TOMINGLEY
GOLD OPERATIONS PTY LTD
(A wholly owned subsidiary of Alkane Resources Ltd)
ABN 53 149 040 371

Tomingley Gold Extension Project

Integrated Transport Assessment

Part 1

Major Project Application No. PA 09_0155





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December 2021

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Tomingley Gold Extension Project

Integrated Transport Assessment

Prepared for

RW Corkery & Co Pty Ltd

December 2021

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Commonly Used Acronyms

Abbreviation	Description
AADT	Average Annual Daily Traffic
AUL	Auxiliary Left Turn Lane
AUR	Auxiliary Right Turn Lane
BAL	Basic Left Turn Lane
BAR	Basic Right Turn Lane
CHL	Channelised Left Turn Lane
CHR	Channelised Right Turn Lane
DPIE	Department of Planning, Industry and Environment's
EIS	Environmental Impact Statement
HV	Heavy Vehicle
HW17	Newell Highway
LV	Light Vehicle
NSC	Narromine Shire Council
SEARs	Secretary's Environmental Assessment Requirements
TfNSW	Transport for NSW

1 Introduction

1.1 Overview

Tomingley Gold Operations Pty Ltd (the Applicant), a wholly owned subsidiary of parent company Alkane Resources Ltd (Alkane), operates the Tomingley Gold Operations Mine Site (referred herewith as the TGO Mine Site), located immediately south of the village of Tomingley, approximately 7.5km north of Peak Hill and approximately 38km south of Narromine (refer **Figure 1**). The TGO Mine Site is currently operating under development consent MP09_0155 and the approved activities include the following:

- Mining of four open cuts, with underground mining under three of the approved open cuts, namely Wyoming One, Caloma One and Caloma Two Open Cuts, until 31 December 2025.
- Placement of waste rock into three out-of-pit waste rock emplacements, namely Waste Rock Emplacements 1, 2 and 3 and two in-pit waste rock emplacement, namely the Wyoming 3 and Caloma 2 Open Cuts.
- Construction and use of a carbon-in-leach processing plant and associated infrastructure, including a run-of-mine (ROM) pad, crushing, grinding and leaching circuits, workshops, ablutions facilities, stores, office area and car parking. The maximum approved rate of processing is 1.5 million tonnes per annum (Mtpa).
- Construction and use Residue Storage Facility 1 (to Stage 9 or 286.5m AHD) and Residue Storage Facility 2 (to Stage 2 or 272m AHD) for the storage of process residues.
- Construction and use of infrastructure required for the Mine, including:
    - dewatering ponds;
    - a water pipeline, from a licensed bore located approximately 7km to the east of Narromine;
    - various mine roads, including an underpass beneath the Newell Highway;
    - a transformer and electrical distribution network within the TGO Mine Site;
    - various clean and dirty water management structures; and
    - vegetated amenity bunds.

Construction of the Mine commenced in February 2013 with open cut mining commencing in November 2013. Underground mining development from a portal in the Wyoming 1 Open Cut commenced in January 2019, with ore production from stopes commencing in December 2019.

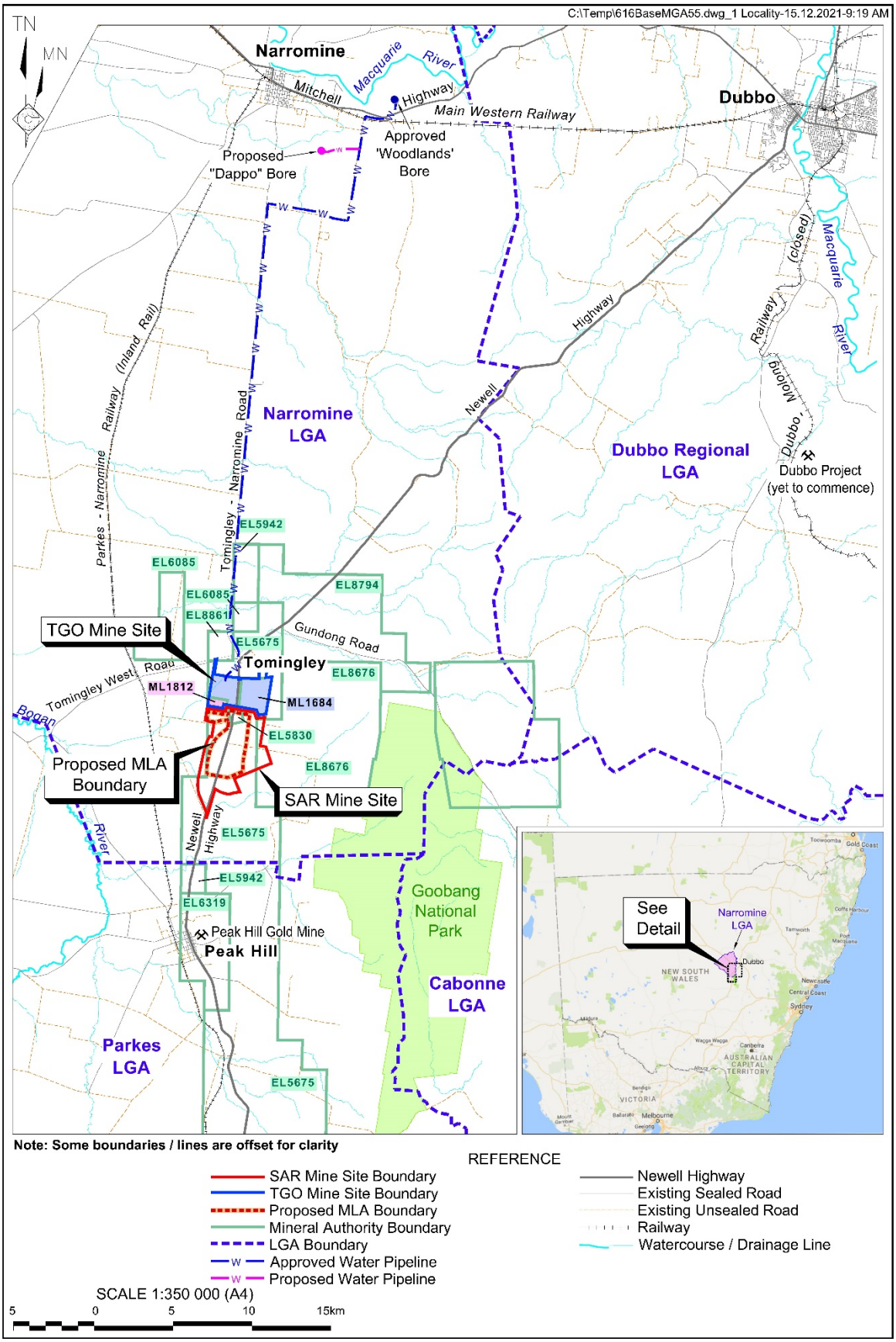


Figure 1 – Locality Plan
(Source: RWC, 2021)

1.2 Project Overview

The Applicant has identified a number of prospects located to the south of the TGO Mine Site, in particular the San Antonio and Roswell (SAR) Prospects, and has completed a preliminary mine optimisation and identified that the resources have the potential to sustain an economically viable mining operation.

The Tomingley Gold Extension Project (the "Project") consists of the TGO Mine Site and the SAR Mine Site, together referred to as the Project Site, shown in **Figure 2**. A full Project description is provided in the Environmental Impact Statement (RWC 2021) and the two components of the Project are as follows:

(1) Approved TGO Mine Site operations. These activities are undertaken in accordance with development consent MP 09_0155. The approved activities would continue under any new development consent, with MP 09_0155 to be surrendered following receipt of the new development consent and all required approvals for the Project. The approved activities include the following.

- Extraction of ore and waste rock from four open cuts, with underground mining beneath three of those open cuts.
- Construction of three out-of-pit waste rock emplacements and two in-pit waste rock emplacements.
- Construction and use of various haul roads, a run-of-mine (ROM) pad and associated stockpiles.
- Construction and use of a Processing Plant to process up to 1.5 million tonnes per annum (Mtpa).
- Construction and use of two residue storage facilities comprising Residue Storage Facility 1 (to Stage 9 or a maximum elevation of 286.5m AHD) and Residue Storage Facility 2 (to Stage 2 or a maximum elevation of 272m AHD).
- Construction and use of ancillary infrastructure.

(2) Proposed SAR Mine Site operations and additional or modified TGO Mine Site operations, including the following:

- Realigned Newell Highway (HW17) and Kyalite Road and associated intersections with Back Tomingley West Road and McNivens Lane and Kyalite Road overpass.
- The SAR Open Cut and Underground Mine.
- Construction of two waste rock emplacements, namely the Caloma Waste Rock Emplacement, within the Caloma 1 and Caloma 2 Open Cuts, and SAR Waste Rock Emplacement, within the southern and central sections of the SAR Open Cut.
- The SAR Amenity Bund, Haul Road and Services Road between the SAR Open Cut and the Caloma 2 Open Cut.
- Minor modifications to the Processing Plant to increase the approved maximum processing rate from 1.5Mtpa to 1.75Mtpa and use of the Plant to process ore from the SAR Open Cut and SAR and TGO underground mining operations.
- Increased capacity for Residue Storage Facility 2, from Stage 2 to Stage 9, with a maximum elevation of 286m AHD).

In addition, the Project would include an extension of the approved mine life, from 31 December 2025 to 31 December 2032.

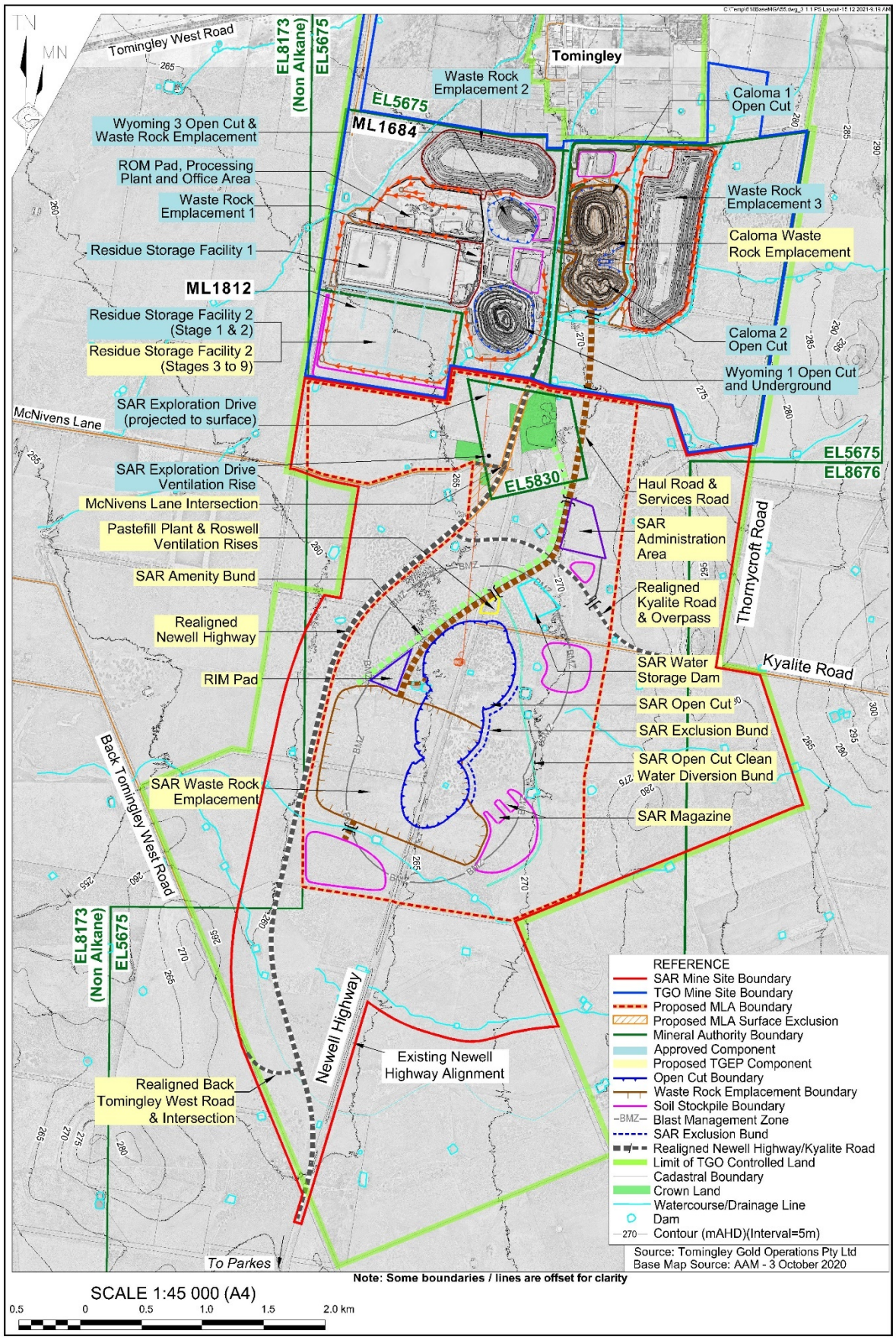


Figure 2 – Project Site Layout

(Source: RWC)

1.3 Scope of this Report

This report has been prepared to accompany an Environmental Impact Statement (EIS) for the Project, prepared by R.W. Corkery & Co. Pty Limited (RWC). This report assesses the transport and traffic related impacts of the Project on the surrounding road network with reference to the following guidelines and standards:

- Guide to Traffic Generating Developments (RTA 2002);
- Road Design Guide (RMS) and Relevant Austroads Standards; and
- Austroads Guide to Traffic Management Part 12: Traffic Impacts of Development.

This assessment has been prepared in accordance with requirements of the NSW Department of Planning, Industry and Environment (DPIE). These were set out in DPIE Secretary's Environmental Assessment Requirements (SEARs) for the Project, issued on 22 July 2021. The SEARs identify matters which must be addressed in the EIS and essentially form its terms of reference. **Table 1** lists individual requirements relevant to this traffic and transport assessment and where they are addressed in this report.

Table 1 – DPIE Road and Transport related SEARs

Description	Report Section
The EIS must address the following specific issues with the level of assessment of likely impacts proportionate to the significance of, or degree, of impact on, the issue, within the context of the project location and the surrounding environment and having regard to applicable NSW Government policies and guidelines, including:	-
• The likely traffic and transport impacts of the development on the capacity, condition, safety and efficiency of the road and rail network and any cumulative impacts of other developments in the locality, documented in an Integrated Transport Assessment, including:	-
- The site access routes (including Newell Highway and Kyalite Road, and associated intersections with Back Tomingley West Road, McNivens Lane and Kyalite Road overpass) and site access points in accordance with the *Roads Act 1993*; and	3.1, 3.2, 4.4, 4.5, 4.6
- A description of the measures that would be implemented to mitigate and / or manage potential traffic impacts including a schedule of all required road upgrades, road maintenance contributions, management of oversized and over mass traffic and other traffic control measures, developed in consultation with the relevant road authority;	4.1.1, 4.5, 4.6, 4.7, 4.8, 4.9, 4.10, 4.11
• Details of design requirements for the realignment of the Newell Highway and Kyalite Road including associated plans and proposed flood protection of the realigned roads;	4.4, 4.5.1

To inform the preparation of the SEARs, DPIE invited other government agencies to recommend matters to be addressed in the EIS. These matters were taken into account by the Secretary for DPIE when preparing the SEARs and included accordingly.

Narromine Shire Council (NSC) and TfNSW raised matters relevant to the traffic and transport assessment. The matters raised are listed in **Table 2** and **Table 3** and have been taken into account in preparing this assessment.

Table 2 – NSC Project Specific Assessment Requirements

Description	Report Section
Council seeks a traffic and access impact assessment that takes into consideration the following:	-
a) The impact of increased traffic movements, type, and number of vehicle movements on Council's road network;	3
b) The level of service required to facilitate an increased traffic volume as the result of the proposal and if any Council roads will require an update to support the increase in traffic and heavy haulage. This should specifically address some matters specifically referred to in the Scoping Report.	4.5

Description	Report Section
Item No. 1 – 1.5.3 Approved TGO Operations - Any new infrastructure that will cross a Council asset or that may have an impact or interfere on a Council asset will require approval from Council. (e.g. Realignment of roads or water pipelines).	4.5, 4.7, 4.9
Item No. 2 – 1.5.6 Key Mitigation Strategies, 5th Bullet Point - Discussion regarding overpass on Kyalite Road for road users is silent of the design vehicle.	4.5.1
Item No. 3 – 1.5.6 Key Mitigation Strategies - Discussion should include impacts on other roads such as the Newell Highway, Back Tomingley West Road and McNivens Lane.	3, 4.4, 4.5.4, 4.5.5
Item No. 4 – 2.1.2.3 Central West and Orana Regional Plan 2036 – Goal 3 and 2.1.2.4 Narromine Shire Community Strategic Plan – What additional travel time has been calculated for road users along Kyalite Road?	4.5.1
What offset in terms or road serviceability and survivability is being proposed for the other impacted roads? The realigned Kyalite Road should have at least the same AEP as the Newell Highway.	4.5.1
Is there any impact on Thornycroft Road?	4.3.3
Item No. 5 – 2.2.3 Land Ownership - The Applicant will be required to follow the appropriate processes in terms of Road Openings and Road Closures in terms of the Roads Act, 1993.	4.3.5
Item No. 6 – 2.2.6 Risks and Hazards, 2nd bullet point - Consideration should also be given to the realigned Kyalite Road and other impacted roads such as Back Tomingley West Road and McNivens Lane.	4.5
Item No. 7 – 2.2.6 Risks and Hazards - Consideration should be given to the restoration/rehabilitation of re-aligned roads vs doing nothing at end of mine life.	4.5.1
Item No. 8 – 3.4.3 Realigned Public Roads - Overpass on Kyalite Road needs further discussion, especially on the deign vehicle. Council's requirement would be that the overpass be constructed for at least a 36.5m Road Train.	4.5.1
Consideration should be given regarding oversize vehicles, especially agricultural equipment, and the use of the proposed permit system, especially during harvest season or during the movement of stock. Council is not in favour of the permit system, at this stage.	4.1.1
Item No. 9 – General - Stacking and storage of the vehicles need to be considered at intersections considering the design vehicle.	4.6
Item No. 10 – General - Expected traffic movements to the administration area should be outlined.	3.2.3, 3.4
Item No. 11 – General - Road safety audit is sought to be provided as part of the EIS and design phase.	4.3.2

Table 3 – TfNSW Project Specific Assessment Recommendations

Description	Report Section
Discussions are currently occurring in relation to the design requirements for the realignment of the referenced section of the Newell Highway (approximately 1km to the west) and Kyalite Road. The discussions should continue with TfNSW as a part of the preparation of the EIS and any outcome in terms of design should form part of the EIS and associated plans to be submitted as a part of the lodgement of the application with the consent authority.	4.4
Integrated Transport Assessment (ITA) The ITA is to address the following general requirements:	-
Project Schedule - Hours and days of work, number of shifts and start and end times,	3.1.3, 3.2.3
Project Schedule - Phases and stages of the project, including construction, operation and decommissioning,	3
Traffic Volumes - Existing background traffic	3.3
Traffic Volumes - Project-related traffic for each phase or stage of the project	3.4

Description	Report Section
Traffic Volumes - Projected cumulative traffic at commencement of operation, and a 10-year horizon post-commencement	3.4, 3.5
Traffic Characteristics - Number and ratio of heavy vehicles to light vehicles	3
Traffic Characteristics - Peak times for existing traffic	3
Traffic Characteristics - Peak times for project-related traffic including commuter periods	3
Traffic Characteristics - Proposed hours for transportation and haulage	3.1.3, 3.2.3
Traffic Characteristics - Interactions between existing and project-related traffic	3
A description of all over size and over mass vehicles and the materials to be transported	4.1.1
The origins, destinations and routes for commuter (employee and contractor) light vehicles and pool vehicles	3
The origins, destinations and routes for heavy (haulage) vehicles	3
The origins, destinations and routes for over size and over mass vehicles:	3
Road safety assessment of key haulage route/s,	-
The impact of traffic generation on the public road network and measures employed to ensure traffic efficiency and road safety during construction, operation and decommissioning of the project	3
The need for improvements to the road network, and the improvements proposed such as road widening and intersection treatments, to cater for and mitigate the impact of project related traffic	4.4, 4.5, 4.6, 4.7, 4.8, 4.9, 4.10, 4.11
Proposed road facilities, access and intersection treatments are to be identified and be in accordance with Austroads Guide to Road Design including provision of Safe Intersection Sight Distance (SISD)	4.6
Local climate conditions that may affect road safety during the life of the project (e.g. fog, wet and dry weather, icy road conditions)	4.13
The layout of the internal road network, parking facilities and infrastructure	4.20
Impacts on rail corridors and level crossings including rail and road traffic, and detailing any proposed interface treatments	4.17
Impact on public transport (public and school bus routes) and consideration for active transport modes such as walking and cycling	2.5, 2.6, 4.15, 4.16
Identification and assessment of potential impacts of the project, such as blasting, lighting, visual, noise, dust and drainage on the function and integrity of all affected public roads	4.14
Controls for transport and use of any dangerous goods in accordance with State Environmental Planning Policy No. 33 – Hazardous and Offensive Development, the Australian Dangerous Goods Code and Australian Standard 4452 Storage and Handling of Toxic Substances	3.2.6

2 The Surrounding Road Network

2.1 The Study Area

An inspection of the roads in the vicinity of the Project Site was conducted on 6 November 2020. The roads included in the study are described in **Table 4** and shown in **Figure 3.**

Table 4 – Inspected Roads within the Study Area

Road Name	Inspection Extent	Approx. Length
Newell Highway	Back Tomingley West Road to Tomingley Road	10.2km
Tomingley Road[1]	Newell Highway to Tomingley West Road	0.22km
Tomingley West Road	Tomingley Road to Back Tomingley West Road	4.4km
Back Tomingley West Road	Tomingley West Road to the Newell Highway	10.4km
Kyalite Road	Newell Highway to O'Leary's Lane	5.8km
Thorncroft Road	Kyalite Road to 90 degree bend	1.6km
McNivens Lane[2]	Newell Highway to Back Tomingley West Road	4.5km

Access to the TGO Mine Site is currently from Tomingley West Road. Traffic travelling to the TGO Mine Site from Dubbo to the north-east and Peak Hill to the south will use the Newell Highway, Tomingley Road and Tomingley West Road, whilst traffic originating from Narromine to the north use Tomingley Road and Tomingley West Road.

The Newell Highway is a state road controlled by TfNSW. All other local roads as listed above are located within the Narromine Shire Council (NSC) Local Government Area (LGA) with NSC as the road authority.

[1] Tomingley Road is also referred to as the Tomingley-Narromine Road.
[2] Whilst signposted McNivens Lane, it is also referred to as McNivens Lane.

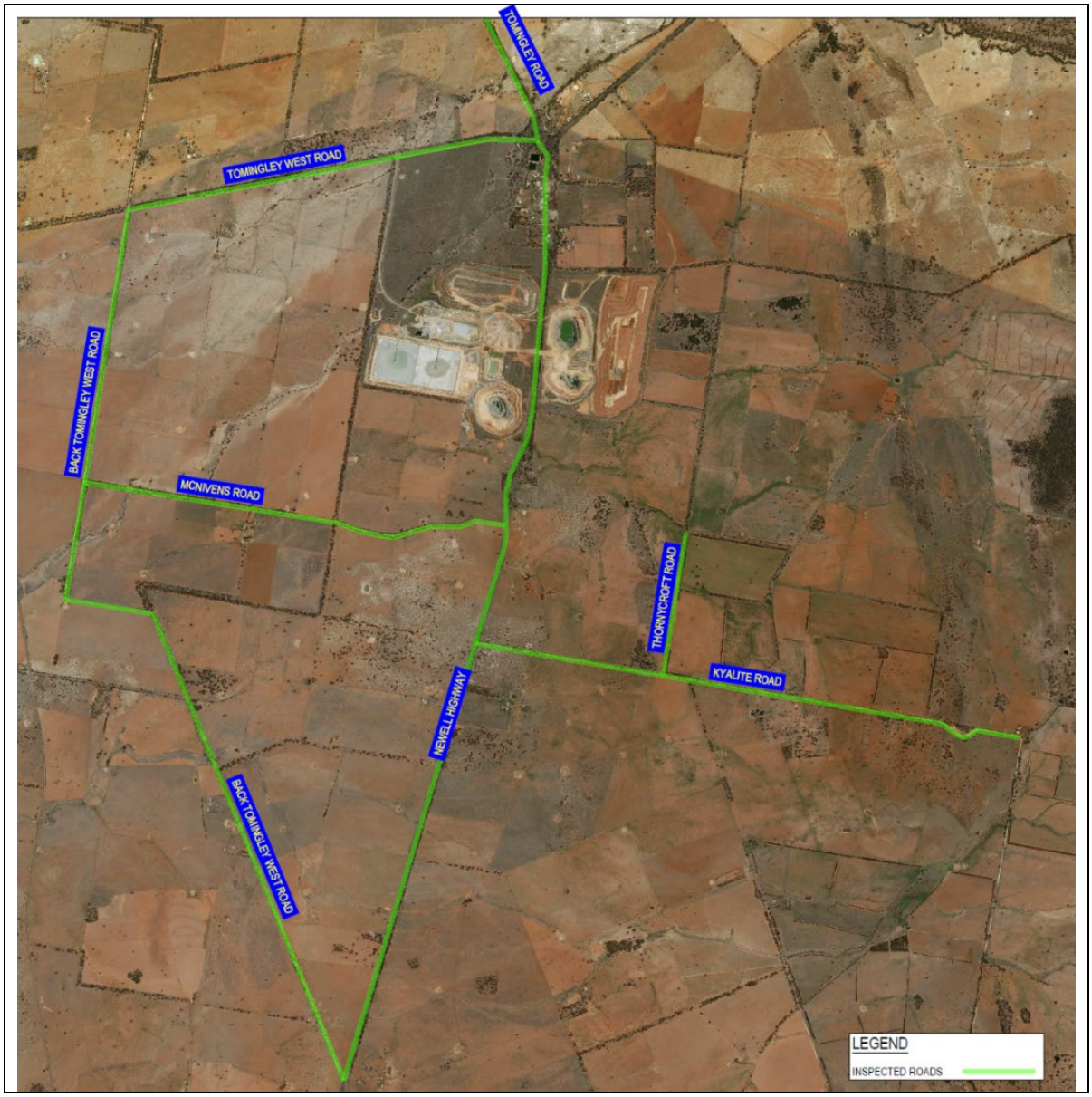


Figure 3 – Surrounding Road Network

2.2 Roads

2.2.1 Newell Highway (HW17)

The Newell Highway forms part of the National Highway network and is a classified road (state road) referred to as Highway 17 (HW17). HW17 is approximately 1,060km in length and provides a link from the Murray River at Tocumwal at the Victoria border through to the Queensland border at Goondiwindi and is a major interstate transport connection between Victoria, New South Wales and Queensland for freight and passengers, including tourists. In addition, HW17 provides a significant regional traffic route serving and linking a range of towns and major centres as well as link for domestic and export markets.

For the purpose of this assessment, HW17 was inspected from its intersection with Back Tomingley West Road to the south of the Project Site to its intersection with Tomingley Road to the north of the Project Site as described below.

In the vicinity of the Project Site, HW17 is generally flat with long, straight sections. The road configuration generally consists of a two-lane / two-way sealed road with 3.5m wide travel lanes and 1.5m sealed shoulders (refer **Plate 1**). The posted speed limit is 110km/h except for the northern and southern approaches to the village of Tomingley where the posted speed limit reduces to 80km/h before reducing to 50km/h within the village (refer **Plate 2**). HW17 travels in a north-south direction in the vicinity of the Project Site and is identified as approved for restricted access vehicles including 25 and 26m long B-doubles, and double road trains as per the TfNSW online interactive Restricted Access Vehicle Maps [3]. The pavement was considered to be in relatively good condition. Delineation consisted of guideposts, retroreflective raised pavement markers (RRPMs), centre and edge line markings. There are also a number of rural property access points that intersect with HW17 between the TGO Mine Site and Back Tomingley West Road.

Plate 1: Typical section of HW17 south of Tomingley

Plate 2: Typical section of HW17 through the village of Tomingley

2.2.2 Tomingley Road

Tomingley Road is a classified road referred to as Main Road 89 (MR89) that provides an important link from HW17 to the Mitchell Highway at Narromine. It also provides access to numerous rural properties and the TGO Mine Site from HW17. For the purpose of this assessment, a 220m long section of Tomingley Road from HW17 to the intersection of Tomingley West Road was inspected as described below. It is approved for restricted access vehicles including 25 and 26m long B-doubles, and double road trains as per the TfNSW online interactive Restricted Access Vehicle Maps.

The configuration of this section of the road consists of a two-lane / two-way sealed road with 3.1m wide travel lanes and 1m wide sealed shoulders (refer **Plate 3**). The posted speed limit is 80km/h. The pavement was considered to be in relatively good condition. Delineation consisted of guideposts, centre and edge line markings.

[3] https://roads-waterways.transport.nsw.gov.au/business-industry/heavy-vehicles/maps/road-train-map/index.html (09/06/2021)

Plate 3: Tomingley Road looking south back to HW17

2.2.3 Tomingley West Road

Tomingley West Road is local road that provides access to numerous rural properties and direct access to the existing TGO Mine Site. Tomingley West Road travels in an east-west direction adjacent to the TGO Mine Site to the south. The posted speed limit is 60km/h from its intersection with Tomingley Road before increasing to 100km/h. To the west of the TGO Mine Site access, the speed limit was signposted with an 80km/h Road Work speed sign. For the purpose of this assessment, Tomingley West Road was inspected for a distance of approximately 4.4km from its intersection with Tomingley Road to its intersection with Back Tomingley West Road as described below.

The TGO Mine Site access is located approximately 1.5km from the Tomingley Road intersection. The configuration of Tomingley West Road in this consists of a two-lane / two-way sealed road with 3.5m wide travel lanes and 0.5m wide sealed shoulders (refer **Plate 4** and **Plate 5**). The pavement was considered to be in relatively good condition. Delineation constated of guideposts, centre and edge line markings however these markings had faded in places.

Plate 4: Tomingley West Road looking west from the Tomingley Road intersection

Plate 5: Typical section of Tomingley West Road looking east

The remaining 2.9km of Tomingley West Road from the TGO Mine Site access to the Back Tomingley West Road consists of a 3.4m wide seal with unsealed shoulders of between 1 and 1.5m wide (refer **Plate 6** and **Plate 7**). The road caters for two way traffic and the pavement was considered to be in relatively good condition however, there were no guideposts for delineation at night.

Plate 6: Tomingley West Road looking west from the TGO Mine Site access intersection

Plate 7: Tomingley West Road looking east from the Back Tomingley West Road intersection

2.2.4 Back Tomingley West Road

Back Tomingley West Road is local road that provides access to numerous rural properties. Back Tomingley West Road effectively travels in a north-south direction and is located to west of the Project Site. Back Tomingley West Road was inspected for a distance of approximately 10.5km from its intersection with Tomingley West Road to its intersection with HW17 as described below.

Back Tomingley West Road is an unsealed road with an average pavement width of approximately 6m that caters for two way traffic (refer **Plate 8** and **Plate 9**). There is no posted speed limit however, the default speed limit is 100km/h. The pavement was considered to be in fair to reasonable condition however there were a number of soft spots encountered due to poor drainage provisions and there were no guideposts for delineation at night.

Plate 8: Back Tomingley West Road – Typical Section for ch5km from the Tomingley West Road intersection

Plate 9: Typical section of Back Tomingley West Road from approximately ch5km to HW17

2.2.5 Kyalite Road

Kyalite Road is local road that provides access to numerous rural properties. Kyalite Road travels in an east-west direction and is located to the east of HW17. Kyalite Road was inspected for a distance of approximately 9.5km from its intersection with HW17 to O'Leary's Lane as described below.

Kyalite Road is an unsealed road with an average pavement width of approximately 6m that caters for two way traffic (refer **Plate 10** and **Plate 11**). There is no posted speed limit however, the default speed limit is 100km/h. The pavement was considered to be in reasonable condition however there were no guideposts for delineation at night.

Where Kyalite Road intersects with Thornycroft Road, there is a crest to the west along Kyalite Road which results in limited sight distance for road users. There is also no crest signage in place (refer **Plate 12**).

Plate 10: Kyalite Road – Typical Section between HW17 and Thornycroft Road

Plate 11: Kyalite Road – Typical Section between Thornycroft Road and O'Learys Lane

Plate 12: Kyalite Road – looking west from the Thornycroft Road intersection

2.2.6 Thornycroft Road

Thornycroft Road is local road that provides access to numerous rural properties. Thornycroft Road travels in a north-south direction, before turning east west and is located to the east of HW17. Thornycroft Road was inspected for a distance of approximately 1.6km from its intersection with Kyalite Road as described below.

Thorncroft Road is an unsealed road with an average pavement width of approximately 4.5m that caters for two way traffic (refer **Plate 13** and **Plate 14**). There is no posted speed limit however, the default speed limit is 100km/h. The pavement was considered to be in reasonable condition however there were no guideposts for delineation at night.

Plate 13: Thornycroft Road – Typical Section looking north from the Kyalite Road intersection

Plate 14: Thornycroft Road – Typical Section looking south from ch1.6km at the bend

2.2.7 McNivens Lane

McNivens Lane is a local road that is located to the south of the TGO Mine Site. McNivens Lane travels in an east-west direction and is located to the west of HW17. McNivens Lane was inspected for a distance of approximately 4.5km from its intersection with HW17 through to Back Tomingley West Road as described below.

McNivens Lane is an unsealed road with an average pavement width of approximately 3.5m that caters for two way traffic (refer **Plate 15** and **Plate 16**). There is no posted speed limit however, the default speed limit is 100km/h. The pavement was considered to be in fair reasonable condition however there were a number of soft sports and there were no guideposts for delineation at night.

McNivens Lane crosses Gundoong Creek approximately 500m east of the Back Tomingley West Road intersection. There is a gravel causeway in place however this section of the road is commonly underwater for extended periods of time as the opportunity for flood waters to dissipate in this area is limited given the flat terrain. **Plate 17** is an example of the flooding that occurred at this location back in August 2020.

Plate 15: McNivens Lane – Typical Section looking west from the HW17 intersection

Plate 16: McNivens Lane – Typical Section looking east from the Back Tomingley West Road intersection

Plate 17: McNivens Lane – Gundong Creek crossing

2.3 Intersections

2.3.1 HW17 and Tomingley Road

The intersection of HW17 and Tomingley Road is a T-intersection inclusive of an Auxiliary Right (AUR) and Auxiliary Left (AUL) turn treatments on HW17. HW17 is the priority road and signposted give way control is in place for Tomingley Road inclusive of a sightboard which is appropriately located opposite the Tomingley Road approach to the intersection. In addition, a median island is in place along the centre line of Tomingley Road to prevent vehicles cutting the corner when undertaking right turn manoeuvres. The posted speed limit is 60km/h for all legs of the intersection, the pavement was considered to be in relatively good condition and delineation was provided in the form of guideposts, line marking, RRPMs and overhead street lighting. (refer **Plate 18** to **Plate 20**).

Plate 18: HW17 – view north from Tomingley Road

Plate 19: HW17 – view south from Tomingley Road

Plate 20: View east on approach from Tomingley Road to HW17

2.3.2 Tomingley Road and Tomingley West Road

The intersection of Tomingley Road and Tomingley West Road is a T-intersection inclusive of a Basic Right (BAR) turn treatment on Tomingley Road. Tomingley Road is the priority road with give way control (no sign posts) in place for Tomingley West Road inclusive of a sightboard which is appropriately located opposite the Tomingley West Road approach to the intersection. The posted speed limit is 80km/h for all legs of the intersection, the pavement was considered to be in relatively good condition and delineation was provided in the form of guideposts and line marking. (refer **Plate 21** to **Plate 23**).

