



LATE ITEM 8.11

Proposed Environmental Offset Options for
Clearing Permit Application CPS 8357/1

Ordinary Council

Meeting 27 May 2020

8.11 PROPOSED ENVIRONMENTAL OFFSET OPTIONS – CLEARING PERMIT APPLICATION FOR PORTION OF AGLIME ROUTE 2 THROUGH THE SHIRE OF VICTORIA PLAINS

File reference	TBC / DWER Clearing Permit Application CPS 8357/1
Report date	26 May 2020
Applicant/Proponent	Coterra Environment on behalf of Roadswest Engineering Group Pty Ltd and the Shire of Victoria Plains
Officer disclosure of interest	Nil
Previous meeting references	Nil
Prepared by	Mr Joe Douglas – Town Planning Consultant
Authorised by	Ms Glenda Teede - CEO
Attachments	
Attachment 1 – Correspondence from Coterra Environment dated 21 May 2020 including various supporting correspondence and documentation.	

PURPOSE

Consideration of a recommendation by Coterra Environment that Council consider and resolve to support three (3) potential environmental offset options to help secure the Department of Water and Environmental Regulation's conditional approval for the proposed clearing of 2.46 hectares of native vegetation to accommodate the road realignment and widening works associated with the Aglime Route 2.

BACKGROUND

Coterra Environment, acting on behalf of Roadswest Engineering Group Pty Ltd and the Shire of Victoria Plains, has prepared and lodged a clearing permit application with the Department of Water and Environmental Regulation (DWER) seeking approval for the proposed clearing of 2.46 hectares of native vegetation to accommodate the road realignment and widening works associated with the Aglime Route 2.

By correspondence dated 1 May 2020 the DWER advised that the on-site mitigation/avoidance strategies proposed by the Shire to mitigate the impacts of the proposed clearing works are insufficient and details of additional avoidance and mitigation measures must be provided prior to the DWER's consideration of any environmental offset proposal by the Shire.

In addition, the DWER advised that the Shire's proposal to offset the environmental impacts by way of a monetary contribution to the DWER's environmental offset fund is not considered acceptable for mitigating impacts of clearing significant remnants of native vegetation that contain two highly cleared vegetation associations in an extensively cleared landscape. As such the DWER has recommended the Shire consider exploring revegetation or land acquisition offset options which would entail the following:

- The revegetation of approximately 3.9 hectares of native vegetation in degraded to good condition on a Crown reserve controlled by the Shire to be set aside as a conservation reserve in perpetuity under relevant legislation;
- The revegetation of approximately 3.9 hectares of native vegetation in degraded to good condition on freehold land either owned or to be acquired by the Shire with a conservation

covenant registered on title in perpetuity or ceding of the land free of cost to the Crown for conservation purposes; or

- A change to the designated purpose of a Crown reserve controlled by the Shire to provide for the long term protection of approximately 7.59 hectares of existing remnant vegetation in very good condition containing the highly cleared Beard vegetation communities 4 and 7 (i.e. the creation of a new conservation reserve); or
- The registration of a conservation covenant in perpetuity on the certificate of title of freehold land either owned or to be acquired by the Shire comprising approximately 7.59 hectares of existing remnant vegetation in very good condition containing the highly cleared Beard vegetation communities 4 and 7 or ceding of such land free of cost to the Crown for conservation purposes.

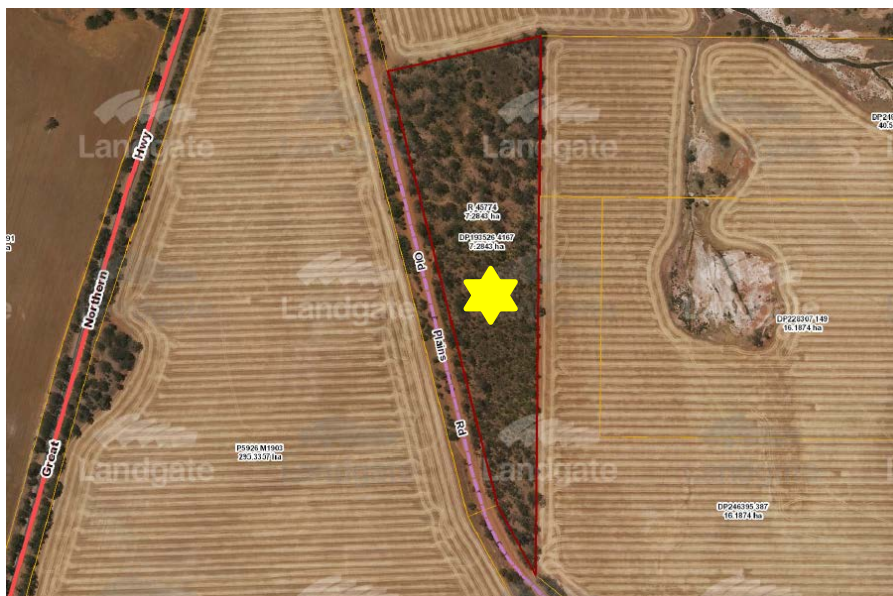
COMMENT

Coterra Environment and Roadswest Engineering Group Pty Ltd has prepared the additional information requested by the DWER regarding avoidance and mitigation measures, the details of which are provided in Attachment 1 and will be submitted to the DWER in response to its correspondence dated 1 May 2020.

In order to assist formulation of the required response to the DWER and negotiate approval to the clearing permit application, Coterra Environment is now seeking Council consideration and endorsement of three (3) potential environmental offset options given the DWER's advice that payment of a monetary contribution by the Shire to the DWER's environmental offset fund is not considered acceptable.

Details of six (6) potential environmental offset sites within the Shire's municipal district that were the subject of recent investigations by the reporting officer and Coterra Environment are provided in Attachment 1. Of these Coterra Environment has identified three (3) viable options that could be presented to the DWER for consideration, the details of which are as follows:

1. Crown Reserve No.45774 being Lot 4167 on Plan 193526 Old Plains Road, Yarawindah which comprises a total area of 7.2843 hectares and has been vested in the Shire for the designated purpose 'parklands':



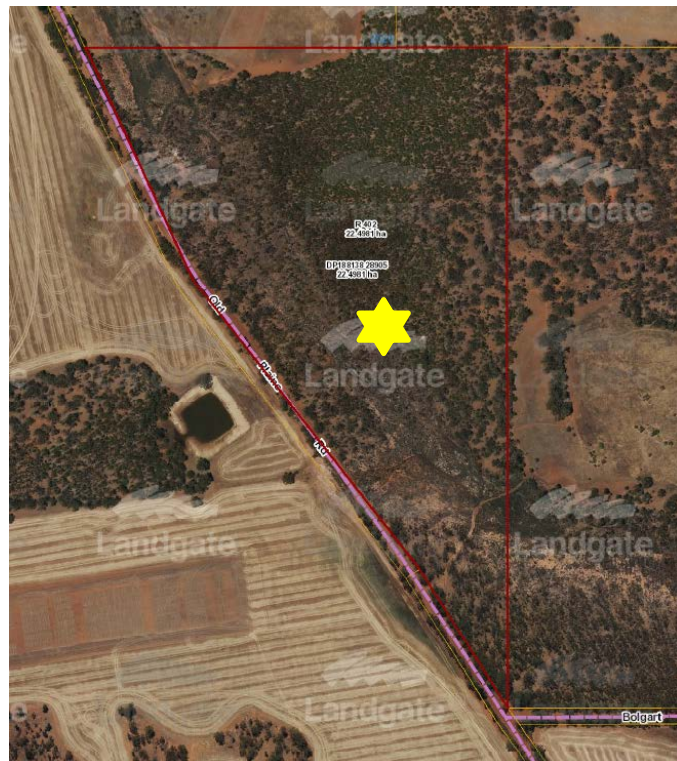
Reserve 45774 Old Plains Road, Yarawindah (Source: Landgate)

2. Lot 4313 on Deposited Plan 34187 Calingiri Road, Calingiri which comprises a total area of 8.099 hectares, is owned in fee simple (i.e. freehold tenure) by the Shire of Victoria Plains and is currently used for stormwater drainage management purposes:



Lot 4313 Calingiri Road, Calingiri (Source: Landgate)

3. Crown Reserve No.402 being Lot 28905 on Deposited Plan 188138 Old Plains Road, Old Plains which comprises a total area of 22.4981 hectares and set aside for the designated purpose 'Watering Place for Travellers & Stock' with no management order having yet been issued:



Lot 4313 Calingiri Road, Calingiri (Source: Landgate)

When considering the above options Council should note the following key points:

- i) Site options 1 and 2 will require a revegetation plan due to their size. A revegetation plan for site option 3 may not be required due to its large size, vegetation type and quality;
- ii) Revegetation programs undertaken pursuant to an approved revegetation plan can prove to be expensive and are generally required to be undertaken over a 2 to 3 year establishment period before revegetation works can cease, with ongoing monitoring and maintenance required thereafter;
- iii) Site options 1 and 3, by virtue of their current land tenure (i.e. Crown reserves) and designated purposes, will require approval from the Minister for Lands before they can be set aside as a conservation reserve in perpetuity. The timeframe to obtain the necessary approvals from the Minister is likely to be in the order of 6 to 9 months which could delay the Shire's ability to act on any clearing permit approval issued by the DWER;
- iv) Coterra Environment has recommended Council consider pursuing site option 3 on the basis it may prove to be the most expedient and cost effective to implement however this may not prove to be the case given the need to seek and obtain the necessary approvals from the Minister for Lands;
- v) Site option 2, which is owned in fee simple (i.e. freehold tenure) by the Shire, is likely to be the most expedient option as the land is immediately available with a conservation covenant able to be prepared and registered on the land's certificate of title in approximately 2 to 3 months. A revegetation plan could also be prepared concurrently to help avoid any potential delays; and
- vi) Each of the three site options will require the allocation of sufficient funding over the next 2 to 3 years to cover the cost of any revegetation or rehabilitation works that may be required to satisfy the DWER's requirements. It is understood from discussion with the Shire's Works and Services Manager that funding has been allocated for the project and could include the allowance required to undertake any revegetation or rehabilitation works needed.

In light of the information presented above, it is recommended that Council endorse all three (3) site options identified by Coterra Environment as being viable and that these be presented to the DWER for consideration when determining the clearing permit application. This suggested approach will provide flexibility when progressing further discussions and negotiations with the DWER and help avoid any unnecessary delays.

In responding to the DWER it is recommended that Council confirm funding is available and will be allocated over the next 2 to 3 years to cover the cost of any revegetation or rehabilitation works that may be required to satisfy the DWER's requirements. Council should note that further allocations may be required in subsequent years to cover any ongoing management and maintenance costs.

Lastly, it is recommended that Council grant delegated authority to the Shire's Chief Executive to either seek and obtain the necessary approvals from the Minister for Lands for site options 1 or 3 given their current tenure (i.e. Crown reserves) and designated purposes under the *Land Administration Act 1997* or to arrange for the registration of a conservation covenant in perpetuity on the certificate of title of the land comprising site option 2 which is currently owned in fee simple by the Shire. A resolution along these lines will provide the flexibility needed to respond and act upon the DWER's preferred site option in a timely manner and again avoid any unnecessary delays.

CONSULTATION

It is understood the Department of Water and Environmental Regulation has previously advertised the clearing permit application for public comment in accordance with the procedural requirements of the *Environmental Protection Act 1986* and associated regulations.

It is expected the Department of Planning, Lands and Heritage will consult with various government agencies when considering any proposal by the Shire to change the purpose of a Crown reserve (i.e. site options 1 and 3) for conservation purposes before making a final recommendation to the Minister for Lands.

The registration of a conservation covenant in perpetuity over freehold land owned by the Shire (i.e. site option 2) does not require public advertising.

STATUTORY CONTEXT

- *Environmental Protection Act 1986*
- *Environmental Protection (Clearing of Native Vegetation) Regulations 2004*
- *Land Administration Act 1997*
- *Land Administration Regulations 1998*
- *Soil and Land Conservation Act 1945*

CORPORATE CONTEXT

Nil

STRATEGIC IMPLICATIONS

The road realignment and widening works associated with the Aglime Route 2, including the associated environmental offset requirements, are consistent with the strategic direction provided by the Shire's Corporate Business Plan 2019-2023 and Strategic Community Plan 2017/18 to 2027/28. The proposed works are also consistent with the strategic direction provided by Main Roads WA in the document entitled 'Roads 2030 Regional Strategies for Significant Local Government Roads' (2018).

FINANCIAL IMPLICATIONS

It is understood the road realignment and widening works associated with the Aglime Route 2 have been fully funded by external sources (i.e. Main Roads WA & Cooperative Bulk Handling Limited).

As mentioned previously above, each of the three environmental offset options identified will require the allocation of sufficient funding over the next 2 to 3 years to cover the cost of any revegetation or rehabilitation works that may be required to satisfy the DWER's requirements. It is understood from discussion with the Shire's Works and Services Manager that funding has been allocated for the project in its entirety and could include the allowance required to undertake any revegetation or rehabilitation works needed.

VOTING REQUIREMENTS

Absolute majority required: No

Officer Recommendation / Council Resolution
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Moved Cr _____

Seconded Cr _____

That Council resolve to:

1. Endorse the following three (3) environmental offset site options identified by Coterra Environment as being viable and authorise Coterra Environment to submit details of these sites to the Department of Water and Environmental Regulation (DWER) for consideration in the processing and determination of clearing permit application CPS 8357/1 for the proposed clearing of 2.46 hectares of native vegetation to accommodate the road realignment and widening works associated with the Aglime Route 2:
 - i) Crown Reserve No.45774 being Lot 4167 on Plan 193526 Old Plains Road, Yarawindah (Option 1);
 - ii) Lot 4313 on Deposited Plan 34187 Calingiri Road, Calingiri (Option 2); and
 - iii) Crown Reserve No.402 being Lot 28905 on Deposited Plan 188138 Old Plains Road, Old Plains (Option 3);
2. Authorise Coterra Environment to provide confirmation to the DWER that funding is available and will be allocated over the next 2 to 3 year period to cover the cost of any revegetation or rehabilitation works that may be required for the preferred environmental offset site to satisfy the DWER's requirements; and
3. Grant delegated authority to the Shire's Chief Executive to either seek and obtain the necessary approvals from the Minister for Lands for site options 1 or 3 given their current tenure (i.e. Crown reserves) and designated purposes under the *Land Administration Act 1997* or to arrange for the registration of a conservation covenant in perpetuity on the certificate of title of the land comprising site option 2 which is currently owned in fee simple by the Shire.

