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Assessment Report  
Road and Watercourse Casements

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# Appendices

## Appendix A

Map sheets of the proposed development area



# 1 Background

## 1.1 Project description

Santos Ltd (Santos) has commissioned Aurecon Australia Pty Ltd (Aurecon) to undertake ecological investigations of proposed areas of development for the Roma gas fields.

The Roma gas fields are located near the township of Roma and are characterised by undulating terrain with small elevated areas including the Thomby and Grafton Range. The dominant vegetation types within the Roma gas fields include Eucalypt and/or Brigalow woodlands, Blue grass or Mitchell grass downs, and smaller areas of White Cypress Pine and Mulga (Eddie 2007). The Roma gas fields are located within the Balonne River catchment.

Much of this area has been subject to cattle grazing and other agricultural practices, as well as previous development associated with the gas fields.

This report is specific to the ground-truthed proposed development areas that are contained within existing road reserves and watercourse casements, within the Roma gas fields (herewith referred to as proposed development areas).

The proposed development areas discussed within this report have been segregated into 17 map sheets for ease of reference (Appendix A). Each map sheet is reported on separately within Section 3 of this report. Note that the subject of this report is solely related to proposed development areas that are contained within the existing road reserves and watercourse casements within the Roma gas fields. For information regarding the species composition and structural complexity of the areas that are adjacent to those discussed within this report, refer to the Lot specific report of interest that has already been prepared.

## 1.2 Purpose of report

The aim of this report is to provide an ecological assessment of the proposed development areas that are contained within the existing road reserves and watercourse casements, within the Roma gas fields (Appendix A), and to identify areas and species of notable ecological or conservation value. This report does not make any recommendations regarding the development in relation to any Santos environmental authorities or other approvals.



## 2 Methodology

### 2.1 Desktop methodology

Proposed development areas have been projected on a range of maps provided by Santos. These maps include Regional Ecosystem (RE) Mapping (version 6.1; Department of Environment and Resource Management [DERM]), Environmentally Sensitive Areas (ESA) mapping, drainage mapping and aerial photography. Where available ahead of time, these resources were reviewed to determine target areas for the field inspection. It is important to note that the RE classifications referred to in this report are based on the 'biodiversity status' of the vegetation and not the '*Vegetation Management Act 1999* (VM Act) status' of the vegetation. Note that the official DERM mapping (based on the VM Act status) is used to generate the figures within this report.

### 2.2 Field methodology

The proposed development areas were assessed by Aurecon ecologists over a six month period (ie during the months of March to August 2011). These assessments were to determine the existing vegetation communities and habitat value of the proposed clearing within the development areas as well as to verify the RE mapping as produced by DERM.

GIS environmental constraints layers (eg RE Mapping, ESA mapping etc) and high resolution aerial photography were uploaded onto a toughbook (C5 mobile clinical assistant CFT-001 – Motion computing), with an integrated GPS used to locate surveys areas. Handheld Garmin GPS units (GPS map 76) were also used during the field investigations. It should be noted that while efforts were made to ensure the GPS co-ordinates provided in this report are accurate, a margin of error approximately +/- 15 m is expected due to the limitations of the devices used and the recording environment.

The proposed development areas within road and watercourse casements vary in width and length.

The ground-truthing of the proposed development areas included undertaking detailed flora species surveys including sampling of unknown flora, and recording all incidental fauna observations. All species known to be of conservation significance (such as endangered, vulnerable, near threatened or Type A species as listed under the provisions of the *Nature Conservation Act 1992* [NC Act] or endangered, vulnerable or near threatened species as listed under the provisions of the *Environment Protection and Biodiversity Conservation Act 1999* [EPBC Act]) were recorded using the toughbook.

It is important to note that ecological data has primarily been collected on a lot-specific basis, and in some cases, distinction between the data collected within the proposed development areas (ie areas that intercept the road reserves and watercourse casements) and additional development areas (not subject to this report) is not possible. For further detail regarding species composition and structural complexity of the proposed development areas, please refer to the Lot specific ecological assessment reports that have previously been prepared for this project.



# 3 Ecological assessment

## 3.1 Map sheet 1

### 3.1.1 General

The proposed development area illustrated on Map Sheet 1 (Appendix A) occurs within and/or adjacent to the following properties:

- Lots 66 on WV762
- Lot 87 on WV763
- Lot 24 on WV432
- Lot 1 on WV432
- Lot 2 on WV432
- Lot 3 on SP180954

This proposed development area occurs in association with:

- Mount Saltbush Road reserve
- Unnamed road reserve
- Corridors R10, R11, R13
- Geotechnical locations 7699-RM-01, 7699-RM-02, 7699-TP-33, and 7399-TP-34, 7699-TP-40

The majority of the proposed development area is currently mapped as non-remnant vegetation on the DERM certified RE mapping. However, approximately 1800 m<sup>2</sup> of mapped remnant vegetation is intercepted along the existing Mount Saltbush Road reserve. This vegetation community is mapped as RE 11.10.9, which has a biodiversity status of 'No Concern at Present'.

The Map Sheet 1 proposed development area does not occur within any identified ESAs. The closest known ESA is located approximately 2 km to the east.

Three (3) DERM mapped watercourses (stream order 2) occur within the Map Sheet 1 proposed development area.

#### 3.1.1.1 Floristics

The proposed development area (associated with corridor R11) traverses approximately 0.5 ha of mapped RE 11.10.9 ('No concern at present') (Map Sheet 1). The RE description for this community is White cypress (*Callitris glaucophylla*) woodland on coarse-grained sedimentary rocks. The RE mapping was confirmed as correct during investigations.

A total of 10 Type A restricted plants (under the provisions of the NC Act), i.e. *Brachychiton rupestris* (Narrow-leaved bottle tree) and *Brachychiton populneus* (Kurrajong), were recorded within the proposed development areas. The location of these species is provided in Table 3.1, below.

No other flora species of conservation significance as listed under the provisions of the NC Act and/or the EPBC Act were observed within the proposed development area.

A list of flora species observed within and/or surrounding the proposed development area is provided in the relevant Lot specific reports.

**Table 3.1** Location of Type A Restricted Plants (*Nature Conservation Act 1992*)

Species	Easting (GDA 94, Zone 55J)	Northing (GDA 94, Zone 55J)
<i>Brachychiton populneus</i>	700725	7083223
<i>Brachychiton rupestris</i>	700755	7083307
<i>Brachychiton rupestris</i>	700773	7083399
<i>Brachychiton rupestris</i>	700772	7083460
<i>Brachychiton populneus</i>	700765	7083520
<i>Brachychiton populneus</i>	704004	7083896
<i>Brachychiton populneus</i>	704377	7084118
<i>Brachychiton populneus</i> (x2)	700883	7084224
<i>Brachychiton populneus</i>	700903	7084553

### 3.1.2 Habitat values

Habitat features associated with the proposed disturbance area include:

- Canopy cover suitable for shelter, foraging and perching
- Fissured tree bark
- Dense groundcover vegetation (ie grassy tussocks)
- Woody debris (ie fallen/felled timber, including hollow-bearing logs)
- Watercourse habitat (including banks)

Despite the range of habitat features present within the proposed development area, the habitat values of this study area are considered low overall, as a result of the thin, linear, nature of the area. The area contains limited woody vegetation and has been extensively disturbed by grazing stock, previous vegetation clearing and the invasion of exotic pasture species. The narrow corridor of vegetation that persists between the road reserve and property boundary is likely to provide habitat for a range of common avian fauna.

Fourteen (14) incidental fauna species were recorded within the proposed development area, as indicated in Table 3.2, below. All of these species are listed as Least Concern under the provisions of the NC Act, and are not listed under the provisions of the EPBC Act.

**Table 3.2** Incidental fauna species recorded

Common name	Species
Apostlebird	<i>Struthidea cinerea</i>
Crested pigeon	<i>Ocyphaps lophotes</i>
Golden-headed Cisticola	<i>Cisticola exilis</i>

Mudlark	<i>Grallina cyanoleuca</i>
Noisy Miner	<i>Manorina melanocephala</i>
Pale-headed Rosella	<i>Platycercus adscitus</i>
Pied butcherbird	<i>Cracticus nigrogularis</i>
Pretty face wallaby	<i>Macropus parryi</i>
Red-backed Fairy-wren	<i>Malurus melanocephalus</i>
Richard's pipet	<i>Anthus novaeseelandiae</i>
Striated pardalote	<i>Pardalotus striatus</i>
Torresian crow	<i>Corvus orru</i>
Wedge-tailed eagle	<i>Aquila audax</i>
Willy wagtail	<i>Rhipidura leucophrys</i>

## 3.2 Map sheet 2

### 3.2.1 General

The proposed development area illustrated on Map Sheet 2 (Appendix A) occurs within and/or adjacent to the following properties:

- Lot 2 on WV432
- Lot 5 on WV434
- Lot 6 on WV435
- Lots 21 WV432
- Lots 22 WV432
- Lots 23 WV432
- Lots 24 WV432

This proposed development area occurs in association with:

- Mount Saltbush Road reserve
- Unnamed road reserve
- Corridors R14 and R50
- Pleasant Hills14 Flowline
- Geotechnical locations TP-R21, RM02-20, 7699-RM-07, 7699-RM-09, 7699-TP-17, 7699-TP-28, 7699-TP-29, 7699-TP-31

The entire proposed development area is currently mapped as non-remnant vegetation on the DERM certified RE mapping.

The proposed development area does not occur within any identified ESAs, with the closest ESA (Cat C) being located approximately 900 m to the south-east, in association with an Of Concern RE.

There are four (4) DERM mapped watercourses which intercept the proposed development area as indicated on Map Sheet 2. Of these watercourses, three are mapped as stream order 1 watercourses, and one is mapped as a stream order 3 watercourse.

### 3.2.2 Floristics

A total of 16 Type A restricted plants (under the provisions of the NC Act), ie *Brachychiton rupestris* (Narrow-leaved bottle tree), *Brachychiton populneus* (Kurrajong), and *Cymbidium canaliculatum* (Black



orchid) were recorded within the proposed development area. The location of these plants is provided in Table 3.3, below.

No other species of conservation significance under the provisions of the NC Act and/or EPBC Act were observed within the proposed development area.

A list of flora species observed within and/or surrounding the proposed development area is provided in the relevant Lot specific reports.

**Table 3.3** Location of Type A Restricted Plants (*Nature Conservation Act 1992*)

Species	Easting (GDA 94, Zone 55J)	Northing (GDA 94, Zone 55J)
<i>Brachychiton populneus</i>	700229	7079513
<i>Brachychiton populneus</i>	700360	7080453
<i>Brachychiton populneus</i>	701828	7082569
<i>Brachychiton populneus</i>	700662	7082746
<i>Brachychiton populneus</i>	700770	7082857
<i>Brachychiton populneus</i>	700695	7082965
<i>Brachychiton populneus</i>	700739	7083099
<i>Brachychiton populneus</i>	700725	7083223
<i>Brachychiton populneus</i> (x6)	700295	7079960
<i>Brachychiton rupestris</i>	700469	7081188
<i>Cymbidium canaliculatum</i>	700530	7081624

### 3.2.3 Habitat values

Habitat features associated with the proposed disturbance area include:

- Limited canopy cover suitable for shelter, foraging and perching
- Limited fissured/exfoliating tree bark
- Dense groundcover vegetation (ie grassy tussocks)
- Limited woody debris (ie fallen/felled timber, including hollow-bearing logs)

The habitat value of the proposed corridor is low overall, as it contains limited woody vegetation and has been disturbed by grazing stock, previous vegetation clearing and the invasion of exotic pasture species. Species utilising resources in this area are most likely to be limited to common, generalist species that are able to adapt to significant habitat disturbances.

Seventeen (17) incidental fauna species were recorded within the proposed development area, as listed below in Table 3.4. All of these species are listed as least concern under the provisions of the NC Act, and are not listed as threatened under the provisions of the EPBC Act.

**Table 3.4** Incidental fauna species recorded

Common name	Species
Apostlebird	<i>Struthidea cinerea</i>
Brown Quail	<i>Coturnix ypsilophora</i>
Common Kestrel	<i>Falco tinnunculus</i>
Crested Pigeon	<i>Ocyphaps lophotes</i>

Eastern Grey Kangaroo	<i>Macropus giganteus</i>
Golden-headed Cisticola	<i>Cisticola exilis</i>
Laughing Kookaburra	<i>Dacelo novaeguineae</i>
Magpie Lark	<i>Grallina cyanoleuca</i>
Noisy Miner	<i>Manorina melanocephala</i>
Pale Headed Rosella	<i>Platycercus adscitus</i>
Pied butcherbird	<i>Gymnorhina tibicen</i>
Pretty-faced Wallaby	<i>Macropus parryi</i>
Red-backed fairy-wren	<i>Malurus melanocephalus</i>
Striated Pardalote	<i>Pardalotus striatus</i>
Torresian Crow	<i>Corvus orru</i>
Wedge-tailed Eagle	<i>Aquila audax</i>
Willie Wagtail	<i>Rhipidura leucophrys</i>

### 3.3 Map sheet 3

#### 3.3.1 General

The proposed development area illustrated on Map Sheet 3 (Appendix A) occurs within and/or adjacent to the following properties:

- Lot 4 on SP180954
- Lot 1 on SP186211
- Lot 6 on WV435
- Lot 7 on WV435
- Lot 8 on WV435
- Lot 9 on WV435
- Lot 21 on WV1519
- Lot 10 on WV1758
- Lot 1 on CP848049

This proposed development area occurs in association with:

- Mount Saltbush Road reserve
- Unnamed Road reserve
- Corridors R4, R5, R7, R36, R37, R70, R73
- Grafton Range Trunkline
- Geotechnical locations 7699-RM-16, 7699-TP-19, 7699-TP-22, 7699-TP-24, 7699-TP-26, Pleasant Hills 3, RM-43, TP-R10, TP-R31, Roma044

The entire proposed development area is currently mapped as non-remnant vegetation on the DERM certified RE mapping.

The proposed development area does not occur within any identified ESAs. Despite this, the proposed development area traverses areas consisting of *Acacia harpophylla* (Brigalow) dominated communities (Appendix A). This vegetation community (which occurs within a number of locations within the proposed development area) is considered to be analogous to referable Brigalow regrowth (ie approximately 10-15 years old) as identified by the provisions of the EPBC Act. These communities will be further discussed in Section 3.3.2.

There are three (3) DERM mapped watercourses within the Map Sheet 3 proposed development area, of which two are mapped as stream order 1 watercourses, and one is mapped as a stream order 3 watercourse (Appendix A).

### 3.3.2 Floristics

A vegetation community (approximately 2 ha) dominated by *A. harpophylla* (with average height around 5 to 8 m) was identified within the proposed development area, where the unnamed road reserve intercepts Corridor R73 (Map Sheet 3). Additionally, a 1 ha patch of regrowth Brigalow was recorded along Mount Saltbush Road, along the eastern boundary of Lot 7 on WV435 (Map Sheet 3). An *Acacia harpophylla* (Brigalow) community (< 1 ha) occurs in association with the on the fence line separating Lot 9 on WV435 from Lot 1 on SP186211 to the south. These vegetation communities are considered analogous to referable Brigalow regrowth (ie. Approx. 10-15 years old) as identified by the provisions EPBC Act.

A total of 11 Type A restricted plants (under the provisions of the NC Act), ie *Brachychiton rupestris* (Narrow-leaved bottle tree) and *Brachychiton populneus* (Kurrajong) were recorded within the proposed development area. The location of these species is provided in Table 3.5 below.

No other flora species of conservation significance as listed under the provisions of the NC Act and/or the EPBC Act were observed within the proposed development area.

A list of flora species observed within and/or surrounding the proposed development area is provided in the relevant Lot specific reports.

Table 3.5 Location of Type A Restricted Plants (*Nature Conservation Act 1992*)

Species	Easting (GDA 94, Zone 55J)	Northing (GDA 94, Zone 55J)
<i>Brachychiton populneus</i>	699838	7076592
<i>Brachychiton populneus</i>	699838	7076598
<i>Brachychiton populneus</i>	699848	7076619
<i>Brachychiton populneus</i>	700030	7077849
<i>Brachychiton populneus</i>	700167	7078509
<i>Brachychiton populneus</i>	700186	7079211
<i>Brachychiton populneus</i>	700199	7079245
<i>Brachychiton populneus</i> (x2)	699837	7076599
<i>Brachychiton rupestris</i>	698065	7076008
<i>Brachychiton rupestris</i>	700143	7078964
<i>Brachychiton populneus</i>	700186	7079211
<i>Brachychiton populneus</i>	700199	7079245

### 3.3.3 Habitat values

Habitat features associated with the proposed development area include:

- Limited canopy cover suitable for shelter, foraging and perching
- Limited fissured/exfoliating tree bark
- Dense groundcover vegetation (ie grassy tussocks)
- Limited woody debris (ie fallen/felled timber, including hollow-bearing logs)

The habitat value associated with the Map Sheet 3 proposed development area are considered low to moderate. Mature trees bearing hollows occur sporadically along the length of the road reserves, and large woody debris with hollows and fissured, flaky bark is also present in limited quantities. However, as the road reserve is narrow and occurs within a highly fragmented landscape, its value to ground-dwelling and arboreal mammals would be marginal. Tree hollows were observed to harbour nesting birds in other parts of the road corridor on adjoining lots, and this is likely to be of greatest habitat value to local fauna species.

Twenty-eight (28) incidental fauna species were observed within the proposed development areas associated with Map Sheet 3 (Table 3.6.)

