



## CLEARING PERMIT

*Granted under section 51E of the Environmental Protection Act 1986*

<b>Purpose Permit number:</b>	CPS 6078/1
<b>Permit Holder:</b>	Commissioner of Main Roads Western Australia
<b>Duration of Permit:</b>	1 August 2015 – 31 December 2036

The Permit Holder is authorised to clear native vegetation subject to the following conditions of this Permit.

### PART I – CLEARING AUTHORISED

#### 1. Purpose for which clearing may be done

Clearing for the purpose of the Cape Leveque Road upgrade project.

#### 2. Land on which clearing is to be done

LOT 26 ON PLAN 221072 (DAMPIER PENINSULA 6725)  
LOT 259 ON PLAN 220696 (WATERBANK 6725)  
LOT 300 ON PLAN 66643 (WATERBANK 6725)  
LOT 301 ON PLAN 66643 (WATERBANK 6725)  
LOT 302 ON PLAN 75838 (WATERBANK 6725)  
LOT 307 ON PLAN 75838 (WATERBANK 6725)  
LOT 365 ON PLAN 92336 (WATERBANK 6725)  
LOT 850 ON PLAN 66632 (WATERBANK 6725)  
LOT 851 ON PLAN 66631 (WATERBANK 6725)  
ROAD RESERVE (WATERBANK 6725) (PIN 11731918)  
ROAD RESERVE (WATERBANK 6725) (PIN 11731919)  
ROAD RESERVE (WATERBANK 6725) (PIN 11731080)  
ROAD RESERVE (WATERBANK 6725) (PIN 11731082)  
ROAD RESERVE (WATERBANK 6725) (PIN 11731083)  
UNALLOCATED CROWN LAND (WATERBANK 6725) (PIN 1188908)

#### 3. Area of Clearing

The Permit Holder shall not clear more than 297 hectares of native vegetation within the areas cross hatched yellow on attached Plan 6078/1a, 6078/1b, 6078/1c, 6078/1d, 6078/1e, 6078/1f, 6078/1g, 6078/1h, 6078/1i and 6078/1j.

#### 4. Period in which clearing is authorised

The Permit Holder shall not clear any native vegetation after 1 January 2025.

#### 5. Application

This Permit allows the Permit Holder to authorise persons, including employees, contractors and agents of the Permit Holder, to clear native vegetation authorised under this Permit subject to compliance with the conditions of this Permit and approval from the Permit Holder.

## 6. Type of clearing authorised

This Permit authorises the Permit Holder to clear native vegetation for the purpose described in condition 1 of this Permit to the extent that the Permit Holder has the power to carry out works involving clearing for that purpose under the *Main Roads Act 1930* or any other written law.

## PART II – ASSESSMENT SEQUENCE AND MANAGEMENT PROCEDURES

### 7. Avoid, minimise etc clearing

In determining the amount of native vegetation to be cleared authorised under this Permit, the Permit Holder must have regard to the following principles, set out in order of preference:

- (a) avoid the clearing of native vegetation;
- (b) minimise the amount of native vegetation to be cleared; and
- (c) reduce the impact of clearing on any environmental value.

### 8. Weed control

When undertaking any clearing or other activity authorised under this Permit, the Permit Holder must take the following steps to minimise the risk of the introduction and spread of *weeds*:

- (a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- (b) ensure that no *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and
- (c) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

### 9. Fauna management

The Permit Holder must implement and adhere to the document “Main Roads WA – Cape Leveque Road Upgrade – Greater Bilby Management Plan – October 2014 – Rev No. 3” which includes, but is not limited to:

- (a) Prior to clearing, the Permit Holder shall complete a Greater Bilby (*Macrotis lagotis*) survey and staged trapping program that includes:
  - (i) the identification of all Greater Bilby (*Macrotis lagotis*) burrows that occur within, or within 50 metres of, areas to be cleared under this Permit at a time within one week prior to clearing;
  - (ii) trapping at burrows identified under condition 9(a)(i) where Greater Bilby (*Macrotis lagotis*) prints are recorded; and
  - (iii) excavation of burrows identified under condition 9(a)(i) that occur within areas to be cleared.

- (b) The Permit Holder shall relocate all Greater Bilby (*Macrotis lagotis*) individuals captured in accordance with condition 9(a) to *suitable habitat* within one kilometre of the capture site or to an alternative location(s) approved by the *CEO*.

- (c) Prior to opening the upgraded Cape Leveque Road to traffic, the Permit Holder shall install three permanent fauna underpasses that are suitable to allow the movement of Greater Bilby (*Macrotis lagotis*) individuals under the upgraded Cape Leveque Road.

- (d) The fauna underpasses identified under condition 9(c) shall be located within 500 metres of each of the following coordinates unless otherwise approved by the *CEO*:

Underpass Number	Latitude	Longitude
1	-17.5096	122.4242
2	-17.4177	122.5266
3	-17.2040	122.5576

- (e) For the term of this Permit, the Permit Holder shall maintain the fauna underpasses installed in accordance with conditions 9(c) and 9(d) to ensure the underpasses are not obstructed in a manner that would prevent use by Greater Bilby (*Macrotis lagotis*) individuals.

- (f) During the term of the permit, the Permit Holder shall implement a Greater Bilby (*Macrotis lagotis*) monitoring program that includes:
  - (i) monitoring of the persistence of Greater Bilby (*Macrotis lagotis*) individuals relocated in accordance with condition 9(b) for a period not less than two weeks commencing from the date(s) of relocation(s); and
  - (ii) annual monitoring for a period not less than five years commencing within 12 months of the completion of the fauna underpasses identified under conditions 9(c) and 9(d), to assess the persistence of Greater Bilby (*Macrotis lagotis*) populations within 500 metres of the upgraded Cape Leveque Road, and the level of use and effectiveness of the fauna underpasses for Greater Bilby (*Macrotis lagotis*).

#### 10. Offset – threat management

- (a) Prior to undertaking any clearing authorised under this Permit and no later than 31 December 2016, the Permit Holder shall provide documentary evidence to the CEO that funding of \$279,500 has been transferred to the Department of Environment Regulation for the purpose of establishing or maintaining vegetation.
- (b) Prior to 30 June 2018, the Permit Holder shall submit a Threat Management Program to the CEO for the CEO's approval.
- (c) The Threat Management Program shall not be implemented prior to the CEO's approval.
- (d) The Threat Management Program should be developed in consultation with the Department of Parks and Wildlife and must include the following:
  - (i) actions that establish or maintain native vegetation on the Dampier Peninsula to address threats to an identified population(s) of Greater Bilby (*Macrotis lagotis*);
  - (ii) the location of the proposed actions recorded as a map and as a *shapefile*;
  - (iii) timeframes for implementation of the proposed actions over a period not less than three years;
  - (iv) a breakdown of allocation of funds for the proposed actions totalling not less than \$279,500;
  - (v) measurable threat reduction targets; and
  - (vi) a program for reporting actions undertaken including the assessment of achievement of threat reduction targets and reporting of expenditure.
- (e) The Permit Holder shall implement and adhere to the approved Threat Management Program.

#### 11. Revegetation – mitigation and offset

The Permit Holder must implement and adhere to the document "Main Roads Western Australia – Cape Leveque Road Upgrade – Revegetation Management Plan – October 2014 – Rev No. 1" which includes, but is not limited to:

- (a) The Permit Holder shall *revegetate* and *rehabilitate* areas cleared for *temporary works* unless those areas are required for the ongoing operation and maintenance of the upgraded Cape Leveque Road.
- (b) To offset the loss of significant Greater Bilby (*Macrotis lagotis*) habitat, the Permit Holder shall *revegetate* and *rehabilitate* an area of at least 38 hectares within the combined areas shaded red on attached Plan 6078/1a, 6078/1b, 6078/1c, 6078/1d, 6078/1e, 6078/1f, 6078/1g, 6078/1h, 6078/1i and 6078/1j.
- (c) *Revegetation* and *rehabilitation* identified under conditions 11(a) and 11(b) shall commence within 12 months of completion of the Cape Leveque Road upgrade and be completed no later than 31 December 2025.
- (d) The Permit Holder shall monitor annually for a period of 10 years areas *revegetated* and *rehabilitated* to determine vegetation cover, density, diversity, structure and weed cover and to assess areas *revegetated* and *rehabilitated* under this Permit against the completion criteria identified at condition 11(e).

- (e) The Permit Holder shall achieve and maintain the following completion criteria for areas *revegetated* and *rehabilitated* under this Permit:

Completion criteria	Value to be achieved
Mean vegetation cover (excluding weeds)	>50%
Mean number of tall shrub/overstorey stems per hectare	>400 stems per hectare
Species diversity	>160 native flora taxa
Structure - overstorey	>20%
Structure - midstorey	>30%
Structure - understorey	>30%
Mean weed foliage cover	<5%

### **PART III - RECORD KEEPING AND REPORTING**

#### **12. Records must be kept**

The Permit Holder must maintain the following records for activities done pursuant to this Permit:

- (a) In relation to the clearing of native vegetation authorised under this Permit:
- (i) the vegetation cover, density, diversity, structure and weed cover of the cleared area;
  - (ii) the location where the clearing occurred, recorded as a *shapefile*;
  - (iii) the date(s) that the area was cleared; and
  - (iv) the size of the area cleared (in hectares).
- (b) In relation to fauna management pursuant to condition 9 of this Permit:
- (i) the location of each Greater Bilby (*Macrotis lagotis*) burrow identified recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
  - (ii) the date each Greater Bilby (*Macrotis lagotis*) burrow was identified;
  - (iii) the date each Greater Bilby (*Macrotis lagotis*) burrow was excavated;
  - (iv) the location of each Greater Bilby (*Macrotis lagotis*) individual captured recorded using a GPS unit set to GDA94, expressing the geographical coordinates in Eastings and Northings or decimal degrees;
  - (v) the date each Greater Bilby (*Macrotis lagotis*) individual was captured;
  - (vi) the location of the relocation site for each Greater Bilby (*Macrotis lagotis*) captured recorded using a GPS unit set to GDA94, expressing the geographical coordinates in Eastings and Northings or decimal degrees;
  - (vii) the location of each fauna underpass installed recorded using a GPS unit set to GDA94, expressing the geographical coordinates in Eastings and Northings or decimal degrees;
  - (viii) the date each fauna underpass was installed;
  - (ix) the date the upgraded Cape Leveque Road was opened to traffic; and
  - (x) a copy of a report(s), prepared by an *environmental specialist*, detailing the fauna management activities undertaken including the results of the Greater Bilby (*Macrotis lagotis*) monitoring program undertaken in accordance with condition 9(f).
- (c) In relation to threat management pursuant to condition 10 of this Permit:
- (i) a copy of a report(s), prepared by an *environmental specialist*, detailing the Threat Management Program activities undertaken, results and expenditure.
- (d) In relation to the revegetation of areas pursuant to condition 11 of this Permit:
- (i) the location of any area *revegetated* and *rehabilitated* recorded as a *shapefile*;
  - (ii) a description of the *revegetation* and *rehabilitation* activities undertaken;
  - (iii) the size of the area *revegetated* and *rehabilitated* (in hectares);
  - (iv) the date that the area was *revegetated* and *rehabilitated*; and
  - (v) a copy of a report(s), prepared by an *environmental specialist*, detailing the *revegetation* and *rehabilitation* activities undertaken and results for the monitoring of vegetation cover, density, diversity, structure and weed cover.



