



## **ATLAS Stage 3 – ATLAS Pre-clearance Survey Report Glenhaven Wells and Gathering**

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**Senex**

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This document has been prepared and is certified by:

**AUSECOLOGY PTY LTD**

ABN 15 155 304 751

PO Box 594, Morningside, QLD 4170

w [www.ausecology.com](http://www.ausecology.com)

e [info@ausecology.com](mailto:info@ausecology.com)

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## Glossary of Terms

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Acronym	Description
ATP	Authority to Prospect
ECPPFD	<i>Environmental Constraints Protocol for Planning and Field Development</i>
ESA	Environmentally sensitive areas
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999 (Cth)</i>
ha	Hectares
m	Metres
MSES	Matter of State Environmental Significance
MNES	Matter of National Environmental Significance
PL	Petroleum Lease
RE	Regional Ecosystem
sp.	Species (singular)
spp.	Species (plural)
sqm	Square metres
SQP	Suitably qualified person
TEC	Threatened Ecological Community

## 1 Introduction

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The pre-clearance survey methodology applied within this package of works is deemed appropriate to confirm the on-the-ground biodiversity values present.

### 1.1 Project background

The Atlas Stage 3 Gas Project (EPBC Act referral 2022/09410) involves developing, operating, decommissioning and rehabilitating up to 151 coal seam gas wells; gas and water gathering systems for the producing wells; access tracks; brine and produced water storages; borrow pits; and ancillary supporting facilities on Authority to Prospect (ATP) 2059, Petroleum Lease (PL) 445, the northern portion of PL209 and parts of PL1037 in the central part of the Surat Basin, Queensland (Senex, 2024). This report is provided to ensure compliance with the following EPBC approval conditions:

4. *In accordance with the Constraints Protocol, the approval holder must:*
  - b) *adhere to the constraints mapping.*
5. *To ensure no functional change to Koala dispersal habitat, the approval holder must not remove more than a total of 4 ha of trees, measured in canopy cover within mapped Koala dispersal habitat.*

#### PRE-CLEARANCE SURVEYS

6. *Prior to commencing clearing, the approval holder must:*
  - a) *undertake at least one pre-clearance survey of the proposed area of clearing, and*
  - b) *publish on the website the pre-clearance survey findings, including:*
    - i) *the location and extent of trees to be cleared, including maps, and*
    - ii) *a discussion of how removal of trees will not change the ability of Koalas to disperse across the landscape.*

This report is also provided to help ensure compliance with Conditions F2-13 of Environmental Authority (P-EA-100511614).

This report provides the results of pre-clearance survey on wells and gathering Infrastructure (well pads, gas and water gathering lines and access tracks) (the footprint) and a 30 m buffer within the Glenhaven property: Lot 2 Plan RP123884.

### 1.2 Scope

Ausecology Pty Ltd (Ausecology) was engaged by Senex Energy Pty Ltd (Senex) to undertake pre-clearance ecological surveys as part of the approval conditions for the Atlas Stage 3 Gas Project and in accordance with the *Atlas Stage 3 Environmental Constraints Protocol for Planning and Field Development* (ECPDFD) document (Senex, 2024). The ECPDFD provides a framework for identifying, assessing and managing potential impacts to Matters of National Environmental Significance (MNES) and Matter of State Environmental Significance (MNES) associated with development of the Atlas Stage 3 Gas Project. Data collected during the pre-clearance surveys will be used by Senex to ensure:

- infrastructure siting complies with relevant environmental approval conditions and does not exceed the maximum disturbance limits
- infrastructure siting adheres to the constraints mapping
- no functional change to Koala dispersal habitat, the approval holder must not remove more than a total of 4 ha of trees, measured in canopy cover within mapped Koala dispersal habitat.

Results from the pre-clearance survey findings (this report) will be published on the website, including:

- the location and extent of trees to be cleared, including maps, and
- a discussion of how removal of trees will not change the ability of Koalas to disperse across the landscape.

This survey also involved targeted threatened flora surveys, active threatened fauna surveys (where suitable habitat was identified) and fauna habitat identification (where encountered) as per the ECPPFD.

## 2 Methodology

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An Ausecology principal ecologist (Suitably qualified) and ecologist conducted field surveys on foot on the 7<sup>th</sup> of July 2024 and 24<sup>th</sup> August 2024 with the Senex team to determine any further impacts not already identified to be avoided by re-aligning gas gathering, access tracks and well pads. The area surveyed and mapped in this report include the Glenhaven property as shown in Figure 2-1.

### 2.1 Regional Ecosystem assessment and Threatened Ecological Communities

#### 2.1.1 Desktop assessments

Baseline assessments of the vegetation communities, including ground-truthed regional ecosystem (GTRE) mapping and threatened ecological community surveys were conducted to an acceptable level of detail and covered the relevant sections of the Field Development Area (ECPPFD). These assessments have been reviewed as part of the desktop assessment prior to the preclearance surveys. Given the level of detail in these reports, no further desktop analysis has been conducted.

#### 2.1.2 Regional Ecosystem assessment

During preclearance surveys, quaternary site assessments to verify regional ecosystems were undertaken where necessary (i.e. where vegetation and ecological communities have been determined to vary from the mapped ground-truthed regional ecosystem at the time of the pre-clearance surveys). These assessments were conducted in accordance with the ECPPFD.

#### 2.1.3 Threatened Ecological Communities

Where necessary Threatened Ecological Community (TEC) assessments were undertaken to confirm the presence and condition of TECs identified as known or potential in the footprint if these were determined to vary from the mapped TEC areas identified in the constraints mapping.

### 2.2 Targeted threatened flora surveys

These surveys were conducted by a suitably qualified person (SQP). Targeted flora surveys of all known, likely or potential threatened flora species were conducted within the footprint and 30 m buffer, where mapped constraint areas were present and/or suitable habitat was identified by the SQP, in accordance with the ECPPFD.

These surveys were conducted using the random meander method and if a species is encountered, a population survey would be undertaken to determine the extent and density of the population. Threatened flora species and the locations of all individuals were recorded, and specimens collected of any unknown individual requiring confirmation by the Queensland Herbarium.

Potentially occurring threatened species in the area as per the ECPPFD are Belson's panic (*Homopholis belsonii*), red soil woolly wrinklewort (*Rutidosia lanata*) and winged nightshade (*Solanum stenopterum*). Random meanders walked in the constraint areas are shown in Figure 3-12 to Figure 3-16.

### 2.3 Fauna habitat assessment

Senex has committed to not clearing any areas confirmed as habitat for threatened species (ECPPFD), apart from Koala dispersal habitat and Echidna habitat. Fauna habitat baseline assessments have been conducted to an adequate level of detail to enable known, likely and potentially present species to be identified and a comprehensive Project impact assessment and constraints mapping has been completed (ECPPFD).

The pre-clearance surveys will reassess the habitat present (as mapped in the constraints mapping (ECPPFD)) or otherwise identified by the SQP during the preclearance surveys) to refine mapped habitat areas and survey and record micro-habitat features and breeding sites in the mapped constraint habitat to facilitate avoidance and minimisation of impacts to potentially utilised micro-habitat features and breeding sites. Recorded micro-habitat features, where present, included:

- Hollow-bearing trees;
- Dead standing trees;
- Hollow logs;
- Termite mounds;
- Woody debris;
- Surface rocks;
- Gilgais;
- Soil cracks / cracking clay;
- Rocky outcrops, crevices, overhangs and caves;
- Mistletoes;
- Nests;
- Animal burrows;
- Watercourses, wetlands and dams (including proximity); and
- Any other significant habitat features, or values present, such as dense leaf litter, heavily decorticating bark, dense grass/shrub shelter, seeding grass cover, fruiting plants, nectar and pollen producing plants and koala food trees.

### 2.4 Threatened Fauna Surveys

As areas confirmed as habitat for threatened species have been effectively avoided by the footprint (apart from Koala dispersal habitat and Echidna habitat) and therefore the area required to be surveyed is minimal.

Active fauna surveys of all known, likely or potential threatened fauna species are to be undertaken where suitable potential habitat is mapped or found to be present within the proposed disturbance footprint (refer to the constraints mapping, and the habitat features listed in Appendix A of the ECPPFD). Active fauna searches as per Table 1, Appendix A of the ECPPFD include scanning trees, the ground and habitat features; overturning rocks, logs and other woody debris; searching under peeling bark; raking leaf litter and soil at the base of trees; and flushing birds from dense shrubs and groundcover.

Invasive active searches were not undertaken in the 30m buffer of the disturbance footprint within mapped constraint areas, given no impact is expected and active searches outside of the footprint would be detrimental to the fauna species habitat. Instead of invasive searches in the 30 m buffer, surveys included incidental observations and scat and sign searches.