**Table 3.6** Incidental fauna species recorded

Common name	Species
Apostlebird	<i>Struthidea cinerea</i>
Black-breasted Buzzard	<i>Hamirostra melanosternon</i>
Black-faced Cuckoo-shrike	<i>Coracina novaehollandiae</i>
Blue Bonnet	<i>Northiella haemotogaster</i>
Buff-rumped Thornbill	<i>Acanthiza reguloides</i>
Crested Pigeon	<i>Ocyphaps lophotes</i>
Galah	<i>Cacatua roseicapilla</i>
Grey Butcherbird	<i>Cracticus torquatus</i>
Grey Fantail	<i>Rhipidura fuliginosa</i>
Grey-crowned Babbler	<i>Pomatostomus temporalis</i>
Laughing Kookaburra	<i>Dacelo novaeguineae</i>
Magpie-lark	<i>Grallina cyanoleuca</i>
Nankeen Kestrel	<i>Falco cenchroides</i>
Noisy Miner	<i>Manorina melanocephala</i>
Pale headed rosella	<i>Platycercus adscitus</i>
Red-backed Fairy Wren	<i>Malurus melanocephalus</i>
Red-necked Wallaby	<i>Macropus rufogriseus</i>
Red-winged Parrot	<i>Aprosmictus erythropterus</i>
Richard's Pipit	<i>Anthus australis</i>
Short-beaked Echidna	<i>Tachyglossus aculeatus</i>
Striated Pardalote	<i>Pardalotus striatus</i>
Striped Honeyeater	<i>Plectorhyncha lanceolata</i>
Torresian Crow	<i>Corvus orru</i>
Wedge-tailed Eagle	<i>Aquila audax</i>
Welcome Swallow	<i>Hirundo neoxena</i>
Willie Wagtail	<i>Rhipidura leucophrys</i>
Yellow Thornbill	<i>Acanthiza nana</i>
Yellow-rumped Thornbill	<i>Acanthiza chrysoffhoa</i>

## 3.5 Map sheet 4

### 3.5.1 General

The proposed development area illustrated on Map Sheet 4 (Appendix A) occurs within and/or adjacent to the following properties:

- Lot 10 on WV1758
- Lot 28 on WV433
- Lot 27 on SP214993
- Lot 26 on SP214993

This proposed development area occurs in association with:

- Unnamed Road Reserve
- Corridors R45, R89
- Pipeline
- Geotechnical locations RM07-22, 7699-TP-51

Most of the proposed development area is currently mapped as non-remnant vegetation on the DERM certified RE mapping. However, approximately 0.4 ha of mapped remnant vegetation is contained within the road casement between Corridor R89, and the Pipeline footprint (Map Sheet 4). This vegetation community is mapped as RE 11.10.9, which has a biodiversity status of 'No Concern at Present'.

The proposed development area contained within Map Sheet 4 does not occur within any identified ESAs. The closest known ESA is mapped in association with an endangered RE community (ESA Category B), which is located approximately 67 m to the north of the road reserve, within Lot 26 on SP214993.

No DERM mapped watercourses occur within the Map Sheet 4 proposed development area.

### 3.5.2 Floristics

One (1) *Brachychiton* species was recorded within the proposed development area. The location of this species is provided in Table 3.7, and in Map Sheet 4. This species is a Type A restricted plant under the provisions of the NC Act.

No species protected under the provisions of the EPBC Act were observed within the proposed corridor.

A list of flora species observed within and/or surrounding the proposed development area is provided in the relevant Lot specific reports.

Table 3.7 Location of Type A Restricted Plants (*Nature Conservation Act 1992*)

Species	Easting (GDA 94, Zone 55J)	Northing (GDA 94, Zone 55J)
<i>Brachychiton rupestris</i>	702292	7078452

### 3.5.3 Habitat values

Habitat features associated with the proposed disturbance area include:

- Limited canopy cover suitable for shelter, foraging and perching
- Limited fissured/exfoliating tree bark

- Dense groundcover vegetation (ie grassy tussocks)
- Limited woody debris (ie fallen/felled timber, including hollow-bearing logs)

The habitat value of the proposed development area is low overall, as it contains limited woody vegetation and has been disturbed by grazing stock, previous vegetation clearing and the invasion of exotic pasture species. Species utilising resources in this area are most likely to be limited to common, generalist species that are able to adapt to significant habitat disturbances.

Incidental fauna species that were observed in the proposed development areas associated with Map Sheet 4 are presented in Table 3.8. All of these species are listed as least concern under the provisions of the NC Act and are not listed under the provisions of the EPBC Act.

**Table 3.8 Incidental fauna species recorded**

Common name	Species
Apostlebird	<i>Struthidea cinerea</i>
Eastern Grey Kangaroo	<i>Macropus giganteus</i>
Galah	<i>Cacatua roseicapilla</i>
Pale-headed Rosella	<i>Platycercus adscitus</i>
Striated Pardalote	<i>Pardalotus striatus</i>
Variiegated Fairy-wren	<i>Malurus lamberti</i>
Wedge Tailed Eagle	<i>Aquila audax</i>

## 3.6 Map sheet 5

### 3.6.1 General

The proposed development area illustrated on Map Sheet 5 (Appendix A) occurs within and/or adjacent to the following properties:

- Lot 54 on WV421
- Lot 58 on WV421
- Lot 57 on WV421
- Lot 55 on WV421
- Lot 56 on WV421
- Lot 79 on WV763
- Lot 80 on WV763

This proposed development area occurs in association with:

- Mount Hope Road reserve
- Corridor R74
- Geotechnical locations TP-R39

The entire proposed development area is currently mapped as non-remnant vegetation on the DERM certified RE mapping.

No ESAs are mapped as being contained within the proposed development area, with the closest being 1.2 km north west (Category B, associated with an Endangered RE).

One (1) DERM mapped watercourse (stream order 2) occurs within the Map Sheet 5 proposed development area.

### 3.6.2 Floristics

No Type A restricted species, or other species of conservation significance, under the provisions of the NC Act and/or the EPBC Act were observed within the proposed development area.

A list of flora species observed within and/or surrounding the proposed development area is provided in the relevant Lot specific reports.

### 3.6.3 Habitat values

Habitat features associated with the entire survey area include:

- Limited canopy cover suitable for shelter, foraging and perching
- Limited Fissured tree bark
- Dense groundcover vegetation (ie grassy tussocks)
- Woody debris (ie fallen/felled timber, including hollow-bearing logs)
- Ephemeral drainage/watercourse habitat (dry at time of survey)

The proposed development area contains limited woody vegetation and has been extensively disturbed by grazing stock, previous vegetation clearing and the construction and operation of Mount Hope Road. Accordingly, the species utilising resources in these regions are most likely to be limited to common, generalist species that are able to adapt to significant habitat disturbances (ie House mouse (*Mus musculus*), macropods etc). Common birds of prey known from the area (ie Wedge-tailed eagle [*Aquila audax*] and Nankeen kestrel [*Falco cenchroides*]) would also be expected to utilise this site and the surrounding areas for foraging purposes.

The watercourse offers suitable habitat values for species whose life cycles are closely linked with ephemeral habitats and provides available drinking water for other fauna, at least after prolonged periods of rainfall.

Incidental fauna species that were observed in the proposed development areas associated with Map Sheet 5 are presented in Table 3.9. All of these species are listed as Least Concern under the provisions of the NC Act and are not listed under the provisions of the EPBC Act.

Feral dog (*Canis familiaris*) and European red fox (*Vulpes vulpes*) were visually observed adjacent to the proposed development area. These species are listed under the provisions of the *Land Protection (Pest and Stock Route Management) Act 2002* (LP Act) as Class 2 pests.

Table 3.9 Incidental fauna species recorded

Common name	Species
Apostlebird	<i>Struthidea cinerea</i>
Crested pigeon	<i>Ocyphaps lophotes</i>
Feral dog	<i>Canis familiaris</i>
Galah	<i>Cacatua roseicapilla</i>
Magpie	<i>Gymnorhina tibicen</i>
Magpie lark	<i>Grallina cyanoleuca</i>
Masked lapwing	<i>Vanellus miles</i>
Noisy miner	<i>Manorina melanocephala</i>
Sulphur-crested cockatoo	<i>Cacatua galerita</i>
Vulpes vulpes	<i>European red fox</i>



## 3.7 Map sheet 6

### 3.7.1 General

The proposed development area illustrated on Map Sheet 6 (Appendix A) occurs within and/or adjacent to the following properties:

- Lot 1 on SP186211
- Lot 1 on CP848049
- Lot 234 on WV496
- Lot 2 on RP858912
- Lot 4 on RP858912
- Lot 9 on WV435
- Lot 3 on RP858912

This proposed development area occurs in association with:

- Mount Saltbush Road reserve
- The Bend Road reserve
- Unnamed road reserve
- Water pipeline
- Corridor R4, R5, R6, R26, R31
- Geotechnical locations 7699-BH-02, 7699-BH-03, 7699-TP-14, 7699-TP-15, 7699-TP-16, 7699-TP-18, 7699-RM-17, 7699-RM-19, RM08-11, TP-R08, TP-R09

All of the proposed development area is currently mapped as non-remnant vegetation on the DERM certified RE mapping. However, field investigation have identified some inconsistencies with this mapping. For instance, an *Acacia harpophylla* (Brigalow) woodland has been identified along The Bend Road (in association with Corridors R4 and R5), and Mount Saltbush Road (towards the south-western property boundary of Lot 2 on RP858912) (Map Sheet 6). This vegetation community may be considered analogous to a Threatened Ecological Community (including Brigalow Regrowth community) under the provisions of the EPBC Act, and may therefore be referable.

Furthermore, one area of unmapped remnant vegetation has been identified along Mount Saltbush Road (in association with the stream order 2 watercourse). This vegetation is consistent with RE 11.3.2 which is listed as 'of concern'. Unmapped REs are discussed further in Section 3.7.2.

Along Mount Saltbush Road (near the junction of Mount Saltbush and The Bend roads) a Category C ESA is mapped within Lot 1 on CP848049, as this is a DERM mapped referable wetland (Map Sheet 6). Additionally, correct mapping of the patch of *Acacia harpophylla* woodland along The Bend Road (associated with Corridor R4 and R5) may also identify this area as a Category B ESA.

Six (6) DERM mapped watercourses bisect the proposed development area (five stream order 1s, and one stream order 2).

### 3.7.2 Floristics

The patch of vegetation north of the stream order 2 watercourse (on Mount Saltbush Road) is incorrectly mapped on the DERM certified RE mapping as non-remnant vegetation. This vegetation community contains mature trees to 20 m and is structurally complex. This vegetation is consistent with the Of Concern RE 11.3.2 (*Eucalyptus populnea* woodland to open woodland). *Acacia pendula* (Weeping myall) was not detected during field investigations, however, should this species occur within the vegetation community associated with the watercourse, this may be classified as a EPBC Threatened Ecological Community, and may therefore be referable.



The tree layer within the Brigalow communities recorded on The Bend Road (associated with Corridors R4 and R5) and Saltbush Road (along the Lot 2 on RP858912 property boundary) is dominated by *Acacia harpophylla* and *Casuarina cristata*. This vegetation community may be considered analogous to a Threatened Ecological Community (including Brigalow Regrowth community) under the provisions of the EPBC Act, and may therefore be referable.

A total of 13 Type A restricted plant (under the provisions of the NC Act), ie *Brachychiton rupestris* (Narrow-leaved bottle tree), *Brachychiton populneus* (Kurrajong), and *Cymbidium canaliculatum* (Black orchid) were recorded within the proposed development area. The location of these species is provided in Table 3.10, below.

No other species of conservation significance under the provisions of the NC Act and/or EPBC Act were observed within the proposed development area.

A list of flora species observed within and/or surrounding the proposed development area is provided in the relevant Lot specific reports.

**Table 3.10** Location of Type A Restricted Plants (*Nature Conservation Act 1992*)

Species	Easting (GDA 94, Zone 55J)	Northing (GDA 94, Zone 55J)
<i>Brachychiton populneus</i>	700191	7072889
<i>Brachychiton populneus</i>	699299	7074592
<i>Brachychiton populneus</i>	699289	7074594
<i>Brachychiton populneus</i>	699434	7074621
<i>Brachychiton populneus</i>	699443	7074687
<i>Brachychiton populneus</i>	699579	7074853
<i>Brachychiton populneus</i>	699639	7074917
<i>Brachychiton populneus</i>	699642	7075008
<i>Brachychiton populneus</i>	699650	7075205
<i>Brachychiton populneus</i>	699650	7075205
<i>Brachychiton rupestris</i>	699282	7074589
<i>Brachychiton rupestris</i>	699576	7074811
<i>Cymbidium canaliculatum</i>	699396	7074629

### 3.7.3 Habitat values

Habitat features associated with the proposed development area include:

- Canopy cover suitable for shelter, foraging and perching
- Fissured tree bark
- Dense groundcover vegetation (ie grassy tussocks)
- Woody debris (ie fallen/felled timber, including hollow-bearing logs)
- Ephemeral watercourse habitat

The habitat value of proposed development area is considered low to moderate. Mature trees bearing hollows, and fallen woody debris is scattered throughout the existing vegetation fringing the road corridor. However, the ground layer offers marginal fauna habitat, with a dense cover of Buffel Grass.

The remnant patch of vegetation north of the stream order 2 watercourse (along Saltbush Road) is considered to have a high habitat value, with greater floristic diversity in all vegetation strata, and

mature trees with abundant hollows. Consequently, faunal diversity was also greater, with representation from a broader order of fauna than in non-remnant areas.

No water was present in the watercourses at the time of survey, but these areas would provide habitat for free living fish, amphibians, reptiles, invertebrates, birds, and water-dependent small mammals when water is present.

Incidental fauna species that were observed within the proposed development area are presented in Table 3.11. No fauna species listed as threatened under the provisions of either the EPBC Act or the NC Act were detected.

**Table 3.11 Incidental fauna species recorded**

<b>Common name</b>	<b>Species</b>
Apostlebird	<i>Struthidea cinerea</i>
Australian Magpie	<i>Gymnorhina tibicen</i>
Brown honeyeater	<i>Lichmera indistincta</i>
Brown songlark	<i>Cincloramphus cruralis</i>
Buff-rumped thornbill	<i>Acanthiza reguloides</i>
Chestnut-rumped thornbill	<i>Acanthiza uropygialis</i>
Cockatiel	<i>Nymphicus hollandicus</i>
Crested pigeon	<i>Ocyphaps lophotes</i>
Double-barred finch	<i>Taeniopygia bichenovii</i>
Eastern grey kangaroo	<i>Macropus giganteus</i>
Emu	<i>Dromaius novaehollandiae</i>
European hare	<i>Lepus europeus</i>
Fantailed cuckoo	<i>Cacomantis flabelliformis</i>
Feral cat	<i>Felix catus</i>
Galah	<i>Cacatua roseicapella</i>
Grey butcherbird	<i>Cracticus torquatus</i>
Grey Fantail	<i>Rhipidura fuliginosa</i>
Grey-crowned Babbler	<i>Pomatostomus temporalis</i>
Magpie-lark	<i>Grallina cyanoleuca</i>
Mistletoebird	<i>Dicaeum hirundinaceum</i>
Nankeen kestrel	<i>Falco cenchroides</i>
Noisy Miner	<i>Manorina melanocephala</i>
Pale headed rosella	<i>Platycercus adscitus</i>
Pied butcherbird	<i>Cracticus nigrogularis</i>
Red rump parrot	<i>Psephotus haematonotus</i>
Red-capped robin	<i>Petroica goodenovii</i>
Red-necked Wallaby	<i>Macropus rufogriseus</i>
Red-winged parrot	<i>Aprosmictus erythropterus</i>
Richard's pipit	<i>Anthus novaeseelandiae</i>
Short-beaked Echidna	<i>Tachyglossus aculeatus</i>

Common name	Species
Silvereye	<i>Zosterops lateralis</i>
Spiny-cheeked honeyeater	<i>Acanthagenys rufogularis</i>
Striated Pardalote	<i>Pardalotus striatus</i>
Striped Honeyeater	<i>Plectorhyncha lanceolata</i>
Sulphur-crested cockatoo	<i>Cacatua galerita</i>
Swamp wallaby	<i>Wallabia bicolor</i>
Torresian Crow	<i>Corvus orru</i>
Variiegated Fairy Wren	<i>Malurus lamberti</i>
Wallaroo	<i>Macropus robusta</i>
Wedge-tailed eagle	<i>Aquila audax</i>
Weebill	<i>Smicromnis brevirostris</i>
White-winged chough	<i>Corcorax melanorhamphos</i>
Willie Wagtail	<i>Rhipidura leucophrys</i>
Yellow thornbill	<i>Acanthiza nana</i>

## 3.8 Map sheet 7

### 3.8.1 General

The proposed development area illustrated on Map Sheet 7 (Appendix A) occurs within and/or adjacent to the following properties:

- Lot 10 on WV1758
- Lot 11 on WV1759
- Lot 42 on WV1499
- Lot 96 on WV457

This proposed development area occurs in association with:

- Blythdale Road reserve
- The Bend Road reserve
- Unnamed road reserve
- Pipeline
- Powerline
- RO02 Permanent Fibre Optic Cable
- Corridor T1
- Geotechnical locations 7699-TP-56, TP-T102, T1

The proposed development is contained within a highly modified environment, resultant from historical land clearing, the construction and operation of Blythdale Road, and current agricultural and historical land management practices. As a result, canopy, sub-canopy and shrub strata are considered relatively sparse (ie 5% - 15%). The shrub layer is also considered sparse, representing approximately 10% of the vegetative cover. The ground-layer is considered the dominant stratum, with an approximate 90% coverage.

No DERM certified REs or known ESAs have been recorded within this proposed development area. The closest ESA mapping occurs approximately 90 m to the north of the proposed development area,

in association with an Of Concern RE (Category C) along a stream order 3 watercourse (Map Sheet 7).

Three (3) watercourses (two stream order 1 and one stream order 3) are bisected, towards the south of the proposed development (Map Sheet 7).

### 3.8.2 Floristics

Canopy cover within this proposed development area is largely restricted to the areas surrounding the mapped watercourses, and along the fence lines delineating the neighbouring properties from the road reserves.

A total of 12 Type A restricted plants (as listed under the provisions of the NC Act), ie *Brachychiton populneus* (Kurrajong), were recorded within the proposed development area. The location of these species is provided in Table 3.12, below.

No other species of conservation significance under the provisions of the NC Act or EPBC Act were observed within the proposed development area.

A list of flora species observed within and/or surrounding the proposed development area is provided in the relevant Lot specific reports.

Table 3.12 Location of Type A Restricted Plants (*Nature Conservation Act 1992*)


Species	Easting 94, Zone 55J	(GDA	Northing 94, Zone 55J)	(GDA
<i>Brachychiton populneus</i>	703170		7072143	
<i>Brachychiton populneus</i>	703173		7072147	
<i>Brachychiton populneus</i>	703286		7072188	
<i>Brachychiton populneus</i>	703392		7072343	
<i>Brachychiton populneus</i>	703385		7072348	
<i>Brachychiton populneus</i>	704033		7073065	
<i>Brachychiton populneus</i>	704020		7073066	
<i>Brachychiton populneus</i>	704041		7073126	
<i>Brachychiton populneus</i>	704092		7073175	
<i>Brachychiton populneus</i>	704120		7073176	
<i>Brachychiton populneus</i> (x 2)	703190		7072154	

### 3.8.3 Habitat values

Habitat features associated with the proposed development area include:

- Limited woody vegetation suitable for shelter, foraging and perching
- Dense groundcover vegetation (ie grassy tussocks)
- Woody debris (ie fallen/felled timber, including hollow-bearing logs)

The proposed development area contains limited woody vegetation and has been extensively disturbed by historical clearing, grazing stock, cropping, and the invasion of exotic pasture species. Habitat features associated with the proposed development are therefore typically limited to dense groundcover vegetation (ie grassy tussocks) and woody debris (ie fallen/felled timber, including hollow-bearing logs). As a result, the habitat value of this survey area is considered low, overall.



