Review of Environmental Factors (REF)

PROJ2022-0058

Jewry Street Extension

September 2022

TAMWORTH REGIONAL COUNCIL

Regional Services

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1. Introduction

The purpose of the review of environmental factors (REF) is to describe the proposal and the environmental factors in which it will take place, in order to identify the main environmental impacts and decide whether or not the project can proceed.

For projects that are going to proceed, the REF will be a tool for setting the mitigation measures for the work. For the purposes of this work Tamworth Regional Council (TRC) is the proponent and determining authority under Division 5.1 of the Environmental Planning and Assessment Act 1979 (EP&A Act).

The description of the proposed works and assessment of associated environmental impacts has been undertaken in the context of clause 171 of the *Environmental Planning and Assessment Regulation 2021*, the *Guidelines for Division 5.1 assessments* (DPE 2022), the *Biodiversity Conservation Act 2016* (BC Act), the *Fisheries Management Act 1994* (FM 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 5.5 of the EP&A Act including that Tamworth Regional Council examine and consider 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 under Division 5.2 of the EP&A Act
- The significance of any impact on threatened species as defined by the BC Act and/or FM Act, in section 1.7 of the EP&A Act and therefore the requirement for a Species Impact Statement or a Biodiversity Development Assessment Report
- The potential for the proposal to significantly impact a matter of national environmental significance, including nationally listed threatened biodiversity matters, or the environment of Commonwealth land.

2. Proposal

2.1. Proposal identification

Table 1 - Proposal identification information

Proposal Details	
Title	Tamworth Global Gateway Park – Jewry Street Extension
File number	PROJ2020-0058-C1
REF Date	14 September 2022

2.2. Description

2.2.1. Location

Table 2 - Proposal location information

Location Details	
Road name and number	Jewry Street and Wallamore Road
Road file number	7744 / 1263
Segments	7744-40 to 7744-50, 1263-30 and 1263-40
Road ownership	Tamworth Regional Council
Location / nearest cross road(s)	Taminda
Land zoning	RU4 (Primary Production Small Lots) and SP3 (Tourist)
Lot and DP	Lot 59 DP1227482, road reserve shown on DP1234850 and existing road corridor for Jewry Street and Wallamore Road.
Land file number	LF31780 and LF7866

The location of the proposal relative to the Tamworth Global Gateway Park, Taminda and Westdale is shown in **Figure 1**.

The Tamworth Global Gateway Park (TGGP) is an area of land adjacent to the Tamworth Regional Airport and the Glen Artney Industrial Estate, being developed as industrial and commercial land by Council. The land is also the site of the proposed Tamworth Intermodal Freight Facility.

Figure 1: Location of the proposal.

2.2.2. Description of proposed works

Tamworth Regional Council proposes to build the Jewry Street Extension (the proposal) starting in late 2022. The proposal is part of the broader Tamworth Global Gateway Park (TGGP) project and supports that project.

The general layout of the proposal is shown in **Figure 2**. Design drawings provide further detail and are provided at **Appendix B**.

Figure 2: Conceptual layout of the proposal.

Key features of the proposal include:

- Construct a heavy vehicle bypass of the local Taminda road network, including a new roundabout at the intersection with Dampier Street, a western connection to Wallamore Road and a cul-de-sac to terminate the eastern section of Wallamore Road;
- Implement drainage improvements including to adequately mitigate flood impacts on surrounding properties;
- Alleviate future congestion that will be experienced at the current rail level crossing on Wallamore Road if the proposal does not go ahead;
- Improve current congestion experienced in the Taminda road network;
- Improve accessibility to the TGGP;
- Deliver the works within the allocated budget;
- Ensure all relevant and interested business and community members are informed and effectively communicated with prior to and during the works; and
- Deliver the works within the GLE funding deadlines.

The proposal is anticipated to involve the following work methodology:

- Work within standard construction hours except where required to protect the operation of essential infrastructure. For example, cut-in of new road lanes needs to be performed outside standard hours to minimise disruption.
- Establishment to site (and maintenance of such) including erection of site fencing as required, provision of amenity facilities, erection of construction signage, installation of environmental control measures, installation of traffic control measures and the like;
- Quality assurance and verification as per the Contractor prepared Quality Management Plan;
- Construction of the roads and roundabout:
    - Construction of road and roundabout pavements (flood plain, roundabout, Jewry Street leg, Dampier Street leg, Wallamore Road tie-in, Wallamore Road cul-de-sac) in accordance with the design drawings;
    - Installation of kerb and gutter as per the design drawings;
    - Construction of roundabout annulus and splitter islands as per the design drawings;
    - Construction of asphalt driveway causeway to Somerset Farm, and 7mm primer seal pavement to the property boundary;
    - Installation of asphalt wearing course, including primer seal beneath, as per the design drawings;
    - Installation of line marking as required;
    - Installation of guide posts as required; and
    - Supply and installation of signage as required.
- Construction of stormwater infrastructure;
    - Formation of Timbumburi Creek channel;
    - Formation of table drains, channels, batters, and slopes;
    - Installation of RCP transverse crossings, pits, lintels/grates, headwalls, and scour protection;
    - Installation of 5-cell 3600x750 RCBC structures, including foundation treatment, base slab, RCBC crown unit installation, apron slabs, wingwalls, headwalls, backfill, scour protection and monowills handrail;
    - Formation of extended outlet channel from 5-cell RCBC structure;

  - Installation of subsoil drainage behind all kerb and gutter;
  - Installation of scour protection to all concrete and asphalt elements that are within channels/drains;
- Construction of auxiliary works;
  - Clearing of vegetation required to construct the works;
  - Stripping and stockpiling of topsoil;
  - Construction of turnaround area at the rear of the jockey club;
  - Relocation of overhead electrical infrastructure (design pending) including construction coordination and approval from Essential Energy;
  - Relocation of cemetery boundary fence with the fencing matched;
  - Construction of a segment of the new rising sewer main beneath the new road (refer to W&W design package);
  - Construction of gravity sewer concrete protection slab;
  - Construction of two gas main concrete protection slabs including construction coordination and approval from APA Group;
  - Hydro mulching of channels, drains, and verges;
  - Installation of a strip of turf behind all new kerbs; and
  - Installation of topsoil and mulch in the centre of the roundabout.
- Coordination and liaison with adjacent contractors;
- Engagement and management of all subcontractors and consultants required to undertake the works;
- Obtaining construction permits for works adjacent to or within the minimum clear zones for external authority services where required;
- Provision of marked up WAE drawings;
- All quality assurance and conformance testing and measurements;
- Implementation of an ITP process for quality verification. This is to be submitted to the Client for approval prior to commencing works;
- Implementation of an environmental process for the protection of the environment in accordance with the Review of Environmental Factors, including sediment and erosion control. This is to be submitted to the Client for approval prior to commencing works;
- Implementation of a Work, Health and Safety process to ensure compliance with WHS Act 2011 and associated regulations. This is to be submitted to the Client for approval prior to commencing works;
- Implementation of a traffic process for the management of vehicular and pedestrian traffic.

2.2.3. Objective of works

The goal of this project is to meet Councils vision of creating “An Accessible Region” through providing a safe and efficient transport network. Objectives/goals includes:

- Construct a heavy vehicle bypass of the local Taminda road network;
- Alleviate future congestion that will be experienced at the current level crossing on Wallamore Road;
- Improve current congestion experienced in the Taminda local road network;
- Improve accessibility to the TGGP;
- Deliver the works within the allocated budget;

- Ensure all relevant and interested business and community members are informed and effectively communicated with prior to and during the works; and
- Deliver the works within the GLE funding deadlines.

2.2.4. Ancillary facilities

Ancillary facilities including compound and stockpile sites will be required for the proposal. Their location is in **Figure 3** and have been chosen to be:

- more than 50 metres from waterways;
- areas of low ecological and heritage conservation significance;
- require no significant clearing of native vegetation beyond that already required for the project;
- minimises impact on amenity of the closest sensitive receiver; and
- located on relatively level ground.

Figure 3 Compound and Stockpile site

Table 3 - Ancillary facilities

Ancillary facilities	Yes / No
Will the proposal require the use or installation of a compound site? Detailed in Section 2.2.4 and Figure 3.	Yes
Will the proposal require the use or installation of a stockpile site? Detailed in Section 2.2.4 and Figure 3.	Yes
Are any other ancillary facilities required (e.g. temporary plants, parking areas, access tracks)? Parking areas will be with the main office. Access tracks will predominantly be within the footprint of the road.	Yes

2.2.5. Proposed date of commencement

Construction of the proposal would start in late September.

2.2.6. Estimated length of construction period

Construction works are likely to require approximately 6 months to complete.

2.2.7. Triggers for additional considerations

Table 4 - Proposal triggers for additional considerations

Proposal Timing Triggers	Yes / No
Will the proposal timing fall over or within the period of higher seasonal rainfall? Tamworth typically experiences higher rainfall heading into summer, with lowest average rainfall experienced in April and the highest in January. Further, higher than usual rainfall is predicted for the remainder of 2022 and this will require emphasis on erosion and sediment controls as well as potentially causing significant delays to the project.	Yes
Will the proposal fall in or over spring flowering period of cold weather dormant vegetation? The proposal would be constructed during spring, however vegetation in the proposal footprint is predominantly non-native apart from native trees planted in shelter belts. The proposal is therefore not likely to adversely affect important native vegetation or habitat.	Yes

2.3. Need and options

2.3.1. Option considered

The options considered for the proposal included:

1. Continued use of the existing road network (the “do nothing” option).
2. Construction of the whole Taminda Bypass including the southern section from Wallamore Road to Gunnedah Road (Oxley Highway) in one stage.
3. The proposal as set out in this review of environmental factors, including a roundabout at the Dampier Street intersection and a cul-de-sac on Wallamore Road.

The preferred option is:

3. The proposal as set out in this review of environmental factors.

Continued use of the current road network would require vehicles from the TGGP accessing Wallamore Road or the Oxley Highway to use Dampier Street which will be intermittently closed at the level crossing during train movements. The efficiency of those who currently use this route and safety of the road network would be impacted by future growth and increased traffic as a result and is predicted to fail under future traffic levels. If nothing is done, there would be an impact on the growth and efficiencies of the transport and freight industry as well as safety risks at the currently highly trafficked intersections that will remain and increase with future traffic levels.

The Transport Impact Assessment for TGGP (GTA Consultants 2018) indicates that the southern section of the Taminda Bypass will be required to maintain satisfactory road network performance some time between 2030 and 2040. To construct the entire bypass in 2022-2023 is therefore not necessary and would divert resources from other more urgent road network needs.

2.3.2. Justification for the proposal

The proposal will provide an important link in the road network, allowing heavy vehicles to access the TGGP and Intermodal site without travelling through the existing Taminda local road network and will eliminate the level crossing on Wallamore Road from the freight network. It aims to improve the connectivity, traffic congestion and safety of road users around Taminda and ensure acceptable performance of the road network as Tamworth continues to grow.

This project aligns with Councils Community Strategic plan 2017-2027 through a range of transport and logistics focussed objectives including P4.1 - Establish rail, air, land connections to enable local, national and international trade, A2.1 - Improve connections with capital cities, other regions and within the region and A2.3 - Traffic management and traffic safety planning.

2.4. Statutory and planning framework

2.4.1. State Environmental Planning Policy (Transport and Infrastructure) 2021 (T&ISEPP)

T&ISEPP aims to facilitate the effective delivery of infrastructure across the state. Section 2.109 of the T&ISEPP permits development on any land for the purpose of a road or road infrastructure facilities to be carried out by or on behalf of a public authority without consent.

As the proposal is appropriately characterised as development for the purposes of a road or road infrastructure facilities and is to be carried out by or on behalf of a public authority (Council), it can be assessed under Division 5.1 of the EP&A Act. Development consent from Council is not required.

The proposal is not located on land reserved under the *National Parks and Wildlife Act 1974* and does not require development consent or approval under the *State Environmental Planning Policy (Resilience and Hazards) 2021* or *State Environmental Planning Policy (Planning Systems) 2021*.

2.4.2. Tamworth Regional Local Environmental Plan 2010 (LEP)

Whilst the proposal is permitted by the T&ISEPP, the LEP has been considered in the development of the proposal. The land where the proposal would be built is zoned RU4 (Primary Production Small Lots) and SP3 (Tourist), and roads are permitted without consent in both zones under the LEP.

The site is within the flood planning area. Whilst not strictly required, the proposal is consistent with the requirements of Clause 5.21(2) of the LEP as it:

a) is compatible with the flood function and behaviour on the land, and

b) will not adversely affect flood behaviour in a way that results in detrimental increases in the potential flood affectation of other development or properties, and

c) will not adversely affect the safe occupation and efficient evacuation of people or exceed the capacity of existing evacuation routes for the surrounding area in the event of a flood, and

d) incorporates appropriate measures to manage risk to life in the event of a flood, and

e) will not adversely affect the environment or cause avoidable erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses.

Consistent with Clause 5.21(3) of the LEP, this review of environmental factors considers:

a) the impact of the development on projected changes to flood behaviour as a result of climate change,

b) the intended design and scale of buildings resulting from the development,

c) whether the development incorporates measures to minimise the risk to life and ensure the safe evacuation of people in the event of a flood,

d) the potential to modify, relocate or remove buildings resulting from development if the surrounding area is impacted by flooding or coastal erosion.

2.4.3. Other relevant legislation and environmental planning instruments

Environment Protection and Biodiversity Conservation Act 1999 (Cth)

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is the Australian Government's key piece of environmental legislation, focusing on Matters of National Environmental Significance (MNES), with States and Territories having responsibility for matters of State and Local significance.

Approval is required from the Commonwealth Minister for the Environment for any actions on Commonwealth land that is likely to have a significant impact on the environment. Additionally, approval is required for any actions on any land that may result in a significant impact to MNES.

Consideration of MNES is provided in **Section 4.2** and **Appendix C**. These findings conclude that no approvals under the EPBC Act are likely to be required.

Biodiversity Conservation Act 2016

The *Biodiversity Conservation Act 2016* (BC Act) and its supporting regulations commenced on 25 August 2017. The BC Act repealed the *Threatened Species Conservation Act 1995* along with other natural resource management legislation. The BC Act sets out the assessment framework for threatened species and ecological communities for Part 5 activities (amongst other types of development).

Section 7.3 of the BC Act requires that the significance of the impact on threatened species, populations, and endangered ecological communities listed under the BC Act is assessed using the 'test of significance'. Where a significant impact is likely to occur, the Proponent must either apply the Biodiversity Offsets Scheme or prepare a Species Impact Statement (SIS).

Relevant database searches were performed, and the likelihood of occurrence in the Proposal footprint assessed. Since there is limited vegetation within the Proposal footprint, it was determined that species' habitat would not be impacted by the Proposal, and as such an assessment of significance is not required. The results are presented in **Appendix C**.

Heritage Act 1977

The *Heritage Act 1977* provides for the conservation of items of environmental heritage in NSW. The *Heritage Act 1997* defines heritage as items or places that are of state and/or local heritage significance and include: places, buildings, works, relics, moveable objects and precincts. The *Heritage Act 1977* establishes a register, including an inventory and list, to protect the listed items.

According to the *Heritage Act 1977,* a person cannot impact a heritage item listed on the State Heritage Register (SHR) or protected by an interim heritage order unless approval has been obtained under Part 4 of the Act. Works also cannot disturb/excavate any land known or likely to contain historic relics unless the disturbance/excavation is carried out in accordance with an excavation permit issued under Section 139 of the Act.

No known Historic heritage sites or items were identified within or near the Proposal footprint (refer **Section 3.5**) so further heritage assessment is not required.

National Parks and Wildlife Act 1974

The *National Parks and Wildlife Act 1974* (NP&W Act) provides the basis for the legal protection and management of Aboriginal sites within NSW. Sections 84 and 90 of the NP&W Act provide statutory protection for any physical/material evidence of Aboriginal occupation of NSW and places of cultural heritage significance to the Aboriginal community.

The key principles of the NP&W Act in relation to Aboriginal heritage are the prevention of unnecessary or unwarranted destruction of Aboriginal objects, and the active protection and conservation of objects which are of high cultural significance. It is an offence to knowingly harm or desecrate an Aboriginal object, irrespective of its nature or significance, without the prior consent of the Secretary of the Department of Planning and Environment (DPE). It is an offence to harm or desecrate an Aboriginal object or a declared Aboriginal place (strict liability offence). An AHIP under Section 90 of the NP&W Act is required from DPE if the objects/places cannot be avoided.

An Aboriginal Heritage Information Management System (AHIMS) search was undertaken as part of this REF and can be found in **Appendix C**. No Aboriginal objects or places were identified within or near the Proposal footprint (refer **Section 3.5**).

The site is previously disturbed and so the Proposal is unlikely to impact any items of Aboriginal heritage. With reference to the Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW, the project alignment is disturbed and Aboriginal objects are unlikely to be harmed by the work so an AHIP is not required for this Proposal.

Biosecurity Act 2015

The *Biosecurity Act 2015* provides control mechanisms for the prevention, elimination, management, and monitoring of listed biosecurity matters in order to reduce the negative impact of biosecurity matters on the economy, environment, and community of NSW. The *Biosecurity Act 2015* specifies the duties of both public and private landholders with respect to the control of biosecurity matters.

The Proponent is responsible for the control of biosecurity matters within the Proposal footprint, which includes any declared noxious weeds that may be encountered during the construction phase of the Proposal. Any biosecurity matters identified within the Proposal footprint are to be dealt with in accordance with their priority.

Fisheries Management Act 1994

The *Fisheries Management Act 1994* (FM Act) is the primary Act governing the management of fish and their habitat in NSW. The FM Act aims to conserve the biodiversity of fish and aquatic vegetation and to protect fish habitat by providing for the management of dredging and reclamation work, consistent with the objectives of ecologically sustainable development. The FM Act lists threatened species, populations, and ecological communities under Schedules 4, 4A and 5. Schedule 6 lists key threatening processes for species, population, and ecological communities in NSW waters.

Permits are required under the following sections of the FM Act for Council to undertake the activities specified:

- Section 200: Carrying out of dredging and reclamation works;

- Section 219: Works that block the passage of fish.

Blockages to fish passage can be either temporary or permanent and may include placement of erosion and sediment controls across waterways, inappropriately designed drainage structures that block fish passage, bunding, and dewatering works during the Proposal works.

The Proposal does not involve any dredging, reclamation works, or the blocking of fish passage. As such, no permits under the FM Act are required.

Water Management Act 2000

The *Water Management Act 2000* (WM Act) makes provisions to provide for the sustainable and integrated management of the water sources of NSW for the benefit of both present and future generations. 'Water sources' are defined very broadly and include any river, lake, estuary, place where water occurs naturally on or below the surface on the ground and NSW coastal waters.

The WM Act controls the extraction of water, the use of water, the construction of works such as dams and weirs and the carrying out of activities in or near water sources in New South Wales.

If a 'controlled activity' is proposed on 'waterfront land' (being land up to 40m inland from the top of bank), a Controlled Activity Approval (CAA) is required under the WM Act. Controlled activities include the removal and deposition of material (earthworks) on waterfront land and any activity that affects the quantity or flow of water in a water source. However, under Clause 38 of the *Water Management (General) Regulation 2011,* public authorities are exempt from needing to obtain CAAs. Hence TRC is exempt from the requirement to obtain a CAA for the construction phase of the Proposal; noting that the construction phase of the Proposal would otherwise be consistent with the requirements of the WM Act.

Protection of the Environment Operations Act 1997

The *Protection of the Environment Operations Act 1997* (POEO Act) includes provisions relating to the protection of the environment. One of the objectives of the POEO Act is to protect, restore, and enhance the quality of the environment in NSW, having regard to the need to maintain ecologically sustainable development.

There are serious offences under the POEO Act for causing pollution of air, noise, water or land. The Proponent and any associated contractors are required to meet the waste licensing obligations of Clause 39-42 of Schedule 1 of the POEO Act during the construction phase of the Proposal.

TRC and any associated contractors are obliged to notify EPA when a "pollution incident" occurs that causes or threatens "material harm" to the environment.

Waste Avoidance and Resource Recovery Act 2001

The purpose of the *Waste Avoidance and Resource Recovery Act 2001* (WARR Act) is to minimise the consumption of resources and to control the management and disposal of any waste materials through waste avoidance, re-use, and recycling in accordance with the principles of Ecologically Sustainable Development. The waste hierarchy established under the WARR Act is one that ensures that resource management options are considered against the following priorities:

- Avoidance including action to reduce the amount of waste generated by households, industry and all levels of government;
- Resource recovery including reuse, recycling, reprocessing and energy recovery, consistent with the most efficient use of the recovered resources; and
- Disposal including management of all disposal options in the most environmentally responsible manner.

The Proposal would generate waste (refer **Section 3.10**) and is therefore required to consider the waste management hierarchy.

Roads Act 1993

The *Roads Act 1993* is administered by the Transport for NSW (TfNSW), local government, or DPE Crown Lands. TfNSW has jurisdiction over major roads, DPE Crown Lands over Crown roads and local government has jurisdiction over other public roads. Under Section 138, consent from the appropriate roads authority must be received if there is a need to:

- Erect a structure or carry out work in, on or over a public road;
- Dig up or disturb the surface of a public road;
- Remove or interfere with a structure, work or tree on a public road;
- Pump water into a public road from any land adjoining the road; or
- Connect a road (whether public or private) to a classified road, otherwise than with the consent of the appropriate road authority.

Under Section 71 of the Act, TRC as the roads authority for local roads may carry out work on any public road and any other land under its control.

Dampier Street and Jewry Street are not classified but are regional roads where Council maintains administrative responsibility for the roads but receives financial assistance from Transport for NSW for their maintenance.

Under Section 10, Council may, by notice published in the Gazette, dedicate any land held by it (including land acquired by it under Division 1 of Part 12) as a public road.

2.5. Community and agency consultation

2.5.1. T&ISEPP consultation

Division 1 of Part 2.2 of T&ISEPP identifies situations where consultation needs to be undertaken by public authorities with the local council or other government agencies prior to the commencement of some forms of development.

Clauses 2.10 to 2.12 of the T&ISEPP require public authorities to consult with the local council where the development has impacts on council-related infrastructure or services, impacts on local heritage or impacts on flood liable land. As TRC is the Proponent for the Proposal, Clauses 2.10 to 2.12 do not apply. The consultation triggers for public authorities other than with local council under Clause 2.13 and Clause 2.15 of the T&ISEPP have been reviewed in **Table 5**.

Table 5 - Planning consultation record

Consultation trigger	Application to proposal
Clause 2.13 Consultation with SES about development on flood liable land.	Parts of the Proposal footprint are flood liable land. Council will notify the SES prior to construction of the proposal and will take into account any response received within 21 days.
Clause 2.15(2)(a) Development adjacent to land reserved under the NP&W Act.	The study area is not located adjacent to reserved land under the NP&W Act.
2.15(2)(b) Development on land in Zone C1 National Parks and Nature Reserves or in a land use zone that is equivalent to that zone, other than land reserved under the *National Parks and Wildlife Act 1974.*	The proposal would not take place on land in a zone equivalent to Zone C1 National Parks and Nature Reserves.

Consultation trigger	Application to proposal
2.15(2)(c) Development comprising a fixed or floating structure in or over navigable waters.	The proposal would not take place over navigable waters.
Clause 2.15(2)(d) Development that may increase the amount of artificial light in the night sky and that is on land within the dark sky region as identified on the dark sky region map.	The study area is in the dark sky region, however the Proposal would not increase the amount of artificial light in the night sky. AS1158 and AS4282 manage dark sky compliance.
Clause 2.15(2)(e) Development on defence communications facility buffer land within the meaning of clause 5.15 of the Standard Instrument.	The study area is not within defence communications facility buffer land.
Clause 2.15(2)(f) Development on land in a mine subsidence district within the meaning of the *Coal Mine Subsidence Compensation Act 2017*.	The study area is not in a mine subsidence district.

2.5.2. Other agency and community consultation

In addition to the consultation required by the T&ISEPP, consultation is required or strongly advised where a proposal may have significant interest or impact on businesses or the community, or interacts with land or infrastructure owned by another agency.

The need for consultation with the community and other agencies is addressed in **Table 6**

Table 6 Community and other agency consultation record

Triggers for Consultation with Community or other Agencies	Yes / No
Will the proposal interact or intersect a service (Telstra, Jemma, Essential Energy?) The proposal will require the relocation and/or protection of services including two APA Group gas mains and an Essential Energy overhead electrical line. Preliminary consultation has been undertaken during design of the proposal and further consultation will be undertaken for construction of the proposal.	Yes
Will the proposal impact on Crown Land or a Travelling stock route (TSR)? The proposal will take place on Council road reserve. There is no need for Council to consult with Crown Lands or Local Lands Services.	No
Will the proposal impact or intersect a road or road structure where Transport for NSW is the Authority? The proposal will only intersect Council roads, remote from intersections with State roads.	No
Local Community Widespread community consultation has occurred as part of the Tamworth Global Gateway Park project. Any unidentified issues raised as a result of this will be addressed by the Proponent before the commencement of construction activities.	Yes

Triggers for Consultation with Community or other Agencies	Yes / No
Local Business Widespread community consultation has not occurred. The Proponent will advertise the Proposal in the local newspaper and on the Proponent's website. Any previously unidentified issues raised as a result of this will be addressed by the Proponent before the commencement of construction activities.	Yes

3. Environmental assessment

This section provides a detailed description of the potential environmental impacts associated with the construction and operation of the proposal. All aspects of the environmental potentially impacted upon by the proposal are considered. The factors specified in Section 170 of the *Environmental Planning and Assessment Regulation 2021*, the *Guidelines for Division 5.1 Assessments* (DPE 2022) and the matters of national environmental significance under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* are also considered in section 5. Site-specific safeguards are provided to ameliorate the identified potential impacts.

3.1. Soil

Table 7 - Soil environmental considerations

Impact Code	Description of Existing Environmental and Potential Impacts	Yes / No
S.1	Does the proposal involve the disturbance of large areas (e.g. >2 hectares) for earthworks? The total area of earthworks required would be about 5ha. A construction environmental management plan will be prepared including an erosion and sediment control plan to adequately mitigate the risk of erosion causing water pollution resulting from this disturbance.	Yes
S.2	Does the site have constraints for erosion and sedimentation controls such as steep gradients or narrow corridors? A key constraint for erosion and sediment controls is the requirement to divert a drainage line running through the proposal site, as well as the location of parts of the proposal on flood liable land. The CEMP prepared for the proposal will include specific measures for the proposed drainage line diversion in accordance with Volumes 1 and 2D of *Managing Urban Stormwater: Soils and Construction* (Landcom 2004 and DECC 2008, the "Blue Book") and *Best Practice Erosion and Sediment Control* (IECA 2008).	Yes

Impact Code	Description of Existing Environmental and Potential Impacts	Yes / No
S.3	Are there any sensitive receiving environments that are located in or nearby the likely proposal footprint or that would likely receive stormwater discharge from the project? Sensitive receiving environments include (but are not limited to) wetlands, state forests, national parks, nature reserves, rainforests, drinking water catchments). The proposal footprint drains to Timbumburi Creek / Wallamore Anabranch then to the Peel River. The Namoi River is used for town water supply downstream of the confluence with the Peel River, however the Peel River already receives stormwater flows from the urban catchments around Tamworth so runoff attributable to the proposal site would have an insignificant impact on those supplies.	No
S.4	Is there any evidence within or nearby the likely footprint of potential contamination? The proposal footprint is mostly grazing land with no evidence of contamination such as former dip sites or waste dumps. However there is some potential for offsite contamination in the locality (Taminda) due to industrial activities or the former airbase. If evidence of contamination is encountered during construction, construction in the potentially contaminated area would cease and: • Contaminated waste would be identified and classified by a suitably qualified consultant; • Contaminated water identified or generated during the construction phase of the Proposal would be disposed of to a lawful liquid waste facility; and • Should any spillage occur during the construction phase of the Proposal, the TRC Environmental Engineering team would be contacted immediately, and contaminants would be immediately contained, removed, treated (if necessary), and disposed of to a lawful waste facility.	No
S.5	Is there any evidence within or nearby the likely footprint of soil erosion? There is no evidence of excessive erosion within or nearby the proposal footprint. Soils in and around the footprint are mapped as Chromosols and Vertosols and are not expected to be particularly susceptible to erosion. Erosion and sediment control measures will be implemented for the proposal in accordance with, where relevant, Volumes 1 and 2D of *Managing Urban Stormwater: Soils and Construction* (Landcom 2004 and DECC 2008, the "Blue Book") and *Best Practice Erosion and Sediment Control* (IECA 2008).	No
S.6	Is the likely proposal footprint in or nearby highly sloping landform? The proposal footprint would be located on the floodplain and not in or near a highly sloping landform.	No

Impact Code	Description of Existing Environmental and Potential Impacts	Yes / No
S.7	Is the proposal likely to result in more than 2.5 hectares (area) of exposed soil? The total area of disturbance required would be about 5ha. A construction environmental management plan will be prepared including an erosion and sediment control plan to adequately mitigate the risk of erosion causing water pollution resulting from this disturbance.	Yes
S.8	Project is occurring within floodplain area and would be prone to scouring once existing vegetation is cleared. Works should be staged so that drains are cut in and impacted area is stabilised prior to moving on to the next stage.	Yes

3.2. Waterways and water quality

Table 8 - Waterway environmental considerations

Impact Code	Description of Existing Environmental and Potential Impacts	Yes / No
WT.1	Is the proposal located within, adjacent to or near a waterway? An unnamed and unmapped drainage line would need to be realigned for the proposal. The CEMP prepared for the proposal will include specific measures for the proposed drainage line diversion in accordance with Volumes 1 and 2D of *Managing Urban Stormwater: Soils and Construction* (Landcom 2004 and DECC 2008, the "Blue Book") and *Best Practice Erosion and Sediment Control* (IECA 2008).	Yes
WT.2	Is the location known to flood or be prone to water logging? The proposal would be located within the flood planning area but is not known to be prone to water logging.	Yes
WT.3	Would the proposal be undertaken on a bridge?	No
WT.4	Is the proposal likely to require the extraction of water from a local water course (not mains)? Mains water would be used in construction.	No
WT.5	Is the proposal likely to require the use of grey or black water? Mains water would be used in construction.	No
WT.6		

3.3. Noise and vibration

Table 9 - Noise and vibration environmental considerations

Impact Code	Description of Existing Environmental and Potential Impacts	Yes / No
NV.1	Are there any residential properties or other noise sensitive areas near the location of the proposal that may be affected by the work (i.e. church, school, hospital): During construction? The nearest sensitive receivers are: 1. The residence at “Somerset” to the north of the proposal, about 110m from the road reserve boundary. 2. The residence at “Ollera”, about 200m west of the road reserve boundary. Nearest receivers to the east and south of the proposal are typically industrial, except for the cemetery and racecourse which immediately adjoin the eastern edge of the proposal footprint to the south-east and north-east, respectively.	Yes

Impact Code	Description of Existing Environmental and Potential Impacts	Yes / No
NV.2	Are there any residential properties or other noise sensitive areas near the location of the proposal that may be affected by the work (i.e. church, school, hospital): During operation? The nearest sensitive receivers are: 1. The residence at “Somerset” to the north of the proposal, about 110m from the road reserve boundary. 2. The residence at “Ollera”, about 200m west of the road reserve boundary. Nearest receivers to the east and south of the proposal are typically industrial, except for the cemetery and racecourse which immediately adjoin the eastern edge of the proposal footprint to the south-east and north-east, respectively. The proposal would also alter traffic flows potentially leading to a changed noise environment at other locations including due to reduced flows on Dampier Street.	Yes
NV.3	Is the proposal going to be undertaken only during standard hours? Standard hours 1. Monday-Friday: 7:00am to 6.00pm 2. Saturday: 8.00am to 1.00pm 3. Sunday and Public Holidays: no work	Yes

NV.4	Would construction noise or vibration from the proposal affect sensitive receivers? Typical construction equipment sound power levels, as per AS2436-2010, are provided in **Table 7**. Other equipment may be used in the construction of the Proposal however, it is anticipated that they would produce similar noise levels. **Table 10 - Typical Construction Equipment Sound Power Levels** **Equipment Item** / **Typical Noise Level dB(A)*** Dozer: 112 Moxy: 108 Backhoe: 104 Bobcat: 103 Electric hand tools: 102 Truck (<20 tonnes): 98 Excavator: 97 ** Magnitude of noise experienced off-site would be dependent on intensity and location of construction, type of equipment used, existing local noise sources, intervening terrain, and prevailing weather conditions.* Not all equipment listed in **Table 7** would be used at all locations during all activities and as such may not be relevant in the noise level assessment at all receivers closest to the Proposal footprint. It is also highly likely that not all plant and equipment would be used concurrently, and that there would be considerable periods that either none or only some equipment would be operational. Using the highest typical noise level from Table 7 of 104dB(A) at the source, the inverse distance law can be used to calculate anticipated noise levels at receptors of varying distances. It should be noted that this does not account for variance resulting from topography or vegetation. Using the inverse distance law, distances to the nearest residential receiver 110m from the Proposal footprint may experience noise levels up to LAeq 55 dB(A) outside. As such, construction noise is likely to be above the noise management level but below the "highly noise affected" level at some receivers. Respite does not need to be provided and construction noise can be appropriately managed through a CEMP including noise and vibration mitigation measures including adherence to standard hours. Vibration associated with the activities, specifically the compaction of subgrades and backfill material, may have an impact on the structural integrity of existing utility cables, buried pipes, and drainage structures and buildings close to the road alignment. The *Construction Noise and Vibration Guideline* (Transport for NSW 2016) nominates a safe working distance for cosmetic damage from a small (less than 50kN or 2t) vibratory roller of 5m. While damage is unlikely to occur from the proposed works, some work will occur within 5m of utilities. No work would take place within 5m of buildings and so vibration impacts to buildings are not expected.	Yes

Impact Code	Description of Existing Environmental and Potential Impacts	Yes / No
	To mitigate the risk of vibration or noise impacts on surrounding businesses, the Contractor will be required to: • Consult with affected businesses to identify appropriate measures to reduce amenity impacts.	
NV.5	Would operation of the proposal alter the noise environment for sensitive receivers? This might include, but not be limited to, altering the line or level of an existing carriageway, changing traffic flow, adding extra lanes, increasing traffic volume, increasing the number of heavy vehicles, removing obstacles that provide shielding including changing the angle of view of the traffic, changing the type of pavement, increasing traffic speeds by more than 10km/hr or installing audio-tactile line markings. The closest residence at "Somerset" would be about 180m from the nearest traffic lane, versus its current distance of about 320m from the nearest lane of Wallamore Road. This means that the road noise level at "Somerset" could potentially increase by up to 4 or 5 dBA, which is noticeable but well below the increase of 12 dBA allowed under the *NSW Road Noise Policy* (DECCW 2011). This prediction is highly conservative and does not account for the lower speed limit proposed for the new road (60 km/h vs 80km/h). The residence at "Ollera" is about 20m from the existing alignment of Wallamore Road, and therefore road noise from the new lanes created by the proposal (about 200m away) would not measurably or noticeably increase the road noise level at that location. To confirm that road noise levels are acceptable, Council would conduct noise monitoring at the nearest residence at "Somerset" at two stages: 1. Once the proposal is constructed and open to traffic; and 2. During environmental assessment of the southern bypass section to the Oxley Highway, expected to occur by 2030. The results of noise monitoring would be used to identify whether any further road noise mitigation is necessary to meet the road noise policy targets for sub-arterial roads, as well as to calibrate any noise modelling undertaken for the southern bypass.	Yes

Impact Code	Description of Existing Environmental and Potential Impacts	Yes / No
NV.6	Would the proposal result in vibration being experienced by any surrounding properties or infrastructure during operation? Vibration associated with the activities, specifically the compaction of the bedding and backfill material, may have an impact on the structural integrity of existing utility cables, buried pipes, and drainage structures and buildings close to the replacement main alignment. German Standard DIN 4150-3 1999 *Structural Vibration – Part 3: Effects of vibration on structures* provides guidance on safe vibration levels for buried pipework. The levels assume "current technology" as special considerations must be applied for systems associated with older structures such as might occur in the vicinity of heritage-listed buildings. Recommended vibration goals for electrical cables and telecommunication services, such as fibre optic cables, range from between 50 mm/s to 100 mm/s. Although the cables may sustain these vibration levels, the services they are connected to, such as transformers and switch blocks, may not. For vibration-related structural damage, British Standard 7385: Part 2-1993 *Evaluation and measurement for vibration in buildings Part 2* is a definitive standard against which the likelihood of building damage from ground vibration can be assessed. The guide values from this standard for transient vibration likely to result in a minimal risk of structural or cosmetic damage are 2 mm/s Peak Particle Velocity (PPV) for historical buildings, monuments and buildings of special value or significance, and 5 mm/s PPV for houses, low rise residential and commercial buildings. Australian Standard AS 2436-2010 nominates a typical vibration level of 1.5 mm/s at a distance of 25 m for vibratory rollers, with damage generally not expected for buildings further than 12 m away when a medium roller is used. Higher vibration levels could occur with the use of heavier rollers. Overall, it is not expected that any structural impact would occur below 5 mm/s. Since the nearest buildings are more than 70m from the proposal footprint, these levels of vibration are not expected to occur at receiver locations and as such, no vibration impacts are expected to any buildings or receivers near the proposal.	No
NV.7		

3.4. Air quality

Table 11 Air quality environmental considerations

Impact Code	Description of Existing Environmental and Potential Impacts	Yes / No
A.1	Are there any dust sensitive receivers located within the vicinity of the proposal during the construction period? The nearest sensitive receivers are: 1. The residence at "Somerset" to the north of the proposal, about 110m from the road reserve boundary. 2. The residence at "Ollera", about 200m west of the road reserve boundary. Nearest receivers to the east and south of the proposal are typically industrial, except for the cemetery and racecourse which immediately adjoin the eastern edge of the proposal footprint to the south-east and north-east, respectively.	Yes
A.2	Is there likely to be an emission to air during construction? Dust is likely to be emitted to air during earthmoving and road construction activities and has the potential to impact on local air quality during the construction phase of the proposal. Any use of heavy machinery would require careful management to limit dust emissions, especially during material excavation, road making, and transport. Further, the emissions from heavy vehicles and machinery can represent a potential source of air quality contaminants. Measures to address potential air quality issues would be included in the CEMP for the proposal. Further detail of the measures to be included is at Section 3.4.	Yes
A.3		

3.5. Cultural heritage

Online heritage database searches have been completed for the proposal footprint and surrounding area.

Table 12 - Cultural heritage considerations

Impact Code	Description of Existing Environmental and Potential Impacts	Yes / No
CH.1	Are there any items of non-Aboriginal heritage or heritage conservation areas listed on relevant heritage databases/registers that are located within the vicinity of the proposal? The nearest listed heritage items are: monuments in the eastern (old) part of the cemetery about 200m east, and the grandstand at the racetrack about 750m north-east of the proposal footprint. Both items are listed on the LEP and are not State or Commonwealth listed. The proposal is not expected to affect the value of these heritage items in any way. 	Yes
CH.2	Are there any items of potential non-Aboriginal heritage significance which are not listed on relevant heritage databases/registers that are in the vicinity of the proposal?	No
CH.3	Is the proposal likely to occur in or near features that indicate potential archaeological remains? Whilst the proposal area includes a drainage line, it has been highly modified and is in effect a stormwater drain which does not indicate a likelihood of encountering archaeological remains.	No
CH.4	Would the proposal involve disturbance in any area that has not been subject to previous ground disturbances? Outside of the existing formed road, the proposal footprint has been previously disturbed by cultivation and by stormwater drainage works.	No

Impact Code	Description of Existing Environmental and Potential Impacts	Yes / No
CH.5	Have online AHIMS search been completed? An AHIMS basic search was completed for the proposal footprint on 1 September 2022 and returned no results. See Appendix C.	Yes
CH.6	Is there potential for the proposal to impact on any items of Aboriginal heritage? With reference to the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (DECCW 2010), the proposal is not likely to impact any Aboriginal objects or places as no confirmed sites or landscape features were returned by AHIMS, there are no landscape features or other known information that suggest a likelihood of objects being present, and the ground surface has previously been disturbed. In the unlikely event that potential Aboriginal objects are encountered (including skeletal material), all construction activities would cease immediately at the specific location, and a qualified heritage consultant and Heritage NSW would be contacted to provide further direction, as per Council's *Heritage and Archaeology Management Procedure*.	No
CH.7	Would the proposal involve the removal of mature native trees? Some native trees are present within shelter belts and the drainage line in the proposal footprint, however these trees were planted within the last 20-30 years and are not expected to have high ecological or heritage value.	No
CH.8	Would the proposal impact on any features that may indicate any potential archaeological remains? Whilst the proposal area includes a drainage line, it has been highly modified and is in effect a stormwater drain which does not indicate a likelihood of encountering archaeological remains.	No

3.6. Biodiversity

Online biodiversity database searches have been completed for the proposal footprint and surrounding area.

Table 13 - Biodiversity considerations

Impact Code	Description of Existing Environmental and Potential Impacts	Yes / No
B.1	Did the database searches identify any endangered ecological communities, threatened flora and/or threatened or protected fauna, or migratory species in or within the vicinity of the proposed works? Both Federal and State listed matters must be considered.	No
B.2	Is the proposal likely to impact nationally listed threatened species, ecological communities or migratory species?	No

Impact Code	Description of Existing Environmental and Potential Impacts	Yes / No
B.3	Would the proposal require the removal of any other vegetation? Some native trees are present within shelter belts and the drainage line in the proposal footprint, however these trees were planted within the last 20-30 years and are not expected to have high ecological or heritage value. Other vegetation which would be cleared is pasture grass which is mapped as non-native and will be a mixture of native and introduced grasses and forbs. This vegetation is not expected to have significant habitat value.	Yes
B.4	Would the proposal affect any tree hollows or hollow logs?	No
B.5	Would the proposal provide any additional barriers to the movement of wildlife? New roads create a barrier to the movement of wildlife. However in this case, impacts are expected to be minor due to the low likelihood of threatened species presence and the small area of grassland (about 10ha) available to the south side of the new road.	Yes
B.6	Would the proposal disturb any natural waterways or aquatic habitat? Whilst drainage work would be required for the proposal, this would occur within constructed drains which do not provide significant aquatic habitat and are not mapped as key fish habitat or threatened species habitat.	No
B.7	Would the proposal disturb any crevices or other locations (such as on bridges and culverts) for potential bat habitat?	No

Impact Code	Description of Existing Environmental and Potential Impacts	Yes / No
B.8	Does the proposal involve pruning, trimming or removal of any tree/s? The proposal would require the removal of four eucalyptus trees approximately 15-20m tall and a small number of shrubs through the works area. No hollow-bearing trees or any significant habitat features would require removal **Figure 4 Two trees to be removed**	Yes
B.9	Do the trees form part of a streetscape, an avenue or roadside planting?	No
B.10	Have the trees been planted by a community group, Landcare group or by council or is the tree a memorial or part of a memorial group e.g. has a plaque?	No
B.11	Do the trees form part of a heritage listing or have other heritage value?	No

Impact Code	Description of Existing Environmental and Potential Impacts	Yes / No
B.12	Will the proposal require the removal of any bush rock? Outside of the existing formed road, the proposal footprint has been previously disturbed by cultivation and by stormwater drainage works. Bush rock is therefore unlikely to be present or to provide significant habitat value.	No
BH.13		

3.7. Traffic and transport

Table 14 - Traffic and transport considerations

Impact Code	Description of Existing Environmental and Potential Impacts	Yes / No
T.1	Is the proposal likely to result in detours or disruptions to traffic flow (vehicular, cycle and pedestrian) or access during construction or operation? Scope of works has been developed for the project detailing the staging of works to minimise traffic disruptions. See Appendix D Section 1.3.1.3.	Yes
T.2	Is the proposal likely to affect any other transport nodes or transport infrastructure (e.g. bus stops, bus routes) in the surrounding area?? Bus stops will be unaffected, detours for buses will be as per plan detailed in T.1 above.	Yes

3.8. Socio-economic

Table 15 - Socio-economic considerations

Impact Code	Description of Existing Environmental and Potential Impacts	Yes / No
SE.1	Is the proposal likely to impact on local business? As the proposal would divert some traffic away from Dampier Street, it would also divert traffic from businesses on that section of road. However, this impact would be balanced by the reduction in congestion and safety benefits of removing a rail crossing from the route to and from Wallamore Road and TGGP.	Yes
SE.2	Is the proposal likely to require any property acquisition? A portion of Lot 2 DP1255956 (council owned land) will be dedicated as road reserve.	Yes
SE.3	Is the proposal likely to alter any access for properties (either temporarily or permanently)? Access to 72 Wallamore Road will be maintained via existing driveway. This will permanently be connected to the new alignment.	Yes

Impact Code	Description of Existing Environmental and Potential Impacts	Yes / No
SE.4	Is the proposal likely to alter any on-street parking arrangements (either temporarily or permanently)?	No
SE.5	Is the proposal likely to change pedestrian movements or pedestrian access (either temporarily or permanently)? There is currently no pedestrian access to the area.	No
SE.6	Is the proposal likely to impact on any items or places of social value to the community (either temporarily or permanently)? The proposal would slightly alter the boundary of the cemetery but this will have no impact on the social value of the site.	No
SE.7	Is the proposal likely to reduce or change visibility of any businesses, farms, tourist attractions or the like (either temporarily or permanently)? As the proposal would divert some traffic away from Dampier Street, it would reduce the visibility of businesses to traffic on that section of road. However, this impact would be balanced by the reduction in congestion and safety benefits of removing a rail crossing from the route to and from Wallamore Road and TGGP.	Yes
SE.8		

3.9. Landscape character and visual amenity

Table 16 - Landscape character and visual amenity considerations

Impact Code	Description of Existing Environmental and Potential Impacts	Yes / No
L.1	Would the proposal require the removal of mature trees or stands of vegetation, either native or introduced?	No
L.2	Would the proposal result in large areas of shotcrete visible from the road or adjacent properties?	No
L.3	Would the proposal involve the removal or reuse of large areas of road corridor, landscape, either verges or medians?	No
L.4	If involving lighting, would the proposal create unwanted light spillage on residential properties at night (in construction or operation)?	No
L.5	Would any new structures or features being constructed result in over shadowing to adjoining properties or areas?	No

3.10. Waste

Table 17 - Waste environmental considerations

Impact Code	Description of Existing Environmental and Potential Impacts	Yes / No
WS.1	Is the proposal likely to generate >200 tonnes of waste material (contaminated and /or non-contaminated material)? Material will be tested for ENM exemption, stockpiled in designated area shown in Figure 3 and reused within the road reserve.	Yes
WS.2	Is the proposal likely to require a licence from EPA?	No
WS.3	Is the proposal likely to require the removal of asbestos?	No

4. Consideration of State and Commonwealth environmental factors

4.1. Environmental Planning and Assessment Regulation 2021 checklist

In addition to the requirements of the *Is an EIS required?* the following factors listed in clause 171(2) of the Environmental Planning and Assessment Regulation, 2021 have also been considered to assess the likely impacts of the proposal on the natural and built environment. This consideration is required to comply with sections 5.5 and 5.7 of the EP&A Act.

Table 18 - EP&AR Regulation 2021 checklist

Environmental Factor	Impact
Any environmental impact on a community? The proposed work may cause minor short-term environmental impacts on the community, such as delays to traffic and noise impacts on residents; however, the potential impacts would be minimised with the implementation of the safeguards detailed in Section 5 of this REF. The project works would have a positive environmental impact on a community in the long-term.	Negative impacts Short-term Positive impacts Long-term
Any transformation of a locality? The proposed work will cause minor disruption and negatively impact of the locality while construction is taking place. Once complete the local drainage will be improved will lessen vehicle movements through the industrial area making it generally safer.	Negative impacts Short-term Positive impacts Long-term
Any environmental impact on the ecosystems of a locality? The proposal would not have any significant potential environmental impacts on the ecosystems around the proposed locality, however and will be further minimised with the implementation of the safeguards given in Section 5 of this REF.	Negative impacts Short-term NIL impacts Long-term
Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality? The proposal would not reduce the aesthetic, recreational, scientific or other environmental quality or value of the locality.	NIL impacts Long-term

Environmental Factor	Impact
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 would not affect a locality, place or building of significance or other special value for present or future generations: however, implementation of the safeguards given in Section 5 in this REF will still be in effect.	NIL impacts Long-term
Any impact on habitat of any protected animals (within the meaning of the *Biodiversity Conservation Act 2016*)? The proposal would not have any impact on the habitat of any protected animals due to the limited scope of works for the proposed activities and the implementation of the safeguards given in Section 5 of this REF.]	NIL impacts Long-term
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 not endanger any species of animal, plant or other form of life, whether living on land, in water or in the air due to the limited scope of works for the proposed activities and the implementation of the safeguards given in Section 5 of this REF.	NIL impacts Long-term
Any long-term effects on the environment? The proposal would potentially have a short-term negative impact on the environment due to the excavation works. The negative impacts would be minimized with the implementation of the safeguards given in Section 5 of this REF.	Negative Short-term NIL impacts Long-term
Any degradation of the quality of the environment? The proposal would potentially degrade the quality of the environment in the short-term, however the potential impacts would be minimised with the implementation of the safeguards given in Section 5 of this REF.	Negative Short-term NIL impacts Long-term

Environmental Factor	Impact
Any risk to the safety of the environment? The proposal would have minimal risk to the safety of the environment in the short-term, however the potential impacts would be minimised with the implementation of the safeguards given in Section 5 of this REF.	Negative Short-term NIL impacts Long-term
Any reduction in the range of beneficial uses of the environment? The proposal would not reduce any range of beneficial uses in the environment as the works will be occurring in the road reserve.	NIL impacts Long-term
Any pollution of the environment? The proposal would potentially cause pollution of the environment (e.g., noise, dust, fuel spills) however, the potential impacts would be minimised with the implementation of the safeguards given in Section 5 of this REF.	Negative Short-term
Any environmental problems associated with the disposal of waste? The waste generated during the proposal would be tested for beneficial reuse elsewhere in the road reserve or contained and removed for disposal to approved recycling facilities or to licensed landfill in accordance with the safeguards in Section 5 of this REF. No environmental problems are anticipated for the disposal of waste.	NIL impacts Long-term
Any increased demands on resources, natural or otherwise which are, or are likely to become, in short supply? The proposal would not significantly increase demands on resources, which are, or are likely to become, in short supply. Relatively small amounts of materials would be required for the proposed work. The safeguards listed in Section 5 of this REF would be implemented to minimise any impacts.	NIL impacts Long-term

Environmental Factor	Impact
Any cumulative environmental effect with other existing or likely future activities? The proposal has the potential to have cumulative environmental effects with other existing or likely future activities, however the effects would be minimal due to the limited scope of works for the activities covered in this REF, and the potential impacts on the environment would be minimised with the implementation of the safeguards given in Section 5 in this REF.	NIL impacts Long-term
Any impact on coastal processes and coastal hazards, including those under projected climate change conditions?	Not Applicable Long-term

4.2. Matters of National Environmental Significance checklist

Under the environmental assessment provisions of the EPBC Act, the following matters of national environmental significance are required to be considered to:

- Assist in determining whether the proposal should be referred to the Australian Government Department of the Environment and Energy
- For nationally listed threatened species, ecological communities and migratory species, whether the impacts are significant and should be assessed via a Project REF.

Table 19 - Matters of National Environmental Significance checklist

Factor	Impact
Any impact on a World Heritage property? The proposal would not impact on a World Heritage property. The Australia's World Heritage List and SEED data base was checked for World Heritage property; no items were found, and no impact will occur.	Nil
Any impact on a National Heritage place? No National Heritage places are within the project area therefore, no impacts will occur.	Nil
Any impact on nationally threatened species, ecological communities or migratory species?	Nil
Additionally, any impact (direct or indirect) on the environment of Commonwealth land?	Nil

5. Summary of safeguards and environmental management measures

Table 20 – Project specific safeguards and environmental management measures

Environmental Consideration	Safeguards for the Proposed Work
Soil	1. The Construction Environmental Management Plan (CEMP)prepared for the works will include an erosion and sediment control plan. Erosion and sediment control measures are to be implemented and maintained to: • Prevent sediment moving off-site and sediment laden water entering any water course, drainage lines, or drain inlets • Reduce water velocity and capture sediment on site • Minimise the amount of material transported from site to surrounding pavement surfaces • Divert clean water around the site (In accordance with the Landcom/Department of Housing Managing Urban Stormwater, Soils and Construction Guidelines -The Blue Book-). 2. All erosion and sediment control measures will be established before excavation begins, due to the type of soil structure present on the proposed site. Also, before the demolition or vegetation clearance begins and is to remain in place until all surfaces have been fully restored and stabilised. 3. Erosion and sediment control measures will be consistent with those specified in the relevant guideline under the DECC Managing Urban Stormwater. Soils and Construction Volume 2 (DECC 2008) and where relevant Managing Urban Stormwater Soils and Construction (Landcom 2004). 4. Erosion and sediment control for in stream works must follow the requirements set out in the Best Practice Erosion and Sediment Control (IECA 2008). 5. Work areas are to be stabilised progressively during the works. 6. Erosion and sedimentation controls are to be checked and maintained on a regular basis (including clearing of sediment from behind barriers) and records kept and provided on request. 7. Sediment control devices (e.g., silt fences, straw bales wrapped in geotextile etc.) will be installed parallel with the contours of the site and immediately downslope of any areas where the natural ground surface has been disturbed. 8. All temporary erosion and sediment control devices such as silt-stop fencing will be removed from the site at the completion of the works or when the site(s) are fully revegetated/stabilised. 9. Any spoil storage areas or stockpiles will have appropriate erosion control devices installed to control runoff and prevent sedimentation. 10. Sediment and erosion control devices will be inspected regularly, maintained to ensure effectiveness over the entire duration of the project, and cleaned out before 30% capacity is reached. 11. Upslope surface runoff will be redirected around work areas by using diversion drains or other methods.

	12. Where excavated soil is to be used in site restoration, it will be excavated and stockpiled in sequential layers corresponding to the existing soil profile. Topsoil and leaf litter is to be removed first and windrowed in separate stockpiles of less than 1m in height on the upslope side of excavations. Soil layers will be replaced sequentially so that the soil profile is restored as closely as possible to its pre-work status.
Waterways and water quality	13. The storage and handling of fuels and chemicals shall comply with Australian Standard AS1940. 14. No chemicals, fuels, and/or waste will be stored or collected for disposal within or adjacent to drainage lines or unsealed surfaces. 15. A 'spill kit' will be kept on site at all times for potential chemical or fuel spills. 16. Water from trench de-watering will be pumped and either collected in tanks for appropriate disposal or filtered through geotextile fabric onto grass filter areas. 17. An Incident Management Plan (IMP) will be prepared as part of the Contractors EMP and will include a contingency plan and emergency procedures for dealing with the potential spillage of fuel or other environmental incidents that may occur on the work site. The IMP should also contain procedures dealing with the unexpected onset of rainfall during the work period. 18. Refuelling, fuel decanting and vehicle maintenance work will take place in a designated sealed and bunded area. 19. No dirty water will be released into drainage lines or waterways. 20. Water quality control measures are to be used to prevent any materials (e.g., concrete, grout, sediment etc.) entering drain inlets or waterways. 21. Drilling water and lubricating fluids will be reused wherever possible prior to disposal at a lawful waste facility. 22. Measures to control pollutants from stormwater and spills would be investigated and incorporated in the open swale drainage systems at locations where it discharges to the receiving drainage lines. Measures aimed at reducing flow rates during rain events and potential scour would also be incorporated in the design of the open swale drainage system. 23. Cleaning of spray bars (or equivalent equipment) is to occur in suitable areas (e.g., not table drains) and not cause water pollution. 24. All fuels, chemicals and liquids are to be stored in an impervious bunded area a minimum of 50 metres away from: a. Rivers, creeks, or any areas of concentrated water flow b. Flooded or poorly drained areas c. Slopes above 10%. 25. Vehicles, vessels, and plant must be properly maintained and regularly inspected for fluid leaks. 26. Vehicle wash down and/or cement truck washout is to occur in a designated bunded area.

	27. Emergency contacts will be kept in an easily accessible location on vehicles, plant, and site office. All workers will be advised of these contact details and procedures.
Noise and vibration	28. Work and deliveries will only occur during the following times: Monday to Friday 7am to 6pm, Saturday 8am to 1pm. No construction work or deliveries will occur on Sundays or public holidays. 29. Measures to be taken for the highly affected residential receivers where residential buildings are less than 25m away from the works include: a. Phone calls to the residents within a minimum of 7 days to works commencement and, b. Respite offers. Respite could be provided by carrying work out in continuous blocks that do not exceed 3 hours each, with a minimum respite period of one hour between each block, during standard work hours. 30. Surrounding residences and other sensitive receivers directly affected by the works will be notified at least 14 days in advance of the proposed commencement of works, work methods and the duration of the construction period. 31. All contractors and machine operators will be inducted on the environmental sensitivities of the work site(s) and relevant safeguards. 32. Measures, including allowing adequate distance from vibration producing equipment to adjacent buildings, will be considered to minimise or prevent vibration impacts. 33. NSW EPA Interim Construction Noise Guidelines includes examples of mitigation measures that can be considered for application for construction works. 34. All stationary and mobile equipment will be fitted with residential type silencers.
Air quality	35. All loads of excavated material, soil, fill and other erodible matter that are transported to or from the work site will be kept covered at all times during transportation and will remain covered until they are unloaded either for use at the work site, reuse or disposal at a lawful waste facility. 36. Odour or air pollutant emission complaints will be dealt with promptly and the source will be eliminated wherever practicable. 37. Vegetation or other materials are not to be burnt on site. 38. Machinery and vehicles will not be left running or idling when not in use. 39. All work sites, general work areas and stockpiles will be closely monitored for dust generation and watered down (with clean water) or covered (via seeding or tarpaulins) in the event of dry and/or windy conditions. 40. Works (including the spraying of paint and other materials) are not to be carried out during strong winds or in weather conditions where high levels of dust or air borne particulates are likely. 41. Odour or air pollutant emission complaints will be dealt with promptly and the source will be eliminated wherever practicable.

	42. Vehicles transporting waste or other materials that may produce odours or dust are to be covered during transportation.
Non-Aboriginal Heritage	43. If Non-Aboriginal heritage items are discovered during the project, the TRC heritage officer and/or NSW Heritage Office will be notified. Contact Heritage NSW on 02 9873 8500 and heritagemailbox@environment.nsw.gov.au.
Aboriginal Heritage	44. If Aboriginal objects are discovered during operations, all work will cease in the area and the Contractor will inform the Tamworth Regional Council Contract Manager as soon as possible. TRC will advise the preferred course of action & liaise with Heritage NSW and the relevant local Aboriginal stakeholders if required. 45. If any human remains are discovered during construction, all work must cease, and the Contractor must notify NSW Police and the TRC Contract Manager as soon as possible. 46. All due care will be taken to ensure that heritage items listed in this report are not adversely affected by any works. 47. Protective barriers will be installed to prevent damage to heritage items either located within the site or adjacent to it. 48. In the case of unexpected finds, the procedures in Appendix E should be followed
Biodiversity	49. Construction activities shall be in accordance with the recommendations contained in this report. 50. The full extent of any vegetation clearance will be clearly documented and mapped in site EMP(s). 51. Materials/equipment lay-down areas will be shown in the EMP(s) and located in cleared or degraded areas to prevent any damage to the surrounding plants or habitat. 52. Materials, plant, and equipment will not be stored within the driplines of any trees at the site(s) or near the site(s). 53. To prevent damage to vegetation outside the boundaries of access tracks/roads, vehicles and machinery will be restricted to designated access roads and tracks. 54. Barrier Tape is to be used to designate non disturbance areas. These areas are to be clearly defined on the CEMP. 55. Works are not to harm threatened fauna (including where they inhabit bridges or other structures e.g., timber fence posts). 56. Weed removal will be undertaken in accordance with contemporary bush regeneration principles and practices. 57. All weeds removed from a site(s) will be transported in a sealed container or bag and disposed at a lawful waste facility. 58. Where works are being undertaken in a weed-infested area(s), all construction vehicles will be cleaned before they leave the site to prevent the spread of weed species. 59. Works are not to harm threatened fauna (including where they inhabit bridges or other structures e.g., timber fence posts).
Trees	60. Pruning of mature trees is to be in accordance with Part 5 of the *Australian Standard 4373-2007 Pruning of amenity trees*.

Traffic and transport	61. Where possible, current traffic movements and property accesses are to be maintained during the works. Any disturbance is to be minimised to prevent unnecessary traffic delays. 62. The contractor will prepare a Traffic Management Plan in consultation with the relevant traffic authority(s). 63. Appropriate exclusion barriers, signage and site supervision will be employed at all times to ensure that the work site is controlled, and that unauthorised vehicles and pedestrians are excluded from the works area. 64. All traffic control devices will be in accordance with AS 1742.3-2019 "Traffic control devices for works on roads". 65. Pedestrian and vehicle access will be maintained to buildings by alternate means, such as ramps, if the proposed works obstruct access to the buildings for an extended period of time. Residents/ occupiers to be notified in advance if obstruction to access is likely to occur. 66. In case traffic movements need to be altered, alternative ways are to be provided
Socio-economic	67. Notification is to be given to affected community members prior to the works taking place. The notification is to include: a. Details of the proposal b. The duration of works and working hours c. Any changed traffic or access arrangements d. How to lodge a complaint or obtain more information e. Contact name and details. 68. Where entry to private properties is required, a notice of entry letter will be provided at least 24 hours in advance. 69. Existing access for nearby and adjoining properties is to be maintained at all times during the works unless otherwise agreed to by the affected property owner. 70. The community must be notified of all work outside standard hours which have the potential to impact noise sensitive receivers. 71. All complaints are to be recorded on complaints register and attended to promptly. 72. Accurate public information signs will be displayed while work is in progress and maintained in presentable manner. 73. TRC or the contractor will personally contact the occupant when they enter a private property to notify of their presence and what works are intended. 74. The Contractor will maintain a complaint register. Any complaints received will be responded to as soon as possible.
Landscape character and visual amenity	75. The site(s) will be maintained in an orderly manner. 76. Work sites will be restored as close to their original condition as possible following the completion of the proposed works 77. The natural landform of the site(s) will be restored as closely as possible to the pre-works condition. 78. Where practical, retain timber debris from clearing and demolition to provide ground habitat, all existing debris is to be retained.

	79. On completion of the works, all vehicles, construction equipment, materials, and refuse relating to the works will be removed from the work site(s) and any adjacent affected areas. 80. Any accidental damage to property occurred by the works must be repaired in consultation with the owner. 81. All services in the vicinity of the works will be located in the field and 'pegged-out' and noted in the Environmental Management Plan and/or work plans prior to excavation works - "dial 1100 before you dig". 82. Mulched/shredded vegetation removed from the site may be used to assist in stabilisation of batters or disturbed surfaces (provided it does not contain weeds). 83. Rehabilitation of native vegetation areas will use brush matting or mulching or planting of appropriate local native tube stock.
Waste	84. A Waste Management Plan must be prepared for management of road construction and maintenance waste. 85. Resource management hierarchy principles are to be followed: a. Avoid unnecessary resource consumption as a priority. b. Avoidance is followed by resource recovery (including reuse of materials, reprocessing, recycling, and energy recovery) c. Disposal is undertaken as a last resort (in accordance with the Waste Avoidance & Resource Recovery Act 2001). 86. All waste generated during the course of the works will be reused or removed from the work areas as soon as practicable and disposed of at a licenced waste disposal facility. 87. If vegetation is to be mulched and transported off site for beneficial reuse, it is to be assessed for the presence of weeds, pest, and other disease and a Mulch Management Plan. 88. All vessels used for contaminated or hazardous waste should be sealed, labelled according to their contents, and stored within bunded areas until their removal from the work site. 89. Any fuel, lubricant or hydraulic fluid spillages will be collected using absorbent material and the contaminated material disposed of at a lawful waste facility. 90. All hazardous wastes on site will be removed and disposed of in accordance with the state and national regulations and guidelines and best practice for the removal of these materials. 91. The Contractor's recycling and reuse proposal will be detailed in the EMP. 92. Excess spoil material that cannot be reused or recycled will be removed from the site and disposed of at a lawful facility. 93. The work site(s) will be left clean and free of weeds, debris and other rubbish at the end of works. Waste material, other than vegetation and tree mulch, is not to be left on site once the works have been completed. 94. Working areas are to be maintained, kept free of rubbish and cleaned up at the end of each working day.

	95. If asbestos is encountered on site, removal must be by a competent person or a licensed asbestos remover who holds a licence administered by SafeWork Australia. 96. An emergency spill kit is to be kept on site at all times and maintained throughout the construction work. The spill kit must be appropriately sized for the volume of substances at the work site

5.1. Licensing and approvals

List of licences and/or approvals required for the proposal:

Table 21 – Applicable environmental licences and approvals

Instrument	Requirement	Timing
Roads Act 1993	Consent under Section 138 of the *Roads Act 1993* is required for any works or activities in a public reserve, public roadway or footpath (nature strip or verge). TfNSW must consult with the applicant even if it is a public authority.	Prior to start of the activity.

6. Certification, review and decision

6.1. Certification

This REF provides a true and fair review of the proposal in relation to its potential effects on the environment. It addresses to the fullest extent possible all matters affecting or likely to affect the environment as a result of the proposal.

Prepared by:

15/9/2022

Jason Brennan

Date

Environmental Scientist

Water and Waste, Tamworth Regional Council

Reviewed by:

21/09/2022

Daniel Coe

Date

Manager Water and Environmental Operations

Water and Waste, Tamworth Regional Council

Endorsed by Project Manager

27/09/2022

Callum Fletcher

Date

Senior Project Engineer, Project Planning & Delivery

Regional Services, Tamworth Regional Council

6.2. Determination

In accordance with the above recommendation and sections 5.5 and 5.7 of the EP&A Act, I determine that Tamworth Regional Council may:

- [proceed with the activity] or
- ~~[not proceed with the activity as the environmental impacts are not acceptable] or~~
- ~~[not proceed with the activity as a Project EIS is required.]~~

Determined by:

27-09-2022

Paul Bennett

General Manager

Tamworth Regional Council

Date

6.3. Staff review and determination

Below are some questions for the reviewer to consider when reviewing a Minor projects REF.

Is the Minor projects REF deficient in any aspect?

Reviewer may consider that the Minor projects REF does not provide enough information to make an informed judgement as to whether significant impacts are likely. Consultation efforts documented in the Minor Projects REF may not satisfy statutory requirements. The works proposed in the Minor Projects REF may be of potentially greater impact than usual for Tamworth Regional Council Minor projects and require the preparation of a Project REF. The proposed safeguards and management measures may not be considered adequate or sufficient in their own right. If the safeguards are not sufficient the Minor Projects REF should be amended, and the project not determined until they are adequate. Additional conditions or requirements must not be included as part of the recommendation in the decision on the Minor Projects REF. In these cases, the project manager should make amendments to the Minor Projects REF and delay endorsing the Minor Projects REF until it provides satisfactory information.

Is the proposal likely to significantly affect the environment?

EM may consider, based on the information in the Minor projects REF and any other specific advice available, that a significant impact on the environment is likely to result from the proposal. Further assessment and consideration would be required before a conclusion can be drawn on whether the following environmental impacts are more likely to be significant (although there may be others):

- Impacts which are extensive relative to the receiving environment
- Impacts in an area where the environment has low resilience
- Impacts which cannot be predicted with any confidence
- Impacts which are not consistent with Tamworth Regional Council or other government policy or for which there are no other adequate government controls
- Impacts with irreversible health or safety implications
- Impacts which are inconsistent with community values.

Is a referral to the Australian Government under the EPBC Act required?

If the potential for impacts is such that the proposal requires a referral to the Australian Government, the assessment of the project under a Minor Projects REF and under Division 5.1 of the EP&A Act must be reconsidered.

If the proposal is likely to have a significant impact on nationally listed threatened species, ecological communities or migratory species then it MUST either be reconsidered or assessed via a Project REF. For more information refer to the EPBC Act – Strategic Assessment Practice Note.

Does the proposal require a concurrence, consent or approval?

Endorsement of the Minor Projects REF should include the need to receive documentary evidence of any concurrence, consent or approvals required to be received prior to deciding under Division 5.1 of the EP&A Act and compliance with any conditions from these other approvals. If necessary, approvals are not included the Minor Projects REF must include appropriate safeguards committing that these will be obtained and complied with prior to the commencement of any works.

7. Appendices

7.1. Appendix A – Safeguards and environmental management measures

The following safeguards must be incorporated as conditions of contract in any contract or work specification for the project. They must also be incorporated into a project-specific Construction Environmental Management Plan (CEMP) which includes a map of the project site showing key environmental features identified in this REF.

Table 22 - Standard safeguards and environmental management measures

Put a 'X' if apply.	Safeguards
	General
X	All contractors and machine operators will be inducted on the environmental sensitivities of the work site(s) and relevant safeguards.
	Topography, geology and soils
X	The Construction Environmental Management Plan (CEMP) prepared for the works will include an erosion and sediment control plan. Erosion and sediment control measures are to be implemented and maintained to: • Prevent sediment moving off-site and sediment laden water entering any water course, drainage lines, or drain inlets • Reduce water velocity and capture sediment on site • Minimise the amount of material transported from site to surrounding pavement surfaces • Divert clean water around the site. (in accordance with the Landcom/Department of Housing Managing Urban Stormwater, Soils and Construction Guidelines -The Blue Book-).
X	Erosion and sediment control measures will be consistent with those specified in the relevant guideline under the DECC Managing Urban Stormwater. Soils and Construction Volume 2 (DECC 2008). and where relevant Managing Urban Stormwater Soils and Construction (Landcom 2004)
X	Erosion and sedimentation controls are to be checked and maintained on a regular basis (including clearing of sediment from behind barriers) and records kept and provided on request.
X	All erosion and sediment control measures will be established before excavation, demolition or vegetation clearance begins and is to remain in place until all surfaces have been fully restored and stabilised.
X	Work areas are to be stabilised progressively during the works
X	Sediment control devices (e.g. silt fences, straw bales wrapped in geotextile etc.) will be installed parallel with the contours of the site and immediately downslope of any areas where the natural ground surface has been disturbed.
X	Any spoil storage areas or stockpiles will have appropriate erosion control devices installed to control runoff and prevent sedimentation.

Put a 'X' if apply.	Safeguards
X	Sediment and erosion control devices will be inspected regularly, maintained to ensure effectiveness over the entire duration of the project, and cleaned out before 30% capacity is reached.
X	Upslope surface runoff will be redirected around work areas by using diversion drains or other methods.
	Water quality, hydrology and drainage
X	The storage and handling of fuels and chemicals shall comply with Australian Standard AS1940.
X	No chemicals, fuels, and/or waste will be stored or collected for disposal within or adjacent to drainage lines or unsealed surfaces.
X	A 'spill kit' will be kept on site at all times for potential chemical or fuel spills.
X	Refuelling, fuel decanting and vehicle maintenance work will take place in a designated sealed and bunded area.
X	An Incident Management Plan (IMP) will be prepared as part of the Contractors EMP and will include a contingency plan and emergency procedures for dealing with the potential spillage of fuel or other environmental incidents that may occur on the work site. The IMP should also contain procedures dealing with the unexpected onset of rainfall during the work period.
X	Water from trench de-watering will be pumped and either collected in tanks for appropriate disposed or filtered through geotextile fabric onto grass filter areas.
X	Drilling water and lubricating fluids will be reused wherever possible prior to disposal at an EPA licenced waste management facility.
X	No dirty water will be released into drainage lines and/or waterways.
	Visual monitoring of local water quality (i.e. turbidity, hydrocarbon spills/slicks) is to be undertaken on a regular basis to identify any potential spills or deficient silt curtains or erosion and sediment controls.
X	Measures to control pollutants from stormwater and spills would be investigated and incorporated in the pavement drainage system at locations where it discharges to the receiving drainage lines. Measures aimed at reducing flow rates during rain events and potential scour would also be incorporated in the design of the pavement drainage system.
X	Water quality control measures are to be used to prevent any materials (e.g. concrete, grout, sediment etc.) entering drain inlets or waterways.
	Flora, fauna and ecosystems
X	Construction activities shall be in accordance with the recommendations contained in this report.
X	The full extent of any vegetation clearance will be clearly documented and mapped in site EMP(s).

Put a 'X' if apply.	Safeguards
X	Materials/equipment lay-down areas will be shown in the EMP(s) and located in cleared or degraded areas to prevent any damage to the surrounding plants or habitat.
X	Materials, plant and equipment will not be stored within the driplines of any trees at the site(s) or near the site(s).
X	To prevent damage to vegetation outside the boundaries of access tracks/roads, vehicles and machinery will be restricted to designated access roads and tracks.
	Where access tracks/roads run alongside areas of natural bushland, protective fencing or paraweb fencing is to be installed along the boundaries of the track/road to prevent vehicles from inadvertently entering/damaging bushland.
	Degradation or disturbance to areas of waterside (riparian) vegetation or banks of watercourses will be avoided to the greatest possible extent. Any such areas will be clearly identified in the Environmental Management Plan.
X	The removal of large isolated canopy trees will be avoided - particularly those with tree-hollows.
X	Weed removal will be undertaken in accordance with contemporary bush regeneration principles and practices.
X	All weeds removed from a site(s) will be transported in a sealed container or bag and disposed at an EPA approved waste disposal facility.
X	Where works are being undertaken in a weed-infested area(s), all construction vehicles will be cleaned before they leave the site to prevent the spread of weed species.
X	Barrier Tape is to be used to designate non disturbance areas. These areas are to be clearly defined on the CEMP
	Works are not to create an ongoing barrier to the movement of wildlife.
X	Pruning of mature trees is to be in accordance with Part 5 of the *Australian Standard 4373-2007 Pruning of amenity trees.*
X	Works are not to harm threatened fauna (including where they inhabit bridges or other structures e.g. timber fence posts).
	Restoration activities
X	Disturbed areas will be stabilised as soon as possible and in a progressive manner as works are completed.
X	Mulched/shredded vegetation removed from the site may be used to assist in stabilisation of batters or disturbed surfaces (provided it does not contain weeds).
X	Where excavated soil is to be used in site restoration, it will be excavated and stockpiled in sequential layers corresponding to the existing soil profile. Topsoil and leaf litter is to be removed first and windrowed in separate stockpiles of less than 1m in height on the upslope side of excavations. Soil layers will be replaced sequentially so that the soil profile is restored as closely as possible to its pre-work status.

Put a 'X' if apply.	Safeguards
	The natural landform of the site(s) will be restored as closely as possible to the pre-works condition.
X	All temporary erosion and sediment control devices such as silt-stop fencing will be removed from the site at the completion of the works or when the site(s) are fully revegetated/stabilised.
	Rehabilitation of native vegetation areas will use brush matting or mulching or planting of appropriate local native tubestock.
X	Where practical retain timber debris from clearing and demolition to provide ground habitat, all existing debris is to be retained.
	Air quality & energy
X	Machinery and vehicles will not be left running or idling when not in use.
X	Odour or air pollutant emission complaints will be dealt with promptly and the source will be eliminated wherever practicable.
	All loads of excavated material, soil, fill and other erodible matter that are transported to or from the work site will be kept covered at all times during transportation and will remain covered until they are unloaded either for use at the work site, reuse or disposal at an EPA licensed waste disposal facility
X	All work sites, general work areas and stockpiles will be closely monitored for dust generation and watered down (with clean water) or covered (via seeding or tarpaulins) in the event of dry and/or windy conditions.
X	Works are to occur only during standard hours
X	Works (including the spraying of paint and other materials) are not to be carried out during strong winds or in weather conditions where high levels of dust or air borne particulates are likely.
X	Vegetation or other materials are not to be burnt on site.
X	Vehicles transporting waste or other materials that may produce odours or dust are to be covered during transportation.
	Heritage
X	If Aboriginal objects are discovered during operations, all work will cease in the area and the Contractor will inform the Tamworth Regional Council Contract Manager as soon as possible. TRC will advise the preferred course of action & liaise with OEH and the relevant local Aboriginal stakeholders if required.
X	If Non-Aboriginal heritage items are discovered during the course of the project, the TRC heritage officer and/or NSW Heritage Office will be notified. Heritage Council of New South Wales. 02 9873 8500 and heritagemailbox@environment.nsw.gov.au
X	All due care will be taken to ensure that heritage items listed in this report are not adversely affected by any works.

Put a 'X' if apply.	Safeguards
X	Hand digging or small machinery will be used in the close proximity of any heritage items to minimise impacts and preserve heritage values.
X	Protective barriers will be installed to prevent damage to heritage items either located within the site or adjacent to it.
	Visual environment
X	The site(s) will be maintained in an orderly manner.
X	On completion of the works, all vehicles, construction equipment, materials, and refuse relating to the works will be removed from the work site(s) and any adjacent affected areas
X	Work sites will be restored as close to their original condition as possible following the completion of the proposed works.
	Noise and vibration
X	Work and deliveries will only occur during the following times: Monday to Friday 7am to 6pm, Saturday 7am to 2pm (if inaudible at residential premises) or 8am to 1pm (if audible at residential premises). No construction work or deliveries will occur on Sundays or public holidays
X	All stationary and mobile equipment will be fitted with residential type silencers.
X	DECC Interim Construction Noise Guidelines includes examples of mitigation measures that can be considered for application for construction works.
X	Measures, including allowing adequate distance from vibration producing equipment to adjacent buildings, will be considered to minimise or prevent vibration impacts
	Traffic and access
X	The contractor will prepare a Traffic Management Plan in consultation with the relevant traffic authority(s).
X	Appropriate exclusion barriers, signage and site supervision will be employed at all times to ensure that the work site is controlled, and that unauthorised vehicles and pedestrians are excluded from the works area.
X	All traffic control devices will be in accordance with AS 1742.3-2019 "Traffic control devices for works on roads".
X	Pedestrian and vehicle access will be maintained to buildings by alternate means, such as ramps, if the proposed works obstruct access to the buildings for an extended period of time. Residents/ occupiers to be notified in advance if obstruction to access is likely to occur.
X	Where possible, current traffic movements and property accesses are to be maintained during the works. Any disturbance is to be minimised to prevent unnecessary traffic delays.
X	In case traffic movements need to be altered, alternative ways are to be provided

Put a 'X' if apply.	Safeguards
	Land use, services and public amenity
X	Surrounding residences directly affected by the works will be notified at least 14 days in advance of the proposed commencement of works, work methods and the duration of the construction period.
X	Where entry to private properties is required, a notice of entry letter will be provided at least 24 hours in advance.
X	TRC or the contractor will personally contact the occupant when they enter a private property to notify of their presence and what works are intended.
X	Any accidental damage to property occurred by the works must be repaired in consultation with the owner.
X	The Contractor will maintain a complaint register. Any complaints received will be responded to as soon as possible.
X	All services in the vicinity of the works will be located in the field and 'pegged-out' and noted in the Environmental Management Plan and/or work plans prior to excavation works - "dial 1100 before you dig".
X	Work sites will be restored as close to their original condition as possible following the completion of the proposed works.
X	Accurate public information signs will be displayed while work is in progress and maintained in presentable manner.
	If tree removal has been approved in a residential area, all local residents in the immediate vicinity of the tree(s) will be notified via letter/notice
	Waste generation
X	A Waste Management Plan must be prepared for management of road construction and maintenance waste.
X	Resource management hierarchy principles are to be followed: Avoid unnecessary resource consumption as a priority Avoidance is followed by resource recovery (including reuse of materials, reprocessing, recycling and energy recovery) Disposal is undertaken as a last resort (in accordance with the *Waste Avoidance & Resource Recovery Act 2001*).
X	All waste generated during the course of the works will be reused or removed from the work areas as soon as practicable and disposed of at a licenced waste disposal facility
X	All vessels used for contaminated or hazardous waste should be sealed, labelled according to their contents, and stored within bunded areas until their removal from the work site.
X	Any fuel, lubricant or hydraulic fluid spillages will be collected using absorbent material and the contaminated material disposed of at an EPA licensed waste depot.

Put a 'X' if apply.	Safeguards
X	The work site(s) will be left clean and free of weeds, debris and other rubbish at the end of works. Waste material, other than vegetation and tree mulch, is not to be left on site once the works have been completed.
X	All hazardous wastes on site will be removed and disposed of in accordance with the state and national regulations and guidelines and best practice for the removal of these materials.
X	The Contractor's recycling and reuse proposal will be detailed in the EMP.
X	Excess spoil material that cannot be reused or recycled will be removed from the site and disposed of at an EPA licensed facility
X	If vegetation is to be mulched and transported off site for beneficial reuse, it is to be assessed for the presence of weeds, pest, and other disease and a Mulch Management Plan.
X	Working areas are to be maintained, kept free of rubbish and cleaned up at the end of each working day.
X	Asbestos removal must be by a licensed asbestos remover who holds a Class A or Class B licence administered by SafeWork Australia.
	Hazard and risk
X	All fuels, chemicals and liquids are to be stored in an impervious bunded area a minimum of 50 metres away from: • Rivers, creeks or any areas of concentrated water flow • Flooded or poorly drained areas • Slopes above 10%.
X	Refuelling of plant and equipment and storage of hazardous materials on barges is to occur within a double-bunded area.
X	Cleaning of spray bars (or equivalent equipment) is to occur in suitable areas (e.g. not table drains) and not cause water pollution.
X	Vehicle wash down and/or cement truck washout is to occur in a designated bunded area.
X	An emergency spill kit is to be kept on site at all times and maintained throughout the construction work. The spill kit must be appropriately sized for the volume of substances at the work site.
X	Emergency contacts will be kept in an easily accessible location on vehicles, plant and site office. All workers will be advised of these contact details and procedures.
X	All workers will be advised of the location of the spill kit and trained in its use.
X	Vehicles, vessels and plant must be properly maintained and regularly inspected for fluid leaks.

Put a 'X' if apply.	Safeguards
	Community consultation
X	Notification is to be given to affected community members prior to the works taking place. The notification is to include: • Details of the proposal • The duration of works and working hours • Any changed traffic or access arrangements • How to lodge a complaint or obtain more information • Contact name and details.
X	All complaints are to be recorded on a complaints register and attended to promptly.
X	Existing access for nearby and adjoining properties is to be maintained at all times during the works unless otherwise agreed to by the affected property owner.
X	The community must be notified of all work outside standard hours which have the potential to impact noise sensitive receivers.

