



Queanbeyan-Palerang Regional Council

Stormwater Pipeline Realignment at Hoover Road Review of Environmental Factors

March 2020

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1. Introduction

1.1 The proposal

The Queanbeyan-Palerang Regional Council (QPRC) propose to replace a collapsed stormwater pipeline that passes under a landfill site at the end of Hoover Road in Queanbeyan, NSW. Council propose to seal off the collapsed stormwater pipeline and construct a new, alternate alignment along Hoover Road to avoid the disused landfill site (the proposal).

Council has engaged GHD to prepare a Review of Environmental Factors (REF) to assess the potential environmental impacts of the proposal.

For the purpose of this REF, the following definitions are used:

- The 'proposal' or the 'proposal site' refers to the area required for construction of the proposal, including construction vehicle access. It includes the construction footprint, site compound, stockpile sites and any areas that would be disturbed (see Figure 1-1)
- The 'study area' refers to the area of impact and any additional areas, which are likely to be affected by the proposal, either directly or indirectly. Generally, the study area includes the area up to 500 metres from the proposal site.
- The 'locality' refers to the area within a 10 kilometre radius of the proposal.

1.2 Purpose of this report

This REF has been prepared by GHD on behalf of Council to assess the potential environmental impacts of the proposal. For the purposes of the proposal, Council is the proponent and determining authority under Division 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

The purpose of the REF is to describe the proposal, to document the likely impacts of the proposal on the environment, and to detail mitigation measures to be implemented as part of the proposal.

The proposal has been assessed in the context of clause 228 of the Environmental Planning and Assessment Regulation 2000, the *Biodiversity Conservation Act 2016* (BC Act), and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). In doing so, the REF helps to fulfil the requirements of section 111 of the EP&A Act that Council examine and take into account to the fullest extent possible, all matters affecting or likely to affect the environment by reason of the activity.

The findings of the REF would be considered when assessing:

- Whether the proposal is likely to have a significant impact on the environment and therefore the necessity for an Environmental Impact Statement to be prepared and approval to be sought from the Minister for Planning and Environment under Part 5 of the EP&A Act.
- The significance of any impact on threatened species as defined by the BC Act, in section 1.7 of the EP&A Act and therefore the requirement for a Species Impact Statement.
- The potential for the proposal to significantly impact on a matter of national environmental significance or Commonwealth land and the need to make a referral to the Australian Government Department of the Environment and Energy (DotEE) for a decision by the Commonwealth Minister for the Environment on whether assessment and approval is required under the EPBC Act.

1.3 Scope and limitations

This report has been prepared by GHD for Queanbeyan-Palerang Regional Council and may only be used and relied on by Queanbeyan-Palerang Regional Council for the purpose agreed between GHD and the Queanbeyan-Palerang Regional Council as set out in section 1.2 of this report.

GHD otherwise disclaims responsibility to any person other than Queanbeyan-Palerang Regional Council arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report (refer section(s) 1.4 of this report). GHD disclaims liability arising from any of the assumptions being incorrect.

GHD has prepared this report on the basis of information provided by Queanbeyan-Palerang Regional Council and others who provided information to GHD (including Government authorities), which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.

1.4 Assumptions

Assumptions made by GHD when undertaking services and preparing the REF include (but are not limited to):

- The impact footprint of the proposal would be as presented in Figure 1-1, and described in section 3.
- The safeguards and management measures detailed in section 7 would be implemented.
- An Aboriginal Heritage Due Diligence Assessment that meets the requirements of the NSW



Paper Size A3

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Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

N

LEGEND

Name		
★	Compound/Stockpile site	■ Proposal site
●	Sensitive receiver	■ Nature reserve
—	Road	

Queanbeyan-Palerang Regional Council
Stormwater realignment at Hoover Road REF

Job Number 12511476
Revision A
Date 29 Oct 2019

Proposal site and locality

Figure 1.1

2. Need and options considered

2.1 Need for the proposal

The existing stormwater pipeline that passes under a disused landfill site at the eastern end of Hoover Road has recently collapsed, prompting the need for Council to seal off the existing stormwater pipeline and construct a new stormwater pipeline to service the residential area located to the west of Hoover Road.

The objective of the proposal is to re-establish a working stormwater pipeline system, to provide a water runoff route for excess rainfall and to protect residential buildings from potential flooding in the area.

2.2 Alternatives and options considered

Council considered three options for this proposal, as follows:

1. Re-design and construct a new stormwater pipeline
2. Realign and repair the existing stormwater pipeline
3. Do nothing.

The do nothing approach is not feasible for this project due to the risk to local residents from water inundation and flooding. This option was therefore discounted.

Option two would involve the realignment and repair of the existing stormwater pipeline located under the disused landfill site at the eastern end of Hoover Road. The realignment of the existing stormwater pipeline is not considered a viable option due to the nature of the fill material (i.e. waste) within the landfill site, and the depth of the main. As such, this option was also discounted.

2.3 Preferred option

The preferred option is the sealing off and decommissioning of the existing stormwater pipeline located under the landfill site, and constructing a new stormwater pipeline along a new alignment. This alignment is along Hoover Road, both within the road reserve, and through the road itself.

3. Description of the proposal

3.1 The proposal

Council propose to construct a stormwater pipeline along a new alignment at Hoover Road, Queanbeyan. The stormwater pipeline will commence within Council owned land on the corner of Alumba Street and Hoover Road, and travel along the northern side of Hoover Road, terminating at the western extent of the road.

Works will include the construction of a new stormwater pipeline approximately 480 m long along Hoover Road. The new stormwater pipeline will match the hydraulic capacity of the existing 2 x DN900 stormwater pipeline that has recently collapsed. Construction will also involve the installation of inspection pits, surface drainage pits and new outlets.

A four metre buffer area either side of the alignment is assumed, to accommodate machinery, stockpiling and the general construction area. This will result in a total disturbance area of about 0.38 hectares within the proposal site. This includes about 0.21 hectares of roadside vegetation and 0.17 hectares of roadway. The trenching itself will impact an area of about 0.07 hectares.

It is anticipated that work will commence in February 2020, with construction duration to be approximately 8-12 weeks.

3.2 Design

The new stormwater pipeline is designed to redirect stormwater runoff away from residential buildings and areas to prevent stormwater flooding and damage.

The following points describe the basis for design:

- The new pipeline alignment will travel along the outside edge of the existing road and avoid existing water mains, sewers and native trees
- The hydraulic capacity of the new pipeline is required to match that of the existing 2 x DN900 pipelines
- 600 mm absolute minimum cover under road
- Inspection and maintenance pits are required at the start of the new alignment and at nominal 100 m spacing
- A surface runoff pit entry into the new pipe is required near the start of the new alignment
- The outlet headwall is to be child-safe
- The design will be undertaken in accordance with the following QPRC design specifications:
 - D5 Stormwater Drainage Design
 - D7 Erosion Control and Stormwater Management Design Specification
 - Handbook of Drafting Standards Development Design Specifications.

3.3 Construction activities

3.3.1 Work Methodology

Pre-construction activities

Construction would be undertaken by Council in accordance with a construction environmental management plan (CEMP).

Pre-construction activities would include:

- Site establishment, including;
 - fencing,
 - site compound, stockpile sites
- Establish work site boundaries
- Installation of environmental control measures and erosion and sediment controls
- Establishment of turning area's for vehicles, plant and equipment
- Set up temporary traffic controls.

Construction activities

Construction activities would include:

- Locate existing utilities within the area of the alignment
- Removal of vegetation from the identified clear-zone and construction footprint
- Undertake progressive earthworks and trenching works to install the replacement stormwater pipeline, backfilling as it progresses
- Undertake topsoil and seeding of the covered pipe
- Site clean-up and rehabilitation, including:
 - Removing stockpile sites and materials
 - Removing temporary erosion and sedimentation controls, following stabilisation of disturbed areas
 - Removing temporary traffic controls

Construction hours

It is anticipated that the proposal would be completed within the following hours:

- Monday to Friday: 7 am to 4 pm.
- Saturday, Sunday and Public Holidays: no work.

Plant and equipment

Plant and equipment needed for the proposal would include:

- | | |
|---------------|-----------|
| • Water carts | • Scraper |
| • Excavator | • Trucks |
| • Loader | • Roller |

3.3.2 Materials

The following materials will be required for construction:

- Two 900 millimetre RCP Class 2 pipes
- Headwall
- Culverts
- Concrete
- Fill – gravel and sand

Water may be required during construction to achieve required earthworks moisture content, and to suppress dust. If required, water would be sourced from water supply mains in the area.

3.4 Compound and stockpile sites

Council propose to establish a stockpile and compound site for the proposal on Council owned land within the vacant block at the corner of Alumba Drive and Hoover Road (refer to Figure 1-1).

In general, the facilities at the compound site would include toilet facilities, secure bunded areas for the storage of fuels and chemicals and designated parking and waste management areas. Due to the minor nature of the proposal and the short duration of construction a site office would not be necessary.

Stockpile sites would be required for storing construction materials. Temporary stockpiles would also likely be located along the existing Hoover Road during excavation of the pipeline trench, however this would be for a short duration as the trench would be backfilled as the work progresses. Stockpiling on the existing Hoover Road will have minimal impact on the surrounding environment as the road is already disturbed. Construction work and stockpiling will prevent access to the Queanbeyan and District Dog Training Club and Queanbeyan Archery Club for the duration of road closure. This is discussed further in section 5.

In addition, stockpiles would be stored:

- In areas not prone to flash flooding and more than 40 metres from a watercourse
- In areas previously disturbed that do not require the clearing of native vegetation where possible
- In plain view of the public to deter theft and illegal dumping
- Stockpiles would be located outside the drip line of trees and would be on level ground wherever possible.

Compound and stockpile sites would be temporary for the period of construction only, and would be rehabilitated before the completion of construction.

3.5 Utilities adjustments

There are a number of utilities located within the study area due to its proximity to residential houses. Two services occur within the proposal site, in the following locations:

- A water pipeline occurs to the north of the proposed stormwater pipeline. It runs parallel to Hoover Road, and parallel to the proposed stormwater alignment. It is not anticipated that this line would need to be disturbed as part of the works, however it would need to be located prior to the commencement of work.
- An existing sewer pipeline crosses Hoover Road adjacent to the vacant lot at the eastern end of the site. It then travels parallel to the southern side of the proposed alignment. It is not anticipated that this line would need to be disturbed as part of the works, however it would also need to be located prior to the commencement of work.

3.6 Property acquisition

No property acquisition would be required for the proposal. The proposed work would generally take place within the road reserve, and on the Town Common (Crown land).

4. Statutory Framework

4.1 Environmental Planning and Assessment Act 1979

4.1.1 Overview

The *Environmental Planning and Assessment Act 1979* (EP&A Act) provides the statutory basis for planning and environmental assessment in NSW. The Minister for Planning and Public Spaces is responsible for implementing the EP&A Act. The EP&A Act provides the framework for environmental planning and development approvals and includes provisions to ensure that the potential environmental impacts of a development are assessed and considered in the decision making process.

The need or otherwise for development consent is set out in environmental planning instruments – State Environmental Planning Policies (SEPPs), or Local Environmental Plans (LEPs).

4.1.2 Part 5 environmental assessment and determining authority

The proposal constitutes an activity and is permissible without development consent under *State Environmental Planning Policy (Infrastructure) 2007* (ISEPP) (see section 4.2). The proposal is therefore subject to Part 5 of the EP&A Act.

Part 5 of the EP&A Act provides for the control of ‘activities’ that do not require development consent or the approval of the Minister for Planning and Public Spaces.

Section 110 of the EP&A Act defines ‘determining authority’ as follows:

‘determining authority means a Minister or public authority and, in relation to any activity, means the Minister or public authority by or on whose behalf the activity is or is to be carried out or any Minister or public authority whose approval is required in order to enable the activity to be carried out.’

The EP&A Act’s definition of ‘public authority’ (section 4) includes: ‘(a) a public or local authority constituted by or under an Act’.

For the purposes of the proposal, Council is the determining authority in accordance with the EP&A Act.

The duties of the determining authority are set out in section 5.5 of the EP&A Act. Section 5.5 requires that a determining authority ‘...*examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of that activity.*’

Section 5.7 provides that a determining authority shall not approve or carry out an activity that is likely to significantly affect the environment or threatened species, populations or ecological communities, or their habitats, unless it has considered an environmental impact statement in respect of the activity. In addition, if the proposal was to be carried out on an area of outstanding biodiversity value (AOBV), or if the determining authority decides the proposal would be likely to significantly affect a threatened species, population or ecological community or its habitat, then it must obtain and consider a species impact statement.

This REF has been prepared to consider whether the proposal would have a significant impact on the environment under Section 5.5 of the EP&A Act. Factors that need to be taken into account when considering the likely impact of an activity on the environment are outlined in clause 228 of the EP&A Regulation and are discussed in Appendix A.

4.2 State Environmental Planning Policies

4.2.1 State Environmental Planning Policy (Infrastructure) 2007

State Environmental Planning Policy (Infrastructure) 2007 (ISEPP) aims to facilitate the effective delivery of infrastructure across the State.

Clause 111(1) of the ISEPP states that development for the purpose of stormwater management systems may be carried out by or on behalf of a public authority without consent on any land. This includes development for any of the following purposes if the development is in connection with stormwater management systems:

- Construction works
- Routine maintenance works, including maintenance dredging to remove sediment build-up in a stormwater canal or at exit points into natural waterways that affects the efficiency of the stormwater management system,
- Environmental management works
- Buildings, including buildings containing amenities for staff, that have a height of not more than 12 metre above ground level (existing).

Therefore, the proposed stormwater construction at Hoover Road is permitted without consent.

4.3 Local planning instruments

4.3.1 Queanbeyan Local Environmental Plan 2012

The provisions of the *Queanbeyan Local Environmental Plan 2012* (Queanbeyan LEP) do not apply to the proposal due to the application of the ISEPP. Nevertheless, consideration is given below to the provisions of the LEP.

The proposal is located within the E2 – Environmental Conservation land use zone, road and environmental protection works (flood mitigation works) are permitted within these land use zones.

4.4 Other relevant legislation

4.4.1 Roads Act 1993

The objectives of this *Roads Act 1993* are:

- To set out the rights of members of the public to pass along public roads
- To set out the rights of persons who own land adjoining a public road to have access to the public road
- To establish the procedures for the opening and closing of a public road
- To provide for the classification of roads
- To provide for the declaration of the RMS and other public authorities as roads authorities for both classified and unclassified roads
- To confer certain functions (in particular, the function of carrying out road work) on the RMS and on other roads authorities
- To provide for the distribution of the functions conferred by this Act between the RMS and other roads authorities
- To regulate the carrying out of various activities on public roads.

Under Section 138 of the *Roads Act 1993* a person must not “*erect a structure or carry out a work in, on or over a public road, or dig up or disturb the surface of a public road*” otherwise than with the consent of the appropriate roads authority. The proposal would involve work on Hoover Road for the construction of the new stormwater pipe. As Council is the road authority, no additional consent is required.

4.4.2 Protection of the Environment Operations Act 1997

The *Protection of the Environment Operations Act 1997* (POEO Act) establishes, amongst other things, the procedures for issuing of licences for environmental protection on aspects such as waste, air, water and noise pollution control. The owner or occupier of premises engaged in scheduled activities is required to hold an environment protection licence and comply with the conditions of that licence.

The proposal would not involve any scheduled activities listed under Schedule 1 of the POEO Act, therefore an application for an environment protection licence is not required.

With appropriate erosion and sediment controls implemented, the proposal is unlikely to cause water pollution. Therefore, an environment protection licence under the POEO Act is not required.

The POEO Act creates a number of pollution offences. If a ‘pollution incident’ were to occur during the proposal causing or threatening ‘material harm’ to the environment, Council would be obliged to notify the NSW Environment Protection Authority (EPA) immediately.

4.4.3 National Park and Wildlife Act 1974

The *National Parks and Wildlife Act 1974* provides the basis for legal protection and management of Aboriginal sites within NSW, and for the management of National Parks estate.

Section 90 of the Act specifies that the Director-General may issue an Aboriginal Heritage Impact Permit (AHIP) in relation to a specified Aboriginal object, place, land, activity or person, or specified types or classes of these. An Aboriginal heritage impact permit may be issued subject to conditions, or unconditionally.

An Aboriginal AHIP must be obtained before the commencement of any project that would, or would be likely to, impact on Aboriginal objects or places.

4.4.4 Biodiversity Conservation Act 2016

The aim of the *Biodiversity Conservation Act 2016* (BC Act) is to conserve biodiversity and deliver ecologically sustainable development through a market-based approach particularly for higher risk projects. Ecological outcomes for lower risk projects would be achieved through self-assessment of risk. The market based approach would have a regional and state focus rather than a local focus on biodiversity.

The BC Act lists a number of threatened species, populations and ecological communities to be considered when deciding whether there is likely to be a significant impact on threatened biota or their habitats. If a species of flora or fauna listed in the BC Act is identified, a review must be carried out of the factors set out to establish if there is likely to be a significant impact on that species, population, ecological community or habitat. If any of these could be impacted by the proposal, an assessment of significance that addresses the requirements of section 1.7 of the EP&A Act must be completed to determine the significance of the impact.

The potential for impacts on ecology have been considered in section 6.1. The assessment concludes that the proposal would be unlikely to have a significant impact on any threatened species, populations or ecological communities listed under the BC Act. A species impact statement or assessment under the BAM is therefore not required.

4.4.1 Biosecurity Act 2015

The NSW *Biosecurity Act 2015* regulates pests, diseases and weeds in NSW. The primary object of the Act is to provide a framework for the prevention, elimination and minimisation of biosecurity risks posed by biosecurity matter, dealing with biosecurity matter, carriers and potential carriers, and other activities that involve biosecurity matter, carriers or potential carriers.

In NSW, all plants are regulated with a general biosecurity duty to prevent, eliminate or minimise any biosecurity risk they may pose. Any person who deals with any plant, who knows (or ought to know) of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practicable.

No priority weeds were present within the study area.

4.4.2 Heritage Act 1977

The *Heritage Act 1977* (Heritage Act) is concerned with all aspects of heritage conservation ranging from basic protection against indiscriminate damage and demolition of buildings and sites, through to restoration and enhancement.

Heritage places and items of particular importance to the people of NSW are listed on the State Heritage Register. Only those heritage items that are of State significance are listed on the State Heritage Register. Approval under Section 60 of the Heritage Act may be required for impacts to a listed heritage item.

None of the items listed on the State Heritage Register are present within the study area.

4.5 Commonwealth legislation

4.5.1 Environment Protection and Biodiversity Conservation Act 1999

Under the EPBC Act a referral to the Australian Government is required for proposed actions that have the potential to significantly impact on matters of national environmental significance or the environment of Commonwealth land. The impacts of the proposal on matters of national environmental significance are considered in chapter 6 and Appendix A of this REF.

This REF finds that the proposal is unlikely to have a significant impact on any matters of national environmental significance. Accordingly, the proposal has not been referred to the Australian Government Department of the Environment and Energy.

4.6 Confirmation of statutory position

An assessment of the relevant statutory planning instruments has concluded that the proposal can be assessed under Part 5 of the EP&A Act, by Council as the proponent and determining authority.

5. Consultation

5.1 Community involvement

Due to the minor nature of the works to be conducted, and the lack of impact that will be caused to nearby residents, formal consultation for the proposal was not conducted. Council would consult with adjoining residents before commencing work, and revisit the REF if required.

Consultation should be undertaken with the local community and organisations reliant on access to Hoover Road, such as the Queanbeyan and District Dog Training Club, and the Queanbeyan Archery Club. During the construction period, access to these clubs from Hoover Road will be unavailable or restricted.

5.2 ISEPP Consultation

Clauses 13 to 16 of the ISEPP require that public authorities undertake consultation with councils and other public authorities for certain activities when proposing to carry out development without consent.

The proposal does not trigger any of the requirements for ISEPP consultation under these clauses. Formal ISEPP consultation is not required.

6. Environmental assessment

6.1 Biodiversity

This chapter of the REF provides a detailed description of the potential environmental impacts associated with the construction and operation of the proposal. All aspects of the environment potentially impacted upon by the proposal are considered. This includes consideration of the factors specified in the guidelines *Is an EIS required?* (DUAP 1999) as required under clause 228(1)(b) of the Environmental Planning and Assessment Regulation 2000. The factors specified in clause 228(2) of the Environmental Planning and Assessment Regulation 2000 are also considered in Appendix A. Site-specific safeguards are provided to ameliorate the identified potential impacts.

6.1.1 Methodology

A desktop database review was undertaken to identify threatened flora and fauna species, populations and ecological communities (biota) listed under the BC Act and FM Act, and MNES listed under the EPBC Act, that could be expected to occur in the locality, based on previous records, known distribution ranges, and habitats present. In addition, searches of relevant priority weeds were also conducted. The searches included:

- OEH Atlas of NSW Wildlife database– licensed data for Queanbeyan-Palerang local government area. Search of all terrestrial threatened flora and fauna species (within a 10 kilometre radius of proposal site) (searched August 2019) (OEH 2019a)
- OEH (2019b) NSW threatened species, online profiles
- DotEE (2019a) EPBC Act Protected Matters Search Tool – for a 10 kilometre radius around the proposal site (searched August 2019)
- DotEE (2019b) Species profile and threats database, online profiles
- DPI – priority weed declarations – Queanbeyan-Palerang LGA control area (DPI 2019) (searched August 2019).

Field surveys

Flora and fauna field surveys were conducted by an ecologist on 02 July 2019. Where appropriate, field surveys were conducted in accordance with the *'Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities Working Draft'* (DEC 2004) (see Figure 6-1).

The primary objectives of the field surveys were to:

- Determine the presence and/or potential for threatened flora and fauna species, populations, ecological communities, listed under the NSW BC Act and Commonwealth EPBC Act, and their habitats to occur in the study area
- Determine the value of the habitat in the study area for flora and fauna species, particularly for threatened species and species of conservation significance, and describe potential impacts that would result from the proposal
- Describe the flora and fauna species, habitat, populations and ecological communities in the study area in relation to their occurrence and quality in the locality. This included ground-truthing, reference to aerial photographs and vegetation mapping
- Determine the condition and extent of vegetation removal required for the proposal.

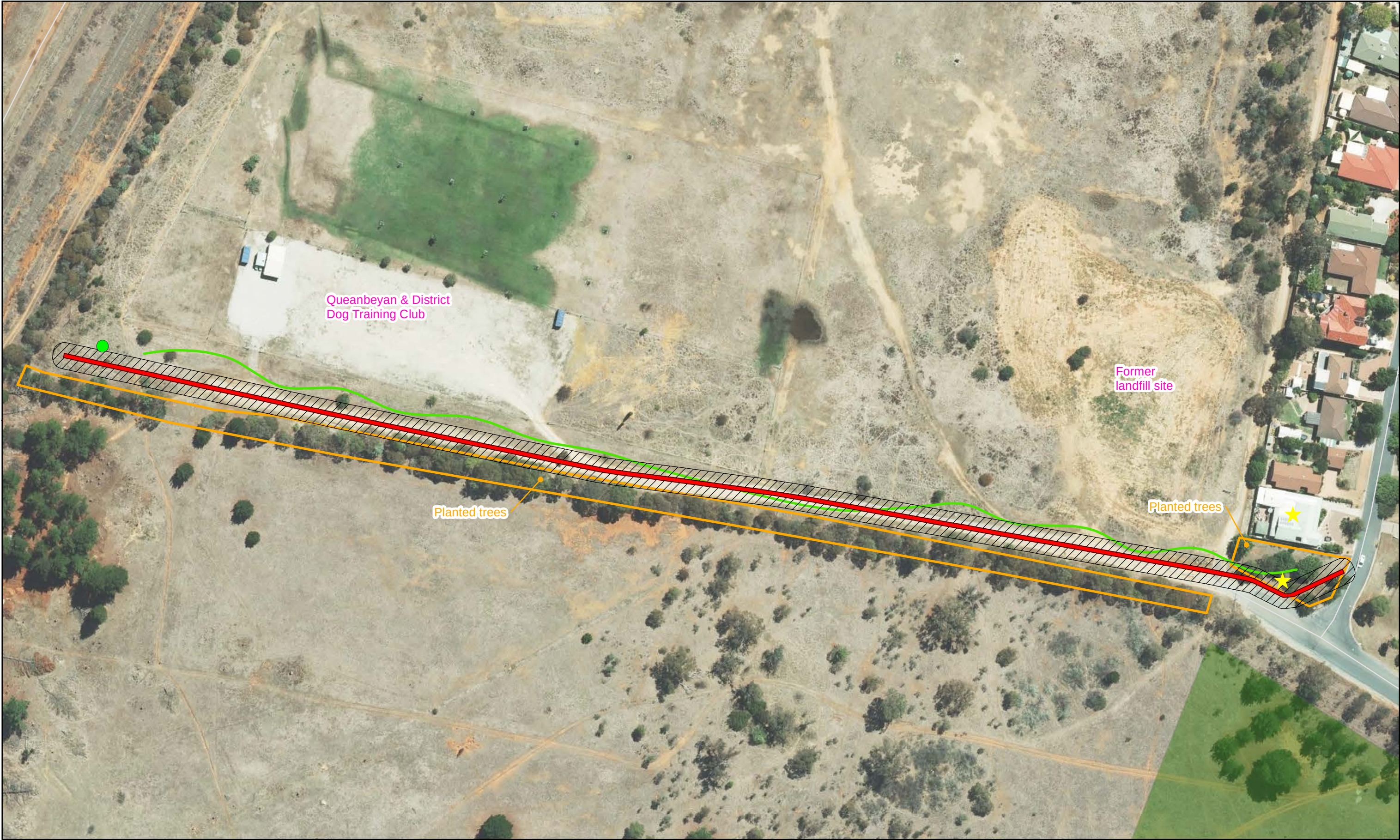


Table 6-1: Survey effort for biodiversity assessment

Survey method	Effort
Flora plot and transect surveys	Transect survey was used to check the length of the proposal site for potentially occurring threatened flora, and a flora plot was used to characterise the vegetation present within the proposal site
Fauna habitat assessment	Assessment of potential fauna habitat identified within areas of potential vegetation clearing and adjacent areas.
Opportunistic fauna observations	Opportunistic fauna observations for all fauna species encountered during flora surveys and habitat assessment.

Flora

Flora surveys were conducted in the proposal site using both a transect and plot survey (refer to Figure 6-1). For the transect survey, the random meander technique (Cropper 1993) was conducted throughout the proposal site. As rare plants often exist in discrete populations in specific areas, a random search can increase the probability of finding rare plant populations. A random search effort also encompasses a greater portion of the landscape, as the search is not limited to specific areas (only the stratification unit), and is useful in surveying difficult terrain and irregular shaped search areas.

The flora plot was conducted to determine species composition and plant community type classification. The following vegetation and habitat characteristics were recorded within each plot:

- Description of vegetation
- Dominant canopy vegetation
- Dominant understorey vegetation
- Groundcover species and abundance
- Any signs of previous disturbance and grazing.

Fauna

Fauna surveys comprised a habitat assessment for all fauna groups, observations of fauna signs and opportunistic observations of fauna during flora surveys. Fauna habitat resources were assessed to identify areas of potential habitat within the study area. Specific resources such as shelter, basking, roosting, nesting and foraging sites for birds, bats, arboreal mammals, amphibians, ground-dwelling mammals and reptiles were noted.

Habitat assessment

Habitat details recorded included presence or absence of:

- Hollow-bearing trees (arboreal mammals, hollow-nesting birds and microchiropteran bats)
- Woody debris (birds and reptiles)
- Feed trees (e.g. *Allocasuarina* spp. and mistletoe)
- Waterbodies (amphibians)

- Nests (birds)
- Rocky outcrops (reptiles)
- Other features likely to provide potential habitat for threatened fauna.

Searches for potential mammal, amphibian, and reptile habitat were undertaken and recorded during flora surveys.

Birds

Species observed at other times (such as during flora surveys) were recorded as opportunistic observations (refer to Appendix C).

Observations of fauna signs

Any indirect evidence of fauna (e.g. scats, feathers, fur, tracks, dens, nests, scratches, chew marks and owl wash) was recorded and/or photographed.

Survey timing and potential limitations

- Surveys were undertaken outside the optimal survey period for some species. Surveys were undertaken in July 2019. Many plant species are not detectable at these times of the year because they have finished flowering or have not yet flowered. For threatened flora species that were not detectable at the time of the survey, but which had the potential to occur at the site, an assessment was made of the suitability of the habitat for the species and its likelihood of occurrence.
- Some fauna species are mobile and transient in their use of resources. Consequently, it is likely that not all species either resident or transitory to the site would have been recorded during field surveys. The disadvantage of this limitation was reduced by undertaking database searches, and by assessing the habitat value of the study area for threatened and migratory species known to occur in the wider area to determine their likelihood of occurrence.
- This survey was not designed to enable all species, either resident or transitory to the study area, to be detected. Instead it was aimed at providing an overall assessment of the ecological values of the study area with particular emphasis on threatened and migratory species to allow an assessment of the potential impacts of the proposal. For those species of conservation significance that were not detected but with the potential to occur in the study area, an assessment of the likelihood of their occurrence was made based on known habitat requirements.

Assessment of the likelihood of occurrence of listed biota

An assessment of the likelihood of occurrence and possibility of impact was completed for listed species, populations and ecological communities with the potential to occur in the study area.

In assessing which of these species, populations and ecological communities are 'likely' to occur within the study area (as described in '*Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities Working Draft*') (DEC 2004) the following factors were taken into consideration:

- The presence of potential habitat within the study area
- Condition and approximate extent of potential habitat within the study area
- Species occurrence within the locality and region (including results of current and previous surveys and results of database searches and literature review).

In addition, the possibility of impact by the proposal on threatened biota known or likely to occur was assessed, and therefore whether an assessment of significance in accordance with the BC Act and/or EPBC Act is required. The proposal is considered to have a low potential to impact on threatened biota likely to occur due to the limited removal of highly modified and disturbed vegetation required. Therefore, no assessments of the significance of impacts were considered necessary.

6.1.2 Existing environment

Flora

Field surveys identified 49 flora species, 23 of which are native and 26 of which were introduced. A full species is provided in Appendix C.

Vegetation along Hoover Road is typically that of an introduced grassland. It features a heavy dominance of introduced grass and forb species, and appears degraded by regular mowing. Evidence of weed control for Serrated Tussock (*Nassella trichotoma*) was present.

Rows of Planted native trees including Mugga Ironbark (*Eucalyptus sideroxylon*) and scattered Blakely's Red Gum (*Eucalyptus blakelyi*) occurred along the inside fence line on the southern side of Hoover Road. Planted Radiata Pine (*Pinus radiata*) was present at the western end of Hoover Road, along with a heavy dominance of introduced groundcover species.

A patch of planted River Sheoak (*Casuarina cunninghamiana*) and a deciduous *Prunus sp* was present in the corner lot at Hoover Road and Alumba Street. Groundcover in this area is again dominated by introduced species. This is where the proposed stormwater pipeline commences.

Dominating introduced groundcover species included Phalaris (*Phalaris aquatica*), Kikuyu Grass (*Cenchrus clandestinum*) and Fennel (*Foeniculum vulgare*). Some commonly occurring native vegetation on site include Red-leg Grass (*Bothriochloa macra*) and Couch grass (*Cynodon dactylon*).

Vegetation communities

Vegetation in the surrounding area to the west (within the ACT) is mapped as Native Grasslands, Natural Temperate Grasslands and Exotic Grasslands. However, the vegetation within the proposal site is considered to be introduced grassland, and planted trees, and does not constitute a classified plant community type (PCT).

Fauna

Surveys undertaken by GHD identified 17 bird species and three mammal species (Appendix C). A range of mammal and reptile species are also likely to occur, however were not identified during surveys. No introduced species were recorded.

Fauna habitat

Threatened biota

The literature review, database search and field surveys identified the following species listed under the BC Act and EPBC Act with the potential to occur in the locality (Appendix D)

- Four reptiles, 21 birds, four mammals, two insects, three amphibians, two fish, 12 flora species and two communities likely to occur in the study area that are listed under the NSW BC Act are predicted, known or likely to occur in the locality (Table 6-2).

- two ecological communities, 12 bird species, two fish species, four amphibian species, six mammal species, three reptile species and 13 flora species listed under the Commonwealth EPBC Act predicted, known or likely to occur in the locality (Table 6-2).

However, given the predominantly cleared and disturbed nature of the proposal site, few of these would occur or be impacted by the proposal.

Likelihood of threatened biota occurring in the study area

Table 6-2: Threatened and migratory species predicted, known or likely to occur in the study area

Species	Status		Likelihood of occurrence in the study area	Likelihood of impact
	BC Act	EPBC Act		
Ecological communities				
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	E	CE	Low	None
Natural Temperate Grasslands of the Southern Tablelands of NSW and the ACT	CE	CE	Moderate	Unlikely
Plants				
<i>Caladenia actensis</i> Canberra Spider Orchid	-	CE	Low	Unlikely
<i>Caladenia tessellata</i> Thick Lip Spider Orchid	V	E	Low	Unlikely
<i>Calotis glandulosa</i> Mauve Burr-daisy	V	V	Low	Unlikely
<i>Dodonaea procumbens</i> Trailing Hop-bush	V	V	Low	Unlikely
<i>Eucalyptus aggregata</i> Black Gum	V	V	Low	Unlikely
<i>Lepidium ginninderrense</i> Ginninderra Peppercress	V	-	Low	Unlikely
<i>Lepidium hyssopifolium</i> Basalt Pepper-cress	E	E	Low	Unlikely
<i>Leucochrysum albicans</i> var. <i>tricolor</i> Hoary Sunray	-	E	Moderate	Unlikely
<i>Pomaderris pallida</i> Pale Pomaderris	V	V	Low	Unlikely
<i>Prasophyllum petilum</i> Tarengo Leek Orchid	E	E	Low	Unlikely
<i>Rutidosia leptorrhynchoides</i> Button Wrinklewort	E	E	Moderate	Unlikely
<i>Swainsona recta</i> Small Purple-pea	E	E	Low	Unlikely
<i>Swainsona sericea</i> Silky Swainsona -pea	V	-	Low	Unlikely
<i>Thesium australe</i> Austral Toadflax	V	V	Low	Unlikely

Species	Status		Likelihood of occurrence in the study area	Likelihood of impact
	BC Act	EPBC Act		
Birds				
Australian Painted Snipe <i>Rostratula australis</i>	E	E	Low	Unlikely
Australasian Bittern <i>Botaurus poiciloptilus</i>	E	E	Low	Unlikely
Bar-tailed Godwit <i>Limosa lapponica baueri</i>	-	V	Low	Unlikely
Black-chinned Honeyeater <i>Melithreptus gularis gularis</i>	V	-	Low	Unlikely
Brown Treecreeper <i>Climacteris picumnus victoriae</i>	V	-	Low	Unlikely
Curlew Sandpiper <i>Calidris ferruginea</i>	E	CE	Low	Unlikely
Diamond Firetail <i>Stagonopleura guttata</i>	V	-	Low	Unlikely
Dusky Woodswallow <i>Artamus cyanopterus cyanopterus</i>	V	-	Low	Unlikely
Eastern Curlew <i>Numenius madagascariensis</i>	-	CE	Low	Unlikely
Flame Robin <i>Petroica phoenicea</i>	V	-	Low	Unlikely
Fork-tailed Swift <i>Apus pacificus</i>	V	Mi	Low	Unlikely
Gang Gang Cockatoo <i>Callocephalon fimbriatum</i>	V	-	Low	Unlikely
Glossy Black Cockatoo <i>Calyptorhynchus lathami</i>	V	-	Low	Unlikely
Hooded Robin (south-eastern form) <i>Melanodryas cucullata cucullata</i>	V	-	Low	Unlikely
Little Eagle <i>Hieraaetus morphnoides</i>	V	-	Low	Unlikely
Little Lorikeet <i>Glossopsitta pusilla</i>	V	-	Low	Unlikely
Northern Siberian Bar-tailed Godwit <i>Limosa lapponica menzbieri</i>	-	CE	Low	Unlikely
Olive Whistler <i>Pachycephala olivacea</i>	V	-	Low	Unlikely
Painted Honeyeater <i>Grantiella picta</i>	V	V	Low	Unlikely
Regent Honeyeater <i>Anthochaera phrygia</i>	E	CE	Low	Unlikely
Scarlet Robin <i>Petroica boodang</i>	V	-	Low	Unlikely
Speckled Warbler <i>Chthonicola sagittata</i>	V	-	Low	Unlikely

Superb Parrot <i>Polytelis swainsonii</i>	V	V	Low	Unlikely
Swift Parrot <i>Lathamus discolor</i>	V	CE	Low	Unlikely
Varied Sittella <i>Daphoenositta chrysoptera</i>	V	-	Low	Unlikely
White-throated Needletail <i>Hirundapus caudacutus</i>	V	-	Low	Unlikely
Mammals				
Brush-tailed Rock-wallaby <i>Petrogale penicillata</i>	E	V	Low	Unlikely
Eastern Bentwing-bat <i>Miniopterus schreibersii ocea</i>	V	-	Low	Unlikely
Koala <i>Phascolarctos cinereus</i>	V	-	Low	Unlikely
Large-eared Pied Bat, Large Pied Bat <i>Chalinolobus dwyeri</i>	-	V	Low	Unlikely
Greater Glider <i>Petauroides volans</i>	V	-	Low	Unlikely
Grey-headed Flying-fox <i>Pteropus poliocephalus</i>	-	V	Low	Unlikely
Spotted-tailed Quoll <i>Dasyurus maculatus maculatus</i>	V	E	Low	Unlikely
Amphibians, Fish and Reptiles				
Booroolong Frog <i>Litoria booroolongensis</i>	E	E	Low	Unlikely
Green and Golden Bell Frog <i>Litoria aurea</i>	E	V	Low	Unlikely
Southern Bell Frog <i>Litoria raniformis</i>	E	V	Low	Unlikely
Yellow-spotted Tree Frog <i>Litoria castanea</i>	CE	CE	Low	Unlikely
Murray Cod <i>Maccullochella peelii</i>	-	V	None	None
Macquarie Perch <i>Macquaria australasica</i>	V	E	None	None
Silver Perch, Bidyan <i>Bidyanus bidyanus</i>	E	-	None	None
Grassland Earless Dragon <i>Tympanocryptis pinguicolla</i>	E	E	Moderate	Unlikely
Pink-tailed Worm-lizard <i>Aprasia parapulchella</i>	V	V	Moderate	Unlikely
Rosenberg's Goanna <i>Varanus rosenbergi</i>	V	-	Low	Unlikely
Striped Legless Lizard <i>Delma impar</i>	V	V	Moderate	Unlikely

6.1.3 Potential impacts

The proposal will impact an area of about 0.39 hectares along Hoover Road and excludes the removal of trees. However, this includes 0.17 hectares within the roadway. The remaining impact area consists of poor quality groundcover vegetation, dominated by introduced species, fringing Hoover Road and at the eastern and western extents of the pipeline alignment.

In areas where vegetation occurs, vegetation removal will not be permanent. At the conclusion of the work the site will be allowed to naturally regenerate.

The proposal has the potential to impact on fauna species that utilise grassland habitat in the nearby study area, such as reptiles, kangaroos and birds. Few threatened fauna species would occur in the proposal site, and none are likely to rely on the habitats present for their survival in the locality.

As no trees will be removed during this project, and clearing will be limited to the removal of some groundcover vegetation dominated by introduced species, from a highly modified, and pre-disturbed area, it is unlikely that the proposal will have a significant effect on threatened fauna species.

No assessments of significance have been prepared pursuant to section 7.3 of the BC Act, given the small area of impact in predominantly cleared and disturbed land.

6.1.4 Safeguards and mitigation measures

Impact	Safeguard	Responsibility and timing
Loss of native vegetation habitat	• All staff will be inducted and informed of the limits of vegetation clearing and the areas of vegetation to be retained. Areas of vegetation not to be removed will be clearly marked prior to construction • Temporary exclusion fencing will be erected to prevent encroachment and clearing of remnant vegetation beyond the construction footprint • Stockpiles of construction materials, fill or vegetation will be restricted to existing cleared areas and not within areas of adjoining native vegetation • Removal of native vegetation will be minimised wherever possible	Council and Project manager Pre-construction
Spread of weeds	• A weed management plan will be prepared before works commence, to be implemented before, during and after the works. The plan would include measures to prevent the spread of weeds, particularly priority species in the study area including: – Serrated Tussock – St. John's Wort – Sweet Briar. • Priority weeds will be managed according to requirements under the NSW <i>Biosecurity Act 2015</i>	Project manager Pre-construction and construction

Impact	Safeguard	Responsibility and timing
	• Soil disturbance will be avoided as much as possible to minimise the potential for spreading weeds and generating sediment. • Vehicle and machinery wash/brush downs may be required to ensure that noxious weed species are not spread to previously non-infested areas, particularly remnant native vegetation.	
Chemical and fuel impacts on native vegetation	• Any herbicides used for weed control will be applied to the manufacturer's specifications and as outlined in the manufacturers Safety Data Sheet • Broad spectrum non-selective herbicides (residual herbicides) will not be used. Herbicides selected for use will be appropriate for the species being treated • Spraying of herbicides will not be undertaken in windy weather or within such distance of a watercourse as will permit any of the herbicide to enter the water • Safeguards for preventing and managing spills of fuels and chemicals will be implemented as detailed in section 6.3.3 of this REF.	Project manager Construction

6.2 Topography, soils and geology

6.2.1 Existing environment

Topography and geology

The study area is located in the Canberra Plains Mitchell Landscape, which is comprised of open grassy plains with meandering channels and terraces in Quaternary alluvium of loams and sandy clays with small areas of red-brown sands of source bordering dunes, over Silurian rhyolite and rhyodacite (Mitchell 2002).

The geology of the study area falls across three geological units. The far eastern edge of the proposal site occurs within the State Circle Shale geological unit from the Silurian period. This unit comprises shale, mudstone, siltstone and minor sandstone. The majority of the proposal site falls within the Canberra Formation geological unit from the Silurian Periods. This unit is comprised of mudstone, siltstone, minor sandstone, limestone, hornfels, dacitic ignimbrite, and volcanoclastic sediments. Finally, the far western edge of the proposal site crosses into the Mount Ainslie Volcanic geological unit from the Silurian period. This unit is comprised of dacitic ignimbrite, minor ash-stone, agglomerate and shale ((NSW Department of Mineral Resources 2002).

The terrain in the locality area is gently undulating, however the proposal site itself is relatively flat, and elevation is about 576 metres above sea level.

Soils

Soil types

The Canberra Plains Mitchell Landscape typically contains shallow stony uniform loams on steeper slopes, stony harsh red-brown texture-contrast soils on the alluvium, usually with hard setting and bleached A-horizons (Mitchell 2002).

Acid sulfate soils

There are no known occurrences of acid sulfate soils in the study area. Based on mapping of acid sulfate soils for NSW (OEH 2013), it is unlikely that these would occur in the study area. Acid sulfate soils are generally confined to coastal areas, although they can occur at inland locations where there is poor drainage. No such environments are known to be present in the study area.

Soil contamination

The proposal site occurs on the western edge of the township of Queanbeyan. Land use in the study area is characterised by residential to the east, a former landfill site and the Queanbeyan and District Dog Training Club to the north, the Queanbeyan Nature Reserve to the south and the Jerrabomberra East Grasslands Nature Reserve to the west. A search for all known contaminated land did not indicate that any records exist within the NSW Environmental Protection Agency (EPA) contaminated land register (refer Appendix E), however the former landfill to the north of Hoover Road presents a potential risk for contamination of the site. The remaining surrounding land uses indicate low potential for contamination.

6.2.2 Potential impacts

Vegetation removal

The proposal would impact on an area of about 0.39 hectares, which is mostly limited to already highly modified areas within Hoover Road. About 0.21 hectares of vegetation would be removed as part of the proposal. Vegetation removal and trenching and stockpiling would expose soils to weathering processes, increasing the risk of erosion and sedimentation. Disturbed areas along the proposal site would be allowed to regenerate naturally revegetated after completion of construction.

Earthworks

The proposal would involve earthworks over the length of Hoover Road (about 480 metres) including trenching to a maximum depth of about three metres along the roadway. The total surface area disturbance for trenching is about 0.07 hectares. In addition, a construction footprint buffer around the proposed pipeline alignment of about four metres is assumed. This will result in an additional 0.38 hectares of temporary ground disturbance and vegetation removal at the proposal site.

The topsoil layer and a proportion of the surficial geology would be removed in sections, and a trench excavated to install the stormwater pipe. Work to clear the site and excavate the trench would expose the soils, however work would be conducted progressively during pipeline installation, and exposed soils would be backfilled to minimise the extent of exposed area and reduce the risk of erosion and sedimentation.

Vehicle movements, including machinery and support vehicles

Machinery and support vehicles used for the construction of the proposal would be driven off road and along the unsealed section of Hoover Road. This has the potential to transport material onto sealed roads.

Stockpiling

Excavated material would require stockpiling before being used to backfill the new pipeline trench. Inadequately stabilised stockpiles could erode in periods of high rainfall or windy conditions. This risk would be managed by ensuring adequate erosion and sedimentation controls are put in place when establishing the stockpile sites, and by not conducting any stockpiling or construction works during periods of high wind.

Soil-contamination

There is potential for chemical and fuel spills during construction, which may result in localised contamination of soils. The potential for contamination is considered to be low provided the safeguards and management measures outlined in section 6.2.3 are implemented.

6.2.3 Safeguard and mitigation measures

Impact	Safeguard	Responsibility and timing
Soil erosion, sedimentation and water quality	A soil and water management plan will be prepared as part of the CEMP for the proposal in accordance with the <i>Blue Book - Soils and Construction - Managing Urban Stormwater Volume 1</i> (Landcom 2004) and <i>Volume 2D</i> (DECC 2008a)	Project manager Pre-construction

Impact	Safeguard	Responsibility and timing
	- The soil and water management plan will include but not be limited to: - A primary erosion and sedimentation control plan and a maintenance schedule for ongoing maintenance of temporary erosion and sediment controls - An incident emergency spill plan which will include measures to avoid spillages of fuels, chemicals, and fluids onto any surfaces or into any adjacent/nearby waterways/ stormwater drains	
Soil erosion and sedimentation	- Sediment and erosion controls will be installed prior to earthworks. - Clean water diversions should be put in place to minimise the amount of dirty water that requires treatment/ management - Erosion and sedimentation controls will be checked and maintained regularly during construction, and following a rain event - High risk soil erosion activities such as earthworks will not be undertaken immediately before or during high rainfall or wind events - Topsoil excavated at the proposal site will be stockpiled separately for reuse in landscaping works - Erosion and sediment control measures will be maintained until the works are complete and areas are stabilised by revegetation.	Project manager Construction

6.3 Flooding, drainage, water

6.3.1 Existing environment

Flooding

The Queanbeyan The proposal site is located on the western edge of Queanbeyan, about 3.5 kilometres west of the Queanbeyan River. Although the river has historically flooded during times of high rainfall, flooding is unlikely to impact the proposal.

Hydrology and water quality

Hydrology

The study area drains to the south via an ephemeral unnamed watercourse which flows from east to west across the Jerrabomberra East Grassland Nature Reserve and discharges into Jerrabomberra Creek.

Surface water quality

The operation of roads can lead to the build-up of contaminants (such as oil and heavy metals) on road surfaces and roadside corridors, which can impact on water quality via runoff. Sediment pollution may also occur from unsealed roads in the study area on the outskirts of the township.

Groundwater

In general, the depth to the water-table would vary with season, rainfall, elevation, proximity to creeks and presence of aquifers. The water-table may be closer to the ground surface in the vicinity of nearby creeks and the Queanbeyan River, however, due to the nature of the works it is unlikely the water-table would be intercepted during construction.

6.3.2 Potential impacts

Flooding

The proposed replacement of the stormwater pipe at Hoover Road will improve the level of flood and water inundation protection for the nearby residents, as water runoff generated during high rain events will be properly managed.