Accordingly, the species utilising resources in these regions of the survey area are most likely to be limited to common, generalist species that are able to adapt to significant habitat disturbances (ie House mouse [*Mus musculus*], macropods etc). Common birds of prey known from the area (ie Wedge-tailed eagle [*Aquila audax*] and Nankeen kestrel [*Falco cenchroides*]) would also be expected to utilise this site and the surrounding areas for foraging purposes.

No incidental fauna species were recorded within this proposed development area.

## 3.9 Map sheet 8

### 3.9.1 General

The proposed development area illustrated on Map Sheet 8 (Appendix A) occurs within and/or adjacent to the following properties:

- Lot 234 on WV496
- Lot 233 on WV496
- Lot 213 on WV991
- Lot 3 on RP858912
- Lot 103 on WV458
- Lot 109 on WV1566
- Lot 111 on WV1566

This proposed development area occurs in association with:

- Mount Saltbush Road reserve
- Beramah Road reserve
- Geotechnical locations 7699-TP-07, 7699-TP-08, 7699-TP-11, 7699-TP-75

The proposed development area considered a highly modified environment, as a result of historical clearing and the construction and operation of Mount Saltbush Road and Beramah Road. Vegetation associated with this proposed development area is limited to a thin strip of vegetation which varies in width. Cultivated land occurs adjacent to the proposed development area in some regions.

No mapped REs occur within the proposed development area. Furthermore, there are no mapped ESAs within the corridor. The nearest ESA (Category C) is approximately 2 km east of the corridor, associated with a mapped Of Concern RE.

One (1) DERM mapped stream order 3 watercourse intersects the proposed development area.

### 3.9.2 Floristics

One (1) Type A restricted plant species (as listed under the provisions of the NC Act), ie *Brachychiton rupestris* (Narrow-leaved bottle tree), was recorded within the proposed development area. The location of this species is provided in Table 3.13, below. A number of Type A plants were also detected adjacent to the proposed development area (Map Sheet 8).

No other species of conservation significance as listed under the provisions of the NC Act and/or EPBC Act were observed within the proposed development area.

A list of flora species observed within and/or surrounding the proposed development area is provided in the relevant Lot specific reports.

Table 3.12 Location of Type A Restricted Plants (*Nature Conservation Act 1992*)

Species	Easting (GDA 94, Zone 55J)	Northing (GDA 94, Zone 55J)
<i>Brachychiton rupestris</i>	697526	7071678

### 3.9.3 Habitat values

Habitat features associated with the proposed development area include:

- Limited woody vegetation suitable for shelter, foraging and perching
- Dense groundcover vegetation (ie grassy tussocks)
- Woody debris (ie fallen/felled timber, including hollow-bearing logs)

The proposed development area has been extensively disturbed by historical clearing, construction and operation of existing roads, and the invasion of exotic pasture species. As a result, the habitat value of this survey area is considered low, overall.

Incidental fauna species that were observed within the proposed development area are presented in Table 3.13. No EVNT fauna species (as listed as under the provisions of the EPBC Act and/or the NC Act) were detected.

Table 3.13 Incidental fauna species recorded

Common name	Species
Apostle bird	<i>Struthidea cinerea</i>
Australian Magpie	<i>Gymnorhina tibicen</i>
feral cat	<i>Felis catus</i>
Galah	<i>Cacatua roseicapilla</i>
Grey Butcher Bird	<i>Cracticus torquatus</i>
Noisy miner	<i>Manorina melanocephala</i>
Pied Butcher Bird	<i>Cracticus nigrogularis</i>
Red Rump Parrot	<i>Psephotus haematonotus</i>
Richard's pipit	<i>Anthus novaeseelandiae</i>
Silvereeye	<i>Zosterops lateralis</i>
Striated Pardalote	<i>Pardalotus striatus</i>
Sulphur-crested cockatoo	<i>Cacatua galerita</i>
Torresian Crow	<i>Corvus orru</i>
Variiegated Fairy Wren	<i>Malurus lamberti</i>
Weebill	<i>Smicrornis brevirostris</i>
Yellow Thornbill	<i>Acanthiza nana</i>

## 3.10 Map sheet 9

### 3.10.1 General

The proposed development area illustrated on Map Sheet 9 (Appendix A) occurs within and/or adjacent to the following properties:

- Lot 4 on RP858912
- Lot 96 on WV457
- Lot 95 on WV456
- Lot 11 on WV1759
- Lot 586 on WV394
- Lot 89 on WV456
- Lot 94 on WV456
- Lot 88 on WV456
- Lot 79 on WV1784
- Lot 586 on WV394

This proposed development area occurs in association with:

- Blythe Creek
- Blythdale Road reserve
- The Bend Road reserve
- Unnamed road reserve
- Powerline
- Corridor R1, R23, R24
- Geotechnical locations BH-03, BH-04, BH-49, BH-50, BH-51, RM12-06, RM12-10, TP-R02, TP-R56, 7699-RM-22, 7699-RM-23, 7699-TP-60

DERM certified RE mapping indicates a number of remnant vegetation communities existing within the proposed development areas. These include Least Concern RE 11.10.9 and Endangered RE 11.9.5/11.9.10. RE mapping associated with the proposed development area is discussed further in Section 3.10.2.

One Mapped Category B ESA occurs to the immediate south of the proposed development in association with RM12-10 (refer to Map sheet 9).

Three (3) DERM mapped watercourse (stream orders 1,2,5) casements occur within the proposed development areas intersects the proposed development area.

### 3.10.2 Floristics

A small area of remnant vegetation mapped as the No Concern at Present RE 11.10.9 occurs along the northern boundary of RM 12-10. RE 11.10.9 is described as *Callitris glaucophylla* woodland to open forest. The landzone and floristic composition of the vegetation community within this area was observed to be consistent with the DERM certified RE mapping.

Four (4) individual Type A restricted plants (under the provisions of the NC Act) of a single species, ie *Brachychiton populneus* (Kurrajong), were recorded within the proposed development area. The location of these species is provided in Table 3.14, below.

No other species of conservation significance as listed under the provisions of the NC Act and/or EPBC Act were observed within the proposed development area.

A list of flora species observed within and/or surrounding the proposed development area is provided in the relevant Lot specific reports.

Table 3.14 Location of Type A Restricted Plants (*Nature Conservation Act 1992*)

Species	Easting 94, Zone 55J	(GDA	Northing 94, Zone 55J)	(GDA
<i>Brachychiton populneus</i>	704073		7071188	



<i>Brachychiton populneus</i>	704056	7071277
<i>Brachychiton populneus</i>	704053	7071280
<i>Brachychiton populneus</i>	704115	7071292

### 3.10.3 Habitat values

Habitat features associated with the proposed development area include:

- Limited canopy cover suitable for shelter, foraging and perching
- Tree hollows
- Limited fissured/exfoliating tree bark
- Dense groundcover vegetation (ie grassy tussocks)
- Limited woody debris (ie fallen/felled timber, including hollow-bearing logs)

The overall habitat value of the proposed development area is considered to be moderate due to disturbances by grazing stock, previous vegetation clearing activities and the invasion of exotic pasture species. The vegetated areas provide some habitat features suitable for small mammals, birds and reptiles (canopy cover, tree hollows, exfoliating bark and woody debris). The riparian vegetation associated with Blyth Creek is of moderate habitat value, providing habitat connectivity in an area which has been predominantly cleared.

Incidental fauna species that were observed within the proposed development area are presented in Table 3.15. No EVNT fauna species (as listed under the provisions of the EPBC Act and/or NC Act) were detected.

**Table 3.15** Incidental fauna species recorded

Common name	Species
Australian Magpie	<i>Gymnorhina tibicen</i>
feral cat	<i>Felis catus</i>
Galah	<i>Cacatua roseicapilla</i>
Grey Butcher Bird	<i>Cracticus torquatus</i>
Little Corella	<i>Cacatua sanguinea</i>
Magpie-lark	<i>Grallina cyanoleuca</i>
Noisy Minor	<i>Manorina melanocephala</i>
Noisy Minor	<i>Manorina melanocephala</i>
Pale-headed rosella	<i>Platycercus adscitus</i>
Pied Butcher Bird	<i>Cracticus nigrogularis</i>
Pretty-faced wallaby	<i>Macropus parryi</i>
Red Rump Parrot	<i>Psephotus haematonotus</i>
Red-necked wallaby	<i>Macropus rufogriseus</i>
Red-necked wallaby	<i>Macropus rufogriseus</i>
Richard's Pipit	<i>Anthus novaeseelandiae</i>
Striated Pardalote	<i>Pardalotus striatus</i>
Striated Pardalote	<i>Pardalotus striatus</i>
Sulfur-crested Cockatoo	<i>Cacatua galerita</i>
Tawny frogmouth	<i>Podargus strigoides</i>



Common name	Species
Torresian Crow	<i>Corvus orru</i>
Variegated Fairy Wren	<i>Malurus lamberti</i>
Variegated Fairy Wren	<i>Malurus lamberti</i>
Welcome swallow	<i>Hirundo neoxena</i>
Yellow Thornbill	<i>Acanthiza nana</i>

### 3.11 Map sheet 10

#### 3.11.1 General

The proposed development area illustrated on Map Sheet 10 (Appendix A) occurs within and/or adjacent to the following properties:

- Lot 585 on WV394
- Lot 588 on WV394
- Lot 583 on WV394
- Lot 392 on WV394
- Lot 690 on WV394
- Lot 589 on WV394
- Lot 584 on WV394

This proposed development area occurs in association with:

- Pickanjinie North Road reserve
- Unnamed road reserve
- Pipeline
- Corridor R2, R78, R86
- Geotechnical locations BH-05, BH-06, BH-48, RM13-09, RM-35, Raslie 1, TP-R47

The proposed development area considered a highly modified environment, as a result of historical clearing for agricultural practices, and the construction and operation of existing roads.

No REs or ESAs have been mapped within this proposed development area. The closest ESA mapping (Category C) occurs approximately 3 km to the east of the proposed development area in association with an Of Concern RE.

Two (2) DERM mapped watercourses occur within the proposed development area (both stream order 1).

#### 3.11.2 Floristics

The proposed development area is predominately cleared, with a mature stand (approximately 0.1 ha) of mature Brigalow occurring within the proposed development area in association with the stream order 1 watercourse adjacent to BH-48.

One (1) Type A restricted plant species (under the provisions of the NC Act), ie *Brachychiton populneus* (Kurrajong), was recorded within the proposed development area. The location of this species is provided in Table 3.16.

No other flora species of conservation significance as listed under the provisions of the NC Act and/or EPBC Act were observed within the proposed development area.

A list of flora species observed within and/or surrounding the proposed development area is provided in the relevant Lot specific reports.

**Table 3.16** Location of Type A Restricted Plants (*Nature Conservation Act 1992*)

Species	Easting 94, Zone 55J	(GDA	Northing 94, Zone 55J)	(GDA
<i>Brachychiton populneus</i>	708808		7068054	

### 3.11.3 Habitat values

Habitat features associated with the proposed development area include:

- Canopy cover suitable for shelter, foraging and perching
- Limited fissured/exfoliating tree bark
- Dense groundcover vegetation (ie grassy tussocks)
- Limited woody debris (ie fallen/felled timber, including hollow-bearing logs)
- Ephemeral watercourse habitat (including banks) and a farm dam

The habitat value of the proposed development area is considered low to moderate overall. Wooded areas contain canopy suitable for perching and foraging and some woody debris. The regrowth vegetation is moderately complex in structure (canopy, sub-canopy, shrub and ground strata present), and has a moderate flora species diversity. These areas of regrowth are likely to support a range of native fauna, including avian fauna, small to medium sized mammals and reptiles. The dense groundcover potentially provides suitable foraging habitat for generalist species such as macropods and birds of prey.

Twenty-seven (27) incidental fauna species were recorded within the proposed development area during field investigations, as listed in Table 3.17, below. No EVNT fauna species (as listed under the provisions of the EPBC Act and/or the NC Act) were observed.

**Table 3.17** Incidental fauna species recorded

Common name	Species name
Apostlebird	<i>Struthidea cinerea</i>
Australian Bustard	<i>Ardeotis australis</i>
Australian Magpie	<i>Cracticus tibicen</i>
Banded Lapwing	<i>Vanellus tricolor</i>
Black Swan	<i>Cygnus atratus</i>
Brown Falcon	<i>Falco berigora</i>
Brown Quail	<i>Coturnix ypsilophora</i>
Cockatiel	<i>Nymphicus hollandicus</i>
Crested Pigeon	<i>Ocyphaps lophotes</i>
Double-barred Finch	<i>Taeniopygia bichenovii</i>
Eastern Grey Kangaroo	<i>Macropus giganteus</i>
Galah	<i>Eolophus roseicapilla</i>
Grey Butcherbird	<i>Cracticus torquatus</i>

Common name	Species name
Grey-crowned Babbler	<i>Pomatostomus temporalis</i>
Magpie-lark	<i>Grallina cyanoleuca</i>
Nankeen Kestrel	<i>Falco cenchroides</i>
Noisy Miner	<i>Manorina melanocephala</i>
Pacific Black Duck	<i>Anas superciliosa</i>
Pale-headed Rosella	<i>Platycercus adscitus</i>
Red-rumped Parrot	<i>Psephotus haematonotus</i>
Richard's Pipit	<i>Anthus richardi</i>
Striated Pardalote	<i>Pardalotus striatus</i>
Torresian Crow	<i>Corvus orru</i>
Wedge-tailed Eagle	<i>Aquila audax</i>
Weebill	<i>Smicrornis brevirostris</i>
White-necked Heron	<i>Ardea pacifica</i>
Willie Wagtail	<i>Rhipidura leucophrys</i>

## 3.12 Map sheet 11

### 3.12.1 General

The proposed development area illustrated on Map Sheet 11 (Appendix A) occurs within and/or adjacent to the following properties:


- Lot 2 on RP200575
- Lot 2 on RP56823
- Lot 383 on WV1174
- Lot 467 on WAL53530
- Lot 582 on WV394
- Lot 466 on WAL53530
- Lot 445 on WAL53490
- Lot 392 on WV394
- Lot 446 on WAL53490

This proposed development area occurs in association with:

- Unnamed road reserve
- Pipeline
- Powerline
- Geotechnical locations TP-R62, TP-R74, Well

Two (2) narrow corridors of *Acacia harpophylla* (Brigalow) are located within the proposed development area (Figure 1), and paddock trees occur sporadically throughout the cleared areas. These areas are not considered to be remnant as a result of the thin, linear, nature of the vegetation community.

The proposed development area is mapped as 'non-remnant' on the DERM RE mapping, and field investigations confirmed the RE mapping as correct.



No ESA's are mapped within the proposed development area, with the nearest ESA located approximately 300 m to the east (associated with an 'Endangered' RE on adjacent lots).

One DERM mapped watercourse (stream order 1) occurs within the proposed development area.

### 3.12.2 Floristics

Two (2) linear corridors of *Acacia harpophylla* (Brigalow) are present within the proposed development area (Map Sheet 11). These corridors of regrowth are likely to have been retained as windrows and are adjacent to cultivated areas. These width of the linear corridors of regrowth varies (between 5-20 m wide), with an average width of 15 metres. The height of the *A. harpophylla* within this regrowth is between 4-8 m, with an average height of 4 m. These linear corridors of Brigalow regrowth are analogous with regrowth vegetation greater than 15 years old. As such this vegetation is considered characteristic of the threatened Brigalow ecological community (EPBC Act).

No Type A restricted species, or other flora species of conservation significance, as listed under the provisions of the NC Act and/or the EPBC Act were observed within the proposed development area.

A list of flora species observed within and/or surrounding the proposed development area is provided in the relevant Lot specific reports.

### 3.12.3 Habitat values

Habitat features associated with the proposed development area include:

- Canopy cover suitable for shelter, foraging and perching
- Limited fissured/exfoliating tree bark
- Dense groundcover vegetation (ie grassy tussocks)
- Limited woody debris (ie fallen/felled timber, including hollow-bearing logs)
- Ephemeral watercourse habitat (including banks) and a farm dam

The habitat value of the *A. harpophylla* regrowth within the proposed development area is moderate overall, as it contains canopy suitable for perching and foraging and some woody debris. The regrowth is moderately complex in structure (canopy, sub-canopy, shrub and ground strata present), and has a moderate flora species diversity (more than 50 species recorded). These areas of regrowth are likely to support a range of native fauna, including avian fauna, small to medium sized mammals and reptiles.

Habitat value within the cleared open areas of the corridor is considered to be of low overall. This is due to the lack of key habitat attributes present within the areas of regrowth. However, the dense groundcover potentially provides suitable foraging habitat for generalist species such as macropods and birds of prey.

No EVNT fauna species as listed under the provisions of the EPBC Act and/or the NC Act were observed.

Twenty-seven (27) incidental fauna species were recorded within the proposed disturbance area during field investigations, as listed in Table 3.18.