Plate 21: Tomingley Road – view south-east from the Tomingley West Road intersection

Plate 22: Tomingley Road – view north-west from the Tomingley West Road intersection

Plate 23: View east on approach from Tomingley West Road to Tomingley Road

2.3.3 Tomingley West Road and the Existing TGO Mine Site Access

The intersection of Tomingley West Road and the existing TGO Mine Site access is a rural property access which is sealed and is wide enough to cater for two way traffic movements. Stop control is in place for the access road inclusive of a sightboard which is appropriately located opposite the TGO Mine Site access to the intersection. In addition, the Applicant has also introduced a 40km/h speed limit for the access road whilst Tomingley West Road has a speed limit of 100km/h at this location. The pavement was considered to be in relatively good condition and delineation was provided in the form of guideposts and line marking however, the line marking at this location was faded. (refer **Plate 24** to **Plate 26**).

Plate 24: Tomingley West Road – view west from the TGO Mine Site access

Plate 25: Tomingley West Road – view east from the TGO Mine Site access

Plate 26 – View north on approach to Tomingley West Road from the TGO Mine Site access

2.3.4 Tomingley West Road and Back Tomingley West Road

The intersection of Tomingley West Road and Back Tomingley West Road is a 4 way intersection. Tomingley West Road is the priority road with signposted give way control in place for Back Tomingley West Road to the south and Lovers Lane to the north. There is no posted speed limit however, the default speed limit for all legs of the intersection would be 100km/h. (refer **Plate 27** to **Plate 30**).

Plate 27: Tomingley West Road – view west from Back Tomingley West Road

Plate 28: Tomingley West Road – view east from Back Tomingley West Road

Plate 29: Lovers Lane – view north from Tomingley West Road

Plate 30: Back Tomingley West Road – view south from Tomingley West Road

2.3.5 Back Tomingley West Road and McNivens Lane

The intersection of Back Tomingley West Road and McNivens Lane is a basic rural T-intersection with all legs consisting of an unsealed gravel pavement. Back Tomingley West Road is the priority road with give way control (no sign posts) in place for McNivens Lane. There is no sightboard located opposite the McNivens Lane approach to the intersection and no delineation. (refer **Plate 31** to **Plate 33**).

Plate 31: Back Tomingley West Road – view north from McNivens Lane

Plate 32: Back Tomingley West Road – view south from McNivens Lane

Plate 33: View west on approach from McNivens Lane to Back Tomingley West Road

2.3.6 HW17 and Back Tomingley West Road

The intersection of HW17 and Back Tomingley West Road is a T-intersection with HW17 as the priority road. Signposted give way control is in place for Back Tomingley West Road inclusive of a sightboard which is appropriately located opposite the Back Tomingley West Road approach to the intersection. The posted speed limit for HW17 is 110km/h and includes a 1.0m wide centre line treatment. The sight distance in both directions along HW17 is greater than 300m and there are no turn treatments in place on HW17. The pavement was considered to be in relatively good condition and delineation was provided in the form of guideposts, RRPMs and line marking (refer **Plate 324** to **Plate 36**).

Plate 34: HW17 – view south from Back Tomingley West Road

Plate 35: HW17 – view north from Back Tomingley West Road

Plate 36 - View east on approach from Back Tomingley West Road to HW17

2.3.7 HW17 and Kyalite Road

The intersection of HW17 and Kyalite Road is a T-intersection with HW17 as the priority road. Signposted give way control is in place for Kyalite Road inclusive of a sightboard which is appropriately located opposite the Kyalite Road approach to the intersection. The posted speed limit for HW17 is 110km/h, the sight distance in both directions along HW17 is greater than 300m. There are no turn treatments in place along HW17. The pavement was considered to be in relatively good condition and delineation was provided in the form of guideposts, RRPMs and line marking (refer **Plate 37** to **Plate 39**).

Plate 37: HW17 – view south from Kyalite Road

Plate 38: HW17 – view north from Kyalite Road

Plate 39: View west on approach from Kyalite Road to HW17

2.3.8 HW17 and McNivens Lane

The intersection of HW17 and McNivens Lane is a T-intersection with HW17 as the priority road. Signposted give way control is in place for Kyalite Road inclusive of a sightboard which is appropriately located opposite the McNivens Lane approach to the intersection. The posted speed limit for HW17 is 110km/h and the sight distance in both directions along HW17 is greater than 300m. There are no turn treatments in place along HW17. The pavement was considered to be in relatively good condition and delineation was provided in the form of guideposts, RRPMs and line marking (refer **Plate 40** to **Plate 42**).

Plate 40: HW17 – view south from McNivens Lane

Plate 41: HW17 – view north from McNivens Lane

Plate 42: View east on approach from McNivens Lane to HW17

2.3.9 Kyalite Road and Thornycroft Road

The intersection of Kyalite Road and Thornycroft Road is a basic rural T-intersection with all legs consisting of an unsealed gravel pavement. Kyalite Road is the priority road with give way control (no sign posts) in place for Thornycroft Road. There is no sightboard located opposite the Thornycroft Road approach to the intersection and no delineation. (refer **Plate 43** to **Plate 45**).

Plate 43: Kyalite Road – view west from Thornycroft Road

Plate 44: Kyalite Road – view east from Thornycroft Road

Plate 45: View south on approach from Thornycroft Road to Kyalite Road

2.4 Traffic Volumes

2.4.1 Existing Traffic Volumes

Table 5 details the 2020 traffic volumes of the roads to be assessed for the Project as annual average daily traffic (AADT) and percentage of heavy vehicles (%HV). Copies of available traffic count reports are included in **APPENDIX 1.**

Table 5 – Existing Traffic Volumes

Road	Traffic Counter Location	Existing Traffic (2020)	
		AADT	HV%
HW17(1)	Between Kyalite Road and Back Tomingley West Road	4448	44.8
Back Tomingley West Road(1)	Approximately 100m on the approach to HW17	34	9.8
Kyalite Road(2)	Approximately 100m on the approach to HW17	22	41.3
McNivens Lane(3)	-	15	10

Note (1) – 2 week period from 24 August 2020 to 6 September 2020

Note (2) – 13 week period from 1 November 2019 to 24 January 2020.

Note (3) – Assumed existing traffic volume given traffic is considered to be less than Kyalite Road as evidenced by its length and the number of properties serviced.

Weekday peak hour traffic on HW17 (2020) occurs as follows:

- AM Peak: 8:00am – 9:00 am at 325 vehicles per hour (vph); and
- PM Peak: 3:30pm – 4:30pm at 348vph.

2.5 Bus Services

There are several bus services that operate adjacent to the Project Site as indicated in **Table 6**. Details of the services were obtained from private bus operators and the Transport for NSW website[4].

Table 6 – Bus Services

Type	Road Name	When	No. of Services	Service Provider	Stop Locations
School Bus	HW17	Weekdays	AM x 3 PM x 3	1. Tony Witts 2. Dubbo Buslines 3. Parker, GJ & AF	Various – informal
School Bus	Tomingley Road	Weekdays	AM x 2 PM x 2	1. Tony Witts 2. Parker, GJ & AF	Various – informal
School Bus	Tomingley West Road	Weekdays	AM x 2 PM x 2	1. Tony Witts 2. Parker, GJ & AF	Various – informal
School Bus	Back Tomingley West Road	Weekdays	AM x 1 PM x 1	Parker, GJ & AF	Various – informal
School Bus	Kyalite Road	Weekdays	AM x 1 PM x 1	Parker, GJ & AF	Various – informal

[4] https://transportnsw.info

Type	Road Name	When	No. of Services	Service Provider	Stop Locations
Coach Service[1]	HW17	Every day except Friday	8:47am[2] 6:12pm[3]	Transport for NSW	Tomingley Coach Stop
Note (1) – Coach service between Cootamundra and Dubbo Note (2) – Monday, Wednesday, Saturday Note (3) – Tuesday, Thursday, Sunday					

2.6 Pedestrian and Cyclist Activity

No pedestrians or cyclists were observed during the inspections on the local roads and only a very small number of pedestrians were observed on HW17 adjacent to the rest area in the 50km/h speed zone within the village of Tomingley.

2.7 Crash History

Crash data from the NSW Government Centre for Road Safety Interactive Crashes website[5] was used to assess the crash history in the vicinity of the Project Site. Four crashes were reported on HW17 in the vicinity of the Project Site and no crashes have been recorded on the other roads inspected within the study area.

The crash data for HW17 is summarized in **Table 7**. Refer **APPENDIX 2** for the maps of the crash sites and refer to the website for more detailed information.

Table 7 – HW17 Crash Data

Year	Crash ID	Location	Accident Type	Degree of Crash	Day or Night	No. Injured
2019	1224254	South of Tomingley Road Intersection	Other Manoeuvring	Moderate Injury	Night	1
2019	1221952	North of McNivens Lane	Left off carriageway into object / parked vehicle	Moderate Injury	Day	2
2016	1123718	South of Kyalite Road Intersection	Off carriageway to right	Serious Injury	Day	2
2018	1166654	South of Back Tomingley West Road Intersection	Left off carriageway into object / parked vehicle	Moderate Injury	Night	1

The number of crashes reported is minor given the volume of traffic using HW17 in the vicinity of the Project Site. No repetitive or reoccurring accident patterns were identified and it is therefore considered that the reported crash history in the vicinity of the Project Site does not indicate any areas of concern within the road network.

[5] https://roadsafety.transport.nsw.gov.au/statistics/interactivecrashstats/lga_stats.html?tablga=4 (20/07/2021)

3 Project Related Traffic

3.1 Construction Phase

Road realignment construction activities are anticipated to commence in the middle of Year 0 (2022) and take 7 months to complete whilst SAR Mine Site construction activities are anticipated to commence in Year 0 and take a similar time to complete. The SAR Mine Site construction activities would continue in parallel with construction of HW17 and Kyalite Road (including the overpass) and after these have been completed and the existing roads closed. During the construction phase, access for construction workers to nominated construction site compounds are proposed as follows and shown in **Figure 4**.

3.1.1 Road Construction Compound Area

Road construction worker site access is proposed to be west of the existing HW17 Alignment as follows:

- **Proposed Entry and Light Vehicle Exit Point** - via the existing "Kenilworth" property access on HW17. It is proposed that this access would be temporarily upgraded to include a Channelised Right (CHR) turn treatment for workers travelling from the north of the Project Site and a Basic Left (BAL) turn treatment for workers travelling from the south of the Project Site;
- **Proposed Heavy Vehicle Exit Point 1** - via a temporary site access from McNivens Lane in the vicinity of the alignment of the proposed HW17 realignment. Vehicles would use the existing HW17 and McNivens Lane intersection;
- **Proposed Heavy Vehicle Exit Point 2** - via a temporary site access from Back Tomingley West Road in the vicinity of the alignment of the proposed HW17 realignment. Vehicles would use the existing HW17 and Back Tomingley West Road intersection.

For construction associated with the realignment of Kyalite Road (including the overpass), construction workers travelling northbound along HW17 would be prevented from turning right in the existing Kyalite Road intersection. This requirement would be reinforced by the use of appropriate roadside signage as well ongoing notification to workers during the construction phase. Workers travelling from the south would continue through to the village of Tomingley and turn right into the existing truck stop rest area before travelling back south along HW17 and then turning left into the existing Kyalite Road intersection.

3.1.2 SAR Mine Site Construction Compound Area

The proposed entry and exit point for mine construction workers is via a temporary site access from the existing Kyalite Road alignment within the footprint to the SAR Open Cut. Vehicles would use the existing HW17 and Kyalite Road intersection.

At the completion of the realignments of HW17 and Kyalite Road (including the overpass) and the associated closure of existing roads, vehicles associated with ongoing SAR Mine Site construction activities would use the new realigned sections of HW17 and Kyalite Road and the new SAR Mine Site access road.

3.1.3 Construction Traffic

Road construction and mine construction activities are proposed to be undertaken during the following working hours:

- Monday to Saturday 7:00am to 10:00pm;and
- No work on Sunday or public holidays.

Estimates of traffic generated by the Project were provided by the Applicant who anticipates that the majority of construction traffic would approach the construction site compound areas from the north. It has therefore been estimated that approximately 80% of the construction workforce traffic will originate

from the north (Dubbo and Narromine) and approximately 20% will originate from the south (Peak Hill and Parkes).

Details of construction traffic levels for the road realignments and SAR Mine Site construction have been provided by the Applicant and are detailed in **Table 8.**

Table 8 – Construction Traffic Levels

	LV	HV
Road Construction Site Compound		
Typical Daily Movements(1)	100	6
Estimated Maximum Daily Movements(1)	120	120
SAR Mine Site Construction Site Compound		
Typical Daily Movements(1)	120	6
Estimated Maximum Daily Movements(1)	170	60
Note (1): Two vehicle movements = one return trip		

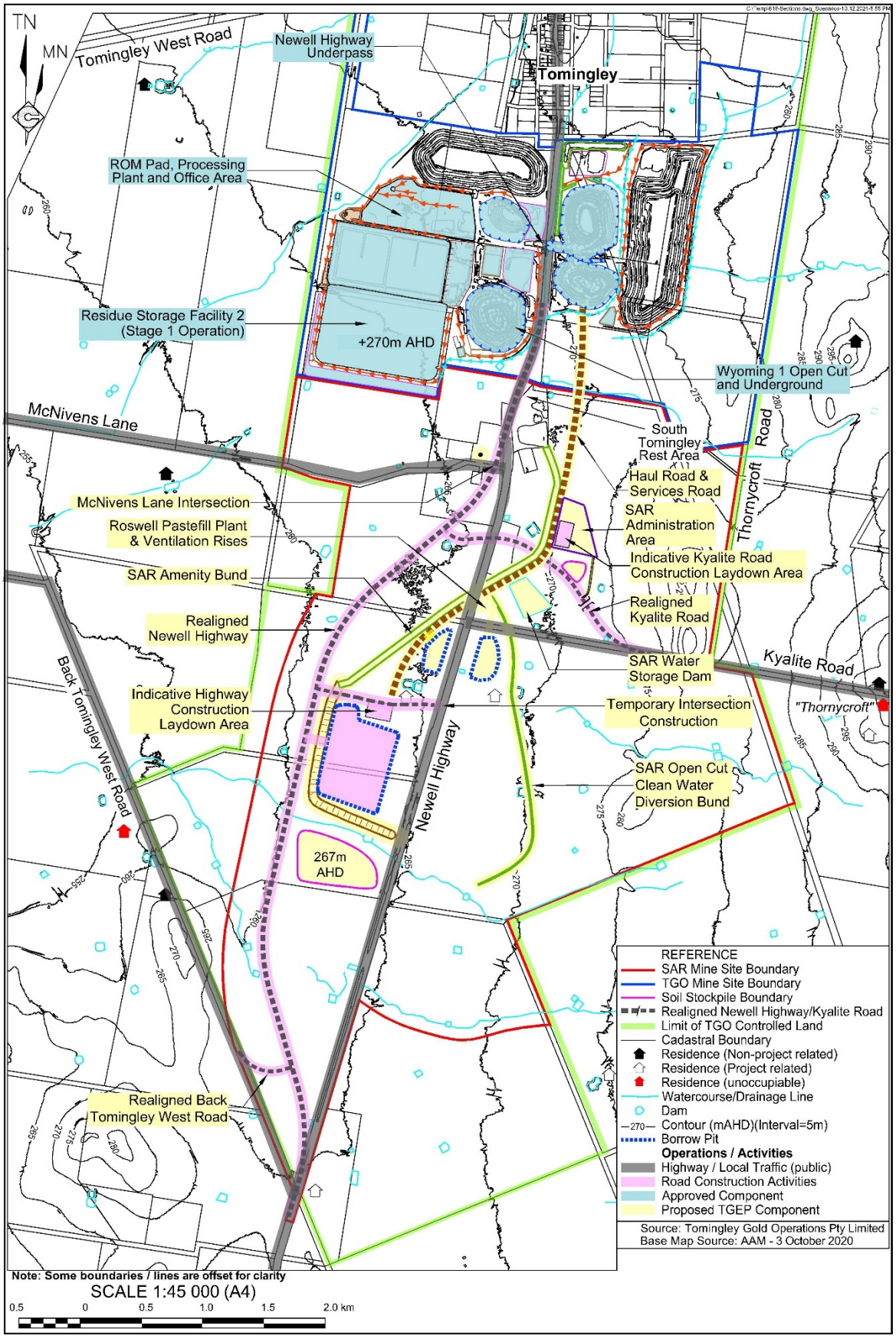


Figure 4 – Construction Site Compound Locations

(Source: RWC, 2021)

3.2 Operational Traffic

3.2.1 TGO Mine Site – Site Access

Operational traffic levels associated with the ongoing operation at the TGO Mine Site should be largely unchanged from the existing traffic levels of 146 light vehicles (LV) and 12 heavy vehicles (HV) as advised by the Applicant. The Applicant has advised that it is anticipated that there would be up to an additional 10 LV traffic movements per day between the TGO Mine Site and the SAR Mine Site. **Table 9** presents the anticipated TGO mine site operational traffic levels using the existing access to the TGO Mine Site off Tomingley West Road as described in **Section 2.3.3**.

Table 9 – TGO Mine Site Operational Traffic Levels

	LV	HV
Daily Movements(1)	156	12
Note (1): Two vehicle movements = one return trip		

3.2.2 TGO Mine Site – Mine Transportation Operations

The existing TGO Mine Site transportation operations will effectively remain unchanged as a result of the Project.

3.2.3 SAR Mine Site – Site Access

During mining operations at the SAR Mine Site, the majority of personnel, consumables and equipment would access the SAR Mine Site via HW17, the realigned Kyalite Road and the new SAR Site Access Road. **Table 10** presents the anticipated SAR Mine Site operational traffic levels as provided by the Applicant.

Table 10 – SAR Mine Site Operational Traffic Levels

	LV	HV
Average Daily Movements(1)	100	6
Maximum Daily Movements(1) (Indicative only)	240	8
Note 1: Two vehicle movements = one return trip.		

For the purposes of this Integrated Traffic Assessment, the operational phase of the Project begins from commissioning of the realigned HW17 and Kyalite Road and associated decommissioning of the existing sections of those roads, expected during the 2023/2024 Financial Year. Operations anticipated to finish by 31 December 2032.

Full scale mining and processing operations would operate 24 hours, 7 days per week with two 12 hour shifts changing over at 6:00am and 6:00pm respectively. Operational shift personnel will work a rotating even time roster with 4 panels of workers.

Office based administrative personnel will generally work a day shift from 7:30am to 4:00pm, Monday to Friday.

Operational and administrative personnel are expected to travel to the SAR Mine site in private LVs during normal operations and it has been assumed that 80% of operational and administrative personnel traffic will originate from the north (Dubbo and Narromine) and 20% will originate from the south (Parkes and Peak Hill).

All material extracted from the SAR Open Cut will be transported and processed on-site and as a result there will be no off site HV haulage of ore.

The directional origin of deliveries and visitors is anticipated to be the same as operational and administrative personnel at 80% from the north and 20% from the south.

3.2.4 SAR Mine Site – Internal Road and Parking Infrastructure

The internal road network including parking provisions for workers within the SAR Mine Site is shown in **Figure 5**. Details of access to the SAR Mine Site have been provided in **Section 4.8** and **Section 4.9**.

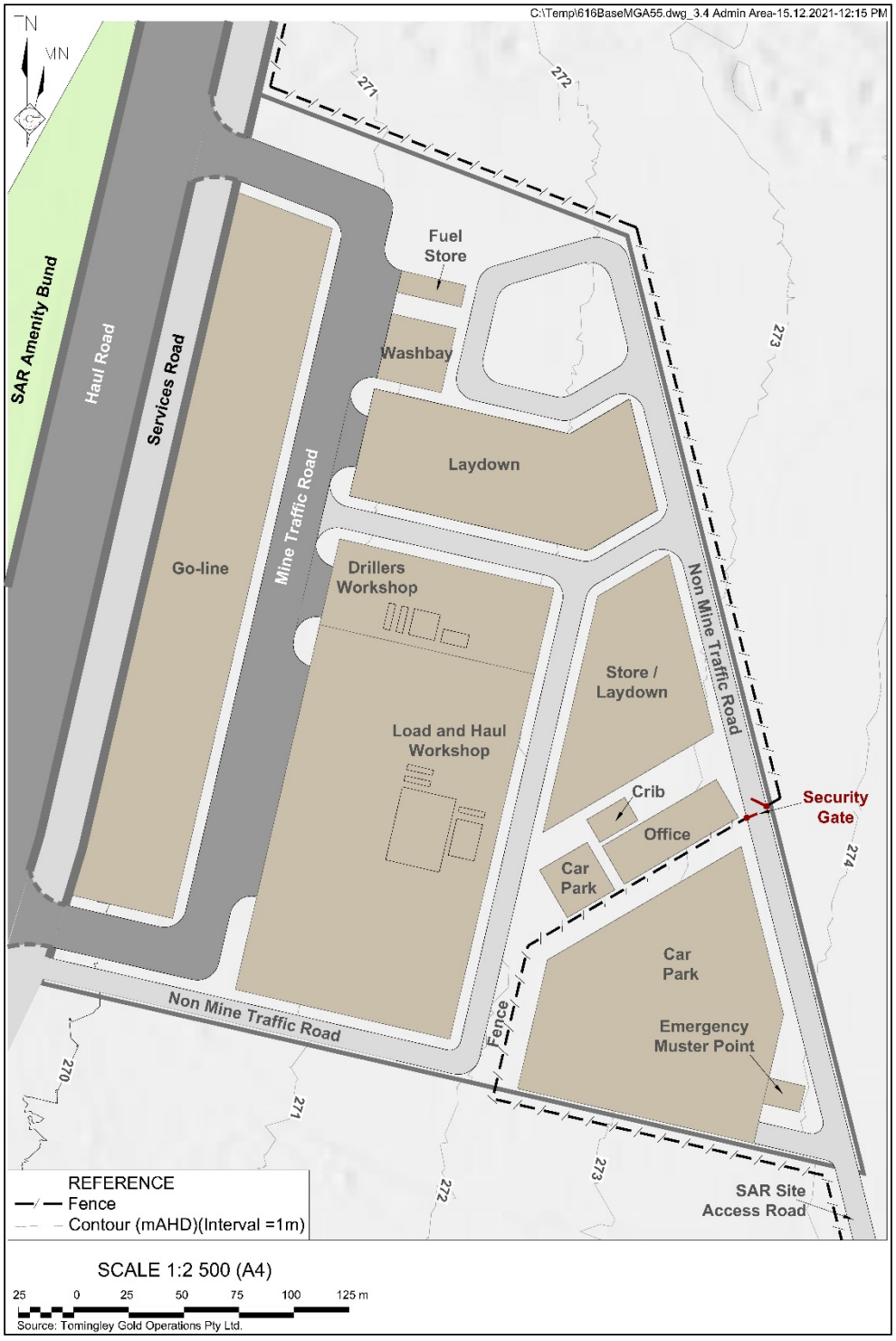


Figure 5 – SAR Mine Internal Road and Parking Infrastructure

(Source: RWC, 2021)

3.2.5 SAR Mine Site – Mine Transportation Operations

A Haul Road and Services Road would be constructed between the Caloma 2 and SAR Open Cuts as shown in **Figure 2**. The Haul Road would permit surface haul trucks to transport ore and waste rock from the SAR Open Cut to the TGO Mine Site. The road would be sufficiently wide to permit two-way use by haul trucks travelling in opposite directions. Ore would be transported to the ROM Pad via the existing HW17 underpass. Waste rock would be placed within the Caloma and Caloma 2 Open Cuts.

A Services Road would be constructed adjacent to the Haul Road and would permit use by road-registerable vehicles, including LVs, service vehicles and HVs. The Services Road would be sufficiently wide to permit two-way use by vehicles travelling in opposite directions. The Services Road would be separated from the Haul Road by a bund that would prevent vehicles crossing between the two roads.

Where the Haul Road and Services Road cross the proposed Kyalite Road realignment, an overpass for Kyalite Road would be constructed. Further information regarding the proposed Kyalite Road realignment and overpass are presented in **Section 4.5.1**.

All material extracted from the SAR Open Cut will be transported and processed on-site and as a result there will be no off site HV haulage of ore.

3.2.6 SAR Mine Site –Transportation of Dangerous Goods

The only dangerous goods to be transported to the SAR Mine site will be diesel and explosives. It is anticipated that frequency of deliveries of diesel and explosive will occur multiple times per week.

3.3 Traffic Data

3.3.1 Current and Forecast Traffic Volumes

The estimated forecast traffic volumes for all roads for the construction phase (Year 0) and expected 10 year Project life (Year 2032) have been calculated using an annual growth rate of 1% and are presented in **Table 11**.

Table 11 – Background and Forecast Traffic Volumes

		Background Traffic (2020)		Forecast Traffic (Year 0 - 2022)		Forecast Traffic (Year 10 - 2032)	
Road	**Location**	**AADT**	**HV%**	**AADT**	**HV%**	**AADT**	**HV%**
HW17	Kyalite Road Intersection	4448	45	4537	45	5012	45
Kyalite Road	East of HW17	22	44	22	44	25	44
McNivens Lane	West of HW17	15	10	15	10	17	10
Back Tomingley West Road	West of HW17	34	10	35	10	38	10

3.4 Development Generated Traffic

The estimates of traffic generated by the Project (both construction and operational) have been used to determine the required intersection upgrades.

For the construction phase, the following locations have been identified for temporary upgrades:

- HW17 and “Kenilworth” property access; and
- HW17 and Kyalite Road Intersection (Existing).

For the operational phase, including intersections impacted by the realignment of HW17, the following locations have been identified for permanent upgrades:

- HW17 and Kyalite Road Intersection (New location);
- HW17and McNivens Lane intersection (New location); and
- HW17 and Back Tomingley West Road (New location).

3.4.1 Peak Hour Volumes (Construction Phase)

It is expected that peak hour movements will occur at the start and end of daily shifts given the vast majority of vehicle movements to and from the Project Site will be workers during the construction phase. Using the information from **Table 9**, the peak hour volumes have been calculated using the maximum daily inward movements based on the following assumptions:

- 40% of maximum daily movements occur during the AM and PM peak hours.
- Traffic origins are 80% from the north and 20% from the south for all vehicles.
- No vehicles are accessing the "Kenilworth" property during the peak hours.
- Given the very low traffic volumes currently using Kyalite Road, five (5) existing inward vehicles movements have been used for the analysis for the new intersection.

A summary of the resultant peak hour volumes for the construction phase are presented in **Table 12** and **Table 13**.

Table 12 – AM Peak Hour Calculations – HW17 and "Kenilworth" Property Access

Activity	Year		HW17 Southbound (vph)	HW17 Northbound (vph)	"Kenilworth" (vph)	Proposed Construction Traffic (vph)		
						HV	LV	Total
Construction	0	2022	172	168	0	48	48	96

Table 13 – AM Peak Hour Calculations – HW17 and Kyalite Road Intersection (Existing)

Activity	Year		HW17 Southbound (vph)	HW17 Northbound (vph)	Kyalite Road (vph)	Proposed Construction Traffic (vph)		
						HV	LV	Total
Construction	0	2022	172	168	5	24	68	97

3.4.2 Peak Hour Volumes (Operational Phase)

It is expected that peak hour movements will occur at the start and end of daily shifts given the vast majority of vehicle movements to and from the Project Site will be operational and administrative workers. Using the information from **Table 10**, the peak hour volumes have been calculated using the maximum daily inward movements based on the following assumptions:

- 40% of maximum daily movements occur during the AM and PM peak hours.
- Traffic origins are 80% from the north and 20% from the south for all vehicles.
- Given the very low traffic volumes currently using Kyalite Road, five (5) existing inward vehicles movements have been used for the analysis for the new intersection.

A summary of the resultant peak hour volumes for the operational phase and the 10 year horizon for are presented in **Table 14**.

Table 14 – AM Peak Hour Calculations – HW17 and Kyalite Road Intersection (New Location)

Activity	Year		HW17 Southbound (vph)	HW17 Northbound (vph)	Kyalite Road Traffic (vph)	Proposed Operational Traffic (vph)		
						HV	LV	Total
Operations	1	2023	174	170	5	4	96	105
Operations	2	2024	176	172	5	4	96	105
Operations	3	2025	178	173	5	4	96	105
Operations	4	2026	179	175	5	4	96	105
Operations	5	2027	181	177	5	4	96	105
Operations	6	2028	183	179	5	4	96	105
Operations	7	2029	185	180	5	4	96	105
Operations	8	2030	187	182	5	4	96	105
Operations	9	2031	189	184	5	4	96	105
Operations	10	2032	190	186	5	4	96	105

The 10 year forecast traffic estimates provided in **Table 11** have been used to determine the required intersection turn treatments for the new intersections at McNivens Lane and Back Tomingley West Road as a result of the new HW17 realignment. The peak hour volumes have been determined using the following criteria:

- HW17 peak hours for southbound and northbound traffic derived from available traffic data;
- Traffic origins are 80% from the north and 20% from the south for all vehicles.
- Given the very low traffic volumes using McNivens Lane and Back Tomingley West Road, five (5) existing inward vehicles movements have used for the analysis at each intersection.

A summary of the resultant peak hour volumes for the 10 year horizon for each intersection are presented in **Table 15** and **Table 16**.

Table 15 – AM Peak Hour Calculations – HW17 and McNivens Lane Intersection

Activity	Year		HW17 Southbound (vph)	HW17 Northbound (vph)	Total Inward Peak Hour Traffic Movements (vph) (1)
Operations	10	2032	190	186	5
Note (1): Assumed given very low traffic volumes using McNivens Lane					

Table 16 – AM Peak Hour Calculations – HW17 and Back Tomingley West Road Intersection

Activity	Year		HW17 Southbound (vph)	HW17 Northbound (vph)	Total Inward Peak Hour Traffic Movements (vph) (1)
Operations	10	2032	190	186	5
Note (1): Assumed given very low traffic volumes using Back Tomingley West Road					

4 Assessment and Recommendations

The following subsections review the anticipated impacts of the Project on the road network. Discussions relevant to the recommendations for impact mitigation or other controls are also included, where appropriate.

4.1 Construction and Operational Traffic Impacts

Peak Project related traffic movements are anticipated to occur during the construction phase during mid-Year 0 (July 2022) for a duration of 7 months. The vast majority of vehicle movements to and from the construction compound areas will be worker LV and these LV will have negligible impact to the road pavement condition of the existing HW17 alignment and other NSC local roads as described in **Section 3.1**. The provision of temporary intersection upgrades namely at the "Kenilworth" property access and Kyalite Road along the existing HW17 alignment will provide an improved level of service on HW17 during the construction phase which should mitigate potential traffic conflicts with other HW17 road users. The roads used during the construction phase will ultimately be closed with the new HW17 and Kyalite Road realignments used for operational traffic.

A comprehensive Traffic Management Plan (TMP) including a drivers' code of conduct will be developed to control construction related traffic movements and driver behaviour both within the Project Site and the surrounding road network as described in **Section 4.14.**

4.1.1 Heavy Vehicle impacts

As there will be no haulage of ore from the mine on public roads, HV impacts due to the Project are minimised, and will not trigger the requirement for road maintenance contributions. HV movements required for the Project are limited to those required during the construction phase and regular deliveries during the operational phase. Quantities of HV deliveries expected to occur during these phases are detailed in **Table 9** and **Table 10.** The expected origin of these vehicles is 80% from the north (Dubbo and Narromine) and 20% from the south (Parkes and Peak Hill). No Project related HV movements are expected on NSC local roads other than short sections of Back Tomingley West Road, McNivens Lane and Kyalite Road during the construction of the HW17 realignment as described in **Section 3.1.1** and **Section 3.1.2**.

The majority of oversized and over mass HV deliveries will occur during the construction phase. These deliveries will include deliveries associated with the following:

- Construction of the proposed additional ball mill within the TGO Mine Site (via the TGO Mine Site access road).
- Construction of the Kyalite Road, particularly associated with bridge elements and plant (via the existing Kyalite Road intersection).
- Mobilisation and demobilisation of construction plant.

Oversize and over mass HV deliveries during the operational phase will include deliveries associated with the following, all via the proposed new Kyalite Road intersection.

- Mobilisation and demobilisation of mining equipment.
- Delivery of large tyres and other parts.

These oversized and over mass HV deliveries will be conducted in accordance with requirements of the National Heavy Vehicle Regulator (NHVR). Oversize/overmass permits will be acquired prior to haulage of these loads and the transport route for each load will be planned in consultation with TfNSW and will vary depending on the origin of each load. Nevertheless, each journey will comply with the conditions outlined within each permit.

4.2 Road Realignments and Upgrades

The Project will require the following public road upgrades as shown in **Figure 5**.

- 8.3km (approx.) realignment of HW17 including new intersections with Kyalite Road, McNivens Lane and Back Tomingley West Road;
- 2.08km (approx.) realignment of Kyalite Road, including an overpass over the SAR Mine Site Haul Road; and
- A modification of Back Tomingley West Road such that its new intersection with the HW17 realignment is located where minimum sight distance requirements are met.

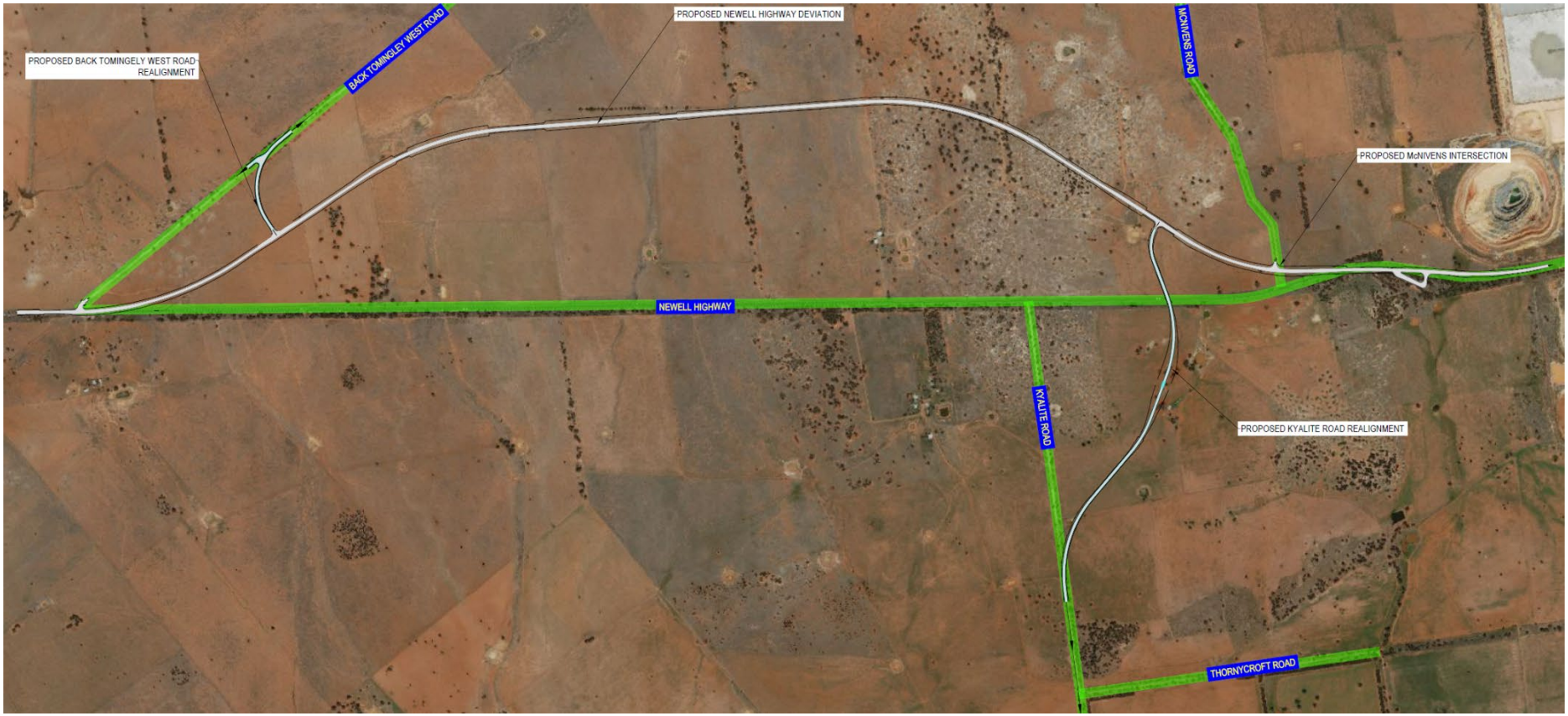


Figure 5 – Proposed Road Realignments and Upgrades

4.3 Design, Construction and Legislative Requirements

4.3.1 Design Requirements

The realignment of HW17 and associated intersections will be subject to the approval of TfNSW in accordance with the specific design and construction requirements as detailed in the TfNSW Works Authorisation Deed (WAD) and SEARs requirements for the Project.