### 13. Reporting

- (a) The Permit Holder must provide to the *CEO* on or before 30 June of each year, a written report:
- (i) of records required under condition 12 of this Permit; and
  - (ii) concerning activities done by the Permit Holder under this Permit between 1 January to 31 December of the preceding calendar year.
- (b) If no clearing authorised under this Permit was undertaken between 1 January to 31 December of the preceding calendar year, a written report confirming that no clearing under this permit has been carried out, must be provided to the *CEO* on or before 30 June of each year.
- (c) Prior to 30 September 2036, the Permit Holder must provide to the *CEO* a written report of records required under condition 12 of this Permit where these records have not already been provided under condition 13(a) of this Permit.

### DEFINITIONS

The following meanings are given to terms used in this Permit:

*camp(s)* means any facilities required to be established by the Permit Holder at the site of the project such as offices, storerooms, workshops, toilets, washing facilities, accommodation, change rooms, shelter sheds, drying conveniences, mess rooms;

*authorised survey* has the meaning given to it in section 3 of the *Licensed Surveyors Act 1909*;

*CEO* means the Chief Executive Officer of the Department;

*engineering survey* means any inspection or measurement taken by a surveyor engaged by the Permit Holder for the purpose of planning, investigating and designing the project;

*environmental specialist* means a person who holds a tertiary qualification in environmental science or equivalent, and has experience relevant to the type of environmental advice that an environmental specialist is required to provide under this Permit, or who is approved by the CEO as a suitable environmental specialist;

*extraction sites* includes gravel pits, borrow pits, water bores and other sites from which *road building materials* are extracted;

*direct seeding* means a method of re-establishing vegetation through the establishment of a seed bed and the introduction of seeds of the desired plant species;

*fill* means material used to increase the ground level, or fill a hollow;

*geological survey* means a survey conducted in order to obtain information about the suitability of the ground for a project activity, and includes geotechnical surveys;

*local provenance* means native vegetation seeds and propagating material from natural sources within 200 kilometres and the same Interim Biogeographic Regionalisation for Australia (IBRA) subregion of the area cleared.

*mulch* means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation;

*planting* means the re-establishment of vegetation by creating favourable soil conditions and planting seedlings of the desired species;

*pre-construction activities* means establishing storage areas, erecting fences and doing similar activities that are required to be done prior to, and in association with, the carrying out of the project;

*project surveys* means *authorised surveys*, *engineering surveys* and *geological surveys*;

*regenerate/ed/ion* means re-establishment of vegetation from in situ seed banks and propagating material (such as lignotubers, bulbs, rhizomes) contained either within the topsoil or seed-bearing *mulch*;

**rehabilitate/ed/ion** means actively managing an area containing native vegetation in order to improve the ecological function of that area;

**revegetate/ed/ion** means the re-establishment of a cover of *local provenance* native vegetation in an area using methods such as natural *regeneration*, *direct seeding* and/or *planting*, so that the species composition, structure and density is similar to pre-clearing vegetation types in that area.

**road building materials** means rock, gravel, soil, stone, timber, boulders and water;

**shapefile** means an ESRI shapefile consisting of polygons using the Geocentric Datum of Australia 1994 (GDA94);

**suitable habitat** means habitat known to be suitable for Greater Bilby (*Macrotis lagotis*) that contains pre-established artificial burrows;

**temporary works** means access tracks, spoil areas, side tracks, site offices, storage areas, laydown areas, *extraction sites*, *camps*, *project surveys*, *pre-construction activities* and similar works associated with the project that are temporary in nature;

**weed/s** means any plant -

- (a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*; or
- (b) published in a Department of Parks and Wildlife Regional Weed Rankings Summary, regardless of ranking; or
- (c) not indigenous to the area concerned.

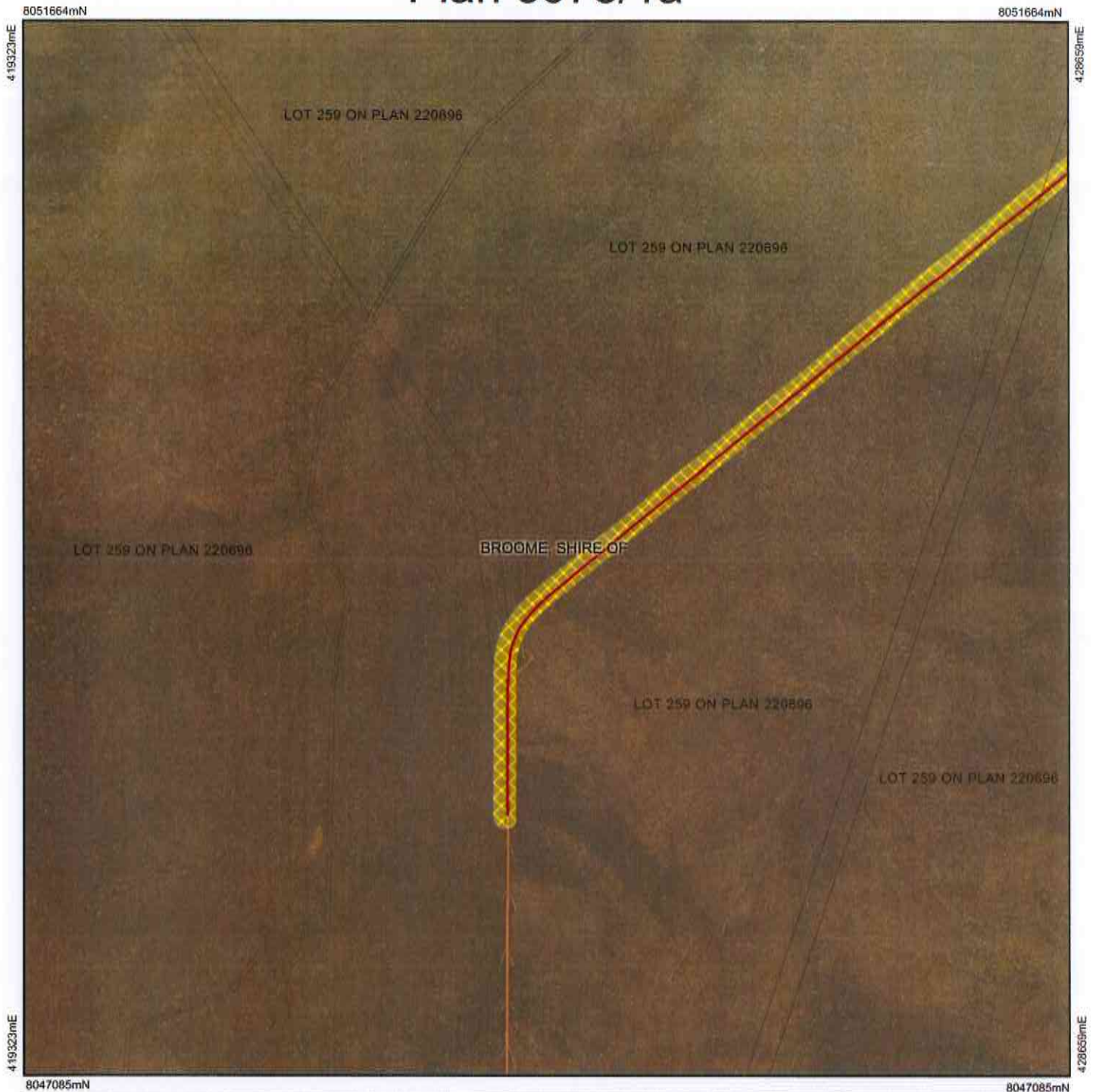


M Warnock  
SENIOR MANAGER  
CLEARING REGULATION

*Officer delegated under Section 20  
of the Environmental Protection Act 1986*

2 July 2015

# Plan 6078/1a



## Legend

-  Cadastre
-  Imagery
-  Clearing Instruments Activities
-  Local Government Authority
-  Clearing Instruments Conditions



1:49,372

(Approximate when reproduced at A4)

