interference with overland flow	*Water Act 2000*	Department of Local Government, Water and Volunteers	Ph: 13 QGOV (13 74 68) www.dlgwv.qld.gov.au
Earthworks, significant disturbance	*Soil Conservation Act 1986*	Queensland Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development	Ph: 13 QGOV (13 74 68) www.nrmmrrd.qld.gov.au
Fire Permits	*Fire and Emergency Services Act 1990*	Queensland Fire Department	Ph: 13 QGOV (13 74 68) www.fire.qld.gov.au
Indigenous Cultural Heritage	*Aboriginal Cultural Heritage Act 2003* *Torres Strait Islander Cultural Heritage Act 2003*	Queensland Department of Women, Aboriginal and Torres Strait Islander Partnerships and Multiculturalism	Ph: 13 QGOV (13 74 68) www.tatsipca.qld.gov.au
Mining and environmentally relevant activities Infrastructure development (coastal) Heritage issues	*Environmental Protection Act 1994* *Coastal Protection and Management Act 1995* *Queensland Heritage Act 1992*	Queensland Department of the Environment, Tourism, Science and Innovation	Ph: 13 QGOV (13 74 68) www.detsi.qld.gov.au
Protected plants and protected areas	*Nature Conservation Act 1992* *Planning Act 2016*	Queensland Department of the Environment, Tourism, Science and Innovation	Ph: 1300 130 372 (option 4) palm@detsi.qld.gov.au www.detsi.qld.gov.au
Koala mapping and regulations	*Nature Conservation Act 1992*	Queensland Department of the Environment, Tourism, Science and Innovation	Ph: 13 QGOV (13 74 68) Koala.assessment@detsi.qld.gov.au
Interference with fish passage in a watercourse, mangroves Forestry activities	*Fisheries Act 1994* *Forestry Act 1959*	Queensland Department of Primary Industries	Ph: 13 QGOV (13 74 68) www.daf.qld.gov.au
Matters of National Environmental Significance including listed threatened species and ecological communities	*Environment Protection and Biodiversity Conservation Act 1999*	Department of Climate Change, Energy, the Environment and Water (Australian Government)	Ph: 1800 803 772 www.dcceew.gov.au
Development and planning processes	*Planning Act 2016* *State Development and Public Works Organisation Act 1971*	Queensland Department of State Development, Infrastructure and Planning	Ph: 13 QGOV (13 74 68) www.planning.qld.gov.au
Coordinated projects	*Planning Act 2016* *State Development and Public Works Organisation Act 1971*	Office of the Coordinator-General	Ph: 13 QGOV (13 74 68) www.statedevelopment.qld.gov.au/coordinator-general
Wet Tropics World Heritage Area	*Wet Tropics World Heritage Protection and Management Act 1993*	Queensland Wet Tropics Management Authority	Ph: (07) 4241 0500 www.wettropics.gov.au
Requirements on State controlled road	*Transport Infrastructure Act 1994*	Queensland Department of Transport and Main Roads	Ph: 13 QGOV (13 74 68) https://www.tmr.qld.gov.au
Local government requirements	*Local Government Act 2009* *Planning Act 2016*	Your relevant local government office	Local Government Contact Directory

Queensland Government

Department of Environment, Science and Innovation

Environmental Reports

Regional Ecosystems

Biodiversity Status

For the selected area of interest
Lot: 4 Plan: RP85497

Environmental Reports - General Information

The Environmental Reports portal provides for the assessment of selected matters of interest relevant to a user specified location, or area of interest (AOI). All area and derivative figures are relevant to the extent of matters of interest contained within the AOI unless otherwise stated. Please note, if a user selects an AOI via the "central coordinates" option, the resulting assessment area encompasses an area extending for a 2km radius from the input coordinates.

All area and area derived figures included in this report have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 2020). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.

Figures in tables may be affected by rounding.

The matters of interest reported on in this document are based upon available state mapped datasets. Where the report indicates that a matter of interest is not present within the AOI (e.g. where area related calculations are equal to zero, or no values are listed), this may be due either to the fact that state mapping has not been undertaken for the AOI, that state mapping is incomplete for the AOI, or that no values have been identified within the site.

The information presented in this report should be considered as a guide only and field survey may be required to validate values on the ground.

Important Note to User

Information presented in this report is based upon the Queensland Herbarium & Biodiversity Science's Regional Ecosystem framework. The Biodiversity Status has been used to depict the extent of "Endangered", "Of Concern" and "No Concern at Present" regional ecosystems in all cases, rather than the classes used for the purposes of the *Vegetation Management Act 1999* (VMA). Mapping and figures presented in this document reflect the Queensland Herbarium & Biodiversity Science's Remnant and Pre-clearing Regional Ecosystem Datasets, and not the certified mapping used for the purpose of the VMA.

For matters relevant to vegetation management under the VMA, please refer to the Department of Resources website https://www.resources.qld.gov.au/

Please direct queries about these reports to: Queensland.Herbarium@qld.gov.au

Disclaimer

Whilst every care is taken to ensure the accuracy of the information provided in this report, the Queensland Government makes no representations or warranties about its accuracy, reliability, completeness, or suitability, for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which the user may incur as a consequence of the information being inaccurate or incomplete in any way and for any reason.

Table of Contents

Summary Information

The following table provides an overview of the AOI with respect to selected topographic and environmental themes. Refer to **Map 1** for locality information.

Table 1: Details for area of interest:
Lot: 4 Plan: RP85497, with area 119.44 ha

Local Government(s)	Catchment(s)	Bioregion(s)	Subregion(s)
Scenic Rim Regional	Logan-Albert	Southeast Queensland	Moreton Basin

The table below summarizes the extent of remnant vegetation classed as "Endangered", "Of concern" and "No concern at present" regional ecosystems classified by Biodiversity Status within the area of interest (AOI).

Table 2: Summary table, biodiversity status of regional ecosystems within the AOI

Biodiversity Status	Area (Ha)	% of AOI
Endangered	0.59	0.49
Of concern	0.60	0.50
No concern at present	0.03	0.03
Total remnant vegetation	1.22	1.02

Refer to **Map 2** for further information.

Regional Ecosystems

1. Introduction

Regional ecosystems are vegetation communities in a bioregion that are consistently associated with particular combinations of geology, landform and soil (Sattler and Williams 1999). Descriptions of Queensland's Regional ecosystems are available online from the Regional Ecosystem Description Database (REDD). Descriptions are compiled from a broad range of information sources including vegetation, land system and geology survey and mapping and detailed vegetation site data. The regional ecosystem classification and descriptions are reviewed as new information becomes available. A number of vegetation communities may form a single regional ecosystem and may be distinguished by differences in structure or sub-dominant species in the ecologically dominant layer. Vegetation communities with different dominant species in the ecologically dominant layer may be amalgamated in to a regional ecosystem if they are not mappable and predictable in the landscape at 1:100 000 scale. Vegetation communities may be mappable at a scale larger than 1:100 000. Vegetation communities within a regional ecosystem are denoted by a letter following the regional ecosystem code (e.g. a, b, c). Vegetation communities and regional ecosystems are amalgamated into a higher level classification of broad vegetation groups (BVGs).

A published methodology for survey and mapping of regional ecosystems across Queensland (Neldner et al 2023) provides further details on regional ecosystem concepts and terminology.

This report provides information on the type, status, and extent of vegetation communities, regional ecosystems and broad vegetation groups present within a user specified area of interest. Please note, for the purpose of this report, the Biodiversity Status is used. This report has not been developed for application of the *Vegetation Management Act 1999* (VMA). Additionally, information generated in this report has been derived from the Queensland Herbarium & Biodiversity Science's Regional Ecosystem Mapping, and not the regulated mapping certified for the purposes of the VMA. If your interest/matter relates to regional ecosystems and the VMA, users should refer to the Department of Resources website https://www.resources.qld.gov.au/.

With respect to the Queensland Biodiversity Status,

"Endangered" regional ecosystems are described as those where:

- remnant vegetation is less than 10 per cent of its pre-clearing extent across the bioregion; or 10-30% of its pre-clearing extent remains and the remnant vegetation is less than 10,000 hectares, or
- less than 10 per cent of its pre-clearing extent remains unaffected by severe degradation and/or biodiversity loss*, or
- 10-30 percent of its pre-clearing extent remains unaffected by severe degradation and/or biodiversity loss and the remnant vegetation is less than 10,000 hectares; or
- it is a rare** regional ecosystem subject to a threatening process.***

"Of concern" regional ecosystems are described as those where:

- the degradation criteria listed above for 'Endangered' regional ecosystems are not met and,
- remnant vegetation is 10-30 per cent of its pre-clearing extent across the bioregion; or more than 20 per cent of its pre-clearing extent remains and the remnant extent is less than 10,000 hectares, or
- 10-30 percent of its pre-clearing extent remains unaffected by moderate degradation and/or biodiversity loss.****

and "No concern at present" regional ecosystems are described as those where:

- remnant vegetation is over 30 percent of its pre-clearing extent across the bioregion, and the remnant area is greater than 10,000 hectares, and
- the degradation criteria listed above for 'Endangered' or 'Of concern' regional ecosystems are not met.

**Severe degradation and/or biodiversity loss is defined as: floristic and/or faunal diversity is greatly reduced but unlikely to recover within the next 50 years even with the removal of threatening processes; or soil surface is severely degraded, for example, by loss of A horizon, surface expression of salinity; surface compaction, loss of organic matter or sheet erosion.*

***Rare regional ecosystem: pre-clearing extent (<1000 ha); or patch size (<100 ha and of limited total extent across its range).*

****Threatening processes are those that are reducing or will reduce the biodiversity and ecological integrity of a regional ecosystem. For example, clearing, weed invasion, fragmentation, inappropriate fire regime or grazing pressure, or infrastructure development.*

*****Moderate degradation and/or biodiversity loss is defined as: floristic and/or faunal diversity is greatly reduced but unlikely to recover within the next 20 years even with the removal of threatening processes; or soil surface is moderately degraded.*

2. Remnant Regional Ecosystems

The following table identifies the remnant regional ecosystems and vegetation communities mapped within the AOI and provides their short descriptions, Biodiversity Status, and remnant extent within the selected AOI. Please note, where heterogeneous vegetated patches (mixed patches of remnant vegetation mapped as containing multiple regional ecosystems) occur within the AOI, they have been split and listed as individual regional ecosystems (or vegetation communities where present) for the purposes of the table below. In such instances, associated area figures have been generated based upon the estimated proportion of each regional ecosystem (or vegetation community) predicted to be present within the larger mixed patch.

Table 3: Remnant regional ecosystems, description and status within the AOI

Regional Ecosystem	Short Description	BD Status	Area (Ha)	% of AOI
12.8.24	Corymbia citriodora subsp. variegata open forest on Cainozoic igneous rocks especially trachyte	Endangered	0.59	0.49
12.9-10.2	Corymbia citriodora subsp. variegata +/- Eucalyptus crebra open forest on sedimentary rocks	No concern at present	0.03	0.03
12.9-10.3	Eucalyptus moluccana open forest on sedimentary rocks	Of concern	0.60	0.50
non-remnant	None	None	118.23	98.98

Refer to **Map 2** for further information. **Map 3** also provides a visual estimate of the distribution of regional ecosystems present before clearing.

Table 4 provides further information in regards to the remnant regional ecosystems present within the AOI. Specifically, the extent of remnant vegetation remaining within the bioregion, the 1:1,000,000 broad vegetation group (BVG) classification, whether the regional ecosystem is identified as a wetland, and extent of representation in Queensland's Protected Area Estate. For a description of the vegetation communities within the AOI and classified according to the 1:1,000,000 BVG, refer to **Table 6**.

Table 4: Remnant regional ecosystems within the AOI, additional information

Regional Ecosystem	Remnant Extent	BVG (1 Million)	Wetland	Representation in protected estate
12.8.24	Pre-clearing 13000 ha; Remnant 2021 4000 ha	10b	Not a Wetland	Medium
12.9-10.2	Pre-clearing 220000 ha; Remnant 2021 86000 ha	10b	Not a Wetland	Low
12.9-10.3	Pre-clearing 86000 ha; Remnant 2021 26000 ha	13d	Not a Wetland	Low
non-remnant	None	None	None	None

Representation in Protected Area Estate: High greater than 10% of pre-clearing extent is represented; Medium 4 - 10% is represented; Low less than 4% is represented, No representation.

The distribution of mapped wetland systems within the area of interest is displayed in **Map 6**.

The following table lists known special values associated with a regional ecosystem type.

Table 5: Remnant regional ecosystems within the AOI, special values

Regional Ecosystem	Special Values
12.8.24	12.8.24: Potential habitat for NCA listed species: Notelaea lloydii. This ecosystem is known to provide suitable habitat for koalas (Phascolarctos cinereus).
12.9-10.2	12.9-10.2: Habitat for threatened plant species including Notelaea lloydii, Grevillea quadricauda, Westringia sericea, Coleus habrophyllus. This ecosystem is known to provide suitable habitat for koalas (Phascolarctos cinereus).
12.9-10.3	12.9-10.3: Potential habitat for NCA listed species: Callitris baileyi, Haloragis exalata subsp. velutina, Picris conyzoides, Sophora fraseri. This ecosystem is known to provide suitable habitat for koalas (Phascolarctos cinereus).
non-remnant	None

3. Remnant Regional Ecosystems by Broad Vegetation Group

BVGs are a higher-level grouping of vegetation communities. Queensland encompasses a wide variety of landscapes across temperate, wet and dry tropics and semi-arid climatic zones. BVGs provide an overview of vegetation communities across the state or a bioregion and allow comparison with other states. There are three levels of BVGs which reflect the approximate scale at which they are designed to be used: the 1:5,000,000 (national), 1:2,000,000 (state) and 1:1,000,000 (regional) scales.

A comprehensive description of BVGs is available at: https://publications.qld.gov.au/dataset/redd/resource/

The following table provides a description of the 1:1,000,000 BVGs present and their associated extent within the AOI.

Table 6: Broad vegetation groups (1 million) within the AOI

BVG (1 Million)	Description	Area (Ha)	% of AOI
None	None	118.23	98.98
10b	Moist open forests to woodlands dominated by Corymbia citriodora (spotted gum).	0.62	0.52
13d	Woodlands dominated by Eucalyptus moluccana (gum -topped box) (or E. microcarpa (inland grey box)) on a range of substrates.	0.60	0.50

Refer to **Map 4** for further information. **Map 5** also provides a representation of the distribution of vegetation communities as per the 1:5,000,000 BVG believed to be present prior to European settlement.

4. Technical and BioCondition Benchmark Descriptions

Technical descriptions provide a detailed description of the full range in structure and floristic composition of regional ecosystems (e.g. 11.3.1) and their component vegetation communities (e.g. 11.3.1a, 11.3.1b). See: http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/technical-descriptions/

The descriptions are compiled using site survey data from the Queensland Herbarium & Biodiversity Science's QBEIS database. Distribution maps, representative images (if available) and the pre-clearing and remnant extent (hectares) of each vegetation community derived from the regional ecosystem mapping data are included. The technical descriptions should be used in conjunction with the fields from the regional ecosystem description database (REDD) for a full description of the regional ecosystem.

Technical descriptions include data on canopy height, canopy cover and native plant species composition of the predominant layer, which are attributes relevant to assessment of the remnant status of vegetation under the *Vegetation Management Act 1999*. However, as technical descriptions reflect the full range in structure and floristic composition across the climatic, natural disturbance and geographic range of the regional ecosystem, local reference sites should be used for remnant assessment where possible (Neldner et al. 2023 (PDF)* section 3.3 of: https://www.qld.gov.au/__data/assets/pdf_file/0033/459186/methodology-mapping-surveying-v7.pdf

The technical descriptions are subject to review and are updated as additional data becomes available.

When conducting a BioCondition assessment, these technical descriptions should be used in conjunction with BioCondition benchmarks for the specific regional ecosystem, or component vegetation community. http://www.qld.gov.au/environment/plants-animals/biodiversity/benchmarks/

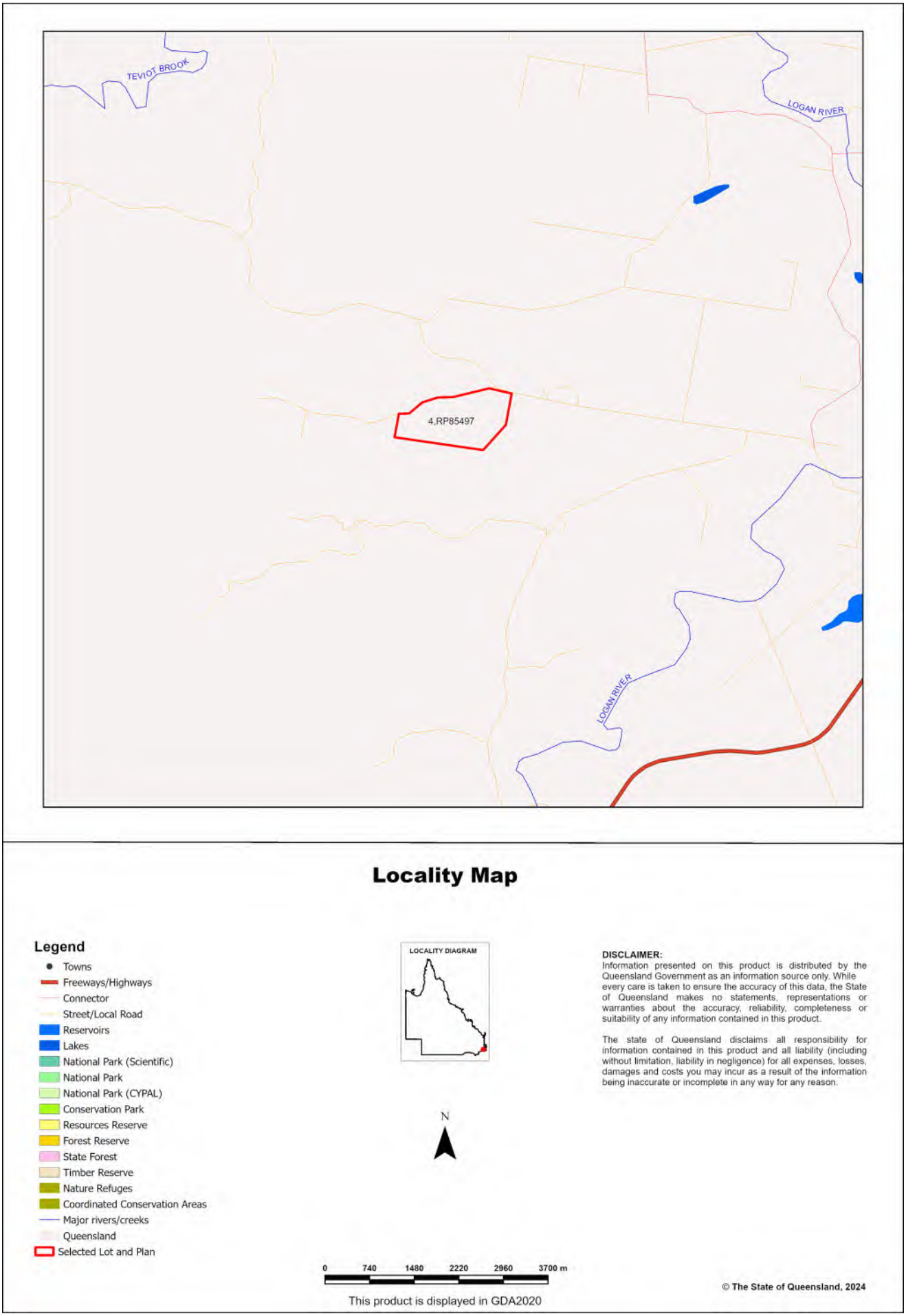
Benchmarks are based on a combination of quantitative and qualitative information and should be used as a guide only. Benchmarks are specific to one regional ecosystem vegetation community, however, the natural variability in structure and floristic composition under a range of climatic and natural disturbance regimes has been considered throughout the geographic extent of the regional ecosystem. Local reference sites should be used for this spatial and temporal (seasonal and annual) variability.

Table 7: List of remnant regional ecosystems within the AOI for which technical and biocondition benchmark descriptions are available

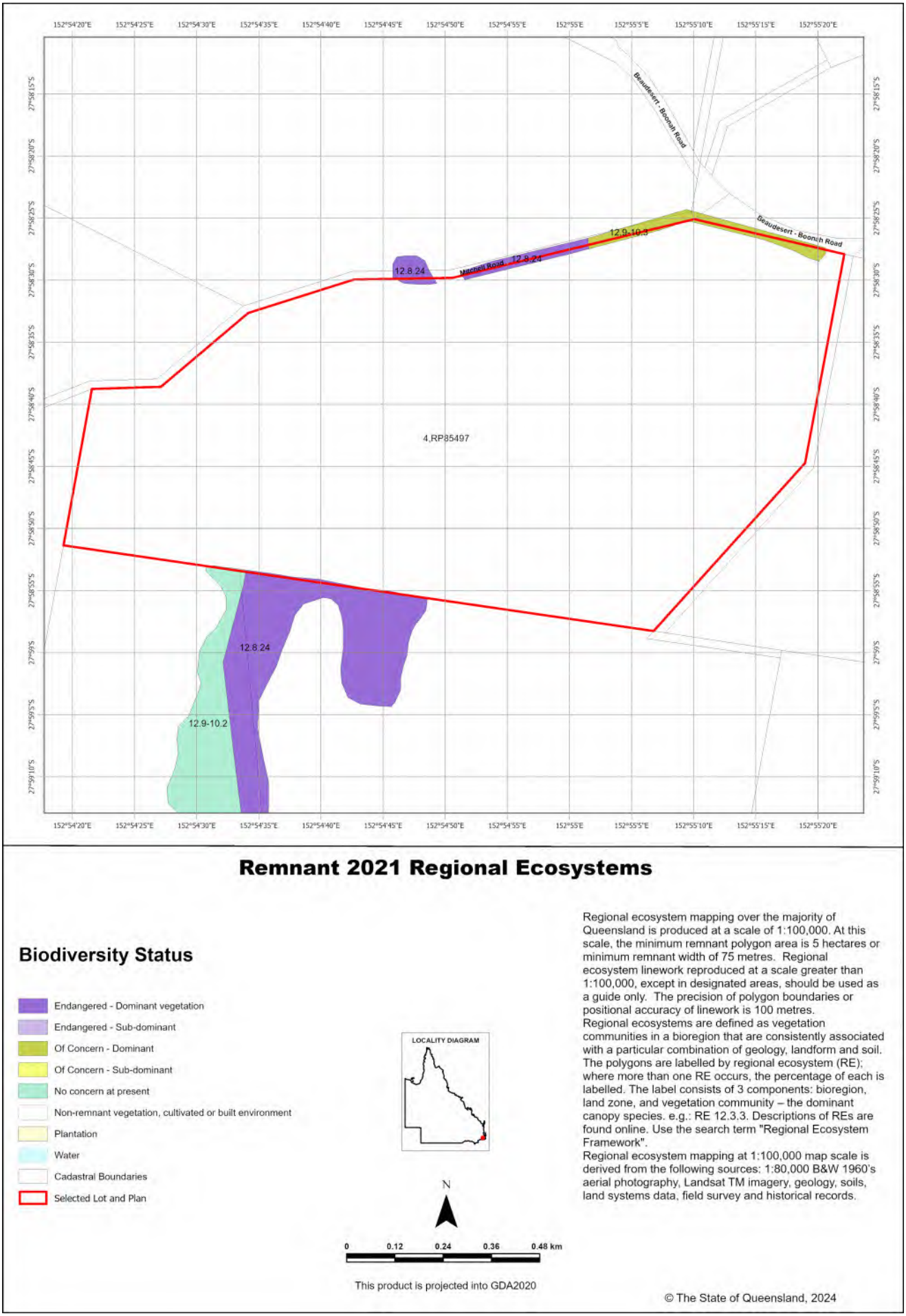
Regional ecosystems mapped as within the AOI	Technical Descriptions	Biocondition Benchmarks
12.8.24	Not currently available	Available
12.9-10.2	Available	Available
12.9-10.3	Available	Available
non-remnant	Not currently available	Not currently available

Maps

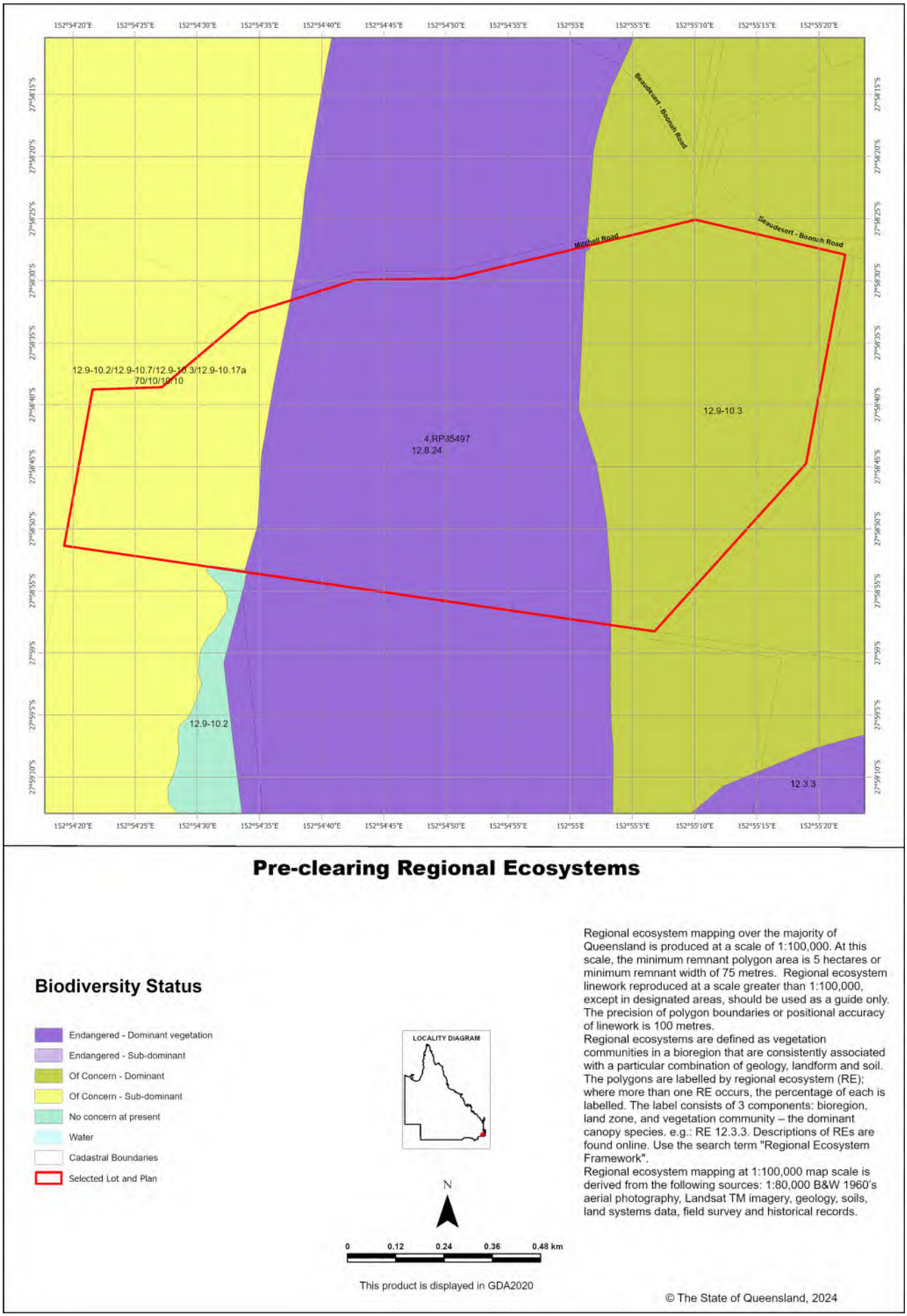
Map 1 - Location



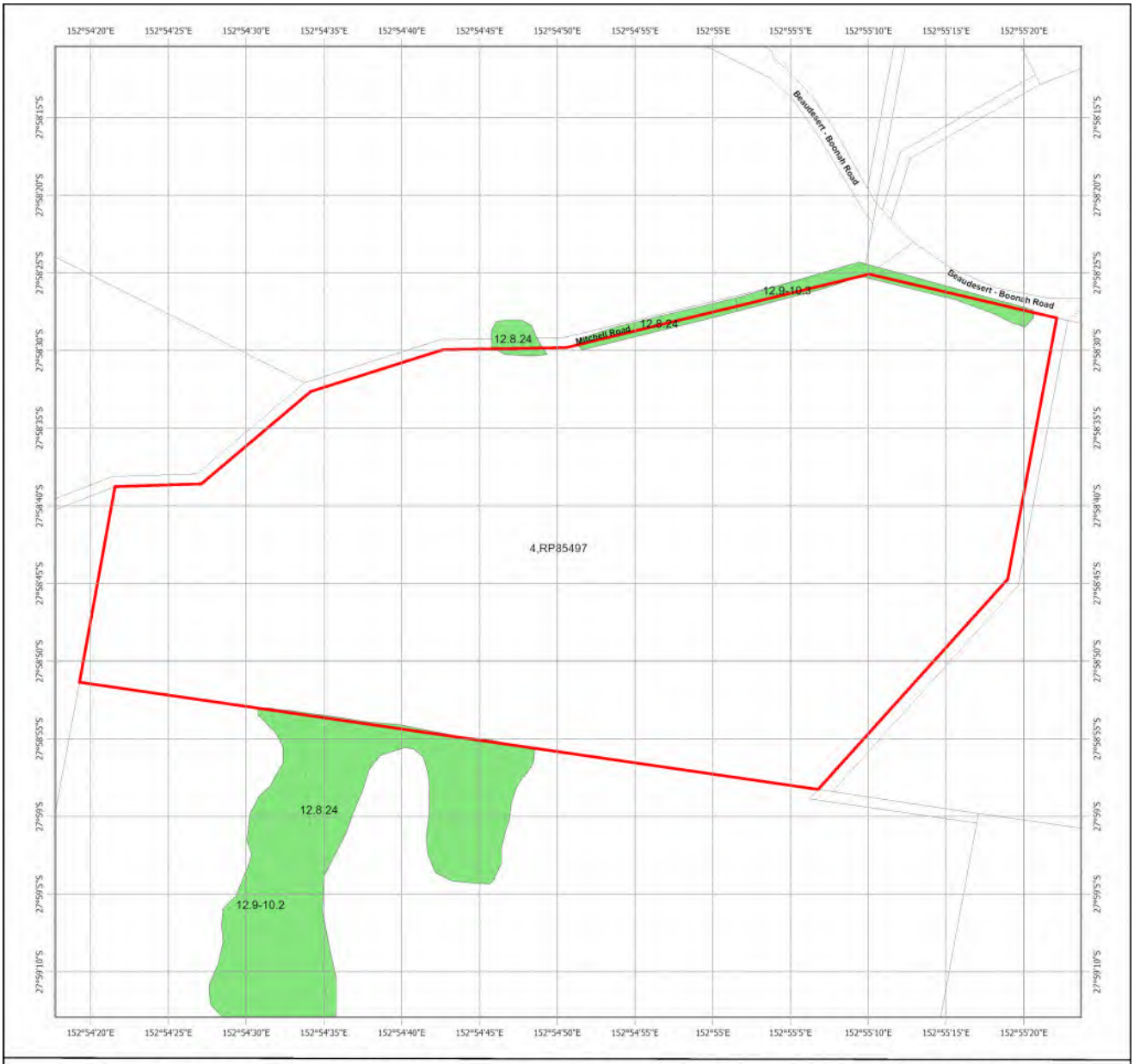
Map 2 - Remnant 2021 regional ecosystems



Map 3 - Pre-clearing regional ecosystems



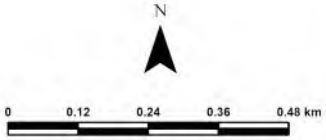
Map 4 - Remnant 2021 regional ecosystems by BVG (5M)



Remnant 2021 Regional Ecosystems coloured by Broad Vegetation Groups

Broad Vegetation Groups
BVG5M Description (BVG1M codes)

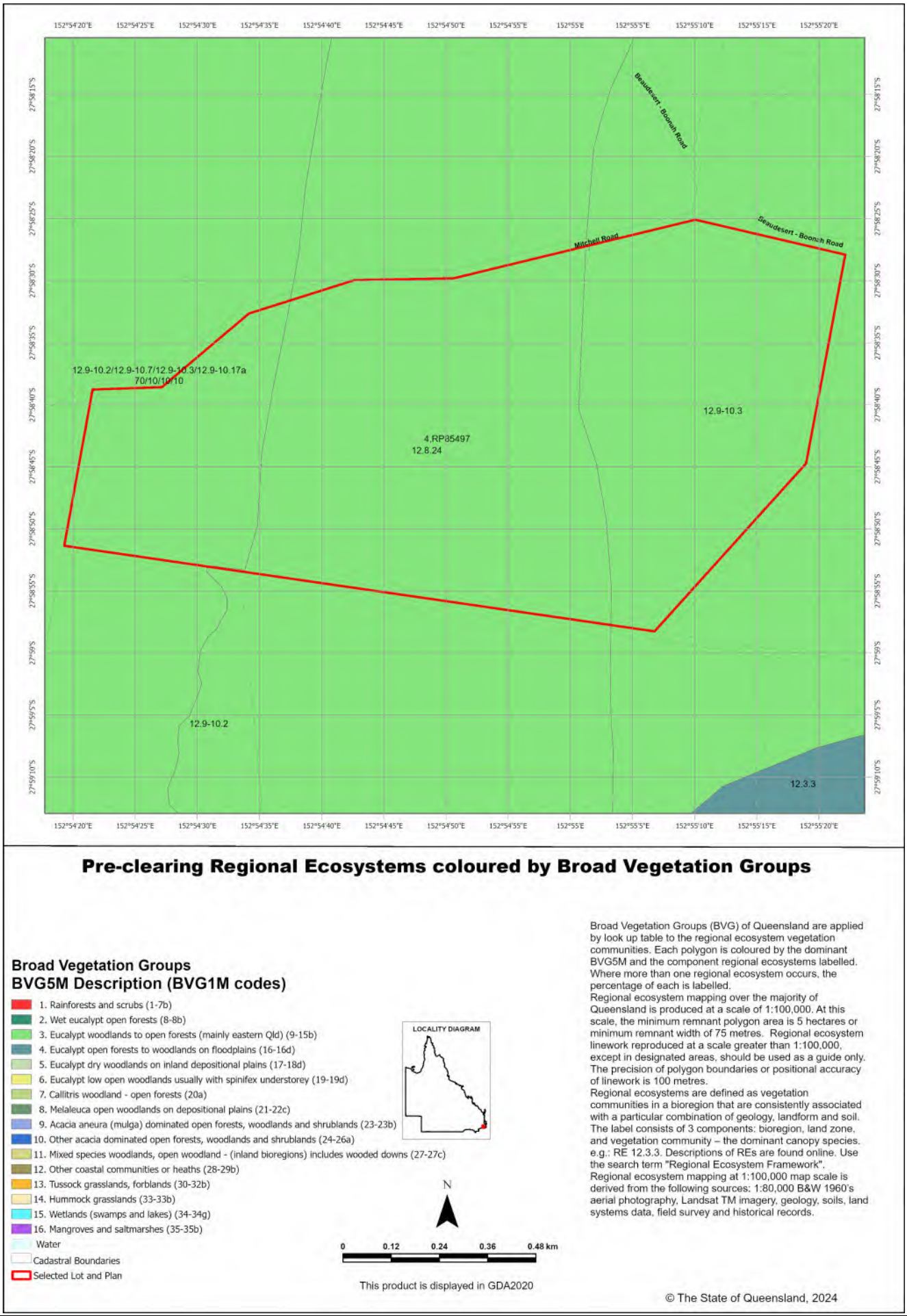
- 1. Rainforests and scrubs (1-7b)
- 2. Wet eucalypt open forests (8-8b)
- 3. Eucalypt woodlands to open forests (mainly eastern Qld) (9-15b)
- 4. Eucalypt open forests to woodlands on floodplains (16-16d)
- 5. Eucalypt dry woodlands on inland depositional plains (17-18d)
- 6. Eucalypt low open woodlands usually with spinifex understorey (19-19d)
- 7. Callitris woodland - open forests (20a)
- 8. Melaleuca open woodlands on depositional plains (21-22c)
- 9. Acacia aneura (mulga) dominated open forests, woodlands and shrublands (23-23b)
- 10. Other acacia dominated open forests, woodlands and shrublands (24-26a)
- 11. Mixed species woodlands, open woodland - (inland bioregions) includes wooded downs (27-27c)
- 12. Other coastal communities or heaths (28-29b)
- 13. Tussock grasslands, forblands (30-32b)
- 14. Hummock grasslands (33-33b)
- 15. Wetlands (swamps and lakes) (34-34g)
- 16. Mangroves and saltmarshes (35-35b)
- Non-remnant vegetation, cultivated or built environment
- Water
- Cadastral Boundaries
- Selected Lot and Plan



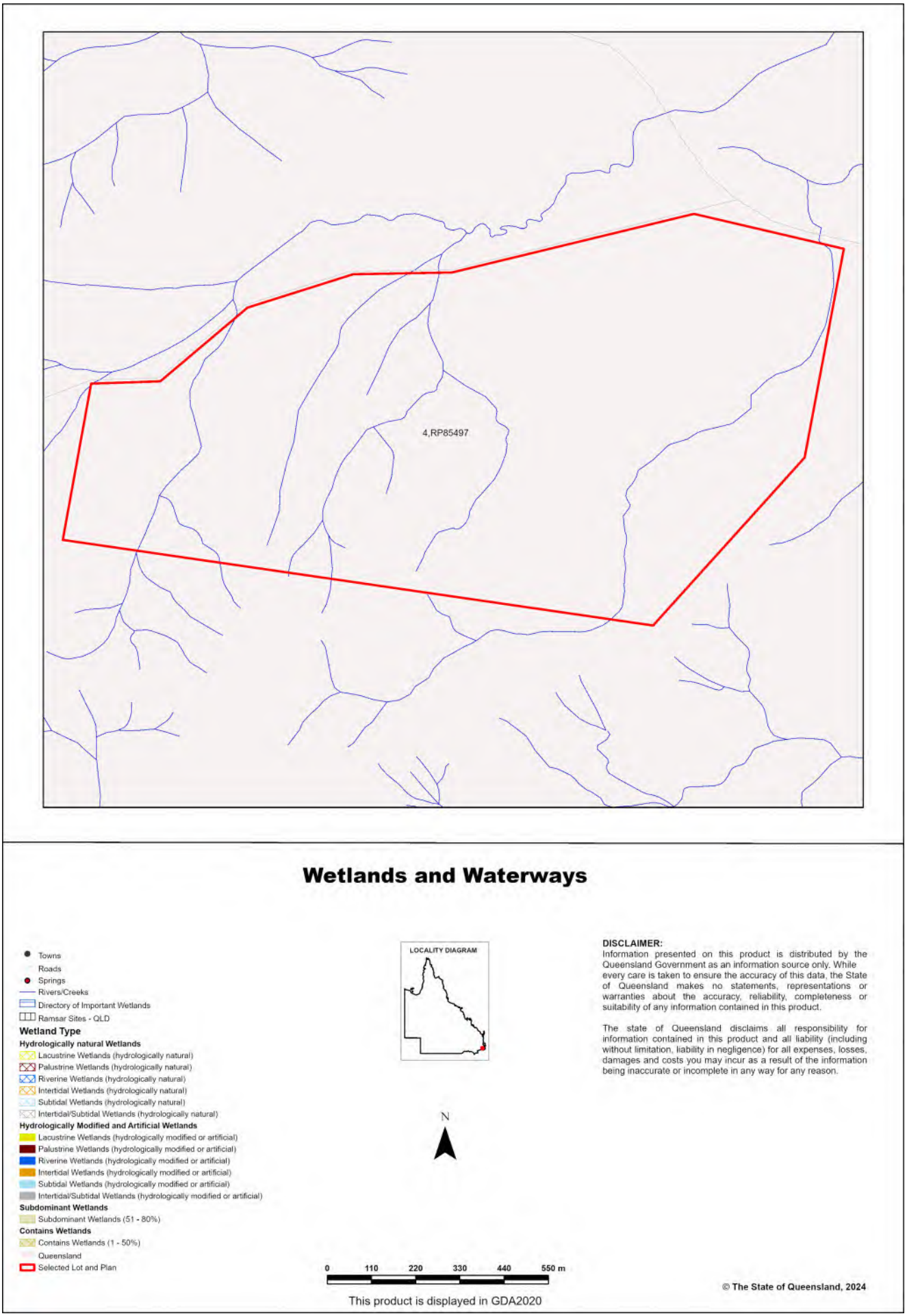
This product is displayed in GDA2020

Broad Vegetation Groups (BVG) of Queensland are applied by look up table to the regional ecosystem vegetation communities. Each polygon is coloured by the dominant BVG5M and the component regional ecosystems labelled. Where more than one regional ecosystem occurs, the percentage of each is labelled. Regional ecosystem mapping over the majority of Queensland is produced at a scale of 1:100,000. At this scale, the minimum remnant polygon area is 5 hectares or minimum remnant width of 75 metres. Regional ecosystem linework reproduced at a scale greater than 1:100,000, except in designated areas, should be used as a guide only. The precision of polygon boundaries or positional accuracy of linework is 100 metres.
Regional ecosystems are defined as vegetation communities in a bioregion that are consistently associated with a particular combination of geology, landform and soil.
The label consists of 3 components: bioregion, land zone, and vegetation community – the dominant canopy species. e.g.: RE 12.3.3. Descriptions of REs are found online. Use the search term "Regional Ecosystem Framework".
Regional ecosystem mapping at 1:100,000 map scale is derived from the following sources: 1:80,000 B&W 1960's aerial photography, Landsat TM imagery, geology, soils, land systems data, field survey and historical records.
Remnant woody vegetation is defined as vegetation that has not been cleared or vegetation that has been cleared but where the dominant canopy has >70% of the height and >50% of the cover relative to the undisturbed height and cover of that stratum and is dominated by species characteristic of the vegetation's undisturbed canopy.
Non-remnant vegetation includes regrowth and disturbed native vegetation.