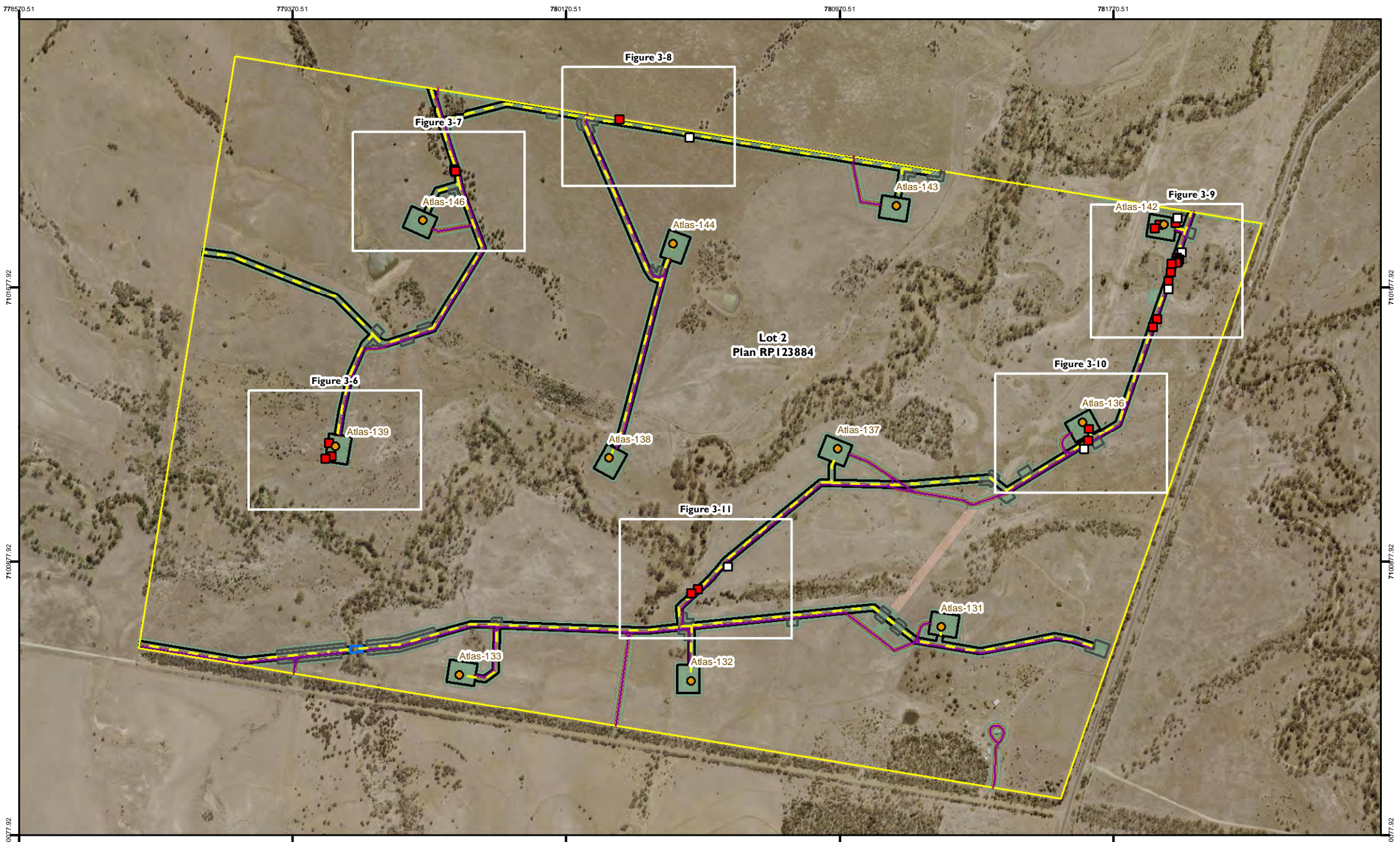
## 2.5 Koala dispersal habitat

An initial desktop survey was undertaken to analyse all previous ecology data collected in the field, analyse the ECPPFD and associated constraints mapping and to identify areas of mapped koala dispersal habitat that would require further ground verification.

Areas identified were highlighted on GIS mapping for further identification and field verification. Additional points were collected in the field where applicable. All tree ID numbers have been provided in individual maps of the area surveyed (Figure 3-6 to Figure 3-11) and Table 3-1 identifying each species in the results.

Canopy cover was measured by walking the dripline of trees located in koala dispersal areas using a sub-10cm accuracy handheld Trimble GPS unit. Tree canopy diameter was also recorded using measuring tape for canopy cover verification. The diameter at breast height (DBH) of each of the abovementioned trees was measured and height data was collected. Where denser regrowth was present and canopy cover of individual trees could not be distinguished, the canopy cover of the clump of trees was walked at the outer dripline and average height assessed. Thorny tree species which are not able to be climbed by Koala (i.e. desert lime (*Citrus glauca*)) were still recorded in the field but excluded from the final koala tree canopy cover calculations.





**Ausecology**  
Micro-ecology

**FIGURE 2-1:**  
 Glenhaven Overview

- Proposed wells
- Proposed Gathering Lines
- Map extents
- Tracks
- Tracks corridor
- Temporary extra workspace
- Cadastre
- Proposed footprint
- Underbore
- Proposed wellpad

- Proposed tree clearance assessment area**
- Surveyed area
  - Surveyed area but not used

- Koala tree**
- Retain
  - Remove

**Data Accuracy Notes:**  
 Ground-Truthed data mapped using Fixed RTK GNSS Receivers with 1cm Accuracy



REVISION	AUTHOR	REVIEWER	DATE
0	MS	RR	19/09/2024
3	MS	LG	07/01/2025

COORDINATE SYSTEM: GDA2020 MGA Zone 55  
 SCALE: 1:13,782

### 3 Results

The Glenhaven property has been historically cleared for cattle grazing and is dominated by cleared pasture lands with some native species but mainly introduced pasture grasses, with scattered small patches of remnant and regrowth woodlands. A corridor of remnant vegetation consists along Wandoan Creek that runs throughout the property consisting of poplar box (*Eucalyptus populnea*), forest red gum (*Eucalyptus tereticornis*) and some patches of Brigalow (*Acacia harpophylla*). Individual and small patches of paddock trees of various ages and species were also scattered across cleared pastures along with areas where some vegetation have been pelleted (Figure 3-1 to Figure 3-4).



Figure 3-1 Non remnant pasture grass paddocks



Figure 3-2 Scattered paddock trees



Figure 3-3 Brigalow patch to be under-bored to avoid impact to constraints mapped area



Figure 3-4 Patch of dead trees, likely pelleted

#### 3.1 Regional Ecosystems and Threatened Ecological Communities

Where mapped constraint areas occurred within the disturbance footprint or 30 m buffer, these were assessed in the field to ensure they aligned with the mapping. A patch of vegetation near the 30 m buffer was reassessed to RE11.9.5 from 11.3.1. There are not enough alluvial influences at this patch as it is a drainage line through landzone 9. This does not have any implications for the project since any impacts have been avoided through re-alignment of the gathering lines. The survey also confirmed that the proposed disturbance areas do not impact on any listed TECs.

### 3.2 Targeted threatened flora surveys

No Belson's panic (*Homopholis belsonii*), red soil woolly wrinklewort (*Rutidosia lanata*) and winged nightshade (*Solanum stenopterum*) were identified within the areas mapped as constraints for these species during targeted threatened flora surveys (Figure 3-14 to Figure 3-18). The disturbance footprint is impacted by grazing and hence these threatened species are not expected to be present within the footprint. Some areas outside of the footprint but within the 30m buffer meet the remnant status and are in better condition than the surrounding non-remnant areas, but these areas also did not contain any of the listed threatened flora species.

### 3.3 Opportunistic weed records

Weeds species observed on the property were recorded opportunistically during the surveys. Species identified included:

- *Harrisia cactus (Harrisia martini)*
- *Mexican poppy (Agremone ochroleuca)*
- *Prickly pears (Opuntia spp)*

### 3.4 Opportunistic fauna surveys and habitat assessment

Active searches were not required within the disturbance footprint as no searchable fauna habitat was present (Either mapped as constraints or identified during the survey). One habitat feature (other than the koala dispersal trees) was recorded during the surveys, a log pile located at -26.185139, 149.806963, however no fauna were detected (Figure 3-5).

No threatened fauna species were observed in suitable potential habitat within 30 m of a proposed disturbance footprint. One patch of brigalow is located within 30 m of the disturbance footprint, however, impacts to the patch have been avoided. Invasive searches were not undertaken in this patch since none of the coarse woody debris, trees with loose bark or areas with leaf litter will be impacted by the disturbance footprint. If invasive active searches had been undertaken on habitat features in this patch, fauna would be disturbed, and some habitat may be unnecessarily destroyed.

Opportunistic sightings were recorded across the disturbance footprint and 30m buffer. Thirty-nine species of fauna were recorded during the surveys (Appendix A).















Figure 3-5 Log pile








### 3.5 Ground-truthed koala dispersal trees








Table 3-1 provides the results including canopy cover, height and DBH of the trees assessed in the field in koala dispersal areas. All trees were assessed and where determined they could be avoided (through underground boring or realignment) they have been marked up as “retain” and will be avoided during construction. Any trees unable to be avoided had their canopy cover assessed and calculated under disturbance limits. Mapping of each location (Desktop ID) are shown in Figure 3-6 to Figure 3-11.


Table 3-1 Dispersal habitat trees

Location (Desktop ID)	Area (sqm)	Species	DBH (cm)	Height (m)	Action	Photo
RR34	23.7 and 15.2	<i>Acacia harpophylla</i> (x2)	15	6.6	Remove	
RR36	162.3	<i>Owenia acidula</i>	52	7.8	Remove	
RR37	107.2	<i>Casuarina cristata</i>	24	8.5	Retain	
RR42	73.2	<i>Eucalyptus populnea</i>	49	9.4	Remove	
RR43	15.8	<i>Acacia excelsa</i>	19	4.6	Remove	