**Table 3.18** Incidental fauna species recorded

Common name	Species name
Apostlebird	<i>Struthidea cinerea</i>
Australian Bustard	<i>Ardeotis australis</i>
Australian Magpie	<i>Cracticus tibicen</i>
Banded Lapwing	<i>Vanellus tricolor</i>
Black Swan	<i>Cygnus atratus</i>
Brown Falcon	<i>Falco berigora</i>
Brown Quail	<i>Coturnix ypsilophora</i>
Cockatiel	<i>Nymphicus hollandicus</i>
Crested Pigeon	<i>Ocyphaps lophotes</i>
Double-barred Finch	<i>Taeniopygia bichenovii</i>
Eastern Grey Kangaroo	<i>Macropus giganteus</i>
Galah	<i>Eolophus roseicapilla</i>
Grey Butcherbird	<i>Cracticus torquatus</i>
Grey-crowned Babbler	<i>Pomatostomus temporalis</i>
Magpie-lark	<i>Grallina cyanoleuca</i>
Nankeen Kestrel	<i>Falco cenchroides</i>
Noisy Miner	<i>Manorina melanocephala</i>
Pacific Black Duck	<i>Anas superciliosa</i>
Pale-headed Rosella	<i>Platycercus adscitus</i>
Red-rumped Parrot	<i>Psephotus haematonotus</i>
Richard's Pipit	<i>Anthus richardi</i>
Striated Pardalote	<i>Pardalotus striatus</i>
Torresian Crow	<i>Corvus orru</i>
Wedge-tailed Eagle	<i>Aquila audax</i>
Weebill	<i>Smicronis brevirostris</i>
White-necked Heron	<i>Ardea pacifica</i>
Willie Wagtail	<i>Rhipidura leucophrys</i>

### 3.13 Map sheet 12

#### 3.13.1 General

The proposed development area illustrated on Map Sheet 12 (Appendix A) occurs within and/or adjacent to the following properties:

- Lot 111 on WV1566
- Lot 213 on WV991
- Lot 210 on WAL53630
- Lot 1 on WV918

This proposed development area occurs in association with:

- Mount Saltbush Road reserve
- Unnamed road reserve
- Geotechnical locations 7699-TP-06, 7699-TP-71, 7699-TP-72, 7699-TP-73, 7699-TP-74

The proposed development area is considered a highly modified environment, as a result of historical clearing for agricultural practices, and the construction and operation of existing roads.

The proposed development area is mapped as 'non-remnant' on the DERM certified RE mapping, and field investigations confirmed the RE mapping as correct.

No ESAs are mapped within the proposed development area, however, a category B ESA is mapped immediately adjacent (associated with an 'Endangered' RE on Lot 111 on WV1566).

One DERM mapped watercourse (stream order 1) occurs within the proposed development area.

### 3.13.2 Floristics

A total of 10 Type A restricted individuals consisting of three species (as listed under the provisions of the NC Act), ie *Brachychiton rupestris* (Narrow-leaved bottle tree), *Brachychiton australis* (Broad-leaved bottle tree) and *Brachychiton populneus* (Kurrajong) were recorded within the proposed development area. The location of these species is provided in Table 3.19, below.

No other flora species of conservation significance as listed under the provisions of the NC Act and/or EPBC Act were observed within the proposed development area.

A list of flora species observed within and/or surrounding the proposed development area is provided in the relevant Lot specific reports.

Table 3.19 Location of Type A Restricted Plants (*Nature Conservation Act 1992*)


Species	Easting 94, Zone 55J	(GDA	Northing 94, Zone 55J)	(GDA
<i>Brachychiton rupestris</i> (x2)	695029		7064323	
<i>Brachychiton populneus</i>	695338		7065152	
<i>Brachychiton populneus</i>	695431		7065750	
<i>Brachychiton populneus</i>	695436		7065775	
<i>Brachychiton populneus</i>	695538		7066399	
<i>Brachychiton australis</i>	695545		7066460	
<i>Brachychiton rupestris</i>	695545		7066460	
<i>Brachychiton populneus</i> (x2)	695545		7066460	

### 3.13.3 Habitat values

Habitat features associated with the proposed development area include:

- Limited woody vegetation suitable for shelter, foraging and perching
- Dense groundcover vegetation (ie grassy tussocks)
- Woody debris (ie fallen/felled timber, including hollow-bearing logs)

The proposed development area contains limited woody vegetation and has been extensively disturbed by historical clearing, grazing stock, cropping, and the invasion of exotic pasture species. Habitat features associated with the proposed development are therefore typically limited to dense



groundcover vegetation (ie grassy tussocks) and woody debris (ie fallen/felled timber, including hollow-bearing logs). As a result, the habitat value of this survey area is considered low, overall.

Accordingly, the species utilising resources in these regions of the survey area are most likely to be limited to common, generalist species that are able to adapt to significant habitat disturbances (ie House mouse [*Mus musculus*], macropods etc). Common birds of prey known from the area (ie Wedge-tailed eagle [*Aquila audax*] and Nankeen kestrel [*Falco cenchroides*]) would also be expected to utilise this site and the surrounding areas for foraging purposes.

No incidental fauna species were recorded within this proposed development area.

## 3.14 Map sheet 13

### 3.14.1 General

The proposed development area illustrated on Map Sheet 13 (Appendix A) occurs within and/or adjacent to the following properties:

- Lot 312 on WV169
- Lot 318 on WV169
- Lot 319 on WAL53499
- Lot 325 on WAL53499
- Lot 327 on WV65

This proposed development area occurs in association with:

- Mount Saltbush Road reserve
- Warooby Lane road reserve
- Unnamed road reserve
- Geotechnical locations 7699-TP-03, 7699-TP-04, 7699-TP-05, 7699-TP-65, 7699-TP-66, 7699-TP-67, 7699-TP-76

The proposed development area is contained within a highly modified environment, which has resulted from historical clearing for agricultural practices, and the construction and operation of existing roads.

No REs or known ESAs have been recorded within this proposed development area. The closest ESA mapping (Category B) occurs approximately 400 m to the east of the proposed development area in association with an Endangered RE (Map Sheet 13).

One DERM mapped (stream order 1) watercourse occurs within the proposed development area.

### 3.14.2 Floristics

The proposed development area is located within a highly disturbed (ie grazed) area. Much of the proposed development area has been cleared of woody vegetation, with adjacent areas used to grow fodder (ie *Sorghum* sp. and Buffel grass *Pennisetum ciliare*). However, native vegetation has been retained particularly along the fence lines.

No Type A restricted flora species, or other species of conservation significance, as listed under the provisions of the NC Act and/or the EPBC Act were observed within the proposed development area.

A list of flora species observed within and/or surrounding the proposed development area is provided in the relevant Lot specific reports.



### 3.14.3 Habitat values

Habitat features associated with the proposed development area include:

- Limited woody vegetation suitable for shelter, foraging and perching
- Dense groundcover vegetation (ie grassy tussocks)
- Woody debris (ie fallen/felled timber, including hollow-bearing logs)

The habitat values of the proposed development area are very low overall. The area has been extensively disturbed by stock grazing, invasion of exotic pastures and cropping. Isolated mature trees are present in places, and these are likely to provide some habitat for avian and arboreal fauna. The remainder of the area contained very little woody debris or other habitat features and is likely to provide limited habitat for native fauna species.

No incidental fauna species were recorded with the proposed development area.

## 3.15 Map sheet 14

### 3.15.1 General

The proposed development area illustrated on Map Sheet 14 (Appendix A) occurs within and/or adjacent to the following properties:

- Lot 20 on WV1410
- Lot 211 on WV988
- Lot 52 on WV1792
- Lot 184 on WAL53457
- Lot 2 on RP7638
- Lot 25 on WAL53249
- Lot 26 on WAL53249
- Lot 22 on WV938

This proposed development area occurs in association with:

- Mount Saltbush Road reserve
- Unnamed road reserve
- Warooby Lane road reserve
- Geotechnical locations 7699-TP-03, 7699-TP-04, 7699-TP-05, 7699-TP-06, 7699-TP-65, 7699-TP-66, 7699-TP-67, 7699-TP-76

The proposed development area is contained within a highly modified environment, which has resulted from historical land clearing for agricultural practices, and the construction and operation of existing roads.

The proposed development area is mapped as 'non-remnant' on the DERM certified RE mapping, and field investigations have confirmed that the DERM certified RE mapping is correct

No ESAs are known to occur within the proposed development area; however a Category B ESA occurs within 800 m of the proposed development area in association with a mapped Endangered RE.

Three (3) DERM mapped watercourses (all stream order 1) occur within the proposed development area.



### 3.15.2 Floristics

Eleven (11) Type A restricted plants consisting of two species (as listed under the provisions of the NC Act), ie *Brachychiton populneus* (Kurrajong) and *Brachychiton rupestris* (Narrow-leaved bottle tree), were recorded within the proposed development area. The location of these species is provided in Table 3.20, below.

No other flora species of conservation significance under the provisions of the NC Act or EPBC Act were observed within the proposed development area.

A list of flora species observed within and/or surrounding the proposed development area is provided in the relevant Lot specific reports.

Table 3.20 Location of Type A Restricted Plants (*Nature Conservation Act 1992*)

Species	Easting 94, Zone 55J)	(GDA	Northing 94, Zone 55J)	(GDA
<i>Brachychiton populneus</i>	689494		7062969	
<i>Brachychiton rupestris</i>	690307		7063184	
<i>Brachychiton rupestris</i>	690381		7063197	
<i>Brachychiton populneus</i>	690542		7063249	
<i>Brachychiton rupestris</i>	690643		7063263	
<i>Brachychiton populneus</i> (x2)	690685		7063266	
<i>Brachychiton populneus</i>	690718		7063274	
<i>Brachychiton populneus</i>	690786		7063289	
<i>Brachychiton populneus</i>	690890		7063315	
<i>Brachychiton populneus</i>	690920		7063319	

### 3.15.3 Habitat values

Habitat features associated with the proposed development area include:

- Limited woody vegetation suitable for shelter, foraging and perching
- Dense groundcover vegetation (ie grassy tussocks)
- Woody debris (ie fallen/felled timber, including hollow-bearing logs)

The proposed development area contains limited woody vegetation and has been extensively disturbed by historical clearing, grazing stock, cropping, and the invasion of exotic pasture species. Habitat features associated with the proposed development are therefore typically limited to dense groundcover vegetation (ie grassy tussocks) and woody debris (ie fallen/felled timber, including hollow-bearing logs). As a result, the habitat value of this survey area is considered low, overall.

Accordingly, the species utilising resources in these regions of the survey area are most likely to be limited to common, generalist species that are able to adapt to significant habitat disturbances (ie House mouse [*Mus musculus*], macropods etc). Common birds of prey known from the area (ie Wedge-tailed eagle [*Aquila audax*] and Nankeen kestrel [*Falco cenchroides*]) would also be expected to utilise this site and the surrounding areas for foraging purposes.

No incidental fauna species were recorded within this proposed development area.

## 3.16 Map sheet 15

### 3.16.1 General

The proposed development area illustrated on Map Sheet 15 (Appendix A) occurs within and/or adjacent to the following properties:

- Lot 210 on WAL53630
- Lot 196 on WAL53523
- Lot 211 on WV988
- Lot 20 on WV1410
- Lot 197 on WAL53680
- Lot 22 on WV938
- Lot 1 on WV918

This proposed development area occurs in association with:

- Mount Saltbush Road reserve
- Bowens Lane road reserve
- Unnamed road reserve
- Geotechnical locations 7699-TP-68, 7699-TP-69, 7699-TP-70

The proposed development area is contained within a highly modified environment, which has resulted from historical land clearing for agricultural practices, and the construction and operation of existing roads.

The proposed development area is mapped as 'non-remnant' on the DERM certified RE mapping and field investigations confirmed that the DERM certified RE mapping is correct. However, a Category C ESA is mapped immediately adjacent to the proposed development area (associated with an 'Of Concern' RE on Lot 22 on WV938).

Two (2) DERM mapped watercourses (stream orders 1 and 3) occur within the proposed development area.

### 3.16.2 Floristics

Three (3) Type A restricted plants consisting of two species (as listed under the provisions of the NC Act), ie *Brachychiton populneus* (Kurrajong) and *Brachychiton rupestris* (Narrow-leaved bottle tree), were recorded within the proposed development area. The location of these species is provided in Table 3.21, below.

No other species of conservation significance as listed under the provisions of the NC Act and/or EPBC Act were observed within the proposed development area.

A list of flora species observed within and/or surrounding the proposed development area is provided in the relevant Lot specific reports.

Table 3.21 Location of Type A Restricted Plants (*Nature Conservation Act 1992*)

Species	Easting (GDA 94, Zone 55J)	Northing (GDA 94, Zone 55J)
<i>Brachychiton rupestris</i>	691269	7063408
<i>Brachychiton rupestris</i>	691511	7063469
<i>Brachychiton populneus</i>	694696	7064246



### 3.16.3 Habitat values

Habitat features associated with the proposed disturbance area include:

- Limited canopy cover suitable for shelter, foraging and perching
- Limited fissured/exfoliating tree bark
- Dense groundcover vegetation (ie grassy tussocks)
- Limited woody debris (ie fallen/felled timber, including hollow-bearing logs)

The habitat value of the proposed development area is low overall, as it contains limited woody vegetation and has been disturbed by grazing stock, previous vegetation clearing and the invasion of exotic pasture species. Species utilising resources in this area are most likely to be limited to common, generalist species that are able to adapt to significant habitat disturbances.

No incidental fauna species that were observed within the proposed development area.

## 3.17 Map sheet 16

### 3.17.1 General

The proposed development area illustrated on Map Sheet 16 (Appendix A) occurs within and/or adjacent to the following properties:

- Lot 22 on WV938
- Lot 4 on SP127239
- Lot 3 on SP127239
- Lot 2 on SP 127239
- Lot 1 on SP127239

This proposed development area occurs in association with:

- Warrego Highway
- Warooby Lane road reserve
- Geotechnical locations 7699-TP-01, 7699-TP-02

The proposed development area is located within a highly modified environment, which has resulted from historical land clearing for agricultural practices, and the construction and operation of existing roads.

One (1) RE community (RE 11.5.13; Of Concern) has been identified within the southern region of the proposed development area, in association with the DERM mapped watercourse (stream order 1). As a result of the Of Concern RE community, the proposed development area occurs within a Category B ESA (Map Sheet 16).

### 3.17.2 Floristics

No Type A restricted species, or other species of conservation significance, as listed under the provisions of the NC Act and/or the EPBC Act were observed within the proposed development area.

A list of flora species observed within and/or surrounding the proposed development area is provided in the relevant Lot specific reports.

### 3.17.3 Habitat values

Habitat features associated with the proposed development area include:

- Limited canopy cover suitable for shelter, foraging and perching
- Limited fissured/exfoliating tree bark
- Dense groundcover vegetation (ie grassy tussocks)
- Woody debris (ie fallen/felled timber, including hollow-bearing logs)
- Watercourse habitat (including banks)

The habitat values associated with the proposed development area are considered low to moderate. Mature trees occur within the riparian zone and sporadically throughout the remainder of the proposed development area. Large woody debris with hollows and fissured, flaky bark is also present in limited quantities. However, as the road reserve is narrow and occurs within a highly fragmented landscape, its value to ground-dwelling and arboreal mammals would be marginal.

## 3.18 Map sheet 17

### 3.18.1 General

The proposed development area illustrated on Map Sheet 17 (Appendix A) occurs within and/or adjacent to the following properties:

- Lot 199 on WV1561
- Lot 200 on RP896193
- Lot 201 on RP896193
- Lot 202 on WV65
- Lot 204 on WV65
- Lot 208 on RP835683
- Lot 219 on WV1588
- Lot 305 on WAL53511
- Lot 330 on WV65

This proposed development area occurs in association with:

- Pickanjinnie North Road reserve
- Warrego Highway
- Temporarily closed road reserve
- Unnamed road reserve
- Corridor R78
- Pickanjinnie 24-27 Buried Water Flowline

The proposed development area is contained within a highly modified environment, which has resulted from historical land clearing for agricultural practices, and the construction and operation of existing roads.

One (1) RE community (RE 11.3.25/11.3.2; Of Concern) has been identified in association with a DERM mapped, watercourse (stream order 3), which is bisected by the Pickanjinnie 24-27 Buried Water Flowline. As a result, the proposed development area occurs within a Category B ESA (Map Sheet 17).



### 3.18.2 Floristics

RE 11.3.25/11.3.2 occurs in association with the watercourse bisected by the Pickanjinnee 24-27 Buried Water Flowline. This vegetation community is described as *Eucalyptus camaldulensis* or *Eucalyptus tereticornis* open forest to woodland. *Acacia pendula* (Weeping myall) was not detected during field investigations, however, should this species occur within the vegetation community associated with the watercourse, this may be classified as a EPBC Threatened Ecological Community, and may therefore be referable.

All other regions of the proposed development area are represented by non-remnant vegetation.

No Type A restricted species, or other species of conservation significance, as listed under the provisions of the NC Act and/or the EPBC Act were observed within the proposed development area.

A list of flora species observed within and/or surrounding the proposed development area is provided in the relevant Lot specific reports.

### 3.18.3 Habitat values

Habitat features associated with the proposed development area include:

- Limited woody vegetation suitable for shelter, foraging and perching
- Dense groundcover vegetation (ie grassy tussocks)
- Woody debris (ie fallen/felled timber, including hollow-bearing logs)

The habitat values of the proposed development areas are considered very low overall. The area has been extensively disturbed by stock grazing, invasion of exotic pastures and cropping. Isolated mature trees are present throughout the proposed development area, and these are likely to provide some habitat for avian and arboreal fauna. The remainder of the area contained very little woody debris or other habitat features and is likely to provide limited habitat for native fauna species.

No incidental fauna species were recorded with the proposed development area.



## 4 Conclusions

The majority of the proposed development areas discussed in this report occur within non-remnant areas as indicated on the DERM certified RE mapping. A number of ESAs have been identified within close proximity to the proposed development areas, although, the location of the proposed infrastructure has largely avoided mapped ESAs.

Unmapped stands of Brigalow (EPBC Threatened Ecological Community and areas of federally referable Brigalow Regrowth) have been identified within and adjacent to the proposed development area. These vegetation communities are discussed throughout this report.

A number of Type A species as listed under the provisions of the NC Act were identified within the proposed development areas. However, no species listed as threatened or near-threatened under the provisions of the EPBC Act and/or the NC Act were identified.

Typically, the habitat values associated with the proposed development areas are relatively low, with some small areas exhibiting a moderate value (usually associated with riparian and/or remnant stands of vegetation).



# 5 References

Eddie, C (2007) Field Guide to Trees and Shrubs of Eastern Queensland Oil and Gas Fields, First Edition, Santos Ltd, Adelaide.

Regional Ecosystem Mapping, Version 6.1, Queensland Government Department of Environment and Resource Management (DERM).