Map 5 - Pre-clearing regional ecosystems by BVG (5M)



Map 6 - Wetlands and waterways



Links and Other Information Sources

The Department of Environment, Science and Innovation's Website - http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/ provides further information on the regional ecosystem framework, including access to links to the Regional Ecosystem Database, Broad Vegetation Group Definitions, Regional Ecosystem and Land zone descriptions.

Descriptions of the broad vegetation groups of Queensland can be downloaded from: https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/broad-vegetation

The methodology for mapping regional ecosystems can be downloaded from: https://www.qld.gov.au/__data/assets/pdf_file/0033/459186/methodology-mapping-surveying-v7.pdf

Technical descriptions for regional ecosystems can be obtained from: http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/technical-descriptions/

Benchmarks can be obtained from: http://www.qld.gov.au/environment/plants-animals/biodiversity/benchmarks/

For further information associated with the remnant regional ecosystem dataset used by this report, refer to the metadata associated with the Biodiversity status of pre-clearing and Remnant Regional Ecosystems of Queensland dataset (version listed in **Appendix 1**) which is available through the Queensland Spatial Catalogue, Queensland Spatial Catalogue : Queensland Government (information.qld.gov.au)

The Queensland Globe is a mapping and data application. As an interactive online tool, Queensland Globe allows you to view and explore Queensland maps, imagery (including up-to-date satellite images) and other spatial data, including regional ecosystem mapping. To further view and explore regional ecosystems over an area of interest, access the Biota Globe (a component of the Queensland Globe). The Queensland Globe can be accessed via the following link: https://qldglobe.information.qld.gov.au/

References

Neldner, V.J., Niehus, R.E., Wilson, B.A., McDonald, W.J.F., Ford, A.J. and Accad, A. (2023). The Vegetation of Queensland. Descriptions of Broad Vegetation Groups. Version 6.0. Queensland Herbarium, Department of Environment and Science. (https://publications.qld.gov.au/dataset/redd/resource/78209e74-c7f2-4589-90c1-c33188359086)

Neldner, V.J., Wilson, B.A., Dillewaard, H.A., Ryan, T.S., Butler, D.W., McDonald, W.J.F, Richter,D., Addicott, E.P. and Appelman, C.N. (2023) Methodology for survey and mapping of regional ecosystems and vegetation communities in Queensland. Version 7.0. Updated December 2023. Queensland Herbarium, Queensland Department of Environment, Science and Innovation, Brisbane. (https://www.qld.gov.au/__data/assets/pdf_file/0033/459186/methodology-mapping-surveying-v7.pdf).

Sattler, P.S. and Williams, R.D. (eds) (1999). *The Conservation Status of Queensland's Bioregional Ecosystems.* Environmental Protection Agency, Brisbane.

Appendices

Appendix 1 - Source Data

The dataset listed below is available for download from:
http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/download/

- Regional Ecosystem Description Database

The datasets listed below are available for download from:
Queensland Spatial Catalogue : Queensland Government (information.qld.gov.au)

- Biodiversity status of pre-clearing and 2021 remnant regional ecosystems of Queensland
- Pre-clearing Vegetation Communities and Regional Ecosystems of Queensland
- Queensland Wetland Data Version - Wetland lines
- Queensland Wetland Data Version - Wetland points
- Queensland Wetland Data Version - Wetland areas
- Pre-clearing broad vegetation groups of Queensland
- Remnant 2021 broad vegetation groups of Queensland

Appendix 2 - Acronyms and Abbreviations

AOI - Area of Interest
GIS - Geographic Information System
RE - Regional Ecosystem
REDD - Regional Ecosystem Description Database
VMA - *Vegetation Management Act 1999*

Queensland Government

Department of Environment, Science and Innovation

Environmental Reports

Matters of State Environmental Significance

For the selected area of interest

Lot: 4 Plan: RP85497

Environmental Reports - General Information

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Please direct queries about these reports to: Planning.Support@des.qld.gov.au

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Assessment Area Details

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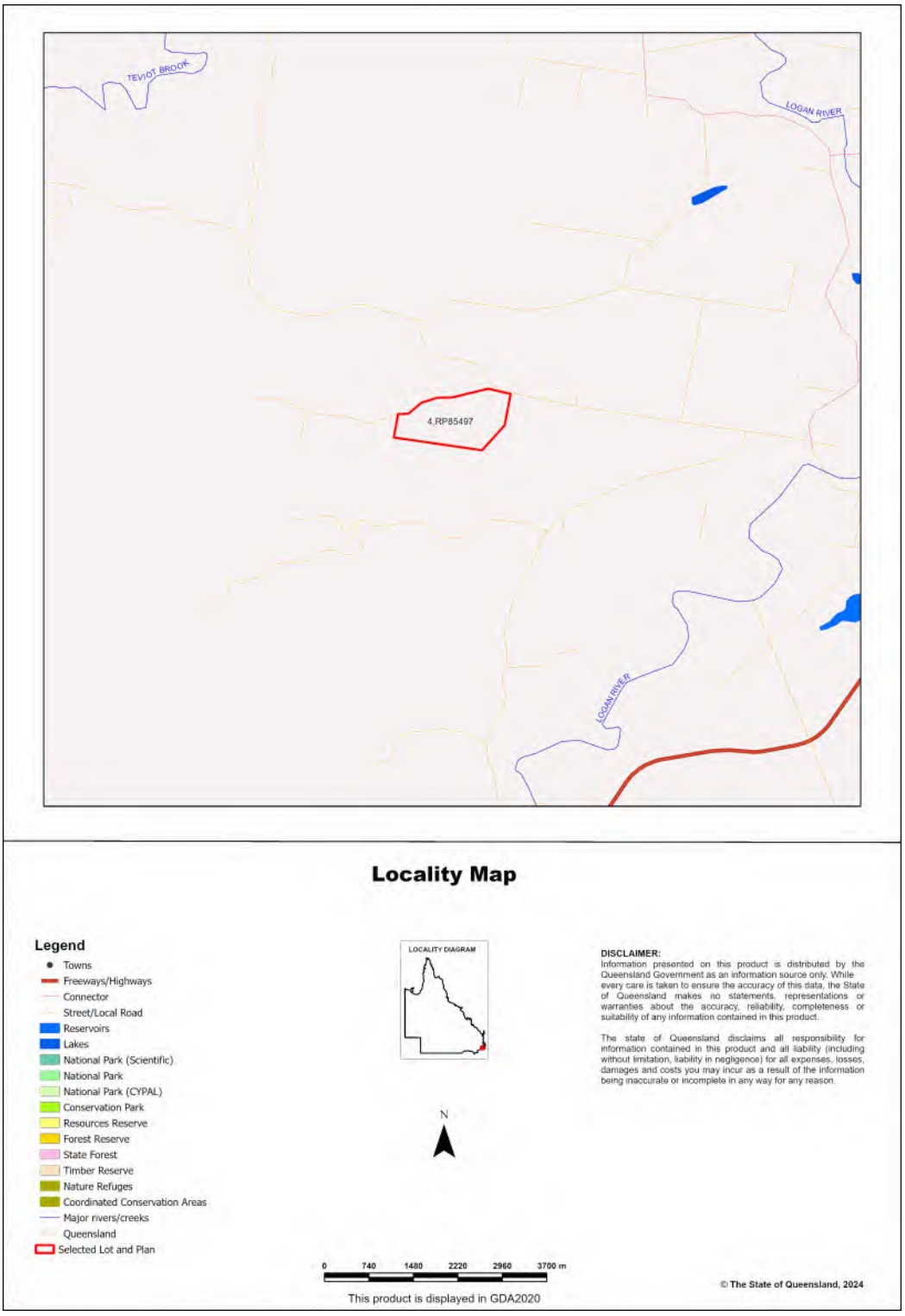
Local Government(s)	Catchment(s)	Bioregion(s)	Subregion(s)
Scenic Rim Regional	Logan-Albert	Southeast Queensland	Moreton Basin



Matters of State Environmental Significance (MSES)

MSES Categories

Queensland's State Planning Policy (SPP) includes a biodiversity State interest that states:

'The sustainable, long-term conservation of biodiversity is supported. Significant impacts on matters of national or state environmental significance are avoided, or where this cannot be reasonably achieved; impacts are minimised and residual impacts offset.'

The MSES mapping product is a guide to assist implementation of the SPP biodiversity policy. While it supports the SPP, the mapping does not replace the regulatory mapping or environmental values specifically called up under other laws or regulations.

The SPP defines matters of state environmental significance as:

- Protected areas (including all classes of protected area except coordinated conservation areas) under the *Nature Conservation Act 1992;*

- Marine parks and land within a 'marine national park', 'conservation park', 'scientific research', 'preservation' or 'buffer' zone under the Marine Parks Act 2004 ;

- Areas within declared fish habitat areas that are management A areas or management B areas under the Fisheries Regulation 2008;

- *Threatened wildlife under the Nature Conservation Act 1992* and special least concern animals under the Nature Conservation (Wildlife) Regulation 2006;

- Regulated vegetation under the *Vegetation Management Act 1999* that is:

  - Category B areas on the regulated vegetation management map, that are 'endangered' or 'of concern' regional ecosystems;
  - Category C areas on the regulated vegetation management map that are 'endangered' or 'of concern' regional ecosystems;
  - Category R areas on the regulated vegetation management map;
  - Regional ecosystems that intersect with watercourses identified on the vegetation management watercourse and drainage feature map;
  - Regional ecosystems that intersect with wetlands identified on the vegetation management wetlands map;

- Strategic Environmental Areas under the *Regional Planning Interests Act 2014* ;

- Wetlands in a wetland protection area of wetlands of high ecological significance shown on the Map of Queensland Wetland Environmental Values under the Environment Protection Regulation 2019;

- Wetlands and watercourses in high ecological value waters defined in the Environmental Protection (Water) Policy 2009, schedule 2;
- Legally secured offset areas.

MSES Values Present

The MSES values that are present in the area of interest are summarised in the table below:

Table 2: Summary of MSES present within the AOI

1a Protected Areas- estates	0 ha	0.0%
1b Protected Areas- nature refuges	0 ha	0.0%
1c Protected Areas- special wildlife reserves	0 ha	0.0%
2 State Marine Parks- highly protected zones	0 ha	0.0%
3 Fish habitat areas (A and B areas)	0 ha	0.0%
4 Strategic Environmental Areas (SEA)	0 ha	0.0%
5 High Ecological Significance wetlands on the Map of Queensland Wetland Environmental Values	0 ha	0.0%
6a High Ecological Value (HEV) wetlands	0 ha	0.0%
6b High Ecological Value (HEV) waterways	0 km	Not applicable
7a Threatened (endangered or vulnerable) wildlife	0 ha	0.0%
7b Special least concern animals	0 ha	0.0%
7c i Koala habitat area - core (SEQ)	3.05 ha	2.6%
7c ii Koala habitat area - locally refined (SEQ)	0 ha	0.0%
7d Sea turtle nesting areas	0 km	Not applicable
8a Regulated Vegetation - Endangered/Of concern in Category B (remnant)	1.18 ha	1.0%
8b Regulated Vegetation - Endangered/Of concern in Category C (regrowth)	2.01 ha	1.7%
8c Regulated Vegetation - Category R (GBR riverine regrowth)	0 ha	0.0%
8d Regulated Vegetation - Essential habitat	2.94 ha	2.5%
8e Regulated Vegetation - intersecting a watercourse	3.5 km	Not applicable
8f Regulated Vegetation - within 100m of a Vegetation Management Wetland	0 ha	0.0%
9a Legally secured offset areas- offset register areas	0 ha	0.0%
9b Legally secured offset areas- vegetation offsets through a Property Map of Assessable Vegetation	0 ha	0.0%

Additional Information with Respect to MSES Values Present

MSES - State Conservation Areas

1a. Protected Areas - estates

(No results)

1b. Protected Areas - nature refuges

(No results)

1c. Protected Areas - special wildlife reserves

(No results)

2. State Marine Parks - highly protected zones

(No results)

3. Fish habitat areas (A and B areas)

(No results)

Refer to **Map 1 - MSES - State Conservation Areas** for an overview of the relevant MSES.

MSES - Wetlands and Waterways

4. Strategic Environmental Areas (SEA)

(No results)

5. High Ecological Significance wetlands on the Map of Queensland Wetland Environmental Values

(no results)

6a. Wetlands in High Ecological Value (HEV) waters

(no results)

6b. Waterways in High Ecological Value (HEV) waters

(no results)

Refer to **Map 2 - MSES - Wetlands and Waterways** for an overview of the relevant MSES.

MSES - Species

7a. Threatened (endangered or vulnerable) wildlife

Not applicable

7b. Special least concern animals

Not applicable

7c i. Koala habitat area - core (SEQ)

Values are present

7c ii. Koala habitat area - locally refined (SEQ)

Not applicable

7d. Wildlife habitat (sea turtle nesting areas)

Not applicable

Threatened (endangered or vulnerable) wildlife habitat suitability models

Species	Common name	NCA status	Presence
Boronia keysii	Keys boronia	V	None
Calyptorhynchus lathami	Glossy black cockatoo	V	None
Casuarius casuarius johnsonii	Sthn population cassowary	E	None
Crinia tinnula	Wallum froglet	V	None
Denisonia maculata	Ornamental snake	V	None
Euastacus bindal	Mount Elliot crayfish	CR	None
Euastacus binzayedi		CR	None
Euastacus eungella		E	None
Euastacus hystricosus		E	None
Euastacus jagara	Jagara hairy crayfish	CR	None
Euastacus maidae		CR	None
Euastacus monteithorum		E	None
Euastacus robertsi		E	None
Taudactylus pleione	Kroombit tinkerfrog	E	None
Litoria freycineti	Wallum rocketfrog	V	None
Litoria olongburensis	Wallum sedgefrog	V	None
Macadamia integrifolia		V	None
Melaleuca irbyana	swamp tea-tree	E	None
Macadamia ternifolia		V	None
Macadamia tetraphylla	bopple nut	V	None
Petrogale penicillata	brush-tailed rock-wallaby	V	None
Petrogale coenensis	Cape York rock-wallaby	V	None
Petrogale purpureicollis	purple-necked rock-wallaby	V	None
Petrogale sharmani	Sharmans rock-wallaby	V	None
Petrogale xanthopus celeris	yellow-footed rock-wallaby (Qld subspecies)	V	None
Petaurus gracilis	Mahogany Glider	E	None
Petrogale persephone	Proserpine rock-wallaby	E	None
Phascolarctos cinereus	Koala - outside SEQ*	E	None
Pezoporus wallicus wallicus	Eastern ground parrot	V	None
Xeromys myoides	Water Mouse	V	None

*For koala model, this includes areas outside SEQ. Check 7c SEQ koala habitat for presence/absence.

Threatened (endangered or vulnerable) wildlife species records

(No results)

Special least concern animal species records

(No results)

Shorebird habitat (critically endangered/endangered/vulnerable)

Not applicable

Shorebird habitat (special least concern)

Not applicable

**Nature Conservation Act 1992 (NCA) Status- Endangered (E), Vulnerable (V) or Special Least Concern Animal (SL). Environment Protection and Biodiversity Conservation Act 1999 (EPBC) status: Critically Endangered (CE) Endangered (E), Vulnerable (V)*

Migratory status (M) - China and Australia Migratory Bird Agreement (C), Japan and Australia Migratory Bird Agreement (J), Republic of Korea and Australia Migratory Bird Agreement (R), Bonn Migratory Convention (B), Eastern Flyway (E)

To request a species list for an area, or search for a species profile, access Wildlife Online at:

https://www.qld.gov.au/environment/plants-animals/species-list/

Refer to **Map 3a - MSES - Species - Threatened (endangered or vulnerable) wildlife and special least concern animals** and **Map 3b - MSES - Species - Koala habitat area (SEQ)** and **Map 3c - MSES - Wildlife habitat (sea turtle nesting areas)** for an overview of the relevant MSES.

MSES - Regulated Vegetation

For further information relating to regional ecosystems in general, go to:

https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/

For a more detailed description of a particular regional ecosystem, access the regional ecosystem search page at:

https://environment.ehp.qld.gov.au/regional-ecosystems/

8a. Regulated Vegetation - Endangered/Of concern in Category B (remnant)

Regional ecosystem	Vegetation management polygon	Vegetation management status
12.8.24	E-dom	rem_end
12.9-10.3	O-dom	rem_oc

8b. Regulated Vegetation - Endangered/Of concern in Category C (regrowth)

Regional ecosystem	Vegetation management polygon	Vegetation management status
12.8.24	E-dom	hvr_end
12.9-10.2/12.9-10.7/12.9-10.3/12.9-10.17a	O-subdom	hvr_oc

8c. Regulated Vegetation - Category R (GBR riverine regrowth)

Not applicable

8d. Regulated Vegetation - Essential habitat

Values are present

8e. Regulated Vegetation - intersecting a watercourse**

A vegetation management watercourse is mapped as present

8f. Regulated Vegetation - within 100m of a Vegetation Management wetland

Not applicable

Refer to **Map 4 - MSES - Regulated Vegetation** for an overview of the relevant MSES.

MSES - Offsets

9a. Legally secured offset areas - offset register areas

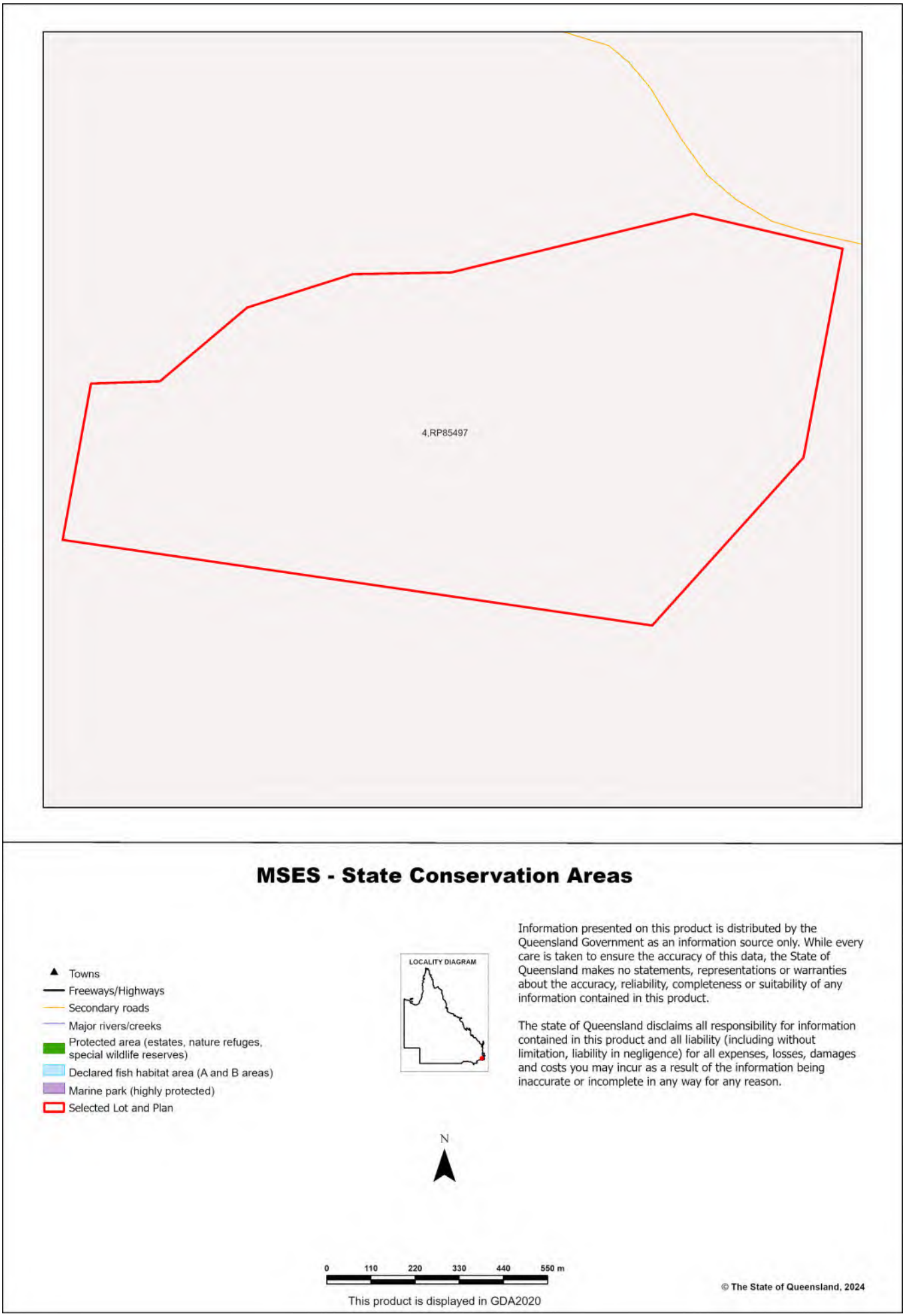
(No results)

9b. Legally secured offset areas - vegetation offsets through a Property Map of Assessable Vegetation

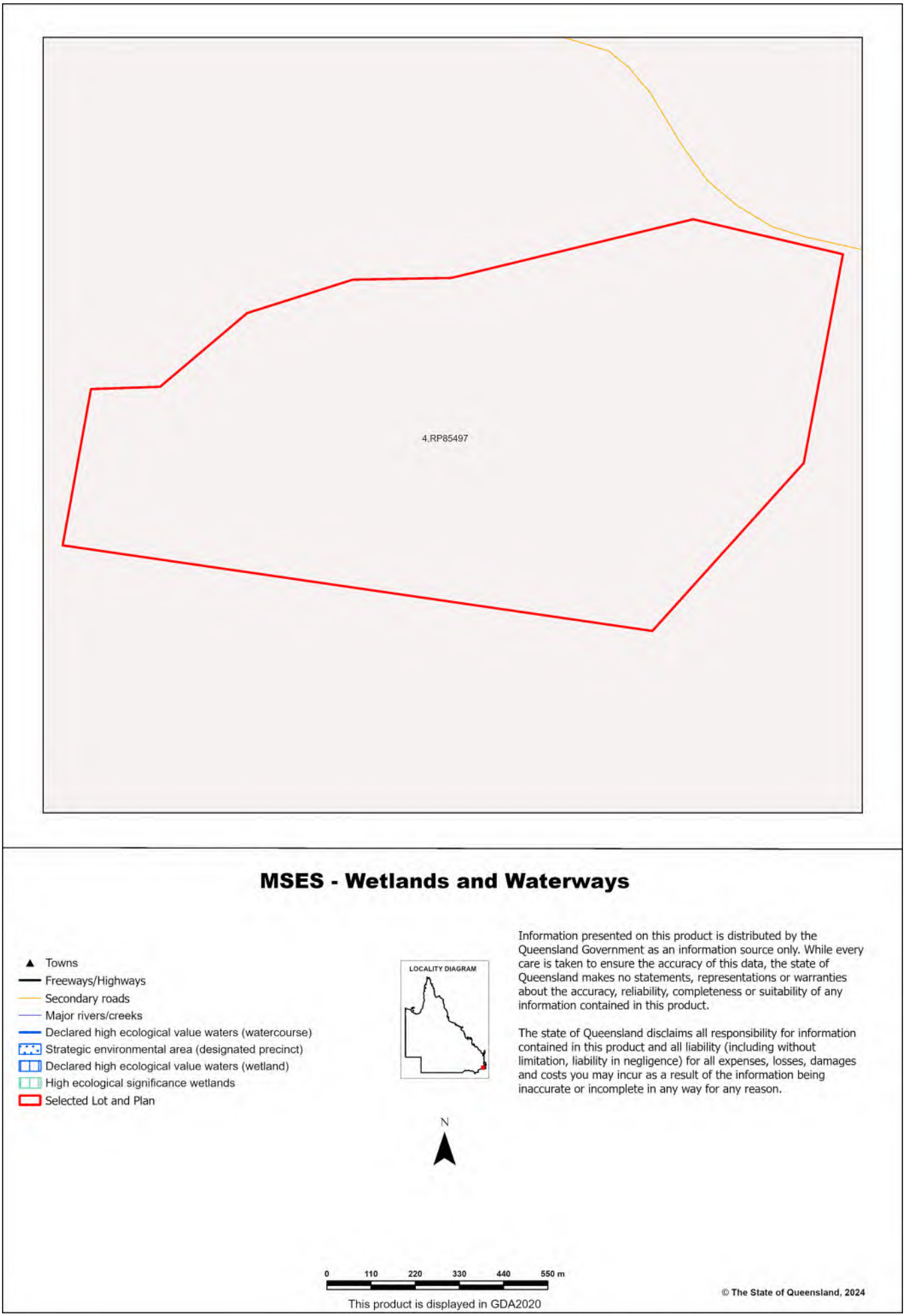
(No results)

Refer to **Map 5 - MSES - Offset Areas** for an overview of the relevant MSES.

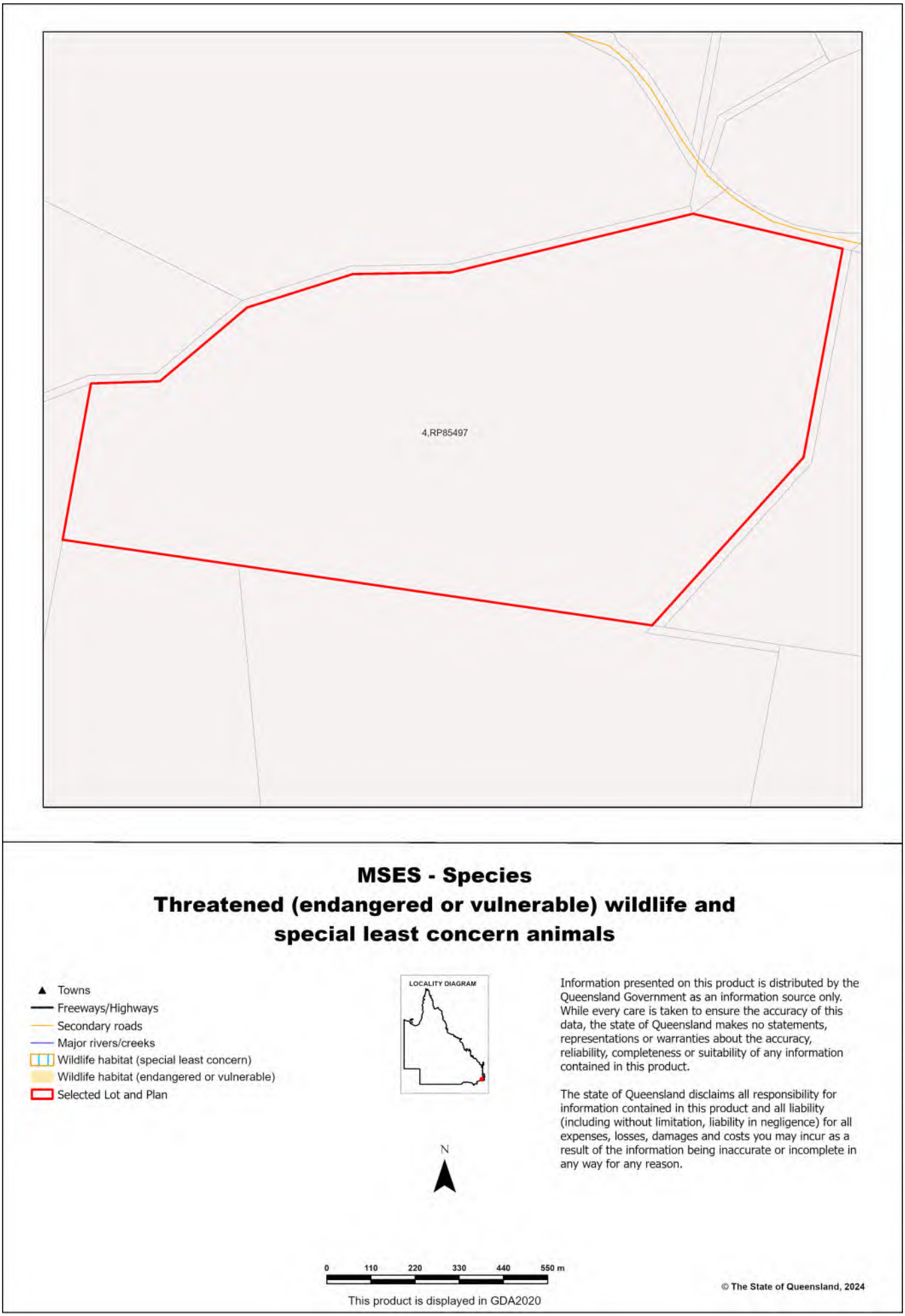
Map 1 - MSES - State Conservation Areas



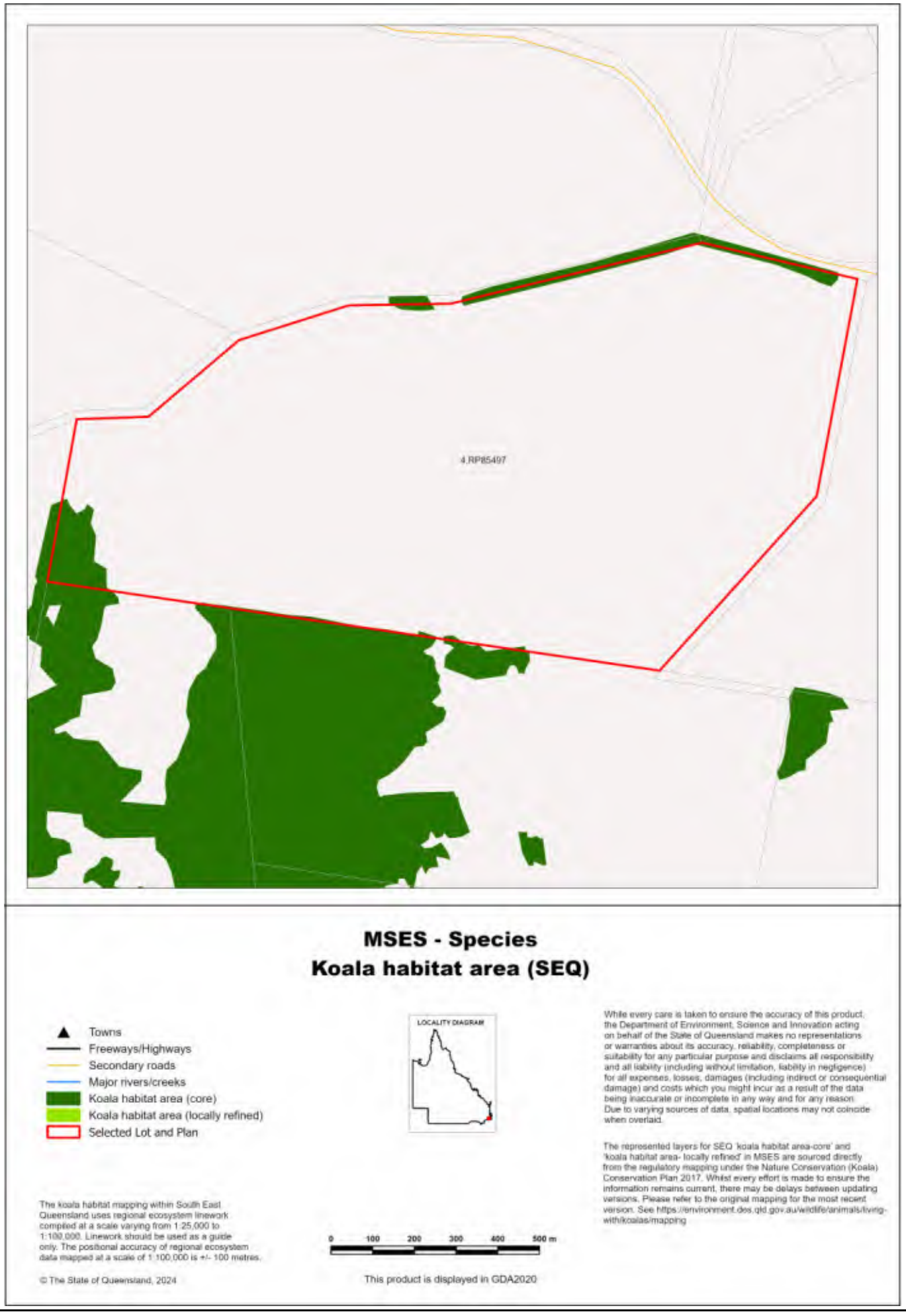
Map 2 - MSES - Wetlands and Waterways



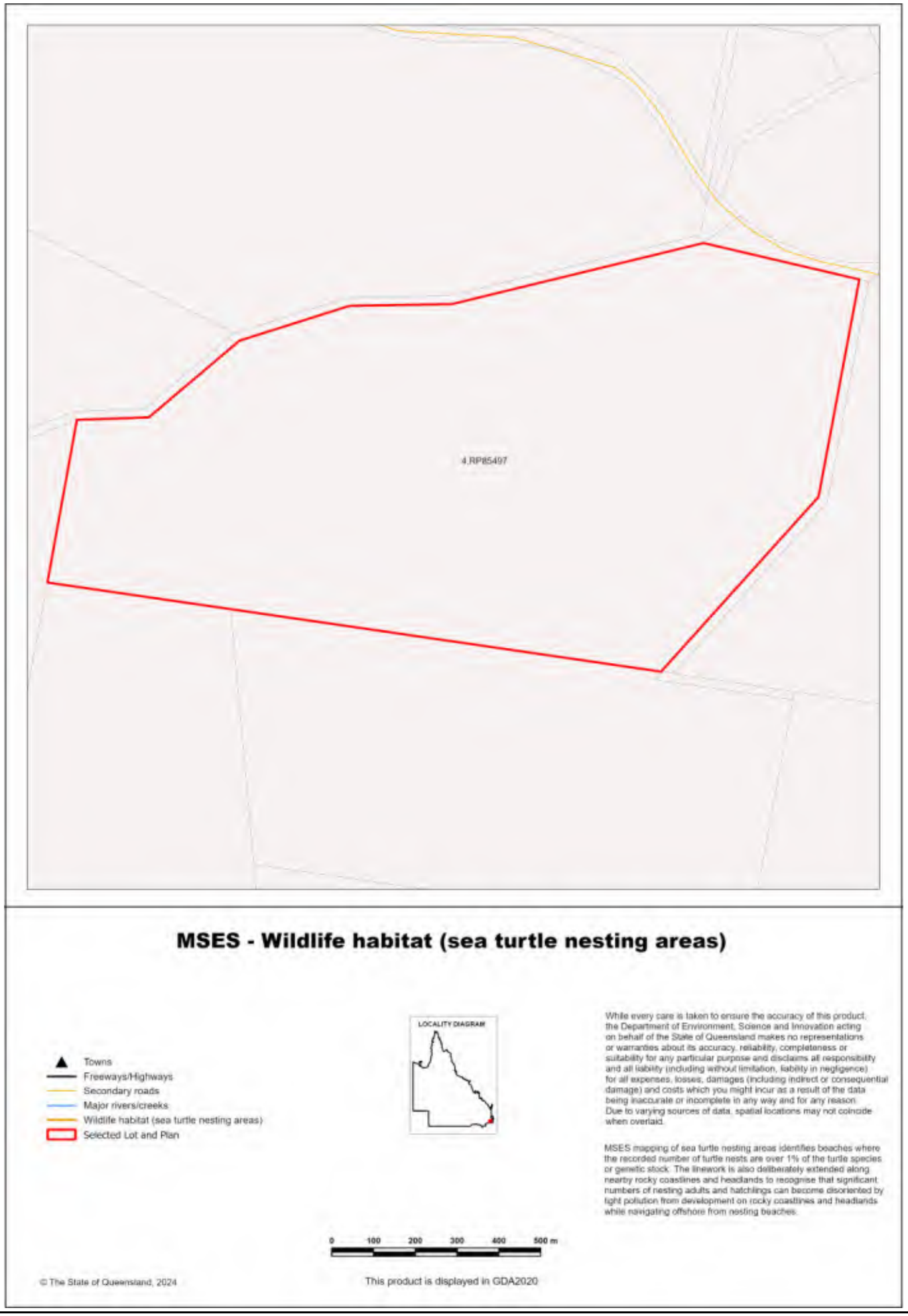
Map 3a - MSES - Species - Threatened (endangered or vulnerable) wildlife and special least concern animals