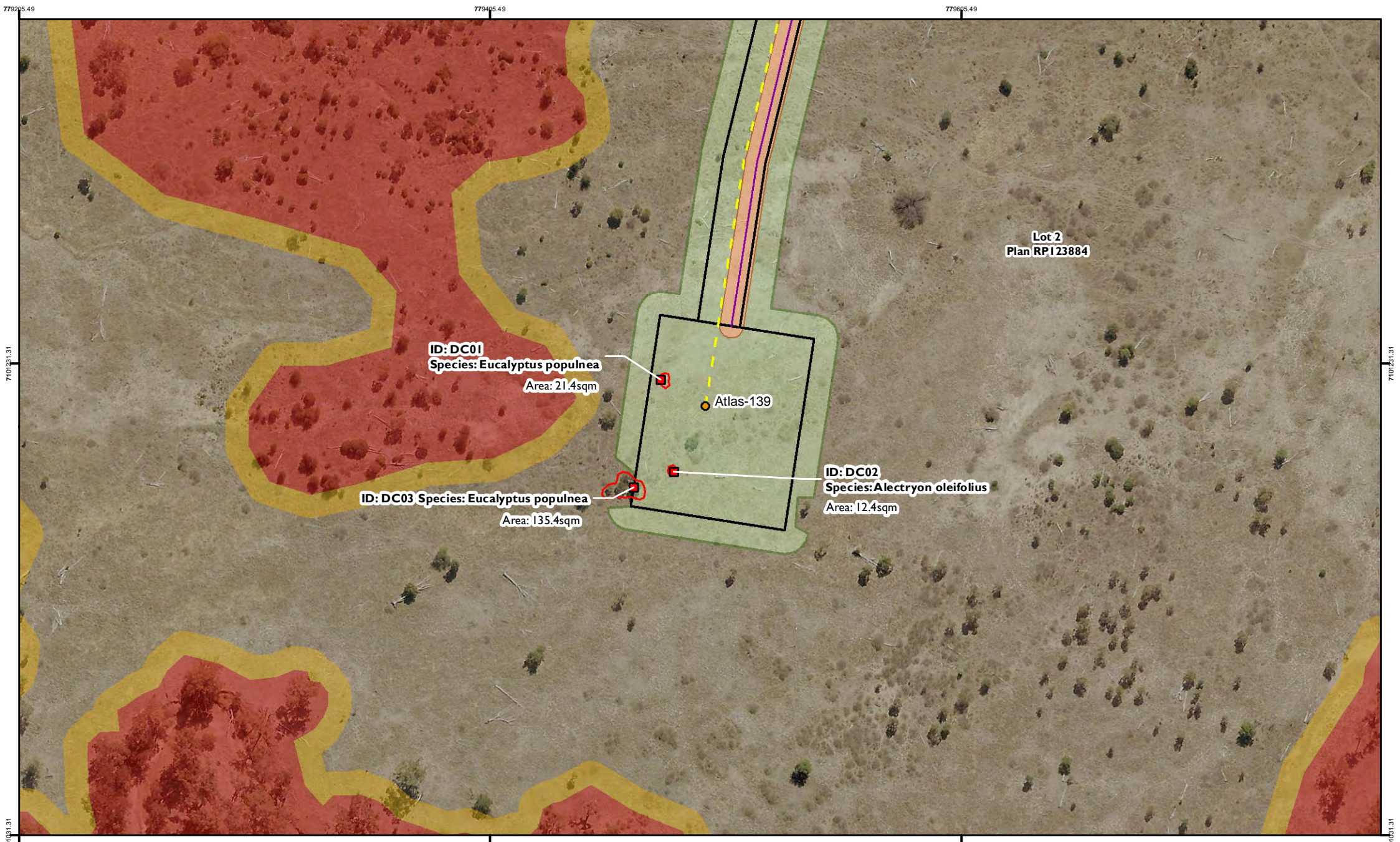
Location (Desktop ID)	Area (sqm)	Species	DBH (cm)	Height (m)	Action	Photo
RR44	108.4	<i>Eucalyptus populnea</i>	36	9.2	Remove	
RR45	45.5	<i>Eucalyptus populnea</i>	35	10	Retain	
RR46	18.6	<i>Corymbia tessellaris</i>	16	6.8	Retain	
RR47	6.9	<i>Corymbia tessellaris</i>	18	7.8	Remove	
RR48	6.6	<i>Corymbia tessellaris</i>	16.5	5.2	Retain	
RR49	23.7	<i>Eucalyptus populnea</i>	14	1.2	Retain	
RR50	54.6	<i>Acacia salicina (x2)</i>	25.5	7.6	Remove	

Location (Desktop ID)	Area (sqm)	Species	DBH (cm)	Height (m)	Action	Photo
RR51	105.98	<i>Eucalyptus populnea</i> (x14)	16	6	Remove	
RR52	127.1	<i>Eucalyptus populnea</i> 4x, <i>Acacia salicina</i> 1x, <i>Grevillea striata</i> 1x	28	6.6	Remove	
RR53	23.8	<i>Eucalyptus populnea</i>	23	7	Remove	
RR54	22.3	<i>Corymbia tessellaris</i>	35	12	Retain	
RR55	50.8	<i>Acacia salicina</i>	20	5	Remove	
RR56	32.1	<i>Acacia excelsa</i>	17	5.6	Remove	
RR57	72.3	<i>Acacia salicina</i>	42.5	7	Remove	

Location (Desktop ID)	Area (sqm)	Species	DBH (cm)	Height (m)	Action	Photo
RR58	78.8	<i>Eucalyptus populnea</i> (x2)	47	12.2	Remove	
RR59	78.4	<i>Acacia salicina</i>	32.5	7.2	Retain	
RR60	252.7	<i>Brachychiton populneus</i>	96	17	Retain	
RR61	23.28	<i>Eucalyptus populnea</i>	19	9.2	Remove	
RR62	17.8	<i>Casuarina cristata</i>	15	4.4	Remove	
DC01	21.3	<i>Eucalyptus populnea</i>	15.5	8.2	Remove	
DC02	12.4	<i>Alectryon oleifolius</i>	18	6.2	Remove	

Location (Desktop ID)	Area (sqm)	Species	DBH (cm)	Height (m)	Action	Photo
DC03	135.4	<i>Eucalyptus populnea</i>	23	8.9	Remove	
<b>Remove</b>	<b>Total sqm</b>	<b>1161.25 m<sup>2</sup></b>				
	<b>Total ha</b>	<b>0.116 ha</b>				
<b>Retain</b>	<b>Total sqm</b>	<b>555.09m<sup>2</sup></b>				
	<b>Total ha</b>	<b>0.06 ha</b>				





**FIGURE 3-6**  
Glenhaven - Koala tree surveys

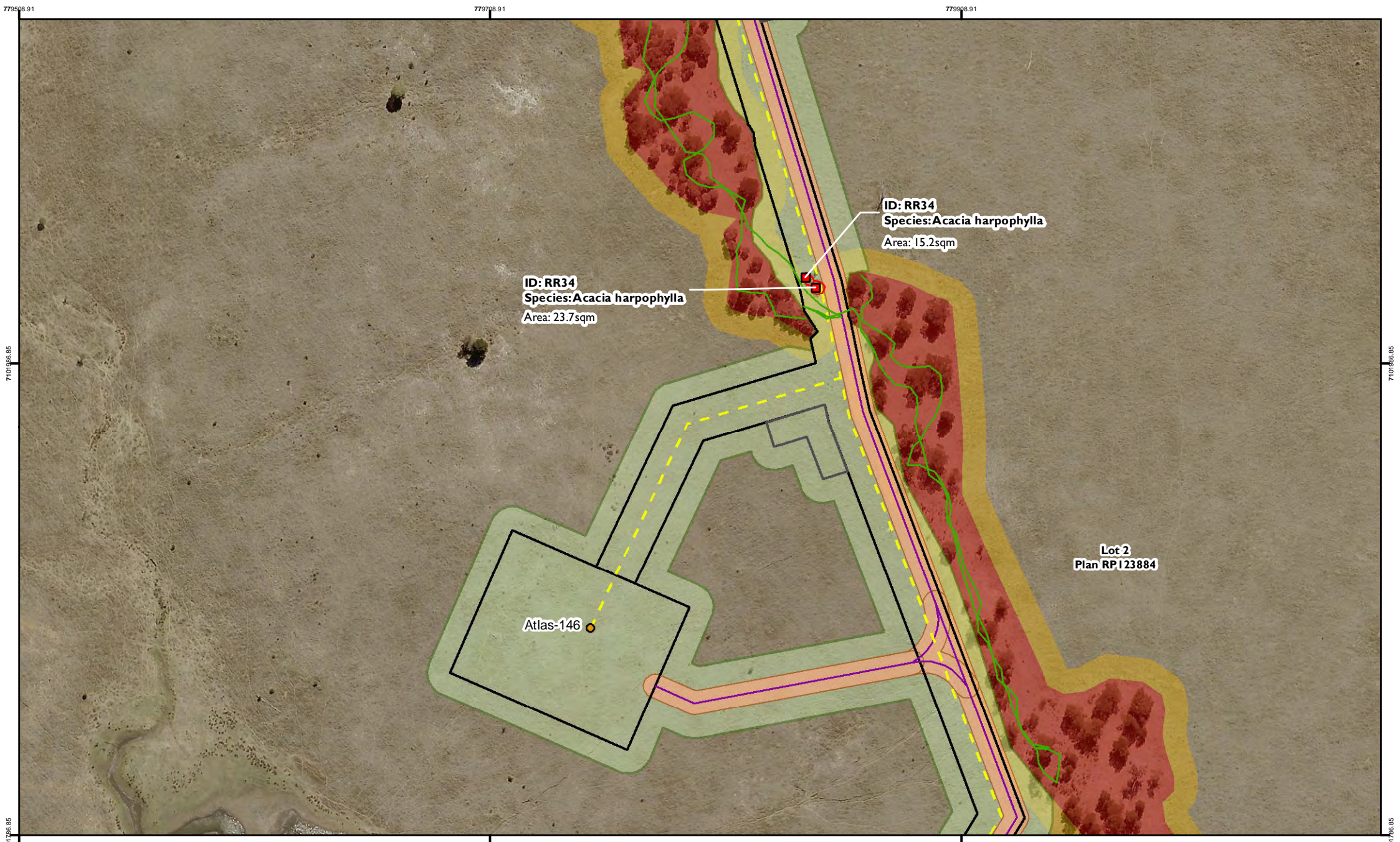
- |                        |                    |  |                      |
|------------------------|--------------------|--|----------------------|
| <b>Koala tree</b>      | Remove             | Proposed Gathering Lines                       | Proposed wellpad     |
| <b>Dripline Extent</b> | Remove             | <b>Proposed tree clearance assessment area</b> | No Go Area           |
| Proposed wells         | Surveyed area      | Cadastre                                       | High Constraint Area |
| Tracks                 | Proposed footprint | Tracks corridor                                |                      |