The realignment of Kyalite Road and adjustments to McNivens Lane and Back Tomingley West Road as a result of the HW17 realignment will be designed and constructed in accordance with the minimum requirements as per the NSC '*Engineering Guidelines for Works within the Narromine Shire'* and SEARs requirements for the Project.

4.3.2 Road Safety Audits

The Road Safety Audits (RSA) as described in **Table 17** shall be undertaken as part of the Project.

Table 17 – Road Safety Audits

Type of RSA	Project Phase	Project Requirement
Stage 2 – Concept Design	100% Concept Design	Nominated by the Designer
Stage 3 – Detailed Design	80% Detailed Design	TfNSW Works Authorisation Deed
Stage 4 – Pre-opening	Pre-Opening prior to Practical Completion	TfNSW Works Authorisation Deed
Note: The design RSAs will included both the highway and the NSC local roads.		

4.3.3 Land Acquisition and Property Boundary Adjustments

All land the subject of the proposed HW17 realignment is either:

- freehold land owned by the Applicant;
- unformed Crown roads the subject of an application to purchase by the Applicant; or
- road reserves associated with the existing roads to be realigned.

It is anticipated that appropriate subdivision applications will be prepared for the establishment of the new road corridor and road reserve boundaries and that "land swaps" will be instigated such that control of the new road reserves will pass to the relevant roads authority and control of the redundant sections of road reserve will pass to the Applicant.

It is anticipated that the approval of the 100% concept designs by both TfNSW and NSC will be the milestone to initiate the subdivision and land swap process.

4.3.4 Construction Requirements

The roadwork and bridgework components of the Project shall be undertaken by a suitably prequalified and registered contractor acceptable to TfNSW as per the requirements of the WAD and NSC. The contractor shall be procured by the Applicant.

The Applicant shall also be responsible for obtaining the required Section 138 approvals as per the *NSW Roads Act (1993)* with regards to working in, over or on a public road.

4.3.5 Opening and Closing of Public Roads

As the Project involves the construction of new roads and closure and modification of existing roads, the legislative requirements of the *NSW Roads Act (1993)* with regards to the opening and closing of public roads is required.

The Applicant shall undertake all works and provide the necessary documentation in accordance with the requirements of Part 2 of the *NSW Roads Act (1993)* for the opening of public roads required for the Project.

The Applicant shall undertake all works and provide the necessary documentation in accordance with requirements of Part 4 of the *NSW Roads Act (1993)* for closing of public roads required for the Project.

4.3.6 Property Access

The Applicant shall also be responsible for obtaining the required Section 138 approvals as per the *NSW Roads Act (1993)* with regards to the establishment of new property access points to public roads.

4.4 Classified Roads - Newell Highway (HW17)

The current alignment of HW17 is within the proposed SAR Mine Site. Open cut mining operations will require HW17 to be realigned approximately 1km to the west of its current alignment and with the realigned road to be designed and constructed in accordance with TfNSW requirements. Specific design requirements for the realignment are as follows:

- Provision of an 80m wide road corridor.
- Minimum sealed carriageway width of 12m.
- Provision for 3.5m wide travel lanes, 2m wide shoulders and a 1.0m wide centre line.
- Pavement design with a 20 year pavement life.
- Provision for centre line and edge line markings, retroreflective raised pavement markers and guide posts.
- Allowance for a minimum 1500m long overtaking lane in both the northbound and southbound travelling lanes.
- Provision of Channelised Right (CHR) and Auxiliary Left (AUL) treatments at the new intersections with Kyalite Road, McNivens Lane and Back Tomingley West Road (refer to **Section 4.6**).
- The B-triple design vehicle has been used for the Kyalite Road, McNivens Lane and Back Tomingley West Road intersection designs.
- Provision of drainage structures necessary to achieve a flood immunity of 1 in 20 year average recurrence interval (ARI).
- Provision for regulatory, warning and guide signage.
- Provision for safety barrier along the verges, as required.
- Provision of new rural property access locations to the new alignment, as required.
- The new alignment has been located such that it is at least 650m from the edge of mining operations which means there is no requirement to stop traffic during blasting operations.
- Where the proposed new alignment ties into the existing, redundant pavement and road formation (20m minimum at each end) is to be removed.

A 50% concept design has been completed and reviewed by TfNSW. At the time of submission of this report, the 100% concept design for the realignment was being prepared for submission to TfNSW.

An extract of the current concept design is included in **APPENDIX 3**.

The realignment of HW17 will increase its length by approximately 410m between Tomingley and Peak Hill resulting in an increased travel time of approximately 13 seconds for HW17 users as detailed in **Table 18**.

Table 18 – Changes in Travel Distance and Travel Times

	Travel Distance(1)			Travel Time(1)		
Road Name	**Existing**	**Proposed**	**Change**	**Existing**	**Proposed**	**Change**
HW17 – Tomingley to Peak Hill(3)	16.12km	16.53km	+0.41km	9.00 min(2)	9:13 min(2)	+0:13 min
Note (1) Approximate Lengths and Travel Times with no waiting at intersections. Note (2) Based on the posted speed limits of 110km/h and 80km/h for HW17. Note (3) To the start of the 50km/h speed zone on HW17.						
Source: Google Maps (August 2021) and the 50% Concept Designs.						

Whilst there is an increased travel time along the new alignment of HW17, the standard of road to be constructed will be a significant improvement in terms of road safety and flood immunity in comparison to the existing road.

4.5 Local Roads – General

Upgrades to the local road network associated with the HW17 realignment and the Project site include the following:

- Kyalite Road;
- McNivens Lane; and
- Back Tomingley Road.

The design and construction of these upgrades shall be in accordance with the NSC *'Engineering Guidelines for Works within Narromine Shire'* and any other specific design and construction requirements defined in the SEARs. Specific road design requirements for these roads are as follows:

- Provision of an 20m wide road corridor.
- Minimum carriageway width of 9m for the Back Tomingley West Road realignment and McNivens Lane, inclusive of a bitumen seal of approximately 30m in length from the edge line of HW17.
- Minimum sealed carriageway width of 9m for the full length of the Kyalite Road realignment.
- Provision for 2 x 3.5m wide travel lanes, 1m wide shoulders.
- Pavement design with a 20 year pavement life.
- Provision for centre line and edge line markings on sealed sections.
- Provision of guide posts.
- Provision of drainage structures necessary to achieve a flood immunity of 1 in 20 year average recurrence interval (ARI).
- Provision for regulatory, warning and guide signage, as required.
- Provision for safety barrier along the verges, as required.

The proposed design for local roads exceeds the minimum NSC requirements for Kyalite Road between the intersection with HW17 and the SAR Mine Site access road as 1m wide bitumen sealed shoulders have been provided which results in a full width of sealed formation for the embankments to the Kyalite Road overpass and between any safety barriers resulting in a reduced maintenance burden for NSC.

A 50% concept design has been completed and reviewed by NSC for these roads.

An extract of the 50% concept design is included in **APPENDIX 4**.

4.5.1 Kyalite Road (including the Overpass)

A section of the existing alignment of Kyalite Road is also within the footprint of the SAR Mine Site. Open cut mining operations will require Kyalite Road to be realigned to the north and will require the construction of an overpass over the SAR Mine Site Haul and Services Roads. The realigned section would be sealed from its intersection with HW17 to where it connects with the existing alignment.

The design of the overpass is required to accommodate all types of mining vehicles within the Project site and B-triple HVs along Kyalite Road. The bridge design criteria is below and shown in **Figure 6.**

- Deck length = 36.5m.
- Deck width = 9.4m between the barriers.
- Clear width between abutments for mine vehicles = 33m (approx.)
- Height clearance for mine vehicles = 15m (approx.)
- Design traffic loading = SM1600 in accordance with the Australian Standard AS5100 Bridge Design Code.

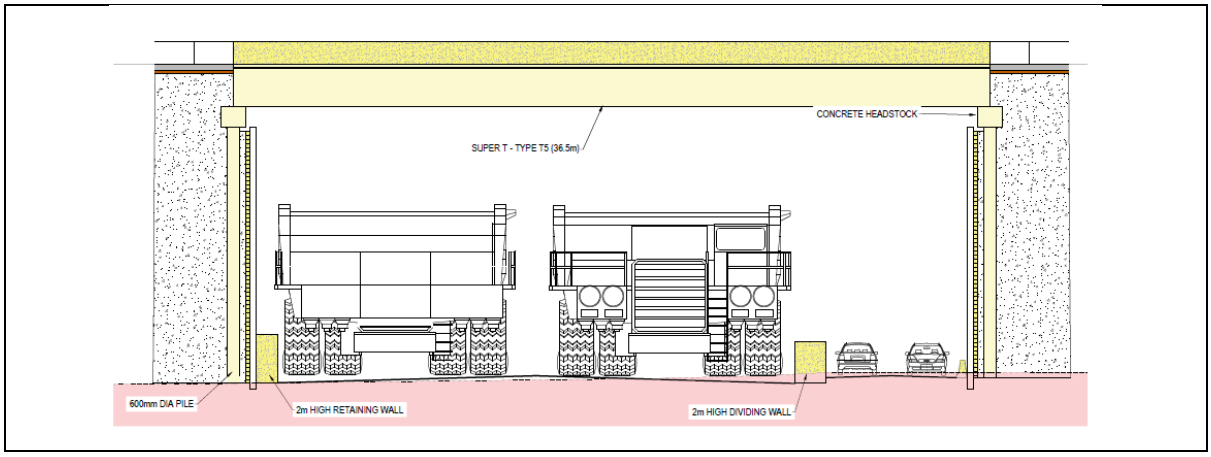


Figure 6 – Overpass Concept

A clear width of 9.4m between the barriers is proposed for the overpass and the design traffic loading of the bridge shall be SM1600 which is the design traffic loading adopted by TfNSW and many local councils for new bridges. This width will accommodate two way traffic movements along Kyalite Road and should adequately cater for any oversize vehicles required to access the SAR Mine Site or oversize agricultural equipment associated with rural properties that access HW17 from Kyalite Road.

The realignment of Kyalite Road will effectively increase its length by approximately 600m and its new intersection with HW17 will be located approximately 700m north of the existing intersection resulting in changes of travel times and distances for Kyalite Road users to Tomingley and Peak Hill as detailed in **Table 19**.

Table 19 – Changes in Travel Distance and Travel Times

	Travel Distance[1]			Travel Time[1]		
Road Name	**Existing**	**Proposed**	**Change**	**Existing**	**Proposed**	**Change**
Kyalite Road – Thornycroft Rd to HW17	2.02 km	2.62 km	+0.60km	1:21 min[2]	1:45 min[2]	+0:24 min
HW17 – Kyalite Road to Tomingley[4]	4.17 km	3.51 km	-0.66km	2:22 min[3]	2:00 min[3]	-0:22 min
HW17 – Kyalite Road to Peak Hill[4]	11.95 km	13.02 km	+1.07km	6:38 min[3]	7:13 min[3]	+0:35 min
Note (1) Approximate Lengths and Travel Times with no waiting at intersections. Note (2) Based on an average speed of 90km/h for Kyalite Road. Note (3) Based on the posted speed limits of 110km/h and 80km/h for HW17. Note (4) To the start of the 50km/h speed zone on HW17.						
Source: Google Maps (August 2021) and the 50% Concept Designs.						

Whilst there is an increased travel time along the new alignment of Kyalite Road, the standard of road to be constructed will be a significant improvement in terms of level of service and road safety in comparison to the existing road.

Motorists using the realigned Kyalite Road would experience the following changes in travel distance and time:

- From the intersection of Thornycroft Road to Tomingley – a reduced distance of approximately 60m and an increased travel time of approximately 2 seconds. This is largely as a result of the reduced travel distance on HW17 with a 110km/h speed limit .
- From the intersection of Thornycroft Road to Peak Hill – an increased distance of approximately 1.67km and associated increased travel time of approximately 59 seconds.

At the end of the mining operation, pending confirmation from NSC, the overpass and embankments will be removed by the Applicant and Kyalite Road shall be reconstructed on a new alignment on the southern side of the overpass which connects to HW17 at the designed intersection similar to that shown in **Figure 7**.

Figure 7 – Proposed Kyalite Road Realignment after the Completion of the Mining Operation

4.5.2 Tomingley Road and Tomingley West Road

As indicated in **Section 3.12**, it is anticipated that there will be up to 10 additional LV movements using the road network between the TGO Mine Site and SAR Mine Site. These additional LV traffic movements are anticipated to be spread out across a normal working day and it is therefore considered that these additional movements will have a negligible impact on the peak traffic flows.

As a result, no upgrades are considered necessary for the following locations:

- HW17 and Tomingley Road intersection;
- Tomingley Road between HW17 and Tomingley West Road;
- Tomingley Road and Tomingley West Road intersection; and
- Tomingley West Road between Tomingley Road and the TGO Mine Site access.

4.5.3 Thornycroft Road

All proposed road adjustments as a result of the Project are clear of Thornycroft Road and this road is not used by Project related traffic. As a result, there are no proposed upgrades for Thornycroft Road.

4.5.4 McNivens Lane

The realignment of HW17 will result in a reduction in the length of McNivens Lane of approximately 90m and no road upgrades are proposed as this road is not used by Project related traffic.

Section 4.6.5.2 details the proposed new intersection with HW17.

4.5.5 Back Tomingley West Road

A realignment of approximately 600m of Back Tomingley West Road and a new intersection with HW17 is required as a result of the proposed HW17 realignment. The new intersection is to be located to the north of the existing intersection to ensure minimum sight distances are met. In addition, the location of the new intersection will be at an elevation slightly higher than the existing providing improved flood immunity.

The existing HW17 intersection will be closed and a cul-de-sac shall be provided on the redundant section of Back Tomingley West Road with landscaping to be provided between the cul-de-sac and HW17.

Section 4.6.5.3 details the proposed new intersection with HW17.

4.6 Intersections

During the construction phase, the "Kenilworth" property access and the existing HW17 and Kyalite Road intersection will be used for access to the proposed construction site compound areas. These intersections currently have no turn treatments however given the volume of construction traffic that will use these intersections, temporary upgrades will be required as described in **Section 4.6.3.1** and **Section 4.6.3.2** respectively.

Three NSC local roads namely, McNivens Lane, Kyalite Road and Back Tomingley West Road currently intersect with HW17 and will be subsequently impacted by the HW17 realignment. Whilst these intersections currently have no turn treatments, the required turn treatments will be provided as part of the design associated with the HW17 realignment and are discussed in **Section 4.6.5**. The new HW17 and Kyalite Road intersection will be used during the operational phase of the Project.

4.6.1 Types of Turn Treatments

The types of right and left turn treatments required for T-intersections as defined by *AUSTROADS Guide to Road Design – Part 4A: Unsignalised and Signalised Intersections* as follows:

- Basic turn treatment (BA) where turning vehicles may share the lane with through traffic movements. The BAR treatment features a widened shoulder on the major road that allows through vehicles, having slowed, to pass to the left of turning vehicles. The BAL treatment on the major road has a widened shoulder, which assists turning vehicles to move further off the through carriageway making it easier for through vehicles to pass (refer **Figure 8**).
- Auxiliary lane turn treatment (AU) where a separate lane is provided to enable the turn to be performed in an additional lane. AUL for left turn and AUR for right turn treatments (refer **Figure 9**).
- Channelised (CH) turn treatment which provides a traffic island to enhance the safety of right-turning or left-turning vehicles. CHL for left turn and CHR for right turn treatments (refer **Figure 10**).

Austroads also allows for the provision of AUL (Short) and CHR (Short) turn treatments. The length of these lanes are less than that of the AUL and CHR turn treatments.

The assessment for intersection turn treatments can result in a combination of the different right and left turn treatments for a T-intersection (e.g.: CHR and AUL)

The following sections of the report detail the warrants for the provision of turn treatments and the assessment for the required turn treatments for the T-intersections associated with the Project.

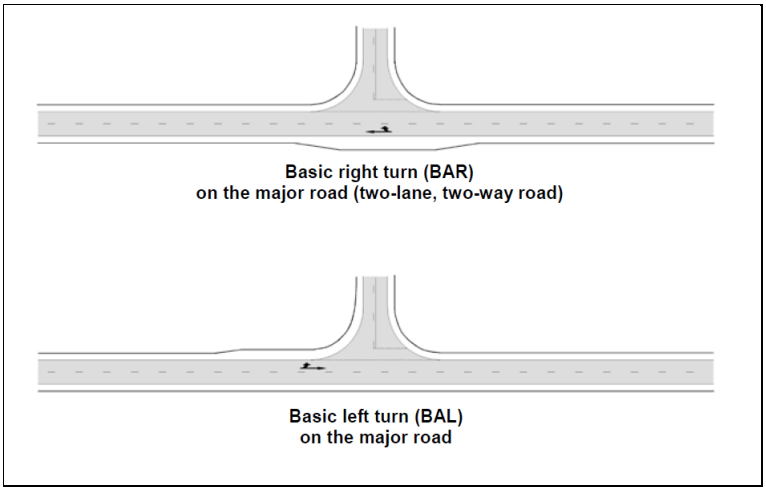


Figure 8 – BAR and BAL Turn treatments
(Source: Austroads)

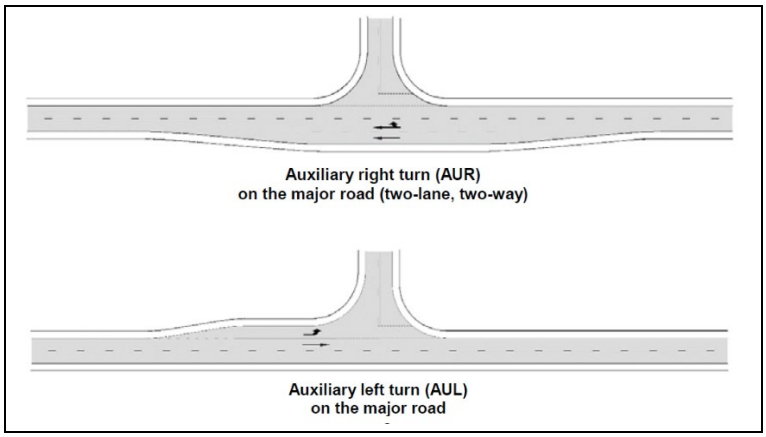


Figure 9 – AUR and AUL Turn treatments
(Source: Austroads)

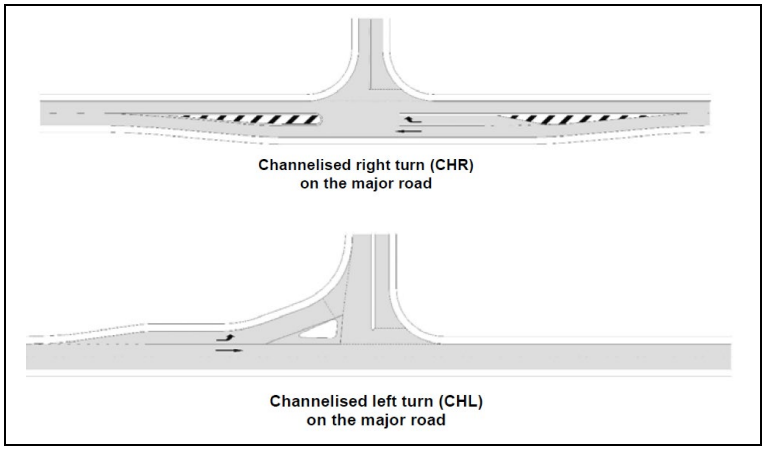


Figure 10 – CHR and CHL Turn treatments
(Source: Austroads)

4.6.2 Warrants for Basic, Auxiliary and Channelised Turn Treatments

Appendix A.10 of *AUSTROADS Guide to Road Design – Part 4A: Unsignalised and Signalised Intersections,* specifies warrants for providing left and right turn treatments at unsignalised intersections including property access points. The graph reproduced below as **Figure 11** shows the volumes of traffic at an intersection subject to speed limits equal to and greater than 100km/h.

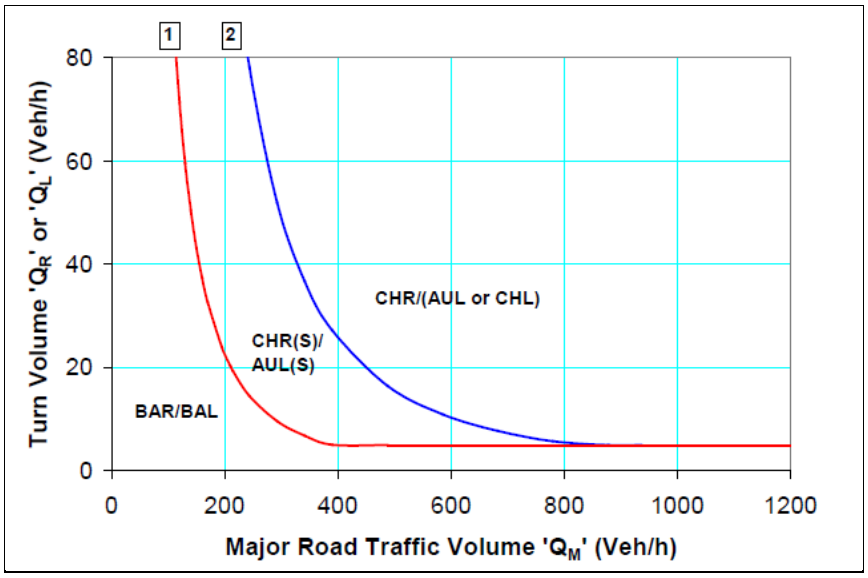
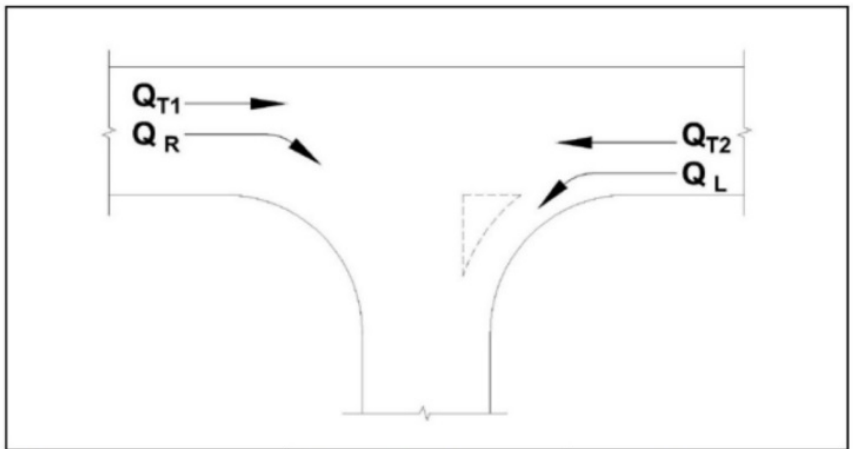


Figure 11 – Warrants for turn treatments – Design speed ≥ 100km/h

Appendix A.11 of *AUSTROADS Guide to Road Design – Part 4A: Unsignalised and Signalised Intersections* defines the traffic and turn volume parameters and this has been reproduced as **Figure 12**.

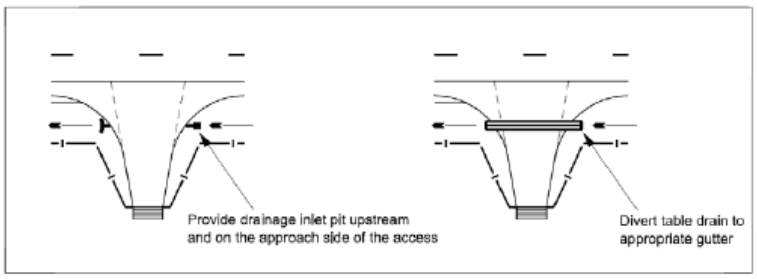


Turn type	Splitter island	Q_M (veh/h)
Right	No	$= Q_{T1} + Q_{T2} + Q_L$
Right	Yes	$= Q_{T1} + Q_{T2}$
Left	No/Yes	$= Q_{T2}$

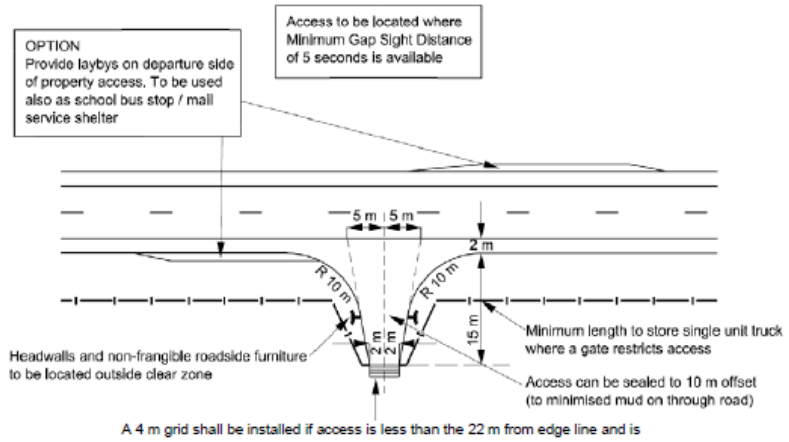
Figure 12 – Traffic and Turn Volume Parameters

4.6.3 Property Access

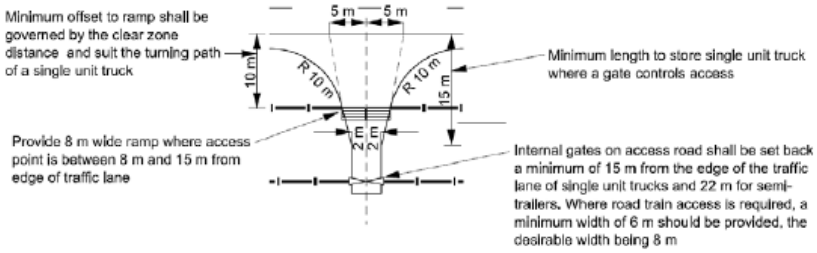
Where a new rural property access is required or an existing access needs to be upgraded, for both the construction and operational phases, they shall be designed in accordance with Figure 7.2 *AUSTROADS Guide to Road Design – Part 4:* Intersections and Crossings – General which has been reproduced as **Figure 13**.



Alternate treatments for table drain crossing



Preferred option with indented access
(showing single carriageway layout)



Option without indented access

Note: This rural property access treatment may be used where articulated vehicles:

- *do not use the driveway on single and dual carriageway roads*
- *infrequently use the driveway on two-lane two-way roads that have an AADT < 2000.*

Figure 13 – Example of a Rural Property Access

(Source: Austroads)

4.6.4 Intersections (Construction Phase)

4.6.4.1 Road Construction Compound Area Access Point ("Kenilworth" Property)

Traffic volume parameters have been calculated for the construction phase (Year 0 - 2022) and have been listed in **Table 20.**

Table 20 – Traffic Parameters (vehicles per hour)

Parameter	Year 0 (2022)
	Peak Hour (vph)
Q_R	78
Q_L	19
$Q_{M\ (R)}$	360
$Q_{M\ (L)}$	168

Figure 14 shows the traffic volume parameters diagrammatically for the HW17 and Kyalite Road intersection and these parameters have then been used to determine the warrant for turn treatments by plotting them on the Austroads graph.

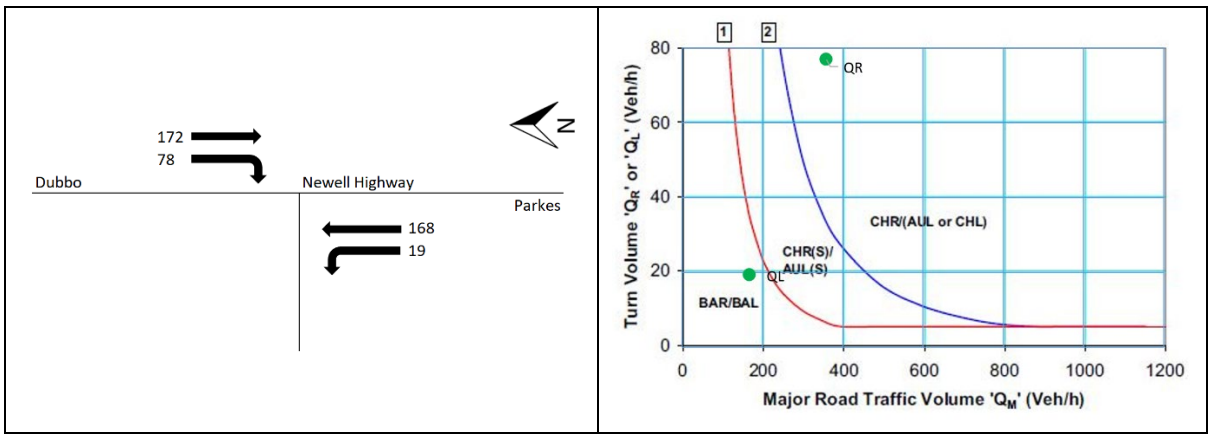


Figure 14 – Peak Hour Flows (Year 0 - 2022)

The resultant outcome is that the "Kenilworth" property access will require temporary upgrading CHR and BAL turn treatments on HW17 during the construction phase.

4.6.4.2 HW17 and Kyalite Road (Existing HW17 Alignment)

As indicated in **Section 3.1.1,** all construction related traffic is to come from the north along HW17 to access this intersection. Traffic volume parameters have been calculated for the construction phase (Year 0 - 2022) and have been listed in **Table 21.**

Table 21 – Traffic Parameters

Parameter	Year 0 (2022)
	Peak Hour (vph)
Q_R	0
Q_L	97
$Q_{M\ (R)}$	438
$Q_{M\ (L)}$	168

Figure 15 show the traffic volume parameters diagrammatically for the HW17 and Kyalite Road intersection and these parameters have then been used to determine the warrant for turn treatments by plotting them on the Austroads graph.

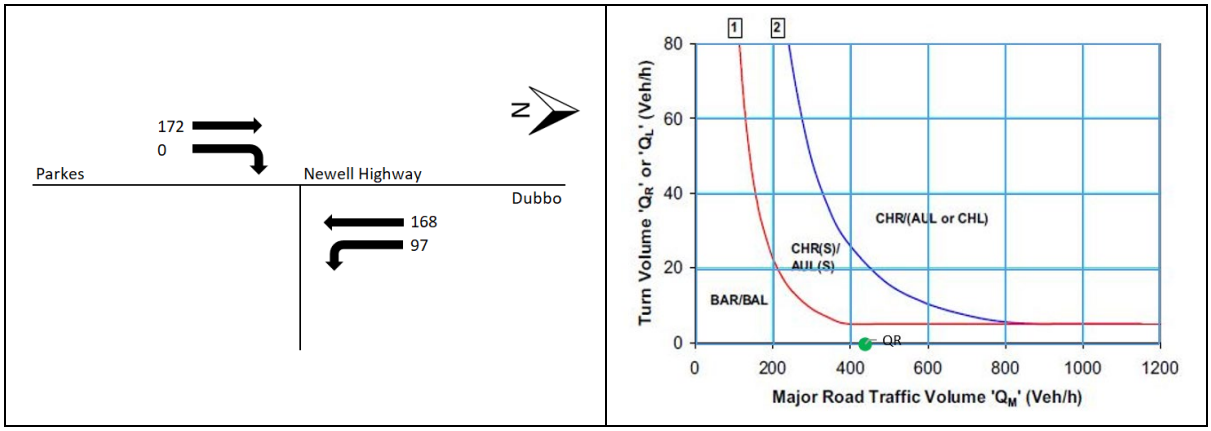


Figure 15 – Peak Hour Flows (Year 0- 2022)

The resultant outcome is that the HW17 and Kyalite Road intersection will require temporary upgrading to provide a BAL turn treatment during the construction phase.

4.6.5 Intersections (Operational Phase)

4.6.5.1 HW17 and Kyalite Road (New HW17 Alignment)

Traffic volume parameters have been calculated for the operational phase (Year 1 - 2023) and the Project life operational phase (Year 10 - 2032). These parameters have been listed in **Table 22.**

Table 22 – Traffic Parameters

Parameter	Year 1 (2023)	Year 10 (2032)
	Peak Hour (vph)	Peak Hour (vph)
Q_R	21	21
Q_L	84	84
$Q_{M\ (R)}$	424	456
$Q_{M\ (L)}$	170	186

Figure 16 and **Figure 17** show the traffic volume parameters diagrammatically for the HW17 and Kyalite Road intersection and these parameters have then been used to determine the warrant for turn treatments by plotting them on the Austroads graph.

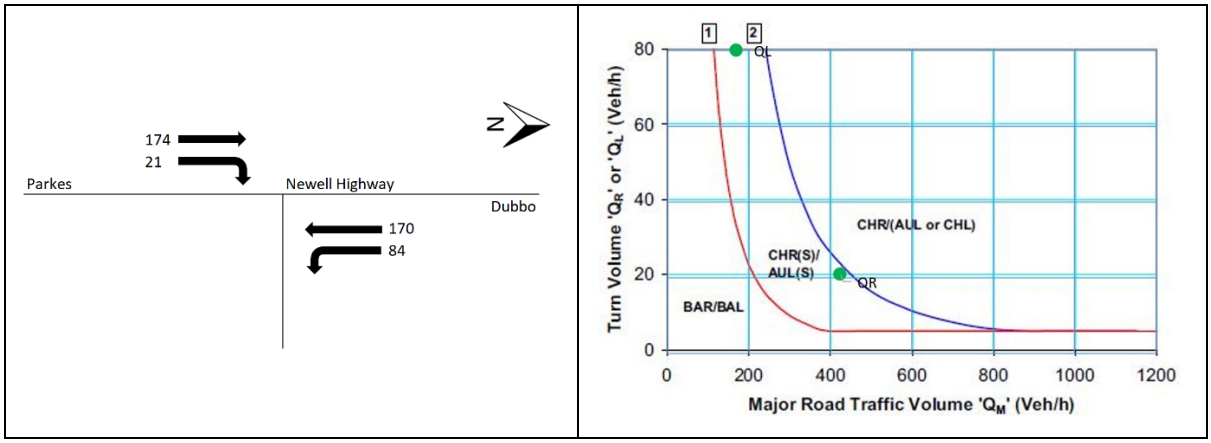


Figure 16 – Peak Hour Flows (Year 1 - 2023)

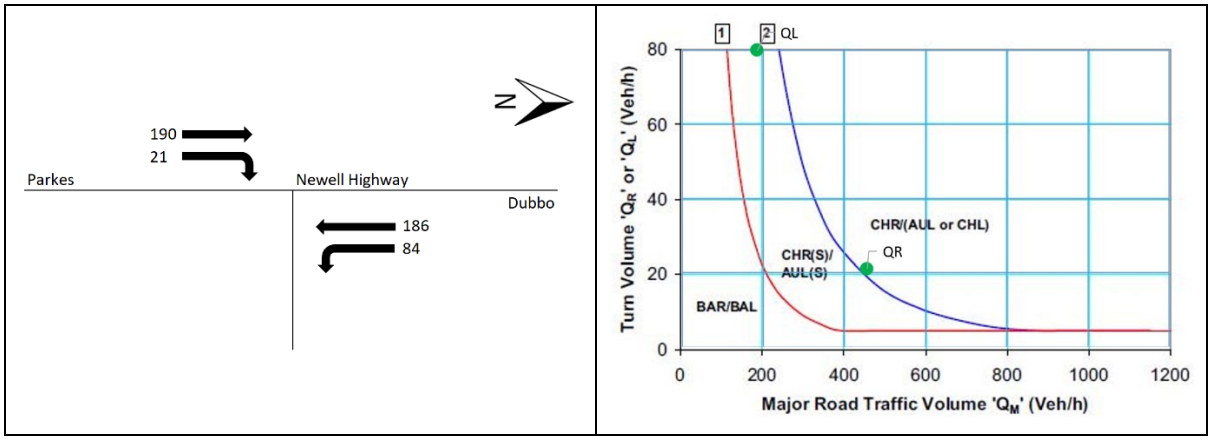


Figure 17 – Peak Hour Flows (Year 10 - 2032)

The resultant outcome for the 10 year horizon is that the HW17 and Kyalite Road intersection will require CHR turn treatment and AUL (Short) turn treatment. Notwithstanding the above, the Applicant has agreed with TfNSW to provide CHR and AUL turn treatments which exceed the minimum requirements. The proposed intersection will therefore provide an enhanced level of service over that required from the Austroads analysis.