UTM Zone 51S

World Geodetic System 1984

*M Warnock* Date *2/7/15*  
M Warnock

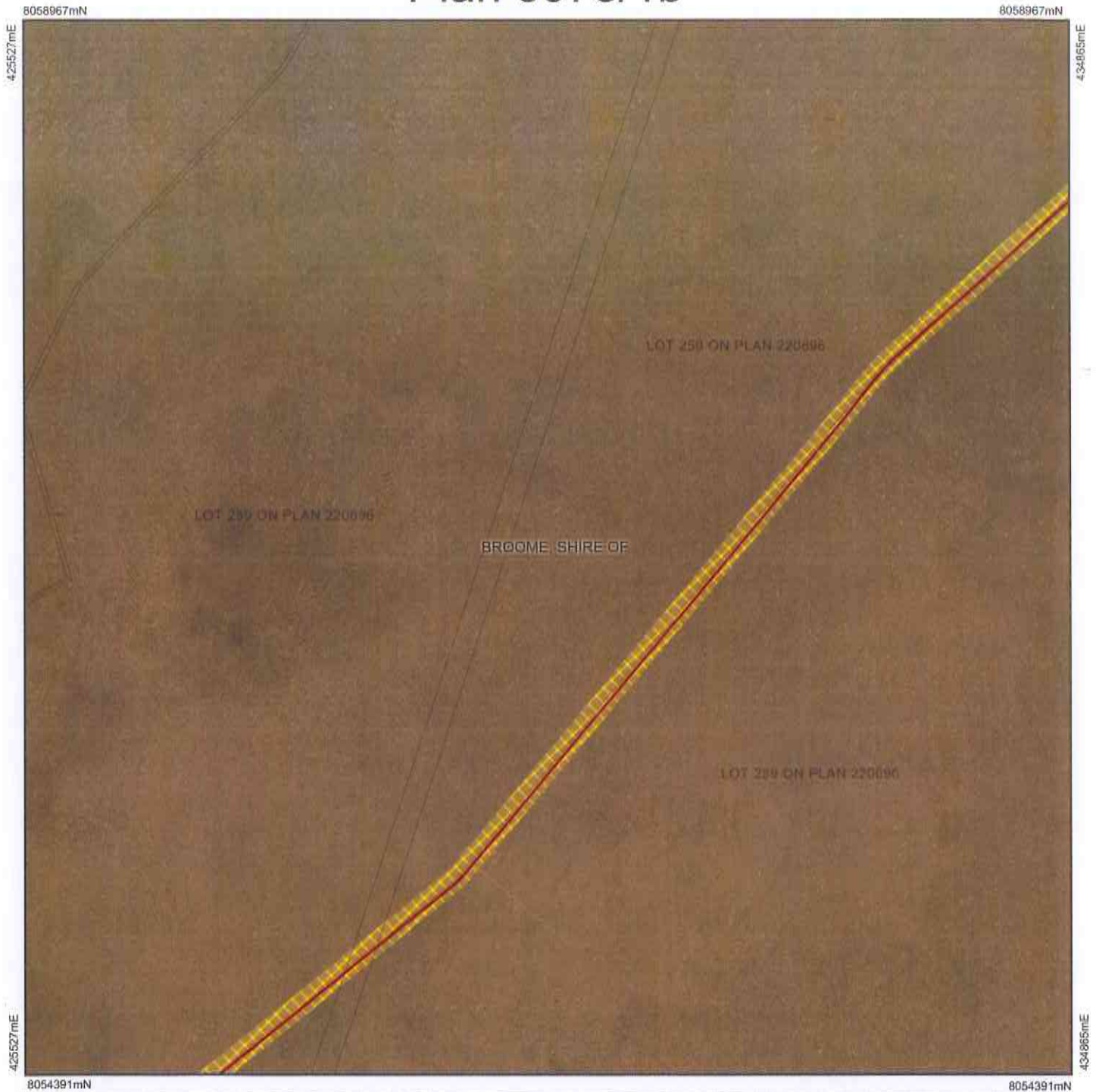
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# Plan 6078/1b



## Legend

-  Cadastre
-  Imagery
-  Clearing Instruments Activities
-  Local Government Authority
-  Clearing Instruments Conditions



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UTM Zone 51S

World Geodetic System 1984

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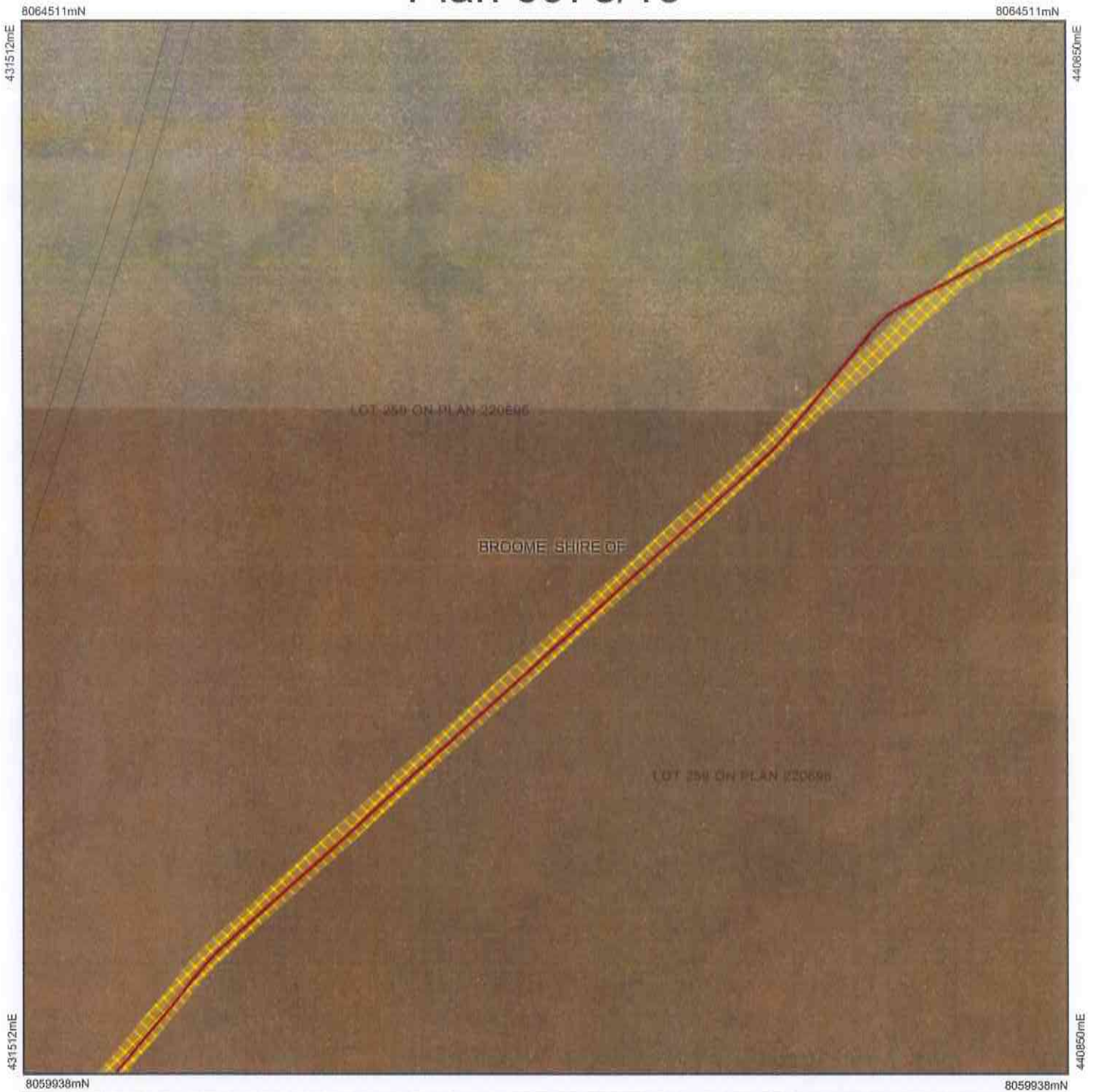
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# Plan 6078/1c



## Legend

-  Cadastre
-  Imagery
-  Clearing Instruments Activities
-  Local Government Authority
-  Clearing Instruments Conditions



1:49,402

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UTM Zone 51S

World Geodetic System 1984

*M Warnock* Date 2/7/15

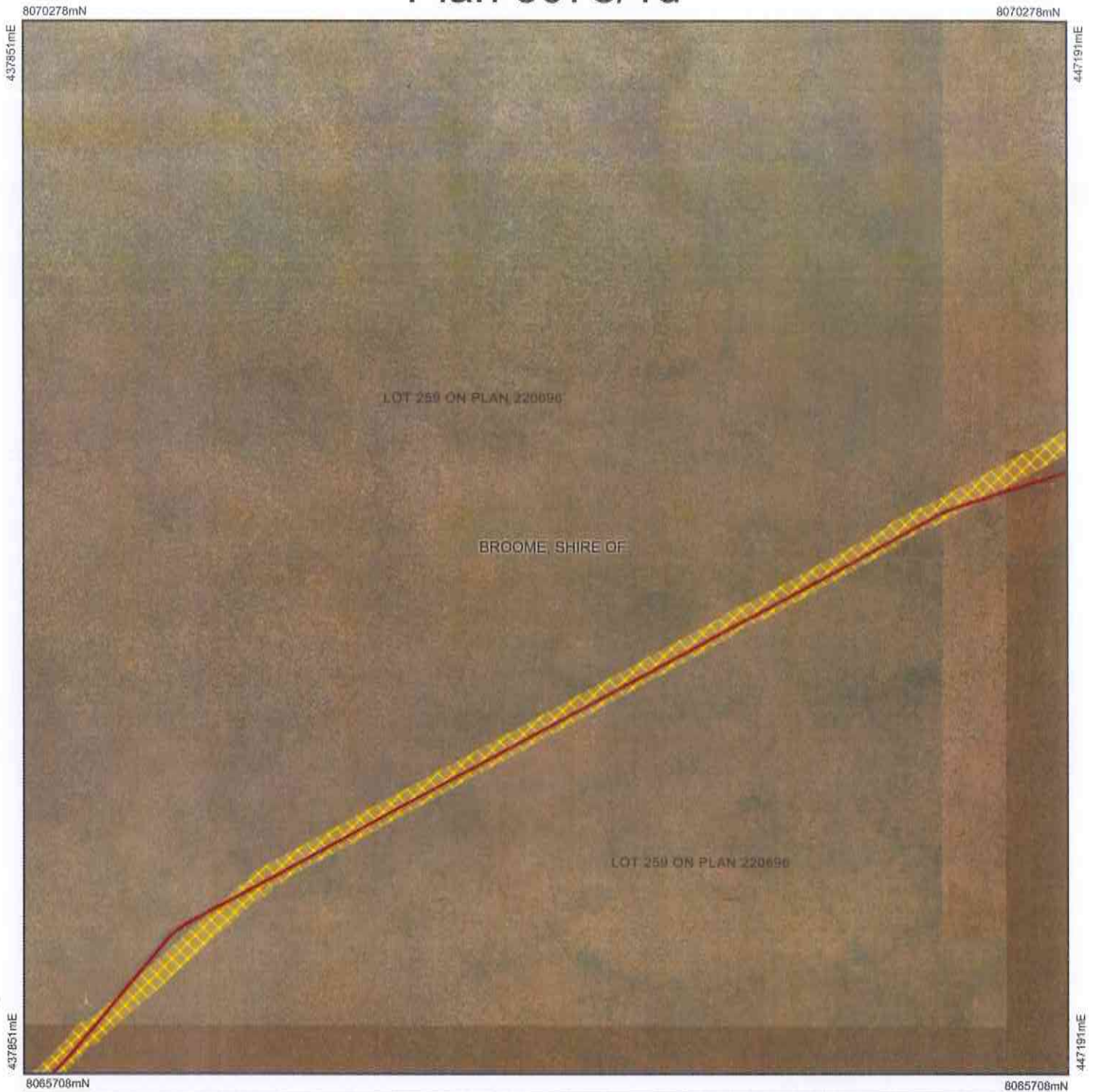
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# Plan 6078/1d