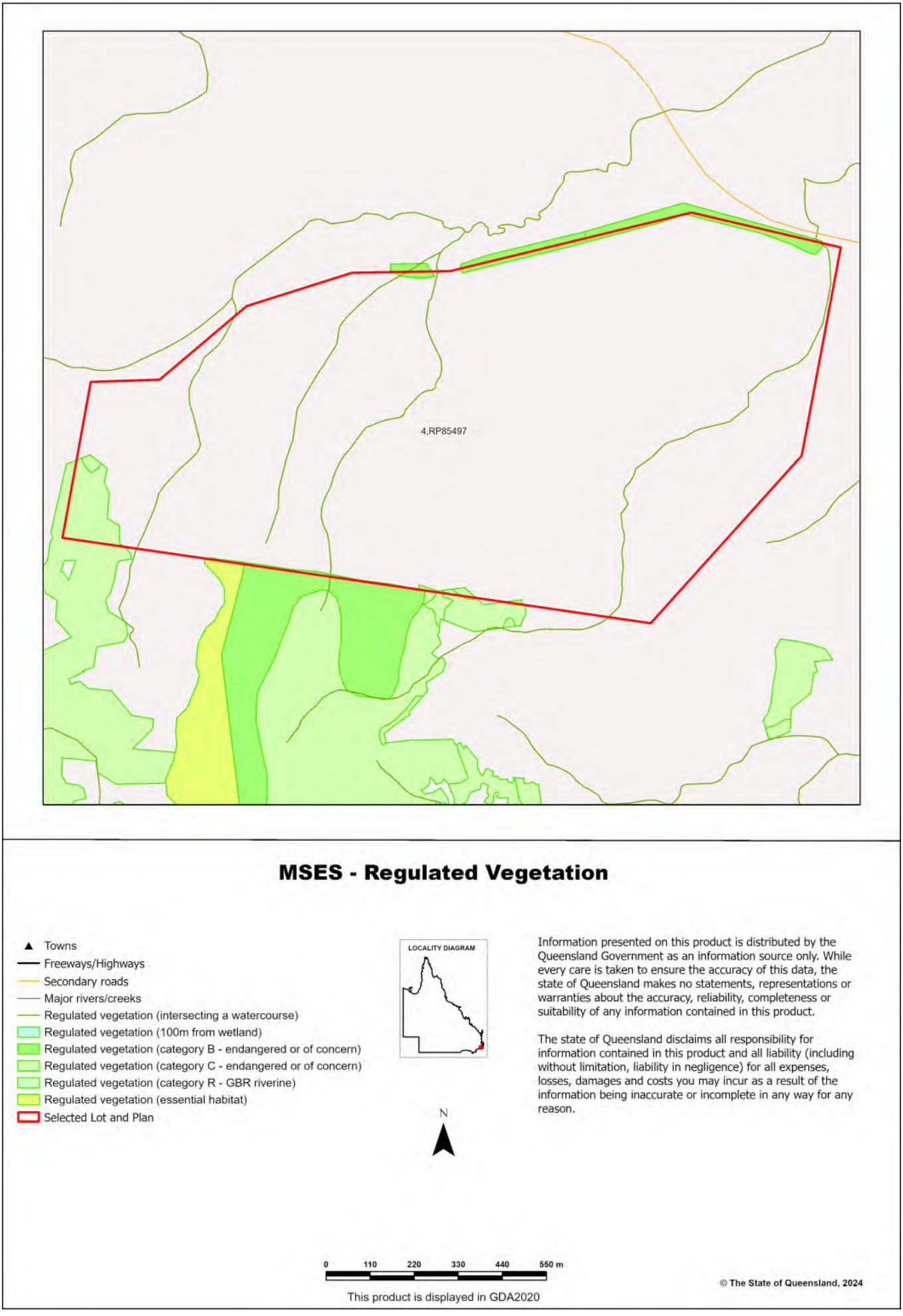
Map 3b - MSES - Species - Koala habitat area (SEQ)



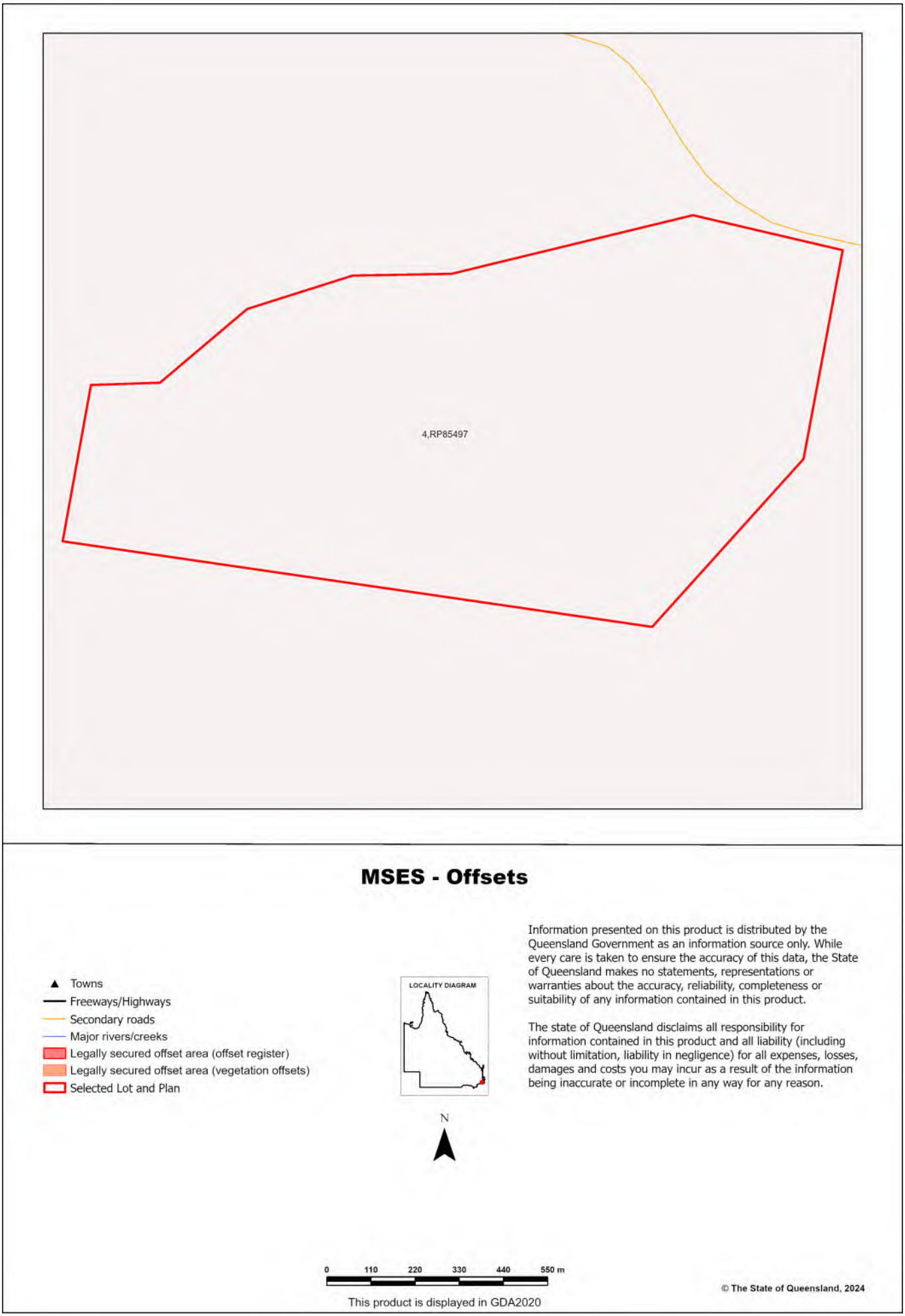
Map 3c - MSES - Species - Wildlife habitat (sea turtle nesting areas)



Map 4 - MSES - Regulated Vegetation



Map 5 - MSES - Offset Areas



Appendices

Appendix 1 - Matters of State Environmental Significance (MSES) methodology

MSES mapping is a regional-scale representation of the definition for MSES under the State Planning Policy (SPP). Its primary purpose is to support implementation of the SPP biodiversity policy.

MSES mapping does not replace the regulatory mapping or environmental values specifically called up under other laws or regulations.

MSES mapping does not determine whether state or local development assessment is required. For state assessment triggers refer to the Development Assessment Mapping System (DAMS). For local assessment triggers, refer to the relevant local planning scheme.

The Queensland Government's "Method for mapping - matters of state environmental significance can be downloaded from:

http://www.ehp.qld.gov.au/land/natural-resource/method-mapping-mses.html .

Appendix 2 - Source Data

The datasets listed below are available on request from:

http://qldspatial.information.qld.gov.au/catalogue/custom/index.page

- Matters of State environmental significance

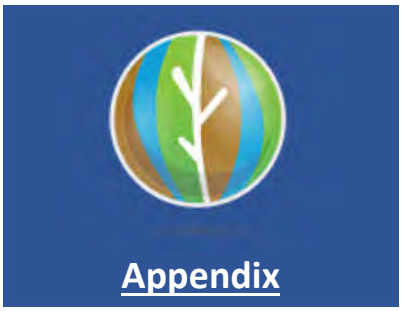
Note: MSES mapping is not based on new or unique data. The primary mapping product draws data from a number of underlying environment databases and geo-referenced information sources. MSES mapping is a versioned product that is updated generally on a twice-yearly basis to incorporate the changes to underlying data sources. Several components of MSES mapping made for the current version may differ from the current underlying data sources. To ensure accuracy, or proper representation of MSES values, it is strongly recommended that users refer to the underlying data sources and review the current definition of MSES in the State Planning Policy, before applying the MSES mapping.

Individual MSES layers can be attributed to the following source data available at QSpatial:

MSES layers	**current QSpatial data (http://qspatial.information.qld.gov.au)**
Protected Areas-Estates, Nature Refuges, Special Wildlife Reserves	- Protected areas of Queensland - Nature Refuges - Queensland - Special Wildlife Reserves- Queensland
Marine Park-Highly Protected Zones	Moreton Bay marine park zoning 2008
Fish Habitat Areas	Queensland fish habitat areas
Strategic Environmental Areas-designated	Regional Planning Interests Act - Strategic Environmental Areas
HES wetlands	Map of Queensland Wetland Environmental Values
Wetlands in HEV waters	HEV waters: - EPP Water intent for waters Source Wetlands: - Queensland Wetland Mapping (Current version 5) Source Watercourses: - Vegetation management watercourse and drainage feature map (1:100000 and 1:250000)
Wildlife habitat (threatened and special least concern)	-WildNet database species records - habitat suitability models (various) - SEQ koala habitat areas under the Koala Conservation Plan 2019
VMA regulated regional ecosystems	Vegetation management regional ecosystem and remnant map
VMA Essential Habitat	Vegetation management - essential habitat map
VMA Wetlands	Vegetation management wetlands map
Legally secured offsets	Vegetation Management Act property maps of assessable vegetation. For offset register data-contact DES
Regulated Vegetation Map	Vegetation management - regulated vegetation management map

Appendix 3 - Acronyms and Abbreviations

AOI	- Area of Interest
DESI	- Department of Environment, Science and Innovation
EP Act	- Environmental Protection Act 1994
EPP	- Environmental Protection Policy
GDA94	- Geocentric Datum of Australia 1994
GEM	- General Environmental Matters
GIS	- Geographic Information System
MSES	- Matters of State Environmental Significance
NCA	- Nature Conservation Act 1992
RE	- Regional Ecosystem
SPP	- State Planning Policy
VMA	- Vegetation Management Act 1999



10. APPENDIX C: TREE DATA

Table 8. Tree data

Number	X	Y	Species name	Common name	DBH (cm)	Height (m)	Spread (m)	TPZ (m)	Notes	tpz2	Status
1	492179.9	6905736	*Eucalyptus moluccana*	Gum-topped box	37	10	6	4.4	2 trunks	4	Remove
2	492123.9	6905726	*Eucalyptus moluccana*	Gum-topped box	95	15+	15	11.4		11	Retain
3	492106.9	6905743	*Eucalyptus moluccana*	Gum-topped box	78	15+	10	9.4m		9	Remove
4	492097.5	6905735	*Eucalyptus moluccana*	Gum-topped box	86	25+	14	10.3m		10	Remove
5	492097.6	6905732	*Eucalyptus moluccana*	Gum-topped box	62	15+	14	7.4m		7	Remove
6	492076.9	6905741	*Eucalyptus moluccana*	Gum-topped box	80	15+	14	9.6m		9	Retain
7	492077.7	6905743	*Eucalyptus moluccana*	Gum-topped box	80	15+	14	9.6m		9	Retain
8	492064.3	6905727	*Eucalyptus moluccana*	Gum-topped box	80	15+	10	9.6m		9	Remove
9	492075.7	6905717	*Eucalyptus moluccana*	Gum-topped box	34	10+	5	4.1m		4	Remove
10	492073	6905718	*Eucalyptus moluccana*	Gum-topped box	35	10+	5	4.2m		4	Remove
11	492055.9	6905724	*Eucalyptus moluccana*	Gum-topped box	39	10+	4	4.7m		4	Remove
14	492043	6905728	*Eucalyptus moluccana*	Gum-topped box	43	15+	14	5.2m		5	Remove
15	492034.9	6905723	*Eucalyptus moluccana*	Gum-topped box	63	15+	1	7.6m		7	Remove
16	492030.8	6905721	*Eucalyptus moluccana*	Gum-topped box	54	20+	10	6.5m		6	Remove
17	492037.6	6905711	*Eucalyptus moluccana*	Gum-topped box	43	15+	7	5.2m		5	Remove
18	492038.5	6905708	*Eucalyptus moluccana*	Gum-topped box	72	20+	16	8.6m		8	Remove
19	492022.6	6905720	*Corymbia citriodora subsp. variegata*	Spotted gum	42	15+	12	5m		3	Remove
20	492017.2	6905720	*Eucalyptus moluccana*	Gum-topped box	31	10+	8	3.7m		3	Remove
21	492015.6	6905717	*Eucalyptus moluccana*	Gum-topped box	64	15+	10	7.7m		7	Remove
23	492012.6	6905704	*Eucalyptus moluccana*	Gum-topped box	36	10+	5	4.3m		4	Remove
24	492006.5	6905698	*Eucalyptus moluccana*	Gum-topped box	58	15+	12	7m		7	Remove
27	492002.8	6905713	*Eucalyptus moluccana*	Gum-topped box	38	15+	8	4.6m		4	Remove
28	492002.8	6905716	*Eucalyptus moluccana*	Gum-topped box	52	15+	12	6.2m		6	Remove
29	491998.4	6905715	*Eucalyptus moluccana*	Gum-topped box	48	15+	12	5.7m		5	Remove
30	491999	6905714	*Eucalyptus moluccana*	Gum-topped box	67	20+	14	8m		8	Remove
31	491988.2	6905699	*Eucalyptus crebra*	Narrow-leaved ironbark	60	15+	8	7.2m		7	Remove
33	491979.2	6905703	*Eucalyptus moluccana*	Gum-topped box	82	20+	20	9.8m		9	Remove
34	491978.5	6905708	*Eucalyptus moluccana*	Gum-topped box	52	10+	10	6.2m		6	Remove

35	491965.6	6905702	*Eucalyptus moluccana*	Gum-topped box	38	10+	15	4.6m		4	Remove
36	491960.8	6905702	*Eucalyptus moluccana*	Gum-topped box	78	20+	20	9.4m		9	Remove
37	491949.9	6905702	*Corymbia citriodora subsp. variegata*	Spotted gum	23	10+	3	2.8m	Average health	2	Remove
38	491947.6	6905701	*Corymbia citriodora subsp. variegata*	Spotted gum	29	15+	6	3.5m	Poor health	3	Remove
39	491965.2	6905688	*Corymbia citriodora subsp. variegata*	Spotted gum	19	10+	4	2.3m	Average health	2	Remove
40	491959.3	6905689	*Corymbia citriodora subsp. variegata*	Spotted gum	23	10+	4	2.8m	Average health	2	Remove
41	491954.8	6905684	*Eucalyptus moluccana*	Gum-topped box	55	15+	12	6.6m		6	Remove
42	491952.9	6905686	*Eucalyptus moluccana*	Gum-topped box	75	20+	16	9m		9	Remove
43	491942.9	6905685	*Eucalyptus moluccana*	Gum-topped box	37	15+	10	4.4m		4	Remove
45	491937.1	6905681	*Eucalyptus moluccana*	Gum-topped box	70	20+	15	8.4m		8	Remove
46	491929.6	6905681	*Eucalyptus moluccana*	Gum-topped box	51	15+	10	6.1m		6	Remove
47	491926.3	6905682	*Eucalyptus moluccana*	Gum-topped box	56	20+	15	6.7m		6	Remove
48	491915.8	6905676	*Eucalyptus moluccana*	Gum-topped box	80	20+	15	9.6m		9	Remove
49	491924.8	6905695	*Eucalyptus moluccana*	Gum-topped box	50	15+	10	6m		6	Remove
50	491920	6905693	*Eucalyptus moluccana*	Gum-topped box	35	15+	10	4.2m		4	Remove
51	491917.3	6905692	*Eucalyptus moluccana*	Gum-topped box	75	20+	15	9m		9	Remove
52	491914.1	6905691	*Eucalyptus moluccana*	Gum-topped box	45	20+	15	5.4m		5	Remove
53	491913.9	6905692	*Eucalyptus tereticornis*	Queensland blue gum	41	15+	10	4.9m		4	Remove
54	491912.7	6905691	*Eucalyptus moluccana*	Gum-topped box	70	15+	15	8.4m		8	Remove
55	491906.7	6905687	*Eucalyptus moluccana*	Gum-topped box	16	10+	3	2m		2	Remove
56	491904.3	6905684	*Eucalyptus moluccana*	Gum-topped box	68	20+	10	8.2m		8	Remove
57	491901	6905685	*Eucalyptus moluccana*	Gum-topped box	23	10+	5	2.8m		2	Remove
58	491895.2	6905680	*Eucalyptus moluccana*	Gum-topped box	23	15+	5	2.8m		2	Remove
59	491892.2	6905683	*Eucalyptus moluccana*	Gum-topped box	100	20+	20	12m			Remove
60	491883.3	6905684	*Corymbia citriodora subsp. variegata*	Spotted gum	34	10+	5	4.1m		4	Remove
61	491880	6905680	*Eucalyptus crebra*	Narrow-leaved ironbark	400	7		2.3m		2	Remove
62	491875.6	6905677	*Corymbia citriodora subsp. variegata*	Spotted gum	81	20+	14	9.7m		9	Remove
63	491876	6905664	*Eucalyptus tereticornis*	Queensland blue gum	46	10+	10	5.5m		5	Remove
64	491869.5	6905661	*Corymbia citriodora subsp. variegata*	Spotted gum	31	10+	5	3.7m		3	Remove
65	491861	6905659	*Eucalyptus moluccana*	Gum-topped box	100	20+	20	13.2m		13	Remove
66	491854	6905666	*Corymbia citriodora subsp. variegata*	Spotted gum	64	15+	12	7.7m		7	Remove

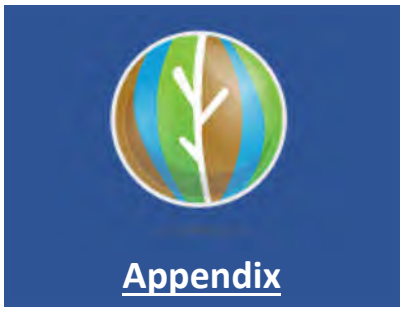
67	491857.1	6905677	*Corymbia citriodora subsp. variegata*	Spotted gum	32	10+	8	3.8m		3	Retain
68	491841.8	6905661	*Corymbia citriodora subsp. variegata*	Spotted gum	45	15+	10	5.4m		5	Remove
69	491840.1	6905651	*Corymbia citriodora subsp. variegata*	Spotted gum	47	15+	5	5.6m		5	Remove
70	491837.9	6905653	*Eucalyptus crebra*	Narrow-leaved ironbark	32	15+	10	3.8m		3	Remove
71	491821.6	6905666	*Eucalyptus crebra*	Narrow-leaved ironbark	35	10+	10	4.2m		4	Remove
72	491821	6905665	*Eucalyptus moluccana*	Gum-topped box	67	20+	14	8m		8	Remove
73	491821.9	6905649	*Eucalyptus moluccana*	Gum-topped box	77	20+	15	9.2m		9	Remove
74	491807.8	6905663	*Corymbia citriodora subsp. variegata*	Spotted gum	47	15+	8	5.6m		5	Remove
75	491802.6	6905662	*Eucalyptus moluccana*	Gum-topped box	70	20+	10	8.4m		8	Possible retain
76	491794	6905661	*Eucalyptus tereticornis*	Queensland blue gum	100	20+	20	12m		12	Retain
77	491787.5	6905656	*Eucalyptus moluccana*	Gum-topped box	64	20+	10	7.7m		7	Remove
78	491778.5	6905654	*Eucalyptus tereticornis*	Queensland blue gum	78	20+	15	9.4m		9	Remove
80	491795	6905640	*Corymbia intermedia*		60	10+	10	7.32m	Poor health	7	Remove
81	491785	6905640	*Eucalyptus crebra*	Narrow-leaved ironbark	28	10+	8	3.4m	Poor health	3	Remove
82	491785	6905644	*Eucalyptus tereticornis*	Queensland blue gum	42	15+	10	5m		5	Remove
84	491774.2	6905646	*Corymbia tessellaris*	Moreton Bay ash	48	15+	8	5.7m	Average health	5	Remove
85	491772.7	6905636	*Eucalyptus tereticornis*	Queensland blue gum	78	25+	18	9.4m		9	Retain
86	491770.6	6905633	*Eucalyptus crebra*	Narrow-leaved ironbark	67	15+	20	8m	Average health	8	Remove
87	491765.4	6905634	*Eucalyptus crebra*	Narrow-leaved ironbark	34	15+	8	4.1m		4	Remove
88	491764.9	6905642	*Eucalyptus moluccana*	Gum-topped box	80	20+	18	9.6m		9	Remove
89	491763	6905642	*Corymbia tessellaris*	Moreton Bay ash	21	5	7	2.5m	Average health	2	Remove
90	491751.7	6905628	*Eucalyptus tereticornis*	Queensland blue gum	56	20	15	6.7m		6	Remove
91	491747.5	6905626	*Eucalyptus tereticornis*	Queensland blue gum	31	10	6	3.7m		3	Remove
92	491740.4	6905624	*Eucalyptus crebra*	Narrow-leaved ironbark	37	15+	10	4.4m	Average health	4	Remove
93	491741.1	6905627	*Eucalyptus tereticornis*	Queensland blue gum	54	20	10	6.5m		6	Remove
95	491740.3	6905641	*Eucalyptus tereticornis*	Queensland blue gum	110	25+	20	13.2m		13	Remove
96	491735	6905636	*Eucalyptus tereticornis*	Queensland blue gum	56	20+	10	6.7m		6	Remove
97	491732.5	6905635	*Corymbia citriodora subsp. variegata*	Spotted gum	45	15+	8	5.4m		5	Remove
98	491720.5	6905632	*Corymbia citriodora subsp. variegata*	Spotted gum	36	15	10	4.3m	Average health	4	Remove
99	491719.1	6905632	*Corymbia citriodora subsp. variegata*	Spotted gum	41	10	14	4.9m		4	Remove
100	491726.2	6905626	*Corymbia citriodora subsp. variegata*	Spotted gum	75	25+	15	9m		9	Remove

101	491729.2	6905625	*Eucalyptus tereticornis*	Queensland blue gum	39	15+	10	4.7m		4	Remove
102	491726.3	6905619	*Eucalyptus tereticornis*	Queensland blue gum	57	20+	15	6.8m		6	Remove
103	491721.4	6905620	*Eucalyptus tereticornis*	Queensland blue gum	43	20+	14	5.2m		5	Remove
104	491720	6905620	*Eucalyptus tereticornis*	Queensland blue gum	39	20+	10	4.7m		4	Remove
105	491710.3	6905617	*Eucalyptus crebra*	Narrow-leaved ironbark	47	15+	10	5.6m		5	Remove
107	491705	6905615	*Corymbia citriodora subsp. variegata*	Spotted gum	38	15+	10	4.6m		4	Remove
108	491697.2	6905613	*Eucalyptus tereticornis*	Queensland blue gum	55	25+	10	6.6m		6	Remove
109	491695.6	6905614	*Eucalyptus tereticornis*	Queensland blue gum	47	20+	15	5.6m		5	Remove
110	491690.8	6905609	*Eucalyptus tereticornis*	Queensland blue gum	80	25+	20	9.6m		9	Possible retain
112	491679.8	6905614	*Eucalyptus moluccana*	Gum-topped box	20	10+	8	2.4m		2	Remove
113	491680.3	6905610	*Eucalyptus tereticornis*	Queensland blue gum	36	15+	10	4.3m		4	Remove
114	491680.6	6905607	*Corymbia citriodora subsp. variegata*	Spotted gum	90	25+	20	10.8m		10	Possible retain
115	491676.1	6905608	*Eucalyptus moluccana*	Gum-topped box	60	20+	12	7.2m		7	Remove
118	491668.1	6905604	*Eucalyptus moluccana*	Gum-topped box	68	20+	10	8.2m		8	Remove
119	491666	6905606	*Eucalyptus tereticornis*	Queensland blue gum	46	15	10	5.5m		5	Remove
120	491664.5	6905606	*Eucalyptus moluccana*	Gum-topped box	74	20+	15	8.9m		8	Remove
121	491662.6	6905609	*Eucalyptus tereticornis*	Queensland blue gum	17	10+	5	2m	Average health	2	Remove
122	491660.9	6905609	*Eucalyptus moluccana*	Gum-topped box	60	20+	15	7.2m		7	Remove
123	491659	6905607	*Eucalyptus moluccana*	Gum-topped box	75	25+	14	9m		9	Remove
124	491653.7	6905605	*Eucalyptus moluccana*	Gum-topped box	30	15+	5	3.6m	Average health	3	Remove
125	491664.5	6905602	*Eucalyptus crebra*	Narrow-leaved ironbark	23	5	7	2.8m	Average health	2	Remove
126	491663.1	6905601	*Eucalyptus moluccana*	Gum-topped box	91	25+	18	10.9m		10	Remove
127	491654.5	6905614	*Eucalyptus moluccana*	Gum-topped box	65	20+	12	7.8m		7	Remove
128	491653.1	6905614	*Eucalyptus moluccana*	Gum-topped box	80	15+	15	9.6m		9	Remove
129	491657.7	6905606	*Corymbia intermedia*		60	15+	7	7.2m		7	Remove
130	491650.1	6905604	*Eucalyptus moluccana*	Gum-topped box	90	20+	10	10.8m		10	Remove
131	491648.4	6905602	*Eucalyptus tereticornis*	Queensland blue gum	45	20+	10	5.5m		5	Remove
133	491640.9	6905601	*Eucalyptus tereticornis*	Queensland blue gum	35	15+	7	4.2m	Average health	4	Remove
134	491642.4	6905599	*Eucalyptus tereticornis*	Queensland blue gum	95	25	15	11.4m	Poor health	11	Remove
135	491635.2	6905593	*Eucalyptus tereticornis*	Queensland blue gum	81	20	16	9.7m		9	Remove
136	491630	6905596	*Eucalyptus tereticornis*	Queensland blue gum	44	20	7	5.3m	Average health	5	Remove

137	491622.7	6905592	*Eucalyptus moluccana*	Gum-topped box	45	20	10	5.4m	Average health	5	Remove
139	491609.6	6905591	*Eucalyptus moluccana*	Gum-topped box	48	20	8	5.7m		5	Remove
140	491633.9	6905607	*Eucalyptus tereticornis*	Queensland blue gum	26	10	4	3.1m	Poor health	3	Remove
141	491624.2	6905611	*Eucalyptus moluccana*	Gum-topped box	26	10	6	3.1m	Average health	3	Remove
143	491622.7	6905601	*Eucalyptus moluccana*	Gum-topped box	56	20	10	6.7m		6	Remove
144	491607.5	6905592	*Eucalyptus crebra*	Narrow-leaved ironbark	370	8		2.8m	Average health	2	Remove
145	491610	6905609	*Eucalyptus crebra*	Narrow-leaved ironbark	64	20	16	7.7m		7	Retain
146	491608.5	6905587	*Eucalyptus crebra*	Narrow-leaved ironbark	60	20+	15	7.2m		7	Remove
147	491604	6905591	*Eucalyptus moluccana*	Gum-topped box	30	10+	8	3.6m		3	Remove
148	491602.3	6905589	*Eucalyptus moluccana*	Gum-topped box	71	20+	14	8.5m		8	Remove
149	491604	6905586	*Eucalyptus moluccana*	Gum-topped box	75	25+	16	9m		9	Remove
151	491593.5	6905594	*Eucalyptus moluccana*	Gum-topped box	80	20	18	9.6m		9	Remove
152	491584.5	6905592	*Eucalyptus moluccana*	Gum-topped box	39	15+	7	4.7m	Poor health	4	Remove
153	491572.8	6905594	*Eucalyptus moluccana*	Gum-topped box	87	25	18	10.4m		10	Remove
154	491567.3	6905593	*Corymbia citriodora subsp. variegata*	Spotted gum	24	5+	6	2.9m	Average health	2	Remove
156	491576.4	6905578	*Eucalyptus moluccana*	Gum-topped box	86	20	14	10.3m	Average health	10	Remove
157	491549.8	6905578	*Eucalyptus moluccana*	Gum-topped box	30	15	6	3.6m	Average health	3	Remove
158	491547	6905571	*Eucalyptus moluccana*	Gum-topped box	88	20	18	10.5m		10	Remove
159	491545.4	6905572	*Eucalyptus moluccana*	Gum-topped box	59	15	10	7.1m		7	Remove
160	491543.9	6905571	*Eucalyptus moluccana*	Gum-topped box	53	20	10	6.4m		6	Remove
161	491540.7	6905576	*Eucalyptus moluccana*	Gum-topped box	43	20	8	5.2m	Average health	5	Remove
162	491545.8	6905589	*Eucalyptus moluccana*	Gum-topped box	51	20	10	6.1m		6	Remove
164	491529.1	6905585	*Eucalyptus moluccana*	Gum-topped box	33	10	8	4m		4	Remove
165	491527.1	6905585	*Eucalyptus moluccana*	Gum-topped box	100	20	16	12m		12	Remove
166	491523.8	6905587	*Eucalyptus moluccana*	Gum-topped box	32	15	3	3.8m		3	Remove
167	491521.2	6905585	*Eucalyptus moluccana*	Gum-topped box	110	25	14	13.2m		13	Remove
168	491512.9	6905585	*Eucalyptus moluccana*	Gum-topped box	44	15	14	5.3m		5	Remove
169	491511.3	6905585	*Eucalyptus moluccana*	Gum-topped box	60	20	16	7.2m		7	Remove
170	491501.3	6905584	*Eucalyptus moluccana*	Gum-topped box	63	25	15	7.6m		7	Remove
171	491498.3	6905589	*Eucalyptus moluccana*	Gum-topped box	68	25	15	8.2m		8	Retain
172	491508.4	6905569	*Corymbia citriodora subsp. variegata*	Spotted gum	19	5	1	2.3m	Poor health	2	Remove

173	491505.8	6905569	*Corymbia citriodora subsp. variegata*	Spotted gum	35	10	7	4.2m	Poor health	4	Remove
174	491499.4	6905571	*Eucalyptus crebra*	Narrow-leaved ironbark	7	10	16	5.6m	Poor health	5	Remove
175	491492.1	6905570	*Eucalyptus moluccana*	Gum-topped box	67	20	14	8m		8	Remove
176	491489.8	6905571	*Eucalyptus tereticornis*	Queensland blue gum	35	10+	8	4.2m		4	Remove
178	491488.1	6905574	*Eucalyptus moluccana*	Gum-topped box	42	15+	8	5m	Average health	5	Remove
179	491482.1	6905573	*Eucalyptus moluccana*	Gum-topped box	35	10+	8	4.2m	Average health	4	Remove
180	491481.6	6905585	*Eucalyptus moluccana*	Gum-topped box	51	15+	10	6.1m	Average health	6	Remove
182	491474	6905573	*Eucalyptus moluccana*	Gum-topped box	75	15+	12	9m		9	Remove
183	491472.7	6905572	*Eucalyptus moluccana*	Gum-topped box	64	15+	12	7.7m		7	Remove
184	491456.8	6905569	*Eucalyptus moluccana*	Gum-topped box	37	10+	8	4.4m		4	Remove
185	491451.1	6905571	*Eucalyptus moluccana*	Gum-topped box	73	20+	12	8.8m		8	Remove
186	491447	6905569	*Eucalyptus moluccana*	Gum-topped box	49	10+	10	5.9m		5	Remove
187	491445.7	6905573	*Eucalyptus moluccana*	Gum-topped box	53	10+	7	6.4m		6	Remove
188	491444.9	6905578	*Eucalyptus moluccana*	Gum-topped box	52	10+		6.2m	Average health	6	Remove
189	491445.7	6905577	*Eucalyptus moluccana*	Gum-topped box	43	10+	3	5.2m	Average health	5	Remove
190	491446.3	6905578	*Eucalyptus moluccana*	Gum-topped box	31	10	5	3.7m	Average health	3	Remove
191	491446.8	6905578	*Eucalyptus moluccana*	Gum-topped box	28	10	7	3.4m	Average health	3	Remove
192	491446.9	6905579	*Eucalyptus moluccana*	Gum-topped box	62	20+	15	7.4m	Average health	7	Remove
194	491440.3	6905577	*Eucalyptus moluccana*	Gum-topped box	36	10+	6	4.3m	Average health	4	Remove
195	491435.5	6905578	*Eucalyptus tereticornis*	Queensland blue gum	90	20+	16	10.8m	Average health	10	Remove
196	491422.5	6905587	*Corymbia citriodora subsp. variegata*	Spotted gum	43	10+	9	5.2m	Average health	5	Remove
197	491415	6905573	*Eucalyptus crebra*	Narrow-leaved ironbark	22	5	7	2.6m	Poor health	2	Remove
198	491422.4	6905569	*Eucalyptus tereticornis*	Queensland blue gum	78	10+	10	9.4m	Average health	9	Remove
199	491421	6905568	*Corymbia citriodora subsp. variegata*	Spotted gum	70	20+	16	8.4m		8	Remove
200	491419.5	6905569	*Eucalyptus moluccana*	Gum-topped box	65	20+	18	7.8m		7	Remove
201	491408.2	6905574	*Eucalyptus moluccana*	Gum-topped box	25	10+	5	3m	Average health	3	Remove
202	491407.9	6905572	*Eucalyptus tereticornis*	Queensland blue gum	88	15+	14	10.5m		10	Remove
203	491392.8	6905575	*Eucalyptus tereticornis*	Queensland blue gum	45	15+	7	5.4m		5	Remove
204	491390.7	6905569	*Eucalyptus tereticornis*	Queensland blue gum	47	15+	8	5.6m		5	Remove
205	491391.4	6905568	*Eucalyptus tereticornis*	Queensland blue gum	38	10+	7	4.6m		4	Remove
206	491366.5	6905576	*Eucalyptus tereticornis*	Queensland blue gum	59	15+	14	7.1m		7	Remove

207	491356.9	6905585	*Corymbia tessellaris*	Moreton Bay ash	27	10+	7	3.2m		3	Remove
208	491356.5	6905584	*Corymbia tessellaris*	Moreton Bay ash	34	10+	8	4.1m		4	Remove
209	491356.4	6905582	*Eucalyptus moluccana*	Gum-topped box	78	20+	18	9.4m		9	Remove
210	491357.6	6905568	*Eucalyptus moluccana*	Gum-topped box	100	20+	18	12m			Remove
211	491352.7	6905568	*Eucalyptus tereticornis*	Queensland blue gum	36	10+	7	4.3m		4	Remove
213	491336.7	6905580	*Eucalyptus tereticornis*	Queensland blue gum	36	15+	3	4.3m		4	Remove
214	491334.9	6905583	*Eucalyptus moluccana*	Gum-topped box	24	10+	5	2.9m		2	Remove
215	491333.5	6905584	*Eucalyptus moluccana*	Gum-topped box	54	20+	18	6.5m		6	Remove
216	491332.6	6905583	*Eucalyptus moluccana*	Gum-topped box	40	15+	10	4.8m		4	Remove
217	491326.8	6905581	*Eucalyptus tereticornis*	Queensland blue gum	54	15+	14	6.5m		6	Remove
218	491325.7	6905576	*Eucalyptus moluccana*	Gum-topped box	58	20+	10	7m		7	Remove
219	491331.3	6905568	*Eucalyptus tereticornis*	Queensland blue gum	49	15+	8	5.9m		5	Remove
220	491320	6905578	*Eucalyptus moluccana*	Gum-topped box	52	15+	14	6.2m		6	Remove
221	491317.2	6905573	*Eucalyptus tereticornis*	Queensland blue gum	59	20+	15	7.1m		7	Remove
222	491316.2	6905579	*Corymbia tessellaris*	Moreton Bay ash	23	5+	2	2.8m	Poor health	2	Remove
223	491315.4	6905578	*Corymbia tessellaris*	Moreton Bay ash	38	10+	10	4.6m		4	Remove
224	491312.8	6905577	*Corymbia tessellaris*	Moreton Bay ash	28	5+	2	3.4m	Poor health	3	Remove
225	491311.5	6905573	*Eucalyptus moluccana*	Gum-topped box	47	15+	10	5.6m		5	Remove
226	491305.3	6905558	*Corymbia tessellaris*	Moreton Bay ash	52	15+	14	6.2m		6	Remove
227	491296.4	6905555	*Corymbia tessellaris*	Moreton Bay ash	43	5+	7	5.2m		5	Remove
228	491285.9	6905552	*Eucalyptus moluccana*	Gum-topped box	74	15+	16	8.9m		8	Remove
229	491267.8	6905564	*Eucalyptus moluccana*	Gum-topped box	110	15+	18	13.2m		13	Remove
230	491261.5	6905560	*Eucalyptus moluccana*	Gum-topped box	38	15+	10	4.6m		4	Remove
231	491249.7	6905558	*Eucalyptus moluccana*	Gum-topped box	68	15+	14	8.2m		8	Remove
232	491247.1	6905536	*Eucalyptus crebra*	Narrow-leaved ironbark	51	15+	7	6.1m		6	Remove



11. APPENDIX D: KOALA IMPACT SUMMARY MAP

FIGURE 8

PPROPOSED OFFSET LOCATION

LEGEND

- 1 m contours
- Watercourses
- Cadastral data
- Core koala habitat area
- Impact area from construction
- Offset area