Surface water quality

The introduction of pollutants from construction of the proposal into the surrounding environment, if uncontrolled, could potentially have the following impacts on the water quality of drainage lines and local stormwater:

- Increased sediment load and organic matter causing adverse impacts to water quality, such as increased turbidity. Provided safeguards and management measures are implemented, the proposal would be unlikely to contribute significant amounts of sediment and organic matter
- Construction activities could introduce additional materials to the local drainage lines and stormwater, particularly during high rainfall events. Contaminants could include rubbish and construction materials, and fuel or chemicals from accidental spills. Spills could occur during refuelling or through leaking of hydraulic and lubricating oil from plant and equipment.

The potential for construction to impact on local water quality is considered to be low due to the potential for soil erosion and sedimentation during construction.

Groundwater

The proposal requires excavation of up to three metres below the ground surface for trenching for pipeline construction. It is considered unlikely that groundwater would be encountered during excavation. As such, the proposal would be unlikely to affect groundwater systems during construction.

6.3.3 Safeguards and mitigation measures

Impact	Safeguard	Timing and responsibility
Soil and water contamination	• All fuels, chemicals, and liquids will be stored at least 50 metres away from any drainage lines/stormwater drains and in bunded fuel trailers and utility vehicles. If storage in the compound site is necessary, fuels,	Project manager Construction

Impact	Safeguard	Timing and responsibility
	chemicals and liquids will be stored in an impervious bunded area • The refuelling of plant and planned maintenance of machinery and plant will be undertaken 50 metres away from waterways/stormwater drains • Visual monitoring of local water quality (i.e turbidity, hydrocarbon spills/slicks) will be undertaken on a regular basis to identify any potential spills or deficient erosion and sediment controls. A record will be kept of these inspections • Emergency spill kits will be kept on-site at all times • All staff will be inducted in incident and emergency procedures and made aware of the locations of emergency spill kits Should a spill occur during construction, the emergency spill plan will be implemented. The EPA will be notified as per Part 5.7 of the POEO Act.	

6.4 Land use and property

6.4.1 Existing environment

Land use in the study area consists of:

- Queanbeyan Nature Reserve located to the south
- Jerrabomberra East Grassland Nature Reserve, and the ACT border to the west
- Disused landfill site immediately adjacent to the north of the proposal site
- Queanbeyan and District Dog Training Club and Queanbeyan Archery Club to the north

The area directly to the east and north east of the proposal site is zoned as R3 Medium Density Residential planning zones (residences north of Hoover Road and west of Lanyon Drive).

The proposal site is located entirely within Council owned land.

6.4.2 Potential impacts

Property acquisition

No property acquisition is required for the proposed works. All works, temporary stockpile sites and compound sites will be restricted to Council owned land (zoned RE1 Public Recreation) located at the corner of Hoover Road and Alumba Street.

6.4.3 Safeguards and mitigation

Impact	Safeguard	Timing and responsibility
Property access	• landowners and stakeholders affected, including the Crown Land, will be consulted on an ongoing basis regarding the impacts associated with construction	Pre-construction Council

Impact	Safeguard	Timing and responsibility
	Landowner consent would be required for any use of private property for establishment for stockpile and compound sites	

6.5 Noise and vibration

A qualitative noise and vibration assessment of the proposal was undertaken (GHD 2019c). The outcomes of the assessment are summarised in this section.

6.5.1 Existing environment

The area directly to the east and north east of the proposed site is characterised by medium density residential, with residences north of Hoover Road and west of Lanyon Drive. To the north of the proposal site is Queanbeyan Archery Club and Queanbeyan and District Dog Training Club. To the south is Queanbeyan Nature Reserve and to the west is the Australian Capital Territory border.

The nearest sensitive noise receivers are the residential properties located along the western side of Alumba Street with the nearest sensitive receiver located at 4 Alumba Street, about 12 metres away from the proposal site.

The existing acoustic environment is likely to be dominated by road traffic noise along Lanyon Drive with an estimated rating background level (RBL) of 45 dB during the day period (based on suburban areas with low density transportation – *Australian Standard, AS1055:1997 – Acoustics – Description and measurement of environmental noise*).

6.5.2 Potential impacts

Construction noise

The *Interim Construction Noise Guideline* (DECC, 2009) (ICNG) outlines construction noise management levels and provides suitable mitigation measures to reduce potential noise and vibration impacts.

The ICNG states a $L_{eq(15\text{ min})}$ dBA noise affected noise management level (NML) for residential receivers of RBL (day) +10 dB during standard work hours (Monday to Friday 7 am to 6 pm and Saturday 8 am to 1 pm). Based on the estimated RBL of 45 dB, the noise affected NML for nearby residential receivers is $L_{eq(15\text{ min})}$ 55 dBA and the highly noise affected level is 75 dBA. For the active recreational receivers to the north of the site, the noise affected NML is 65 dBA. All construction works associated with the proposal are to occur within the recommended standard construction hours.

Construction works may involve the use of vehicles and machinery such as excavators, tippers, front end loader or backhoe, compactors or pneumatic rollers, generators, and hand tools. These would be used on a periodic basis and would not likely be used concurrently.

Given the close proximity of the proposal to the residences to the east and northeast, it is likely that the noise affected NMLs would be exceeded during the day period for short periods of time when construction activities are within 60 metres of a residence. There may be some community reaction to noise in these instances, which may be as follows;

- Where the predicted noise level is greater than the noise affected NML, feasible and reasonable work practices to meet the noise affected level are required by the ICNG. Mitigation measures are recommended in Section 1.3 to reduce potential noise impacts to sensitive receivers.

- The proponent should also inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels and duration, as well as contact details.

The highly noise affected noise level is likely to be exceeded for a short period at the nearest residential receivers. This is likely to occur when the construction works are within 10 metres from the residential receivers along Alumba Road which is likely to occur for only very short periods of time therefore additional mitigation is not recommended.

Construction vibration

The use of a vibratory roller has the potential to cause cosmetic damage to nearby residential structures. Safe working distances for vibration intensive construction equipment are provided in the Construction Noise and Vibration Guideline (RMS 2010). The safe working distances for vibratory rollers are:

- 1-2 tonne vibratory roller – 5 metres
- 2-4 tonne vibratory roller – 6 metres
- 4-6 tonne vibratory roller – 12 metres
- 7-13 tonne vibratory roller – 15 metres
- 13-18 tonne vibratory roller – 20 metres
- >18 tonne vibratory roller – 25 metres

The nearest residential dwelling to the construction works is at 4 Alumba Road and is approximately 12 metres from the proposed works. It is recommended the vibratory roller used for the construction works is 6 tonnes or less or static rolling is used as an alternative. Additionally, no vibratory rolling should occur within 12 metres of the nearest residential dwelling.

If a heavier vibratory roller is required for the construction works, vibration monitoring is recommended prior to the commencement of works to determine the site specific ground conditions at the proposal site. This can be used to predict the vibration levels at the nearest residential dwelling to ensure there are no cosmetic damage impacts to the building.

The vibration criteria presented in British Standard 7385-2:1993 *Evaluation and measurement for vibration in buildings - Part 2: Guide to damage levels from groundborne vibration* should be used to establish the cosmetic damage vibration criteria for the nearby residential dwellings.

Mitigation measures are recommended in section 6.5.3 to reduce potential vibration impacts to residential dwellings.

6.5.3 Safeguards and mitigation

Impact	Safeguard	Timing and responsibility
Noise and vibration	Works would be undertaken during recommended standard hours (7.00 am to 6.00 pm Monday to Friday; 8.00 am to 1.00 pm Saturdays) and no work would be undertaken on Sundays, Public Holidays or outside these work hours without notification and approval from Council with the following details: –the locations and types of surrounding receivers likely to be affected –the nature of the proposed works –the noise characteristics of any powered equipment likely to be used –measures to be taken to reduce noise emissions –any other information the Council may request.	Pre-construction Council and Construction Contractor
	Community notification and complaints • Property owners/occupiers potentially impacted by the construction works (within 60 metres of the construction works) would be informed in advance of the proposed work (total building time, what works are expected to be noisy, their duration, what is being done to minimise noise to neighbouring properties) and provided a contact phone number for any complaints or concerns during the construction period • Provide a quick response to complaints, with complaint handling staff having both a good knowledge of the project and ready access to information. Implement all feasible and reasonable measures to address the source of complaint. • Keep a register of any complaints, including details of the complaint such as date, time, person receiving complaint, complainant's contact number, person referred to, description of the complaint, time of verbal response and timeframe for written response where appropriate.	Prior to construction Council
	The impact of construction noise and vibration shall be mitigated in the planning and implementation of the works in accordance with the ICNG work practices (Section 6) specifically: – Strategy 1 – Universal Work Practices – Strategy 3 – Plant and Equipment – Strategy 4 – On site	Pre-construction Council and Construction Contractor

Impact	Safeguard	Timing and responsibility
	Selection of equipment is to minimise vibration where possible due to the proximity of the proposal to private property and associated structures. - The size of the vibratory roller should be reduced to ensure vibratory rolling is not undertaken within the safe working distances provided in Section 6.5.2 - If vibratory rolling is to occur within the safe working distances in Section 6.5.2. Council will undertake a dilapidation survey of buildings and structures within the safe work buffer distances and vibration monitoring should be undertaken prior to construction works to determine the site specific ground conditions at the proposal site	Pre-construction Council and Construction Contractor

6.6 Air quality

6.6.1 Existing environment

The proposal site is located adjacent to a residential area on the western fringes of the city of Queanbeyan, NSW. Nearby properties and land use are detailed above in section 6.4. Sources of air pollution in the study area are likely to include:

- Emissions from vehicles on local roads
- Dust from vehicles travelling on unsealed roads located west of the proposal site.

Search results from the national pollutant inventory managed by DotEE (2017c) indicate there is one industrial facility located within the LGA, which emits 12 known substances. The most commonly reported atmospheric emissions from this facility are;

- Carbon monoxide
- Fluoride compounds
- Lead, Manganese and Mercury compounds
- Total Volatile Organic Compounds
- Toluene (methylbenzene)
- Total Phosphorus
- Total Nitrogen
- Benzene

Sensitive receivers

Sensitive receivers with the potential to be affected by air quality impacts during construction of the proposal include residents adjacent to, and nearby the proposal site. The nearest resident to work on Hoover Road is immediately north of the eastern edge of the proposal site (refer to Figure 1-1).

6.6.2 Potential impacts

During construction the following activities would potentially result in air quality impacts:

- Clearing of groundcover vegetation
- Earthworks
- Stripping and stockpiling topsoil
- Transport and handling of soils and materials.
- Use of construction vehicles, generating exhaust fumes.

Potential air quality impacts during construction would predominantly be from the generation of dust. Dust generation could result in health impacts to nearby receivers.

Given the close distance of the proposal to sensitive receivers, temporary air quality impacts are expected at some residences.

Vehicles accessing unsealed Hoover Road, could generate dust during construction. The impact of dust generation would be short-term, during the construction phase only and would be controlled using the safeguards detailed in section 6.6.3.

Machinery and other construction vehicles would emit exhaust fumes. The impact of these emissions would be temporary in nature and limited to the construction phase.

Overall, potential air quality impacts during construction would be moderate and short-term.

6.6.3 Safeguards and mitigation measures

Impact	Safeguard	Timing and responsibility
General air quality impacts	• Construction activities will be managed to minimise the emission of dust, exhaust, and other substances.	Construction Contractor
Dust	• Air quality impacts relating to dust generated by construction vehicles will be monitored • Exposed surfaces will be watered regularly to minimise dust emissions, if required • During periods of high winds, dust generating activities will cease • Stabilisation of disturbed surfaces will take place as soon as practicable • During transportation, loads will be adequately covered.	Construction Contractor
Other emissions	• Plant and machinery will be turned off when not in use as much as possible and will be fitted with emission control devices complying with Australian Design Standards • Construction plant and equipment will be maintained in a good working condition in order to limit impacts on air quality • No burning of any materials will occur	Construction Contractor

6.7 Landscape and visual

6.7.1 Existing environment

Landscape character of the study area is generally defined by urban development to the east, public recreation land to the north, and environmental conservation and Nature Reserves to the south. West of the proposal site crosses into the ACT, and features Jerrabomberra East Grasslands Nature Reserve. The study area features grassy plains and gently undulating slopes.

Queanbeyan Nature Reserve, and Jerrabomberra East Grassland Nature Reserve feature good quality remnant native grassland vegetation and provide the study area with its visual amenity and character.

Key receivers in the area include residents to the east, local road users and visitors to the Queanbeyan Nature Reserve and Queanbeyan and District Dog Training Club and Queanbeyan Archery Club.

6.7.2 Potential impacts

Construction

Visual impacts during construction would generally be associated with:

- Plant and equipment
- Earthworks
- Establishment of the site compound and stockpile site.

The visual impacts of construction works would be temporary and relatively small-scale. It is anticipated that reinstatement of disturbed areas would reduce the visual impacts in the short to medium term after construction.

Operation

The proposal would not impact existing views once works are complete, as the stormwater pipeline and culvert are underground.

6.7.3 Safeguards and mitigation measures

Impact	Safeguard	Timing and responsibility
Visual impacts of proposal	• The footprint for construction works will be kept to a minimum to minimise earthworks and maintain existing groundcover vegetation wherever possible • Sites disturbed by earthworks will be rehabilitated as soon as possible after construction.	Pre-construction and construction Council and contractor

6.8 Aboriginal heritage

In assessing the potential impact of the proposal on Aboriginal heritage, the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (DECCW 2010) was followed.

The proposal is not defined as a low impact activity under the *National Parks and Wildlife Regulation 2009* (NPW Regulation) as it involves excavation of soil. The due diligence process is therefore relevant to the proposal.

6.8.1 Existing environment

A search of the NSW Aboriginal Heritage Information Management System (AHIMS) was undertaken on 23 August 2019 with a search buffer of 200 metres around the proposal site. No Aboriginal sites are recorded within this buffer area.

The results of the AHIMS search indicate that no Aboriginal objects or Aboriginal places have been recorded within about a 200 metre radius of the proposal site (Appendix E).

The study area and proposal site have been substantially modified by the development of residential areas and dwellings, and the development of roads. The proposed stormwater pipeline is located along Hoover Road, which has previously been cleared of native vegetation, and now contains predominantly only introduced grassland. In addition no mature trees would be removed by the proposal.

6.8.2 Potential impacts

The due diligence assessment process detailed in the Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales (DECCW 2010) was followed for the proposal as outlined in Table 6-3.

Table 6-3: Due diligence assessment

Due diligence matter	Response
1. Will the activity disturb the ground surface or any culturally modified trees?	Yes – the proposal would disturb the ground surface for the construction of the stormwater pipeline; however the proposal site is located in previously disturbed land. No trees would be removed by the proposal.
2a. Are there any relevant confirmed site records or other associated landscape feature information on AHIMS?	The results of the AHIMS search indicate that no Aboriginal objects or Aboriginal places have been recorded within 200 metres of the proposal site.
2a. Are there any other sources of information of which a person is already aware?	There are no other known studies of the area relevant to the proposal.
2b. Are there landscape features that are likely to indicate presence of Aboriginal objects?	No landscape features such as rock shelters, sand dunes, permanent waterways, waterholes or wetlands are present in the study area. The proposal is located on land that has been previously disturbed by clearing and road development.

No Aboriginal sites were identified during the current study, and the study area was assessed as holding little potential for the existence of undetected Aboriginal sites. It is unlikely that the proposal would have any impacts on sites of Aboriginal heritage.

6.8.3 Safeguards and mitigation measures

Impact	Safeguard	Timing and responsibility
Potential impacts to Aboriginal heritage	• In the event of an unexpected find of an Aboriginal heritage item (or suspected item), all works in the vicinity of the find must cease and the site supervisor will be contacted immediately for advice on how to proceed • If the origin of the find cannot be determined quickly, or if it is determined that the find is of Aboriginal origin, immediately notify the following authorities or personnel of the discovery: – OEH (Queanbeyan Office): ph. 131 555 or (02) 6966 8100 – Ngambri Local Aboriginal Land Council (LALC): ph. (02) 6297 4152 • Facilitate, in co-operation with the appropriate authorities and Ngambri LALC: – The recording and assessment of the finds	Project manager Construction

Impact	Safeguard	Timing and responsibility
	– Fulfilling any legal constraints arising from the find(s). This will include complying with OEH directions – The development and conducting of appropriate management strategies. Strategies will depend on Aboriginal consultation and the assessment of the significance of the find(s). • Where the find(s) are determined to be Aboriginal objects as defined by the NPW Act, any re-commencement of construction related ground surface disturbance may only resume in the area of the find(s) following compliance with any consequential legal requirements and gaining written approval from OEH (as required).	
Potential impacts to unexpected human remains	• Cease all ground surface disturbance in the area of the find(s) immediately by notifying machinery operators in the immediate vicinity of the find(s). Also avoid touching the discovered remains • Inform the site supervisor as soon as possible to organise for a qualified professional opinion (usually the police in the first instance) • Create a buffer zone of 50 metres by 50 metres around the find spot. No authorised entry or earth disturbance will be allowed until the discovery has been assessed.	Project manager Construction

6.9 Non-Aboriginal heritage

6.9.1 Methodology

Heritage databases were searched on 6 August 2019 to identify heritage items recorded in the study area, including the following:

- Australian Heritage database, for items and places of national heritage significance.
- NSW State Heritage Inventory, for items and places of State heritage significance.
- Heritage Schedule 5 of the Queanbeyan LEP (2012) for zoning and local heritage information.

6.9.2 Existing environment

Many heritage buildings are listed within the Queanbeyan LEP and occur within the city and surrounding areas. These include residential and recreational buildings, churches, memorials and cemeteries.

6.9.3 Potential impacts

No sites with the potential to be of non-Aboriginal heritage significance were identified during field investigations. It is unlikely that the proposal would cause any impacts to items of non-Aboriginal heritage.

6.9.4 Safeguards and mitigation measures

Impact	Safeguard	Timing and responsibility
Potential impacts to unexpected finds	• In the event of an unexpected find of a non-Aboriginal heritage item (or suspected item), all works in the vicinity of the find must cease and the site supervisor will be contacted immediately for advice on how to proceed • Works will not recommence until the heritage value and associated protection and any approval requirements have been determined	Construction Contractor

6.10 Traffic access

6.10.1 Existing environment

The proposal site is located on Hoover Road, Queanbeyan. This road is not a through road and does not experience regular traffic. Traffic that may use this road includes visitors to the Queanbeyan Nature Reserve and to the Queanbeyan and District Dog Training Club and Queanbeyan Archery Club. Figure 1-1 shows the location of roads in relation to the proposal site.

6.10.2 Potential impacts

As Hoover Road does not experience through traffic, it is unlikely that construction will impact on traffic access in the area.

Increased activity around Hoover Road during construction may temporarily impact on local residential traffic along Alumba Street.

The proposal would generate some heavy vehicle movements through the transport of machinery, fuel, general provisions and materials for the duration of construction.

Light vehicles would be required to transport staff to and from the proposal site and also used in various roles on site.

This number of vehicle movements generated by the proposal would be unlikely to significantly affect traffic on local roads as delays would be slight and short term.

6.10.3 Safeguards and mitigation measures

Impact	Safeguard	Timing and responsibility
Construction impacts to traffic	• A traffic management plan would be prepared and implemented in accordance with the Australian Standard 1742.3-2002: Manual of Uniform Traffic Control Devices and the NSW Roads and Maritime Services 'QA Specification G10 Traffic Control at Worksites' • The traffic management plans would include measures to provide safe access points to work areas from the adjacent road network, safety barriers where necessary, temporary speed restrictions when	Pre-construction & construction Contractor

Impact	Safeguard	Timing and responsibility
	necessary, specific controls for partial road closures and changed road conditions, adequate sight distances and prominent warning signage (if required). The plan would also include measures to restrict public access to the proposal site.	
Construction impacts to property access	• Access to all private property and residences would be maintained throughout construction • All fences and gates would be reinstated to the same standard as existing, prior to completion of the proposal.	Construction Contractor

6.11 Socio-economic

6.11.1 Existing environment

Queanbeyan is located about 12 kilometres east of the city of Canberra in NSW. At the 2016 census about 57,331 people were located in Queanbeyan. The city provides essential services, such as medical and community facilities, schools and shopping to local residents.

The area surrounding Queanbeyan consists of rural land use and environmental conservation areas. Queanbeyan is located in close proximity to the city of Canberra and the most common occupations in Queanbeyan include included Professionals 19.9 per cent, Clerical and Administrative Workers 18.2 per cent (ABS 2019).

6.11.2 Potential impacts

During construction there would be a potential reduction in amenity for residents as a result of construction activities. Potential impacts on amenity have been assessed in the following sections of the REF:

- Land use and property (section 6.4.2)
- Noise and vibration (section 6.5.2)
- Air quality (section 6.6.2)
- Visual (section 6.7.2).

Given the minimal works and short duration, socio-economic impacts are considered to be negligible for this project.

6.11.3 Safeguards and mitigation measures

Impact	Safeguard
General impacts to properties	• Potentially affected property owners will be contacted before the commencement of works. Residents will be notified via door knocks or letter box drops providing information on the proposed works, working hours and a contact name and number should any complaints wish to be registered.

6.12 Waste management

6.12.1 Policy setting

QPRC is committed to ensuring responsible management of unavoidable waste and to promoting the reuse of such waste through appropriate measures. This is done in accordance with the resource management hierarchy principles contained in the *Waste Avoidance and Resource Recovery Act 2001*. The resource management hierarchy principles in order of priority as outlined in the *Waste Avoidance and Resource Recovery Act 2001* are:

- Avoidance of unnecessary resource consumption
- Resource recovery (including reuse, reprocessing, recycling and energy recovery)
- Diversion of Green waste, metal waste and E-waste
- Disposal
- Chemclear - implemented in 2017 to collect unwanted agricultural chemicals.

By adopting the above principles, Council encourages the most efficient use of resources and reduces cost and environmental harm.

6.12.2 Potential impacts

The proposal is unlikely to generate large quantities of waste. Waste would potentially be generated from the following sources, some of which would be recycled or reused:

- Green waste from vegetation clearing (native and introduced vegetation). Noxious weed material would be separated from native green waste
- Chemicals and oils
- Waste water from wash-down and bunded areas
- Excess construction materials
- Redundant erosion and sediment controls
- Paper and office waste from site and management facilities
- General waste from staff (lunch packaging etc).

The potential to reuse materials would be investigated during detailed design. The largest quantity of waste expected to be produced would be from excavation activities.

Liquid and solid waste would be removed by tanker or truck and disposed of off-site at a facility that is licensed and able to accept those wastes for storage, reuse or disposal. Fuel and chemical storage areas would be bunded and protected in accordance with the specifications set out by OEH and WorkCover.

Any spoil material that cannot be used on site would be classified in accordance with the '*Waste Classification Guidelines*' (EPA 2014) and disposed of at an approved materials recycling or waste disposal facility.

Materials not reused would be removed to a licensed or approved facility. The impacts of waste generation at the site are considered to be low, and would be minimised.

6.12.3 Safeguards and mitigation measures

Impact	Safeguard	Timing and responsibility
General waste impacts	• A waste management plan will be prepared and included in the CEMP.	Pre-construction Contractor
General waste impacts	• Resource management hierarchy principles will be followed: – Avoid unnecessary resource consumption as a priority – Recover resources as far as is practicable (including reuse of materials, reprocessing, and recycling and energy recovery) – Disposal is undertaken as a last resort (in accordance with the <i>Waste Avoidance and Resource Recovery Act 2001</i>). • Site inductions will be undertaken (and recorded) by a site supervisor for all staff, to provide a thorough knowledge of all key environmental/safety issues, including waste disposal protocols • Wastes will be managed and classified in accordance with the '<i>Waste Classification Guidelines</i>' (EPA 2014) and managed in accordance with the POEO Act • Garbage receptacles will be provided for construction staff and recycling of materials encouraged. Rubbish will be transported to an appropriate waste disposal facility. • All waste material would be removed from site prior to completion of works.	Pre-construction and construction Contractor

6.13 Cumulative impacts

6.13.1 Existing environment

Developments in the locality with which the proposal has the potential to have cumulative impacts include:

- Residential development, the development of residential housing estates in the area to accommodate the expansion of the city of Queanbeyan
- Maintenance of other linear infrastructure projects including roads, power-lines and services that have been constructed in the study area and locality.

There are no other known major developments occurring concurrently or planned in the locality.

6.13.2 Potential impacts

Disturbance from the proposal could facilitate the spread of weeds in the study area, which already experiences a high level of weed incursion associated with the surrounding development.

The cumulative effects of the proposal would be minimal due to the limited scope of works for the activities covered in this REF.

6.13.3 Safeguards and management measures

The potential impacts on the environment would be minimised with the implementation of the safeguards summarised in Table 6-4.

6.14 Summary of adverse effects

The main adverse effects of the proposal would include:

- Potential construction noise impacts on nearby residents
- Potential for soil erosion and water quality impacts during construction of the stormwater pipeline
- Potential for a reduction in air quality caused by the generation of dust during construction
- Other changes in amenity and environmental risks including visual impacts and waste.

Table 6-4: Summary of safeguards and management measures

Impact	Safeguard	Responsibility and timing
Biodiversity - Loss of native vegetation and fauna habitat	• All staff will be inducted and informed of the limits of vegetation clearing and the areas of vegetation to be retained. Areas of vegetation not to be removed will be clearly marked prior to construction • Temporary exclusion fencing will be erected to prevent encroachment and clearing of remnant vegetation beyond the construction footprint • Stockpiles of construction materials, fill or vegetation will be restricted to existing cleared areas and not within areas of adjoining native vegetation Removal of native vegetation will be minimised wherever possible	Council and Project manager Pre-construction
Biodiversity - Spread of weeds	• A weed management plan will be prepared before works commence, to be implemented before, during and after the works. The plan would include measures to prevent the spread of weeds, particularly priority species in the study area including: – Serrated Tussock – St. John's Wort – Sweet Briar. • Priority weeds will be managed according to requirements under the NSW <i>Biosecurity Act 2015</i> • Soil disturbance will be avoided as much as possible to minimise the potential for spreading weeds and generating sediment. • Vehicle and machinery wash/brush downs may be required to ensure that noxious weed species are not spread to previously non-infested areas, particularly remnant native vegetation.	Project manager Pre-construction and construction
Biodiversity - Chemical and fuel impacts on native vegetation	• Any herbicides used for weed control will be applied to the manufacturer's specifications and as outlined in the manufacturers Safety Data Sheet • Broad spectrum non-selective herbicides (residual herbicides) will not be used. Herbicides selected for use will be appropriate for the species being treated	Project manager Construction

Impact	Safeguard	Responsibility and timing
	Spraying of herbicides will not be undertaken in windy weather or within such distance of a watercourse as will permit any of the herbicide to enter the water Safeguards for preventing and managing spills of fuels and chemicals will be implemented as detailed in section 6.3.3 of this REF.	
Topography, soils and geology: Soil erosion, sedimentation and water quality	- A soil and water management plan will be prepared as part of the CEMP for the proposal in accordance with the <i>Blue Book - Soils and Construction - Managing Urban Stormwater Volume 1</i> (Landcom 2004) and <i>Volume 2D</i> (DECC 2008a) - The soil and water management plan will include but not be limited to: - A primary erosion and sedimentation control plan and a maintenance schedule for ongoing maintenance of temporary erosion and sediment controls An incident emergency spill plan which will include measures to avoid spillages of fuels, chemicals, and fluids onto any surfaces or into any adjacent/nearby waterways/ stormwater drains	Project manager Pre-construction
Topography, soils and geology: Soil erosion and sedimentation	- Sediment and erosion controls will be installed prior to earthworks. - Clean water diversions should be put in place to minimise the amount of dirty water that requires treatment/ management - Erosion and sedimentation controls will be checked and maintained regularly during construction, and following a rain event - High risk soil erosion activities such as earthworks will not be undertaken immediately before or during high rainfall or wind events - Topsoil excavated at the proposal site will be stockpiled separately for reuse in landscaping works Erosion and sediment control measures will be maintained until the works are complete and areas are stabilised by revegetation.	Project manager Construction
Flooding, drainage, water: Soil and water contamination	All fuels, chemicals, and liquids will be stored at least 50 metres away from any drainage lines/stormwater drains and in bunded fuel trailers and utility vehicles. If storage in the compound site is necessary, fuels, chemicals and liquids will be stored in an impervious bunded area	Project manager Construction

Impact	Safeguard	Responsibility and timing
	- The refuelling of plant and planned maintenance of machinery and plant will be undertaken 50 metres away from waterways/stormwater drains - Visual monitoring of local water quality (ie turbidity, hydrocarbon spills/slicks) will be undertaken on a regular basis to identify any potential spills or deficient erosion and sediment controls. A record will be kept of these inspections - Emergency spill kits will be kept on-site at all times - All staff will be inducted in incident and emergency procedures and made aware of the locations of emergency spill kits Should a spill occur during construction, the emergency spill plan will be implemented. The EPA will be notified as per Part 5.7 of the POEO Act.	
Land use and property: Property access	landowners and stakeholders affected, including the Crown Land, will be consulted on an ongoing basis regarding the impacts associated with construction Landowner consent would be required for any use of private property for establishment for stockpile and compound sites	Pre-construction Council
Noise and vibration	Works would be undertaken during recommended standard hours (7.00 am to 6.00 pm Monday to Friday; 8.00 am to 1.00 pm Saturdays) and no work would be undertaken on Sundays, Public Holidays or outside these work hours without notification and approval from Council with the following details: –the locations and types of surrounding receivers likely to be affected –the nature of the proposed works –the noise characteristics of any powered equipment likely to be used –measures to be taken to reduce noise emissions –any other information the Council may request.	Pre-construction Council and Construction Contractor
Noise and vibration	The impact of construction noise and vibration shall be mitigated in the planning and implementation of the works in accordance with the ICNG work practices (Section 6) specifically: – Strategy 1 – Universal Work Practices – Strategy 3 – Plant and Equipment	

Impact	Safeguard	Responsibility and timing
	Strategy 4 – On site	
Noise and vibration	Selection of equipment is to minimise vibration where possible due to the proximity of the proposal to private property and associated structures. - The size of the vibratory roller should be reduced to ensure vibratory rolling is not undertaken within the safe working distances provided in Section 6.5.2 - If vibratory rolling is to occur within the safe working distances in Section 6.5.2. Council will undertake a dilapidation survey of buildings and structures within the safe work buffer distances and vibration monitoring should be undertaken prior to construction works to determine the site specific ground conditions at the proposal site	
Noise and vibration	Community notification and complaints - Property owners/occupiers potentially impacted by the construction works (within 60 metres of the construction works) would be informed in advance of the proposed work (total building time, what works are expected to be noisy, their duration, what is being done to minimise noise to neighbouring properties) and provided a contact phone number for any complaints or concerns during the construction period - Provide a quick response to complaints, with complaint handling staff having both a good knowledge of the project and ready access to information. Implement all feasible and reasonable measures to address the source of complaint. Keep a register of any complaints, including details of the complaint such as date, time, person receiving complaint, complainant's contact number, person referred to, description of the complaint, time of verbal response and timeframe for written response where appropriate.	Prior to construction Council
Air quality - General air quality impacts	Construction activities will be managed to minimise the emission of dust, exhaust, and other substances.	Project manager Construction
Air quality - Dust	- Air quality impacts relating to dust generated by construction vehicles will be monitored - Exposed surfaces will be watered regularly to minimise dust emissions, if required	Project manager Construction

Impact	Safeguard	Responsibility and timing
	- During periods of high winds, dust generating activities will cease - Stabilisation of disturbed surfaces will take place as soon as practicable During transportation, loads will be adequately covered.	
Air quality - Other emissions	- Plant and machinery will be turned off when not in use as much as possible and will be fitted with emission control devices complying with Australian Design Standards - Construction plant and equipment will be maintained in a good working condition in order to limit impacts on air quality No burning of any materials will occur	Project manager Construction
Landscape and visual: Visual impacts of proposal	The footprint for construction works will be kept to a minimum to minimise earthworks and maintain existing groundcover vegetation wherever possible Sites disturbed by earthworks will be rehabilitated as soon as possible after construction.	Pre-construction and construction Council and contractor
Aboriginal heritage: Potential impacts to Aboriginal heritage	- In the event of an unexpected find of an Aboriginal heritage item (or suspected item), all works in the vicinity of the find must cease and the site supervisor will be contacted immediately for advice on how to proceed - If the origin of the find cannot be determined quickly, or if it is determined that the find is of Aboriginal origin, immediately notify the following authorities or personnel of the discovery: – OEH (Queanbeyan Office): ph. 131 555 or (02) 6966 8100 – Ngambri Local Aboriginal Land Council (LALC): ph. (02) 6297 4152 - Facilitate, in co-operation with the appropriate authorities and Ngambri LALC: – The recording and assessment of the finds	Council and contractor Design Council Pre-construction

Impact	Safeguard	Responsibility and timing
	– Fulfilling any legal constraints arising from the find(s). This will include complying with OEH directions – The development and conducting of appropriate management strategies. Strategies will depend on Aboriginal consultation and the assessment of the significance of the find(s). Where the find(s) are determined to be Aboriginal objects as defined by the NPW Act, any re-commencement of construction related ground surface disturbance may only resume in the area of the find(s) following compliance with any consequential legal requirements and gaining written approval from OEH (as required).	
Aboriginal heritage - Potential impacts to unexpected human remains	• Cease all ground surface disturbance in the area of the find(s) immediately by notifying machinery operators in the immediate vicinity of the find(s). Also avoid touching the discovered remains • Inform the site supervisor as soon as possible to organise for a qualified professional opinion (usually the police in the first instance) Create a buffer zone of 50 metres by 50 metres around the find spot. No authorised entry or earth disturbance will be allowed until the discovery has been assessed	Project manager Council Construction
Non-Aboriginal heritage - Potential impacts to unexpected finds	• In the event of an unexpected find of a non-Aboriginal heritage item (or suspected item), all works in the vicinity of the find must cease and the site supervisor will be contacted immediately for advice on how to proceed Works will not recommence until the heritage value and associated protection and any approval requirements have been determined	Contractor Construction
Traffic access - Construction impacts to traffic	• A traffic management plan would be prepared and implemented in accordance with the Australian Standard 1742.3-2002: Manual of Uniform Traffic Control Devices and the NSW Roads and Maritime Services 'QA Specification G10 Traffic Control at Worksites' The traffic management plans would include measures to provide safe access points to work areas from the adjacent road network, safety barriers where necessary, temporary speed restrictions when necessary, specific controls for partial road closures and changed road conditions, adequate sight distances and prominent warning signage (if required). The plan would also include measures to restrict public access to the proposal site.	Council and contractor Pre-construction
Traffic access - Construction impacts to	• Access to all private property and residences would be maintained throughout construction	Contractor Construction

Impact	Safeguard	Responsibility and timing
traffic and property access	All fences and gates would be reinstated to the same standard as existing, prior to completion of the proposal.	
Socio-economic - General impacts to properties	Potentially affected property owners will be contacted before the commencement of works. Residents will be notified via door knocks or letter box drops providing information on the proposed works, working hours and a contact name and number should any complaints wish to be registered.	Council Pre-construction and construction
Waste management - General waste impacts	A waste management plan will be included in the CEMP.	Contractor Pre-construction
Waste management - General waste impacts	• Resource management hierarchy principles will be followed: – Avoid unnecessary resource consumption as a priority – Recover resources as far as is practicable (including reuse of materials, reprocessing, and recycling and energy recovery) – Disposal is undertaken as a last resort (in accordance with the <i>Waste Avoidance and Resource Recovery Act 2001</i>). • Site inductions will be undertaken (and recorded) by a site supervisor for all staff, to provide a thorough knowledge of all key environmental/safety issues, including waste disposal protocols • Wastes will be managed and classified in accordance with the 'Waste Classification Guidelines' (EPA 2014) and managed in accordance with the POEO Act • Garbage receptacles will be provided for construction staff and recycling of materials encouraged. Rubbish will be transported to an appropriate waste disposal facility. All waste material would be removed from site prior to completion of works.	Contractor Pre-construction and construction

7. Environmental management

This chapter describes how the proposal would be managed to reduce potential environmental impacts throughout construction and operation. A framework for managing the potential impacts is provided with reference to environmental management plans. The licence and/or approval requirements required before construction are identified.

7.1 Environmental management plan

A number of safeguards and management measures have been identified in order to minimise adverse environmental impacts, including social impacts, which could potentially arise as a result of the proposal. Should the proposal proceed, these management measures would be applied during the construction of the proposal.

A construction environmental management plan (CEMP) would be prepared to describe safeguards and management measures identified. The CEMP would provide a framework for establishing how these measures would be implemented and who would be responsible for their implementation.

The CEMP would be prepared before the construction of the proposal and would be a working document, subject to ongoing change and updated as necessary to respond to specific requirements.

7.2 License and approvals

It is understood that the proposal would not require any approvals, as all construction impacts would be limited to Council owned land.

8. Conclusion

This chapter provides the justification for the proposal taking into account its biophysical, social and economic impacts, the suitability of the site and whether or not the proposal is in the public interest. The proposal is also considered in the context of the objectives of the EP&A Act, including the principles of ecologically sustainable development as defined in schedule 2 of the Environmental Planning and Assessment Regulation 2000.

8.1 Justification

The proposal is required to provide necessary stormwater drainage for the residential estates within the area. The construction of the new stormwater pipeline to replace the damaged pipe is necessary to protect residential dwellings and assets from the risk of flooding.

The potential adverse environmental impacts would be short-term, and related to construction activities, including:

- Potential construction noise impacts on nearby residents
- Potential for soil erosion and water quality impacts during construction of the stormwater pipeline
- Potential for a reduction in air quality caused by the generation of dust during construction
- Other changes in amenity and environmental risks including visual impacts and waste.

Due to the small scale of the proposal and the proposed design measures and safeguards, the proposal would be unlikely to cause significant environmental impacts during construction.

Where possible, impacts would be avoided or minimised through the implementation of site-specific safeguards. The proposal is unlikely to have a significant long-term impact on the environment or the community. On balance, it is considered that the adverse environmental impacts of the proposal are outweighed by the benefit of the proposal and that the proposal is therefore justified.

8.2 Objects of the EP&A Act

The objects of the EP&A Act are listed in Table 8-1.

Table 8-1: Objects of the EP&A Act

Object	Comment
5(a)(i) To encourage the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment.	The proposal would remove a small extent of introduced grassland. However, the proposal could cause the further spread of weeds in the study area. The proposal has the potential to cause impacts to nearby residents during construction through noise and generation of dust.
5(a)(ii) To encourage the promotion and co-ordination of the orderly economic use and development of land.	Council is undertaking consultation and environmental assessments required to properly plan and develop the proposal without undue impacts to the local economy.

5(a)(iii) To encourage the protection, provision and co-ordination of communication and utility services.	Water and sewage services exist in the vicinity of the proposal, as detailed in section 3.5. Council would consult with the relevant service providers to address issues relating to potential public utility adjustment.
5(a)(iv) To encourage the provision of land for public purposes.	The proposal would temporarily affect access to the Queanbeyan and District Dog Training Club and the Queanbeyan Archery Club located to the north of Hoover road during the construction period. Although access would still be available to the general area, the construction site would be closed to public access for the construction period.
5(a)(v) To encourage the provision and co-ordination of community services and facilities.	The proposal is unlikely to substantially affect the use of community facilities by the public.
5(a)(vi) To encourage the protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats.	The proposal would remove a small extent of introduced grassland. However, the proposal could potentially cause the spread of weeds in the study area. The proposal would be unlikely to have a significant impact on any listed species, population or ecological community.
5(a)(vii) To encourage ecologically sustainable development.	Ecologically sustainable development is considered in Sections 8.2.1 – 8.2.4 below.
5(a)(viii) To encourage the provision and maintenance of affordable housing.	Not relevant to the project.
5(b) To promote the sharing of the responsibility for environmental planning between different levels of government in the State.	Not relevant to the project.
5(c) To provide increased opportunity for public involvement and participation in environmental planning and assessment.	Due to the minor nature of the works to be conducted, and the minimal impact that will be caused to nearby residents, formal consultation for the proposal was not conducted. Council would consult with adjoining residents before commencing work.

8.2.1 The precautionary principle

This principle states that *“if there are threats of serious or irreversible damage, lack of scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation”*.

The environmental consequences of the proposal have been assessed as accurately as possible using appropriate specialists in relevant disciplines where required. The assessment process involved analysis and interpretation of the potential environmental impacts associated with the proposal. This process has enabled the impacts of the proposal to be predicted within a reasonable degree of certainty. All predictions, however, contain a degree of variability, which reflects the variable nature of the environment.

The proposed works are not anticipated to result in serious or irreversible damage. Under the proposal, as a requirement of the CEMP, environmental monitoring will be undertaken as a precautionary measure to reduce any uncertainty regarding the potential for environmental damage. No mitigation measures or management mechanisms would be postponed as a result of a lack of information.

8.2.2 Intergenerational equity

The principle states that *"the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations"*.

The proposal would have a long-term benefit for future generations by providing necessary stormwater services to surrounding residents.

The proposal would benefit future generations by ensuring that proposed works do not give rise to significant long-term adverse impacts. Potential impacts would be minimised by the implementation of appropriate safeguards.

Should the proposal not proceed, the principle of intergenerational equity may be compromised, as future generations would inherit sub-standard stormwater runoff and potential flooding issues in the area.

8.2.3 Conservation of biological diversity and ecological integrity

This principle states that the *"diversity of genes, species, populations and communities, as well as the ecosystems and habitats to which they belong, must be maintained and improved to ensure their survival"*.

An assessment of the existing local environment has been undertaken in order to identify and manage any potential impacts of the proposal on local biodiversity. The proposal would involve the removal of a small extent of introduced ground-cover species. The proposal is considered unlikely to significantly impact on any species, population or ecological community listed under the *BC Act* or *EPBC Act*.

An ecological assessment and appropriate site-specific safeguards are provided in section 6.1 of this REF. Safeguards include consideration of design impacts upon biodiversity, vegetation management and weed management.

8.2.4 Improved valuation, pricing and incentive mechanisms

This principle requires that *"costs to the environment should be factored into the economic costs of a project"*.

The REF has examined the environmental consequences of the proposal and identified mitigation measures for areas which have the potential to experience adverse impacts. Requirements imposed in terms of implementation of these mitigation measures would result in an economic cost to Council. The implementation of mitigation measures would increase both the capital and operating costs of the proposal. This signifies that environmental resources have been given appropriate valuation.

The design for the proposal has been developed with an objective of minimising potential impacts on the surrounding environment. This indicates that the concept design for the proposal has been developed with an objective to minimise environmental impacts.

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10. Terminology used in this REF

Term/acronym	Description
AEP	Annual Exceedance Probability
AHD	Australian Height Datum
AHIMS	Aboriginal Heritage Information Management System
ARI	Annual Recurrence Interval
BC Act	Biodiversity Conservation Act 2016
Biota	The flora and fauna of a region.
CEMP	Construction Environmental Management Plan
DECC	Department of Environment and Climate Change, now OEH (see below)
DECCW	NSW Department of Environment, Climate Change and Water, now OEH (see below)
DotEE	Commonwealth Department of the Environment and Energy
DSEWPaC	Commonwealth Department of Sustainability, Environment, Water, Populations and Communities, now DotEE (see above)
EIS	Environmental Impact Statement
EP&A Act	Environmental Planning and Assessment Act 1979
EP&A Regulation	Environmental Planning and Assessment Regulation 2000
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
ESD	Ecologically sustainable development. Development which uses, conserves and enhances the resources of the community so that ecological processes on which life depends, are maintained and the total quality of life, now and in the future, can be increased.
GHD	GHD Pty Ltd
Hydrology	Term given to the study of the rainfall and runoff process; in particular, the evaluation of peak flows, flow volumes and the derivation of hydrographs for a range of floods.
ISEPP	State Environmental Planning Policy (Infrastructure) 2007
LALC	Local Aboriginal Land Council
LEP	Local Environmental Plan
LGA	Local government area
Likely	Taken to be a real chance or possibility.
Locality	The area within a 10 kilometre radius of the proposal.
NPW Act	National Parks and Wildlife Act 1974
NSW	New South Wales
OEH	NSW Office of Environment and Heritage
POEO Act	Protection of the Environment Operations Act 1997
Proposal site	The area that would be directly impacted by the proposal.
REF	Review of environmental factors
SEPP	State Environmental Planning Policy
Study area	The area of impact and any additional areas, which are likely to be affected by the proposal, either directly or indirectly. Generally this includes the area up to 500 metres from the proposal boundary.
Threatened species	A species specified in Schedule 1 Part 1 (endangered species), Part 4 (presumed extinct) and Schedule 2 (vulnerable species) of the BC Act, in Schedule 4 (endangered species), 4A (critically endangered species) and Schedule 5 (vulnerable species) or under the EPBC Act.
BC Act	Biodiversity Conservation Act 1995
Unlikely	Taken to be an unlikely or remote possibility of occurring.

Appendices

Appendix A - (Consideration of clause 228 (2)) factors and matters of natural environmental significance

Clause 228(2) factors

In addition to the requirements of the guideline 'Is an EIS required?' as detailed in the REF, the following factors, listed in clause 228(2) of the Environmental Planning and Assessment Regulation 2000, have also been considered to assess the likely impacts of the proposal on the natural and built environment.