7.2. Appendix B – Drawing Designs

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TAMWORTH GLOBAL GATEWAY PARK

JEWRY STREET EXTENSION ROAD UPGRADE

100% DETAILED DESIGN

HATCH

PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT
TAMWORTH REGIONAL COUNCIL

THIS DRAWING CONTAINS COLOURED INFORMATION C M Y

DIAL BEFORE YOU DIG
www.1100.com.au

TRC REFERENCES:
TRC DESIGN NUMBER: DSJN1177
DESIGN DRAWINGS - TRIM RECORD NUMBER: 2018-48883

PROJECT NORTH

Map data ©2021 Nearmap

LOCALITY PLAN
SCALE 1:2000

DRAWING LIST

16562-H-DR-C-0000	COVER SHEET & DRAWING LIST
16562-H-DR-C-0001	CONSTRUCTION NOTES - SHEET 1
16562-H-DR-C-0002	CONSTRUCTION NOTES - SHEET 2
16562-H-DR-C-0100	GENERAL ARRANGEMENT PLAN
16562-H-DR-C-0200	TYPICAL SECTIONS - SHEET 1
16562-H-DR-C-0201	TYPICAL SECTIONS - SHEET 2
16562-H-DR-C-0300	CIVIL WORKS PLAN - SHEET 1
16562-H-DR-C-0301	CIVIL WORKS PLAN - SHEET 2
16562-H-DR-C-0302	CIVIL WORKS PLAN - SHEET 3
16562-H-DR-C-0303	CIVIL WORKS PLAN - SHEET 4
16562-H-DR-C-0400	STORMWATER MANAGEMENT PLAN - SHEET 1
16562-H-DR-C-0401	STORMWATER MANAGEMENT PLAN - SHEET 2
16562-H-DR-C-0402	STORMWATER MANAGEMENT PLAN - SHEET 3
16562-H-DR-C-0403	STORMWATER MANAGEMENT PLAN - SHEET 4
16562-H-DR-C-0410	ROCK SCOUR PROTECTION HEADWALL PLAN & DETAILS

DRAWING LIST

16562-H-DR-C-0500	ROUNDABOUT PLAN
16562-H-DR-C-0510	LINEMARKING & SIGNAGE PLAN - SHEET 1
16562-H-DR-C-0511	LINEMARKING & SIGNAGE PLAN - SHEET 2
16562-H-DR-C-0512	LINEMARKING & SIGNAGE PLAN - SHEET 3
16562-H-DR-C-0513	LINEMARKING & SIGNAGE PLAN - SHEET 4
16562-H-DR-C-0514	LINEMARKING & SIGNAGE PLAN - SHEET 5
16562-H-DR-C-0515	LINEMARKING & SIGNAGE PLAN - SHEET 6
16562-H-DR-C-0600	LONGITUDINAL SECTIONS - MC00 - SHEET 1
16562-H-DR-C-0601	LONGITUDINAL SECTIONS - MC00 - SHEET 2
16562-H-DR-C-0602	LONGITUDINAL SECTIONS - MC01 & MC02
16562-H-DR-C-0700	LONGITUDINAL SECTIONS - MK01 & MK02
16562-H-DR-C-0701	LONGITUDINAL SECTIONS - MK03 & MK04
16562-H-DR-C-0800	LONGITUDINAL SECTIONS - SP01 & SP02
16562-H-DR-C-0801	LONGITUDINAL SECTIONS - SP03
16562-H-DR-C-0900	LONGITUDINAL SECTIONS - MD04 & MD05

DRAWING LIST

16562-H-DR-C-1000	CROSS SECTIONS - MC00 - SHEET 1
16562-H-DR-C-1001	CROSS SECTIONS - MC00 - SHEET 2
16562-H-DR-C-1002	CROSS SECTIONS - MC00 - SHEET 3
16562-H-DR-C-1003	CROSS SECTIONS - MC00 - SHEET 4
16562-H-DR-C-1004	CROSS SECTIONS - MC00 - SHEET 5
16562-H-DR-C-1005	CROSS SECTIONS - MC00 - SHEET 6
16562-H-DR-C-1006	CROSS SECTIONS - MC00 - SHEET 7
16562-H-DR-C-1007	CROSS SECTIONS - MC00 - SHEET 8
16562-H-DR-C-1008	CROSS SECTIONS - MC00 - SHEET 9
16562-H-DR-C-1009	CROSS SECTIONS - MC00 - SHEET 10
16562-H-DR-C-1100	CROSS SECTIONS - MC01 - SHEET 1
16562-H-DR-C-1101	CROSS SECTIONS - MC01 - SHEET 2
16562-H-DR-C-1200	LONGITUDINAL SECTIONS - MD01
16562-H-DR-C-1201	LONGITUDINAL SECTIONS - MD06 & MD10
16562-H-DR-C-1300	CROSS SECTIONS - MD01 - SHEET 1
16562-H-DR-C-1301	CROSS SECTIONS - MD01 - SHEET 2
16562-H-DR-C-1302	CROSS SECTIONS - MD01 - SHEET 3

DRAWING LIST

16562-H-DR-C-1400	LONGITUDINAL SECTIONS - MD02 & MD03
16562-H-DR-C-1401	CROSS SECTIONS - MD02 - SHEET 1
16562-H-DR-C-1402	CROSS SECTIONS - MD02 - SHEET 2
16562-H-DR-C-1403	CROSS SECTIONS - MD03 - SHEET 1
16562-H-DR-C-1404	CROSS SECTIONS - MD03 - SHEET 2
16562-H-DR-C-1500	LONGITUDINAL SECTIONS - MK05 & MC03
16562-H-DR-C-1600	CROSS SECTIONS - MC02
16562-H-DR-C-1700	JEWRY STREET BOX CULVERT - PLAN & SECTION
16562-H-DR-C-1701	BOX CULVERT - TYPICAL DETAILS
16562-H-DR-C-1702	BOX CULVERT - BASE SLAB PLAN & DETAILS
16562-H-DR-C-1703	BOX CULVERT - BASE SLAB REINFORCEMENT PLANS
16562-H-DR-C-1704	BOX CULVERT - WINGWALL & HEADWALL DETAILS
16562-H-DR-C-1800	LONGITUDINAL SECTIONS - SEWER
16562-H-DR-C-1900	LONGITUDINAL SECTIONS - GAS - MC00
16562-H-DR-C-1901	LONGITUDINAL SECTIONS - GAS - MC01

DRAWING LIST

16562-H-DR-C-2000	CROSS SECTIONS - GAS - MC00 - SHEET 1
16562-H-DR-C-2001	CROSS SECTIONS - GAS - MC00 - SHEET 2
16562-H-DR-C-2002	CROSS SECTIONS - GAS - MC00 - SHEET 3
16562-H-DR-C-2003	CROSS SECTIONS - GAS - MC00 - SHEET 4
16562-H-DR-C-2004	CROSS SECTIONS - GAS - MC00 - SHEET 5
16562-H-DR-C-2100	CROSS SECTIONS - GAS - MC01
16562-H-DR-C-2200	DRAINAGE LONGITUDINAL SECTIONS - LINE 2
16562-H-DR-C-2201	DRAINAGE LONGITUDINAL SECTIONS - LINE 3 & LINE 4
16562-H-DR-C-2202	DRAINAGE LONGITUDINAL SECTIONS - LINE 5 & LINE 6
16562-H-DR-C-2300	MD02 TYPICAL SECTION
16562-H-DR-C-2400	CROSS SECTIONS - MD10 - SHEET 1
16562-H-DR-C-2401	CROSS SECTIONS - MD10 - SHEET 2
16562-H-DR-C-2402	CROSS SECTIONS - MD10 - SHEET 3

DRAWING LIST

16562-H-DR-C-2500	VEHICLE TURNING PATH PLAN - SHEET 1
16562-H-DR-C-2501	VEHICLE TURNING PATH PLAN - SHEET 2
16562-H-DR-C-2502	VEHICLE TURNING PATH PLAN - SHEET 3
16562-H-DR-C-2503	VEHICLE TURNING PATH PLAN - SHEET 4
16562-H-DR-C-2504	VEHICLE TURNING PATH PLAN - SHEET 5
16562-H-DR-C-2505	VEHICLE TURNING PATH PLAN - SHEET 6
16562-H-DR-C-2506	VEHICLE TURNING PATH PLAN - SHEET 7
16562-H-DR-C-2507	VEHICLE TURNING PATH PLAN - SHEET 8
16562-H-DR-C-2508	VEHICLE TURNING PATH PLAN - SHEET 9

REV	DATE	DESCRIPTION	DRN	APP
P03	24.08.2022	DRAFT ISSUE FOR 100% DETAILED DESIGN	A.V.	T.W.
P02	01.06.2022	ISSUED FOR 90% DETAILED DESIGN	A.V.	C.G.
P01	13.05.2022	ISSUED FOR 90% DETAILED DESIGN	A.V.	C.G.

TITLE
COVER SHEET & DRAWING LIST

DOCUMENT STATUS			SHEET SIZE
DRAFT COPY			A1
DRAWN: A.VIZL	DESIGNED: C.GARNER	APPROVED: T.WALTON	SCALE: 1:2000
DOCUMENT No. 16562-H-DR-C-0000			REVISION P03

NOT FOR CONSTRUCTION

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CONSTRUCTION NOTES

GENERAL:

1. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL OTHER CONSULTANTS' DRAWINGS AND SPECIFICATIONS AND WITH SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ALL DISCREPANCIES SHALL BE REFERRED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
2. DIMENSIONS SHALL NOT BE OBTAINED BY SCALING THESE DRAWINGS.
3. ALL DIMENSIONS ARE IN MILLIMETRES AND ALL LEVELS ARE IN METRES UNLESS NOTED OTHERWISE.
4. SETTING OUT DIMENSIONS SHOWN ON THE DRAWINGS SHALL BE VERIFIED BY THE BUILDER.
5. DURING CONSTRUCTION, THE STRUCTURE SHALL BE MAINTAINED IN A STABLE CONDITION AND NO PART SHALL BE OVER-STRESSED. TEMPORARY STRUCTURES, FORMWORK, FALSEWORK, TEMPORARY BRACING, SHORING AND THE LIKE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
6. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT EDITIONS, INCLUDING AMENDMENTS, OF THE RELEVANT STANDARDS AND CODES OF PRACTICE, EXCEPT AS VARIED BY THE CONTRACT DOCUMENTS AND THE LAWS AND REQUIREMENTS OF STATUTORY AUTHORITIES.
7. ALL WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH ALL WORKCOVER REQUIREMENTS AND OCCUPATIONAL HEALTH AND SAFETY ACT REGULATIONS.
8. WHERE THE ENGINEERS ARE ENGAGED FOR INSPECTIONS AND/OR SUPERVISION, A MINIMUM OF 24 HOURS NOTICE SHALL BE GIVEN.
9. CONSTRUCTION USING THESE DRAWINGS SHALL NOT COMMENCE UNTIL A CONSTRUCTION CERTIFICATE IS ISSUED BY THE PRINCIPAL CERTIFYING AUTHORITY.

GROUND PREPARATION:

1. EXCAVATION AND GROUND PREPARATION SHALL BE CARRIED OUT IN ACCORDANCE WITH THE SPECIFICATION FOLLOWING THE RECOMMENDATIONS OF THE GEOTECHNICAL REFERENCES AND ANY ADDITIONAL INSTRUCTIONS THAT MAY BE PROVIDED BY A GEOTECHNICAL ENGINEER DURING THE COURSE OF THE PROJECT.
2. IN THE ABSENCE OF SPECIFIC GEOTECHNICAL ADVICE REGARDING GROUND PREPARATION, THE SITE SHALL BE PREPARED IN ACCORDANCE WITH THE FOLLOWING NOTES.
3. STRIP ALL VEGETATION, TOPSOIL, ROOT AFFECTED OR OTHER POTENTIALLY DELETERIOUS MATERIAL AND CUT SITE WHERE REQUIRED TO LEVELS INDICATED.
4. ANY EXISTING FILL MATERIAL UNDER PROPOSED AREA OF CONSTRUCTION TO BE REMOVED AND REPLACED WITH COMPACTED FILL.
5. FOLLOWING STRIPPING, THE EXPOSED SUBGRADE MATERIALS SHALL BE PROOF ROLLED WITH 5 PASSES OF A 10 TONNE ROLLER TO IDENTIFY ANY WET OR EXCESSIVELY DEFLECTING MATERIAL (SOFT SPOTS). ALL SUCH AREAS ARE TO BE OVER EXCAVATED AND BACKFILLED WITH AN APPROVED SELECT MATERIAL.
6. WHERE FILLING IS REQUIRED, LAY SELECT FILL MATERIAL IN NEAR HORIZONTAL LAYERS NOT EXCEEDING 200mm LOOSE THICKNESS AND COMPACTED AT OPTIMUM MOISTURE CONTENT ±2%, TO 80% MIN. DENSITY INDEX FOR COHESIONLESS SOILS OR 98% MIN. STANDARD DENSITY INDEX FOR COHESIVE SOILS.
7. TESTING OF SUBGRADE AND FILLING COMPACTION TO BE IN ACCORDANCE WITH LEVEL 2 TESTING AS DESCRIBED IN AS3798-2007.
8. EXCAVATIONS SHALL NOT BE MADE BELOW THE TOP LEVEL OF EXISTING ADJOINING FOOTINGS WITHOUT THE APPROVAL OF THE ENGINEER.

GEOTECHNICAL REFERENCES:

1. FOR GEOTECHNICAL REFERENCES REFER TO THE FOLLOWING DOCUMENTS

PREPARED BY:	REGIONAL GEOTECHNICAL SOLUTIONS
REPORT No.	RGS32468.1-AA(Rev1)
DATED	10 NOVEMBER 2020
PREPARED BY:	REGIONAL GEOTECHNICAL SOLUTIONS
REPORT No.	RGS32468.1-AA(Rev2)
DATED	18 MARCH 2021
PREPARED BY:	REGIONAL GEOTECHNICAL SOLUTIONS
REPORT No.	RGS32468.1-AA(Rev3)
DATED	08 JULY 2021

SAFETY IN DESIGN:

1. IN UNDERTAKING THE DESIGN HATCH HAVE MADE REFERENCE TO SAFE WORK AUSTRALIA'S CODE OF CONDUCT FOR THE SAFE DESIGN OF STRUCTURES. THE METHOD OF CONSTRUCTION AND SAFETY CONTROLS DURING CONSTRUCTION IS THE RESPONSIBILITY OF THE CONTRACTOR.
2. IF ANY ELEMENT PRESENTS DIFFICULTY IN RESPECT TO CONSTRUCTION, SAFETY OR FUTURE MAINTENANCE & DEMOLITION THE MATTER SHOULD BE REFERRED TO THE ENGINEER FOR RESOLUTION BEFORE PROCEEDING.
3. THE DETERMINATION OF SAFE WORK METHOD REMAINS THE RESPONSIBILITY OF THE CONTRACTOR.

DRAINAGE:

1. SELECTION AND INSTALLATION OF PITS, PIPES, TANKS AND TRENCHES SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF AS/NZS3500, LOCAL AND STATUTORY REQUIREMENTS (U.N.O.).
2. THE CONTRACTOR SHALL IDENTIFY AND LOCATE ALL SERVICES PRIOR TO COMMENCEMENT OF CONSTRUCTION.
3. SEDIMENT AND EROSION CONTROLS TO BE PROVIDED IN ACCORDANCE WITH ALL LOCAL AND STATUTORY REGULATIONS.
4. WHERE REQUIRED, STORMWATER EASEMENTS SHALL BE OBTAINED BY THE OWNER. ALL NEGOTIATIONS/COMPENSATION PAYMENTS AND THE INTEGRATION OF ANY EASEMENTS INTO THE TITLE DOCUMENTS SHALL BE BY THE OWNER UNLESS AGREED OTHERWISE.
5. THE ENGINEER SHALL BE ADVISED IF ANY EXISTING STRUCTURES ARE WITHIN THE ZONE OF INFLUENCE OF AN EXCAVATION. ANY REQUIRED UNDER-PINNING OR PIERING SHALL BE PROVIDED.
6. WHERE EXCAVATING ADJACENT TO BOUNDARIES, ADEQUATE SHORING SHALL BE PROVIDED.
7. THE CONTRACTOR SHALL ENSURE THAT ALL NEW STRUCTURES ARE FOUNDED BELOW THE ZONE OF INFLUENCE OF ANY EXCAVATIONS WHETHER THEY BE FOR PIPELINES, TANKS OR OTHER DRAINAGE FACILITIES.
8. UNLESS NOTED OTHERWISE, THE MAXIMUM DEVIATION FROM NOMINATED LEVELS SHALL BE ±10mm, EXCEPT IN INSTANCES WHERE SUCH A DEVIATION COULD HAVE ADVERSE EFFECTS, IN WHICH CASE THE ENGINEER SHALL BE CONSULTED.
9. LOAD CLASS FOR COVERS/GRATES SHALL BE IN ACCORDANCE WITH AS3996 - 2019, TABLE 3.1.
10. UNTIL COMPLETION OF ALL WORKS, THE CONTRACTOR SHALL FIRSTLY FILTER ALL STORMWATER IN ACCORDANCE WITH APPROVED DETAILS TO ENSURE THE REMOVAL OF ALL CONCRETE AND OTHER BUILDING SITE POLLUTANTS.
11. THE CONTRACTOR SHALL SEEK DIRECTION BEFORE COMMENCING ANY EXCAVATION THAT MAY RESULT IN DAMAGE TO ANY EXISTING TREES.
12. RETAINING STRUCTURES SHALL BE PROVIDED AS REQUIRED IN ORDER TO ACHIEVE THE LEVELS NOMINATED ON THE DRAWINGS. THESE STRUCTURES SHALL COMPLY WITH ALL LOCAL AND STATUTORY REGULATIONS, AND MAY REQUIRE DESIGN BY AN ENGINEER.
13. UNLESS NOTED OTHERWISE, WHERE A PIT INVERT IS BELOW THE INVERT OF THE LOWEST OUTLET PIPE, THE CONTRACTOR SHALL EITHER PROVIDE DRAINAGE HOLES IN THE BASE OF THE PIT OR ELSE FILL THE BASE OF THE PIT WITH MASS CONCRETE TO THE INVERT OF THE LOWEST OUTLET PIPE.
14. WHERE REQUIRED BY REGULATIONS, STEP IRONS IN ACCORDANCE WITH AS1657 SHALL BE INSTALLED IN DEEP PITS/TANKS TO ALLOW ACCESS FOR MAINTENANCE. PIT COVERS OVER DEEP PITS SHALL BE 'CHILD-PROOFED' BY BOLTING THEM DOWN, EXCEPT WHERE THE COVER WEIGHS OVER 30kg.
15. ALL IMPERVIOUS SURFACES SHALL BE GRADED SUCH THAT THEY ARE FREE DRAINING.
16. WHERE REQUIRED BY THE PRINCIPAL CERTIFIER, WORK-AS-EXECUTED DETAILS SHALL BE PREPARED BY A REGISTERED SURVEYOR/CHARTERED PROFESSIONAL ENGINEER VERIFYING THAT THE DRAINAGE SYSTEM HAS BEEN CONSTRUCTED IN ACCORDANCE WITH THE DRAWINGS. ANY DEVIATIONS FROM THE APPROVED PLANS SHALL BE NOTED AND BROUGHT TO THE ATTENTION OF THE ENGINEER. ADEQUATE INSPECTIONS SHOULD BE CARRIED OUT DURING THE COURSE OF CONSTRUCTION.
17. WHERE AN ENGINEER'S CERTIFICATE WILL BE REQUIRED, THE ENGINEER SHALL BE CALLED ON TO INSPECT THE WORKS PRIOR TO ANY CONCRETE POURS, PRIOR TO BACKFILLING AROUND ANY TANKS, AND AT THE COMPLETION OF WORKS. THE ENGINEER SHALL BE GIVEN A MINIMUM OF 24 HOURS NOTICE BEFORE AN INSPECTION IS REQUIRED.
18. ANY PROPOSED ALTERATIONS TO THE DETAILS SHOWN ON THE DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
19. LEAF SCREENS, SILT CONTROLS AND ANY OTHER POLLUTANT CONTROL DEVICES SHALL BE REGULARLY SERVICED TO ENSURE THAT THE DRAINAGE SYSTEM REMAINS UNBLOCKED AND OPERATES AS ORIGINALLY INTENDED.
20. OVERLAND FLOW PATHS SHALL BE REGULARLY MAINTAINED AND KEPT FREE OF OBSTRUCTIONS TO THE FLOW OF WATER.
21. SUBSOIL DRAINAGE LINES SHALL BE PROVIDED BEHIND RETAINING WALLS AND OTHER AREAS AS REQUIRED TO RELIEVE HYDROSTATIC PRESSURE AND DRAIN GROUND WATERS. CONNECT INTO THE DRAINAGE SYSTEM IN SUCH A WAY AS TO AVOID BACKFLOW OF STORMWATER INTO THE SUBSOIL DRAINAGE LINE. IF IN DOUBT REFER TO ENGINEER.
22. NEW FENCES, RETAINING WALLS AND OTHER LANDSCAPING ITEMS SHALL BE DETAILED IN SUCH A WAY SO AS TO AVOID IMPOUNDING OR DIVERTING SURFACE WATERS ON TO ADJOINING PROPERTIES.
23. UPON COMPLETION, PIPE/PIT EXCAVATIONS SHALL BE BACKFILLED WITH SUITABLE COMPACTED MATERIAL IN ACCORDANCE WITH NOTES BELOW.
24. ALL PVC PIPES ARE TO BE:-
    a. SEWER GRADE (U.N.O.)
    b. INSTALLED AND BACKFILLED IN ACCORDANCE WITH AS2566.1
25. ALL CONCRETE PIPES ARE TO BE:-
    a. STRENGTH LOAD CLASS 4 (U.N.O.)
    b. INSTALLED AND BACKFILLED IN ACCORDANCE WITH AS3725 WITH CLASS H2 BEDDING SUPPORT
26. THE CONTRACTOR SHALL ADEQUATELY SHIELD PIPES AGAINST CONSTRUCTION AND PERMANENT LOADS.
27. PIPES HAVE BEEN DESIGNED TO WITHSTAND SM1600 TRAFFIC LOADING IN ACCORDANCE WITH AS5100.

LAND DISTURBANCE:

1. THE SOIL EROSION HAZARD ON THE SITE WILL BE KEPT AS LOW AS POSSIBLE AND PRACTICAL. TO THIS END, WORKS IS TO BE UNDERTAKEN IN THE FOLLOWING GENERAL SEQUENCE:-
    a) CONSTRUCTION OF SEDIMENT AND EROSION CONTROLS PRIOR TO ANY WORK COMMENCING
    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
2. THE SITE MANAGER (PRINCIPAL CONTRACTOR) IS TO INFORM ALL CONTRACTORS AND SUBCONTRACTORS OF THEIR OBLIGATIONS UNDER THE EROSION AND SEDIMENT CONTROL PLAN.
3. TOPSOIL FROM ALL AREAS THAT WILL BE DISTURBED IS TO BE STRIPPED AND STOCKPILED AT THE NOMINATED LOCATION.
4. CUT AND FILL BATTER GRADIENTS TO BE 1 VERTICAL (MAX) : 2 HORIZONTAL (MIN). U.N.O OR FLATTER.

INSPECTION AND MAINTENANCE:

1. THE SITE MANAGER (PRINCIPAL CONTRACTOR) WILL ENSURE THAT ALL SEDIMENT AND EROSION CONTROL WORKS ARE LOCATED AS INSTRUCTED IN THIS SPECIFICATION OR IN ANY SUBSEQUENT SITE INSTRUCTION.
2. ALL BUILDERS AND SUB-CONTRACTORS SHALL BE INFORMED OF THEIR RESPONSIBILITIES BY THE SITE MANAGER (PRINCIPAL CONTRACTOR) IN MINIMISING THE POTENTIAL FOR SOIL EROSION AND POLLUTION TO DOWNSLOPE LANDS AND WATERWAYS.
3. RECEPTORS FOR CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHT-WEIGHT WASTE MATERIALS AND LITTER ARE TO BE EMPTIED AS NECESSARY. DISPOSAL OF WASTE SHALL BE IN A MANNER APPROVED BY THE SITE SUPERINTENDENT AND GENERALLY OFF SITE.
4. AT LEAST WEEKLY, THE CONTRACTOR SHALL INSPECT THE SITE AND ENSURE THAT:-
    a) DRAINS OPERATE EFFECTIVELY AND INITIATE REPAIR OR MAINTENANCE AS REQUIRED
    b) SPILLED SOIL (OR OTHER MATERIAL) IS REMOVED FROM HAZARD AREAS, INCLUDING LIKELY AREAS OF CONCENTRATED OR HIGH VELOCITY FLOWS SUCH AS WATERWAYS, GUTTERS, PAVED AREAS AND DRIVEWAYS
    c) SEDIMENT IS REMOVED FROM BASINS AND/OR TRAPS WHEN LESS THAN 20m OF TRAPPING CAPACITY REMAIN PER 1000m OF DISTURBED LANDS, AND/OR LESS THAN 500mm DEPTH REMAINS IN THE SETTLING ZONE. ANY COLLECTED SEDIMENT WILL BE DISPOSED IN AREAS WHERE FURTHER POLLUTION TO DOWNSLOPE LANDS AND WATERWAYS IS UNLIKELY
    d) REHABILITATED LANDS HAVE EFFECTIVELY REDUCED THE EROSION HAZARD AND INITIATE UPGRADING OR REPAIRS AS APPROPRIATE
5. THE CONTRACTOR SHALL PROVIDE A DETAILED 'LOG BOOK' RECORDING INFORMATION & DATA WITH RESPECT TO THE SEDIMENT & EROSION CONTROL PLAN AND TO ENSURE SEDIMENT CONTROL DEVICES ARE FUNCTIONING PROPERLY. THIS IS TO BE KEPT ON SITE AT ALL TIMES AND UPDATED DAILY. INFORMATION RECORDED MUST INCLUDE:-
    a) RAINFALL EVENTS
    b) RAINFALL IN MILLIMETRES
    c) RESULTS OF ANY INSPECTIONS

ADDITIONAL MATTERS:

1. ACCEPTABLE RECEPTORS SHALL BE PROVIDED FOR CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHT-WEIGHT WASTE MATERIALS AND LITTER.
2. 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 1.5m 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 300mm DEPTH
        iii) CARE IS TAKEN NOT TO CUT ROOTS UNNECESSARILY NOR TO COMPACT THE SOIL AROUND THEM

KERBING:

1. ALL KERBS, GUTTERS, DISH DRAINS AND CROSSINGS TO BE CONSTRUCTED ON MINIMUM 75mm GRANULAR BASECOURSE COMPACTED TO MINIMUM 98% MODIFIED MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS1289 5.2.1.
2. EXPANSION JOINTS (EJ) TO BE FORMED FROM 10mm COMPRESSIBLE CORK FILLER BOARD FOR FULL DEPTH OF THE SECTION AND CUT TO PROFILE. EXPANSION JOINTS TO BE LOCATED AT DRAINAGE PITS, ON TANGENT POINTS OF CURVES AND ELSEWHERE AT 12m CENTRES EXCEPT FOR INTEGRAL KERBS WHERE THE EXPANSION JOINTS ARE TO MATCH THE JOINT LOCATIONS IN SLABS.
3. WEAKENED PLANE JOINTS TO BE MINIMUM 3mm WIDE AND LOCATED AT 3m CENTRES EXCEPT FOR INTEGRAL KERBS WHERE WEAKENED PLANE JOINTS ARE TO MATCH THE JOINT LOCATIONS IN SLABS.
4. PROVIDE BROOM FINISH TO ALL RAMPS AND VEHICULAR CROSSINGS. ALL OTHER KERBS OR DISH DRAINS TO BE STEEL FLOAT FINISHED.
5. WHERE REPLACEMENT OF EXISTING KERBING IS REQUIRED, ROAD PAVEMENT IS TO BE SAWCUT 900mm FROM LIP OF GUTTER. UPON COMPLETION OF NEW KERBS, NEW BASECOURSE AND SURFACE IS TO BE LAID 900mm WIDE. MAKE GOOD ANY DAMAGE TO SURROUNDING KERBING OR PAVEMENT. EXISTING KERBS ARE TO BE COMPLETELY REMOVED WHERE NEW KERBS ARE SHOWN.

SURVEY:

1. SURVEY INFORMATION USED FOR DESIGN PURPOSES SUPPLIED AS FOLLOWS:

SURVEYOR:	TAMWORTH REGIONAL COUNCIL
DOCUMENT No:	ACAD-1177 DETAIL MGA 2020-MODEL
DATED:	UNKNOWN

2. ALL LEVELS ARE TO AUSTRALIAN HEIGHT DATUM AHD.
3. SURVEY COORDINATE SYSTEM IS MAP GRID OF AUSTRALIA MGA2020.
4. ALL SURVEY SETOUT SHALL BE UNDERTAKEN BY A QUALIFIED SURVEYOR.
5. THE CONTRACTOR SHALL PREPARE WORK AS EXECUTED DRAWINGS FOR THE WORKS AS REQUIRED BY THE SUPERINTENDENT.
7. THE CONTRACTOR SHALL VERIFY THE SURVEY AND SHALL NOTIFY THE SUPERINTENDENT AND ENGINEER OF ANY SURVEY DISCREPANCIES AT LEAST TWO WEEKS PRIOR TO COMMENCEMENT OF WORKS.
8. ANY REGISTERED SURVEY MARKS WITHIN THE WORKS AREA OR CLOSE PROXIMITY THAT WILL BE DESTROYED, MUST BE APPROVED BY THE SURVEYORS GENERAL BEFORE CONSTRUCTION COMMENCES. DESTROYED REGISTERED SURVEY MARKS ARE TO BE REPLACED WITH AN EQUIVALENT STANDARD MARK IN ACCORDANCE WITH THE RELEVANT STANDARD AND IN AS DIRECTED BY THE SURVEYOR GENERAL, PRIOR TO REMOVAL OF THE EXISTING MARK. IT SHALL ALSO BE COORDINATED AND DOCUMENTED TO EQUIVALENT LANDS DEPARTMENT STANDARDS.
9. DAMAGED SURVEY MONUMENTS ARE TO BE REPAIRED OR REINSTATED TO THE SATISFACTION OF THE SURVEYOR GENERAL.

HATCH

PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT
TAMWORTH REGIONAL COUNCIL

THIS DRAWING CONTAINS COLOURED INFORMATION C M Y

REV	DATE	DESCRIPTION	DRN	APP
P03	24.08.2022	DRAFT ISSUE FOR 100% DETAILED DESIGN	A.V.	T.W.
P02	01.06.2022	ISSUED FOR 90% DETAILED DESIGN	A.V.	C.G.

TITLE
CONSTRUCTION NOTES
SHEET 1

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DOCUMENT STATUS			SHEET SIZE
DRAFT COPY			A1
DRAWN	DESIGNED	APPROVED	SCALE
A.VIZL	C.GARNER	T.WALTON	N.T.S.
DOCUMENT No.			REVISION
16562-H-DR-C-0001			P03

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CONSTRUCTION NOTES

HATCH

GENERAL:

1. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL COUNCIL AND OTHER CONSULTANTS' DRAWINGS, SPECIFICATIONS , WORKS AUTHORISATION DEED (WAD) AND CLIENT CONTRACT DOCUMENTS. ALL DISCREPANCIES SHALL BE REFERRED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
2. DIMENSIONS SHALL NOT BE OBTAINED BY SCALING THESE DRAWINGS.
3. ALL DIMENSIONS ARE IN MILLIMETRES AND ALL LEVELS ARE IN METRES (mAHD) UNLESS NOTED OTHERWISE.
4. SETTING OUT DIMENSIONS SHOWN ON THE DRAWINGS SHALL BE VERIFIED BY THE BUILDER.
5. DURING CONSTRUCTION, ALL STRUCTURES SHALL BE MAINTAINED IN A STABLE CONDITION AND NO PART SHALL BE OVER-STRESSED. TEMPORARY STRUCTURES, FORMWORK, FALSEWORK, TEMPORARY BRACING, SHORING AND THE LIKE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
6. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT EDITIONS, INCLUDING AMENDMENTS, OF THE RELEVANT SPECIFICATIONS, STANDARDS AND CODES OF PRACTICE, EXCEPT AS VARIED BY THE CONTRACT DOCUMENTS AND THE LAWS AND REQUIREMENTS OF STATUTORY AUTHORITIES.
7. ALL WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH ALL WORKCOVER REQUIREMENTS AND OCCUPATIONAL HEALTH AND SAFETY ACT REGULATIONS.
8. WHERE THE ENGINEERS ARE ENGAGED FOR INSPECTIONS AND/OR SUPERVISION, A MINIMUM OF 24 HOURS NOTICE SHALL BE GIVEN.
9. CONSTRUCTION USING THESE DRAWINGS SHALL NOT COMMENCE UNTIL APPROVAL IS ISSUED BY THE PRINCIPAL CERTIFYING AUTHORITY.

GROUND PREPARATION:

1. EXCAVATION AND GROUND PREPARATION SHALL BE CARRIED OUT IN ACCORDANCE WITH THE SPECIFICATION FOLLOWING THE RECOMMENDATIONS OF THE GEOTECHNICAL REFERENCES AND ANY ADDITIONAL INSTRUCTIONS THAT MAY BE PROVIDED BY A GEOTECHNICAL ENGINEER DURING THE COURSE OF THE PROJECT.

GEOTECHNICAL REFERENCES:

1. FOR GEOTECHNICAL REFERENCES REFER TO THE FOLLOWING DOCUMENTS
   PREPARED BY: REGIONAL GEOTECHNICAL SOLUTIONS
   REPORT No. RGS32468.1-AA(Rev3)
   DATED 08 JULY 2021

SAFETY IN DESIGN:

1. IN UNDERTAKING THE DESIGN HATCH HAVE MADE REFERENCE TO SAFE WORK AUSTRALIA'S CODE OF CONDUCT FOR THE SAFE DESIGN OF STRUCTURES. THE METHOD OF CONSTRUCTION AND SAFETY CONTROLS DURING CONSTRUCTION IS THE RESPONSIBILITY OF THE CONTRACTOR.
2. IF ANY ELEMENT PRESENTS DIFFICULTY IN RESPECT TO CONSTRUCTION, SAFETY OR FUTURE MAINTENANCE & DEMOLITION THE MATTER SHOULD BE REFERRED TO THE ENGINEER FOR RESOLUTION BEFORE PROCEEDING.
3. THE DETERMINATION OF SAFE WORK METHOD REMAINS THE RESPONSIBILITY OF THE CONTRACTOR.

DESIGN CRITERIA:

1. BRIDGE DESIGNED IN ACCORDANCE WITH AS5100-2017
2. DESIGN LIFE = 100 YEARS
3. DESIGN LOADINGS IN ACCORDANCE WITH THE FOLLOWING:
   - VEHICLE LOADING = SM1600
4. 5 CELL, 3600 x 750 BOX CULVERT HYDROLOGY DESIGN BY LYALL & ASSOCIATES.

CONCRETE:

1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS3600, AS5100, CURRENT EDITION WITH AMENDMENTS, EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS AND TINSW SPEC B80.
2. ALL CONCRETE TO BE MANUFACTURED AND SUPPLIED ACCORDING TO AS1379.
3. USE TYPE 'GP' CEMENT UNLESS OTHERWISE SPECIFIED.
4. CONCRETE QUALITY SHALL CONFORM TO THE FOLLOWING (U.N.O.):

ELEMENT	SLUMP (mm)	MAX. SIZE AGGREGATE	STRENGTH (MPa)	SHRINKAGE STRAIN µ (MAX.)
ALL (U.N.O.)	80	20	N40	600
PRECAST UNITS	80	20	N50	600

5. ALL CONCRETE SHALL BE SUBJECT TO PROJECT ASSESSMENT AND TESTING TO AS1379.
6. CONSOLIDATE ALL CONCRETE BY MECHANICAL VIBRATION. CURE ALL CONCRETE SURFACES AS DIRECTED IN THE SPECIFICATION. (IF NO SPECIFICATION, IN ACCORDANCE WITH AS3600).
7. FOR ALL FALLS IN SLAB, DRIP GROOVES, REGLETS, CHAMFERS ETC REFER TO ARCHITECTS DRAWINGS AND SPECIFICATION.
8. NO HOLES OR CHASES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT THE PRIOR APPROVAL OF THE ENGINEER.
9. CONSTRUCTION JOINTS WHERE NOT SHOWN ON DRAWINGS SHALL BE LOCATED SUBJECT TO THE APPROVAL OF THE ENGINEER.
10. CONCRETE THICKNESSES SHOWN DO NOT INCLUDE THICKNESS OF APPLIED FINISHES.
11. BEAM DEPTHS ARE NOTED FIRST AND INCLUDE SLAB THICKNESSES, IF ANY.
12. FORMWORK: THE DESIGN, CERTIFICATION, CONSTRUCTION AND PERFORMANCE OF THE FORMWORK, FALSEWORK AND BACKPROPPING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE PROPOSED METHOD OF INSTALLATION AND REMOVAL OF FORMWORK IS TO BE SUBMITTED TO THE SUPERINTENDENT FOR COMMENT PRIOR TO WORK BEING CARRIED OUT.

PRECAST CONCRETE:

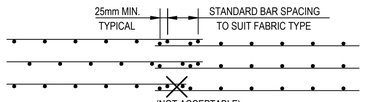
1. CROWN UNITS SHALL BE SUPPLIED IN ACCORDANCE WITH RMS SPECIFICATION R16 EXCEPT THAT THE TRAFFIC LOADING SHALL BE SM1600 IN ACCORDANCE WITH AS5100 BRIDGE DESIGN
2. THE REINFORCEMENT SHOWN ON THESE DRAWINGS IS FOR IN SERVICE LOADING CONDITIONS. IT IS THE PANEL MANUFACTURER'S RESPONSIBILITY TO DESIGN & ERECT THE PANELS TO SUIT THEIR SELECTED LIFTING ARRANGEMENT, ALLOWING FOR THE INSTALLATION OF ANY ADDITIONAL REINFORCEMENT, LIFTING & BRACING INSERTS ETC. WHICH MAY BE REQUIRED FOR LIFTING. THE PANEL MANUFACTURER SHALL SUBMIT FULLY DETAILED SHOP DRAWINGS INCLUDING DETAILS OF ALL LIFTING & BRACING INSERTS IN ADDITION TO PANEL TEMPORARY BRACING DETAILS.
3. ALL WORK TO BE CARRIED OUT STRICTLY IN ACCORDANCE WITH AS3850, AS3600 & AS5100
4. ANY VARIATIONS TO DIMENSIONS, SPECIFIED PRODUCTS, ETC. SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
5. ALL CONCRETE TO HAVE A MINIMUM 28 DAY STRENGTH OF f'c = 50MPa. MINIMUM CONCRETE STRENGTH AT TIME OF LIFT TO BE 25MPa.
6. THE MINIMUM STRUCTURAL THICKNESS OF PANELS IS 165mm.
7. THE MINIMUM CEMENT CONTENT SHALL NOT BE LESS THAN 320kg/m³.
8. PRECAST CONCRETE ELEMENT SHALL COMPLY WITH AS3600 & AS5100.
9. ENSURE THAT PRECAST UNITS REMAIN UNCRACKED DURING HANDLING AND ERECTION OPERATIONS. USE FORMWORK BOND BREAKERS AND STRONGBACKS AS REQUIRED.
10. ALL LIFTING POINTS VISIBLE IN THE FINISHED BUILDING SHALL BE MADE GOOD. LIFTING FERRULES THAT WILL BE IN EXTERIOR LOCATIONS ON THE PRECAST ELEMENT SHALL BE OF GRADE 316 STAINLESS STEEL.
11. ALL CAST-IN STEELWORK INCLUDING FERRULES, INSERTS, DOWEL BARS, ANGLE CLEATS, BOLTS, NUTS, WASHERS & PACKERS SHALL BE HOT-DIP GALVANISED.
12. ALLOW FOR WORKCOVER OR OTHER REQUIREMENTS GOVERNING HANDLING, LIFTING, ROTATION OR TRANSPORT OF PRECAST UNITS.
13. ALL GROUT IS TO BE AN APPROVED NON-SHRINK, NON-STAINING GROUT.

REINFORCEMENT:

1. FIX REINFORCEMENT AS SHOWN ON THE DRAWINGS. THE TYPE AND GRADE IS INDICATED BY THE SYMBOL AS SHOWN BELOW ON THE DRAWINGS. THIS IS FOLLOWED BY A NUMERAL WHICH INDICATES A SIZE IN MILLIMETRES OF THE REINFORCEMENT.
   N - HOT-ROLLED DEFORMED BAR (GRADE D500N)
   R - PLAIN ROUND BAR (GRADE R250N)
   SL - SQUARE MESH (GRADE 500L)
   RL - RECTANGULAR MESH (GRADE 500L)
2. PROVIDE BAR SUPPORTS OR SPACERS TO GIVE CONCRETE COVER TO ALL REINFORCEMENT.
3. WELDING OF REINFORCEMENT WILL NOT BE PERMITTED UNLESS SHOWN ON THE STRUCTURAL DRAWINGS.
4. SPLICES IN REINFORCEMENT SHALL BE MADE ONLY IN THE POSITIONS SHOWN. THE WRITTEN APPROVAL OF THE ENGINEER SHALL BE OBTAINED FOR ANY OTHER SPLICES WHERE THE LAP LENGTH IS NOT SHOWN.
5. CLEAR CONCRETE COVER TO REINFORCEMENT IS AS FOLLOWS UNLESS SHOWN OTHERWISE ON THE DRAWINGS:

ELEMENT	BOTTOM (mm)	SIDES (mm)	TOP (mm)
ALL (U.N.O.)	40	40	40
BASE SLAB	40	40	40

6. COVER TO REINFORCEMENT ENDS TO BE 50mm (U.N.O.).
7. PROVIDE N12-450 SUPPORT BARS TO TOP REINFORCEMENT AS REQUIRED, LAP 450 (U.N.O.).
8. HOOKS, BENDS, SPLICES AND LAPS TO BE IN ACCORDANCE WITH AS3600.
9. AT SPLICES FABRIC SHALL BE LAPPED AS FOLLOWS:



(NOT ACCEPTABLE)

10. LAPS IN REINFORCEMENT SHALL BE MADE ONLY WHERE SHOWN ON THE DRAWINGS UNLESS OTHERWISE APPROVED. LAP LENGTHS AS PER THE TABLE BELOW.

TENSION LAPS			COMPRESSION LAPS
BAR SIZE	HORIZONTAL BAR WITH > 300mm CONCRETE CAST BELOW THE BAR	ALL OTHER BARS	
N12	570	480	450
N16	800	700	640
N20	1150	950	800
N24	1500	1250	960
N28	1850	1500	1120
N32	2250	1800	1280
N36	2700	2100	1440

STRUCTURAL STEEL:

1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS4100 AND AS1554 EXCEPT WHERE VARIED BY CONTRACT DOCUMENTS.
2. UNLESS NOTED OTHERWISE ALL STEEL SHALL COMPLY WITH AS1163, AS1594, AS3678, AS3679 WITH MINIMUM YIELD STRESS U.N.O:
   - HOT-ROLLED SECTIONS - 300MPa
   - SQUARE HOLLOW SECTIONS - 350MPa
   - RECTANGULAR HOLLOW SECTIONS - 350MPa
   - CIRCULAR HOLLOW SECTIONS - 350MPa
   - HOT-ROLLED PLATE - 250MPa
3. THE CONTRACTOR SHALL PREPARE WORKSHOP DRAWINGS AND SUBMIT ONE (1) COPY OF EACH DRAWING FOR APPROVAL. FABRICATION SHALL NOT COMMENCE UNTIL APPROVAL HAS BEEN RECEIVED.
4. CONTRACTOR TO SUPPLY ENGINEER WITH MANUFACTURER'S CERTIFICATE FOR HIGH STRENGTH BOLTS. CERTIFICATES TO BE SUBMITTED FOR APPROVAL WITH STEEL WORKSHOP DRAWINGS.
5. UNLESS NOTED OTHERWISE:
   - ALL BOLTS SHALL BE 8.8/S GALVANISED U.N.O.
   - ALL WELDS SHALL BE 6mm CONTINUOUS FILLET, SP CATEGORY E49xx/W50x
   - NO BOLT THREADS WILL BE PERMITTED IN THE BEARING LENGTH
   - POST HOLD DOWN BOLTS, CAST IN PLACE, SHALL BE 8.8/S GALVANISED
6. BUTT WELDS WHERE INDICATED ON THE DRAWINGS ARE TO BE COMPLETE PENETRATION BUTT WELDS AS DEFINED IN AS1554 UNLESS NOTED OTHERWISE.
7. BOLT TYPE AND INSTALLATION PROCEDURE SHALL BE DENOTED AS FOLLOWS:
   - 8.8/S HIGH STRENGTH STRUCTURAL BOLTS OF STRENGTH GRADE 8.8 MANUFACTURED TO AS1252, TIGHTENED USING A STANDARD WRENCH TO A SNUG TIGHT CONDITION.
8. THE CONTRACTOR SHALL PROVIDE ALL CLEATS AND DRILL ALL HOLES NECESSARY FOR FIXING STEEL TO STEEL WHETHER OR NOT DETAILED ON THE DRAWING.
9. THE DISTANCE BETWEEN CENTRES OF FASTENER HOLES AND THE MINIMUM DISTANCE FROM THE CENTRE OF A FASTENER TO THE EDGE OF A PLATE OR FLANGE OF A ROLLED SECTION SHALL COMPLY WITH AS4100 (U.N.O.).
10. WELD TESTING FOR SHOP AND SITE WELDS ARE TO BE DONE TO COMPLY WITH AS4100 AND AS1554 WITH ADDITIONAL AS STATED IN RMS SPECIFICATION B204.
11. FOR EXTENT OF WELD INSPECTION, SEE RMS SPECIFICATION B204.
12. ALL COMPONENTS, EXCEPT STAINLESS STEEL ITEMS, TO BE HOT-DIP GALVANISED AFTER FABRICATION, IN ACCORDANCE WITH RMS SPECIFICATION B241.
13. EDGES TO BE PROTECTIVE TREATED TO BE ROUNDED TO A 1.5mm RADIUS UNLESS SPECIFIED OTHERWISE.
14. GROUT UNDER BASEPLATES TO BE HIGH STRENGTH CEMENT NON-SHRINK UNLESS SHOWN OTHERWISE.

PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT
TAMWORTH REGIONAL COUNCIL

THIS DRAWING CONTAINS COLOURED INFORMATION C M Y

REV	DATE	DESCRIPTION	DRN	APP
P03	24.08.2022	DRAFT ISSUE FOR 100% DETAILED DESIGN	A.V.	T.W.
P02	12.08.2022	ISSUED FOR CONSTRUCTION	M.S.	B.W.

TITLE
CONSTRUCTION NOTES
SHEET 2

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16562-H-DR-C-0002			P03

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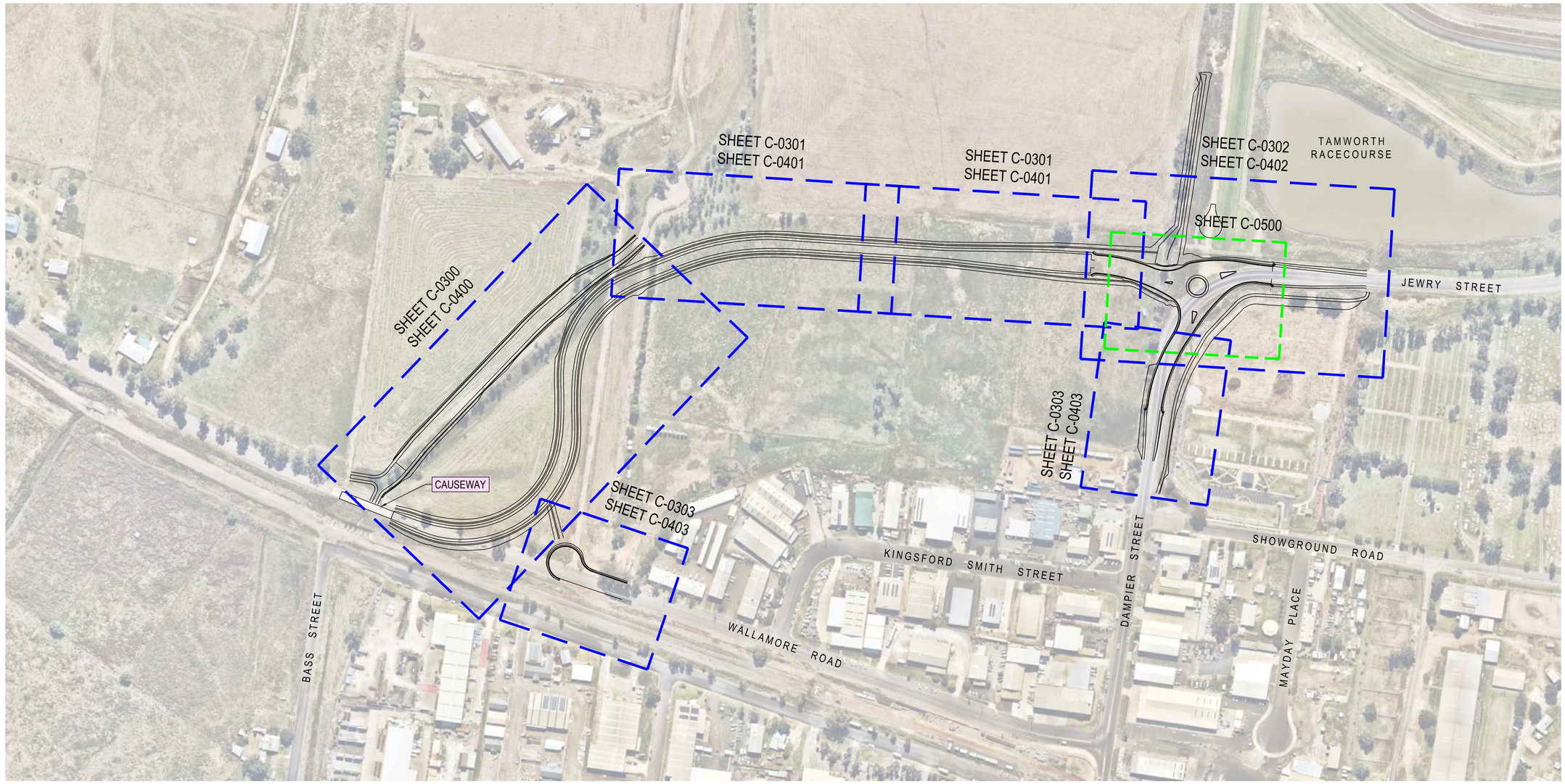
HATCH

PROJECT NORTH



GENERAL ARRANGEMENT PLAN

SCALE 1:2000

PROJECT

TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT

TAMWORTH REGIONAL COUNCIL

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P01	13.05.2022	ISSUED FOR 90% DETAILED DESIGN	A.V.	C.G.

TITLE

GENERAL ARRANGEMENT PLAN

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DOCUMENT STATUS			SHEET SIZE
DRAFT COPY			A1
DRAWN	DESIGNED	APPROVED	SCALE
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PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

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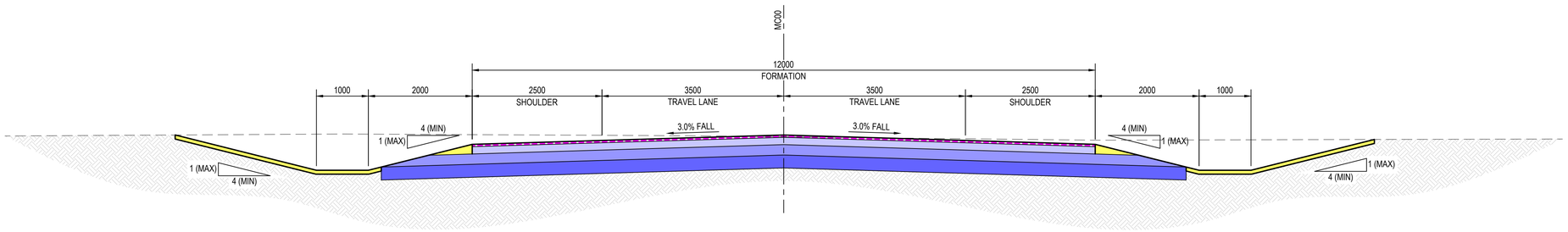
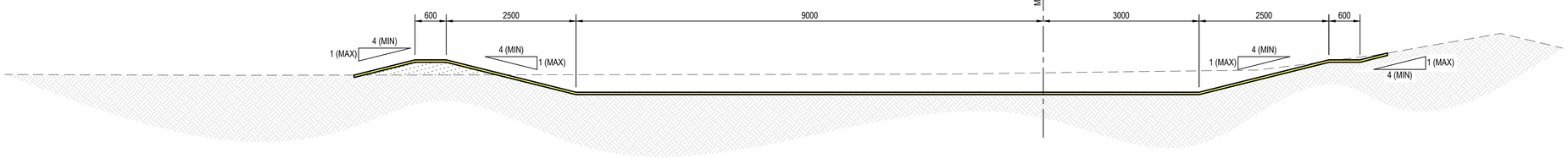
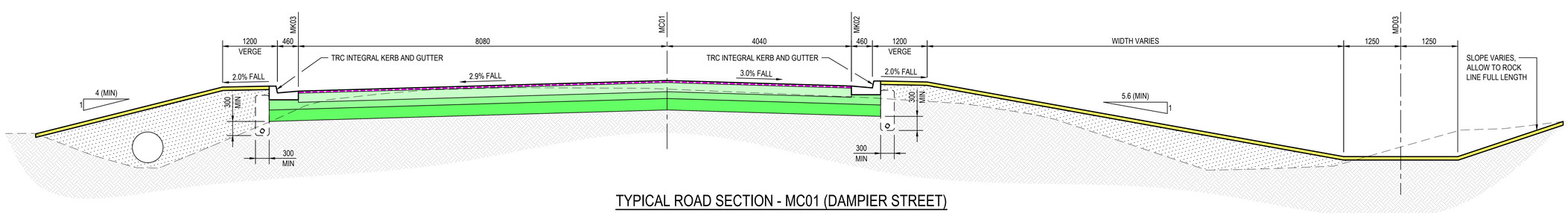


TYPICAL ROAD SECTION - MC00 (JEWRY STREET)
CH 240.000
SCALE 1:50



TYPICAL CREEK SECTION - MD01 (TIMBUMBURI CREEK)
CH 180.000
SCALE 1:50



TYPICAL ROAD SECTION - MC01 (DAMPIER STREET)
CH 60.000
SCALE 1:50

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TITLE
TYPICAL SECTIONS
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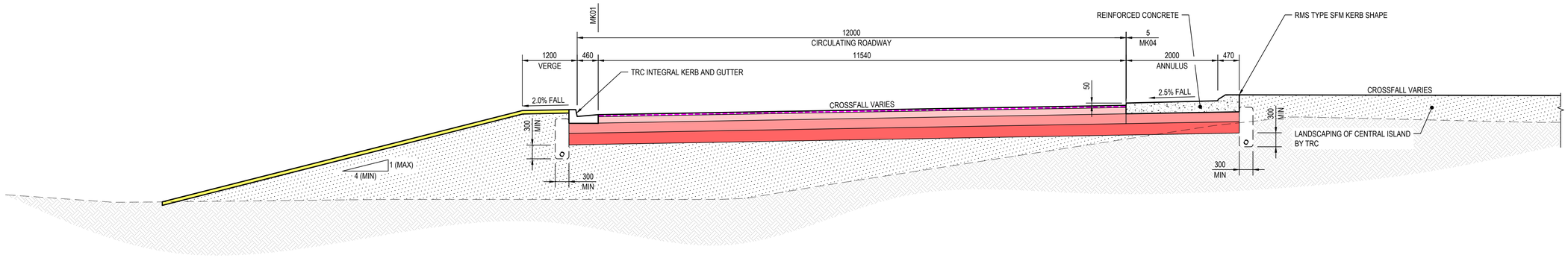
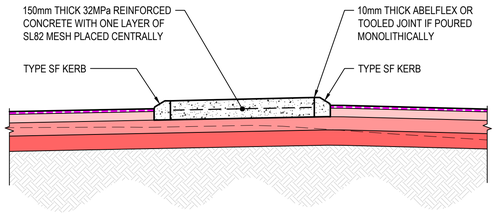


TYPICAL ROAD SECTION - ROUNDABOUT CIRCULATING ROADWAY

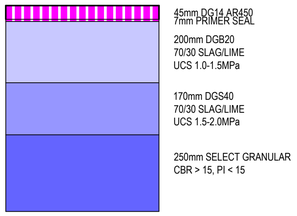
SCALE 1:50



TYPICAL ROAD SECTION - ROUNDABOUT SPLITTER ISLAND

SCALE 1:50

NOTE: TRANSVERSE SAWCUTS TO BE PROVIDED AT MAX. 4.0m CENTRES. SAWCUT TO BE 40mm DEEP WITH MESH DROOPED TO ACHIEVE MIN. 45 COVER TO UNDERSIDE OF CUT. CUT TO BE UNDERTAKEN WITHIN 24 HOURS OF CONCRETE PLACEMENT

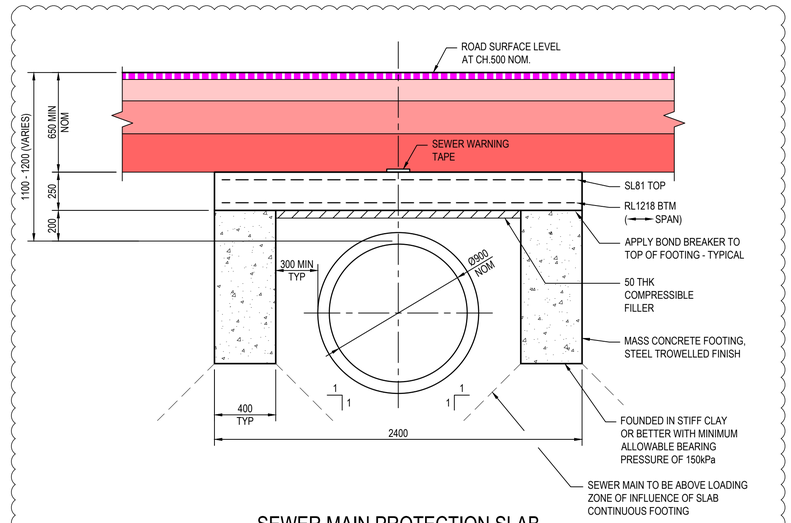


PAVEMENT DETAIL - TYPE 1

PAVEMENT IN JEWRY STREET ACROSS FLOODPLAIN

SCALE 1:10

NOTE:
CONTRACTOR TO UNDERTAKE ADDITIVE TESTING TO CONFIRM
UCS TO WITHIN THE NOMINATED RANGES



SEWER MAIN PROTECTION SLAB CAST IN-SITU

SCALE 1:20

NOTES:
1. MINIMUM CONCRETE COMPRESSIVE STRENGTH OF 32MPa.
2. MINIMUM COVER TO NEAREST CONCRETE EDGE SHALL BE 45mm.
3. THE PROTECTION SLAB SHALL BE SETOUT BASED ON THE POTHOLED LOCATIONS OF THE SEWER MAIN TO ENSURE THE SLAB IS CENTERED OVER THE MAIN.
4. THE SLAB HAS BEEN DESIGNED FOR SM1600 LOADING BASED ON LOAD DISTRIBUTION THROUGH THE SOIL IN ACCORDANCE WITH AS1597.2.

DESIGN CONTROL - MK04

CHAINAGE	EASTING	NORTHING	BEARING	LENGTH	RADIUS
0.000 31.416	299611.909 299592.998	6558600.445 6558593.934	-	31.416	10.000
31.416 62.832	299592.998 299611.909	6558593.934 6558600.445	-	31.416	10.000

DESIGN CONTROL - SP01

CHAINAGE	EASTING	NORTHING	BEARING	LENGTH	RADIUS
0.000 5.812	299578.883 299573.209	6558599.343 6558600.604	282 31 32	5.812	-
5.812 6.246	299573.209 299572.976	6558600.604 6558600.925	-	0.434	0.300
6.246 6.680	299572.976 299573.266	6558600.925 6558601.197	-	0.434	0.300
6.680 13.297	299573.266 299579.880	6558601.197 6558601.392	88 18 14	6.617	-
13.297 13.908	299579.880 299580.160	6558601.392 6558600.965	-	0.611	0.300
13.908 15.333	299580.160 299579.557	6558600.965 6558599.675	205 04 17	1.425	-
15.333 16.144	299579.557 299578.883	6558599.675 6558599.343	-	0.811	0.600

DESIGN CONTROL - SP02

CHAINAGE	EASTING	NORTHING	BEARING	LENGTH	RADIUS
0.000 4.247	299628.192 299624.415	6558605.845 6558603.905	-	4.247	44.000
4.247 4.785	299624.415 299623.979	6558603.905 6558604.076	-	0.538	0.300
4.785 8.978	299623.979 299622.735	6558604.076 6558608.081	342 44 54	4.193	-
8.978 11.104	299622.735 299623.761	6558608.081 6558609.631	-	2.126	1.200
11.104 23.939	299623.761 299636.532	6558609.631 6558610.914	84 15 48	12.835	-
23.939 24.784	299636.532 299637.171	6558610.914 6558610.473	-	0.845	0.600
24.784 25.629	299637.171 299636.840	6558610.473 6558609.770	-	0.845	0.600
25.629 35.126	299636.840 299628.192	6558609.770 6558605.845	245 35 09	9.497	-

DESIGN CONTROL - SP03

CHAINAGE	EASTING	NORTHING	BEARING	LENGTH	RADIUS
0.000 1.118	299597.719 299597.738	6558573.602 6558574.720	-	1.118	40.000
1.118 1.666	299597.738 299598.114	6558574.720 6558575.010	-	0.548	0.300
1.666 4.848	299598.114 299601.192	6558575.010 6558574.201	104 43 07	3.182	-
4.848 6.892	299601.192 299601.997	6558574.201 6558572.585	-	2.044	1.200
6.892 15.849	299601.997 299598.560	6558572.585 6558564.298	202 17 34	8.957	-
15.849 16.683	299598.560 299597.920	6558564.298 6558563.939	-	0.835	0.600
16.683 17.518	299597.920 299597.445	6558563.939 6558564.544	-	0.835	0.600
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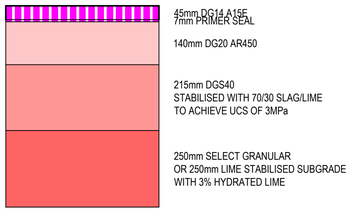
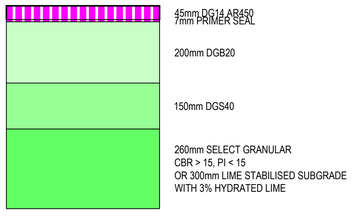


PAVEMENT DETAIL - TYPE 2

ROUNDABOUT PAVEMENT

SCALE 1:10

NOTE:
CONTRACTOR TO UNDERTAKE ADDITIVE TESTING TO CONFIRM
UCS TO WITHIN THE NOMINATED RANGES

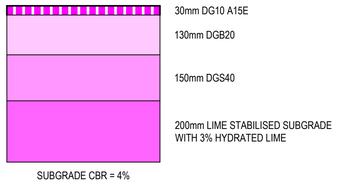


PAVEMENT DETAIL - TYPE 3

PAVEMENT IN JEWRY STREET EAST OF ROUNDABOUT AND IN DAMPIER STREET

SCALE 1:10

NOTE:
CONTRACTOR TO UNDERTAKE ADDITIVE TESTING TO CONFIRM
UCS TO WITHIN THE NOMINATED RANGES



PAVEMENT DETAIL - TYPE 4

CUL-DE-SAC PAVEMENT IN WALLAMORE ROAD

SCALE 1:10

HATCH

PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT
TAMWORTH REGIONAL COUNCIL

THIS DRAWING CONTAINS COLOURED INFORMATION C M Y

GENERAL NOTES

1. BASE AND SUBBASE LAYERS SHALL BE IN ACCORDANCE WITH TRC SPECIFICATION C241 AND C242.
2. GRANULAR SELECT MATERIAL SHALL BE IN ACCORDANCE WITH TRC SPECIFICATION C213.
3. THE CONTRACTOR MAY STABILISE THE SUBGRADE AS A FOUNDATION TREATMENT IN ACCORDANCE WITH TRC SPECIFICATION C241. A STABILISED SUBGRADE SHALL NOT BE USED IN LIEU OF THE SELECT LAYER FOR PAVEMENT TYPE 1.

REV	DATE	DESCRIPTION	DRN	APP
P04	24.08.2022	DRAFT ISSUE FOR 100% DETAILED DESIGN	A.V.	T.W.
P03	02.08.2022	GAS MAIN PROTECTION SLAB DETAIL ADDED	M.S.	B.W.
P02	01.06.2022	ISSUED FOR 90% DETAILED DESIGN	A.V.	C.G.
P01	13.05.2022	ISSUED FOR 90% DETAILED DESIGN	A.V.	C.G.

TITLE
TYPICAL SECTIONS
SHEET 2

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DOCUMENT STATUS			SHEET SIZE
DRAFT COPY			A1
DRAWN	DESIGNED	APPROVED	SCALE
A.VIZL	C.GARNER	T.WALTON	AS NOTED
DOCUMENT No.			REVISION
16562-H-DR-C-0201			P04

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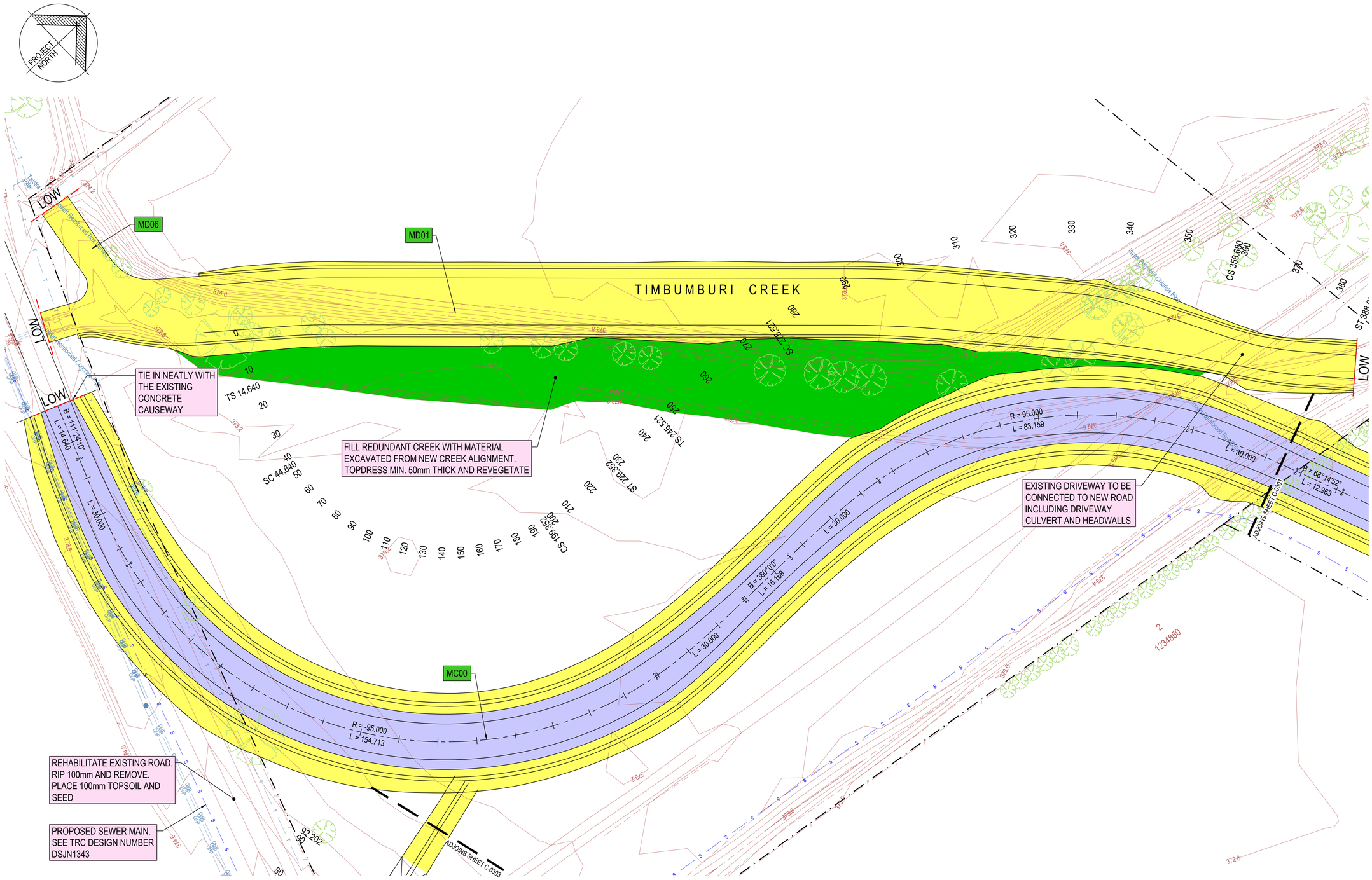

CIVIL WORKS PLAN - SHEET 1

SCALE 1:500

PROJECT

TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT

TAMWORTH REGIONAL COUNCIL

THIS DRAWING CONTAINS COLOURED INFORMATION C M Y

LEGEND

- 372.0 — EXISTING CONTOUR
- DENOTES PAVEMENT TYPE 1, REFER TO DRAWING 16562-H-DR-C-0201 FOR DETAILS
- DENOTES PAVEMENT TYPE 2, REFER TO DRAWING 16562-H-DR-C-0201 FOR DETAILS
- DENOTES PAVEMENT TYPE 3, REFER TO DRAWING 16562-H-DR-C-0201 FOR DETAILS
- DENOTES PAVEMENT TYPE 4, REFER TO DRAWING 16562-H-DR-C-0201 FOR DETAILS
- DENOTES OPEN CHANNEL/TABLE DRAIN/VERGE, REFER TO DRAWING 16562-H-DR-C-0201 FOR DETAILS
- DENOTES LANDSCAPING BY TRC
- DENOTES REINFORCED CONCRETE PAVING/SLAB
- LOW — DENOTES LIMIT OF WORKS
- MC00 — DESIGN CONTROL STRING LABEL
- NEW STORMWATER DRAINAGE PIT
- NEW STORMWATER HEADWALL
- NEW UPVC (U.N.O.) STORMWATER DRAINAGE PIPE SIZE AS SHOWN ON PLAN, LAID AT 1.0% MIN FALL (U.N.O.), IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS
- NEW ROCK SCOUR PROTECTION, REFER TO DRAWING 16562-H-DR-C-0410 FOR DETAILS
- S — PROPOSED SEWER RISING MAIN
- G — EXISTING GAS SERVICE
- OHP — EXISTING OVERHEAD POWER LINE
- OPT — EXISTING OPTIC FIBRE SERVICE
- S — EXISTING SEWER SERVICE
- T — EXISTING TELSTRA SERVICE
- W — EXISTING WATER SERVICE
- EXISTING BOUNDARY LINE
- PROPOSED BOUNDARY LINE
- EASEMENT LINE
- EXISTING FENCE
- EXISTING TREE

REV	DATE	DESCRIPTION	DRN	APP
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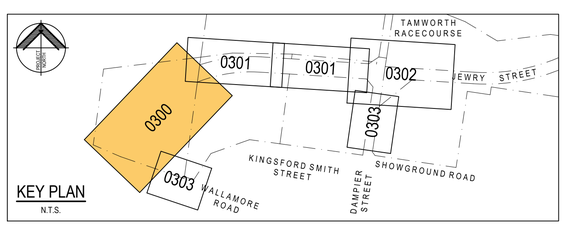
P01	13.05.2022	ISSUED FOR 90% DETAILED DESIGN	A.V.	C.G.

TITLE

CIVIL WORKS PLAN
SHEET 1



KEY PLAN
N.T.S.

GENERAL NOTES

1. FOR DRAWING LIST REFER TO HATCH DRAWING 16562-H-DR-C-0000.
2. THE POSITION OF ALL EXISTING SERVICES SHOWN SHOULD BE REGARDED AS APPROXIMATE AND NOT NECESSARILY COMPREHENSIVE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT LOCATIONS AND INFORM ALL RELEVANT AUTHORITIES PRIOR TO ANY EXCAVATION.
3. BENCHMARKS TO BE PROVIDED PRIOR TO COMMENCEMENT OF CONSTRUCTION.
4. CONTRACTOR TO VERIFY SETOUT BEFORE COMMENCING EARTHWORKS. REFER ANY DISCREPANCIES TO ENGINEER.
5. EXISTING CONTOURS SHOWN AT 0.2m INTERVALS.

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DOCUMENT STATUS			SHEET SIZE
DRAFT COPY			A1
DRAWN	DESIGNED	APPROVED	SCALE
A.VIZL	C.GARNER	T.WALTON	1:500
DOCUMENT No.			REVISION
16562-H-DR-C-0300			P03

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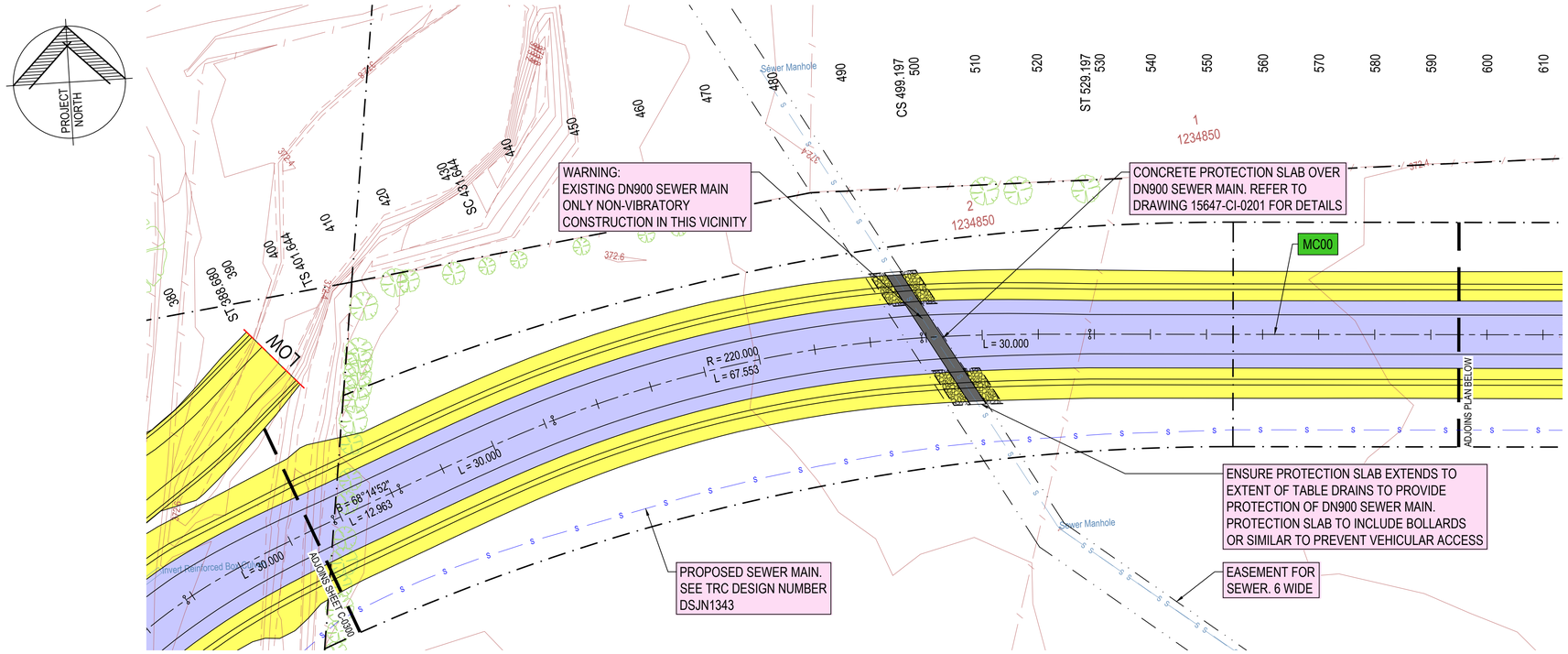
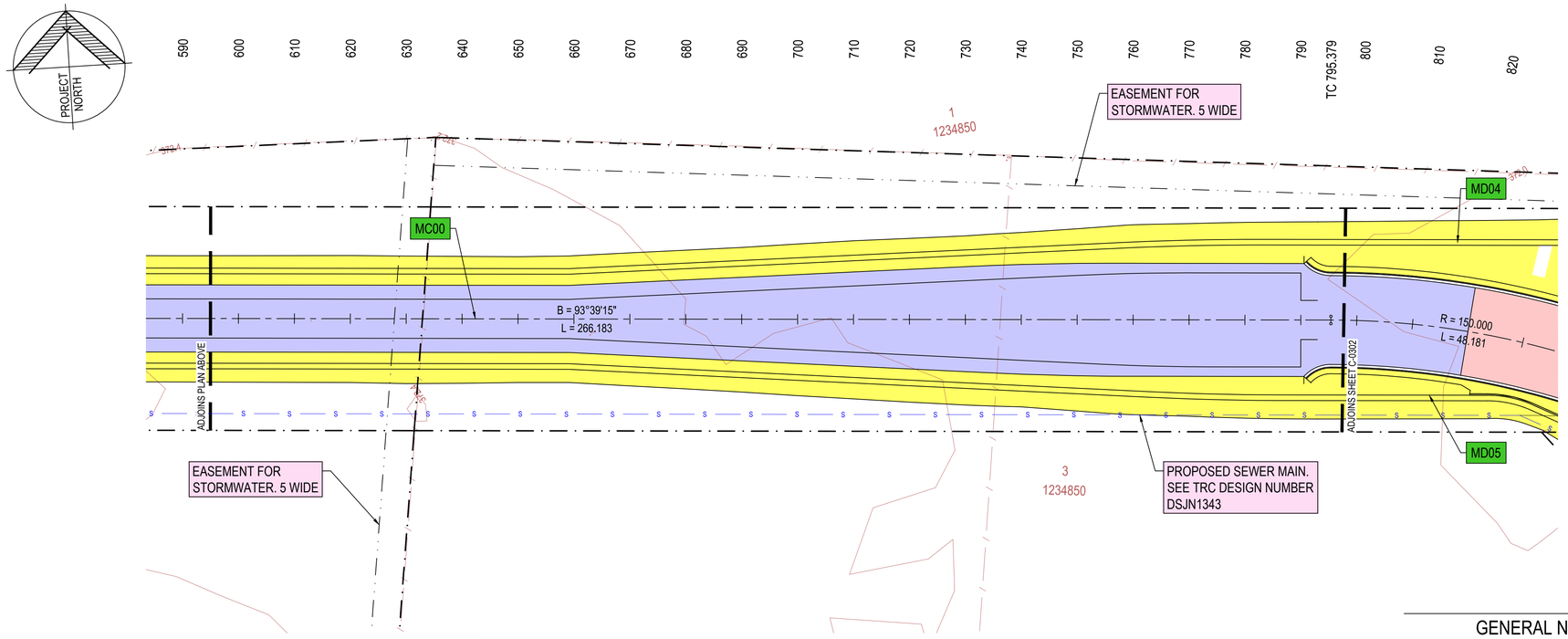


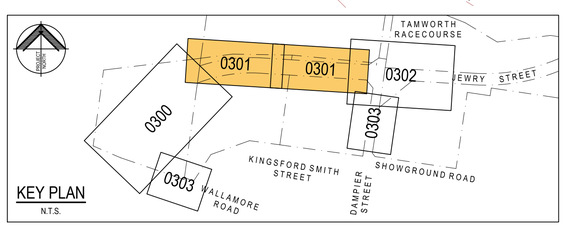
CIVIL WORKS PLAN - SHEET 2 PART A

SCALE 1:500



CIVIL WORKS PLAN - SHEET 2 PART B

SCALE 1:500



KEY PLAN

N.T.S.

GENERAL NOTES

1. FOR DRAWING LIST REFER TO HATCH DRAWING 16562-H-DR-C-0000.
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5. EXISTING CONTOURS SHOWN AT 0.2m INTERVALS.

HATCH

PROJECT

TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT

TAMWORTH REGIONAL COUNCIL

THIS DRAWING CONTAINS COLOURED INFORMATION C M Y

LEGEND

- 372.0 — EXISTING CONTOUR
- DENOTES PAVEMENT TYPE 1, REFER TO DRAWING 16562-H-DR-C-0201 FOR DETAILS
- DENOTES PAVEMENT TYPE 2, REFER TO DRAWING 16562-H-DR-C-0201 FOR DETAILS
- DENOTES PAVEMENT TYPE 3, REFER TO DRAWING 16562-H-DR-C-0201 FOR DETAILS
- DENOTES PAVEMENT TYPE 4, REFER TO DRAWING 16562-H-DR-C-0201 FOR DETAILS
- DENOTES OPEN CHANNEL/TABLE DRAIN/VERGE, REFER TO DRAWING 16562-H-DR-C-0201 FOR DETAILS
- DENOTES LANDSCAPING BY TRC
- DENOTES REINFORCED CONCRETE PAVING/SLAB
- LOW — DENOTES LIMIT OF WORKS
- MC00 — DESIGN CONTROL STRING LABEL
- NEW STORMWATER DRAINAGE PIT
- NEW STORMWATER HEADWALL
- NEW UPVC (U.N.O.) STORMWATER DRAINAGE PIPE SIZE AS SHOWN ON PLAN, LAID AT 1.0% MIN FALL (U.N.O.), IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS
- NEW ROCK SCOUR PROTECTION, REFER TO DRAWING 16562-H-DR-C-0410 FOR DETAILS
- S — PROPOSED SEWER RISING MAIN
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- OHP — EXISTING OVERHEAD POWER LINE
- OPT — EXISTING OPTIC FIBRE SERVICE
- S — EXISTING SEWER SERVICE
- T — EXISTING TELSTRA SERVICE
- W — EXISTING WATER SERVICE
- EXISTING BOUNDARY LINE
- PROPOSED BOUNDARY LINE
- EASEMENT LINE
- EXISTING FENCE
- EXISTING TREE

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P03	24.08.2022	DRAFT ISSUE FOR 100% DETAILED DESIGN	A.V.	T.W.
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P01	13.05.2022	ISSUED FOR 90% DETAILED DESIGN	A.V.	C.G.