## Legend

-  Cadastre
-  Imagery
-  Clearing Instruments Activities
-  Local Government Authority
-  Clearing Instruments Conditions



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UTM Zone 51S  
World Geodetic System 1984

*M Warnock* Date *2/7/15*  
M Warnock

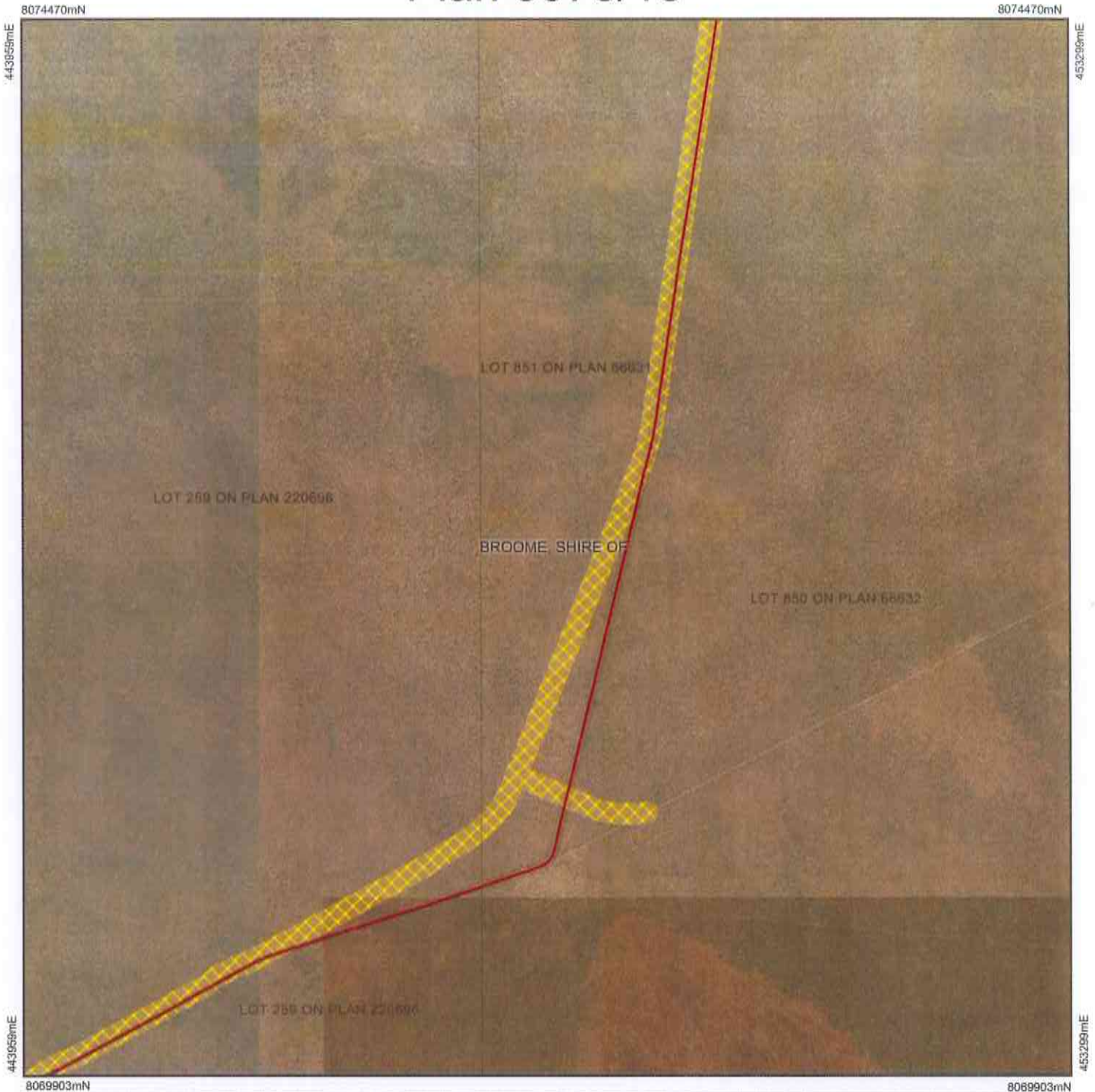
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# Plan 6078/1e



## Legend

-  Cadastre
-  Imagery
-  Clearing Instruments Activities
-  Local Government Authority
-  Clearing Instruments Conditions



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UTM Zone 51S

World Geodetic System 1984

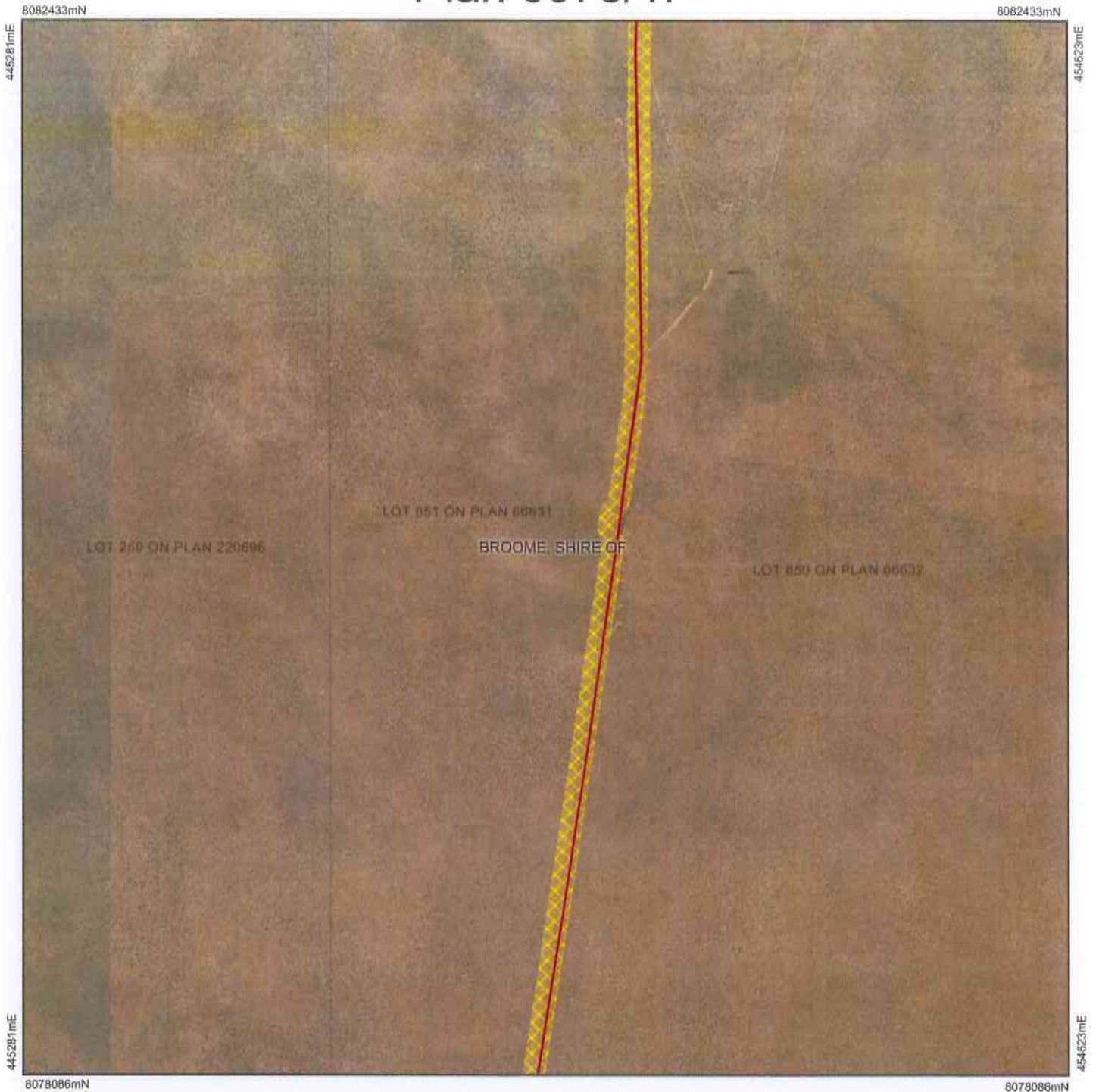
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# Plan 6078/1f



## Legend

-  Cadastre
-  Imagery
-  Clearing Instruments Activities
-  Local Government Authority
-  Clearing Instruments Conditions