Factor	Impact
a. Any environmental impact on a community?	
Residences in the study area would potentially be affected during construction by noise from construction plant, machinery and vehicles as well as air quality impacts through generation of dust. Visual impacts would occur from earthworks, the compound and stockpile site and machinery. These impacts would be short-term and would be minimised through the implementation of safeguards detailed in sections 6.5.3 and 6.7.3.	Short-term minor negative
The proposal would not affect the use of the Crown Land in the long term, although there would be minor temporary restrictions to use of the land during construction.	Short and long-term minor negative
The construction of the proposal would have low long-term visual impacts through the excavation of the pipeline and construction of new stormwater pipes, culverts etc. These impacts would be minimised by rehabilitating the proposal site following construction.	Long-term minor negative
The proposal would increase the level of stormwater run-off protection for residents in the area, reducing the potential for flood damages and the associated economic costs and disruption to the community.	Long-term positive
b. Any transformation of a locality?	
The construction of the proposal would have low long-term visual impacts through the excavation of the site and construction of additional stormwater pipeline infrastructure. These impacts would be minimised by rehabilitating the proposal site following construction.	Long-term minor negative
c. Any environmental impact on the ecosystems of the locality?	
The proposal would remove a small amount of introduced grassland. The proposal could potentially cause the further spread of weeds in the study area. Safeguards to minimise impacts would be implemented as described in section 6.1.4. The proposal would be unlikely to have a significant impact.	Long-term minor negative
d. Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality?	
Residences in the study area would potentially be affected during construction by construction impacts as detailed in (a) above.	Short-term minor negative

Factor	Impact
e. Any effect on a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations?	
The proposal is unlikely to impact on any sites with potential heritage or other social values. Safeguards to avoid or minimise impacts on heritage would be implemented as detailed in sections 6.9.4 and 6.8.3	Nil
f. Any impact on the habitat of protected fauna (within the meaning of the National Parks and Wildlife Act 1974)?	
The proposal would remove a small amount on introduced grassland. The ecological assessment found that the proposal would be unlikely to impact fauna species due to the limited vegetation removal required and the presence of additional habitat in the study area. Safeguards would be implemented as described in section in section 6.1.4	Long-term minor negative
g. Any endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air?	
The proposal would remove a small amount of introduced grassland. The proposal could potentially cause the spread of weeds in the study area. The proposal would be unlikely to endanger any species of animal, plant or other form of life. Safeguards to minimise impacts would be implemented as described in section in section 6.1.4.	Minor
h. Any long-term effects on the environment?	
The proposal could potentially cause minor long-term ecological impacts as described in (g) above.	Minor
The proposal would increase the level of stormwater protection for residents in the study area of the Hoover Road proposal, as described in (a) above.	Long-term positive
i. Any degradation of the quality of the environment?	
Residences in the study area could potentially be affected by construction impacts as described in (a) above.	Short-term minor negative
The proposal would have a minor impact on the quality of the environment through the ecological impacts described in (g) above.	Long-term minor negative
j. Any risk to the safety of the environment?	
There is potential for safety to be reduced during the construction of the proposal. Traffic management safeguards described in section 6.10.3 would address safety risks in relation to work near roads and rail. Standard safety measures would be implemented to restrict public access to the proposal site during construction.	Short-term minor negative
k. Any reduction in the range of beneficial uses of the environment?	
The proposal would result in the partial or complete, temporary inaccessibility of .The Queanbeyan and District Dog Training Club and the Queanbeyan Archery Club, however the effect will be short term in duration	Short-term minor negative
l. Any pollution of the environment?	
Alumba drive residences could potentially be affected by construction impacts as described in (a) above.	Short-term minor negative

Factor	Impact
During construction the proposal could potentially result in soil and water pollution, including pollution of the drainage lines in the study area. Pollution could result from sedimentation or chemical and fuel spills. Management of soil and water quality impacts would be undertaken in accordance with the safeguards outlined in section .	Short-term minor negative
Waste generated during construction could also pollute the environment. Waste would be managed in accordance with the safeguards outlined in section 6.12.3.	Short-term minor negative
m. Any environmental problems associated with the disposal of waste?	
The proposal would be unlikely to generate contaminated waste during construction. Other waste streams generated during construction are common and would pose no difficulty in their disposal. Waste would be recycled wherever possible. Waste would be managed in accordance with the safeguards outlined in section section6.12.3.	Nil
n. Any increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply?	
All resources required for the proposal are readily available and are not in short supply.	Nil
o. Any cumulative environmental effect with other existing or likely future activities?	
The cumulative effects of the proposal are discussed in section 6.13.3. Short-term cumulative impacts relate to soils and water quality, visual amenity and air quality impacts. The proposal would be likely to have relatively minor cumulative impacts in relation to these factors.	Short-term minor negative
Long-term cumulative impacts relate to biodiversity and land use impacts. The proposal would be likely to have relatively minor cumulative impacts in relation to these factors.	Long-term minor negative
p. Any impact on coastal processes and coastal hazards, including those under projected climate change conditions?	
The proposal is not located within a coastal area, and would not cause any impact on coastal processes and coastal hazards.	Nil

Matters of national environmental significance

Factor	Impact
a. Any impact on a World Heritage property?	
The proposal would not have any impact on a World Heritage property. There are no World Heritage properties within 10 kilometres of the proposal.	Nil
b. Any impact on a National Heritage place?	
The proposal would not have any impact on a National Heritage place. There are no National Heritage places located within 10 kilometres of the proposal.	Nil

Factor	Impact
c. Any impact on a wetland of international importance?	
The proposal would not have any impact on a wetland of international importance.	Nil
d. Any impact on listed threatened species or communities?	
The proposal would not have an impact on any listed threatened species or communities due to the limited vegetation removal required. Safeguards would be implemented as described section 6.13.3.	Minor
e. Any impacts on listed migratory species?	
The proposal is unlikely to affect any species listed as migratory under the EPBC Act.	Nil
f. Any impact on a Commonwealth marine area?	
The proposal is not located near a marine area and would be unlikely to have an impact on a marine area.	Nil
g. Does the proposal involve a nuclear action (including uranium mining)?	
The proposal does not involve a nuclear action.	Nil
h. Any impact on the Great Barrier Reef Marine Park?	
The proposal would not result in any impacts to the Great Barrier Reef Marine Park due to its distance from the park.	Nil
i. Any environmental impact on a water resource, in relation to coal seam gas development and large coal mining development?	
The proposal is not a coal seam gas or large coal mining development.	Nil
j. Additionally, any impact (direct or indirect) on Commonwealth land?	
The following Commonwealth land is located within 10 kilometres of the proposal site - Commonwealth Land - Airservices Australia - Commonwealth Land - Australian Postal Corporation - Commonwealth Land - Australian Telecommunications Commission - Commonwealth Land - Defence Housing Authority - Commonwealth Land - Telstra Corporation Limited - Defence - 10 WHYALLA ST - FYSHWICK - Defence - 139 CANBERRA AVE - FYSHWICK - Defence - 169 GLADSTONE ST - FYSHWICK - Other Matters Protected by the EPBC Act - Name - Defence - AUSTRALIAN DEFENCE FORCE ACADEMY - Defence - CAMPBELL PARK	Nil

Factor	Impact
- Defence - DEFENCE ARCHIVES - QUEANBEYAN - Defence - HMAS HARMAN - SYMONSTOWN - Defence - MAJURA FIELD FIRING RANGE - Defence - MAJURA NAVIGATION BEACON - Defence - MT JERRABOMBERRA OBSTRUCTION WARNING - Defence - NAVAL COMBAT DATA SYSTEM CENTRE - FYSHWICK - Defence - NORTHCOTT DRIVE PLAYING FIELDS (Addison Rd) - Defence - PHYSICS FIELD TESTING STATION - CANBERRA - Defence - RAAF BASE FAIRBAIRN - Defence - ROYAL MILITARY COLLEGE - DUNTROON - Defence - RUSSELL HILL COMPLEX The proposal will not directly or indirectly impact on any areas of Commonwealth land.	
k. The environment, where Commonwealth agencies are proposing to take action?	
Council is not a Commonwealth agency.	Nil

Appendix B – Design Drawings

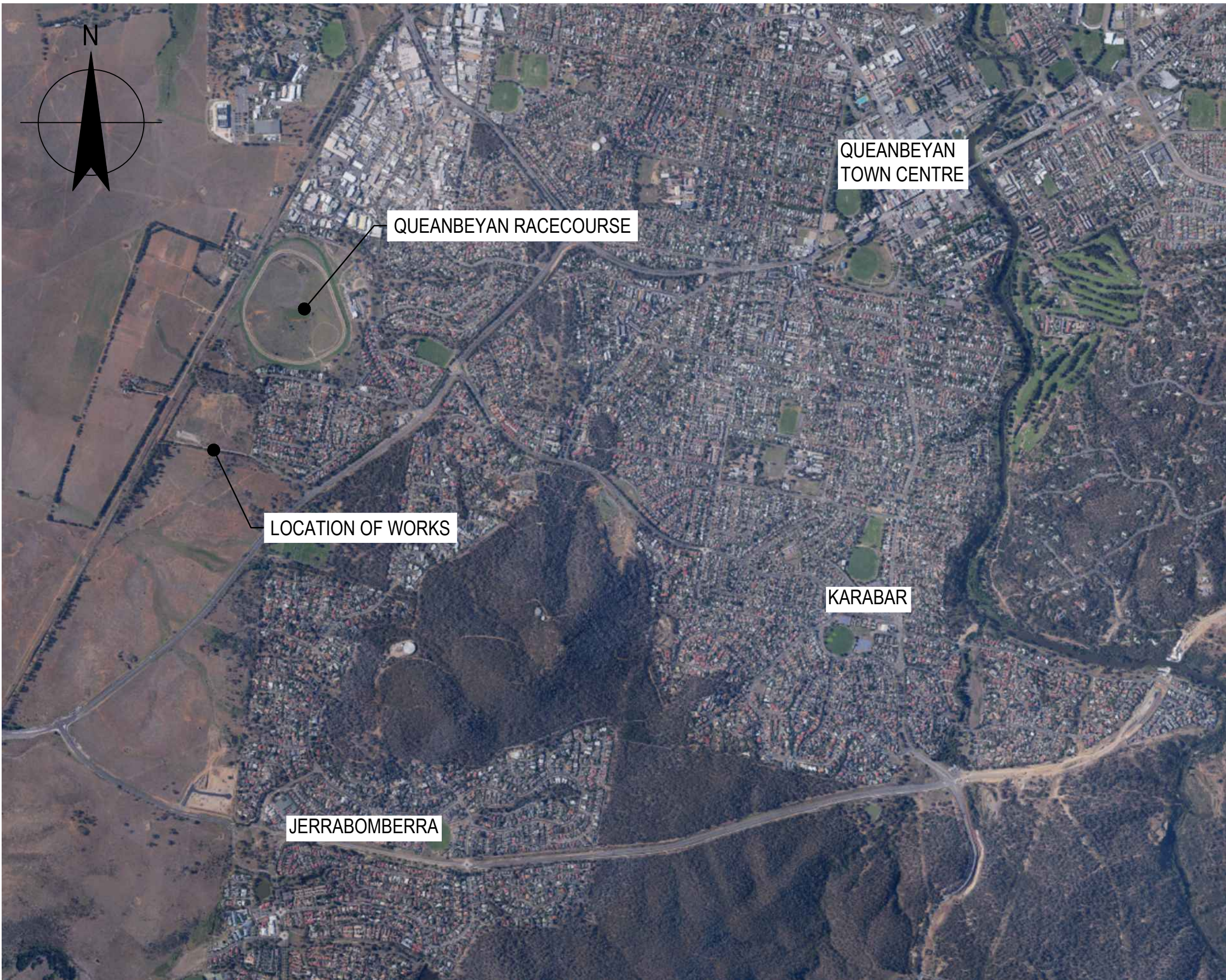
(to be provided separately)



QUEANBEYAN - PALERANG REGIONAL COUNCIL

HOOVER ROAD STORMWATER REALIGNMENT

12511476



LOCALITY PLAN
NOT TO SCALE

DRAWING NUMBER	DRAWING NAME
12511476-C001	COVER SHEET DRAWING LIST AND LOCALITY PLAN
12511476-C005	GENERAL NOTES
12511476-C010	GENERAL ARRANGEMENT PLAN AND PIT SCHEDULE
12511476-C015	STORMWATER LONGITUDINAL SECTION - SHEET 1 OF 2
12511476-C016	STORMWATER LONGITUDINAL SECTION - SHEET 2 OF 2
12511476-C020	OUTLET HEADWALL CIVIL PLAN AND DETAILS
12511476-C021	STORMWATER MISCELLANEOUS DETAILS
12511476-C030	STORMWATER INSPECTION CHAMBER - CIVIL PLAN AND STRUCTURAL DETAILS
12511476-C031	STORMWATER SURCHARGE STRUCTURE - CIVIL PLAN AND STRUCTURAL DETAILS
12511476-C060	SEDIMENT AND EROSION CONTROL PLAN
12511476-C070	SEDIMENT AND EROSION CONTROL DETAILS

PRELIMINARY

A	PRELIMINAY ISSUE	RK	AR	PC	13.11.19
No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director

Plot Date: 13 November 2019 - 3:50 PM
Plotted by: Madia Downes

Cad File No: G:\231\12511476\CADD\Drawings\12511476-C001.dwg



DO NOT SCALE	Drawn R. KALOS	Designer M. DOWNES	Client	QUEANBEYAN - PALERANG REGIONAL COUNCIL	
	Drafting R. CASACLANG	Design J. WEARNE	Project	HOOVER ROAD STORMWATER REALIGNMENT	
	Approved (Project Director)		Title	COVER SHEET, DRAWING LIST AND LOCALITY PLAN	
	Scale NOT TO SCALE	This Drawing must not be used for Construction unless signed as Approved	Original Size A1	Drawing No: 12511476-C001	Rev: A

A1. ALL CONSTRUCTION WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH BUT NOT LIMITED TO QUEANBEYAN PALERANG REGIONAL COUNCIL, RELEVANT AUSTRALIAN STANDARDS, ENGINEERING SPECIFICATIONS, BCA GUIDELINES AND ENVIRONMENTAL LEGISLATIVE REQUIREMENTS.

A2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT THEY UNDERSTAND ALL THE RELEVANT REQUIREMENTS AND SEEK CLARIFICATION AS NECESSARY DURING THE DELIVERY OF THIS PROJECT WHERE NECESSARY AND READ TO UNDERTAKING THE WORKS

A3. PRIOR THESE NOTES IN CONJUNCTION WITH THE ENGINEERING DRAWINGS, AND WITH SUCH OTHER WRITTEN INSTRUCTIONS ISSUED. REFER TO DRAWINGS FOR SETTING OUT AND DIMENSIONS. IN CASE OF DISCREPANCY, PRECEDENCE IS GIVEN TO DRAWINGS, THEN NOTES.

A4. DO NOT OBTAIN DIMENSIONS BY SCALING FROM DRAWINGS.

A5. KEEP ON SITE A COMPLETE SET OF CONTRACT DOCUMENTS (INCLUDING DRAWINGS AND NOTES) AND SITE INSTRUCTIONS.

A6. INSPECTIONS UNDERTAKEN BY SUPERINTENDENT OR OTHERS DO NOT RELIEVE CONTRACTOR OF RESPONSIBILITY FOR COMPLIANCE WITH DRAWINGS AND SPECIFICATIONS.

A7. DRAWINGS DO NOT DETAIL TEMPORARY WORKS. CONSTRUCTION METHODS AND TEMPORARY WORKS ARE RESPONSIBILITY OF THE CONTRACTOR.

A8. SURFACES WHICH LIE OUTSIDE THE GENERAL LIMITS OF WORKS AND WHICH ARE DISTURBED ARE TO BE RESTORED TO THE PRE CONSTRUCTION CONDITION BY THE CONTRACTOR AT THE CONTRACTORS EXPENSE TO THE SATISFACTION OF THE SUPERINTENDENT.

A9. ALL LEVELS SHOWN ARE FINISHED SURFACE LEVELS UNLESS NOTED OTHERWISE. WHERE APPLICABLE THE CONTRACTOR SHALL ALLOW FOR THE THICKNESS OF THE VARIED SPECIFIED FINISHES.

A10. THE CONTRACTOR SHALL PROVIDE ALL LABOUR, MATERIALS AND EQUIPMENT NECESSARY FOR THE ACCURATE SETTING OUT OF THE ENTIRE WORKS. THE CONTRACTOR SHALL ENSURE THAT ALL SURFACES ARE CONSTRUCTED TO THE CORRECT LEVELS. ALL WORKS AS EXECUTED INFORMATION TO BE VERIFIED BY THE SUPERINTENDING SURVEYOR.

A11. THE CONTRACTOR SHALL NOT DISTURB NOR OBLITERATE ANY SURVEY MARK. SHOULD ANY SURVEY MARK BE DISTURBED OR OBLITERATED, THE CONTRACTOR SHALL NOTIFY THE SUPERINTENDENT IMMEDIATELY AND THE SURVEY MARK SHALL BE REPLACED AT THE EXPENSE OF THE CONTRACTOR.

A12. EXISTING SERVICES HAVE BEEN PLOTTED FROM CURRENT DBO'S INFORMATION AND LIMITED SURVEY INFORMATION ONLY. THE SUPERINTENDENT DOES NOT GUARANTEE THE ACCURACY OR COMPLETENESS OF DATA USED AND IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM THE LOCATION AND DEPTH OF ALL EXISTING SERVICES PRIOR TO COMMENCING WORK.

A13. CONTRACTOR IS TO OBTAIN CLEARANCES AND CO-ORDINATE WORK WITH ALL RELEVANT AUTHORITIES PRIOR TO COMMENCEMENT.

A14. THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE WORK HEALTH AND SAFETY ACT 2011, WHICH IMPOSES EMPLOYERS TO ENSURE THE HEALTH, SAFETY AND WELFARE OF ALL THEIR EMPLOYEES AND PERSONS IN THE VICINITY OF THE WORK SITE.

A15. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.

A16. THE CONTRACTOR SHALL BE PROVIDED WITH THE RESULTS OF PREVIOUS SITE INVESTIGATIONS CONDUCTED AT THE SITE FOR INFORMATION PURPOSES ONLY. IT IS NEITHER IMPLIED NOR WARRANTED BY THE PRINCIPAL TO BE A COMPLETE DESCRIPTION OF CONDITIONS EXISTING AT OR BELOW GROUND LEVEL, AND THE CONTRACTOR ACCEPTS ALL RISKS INVOLVED WITH INTERPRETATION AND USE OF THAT INFORMATION.

A17. THE CONTRACTOR SHALL NOTIFY THE SUPERINTENDENT IMMEDIATELY IN THE EVENT OF ANY DISCREPANCIES OR ERRORS THAT MAY BE PRESENT WITHIN THESE PLANS.

A18. THE CONTRACTOR SHALL MAINTAIN ACCURATE RECORDS OF LEVELS AND DIMENSIONS AT SERVICES TO FULLY COMPLY WITH REFERENCE DOCUMENTS AND STANDARD SPECIFICATIONS.

A19. THE CONTRACTOR SHALL MAINTAIN ACCURATE RECORDS OF LEVELS AND DIMENSIONS AT SERVICES TO FULLY COMPLY WITH REFERENCE DOCUMENTS AND STANDARD SPECIFICATIONS.

A20. CONTRACTOR TO PROVIDE DILATION/REPORT ON EXISTING CONDITIONS PRIOR TO COMMENCING WORK.

- B1. DATUM FOR ALL LEVELS IS AUSTRALIAN HEIGHT DATUM (AHD) SURVEY BY POLKINGHORNE HARRISON LONGHURST (PHL) SURVEYORS
- B2. ALL SURVEY WORK REQUIRED TO PROVIDE THE SERVICES SHALL BE ARRANGED BY THE CONTRACTOR AND SHALL BE CARRIED OUT BY APPROPRIATELY QUALIFIED PERSONNEL. THE COST OF SURVEY SHALL BE BORNE BY THE CONTRACTOR.
- B3. UNLESS NOTED OTHERWISE, COPIES OF ALL SURVEY RESULTS SHALL BE SENT TO THE SUPERINTENDENT WITHIN 48 HOURS OF BECOMING AVAILABLE IN GRAPHICAL AND TABULAR FORMAT.
- B4. SURVEY BENCHMARKS SHALL BE ESTABLISHED IN CONSULTATION WITH THE SUPERINTENDENT.
- B5. PRIOR TO BEGINNING CONSTRUCTION OF THE WORKS, THE CONTRACTOR SHALL ESTABLISH A SURVEY GRID OVER THE WORKS AREA. GRID SPACING SHALL BE CONFIRMED IN CONSULTATION WITH THE SUPERINTENDENT. GRID LOCATIONS SHALL INCORPORATE THE SET-OUT POINTS PROVIDED IN THE 'SET-OUT TABLES' IN THE ENGINEERING DRAWINGS.
- B6. THE CONTRACTOR SHALL CHECK, CONFIRM AND SATISFY THEMSELVES THAT ALL DIMENSIONS, LEVELS AND SERVICE LOCATIONS ARE CORRECT PRIOR TO CONSTRUCTION WORKS COMMENCING ON SITE.
- B7. THE CONTRACTOR SHALL BE REQUIRED TO COMPLETE THE FOLLOWING SURVEYS DURING THE WORKS:
PAVEMENT: FOLLOWING PAVEMENT INSTALLATION, SURVEY THE ELEVATION OF THE COMPLETED LAYER AT ALL GRID LOCATIONS AND AT ANY CHANGES IN GRADE. A CONFORMANCE SURVEY SHALL ALSO BE PROVIDED (WITH CONSIDERATION TO THE GRADIENT ELEVATIONS OF THE UNDERLYING SURFACE) SHOWING CONFORMING LAYER THICKNESS WITHIN THE ALLOWABLE TOLERANCES. INCLUDE THE LOCATION OF ANY PAVEMENT CROSSINGS.
- B8. ALL GENERAL EXCAVATION SHALL HAVE AN ELEVATION TOLERANCE OF +/100 mm.
- B9. PAVEMENT LAYER THICKNESSES SHALL HAVE A THICKNESS TOLERANCE OF -0 mm, +100 mm.

- C1. AREAS FOR PARKING OF CONSTRUCTION PLANT, ETC. SHALL BE KEPT FREE OF ANY CONTAMINANTS (EG ENGINE OIL, HYDRAULIC OIL, FUEL, KEROSENE).
- C2. DAMAGE CAUSED BY CONSTRUCTION EQUIPMENT, ETC., TO ANY NEW OR EXISTING INFRASTRUCTURE SHALL BE MADE GOOD BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE SUPERINTENDENT.
- C3. CONTRACTOR TO TAKE ALL PRECAUTIONS TO PROTECT ADJUTING STRUCTURES (RETAINING WALLS, FENCES AND BUILDINGS) AND IS FULLY RESPONSIBLE FOR RESTORATION AND REPAIR.
- C4. CONTRACTOR SHALL BE REQUIRED TO MEET THE ENVIRONMENTAL REQUIREMENTS SPECIFIED BY QUEANBEYAN PALERANG REGIONAL COUNCIL.
- C5. THE CONTRACTOR SHALL PREPARE AN ENVIRONMENTAL MANAGEMENT PLAN FOR THE WORKS TO IDENTIFY AND DESCRIBE ALL MANAGEMENT METHODS TO BE USED TO MANAGE ENVIRONMENTAL RISKS DURING THE WORKS, FOR APPROVAL BY THE SUPERINTENDENT PRIOR TO COMMENCING ONSITE. THE CONTRACTOR IS TO SEEK CONFIRMATION FROM QUEANBEYAN PALERANG REGIONAL COUNCIL THAT THE PLAN COMPLIES WITH THE ENVIRONMENTAL AUTHORIZATION AND ANY OTHER REQUIREMENTS AS SPECIFIED BY QUEANBEYAN PALERANG REGIONAL COUNCIL.

D1. THE CONTRACTOR SHALL NOT DISTURB THE FOOTINGS OF EXISTING STREET LIGHTING AND POWER POLES WHICH ARE NOT TO BE RELOCATED.

D2. THE CONTRACTOR IS TO DEMONSTRATE CARE WHEN OPERATING VEHICLES AND MACHINERY IN THE VICINITY OF OVERHEAD POWER LINES.

- E1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT THE SITE AND SURROUNDING AREA FROM DAMAGE RESULTING FROM STORMWATER RUNOFF.
- E2. THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY EROSION AND SEDIMENT CONTROLS NECESSARY TO PROTECT THE AREAS IMMEDIATELY ADJACENT TO THE WORKS AREA FROM NEGATIVE IMPACTS. EROSION AND SEDIMENT CONTROLS SHALL BE MAINTAINED BY THE SUPERINTENDENT AND SHALL COMPLY WITH APPLICABLE REQUIREMENTS.
- E3. EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE IMPLEMENTED AND MAINTAINED BY THE CONTRACTOR DURING CONSTRUCTION TO MINIMISE THE EFFECTS OF WEATHER TO THE SATISFACTION OF THE SUPERINTENDENT.
- E4. NO EXTENSIONS OF TIME WILL BE GRANTED SHOULD DAMAGE TO THE WORKS AND SURROUNDING AREAS RESULT FROM THE CONTRACTOR'S NEGLIGENCE IN NOT PROVIDING ADEQUATE EROSION AND SEDIMENT CONTROL PROTECTION.
- E5. TEMPORARY EROSION AND SEDIMENT CONTROL WORKS SHALL BE REMOVED BY THE CONTRACTOR BEFORE THE END OF THE CONTRACT. ALL MATERIALS USED FOR THE TEMPORARY EROSION AND SEDIMENT CONTROL WORKS SHALL BE REMOVED FROM THE WORKS AREA OR OTHERWISE DISPOSED OF BY THE CONTRACTOR TO THE SATISFACTION OF THE SUPERINTENDENT. MAINTENANCE OF PERMANENT CONTROL MEASURES ENTRUSTED INTO THE CARE AND CONTROL OF THE CONTRACTOR BY THE CONTRACT UP UNTIL THE DATE OF PRACTICAL COMPLETION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

FOLLOWING INSTALLATIONS OF ALL SEDIMENTS AND EROSION CONTROL, THE CONTRACTOR MUST ENSURE THAT:

- E6. PERIODIC APPLICATIONS OF WATER SPECIFICALLY IN THE FIRST SEVEN DAYS FROM ESTABLISHMENT AND TURFED AREAS AND/OR IN HOT DRY AREAS
- E7. FURTHER APPLICATION OF SEED AND FERTILISER IN AREAS OF MINOR SOIL EROSION AND/OR INADEQUATE AND VEGETATIVE ESTABLISHMENT AND
- E8. ENSURE DRAINAGE TO CONTROL WEEDS AND TO MAINTAIN A COVER THAT DOES NOT IMPEDE FLOWS AND CAUSE FLOODING OR ACCUMULATION OF POOLS OF STAGNANT WATERS
- E9. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ANY PONDING OCCURRING ON SITE IS TREATED PRIOR TO DISCHARGE INTO THE RECEIVING STORMWATER

THE FOLLOWING IS A LIST OF ACTIVITIES TO WHICH HOLD POINTS SHALL APPLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT ALL OBLIGATIONS ARE FULFILLED IN REGARDS TO HOLD POINTS WITHIN THE CONTRACT:

- PROVISION OF ALL SPECIFIED CERTIFICATES FOR MATERIALS USED IN THE WORKS, PRIOR TO USE, INCLUDING ALL GEO-SYNTHETICS, PIPEWORK, AND OTHER SPECIFIED MATERIALS
- SUBMISSION OF INSPECTION AND TESTING PLANS FOR EACH COMPONENT OF THE WORKS
- PROVISION OF ANY OTHER REQUIRED DOCUMENTATION PRIOR TO INITIATING THE WORKS, INCLUDING SAFETY AND ENVIRONMENTAL MANAGEMENT DOCUMENTATION
- INITIAL EARTHWORKS SURVEY AND CONFIRMATION OF EXTENT OF EARTHWORKS
- SURVEY OF WORK AFTER COMPLETION OF BULK EARTHWORKS AND SUBGRADE PREPARATION
- SURVEY OF WORK AFTER COMPLETION OF PAVEMENT INSTALLATION
- SURVEY OF WORK AFTER COMPLETION OF DRAINAGE WORKS
- SUBMISSION OF WORKS AS EXECUTED DRAWINGS

F2. WHERE THE HOLD POINT RELATES TO THE CONDITION OF A SURFACE OR INSTALLED MATERIAL, THE CONTRACTOR SHALL VERIFY THAT THE COMPLETED SURFACE HAS ACHIEVED FULL CONFORMANCE WITH THE CONTRACT DOCUMENTS. HOLD POINTS MAY BE RELEASED FOR PART OF THE WORKS AREA ONLY, AS DEFINED BY THE SUPERINTENDENT, SO THAT THE WORKS CAN BE COMPLETED IN A SEQUENCED MANNER. THE SUPERINTENDENT'S APPROVAL OF THE COMPLETED ITEMS IS REQUIRED PRIOR TO THE RELEASE OF EACH HOLD POINT.

F3. THE CONTRACTOR SHALL BE REQUIRED TO STOCKPILE ANY EXCAVATED MATERIAL SUITABLE FOR DAILY COVER IN THE AREA SHOWN ON THE DRAWINGS. THE SUPERINTENDENT SHALL CONFIRM THE RELEVANT SPECIFICATIONS FOR DAILY COVER MATERIAL PRIOR TO CONSTRUCTION.

F4. IN THE EVENT THAT ANY LIVESTOCK ENTER THE WORKS AREA, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE SUPERINTENDENT TO ALLOW THE FARMER TO REMOVE FROM SITE.

G1. REFER TO GHD'S REVIEW OF ENVIRONMENTAL FACTORS REPORT DATED NOVEMBER 2019.

G2. ANY EXISTING TREES WHICH FORM PART OF SOUTHERN VERGE OF HOOVER ROAD SHALL BE PROTECTED FROM CONSTRUCTION ACTIVITIES BY:

G3. PROTECTING THEM WITH BARRIER FENCING OR SIMILAR MATERIALS INSTALLED OUTSIDE THE DRIP LINE.

G4. ENSURING THAT NOTHING IS NAILED TO ANY PART OF THE TREE.

G5. CARE IS TAKEN NOT TO CUT ROOTS UNNECESSARILY. COUNCILS AND/OR INDEPENDENT ARBORISTS TO BE CONSULTED WHERE OTHER TREES, TREE ROOT ARE TO BE REMOVED AND/OR CUT.

H1. ALL UTILITY SERVICES INDICATED ON THE DRAWINGS ORIGINATE FROM COUNCIL SUPPLIED DATA, SURVEY BY PHIL SURVEYORS OR DIAL BEFORE YOU DIG SEARCHES. THEREFORE THEIR ACCURACY AND COMPLETENESS IS NOT GUARANTEED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE AND CONFIRM THE LOCATION AND LEVEL OF ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE APPROPRIATE DEPARTMENT. CLEARANCES SHALL BE OBTAINED FROM THE RELEVANT SERVICE AUTHORITY. NOTE SERVICE AUTHORITY REQUIREMENTS FOR LOCATING OF SERVICES PRIOR TO COMMENCEMENT OF WORKS.

H2. CARE TO BE TAKEN WHEN EXCAVATING NEAR EXISTING SERVICES. NO MECHANICAL EXCAVATIONS AREA TO BE UNDERTAKEN OVER COMMUNICATION, GAS OR ELECTRICAL SERVICES. HAND EXCAVATION ONLY IN THESE AREAS.

M1. ALL TRAFFIC CONTROL DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH AS 1742. AND APPROVED TRAFFIC MANAGEMENT PLAN

J1. ALL EARTHWORKS SHALL BE UNDERTAKEN IN ACCORDANCE WITH AS3798-2007.

J2. ALL EARTHWORKS SHALL BE UNDERTAKEN USING CONVENTIONAL EARTHMOVING EQUIPMENT AND METHODS E.G. DOZERS, EXCAVATORS, ROCK BREAKERS, AND OTHER EQUIPMENT TYPICAL TO THIS TYPE OF PROJECT.

J3. THE CONTRACTOR SHALL UNDERTAKE ALL CLEARING, GRUBBING AND GRADING NECESSARY TO EXECUTE THE WORKS. LOCAL OVER EXCAVATION TO BE BACKFILLED IN ACCORDANCE WITH AS2898-2007 AND THE SPECIFICATION.

J4. REMOVE ALL EVIDENT UNCONTROLLED FILL, OR ANY SOFT, WET OR HIGHLY COMPRESSIBLE MATERIAL OR SOIL RICH IN ORGANIC MATTER INCLUDING ROOTS. CARE SHALL BE TAKEN IN THE REMOVAL OF TREE ROOTS.

J5. IF APPROVED BY THE SUPERINTENDENT, ALL IMPORTED FILL MATERIAL SHALL COMPRISE ONLY NATURAL EARTH AND ROCK AND SHALL BE FREE OF CONTAMINANTS (VEGETAL FILL SHALL COMPLY WITH THE REQUIREMENTS OF CLAUSE 4.4 OF AS3798-2007 GUIDELINES ON EARTHWORKS FOR RESIDENTIAL AND COMMERCIAL DEVELOPMENT).

J6. UNLESS STATED OTHERWISE, ALL CLEAN FILL SHALL BE PLACED IN COMPACTED LAYERS NOT EXCEEDING 200 MM AT A MOISTURE CONTENT OF -3 TO +3% OF THE OPTIMUM MOISTURE CONTENT, MINIMUM COMPACTION RATIOS SHALL BE IN ACCORDANCE WITH ITEM 1 TABLE 5.1 AS3798-2007.

J7. UNLESS STATED OTHERWISE, ALL FILL SHALL BE TESTED IN ACCORDANCE WITH THE SPECIFIED REQUIREMENTS AS SPECIFIED BY THE ENGAGED ENVIRONMENTAL CONSULTANT.

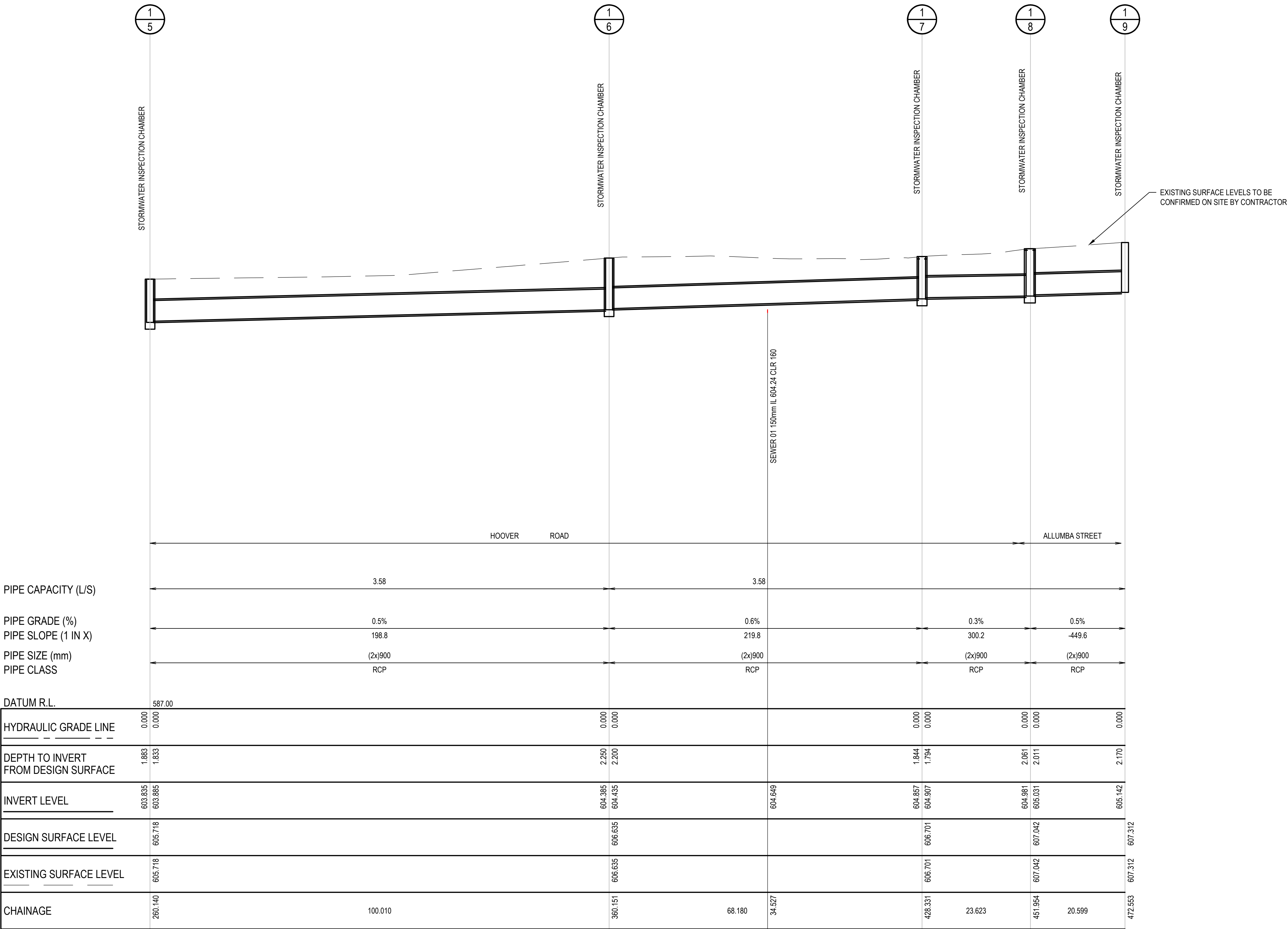
J8. HAVE TESTING PERFORMED BY AN INDEPENDENT NATA (NATIONAL ASSOCIATION OF TESTING AUTHORITIES) ACCREDITED AUTHORITY, AND PROVIDE TEST REPORTS TO SUPERINTENDENT.

J9. ALL UNSUITABLE MATERIAL IS TO BE DISPOSED OF OFF SITE AT THE CONTRACTOR'S EXPENSE TO AN APPROVED SITE WITHIN NSW AND ACCOMPANIED BY THE RELEVANT DISPOSAL PERMITS AND CERTIFICATION IN ACCORDANCE WITH THE ENGAGED ENVIRONMENTAL CONSULTANT.

- K1. CONCRETE PIPES SHALL BE INSTALLED UNDER TRENCH CONDITIONS IN ACCORDANCE WITH AS 3725 UNLESS OTHERWISE SPECIFIED.
- K2. ALL STORMWATER PIPES TO HAVE A MINIMUM OF 0.5% SLOPE IN DIRECTION SHOWN.
- K3. ALL PIPES TO BE MINIMUM 450MM BELOW LANDSCAPED SURFACES AND 600MM BELOW SURFACE IN TRAFFICABLE AREA UNO.
- K4. UNLESS NOTED OTHERWISE, THE IN-GROUND STORMWATER PIPES SHALL BE STEEL REINFORCED CONCRETE CLASS 4 APPROVED SPIGOT AND SOCKET WITH RUBBER RING JOINTS.
- K5. STORMWATER PIPES ARE TO BE INSTALLED IN ACCORDANCE WITH AS 3725. ALL BEDDING IS TO BE TYPE H2 UNLESS NOTED OTHERWISE.
- K6. CARE IS TO BE TAKEN WITH LEVELS OF STORMWATER LINES. GRADE SHOWN ARE NOT TO BE REDUCED WITHOUT APPROVAL.
- K7. STORMWATER PITS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS.
- K8. GRATES AND COVERS SHALL CONFORM WITH AS 3996-1992.
- K9. ALL WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH CURRENT STANDARDS AND CONSTRUCTION SPECIFICATIONS.
- K10. THE CONTRACTOR SHALL VERIFY LOCATIONS OF EXISTING SERVICES WITH ALL RELEVANT AUTHORITIES BEFORE COMMENCING CONSTRUCTION.
- K11. ALL STRUCTURES TO BE CONSTRUCTED TO NEW FINISHED SURFACE LEVELS.
- K12. DATUM FOR LEVELS IS AHD, THE POSITION, SIZE, SURFACE LEVELS AND INVERT LEVELS EXISTING STORMWATER PITS ARE TAKEN FROM SURVEY DRAWINGS. THESE NEED TO BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
- K13. ALL STORMWATER PITS SHALL BE CONSTRUCTED USING CAST IN-SITU CONCRETE
- K14. CONNECTION TO EXISTING STORMWATER PITS TO BE CARRIED OUT BY THE CONTRACTOR IN ACCORDANCE WITH THE SPECIFICATION AND IN CONSULTATION WITH COUNCIL. MAKE REQUIRED OPENING IN THE EXISTING STORMWATER PIT WALL AT THE CONNECTION POINT OF NEW LINE. REPAIR AND MAKE GOOD THE PIT WALL INCLUDING NECESSARY ADJUSTMENT OF THE OUT BENCHING TO MATCH NEW PIPE CONNECTIONS.
- K15. STORMWATER PITS TO W80 AND A160 LOADINGS IN ACCORDANCE WITH AS 5.
- K16. ALL STORMWATER PITS TO HAVE CLASS C CAST IRON MANHOLE COVERS.

L1. THE USE OF PRE-CAST STORMWATER DRAINAGE PITS REQUIRES CONFIRMATION BETWEEN GHD ENGINEERS AND THE CONTRACTOR REGARDING QUALITY CONTROL AND CERTIFICATION OF FINISHES.

[illegible]



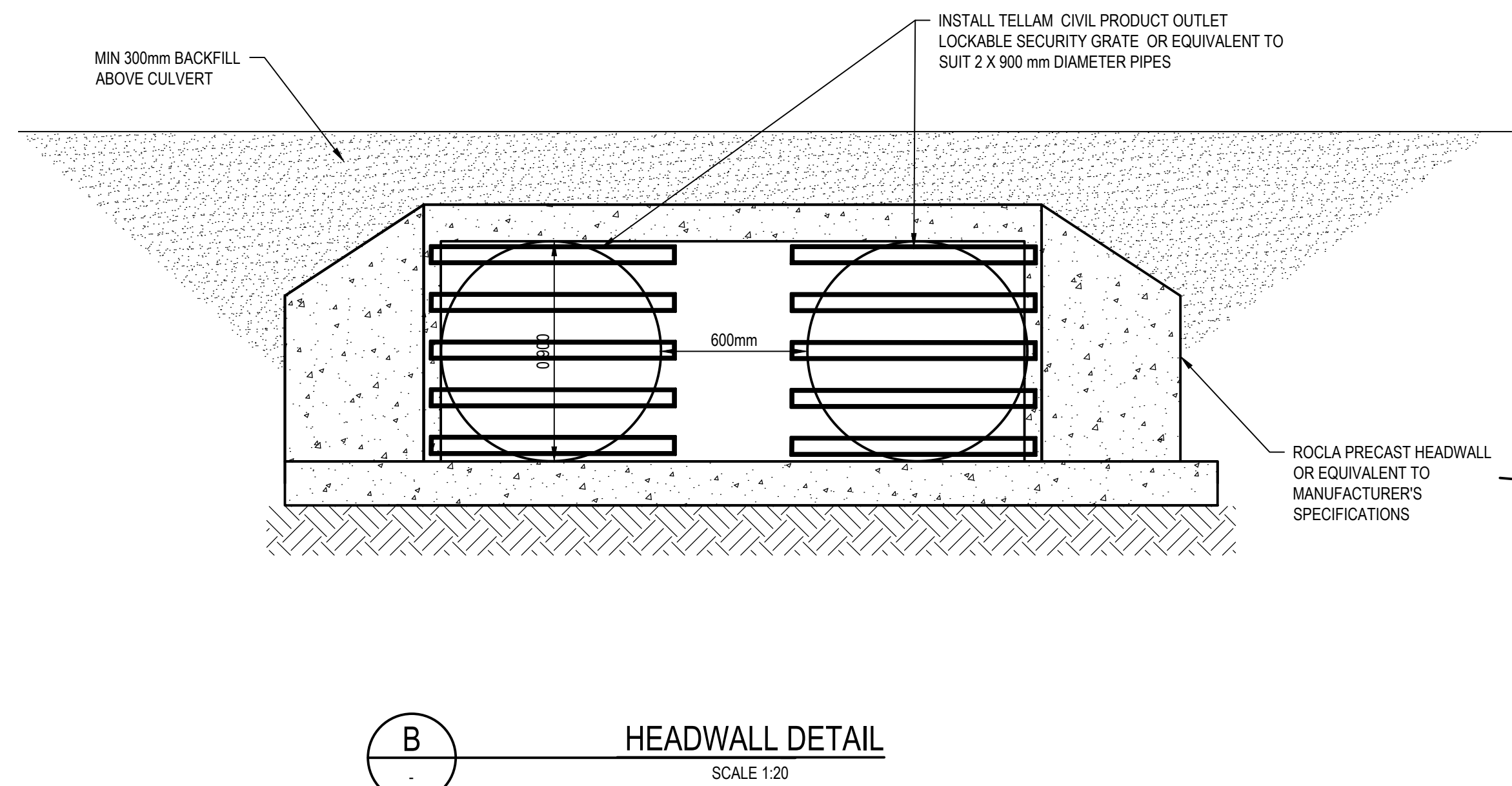
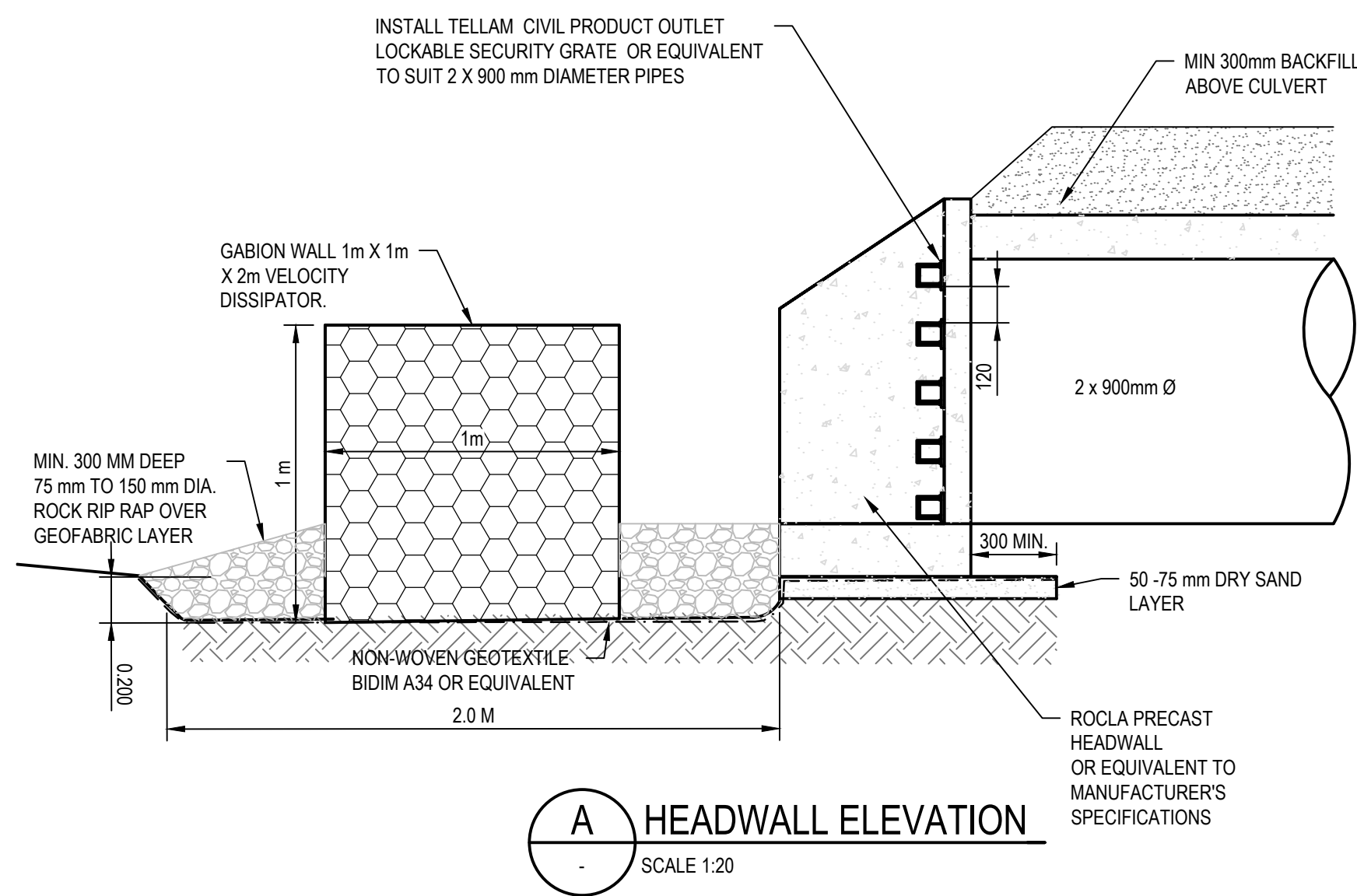
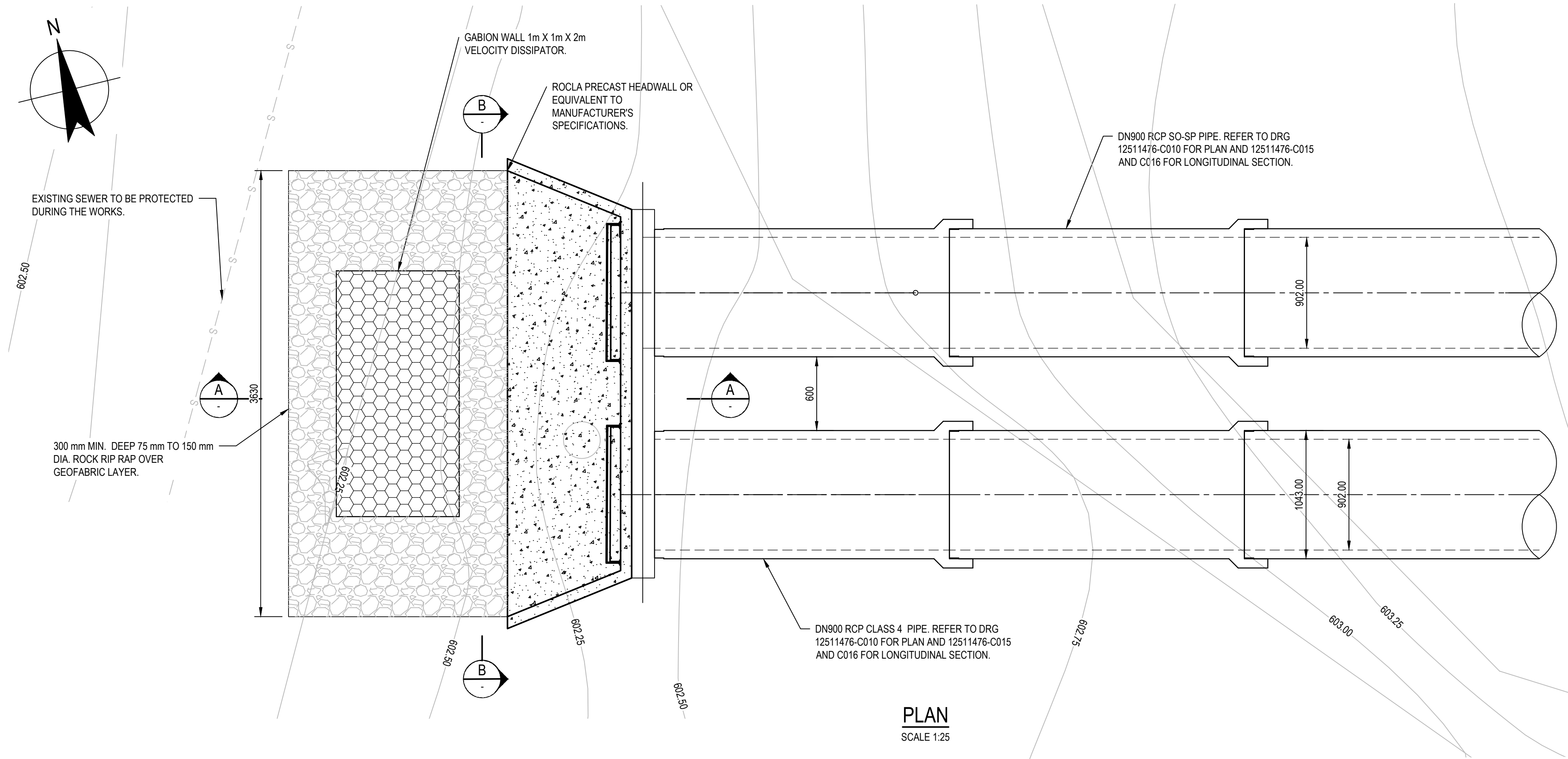
LONGITUDINAL SECTION - STRM 01