ADDRESS: 260 MITCHELL ROAD, BROMELTON

CLIENT: ACS Engineers

AUTHOR: Simon Muirhead

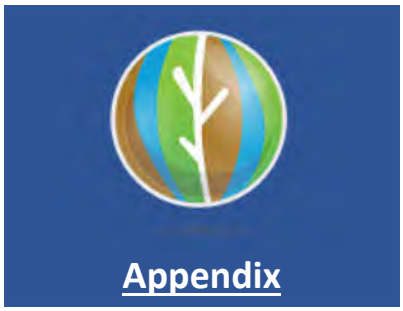
DATE: 27.08.24

PAGE SIZE: A3

SCALE: 1:9000

COORDINATE SYSTEM: GDA94 MGA56

ENVIROSPHERE consulting

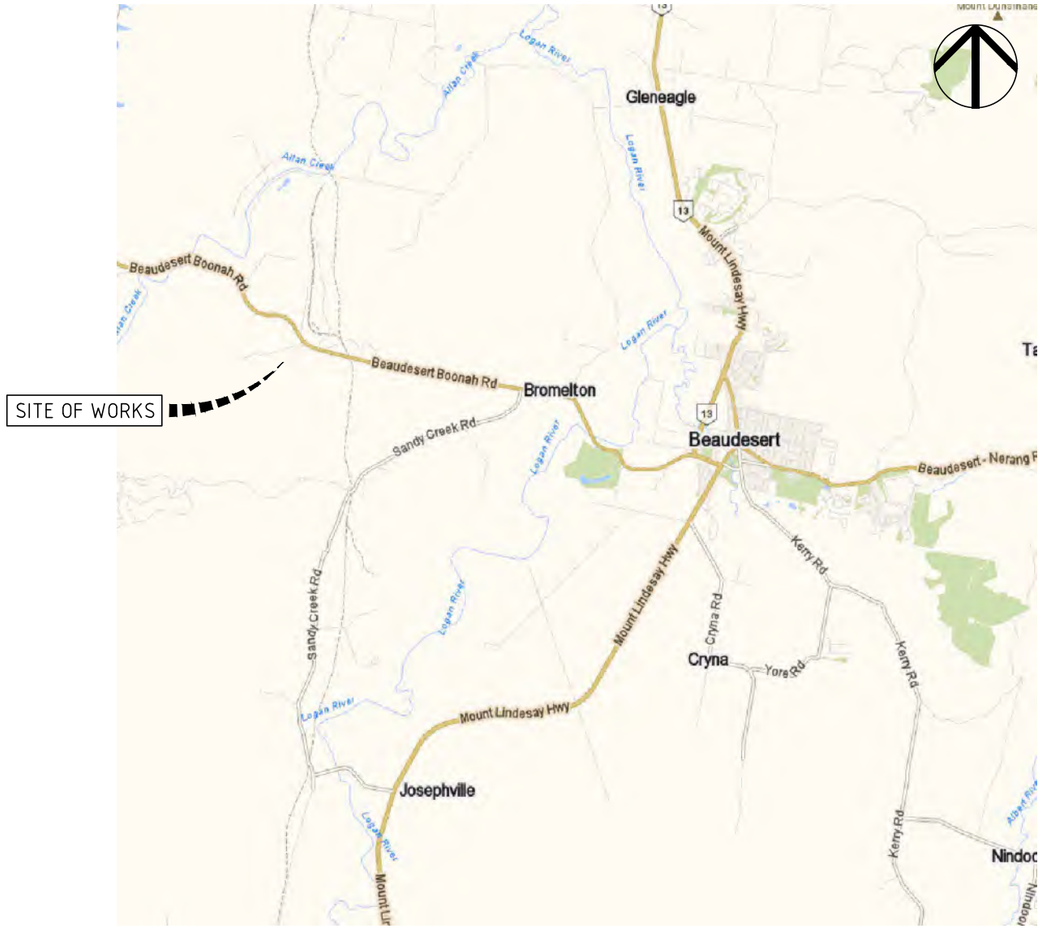


12. APPENDIX E: PLAN OF DEVELOPMENT

ACS Engineers
CIVIL | ENVIRONMENTAL | PROJECT MANAGEMENT

MITCHELL ROAD – NEW ROAD CONSTRUCTION

260 MITCHELL ROAD, BROMELTON QLD 4285



LOCALITY PLAN
N.T.S

SHEET NO.	SHEET TITLE	REVISION
01	COVER SHEET	1
02	TYPICAL CROSS SECTION	1
03	GENERAL NOTES	1
04	PLAN AND LONG SECTION - SHEET 01	1
05	PLAN AND LONG SECTION - SHEET 02	1
06	PLAN AND LONG SECTION - SHEET 03	1
07	PROPERTY ACCESS LAYOUT	1
08	CROSS SECTIONS - SHEET 01	1
09	CROSS SECTIONS - SHEET 02	1
10	CROSS SECTIONS - SHEET 03	1
11	CROSS SECTIONS - SHEET 04	1
12	CROSS SECTIONS - SHEET 05	1
13	CROSS SECTIONS - SHEET 06	1
14	CATCHMENT PLAN	1
15	CULVERT DETAILS	1
16	ESC NOTES - PAGE 1	1
17	ESC NOTES - PAGE 2	1
18	ESC DETAILS	1
19	ESC LAYOUT PLAN	1

				SURVEY DATA		
				DATUM	GDA2020	
				MAP GRID	MGA56	
				HEIGHT ORIGIN	AHD	
				SURVEY BOOKS		
1	FOR APPROVAL	NJF	30/06/24	NJF	30/06/24	
	REVISION/DETAILS	DWN	DATE	DES	DATE	

FILE: C:\12DS\DATA\ACSSYN\220089 SOILCO BROMELTON DEVELOPMENT - 260 MITCHELL ROAD_596\DESIGN\DRAWING FILES\ACS-220089-GEN.DWG PLOT TIME: 04/7/2024 - 11:40AM BY USER: MALINDASELLARS

SOILCO
PO BOX 199, UNANDERRA NSW 2526

BROMELTON DEVELOPMENT
260 MITCHELL ROAD, BROMELTON QLD 4285

COVER SHEET

ENGINEERING CERTIFICATION (RPEQ)

#	FIELD	NAME	SIGNATURE	DATE
13697	CIVIL	S. SHAY		04/07/24

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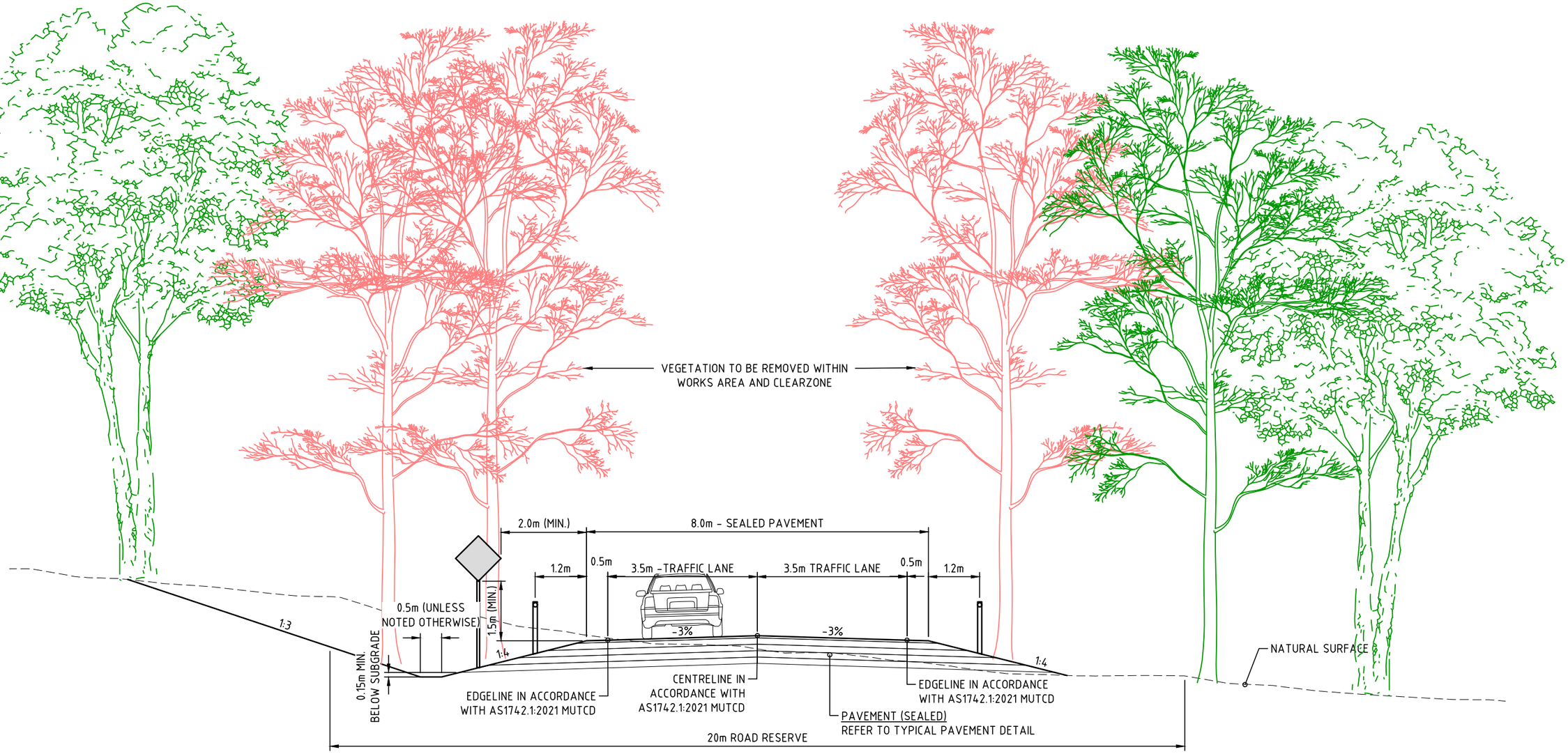
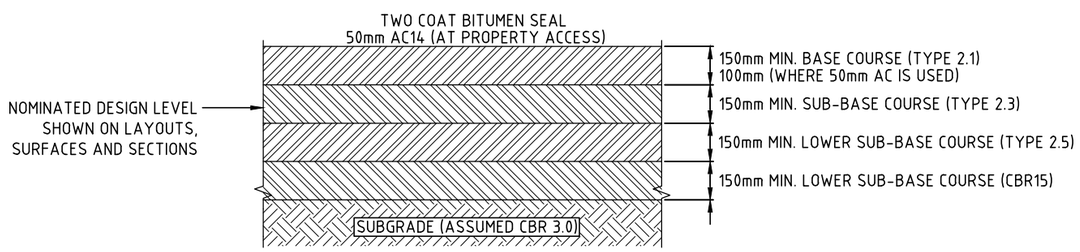
DRAWING NUMBER: ACS-220089-ROAD-01

REVISION: 1



TYPICAL CROSS SECTION - MITCHELL ROAD

SCALE 1:100
CLASS 4B



TYPICAL PAVEMENT DETAIL

SCALE 1 : 20

				SURVEY DATA		
				DATUM	GDA2020	
				MAP GRID	MGA56	
				HEIGHT ORIGIN	AHD	
				SURVEY BOOKS		
1	FOR APPROVAL	NJF	30/06/24	NJF	30/06/24	
REVISION/DETAILS		DWN	DATE	DES	DATE	

FILE: C:\12DS\DATA\ACSSYN\220089 SOILCO BROMELTON DEVELOPMENT - 260 MITCHELL ROAD_596\DESIGN\DRAWING FILES\ACS-220089-GEN.DWG PLOT TIME: 04/7/2024 - 11:40AM BY USER: MALINDASELLARS

SOILCO
PO BOX 199, UNANDERRA NSW 2526

BROMELTON DEVELOPMENT
260 MITCHELL ROAD, BROMELTON QLD 4285

TYPICAL CROSS SECTION

ENGINEERING CERTIFICATION (RPEQ)

#	FIELD	NAME	SIGNATURE	DATE
13697	CIVIL	S. SHAY		04/07/24

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DRAWING NUMBER: ACS-220089-ROAD-02
REVISION: 1

GENERAL NOTES

1. THE BILL OF QUANTITIES (BOQ) IS PROVIDED AS A GUIDE ONLY. THE CONTRACTOR IS TO REVIEW THIS BOQ AGAINST THE PLANS AND VERIFY QUANTITIES AS A PART OF THEIR DUE DILIGENCE IN TENDERING. ANY DISCREPANCIES ARE TO BE REFERRED TO ACS ENGINEERS FOR CLARIFICATION.
2. THE CONTRACTOR IS RESPONSIBLE FOR ACCURATELY ASCERTAINING THE LOCATION OF EXISTING UNDERGROUND AND OVERHEAD SERVICES PRIOR TO THE COMMENCEMENT OF WORKS.
3. REFER ANY DISCREPANCY TO THE PRINCIPLE ENGINEER BEFORE PROCEEDING WITH THE WORK.
4. PRIOR TO CONSTRUCTION LOCATE ALL EXISTING SERVICES IN THE VICINITY THAT MAY BE AFFECTED BY THE PROPOSED CONSTRUCTION.
5. DESIGN LEVELS TO BE CONFIRMED ON SITE PRIOR TO COMMENCING CONSTRUCTION.
6. CONCRETE ELEMENTS INCLUDING KERBS, FOOTPATHS, DRIVEWAYS ETC. SHALL BE SAW CUT WHERE REQUIRED AND SHALL BE REPLACED WITH MATCHING SURFACE TEXTURE AND TREATMENT AS ADJOINING SURFACES OR AS SPECIFIED IN THE DRAWINGS. NEW SURFACE SHALL MATCH SMOOTHLY WITH ADJOINING SURFACES.
7. DRAINAGE STRUCTURES TO BE CONSTRUCTED IN ACCORDANCE WITH SD1305 & SD1359 OF TMR STANDARD DRAWINGS.

SURVEY:

1. THE DATUM FOR ALL LEVELS IS THE AUSTRALIAN HEIGHT DATUM IN METRES AND PROJECTIONS ARE BASED ON MGA 2020 ZONE 56 COORDINATE SYSTEM.
2. DETAILED SURVEY WAS CARRIED OUT BY TJ KELLYS SURVEYS REF: 4497-02. THE ACCURACY OF PROPERTY BOUNDARIES IS NOT TO BE RELIED UPON AND SHOULD BE VERIFIED BY THE SURVEYOR.
3. SOME SERVICES HAVE BEEN EXPOSED AND LOCATED BUT OTHER SERVICE POSITIONS ARE DERIVED FROM SURFACE FEATURES ONLY. PRIOR TO EXCAVATION THE RELEVANT AUTHORITY SHOULD BE CONTACTED FOR DETAILED LOCATION OF ALL SERVICES.

SITE ACCESS:

1. PRIOR TO THE COMMENCEMENT OF SITE WORKS, THE LOCATION OF THE SITE ACCESS POINT MUST BE VERIFIED WITH RELEVANT AUTHORITY.
2. SITE ACCESS IS RESTRICTED TO ONE LOCATION.
3. SITE EXIT POINT MUST BE APPROPRIATELY MANAGED TO MINIMISE THE RISK OF SEDIMENT BEING TRACKED ONTO SEALED PUBLIC ROADWAYS.
4. STORMWATER RUNOFF FROM ACCESS ROADS AND STABILISED ENTRY/EXIT POINTS MUST DRAIN TO AN APPROPRIATE SEDIMENT CONTROL DEVICE.

EARTHWORKS - GENERAL

1. THE CONTRACTOR IS TO STRIP THE CONSTRUCTION AREA OF ALL GRASS, SHRUBS, RUBBISH, DELETERIOUS MATERIAL AND UNSUITABLE TOPSOIL AS NOMINATED BY THE ENGINEER.
2. DISPOSAL OF UNSUITABLE MATERIAL IS TO BE ONSITE. TOPSOIL APPROVED BY THE CLIENT FOR REUSE, IS TO BE STOCKPILED ON SITE AS DIRECTED.
3. BULK EARTHWORKS IS TO BE CARRIED OUT IN ACCORDANCE WITH SRRC AND TMR STANDARDS AND THE REQUIREMENTS OF AS3798.
4. THE CONTRACTOR SHALL PROVIDE DETAILS OF ALL TESTING TO THE SUPERVISING ENGINEER PROGRESSIVELY THROUGH THE WORKS AND NOTIFY THE ENGINEER OF ANY NON-CONFORMANCES. ALL NON CONFORMING WORK IS TO BE RECTIFIED.
5. PRIOR TO WORKS PROCEEDING, REMOVE SOFT AND OR COMPRESSIBLE ZONES AND REPLACE WITH SELECT SITE MATERIAL COMPACTED TO A DENSITY CONSISTENT WITH THAT NOTED FOR THE PROPOSED FILLING.
6. IT IS THE CONTRACTORS RESPONSIBILITY TO PROTECT THE SITE AND SURROUNDING AREAS FROM DAMAGE RESULTING FROM STORMWATER RUNOFF. TEMPORARY DIVERSION DRAINS AND OR OTHER DRAINAGE CONTROL DEVICES ARE TO BE IMPLEMENTED BY THE CONTRACTOR DURING CONSTRUCTION TO MINIMISE THE EFFECTS OF WEATHER.
7. ALL FILL MATERIAL PLACED ON THE SITE COMPRISING ONLY NATURAL EARTH AND ROCK IS TO BE FREE OF CONTAMINANTS (AS DEFINED BY SECTION 11 OF THE ENVIRONMENTAL PROTECTION ACT (EPA) 1994), NOXIOUS, HAZARDOUS, DELETERIOUS AND ORGANIC MATERIALS.
8. IMPORTED FILL FOR BUILDING PAD SHALL MEET THE REQUIREMENTS OF AS3798 FOR IMPORTED FILL.
9. BUILDING PAD TO BE KEYED INTO NATURAL SURFACE AFTER TOPSOIL STRIP.

EARTHWORKS - ROADWAYS

1. CLEARING AND GRUBBING SHALL BE LIMITED TO THOSE AREAS REQUIRED TO CONSTRUCT THE WORKS AND/OR MEET VISIBILITY REQUIREMENTS.
2. CLEARED AND GRUBBED MATERIAL OTHER THAN THAT MULCHED SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN ACCORDANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
3. WHERE WHEREVER PRACTICAL TOPSOIL SHALL BE TRANSFERRED DIRECTLY TO PLACEMENT AS PLANTING MEDIA. WHERE STOCKPILING OF TOPSOIL IS REQUIRED, IT SHALL BE CARRIED OUT IN A MANNER WHICH ENSURES THE PROPERTIES OF THE TOPSOIL ARE NOT PERMITTED TO DEGRADE SUCH THAT IT BECOMES UNSUITABLE AS PLANTING MEDIA.
4. WHERE UNSUITABLE MATERIAL MATERIAL IS ENCOUNTERED ONSITE, THE FOREMAN SHALL NOTIFY THE PROJECT ENGINEER BEFORE PROCEEDING TO REMOVE OR COVER SUCH MATERIAL.
5. MATERIAL USED FOR CONSTRUCTION OF SUBGRADE IN ROAD EMBANKMENT, WHERE DIRECTED, SHALL BE GENERAL FILL MATERIAL SUITABLE FOR PLACEMENT USING THE COMPACTED LAYER METHOD AND HAS A MAXIMUM STONE SIZE OF 75mm.

EXCAVATION ADJACENT TO POWER POLES:

1. POSSIBLE TRENCH SHORING REQUIREMENTS NEAR POWER POLES TO BE COORDINATED WITH ENERGEX AND THE APPROPRIATE APPROVALS TO BE OBTAINED FROM ENERGEX PRIOR TO CONSTRUCTION COMMENCEMENT.
2. ANY TRENCHING REQUIREMENTS ADJACENT TO EXISTING POWER POLES SHALL HAVE THE POWER POLES ADEQUATELY SUPPORTED DURING TRENCHING AND BACKFILLING OPERATIONS. A CERTIFIED ENGINEERING ASSESSMENT OF THE COMPACTION OF BACKFILL MATERIAL IS TO BE PROVIDED TO AND ASSESSED BY ENERGEX TO ENSURE POLE STABILITY BEFORE REMOVAL OF ADDITIONAL SUPPORT.
3. ALL CONSTRUCTION WITHIN 3m OF OVERHEAD POWER LINES REQUIRE 'SAFETY ADVICE ON WORKING AROUND ELECTRICAL POSTS' FORM BS0001405F108 FROM ENERGEX.

TABLE 4.1 - SPACING OF GUIDE POSTS ON CURVES

CURVE RADIUS (NOTE 1)	SPACING (NOTE 2)	
	ON OUTSIDE OF CURVE	ON INSIDE OF CURVE (NOTE 3)
100	6	12
100-199	10	20
200-299	15	30
300-399	20	40
400-599	30	60
600-699	40	60
800-1999	60	60
1200-2000	90 (NOTE 4)	90 (NOTE 4)
> 2000 (INCL. STRAIGHTS)	150 (SEE NOTE 4)	150 (SEE NOTE 4)

NOTES:

1. WHERE THE RADIUS OF AN EXISTING CURVE IS NOT AVAILABLE FROM RECORDS, IT MAY BE DETERMINED APPROXIMATELY BY MEASURING THE MIDDLE ORDINATE OFFSET FROM A CHORD OF KNOWN LENGTH USING EITHER THE EDGE OF PAVEMENT OR A MARKING LONGITUDINAL LINE AS A GUIDE.
2. ON GUARD FENCE, SPACING SHOULD BE ADJUSTED, IF NECESSARY, TO THE NEAREST MULTIPLE OF POST SPACING.
3. EACH POST ON THE INSIDE OF A CURVE IS PLACE OPPOSITE TO A POST ON THE OUTSIDE OF THE CURVE WHEREVER PRACTICABLE.
4. SPACING IS REDUCED TO 75m IN AREAS SUBJECT TO FOG.
5. THE SPACING GIVEN IN THIS TABLE ARE BASED ON APPROCIMATIONS OF THE FOLLOWING FORMULAE:
   CURVE RADII UP TO 150m.....S = 0.03R + 5
   CURVE RADII 150m TO 2000m.....S = 0.06R
   WHERE
   S = SPACING IN METERS
   R = CURVE RADIUS IN METERS

CONSTRUCTION NOTES

1. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL ENGINEERS AND OTHER CONSULTANT'S DRAWINGS AND SPECIFICATIONS AND WITH OTHER SUCH WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ANY DISCREPANCIES SHALL BE REFERRED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
2. NO RESPONSIBILTY WILL BE TAKEN FOR DIMENSIONS OBTAINED BY SCALING THESE DRAWINGS.
3. ALL DIMENSIONS SHALL BE VERIFIED ON SITE BY THE CONTRACTOR WHO SHALL BE RESPONSIBLE FOR THEIR CORRECTNESS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE STRUCTURE AND NEIGHBOURING STRUCTURES IN A SAFE AND STABLE CONDITION DURING CONSTRUCTION. NO PART SHALL BE OVER STRESSED.
5. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT S.R.R.C SPECS AND THE BY-LAWS AND ORDINANCES OF THE RELEVANT GOVERNMENT AUTHORITY.
6. THE CONTRACTOR SHALL PROVIDE TRAFFIC MANAGEMENT FOR THE DURATION OF CONSTRUCTION IN ACCORDANCE WITH "THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES - PART 3" AS1742.1:2021 MUTCD, IF REQUIRED.
7. THE CONTRACTOR IS TO LOCATE, IDENTIFY AND ESTABLISH THE CONNECTIVITY OF ALL EXISTING SERVICES WITHIN THE LIMITS OF THE WORKS AND CONFIRM THIS INFORMATION WITH THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
8. PROPERTY BOUNDARIES ARE SUBJECT TO CONFIRMATION BY FIELD SURVEY CARRIED OUT BY A REGISTERED SURVEYOR.
9. ALL WORK SHALL BE JOINED NEATLY TO EXISTING FEATURES.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL MEASURING DEVICES, SAFETY EQUIPMENT AND MACHINERY REQUIRED TO CARRY OUT INSPECTIONS AS SPECIFIED OR REQUESTED.
11. THE CONTRACTOR SHALL RESTORE ALL EXTERNAL AREAS TO THE SITE, TO THEIR ORIGINAL CONDITION UPON COMPLETION OF THE WORKS.

PAVEMENT NOTES:

1. BASE GRAVEL TO BE TYPE 2 MATERIAL WITH MINIMUM CBR80 AND SUB-BASE GRAVEL TO BE TYPE 2 MATERIAL WITH MINIMUM CBR45 IN ACCORDANCE WITH MAIN ROADS SPECIFICATION MRTS05 UNBOUND PAVEMENTS.
2. COMPACTION STANDARD OF SUB-BASE & BASE PAVEMENTS SHALL ACHIEVE A CHARACTERISTIC VALUE OF THE RELATIVE DRY DENSITY NOT LESS THAN 100%.
3. THE PAVEMENT SHALL BE CONSTRUCTED SO AS NOT TO DEPART FROM THE WIDTHS, LENGTHS, HEIGHTS AND SHAPES SPECIFIED IN THESE PLANS UNLESS AUTHORISED BY PROJECT ENGINEER. THE WIDTHS, HEIGHTS AND SHAPES OF LAYERS OTHER THAN THE FINAL LAYER SHALL BE CALCULATED USING THE COMPLETED PAVEMENT SURFACE AND THE DEPTH TO SURFACE OF THE PARTICULAR LAYER WITHIN THE PAVEMENT.
4. COMPACTED LAYER THICKNESS SHALL NOT BE GREATER THAN 200mm OR LESS THAN 100mm.
5. ROAD SURFACE TO BE CLEAN AND DRY PRIOR TO PLACING SEAL.
6. TWO COAT BITUMENT SEAL EXCEPT AT PROPERTY ACCESS WHICH IS TO BE 50mm ASPHALT AC14.

DELINEATION:

1. WHERE PAVEMENT IS 6.8m WIDE OR GREATER, GUIDE POSTS SHALL BE USED ON UNDIVIDED RURAL ROADS AT, OR NEAR, THE EDGE OF FORMATION AND AT A CONSTANT DISTANCE (GENERALLY BETWEEN 1.2m AND 3.0m) FROM THE PAVEMENT EDGE.
2. NOMINAL SPACING OF GUIDE POSTS ON A STRAIGHT SECTION OF ROAD SHALL BE 150m, WITH THE POSTS IN PAIRS, ONE EACH SIDE OF THE FORMATION. THE SPACING MAY BE REDUCED TO 75M IN AREAS SUBJECT TO FREQUENT FOGS.
3. THE SPACING OF GUIDE POSTS ON CURVES SHALL BE AS GIVEN IN THE TABLE 4.1 ON THIS SHEET.
4. LINEMARKING (EDGE LINE, CENTRE LINE ETC) TO BE PROVIDED IN ACCORDANCE WITH AS1742.1:2021 MUTCD.

ENVIRONMENTAL:

1. THE EXTENT OF CLEARING OF VEGETATION SHALL BE KEPT TO THE ABSOLUTE MINIMUM NECESSARY TO UNDERTAKE THE WORKS.
2. SILTATION CONTROLS, SITE REVEGETATION AND ENVIRONMENTAL REQUIREMENTS SHALL BE CARRIED OUT TO THE SATISFACTION OF THE PRINCIPAL.

OTHER:

1. THE CONTRACTOR IS TO TAKE ALL NECESSARY PRECAUTIONS TO CONTROL EROSION AND DOWNSTREAM SEDIMENTATION DURING ALL STAGES OF CONSTRUCTION INCLUDING THE MAINTENANCE PERIOD.
2. ALL SEDIMENT CONTROL DEVICES SHALL BE MONITORED, CLEANED AND/OR REPAIRED WHENEVER THE ACCUMULATED SEDIMENT REDUCES THE CAPACITY BY 50%.
3. THE EXTENT OF GRASSING SHALL BE DETERMINED BY THE SUPERINTENDENT AND SHALL BE SEEDED, AS SPECIFIED, WITHIN SEVEN DAYS OF FINAL TRIMMING.
4. EXTENT AND POSITION OF SILT FENCE CONTROL MEASURES TO BE DETERMINED ON SITE BY SUPERINTENDENT.
5. MEASURES SHOWN ON THIS DRAWING ARE MINIMUM REQUIREMENTS ONLY.
6. SCOUR PROTECTION AND SILT MANAGEMENT MEASURES TO BE PROVIDED AT STORMWATER OUTLET HEADWALLS.
7. PROVISION TO BE MADE FOR DIRT/SAND REMOVAL FROM CONSTRUCTION VEHICLES PRIOR TO TRAVEL ON PUBLIC ROADS. METHOD TO BE APPROVED BY SUPERINTENDENT PRIOR TO COMMENCEMENT OF WORK.
8. ANY SILT OR SEDIMENT CAUSED BY CONSTRUCTION TRAFFIC ON EXISTING ROADS IS TO BE REMOVED DAILY.
9. THE CONTRACTOR SHALL IMPLEMENT EROSION AND SEDIMENT CONTROL PROCEDURES DURING CONSTRUCTION AND MAINTENANCE STAGES OF THE DEVELOPMENT AND SHALL TAKE ALL NECESSARY ACTIONS TO COMPLY WITH THE POLICY OBJECTIVES OF QUEENSLAND TRANSPORT AND MAIN ROADS - EROSION AND SEDIMENT CONTROL.
10. A SCHEDULE SHALL BE SUBMITTED FOR THE APPROVAL OF TMR'S REPRESENTATIVE AT THE PRE-START MEETING FOR THE FIELD IMPLEMENTATION OF EROSION AND SEDIMENT CONTROL, DETAILING THE STAGES AT WHICH VARIOUS MANAGEMENT TECHNIQUES WOULD BE IN PLACE AND AUDITING PROCEDURES.
11. FINAL FORM OF SEDIMENT EROSION CONTROL TO BE DECIDED ON SITE BY THE SUPERINTENDENT.
12. THE CONTRACTOR IS TO ENSURE THAT NO SILT REACHES THE DOWNSTREAM WATER COURSE AND IS TO PROVIDE ADEQUATE PROTECTION TO PREVENT THIS OCCURRING.
13. CULVERT AT CH. 665 MUST NOT OCCUR UNTIL REQUIRED NOTIFICATION HAS BEEN MADE TO DAF IN ACCORDANCE WITH ACCEPTED DEVELOPMENT GUIDELINES FOR WATERWAY BARRIER WORKS.

1	FOR APPROVAL	NJF	30/06/24	NJF	30/06/24	
REVISION	DETAILS	DWN	DATE	DES	DATE	

FILE: C:\12DS\DATA\ACSSYN\220089 SOILCO BROMELTON DEVELOPMENT - 260 MITCHELL ROAD_596\DESIGN\DRAWING FILES\ACS-220089-GEN.DWG PLOT TIME: 04/7/2024 - 11:40AM BY USER: MALINDASELLARS

SURVEY DATA
DATUM: GDA2020
MAP GRID: MGA56
HEIGHT ORIGIN: AHD
SURVEY BOOKS:

SOILCO
PO BOX 199, UNANDERRA NSW 2526

BROMELTON DEVELOPMENT
260 MITCHELL ROAD, BROMELTON QLD 4285

GENERAL NOTES

ENGINEERING CERTIFICATION (RPEQ)

#	FIELD	NAME	SIGNATURE	DATE
13697	CIVIL	S. SHAY		04/07/24

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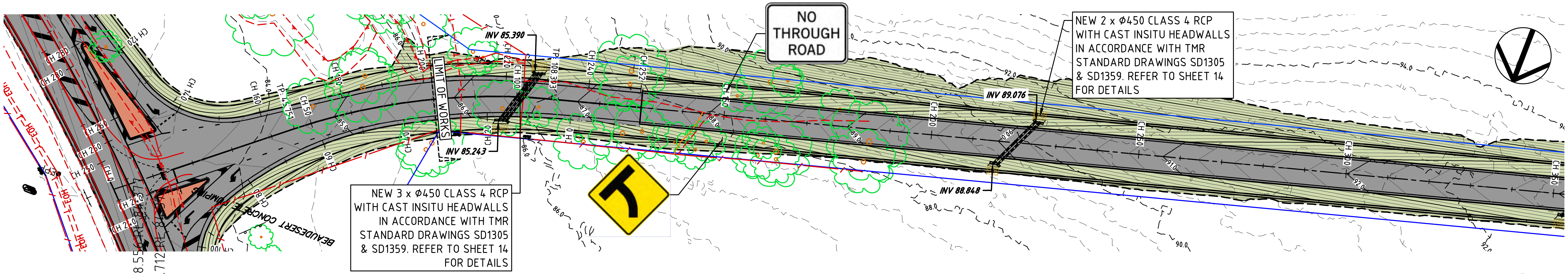
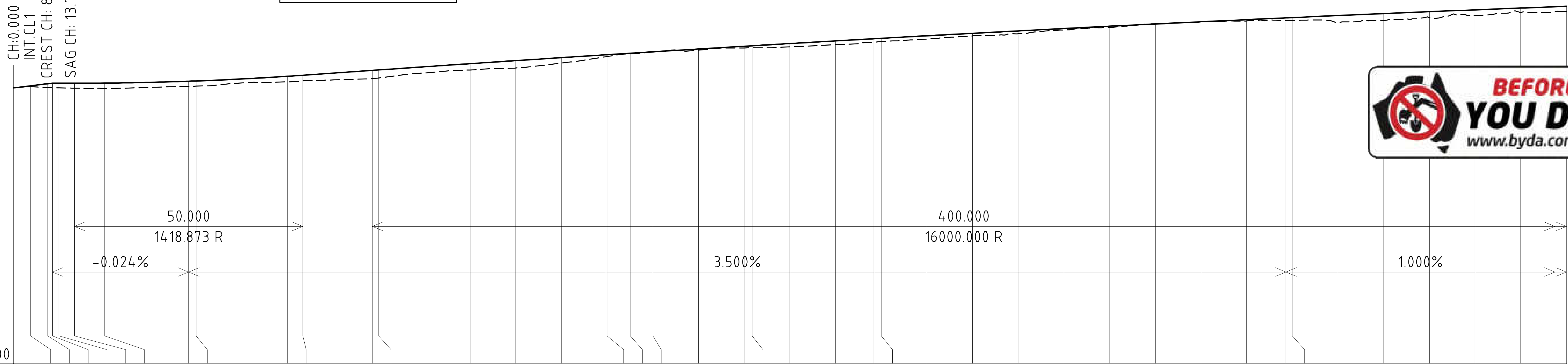
DRAWING NUMBER: ACS-220089-ROAD-03
REVISION: 1





HORIZONTAL GEOMETRY: L=45.751 B=230°24'04" | L=62.642 R=150.000 | L=463.822 B=254°19'44"

SUPER ELEVATION: R-3.0% L-3.0%

CHAINAGE	CUT FILL	DESIGN LEVELS	EXISTING SURFACE
0.000	-0.015	83.861	83.876
3.780	+0.092	84.089	83.997
7.550	+0.420	84.317	83.897
8.555	+0.492	84.377	83.885
10.000	+0.509	84.377	83.868
13.373	+0.543	84.376	83.833
20.000	+0.610	84.390	83.780
38.373	+0.560	84.591	84.031
40.000	+0.570	84.620	84.050
60.000	+0.603	85.131	84.528
63.373	+0.622	85.245	84.623
78.606	+0.905	85.778	84.873
80.000	+0.875	85.827	84.952
100.000	+0.686	86.513	85.827
110.000	+0.807	86.846	86.039
120.000	+0.597	87.174	86.577
129.527	+0.219	87.480	87.261
130.000	+0.197	87.495	87.298
135.060	+0.062	87.655	87.593
140.000	+0.020	87.809	87.789
150.000	+0.118	88.118	88.000
160.000	+0.180	88.420	88.240
161.727	+0.227	88.472	88.245
170.000	+0.358	88.716	88.358
180.000	+0.425	89.006	88.581
188.393	+0.382	89.244	88.862
190.000	+0.358	89.289	88.931
200.000	+0.368	89.567	89.199
210.000	+0.281	89.838	89.557
220.000	+0.305	90.103	89.798
230.000	+0.152	90.361	90.209
240.000	+0.135	90.613	90.478
250.000	-0.026	90.859	90.885
260.000	+0.005	91.099	91.094
270.000	+0.138	91.333	91.195
278.606	+0.296	91.528	91.232
280.000	+0.301	91.560	91.259
290.000	+0.734	91.781	91.047
300.000	+0.752	91.996	91.244
310.000	+0.650	92.204	91.554
320.000	+0.612	92.406	91.794
330.000	+0.472	92.602	92.130
340.000	+0.541	92.792	92.251

CL2 CH:0.000 TO CH:340.000
SCALES: HORIZONTAL 1:1000 VERTICAL 1:500

REV	REVISION/DETAILS	DWN	DATE	DES	DATE
1	FOR APPROVAL	NJF	30/06/24	NJF	30/06/24

SURVEY DATA
DATUM: GDA2020
MAP GRID: MGA56
HEIGHT ORIGIN: AHD
SURVEY BOOKS:

SOILCO
PO BOX 199, UNANDERRA NSW 2526
BROMELTON DEVELOPMENT
260 MITCHELL ROAD, BROMELTON QLD 4285

PLAN AND LONG SECTION - SHEET 01

ENGINEERING CERTIFICATION (RPEQ)

#	FIELD	NAME	SIGNATURE	DATE
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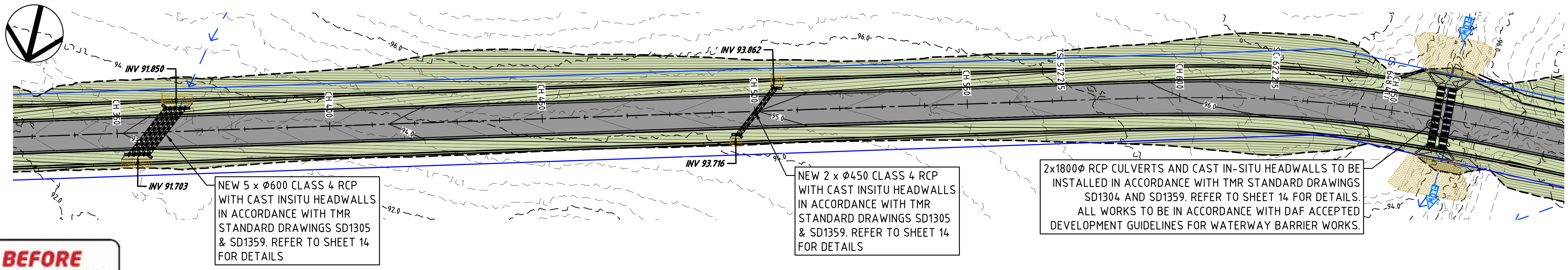
DRAWING NUMBER: ACS-220089-ROAD-04
REVISION: 1

FILE: C:\12DS\DATA\ACSSYN\220089 SOILCO BROMELTON DEVELOPMENT - 260 MITCHELL ROAD_596\DESIGN\DRAWING FILES\ACS-220089-GEN.DWG PLOT TIME: 04/7/2024 - 11:40AM BY USER: MALINDASELLARS



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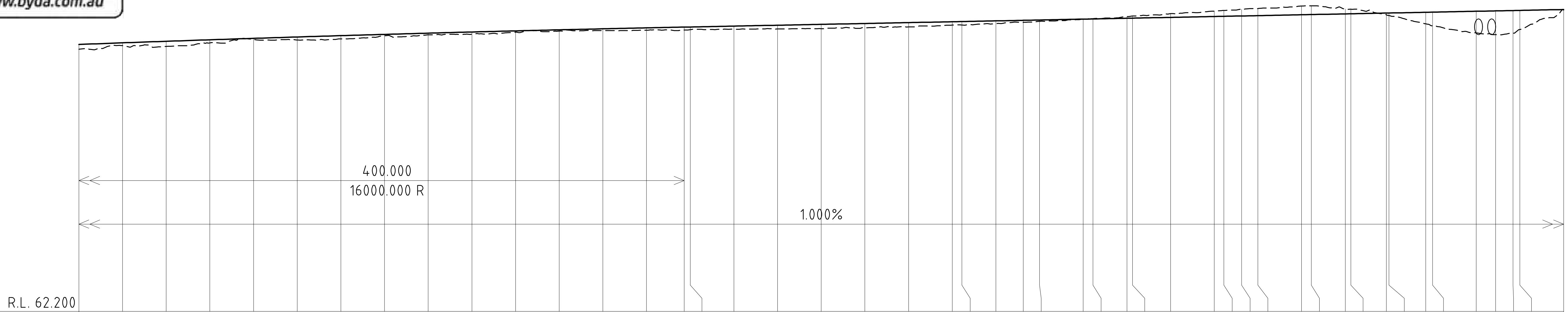