For _____ / Against _____



LATE ITEM
Attachment
8.11

Ordinary Council Meeting

27 May 2020



COTERRA ENVIRONMENT

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Our Ref: ROALIM02
Date: 21 May 2020

Attention: Mr Robert Edwards
Works and Services Manager
Shire of Victoria Plains
10 Edmonds St
CALINGIRI WA 6569

Via email: works@victoriaplains.wa.gov.au

Dear Robert

Clearing Permit Application 8357/1 – DWER Request for Offset

Further to our recent discussions, we seek some direction from the Shire of Victoria Plains so that we may respond to a further information request received from the Department of Water, Environment and Water on the 1 May 2020 regarding the Shire's Native Vegetation Clearing Permit application CP8357/1.

Background

On behalf of Roadswest Engineers and the Shire of Victoria Plains, Coterra Environment has been commissioned to apply for a Native Vegetation Clearing Permit (NVCP) for the proposed clearing of native vegetation adjacent to existing Shire roads as follows:

- Mogumber Road West;
- Calingiri-New Norcia Road;
- Goomalling-Calingiri Road; and
- Several locations near a proposed new intersection in Calingiri.

The purpose of the project is to allow for road widening and construction of a new intersection into Calingiri. This project will provide the following benefits to the stakeholders identified below (from Roadswest Engineering, 2018):

Local Community

The proposal significantly increases road user safety by:

- Removing the issue of waiting time at the rail crossing blockage during train loading events, as well as during train shunting operations.
- Removes the risk of emergency vehicles not being able to access the town and districts either side of the railway due to trains blocking the existing crossing.
- Improves road user safety for heavy vehicles crossing the railway without truck trailers conflicting with train traffic and through road traffic.
- Improves road user safety for heavy vehicle and light vehicle mix at the Toodyay Bindi Bindi Rd intersection.

- During the construction phase there will be an increase in level of business activity in the short to medium term for local suppliers and services organisations.

Western Australia

- Provides for more efficient transport of lime sands and bulk agricultural products through to Calingiri and surrounding districts.
- Improves access for tourists accessing New Norcia from eastern centres and Toodyay.

CBH

- The Calingiri grain facility, is a primary receipt and storage site for CBH. This project allows CBH to further increase their land holding for the purposes of future expansion of their grain storage and handling facilities at Calingiri.
- This project will improve the efficiency of train out loading operations, as the removal of the level crossing will allow for full length trains, up to 900m long.
- Decreases congestion with heavy vehicles within the CBH internal road network, as there will be a separation between Entry and Exit driveways to and from their property.
- Will decrease congestion around weighbridge/sampling areas and around un-loading pits and open

Shire of Victoria Plains

- Allows for public traffic and 'emergency' vehicles need to be able to get to alternative rail crossing if one of the crossings is blocked by train or other obstruction.
- Provides for lower road maintenance costs as pavements will be upgraded to accommodate for long term heavy vehicle traffic.

PTA/ARC Infrastructure

- Removes an existing poorly located and substandard rail crossing and replaces it with a new crossing at a location that will provide for safer passage of through road traffic.
- Improves the asset value of rail crossings and lowers future maintenance costs for PTA/ARC.

Main Roads of Western Australia

- Removes the stacking distance problem and improves road user safety for heavy vehicles crossing the railway without truck trailers conflicting with train traffic and through road traffic.
- The project will enable the upgrade of all rail and road signage and pavement markings to the latest Australian Standards.

Clearing Permit Process

Coterra was requested by Roadswest to undertake a survey for significant (Threatened and Priority) flora and significant vegetation, including Threatened Ecological Communities (TECs) and Priority Ecological Communities (PECs) of roadside vegetation, and subsequently prepare the NVCP.

Initially the total area proposed to be cleared was 1.98ha and clearing permit application CPS 8357/1 was submitted to the Department of Water and Environmental Regulation (DWER) in May 2019.

Following the submittal of the clearing permit, the proposed new intersection and railway level crossing in Calingiri was reviewed by the Railway Crossing Protection Sub-Committee/s in accordance with the Railway Crossing Control in Western Australia Policy and Guidelines (MRWA, 2017). The Committee advised that additional clearing within the rail corridor is required for the approval of the crossing design and construction, in order to conform to the Australian Standard (AS) 1742.2-7 2016 Manual of uniform traffic

control devices; Part 7: Railway Crossings. This standard specifies the sight distance required by approaching road vehicle drivers for the safe operation of railway crossing controls.

As such, Coterra was commissioned to complete an additional flora vegetation survey in September 2019. Coterra subsequently amended the original NVCP application in December 2019 to include an additional clearing area of approximately 0.48 ha of native vegetation near to the proposed new intersection at Calingiri. The overall clearing extent for the additional clearing works is approximately 0.48 ha which sits within a band of vegetation bound by an unsealed track to the east and the railway line to the west.

Rather than clearing of the vegetation to the ground level, the vegetation in this additional area is proposed to be pruned to a height of approximately 800mm to allow for sight lines. Herb and small shrub species in the understorey will be retained and will be minimally impacted with taller shrubs and trees to be the focus of the pruning works. As such the majority of the existing species will remain in perpetuity within the area.

The total clearing area applied for within NVCP CPS8357/1 is now 2.46ha.

Results of Botanical Surveys

The targeted Threatened and Priority Flora search for the majority of the survey area was conducted in early and mid November 2018 and located the following two Priority Flora species:

- *Isopogon drummondii* (Priority 3). Five plants were recorded in the Mogumber Road West at location -31.022869, 115.958303, and
- *Eucalyptus sargentii* subsp. *onesis* (Priority 3) One plant was recorded in disturbed remnant bushland alongside a track at location 31.084140, 116.441057 near the proposed new intersection in Calingiri.

A further survey was conducted in September 2019 of 0.48ha of land adjacent to the railway near to the proposed Calingiri intersection. No Threatened or Priority species were found during that search.

Two Potential Threatened Ecological Community types- 'Banksia Woodlands of the Swan Coastal Plain (SCP)' and 'Eucalypt Woodlands of the Western Australian Wheatbelt' were mapped and assessed within the survey areas.

Response to DWER Further Information Request December 2019

The DWER and DBCAs' preliminary assessment of the botanical studies detailed in the Supplementary Information report attached to the Clearing Permit Application, identified the following areas in which further information is required to assess the Victoria Plains Clearing Application (see Table 1).

Table 1: Information requested by DWER for the assessment of the Victoria Plains Clearing Application (August 2019)

Item	Information requirements	Response Provided
1	Clarification of impact to habitat for Threatened and Priority flora.	<p>Coterra Environment provided a post-survey assessment of the likelihood of occurrence of Threatened and Priority flora to provide confirmation that flora with the potential to occur within the application area, and for which the on ground survey was undertaken outside of the recorded flowering period, are unlikely to occur within the application area.</p> <p>In addition, some of the flora recorded during the targeted flora survey, were not able to be identified to species level. Of these, Coterra's Botanist re-assessed several specimens that may have the potential to represent Threatened flora listed as potentially occurring within the proposed clearing area. None of the specimens examined were determined to represent the possible Threatened flora.</p>

Item	Information requirements	Response Provided
		Detailed justification was provided to demonstrate why these species were unlikely/ likely to occur in the area.
2	<p>Identification of appropriate onsite impact mitigation strategies for the impact to the Priority 3 flora <i>Eucalyptus sargentii</i> subsp.<i>onesis</i>.</p> <p>Information on how the impact of the proposed clearing on this species will be avoided, managed or mitigated is required.</p> <p>If this species cannot be avoided, justification is required.</p>	<p>DWER requested information on how the impact of the proposed clearing on this species will be avoided, managed or mitigated.</p> <p>Unfortunately the design of the intersection cannot accommodate retention of this individual species. Coterra provided information on this particular occurrence of the species, and given the location and soil profile differed from other known occurrences of this species, speculated that this individual plant may have been planted in this location.</p>
3	<p>Identification of appropriate onsite impact mitigation strategies and/or satisfactory environmental offsets</p>	<p>DWER requested an offset to counterbalance the significant residual impacts of the proposed clearing of a significant remnant of native vegetation in a highly cleared area and represents the highly cleared Beard vegetation communities 4 and 7.</p> <p>Under Part V Division 2 (Clearing of native vegetation) of the Environmental Protection Act (EP Act), the Chief Executive Officer (CEO) of the DWER may grant a clearing permit that is subject to a condition under section 51I(2)(b) requiring an offset to “establish and maintain vegetation on land other than land cleared under the [clearing] permit in order to offset the loss of the cleared vegetation, or make monetary contributions to a fund maintained for the purpose of establishing or maintaining vegetation”.</p> <p>The clearing provisions of the EP Act allow for the giving of a conservation covenant or other form of binding undertaking for the purpose of establishing or maintaining vegetation as a condition of a clearing permit.</p> <p>Coterra requested that the Shire’s requirement for an offset be included as a condition on the clearing permit, and requested that the Shire’s preference was to make a monetary contribution to an offset fund to contribute to the purchase of larger conservation reserve in the Shire.</p>

DWER Further Information Request 1 May 2020

The DWER and DBCAs’ preliminary assessment of the Supplementary Information report attached to our subsequent amended Clearing Permit Application submitted in December 2019, identified the following areas in which further information is required to assess the Victoria Plains Clearing Application (see Table 2 and Attachment 1)

Table 2: Information requested by DWER for the assessment of the Victoria Plains Clearing Application

Item	Information requirements	Specifications
1	Clarification of impact to habitat for Threatened and Priority flora.	Further information is required from the applicant in relation to the indeterminate species recorded during the flora survey that have the potential to represent threatened flora.

Item	Information requirements	Specifications
2	Further evidence is required to be provided to support the claim that the Priority 3 flora <i>Eucalyptus sargentii</i> subsp. <i>onesis</i> individual is not a natural occurrence, and is therefore not considered to have conservation significance at a local or regional level.	Additional information is required from the applicant to determine whether the Priority 3 flora <i>Eucalyptus sargentii</i> subsp. <i>onesis</i> individual has been planted or is a natural occurrence.
3	Identification of appropriate onsite impact mitigation strategies and/or satisfactory environmental offsets	<p>The WA Environmental Offsets Policy (2011), WA Environmental Offsets Guidelines (2014) and DWER's Clearing of Native Vegetation Offsets Procedure outlines the assessment and decision making processes for use of environmental offsets.</p> <p>As such Principle 1 of the WA Environmental Offsets Policy will consider offsets after strategies to avoid and mitigate significant environmental impacts have been applied.</p> <p>Any proposed modifications to the area to be cleared must be accompanied by updated maps and/or digital files reflecting these proposed changes.</p> <p>Rationale:</p> <p>DWER notes that the onsite mitigation and avoidance measures provided to mitigate the impacts of the proposed 2.46ha of a significant remnant of native vegetation in the highly cleared Beard Vegetation Communities 4 and 7 on in an extensively cleared area is insufficient.</p> <p>DWER notes that the Shire have proposed to offset the significant residual impacts outlined above through the provision of a monetary contribution to DWER's offset fund. As outlined in the Offsets Policy environmental offsets can only be considered after proposed strategies to avoid and mitigate environmental impacts have been pursued.</p> <p>Please provide evidence of an onsite mitigation/avoidance strategies that have been considered by the Shire to mitigate the environmental impact of the proposed clearing of 2.46ha. This should include options explored during the planning stage that clearly demonstrates efforts to avoid native vegetation have been explored and exhausted.</p> <p>Once appropriate mitigation/avoidance measures have been provided to DWER, the Shire can consider the offset options discussed under Item 4.</p>
4	Identification of Satisfactory Offsets	<p>Proposed environmental offsets are to be submitted using Appendix A of the <i>Clearing of native vegetation offsets procedure</i> guideline.</p> <p>Please note DWER uses a calculation broadly consistent with the Commonwealth Department of the Environment and Energy offset calculator. These calculations have assumed particular variables that directly impact on the adequacy of the offset, and as such are to be used as a guide only.</p> <p>Rationale:</p> <p>If the residual impacts of the proposed clearing remain</p>

Item	Information requirements	Specifications
		<p>significant after the application of avoidance and minimization techniques, an offset is required to counterbalance the significant residual impacts of the clearing including approximately 2.46ha of a significant remnant of native vegetation that contains the highly cleared Beard vegetation communities 4 and 7.</p> <p>DWER notes that the Shire have proposed to offset the significant residual impacts outlined above through the provision of a monetary contribution to DWER's offset fund. However, a monetary contribution to the offset fund is not generally acceptable for mitigating impacts of clearing a significant remnant of native vegetation that contains two highly cleared vegetation associations in an extensively cleared area. Given this, it is recommended that the Shire consider exploring revegetation or land acquisition offsets.</p> <p>For revegetation offsets, the Shire should investigate whether there are any gravel reserves or reserves managed for recreation that could be revegetated. Long term security of the revegetation would be required for it to be considered an offset, therefore the vesting of the reserve would be required to be changed to 'conservation' or a conservation covenant be placed over the land parcel. Alternatively a land acquisition offset of remnant vegetation in very good condition containing the highly cleared Beard vegetation communities 4 and 7 would be suitable.</p> <p>Offset calculation identified that the conservation of remnant native vegetation in a very good condition, as specified below, may be sufficient to adequately address the impacts of the proposed clearing (noting that these values can all be present within one larger remnant):</p> <ul style="list-style-type: none"> - Approximately 7.59ha of native vegetation that is a significant remnant within an extensively cleared landscape. <p>Offset calculation has identified that revegetation from a completely degraded to good condition, as specified below, may be sufficient to adequately address the impacts of the proposed clearing:</p> <ul style="list-style-type: none"> - Approximately 3.9ha of native vegetation that is a significant remnant within and extensively cleared landscape. <p>Please note that for revegetation to be considered, a comprehensive revegetation plan would be required, and the site would have to be conserved in perpetuity.</p>
5	Index of Biodiversity Surveys for Assessments (IBSA) package for Coterra Environment's 2019 <i>Flora and Vegetation Survey for the Calingiri Railway Crossing</i> .	The IBSA package that was provided to DWER does not meet the IBSA requirements to be accepted as it does not contain a survey report in Pdf and Html format. The applicant is to provide a revised IBSA package containing the information outlined.