1:49,445

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UTM Zone 51S

World Geodetic System 1984

*M Warnock* Date *2/7/15*  
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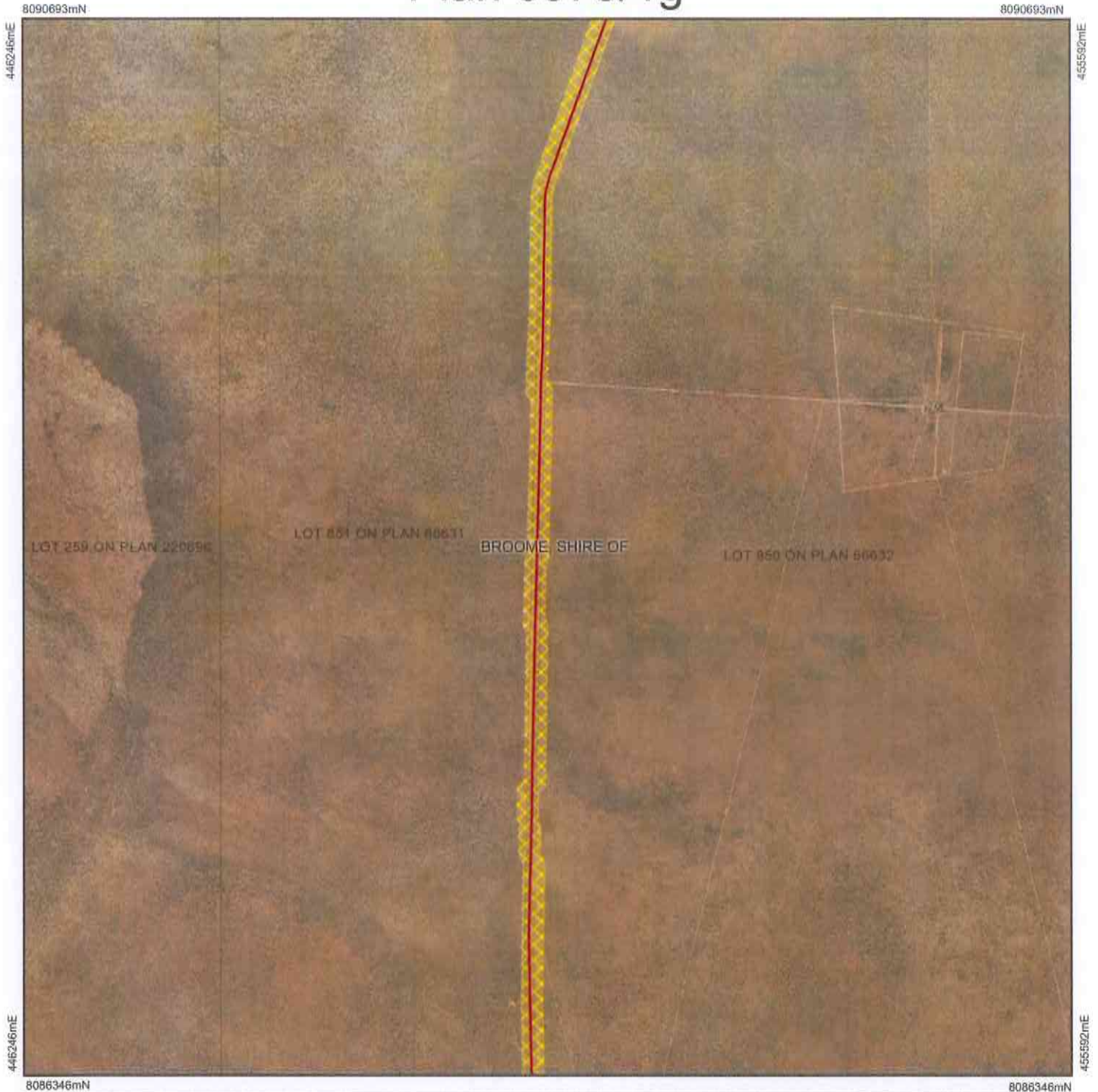
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# Plan 6078/1g



## Legend

-  Cadastre
-  Imagery
-  Clearing Instruments Activities
-  Local Government Authority
-  Clearing Instruments Conditions



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UTM Zone 51S

World Geodetic System 1984

*M Wamock* Date *2/7/15*

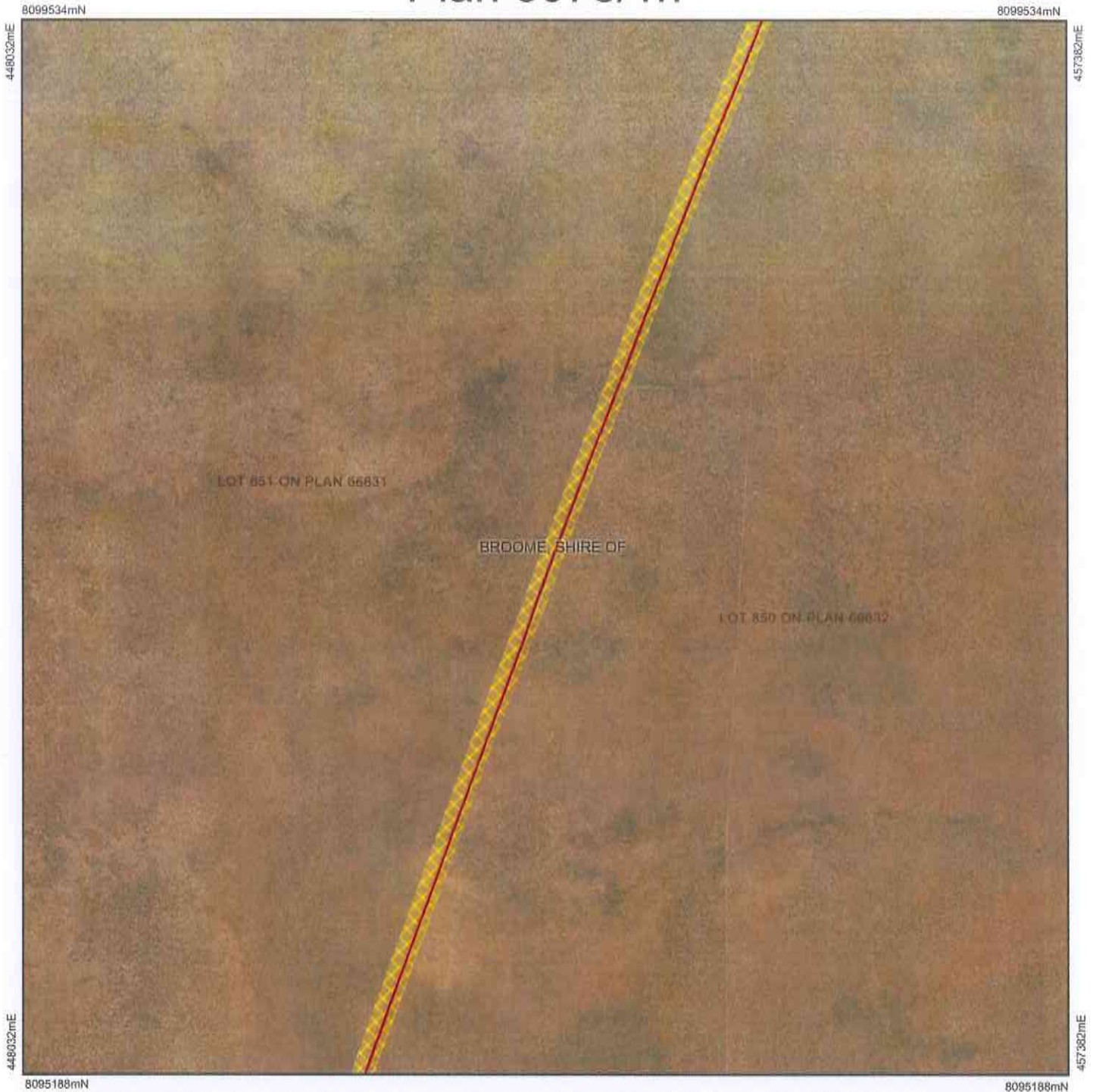
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# Plan 6078/1h



## Legend

-  Cadastre
-  Imagery
-  Clearing Instruments Activities
-  Local Government Authority
-  Clearing Instruments Conditions



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UTM Zone 51S

World Geodetic System 1984

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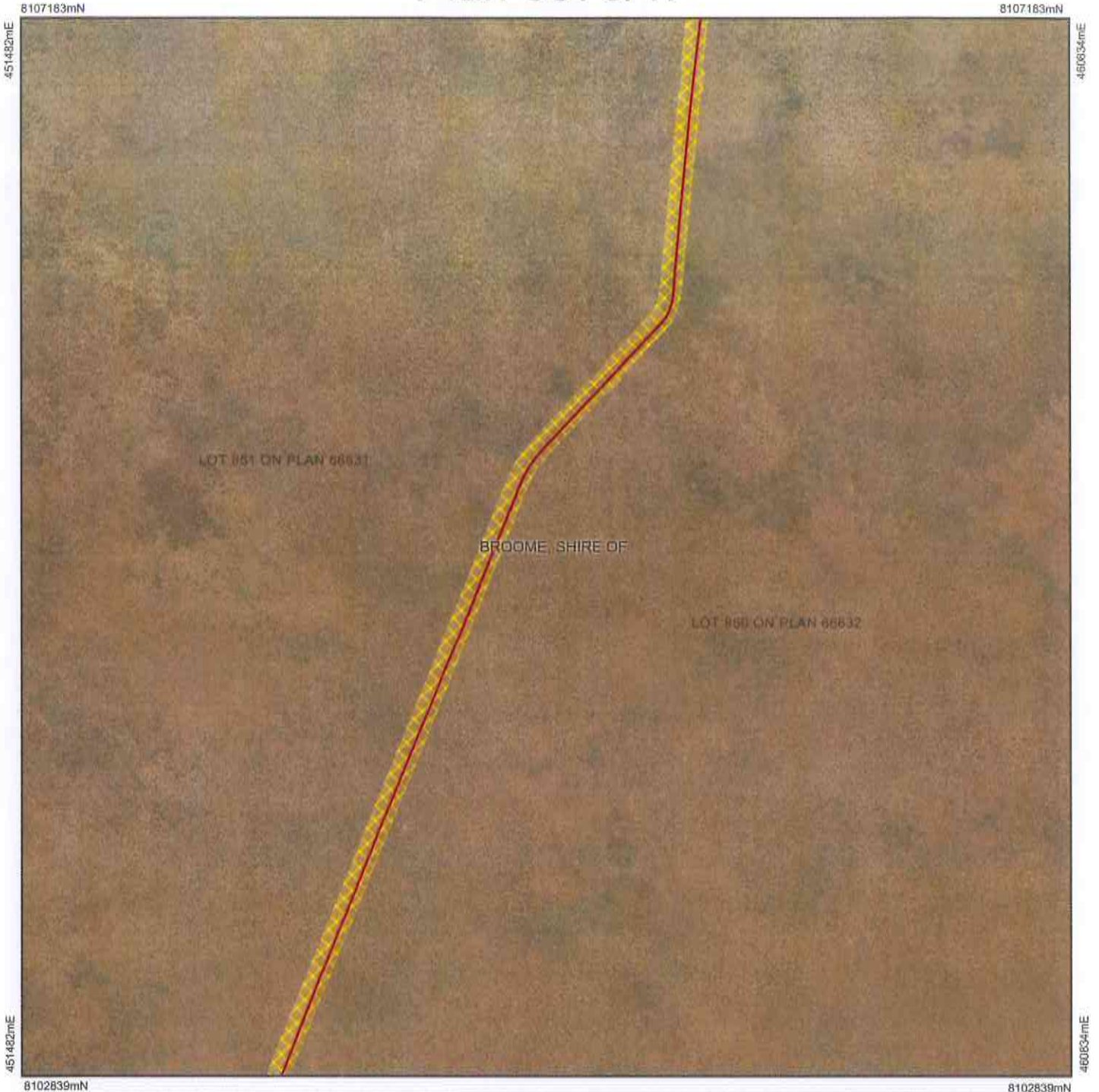
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# Plan 6078/1i



## Legend

-  Cadastre
-  Imagery
-  Clearing Instruments Activities
-  Local Government Authority
-  Clearing Instruments Conditions



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UTM Zone 51S  
World Geodetic System 1984