TITLE

CIVIL WORKS PLAN
SHEET 2

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DOCUMENT STATUS			SHEET SIZE
DRAFT COPY			A1
DRAWN	DESIGNED	APPROVED	SCALE
A.VIZL	C.GARNER	T.WALTON	1:500
DOCUMENT No.			REVISION
16562-H-DR-C-0301			P03

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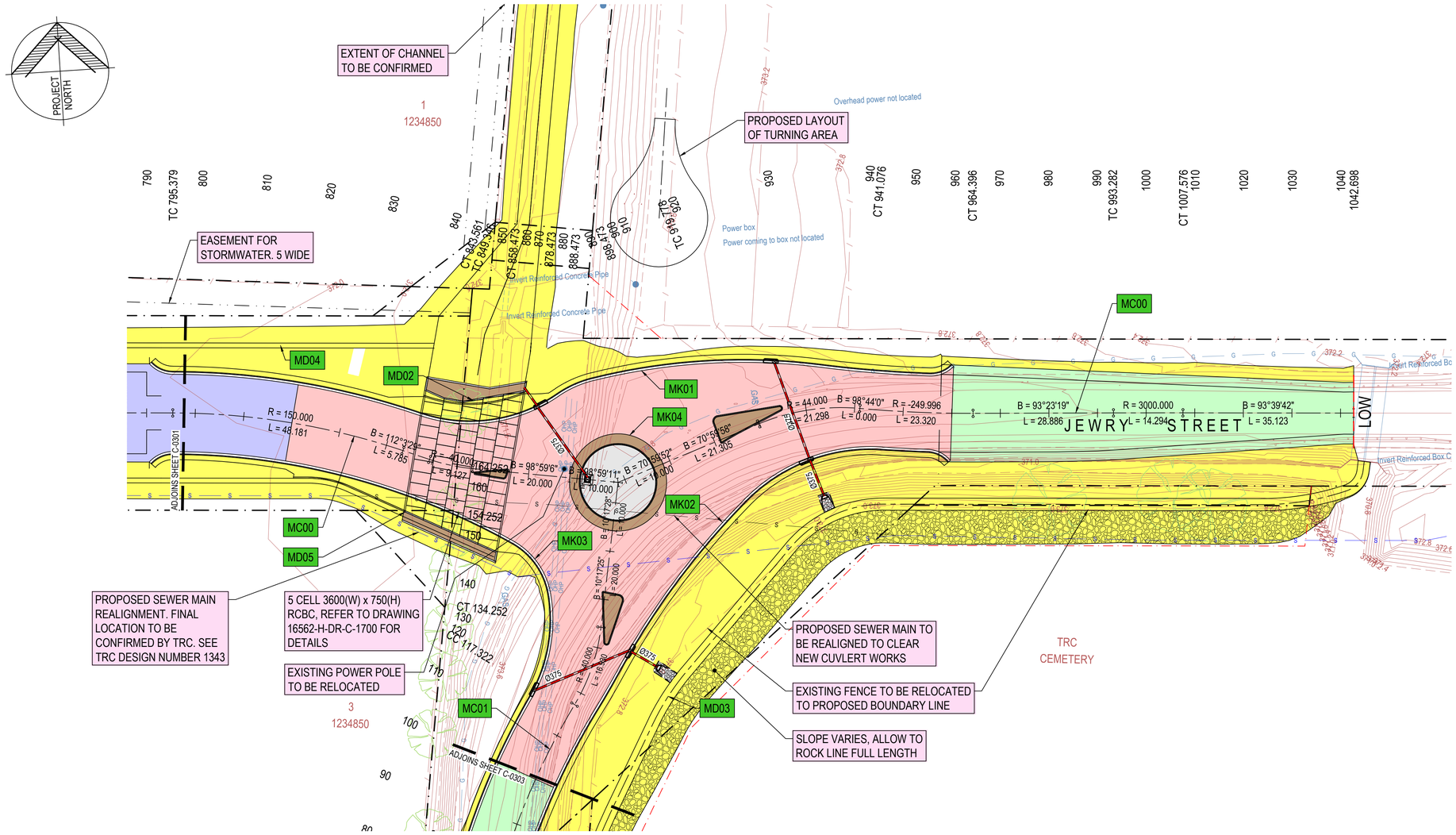


CIVIL WORKS PLAN - SHEET 3

SCALE 1:500

HATCH

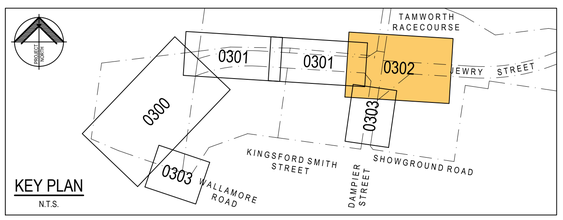
PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT
TAMWORTH REGIONAL COUNCIL

THIS DRAWING CONTAINS COLOURED INFORMATION C M Y

LEGEND

- 372.0 — EXISTING CONTOUR
- DENOTES PAVEMENT TYPE 1, REFER TO DRAWING 16562-H-DR-C-0201 FOR DETAILS
- DENOTES PAVEMENT TYPE 2, REFER TO DRAWING 16562-H-DR-C-0201 FOR DETAILS
- DENOTES PAVEMENT TYPE 3, REFER TO DRAWING 16562-H-DR-C-0201 FOR DETAILS
- DENOTES PAVEMENT TYPE 4, REFER TO DRAWING 16562-H-DR-C-0201 FOR DETAILS
- DENOTES OPEN CHANNEL/TABLE DRAIN/VERGE, REFER TO DRAWING 16562-H-DR-C-0201 FOR DETAILS
- DENOTES LANDSCAPING BY TRC
- DENOTES REINFORCED CONCRETE PAVING/SLAB
- LOW — DENOTES LIMIT OF WORKS
- MC00 — DESIGN CONTROL STRING LABEL
- NEW STORMWATER DRAINAGE PIT
- NEW STORMWATER HEADWALL
- NEW UPVC (U.N.O.) STORMWATER DRAINAGE PIPE SIZE AS SHOWN ON PLAN, LAID AT 1.0% MIN FALL (U.N.O.), IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS
- NEW ROCK SCOUR PROTECTION, REFER TO DRAWING 16562-H-DR-C-0410 FOR DETAILS
- S — PROPOSED SEWER RISING MAIN
- G — EXISTING GAS SERVICE
- OHP — EXISTING OVERHEAD POWER LINE
- OPT — EXISTING OPTIC FIBRE SERVICE
- S — EXISTING SEWER SERVICE
- T — EXISTING TELSTRA SERVICE
- W — EXISTING WATER SERVICE
- EXISTING BOUNDARY LINE
- PROPOSED BOUNDARY LINE
- EASEMENT LINE
- EXISTING FENCE
- EXISTING TREE



KEY PLAN
N.T.S.

GENERAL NOTES

1. FOR DRAWING LIST REFER TO HATCH DRAWING 16562-H-DR-C-0000.
2. THE POSITION OF ALL EXISTING SERVICES SHOWN SHOULD BE REGARDED AS APPROXIMATE AND NOT NECESSARILY COMPREHENSIVE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT LOCATIONS AND INFORM ALL RELEVANT AUTHORITIES PRIOR TO ANY EXCAVATION.
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5. EXISTING CONTOURS SHOWN AT 0.2m INTERVALS.

REV	DATE	DESCRIPTION	DRN	APP
P03	24.08.2022	DRAFT ISSUE FOR 100% DETAILED DESIGN	A.V.	T.W.
P02	01.06.2022	ISSUED FOR 90% DETAILED DESIGN	A.V.	C.G.
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TITLE
CIVIL WORKS PLAN
SHEET 3

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DOCUMENT STATUS			SHEET SIZE
DRAFT COPY			A1
DRAWN	DESIGNED	APPROVED	SCALE
A.VIZL	C.GARNER	T.WALTON	1:500
DOCUMENT No.			REVISION
16562-H-DR-C-0302			P03

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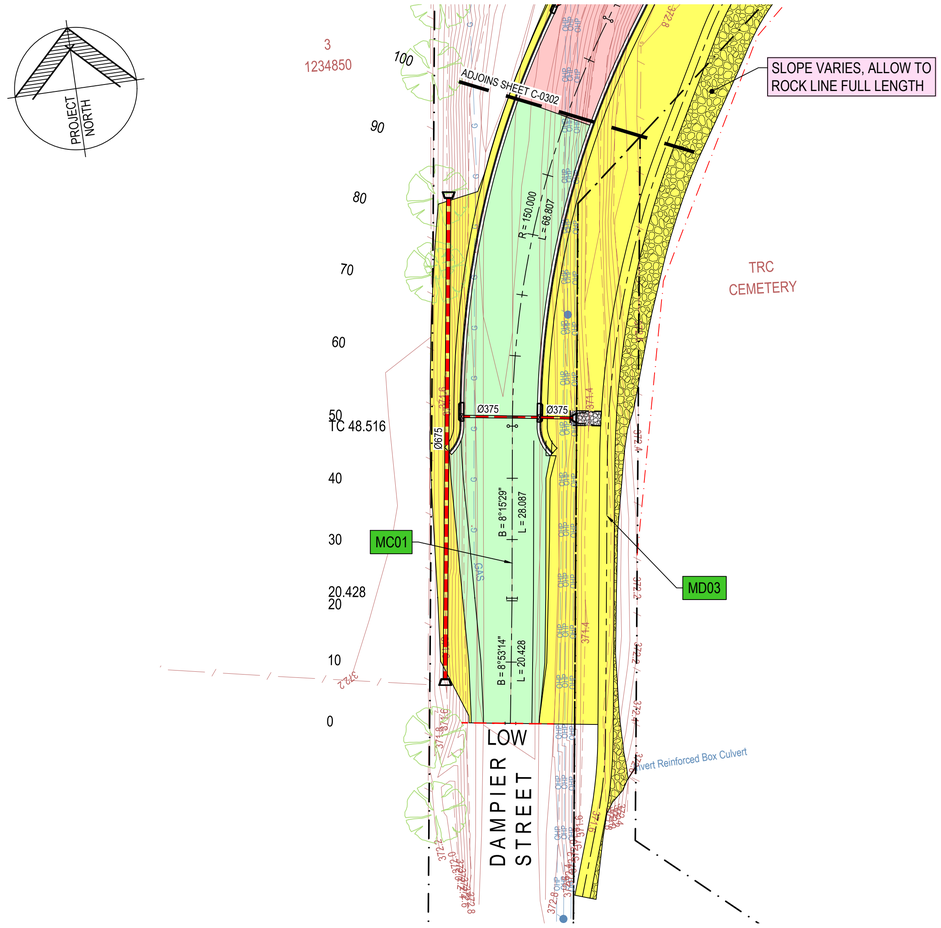
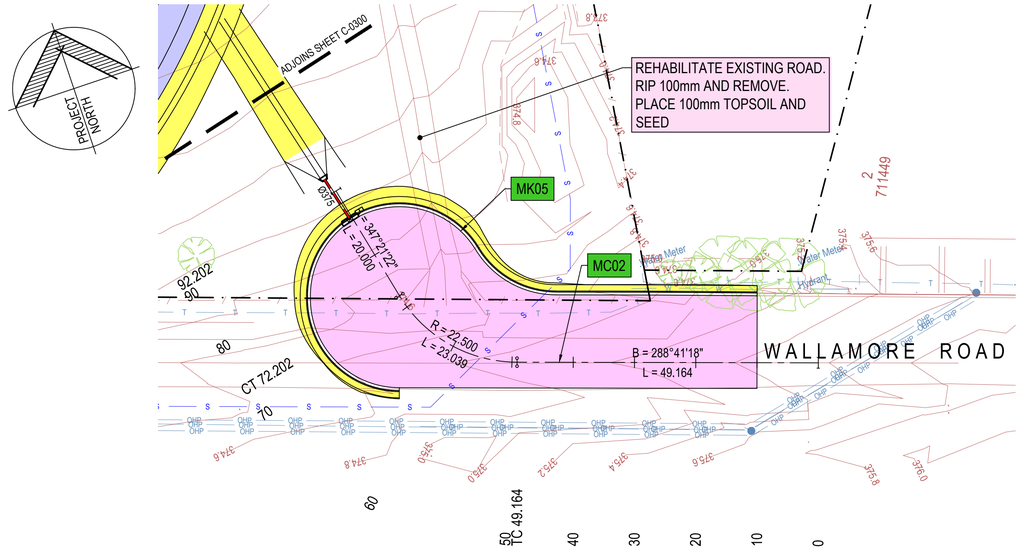


CIVIL WORKS PLAN - SHEET 4 PART A

SCALE 1:500



CIVIL WORKS PLAN - SHEET 4 PART B

SCALE 1:500

HATCH

PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT
TAMWORTH REGIONAL COUNCIL

THIS DRAWING CONTAINS COLOURED INFORMATION C M Y

LEGEND

- 372.0 — EXISTING CONTOUR
- DENOTES PAVEMENT TYPE 1, REFER TO DRAWING 16562-H-DR-C-0201 FOR DETAILS
- DENOTES PAVEMENT TYPE 2, REFER TO DRAWING 16562-H-DR-C-0201 FOR DETAILS
- DENOTES PAVEMENT TYPE 3, REFER TO DRAWING 16562-H-DR-C-0201 FOR DETAILS
- DENOTES PAVEMENT TYPE 4, REFER TO DRAWING 16562-H-DR-C-0201 FOR DETAILS
- DENOTES OPEN CHANNEL/TABLE DRAIN/VERGE, REFER TO DRAWING 16562-H-DR-C-0201 FOR DETAILS
- DENOTES LANDSCAPING BY TRC
- DENOTES REINFORCED CONCRETE PAVING/SLAB
- LOW — DENOTES LIMIT OF WORKS
- MC00 — DESIGN CONTROL STRING LABEL
- NEW STORMWATER DRAINAGE PIT
- NEW STORMWATER HEADWALL
- NEW UPVC (U.N.O.) STORMWATER DRAINAGE PIPE SIZE AS SHOWN ON PLAN, LAID AT 1.0% MIN FALL (U.N.O.), IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS
- NEW ROCK SCOUR PROTECTION, REFER TO DRAWING 16562-H-DR-C-0410 FOR DETAILS
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- EXISTING FENCE
- EXISTING TREE

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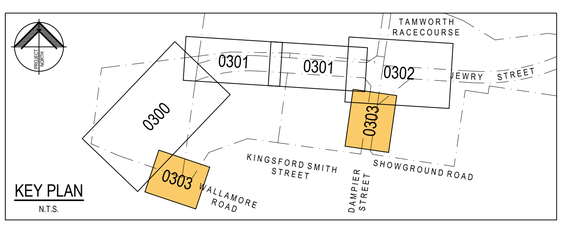
P01	13.05.2022	ISSUED FOR 90% DETAILED DESIGN	A.V.	C.G.

TITLE
CIVIL WORKS PLAN
SHEET 4



KEY PLAN
N.T.S.

GENERAL NOTES

1. FOR DRAWING LIST REFER TO HATCH DRAWING 16562-H-DR-C-0000.
2. THE POSITION OF ALL EXISTING SERVICES SHOWN SHOULD BE REGARDED AS APPROXIMATE AND NOT NECESSARILY COMPREHENSIVE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT LOCATIONS AND INFORM ALL RELEVANT AUTHORITIES PRIOR TO ANY EXCAVATION.
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DRAWN A.VIZL	DESIGNED C.GARNER	APPROVED T.WALTON	SCALE 1:500
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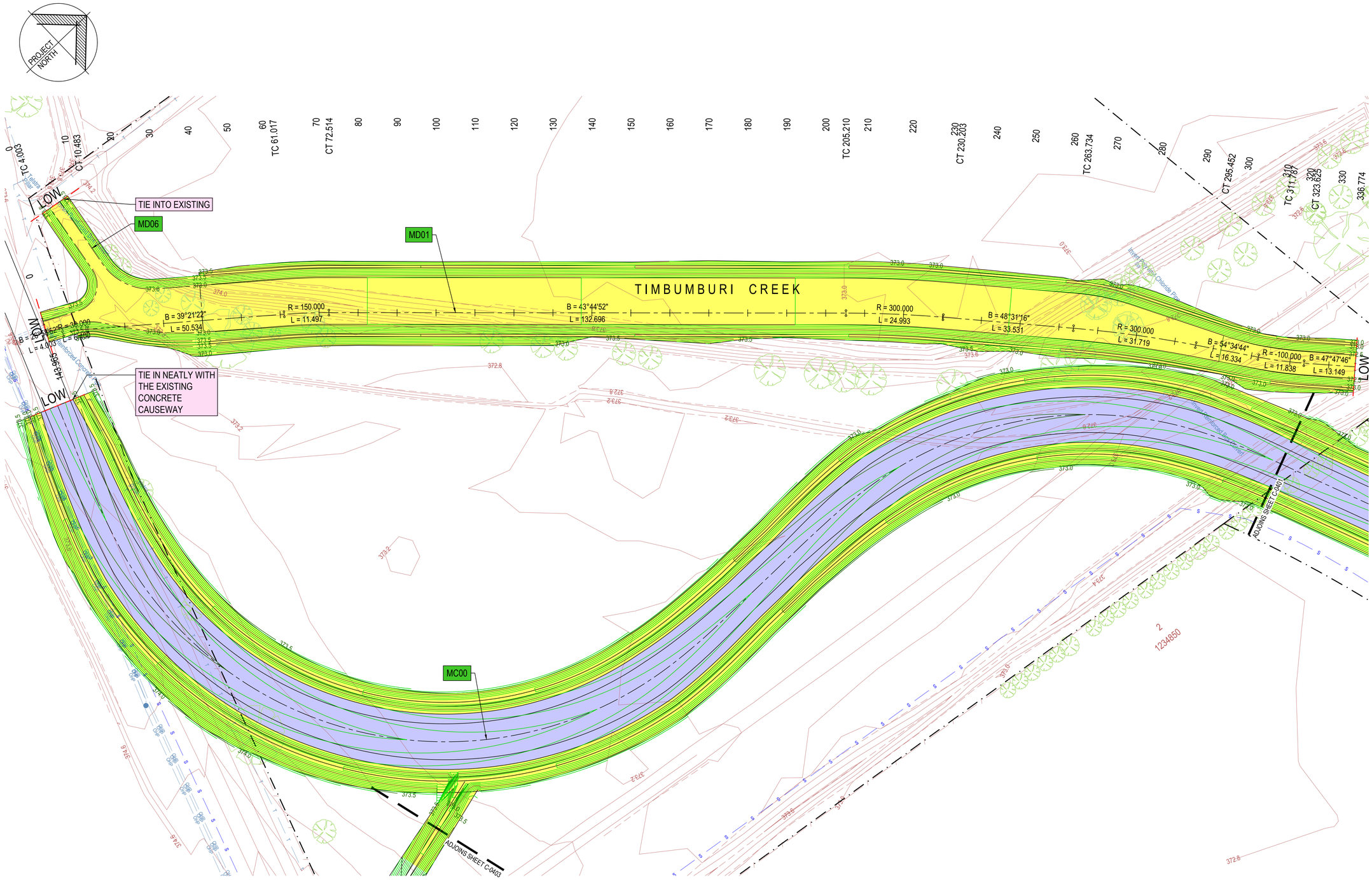

STORMWATER MANAGEMENT PLAN - SHEET 1

SCALE 1:500

PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT
TAMWORTH REGIONAL COUNCIL

THIS DRAWING CONTAINS COLOURED INFORMATION C M Y

LEGEND

- 372.0 EXISTING CONTOUR
- 372.0 DESIGN CONTOUR
- DENOTES PAVEMENT TYPE 1, REFER TO DRAWING 16562-H-DR-C-1001 FOR DETAILS
- DENOTES PAVEMENT TYPE 2, REFER TO DRAWING 16562-H-DR-C-1001 FOR DETAILS
- DENOTES PAVEMENT TYPE 3, REFER TO DRAWING 16562-H-DR-C-1001 FOR DETAILS
- DENOTES PAVEMENT TYPE 4, REFER TO DRAWING 16562-H-DR-C-1001 FOR DETAILS
- DENOTES OPEN CHANNEL/TABLE DRAIN/VERGE, REFER TO DRAWING 16562-H-DR-C-1001 FOR DETAILS
- DENOTES LANDSCAPING BY TRC
- DENOTES REINFORCED CONCRETE PAVING/SLAB
- LOW DENOTES LIMIT OF WORKS
- MC00 DESIGN CONTROL STRING LABEL
- NEW STORMWATER DRAINAGE PIT
- NEW STORMWATER HEADWALL
- NEW UPVC (U.N.O.) STORMWATER DRAINAGE PIPE SIZE AS SHOWN ON PLAN, LAID AT 1.0% MIN FALL (U.N.O.), IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS
- NEW ROCK SCOUR PROTECTION, REFER TO DRAWING 16562-H-DR-C-0410 FOR DETAILS
- S PROPOSED SEWER RISING MAIN
- G EXISTING GAS SERVICE
- OHP EXISTING OVERHEAD POWER LINE
- OPT EXISTING OPTIC FIBRE SERVICE
- S EXISTING SEWER SERVICE
- T EXISTING TELSTRA SERVICE
- W EXISTING WATER SERVICE
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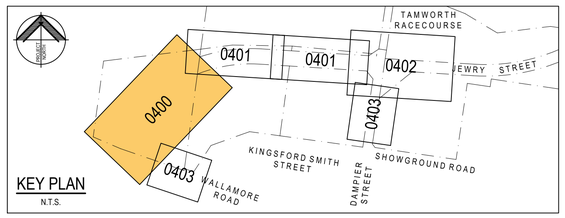
TITLE
STORMWATER MANAGEMENT PLAN
SHEET 1



KEY PLAN
N.T.S.

GENERAL NOTES

1. FOR DRAWING LIST REFER TO HATCH DRAWING 16562-H-DR-C-0000.
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4. CONTRACTOR TO VERIFY SETOUT BEFORE COMMENCING EARTHWORKS. REFER ANY DISCREPANCIES TO ENGINEER.
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6. DESIGN CONTOURS SHOWN AT 0.1m INTERVALS.

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DOCUMENT No.			REVISION
16562-H-DR-C-0400			P03

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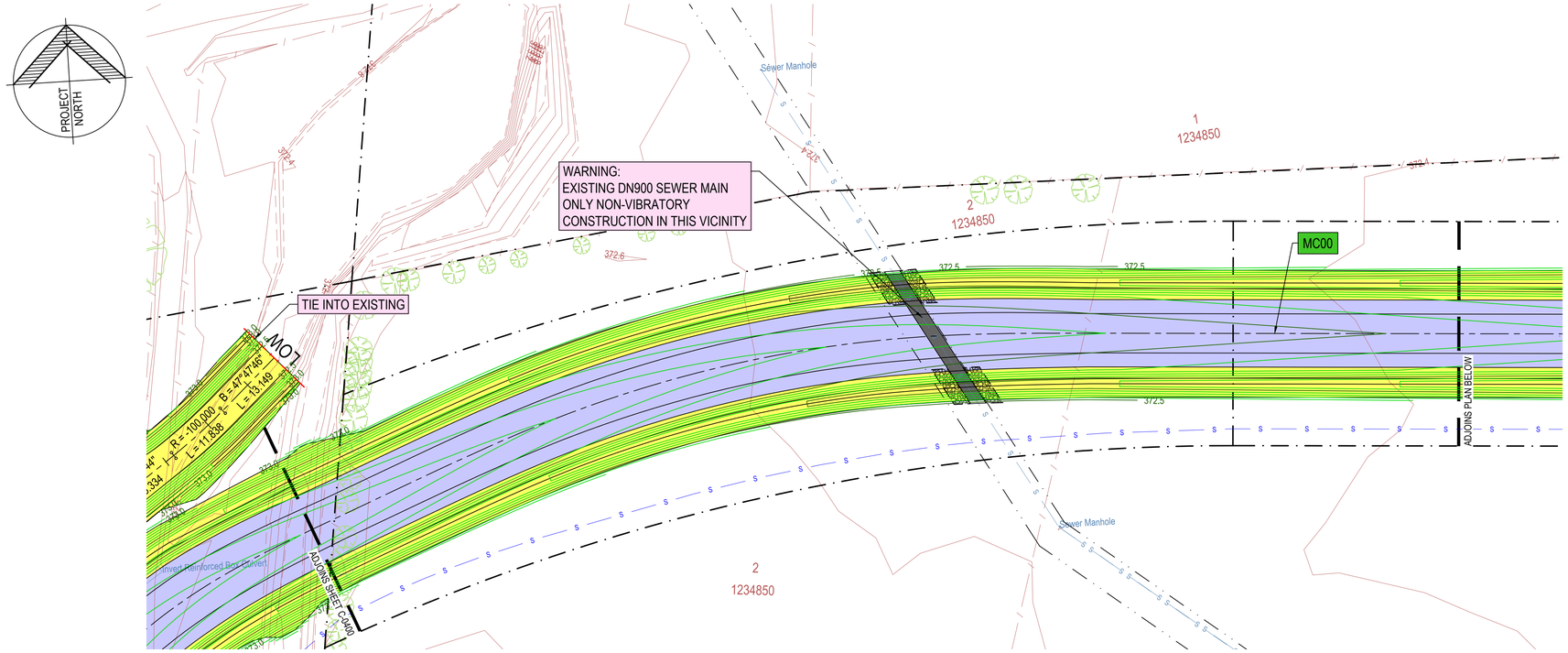
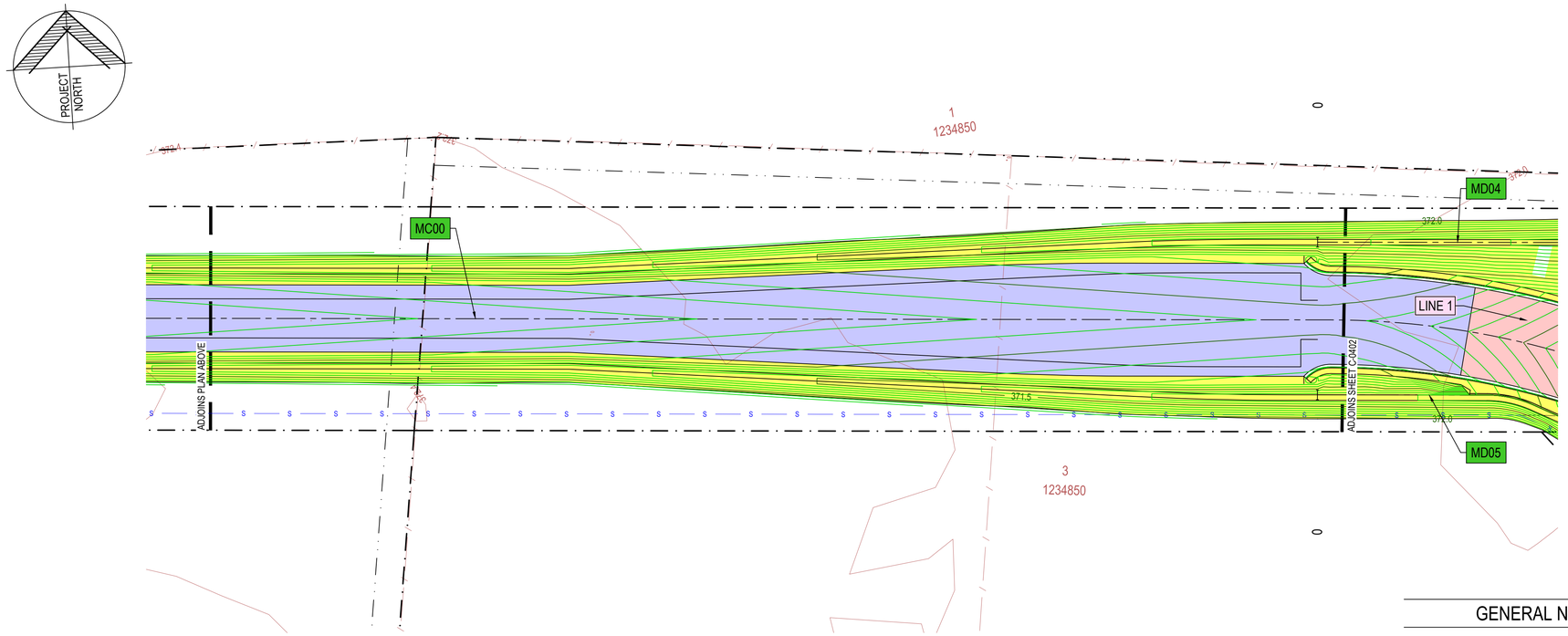


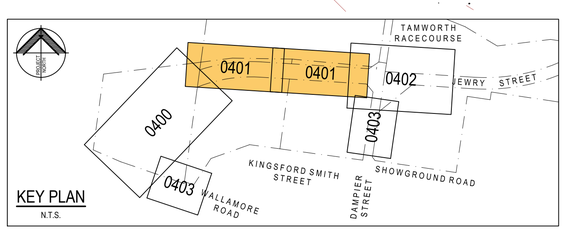
STORMWATER MANAGEMENT PLAN - SHEET 2 PART A

SCALE 1:500



STORMWATER MANAGEMENT PLAN - SHEET 2 PART B

SCALE 1:500



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6. DESIGN CONTOURS SHOWN AT 0.1m INTERVALS.

HATCH

PROJECT

TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT

TAMWORTH REGIONAL COUNCIL

THIS DRAWING CONTAINS COLOURED INFORMATION C M Y

LEGEND

- 372.0 — EXISTING CONTOUR
- 372.0 — DESIGN CONTOUR
- DENOTES PAVEMENT TYPE 1, REFER TO DRAWING 16562-H-DR-C-1001 FOR DETAILS
- DENOTES PAVEMENT TYPE 2, REFER TO DRAWING 16562-H-DR-C-1001 FOR DETAILS
- DENOTES PAVEMENT TYPE 3, REFER TO DRAWING 16562-H-DR-C-1001 FOR DETAILS
- DENOTES PAVEMENT TYPE 4, REFER TO DRAWING 16562-H-DR-C-1001 FOR DETAILS
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- DENOTES LANDSCAPING BY TRC
- DENOTES REINFORCED CONCRETE PAVING/SLAB
- LOW — DENOTES LIMIT OF WORKS
- MC00 — DESIGN CONTROL STRING LABEL
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- NEW STORMWATER HEADWALL
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- NEW ROCK SCOUR PROTECTION, REFER TO DRAWING 16562-H-DR-C-0410 FOR DETAILS
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- G — EXISTING GAS SERVICE
- OHP — EXISTING OVERHEAD POWER LINE
- OPT — EXISTING OPTIC FIBRE SERVICE
- S — EXISTING SEWER SERVICE
- T — EXISTING TELSTRA SERVICE
- W — EXISTING WATER SERVICE
- EXISTING BOUNDARY LINE
- PROPOSED BOUNDARY LINE
- EASEMENT LINE
- EXISTING FENCE
- EXISTING TREE

REV	DATE	DESCRIPTION	DRN	APP
P03	24.08.2022	DRAFT ISSUE FOR 100% DETAILED DESIGN	A.V.	T.W.
P02	01.06.2022	ISSUED FOR 90% DETAILED DESIGN	A.V.	C.G.
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TITLE

STORMWATER MANAGEMENT PLAN
SHEET 2

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DOCUMENT STATUS			SHEET SIZE
DRAFT COPY			A1
DRAWN	DESIGNED	APPROVED	SCALE
A.VIZL	C.GARNER	T.WALTON	1:500
DOCUMENT No.			REVISION
16562-H-DR-C-0401			P03

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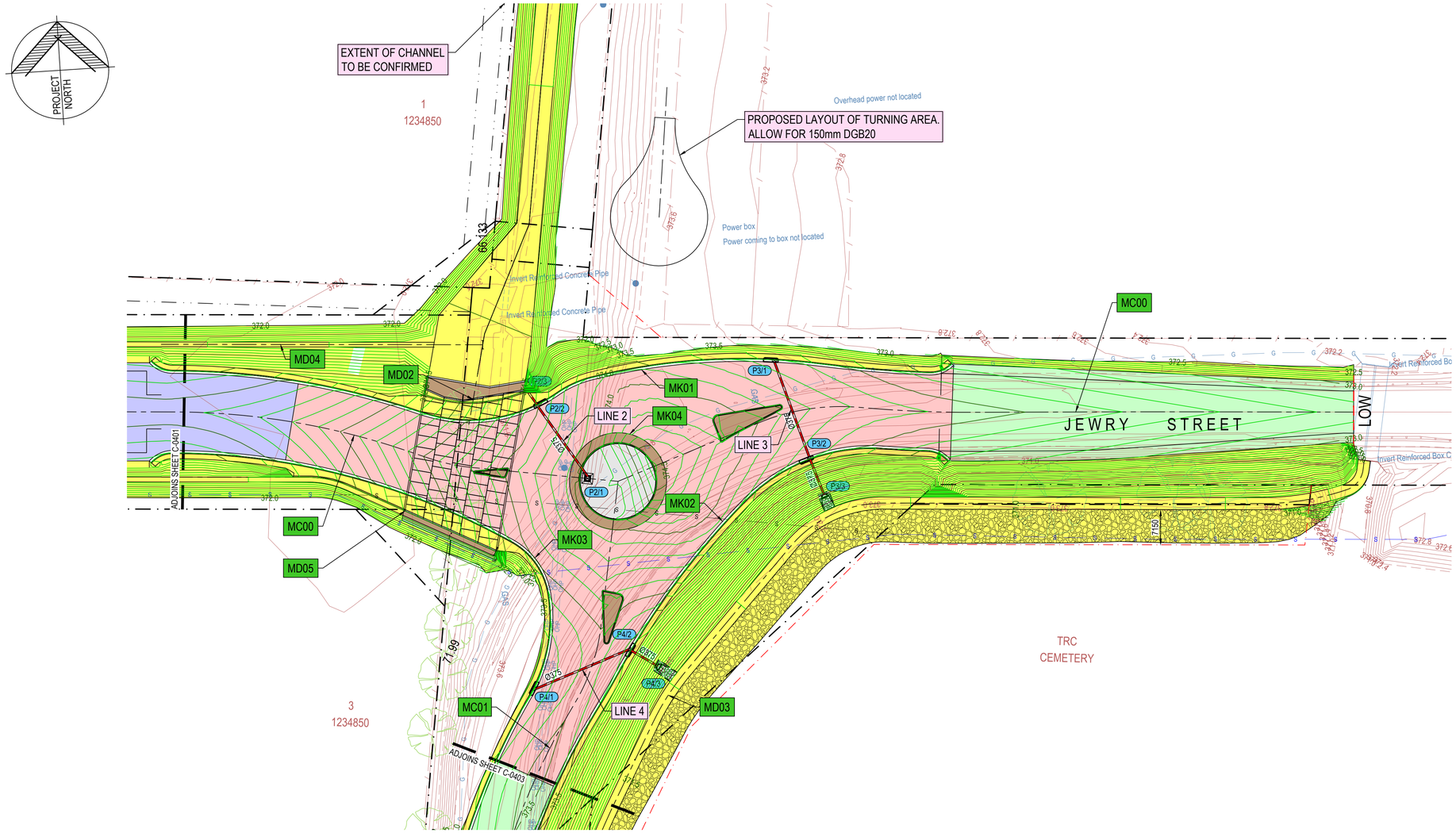

STORMWATER MANAGEMENT PLAN - SHEET 3

SCALE 1:500

HATCH

PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT
TAMWORTH REGIONAL COUNCIL

THIS DRAWING CONTAINS COLOURED INFORMATION C M Y

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- 372.0 — DESIGN CONTOUR
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- EXISTING FENCE
- EXISTING TREE

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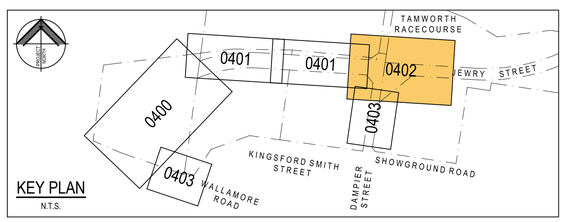
P01	13.05.2022	ISSUED FOR 90% DETAILED DESIGN	A.V.	C.G.

TITLE
STORMWATER MANAGEMENT PLAN
SHEET 3



KEY PLAN
N.T.S.

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DOCUMENT STATUS			SHEET SIZE
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DOCUMENT No.			REVISION
16562-H-DR-C-0402			P03

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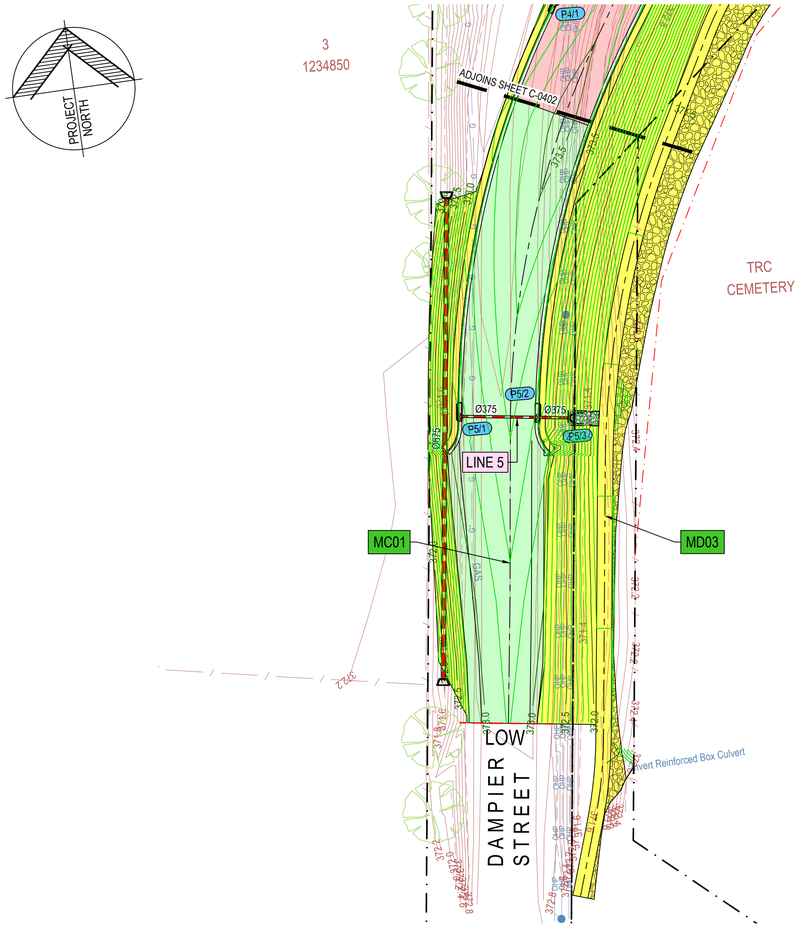
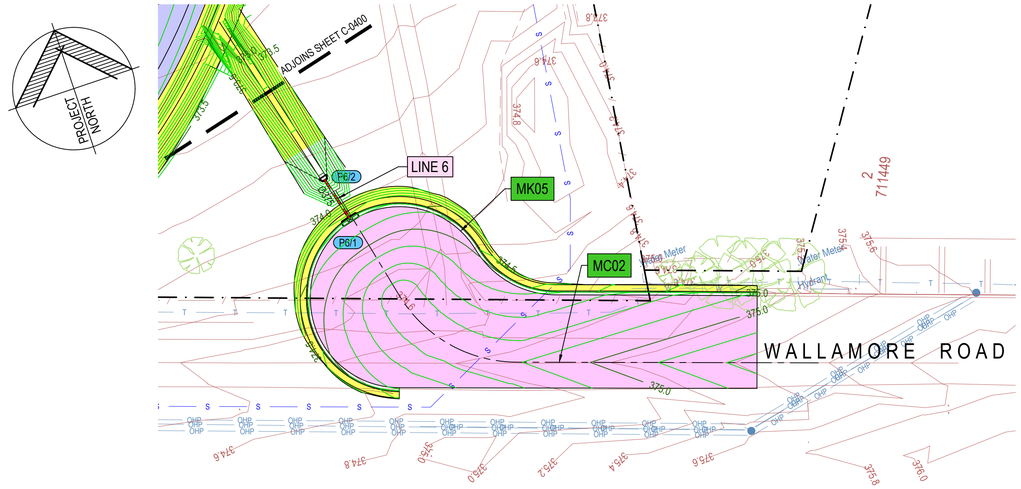


STORMWATER MANAGEMENT PLAN - SHEET 4 PART A

SCALE 1:500



STORMWATER MANAGEMENT PLAN - SHEET 4 PART B

SCALE 1:500

SCHEDULE OF DRAINAGE

PIT No.	CHAINAGE	EASTING	NORTHING	SURFACE RL	INLET			OUTLET			DESCRIPTION	STD DWG
					SIZE	CLASS	INV. RL	SIZE	CLASS	INV. RL		
P2/1		299596.213	6558598.176	374.020				DN375	4	372.820	GRATED SURFACE INLET PIT	SW008
P2/2	870.729	299587.067	6558613.487	373.502	DN375	4	372.295	DN375	4	371.310	ON GRADE KERB INLET PIT	SW002
P2/3		299584.407	6558617.777		DN375	4	371.180				HEADWALL OF MAJOR CULVERT	
P3/1	926.054	299636.074	6558619.655	373.659				DN375	4	372.190	ON GRADE KERB INLET PIT	SW003
P3/2	928.763	299642.015	6558599.834	373.644	DN375	4	371.983	DN375	4	371.286	ON GRADE KERB INLET PIT	SW003
P3/3		299645.044	6558591.602		DN375	4	371.209				PRECAST HEADWALL	
P4/1	115.818	299582.930	6558555.550	373.227				DN375	4	371.995	SAG KERB INLET PIT	SW001
P4/2	130.788	299602.498	6558562.613	373.279	DN375	4	371.600	DN375	4	371.588	SAG KERB INLET PIT	SW001
P4/3		299609.164	6558558.111		DN375	4	371.471				PRECAST HEADWALL	
P5/1	50.000	299558.193	6558491.318	373.082				DN375	4	371.876	ON GRADE KERB INLET PIT	SW003
P5/2	50.000	299570.014	6558489.483	373.197	DN375	4	371.804	DN375	4	371.800	ON GRADE KERB INLET PIT	SW003
P5/3		299577.552	6558488.313		DN375	4	371.770				PRECAST HEADWALL	
P6/1		299029.931	6558362.499	374.299				DN375	4	373.100	SAG KERB INLET PIT	SW001
P6/2		299027.991	6558370.146		DN375	4	373.014				PRECAST HEADWALL	

HATCH

PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT
TAMWORTH REGIONAL COUNCIL

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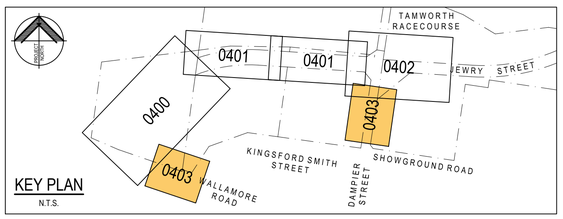

KEY PLAN
N.T.S.

DRAINAGE NOTES

1. REFER TO TAMWORTH REGIONAL COUNCIL STANDARD DRAWINGS STORMWATER INDEX FOR CONSTRUCTION OF DRAINAGE STRUCTURES, SUBSOIL DRAINAGE AND STORMWATER PIPE BEDDING.
2. UNLESS OTHERWISE DIRECTED BY COUNCIL, THE FOLLOWING NSW TRANSPORT ROADS AND MARITIME SERVICES' STANDARD DRAWING OR NOMINATED ALTERNATIVE SHALL APPLY TO THE PROPOSED CONSTRUCTION:
   CONCRETE HEADWALL
   R0210-15 CONCRETE HEADWALLS SINGLE CELL WITH CONCRETE APRON FOR CAST IN SITU CONSTRUCTION OR R0210-28 HEADWALLS CAST-IN-SITU CURTAIN WALL FOR USE WITH PRECAST HEADWALLS

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TITLE
STORMWATER MANAGEMENT PLAN
SHEET 4

DOCUMENT STATUS			SHEET SIZE
DRAFT COPY			A1
DRAWN	DESIGNED	APPROVED	SCALE
A.VIZL	C.GARNER	T.WALTON	1:500
DOCUMENT No.			REVISION
16562-H-DR-C-0403			P03

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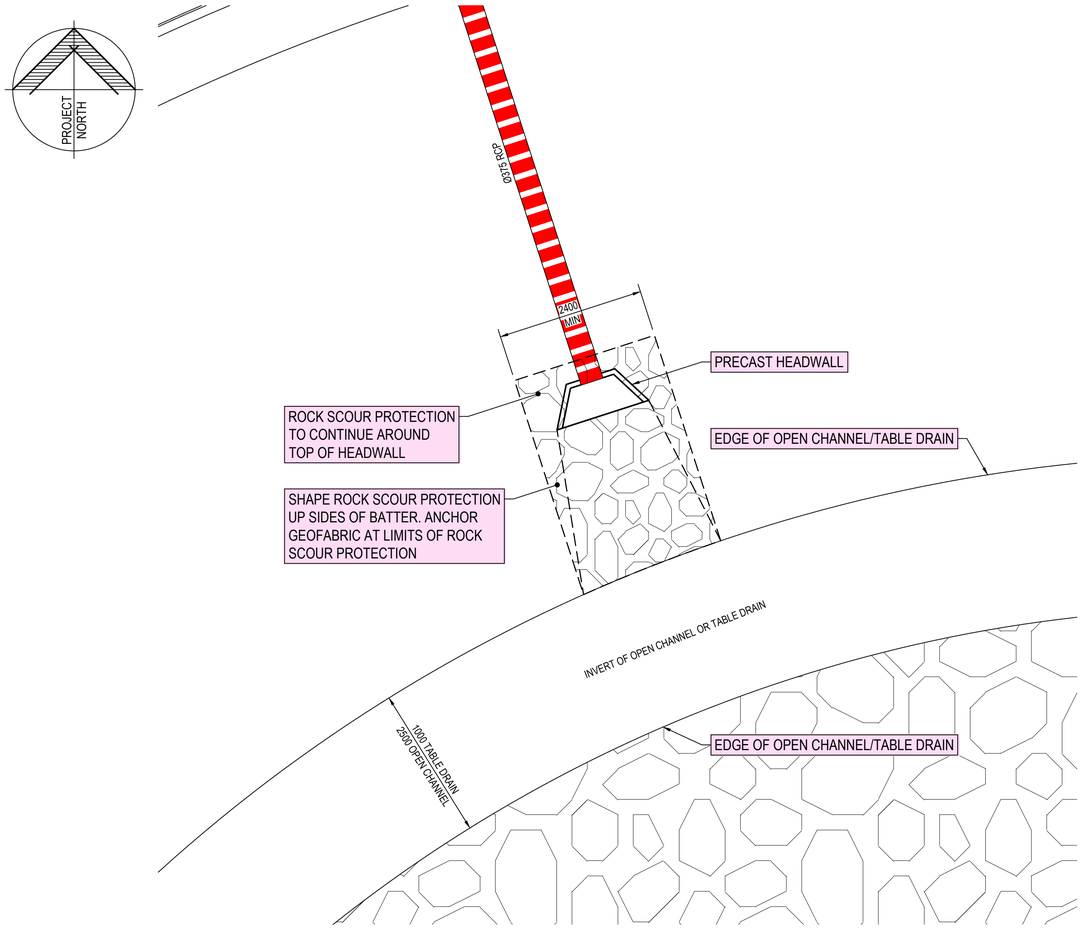
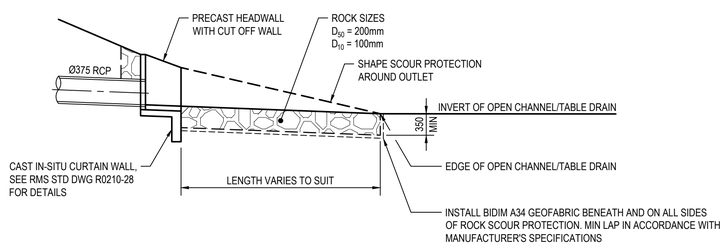


TYPICAL ROCK SCOUR PROTECTION HEADWALL PLAN

SCALE 1:50



TYPICAL ROCK SCOUR PROTECTION HEADWALL SECTION

SCALE 1:50

HATCH

PROJECT

TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT

TAMWORTH REGIONAL COUNCIL

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TITLE

ROCK SCOUR PROTECTION
HEADWALL PLAN & DETAILS

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DOCUMENT STATUS			SHEET SIZE
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A.VIZL	C.GARNER	T.WALTON	1:50
DOCUMENT No.			REVISION
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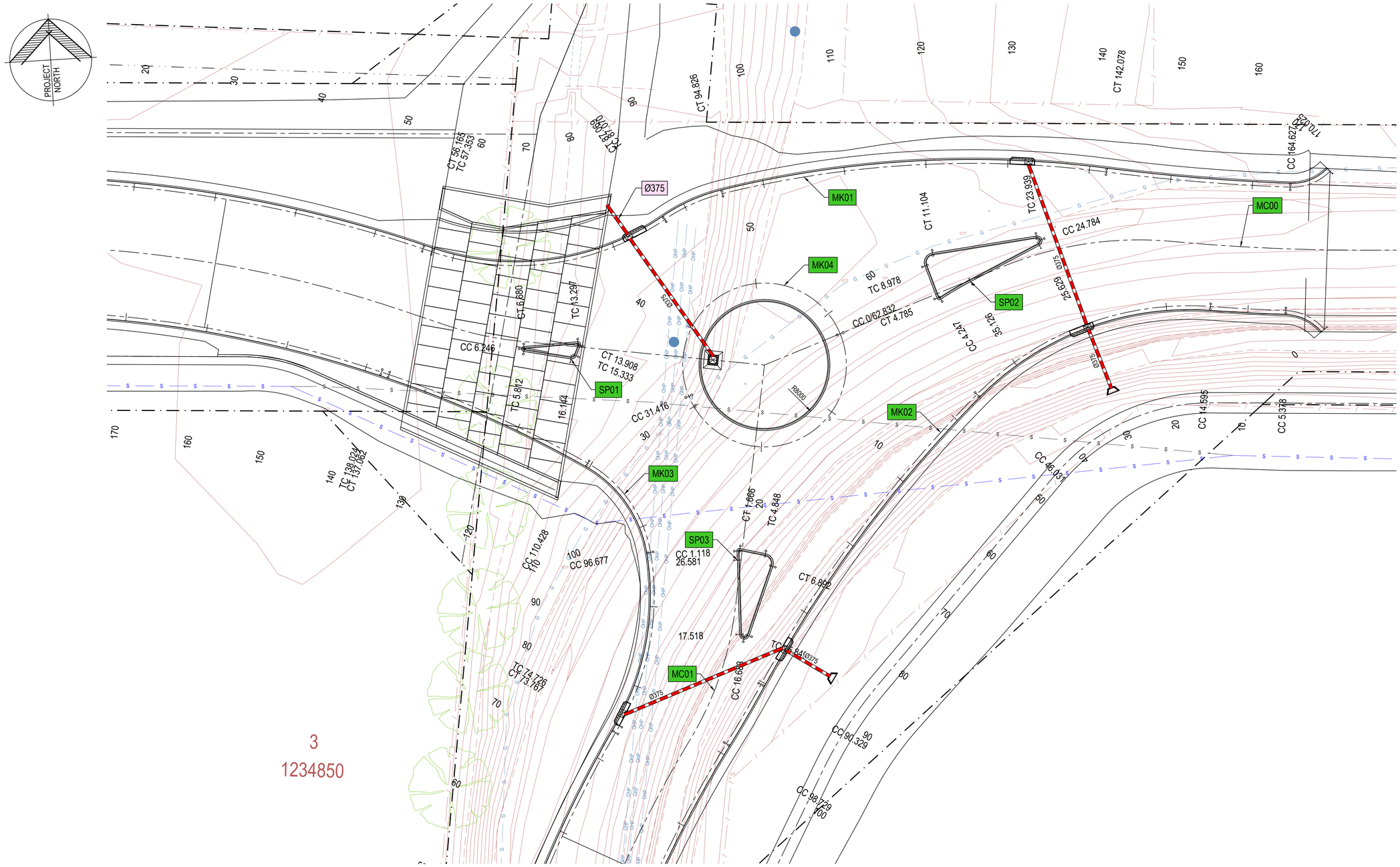

ROUNDABOUT PLAN

SCALE 1:250

3
1234850

HATCH

PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

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DOCUMENT No.			REVISION
16562-H-DR-C-0500			P03

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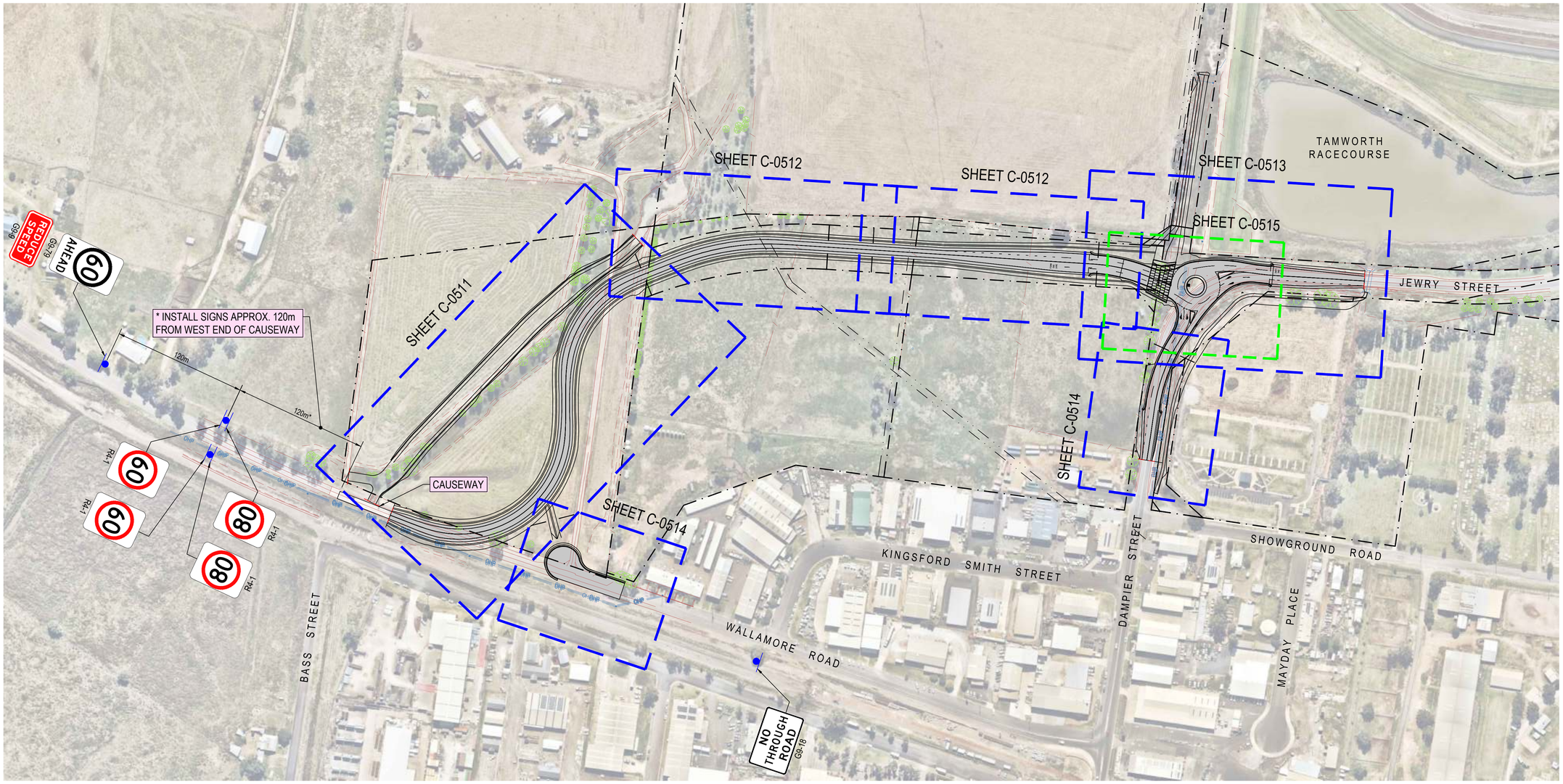
HATCH

PROJECT NORTH



LINEMARKING & SIGNAGE PLAN - SHEET 1

SCALE 1:2000

PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT
TAMWORTH REGIONAL COUNCIL

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LEGEND

- DENOTES PAVEMENT
- LOW — DENOTES LIMIT OF WORKS
- NEW STORMWATER DRAINAGE PIT
- NEW STORMWATER HEADWALL
- OHP — EXISTING OVERHEAD POWER LINE
- EXISTING BOUNDARY LINE
- PROPOSED BOUNDARY LINE
- EASEMENT LINE
- EXISTING FENCE
- EXISTING TREE

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P03	24.08.2022	DRAFT ISSUE FOR 100% DETAILED DESIGN	A.V.	T.W.
P02	01.06.2022	ISSUED FOR 90% DETAILED DESIGN	A.V.	C.G.

TITLE
LINEMARKING & SIGNAGE PLAN
SHEET 1

GENERAL NOTES

1. FOR DRAWING LIST REFER TO HATCH DRAWING 16562-H-DR-C-0000.
2. THE POSITION OF ALL EXISTING SERVICES SHOWN SHOULD BE REGARDED AS APPROXIMATE AND NOT NECESSARILY COMPREHENSIVE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT LOCATIONS AND INFORM ALL RELEVANT AUTHORITIES PRIOR TO ANY EXCAVATION.
3. BENCHMARKS TO BE PROVIDED PRIOR TO COMMENCEMENT OF CONSTRUCTION.
4. CONTRACTOR TO VERIFY SETOUT BEFORE COMMENCING EARTHWORKS. REFER ANY DISCREPANCIES TO ENGINEER.

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DOCUMENT STATUS			SHEET SIZE
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A.VIZL	C.GARNER	T.WALTON	1:2000
DOCUMENT No.			REVISION
16562-H-DR-C-0510			P03

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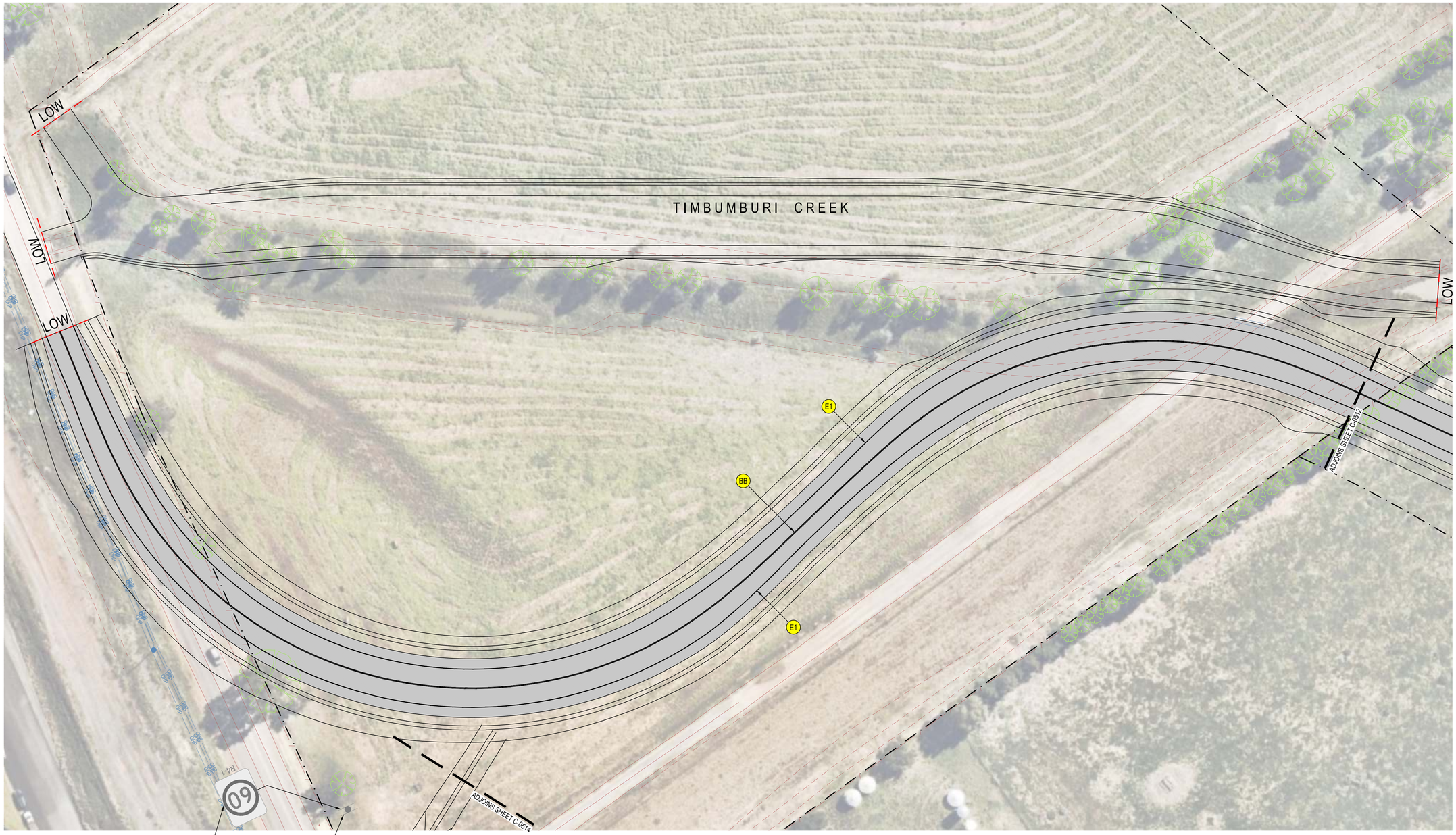
PROJECT NORTH

HATCH



EXISTING SIGNS TO BE REMOVED

LINEMARKING & SIGNAGE PLAN - SHEET 2

SCALE 1:500

PROJECT

TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT

TAMWORTH REGIONAL COUNCIL

THIS DRAWING CONTAINS COLOURED INFORMATION C M Y

LEGEND

- DENOTES PAVEMENT
- LOW — DENOTES LIMIT OF WORKS
- NEW STORMWATER DRAINAGE PIT
- NEW STORMWATER HEADWALL
- OHP — EXISTING OVERHEAD POWER LINE
- EXISTING BOUNDARY LINE
- PROPOSED BOUNDARY LINE
- EASEMENT LINE
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P02	01.06.2022	ISSUED FOR 90% DETAILED DESIGN	A.V.	C.G.

TITLE

LINEMARKING & SIGNAGE PLAN
SHEET 2

DOCUMENT STATUS			SHEET SIZE
DRAFT COPY			A1
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A.VIZL	C.GARNER	T.WALTON	1:500
DOCUMENT No.			REVISION
16562-H-DR-C-0511			P03

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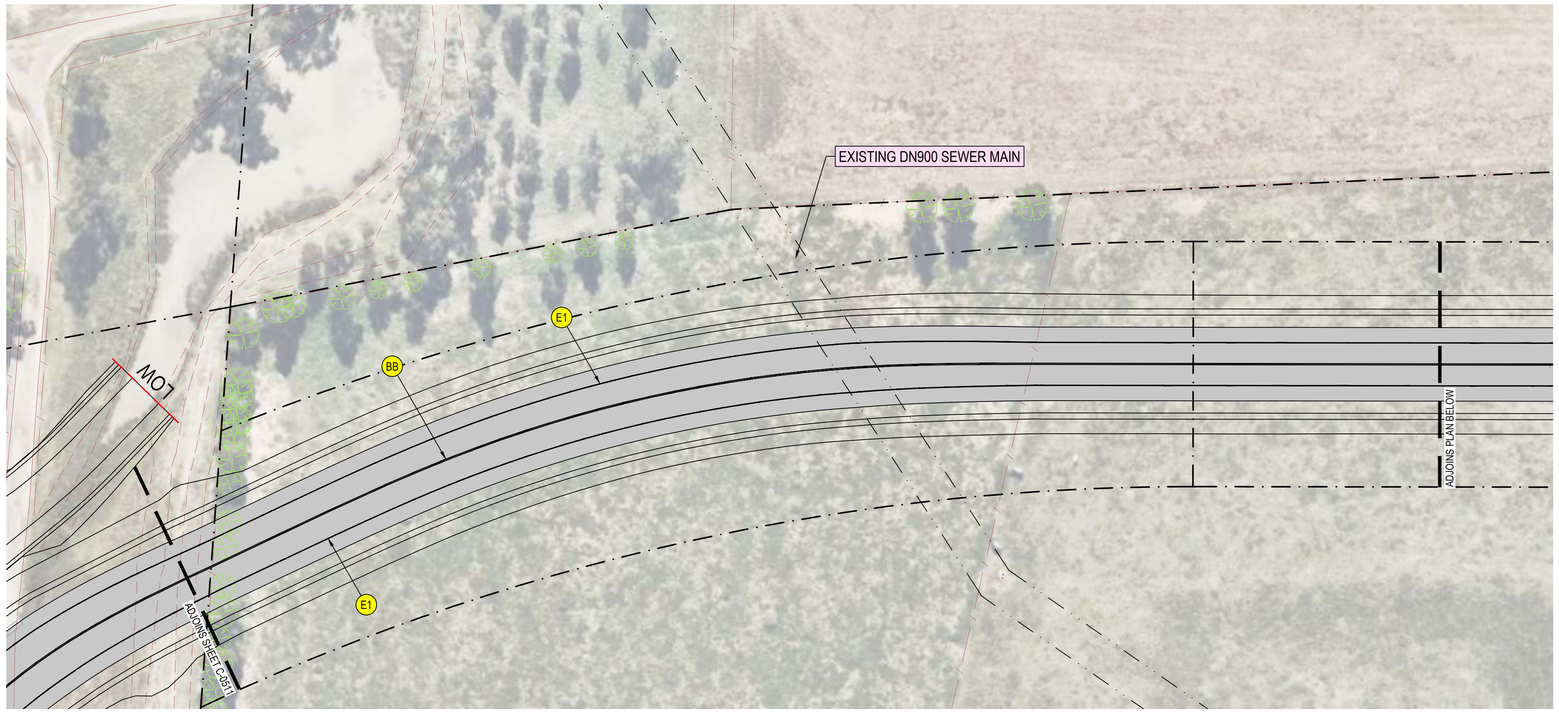
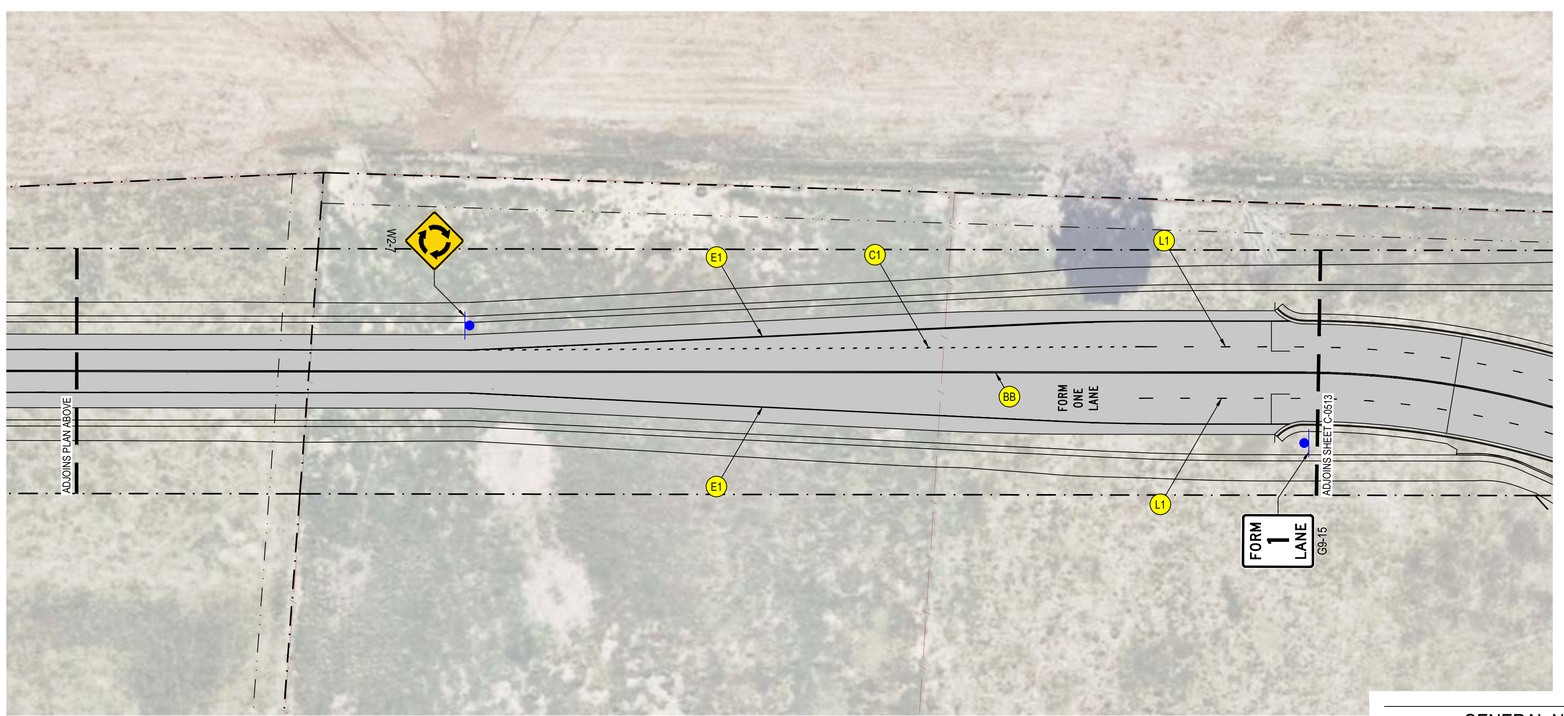


LINEMARKING & SIGNAGE PLAN - SHEET 3 PART A

SCALE 1:500



LINEMARKING & SIGNAGE PLAN - SHEET 3 PART B

SCALE 1:500

GENERAL NOTES

1. FOR DRAWING LIST REFER TO HATCH DRAWING 16562-H-DR-C-0000.
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HATCH

PROJECT

TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT

TAMWORTH REGIONAL COUNCIL

THIS DRAWING CONTAINS COLOURED INFORMATION C M Y

LEGEND

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TITLE

LINEMARKING & SIGNAGE PLAN
SHEET 3

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A.VIZL	C.GARNER	T.WALTON	1:500
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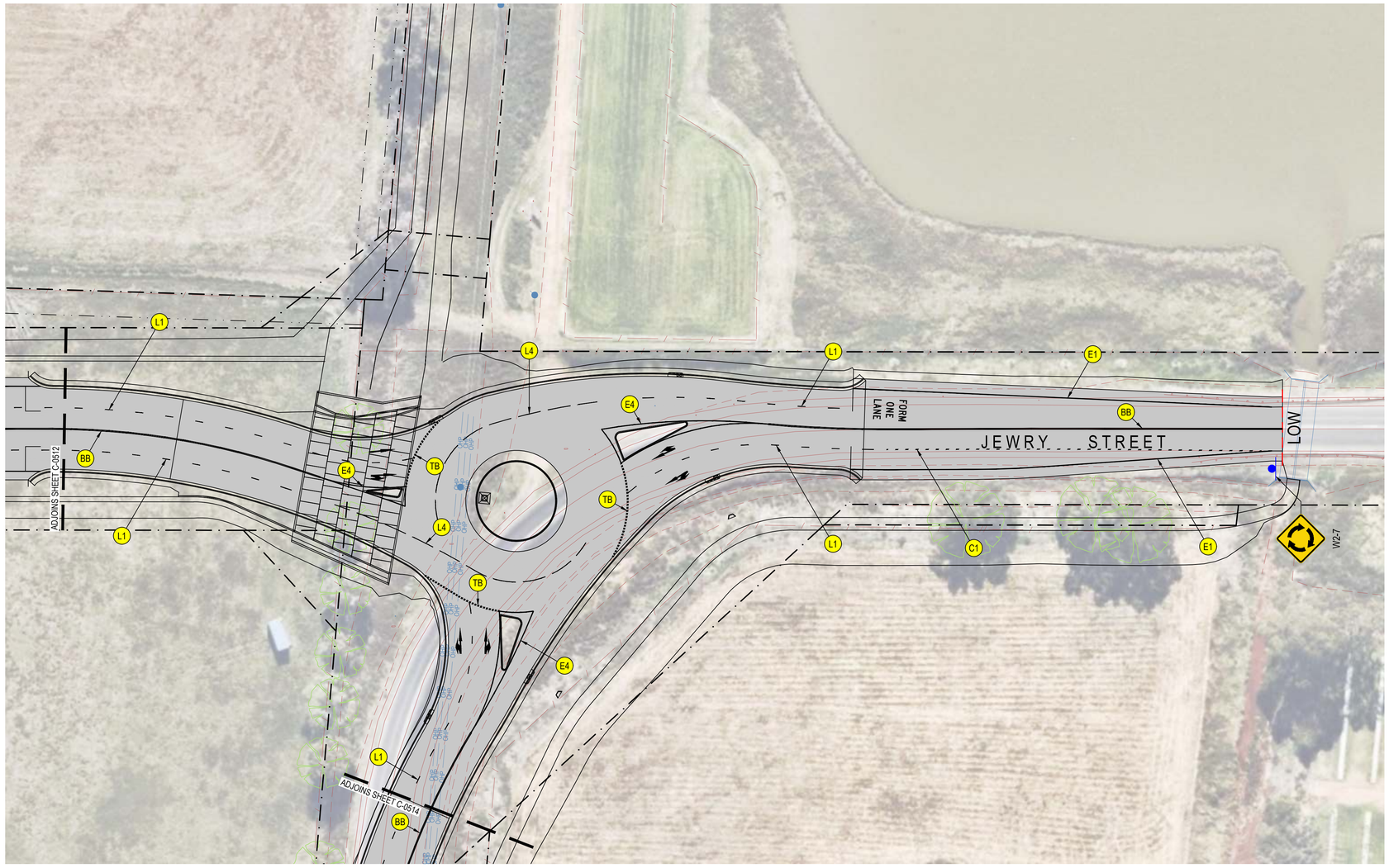

LINEMARKING & SIGNAGE PLAN - SHEET 4

SCALE 1:500

HATCH

PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT
TAMWORTH REGIONAL COUNCIL

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TITLE
LINEMARKING & SIGNAGE PLAN
SHEET 4

GENERAL NOTES

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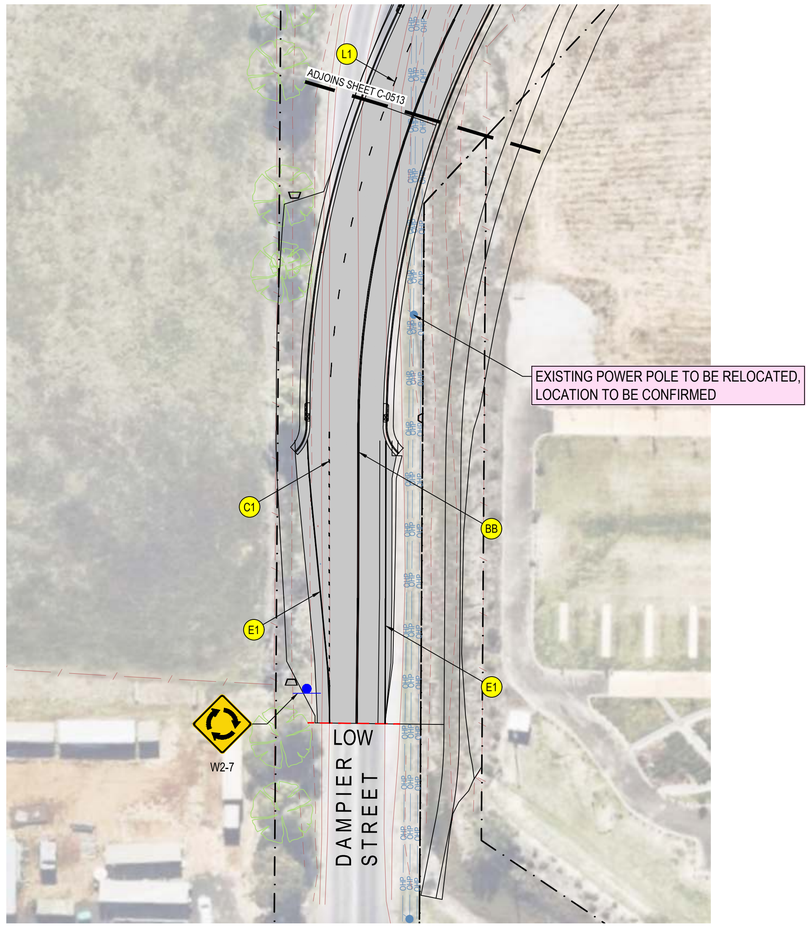
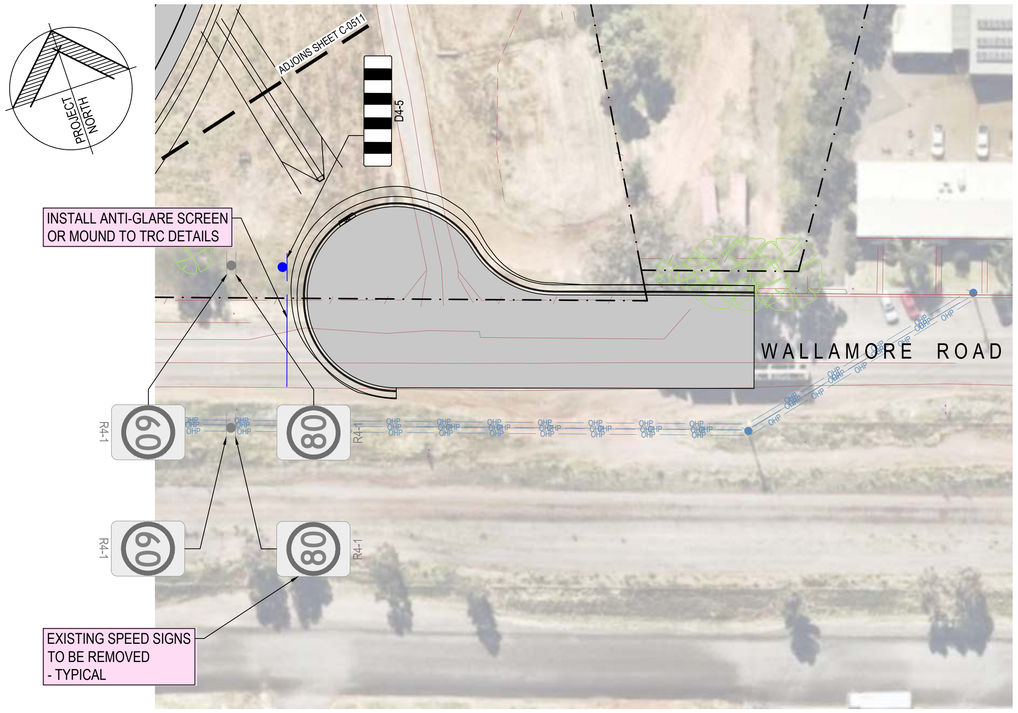


LINEMARKING & SIGNAGE PLAN - SHEET 5 PART A

SCALE 1:500



LINEMARKING & SIGNAGE PLAN - SHEET 5 PART B

SCALE 1:500

HATCH

PROJECT

TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT

TAMWORTH REGIONAL COUNCIL

THIS DRAWING CONTAINS COLOURED INFORMATION C M Y

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LINEMARKING & SIGNAGE PLAN
SHEET 5

DOCUMENT STATUS			SHEET SIZE
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A.VIZL	C.GARNER	T.WALTON	1:500
DOCUMENT No.			REVISION
16562-H-DR-C-0514			P03

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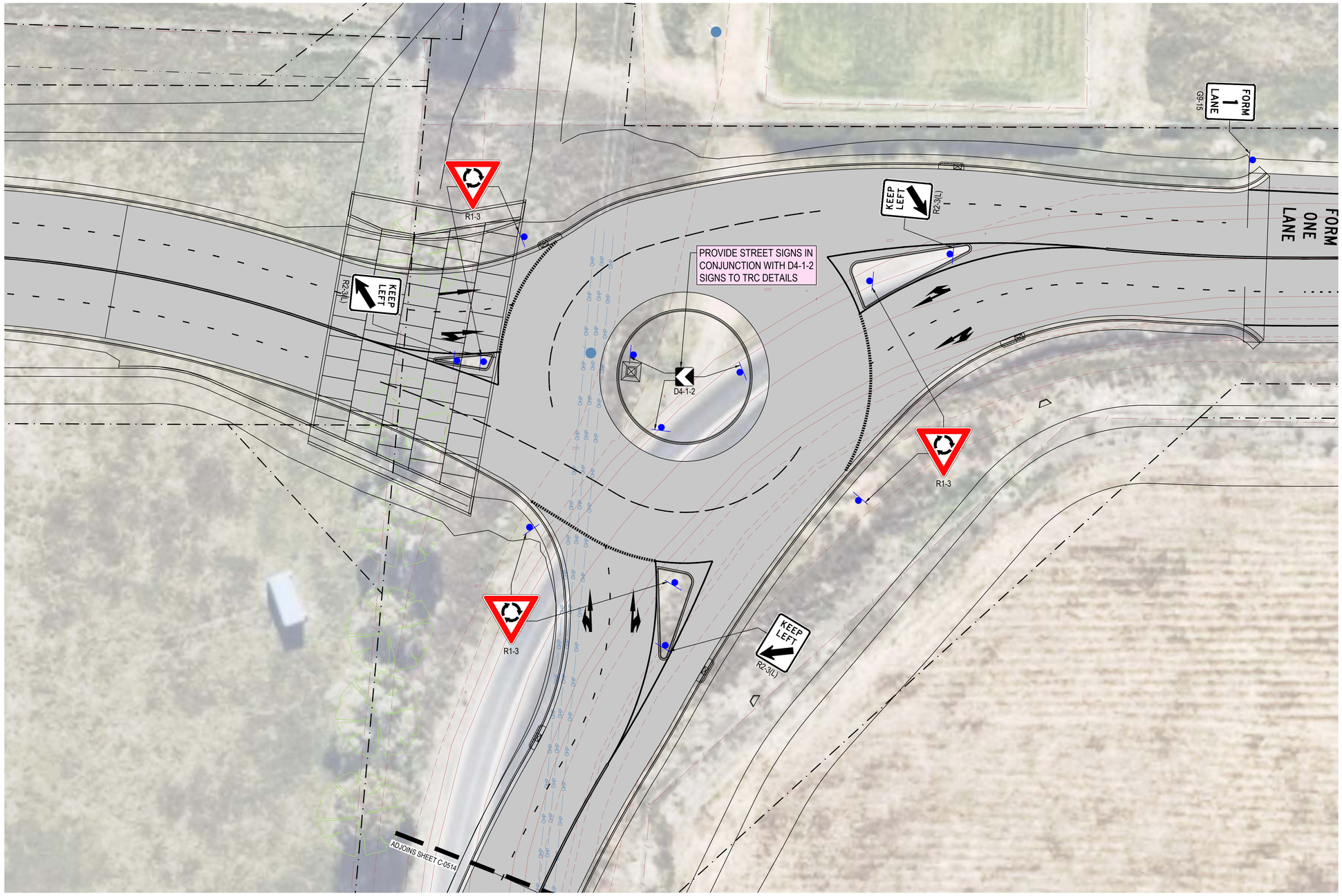

LINEMARKING & SIGNAGE PLAN - SHEET 6

SCALE 1:250

HATCH

PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT
TAMWORTH REGIONAL COUNCIL

THIS DRAWING CONTAINS COLOURED INFORMATION C M Y

LEGEND

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P03	24.08.2022	DRAFT ISSUE FOR 100% DETAILED DESIGN	A.V.	T.W.
P02	01.06.2022	ISSUED FOR 90% DETAILED DESIGN	A.V.	C.G.