Further Information

The information requested by DWER and DBCA is provided below.

1. Clarification of impact to habitat for Threatened and Priority flora

Indeterminate Species

DWER noted that in our original clearing permit application a number of the flora taxa identified were not able to be identified down to species level, which may mean that those species have the potential to represent threatened flora. DWER requested that we review the potential of these species to be threatened or priority flora.

In our application in December 2019, we provided a table showing the list of indeterminate species and the results of the re-examination which was undertaken in the Herbarium by botanist Dr Alice O'Connor. One of the species listed as being indeterminate were from the genus *Verticordia*, which DWER noted could represent Critically Endangered *Verticordia staminosa* subsp. *staminosa*.

Dr O'Connor had reviewed the indeterminate *Verticordia* specimen at the WA Herbarium, comparing it with *Verticordia staminosa* subsp. *staminosa* collections at the Western Australian Herbarium, Jstore plants images and the current key and descriptions (Elizabeth George: *Verticordia*-The turner of hearts pg. 172-4).

Comparative features used to distinguish the sterile *Verticordia* specimen from *V.staminosa* subsp. *staminosa* are described. Her findings are detailed below and images of both the holotype of *Verticordia staminosa* subsp. *staminosa* (from Jstore) were taken. Her notations were:

***Verticordia staminosa* subsp. *staminosa* - Critically Endangered Flora**

Features: Stem leaves 7-14mm long, linear-terete, crowded, glabrous.

Distinguishing characteristics: branchlets and peduncles covered with stiff bristly hair and by it's unusual flowers with prominent staminal tube (Elizabeth George: *Verticordia*-The turner of hearts pg. 172-4).

Habitat: Grows on soil pockets and exposed granite outcrops.

Known locality: One collection from Wongan Hills

***Verticordia* sp. sterile Mog2-10. Specimen collected by Carolyn Harding from Calingiri rail reserve survey on 15/11/2018 and identified by Paul Armstrong.**

Features: Stem leaves 4.5-8mm long, linear-terete, less crowded, glabrous. Floral leaves smaller 3.5-6mm. Branchlets glabrous.

Habitat: Not provided

Locality: Mogumber, approximately 45km southwest of Wongan Hills.

The sterile specimen Mog2-10 *Verticordia* sp. was concluded by Dr O'Connor not to correspond to the endangered *Verticordia staminosa* subsp. *staminosa*.

Item 2 : Further Evidence that the Priority 3 Species was Planted

Coterra Environment has reviewed available historical aerial photography which indicates that the area in which the Priority 3 species *Eucalyptus sargentii* subsp. *onesis* is located was cleared at some point in the past. We are awaiting further historical photographs to confirm this from Landgate. If the area was cleared previously then the species has either been planted, or may have regenerated.

It is noted that the definition of the Priority 3 flora species is:

Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further.

Priority flora does not have statutory protection in Western Australia.

On the basis of the historical clearing at this location and the priority level of the flora species, we will request that DWER progress the clearing permit application without further delay in relation to this factor.

Item 3: Onsite Mitigation and Avoidance Strategies

In order to address the DWERs request for onsite mitigation and avoidance strategies, Mr David McKenna from Roadswest Engineering has provided a comprehensive report (Attachment 2) outlining for each proposed clearing area containing:

1. Photographs of the current road alignment
2. Discussion on road safety issues for that section
3. Proposed safety treatment
4. Details on how the design process minimised the clearing area proposed

Item 4: Identification of Satisfactory Environmental Offsets

DWER have advised that an offset is required to counterbalance the significant residual impacts of the clearing including approximately 2.46ha of a significant remnant of native vegetation that contains the highly cleared Beard vegetation communities 4 and 7.

DWER noted that the Shire requested to offset the impacts through the provision of a monetary contribution to DWERs offset fund. However, DWER rejected our request on the basis that *“the offset fund is not generally acceptable for mitigating impacts of clearing of a significant remnant of native vegetation that contains two highly cleared vegetation associations in an extensively cleared area”*.

There are two offset options available for the Shire:

- a. Revegetation of 3.9ha of completely degraded vegetation
- b. Land acquisition for conservation of 7.59ha of very good condition vegetation (or equivalent larger area of lower quality vegetation)

The DWER suggested that for revegetation offsets, the Shire should investigate whether there are any gravel reserves or reserves managed for recreation that could be revegetated. Long term security of the revegetation would be required for it to be considered an offset, therefore the vesting of the reserve would be required to be changed to ‘conservation’ or a conservation covenant be placed over the land parcel. Please note that for revegetation to be considered, the DWER have requested a comprehensive revegetation plan be prepared, and the site would have to be conserved in perpetuity.

The alternative option is for Shire to pursue a land acquisition offset of remnant vegetation in very good condition containing the highly cleared Beard vegetation communities 4 and 7, to be set aside for conservation in perpetuity. The Environmental Offset Guidelines (2014) describes land acquisition offsets as:

“These involve the protection of environmental values through improved security of tenure or restricting the use of the land. This may be achieved through ceding freehold land to the Crown for conservation purposes or perpetual covenants for conservation. In considering land acquisition offsets, the need for ongoing management must be considered. Any offsets proposing land acquisition, whether the land is to be managed by the proponent/applicant, a third party or the Department of Parks and Wildlife, must consider

the upfront costs of establishing the offset site and the on-going management costs of maintaining the offset for the long term.”

Review of Potential Offset Sites within the Shire

Mr Joe Douglas, Principal Planner of Exurban has examined a series of existing Shire of Victoria Plains reserves and freehold land, which all contain varying quality of remnant vegetation which may be suitable as a potential offset. Following the identification of six possible offset sites within the Shire by Mr Douglas, Coterra has reviewed the environmental features of these options to identify if they meet the DWER criteria for provision of an offset. Full details of the options assessed by Exurban and Coterra are provided in Attachment 3. Aerial photographs of the offset options considered are provided in Attachment 4.

An assessment of each of the potential offset properties against the DWER requirements are detailed in the following Table 3.

Table 3: Assessment of Potential Offset Properties against DWER Requirements for the Proposed Offset

Site	Tenure/ Planning Context	Size	Beard Vegetation Community	Expected Vegetation Condition	Assessment against DWER Requirements for Offset
Lot 4313 Calingiri Rd, Calingiri	Freehold Public Purposes Reserve (no designated purpose)	8.099ha	1022 and 7	Degraded to Good	Only small amount of the site is Beard Community 7, which is in Degraded condition. Viable Revegetation Offset option.
Lot 4314 Calingiri Rd, Calingiri	Freehold Public Purposes Reserve (no designated purpose)	3.1413ha	1022	Completely Degraded to Good	Not suitable, due to no Beard Vegetation Community 4 or 7.
Lot 4318 Calingiri Rd, Calingiri	Crown Reserve vested in Shire Rural Zoning	1.8997ha	1022	Degraded to Good Condition	Not suitable, due to no Beard Community 4 or 7, and also too small to be considered as an offset.
Lot 4167 Old Plains Rd, Yarawindah	Crown Reserve vested in Shire Public Purposes Reserve (no designated purpose)	7.2843ha	4 and 352	Mostly Good condition	Has relatively small area of Beard Community 4, however may have potential as Viable Revegetation Offset Option
Lot 28905 Old Plains Rd, Old Plains	Crown Reserve vested in Shire Parks and Recreation Reserve – Watering Place for Travellers and Stock	22.4981ha	4	Completely Degraded to Very Good	Suitable for offset, Beard Community 4 over majority of the site. Large enough to meet both ‘Conservation’ vesting offset requirement and Revegetation offset size requirements.
Various Lots, Bolgart	Crown Reserve vested in Shire	10.6357ha	352	Completely Degraded to Good	Not suitable, Beard Community 4 and 7 not

Site	Tenure/ Planning Context	Size	Beard Vegetation Community	Expected Vegetation Condition	Assessment against DWER Requirements for Offset
					present. Fragmented lots not desirable as an offset. .

In light of the above analysis there are three viable options for the Shire to consider:

1. Lots 4167 Old Plains Rd Yarawindah
2. Lot 4313 Calingiri Rd, Calingiri
3. Lot 28905 Old Plains Rd, Old Plains

The first two options would require a Revegetation Plan due to their size. The third option due to its large size, vegetation quality and Beard Community 4, may potentially avoid the revegetation plan requirement if we argue that the site's current intended use is for Watering of Travellers and Stock. As such we can propose that the Shire will restricting the use of the land moving forward to prevent the use of the land for travellers and stock. This may be achieved through a perpetual covenants for conservation, In addition the Shire could commit some funds for ongoing management of the conservation values.

Whilst Revegetation Programs can vary in their scope, planting and maintenance requirements, they are a more expensive option for the Shire potentially than a potential land acquisition or change of use/covenanting within an existing reserve. The Shire would be bound to implement the Revegetation Plan over a two to three year establishment period and meet a pre-agreed set of completion criteria (including number of plants per square metre, vegetation condition rating, percentage weed cover etc) before revegetation works can cease. Planting and weeding are labour intensive activities and without a community group volunteering to carry out the planting and regular maintenance, could be costly to implement through private contractors (we estimate works over a 3.5ha site to be greater than >\$100,000).

The Environmental Offsets Guideline (2014) states that "*Environmental offsets will be cost-effective, as well as relevant and proportionate to the significance of the environmental value being impacted (principle 3). Environmental offsets should be proportionate to the significance of the environmental value being impacted with a preference for cost-effective solutions.*"

As such it is recommended the Shire propose in the first instance to change the use of Lot 28905 and vesting purpose from 'Watering for Travellers and Stock' to 'Conservation'. It is also recommended that the Shire consider setting aside some funds for on-ground management of the site including some rehabilitation (not revegetation) such as repair of fencing if required, management of weeds, disease and feral animals. The objective of the on-ground management actions would be to demonstrate that the Shire proposes tangible improvement to the existing environmental values within the offset area.

Coterra seeks direction from the Shire's of Victoria Plains as to:

1. Which option presented in Table 3 is the Shire's preferred offset site,
2. Resolve to inform DWER that the Shire proposes to change the use / covenant / revegetate / rehabilitate / fund on-ground management (as relevant to the selected site) as the agreed offset for the clearing impacts proposed within the clearing permit application, and
3. Should DWER verify that the site is suitable to be considered as an offset, the Shire provides delegated authority to the Shire officers/Exurban to commence the process of changing the use/covenanting the selected land for "Conservation" purposes.

Yours sincerely



Stacey Harley
Director

Attachment 1 : DWER Further Information Request (1/5/2020)

Attachment 2: Roadswest Engineering Report on Mitigation Actions

Attachment 3: Detail of Potential Offset Options

Attachment 4: Aerial Photographs of Potential Offset Options

ATTACHMENT 1 - DWER Further Information Request (1/5/2020)



Ms Stacey Harley
Director
Coterra Environment
Level 3, 35 Prowse St
WEST PERTH WA 6005

via email: stacey.harley@coterra.com.au

Dear Ms Harley,

APPLICATION TO CLEAR NATIVE VEGETATION UNDER THE ENVIRONMENTAL PROTECTION ACT 1986 – REQUEST FOR INFORMATION

I refer to the Shire of Victoria Plains' (the Shire) application for an Area Permit under section 51E(1) of the *Environmental Protection Act 1986* (the EP Act) to clear 1.98 hectares of native vegetation within Mogumber Road West road reserve, Calingiri-New Norcia road reserve, Goomalling - Calingiri road reserve, unnamed rail reserves and Lot 9001 on Deposited Plain 43363, for the purpose of road realignment and widening. The application was received by the Department of Water and Environmental Regulation (DWER) on 9 May 2019.

Thank you for your advice received on 6 December 2019, 27 December 2019 and 30 March 2020 on behalf of the Shire, providing additional information to address the matters raised in DWER's letter of 24 October 2019. As a result of this information, the application area was increased from 1.98 hectares to 2.46 hectares, to include approximately 0.48 hectares of clearing required at the Calingiri Railway intersection area.

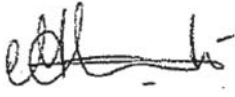
DWER has reviewed the additional information provided, and has concluded that the onsite mitigation/avoidance strategies proposed by the Shire to mitigate the impacts of the proposed clearing of 2.46 hectares of a significant remnant of native vegetation in an extensively cleared area are insufficient. Therefore, as discussed further under Item 3 of Schedule 1, additional avoidance and mitigation measures are required to be provided prior to the consideration of the Shire's offset proposal. Once evidence of efforts to avoid and/or mitigate the need for clearing have been provided to DWER, the offset proposal can be considered. It is also noted that monetary contributions are not DWER's preferred offset option for mitigating impacts of clearing to a significant remnant in an extensively cleared area. Item 4 of Schedule 1 discusses other offset options that are recommended to be explored by the Shire following the provision of avoidance/mitigation strategies.

Please provide the information set out in Schedule 1 (attached), within 30 days of the date of this letter. You may request an extension (in writing), should you require additional time. Until this information has been received, DWER has suspended the assessment timeframe for your application ('stop the clock'). This timeframe will recommence upon receipt of the required information.

If the required information is not received by the date set out above (or other date as agreed), the assessment process will recommence, and a determination will be made based on the information available. This may result in the refusal of the application.

If you have any queries regarding the above information, please contact the Environmental Officer, as listed above.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Meenu Vitarana', with a horizontal line extending to the right.