SCALE 1:500H, 1:100V

- NOTES:
- FOR GENERAL ARRANGEMENT PLAN REFER TO DRAWING No. 12511476-C010
 - CONTRACTOR TO LOCATE, PROTECT AND SUPPORT EXISTING SERVICES DURING CONSTRUCTION
 - RELOCATED SERVICES TO ABIDE TO RELEVANT AUTHORITY REQUIREMENTS

PRELIMINARY

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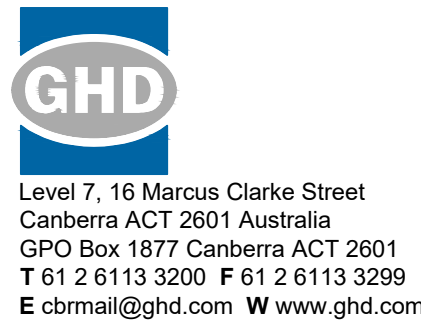


NOTES:

1. TELLAM CIVIL PRODUCT (TCP) DETAILS ARE UNDER <https://tellam.com.au/catalogue.pdf>
2. TELLAM PIPE OUTLET LOCKABLE SECURITY GRATE (OR EQUIVALENT) SHOP DRAWINGS ARE TO BE SUBMITTED TO THE SUPERINTENDANT FOR APPROVAL.
3. EXISTING SWALE TO BE LOCATED ON SITE. EXTENT OF SCOUR PROTECTION AND HEADWALL OUTLET TREATMENT TO BE ADJUSTED TO SUIT THE EXISTING SWALE.
4. CONTRACTOR TO LOCATE, PROTECT AND SUPPORT EXISTING SERVICES DURING CONSTRUCTION

PRELIMINARY

A	PRELIMINAY ISSUE	RK	AR	PC	13.11.19
No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director



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Drawn R. KALOS

Designer M. DOWNES

Drafting Check R. CASACLANG

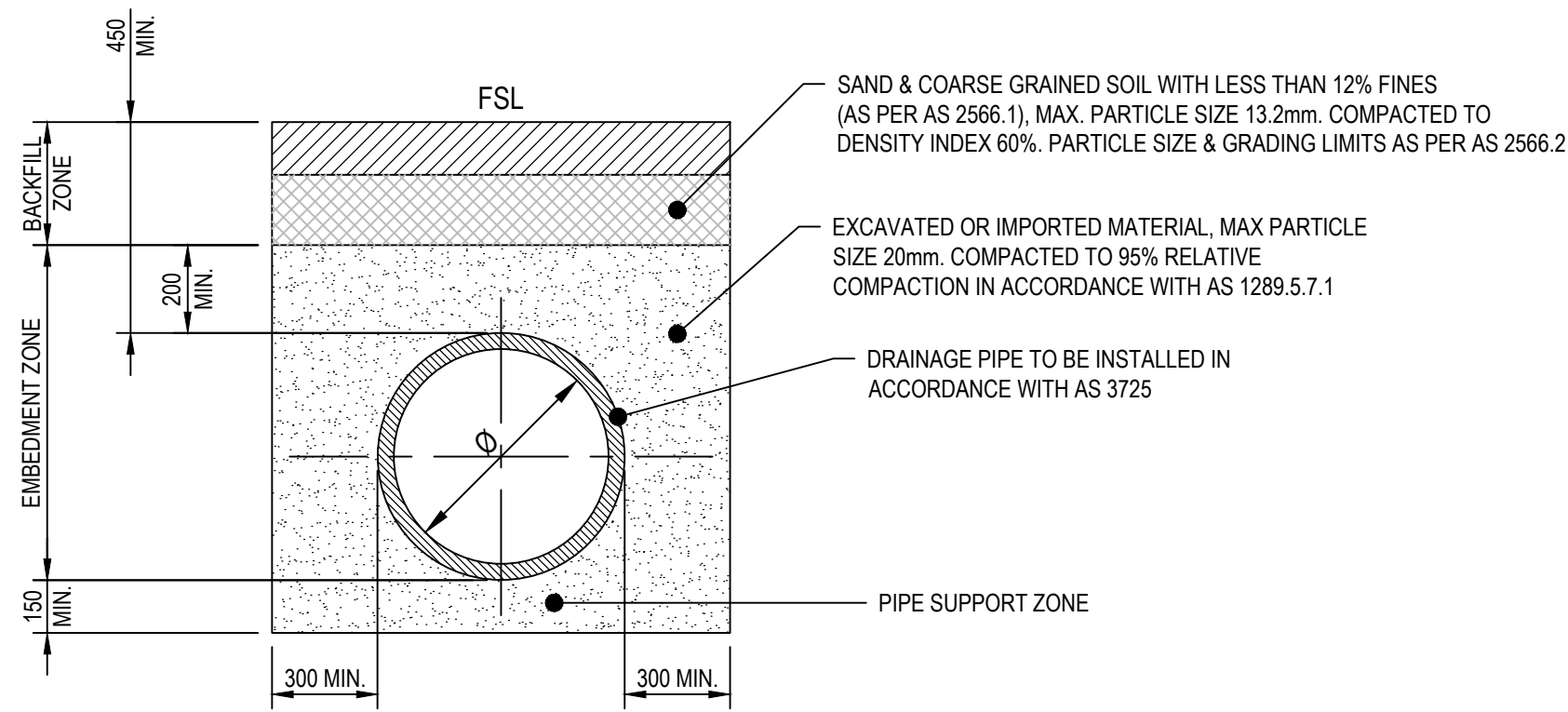
Design Check J. WEARNE

Approved (Project Director)
Date

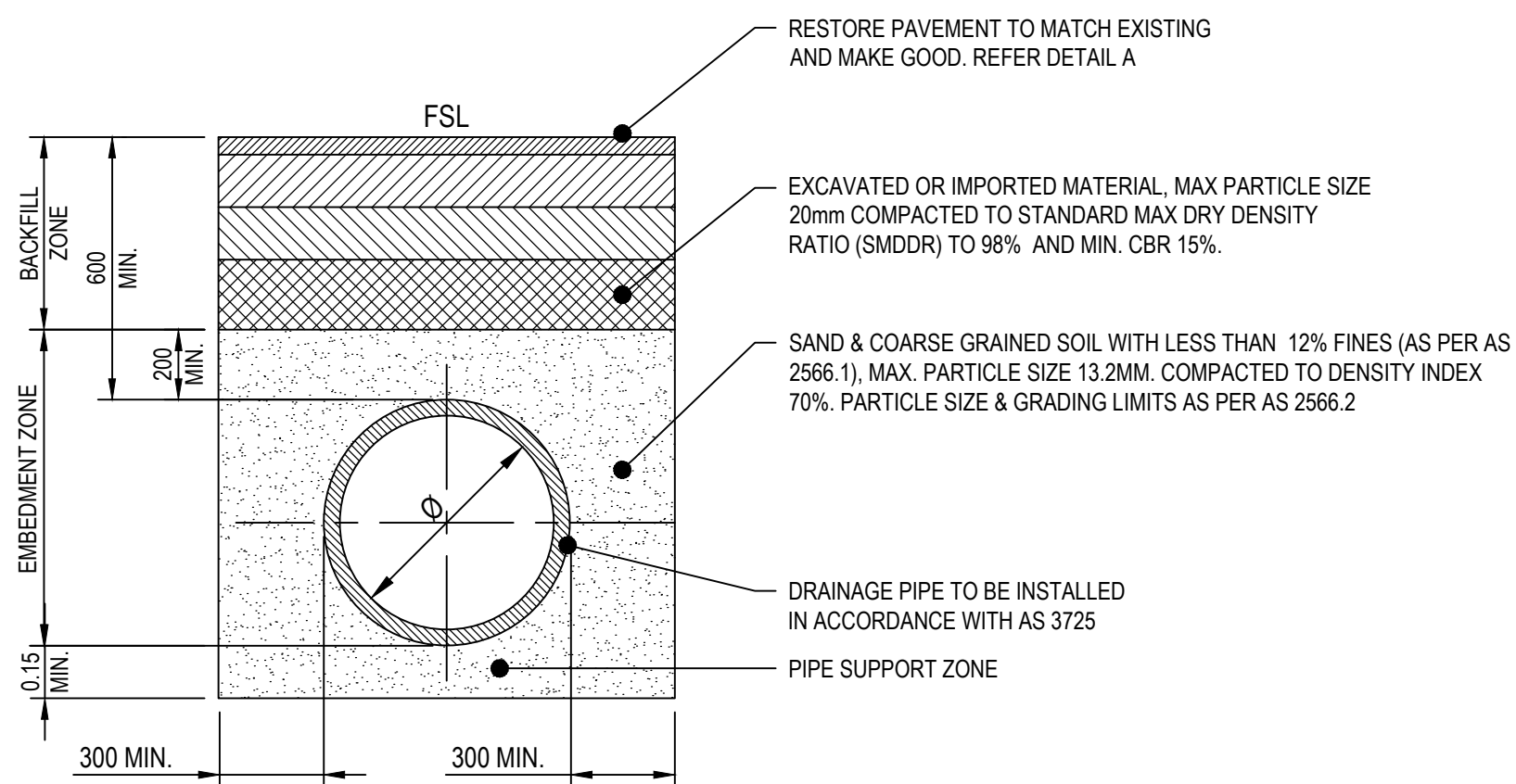
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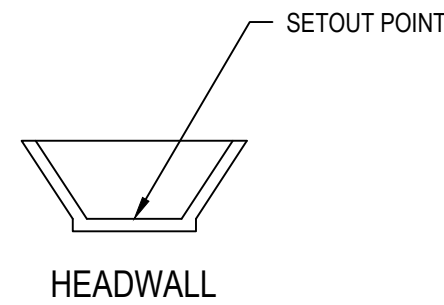
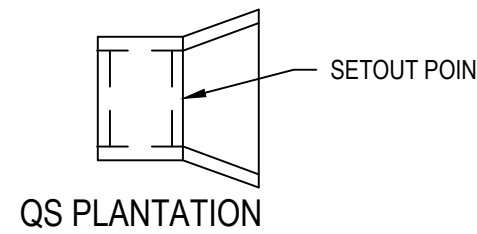
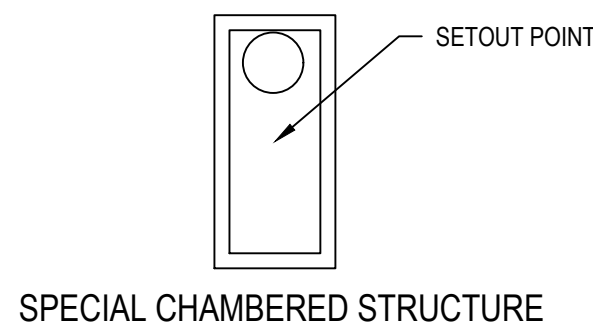
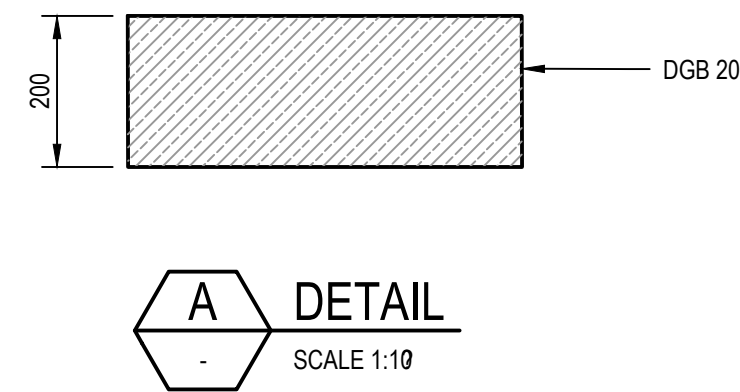
Client	QUEANBEYAN - PALERANG REGIONAL COUNCIL
Project	HOOVER ROAD STORMWATER REALIGNMENT
Title	OUTLET STRUCTURE CIVIL PLAN AND DETAILS
Original Size	A1
Drawing No:	12511476-C020
Rev:	A



TYPICAL DETAIL - BURIED UNDER
NON - TRAFFICABLE AREA
SCALE 1:20



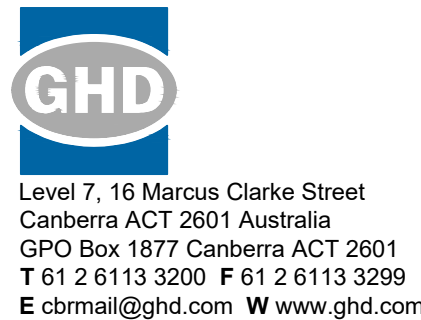
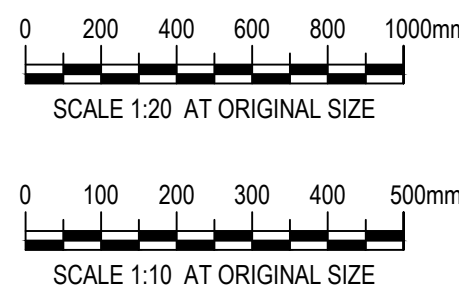
TRENCH DETAIL - BURIED PIPE
UNDER TRAFFICABLE AREA
SCALE 1:20



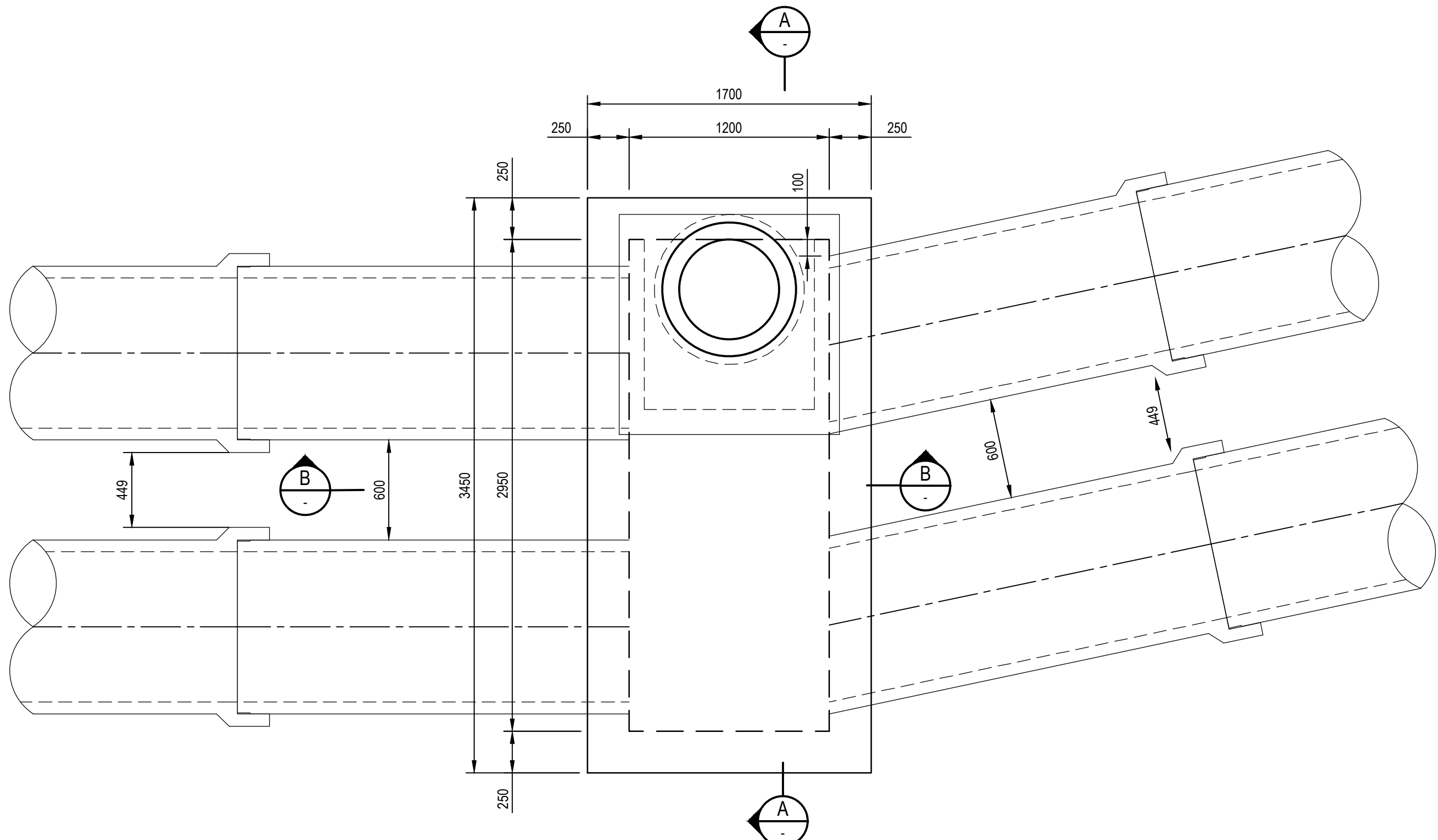
STRUCTURE SETOUT
NOT TO SCALE

PRELIMINARY

No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date
A	PRELIMINAY ISSUE		RK	AR	PC	13.11.19

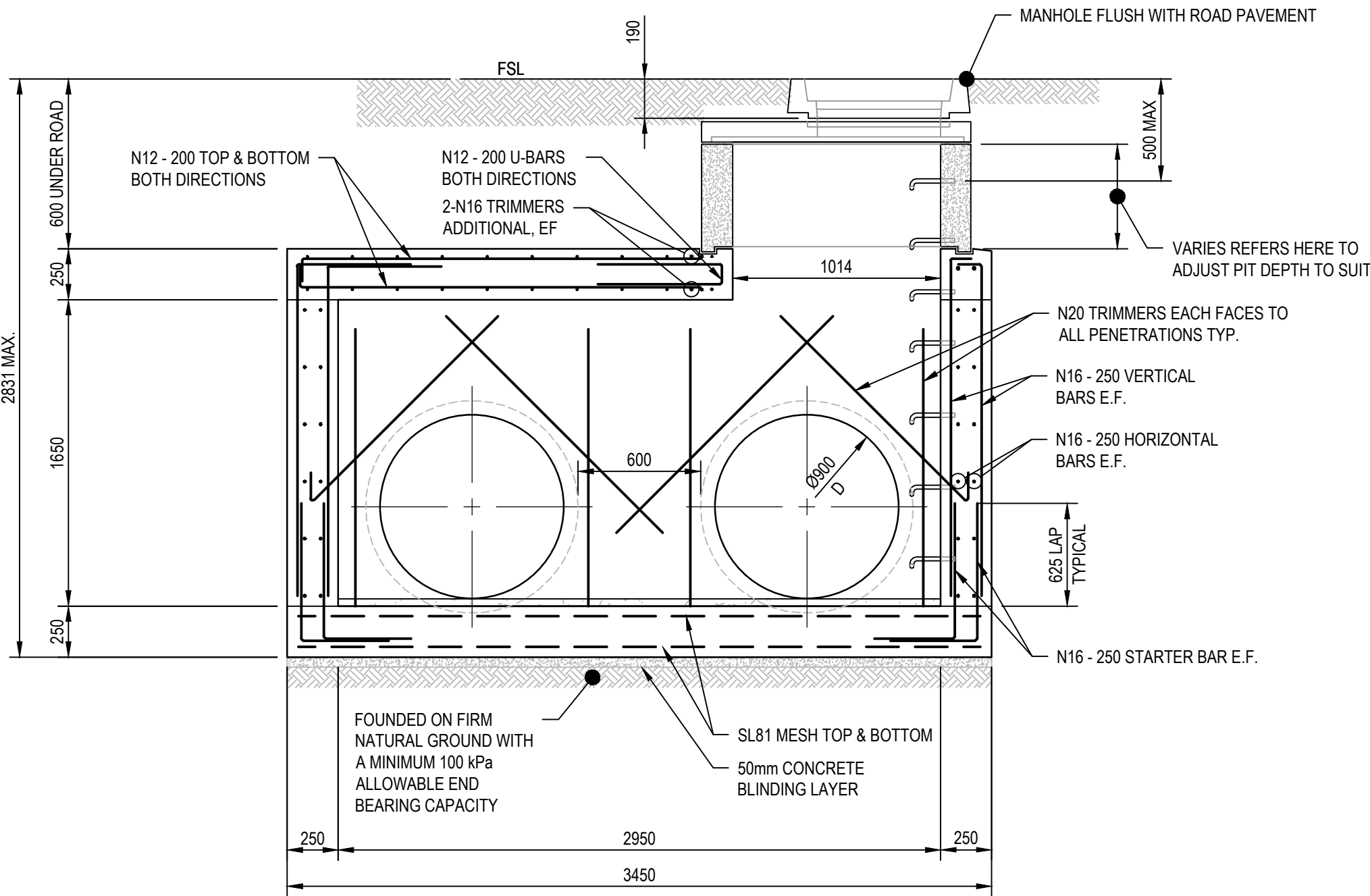


DO NOT SCALE	Drawn R. KALOS		Designer M. DOWNES		Client	QUEANBEYAN - PALERANG REGIONAL COUNCIL		
	Drafting Check R. CASACLANG		Design Check J. WEARNE		Project	HOOVER ROAD STORMWATER REALIGNMENT		
	Approved (Project Director) Date				Title	STORMWATER MISCELLANEOUS DETAILS		
	Scale AS SHOWN		This Drawing must not be used for Construction unless signed as Approved		Original Size	A1		Drawing No: 23-12511476-C021
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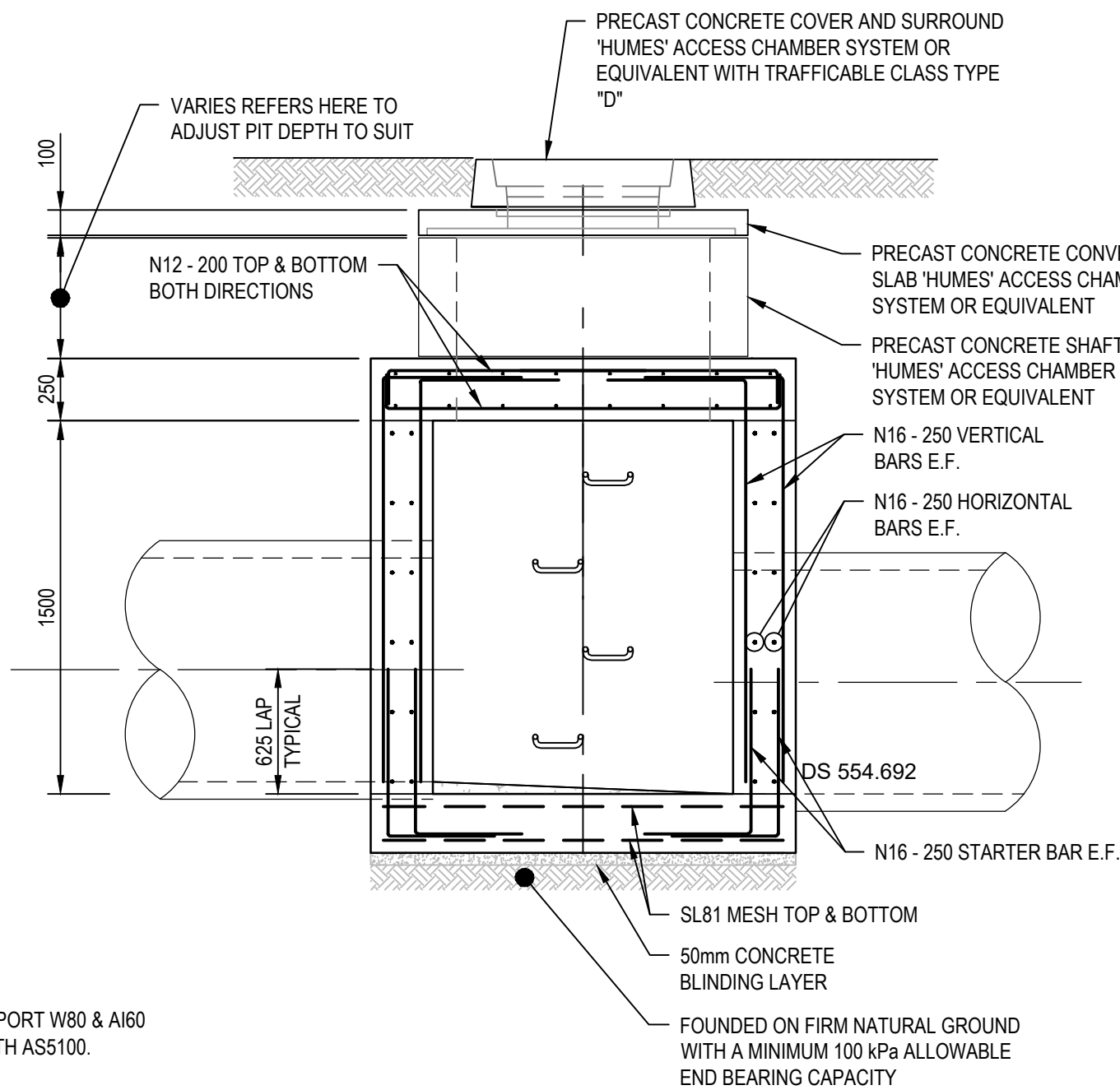


PLAN

SCALE 1:25



A SECTION
SCALE 1 : 25



B SECTION
SCALE 1 : 25

NOTES:

1. CONCRETE GRADE N32
2. COVER TO REINF. = 50mm MIN.
3. CHAMBER IS DESIGNED TO SUPPORT W80 & A160 LOADINGS IN ACCORDANCE WITH AS5100.

GENERAL:

1. ALL MATERIALS AND WORKMANSHIP TO BE IN ACCORDANCE WITH THE RELEVANT AND CURRENT S.A.A. CODES AND WITH THE BY-LAWS AND ORDINANCES OF THE RELEVANT BUILDING AUTHORITIES.
2. SETTING-OUT DIMENSIONS AND SIZES OF STRUCTURAL MEMBERS NOT TO BE OBTAINED BY SCALING THE STRUCTURAL DRAWINGS. ANY SETTING-OUT DIMENSIONS SHOWN IN THE STRUCTURAL DRAWINGS TO BE CHECKED BY THE CONTRACTOR BEFORE CONSTRUCTION COMMENCES. REFER ANY DISCREPANCY TO THE SUPERINTENDENT BEFORE PROCEEDING WITH THE WORK.
3. DURING CONSTRUCTION IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE STRUCTURE IS MAINTAINED IN A SAFE AND STABLE CONDITION AND NO PART IS OVERSTRESSED. TEMPORARY BRACING TO BE PROVIDED BY THE CONTRACTOR AS REQUIRED TO KEEP THE WORKS AND EXCAVATIONS STABLE AT ALL TIMES.
4. UNLESS NOTED OTHERWISE, ALL LEVELS ARE IN METRES AND ALL DIMENSIONS ARE IN MILLIMETRES.

CONCRETE:

1. ALL WORKMANSHIP AND MATERIALS TO BE IN ACCORDANCE WITH A.S.3600 AND THE CONCRETE SPECIFICATION.
2. CONCRETE QUALITY:-

ELEMENT	SLUMP	MAX. SIZE AGGREGATE	CEMENT TYPE	CONCRETE GRADE
FLOOR & ROOF SLABS	80	20	GP	32MPa
WALLS	80	20	GP	32MPa

MIN. CEMENT CONTENT = 270kg/m³ MAX. W/C RATIO = 0.5

- PROJECT CONTROL TESTING TO BE CARRIED OUT IN ACCORDANCE WITH A.S.3600.
- CHAMBER IS DESIGN TO SUPPORT W80 & A160 LOADING IN ACCORDANCE WITH AS5100.
4. NO ADMIXTURES TO BE USED IN CONCRETE UNLESS APPROVED IN WRITING.
 5. ALL EXPOSED EDGES AND CORNERS TO BE PROVIDED WITH 25mm FILLETS OR CHAMFERS. MAINTAIN COVER TO REINFORCEMENT AT THESE DETAILS UNLESS OTHERWISE INDICATED.
 6. NO HOLES, CHASES OR EMBEDMENT OF PIPES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS TO BE MADE IN CONCRETE MEMBERS WITHOUT THE PRIOR WRITTEN APPROVAL OF THE SUPERINTENDENT/DESIGNER.
 7. CONSTRUCTION JOINTS WHERE NOT SHOWN TO BE LOCATED TO THE APPROVAL OF THE SUPERINTENDENT/DESIGNER. DETAILS OF CONSTRUCTION JOINTS TO BE SUBMITTED TO THE SUPERINTENDENT/DESIGNER FOR APPROVAL.
 8. THE FINISHED CONCRETE TO BE A DENSE HOMOGENEOUS MASS, COMPLETELY FILLING THE FORMWORK THOROUGHLY EMBEDDING THE REINFORCEMENT AND FREE OF STONE POCKETS. ALL CONCRETE INCLUDING SLABS ON GROUND AND FOOTINGS, TO BE COMPACTED WITH MECHANICAL VIBRATORS.
 9. CURING OF ALL CONCRETE TO BE ACHIEVED BY KEEPING SURFACES CONTINUOUSLY WET FOR A PERIOD OF 3 DAYS, AND PREVENTION OF LOSS OF MOISTURE FOR A TOTAL OF 7 DAYS FOLLOWED BY A GRADUAL DRYING OUT. APPROVED SPRAYED OR CURING COMPOUNDS MAY BE USED WHERE NO FLOOR FINISH IS PROPOSED. POLYTHENE SHEETING OR WET HESSIAN MAY BE USED IF PROTECTED FROM WIND AND TRAFFIC.
 10. CONSTRUCTION SUPPORT PROPPING TO BE LEFT IN PLACE WHERE NEEDED TO AVOID OVERSTRESSING THE STRUCTURE DUE TO CONSTRUCTION LOADING.
 11. CONDUITS, PIPES ETC, ONLY TO BE LOCATED AS SHOWN IN THE DRAWINGS OR AS APPROVED BY THE SUPERINTENDENT/DESIGNER.
 12. ALL FORMWORK AND PROPPING UNDER SUSPENDED CONCRETE WORKS SHALL BE REMOVED BEFORE ANY MASONRY WORK IS BUILT ABOVE.
 13. SHRINKAGE
MAXIMUM DRYING SHRINKAGE STRAIN MEASURED IN ACCORDANCE WITH AS 1012 PART 13 SHALL NOT EXCEED 650×10^{-6} AT 8 WEEKS
 14. BACKPROPPING FOR FORMWORK TO BE DESIGNED IN ACCORDANCE WITH AS 1509 AND SUBMITTED FOR ENGINEER'S COMMENTS
 15. THE STRUCTURAL DESIGN FOR SUSPENDED STRUCTURES ASSUMES:-
 1. A MAXIMUM COMBINED VERTICAL DEFLECTION OF FORMWORK AND PROPS OF 2mm UNDER THE WEIGHT OF CONCRETE, REINFORCEMENT AND CONSTRUCTION LIVE LOAD.
 2. REMOVAL OF FORMWORK AND PROPS SHALL COMPLY WITH CLAUSE 19.6.2 OF AS3600

FORMWORK

1. THE DESIGN, CERTIFICATION, CONSTRUCTION AND PERFORMANCE OF THE FORMWORK AND FALSEWORK IS THE RESPONSIBILITY OF THE CONTRACTOR. DESIGN AND CONSTRUCTION OF FORMWORK TO BE IN ACCORDANCE WITH A.S.3610 UNLESS OTHERWISE APPROVED IN WRITING BY THE SUPERINTENDENT.

REINFORCEMENT:

1. CLEAR CONCRETE COVER TO ALL REINFORCEMENT TO BE AS FOLLOWS, UNLESS SHOWN OTHERWISE.

ELEMENT	COVER(mm) NOT EXPOSED TO WEATHER	COVER(mm) EXPOSED TO WEATHER
FLOOR AND ROOF SLABS	25	40
WALLS	25	40

2. ALL REINFORCEMENT TO BE FIRMLY SUPPORTED NOT GREATER THAN 1m CENTRES BOTH WAYS, UNLESS NOTED OTHERWISE. BARS TO BE TIED AT ALTERNATE INTERSECTIONS.

3. REINFORCEMENT SYMBOLS:
 - N - DENOTES GRADE 500 DEFORMED BARS TO A.S.4671
 - Y - DENOTES GRADE 400 Y BARS TO A.S.1302 GRADE Y (TEMPCORE).
 - R - DENOTES GRADE 250 R HOT ROLLED PLAIN BARS TO A.S.1302.
 - SL, RL - DENOTES FABRIC TO AS 4671 (GRADE 500)
 - F - DENOTES GRADE 450 F HARD-DRAWN WIRE REINFORCING FABRIC TO A.S.1304.
 - W - DENOTES GRADE 450 W HARD-DRAWN PLAIN WIRE TO A.S.1303.

- 17N20-250
17 - (NUMBER OF BARS IN GROUP)
N - (BAR GRADE AND TYPE)
20 - (NOMINAL BAR SIZE IN mm)
250 - (SPACING IN mm)

THE FIGURE FOLLOWING THE FABRIC SYMBOL F IS THE REFERENCE NUMBER FOR FABRIC TO A.S.1304.

4. REINFORCEMENT BARS TO BE LAID IN LAYERS TAGGED ON PLANS AS FOLLOWS:-
 - (1) - DENOTES BARS LAID IN BOTTOM LAYER FIRST.
 - (2) - DENOTES BARS LAID IN BOTTOM LAYER SECOND.
 - (3) - DENOTES BARS LAID IN TOP LAYER FIRST.
 - (4) - DENOTES BARS LAID IN TOP LAYER LAST.
5. REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY AND NOT NECESSARILY IN TRUE PROJECTION.
6. SPLICES IN REINFORCEMENT TO BE MADE ONLY IN POSITION SHOWN, OR OTHERWISE APPROVED IN WRITING BY THE SUPERINTENDENT/DESIGNER. HOOKS, LAPS, SPLICES AND BENDS TO BE IN ACCORDANCE WITH AS 3600.
LAPS TO BE NOT LESS THAN THE DEVELOPMENT LENGTH FOR EACH BAR SHOWN BELOW U.N.O.

BAR SIZE (mm)	SPLICE LENGTH (mm)
N12	475
N16	625
N20	800
N24	950
N28	1250
N32	1575

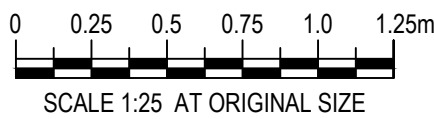
7. WELDING OF REINFORCEMENT NOT TO BE PERMITTED UNLESS SHOWN ON THE STRUCTURAL DRAWINGS OR APPROVED BY THE SUPERINTENDENT/DESIGNER.
8. JOGGLES TO BARS TO BE 1 BAR DIAMETER OVER A LENGTH OF 12 BAR DIAMETERS UNLESS OTHERWISE NOTED.
9. FABRIC TO BE LAPPED 2 TRANSVERSE WIRES PLUS 50mm. BUNDLED BARS TO BE TIED TOGETHER AT 30 BAR DIAMETER CENTRES WITH 3 WRAPS OF TIE WIRE.
10. AT PENETRATIONS IN SLABS, UNLESS OTHERWISE DETAILED REINFORCEMENT, NOT TO BE CUT BUT TO BE GATHERED EQUALLY TO EACH SIDE OF PENETRATION AND EXTRA REINFORCEMENT PROVIDED BETWEEN THE PENETRATIONS, AS DIRECTED BY THE SUPERINTENDENT/DESIGNER.
11. DISTRIBUTION BARS TO MAIN REINFORCEMENT IN SLABS SHALL BE N12 AT 300c/s. U.N.O.

LOADING

1. STORMWATER PITS TO W80 AND A160 LOADINGS IN ACCORDANCE WITH AS5100
2. ALL STORMWATER PITS TO HAVE CLASS D CAST IRON MANHOLE COVERS.

PRELIMINARY

B	REVISED ISSUE	RK	AR	PC	14.11.19
A	PRELIMINARY ISSUE	RK	AR	PC	13.11.19
No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director



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Drawn B.SACAYANAN

Designer M.DOWNES

Drafting Check R. CASACLANG

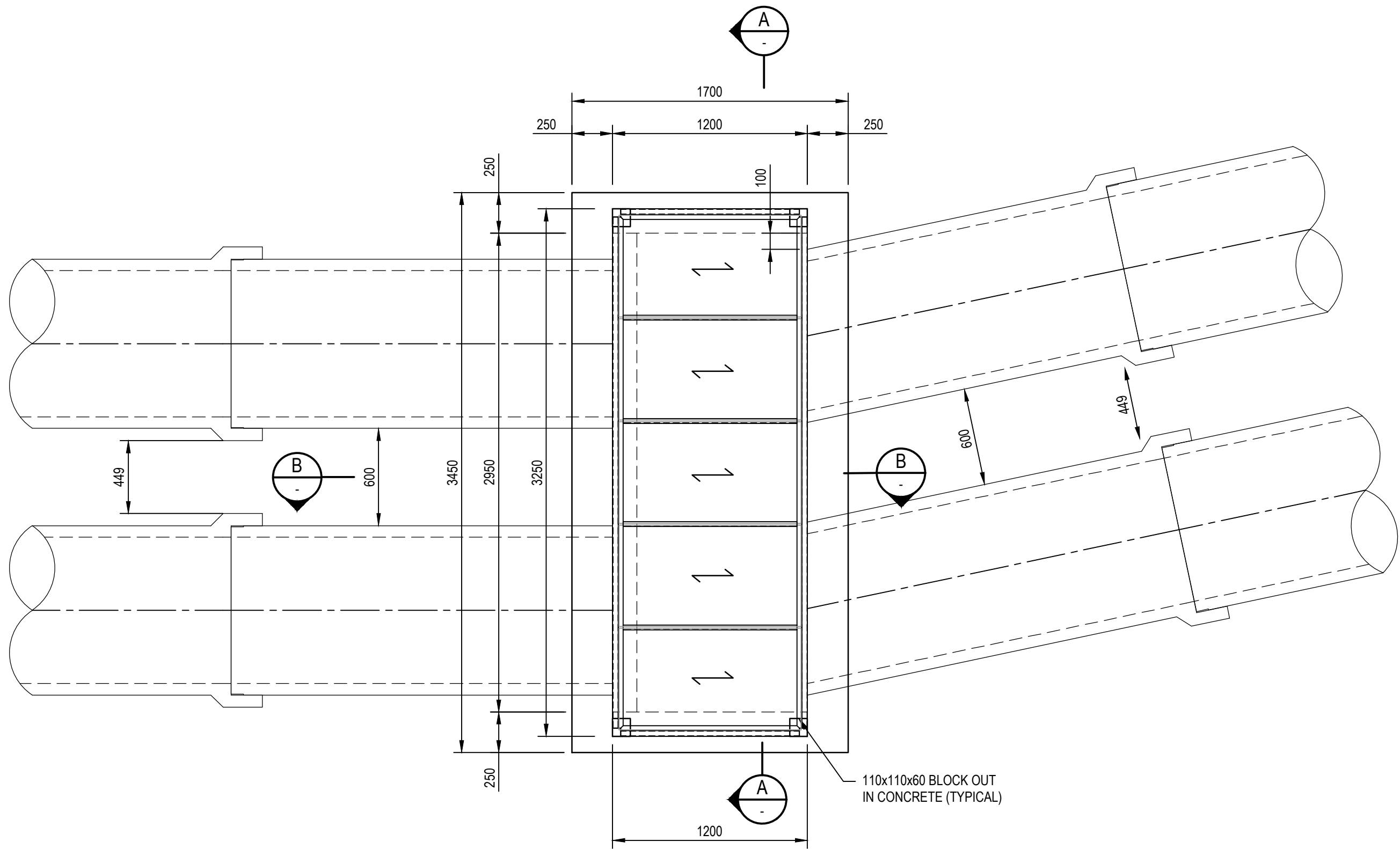
Design Check B. REMEDIOS

Approved (Project Director)
Date

Scale 1:25

This Drawing must not be used for construction unless signed as Approved

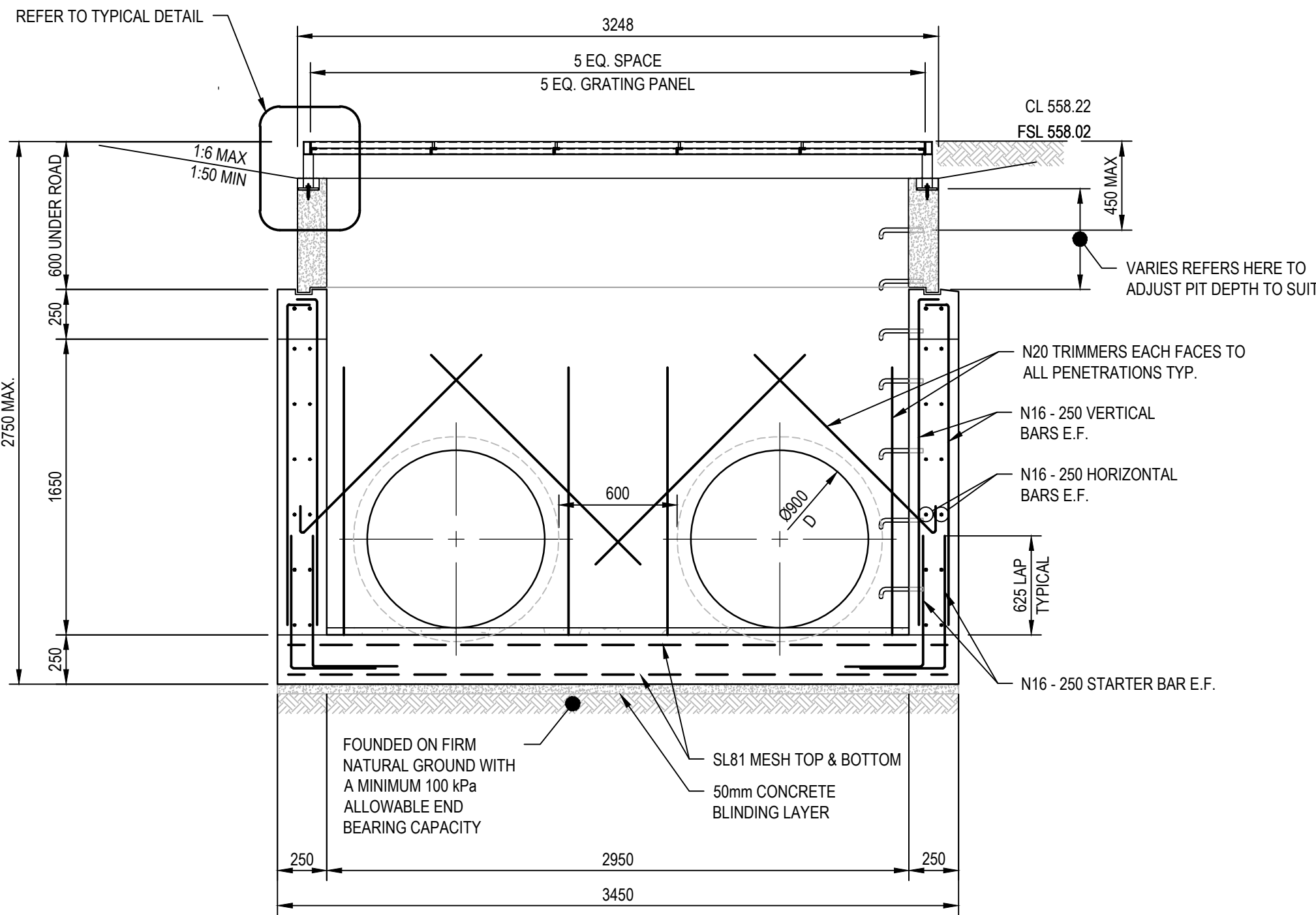
Client	QUEANBEYAN - PALERANG REGIONAL COUNCIL
Project	HOOVER ROAD STORMWATER REALIGNMENT
Title	STORMWATER INSPECTION CHAMBER CIVIL PLAN AND STRUCTURAL DETAILS
Original Size	A1
Drawing No:	12511476-C030
Rev:	B



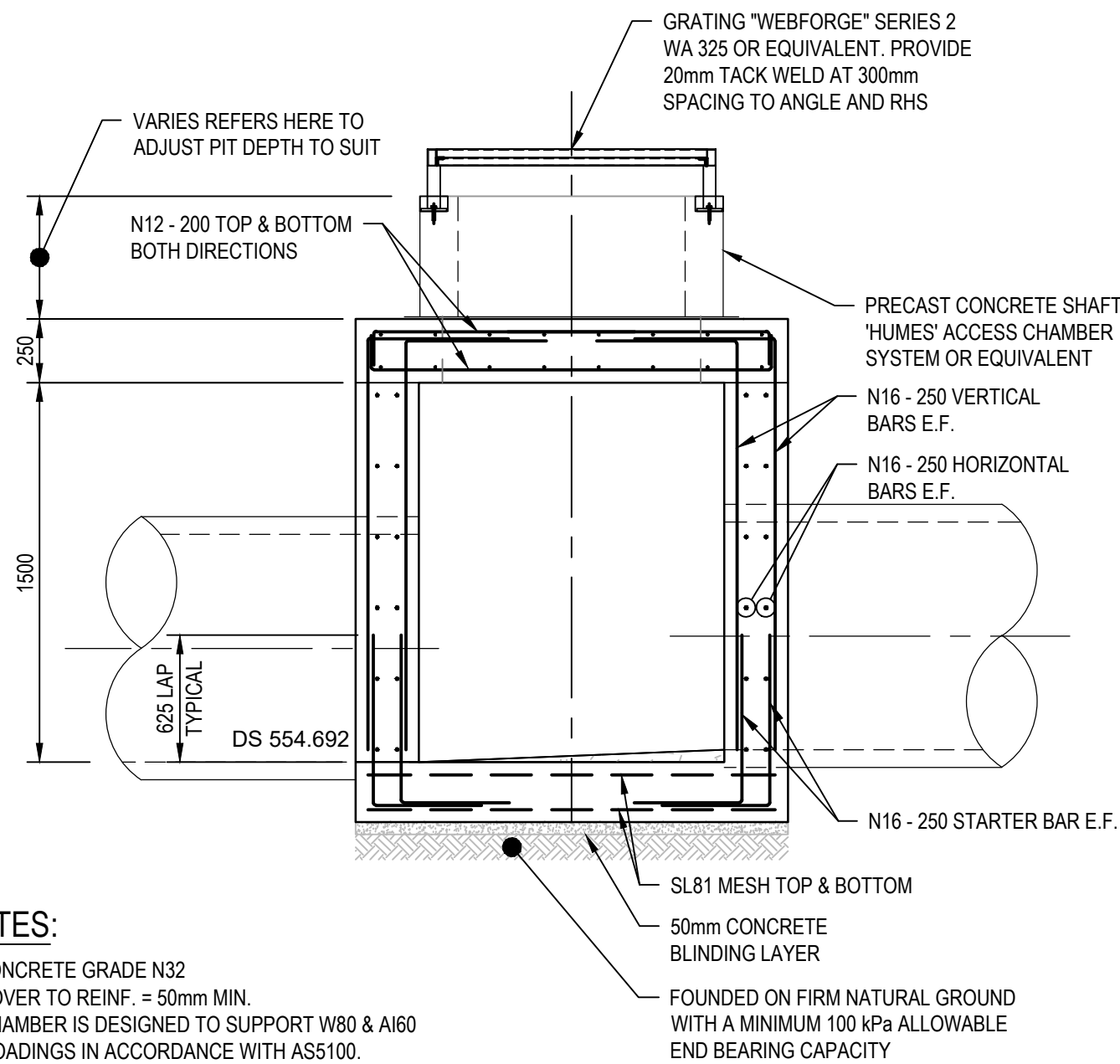
PLAN

SCALE 1:25

NOTE: GRATING IS OMITTED FOR CLARITY



A SECTION
SCALE 1: 25



NOTES:

1. CONCRETE GRADE N32
2. COVER TO REINF. = 50mm MIN.
3. CHAMBER IS DESIGNED TO SUPPORT W80 & A160 LOADINGS IN ACCORDANCE WITH ASS100.