HORIZONTAL GEOMETRY: L=463.822, B=254°19'44"; L=50.000; L=26.202, R=300.000; L=50.000

SUPER ELEVATION: R-3.0%, L-3.0%; L0.0%; L3.0%; L5.0%; R-5.0%; L3.0%, R-3.0%

CUT FILL	+0.541	+0.321	+0.586	+0.352	+0.128	+0.348	+0.378	+0.166	+0.194	+0.248	+0.147	+0.145
DESIGN LEVELS	92.792	92.976	93.153	93.324	93.489	93.647	93.799	93.945	94.085	94.219	94.346	94.467
EXISTING SURFACE	92.251	92.655	92.567	92.972	93.361	93.299	93.421	93.779	93.891	93.971	94.199	94.322
CHAINAGE	340.000	350.000	360.000	370.000	380.000	390.000	400.000	410.000	420.000	430.000	440.000	450.000

CUT FILL	+0.204	+0.273	+0.338	+0.311	+0.340	+0.418	+0.494	+0.445	+0.487	+0.386	+0.396	+0.330
DESIGN LEVELS	94.582	94.690	94.778	94.792	94.892	94.992	95.092	95.192	95.292	95.392	95.415	95.492
EXISTING SURFACE	94.378	94.417	94.440	94.481	94.552	94.574	94.598	94.747	94.805	95.006	95.019	95.162
CHAINAGE	460.000	470.000	478.606	480.000	490.000	500.000	510.000	520.000	530.000	540.000	542.215	550.000

CUT FILL	+0.234	+0.156	-0.030	-0.025	-0.187	-0.238	-0.425	-0.609	-0.673	-0.763	-0.815	-1.002
DESIGN LEVELS	95.555	95.592	95.692	95.715	95.792	95.805	95.892	95.992	96.015	96.055	96.092	96.192
EXISTING SURFACE	95.321	95.436	95.722	95.740	95.979	96.043	96.317	96.601	96.688	96.818	96.907	97.194
CHAINAGE	556.271	560.000	570.000	572.215	580.000	581.271	590.000	600.000	602.215	606.271	610.000	620.000

CUT FILL	-1.003	-0.562	-0.524	+0.200	+0.292	+1.321	+1.559	+2.482	+2.717	+2.588	+2.179	+0.071
DESIGN LEVELS	96.215	96.292	96.305	96.387	96.392	96.477	96.492	96.592	96.637	96.677	96.692	96.792
EXISTING SURFACE	97.218	96.854	96.829	96.187	96.100	95.156	94.933	94.110	93.920	94.089	94.513	96.721
CHAINAGE	622.215	630.000	631.271	639.439	640.000	648.417	650.000	660.000	664.439	668.417	670.000	680.000

CL2 CH:340.000 TO CH:680.000
SCALES: HORIZONTAL 1:1000 VERTICAL 1:500

REV	REVISION/DETAILS	DWN	DATE	DES	DATE
1	FOR APPROVAL	NJF	30/06/24	NJF	30/06/24

SURVEY DATA
DATUM: GDA2020
MAP GRID: MGA56
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PO BOX 199, UNANDERRA NSW 2526
BROMELTON DEVELOPMENT
260 MITCHELL ROAD, BROMELTON QLD 4285

PLAN AND LONG SECTION - SHEET 02

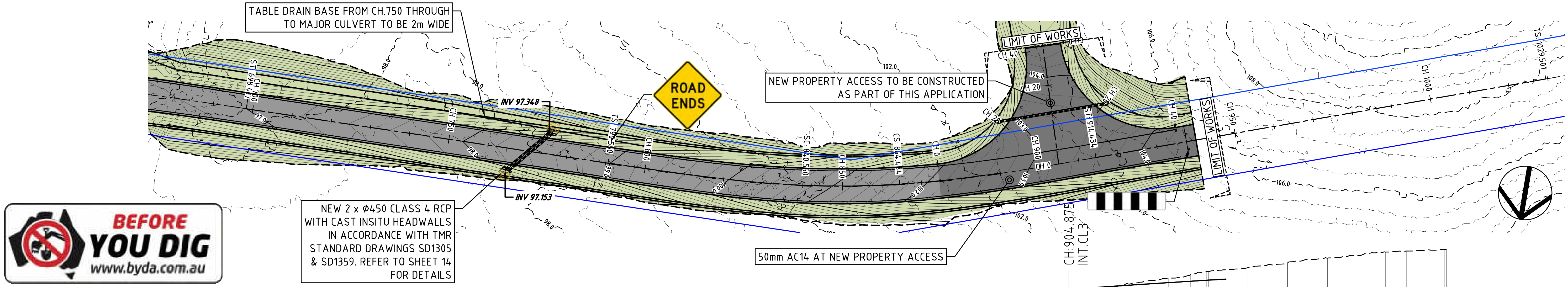
ENGINEERING CERTIFICATION (RPEQ)

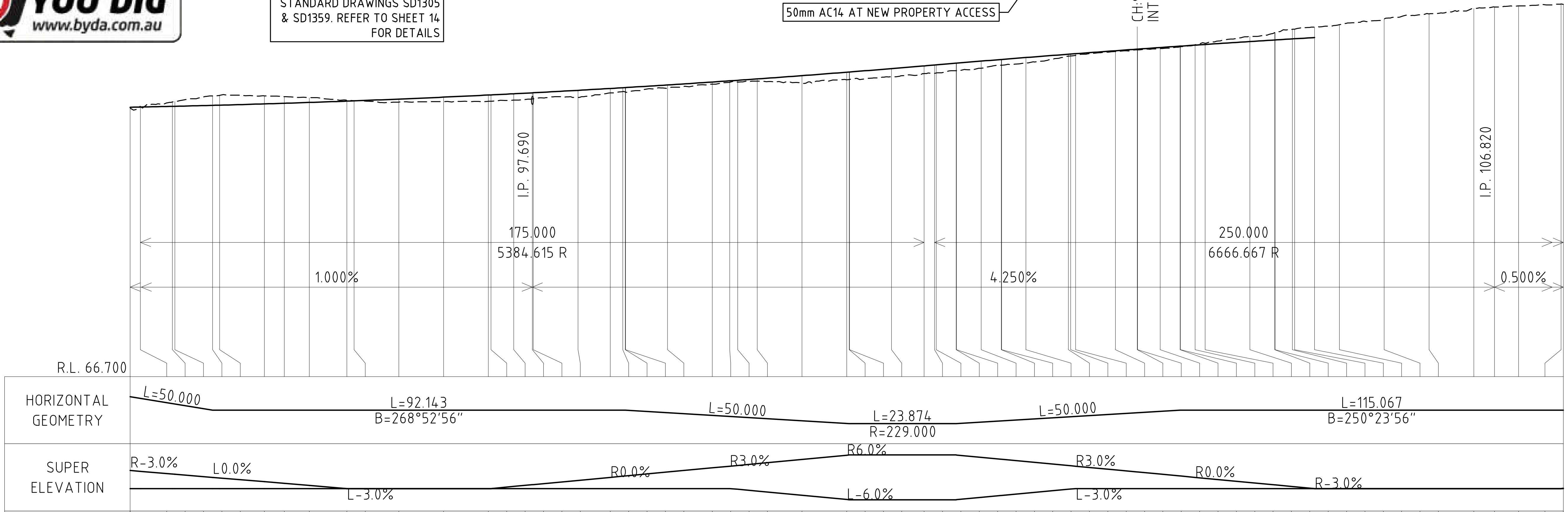
#	FIELD	NAME	SIGNATURE	DATE
13697	CIVIL	S. SHAY	[signature]	04/07/24

PO Box 554
Beaudesert QLD 4285
(07) 5541 3500
www.acsengineers.com.au
ACS Engineers
CIVIL | ENVIRONMENTAL | PROJECT MANAGEMENT

DRAWING NUMBER: ACS-220089-ROAD-05
REVISION: 1

FILE: C:\12DS\DATA\ACSSYN\220089 SOILCO BROMELTON DEVELOPMENT - 260 MITCHELL ROAD_596\DESIGN\DRAWING FILES\ACS-220089-GEN.DWG PLOT TIME: 04/7/2024 - 11:41AM BY USER: MALINDASELLARS





CHAINAGE	EXISTING SURFACE	DESIGN LEVELS	CUT FILL
680.000	96.721	96.792	+0.071
682.296	96.873	96.815	-0.058
689.439	97.382	96.892	-0.490
690.000	97.431	96.898	-0.533
698.417	98.049	97.001	-1.048
700.000	98.117	97.022	-1.095
710.000	98.061	97.164	-0.897
714.439	97.977	97.233	-0.744
720.000	97.852	97.324	-0.528
728.417	97.581	97.474	-0.107
730.000	97.530	97.504	-0.026
740.000	97.363	97.702	+0.339
750.000	97.418	97.918	+0.500
760.000	97.451	98.153	+0.702
760.560	97.457	98.167	+0.710
765.638	97.590	98.294	+0.704
769.796	97.715	98.401	+0.686
770.000	97.733	98.407	+0.674
780.000	97.879	98.679	+0.800
787.226	98.392	98.887	+0.495
790.000	98.542	98.970	+0.428
790.560	98.493	98.986	+0.493
790.638	98.482	98.989	+0.507
800.000	98.913	99.279	+0.366
810.000	99.362	99.607	+0.245
813.893	99.574	99.739	+0.165
815.638	99.598	99.800	+0.202
820.000	99.702	99.953	+0.251
830.000	99.469	100.318	+0.849
840.000	99.860	100.702	+0.842
840.560	99.892	100.724	+0.832
840.638	99.901	100.727	+0.826
850.000	100.206	101.104	+0.898
857.296	100.543	101.409	+0.866
859.616	100.582	101.508	+0.926
860.000	100.613	101.524	+0.911
864.434	100.863	101.711	+0.848
864.512	100.864	101.714	+0.850
870.000	101.149	101.941	+0.792
874.499	101.481	102.124	+0.643
874.580	101.482	102.127	+0.645
880.000	101.713	102.343	+0.630
889.512	102.499	102.711	+0.212
890.000	102.518	102.730	+0.212
891.100	102.574	102.771	+0.197
900.000	103.017	103.102	+0.085
904.875	103.198	103.278	+0.080
904.954	103.197	103.280	+0.083
910.000	103.344	103.459	+0.115
914.434	103.533	103.612	+0.079
914.512	103.538	103.615	+0.077
917.767	103.760	103.726	-0.034
920.000	103.946	103.801	-0.145
930.000	104.684	104.127	-0.557
935.559	105.120	104.303	-0.817
935.638	105.139	104.305	-0.834
939.512	105.498	104.425	-1.073
940.000	105.513	104.439	-1.074
944.434	105.748	104.573	-1.175
950.000	106.022	104.736	-1.286
960.000	106.649	105.018	-1.631
970.000	107.229	105.285	-1.944
980.000	107.813	105.537	-2.276
984.616	107.984	105.648	-2.336
990.000	108.104	105.774	-2.330
999.501	108.314	105.985	-2.329
1000.000	108.287	105.996	-2.291

CL2 CH:680.000 TO CH:1000.000
SCALES: HORIZONTAL 1:1000 VERTICAL 1:500

REV	REVISION/DETAILS	DWN	DATE	DES	DATE
1	FOR APPROVAL	NJF	30/06/24	NJF	30/06/24

SURVEY DATA
DATUM: GDA2020
MAP GRID: MGA56
HEIGHT ORIGIN: AHD
SURVEY BOOKS:

SOILCO
PO BOX 199, UNANDERRA NSW 2526
BROMELTON DEVELOPMENT
260 MITCHELL ROAD, BROMELTON QLD 4285

PLAN AND LONG SECTION - SHEET 03

ENGINEERING CERTIFICATION (RPEQ)

#	FIELD	NAME	SIGNATURE	DATE
13697	CIVIL	S. SHAY	(signed)	04/07/24

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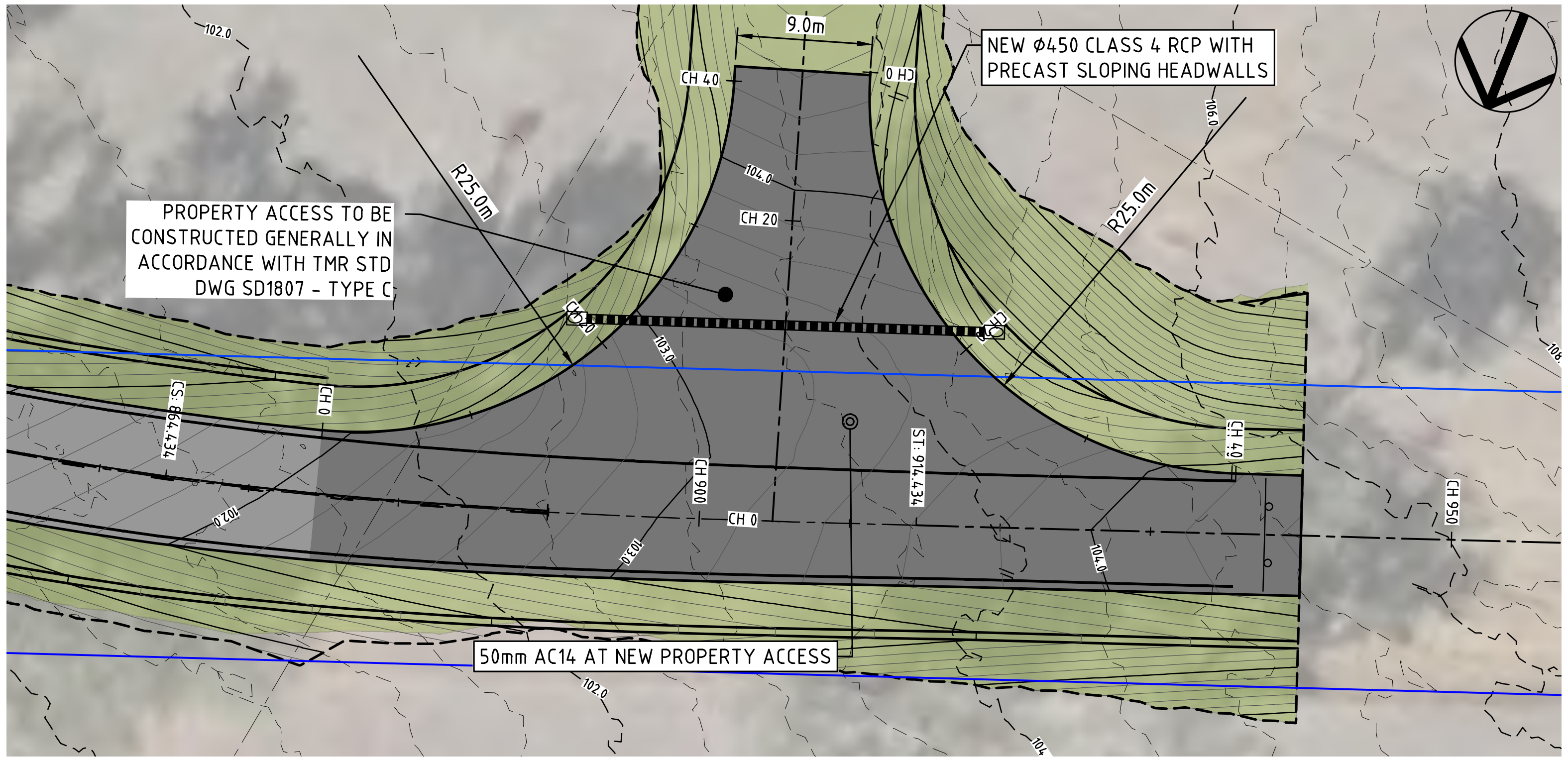
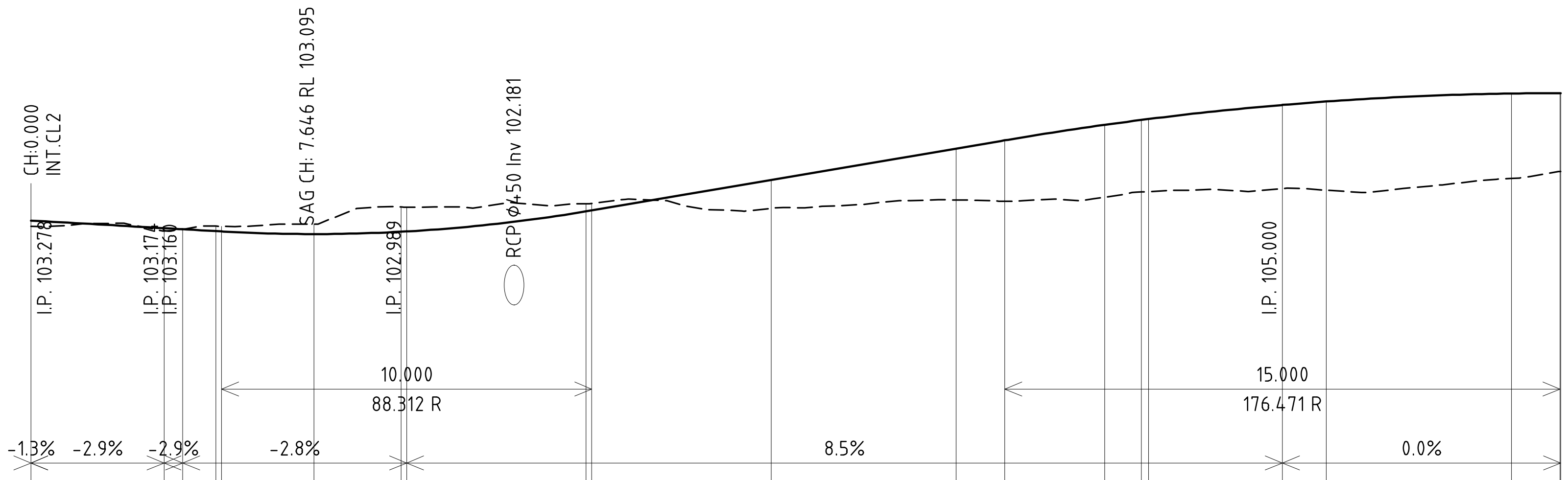
DRAWING NUMBER: ACS-220089-ROAD-06
REVISION: 1

FILE: C:\12DS\DATA\ACSSYN\220089 SOILCO BROMELTON DEVELOPMENT - 260 MITCHELL ROAD_596\DESIGN\DRAWING FILES\ACS-220089-GEN.DWG PLOT TIME: 04/7/2024 - 11:41AM BY USER: MALINDASELLARS





R.L. 99.000

CUT FILL	+0.080	+0.036	+0.001	-0.067	-0.070	-0.135	-0.336	-0.327	-0.104	-0.095	+0.383
DESIGN LEVELS	103.278	103.174	103.160	103.135	103.130	103.095	103.126	103.131	103.401	103.414	103.826
EXISTING SURFACE	103.198	103.138	103.159	103.202	103.200	103.230	103.462	103.458	103.505	103.509	103.443
CHAINAGE	0.000	3.598	4.098	5.000	5.152	7.646	10.000	10.152	15.000	15.152	20.000

CUT FILL	+0.694	+0.823	+0.978	+0.974	+0.981	+1.132	+1.200	+1.148	+1.059	+1.059
DESIGN LEVELS	104.251	104.362	104.571	104.638	104.650	104.841	104.887	104.995	105.000	105.000
EXISTING SURFACE	103.557	103.539	103.593	103.664	103.669	103.709	103.687	103.847	103.941	103.941
CHAINAGE	25.000	26.311	29.011	30.000	30.192	33.811	35.000	40.000	41.311	41.330

CL3 CH:0.000 TO CH:41.330
SCALES: HORIZONTAL 1:200 VERTICAL 1:100

FOR APPROVAL

1	FOR APPROVAL	MLS	06/2024	NJF	30/06/24	
	REVISION/DETAILS	DWN	DATE	DES	DATE	

SURVEY DATA
DATUM GDA2020
MAP GRID MGA56
HEIGHT ORIGIN AHD
SURVEY BOOKS

SOILCO
PO BOX 199, UNANDERRA NSW 2526
BROMELTON DEVELOPMENT
260 MITCHELL ROAD, BROMELTON QLD 4285

PROPERTY ACCESS LAYOUT

ENGINEERING CERTIFICATION (RPEQ)

#	FIELD	NAME	SIGNATURE	DATE
13697	CIVIL	S. SHAY	[signature]	04/07/24

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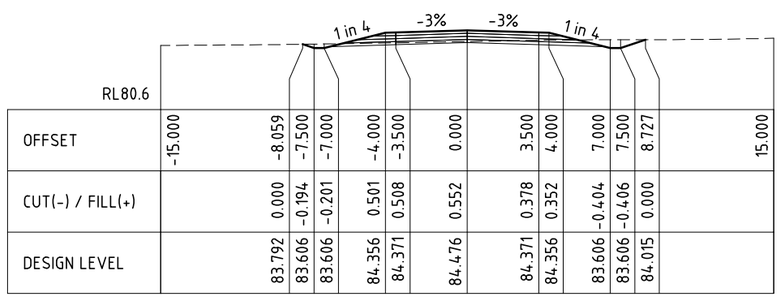
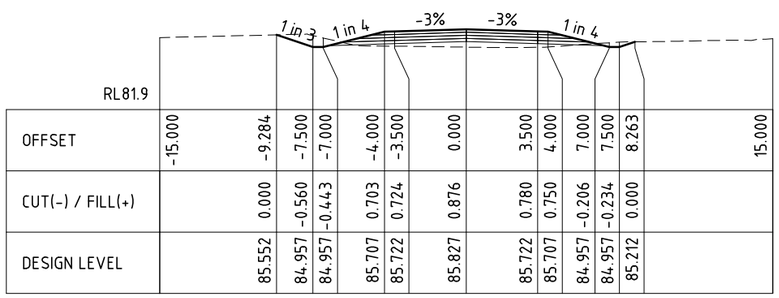
DRAWING NUMBER ACS-220089-ROAD-07
REVISION 1

FILE: C:\12DS\DATA\ACSSYN\220089 SOILCO BROMELTON DEVELOPMENT - 260 MITCHELL ROAD_596\DESIGN\DRAWING FILES\ACS-220089-GEN.DWG PLOT TIME: 04/7/2024 - 11:41AM BY USER: MALINDASELLARS



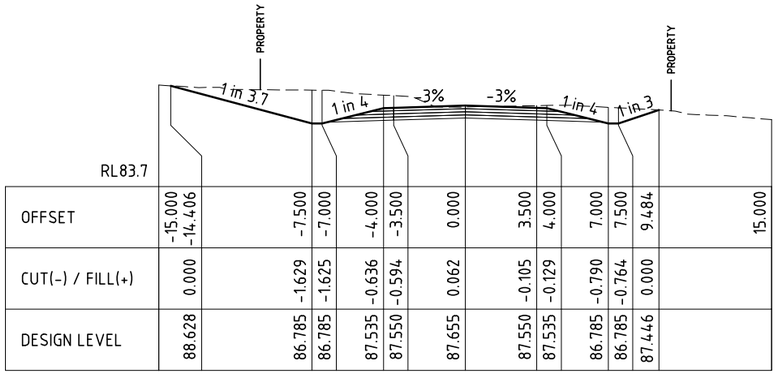
OFFSET	-15.000	-8.059	-7.500	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	8.727	15.000
CUT(-) / FILL(+)		0.000	-0.194	-0.201	0.501	0.508	0.552	0.378	0.352	-0.404	-0.406	0.000	
DESIGN LEVEL		83.792	83.606	83.606	84.356	84.371	84.476	84.371	84.356	83.606	83.606	84.015	

CH: 30.501



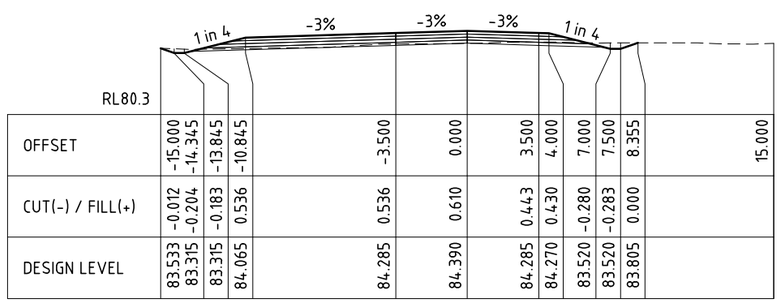
OFFSET	-15.000	-9.284	-7.500	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	8.263	15.000
CUT(-) / FILL(+)		0.000	-0.560	-0.443	0.703	0.724	0.876	0.780	0.750	-0.206	-0.234	0.000	
DESIGN LEVEL		85.552	84.957	84.957	85.707	85.722	85.827	85.722	85.707	84.957	84.957	85.212	

CH: 80.000



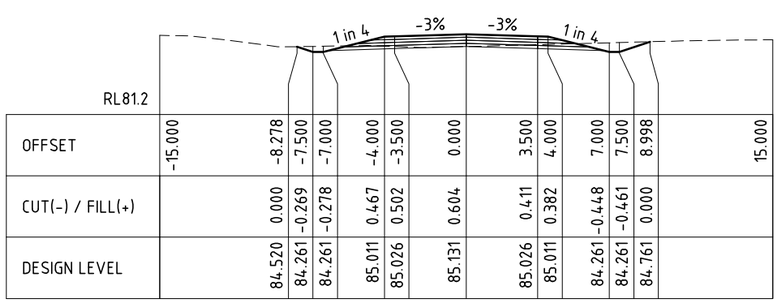
OFFSET	-15.000	-14.406	-7.500	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	9.484	15.000
CUT(-) / FILL(+)	0.000		-1.629	-1.625	-0.636	-0.594	0.062	-0.105	-0.129	-0.790	-0.764	0.000	
DESIGN LEVEL	88.628		86.785	86.785	87.535	87.550	87.655	87.550	87.535	86.785	86.785	87.446	

CH: 135.060



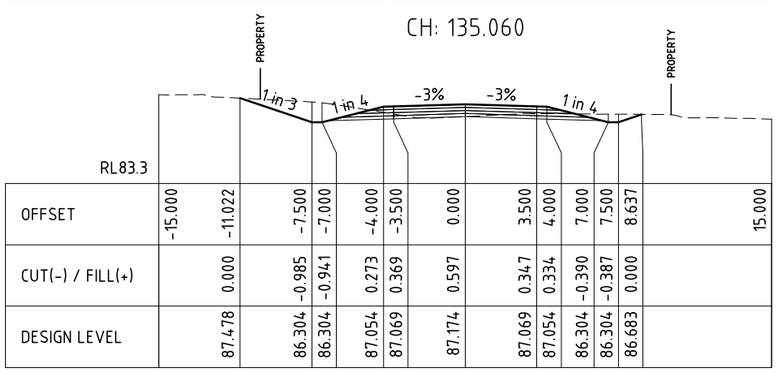
OFFSET	-15.000	-14.345	-13.845	-10.845	-3.500	0.000	3.500	4.000	7.000	7.500	8.355		15.000
CUT(-) / FILL(+)	-0.012	-0.204	-0.183	0.536	0.536	0.610	0.443	0.430	-0.280	-0.283	0.000		
DESIGN LEVEL	83.533	83.315	83.315	84.065	84.285	84.390	84.285	84.270	83.520	83.520	83.805		

CH: 20.000



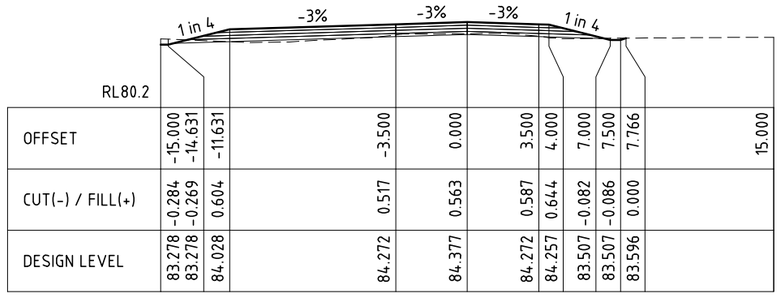
OFFSET	-15.000	-8.278	-7.500	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	8.998	15.000
CUT(-) / FILL(+)		0.000	-0.269	-0.278	0.467	0.502	0.604	0.411	0.382	-0.448	-0.461	0.000	
DESIGN LEVEL		84.520	84.261	84.261	85.011	85.026	85.131	85.026	85.011	84.261	84.261	84.761	

CH: 60.000



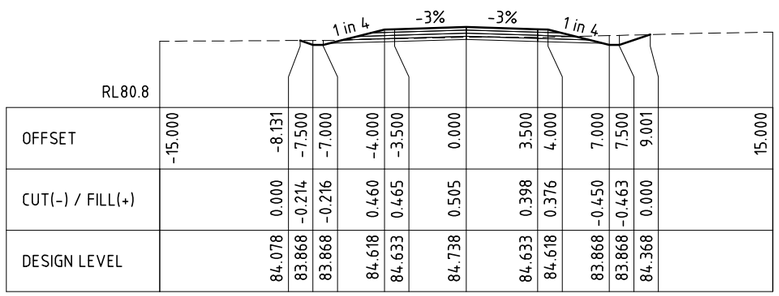
OFFSET	-15.000	-11.022	-7.500	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	8.637	15.000
CUT(-) / FILL(+)		0.000	-0.985	-0.941	0.273	0.369	0.597	0.347	0.334	-0.390	-0.387	0.000	
DESIGN LEVEL	87.478		86.304	86.304	87.054	87.069	87.174	87.069	87.054	86.304	86.304	86.683	

CH: 120.000



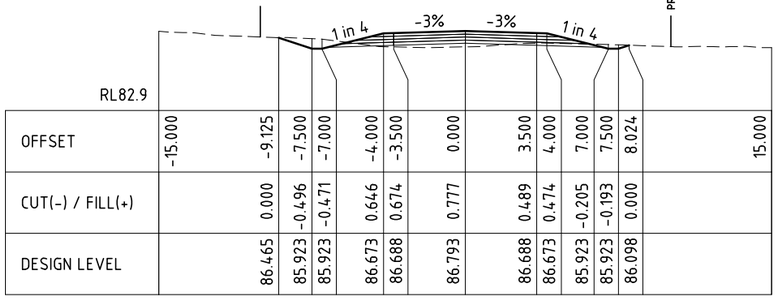
OFFSET	-15.000	-14.631	-11.631	-3.500	0.000	3.500	4.000	7.000	7.500	7.766			15.000
CUT(-) / FILL(+)	-0.284	-0.269	0.604	0.517	0.563	0.587	0.644	-0.082	-0.086	0.000			
DESIGN LEVEL	83.278	83.278	84.028	84.272	84.377	84.272	84.257	83.507	83.507	83.596			

CH: 15.250



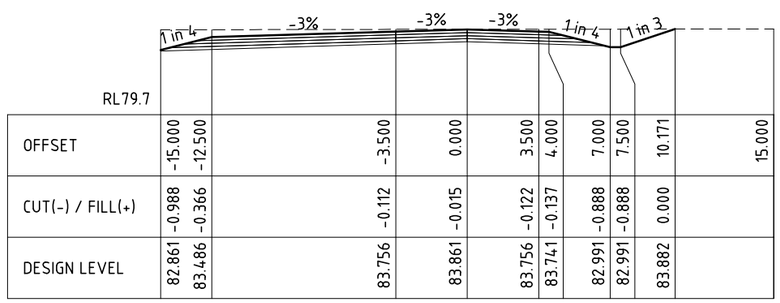
OFFSET	-15.000	-8.131	-7.500	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	9.001	15.000
CUT(-) / FILL(+)		0.000	-0.214	-0.216	0.460	0.465	0.505	0.398	0.376	-0.450	-0.463	0.000	
DESIGN LEVEL		84.078	83.868	83.868	84.618	84.633	84.738	84.633	84.618	83.868	83.868	84.368	

CH: 45.751



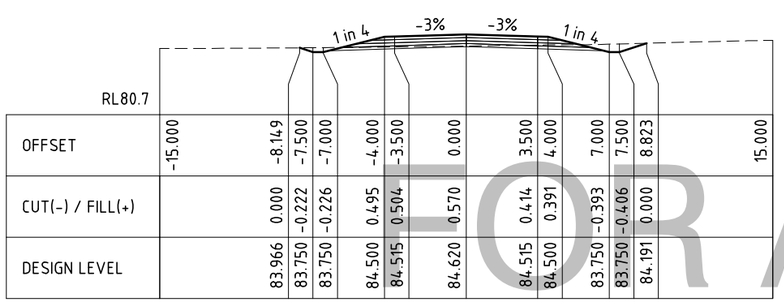
OFFSET	-15.000	-9.125	-7.500	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	8.024	15.000
CUT(-) / FILL(+)		0.000	-0.496	-0.471	0.646	0.674	0.777	0.489	0.474	-0.205	-0.193	0.000	
DESIGN LEVEL	86.465		85.923	85.923	86.673	86.688	86.793	86.688	86.673	85.923	85.923	86.098	

CH: 108.393



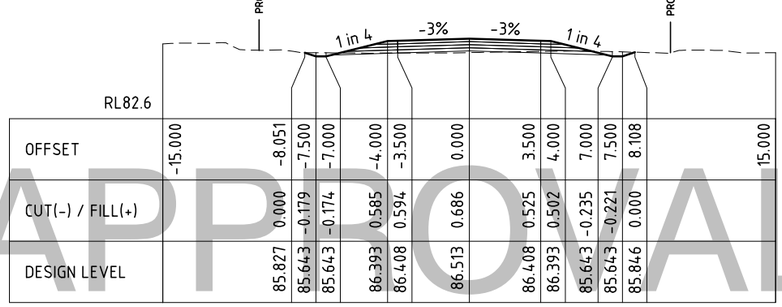
OFFSET	-15.000	-12.500	-3.500	0.000	3.500	4.000	7.000	7.500	10.171				15.000
CUT(-) / FILL(+)	-0.988	-0.366	-0.112	-0.015	-0.122	-0.137	-0.888	-0.888	0.000				
DESIGN LEVEL	82.861	83.486	83.756	83.861	83.756	83.741	82.991	82.991	83.882				

CH: 0.000



OFFSET	-15.000	-8.149	-7.500	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	8.823	15.000
CUT(-) / FILL(+)		0.000	-0.222	-0.226	0.495	0.504	0.570	0.414	0.391	-0.393	-0.406	0.000	
DESIGN LEVEL		83.966	83.750	83.750	84.500	84.515	84.620	84.515	84.500	83.750	83.750	84.191	

CH: 40.000



OFFSET	-15.000	-8.051	-7.500	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	8.108	15.000
CUT(-) / FILL(+)		0.000	-0.179	-0.174	0.585	0.594	0.686	0.525	0.502	-0.235	-0.221	0.000	
DESIGN LEVEL	85.827		85.643	85.643	86.393	86.408	86.513	86.408	86.393	85.643	85.643	85.846	

CH: 100.000

				SURVEY DATA		
				DATUM	GDA2020	
				MAP GRID	MGA56	
				HEIGHT ORIGIN	AHD	
				SURVEY BOOKS		
1	FOR APPROVAL	NJF	30/06/24	NJF	30/06/24	
	REVISION/DETAILS	DWN	DATE	DES	DATE	

FILE: C:\12DS\DATA\ACSSYN\220089 SOILCO BROMELTON DEVELOPMENT - 260 MITCHELL ROAD_596\DESIGN\DRAWING FILES\ACS-220089-GEN.DWG PLOT TIME: 04/7/2024 - 11:42AM BY USER: MALINDASELLARS

SOILCO

PO BOX 199, UNANDERRA NSW 2526

BROMELTON DEVELOPMENT

260 MITCHELL ROAD, BROMELTON QLD 4285

CROSS SECTIONS - SHEET 01

ENGINEERING CERTIFICATION (RPEQ)

#	FIELD	NAME	SIGNATURE	DATE
13697	CIVIL	S. SHAY		04/07/24

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Beaudesert QLD 4285

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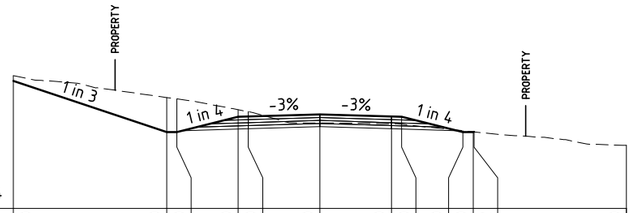
ACS Engineers
CIVIL | ENVIRONMENTAL | PROJECT MANAGEMENT

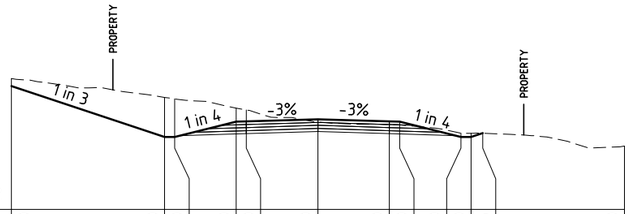
DRAWING NUMBER: ACS-220089-ROAD-08

REVISION: 1



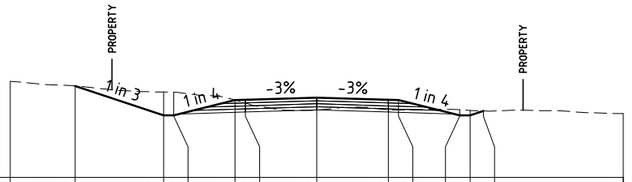
RL84.4												
OFFSET	-15.000	-7.500	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	7.542	15.000
CUT(-) / FILL(+)	-0.255	-1.692	-1.622	-0.346	-0.235	0.425	0.358	0.368	-0.071	-0.018	0.000	
DESIGN LEVEL	90.636	88.136	88.136	88.886	88.901	89.006	88.901	88.886	88.136	88.136	88.150	

CH: 180.000



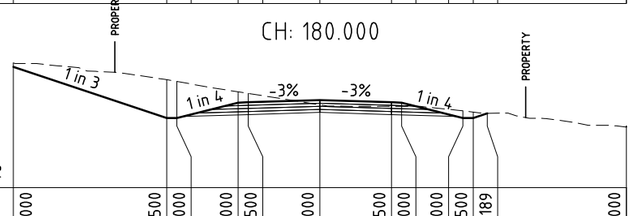
RL86.2												
OFFSET	-15.000	-7.500	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	8.076	15.000
CUT(-) / FILL(+)	-0.368	-1.939	-1.868	-0.668	-0.563	0.135	0.152	0.154	-0.192	-0.186	0.000	
DESIGN LEVEL	92.243	89.743	89.743	90.493	90.508	90.613	90.508	90.493	89.743	89.743	89.935	

CH: 240.000



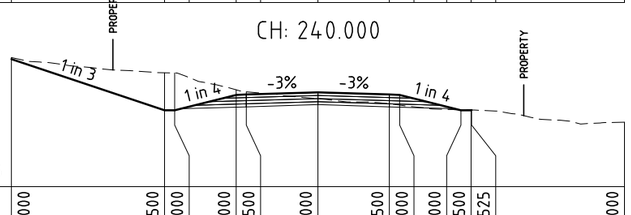
RL88.5												
OFFSET	-15.000	-11.823	-7.500	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	8.158	15.000
CUT(-) / FILL(+)		0.000	-1.143	-1.138	-0.003	0.156	0.613	0.493	0.481	-0.280	-0.244	0.000	
DESIGN LEVEL		92.977	91.536	91.536	92.286	92.301	92.406	92.301	92.286	91.536	91.536	91.756	

CH: 320.000



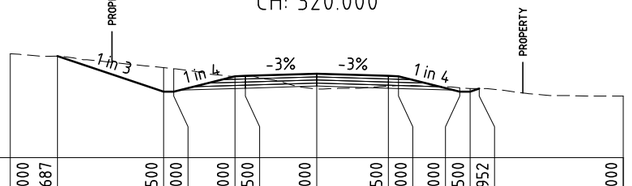
RL84.2												
OFFSET	-15.000	-7.500	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	8.189	15.000
CUT(-) / FILL(+)	-0.186	-1.872	-1.784	-0.527	-0.433	0.227	0.201	0.187	-0.347	-0.288	0.000	
DESIGN LEVEL	90.102	87.602	87.602	88.352	88.367	88.472	88.367	88.352	87.602	87.602	87.832	