Meenu Vitarana
A/MANAGER
NATIVE VEGETATION REGULATION

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

1 May 2020

Att: Schedule 1

Schedule 1:

Item	Information requirements	Specifications	Rationale
1.	Clarification of impact to habitat for threatened and priority flora.	Further information is required from the applicant in relation to the indeterminate species recorded during the flora survey that have the potential to represent threatened flora.	<p>DWER noted in the letter of 24 October 2019 under Item 1, Schedule 1, that a number of the flora taxa identified during the targeted flora survey that were not able to be identified to species level have the potential to represent threatened flora listed as potentially occurring within the application area. DWER requested justification as to why these species are likely/unlikely to occur.</p> <p>It is unclear from the additional information provided on 27 December 2019 (herein referred to as Coterra Environments response letter) as to whether the specimens were compared at the Herbarium and by whom. DWER requests that the applicant provides further clarification on this matter to ensure that the re-examination of indeterminate species was adequately undertaken for species identification.</p> <p>It is noted that the re-examination of indeterminate species detailed in Table 4 of the additional information did not mention the <i>Verticordia</i> specimens that was not identified to species level in the targeted flora survey. Further clarification is required to be provided as to whether a re-examination of this species was undertaken, as it has the potential to represent the critically endangered <i>Verticordia staminosa</i> subsp. <i>staminosa</i> (CR).</p>

Item	Information requirements	Specifications	Rationale
2.	<p>Further evidence is required to be provided to support the claim that the priority 3 flora <i>Eucalyptus sargentii</i> subsp. <i>onesis</i> individual is not a natural occurrence, and is therefore not considered to have conservation significance at a local or regional level.</p>	<p>Additional information is required from the applicant to determine whether the priority 3 flora <i>Eucalyptus sargentii</i> subsp. <i>onesis</i> individual has been planted or is a natural occurrence.</p>	<p>DWER noted in the letter of 24 October 2019 under Item 2, Schedule 1 that the occurrence of <i>Eucalyptus sargentii</i> subsp. <i>onesis</i> (P3) within the application area is significant and requested additional information on how the impact of the proposed clearing on this species would be avoided, managed or mitigated.</p> <p>The additional information provided under Item 2, Page 6 of Coterra Environment's response letter asserts that it is questionable that the <i>Eucalyptus sargentii</i> subsp. <i>onesis</i> individual and its habitat are significant as it was identified in a different soil type to that of the other herbarium specimen records for this species, indicating it may have been planted. DWER has concluded that there is not enough information provided in the response to determine if it is likely to be a natural population of this species given there is very little vegetation remaining to give an indication of the original vegetation community. The laterite pebbles isn't a typical soil type for this species based on the specimen records, however the laterite may have come from nearby roads/tracks, therefore is not natural either.</p> <p>The applicant is required to provide further evidence to support the claim that this species was planted as the information provided is considered to be insufficient to make a concrete determination.</p>

Item	Information requirements	Specifications	Rationale
3.	<p>Identification of appropriate onsite impact mitigation/avoidance strategies.</p>	<p>The <i>WA Environmental Offsets Policy (2011)</i>, <i>WA Environmental Offsets Guidelines (2014)</i> and <i>DWER's Clearing of Native Vegetation Offsets Procedure</i> outlines the assessment and decision making processes for the use of environmental offsets and can be found at: https://www.der.wa.gov.au/your-environment/offsets.</p> <p>As such, Principle 1 of the <i>WA Environmental Offsets Policy (2011)</i> will consider offsets after strategies to avoid and mitigate significant environmental impacts have been applied.</p> <p>Any proposed modifications to the area to be cleared must be accompanied by updated maps and/or digital files reflecting these proposed changes.</p>	<p>DWER notes that the onsite mitigation/avoidance strategies provided in Coterra Environment's response letter to mitigate the impacts of the proposed clearing of 2.46 hectares of a significant remnant of native vegetation in an extensively cleared area and the highly cleared Beard vegetation communities 4 and 7 are insufficient. DWER notes that the additional information provided only details the benefits that the project will have on various stakeholders, it does not provide any information on mitigation/avoidance strategies to mitigate the environmental impacts associated to the proposed clearing as DWER requested.</p> <p>DWER notes that the Shire have proposed to offset the significant residual impacts outlined above through the provision of a monetary contribution to DWER's offset fund. As outlined in the <i>Western Australian Government's Environmental Offsets Policy (2011)</i>, environmental offsets will only be considered after proposed strategies to avoid and mitigate environmental impacts have been pursued.</p> <p>Please provide evidence of on onsite impact mitigation/avoidance strategies that have been considered by the Shire to mitigate the environmental impact of the proposed clearing of 2.46 hectares of a significant remnant of native vegetation in an extensively cleared area. This should include options explored during the planning stage that clearly demonstrates efforts to avoid native vegetation have been explored and exhausted.</p> <p>Once appropriate impact mitigation/avoidance measures have been provided to DWER, the Shire can consider the offset options discussed under Item 4.</p>

<p>4.</p>	<p>Identification of satisfactory environmental offsets.</p>	<p>Proposed environmental offsets are to be submitted using Appendix A of the <i>Clearing of native vegetation – offsets procedure</i> guideline, available via DWER's website.</p> <p>Any proposed modifications to the area to be cleared must be accompanied by updated maps and/or digital files reflecting these proposed changes.</p> <p>Please note DWER uses a calculation broadly consistent with the Commonwealth Department of the Environment and Energy (DotEE) offset calculator. These calculations have assumed particular variables that directly impact on the adequacy of an offset, and as such are to be used as a guide only.</p>	<p>If the residual impacts of the proposed clearing remain significant after the application of avoidance and minimisation techniques, an offset is required to counterbalance the significant residual impacts of the proposed clearing including of approximately 2.46 hectares of a significant remnant of native vegetation that contains the highly cleared Beard vegetation communities 4 and 7.</p> <p>DWER notes that the Shire have proposed to offset the significant residual impacts outlined above through the provision of a monetary contribution to DWER's offset fund. However, a monetary contribution to the offset fund is not generally acceptable for mitigating impacts of clearing a significant remnant of native vegetation that contains two highly cleared vegetation associations in an extensively cleared area. This was also advised by Officer Erika Eko on 6 March 2020 during a telephone conversation with Coterra Environment. Given this, it is recommended that the Shire consider exploring revegetation or land acquisition offsets.</p> <p>For revegetation offsets, the Shire should investigate whether there are any gravel reserves or reserves managed for recreation that could be revegetated. Long-term security of the revegetation would be required for it to be considered an offset, therefore the vesting of the reserve would be required to be changed to 'conservation' or a conservation covenant be placed over the land parcel. Alternatively a land acquisition offset of remnant vegetation in a very good condition containing the highly cleared Beard vegetation communities 4 and 7 would be suitable.</p> <p>It is noted that the preliminary offset calculations undertaken by DWER were based on the original proposed clearing area of 1.98 hectares. As the proposed clearing area has increased to 2.46 hectares, a revised recalculation has been undertaken based on the amended footprint area.</p> <p>Offset calculation identified that the conservation of remnant native vegetation in a very good condition, as specified below, may be sufficient to adequately address the impacts of the proposed clearing (noting that these values can all be present within one larger remnant):</p> <ul style="list-style-type: none"> - approximately 7.59 hectares of native vegetation that is a significant remnant within an extensively cleared landscape.
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Item	Information requirements	Specifications	Rationale
5.	<p>Index of Biodiversity Surveys for Assessments (IBSA) package for Coterra Environment's 2019 'Flora and Vegetation survey for the Calligiri Railway Crossing'</p> <p>Please provide your IBSA submission number once the survey has been submitted in the IBSA Portal.</p>	<p>EPA's <i>Instructions for the preparation of data packages for the Index of Biodiversity Surveys for Assessments (IBSA)</i>, and be accompanied by a completed <i>Metadata and Licensing Statement</i>.</p> <p>Each survey must be accompanied by:</p> <ul style="list-style-type: none"> - Survey Shapefiles - Survey report in PDF format - Survey report in Html format - Completed Metadata and Licensing Statement - All documents provided as a zip file. <p>Surveys should be submitted on the IBSA online portal. Further information can be found here: https://ibsasubmissions.dwer.wa.gov.au/</p>	<p>Offset calculation has identified that revegetation from a completely degraded to good condition, as specified below, may be sufficient to adequately address the impacts of the proposed clearing:</p> <ul style="list-style-type: none"> - approximately 3.9 hectares of native vegetation that is a significant remnant within an extensively cleared landscape. <p>Please note that for revegetation to be considered, a comprehensive revegetation plan would be required, and the site would have to be conserved in perpetuity. A guide to revegetation can be found at https://www.der.wa.gov.au/our-work/clearing-permits/48-guidelines-clearing-permits.</p> <p>It is noted that Coterra Environment provided an IBSA data package on 27 December 2019 for the flora survey that was undertaken for the additional clearing area (0.48 hectares).</p> <p>The IBSA data package that was provided to DWER does not meet the IBSA requirements to be accepted as it does not contain a survey report in PDF and Html format. The applicant is required to provide a revised IBSA data package to the IBSA online portal with the information outlined in the specifications column.</p>

ATTACHMENT 2 – Roadswest Engineering Report on Mitigation Actions



**INFORMATION FOR DWER IN REGARD TO
CLEARING PERMIT APPLICATION CPS 8357/1
DESIGN CONSIDERATIONS ADOPTED TO
MITIGATE CLEARING REQUIREMENTS**

SHIRE OF VICTORIA PLAINS

MOGUMBER WEST ROAD 0.11 – 0.19 SLK

MOGUMBER WEST ROAD 0.94 – 1.25 SLK

MOGUMBER WEST ROAD 1.90 – 2.50 SLK

**CALINGIRI NEW NORCIA ROAD & TOODYAY BINDI BINDI ROAD
INTERSECTION**

CALINGIRI NEW NORCIA ROAD 16.62 – 16.72 SLK

CALINGIRI NEW NORCIA ROAD 17.52 – 17.84 SLK

CALINGIRI NEW NORCIA ROAD 22.21 SLK

CALINGIRI NEW NORCIA ROAD 25.12 – 25.31 SLK

PREPARED FOR:

SHIRE OF VICTORIA PLAINS

PREPARED BY:

Tony Saraullo

DATE:

18 May 2020

Roadswest Reference No:

R2019

Roadswest Doc. No

R2019-01 Rev 0

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1 INTRODUCTION

The following report is intended to provide additional detail requested by DWER to support Clearing Permit Application No. CPS 8375/1. Specifically DWER has requested information on what steps have been taken during the design process to mitigate the impacts of the proposed roadworks on the vegetation.

The Figure No's noted below are as per the original clearing application with SLK's (Main Roads Road referencing system ie. Mile pegs) included. Copies of the figures are located in Appendix 1.

2 FIGURE 2A MOGUMBER WEST ROAD 1.90 – 2.50 SLK

2.1 Photographs



Looking west at start of left hand curve – note narrow gravel shoulder



Note trucks running off road on inside of curve – narrow shoulder, encroachment of vegetation on right hand side



Note trucks running off road on inside of curve – narrow shoulder encroachment of vegetation on right hand side

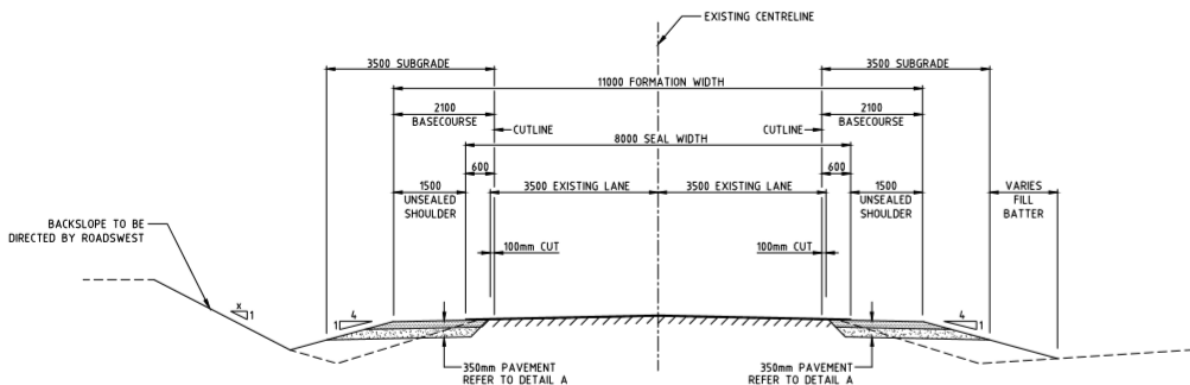
2.2 Road Safety Issues

The issue with this location is that the road is not wide enough. Each lane is only 3.5m wide and there is no sealed shoulder. As such large roadtrains on the inside of the curve, experience particularly with their rear trailer, tracking over and running on the unsealed shoulder. This causes further safety and wear issues. The seal edge frets and starts becoming narrower.

Likewise roadtrains on the outside of the curve tend to track towards the centreline risking side swipes and head on collisions.

2.3 Proposed Safety Treatment

The proposed safety treatment is to widen the road formation from 9m to 11m and widen the sealed portion from 7m to 8 to 9m similar to the detail below. This is in keeping with relevant Main Roads standards.



2.4 Mitigation Strategies to Minimise Clearing

The following mitigation strategies have been implemented in the design to minimise clearing requirements :-

- The widening has been done to the minimum amount allowed by the standards to cater for the swept path of the vehicles without risk of collisions or side swipes.
- The batters have been reduced to the steepest allowable by the standards 1:4 which is steeper than recommended 1:6. This will reduce the footprint and hence the clearing.
- The widening is being undertaken both sides to take advantage of existing clearing.