**Data Accuracy Notes:**  
Ground-Truthed data mapped using Fixed RTK GNSS Receivers with 1cm Accuracy



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0	MS	RR	19/09/2024
3	MS	LG	07/01/2025

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**FIGURE 3-7**  
Glenhaven - Koala tree surveys

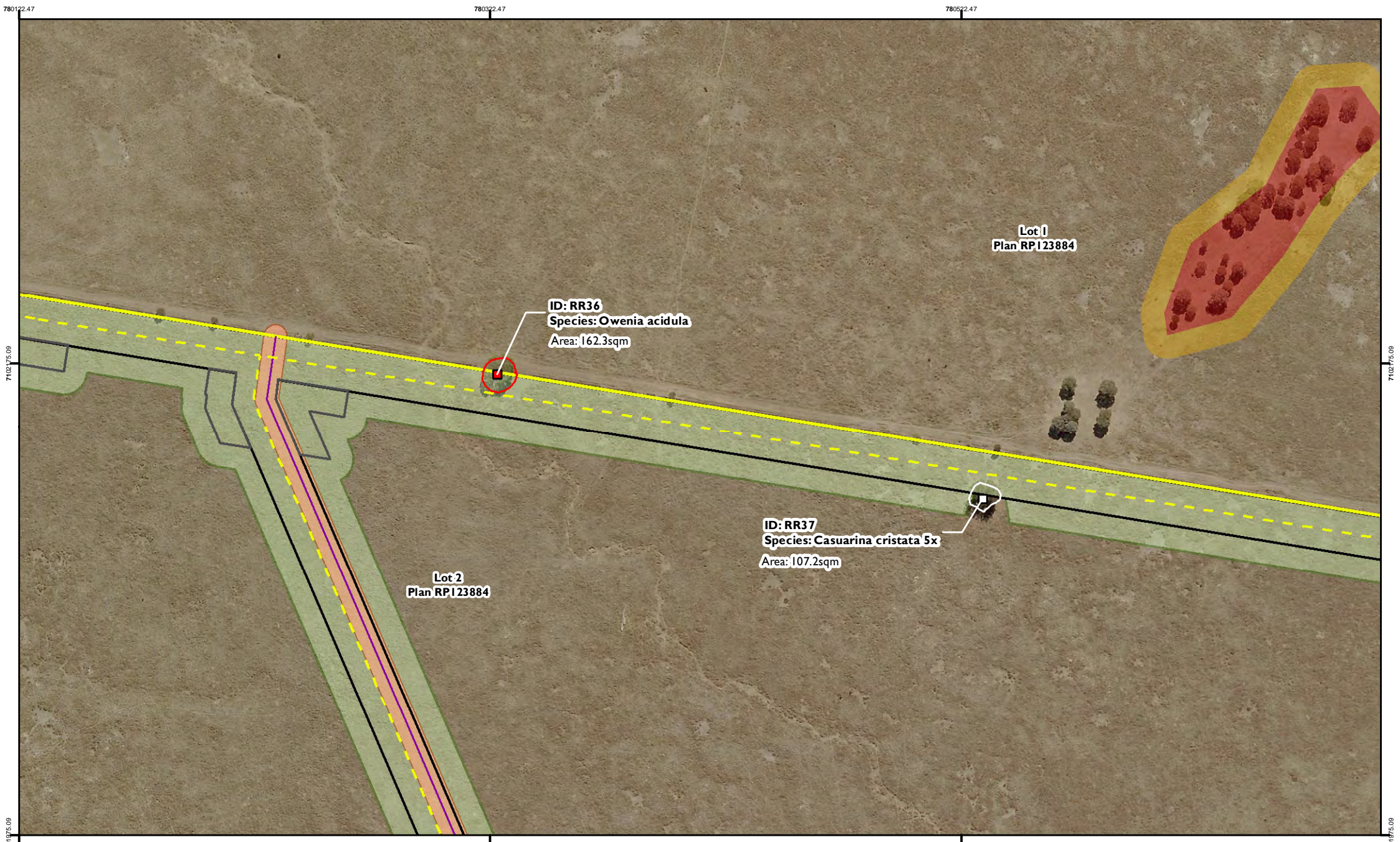
- |                              |  |                      |
|------------------------------|--|----------------------|
| <b>Koala tree</b>            | Tracks   | Proposed footprint   |
| Remove                       | Proposed Gathering Lines                       | Tracks corridor      |
| <b>Dripline Extent</b>       | <b>Proposed tree clearance assessment area</b> | Proposed wellpad     |
| Remove                       | Surveyed area                                  | No Go Area           |
| Proposed wells               | Temporary extra workspace                      | High Constraint Area |
| Protected plant survey lines | Cadastre                                       |                      |

**Data Accuracy Notes:**  
Ground-Truthed data mapped using Fixed RTK GNSS Receivers with 1cm Accuracy



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COORDINATE SYSTEM: GDA2020 MGA Zone 55  
SCALE: 1:2,000



**FIGURE 3-8**  
Glenhaven - Koala tree surveys

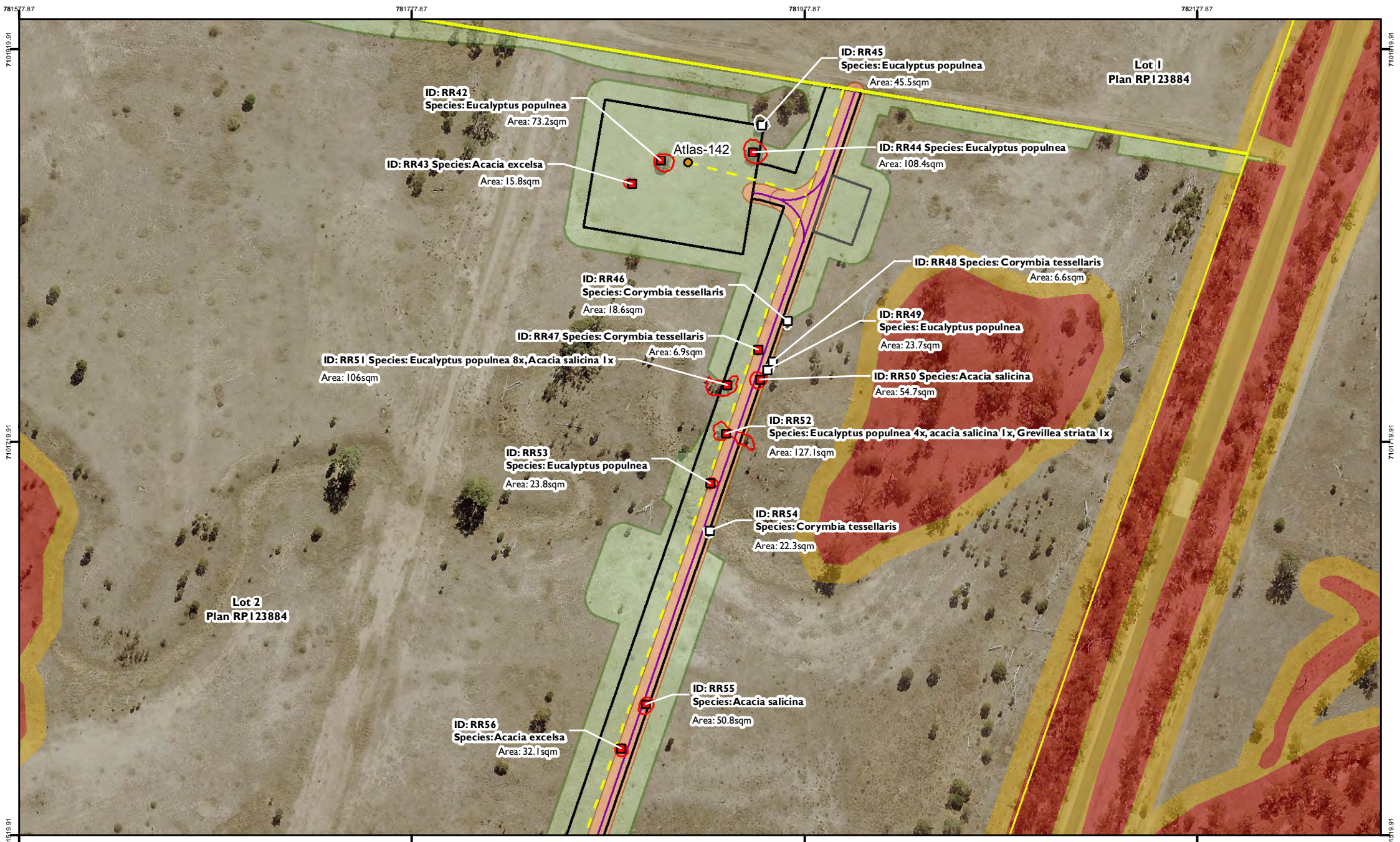
- |                        |  |                      |
|------------------------|--|----------------------|
| <b>Koala tree</b>      | Tracks   | Proposed footprint   |
| Retain                 | Proposed Gathering Lines                       | Tracks corridor      |
| Remove                 | <b>Proposed tree clearance assessment area</b> | No Go Area           |
| <b>Dripline Extent</b> | Surveyed area                                  | High Constraint Area |
| Retain                 | Temporary extra workspace                      |                      |
| Remove                 | Cadastre                                       |                      |