4.6.5.2 HW17 and McNiven Lane (New HW17 Alignment)

Traffic volume parameters have been calculated for the Project life operational phase (Year 10 - 2032). These parameters have been listed in **Table 23.**

Table 23 – Traffic Parameters

Parameter	Year 10 (2032)
	Peak Hour (vph)
Q_R	4
Q_L	1
$Q_{M\ (R)}$	377
$Q_{M\ (L)}$	190

Figure 18 shows the traffic volume parameters diagrammatically for the HW17 and McNivens Lane intersection and these parameters have then been used to determine the warrant for turn treatments by plotting them on the Austroads graph.

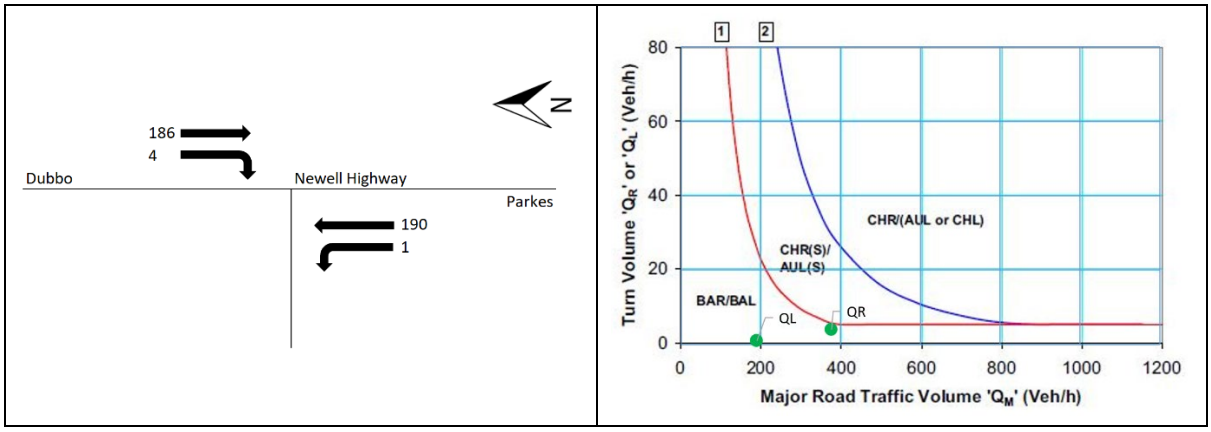


Figure 18 – Peak Hour Flows (Year 10 - 2032)

The resultant outcome for both scenarios is that the HW17 and McNivens Lane intersection will require BAL and BAR turn treatments. Notwithstanding the above, the Applicant has agreed with TfNSW to provide CHR and AUL turn treatments which exceed the minimum requirements. The proposed intersection will therefore provide an enhanced level of service over that required from the Austroads analysis.

4.6.5.3 HW17 and Back Tomingley West Road (New HW17 Alignment)

Traffic volume parameters have been calculated for the Project life operational phase (Year 10 - 2032). These parameters have been listed in **Table 24.**

Table 24 – Traffic Parameters

Parameter	Year 10 (2032)
	Peak Hour (vph)
Q_R	4
Q_L	1
$Q_{M\ (R)}$	377
$Q_{M\ (L)}$	190

Figure 19 shows the traffic volume parameters diagrammatically for the HW17 and the Back Tomingley West Road intersection and these parameters have then been used to determine the warrant for turn treatments by plotting them on the Austroads graph.

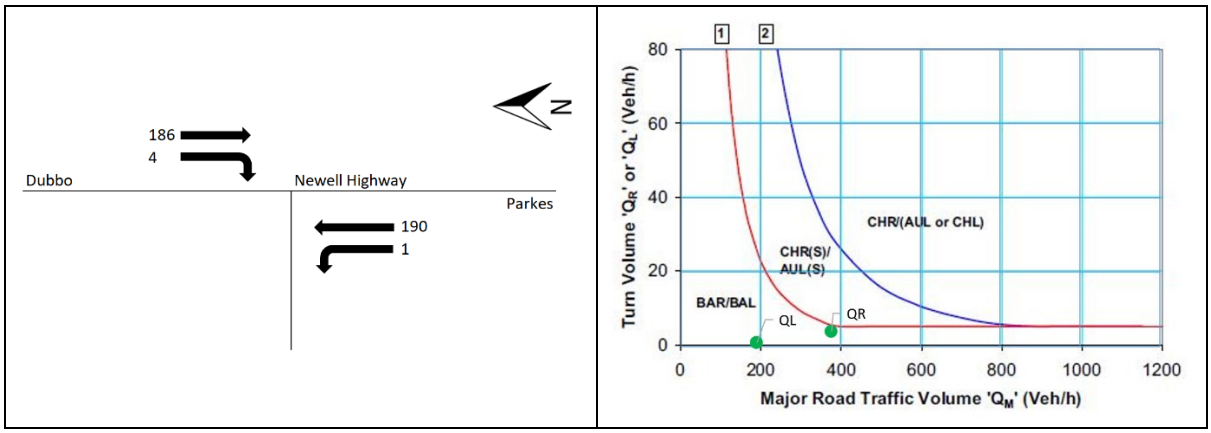


Figure 19 – Peak Hour Flows (Year 10 - 2032)

The resultant outcome for both scenarios is that the HW17 and Back Tomingley West Road intersection will require BAL and BAR turn treatments. Notwithstanding the above, the Applicant has agreed with TfNSW to provide CHR and AUL turn treatments which exceed the minimum requirements. The proposed intersection will therefore provide an enhanced level of service over that required from the Austroads analysis.

4.6.5.4 SAR Mine Site Construction Compound Area Access Point (Construction Phase)

Vehicle movements in and out of the SAR Mine Site construction compound areas will be left in and right out. Given the relatively low traffic volumes along the existing Kyalite Road alignment, the proposed property access arrangement from Kyalite Road is a typical rural property access as per **Figure 13**, with provision for two way traffic movements.

4.6.5.5 TGO Mine Site Access (Operational Phase)

Further to **Section 4.5.2**, it is anticipated that there will be up to 10 additional LV movements using the road network between the TGO Mine Site and SAR Mine Site. These additional LV traffic movements are anticipated to be spread out across a normal working day and it is therefore considered that these additional movements will have a negligible impact on the peak traffic flows.

As a result, no upgrades to the existing TGO Mine Site access off Tomingley West Road are proposed.

4.6.5.6 SAR Mine Site Access (Operational Phase)

The SAR Mine Site access is located approximately 1.3km from HW17 along the Kyalite Road realignment. The location of this access has been chosen such that minimum SISD has been achieved for the 100km/h speed zone.

Vehicle movements in and out of the SAR Mine Site will be left in and right out. Given the relatively low traffic volumes along Kyalite Road, the proposed property access arrangement from Kyalite Road is T-intersection configuration, inclusive of a BAL turn treatment, with the SAR Mine Site access road accommodating two way traffic movements.

Given the 100km/h speed limit, the significant improvement to the realigned section of Kyalite Road and the number of vehicles using the SAR Mine Site access, the provision of Side Road and Truck advanced warning signage (refer **Figure 20** and **Figure 21**).located on both approaches of Kyalite Road to the SAR Mine Site access are to be provided to warn road users of the vehicle activity at this location

Figure 20 – Side Road Warning Sign

Figure 21 – Truck Warning Sign

4.7 Rural Property Access and Addressing

As part of the HW17 realignment, the Applicant is proposing to close four existing rural property access points associated with Applicant owned land holdings namely, Kenilworth, Old Thornycroft and Rosewood (x2)**.** Proposed property access locations for the HW17 realignment are shown in **APPENDIX 5.**

Where a new rural property access is required to replace an existing rural property access, they shall be designed in accordance with **Figure 13**.

The provision of BAR and BAL layouts for the new rural property access points is considered to be unnecessary for the following reasons:

- The sealed pavement width of the HW17 realignment includes 2m wide shoulders and a 1m wide centre line treatment. This available pavement width should provide sufficient space for vehicles to complete any turning manoeuvres into these rural properties as well as allowing enough room for road users to pass them.

Where required, updates to property access addressing (Rural Road Numbering) as a result of any new property access points associated with the road realignments shall be undertaken by the Applicant in accordance with NSC requirements prior to the opening of the new public roads.

4.8 Utility Adjustments / Relocations

The road realignments and upgrades will require adjustments to existing utilities such as Telstra, Nextgen and Essential Energy for example.

The Applicant is responsible for co-ordinating and gaining the necessary approvals from impacted utility providers for any utility adjustments and relocations required to be accommodated within the new road corridors as a result of the Project.

The Applicant shall be responsible for the procurement of the design and construction of any utility adjustments and relocations and these works are to be completed prior to the opening of the new public roads.

4.9 Local Climate Conditions

Flooding of HW17 currently occurs for less than 1:20 ARI events, approximately every 5 years. This results in water overtopping the HW17 north of McNivens Lane and in constructed causeways between Kyalite Road and Back Tomingley West Road.

4.10 Noise, Dust, Lighting and Visual Impacts

4.10.1 Noise

Details regarding noise impacts attributable to traffic associated with the Project are detailed in the separate assessment reports included with the EIS.

4.10.2 Dust

Details regarding dust impacts attributable to traffic associated with the Project are detailed in the separate assessment reports included with the EIS.

With regards to the road realignments and upgrades, dust suppression during construction will generally be via the use of water trucks and will be the responsibility of the contractor to be engaged by the Applicant. The management of dust will be in accordance with the contractor's environmental management plan to be approved by TfNSW which is to be developed by the contractor such that it meets the requirements of the relevant TfNSW QA Construction Specifications inclusive of the mitigation measures for dust included in the EIS.

4.10.3 Lighting

Details regarding lighting impacts attributable to traffic associated with the Project are detailed in the separate assessment reports included with the EIS.

4.10.4 Visual

The Applicant is designing a visual amenity bund on the western side of the Haul Road as part of the SAR Mine Site design to restrict road users along HW17 from viewing the mining operations. The location of the visual amenity bund, referred to as the SAR Amenity Bund as shown in **Figure 22** below, would be constructed in a manner that would ensure motorists using HW17 cannot see mine-related vehicle movements on the Haul Road. This would limit the potential for driver distraction on HW17.

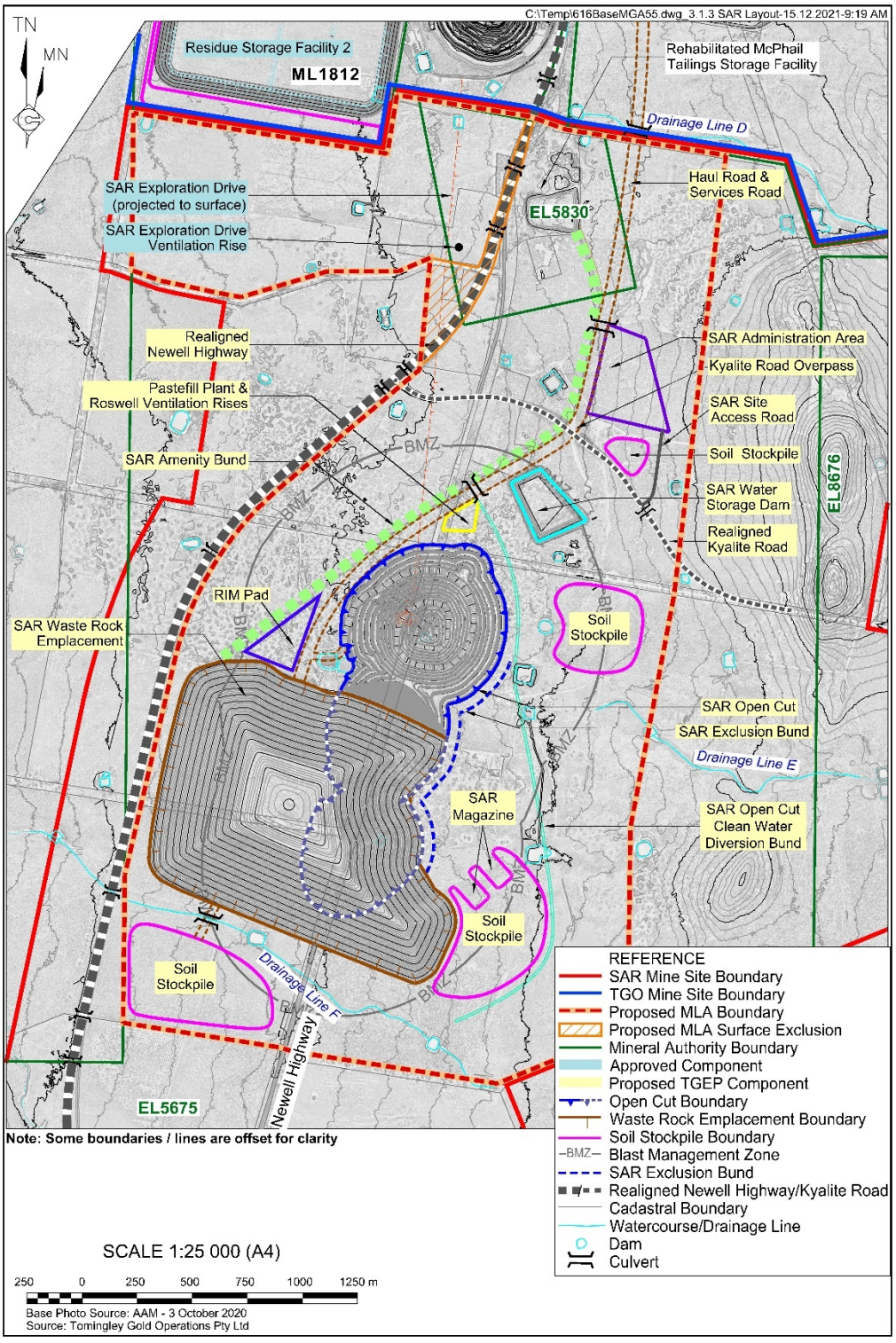


Figure 22 – SAR Mine Site Layout
(Source: RWC, 2021)

4.11 Bus Services

As described in **Section 2.5**, there are several school and passenger bus services that use the surrounding road network in the vicinity of the Project Site. There are no formal bus stops on the NSC local roads and the school bus services using these roads pick up students wherever required. Bus services using HW17 pick and set down passengers at designated stops within the 50km/h speed zone in the Tomingley village.

Worker shift changeover times during the construction phase and operational phase of the Project occur before and after school bus morning and afternoon travel times.

As the proposed road construction compound area as described in **Section 3.1.1** is to be located off HW17, there will be a minor increase in traffic volumes during peak morning and afternoon times when workers enter and leave the proposed construction compound area however, it is considered that the road construction phase is unlikely to impact on any of these bus services.

The existing HW17 intersections with Back Tomingley West Road and Kyalite Road will be available at all times during the construction phase until the traffic switch to the new HW17 realignment and associated new intersections.

Whilst there will be a minor increase in traffic volumes during peak morning and afternoon times when workers enter and leave the Project Site, it is considered unlikely that the construction and operational phases of the Project will impact on these school bus services.

4.12 Pedestrians and Cyclists

Given the surrounding rural environment and the distance of the Project Site from populated areas such as Tomingley, it is considered that the Project is unlikely to impact on pedestrians and cyclists.

4.13 Rail Services

The existing Parkes to Narromine rail line which has been upgraded to form part of the Inland Rail network is located approximately 4km west of the western boundary of the Project Site . As there is no rail infrastructure within the vicinity of the Project Site, the Project will have no impact on rail infrastructure, the rail corridor or rail services.

4.14 Traffic Management and Code of Conduct

Although there are relatively low traffic volumes associated with the construction and operational phases of the Project**,** a Traffic Management Plan (TMP), inclusive of a driver code of conduct, will be developed by the principal contractors during the road and mine phases. This will assist with the control of Project related traffic movements, provide details of school bus services, and ensure that driver behaviour on the surrounding road network is maintained to a safe level that accounts for local conditions.

It is also expected that a TMP will be developed by the Applicant for the operational phase of the SAR Mine Site and TGO Mine Site that would replace the existing TGO Mine Site TMP.

4.15 Cumulative Traffic Impacts

There are no known other traffic generating developments or proposed developments in close proximity the Project Site. As the construction of the HW17 realignment is offline and the existing HW17 alignment will be unimpeded during the construction phase, except for the construction of the tie ins of the new alignment to the existing alignment, it is considered that there will be no cumulative traffic impact on the road network as a result of this Project.

5 Conclusion

Matters relating to traffic and transport for the Project have been addressed in this report. The analysis and discussions presented in this Integrated Transport Assessment report are summarised as follows:

Project Construction Phase

- The construction phase for the Project is anticipated to be approximately 7 months nominally commencing in July 2022.
- Project related traffic during the construction phase will result in a negligible increase to traffic volumes on the existing HW17 alignment and as such, HW17 has sufficient capacity to cater for the combined background traffic and construction related traffic.
- The following temporary roadworks are required for the construction phase:
  - Construction of a temporary intersection upgrade at the existing HW17 and Kyalite Road intersection consisting of BAL turn treatment that satisfies the requirements of TfNSW. The temporary intersection is to be designed to cater for the largest HV construction vehicle required to access the SAR Mine Site and Kyalite Road construction site compound areas.
  - Construction of a temporary site access from the existing Kyalite Road alignment as the Proposed Entry and Exit point for the SAR Mine Site and Kyalite Road construction site compound areas.
  - Construction of a temporary intersection upgrade at the existing HW17 and 'Kenilworth" property access consisting of a CHR and BAL turn treatment that satisfies the requirements of TfNSW. The temporary intersection is to be designed to cater for the largest HV construction vehicle using the Proposed Entry Point to the HW17 construction site compound area;
  - Construction of a temporary site access from McNivens Lane as the Proposed Exit Point 1 from the HW17 construction site compound in the vicinity of the alignment of the proposed HW17 realignment. Vehicles would then use the existing HW17 and McNivens Lane intersection.
  - Construction of a temporary site access from Back Tomingley West Road as the Proposed Exit Point 2 from the HW17 construction site compound in the vicinity of the alignment of the proposed HW17 realignment. Vehicles would then use the existing HW17 and Back Tomingley West Road intersection
- Provision of a Traffic Management Plan (TMP) and driver code of conduct is considered desirable during the construction phase. This will assist with the control of construction related traffic movements and ensure that driver behaviour on the surrounding road network and within the SAR Mine Site during construction is maintained to a safe level that accounts for local conditions.

Project Operational Phase

- No upgrades are considered necessary for the existing TGO Mine Site Access, Tomingley West Road, Tomingley Road and associated intersections given very low additional Project related traffic using the public road network travelling between the TGO Mine Site and SAR Mine Site.
- As there will be no transportation of ore from the Project Site on public roads, HV impacts on the surrounding road network as a result of the operational phase of the Project are expected to be minimal.
- The following permanent roadworks are required for the operational phase:
  - Construction of a new HW17 realignment, inclusive of the new intersections for Kyalite Road, McNivens Lane and Back Tomingley West Road, that satisfies the requirements of TfNSW;
  - Construction of a new realignment of Kyalite Road, including overpass, to its new intersection with the realigned HW17 that satisfies the requirements of NSC;

  - Construction of a new SAR Mine Site access road off the new realignment of Kyalite Road, inclusive of a BAL turn treatment that satisfies the requirements of NSC;
  - Construction of a new SAR Mine Site private access road;
  - Construction of a new realignment of Back Tomingley West Road to its new intersection with HW17 that satisfies the requirements of NSC;
  - Where the existing HW17 and Back Tomingley West Road intersection will be closed, a cul-de-sac shall be constructed on the redundant section of Back Tomingley West Road with landscaping to be provided between the cul-de-sac and HW17 that satisfies the requirements of TfNSW and NSC;
  - Where the proposed new alignment ties into the existing, redundant pavement and road formation (20m minimum at each end) is to be removed.
  - Construction of new property access points long the realigned sections of HW17, Kyalite Road and Back Tomingley Road, as required.
- At the end of the mining operation, the Kyalite Road overpass and embankments will, following confirmation by NSC, be removed by the Applicant and Kyalite Road shall be reconstructed on a new alignment on the southern side of the overpass which connects to the designed HW17 intersection.

Other Road Related Matters

- The new alignments for HW17, Kyalite Road, Back Tomingley West Road and new property access points, are to be opened in accordance with the *Roads Act 1993*, once the permanent roadworks required for the operational phase have been completed.
- Redundant sections of HW17, McNivens Lane and Kyalite Road and redundant property access points are to be closed in accordance with the *Roads Act 1993*, once the permanent roadworks above have been completed.
- No road upgrades are required at the following locations as no operational traffic will use these roads:
  - Thornycroft Road;
  - Back Tomingley West Road between the start of its new alignment and Tomingley West Road; and
  - McNivens Lane between its new intersection on the HW17 realignment and Back Tomingley West Road.
- Impacts on the surrounding road network in terms of bus services will be negligible given the volume of Project related traffic and insignificant for pedestrians and cyclists;

It is concluded that subject to the recommended temporary and permanent roadworks being implemented, there are no Project related traffic and transport issues which would prevent the Project from proceeding.

6 References

- NSW Roads and Traffic Authority (2002), 'Guide to Traffic Generating Developments'.
- Austroads (2016), 'Guide to Road Design – Part 3: Geometric Design'.
- Austroads (2017), 'Guide to Road Design – Part 4: Intersections and Crossings - General'.
- Austroads (2017), 'Guide to Road Design – Part 4A: Un-signalised and Signalised Intersections'.
- Austroads (2010), 'Guide to Road Design Part 6: Roadside Design, Safety and Barriers'.
- Transport for NSW (2016), 'Definitions and Notes to Support LGA Visualisations, NSW Centre for Road Safety'.
- NSW Roads and Maritime Services (2007), 'Route Standards – Route by Route Values (Western Region)'.
- Transport for NSW (2021), 'Major Works Authorisation Deed Private Financing and Construction for the Newell Highway Re-Alignment, Tomingley NSW'.
- Narromine Shire Council (2020), 'Engineering Guidelines for Works within Narromine Shire' - Version 1.

Appendix 1: Traffic Data

austraffic

Road	Back Tomingley Rd
Location	Near Newell Hwy Intersection
Site No.	9109_2
Start Date	Wednesday 19 Aug 2020
Suburb	Tomingley

Northbound

Starting Time	Day of Week1 Mon 24-Aug	Tue 25-Aug	Wed 19-Aug	Thu 20-Aug	Fri 21-Aug	Sat 22-Aug	Sun 23-Aug	Ave W'day	All Days Ave
AM Peak	4	4	1	2	1	3	1		
PM Peak	1	3	1	1	1	1	1		
0:00	0	0	0	0	0	0	0	0	0
0:30	0	0	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0	0	0
1:30	0	0	0	0	0	0	0	0	0
2:00	0	0	1	0	0	0	0	0	0
2:30	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0	0	0
3:30	0	0	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0	0	0
4:30	0	0	0	0	0	0	0	0	0
5:00	0	0	0	0	0	0	0	0	0
5:30	0	0	0	0	0	0	0	0	0
6:00	1	0	0	0	0	0	0	0	0
6:30	0	4	0	0	0	0	1	1	1
7:00	0	0	1	0	1	0	1	0	0
7:30	4	0	0	0	0	1	1	1	1
8:00	0	1	0	2	0	0	1	1	1
8:30	1	1	1	2	1	0	0	1	1
9:00	0	0	0	1	0	1	0	0	0
9:30	2	2	0	0	0	3	0	1	1
10:00	0	2	0	0	0	0	0	0	0
10:30	0	1	0	0	0	0	0	0	0
11:00	1	0	1	0	0	1	0	0	0
11:30	2	0	0	0	0	0	0	0	0
12:00	0	0	1	0	0	1	0	0	0
12:30	1	0	0	0	0	0	0	0	0
13:00	0	3	1	0	0	0	1	1	1
13:30	1	0	0	0	0	0	0	0	0
14:00	1	0	0	0	0	0	0	0	0
14:30	0	1	0	0	0	0	0	0	0
15:00	1	0	0	0	0	0	0	0	0
15:30	1	0	0	0	1	0	0	0	0
16:00	0	0	0	1	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	1	0	0	0
19:00	0	0	0	0	0	0	0	0	0
19:30	1	0	1	0	0	1	1	0	1
20:00	0	0	0	0	0	0	0	0	0
20:30	1	0	0	0	0	0	0	0	0
21:00	0	0	0	0	1	0	0	0	0
21:30	0	1	0	0	0	0	0	0	0
22:00	0	0	0	0	1	0	0	0	0
22:30	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0
23:30	0	0	0	0	0	0	0	0	0
Total	18	16	7	6	5	9	6	10	10
% Heavies	5.6%	18.8%	0.0%	0.0%	0.0%	0.0%	0.0%	7.7%	6.0%

Starting Time	Day of Week2 Mon 31-Aug	Tue 1-Sep	Wed 2-Sep	Thu 3-Sep	Fri 4-Sep	Sat 5-Sep	Sun 6-Sep	Ave W'day	All Days Ave
AM Peak	1	2	1	1	2	1	2		
PM Peak	2	2	2	4	1	1	2		
0:00	0	0	0	0	0	0	0	0	0
0:30	0	0	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0	0	0
1:30	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	0
2:30	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0	0	0
3:30	0	0	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0	0	0
4:30	0	0	0	0	0	0	0	0	0
5:00	0	0	0	0	0	0	0	0	0
5:30	0	0	0	0	0	0	0	0	0
6:00	0	0	0	0	0	0	0	0	0
6:30	0	0	0	0	0	0	0	0	0
7:00	1	0	1	0	0	0	0	0	0
7:30	1	1	0	0	1	0	0	1	0
8:00	0	1	0	0	0	1	1	0	0
8:30	0	0	1	1	0	0	0	0	0
9:00	0	1	1	1	0	0	1	1	1
9:30	0	0	0	1	0	0	0	0	0
10:00	0	0	0	0	0	1	0	0	0
10:30	0	0	1	0	0	0	0	0	0
11:00	0	0	0	0	0	0	2	0	0
11:30	1	2	1	0	2	0	1	1	1
12:00	1	1	0	0	1	0	1	1	1
12:30	0	1	0	0	0	0	0	0	0
13:00	0	0	1	4	0	1	0	1	1
13:30	0	0	2	2	0	0	0	1	1
14:00	0	0	0	1	0	0	1	0	0
14:30	0	0	0	0	1	0	0	0	0
15:00	0	0	0	0	0	0	2	0	0
15:30	0	0	0	0	0	0	0	0	0
16:00	1	0	0	0	0	1	0	0	0
16:30	2	0	0	0	1	1	0	1	1
17:00	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0
18:00	0	0	1	0	1	0	0	0	0
18:30	0	2	0	0	0	0	1	0	0
19:00	1	0	0	0	0	1	0	0	0
19:30	0	0	0	0	0	0	0	0	0
20:00	0	0	0	1	0	0	0	0	0
20:30	0	0	0	0	0	0	0	0	0
21:00	0	0	0	0	0	0	0	0	0
21:30	0	0	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0	0	0
22:30	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0
23:30	0	0	0	0	0	0	0	0	0
Total	8	9	9	11	7	6	10	9	9
% Heavie	12.5%	0.0%	22.2%	9.1%	14.3%	0.0%	0.0%	11.4%	8.3%

Starting Time	Day of Week 1+2 Mon	Tue	Wed	Thu	Fri	Sat	Sun	Ave W'day	All Days Ave
AM Peak	5	4	2	3	2	3	2		
PM Peak	2	3	2	4	1	1	2		
0:00	0	0	0	0	0	0	0	0	0
0:30	0	0	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0	0	0
1:30	0	0	0	0	0	0	0	0	0
2:00	0	0	1	0	0	0	0	0	0
2:30	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0	0	0
3:30	0	0	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0	0	0
4:30	0	0	0	0	0	0	0	0	0
5:00	0	0	0	0	0	0	0	0	0
5:30	0	0	0	0	0	0	0	0	0
6:00	1	0	0	0	0	0	0	0	0
6:30	0	4	0	0	0	0	1	1	1
7:00	1	0	2	0	1	0	1	1	1
7:30	5	1	0	0	1	1	1	1	1
8:00	0	2	0	2	0	1	2	1	1
8:30	1	1	2	3	1	0	0	2	1
9:00	0	1	1	2	0	1	1	1	1
9:30	2	2	0	1	0	3	0	1	1
10:00	0	2	0	0	0	1	0	0	0
10:30	0	1	1	0	0	0	0	0	0
11:00	1	0	1	0	0	1	2	0	1
11:30	3	2	1	0	2	0	1	2	1
12:00	1	1	1	0	1	1	1	1	1
12:30	1	1	0	0	0	0	0	0	0
13:00	0	3	2	4	0	1	1	2	2
13:30	1	0	2	2	0	0	0	1	1
14:00	1	0	0	1	0	0	1	0	0
14:30	0	1	0	0	1	0	0	0	0
15:00	1	0	0	0	0	0	2	0	0
15:30	1	0	0	0	1	0	0	0	0
16:00	1	0	0	1	0	1	0	0	0
16:30	2	0	0	0	1	1	0	1	1
17:00	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0
18:00	0	0	1	0	1	0	0	0	0
18:30	0	2	0	0	0	1	1	0	1
19:00	1	0	0	0	0	1	0	0	0
19:30	1	0	1	0	0	1	1	0	1
20:00	0	0	0	1	0	0	0	0	0
20:30	1	0	0	0	0	0	0	0	0
21:00	0	0	0	0	1	0	0	0	0
21:30	0	1	0	0	0	0	0	0	0
22:00	0	0	0	0	1	0	0	0	0
22:30	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0
23:30	0	0	0	0	0	0	0	0	0
Total	26	25	16	17	12	15	16	19	18
% Heavie	7.7%	12.0%	12.5%	5.9%	8.3%	0.0%	0.0%	9.3%	6.6%

Southbound

Starting Time	Day of Week1 Mon 24-Aug	Tue 25-Aug	Wed 19-Aug	Thu 20-Aug	Fri 21-Aug	Sat 22-Aug	Sun 23-Aug	Ave W'day	All Days Ave
AM Peak	1	1	1	1	1	3	1		
PM Peak	3	2	1	1	1	2	0		
0:00	0	0	0	0	0	0	0	0	0
0:30	0	0	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0	0	0
1:30	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	0
2:30	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0	0	0
3:30	0	0	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0	0	0
4:30	0	0	0	0	0	0	0	0	0
5:00	0	0	0	0	0	0	0	0	0
5:30	0	0	0	0	0	0	0	0	0
6:00	0	0	0	1	0	1	0	0	0
6:30	0	1	0	0	0	0	0	0	0
7:00	0	0	0	0	0	0	0	0	0
7:30	1	0	0	0	1	0	1	0	0
8:00	0	1	0	0	0	1	0	0	0
8:30	0	0	0	0	1	0	0	0	0
9:00	0	0	0	0	0	0	1	0	0

Starting Time	Day of Week2 Mon 31-Aug	Tue 1-Sep	Wed 2-Sep	Thu 3-Sep	Fri 4-Sep	Sat 5-Sep	Sun 6-Sep	Ave W'day	All Days Ave
AM Peak	1	1	3	1	2	1	1		
PM Peak	3	2	2	2	2	1	1		
0:00	0	0	0	0	0	0	0	0	0
0:30	0	0	0	0	0	1	0	0	0
1:00	0	0	0	0	0	0	0	0	0
1:30	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	0
2:30	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0	0	0
3:30	0	0	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0	0	0
4:30	0	0	0	0	0	0	0	0	0
5:00	0	0	0	0	0	0	0	0	0
5:30	0	0	0	0	0	0	0	0	0
6:00	0	0	0	0	0	0	0	0	0
6:30	1	1	0	1	1	0	0	1	1
7:00	0	0	1	0	0	0	0	0	0
7:30	1	0	1	0	0	0	0	0	0
8:00	0	0	0	0	2	0	0	0	0
8:30	1	1	0	0	1	1	1	1	1
9:00	0	0	0	1	0	0	0	0	0

Starting Time	Day of Week 1+2 Mon	Tue	Wed	Thu	Fri	Sat	Sun	Ave W'day	All Days Ave
AM Peak	2	2	3	1	2	3	1		
PM Peak	4	2	2	2	2	2	1		
0:00	0	0	0	0	0	0	0	0	0
0:30	0	0	0	0	0	1	0	0	0
1:00	0	0	0	0	0	0	0	0	0
1:30	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	0
2:30	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0	0	0
3:30	0	0	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0	0	0
4:30	0	0	0	0	0	0	0	0	0
5:00	0	0	0	0	0	0	0	0	0
5:30	0	0	0	0	0	0	0	0	0
6:00	0	0	0	1	0	1	0	0	0
6:30	1	2	0	1	1	0	0	1	1
7:00	0	0	1	0	0	0	0	0	0
7:30	2	0	1	0	1	0	1	1	1
8:00	0	1	0	0	2	1	0	1	1
8:30	1	1	0	0	2	1	1	1	1
9:00	0	0	0	1	0	0	1	0	0

9:30	0	0	1	0	0	1	0	0	0
10:00	0	1	0	1	0	3	0	0	1
10:30	0	0	0	0	1	0	0	0	0
11:00	1	1	0	0	0	0	0	0	0
11:30	0	0	0	1	0	0	0	0	0
12:00	2	1	0	1	0	0	0	1	1
12:30	0	0	1	0	0	1	0	0	0
13:00	0	0	0	1	0	2	0	0	0
13:30	0	1	1	0	0	0	0	0	0
14:00	1	0	0	0	0	0	0	0	0
14:30	1	2	0	0	0	0	0	1	0
15:00	0	0	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0
16:00	3	0	1	0	0	0	0	1	1
16:30	0	2	0	0	0	0	0	0	0
17:00	0	1	0	0	0	0	0	0	0
17:30	0	0	0	1	0	0	0	0	0
18:00	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	0
19:00	0	0	0	0	0	0	0	0	0
19:30	1	0	0	0	0	0	0	0	0
20:00	0	0	0	0	0	0	0	0	0
20:30	0	0	1	0	0	0	0	0	0
21:00	0	0	0	0	0	0	0	0	0
21:30	0	0	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0	0	0
22:30	0	0	0	0	1	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0
23:30	0	0	0	0	0	0	0	0	0
Total	10	11	5	6	4	9	2	7	7
% Heavies	20.0%	45.5%	60.0%	33.3%	0.0%	0.0%	0.0%	33.3%	25.5%

9:30	0	1	1	0	0	0	0	0	0
10:00	0	0	0	0	0	0	0	0	0
10:30	0	1	3	1	0	1	1	1	1
11:00	1	0	0	0	0	0	0	0	0
11:30	1	1	0	0	0	0	0	0	0
12:00	0	1	0	1	1	0	0	1	0
12:30	1	0	0	1	2	0	1	1	1
13:00	0	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	1	1	0	0
14:00	0	0	0	1	0	0	0	0	0
14:30	0	0	0	0	1	0	0	0	0
15:00	3	2	0	0	0	0	0	1	1
15:30	0	0	2	0	0	0	0	0	0
16:00	1	2	0	2	0	1	0	1	1
16:30	1	0	0	0	0	0	1	0	0
17:00	1	1	0	0	1	1	1	1	1
17:30	0	0	0	0	0	0	0	0	0
18:00	1	0	0	0	1	0	1	0	0
18:30	0	0	0	0	1	0	1	0	0
19:00	0	0	0	0	0	0	0	0	0
19:30	0	0	0	0	0	0	0	0	0
20:00	0	0	0	0	0	0	0	0	0
20:30	0	0	0	0	0	0	0	0	0
21:00	0	0	0	0	0	0	0	0	0
21:30	0	0	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0	0	0
22:30	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0
23:30	0	0	0	0	0	0	0	0	0
Total	13	11	8	8	11	6	8	10	9
% Heavie	15.4%	9.1%	12.5%	12.5%	0.0%	0.0%	0.0%	9.8%	7.7%