TITLE
LINEMARKING & SIGNAGE PLAN
SHEET 6

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DOCUMENT STATUS			SHEET SIZE
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A.VIZL	C.GARNER	T.WALTON	1:250
DOCUMENT No.			REVISION
16562-H-DR-C-0515			P03

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PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT
TAMWORTH REGIONAL COUNCIL

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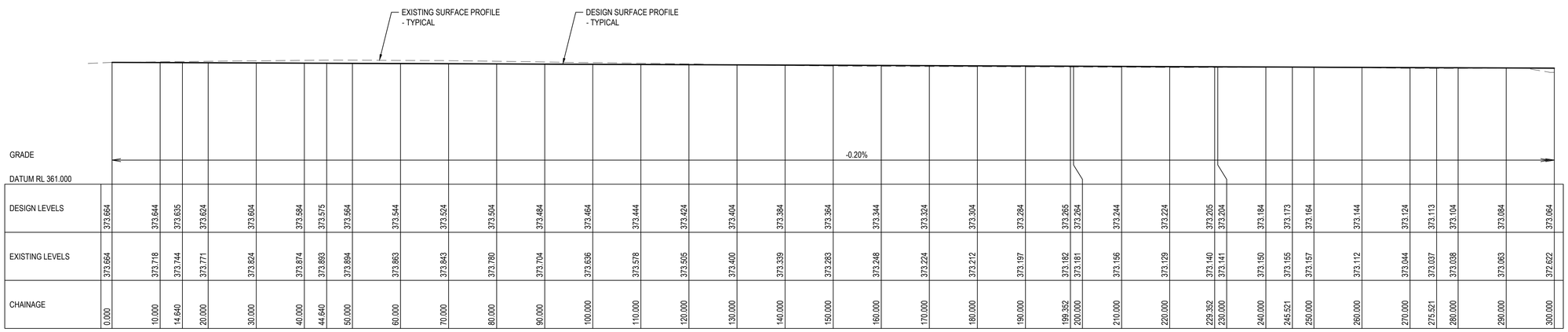

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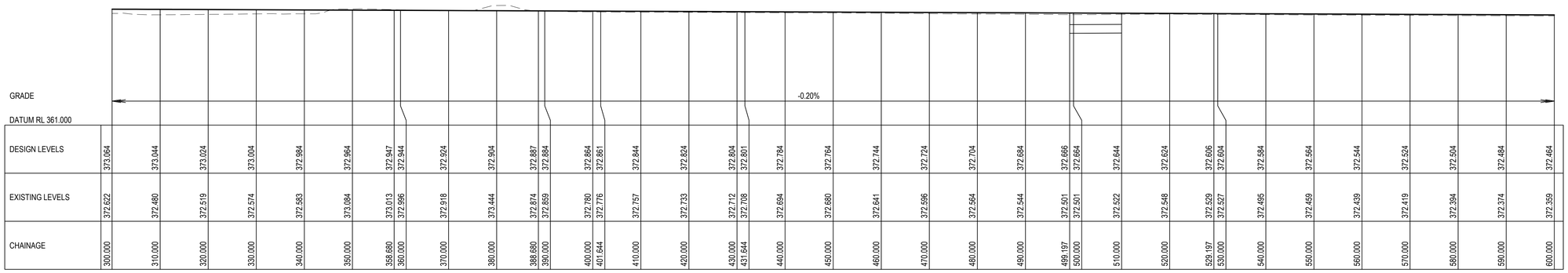
10.000	373.718	373.644
14.640	373.744	373.635
20.000	373.771	373.624
30.000	373.824	373.604
40.000	373.874	373.584
44.640	373.893	373.575
50.000	373.894	373.564
60.000	373.863	373.544
70.000	373.843	373.524
80.000	373.780	373.504
90.000	373.704	373.484
100.000	373.636	373.464
110.000	373.578	373.444
120.000	373.505	373.424
130.000	373.400	373.404
140.000	373.339	373.384
150.000	373.283	373.364
160.000	373.248	373.344
170.000	373.224	373.324
180.000	373.212	373.304
190.000	373.197	373.284
199.352	373.182	373.265
200.000	373.181	373.264
210.000	373.156	373.244
220.000	373.129	373.224
229.352	373.140	373.205
230.000	373.141	373.204
240.000	373.150	373.184
245.521	373.155	373.173
250.000	373.157	373.164
260.000	373.112	373.144
270.000	373.044	373.124
275.521	373.037	373.113
280.000	373.038	373.104
290.000	373.063	373.084
300.000	372.622	373.064

LONGITUDINAL SECTION ALONG JEWRY STREET CONTROL MC00

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:250



CHAINAGE	EXISTING LEVELS	DESIGN LEVELS
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310.000	372.460	373.044
320.000	372.519	373.024
330.000	372.574	373.004
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358.680	373.013	372.947
360.000	372.996	372.944
370.000	372.918	372.924
380.000	373.444	372.904
388.680	372.874	372.887
390.000	372.859	372.884
400.000	372.760	372.864
401.644	372.776	372.861
410.000	372.757	372.844
420.000	372.733	372.824
430.000	372.712	372.804
431.644	372.708	372.801
440.000	372.694	372.784
450.000	372.680	372.764
460.000	372.641	372.744
470.000	372.596	372.724
480.000	372.564	372.704
490.000	372.544	372.684
499.197	372.501	372.666
500.000	372.501	372.664
510.000	372.522	372.644
520.000	372.548	372.624
529.197	372.529	372.606
530.000	372.527	372.604
540.000	372.495	372.584
550.000	372.459	372.564
560.000	372.439	372.544
570.000	372.419	372.524
580.000	372.394	372.504
590.000	372.374	372.484
600.000	372.359	372.464

LONGITUDINAL SECTION ALONG JEWRY STREET CONTROL MC00

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:250

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TITLE
LONGITUDINAL SECTIONS
MC00
SHEET 1

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DOCUMENT No.			REVISION
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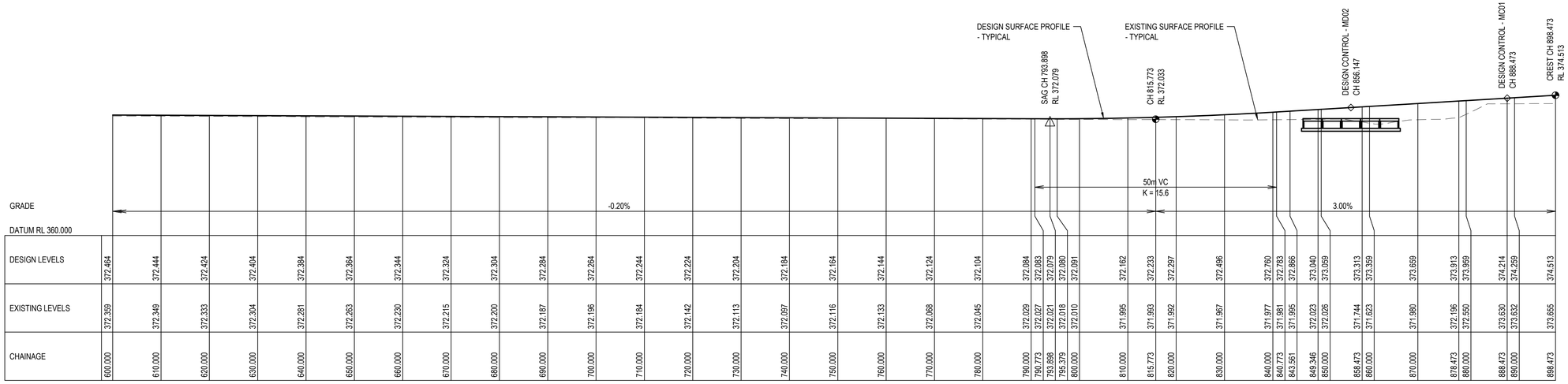
HATCH

PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT
TAMWORTH REGIONAL COUNCIL

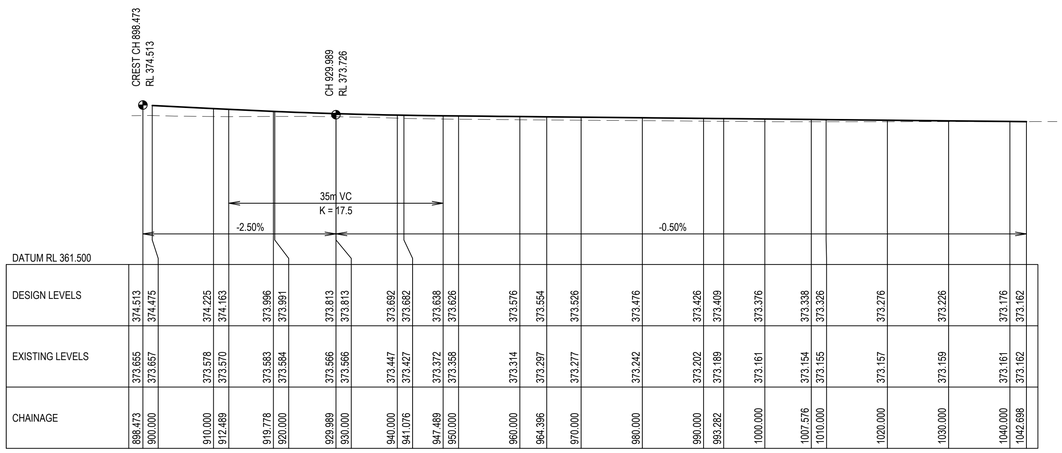
THIS DRAWING CONTAINS COLOURED INFORMATION C M Y



CHAINAGE	DESIGN LEVELS	EXISTING LEVELS
600.000	372.464	372.359
610.000	372.444	372.349
620.000	372.424	372.333
630.000	372.404	372.304
640.000	372.384	372.281
650.000	372.364	372.263
660.000	372.344	372.230
670.000	372.324	372.215
680.000	372.304	372.200
690.000	372.284	372.187
700.000	372.264	372.196
710.000	372.244	372.184
720.000	372.224	372.142
730.000	372.204	372.113
740.000	372.184	372.097
750.000	372.164	372.116
760.000	372.144	372.133
770.000	372.124	372.068
780.000	372.104	372.045
790.000	372.084	372.029
790.773	372.083	372.027
793.898	372.079	372.021
795.379	372.080	372.018
800.000	372.091	372.010
810.000	372.162	371.995
815.773	372.233	371.993
820.000	372.297	371.992
830.000	372.496	371.967
840.000	372.760	371.977
840.773	372.783	371.981
843.561	372.866	371.995
849.346	373.040	372.023
850.000	373.059	372.026
858.473	373.313	371.744
860.000	373.359	371.623
870.000	373.659	371.980
878.473	373.913	372.196
880.000	373.959	372.550
888.473	374.214	373.630
890.000	374.259	373.632
898.473	374.513	373.655

LONGITUDINAL SECTION ALONG JEWRY STREET CONTROL MC00

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:250



CHAINAGE	DESIGN LEVELS	EXISTING LEVELS
898.473	374.513	373.655
900.000	374.475	373.657
910.000	374.225	373.578
912.489	374.163	373.570
919.778	373.996	373.583
920.000	373.991	373.584
929.989	373.813	373.566
930.000	373.813	373.566
940.000	373.692	373.447
941.076	373.662	373.427
947.489	373.638	373.372
950.000	373.626	373.358
960.000	373.576	373.314
964.396	373.554	373.297
970.000	373.526	373.277
980.000	373.476	373.242
990.000	373.426	373.202
993.282	373.409	373.189
1000.000	373.376	373.161
1007.576	373.338	373.154
1010.000	373.326	373.155
1020.000	373.276	373.157
1030.000	373.226	373.159
1040.000	373.176	373.161
1042.698	373.162	373.162

LONGITUDINAL SECTION ALONG JEWRY STREET CONTROL MC00

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:250

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P01	13.05.2022	ISSUED FOR 90% DETAILED DESIGN	A.V.	C.G.

TITLE
LONGITUDINAL SECTIONS
MC00
SHEET 2

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DOCUMENT STATUS			SHEET SIZE
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A.VIZL	C.GARNER	T.WALTON	1:500, 1:250
DOCUMENT No.			REVISION
16562-H-DR-C-0601			P03

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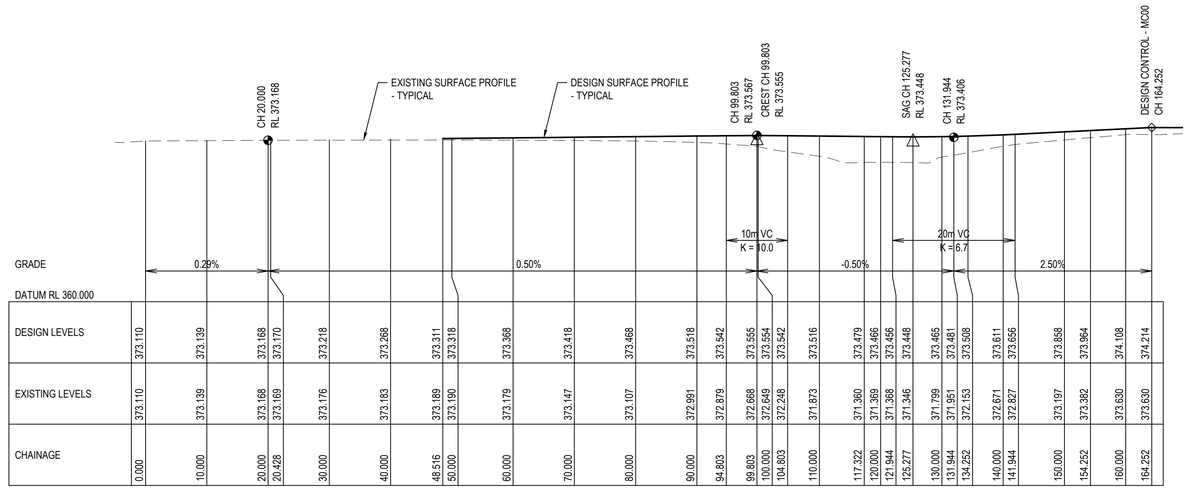
HATCH

PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT
TAMWORTH REGIONAL COUNCIL

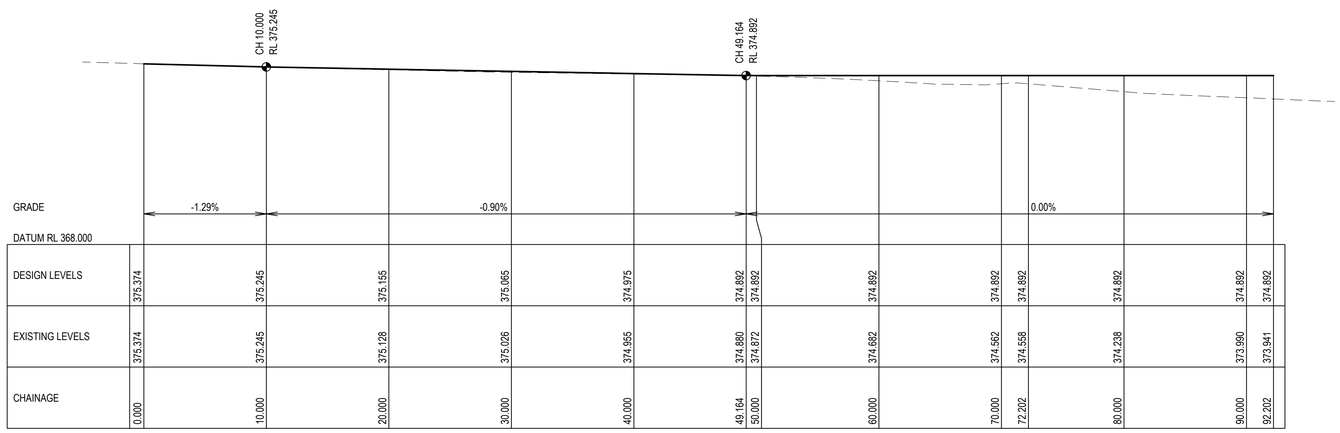
THIS DRAWING CONTAINS COLOURED INFORMATION C M Y



CHAINAGE	DESIGN LEVELS	EXISTING LEVELS
0.000	373.110	373.110
10.000	373.139	373.139
20.000	373.168	373.168
20.428	373.170	373.169
30.000	373.218	373.176
40.000	373.268	373.183
48.516	373.311	373.189
50.000	373.318	373.190
60.000	373.368	373.179
70.000	373.418	373.147
80.000	373.468	373.107
90.000	373.518	372.991
94.803	373.542	372.879
99.803	373.555	372.668
100.000	373.554	372.649
104.803	373.542	372.248
110.000	373.516	371.873
117.322	373.479	371.360
120.000	373.466	371.369
121.944	373.456	371.368
125.277	373.448	371.346
130.000	373.465	371.799
131.944	373.481	371.951
134.252	373.508	372.153
140.000	373.611	372.671
141.944	373.656	372.827
150.000	373.858	373.197
154.252	373.964	373.382
160.000	374.108	373.630
164.252	374.214	373.630

LONGITUDINAL SECTION ALONG DAMPIER STREET CONTROL MC01

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:250



CHAINAGE	DESIGN LEVELS	EXISTING LEVELS
0.000	375.374	375.374
10.000	375.245	375.245
20.000	375.155	375.128
30.000	375.065	375.026
40.000	374.975	374.955
49.164	374.892	374.880
50.000	374.892	374.872
60.000	374.892	374.682
70.000	374.892	374.562
72.202	374.892	374.558
80.000	374.892	374.238
90.000	374.892	373.990
92.202	374.892	373.941

LONGITUDINAL SECTION ALONG WALLAMORE ROAD CONTROL MC02

HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:125

REV	DATE	DESCRIPTION	DRN	APP
P03	24.08.2022	DRAFT ISSUE FOR 100% DETAILED DESIGN	A.V.	T.W.
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TITLE
LONGITUDINAL SECTIONS
MC01 & MC02

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DOCUMENT No.			REVISION
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PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT
TAMWORTH REGIONAL COUNCIL

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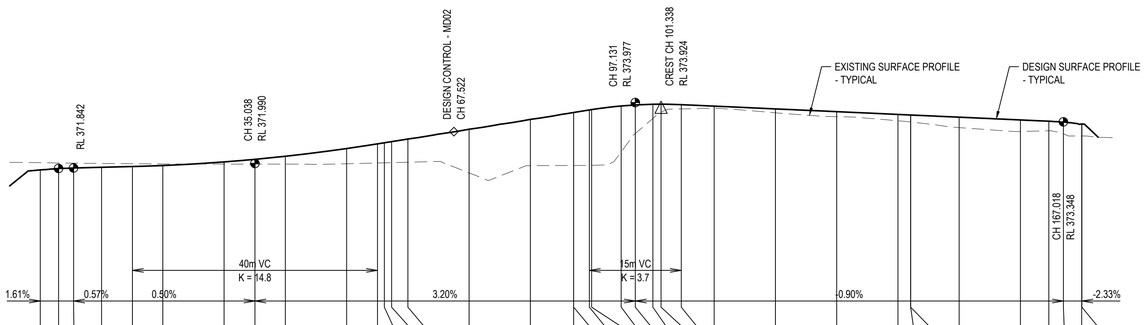
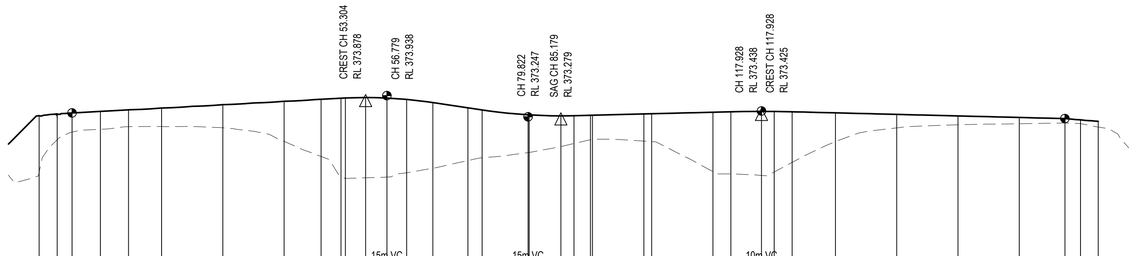


DATUM RL 366.500

CHAINAGE	DESIGN LEVELS	EXISTING LEVELS
0.000	371.780	372.016
2.981	371.828	372.006
5.433	371.842	372.000
10.000	371.865	371.990
15.038	371.890	371.981
20.000	371.923	371.974
30.000	372.040	371.970
35.038	372.125	371.969
40.000	372.225	371.968
50.000	372.477	371.981
55.038	372.630	372.006
56.165	372.666	372.011
57.353	372.704	372.017
60.000	372.789	372.030
70.000	373.109	371.682
80.000	373.429	371.919
87.069	373.655	371.923
87.070	373.655	371.923
89.631	373.737	371.925
90.000	373.749	371.927
94.826	373.866	372.365
97.131	373.900	372.965
100.000	373.922	373.458
101.338	373.924	373.663
104.631	373.909	373.769
110.000	373.861	373.792
120.000	373.771	373.643
130.000	373.681	373.515
140.000	373.591	373.383
142.078	373.572	373.345
142.079	373.572	373.345
150.000	373.501	373.161
160.000	373.411	373.034
164.627	373.370	373.057
167.018	373.348	372.968
170.000	373.279	372.887
170.025	373.278	372.867

LONGITUDINAL SECTION ALONG CONTROL MK01

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100



DATUM RL 366.500

CHAINAGE	DESIGN LEVELS	EXISTING LEVELS
0.000	373.285	371.428
2.955	373.348	372.513
5.378	373.373	372.749
10.000	373.424	372.839
14.595	373.474	372.926
20.000	373.534	372.932
30.000	373.644	372.891
40.000	373.754	372.448
46.031	373.820	371.955
49.279	373.856	371.293
50.000	373.863	371.237
53.304	373.878	371.256
56.779	373.862	371.278
60.000	373.817	371.419
64.279	373.713	371.567
70.000	373.542	371.815
72.322	373.472	371.905
79.822	373.313	372.078
80.000	373.311	372.083
85.179	373.279	372.274
87.322	373.265	372.370
90.000	373.298	372.500
90.329	373.300	372.518
98.729	373.342	372.455
100.000	373.348	372.438
110.000	373.398	371.457
112.928	373.413	371.384
117.928	373.425	371.333
120.000	373.423	371.447
122.928	373.413	371.767
130.000	373.377	372.441
140.000	373.327	372.886
150.000	373.277	372.988
160.000	373.227	373.021
167.461	373.190	373.045
170.000	373.148	373.024
172.895	373.101	372.914

LONGITUDINAL SECTION ALONG CONTROL MK02

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100

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P03	24.08.2022	DRAFT ISSUE FOR 100% DETAILED DESIGN	A.V.	T.W.
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TITLE
LONGITUDINAL SECTIONS
MK01 & MK02

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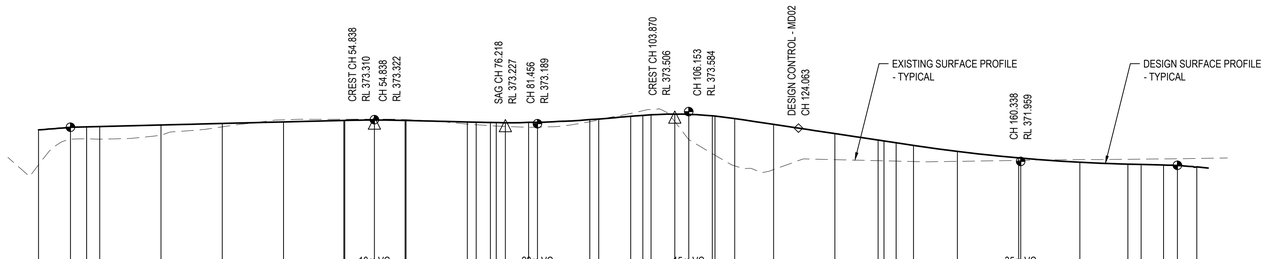
PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT
TAMWORTH REGIONAL COUNCIL

THIS DRAWING CONTAINS COLOURED INFORMATION C M Y

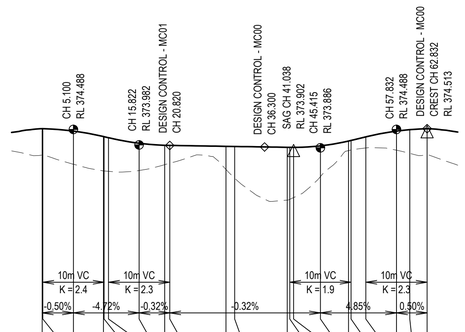


DATUM RL 366.500

CHAINAGE	DESIGN LEVELS	EXISTING LEVELS
0.000	372.990	371.846
5.220	373.074	372.687
7.861	373.087	372.699
10.000	373.098	372.684
20.000	373.148	372.820
30.000	373.198	373.088
40.000	373.248	373.317
49.838	373.297	373.336
50.000	373.298	373.336
54.838	373.310	373.339
59.838	373.297	373.325
60.000	373.296	373.324
70.000	373.246	373.178
71.456	373.239	373.159
73.767	373.230	373.127
74.726	373.228	373.114
76.218	373.227	373.095
80.000	373.225	373.072
81.456	373.242	373.073
90.000	373.327	373.252
91.456	373.349	373.309
96.677	373.433	373.524
98.653	373.464	373.611
100.000	373.483	373.664
103.870	373.506	373.264
106.153	373.498	372.670
110.000	373.448	372.213
110.428	373.440	372.163
113.653	373.359	371.815
120.000	373.169	371.694
130.000	372.869	372.017
137.062	372.657	371.983
138.024	372.628	371.978
140.000	372.569	371.969
142.838	372.484	371.955
150.000	372.287	371.961
160.000	372.074	371.992
160.338	372.068	371.993
170.000	371.932	372.017
177.838	371.871	372.029
180.000	371.860	372.033
183.655	371.842	372.040
185.922	371.831	372.046
189.089	371.780	372.056

LONGITUDINAL SECTION ALONG CONTROL MK03

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100



DATUM RL 367.500

CHAINAGE	DESIGN LEVELS	EXISTING LEVELS
0.000	374.513	373.655
0.100	374.513	373.658
5.100	374.435	373.351
10.000	374.257	373.134
10.100	374.252	373.131
10.822	374.218	373.116
15.822	374.037	373.142
20.000	373.970	373.340
20.822	373.966	373.382
30.000	373.936	373.176
31.416	373.932	372.895
40.000	373.904	372.161
40.415	373.903	372.191
41.038	373.902	372.240
45.415	373.951	372.940
50.000	374.109	373.815
50.415	374.129	373.825
52.832	374.246	373.885
57.832	374.434	373.810
60.000	374.482	373.707
62.832	374.513	373.655

LONGITUDINAL SECTION ALONG CONTROL MK04

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100

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P03	24.08.2022	DRAFT ISSUE FOR 100% DETAILED DESIGN	A.V.	T.W.
P02	01.06.2022	ISSUED FOR 90% DETAILED DESIGN	A.V.	C.G.
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TITLE
LONGITUDINAL SECTIONS
MK03 & MK04

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DOCUMENT No.			REVISION
16562-H-DR-C-0701			P03

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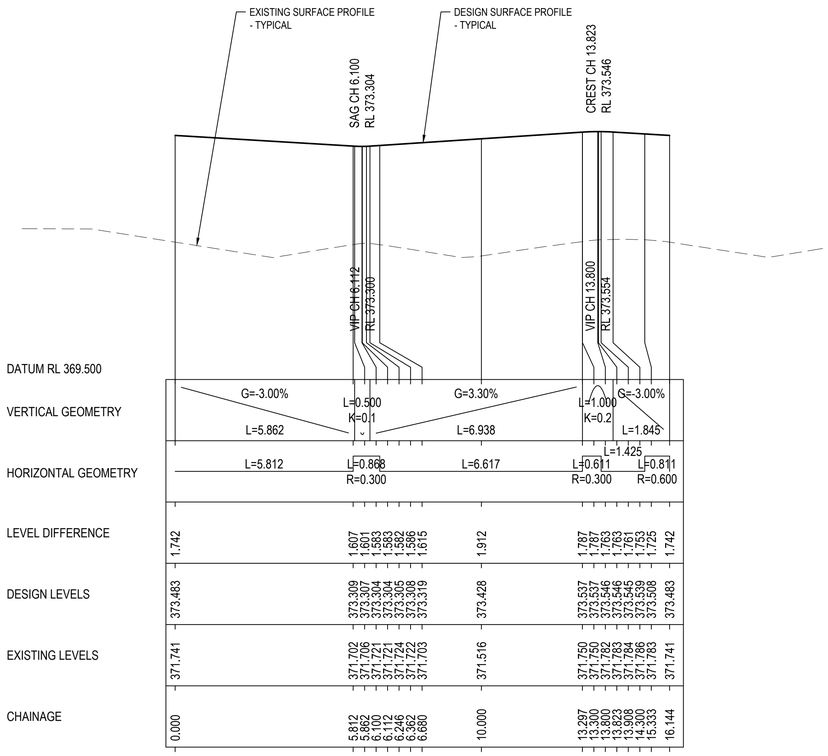
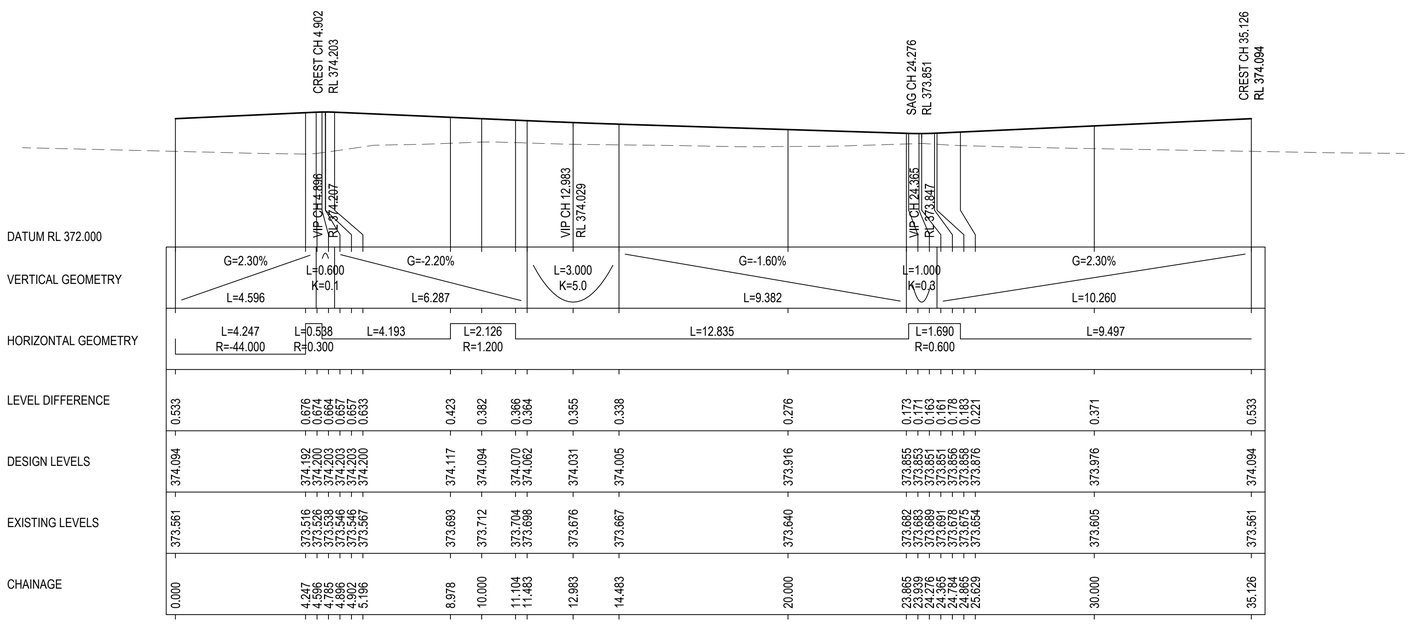


LONGITUDINAL SECTION ALONG CONTROL SP01

HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:20



LONGITUDINAL SECTION ALONG CONTROL SP02

HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:20

HATCH

PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT
TAMWORTH REGIONAL COUNCIL

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TITLE
LONGITUDINAL SECTIONS
SP01 & SP02

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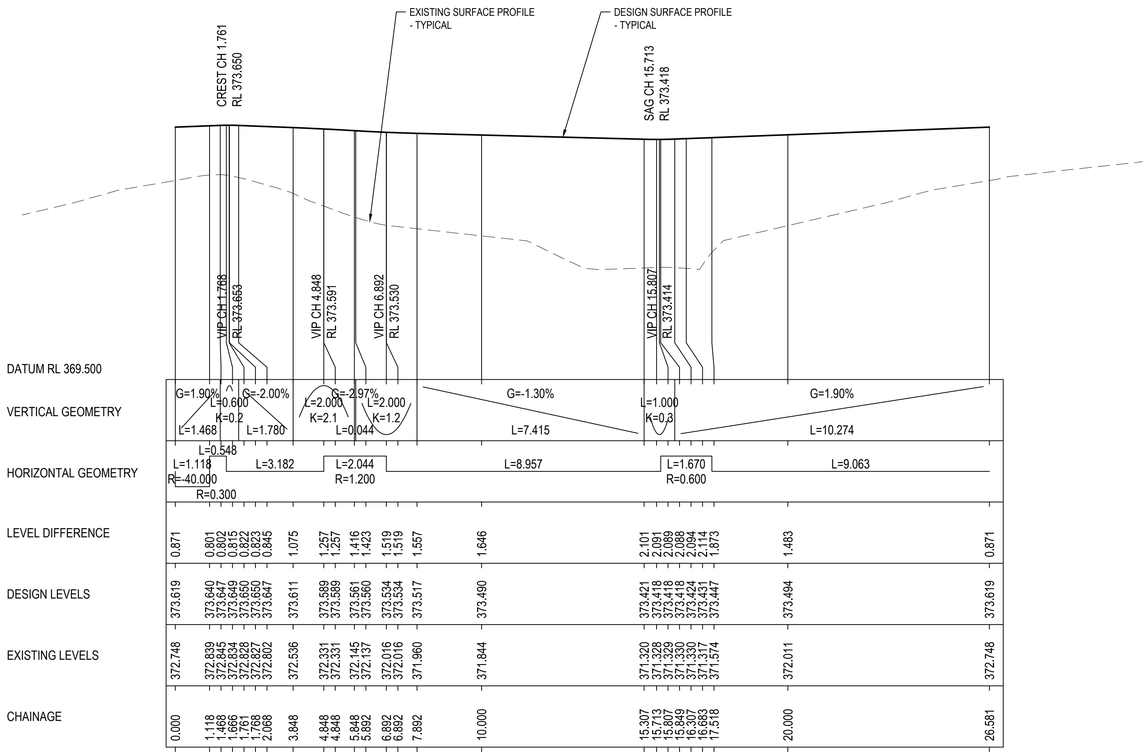

LONGITUDINAL SECTION ALONG CONTROL SP03

HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:20

HATCH

PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

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LONGITUDINAL SECTIONS
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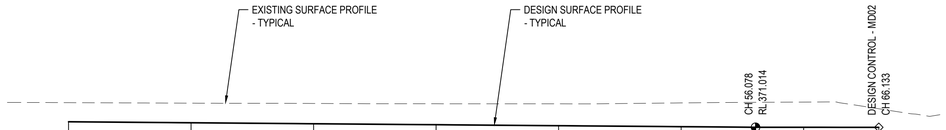

GRADE -0.40% -0.03%

DATUM RL 365.000

DESIGN LEVELS	371.238	371.198	371.158	371.118	371.078	371.038	371.014	371.013	371.011
EXISTING LEVELS	372.019	371.997	371.985	371.973	371.970	372.007	372.031	372.042	371.770
CHAINAGE	0.000	10.000	20.000	30.000	40.000	50.000	56.078	60.000	66.133

LONGITUDINAL SECTION ALONG TABLE DRAIN TO BOX CULVERT OUTLET CONTROL MD04

HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:125

GRADE -0.21% 0.09%

DATUM RL 365.500

DESIGN LEVELS	371.238	371.217	371.196	371.175	371.174	371.156	371.153	371.132	371.129	371.136	371.145	371.147
EXISTING LEVELS	372.060	372.036	372.008	371.977	371.976	371.950	371.948	371.985	371.992	372.032	371.810	372.036
CHAINAGE	0.000	10.000	20.000	30.000	30.313	38.877	40.000	50.000	51.546	60.000	70.000	71.990

LONGITUDINAL SECTION ALONG TABLE DRAIN TO BOX CULVERT INLET CONTROL MD05

HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:125

REV	DATE	DESCRIPTION	DRN	APP
P03	24.08.2022	DRAFT ISSUE FOR 100% DETAILED DESIGN	A.V.	T.W.
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TITLE
LONGITUDINAL SECTIONS
MD04 & MD05

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DOCUMENT No.			REVISION
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DATUM RL 370.800

DESIGN LEVELS	373.623	372.876	372.876	373.376	373.451	373.584	373.451	373.376	372.876	372.876	373.768
EXISTING LEVELS	373.623	373.654	373.684	373.783	373.815	373.874	373.860	373.911	373.907	373.874	373.768
OFFSET	-12.918	-9.930	-8.930	-6.930	-4.430	0.000	4.430	6.930	8.930	9.930	13.496

CH 40.000

DATUM RL 370.900

DESIGN LEVELS	373.605	372.907	372.907	373.407	373.482	373.604	373.482	373.407	372.907	372.907	373.966
EXISTING LEVELS	373.605	373.632	373.672	373.732	373.748	373.824	373.805	373.867	373.905	373.917	373.966
OFFSET	-12.356	-9.563	-8.563	-6.563	-4.063	0.000	4.063	6.563	8.563	9.563	13.799

CH 30.000

DATUM RL 370.900

DESIGN LEVELS	373.571	372.938	372.938	373.438	373.513	373.624	373.566	373.526	373.026	373.026	373.921
EXISTING LEVELS	373.571	373.664	373.741	373.725	373.685	373.771	373.751	373.803	373.857	373.886	373.921
OFFSET	-11.729	-9.197	-8.197	-6.197	-3.697	0.000	3.697	6.197	8.197	9.197	12.776

CH 20.000

DATUM RL 370.900

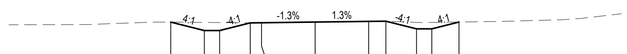
DESIGN LEVELS	373.596	372.955	372.955	373.455	373.530	373.635	373.606	373.585	373.085	373.085	373.930
EXISTING LEVELS	373.596	373.761	373.732	373.710	373.654	373.742	373.746	373.749	373.804	373.833	373.930
OFFSET	-11.563	-9.000	-8.000	-6.000	-3.500	0.000	3.500	6.000	8.000	9.000	12.380

CH 14.640

DATUM RL 371.000

DESIGN LEVELS	373.626	373.011	373.011	373.511	373.558	373.644	373.638	373.635	373.135	373.135	373.863
EXISTING LEVELS	373.626	373.730	373.680	373.684	373.634	373.704	373.742	373.696	373.750	373.779	373.863
OFFSET	-10.899	-8.441	-7.441	-5.441	-3.500	0.000	3.500	5.563	7.563	8.563	11.476

CH 10.000



DATUM RL 371.100

DESIGN LEVELS	373.659	373.111	373.111	373.611	373.620	373.664	373.708	373.722	373.222	373.222	373.666
EXISTING LEVELS	373.659	373.641	373.630	373.610	373.617	373.664	373.714	373.730	373.642	373.640	373.666
OFFSET	-9.427	-7.235	-6.235	-4.235	-3.500	0.000	3.500	4.620	6.620	7.620	9.397

CH 0.000

DATUM RL 370.700

DESIGN LEVELS	373.513	372.771	372.771	373.271	373.346	373.484	373.346	373.271	372.771	372.771	374.058
EXISTING LEVELS	373.513	373.545	373.558	373.589	373.629	373.704	373.780	373.822	373.902	373.950	374.058
OFFSET	-13.070	-10.100	-9.100	-7.100	-4.600	0.000	4.600	7.100	9.100	10.100	15.249

CH 90.000

DATUM RL 370.700

DESIGN LEVELS	373.564	372.791	372.791	373.291	373.366	373.504	373.366	373.291	372.791	372.791	374.097
EXISTING LEVELS	373.564	373.615	373.631	373.664	373.705	373.780	373.890	373.943	373.997	374.032	374.097
OFFSET	-13.192	-10.100	-9.100	-7.100	-4.600	0.000	4.600	7.100	9.100	10.100	15.323

CH 80.000

DATUM RL 370.800

DESIGN LEVELS	373.613	372.811	372.811	373.311	373.386	373.524	373.386	373.311	372.811	372.811	373.974
EXISTING LEVELS	373.613	373.668	373.685	373.719	373.761	373.845	373.926	374.001	374.003	373.992	373.974
OFFSET	-13.309	-10.100	-9.100	-7.100	-4.600	0.000	4.600	7.100	9.100	10.100	14.750

CH 70.000

DATUM RL 370.800

DESIGN LEVELS	373.655	372.831	372.831	373.331	373.406	373.544	373.406	373.331	372.831	372.831	373.890
EXISTING LEVELS	373.655	373.704	373.721	373.756	373.810	373.863	373.948	373.917	373.914	373.918	373.890
OFFSET	-13.394	-10.100	-9.100	-7.100	-4.600	0.000	4.600	7.100	9.100	10.100	14.335

CH 60.000

DATUM RL 370.800

DESIGN LEVELS	373.653	372.851	372.851	373.351	373.426	373.564	373.426	373.351	372.851	372.851	373.820
EXISTING LEVELS	373.653	373.700	373.715	373.779	373.823	373.894	373.902	373.887	373.892	373.884	373.820
OFFSET	-13.307	-10.100	-9.100	-7.100	-4.600	0.000	4.600	7.100	9.100	10.100	13.977

CH 50.000

DATUM RL 370.800

DESIGN LEVELS	373.630	372.862	372.862	373.362	373.437	373.575	373.437	373.362	372.862	372.862	373.794
EXISTING LEVELS	373.630	373.674	373.688	373.782	373.820	373.893	373.887	373.882	373.879	373.863	373.794
OFFSET	-13.171	-10.100	-9.100	-7.100	-4.600	0.000	4.600	7.100	9.100	10.100	13.831

CH 44.640

HATCH

PROJECT
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JEWRY STREET EXTENSION
ROAD UPGRADE

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DATUM RL 370.600

DESIGN LEVELS	373.233	372.651	372.651	373.151	373.226	373.364	373.226	373.151	372.651	372.651	373.372	
EXISTING LEVELS	373.233	373.242	373.246	373.255	373.265	373.283	373.315	373.332	373.346	373.352	373.372	
OFFSET	-12.426	-10.100	-9.100	-7.100	-4.600	0.000	4.600	7.100	9.100	10.100	12.984	

CH 150.000

DATUM RL 370.600

DESIGN LEVELS	373.266	372.671	372.671	373.171	373.246	373.384	373.246	373.171	372.671	372.671	373.421	
EXISTING LEVELS	373.266	373.280	373.286	373.297	373.312	373.339	373.367	373.382	373.393	373.399	373.421	
OFFSET	-12.479	-10.100	-9.100	-7.100	-4.600	0.000	4.600	7.100	9.100	10.100	13.098	

CH 140.000

DATUM RL 370.600

DESIGN LEVELS	373.311	372.691	372.691	373.191	373.266	373.404	373.266	373.191	372.691	372.691	373.545	
EXISTING LEVELS	373.311	373.325	373.331	373.344	373.360	373.400	373.450	373.476	373.488	373.509	373.545	
OFFSET	-12.580	-10.100	-9.100	-7.100	-4.600	0.000	4.600	7.100	9.100	10.100	13.517	

CH 130.000

DATUM RL 370.700

DESIGN LEVELS	373.356	372.711	372.711	373.211	373.286	373.424	373.286	373.211	372.711	372.711	373.676	
EXISTING LEVELS	373.356	373.379	373.391	373.417	373.449	373.505	373.562	373.593	373.617	373.629	373.676	
OFFSET	-12.679	-10.100	-9.100	-7.100	-4.600	0.000	4.600	7.100	9.100	10.100	13.959	

CH 120.000

DATUM RL 370.700

DESIGN LEVELS	373.416	372.731	372.731	373.231	373.306	373.444	373.306	373.231	372.731	372.731	373.794	
EXISTING LEVELS	373.416	373.442	373.453	373.481	373.515	373.578	373.641	373.674	373.705	373.722	373.794	
OFFSET	-12.839	-10.100	-9.100	-7.100	-4.600	0.000	4.600	7.100	9.100	10.100	14.353	

CH 110.000

DATUM RL 370.700

DESIGN LEVELS	373.467	372.751	372.751	373.251	373.326	373.464	373.326	373.251	372.751	372.751	373.879	
EXISTING LEVELS	373.467	373.497	373.507	373.531	373.567	373.636	373.709	373.749	373.782	373.799	373.879	
OFFSET	-12.965	-10.100	-9.100	-7.100	-4.600	0.000	4.600	7.100	9.100	10.100	14.613	

CH 100.000

DATUM RL 370.500

DESIGN LEVELS	373.202	372.552	372.552	373.052	373.127	373.264	373.127	373.052	372.552	372.552	373.203	
EXISTING LEVELS	373.202	373.194	373.192	373.190	373.187	373.181	373.181	373.194	373.204	373.205	373.203	
OFFSET	-12.677	-10.076	-9.076	-7.076	-4.576	0.000	4.576	7.076	9.076	10.076	12.683	

CH 200.000

DATUM RL 370.500

DESIGN LEVELS	373.205	372.552	372.552	373.052	373.127	373.265	373.127	373.052	372.552	372.552	373.217	
EXISTING LEVELS	373.205	373.196	373.193	373.191	373.188	373.182	373.183	373.196	373.207	373.212	373.217	
OFFSET	-12.709	-10.100	-9.100	-7.100	-4.600	0.000	4.600	7.100	9.100	10.100	12.759	

CH 199.352

DATUM RL 370.500

DESIGN LEVELS	373.235	372.571	372.571	373.071	373.146	373.284	373.146	373.071	372.571	372.571	373.235	
EXISTING LEVELS	373.235	373.225	373.221	373.213	373.203	373.197	373.211	373.225	373.236	373.239	373.235	
OFFSET	-12.755	-10.100	-9.100	-7.100	-4.600	0.000	4.600	7.100	9.100	10.100	12.755	

CH 190.000

DATUM RL 370.500

DESIGN LEVELS	373.259	372.591	372.591	373.091	373.166	373.304	373.166	373.091	372.591	372.591	373.199	
EXISTING LEVELS	373.259	373.249	373.245	373.238	373.228	373.212	373.210	373.207	373.204	373.203	373.199	
OFFSET	-12.773	-10.100	-9.100	-7.100	-4.600	0.000	4.600	7.100	9.100	10.100	12.533	

CH 180.000

DATUM RL 370.600

DESIGN LEVELS	373.245	372.611	372.611	373.111	373.186	373.324	373.186	373.111	372.611	372.611	373.231	
EXISTING LEVELS	373.245	373.243	373.241	373.233	373.223	373.224	373.228	373.229	373.227	373.226	373.231	
OFFSET	-12.634	-10.100	-9.100	-7.100	-4.600	0.000	4.600	7.100	9.100	10.100	12.579	

CH 170.000

DATUM RL 370.600

DESIGN LEVELS	373.229	372.631	372.631	373.131	373.206	373.344	373.206	373.131	372.631	372.631	373.307	
EXISTING LEVELS	373.229	373.228	373.228	373.232	373.241	373.248	373.255	373.270	373.283	373.290	373.307	
OFFSET	-12.493	-10.100	-9.100	-7.100	-4.600	0.000	4.600	7.100	9.100	10.100	12.804	

CH 160.000

HATCH

PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

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DATUM RL 370.400

DESIGN LEVELS	373.167	372.493	372.493	372.993	373.068	373.173	373.068	372.993	372.493	372.493	373.079
EXISTING LEVELS	373.167	373.183	373.189	373.201	373.189	373.155	373.116	373.089	373.074	373.077	373.079
OFFSET	-11.696	-9.000	-8.000	-6.000	-3.500	0.000	3.500	6.000	8.000	9.000	11.345

CH 245.521

DATUM RL 370.300

DESIGN LEVELS	372.663	372.371	372.371	372.871	372.946	373.084	372.946	372.871	372.371	372.371	373.001
EXISTING LEVELS	372.663	372.637	372.623	372.617	372.701	373.063	373.047	373.010	372.999	372.994	373.001
OFFSET	-11.266	-10.100	-9.100	-7.100	-4.600	0.000	4.600	7.100	9.100	10.100	12.622

CH 290.000

DATUM RL 370.500

DESIGN LEVELS	373.184	372.504	372.504	373.004	373.079	373.184	373.079	373.004	372.504	372.504	373.098
EXISTING LEVELS	373.184	373.200	373.201	373.191	373.178	373.150	373.112	373.084	373.089	373.092	373.098
OFFSET	-11.721	-9.000	-8.000	-6.000	-3.500	0.000	3.500	6.000	8.000	9.000	11.376

CH 240.000

DATUM RL 370.300

DESIGN LEVELS	372.772	372.391	372.391	372.891	372.966	373.104	372.966	372.891	372.391	372.391	373.043
EXISTING LEVELS	372.772	373.014	373.115	373.073	373.055	373.038	373.021	373.015	373.025	373.030	373.043
OFFSET	-11.625	-10.100	-9.100	-7.100	-4.600	0.000	4.600	7.100	9.100	10.100	12.709

CH 280.000

DATUM RL 370.500

DESIGN LEVELS	373.201	372.524	372.524	373.024	373.099	373.204	373.099	373.024	372.524	372.524	373.125
EXISTING LEVELS	373.201	373.187	373.182	373.172	373.159	373.141	373.105	373.111	373.117	373.119	373.125
OFFSET	-11.708	-9.000	-8.000	-6.000	-3.500	0.000	3.500	6.000	8.000	9.000	11.405

CH 230.000

DATUM RL 370.400

DESIGN LEVELS	373.131	372.400	372.400	372.900	372.975	373.113	372.975	372.900	372.400	372.400	373.050
EXISTING LEVELS	373.131	373.106	373.097	373.064	373.055	373.037	373.024	373.020	373.031	373.036	373.050
OFFSET	-13.024	-10.100	-9.100	-7.100	-4.600	0.000	4.600	7.100	9.100	10.100	12.699

CH 275.521

DATUM RL 370.500

DESIGN LEVELS	373.200	372.525	372.525	373.025	373.100	373.205	373.100	373.025	372.525	372.525	373.127
EXISTING LEVELS	373.200	373.186	373.181	373.171	373.158	373.140	373.107	373.113	373.118	373.121	373.127
OFFSET	-11.698	-9.000	-8.000	-6.000	-3.500	0.000	3.500	6.000	8.000	9.000	11.407

CH 229.352

DATUM RL 370.400

DESIGN LEVELS	373.103	372.417	372.417	372.917	372.992	373.124	372.992	372.917	372.417	372.417	373.052
EXISTING LEVELS	373.103	373.081	373.072	373.062	373.056	373.044	373.033	373.026	373.033	373.038	373.052
OFFSET	-12.643	-9.898	-8.898	-6.898	-4.398	0.000	4.398	6.898	8.898	9.898	12.437

CH 270.000

DATUM RL 370.500

DESIGN LEVELS	373.192	372.534	372.534	373.034	373.109	373.224	373.109	373.034	372.534	372.534	373.107
EXISTING LEVELS	373.192	373.178	373.172	373.162	373.148	373.129	373.125	373.124	373.118	373.115	373.107
OFFSET	-11.976	-9.343	-8.343	-6.343	-3.843	0.000	3.843	6.343	8.343	9.343	11.637

CH 220.000

DATUM RL 370.400

DESIGN LEVELS	373.101	372.448	372.448	372.948	373.023	373.144	373.023	372.948	372.448	372.448	373.057
EXISTING LEVELS	373.101	373.115	373.121	373.132	373.127	373.112	373.088	373.058	373.045	373.049	373.057
OFFSET	-12.141	-9.531	-8.531	-6.531	-4.031	0.000	4.031	6.531	8.531	9.531	11.967

CH 260.000

DATUM RL 370.500

DESIGN LEVELS	373.195	372.543	372.543	373.043	373.118	373.244	373.118	373.043	372.543	372.543	373.147
EXISTING LEVELS	373.195	373.180	373.175	373.166	373.162	373.156	373.151	373.150	373.149	373.148	373.147
OFFSET	-12.317	-9.710	-8.710	-6.710	-4.210	0.000	4.210	6.710	8.710	9.710	12.128

CH 210.000

DATUM RL 370.400

DESIGN LEVELS	373.152	372.479	372.479	372.979	373.054	373.164	373.054	372.979	372.479	372.479	373.075
EXISTING LEVELS	373.152	373.168	373.174	373.186	373.198	373.157	373.114	373.085	373.064	373.068	373.075
OFFSET	-11.855	-9.164	-8.164	-6.164	-3.664	0.000	3.664	6.164	8.164	9.164	11.549

CH 250.000

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JEWRY STREET EXTENSION
ROAD UPGRADE

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DATUM RL 370.200

DESIGN LEVELS	373.027	372.251	372.251	372.751	372.826	372.964	372.826	372.751	372.251	372.251	372.885
EXISTING LEVELS	373.027	373.077	373.034	372.759	373.018	373.084	373.035	372.987	372.948	372.929	372.885
OFFSET	-13.205	-10.100	-9.100	-7.100	-4.600	0.000	4.600	7.100	9.100	10.100	12.637

CH 350.000

DATUM RL 370.200

DESIGN LEVELS	372.932	372.271	372.271	372.771	372.846	372.984	372.846	372.771	372.271	372.271	372.973
EXISTING LEVELS	372.932	372.935	372.926	372.908	372.663	372.583	372.880	372.981	372.988	372.992	372.973
OFFSET	-12.746	-10.100	-9.100	-7.100	-4.600	0.000	4.600	7.100	9.100	10.100	12.909

CH 340.000

DATUM RL 370.200

DESIGN LEVELS	372.862	372.291	372.291	372.791	372.866	373.004	372.866	372.791	372.291	372.291	372.966
EXISTING LEVELS	372.862	372.916	372.916	372.911	372.904	372.574	372.780	373.054	373.036	373.016	372.966
OFFSET	-12.383	-10.100	-9.100	-7.100	-4.600	0.000	4.600	7.100	9.100	10.100	12.799

CH 330.000

DATUM RL 370.300

DESIGN LEVELS	372.879	372.311	372.311	372.811	372.886	373.024	372.886	372.811	372.311	372.311	373.037
EXISTING LEVELS	372.879	372.937	372.946	372.873	372.893	372.519	372.650	372.961	373.012	373.019	373.037
OFFSET	-12.371	-10.100	-9.100	-7.100	-4.600	0.000	4.600	7.100	9.100	10.100	13.006

CH 320.000

DATUM RL 370.300

DESIGN LEVELS	373.059	372.331	372.331	372.831	372.906	373.044	372.906	372.831	372.331	372.331	372.977
EXISTING LEVELS	373.059	372.943	372.913	372.896	372.809	372.480	372.836	372.963	372.951	372.948	372.977
OFFSET	-13.010	-10.100	-9.100	-7.100	-4.600	0.000	4.600	7.100	9.100	10.100	12.683

CH 310.000

DATUM RL 370.300

DESIGN LEVELS	372.709	372.351	372.351	372.851	372.926	373.064	372.926	372.851	372.351	372.351	372.977
EXISTING LEVELS	372.709	372.677	372.654	372.645	372.637	372.622	373.022	373.004	372.994	372.989	372.977
OFFSET	-11.531	-10.100	-9.100	-7.100	-4.600	0.000	4.600	7.100	9.100	10.100	12.603

CH 300.000

DATUM RL 370.100

DESIGN LEVELS	373.360	372.189	372.189	372.689	372.764	372.884	372.764	372.689	372.189	372.189	372.793
EXISTING LEVELS	373.360	373.154	373.073	372.911	372.873	372.659	372.848	372.828	372.811	372.803	372.793
OFFSET	-14.183	-9.500	-8.500	-6.500	-4.000	0.000	4.000	6.500	8.500	9.500	11.916

CH 390.000

DATUM RL 370.100

DESIGN LEVELS	373.369	372.192	372.192	372.692	372.767	372.887	372.767	372.692	372.192	372.192	372.794
EXISTING LEVELS	373.369	373.346	373.269	373.108	372.922	372.874	372.868	372.847	372.831	372.822	372.794
OFFSET	-14.211	-9.500	-8.500	-6.500	-4.000	0.000	4.000	6.500	8.500	9.500	11.908

CH 388.680

DATUM RL 370.200

DESIGN LEVELS	372.704	372.779	372.904	372.779	372.704	372.204	372.204	372.903
EXISTING LEVELS	373.035	373.220	373.444	373.447	373.321	373.169	373.074	372.903
OFFSET	-6.674	-4.174	0.000	4.174	6.674	8.674	9.674	12.468

CH 380.000

DATUM RL 370.200

DESIGN LEVELS	372.718	372.793	372.924	372.793	372.718	372.218	372.218	373.394
EXISTING LEVELS	372.966	372.931	372.918	372.918	372.907	372.969	373.073	373.394
OFFSET	-6.874	-4.374	0.000	4.374	6.874	8.874	9.874	14.580

CH 370.000

DATUM RL 370.200

DESIGN LEVELS	373.137	372.232	372.232	372.732	372.807	372.944	372.807	372.732	372.232	372.232	372.840
EXISTING LEVELS	373.137	373.042	372.900	373.038	373.078	372.996	372.913	372.868	372.832	372.825	372.840
OFFSET	-13.694	-10.074	-9.074	-7.074	-4.574	0.000	4.574	7.074	9.074	10.074	12.508

CH 360.000

DATUM RL 370.200

DESIGN LEVELS	373.161	372.234	372.234	372.734	372.809	372.947	372.809	372.734	372.234	372.234	372.825
EXISTING LEVELS	373.161	373.143	373.145	373.004	373.097	373.013	372.929	372.863	372.847	372.829	372.825
OFFSET	-13.810	-10.100	-9.100	-7.100	-4.600	0.000	4.600	7.100	9.100	10.100	12.467

CH 358.680

HATCH

PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

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4:1 4:1 -3.0% -3.0% 4:1 4:1

DATUM RL 370.100

DESIGN LEVELS	372.704	372.106	372.106	372.606	372.681	372.801	372.681	372.606	372.106	372.106	372.714
EXISTING LEVELS	372.704	372.704	372.704	372.705	372.706	372.708	372.710	372.711	372.712	372.713	372.714
OFFSET	-11.891	-9.500	-8.500	-6.500	-4.000	0.000	4.000	6.500	8.500	9.500	11.933

CH 431.644

4:1 4:1 -3.0% -3.0% 4:1 4:1

DATUM RL 370.100

DESIGN LEVELS	372.707	372.109	372.109	372.609	372.684	372.804	372.684	372.609	372.109	372.109	372.717
EXISTING LEVELS	372.707	372.708	372.708	372.709	372.710	372.712	372.713	372.715	372.716	372.716	372.717
OFFSET	-11.894	-9.500	-8.500	-6.500	-4.000	0.000	4.000	6.500	8.500	9.500	11.932

CH 430.000

4:1 4:1 -3.0% -3.0% 4:1 4:1

DATUM RL 370.100

DESIGN LEVELS	372.731	372.129	372.129	372.629	372.704	372.824	372.704	372.629	372.129	372.129	372.739
EXISTING LEVELS	372.731	372.731	372.731	372.732	372.732	372.733	372.734	372.735	372.736	372.737	372.739
OFFSET	-11.909	-9.500	-8.500	-6.500	-4.000	0.000	4.000	6.500	8.500	9.500	11.941

CH 420.000

4:1 4:1 -3.0% -3.0% 4:1 4:1

DATUM RL 370.100

DESIGN LEVELS	372.757	372.149	372.149	372.649	372.724	372.844	372.724	372.649	372.149	372.149	372.761
EXISTING LEVELS	372.757	372.757	372.757	372.757	372.757	372.757	372.755	372.755	372.757	372.758	372.761
OFFSET	-11.930	-9.500	-8.500	-6.500	-4.000	0.000	4.000	6.500	8.500	9.500	11.947

CH 410.000

4:1 4:1 -3.0% -3.0% 4:1 4:1

DATUM RL 370.100

DESIGN LEVELS	372.768	372.166	372.166	372.666	372.741	372.861	372.741	372.666	372.166	372.166	372.775
EXISTING LEVELS	372.768	372.773	372.774	372.778	372.779	372.776	372.773	372.771	372.771	372.772	372.775
OFFSET	-11.909	-9.500	-8.500	-6.500	-4.000	0.000	4.000	6.500	8.500	9.500	11.936

CH 401.644

4:1 4:1 -3.0% -3.0% 4:1 4:1

DATUM RL 370.100

DESIGN LEVELS	372.770	372.169	372.169	372.669	372.744	372.864	372.744	372.669	372.169	372.169	372.777
EXISTING LEVELS	372.770	372.775	372.777	372.780	372.783	372.780	372.777	372.775	372.774	372.775	372.777
OFFSET	-11.905	-9.500	-8.500	-6.500	-4.000	0.000	4.000	6.500	8.500	9.500	11.934

CH 400.000

4:1 4:1 -3.0% -3.0% 4:1 4:1

DATUM RL 369.900

DESIGN LEVELS	372.512	371.989	371.989	372.489	372.564	372.684	372.564	372.489	371.989	371.989	372.554
EXISTING LEVELS	372.512	372.522	372.527	372.532	372.537	372.544	372.546	372.546	372.549	372.551	372.554
OFFSET	-11.590	-9.500	-8.500	-6.500	-4.000	0.000	4.000	6.500	8.500	9.500	11.760

CH 490.000

4:1 4:1 -3.0% -3.0% 4:1 4:1

DATUM RL 370.000

DESIGN LEVELS	372.569	372.009	372.009	372.509	372.584	372.704	372.584	372.509	372.009	372.009	372.576
EXISTING LEVELS	372.569	372.567	372.567	372.565	372.564	372.564	372.565	372.569	372.572	372.573	372.576
OFFSET	-11.740	-9.500	-8.500	-6.500	-4.000	0.000	4.000	6.500	8.500	9.500	11.769

CH 480.000

4:1 4:1 -3.0% -3.0% 4:1 4:1

DATUM RL 370.000

DESIGN LEVELS	372.598	372.029	372.029	372.529	372.604	372.724	372.604	372.529	372.029	372.029	372.598
EXISTING LEVELS	372.598	372.597	372.597	372.597	372.597	372.596	372.591	372.591	372.594	372.595	372.598
OFFSET	-11.778	-9.500	-8.500	-6.500	-4.000	0.000	4.000	6.500	8.500	9.500	11.776

CH 470.000

4:1 4:1 -3.0% -3.0% 4:1 4:1

DATUM RL 370.000

DESIGN LEVELS	372.638	372.049	372.049	372.549	372.624	372.744	372.624	372.549	372.049	372.049	372.622
EXISTING LEVELS	372.638	372.648	372.649	372.648	372.648	372.641	372.635	372.630	372.627	372.626	372.622
OFFSET	-11.857	-9.500	-8.500	-6.500	-4.000	0.000	4.000	6.500	8.500	9.500	11.791

CH 460.000

4:1 4:1 -3.0% -3.0% 4:1 4:1

DATUM RL 370.000

DESIGN LEVELS	372.658	372.069	372.069	372.569	372.644	372.764	372.644	372.569	372.069	372.069	372.661
EXISTING LEVELS	372.658	372.670	372.674	372.675	372.677	372.680	372.674	372.670	372.667	372.665	372.661
OFFSET	-11.855	-9.500	-8.500	-6.500	-4.000	0.000	4.000	6.500	8.500	9.500	11.869

CH 450.000

4:1 4:1 -3.0% -3.0% 4:1 4:1

DATUM RL 370.000

DESIGN LEVELS	372.685	372.089	372.089	372.589	372.664	372.784	372.664	372.589	372.089	372.089	372.692
EXISTING LEVELS	372.685	372.687	372.687	372.689	372.691	372.694	372.697	372.699	372.698	372.696	372.692
OFFSET	-11.883	-9.500	-8.500	-6.500	-4.000	0.000	4.000	6.500	8.500	9.500	11.912

CH 440.000

HATCH

PROJECT
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JEWRY STREET EXTENSION
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DATUM RL 369.900

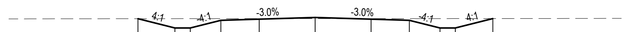
DESIGN LEVELS	372.530	371.924	371.924	372.424	372.499	372.604	372.499	372.424	371.924	371.924	372.526	
EXISTING LEVELS	372.530	372.528	372.528	372.528	372.527	372.527	372.527	372.527	372.526	372.526	372.526	
OFFSET	-11.425	-9.000	-8.000	-6.000	-3.500	0.000	3.500	6.000	8.000	9.000	11.409	

CH 530.000

DATUM RL 369.900

DESIGN LEVELS	372.532	371.926	371.926	372.426	372.501	372.606	372.501	372.426	371.926	371.926	372.528	
EXISTING LEVELS	372.532	372.530	372.529	372.529	372.529	372.529	372.529	372.528	372.528	372.528	372.528	
OFFSET	-11.427	-9.000	-8.000	-6.000	-3.500	0.000	3.500	6.000	8.000	9.000	11.410	

CH 529.197



DATUM RL 369.900

DESIGN LEVELS	372.543	371.939	371.939	372.439	372.514	372.624	372.514	372.439	371.939	371.939	372.552	
EXISTING LEVELS	372.543	372.545	372.546	372.548	372.550	372.548	372.548	372.549	372.550	372.550	372.552	
OFFSET	-11.568	-9.153	-8.153	-6.153	-3.653	0.000	3.653	6.153	8.153	9.153	11.603	

CH 520.000

DATUM RL 368.500

DESIGN LEVELS	372.522	371.954	371.954	372.454	372.529	372.644	372.529	372.454	371.954	371.954	372.559	
EXISTING LEVELS	372.522	372.521	372.521	372.520	372.520	372.522	372.532	372.538	372.543	372.547	372.559	
OFFSET	-11.588	-9.320	-8.320	-6.320	-3.820	0.000	3.820	6.320	8.320	9.320	11.737	

CH 510.000

DATUM RL 368.500

DESIGN LEVELS	372.482	371.969	371.969	372.469	372.544	372.664	372.544	372.469	371.969	371.969	372.552	
EXISTING LEVELS	372.482	372.481	372.481	372.481	372.485	372.501	372.521	372.533	372.542	372.547	372.552	
OFFSET	-11.537	-9.487	-8.487	-6.487	-3.987	0.000	3.987	6.487	8.487	9.487	11.816	

CH 500.000

DATUM RL 368.500

DESIGN LEVELS	372.479	371.971	371.971	372.471	372.546	372.666	372.546	372.471	371.971	371.971	372.551	
EXISTING LEVELS	372.479	372.478	372.478	372.478	372.469	372.501	372.521	372.533	372.542	372.547	372.551	
OFFSET	-11.533	-9.500	-8.500	-6.500	-4.000	0.000	4.000	6.500	8.500	9.500	11.822	

CH 499.197

DATUM RL 369.800

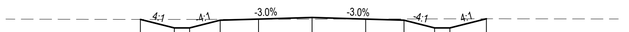
DESIGN LEVELS	372.358	371.804	371.804	372.304	372.379	372.484	372.379	372.304	371.804	371.804	372.393	
EXISTING LEVELS	372.358	372.359	372.361	372.364	372.368	372.374	372.380	372.384	372.388	372.389	372.393	
OFFSET	-11.215	-9.000	-8.000	-6.000	-3.500	0.000	3.500	6.000	8.000	9.000	11.357	

CH 590.000

DATUM RL 369.800

DESIGN LEVELS	372.376	371.824	371.824	372.324	372.399	372.504	372.399	372.324	371.824	371.824	372.411	
EXISTING LEVELS	372.376	372.376	372.378	372.381	372.385	372.391	372.397	372.401	372.404	372.406	372.411	
OFFSET	-11.206	-9.000	-8.000	-6.000	-3.500	0.000	3.500	6.000	8.000	9.000	11.348	

CH 580.000



DATUM RL 369.800

DESIGN LEVELS	372.397	371.844	371.844	372.344	372.419	372.524	372.419	372.344	371.844	371.844	372.439	
EXISTING LEVELS	372.397	372.396	372.398	372.401	372.406	372.414	372.422	372.427	372.432	372.434	372.439	
OFFSET	-11.213	-9.000	-8.000	-6.000	-3.500	0.000	3.500	6.000	8.000	9.000	11.381	

CH 560.000

DATUM RL 369.800

DESIGN LEVELS	372.425	371.864	371.864	372.364	372.439	372.544	372.439	372.364	371.864	371.864	372.463	
EXISTING LEVELS	372.425	372.417	372.420	372.424	372.430	372.439	372.447	372.453	372.458	372.460	372.463	
OFFSET	-11.244	-9.000	-8.000	-6.000	-3.500	0.000	3.500	6.000	8.000	9.000	11.395	

CH 550.000

DATUM RL 369.800

DESIGN LEVELS	372.450	371.884	371.884	372.384	372.459	372.564	372.459	372.384	371.884	371.884	372.480	
EXISTING LEVELS	372.450	372.440	372.441	372.446	372.451	372.459	372.467	372.473	372.477	372.479	372.480	
OFFSET	-11.262	-9.000	-8.000	-6.000	-3.500	0.000	3.500	6.000	8.000	9.000	11.383	

CH 540.000

DATUM RL 369.900

DESIGN LEVELS	372.487	371.904	371.904	372.404	372.479	372.584	372.479	372.404	371.904	371.904	372.502	
EXISTING LEVELS	372.487	372.484	372.485	372.487	372.491	372.495	372.500	372.502	372.502	372.502	372.502	
OFFSET	-11.331	-9.000	-8.000	-6.000	-3.500	0.000	3.500	6.000	8.000	9.000	11.390	

CH 540.000

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JEWRY STREET EXTENSION
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DATUM RL 369.600

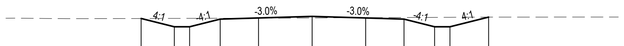
DESIGN LEVELS	372.216	371.684	371.684	372.184	372.259	372.364	372.259	372.184	371.684	371.684	372.278	
EXISTING LEVELS	372.216	372.222	372.225	372.230	372.237	372.247	372.257	372.263	372.269	372.272	372.278	
OFFSET	-11.128	-9.000	-8.000	-6.000	-3.500	0.000	3.500	6.000	8.000	9.000	11.376	

CH 650.000

DATUM RL 369.500

DESIGN LEVELS	372.148	371.503	371.503	371.990	372.065	372.244	372.068	371.993	371.503	371.503	372.213	
EXISTING LEVELS	372.148	372.152	372.155	372.160	372.167	372.184	372.209	372.213	372.213	372.213	372.213	
OFFSET	-14.054	-11.475	-10.475	-8.474	-5.972	0.000	5.875	8.377	10.378	11.378	14.216	

CH 710.000



DATUM RL 369.700

DESIGN LEVELS	372.245	371.704	371.704	372.204	372.279	372.384	372.279	372.204	371.704	371.704	372.335	
EXISTING LEVELS	372.245	372.251	372.254	372.259	372.266	372.281	372.297	372.309	372.319	372.324	372.335	
OFFSET	-11.165	-9.000	-8.000	-6.000	-3.500	0.000	3.500	6.000	8.000	9.000	11.523	

CH 640.000

DATUM RL 369.500

DESIGN LEVELS	372.155	371.535	371.535	372.024	372.099	372.264	372.102	372.027	371.535	371.535	372.220	
EXISTING LEVELS	372.155	372.162	372.165	372.171	372.179	372.196	372.210	372.215	372.219	372.220	372.220	
OFFSET	-13.469	-10.988	-9.988	-7.988	-5.486	0.000	5.409	7.910	9.911	10.911	13.650	

CH 700.000

DATUM RL 369.700

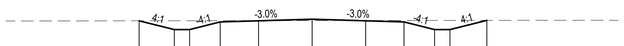
DESIGN LEVELS	372.277	371.724	371.724	372.224	372.299	372.404	372.299	372.224	371.724	371.724	372.372	
EXISTING LEVELS	372.277	372.281	372.283	372.286	372.290	372.304	372.324	372.339	372.351	372.357	372.372	
OFFSET	-11.212	-9.000	-8.000	-6.000	-3.500	0.000	3.500	6.000	8.000	9.000	11.592	

CH 630.000

DATUM RL 369.500

DESIGN LEVELS	372.151	371.567	371.567	372.059	372.134	372.284	372.136	372.061	371.567	371.567	372.212	
EXISTING LEVELS	372.151	372.157	372.160	372.166	372.173	372.187	372.198	372.202	372.206	372.208	372.212	
OFFSET	-12.836	-10.502	-9.502	-7.502	-5.001	0.000	4.942	7.443	9.444	10.444	13.024	

CH 690.000



DATUM RL 369.700

DESIGN LEVELS	372.318	371.744	371.744	372.244	372.319	372.424	372.319	372.244	371.744	371.744	372.347	
EXISTING LEVELS	372.318	372.322	372.323	372.325	372.328	372.333	372.337	372.340	372.343	372.344	372.347	
OFFSET	-11.297	-9.000	-8.000	-6.000	-3.500	0.000	3.500	6.000	8.000	9.000	11.412	

CH 620.000

DATUM RL 369.500

DESIGN LEVELS	372.178	371.599	371.599	372.094	372.169	372.304	372.170	372.095	371.599	371.599	372.221	
EXISTING LEVELS	372.178	372.183	372.186	372.191	372.198	372.200	372.209	372.213	372.216	372.217	372.221	
OFFSET	-12.330	-10.016	-9.016	-7.016	-4.515	0.000	4.475	6.976	8.976	9.976	12.464	

CH 680.000

DATUM RL 369.700

DESIGN LEVELS	372.329	371.764	371.764	372.264	372.339	372.444	372.339	372.264	371.764	371.764	372.363	
EXISTING LEVELS	372.329	372.333	372.335	372.338	372.343	372.349	372.353	372.356	372.359	372.360	372.363	
OFFSET	-11.261	-9.000	-8.000	-6.000	-3.500	0.000	3.500	6.000	8.000	9.000	11.395	

CH 610.000

DATUM RL 369.600

DESIGN LEVELS	372.207	371.631	371.631	372.128	372.203	372.324	372.204	372.129	371.631	371.631	372.241	
EXISTING LEVELS	372.207	372.213	372.216	372.216	372.215	372.215	372.221	372.228	372.233	372.235	372.241	
OFFSET	-11.835	-9.530	-8.530	-6.530	-4.029	0.000	4.009	6.509	8.509	9.509	11.949	

CH 670.000

DATUM RL 369.700

DESIGN LEVELS	372.342	371.784	371.784	372.284	372.359	372.464	372.359	372.284	371.784	371.784	372.378	
EXISTING LEVELS	372.342	372.344	372.345	372.349	372.353	372.359	372.365	372.369	372.372	372.374	372.378	
OFFSET	-11.234	-9.000	-8.000	-6.000	-3.500	0.000	3.500	6.000	8.000	9.000	11.376	

CH 600.000

DATUM RL 369.600

DESIGN LEVELS	372.232	371.663	371.663	372.163	372.238	372.344	372.238	372.163	371.663	371.663	372.254	
EXISTING LEVELS	372.232	372.232	372.231	372.231	372.231	372.230	372.234	372.240	372.245	372.248	372.254	
OFFSET	-11.319	-9.044	-8.044	-6.044	-3.544	0.000	3.542	6.042	8.042	9.042	11.405	

CH 660.000

HATCH

PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

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REV	DATE	DESCRIPTION	DRN	APP
P03	24.08.2022	DRAFT ISSUE FOR 100% DETAILED DESIGN	A.V.	T.W.
P02	01.06.2022	ISSUED FOR 90% DETAILED DESIGN	A.V.	C.G.
P01	13.05.2022	ISSUED FOR 90% DETAILED DESIGN	A.V.	C.G.