CH: 161.727



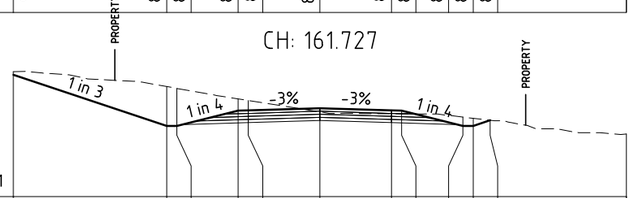
RL85.5												
OFFSET	-15.000	-7.500	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	7.525	15.000
CUT(-) / FILL(+)	-0.071	-1.828	-1.820	-0.247	-0.138	0.305	0.446	0.500	-0.019	-0.009	0.000	
DESIGN LEVEL	91.733	89.233	89.233	89.983	89.998	90.103	89.998	89.983	89.233	89.233	89.241	

CH: 220.000



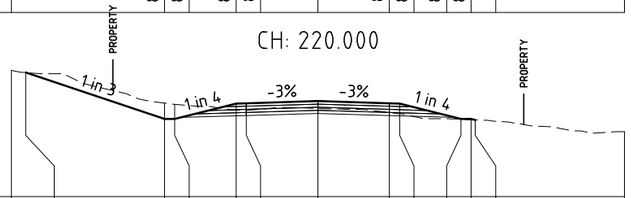
RL87.9												
OFFSET	-15.000	-12.687	-7.500	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	7.952	15.000
CUT(-) / FILL(+)		0.000	-1.167	-1.115	0.003	0.015	0.751	0.498	0.454	-0.186	-0.153	0.000	
DESIGN LEVEL		92.855	91.126	91.126	91.876	91.891	91.996	91.891	91.876	91.126	91.126	91.276	

CH: 300.000



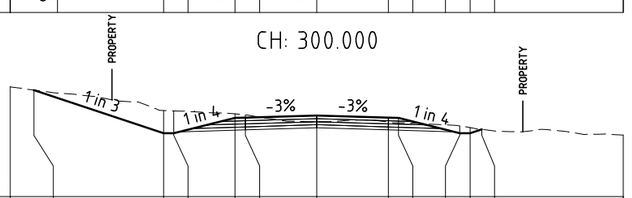
RL84.1												
OFFSET	-15.000	-7.500	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	8.333	15.000
CUT(-) / FILL(+)	-0.161	-1.926	-1.838	-0.577	-0.483	0.180	0.168	0.156	-0.435	-0.376	0.000	
DESIGN LEVEL	90.050	87.550	87.550	88.300	88.315	88.420	88.315	88.300	87.550	87.550	87.828	

CH: 160.000



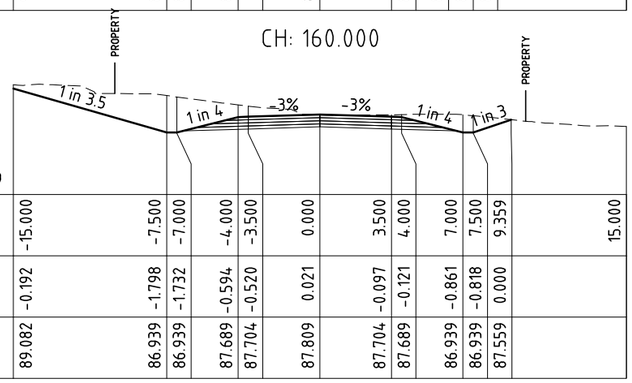
RL84.9												
OFFSET	-15.000	-14.297	-7.500	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	7.700	15.000
CUT(-) / FILL(+)	0.000	-0.767	-0.708	0.317	0.332	0.368	0.453	0.501	0.026	0.045	0.000		
DESIGN LEVEL	90.962	88.697	88.697	89.447	89.462	89.567	89.462	89.447	88.697	88.697	88.647		

CH: 200.000



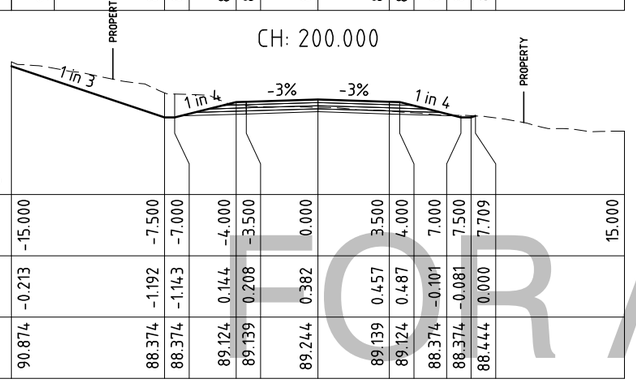
RL87.6												
OFFSET	-15.000	-13.851	-7.500	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	8.076	15.000
CUT(-) / FILL(+)	0.000	-1.113	-1.093	-0.202	-0.148	0.301	0.215	0.237	-0.361	-0.283	0.000		
DESIGN LEVEL	92.807	90.690	90.690	91.440	91.455	91.560	91.455	91.440	90.690	90.690	90.882		

CH: 280.000



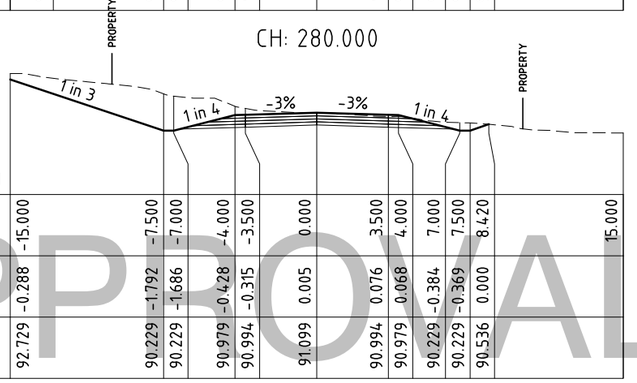
RL83.9											
OFFSET	-15.000	-7.500	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	9.359	15.000
CUT(-) / FILL(+)	-0.192	-1.798	-1.732	-0.594	-0.520	0.021	-0.097	-0.121	-0.861	-0.818	0.000	
DESIGN LEVEL	89.082	86.939	86.939	87.689	87.704	87.809	87.704	87.689	86.939	86.939	87.559	

CH: 140.000



RL84.6												
OFFSET	-15.000	-7.500	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	7.709	15.000
CUT(-) / FILL(+)	-0.213	-1.192	-1.143	0.144	0.208	0.382	0.457	0.487	-0.101	-0.081	0.000	
DESIGN LEVEL	90.874	88.374	88.374	89.124	89.139	89.244	89.139	89.124	88.374	88.374	88.444	

CH: 188.393



RL87.1												
OFFSET	-15.000	-7.500	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	8.420	15.000
CUT(-) / FILL(+)	-0.288	-1.792	-1.686	-0.428	-0.315	0.005	0.076	0.068	-0.384	-0.369	0.000	
DESIGN LEVEL	92.729	90.229	90.229	90.979	90.994	91.099	90.994	90.979	90.229	90.229	90.536	

CH: 260.000

				SURVEY DATA	
				DATUM	GDA2020
				MAP GRID	MGA56
				HEIGHT ORIGIN	AHD
				SURVEY BOOKS	
1	FOR APPROVAL	NJF	30/06/24	NJF	30/06/24
	REVISION/DETAILS	DWN	DATE	DES	DATE

FILE: C:\12DS\DATA\ACSSYN\220089 SOILCO BROMELTON DEVELOPMENT - 260 MITCHELL ROAD_596\DESIGN\DRAWING FILES\ACS-220089-GEN.DWG PLOT TIME: 04/7/2024 - 11:42AM BY USER: MALINDASELLARS

SOILCO

PO BOX 199, UNANDERRA NSW 2526

BROMELTON DEVELOPMENT

260 MITCHELL ROAD, BROMELTON QLD 4285

CROSS SECTIONS - SHEET 02

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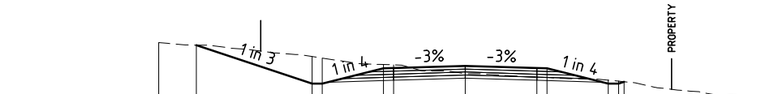
ACS Engineers
CIVIL | ENVIRONMENTAL | PROJECT MANAGEMENT

ENGINEERING CERTIFICATION (RPEQ)

#	FIELD	NAME	SIGNATURE	DATE
13697	CIVIL	S. SHAY		04/07/24

DRAWING NUMBER: ACS-220089-ROAD-09

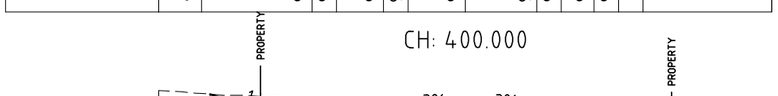
REVISION: 1



RL89

OFFSET	-15.000	-13.155	-7.500	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	7.774	15.000
CUT(-) / FILL(+)	0.000		-1.328	-1.249	-0.188	-0.155	0.378	0.448	0.452	-0.174	-0.124	0.000	
DESIGN LEVEL	94.814		92.929	92.929	93.679	93.694	93.799	93.694	93.679	92.929	92.929	93.021	

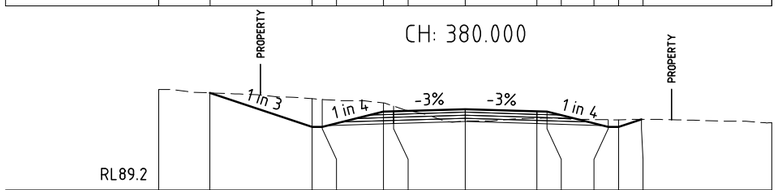
CH: 400.000



RL89.3

OFFSET	-15.000	-12.485	-7.500	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	8.406	15.000
CUT(-) / FILL(+)		0.000	-1.315	-1.284	-0.273	-0.233	0.128	0.339	0.328	-0.365	-0.341	0.000	
DESIGN LEVEL	94.280		92.619	92.619	93.369	93.384	93.489	93.384	93.369	92.619	92.619	92.920	

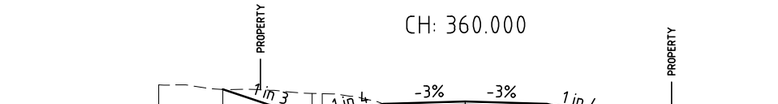
CH: 380.000



RL89.2

OFFSET	-15.000	-12.502	-7.500	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	8.621	15.000
CUT(-) / FILL(+)		0.000	-1.384	-1.343	-0.423	-0.255	0.586	0.339	0.322	-0.353	-0.348	0.000	
DESIGN LEVEL	93.950		92.283	92.283	93.033	93.048	93.153	93.048	93.033	92.283	92.283	92.657	

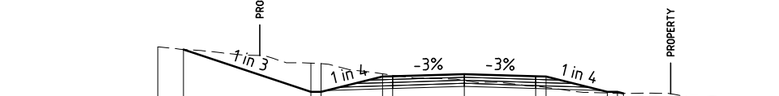
CH: 360.000



RL88.9

OFFSET	-15.000	-11.866	-7.500	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	8.323	15.000
CUT(-) / FILL(+)		0.000	-1.257	-1.248	0.003	0.193	0.541	0.355	0.354	-0.275	-0.278	0.000	
DESIGN LEVEL	93.377		91.922	91.922	92.672	92.687	92.792	92.687	92.672	91.922	91.922	92.196	

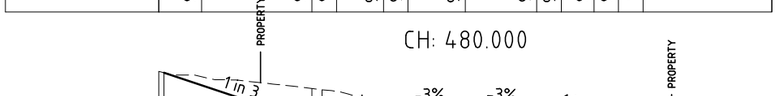
CH: 340.000



RL90.3

OFFSET	-15.000	-13.739	-7.500	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	7.785	15.000
CUT(-) / FILL(+)		0.000	-1.411	-1.386	-0.134	-0.049	0.311	0.494	0.527	0.050	0.069	0.000	
DESIGN LEVEL	96.002		93.922	93.922	94.672	94.687	94.792	94.687	94.672	93.922	93.922	93.851	

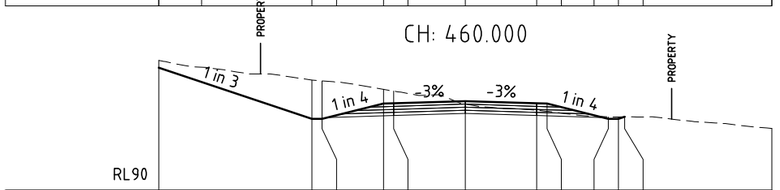
CH: 480.000



RL90.1

OFFSET	-15.000	-14.745	-7.500	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	7.575	15.000
CUT(-) / FILL(+)	0.000		-1.645	-1.584	-0.380	-0.291	0.204	0.269	0.263	-0.029	0.015	0.000	
DESIGN LEVEL	96.127		93.712	93.712	94.462	94.477	94.582	94.477	94.462	93.712	93.712	93.693	

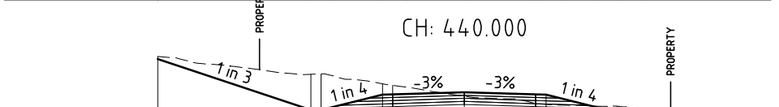
CH: 460.000



RL90

OFFSET	-15.000		-7.500	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	7.803	15.000
CUT(-) / FILL(+)	-0.358		-1.899	-1.859	-0.694	-0.590	0.146	0.342	0.379	-0.097	-0.096	0.000	
DESIGN LEVEL	95.976		93.476	93.476	94.226	94.241	94.346	94.241	94.226	93.476	93.476	93.577	

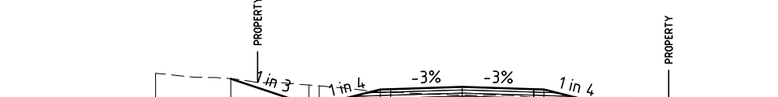
CH: 440.000



RL89.6

OFFSET	-15.000		-7.500	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	7.913	15.000
CUT(-) / FILL(+)	-0.117		-1.745	-1.763	-0.531	-0.441	0.194	0.445	0.468	-0.188	-0.186	0.000	
DESIGN LEVEL	95.715		93.215	93.215	93.965	93.980	94.085	93.980	93.965	93.215	93.215	93.353	

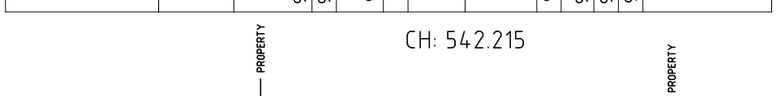
CH: 420.000



RL91.5

OFFSET	-15.000	-11.313	-7.500	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	8.202	15.000
CUT(-) / FILL(+)		0.000	-0.964	-0.922	0.137	0.168	0.395	0.409	0.413	-0.249	-0.247	0.000	
DESIGN LEVEL	95.816		94.545	94.545	95.295	95.310	95.415	95.310	95.295	94.545	94.545	94.779	

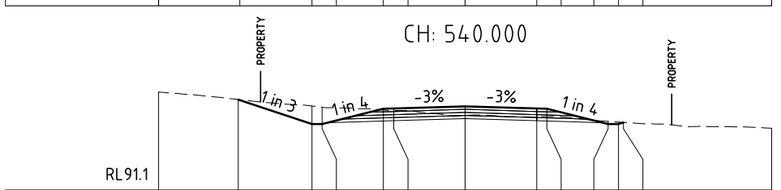
CH: 542.215



RL91.4

OFFSET	-15.000	-11.032	-7.500	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	8.094	15.000
CUT(-) / FILL(+)		0.000	-0.991	-0.948	0.109	0.204	0.387	0.373	0.378	-0.225	-0.217	0.000	
DESIGN LEVEL	95.700		94.522	94.522	95.272	95.287	95.392	95.287	95.272	94.522	94.522	94.720	

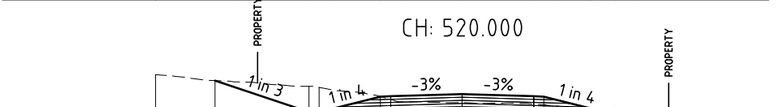
CH: 540.000



RL91.1

OFFSET	-15.000	-11.099	-7.500	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	7.749	15.000
CUT(-) / FILL(+)		0.000	-0.884	-0.821	0.062	0.099	0.445	0.418	0.390	-0.128	-0.098	0.000	
DESIGN LEVEL	95.522		94.322	94.322	95.072	95.087	95.192	95.087	95.072	94.322	94.322	94.405	

CH: 520.000



RL90.6

OFFSET	-15.000	-12.093	-7.500	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	7.818	15.000
CUT(-) / FILL(+)		0.000	-1.252	-1.202	-0.010	0.154	0.419	0.381	0.402	-0.124	-0.118	0.000	
DESIGN LEVEL	95.653		94.122	94.122	94.872	94.887	94.992	94.887	94.872	94.122	94.122	94.229	

CH: 500.000

				SURVEY DATA		
				DATUM	GDA2020	
				MAP GRID	MGA56	
				HEIGHT ORIGIN	AHD	
				SURVEY BOOKS		
1	FOR APPROVAL	NJF	30/06/24	NJF	30/06/24	
REVISION/DETAILS		DWN	DATE	DES	DATE	

FILE: C:\12DS\DATA\ACSSYN\220089 SOILCO BROMELTON DEVELOPMENT - 260 MITCHELL ROAD_596\DESIGN\DRAWING FILES\ACS-220089-GEN.DWG PLOT TIME: 04/7/2024 - 11:42AM BY USER: MALINDASELLARS

SOILCO

PO BOX 199, UNANDERRA NSW 2526

BROMELTON DEVELOPMENT

260 MITCHELL ROAD, BROMELTON QLD 4285

CROSS SECTIONS - SHEET 03

ENGINEERING CERTIFICATION (RPEQ)

#	FIELD	NAME	SIGNATURE	DATE
13697	CIVIL	S. SHAY		04/07/24

PO Box 554
Beaudesert QLD 4285
(07) 5541 3500
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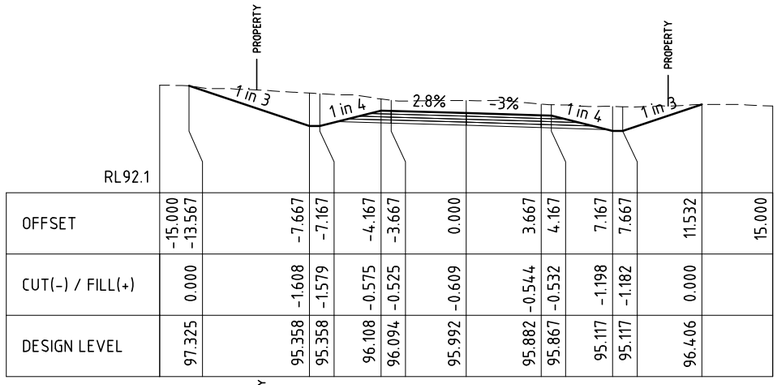
ACS Engineers
CIVIL | ENVIRONMENTAL | PROJECT MANAGEMENT

DRAWING NUMBER: ACS-220089-ROAD-10

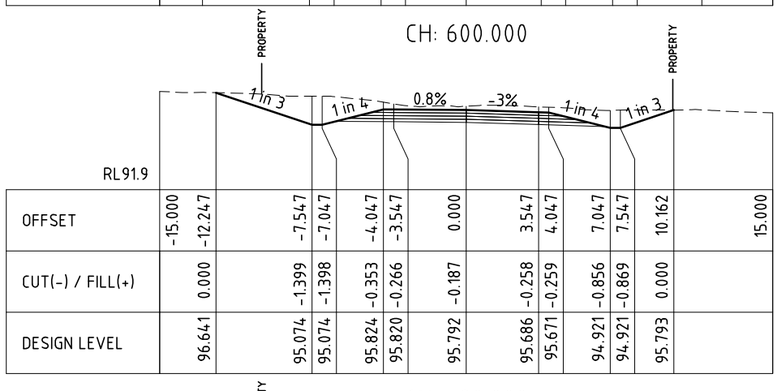
REVISION: 1



RL92.1

OFFSET	-15.000	-13.567	-7.667	-7.167	-4.167	-3.667	0.000	3.667	4.167	7.167	7.667	11.532	15.000
CUT(-) / FILL(+)	0.000		-1.608	-1.579	-0.575	-0.525	-0.609	-0.544	-0.532	-1.198	-1.182	0.000	
DESIGN LEVEL	97.325		95.358	95.358	96.108	96.094	95.992	95.882	95.867	95.117	95.117	96.406	

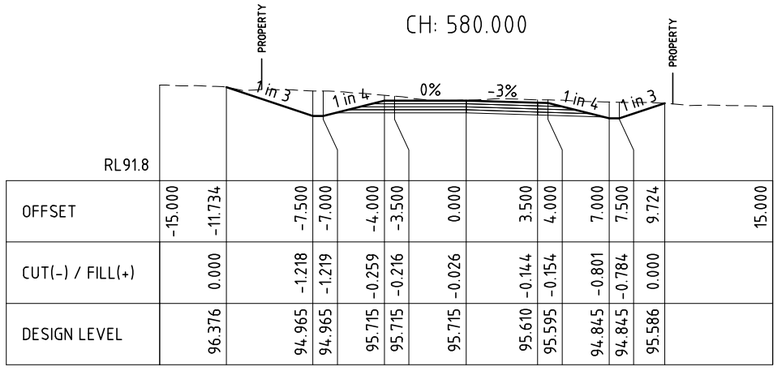
CH: 600.000



RL91.9

OFFSET	-15.000	-12.247	-7.547	-7.047	-4.047	-3.547	0.000	3.547	4.047	7.047	7.547	10.162	15.000
CUT(-) / FILL(+)	0.000		-1.399	-1.398	-0.353	-0.266	-0.187	-0.258	-0.259	-0.856	-0.869	0.000	
DESIGN LEVEL	96.641		95.074	95.074	95.824	95.820	95.792	95.686	95.671	94.921	94.921	95.793	

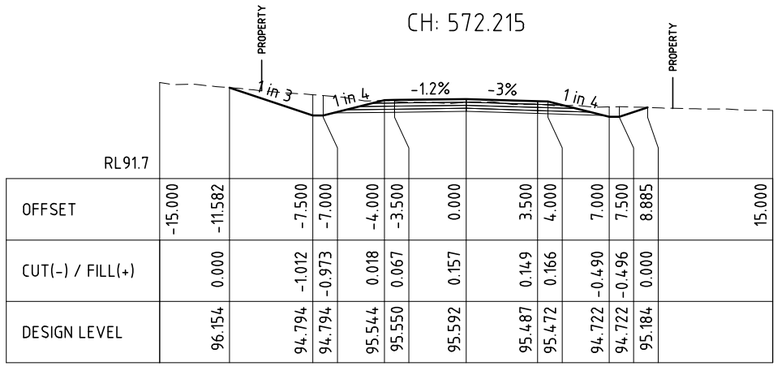
CH: 580.000



RL91.8

OFFSET	-15.000	-11.734	-7.500	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	9.724	15.000
CUT(-) / FILL(+)	0.000		-1.218	-1.219	-0.259	-0.216	-0.026	-0.144	-0.154	-0.801	-0.784	0.000	
DESIGN LEVEL	96.376		94.965	94.965	95.715	95.715	95.715	95.610	95.595	94.845	94.845	95.586	

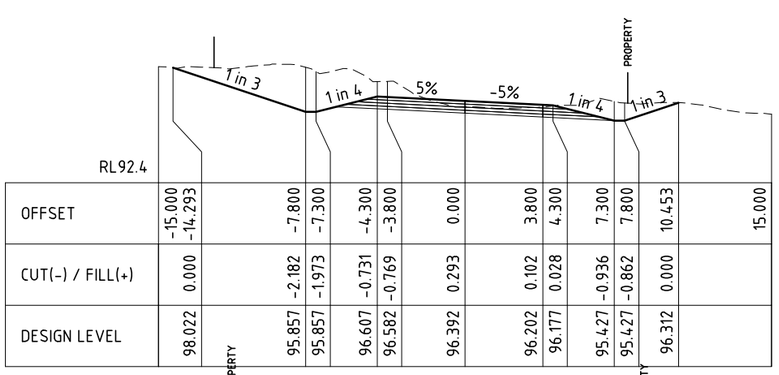
CH: 572.215



RL91.7

OFFSET	-15.000	-11.582	-7.500	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	8.885	15.000
CUT(-) / FILL(+)	0.000		-1.012	-0.973	0.018	0.067	0.157	0.149	0.166	-0.490	-0.496	0.000	
DESIGN LEVEL	96.154		94.794	94.794	95.544	95.550	95.592	95.487	95.472	94.722	94.722	95.184	

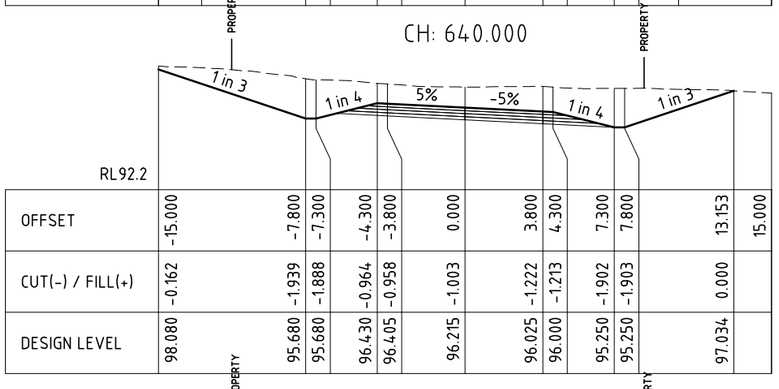
CH: 560.000



RL92.4

OFFSET	-15.000	-14.293	-7.800	-7.300	-4.300	-3.800	0.000	3.800	4.300	7.300	7.800	10.453	15.000
CUT(-) / FILL(+)	0.000		-2.182	-1.973	-0.731	-0.769	0.293	0.102	0.028	-0.936	-0.862	0.000	
DESIGN LEVEL	98.022		95.857	95.857	96.607	96.582	96.392	96.202	96.177	95.427	95.427	96.312	

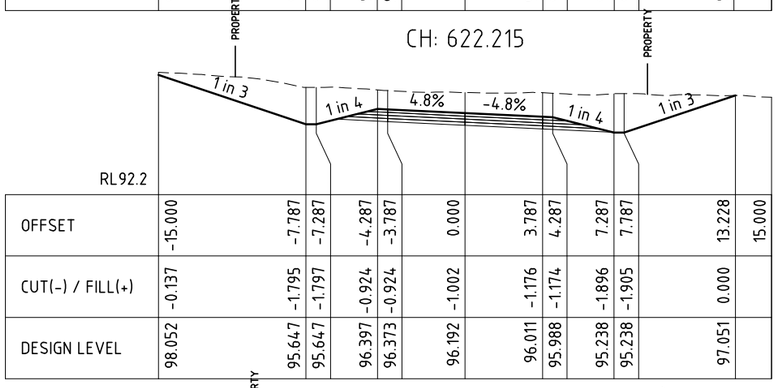
CH: 640.000



RL92.2

OFFSET	-15.000		-7.800	-7.300	-4.300	-3.800	0.000	3.800	4.300	7.300	7.800	13.153	15.000
CUT(-) / FILL(+)	-0.162		-1.939	-1.888	-0.964	-0.958	-1.003	-1.222	-1.213	-1.902	-1.903	0.000	
DESIGN LEVEL	98.080		95.680	95.680	96.430	96.405	96.215	96.025	96.000	95.250	95.250	97.034	

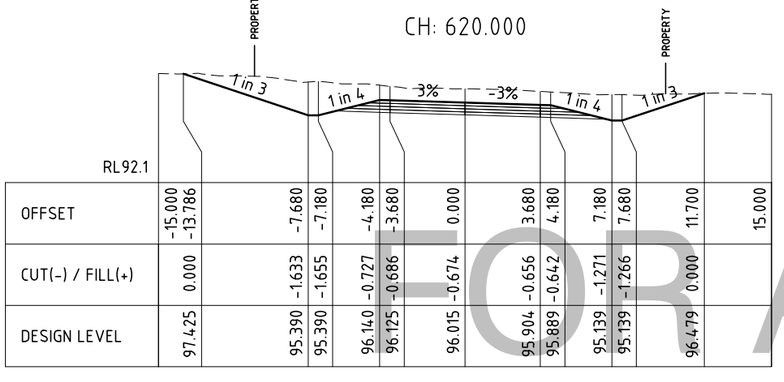
CH: 622.215



RL92.2

OFFSET	-15.000		-7.787	-7.287	-4.287	-3.787	0.000	3.787	4.287	7.287	7.787	13.228	15.000
CUT(-) / FILL(+)	-0.137		-1.795	-1.797	-0.924	-0.924	-1.002	-1.176	-1.174	-1.896	-1.905	0.000	
DESIGN LEVEL	98.052		95.647	95.647	96.397	96.373	96.192	96.011	95.988	95.238	95.238	97.051	

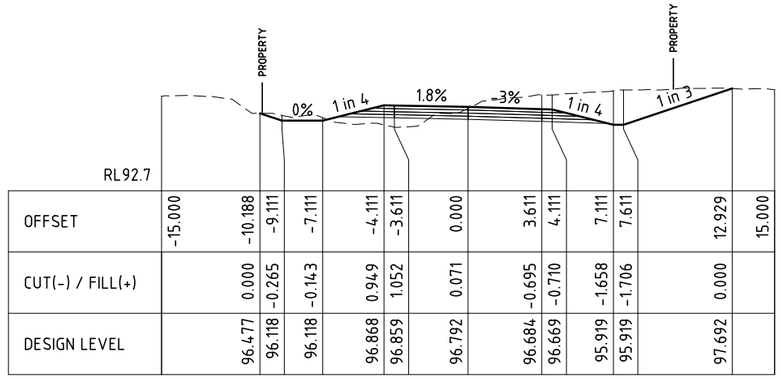
CH: 620.000



RL92.1

OFFSET	-15.000	-13.786	-7.680	-7.180	-4.180	-3.680	0.000	3.680	4.180	7.180	7.680	11.700	15.000
CUT(-) / FILL(+)	0.000		-1.633	-1.655	-0.727	-0.686	-0.674	-0.656	-0.642	-1.271	-1.266	0.000	
DESIGN LEVEL	97.425		95.390	95.390	96.140	96.125	96.015	95.904	95.889	95.139	95.139	96.479	

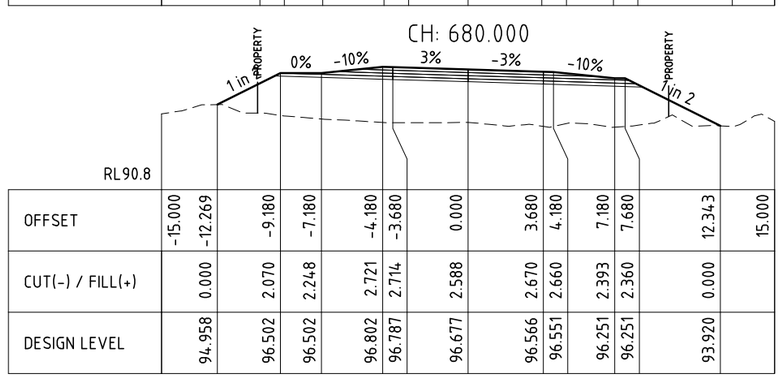
CH: 602.215



RL92.7

OFFSET	-15.000	-10.188	-9.111	-7.111	-4.111	-3.611	0.000	3.611	4.111	7.111	7.611	12.929	15.000
CUT(-) / FILL(+)		0.000	-0.265	-0.143	0.949	1.052	0.071	-0.695	-0.710	-1.658	-1.706	0.000	
DESIGN LEVEL	96.477	96.118	96.118	96.868	96.859	96.792	96.684	96.669	95.919	95.919	97.692		

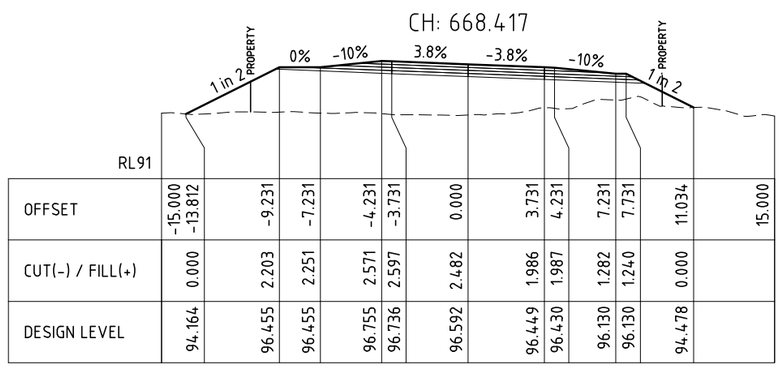
CH: 680.000



RL90.8

OFFSET	-15.000	-12.269	-9.180	-7.180	-4.180	-3.680	0.000	3.680	4.180	7.180	7.680	12.343	15.000
CUT(-) / FILL(+)	0.000		2.070	2.248	2.721	2.714	2.588	2.670	2.660	2.393	2.360	0.000	
DESIGN LEVEL	94.958		96.502	96.502	96.802	96.787	96.677	96.566	96.551	96.251	96.251	93.920	

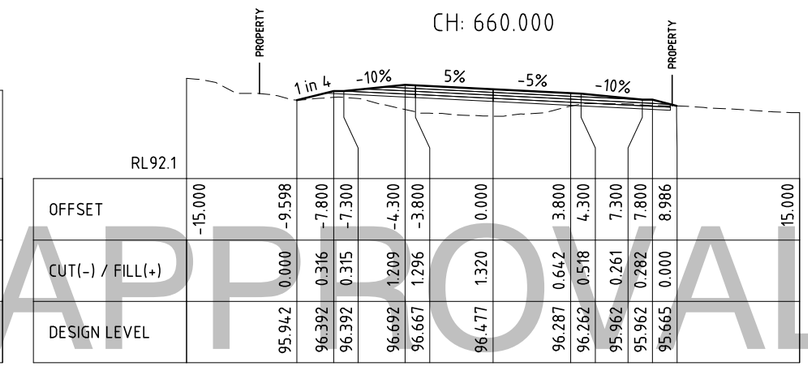
CH: 668.417



RL91

OFFSET	-15.000	-13.812	-9.231	-7.231	-4.231	-3.731	0.000	3.731	4.231	7.231	7.731	11.034	15.000
CUT(-) / FILL(+)	0.000		2.203	2.251	2.571	2.597	2.482	1.986	1.987	1.282	1.240	0.000	
DESIGN LEVEL	94.164		96.455	96.455	96.755	96.736	96.592	96.449	96.430	96.130	96.130	94.478	

CH: 660.000



RL92.1

OFFSET	-15.000	-9.598	-7.800	-7.300	-4.300	-3.800	0.000	3.800	4.300	7.300	7.800	8.986	15.000
CUT(-) / FILL(+)		0.000	0.316	0.315	1.209	1.296	1.320	0.642	0.518	0.261	0.282	0.000	
DESIGN LEVEL	95.942	96.392	96.392	96.692	96.667	96.477	96.287	96.262	95.962	95.962	95.665		

CH: 648.417

				SURVEY DATA	SOILCO	CROSS SECTIONS - SHEET 04
				DATUM GDA2020	PO BOX 199, UNANDERRA NSW 2526	
				MAP GRID MGA56		
				HEIGHT ORIGIN AHD	BROMELTON DEVELOPMENT	
				SURVEY BOOKS		
1	FOR APPROVAL	NJF	30/06/24	NJF 30/06/24	260 MITCHELL ROAD, BROMELTON QLD 4285	
	REVISION/DETAILS	DWN	DATE	DES DATE		

FILE: C:\12DS\DATA\ACSSYN\220089 SOILCO BROMELTON DEVELOPMENT - 260 MITCHELL ROAD_596\DESIGN\DRAWING FILES\ACS-220089-GEN.DWG PLOT TIME: 04/7/2024 - 11:42AM BY USER: MALINDASELLARS

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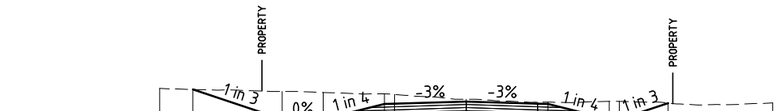
ACS Engineers
CIVIL | ENVIRONMENTAL | PROJECT MANAGEMENT

ENGINEERING CERTIFICATION (RPEQ)

#	FIELD	NAME	SIGNATURE	DATE
13697	CIVIL	S. SHAY		04/07/24

DRAWING NUMBER: ACS-220089-ROAD-11

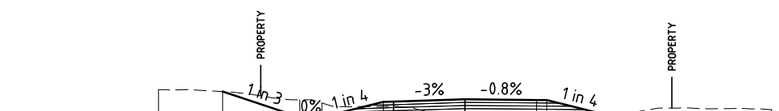
REVISION: 1



RL93.6

OFFSET	-15.000	-13.376	-9.000	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	9.882	15.000
CUT(-) / FILL(+)	0.000		-1.366	-1.311	-0.492	-0.455	-0.107	-0.076	-0.086	-0.874	-0.880	0.000	
DESIGN LEVEL	98.063		96.604	96.604	97.354	97.369	97.474	97.369	97.354	96.604	96.604	97.398	

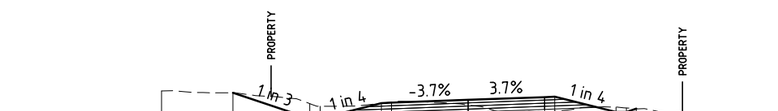
CH: 728.417



RL94.7

OFFSET	-15.000	-11.864	-8.100	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	7.554	15.000
CUT(-) / FILL(+)	0.000		-0.854	-0.689	0.220	0.230	0.800	0.794	0.802	0.023	0.023	0.000	
DESIGN LEVEL	99.063		97.809	97.809	98.559	98.574	98.679	98.650	98.646	97.896	97.896	97.883	

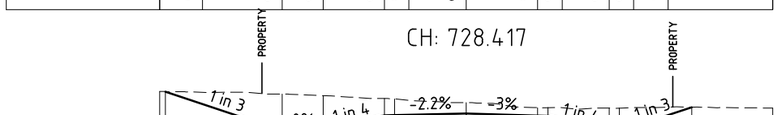
CH: 780.000



RL96

OFFSET	-15.000	-11.506	-7.746	-7.246	-4.246	-3.746	0.000	3.746	4.246	7.246	7.746	8.231	15.000
CUT(-) / FILL(+)	0.000		-0.722	-0.593	0.010	-0.026	0.251	0.727	0.719	-0.242	-0.197	0.000	
DESIGN LEVEL	100.300		99.047	99.047	99.797	99.815	99.953	100.091	100.110	99.360	99.360	99.521	

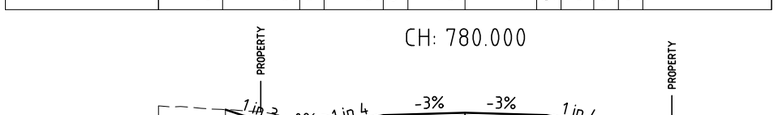
CH: 820.000



RL93.4

OFFSET	-15.000	-14.718	-9.000	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	11.038	15.000
CUT(-) / FILL(+)	0.000		-1.782	-1.711	-0.816	-0.785	-0.528	-0.388	-0.408	-1.130	-1.131	0.000	
DESIGN LEVEL	98.394		96.488	96.488	97.238	97.249	97.324	97.219	97.204	96.454	96.454	97.634	