3 FIGURE 2B MOGUMBER WEST ROAD 0.94 – 1.25 SLK

3.1 Photographs



Looking west at start of right hand curve – note narrow gravel shoulder



Looking west at start of right hand curve – note narrow gravel shoulder



Looking west through right hand curve – note lack of sight distance - unsafe



Note trucks running off road on outside of curve – narrow shoulder encroachment of vegetation.
Note loss of seal edge. Vehicles can loose control on soft shoulders

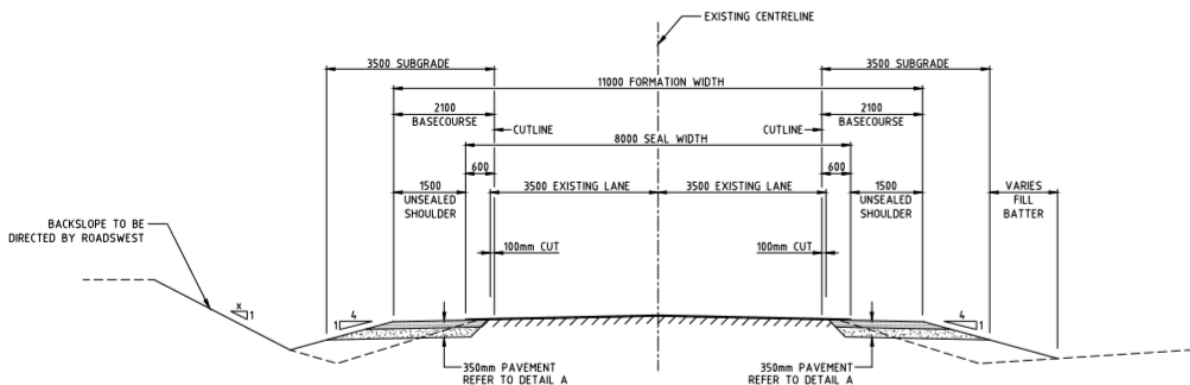
3.2 Road Safety Issues

The issue with this location is that the road is not wide enough. Each lane is only 3.5m wide and there is no sealed shoulder. As such large roadtrains on the inside of the curve, experience particularly with their rear trailer, tracking over and running on the unsealed shoulder. This causes further safety and wear issues. The seal edge frets and starts becoming narrower.

Likewise roadtrains on the outside of the curve tend to track towards the centreline risking side swipes and head on collisions.

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- The batters have been reduced to the steepest allowable by the standards 1:4 which is steeper than recommended 1:6. This will reduce the footprint and hence the clearing.
- The widening is being undertaken both sides to take advantage of existing clearing.

4 FIGURE 2C MOGUMBER WEST ROAD 0.11 – 0.19 SLK

4.1 Photographs



Note sharp bend



Note trucks running off road on inside of curve



Note how tight bend



Note vegetation on left hand side

4.2 Road Safety Issues

The main issue with this location is that it encompasses a very tight right hand bend. Large road trains, which have for a number of years been able to use this road, cannot physically manoeuvre this corner properly without departing from the lane. This will mean they have to use the unformed gravel shoulder and risk loss of control. If they maintain the prime mover in the correct location in the lane then their trailers will track over the centreline of the road and will risk a potential head on or side swipe collision.

4.3 Proposed Safety Treatment

The proposed safety treatment is to widen the road at the corner to allow more room for large trucks to manoeuvre around the corner without the need to cross over into the other lane. Some representative drawings are included in Appendix 2.

4.4 Mitigation Strategies to Minimise Clearing

The following mitigation strategies have been implemented in the design to minimise clearing requirements:-

- The widening has been done to the minimum amount allowed by the standards to cater for the swept path of the vehicles without risk of collisions or side swipes.
- The batters have been reduced to the steepest allowable by the standards 1:4 which is steeper than recommended 1:6. This will reduce the footprint and hence the clearing.
- Guardrail on the outside of the curve was not an option as access is required to properties north of the road. Installing guardrail would require the road embankment to be widened and negate any advantage gained in being able to increase the batter

5 FIGURE 2D CALINGIRI NEW NORCIA ROAD LEFT HAND SIDE 25.12 – 25.31 SLK

5.1 Photographs



Poor drainage on southern side of road



Poor drainage on southern side of road – note water damaging shoulder
and lack of drain for water to flow down



Poor drainage on southern side of road – note water damaging shoulder and lack of drain for water to flow down

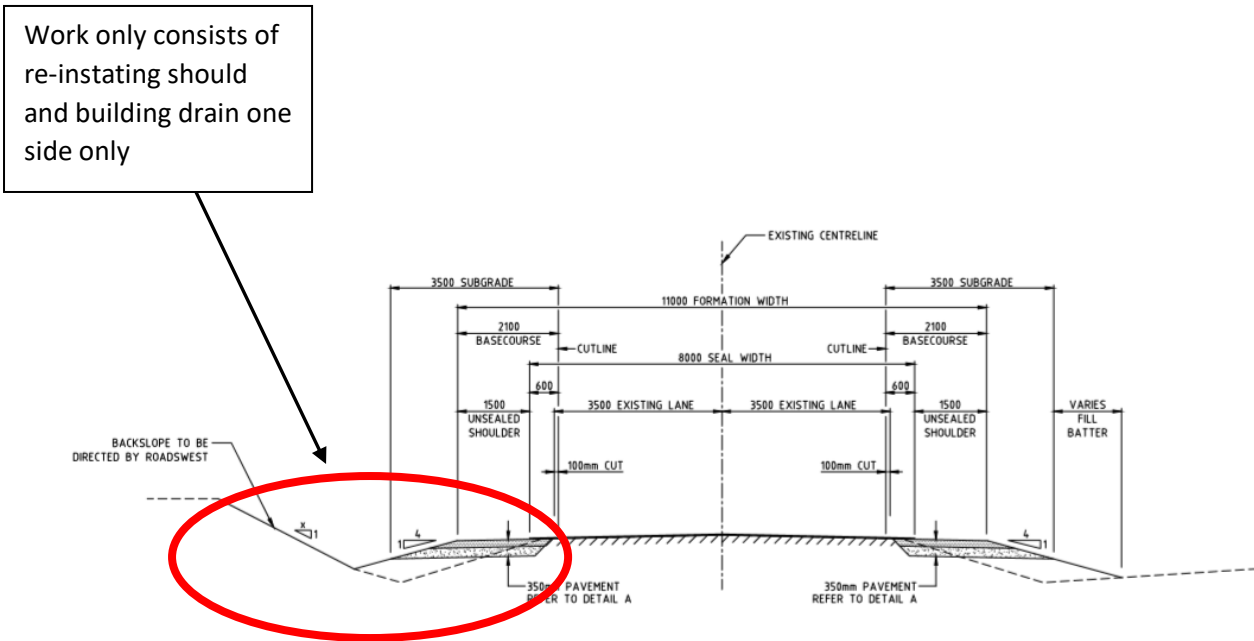
5.2 Road Safety Issues

The issues at this location are as follows:-

- There is a lack of defined drain for the rainfall run off to flow down
- The water is flowing on to the road which may cause vehicles to aquaplane
- The run off is damaging the shoulder and causing scours which will eventually eat into the sealed portion of road.
- The gravel should will become saturated and if a vehicle runs off the road its wheels may sink (rut) and become unstable.

5.3 Proposed Safety Treatment

The proposed safety treatment is to reconstruct the shoulder on the southern side of the road for 190m and include a drain. This is highlighted in the section below.



5.4 Mitigation Strategies to Minimise Clearing

The following mitigation strategies have been implemented in the design to minimise clearing requirements :-

- The batters have been reduced to the steepest allowable by the standards 1:4 which is steeper than recommended 1:6. This will reduce the footprint and hence the clearing.

6 FIGURE 2E CALINGIRI NEW NORCIA ROAD 22.21 SLK CULVERT

6.1 Photographs



Culvert from north side of road – end of culvert too close to the road



Shoulder on north side of road - narrow



Shoulder on south side of road - narrow



Culvert from south side of road – end of culvert too close to the road – sudden drop off

6.2 Road Safety Issues

The issues at this location are as follows:-

- The culvert is considerably too short and as such there is very little room between the road and the end of the culvert. Any vehicle drifting off the road will soon end up potentially in the creek.
- The lack of width of the culvert is exacerbated by being located on a curve and the rear trailers of semi trailers are tracking over towards the edge of the culvert.

6.3 Proposed Safety Treatment

The proposed safety treatment is to widen the culvert to allow more room between the edge of the vehicle lane and the end of the culvert with the v=sudden drop off.

6.4 Mitigation Strategies to Minimise Clearing

The following mitigation strategies have been implemented in the design to minimise clearing requirements :-

- The batters have been reduced to the steepest allowable by the standards 1:4 which is steeper than recommended 1:6. This will reduce the footprint and hence the clearing.
- The use of guardrail was considered however was rejected for the following reasons:-
 - Introducing a barrier on the side of the road will introduce the 'shy line' effect where drivers will tend to stay further away from the barrier – and as the road is not wide enough here – there is serious potential for a head on or side swipe collision.
 - Barriers themselves are a hazard when they get hit by vehicles. And this is a serious consideration at this location due to the limited width.

7 FIGURE 2F CALINGIRI NEW NORCIA ROAD LEFT HAND SIDE 17.52 – 17.84 SLK

7.1 Photographs



Looking east note narrow shoulder around curve



Looking west note narrow shoulder around curve

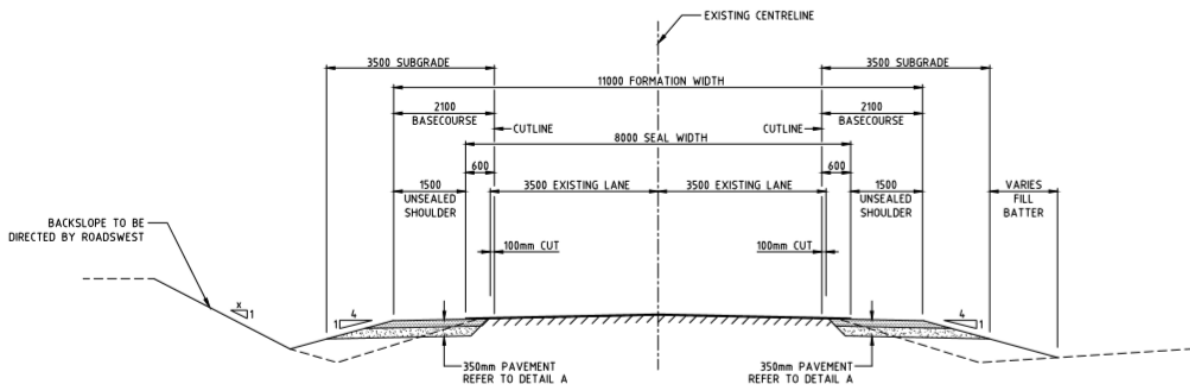
7.2 Road Safety Issues

The issue with this location is that the road is not wide enough. Each lane is only 3.5m wide and there is no sealed shoulder. As such large roadtrains on the inside of the curve, experience particularly with their rear trailer, tracking over and running on the unsealed shoulder. This causes further safety and wear issues. The seal edge frets and starts becoming narrower.

Likewise roadtrains on the outside of the curve tend to track towards the centreline risking side swipes and head on collisions.

7.3 Proposed Safety Treatment

The proposed safety treatment is to widen the road formation from 9m to 11m and widen the sealed portion from 7m to 11m similar to the detail below. This is in keeping with relevant Main Roads standards.



7.4 Mitigation Strategies to Minimise Clearing

The following mitigation strategies have been implemented in the design to minimise clearing requirements :-

- The widening has been done to the minimum amount allowed by the standards to cater for the swept path of the vehicles without risk of collisions or side swipes.
- The batters have been reduced to the steepest allowable by the standards 1:4 which is steeper than recommended 1:6. This will reduce the footprint and hence the clearing.

8 FIGURE 2G CALINGIRI NEW NORCIA ROAD 16.62 – 16.72 SLK

8.1 Photographs



Looking east from northern side of the road - note narrow shoulder and steep batter



Looking east from southern side of the road - note narrow shoulder and steep batter.
Note batter erosion



Looking east from southern side of the road - note narrow shoulder and steep batter.
Note batter erosion



Looking east from southern side of the road - note narrow shoulder and steep batter.
Note batter erosion

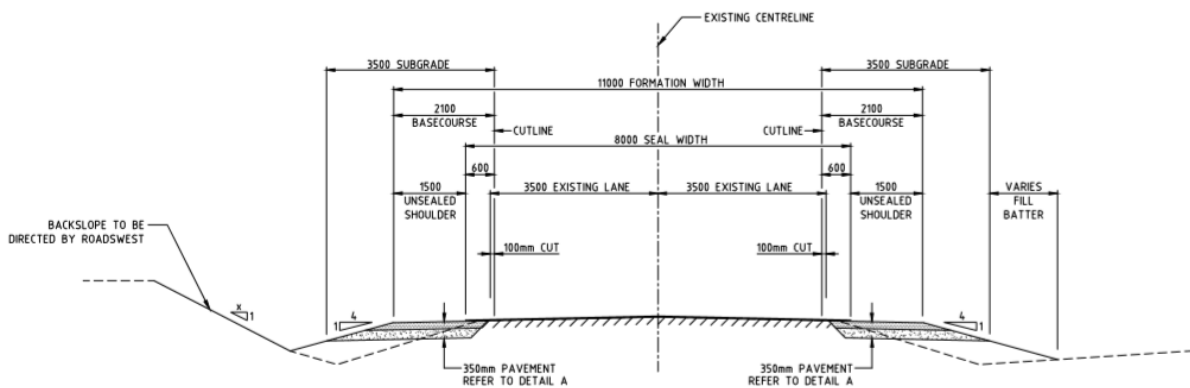
8.2 Road Safety Issues

The issue with this location is that the road is not wide enough. Each lane is only 3.5m – 4m wide and there is very little shoulder with an extremely steep batter. The batters are so steep that due to rainfall run off they are eroding. The edges of the shoulders are soft and cannot support trucks adequately.

For quite a distance there is no room on the shoulder for a vehicle to rest should it breakdown et. With poor sight distance at each end of the straight due to curves and crests sight stopping distance is minimal.

8.3 Proposed Safety Treatment

The proposed safety treatment is to widen the road formation from 9m to 11m similar to the detail below. This is in keeping with relevant Main Roads standards.