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16562-H-DR-C-1006			P03

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DATUM RL 369.300

DESIGN LEVELS	372.051	371.311	371.311	371.821	371.872	372.124	371.872	371.821	371.311	371.311	372.086	
EXISTING LEVELS	372.051	372.052	372.053	372.057	372.059	372.088	372.078	372.079	372.082	372.083	372.086	
OFFSET	-17.209	-14.248	-13.248	-10.100	-8.400	0.000	8.385	10.100	13.133	14.133	17.231	

CH 770.000

DATUM RL 369.300

DESIGN LEVELS	372.113	371.343	371.343	371.841	371.896	372.144	371.899	371.841	371.343	371.343	372.158	
EXISTING LEVELS	372.113	372.109	372.108	372.110	372.114	372.133	372.152	372.156	372.157	372.158	372.158	
OFFSET	-16.981	-13.902	-12.902	-10.100	-8.282	0.000	8.175	10.100	12.714	13.714	16.972	

CH 760.000

DATUM RL 369.300

DESIGN LEVELS	372.084	371.375	371.375	371.862	371.927	372.164	371.932	371.863	371.375	371.375	372.144	
EXISTING LEVELS	372.084	372.087	372.089	372.093	372.096	372.116	372.139	372.140	372.142	372.142	372.144	
OFFSET	-16.254	-13.419	-12.419	-10.069	-7.914	0.000	7.742	10.027	12.247	13.247	16.323	

CH 750.000

DATUM RL 369.400

DESIGN LEVELS	372.069	371.407	371.407	371.888	371.961	372.184	371.966	371.891	371.407	371.407	372.113	
EXISTING LEVELS	372.069	372.066	372.068	372.071	372.075	372.097	372.113	372.113	372.113	372.113	372.113	
OFFSET	-15.580	-12.933	-11.933	-9.857	-7.429	0.000	7.275	9.755	11.780	12.780	15.603	

CH 740.000

DATUM RL 369.400

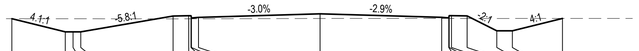
DESIGN LEVELS	372.068	371.439	371.439	371.921	371.996	372.204	372.000	371.925	371.439	371.439	372.182	
EXISTING LEVELS	372.068	372.060	372.060	372.070	372.081	372.113	372.161	372.175	372.177	372.178	372.182	
OFFSET	-14.963	-12.447	-11.447	-9.446	-6.943	0.000	6.809	9.311	11.312	12.312	15.282	

CH 730.000

DATUM RL 369.400

DESIGN LEVELS	372.105	371.471	371.471	371.955	372.030	372.224	372.034	371.959	371.471	371.471	372.205	
EXISTING LEVELS	372.105	372.100	372.105	372.113	372.124	372.142	372.185	372.203	372.206	372.206	372.205	
OFFSET	-14.496	-11.961	-10.961	-8.960	-6.458	0.000	6.342	8.844	10.845	11.845	14.782	

CH 720.000



DATUM RL 369.100

DESIGN LEVELS	371.978	371.120	371.120	371.120	372.152	372.172	372.172	372.022	372.062	372.297	372.068	372.028	372.178	372.178	372.158	371.185	371.185	371.994
EXISTING LEVELS	371.978	371.973	371.973	371.972	371.967	371.968	371.968	371.969	371.970	371.992	371.993	371.993	371.993	371.992	371.992	371.993	371.994
OFFSET	-20.129	-16.640	-16.133	-15.626	-9.600	-8.580	-8.430	-8.400	-7.940	0.000	7.940	8.400	8.430	8.580	9.600	11.539	12.553	15.826

CH 820.000

DATUM RL 369.100

DESIGN LEVELS	372.002	371.164	371.164	371.165	372.021	372.041	372.041	371.891	371.931	372.162	371.934	371.894	372.044	372.024	372.024	371.205	371.205	372.020
EXISTING LEVELS	372.004	371.990	371.988	371.986	371.971	371.972	371.972	371.972	371.974	371.995	372.017	372.018	372.018	372.019	372.021	372.021	372.021	372.022
OFFSET	-18.557	-15.184	-14.682	-14.179	-9.600	-8.580	-8.430	-8.400	-7.940	0.000	7.940	8.400	8.430	8.580	9.600	12.749	13.753	17.028

CH 810.000

DATUM RL 369.200

DESIGN LEVELS	372.014	371.208	371.208	371.208	371.956	371.976	371.976	371.826	371.866	372.091	371.864	371.824	371.974	371.974	371.953	371.224	371.224	372.044
EXISTING LEVELS	372.010	372.003	372.002	372.001	371.993	371.991	371.990	371.990	371.989	372.010	372.032	372.033	372.033	372.034	372.037	372.044	372.044	372.044
OFFSET	-17.704	-14.478	-13.978	-13.478	-9.600	-8.580	-8.430	-8.400	-7.940	0.000	7.940	8.400	8.430	8.580	9.600	13.335	14.356	17.617

CH 800.000

DATUM RL 369.400

DESIGN LEVELS	372.069	371.407	371.407	371.888	371.961	372.184	371.966	371.891	371.407	371.407	372.113	
EXISTING LEVELS	372.069	372.066	372.068	372.071	372.075	372.097	372.113	372.113	372.113	372.113	372.113	
OFFSET	-15.580	-12.933	-11.933	-9.857	-7.429	0.000	7.275	9.755	11.780	12.780	15.603	

CH 740.000

DATUM RL 369.200

DESIGN LEVELS	372.023	371.228	371.228	371.228	371.932	371.952	371.952	371.802	371.842	372.080	371.842	371.802	371.952	371.952	371.932	371.233	371.233	372.055
EXISTING LEVELS	372.022	372.015	372.013	372.012	372.004	372.002	372.001	372.001	372.000	372.018	372.040	372.042	372.042	372.042	372.045	372.055	372.055	372.055
OFFSET	-17.577	-14.400	-13.900	-13.400	-9.600	-8.580	-8.430	-8.400	-7.940	0.000	7.940	8.400	8.430	8.580	9.600	13.400	14.400	17.686

CH 795.379

DATUM RL 369.200

DESIGN LEVELS	372.033	371.248	371.248	371.781	371.832	372.084	371.832	371.781	371.248	371.248	372.069	
EXISTING LEVELS	372.033	372.026	372.024	372.017	372.013	372.029	372.052	372.057	372.066	372.068	372.069	
OFFSET	-17.540	-14.400	-13.400	-10.100	-8.400	0.000	8.400	10.100	13.400	14.400	17.685	

CH 790.000

DATUM RL 369.200

DESIGN LEVELS	372.042	371.279	371.279	371.801	371.852	372.104	371.852	371.801	371.279	371.279	372.081	
EXISTING LEVELS	372.042	372.035	372.033	372.030	372.032	372.045	372.068	372.073	372.077	372.077	372.081	
OFFSET	-17.444	-14.395	-13.395	-10.100	-8.400	0.000	8.400	10.100	13.360	14.360	17.564	

CH 780.000

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PROJECT
TAMWORTH GLOBAL GATEWAY PARK
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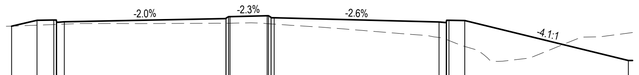
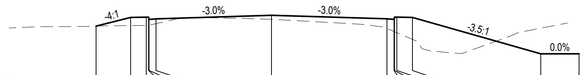


DATUM RL 369.100

DESIGN LEVELS	373.449	373.831	373.848	373.847	373.697	373.735	373.942	373.972	374.071	374.128	374.128	374.028	373.998	373.996	373.721	373.861	373.831	373.832	373.813	371.207
EXISTING LEVELS	373.447	373.512	373.554	373.561	373.562	373.581	373.636	373.636	373.639	373.641	373.615	373.609	373.598	373.597	372.709	372.566	372.574	372.513	372.124	372.995
OFFSET	-17.147	-15.486	-14.390	-14.229	-14.197	-13.702	-3.150	-3.140	-2.976	-2.883	-0.458	-0.368	-0.207	-0.197	0.000	10.765	11.230	11.260	11.412	12.445	23.125

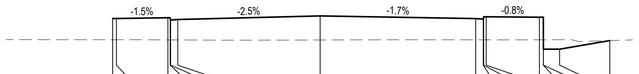
CH 919.778



DATUM RL 369.000

DESIGN LEVELS	372.895	373.459	373.480	373.480	373.330	373.370	373.599	373.373	373.333	373.483	373.483	373.463	371.086	371.086
EXISTING LEVELS	372.895	372.927	372.957	372.949	372.956	373.057	373.333	372.749	372.544	372.531	372.467	372.033	372.761	
OFFSET	-11.458	-9.200	-8.180	-8.030	-8.000	-7.540	0.000	7.540	8.000	8.030	8.180	9.200	17.582	20.083

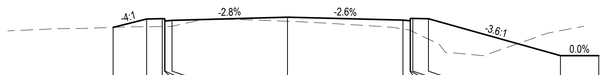
CH 955.262



DATUM RL 369.100

DESIGN LEVELS	373.147	373.146	373.195	373.194	373.044	373.082	373.313	373.143	373.108	373.258	373.260	373.231	373.235	371.141	371.141	371.704
EXISTING LEVELS	371.762	371.762	371.751	371.750	371.750	371.747	371.744	371.755	371.755	371.755	371.755	371.757	371.758	371.758	371.762	371.704
OFFSET	-13.547	-13.299	-9.940	-9.789	-9.759	-9.294	0.000	10.163	10.652	10.684	10.843	14.319	14.578	14.583	15.638	18.916

CH 858.473



DATUM RL 369.100

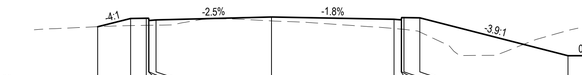
DESIGN LEVELS	372.958	373.505	373.525	373.525	373.375	373.415	373.626	373.433	373.393	373.543	373.543	373.522	371.112	371.112
EXISTING LEVELS	372.958	373.000	373.013	373.016	373.016	373.030	373.358	372.847	372.769	372.755	372.683	372.194	372.743	
OFFSET	-11.390	-9.200	-8.180	-8.030	-8.000	-7.540	0.000	7.540	8.000	8.030	8.180	9.200	17.821	20.324

CH 950.000

DATUM RL 369.100

DESIGN LEVELS	372.935	372.933	372.981	372.981	372.831	372.868	373.059	372.825	372.786	372.938	372.938	372.882	371.131	371.131	371.995
EXISTING LEVELS	372.052	372.051	372.044	372.044	372.044	372.043	372.026	372.010	372.009	372.009	372.009	372.003	372.003	372.001	371.995
OFFSET	-12.602	-12.354	-8.993	-8.842	-8.811	-8.346	0.000	8.057	8.518	8.548	8.688	11.810	12.057	12.062	16.543

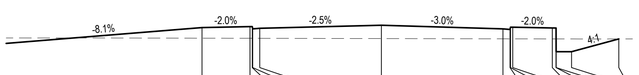
CH 850.000



DATUM RL 369.100

DESIGN LEVELS	373.046	373.583	373.603	373.603	373.453	373.493	373.692	373.534	373.495	373.645	373.645	373.627	371.155	371.160
EXISTING LEVELS	373.051	373.123	373.138	373.141	373.141	373.149	373.427	372.932	372.891	372.889	372.875	372.703	372.804	
OFFSET	-11.353	-9.200	-8.180	-8.030	-8.000	-7.540	0.000	8.000	8.467	8.497	8.649	9.685	19.358	22.032

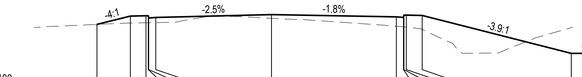
CH 941.076



DATUM RL 369.100

DESIGN LEVELS	372.713	372.776	372.776	372.626	372.666	372.866	372.628	372.588	372.738	372.738	372.686	372.898	371.138	371.138	371.970
EXISTING LEVELS	372.019	372.013	372.012	372.012	372.011	371.995	371.978	371.977	371.977	371.977	371.972	371.972	371.972	371.970	371.970
OFFSET	-11.711	-8.580	-8.430	-8.400	-7.940	0.000	7.940	8.400	8.430	8.580	11.161	11.407	11.412	12.417	15.504

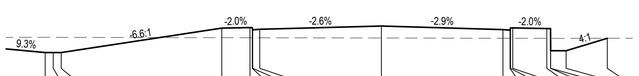
CH 843.561



DATUM RL 369.100

DESIGN LEVELS	373.051	373.595	373.615	373.615	373.465	373.505	373.692	373.544	373.505	373.655	373.655	373.637	371.158	371.163
EXISTING LEVELS	373.050	373.141	373.156	373.159	373.159	373.167	373.447	372.931	372.894	372.891	372.879	372.721	372.838	
OFFSET	-11.399	-9.219	-8.199	-8.049	-8.019	-7.559	0.000	8.150	8.617	8.648	8.800	9.836	19.573	22.247

CH 940.000



DATUM RL 369.000

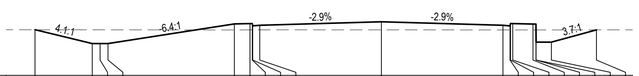
DESIGN LEVELS	371.027	371.028	371.028	372.622	372.659	372.659	372.509	372.549	372.760	372.527	372.487	372.637	372.637	372.593	372.594	371.145	371.145	371.961
EXISTING LEVELS	372.022	372.022	372.020	371.998	371.994	371.994	371.994	371.993	371.977	371.962	371.961	371.961	371.961	371.956	371.956	371.957	371.957	371.961
OFFSET	-21.952	-21.429	-20.966	-10.419	-8.580	-8.430	-8.400	-7.940	0.000	7.940	8.400	8.430	8.580	10.802	11.049	11.054	12.061	14.752

CH 840.000

DATUM RL 369.100

DESIGN LEVELS	373.225	373.707	373.725	373.724	373.574	373.613	373.613	373.633	373.594	373.744	373.744	373.726	371.183	371.187
EXISTING LEVELS	373.225	373.335	373.392	373.400	373.401	373.425	373.566	372.903	372.868	372.866	372.843	372.573	372.902	
OFFSET	-13.180	-11.182	-10.129	-9.974	-9.943	-9.468	0.000	9.506	9.973	10.003	10.155	11.190	21.460	24.122

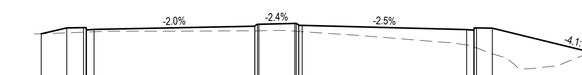
CH 930.000



DATUM RL 369.000

DESIGN LEVELS	371.981	371.074	371.075	371.075	372.358	372.378	372.378	372.228	372.268	372.496	372.266	372.226	372.376	372.376	372.350	371.165	371.165	371.966
EXISTING LEVELS	371.974	371.970	371.970	371.969	371.963	371.966	371.967	371.967	371.968	371.967	371.964	371.964	371.964	371.963	371.963	371.963	371.964	371.966
OFFSET	-22.617	-18.878	-18.365	-17.851	-9.600	-8.580	-8.430	-8.400	-7.940	0.000	7.940	8.400	8.430	8.580	9.902	10.101	11.102	14.044

CH 830.000



DATUM RL 369.100

DESIGN LEVELS	373.443	373.828	373.845	373.844	373.694	373.732	373.938	373.968	374.067	374.067	374.122	374.023	373.993	373.991	373.719	373.860	373.830	373.811	371.206
EXISTING LEVELS	373.441	373.507	373.550	373.556	373.557	373.577	373.636	373.637	373.640	373.642	373.617	373.611	373.599	373.599	372.716	372.603	372.591	372.132	372.992
OFFSET	-17.037	-15.369	-14.274	-14.113	-14.081	-13.586	-3.095	-3.085	-2.920	-2.828	-0.480	-0.390	-0.229	-0.219	10.739	11.204	11.235	11.387	23.092

CH 920.000

HATCH

PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

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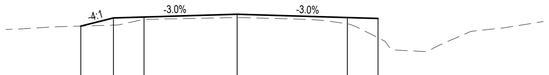
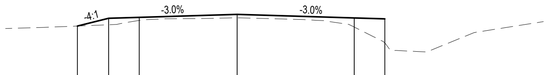


DATUM RL 368.900

DESIGN LEVELS	372.601	373.133	373.193	373.376	373.160	373.100
EXISTING LEVELS	372.601	372.662	373.029	373.161	372.748	371.843
OFFSET	-10.205	-8.077	-6.077	0.000	7.200	9.200

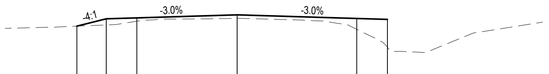
CH 1000.000



DATUM RL 368.900

DESIGN LEVELS	372.648	373.157	373.217	373.409	373.180	373.120
EXISTING LEVELS	372.648	372.733	373.017	373.189	372.584	371.545
OFFSET	-10.429	-8.390	-6.390	0.000	7.645	9.645

CH 993.282



DATUM RL 368.900

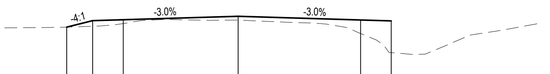
DESIGN LEVELS	372.690	373.169	373.229	373.428	373.191	373.131
EXISTING LEVELS	372.690	372.768	373.011	373.202	372.480	371.318
OFFSET	-10.464	-8.547	-6.547	0.000	7.812	9.812

CH 990.000

DATUM RL 368.900

DESIGN LEVELS	372.759	373.205	373.265	373.476	373.236	373.176
EXISTING LEVELS	372.759	372.895	373.063	373.242	372.378	371.023
OFFSET	-10.805	-9.022	-7.022	0.000	7.994	9.994

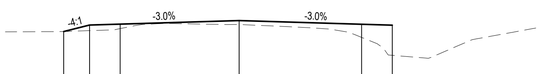
CH 980.000



DATUM RL 369.000

DESIGN LEVELS	372.817	373.241	373.301	373.526	373.286	373.226
EXISTING LEVELS	372.817	372.876	373.046	373.277	372.401	371.156
OFFSET	-11.192	-9.498	-7.498	0.000	7.998	9.998

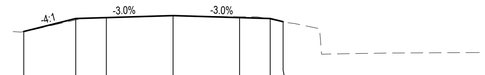
CH 970.000



DATUM RL 369.000

DESIGN LEVELS	372.838	373.261	373.321	373.554	373.314	373.254
EXISTING LEVELS	372.838	372.897	373.031	373.297	372.456	371.283
OFFSET	-11.454	-9.765	-7.765	0.000	8.000	10.000

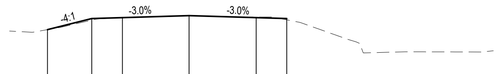
CH 964.396



DATUM RL 368.600

DESIGN LEVELS	372.123	372.971	373.031	373.162	373.032	372.972	372.762
EXISTING LEVELS	372.123	372.882	373.050	373.162	373.082	372.920	372.762
OFFSET	-9.750	-6.356	-4.356	0.000	4.341	6.341	7.180

CH 1042.698



DATUM RL 368.700

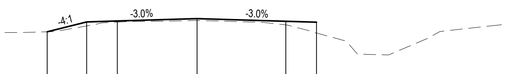
DESIGN LEVELS	372.261	372.985	373.045	373.176	373.044	372.984
EXISTING LEVELS	372.261	372.879	373.049	373.161	373.082	372.901
OFFSET	-9.248	-6.354	-4.354	0.000	4.380	6.380

CH 1040.000

DATUM RL 368.800

DESIGN LEVELS	372.357	373.022	373.082	373.226	373.073	373.013
EXISTING LEVELS	372.357	372.816	373.046	373.159	373.080	372.632
OFFSET	-9.444	-6.783	-4.783	0.000	5.087	7.087

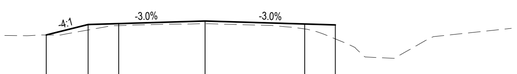
CH 1030.000



DATUM RL 368.900

DESIGN LEVELS	372.414	373.059	373.119	373.276	373.102	373.042
EXISTING LEVELS	372.414	372.797	373.046	373.157	372.866	372.332
OFFSET	-9.790	-7.211	-5.211	0.000	5.795	7.795

CH 1020.000



DATUM RL 368.800

DESIGN LEVELS	372.413	373.086	373.156	373.326	373.130	373.070
EXISTING LEVELS	372.413	372.741	373.024	373.155	372.808	372.158
OFFSET	-10.373	-7.639	-5.639	0.000	6.503	8.503

CH 1010.000

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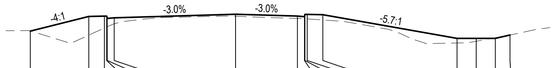
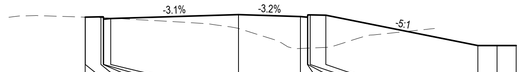


DATUM RL 369.300

DESIGN LEVELS	372.217	373.171	373.192	373.192	373.042	373.082	373.318	373.197	373.157	373.307	373.307	373.287	371.741	371.741	371.741	371.959
EXISTING LEVELS	372.223	371.954	372.419	372.487	372.501	372.694	373.190	373.041	373.026	373.025	373.014	372.942	371.441	371.554	371.784	371.959
OFFSET	-13.402	-9.582	-8.562	-8.412	-8.382	-7.922	0.000	4.040	4.500	4.530	4.680	5.700	14.464	15.715	16.966	17.922

CH 50.000



DATUM RL 369.300

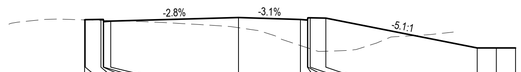
DESIGN LEVELS	373.389	373.388	373.408	373.408	373.258	373.298	373.554	373.425	373.385	373.535	373.535	373.514	371.535	371.535	371.535	
EXISTING LEVELS	373.389	373.389	373.357	373.352	373.351	373.328	372.649	371.343	371.362	371.364	371.370	371.413				
OFFSET	-10.012	-10.004	-8.984	-8.834	-8.804	-8.344	0.000	4.040	4.500	4.530	4.680	5.700	15.630	16.880	18.130	

CH 100.000

DATUM RL 369.400

DESIGN LEVELS	372.151	372.968	373.028	373.268	373.163	373.103	371.787	371.787	371.787	
EXISTING LEVELS	372.151	371.820	372.636	373.183	373.058	372.964	371.459	371.487	371.675	
OFFSET	-13.262	-9.993	-7.993	0.000	3.500	5.500	14.244	15.494	16.744	

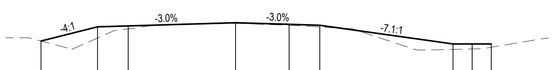
CH 40.000



DATUM RL 369.300

DESIGN LEVELS	373.386	373.399	373.419	373.419	373.269	373.309	373.542	373.415	373.374	373.524	373.524	373.504	371.556	371.556	371.556	
EXISTING LEVELS	373.386	373.385	373.353	373.348	373.348	373.339	372.879	371.713	371.561	371.551	371.502	371.337				
OFFSET	-10.052	-10.005	-8.985	-8.835	-8.805	-8.345	0.000	4.040	4.500	4.530	4.680	5.700	15.585	16.836	18.086	

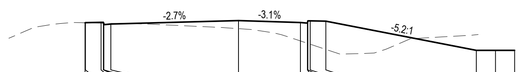
CH 94.803



DATUM RL 369.400

DESIGN LEVELS	372.024	372.948	373.008	373.218	373.113	373.053	371.833	371.833	371.833
EXISTING LEVELS	372.024	372.219	372.812	373.176	373.046	372.941	371.476	371.504	371.615
OFFSET	-12.704	-9.010	-7.010	0.000	3.500	5.500	14.199	15.449	16.699

CH 30.000



DATUM RL 369.300

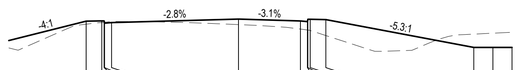
DESIGN LEVELS	373.374	373.382	373.403	373.403	373.253	373.293	373.518	373.392	373.352	373.502	373.502	373.481	371.576	371.576	371.576	
EXISTING LEVELS	373.374	373.373	373.348	373.345	373.344	373.335	372.991	372.189	372.036	372.026	371.976	371.637	372.596			
OFFSET	-10.023	-9.966	-8.976	-8.826	-8.796	-8.336	0.000	4.040	4.500	4.530	4.680	5.700	15.528	16.779	18.029	

CH 90.000

DATUM RL 369.300

DESIGN LEVELS	371.907	372.927	372.987	373.168	373.063	373.003	371.880	371.880	371.880	
EXISTING LEVELS	371.907	372.668	372.948	373.168	373.030	372.927	371.470	371.504	371.627	
OFFSET	-12.108	-8.028	-6.028	0.000	3.500	5.500	14.159	15.409	16.659	

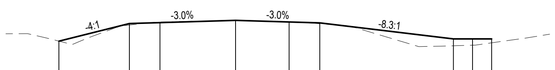
CH 20.000



DATUM RL 369.300

DESIGN LEVELS	373.330	373.350	373.350	373.200	373.240	373.468	373.343	373.303	373.453	373.453	373.433	371.617	371.617	371.617		
EXISTING LEVELS	373.133	373.244	373.256	373.258	373.300	373.107	372.815	372.757	372.752	372.724	372.393	372.484	372.546			
OFFSET	-9.949	-8.929	-8.779	-8.749	-8.289	0.000	4.040	4.500	4.530	4.680	5.700	15.380	16.611	17.861		

CH 80.000



DATUM RL 369.400

DESIGN LEVELS	371.781	372.931	372.991	373.139	373.034	372.974	371.926	371.926	371.926	
EXISTING LEVELS	371.781	372.836	373.032	373.139	373.020	372.919	371.478	371.516	371.672	
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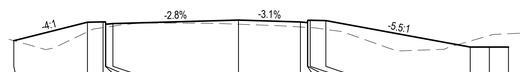
CH 10.000



DATUM RL 369.400

DESIGN LEVELS	372.072	373.277	373.297	373.297	373.147	373.167	373.418	373.295	373.255	373.405	373.405	373.384	371.658	371.658	371.658	
EXISTING LEVELS	372.075	372.651	372.925	372.948	372.952	373.021	373.147	372.966	372.937	372.935	372.926	372.804	372.048	372.411	372.525	
OFFSET	-14.674	-9.863	-8.843	-8.693	-8.663	-8.203	0.000	4.040	4.500	4.530	4.680	5.700	15.126	16.377	17.628	

CH 70.000

DATUM RL 369.400

DESIGN LEVELS	372.829	372.918	372.978	373.110	373.005	372.970	371.973	371.973	371.973
EXISTING LEVELS	372.829	372.875	373.001	373.110	373.014	372.963	371.523	371.640	371.831
OFFSET	-6.762	-6.409	-4.409	0.000	3.500	4.651	14.290	15.540	16.790

CH 0.000

DATUM RL 369.300

DESIGN LEVELS	372.199	373.224	373.245	373.245	373.095	373.134	373.368	373.246	373.206	373.356	373.356	373.335	371.700	371.700	371.699	
EXISTING LEVELS	372.199	372.032	372.458	372.521	372.535	372.745	373.179	373.011	372.985	372.984	372.974	372.910	371.553	371.910	372.264	
OFFSET	-13.837	-9.740	-8.720	-8.570	-8.540	-8.090	0.000	4.040	4.500	4.530	4.680	5.700	14.827	16.078	17.329	

CH 60.000

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PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

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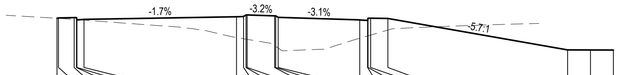

DATUM RL 369.200

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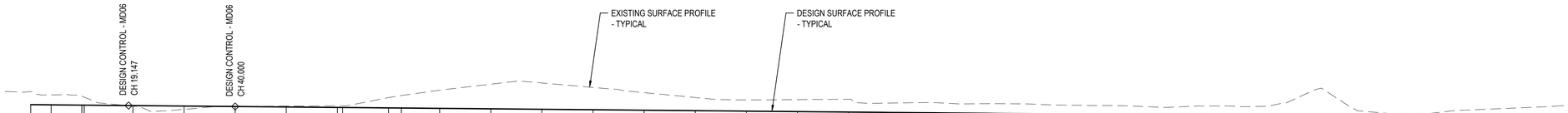

CHAINAGE	DESIGN LEVELS	EXISTING LEVELS
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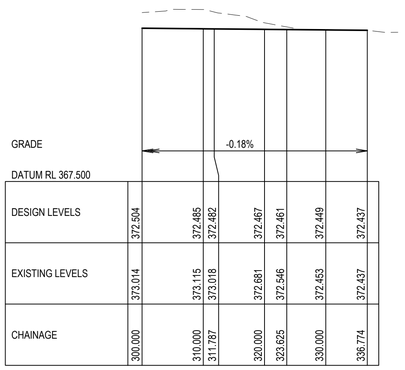
4.003	373.043	373.432
10.000	373.032	373.385
10.463	373.031	373.343
20.000	373.014	372.992
30.000	372.995	372.868
40.000	372.977	372.970
50.000	372.959	372.994
60.000	372.941	373.004
61.017	372.939	373.005
70.000	372.923	373.329
72.514	372.918	373.409
80.000	372.904	373.617
90.000	372.886	373.653
100.000	372.868	373.902
110.000	372.850	373.726
120.000	372.831	373.522
130.000	372.813	373.331
140.000	372.795	373.239
150.000	372.777	373.248
160.000	372.759	373.263
170.000	372.740	373.118
180.000	372.722	373.097
190.000	372.704	373.087
200.000	372.686	373.039
205.210	372.676	373.023
210.000	372.668	373.016
220.000	372.649	372.955
230.000	372.631	372.998
230.203	372.631	372.998
240.000	372.613	372.978
250.000	372.595	373.521
260.000	372.577	372.802
263.734	372.570	372.737
270.000	372.558	372.664
280.000	372.540	372.829
290.000	372.522	372.914
295.452	372.512	372.961
300.000	372.504	373.014

LONGITUDINAL SECTION ALONG TIMBUMBURI CREEK CONTROL MD01

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100



CHAINAGE	DESIGN LEVELS	EXISTING LEVELS
300.000	372.504	373.014
310.000	372.485	373.115
311.787	372.482	373.018
320.000	372.467	372.681
323.625	372.461	372.546
330.000	372.449	372.453
338.774	372.437	372.437

LONGITUDINAL SECTION ALONG TIMBUMBURI CREEK CONTROL MD01

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100

REV	DATE	DESCRIPTION	DRN	APP
P03	24.08.2022	DRAFT ISSUE FOR 100% DETAILED DESIGN	A.V.	T.W.
P02	01.06.2022	ISSUED FOR 90% DETAILED DESIGN	A.V.	C.G.
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TITLE
LONGITUDINAL SECTIONS
MD01

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A.VIZL	C.GARNER	T.WALTON	1:500, 1:100
DOCUMENT No.			REVISION
16562-H-DR-C-1200			P03

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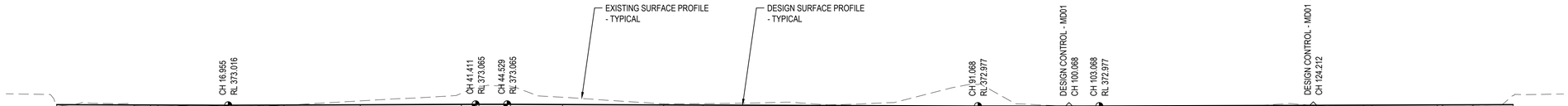
HATCH

PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT
TAMWORTH REGIONAL COUNCIL

THIS DRAWING CONTAINS COLOURED INFORMATION C M Y

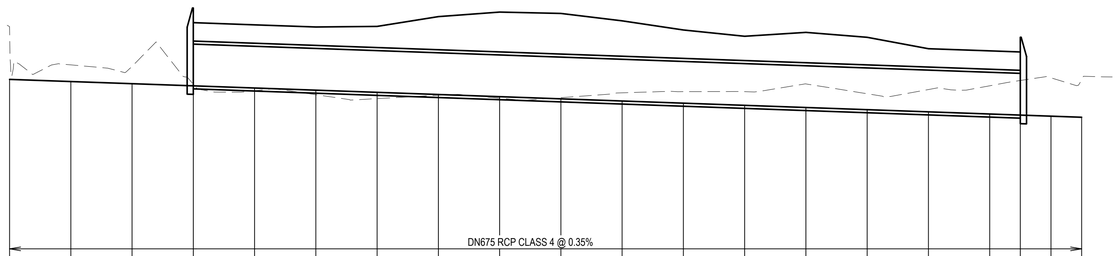


DATUM RL 367.000

CHAINAGE	DESIGN LEVELS	EXISTING LEVELS
0.000	373.050	373.052
9.270	373.031	372.958
10.000	373.030	372.958
16.955	373.016	372.957
20.000	373.022	372.964
22.446	373.027	373.009
30.000	373.042	373.234
40.000	373.062	373.607
41.411	373.065	373.910
41.528	373.065	373.942
44.528	373.065	373.997
50.000	373.055	373.415
60.000	373.036	373.091
63.897	373.028	373.097
70.000	373.017	373.144
79.548	372.999	373.087
80.000	372.998	373.096
90.000	372.979	374.025
91.068	372.977	374.041
100.000	372.977	372.971
103.068	372.977	372.911
103.571	372.978	372.906
110.000	372.989	372.862
120.000	373.007	373.049
122.450	373.012	373.083
129.180	373.024	372.817
130.000	373.025	372.820
136.465	373.037	372.891
140.000	373.043	373.018
143.965	373.050	373.496

LONGITUDINAL SECTION ALONG CULVERT OUTLETS INTO TIMBUMBURI CREEK CONTROL MD06

HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:125



PIPE SIZE, CLASS AND GRADE: DN675 RCP CLASS 4 @ 0.35%

DATUM RL 368.500

CHAINAGE	PIPE INVERT LEVELS	EXISTING SURFACE LEVELS
0.000	371.766	372.626
10.000	371.731	372.003
20.000	371.696	371.978
30.000	371.661	371.685
40.000	371.626	371.580
50.000	371.590	371.516
60.000	371.555	371.452
70.000	371.520	371.507
80.000	371.484	371.459
90.000	371.449	371.467
100.000	371.413	371.547
110.000	371.378	371.565
120.000	371.343	371.566
130.000	371.307	371.692
140.000	371.272	371.532
150.000	371.236	371.600
160.000	371.201	371.661
165.000	371.183	371.748
170.000	371.166	371.791
175.015	371.148	371.751

DRAINAGE PROFILE DN675 ALONG CONTROL MD10

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:50

REV	DATE	DESCRIPTION	DRN	APP
P03	24.08.2022	DRAFT ISSUE FOR 100% DETAILED DESIGN	A.V.	T.W.
P02	01.06.2022	ISSUED FOR 90% DETAILED DESIGN	A.V.	C.G.
P01	13.05.2022	ISSUED FOR 90% DETAILED DESIGN	A.V.	C.G.

TITLE
LONGITUDINAL SECTIONS
MD06 & MD10

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DOCUMENT STATUS			SHEET SIZE
DRAFT COPY			A1
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A.VIZL	C.GARNER	T.WALTON	1:250, 1:125
DOCUMENT No.			REVISION
16562-H-DR-C-1201			P03

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DATUM RL 370.700

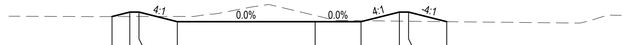
DESIGN LEVELS	373.255	373.511	373.511	372.886	372.886	372.886	373.511	373.511	372.921
EXISTING LEVELS	373.255	373.257	373.265	373.305	373.853	373.095	372.970	372.960	372.921
OFFSET	-13.124	-12.100	-11.500	-9.000	0.000	3.000	5.500	6.100	8.459

CH 90.000

DATUM RL 370.800

DESIGN LEVELS	373.267	373.529	373.529	372.904	372.904	372.904	373.529	373.529	372.958
EXISTING LEVELS	373.267	373.270	373.272	373.279	373.617	373.036	373.000	372.991	372.958
OFFSET	-13.149	-12.100	-11.500	-9.000	0.000	3.000	5.500	6.100	8.385

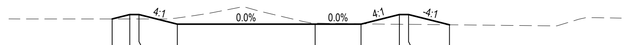
CH 80.000



DATUM RL 370.800

DESIGN LEVELS	373.257	373.548	373.548	372.923	372.923	372.923	373.548	373.548	372.923
EXISTING LEVELS	373.257	373.259	373.260	373.265	373.329	372.988	372.958	372.951	372.923
OFFSET	-13.264	-12.100	-11.500	-9.000	0.000	3.000	5.500	6.100	8.597

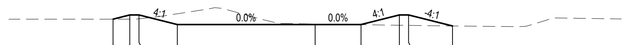
CH 70.000



DATUM RL 370.800

DESIGN LEVELS	373.278	373.566	373.566	372.941	372.941	372.941	373.566	373.566	372.897
EXISTING LEVELS	373.278	373.278	373.278	373.341	373.004	372.959	372.931	372.925	372.897
OFFSET	-13.251	-12.100	-11.500	-9.000	0.000	3.000	5.500	6.100	8.775

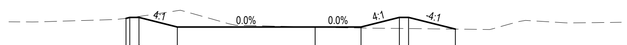
CH 60.000



DATUM RL 370.800

DESIGN LEVELS	373.310	373.584	373.584	372.959	372.959	372.959	373.584	373.584	372.866
EXISTING LEVELS	373.310	373.310	373.333	373.662	372.994	372.949	372.912	372.903	372.866
OFFSET	-13.196	-12.100	-11.500	-9.000	0.000	3.000	5.500	6.100	8.970

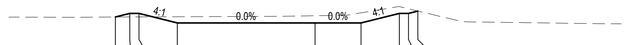
CH 50.000



DATUM RL 370.800

DESIGN LEVELS	373.540	373.602	373.602	372.977	372.977	372.977	373.602	373.602	372.838
EXISTING LEVELS	373.540	373.573	373.662	374.041	372.970	372.911	372.881	372.874	372.838
OFFSET	-12.347	-12.100	-11.500	-9.000	0.000	3.000	5.500	6.100	9.157

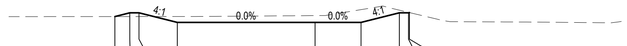
CH 40.000



DATUM RL 370.700

DESIGN LEVELS	373.167	373.402	373.402	372.777	372.777	372.777	373.402	373.402	373.554
EXISTING LEVELS	373.167	373.170	373.173	373.183	373.248	373.436	373.844	373.700	373.554
OFFSET	-13.041	-12.100	-11.500	-9.000	0.000	3.000	5.500	6.100	6.710

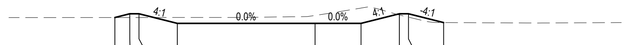
CH 150.000



DATUM RL 370.700

DESIGN LEVELS	373.176	373.420	373.420	372.795	372.795	372.795	373.420	373.420	373.436
EXISTING LEVELS	373.176	373.177	373.177	373.179	373.239	373.627	373.594	373.451	373.436
OFFSET	-13.076	-12.100	-11.500	-9.000	0.000	3.000	5.500	6.100	6.164

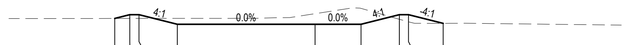
CH 140.000



DATUM RL 370.800

DESIGN LEVELS	373.194	373.438	373.438	372.813	372.813	372.813	373.438	373.438	372.865
EXISTING LEVELS	373.194	373.195	373.195	373.197	373.331	373.811	373.363	373.220	372.865
OFFSET	-13.076	-12.100	-11.500	-9.000	0.000	3.000	5.500	6.100	8.394

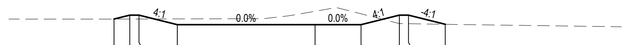
CH 130.000



DATUM RL 370.700

DESIGN LEVELS	373.211	373.456	373.456	372.831	372.831	372.831	373.456	373.456	372.891
EXISTING LEVELS	373.211	373.212	373.213	373.215	373.522	373.868	373.157	372.988	372.891
OFFSET	-13.083	-12.100	-11.500	-9.000	0.000	3.000	5.500	6.100	8.363

CH 120.000



DATUM RL 370.700

DESIGN LEVELS	373.217	373.475	373.475	372.850	372.850	372.850	373.475	373.475	372.875
EXISTING LEVELS	373.217	373.219	373.220	373.226	373.726	373.560	372.924	372.914	372.875
OFFSET	-13.130	-12.100	-11.500	-9.000	0.000	3.000	5.500	6.100	8.498

CH 110.000

DATUM RL 370.700

DESIGN LEVELS	373.246	373.493	373.493	372.868	372.868	372.868	373.493	373.493	372.898
EXISTING LEVELS	373.246	373.250	373.253	373.263	373.902	373.327	372.947	372.937	372.898
OFFSET	-13.089	-12.100	-11.500	-9.000	0.000	3.000	5.500	6.100	8.479

CH 100.000

HATCH

PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

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DOCUMENT No.			REVISION
16562-H-DR-C-1300			P03

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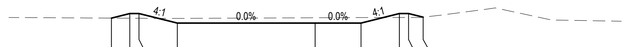
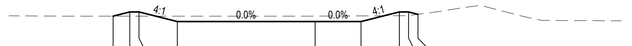


DATUM RL 370.600

DESIGN LEVELS	372.993	373.293	373.293	372.668	372.668	372.668	373.293	373.293	373.054
EXISTING LEVELS	372.993	372.986	372.982	372.974	373.016	373.030	373.033	373.032	373.054
OFFSET	-13.298	-12.100	-11.500	-9.000	0.000	3.000	5.500	6.100	7.055

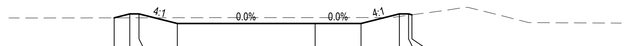
CH 210.000



DATUM RL 370.600

DESIGN LEVELS	373.038	373.311	373.311	372.686	372.686	372.686	373.311	373.311	373.157
EXISTING LEVELS	373.038	373.038	373.038	373.038	373.039	373.053	373.065	373.075	373.157
OFFSET	-13.191	-12.100	-11.500	-9.000	0.000	3.000	5.500	6.100	6.715

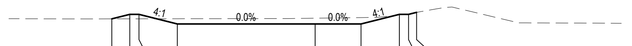
CH 200.000



DATUM RL 370.700

DESIGN LEVELS	373.073	373.329	373.329	372.704	372.704	372.704	373.329	373.329	373.273
EXISTING LEVELS	373.073	373.075	373.076	373.080	373.087	373.088	373.160	373.244	373.273
OFFSET	-13.124	-12.100	-11.500	-9.000	0.000	3.000	5.500	6.100	6.322

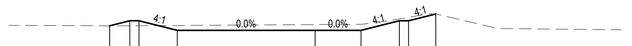
CH 190.000



DATUM RL 370.700

DESIGN LEVELS	373.054	373.347	373.347	372.722	372.722	372.722	373.347	373.347	373.479
EXISTING LEVELS	373.054	373.056	373.057	373.061	373.097	373.136	373.320	373.402	373.479
OFFSET	-13.274	-12.100	-11.500	-9.000	0.000	3.000	5.500	6.100	6.628

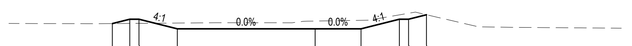
CH 180.000



DATUM RL 370.700

DESIGN LEVELS	373.037	373.365	373.365	372.740	372.740	372.740	373.365	373.365	373.609
EXISTING LEVELS	373.037	373.041	373.044	373.060	373.118	373.137	373.486	373.590	373.809
OFFSET	-13.413	-12.100	-11.500	-9.000	0.000	3.000	5.500	6.100	7.875

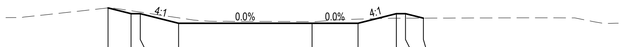
CH 170.000



DATUM RL 370.700

DESIGN LEVELS	373.099	373.384	373.384	372.759	372.759	372.759	373.384	373.384	373.676
EXISTING LEVELS	373.099	373.108	373.113	373.133	373.263	373.314	373.667	373.771	373.676
OFFSET	-13.239	-12.100	-11.500	-9.000	0.000	3.000	5.500	6.100	7.269

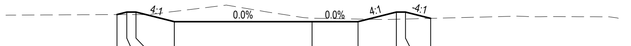
CH 160.000



DATUM RL 370.500

DESIGN LEVELS	373.559	373.183	373.183	372.558	372.558	372.558	373.183	373.183	372.891
EXISTING LEVELS	373.559	373.376	373.286	372.912	372.664	372.827	372.886	372.888	372.891
OFFSET	-13.323	-11.820	-11.220	-8.720	0.000	3.000	5.500	6.100	7.268

CH 270.000



DATUM RL 370.500

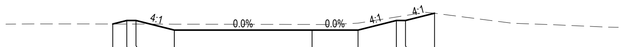
DESIGN LEVELS	373.042	373.202	373.202	372.577	372.577	372.577	373.202	373.202	372.791
EXISTING LEVELS	373.042	373.044	373.044	373.245	372.802	372.748	372.735	372.749	372.791
OFFSET	-12.740	-12.100	-11.500	-9.000	0.000	3.000	5.500	6.100	7.741

CH 260.000

DATUM RL 370.500

DESIGN LEVELS	373.029	373.220	373.220	372.595	372.595	372.595	373.220	373.220	372.972
EXISTING LEVELS	373.029	373.029	373.029	373.030	373.521	373.585	373.208	373.115	372.972
OFFSET	-12.864	-12.100	-11.500	-9.000	0.000	3.000	5.500	6.100	7.062

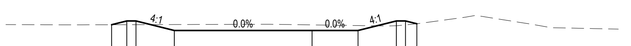
CH 250.000



DATUM RL 370.600

DESIGN LEVELS	373.009	373.238	373.238	372.613	372.613	372.613	373.238	373.238	373.711
EXISTING LEVELS	373.009	373.006	373.005	372.999	372.978	373.067	373.468	373.564	373.711
OFFSET	-13.017	-12.100	-11.500	-9.000	0.000	3.000	5.500	6.100	7.994

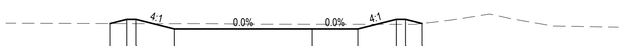
CH 240.000



DATUM RL 370.600

DESIGN LEVELS	373.008	373.256	373.256	372.631	372.631	372.631	373.256	373.256	373.071
EXISTING LEVELS	373.008	373.011	373.013	373.020	372.998	372.954	372.945	372.999	373.071
OFFSET	-13.094	-12.100	-11.500	-9.000	0.000	3.000	5.500	6.100	6.840

CH 230.000



DATUM RL 370.600

DESIGN LEVELS	373.002	373.274	373.274	372.649	372.649	372.649	373.274	373.274	373.005
EXISTING LEVELS	373.002	372.997	372.995	372.992	372.955	372.952	372.950	372.950	373.005
OFFSET	-13.191	-12.100	-11.500	-9.000	0.000	3.000	5.500	6.100	7.176

CH 220.000

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TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

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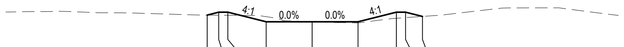
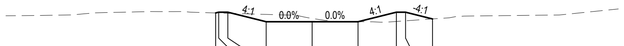


DATUM RL 370.300

DESIGN LEVELS	372.886	373.074	373.074	372.449	372.449	372.449	373.074	373.074	372.798
EXISTING LEVELS	372.886	372.860	372.874	372.782	372.453	372.376	372.678	372.722	372.798
OFFSET	-6.851	-6.100	-5.500	-3.000	0.000	3.000	5.500	6.100	7.206

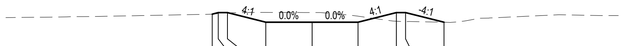
CH 330.000



DATUM RL 370.400

DESIGN LEVELS	373.043	373.092	373.092	372.467	372.467	372.467	373.092	373.092	372.652
EXISTING LEVELS	373.043	373.037	373.019	372.946	372.681	372.474	372.487	372.529	372.652
OFFSET	-6.298	-6.100	-5.500	-3.000	0.000	3.000	5.500	6.100	7.863

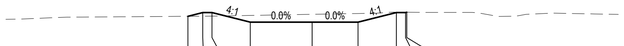
CH 320.000



DATUM RL 370.400

DESIGN LEVELS	373.011	373.110	373.110	372.485	372.485	372.485	373.110	373.110	372.483
EXISTING LEVELS	373.011	373.046	373.087	373.122	373.115	372.878	372.548	372.528	372.483
OFFSET	-6.523	-6.127	-5.527	-3.027	0.000	3.000	5.500	6.100	8.611

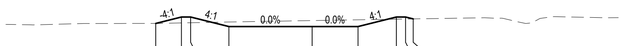
CH 310.000



DATUM RL 370.500

DESIGN LEVELS	372.886	373.129	373.129	372.504	372.504	372.504	373.129	373.129	373.149
EXISTING LEVELS	372.886	372.893	372.897	372.942	373.014	373.067	373.155	373.150	373.149
OFFSET	-8.112	-7.139	-6.539	-4.039	0.000	3.000	5.500	6.100	6.183

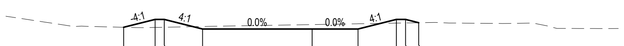
CH 300.000



DATUM RL 370.500

DESIGN LEVELS	372.728	373.147	373.147	372.522	372.522	372.522	373.147	373.147	373.022
EXISTING LEVELS	372.728	372.759	372.772	372.822	372.914	372.964	373.004	373.014	373.022
OFFSET	-10.208	-8.532	-7.932	-5.432	0.000	3.000	5.500	6.100	6.599

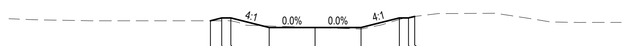
CH 290.000



DATUM RL 370.500

DESIGN LEVELS	372.652	373.165	373.165	372.540	372.540	372.540	373.165	373.165	372.949
EXISTING LEVELS	372.652	372.644	372.654	372.704	372.829	372.881	372.924	372.935	372.949
OFFSET	-12.304	-10.254	-9.654	-7.154	0.000	3.000	5.500	6.100	6.963

CH 280.000



DATUM RL 370.300

DESIGN LEVELS	372.878	373.062	373.062	372.437	372.437	372.437	373.062	373.062	373.163
EXISTING LEVELS	372.878	372.878	372.877	372.537	372.437	372.336	372.961	373.114	373.163
OFFSET	-6.836	-6.100	-5.500	-3.000	0.000	3.000	5.500	6.100	6.504

CH 336.774

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TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

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JEWRY STREET EXTENSION
ROAD UPGRADE

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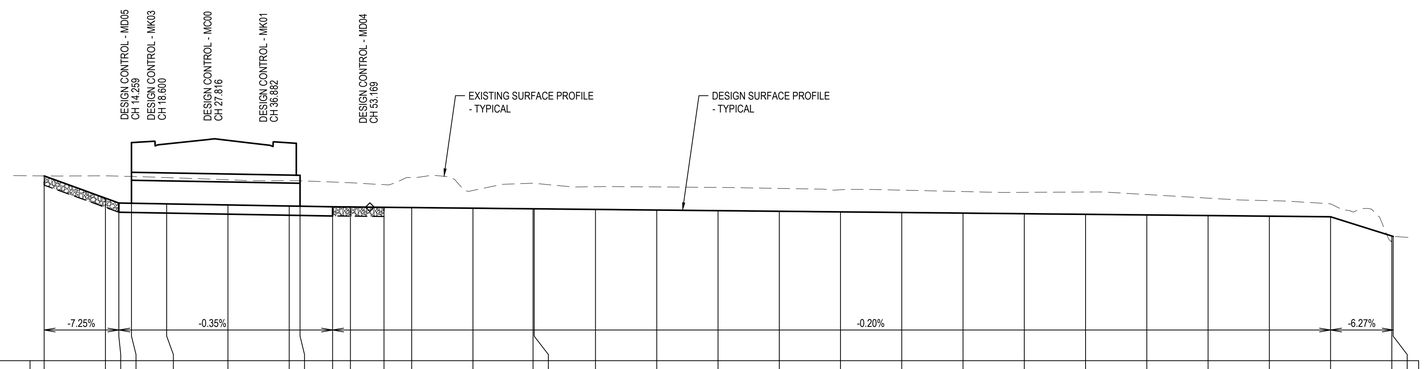

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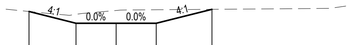
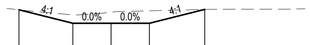


DATUM RL 368.900

DESIGN LEVELS	371.725	370.957	370.957	370.957	371.867
EXISTING LEVELS	371.725	371.544	371.793	371.840	371.867
OFFSET	-5.689	-2.617	0.000	2.617	6.256

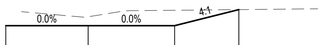
CH 79.804



DATUM RL 368.800

DESIGN LEVELS	371.736	370.857	370.857	370.857	371.760
EXISTING LEVELS	371.736	371.404	371.578	371.671	371.760
OFFSET	-6.019	-2.500	0.000	2.500	6.115

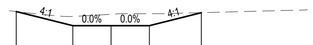
CH 130.000



DATUM RL 368.900

DESIGN LEVELS	370.977	370.977	370.977	372.025	
EXISTING LEVELS		371.556	371.982	372.025	
OFFSET	-5.373	0.000	5.650	9.842	

CH 70.000



DATUM RL 368.800

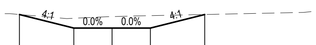
DESIGN LEVELS	371.800	370.877	370.877	370.877	371.725
EXISTING LEVELS	371.800	371.481	371.623	371.658	371.725
OFFSET	-6.194	-2.500	0.000	2.500	5.892

CH 120.000

DATUM RL 368.900

DESIGN LEVELS	372.017	370.997	370.997	370.997	371.868
EXISTING LEVELS	372.017	372.029	371.977	371.925	371.868
OFFSET	-12.742	-8.664	0.000	8.744	12.229

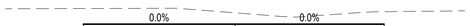
CH 60.000



DATUM RL 368.800

DESIGN LEVELS	371.784	370.897	370.897	370.897	371.784
EXISTING LEVELS	371.784	371.539	371.652	371.710	371.784
OFFSET	-6.050	-2.500	0.000	2.500	6.047

CH 110.000



DATUM RL 369.000

DESIGN LEVELS	371.006	371.006	371.006
EXISTING LEVELS	372.028	371.747	371.820
OFFSET	-9.910	0.000	9.724

CH 55.480

DATUM RL 368.900

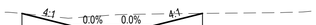
DESIGN LEVELS	371.786	370.917	370.917	370.917	371.764
EXISTING LEVELS	371.786	371.524	371.671	371.714	371.764
OFFSET	-5.977	-2.500	0.000	2.500	5.888

CH 100.000

DATUM RL 369.000

DESIGN LEVELS	371.017	371.017	371.017
EXISTING LEVELS	372.033	371.808	371.886
OFFSET	-9.910	0.000	9.910

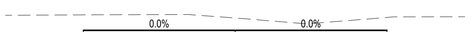
CH 50.000



DATUM RL 368.900

DESIGN LEVELS	371.784	370.937	370.937	370.937	371.788
EXISTING LEVELS	371.784	371.496	371.678	371.744	371.788
OFFSET	-5.888	-2.500	0.000	2.500	5.903

CH 90.000



DATUM RL 369.000

DESIGN LEVELS	371.023	371.023	371.023
EXISTING LEVELS	372.033	371.831	371.867
OFFSET	-9.910	0.000	9.910

CH 47.080

DATUM RL 368.900

DESIGN LEVELS	371.749	370.957	370.957	370.957	371.758
EXISTING LEVELS	371.749	371.548	371.789	371.794	371.758
OFFSET	-5.669	-2.500	0.000	2.500	5.704

CH 80.000

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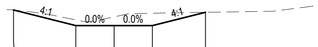
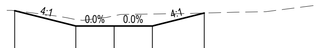


DATUM RL 368.700

DESIGN LEVELS	371.754	370.736	370.736	370.736	371.603
EXISTING LEVELS	371.754	371.107	371.305	371.539	371.603
OFFSET	-6.569	-2.500	0.000	2.500	5.965

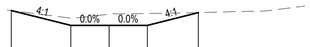
CH 190.000



DATUM RL 368.700

DESIGN LEVELS	371.755	370.756	370.756	370.756	371.603
EXISTING LEVELS	371.755	371.175	371.422	371.539	371.603
OFFSET	-6.494	-2.500	0.000	2.500	5.885

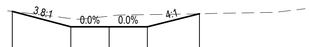
CH 180.000



DATUM RL 368.700

DESIGN LEVELS	371.748	370.776	370.776	370.776	371.608
EXISTING LEVELS	371.748	371.245	371.505	371.555	371.608
OFFSET	-6.385	-2.500	0.000	2.500	5.827

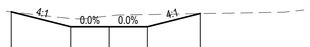
CH 170.000



DATUM RL 368.700

DESIGN LEVELS	371.802	370.796	370.796	370.796	371.646
EXISTING LEVELS	371.802	371.330	371.494	371.591	371.646
OFFSET	-6.322	-2.500	0.000	2.500	5.898

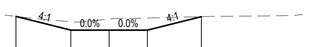
CH 160.000



DATUM RL 368.800

DESIGN LEVELS	371.789	370.817	370.817	370.817	371.680
EXISTING LEVELS	371.789	371.354	371.520	371.610	371.680
OFFSET	-6.391	-2.500	0.000	2.500	5.955

CH 150.000



DATUM RL 368.800

DESIGN LEVELS	371.732	370.837	370.837	370.837	371.718
EXISTING LEVELS	371.732	371.384	371.565	371.628	371.718
OFFSET	-6.083	-2.500	0.000	2.500	6.027

CH 140.000

DATUM RL 367.900

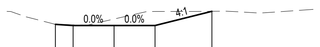
DESIGN LEVELS	370.056	
EXISTING LEVELS	370.056	
OFFSET	0.000	

CH 220.217

DATUM RL 367.900

DESIGN LEVELS	370.070	
EXISTING LEVELS	369.951	
OFFSET	0.000	

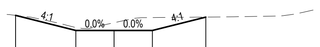
CH 220.000



DATUM RL 368.600

DESIGN LEVELS	370.771	370.696	370.696	370.696	371.624	
EXISTING LEVELS	370.748	370.742	371.120	371.614	371.624	
OFFSET	-2.881	-2.675	0.000	2.675	6.388	

CH 210.000



DATUM RL 368.700

DESIGN LEVELS	371.699	370.716	370.716	370.716	371.588	
EXISTING LEVELS	371.699	370.904	371.223	371.557	371.588	
OFFSET	-6.433	-2.500	0.000	2.500	5.987	

CH 200.000

HATCH

PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT
TAMWORTH REGIONAL COUNCIL

THIS DRAWING CONTAINS COLOURED INFORMATION C M Y

REV	DATE	DESCRIPTION	DRN	APP
P03	24.08.2022	DRAFT ISSUE FOR 100% DETAILED DESIGN	A.V.	T.W.
P02	01.06.2022	ISSUED FOR 90% DETAILED DESIGN	A.V.	C.G.

TITLE
CROSS SECTIONS
MD02
SHEET 2

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DOCUMENT No.			REVISION
16562-H-DR-C-1402			P03

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DATUM RL 369.300

DESIGN LEVELS	373.406	371.389	371.389	371.389	372.696
EXISTING LEVELS		372.347	372.494	372.553	372.696
OFFSET	-10.777	-1.250	0.000	1.250	5.171

CH 100.000

DATUM RL 369.300

DESIGN LEVELS	373.298	371.458	371.458	371.458	372.364
EXISTING LEVELS		371.439	371.599	371.865	372.364
OFFSET	-10.087	-1.250	0.000	1.250	3.968

CH 80.000

DATUM RL 369.400

DESIGN LEVELS	373.060	371.528	371.528	371.528	371.701
EXISTING LEVELS		371.476	371.504	371.613	371.701
OFFSET	-9.956	-1.250	0.000	1.250	1.769

CH 60.000

DATUM RL 369.400

DESIGN LEVELS	372.978	371.597	371.597	371.597	371.697
EXISTING LEVELS		371.484	371.515	371.655	371.697
OFFSET	-8.714	-1.250	0.000	1.250	1.549

CH 40.000

DATUM RL 369.500

DESIGN LEVELS	372.862	371.666	371.666	371.666	372.588
EXISTING LEVELS		371.565	371.589	371.869	372.588
OFFSET	-8.608	-1.250	0.000	1.250	4.017

CH 20.000

DATUM RL 369.600

DESIGN LEVELS	372.926	371.735	371.735	371.735
EXISTING LEVELS		372.566	372.212	372.250
OFFSET	-6.134	-1.250	0.000	1.250

CH 0.000

DATUM RL 368.900

DESIGN LEVELS	373.465	370.974	370.974	370.974	373.372
EXISTING LEVELS		372.760	373.002	373.126	373.372
OFFSET	-9.634	-1.250	0.000	1.250	8.225

CH 220.000

DATUM RL 369.000

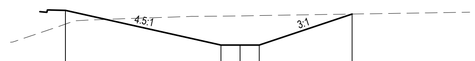
DESIGN LEVELS	373.746	371.043	371.043	371.043	373.293
EXISTING LEVELS		372.860	372.976	373.053	373.293
OFFSET	-11.217	-1.250	0.000	1.250	8.000

CH 200.000

DATUM RL 369.100

DESIGN LEVELS	373.949	371.113	371.113	371.113	373.296
EXISTING LEVELS		373.164	373.181	373.200	373.296
OFFSET	-12.468	-1.250	0.000	1.250	7.802

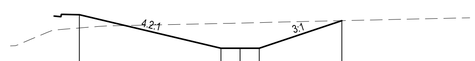
CH 180.000



DATUM RL 369.100

DESIGN LEVELS	373.446	371.182	371.182	371.182	373.203
EXISTING LEVELS		373.067	373.079	373.106	373.203
OFFSET	-11.406	-1.250	0.000	1.250	7.313

CH 160.000



DATUM RL 369.200

DESIGN LEVELS	373.437	371.251	371.251	371.251	373.049
EXISTING LEVELS		372.862	372.888	372.922	373.049
OFFSET	-10.497	-1.250	0.000	1.250	6.645

CH 140.000

DATUM RL 369.300

DESIGN LEVELS	373.511	371.320	371.320	371.320	372.750
EXISTING LEVELS		372.648	372.656	372.670	372.750
OFFSET	-11.150	-1.250	0.000	1.250	5.539

CH 120.000

HATCH

PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT
TAMWORTH REGIONAL COUNCIL

THIS DRAWING CONTAINS COLOURED INFORMATION C M Y

REV	DATE	DESCRIPTION	DRN	APP
P03	24.08.2022	DRAFT ISSUE FOR 100% DETAILED DESIGN	A.V.	T.W.

TITLE
CROSS SECTIONS
MD03
SHEET 1

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DOCUMENT No.			REVISION
16562-H-DR-C-1403			P03

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DATUM RL 368.600

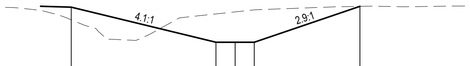
DESIGN LEVELS		370.648	370.648	370.648	
EXISTING LEVELS		370.712	370.659	370.666	
OFFSET		-1.250	0.000	1.250	

CH 314.342

DATUM RL 368.600

DESIGN LEVELS	373.006		370.698	370.698	370.698	371.917
EXISTING LEVELS			372.188	372.306	372.238	371.917
OFFSET	-11.066		-1.250	0.000	1.250	4.909

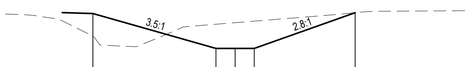
CH 300.000



DATUM RL 368.700

DESIGN LEVELS	373.057		370.767	370.767	370.767	373.110
EXISTING LEVELS			372.616	372.749	372.881	373.110
OFFSET	-10.701		-1.250	0.000	1.250	8.153

CH 280.000



DATUM RL 368.800

DESIGN LEVELS	373.115		370.836	370.836	370.836	373.170
EXISTING LEVELS			372.416	372.517	372.617	373.170
OFFSET	-9.267		-1.250	0.000	1.250	7.838

CH 260.000

DATUM RL 368.900

DESIGN LEVELS	373.202		370.905	370.905	370.905	373.467
EXISTING LEVELS			372.671	372.864	373.017	373.467
OFFSET	-7.500		-1.250	0.000	1.250	8.168

CH 240.000

HATCH

PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT
TAMWORTH REGIONAL COUNCIL

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REV	DATE	DESCRIPTION	DRN	APP
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PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT
TAMWORTH REGIONAL COUNCIL

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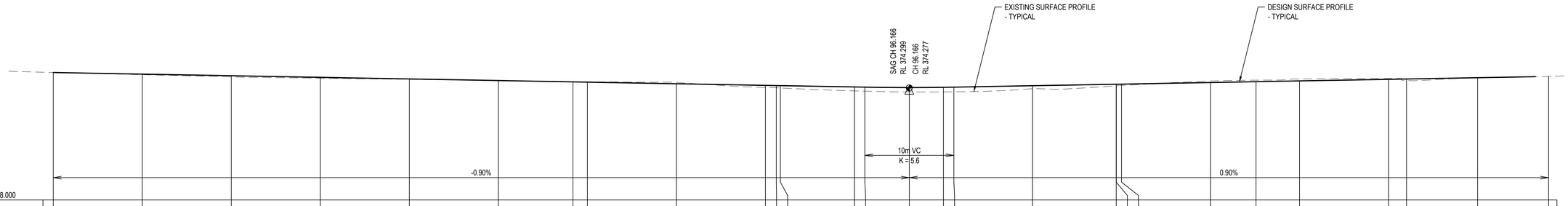


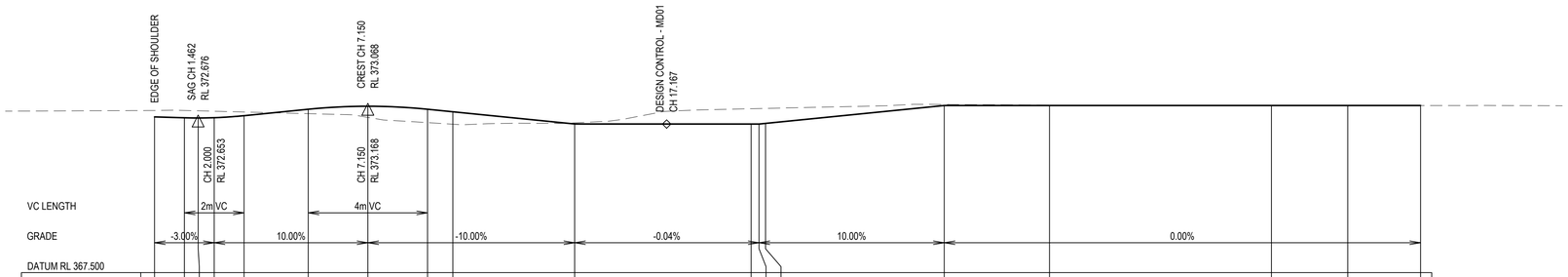
GRADE

DATUM RL 368.000

DESIGN LEVELS	375.142	375.052	374.962	374.872	374.782	374.692	374.617	374.602	374.512	374.422	374.411	374.407	374.332	374.322	374.299	374.312	374.322	374.401	374.486	374.486	374.491	374.581	374.627	374.671	374.761	374.779	374.851	374.923
EXISTING LEVELS	375.142	375.019	374.896	374.822	374.755	374.686	374.628	374.619	374.585	374.304	374.288	374.271	374.111	374.095	374.054	374.056	374.060	374.239	374.413	374.413	374.421	374.666	374.712	374.782	374.816	374.694	374.837	374.923
CHAINAGE	0.000	10.000	20.000	30.000	40.000	50.000	58.382	60.000	70.000	80.000	81.222	81.682	90.000	91.166	96.166	100.000	101.166	110.000	119.409	119.409	120.000	130.000	135.111	140.000	150.000	152.014	160.000	167.976

LONGITUDINAL SECTION ALONG WALLAMORE ROAD TURNING AREA CONTROL MK05

HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:125



VC LENGTH

GRADE

DATUM RL 367.500

DESIGN LEVELS	372.713	372.653	372.676	372.685	372.753	372.968	373.068	372.968	372.883	372.475	372.472	372.472	372.494	373.093	373.093	373.093	373.093	373.093
EXISTING LEVELS	372.926	372.928	372.916	372.902	372.876	372.821	372.696	372.520	372.467	372.513	372.985	372.992	372.997	373.129	373.105	373.089	373.091	373.093
CHAINAGE	0.000	1.000	1.462	2.000	3.000	5.150	7.150	9.150	10.000	14.084	20.000	20.264	20.481	26.471	30.000	37.441	40.000	42.441

LONGITUDINAL SECTION ALONG CONTROL MC03 - PROPERTY ACCESS

HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:100

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TITLE
LONGITUDINAL SECTIONS
MK05 & MC03

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DOCUMENT No.			REVISION
16562-H-DR-C-1500			P03

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DATUM RL 372.300

DESIGN LEVELS	374.664	374.892	374.526	374.485	374.635	374.635	374.611	374.456
EXISTING LEVELS	374.664	374.682	374.525	374.508	374.508	374.503	374.474	374.456
OFFSET	-7.627	0.000	13.962	14.437	14.468	14.623	15.682	16.329

CH 60.000

DATUM RL 372.300

DESIGN LEVELS	374.781	374.892	374.565	374.523	374.545	374.673	374.672	374.647	374.545
EXISTING LEVELS	374.754	374.872	374.634	374.613	374.612	374.611	374.604	374.560	374.545
OFFSET	-4.218	0.000	12.520	13.024	13.028	13.057	13.222	14.354	14.810

CH 50.000

DATUM RL 372.400

DESIGN LEVELS	374.872	374.975	374.653	374.613	374.763	374.763	374.743	374.708
EXISTING LEVELS	374.822	374.955	374.726	374.714	374.714	374.710	374.684	374.680
OFFSET	-4.200	0.000	11.000	11.460	11.490	11.640	12.660	12.800

CH 40.000

DATUM RL 372.700

DESIGN LEVELS	374.962	375.065	374.743	374.703	374.853	374.853	374.833	374.844
EXISTING LEVELS	374.896	375.026	374.809	374.823	374.823	374.828	374.858	374.860
OFFSET	-4.200	0.000	11.000	11.460	11.490	11.640	12.660	12.716

CH 30.000

DATUM RL 372.700

DESIGN LEVELS	375.052	375.155	374.833	374.793	374.943	374.943	374.923	374.936
EXISTING LEVELS	375.019	375.128	374.812	374.802	374.879	374.948	374.911	374.910
OFFSET	-4.200	0.000	10.971	11.431	11.461	11.611	12.631	12.704

CH 20.000

DATUM RL 372.300

DESIGN LEVELS	374.462	374.569	374.589	374.589	374.589	374.439	374.479	374.892	374.486	374.446	374.596	374.596	374.576	374.393
EXISTING LEVELS	374.482	374.479	374.470	374.469	374.468	374.464	374.558	374.413	374.409	374.409	374.407	374.399	374.393
OFFSET	-16.775	-16.434	-15.414	-15.264	-15.234	-14.774	0.000	14.540	15.000	15.030	15.180	16.200	16.929

CH 72.202

DATUM RL 372.800

DESIGN LEVELS	375.142	375.245	374.923	374.923	374.921	374.883	375.033	375.033	375.013	375.016
EXISTING LEVELS	375.142	375.245	374.923	374.923	374.922	374.964	374.966	374.976	375.017	375.017
OFFSET	-4.200	0.000	10.922	10.924	10.943	11.382	11.412	11.562	12.982	12.997

CH 10.000

DATUM RL 372.300

DESIGN LEVELS	374.573	374.600	374.621	374.622	374.472	374.512	374.892	374.493	374.453	374.603	374.603	374.592	374.401
EXISTING LEVELS	374.573	374.575	374.592	374.591	374.590	374.585	374.562	374.423	374.419	374.419	374.417	374.408	374.401
OFFSET	-16.367	-16.265	-15.238	-15.087	-15.057	-14.593	0.000	14.522	14.982	15.012	15.162	16.184	16.909

CH 70.000

HATCH

PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT
TAMWORTH REGIONAL COUNCIL

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REV	DATE	DESCRIPTION	DRN	APP
P03	24.08.2022	DRAFT ISSUE FOR 100% DETAILED DESIGN	A.V.	T.W.
P02	01.06.2022	ISSUED FOR 90% DETAILED DESIGN	A.V.	C.G.
P01	13.05.2022	ISSUED FOR 90% DETAILED DESIGN	A.V.	C.G.

TITLE
CROSS SECTIONS
MC02

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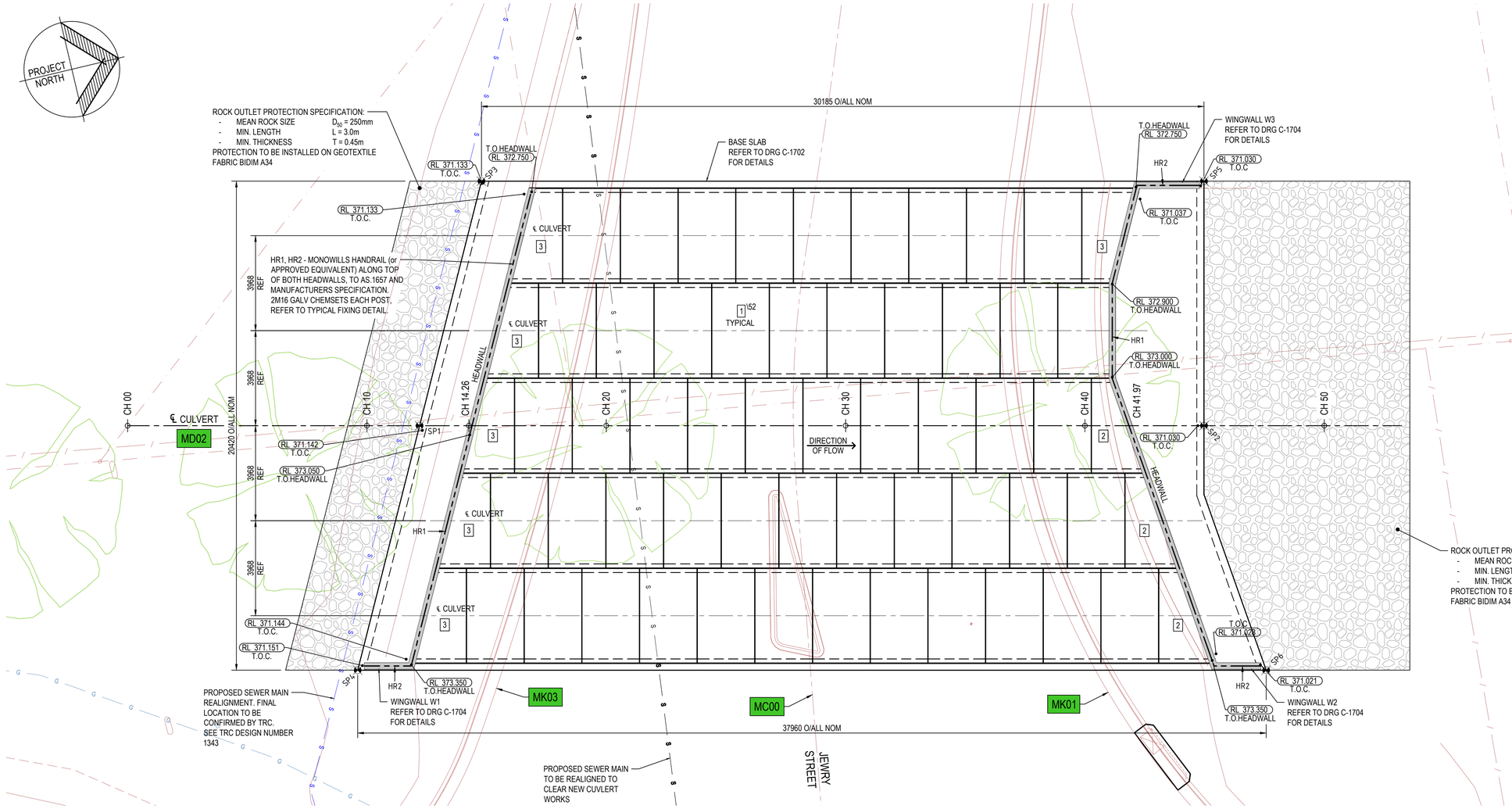
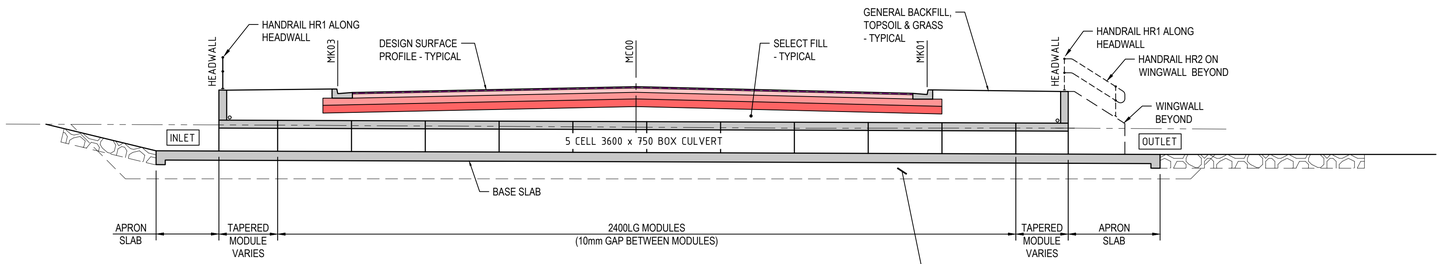
DRAFT COPY			A1
DRAWN	DESIGNED	APPROVED	SCALE
A.VIZL	C.GARNER	T.WALTON	1:200
DOCUMENT No.			REVISION
16562-H-DR-C-1600			P03



JEWRY STREET BOX CULVERT PLAN

SCALE 1:100



TYPICAL SECTION - MD02

SCALE 1:100

SUBGRADE REPLACEMENT MATERIAL

1. WHERE THE SUBGRADE DOES NOT ACHIEVE AN ALLOWABLE BEARING CAPACITY OF 150kPa, EXISTING SUBGRADE IS TO BE EXCAVATED A MINIMUM 500mm, AND SOCKETED A MINIMUM OF 100mm INTO STIFF ALLUVIAL SILTY CLAY TO ACHIEVE AN ALLOWABLE BEARING PRESSURE OF 150kPa. IF STIFF ALLUVIAL SILTY CLAY IS NOT FOUND AT THIS DEPTH, GEOTECHNICAL ENGINEER TO ASSESS THE ENCOUNTERED MATERIAL FOR SUITABILITY.
2. FILL BENEATH STRUCTURES SHOULD BE COMPACTED IN LAYERS NOT EXCEEDING 300mm LOOSE THICKNESS TO A MINIMUM DENSITY RATIO OF 98% STANDARD COMPACTION WITHIN +/-2% OF OPTIMUM MOISTURE CONTENT (OCM). SELECT MATERIAL (TFNSW QA SPECIFICATION 3071) CBR >10%. THE UPPER 300mm BELOW SUBGRADE LEVEL NEEDS TO BE COMPACTED TO 100% STANDARD COMPACTION WITHIN THE ABOVE MOISTURE RANGE.

HATCH

PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT
TAMWORTH REGIONAL COUNCIL

THIS DRAWING CONTAINS COLOURED INFORMATION C M Y

LEGEND

1	DENOTES STANDARD RCBC UNIT TYPE 1
2	DENOTES NON-STANDARD RCBC UNIT TYPE 2
3	DENOTES NON-STANDARD RCBC UNIT TYPE 3
MC00	DESIGN CONTROL STRING LABEL
HR1/HR2	EXTENT OF NEW HANDRAIL
	EXISTING BOUNDARY LINE
	PROPOSED BOUNDARY LINE
	EXISTING FENCE

GENERAL NOTES

1. FOR DRAWING LIST REFER TO HATCH DRAWING 16562-H-DR-C-0000.
2. CONTRACTOR TO VERIFY SETOUT BEFORE COMMENCING EARTHWORKS. REFER ANY DISCREPANCIES TO ENGINEER.

PRECAST CULVERTS

1. PRECAST CROWN UNIT DIMENSION SHOWN IN THE TABLE BELOW ARE NOMINATED ON HUMES STANDARD DRAWING BC-CU-MET-NAT-B1-P_0. IF THE ACTUAL PRECAST CROWN UNITS VARY IN DIMENSIONS FROM THOSE SHOWN BELOW, THE BASE SLAB, HEAD WALL AND WING WALL DIMENSIONS MAY NEED TO BE ADJUSTED TO MATCH.
2. FINAL SETOUT DIMENSIONS OF PRECAST CROWN UNITS TO BE COORDINATED BY PRINCIPAL CONTRACTOR AGAINST CULVERT DIMENSIONS SHOWN ON DRAWINGS. ANY DISCREPANCIES TO BE REPORTED TO ENGINEER.

ASSUMED PRECAST CONCRETE CROWN UNIT DIMENSIONS

NOMINAL SIZE	OVERALL WIDTH	OVERALL HEIGHT	UNIT LENGTH	CROWN THICKNESS	LEG THICKNESS AT BASE
3600 x 750	3948	1010	2400	260	165 / 174

BASE SLAB SETOUT

ITEM	CO-ORDINATES	
	EASTING	NORTHING
SP1	299566.920	6558587.112
SP2	299574.510	6558618.995
SP3	299557.587	6558591.993
SP4	299576.254	6558582.232
SP5	299564.578	6558621.359
SP6	299585.045	6558619.159

REV	DATE	DESCRIPTION	DRN	APP
P05	24.08.2022	DRAFT ISSUE FOR 100% DETAILED DESIGN	A.V.	T.W.
P04	12.08.2022	ISSUED FOR CONSTRUCTION	M.S.	B.W.
P03	03.08.2022	DETAILED CULVERT DESIGN ADDED	M.S.	B.W.
P02	01.06.2022	ISSUED FOR 90% DETAILED DESIGN	A.V.	C.G.
P01	13.05.2022	ISSUED FOR 90% DETAILED DESIGN	A.V.	C.G.

TITLE
JEWRY STREET BOX CULVERT PLAN & SECTION

DOCUMENT STATUS			SHEET SIZE
DRAFT COPY			A1
DRAWN A.VIZL	DESIGNED C.GARNER	APPROVED T.WALTON	SCALE 1:100
DOCUMENT No. 16562-H-DR-C-1700			REVISION P05

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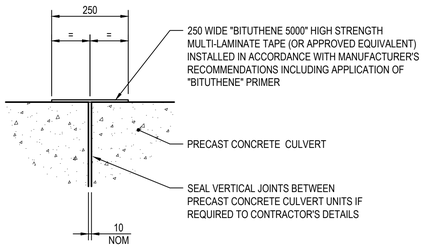
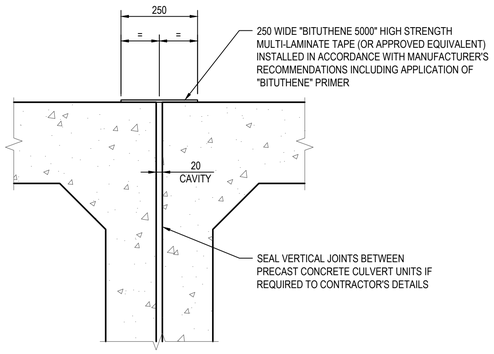


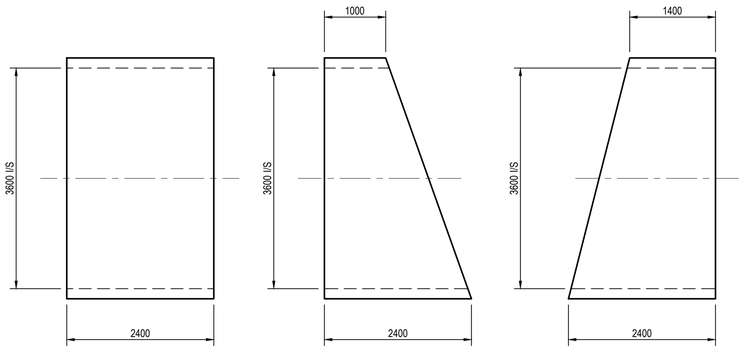
TYPICAL CROWN UNIT JOINT DETAIL

SCALE 1:10



TYPICAL CROWN UNIT CAVITY DETAIL

SCALE 1:10



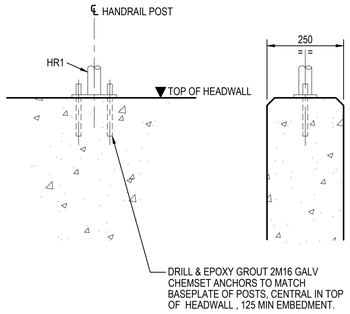
TYPE 1
(52 REQUIRED)

TYPE 2
(3 REQUIRED)

TYPE 3
(6 REQUIRED)

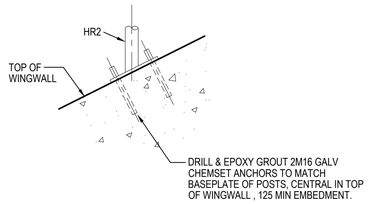
PLAN - REINFORCED CONCRETE BOX CULVERTS

SCALE 1:50



HANDRAIL HR1 - POST FIXING DETAILS

SCALE 1:10



HANDRAIL HR2 - POST FIXING DETAILS

SCALE 1:10

HATCH

PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT
TAMWORTH REGIONAL COUNCIL

THIS DRAWING CONTAINS COLOURED INFORMATION C M Y

REV	DATE	DESCRIPTION	DRN	APP
P03	24.08.2022	DRAFT ISSUE FOR 100% DETAILED DESIGN	A.V.	T.W.
P02	12.08.2022	ISSUED FOR CONSTRUCTION	M.S.	B.W.
P01	03.08.2022	ISSUED FOR 90% DETAILED DESIGN	M.S.	B.W.

TITLE
JEWRY STREET BOX CULVERT
TYPICAL DETAILS

DOCUMENT STATUS			SHEET SIZE
DRAFT COPY			A1
DRAWN	DESIGNED	APPROVED	SCALE
M.SIM	B.WAKEM	T.WALTON	AS NOTED
DOCUMENT No.			REVISION
16562-H-DR-C-1701			P03

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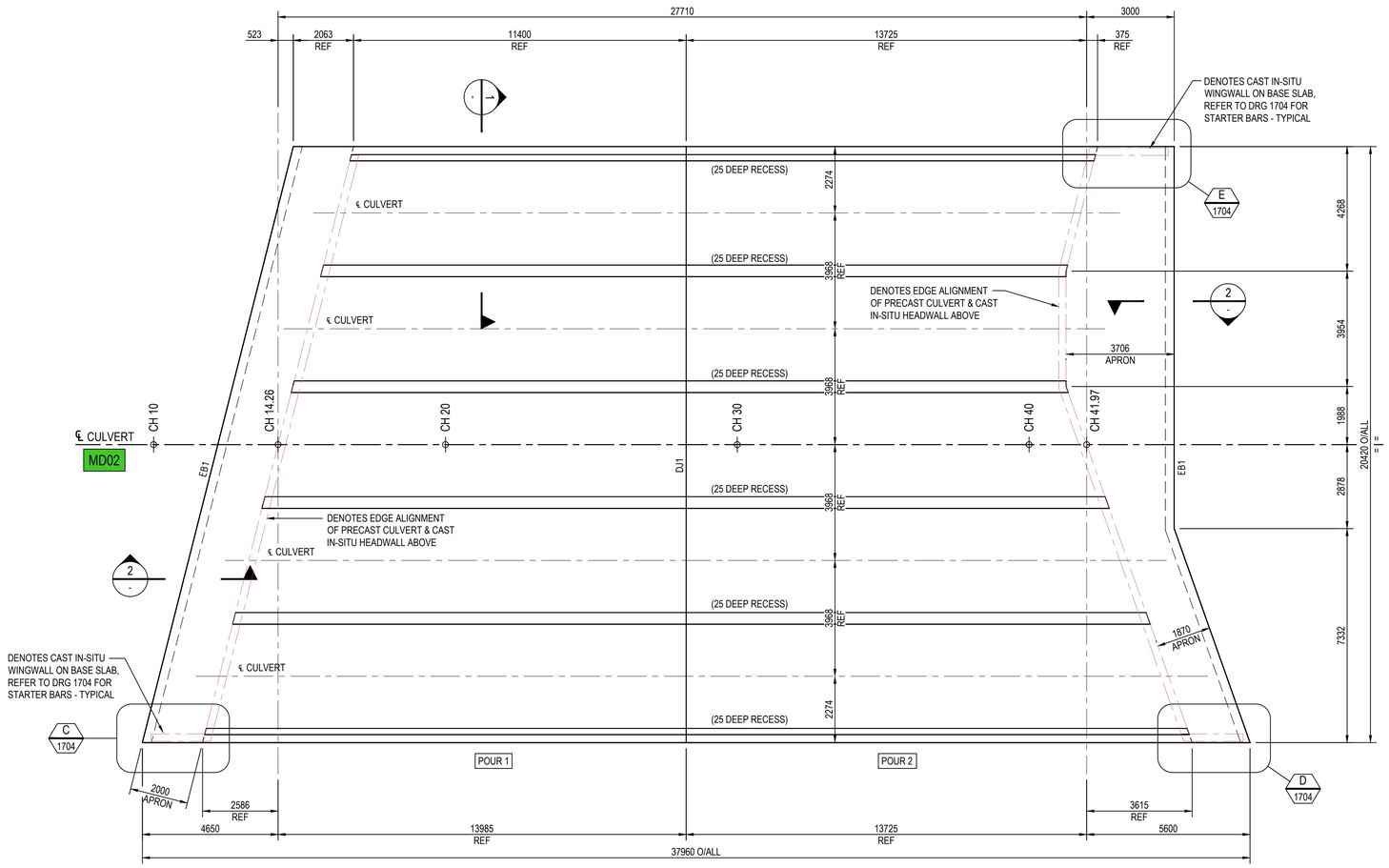
NOTE:
- BASE SLAB TO BE CONSTRUCTED AS TWO SEPARATE POURS, MINIMUM 10 DAYS BETWEEN POURS.
- DOWEL JOINT TO BE INSTALLED AT CONSTRUCTION JOINT, REFER TO DETAIL.
- BASE SLAB TO ACHIEVE A MINIMUM CONCRETE COMPRESSIVE STRENGTH OF 32MPa PRIOR TO INSTALLATION OF PRECAST CULVERTS.
- BASE SLAB TO ACHIEVE A MINIMUM CONCRETE COMPRESSIVE STRENGTH OF 40MPa PRIOR TO TRAFFIC LOADING ON STRUCTURE

HATCH

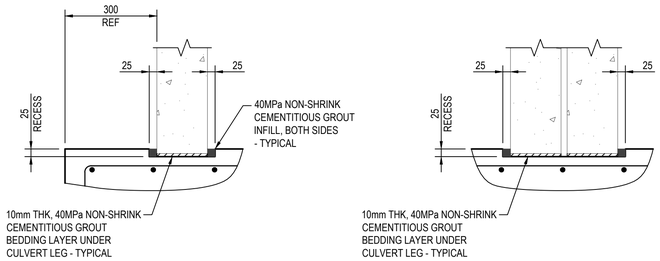
PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT
TAMWORTH REGIONAL COUNCIL

THIS DRAWING CONTAINS COLOURED INFORMATION C M Y



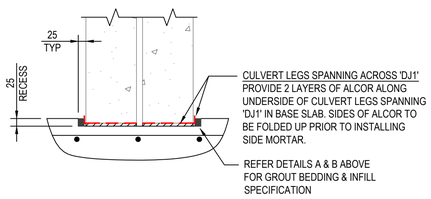
BASE SLAB PLAN
SCALE 1:100



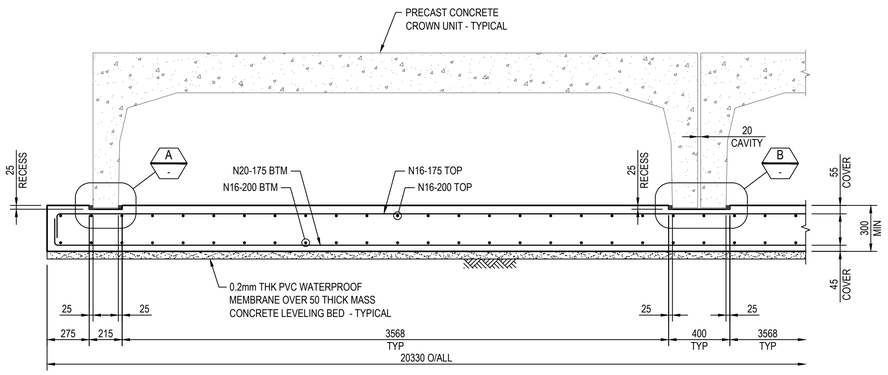
DETAIL A
SCALE 1:10

NOTE - REFER TO THE 'ALTERNATE BEDDING DETAIL' FOR CROWN UNIT LEGS SPANNING ACROSS THE CONSTRUCTION JOINT IN THE CONCRETE BASE SLAB.

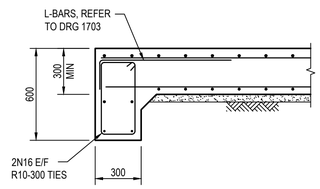
DETAIL B
SCALE 1:10



ALTERNATE BEDDING DETAIL
SCALE 1:10

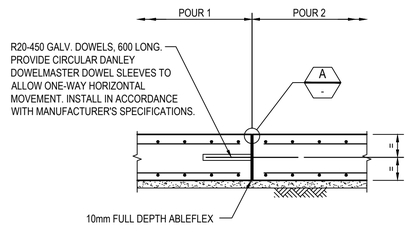


SECTION 1
SCALE 1:20

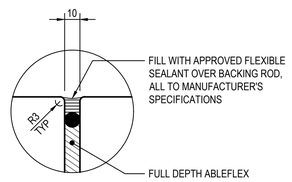


EDGE BEAM - EB1

SECTION 2
SCALE 1:20



DOWEL JOINT - DJ1
SCALE 1:20



DETAIL A
SCALE 1:2

REV	DATE	DESCRIPTION	DRN	APP
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P01	03.08.2022	ISSUED FOR 90% DETAILED DESIGN	M.S.	B.W.