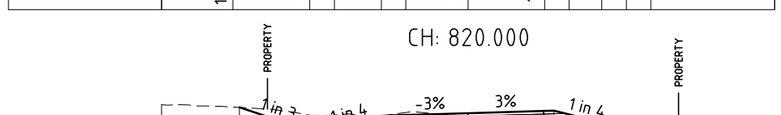
CH: 720.000



RL94.2

OFFSET	-15.000	-11.729	-8.683	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	8.393	15.000
CUT(-) / FILL(+)	0.000		-0.712	-0.699	0.608	0.569	0.710	0.566	0.549	-0.162	-0.242	0.000	
DESIGN LEVEL	98.312		97.297	97.297	98.047	98.062	98.167	98.062	98.047	97.297	97.297	97.594	

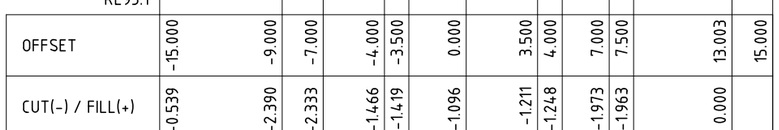
CH: 760.560



RL95.8

OFFSET	-15.000	-11.186	-7.700	-7.200	-4.200	-3.700	0.000	3.700	4.200	7.200	7.700	8.581	15.000
CUT(-) / FILL(+)	0.000		-0.762	-0.761	-0.013	-0.057	0.166	0.640	0.733	-0.273	-0.292	0.000	
DESIGN LEVEL	100.025		98.863	98.863	99.613	99.628	99.739	99.850	99.865	99.115	99.115	99.409	

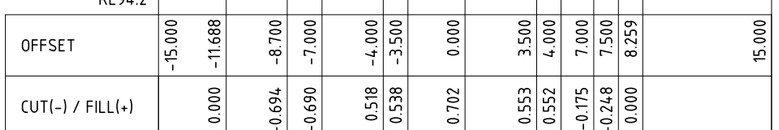
CH: 813.893



RL93.1

OFFSET	-15.000		-9.000	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	13.003	15.000
CUT(-) / FILL(+)	-0.539	-2.390		-2.333	-1.466	-1.419	-1.096	-1.211	-1.248	-1.973	-1.963	0.000	
DESIGN LEVEL	98.265	96.265		96.265	97.015	97.016	97.022	96.917	96.902	96.152	96.152	97.986	

CH: 700.000



RL94.2

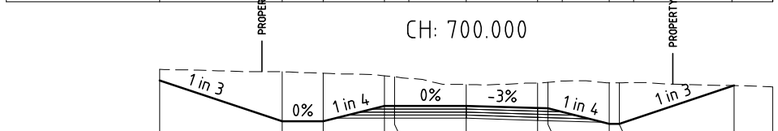
OFFSET	-15.000	-11.688	-8.700	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	8.259	15.000
CUT(-) / FILL(+)	0.000		-0.694	-0.690	0.518	0.538	0.702	0.553	0.552	-0.175	-0.248	0.000	
DESIGN LEVEL	98.279		97.283	97.283	98.033	98.048	98.153	98.048	98.033	97.283	97.283	97.536	

CH: 760.000

RL95.4

OFFSET	-15.000	-10.870	-7.596	-7.096	-4.096	-3.596	0.000	3.596	4.096	7.096	7.596	8.293	15.000
CUT(-) / FILL(+)	0.000		-0.953	-0.953	-0.194	-0.183	0.366	0.694	0.733	-0.206	-0.221	0.000	
DESIGN LEVEL	99.497		98.406	98.406	99.156	99.171	99.279	99.331	99.338	98.588	98.588	98.820	

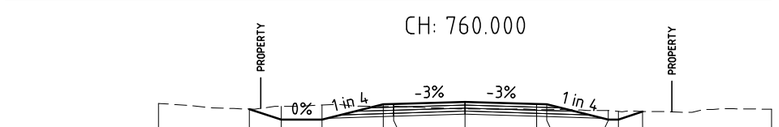
CH: 800.000



RL93.1

OFFSET	-15.000		-9.000	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	13.104	15.000
CUT(-) / FILL(+)	-0.539	-2.426		-2.351	-1.476	-1.427	-1.048	-1.217	-1.274	-2.000	-2.005	0.000	
DESIGN LEVEL	98.251	96.251		96.251	97.001	97.001	97.001	96.896	96.881	96.131	96.131	97.999	

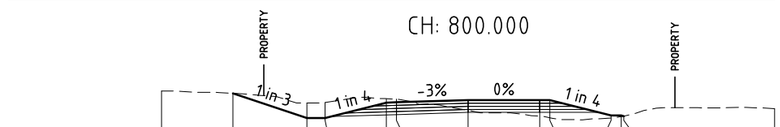
CH: 698.417



RL93.8

OFFSET	-15.000	-10.555	-9.000	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	8.686	15.000
CUT(-) / FILL(+)		0.000	-0.650	-0.714	0.109	0.117	0.339	0.269	0.257	-0.454	-0.409	0.000	
DESIGN LEVEL		97.350	96.832	96.832	97.582	97.597	97.702	97.597	97.582	96.832	96.832	97.227	

CH: 740.000



RL94.9

OFFSET	-15.000	-11.508	-7.883	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	7.621	15.000
CUT(-) / FILL(+)	0.000		-0.730	-0.758	-0.192	-0.153	0.495	0.773	0.860	0.121	0.052	0.000	
DESIGN LEVEL	99.225		98.017	98.017	98.767	98.782	98.887	98.887	98.887	98.137	98.137	98.107	

CH: 787.226

				SURVEY DATA	SOILCO	CROSS SECTIONS - SHEET 05
				DATUM: GDA2020		
				MAP GRID: MGA56	PO BOX 199, UNANDERRA NSW 2526	
				HEIGHT ORIGIN: AHD		
				SURVEY BOOKS	BROMELTON DEVELOPMENT	
1	FOR APPROVAL	NJF	30/06/24	NJF	30/06/24	
	REVISION/DETAILS	DWN	DATE	DES	DATE	260 MITCHELL ROAD, BROMELTON QLD 4285

FILE: C:\12DS\DATA\ACSSYN\220089 SOILCO BROMELTON DEVELOPMENT - 260 MITCHELL ROAD_596\DESIGN\DRAWING FILES\ACS-220089-GEN.DWG PLOT TIME: 04/7/2024 - 11:42AM BY USER: MALINDASELLARS

ENGINEERING CERTIFICATION (RPEQ)

#	FIELD	NAME	SIGNATURE	DATE
13697	CIVIL	S. SHAY		04/07/24

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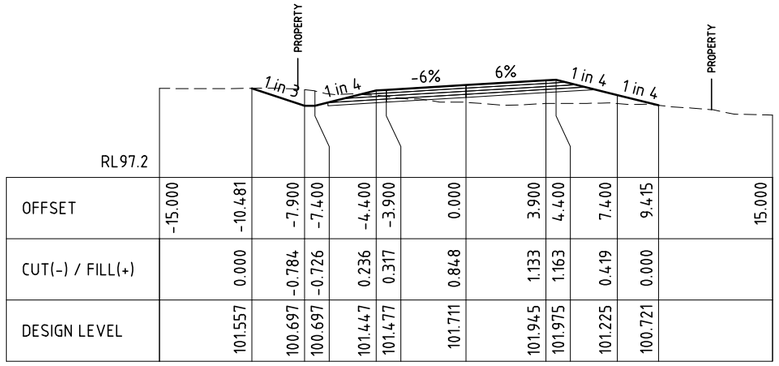
CIVIL | ENVIRONMENTAL | PROJECT MANAGEMENT

DRAWING NUMBER: ACS-220089-ROAD-12

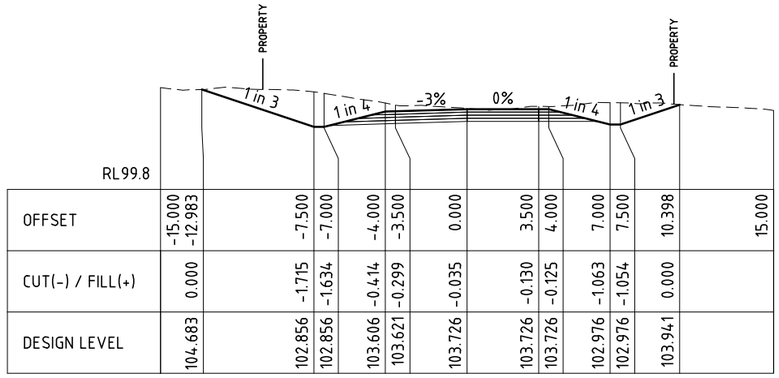
REVISION: 1



RL97.2

OFFSET	-15.000	-10.481	-7.900	-7.400	-4.400	-3.900	0.000	3.900	4.400	7.400	9.415	15.000
CUT(-) / FILL(+)		0.000	-0.784	-0.726	0.236	0.317	0.848	1.133	1.163	0.419	0.000	
DESIGN LEVEL		101.557	100.697	100.697	101.447	101.477	101.711	101.945	101.975	101.225	100.721	

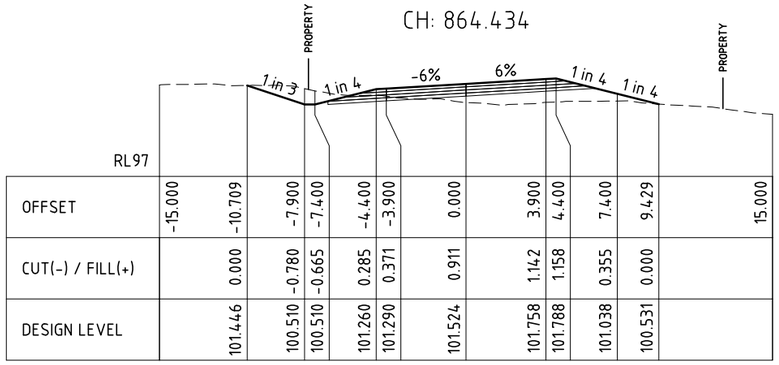
CH: 864.434



RL99.8

OFFSET	-15.000	-12.983	-7.500	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	10.398	15.000
CUT(-) / FILL(+)	0.000		-1.715	-1.634	-0.414	-0.299	-0.035	-0.130	-0.125	-1.063	-1.054	0.000	
DESIGN LEVEL	104.683		102.856	102.856	103.606	103.621	103.726	103.726	103.726	102.976	102.976	103.941	

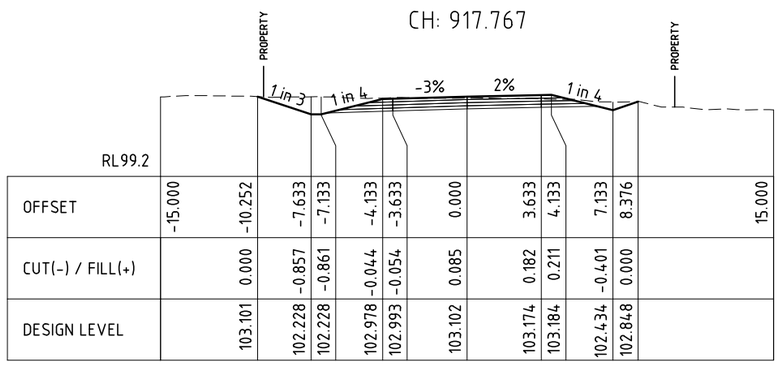
CH: 917.767



RL97

OFFSET	-15.000	-10.709	-7.900	-7.400	-4.400	-3.900	0.000	3.900	4.400	7.400	9.429	15.000
CUT(-) / FILL(+)		0.000	-0.780	-0.665	0.285	0.371	0.911	1.142	1.158	0.355	0.000	
DESIGN LEVEL		101.446	100.510	100.510	101.260	101.290	101.524	101.758	101.788	101.038	100.531	

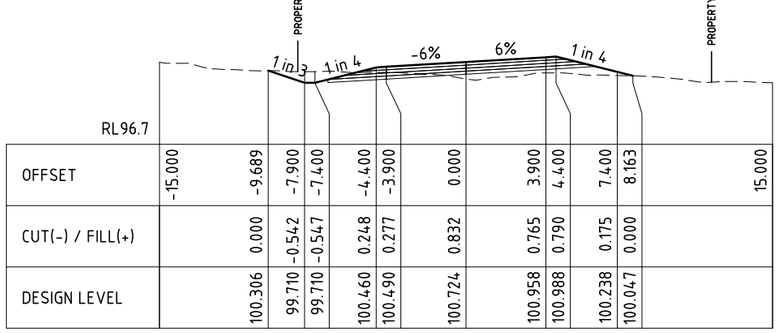
CH: 860.000



RL99.2

OFFSET	-15.000	-10.252	-7.633	-7.133	-4.133	-3.633	0.000	3.633	4.133	7.133	8.376	15.000
CUT(-) / FILL(+)		0.000	-0.857	-0.861	-0.044	-0.054	0.085	0.182	0.211	-0.401	0.000	
DESIGN LEVEL		103.101	102.228	102.228	102.978	102.993	103.102	103.174	103.184	102.434	102.848	

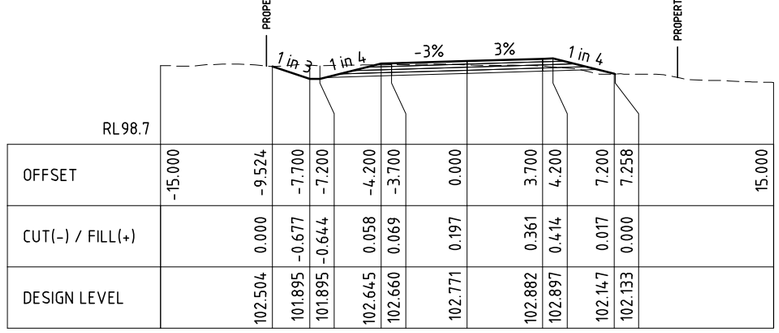
CH: 900.000



RL96.7

OFFSET	-15.000	-9.689	-7.900	-7.400	-4.400	-3.900	0.000	3.900	4.400	7.400	8.163	15.000
CUT(-) / FILL(+)		0.000	-0.542	-0.547	0.248	0.277	0.832	0.765	0.790	0.175	0.000	
DESIGN LEVEL		100.306	99.710	99.710	100.460	100.490	100.724	100.958	100.988	100.238	100.047	

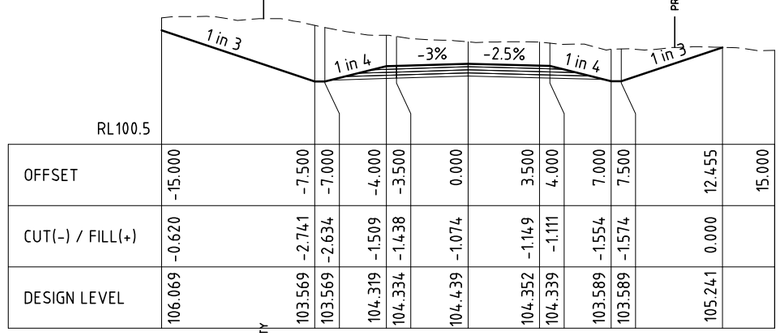
CH: 840.560



RL98.7

OFFSET	-15.000	-9.524	-7.700	-7.200	-4.200	-3.700	0.000	3.700	4.200	7.200	7.258	15.000
CUT(-) / FILL(+)		0.000	-0.677	-0.644	0.058	0.069	0.197	0.361	0.414	0.017	0.000	
DESIGN LEVEL		102.504	101.895	101.895	102.645	102.660	102.771	102.882	102.897	102.147	102.133	

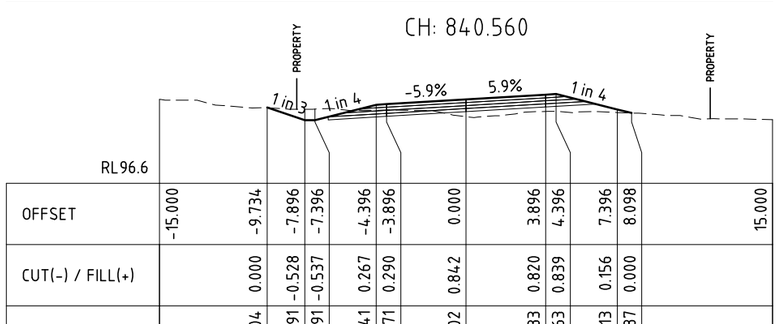
CH: 891.100



RL100.5

OFFSET	-15.000	-7.500	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	12.455	15.000
CUT(-) / FILL(+)	-0.620	-2.741	-2.634	-1.509	-1.438	-1.074	-1.149	-1.111	-1.554	-1.574	0.000	
DESIGN LEVEL	106.069	103.569	103.569	104.319	104.334	104.439	104.352	104.339	103.589	103.589	105.241	

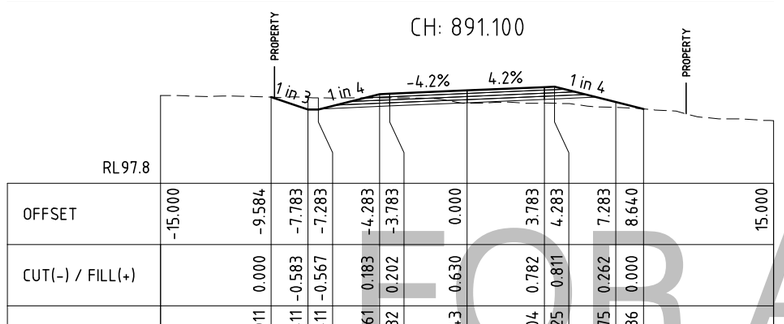
CH: 940.000



RL96.6

OFFSET	-15.000	-9.734	-7.896	-7.396	-4.396	-3.896	0.000	3.896	4.396	7.396	8.098	15.000
CUT(-) / FILL(+)		0.000	-0.528	-0.537	0.267	0.290	0.842	0.820	0.839	0.156	0.000	
DESIGN LEVEL		100.304	99.691	99.691	100.441	100.471	100.702	100.933	100.963	100.213	100.037	

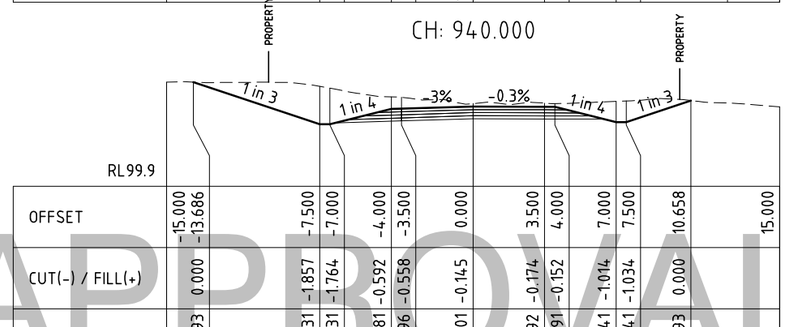
CH: 840.000



RL97.8

OFFSET	-15.000	-9.584	-7.783	-7.283	-4.283	-3.783	0.000	3.783	4.283	7.283	8.640	15.000
CUT(-) / FILL(+)		0.000	-0.583	-0.567	0.183	0.202	-0.630	0.782	0.811	0.262	0.000	
DESIGN LEVEL		102.011	101.411	101.411	102.161	102.182	102.343	102.504	102.525	101.775	101.436	

CH: 880.000



RL99.9

OFFSET	-15.000	-13.686	-7.500	-7.000	-4.000	-3.500	0.000	3.500	4.000	7.000	7.500	10.658	15.000
CUT(-) / FILL(+)	0.000		-1.857	-1.764	-0.592	-0.558	-0.145	-0.174	-0.152	-1.014	-1.034	0.000	
DESIGN LEVEL	104.993		102.931	102.931	103.681	103.696	103.801	103.792	103.791	103.041	103.041	104.093	

CH: 920.000

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				DATUM	GDA2020
				MAP GRID	MGA56
				HEIGHT ORIGIN	AHD
				SURVEY BOOKS	
1	FOR APPROVAL	NJF	30/06/24	NJF	30/06/24
	REVISION/DETAILS	DWN	DATE	DES	DATE

FILE: C:\12DS\DATA\ACSSYN\220089 SOILCO BROMELTON DEVELOPMENT - 260 MITCHELL ROAD_596\DESIGN\DRAWING FILES\ACS-220089-GEN.DWG PLOT TIME: 04/7/2024 - 11:42AM BY USER: MALINDASELLARS

SOILCO

PO BOX 199, UNANDERRA NSW 2526

BROMELTON DEVELOPMENT

260 MITCHELL ROAD, BROMELTON QLD 4285

CROSS SECTIONS - SHEET 06

ENGINEERING CERTIFICATION (RPEQ)

#	FIELD	NAME	SIGNATURE	DATE
13697	CIVIL	S. SHAY		04/07/24

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Beaudesert QLD 4285
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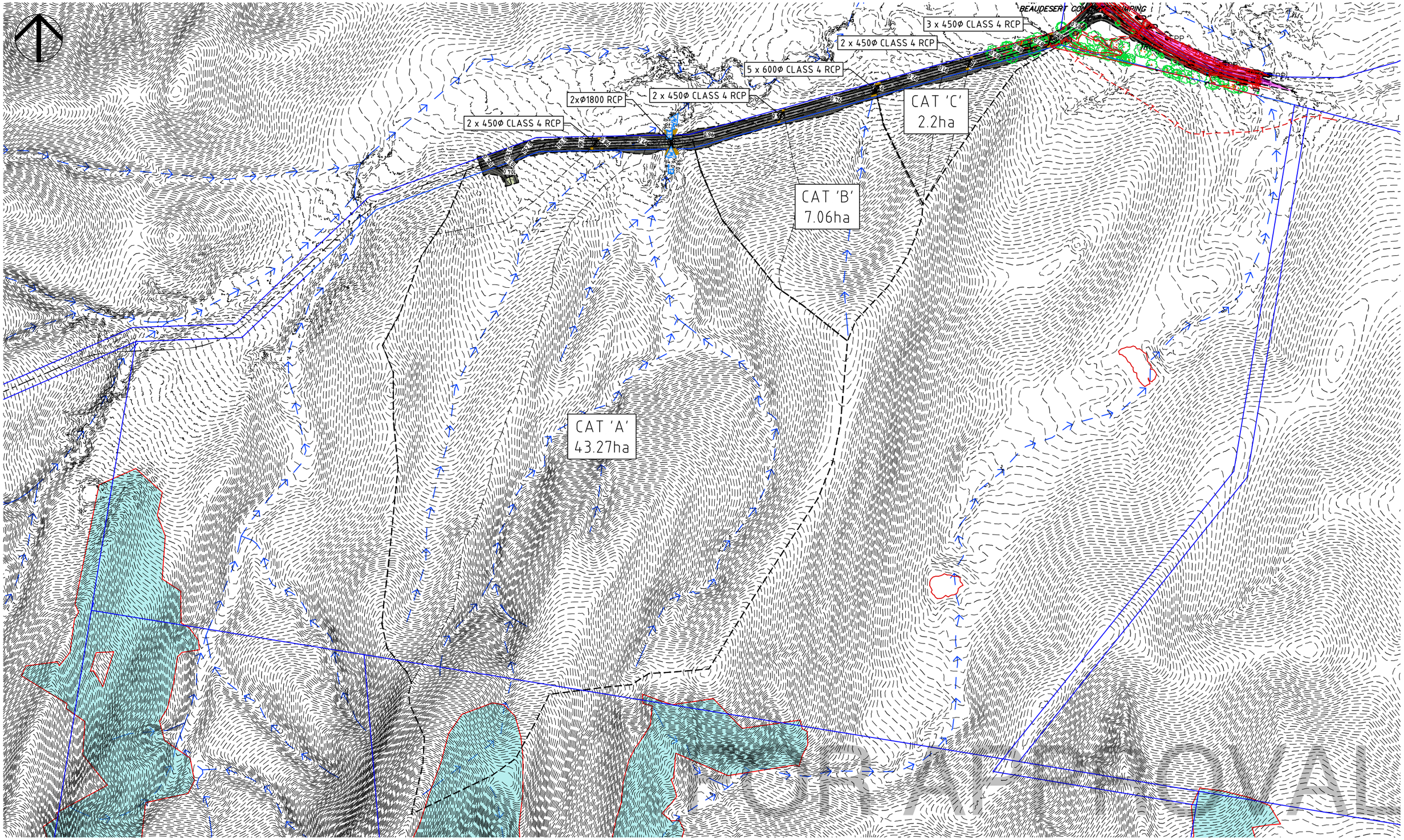
ACS Engineers
CIVIL | ENVIRONMENTAL | PROJECT MANAGEMENT

DRAWING NUMBER: ACS-220089-ROAD-13

REVISION: 1



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				SURVEY BOOKS			
1	FOR APPROVAL	NJF	30/06/24	NJF	30/06/24	260 MITCHELL ROAD, BROMELTON QLD 4285	
REVISION/DETAILS		DWN	DATE	DES	DATE		

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ENGINEERING CERTIFICATION (RPEQ)

#	FIELD	NAME	SIGNATURE	DATE
13697	CIVIL	S. SHAY		04/07/24

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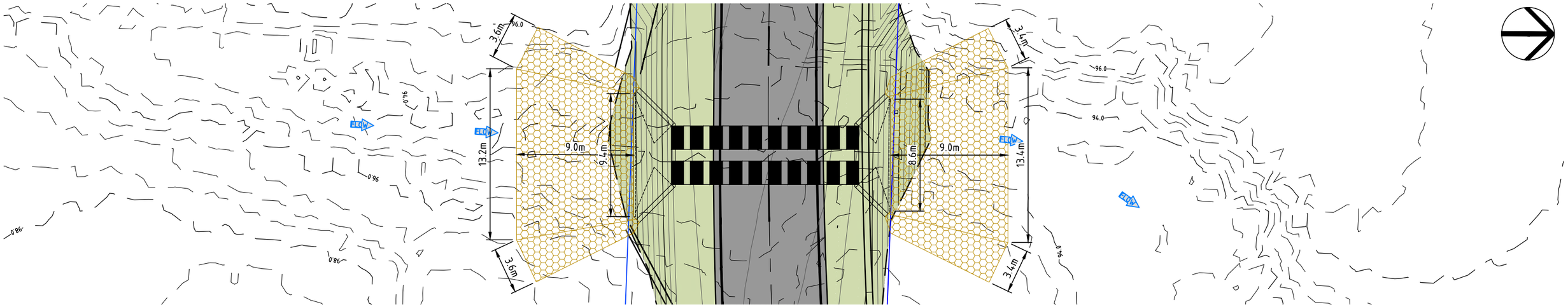
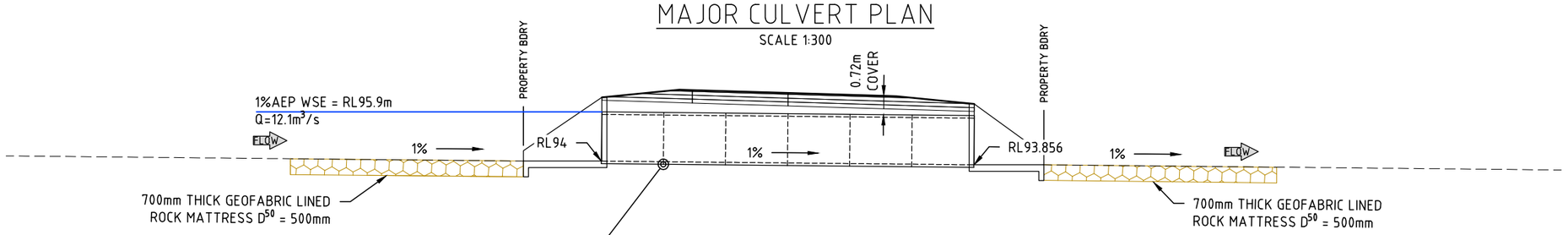
DRAWING NUMBER: ACS-220089-ROAD-14

REVISION: 1

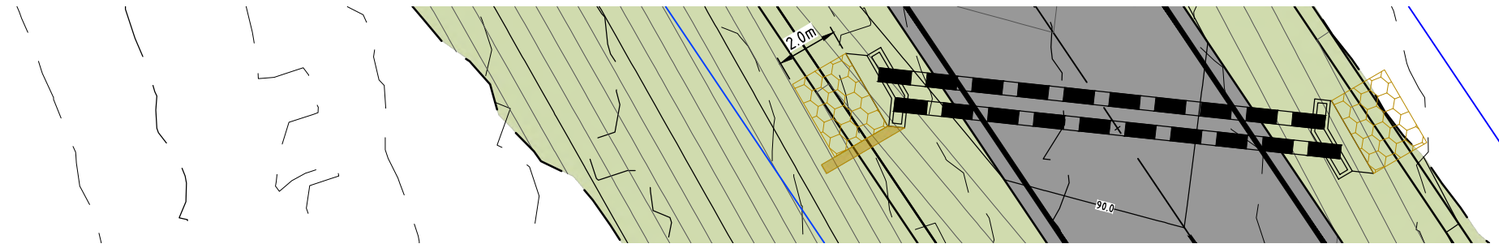


MAJOR CULVERT PLAN

SCALE 1:300

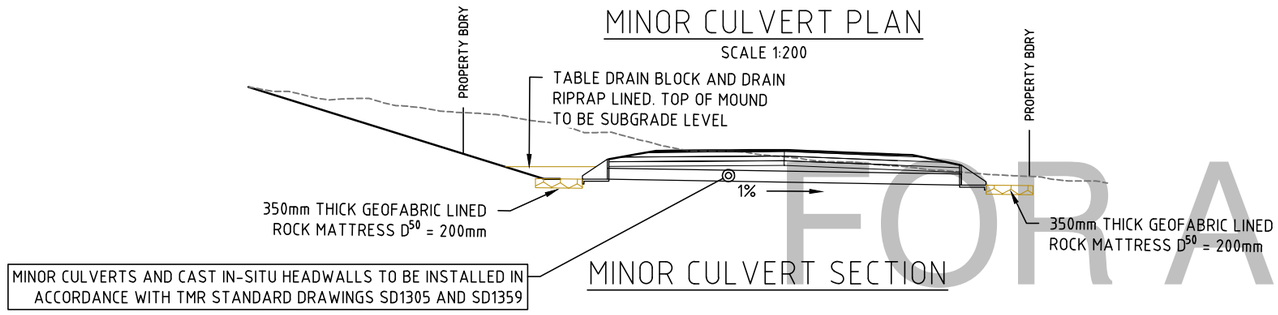


MAJOR CULVERT SECTION



MINOR CULVERT PLAN

SCALE 1:200



MINOR CULVERT SECTION

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				SURVEY BOOKS			
1	FOR APPROVAL	NJF	30/06/24	NJF	30/06/24	260 MITCHELL ROAD, BROMELTON QLD 4285	
	REVISION/DETAILS	DWN	DATE	DES	DATE		

ENGINEERING CERTIFICATION (RPEQ)

#	FIELD	NAME	SIGNATURE	DATE
13697	CIVIL	S. SHAY		04/07/24

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DRAWING NUMBER: ACS-220089-ROAD-15

REVISION: 1

FILE: C:\12DS\DATA\ACSSYN\220089 SOILCO BROMELTON DEVELOPMENT - 260 MITCHELL ROAD_596\DESIGN\DRAWING FILES\ACS-220089-GEN.DWG PLOT TIME: 04/7/2024 - 11:43AM BY USER: MALINDASELLARS

SEDIMENT AND EROSION CONTROL - GENERAL NOTES:

1. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES MUST BE IMPLEMENTED AND A REVISED EROSION AND SEDIMENT CONTROL PLAN (ESCP) MUST BE SUBMITTED FOR APPROVAL IN THE EVENT THAT SITE CONDITIONS CHANGE SIGNIFICANTLY FROM THOSE CONSIDERED WITHIN THE CURRENT ESCP.
2. WHERE THERE IS A HIGH PROBABILITY THAT SERIOUS OR MATERIAL ENVIRONMENTAL HARM MAY OCCUR AS A RESULT OF CURRENT SEDIMENT LEAVING THE SITE, APPROPRIATE ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES MUST BE IMPLEMENTED SUCH THAT ALL REASONABLE AND PRACTICABLE MEASURES ARE BEING TAKEN TO PREVENT OR MINIMISE SUCH HARM. ONLY THOSE WORKS NECESSARY TO MINIMISE OR PREVENT ENVIRONMENTAL HARM SHALL BE CONDUCTED ON-SITE PRIOR TO APPROVAL OF THE AMENDED EROSION AND SEDIMENT CONTROL PLAN (ESCP).
3. IN CIRCUMSTANCES WHERE IT IS CONSIDERED NECESSARY TO PREPARE AN AMENDED EROSION AND SEDIMENT CONTROL PLAN (ESCP), AND WHERE THE DELIVERY OF SUCH AN AMENDED ESCP IS NOT IMMINENT, THEN ALL NECESSARY NEW OR MODIFIED EROSION AND SEDIMENT CONTROL WORKS MUST BE IN ACCORDANCE TO WITH IECA (2008) BEST PRACTICE EROSION & SEDIMENT CONTROL. UPON APPROVAL OF THE AMENDED ESCP ALL WORKS MUST BE IMPLEMENTED IN ACCORDANCE WITH THE AMENDED PLAN.

SITE ACCESS:

1. PRIOR TO THE COMMENCEMENT OF SITE WORKS, THE LOCATION OF THE SITE ACCESS POINT MUST BE VERIFIED WITH RELEVANT LOCAL AUTHORITY.
2. SITE ACCESS IS RESTRICTED TO ONE LOCATION.
3. SITE EXIT POINT MUST BE APPROPRIATELY MANAGED TO MINIMISE THE RISK OF SEDIMENT BEING TRACKED ONTO SEALED PUBLIC ROADWAYS.

STORMWATER RUNOFF FROM ACCESS ROADS AND STABILISED ENTRY/EXIT POINTS MUST DRAIN TO AN APPROPRIATE SEDIMENT CONTROL DEVICE.

LAND CLEARING

1. LAND CLEARING MUST BE DELAYED AS LONG AS PRACTICABLE AND MUST BE UNDERTAKEN IN CONJUNCTION WITH DEVELOPMENT, UNLESS OTHERWISE APPROVED BY THE SUPERINTENDENT.
2. ALL REASONABLE AND PRACTICABLE EFFORTS MUST BE TAKEN TO DELAY THE REMOVAL OF, OR DISTURBANCE TO, EXISTING GROUND COVER (ORGANIC OR INORGANIC) PRIOR TO LAND-DISTURBING ACTIVITIES.
3. BULK TREE CLEARING MUST OCCUR IN A MANNER THAT MINIMISES DISTURBANCE TO EXISTING GROUND COVER (ORGANIC OR INORGANIC).
4. BULK TREE CLEARING AND GRUBBING OF THE SITE MUST BE IMMEDIATELY FOLLOWED BY SPECIFIED TEMPORARY STABILISATION MEASURES (E.G. TEMPORARY GRASSING, OR MULCHING) PRIOR TO COMMENCEMENT OF EACH STAGE OF CONSTRUCTION WORKS.
5. DISTURBANCE TO NATURAL WATERCOURSES (INCLUDING BED AND BANKS) AND THEIR ASSOCIATED RIPARIAN ZONES MUST BE LIMITED TO THE MINIMUM PRACTICABLE.
6. NO LAND CLEARING SHALL BE UNDERTAKEN UNLESS PRECEDED BY THE INSTALLATION OF ADEQUATE DRAINAGE AND SEDIMENT CONTROL MEASURES, UNLESS SUCH CLEARING IS REQUIRED FOR THE PURPOSE OF INSTALLING SUCH MEASURES, IN WHICH CASE, ONLY THE MINIMUM CLEARING REQUIRED TO INSTALL SUCH MEASURES SHALL OCCUR.
7. LAND CLEARING MUST BE LIMITED TO 5m FROM THE EDGE OF PROPOSED CONSTRUCTED WORKS, 2m OF ESSENTIAL CONSTRUCTION TRAFFIC ROUTES, AND A TOTAL OF 10m WIDTH FOR CONSTRUCTION ACCESS, UNLESS OTHERWISE APPROVED BY THE SUPERINTENDENT.
8. PRIOR TO LAND CLEARING, AREAS OF PROTECTED VEGETATION, AND SIGNIFICANT AREAS OF RETAINED VEGETATION MUST BE CLEARLY IDENTIFIED (E.G. WITH HIGH-VISIBILITY TAPE, OR LIGHT FENCING) FOR THE PURPOSES OF MINIMISING THE RISK OF UNNECESSARY LAND CLEARING.
9. ALL REASONABLE AND PRACTICABLE MEASURES MUST BE TAKEN TO MINIMISE THE REMOVAL OF, OR DISTURBANCE TO, THOSE TREES, SHRUBS AND GROUND COVERS (ORGANIC OR INORGANIC) THAT ARE INTENDED TO BE RETAINED.
10. ALL LAND CLEARING MUST BE IN ACCORDANCE WITH THE FEDERAL, STATE AND LOCAL GOVERNMENT VEGETATION PROTECTION/PRESERVATION REQUIREMENTS AND/OR POLICIES.
11. LAND CLEARING IS LIMITED TO THE MINIMUM PRACTICABLE DURING THOSE PERIODS WHEN SOIL EROSION DUE TO WIND, RAIN OR SURFACE WATER IS POSSIBLE.
12. LAND CLEARING MUST NOT EXTEND BEYOND THAT NECESSARY TO PROVIDE UP TO EIGHT (8) WEEKS OF SITE ACTIVITY DURING THOSE MONTHS WHEN THE ACTUAL OR AVERAGE RAINFALL IS LESS THAN 45mm, SIX (6) IF BETWEEN 45 AND 100mm, FOUR (4) WEEKS IF BETWEEN 100 AND 225mm, AND TWO (2) WEEKS IF GREATER THAN 225mm.