**Data Accuracy Notes:**  
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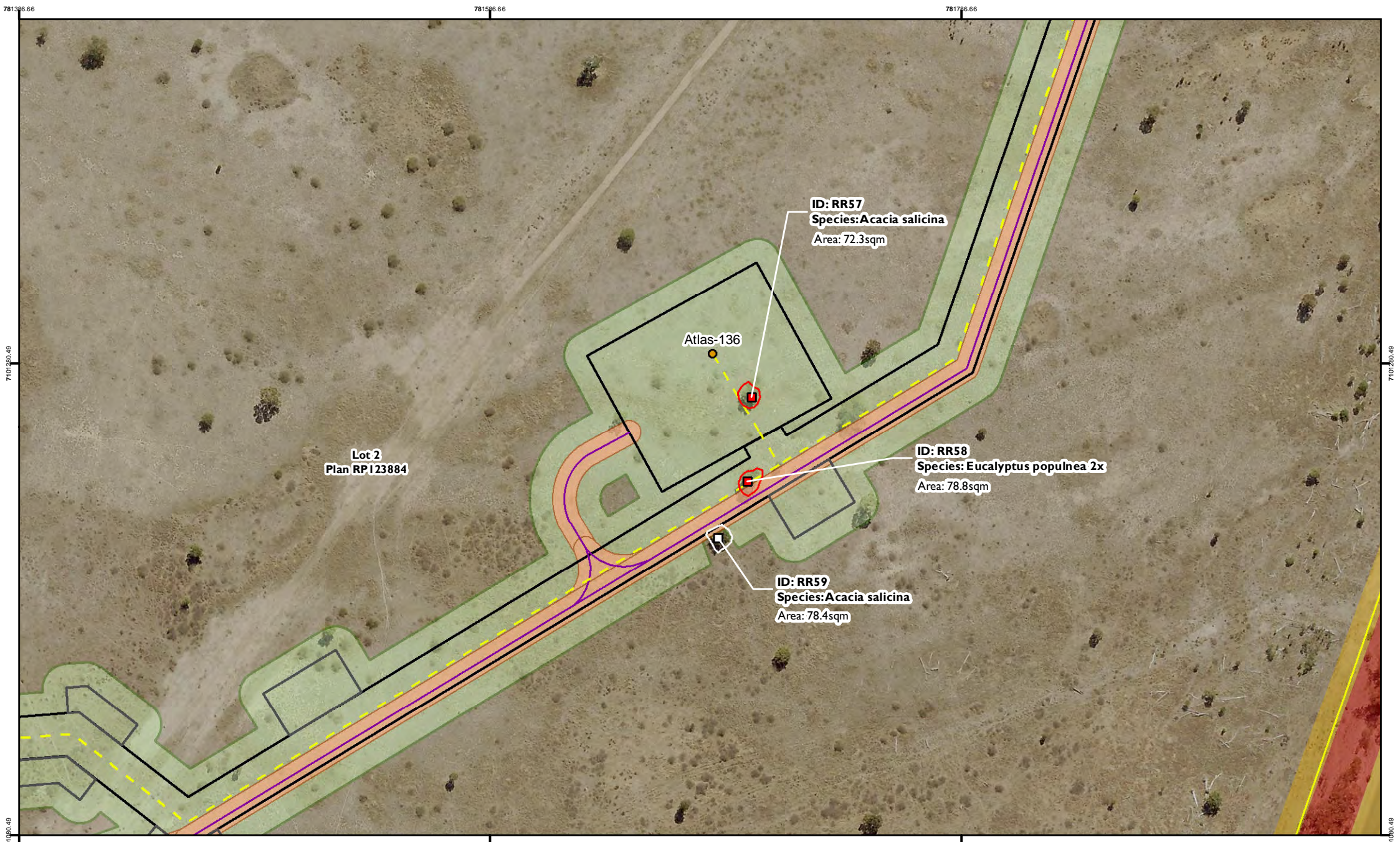
**Ausecology**  
Micro-ecology  
**FIGURE 3-9**  
 Glenhaven - Koala tree surveys

<ul style="list-style-type: none"> <li><span style="display: inline-block; width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></span> Retain</li> <li><span style="display: inline-block; width: 10px; height: 10px; background-color: red; margin-right: 5px;"></span> Remove</li> </ul> <p><b>Dripline Extent</b></p> <ul style="list-style-type: none"> <li><span style="display: inline-block; width: 10px; height: 10px; border: 1px solid gray; margin-right: 5px;"></span> Retain</li> <li><span style="display: inline-block; width: 10px; height: 10px; border: 1px solid red; margin-right: 5px;"></span> Remove</li> </ul>	<ul style="list-style-type: none"> <li><span style="display: inline-block; width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></span> Proposed wells</li> <li><span style="display: inline-block; width: 10px; height: 10px; border-bottom: 1px solid purple; margin-right: 5px;"></span> Tracks</li> <li><span style="display: inline-block; width: 10px; height: 10px; border-bottom: 1px dashed yellow; margin-right: 5px;"></span> Proposed Gathering Lines</li> </ul> <p><b>Proposed tree clearance assessment area</b></p> <ul style="list-style-type: none"> <li><span style="display: inline-block; width: 10px; height: 10px; background-color: lightgreen; margin-right: 5px;"></span> Surveyed area</li> <li><span style="display: inline-block; width: 10px; height: 10px; background-color: lightgray; margin-right: 5px;"></span> Temporary extra workspace</li> </ul>	<ul style="list-style-type: none"> <li><span style="display: inline-block; width: 10px; height: 10px; border: 1px solid yellow; margin-right: 5px;"></span> Cadastre</li> <li><span style="display: inline-block; width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></span> Proposed footprint</li> <li><span style="display: inline-block; width: 10px; height: 10px; background-color: lightorange; margin-right: 5px;"></span> Tracks corridor</li> <li><span style="display: inline-block; width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></span> Proposed wellpad</li> <li><span style="display: inline-block; width: 10px; height: 10px; background-color: red; margin-right: 5px;"></span> No Go Area</li> <li><span style="display: inline-block; width: 10px; height: 10px; background-color: yellow; margin-right: 5px;"></span> High Constraint Area</li> </ul>	<p><b>Data Accuracy Notes:</b>        Ground-Truthed data mapped using Fixed RTK GNSS Receivers with 1cm Accuracy</p>
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0	MS	RR	19/09/2024
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COORDINATE SYSTEM: GDA2020 MGA Zone 55  
 SCALE: 1:2,400



**Ausecology**  
Micro-ecology  
**FIGURE 3-10**  
 Glenhaven - Koala tree surveys

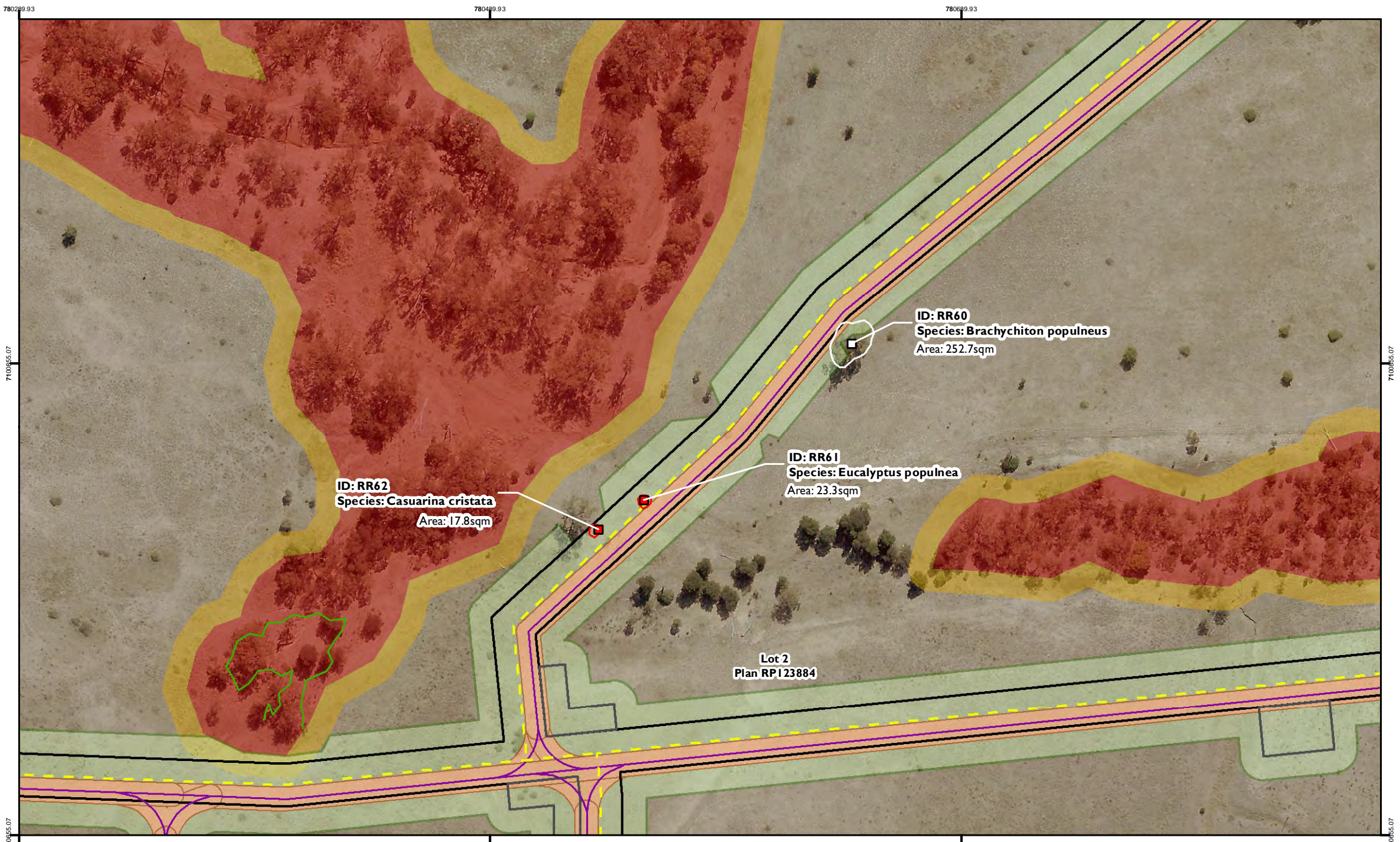
Retain	Proposed wells	Cadastre
Remove	Tracks	Proposed footprint
<b>Dripline Extent</b>	Proposed Gathering Lines	Tracks corridor
Retain	<b>Proposed tree clearance assessment area</b>	Proposed wellpad
Remove	Surveyed area	High Constraint Area
	Temporary extra workspace	