TITLE
JEWRY STREET BOX CULVERT
BASE SLAB PLAN & DETAILS

DOCUMENT STATUS			SHEET SIZE
DRAFT COPY			A1
DRAWN	DESIGNED	APPROVED	SCALE
M.SIM	B.WAKEM	T.WALTON	1:100, 1:20
DOCUMENT No.			REVISION
16562-H-DR-C-1702			P03

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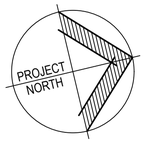
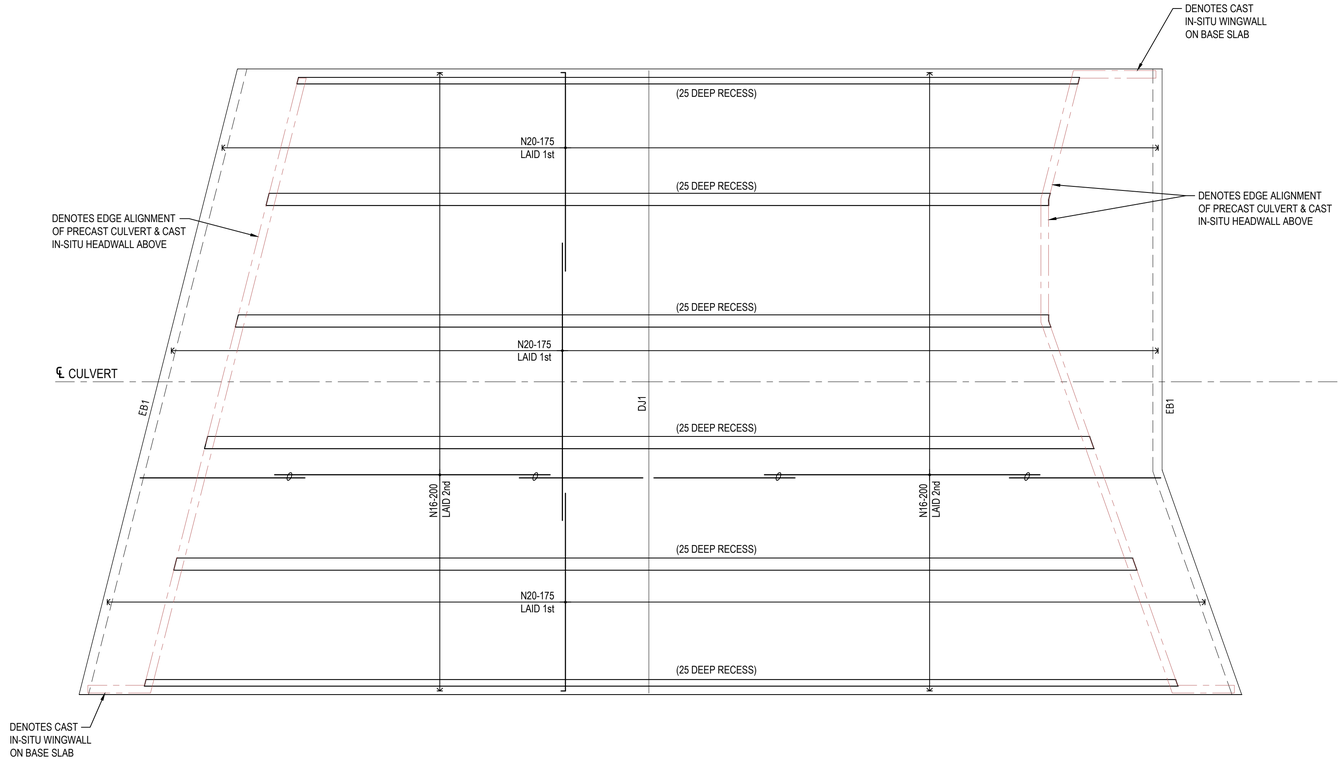
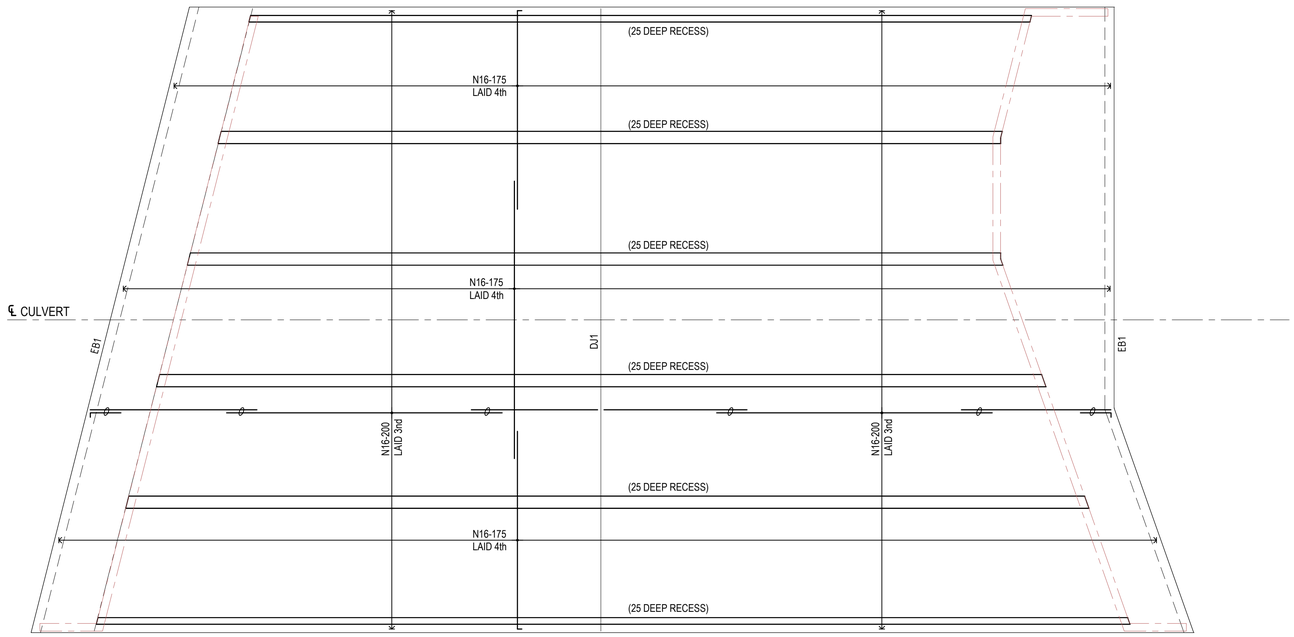




BASE SLAB - BOTTOM REINFORCEMENT PLAN

SCALE 1:100



BASE SLAB - TOP REINFORCEMENT PLAN

SCALE 1:100

HATCH

PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT
TAMWORTH REGIONAL COUNCIL

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P01	03.08.2022	ISSUED FOR 90% DETAILED DESIGN	M.S.	B.W.

TITLE
JEWRY STREET BOX CULVERT
BASE SLAB
REINFORCEMENT PLANS

DOCUMENT STATUS			SHEET SIZE
DRAFT COPY			A1
DRAWN	DESIGNED	APPROVED	SCALE
M.SIM	B.WAKEM	T.WALTON	1:100
DOCUMENT No.			REVISION
16562-H-DR-C-1703			P03

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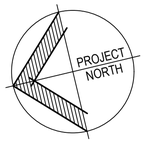
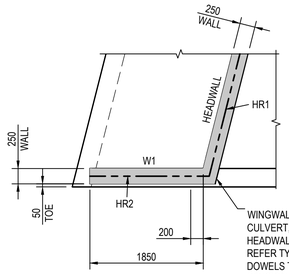
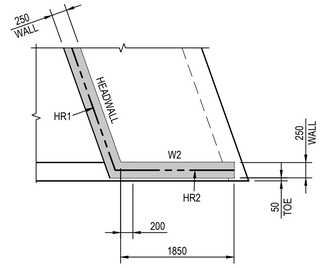


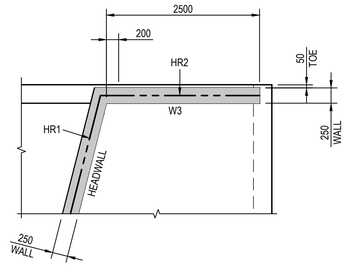


WINGWALL TO LAP 250 MIN WITH END OF CULVERT, TO ALIGN WITH INSIDE FACE OF HEADWALL - TYPICAL.
REFER TYPICAL WINGWALL SECTION FOR GALV DOWELS TO BE INSTALLED BETWEEN UPPER WINGWALL & HEADWALL ON CULVERT - TYPICAL

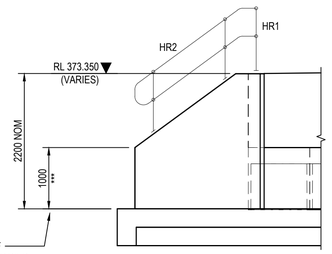
PLAN



PLAN



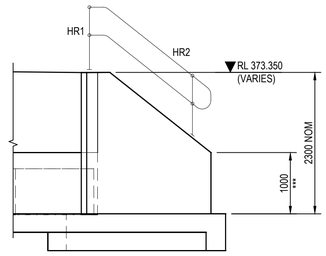
PLAN



HEIGHT ON ENDS OF WINGWALLS TO BE VARIED ON SITE AS REQUIRED TO SUIT FINAL BATTER SURFACE

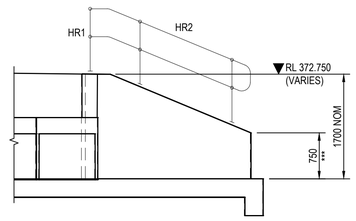
ELEVATION

DETAIL C 1702 WINGWALL W1
SCALE 1:50



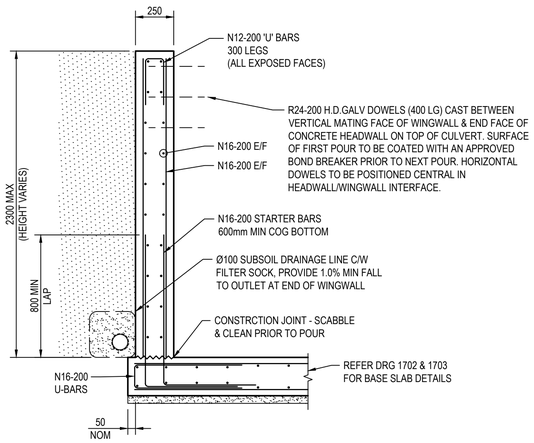
ELEVATION

DETAIL D 1702 WINGWALL W2
SCALE 1:50

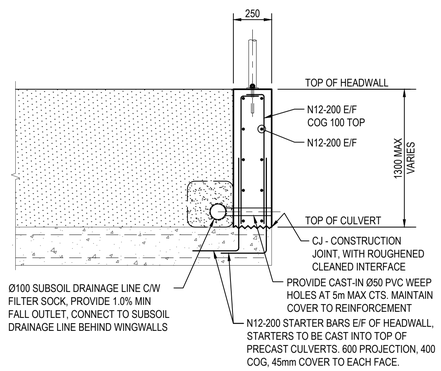


ELEVATION

DETAIL E 1702 WINGWALL W3
SCALE 1:50



WINGWALL - TYPICAL SECTION
SCALE 1:20



HEADWALL - TYPICAL SECTION
SCALE 1:20

HATCH

PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT
TAMWORTH REGIONAL COUNCIL

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P01	03.08.2022	ISSUED FOR 90% DETAILED DESIGN	M.S.	B.W.

TITLE
JEWRY STREET BOX CULVERT
WINGWALL & HEADWALL DETAILS

DOCUMENT STATUS			SHEET SIZE
DRAFT COPY			A1
DRAWN	DESIGNED	APPROVED	SCALE
M.SIM	B.WAKEM	T.WALTON	1:50, 1:20
DOCUMENT No.			REVISION
16562-H-DR-C-1704			P03

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PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

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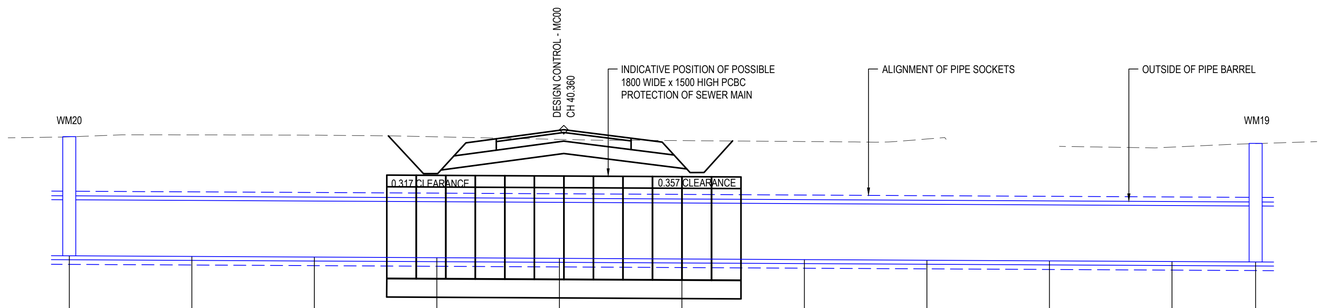

EXISTING PIPE INVERT LEVELS — -0.10% (WESTDALE TRUNK GRAVITY SEWER MAIN 36" DIA RCP CLASS 'X')

DATUM RL 368.000

EXISTING PIPE INVERT LEVELS	370.603											370.502
EXISTING SURFACE LEVELS	372.544	372.576	372.572	372.545	372.503	372.483	372.468	372.509		372.377	372.434
CHAINAGE	0.000	10.000	20.000	30.000	40.000	50.000	60.000	70.000	80.000	90.000	96.831

LONGITUDINAL SECTION ALONG CONTROL SEWER 900

HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:50

REV	DATE	DESCRIPTION	DRN	APP
P03	24.08.2022	DRAFT ISSUE FOR 100% DETAILED DESIGN	A.V.	T.W.
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P01	13.05.2022	ISSUED FOR 90% DETAILED DESIGN	A.V.	C.G.

TITLE
LONGITUDINAL SECTIONS
SEWER

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DOCUMENT STATUS			SHEET SIZE
DRAFT COPY			A1
DRAWN	DESIGNED	APPROVED	SCALE
A.VIZL	C.GARNER	T.WALTON	1:250, 1:50
DOCUMENT No.			REVISION
16562-H-DR-C-1800			P03

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PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT
TAMWORTH REGIONAL COUNCIL

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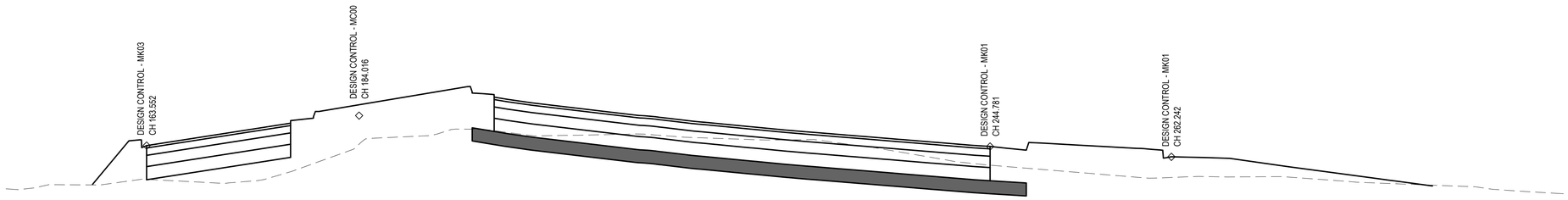

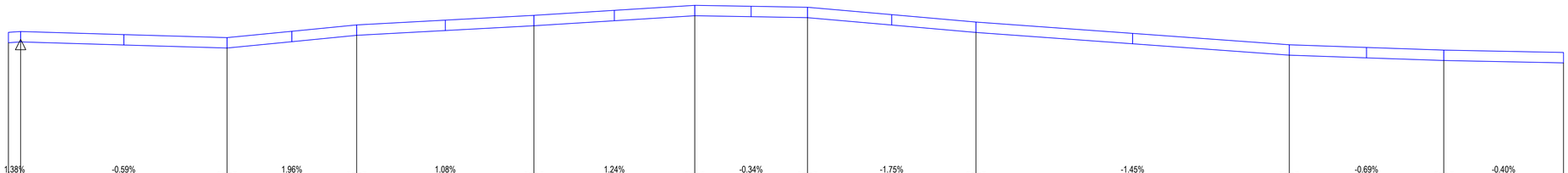

DATUM RL 368.500

EXISTING PIPE INVERT LEVELS	371.550	371.566	371.448	371.693	371.877	372.070	372.033	371.748	371.311	371.208	371.162
EXISTING LEVELS	372.670	372.652	372.773	373.449	373.693	373.657	373.616	373.152	372.895	372.731	372.574
PIPE CHAINAGE	150.000	151.178	171.085	183.591	200.688	216.203	227.078	243.325	273.548	288.454	300.000

LONGITUDINAL SECTION ALONG CONTROL DN200 GAS MAIN

HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:50

REV	DATE	DESCRIPTION	DRN	APP
P03	24.08.2022	DRAFT ISSUE FOR 100% DETAILED DESIGN	A.V.	T.W.
P02	01.06.2022	ISSUED FOR 90% DETAILED DESIGN	A.V.	C.G.
P01	13.05.2022	ISSUED FOR 90% DETAILED DESIGN	A.V.	C.G.

TITLE
LONGITUDINAL SECTIONS
GAS
MC00

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DOCUMENT STATUS			SHEET SIZE
DRAFT COPY			A1
DRAWN	DESIGNED	APPROVED	SCALE
A.VIZL	C.GARNER	T.WALTON	1:250, 1:50
DOCUMENT No.			REVISION
16562-H-DR-C-1900			P03

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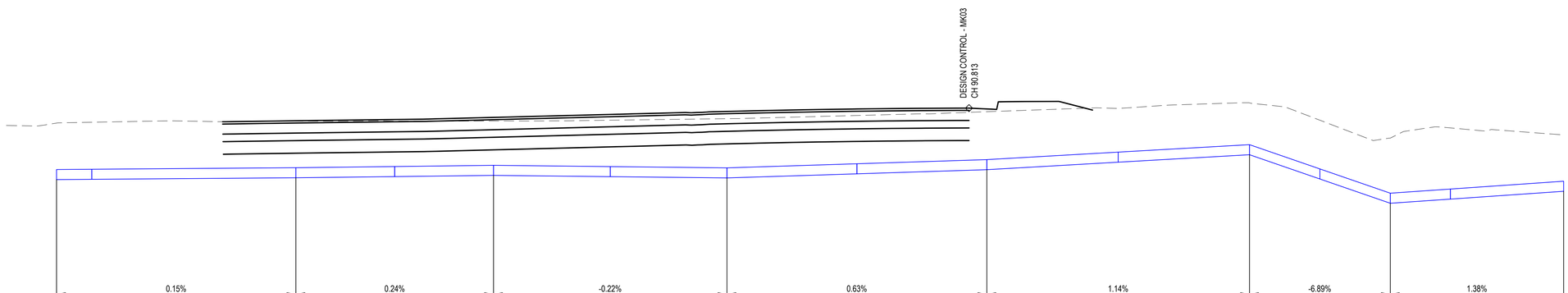
PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT
TAMWORTH REGIONAL COUNCIL

THIS DRAWING CONTAINS COLOURED INFORMATION C M Y



EXISTING PIPE INVERT LEVELS	371.762	371.818	371.866	371.815	371.979	372.277	371.311	371.550
EXISTING LEVELS	372.996	372.944	372.946	372.993	373.133	373.308	372.607	372.670
PIPE CHAINAGE	0.000	23.823	43.490	66.729	92.592	118.733	132.746	150.000

LONGITUDINAL SECTION ALONG CONTROL DN200 GAS MAIN

HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:50

REV	DATE	DESCRIPTION	DRN	APP
P03	24.08.2022	DRAFT ISSUE FOR 100% DETAILED DESIGN	A.V.	T.W.
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P01	13.05.2022	ISSUED FOR 90% DETAILED DESIGN	A.V.	C.G.

TITLE
LONGITUDINAL SECTIONS
GAS
MC01

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DOCUMENT STATUS			SHEET SIZE
DRAFT COPY			A1
DRAWN	DESIGNED	APPROVED	SCALE
A.VIZL	C.GARNER	T.WALTON	1:250, 1:50
DOCUMENT No.			REVISION
16562-H-DR-C-1901			P03

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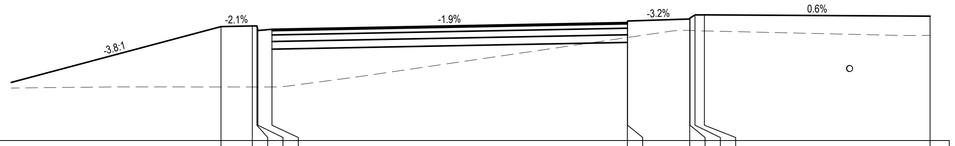

DATUM RL 370.200

| | | |

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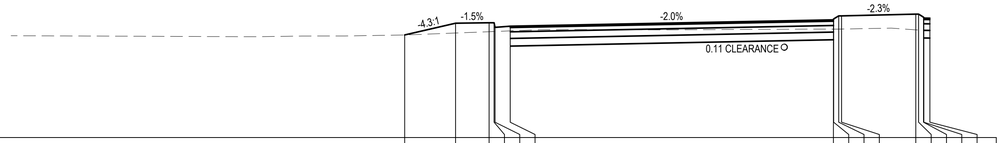
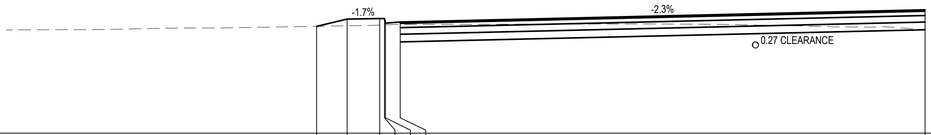


DATUM RL 370.100

DESIGN LEVELS	373.449	373.831	373.848	373.847	373.697	373.735	373.942	373.972	374.071	374.071	374.128	374.128	374.028	373.998	373.996
EXISTING LEVELS	373.447	373.512	373.554	373.561	373.562	373.581	373.636	373.636	373.639	373.641	373.615	373.609	373.598	373.597	373.583
OFFSET	-17.147	-15.486	-14.390	-14.229	-14.197	-13.702	-3.150	-3.140	-2.976	-2.883	-0.458	-0.368	-0.207	-0.197	0.000

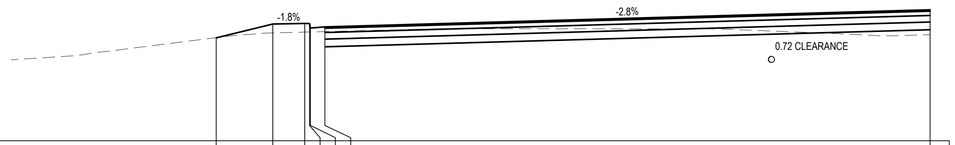
CH 919.778



DATUM RL 370.200

DESIGN LEVELS	373.686	373.923	373.940	373.940	373.790	373.829	374.225
EXISTING LEVELS	372.686	373.703	373.728	373.735	373.736	373.750	373.578
OFFSET	-19.866	-18.872	-17.806	-17.649	-17.618	-17.137	0.000

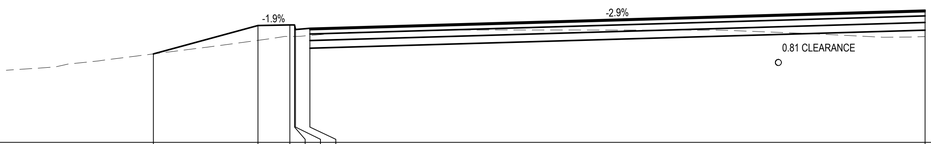
CH 910.000



DATUM RL 370.200

DESIGN LEVELS	373.560	374.009	374.029	374.028	373.878	373.918	374.475
EXISTING LEVELS	373.566	373.721	373.747	373.751	373.752	373.764	373.657
OFFSET	-23.308	-21.460	-20.416	-20.262	-20.232	-19.761	0.000

CH 900.000



DATUM RL 370.200

DESIGN LEVELS	373.088	374.014	374.034	374.034	373.884	373.924	374.513
EXISTING LEVELS	373.088	373.530	373.657	373.656	373.657	373.689	373.655
OFFSET	-25.196	-21.781	-20.740	-20.587	-20.556	-20.086	0.000

CH 898.473

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16562-H-DR-C-2001			P03

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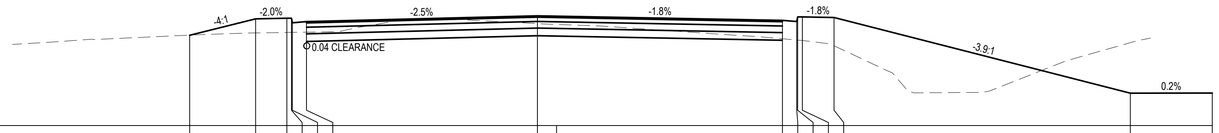
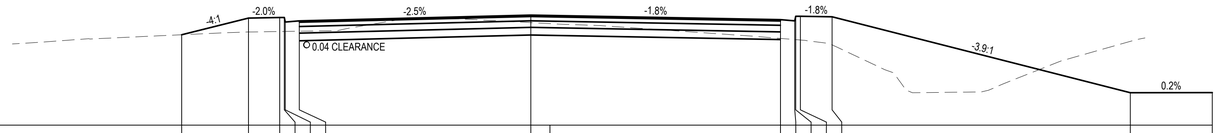


DATUM RL 370.100

DESIGN LEVELS	373.046	373.583	373.603	373.603	373.453	373.493	373.692	373.534	373.495	373.645	373.645	373.627	371.155	371.160
EXISTING LEVELS	373.051	373.123	373.138	373.141	373.141	373.149	373.427	372.932	372.891	372.889	372.875	372.703	372.804	
OFFSET	-11.353	-9.200	-8.180	-8.030	-8.000	-7.540	0.000	8.000	8.467	8.497	8.649	9.685	19.358	22.032

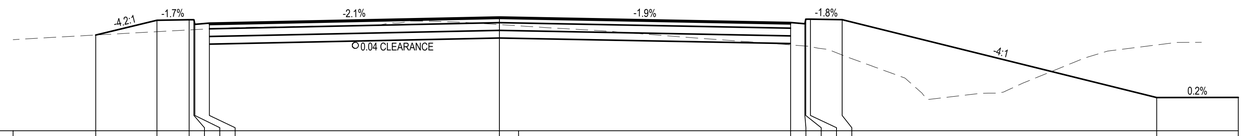
CH 941.076



DATUM RL 370.100

DESIGN LEVELS	373.051	373.595	373.615	373.615	373.465	373.505	373.692	373.544	373.505	373.655	373.655	373.637	371.158	371.163
EXISTING LEVELS	373.050	373.141	373.156	373.159	373.159	373.167	373.447	372.931	372.894	372.891	372.879	372.721	372.836	
OFFSET	-11.399	-9.219	-8.199	-8.049	-8.019	-7.559	0.000	8.150	8.617	8.648	8.800	9.836	19.573	22.247

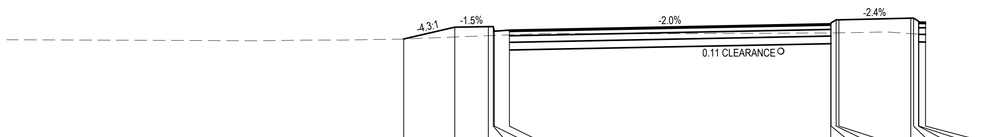
CH 940.000



DATUM RL 370.100

DESIGN LEVELS	373.225	373.707	373.725	373.724	373.613	373.813	373.633	373.594	373.744	373.744	373.726	371.183	371.187
EXISTING LEVELS	373.225	373.335	373.392	373.400	373.401	373.425	373.566	372.903	372.868	372.866	372.843	372.573	372.902	
OFFSET	-13.180	-11.182	-10.129	-9.974	-9.943	-9.468	0.000	9.506	9.973	10.003	10.155	11.190	21.460	24.122

CH 930.000



DATUM RL 370.100

DESIGN LEVELS	373.443	373.828	373.845	373.844	373.694	373.732	373.938	373.968	374.067	374.067	374.122	374.123	374.023	373.993	373.991
EXISTING LEVELS	373.441	373.507	373.550	373.556	373.557	373.577	373.636	373.637	373.640	373.642	373.617	373.611	373.599	373.599	373.584
OFFSET	-17.037	-15.369	-14.274	-14.113	-14.081	-13.586	-3.095	-3.085	-2.920	-2.828	-0.480	-0.390	-0.229	-0.219	0.000

CH 920.000

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ROAD UPGRADE

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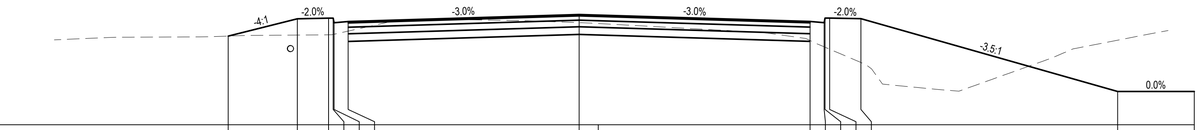
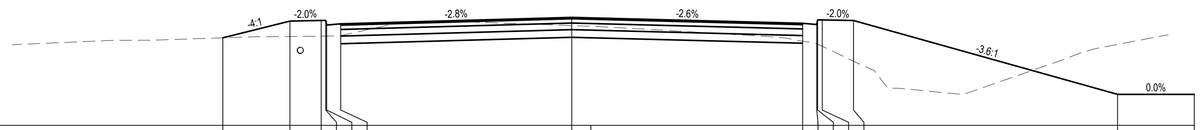


DATUM RL 370.000

DESIGN LEVELS	372.895	373.459	373.480	373.480	373.330	373.370	373.599	373.373	373.333	373.483	373.483	373.463	371.086	371.086
EXISTING LEVELS	372.895	372.927	372.937	372.949	372.956	373.057	373.333	372.749	372.544	372.531	372.467	372.033	372.761	
OFFSET	-11.458	-9.200	-8.180	-8.030	-8.000	-7.540	0.000	7.540	8.000	8.030	8.180	9.200	17.582	20.083

CH 955.262



DATUM RL 370.100

DESIGN LEVELS	372.958	373.505	373.525	373.525	373.375	373.415	373.626	373.433	373.393	373.543	373.543	373.522	371.112	371.112
EXISTING LEVELS	372.958	373.000	373.013	373.016	373.016	373.030	373.358	372.947	372.769	372.755	372.683	372.194	372.743	
OFFSET	-11.390	-9.200	-8.180	-8.030	-8.000	-7.540	0.000	7.540	8.000	8.030	8.180	9.200	17.821	20.324

CH 950.000

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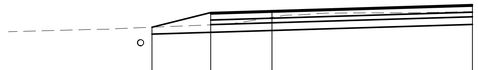


DATUM RL 371.000

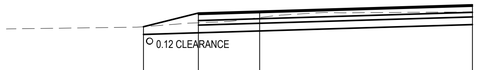
DESIGN LEVELS	372.690	373.169	373.229	373.426
EXISTING LEVELS	372.690	372.768	373.011	373.202
OFFSET	-10.464	-8.547	-5.547	0.000

CH 990.000

DATUM RL 370.800

DESIGN LEVELS	372.414	373.059	373.119	373.276
EXISTING LEVELS	372.414	372.797	373.046	373.157
OFFSET	-9.790	-7.211	-5.211	0.000

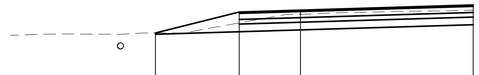
CH 1020.000



DATUM RL 371.100

DESIGN LEVELS	372.751	373.199	373.259	373.458
EXISTING LEVELS	372.751	372.881	373.050	373.236
OFFSET	-10.741	-8.949	-5.949	0.000

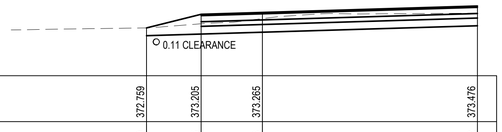
CH 981.550



DATUM RL 370.800

DESIGN LEVELS	372.413	373.096	373.156	373.326
EXISTING LEVELS	372.413	372.741	373.024	373.155
OFFSET	-10.373	-7.639	-5.639	0.000

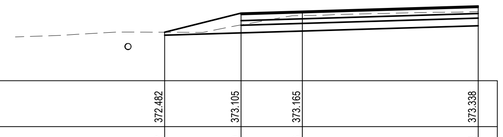
CH 1010.000



DATUM RL 371.200

DESIGN LEVELS	372.759	373.205	373.265	373.476
EXISTING LEVELS	372.759	372.895	373.063	373.242
OFFSET	-10.805	-9.022	-7.022	0.000

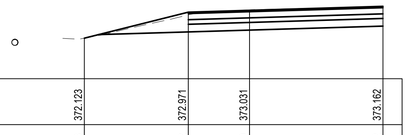
CH 980.000



DATUM RL 370.900

DESIGN LEVELS	372.482	373.105	373.165	373.338
EXISTING LEVELS	372.482	372.720	373.026	373.154
OFFSET	-10.237	-7.743	-5.743	0.000

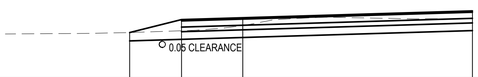
CH 1007.576



DATUM RL 370.800

DESIGN LEVELS	372.123	372.971	373.031	373.162
EXISTING LEVELS	372.123	372.882	373.050	373.162
OFFSET	-9.750	-6.356	-4.356	0.000

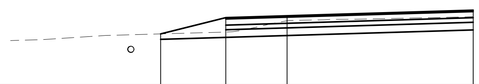
CH 1042.698



DATUM RL 371.300

DESIGN LEVELS	372.817	373.241	373.301	373.526
EXISTING LEVELS	372.817	372.876	373.046	373.277
OFFSET	-11.192	-9.498	-7.498	0.000

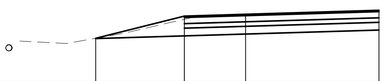
CH 970.000



DATUM RL 370.900

DESIGN LEVELS	372.601	373.133	373.193	373.376
EXISTING LEVELS	372.601	372.662	373.029	373.161
OFFSET	-10.205	-8.077	-6.077	0.000

CH 1000.000



DATUM RL 370.800

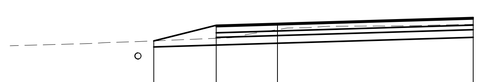
DESIGN LEVELS	372.261	372.985	373.045	373.176
EXISTING LEVELS	372.261	372.879	373.049	373.161
OFFSET	-9.248	-6.354	-4.354	0.000

CH 1040.000

DATUM RL 371.300

DESIGN LEVELS	372.838	373.261	373.321	373.554
EXISTING LEVELS	372.838	372.897	373.031	373.297
OFFSET	-11.454	-9.765	-7.765	0.000

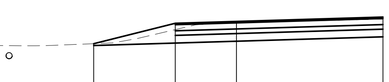
CH 964.396



DATUM RL 371.000

DESIGN LEVELS	372.648	373.157	373.217	373.409
EXISTING LEVELS	372.648	372.733	373.017	373.189
OFFSET	-10.429	-8.390	-6.390	0.000

CH 993.282



DATUM RL 370.800

DESIGN LEVELS	372.357	373.022	373.082	373.226
EXISTING LEVELS	372.357	372.816	373.046	373.159
OFFSET	-9.444	-6.783	-4.783	0.000

CH 1030.000

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TITLE
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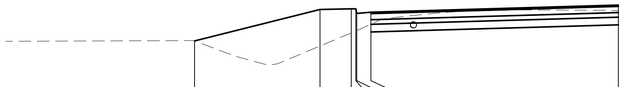
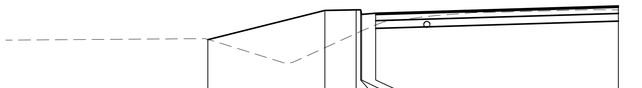


DATUM RL 370.400

DESIGN LEVELS	372.199	373.224	373.245	373.245	373.095	373.134	373.368
EXISTING LEVELS	372.199	372.032	372.458	372.521	372.535	372.745	373.179
OFFSET	-13.837	-9.740	-8.720	-8.570	-8.540	-8.080	0.000

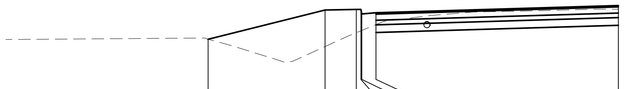
CH 60.000



DATUM RL 370.400

DESIGN LEVELS	372.217	373.171	373.192	373.192	373.042	373.082	373.318
EXISTING LEVELS	372.223	371.954	372.419	372.467	372.501	372.694	373.190
OFFSET	-13.402	-9.582	-8.562	-8.412	-8.382	-7.922	0.000

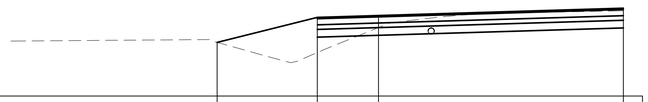
CH 50.000



DATUM RL 370.400

DESIGN LEVELS	372.209	373.164	373.184	373.184	373.034	373.074	373.311
EXISTING LEVELS	372.209	371.972	372.424	372.486	372.498	372.687	373.189
OFFSET	-13.394	-9.574	-8.554	-8.404	-8.374	-7.914	0.000

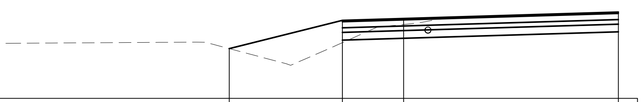
CH 48.516



DATUM RL 370.400

DESIGN LEVELS	372.151	372.968	373.028	373.268
EXISTING LEVELS	372.151	371.820	372.636	373.183
OFFSET	-13.262	-9.993	-7.993	0.000

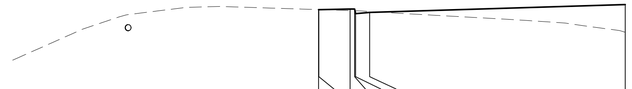
CH 40.000



DATUM RL 370.400

DESIGN LEVELS	372.024	372.948	373.008	373.218
EXISTING LEVELS	372.024	372.219	372.812	373.176
OFFSET	-12.704	-9.010	-7.010	0.000

CH 30.000



DATUM RL 370.700

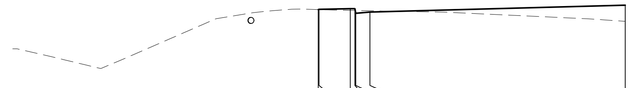
DESIGN LEVELS	373.389	373.388	373.408	373.408	373.258	373.298	373.554
EXISTING LEVELS	373.389	373.389	373.357	373.352	373.351	373.328	372.649
OFFSET	-10.012	-10.004	-8.984	-8.834	-8.804	-8.344	0.000

CH 100.000

DATUM RL 370.400

DESIGN LEVELS	373.386	373.399	373.419	373.419	373.269	373.309	373.542
EXISTING LEVELS	373.386	373.385	373.353	373.348	373.348	373.339	372.879
OFFSET	-10.052	-10.005	-8.985	-8.835	-8.805	-8.345	0.000

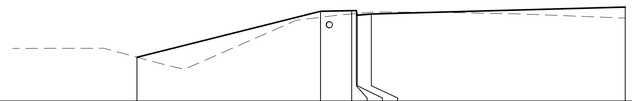
CH 94.803



DATUM RL 370.400

DESIGN LEVELS	373.374	373.382	373.403	373.403	373.253	373.293	373.518
EXISTING LEVELS	373.374	373.373	373.348	373.345	373.344	373.335	372.991
OFFSET	-10.023	-9.996	-8.976	-8.826	-8.796	-8.336	0.000

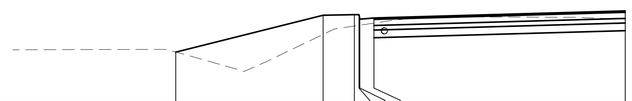
CH 90.000



DATUM RL 370.400

DESIGN LEVELS	371.830	373.330	373.350	373.350	373.200	373.240	373.468
EXISTING LEVELS	371.830	373.133	373.244	373.256	373.258	373.300	373.107
OFFSET	-15.940	-9.949	-8.929	-8.779	-8.749	-8.289	0.000

CH 80.000



DATUM RL 370.400

DESIGN LEVELS	372.072	373.277	373.297	373.297	373.147	373.187	373.418
EXISTING LEVELS	372.075	372.651	372.925	372.948	372.952	373.021	373.147
OFFSET	-14.674	-9.863	-8.843	-8.693	-8.663	-8.203	0.000

CH 70.000

HATCH

PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT
TAMWORTH REGIONAL COUNCIL

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TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

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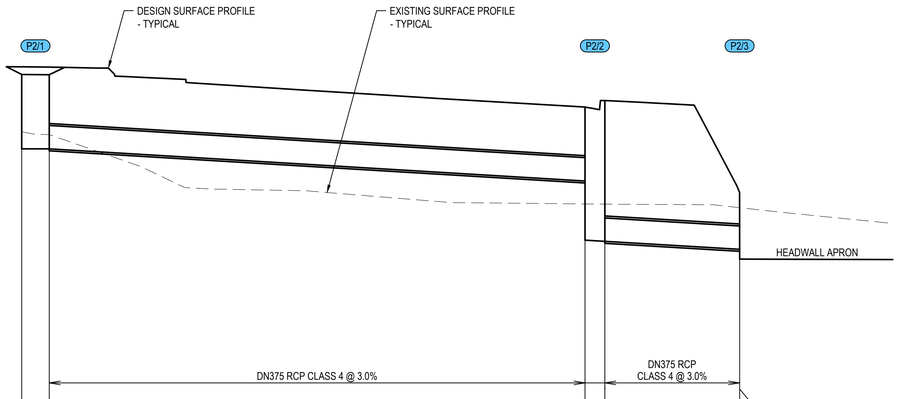

DATUM RL 368.500

PIPE INVERT LEVELS		372.820	372.295	371.310	371.180	
DESIGN SURFACE		374.020	373.502		371.027	
CHAINAGE	0.000	0.900	18.391	19.039	23.439	23.439

DRAINAGE LONGITUDINAL SECTION - LINE 2

HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:50

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DRAINAGE LONGITUDINAL SECTIONS
LINE 2

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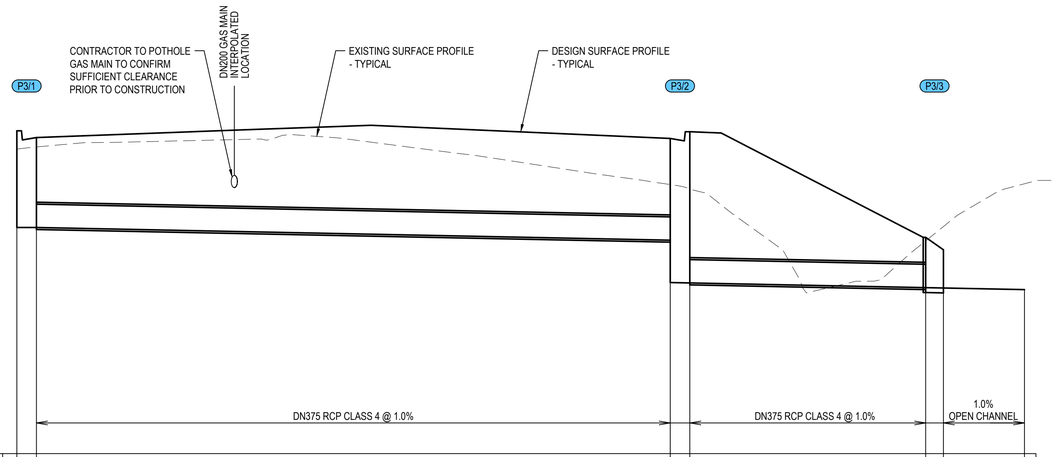
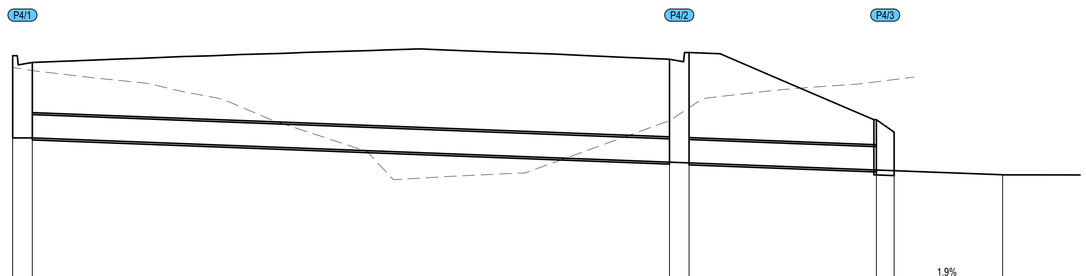


DATUM RL 368.500

PIPE INVERT LEVELS		372.190		371.983	371.286		371.209		
DESIGN SURFACE		373.659		373.644				371.203	371.176
CHAINAGE	0.000	0.640		21.332	21.972		29.671	30.251	32.897

DRAINAGE LONGITUDINAL SECTION - LINE 3

HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:50



DATUM RL 369.000

PIPE INVERT LEVELS		371.995		371.600	371.588		371.471		
DESIGN SURFACE		373.227		373.279				371.460	371.394
CHAINAGE	0.000	0.640		21.444	22.084		28.197	28.777	32.320

DRAINAGE LONGITUDINAL SECTION - LINE 4

HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:50

PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

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DRAINAGE LONGITUDINAL SECTIONS
LINE 3 & LINE 4

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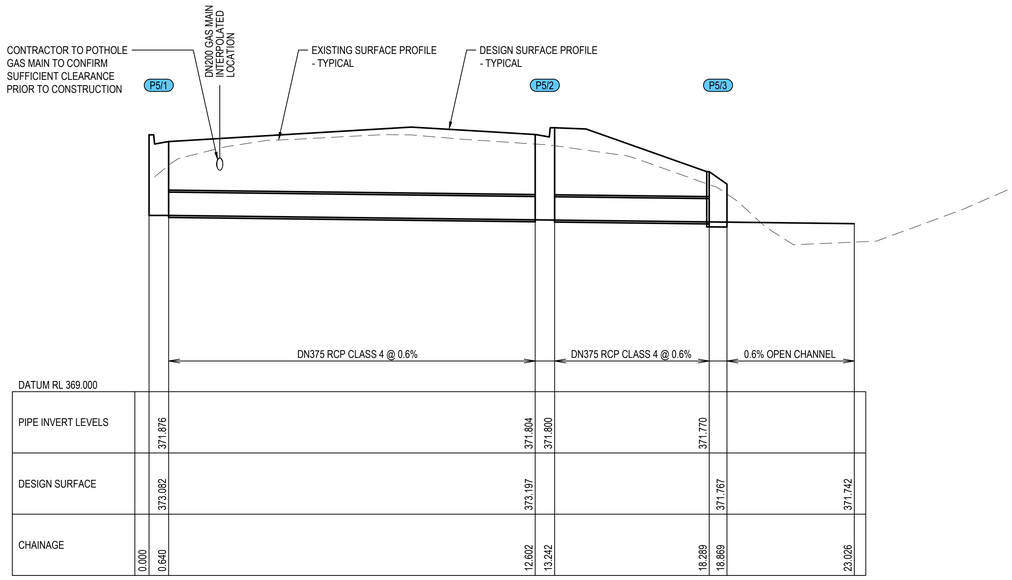
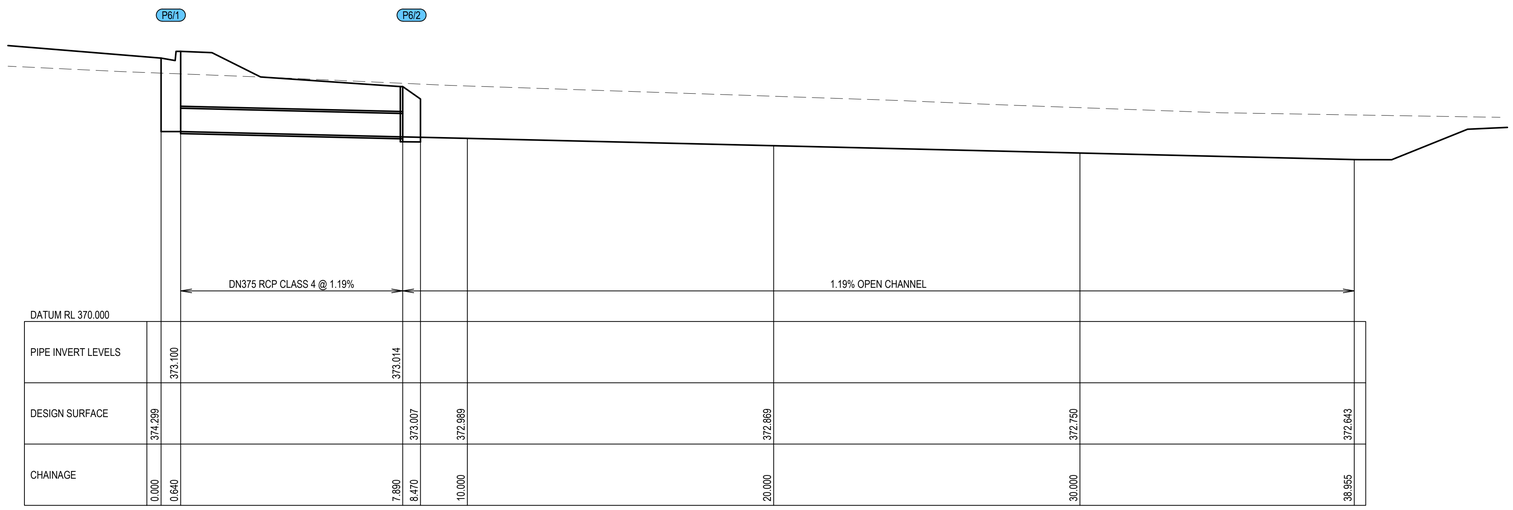


DRAINAGE LONGITUDINAL SECTION - LINE 5

HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:50



DRAINAGE LONGITUDINAL SECTION - LINE 6

HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:50

PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

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DRAINAGE LONGITUDINAL SECTIONS
LINE 5 & LINE 6

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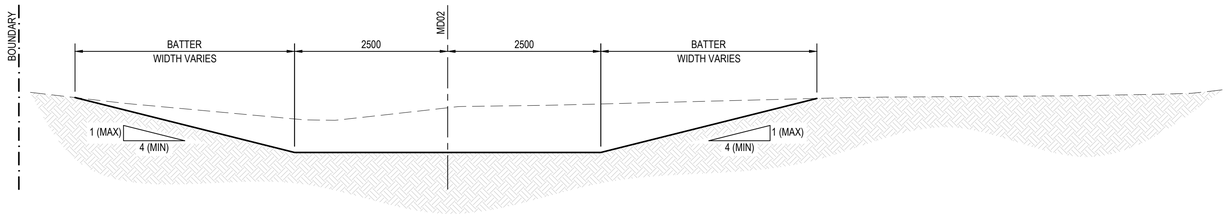

TYPICAL SECTION - MD02 OPEN CHANNEL

SCALE 1:50

PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

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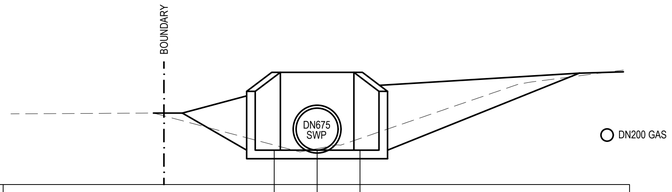
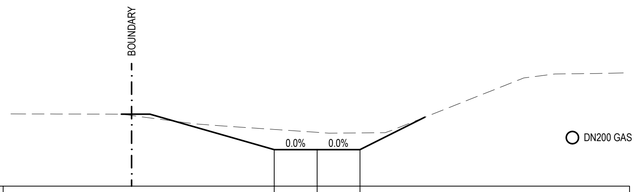


DATUM RL 371.100

DESIGN LEVELS	371.661	371.661	371.661
EXISTING LEVELS	371.744	371.685	371.851
OFFSET	-0.700	0.000	0.700

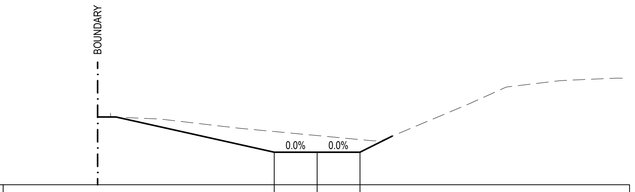
CH 30.000



DATUM RL 371.100

DESIGN LEVELS	371.696	371.696	371.696
EXISTING LEVELS	372.026	371.978	371.969
OFFSET	-0.700	0.000	0.700

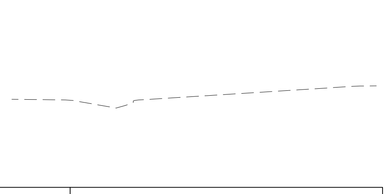
CH 20.000



DATUM RL 371.200

DESIGN LEVELS	371.731	371.731	371.731
EXISTING LEVELS	372.069	372.003	371.937
OFFSET	-0.700	0.000	0.700

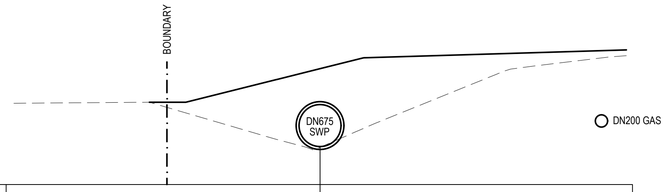
CH 10.000



DATUM RL 371.200

DESIGN LEVELS		371.766
EXISTING LEVELS		372.627
OFFSET		0.000

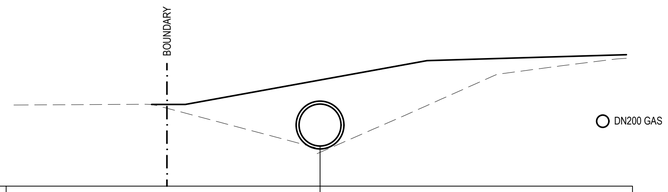
CH 0.000



DATUM RL 370.900

DESIGN LEVELS		371.520
EXISTING LEVELS		371.507
OFFSET		0.000

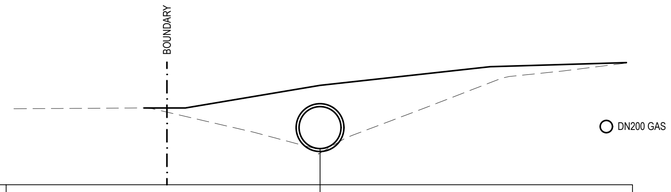
CH 70.000



DATUM RL 370.900

DESIGN LEVELS		371.555
EXISTING LEVELS		371.452
OFFSET		0.000

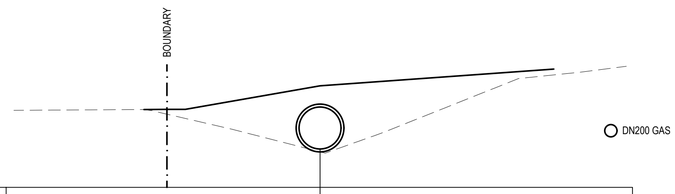
CH 60.000



DATUM RL 371.000

DESIGN LEVELS		371.590
EXISTING LEVELS		371.516
OFFSET		0.000

CH 50.000



DATUM RL 371.000

DESIGN LEVELS		371.626
EXISTING LEVELS		371.580
OFFSET		0.000

CH 40.000

PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

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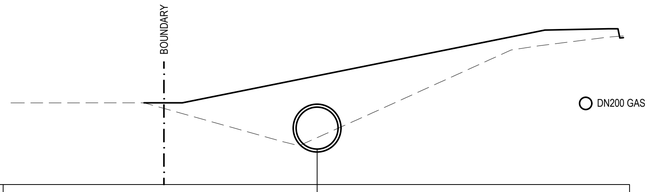
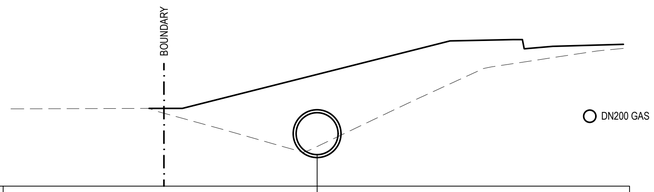


DATUM RL 370.800

DESIGN LEVELS	371.378
EXISTING LEVELS	371.565
OFFSET	0.000

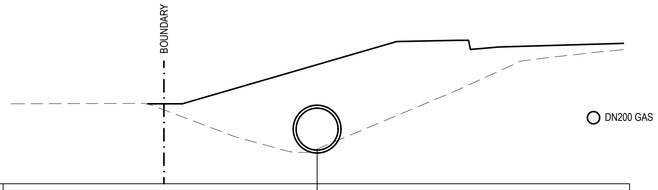
CH 110.000



DATUM RL 370.900

DESIGN LEVELS	371.413
EXISTING LEVELS	371.547
OFFSET	0.000

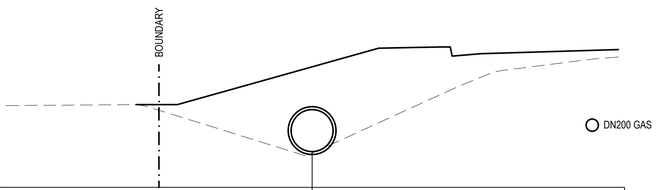
CH 100.000



DATUM RL 370.900

DESIGN LEVELS	371.449
EXISTING LEVELS	371.467
OFFSET	0.000

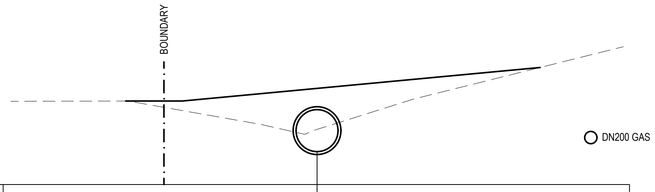
CH 90.000



DATUM RL 370.900

DESIGN LEVELS	371.484
EXISTING LEVELS	371.459
OFFSET	0.000

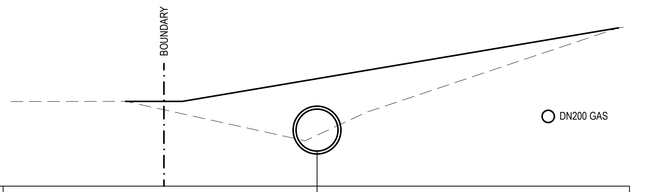
CH 80.000



DATUM RL 370.700

DESIGN LEVELS	371.236
EXISTING LEVELS	371.600
OFFSET	0.000

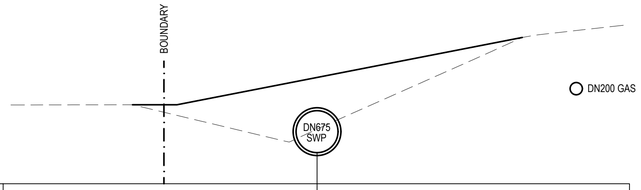
CH 150.000



DATUM RL 370.700

DESIGN LEVELS	371.272
EXISTING LEVELS	371.532
OFFSET	0.000

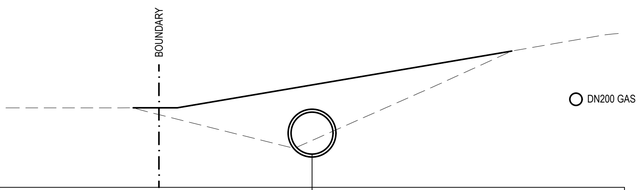
CH 140.000



DATUM RL 370.800

DESIGN LEVELS	371.307
EXISTING LEVELS	371.692
OFFSET	0.000

CH 130.000



DATUM RL 370.800

DESIGN LEVELS	371.343
EXISTING LEVELS	371.566
OFFSET	0.000

CH 120.000

PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT
TAMWORTH REGIONAL COUNCIL

THIS DRAWING CONTAINS COLOURED INFORMATION C M Y

REV	DATE	DESCRIPTION	DRN	APP
P03	24.08.2022	DRAFT ISSUE FOR 100% DETAILED DESIGN	A.V.	T.W.

TITLE
CROSS SECTIONS
MD10
SHEET 2

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DRAFT COPY			A1
DRAWN	DESIGNED	APPROVED	SCALE
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DOCUMENT No.			REVISION
16562-H-DR-C-2401			P03

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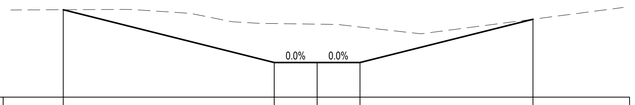
PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT
TAMWORTH REGIONAL COUNCIL

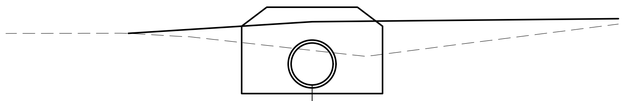
THIS DRAWING CONTAINS COLOURED INFORMATION C M Y



DATUM RL 370.600

DESIGN LEVELS	372.027	371.166	371.166	371.166	371.871	
EXISTING LEVELS	372.027	371.801	371.791	371.745	371.871	
OFFSET	-4.144	-0.700	0.000	0.700	2.823	

CH 170.000



DATUM RL 370.600

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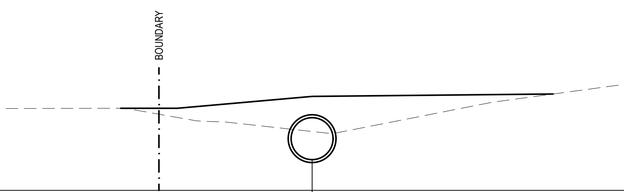
EXISTING LEVELS	371.748
OFFSET	0.000

CH 165.000



DATUM RL 370.700

DESIGN LEVELS	371.201
EXISTING LEVELS	371.661
OFFSET	0.000

CH 160.000

REV	DATE	DESCRIPTION	DRN	APP
P03	24.08.2022	DRAFT ISSUE FOR 100% DETAILED DESIGN	A.V.	T.W.

TITLE
CROSS SECTIONS
MD10
SHEET 3

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DOCUMENT STATUS			SHEET SIZE
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A.VIZL	C.GARNER	T.WALTON	1:50
DOCUMENT No.			REVISION
16562-H-DR-C-2402			P03

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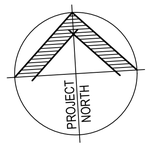
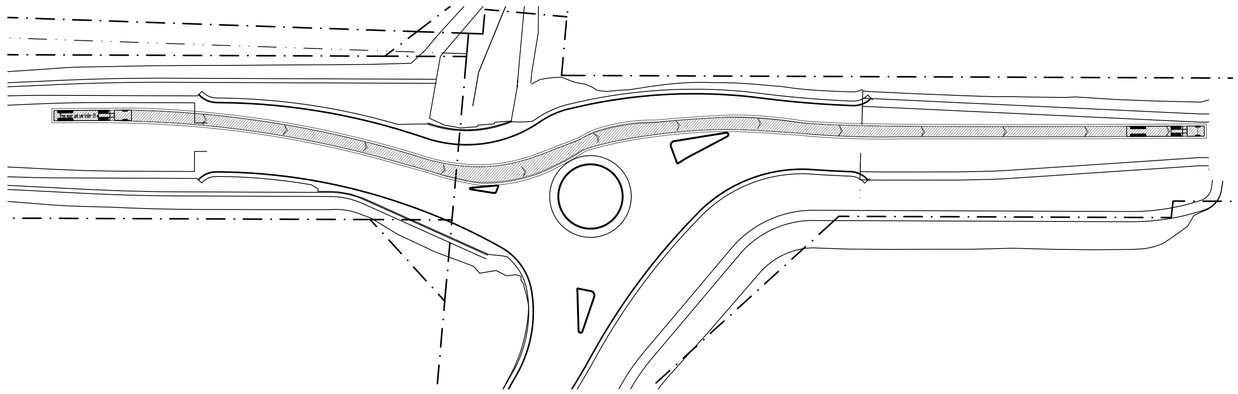
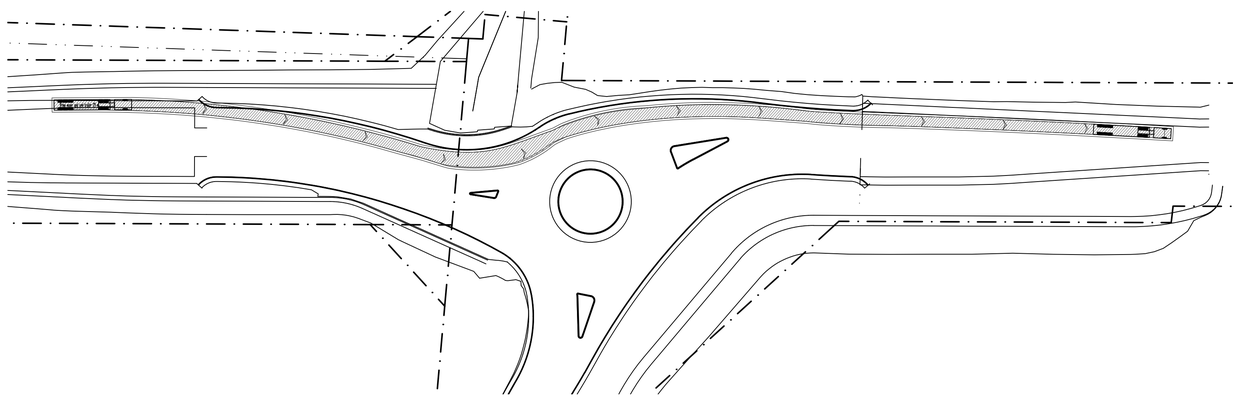




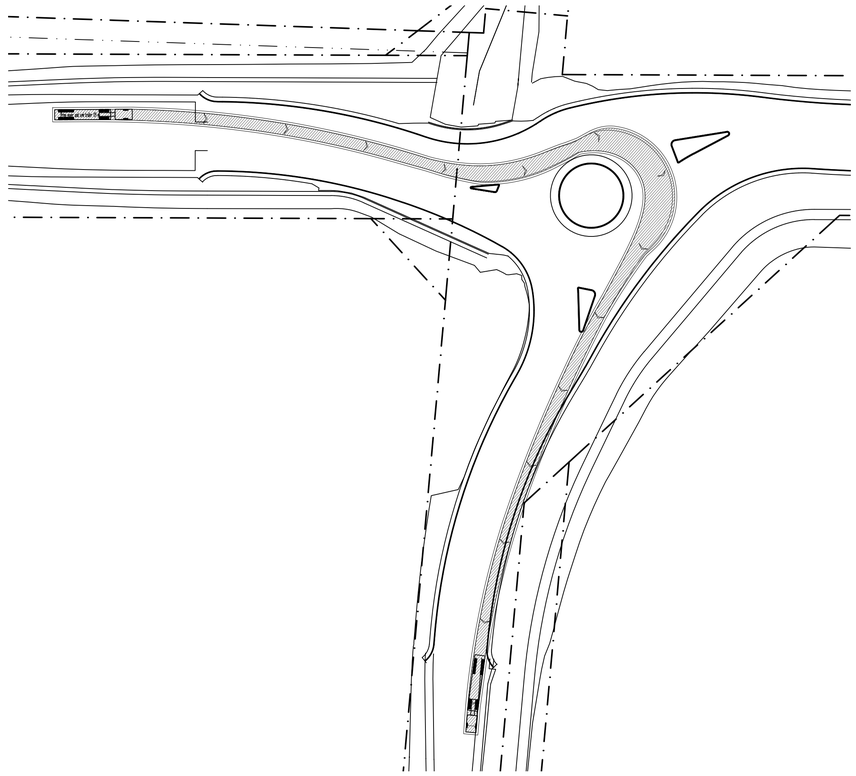
JEWRY STREET EASTBOUND THROUGH TRAFFIC - 19m PRIME MOVER AND SEMI TRAILER

SCALE 1:750



JEWRY STREET EASTBOUND THROUGH TRAFFIC - 19m PRIME MOVER AND SEMI TRAILER

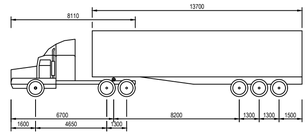
SCALE 1:750



RIGHT TURN ONTO DAMPIER STREET - 19m PRIME MOVER AND SEMI TRAILER

SCALE 1:750

VEHICLE DIAGRAM



19m SEMI TRAILER

OVERALL LENGTH	19.000m
OVERALL WIDTH	2.500m
MAX TRACK WIDTH	2.500m
KERB TO KERB TURNING RADIUS	12.500m

HATCH

PROJECT

TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT

TAMWORTH REGIONAL COUNCIL

THIS DRAWING CONTAINS COLOURED INFORMATION C M Y

REV	DATE	DESCRIPTION	DRN	APP
P03	24.08.2022	DRAFT ISSUE FOR 100% DETAILED DESIGN	A.V.	T.W.

TITLE

VEHICLE TURNING PATH PLAN
SHEET 1

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DOCUMENT STATUS			SHEET SIZE
DRAFT COPY			A1
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A.VIZL	C.GARNER	T.WALTON	1:750
DOCUMENT No.			REVISION
16562-H-DR-C-2500			P03

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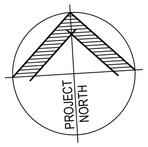
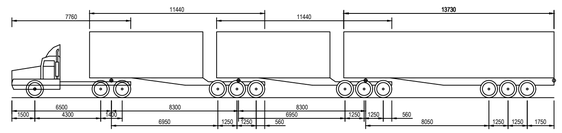


VEHICLE DIAGRAM



35.4m B-TRIPLE

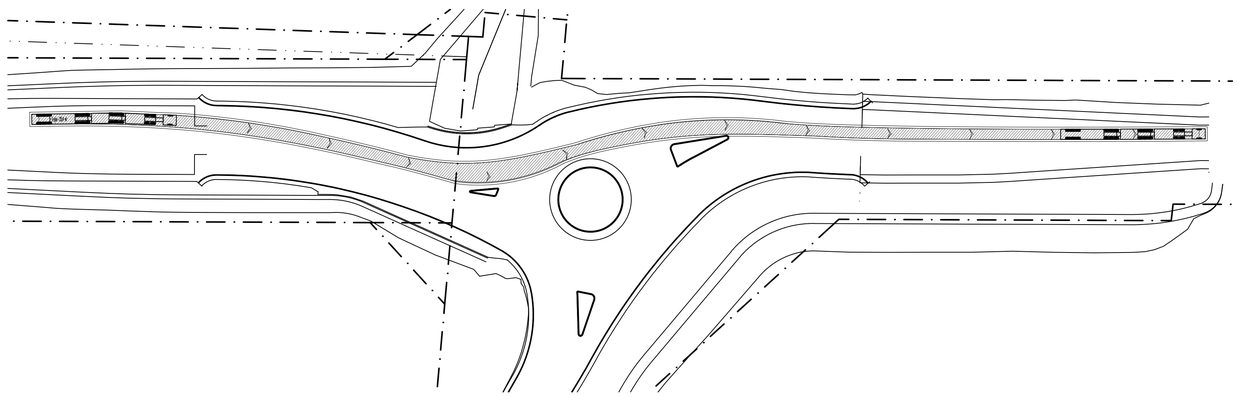
OVERALL LENGTH	35.400m
OVERALL WIDTH	2.500m
MAX TRACK WIDTH	2.500m
KERB TO KERB TURNING RADIUS	15.000m

HATCH

PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

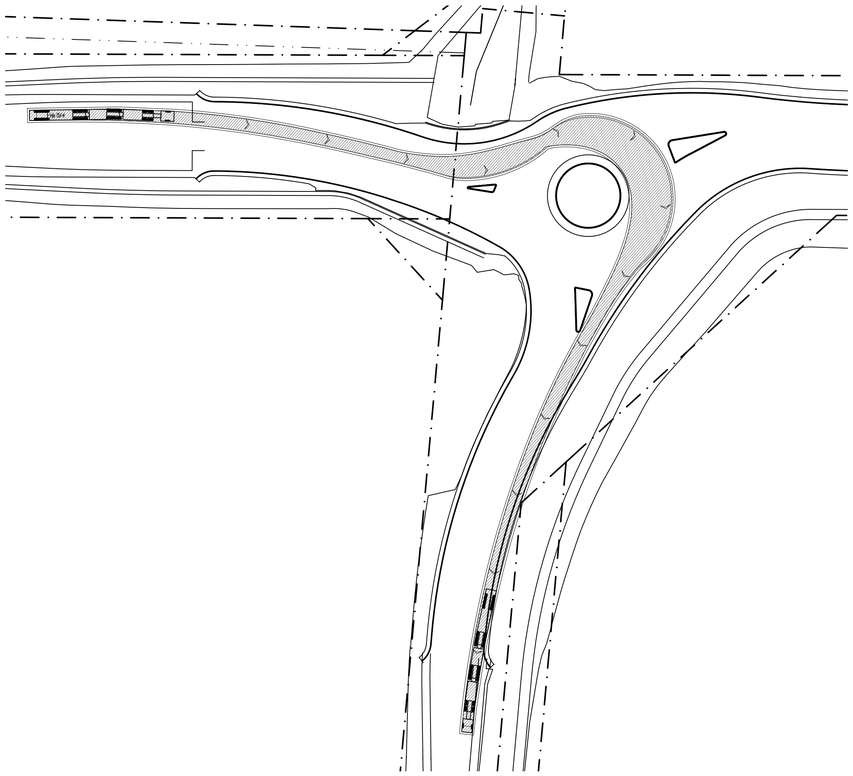
CLIENT
TAMWORTH REGIONAL COUNCIL

THIS DRAWING CONTAINS COLOURED INFORMATION C M Y



JEWRY STREET EASTBOUND THROUGH TRAFFIC - 35.4m B-TRIPLE

SCALE 1:750



RIGHT TURN ONTO DAMPIER STREET - 35.4m B-TRIPLE

SCALE 1:750

REV	DATE	DESCRIPTION	DRN	APP
P03	24.08.2022	DRAFT ISSUE FOR 100% DETAILED DESIGN	A.V.	T.W.

TITLE
VEHICLE TURNING PATH PLAN
SHEET 2

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DOCUMENT STATUS			SHEET SIZE
DRAFT COPY			A1
DRAWN	DESIGNED	APPROVED	SCALE
A.VIZL	C.GARNER	T.WALTON	1:750
DOCUMENT No.			REVISION
16562-H-DR-C-2501			P03

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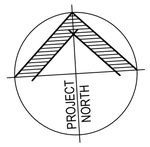
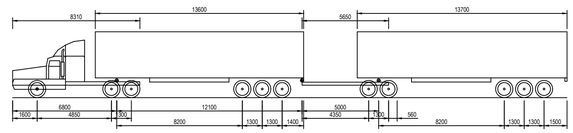


VEHICLE DIAGRAM



36.2m A-DOUBLE

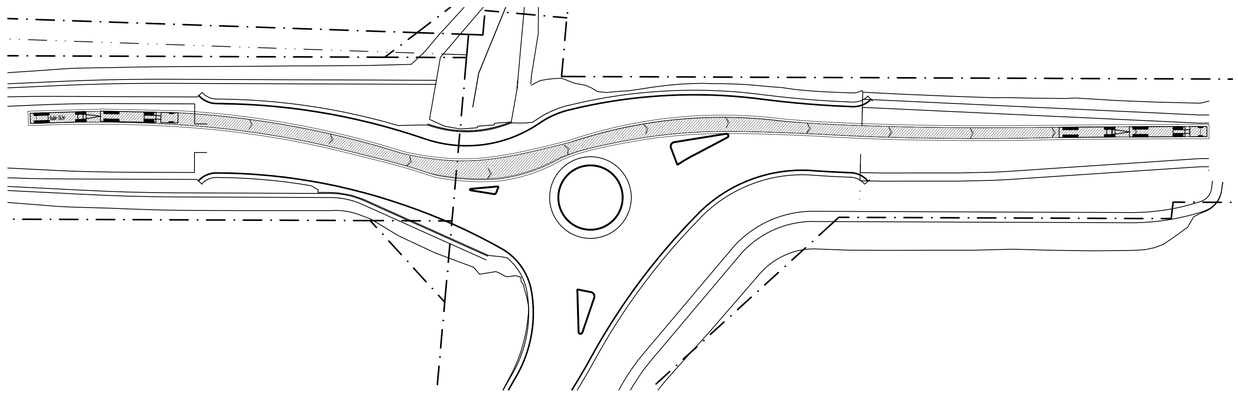
OVERALL LENGTH	36.200m
OVERALL WIDTH	2.500m
MAX TRACK WIDTH	2.500m
KERB TO KERB TURNING RADIUS	15.000m

HATCH

PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

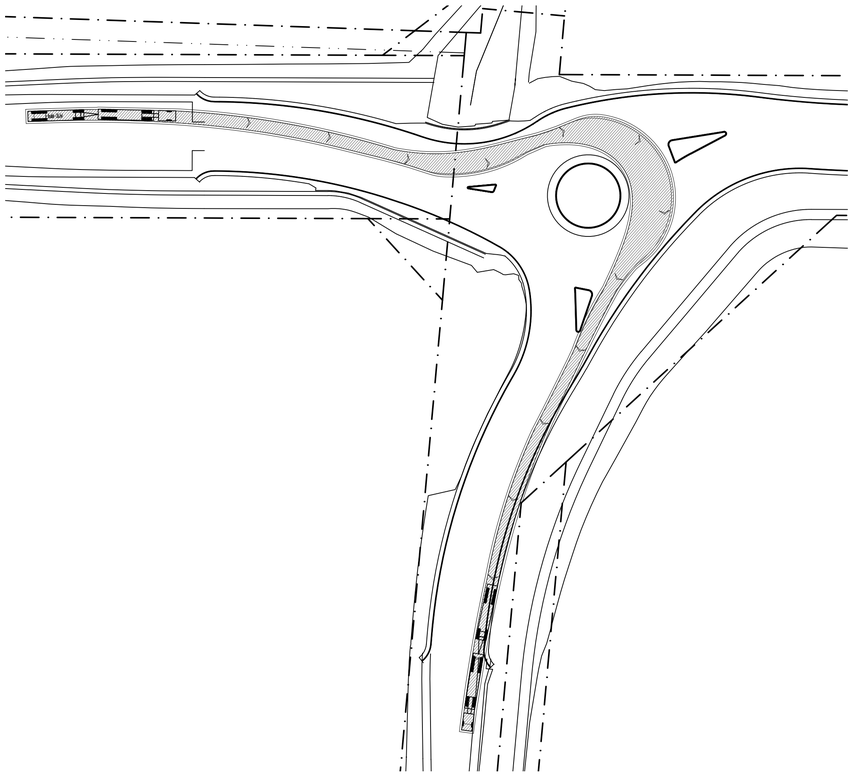
CLIENT
TAMWORTH REGIONAL COUNCIL

THIS DRAWING CONTAINS COLOURED INFORMATION C M Y



JEWRY STREET EASTBOUND THROUGH TRAFFIC - 36.2m A-DOUBLE

SCALE 1:750



RIGHT TURN ONTO DAMPIER STREET - 36.2m A-DOUBLE

SCALE 1:750

REV	DATE	DESCRIPTION	DRN	APP
P03	24.08.2022	DRAFT ISSUE FOR 100% DETAILED DESIGN	A.V.	T.W.

TITLE
VEHICLE TURNING PATH PLAN
SHEET 3

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DOCUMENT STATUS			SHEET SIZE
DRAFT COPY			A1
DRAWN	DESIGNED	APPROVED	SCALE
A.VIZL	C.GARNER	T.WALTON	1:750
DOCUMENT No.			REVISION
16562-H-DR-C-2502			P03

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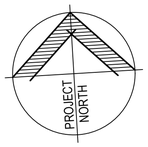
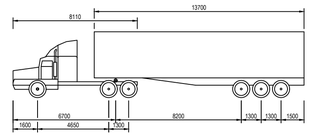


VEHICLE DIAGRAM



19m SEMI TRAILER

OVERALL LENGTH	19.000m
OVERALL WIDTH	2.500m
MAX TRACK WIDTH	2.500m
KERB TO KERB TURNING RADIUS	12.500m

HATCH

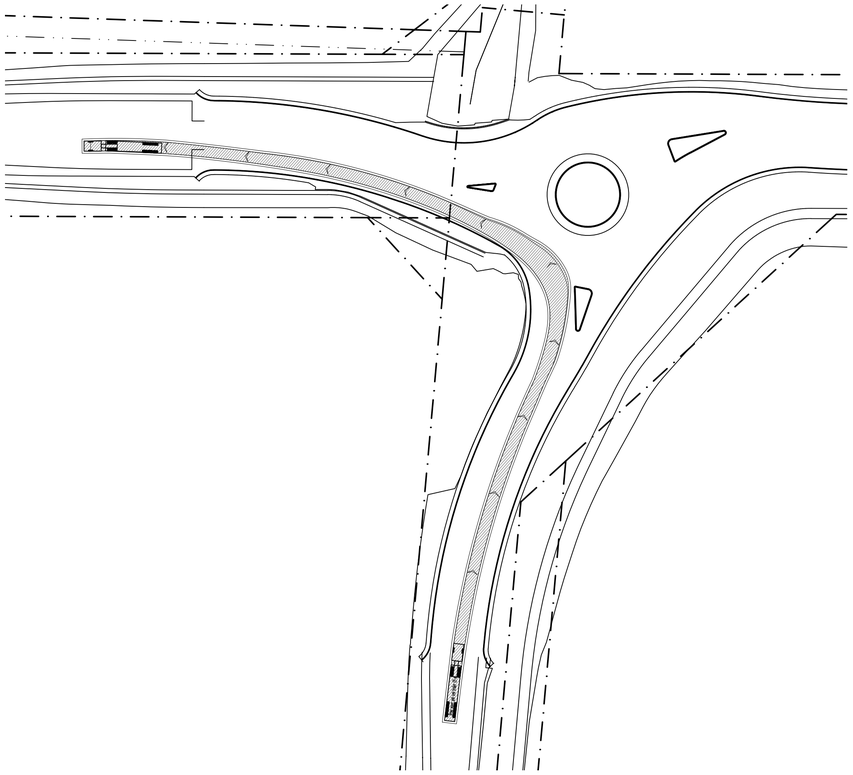
PROJECT

TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT

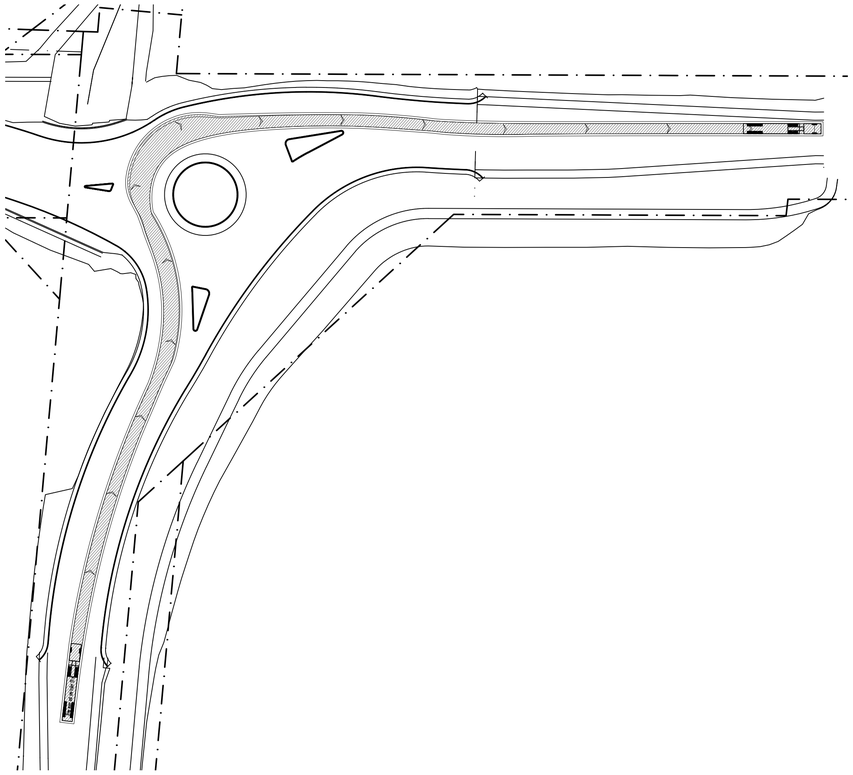
TAMWORTH REGIONAL COUNCIL

THIS DRAWING CONTAINS COLOURED INFORMATION C M Y



LEFT TURN ONTO JEWRY STREET - 19m PRIME MOVER AND SEMI TRAILER

SCALE 1:750



RIGHT TURN ONTO JEWRY STREET - 19m PRIME MOVER AND SEMI TRAILER

SCALE 1:750

REV	DATE	DESCRIPTION	DRN	APP
P03	24.08.2022	DRAFT ISSUE FOR 100% DETAILED DESIGN	A.V.	T.W.