SOIL AND STOCKPILE MANAGEMENT:

1. ALL REASONABLE AND PRACTICABLE MEASURES MUST BE TAKEN TO OBTAIN THE MAXIMUM BENEFIT FROM EXISTING TOPSOIL, INCLUDING:
   (i) WHERE THE PROPOSED AREA OF SOIL DISTURBANCE DOES NOT EXCEED 2500m^2, AND THE TOPSOIL DOES NOT CONTAIN UNDESIRABLE WEED SEED, THE TOP 100mm OF SOIL LOCATED WITHIN AREAS OF PROPOSED SOIL DISTURBANCE (INCLUDING STOCKPILE AREAS) MUST BE STRIPPED AND STOCKPILED SEPARATELY FROM THE REMAINING SOIL.
   (ii) WHERE THE PROPOSED AREA OF SOIL DISTURBANCE EXCEEDS 2500m^2, AND THE TOPSOIL DOES NOT CONTAIN UNDESIRABLE WEED SEED, THE TOP 50mm OF SOIL MUST BE STRIPPED AND STOCKPILED SEPARATELY FROM THE REMAINING TOPSOIL, AND SPREAD AS A FINAL SURFACE SOIL.
   (iii) IN AREAS WHERE THE TOPSOIL CONTAINS UNDESIRABLE WEED SEED, THE AFFECTED SOIL MUST BE SUITABLY BURIED OR REMOVED FROM THE SITE.
2. STOCKPILES OF ERODIBLE MATERIAL THAT HAS THE POTENTIAL TO CAUSE ENVIRONMENTAL HARM IF DISPLACED MUST BE:
   (i) APPROPRIATELY PROTECTED FROM WIND, RAIN, CONCENTRATED SURFACE FLOW AND EXCESSIVE UP-SLOPE STORMWATER SURFACE FLOWS.
   (ii) LOCATED AT LEAST 2m FROM ANY HAZARDOUS AREA, RETAINED VEGETATION OR CONCENTRATED DRAINAGE LINE.
   (iii) LOCATED UP-SLOPE OF AN APPROPRIATE SEDIMENT CONTROL SYSTEM.
   (iv) PROVIDED WITH AN APPROPRIATE PROTECTIVE COVER (SYNTHETIC, MULCH OR VEGETATIVE) IF THE MATERIALS ARE LIKELY TO BE STOCKPILED FOR MORE THAN 28 DAYS.
   (v) PROVIDED WITH AN APPROPRIATE PROTECTIVE COVER (SYNTHETIC, MULCH OR VEGETATIVE) IF THE MATERIALS ARE LIKELY TO BE STOCKPILED FOR MORE THAN 10 DAYS DURING THOSE MONTHS THAT HAVE A HIGH EROSION RISK.
   (vi) PROVIDED WITH AN APPROPRIATE PROTECTIVE COVER (SYNTHETIC, MULCH OR VEGETATIVE) IF THE MATERIALS ARE LIKELY TO BE STOCKPILED FOR MORE THAN 5 DAYS DURING THOSE MONTHS THAT HAVE A EXTREME EROSION RISK.
3. A SUITABLE FLOW DIVERSION SYSTEM MUST BE ESTABLISHED IMMEDIATELY UP-SLOPE OF A STOCKPILE OF ERODIBLE MATERIAL THAT HAS THE POTENTIAL TO CAUSE ENVIRONMENTAL HARM IF DISPLACED IF THE UP-SLOPE CATCHMENT AREA DRAINING TO THE STOCKPILE EXCEEDS 1500m^2.

SITE MANAGEMENT:

1. ALL OFFICE FACILITIES AND OPERATIONAL ACTIVITIES MUST BE LOCATED SUCH THAT ANY LIQUID EFFLUENT (E.G. PROCESS WATER, WASH-DOWN WATER, EFFLUENT FROM EQUIPMENT CLEANING, OR PLANT WATERING), CAN BE TOTALLY CONTAINED AND TREATED WITHIN THE SITE.
2. THE CONSTRUCTION SCHEDULE MUST AIM TO MINIMISE THE DURATION THAT ANY AND ALL AREAS OF SOIL ARE EXPOSED TO THE EROSIVE EFFECTS OF WIND, RAIN AND SURFACE WATER.
3. LAND-DISTURBING ACTIVITIES MUST BE UNDERTAKEN IN ACCORDANCE WITH THE EROSION AND SEDIMENT CONTROL PLAN (ESCP) AND ASSOCIATED DEVELOPMENT CONDITIONS.
4. LAND-DISTURBING ACTIVITIES MUST BE UNDERTAKEN IN SUCH A MANNER THAT ALLOWS ALL REASONABLE AND PRACTICABLE MEASURES TO BE UNDERTAKEN TO:
   (i) ALLOW STORMWATER TO PASS THROUGH THE SITE IN A CONTROLLED MANNER AND AT NON-EROSIVE FLOW VELOCITIES UP TO THE SPECIFIED DESIGN STORM DISCHARGE;
   (ii) MINIMISE SOIL EROSION RESULTING FROM RAIN, WATER FLOW AND/OR WIND;
   (iii) MINIMISE ADVERSE EFFECTS OF SEDIMENT RUNOFF, INCLUDING SAFETY ISSUES;
   (iv) PREVENT OR AT LEAST MINIMISE, ENVIRONMENTAL HARM RESULTING FROM WORK-RELATED SOIL EROSION AND SEDIMENT RUNOFF;
   (v) ENSURE THAT THE VALUE AND USE OF LAND/PROPERTIES ADJACENT TO THE DEVELOPMENT (INCLUDING ROADS) ARE NOT DIMINISHED AS A RESULT OF THE ADOPTED ESC MEASURES.
5. ALL EROSION AND SEDIMENT CONTROL MEASURES MUST CONFORM TO THE STANDARDS AND SPECIFICATIONS CONTAINED IN:
   (i) THE DEVELOPMENT APPROVAL CONDITION ISSUED BY RELEVANT LOCAL AUTHORITY; AND/OR
   (ii) THE APPROVED ESCP AND SUPPORTING DOCUMENTATION; OR
   (iii) THE LATEST VERSION OF IECA (2008) BEST PRACTICE EROSION & SEDIMENT CONTROL IF THE STANDARDS AND SPECIFICATIONS ARE NOT CONTAINED IN THE APPROVED ESCP.
6. ANY WORKS THAT MAY CAUSE SIGNIFICANT SOIL DISTURBANCE AND ARE ANCILLARY TO ANY ACTIVITY FOR WHICH REGULATORY BODY APPROVAL IS REQUIRED, MUST NOT COMMENCE BEFORE THE ISSUE OF THAT APPROVAL.
7. ADDITIONAL AND/OR ALTERNATIVE ESC MEASURES MUST BE IMPLEMENTED IN THE EVENT THAT THE RELEVANT AUTHORITY IDENTIFIES THAT UNACCEPTABLE OFF-SITE SEDIMENTATION IS OCCURRING AS A RESULT OF THE WORK ACTIVITIES.
8. LAND-DISTURBING ACTIVITIES MUST NOT CAUSE UNNECESSARY SOIL DISTURBANCE IF AN ALTERNATIVE CONSTRUCTION PROCESS IS AVAILABLE THAT ACHIEVES THE SAME OR EQUIVALENT OUTCOMES AT AN EQUIVALENT COST.
9. SEDIMENT (INCLUDING CLAY, SILT, SAND, GRAVEL, SOIL, MUD, CEMENT AND CERAMIC WASTE) DEPOSITED OFF THE SITE AS A DIRECT RESULT OF AN ON-SITE ACTIVITY, MUST BE COLLECTED AND THE AREA APPROPRIATELY CLEANED/REHABILITATED AS SOON AS REASONABLE AND PRACTICABLE, AND IN A MANNER THAT GIVES APPROPRIATE CONSIDERATION TO THE SAFETY AND ENVIRONMENTAL RISKS ASSOCIATED WITH THE SEDIMENT DEPOSITION.
10. ALL WASTE INCLUDING PETROLEUM AND OIL-BASED PRODUCTS, MUST BE PREVENTED FROM ENTERING AN INTERNAL WATER BODY, OR AN EXTERNAL DRAIN, STORMWATER SYSTEM, OR WATER BODY.
11. ALL FLAMMABLE AND COMBUSTIBLE LIQUIDS, INCLUDING ALL LIQUID CHEMICALS IF SUCH CHEMICALS COULD POTENTIALLY BE WASHED OR DISCHARGED FROM THE SITE, ARE STORED AND HANDLED ON-SITE IN ACCORDANCE WITH RELEVANT STANDARDS SUCH AS AS1940 THE STORAGE AND HANDLING OF FLAMMABLE AND COMBUSTIBLE LIQUIDS.
12. NO MORE THAN 150m OF A STORMWATER, SEWER LINE OR OTHER SERVICE TRENCH MUST TO BE OPEN AT ANY ONE TIME.
13. SITE SPOIL MUST BE LAWFULLY DISPOSED OF IN A MANNER THAT DOES NOT RESULT IN ONGOING SOIL EROSION OR ENVIRONMENTAL HARM.
14. ALL FILL MATERIAL PLACED ON SITE MUST COMPRISE ONLY NATURAL EARTH AND ROCK, AND IS TO BE FREE OF CONTAMINANTS, BE FREE DRAINING, AND BE COMPACTED IN LAYERS NOT EXCEEDING 300mm TO 90% MODIFIED MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS1289.

DRAINAGE CONTROL:

1. ALL DRAINAGE CONTROL MEASURES MUST BE APPLIED AND MAINTAINED IN ACCORDANCE WITH THE CONSTRUCTION PLANS.
2. WHEREVER REASONABLE AND PRACTICABLE, STORMWATER RUNOFF ENTERING THE SITE FROM EXTERNAL AREAS, AND NON-SEDIMENT LADEN (CLEAN) STORMWATER RUNOFF ENTERING A WORK AREA OR AREA OF SOIL DISTURBANCE, MUST BE DIVERTED AROUND OR THROUGH THAT AREA IN A MANNER THAT MINIMISES SOIL EROSION AND THE CONTAMINATION OF THAT WATER FOR ALL DISCHARGES UP TO THE SPECIFIED DESIGN STORM DISCHARGE.
3. DURING THE CONSTRUCTION PERIOD, ALL REASONABLE AND PRACTICABLE MEASURES MUST BE IMPLEMENTED TO CONTROL FLOW VELOCITIES IN SUCH A MANNER THAN PREVENTS SOIL EROSION ALONG DRAINAGE PATHS AND AT THE ENTRANCE AND EXIT OF ALL DRAINS AND DRAINAGE PIPES DURING ALL STORMS UP TO THE RELEVANT DESIGN STORM DISCHARGE.
4. TO THE MAXIMUM DEGREE REASONABLE AND PRACTICABLE, ALL WATERS DISCHARGED DURING THE CONSTRUCTION PHASE MUST DISCHARGE ONTO STABLE LAND, IN A NON-EROSIVE MANNER, AND AT A LEGAL POINT OF DISCHARGE.
5. WHEREVER REASONABLE AND PRACTICABLE, "CLEAN" SURFACE WATERS MUST BE DIVERTED AWAY FROM SEDIMENT CONTROL DEVICES AND ANY UNTREATED, SEDIMENT-LADEN WATERS.
6. DURING THE CONSTRUCTION PERIOD, ROOF WATER MUST BE MANAGED IN A MANNER THAT MINIMISES SOIL EROSION THROUGHOUT THE SITE, AND SITE WETNESS WITHIN ACTIVE WORK AREAS.
7. DRAINS ARE TO BE SIZED AND CONSTRUCTED TO ALLOW WATER TO DRAIN. THIS MAY INCLUDE CUTTING INTO THE EARTH TO OBTAIN THE REQUIRED FALL TO PERMIT DRAINAGE. DIMENSIONS GIVEN ARE A MINIMUM.

				SURVEY DATA	
				DATUM	GDA2020
				MAP GRID	MGA56
				HEIGHT ORIGIN	AHD
				SURVEY BOOKS	
1	FOR APPROVAL	MLS	06/2024	NJF	30/06/24
	REVISION/DETAILS	DWN	DATE	DES	DATE

FILE: C:\12DS\DATA\ACSSYN\220089 SOILCO BROMELTON DEVELOPMENT - 260 MITCHELL ROAD_596\DESIGN\DRAWING FILES\ACS-220089-GEN.DWG PLOT TIME: 04/7/2024 - 11:43AM BY USER: MALINDASELLARS

SOILCO

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BROMELTON DEVELOPMENT

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ESC NOTES - PAGE 1

ENGINEERING CERTIFICATION (RPEQ)

#	FIELD	NAME	SIGNATURE	DATE
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DRAWING NUMBER: ACS-220089-ROAD-16

REVISION: 1

EROSION CONTROL:

1. ALL EROSION CONTROL MEASURES MUST BE APPLIED AND MAINTAINED IN ACCORDANCE WITH IECA (2008) BEST PRACTICE EROSION & SEDIMENT CONTROL.
2. THE APPLICATION OF LIQUID-BASED DUST SUPPRESSION MEASURES MUST ENSURE THAT SEDIMENT-LADEN RUNOFF RESULTING FROM SUCH MEASURES DOES NOT CREATE A TRAFFIC OR ENVIRONMENTAL HAZARD.
3. ALL TEMPORARY EARTH BANKS, FLOW DIVERSION SYSTEMS, AND EMBANKMENTS ASSOCIATED WITH CONSTRUCTED SEDIMENT BASINS MUST BE MACHINE-COMPACTED, SEEDED AND MULCHED FOR THE PURPOSE OF ESTABLISHING A TEMPORARY VEGETATIVE COVER WITHIN 10 DAYS AFTER GRADING.
4. UNPROTECTED SLOPE LENGTHS MUST NOT EXCEED 80m, OR AN EQUIVALENT VERTICAL FALL OF 3m DURING THE CONSTRUCTION PERIOD.
5. THE CONSTRUCTION AND STABILISATION OF EARTH BATTERS STEEPER THAN 6:1 (H:V) MUST BE STAGED SUCH THAT NO MORE THAN 3 VERTICAL-METRES OF ANY BATTER IS EXPOSED TO RAINFALL AT ANY INSTANT.
6. SYNTHETIC REINFORCED EROSION CONTROL MATS AND BLANKETS MUST NOT BE PLACED WITHIN, OR ADJACENT TO, RIPARIAN ZONES AND WATERCOURSES IF SUCH MATERIALS ARE LIKELY TO CAUSE ENVIRONMENTAL HARM TO WILDLIFE OR WILDLIFE HABITATS.
7. A MINIMUM 60% GROUND COVER MUST BE ACHIEVED ON ALL NON-COMPLETED EARTHWORKS EXPOSED TO ACCELERATED SOIL EROSION IF FURTHER CONSTRUCTION ACTIVITIES OR SOIL DISTURBANCES ARE LIKELY TO BE SUSPENDED FOR MORE THAN 30 DAYS DURING THOSE MONTHS WHEN THE EXPECTED RAINFALL IS LESS THAN 30mm; MINIMUM 70% COVER WITHIN 30 DAYS IF BETWEEN 30 AND 45mm; MINIMUM 70% COVER WITHIN 20 DAYS IF BETWEEN 45 AND 100mm; MINIMUM 75% COVER WITHIN 10 DAYS IF BETWEEN 100 AND 225mm; AND MINIMUM 80% COVER WITHIN 5 DAYS IF GREATER THAN 225mm. (ALTERNATIVE TO ABOVE)

SEDIMENT CONTROL:

1. ALL SEDIMENT CONTROL MEASURES MUST BE APPLIED AND MAINTAINED IN ACCORDANCE WITH IECA (2008) BEST PRACTICE EROSION & SEDIMENT CONTROL.
2. OPTIMUM BENEFIT MUST BE MADE OF EVERY OPPORTUNITY TO TRAP SEDIMENT WITHIN THE WORK SITE, AND AS CLOSE AS PRACTICABLE TO ITS SOURCE.
3. SEDIMENT TRAPS MUST BE INSTALLED AND OPERATED TO BOTH COLLECT AND RETAIN SEDIMENT.
4. THE POTENTIAL SAFETY RISK OF A PROPOSED SEDIMENT TRAP TO SITE WORKERS AND THE PUBLIC MUST BE GIVEN APPROPRIATE CONSIDERATION, ESPECIALLY THOSE DEVICES LOCATED WITHIN PUBLICLY ACCESSIBLE AREAS.
5. ALL REASONABLE AND PRACTICABLE MEASURES MUST BE TAKEN TO PREVENT, OR AT LEAST MINIMISE, THE RELEASE OF SEDIMENT FROM THE SITE.
6. SUITABLE ALL-WEATHER MAINTENANCE ACCESS MUST BE PROVIDED TO ALL SEDIMENT CONTROL DEVICES.
7. SEDIMENT CONTROL DEVICES MUST BE DE-SILTED AND MADE FULLY OPERATIONAL AS SOON AS REASONABLE AND PRACTICABLE AFTER A SEDIMENT-PRODUCING EVENT, WHETHER NATURAL OR ARTIFICIAL, IF THE DEVICE'S SEDIMENT RETENTION CAPACITY REDUCES BY 30% OF DESIGN CAPACITY.
8. MATERIALS, WHETHER LIQUID OR SOLID, REMOVED FROM SEDIMENT CONTROL DEVICES DURING MAINTENANCE OR DECOMMISSIONING, MUST BE DISPOSED OF IN A MANNER THAT DOES NOT CAUSE ONGOING SOIL EROSION OR ENVIRONMENTAL HARM.

ROADWORKS:

1. VEGETATION REMOVED DURING ROAD WORKS MUST BE RE-USED TO THE MAXIMUM POSSIBLE EXTENT TO MINIMISE SHORT AND LONG-TERM SOIL EROSION. NON-SALVAGEABLE DEBRIS MUST BE DISPOSED OF IN A MANNER THAT DOES NOT CAUSE ONGOING ENVIRONMENTAL HARM.
2. SOIL DISTURBANCES MUST BE STAGED INTO MANAGEABLY-SIZED AREAS OF NO GREATER THAN TEN (10) HECTARES TO ENSURE ADEQUATE ESC MANAGEMENT AND PROGRESSIVE STABILISATION OF DISTURBED SURFACES.
3. NEWLY CONSTRUCTED SPRAY-SEALED ROADS MUST BE SWEPT THOROUGHLY AS SOON AS POSSIBLE AFTER GRAVELLING TO PREVENT EXCESS GRAVEL ENTERING STORMWATER DRAINS OR WATERWAYS.
4. DURING THE CONSTRUCTION PERIOD, ALL UNSTABLE FILL EMBANKMENTS ARE TO BE LEFT WITH A LIP (WINDROW) AT THE TOP OF THE SLOPE AT THE END OF EACH DAY'S OPERATION, OR OTHER APPROPRIATE DRAINAGE CONTROL MEASURES, TO PREVENT BANK EROSION.
5. ALL CUT AND FILL EARTH BATTERS ARE TO BE TOPSOILED, AND GRASS SEEDED/HYDROMULCHED WITHIN TEN (10) DAYS OF COMPLETION OF GRADING.

SITE REHABILITATION:

1. ALL DISTURBED AREAS IDENTIFIED AS VERY LOW, LOW, MEDIUM, HIGH, OR EXTREME EROSION RISK MUST BE SUITABLY STABILISED WITHIN 30, 30, 20, 10 OR 5 DAYS RESPECTIVELY, OR PRIOR TO ANTICIPATED RAINFALL, WHICHEVER IS THE GREATER, FROM THE DAY THAT SOIL DISTURBANCES ON THE AREA HAVE BEEN FINALISED.
2. A MINIMUM 60% GROUND COVER MUST BE ACHIEVED ON ALL COMPLETED EARTHWORKS EXPOSED TO ACCELERATED SOIL EROSION WITHIN 30 DAYS DURING THOSE MONTHS WHEN THE EXPECTED RAINFALL IS LESS THAN 30mm; MINIMUM 70% COVER WITHIN 30 DAYS IF BETWEEN 30 AND 45mm; MINIMUM 70% COVER WITHIN 20 DAYS IF BETWEEN 45 AND 100mm; MINIMUM 75% COVER WITHIN 10 DAYS IF BETWEEN 100 AND 225mm; AND MINIMUM 80% COVER WITHIN 5 DAYS IF GREATER THAN 225mm. (ALTERNATIVE TO ABOVE)
3. NO COMPLETED EARTHWORK SURFACE MUST REMAIN DENUDED FOR LONGER THAN 60 DAYS.
4. THE TYPE OF GROUND COVER APPLIED TO COMPLETED EARTHWORKS IS COMPATIBLE WITH THE ANTICIPATED LONG-TERM LAND USE, ENVIRONMENTAL RISK, AND SITE REHABILITATION MEASURES.
5. UNLESS OTHERWISE DIRECTED BY THE SUPERINTENDENT OR WHERE DIRECTED BY THE APPROVED REVEGETATION PLAN, TOPSOIL MUST BE PLACED AT A MINIMUM DEPTH OF 75mm ON SLOPES 4:1 (H:V) OR FLATTER, AND 50mm ON SLOPES STEEPER THAN 4:1.
6. SOIL AMELIORANTS MUST BE ADDED TO THE SOIL IN ACCORDANCE WITH THE APPROVED LANDSCAPE/REVEGETATION PLANS AND/OR SOIL ANALYSIS.
7. TEMPORARY SITE STABILISATION PROCEDURES MUST COMMENCE AT LEAST 30 DAYS PRIOR TO THE NOMINATED SITE SHUTDOWN DATE. AT LEAST 70% STABLE COVER OF ALL UNSTABLE AND/OR DISTURBED SOIL SURFACES MUST BE ACHIEVED PRIOR TO ANY SHUTDOWN. THE STABILISATION WORKS MUST NOT RELY UPON THE LONGEVITY OF NON-VEGETATED EROSION CONTROL BLANKETS, OR TEMPORARY SOIL BINDERS.
8. ALL UNSTABLE OR DISTURBED SOIL SURFACES MUST BE ADEQUATELY STABILISED AGAINST EROSION (MINIMUM 70%) PRIOR TO COMMENCEMENT OF USE, OR SURVEY PLAN ENDORSEMENT.

SITE MAINTENANCE:

1. ENSURE ESC PLANS ARE ON SITE AT ALL TIMES.
2. ALL EROSION AND SEDIMENT CONTROL MEASURES, INCLUDING DRAINAGE CONTROL MEASURES, MUST BE MAINTAINED IN PROPER WORKING ORDER AT ALL TIMES DURING THEIR OPERATIONAL LIVES.
3. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES, INCLUDING DRAINAGE CONTROL MEASURES, MUST BE FULLY OPERATIONAL AND MAINTAINED IN PROPER WORKING ORDER AT ALL TIMES DURING THE MAINTENANCE PERIOD AS SPECIFIED BY RELEVANT AUTHORITY.
4. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES, INCLUDING DRAINAGE CONTROL MEASURES, MUST BE REMOVED AFTER ACHIEVING A SATISFACTORY "OFF-MAINTENANCE INSPECTION" BY THE RELEVANT AUTHORITY.
5. ALL DRAINAGE, EROSION AND SEDIMENT CONTROL MEASURES MUST BE INSPECTED:
   (i) AT LEAST DAILY (WHEN WORK IS OCCURRING ON-SITE);
   (ii) AT LEAST WEEKLY (WHEN WORK IS NOT OCCURRING ON-SITE);
   (iii) WITHIN 24 HOURS OF EXPECTED RAINFALL; AND
   (iv) WITHIN 18 HOURS OF A RAINFALL EVENT OF SUFFICIENT INTENSITY AND DURATION TO CAUSE RUNOFF ON-SITE).
   IF FAILURE HAS BEEN FOUND, IMMEDIATE REMEDIATIONS ARE REQUIRED AND TO A STANDARD WHICH ENSURES THE FAILURE DOES NOT CONTINUALLY OCCUR UNDER DESIGN RAINFALL CONDITIONS.
6. WASHING/FLUSHING OF SEALED ROADWAYS MUST ONLY OCCUR WHERE SWEEPING HAS FAILED TO REMOVE SUFFICIENT SEDIMENT AND THERE IS A COMPELLING NEED TO REMOVE THE REMAINING SEDIMENT (E.G. FOR SAFETY REASONS). IN SUCH CIRCUMSTANCES, ALL REASONABLE AND PRACTICABLE SEDIMENT CONTROL MEASURES MUST BE USED TO PREVENT, OR AT LEAST MINIMISE, THE RELEASE OF SEDIMENT INTO RECEIVING WATERS. ONLY THOSE MEASURES THAT WILL NOT CAUSE SAFETY AND PROPERTY FLOODING ISSUES SHALL BE EMPLOYED. SEDIMENT REMOVED FROM ROADWAYS MUST BE DISPOSED OF IN A LAWFUL MANNER THAT DOES NOT CAUSE ONGOING SOIL EROSION OR ENVIRONMENTAL HARM.
7. SEDIMENT REMOVED FROM SEDIMENT TRAPS AND PLACES OF SEDIMENT DEPOSITION MUST BE DISPOSED OF IN A LAWFUL MANNER THAT DOES NOT CAUSE ONGOING SOIL EROSION OR ENVIRONMENTAL HARM.
8. MAINTENANCE IS TO OCCUR ON ALL EROSION AND SEDIMENT CONTROL MEASURES WHEN CAPACITY REDUCES BY 30%.
9. MAINTENANCE MOWING OF ALL ROAD SHOULDERS, TABLE DRAINS, BATTERS AND OTHER SURFACES LIKELY TO EXPERIENCE ACCELERATED SOIL EROSION MUST AIM TO LEAVE THE GRASS LENGTH NO SHORTER THAN 50mm WHERE REASONABLE AND PRACTICABLE.
10. MAINTENANCE MOWING MUST BE DONE IN A MANNER THAT WILL NOT DAMAGE THE PROFILE OF FORMED, SOFT EDGES, SUCH AS THE CREST OF EARTH EMBANKMENTS.
11. ENSURE RECORDS ARE KEPT OF DATES OF MAINTENANCE AND THE PERSONNEL RESPONSIBLE FOR UNDERTAKING THE MAINTENANCE.
12. IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE SOIL EROSION IS LIMITED AS MUCH AS POSSIBLE. THE TECHNIQUES USED IN THE DESIGN SHOULD NOT BE TAKEN AS THE MAXIMUM CONTROLS ALLOWABLE, AND THE CONTRACTOR MAY ADD CONTROLS AS NECESSARY TO LIMIT SOIL EROSION AND SEDIMENTATION.
13. MONITORING SHALL BE UNDERTAKEN BY A PERSON WITH EXPERIENCE IN EROSION AND SEDIMENT CONTROL MONITORING. MONITORING IS TO BE UNDERTAKEN IN A MANNER WHICH COMPLIES WITH IECA GUIDELINES 2008, CHAPTER 7. SITE INSPECTION.

OTHER:

1. THE CONTRACTOR IS TO TAKE ALL NECESSARY PRECAUTIONS TO CONTROL EROSION AND DOWNSTREAM SEDIMENTATION DURING ALL STAGES OF CONSTRUCTION INCLUDING THE MAINTENANCE PERIOD.
2. ALL SEDIMENT CONTROL DEVICES SHALL BE MONITORED, CLEANED AND/OR REPAIRED WHENEVER THE ACCUMULATED SEDIMENT REDUCES THE CAPACITY BY 30%.
3. THE EXTENT OF GRASSING SHALL BE DETERMINED BY THE SUPERINTENDENT AND SHALL BE SEEDED, AS SPECIFIED, WITHIN SEVEN DAYS OF FINAL TRIMMING.
4. EXTENT AND POSITION OF SILT FENCE CONTROL MEASURES TO BE DETERMINED ON SITE BY SUPERINTENDENT.
5. MEASURES SHOWN ON THIS DRAWING ARE MINIMUM REQUIREMENTS ONLY.
6. SCOUR PROTECTION AND SILT MANAGEMENT MEASURES TO BE PROVIDED AT STORMWATER OUTLET HEADWALLS.
7. PROVISION TO BE MADE FOR DIRT/SAND REMOVAL FROM CONSTRUCTION VEHICLES PRIOR TO TRAVEL ON PUBLIC ROADS. METHOD TO BE APPROVED BY SUPERINTENDENT PRIOR TO COMMENCEMENT OF WORK.
8. ANY SILT OR SEDIMENT CAUSED BY CONSTRUCTION TRAFFIC ON EXISTING ROADS IS TO BE REMOVED DAILY.
9. THE CONTRACTOR SHALL IMPLEMENT EROSION AND SEDIMENT CONTROL PROCEDURES DURING CONSTRUCTION AND MAINTENANCE STAGES OF THE DEVELOPMENT AND SHALL TAKE ALL NECESSARY ACTIONS TO COMPLY WITH THE POLICY OBJECTIVES OF COUNCIL'S LOCAL PLANNING POLICY - EROSION AND SEDIMENT CONTROL.
10. A SCHEDULE SHALL BE SUBMITTED FOR THE APPROVAL OF COUNCIL'S REPRESENTATIVE AT THE PRE-START MEETING FOR THE FIELD IMPLEMENTATION OF EROSION AND SEDIMENT CONTROL, DETAILING THE STAGES AT WHICH VARIOUS MANAGEMENT TECHNIQUES WOULD BE IN PLACE AND AUDITING PROCEDURES.
11. FINAL FORM OF SEDIMENT EROSION CONTROL TO BE DECIDED ON SITE BY THE SUPERINTENDENT.
12. THE CONTRACTOR IS TO ENSURE THAT NO SILT REACHES THE DOWNSTREAM WATER COURSE AND IS TO PROVIDE ADEQUATE PROTECTION TO PREVENT THIS OCCURRING.

ROCK CHECK DAMS, SAND BAG CHECK DAMS AND COIR LOGS:

1. TO BE LOCATED AS DIRECTED ON SITE AND SPACED TO SUIT SETOUT DETAIL, REFER DRG 04.
2. MAINTENANCE OF CHECK DAMS TO BE IN ACCORDANCE WITH 'IECA BEST PRACTICE EROSION AND SEDIMENT CONTROL BOOK 6 STANDARD DRAWINGS'.

				SURVEY DATA		
				DATUM	GDA2020	
				MAP GRID	MGA56	
				HEIGHT ORIGIN	AHD	
				SURVEY BOOKS		
1	FOR APPROVAL	MLS	06/2024	NJF	30/06/24	
	REVISION/DETAILS	DWN	DATE	DES	DATE	

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ESC NOTES - PAGE 2

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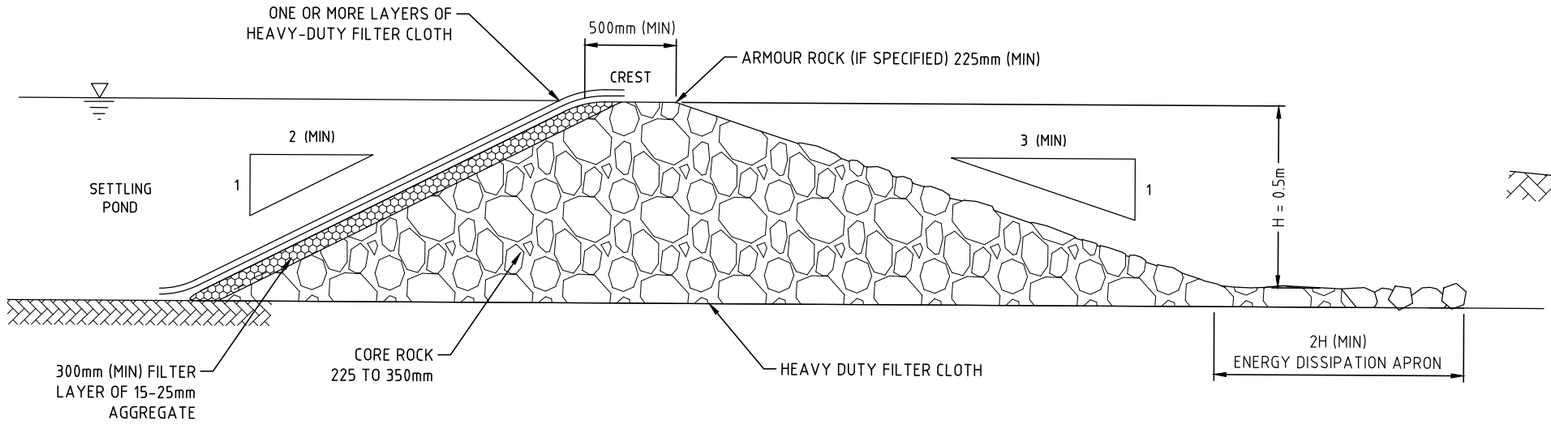
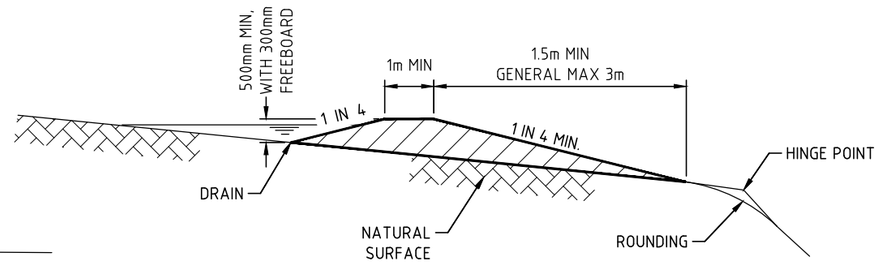
DRAWING NUMBER: ACS-220089-ROAD-17

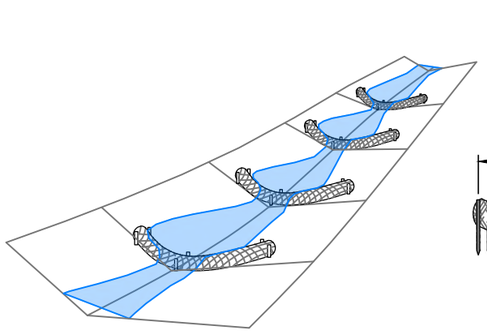
REVISION: 1

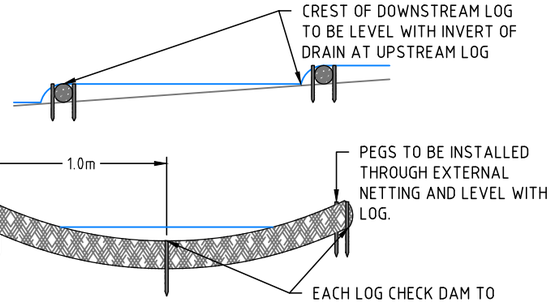


ROCK FILTER DAM WITH AGGREGATE FILTER
(INSTREAM INSTALLATION)

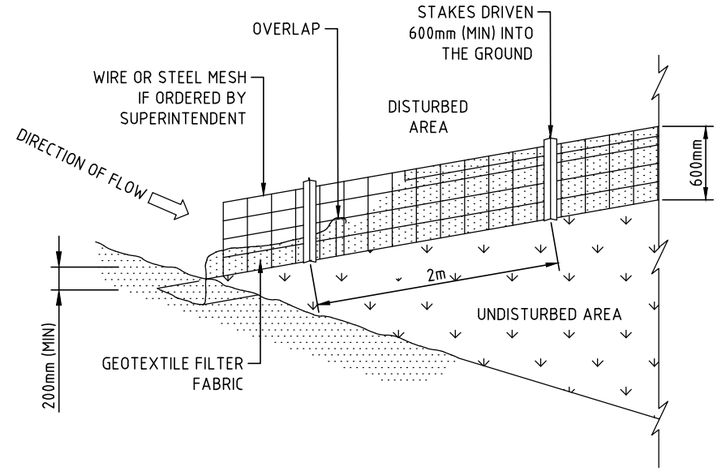


CATCH DRAIN
NOT TO SCALE





GEO LOGS (COIR LOGS)
NOT TO SCALE



GEOTEXTILE SEDIMENT FENCE
NOT TO SCALE

				SURVEY DATA		SOILCO
				DATUM GDA2020		PO BOX 199, UNANDERRA NSW 2526
				MAP GRID MGA56		
				HEIGHT ORIGIN AHD		BROMELTON DEVELOPMENT
				SURVEY BOOKS		
1	FOR APPROVAL	MLS	06/2024	NJF	30/06/24	260 MITCHELL ROAD, BROMELTON QLD 4285
REVISION/DETAILS		DWN	DATE	DES	DATE	

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ESC DETAILS

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DRAWING NUMBER: ACS-220089-ROAD-18

REVISION: 1

LEGEND:

EXIT ROCK SHAKE DOWN

RFD ROCK FILTER DAM

GL COIR/GEO LOGS

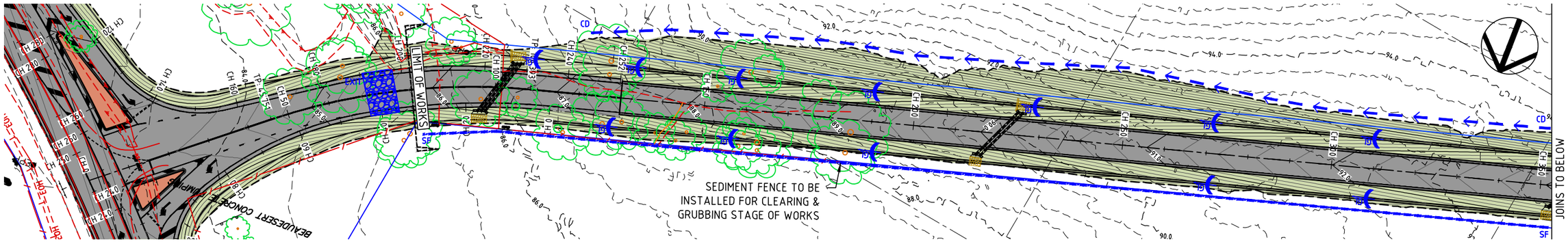
CD CATCH DRAIN

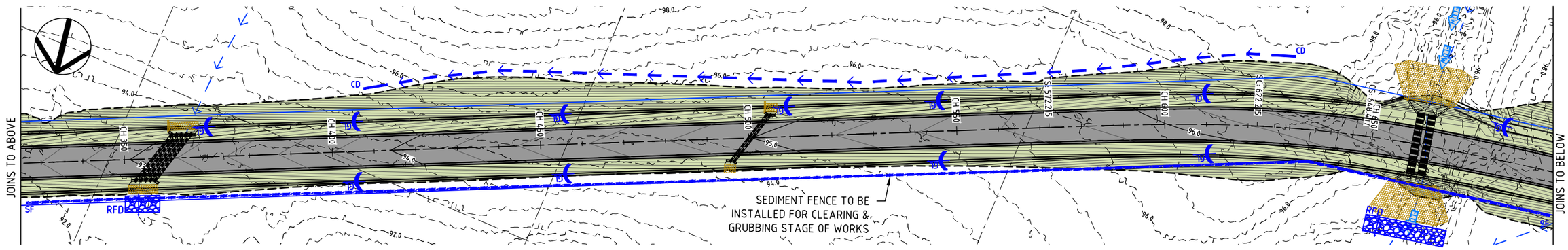
SF SEDIMENT FENCE

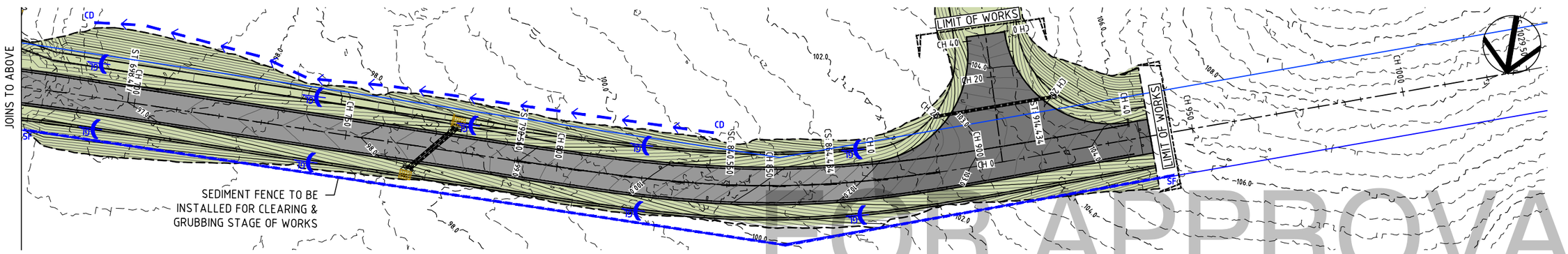
FLOW ARROWS

HYDROSEEDING

BEFORE YOU DIG www.byda.com.au







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				DATUM GDA2020		PO BOX 199, UNANDERRA NSW 2526
				MAP GRID MGA56		
				HEIGHT ORIGIN AHD		BROMELTON DEVELOPMENT
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1	FOR APPROVAL	MLS	06/2024	NJF	30/06/24	260 MITCHELL ROAD, BROMELTON QLD 4285
	REVISION/DETAILS	DWN	DATE	DES	DATE	

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ESC LAYOUT PLAN

ENGINEERING CERTIFICATION (RPEQ)

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REVISION: 1