**Data Accuracy Notes:**  
 Ground-Truthed data mapped using Fixed RTK GNSS Receivers with 1cm Accuracy



REVISION	AUTHOR	REVIEWER	DATE
0	MS	RR	19/09/2024
3	MS	LG	07/01/2025

COORDINATE SYSTEM: GDA2020 MGA Zone 55  
 SCALE: 1:2,000



**Ausecology**  
Micro-ecology  
**FIGURE 3-11**  
 Glenhaven - Koala tree surveys

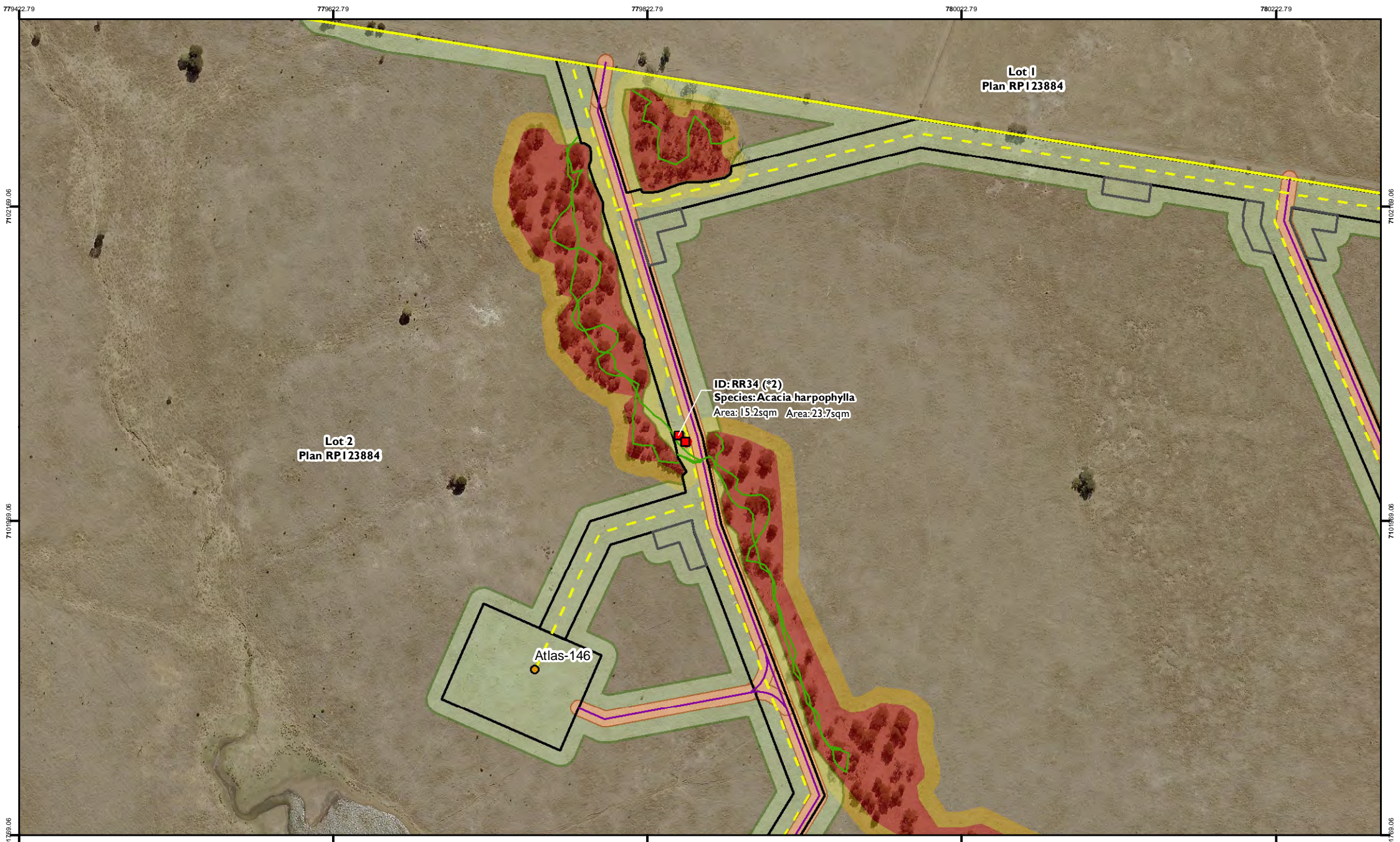
<b>Koala tree</b>	Protected plant survey lines	Cadastre
Retain	Tracks	Proposed footprint
Remove	Proposed Gathering Lines	Tracks corridor
<b>Dripline Extent</b>	<b>Proposed tree clearance assessment area</b>	No Go Area
Retain	Surveyed area	High Constraint Area
Remove	Temporary extra workspace	

**Data Accuracy Notes:**  
 Ground-Truthed data mapped using Fixed RTK GNSS Receivers with 1cm Accuracy



REVISION	AUTHOR	REVIEWER	DATE
0	MS	RR	19/09/2024
3	MS	LG	07/01/2025

COORDINATE SYSTEM: GDA2020 MGA Zone 55  
 SCALE: 1:2,000



**Ausecology**  
 Micro-ecology  
**FIGURE 3-12**  
 Glenhaven – Protected plant surveys

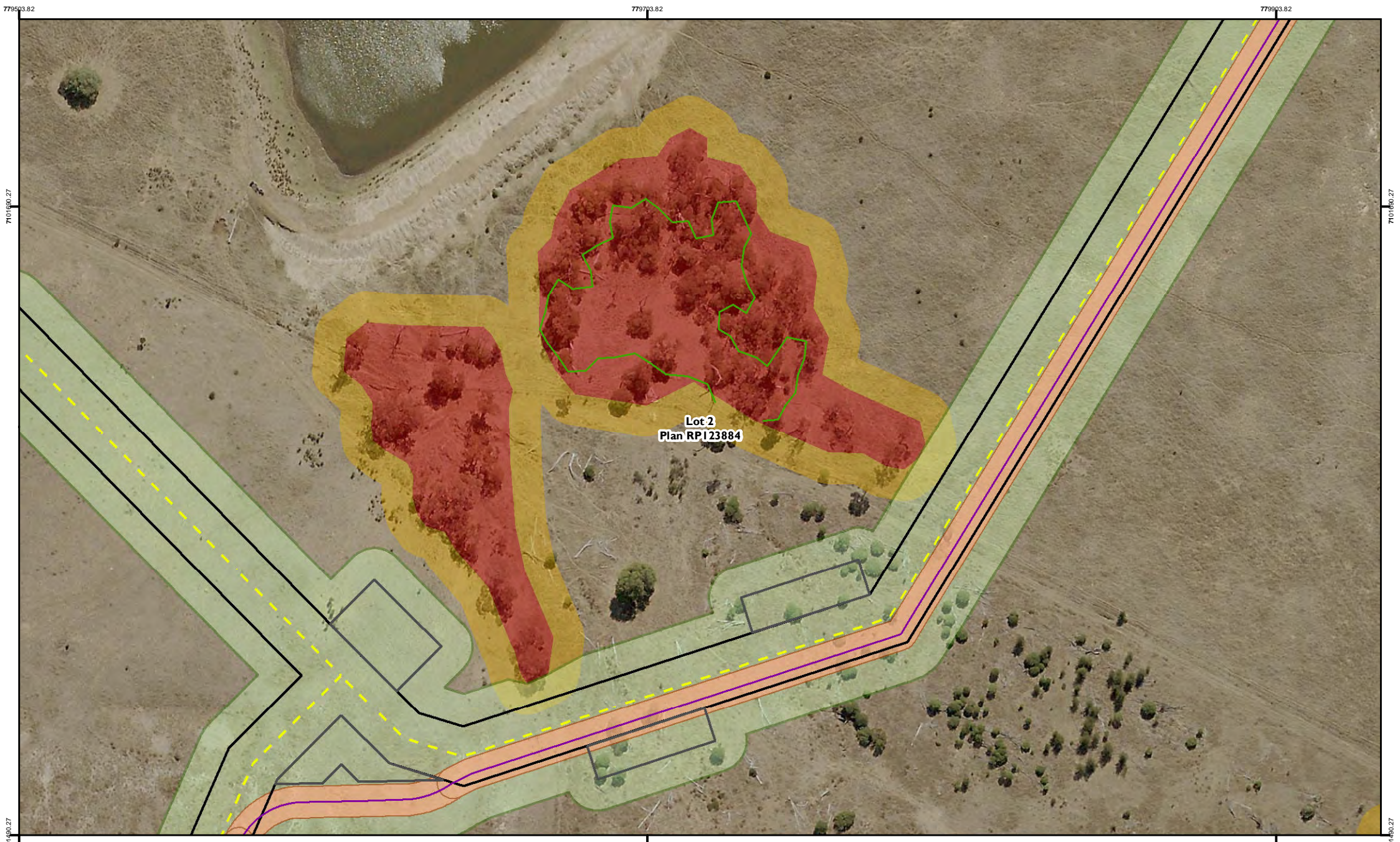
- |                              |                           |                      |
|------------------------------|---------------------------|----------------------|
| Remove                       | Tracks                    | Proposed footprint   |
| <b>Dripline Extent</b>       | Proposed Gathering Lines  | Tracks corridor      |
| Remove                       | Surveyed area             | No Go Area           |
| Proposed wells               | Temporary extra workspace | High Constraint Area |
| Protected plant survey lines | Cadastral                 |                      |
|                              | Proposed wellpad          |                      |