9:30	0	1	2	0	0	1	0	1	1
10:00	0	1	0	1	0	3	0	0	1
10:30	0	1	3	1	1	1	1	1	1
11:00	2	1	0	0	0	0	0	1	0
11:30	1	1	0	1	0	0	0	1	0
12:00	2	2	0	2	1	0	0	1	1
12:30	1	0	1	1	2	1	1	1	1
13:00	0	0	0	1	0	2	0	0	0
13:30	0	1	1	0	0	1	1	0	1
14:00	1	0	0	1	0	0	0	0	0
14:30	1	2	0	0	0	1	0	0	1
15:00	3	2	0	0	0	0	0	1	1
15:30	0	0	2	0	0	0	0	0	0
16:00	4	2	1	2	0	1	0	2	1
16:30	1	2	0	0	0	0	1	1	1
17:00	1	2	0	0	1	1	1	1	1
17:30	0	0	0	1	0	0	0	0	0
18:00	1	0	0	0	1	0	1	0	0
18:30	0	0	0	0	1	0	1	0	0
19:00	0	0	0	0	0	0	0	0	0
19:30	1	0	0	0	0	0	0	0	0
20:00	0	0	0	0	0	0	0	0	0
20:30	0	0	1	0	0	0	0	0	0
21:00	0	0	0	0	0	0	0	0	0
21:30	0	0	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0	0	0
22:30	0	0	0	0	1	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0
23:30	0	0	0	0	0	0	0	0	0
Total	23	22	13	14	15	15	10	17	16
% Heavie	17.4%	27.3%	30.8%	21.4%	0.0%	0.0%	0.0%	19.4%	13.8%

Two ways

Starting Time	Day of Week1 Mon 24-Aug	Tue 25-Aug	Wed 19-Aug	Thu 20-Aug	Fri 21-Aug	Sat 22-Aug	Sun 23-Aug	Ave W'day	All Days Ave
AM Peak	5	5	1	2	2	4	2		
PM Peak	3	3	1	1	1	2	1		
0:00	0	0	0	0	0	0	0	0	0
0:30	0	0	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0	0	0
1:30	0	0	0	0	0	0	0	0	0
2:00	0	0	1	0	0	0	0	0	0
2:30	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0	0	0
3:30	0	0	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0	0	0
4:30	0	0	0	0	0	0	0	0	0
5:00	0	0	0	0	0	0	0	0	0
5:30	0	0	0	0	0	0	0	0	0
6:00	1	0	0	1	0	1	0	0	0
6:30	0	5	0	0	0	0	1	1	1
7:00	0	0	1	0	1	0	1	0	0
7:30	5	0	0	0	1	1	2	1	1
8:00	0	2	0	2	0	1	1	1	1
8:30	1	1	1	2	2	0	0	1	1
9:00	0	0	0	1	0	1	1	0	0
9:30	2	2	1	0	0	4	0	1	1
10:00	0	3	0	1	0	3	0	1	1
10:30	0	1	0	0	1	0	0	0	0
11:00	2	1	1	0	0	1	0	1	1
11:30	2	0	0	1	0	0	0	1	0
12:00	2	1	1	1	0	1	0	1	1
12:30	1	0	1	0	0	1	0	0	0
13:00	0	3	1	1	0	2	1	1	1
13:30	1	1	1	0	0	0	0	1	0
14:00	2	0	0	0	0	0	0	0	0
14:30	1	3	0	0	0	0	0	1	1
15:00	1	0	0	0	0	0	0	0	0
15:30	1	0	0	0	1	0	0	0	0
16:00	3	0	1	1	0	0	0	1	1
16:30	0	2	0	0	0	0	0	0	0
17:00	0	1	0	0	0	0	0	0	0
17:30	0	0	0	1	0	0	0	0	0
18:00	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	1	0	0	0
19:00	0	0	0	0	0	0	0	0	0
19:30	2	0	1	0	0	1	1	1	1
20:00	0	0	0	0	0	0	0	0	0
20:30	1	0	1	0	0	0	0	0	0
21:00	0	0	0	0	1	0	0	0	0
21:30	0	1	0	0	0	0	0	0	0
22:00	0	0	0	0	1	0	0	0	0
22:30	0	0	0	0	1	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0
23:30	0	0	0	0	0	0	0	0	0
Total	28	27	12	12	9	18	8	18	16
% Heavies	10.7%	29.6%	25.0%	16.7%	0.0%	0.0%	0.0%	18.2%	14.0%

Starting Time	Day of Week2 Mon 31-Aug	Tue 1-Sep	Wed 2-Sep	Thu 3-Sep	Fri 4-Sep	Sat 5-Sep	Sun 6-Sep	Ave W'day	All Days Ave
AM Peak	2	3	4	2	2	1	2		
PM Peak	3	2	2	4	2	2	2		
0:00	0	0	0	0	0	0	0	0	0
0:30	0	0	0	0	0	1	0	0	0
1:00	0	0	0	0	0	0	0	0	0
1:30	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	0
2:30	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0	0	0
3:30	0	0	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0	0	0
4:30	0	0	0	0	0	0	0	0	0
5:00	0	0	0	0	0	0	0	0	0
5:30	0	0	0	0	0	0	0	0	0
6:00	0	0	0	0	0	0	0	0	0
6:30	1	1	0	1	1	0	0	1	1
7:00	1	0	2	0	0	0	0	1	0
7:30	2	1	1	0	1	0	0	1	1
8:00	0	1	0	0	2	1	1	1	1
8:30	1	1	1	1	1	1	1	1	1
9:00	0	1	1	2	0	0	1	1	1
9:30	0	1	1	1	0	0	0	1	0
10:00	0	0	0	0	0	1	0	0	0
10:30	0	1	4	1	0	1	1	1	1
11:00	1	0	0	0	0	0	2	0	0
11:30	2	3	1	0	2	0	1	2	1
12:00	1	2	0	1	2	0	1	1	1
12:30	1	1	0	1	2	0	1	1	1
13:00	0	0	1	4	0	1	0	1	1
13:30	0	0	2	2	0	1	1	1	1
14:00	0	0	0	2	0	0	1	0	0
14:30	0	0	0	0	2	0	0	0	0
15:00	3	2	0	0	0	0	2	1	1
15:30	0	0	2	0	0	0	0	0	0
16:00	2	2	0	2	0	2	0	1	1
16:30	3	0	0	0	1	1	1	1	1
17:00	1	1	0	0	1	1	1	1	1
17:30	0	0	0	0	0	0	0	0	0
18:00	1	0	1	0	2	0	1	1	1
18:30	0	2	0	0	1	0	2	1	1
19:00	1	0	0	0	0	1	0	0	0
19:30	0	0	0	0	0	0	0	0	0
20:00	0	0	0	1	0	0	0	0	0
20:30	0	0	0	0	0	0	0	0	0
21:00	0	0	0	0	0	0	0	0	0
21:30	0	0	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0	0	0
22:30	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0
23:30	0	0	0	0	0	0	0	0	0
Total	21	20	17	19	18	12	18	19	18
% Heavie	14.3%	5.0%	17.6%	10.5%	5.6%	0.0%	0.0%	10.5%	8.0%

Starting Time	Day of Week 1+2 Mon	Tue	Wed	Thu	Fri	Sat	Sun	Ave W'day	All Days Ave	
AM Peak	7	6	4	3	3	4	2			
PM Peak	5	3	3	5	2	3	2			
0:00	0	0	0	0	0	0	0	0	0	
0:30	0	0	0	0	0	1	0	0	0	
1:00	0	0	0	0	0	0	0	0	0	
1:30	0	0	0	0	0	0	0	0	0	
2:00	0	0	1	0	0	0	0	0	0	
2:30	0	0	0	0	0	0	0	0	0	
3:00	0	0	0	0	0	0	0	0	0	
3:30	0	0	0	0	0	0	0	0	0	
4:00	0	0	0	0	0	0	0	0	0	
4:30	0	0	0	0	0	0	0	0	0	
5:00	0	0	0	0	0	0	0	0	0	
5:30	0	0	0	0	0	0	0	0	0	
6:00	1	0	0	1	0	1	0	0	0	
6:30	1	6	0	1	1	0	1	2	1	
7:00	1	0	3	0	1	0	1	1	1	
7:30	7	1	1	0	2	1	2	2	2	
8:00	0	3	0	2	2	2	2	1	2	Peak AM = 4
8:30	2	2	2	3	3	1	1	2	2	
9:00	0	1	1	3	0	1	2	1	1	
9:30	2	3	2	1	0	4	0	2	2	
10:00	0	3	0	1	0	4	0	1	1	
10:30	0	2	4	1	1	1	1	2	1	
11:00	3	1	1	0	0	1	2	1	1	
11:30	4	3	1	1	2	0	1	2	2	
12:00	3	3	1	2	2	1	1	2	2	
12:30	2	1	1	1	2	1	1	1	1	
13:00	0	3	2	5	0	3	1	2	2	
13:30	1	1	3	2	0	1	1	1	1	
14:00	2	0	0	2	0	0	1	1	1	
14:30	1	3	0	0	2	0	0	1	1	
15:00	4	2	0	0	0	0	2	1	1	
15:30	1	0	2	0	1	0	0	1	1	
16:00	5	2	1	3	0	2	0	2	2	Peak PM = 3
16:30	3	2	0	0	1	1	1	1	1	
17:00	1	2	0	0	1	1	1	1	1	
17:30	0	0	0	1	0	0	0	0	0	
18:00	1	0	1	0	2	0	1	1	1	
18:30	0	2	0	0	1	1	2	1	1	
19:00	1	0	0	0	0	1	0	0	0	
19:30	2	0	1	0	0	1	1	1	1	
20:00	0	0	0	1	0	0	0	0	0	
20:30	1	0	1	0	0	0	0	0	0	
21:00	0	0	0	0	1	0	0	0	0	
21:30	0	1	0	0	0	0	0	0	0	
22:00	0	0	0	0	1	0	0	0	0	
22:30	0	0	0	0	1	0	0	0	0	
23:00	0	0	0	0	0	0	0	0	0	
23:30	0	0	0	0	0	0	0	0	0	
Total	49	47	29	31	27	30	26	37	34	
% Heavie	12.2%	19.1%	20.7%	12.9%	3.7%	0.0%	0.0%	13.7%	9.8%	

austraffic

Road	Newell Highway
Location	Between Back Tomingley Rd And Kyalite Rd
Site No.	9109_1
Start Date	Wednesday 19 Aug 2020
Suburb	Tomingley

Northbound

Starting Time	Day of Week1 Mon 24-Aug	Tue 25-Aug	Wed 19-Aug	Thu 20-Aug	Fri 21-Aug	Sat 22-Aug	Sun 23-Aug	Ave W'day	All Days Ave
AM Peak	41	52	49	48	49	51	41		
PM Peak	50	48	56	51	50	48	43		
0:00	3	12	11	8	4	6	13	8	8
0:30	5	1	2	2	2	2	4	2	3
1:00	1	3	4	9	5	7	6	4	5
1:30	0	3	4	4	2	4	3	3	3
2:00	1	3	7	5	2	1	2	4	3
2:30	0	8	1	8	3	1	2	4	3
3:00	1	1	3	3	1	5	3	2	2
3:30	1	8	5	4	3	4	3	4	4
4:00	6	9	8	14	5	8	1	8	7
4:30	6	7	6	10	10	6	2	8	7
5:00	4	14	5	12	10	10	6	9	9
5:30	17	29	24	22	26	19	10	24	21
6:00	28	36	49	48	28	23	19	38	33
6:30	27	27	29	32	23	22	8	28	24
7:00	26	38	46	31	41	17	11	36	30
7:30	33	47	47	43	30	28	18	40	35
8:00	34	32	37	41	39	31	19	37	33
8:30	30	41	33	44	49	49	20	39	38
9:00	18	35	48	43	41	36	30	37	36
9:30	41	51	41	43	40	40	40	43	42
10:00	38	47	37	47	33	50	24	40	39
10:30	34	39	45	39	32	51	40	38	40
11:00	40	52	33	44	38	47	31	41	41
11:30	29	33	35	34	30	46	41	32	35
12:00	32	33	40	48	33	25	42	37	36
12:30	28	40	33	26	32	38	42	32	34
13:00	38	40	56	51	40	48	35	45	44
13:30	37	41	37	44	41	39	32	40	39
14:00	33	41	53	42	32	31	43	40	39
14:30	36	36	32	49	47	42	40	40	40
15:00	33	48	39	35	34	27	33	38	36
15:30	50	47	36	37	50	27	39	44	41
16:00	45	42	41	34	33	24	27	39	35
16:30	33	34	30	51	32	32	34	36	35
17:00	35	36	42	37	32	17	16	36	31
17:30	26	37	29	26	32	18	23	30	27
18:00	24	32	38	27	23	18	26	29	27
18:30	25	19	21	18	24	17	14	21	20
19:00	11	15	13	13	15	17	12	13	14
19:30	21	18	16	13	24	14	12	18	17
20:00	11	8	16	12	13	8	8	12	11
20:30	21	10	11	8	12	9	12	12	12
21:00	12	16	10	5	10	22	10	11	12
21:30	9	14	11	9	9	11	8	10	10
22:00	18	11	10	11	7	15	7	11	11
22:30	16	11	14	5	11	8	9	11	11
23:00	14	6	13	7	8	9	6	10	9
23:30	8	4	11	4	17	7	4	9	8
Total	1039	1215	1212	1202	1108	1036	890	1155	1100
% Heavies	41.1%	53.3%	52.5%	49.5%	40.4%	42.5%	44.2%	47.7%	46.6%

Starting Time	Day of Week2 Mon 31-Aug	Tue 1-Sep	Wed 26-Aug	Thu 27-Aug	Fri 28-Aug	Sat 29-Aug	Sun 30-Aug	Ave W'day	All Days Ave
AM Peak	42	55	54	53	48	52	47		
PM Peak	43	59	47	57	57	46	42		
0:00	0	6	11	9	2	2	5	6	5
0:30	5	8	7	1	4	5	6	5	5
1:00	4	4	7	5	3	3	4	5	4
1:30	1	5	6	8	3	5	5	5	5
2:00	4	4	4	4	3	3	3	4	4
2:30	3	7	6	4	2	8	0	4	4
3:00	1	7	6	2	4	4	6	4	4
3:30	3	5	7	10	7	6	3	6	6
4:00	4	6	7	11	5	4	7	7	6
4:30	6	10	8	8	8	3	5	8	7
5:00	6	16	14	11	7	9	4	11	10
5:30	20	24	23	23	22	15	8	22	19
6:00	33	42	46	50	31	10	11	40	32
6:30	31	35	35	25	18	17	7	29	24
7:00	30	55	34	37	33	41	6	38	34
7:30	29	35	45	42	32	44	25	37	36
8:00	40	42	42	53	39	35	27	43	40
8:30	38	39	39	44	30	52	26	38	38
9:00	42	39	53	42	38	44	25	43	40
9:30	35	37	54	39	44	46	38	42	42
10:00	41	38	31	43	28	50	37	36	38
10:30	27	47	40	49	46	50	37	42	42
11:00	33	22	36	39	46	46	30	35	36
11:30	30	52	53	41	48	39	47	45	44
12:00	38	42	43	38	48	46	39	42	42
12:30	33	47	47	47	45	37	28	44	41
13:00	27	35	46	46	34	33	42	38	38
13:30	32	52	36	49	41	32	36	42	40
14:00	34	39	41	38	43	32	37	39	38
14:30	37	38	32	37	41	26	30	37	34
15:00	31	43	25	45	57	28	40	40	38
15:30	43	59	44	57	47	36	29	50	45
16:00	36	43	38	50	38	43	33	41	40
16:30	38	33	37	42	46	31	25	39	36
17:00	24	35	45	37	31	23	34	34	33
17:30	31	29	26	35	30	28	31	30	30
18:00	22	24	37	23	36	21	29	28	27
18:30	20	15	17	23	37	28	18	22	23
19:00	22	14	14	9	15	13	13	15	14
19:30	11	13	12	12	16	15	16	13	14
20:00	13	14	14	16	9	7	7	13	11
20:30	15	12	16	16	20	17	12	16	15
21:00	11	15	17	5	9	18	10	11	12
21:30	13	14	11	7	12	4	7	11	10
22:00	14	16	12	7	7	18	10	11	12
22:30	14	6	6	3	5	16	1	7	7
23:00	8	5	11	6	6	9	5	7	7
23:30	8	8	9	5	8	6	3	8	7
Total	1041	1236	1250	1253	1184	1108	907	1193	1140
% Heavie	43.3%	50.3%	48.9%	48.9%	39.3%	39.5%	39.4%	46.3%	44.6%

Starting Time	Day of Week 1+2 Mon	Tue	Wed	Thu	Fri	Sat	Sun	Ave W'day	All Days Ave
AM Peak	79	93	101	98	84	101	88		
PM Peak	93	106	102	97	97	81	81		
0:00	3	18	22	17	6	8	18	13	13
0:30	10	9	9	3	6	7	10	7	8
1:00	5	7	11	14	8	10	10	9	9
1:30	1	8	10	12	5	9	8	7	8
2:00	5	7	11	9	5	4	5	7	7
2:30	3	15	7	12	5	9	2	8	8
3:00	2	8	9	5	5	9	9	6	7
3:30	4	13	12	14	10	10	6	11	10
4:00	10	15	15	25	10	12	8	15	14
4:30	12	17	14	18	18	9	7	16	14
5:00	10	30	19	23	17	19	10	20	18
5:30	37	53	47	45	48	34	18	46	40
6:00	61	78	95	98	59	33	30	78	65
6:30	58	62	64	57	41	39	15	56	48
7:00	56	93	80	68	74	58	17	74	64
7:30	62	82	92	85	62	72	43	77	71
8:00	74	74	79	94	78	66	46	80	73
8:30	68	80	72	88	79	101	46	77	76
9:00	60	74	101	85	79	80	55	80	76
9:30	76	88	95	82	84	86	78	85	84
10:00	79	85	68	90	61	100	61	77	78
10:30	61	86	85	88	78	101	77	80	82
11:00	73	74	69	83	84	93	61	77	77
11:30	59	85	88	75	78	85	88	77	80
12:00	70	75	83	86	81	71	81	79	78
12:30	61	87	80	73	77	75	70	76	75
13:00	65	75	102	97	74	81	77	83	82
13:30	69	93	73	93	82	71	68	82	78
14:00	67	80	94	80	75	63	80	79	77
14:30	73	74	64	86	88	68	70	77	75
15:00	64	91	64	80	91	55	73	78	74
15:30	93	106	80	94	97	63	68	94	86
16:00	81	85	79	84	71	67	60	80	75
16:30	71	67	67	93	78	63	59	75	71
17:00	59	71	87	74	63	40	50	71	63
17:30	57	66	55	61	62	46	54	60	57
18:00	46	56	75	50	59	39	55	57	54
18:30	45	34	38	41	61	45	32	44	42
19:00	33	29	27	22	30	30	25	28	28
19:30	32	31	28	25	40	29	28	31	30
20:00	24	22	30	28	22	15	15	25	22
20:30	36	22	27	24	32	26	24	28	27
21:00	23	31	27	10	19	40	20	22	24
21:30	22	28	22	16	21	15	15	22	20
22:00	32	27	22	18	14	33	17	23	23
22:30	30	17	20	8	16	24	10	18	18
23:00	22	11	24	13	14	18	11	17	16
23:30	16	12	20	9	25	13	7	16	15
Total	2080	2451	2462	2455	2292	2144	1797	2348	2240
% Heavie	42.2%	51.8%	50.6%	49.2%	39.8%	41.0%	41.7%	46.7%	45.2%

Southbound

Starting Time	Day of Week1 Mon 24-Aug	Tue 25-Aug	Wed 19-Aug	Thu 20-Aug	Fri 21-Aug	Sat 22-Aug	Sun 23-Aug	Ave W'day	All Days Ave
AM Peak	41	48	51	53	50	45	47		
PM Peak	47	55	49	56	60	50	60		
0:00	3	3	3	3	8	5	3	4	4
0:30	7	4	7	7	5	9	2	6	6
1:00	2	2	4	0	3	5	8	2	3
1:30	3	5	1	5	1	8	3	3	4
2:00	0	1	4	3	3	3	3	2	2
2:30	2	7	4	1	8	6	0	4	4
3:00	2	3	2	3	2	3	1	2	2
3:30	5	4	4	9	1	2	1	5	4
4:00	3	3	2	1	3	5	1	2	3
4:30	3	3	3	3	4	3	3	3	3
5:00	6	5	11	6	7	7	0	7	6
5:30	14	13	17	12	11	7	4	13	11
6:00	19	30	23	20	20	16	12	22	20
6:30	41	38	23	23	30	26	14	31	28
7:00	24	35	25	31	29	10	12	29	24
7:30	36	46	23	42	36	18	12	37	30
8:00	33	42	41	53	33	27	16	40	35
8:30	41	40	51	37	32	24	24	40	36
9:00	36	48	39	39	29	39	25	38	36

Starting Time	Day of Week2 Mon 31-Aug	Tue 1-Sep	Wed 26-Aug	Thu 27-Aug	Fri 28-Aug	Sat 29-Aug	Sun 30-Aug	Ave W'day	All Days Ave
AM Peak	46	59	51	60	55	63	61		
PM Peak	55	51	62	57	58	62	57		
0:00	4	6	2	4	3	2	3	4	3
0:30	2	1	1	6	0	1	3	2	2
1:00	1	4	2	2	2	8	2	2	3
1:30	3	3	3	4	1	2	1	3	2
2:00	1	3	3	5	1	6	1	3	3
2:30	0	4	9	7	4	3	4	5	4
3:00	1	3	5	7	3	2	3	4	3
3:30	1	1	6	4	5	2	5	3	3
4:00	2	3	4	4	3	2	1	3	3
4:30	6	3	5	5	4	2	6	5	4
5:00	9	11	4	8	6	5	6	8	7
5:30	18	20	13	18	16	7	6	17	14
6:00	20	25	24	20	24	14	17	23	21
6:30	37	30	33	33	27	15	7	32	26
7:00	19	37	24	23	21	13	12	25	21
7:30	32	44	33	30	38	20	16	35	30
8:00	24	55	45	50	42	26	17	43	37
8:30	46	51	45	48	32	30	25	44	40
9:00	28	43	40	34	25	30	22	34	32

Starting Time	Day of Week 1+2 Mon	Tue	Wed	Thu	Fri	Sat	Sun	Ave W'day	All Days Ave
AM Peak	87	107	96	103	98	96	108		
PM Peak	92	104	111	101	111	104	101		
0:00	7	9	5	7	11	7	6	8	7
0:30	9	5	8	13	5	10	5	8	8
1:00	3	6	6	2	5	13	10	4	6
1:30	6	8	4	9	2	10	4	6	6
2:00	1	4	7	8	4	9	4	5	5
2:30	2	11	13	8	12	9	4	9	8
3:00	3	6	7	10	5	5	4	6	6
3:30	6	5	10	13	6	4	6	8	7
4:00	5	6	6	5	6	7	2	6	5
4:30	9	6	8	8	8	5	9	8	8
5:00	15	16	15	14	13	12	6	15	13
5:30	32	33	30	30	27	14	10	30	25
6:00	39	55	47	40	44	30	29	45	41
6:30	78	68	56	56	57	41	21	63	54
7:00	43	72	49	54	50	23	24	54	45
7:30	68	90	56	72	74	38	28	72	61
8:00	57	97	86	103	75	53	33	84	72
8:30	87	91	96	85	64	54	49	85	75
9:00	64	91	79	73	54	69	47	72	68

9:30	26	44	44	44	38	43	27	39	38
10:00	37	48	32	37	31	35	34	37	36
10:30	35	41	29	40	50	45	46	39	41
11:00	29	31	41	31	39	39	47	34	37
11:30	39	43	39	35	25	33	45	36	37
12:00	30	43	22	29	46	35	31	34	34
12:30	28	40	40	41	39	44	30	38	37
13:00	30	28	32	45	34	28	35	34	33
13:30	37	50	42	39	41	28	32	42	38
14:00	39	43	40	41	40	42	40	41	41
14:30	31	49	40	51	40	40	36	42	41
15:00	32	36	41	56	49	44	42	43	43
15:30	44	42	35	40	50	35	60	42	44
16:00	47	54	38	49	48	50	42	47	47
16:30	37	51	45	41	55	40	35	46	43
17:00	39	55	49	47	60	21	22	50	42
17:30	39	38	40	34	38	32	22	38	35
18:00	37	30	24	22	36	21	27	30	28
18:30	28	15	24	22	26	18	15	23	21
19:00	16	19	22	18	20	19	13	19	18
19:30	15	16	19	23	11	18	10	17	16
20:00	15	4	13	12	12	7	9	11	10
20:30	9	15	11	15	16	17	8	13	13
21:00	16	7	16	8	9	6	8	11	10
21:30	10	8	13	18	4	8	6	11	10
22:00	7	11	13	13	8	10	8	10	10
22:30	9	5	8	6	3	6	5	6	6
23:00	9	8	7	6	5	5	3	7	6
23:30	2	1	2	4	6	1	6	3	3
Total	**1052**	**1207**	**1108**	**1165**	**1144**	**993**	**888**	**1135**	**1080**
% Heavies	**42.6%**	**54.0%**	**53.0%**	**51.2%**	**43.7%**	**40.9%**	**37.3%**	**49.0%**	**46.6%**

9:30	23	47	51	41	55	40	50	43	44
10:00	39	59	33	42	48	46	30	44	42
10:30	37	46	36	60	48	34	41	45	43
11:00	41	47	41	35	42	32	61	41	43
11:30	33	40	38	52	35	63	47	40	44
12:00	36	38	37	37	48	48	34	39	40
12:30	29	51	43	44	43	50	41	42	43
13:00	41	36	53	30	47	45	39	41	42
13:30	40	46	35	36	38	41	42	39	40
14:00	32	47	50	41	30	62	57	40	46
14:30	41	41	47	47	33	52	40	42	43
15:00	45	40	41	45	36	41	49	41	42
15:30	41	28	44	44	46	59	41	41	43
16:00	26	42	47	47	58	35	33	44	41
16:30	55	48	50	57	56	41	26	53	48
17:00	38	49	62	40	45	31	27	47	42
17:30	33	40	21	42	35	22	29	34	32
18:00	30	32	30	40	30	21	20	32	29
18:30	21	16	23	17	18	22	12	19	18
19:00	28	18	22	17	25	15	20	22	21
19:30	19	8	15	25	20	13	14	17	16
20:00	13	6	14	14	17	8	11	13	12
20:30	13	9	10	11	17	15	7	12	12
21:00	7	7	5	9	9	15	6	7	8
21:30	13	3	8	9	8	15	9	8	9
22:00	15	11	8	11	7	6	4	10	9
22:30	5	10	12	7	2	5	3	7	6
23:00	8	2	7	6	7	7	5	6	6
23:30	8	3	5	9	5	4	3	6	5
Total	**1064**	**1217**	**1189**	**1227**	**1165**	**1078**	**958**	**1172**	**1128**
% Heavie	**43.4%**	**50.0%**	**46.8%**	**47.4%**	**40.4%**	**35.3%**	**37.4%**	**45.7%**	**43.3%**

9:30	49	91	95	85	93	83	77	83	82
10:00	76	107	65	79	79	81	64	81	79
10:30	72	87	65	100	98	79	87	84	84
11:00	70	78	82	66	81	71	108	75	79
11:30	72	83	77	87	60	96	92	76	81
12:00	66	81	59	66	94	83	65	73	73
12:30	57	91	83	85	82	94	71	80	80
13:00	71	64	85	75	81	73	74	75	75
13:30	77	96	77	75	79	69	74	81	78
14:00	71	90	90	82	70	104	97	81	86
14:30	72	90	87	98	73	92	76	84	84
15:00	77	76	82	101	85	85	91	84	85
15:30	85	70	79	84	96	94	101	83	87
16:00	73	96	85	96	106	85	75	91	88
16:30	92	99	95	98	111	81	61	99	91
17:00	77	104	111	87	105	52	49	97	84
17:30	72	78	61	76	73	54	51	72	66
18:00	67	62	54	62	66	42	47	62	57
18:30	49	31	47	39	44	40	27	42	40
19:00	44	37	44	35	45	34	33	41	39
19:30	34	24	34	48	31	31	24	34	32
20:00	28	10	27	26	29	15	20	24	22
20:30	22	24	21	26	33	32	15	25	25
21:00	23	14	21	17	18	21	14	19	18
21:30	23	11	21	27	12	23	15	19	19
22:00	22	22	21	24	15	16	12	21	19
22:30	14	15	20	13	5	11	8	13	12
23:00	17	10	14	12	12	12	8	13	12
23:30	10	4	7	13	11	5	9	9	8
Total	**2116**	**2424**	**2297**	**2392**	**2309**	**2071**	**1846**	**2308**	**2208**
% Heavie	**43.0%**	**52.0%**	**49.8%**	**49.2%**	**42.1%**	**38.0%**	**37.3%**	**47.2%**	**44.5%**

Two ways

Starting Time	Day of Week1 Mon 24-Aug	Tue 25-Aug	Wed 19-Aug	Thu 20-Aug	Fri 21-Aug	Sat 22-Aug	Sun 23-Aug	Ave W'day	All Days Ave
AM Peak	**75**	**95**	**87**	**94**	**82**	**96**	**86**		
PM Peak	**94**	**96**	**93**	**100**	**100**	**82**	**99**		
0:00	6	15	14	11	12	11	16	12	12
0:30	12	5	9	9	7	11	6	8	8
1:00	3	5	8	9	8	12	14	7	8
1:30	3	8	5	9	3	12	6	6	7
2:00	1	4	11	8	5	4	5	6	5
2:30	2	15	5	9	11	7	2	8	7
3:00	3	4	5	6	3	8	4	4	5
3:30	6	12	9	13	4	6	4	9	8
4:00	9	12	10	15	8	13	2	11	10
4:30	9	10	9	13	14	9	5	11	10
5:00	10	19	16	18	17	17	6	16	15
5:30	31	42	41	34	37	26	14	37	32
6:00	47	66	72	68	48	39	31	60	53
6:30	68	65	52	55	53	48	22	59	52
7:00	50	73	71	62	70	27	23	65	54
7:30	69	93	70	85	66	46	30	77	66
8:00	67	74	78	94	72	58	35	77	68
8:30	71	81	84	81	81	73	44	80	74
9:00	54	83	87	82	70	75	55	75	72
9:30	67	95	85	87	78	83	67	82	80
10:00	75	95	69	84	64	85	58	77	76
10:30	69	80	74	79	82	96	86	77	81
11:00	69	83	74	75	77	86	78	76	77
11:30	68	76	74	69	55	79	86	68	72
12:00	62	76	62	77	79	60	73	71	70
12:30	56	80	73	67	71	82	72	69	72
13:00	68	68	88	96	74	76	70	79	77
13:30	74	91	79	83	82	67	64	82	77
14:00	72	84	93	83	72	73	83	81	80
14:30	67	85	72	100	87	82	76	82	81
15:00	65	84	80	91	83	71	75	81	78
15:30	94	89	71	77	100	62	99	86	85
16:00	92	96	79	83	81	74	69	86	82
16:30	70	85	75	92	87	72	69	82	79
17:00	74	91	91	84	92	38	38	86	73
17:30	65	75	69	60	70	50	45	68	62
18:00	61	62	62	49	59	39	53	59	55
18:30	53	34	45	40	50	35	29	44	41
19:00	27	34	35	31	35	36	25	32	32
19:30	36	34	35	36	35	32	22	35	33
20:00	26	12	29	24	25	15	17	23	21
20:30	30	25	22	23	28	26	20	26	25
21:00	28	23	26	13	19	28	18	22	22
21:30	19	22	24	27	13	19	14	21	20
22:00	25	22	23	24	15	25	15	22	21
22:30	25	16	22	11	14	14	14	18	17
23:00	23	14	20	13	13	14	9	17	15
23:30	10	5	13	8	23	8	10	12	11
Total	**2091**	**2422**	**2320**	**2367**	**2252**	**2029**	**1778**	**2290**	**2180**
% Heavies	**41.8%**	**53.6%**	**52.7%**	**50.3%**	**42.1%**	**41.7%**	**40.7%**	**48.3%**	**46.6%**

Starting Time	Day of Week2 Mon 31-Aug	Tue 1-Sep	Wed 26-Aug	Thu 27-Aug	Fri 28-Aug	Sat 29-Aug	Sun 30-Aug	Ave W'day	All Days Ave
AM Peak	**84**	**97**	**105**	**109**	**99**	**102**	**94**		
PM Peak	**93**	**98**	**107**	**101**	**102**	**95**	**94**		
0:00	4	12	13	13	5	4	8	9	8
0:30	7	9	8	7	4	6	9	7	7
1:00	5	8	9	7	5	11	6	7	7
1:30	4	8	9	12	4	7	6	7	7
2:00	5	7	7	9	4	9	4	6	6
2:30	3	11	15	11	6	11	4	9	9
3:00	2	10	11	9	7	6	9	8	8
3:30	4	6	13	14	12	8	8	10	9
4:00	6	9	11	15	8	6	8	10	9
4:30	12	13	13	13	12	5	11	13	11
5:00	15	27	18	19	13	14	10	18	17
5:30	38	44	36	41	38	22	14	39	33
6:00	53	67	70	70	55	24	28	63	52
6:30	68	65	68	58	45	32	14	61	50
7:00	49	92	58	60	54	54	18	63	55
7:30	61	79	78	72	70	64	41	72	66
8:00	64	97	87	103	81	61	44	86	77
8:30	84	90	84	92	62	82	51	82	78
9:00	70	82	93	76	63	74	47	77	72
9:30	58	84	105	80	99	86	88	85	86
10:00	80	97	64	85	76	96	67	80	81
10:30	64	93	76	109	94	84	78	87	85
11:00	74	69	77	74	88	78	91	76	79
11:30	63	92	91	93	83	102	94	84	88
12:00	74	80	80	75	96	94	73	81	82
12:30	62	98	90	91	88	87	69	86	84
13:00	68	71	99	76	81	78	81	79	79
13:30	72	98	71	85	79	73	78	81	79
14:00	66	86	91	79	73	94	94	79	83
14:30	78	79	79	84	74	78	70	79	77
15:00	76	83	66	90	93	69	89	82	81
15:30	84	87	88	101	93	95	70	91	88
16:00	62	85	85	97	96	78	66	85	81
16:30	93	81	87	99	102	72	51	92	84
17:00	62	84	107	77	76	54	61	81	74
17:30	64	69	47	77	65	50	60	64	62
18:00	52	56	67	63	66	42	49	61	56
18:30	41	31	40	40	55	50	30	41	41
19:00	50	32	36	26	40	28	33	37	35
19:30	30	21	27	37	36	28	30	30	30
20:00	26	20	28	30	26	15	18	26	23
20:30	28	21	26	27	37	32	19	28	27
21:00	18	22	22	14	18	33	16	19	20
21:30	26	17	19	16	20	19	16	20	19
22:00	29	27	20	18	14	24	14	22	21
22:30	19	16	18	10	7	21	4	14	14
23:00	16	7	18	12	13	16	10	13	13
23:30	16	11	14	14	13	10	6	14	12
Total	**2105**	**2453**	**2439**	**2480**	**2349**	**2186**	**1865**	**2365**	**2268**
% Heavie	**43.4%**	**50.2%**	**47.8%**	**48.1%**	**39.8%**	**37.4%**	**38.3%**	**46.0%**	**43.9%**