# Appendices

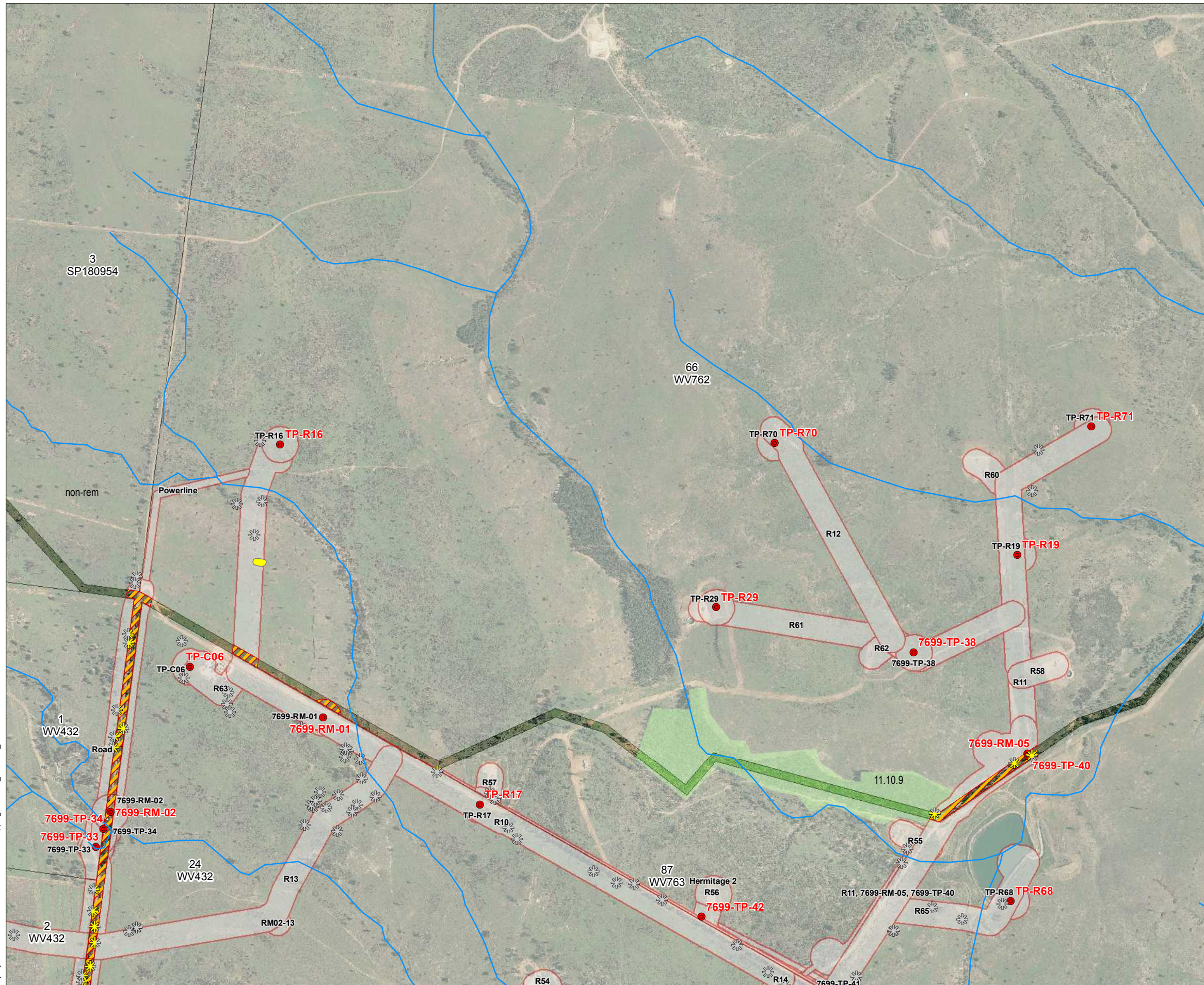




# Appendix A

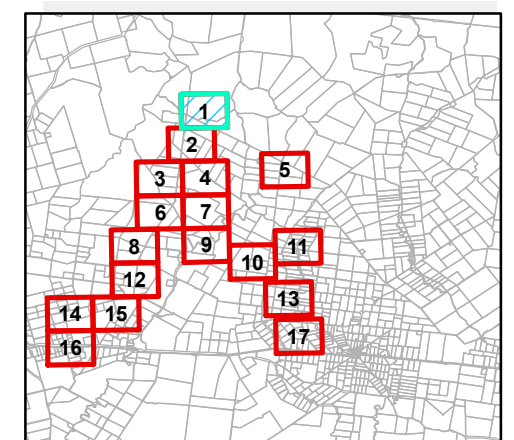
Map sheets of the proposed development area





**Legend**

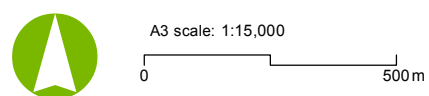
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  - Geotech Borehole Locations
  - Ground Truthed Areas
  - Drainage (100K)
  - ESA Category A
  - ESA Category B
  - ESA Category C
- Regional Ecosystem Mapping**
- Non-remnant / regrowth
  - Endangered - Sub-dominant
  - Endangered - Dominant
  - Of Concern - Sub-dominant
  - Of Concern - Dominant
  - Not Of Concern
  - Plantation forest
  - Water



Notes: Regional Ecosystem (RE) colours depicted in this map are based on the Vegetation Management Status of the RE as described in the Regional Ecosystem Description Database. The Biodiversity Status of the vegetation is not shown on this map.

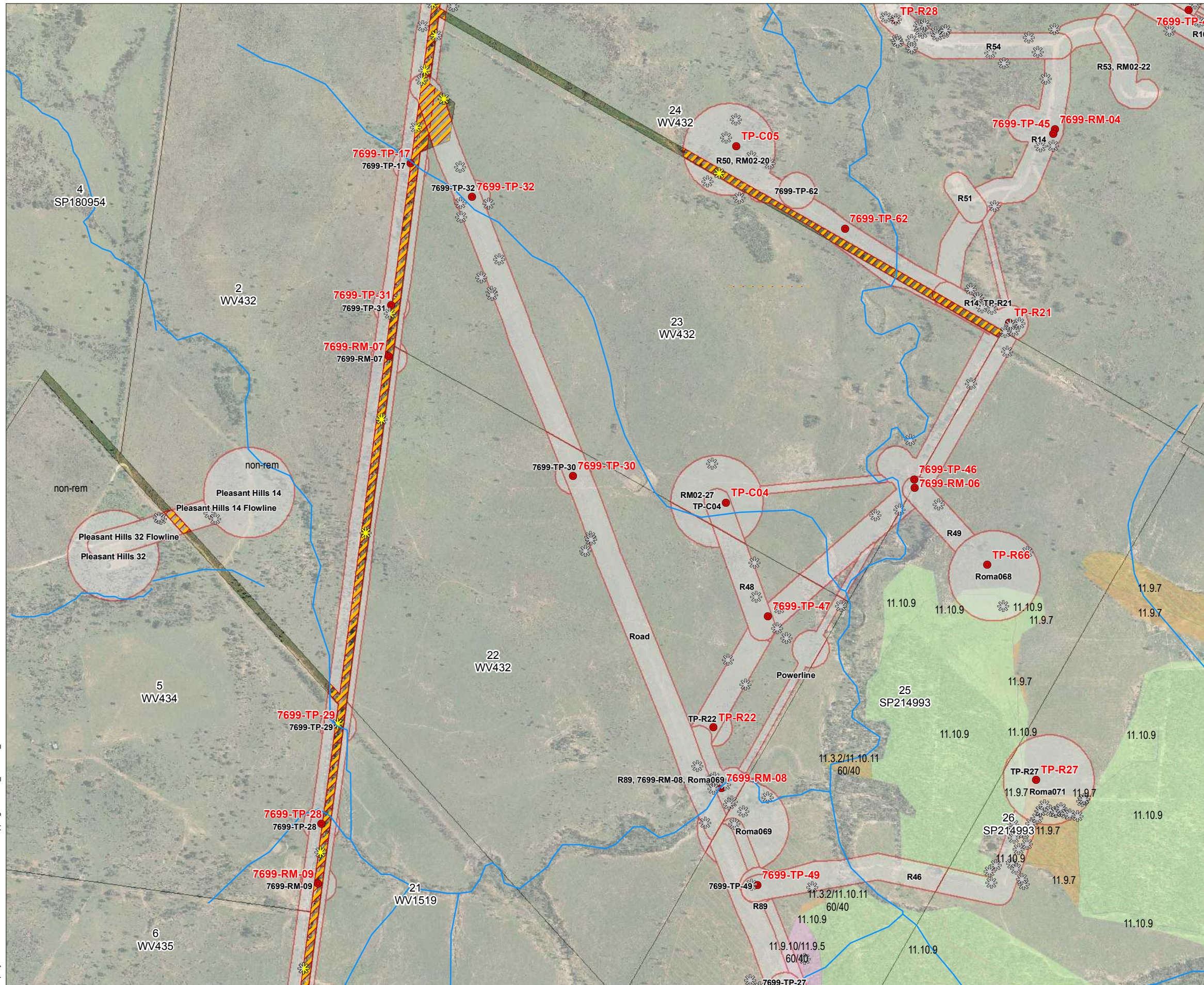
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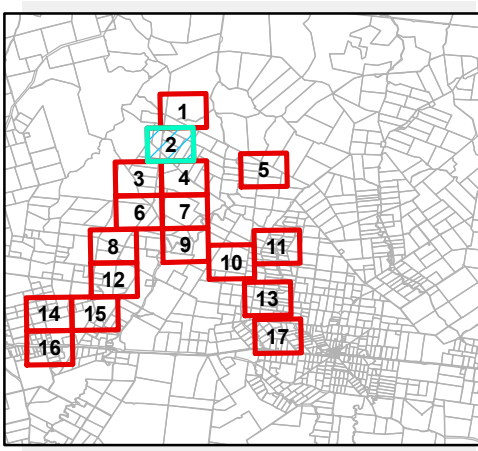


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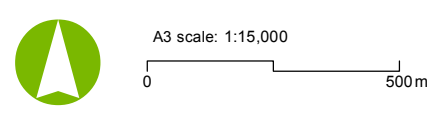
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  - Notable Species Areas
  - Geotech Borehole Locations
  - Ground Truthed Areas
  - Drainage (100K)
  - ESA Category A
  - ESA Category B
  - ESA Category C
- Regional Ecosystem Mapping**
- Non-remnant / regrowth
  - Endangered - Sub-dominant
  - Endangered - Dominant
  - Of Concern - Sub-dominant
  - Of Concern - Dominant
  - Not Of Concern
  - Plantation forest
  - Water



Notes: Regional Ecosystem (RE) colours depicted in this map are based on the Vegetation Management Status of the RE as described in the Regional Ecosystem Description Database. The Biodiversity Status of the vegetation is not shown on this map.

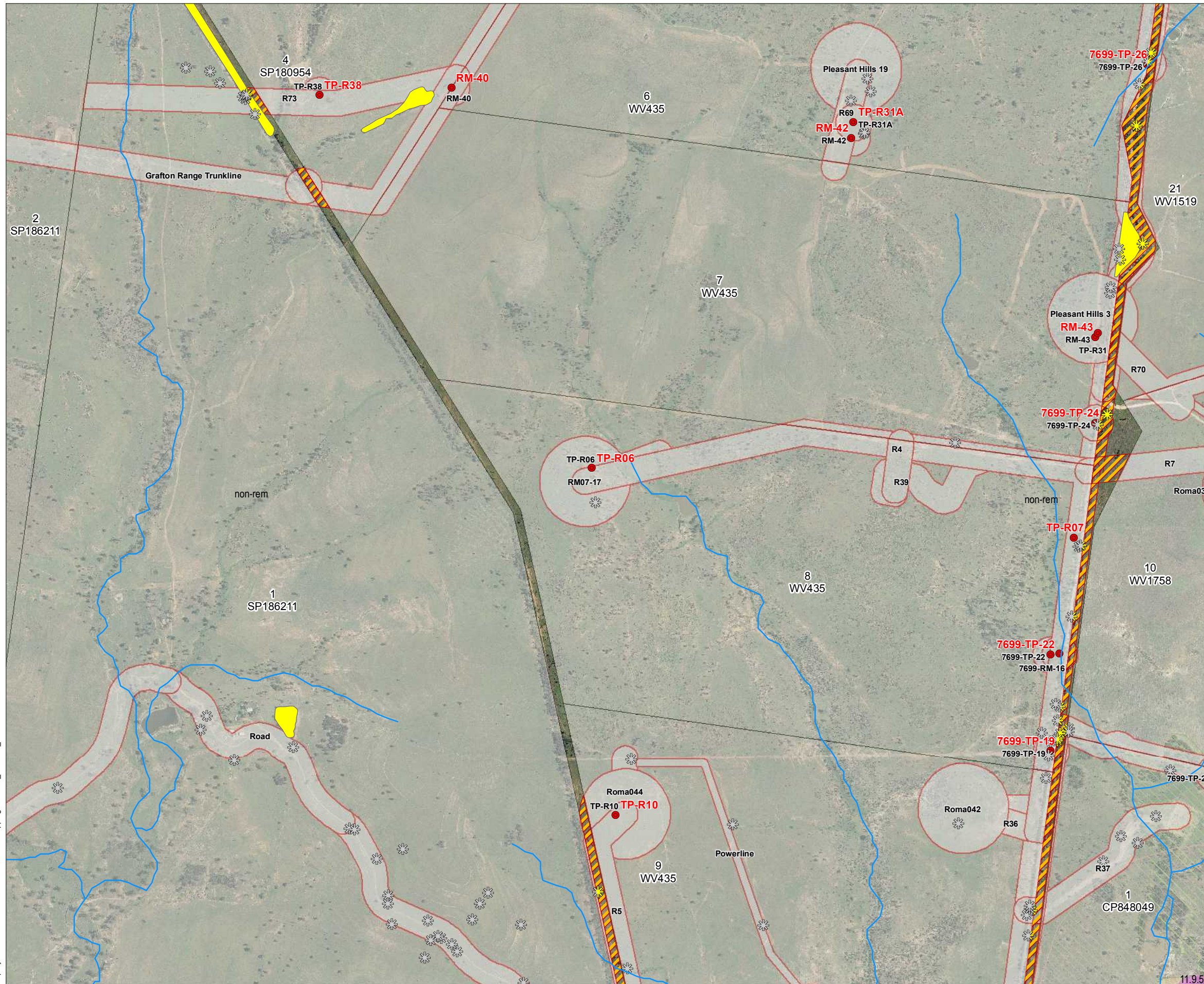
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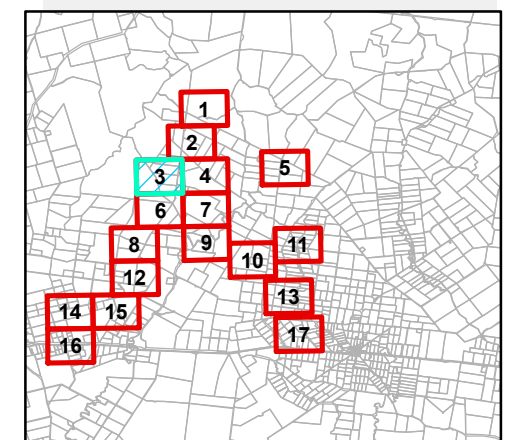
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**Legend**

- Notable Species
  - Notable Species Areas
  - Geotech Borehole Locations
  - Ground Truthed Areas
  - Drainage (100K)
  - ESA Category A
  - ESA Category B
  - ESA Category C
- Regional Ecosystem Mapping**
- Non-remnant / regrowth
  - Endangered - Sub-dominant
  - Endangered - Dominant
  - Of Concern - Sub-dominant
  - Of Concern - Dominant
  - Not Of Concern
  - Plantation forest
  - Water

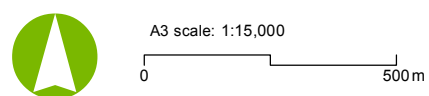


Notes: Regional Ecosystem (RE) colours depicted in this map are based on the Vegetation Management Status of the RE as described in the Regional Ecosystem Description Database. The Biodiversity Status of the vegetation is not shown on this map.

Date: 11/10/2011

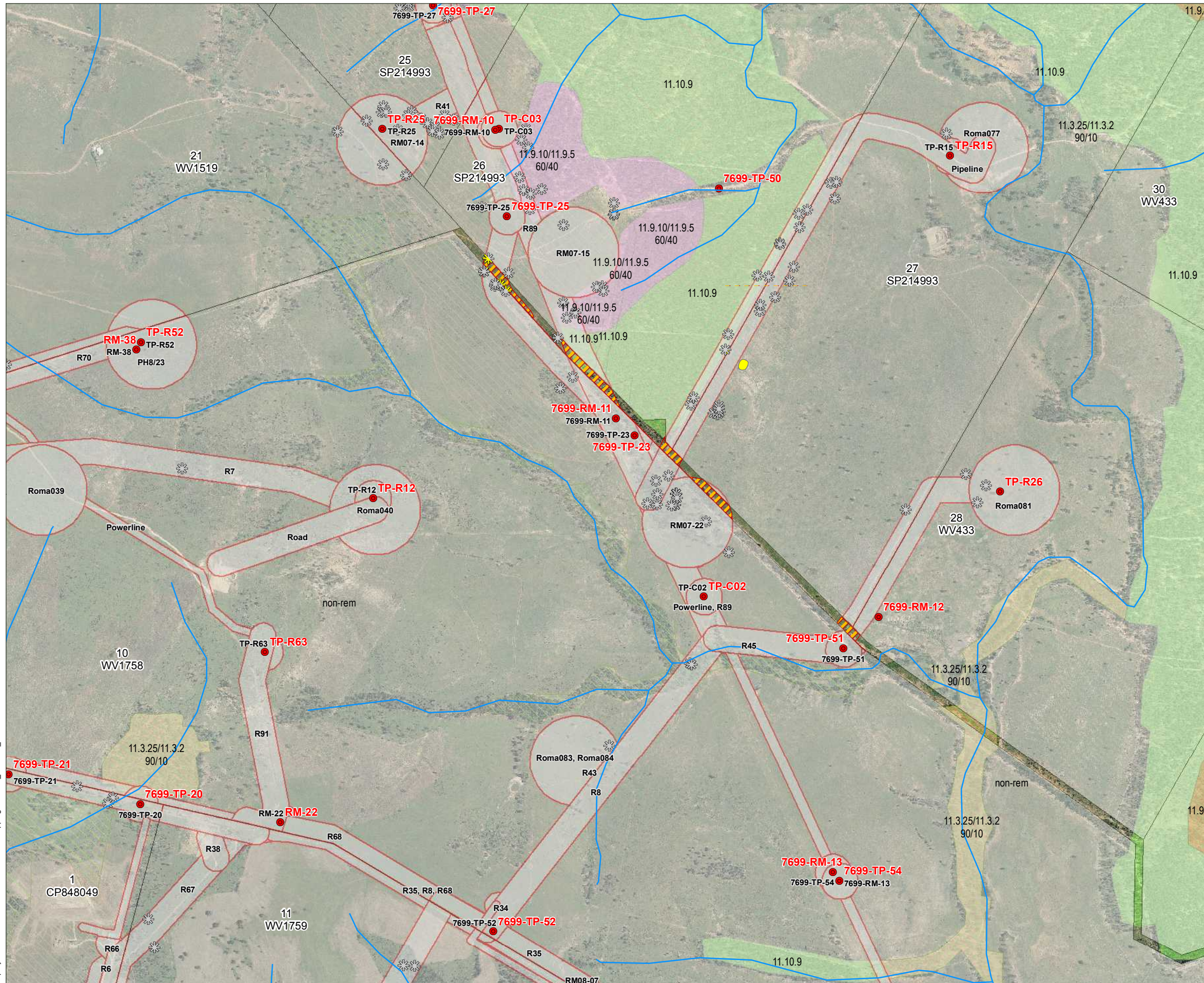
Version: 1

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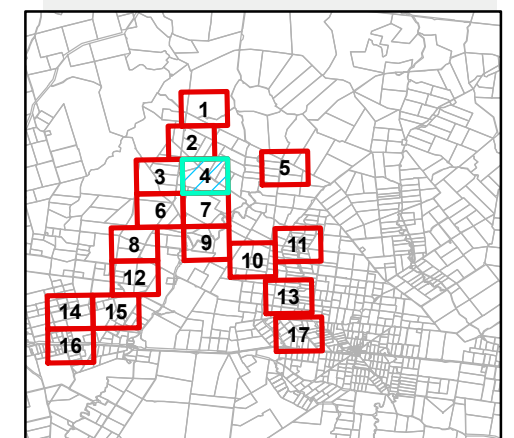
Job No: 215648  
Coordinate system: GDA 1994 MGA Zone 55