**Data Accuracy Notes:**  
 Ground-Truthed data mapped using Fixed RTK GNSS Receivers with 1cm Accuracy



REVISION	AUTHOR	REVIEWER	DATE
A	NC	RR	26/09/2024
I	MS	RR	08/01/2025

COORDINATE SYSTEM: GDA2020 MGA Zone 55  
 SCALE: 1:3,000



Lot 2  
Plan RP123884



**FIGURE 3-13**  
Glenhaven – Protected plant surveys

- Protected plant survey lines
- Proposed Gathering Lines
- Tracks
- Surveyed area
- Temporary extra workspace
- Cadastre
- Proposed footprint
- Tracks corridor
- No Go Area
- High Constraint Area

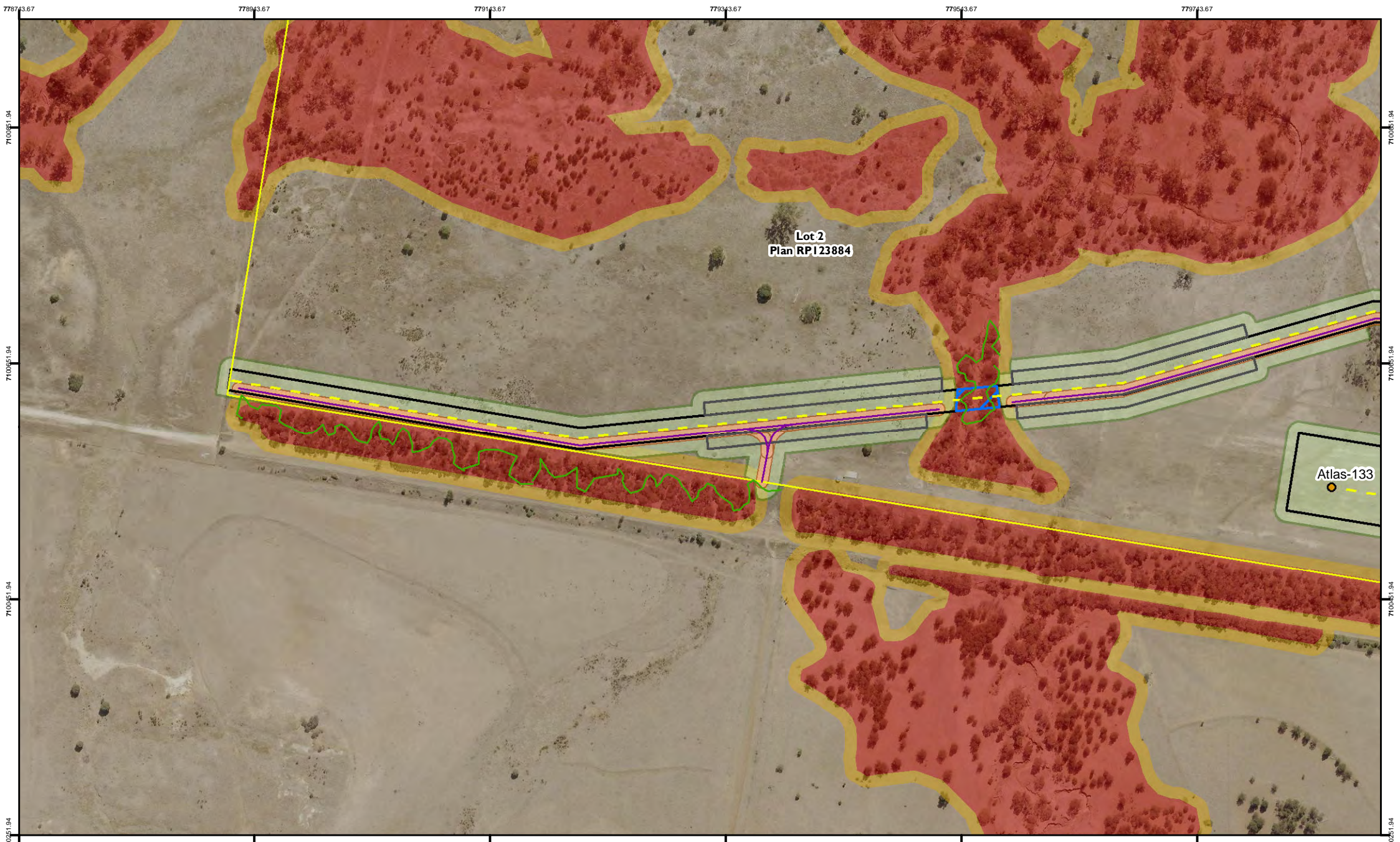
**Data Accuracy Notes:**  
Ground-Truthed data mapped using Fixed RTK GNSS Receivers with 1cm Accuracy



REVISION	AUTHOR	REVIEWER	DATE
A	NC	RR	26/09/2024
I	MS	RR	08/01/2025

COORDINATE SYSTEM: GDA2020 MGA Zone 55  
SCALE: 1:1,500





**FIGURE 3-14**  
Glenhaven – Protected plant surveys

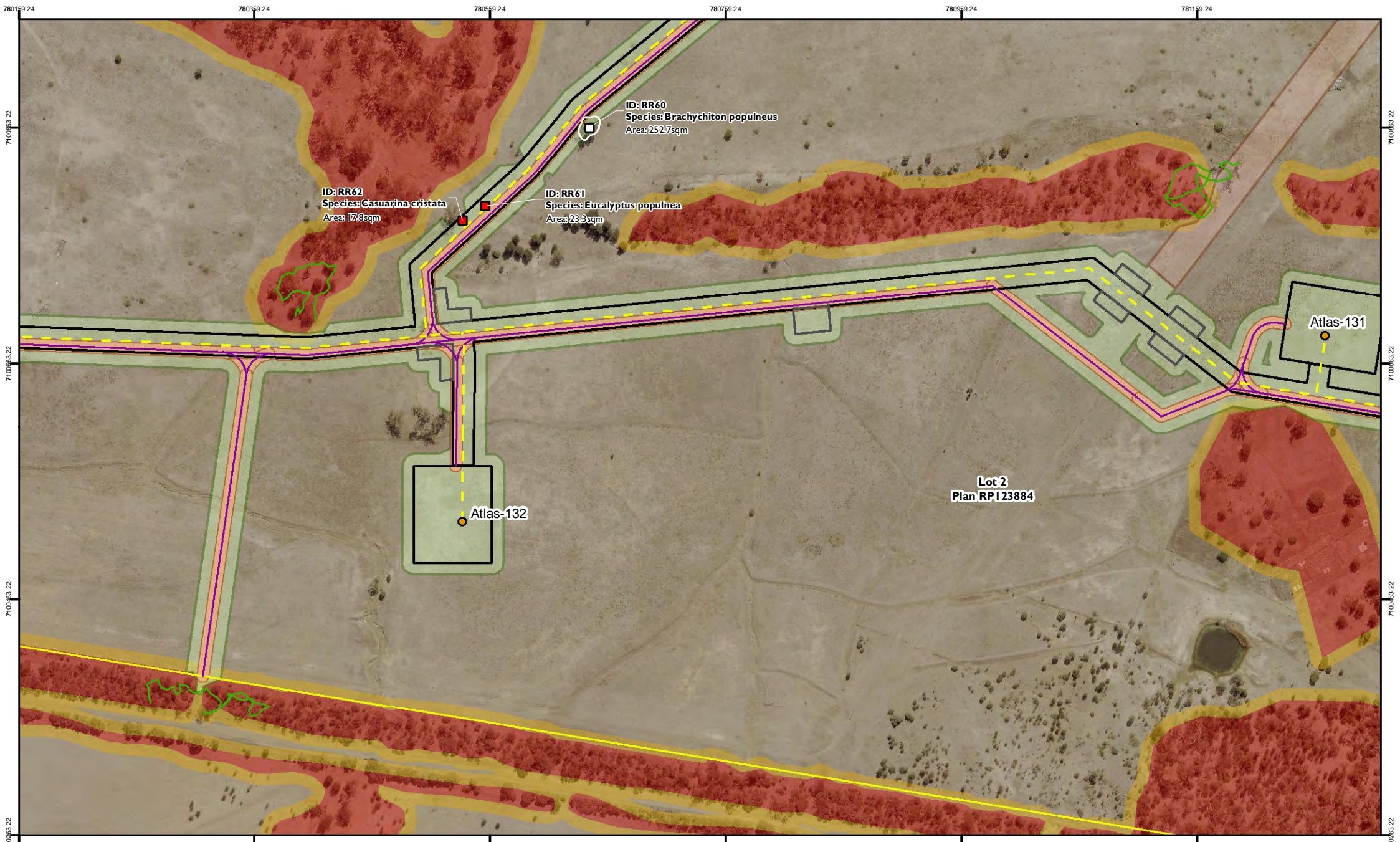
- Proposed wells
- Protected plant survey lines
- Proposed Gathering Lines
- Tracks
- Proposed wellpad
- Surveyed area
- Temporary extra workspace
- Cadastre
- Proposed footprint
- Underbore
- Tracks corridor
- No Go Area
- High Constraint Area