8.4 Mitigation Strategies to Minimise Clearing

The following mitigation strategies have been implemented in the design to minimise clearing requirements :-

- The widening has been done to the minimum amount allowed by the standards to cater for the swept path of the vehicles without risk of collisions or side swipes.
- The use of guardrail was considered however was rejected for the following reasons:-
 - Introducing a barrier on the side of the road will introduce the 'shy line' effect where drivers will tend to stay further away from the barrier – and as the road is not wide enough here – there is serious potential for a head on or side swipe collision.
 - Barriers themselves are a hazard when they get hit by vehicles. And this is a serious consideration at this location due to the limited width.
 - They would trap broken down vehicles in middle of the road
 - The embankment would need to be widened to accommodate the guardrail posts (for structural reasons) which would require the trees to be cleared in any regard.

9 FIGURE 2H INTERSECTION OF CALINGIRI NEW NORCIA AND TOODYAY BINDI BINDI ROAD

9.1 Photographs



Proposed New alignment – looking east down existing track – for Calingiri New Norcia just near Toodyay Bindi Bindi Road



Proposed New alignment – looking west down – for Calingiri New Norcia just near Toodyay Bindi Bindi Road – 180 degrees around from above

9.2 Road Safety Issues & Requirement for Roadworks

The main reasons for the requirement to re-align the Calingiri New Norcia Road is noted as follows:-

- The existing rail crossing on the New Norcia Calingiri Road is too close to the grain loading facility and trains park across the level crossing causing traffic issues.
- There is minimal stacking distance on the eastern side of the rail crossing between the crossing and the Toodyay Bindi Bindi Road.
- The curve on the eastern side of the rail crossing tight and restricts sight distance to the rail crossing.
- Having the CBH access, rail crossing, tight bend and Toodyay Bindi Bindi intersection so close together presents unsafe conflicts during harvet especially with road trains.

9.3 Proposed Safety Treatment

The proposed safety treatment is to re-align the Calingiri New Norcia Road to form a new intersection with the Toodyay Bindi Bindi Road. The new alignment would be designed to Main Roads and Austroad standards and encompass all the required design criteria to satisfy safety requirements. Some representative drawings are included in Appendix 3.

9.4 Mitigation Strategies to Minimise Clearing

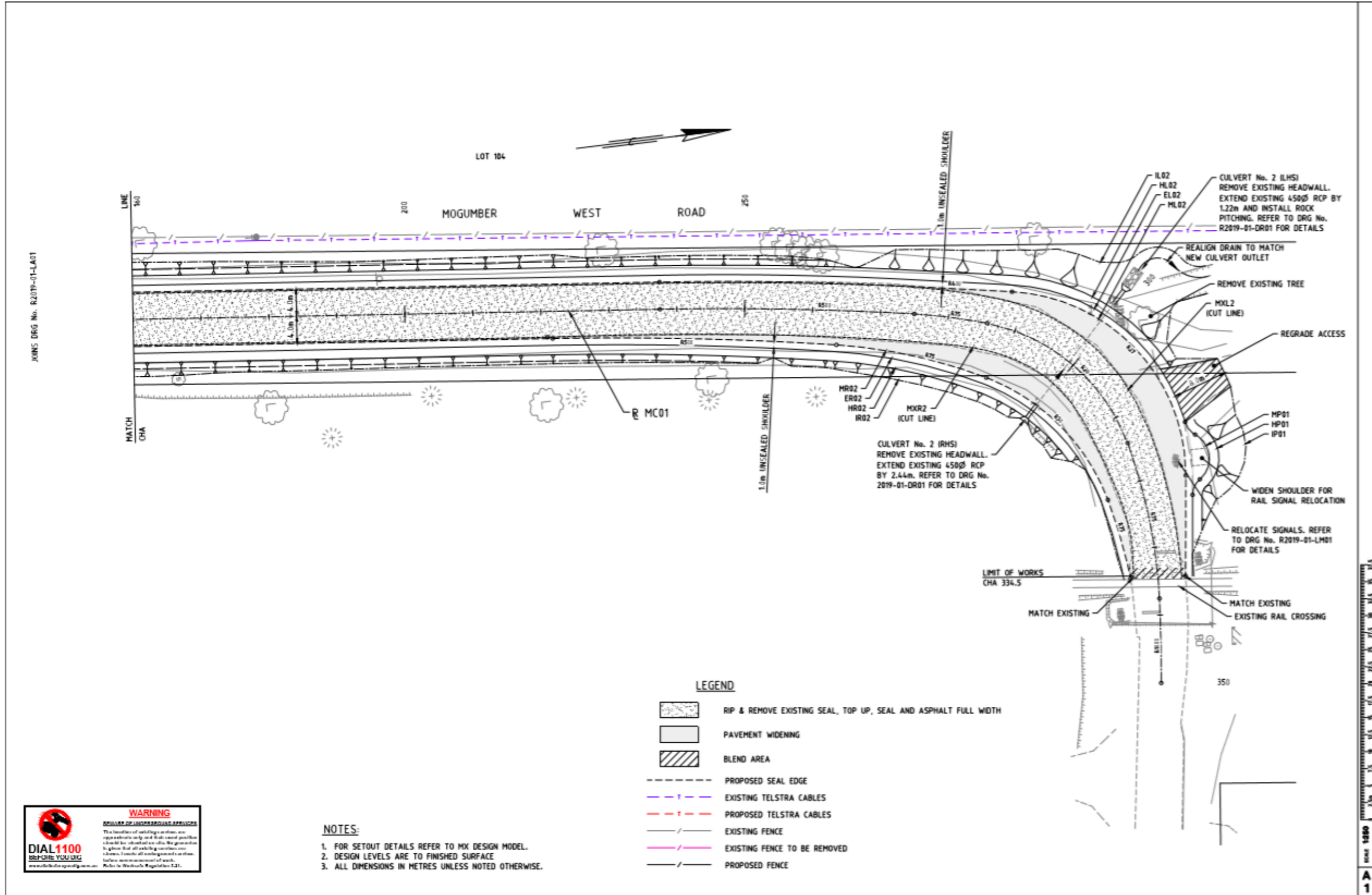
The following mitigation strategies have been implemented in the design to minimise clearing requirements :-

- The realignment route has been selected to utilise as much existing cleared (pasture) land as possible whilst maintaining safe geometric standards.
- Where the alignment has to go through native vegetation on the eastern side of the rail crossing – the alignment deliberately coincides with an existing track to minimise the clearing.
- The batters have been reduced to the steepest allowable by the standards 1:4 which is steeper than recommended 1:6. This will reduce the footprint and hence the clearing.
- Guardrail would not achieve any saving in clearing area.

APPENDIX 1

**CLEARING PERMIT APPLICATION CPS 8357/1
AERIAL FIGURES**

APPENDIX 2
DRAWINGS RELEVANT TO FIGURE 2C
0.11 TO 0.19 SLK MOGUMBER WEST ROAD



JOINS DRG No. R2019-01-LA01

WARNING
RESULTS OF UNDERGROUND SERVICES
 The location of existing services are approximate only and their exact position should be checked on site. The guarantee is given that all existing services are shown. It is the responsibility of the client to verify the location of all services on site. Refer to Worksafe Regulations 2.21.

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- NOTES:**
1. FOR SETOUT DETAILS REFER TO MX DESIGN MODEL.
 2. DESIGN LEVELS ARE TO FINISHED SURFACE
 3. ALL DIMENSIONS IN METRES UNLESS NOTED OTHERWISE.

LEGEND

- RIP & REMOVE EXISTING SEAL, TOP UP, SEAL AND ASPHALT FULL WIDTH
- PAVEMENT WIDENING
- BLEND AREA
- PROPOSED SEAL EDGE
- EXISTING TELSTRA CABLES
- PROPOSED TELSTRA CABLES
- EXISTING FENCE
- EXISTING FENCE TO BE REMOVED
- PROPOSED FENCE

SCALE 1:500
 0 2.5 5 7.5 10 12.5 15 17.5 20 22.5 25 27.5 30 32.5 35 37.5 40 42.5 45 47.5 50 52.5 55 57.5 60 62.5 65 67.5 70 72.5 75 77.5 80 82.5 85 87.5 90 92.5 95 97.5 100

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ISSUED FOR CLIENT REVIEW	22-04-18											
DESCRIPTION	APPROVED & DATE											
AMENDMENTS												



SCALE 1:4000
A 1

ISSUED FOR 10% CLIENT REVIEW		22-04-18
No.	DESCRIPTION	APPROVED & DATE
AMENDMENTS		



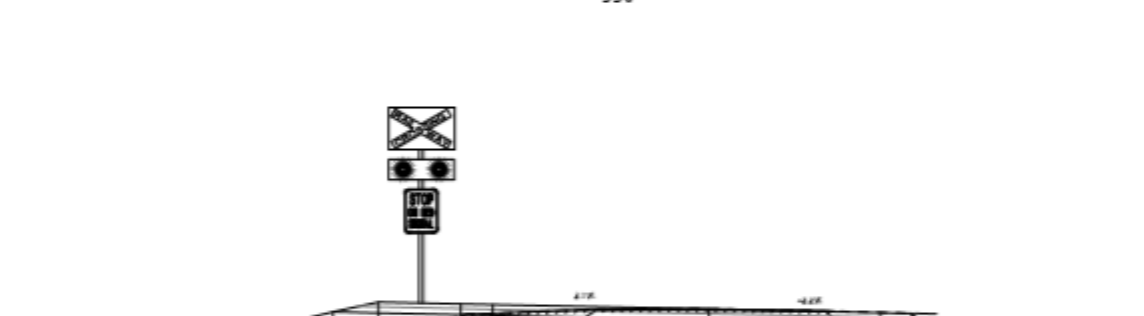
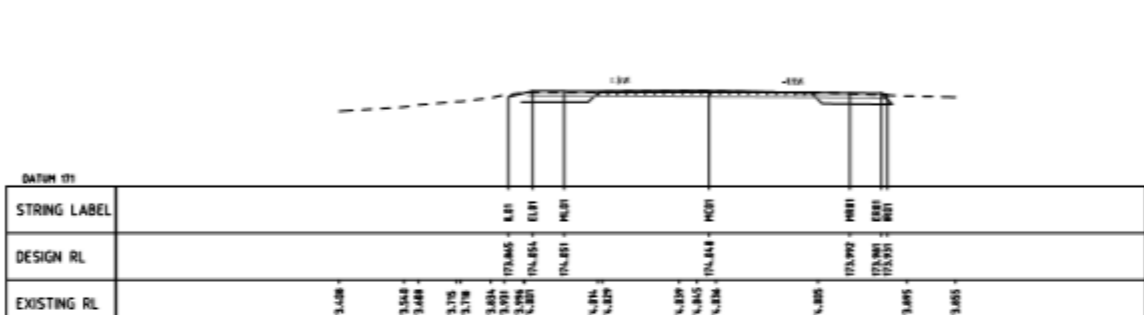
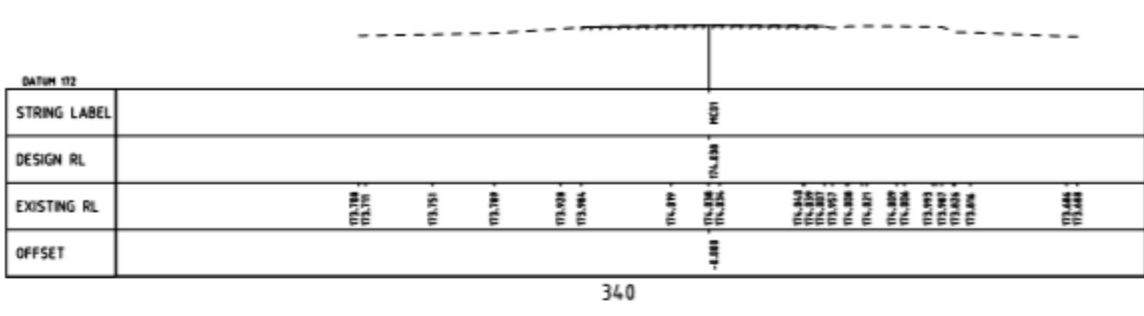
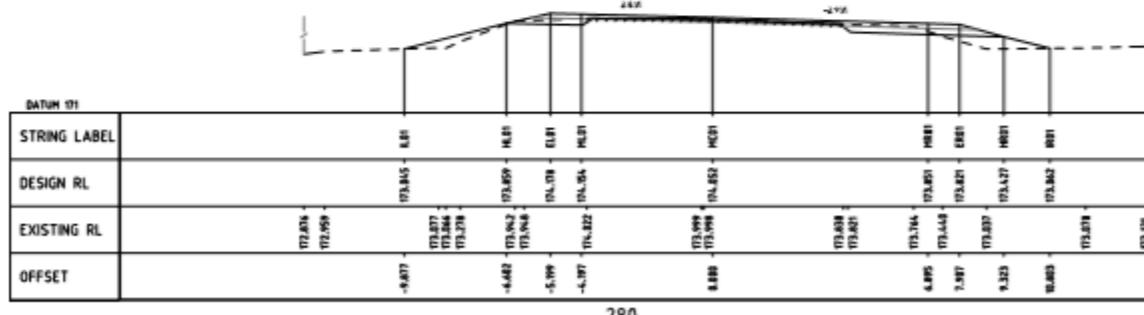
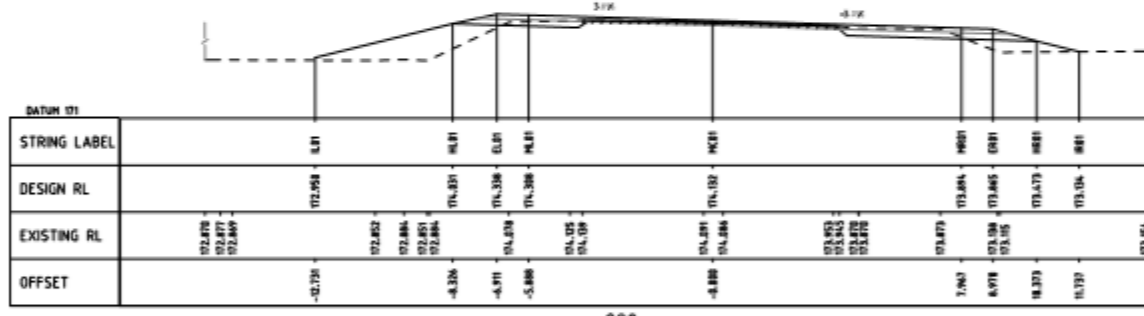
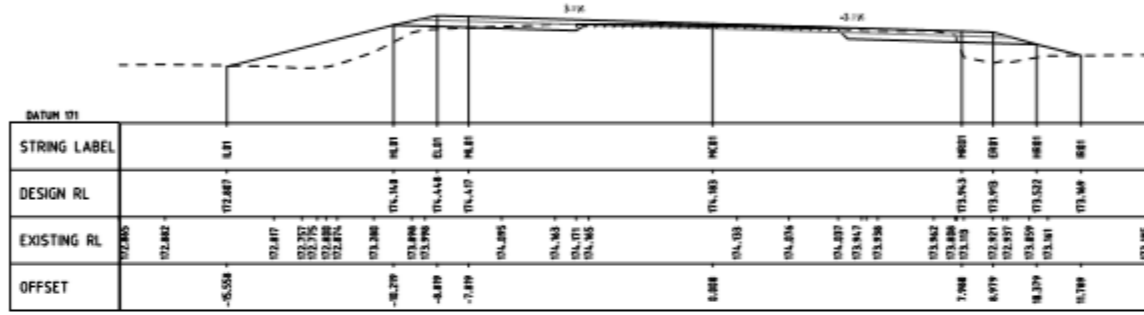
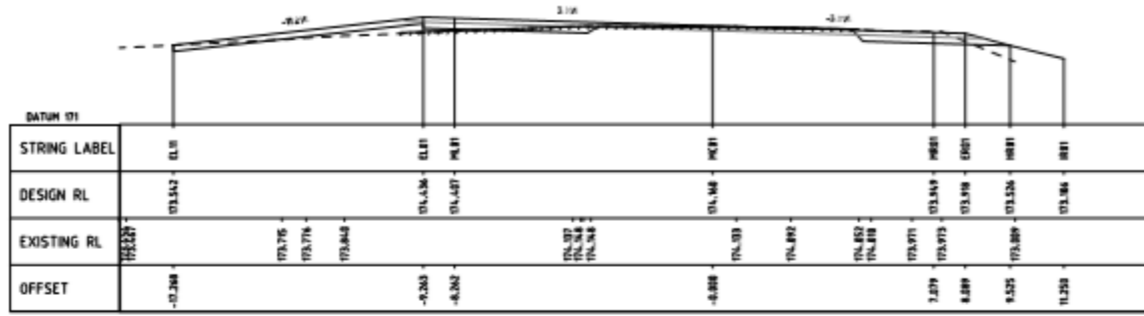
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HEIGHT DATUM: AHD			
DWG PATH			
DESIGNED BY	22-04-18	DRAWN BY	22-04-18
VERIFIED		APPROVED	