**Legend**

- Notable Species
  - Notable Species Areas
  - Geotech Borehole Locations
  - Ground Truthed Areas
  - Drainage (100K)
  - ESA Category A
  - ESA Category B
  - ESA Category C
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  - Endangered - Dominant
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  - Of Concern - Dominant
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  - Water

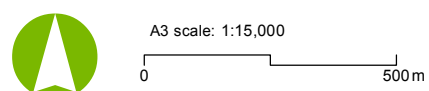


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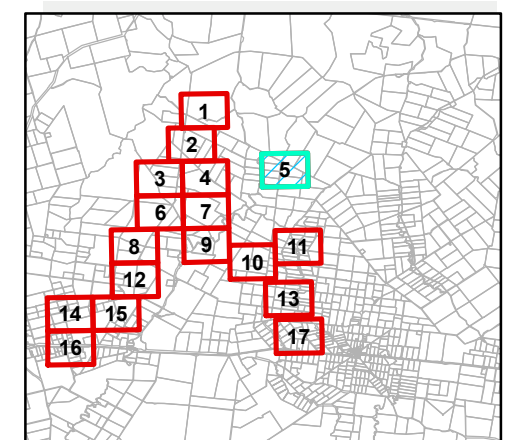
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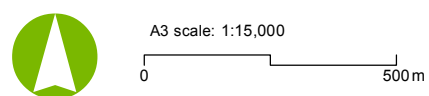


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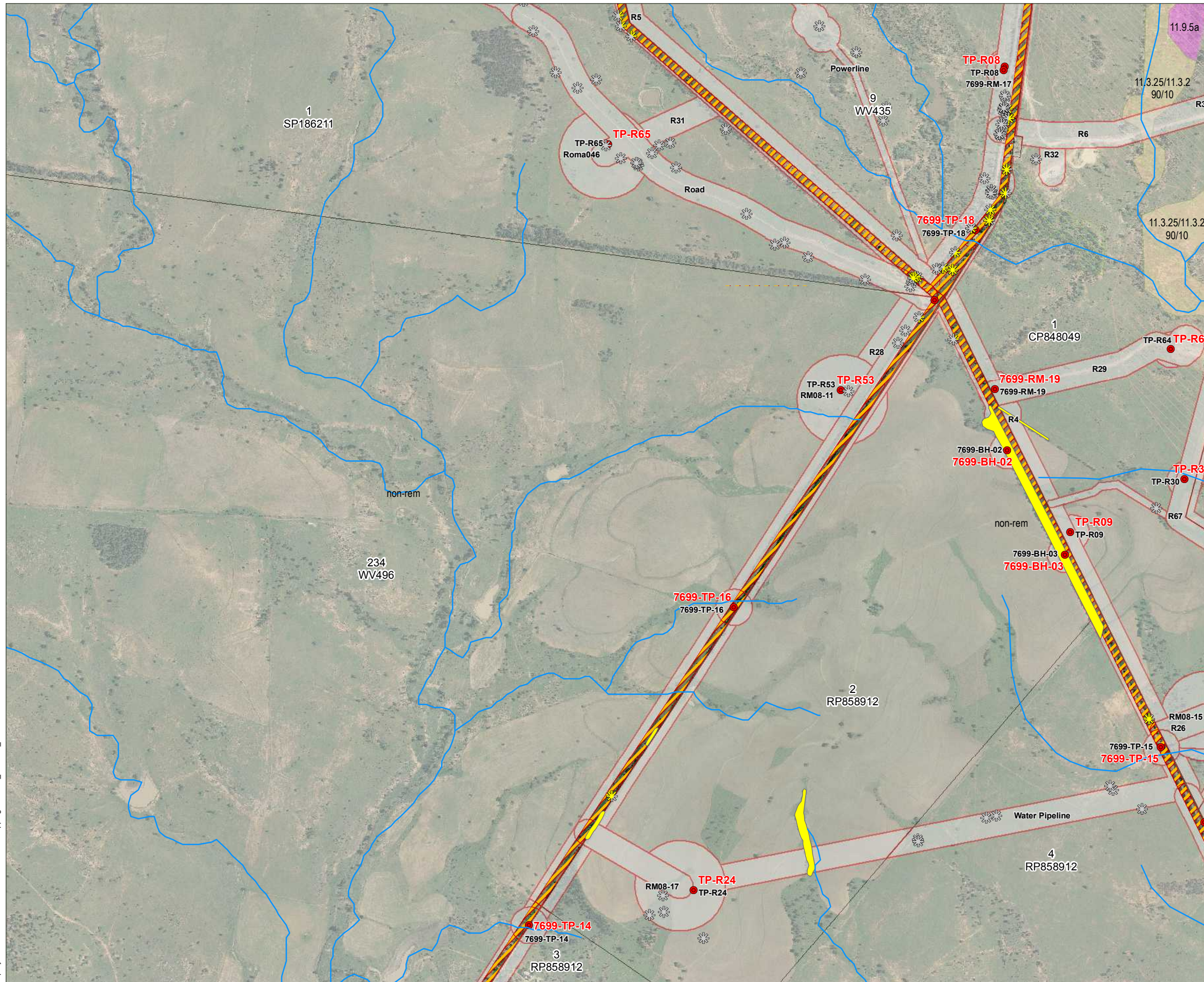
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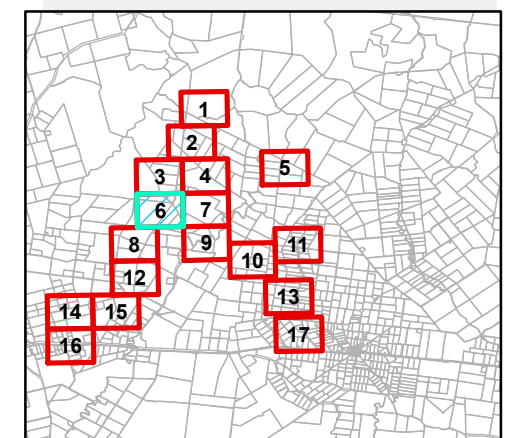
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### Legend

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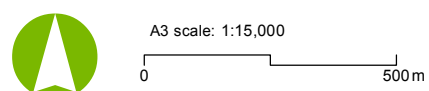


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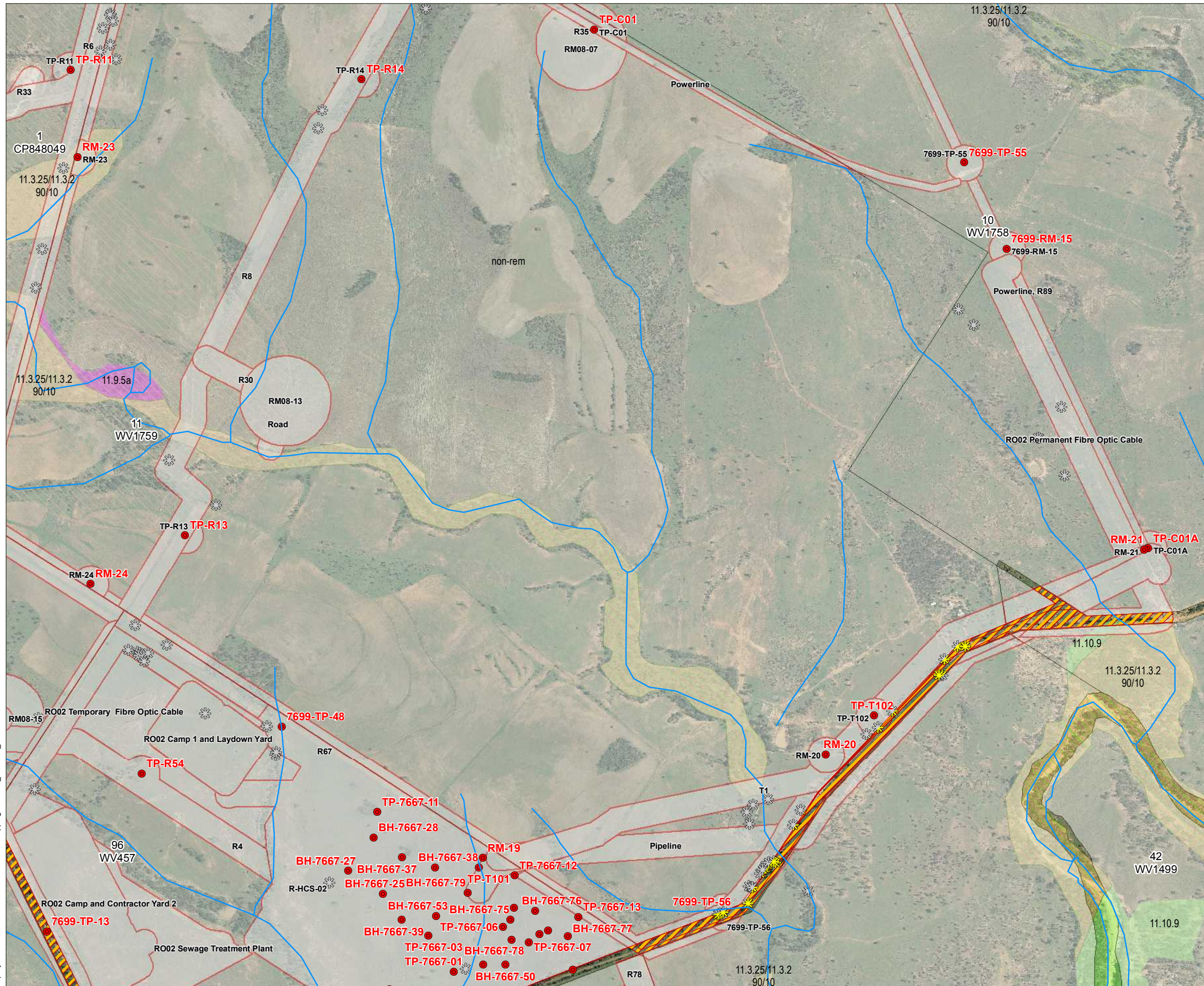
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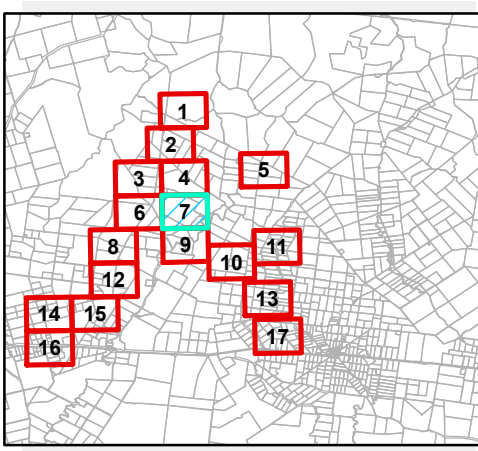


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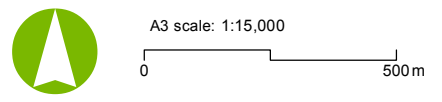
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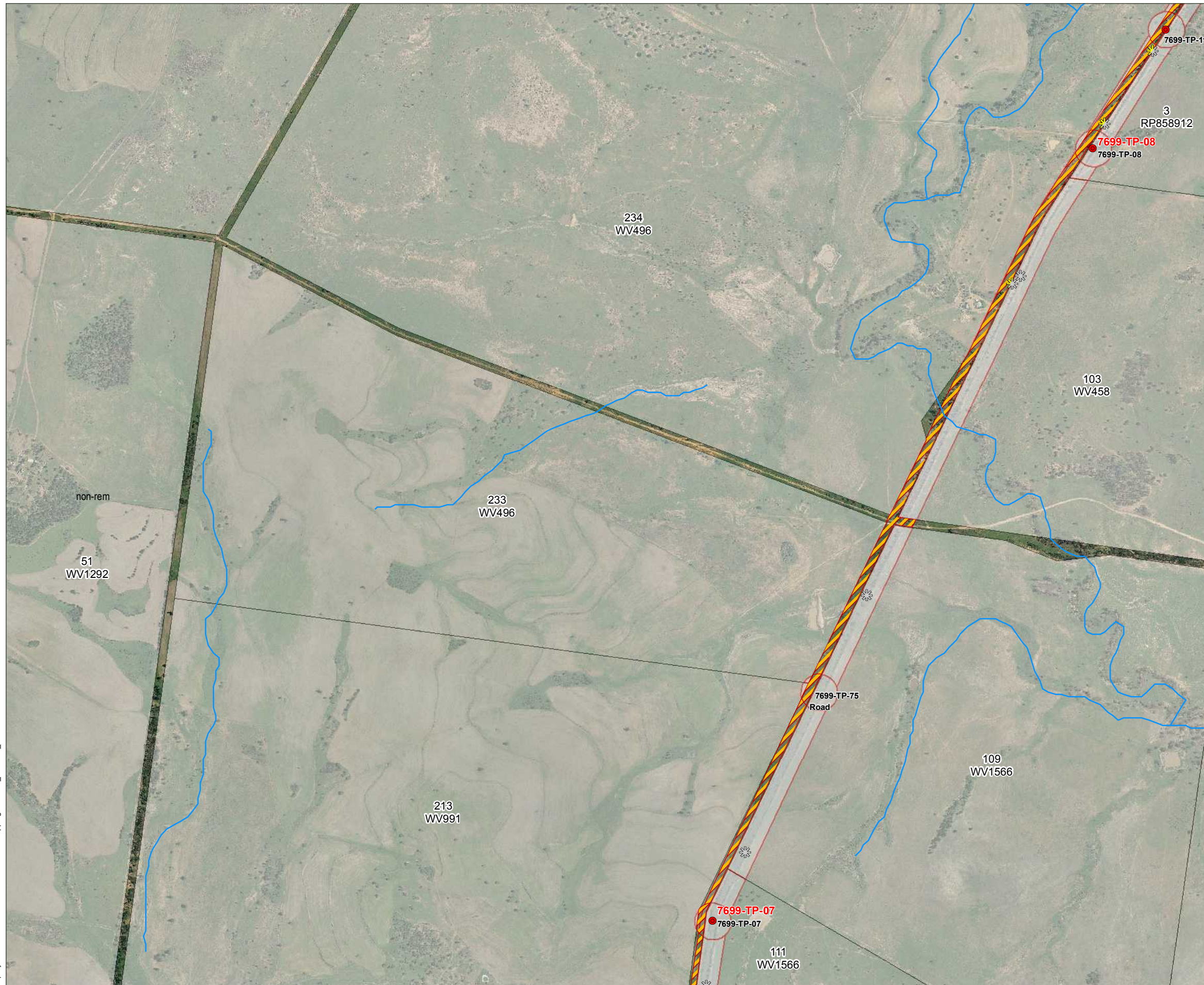
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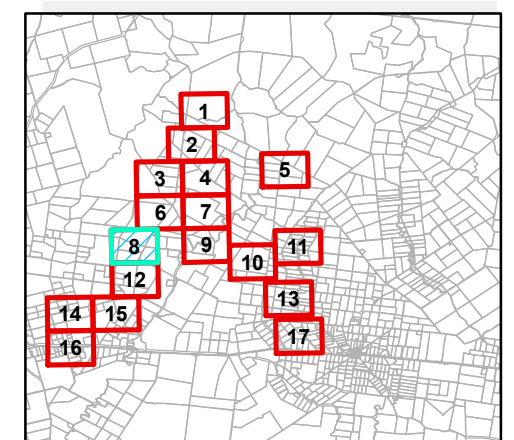
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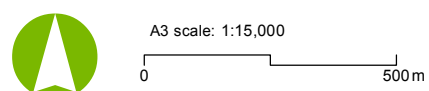