Starting Time	Day of Week 1+2 Mon	Tue	Wed	Thu	Fri	Sat	Sun	Ave W'day	All Days Ave	
AM Peak	**155**	**192**	**190**	**197**	**177**	**181**	**180**			
PM Peak	**178**	**189**	**198**	**191**	**193**	**169**	**177**			
0:00	10	27	27	24	17	15	24	21	21	
0:30	19	14	17	16	11	17	15	15	16	
1:00	8	13	17	16	13	23	20	13	16	
1:30	7	16	14	21	7	19	12	13	14	
2:00	6	11	18	17	9	13	9	12	12	
2:30	5	26	20	20	17	18	6	18	16	
3:00	5	14	16	15	10	14	13	12	12	
3:30	10	18	22	27	16	14	12	19	17	
4:00	15	21	21	30	16	19	10	21	19	
4:30	21	23	22	26	26	14	16	24	21	
5:00	25	46	34	37	30	31	16	34	31	
5:30	69	86	77	75	75	48	28	76	65	
6:00	100	133	142	138	103	63	59	123	105	
6:30	136	130	120	113	98	80	36	119	102	
7:00	99	165	129	122	124	81	41	128	109	
7:30	130	172	148	157	136	110	71	149	132	
8:00	131	171	165	197	153	119	79	163	145	
8:30	155	171	168	173	143	155	95	162	151	
9:00	124	165	180	158	133	149	102	152	144	
9:30	125	179	190	167	177	169	155	168	166	
10:00	155	192	133	169	140	181	125	158	156	AM Peak = 323
10:30	133	173	150	188	176	180	164	164	166	
11:00	143	152	151	149	165	164	169	152	156	
11:30	131	168	165	162	138	181	180	153	161	
12:00	136	156	142	152	175	154	146	152	152	
12:30	118	178	163	158	159	169	141	155	155	
13:00	136	139	187	172	155	154	151	158	156	
13:30	146	189	150	168	161	140	142	163	157	
14:00	138	170	184	162	145	167	177	160	163	
14:30	145	164	151	184	161	160	146	161	159	
15:00	141	167	146	181	176	140	164	162	159	
15:30	178	176	159	178	193	157	169	177	173	PM Peak = 336
16:00	154	181	164	180	177	152	135	171	163	
16:30	163	166	162	191	189	144	120	174	162	
17:00	136	175	198	161	168	92	99	168	147	
17:30	129	144	116	137	135	100	105	132	124	
18:00	113	118	129	112	125	81	102	119	111	
18:30	94	65	85	80	105	85	59	86	82	
19:00	77	66	71	57	75	64	58	69	67	
19:30	66	55	62	73	71	60	52	65	63	
20:00	52	32	57	54	51	30	35	49	44	
20:30	58	46	48	50	65	58	39	53	52	
21:00	46	45	48	27	37	61	34	41	43	
21:30	45	39	43	43	33	38	30	41	39	
22:00	54	49	43	42	29	49	29	43	42	
22:30	44	32	40	21	21	35	18	32	30	
23:00	39	21	38	25	26	30	19	30	28	
23:30	26	16	27	22	36	18	16	25	23	
Total	**4196**	**4875**	**4759**	**4847**	**4601**	**4215**	**3643**	**4656**	**4448**	
% Heavie	**42.6%**	**51.9%**	**50.2%**	**49.2%**	**40.9%**	**39.5%**	**39.5%**	**47.0%**	**44.8%**	

616 **Kyalite Road Traffic Data**

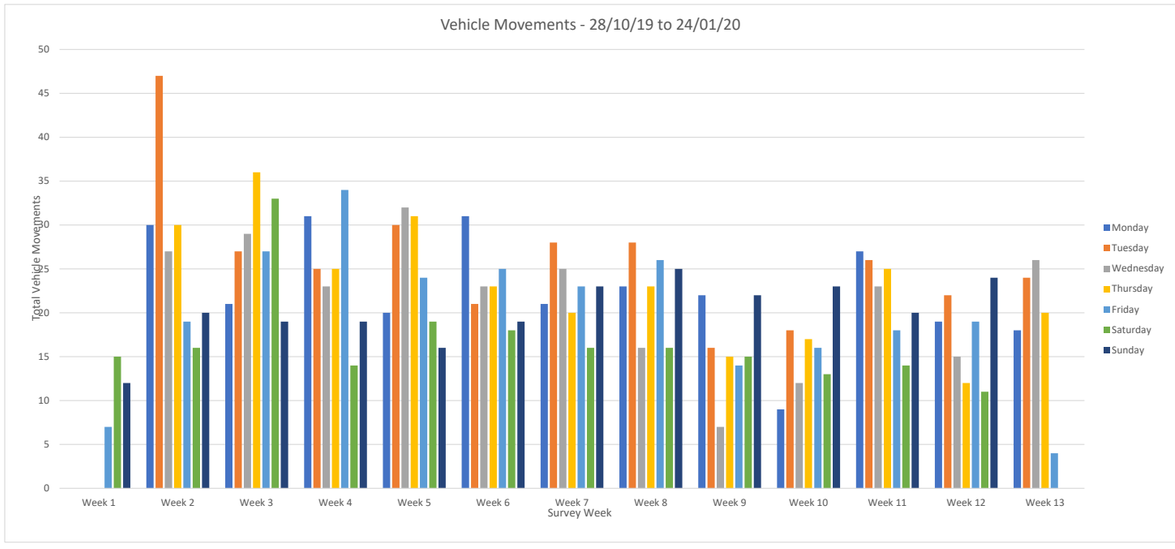
Survey Duration 1 November 2019 to 24 January 2020 (i.e. 57 days or 55 full days)
Site: Kyalite Road / Newell Highway Intersection
Direction: East = East Bound
West = West Bound
Status: I = Incomplete, C = Complete

Report: Daily Class By Direction

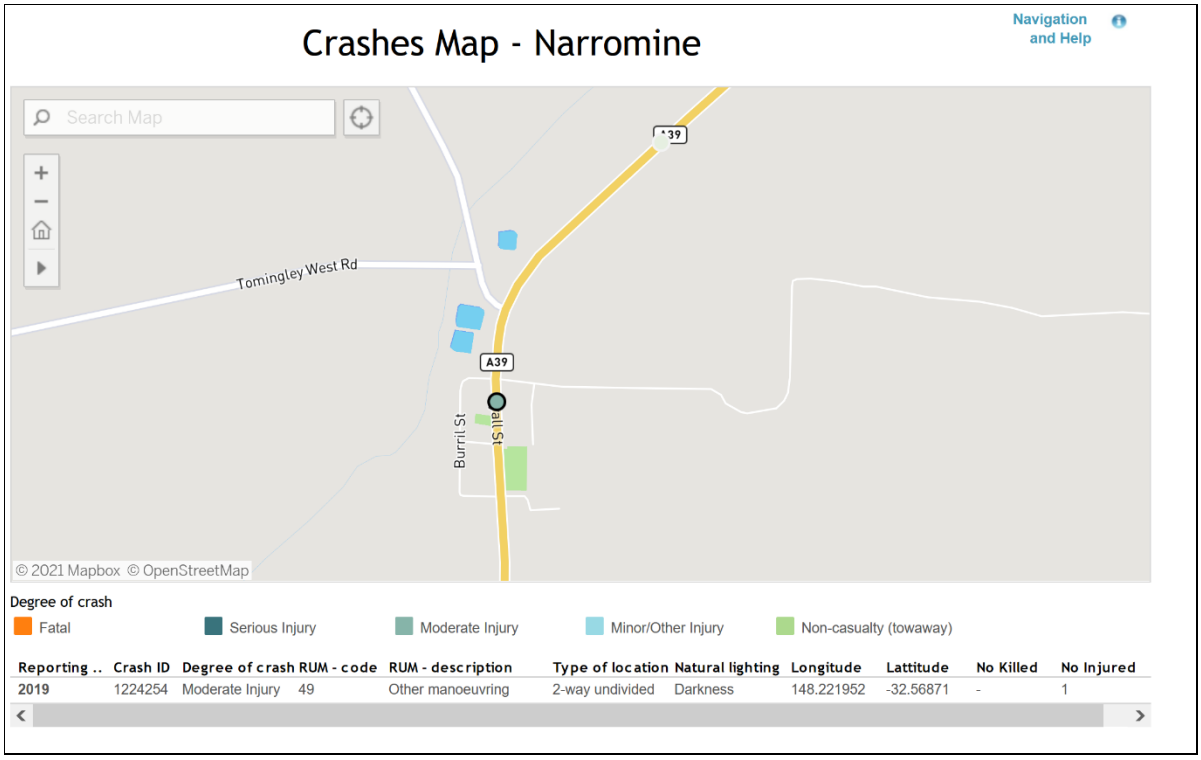
Week No.	Start	End	Data (C/I)*	Monday			Tuesday			Wednesday			Thursday			Friday			Saturday			Sunday			Total - Week Days			Total - Weekends			Total - Whole Week			Daily Average		
				Total	East	West	Total	East	West	Total	East	West	Total	East	West	Total	East	West	Total	East	West	Total	East	West	Total	East	West	Total	East	West	Total	East	West	Total	East	West
Week 1	28/10/2019	3/11/2019	I	0	0	0	0	0	0	0	0	0	0	0	0	7	1	6	15	9	6	12	6	6	7	1	6	27	15	12	34	16	18	5	2	3
Week 2	4/11/2019	10/11/2019	C	30	17	12	47	24	23	27	14	13	30	15	15	19	11	8	16	8	8	20	9	11	153	81	71	36	17	19	189	98	90	27	14	13
Week 3	11/11/2019	17/11/2019	C	21	11	10	27	14	13	29	15	14	36	17	19	27	14	13	33	16	17	19	8	11	140	71	69	52	24	28	192	95	97	27	14	14
Week 4	18/11/2019	24/11/2019	C	31	18	13	25	12	13	23	12	11	25	12	13	34	18	16	14	7	7	19	8	11	138	72	66	33	15	18	171	87	84	24	12	12
Week 5	25/11/2019	1/12/2019	C	20	11	9	30	15	15	32	16	16	31	16	15	24	13	11	19	10	9	16	7	9	137	71	66	35	17	18	172	88	84	25	13	12
Week 6	2/12/2019	8/12/2019	C	31	17	14	21	11	10	23	13	10	23	12	11	25	12	13	18	9	9	19	9	10	123	65	58	37	18	19	160	83	77	23	12	11
Week 7	9/12/2019	15/12/2019	C	21	9	12	28	12	16	25	14	11	20	9	11	23	14	9	16	8	8	23	12	11	117	58	59	39	20	19	156	78	78	22	11	11
Week 8	16/12/2019	22/12/2019	C	23	12	11	28	15	13	16	7	9	23	12	11	26	14	12	16	9	7	25	10	15	116	60	56	41	19	22	157	79	78	22	11	11
Week 9	23/12/2019	29/12/2019	C	22	12	10	16	9	7	7	3	4	15	8	7	14	7	7	15	7	8	22	10	12	74	39	35	37	17	20	111	56	55	16	8	8
Week 10	30/12/2019	5/01/2020	C	9	5	4	18	10	8	12	5	7	17	8	9	16	9	7	13	6	7	23	10	13	72	37	35	36	16	20	108	53	55	15	8	8
Week 11	6/01/2020	12/01/2020	C	27	15	12	26	12	14	23	12	11	25	12	13	18	11	7	14	8	6	20	11	9	119	62	57	34	19	15	153	81	72	22	12	10
Week 12	13/01/2020	19/01/2020	C	19	11	8	22	13	9	15	7	8	12	6	6	19	11	8	11	5	6	24	12	12	87	48	39	35	17	18	122	65	57	17	9	8
Week 13	20/01/2020	24/01/2020	I	18	10	8	24	11	13	26	14	12	20	11	9	4	4	0	0	0	0	0	0	0	92	50	42	0	0	0	92	50	42	13	7	6
Complete Week Data Only	Minimum			9	5	4	16	9	7	7	3	4	12	6	6	14	7	7	11	5	6	16	7	9	72	37	35	33	15	15	108	53	55	15	8	8
	Maximum			31	18	14	47	24	23	32	16	16	36	17	19	34	18	16	33	16	17	25	12	15	153	81	71	52	24	28	192	98	97	27	14	14
	Mean			23	13	10	26	13	13	21	11	10	23	12	12	22	12	10	17	8	8	21	10	11	116	60	56	38	18	20	154	78	75	22	11	11
	Median			22	12	11	26	12	13	23	12	11	23	12	11	23	12	9	16	8	8	20	10	11	119	62	58	36	17	19	157	81	78	22	12	11

*C = Complete weekly data, I = Incomplete weekly data.

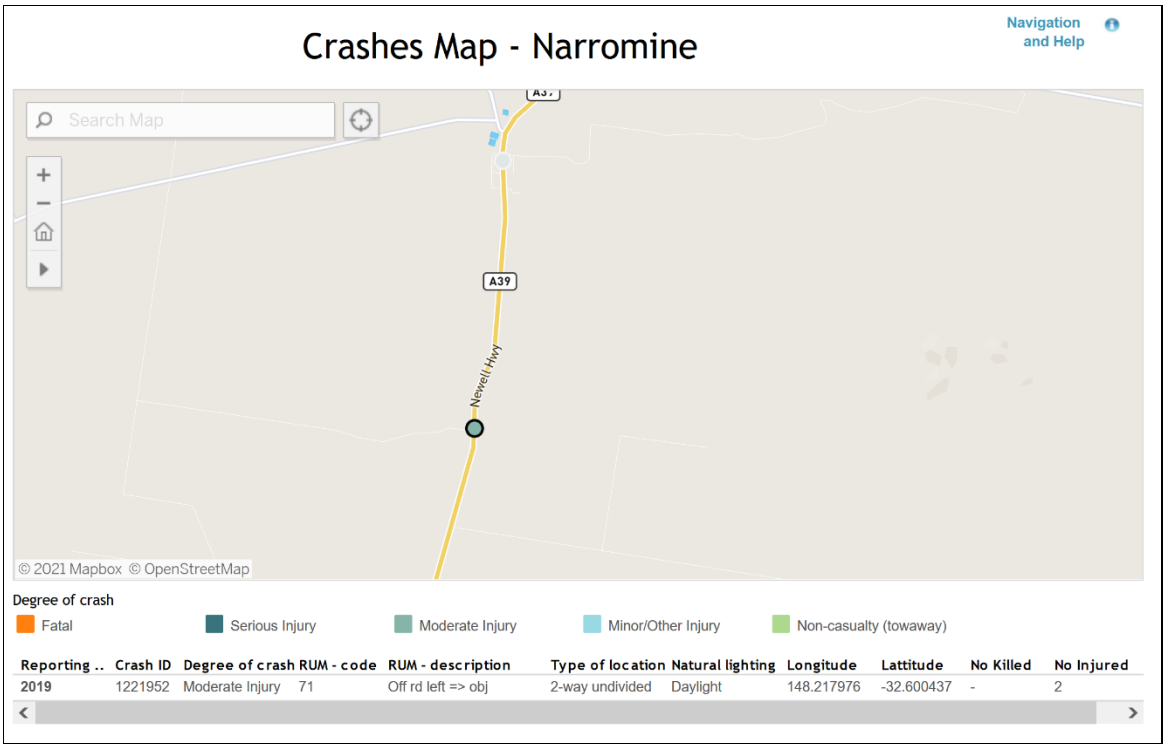
Mon Tue Wed Thu Fri Sat Sun



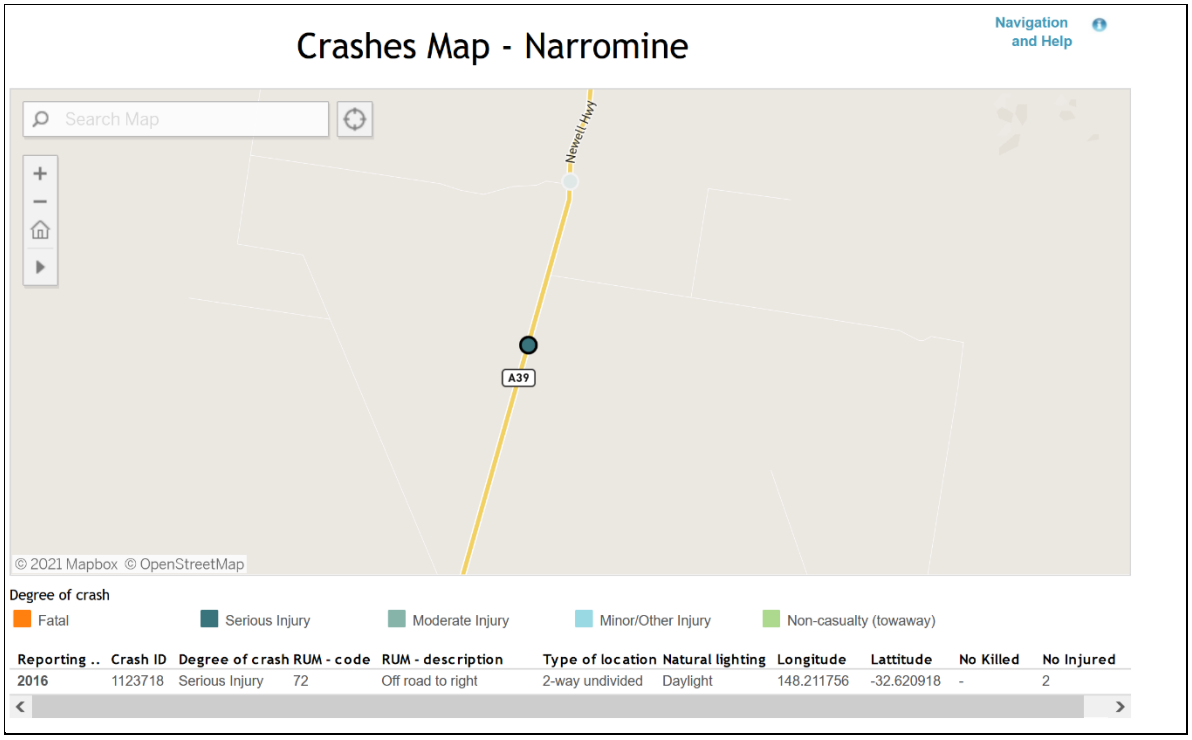
Appendix 2: HW17 Crash Data



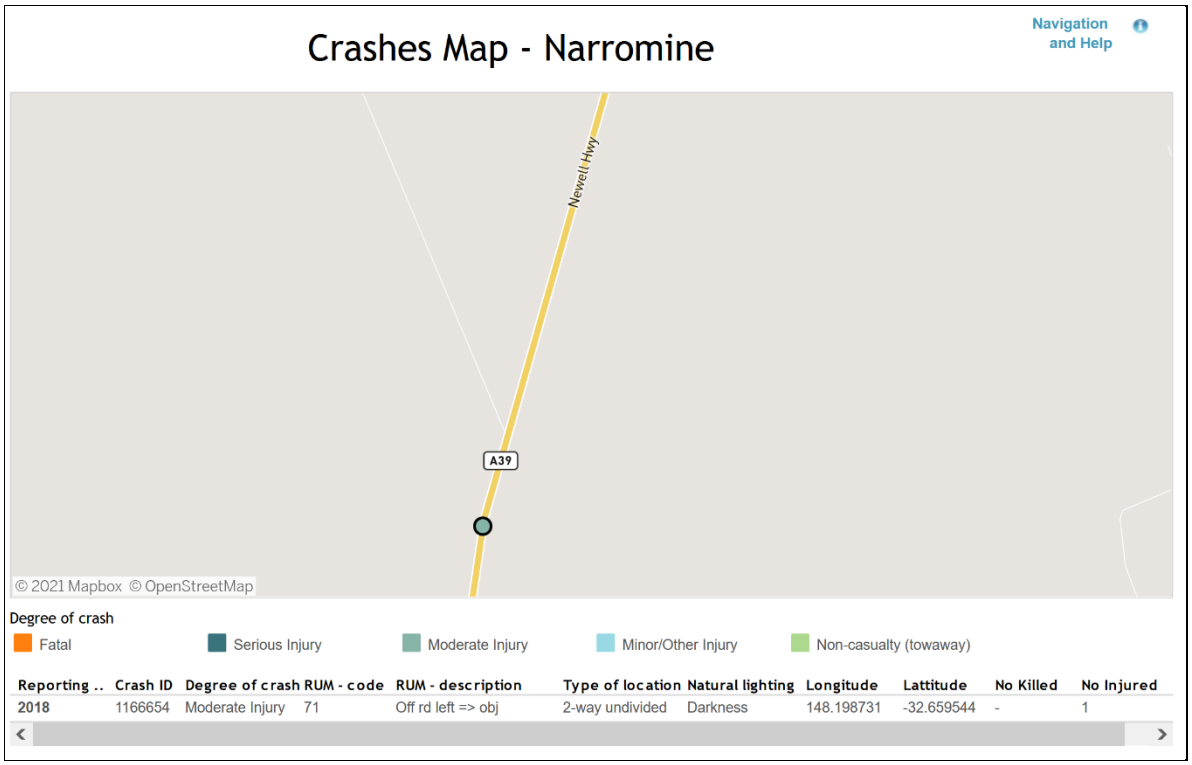
Reporting ..	Crash ID	Degree of crash	RUM - code	RUM - description	Type of location	Natural lighting	Longitude	Lattitude	No Killed	No Injured
2019	1224254	Moderate Injury	49	Other manoeuvring	2-way undivided	Darkness	148.221952	-32.56871	-	1



Reporting ..	Crash ID	Degree of crash	RUM - code	RUM - description	Type of location	Natural lighting	Longitude	Lattitude	No Killed	No Injured
2019	1221952	Moderate Injury	71	Off rd left => obj	2-way undivided	Daylight	148.217976	-32.600437	-	2



Reporting ..	Crash ID	Degree of crash	RUM - code	RUM - description	Type of location	Natural lighting	Longitude	Lattitude	No Killed	No Injured
2016	1123718	Serious Injury	72	Off road to right	2-way undivided	Daylight	148.211756	-32.620918	-	2



Reporting ..	Crash ID	Degree of crash	RUM - code	RUM - description	Type of location	Natural lighting	Longitude	Lattitude	No Killed	No Injured
2018	1166654	Moderate Injury	71	Off rd left => obj	2-way undivided	Darkness	148.198731	-32.659544	-	1

Appendix 3: HW17 Realignment – 100% Concept Design (Extract)

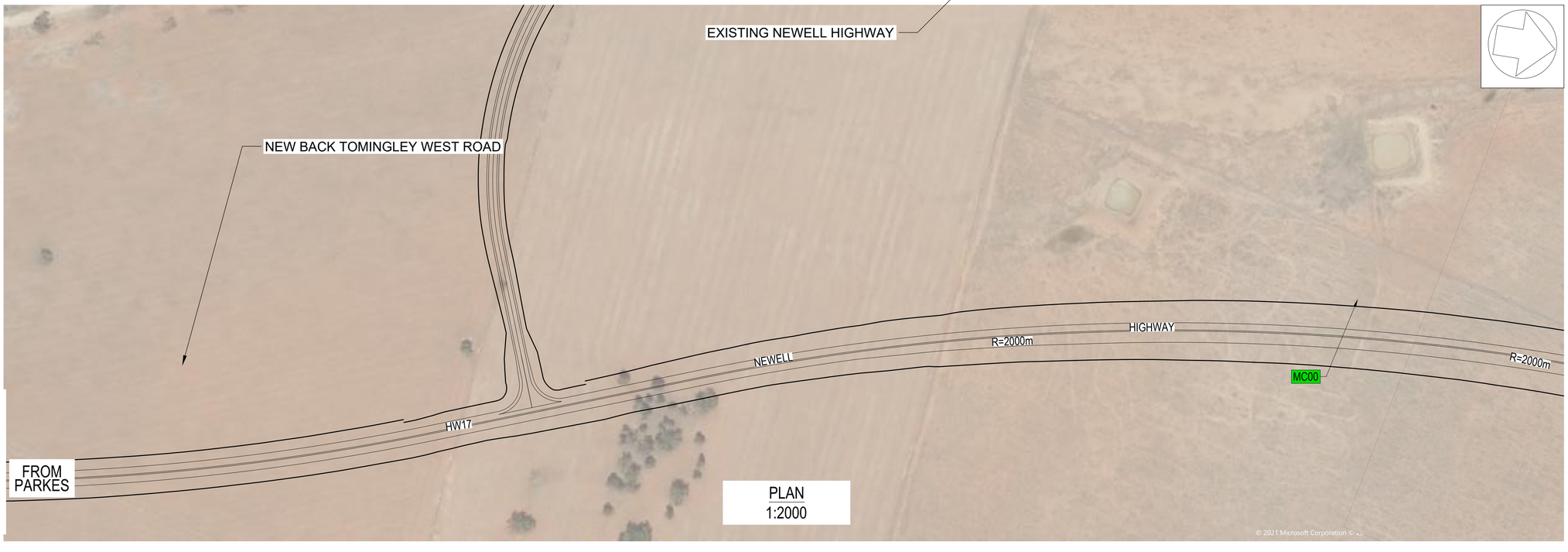
PLAN
1:2000

LEGEND

CONTROL LINE

DESIGN VERGE

DESIGN BATTER



PLAN
1:2000

0 60 120 Meters

REV	DATE	REVISION DETAILS	APPROVED
1	15-07-21	50% CONCEPT DESIGN CLOSE-OUT	SOR
0	14-05-21	50% CONCEPT DESIGN FOR CLIENT & TfNSW REVIEW	SOR
D	12-05-21	50% CONCEPT DESIGN FOR INTERNAL REVIEW	SOR

DRAWN: L.BAYNHAM

DESIGNED: L.BAYNHAM

CHECKED: S.O'ROURKE

APPROVED: S.O'ROURKE

PROJECT: NARROMINE SHIRE COUNCIL, HW17 - NEWELL HIGHWAY DEVIATION
56.3km TO 64.1km NORTH OF PARKES

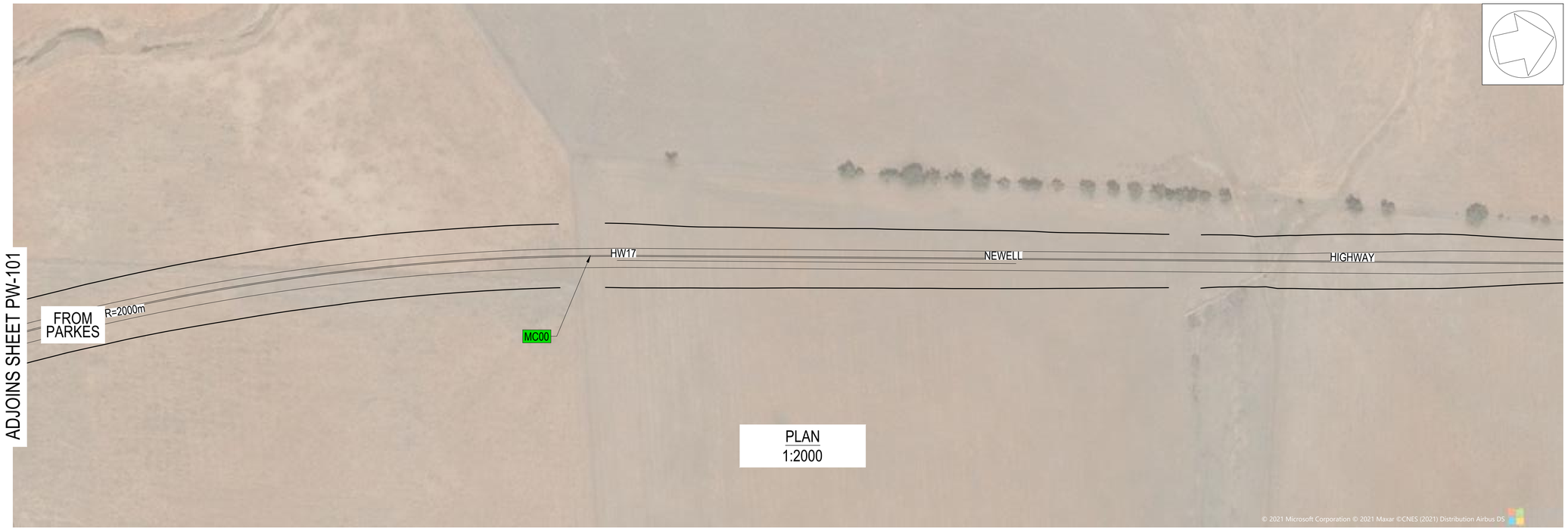
DRAWING TITLE: PROPERTY PLAN - SHEET 1 OF 4

CLIENT: TOMINGLEY GOLD OPERATIONS PTY LTD (A wholly owned subsidiary of Alkane Resources Ltd)

constructive solutions
providing total solutions

50% CONCEPT DESIGN

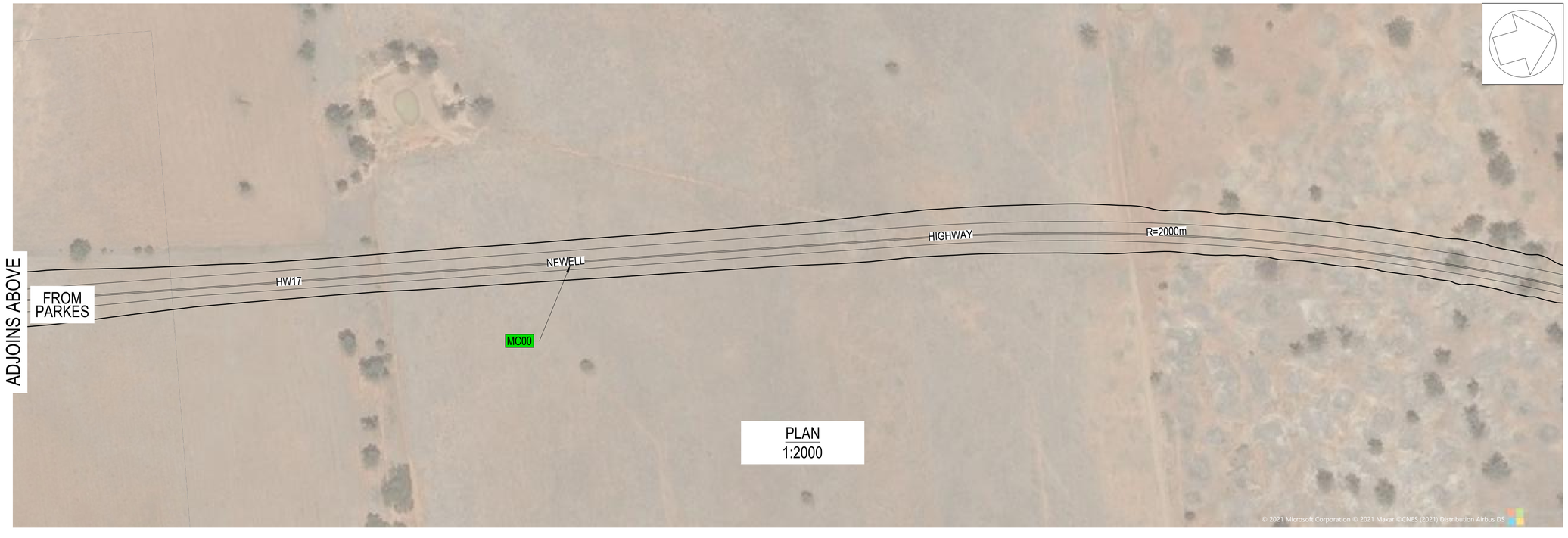
TfNWS REGISTRATION No.	SIZE
TBC	A1
DRAWING NUMBER	REV
PW-101	1



PLAN
1:2000

LEGEND

- CONTROL LINE
- DESIGN VERGE
- DESIGN BATTER



PLAN
1:2000

0 60 120 Meters

REV	DATE	REVISION DETAILS	APPROVED
1	15-07-21	50% CONCEPT DESIGN CLOSE-OUT	SOR
0	14-05-21	50% CONCEPT DESIGN FOR CLIENT & TfNSW REVIEW	SOR
D	12-05-21	50% CONCEPT DESIGN FOR INTERNAL REVIEW	SOR

DRAWN L.BAYNHAM

DESIGNED L.BAYNHAM

CHECKED S.O'ROURKE

APPROVED S.O'ROURKE

PROJECT

NARROMINE SHIRE COUNCIL, HW17 - NEWELL HIGHWAY DEVIATION
56.3km TO 64.1km NORTH OF PARKES

DRAWING TITLE

PROPERTY PLAN - SHEET 2 OF 4

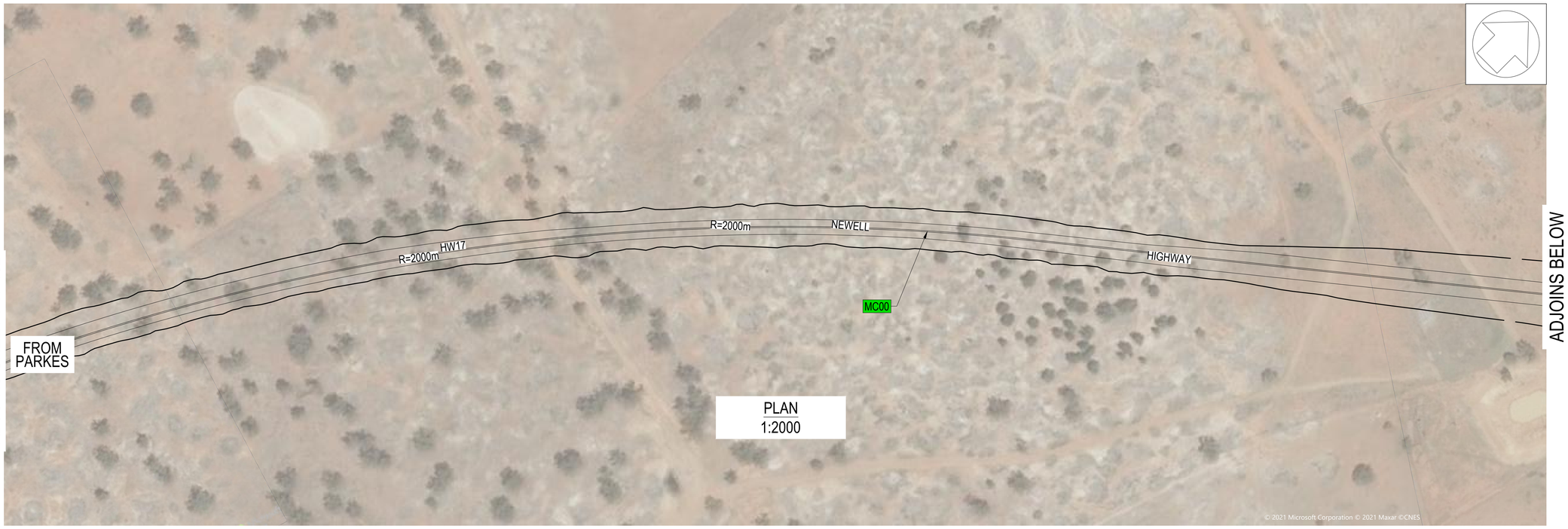
CLIENT

TOMINGLEY GOLD OPERATIONS PTY LTD
(A wholly owned subsidiary of Alkane Resources Ltd)

constructive solutions
providing total solutions

50% CONCEPT DESIGN

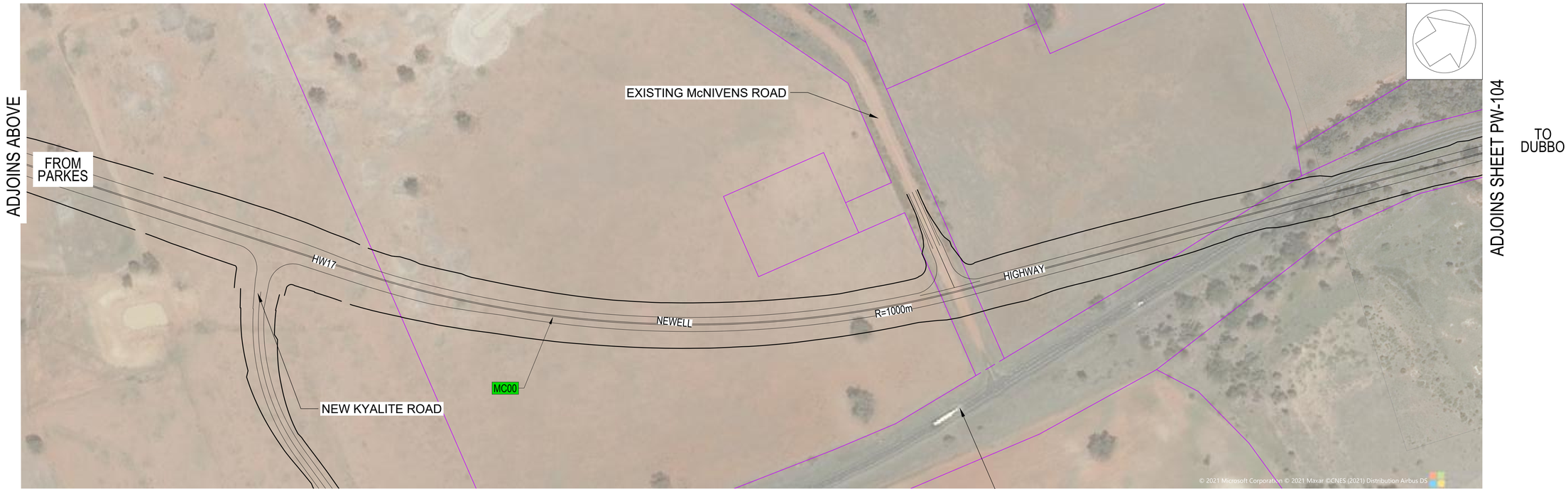
TfNWS REGISTRATION No.	SIZE
TBC	A1
DRAWING NUMBER	**REV**
PW-102	1



PLAN
1:2000

LEGEND

- CONTROL LINE
- DESIGN VERGE
- DESIGN BATTER



PLAN
1:2000

0 60 120 Meters

REV	DATE	REVISION DETAILS	APPROVED
1	15-07-21	50% CONCEPT DESIGN CLOSE-OUT	SOR
0	14-05-21	50% CONCEPT DESIGN FOR CLIENT & TfNSW REVIEW	SOR
D	12-05-21	50% CONCEPT DESIGN FOR INTERNAL REVIEW	SOR