SUITE 10, 8 LUDLOW ST
 BURSWOOD WA 6100
 TELEPHONE (08) 9172 1122

ROADSWEST
 ENGINEERING GROUP PTY LTD
 PROJECT MANAGEMENT & CIVIL ENGINEERING

MOGUMBER WEST ROAD
 ROAD IMPROVEMENTS
 SLK 0.09 TO SLK 0.54
 SITE PLAN
 CHA 0 TO CHA 350
 LOCAL AUTHORITY: SHIRE OF VICTORIA PLAINS (S17)

ROADSWEST ENGINEERING GROUP	
JOB NUMBER	R2019
DRAWING NUMBER	R2019-01-SP01-A



SCALE 1:100
A 1

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No.	DESCRIPTION
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2	ISSUED FOR CLIENT REVIEW
3	ISSUED FOR CLIENT REVIEW

APPROVED & DATE	



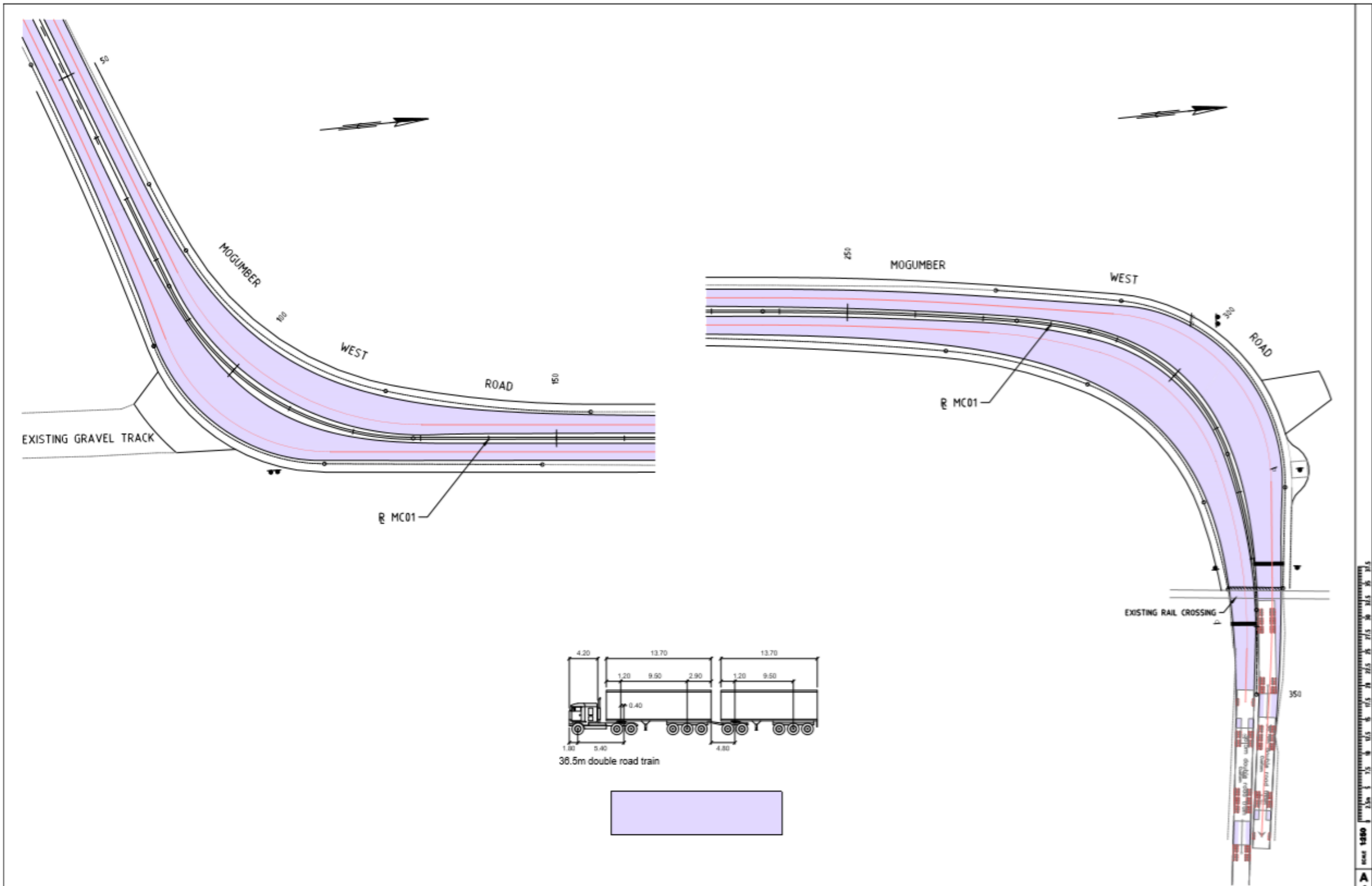
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DWG PATH:	
DESIGNED BY:	22-06-18
DRAWN BY:	22-06-18
VERIFIED:	
APPROVED:	

SUITE 15, ALLEGRIE ST
 WILSONS CREEK VIC 3100
 TEL: 03 9478 1122

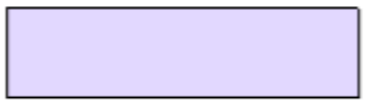
ROADSWEST
 ENGINEERING GROUP PTY LTD
 PROJECT MANAGEMENT & CIVIL ENGINEERING

MOGUMBER WEST ROAD
 ROAD IMPROVEMENTS
 SLK 0.09 TO SLK 0.54
 CROSS SECTIONS - MC01
 CHA 280 TO CHA 340
 LOCAL AUTHORITY SHIRE OF VICTORIA PLAINS (S1)

ROADSWEST ENGINEERING GROUP
 JOB NUMBER
 R2019
 DRAWING NUMBER
R2019-01-XS04-B



36.5m double road train



AMENDMENTS	
No.	DESCRIPTION
B.	SHOULDER MODIFIED FOR RAIL SIGNAL
A.	ISSUED FOR FINAL CLIENT REVIEW

APPROVED & DATE



BASE DATA INFORMATION	
SURVEY GRID:	GDA94 MGA ZONE 50
HEIGHT DATUM:	AHD
DWG PATH:	
DESIGNED BY:	22-04-18
DRAWN BY:	22-04-18
VERIFIED:	APPROVED

SUITE 6, ELDON ST
BURSWOOD WA 6100
TELEPHONE: (81) 972 1122

ROADSWEST
ENGINEERING GROUP PTY LTD
PROJECT MANAGEMENT & CIVIL ENGINEERING

MOGUMBER WEST ROAD
ROAD IMPROVEMENTS
SLK 0.09 TO SLK 0.54
36.5m DOUBLE ROAD TRAIN SWEEP PATH
CHA 0 TO CHA 350
LOCAL AUTHORITY: SHIRE OF VICTORIA PLAINS (S7)

ROADSWEST ENGINEERING GROUP	
JOB NUMBER:	R2019
DRAWING NUMBER:	R2019-01-VP01-B

SCALE 1:250
A1

APPENDIX 3

DRAWINGS RELEVANT TO FIGURE 2H

INTERSECTION OF TOODYAY BINDI BINDI ROAD & CALINGIRI NEW NORCIA ROAD

CALINGIRI



LEGEND

- EXISTING CADASTRAL BOUNDARY
- PROPOSED RAIL RESERVE CLEARING AREA

TOTAL AREA OF CLEARING = 24,98m²

WARNING
DIAL 1100 BEFORE YOU DIG
 www.dial1100.org.au
 The location of existing services (gas, water, sewer, stormwater, power, telecommunications, etc.) should be checked on site. No guarantee is given that all existing services are shown. Exclude all underground services. Contact your local council for more information.

AMENDMENTS	DESCRIPTION	APPROVED & DATE
C.	ISSUED FOR 100% REVIEW	23-06-19
B.	ISSUED FOR 85% REVIEW	12-07-19
A.	ISSUED FOR REVIEW	23-01-19



BASE DATA INFORMATION			
SURVEY GRID:	GDA94 MGA ZONE 50		
HEIGHT DATUM:	AHD		
DWG PATH:			
DESIGNED BY:	SH	23-01-19	CHECKED BY:
VERIFIED:			APPROVED:

ROADSWEST ENGINEERING GROUP
 PROJECT MANAGEMENT & CIVIL ENGINEERING
 15/176 TULLAGHBYE RD, BUNBURY WA 6230
 TEL: (08) 9437 4100

TOODYAY - BINDI BINDI ROAD
 CALINGIRI-NEW NORCIA RD
 & CBH ACCESS RD INTERSECTIONS
 RAIL RESERVE CLEARING PLAN
 LOCAL AUTHORITY: SHIRE OF VICTORIA PLAINS (SVP)

ROADSWEST ENGINEERING GROUP
 JOB NUMBER: R2019
 DRAWING NUMBER: R2019-02-CL02 - C

100% 100000 1 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100
 A 1



- LEGEND**
- EXISTING CADASTRAL BOUNDARY
 - PROPOSED CLEARING AREA
 - EXISTING CROP FARM LAND
- SERVICES LEGEND**
- TELSTRA COPPER
 - EXISTING UNDERGROUND POWER

TOTAL AREA OF CLEARING = 10438m²

TOTAL AREA OF CROP FARMING = 8227m²

WARNING
 BEFORE YOU DIG
 DIAL 1100
 www.dial1100.vic.gov.au

WARNING
 STATE OF VICTORIA
 The location of existing services and infrastructure tools and their exact profiles should be checked on site. No guarantee is given that all existing services are shown. Exclude all underground services before commencement of work. Refer to Melbourne Regulators 2.21.