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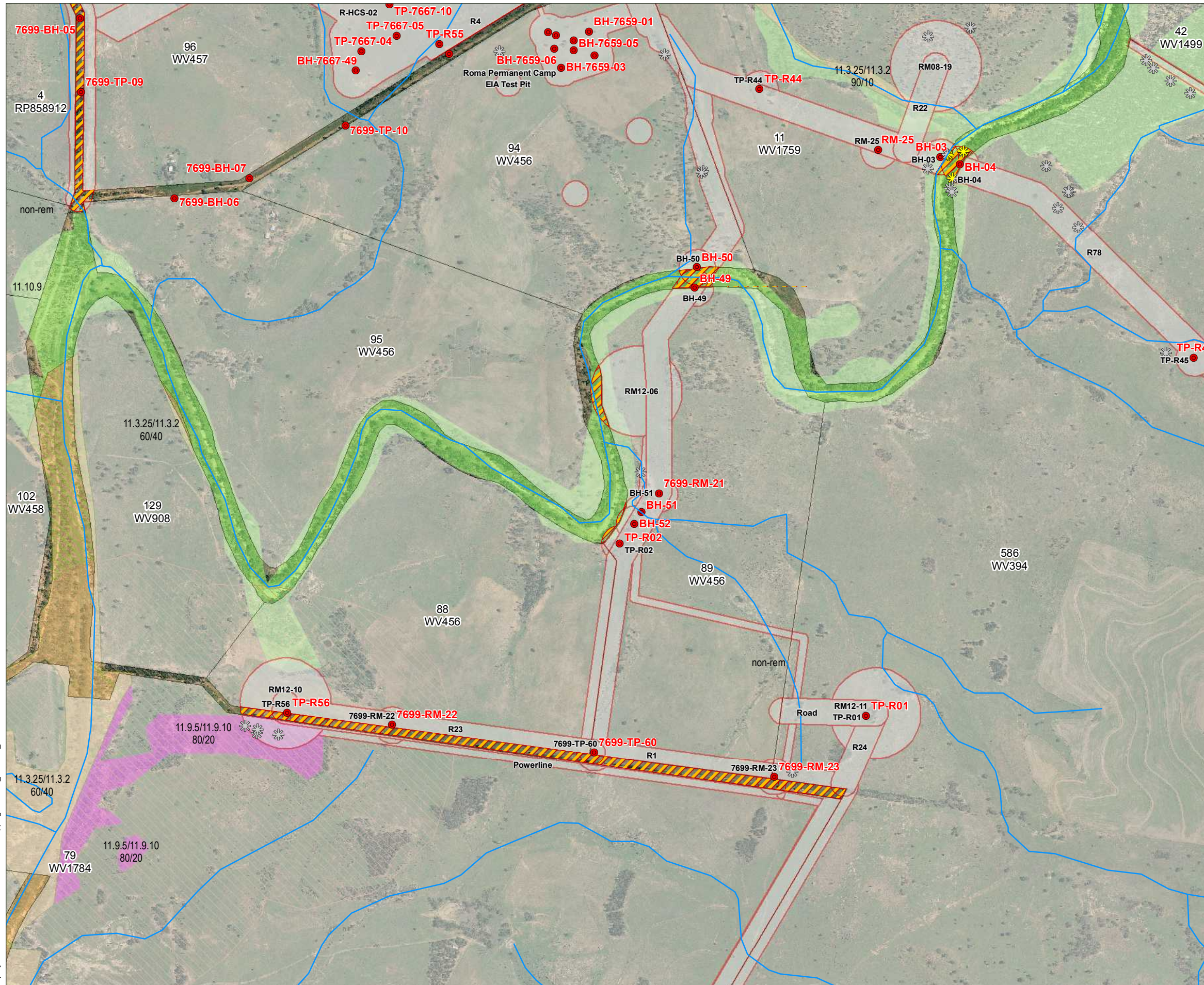
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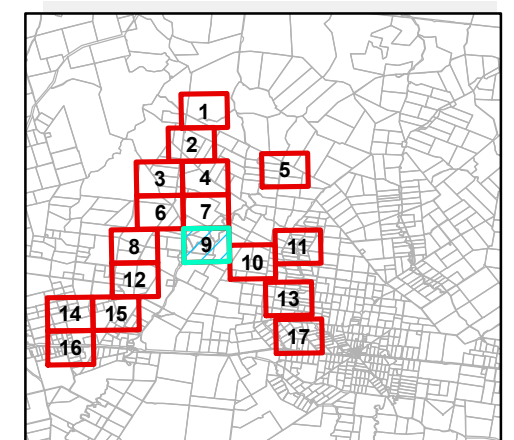
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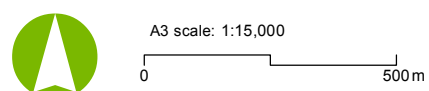


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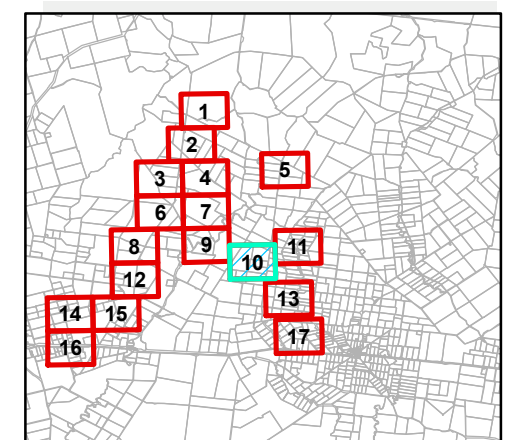
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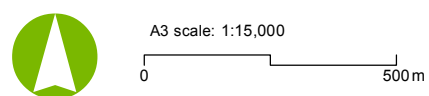


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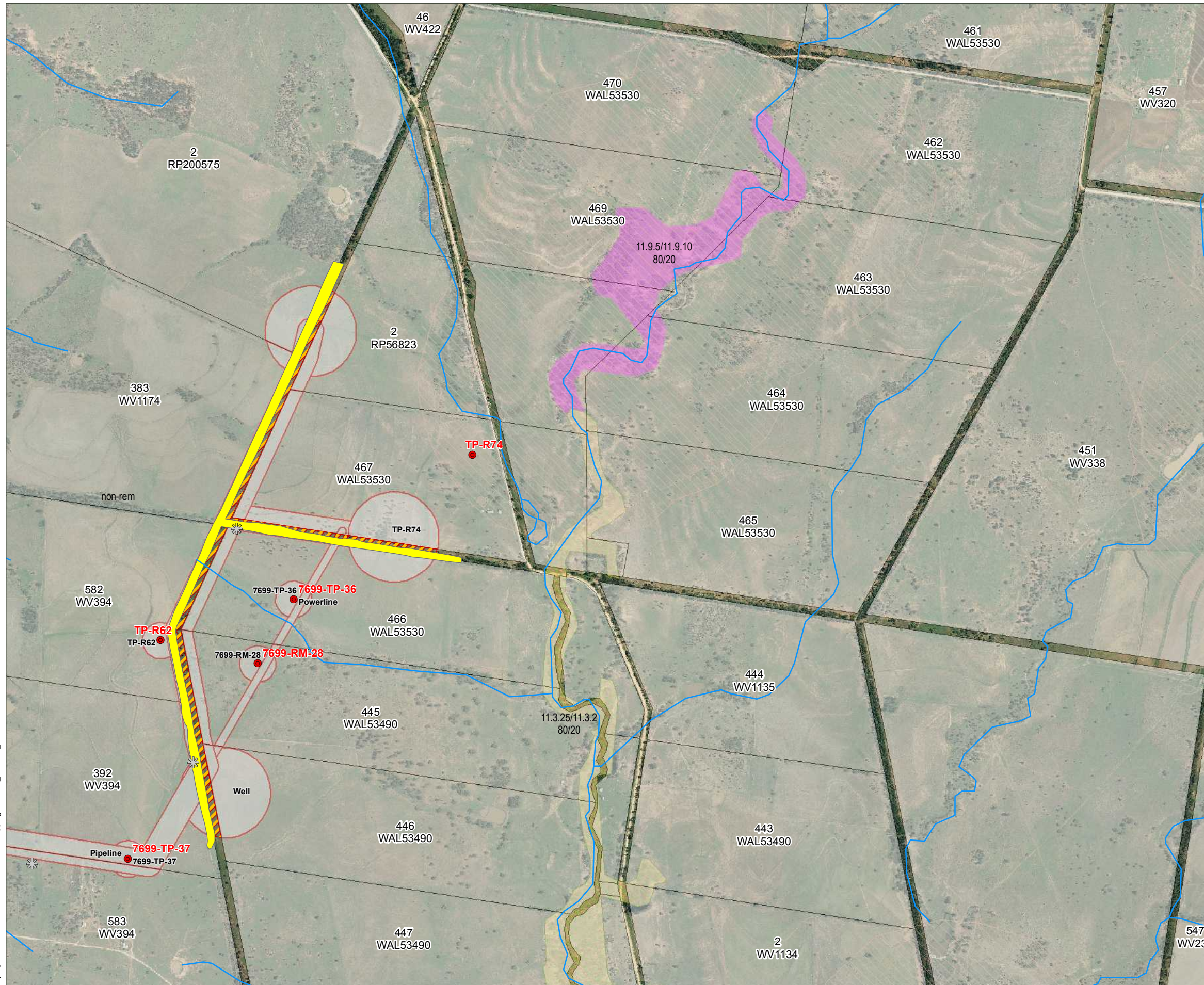
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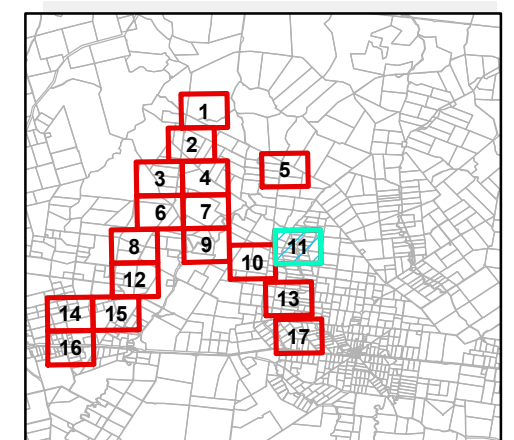
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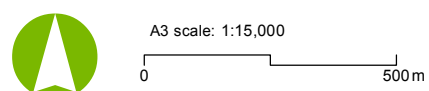


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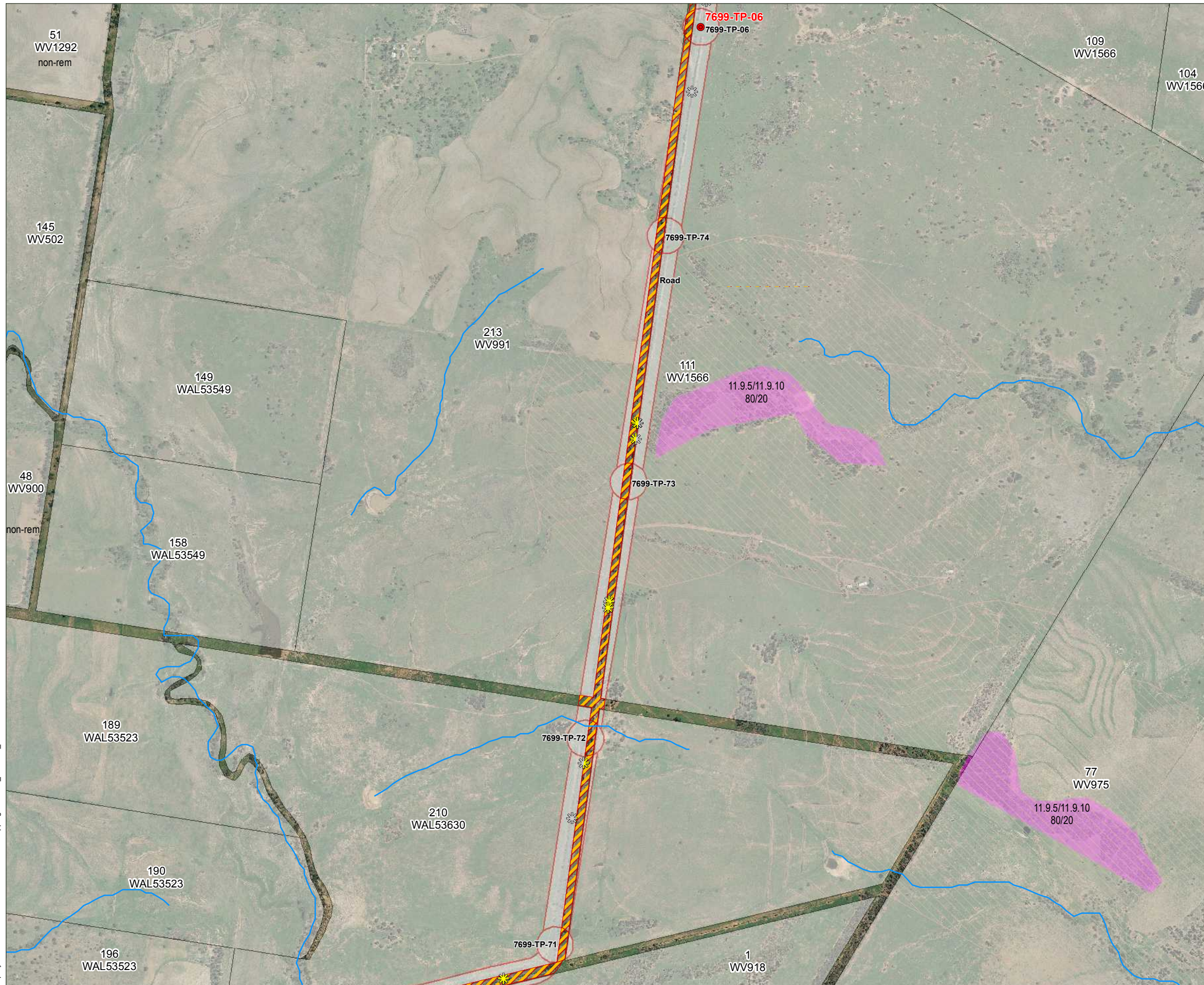
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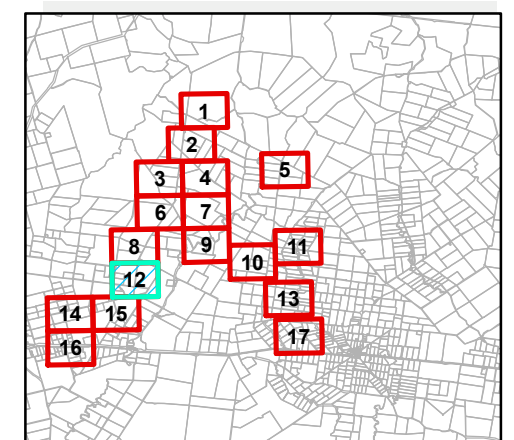
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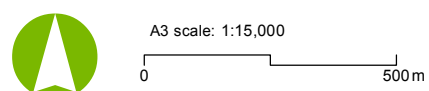


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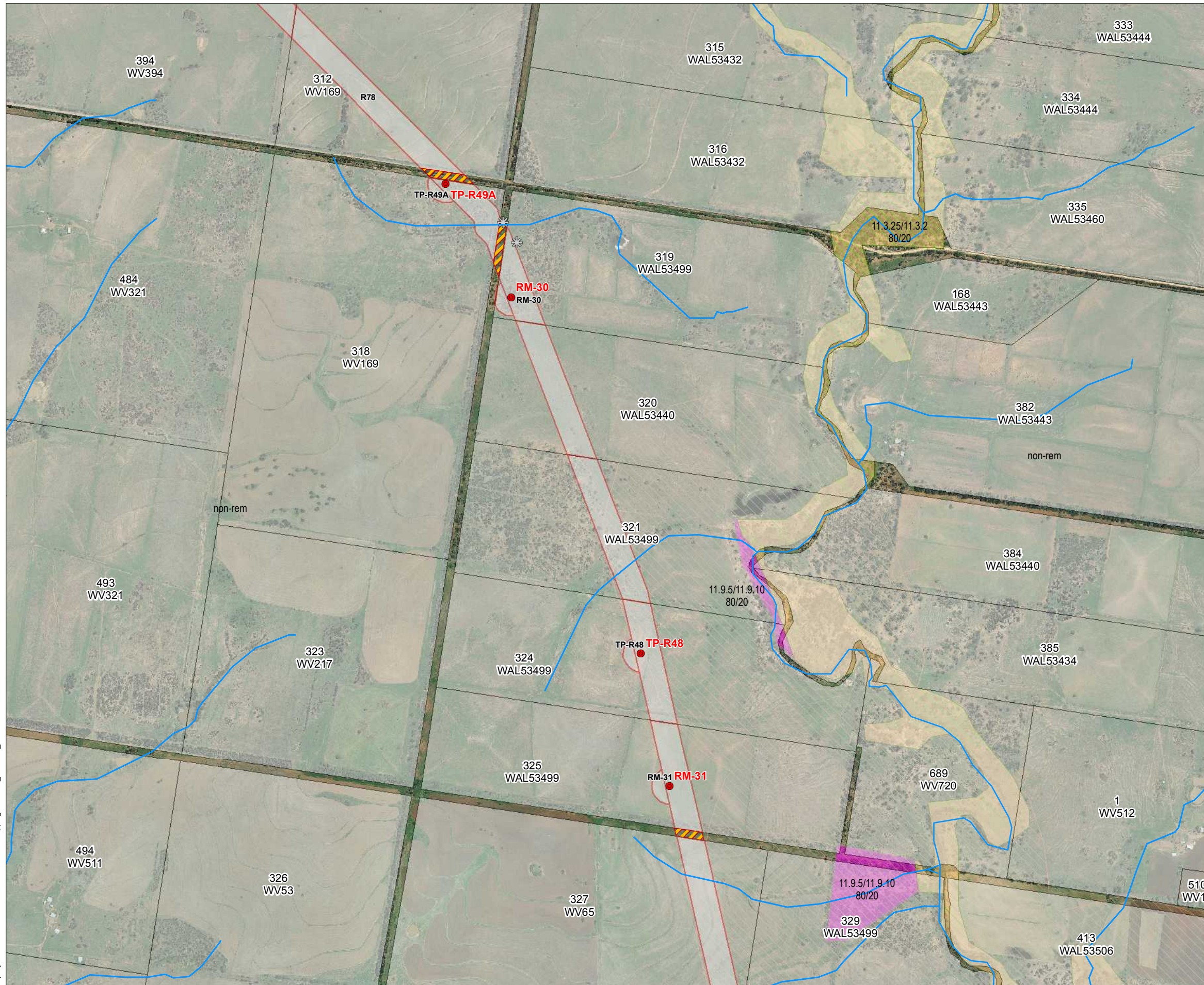
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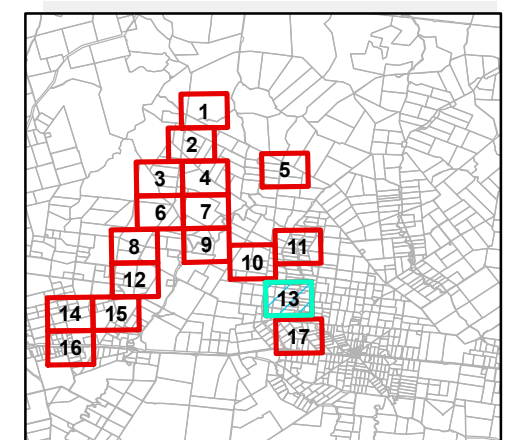
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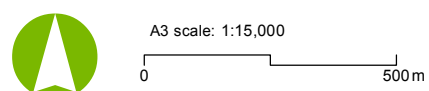