**Data Accuracy Notes:**  
Ground-Truthed data mapped using Fixed RTK GNSS Receivers with 1cm Accuracy



REVISION	AUTHOR	REVIEWER	DATE
A	NC	RR	26/09/2024
I	MS	RR	08/01/2025

COORDINATE SYSTEM: GDA2020 MGA Zone 55  
SCALE: 1:4,000



**Ausecology**  
Micro-ecology  
**FIGURE 3-15**  
 Glenhaven – Protected plant surveys

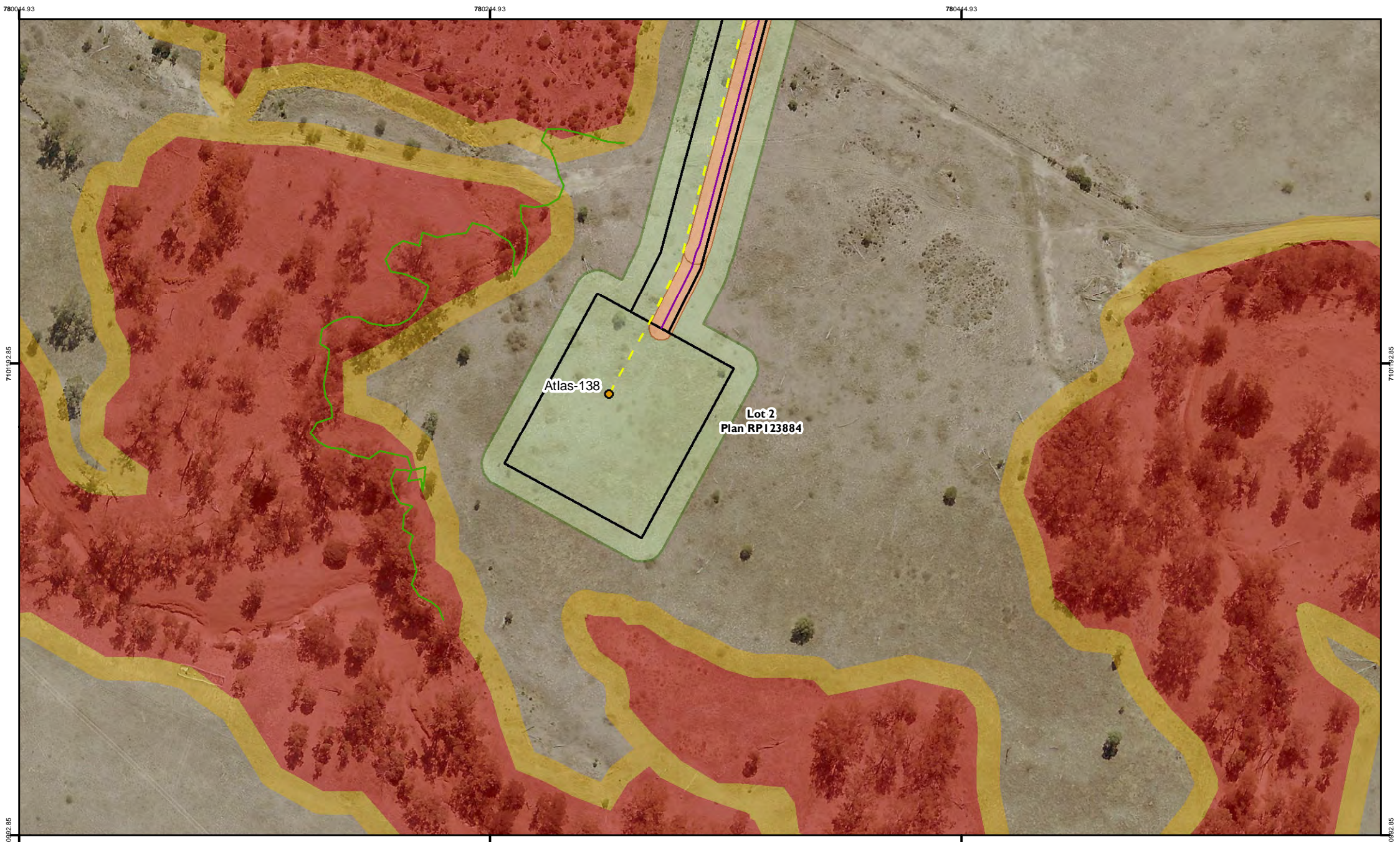
- |                        |                              |                           |                      |
|------------------------|------------------------------|---------------------------|----------------------|
| Retain                 | Proposed wells               | Proposed wellpad          | High Constraint Area |
| Remove                 | Proposed Gathering Lines     | Temporary extra workspace |                      |
| <b>Dripline Extent</b> | Protected plant survey lines | Proposed footprint        |                      |
| Retain                 | Tracks                       | Cadastre                  |                      |
| Remove                 | Surveyed area                | Tracks corridor           |                      |
|                        | Surveyed area but not used   | No Go Area                |                      |

**Data Accuracy Notes:**  
 Ground-Truthed data mapped using Fixed RTK GNSS Receivers with 1cm Accuracy



REVISION	AUTHOR	REVIEWER	DATE
A	NC	RR	26/09/2024
I	MS	RR	08/01/2025

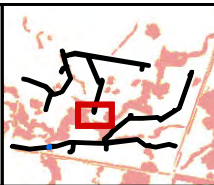
COORDINATE SYSTEM: GDA2020 MGA Zone 55  
 SCALE: 1:4,000



**FIGURE 3-16**  
Glenhaven – Protected plant surveys

- Proposed wells
- Protected plant survey lines
- Proposed Gathering Lines
- Tracks
- Surveyed area
- Proposed wellpad
- Cadastral
- Proposed footprint
- Tracks corridor
- No Go Area
- High Constraint Area

**Data Accuracy Notes:**  
Ground-Truthed data mapped using Fixed RTK GNSS Receivers with 1cm Accuracy



REVISION	AUTHOR	REVIEWER	DATE
A	NC	RR	26/09/2024
I	MS	RR	08/01/2025

COORDINATE SYSTEM: GDA2020 MGA Zone 55  
SCALE: 1:2,000

## 8 Discussion

The surveys on the “Glenhaven” property found that the project impacts to koala dispersal habitat would be minimal, with a total of 0.11 ha (1161.25 m<sup>2</sup>) to be potentially cleared. Most of the impact footprint is located within predominantly cleared agricultural areas and Senex has actively avoided patches of remnant and regrowth vegetation, as well as individual paddock trees, resulting in retaining 0.06 ha (or 555.09 m<sup>2</sup>) of koala dispersal habitat. In all cases, trees are retained within proximity to those that are unable to be avoided and the clearing of 0.11 ha is unlikely to have a significant effect on the ecological function of dispersal habitat on the property for koalas. Adjacent areas of dispersal habitat avoided are shown in Figure 8-1.

Threatened flora searches found no threatened species within or in proximity to the impact footprint. No threatened flora were encountered during the survey and no TECs are present within the disturbance footprint or within 30m of the disturbance footprint. During surveys weed species were found on the property including *Harrisia* cactus (*Harrisia martini*), Mexican poppy (*Agremone ochroleuca*) and *Opuntia* spp. No remnant or HVR regulated vegetation, potential threatened fauna habitat or environmentally sensitive areas (ESAs) are present within the disturbance footprint, other than where an under-bore will be carried out shown in Figure 8-2. Access from Weldons Road shows no impact to surrounding vegetation on road reserves as per Figure 8-3.

The area is known echidna and koala dispersal area and other least concern species were observed in the area during the surveys. It is recommended that a qualified fauna spotter catcher undertake a preclearance survey across the disturbance footprint to identify habitat features prior to clearing. The spotter catcher should be present during clearing works to check habitat features and relocate fauna, and where possible habitat features to minimise impacts to fauna.



Figure 8-1 Examples of adjacent vegetation avoided by disturbance footprint



*Figure 8-2 – Vegetation to be under-bored*



*Figure 8-3 – Entrances from Weldons Road*

## Appendix A – Fauna records

Results of the fauna observed during the surveys are included in the table below.

Scientific name	Common name	Non-native (*)
<i>Acanthiza chrysorrhoa</i>	Yellow-rumped Thornbill	
<i>Anthus novaeseelandiae</i>	Australasian Pipit	
<i>Aprosmictus erythropterus</i>	Red-winged Parrot	
<i>Aquila audax</i>	Wedge-tailed Eagle	
<i>Cacatua galerita</i>	Sulphur-crested Cockatoo	
<i>Cisticola exilis</i>	Golden-headed Cisticola	
<i>Coracina novaehollandiae</i>	Black-faced Cuckoo-shrike	
<i>Corvus orru</i>	Torresian Crow	
<i>Coturnix ypsilophora</i>	Brown Quail	
<i>Cracticus nigrogularis</i>	Pied Butcherbird	
<i>Cracticus tibicen</i>	Australian Magpie	
<i>Cryptoblepharus metallicus</i>	Metallic Snake-eyed Skink	
<i>Cryptoblepharus pulcher</i>	Elegant Snake-eyed Skink	
<i>Dacelo novaeguineae</i>	Laughing Kookaburra	
<i>Dicaeum hirundinaceum</i>	Mistletoebird	
<i>Elanus axillaris</i>	Black-shouldered Kite	
<i>Eolophus roseicapillus</i>	Galah	
<i>Falco berigora</i>	Brown Falcon	
<i>Falco cenchroides</i>	Nankeen Kestrel	
<i>Geopelia striata</i>	Peaceful Dove	
<i>Gerygone albogularis</i>	White-throated Gerygone	
<i>Haliastur sphenurus</i>	Whistling Kite	
<i>Macropus giganteus</i>	Eastern Grey Kangaroo	
<i>Macropus rufogriseus</i>	Red-necked Wallaby	
<i>Malurus leucopterus</i>	White-winged Fairy-wren	
<i>Malurus melanocephalus</i>	Red-backed Fairy-wren	
<i>Manorina melanocephala</i>	Noisy Miner	
<i>Merops ornatus</i>	Rainbow Bee-eater	
<i>Morethia boulengeri</i>	South-eastern Morethia Skink	
<i>Morethia taeniopleura</i>	Fire-tailed Skink	
<i>Ocyphaps lophotes</i>	Crested Pigeon	
<i>Oriolus sagittatus</i>	Olive-backed Oriole	
<i>Pardalotus striatus</i>	Striated Pardalote	
<i>Philemon citreogularis</i>	Little Friarbird	
<i>Platalea regia</i>	Royal Spoonbill	
<i>Platycercus adscitus</i>	Pale-headed Rosella	
<i>Plectorhyncha lanceolata</i>	Striped Honeyeater	
<i>Rhinella marina</i>	Cane Toad	*
<i>Rhipidura leucophrys</i>	Willie Wagtail	
<i>Taeniopygia bichenovii</i>	Double-barred Finch	
<i>Trichoglossus haematodus</i>	Rainbow Lorikeet	