NO.	DESCRIPTION	APPROVED & DATE
AMENDMENTS		



BASE DATA INFORMATION	
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HEIGHT DATUM:	AHD
DWG PATH:	
DESIGNED BY:	23-01-19
VERIFIED:	23-01-19
DRAWN BY:	23-01-19
APPROVED:	

ROADSWEST ENGINEERING GROUP PTY LTD
 PROJECT MANAGEMENT & CIVIL ENGINEERING

15/16 11-11 18/19 ST
 3188/002 318 010
 1838/004 031 907 4700

TOODYAY - BINDI BINDI ROAD
 CALINGIRI-NEW NORCIA RD
 & CBH ACCESS RD INTERSECTIONS
 CLEARING PLAN

LOCAL AUTHORITY: SHIRE OF VICTORIA PLAINS (S1)

ROADSWEST ENGINEERING GROUP
 JOB NUMBER
 R2019
 DRAWING NUMBER
 R2019-02-CL01 - C

SCALE 1:2000
 A 1

ATTACHMENT 3 - Detail of Potential Offset Options

POTENTIAL ENVIRONMENTAL OFFSET OPTIONS – SHIRE OF VICTORIA PLAINS

LOT NO.	PLAN TYPE & NO.	STREET ADDRESS	LOCALITY	LAND TENURE	OWNERSHIP DETAILS	LAND AREA	CURRENT ZONING	CURRENT USE / PURPOSE	INTEPRETED VEGETATION CONDITION AND SIZE	ENVIRONMENTAL FEATURES
4313	DP 34187	Calingiri Road (no street address number assigned)	CALINGIRI	Freehold	Shire of Victoria Plains	8.099 ha	Public Purposes Reserve (No designated purpose)	Drainage / NA	Condition varies from Degraded to Good. Some parkland cleared areas – still partially grazed? Size suitable for offset if majority in Good condition	<ul style="list-style-type: none"> - Modified drainage lines and excavated drainage area/dam. - High potential Groundwater Dependent Ecosystems - Potential Carnaby's Cockatoo breeding area - Beard Vegetation types Mostly 1022, some 7 - 1022 – 30-40% remaining in Shire - 1022 – 30-40% remaining in IBRA - 7 – 10-30% remaining in IBRA region - 7 - 10-30% remaining in Shire - Local Natural Area - Moore River Catchment Area - Czs Geology - 256Gh and 256Mb Soil Landscape Systems - Adjoining Crown Reserves and vegetated lots – makes for a large contiguous vegetation area
4314	DP 34187	Calingiri Road (no street address number assigned)	CALINGIRI	Freehold	Shire of Victoria Plains	3.1413 ha	Public Purposes Reserve (No designated purpose)	Drainage / NA	Condition varies from Completely Degraded to Good. May have been grazed historically. Could be added to Lot 4313 as an additional offset area due to degraded parts. However, separated by road from Lot 4313.	<ul style="list-style-type: none"> - Upper catchment of drainage line within Lot 4313 - High potential Groundwater Dependent Ecosystem - Potential Carnaby's Cockatoo breeding area - Beard Vegetation type 1022, - 1022 – 30-40% remaining in IBRA region - 1022 – 30-40% remaining in Shire - Local Natural Area - Adjacent to Wheatbelt wetland - Moore River Catchment Area - Czs Geology - 256Mb Soil Landscape system - Adjoining Crown Reserves and Lot 4313 to make large contiguous piece of vegetation
4318	DP 35602	Calingiri Road (no street address number assigned)	CALINGIRI	Crown Reserve vested in Shire (Reserve No.47082)	State of WA	1.8997 ha	Rural	Nil / Public Recreation	Mixed Degraded to Good condition Less impacted than Lot 4313 and Lot 4314	<ul style="list-style-type: none"> - Modified drainage lines and excavated drainage area/dam. - High potential Groundwater Dependent Ecosystems - Potential Carnaby's Cockatoo breeding area - Beard Vegetation types 1022 - 1022 – 30-40% remaining in IBRA region - 1022 – 30-40% remaining in IBRA region - Local Natural Area

POTENTIAL ENVIRONMENTAL OFFSET OPTIONS – SHIRE OF VICTORIA PLAINS

									Could be added to Lot 4313 as an additional offset, located directly adjacent	<ul style="list-style-type: none"> - Moore River Catchment Area - Czs Geology - Sand or gravel plains; quartz sand sheets commonly with ferruginous pisoliths or pebbles, minor clay; local calcrete, laterite, silcrete, silt, clay, alluvium, colluvium, aeolian sand - 256Gh and 256Mb Soil Landscape Systems - Adjoining Lots 4313 and Lot 4314 and Reserve 20121 – makes for a large contiguous vegetation area
4167	P 193526	Old Plains Road (no street address number assigned)	YARAWINDAH	Crown Reserve vested in Shire (Reserve No.45774)	State of WA	7.2843 ha	Public Purposes Reserve (No designated purpose)	Nil / Parklands	<p>Mostly Good condition, little evidence of current impacts</p> <p>Located in highly cleared agricultural area</p>	<ul style="list-style-type: none"> - Existing reserve noted as Parklands use, may not be allowable as an offset - No Groundwater Dependent Ecosystems, wetlands or drainage lines - Possible Carnaby's Cockatoo Breeding and some Feeding habitat - Beard Vegetation types: Mogumber 4 Medium woodland; marri & wandoo and Mogumber 352 Medium woodland; York gum - Michibin Mi vegetation complex - Local Natural Area - Moore River catchment - CzI geology - Pisolitic, nodular or vuggy ferruginous laterite; some lateritic soils; ferricrete; magnesite; ferruginous and siliceous duricrusts and reworked products, calcrete, kaolinised rock, gossan; residual ferruginous saprolite - Soil landscape systems 253Yh mostly, some 253Ug, 256Gt
28905	DP 188138	Old Plains Road	OLD PLAINS	Crown Reserve vested in Shire (Reserve No.402)	State of WA	22.4981 ha	Parks and Recreation Reserve	Nil / Watering place for travellers and stock.	<p>Completely Degraded (farmed) to Very Good. May be some weed invasion as lighter green evidenced in areas. Dense vegetation in parts. Possible grazing impacts, particularly in drainage line and to the east of the site (looks like it may be</p>	<ul style="list-style-type: none"> - Moderate potential for Groundwater Dependent Ecosystems - Drainage line runs through the reserve - Possible Carnaby's Cockatoos Feeding and Breeding habitat - Beard vegetation Mogumber 4 Medium woodland; marri & wandoo - Coolakin, Ck vegetation complex - Beard representation 10-30% remaining in Shire, 10-30% remaining in IBRA - Local Natural Area - Swan Avon Catchment - Ag Geology – - Soil landscape system – 253Yh and 253Wa

POTENTIAL ENVIRONMENTAL OFFSET OPTIONS – SHIRE OF VICTORIA PLAINS

									currently being grazed?).	
Various	Various	Various	BOLGART	Crown Reserve vested in Shire (Reserve No.39103)	State of WA	10.6357 ha	Parks and Recreation Reserve	Mostly unused with some sand extraction works on Lots 109 & 111 / Parklands	Fragmented lots of various sizes and various condition from Completely Degraded to Good condition, Some areas may be in Excellent condition, as they appear densely vegetated.	<ul style="list-style-type: none"> - Moderate potential of Groundwater Dependant Ecosystems - No Carnaby Cockatoo habitat mapped - Beard vegetation 352 - 352 – 10-30% remaining in IBRA region - 352 – 10-30% remaining in Shire - Mostly Local Natural Area - One drainage line running centrally north to south through the lots and associated Wheatbelt wetland mapped either side of drainage line - Swan Avon catchment - Partly within a Priority 2 Priority Drinking Water Supply Area - Geology Aty - Soil landscape systems 256Jc and 256Mb

ATTACHMENT 4 – Aerial Photographs of Potential Offset Options



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08/05/2020, 6:09:20 pm





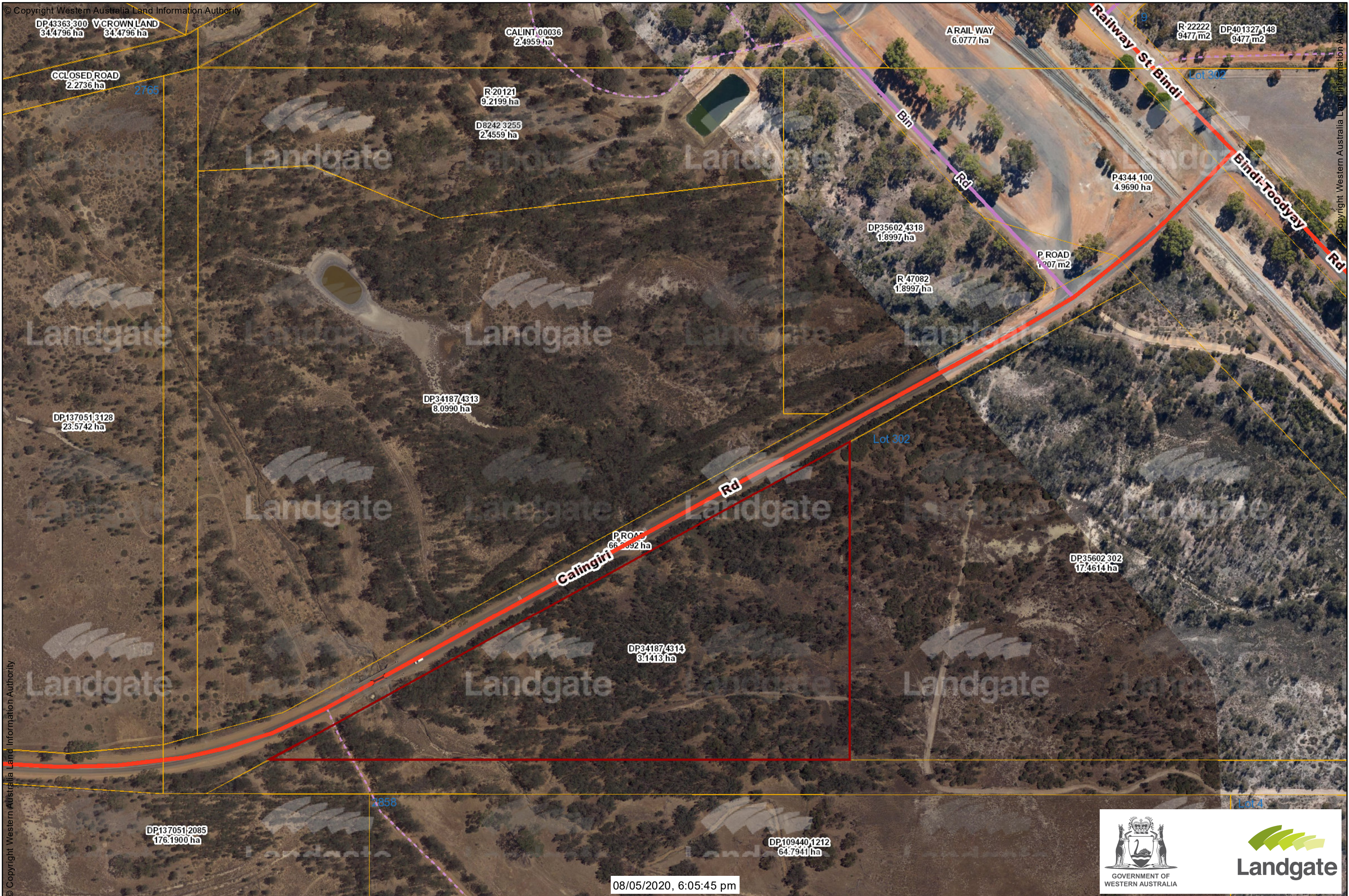
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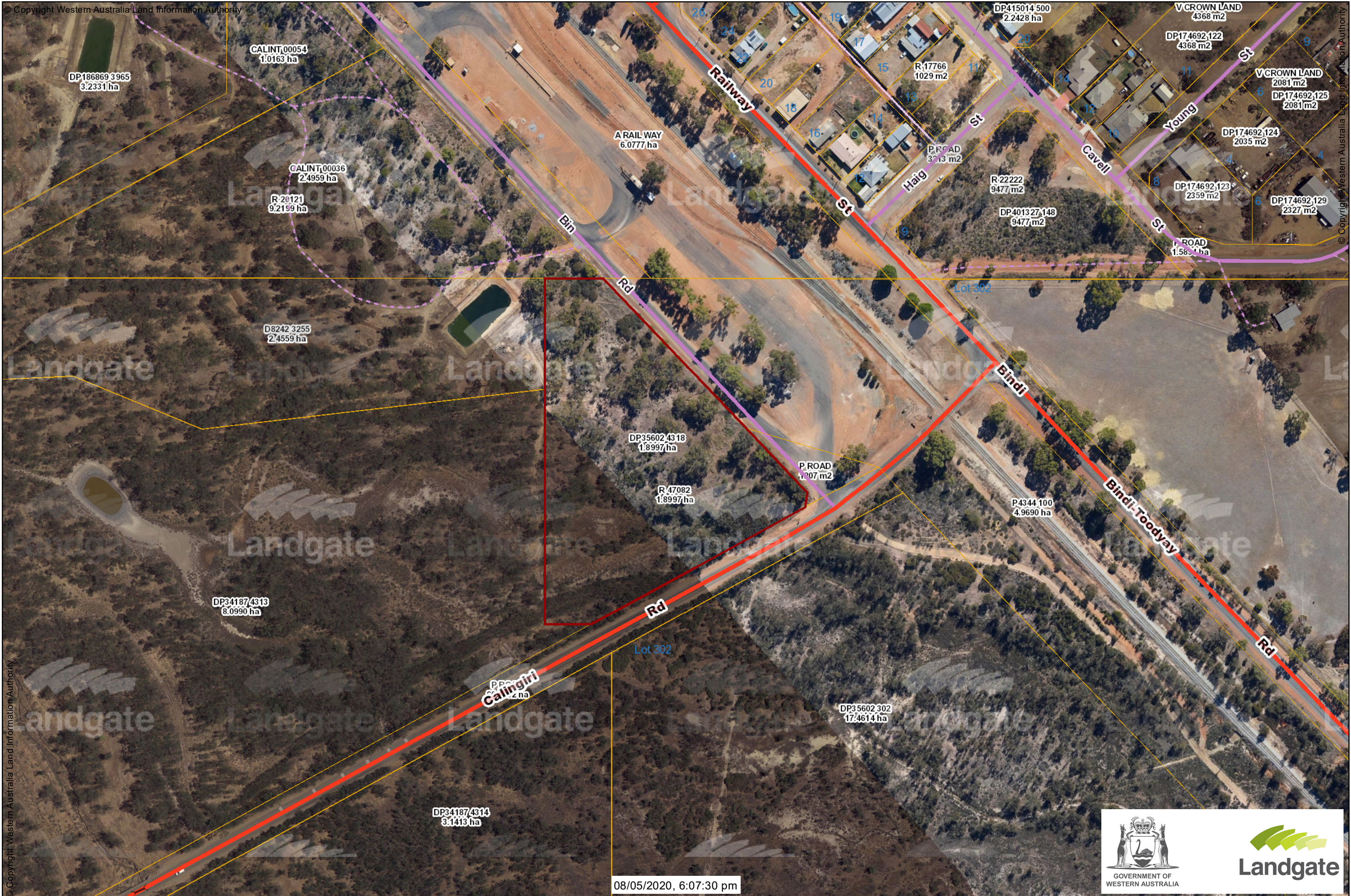
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08/05/2020, 6:03:53 pm





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1686

DP249859.922
39.9338 ha

P1887.0
706.4662 ha

2526

1245

R402
22.4981 ha

DP188138.28905
22.4981 ha

DP247214.1538
40.9522 ha

P6168 M2043
6708.9333 ha

GM

PLPFC

120

Bolgart

08/05/2020, 6:11:25 pm





08/05/2020, 6:13:49 pm