B SECTION
SCALE 1: 25

GENERAL:

1. ALL MATERIALS AND WORKMANSHIP TO BE IN ACCORDANCE WITH THE RELEVANT AND CURRENT S.A.A. CODES AND WITH THE BY-LAWS AND ORDINANCES OF THE RELEVANT BUILDING AUTHORITIES.
2. SETTING-OUT DIMENSIONS AND SIZES OF STRUCTURAL MEMBERS NOT TO BE OBTAINED BY SCALING THE STRUCTURAL DRAWINGS. ANY SETTING-OUT DIMENSIONS SHOWN IN THE STRUCTURAL DRAWINGS TO BE CHECKED BY THE CONTRACTOR BEFORE CONSTRUCTION COMMENCES. REFER ANY DISCREPANCY TO THE SUPERINTENDENT BEFORE PROCEEDING WITH THE WORK.
3. DURING CONSTRUCTION IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE STRUCTURE IS MAINTAINED IN A SAFE AND STABLE CONDITION AND NO PART IS OVERSTRESSED. TEMPORARY BRACING TO BE PROVIDED BY THE CONTRACTOR AS REQUIRED TO KEEP THE WORKS AND EXCAVATIONS STABLE AT ALL TIMES.
4. UNLESS NOTED OTHERWISE, ALL LEVELS ARE IN METRES AND ALL DIMENSIONS ARE IN MILLIMETRES.

CONCRETE:

1. ALL WORKMANSHIP AND MATERIALS TO BE IN ACCORDANCE WITH A.S.3600 AND THE CONCRETE SPECIFICATION.
2. CONCRETE QUALITY:-

ELEMENT	SLUMP	MAX. SIZE AGGREGATE	CEMENT TYPE	CONCRETE GRADE
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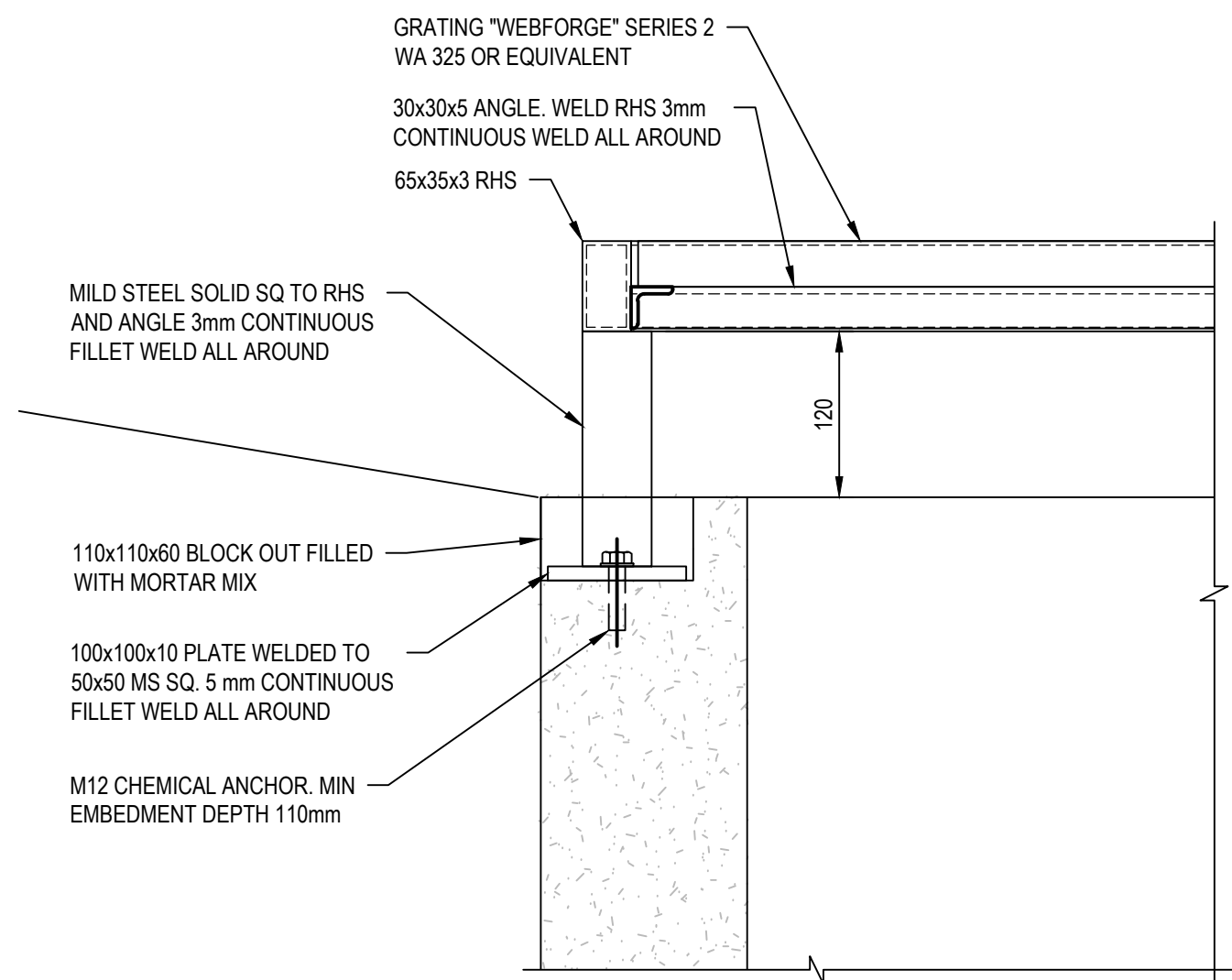
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 - R - DENOTES GRADE 250 R HOT ROLLED PLAIN BARS TO A.S.1302.
 - SL, RL - DENOTES FABRIC TO AS 4671 (GRADE 500)
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BAR SIZE (mm)	SPLICE LENGTH (mm)
N12	475
N16	625
N20	800
N24	950
N28	1250
N32	1575

7. WELDING OF REINFORCEMENT NOT TO BE PERMITTED UNLESS SHOWN ON THE STRUCTURAL DRAWINGS OR APPROVED BY THE SUPERINTENDENT/DESIGNER.
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- AT PENETRATIONS IN SLABS, UNLESS OTHERWISE DETAILED REINFORCEMENT, NOT TO BE CUT BUT TO BE GATHERED EQUALLY TO EACH SIDE OF PENETRATION AND EXTRA REINFORCEMENT PROVIDED BETWEEN THE PENETRATIONS, AS DIRECTED BY THE SUPERINTENDENT/DESIGNER.
- DISTRIBUTION BARS TO MAIN REINFORCEMENT IN SLABS SHALL BE N12 AT 300c/s. U.N.O.

LOADING

1. STORMWATER PITS TO W80 AND A160 LOADINGS IN ACCORDANCE WITH ASS100
2. ALL STORMWATER PITS TO HAVE CLASS D CAST IRON MANHOLE COVERS.

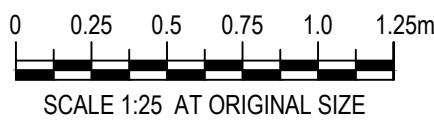


TYPICAL DETAIL

SCALE 1:5

PRELIMINARY

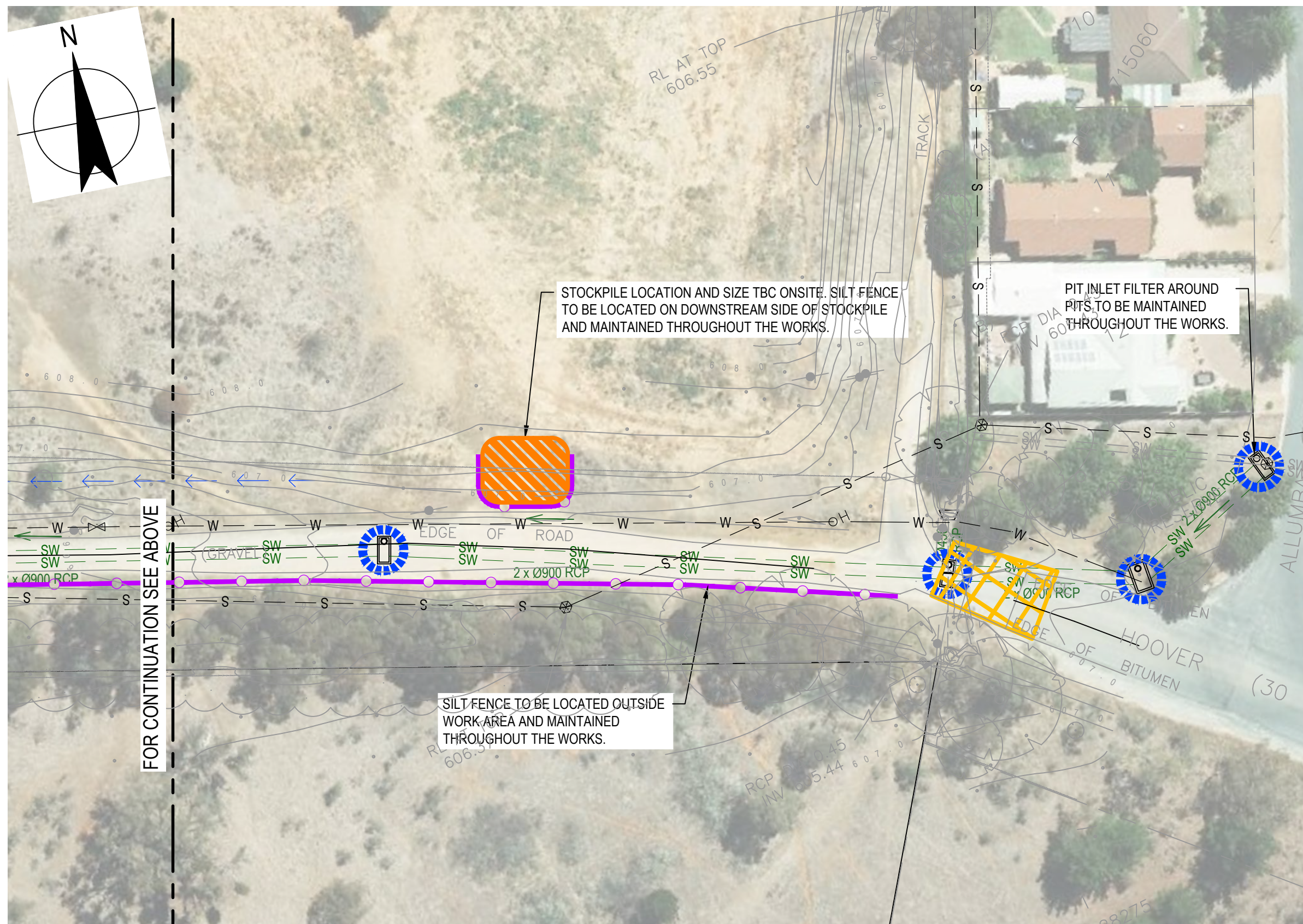
No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date
B	REVISED ISSUE		RK	AR	PC	14.11.19
A	PRELIMINARY ISSUE		RK	AR	PC	12.11.19



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Conditions of Use. This document may only be used by GHD's client (and any other person who GHD has agreed can use this document) for the purpose for which it was prepared and must not be used by any other person or for any other purpose.	Drafting Check R. CASACLANG	Design Check B. REMEDIOS	Project HOOVER ROAD STORMWATER REALIGNMENT
	Approved (Project Director) Date		Stormwater Surcharge Structure Civil Plan and Structural Details
	Scale 1:25	This Drawing must not be used for construction unless signed as Approved	Title
			Original Size
			A1 Drawing No: 12511476-C031
			Rev: B



PLAN
SCALE 1:500



PLAN
SCALE 1:500

LEGEND

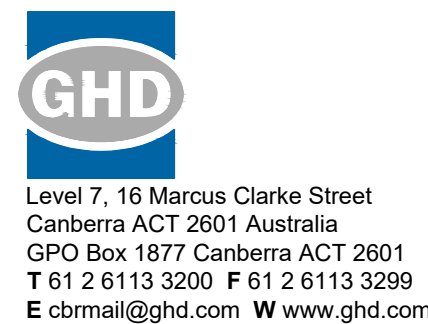
- SILT FENCE
- PIT INLET FILTER
- STOCKPILE
- STABILISED SITE ENTRY ACCESS AND SHAKER PAD
- CATCH DRAIN
- PROPOSED STORMWATER PIPE
- STRAWBALE FILTER

NOTE:

- REFER TO DRAWING No.12511476-C070 FOR SEDIMENT AND EROSION CONTROL DETAILS

PRELIMINARY

No	Revision	Note: * Indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date
A	PRELIMINARY ISSUE		RK	AR	PC	13.11.19



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	Approved (Project Director)				Title	SEDIMENT AND EROSION CONTROL PLAN		
	Date							
	Scale	1:500	This Drawing must not be used for Construction unless signed as Approved		Original Size	A1	Drawing No:	12511476-C060

GENERAL INSTRUCTIONS:

- G1 ALL SEDIMENT AND EROSION CONTROL MEASURES TO BE IN ACCORDANCE WITH NSW MEASURES DEPARTMENT OF HOUSING "MANAGING URBAN STORMWATER: SOILS, AND CONSTRUCTION" (ALSO REFERRED TO AS THE "BLUE BOOK").
- G2 THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE ENGINEERING PLANS, AND ANY OTHER PLANS OR WRITTEN INSTRUCTIONS THAT MAY BE ISSUED BY THE SITE SUPERINTENDENT RELATING TO DEVELOPMENT OF THE SUBJECT SITE.
- G3 THE SITE SUPERINTENDENT WILL ENSURE THAT ALL SEDIMENT AND EROSION CONTROL WORKS ARE LOCATED AS INSTRUCTED IN THIS SPECIFICATION OR IN ANY SUBSEQUENT SITE INSTRUCTION.
- G4 ALL BUILDERS AND SUB-CONTRACTORS WILL BE INFORMED OF THEIR RESPONSIBILITIES BY THE SITE SUPERINTENDENT IN MINIMISING THE POTENTIAL FOR SOIL EROSION AND POLLUTION TO DOWNSLOPE LANDS AND WATERWAYS.

SEDIMENT CONTROL:

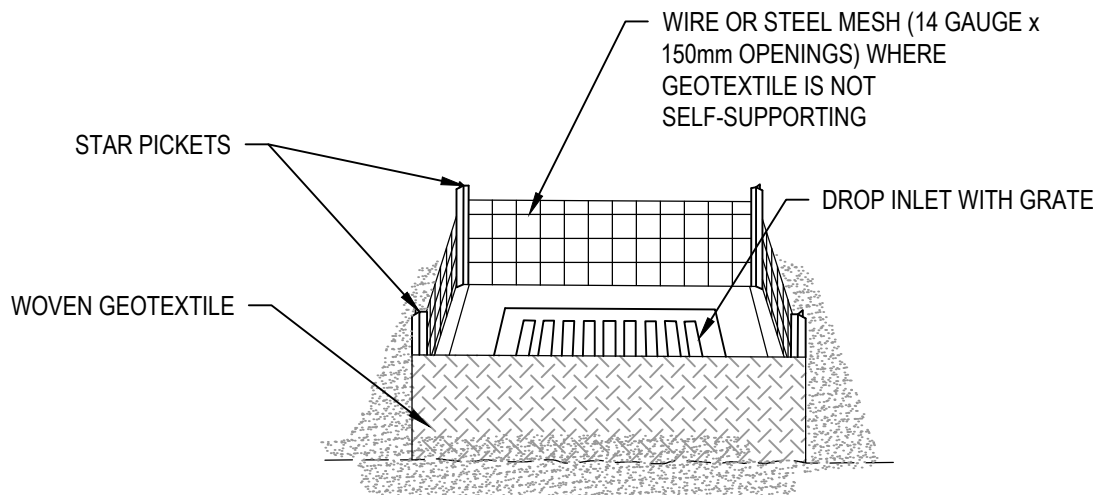
- S1 AN EROSION AND SEDIMENT CONTROL PLAN (ESCP) FOR ALL SITE WORKS, INCLUDING ROAD WORKS AND ACCESS, IS TO BE APPROVED BY THE PRINCIPAL CERTIFYING AUTHORITY PRIOR TO WORK COMMENCING. THE PLAN IS TO COVER ALL MEASURES TO CONTROL EROSION AND SEDIMENT TRANSPORT IN ACCORDANCE WITH THE NSW LANDCOM PUBLICATION MANAGING URBAN STORMWATER-SOILS AND CONSTRUCTION (4TH EDITION 2004-"BLUE BOOK"), THE ESCP SHALL INCLUDE MAINTENANCE REQUIREMENTS AND INSPECTION SCHEDULES FOR ALL CONTROL MEASURES.
- S2 EROSION AND SEDIMENT CONTROLS ARE TO BE IN PLACE BEFORE THE DISTURBANCE OF ANY SOILS ON THE SITE, AND ARE TO BE MAINTAINED DURING THE WORKS AND FOR AS LONG AS NECESSARY AFTER THE COMPLETION TO PREVENT SEDIMENT AND DIRTY WATER LEAVING THE SITE AND/OR ENTERING THE SURFACE WATER SYSTEM OUTSIDE THE SITE.
- S3 THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE ENGINEERING PLANS, AND ANY OTHER PLANS OR WRITTEN INSTRUCTIONS THAT MAY BE ISSUED BY THE SITE SUPERINTENDENT RELATING TO DEVELOPMENT OF THE SUBJECT SITE.
- S4 THE SITE SUPERINTENDENT WILL ENSURE THAT ALL SEDIMENT AND EROSION CONTROL WORKS ARE LOCATED AS INSTRUCTED IN THIS SPECIFICATION OR IN ANY SUBSEQUENT SITE INSTRUCTION.
- S5 ALL BUILDERS AND SUB-CONTRACTORS WILL BE INFORMED OF THEIR RESPONSIBILITIES BY THE SITE SUPERINTENDENT IN MINIMISING THE POTENTIAL FOR SOIL EROSION AND POLLUTION TO DOWNSLOPE LANDS AND WATERWAYS.
- S6 SEDIMENT FROM THE DEVELOPMENT SITE IS TO BE RETAINED ON-SITE DURING CONSTRUCTION WORK.
- S7 PROVIDE MITIGATION MEASURES TO ENSURE STORMWATER RUN-OFF DOES NOT ENTER ADJOINING PROPERTIES OR INTO THE SEWERAGE SYSTEM.
- S8 PROVIDE SEDIMENT FILTERS SUCH AS STRAW BALES FILTERS, GRAVEL SURFACE BARRIERS, SANDBAGS, PIT BASKETS OR GEO-TEXTILE MESH SCREENS AT RUN-OFF POINTS.
- S9 STRAW BALES/GEO-TEXTILE MESH SCREENS MUST BE INSPECTED ON A REGULAR BASIS AND REPLACED IF NECESSARY SO THEY REMAIN EFFECTIVE.
- S10 SEDIMENT TRAPS OR FILTERS MUST BE PLACED AROUND ANY DRAIN AFFECTED BY CONSTRUCTION WORKS TO PREVENT SEDIMENT ENTERING THE STORMWATER SYSTEM. SEDIMENT CONTROLS SHOULD BE CHECKED DAILY TO ENSURE THEY REMAIN EFFECTIVE.
- S11 ANY SAND USED IN THE CONCRETE CURING PROCESS (SPREAD OVER THE SURFACE) IS TO BE REMOVED AS SOON AS POSSIBLE AND WITHIN 10 WORKING DAYS FROM PLACEMENT.
- S12 WATER IS TO BE PREVENTED FROM ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS THE CATCHMENT AREA HAS BEEN PERMANENTLY LANDSCAPED AND/OR ANY LIKELY SEDIMENT HAS BEEN FILTERED THROUGH AN APPROVED STRUCTURE.
- S13 TEMPORARY SEDIMENT AND EROSION CONTROL STRUCTURES ARE TO BE REMOVED ONLY AFTER THE LANDS THEY ARE PROTECTING ARE REHABILITATED AND WHEN REMOVAL IS APPROVED BY THE SITE SUPERINTENDENT.
- S14 REHABILITATION GRASS MIX IS TO BE APPLIED TO ALL DISTURBED SURFACES AT THE RECOMMENDED RATE OF DISPERSAL PRIOR TO THE ISSUE OF THE FINAL OCCUPATION/ COMPLETION CERTIFICATE. DO NOT USE SPECIES THAT ARE LISTED UNDER THE NOXIOUS WEEDS ACT 1993.

LAND DISTURBANCE:

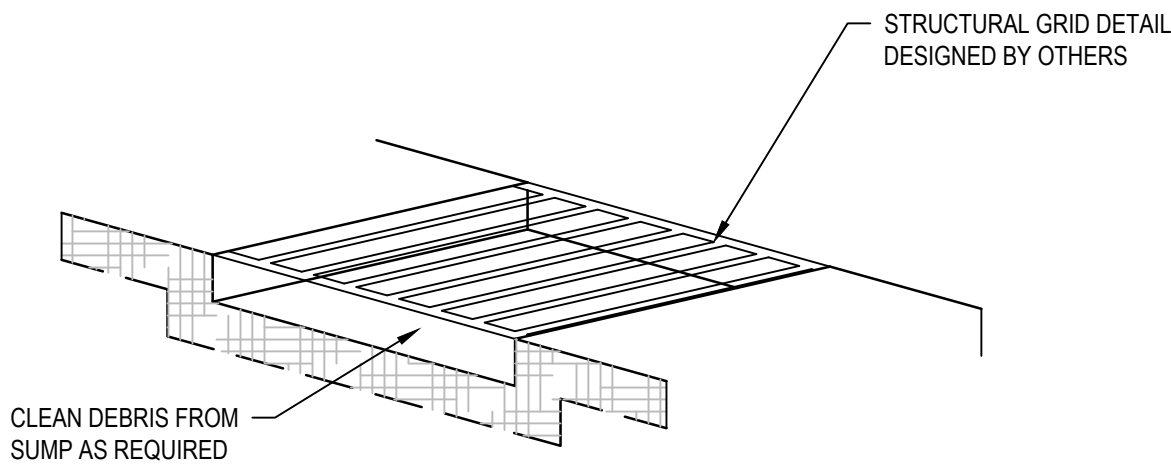
- L1 THE SOIL EROSION HAZARD ON THE SITE WILL BE KEPT AS LOW AS POSSIBLE AND PRACTICAL. TO THIS END, WORKS SHOULD BE UNDERTAKEN IN THE FOLLOWING GENERAL SEQUENCE:
- A CONSTRUCTION OF SEDIMENT AND EROSION CONTROLS.
- B REHABILITATION OF ANY DISTURBED LANDS WITHIN 20 WORKING DAYS.
- C UNDERTAKE SITE DEVELOPMENT WORKS IN ACCORDANCE WITH THE ENGINEERING PLANS. WHERE POSSIBLE, PHASE DEVELOPMENT SO THAT LAND DISTURBANCE IS CONFINED TO AREAS OF WORKABLE SIZE.

ADDITIONAL MATTERS:

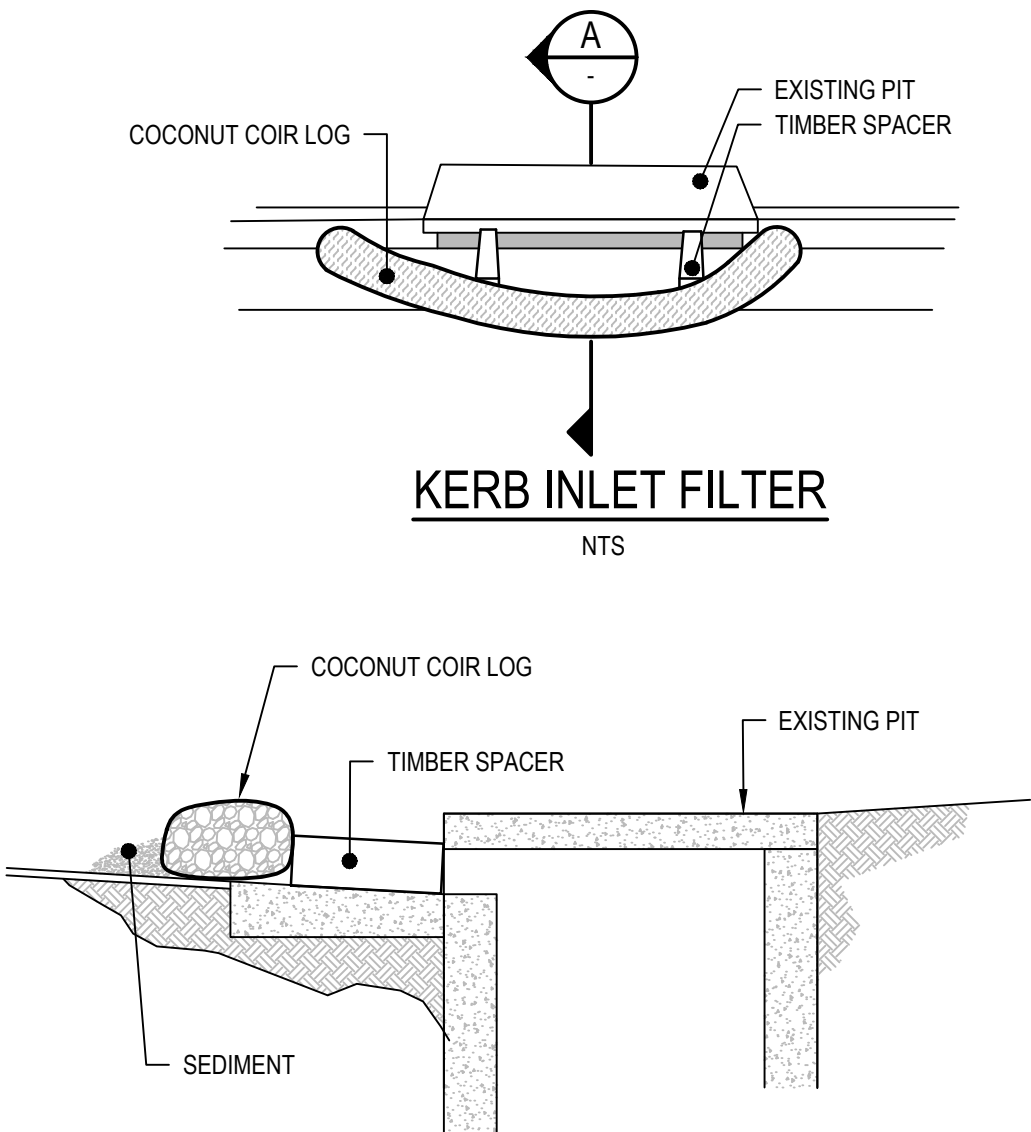
- A1 ACCEPTABLE RECEPTORS WILL BE PROVIDED FOR CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHT-WEIGHT WASTE MATERIALS AND LITTER.
- A2 ANY EXISTING TREES WHICH FORM PART OF THE FINAL LANDSCAPING PLAN ARE TO BE PROTECTED FROM CONSTRUCTION ACTIVITIES BY:
- A PROTECTING THEM WITH BARRIER FENCING OR SIMILAR MATERIALS INSTALLED OUTSIDE THE DRIP LINE.
- B ENSURING THAT NOTHING IS NAILED TO THEM.
- C PROHIBITING PAVING, GRADING, SEDIMENT WASH OR PLACING OF STOCKPILES WITHIN THE DRIP LINE EXCEPT UNDER THE FOLLOWING CONDITIONS.
- I ENCROACHMENT ONLY OCCURS ON ONE SIDE AND NO CLOSER TO THE TRUNK THAN EITHER 1.5 M OR HALF DISTANCE BETWEEN THE OUTER EDGE OF THE DRIP LINE AND THE TRUNK, WHICHEVER IS THE GREATER.
- II A DRAINAGE SYSTEM THAT ALLOWS AIR AND WATER TO CIRCULATE THROUGH THE ROOT ZONE (EG. A GRAVEL BED) IS PLACED UNDER ALL FILL LAYERS OF MORE THAN 300 MM DEPTH.
- III CARE IS TAKEN NOT TO CUT ROOTS UNNECESSARILY NOR TO COMPACT THE SOIL AROUND THEM.



GEOTEXTILE INLET FILTER - PERSPECTIVE
NOT TO SCALE

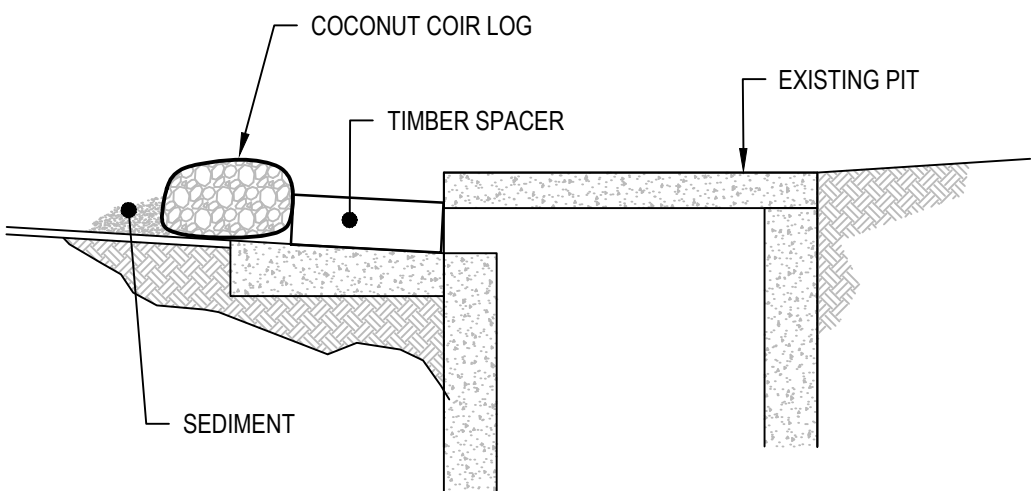


SHAKER PAD DETAIL
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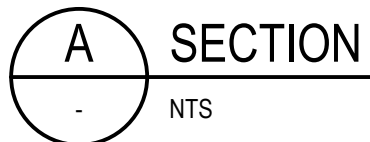


KERB INLET FILTER

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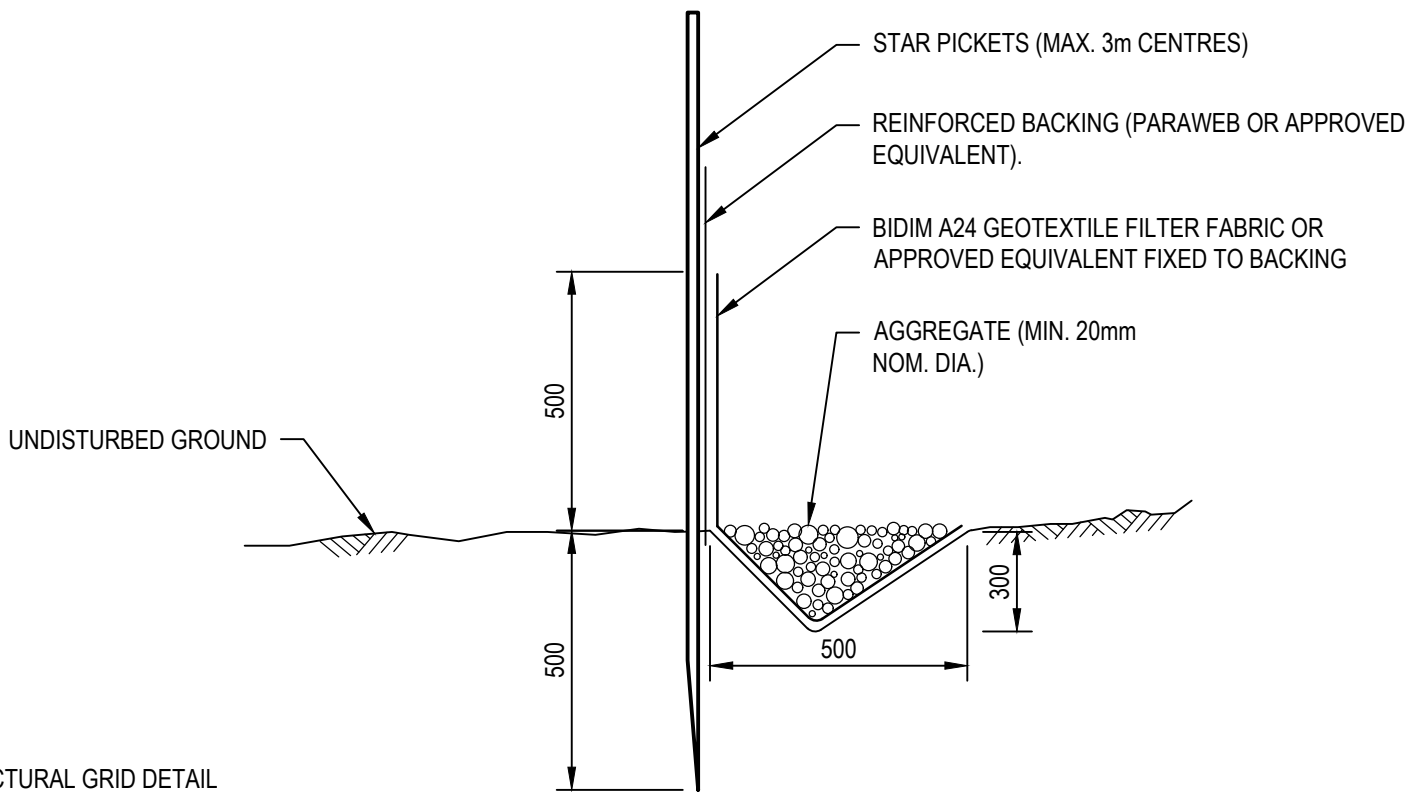


KERB INLET FILTER



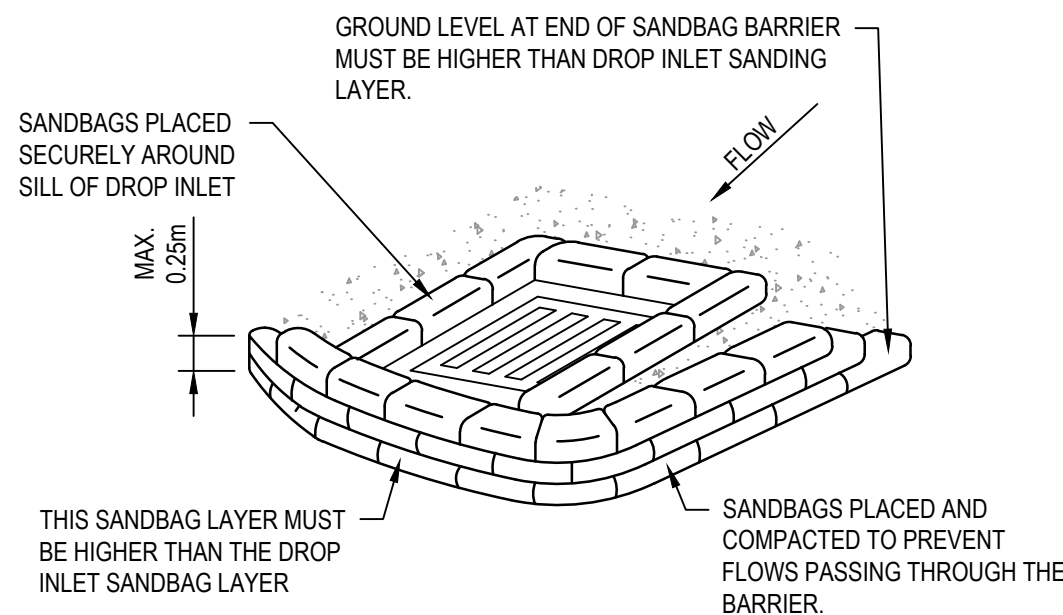
SECTION

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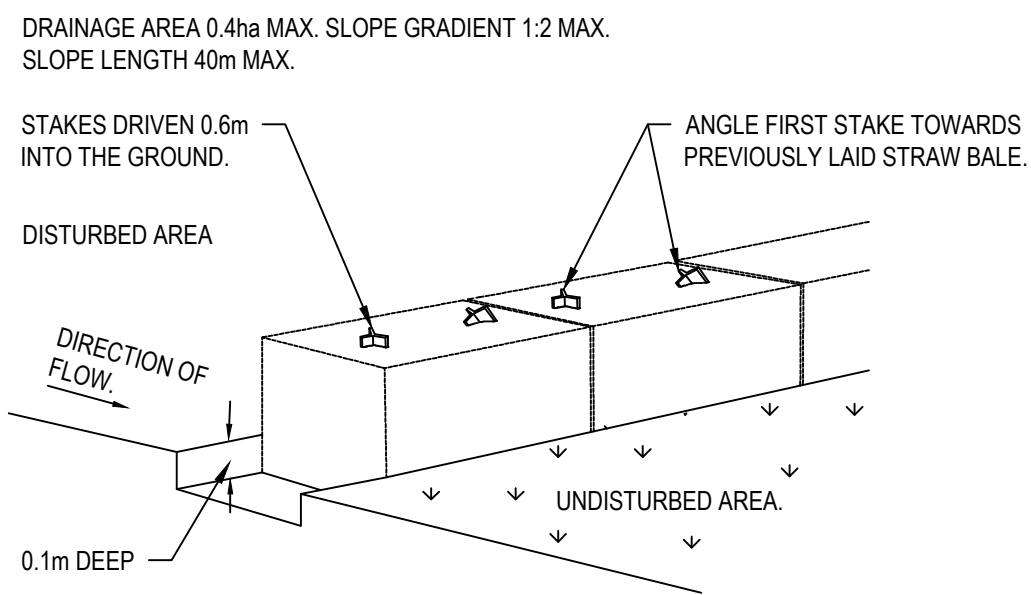
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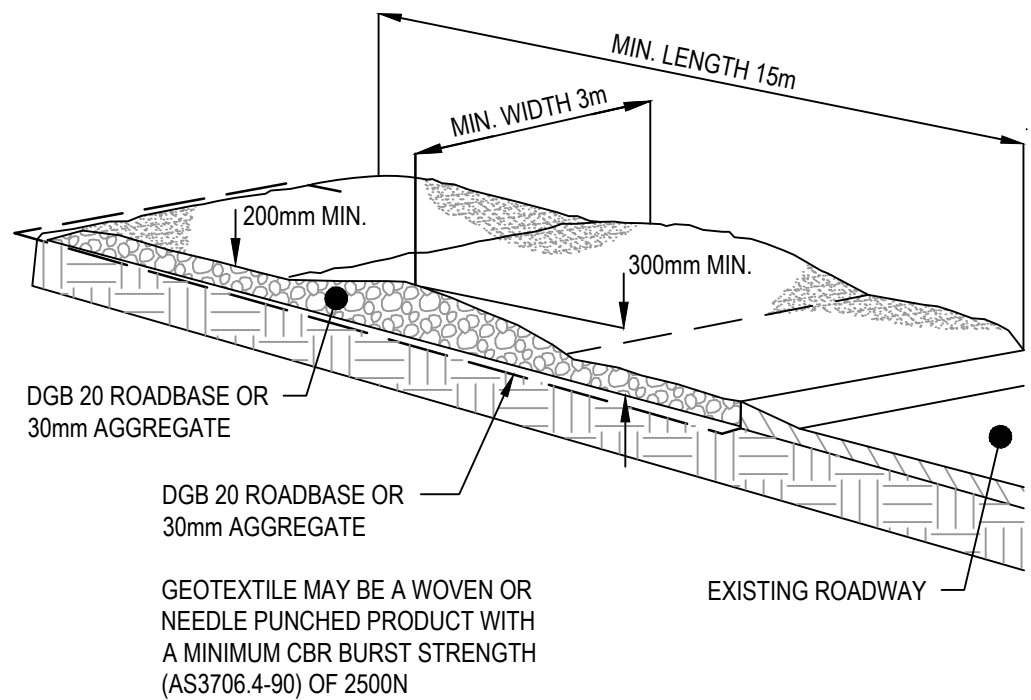
SEDIMENT BARRIER DETAIL

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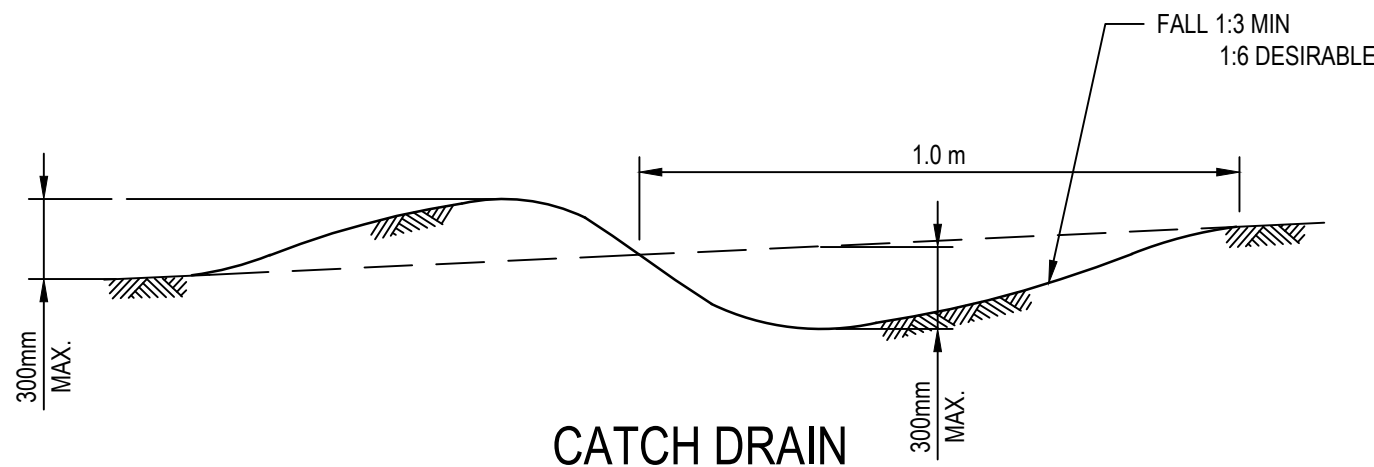
STRAW BALE SEDIMENT FILTER

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STABILISED SITE ACCESS

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CATCH DRAIN

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PRELIMINARY

A	PRELIMINAY ISSUE		RK	AR	PC	13.11.19
No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date

Plot Date: 13 November 2019 - 4:34 PM Plotted by: Madia Downes

Cad File No: G:\23112511476\CADD\Drawings\12511476-C070.dwg



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Drawn R. KALOS

Designer M. DOWNES

Drafting R. CASACLANG

Design J. WEARNE

Approved (Project Director)

Date

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Client QUEANBEYAN - PALERANG REGIONAL COUNCIL
Project HOOVER ROAD STORMWATER REALIGNMENT
Title SEDIMENT AND EROSION CONTROL DETAILS

Original Size A1 Drawing No: 12511476-C070

Rev: A

Appendix C – Species list

✓ = species recorded

* denotes an introduced species

Flora list

Species name	Common name	Intro	P1	Opp
<i>Acacia pycnantha</i>	Golden Wattle	-	-	✓
<i>Anthosachne scabra</i>	Wheatgrass	-	0.1	
<i>Aristida ramosa</i>	Purple Wiregrass	-	0.1	
<i>Atriplex semibaccata</i>	Creeping Saltbush	-	-	✓
<i>Austrostipa scabra</i>	Speargrass	-	0.1	
<i>Austrostipa sp.</i>	-	-	-	✓
<i>Avena fatua</i>	Wild Oats	-	-	✓
<i>Bothriochloa macra</i>	Red-leg Grass	-	10	
<i>Brachychiton populneus</i>	Kurrajong	-	-	✓
<i>Carthamus lanatus</i>	Saffron Thistle	*	-	✓
<i>Cenchrus clandestinum</i>	Kikuyu Grass	*	10	
<i>Cirsium vulgare</i>	Spear Thistle	*	-	✓
<i>Cotoneaster sp</i>	-	*	2	
<i>Cynodon dactylon</i>	Couch	-	5	
<i>Dactylis glomerata</i>	Cocksfoot	*	0.1	
<i>Echium plantagineum</i>	Patterson's Curse	*	-	✓
<i>Eleusine tristachya</i>	Goose Grass	-	-	✓
<i>Eragrostis brownii</i>	Brown's Lovegrass	-	-	✓
<i>Eragrostis curvula</i>	African Lovegrass	*	-	✓
<i>Erodium botrys</i>	Long Storksbill	*	-	✓
<i>Erodium moschatum</i>	Musky Storksbill	*	-	✓
<i>Eucalyptus camaldulensis</i>	River Red Gum	-	2	-
<i>Eucalyptus sideroxylon</i>	Mugga Ironbark	-	-	✓
<i>Foeniculum vulgare</i>	Fennel	*	5	-
<i>Fraxinus sp</i>	Ash sp	*	0.1	-
<i>Hypericum perforatum</i>	St. John's Wort	*	2	-
<i>Hypochaeris radicata</i>	Catsear, Flatweed	*	-	✓
<i>Lepidium sp.</i>	peppergrass species	-	-	✓

Species name	Common name	Intro	P1	Opp
<i>Lolium rigidum</i>	Wimmera Ryegrass	*	-	✓
<i>Lomandra sp.</i>	-	-	-	✓
<i>Malva parviflora</i>	Small-flowered Mallow	*	-	✓
<i>Modiola caroliniana</i>	Red-flowered Mallow	*	-	✓
<i>Nassella trichotoma</i>	Serrated tussock	*	0.1	-
<i>Oxalis sp.</i>	-	-	0.1	-
<i>Panicum sp</i>	-	-	-	✓
<i>Paspalum dilatatum</i>	Paspalum	*	-	✓
<i>Phalaris aquatica</i>	Phalaris	*	50	-
<i>Pinus radiata</i>	Radiata Pine	*	2	-
<i>Plantago lanceolata</i>	Lambs Tongue	*	0.1	-
<i>Prunus sp.</i>	-	*	2	-
<i>Rosa rubignosa</i>	Sweet Briar	*	-	✓
<i>Rumex brownii</i>	Swamp Dock	-	0.1	-
<i>Rumex crispus</i>	Curled Dock	*	-	✓
<i>Rytidosperma fulvum</i>	Wallaby Grass	-	-	✓
<i>Rytidosperma sp.</i>	-	-	0.1	-
<i>Salvia verbenaca</i>	Vervain	-	0.1	-
<i>Sanguisorba minor</i>	Sheep's Burnet	*	-	✓
<i>Sisymbrium officinale</i>	Hedge Mustard	*	0.1	-
<i>Vittadinia cuneata</i>	Fuzzweed	-	0.1	-

Fauna list

* Denotes an introduced species

Common name	Species name
Australian Magpie	<i>Cracticus tibicen</i>
Australian Raven	<i>Corvus coronoides</i>
Crested Pigeon	<i>Ocyphaps lophotes</i>
Crimson Rosella	<i>Platycercus elegans</i>
Galah	<i>Eolophus roseicapillus</i>
Grey Fantail	<i>Rhipidura albiscapa</i>
Laughing Kookaburra	<i>Dacelo novaeguineae</i>
Magpie Lark	<i>Grallina cyanoleuca</i>
Martin sp.	<i>Hirundinidae sp.</i>
Noisy Miner	<i>Manorina melanocephala</i>
Pied Currawong	<i>Strepera graculina</i>
Red Wattlebird	<i>Anthochaera carunculata</i>
Superb Fairy-wren	<i>Malurus cyaneus</i>
Wedge-tailed Eagle	<i>Aquila audax</i>
Welcome Swallow	<i>Hirundo neoxena</i>
Willie Wagtail	<i>Rhipidura leucophrys</i>
Yellow-rumped Thornbill	<i>Acanthiza chrysorrhoa</i>
Brushtail Possum	<i>Trichosurus vulpecula</i>
Eastern Grey Kangaroo	<i>Macropus giganteus</i>
Fox *	<i>Vulpes vulpes</i>

Appendix D – Likelihood of occurrence

The following likelihood of occurrence and impact table, and subsequent tests of significance for species or ecological communities considered to have a high likelihood of occurrence and to be impacted by the proposal been prepared and assessed on the basis of information provided by Roads and Maritime.