TITLE

VEHICLE TURNING PATH PLAN
SHEET 4

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DOCUMENT STATUS			SHEET SIZE
DRAFT COPY			A1
DRAWN	DESIGNED	APPROVED	SCALE
A.VIZL	C.GARNER	T.WALTON	1:750
DOCUMENT No.			REVISION
16562-H-DR-C-2503			P03

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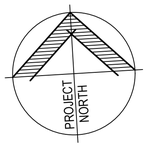
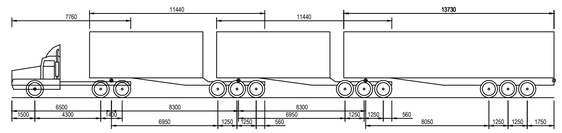


VEHICLE DIAGRAM



35.4m B-TRIPLE

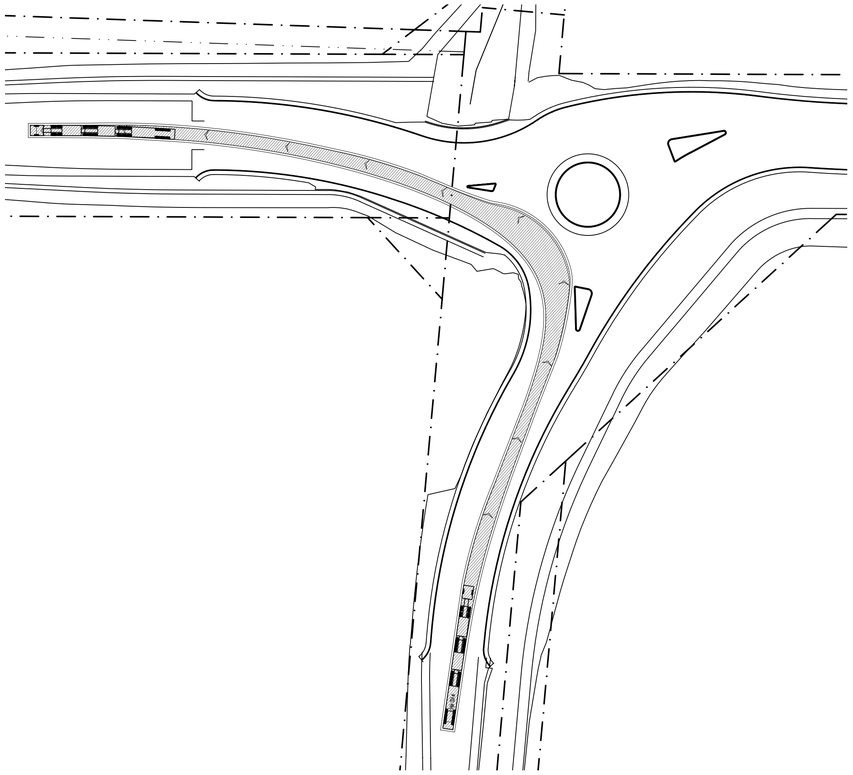
OVERALL LENGTH	35.400m
OVERALL WIDTH	2.500m
MAX TRACK WIDTH	2.500m
KERB TO KERB TURNING RADIUS	15.000m

HATCH

PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

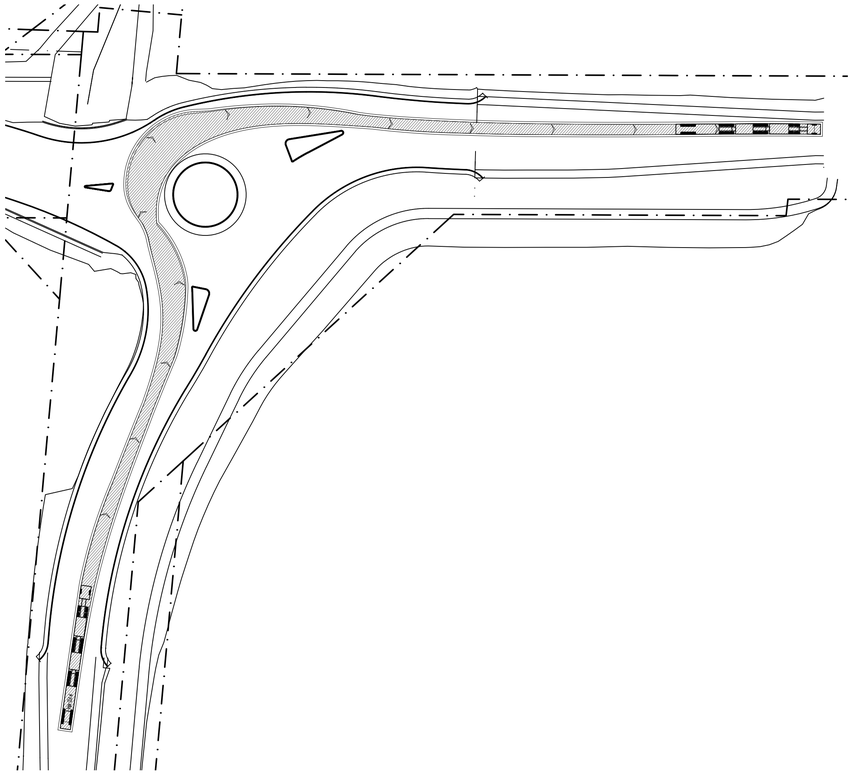
CLIENT
TAMWORTH REGIONAL COUNCIL

THIS DRAWING CONTAINS COLOURED INFORMATION C M Y



LEFT TURN ONTO JEWRY STREET - 35.4m B-TRIPLE

SCALE 1:750



RIGHT TURN ONTO JEWRY STREET - 35.4m B-TRIPLE

SCALE 1:750

REV	DATE	DESCRIPTION	DRN	APP
P03	24.08.2022	DRAFT ISSUE FOR 100% DETAILED DESIGN	A.V.	T.W.

TITLE
VEHICLE TURNING PATH PLAN
SHEET 5

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DOCUMENT STATUS			SHEET SIZE
DRAFT COPY			A1
DRAWN	DESIGNED	APPROVED	SCALE
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DOCUMENT No.			REVISION
16562-H-DR-C-2504			P03

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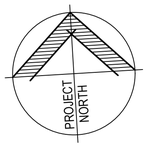
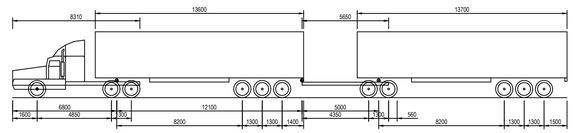


VEHICLE DIAGRAM



36.2m A-DOUBLE

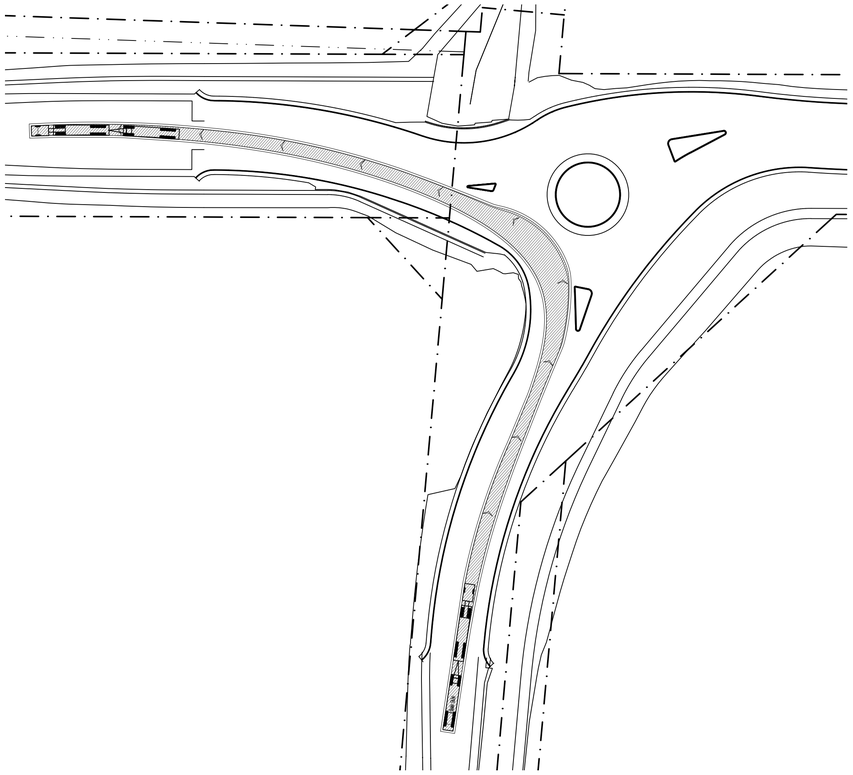
OVERALL LENGTH	36.200m
OVERALL WIDTH	2.500m
MAX TRACK WIDTH	2.500m
KERB TO KERB TURNING RADIUS	15.000m

HATCH

PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

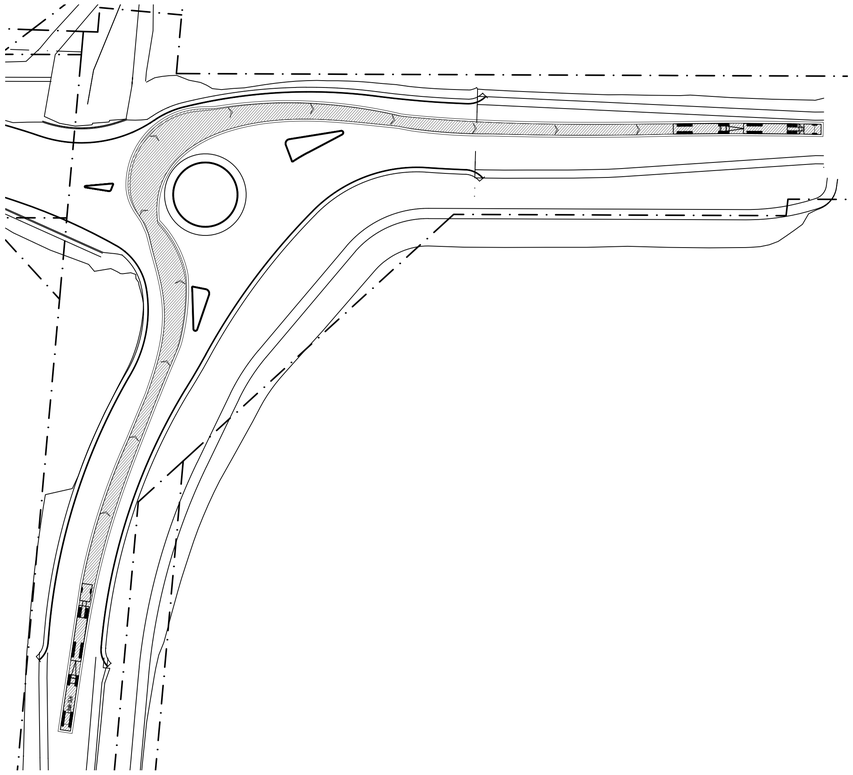
CLIENT
TAMWORTH REGIONAL COUNCIL

THIS DRAWING CONTAINS COLOURED INFORMATION C M Y



LEFT TURN ONTO JEWRY STREET - 36.2m A-DOUBLE

SCALE 1:750



RIGHT TURN ONTO JEWRY STREET - 36.2m A-DOUBLE

SCALE 1:750

REV	DATE	DESCRIPTION	DRN	APP
P03	24.08.2022	DRAFT ISSUE FOR 100% DETAILED DESIGN	A.V.	T.W.

TITLE
VEHICLE TURNING PATH PLAN
SHEET 6

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DOCUMENT STATUS			SHEET SIZE
DRAFT COPY			A1
DRAWN	DESIGNED	APPROVED	SCALE
A.VIZL	C.GARNER	T.WALTON	1:750
DOCUMENT No.			REVISION
16562-H-DR-C-2505			P03

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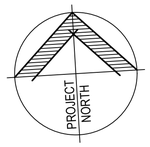
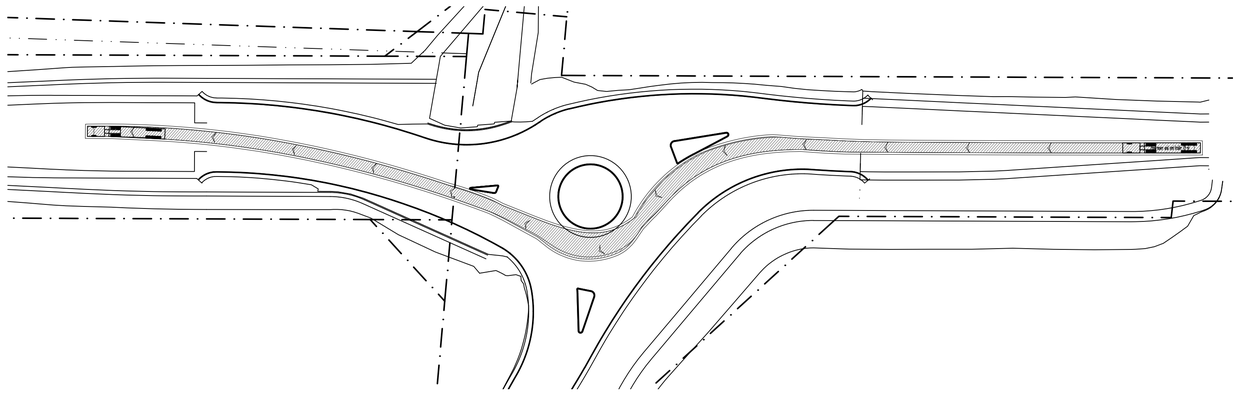
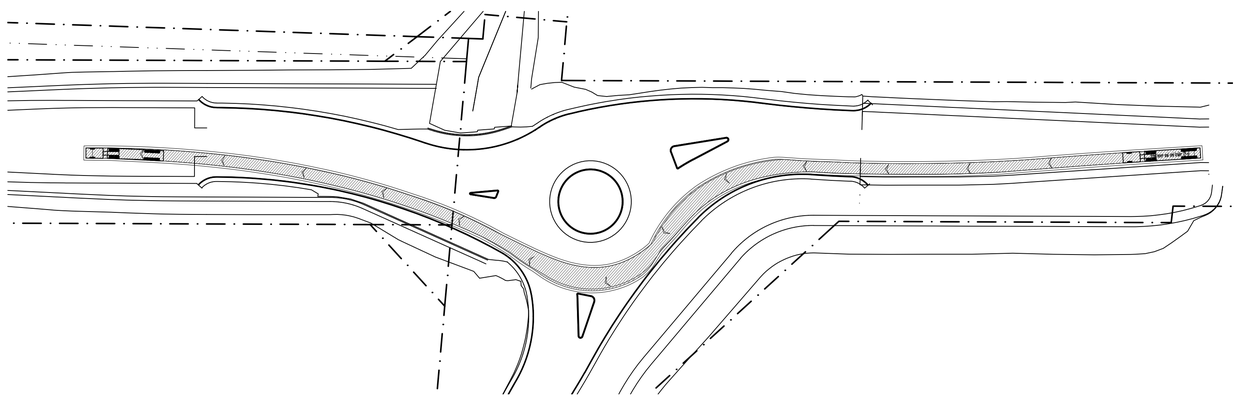




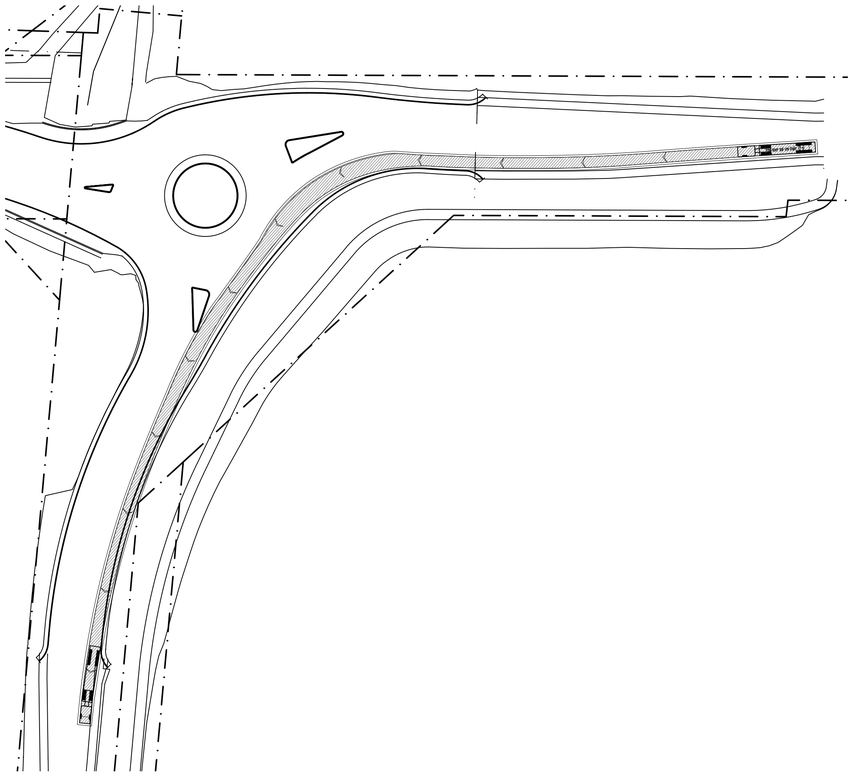
JEWRY STREET WESTBOUND THROUGH TRAFFIC - 19m PRIME MOVER AND SEMI TRAILER

SCALE 1:750



JEWRY STREET WESTBOUND THROUGH TRAFFIC - 19m PRIME MOVER AND SEMI TRAILER

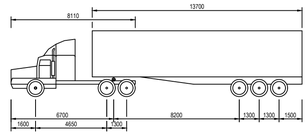
SCALE 1:750



LEFT TURN ONTO DAMPIER STREET - 19m PRIME MOVER AND SEMI TRAILER

SCALE 1:750

VEHICLE DIAGRAM



19m SEMI TRAILER

OVERALL LENGTH	19.000m
OVERALL WIDTH	2.500m
MAX TRACK WIDTH	2.500m
KERB TO KERB TURNING RADIUS	12.500m

HATCH

PROJECT

TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT

TAMWORTH REGIONAL COUNCIL

THIS DRAWING CONTAINS COLOURED INFORMATION C M Y

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TITLE

VEHICLE TURNING PATH PLAN
SHEET 7

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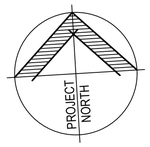
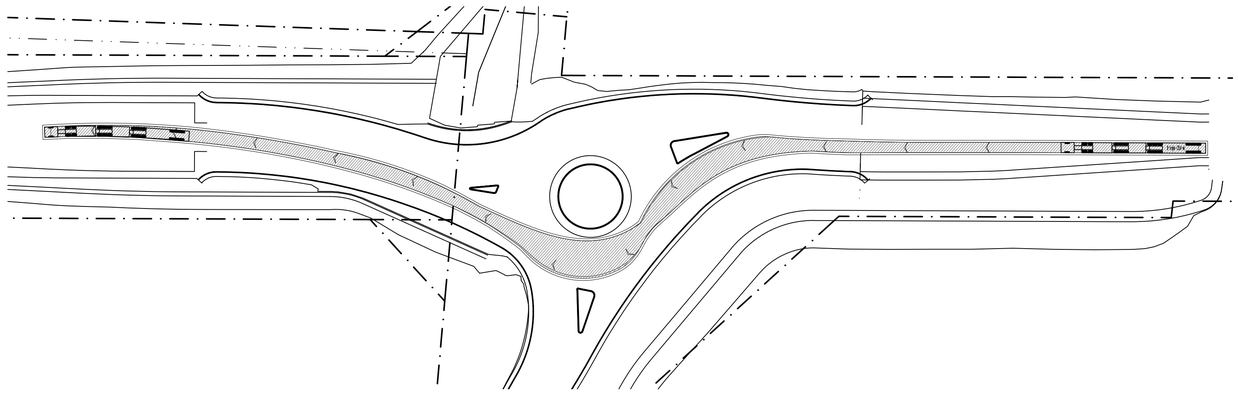
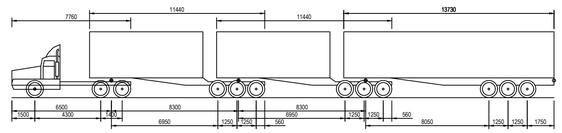




JEWRY STREET WESTBOUND THROUGH TRAFFIC - 35.4m B-TRIPLE

SCALE 1:750

VEHICLE DIAGRAM



35.4m B-TRIPLE

OVERALL LENGTH	35.400m
OVERALL WIDTH	2.500m
MAX TRACK WIDTH	2.500m
KERB TO KERB TURNING RADIUS	15.000m

HATCH

PROJECT

TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

CLIENT

TAMWORTH REGIONAL COUNCIL

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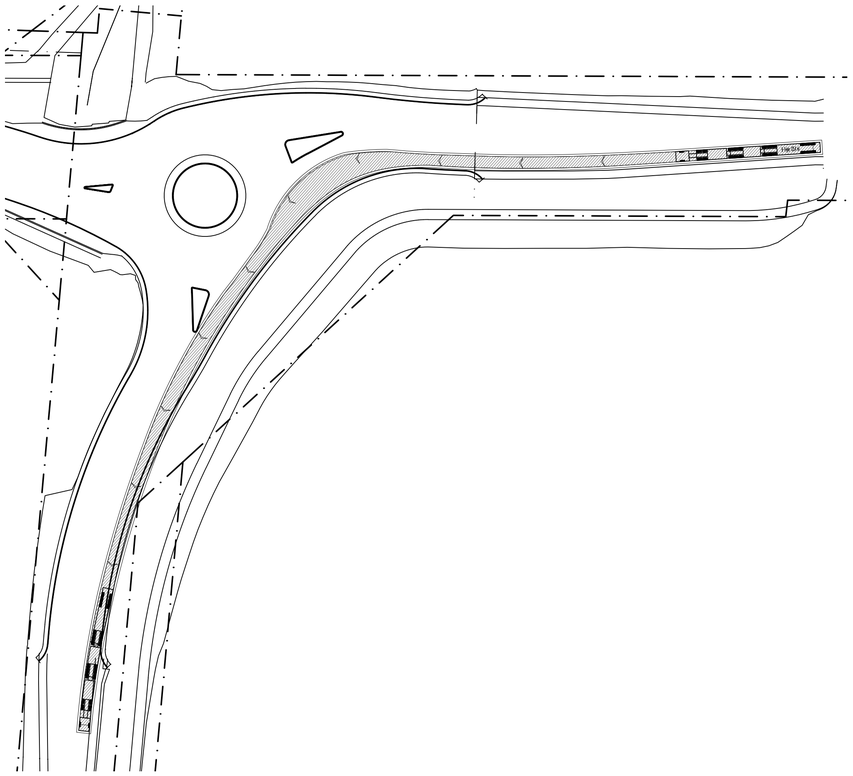
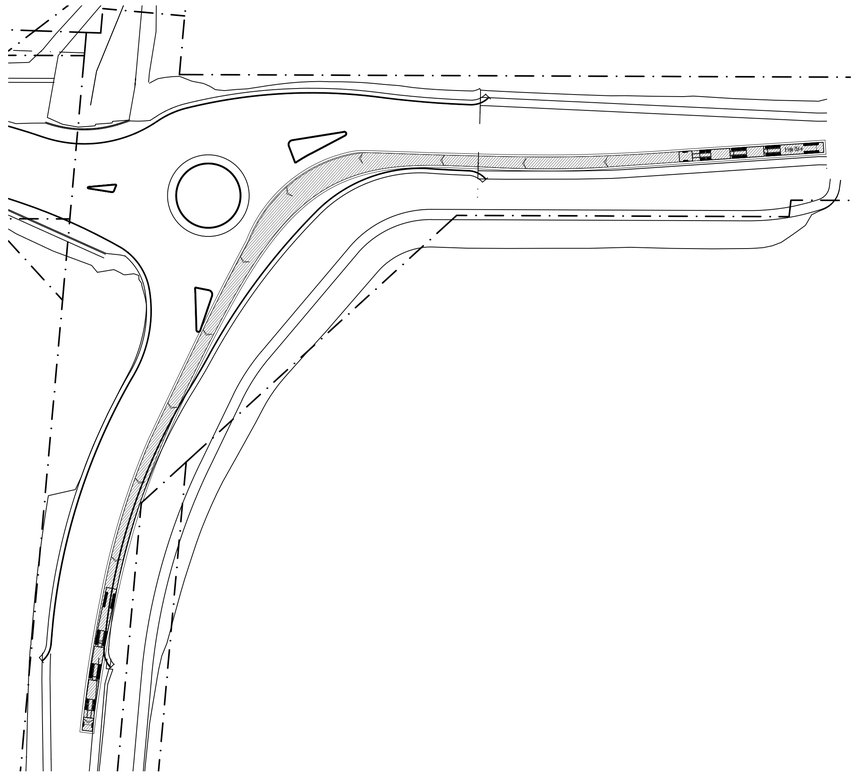


LEFT TURN ONTO DAMPIER STREET - 35.4m B-TRIPLE (5Khr)

SCALE 1:750



LEFT TURN ONTO DAMPIER STREET - 35.4m B-TRIPLE (10Khr)

SCALE 1:750

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VEHICLE TURNING PATH PLAN
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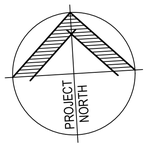
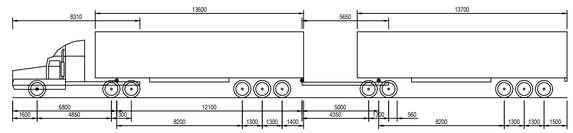


VEHICLE DIAGRAM



36.2m A-DOUBLE

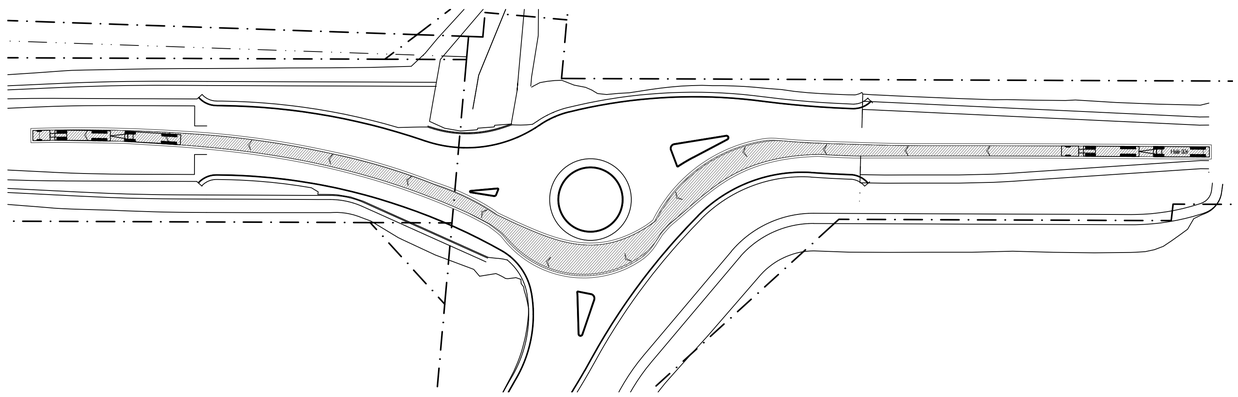
OVERALL LENGTH	36.200m
OVERALL WIDTH	2.500m
MAX TRACK WIDTH	2.500m
KERB TO KERB TURNING RADIUS	15.000m

HATCH

PROJECT
TAMWORTH GLOBAL GATEWAY PARK
JEWRY STREET EXTENSION
ROAD UPGRADE

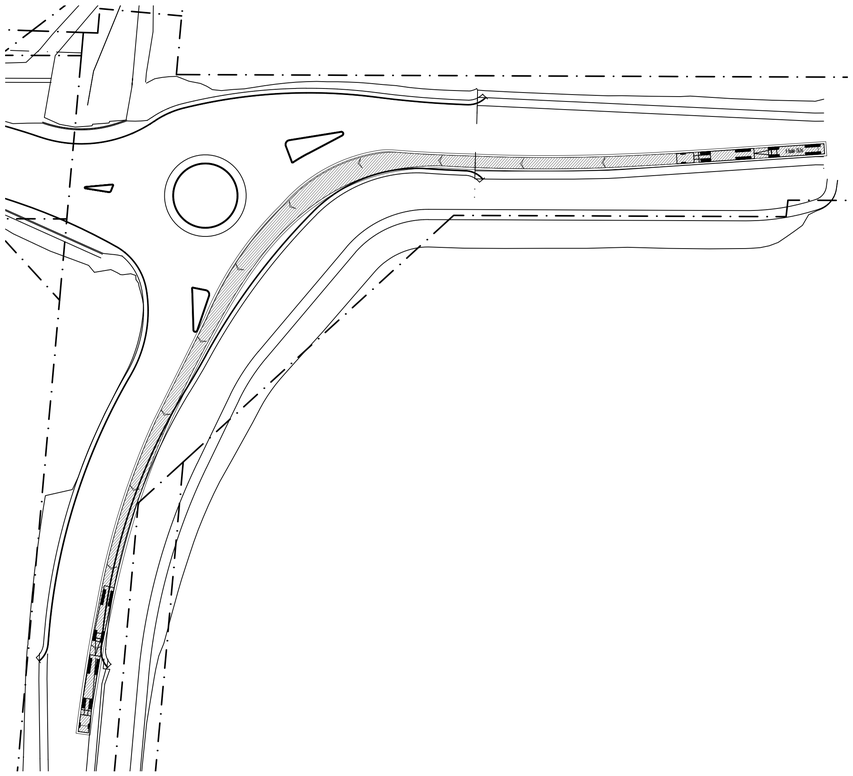
CLIENT
TAMWORTH REGIONAL COUNCIL

THIS DRAWING CONTAINS COLOURED INFORMATION C M Y



JEWRY STREET WESTBOUND THROUGH TRAFFIC - 36.2m A-DOUBLE

SCALE 1:750



LEFT TURN ONTO DAMPIER STREET - 36.2m A-DOUBLE

SCALE 1:750

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DOCUMENT No.			REVISION
16562-H-DR-C-2508			P03

7.3. Appendix C – Statutory Planning and Framework Searches

AHIMS Web Services (AWS)
Search Result

Your Ref/PO Number : Jewry Street Extension

Client Service ID : 713865

Duncan Mcgregor

PO Box 555
Tamworth New South Wales 2340

Attention: Duncan Mcgregor

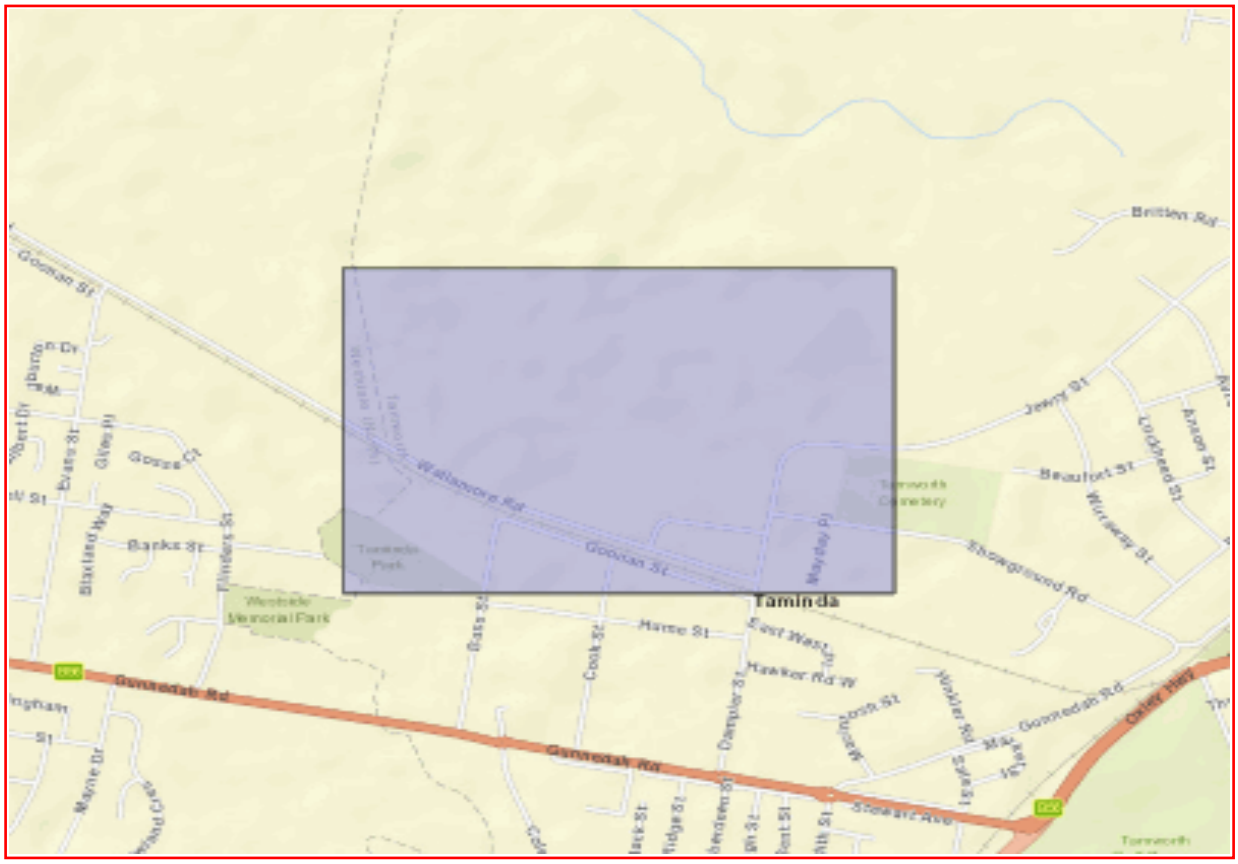
Email: d.mcgregor@tamworth.nsw.gov.au

Date: 01 September 2022

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lat, Long From : -31.0935, 150.8865 - Lat, Long To : -31.0843, 150.902, conducted by Duncan Mcgregor on 01 September 2022.

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 Heritage NSW 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 (https://www.legislation.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Heritage NSW 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 Heritage NSW 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.

Australian Government
Department of Agriculture, Water and the Environment

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. Please see the caveat for interpretation of information provided here.

Report created: 14-Sep-2022

- Summary
- Details
  - Matters of NES
  - Other Matters Protected by the EPBC Act
  - Extra Information
- Caveat
- Acknowledgements

Summary

Matters of National Environment 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:	None
Wetlands of International Importance (Ramsar	3
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	4
Listed Threatened Species:	27
Listed Migratory Species:	10

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

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 Lands:	1
Commonwealth Heritage Places:	None
Listed Marine Species:	16
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

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

State and Territory Reserves:	None
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	5
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands)	[Resource Information]
Ramsar Site Name	Proximity
Banrock station wetland complex	1000 - 1100km upstream from Ramsar site
Riverland	900 - 1000km upstream from Ramsar site
The coorong, and lakes alexandrina and albert wetland	1100 - 1200km upstream from Ramsar site

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.
Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text
Natural grasslands on basalt and fine-textured alluvial plains of northern New South Wales and southern Queensland	Critically Endangered	Community likely to occur within area
New England Peppermint (Eucalyptus nova-anglica) Grassy Woodlands	Critically Endangered	Community may occur within area
Weeping Myall Woodlands	Endangered	Community may occur within area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community may occur within area

Listed Threatened Species	[Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text
BIRD		
Anthochaera phrygia		
Regent Honeyeater [82338]	Critically Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
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 may occur within area
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo [67036]	Vulnerable	Species or species habitat likely to occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat likely to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Polytelis swainsonii Superb Parrot [738]	Vulnerable	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
FISH		
Maccullochella peelii Murray Cod [66633]	Vulnerable	Species or species habitat known to occur within area
FROG		
Litoria booroolongensis Booroolong Frog [1844]	Endangered	Species or species habitat likely to occur within area
MAMMAL		
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Dasyurus maculatus maculatus (SE mainland population)		
Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat likely to occur within area
Nyctophilus corbeni		
Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat likely to 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]	Endangered	Species or species habitat known to occur within area
Pteropus poliocephalus		
Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
PLANT		
Cadellia pentastylis		
Ooline [9828]	Vulnerable	Species or species habitat likely to occur within area
Dichanthium setosum		
bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area
Eucalyptus nicholii		
Narrow-leaved Peppermint, Narrow-leaved Black Peppermint [20992]	Vulnerable	Species or species habitat may occur within area
Euphrasia arguta		
[4325]	Critically Endangered	Species or species habitat likely to occur within area
Lepidium aschersonii		
Spiny Pepper-cress [10976]	Vulnerable	Species or species habitat may occur within area
Lepidium monoplocoides		
Winged Pepper-cress [9190]	Endangered	Species or species habitat may occur within area
Prasophyllum sp. Wybong (C.Phelps ORG 5269)		
a leek-orchid [81964]	Critically Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Thesium australe		
Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat likely to occur within area
Vincetoxicum forsteri listed as Tylophora linearis		
[92384]	Endangered	Species or species habitat may occur within area
REPTILE		
Aprasia parapulchella		
Pink-tailed Worm-lizard, Pink-tailed Legless Lizard [1665]	Vulnerable	Species or species habitat may occur within area
Uvidicolus sphyrurus		
Border Thick-tailed Gecko, Granite Belt Thick-tailed Gecko [84578]	Vulnerable	Species or species habitat likely to occur within area

Listed Migratory Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Hirundapus caudacutus		
White-throated Needletail [682]	Vulnerable	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 likely to occur within area
Rhipidura rufifrons		
Rufous Fantail [592]		Species or species habitat may occur within area
Migratory Wetlands Species		
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Commonwealth Lands [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.

Commonwealth Land Name	State
Communications, Information Technology and the Arts - Australian Postal Corporation	
Commonwealth Land - Australian Postal Commission [12993]	NSW

Listed Marine Species [Resource Information]

Scientific Name	Threatened Category	Presence Text
Bird		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area overfly marine area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat likely to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Neophema chrysostoma Blue-winged Parrot [726]		Species or species habitat may occur within area overfly marine area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat may occur within area overfly marine area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area

Extra Information

EPBC Act Referrals			[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
One Tree Hill Estate - Stage 13	2003/1142	Controlled Action	Post-Approval
Not controlled action			
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed
Residential Development & Assoc Infrastructure 31 & 41 Panorama Road	2005/2115	Not Controlled Action	Completed
Residential Subdivision, Warramunga Avenue	2005/2201	Not Controlled Action	Completed
Not controlled action (particular manner)			
Aerial baiting for wild dog control	2006/2713	Not Controlled Action (Particular Manner)	Post-Approval

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and 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

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

Where little information is available for a 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 detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

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

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

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

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

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

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Please feel free to provide feedback via the Contact Us page.

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Data from the 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 0.1°C; ^^ rounded to 0.01°C. Copyright the State of NSW through the Department of Planning, Industry and Environment. Search criteria : Public Report of all Valid Records of Entities in selected area [North: -31.04 West: 150.84 East: 150.94 South: -31.14] returned a total of 3,744 records of 844 species.
Report generated on 14/09/2022 1:21 PM

Kingdom	Class	Family	Species Code	Scientific Name	Exotic	Common Name	NSW status	Comm. status	Records	Info
Animalia	Amphibia	Myobatrachidae	3134	*Crinia signifera*		Common Eastern Froglet	P		28	
Animalia	Amphibia	Hylidae	3171	*Litoria caerulea*		Green Tree Frog	P		10	
Animalia	Amphibia	Hylidae	3180	*Litoria dentata*		Bleating Tree Frog	P		1	
Animalia	Amphibia	Hylidae	3191	*Litoria latopalmata*		Broad-palmed Frog	P		3	
Animalia	Amphibia	Hylidae	3204	*Litoria peronii*		Peron's Tree Frog	P		21	
Animalia	Amphibia	Hylidae	3210	*Litoria rubella*		Desert Tree Frog	P		4	
Animalia	Amphibia	Limnodynastidae	3058	*Limnodynastes dumerilii*		Eastern Banjo Frog	P		2	
Animalia	Amphibia	Limnodynastidae	3062	*Limnodynastes salmini*		Salmon Striped Frog	P		2	
Animalia	Amphibia	Limnodynastidae	3063	*Limnodynastes tasmaniensis*		Spotted Grass Frog	P		5	
Animalia	Amphibia	Limnodynastidae	3112	*Platyplectrum ornatum*		Ornate Burrowing Frog	P		1	
Animalia	Amphibia	Bufonidae	3269	*Rhinella marina*	*	Cane Toad			1	
Animalia	Reptilia	Chelidae	2017	*Chelodina longicollis*		Eastern Snake-necked Turtle	P		10	
Animalia	Reptilia	Chelidae	2951	*Emydura macquarii macquarii*		Macquarie River Turtle	P		2	
Animalia	Reptilia	Carphodactylidae	2138	*Underwoodisaurus milii*		Thick-tailed Gecko	P		2	
Animalia	Reptilia	Diplodactylidae	2059	*Strophurus intermedius*		Southern Spiny-tailed Gecko	P		1	
Animalia	Reptilia	Diplodactylidae	2078	*Strophurus williamsi*		Eastern Spiny-tailed Gecko	P		1	
Animalia	Reptilia	Gekkonidae	2082	*Gehyra dubia*		Dubious Dtella	P		1	
Animalia	Reptilia	Gekkonidae	2105	*Heteronotia binoei*		Bynoe's Gecko	P		1	
Animalia	Reptilia	Pygopodidae	2165	*Delma tincta*		Excitable Delma	P		1	
Animalia	Reptilia	Pygopodidae	2170	*Lialis burtonis*		Burton's Snake-lizard	P		3	
Animalia	Reptilia	Scincidae	2464	*Acritoscincus platynotus*		Red-throated Skink	P		1	
Animalia	Reptilia	Scincidae	2041	*Anomalopus leuckartii*		Two-clawed Worm-skink	P		1	
Animalia	Reptilia	Scincidae	2318	*Carlia tetradactyla*		Southern Rainbow-skink	P		1	
Animalia	Reptilia	Scincidae	2559	*Concinnia tenuis*		Barred-sided Skink	P		1	
Animalia	Reptilia	Scincidae	2331	*Cryptoblepharus virgatus*		Cream-striped Shinning-skink	P		1	
Animalia	Reptilia	Scincidae	2375	*Ctenotus robustus*		Robust Ctenotus	P		3	
Animalia	Reptilia	Scincidae	2429	*Egernia striolata*		Tree Skink	P		4	
Animalia	Reptilia	Scincidae	2307	*Lygisaurus foliorum*		Tree-base Litter-skink	P		1	
Animalia	Reptilia	Scincidae	2526	*Morethia boulengeri*		South-eastern Morethia Skink	P		3	
Animalia	Reptilia	Scincidae	2580	*Tiliqua scincoides*		Eastern Blue-tongue	P		69	
Animalia	Reptilia	Agamidae	5059	*Diporiphora nobbi*		Nobbi Dragon	P		1	
Animalia	Reptilia	Agamidae	2177	*Pogona barbata*		Bearded Dragon	P		9	
Animalia	Reptilia	Varanidae	2271	*Varanus gouldii*		Gould's Goanna	P		1	
Animalia	Reptilia	Varanidae	2283	*Varanus varius*		Lace Monitor	P		3	
Animalia	Reptilia	Typhlopidae	2603	*Anilios proximus*		Proximus Blind Snake	P		1	
Animalia	Reptilia	Typhlopidae	2606	*Anilios wiedii*		Brown-snouted Blind Snake	P		2	
Animalia	Reptilia	Elapidae	2711	*Brachyurophis australis*		Coral Snake	P		1	
Animalia	Reptilia	Elapidae	2655	*Demansia psammophis*		Yellow-faced Whip Snake	P		2	
Animalia	Reptilia	Elapidae	2669	*Furina diadema*		Red-naped Snake	P		2	
Animalia	Reptilia	Elapidae	2681	*Notechis scutatus*		Tiger Snake	P		2	
Animalia	Reptilia	Elapidae	2692	*Pseudechis guttatus*		Spotted Black Snake	P		1	
Animalia	Reptilia	Elapidae	2693	*Pseudechis porphyriacus*		Red-bellied Black Snake	P		8	
Animalia	Reptilia	Elapidae	2699	*Pseudonaja textilis*		Eastern Brown Snake	P		77	
Animalia	Reptilia	Elapidae	2726	*Suta dwyeri*		Dwyer's Snake	P		1	
Animalia	Reptilia	Elapidae	2734	*Vermicella annulata*		Bandy-bandy	P		2	
Animalia	Aves	Megapodiidae	0008	*Alectura lathami*		Australian Brush-turkey	P		2	
Animalia	Aves	Megapodiidae	0008	*Alectura lathami*		Australian Brush-turkey population in the Nandewar and Brigalow Belt South Bioregions	E2,P		2	
Animalia	Aves	Phasianidae	0009	*Coturnix pectoralis*		Stubble Quail	P		1	
Animalia	Aves	Phasianidae	9046	*Coturnix sp.*		Unidentified Quail	P		3	
Animalia	Aves	Phasianidae	0011	*Synoicus ypsilophora*		Brown Quail	P		2	
Animalia	Aves	Anatidae	0211	*Anas gracilis*		Grey Teal	P		4	
Animalia	Aves	Anatidae	0208	*Anas superciliosa*		Pacific Black Duck	P		10	
Animalia	Aves	Anatidae	0215	*Aythya australis*		Hardhead	P		1	
Animalia	Aves	Anatidae	0202	*Chenonetta jubata*		Australian Wood Duck	P		25	
Animalia	Aves	Anatidae	0205	*Dendrocygna eytoni*		Plumed Whistling-Duck	P		1	

Animalia	Aves	Anatidae	0213	*Malacorhynchus membranaceus*		Pink-eared Duck	P	1	
Animalia	Aves	Podicipedidae	0061	*Tachybaptus novaehollandiae*		Australasian Grebe	P	1	
Animalia	Aves	Columbidae	0957	*Columba livia*	*	Rock Dove		10	
Animalia	Aves	Columbidae	0031	*Geopelia cuneata*		Diamond Dove	P	3	
Animalia	Aves	Columbidae	0032	*Geopelia humeralis*		Bar-shouldered Dove	P	1	
Animalia	Aves	Columbidae	9931	*Geopelia striata*		Peaceful Dove	P	2	
Animalia	Aves	Columbidae	0043	*Ocyphaps lophotes*		Crested Pigeon	P	65	
Animalia	Aves	Columbidae	0989	*Spilopelia chinensis*	*	Spotted Turtle-Dove		20	
Animalia	Aves	Podargidae	0313	*Podargus strigoides*		Tawny Frogmouth	P	45	
Animalia	Aves	Aegothelidae	0317	*Aegotheles cristatus*		Australian Owlet-nightjar	P	3	
Animalia	Aves	Phalacrocoracidae	0100	*Microcarbo melanoleucos*		Little Pied Cormorant	P	1	
Animalia	Aves	Phalacrocoracidae	0096	*Phalacrocorax carbo*		Great Cormorant	P	2	
Animalia	Aves	Phalacrocoracidae	0099	*Phalacrocorax varius*		Pied Cormorant	P	1	
Animalia	Aves	Pelecanidae	0106	*Pelecanus conspicillatus*		Australian Pelican	P	2	
Animalia	Aves	Ardeidae	0189	*Ardea pacifica*		White-necked Heron	P	1	
Animalia	Aves	Ardeidae	0977	*Bubulcus ibis*		Cattle Egret	P	1	
Animalia	Aves	Ardeidae	8712	*Casmerodius modesta*		Eastern Great Egret	P	1	
Animalia	Aves	Ardeidae	0188	*Egretta novaehollandiae*		White-faced Heron	P	2	
Animalia	Aves	Threskiornithidae	0179	*Threskiornis moluccus*		Australian White Ibis	P	2	
Animalia	Aves	Threskiornithidae	0180	*Threskiornis spinicollis*		Straw-necked Ibis	P	6	
Animalia	Aves	Accipitridae	0222	*Accipiter cirrocephalus*		Collared Sparrowhawk	P	2	
Animalia	Aves	Accipitridae	0221	*Accipiter fasciatus*		Brown Goshawk	P	4	
Animalia	Aves	Accipitridae	0224	*Aquila audax*		Wedge-tailed Eagle	P	8	
Animalia	Aves	Accipitridae	0232	*Elanus axillaris*		Black-shouldered Kite	P	2	
Animalia	Aves	Accipitridae	0228	*Haliastur sphenurus*		Whistling Kite	P	4	
Animalia	Aves	Accipitridae	0225	*Hieraaetus morphnoides*		Little Eagle	V,P	2	
Animalia	Aves	Accipitridae	0230	*^^Lophoictinia isura*		Square-tailed Kite	V,P,3	1	
Animalia	Aves	Accipitridae	0229	*Milvus migrans*		Black Kite	P	10	
Animalia	Aves	Falconidae	0239	*Falco berigora*		Brown Falcon	P	1	
Animalia	Aves	Falconidae	0240	*Falco cenchroides cenchroides*		Nankeen Kestrel	P	11	
Animalia	Aves	Falconidae	0235	*Falco longipennis*		Australian Hobby	P	1	
Animalia	Aves	Falconidae	0237	*Falco peregrinus*		Peregrine Falcon	P	1	
Animalia	Aves	Falconidae	9043	*Falco sp.*		Unidentified Falcon	P	1	
Animalia	Aves	Falconidae	0238	*Falco subniger*		Black Falcon	V,P	4	
Animalia	Aves	Rallidae	0059	*Fulica atra*		Eurasian Coot	P	2	
Animalia	Aves	Rallidae	0056	*Gallinula tenebrosa*		Dusky Moorhen	P	1	
Animalia	Aves	Rallidae	0049	*Porzana fluminea*		Australian Spotted Crake	P	1	
Animalia	Aves	Charadriidae	0144	*Elseyornis melanops*		Black-fronted Dotterel	P	2	
Animalia	Aves	Charadriidae	0133	*Vanellus miles*		Masked Lapwing	P	6	
Animalia	Aves	Laridae	0125	*Chroicocephalus novaehollandiae*		Silver Gull	P	1	
Animalia	Aves	Cacatuidae	0269	*Cacatua galerita*		Sulphur-crested Cockatoo	P	20	
Animalia	Aves	Cacatuidae	0271	*Cacatua sanguinea*		Little Corella	P	6	
Animalia	Aves	Cacatuidae	0273	*Eolophus roseicapilla*		Galah	P	116	
Animalia	Aves	Cacatuidae	0274	*Nymphicus hollandicus*		Cockatiel	P	5	
Animalia	Aves	Cacatuidae	0267	*Zanda funereus*		Yellow-tailed Black-Cockatoo	P	1	
Animalia	Aves	Psittacidae	0281	*Alisterus scapularis*		Australian King-Parrot	P	17	
Animalia	Aves	Psittacidae	0258	*Glossopsitta concinna*		Musk Lorikeet	P	7	
Animalia	Aves	Psittacidae	0260	*Glossopsitta pusilla*		Little Lorikeet	V,P	2	
Animalia	Aves	Psittacidae	0310	*Melopsittacus undulatus*		Budgerigar	P	2	
Animalia	Aves	Psittacidae	0302	*^^Neophema pulchella*		Turquoise Parrot	V,P,3	3	
Animalia	Aves	Psittacidae	0282	*Platycercus elegans*		Crimson Rosella	P	5	
Animalia	Aves	Psittacidae	0288	*Platycercus eximius*		Eastern Rosella	P	34	
Animalia	Aves	Psittacidae	T039	*Platycercus sp.*		Unidentified Rosella	P	32	
Animalia	Aves	Psittacidae	0295	*Psephotus haematonotus*		Red-rumped Parrot	P	25	
Animalia	Aves	Psittacidae	0256	*Trichoglossus chlorolepidotus*		Scaly-breasted Lorikeet	P	2	
Animalia	Aves	Psittacidae	9947	*Trichoglossus haematodus*		Rainbow Lorikeet	P	72	
Animalia	Aves	Cuculidae	0342	*Chalcites basalis*		Horsfield's Bronze-Cuckoo	P	1	
Animalia	Aves	Cuculidae	0343	*Chalcites lucidus*		Shining Bronze-Cuckoo	P	1	
Animalia	Aves	Cuculidae	0347	*Eudynamys orientalis*		Eastern Koel	P	3	
Animalia	Aves	Cuculidae	0337	*Heteroscenes pallidus*		Pallid Cuckoo	P	1	
Animalia	Aves	Cuculidae	0348	*Scythrops novaehollandiae*		Channel-billed Cuckoo	P	1	
Animalia	Aves	Strigidae	9922	*Ninox novaeseelandiae*		Southern Boobook	P	10	
Animalia	Aves	Strigidae	0248	*^^Ninox strenua*		Powerful Owl	V,P,3	1	
Animalia	Aves	Tytonidae	9923	*Tyto javanica*		Eastern Barn Owl	P	11	
Animalia	Aves	Alcedinidae	0319	*Ceyx azureus*		Azure Kingfisher	P	2	

Animalia	Aves	Alcedinidae	0322	*Dacelo novaeguineae*		Laughing Kookaburra	P		38	
Animalia	Aves	Alcedinidae	0326	*Todiramphus sanctus*		Sacred Kingfisher	P		6	
Animalia	Aves	Meropidae	0329	*Merops ornatus*		Rainbow Bee-eater	P		1	
Animalia	Aves	Coraciidae	0318	*Eurystomus orientalis*		Dollarbird	P		1	
Animalia	Aves	Climacteridae	8127	*Climacteris picumnus victoriae*		Brown Treecreeper (eastern subspecies)	V,P		1	
Animalia	Aves	Climacteridae	0558	*Cormobates leucophaea*		White-throated Treecreeper	P		1	
Animalia	Aves	Ptilonorhynchidae	0679	*Ptilonorhynchus violaceus*		Satin Bowerbird	P		1	
Animalia	Aves	Maluridae	0529	*Malurus cyaneus*		Superb Fairy-wren	P		5	
Animalia	Aves	Acanthizidae	0476	*Acanthiza apicalis*		Inland Thornbill	P		1	
Animalia	Aves	Acanthizidae	0486	*Acanthiza chrysorrhoa*		Yellow-rumped Thornbill	P		4	
Animalia	Aves	Acanthizidae	0453	*Gerygone olivacea*		White-throated Gerygone	P		2	
Animalia	Aves	Acanthizidae	0465	*Smicrornis brevirostris*		Weebill	P		1	
Animalia	Aves	Pardalotidae	0565	*Pardalotus punctatus*		Spotted Pardalote	P		2	
Animalia	Aves	Pardalotidae	0976	*Pardalotus striatus*		Striated Pardalote	P		5	
Animalia	Aves	Meliphagidae	0640	*Acanthagenys rufogularis*		Spiny-cheeked Honeyeater	P		5	
Animalia	Aves	Meliphagidae	0638	*Anthochaera carunculata*		Red Wattlebird	P		2	
Animalia	Aves	Meliphagidae	0710	*Anthochaera chrysoptera*		Little Wattlebird	P		2	
Animalia	Aves	Meliphagidae	T210	*Anthochaera sp.*		Unidentified Wattlebird	P		6	
Animalia	Aves	Meliphagidae	0597	*Lichmera indistincta*		Brown Honeyeater	P		1	
Animalia	Aves	Meliphagidae	0634	*Manorina melanocephala*		Noisy Miner	P		33	
Animalia	Aves	Meliphagidae	0633	*Manorina melanophrys*		Bell Miner	P		1	
Animalia	Aves	Meliphagidae	0586	*Myzomela sanguinolenta*		Scarlet Honeyeater	P		1	
Animalia	Aves	Meliphagidae	0645	*Philemon corniculatus*		Noisy Friarbird	P		3	
Animalia	Aves	Meliphagidae	0625	*Ptilotula penicillata*		White-plumed Honeyeater	P		4	
Animalia	Aves	Falcunculidae	0416	*Falcunculus frontatus frontatus*		Eastern Shrike-tit	P		1	
Animalia	Aves	Campephagidae	0424	*Coracina novaehollandiae*		Black-faced Cuckoo-shrike	P		9	
Animalia	Aves	Pachycephalidae	0408	*Colluricincla harmonica*		Grey Shrike-thrush	P		2	
Animalia	Aves	Pachycephalidae	0401	*Pachycephala rufiventris*		Rufous Whistler	P		2	
Animalia	Aves	Oriolidae	0671	*Oriolus sagittatus*		Olive-backed Oriole	P		2	
Animalia	Aves	Oriolidae	0432	*Sphecotheres vieilloti*		Australasian Figbird	P		3	
Animalia	Aves	Artamidae	8519	*Artamus cyanopterus cyanopterus*		Dusky Woodswallow	V,P		1	
Animalia	Aves	Artamidae	0700	*Cracticus nigrogularis*		Pied Butcherbird	P		6	
Animalia	Aves	Artamidae	T022	*Cracticus sp.*		Unidentified Butcherbird	P		9	
Animalia	Aves	Artamidae	0702	*Cracticus torquatus*		Grey Butcherbird	P		5	
Animalia	Aves	Artamidae	0705	*Gymnorhina tibicen*		Australian Magpie	P		179	
Animalia	Aves	Artamidae	0694	*Strepera graculina*		Pied Currawong	P		14	
Animalia	Aves	Rhipiduridae	0361	*Rhipidura albiscapa*		Grey Fantail	P		2	
Animalia	Aves	Rhipiduridae	0364	*Rhipidura leucophrys*		Willie Wagtail	P		16	
Animalia	Aves	Corvidae	0930	*Corvus coronoides*		Australian Raven	P		7	
Animalia	Aves	Corvidae	9067	*Corvus sp.*		Unidentified Corvid	P		1	
Animalia	Aves	Monarchidae	0415	*Grallina cyanoleuca*		Magpie-lark	P		66	
Animalia	Aves	Monarchidae	9955	*Myiagra inquieta*		Restless Flycatcher	P		1	
Animalia	Aves	Petroicidae	0392	*Eopsaltria australis*		Eastern Yellow Robin	P		1	
Animalia	Aves	Petroicidae	0377	*Microeca fascinans*		Jacky Winter	P		2	
Animalia	Aves	Alaudidae	0648	*Mirafra javanica*		Horsfield's Bushlark	P		1	
Animalia	Aves	Locustellidae	0508	*Cincloramphus cruralis*		Brown Songlark	P		1	
Animalia	Aves	Locustellidae	0509	*Cincloramphus mathewsi*		Rufous Songlark	P		2	
Animalia	Aves	Locustellidae	0522	*Poodytes gramineus*		Little Grassbird	P		1	
Animalia	Aves	Hirundinidae	0357	*Hirundo neoxena*		Welcome Swallow	P		5	
Animalia	Aves	Hirundinidae	0360	*Petrochelidon ariel*		Fairy Martin	P		6	
Animalia	Aves	Hirundinidae	0359	*Petrochelidon nigricans*		Tree Martin	P		1	
Animalia	Aves	Turdidae	0991	*Turdus merula*	*	Eurasian Blackbird			5	
Animalia	Aves	Sturnidae	0998	*Acridotheres tristis*	*	Common Myna			5	
Animalia	Aves	Sturnidae	0999	*Sturnus vulgaris*	*	Common Starling			10	
Animalia	Aves	Zosteropidae	0574	*Zosterops lateralis*		Silvereye	P		4	
Animalia	Aves	Dicaeidae	0564	*Dicaeum hirundinaceum*		Mistletoebird	P		3	
Animalia	Aves	Estrildidae	0661	*Neochmia modesta*		Plum-headed Finch	P		1	
Animalia	Aves	Estrildidae	0662	*Neochmia temporalis*		Red-browed Finch	P		2	
Animalia	Aves	Estrildidae	0652	*Stagonopleura guttata*		Diamond Firetail	V,P		1	
Animalia	Aves	Estrildidae	0655	*Stizoptera bichenovii*		Double-barred Finch	P		2	
Animalia	Aves	Estrildidae	0653	*Taeniopygia guttata*		Zebra Finch	P		3	
Animalia	Aves	Passeridae	0995	*Passer domesticus*	*	House Sparrow			7	
Animalia	Aves	Motacillidae	0647	*Anthus novaeseelandiae*		Australian Pipit	P		4	
Animalia	Mammalia	Ornithorhynchidae	1001	*Ornithorhynchus anatinus*		Platypus	P		1	
Animalia	Mammalia	Tachyglossidae	1003	*Tachyglossus aculeatus*		Short-beaked Echidna	P		40	
Animalia	Mammalia	Dasyuridae	1008	*Dasyurus maculatus*		Spotted-tailed Quoll	V,P	E	5	
Animalia	Mammalia	Peramelidae	T081	*Isoodon/Perameles sp.*		unidentified Bandicoot	P		1	

Animalia	Mammalia	Phascolarctidae	1162	*Phascolarctos cinereus*		Koala	E1,P	E	11	
Animalia	Mammalia	Vombatidae	1165	*Vombatus ursinus*		Bare-nosed Wombat	P		2	
Animalia	Mammalia	Petauridae	1138	*Petaurus breviceps*		Sugar Glider	P		4	
Animalia	Mammalia	Petauridae	1137	*Petaurus norfolcensis*		Squirrel Glider	V,P		3	
Animalia	Mammalia	Pseudocheiridae	1129	*Pseudocheirus peregrinus*		Common Ringtail Possum	P		6	
Animalia	Mammalia	Phalangeridae	T082	*Trichosurus sp.*		brushtail possum	P		8	
Animalia	Mammalia	Phalangeridae	1113	*Trichosurus vulpecula*		Common Brushtail Possum	P		26	
Animalia	Mammalia	Macropodidae	1265	*Macropus giganteus*		Eastern Grey Kangaroo	P		66	
Animalia	Mammalia	Macropodidae	T085	*Macropus sp.*		kangaroo / wallaby	P		200	
Animalia	Mammalia	Macropodidae	1261	*Notamacropus rufogriseus*		Red-necked Wallaby	P		2	
Animalia	Mammalia	Macropodidae	1266	*Osphranter robustus*		Common Wallaroo	P		20	
Animalia	Mammalia	Macropodidae	1242	*Wallabia bicolor*		Swamp Wallaby	P		8	
Animalia	Mammalia	Pteropodidae	1280	*Pteropus poliocephalus*		Grey-headed Flying-fox	V,P	V	23	
Animalia	Mammalia	Pteropodidae	1281	*Pteropus scapulatus*		Little Red Flying-fox	P		6	
Animalia	Mammalia	Pteropodidae	T087	*Pteropus sp.*		Flying-fox	P		19	
Animalia	Mammalia	Molossidae	1324	*Austronomus australis*		White-striped Freetail-bat	P		2	
Animalia	Mammalia	Molossidae	1329	*Micronomus norfolkensis*		Eastern Coastal Free-tailed Bat	V,P		1	
Animalia	Mammalia	Molossidae	1946	*Ozimops petersi*			P		1	
Animalia	Mammalia	Vespertilionidae	1353	*Chalinolobus dwyeri*		Large-eared Pied Bat	V,P	V	1	
Animalia	Mammalia	Vespertilionidae	1351	*Chalinolobus morio*		Chocolate Wattled Bat	P		1	
Animalia	Mammalia	Vespertilionidae	1334	*Nyctophilus gouldi*		Gould's Long-eared Bat	P		2	
Animalia	Mammalia	Vespertilionidae	T092	*Nyctophilus sp.*		long-eared bat	P		1	
Animalia	Mammalia	Vespertilionidae	1364	*Scotorepens balstoni*		Inland Broad-nosed Bat	P		1	
Animalia	Mammalia	Vespertilionidae	1379	*Vespadelus vulturnus*		Little Forest Bat	P		7	
Animalia	Mammalia	Miniopteridae	3330	*Miniopterus orianae oceanensis*		Large Bent-winged Bat	V,P		1	
Animalia	Mammalia	Muridae	1412	*Mus musculus*	*	House Mouse			9	
Animalia	Mammalia	Muridae	1408	*Rattus rattus*	*	Black Rat			2	
Animalia	Mammalia	Canidae	1905	*Canis familiaris*	*	Dog			1	
Animalia	Mammalia	Canidae	1532	*Vulpes vulpes*	*	Fox			21	
Animalia	Mammalia	Felidae	1536	*Felis catus*	*	Cat			10	
Animalia	Mammalia	Leporidae	1929	*Lepus capensis occidentalis*	*	Brown Hare			3	
Animalia	Mammalia	Leporidae	1510	*Oryctolagus cuniculus*	*	Rabbit			10	
Animalia	Mammalia	Suidae	1514	*Sus scrofa*	*	Pig			1	
Plantae	Flora	Acanthaceae	1003	*Brunoniella australis*		Blue Trumpet			4	
Plantae	Flora	Acanthaceae	9256	*Rostellularia adscendens*		Pink Tongues			3	
Plantae	Flora	Acanthaceae	12393	*Rostellularia adscendens var. adscendens*					4	
Plantae	Flora	Aizoaceae	7476	*Galenia pubescens*	*	Galenia			1	
Plantae	Flora	Alliaceae	10418	*Agapanthus praecox subsp. orientalis*	*				1	
Plantae	Flora	Alliaceae	8963	*Nothoscordum borbonicum*	*	Onion Weed			2	
Plantae	Flora	Amaranthaceae	7191	*Alternanthera pungens*	*	Khaki Weed			7	
Plantae	Flora	Amaranthaceae	9092	*Amaranthus macrocarpus var. macrocarpus*					1	
Plantae	Flora	Amaranthaceae	1060	*Amaranthus powellii*	*	Powell's Amaranth			1	
Plantae	Flora	Amaranthaceae	1061	*Amaranthus quitensis*	*	South American Amaranth			1	
Plantae	Flora	Amaranthaceae	AMAR	*Amaranthus spp.*		Amaranth			1	
Plantae	Flora	Amaranthaceae	1064	*Amaranthus viridis*	*	Green Amaranth			3	
Plantae	Flora	Amaranthaceae	7056	*Gomphrena celosioides*	*	Gomphrena Weed			1	
Plantae	Flora	Amaranthaceae	6575	*Guilleminea densa*	*	Small Matweed			1	
Plantae	Flora	Amaranthaceae	1067	*Nyssanthes diffusa*		Barbwire Weed			1	
Plantae	Flora	Amaranthaceae	8523	*Ptilotus semilanatus*		Lambs tails			1	
Plantae	Flora	Anacardiaceae	1086	*Schinus areira*	*	Pepper Tree			7	
Plantae	Flora	Anthericaceae	12649	*Arthropodium fimbriatum*					4	
Plantae	Flora	Anthericaceae	3517	*Arthropodium milleflorum*		Pale Vanilla-lily			2	
Plantae	Flora	Anthericaceae	3518	*Arthropodium minus*		Small Vanilla Lily			2	
Plantae	Flora	Anthericaceae	ARTR	*Arthropodium spp.*					1	
Plantae	Flora	Apiaceae	1098	*Ammi majus*	*	Bishop's Weed			3	
Plantae	Flora	Apiaceae	6505	*Berula erecta*	*	Water Parsnip			2	
Plantae	Flora	Apiaceae	11195	*Cyclospermum leptophyllum*	*	Slender Celery			10	
Plantae	Flora	Apiaceae	1109	*Daucus glochidiatus*		Native Carrot			6	
Plantae	Flora	Apiaceae	10681	*Eryngium ovinum*		Blue Devil			1	
Plantae	Flora	Apiaceae	1118	*Foeniculum vulgare*	*	Fennel			8	
Plantae	Flora	Apiaceae	1128	*Hydrocotyle laxiflora*		Stinking Pennywort			6	

Plantae	Flora	Apiaceae	1150	*Torilis nodosa*	*	Knotted Hedge-parsley		1
Plantae	Flora	Apocynaceae	1227	*Gomphocarpus fruticosus*	*	Narrow-leaved Cotton Bush		5
Plantae	Flora	Apocynaceae	1239	*Tweedia coerulea*	*			1
Plantae	Flora	Arecaceae	11354	*Phoenix canariensis*	*	Canary Island Date Palm		1
Plantae	Flora	Asparagaceae	15290	*Arthropodium sp. South-east Highlands*				1
Plantae	Flora	Asparagaceae	15289	*Arthropodium sp. Snowy R. catchment*				1
Plantae	Flora	Asphodelaceae	3524	*Asphodelus fistulosus*	*	Onion Weed		2
Plantae	Flora	Asphodelaceae	3531	*Bulbine bulbosa*		Bulbine Lily		2
Plantae	Flora	Aspleniaceae	8033	*Asplenium flabellifolium*		Necklace Fern		1
Plantae	Flora	Asteraceae	1273	*Arctotheca calendula*	*	Capeweed		2
Plantae	Flora	Asteraceae	1283	*Bidens pilosa*	*	Cobbler's Pegs		8
Plantae	Flora	Asteraceae	1284	*Bidens subalternans*	*	Greater Beggar's Ticks		3
Plantae	Flora	Asteraceae	7700	*Brachyscome angustifolia var. heterophylla*				1
Plantae	Flora	Asteraceae	10403	*Brachyscome ciliaris var. subintegrifolia*		Variable Daisy		1
Plantae	Flora	Asteraceae	11056	*Brachyscome dentata*				4
Plantae	Flora	Asteraceae	1330	*Calocephalus citreus*		Lemon Beauty-heads		1
Plantae	Flora	Asteraceae	1336	*Calotis cuneata*		Mountain Burr-Daisy		1
Plantae	Flora	Asteraceae	1337	*Calotis cuneifolia*		Purple Burr-Daisy		1
Plantae	Flora	Asteraceae	1344	*Calotis lappulacea*		Yellow Burr-daisy		10
Plantae	Flora	Asteraceae	1354	*Carduus pycnocephalus*	*	Slender Thistle		1
Plantae	Flora	Asteraceae	CARD	*Carduus spp.*	*			1
Plantae	Flora	Asteraceae	1358	*Carthamus lanatus*	*	Saffron Thistle		13
Plantae	Flora	Asteraceae	1370	*Cassinia quinquefaria*				3
Plantae	Flora	Asteraceae	1378	*Centaurea calcitrapa*	*	Star Thistle		1
Plantae	Flora	Asteraceae	1382	*Centaurea melitensis*	*	Maltese Cockspur		4
Plantae	Flora	Asteraceae	1383	*Centaurea solstitialis*	*	St Barnabys Thistle		23
Plantae	Flora	Asteraceae	1391	*Chondrilla juncea*	*	Skeleton Weed		3
Plantae	Flora	Asteraceae	8559	*Chrysocephalum apiculatum*		Common Everlasting		7
Plantae	Flora	Asteraceae	1397	*Cichorium intybus*	*	Chicory		5
Plantae	Flora	Asteraceae	1400	*Cirsium vulgare*	*	Spear Thistle		13
Plantae	Flora	Asteraceae	1404	*Conyza bonariensis*	*	Flaxleaf Fleabane		13
Plantae	Flora	Asteraceae	CONY	*Conyza spp.*	*			1
Plantae	Flora	Asteraceae	10442	*Conyza sumatrensis*	*	Tall fleabane		10
Plantae	Flora	Asteraceae	1409	*Coreopsis lanceolata*	*	Coreopsis		1
Plantae	Flora	Asteraceae	1426	*Cymbonotus lawsonianus*		Bear's Ear		5
Plantae	Flora	Asteraceae	9904	*Euchiton involucratus*		Star Cudweed		1
Plantae	Flora	Asteraceae	9690	*Euchiton sphaericus*		Star Cudweed		5
Plantae	Flora	Asteraceae	EUCH	*Euchiton spp.*				1
Plantae	Flora	Asteraceae	12748	*Gamochaeta purpurea*	*	Purple Cudweed		1
Plantae	Flora	Asteraceae	13989	*Glossocardia bidens*		Cobbler's Tack		1
Plantae	Flora	Asteraceae	1502	*Helichrysum rutidolepis*		Pale Everlasting		1
Plantae	Flora	Asteraceae	1540	*Hypochaeris glabra*	*	Smooth Catsear		1
Plantae	Flora	Asteraceae	8788	*Hypochaeris radicata*	*	Catsear		7
Plantae	Flora	Asteraceae	1549	*Lactuca saligna*	*	Willow-leaved Lettuce		1
Plantae	Flora	Asteraceae	1550	*Lactuca serriola*	*	Prickly Lettuce		7
Plantae	Flora	Asteraceae	13677	*Lactuca serriola f. integrifolia*	*			1
Plantae	Flora	Asteraceae	LEIO	*Leiocarpa spp.*				1
Plantae	Flora	Asteraceae	12769	*Leiocarpa websteri*				1
Plantae	Flora	Asteraceae	15129	*Leontodon rhagadioloides*	*	Cretan Weed		6
Plantae	Flora	Asteraceae	1574	*Minuria leptophylla*				2
Plantae	Flora	Asteraceae	10480	*Olearia elliptica subsp. elliptica*				1
Plantae	Flora	Asteraceae	8884	*Onopordum acanthium subsp. acanthium*	*	Scotch Thistle		1
Plantae	Flora	Asteraceae	8911	*Pycnosorus globosus*		Drumsticks	P	1
Plantae	Flora	Asteraceae	14032	*Rhaponticum repens*	*	Creeping Knapweed		1
Plantae	Flora	Asteraceae	10166	*Schkuhria pinnata var. abrotanoides*	*	Dwarf Marigold		7
Plantae	Flora	Asteraceae	1650	*Scolymus maculatus*	*	Spotted Thistle		2
Plantae	Flora	Asteraceae	11809	*Senecio bathurstianus*				1
Plantae	Flora	Asteraceae	1666	*Senecio lautus*		Variable Groundsel		1
Plantae	Flora	Asteraceae	6465	*Senecio madagascariensis*	*	Fireweed		1
Plantae	Flora	Asteraceae	14040	*Senecio pinnatifolius var. lanceolatus*				1
Plantae	Flora	Asteraceae	1675	*Senecio quadridentatus*		Cotton Fireweed		3
Plantae	Flora	Asteraceae	SENE	*Senecio spp.*		Groundsel, Fireweed		1
Plantae	Flora	Asteraceae	8789	*Sigesbeckia orientalis subsp. orientalis*		Indian Weed		1
Plantae	Flora	Asteraceae	1684	*Silybum marianum*	*	Variegated Thistle		6
Plantae	Flora	Asteraceae	1689	*Sonchus asper*	*	Prickly Sowthistle		4

Plantae	Flora	Asteraceae	1690	*Sonchus oleraceus*	*	Common Sowthistle	15
Plantae	Flora	Asteraceae	1698	*Taraxacum officinale*	*	Dandelion	10
Plantae	Flora	Asteraceae	TARA	*Taraxacum spp.*		Dandelion	1
Plantae	Flora	Asteraceae	14051	*Tragopogon porrifolius subsp. porrifolius*	*	Salsify	3
Plantae	Flora	Asteraceae	10164	*Verbesina encelioides subsp. encelioides*	*	Crownbeard	1
Plantae	Flora	Asteraceae	1711	*Vittadinia cuneata*			5
Plantae	Flora	Asteraceae	1716	*Vittadinia muelleri*			1
Plantae	Flora	Asteraceae	1717	*Vittadinia pterochaeta*		Rough Fuzzweed	1
Plantae	Flora	Asteraceae	VITT	*Vittadinia spp.*		Fuzzweed	1
Plantae	Flora	Asteraceae	1719	*Vittadinia sulcata*			1
Plantae	Flora	Asteraceae	7130	*Xanthium occidentale*	*	Noogoora Burr	2
Plantae	Flora	Asteraceae	1729	*Xanthium spinosum*	*	Bathurst Burr	7
Plantae	Flora	Bignoniaceae	8688	*Jacaranda mimosifolia*	*	Jacaranda	1
Plantae	Flora	Bignoniaceae	1740	*Pandorea pandorana*		Wonga Wonga Vine	2
Plantae	Flora	Bignoniaceae	10485	*Pandorea pandorana subsp. pandorana*		Wonga Wonga Vine	1
Plantae	Flora	Blechnaceae	14900	*Blechnum neohollandicum*			1
Plantae	Flora	Blechnaceae	10523	*Doodia australis*		Common Rasp Fern	1
Plantae	Flora	Boraginaceae	1744	*Amsinckia lycopsoides*	*		3
Plantae	Flora	Boraginaceae	1751	*Echium plantagineum*	*	Patterson's Curse	10
Plantae	Flora	Boraginaceae	1752	*Echium vulgare*	*	Viper's Bugloss	1
Plantae	Flora	Boraginaceae	1758	*Heliotropium amplexicaule*	*	Blue Heliotrope	1
Plantae	Flora	Brassicaceae	10772	*Brassica napus*	*	Canola	1
Plantae	Flora	Brassicaceae	BRAS	*Brassica spp.*	*	Brassica	1
Plantae	Flora	Brassicaceae	1794	*Capsella bursa-pastoris*	*	Shepherd's Purse	6
Plantae	Flora	Brassicaceae	1814	*Hirschfeldia incana*	*	Buchan Weed	1
Plantae	Flora	Brassicaceae	1815	*Lepidium africanum*	*	Common Peppercress	9
Plantae	Flora	Brassicaceae	1817	*Lepidium bonariense*	*	Argentine Peppercress	3
Plantae	Flora	Brassicaceae	1818	*Lepidium campestre*	*	Field Cress	1
Plantae	Flora	Brassicaceae	6643	*Lepidium pseudohyssopifolium*		Peppercress	4
Plantae	Flora	Brassicaceae	1839	*Raphanus raphanistrum*	*	Wild Radish	2
Plantae	Flora	Brassicaceae	1841	*Rapistrum rugosum*	*	Turnip Weed	13
Plantae	Flora	Brassicaceae	7382	*Rorippa palustris*	*	Yellow Cress	1
Plantae	Flora	Brassicaceae	1853	*Sisymbrium irio*	*	London Rocket	3
Plantae	Flora	Brassicaceae	1854	*Sisymbrium officinale*	*	Hedge Mustard	5
Plantae	Flora	Brassicaceae	1855	*Sisymbrium orientale*	*	Indian Hedge Mustard	5
Plantae	Flora	Cactaceae	1872	*Opuntia aurantiaca*	*	Tiger Pear	7
Plantae	Flora	Cactaceae	1875	*Opuntia stricta*	*	Common Prickly Pear	2
Plantae	Flora	Cactaceae	7659	*Opuntia stricta var. stricta*	*	Common Prickly Pear	1
Plantae	Flora	Campanulaceae	14937	*Lobelia concolor*		Poison Pratia	3
Plantae	Flora	Campanulaceae	14415	*Lobelia purpurascens*		whiteroot	2
Plantae	Flora	Campanulaceae	1929	*Wahlenbergia communis*		Tufted Bluebell	8
Plantae	Flora	Campanulaceae	1934	*Wahlenbergia gracilis*		Sprawling Bluebell	4
Plantae	Flora	Campanulaceae	7314	*Wahlenbergia luteola*		Bluebell	2
Plantae	Flora	Campanulaceae	WAHL	*Wahlenbergia spp.*		Bluebell	3
Plantae	Flora	Campanulaceae	1938	*Wahlenbergia stricta*		Tall Bluebell	1
Plantae	Flora	Capparaceae	6374	*Capparis lasiantha*		Nepine	1
Plantae	Flora	Capparaceae	1945	*Capparis mitchellii*		Native Orange	1
Plantae	Flora	Caryophyllaceae	7154	*Arenaria leptoclados*	*	Lesser Thyme-leaved Sandwort	3
Plantae	Flora	Caryophyllaceae	10550	*Cerastium vulgare*	*	Mouse-ear Chickweed	3
Plantae	Flora	Caryophyllaceae	13845	*Petrorhagia dubia*	*		2
Plantae	Flora	Caryophyllaceae	7584	*Petrorhagia nanteuilii*	*	Proliferous Pink	12
Plantae	Flora	Caryophyllaceae	PETR	*Petrorhagia spp.*	*		1
Plantae	Flora	Caryophyllaceae	9668	*Polycarpaea corymbosa var. minor*			1
Plantae	Flora	Caryophyllaceae	1979	*Polycarpon tetraphyllum*	*	Four-leaved Allseed	1
Plantae	Flora	Caryophyllaceae	1985	*Scleranthus biflorus*		Two-flowered Knawel	1
Plantae	Flora	Caryophyllaceae	2001	*Spergularia rubra*	*	Sandspurry	1

Plantae	Flora	Casuarinaceae	9006	*Casuarina cunninghamiana subsp. cunninghamiana*		River Oak	5
Plantae	Flora	Celastraceae	14672	*Denhamia cunninghamii*			2
Plantae	Flora	Chenopodiaceae	2070	*Atriplex semibaccata*		Creeping Saltbush	2
Plantae	Flora	Chenopodiaceae	2084	*Chenopodium album*	*	Fat Hen	1
Plantae	Flora	Chenopodiaceae	2096	*Chenopodium multifidum*	*	Scented Goosefoot	1
Plantae	Flora	Chenopodiaceae	2111	*Einadia nutans*		Climbing Saltbush	8
Plantae	Flora	Chenopodiaceae	6482	*Einadia nutans subsp. nutans*		Climbing Saltbush	1
Plantae	Flora	Chenopodiaceae	2112	*Einadia polygonoides*		Knotweed Goosefoot	4
Plantae	Flora	Chenopodiaceae	EINA	*Einadia spp.*			1
Plantae	Flora	Chenopodiaceae	2113	*Einadia trigonos*		Fishweed	1
Plantae	Flora	Chenopodiaceae	2138	*Maireana microphylla*		Small-leaf Bluebush	9
Plantae	Flora	Chenopodiaceae	7923	*Salsola kali var. kali*		Buckbush	5
Plantae	Flora	Chenopodiaceae	2185	*Sclerolaena muricata*		Black Rolypoly	3
Plantae	Flora	Chenopodiaceae	2191	*Sclerolaena tetracuspis*		Brigalow Burr	1
Plantae	Flora	Clusiaceae	7240	*Hypericum gramineum*		Small St John's Wort	1
Plantae	Flora	Clusiaceae	2204	*Hypericum perforatum*	*	St. Johns Wort	1
Plantae	Flora	Colchicaceae	3578	*Wurmbea biglandulosa*			1
Plantae	Flora	Commelinaceae	2209	*Commelina cyanea*		Native Wandering Jew	2
Plantae	Flora	Commelinaceae	COMM	*Commelina spp.*			1
Plantae	Flora	Commelinaceae	10508	*Tradescantia fluminensis*	*	Wandering Jew	1
Plantae	Flora	Convolvulaceae	2220	*Convolvulus erubescens*		Pink Bindweed	4
Plantae	Flora	Convolvulaceae	11616	*Convolvulus graminetinus*			1
Plantae	Flora	Convolvulaceae	2222	*Dichondra repens*		Kidney Weed	4
Plantae	Flora	Convolvulaceae	15127	*Dichondra sp. Inglewood*			6
Plantae	Flora	Convolvulaceae	2232	*Polymeria longifolia*			1
Plantae	Flora	Crassulaceae	2237	*Crassula colorata*		Dense Stonecrop	1
Plantae	Flora	Crassulaceae	6840	*Sedum praealtum*	*		1
Plantae	Flora	Cucurbitaceae	11072	*Cucumis myriocarpus subsp. leptodermis*	*	Paddy Melon	2
Plantae	Flora	Cupressaceae	2279	*Callitris endlicheri*		Black Cypress Pine	2
Plantae	Flora	Cupressaceae	6379	*Callitris glaucophylla*		White Cypress Pine	3
Plantae	Flora	Cyperaceae	2307	*Bolboschoenus medianus*			1
Plantae	Flora	Cyperaceae	2327	*Carex inversa*		Knob Sedge	9
Plantae	Flora	Cyperaceae	2364	*Cyperus eragrostis*	*	Umbrella Sedge	1
Plantae	Flora	Cyperaceae	2366	*Cyperus exaltatus*			1
Plantae	Flora	Cyperaceae	2374	*Cyperus gracilis*		Slender Flat-sedge	5
Plantae	Flora	Cyperaceae	8483	*Cyperus polystachyos*			1
Plantae	Flora	Cyperaceae	2393	*Cyperus rotundus*	*	Nutgrass	1
Plantae	Flora	Cyperaceae	7617	*Cyperus vaginatus*		Stiff Flat-sedge	1
Plantae	Flora	Cyperaceae	2421	*Eleocharis plana*		Flat Spike-sedge	1
Plantae	Flora	Cyperaceae	7435	*Fimbristylis dichotoma*		Common Fringe-sedge	1
Plantae	Flora	Cyperaceae	2514	*Scleria mackaviensis*			1
Plantae	Flora	Dilleniaceae	2542	*Hibbertia obtusifolia*		Hoary Guinea Flower	1
Plantae	Flora	Euphorbiaceae	10564	*Adriana tomentosa var. tomentosa*			1
Plantae	Flora	Euphorbiaceae	2694	*Beyeria viscosa*		Sticky Wallaby Bush	1
Plantae	Flora	Euphorbiaceae	2704	*Croton phebalioides*			1
Plantae	Flora	Euphorbiaceae	2710	*Euphorbia dallachyana*			2
Plantae	Flora	Euphorbiaceae	9752	*Euphorbia davidii*	*		1
Plantae	Flora	Euphorbiaceae	7628	*Euphorbia drummondii*		Caustic Weed	3
Plantae	Flora	Euphorbiaceae	14912	*Euphorbia hyssopifolia*	*	Hyssopleaf Sandmat, Hyssop Leaf Sandmat	1
Plantae	Flora	Euphorbiaceae	2721	*Euphorbia peplus*	*	Petty Spurge	1
Plantae	Flora	Euphorbiaceae	6900	*Euphorbia tannensis subsp. eremophila*			2
Plantae	Flora	Fabaceae (Caesalpinioideae)	1900	*Ceratonia siliqua*	*	Carob	1
Plantae	Flora	Fabaceae (Caesalpinioideae)	9221	*Senna aciphylla*		Sprawling Cassia	1
Plantae	Flora	Fabaceae (Caesalpinioideae)	8494	*Senna artemisioides subsp. zygophylla*			1