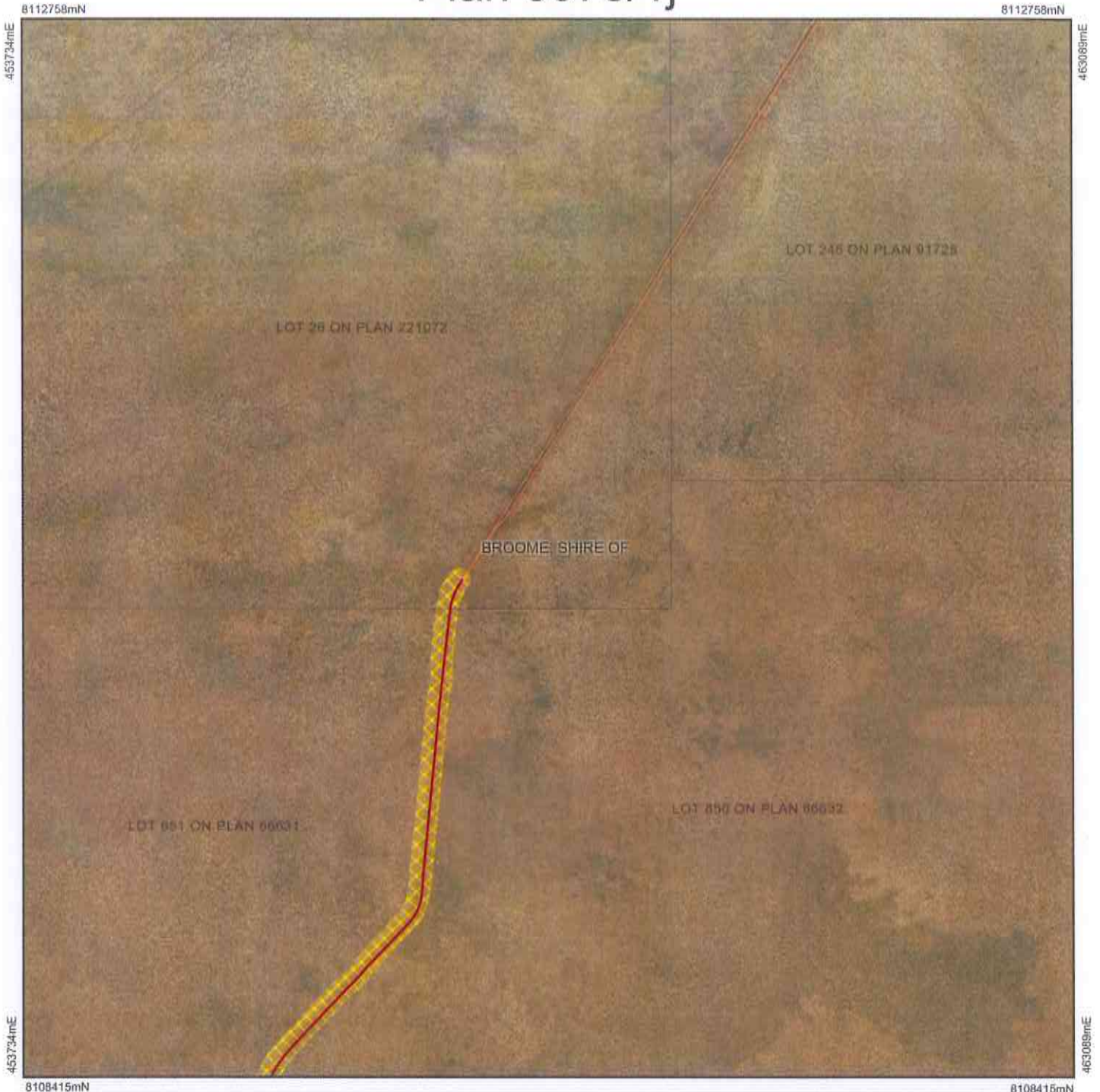
*M Warnock* Date 2/7/15  
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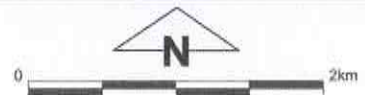
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# Plan 6078/1j



## Legend

-  Cadastre
-  Imagery
-  Clearing Instruments Activities
-  Local Government Authority
-  Clearing Instruments Conditions



1:49,518  
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World Geodetic System 1984

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## 1. Application details

### 1.1. Permit application details

Permit application No.: 6078/1  
Permit type: Purpose Permit

### 1.2. Proponent details

Proponent's name: Commissioner of Main Roads WA

### 1.3. Property details

Property: LOT 851 ON PLAN 66631, WATERBANK  
LOT 850 ON PLAN 66632, WATERBANK  
LOT 365 ON PLAN 92336, WATERBANK  
LOT 307 ON PLAN 75838, WATERBANK  
LOT 302 ON PLAN 75838, WATERBANK  
LOT 301 ON PLAN 66643, WATERBANK  
LOT 300 ON PLAN 66643, WATERBANK  
LOT 26 ON PLAN 221072, DAMPIER PENINSULA  
LOT 259 ON PLAN 220696, WATERBANK  
UNALLOCATED CROWN LAND, WATERBANK  
ROAD RESERVE - 11731082, WATERBANK  
ROAD RESERVE - 11731083, WATERBANK  
ROAD RESERVE - 11731080, WATERBANK  
ROAD RESERVE - 11731918, WATERBANK  
ROAD RESERVE - 11731919, WATERBANK  
BROOME, SHIRE OF

Local Government Authority: BROOME, SHIRE OF  
DER Region: North West  
DPaW District: WEST KIMBERLEY  
LCDC: BROOME  
Localities: WATERBANK and DAMPIER PENINSULA

### 1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
297		Mechanical Removal	Road construction or upgrades

### 1.5. Decision on application

Decision on Permit Application: Granted  
Decision Date: 02 July 2015

## 2. Site Information

### 2.1. Existing environment and information

#### 2.1.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
Beard Vegetation Association (Shepherd et al. 2001): 750 - Shrublands, pindan; <i>Acacia tumida</i> shrubland with grey box & cabbage gum medium woodland over ribbon grass & curly spinifex.	The application is to clear up to 297 hectares of native vegetation within various properties for the purpose of upgrading a 77.6 kilometre section (SLK 25 to SLK 102.6) of Cape Leveque Road to a sealed standard. The application includes clearing for construction of a new road formation (generally located parallel to the existing alignment), the upgrade of approximately two kilometres of a side road, 36 borrow pits, offshoot drains, access tracks, and contingency amounts for associated works. The works are proposed to take place during the dry season (May to October) from 2015-2019.	Excellent; Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994).  To  Completely Degraded: No longer intact; completely/almost completely without native species (Keighery 1994)	The vegetation condition of the application area was determined by a flora and vegetation survey undertaken by GHD (GHD 2013). Vegetation condition is predominantly excellent (Keighery, 1994) except for approximately three per cent of the application area which is completely degraded (Keighery, 1994) due to the presence of tracks and other previously cleared areas.
Vegetation units as identified by GHD (GHD 2013): Pindan woodland - <i>Corymbia greeniana</i> , <i>Eucalyptus tectifica</i> , <i>Brachychiton diversifolius</i> and occasionally <i>E. jensenii</i> low woodland over <i>Acacia ancistrocarpa</i> , <i>Dodonaea hispidula</i> and <i>A. hippuroides</i> mixed shrubland over <i>Sorghum plumosa</i> , <i>S. stipoideum</i> tall tussock grassland over <i>Glycine tomentella</i> , <i>Galactia tenuiflora</i> and <i>Gossypium rotundifolium</i> low sparse vineland.			

### 3. Assessment of application against clearing principles

#### (a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

##### Comments

##### Proposal is at variance to this Principle

Main Roads Western Australia (MRWA) proposes to clear up to 297 hectares of native vegetation for the purpose of upgrading a 77.6 kilometre section of Cape Leveque Rd to a sealed standard. The clearing is proposed to occur within a 200 metre wide corridor which is predominantly centred on the existing Cape Leveque Road alignment. Clearing will be required for the following activities (GHD 2014a):

- A new 20-30 metre wide road alignment proposed to be located generally parallel to the existing alignment (172.05 hectares). This includes clearing for a side road approximately 2 kilometres long.
- Extraction of road building materials from 36 proposed borrow pits (60.95 hectares).
- Construction of offshoot drains that will be located approximately every 170 metres (22 hectares).
- Installation of access tracks (5 hectares).
- Additional works (20 per cent contingency – 52 hectares).

There is approximately 15 hectares of overlap between the new road alignment and proposed borrow pits.

The vegetation under application is largely uniform and is generally comprised of Eucalyptus and/or Corymbia low woodland over a mixed shrubland and Sorghum dominated tussock grassland. Approximately 97 per cent of the vegetation under application is in excellent (Keighery 1994) condition with the remainder in a completely degraded (Keighery, 1994) condition (GHD 2013).

A total of 205 flora taxa were recorded during flora and vegetation surveys undertaken for the proposal. This includes five introduced flora taxa and five conservation significant flora taxa. No rare flora was identified during the surveys and no rare flora is considered likely to occur within the application area. Of the conservation significant flora taxa identified, two are considered to represent range extensions (*Phyllanthus virgatus* and *Alloteropsis semialata*). The remaining three taxa are Priority 1 (P1) flora (*Glycine pindanica*, *Ipomoea* sp. A Kimberley Flora and *Jacquemontia* sp. Broome) (GHD 2013).

Based on survey results, it is estimated that thousands of individuals of *Glycine pindanica* occur both within and adjacent to the application area. *Jacquemontia* sp. Broome was recorded as occurring sparsely over a length of approximately 50 kilometres of the application area. *Phyllanthus virgatus* and *Alloteropsis semialata* both exhibit wide distributions across Australia. Based on this information and the narrow and linear nature of the proposed clearing, the proposal is not expected to result in significant residual impacts to *Glycine pindanica*, *Jacquemontia* sp. Broome, *Phyllanthus virgatus* or *Alloteropsis semialata* (Parks and Wildlife 2014a).

Prior to surveys being undertaken for the proposal, *Ipomoea* sp. A Kimberley Flora was known from a single location. Surveys for the proposal recorded *Ipomoea* sp. A Kimberley Flora frequently along an approximately seven kilometre long section of the application area. A limited number of individuals were recorded at a second confined location approximately 10 kilometres north (GHD 2013).