An evaluation of the likelihood and extent of impact to threatened and migratory fauna recorded from within the Moree Plains Shire Council area (BC Act threatened species); and within a 10 kilometre radius of the proposal site (EPBC Act threatened and migratory species). Records are from the EPBC Protected Matters Search Tool (PMST) available from the Department of the Environment and Energy (DotEE) website. Ecology information has been obtained from the Threatened Species Profiles on the NSW Office of Environment and Heritage (OEH) website (<http://www.environment.nsw.gov.au/threatenedspecies/>) and from the Species Profiles and Threats Database on the Commonwealth DotEE website (<http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>).

Status

- National - Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).
- NSW - *Biodiversity Conservation Act 2016* (BC Act); *Fisheries Management Act 1994* (FM Act)
- E Endangered
- CE Critically Endangered
- EP Endangered population
- V Vulnerable
- Mi Migratory
- EC Ecological community

Likelihood of occurrence in study area

Recorded – The species was observed in the study area during surveys.

High – It is highly likely that a species inhabits the study area and is dependent on identified suitable habitat (i.e. for breeding or important life cycle periods such as winter flowering resources), has been recorded recently in the locality (within 10 kilometres) and is known or likely to maintain resident populations in the study area. Also includes species known or likely to visit the study area during regular seasonal movements or migration

Moderate – Potential habitat is present in the study area. Species unlikely to maintain sedentary populations, however may seasonally use resources within the study area opportunistically or during migration. The species is unlikely to be dependent (ie. for breeding or important life cycle periods such as winter flowering resources) on habitat within the study area, or habitat is in a modified or degraded state. Includes cryptic flowering flora species that were not seasonally targeted by surveys and that have not been recorded.

Low – It is unlikely that the species inhabits the study area and has not been recorded recently in the locality (within 10 kilometres). It may be an occasional visitor, but habitat similar to the study area is widely distributed in the local area, meaning that the species is not dependent (i.e. for breeding or important life cycle periods such as winter flowering resources) on available habitat. Specific habitat is not present in the study area or the species are a non-cryptic perennial flora species that were specifically targeted by surveys and not recorded.

None – Suitable habitat is absent from the study area.

Likelihood of impact

Unlikely impact - The project would have a low possibility of impact on this species/community or its habitats. No five part test is required for this species/community.

Likely impact - The project could impact on this species/community and its habitat. A five part test is required for this species/community.

Species / Communities	Status		Habitat requirements	Likelihood of occurrence in the study area
	EPBC	BC		
Ecological communities				
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	CE	E	Box-Gum Woodland is found from the Queensland border in the north, to the Victorian border in the south. It occurs in the tablelands and western slopes of NSW. Characterised by the presence or prior occurrence of White Box, Yellow Box and/or Blakely's Red Gum. The trees may occur as pure stands, mixtures of the three species or in mixtures with other trees, including wattles. Commonly co-occurring eucalypts include Apple Box (<i>E. bridgesiana</i>), Red Box (<i>E. polyanthemus</i>), Candlebark (<i>E. rubida</i>), Snow Gum (<i>E. pauciflora</i>), Argyle Apple (<i>E. cinerea</i>), Brittle Gum (<i>E. mannifera</i>), Red Stringybark (<i>E. macrorhyncha</i>), Grey Box (<i>E. microcarpa</i>), Cabbage Gum (<i>E. amplifolia</i>) and others. Community predicted 'likely to occur' within 10 kilometres of the project area (DotE 2019)	Low: This community may occur in the wider study area, however it was not recorded on site during recent site surveys. Unlikely: As this community does not occur within the proposal site it will not be impacted by the project
Natural Temperate Grasslands of the Southern Tablelands of NSW and the ACT	CE	CE	Natural Temperate Grassland is confined to the Southern Tablelands, a region bounded by the ACT, Yass, Boorowa, the Abercrombie River, Goulburn, the Great Eastern Escarpment, the Victorian border and the eastern boundary of Kosciuszko National Park. The community occurs in a number of distinct plant associations. According to the association present, the community is found in various topographical positions and on a variety of substrates. The altitudinal range of the community is between 500 m and 1200 m asl. The community is found on broad sweeping plains with poor drainage and cold air inversions that promote frosts which inhibit tree growth; on all topographical locations, including upper-slopes, crests and plateaux on basalt landscapes; and in frost hollows in areas otherwise dominated by woodlands or forests. The community	Moderate: Recent site surveys did not record this community. While it does not occur within the proposal site, it has a known occurrence within the Queanbeyan Nature Reserve immediately adjacent to the southern edge of the proposal site, and to the west of the proposal site within the Jerrabomberra East Grasslands Nature Reserve, and is likely to occur in the wider study area and locality. Unlikely: The construction footprint will not impact outside the assessment area within the proposal site, and as this community was not recorded within the proposal site it will not be impacted by the proposal.

Species / Communities	Status		Habitat requirements	Likelihood of occurrence in the study area
	EPBC	BC		
			may also occur in a landscape mosaic with several woodland communities. Community predicted 'likely to occur' within 10 kilometres of the project area (DotE 2019)	
Reptiles				
Grassland Earless Dragon <i>Tympanocryptis pinguicolla</i>	E	E	Occurs in a restricted number of Natural Temperate Grassland sites dominated by Notodanthonia spp., Austrostipa spp., Poa sieberiana, Bothriochloa macra, and occasionally Themeda australis. Prefers areas with a more open structure, with areas of bare ground present. Partially embedded surface rocks, and spider and insect holes are also utilised for sheltering and are an essential requirement for this species to persist in an area. Species or species habitat is known to occur within 10 kilometres of the project site (DotE 2019) Recent records (2013 and 2012) exist for this species within 300 metres of the proposal site from Queanbeyan Nature Reserve to the south of the proposal site (OEH 2019)	Moderate: This species has a known occurrence within the Queanbeyan Nature Reserve to the south of the proposal site, and a likely occurrence within temperate grasslands to the west of the proposal site within Jerrabomberra Nature Reserve Unlikely: Habitat quality within the road reserve where works will occur is poor. Grassland is introduced and habitat previously disturbed by the construction of the road. It is unlikely that the removal of 0.21 hectares of poor quality, introduced vegetation will impact this species.
Pink-tailed Worm-lizard <i>Aprasia parapulchella</i>	V	V	Populations occur in the Queanbeyan/Canberra district, Cooma, Yass, Bathurst, Albury and West Wyalong areas. Inhabits grassland and open woodland with substantial embedded rock cover in sunny situations. Recorded in both native and non-native grasslands. Usually recorded under small rocks (150 - 600 mm basal area) shallowly embedded in the soil (2 - 5 cm, and use ant burrows under these rocks. Inhabits sloping, open woodland areas with predominantly native grassy ground layers, particularly those dominated by Kangaroo Grass (Themeda australis). Sites are typically well-drained, with rocky outcrops or scattered, partially-buried rocks.	Moderate: This species has a known occurrence within the Queanbeyan Nature Reserve to the south of the proposal site, and a likely occurrence within temperate grasslands to the west of the proposal site within Jerrabomberra Nature Reserve Unlikely: Habitat quality within the road reserve where works will occur is poor. Grassland is introduced and habitat previously disturbed by the construction of the road. It is unlikely that the removal of 0.21 hectares of

Species / Communities	Status		Habitat requirements	Likelihood of occurrence in the study area
	EPBC	BC		
			Multiple records for this species exist within 3.2 and 8.1 kilometres of the proposal site (OEH 2019) Species or species habitat is known to occur within 10 kilometres of the project site (DotE 2019)	poor quality, introduced vegetation will impact this species.
Rosenberg's Goanna <i>Varanus rosenbergi</i>	-	V	Rosenberg's Goanna occurs on the Sydney Sandstone in Wollemi National Park to the north-west of Sydney, in the Goulburn and ACT regions and near Cooma in the south. There are records from the South West Slopes near Khancoban and Tooma River. Also occurs in South Australia and Western Australia. Found in heath, open forest and woodland. Associated with termites, the mounds of which this species nests in; termite mounds are a critical habitat component. Recent records for this species exist 4.2 kilometres east of the proposal site (OEH 2019)	Low: Suitable woodland and forest habitat for this species does not occur within the proposal site, and will not be impacted by the proposal. This species is unlikely to occur. Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal.
Striped Legless Lizard <i>Delma impar</i>	V	V	Occurs in the Southern Tablelands, South-west Slopes and possibly the Riverina. Found in natural or secondary grassland or open areas in grassy eucalypt woodland. May occur in modified grasslands with high exotic grass cover. Shelters in base of grass tussocks, under rocks or logs or in soil cracks (Smith and Robertson 1999). Habitat is where grassland is dominated by perennial, tussock-forming grasses such as <i>Themeda australis</i> , <i>Austrostipa</i> spp. and <i>Poa</i> spp., and occasionally <i>Austrodanthonia</i> spp. Sometimes present in modified grasslands with a significant content of exotic grasses. Sometimes found in grasslands with significant amounts of surface rocks, which are used for shelter. Species or species habitat is known to occur within 10 kilometres of the project site (DotE 2019)	Moderate: This species has a known occurrence within the Queanbeyan Nature Reserve to the south of the proposal site, and a likely occurrence within temperate grasslands to the west of the proposal site within Jerrabomberra Nature Reserve Unlikely: Habitat quality within the road reserve where works will occur is poor. Grassland is introduced and habitat previously disturbed by the construction of the road. It is unlikely that the removal of 0.21 hectares of poor quality, introduced vegetation will impact this species.
Birds				

Species / Communities	Status		Habitat requirements	Likelihood of occurrence in the study area
	EPBC	BC		
Australian Painted Snipe <i>Rostratula australis</i>	E	E	The Australian Painted Snipe is restricted to Australia. Most records are from the south east, particularly the Murray Darling Basin, with scattered records across northern Australia and historical records from around the Perth region in Western Australia. In NSW many records are from the Murray-Darling Basin including the Paroo wetlands, Lake Cowal, Macquarie Marshes, Fivebough Swamp and more recently, swamps near Balldale and Wanganella. Other important locations with recent records include wetlands on the Hawkesbury River and the Clarence and lower Hunter Valleys. Prefers fringes of swamps, dams and nearby marshy areas where there is a cover of grasses, lignum, low scrub or open timber. Species, or species habitat predicted likely to occur within 10 kilometres of the project site (DotE 2019)	Low: Suitable wetland habitat does not occur within the proposal site and will not be impacted by the proposal. Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal.
Australasian Bittern <i>Botaurus poiciloptilus</i>	E	E	Australasian Bitterns are widespread but uncommon over south-eastern Australia. In NSW they may be found over most of the state except for the far north-west. Favours permanent freshwater wetlands with tall, dense vegetation, particularly bullrushes (<i>Typha</i> spp.) and spikerushes (<i>Eleocharis</i> spp.). Hides during the day amongst dense reeds or rushes and feed mainly at night on frogs, fish, yabbies, spiders, insects and snails. Predicted that this species, or species habitat may occur within 10 kilometres of the project site (DotE 2019) The closest record for this species is located 4.2 kilometres east of the proposal site (OEH 2019)	Low: Suitable wetland habitat does not occur within the proposal site and will not be impacted by the proposal. Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal.
Bar-tailed Godwit <i>Limosa lapponica baueri</i>	V	-	Bar-tailed Godwits arrive in Australia each year in August from breeding grounds in the northern hemisphere. Birds are more numerous in northern Australia. Bar-tailed Godwits inhabit estuarine mudflats, beaches and mangroves. They are common in coastal	Low: Suitable wetland habitat does not occur within the proposal site and will not be impacted by the proposal.

Species / Communities	Status		Habitat requirements	Likelihood of occurrence in the study area
	EPBC	BC		
			areas around Australia. They are social birds and are often seen in large flocks and in the company of other waders Predicted that this species, or species habitat may occur within 10 kilometres of the project site (DotE 2019)	Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal.
Black-chinned Honeyeater <i>Melithreptus gularis gularis</i>	-	V	Extends south from central Queensland, through NSW, Victoria into south eastern South Australia, though it is very rare in the last state. In NSW it is widespread, with records from the tablelands and western slopes of the Great Dividing Range to the north-west and central-west plains and the Riverina. It is rarely recorded east of the Great Dividing Range, although regularly observed from the Richmond and Clarence River areas. It has also been recorded at a few scattered sites in the Hunter, Central Coast and Illawarra regions, though it is very rare in the latter. Occupies mostly upper levels of drier open forests or woodlands dominated by box and ironbark eucalypts, especially Mugga Ironbark (<i>Eucalyptus sideroxylon</i>), White Box (<i>E. albens</i>), Inland Grey Box (<i>E. microcarpa</i>), Yellow Box (<i>E. melliodora</i>), Blakely's Red Gum (<i>E. blakelyi</i>) and Forest Red Gum (<i>E. tereticornis</i>). One record for this species exists 4.2 kilometres east of the proposal site (OEH 2019)	Low: Suitable woodland habitat does not occur within the proposal site and will not be impacted by the proposal. Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal.
Brown Treecreeper <i>Climacteris picumnus victoriana</i>	-	V	Endemic to eastern Australia and occurs in eucalypt forests and woodlands of inland plains and slopes of the Great Dividing Range. It is less commonly found on coastal plains and ranges. Mainly inhabits woodlands dominated by stringybarks or other rough-barked eucalypts, usually with an open grassy understorey, sometimes with one or more shrub species; also found in mallee and River Red Gum (<i>Eucalyptus camaldulensis</i>) Forest bordering wetlands with an open	Low: Suitable woodland habitat containing rough-barked eucalypts does not occur within the proposal site and will not be impacted by the proposal. Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal.

Species / Communities	Status		Habitat requirements	Likelihood of occurrence in the study area
	EPBC	BC		
			understorey of acacias, saltbush, lignum, cumbungi and grasses. Sedentary, considered to be resident in many locations throughout its range; present in all seasons or year-round at many sites; territorial year-round. Up to 80% of the diet is comprised of ants; other invertebrates (including spiders, insects larvae, moths, beetles, flies, hemipteran bugs, cockroaches, termites and lacewings) make up the remaining percentage; nectar from Mugga Ironbark (<i>Eucalyptus sideroxylon</i>) and paperbarks, and sap from an unidentified eucalypt are also eaten. Hollows in standing dead or live trees and tree stumps are essential for nesting. Breeds in pairs or co-operatively in territories which range in size from 1.1 to 10.7 ha (mean = 4.4 ha). The closest record for this species exists 4.2 kilometres east of the proposal site (OEH 2019)	
Curlew Sandpiper <i>Calidris ferruginea</i>	CE	E	The Curlew Sandpiper is distributed around most of the Australian coastline (including Tasmania). It occurs along the entire coast of NSW, particularly in the Hunter Estuary, and sometimes in freshwater wetlands in the Murray-Darling Basin. Inland records are probably mainly of birds pausing for a few days during migration. The Curlew Sandpiper breeds in Siberia and migrates to Australia (as well as Africa and Asia) for the non-breeding period, arriving in Australia between August and November, and departing between March and mid-April. It generally occupies littoral and estuarine habitats, and in New South Wales is mainly found in intertidal mudflats of sheltered coasts. It also occurs in non-tidal swamps, lakes and lagoons on the coast and sometimes inland.	Low: Suitable wetland habitat does not occur within the proposal site and will not be impacted by the proposal. Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal.

Species / Communities	Status		Habitat requirements	Likelihood of occurrence in the study area
	EPBC	BC		
			Predicted that this species, or species habitat is known to occur within 10 kilometres of the project site (DotE 2019)	
Diamond Firetail <i>Stagonopleura guttata</i>	-	V	The Diamond Firetail is endemic to south-eastern Australia, extending from central Queensland to the Eyre Peninsula in South Australia. It is widely distributed in NSW, with a concentration of records from the Northern, Central and Southern Tablelands, the Northern, Central and South Western Slopes and the North West Plains and Riverina. Not commonly found in coastal districts, though there are records from near Sydney, the Hunter Valley and the Bega Valley. This species has a scattered distribution over the rest of NSW, though is very rare west of the Darling River. Found in grassy eucalypt woodlands, including Box-Gum Woodlands and Snow Gum Eucalyptus pauciflora Woodlands. Also occurs in open forest, mallee, Natural Temperate Grassland, and in secondary grassland derived from other communities. Often found in riparian areas (rivers and creeks), and sometimes in lightly wooded farmland. The closest record for this species exists 3.7 kilometres south east of the proposal site (OEH 2019)	Low: The proposal site lacks native vegetation and woodland habitat, as such, this species is unlikely to occur. Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal.
Dusky Woodswallow <i>Artamus cyanopterus cyanopterus</i>	-	V	Dusky woodswallows are widespread in eastern, southern and south western Australia. The species occurs throughout most of New South Wales, but is sparsely scattered in, or largely absent from, much of the upper western region. Most breeding activity occurs on the western slopes of the Great Dividing Range. Primarily inhabit dry, open eucalypt forests and woodlands, including mallee associations, with an open or sparse understorey of eucalypt saplings, acacias and other shrubs, and ground-cover of grasses or sedges and fallen woody debris. It has also been recorded in shrublands, heathlands and very occasionally in moist	Low: The proposal site lacks native vegetation and woodland habitat, as such, this species is unlikely to occur. Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal.

Species / Communities	Status		Habitat requirements	Likelihood of occurrence in the study area
	EPBC	BC		
			forest or rainforest. Also found in farmland, usually at the edges of forest or woodland. Depending on location and local climatic conditions (primarily temperature and rainfall), the dusky woodswallow can be resident year round or migratory. In NSW, after breeding, birds migrate to the north of the state and to southeastern Queensland The closest record for this species exists about 500 metres south of the proposal site within Queanbeyan Nature Reserve (OEH 2019)	
Eastern Curlew <i>Numenius madagascariensis</i>	CE	-	The Curlew is a migratory bird that travels from Australia to Russia. In Australia it is primarily coastal, residing in estuaries, bays, harbours, inlets and coastal lagoons. Forages on crabs and molluscs on mudflats (Marchant and Higgins, 1993). Predicted that this species, or species habitat may occur within 10 kilometres of the project site (DotE 2019)	Low: Suitable wetland habitat does not occur within the proposal site and will not be impacted by the proposal. Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal.
Flame Robin <i>Petroica phoenicea</i>	-	V	The Flame Robin is endemic to south eastern Australia, and ranges from near the Queensland border to south east South Australia and also in Tasmania. In NSW, it breeds in upland areas and in winter, many birds move to the inland slopes and plains. It is likely that there are two separate populations in NSW, one in the Northern Tablelands, and another ranging from the Central to Southern Tablelands. Breeds in upland tall moist eucalypt forests and woodlands, often on ridges and slopes. Prefers clearings or areas with open understoreys. The groundlayer of the breeding habitat is dominated by native grasses and the shrub layer may be either sparse or dense.	Low: Suitable woodland habitat with an understory of native grasses does not occur within the proposal site and will not be impacted by the proposal. The species may be an occasional visitor to the project site, however is unlikely to reliably occur. Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal.

Species / Communities	Status		Habitat requirements	Likelihood of occurrence in the study area
	EPBC	BC		
			The closest record for this species exists 5.7 kilometres south of the proposal site (OEH 2019)	
Fork-tailed Swift <i>Apus pacificus</i>	Mi C, J, K	-	Recorded in all regions of NSW. Non- breeding, and almost exclusively aerial while in Australia. Occurs over urban and rural areas as well as areas of native vegetation. This species was recorded 4.3 kilometres east of the proposal site (OEH 2019)	Low: May occur aerially over the proposal site, and land occasionally, however is unlikely to be reliant on habitat in the area Unlikely: As the species will not be reliant on habitat in the area, it will not be impacted by the proposal.
Gang Gang Cockatoo <i>Callocephalon fimbriatum</i>	-	V	The Gang-gang Cockatoo is distributed from southern Victoria through south- and central-eastern New South Wales. In New South Wales, the Gang-gang Cockatoo is distributed from the south-east coast to the Hunter region, and inland to the Central Tablelands and south-west slopes. It occurs regularly in the Australian Capital Territory. It is rare at the extremities of its range, with isolated records known from as far north as Coffs Harbour and as far west as Mudgee. In spring and summer, generally found in tall mountain forests and woodlands, particularly in heavily timbered and mature wet sclerophyll forests. In autumn and winter, the species often moves to lower altitudes in drier more open eucalypt forests and woodlands, particularly box-gum and box-ironbark assemblages, or in dry forest in coastal areas and often found in urban areas. May also occur in sub-alpine Snow Gum (<i>Eucalyptus pauciflora</i>) woodland and occasionally in temperate rainforests. Favours old growth forest and woodland attributes for nesting and roosting. Nests are located in hollows that are 10 cm in diameter or larger and at least 9 m above the ground in eucalypts. The closes record for this species is located 1.5 kilometres south—east of the proposal site (OEH 2019)	Low: Suitable woodland habitat does not occur within the proposal site, therefore this species is unlikely to occur. Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal.

Species / Communities	Status		Habitat requirements	Likelihood of occurrence in the study area
	EPBC	BC		
Glossy Black Cockatoo <i>Calyptorhynchus lathami</i>	-	V	The species is uncommon although widespread throughout suitable forest and woodland habitats, from the central Queensland coast to East Gippsland in Victoria, and inland to the southern tablelands and central western plains of NSW, with a small population in the Riverina. An isolated population exists on Kangaroo Island, South Australia. Inhabits open forest and woodlands of the coast and the Great Dividing Range where stands of sheoak occur. Black Sheoak (<i>Allocasuarina littoralis</i>) and Forest Sheoak (<i>A. torulosa</i>) are important foods. Inland populations feed on a wide range of sheoaks, including Drooping Sheoak, <i>Allocasuarina diminuta</i>, and <i>A. gymnathera</i>. Belah is also utilised and may be a critical food source for some populations. One record for this species exists 3.6 kilometres south of the proposal site (OEH 2019)	Low: Suitable woodland habitat or <i>Allocasuarina</i> feed trees do not occur within the proposal site and will not be impacted by the proposal, therefore this species is unlikely to occur. Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal.
Hooded Robin (south-eastern form) <i>Melanodryas cucullata cucullata</i>	-	V	The Hooded Robin is widespread, found across Australia, except for the driest deserts and the wetter coastal areas - northern and eastern coastal Queensland and Tasmania. However, it is common in few places, and rarely found on the coast. It is considered a sedentary species, but local seasonal movements are possible. The south-eastern form (subspecies <i>cucullata</i>) is found from Brisbane to Adelaide and throughout much of inland NSW, with the exception of the extreme north-west, where it is replaced by subspecies <i>picata</i>. Two other subspecies occur outside NSW. Prefers lightly wooded country, usually open eucalypt woodland, acacia scrub and mallee, often in or near clearings or open areas. Requires structurally diverse habitats featuring mature eucalypts, saplings, some small shrubs and a ground layer of moderately tall native grasses.	Low: Suitable woodland habitat does not occur within the proposal site and will not be impacted by the proposal, therefore this species is unlikely to occur. Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal.

Species / Communities	Status		Habitat requirements	Likelihood of occurrence in the study area
	EPBC	BC		
			The closest record for this species exists 3.3 kilometres north east of the proposal site (OEH 2019)	
Little Eagle <i>Hieraaetus morphnoides</i>	-	V	The Little Eagle is found throughout the Australian mainland excepting the most densely forested parts of the Dividing Range escarpment. It occurs as a single population throughout NSW. Occupies open eucalypt forest, woodland or open woodland. Sheoak or Acacia woodlands and riparian woodlands of interior NSW are also used. This species was recorded 500 metres south of the proposal site within the Queanbeyan Nature Reserve (OEH 2019)	Low: This species may be an occasional visitor to the project site, however will not be reliant on any aspects of habitat within the proposal site, and is unlikely to reliably occur. Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal
Little Lorikeet <i>Glossopsitta pusilla</i>	-	V	The Little Lorikeet is distributed widely across the coastal and Great Divide regions of eastern Australia from Cape York to South Australia. NSW provides a large portion of the species' core habitat, with lorikeets found westward as far as Dubbo and Albury. Nomadic movements are common, influenced by season and food availability, although some areas retain residents for much of the year and 'locally nomadic' movements are suspected of breeding pairs. Forages primarily in the canopy of open Eucalyptus forest and woodland, yet also finds food in Angophora, Melaleuca and other tree species. Riparian habitats are particularly used, due to higher soil fertility and hence greater productivity. Isolated flowering trees in open country, e.g. paddocks, roadside remnants and urban trees also help sustain viable populations of the species. One record for this species exists 4.2 kilometres east of the proposal site (OEH 2019)	Low: May be an occasional visitor to the proposal site but is unlikely to occur reliably or be reliant on habitat within the area, due to a lack of woodland habitat. Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal
Northern Siberian Bar-tailed Godwit	CE	-	This species has been recorded in coastal areas in all Australian states. During the non-breeding season its distribution is predominantly in the north and north-west of Western Australia and in south-eastern Asia.	Low: Suitable wetland and coastal habitat does not occur within the proposal site and will not be impacted by the proposal.

Species / Communities	Status		Habitat requirements	Likelihood of occurrence in the study area
	EPBC	BC		
<i>Limosa lapponica menzbieri</i>			Predicted that this species, or species habitat may occur within 10 kilometres of the project site (DotE 2019)	Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal.
Olive Whistler <i>Pachycephala olivacea</i>	-	V	The Olive Whistler inhabits the wet forests on the ranges of the east coast. It has a disjunct distribution in NSW chiefly occupying the beech forests around Barrington Tops and the MacPherson Ranges in the north and wet forests from Illawarra south to Victoria. In the south it is found inland to the Snowy Mountains and the Brindabella Range. Mostly inhabit wet forests above about 500m. During the winter months they may move to lower altitudes. Forage in trees and shrubs and on the ground, feeding on berries and insects. A single record for this species exists 4.3 kilometres east of the proposal site (OEH 2019)	Low: Suitable wet forest areas do not occur in the study area, therefore this species is unlikely to occur. It may be an occasional visitor to the proposal site during the winter months Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal.
Painted Honeyeater <i>Grantiella picta</i>	V	V	Nomadic, occurring in low densities across most of NSW. Highest concentrations and almost all breeding occur on inland slopes of the Great Dividing Range. Inhabits Boree, Brigalow and Box Gum woodlands and Box-Ironbark forests. Specialist forager on the fruits of mistletoes, preferably of the Amyema genus. Nests in outer tree canopy. A specialist feeder on the fruits of mistletoes growing on woodland eucalypts and acacias. Prefers mistletoes of the genus Amyema. The greatest concentrations of the species and almost all breeding occurs on the inland slopes of the Great Dividing Range in NSW, Victoria and southern Queensland. Inhabits Boree/ Weeping Myall (<i>Acacia pendula</i>), Brigalow (<i>A. harpophylla</i>) and Box-Gum Woodlands and Box-Ironbark Forests. A single record for this species occurs 4.2 kilometres east of the proposal site (OEH 2019)	Low: Suitable woodland and forest habitat does not occur within the study area, therefore this species is unlikely to occur. Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal.

Species / Communities	Status		Habitat requirements	Likelihood of occurrence in the study area
	EPBC	BC		
			Predicted that this species, or species habitat is known to occur within 10 kilometres of the project site (DotE 2019)	
Regent Honeyeater <i>Anthochaera phrygia</i>	CE	E	The Regent Honeyeater mainly inhabits temperate woodlands and open forests of the inland slopes of south-east Australia. Birds are also found in drier coastal woodlands and forests in some years. Once recorded between Adelaide and the central coast of Queensland, its range has contracted dramatically in the last 30 years to between north-eastern Victoria and south-eastern Queensland. There are only three known key breeding regions remaining: north-east Victoria (Chiltern-Albury), and in NSW at Capertee Valley and the Bundarra-Barraba region. In NSW the distribution is very patchy and mainly confined to the two main breeding areas and surrounding fragmented woodlands. In some years flocks converge on flowering coastal woodlands and forests. Predicted that this species, or species habitat is known to occur within 10 kilometres of the project site (DotE 2019)	Low: No suitable temperate woodland habitat for this species was available within the project site, therefore this species is unlikely to occur. Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal.
Scarlet Robin <i>Petroica boodang</i>	-	V	The Scarlet Robin is found from south east Queensland to south east South Australia and also in Tasmania and south west Western Australia. In NSW, it occurs from the coast to the inland slopes. After breeding, some Scarlet Robins disperse to the lower valleys and plains of the tablelands and slopes. Some birds may appear as far west as the eastern edges of the inland plains in autumn and winter. The Scarlet Robin lives in dry eucalypt forests and woodlands. The understorey is usually open and grassy with few scattered shrubs. This species lives in both mature and regrowth vegetation. It occasionally occurs in mallee or wet forest communities, or in wetlands and tea-tree swamps.	Low: The proposal site lacks native vegetation and woodland habitat, as such, this species is unlikely to occur. Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal.

Species / Communities	Status		Habitat requirements	Likelihood of occurrence in the study area
	EPBC	BC		
			The closest record for this species exists 4.2 kilometres east of the proposal site (OEH 2019)	
Speckled Warbler <i>Chthonicola sagittata</i>	-	V	The Speckled Warbler has a patchy distribution throughout south-eastern Queensland, the eastern half of NSW and into Victoria, as far west as the Grampians. The species is most frequently reported from the hills and tablelands of the Great Dividing Range, and rarely from the coast. The Speckled Warbler lives in a wide range of Eucalyptus dominated communities that have a grassy understorey, often on rocky ridges or in gullies. Typical habitat would include scattered native tussock grasses, a sparse shrub layer, some eucalypt regrowth and an open canopy. Large, relatively undisturbed remnants are required for the species to persist in an area. The closest record for this species exists 4.3 kilometres east of the proposal site (OEH 2019)	Low: Suitable eucalypt woodland habitat does not exist within the project site. This species is unlikely to occur. Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal.
Superb Parrot <i>Polytelis swainsonii</i>	V	V	The Superb Parrot is found throughout eastern inland NSW. On the South-western Slopes their core breeding area is roughly bounded by Cowra and Yass in the east, and Grenfell, Cootamundra and Coolac in the west. Birds breeding in this region are mainly absent during winter, when they migrate north to the region of the upper Namoi and Gwydir Rivers. The other main breeding sites are in the Riverina along the corridors of the Murray, Edward and Murrumbidgee Rivers where birds are present all year round. In the Riverina the birds nest in the hollows of large trees (dead or alive) mainly in tall riparian River Red Gum Forest or Woodland. On the South West Slopes nest trees can be in open Box-Gum Woodland or isolated paddock trees. Species known to be used are Blakely's Red Gum, Yellow Box, Apple Box and Red Box. Inhabit Box-Gum, Box-Cypress-pine and Boree Woodlands and River Red Gum Forest.	Low: Suitable Box Gum woodland does not occur in the study area. This species may be an occasional visitor but is unlikely to be impacted by the proposal Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal.

Species / Communities	Status		Habitat requirements	Likelihood of occurrence in the study area
	EPBC	BC		
			The closest record for this species exists 3.2 kilometres north- east of the proposal site (OEH 2019) Predicted that this species, or species habitat is known to occur within 10 kilometres of the project site (DotE 2019)	
Swift Parrot <i>Lathamus discolor</i>	CE	V	Breeds in Tasmania during spring and summer, migrating in the autumn and winter months to south-eastern Australia from Victoria and the eastern parts of South Australia to south-east Queensland. In NSW mostly occurs on the coast and south west slopes. On the mainland they occur in areas where eucalypts are flowering profusely or where there are abundant lerp (from sap-sucking bugs) infestations. Favoured feed trees include winter flowering species such as Swamp Mahogany <i>Eucalyptus robusta</i>, Spotted Gum <i>Corymbia maculata</i>, Red Bloodwood <i>C. gummifera</i>, Mugga Ironbark <i>E. sideroxylon</i>, and White Box <i>E. albens</i>. Commonly used lerp infested trees include Inland Grey Box <i>E. microcarpa</i>, Grey Box <i>E. moluccana</i> and Blackbutt <i>E. pilularis</i>. Predicted that this species, or species habitat is known to occur within 10 kilometres of the project site (DotE 2019)	Low: The proposal site lacks woodland habitat and suitable eucalypt feed trees, as such, this species is unlikely to occur. Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal.
Varied Sittella <i>Daphoenositta chrysoptera</i>	-	V	The Varied Sittella is sedentary and inhabits most of mainland Australia except the treeless deserts and open grasslands. Distribution in NSW is nearly continuous from the coast to the far west. The Varied Sittella's population size in NSW is uncertain but is believed to have undergone a moderate reduction over the past several decades. Inhabits eucalypt forests and woodlands, especially those containing rough-barked species and mature smooth-barked gums with dead branches, mallee and Acacia woodland. Feeds on arthropods gleaned from crevices in rough or decorticating bark, dead branches,	Low: Suitable eucalypt woodland habitat does not exist within the project site. This species is unlikely to occur. Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal.

Species / Communities	Status		Habitat requirements	Likelihood of occurrence in the study area
	EPBC	BC		
			standing dead trees and small branches and twigs in the tree canopy. The closest record for this species exists 1.3 kilometres south of the proposal site (OEH 2019)	
White-throated Needletail <i>Hirundapus caudacutus</i>	Mi	-	The White-throated Needletail is widespread in eastern and south-eastern Australia. In eastern Australia, it is recorded in all coastal regions of Queensland and NSW, extending inland to the western slopes of the Great Divide and occasionally onto the adjacent inland plains. A large proportion of the White-throated Needletails of the nominate subspecies would occur in Australia as non-breeding visitors. Most White-throated Needletails spend the non-breeding season in Australasia, mainly in Australia, and occasionally in New Guinea and New Zealand, though it has been suggested that some may overwinter in parts of South-East Asia. As the Needletails that occur in Australia migrate from breeding areas in the Northern Hemisphere, they would be affected by global threats. The closest record for this species is located 2.4 kilometres north east of the proposal site (OEH 2019) Predicted that this species, or species habitat is known to occur within 10 kilometres of the project site (DotE 2019)	Low: Suitable coastal habitat is not present within the proposal site, this species is unlikely to occur. Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal.
Mammals				
Brush-tailed Rock-wallaby <i>Petrogale penicillata</i>	V	E	The range of the Brush-tailed Rock-wallaby extends from south-east Queensland to the Grampians in western Victoria, roughly following the line of the Great Dividing Range. However the distribution of the species across its original range has declined significantly in the west and south and has become more fragmented. In NSW they occur from the Queensland border in the north to the Shoalhaven in the south, with the	Low: Suitable habitat does not occur in the project site or study area. This species is unlikely to occur. Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal.

Species / Communities	Status		Habitat requirements	Likelihood of occurrence in the study area
	EPBC	BC		
			population in the Warrumbungle Ranges being the western limit. Occupy rocky escarpments, outcrops and cliffs with a preference for complex structures with fissures, caves and ledges, often facing north. Species or species habitat is predicted as 'may occur' within 10 kilometres of the project site (DotE 2019)	
Eastern Bentwing-bat <i>Miniopterus schreibersii ocea</i>	-	V	Inhabits various habitats from open grasslands to woodlands, wet and dry sclerophyll forests and rainforest. Essentially a cave bat but may also roost in road culverts, stormwater tunnels and other man-made structures. Only 4 known maternity caves in NSW, near Wee Jasper, Bungonia, Kempsey and Texas. Females may travel hundreds of kilometres to the nearest maternal colony. Hunts in forested areas for insects like moths and flying insects. Caves are the primary roosting habitat, but also use derelict mines, storm-water tunnels, buildings and other man-made structures. Form discrete populations centred on a maternity cave that is used annually in spring and summer for the birth and rearing of young. The closest record for this species exists 3.1 kilometres north east of the proposal site (OEH 2019)	Low: Suitable eucalypt woodland habitat does not exist within the project site. This species may be an occasional visitor to the study area, but is unlikely to reliably occur. Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal.
Greater Glider <i>Petauroides volans</i>	V	-	The species is restricted to eastern Australia, from north QLD to central Victoria. This nocturnal marsupial lives in a variety of eucalypt-dominated habitats, ranging from low open forests on the coast to tall forests in the ranges and low woodland westwards of the Dividing Range. It feeds on eucalypt leaves and flowers. It uses large tree hollows in old, large trees. Species or species habitat is predicted as 'may occur' within 10 kilometres of the project site (DotE 2019)	Low: Suitable eucalypt woodland habitat does not exist within the project site. This species is unlikely to occur. Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal.
Grey-headed Flying-fox <i>Pteropus poliocephalus</i>	V	-	Roosts in camps within 20km of a regular food source, typically in gullies, close to water and in vegetation with a dense canopy. Forages in subtropical and temperate	Low: Suitable habitat does not exist within the project site. This species is unlikely to occur.

Species / Communities	Status		Habitat requirements	Likelihood of occurrence in the study area
	EPBC	BC		
			rainforests, tall sclerophyll forests and woodlands, heaths, swamps and street trees, particularly in eucalypts, melaleucas and banksias. Highly mobile with movements largely determined by food availability (Eby & Law, 2008). Will also forage in urban gardens and cultivated fruit crops. The closest record for this species exists 2.8 kilometres east of the proposal site (OEH 2019) Species or species habitat is predicted as 'may occur' within 10 kilometres of the project site (DotE 2019)	Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal.
Koala <i>Phascolarctos cinereus</i>	V	V	The Koala has a fragmented distribution throughout eastern Australia from north-east Queensland to the Eyre Peninsula in South Australia. In NSW it mainly occurs on the central and north coasts with some populations in the west of the Great Dividing Range. It was briefly historically abundant in the 1890s in the Bega District on the south coast of NSW, although not elsewhere, but it now occurs in sparse and possibly disjunct populations. Koalas are also known from several sites on the southern tablelands. Feed on the foliage of more than 70 eucalypt species and 30 non-eucalypt species, but in any one area will select preferred browse species. Species or species habitat is known to occur within 10 kilometres of the project site (DotE 2019)	Low: Suitable habitat does not exist within the project site. This species is unlikely to occur. Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal.
Large-eared Pied Bat, Large Pied Bat <i>Chalinolobus dwyeri</i>	V	-	Found mainly in areas with extensive cliffs and caves, from Queensland south to the NSW Southern Highlands. Roosts in caves (near their entrances), crevices in cliffs, old mine workings and in the disused, bottle-shaped mud nests of the Fairy Martin (<i>Petrochelidon ariel</i>), frequenting low to mid-elevation dry open forest and woodland close to these features. Females have been recorded raising young in maternity roosts (20-40 females) from November through to January in roof domes in sandstone caves and	Low: Suitable habitat does not exist within the project site. This species is unlikely to occur. Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal.

Species / Communities	Status		Habitat requirements	Likelihood of occurrence in the study area
	EPBC	BC		
			overhangs. Found in well-timbered areas containing gullies. Feeds on insects in the forest canopy or over water. Breeding occurs in winter or spring. Likely to hibernate through the coolest months. Species or species habitat is predicted as 'likely to occur' within 10 kilometres of the project site (DotE 2019)	
Spotted-tailed Quoll <i>Dasyurus maculatus maculatus</i>	E	V	It is now found in eastern NSW, eastern Victoria, south-east and north-eastern Queensland, and Tasmania. Only in Tasmania is it still considered relatively common. Inhabits a range of environments including rainforest, open forest, woodland, coastal heath and inland riparian forest, from the sub-alpine zone to the coastline. Den subject sites are in hollow-bearing trees, fallen logs, small caves, rock crevices, boulder fields and rocky-cliff faces. Females occupy home ranges of up to 750 ha and males up to 3,500 ha, which are usually traversed along immensely vegetated creek lines. Species or species habitat is known to occur within 10 kilometres of the project site (DotE 2019)	Low: Suitable habitat does not exist within the project site. This species is unlikely to occur. Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal.
Frogs				
Booroolong Frog <i>Litoria booroolongensis</i>	E	E	The Booroolong Frog is restricted to NSW and north-eastern Victoria, predominantly along the western-flowing streams of the Great Dividing Range. It has disappeared from much of the Northern Tablelands, however several populations have recently been recorded in the Namoi catchment. The species is rare throughout most of the remainder of its range. Live along permanent streams with some fringing vegetation cover such as ferns, sedges or grasses. Adults occur on or near cobble banks and other rock structures within stream margins.	Low: Suitable wetland or aquatic habitat does not exist within the project site. This species is unlikely to occur. Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal.

Species / Communities	Status		Habitat requirements	Likelihood of occurrence in the study area
	EPBC	BC		
			Species or species habitat is predicted as 'may occur' within 10 kilometres of the project site (DotE 2019)	
Green and Golden Bell Frog <i>Litoria aurea</i>	V	E	Inhabits a wide range of water bodies, including highly disturbed sites, except fast flowing streams, although they require unpolluted habitat to breed. They show an affinity for areas with a higher macrophyte diversity and cannot breed in aquatic habitats where <i>Gambusia holbrooki</i> are also found. There is only one known population on the NSW Southern Tablelands, near Hoskinstown. The species is considered to be absent from the ACT. The wetland habitat in the study area contains <i>Gambusia holbrooki</i> . Species or species habitat is predicted as 'may occur' within 10 kilometres of the project site (DotE 2019)	Low: Suitable wetland or aquatic habitat does not exist within the project site. This species is unlikely to occur. Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal.
Southern Bell Frog <i>Litoria raniformis</i>	E	V-	Found in or around permanent or ephemeral Black Box/Lignum/Nitre Goosefoot swamps, Lignum/Typha swamps and River Red Gum swamps or billabongs along floodplains and river valleys. They are also found in irrigated rice crops, particularly where there is no available natural habitat. Species or species habitat is predicted as 'may occur' within 10 kilometres of the project site (DotE 2019)	Low: Suitable wetland or aquatic habitat does not exist within the project site. This species is unlikely to occur. Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal.
Yellow-spotted Tree Frog <i>Litoria castanea</i>	CE	-	There is only a single known population of the species, which occurs on the Southern Tablelands. Require large permanent ponds or slow flowing streams with plenty of emergent vegetation such as bulrushes. The species is also found in ponds or slow moving streams with overhanging grassy banks in the absence of reed beds. The study area is not within the known distribution of this species. Species or species habitat is predicted as 'likely to occur' within 10 kilometres of the project site (DotE 2019)	Low: Suitable wetland or aquatic habitat does not exist within the project site. This species is unlikely to occur. Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal.
Fish				

Species / Communities	Status		Habitat requirements	Likelihood of occurrence in the study area
	EPBC	BC		
Macquarie Perch <i>Macquaria australasica</i>	E	V	Occurs in the upper reaches of the Lachlan, Murrumbidgee and Murray Rivers, and in parts of the Hawkesbury and Shoalhaven catchment areas. Inhabits river and lake habitats, especially the upper reaches of rivers and their tributaries. Requires clear water with deep, rocky holes and abundant cover (including aquatic vegetation, woody debris, large boulders and overhanging banks). Spawning occurs in spring and summer in shallow upland streams or flowing sections of river systems. Species or species habitat is predicted as 'may occur' within 10 kilometres of the project site (DotE 2019)	None: No suitable aquatic habitat exists for this species or will be impacted by the proposal, therefore this species will not occur or be impacted by the proposal.
Murray Cod <i>Maccullochella peelii</i>	V	-	Occurs throughout the Murray-Darling Basin. Can live in a wide range of habitats, from clear, rocky streams in the upper western slopes regions of New South Wales to the slow flowing, turbid rivers and billabongs of the western plains. Generally, they are found in waters up to 5m deep and in sheltered areas with cover from rocks, timber or overhanging banks. The presence of wood debris has been shown to be the primary factor determining Murray cod presence. Species or species habitat is predicted as 'likely to occur' within 10 kilometres of the project site (DotE 2019)	None: No suitable aquatic habitat exists for this species or will be impacted by the proposal, therefore this species will not occur or be impacted by the proposal.
Silver Perch, Bidyan <i>Bidyanus bidyanus</i>	-	E	Silver Perch are a moderate to large freshwater fish native to the Murray-Darling river system. They were once widespread and abundant throughout most of the Murray-Darling river system. They have now declined to low numbers or disappeared from most of their former range. Only one remaining secure and self-sustaining population occurs in NSW in the central Murray River downstream of Yarrawonga weir, as well as several anabranches and tributaries.	None: No suitable aquatic habitat exists for this species or will be impacted by the proposal, therefore this species will not occur or be impacted by the proposal.

Species / Communities	Status		Habitat requirements	Likelihood of occurrence in the study area
	EPBC	BC		
			Species or species habitat is 'known to occur' within 10 kilometres of the project site (DotE 2019)	
Insects				
Perunga Grasshopper <i>Perunga ochracea</i>	-	V	Habitat appears to be natural temperate grassland dominated by wallaby, kangaroo and spear grasses with forb food plants located in the inter-tussock spaces. Grass tussocks are used also to escape predators. It may also occur in open woodland areas with a grassy understorey, including the endangered Yellow Box–Red Gum Grassy Woodland community.	Moderate: This species is known to occur in the study area within Queanbeyan Nature Reserve Unlikely: No suitable native grassland habitat will be impacted by the proposal, there it is unlikely that this species will be impacted
Golden Sun Moth <i>Synemon plana</i>	CE	E	In the ACT, only 5% of the 1000 hectares of the pre-1750 grasslands remain, and the Wallaby Grass-dominated grasslands are only a small fraction of that total. The majority of suitable habitats have been surveyed for the presence of the species over the last ten years. Additionally, distribution modelling for natural temperate grassland in the ACT and NSW has been undertaken by Environment ACT. Multiple records for this species exist within 500 metres of the proposal site, the closest of which was recorded within 50 metres of the proposed alignment (OEH 2019). Species or species habitat is known to occur within 10 kilometres of the project site (DotE 2019).	Moderate: This species is known to occur in the study area within Queanbeyan Nature Reserve Unlikely: No suitable native grassland habitat will be impacted by the proposal, therefore it is unlikely that this species will be impacted
Plants				
<i>Caladenia actensis</i> Canberra Spider Orchid	V	E-	This species occurs in transitional vegetation zones between Yellow Box – Red Gum Tableland Grassy Woodland (dominated by <i>Eucalyptus blakelyi</i> , <i>E. melliodora</i> , <i>E. pauciflora</i>) and Red Stringybark Tableland Grass/Shrub Forest (dominated by <i>E. rossii</i>) at an altitude of 645 to 745 metres. Species or species habitat is known to occur within 10 kilometres of the project site (DotE 2019).	Low: Suitable woodland habitat and associated species do not occur, therefore it is unlikely that this species will occur. Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal.