Plantae	Flora	Fabaceae (Caesalpinioideae)	6644	*Senna barclayana*		Smooth Senna	1
Plantae	Flora	Fabaceae (Caesalpinioideae)	8240	*Senna coronilloides*			1
Plantae	Flora	Fabaceae (Faboideae)	9141	*Crotalaria dissitiflora subsp. dissitiflora*		Grey Rattlepod	1
Plantae	Flora	Fabaceae (Faboideae)	10674	*Cullen tenax*		Emu-foot	1
Plantae	Flora	Fabaceae (Faboideae)	2840	*Desmodium varians*		Slender Tick-trefoil	1
Plantae	Flora	Fabaceae (Faboideae)	2860	*Glycine clandestina*		Twining glycine	4
Plantae	Flora	Fabaceae (Faboideae)	7208	*Glycine microphylla*		Small-leaf Glycine	1
Plantae	Flora	Fabaceae (Faboideae)	2861	*Glycine tabacina*		Variable Glycine	10
Plantae	Flora	Fabaceae (Faboideae)	2873	*Hardenbergia violacea*		False Sarsaparilla	1
Plantae	Flora	Fabaceae (Faboideae)	13010	*Hedysarum coronarium*	*		1
Plantae	Flora	Fabaceae (Faboideae)	2875	*Hovea lanceolata*			1
Plantae	Flora	Fabaceae (Faboideae)	7544	*Indigofera adesmiifolia*		Tick Indigo	2
Plantae	Flora	Fabaceae (Faboideae)	2900	*Lablab purpureus*	*	Indian Bean	1
Plantae	Flora	Fabaceae (Faboideae)	2906	*Lotus australis*		Australian Trefoil	3
Plantae	Flora	Fabaceae (Faboideae)	8928	*Lotus uliginosus*	*	Birds-foot Trefoil	1
Plantae	Flora	Fabaceae (Faboideae)	2911	*Lupinus angustifolius*	*	Narrow-leaved Lupin	1
Plantae	Flora	Fabaceae (Faboideae)	2919	*Medicago lupulina*	*	Black Medic	1
Plantae	Flora	Fabaceae (Faboideae)	2920	*Medicago minima*	*	Woolly Burr Medic	2
Plantae	Flora	Fabaceae (Faboideae)	2921	*Medicago orbicularis*	*	Button Medic	1
Plantae	Flora	Fabaceae (Faboideae)	2922	*Medicago polymorpha*	*	Burr Medic	6
Plantae	Flora	Fabaceae (Faboideae)	2924	*Medicago sativa*	*	Lucerne	5
Plantae	Flora	Fabaceae (Faboideae)	2926	*Medicago truncatula*	*	Barrel Medic	1
Plantae	Flora	Fabaceae (Faboideae)	2928	*Melilotus indicus*	*	Hexham Scent	2
Plantae	Flora	Fabaceae (Faboideae)	15128	*Oxytes brachypoda*		Large Tick-trefoil	7
Plantae	Flora	Fabaceae (Faboideae)	3041	*Swainsona galegifolia*		Smooth Darling Pea	8
Plantae	Flora	Fabaceae (Faboideae)	3055	*Swainsona procumbens*		Broughton Pea	1
Plantae	Flora	Fabaceae (Faboideae)	3059	*Swainsona swainsonioides*		Downy Swainson-pea	1
Plantae	Flora	Fabaceae (Faboideae)	3063	*Templetonia stenophylla*		Leafy Templetonia	1
Plantae	Flora	Fabaceae (Faboideae)	13054	*Tephrosia brachyodon var. brachyodon*			1
Plantae	Flora	Fabaceae (Faboideae)	3072	*Trifolium angustifolium*	*	Narrow-leaved Clover	2
Plantae	Flora	Fabaceae (Faboideae)	3073	*Trifolium arvense*	*	Haresfoot Clover	10
Plantae	Flora	Fabaceae (Faboideae)	3074	*Trifolium campestre*	*	Hop Clover	6
Plantae	Flora	Fabaceae (Faboideae)	3076	*Trifolium dubium*	*	Yellow Suckling Clover	2
Plantae	Flora	Fabaceae (Faboideae)	3077	*Trifolium fragiferum*	*	Strawberry Clover	2
Plantae	Flora	Fabaceae (Faboideae)	3079	*Trifolium glomeratum*	*	Clustered Clover	4
Plantae	Flora	Fabaceae (Faboideae)	3085	*Trifolium repens*	*	White Clover	3
Plantae	Flora	Fabaceae (Faboideae)	3086	*Trifolium resupinatum*	*	Shaftal Clover	1
Plantae	Flora	Fabaceae (Faboideae)	3088	*Trifolium striatum*	*	Knotted Clover	1
Plantae	Flora	Fabaceae (Faboideae)	3091	*Trifolium tomentosum*	*	Woolly Clover	3
Plantae	Flora	Fabaceae (Faboideae)	10756	*Trifolium vesiculosum*	*		2
Plantae	Flora	Fabaceae (Faboideae)	8904	*Vigna lanceolata var. lanceolata*			2
Plantae	Flora	Fabaceae (Mimosoideae)	8269	*Acacia deanei subsp. deanei*		Deane's Wattle	1

Plantae	Flora	Fabaceae (Mimosoideae)	3761	*Acacia decora*		Western Silver Wattle	5
Plantae	Flora	Fabaceae (Mimosoideae)	3772	*Acacia falciformis*		Broad-leaved Hickory	1
Plantae	Flora	Fabaceae (Mimosoideae)	12032	*Acacia homalophylla <--> melvillei*			2
Plantae	Flora	Fabaceae (Mimosoideae)	3792	*Acacia implexa*		Hickory Wattle	1
Plantae	Flora	Fabaceae (Mimosoideae)	3829	*Acacia montana*		Mallee Wattle	4
Plantae	Flora	Fabaceae (Mimosoideae)	3835	*Acacia neriifolia*		Silver Wattle	1
Plantae	Flora	Fabaceae (Mimosoideae)	3845	*Acacia paradoxa*		Kangaroo Thorn	1
Plantae	Flora	Fabaceae (Mimosoideae)	3853	*Acacia podalyriifolia*		Queensland Silver Wattle	1
Plantae	Flora	Fabaceae (Mimosoideae)	3872	*Acacia salicina*		Cooba	3
Plantae	Flora	Fabaceae (Mimosoideae)	3873	*Acacia saligna*	*	Golden Wreath Wattle	1
Plantae	Flora	Fabaceae (Mimosoideae)	ACAC	*Acacia spp.*		Wattle	1
Plantae	Flora	Fabaceae (Mimosoideae)	10823	*Neptunia gracilis f. gracilis*		Sensitive Plant	1
Plantae	Flora	Fabaceae (Mimosoideae)	12157	*Vachellia farnesiana*	*	Mimosa Bush	2
Plantae	Flora	Fumariaceae	3124	*Fumaria bastardii*	*	Bastards Fumitory	2
Plantae	Flora	Fumariaceae	7396	*Fumaria capreolata subsp. capreolata*	*	Climbing Fumitory	5
Plantae	Flora	Gentianaceae	3131	*Centaurium erythraea*	*	Common Centaury	1
Plantae	Flora	Gentianaceae	CENA	*Centaurium spp.*	*		1
Plantae	Flora	Gentianaceae	3133	*Centaurium tenuiflorum*	*	Branched Centaury, Slender centaury	2
Plantae	Flora	Gentianaceae	13834	*Schenkia spicata*		Spike Centaury	1
Plantae	Flora	Geraniaceae	3141	*Erodium cicutarium*	*	Common Crowfoot	1
Plantae	Flora	Geraniaceae	3142	*Erodium crinitum*		Blue Crowfoot	5
Plantae	Flora	Geraniaceae	3148	*Geranium homeanum*			1
Plantae	Flora	Geraniaceae	10093	*Geranium molle subsp. molle*	*	Cranesbill Geranium	3
Plantae	Flora	Geraniaceae	3154	*Geranium retrorsum*		Cranesbill Geranium	1
Plantae	Flora	Geraniaceae	3156	*Geranium solanderi*		Native Geranium	2
Plantae	Flora	Geraniaceae	8226	*Geranium solanderi var. solanderi*			6
Plantae	Flora	Geraniaceae	GERA	*Geranium spp.*			1
Plantae	Flora	Goodeniaceae	3181	*Goodenia fascicularis*		Mallee Goodenia	1
Plantae	Flora	Goodeniaceae	3182	*Goodenia glabra*		Smooth Goodenia	1
Plantae	Flora	Goodeniaceae	9279	*Goodenia hederacea subsp. hederacea*			1
Plantae	Flora	Goodeniaceae	3193	*Goodenia pinnatifida*		Scrambles Eggs	3
Plantae	Flora	Goodeniaceae	3200	*Lechenaultia divaricata*			1
Plantae	Flora	Goodeniaceae	3216	*Velleia paradoxa*			2
Plantae	Flora	Haloragaceae	3249	*Haloragis aspera*		Rough Raspwort	1
Plantae	Flora	Haloragaceae	3254	*Haloragis serra*			1
Plantae	Flora	Juncaceae	9311	*Juncus acutus subsp. acutus*	*	Sharp Rush	1
Plantae	Flora	Juncaceae	JUNC	*Juncus spp.*			3
Plantae	Flora	Juncaceae	3348	*Juncus subsecundus*		Finger Rush	2
Plantae	Flora	Juncaceae	3350	*Juncus usitatus*			2
Plantae	Flora	Lamiaceae	3371	*Ajuga australis*		Austral Bugle	1
Plantae	Flora	Lamiaceae	3377	*Lamium amplexicaule*	*	Dead Nettle	4
Plantae	Flora	Lamiaceae	3381	*Marrubium vulgare*	*	White Horehound	8
Plantae	Flora	Lamiaceae	3384	*Mentha diemenica*		Slender Mint	1
Plantae	Flora	Lamiaceae	3387	*Mentha satureioides*		Native Pennyroyal	2
Plantae	Flora	Lamiaceae	3423	*Prostanthera ovalifolia*			1
Plantae	Flora	Lamiaceae	3444	*Salvia plebeia*		Austral Sage	1
Plantae	Flora	Lamiaceae	3446	*Salvia verbenaca*	*	Vervain	4
Plantae	Flora	Lamiaceae	3447	*Scutellaria humilis*		Dwarf Skullcap	3
Plantae	Flora	Lamiaceae	3450	*Stachys arvensis*	*	Stagger Weed	2
Plantae	Flora	Lamiaceae	15130	*Teucrium betchei*			2
Plantae	Flora	Lomandraceae	6511	*Lomandra filiformis subsp. coriacea*		Wattle Matt-rush	1
Plantae	Flora	Lomandraceae	7931	*Lomandra filiformis subsp. filiformis*			2
Plantae	Flora	Lomandraceae	6512	*Lomandra filiformis subsp. flavior*		Wattle Matt-rush	1
Plantae	Flora	Lomandraceae	6307	*Lomandra leucocephala*		Woolly Mat-rush	2
Plantae	Flora	Lomandraceae	7925	*Lomandra leucocephala subsp. leucocephala*		Woolly Mat-rush	1
Plantae	Flora	Lomandraceae	6308	*Lomandra longifolia*		Spiny-headed Mat-rush	4

Plantae	Flora	Lomandraceae	8802	*Lomandra multiflora subsp. multiflora*		Many-flowered Mat-rush			5
Plantae	Flora	Lomandraceae	LOMA	*Lomandra spp.*		Mat-rush			1
Plantae	Flora	Loranthaceae	6393	*Amyema bifurcata*					1
Plantae	Flora	Loranthaceae	3599	*Amyema cambagei*		Needle-leaf Mistletoe			1
Plantae	Flora	Loranthaceae	6394	*Amyema miquelii*		Box Mistletoe			4
Plantae	Flora	Loranthaceae	3607	*Amyema pendula*					2
Plantae	Flora	Loranthaceae	AMYE	*Amyema spp.*		Mistletoe			1
Plantae	Flora	Loranthaceae	6710	*Dendrophthoe glabrescens*					1
Plantae	Flora	Loranthaceae	3613	*Dendrophthoe vitellina*					1
Plantae	Flora	Loranthaceae	7910	*Lysiana subfalcata*					2
Plantae	Flora	Loranthaceae	3618	*Muellerina bidwillii*					2
Plantae	Flora	Loranthaceae	3620	*Muellerina eucalyptoides*					1
Plantae	Flora	Luzuriagaceae	6015	*Eustrephus latifolius*		Wombat Berry			2
Plantae	Flora	Malaceae	5612	*Cotoneaster glaucophyllus*	*				1
Plantae	Flora	Malaceae	5616	*Crataegus monogyna*	*	Hawthorn			1
Plantae	Flora	Malaceae	5627	*Pyracantha angustifolia*	*	Orange Firethorn			1
Plantae	Flora	Malvaceae	3633	*Abutilon theophrasti*	*				1
Plantae	Flora	Malvaceae	3634	*Abutilon tubulosum*					1
Plantae	Flora	Malvaceae	6128	*Brachychiton populneus*		Kurrajong			7
Plantae	Flora	Malvaceae	8961	*Brachychiton populneus subsp. populneus*					1
Plantae	Flora	Malvaceae	7296	*Hibiscus sturtii var. sturtii*		Hill Hibiscus			1
Plantae	Flora	Malvaceae	13203	*Hibiscus trionum var. trionum*					1
Plantae	Flora	Malvaceae	3657	*Malva parviflora*	*	Small-flowered Mallow			8
Plantae	Flora	Malvaceae	7206	*Malvastrum americanum*	*	Spiked Malvastrum			2
Plantae	Flora	Malvaceae	3660	*Modiola caroliniana*	*	Red-flowered Mallow			6
Plantae	Flora	Malvaceae	7267	*Pavonia hastata*	*				2
Plantae	Flora	Malvaceae	3664	*Sida corrugata*		Corrugated Sida			7
Plantae	Flora	Malvaceae	3666	*Sida cunninghamii*		Ridge Sida			1
Plantae	Flora	Malvaceae	3673	*Sida rhombifolia*	*	Paddy's Lucerne			1
Plantae	Flora	Malvaceae	SIDA	*Sida spp.*					1
Plantae	Flora	Meliaceae	3680	*Melia azedarach*		White Cedar			1
Plantae	Flora	Moraceae	11720	*Ficus rubiginosa f. rubiginosa*					1
Plantae	Flora	Myoporaceae	8602	*Eremophila debilis*		Amulla			3
Plantae	Flora	Myoporaceae	7906	*Myoporum acuminatum*		Boobialla			1
Plantae	Flora	Myoporaceae	3955	*Myoporum montanum*		Western Boobialla			1
Plantae	Flora	Myrtaceae	3971	*Angophora floribunda*		Rough-barked Apple			7
Plantae	Flora	Myrtaceae	4019	*Callistemon viminalis*		Weeping Bottlebrush			1
Plantae	Flora	Myrtaceae	4039	*Eucalyptus albens*		White Box			21
Plantae	Flora	Myrtaceae	4057	*Eucalyptus blakelyi*		Blakely's Red Gum			11
Plantae	Flora	Myrtaceae	11385	*Eucalyptus blakelyi <--> dealbata*					1
Plantae	Flora	Myrtaceae	6360	*Eucalyptus camaldulensis*		River Red Gum			9
Plantae	Flora	Myrtaceae	4074	*Eucalyptus crebra*		Narrow-leaved Ironbark			2
Plantae	Flora	Myrtaceae	4078	*Eucalyptus dealbata*		Tumbledown Red Gum			3
Plantae	Flora	Myrtaceae	8682	*Eucalyptus elliptica*		Bendemeer White Gum			1
Plantae	Flora	Myrtaceae	4087	*Eucalyptus eugenioides*		Thin-leaved Stringybark			1
Plantae	Flora	Myrtaceae	4120	*Eucalyptus macrorhyncha*		Red Stringybark			1
Plantae	Flora	Myrtaceae	4125	*Eucalyptus melliodora*		Yellow Box			12
Plantae	Flora	Myrtaceae	4129	*Eucalyptus moluccana*		Grey Box			2
Plantae	Flora	Myrtaceae	4134	*Eucalyptus nicholii*		Narrow-leaved Black Peppermint	V	V	1
Plantae	Flora	Myrtaceae	4181	*Eucalyptus sideroxylon*		Mugga Ironbark			4
Plantae	Flora	Myrtaceae	4191	*Eucalyptus tereticornis*		Forest Red Gum			1
Plantae	Flora	Myrtaceae	4293	*Syzygium paniculatum*		Magenta Lilly Pilly	E1	V	1
Plantae	Flora	Nyctaginaceae	6841	*Boerhavia dominii*		Tarvine			2
Plantae	Flora	Oleaceae	12177	*Fraxinus angustifolia subsp. angustifolia*	*	Desert Ash			2
Plantae	Flora	Oleaceae	6398	*Jasminum lineare*		Desert Jasmine			3
Plantae	Flora	Oleaceae	4310	*Jasminum suavissimum*					4
Plantae	Flora	Oleaceae	4312	*Ligustrum lucidum*	*	Large-leaved Privet			2
Plantae	Flora	Oleaceae	4318	*Notelaea longifolia*		Large Mock-olive			1
Plantae	Flora	Oleaceae	4319	*Notelaea microcarpa*		Native Olive			5
Plantae	Flora	Oleaceae	6695	*Notelaea microcarpa var. microcarpa*					5
Plantae	Flora	Onagraceae	4326	*Epilobium billardierianum*					1
Plantae	Flora	Onagraceae	7952	*Epilobium billardierianum subsp. cinereum*					2
Plantae	Flora	Onagraceae	4339	*Oenothera affinis*	*				1
Plantae	Flora	Orchidaceae	4419	*Cymbidium suave*		Snake Orchid	P		1
Plantae	Flora	Orchidaceae	4463	*Gastrodia sesamoides*		Cinnamon Bells	P		1

Plantae	Flora	Orchidaceae	4465	*Glossodia major*		Waxlip Orchid	P	1
Plantae	Flora	Oxalidaceae	4615	*Oxalis exilis*				1
Plantae	Flora	Oxalidaceae	4621	*Oxalis perennans*				4
Plantae	Flora	Oxalidaceae	OXAL	*Oxalis spp.*				2
Plantae	Flora	Papaveraceae	7115	*Argemone ochroleuca subsp. ochroleuca*	*	Mexican Poppy		1
Plantae	Flora	Papaveraceae	9362	*Argemone subfusiformis subsp. subfusiformis*	*	American Poppy		1
Plantae	Flora	Papaveraceae	4640	*Papaver somniferum*	*	Opium Poppy		2
Plantae	Flora	Phormiaceae	6700	*Dianella caerulea var. caerulea*				1
Plantae	Flora	Phormiaceae	7783	*Dianella longifolia*		Blueberry Lily		2
Plantae	Flora	Phyllanthaceae	2695	*Breynia oblongifolia*		Coffee Bush		1
Plantae	Flora	Phyllanthaceae	2750	*Phyllanthus subcrenulatus*				5
Plantae	Flora	Phyllanthaceae	12969	*Phyllanthus virgatus complex*				1
Plantae	Flora	Pinaceae	4661	*Pinus radiata*	*	Radiata Pine		1
Plantae	Flora	Pittosporaceae	4674	*Bursaria spinosa*		Native Blackthorn		4
Plantae	Flora	Pittosporaceae	11018	*Bursaria spinosa subsp. spinosa*		Native Blackthorn		8
Plantae	Flora	Pittosporaceae	11202	*Pittosporum angustifolium*		Butterbush		2
Plantae	Flora	Plantaginaceae	5974	*Linaria arvensis*	*			1
Plantae	Flora	Plantaginaceae	5978	*Linaria pelisseriana*	*	Pelisser's Toadflax		2
Plantae	Flora	Plantaginaceae	4691	*Plantago debilis*		Shade Plantain		3
Plantae	Flora	Plantaginaceae	4699	*Plantago lanceolata*	*	Lamb's Tongues		14
Plantae	Flora	Plantaginaceae	9779	*Plantago scabra*	*	Sand Plantain		4
Plantae	Flora	Plantaginaceae	4705	*Plantago varia*				2
Plantae	Flora	Plantaginaceae	6000	*Veronica anagallis-aquatica*	*	Blue Water-speedwell		1
Plantae	Flora	Poaceae	13924	*Amelichloa brachychaeta*	*	Espartillo		1
Plantae	Flora	Poaceae	14896	*Anthosachne scabra*		Wheatgrass, Common Wheatgrass		6
Plantae	Flora	Poaceae	9334	*Aristida calycina var. calycina*				2
Plantae	Flora	Poaceae	6439	*Aristida jerichoensis var. jerichoensis*		Jericho Wiregrass		1
Plantae	Flora	Poaceae	6713	*Aristida latifolia*		Featherop Wiregrass		2
Plantae	Flora	Poaceae	4762	*Aristida leptopoda*		White Speargrass		2
Plantae	Flora	Poaceae	4767	*Aristida personata*				5
Plantae	Flora	Poaceae	4770	*Aristida ramosa*		Purple Wiregrass		8
Plantae	Flora	Poaceae	4773	*Aristida vagans*		Threeawn Speargrass		1
Plantae	Flora	Poaceae	4777	*Arundo donax*	*	Giant Reed		1
Plantae	Flora	Poaceae	10384	*Austrostipa aristiglumis*		Plains Grass		16
Plantae	Flora	Poaceae	10395	*Austrostipa densiflora*		Foxtail Speargrass		1
Plantae	Flora	Poaceae	10375	*Austrostipa nitida*				2
Plantae	Flora	Poaceae	10376	*Austrostipa nodosa*				1
Plantae	Flora	Poaceae	9918	*Austrostipa ramosissima*		Stout Bamboo Grass		2
Plantae	Flora	Poaceae	10377	*Austrostipa scabra*		Speargrass		2
Plantae	Flora	Poaceae	10379	*Austrostipa scabra subsp. falcata*		Rough Speargrass		1
Plantae	Flora	Poaceae	10378	*Austrostipa scabra subsp. scabra*		Rough Speargrass		7
Plantae	Flora	Poaceae	10371	*Austrostipa verticillata*		Slender Bamboo Grass		11
Plantae	Flora	Poaceae	4780	*Avena fatua*	*	Wild Oats		7
Plantae	Flora	Poaceae	4781	*Avena ludoviciana*	*	Ludo Wild Oats		1
Plantae	Flora	Poaceae	4782	*Avena sativa*	*	Oats		4
Plantae	Flora	Poaceae	AVEN	*Avena spp.*	*	Oats		2
Plantae	Flora	Poaceae	4787	*Bothriochloa biloba*		Lobed Bluegrass		6
Plantae	Flora	Poaceae	7559	*Bothriochloa decipiens var. decipiens*		Pitted Bluegrass		8
Plantae	Flora	Poaceae	4790	*Bothriochloa macra*		Red Grass		8
Plantae	Flora	Poaceae	4801	*Briza minor*	*	Shivery Grass		2
Plantae	Flora	Poaceae	10328	*Bromus alopecuros*	*			1
Plantae	Flora	Poaceae	7813	*Bromus catharticus*	*	Praire Grass		9
Plantae	Flora	Poaceae	4807	*Bromus hordeaceus*	*	Soft Brome		1
Plantae	Flora	Poaceae	4811	*Bromus molliformis*	*	Soft Brome		7
Plantae	Flora	Poaceae	4820	*Capillipedium parviflorum*		Scented-top Grass		1
Plantae	Flora	Poaceae	4822	*Catapodium rigidum*	*	Rigid Fescue		2
Plantae	Flora	Poaceae	14903	*Cenchrus clandestinus*	*	Kikuyu Grass		4
Plantae	Flora	Poaceae	14862	*Cenchrus longisetus*	*	Feathertop, White Foxtail		1
Plantae	Flora	Poaceae	14952	*Cenchrus purpurascens*				2
Plantae	Flora	Poaceae	7223	*Cenchrus setiger*	*	Birdwood Grass		1
Plantae	Flora	Poaceae	15299	*Cenchrus spinifex*	*	Spiny Burrgrass		1
Plantae	Flora	Poaceae	4831	*Chloris gayana*	*	Rhodes Grass		5
Plantae	Flora	Poaceae	4833	*Chloris truncata*		Windmill Grass		14

Plantae	Flora	Poaceae	4834	*Chloris ventricosa*		Tall Chloris			11	
Plantae	Flora	Poaceae	6655	*Chloris virgata*	*	Feathertop Rhodes Grass			5	
Plantae	Flora	Poaceae	4841	*Cymbopogon refractus*		Barbed Wire Grass			3	
Plantae	Flora	Poaceae	6540	*Cynodon dactylon*		Common Couch			15	
Plantae	Flora	Poaceae	4842	*Cynodon incompletus*	*				2	
Plantae	Flora	Poaceae	4846	*Dactylis glomerata*	*	Cocksfoot			2	
Plantae	Flora	Poaceae	7485	*Dichanthium sericeum*		Queensland Bluegrass			9	
Plantae	Flora	Poaceae	7645	*Dichanthium sericeum subsp. sericeum*		Queensland Bluegrass			14	
Plantae	Flora	Poaceae	4895	*Dichanthium setosum*		Bluegrass	V	V	2	
Plantae	Flora	Poaceae	4897	*Dichelachne crinita*		Longhair Plumegrass			2	
Plantae	Flora	Poaceae	4898	*Dichelachne micrantha*		Shorthair Plumegrass			2	
Plantae	Flora	Poaceae	4899	*Dichelachne rara*					1	
Plantae	Flora	Poaceae	DICE	*Dichelachne spp.*					1	
Plantae	Flora	Poaceae	6857	*Digitaria brownii*		Cotton Panic Grass			1	
Plantae	Flora	Poaceae	6554	*Digitaria ciliaris*	*	Summer Grass			2	
Plantae	Flora	Poaceae	4907	*Digitaria divaricatissima*		Umbrella Grass			4	
Plantae	Flora	Poaceae	4909	*Digitaria hystrichoides*		Curly Umbrella Grass			1	
Plantae	Flora	Poaceae	6937	*Digitaria sanguinalis*	*	Crab Grass			1	
Plantae	Flora	Poaceae	7607	*Echinochloa colona*		Awnless Barnyard Grass			3	
Plantae	Flora	Poaceae	4923	*Echinochloa crus-galli*	*	Barnyard Grass			2	
Plantae	Flora	Poaceae	ECHI	*Echinochloa spp.*					1	
Plantae	Flora	Poaceae	7196	*Eleusine indica*	*	Crowsfoot Grass			2	
Plantae	Flora	Poaceae	4940	*Eleusine tristachya*	*	Goose Grass			1	
Plantae	Flora	Poaceae	4943	*Enneapogon gracilis*		Slender Nineawn			2	
Plantae	Flora	Poaceae	4945	*Enneapogon nigricans*		Niggerheads			1	
Plantae	Flora	Poaceae	ENNE	*Enneapogon spp.*		Nineawn Grass, Bottlewashers			1	
Plantae	Flora	Poaceae	9159	*Enneapogon truncatus*		Bottlewashers			1	
Plantae	Flora	Poaceae	6721	*Enteropogon acicularis*		Curly Windmill Grass			2	
Plantae	Flora	Poaceae	11647	*Eragrostis alveiformis*					2	
Plantae	Flora	Poaceae	7921	*Eragrostis brownii*		Brown's Lovegrass			1	
Plantae	Flora	Poaceae	6387	*Eragrostis cilianensis*	*	Stinkgrass			3	
Plantae	Flora	Poaceae	4960	*Eragrostis leptostachya*		Paddock Lovegrass			3	
Plantae	Flora	Poaceae	4967	*Eragrostis parviflora*		Weeping Lovegrass			2	
Plantae	Flora	Poaceae	4970	*Eragrostis pilosa*	*	Soft Lovegrass			1	
Plantae	Flora	Poaceae	ERAG	*Eragrostis spp.*					1	
Plantae	Flora	Poaceae	4973	*Eragrostis tef*	*	Teff			1	
Plantae	Flora	Poaceae	7335	*Eriochloa pseudoacrotricha*		Early Spring Grass			1	
Plantae	Flora	Poaceae	4993	*Festuca pratensis*	*	Meadow Fescue			2	
Plantae	Flora	Poaceae	5000	*Hainardia cylindrica*	*	Common Barbgrass			1	
Plantae	Flora	Poaceae	5012	*Hordeum leporinum*	*	Barley Grass			7	
Plantae	Flora	Poaceae	HORD	*Hordeum spp.*	*				3	
Plantae	Flora	Poaceae	9326	*Hyparrhenia filipendula var. filipendula*		Tambookie Grass			1	
Plantae	Flora	Poaceae	5016	*Hyparrhenia hirta*	*	Coolatai Grass			4	
Plantae	Flora	Poaceae	11388	*Lachnagrostis filiformis*					1	
Plantae	Flora	Poaceae	5023	*Lamarckia aurea*	*	Goldentop			2	
Plantae	Flora	Poaceae	7726	*Leptochloa digitata*		Umbrella Canegrass			1	
Plantae	Flora	Poaceae	5032	*Lolium perenne*	*	Perennial Ryegrass			4	
Plantae	Flora	Poaceae	5033	*Lolium rigidum*	*	Wimmera Ryegrass			3	
Plantae	Flora	Poaceae	5037	*Microlaena stipoides*		Weeping Grass			2	
Plantae	Flora	Poaceae	7707	*Microlaena stipoides var. stipoides*		Weeping Grass			3	
Plantae	Flora	Poaceae	13451	*Nassella tenuissima*	*				2	
Plantae	Flora	Poaceae	5049	*Panicum antidotale*	*	Giant Panic Grass			1	
Plantae	Flora	Poaceae	5052	*Panicum buncei*		Native Panic			2	
Plantae	Flora	Poaceae	6395	*Panicum decompositum*		Native Millet			3	
Plantae	Flora	Poaceae	7340	*Panicum gilvum*	*				1	
Plantae	Flora	Poaceae	9331	*Panicum queenslandicum var. queenslandicum*		Yabila Grass			2	
Plantae	Flora	Poaceae	5066	*Panicum simile*		Two-colour Panic			1	
Plantae	Flora	Poaceae	5072	*Paspalidium albovillosum*					1	
Plantae	Flora	Poaceae	5073	*Paspalidium aversum*		Bent Summer Grass			8	
Plantae	Flora	Poaceae	7172	*Paspalidium distans*					1	
Plantae	Flora	Poaceae	5081	*Paspalidium gracile*		Slender Panic			1	
Plantae	Flora	Poaceae	5086	*Paspalum dilatatum*	*	Paspalum			14	
Plantae	Flora	Poaceae	5087	*Paspalum distichum*		Water Couch			4	
Plantae	Flora	Poaceae	6638	*Pennisetum glaucum*	*	Pearl Millet			2	
Plantae	Flora	Poaceae	5106	*Phalaris aquatica*	*	Phalaris			2	
Plantae	Flora	Poaceae	9346	*Phalaris arundinacea var. arundinacea*	*	Reed Canary Grass			1	
Plantae	Flora	Poaceae	5111	*Phalaris paradoxa*	*	Paradoxa Grass			2	
Plantae	Flora	Poaceae	5113	*Phragmites australis*		Common Reed			1	

Plantae	Flora	Poaceae	5121	*Poa annua*	*	Winter Grass		1
Plantae	Flora	Poaceae	11196	*Poa labillardierei var. labillardierei*		Tussock		2
Plantae	Flora	Poaceae	5141	*Poa sieberiana*		Snowgrass		4
Plantae	Flora	Poaceae	5145	*Polypogon monspeliensis*	*	Annual Beardgrass		1
Plantae	Flora	Poaceae	7878	*Rostraria cristata*	*	Annual Cat's Tail		4
Plantae	Flora	Poaceae	14304	*Rytidosperma bipartitum*		Wallaby Grass		8
Plantae	Flora	Poaceae	14305	*Rytidosperma caespitosum*		Ringed Wallaby Grass		3
Plantae	Flora	Poaceae	14309	*Rytidosperma fulvum*		Wallaby Grass		1
Plantae	Flora	Poaceae	14312	*Rytidosperma longifolium*		Long-leaved Wallaby Grass		4
Plantae	Flora	Poaceae	14313	*Rytidosperma monticola*		Mountain Wallaby Grass		2
Plantae	Flora	Poaceae	14317	*Rytidosperma racemosum*		Wallaby Grass		5
Plantae	Flora	Poaceae	14319	*Rytidosperma racemosum var. obtusatum*		Wallaby Grass		2
Plantae	Flora	Poaceae	14318	*Rytidosperma racemosum var. racemosum*		Wallaby Grass		2
Plantae	Flora	Poaceae	14320	*Rytidosperma richardsonii*		Straw Wallaby-grass		4
Plantae	Flora	Poaceae	RYTI	*Rytidosperma spp.*				2
Plantae	Flora	Poaceae	14323	*Rytidosperma tenuius*				2
Plantae	Flora	Poaceae	13468	*Setaria parviflora*	*			1
Plantae	Flora	Poaceae	7842	*Setaria pumila*	*	Pale Pigeon Grass		1
Plantae	Flora	Poaceae	SETA	*Setaria spp.*				2
Plantae	Flora	Poaceae	12511	*Sorghum almum*	*	Columbus Grass		1
Plantae	Flora	Poaceae	5171	*Sorghum bicolor*	*	Sorghum		7
Plantae	Flora	Poaceae	5172	*Sorghum halepense*	*	Johnson Grass		6
Plantae	Flora	Poaceae	5173	*Sorghum leiocladum*		Wild Sorghum		1
Plantae	Flora	Poaceae	SORG	*Sorghum spp.*				3
Plantae	Flora	Poaceae	5176	*Sporobolus africanus*	*	Parramatta Grass		2
Plantae	Flora	Poaceae	5177	*Sporobolus caroli*		Fairy Grass		2
Plantae	Flora	Poaceae	5179	*Sporobolus creber*		Slender Rat's Tail Grass		3
Plantae	Flora	Poaceae	5181	*Sporobolus elongatus*		Slender Rat's Tail Grass		6
Plantae	Flora	Poaceae	5229	*Tripogon loliiformis*		Fiveminute Grass		1
Plantae	Flora	Poaceae	5234	*Triticum aestivum*	*	Wheat		1
Plantae	Flora	Poaceae	TRIM	*Triticum spp.*	*			1
Plantae	Flora	Poaceae	5237	*Urochloa panicoides*	*	Urochloa Grass		6
Plantae	Flora	Poaceae	7506	*Urochloa piligera*		Hairy Armgrass		1
Plantae	Flora	Poaceae	8516	*Vulpia muralis*	*	Wall Fescue		1
Plantae	Flora	Poaceae	5242	*Vulpia myuros*	*	Rat's Tail Fescue		2
Plantae	Flora	Polygonaceae	5265	*Acetosella vulgaris*	*	Sheep Sorrel		3
Plantae	Flora	Polygonaceae	5266	*Emex australis*	*	Spiny Emex		1
Plantae	Flora	Polygonaceae	5268	*Fallopia convolvulus*	*	Black Bindweed		1
Plantae	Flora	Polygonaceae	5282	*Persicaria lapathifolia*		Pale Knotweed		1
Plantae	Flora	Polygonaceae	5287	*Polygonum arenastrum*	*	Wireweed		1
Plantae	Flora	Polygonaceae	5288	*Polygonum aviculare*	*	Wireweed		4
Plantae	Flora	Polygonaceae	13486	*Polygonum bellardii*	*	Tree Hogweed		3
Plantae	Flora	Polygonaceae	5296	*Rumex brownii*		Swamp Dock		15
Plantae	Flora	Polygonaceae	5298	*Rumex crispus*	*	Curled Dock		3
Plantae	Flora	Polygonaceae	RUME	*Rumex spp.*		Dock		1
Plantae	Flora	Polygonaceae	5304	*Rumex tenax*		Shiny Dock		1
Plantae	Flora	Portulacaceae	5324	*Portulaca oleracea*		Pigweed		2
Plantae	Flora	Primulaceae	14614	*Lysimachia arvensis*	*	Scarlet Pimpernel		7
Plantae	Flora	Proteaceae	9759	*Hakea leucoptera subsp. sericipes*				1
Plantae	Flora	Pteridaceae	10516	*Adiantum atroviride*			P	1
Plantae	Flora	Pteridaceae	11226	*Adiantum hispidulum var. hispidulum*		Rough Maidenhair	P	1
Plantae	Flora	Pteridaceae	6382	*Cheilanthes distans*		Bristly Cloak Fern		3
Plantae	Flora	Pteridaceae	10439	*Cheilanthes sieberi*		Rock Fern		3
Plantae	Flora	Pteridaceae	8007	*Cheilanthes sieberi subsp. sieberi*		Rock Fern		2
Plantae	Flora	Ranunculaceae	5491	*Adonis microcarpa*	*	Pheasant's Eye		1
Plantae	Flora	Ranunculaceae	13519	*Clematis decipiens*				1
Plantae	Flora	Ranunculaceae	5495	*Clematis glycinoides*		Headache Vine		1
Plantae	Flora	Ranunculaceae	5508	*Ranunculus lappaceus*		Common Buttercup		2
Plantae	Flora	Ranunculaceae	8811	*Ranunculus sessiliflorus var. sessiliflorus*				1
Plantae	Flora	Resedaceae	5529	*Reseda lutea*	*	Cut-leaved Mignonette		2
Plantae	Flora	Rhamnaceae	5554	*Cryptandra amara*		Bitter Cryptandra		1
Plantae	Flora	Rhamnaceae	8784	*Cryptandra amara var. longiflora*				1
Plantae	Flora	Rosaceae	5605	*Acaena ovina*		Acaena		2
Plantae	Flora	Rosaceae	5625	*Prunus persica*	*			1
Plantae	Flora	Rosaceae	5635	*Rosa rubiginosa*	*	Sweet Briar		3
Plantae	Flora	Rosaceae	11303	*Rubus fruticosus sp. agg.*	*	Blackberry complex		1
Plantae	Flora	Rubiaceae	5653	*Asperula conferta*		Common Woodruff		6

Plantae	Flora	Rubiaceae	5679	*Galium aparine*	*	Goosegrass	4
Plantae	Flora	Rubiaceae	5699	*Opercularia hispida*		Hairy Stinkweed	1
Plantae	Flora	Rubiaceae	11943	*Psydrax oleifolia*			1
Plantae	Flora	Rutaceae	11689	*Citrus X aurantium*	*	Sour Orange	1
Plantae	Flora	Rutaceae	10758	*Citrus x taitensis*	*	Rough Lemon	1
Plantae	Flora	Salicaceae	5848	*Populus alba*	*	White Poplar	1
Plantae	Flora	Salicaceae	5851	*Salix babylonica*	*	Weeping Willow	2
Plantae	Flora	Salicaceae	10652	*Salix fragilis var. fragilis*	*	Crack Willow	2
Plantae	Flora	Salicaceae	10663	*Salix x sepulcralis var. sepulcralis*	*	Weeping Willow	1
Plantae	Flora	Santalaceae	5860	*Exocarpos cupressiformis*		Cherry Ballart	2
Plantae	Flora	Santalaceae	6384	*Santalum lanceolatum*		Northern Sandalwood	2
Plantae	Flora	Sapindaceae	7015	*Alectryon oleifolius*		Western Rosewood	1
Plantae	Flora	Sapindaceae	7085	*Alectryon oleifolius subsp. elongatus*			1
Plantae	Flora	Sapindaceae	6365	*Atalaya hemiglauca*		Whitewood	1
Plantae	Flora	Sapindaceae	5913	*Dodonaea viscosa*		Sticky Hop-bush	3
Plantae	Flora	Sapindaceae	7690	*Dodonaea viscosa subsp. angustifolia*			4
Plantae	Flora	Sapindaceae	7830	*Dodonaea viscosa subsp. angustissima*		Narrow-leaf Hop-bush	1
Plantae	Flora	Scrophulariaceae	9736	*Cymbalaria muralis subsp. muralis*	*	Ivy-leaved Toadflax	1
Plantae	Flora	Scrophulariaceae	10216	*Kickxia spuria subsp. integrifolia*	*	Round-leaved Toadflax	3
Plantae	Flora	Scrophulariaceae	5973	*Limosella curdieana*		Large Mudwort	1
Plantae	Flora	Scrophulariaceae	7062	*Misopates orontium*	*	Lesser Snapdragon	1
Plantae	Flora	Scrophulariaceae	7625	*Verbascum thapsus subsp. thapsus*	*	Great Mullein	2
Plantae	Flora	Scrophulariaceae	5999	*Verbascum virgatum*	*	Twiggy Mullein	5
Plantae	Flora	Simaroubaceae	6012	*Ailanthus altissima*	*	Tree of Heaven	1
Plantae	Flora	Solanaceae	6027	*Cestrum parqui*	*	Green Cestrum	5
Plantae	Flora	Solanaceae	6033	*Datura stramonium*	*	Common Thornapple	3
Plantae	Flora	Solanaceae	6040	*Lycium ferocissimum*	*	African Boxthorn	6
Plantae	Flora	Solanaceae	6045	*Nicotiana glauca*	*	Tree Tobacco	2
Plantae	Flora	Solanaceae	14010	*Physalis longifolia*	*	Perennial Ground Cherry	2
Plantae	Flora	Solanaceae	7325	*Solanum capsicoides*	*	Devil's Apple	1
Plantae	Flora	Solanaceae	6072	*Solanum cinereum*		Narrawa Burr	2
Plantae	Flora	Solanaceae	6078	*Solanum elaeagnifolium*	*	Silver-leaved Nightshade	2
Plantae	Flora	Solanaceae	6081	*Solanum esuriale*		Quena	1
Plantae	Flora	Solanaceae	6091	*Solanum nigrum*	*	Black-berry Nightshade	2
Plantae	Flora	Solanaceae	12295	*Solanum parvifolium subsp. parvifolium*		Nightshade	4
Plantae	Flora	Solanaceae	6115	*Solanum vescum*			1
Plantae	Flora	Stackhousiaceae	6120	*Stackhousia monogyna*		Creamy Candles	2
Plantae	Flora	Thymelaeaceae	6774	*Pimelea curviflora var. divergens*			4
Plantae	Flora	Thymelaeaceae	6814	*Pimelea linifolia subsp. linifolia*			1
Plantae	Flora	Thymelaeaceae	6191	*Pimelea stricta*		Gaunt Rice-flower	1
Plantae	Flora	Thymelaeaceae	6192	*Pimelea strigosa*			1
Plantae	Flora	Typhaceae	7224	*Typha domingensis*		Narrow-leaved Cumbungi	1
Plantae	Flora	Typhaceae	TYPH	*Typha spp.*			1
Plantae	Flora	Ulmaceae	6761	*Trema tomentosa var. aspera*		Native Peach	1
Plantae	Flora	Urticaceae	6232	*Parietaria judaica*	*	Pellitory	1
Plantae	Flora	Urticaceae	6237	*Urtica incisa*		Stinging Nettle	5
Plantae	Flora	Urticaceae	6238	*Urtica urens*	*	Small Nettle	1
Plantae	Flora	Verbenaceae	12422	*Glandularia aristigera*	*	Mayne's Pest	5
Plantae	Flora	Verbenaceae	11134	*Phyla canescens*	*	Lippia	1
Plantae	Flora	Verbenaceae	6256	*Verbena bonariensis*	*	Purpletop	13
Plantae	Flora	Verbenaceae	10717	*Verbena gaudichaudii*		Verbena	4
Plantae	Flora	Verbenaceae	6636	*Verbena hispida*	*	Rough Verbena	1
Plantae	Flora	Verbenaceae	6259	*Verbena officinalis*	*	Common Verbena	3
Plantae	Flora	Verbenaceae	11406	*Verbena rigida var. rigida*	*	Veined Verbena	2
Plantae	Flora	Violaceae	6274	*Viola odorata*	*	Sweet Violet	1
Plantae	Flora	Viscaceae	6277	*Notothixos cornifolius*		Kurrajong Mistletoe	1
Plantae	Flora	Vitaceae	6281	*Cayratia clematidea*		Native Grape	1
Plantae	Flora	Vitaceae	14093	*Clematicissus opaca*		Pepper Vine	7
Plantae	Flora	Zygophyllaceae	9230	*Tribulus micrococcus*		Spineless Caltrop	4
Plantae	Flora	Zygophyllaceae	7655	*Tribulus terrestris*	*	Cat-head	1

7.4. Appendix D – Project Scope of Works

Scope of Works (Road)

Tamworth Global Gateway Park – Jewry Street Extension

PROJ2020-0058-C1

June 2022

Tamworth REGIONAL COUNCIL

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1 Scope of works and general requirements

1.1 Project descriptions

1.1.1 Background

The Tamworth Global Gateway Park (TGGP) is an area of land adjacent to the Tamworth Regional Airport and the Glen Artney Industrial Estate, being developed as industrial and commercial land by Council. The land is also the site of the proposed Tamworth Intermodal Freight Facility.

As part of the TGGP, several activation projects are being undertaken. One of these projects is the Jewry Street Extension which is funded by a 90% contribution from the NSW Government's Growing Local Economy Fund (GLE) with a 10% contribution from Council.

The project includes the construction of a roundabout at the corner of Jewry Street and Dampier Street, with a flood plain road connection between this roundabout and Wallamore road to the west.

1.1.2 Location

Figure 1 – Site locality

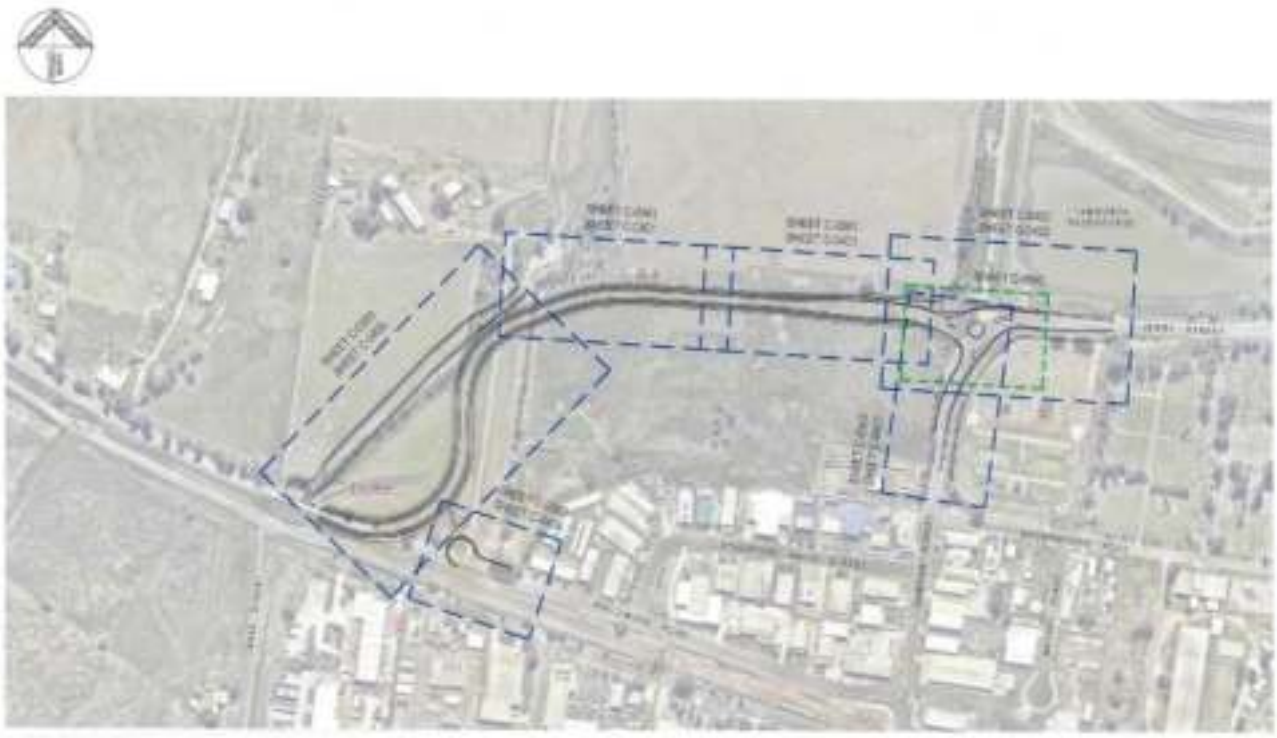

Figure 2 – Extent of works

1.1.3 Objective

The goal of this project is to meet Councils vision of creating "An Accessible Region" through providing a safe and efficient transport network. Objectives/goals includes:

- Construct a heavy vehicle bypass of the local Taminda road network;
- Alleviate future congestion that will be experienced at the current level crossing on Wallamore Road;
- Improve current congestion experienced in the Taminda local road network;
- Improve accessibility to the TGGP;
- Deliver the works within the allocated budget;
- Ensure all relevant and interested business and community members are informed and effectively communicated with prior to and during the works; and
- Deliver the works within the GLE funding deadlines.

The Contractor shall undertake the works identified on the approved design drawings to accomplish this objective.

1.1.4 Principal's representative

The Principal's Representative is nominated below;

- Name: Callum Fletcher, Senior Project Engineer
- Phone: (02) 6767 5014
- E-mail: c.fletcher@tamworth.nsw.gov.au

1.2 Technical specifications

The technical specifications for the works are generally split between the following, with all documents deemed to comprise the project specification, noting that this is in addition to the design drawings:

- APA Group, Essential Energy, and other external service authority requirements;
- Scope of works and general requirements which also include any project specific requirements which shall be followed;
- Tamworth Regional Council construction specifications; and
- Tamworth Regional Council standard drawings.

1.3 Scope of works

1.3.1 General

1.3.1.1 Inclusions

A summary of the Contractor's key responsibilities in relation to the works include the following:

- Establishment to site (and maintenance of such) including erection of site fencing as required, provision of amenity facilities, erection of construction signage, installation of environmental control measures, installation of traffic control measures and the like;
- Quality assurance and verification as per the Contractor prepared Quality Management Plan;
- Construction of the roads and roundabout:
    - Construction of road and roundabout pavements (flood plain, roundabout, Jewry Street leg, Dampier Street leg, Wallamore Road tie-in, Wallamore Road cul-de-sac) in accordance with the design drawings;
    - Installation of kerb and gutter as per the design drawings;
    - Construction of roundabout annulus and splitter islands as per the design drawings;
    - Construction of asphalt driveway causeway to Somerset Farm, and 7mm primer seal pavement to the property boundary;
    - Installation of asphalt wearing course, including primer seal beneath, as per the design drawings;
    - Installation of line marking as required;
    - Installation of guide posts as required; and
    - Supply and installation of signage as required.
- Construction of stormwater infrastructure;
    - Formation of Timbumburi Creek channel;
    - Formation of table drains, channels, batters, and slopes;
    - Installation of RCP transverse crossings, pits, lintels/grates, headwalls, and scour protection;
    - Installation of 5-cell 3600x750 RCBC structures, including foundation treatment, base slab, RCBC crown unit installation, apron slabs, wingwalls, headwalls, backfill, scour protection and monowills handrail;
    - Formation of extended outlet channel from 5-cell RCBC structure;
    - Installation of subsoil drainage behind all kerb and gutter;
    - Installation of scour protection to all concrete and asphalt elements that are within channels/drains;
- Construction of auxiliary works;
    - Clearing of vegetation required to construct the works;
    - Stripping and stockpiling of topsoil;
    - Construction of turnaround area at the rear of the jockey club;
    - Relocation of overhead electrical infrastructure (design pending) including construction coordination and approval from Essential Energy;
    - Relocation of cemetery boundary fence with the fencing matched;
    - Construction of a segment of the new rising sewer main beneath the new road (refer to W&W design package);

  - Construction of gravity sewer concrete protection slab;
  - Construction of two gas main concrete protection slabs including construction coordination and approval from APA Group;
  - Hydro mulching of channels, drains, and verges;
  - Installation of a strip of turf behind all new kerbs; and
  - Installation of topsoil and mulch in the centre of the roundabout.
- Coordination and liaison with adjacent contractors;
- Coordination of RCBC crown unit delivery (procured by the Principal);
- Engagement and management of all subcontractors and consultants required to undertake the works;
- Obtaining construction permits for works adjacent to or within the minimum clear zones for external authority services where required;
- Provision of marked up WAE drawings;
- All quality assurance and conformance testing and measurements;
- Implementation of an ITP process for quality verification. This is to be submitted to the Client for approval prior to commencing works;
- Implementation of an environmental process for the protection of the environment in accordance with the Review of Environmental Factors, including sediment and erosion control. This is to be submitted to the Client for approval prior to commencing works;
- Implementation of a Work, Health and Safety process to ensure compliance with WHS Act 2011 and associated regulations. This is to be submitted to the Client for approval prior to commencing works;
- Implementation of a traffic process for the management of vehicular and pedestrian traffic. This is to be submitted to the Client for approval prior to commencing works; and
- Implementation of a coronavirus management plan. This is to be submitted to the Client for approval prior to commencing works.

The Contractor shall seek review and approval (by the Principal's Representative) of all construction documentation prior to commencing works.

1.3.1.2 Exclusions

The following are not within the scope of this contract:

- Supply and delivery of RCBC crown units (these will be procured by the Principal);
- Consultation with adjacent landowners other than daily coordination regarding their access;
- Works not shown on the design drawings;
- Environmental approvals;
- Design services or engagement and management of a design consultant not associated with Contractor initiated design changes; and
- Client-side inspections.

1.3.1.3 Staging of Works to Minimise Traffic Disruptions

In order to minimise disruption to traffic, it is proposed that construction is staged as per the below, noting that detailed staging of the works is the responsibility of the Contractor:

- Stage 1 – No traffic impact;

  - Construct temporary tie-in with Wallamore Road;
  - Construct Timbumburi Creek channel and table drains.
  - Construct flood plain road between Wallamore Road and Roundabout.
  - Construct north-western section of roundabout.
- Stage 2 – Jewry Street/Dampier Street down to one lane closest to the cemetery;
  - Construct Jewry Street leg.
- Stage 3 – Divert traffic from Jewry Street along flood plain road (Dampier Street closed at Showground Road.
  - Construct south-eastern section of roundabout.
  - Construct Dampier Street leg.
  - Construct cemetery channel.
- Stage 4 – Roundabout fully open.
  - Complete Wallamore Road tie-in.
  - Construct Wallamore Road cul-de-sac.

1.3.2 Contract intent

The Contractor undertaking the works onsite will make allowance for the inclusions and allow for consulting / liaising with the Client in relation to the exclusions; however, these exclusions are not part of the Contractor's scope of works. The general inclusions are written to provide guidance to the Contractor is the proposed works. The design drawings are to be strictly followed in regards to technical details where any discrepancies arise.

The intent of the works is to construct the roundabout and roads, excluding the general exclusions noted, as per the design drawings and to the specifications and drawings noted in Section 2, 3, and 4, with all required infrastructure and features to enable full, compliant public usage on the Contractor's completion. Any oversights or omissions in scope by the Client, required to be undertaken to achieve this intent are assumed to be allowed for by the Contractor. Any works outside the original intent will be treated as variation works.

1.3.3 Work-as-executed and certification

1.3.3.1 Works as Executed

These specifications are to be read in conjunction with Section 1 .8 of Tamworth Regional Council's Engineering Design Minimum Standards for Subdivisions & Developments (Version 1 March 2019), with the following specification intended to include items not otherwise covered in the standards.

Works as executed (WAE) drawings and electronic files must be provided on completion of the works. If not noted elsewhere, these shall be in the form of electronic files – PDF format of all documents and specific model format utilised for the design (public.zip, etransmit or similar), including all styles, templates, and settings required to view and edit the model and to replicate the submitted hard copy plans by others.

Table 1 – Electronic file formats for WAE information

Electronic data	Accepted file format
Alignments	LandXML
Linework	.dxf or .dwg for both 2d, 3d and breakline data

Electronic data	Accepted file format
Linework (services and utilities)	.dxf or .dwg for both 2d, 3d data
Surface	LandXML, AutoCAD 3d Faces
Points	.csv, LandXML
Hard Copy Plans	.pdf

All other formats inclusive of Genio and 12da should be supplied only with prior consultation with Council. Hard copy plans should provide control points and annotation to allow for checking of design alignments.

If the Contractor wishes to deviate from these requirements, they will need to obtain approval from the Client and provide adequate justification that the proposed change does not impact the way Council uses the WAE information for ongoing inspection and maintenance

1.3.3.1.1 Operations and Maintenance Manuals

Where installed or constructed components require specific maintenance tasks to be completed that are outside of the Client's usual maintenance activities or where requested by the Client, manuals shall be issued providing guidance on their installation, product data, manufacturer's recommended use / maintenance / replacement, risks associated with the use or presence of the component, any other information required to be provided to the operator, maintainer, or replacer of a component – both to complete the task competently or as required by legislation.

1.3.3.1.2 Extent of WAE Documentation

The scope of information required within the WAE documentation is noted below. The intention is for the WAE information to be used for any future maintenance, design, or construction works in the area, and the information provided should therefore reflect this intent. Any oversights or omissions in this extent noted below, required to be undertaken to achieve this intent are assumed to be allowed for in the WAE by the contractor.

Table 2 – Tolerances for WAE capture

Component	Electronic data	PDF Drawing (*)	Tolerance not requiring markup
Road pavement layers and final surface	Points 3D polylines (where requested)	Corrected long section levels for final surface Pavement changes Omissions and additions	+/- 25mm in long section +/- 50mm in plan
Road pavement layer thickness	Points 3D surface (where requested)	Minimum, maximum, and average layer thickness.	Nil tolerance.

Component	Electronic data	PDF Drawing (*)	Tolerance not requiring markup
Underground Stormwater / Subsoil / Water / Sewer	3D polylines	Corrected levels and lengths Altered service details Omissions and additions	The lesser of +/- 20mm or 0.1% change in grade in long section
Stormwater channels	3D polylines	Corrected levels and batter slopes	The lesser of +/- 50mm or 0.1% change in grade in long section
Kerb and gutter	3D polylines	Extent and kerb type Altered kerb type or details Omissions and additions	+/- 50mm in plan or +/- 20mm in long section
Lighting	Points (fixtures) 3D polylines	Corrected fixture locations Altered fixture type or details Omissions and additions	+/- 100mm in plan
Electrical, communications, gas	Points (fixtures) 3D polylines	Corrected levels and lengths Altered service details Omissions and additions	+/- 100mm in plan and long section
Structures	Points 2D polylines	Corrected levels and lengths Altered structural or misc. details Omissions and additions	+/- 20mm in plan and level
Internal structure services	Points (fixtures) 2D polylines	Corrected fixture locations Corrected levels and lengths Altered service details Omissions and additions	Nil
Fencing	Nil	Extent of fencing and actual lengths Altered fencing type or details Omissions and additions	Nil
Guardrail	Nil	Extent of guardrail and actual lengths Altered details Omissions and additions	+/- 100mm in plan

Component	Electronic data	PDF Drawing (*)	Tolerance not requiring markup
Miscellaneous	Nil	Extent Details Omissions and additions	Nil

* The corrections on the hard copy drawings exclude changes to the model arising out of the WAE i.e. water main model does not require to be re-designed with WAE chainages.

1.3.3.1.3 Verification of WAE Documentation

All survey observations used for the purposes of WAE documentation must be related to the Survey Control Points provided on approved plans.

WAE observations will from time to time be verified by Council staff against approved plan Survey Control Points.

The provision of satisfactory WAE drawings is a condition of Practical Completion.

1.3.4 Project media

The project will be subject to financial auditing and project reporting.

No media may be undertaken by the Contractor without written approval from the Principal. It is noted that any media undertaken may be restricted in nature and content.

1.4 Construction of the works

1.4.1 General

The Contractor is to manufacture, construct, test, commission and hand-over the works as fit-for-purpose in accordance with the approved design drawings and the Contract Documents.

1.4.1.1 Road closures

Generally, the Contractor is anticipated to undertake the works in accordance with Section 1.3.1.3 to minimise traffic disruptions.

Works within state roads or roads under the authority of Transport for NSW (TfNSW) are to be completed in accordance with the TfNSW Road Occupancy Licence framework.

1.4.1.2 Garden beds

Garden beds shall be constructed from a minimum of 300mm topsoil, weed mat, and 100mm of hard wood bark.

1.4.1.3 Supply of materials

The Contractor shall procure all materials in accordance with the approved design drawings. Verification of conformance shall be provided for all materials prior to incorporation in to the works using appropriate test methods and frequency and/or conformance certificates provided by the supplier.

1.4.1.4 Manufacture

The Contractor shall ensure all components manufactured off site, including precast concrete wall panels and structural steelwork, are done so strictly in accordance with the approved design drawings and the workshop drawings, including requirements for storage, handling, transport and erection.

1.4.1.5 Supervision and certification of the works

The Contractor is to provide a suitably qualified and experienced supervisor to supervise, on a full time basis, construction of the works from commencement to completion. The requirement to provide a full time supervisor applies both if the Contractor carries out the work itself or engages the services of a sub-contractor.

Prior to handover to the Principal the Contractor's supervisor is to certify the works have been executed, and are fit-for purpose, in accordance with the approved design drawings and the Contract Documents.

1.4.1.6 Temporary works

The Contractor shall design, construct, maintain and remove any temporary work including access, bracing, weather proofing, surface protection and hoardings required to execute the works under the contract. All temporary work shall be designed and constructed for the loads which it will be subject to. The designs shall be formally certified by the Contractor (or their consultant) and shall be submitted to the Principal's Representative for approval prior to construction. In no case shall such approval relieve the Contractor of its responsibility for the adequacy of the temporary work.

1.4.1.7 Reinstatement

Any damage, as a result of the activities of the Contractor, to property both public and private, including buildings, services, roads, footways, paving, landscaping, street furniture or passing or parked vehicles and any other property shall be reinstated or made good by the Contractor at their cost.

1.4.1.8 Smooth junctions

Construction work, including temporary work, carried out under this Contract which is adjacent to or adjoining existing works shall make smooth junctions with the existing works.

1.4.1.9 Defective work or materials

1.4.1.9.1 Contractors obligations

The Contractor shall make good at his own expense any work, which, in the opinion of the Principal's Representative, is not in accordance with the Contract Documents, whether caused by bad workmanship, by defective materials supplied by the Contractor, or by materials made defective by the Contractor's operations. If the defective work is such that, in the opinion of the Principal's Representative, it cannot be made to comply with the Contract Documents, the sections concerned may be rejected, in which case no payment will be made. Alternatively, the Principal's Representative may accept the defective work at a reduced price, subject to the Contractor remedying the defects to the maximum extent practicable.

Security will be released only where the site has been declared 'defect free'.

1.4.1.9.2 Rectification by the Principal

If the Contractor fails to comply with an obligation under the Contract, the Principal must notify the Contractor of the non-compliance in writing and allow the Contractor a reasonable period of not less than seven (7) days to remedy their performance pursuant to the obligation. If the Contractor fails to perform their obligation following the Principal's notice of non-compliance then the Principal may perform, or have performed, the obligation on the Contractor's behalf and recover their reasonable costs and expenses incurred from the Contractor as a debt and the Contractor shall indemnify the Principal against any loss, cost, damage or expense (including any fine or penalty imposed by any statutory authority) which the Principal may incur as a consequence of that failure.

1.4.1.10 Hours of work

The hours of work under the Contract will be limited to:

- Monday – Friday: 7.00am – 5.00pm;
- Saturday: 8.00 am – 1pm if audible on residential premises, otherwise 7.00am – 5.00pm; and
- Sunday and Public Holidays – no work if audible on residential premises. By approval and at the complete discretion of the Principal only, with any rejections having no adverse impact on the Principal.

Work may be allowed outside these hours with the prior approval of the Principals Representative. If, in the interests of the safety or to protect life or property the Contractor finds it necessary to carry out, without the prior approval of the Principals Representative, work outside the defined hours of work, the Contractor shall inform the Principals Representative in writing of the circumstances within 24 hours.

1.4.1.11 Notification of works and clearance of vehicles

The Contractor shall provide all owners and/or occupiers of properties adjoining any part of the works with written notice of work commencement at least 48 hours in advance.

Wherever works involve the need for clearance of parked vehicles within the work site or adjacent to the work site in public streets the Contractor shall arrange for their prior removal by owners by placement of appropriate signage or other means providing notice at least 24 hours in advance.

Where inadequate or inappropriate action by the Contractor results in costs, losses or damages incurred by the Principal or claims by third parties against the Principal for either direct or consequential costs, losses or damages, including loss of profits and property damage, the

Contractor shall be liable for costs, losses or damages associated with any claim including but not limited to administration costs incurred by the Principal in resolving such claim.

1.4.2 Quality

1.4.2.1 General

The Contractor shall:

- Comply with all the quality requirements as provided in the contract documents for all works under the Contract;
- Ensure that each of its Subcontractors and Consultants comply in like manner; and
- Demonstrate to the Principal whenever required that all the quality requirements of the contract are being met.

Where inappropriate or inadequate provision of quality supervision by the Contractor or Contractor's Subcontractor results in costs, losses or damages incurred by the Principal or claims by third parties against the Principal for either direct or consequential costs, losses or damages, the Contractor shall be liable for costs, losses or damages associated with any claim including but not limited to administration costs incurred by the Principal in resolving such claim.

1.4.2.2 Standards and test methods

1.4.2.2.1 Standards and Specifications

Unless otherwise specified in the Contract Documents, and where applicable, materials, workmanship and test methods shall be in accordance with the relevant standard of the Standards Association of Australia and the National Code of Construction (Building Code of Australia and Plumbing Code of Australia).

1.4.2.2.2 Applicable edition

A standard applicable to the works shall be the edition last published 14 days prior to the closing date for tenders unless otherwise specified.

1.4.2.2.3 Overseas standards

Overseas standards and other standard documents named in the Specification shall be applicable in the same manner as Australian Standards to relevant materials and workmanship.

1.4.2.2.4 Copies to be kept on site

Copies of any standards quoted or referred to in the Specification shall be kept on the site if so specified.

1.4.2.2.5 Test methods other than Australian Standards

Test Methods, other than Australian Standards, specified in the Contract Documents shall refer to the issue dates current at 14 days prior to the closing date for tenders unless otherwise specified.

1.4.2.3 Testing and survey

All testing and survey as required by the Contract Documents shall be arranged and carried out by the Contractor after approval to proceed with testing and survey is obtained from the Principal's Representative.

All test results and survey records shall be made available to the Principal's Representative if requested to do so. The cost of all such testing and survey shall be borne by the Contractor.

The minimum frequency of testing and survey shall be in accordance with the relevant specification.

1.4.3 Workplace, health and safety

1.4.3.1 General

The Contractor shall:

- Comply with all requirements of the Contract and all statutory requirements for Work Health and Safety as per Work Health and Safety Act 2011 and WHS Regulation 2017;
- Ensure that each of its Subcontractors and Consultants comply in like manner;
- Demonstrate to the Principal whenever requested that requirements of the Contract and statutory requirements for Work Health and Safety are being met;
- Prior to the commencement of work, provide the Principal with certification that safety requirements of the Contract and statutory requirements for Work Health and Safety are capable of being met; and
- If the period of the contract exceeds three months the Contractor is to provide the Principal with a monthly certification that requirements of the Contract and statutory requirements for Occupational Health and Safety are being met.

Where inappropriate or inadequate provision of Work Health and Safety Management by the Contractor or Contractor's Subcontractor results in costs, losses or damages incurred by the Principal or claims by third parties against the Principal for either direct or consequential costs, losses or damages, the Contractor shall be liable for costs, losses or damages associated with any claim including but not limited to administration costs incurred by the Principal in resolving such claim.

1.4.3.2 Working areas

1.4.3.2.1 Designated sites

Where the working areas and areas for the storing of materials and use of plant has been identified, work shall not be performed nor the site occupied outside of these areas.

1.4.3.2.2 Security

The Principal will not be responsible for the safe-keeping of any of the Contractor's plant, equipment, tools, materials or other property on public land. The Principal may allow the contractor to store materials and plant within secure depots if so requested and mutually agreed upon.

1.4.3.2.3 Safety signs

The Contractor shall erect appropriate regulatory, hazard, emergency information and fire signs, in accordance with AS 1319 Safety signs for the occupational environment, at prominent locations around the working areas and temporary site facilities. Signs shall include, but are not limited to: mandatory signs for personal protective equipment such as eye, head and foot protection, and DANGER signs such as 'DANGER, Construction Site. No Unauthorised Access'.

All words on word-message signs shall be approved by the Principal's Representative prior to sign manufacture or purchase.

1.4.3.2.4 Temporary fencing

If existing fencing on the Principal's property is cut or altered by the Contractor, the Contractor shall provide and maintain temporary fencing to the satisfaction of the Principal's Representative during the Contract to prevent unauthorised entry into private property, and shall reinstate the fencing and remove temporary fencing on completion of the work.

Where construction hazards exist during works which may pose a risk due to unauthorised access into the site by a member of the public, or other person/s, the Contractor is to provide a physical barrier around the site which will prevent inadvertent unauthorised access. This may be in the form

of barrier mesh or temporary fence panels and should be selected based on the specific site conditions and location to the satisfaction of the Principal's Representative.

1.4.4 Environmental systems planning

1.4.4.1 General

The Contractor shall:

- Comply with all requirements of the Contract and statutory requirements for protection of the environment;
- Ensure that each of its Subcontractors and Consultants comply in like manner;
- Demonstrate to the Principal by mutual inspection and/or documentation whenever requested that requirements of the Contract and statutory requirements for the protection of the environment are being met;
- Prior to the commencement of work, provide the Principal with certification that the requirements of the Contract and statutory requirements for the protection of the environment are capable of being met by the Contractors' organisation and management;
- If the period of the contract exceeds three months the Contractor is to provide the Principal with a monthly certification that the requirements of the Contract and statutory requirements for protecting the environment are being met; and
- The Contractor is responsible for and must at its own cost make good any damage to the environment caused by the execution of the works.

Where inappropriate or inadequate provision of environmental management by the Contractor or Contractor's Subcontractor results in costs, losses or damages incurred by the Principal or claims by third parties against the Principal for either direct or consequential costs, losses or damages, the Contractor shall be liable for costs, losses or damages associated with any claim including but not limited to administration costs incurred by the Principal in resolving such claim.

1.4.4.2 Limits on noise

1.4.4.2.1 Plant with silencers

The Contractor shall only use plant that have effective residential class silencers fitted to all engine exhausts, have engine covers fitted, and are maintained in good order; however, all construction plant shall have clear and audible reversing beepers installed.

1.4.4.2.2 Working hours

Operational hours of plant, including the entry and/or departure of heavy vehicles, shall be in accordance with Section 1.4.1.10. Work outside of the hours specified shall not be undertaken without the prior approval of the Principal's Representative.

1.4.4.2.3 Maximum noise levels

Noise emanating from the construction site when measured at any noise sensitive location (such as a residential premise), as determined by the Environment Protection Authority's publication *Environmental Noise Control Manual*, shall not exceed an assigned L10 sound pressure level threshold (noise level exceeded for 10% of the sample time). The intent of this requirement is to avoid excessive noise and long periods of elevated noise that is reasonably anticipated to annoy or adversely affect the adjacent community.

1.4.4.2.4 Responsibility for damage

The Contractor will be responsible for any damage and compensation payments as a result of non observance of the above requirements. No claim by the Contractor arising out of these requirements will be considered by the Principal.

1.4.4.3 Limits on ground vibration

1.4.4.3.1 Levels

It is the intent of this requirements that ground vibration levels, transmitted from operating items of plant in the vicinity of residential premises, shall not exceed levels that are close to the lower level of human perception inside the premise nor will cause structural damage to the building.

Practices and vibration thresholds acceptable shall be determined in accordance with the current Statutory Regulation. Where such regulation is not available, or jurisdiction is disputed, the criteria given in this clause shall apply.

1.4.4.3.2 Limits

Vibration (RMS Z-Axis) generated by construction works shall not exceed:

- Curve 4—for the period of 1 month or less; and
- Curve 2—for the period of more than 1 month.

as defined in British Standard BS 6472.1 'Evaluation of Human Exposure to Vibration in Buildings (1 HZ to 80 HZ)' when measured inside nearby residential premises.

1.4.4.3.3 Peak particle velocity

Ground vibrations generated by construction works shall not exceed a peak particle velocity (VR max) limit of 5 mm/sec when measured within one metre of any residential premise.

1.4.4.3.4 Responsibility for damage

The Contractor shall be responsible for any damage and compensation payments as a result of non-observance of the above requirements. No claim by the Contractor will be considered by the Principal.

1.4.5 Utility authorities and other agencies

1.4.5.1 Relations with utility authorities and other agencies

1.4.5.1.1 Principal to arrange adjustments to utilities

The Principal's Representative will arrange for all necessary adjustments to utilities required to conform to the design drawings unless specified otherwise or noted on the design drawings and Contract Documents. The Principal's Representative will make every endeavour to arrange for such adjustments to be performed expeditiously and with a minimum of inconvenience to the Contractor. Work shall comply with the Streets Opening Conference's Information Bulletin on Codes and Practices.

1.4.5.1.2 Check on presence

Before proceeding with excavation or other work in any area, the Contractor shall liaise with the utility authorities to ascertain the presence of any utility services and check that all necessary utility relocations have been completed.

The 'Dial Before You Dig' Service, telephone 1100, may be contacted to obtain presence of water, sewer, stormwater, gas, electricity and telephone services and some cables and pipes of companies and other organisations.

1.4.5.1.3 Additional adjustments

Where the Contractor's method of working results in additional adjustments to their plant being deemed necessary by any other Authority the Contractor will arrange for and bear all costs relevant to those additional adjustments. This applies regardless of any approval to the method of working by the Principal's Representative.

1.4.5.1.4 Minimum interference with services and other contractors

The Contractor shall conduct the operations so as to interfere as little as possible with the operations of other Authorities or their contractors on or near the site of the works. The Principal reserves the right to permit other Authorities and others to work on or near the Works being constructed under the Contract.

1.4.5.1.5 Responsibility for maintenance and protection of services

The Contractor will not be responsible for the maintenance of any facilities installed or constructed by the various Authorities or structures and other facilities constructed by others (except where such structures and facilities form part of the Contract), but will be responsible for the protection of such facilities and structures during the Contract period.

1.4.5.1.5.1 Delays due to works by authorities

In certain instances the Contractor may be required to provide the various Authorities the opportunity to remove, relocate, or work on their facilities before the Contractor proceeds with succeeding construction operations.

Should the Contractor suffer any delay in excess of the times set out in this requirements owing to the moving of any such services, or the operations of any Authority controlling such services, the Contractor may apply to the Principal's Representative for an extension of time in accordance with the Contract.

The Contractor shall have no right to monetary compensation or to any claim for damages because of any loss owing to such delays, nor shall the Contractor stop the Works without the express permission in writing of the Principal's Representative because of any operation by other Authorities.

1.4.5.2 Location and protection of services and utilities

1.4.5.2.1 Contractor to verify locations

Prior to the commencement of any excavation the Contractor shall verify the location and depth of all Public Utility Mains and Consumer Services and shall be responsible for any damage caused, the repair of the damage, and payment of all charges associated therewith.

1.4.5.2.2 Precautions

During the excavation of Works, the Contractor shall take every precaution that is necessary, in the opinion of the Principal's Representative, to secure existing gas, water or drainage pipes, sewers, electric conduits or other existing works, wherever met with both underground and overhead, or that are adjacent to these Works, from injury and shall maintain the same until in the opinion of the Principal's Representative, the backfilling of excavation and the general progress of the Works render further precautions unnecessary.

The Contractor shall comply with the Statutory Requirements for maintaining safe working clearance to overhead electrical services.

1.4.5.2.3 Repairs to damage caused by contractor

Damage to existing water, gas or drainage pipes, sewers, electric conduit or other existing works or services, shall be repaired by the Contractor to the satisfaction of the Principal's Representative and the relevant Authority at the Contractor's cost.

1.4.5.2.4 Notice to divert services

Where it is found necessary to remove, divert or cut into any existing sewer, drainage pipe, gas or water main, service pipes, electric conduits or other existing works, the Contractor shall give at least 3 days' notice of the Contractor's requirements to the Principal's Representative, who will advise what arrangements should be made for the alteration of such existing works.

1.4.5.2.5 Liaison

Where the installation of service mains, pits and consumer service connections is to be carried out by the various Utility Authorities the Contractor shall liaise and co-ordinate with the relevant Authorities for the installation to coincide with the construction work of this Contract.

The Contractor shall be responsible to programme the installation such that all work is completed by the relevant Authorities so as not to hinder or delay the progress of the construction work.

1.4.5.2.6 Limitations to work methods

Attention is directed to the possible existence of vibration and other working limitations in the vicinity of underground and overhead facilities. The extent of these limitations are liable to the absolute discretion of the Authority concerned.

The Contractor shall be deemed to have included consideration of these potential limitations in the method of construction as proposed for approval by the Principal's Representative in accordance with the provisions of this work section.

The cost of such limitations on working methods shall be determined in accordance with the Conditions of Contract.

1.4.5.2.7 Disclaimer to information shown on drawings

Information shown on the Drawings concerning utility services has been compiled from information obtained from various Utility Authorities and is not guaranteed correct or complete. Services may exist which are not shown on the Drawings, or which are at locations or elevations different than those shown on the Drawings.

2 Documents provided by the principal

The below documents are provided to the Contractor to undertake the works:

- Review of Environmental Factors (to be issued);
- 16562 Road, Stormwater and Roundabout Design Drawings;
- Electrical Relocation Design Drawings (to be issued);
- RGS32468.1-AA Roundabout and Leg Pavement Design Report;
- RGS32468.1-AB Flood Plain At-Grade Pavement Design Report; and
- Flooding figures for at-grade flood plain pavement.

3 Tamworth Regional Council specifications

The following Tamworth Regional Council specifications form part of the Contract Documents and are relevant to all bridges:

- C201 – Control of Traffic
- C211 – Control of Erosion and Sedimentation
- C212 – Clearing
- C213 – Earthworks
- C220 – Stormwater Drainage
- C221 – Pipe Drainage
- C223 – Drainage Structures
- C224 – Open Drains Including Kerb and Gutter
- C230 – Subsoil Drainage – General
- C231 – Subsoil and Foundation Drains
- C232 – Pavement Drains
- C241 – Stabilisation
- C242 – Flexible Pavements
- C244 – Sprayed Bitumous Surfacing
- C245 – Asphaltic Concrete
- C261 – Pavement Markings
- C262 – Signposting
- C271 – Minor Concrete Works
- C273 – Landscaping
- C303 – Service Conduits
- C401 – Water Reticulation
- C402 – Sewerage System

These specifications have not been included in the Tender documents. It is the Contractor's responsibility to obtain the relevant specifications from the TRC website.

https://www.tamworth.nsw.gov.au/develop/development-engineering/construction-specifications

4 Tamworth Regional Council standard drawings

The full suite of Tamworth Regional Council standard drawings form part of the Contract Documents.

These standard drawings have not been included in the Tender documents. It is the Contractor's responsibility to obtain the relevant specifications from the TRC website.

https://www.tamworth.nsw.gov.au/develop/development-engineering/standard-drawings-suite

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7.5. Appendix E – Heritage Items Unexpected Finds Protocol

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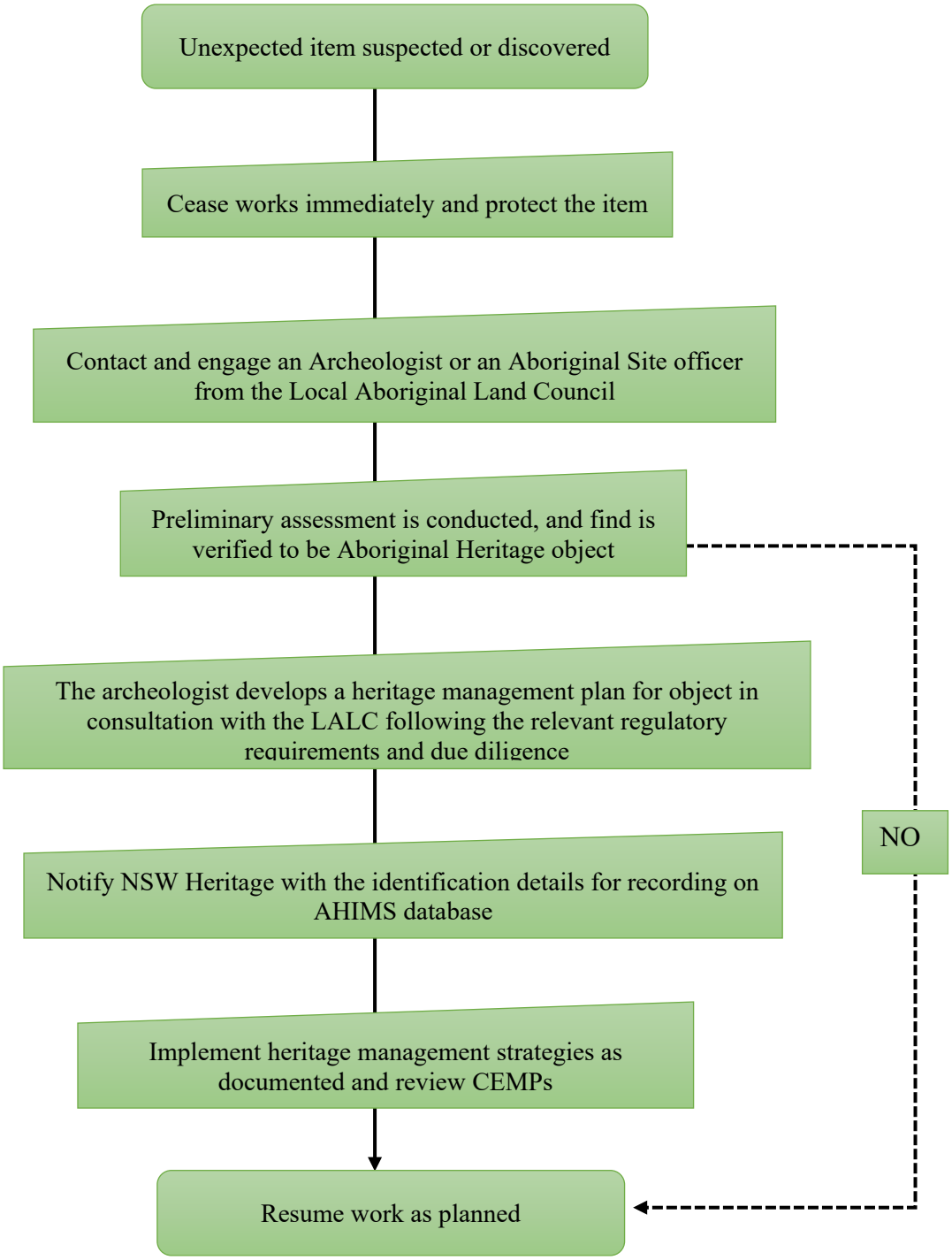
PO Box 390, Tamworth NSW 2340

Heritage Items Unexpected Finds Protocol

In some instances where an Aboriginal Cultural Heritage item is suspected or found during construction of works, the following protocol should be followed to avoid further harms to the object(s).



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END OF REPORT

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