Approximately 25 per cent of the *Ipomoea* sp. A Kimberley Flora individuals recorded occur within the proposed road alignment. Little is known of the species but given the proposal involves the clearing of a narrow linear corridor through a highly vegetated area, the clearing is not considered to pose a significant risk to the conservation status of the taxon (Parks and Wildlife 2014c).

A number of occurrences of a threatened ecological community (TEC) are mapped within 20 kilometres of the application area. The closest mapped occurrence of this TEC ('Vine thickets on coastal sand dunes of Dampier Peninsula') (Vulnerable) is located approximately 10 kilometres west of the southernmost extent of the application area. Surveys of the application area found that the vegetation proposed to be cleared is largely uniform and did not support any TECs (GHD 2013). Given the distance to the nearest mapped TEC and that the local area remains intact with remnant native vegetation, no direct or indirect impacts to TECs are expected from the proposed clearing.

The closest priority ecological community (PEC) to the application area is the Priority 3 (P3) 'Assemblages of Lolly Well Springs wetland complex'. This PEC is mapped approximately 15 kilometres north of the application area. The application area is not expected to support occurrences of this PEC or result in indirect impacts to this community.

A targeted greater bilby (*Macrolis lagotis*) (Vulnerable) survey for the proposal identified the presence of bilbies within the application area. At one location a bilby was recorded on a motion sensor camera. Ten active burrows were recorded within the general area at this location. In total, 48 observations of diggings, 19 active burrow entrances and 10 in-active or old burrows were recorded during the survey (GHD 2013).

Burrows were recorded at two main locations within the application area approximately 35 kilometres apart. Diggings were recorded from numerous locations across the entire application area. It is considered that the entire application area provides suitable foraging, breeding and sheltering habitat for the greater bilby.

Given the application area contains excellent condition vegetation which is significant habitat for the greater bilby, the proposed clearing is at variance to this Principle.



An offset proposal was requested from the applicant to address the loss of up to 297 hectares of significant greater bilby habitat. The approved offset package includes:

- revegetation of 38 hectares of the redundant road alignment; and
- implementation of a Threat Management Program that includes on-ground management actions to the value of at least \$279,500 that establish or maintain native vegetation on the Dampier Peninsula in a manner that addresses threats to an identified population(s) of the greater bilby.

**Methodology**

References:

- GHD (2013)
- GHD (2014a)
- Keighery (1994)
- Parks and Wildlife (2014a)
- Parks and Wildlife (2014c)

GIS Database:

- SAC Bio Datasets (accessed June 2015)

**(b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.**

**Comments**

**Proposal is at variance to this Principle**

Numerous fauna species of conservation significance have been recorded in the local area (20 kilometre radius). Records of four species listed as rare or likely to become extinct under the *Wildlife Conservation Act 1950* occur within the vicinity of the application area. This includes records of the great knot (*Calidris tenuirostris*) (Vulnerable), eastern curlew (*Numenius madagascariensis*) (Vulnerable), greater bilby (*Macrotis lagotis*) (Vulnerable) and golden bandicoot (*Isodon auratus* subsp. *auratus*) (Vulnerable). Records of one Priority 2 (P2) species (yellow-lipped cave bat (*Vespadelus douglasorum*)), three Priority 4 (P4) species (Australian bustard (*Ardeotis australis*), bush stone-curlew (*Burhinus grallarius*) and little bittern (*Ixobrychus minutus*)) and 29 species protected under an international agreement also occur within the application area (Parks and Wildlife 2007-).

An additional four species of conservation significance are considered to have the potential to occur in the application area. These include the red goshawk (*Erythrotriorchis radiatus*) (Vulnerable), masked owl (*Tyto novaehollandiae kimberli*) (P1), gouldian finch (*Erythrura gouldiae*) (P4) and pictorella mannikin (*Heteromunia pectoralis*) (P4) (GHD 2013).

Fauna surveys of the application area identified the presence of 125 native species and three introduced species including 86 birds, 26 reptiles, 11 mammals (including the three introduced species) and five amphibians. A total of four species of conservation significance were recorded in the surveys. This included the greater bilby (Vulnerable), Australian bustard (P4), fork-tailed swift (*Apus pacificus*) (protected under an international agreement) and the rainbow bee-eater (*Merops ornatus*) (protected under international agreement) (GHD 2013).

The great knot and eastern curlew are known from coastal habitat types which do not occur within the application area. The golden bandicoot is currently only known from the Kimberley region in northern Western Australia (WA), and Marchinbar Island off the coast of the Northern Territory (NT) (DotE 2014a). The application area does not include habitat similar to that which supports remaining populations of the golden bandicoot. The application area is also located south of all known WA populations of the species. The application area is not considered likely to comprise the whole, or a part of, or be necessary for the maintenance of, significant habitat for the great knot, eastern curlew or golden bandicoot.

The application area is not considered likely to support significant habitat for the yellow-lipped cave bat, Australian bustard, bush stone-curlew, little bittern, red goshawk, masked owl, pictorella mannikin, fork-tailed swift or rainbow bee-eater. The Dampier Peninsula has been described as presenting a relatively uniform environment (Kenneally et al. 1996 in GHD 2013), and the local area (20 kilometre radius) is expected to support an abundance of similar suitable habitat for the aforementioned species.

The gouldian finch (P4) was recorded from the Dampier Peninsula in 2012 by indigenous rangers. The observation was from within the application area. Fauna surveys of the application area did not identify the species; however, suitable habitat was identified near the location of the 2012 record. Approximately 14 hectares of the application area was identified as being suitable breeding habitat for gouldian finches (GHD 2013). Given the local area (20 kilometre radius) is expected to support a large amount of similar suitable habitat, the clearing is not considered likely to result in significant residual impacts to the gouldian finch.

A targeted greater bilby survey for the proposal identified the presence of bilbies within the application area. At one location a bilby was recorded on a motion sensor camera. Ten active burrows were recorded within the general area at this location. In total, 48 observations of diggings, 19 active burrow entrances and 10 in-active or old burrows were recorded during the survey (GHD 2013).

Greater bilby burrows were recorded at two main locations within the application area approximately 35 kilometres apart. Diggings were recorded from numerous locations across the entire application area. It is considered that the entire application area provides suitable foraging, breeding and sheltering habitat for the greater bilby.

Historically the greater bilby occupied a vast area of Australia with records from all states except Victoria and Tasmania. In WA, the distribution of the greater bilby extended from the Dampier Peninsula in the north to the Wheatbelt in the southwest.

The species is now restricted to the Pilbara and Kimberley in WA, the Tanami, Great Sandy and Gibson deserts in NT, and an isolated population in southwest Queensland (Pavey 2006). The current distribution of the greater bilby is reported as being strongly correlated to the absence or limited abundance of foxes, rabbits and stock (DEC 2012; Abbott 2001 in DotE 2014b; Southgate 1990 in DotE 2014b). The fox and rabbit were not recorded in fauna surveys of the application area (GHD 2013).

Known/potential threats to the greater bilby include predation by introduced animals (fox, feral cat), competition with introduced herbivores (rabbits, stock), habitat degradation/destruction, unsuitable fire regimes, mining and other development, drought and road mortality (Pavey 2006).

The population of the greater bilby recorded within the application area is located at the north western edge of the known state and national distribution of the species. Accordingly, the population is of considerable importance to the conservation of the species (Parks and Wildlife 2014b). The proposal will result in the loss of up to 297 hectares of suitable foraging, breeding and sheltering habitat for the greater bilby. The proposal has the potential to result in a number of other impacts to the greater bilby including:

- disruption of breeding cycles of resident individuals;
- disruption of normal behavioural patterns;
- direct mortalities from clearing activities;
- indirect mortalities through loss of shelter;
- increased predation through creation of more favourable conditions for introduced predators (e.g. increased subsistence of water in borrow pits and roadside drains);
- increased fire risks including subsequent mortalities and habitat loss; and
- increased habitat fragmentation/barrier effects through widening of the existing road corridor (the proposal includes clearing of a 20 to 30 metre wide corridor predominantly located immediately adjacent to, and parallel with, the existing 10 to 20 metre wide road formation).

To address potential impacts to the greater bilby, MRWA has proposed a number of avoidance, management and mitigation measures. These include (GHD 2014b; GHD 2014c):

- limiting the size of the project footprint;
- constructing and maintaining fauna underpasses;
- undertaking pre-clearing trapping and relocation;
- post-disturbance greater bilby monitoring (including monitoring of greater bilby persistence and use of fauna underpasses);
- imposing limitations on night works;
- fire management;
- weed management;
- introduced fauna management; and
- rehabilitation of borrow pits and temporary access tracks including shaping of borrow pits in a manner that provides a low side or drainage outlet where possible to avoid ponding.

As the application area comprises significant habitat for the greater bilby, the proposed clearing is at variance to this Principle.

An offset proposal was requested from the applicant to address the loss of up to 297 hectares of significant greater bilby habitat. The approved offset package includes:

- revegetation of 38 hectares of the redundant road alignment; and
- implementation of a Threat Management Program that includes on-ground management actions to the value of at least \$279,500 that establish or maintain native vegetation on the Dampier Peninsula in a manner that addresses threats to an identified population(s) of the greater bilby.

#### Methodology

#### References:

- Abbott (2001)
- DEC (2012)
- DotE (2014a)
- DotE (2014b)
- GHD (2013)
- GHD (2014b)
- GHD (2014c)
- Kenneally et al. (1996)
- Parks and Wildlife (2007- )
- Parks and Wildlife (2014b)
- Pavey (2006)
- Southgate (1990)



**(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.**

**Comments**      **Proposal is not likely to be at variance to this Principle**  
 No records of rare flora occur within 20 kilometres of the application area. A number of records of a rare flora species occur approximately 30 kilometres south of the application area near the Broome town site. No other records of rare flora occur within 100 kilometres of the application area.

Flora surveys of the application area did not identify any rare flora, and no suitable habitat for the rare flora species which occurs approximately 30 kilometres south of the application area was identified (GHD 2013). The native vegetation to be cleared is not considered likely to include or be necessary for the continued existence of rare flora.

The proposed clearing is not likely to be at variance to this Principle.

**Methodology**    References:  
 -GHD (2013)

GIS Database:  
 -SAC Bio Datasets (accessed June 2015)

**(d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.**

**Comments**      **Proposal is not likely to be at variance to this Principle**  
 A number of occurrences of a TEC are mapped within 20 kilometres of the application area. The closest mapped occurrence of this TEC ('Vine thickets on coastal sand dunes of Dampier Peninsula') (Vulnerable) is located approximately 10 kilometres west of the southernmost extent of the application area.