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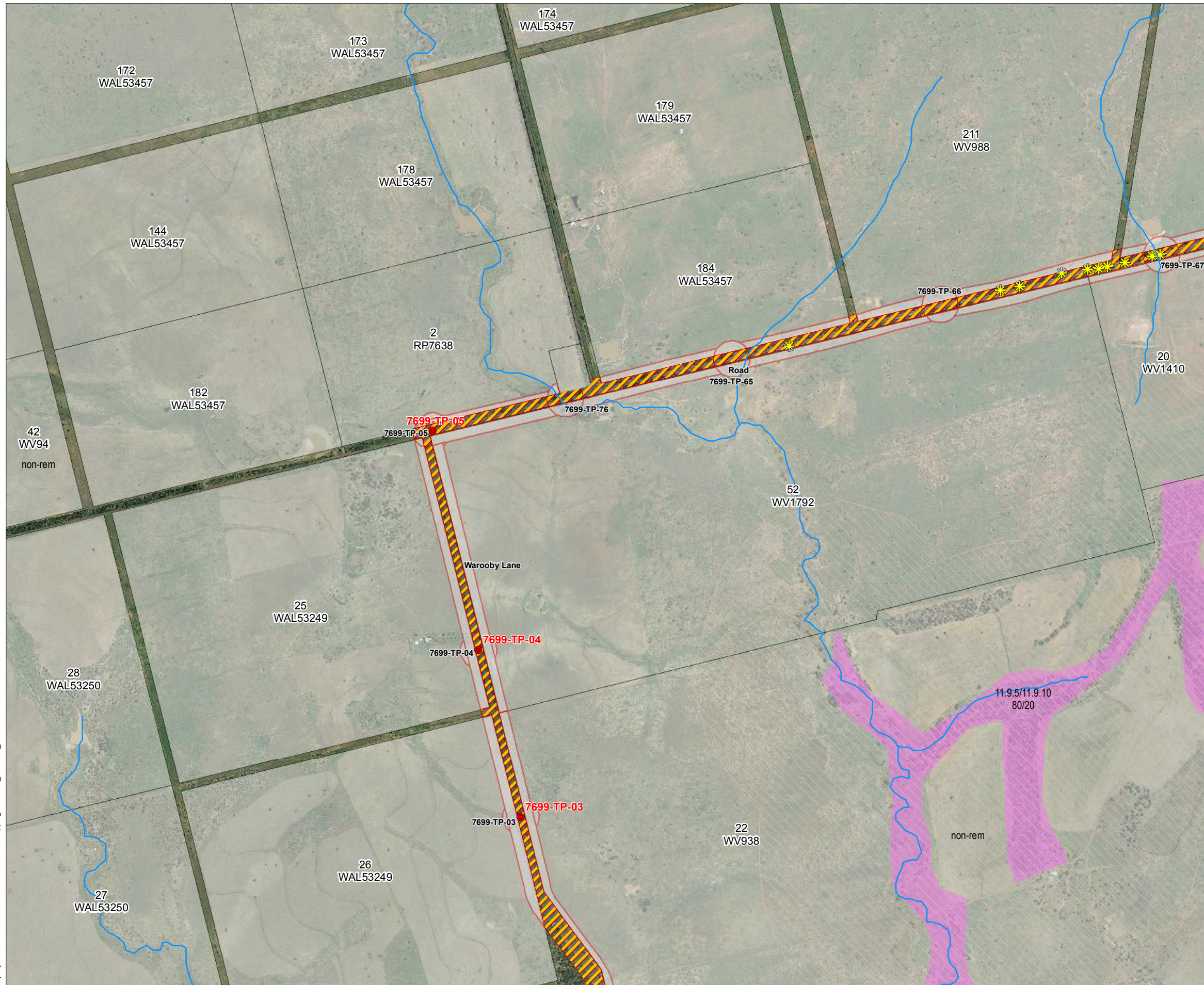
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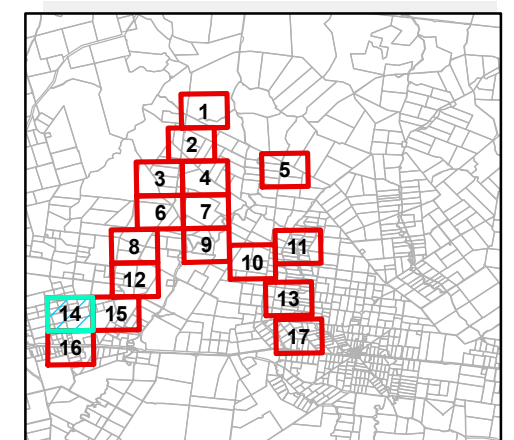
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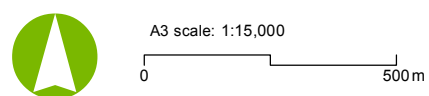


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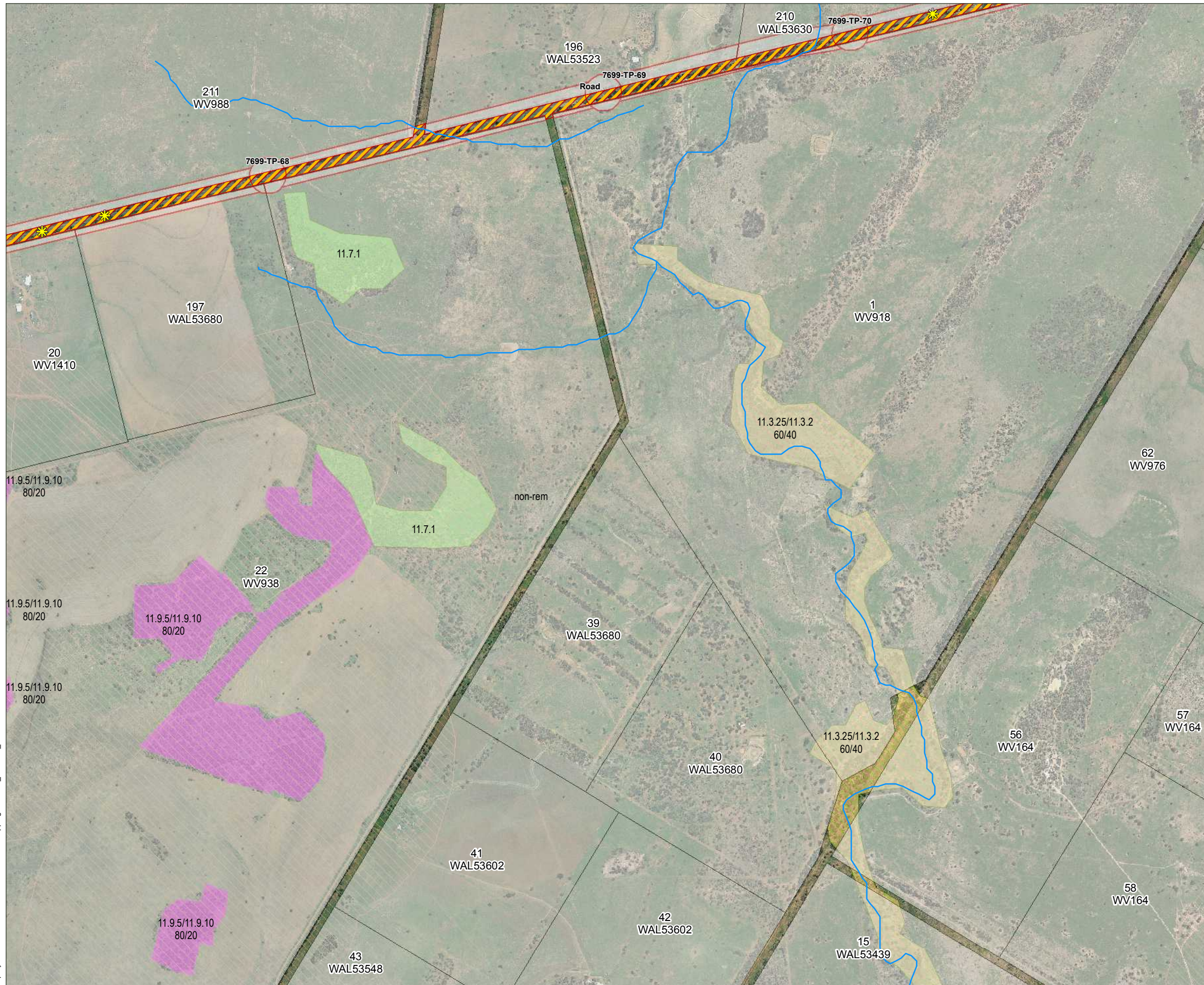
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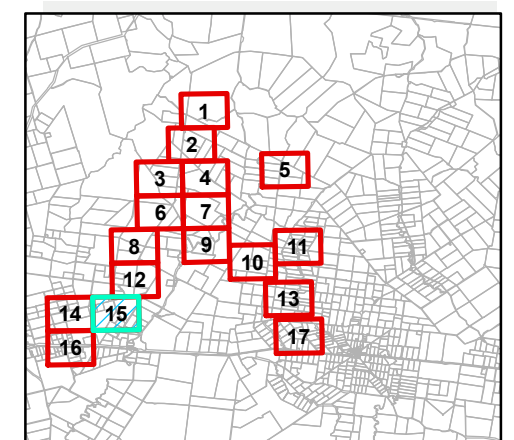
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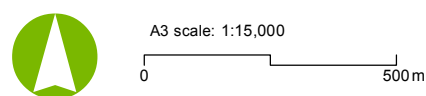


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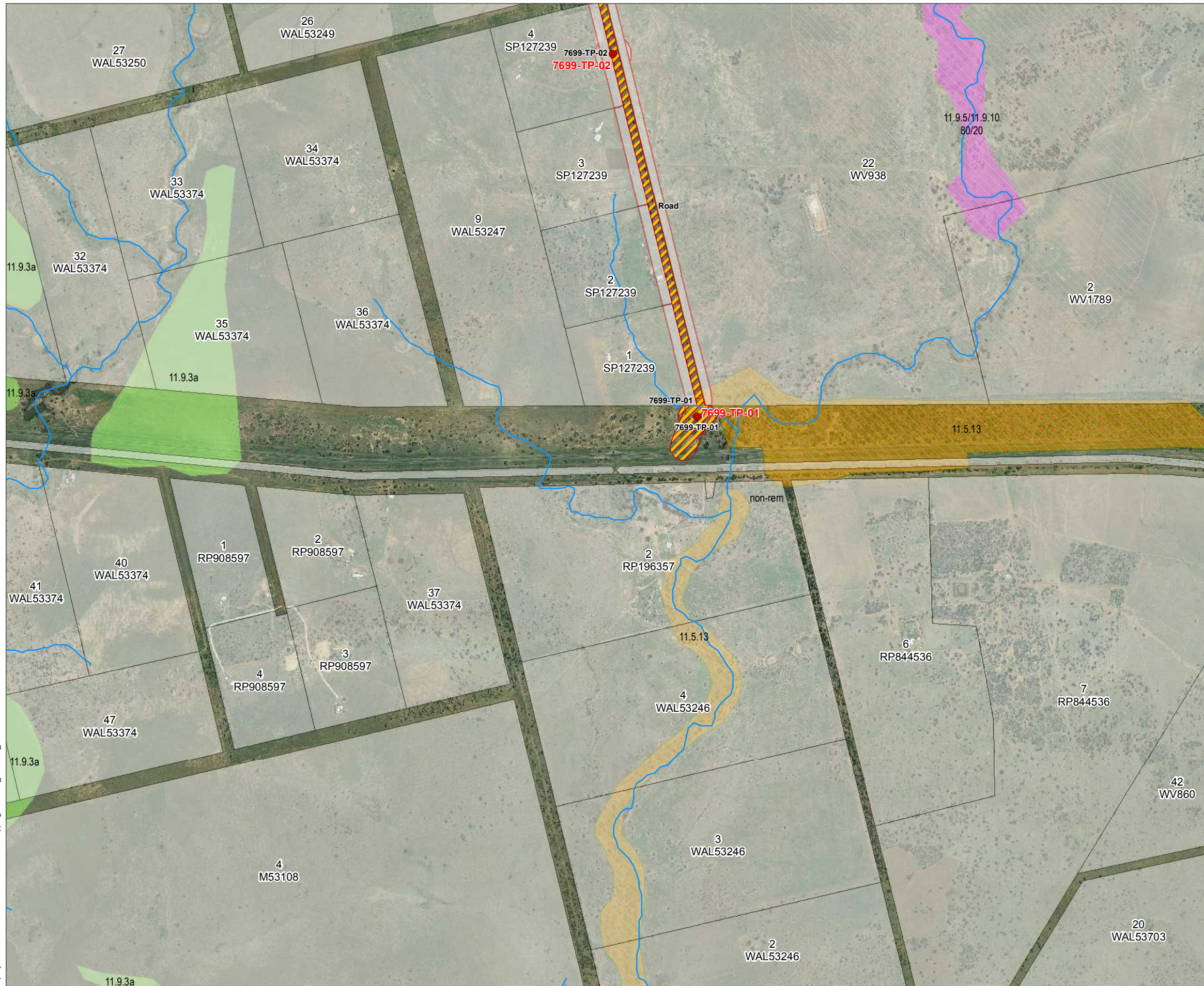
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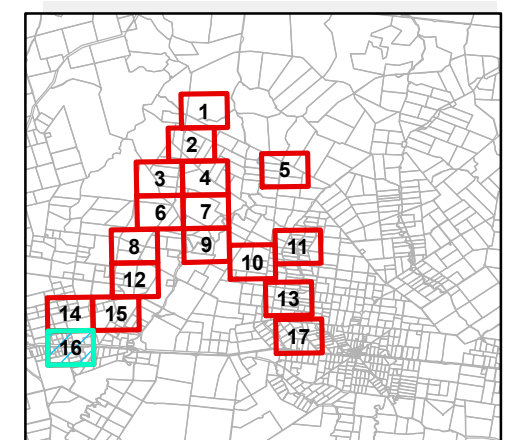
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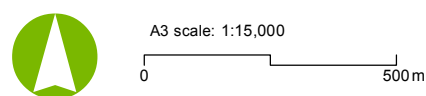


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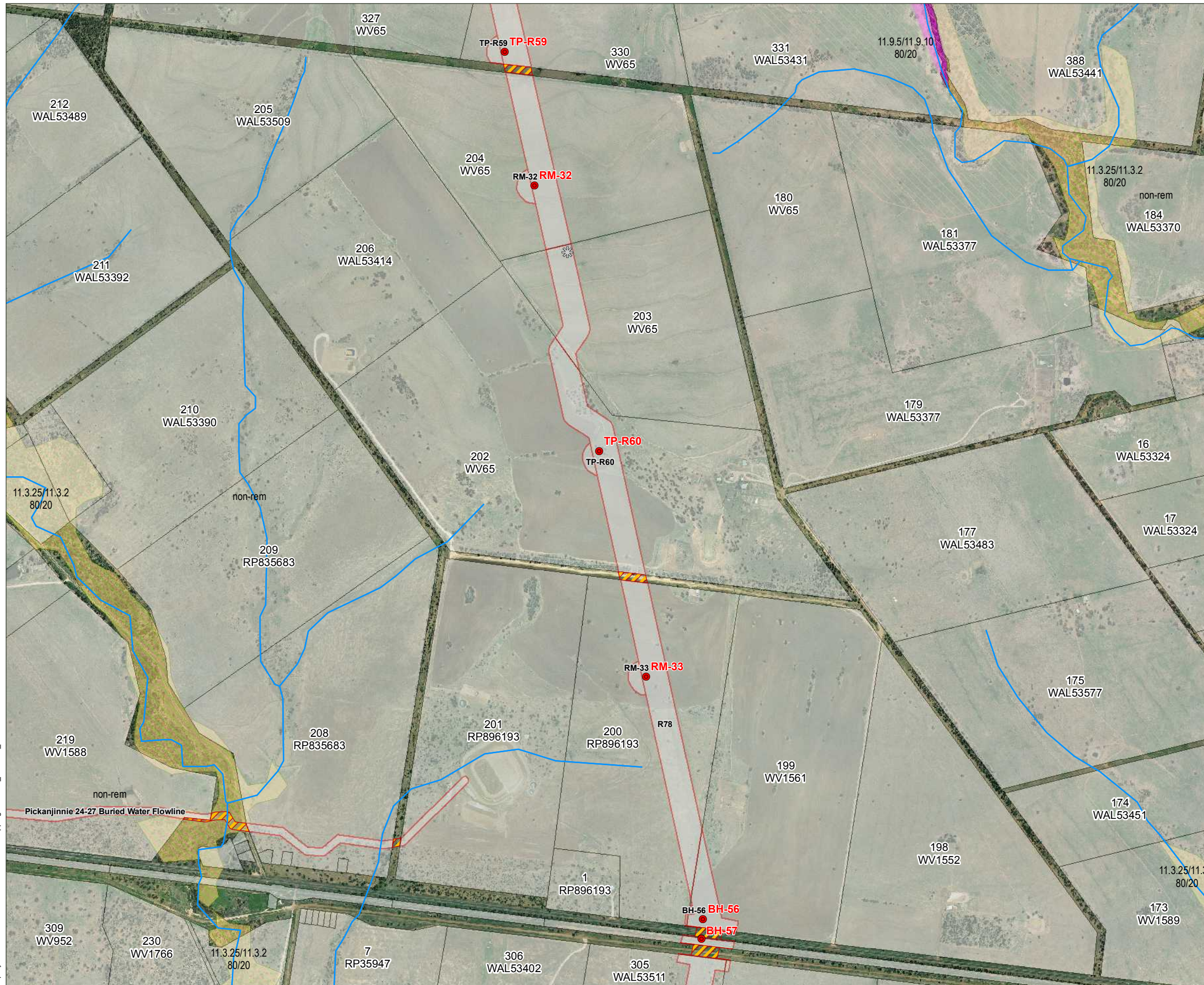
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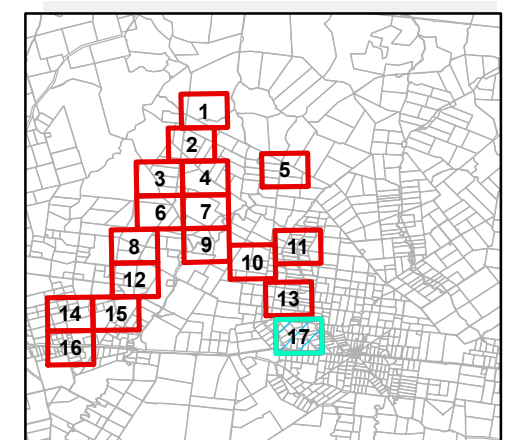
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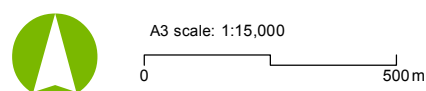


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**Aurecon Australia Pty Ltd**

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