DRAWN	DESIGNED	CHECKED	APPROVED
L.BAYNHAM	L.BAYNHAM	S.O'ROURKE	S.O'ROURKE

PROJECT
NARROMINE SHIRE COUNCIL, HW17 - NEWELL HIGHWAY DEVIATION
56.3km TO 64.1km NORTH OF PARKES

DRAWING TITLE
PROPERTY PLAN - SHEET 3 OF 4

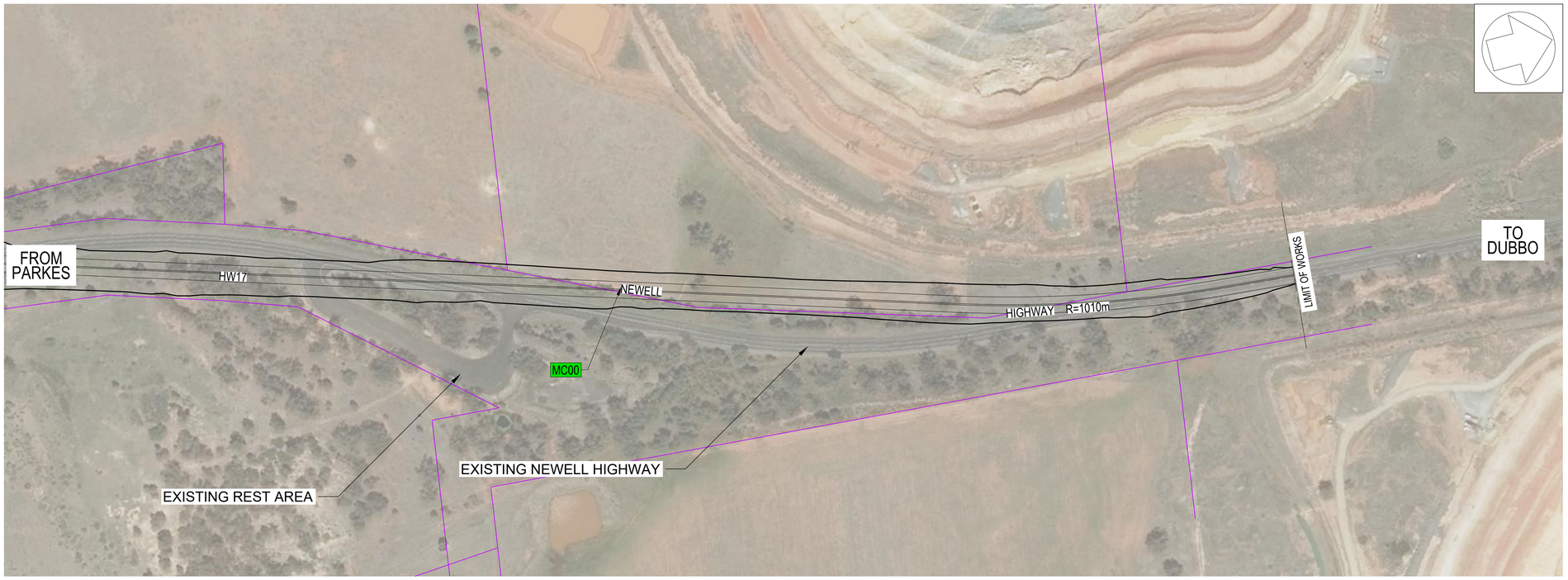
CLIENT
TOMINGLEY GOLD OPERATIONS PTY LTD
(A wholly owned subsidiary of Alkane Resources Ltd)

constructive solutions
providing total solutions

50% CONCEPT DESIGN

TfNWS REGISTRATION No.	SIZE
TBC	A1
DRAWING NUMBER	**REV**
PW-103	1

ADJOINS SHEET PW-103



LEGEND

CONTROL LINE

DESIGN VERGE

DESIGN BATTER

PLAN
1:2000

0 60 120 Meters

REV	DATE	REVISION DETAILS	APPROVED
1	15-07-21	50% CONCEPT DESIGN CLOSE-OUT	SOR
0	14-05-21	50% CONCEPT DESIGN FOR CLIENT & TfNSW REVIEW	SOR
D	12-05-21	50% CONCEPT DESIGN FOR INTERNAL REVIEW	SOR

DRAWN	L.BAYNHAM
DESIGNED	L.BAYNHAM
CHECKED	S.O'ROURKE
APPROVED	S.O'ROURKE

PROJECT

NARROMINE SHIRE COUNCIL, HW17 - NEWELL HIGHWAY DEVIATION
56.3km TO 64.1km NORTH OF PARKES

DRAWING TITLE

PROPERTY PLAN - SHEET 4 OF 4

CLIENT

TOMINGLEY GOLD OPERATIONS PTY LTD
(A wholly owned subsidiary of Alkane Resources Ltd)

constructive solutions
providing total solutions

50% CONCEPT DESIGN

TfNWS REGISTRATION No.	SIZE
TBC	A1
DRAWING NUMBER	REV
PW-104	1

Appendix 4: Kyalite Road Realignment – 100% Concept Design (Extract)

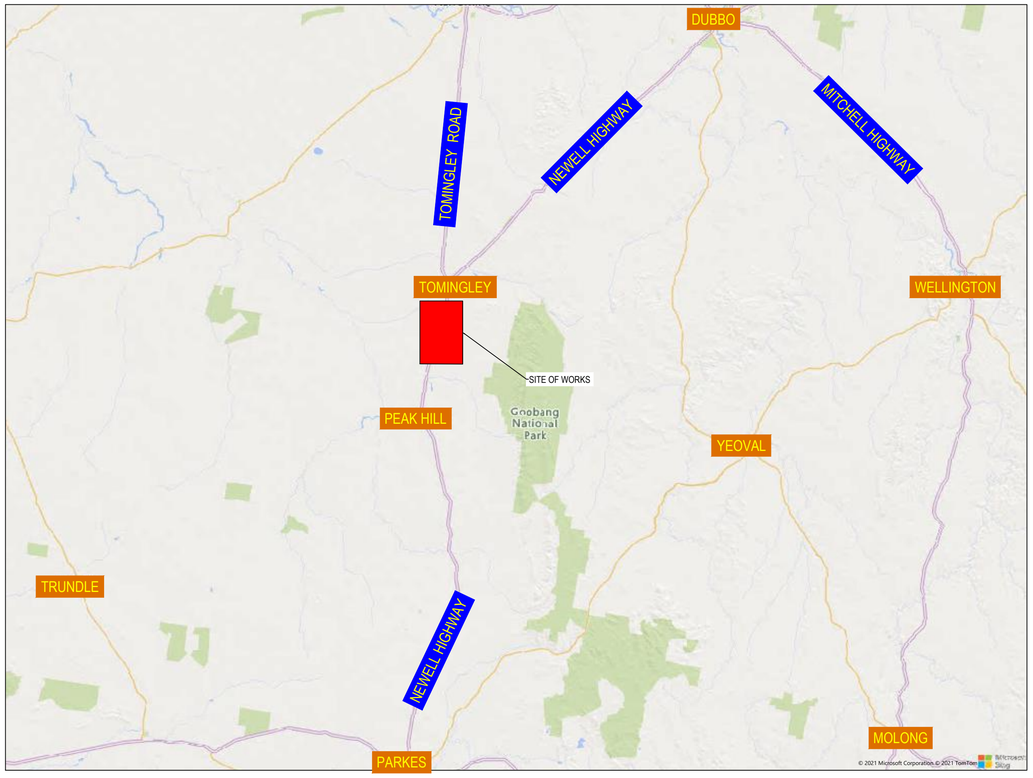
HW17 NEWELL HIGHWAY

NEWELL HIGHWAY PROPOSED DEVIATION

COUNCIL ROAD REALIGNMENTS

56.3KM TO 64.1KM NORTH OF PARKES

CONCEPT DESIGN DRAWINGS



LOCALITY PLAN

ROAD SHEETS		
ROAD	ALIGNMENT	SHEET SET
BACK TOMINGLEY WEST ROAD	MC10	1000
KYALITE ROAD	MC20	2000
McNIVENS ROAD	MC30	3000

SIGNATURE BOXES TO BE DETERMINED

REV	DATE	REVISION DETAILS	APPROVED
F	21-06-21	50% CONCEPT DESIGN FOR COUNCIL REVIEW	SOR
E	15-06-21	50% CONCEPT DESIGN FOR CLIENT REVIEW	SOR
D	04-06-21	50% CONCEPT DESIGN FOR INTERNAL REVIEW	SOR

DRAWN: L.BAYNHAM
DESIGNED: L.BAYNHAM
CHECKED: S.O'ROURKE
APPROVED: S.O'ROURKE

PROJECT: NARROMINE SHIRE COUNCIL, HW17 - NEWELL HIGHWAY DEVIATION 56.3km TO 64.1km NORTH OF PARKES

DRAWING TITLE: COVER SHEET

CLIENT: TOMINGLEY GOLD OPERATIONS PTY LTD (A wholly owned subsidiary of Alkane Resources Ltd)

constructive solutions
providing total solutions

50% CONCEPT

TfNWS REGISTRATION No.	SIZE
2019116	A1
DRAWING NUMBER	REV
2019116-0001	F

SHEET INDEX

Sheet Number	Sheet Name
2019116-0001	COVER SHEET
2019116-0002	SHEET INDEX
2019116-0003	COUNCIL ROADS PLAN OVERVIEW
BACK TOMINGLEY WEST ROAD (MC10) - 1000	
2019116-1001	PLAN OVERVIEW AND ALIGNMENT TABLE (MC10)
2019116-1010	TYPICAL SECTIONS & PAVEMENT DETAILS (MC10)
2019116-1011	TYPICAL SECTIONS & PAVEMENT DETAILS (MC11)
2019116-1101	PLAN VIEW AND LONGITUDINAL SECTION - SHEET 1 OF 2 (MC10)
2019116-1102	PLAN VIEW AND LONGITUDINAL SECTION - SHEET 2 OF 2 (MC10)
2019116-1103	PLAN VIEW AND LONGITUDINAL SECTION (MC11)
2019116-1201	CROSS SECTION VIEW - SHEET 1 OF 5 (MC10)
2019116-1202	CROSS SECTION VIEW - SHEET 2 OF 5 (MC10)
2019116-1203	CROSS SECTION VIEW - SHEET 3 OF 5 (MC10)
2019116-1204	CROSS SECTION VIEW - SHEET 4 OF 5 (MC10)
2019116-1205	CROSS SECTION VIEW - SHEET 5 OF 5 (MC11)
2019116-1500	BACK TOMINGLEY WEST ROAD - INTERSECTION DETAIL (MC10)
KYALITE ROAD (MC20) - 2000	
2019116-2001	PLAN OVERVIEW AND ALIGNMENT TABLE (MC20)
2019116-2010	TYPICAL SECTIONS & PAVEMENT DETAILS (MC20)
2019116-2101	PLAN VIEW AND LONGITUDINAL SECTION - SHEET 1 OF 7 (MC20)
2019116-2102	PLAN VIEW AND LONGITUDINAL SECTION - SHEET 2 OF 7 (MC20)
2019116-2103	PLAN VIEW AND LONGITUDINAL SECTION - SHEET 3 OF 7 (MC20)
2019116-2104	PLAN VIEW AND LONGITUDINAL SECTION - SHEET 4 OF 7 (MC20)
2019116-2105	PLAN VIEW AND LONGITUDINAL SECTION - SHEET 5 OF 7 (MC20)
2019116-2106	PLAN VIEW AND LONGITUDINAL SECTION - SHEET 6 OF 7 (MC20)
2019116-2107	PLAN VIEW AND LONGITUDINAL SECTION - SHEET 7 OF 7 (MC20)
2019116-2201	CROSS SECTION VIEW - SHEET 1 OF 42 (MC20)
2019116-2202	CROSS SECTION VIEW - SHEET 2 OF 42 (MC20)
2019116-2203	CROSS SECTION VIEW - SHEET 3 OF 42 (MC20)
2019116-2204	CROSS SECTION VIEW - SHEET 4 OF 42 (MC20)
2019116-2205	CROSS SECTION VIEW - SHEET 5 OF 42 (MC20)
2019116-2206	CROSS SECTION VIEW - SHEET 6 OF 42 (MC20)
2019116-2207	CROSS SECTION VIEW - SHEET 7 OF 42 (MC20)
2019116-2208	CROSS SECTION VIEW - SHEET 8 OF 42 (MC20)
2019116-2209	CROSS SECTION VIEW - SHEET 9 OF 42 (MC20)
2019116-2210	CROSS SECTION VIEW - SHEET 10 OF 42 (MC20)
2019116-2211	CROSS SECTION VIEW - SHEET 11 OF 42 (MC20)
2019116-2212	CROSS SECTION VIEW - SHEET 12 OF 42 (MC20)
2019116-2213	CROSS SECTION VIEW - SHEET 13 OF 42 (MC20)
2019116-2214	CROSS SECTION VIEW - SHEET 14 OF 42 (MC20)
2019116-2215	CROSS SECTION VIEW - SHEET 15 OF 42 (MC20)
2019116-2216	CROSS SECTION VIEW - SHEET 16 OF 42 (MC20)
2019116-2217	CROSS SECTION VIEW - SHEET 17 OF 42 (MC20)
2019116-2218	CROSS SECTION VIEW - SHEET 18 OF 42 (MC20)
2019116-2219	CROSS SECTION VIEW - SHEET 19 OF 42 (MC20)
2019116-2220	CROSS SECTION VIEW - SHEET 20 OF 42 (MC20)
2019116-2221	CROSS SECTION VIEW - SHEET 21 OF 42 (MC20)
2019116-2222	CROSS SECTION VIEW - SHEET 22 OF 42 (MC20)
2019116-2223	CROSS SECTION VIEW - SHEET 23 OF 42 (MC20)
2019116-2224	CROSS SECTION VIEW - SHEET 24 OF 42 (MC20)
2019116-2225	CROSS SECTION VIEW - SHEET 25 OF 42 (MC20)
2019116-2226	CROSS SECTION VIEW - SHEET 26 OF 42 (MC20)
2019116-2227	CROSS SECTION VIEW - SHEET 27 OF 42 (MC20)
2019116-2228	CROSS SECTION VIEW - SHEET 28 OF 42 (MC20)
2019116-2229	CROSS SECTION VIEW - SHEET 29 OF 42 (MC20)
2019116-2230	CROSS SECTION VIEW - SHEET 30 OF 42 (MC20)
2019116-2231	CROSS SECTION VIEW - SHEET 31 OF 42 (MC20)
2019116-2232	CROSS SECTION VIEW - SHEET 32 OF 42 (MC20)
2019116-2233	CROSS SECTION VIEW - SHEET 33 OF 42 (MC20)
2019116-2234	CROSS SECTION VIEW - SHEET 34 OF 42 (MC20)
2019116-2235	CROSS SECTION VIEW - SHEET 35 OF 42 (MC20)
2019116-2236	CROSS SECTION VIEW - SHEET 36 OF 42 (MC20)
2019116-2237	CROSS SECTION VIEW - SHEET 37 OF 42 (MC20)
2019116-2238	CROSS SECTION VIEW - SHEET 38 OF 42 (MC20)
2019116-2239	CROSS SECTION VIEW - SHEET 39 OF 42 (MC20)
2019116-2240	CROSS SECTION VIEW - SHEET 40 OF 42 (MC20)
2019116-2241	CROSS SECTION VIEW - SHEET 41 OF 42 (MC20)
2019116-2242	CROSS SECTION VIEW - SHEET 42 OF 42 (MC20)
2019116-2700	PROPOSED KYALITE ROAD OVERPASS (MC20)
McNIVENS ROAD (MC30) - 3000	
2019116-3001	PLAN OVERVIEW AND ALIGNMENT TABLE (MC30)
2019116-3010	TYPICAL SECTIONS & PAVEMENT DETAILS (MC30)
2019116-3101	PLAN VIEW AND LONGITUDINAL SECTION (MC30)
2019116-3201	CROSS SECTION VIEW (MC30)

REV	DATE	REVISION DETAILS	APPROVED
F	21-06-21	50% CONCEPT DESIGN FOR COUNCIL REVIEW	SOR
E	15-06-21	50% CONCEPT DESIGN FOR CLIENT REVIEW	SOR
D	04-06-21	50% CONCEPT DESIGN FOR INTERNAL REVIEW	SOR

DRAWN: L.BAYNHAM
DESIGNED: L.BAYNHAM
CHECKED: S.O'ROURKE
APPROVED: S.O'ROURKE

PROJECT: NARROMINE SHIRE COUNCIL, HW17 - NEWELL HIGHWAY DEVIATION
56.3km TO 64.1km NORTH OF PARKES

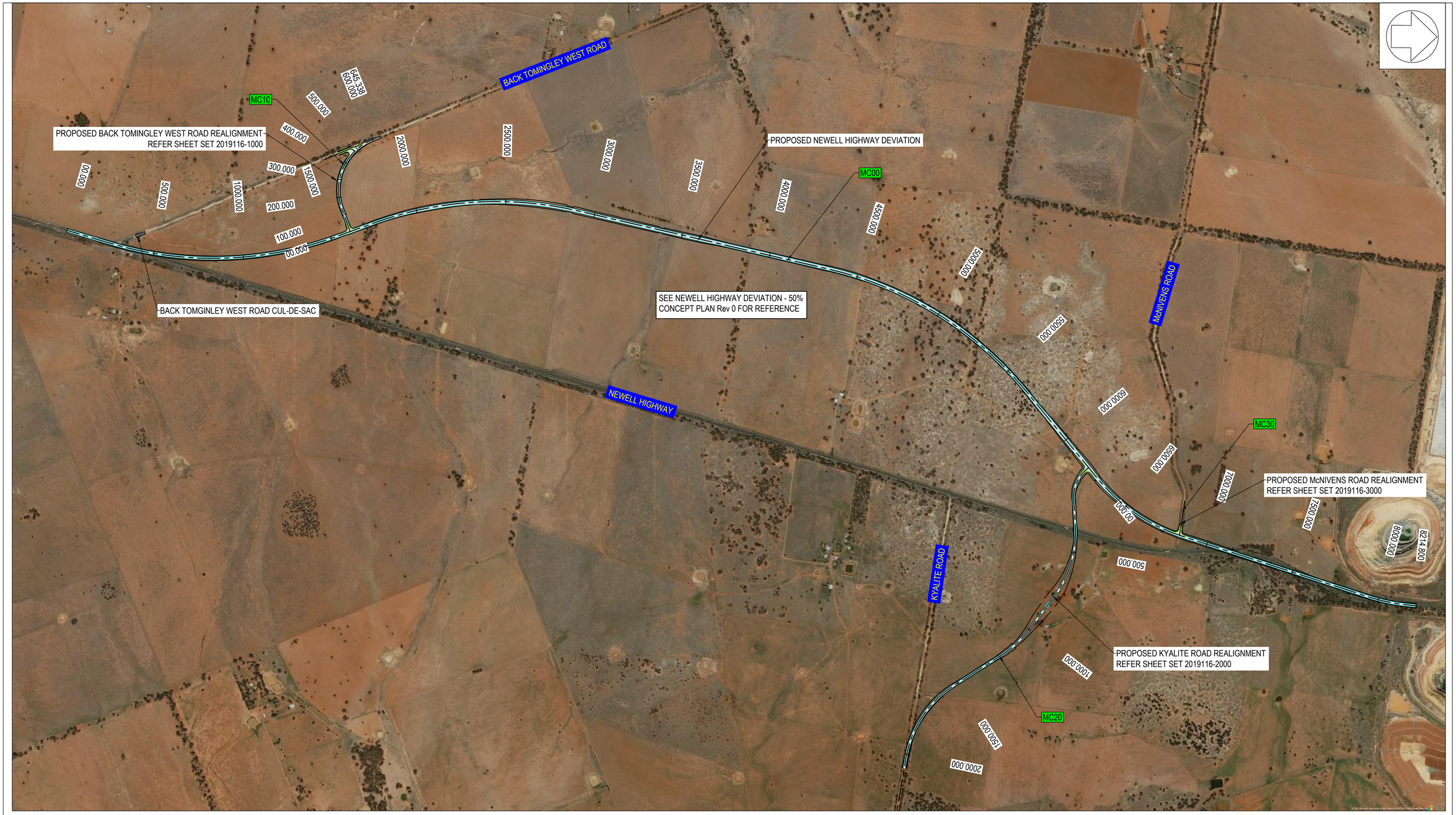
DRAWING TITLE: SHEET INDEX

CLIENT: TOMINGLEY GOLD OPERATIONS PTY LTD (A wholly owned subsidiary of Alkane Resources Ltd)

constructive solutions
providing total solutions

50% CONCEPT

TfNWS REGISTRATION No.	SIZE
2019116	A1
DRAWING NUMBER	REV
2019116-0002	F



PLAN OVERVIEW
1:10,000

0 300 600
Meters

REV	DATE	REVISION DETAILS	APPROVED
F	21-06-21	50% CONCEPT DESIGN FOR COUNCIL REVIEW	SOR
E	15-06-21	50% CONCEPT DESIGN FOR CLIENT REVIEW	SOR
D	04-06-21	50% CONCEPT DESIGN FOR INTERNAL REVIEW	SOR

DRAWN	L.BAYNHAM
DESIGNED	L.BAYNHAM
CHECKED	S.O'ROURKE
APPROVED	S.O'ROURKE

PROJECT
NARROMINE SHIRE COUNCIL, HW17 - NEWELL HIGHWAY DEVIATION
56.3km TO 64.1km NORTH OF PARKES

DRAWING TITLE
COUNCIL ROADS PLAN OVERVIEW

CLIENT
TOMINGLEY GOLD OPERATIONS PTY LTD
(A wholly owned subsidiary of Alkane Resources Ltd)

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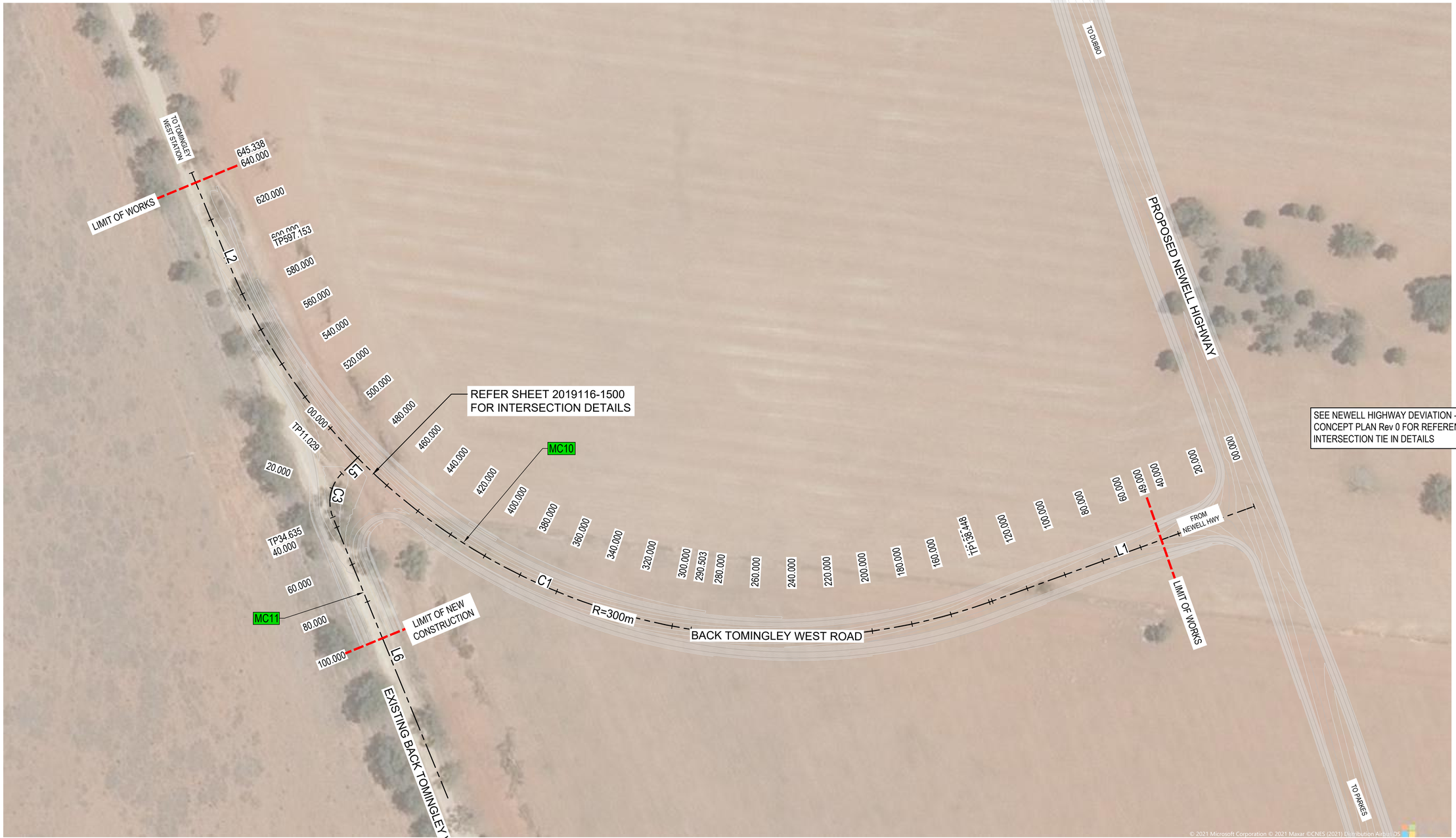
providing total solutions

50% CONCEPT

TfNWS REGISTRATION No.	SIZE
2019116	A1
DRAWING NUMBER	**REV**
2019116-0003	F



PLAN OVERVIEW
1:1000

CUL-DE-SAC TO BE CONSTRUCTED AT THE END OF KYALITE AROUND, LOCATED AFTER THE LAST FARM ACCESS

0 30 60 Meters

ROAD SHEETS	
ROAD	ALIGNMENT
BACK TOMINGLEY WEST ROAD	MC10
KYALITE ROAD	MC20
McNIVENS ROAD	MC30

Set Out Table for MC-10

TAG		CHAINAGE	EASTING	NORTHING	LENGTH	RADIUS	BEARING
L1	BP	0.000	612508.948	6387713.952	138.448		250.1080
	EP	138.448	612378.761	6387666.845			
C1	TP	138.448	612378.761	6387666.845	458.704	300.0	293° 54' 39.82"
	IP	426.169	612108.207	6387568.949			
	TP	597.153	611999.095	6387835.177			
L2	BP	597.153	611999.095	6387835.177	48.185		337.7141
	EP	645.338	611980.822	6387879.763			

Set Out Table for MC-11

TAG		CHAINAGE	EASTING	NORTHING	LENGTH	RADIUS	BEARING
L5	BP	0.000	612063.301	6387738.075	11.029		225.3396
	EP	11.029	612055.456	6387730.322			
C3	TP	11.029	612055.456	6387730.322	23.606	20.0	191° 31' 36.63"
	IP	24.424	612045.928	6387720.907			
	TP	34.635	612051.008	6387708.512			
L6	BP	34.635	612051.008	6387708.512	150.830		157.7141
	EP	185.465	612108.207	6387568.949			

REV	DATE	REVISION DETAILS	APPROVED
F	21-06-21	50% CONCEPT DESIGN FOR COUNCIL REVIEW	SOR
E	15-06-21	50% CONCEPT DESIGN FOR CLIENT REVIEW	SOR
D	04-06-21	CONCEPT PLAN FOR INTERNAL REVIEW	SOR

DRAWN: L.BAYNHAM
DESIGNED: L.BAYNHAM
CHECKED: S.O'ROURKE
APPROVED: S.O'ROURKE

PROJECT: NARROMINE SHIRE COUNCIL, HW17 - NEWELL HIGHWAY DEVIATION
56.3km TO 64.1km NORTH OF PARKES

DRAWING TITLE: PLAN OVERVIEW AND ALIGNMENT TABLE (MC10)

CLIENT: TOMINGLEY GOLD OPERATIONS PTY LTD (A wholly owned subsidiary of Alkane Resources Ltd)

constructive solutions
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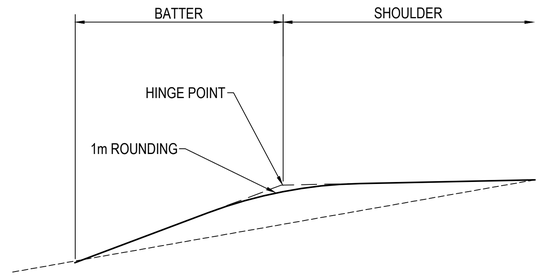
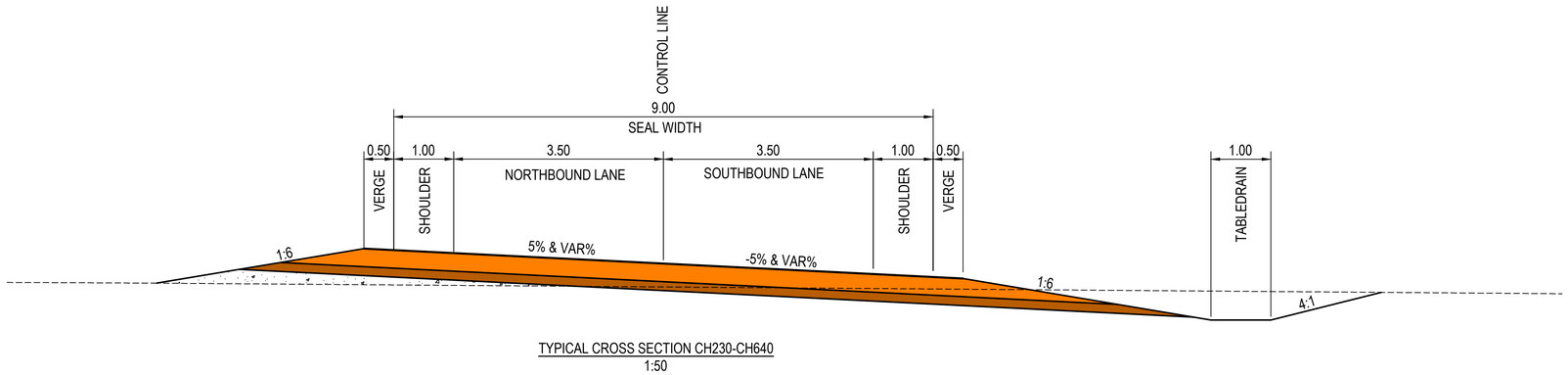
50% CONCEPT

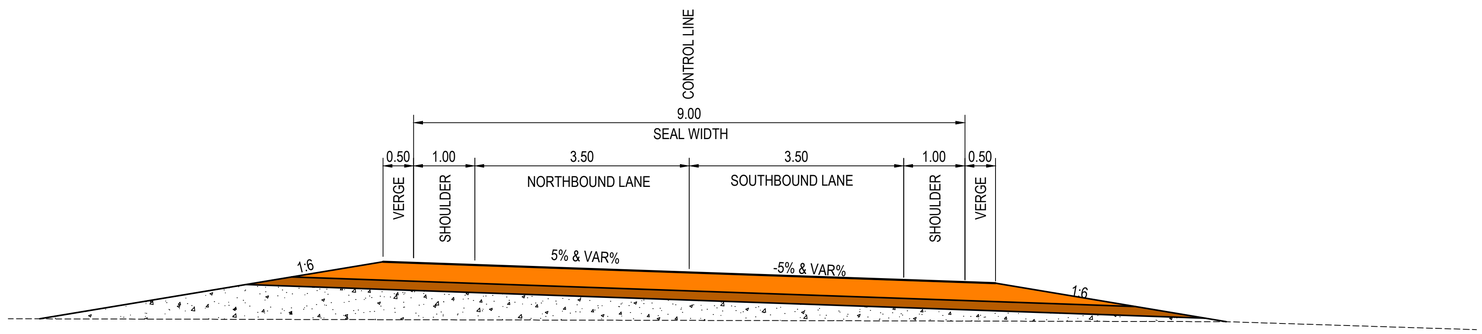
TfNWS REGISTRATION No.	SIZE
2019116	A1
DRAWING NUMBER	REV
2019116-1001	F



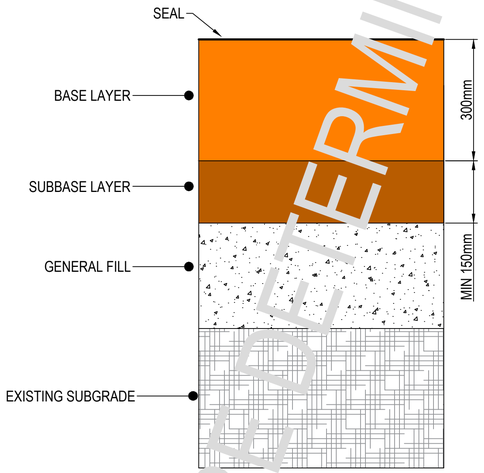
VERGE TO BATTER DETAIL
NTS



TYPICAL CROSS SECTION CH230-CH640
1:50



TYPICAL CROSS SECTION CH0-CH350
1:50



PAVEMENT DESIGN

REV	DATE	REVISION DETAILS	APPROVED
F	21-06-21	50% CONCEPT DESIGN FOR COUNCIL REVIEW	SOR
E	15-06-21	50% CONCEPT DESIGN FOR CLIENT REVIEW	SOR
D	04-06-21	CONCEPT PLAN FOR INTERNAL REVIEW	SOR

DRAWN	L.BAYNHAM
DESIGNED	L.BAYNHAM
CHECKED	S.O'ROURKE
APPROVED	S.O'ROURKE

PROJECT
NARROMINE SHIRE COUNCIL, HW17 - NEWELL HIGHWAY DEVIATION
56.3km TO 64.1km NORTH OF PARKES

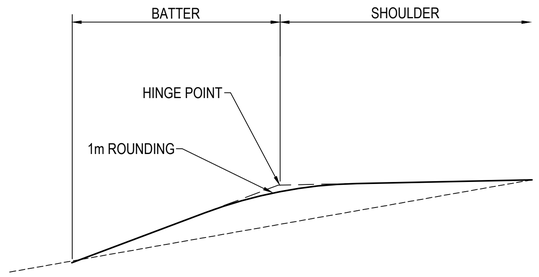
DRAWING TITLE
TYPICAL SECTIONS & PAVEMENT DETAILS (MC10)

CLIENT
TOMINGLEY GOLD OPERATIONS PTY LTD
(A wholly owned subsidiary of Alkane Resources Ltd)