Surveys of the application area found that the vegetation proposed to be cleared is largely uniform and did not support any TECs (GHD 2013). Given the distance to the nearest mapped TEC and the fact that the local area remains intact with remnant native vegetation, no direct or indirect impacts to TECs are expected from the proposed clearing.

The proposed clearing is not likely to be at variance to this Principle.

**Methodology**    References:  
 -GHD (2013)

GIS Database:  
 -SAC Bio Datasets (accessed June 2015)

**(e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.**

**Comments**      **Proposal is not at variance to this Principle**  
 The National Objectives and Targets for Biodiversity Conservation include a target that prevents the clearance of ecological communities with an extent below 30 per cent of that present pre-European settlement (Commonwealth of Australia 2001).

The application area is located within the Dampierland Bioregion, as identified in the Interim Biogeographic Regionalisation for Australia (IBRA), and the Shire of Broome. Both retain at least 99 per cent of their pre-European extent of native vegetation. The application area is mapped as Beard Vegetation Association (BVA) 750. BVA 750 retains approximately 100 per cent of its pre-European extent of native vegetation. The local area (20 kilometre radius) is also estimated to retain approximately 100 per cent of its pre-European extent of native vegetation.

Given that the application area does not occur in an area that has been extensively cleared, the proposed clearing is not at variance to this Principle.

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Extent in DEC Managed Lands (%)
IBRA Bioregion*				
Dampierland	8,343,939	8,319,872	100	1.2
Shire*				
Shire of Broome	5,469,436	5,436,202	99	1.1
Beard Vegetation Association in Bioregion*				
750	1,229,182	1,225,281	100	2.3

\* Government of Western Australia 2013

**Methodology**   References:  
-Commonwealth of Australia (2001)  
-Government of Western Australia (2013)

GIS Database:  
-IBRA Australia  
-Local Government Authorities  
-Pre-European Vegetation

**(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.**

**Comments**       **Proposal may be at variance to this Principle**

The vegetation of the application area is largely uniform with only localised variation in vegetation structure and species composition. This variation can largely be attributed to fire. The topography of the application area is typically flat with localised areas of gently undulating terrain (GHD 2013).

The application area is predominantly characterised by sand plain with limited external drainage (Northcote et al. 1960-68). The application area intersects three ephemeral drainage lines. No permanent watercourses or wetlands intersect or occur immediately adjacent to the application area. Flora and vegetation surveys of the application area did not identify any riparian vegetation (GHD 2013).

Although no riparian vegetation was identified within the application area, native vegetation growing in, or in association with, an environment associated with a watercourse may be cleared due to the presence of three ephemeral drainage lines. Any clearing of such vegetation would be minimal in the context of the surrounding environment and therefore no significant residual impacts are expected.

The proposed clearing may be at variance to this Principle.

**Methodology**   References:  
-GHD (2013)  
-Northcote et al. (1960-68)

GIS Database:  
-Hydrography, linear

**(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.**

**Comments**       **Proposal is not likely to be at variance to this Principle**

The application area is mapped as comprising two soil types; AB21 (pindan country – gently undulating sand plain with a few small rocky sandstone residuals; no external drainage and chief soils are red earthy sands) and AB26 (sand plain with longitudinal sand dunes and some active drainage-ways; chief soils are red earthy sands) (Northcote et al. 1960-68).

The average annual rainfall of the application area is estimated to be between 800 and 1000 millimetres. The closest Bureau of Meteorology (BoM) weather station is located at Broome Airport approximately 30 kilometres south. The average annual rainfall at Broome Airport is 613.2 millimetres (BoM 2014).

The application area is located in the arid tropics which regularly experience high intensity rainfall. The proposed clearing of 297 hectares of native vegetation will increase the potential for erosion from high intensity winds and rainfall. However, given the local area (20 kilometre radius) is intact with remnant native vegetation, the linear nature of the proposed clearing, and the absence of major drainage lines within the application area, the clearing is not considered likely to cause appreciable land degradation.

The proposed clearing is not likely to be at variance to this Principle.

**Methodology**   References:  
-BoM (2014)  
-Northcote et al. (1960-68)

GIS Database:  
-Mean Annual Rainfall  
-Soils, statewide

**(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.**

**Comments Proposal is not likely to be at variance to this Principle**

Two conservation areas occur within 20 kilometres of the application area. The closest conservation area is an un-named A Class reserve located approximately 10 kilometres south of the application area. The reserve is vested with the Shire of Broome, Yawuru Native Title Holders Aboriginal Corporation and Conservation Commission of Western Australia for conservation, recreation and traditional and customary Aboriginal use and enjoyment. Coulomb Point Nature Reserve is located approximately 15 kilometres west of the application area.

The application area is not considered to form part of a significant linkage with any nearby conservation area. The areas surrounding the aforementioned conservation areas remain intact with native vegetation. The proposed clearing is not likely to be at variance to this Principle.

**Methodology** GIS Database:  
-Parks and Wildlife Tenure

**(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.**

**Comments Proposal is not likely to be at variance to this Principle**

The application area is located within the Broome and Canning-Kimberley Groundwater Areas. The southernmost section of the application area (a distance of approximately 20 kilometres) intersects the Broome Water Reserve (BWR) which is a Priority 1 (P1) Public Drinking Water Source Area (PDWSA).

Groundwater salinity of the application area is mapped as being between 0 and 3000 milligrams per litre (measured as Total Dissolved Solids [TDS]). As the application area has limited external drainage there is the potential for the clearing to result in increased groundwater levels. A rise in groundwater levels has the potential to result in deterioration in the quality of surface and/or underground water via increased salinity. However, given the local area (20 kilometre radius) is intact with remnant native vegetation, and the application area is narrow and linear in nature, no significant impacts are expected.

The application area intersects three ephemeral drainage lines. No permanent watercourses or wetlands intersect or occur immediately adjacent to the application area. The proposal is not considered likely to cause deterioration in the quality of water in any nearby watercourse or wetland.

The proposed clearing is not likely to be at variance to this Principle.

**Methodology** GIS Database:  
-Groundwater Salinity, statewide  
-Hydrography, linear  
-RIWI Groundwater Areas  
-PDWSAs

**(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.**

**Comments Proposal is not likely to be at variance to this Principle**

The proposed clearing of 297 hectares of native vegetation will be spread out across a distance of 77.6 kilometres. The local area (20 kilometre radius) is estimated to retain approximately 100 per cent of its pre-European extent of native vegetation and no permanent wetlands or watercourses occur within the application area.

Given the above, the proposed clearing is not likely to cause, or exacerbate, the incidence or intensity of flooding. The proposed clearing is not likely to be at variance to this Principle.

**Methodology** GIS Database:  
-Hydrography, linear

## Planning instruments and other relevant matters.

<b>Comments</b>	<p>MRWA referred the proposal to the Environmental Protection Authority (EPA) in August 2013. In November 2013 the EPA made a determination on the proposal. The determination was 'Not assessed – managed under Part V Division 2 of the <i>Environmental Protection Act 1986 (Clearing)</i>'.</p> <p>MRWA referred the proposal to the Australian Government Department of the Environment (DotE) in September 2013 (EPBC 2013/6984). In September 2013 the DotE determined that the proposal is a controlled action and that it will require assessment and approval under the <i>Environment Protection and Biodiversity Conservation Act 1999</i>.</p> <p>MRWA has proposed an offset package to the DotE that includes elements of the offset package submitted for the clearing permit application. In addition to the revegetation of 38 hectares of redundant road alignment and implementation of a Threat Management Program, the offset package proposed to the DotE includes:</p> <ul style="list-style-type: none"><li>• a project to define the area of occupancy of greater bilby colonies on the Dampier Peninsula; and</li><li>• a project to monitor population trends in known and/or newly identified greater bilby populations on the Dampier Peninsula.</li></ul> <p>The information obtained from these projects will be used to develop appropriate on-ground management actions that will form the Threat Management Program.</p> <p>The Department of Environment Regulation (DER) notified the Jabirr Jabirr, Goolarabooloo and Bindunbur Native Title claimant groups and their representatives of the application in accordance with section 24KA of the <i>Native Title Act 1993</i>. One response was received. The response identified that clearing is proposed to occur within areas that were part of previous Aboriginal heritage surveys and monitors should be used as per the outcomes of the surveys (KLC 2014).</p> <p>No known Aboriginal heritage sites are located within the application area.</p> <p>One submission was received regarding the application. The items raised have been addressed above under the relevant section/clearing principle. A summary of the items raised is as follows (Submission 2014):</p> <ul style="list-style-type: none"><li>• The proposal should be referred to the EPA.</li><li>• The Dampier Peninsula bilby population is critical to the survival of the species given that it represents the only part of their range where a population can persist without the need for intensive management.</li><li>• In relation to bilbies, the proposed clearing has the potential to result in increased predation, wildfires and vehicle strikes.</li><li>• Proposed fauna underpasses may not be utilised by fauna or may lead to increased predation.</li><li>• Mitigation measures that could be implemented for the proposal include bilby research, fire management and introduced predator management.</li></ul> <p>Approximately 25 per cent of the application area intersects a Redbook area. The Redbook area is located adjacent to the Coulomb Point Nature Reserve and is an area recommended for conservation by the EPA (potential extension to Coulomb Point Nature Reserve). Given the existing Cape Leveque Road already intersects this area, the proposal is not considered likely to have a significant impact on the viability of the Redbook area as a future conservation area.</p> <p>The Department of Water (DoW) have advised that infrastructure corridors are considered an incompatible land use within P1 PDWSAs, however, the need to upgrade existing road infrastructure is acknowledged (DoW 2014). DoW have also advised the following:</p> <ul style="list-style-type: none"><li>• DoW understands that the Water Corporation intends to expand their bore field over time within the BWR. DoW recommends MRWA discuss their proposal with Water Corporation to identify any potential impacts on Water Corporation's future bore field plans.</li><li>• MRWA already holds a valid section 26D licence to construct a well and a section 5C licence to take groundwater under the Rights in Water and Irrigation Act 1914 (RIWI Act) to support construction of the proposal.</li></ul> <p>As the proposal crosses over drainage lines, a permit under section 21A of the RIWI Act may be required for any interference with the bed and banks of a watercourse.</p>
<b>Methodology</b>	<p>References:</p> <ul style="list-style-type: none"><li>-DoW 2014</li><li>-KLC 2014</li><li>-Submission 2014</li></ul> <p>GIS Database:</p> <ul style="list-style-type: none"><li>-EPA Redbook</li></ul>



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