Species / Communities	Status		Habitat requirements	Likelihood of occurrence in the study area
	EPBC	BC		
<i>Caladenia tessellata</i> Thick Lip Spider Orchid	E	V	This species is known from the Sydney area, and populations in Kiama and Queanbeyan are presumed extinct. This species is generally found in grassy sclerophyll woodland on clay loam or sandy soils. Flowers appear between September and November. The closest record for this species exists within 3.8 kilometres to the south of the proposal site (OEH 2019)	Low: Populations from Queanbeyan are presumed extinct, therefore this species is unlikely to occur. Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal
<i>Calotis glandulosa</i> Mauve Burr-daisy	V	V	The distribution of this species is centred on the Monaro and Kosciuszko regions. There are three known sites in the upper Shoalhaven catchment. There are old records near Oberon, the Dubbo area and Mt Imlay. It is found in montane or natural temperate grasslands dominated by Kangaroo Grass (<i>Themeda australis</i>), and Snow Gums (<i>Eucalyptus pauciflora</i>) woodlands, and in subalpine grasslands dominated by <i>Poa</i> spp in the Australian Alps. It appears to be a coloniser of bare patches, which explains why it often occurs on roadsides. Species or species habitat is predicted as 'may occur' within 10 kilometres of the project site (DotE 2019)	Low: Habitat within the proposal site is not suitable for this species due to a high dominance of introduced species, therefore this species is unlikely to occur. It may occur in the wider study area in suitable habitat. Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal
<i>Dodonaea procumbens</i> Trailing Hop-bush	V	V	The Trailing Hop-bush is a small prostrate shrub patchily distributed across south-eastern Australia, where it occurs in New South Wales, Victoria and South Australia. The species grows in low-lying, often winter-wet areas in woodland, low open forests, heathlands and grasslands, on sandy clays. Flowering takes place in spring and summer and fruit are usually present. Species or species habitat is predicted as 'may occur' within 10 kilometres of the project site (DotE 2019)	Low: Suitable woodland habitat does not occur in the proposal site, and this species is unlikely to occur. Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal
<i>Eucalyptus aggregata</i> Black Gum	V	V	Black Gum is found in the NSW Central and Southern Tablelands, with small isolated populations in Victoria and the ACT. In NSW it occurs in the South Eastern Highlands Bioregion and on the western fringe of the Sydney Basin Bioregion. Black Gum has a moderately	Low: Suitable wooded areas do not occur in the study area, and this species is unlikely to occur.

Species / Communities	Status		Habitat requirements	Likelihood of occurrence in the study area
	EPBC	BC		
			narrow distribution, occurring mainly in the wetter, cooler and higher parts of the tablelands, for example in the Blayney, Crookwell, Goulburn, Braidwood and Bungendore districts. Grows on alluvial soils, on cold, poorly-drained flats and hollows adjacent to creeks and small rivers. Grows in the lowest part of the landscape Species or species habitat is predicted as 'likely to occur' within 10 kilometres of the project site (DotE 2019)	Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal
<i>Lepidium ginninderrense</i> Ginninderra Peppercress	V		This species is a perennial herb that grows 20 centimetres tall. It is known from two natural sites and two planted sites in the Northern ACT. It occurs in Natural Temperate Grasslands. Threats to the species include land use changes, urban development, deliberate or unintended actions associated with visitor and/ or land management activities in the local area. The only known extant population of <i>L. ginninderrense</i> occurs in the north-west corner of Belconnen Naval Transmission Station in the suburb of Lawson in the Australian Capital Territory. <i>L. ginninderrense</i> grows on the flood plain of Ginninderra Creek, in Natural Temperate Grassland dominated by native grasses and herbs. Species or species habitat is predicted as 'may occur' within 10 kilometres of the project site (DotE 2019)	Low: This species is known from two sites, neither of which are located near the proposal site. This, along with a lack of suitable grassland habitat within the proposal site makes it unlikely that this species will occur Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal
<i>Lepidium hyssopifolium</i> Basalt Pepper-cress	E	E	Known to establish in areas of open bare ground with little competition from other plants. Previously recorded from Eucalypt woodland with a grassy groundcover, low open Casuarina woodland with a grassy ground cover and tussock grassland, however it has also been recorded in weed infested areas of heavy modification and high degradation such as road and rail verges.	Low: Suitable woodland habitat does not occur in the study area, therefore it is unlikely that this species will occur. Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal

Species / Communities	Status		Habitat requirements	Likelihood of occurrence in the study area
	EPBC	BC		
			Species or species habitat is predicted as 'may occur' within 10 kilometres of the project site (DotE 2019)	
<i>Leucochrysum albicans</i> var. <i>tricolor</i> Hoary Sunray	E	-	Endemic to south-eastern Australia, where it is currently known from three geographically separate areas in Tasmania, Victoria and south-eastern NSW and ACT. In NSW it currently occurs on the Southern Tablelands adjacent areas in an area roughly bounded by Albury, Bega and Goulburn, with a few scattered localities known from beyond this region. Occurs in a wide variety of grassland, woodland and forest habitats, generally on relatively heavy soils. Highly dependent on the presence of bare ground for germination. Multiple records for this species exist within 500 metres of the proposal site, the closest of which was recorded within 50 metres of the eastern end of the proposed alignment (OEH 2019) Species or species habitat is known to occur within 10 kilometres of the project site (DotE 2019)	Moderate: This species is known to occur in the study area, however neither this species, nor suitable habitat was recorded during recent site surveys, therefore this species is unlikely to occur within the proposal site. Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal
<i>Pomaderris pallida</i> Pale Pomaderris	V	V	This species usually grows in shrub communities surrounded by Brittle Gum (<i>Eucalyptus mannifera</i>) and Red Stringybark (<i>E. macrorhyncha</i>) or <i>Callitris</i> spp. woodland. The main distribution is along the Murrumbidgee River in the ACT. Species or species habitat is known to occur within 10 kilometres of the project site (DotE 2019)	Low: Suitable woodland habitat with a shrubby component associated with this species was not recorded in the study area, therefore this species is unlikely to occur. Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal
<i>Prasophyllum petilum</i> Tarengo Leek Orchid	E	E	These area at Boorowa, Captains Flat, Ilford, Delegate and a newly recognised population 10 kilometres south east of Muswellbrook. Grows in natural temperate grassland and grassy woodland. Associated species include River Tussock <i>Poa labillardieri</i> , Black Gum <i>Eucalyptus aggregata</i> and tea-trees <i>Leptospermum</i>	Low: Suitable woodland habitat associated with this species was not recorded in the study area, therefore this species is unlikely to occur. Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal

Species / Communities	Status		Habitat requirements	Likelihood of occurrence in the study area
	EPBC	BC		
			species. Occurs in relatively moist, poorly drained areas. Flowers in October. Species or species habitat is predicted as 'may occur' within 10 kilometres of the project site (DotE 2019)	
<i>Rutidosia leptorrhynchoidea</i> Button Wrinklewort	E	E	Known from the ACT and NSW, Button Wrinklewort occurs in box-gum woodland, secondary grassland derived from box-gum woodland or in natural temperate grassland; and often in the ecotone between the two communities. In the ACT and NSW, topography is undulating, 570–780 m above sea level and soils are red-brown clays to clay loams, shallow and stony. In Victoria, populations occur in grasslands on fertile volcanic plains at altitudes of 10–80 m above sea level. It is unclear why the altitudinal difference is so great between ACT/NSW and Victoria. Multiple records for this species exist within 500 metres of the proposal site, the closest of which was recorded within 50 metres of the eastern end of the proposed alignment (OEH 2019) Species or species habitat known to occur within 10 kilometres of the project site (DotE 2019)	Moderate: suitable habitat is present within the proposal site, and this species may occur. However, grassland within the proposal site was dominated by invasive species, and is unlikely to be suitable for the Button Wrinklewort, therefore this species is unlikely to occur within the proposal site. Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal
<i>Swainsona recta</i> Small Purple-pea	E	E	Small Purple-pea was recorded historically from places such as Carcoar, Culcairn and Wagga Wagga where it is probably now extinct. Populations still exist in the Queanbeyan and Wellington-Mudgee areas. Over 80% of the southern population grows on a railway easement. It is also known from the ACT and a single population of four plants near Chiltern in Victoria. Before European settlement Small Purple-pea occurred in the grassy understorey of woodlands and open-forests dominated by Blakely's Red Gum Eucalyptus blakelyi, Yellow Box E. melliodora, Candlebark Gum E. rubida and Long-leaf Box E. goniocalyx.	Low: Suitable woodland habitat associated with this species was not recorded in the study area, therefore this species is unlikely to occur. Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal

Species / Communities	Status		Habitat requirements	Likelihood of occurrence in the study area
	EPBC	BC		
			Grows in association with understorey dominants that include Kangaroo Grass <i>Themeda australis</i> , poa tussocks <i>Poa</i> spp. and spear-grasses <i>Austrostipa</i> spp. The closest record for this species exists within 2.5 kilometres north of the proposal site (OEH 2019) Species or species habitat is predicted as 'likely to occur' within 10 kilometres of the project site (DotE 2019)	
<i>Swainsona sericea</i> Silky Swainsona -pea	-	V	Silky Swainson-pea has been recorded from the Northern Tablelands to the Southern Tablelands and further inland on the slopes and plains. There is one isolated record from the far north-west of NSW. Its stronghold is on the Monaro. Also found in South Australia, Victoria and Queensland. Found in Natural Temperate Grassland and Snow Gum <i>Eucalyptus pauciflora</i> Woodland on the Monaro. Found in Box-Gum Woodland in the Southern Tablelands and South West Slopes. The closest record for this species exists within 3 kilometres to the north of the proposal site (OEH 2019)	Low: Suitable woodland habitat associated with this species was not recorded in the study area, therefore this species is unlikely to occur. Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal
<i>Thesium australe</i> Austral Toadflax	V	V	Found in small, scattered populations along the east coast, northern and southern tablelands. Occurs in grassland or grassy woodland. Found in association with Kangaroo Grass <i>Themeda australis</i> . Flowers in spring and summer. Species or species habitat is predicted as 'likely to occur' within 10 kilometres of the project site (DotE 2019)	Low: Suitable woodland habitat and native grasslands associated with this species was not recorded in the study area, therefore this species is unlikely to occur. Unlikely: As this species is unlikely to occur, it is unlikely to be impacted by the proposal

Appendix E – Database searches

AHIMS Web Services (AWS) Search Result

Purchase Order/Reference : Queanbeyan

Client Service ID : 439515

Brianna Turner

Date: 02 August 2019

Suite 3 Level 1 161 - 169 Baylis St
Wagga Wagga New South Wales 2650

Attention: Brianna Turner

Email: brianna.turner@ghd.com

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lat, Long From : -35.3731, 149.1886 - Lat, Long To : -35.3608, 149.208 with a Buffer of 50 meters, conducted by Brianna Turner on 02 August 2019.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of the Office of the Environment and Heritage AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

0	Aboriginal sites are recorded in or near the above location.
0	Aboriginal places have been declared in or near the above location. *

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the [NSW Government Gazette](http://www.nsw.gov.au/gazette) (<http://www.nsw.gov.au/gazette>) website. Gazettal notices published prior to 2001 can be obtained from Office of Environment and Heritage's Aboriginal Heritage Information Unit upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Office of Environment and Heritage and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date .Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.

Search Results

31 results found.

Boer War Memorial Lowe St	Queanbeyan, NSW, (Registered) Australia Register of the National Estate (Non-statutory archive)
Bulls Cottage 24 Henderson St	Queanbeyan, NSW, (Registered) Australia Register of the National Estate (Non-statutory archive)
Byrnes Mill and Millhouse 49-55 Collett St	Queanbeyan, NSW, (Registered) Australia Register of the National Estate (Non-statutory archive)
Christ Church Anglican Church Precinct Rutledge St	Queanbeyan, NSW, (Registered) Australia Register of the National Estate (Non-statutory archive)
Coroda 58 Atkinson St	Queanbeyan East, (Registered) NSW, Australia Register of the National Estate (Non-statutory archive)
Dog and Stile Inn (former) 11-13 Macquoid St	Queanbeyan East, (Registered) NSW, Australia Register of the National Estate (Non-statutory archive)
Glenrock 26 Malcolm Rd	Karabar, NSW, (Registered) Australia Register of the National Estate (Non-statutory archive)
Hibernia Lodge 69 Collett St	Queanbeyan, NSW, (Registered) Australia Register of the National Estate (Non-statutory archive)
Hotel Queanbeyan 59 Crawford St	Queanbeyan, NSW, (Registered) Australia Register of the National Estate (Non-statutory archive)

Queanbeyan Swimming Pool and Surrounds Crawford St	Queanbeyan, NSW, (Registered) Australia Register of the National Estate (Non-statutory archive)
Queanbeyan and District Historical Society Museum 8 Farrer Pl	Queanbeyan, NSW, (Registered) Australia Register of the National Estate (Non-statutory archive)
Rusten House 87-105 Collett St	Queanbeyan, NSW, (Registered) Australia Register of the National Estate (Non-statutory archive)
Rutidosis Site, Queanbeyan	Queanbeyan West, (Registered) NSW, Australia Register of the National Estate (Non-statutory archive)
School of Arts Building (former) 251 Crawford St	Queanbeyan, NSW, (Registered) Australia Register of the National Estate (Non-statutory archive)
St Benedicts Convent (former) and Kitchen Block 39 Isabella St	Queanbeyan, NSW, (Registered) Australia Register of the National Estate (Non-statutory archive)
St Gregorys Catholic Church Molonglo St	Queanbeyan East, (Registered) NSW, Australia Register of the National Estate (Non-statutory archive)
St Iliias Macedonian Orthodox Church 266 Crawford St	Queanbeyan, NSW, (Destroyed) Australia Register of the National Estate (Non-statutory archive)
Surveyor Street Precinct 1-22 Surveyor St	Queanbeyan, NSW, (Rejected Place) Australia Register of the National Estate (Non-statutory archive)
Suspension Bridge Isabella St	Queanbeyan, NSW, (Registered) Australia Register of the National Estate (Non-statutory archive)

Search Results

31 results found.

Boer War Memorial Lowe St	Queanbeyan, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Bulls Cottage 24 Henderson St	Queanbeyan, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
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Christ Church Anglican Church Precinct Rutledge St	Queanbeyan, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
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Dog and Stile Inn (former) 11-13 Macquoid St	Queanbeyan East, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Glenrock 26 Malcolm Rd	Karabar, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Hibernia Lodge 69 Collett St	Queanbeyan, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Hotel Queanbeyan 59 Crawford St	Queanbeyan, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)

Judge Callaghans Cottage Isabella St	Queanbeyan, NSW, Australia	(Destroyed) Register of the National Estate (Non-statutory archive)
Kent House 2 Macquoid St	Queanbeyan East, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Morleys Limekiln Cooma Rd	Googong, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Mount Jerrabomberra Area Jerrabomberra Hill Rd	Jerrabomberra, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Pooleys Hotel (former) 32-38 Monaro St	Queanbeyan, NSW, Australia	(Rejected Place) Register of the National Estate (Non-statutory archive)
Poplars Rutidosis Site Lanyon Dr	Jerrabomberra, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Queanbeyan Railway Station Henderson St	Queanbeyan, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Queanbeyan Railway Station Group Henderson St	Queanbeyan, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Queanbeyan River Within Queanbeyan	Queanbeyan, NSW, Australia	(Rejected Place) Register of the National Estate (Non-statutory archive)
Queanbeyan Showground Reserve Farrer Pl	Queanbeyan, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)

Queanbeyan Swimming Pool and Surrounds Crawford St	Queanbeyan, NSW, (Registered) Australia Register of the National Estate (Non-statutory archive)
Queanbeyan and District Historical Society Museum 8 Farrer Pl	Queanbeyan, NSW, (Registered) Australia Register of the National Estate (Non-statutory archive)
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Surveyor Street Precinct 1-22 Surveyor St	Queanbeyan, NSW, (Rejected Place) Australia Register of the National Estate (Non-statutory archive)
Suspension Bridge Isabella St	Queanbeyan, NSW, (Registered) Australia Register of the National Estate (Non-statutory archive)

[The Retreat](#) 72 Lowe St

Queanbeyan, NSW, ([Rejected Place](#))

Australia

Register of the
National Estate
(Non-statutory
archive)

[Tralce - Williamsdale Railway Swainsona Recta Sites](#) Monaro Hwy

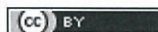
Williamsdale, NSW, ([Registered](#))

Australia

Register of the
National Estate
(Non-statutory
archive)

Report Produced: Fri Aug 2 17:12:09 2019

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You are here: [NPI Home](#) » [NPI data](#) » [Search NPI data](#) » [Search by Map](#) » View data

Summary

Sources

Emissions

Transfers

Download

Map

2017/2018 data within Australia - All Substances from Facilities (Industry)

Summary of returned search results with information related to the search criteria. Click on the tabs for a more detailed view of the search results.

The search results contain the following data

Industry data

▪ Number of facilities	5
▪ Number of substances emitted	23
▪ Number of substances transferred	0

Display time: 0.135s

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NPI

- [NPI Home](#)
- [NPI Database Search](#)

Search Criteria

- Source Type = Facility (Industry)
- Include subthreshold facility data = Yes
- Reporting year = 2017/2018
- State = National
- Substance = All
- Destination type = All

[Edit Criteria](#)

Key

-  Links to an another web site
-  Opens a pop-up window

You are here: [NPI Home](#) » [NPI data](#) » [Search NPI data](#) » [Browse Search](#) » [2017/2018](#) » [Location](#) » [New South Wales](#) » QUEANBEYAN CITY

Summary Sources Emissions Transfers Download Map

2017/2018 data within QUEANBEYAN CITY - All Substances from All Sources

Summary of returned search results with information related to the search criteria. Click on the tabs for a more detailed view of the search results.

The search results contain the following data

Industry data		Diffuse data	
▪ Number of facilities	1	▪ Number of airsheds	1
▪ Number of substances emitted	12	▪ Number of substances emitted	56
▪ Number of substances transferred	0	▪ Number of catchments	2
		▪ Number of substances emitted	2

Most commonly reported substances for the Location: QUEANBEYAN CITY

Industry Emissions	Industry Transfers	Diffuse Emissions
- Carbon monoxide - Fluoride compounds - Lead & compounds - Manganese & compounds - Mercury & compounds		- Total Volatile Organic Compounds - Toluene (methylbenzene) - Total Phosphorus - Total Nitrogen - Benzene

NPI

- [NPI Home](#)
- [NPI Database Search](#)

Search Criteria

- Source Type = All
- Include subthreshold facility data = Yes
- Reporting year = 2017/2018
- State = National
- LGA = QUEANBEYAN CITY
- Substance = All
- Destination type = All

[Edit Criteria](#)

Key

- [🔗](#) Links to an another web site
- [🔗](#) Opens a pop-up window

Display time: 0.157s

23 items found, displaying 1 to 10.

[First/Prev] 1,2,3 [Next/Last]

Substance 	Source	Air (kg) ^[1]	Land (kg) ^[1]	Water (kg) ^[1]
Benzene 		8.5		
	Mineral, Metal and Chemical Wholesaling [332]	8.5		
Carbon monoxide 		42,000		
	Petroleum and Coal Product Manufacturing [170]	28,000		
	Construction Material Mining [091]	13,000		
	Bakery Product Manufacturing [117]	1,000		
Chromium (III) compounds 		1.9		
	Petroleum and Coal Product Manufacturing [170]	1.9		
Copper & compounds 		1.2		
	Petroleum and Coal Product Manufacturing [170]	1.2		
Cumene (1-methylethylbenzene) 		2.2		
	Mineral, Metal and Chemical Wholesaling [332]	2.2		
Cyclohexane 		6.0		
	Mineral, Metal and Chemical Wholesaling [332]	6.0		
Ethanol 		3,500		
	Bakery Product Manufacturing [117]	3,500		
	Mineral, Metal and Chemical Wholesaling [332]	3.0		
Ethylbenzene 		1.7		
	Mineral, Metal and Chemical Wholesaling [332]	1.7		
Fluoride compounds 		180		
	Construction Material Mining [091]	170		
	Petroleum and Coal Product Manufacturing [170]	5.0		
n-Hexane 		23		
	Mineral, Metal and Chemical Wholesaling [332]	23		



Your environment

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Contaminated land

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+ Underground petroleum storage systems

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NEPM amendment

+ Further guidance

– Record of notices

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+ Other contamination issues

+ Contaminated Land Management Program

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Search results

Your search for: LGA: Queanbeyan City Council

did not find any records in our database.

If a site does not appear on the record it may still be affected by contamination. For example:

- Contamination may be present but the site has not been regulated by the EPA under the Contaminated Land Management Act 1997 or the Environmentally Hazardous Chemicals Act 1985.
- The EPA may be regulating contamination at the site through a licence or notice under the Protection of the Environment Operations Act 1997 (POEO Act).
- Contamination at the site may be being managed under the [planning process](#).

More information about particular sites may be available from:

- The [POEO public register](#)
- The appropriate planning authority: for example, on a planning certificate issued by the local council under [section 149 of the Environmental Planning and Assessment Act](#).

See [What's in the record](#) and [What's not in the record](#).

If you want to know whether a specific site has been the subject of notices issued by the EPA under the CLM Act, we suggest that you search by Local Government Area only and carefully review the sites that are listed.

This public record provides information about sites regulated by the EPA under the Contaminated Land Management Act 1997, including sites currently and previously regulated under the Environmentally Hazardous Chemicals Act 1985. Your inquiry using the above search

[Search Again](#)

[Refine Search](#)

Search TIP

To search for a specific site, search by LGA (local government area) and carefully review all sites listed.

... [more search tips](#)

Queanbeyan Local Environmental Plan 2012

Current version for 28 February 2019 to date (accessed 2 August 2019 at 17:24)

Schedule 5

Schedule 5 Environmental heritage

(Clause 5.10)

Part 1 Heritage items

Suburb	Item name	Address	Property description	Significance	Item no
Carwoola	Burbong Homestead	6547 Kings Highway	Lot 1, DP 956848	Local	12
Carwoola	Homestead	149 Wanna Wanna Road	Lot 16, DP 259432	Local	11
Googong	McCawley "Sunset" Homestead complex	141 Googong Dam Road	Lot 2, DP 255492	Local	15
Googong	Shearing shed complex	Old Cooma Road	Part of Lot 9, DP 255493	Local	1178
Googong	Mount Campbell	1260 Old Cooma Road	Lot 18, DP 270301	Local	13
Googong	St Paul's Church of England	1290 Old Cooma Road	Lot 1, DP 151940	Local	14
Jerrabomberra	Mount Jerrabomberra	Jerrabomberra Hill Road	DP 17204; DP 17205; DP 17206; Lots 1, 2 and 4, DP 595527; Lot 536, DP 8708; Lot 177, DP 832788; Lot 186, DP 811146; Lot 357, DP 864750; Lot 872, DP 1060706; Lot 1, DP 1061667	Local	16
Queanbeyan	House	5 Albert Street	Lots 11 and 12, DP 38054	Local	17
Queanbeyan	Cottage	2 Alice Street	Lot 29, DP 13806	Local	18
Queanbeyan	Cottage	4 Alice Street	Lot 30, DP 13806	Local	128
Queanbeyan	Cottage	6 Alice Street	Lot 31, DP 13806	Local	144
Queanbeyan	Cottage	9 Alice Street	Lot 44, DP 13806	Local	19
Queanbeyan	House	12 Alice Street	Lot 2, DP 1095519	Local	110
Queanbeyan	Cottage	30 Atkinson Street	Lot A, DP 164331	Local	111
Queanbeyan	Cottage	38 Atkinson Street	Lot B, DP 367816	Local	112
Queanbeyan	House	57 Atkinson Street	Lot 1, DP 513431	Local	113
Queanbeyan	"Coroda"	58 Atkinson Street	Lot 3, DP 587190	Local	114
Queanbeyan	"Sir Murray Tyrrell's Cottage"	11 Blundell Street	Lot 17, DP 548458	Local	115
Queanbeyan	"Cantle Cottage"	3 Booth Street	Lot 9, DP 758862	Local	116
Queanbeyan	"Gabriel's Cottage"	26 Booth Street	Lot 4, DP 24371	Local	117

Queanbeyan	Masonic Hall	258 Crawford Street	Lot 3, DP 507909	Local	148
Queanbeyan	House (Baker Deane and Nutt offices)	260 Crawford Street	Lot A, DP 389447	Local	149
Queanbeyan	Fire station (former)	261 Crawford Street	Lot 2, DP 806157	Local	150
Queanbeyan	Dutton's Cottage	263 Crawford Street	Lot 2, DP 806157	Local	151
Queanbeyan	Weatherboard cottage	274 Crawford Street	Lot B, DP 157512	Local	152
Queanbeyan	Weatherboard cottage	276 Crawford Street	Lot C, DP 157512	Local	153
Queanbeyan	Cottage	11–13 Derrima Road	Lots 25 and 26, Section A, DP 7255	Local	154
Queanbeyan	Cottage	21 Derrima Road	Lot A, DP 37890	Local	155
Queanbeyan	Cottage	23 Derrima Road	Lot 31, Section A, DP 7255	Local	156
Queanbeyan	House	25 Derrima Road	Lots 32 and 33, Section A, DP 7255	Local	157
Queanbeyan	House	35 Derrima Road	Lot A, DP 364414	Local	158
Queanbeyan	House	82 Derrima Road	Lot 15, DP 12593	Local	159
Queanbeyan	"Langdene"	17 Donald Road	Lot 2, DP 12658	Local	160
Queanbeyan	Cottage	25 Donald Road	Lot 5, DP 12658	Local	161
Queanbeyan	Cottage	36 Donald Road	Lot 23, DP 516114	Local	162
Queanbeyan	House	38 Donald Road	Lot 1, DP 660144	Local	163
Queanbeyan	House	41 Donald Road	Lot 13, DP 12658	Local	164
Queanbeyan	House	43 Donald Road	Lot 14, DP 12658	Local	165
Queanbeyan	House	12 Early Street	Lot 24, Section H, DP 13427; Lot 5, DP 253405	Local	166
Queanbeyan	Riverside Cemetery	40 Erin Street	Crown Reserve R 95617; Lots 54–56, DP 754907; Lots 7334 and 7335, DP 1154175; Lot 7303, DP 1137732; Part Lot 1, Section 33, DP 758862	Local	167
Queanbeyan	Memorial to William James Farrer	Farrer Place	Part of Farrer Place road reserve	Local	174
Queanbeyan	Tourist Information Centre (former municipal chambers), Lazarus sundial and World War I memorial	1–3 Farrer Place	Lots 1 and 2, DP 758862	Local	168
Queanbeyan	Queanbeyan and District Historical Society Museum	8 Farrer Place	Part Lot 124, DP 1011230	Local	169
Queanbeyan	Queanbeyan Showground	19–41 Farrer Place	Lots 1–24, DP 13963; Lot 6, DP 1116082; Lot 4, Section 56, DP 758862	State	170
Queanbeyan	Remnant house	2 Federal Avenue	Lot 131, DP 832565	Local	171
Queanbeyan	Homestead	15 Fergus Road	Lot 2, DP 505146	Local	172

Queanbeyan	St Raphael's Roman Catholic Church and St Gregory's School complex	47–59 Lowe Street	Lot 1, DP 319352; Lots 7 and 8, Section 56, DP 758862	Local	198
Queanbeyan	Ye Olde Kent Hotel	2 MacQuoid Street	Lot 112, DP 788863	Local	199
Queanbeyan	Dog and Stile Inn	11–13 MacQuoid Street	Lots A and B, DP 161553	Local	1100
Queanbeyan	St Gregory's Roman Catholic Church	15 MacQuoid Street	Lot 19 and 20, Section 4, DP 758862	Local	1101
Queanbeyan	Cottage	33–37 MacQuoid Street	Lot 15, SP 78396	Local	1102
Queanbeyan	Lazarus Cottage	38 MacQuoid Street	Lot 1, DP 136856	Local	1103
Queanbeyan	Torpy's Cottage	51 MacQuoid Street	Lot B, DP 377563	Local	1104
Queanbeyan	Group of houses	70–80 MacQuoid Street	Lots 1–3, DP 735030; Lot 6, DP 792815	Local	1105
Queanbeyan	Glenrock Cottage	26 Malcolm Road	Lot 36, DP 228415	Local	1106
Queanbeyan	House	1 McEwan Avenue	Lot 11, DP 881552	Local	1107
Queanbeyan	Weatherboard cottage	29 McIntosh Street	Lot 49, DP 12658	Local	1108
Queanbeyan	Remnant cottage	3 McKeahnie Street	Lot 13, Section A, DP 8211	Local	1109
Queanbeyan	House	14 McKeahnie Street	Lot C, DP 381891	Local	1110
Queanbeyan	Raine and Horne Real Estate (formerly Temperance Hall)	6–8 Monaro Street	Lot 2, DP 745806	Local	1111
Queanbeyan	Shop	9–11 Monaro Street	Lot 6, DP 239955	Local	1112
Queanbeyan	Shop (Oz Property Services)	27–29 Monaro Street	Lot 4, DP 239955	Local	1113
Queanbeyan	Tourist Hotel	31–43 Monaro Street	Lot 10, DP 530627	Local	1114
Queanbeyan	Black's Chambers	45–53 Monaro Street	Lot 16, DP 543424	Local	1115
Queanbeyan	Dudley Building	55–59 Monaro Street	Lot 14, DP 816328	Local	1116
Queanbeyan	Royal Hotel	85–93 Monaro Street	Lot 1, DP 624770	Local	1117
Queanbeyan	Fallick's Building	95–99 Monaro Street	Lot 1, DP 131589	Local	1118
Queanbeyan	Federation free style shops	130–134 Monaro Street	Lot 1A, DP 162360; Lot 2B, DP 162361; Lot 1, DP 778814	Local	1119
Queanbeyan	Spackman Real Estate	138–140 Monaro Street	Lot 3, DP 32660	Local	1120
Queanbeyan	Former Bradbury's Brewery site	146–154 Monaro Street	Lot A, DP 38752	Local	1121
Queanbeyan	Cottage	8 Moore Street	Lot 9, Section B, DP 7255	Local	1122
Queanbeyan	Cottage	15 Moore Street	Lot 1, Section C, DP 7255	Local	1123
Queanbeyan	St Stephen's Presbyterian Church and Manse	2 Morisset Street	Lot 2, DP 810937	Local	1124
Queanbeyan	Furlong House	15 Morisset Street	Part Lot 13, DP 758862	Local	1125

Queanbeyan	House	99 Stornaway Road	Lot 7, Section C, DP 13427	Local	1152
Queanbeyan	House	105 Stornaway Road	Lot 2, Section G, DP 13427	Local	1153
Queanbeyan	House	31 Surveyor Street	Lot 17, Section C, DP 13427	Local	1154
Queanbeyan	Houses	1–3 Symonds Street	Lots 112 and 113, DP 13963	Local	1155
Queanbeyan	Houses	5–7 Symonds Street	Lots 114 and 115, DP 13963	Local	1156
Queanbeyan	House	1 The Crescent	Lot 1, Section D, DP 13427	Local	1157
Queanbeyan	House	9 The Crescent	Lot 6, Section E, DP 13427	Local	1158
Queanbeyan	House	19 The Crescent	Lot 8, Section D, DP 13427	Local	1159
Queanbeyan	House	43 The Crescent	Lot 6, Section F, DP 13427	Local	1160
Queanbeyan	O'Neill's Cottage	6 Trinculo Place	Lot 6, DP 1099164; Part Lot 1, DP 597143; Lot 2, DP 749033	Local	1161
Queanbeyan	House	24 Uriarra Road	Part Lot 37, DP 8874	Local	1162
Queanbeyan	House	44 Uriarra Road	Lot 44, DP 8874	Local	1163
Queanbeyan	Houses	57–59 Uriarra Road	Lots C and D, DP 383194	Local	1164
Queanbeyan	House	96 Uriarra Road	Lot 132, DP 8874	Local	1165
Queanbeyan	House	17 White Avenue	Lot 128, DP 13963	Local	1166
Queanbeyan	House	27 White Avenue	Lot 33, DP 14068	Local	1167
Queanbeyan	Group of houses	36–38 White Avenue	Lots 39 and 40, DP 14068	Local	1168
Queanbeyan	Group of houses	37–41 White Avenue	Lots 26–28, DP 14068	Local	1169
Queanbeyan	House	42 White Avenue	Lot 42, DP 14068	Local	1170
Queanbeyan	House	47 White Avenue	Lot 24, DP 14068; Lot B, DP 393952	Local	1171
Queanbeyan	House	48 White Avenue	Lot 45, DP 14068	Local	1172
Queanbeyan	House	10 Young Street	Lot 22, DP 505796	Local	1173
Queanbeyan	House	14 Young Street	Lot 11, Section A, DP 332819	Local	1174
Queanbeyan	Aboriginal item—scarred tree site	Gale Precinct	Part Lot 100, DP 727522	Local	1176
Queanbeyan	Aboriginal item—artefact scattering	Gale Precinct	Part Lot 60, DP 754907	Local	1177
Royalla	Shepherds Ruin	1291 Old Cooma Road	Part Lot 1, DP 613054	Local	1179
Royalla	Green Gables Homestead	1866 Old Cooma Road	Part of Lot 22, DP 556417	Local	1175

Queanbeyan Local Environmental Plan 2012

Current version for 28 February 2019 to date (accessed 2 August 2019 at 17:24)

Schedule 5

Schedule 5 Environmental heritage

(Clause 5.10)

Part 1 Heritage items

Suburb	Item name	Address	Property description	Significance	Item no
Carwoola	Burbong Homestead	6547 Kings Highway	Lot 1, DP 956848	Local	12
Carwoola	Homestead	149 Wanna Wanna Road	Lot 16, DP 259432	Local	11
Googong	McCawley "Sunset" Homestead complex	141 Googong Dam Road	Lot 2, DP 255492	Local	15
Googong	Shearing shed complex	Old Cooma Road	Part of Lot 9, DP 255493	Local	1178
Googong	Mount Campbell	1260 Old Cooma Road	Lot 18, DP 270301	Local	13
Googong	St Paul's Church of England	1290 Old Cooma Road	Lot 1, DP 151940	Local	14
Jerrabomberra	Mount Jerrabomberra	Jerrabomberra Hill Road	DP 17204; DP 17205; DP 17206; Lots 1, 2 and 4, DP 595527; Lot 536, DP 8708; Lot 177, DP 832788; Lot 186, DP 811146; Lot 357, DP 864750; Lot 872, DP 1060706; Lot 1, DP 1061667	Local	16
Queanbeyan	House	5 Albert Street	Lots 11 and 12, DP 38054	Local	17
Queanbeyan	Cottage	2 Alice Street	Lot 29, DP 13806	Local	18
Queanbeyan	Cottage	4 Alice Street	Lot 30, DP 13806	Local	128
Queanbeyan	Cottage	6 Alice Street	Lot 31, DP 13806	Local	144
Queanbeyan	Cottage	9 Alice Street	Lot 44, DP 13806	Local	19
Queanbeyan	House	12 Alice Street	Lot 2, DP 1095519	Local	110
Queanbeyan	Cottage	30 Atkinson Street	Lot A, DP 164331	Local	111
Queanbeyan	Cottage	38 Atkinson Street	Lot B, DP 367816	Local	112
Queanbeyan	House	57 Atkinson Street	Lot 1, DP 513431	Local	113
Queanbeyan	"Coroda"	58 Atkinson Street	Lot 3, DP 587190	Local	114
Queanbeyan	"Sir Murray Tyrrell's Cottage"	11 Blundell Street	Lot 17, DP 548458	Local	115
Queanbeyan	"Cattle Cottage"	3 Booth Street	Lot 9, DP 758862	Local	116
Queanbeyan	"Gabriel's Cottage"	26 Booth Street	Lot 4, DP 24371	Local	117

Queanbeyan	Cottage	21 Buttle Street	Lot 1, DP 150744	Local	I18
Queanbeyan	House	49 Cameron Road	Lot 2, DP 215849	Local	I19
Queanbeyan	House	55 Cameron Road	Lot 13, DP 7491	Local	I20
Queanbeyan	Duplex	57–59 Cameron Road	Lots A and B, DP 351079	Local	I21
Queanbeyan	House	61 Cameron Road	Lot 11, DP 7491	Local	I22
Queanbeyan	House known initially as “Mimosa” and now as “Karabar”	71 Cameron Road	Lot 421, DP 553344	Local	I23
Queanbeyan	The Grotto	Riverside Oval, 14–22 Carinya Street	Lot 1, DP 835901	Local	I25
Queanbeyan	House	23 Carinya Street	Lot 1, DP 220459	Local	I26
Queanbeyan	“Byrne’s Mill”	55–57 Collett Street	Lots 11 and 12, DP 815597	State	I27
Queanbeyan	“Hibernia Lodge”	69 Collett Street	Lot 1, DP 349095	State	I29
Queanbeyan	Cottage	72 Collett Street	Lot 1, DP 714734	Local	I30
Queanbeyan	Old Queanbeyan Hospital	87–105 Collett Street	Part Lot 2, DP 226590	State	I31
Queanbeyan	Greek Orthodox Church	120 Collett Street (northeast corner of Campbell and Collett Streets)	Lot 63, DP 754907	Local	I32
Queanbeyan	Remnant house	126 Collett Street	Lot 18, Section A, DP 7255	Local	I33
Queanbeyan	Remnant house	145 Collett Street	Lot 27, Section B, DP 7255	Local	I34
Queanbeyan	Cottage	5 Collins Street	Lot 18, Section A, DP 13427	Local	I35
Queanbeyan	House	22 Collins Street	Lot 3, Section B, DP 13427	Local	I36
Queanbeyan	Remnant house	46 Cooma Street	Lot 49, DP 32640	Local	I37
Queanbeyan	Remnant house	48 Cooma Street	Lot 6, DP 37240	Local	I38
Queanbeyan	Remnant house	58 Cooma Street	Lot 1, DP 37240	Local	I39
Queanbeyan	Cottages	22–24 Crawford Street	Lots 2 and 3, Section A, DP 7255	Local	I40
Queanbeyan	Hotel Queanbeyan	63 Crawford Street	Lots 4 and 5, DP 13869	Local	I41
Queanbeyan	Building	76 Crawford Street	Lot 2, Section C, DP 7255	Local	I42
Queanbeyan	Queanbeyan Recreation and Leisure Centre	121–147 Crawford Street	Lot 1, DP 758862	Local	I43
Queanbeyan	Cottage	182 Crawford Street	Lot 1, DP 556014	Local	I45
Queanbeyan	Wright Building	200 Crawford Street	Lot A, DP 157292	Local	I46
Queanbeyan	Queanbeyan City Council Chambers (former School of Arts building)	251 Crawford Street	Lot 2, DP 735700	Local	I47

Queanbeyan	Masonic Hall	258 Crawford Street	Lot 3, DP 507909	Local	148
Queanbeyan	House (Baker Deane and Nutt offices)	260 Crawford Street	Lot A, DP 389447	Local	149
Queanbeyan	Fire station (former)	261 Crawford Street	Lot 2, DP 806157	Local	150
Queanbeyan	Dutton's Cottage	263 Crawford Street	Lot 2, DP 806157	Local	151
Queanbeyan	Weatherboard cottage	274 Crawford Street	Lot B, DP 157512	Local	152
Queanbeyan	Weatherboard cottage	276 Crawford Street	Lot C, DP 157512	Local	153
Queanbeyan	Cottage	11–13 Derrima Road	Lots 25 and 26, Section A, DP 7255	Local	154
Queanbeyan	Cottage	21 Derrima Road	Lot A, DP 37890	Local	155
Queanbeyan	Cottage	23 Derrima Road	Lot 31, Section A, DP 7255	Local	156
Queanbeyan	House	25 Derrima Road	Lots 32 and 33, Section A, DP 7255	Local	157
Queanbeyan	House	35 Derrima Road	Lot A, DP 364414	Local	158
Queanbeyan	House	82 Derrima Road	Lot 15, DP 12593	Local	159
Queanbeyan	"Langdene"	17 Donald Road	Lot 2, DP 12658	Local	160
Queanbeyan	Cottage	25 Donald Road	Lot 5, DP 12658	Local	161
Queanbeyan	Cottage	36 Donald Road	Lot 23, DP 516114	Local	162
Queanbeyan	House	38 Donald Road	Lot 1, DP 660144	Local	163
Queanbeyan	House	41 Donald Road	Lot 13, DP 12658	Local	164
Queanbeyan	House	43 Donald Road	Lot 14, DP 12658	Local	165
Queanbeyan	House	12 Early Street	Lot 24, Section H, DP 13427; Lot 5, DP 253405	Local	166
Queanbeyan	Riverside Cemetery	40 Erin Street	Crown Reserve R 95617; Lots 54–56, DP 754907; Lots 7334 and 7335, DP 1154175; Lot 7303, DP 1137732; Part Lot 1, Section 33, DP 758862	Local	167
Queanbeyan	Memorial to William James Farrer	Farrer Place	Part of Farrer Place road reserve	Local	174
Queanbeyan	Tourist Information Centre (former municipal chambers), Lazarus sundial and World War I memorial	1–3 Farrer Place	Lots 1 and 2, DP 758862	Local	168
Queanbeyan	Queanbeyan and District Historical Society Museum	8 Farrer Place	Part Lot 124, DP 1011230	Local	169
Queanbeyan	Queanbeyan Showground	19–41 Farrer Place	Lots 1–24, DP 13963; Lot 6, DP 1116082; Lot 4, Section 56, DP 758862	State	170
Queanbeyan	Remnant house	2 Federal Avenue	Lot 131, DP 832565	Local	171
Queanbeyan	Homestead	15 Fergus Road	Lot 2, DP 505146	Local	172

Queanbeyan	Cottage	31 Fergus Road	Lot 37, DP 13295	Local	173
Queanbeyan	Dwelling, part of complex known as "Kawaree"	18 George Street	Lot 1, DP 774149	State	124
Queanbeyan	Building	19 Hayes Street	Lot 25, DP 13806	Local	175
Queanbeyan	Group of cottages	21–25 Hayes Street	Lots 70 and 71, DP 32640	Local	176
Queanbeyan	Group of houses	34–36 Hayes Street	Lots 62 and 63, DP 32640	Local	177
Queanbeyan	Bull's Cottage	24 Henderson Road	Lots 10 and 11, DP 2207	Local	178
Queanbeyan	Railway worker's cottage	37 Henderson Road	Lot 1, DP 828793	Local	179
Queanbeyan	Queanbeyan Railway Station group	43–47 Henderson Road	Lot 2, DP 1002170; Lot 79, Section B, DP 910710	State	180
Queanbeyan	House	76 Henderson Road	Lot 27, DP 12593	Local	182
Queanbeyan	House	101 Henderson Road	Lot 2, DP 816124	Local	183
Queanbeyan	Group of houses	1 and 5 Hirst Avenue	Lots 116 and 118, DP 13963	Local	184
Queanbeyan	Houses	6–8 Hirst Avenue	Lots 101 and 102, DP 13963	Local	185
Queanbeyan	Group of houses	26–30 Hirst Avenue	Lots 5 and 6, DP 14068	Local	186
Queanbeyan	Suspension bridge	Isabella Street	Intersection of Isabella and Collett Streets	Local	187
Queanbeyan	"Falklands"	5 Isabella Street	Lots 94 and 95, DP 13963	Local	188
Queanbeyan	House	11 Isabella Street	Lot C, DP 334918; Part Lot 98, DP 1014785; Lot 99, DP 13963	Local	189
Queanbeyan	Public schoolhouse	35 Isabella Street	Lot 1, DP 758862	Local	190
Queanbeyan	Former St Benedict's Convent	39 Isabella Street	Lot 1, DP 801099	Local	191
Queanbeyan	Trees planted for Avenue of Memory	Isabella Street	Isabella Street road reserve from Crawford to Lowe Streets	Local	192
Queanbeyan	Houses	4–6 Kathleen Street	Lots 51 and 52, DP 32640	Local	193
Queanbeyan	Building	17–19 Kathleen Street	Lots 19 and 20, DP 37240	Local	194
Queanbeyan	Group of dwellings	28–34 Kathleen Street	Lots 113 and 114, DP 32640	Local	195
Queanbeyan	Boer War memorial	Lowe Street	Lowe Street road reserve	Local	196
Queanbeyan	Building house, Thai restaurant,	24 Lowe Street	Lots 3 and 4, DP 14686	Local	197

Queanbeyan	St Raphael's Roman Catholic Church and St Gregory's School complex	47–59 Lowe Street	Lot 1, DP 319352; Lots 7 and 8, Section 56, DP 758862	Local	198
Queanbeyan	Ye Olde Kent Hotel	2 MacQuoid Street	Lot 112, DP 788863	Local	199
Queanbeyan	Dog and Stile Inn	11–13 MacQuoid Street	Lots A and B, DP 161553	Local	1100
Queanbeyan	St Gregory's Roman Catholic Church	15 MacQuoid Street	Lot 19 and 20, Section 4, DP 758862	Local	1101
Queanbeyan	Cottage	33–37 MacQuoid Street	Lot 15, SP 78396	Local	1102
Queanbeyan	Lazarus Cottage	38 MacQuoid Street	Lot 1, DP 136856	Local	1103
Queanbeyan	Torpy's Cottage	51 MacQuoid Street	Lot B, DP 377563	Local	1104
Queanbeyan	Group of houses	70–80 MacQuoid Street	Lots 1–3, DP 735030; Lot 6, DP 792815	Local	1105
Queanbeyan	Glenrock Cottage	26 Malcolm Road	Lot 36, DP 228415	Local	1106
Queanbeyan	House	1 McEwan Avenue	Lot 11, DP 881552	Local	1107
Queanbeyan	Weatherboard cottage	29 McIntosh Street	Lot 49, DP 12658	Local	1108
Queanbeyan	Remnant cottage	3 McKeahnie Street	Lot 13, Section A, DP 8211	Local	1109
Queanbeyan	House	14 McKeahnie Street	Lot C, DP 381891	Local	1110
Queanbeyan	Raine and Horne Real Estate (formerly Temperance Hall)	6–8 Monaro Street	Lot 2, DP 745806	Local	1111
Queanbeyan	Shop	9–11 Monaro Street	Lot 6, DP 239955	Local	1112
Queanbeyan	Shop (Oz Property Services)	27–29 Monaro Street	Lot 4, DP 239955	Local	1113
Queanbeyan	Tourist Hotel	31–43 Monaro Street	Lot 10, DP 530627	Local	1114
Queanbeyan	Black's Chambers	45–53 Monaro Street	Lot 16, DP 543424	Local	1115
Queanbeyan	Dudley Building	55–59 Monaro Street	Lot 14, DP 816328	Local	1116
Queanbeyan	Royal Hotel	85–93 Monaro Street	Lot 1, DP 624770	Local	1117
Queanbeyan	Fallick's Building	95–99 Monaro Street	Lot 1, DP 131589	Local	1118
Queanbeyan	Federation free style shops	130–134 Monaro Street	Lot 1A, DP 162360; Lot 2B, DP 162361; Lot 1, DP 778814	Local	1119
Queanbeyan	Spackman Real Estate	138–140 Monaro Street	Lot 3, DP 32660	Local	1120
Queanbeyan	Former Bradbury's Brewery site	146–154 Monaro Street	Lot A, DP 38752	Local	1121
Queanbeyan	Cottage	8 Moore Street	Lot 9, Section B, DP 7255	Local	1122
Queanbeyan	Cottage	15 Moore Street	Lot 1, Section C, DP 7255	Local	1123
Queanbeyan	St Stephen's Presbyterian Church and Manse	2 Morisset Street	Lot 2, DP 810937	Local	1124
Queanbeyan	Furlong House	15 Morisset Street	Part Lot 13, DP 758862	Local	1125

Queanbeyan	House	32 Morton Street	Lot 1, DP 834558	Local	I126
Queanbeyan	House	33 Morton Street	Lot 11, DP 14045	Local	I127
Queanbeyan	Mill Thorpe House	7 Mowatt Street	Lot 12, DP 507908	Local	I128
Queanbeyan	Queanbeyan Rail Bridge	Queanbeyan River, east of Queanbeyan Station		State	I129
Queanbeyan	Cottage	26 Ross Road	Lot 8, DP 549515	Local	I130
Queanbeyan	House	27 Ross Road	Lot 10, Section 1, DP 8396	Local	I131
Queanbeyan	House	29 Ross Road	Lot A, DP 439589	Local	I132
Queanbeyan	House	66 Ross Road	Lot 24, Section D, DP 13427	Local	I133
Queanbeyan	House	88 Ross Road	Lot 25, Section F, DP 13427	Local	I134
Queanbeyan	House	132 Ross Road	Lot 68, DP 12658	Local	I135
Queanbeyan	House	18 Rutledge Street	Lot 2, DP 710825	Local	I136
Queanbeyan	Parish hall— Anglican Parish of Queanbeyan	19 Rutledge Street	Lots 3–7, DP 37235	Local	I137
Queanbeyan	Hereford House	32 Rutledge Street	Lot 5, DP 551214	Local	I138
Queanbeyan	Christ Church Anglican Church group, including rectory, former school and first extension, church hall and landscape	39 Rutledge Street	Lots 1–3, DP 199191	State	I139
Queanbeyan	House (former Kinkora Private Hospital)	5 Stornaway Road	Lot 2, DP 1091874	Local	I140
Queanbeyan	Houses	17–19 Stornaway Road	Lots 7 and 8, DP 13098	Local	I141
Queanbeyan	House	39 Stornaway Road	Lot 4, Section A, DP 13427	Local	I142
Queanbeyan	Group of houses	41–45 Stornaway Road	Lots 5 and 6, Section A, DP 13427; Lot A, DP 373070	Local	I143
Queanbeyan	Group of houses	51–55 Stornaway Road	Lots 10–12, Section A, DP 13427	Local	I144
Queanbeyan	House	57 Stornaway Road	Lot 13, Section A, DP 13427	Local	I145
Queanbeyan	House	59 Stornaway Road	Lot 1, Section C, DP 13427	Local	I146
Queanbeyan	House	73 Stornaway Road	Lot 8, Section C, DP 13427	Local	I147
Queanbeyan	House	75 Stornaway Road	Lot 9, Section C, DP 13427	Local	I148
Queanbeyan	House	91 Stornaway Road	Lot 3, DP 13427	Local	I149
Queanbeyan	House	95 Stornaway Road	Lot 5, Section E, DP 13427	Local	I150
Queanbeyan	House	97 Stornaway Road	Lot 6, Section E, DP 13427	Local	I151

Queanbeyan	House	99 Stornaway Road	Lot 7, Section C, DP 13427	Local	1152
Queanbeyan	House	105 Stornaway Road	Lot 2, Section G, DP 13427	Local	1153
Queanbeyan	House	31 Surveyor Street	Lot 17, Section C, DP 13427	Local	1154
Queanbeyan	Houses	1–3 Symonds Street	Lots 112 and 113, DP 13963	Local	1155
Queanbeyan	Houses	5–7 Symonds Street	Lots 114 and 115, DP 13963	Local	1156
Queanbeyan	House	1 The Crescent	Lot 1, Section D, DP 13427	Local	1157
Queanbeyan	House	9 The Crescent	Lot 6, Section E, DP 13427	Local	1158
Queanbeyan	House	19 The Crescent	Lot 8, Section D, DP 13427	Local	1159
Queanbeyan	House	43 The Crescent	Lot 6, Section F, DP 13427	Local	1160
Queanbeyan	O'Neill's Cottage	6 Trinculo Place	Lot 6, DP 1099164; Part Lot 1, DP 597143; Lot 2, DP 749033	Local	1161
Queanbeyan	House	24 Uriarra Road	Part Lot 37, DP 8874	Local	1162
Queanbeyan	House	44 Uriarra Road	Lot 44, DP 8874	Local	1163
Queanbeyan	Houses	57–59 Uriarra Road	Lots C and D, DP 383194	Local	1164
Queanbeyan	House	96 Uriarra Road	Lot 132, DP 8874	Local	1165
Queanbeyan	House	17 White Avenue	Lot 128, DP 13963	Local	1166
Queanbeyan	House	27 White Avenue	Lot 33, DP 14068	Local	1167
Queanbeyan	Group of houses	36–38 White Avenue	Lots 39 and 40, DP 14068	Local	1168
Queanbeyan	Group of houses	37–41 White Avenue	Lots 26–28, DP 14068	Local	1169
Queanbeyan	House	42 White Avenue	Lot 42, DP 14068	Local	1170
Queanbeyan	House	47 White Avenue	Lot 24, DP 14068; Lot B, DP 393952	Local	1171
Queanbeyan	House	48 White Avenue	Lot 45, DP 14068	Local	1172
Queanbeyan	House	10 Young Street	Lot 22, DP 505796	Local	1173
Queanbeyan	House	14 Young Street	Lot 11, Section A, DP 332819	Local	1174
Queanbeyan	Aboriginal item—scarred tree site	Gale Precinct	Part Lot 100, DP 727522	Local	1176
Queanbeyan	Aboriginal item—artefact scattering	Gale Precinct	Part Lot 60, DP 754907	Local	1177
Royalla	Shepherds Ruin	1291 Old Cooma Road	Part Lot 1, DP 613054	Local	1179
Royalla	Green Gables Homestead	1866 Old Cooma Road	Part of Lot 22, DP 556417	Local	1175

Part 2 Heritage conservation areas

Name of heritage conservation area	Identification on Heritage Map	Significance
Queanbeyan Conservation Area	Shown by a red outline with red hatching and labelled "CI"	Local

Part 3 Archaeological sites

Suburb	Item name	Address	Property description	Significance	Item No
Carwoola	Mason Brothers' Brickworks	1.8km from turn off from Kings Highway (in road reserve to the left of Captains Flat Road)	Adjacent to Lot 4, DP 821756	Local	A1
Greenleigh	Marchiori's Lime Kiln and quarry	South east corner of Jumping Creek	Part of Lot 1, DP 711905	Local	A2
Googong	Moses Morley's Lime Kiln	Quarry, 501 Cooma Road	Part of Lots 103 and 104, DP 754881	Local	A3
Queanbeyan	White Rocks Limestone Kilns	On the Queanbeyan River, Gale, 300 Cooma Street	Part of Lot 86, DP 45240	Local	A4



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Statutory listed items

Information and items listed in the State Heritage Inventory come from a number of sources. This means that there may be several entries for the same heritage item in the database. For clarity, the search results have been divided into three sections.

- **Section 1** - contains Aboriginal Places declared by the **Minister for the Environment** under the National Parks and Wildlife Act. This information is provided by the Heritage Division.
- **Section 2** - contains heritage items listed by the **Heritage Council of NSW** under the NSW Heritage Act. This includes listing on the State Heritage Register, an Interim Heritage Order or protected under section 136 of the NSW Heritage Act. This information is provided by the Heritage Division.
- **Section 3** - contains items listed by **local councils** on Local Environmental Plans under the Environmental Planning and Assessment Act, 1979 and **State government agencies** under s.170 of the Heritage Act. This information is provided by local councils and State government agencies.

Section 1. Aboriginal Places listed under the National Parks and Wildlife Act.

Your search returned 1 record.

Aboriginal place name	Local government area	Local Aboriginal Land Council	Latitude	Longitude	Gazettal date and page numbers	Comments
Millpost Stone Axe Quarry Aboriginal Place	Queanbeyan	Ngambri	-35.30125104360	149.36559821400	06/29/2018 p. 3984	

Section 2. Items listed under the NSW Heritage Act.

Your search returned 9 records.

Item name	Address	Suburb	LGA	SHR
Christ Church Anglican Group	Rutledge Street	Queanbeyan	Queanbeyan	00043
Hibernia Lodge	69 Collett Street	Queanbeyan	Queanbeyan	00514
Kawaree	3 Tharwa Road	Queanbeyan	Queanbeyan	00365
Mill and Millhouse	Morrisett Street	Queanbeyan	Queanbeyan	00363
Old Queanbeyan Hospital - Rusten House	Antill Street	Queanbeyan	Queanbeyan	00552
Queanbeyan rail bridges over Queanbeyan and Burbong Rivers	Goulburn-Bombala railway	Queanbeyan	Queanbeyan	01052
Queanbeyan Railway Station group	Henderson Road	Queanbeyan	Queanbeyan	01226

<u>Queanbeyan Showground</u>	19-41 Farrer Place	Queanbeyan	Queanbeyan	01890
<u>St Stephen's Presbyterian Church and Manse</u>	2 Morisset Street	Queanbeyan	Queanbeyan	02018

Section 3. Items listed by Local Government and State Agencies.

Your search returned 215 records.

Item name	Address	Suburb	LGA	Information source
<u>Art Deco Style Shop</u>	9-11 Monaro St	Queanbeyan	Queanbeyan	LGOV
<u>Avenue of Memory</u>	Isabella Street	Queanbeyan	Queanbeyan	LGOV
<u>Black's Chambers</u>	45-53 Monaro St	Queanbeyan	Queanbeyan	LGOV
<u>Boer War Memorial</u>	Lowe St	Queanbeyan	Queanbeyan	LGOV
<u>Bradbury's Brewery Site (Former)</u>	146-154 Monaro St	Queanbeyan	Queanbeyan	LGOV
<u>Brick House</u>	5 Albert Street	Queanbeyan	Queanbeyan	LGOV
<u>Building</u>	76 Crawford Street	Queanbeyan	Queanbeyan	LGOV
<u>Building</u>	19 Hayes Street	Queanbeyan	Queanbeyan	LGOV
<u>Building</u>	17-19 Kathleen Street	Queanbeyan	Queanbeyan	LGOV
<u>Building (Rusten House, Former Hospital)</u>	87-105 Collett Street	Queanbeyan	Queanbeyan	LGOV
<u>Bulls Cottage</u>	24 Henderson Road	Queanbeyan	Queanbeyan	LGOV
<u>Bull's Cottage</u>	24 Henderson Rd	Queanbeyan	Queanbeyan	LGOV
<u>Burbong Homestead</u>	6547 Kings Highway	Carwoola	Queanbeyan	LGOV
<u>Burbong, Molonglo River Underbridge</u>	311.927km, Goulburn To Bombala Railway	Burbong	Queanbeyan	SGOV
<u>Byrnes Mill (Residence, Former Craft Shop)</u>	57 Collett St	Queanbeyan	Queanbeyan	LGOV
<u>Byrne's Mill (Restaurant)</u>	55 Collett St	Queanbeyan	Queanbeyan	LGOV

<u>Cattle Cottage</u>	3 Booth Street	Queanbeyan	Queanbeyan	LGOV
<u>Christ Church Anglican Church</u>	39 Rutledge Street	Queanbeyan	Queanbeyan	LGOV
<u>Christ Church Anglican Group</u>	39 Rutledge Street	Queanbeyan	Queanbeyan	LGOV
<u>Cottage</u>	30 Atkinson Street	Queanbeyan	Queanbeyan	LGOV
<u>Cottage</u>	38 Atkinson Street	Queanbeyan	Queanbeyan	LGOV
<u>Cottage</u>	9 Alice Street	Queanbeyan	Queanbeyan	LGOV
<u>Cottage</u>	72 Collett	Queanbeyan	Queanbeyan	LGOV
<u>Cottage</u>	21 Buttle Street	Queanbeyan	Queanbeyan	LGOV
<u>Cottage</u>	15 Moore Street	Queanbeyan	Queanbeyan	LGOV
<u>Cottage</u>	26 Ross Road	Queanbeyan	Queanbeyan	LGOV
<u>Cottage</u>	5 Collins Street	Queanbeyan	Queanbeyan	LGOV
<u>Cottage</u>	21 Derrima Road	Queanbeyan	Queanbeyan	LGOV
<u>Cottage</u>	23 Derrima Road	Queanbeyan	Queanbeyan	LGOV
<u>Cottage</u>	25 Donald Road	Queanbeyan	Queanbeyan	LGOV
<u>Cottage</u>	36 Donald Road	Queanbeyan	Queanbeyan	LGOV
<u>Cottage</u>	31 Fergus Road	Queanbeyan	Queanbeyan	LGOV
<u>Cottage</u>	33 Macquoid Street	Queanbeyan	Queanbeyan	LGOV
<u>Cottage</u>	8 Moore Street	Queanbeyan	Queanbeyan	LGOV
<u>Cottage (Dog and Stile Inn)</u>	11-13 Macquoid St	Queanbeyan	Queanbeyan	LGOV
<u>Cottage (Lazarus Cottage)</u>	38 Macquoid Street	Queanbeyan	Queanbeyan	LGOV
<u>Cottages</u>	22 - 24 Crawford Street	Queanbeyan	Queanbeyan	LGOV

<u>Cottages (Railway Workers')</u>	11 - 13 Derrima Road	Queanbeyan	Queanbeyan	LGOV
<u>Dudley's Buildings</u>	55-59 Monaro St	Queanbeyan	Queanbeyan	LGOV
<u>Duplex House</u>	57- 59 Cameron Rd	Queanbeyan	Queanbeyan	LGOV
<u>Dutton's Cottage</u>	263 Crawford Street	Queanbeyan	Queanbeyan	LGOV
<u>Dwelling (Kawaree)</u>	18 George	Queanbeyan	Queanbeyan	LGOV
<u>Falklands</u>	5 Isabella Street	Queanbeyan	Queanbeyan	LGOV
<u>Fallick Building</u>	95-99 Monaro St	Queanbeyan	Queanbeyan	LGOV
<u>Federation Free Style Shops</u>	130-134 Monaro St	Queanbeyan	Queanbeyan	LGOV
<u>Federation Period House</u>	18 Rutledge St	Queanbeyan	Queanbeyan	LGOV
<u>Furlong House</u>	15 Morisset Street	Queanbeyan	Queanbeyan	LGOV
<u>Gabriel's Cottage</u>	26 Booth Street	Queanbeyan	Queanbeyan	LGOV
<u>Garryowen Estate (Portion of The Conservation Area)</u>	Bound by George & Campbell Sts Stornaway Road	Queanbeyan	Queanbeyan	LGOV
<u>Glenrock</u>	26 Malcolm Road	Queanbeyan	Queanbeyan	LGOV
<u>Glenrock</u>	26 Malcolm Rd	Queanbeyan	Queanbeyan	LGOV
<u>Gp8 Stone Artefact Scatter (Sheet 4, Heritage Map)</u>	Gale Precinct	Queanbeyan	Queanbeyan	LGOV
<u>Gp9 Scarred Tree Site, Sheet 4 of Heritage Map</u>	Gale Precinct	Queanbeyan	Queanbeyan	LGOV
<u>Greek Orthodox Church</u>	120 Collett St	Queanbeyan	Queanbeyan	LGOV
<u>Green Gables Homestead</u>	1866 Old Cooma Road	Queanbeyan	Queanbeyan	LGOV
<u>Group of Cottages</u>	21-25 Hayes Street	Queanbeyan	Queanbeyan	LGOV
<u>Group of Cottages</u>	2-6 Alice Street	Queanbeyan	Queanbeyan	LGOV
<u>Group of Dwellings</u>	28-34 Kathleen Street	Queanbeyan	Queanbeyan	LGOV
<u>Group of Houses</u>	41-45 Stornaway Road	Queanbeyan	Queanbeyan	LGOV

<u>Group of Houses</u>	51-55 Stornaway Road	Queanbeyan	Queanbeyan	LGOV
<u>Group of Houses</u>	34 and 36 Hayes Street	Queanbeyan	Queanbeyan	LGOV
<u>Group of Houses</u>	1-5 Hirst Avenue	Queanbeyan	Queanbeyan	LGOV
<u>Group of Houses</u>	26-30 Hirst Avenue	Queanbeyan	Queanbeyan	LGOV
<u>Group of Houses</u>	36 and 38 White Avenue	Queanbeyan	Queanbeyan	LGOV
<u>Group of Houses</u>	37-41 White Avenue	Queanbeyan	Queanbeyan	LGOV
<u>Group of Semi-detached Dwellings</u>	70 - 80 Macquoid Street	Queanbeyan	Queanbeyan	LGOV
<u>H2 Open Air Motor Sport Track, Sheet 3 of Heritage Map</u>	Environa (Tralee Homestead Complex)	Tralee	Queanbeyan	LGOV
<u>H5 Shed Ruins, Sheet 3 of Heritage Map</u>	Environa (Tralee Homestead Complex)	Tralee	Queanbeyan	LGOV
<u>H8 Sheep Dip, Sheet 3 of Heritage Map</u>	Environa (Tralee Homestead Complex)	Tralee	Queanbeyan	LGOV
<u>H9 Tralee Landing Ground, Sheet 3 of Heritage Map</u>	Environa (Tralee Homestead Complex)	Tralee	Queanbeyan	LGOV
<u>Hereford House</u>	32 Rutledge St	Queanbeyan	Queanbeyan	LGOV
<u>Hibernia Lodge</u>	69 Collett Street	Queanbeyan	Queanbeyan	LGOV
<u>Homestead</u>	15 Fergus Road	Queanbeyan	Queanbeyan	LGOV
<u>Homestead (Langdene)</u>	17 Donald Road	Queanbeyan	Queanbeyan	LGOV
<u>Hotel Queanbeyan</u>	63 Crawford Street	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	12 Alice Street	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	58 Atkinson Street	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	1 The Crescent	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	9 The Crescent	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	19 The Crescent	Queanbeyan	Queanbeyan	LGOV
<u>House</u>		Queanbeyan	Queanbeyan	LGOV

	43 The Crescent			
<u>House</u>	44 Uriarra Road	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	17 White Avenue	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	27 White Avenue	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	42 White Avenue	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	47 White Avenue	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	48 White Avenue	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	57 Atkinson Street	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	24 Uriarra Road	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	76 Henderson Road	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	101 Henderson Road	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	1 McEwan Ave	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	22 Collins Street	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	66 Ross Road	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	88 Ross Road	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	132 Ross Road	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	39 Stornaway Road	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	38 Donald Road	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	41 Donald Road	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	43 Donald Road	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	12 Early Street	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	25 Derrima Road	Queanbeyan	Queanbeyan	LGOV

<u>House</u>	35 Derrima Road	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	82 Derrima Road	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	61 Cameron Road	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	11 Isabella Street	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	31 Surveyor Street	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	57 Stornaway Road	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	59 Stornaway Road	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	73 Stornaway Road	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	75 Stornaway Road	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	91 Stornaway Road	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	95 Stornaway Road	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	97 Stornaway Road	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	99 Stornaway Road	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	105 Stornaway Road	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	49 Cameron Road	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	55 Cameron Road	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	32 Morton Street	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	33 Morton Street	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	14 McKeanie Street	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	27 Ross Road	Queanbeyan	Queanbeyan	LGOV

<u>House</u>	29 Ross Road	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	57 - 59 Uriarra Road	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	96 Uriarra Road	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	10 Young Street	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	14 Young Street	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	29 McIntosh Street	Queanbeyan	Queanbeyan	LGOV
<u>House</u>	23 Carinya	Queanbeyan	Queanbeyan	LGOV
<u>House (Coroda)</u>	58 Atkinson St	Queanbeyan	Queanbeyan	LGOV
<u>House (Former Mimosa, Now Karabar)</u>	71 Cameron Road	Queanbeyan	Queanbeyan	LGOV
<u>House (Hibernia Lodge)</u>	69 Collett St	Queanbeyan	Queanbeyan	LGOV
<u>House (Kinkora Private Hospital)</u>	5 Stornaway Rd	Queanbeyan	Queanbeyan	LGOV
<u>Houses</u>	4-6 Kathleen Street	Queanbeyan	Queanbeyan	LGOV
<u>Houses</u>	1 - 3 Symonds Street	Queanbeyan	Queanbeyan	LGOV
<u>Houses</u>	5 - 7 Symonds Street	Queanbeyan	Queanbeyan	LGOV
<u>Houses</u>	6-8 Hirst Avenue	Queanbeyan	Queanbeyan	LGOV
<u>Houses (California Bungalows)</u>	17-19 Stornaway Road	Queanbeyan	Queanbeyan	LGOV
<u>Hs3 Two Lime Kilns, Sheet 4 of Heritage Map</u>	Gale Precinct	Queanbeyan	Queanbeyan	LGOV
<u>Inter-war Style Shop</u>	138-140 Monaro St	Queanbeyan	Queanbeyan	LGOV
<u>Inter-war Style Shop</u>	27-29 Monaro St	Queanbeyan	Queanbeyan	LGOV
<u>Kawaree</u>	3 Tharwa Road	Queanbeyan	Queanbeyan	LGOV
<u>'Kinkora' House</u>	5 Stornaway Road	Queanbeyan	Queanbeyan	SGOV
<u>Manor, The</u>		Queanbeyan	Queanbeyan	LGOV

	24 Lowe Street (Cnr Morisset)			
<u>Marchiori's Lime Kiln and Quarry</u>	South East Corner	Greenleigh	Queanbeyan	LGOV
<u>Mason Brothers' Brickworks</u>	Captains Flat Road	Carwoola	Queanbeyan	LGOV
<u>Mill and Millhouse</u>	Morisset Street	Queanbeyan	Queanbeyan	LGOV
<u>Mill Thorpe House</u>	7 Mowatt Street	Queanbeyan	Queanbeyan	LGOV
<u>Monument To William James Farrer</u>	Farrer Place	Queanbeyan	Queanbeyan	LGOV
<u>Moses Morley Lime Burning Kiln</u>	501 Cooma Road	Googong	Queanbeyan	LGOV
<u>Mount Campbell</u>	1260 Old Cooma Road	Googong	Queanbeyan	LGOV
<u>Mount Jerrabomberra</u>	Jerrabomberra Hill Rd	Jerrabomberra	Queanbeyan	LGOV
<u>O'Neill's Cottage (Art Gallery)</u>	6 Trinculo Place	Queanbeyan	Queanbeyan	LGOV
<u>Parish Hall - Anglican Parish of Queanbeyan</u>	19 Rutledge St	Queanbeyan	Queanbeyan	LGOV
<u>Police Residence (Former)</u>	8 Farrer Place	Queanbeyan	Queanbeyan	LGOV
<u>Poplars (The)</u>	Lanyon Dr	Queanbeyan	Queanbeyan	LGOV
<u>Potential Archaeological Site 1 (Site Gp2)</u>	Gale Precinct	Queanbeyan	Queanbeyan	LGOV
<u>Potential Archaeological Site 2 (Sites Gp3 and Gp5)</u>	Gale Precinct	Queanbeyan	Queanbeyan	LGOV
<u>Potential Archaeological Site 3 (Site Hs4)</u>	Gale Precinct	Queanbeyan	Queanbeyan	LGOV
<u>Presbyterian Manse</u>	2 Morisset Street	Queanbeyan	Queanbeyan	LGOV
<u>Public School House</u>	35 Isabella Street	Queanbeyan	Queanbeyan	LGOV
<u>Public School House</u>	35 Isabella Street	Queanbeyan	Queanbeyan	LGOV
<u>Queanbeyan and District Historical Society Museum</u>	8 Farrer Pl	Queanbeyan	Queanbeyan	LGOV
<u>Queanbeyan Rail Bridge (Over River)</u>	East of Railway Station	Queanbeyan	Queanbeyan	LGOV
<u>Queanbeyan Railway Precinct</u>	Henderson Road	Queanbeyan	Queanbeyan	SGOV
<u>Queanbeyan Railway Precinct</u>	Henderson Road	Queanbeyan	Queanbeyan	SGOV

<u>Queanbeyan Railway Station</u>	43 Henderson Rd	Queanbeyan	Queanbeyan	LGOV
<u>Queanbeyan Railway Station</u>	43 Henderson Road	Queanbeyan	Queanbeyan	LGOV
<u>Queanbeyan Recreation and Leisure Centre</u>	121-147 Crawford Street	Queanbeyan	Queanbeyan	LGOV
<u>Queanbeyan Recreation and Leisure Centre</u>	121-147 Crawford Street	Queanbeyan	Queanbeyan	LGOV
<u>Queanbeyan Showground</u>	19-41 Farrer Place	Queanbeyan	Queanbeyan	LGOV
<u>Queanbeyan Showground</u>	19-41 Farrer Pl	Queanbeyan	Queanbeyan	LGOV
<u>Queanbeyan Weir</u>	Queanbeyan River	Queanbeyan	Queanbeyan	SGOV
<u>Queanbeyan, Queanbeyan River Underbridge</u>	320.935km, Goulburn To Bombala Railway	Queanbeyan	Queanbeyan	SGOV
<u>Railway Worker's Cottage</u>	37 Henderson Road	Queanbeyan	Queanbeyan	LGOV
<u>Remnant Cottage</u>	3 McKeahnie Street	Queanbeyan	Queanbeyan	LGOV
<u>Remnant House</u>	2 Federal Avenue	Queanbeyan	Queanbeyan	LGOV
<u>Remnant House</u>	145 Collett Street	Queanbeyan	Queanbeyan	LGOV
<u>Remnant House</u>	126 Collett Street	Queanbeyan	Queanbeyan	LGOV
<u>Remnant House</u>	46 Cooma Street	Queanbeyan	Queanbeyan	LGOV
<u>Remnant House</u>	48 Cooma Street	Queanbeyan	Queanbeyan	LGOV
<u>Remnant House</u>	58 Cooma Street	Queanbeyan	Queanbeyan	LGOV
<u>Riverside Cemetery</u>	Erin Street	Queanbeyan	Queanbeyan	LGOV
<u>Royal Hotel</u>	85-93 Monaro St	Queanbeyan	Queanbeyan	LGOV
<u>Rusten House</u>	ERIN and COLLETT PLACE	Queanbeyan	Queanbeyan	SGOV
<u>School</u>	35 Isabella Street	Queanbeyan	Queanbeyan	LGOV
<u>School of Arts (Council Chambers)</u>	251 Crawford Street	Queanbeyan	Queanbeyan	LGOV
<u>School of Arts Building (Former), Council Chambers</u>	251 Crawford Street	Queanbeyan	Queanbeyan	LGOV

<u>Shearing Shed Complex</u>	Old Cooma Road	Googong	Queanbeyan	LGOV
<u>Sir Murray Tyrell's Cottage</u>	11 Blundell Street	Queanbeyan	Queanbeyan	LGOV
<u>Site Gp8, Sheet 4 of Heritage Map</u>	Gale Precinct	Queanbeyan	Queanbeyan	LGOV
<u>St Benedict's Convent</u>	39 Isabella St	Queanbeyan	Queanbeyan	LGOV
<u>St Benedict's Convent</u>	Isabella Street	Queanbeyan	Queanbeyan	LGOV
<u>St Gregory's Roman Catholic Church</u>	15 Macquoid Street	Queanbeyan	Queanbeyan	LGOV
<u>St Paul's Church of England</u>	1290 Old Cooma Road	Googong	Queanbeyan	LGOV
<u>St Stephen's Presbyterian Church</u>	2 Morisset Street	Queanbeyan	Queanbeyan	LGOV
<u>St Stephens Presbyterian Church, Hall and Manse</u>	2 Morisset Street	Queanbeyan	Queanbeyan	LGOV
<u>St. Gregory's Roman Catholic Church</u>	15-21 Macquoid Street	Queanbeyan	Queanbeyan	LGOV
<u>St. Raphael's Roman Catholic Church and St. Gregory's School Complex</u>	47 - 59 Lowe Street	Queanbeyan	Queanbeyan	LGOV
<u>Station Master's Cottage</u>	47 Henderson Rd	Queanbeyan	Queanbeyan	LGOV
<u>Sunset - McCawley Homestead</u>	141 Googong Dam Road	Googong	Queanbeyan	LGOV
<u>Surveyor Street Group</u>	1-22 Surveyor St	Queanbeyan	Queanbeyan	LGOV
<u>Suspension Bridge</u>	Isabella St	Queanbeyan	Queanbeyan	LGOV
<u>Suspension Bridge Over Queanbeyan River</u>	Isabella Street	Queanbeyan	Queanbeyan	LGOV
<u>Temperance Hall</u>	6-8 Monaro St	Queanbeyan	Queanbeyan	LGOV
<u>Torpy's Cottage</u>	51 Macquoid Street	Queanbeyan	Queanbeyan	LGOV
<u>Tourist Hotel</u>	31-41 Monaro Street	Queanbeyan	Queanbeyan	LGOV
<u>Tourist Information Centre (Former Municipal Chambers)</u>	1-3 Farrer Pl	Queanbeyan	Queanbeyan	LGOV
<u>Victorian Georgian Cottage</u>	182 Crawford Street	Queanbeyan	Queanbeyan	LGOV
<u>Wanna Wanna Homestead, Garden and Outbuildings Group</u>	149 Wanna Wanna Road	Carwoola	Queanbeyan	LGOV

<u>Weatherboard Cottage</u>	276 Crawford Street	Queanbeyan	Queanbeyan	LGOV
<u>White Rocks Lime Burning Kiln</u>	300 Cooma Street	Queanbeyan	Queanbeyan	LGOV
<u>Wright Building</u>	200 Crawford Street	Queanbeyan	Queanbeyan	LGOV
<u>Ye Olde Kent Hotel</u>	2 Macquoid St	Queanbeyan	Queanbeyan	LGOV
<u>Ye Olde Kent House</u>	2 Macquoid Street	Queanbeyan	Queanbeyan	LGOV

There was a total of 225 records matching your search criteria.

Key:

LGA = Local Government Area

GAZ= NSW Government Gazette (statutory listings prior to 1997), HGA = Heritage Grant Application, HS = Heritage Study, LGOV = Local Government, SGOV = State Government Agency.

Note: While the Heritage Division seeks to keep the Inventory up to date, it is reliant on State agencies and local councils to provide their data. Always check with the relevant State agency or local council for the most up-to-date information.



EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about [Environment Assessments](#) and the EPBC Act including significance guidelines, forms and application process details.

Report created: 05/07/19 13:20:55

[Summary](#)

[Details](#)

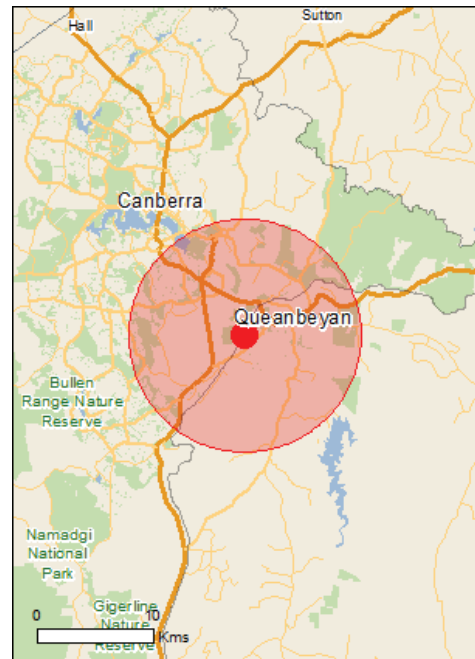
[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

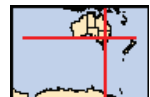
[Acknowledgements](#)



This map may contain data which are
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[Coordinates](#)

Buffer: 10.0Km



Summary

Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	None
National Heritage Places:	2
Wetlands of International Importance:	4
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	2
Listed Threatened Species:	40
Listed Migratory Species:	14

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <http://www.environment.gov.au/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Land:	23
Commonwealth Heritage Places:	44
Listed Marine Species:	21
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

State and Territory Reserves:	14
Regional Forest Agreements:	1
Invasive Species:	35
Nationally Important Wetlands:	1
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

National Heritage Properties		[Resource Information]
Name	State	Status
Historic		
High Court - National Gallery Precinct	ACT	Listed place
Old Parliament House and Curtilage	ACT	Listed place

Wetlands of International Importance (Ramsar)		[Resource Information]
Name	Proximity	
Banrock station wetland complex	800 - 900km upstream	
Hattah-kulkyne lakes	600 - 700km upstream	
Riverland	700 - 800km upstream	
The coorong, and lakes alexandrina and albert wetland	800 - 900km upstream	

Listed Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Name	Status	Type of Presence
Natural Temperate Grassland of the South Eastern Highlands	Critically Endangered	Community likely to occur within area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community likely to occur within area

Listed Threatened Species [Resource Information]

Name	Status	Type of Presence
Birds		
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Species or species habitat known to occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat known to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area
Limosa lapponica baueri Bar-tailed Godwit (baueri), Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat may occur within area
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Bar-tailed Godwit (menzbieri) [86432]	Critically Endangered	Species or species habitat may occur within

Name	Status	Type of Presence area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Polytelis swainsonii Superb Parrot [738]	Vulnerable	Species or species habitat known to occur within area
Rostratula australis Australian Painted-snipe, Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Fish		
Bidyanus bidyanus Silver Perch, Bidyan [76155]	Critically Endangered	Species or species habitat known to occur within area
Maccullochella peelii Murray Cod [66633]	Vulnerable	Species or species habitat likely to occur within area
Macquaria australasica Macquarie Perch [66632]	Endangered	Species or species habitat may occur within area
Frogs		
Litoria aurea Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat may occur within area
Litoria booroolongensis Booroolong Frog [1844]	Endangered	Species or species habitat may occur within area
Litoria castanea Yellow-spotted Tree Frog, Yellow-spotted Bell Frog [1848]	Critically Endangered	Species or species habitat likely to occur within area
Litoria raniformis Growling Grass Frog, Southern Bell Frog, Green and Golden Frog, Warty Swamp Frog [1828]	Vulnerable	Species or species habitat may occur within area
Insects		
Synemon plana Golden Sun Moth [25234]	Critically Endangered	Species or species habitat known to occur within area
Mammals		
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat likely to occur within area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat known to occur within area
Petauroides volans Greater Glider [254]	Vulnerable	Species or species habitat may occur within area
Petrogale penicillata Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat may occur within area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat known to occur within area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Name	Status	Type of Presence
Plants		
Caladenia actensis Canberra Spider Orchid [76138]	Critically Endangered	Species or species habitat known to occur within area
Calotis glandulosa Mauve Burr-daisy [7842]	Vulnerable	Species or species habitat may occur within area
Dodonaea procumbens Trailing Hop-bush [12149]	Vulnerable	Species or species habitat may occur within area
Eucalyptus aggregata Black Gum [20890]	Vulnerable	Species or species habitat likely to occur within area
Lepidium ginninderrense Ginninderra Peppercress [78474]	Vulnerable	Species or species habitat may occur within area
Lepidium hyssopifolium Basalt Pepper-cress, Peppercress, Rubble Pepper-cress, Pepperweed [16542]	Endangered	Species or species habitat may occur within area
Leucochrysum albicans var. tricolor Hoary Sunray, Grassland Paper-daisy [56204]	Endangered	Species or species habitat known to occur within area
Pomaderris pallida Pale Pomaderris [13684]	Vulnerable	Species or species habitat known to occur within area
Prasophyllum petilum Tarengo Leek Orchid [55144]	Endangered	Species or species habitat may occur within area
Rutidosis leptorrhynchoides Button Wrinklewort [7384]	Endangered	Species or species habitat known to occur within area
Swainsona recta Small Purple-pea, Mountain Swainson-pea, Small Purple Pea [7580]	Endangered	Species or species habitat likely to occur within area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat likely to occur within area
Reptiles		
Aprasia parapulchella Pink-tailed Worm-lizard, Pink-tailed Legless Lizard [1665]	Vulnerable	Species or species habitat known to occur within area
Delma impar Striped Legless Lizard [1649]	Vulnerable	Species or species habitat known to occur within area
Tymanocryptis pinguicolla Grassland Earless Dragon [66727]	Endangered	Species or species habitat known to occur within area
Listed Migratory Species		[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		

Name	Threatened	Type of Presence
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat likely to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Commonwealth Land [Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Name
Commonwealth Land -
Commonwealth Land - Airservices Australia
Commonwealth Land - Australian Postal Corporation
Commonwealth Land - Australian Telecommunications Commission
Commonwealth Land - Defence Housing Authority
Commonwealth Land - Telstra Corporation Limited
Defence - 10 WHYALLA ST - FYSHWICK
Defence - 139 CANBERRA AVE - FYSHWICK
Defence - 169 GLADSTONE ST - FYSHWICK

Name
Defence - AUSTRALIAN DEFENCE FORCE ACADEMY
Defence - CAMPBELL PARK
Defence - DEFENCE ARCHIVES - QUEANBEYAN
Defence - HMAS HARMAN - SYMONSTOWN
Defence - MAJURA FIELD FIRING RANGE
Defence - MAJURA NAVIGATION BEACON
Defence - MT JERRABOMBERRA OBSTRUCTION WARNING
Defence - NAVAL COMBAT DATA SYSTEM CENTRE - FYSHWICK
Defence - NORTHCOTT DRIVE PLAYING FIELDS (Addison Rd)
Defence - PHYSICS FIELD TESTING STATION - CANBERRA
Defence - RAAF BASE FAIRBAIRN
Defence - ROYAL MILITARY COLLEGE - DUNTROON
Defence - RUSSELL HILL COMPLEX
Defence - WERRIWA DEPOT

Commonwealth Heritage Places		[Resource Information]
Name	State	Status
Natural		
Majura Valley Natural Temperate Grassland	ACT	Listed place
State Circle Cutting	ACT	Listed place
Indigenous		
Aboriginal Embassy Site	ACT	Within listed place
Historic		
Anzac Memorial Chapel of St Paul	ACT	Listed place
Apostolic Nunciature	ACT	Listed place
Apple Shed Asset C58	ACT	Listed place
Australian American Memorial and Sir Thomas Blamey Square	ACT	Listed place
Blundells Farmhouse, Slab Outbuilding and Surrounds	ACT	Listed place
Captains Quarters Assets B1 to B4	ACT	Listed place
Carillon	ACT	Listed place
Changi Chapel	ACT	Listed place
Commandants House Asset B9	ACT	Listed place
Commencement Column Monument	ACT	Listed place
Communications Centre	ACT	Listed place
Duntroon House and Garden	ACT	Listed place
East Block Government Offices	ACT	Listed place
Edmund Barton Offices	ACT	Listed place
General Bridges Grave	ACT	Listed place
High Court - National Gallery Precinct	ACT	Listed place
High Court of Australia	ACT	Listed place
John Gorton Building	ACT	Listed place
National Gallery of Australia	ACT	Listed place
National Rose Gardens	ACT	Listed place
Old Parliament House Gardens	ACT	Listed place
Old Parliament House and Curtilage	ACT	Listed place
Parade Ground and Associated Buildings Group	ACT	Listed place
Parliament House Vista	ACT	Listed place
Parliament House Vista Extension - Portal Buildings	ACT	Listed place
Patent Office (former)	ACT	Listed place
RMC Duntroon Conservation Area	ACT	Listed place
Redwood Plantation	ACT	Listed place
Residence Asset B5	ACT	Listed place
Residence Asset B7	ACT	Listed place
Residence Asset C12	ACT	Listed place
Residence Asset C13	ACT	Listed place
Residence Asset C14	ACT	Listed place
Residence Asset C15	ACT	Listed place
Residence Asset C7	ACT	Listed place
Residence Asset C8	ACT	Listed place
Russell Precinct Heritage Area	ACT	Listed place
Sculpture Garden National Gallery of Australia	ACT	Listed place
Three Wartime Bomb Dump Buildings	ACT	Listed place
York Park North Tree Plantation	ACT	Listed place
Russell Cafeteria	ACT	Within listed place

Listed Marine Species		[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat likely to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Species or species habitat known to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area
Chrysococcyx osculans Black-eared Cuckoo [705]		Species or species habitat likely to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area

Name	Threatened	Type of Presence
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area

Extra Information

State and Territory Reserves	[Resource Information]
Name	State
Callum Brae	ACT
Cuumbeun	NSW
Farrer Ridge	ACT
Isaacs Ridge	ACT
Jerrabomberra Wetlands	ACT
Molonglo Gorge	ACT
Mt Ainslie	ACT
Mt Mugga Mugga	ACT
Mt Pleasant	ACT
Queanbeyan	NSW
Red Hill	ACT
Unnamed	ACT
Wanniassa Hills	ACT
West Jerrabomberra	ACT

Regional Forest Agreements [[Resource Information](#)]

Note that all areas with completed RFAs have been included.

Name	State
Southern RFA	New South Wales

Invasive Species [[Resource Information](#)]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resources Audit, 2001.

Name	Status	Type of Presence
Birds		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Alauda arvensis Skylark [656]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area
Carduelis chloris European Greenfinch [404]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Turdus merula Common Blackbird, Eurasian Blackbird [596]		Species or species habitat likely to occur within area
Mammals		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Feral deer Feral deer species in Australia [85733]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus norvegicus Brown Rat, Norway Rat [83]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Alternanthera philoxeroides Alligator Weed [11620]		Species or species habitat likely to occur within area
Cytisus scoparius Broom, English Broom, Scotch Broom, Common Broom, Scottish Broom, Spanish Broom [5934]		Species or species habitat likely to occur

Name	Status	Type of Presence
Genista monspessulana Montpellier Broom, Cape Broom, Canary Broom, Common Broom, French Broom, Soft Broom [20126]		within area Species or species habitat likely to occur within area
Genista sp. X Genista monspessulana Broom [67538]		Species or species habitat may occur within area
Lycium ferocissimum African Boxthorn, Boxthorn [19235]		Species or species habitat likely to occur within area
Nassella neesiana Chilean Needle grass [67699]		Species or species habitat likely to occur within area
Nassella trichotoma Serrated Tussock, Yass River Tussock, Yass Tussock, Nassella Tussock (NZ) [18884]		Species or species habitat likely to occur within area
Opuntia spp. Prickly Pears [82753]		Species or species habitat likely to occur within area
Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
Rubus fruticosus aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Sagittaria platyphylla Delta Arrowhead, Arrowhead, Slender Arrowhead [68483]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Senecio madagascariensis Fireweed, Madagascar Ragwort, Madagascar Groundsel [2624]		Species or species habitat likely to occur within area
Ulex europaeus Gorse, Furze [7693]		Species or species habitat likely to occur within area

Nationally Important Wetlands		[Resource Information]
Name	State	
Jerrabomberra Wetlands	ACT	

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species distributions have been derived through a variety of methods. Where distributions are well known and if time permits, maps are derived using either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc) together with point locations and described habitat; or environmental modelling (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

Coordinates

-35.36499 149.19516

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- [-Natural history museums of Australia](#)
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence](#)
- [Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- [-Other groups and individuals](#)

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact Us](#) page.

Data from the BioNet BioNet Atlas website, which holds records from a number of custodians. The data are only indicative and cannot be considered a comprehensive inventory, and may contain errors and omissions. Species listed under the Sensitive Species Data Policy may have their locations denatured (^ rounded to 0.1Å°; ^^ rounded to 0.01Å°). Copyright the State of NSW through the Office of Environment and Heritage. Search criteria : Public Report of all Valid Records of Threatened (listed on TSC Act 1995) ,Commonwealth listed ,CAMBA listed ,JAMBA listed or ROKAMBA listed Entities in selected area [North: -35.33 West: 149.15 East: 149.25 South: -35.43] returned a total of 312 records of 31 species.
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Kingdom	Class	Family	Species Code	Scientific Name	Exotic	Common Name	NSW status	Comm. status	Records	Info
Animalia	Reptilia	Pygopodidae	2144	<i>Aprasia parapulchella</i>		Pink-tailed Legless Lizard	V,P	V	47	
Animalia	Reptilia	Agamidae	2824	<i>Tympanocryptis pinguicollis</i>		Grassland Earless Dragon	E1,P	E	14	
Animalia	Reptilia	Varanidae	2287	<i>Varanus rosenbergi</i>		Rosenberg's Goanna	V,P		5	
Animalia	Aves	Apodidae	0335	<i>Apus pacificus</i>		Fork-tailed Swift	P	C,J,K	1	
Animalia	Aves	Apodidae	0334	<i>Hirundapus caudacutus</i>		White-throated Needletail	P	C,J,K	2	
Animalia	Aves	Ardeidae	0197	<i>Botaurus poiciloptilus</i>		Australasian Bittern	E1,P	E	1	
Animalia	Aves	Accipitridae	0225	<i>Hieraaetus morphnoides</i>		Little Eagle	V,P		8	
Animalia	Aves	Cacatuidae	0268	^^ <i>Callocephalon fimbriatum</i>		Gang-gang Cockatoo	V,P,3		14	
Animalia	Aves	Cacatuidae	0265	^ <i>Calyptorhynchus lathami</i>		Glossy Black-Cockatoo	V,P,2		1	
Animalia	Aves	Psittacidae	0260	<i>Glossopsitta pusilla</i>		Little Lorikeet	V,P		1	
Animalia	Aves	Psittacidae	0277	^^ <i>Polytelis swainsonii</i>		Superb Parrot	V,P,3	V	2	
Animalia	Aves	Meropidae	0329	<i>Merops ornatus</i>		Rainbow Bee-eater	P	J	1	
Animalia	Aves	Climacteridae	8127	<i>Climacteris picumnus victoriae</i>		Brown Treecreeper (eastern subspecies)	V,P		2	
Animalia	Aves	Acanthizidae	0504	<i>Chthonicola sagittata</i>		Speckled Warbler	V,P		16	
Animalia	Aves	Meliphagidae	0598	<i>Grantiella picta</i>		Painted Honeyeater	V,P	V	1	
Animalia	Aves	Meliphagidae	8303	<i>Melithreptus gularis gularis</i>		Black-chinned Honeyeater (eastern subspecies)	V,P		1	
Animalia	Aves	Neosittidae	0549	<i>Daphoenositta chrysoptera</i>		Varied Sittella	V,P		7	
Animalia	Aves	Pachycephalidae	0405	<i>Pachycephala olivacea</i>		Olive Whistler	V,P		1	
Animalia	Aves	Artamidae	8519	<i>Artamus cyanopterus cyanopterus</i>		Dusky Woodswallow	V,P		27	
Animalia	Aves	Petroicidae	8367	<i>Melanodryas cucullata cucullata</i>		Hooded Robin (south-eastern form)	V,P		8	
Animalia	Aves	Petroicidae	0380	<i>Petroica boodang</i>		Scarlet Robin	V,P		16	
Animalia	Aves	Petroicidae	0382	<i>Petroica phoenicea</i>		Flame Robin	V,P		10	
Animalia	Aves	Estrildidae	0652	<i>Stagonopleura guttata</i>		Diamond Firetail	V,P		7	
Animalia	Mammalia	Pteropodidae	1280	<i>Pteropus poliocephalus</i>		Grey-headed Flying-fox	V,P	V	4	
Animalia	Mammalia	Vespertilionidae	1834	<i>Miniopterus schreibersii oceanensis</i>		Eastern Bentwing-bat	V,P		6	
Animalia	Insecta	Castniidae	1003	<i>Synemon plana</i>		Golden Sun Moth	E1	CE	25	
Plantae	Flora	Asteraceae	9071	<i>Leucochrysum albicans</i> var. <i>tricolor</i>		Hoary Sunray		E	27	
Plantae	Flora	Asteraceae	1645	<i>Rutidosia leptorrhynchoidea</i>		Button Wrinklewort	E1	E	41	
Plantae	Flora	Fabaceae (Faboideae)	3056	<i>Swainsona recta</i>		Small Purple-pea	E1	E	4	
Plantae	Flora	Fabaceae (Faboideae)	8538	<i>Swainsona sericea</i>		Silky Swainson-pea	V		10	
Plantae	Flora	Orchidaceae	4386	^ <i>Caladenia tessellata</i>		Thick Lip Spider Orchid	E1,P,2	V	2	

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