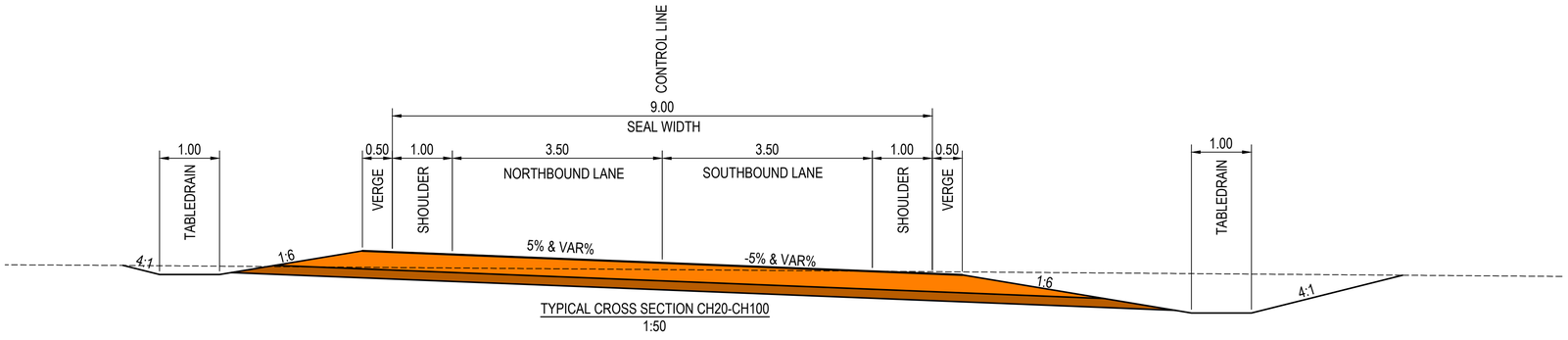
constructive solutions
providing total solutions

50% CONCEPT

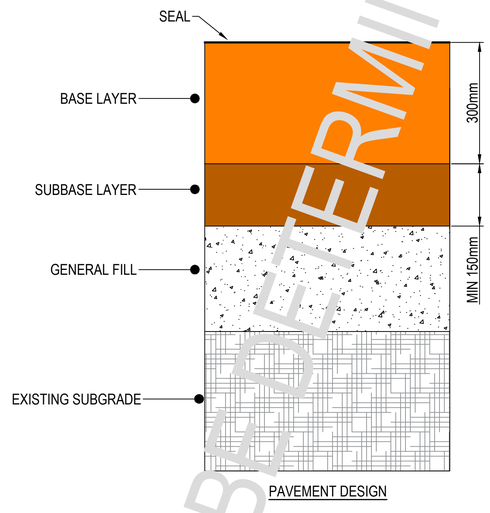
TfNWS REGISTRATION No.	SIZE
2019116	A1
DRAWING NUMBER	REV
2019116-1010	F



VERGE TO BATTER DETAIL
NTS



TYPICAL CROSS SECTION CH20-CH100
1:50



PAVEMENT DESIGN

REV	DATE	REVISION DETAILS	APPROVED
F	21-06-21	50% CONCEPT DESIGN FOR COUNCIL REVIEW	SOR
E	15-06-21	50% CONCEPT DESIGN FOR CLIENT REVIEW	SOR
D	04-06-21	CONCEPT PLAN FOR INTERNAL REVIEW	SOR

DRAWN: L.BAYNHAM
DESIGNED: L.BAYNHAM
CHECKED: S.O'ROURKE
APPROVED: S.O'ROURKE

PROJECT: NARROMINE SHIRE COUNCIL, HW17 - NEWELL HIGHWAY DEVIATION
56.3km TO 64.1km NORTH OF PARKES

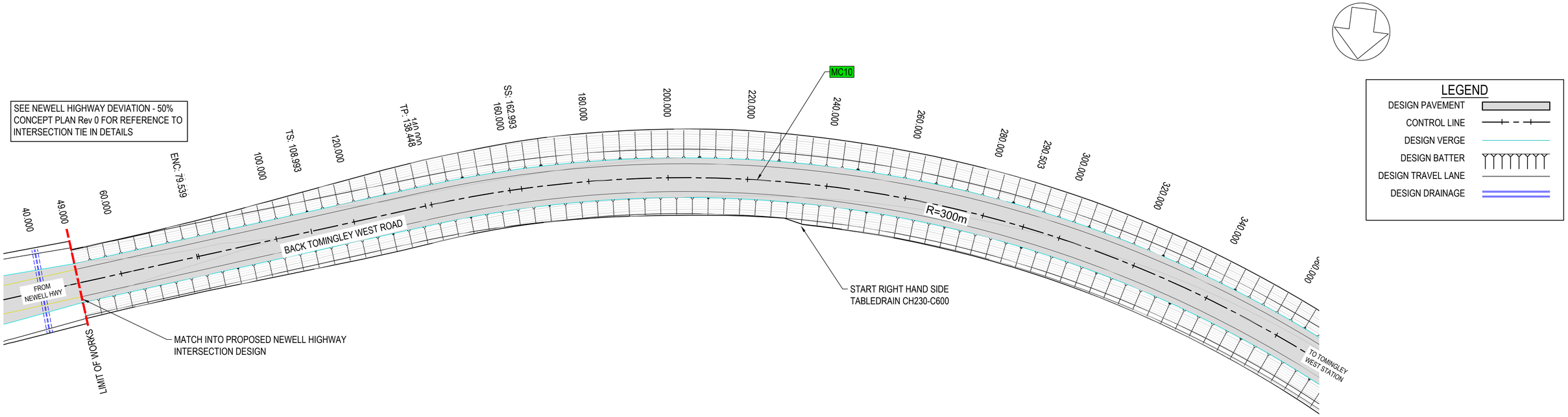
DRAWING TITLE: TYPICAL SECTIONS & PAVEMENT DETAILS (MC11)

CLIENT: TOMINGLEY GOLD OPERATIONS PTY LTD (A wholly owned subsidiary of Alkane Resources Ltd)

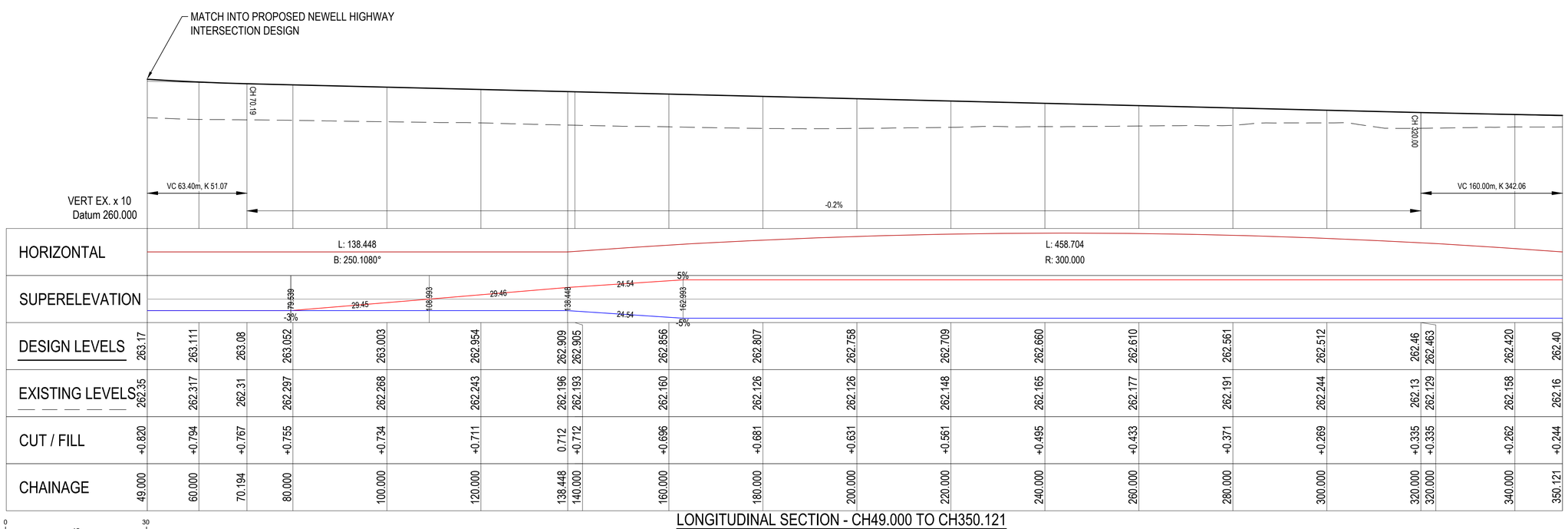
constructive solutions
providing total solutions

50% CONCEPT

TfNWS REGISTRATION No.	SIZE
2019116	A1
DRAWING NUMBER	REV
2019116-2004	F



PLAN
1:500



LONGITUDINAL SECTION - CH49.000 TO CH350.121
1:500

REV	DATE	REVISION DETAILS	APPROVED
F	21-06-21	50% CONCEPT DESIGN FOR COUNCIL REVIEW	SOR
E	15-06-21	50% CONCEPT DESIGN FOR CLIENT REVIEW	SOR
D	04-06-21	CONCEPT PLAN FOR INTERNAL REVIEW	SOR

DRAWN: L.BAYNHAM
DESIGNED: L.BAYNHAM
CHECKED: S.O'ROURKE
APPROVED: S.O'ROURKE

PROJECT: NARROMINE SHIRE COUNCIL, HW17 - NEWELL HIGHWAY DEVIATION
56.3km TO 64.1km NORTH OF PARKES

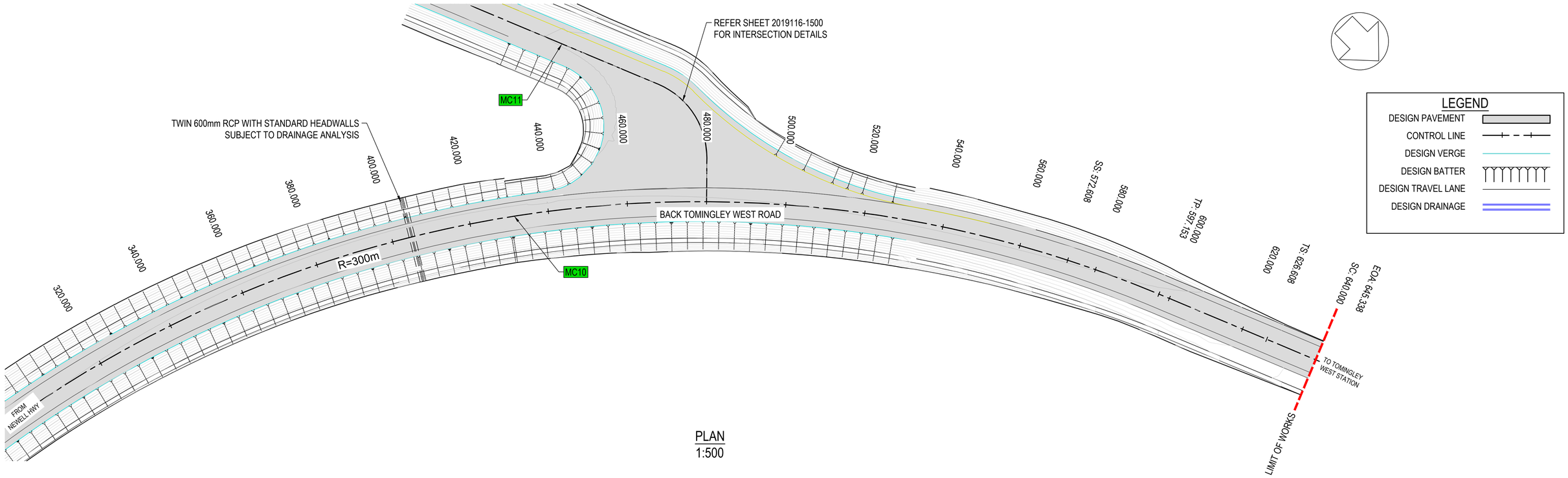
DRAWING TITLE: PLAN VIEW AND LONGITUDINAL SECTION - SHEET 1 OF 2 (MC10)

CLIENT: TOMINGLEY GOLD OPERATIONS PTY LTD (A wholly owned subsidiary of Alkane Resources Ltd)

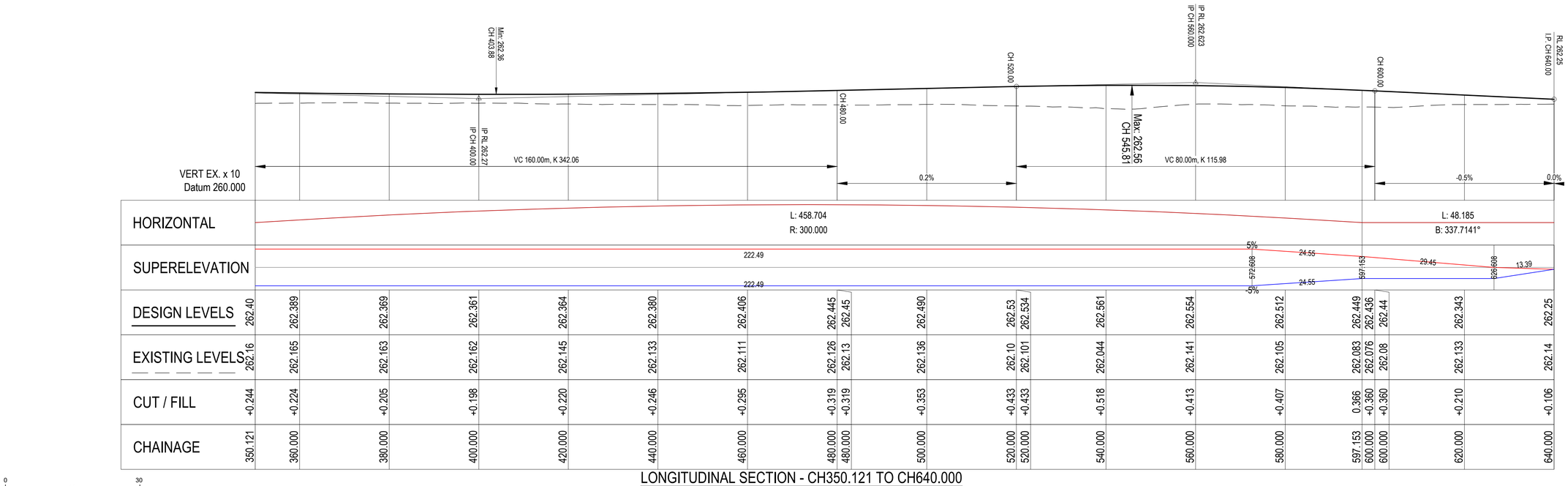
constructive solutions
providing total solutions

50% CONCEPT

TfNWS REGISTRATION No.	SIZE
2019116	A1
DRAWING NUMBER	REV
2019116-1101	F



PLAN
1:500



LONGITUDINAL SECTION - CH350.121 TO CH640.000
1:500

REV	DATE	REVISION DETAILS	APPROVED
F	21-06-21	50% CONCEPT DESIGN FOR COUNCIL REVIEW	SOR
E	15-06-21	50% CONCEPT DESIGN FOR CLIENT REVIEW	SOR
D	04-06-21	CONCEPT PLAN FOR INTERNAL REVIEW	SOR

DRAWN: L.BAYNHAM
DESIGNED: L.BAYNHAM
CHECKED: S.O'ROURKE
APPROVED: S.O'ROURKE

PROJECT: NARROMINE SHIRE COUNCIL, HW17 - NEWELL HIGHWAY DEVIATION
56.3km TO 64.1km NORTH OF PARKES

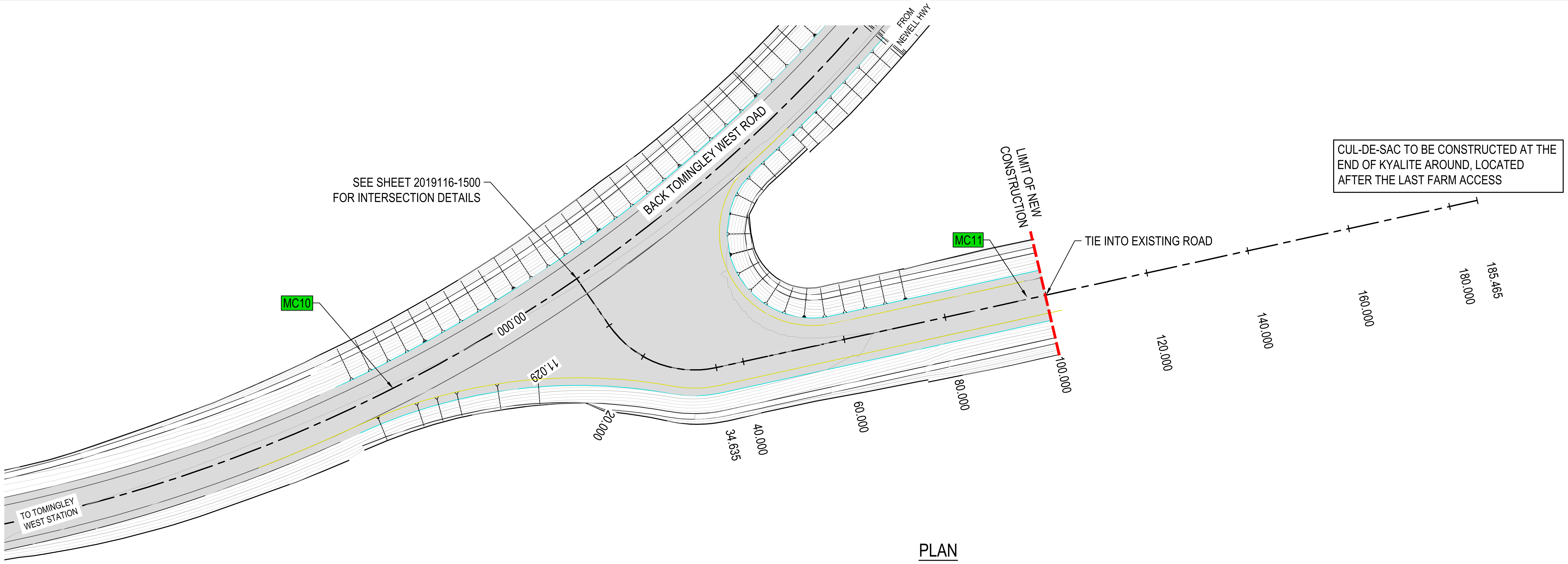
DRAWING TITLE: PLAN VIEW AND LONGITUDINAL SECTION - SHEET 2 OF 2 (MC10)

CLIENT: TOMINGLEY GOLD OPERATIONS PTY LTD (A wholly owned subsidiary of Alkane Resources Ltd)

constructive solutions
providing total solutions

50% CONCEPT

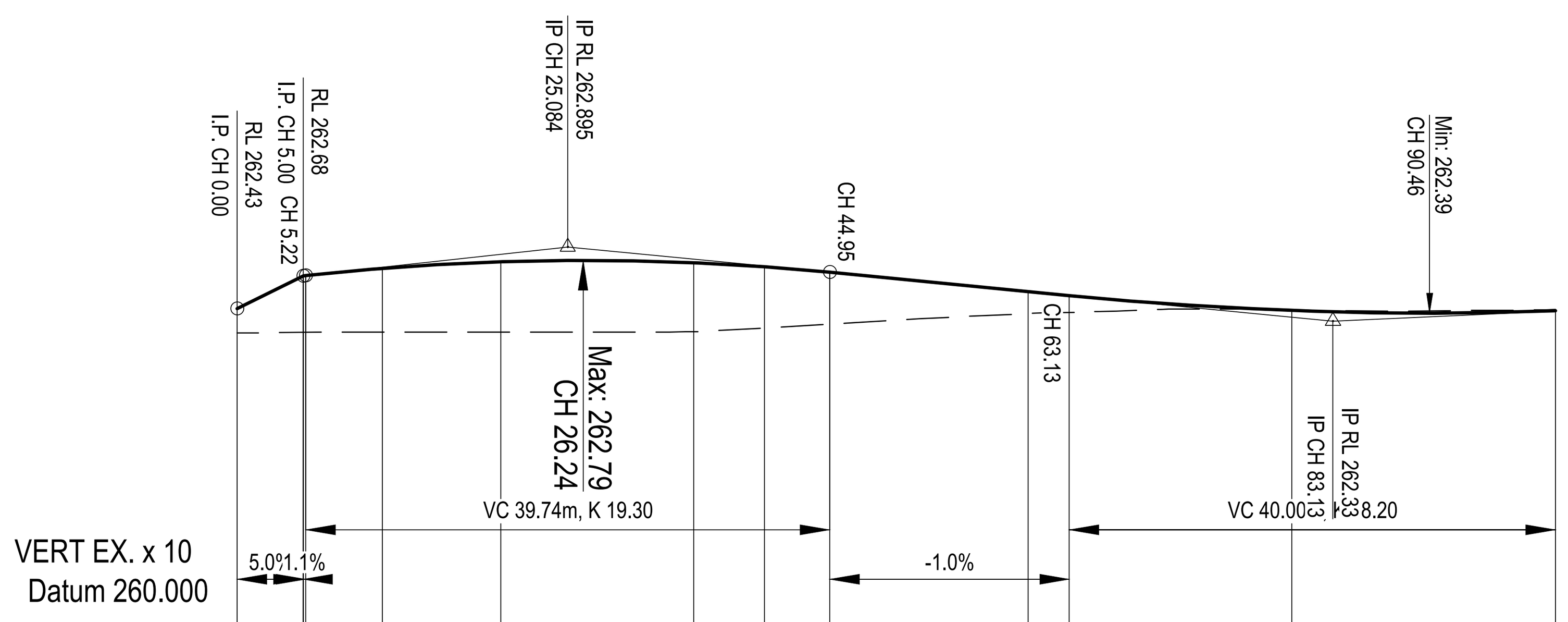
TfNWS REGISTRATION No.	SIZE
2019116	A1
DRAWING NUMBER	REV
2019116-1102	F



LEGEND

DESIGN PAVEMENT	
CONTROL LINE	
DESIGN VERGE	
DESIGN BATTER	
DESIGN TRAVEL LANE	
DESIGN DRAINAGE	

PLAN
1:500



HORIZONTAL	L: 11.029 B: 225.3396°			L: 23.606 R: 20.000		L: 150.830 B: 157.7141°					
SUPERELEVATION											
DESIGN LEVELS	262.43	262.68	262.733	262.783	262.774	262.744	262.70	262.556	262.53	262.413	262.41
EXISTING LEVELS	262.24	262.25	262.250	262.250	262.253	262.281	262.31	262.390	262.40	262.418	262.42
CUT / FILL	+0.183	+0.431	0.482	+0.533	0.522	+0.463	+0.392	+0.166	+0.128	-0.005	-0.010
CHAINAGE	0.000	5.217	11.029	20.000	34.635	40.000	44.952	60.000	63.126	80.000	100.000

LONGITUDINAL SECTION - CH0.000 TO CH100.000
1:500

0 15 30 Meters

REV	DATE	REVISION DETAILS	APPROVED
F	21-06-21	50% CONCEPT DESIGN FOR COUNCIL REVIEW	SOR
E	15-06-21	50% CONCEPT DESIGN FOR CLIENT REVIEW	SOR
D	04-06-21	CONCEPT PLAN FOR INTERNAL REVIEW	SOR

DRAWN: L.BAYNHAM
DESIGNED: L.BAYNHAM
CHECKED: S.O'ROURKE
APPROVED: S.O'ROURKE

PROJECT: NARROMINE SHIRE COUNCIL, HW17 - NEWELL HIGHWAY DEVIATION 56.3km TO 64.1km NORTH OF PARKES

DRAWING TITLE: PLAN VIEW AND LONGITUDINAL SECTION (MC11)

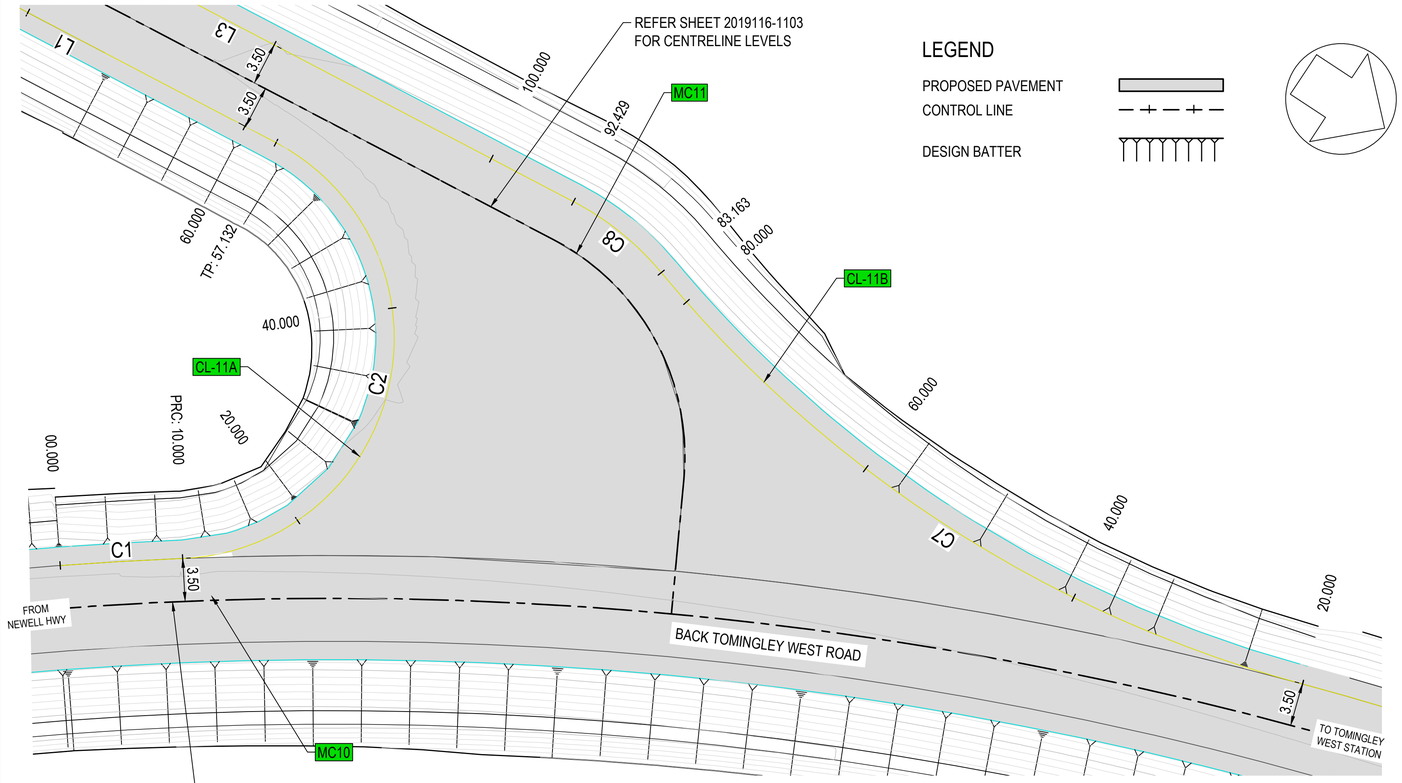
CLIENT: TOMINGLEY GOLD OPERATIONS PTY LTD (A wholly owned subsidiary of Alkane Resources Ltd)

constructive solutions — providing total solutions

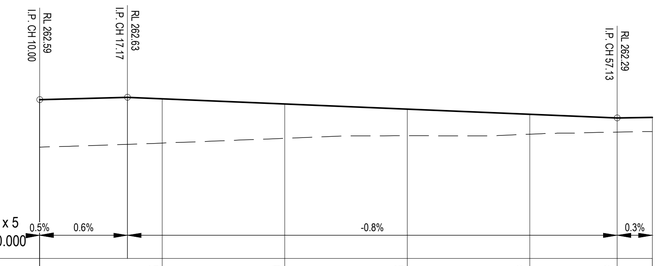
50% CONCEPT

TfNWS REGISTRATION No.	SIZE
2019116	A1

DRAWING NUMBER	REV
2019116-1103	F



LAYOUT PLAN
1:250

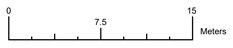


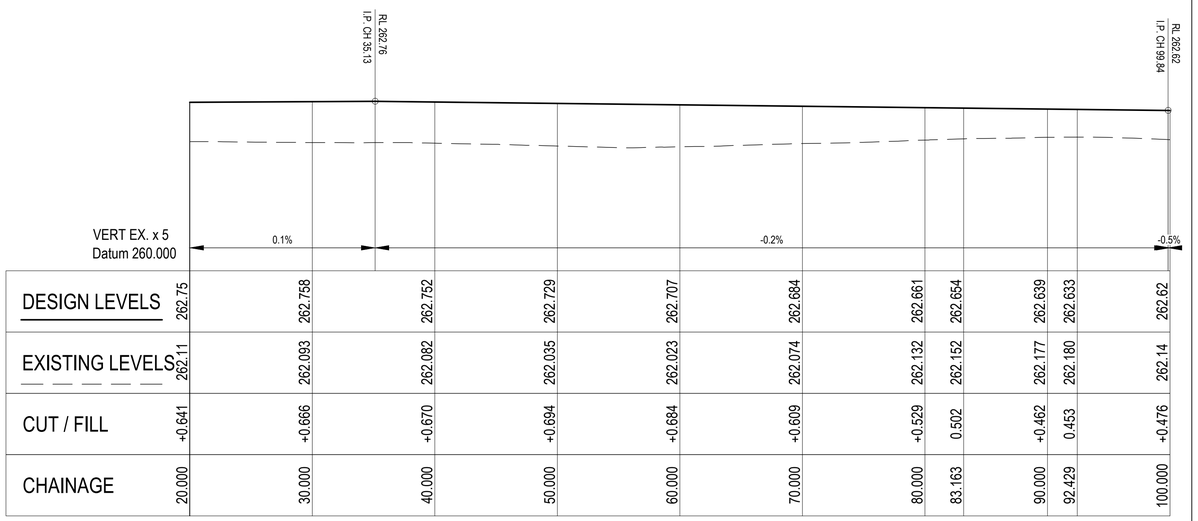
DESIGN LEVELS	262.59	262.605	262.520	262.436	262.352	262.292	262.30
EXISTING LEVELS	261.82	261.881	261.960	262.001	262.027	262.062	262.07
CUT / FILL	+0.773	+0.724	+0.561	+0.435	+0.325	0.230	+0.231
CHAINAGE	10.000	20.000	30.000	40.000	50.000	57.132	60.000

LONGITUDINAL SECTION - CL-11A
1:250

Set Out Table for CL-11A							
TAG		CHAINAGE	EASTING	NORTHING	LENGTH	RADIUS	BEARING
C1	TP	0.000	612098.927	6387702.950	10.000	303.5	306° 47' 46.18"
	IP	5.000	612094.874	6387705.878			
	TP	10.000	612090.920	6387708.939			
C2	TP	10.000	612090.920	6387708.939	47.132	18.0	232° 43' 37.54"
	IP	77.238	612037.748	6387750.094			
	TP	57.132	612063.247	6387687.879			
L1	BP	57.132	612063.247	6387687.879	37.980		157.7141
	EP	95.112	612077.650	6387652.736			

Set Out Table for CL-11B							
TAG		CHAINAGE	EASTING	NORTHING	LENGTH	RADIUS	BEARING
C6	TP	0.000	612016.687	6387792.379	20.000	303.5	147° 03' 23.85"
	IP	10.004	612021.848	6387783.810			
	TP	20.000	612027.562	6387775.598			
C7	TP	20.000	612027.562	6387775.598	63.163	103.0	162° 44' 10.92"
	IP	52.610	612046.187	6387748.831			
	TP	83.163	612046.014	6387716.221			
C8	TP	83.163	612046.014	6387716.221	9.265	23.5	169° 00' 32.49"
	IP	87.857	612045.989	6387711.528			
	TP	92.429	612047.769	6387707.185			
L3	BP	92.429	612047.769	6387707.185	67.778		157.7141
	EP	160.207	612073.473	6387644.469			





DESIGN LEVELS	262.75	262.758	262.752	262.729	262.707	262.684	262.661	262.654	262.639	262.633	262.62
EXISTING LEVELS	262.11	262.093	262.082	262.035	262.023	262.074	262.132	262.152	262.177	262.180	262.14
CUT / FILL	+0.641	+0.666	+0.670	+0.694	+0.684	+0.609	+0.529	0.502	+0.462	0.453	+0.476
CHAINAGE	20.000	30.000	40.000	50.000	60.000	70.000	80.000	83.163	90.000	92.429	100.000

LONGITUDINAL SECTION - CL-11B
1:250

REV	DATE	REVISION DETAILS	APPROVED
F	21-06-21	50% CONCEPT DESIGN FOR COUNCIL REVIEW	SOR
E	15-06-21	50% CONCEPT DESIGN FOR CLIENT REVIEW	SOR
D	04-06-21	CONCEPT PLAN FOR INTERNAL REVIEW	SOR

DRAWN: L.BAYNHAM
DESIGNED: L.BAYNHAM
CHECKED: S.O'ROURKE
APPROVED: S.O'ROURKE

PROJECT: NARROMINE SHIRE COUNCIL, HW17 - NEWELL HIGHWAY DEVIATION
56.3km TO 64.1km NORTH OF PARKES

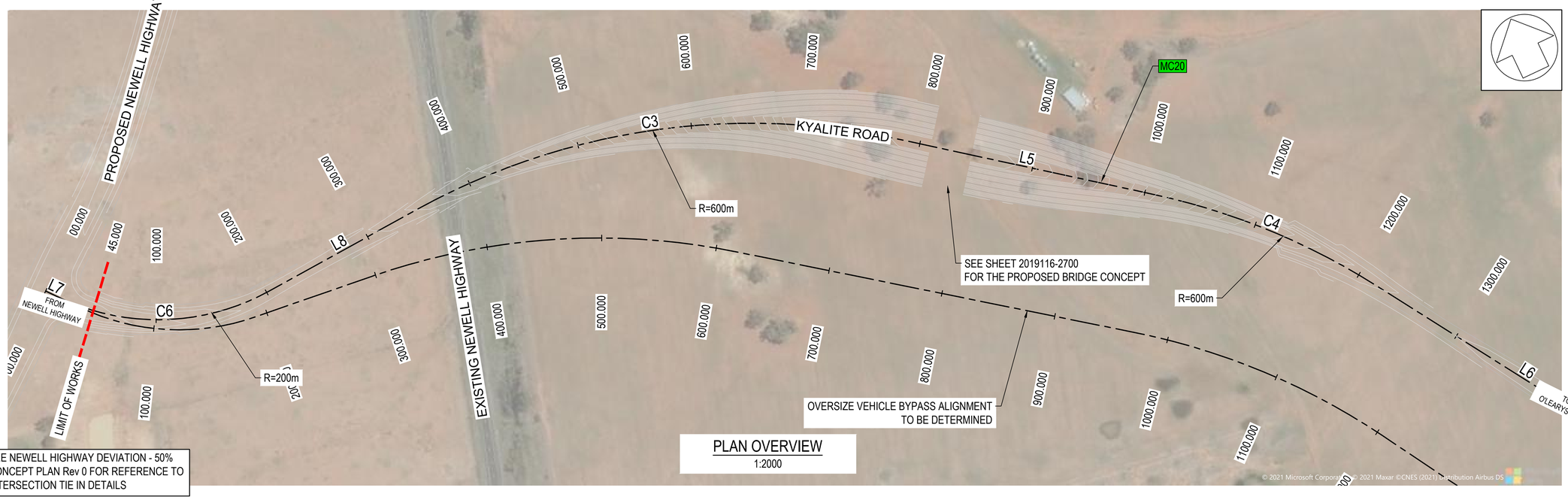
DRAWING TITLE: BACK TOMINGLEY WEST ROAD - INTERSECTION DETAIL

CLIENT: TOMINGLEY GOLD OPERATIONS PTY LTD (A wholly owned subsidiary of Alkane Resources Ltd)

constructive solutions
providing total solutions

50% CONCEPT

TfNWS REGISTRATION No.	SIZE
2019116	A1
DRAWING NUMBER	REV
2019116-1500	F



PLAN OVERVIEW
1:2000

SEE NEWELL HIGHWAY DEVIATION - 50% CONCEPT PLAN Rev 0 FOR REFERENCE TO INTERSECTION TIE IN DETAILS

PLAN OVERVIEW
1:2000

0 60 120 Meters

Set Out Table for MC-20							
TAG		CHAINAGE	EASTING	NORTHING	LENGTH	RADIUS	BEARING
L7	BP	0.000	613821.181	6391820.313	13.090		140.7087
	EP	13.090	613829.470	6391810.182			
C6	TP	13.090	613829.470	6391810.182	189.266	200.0	113° 35' 54.13"
	IP	115.481	613894.311	6391730.938			
	TP	202.356	613996.509	6391737.210			
L8	BP	202.356	613996.509	6391737.210	147.323		086.4880
	EP	349.679	614143.556	6391746.235			
C3	TP	349.679	614143.556	6391746.235	430.291	600.0	107° 01' 58.47"
	IP	574.546	614368.000	6391760.010			
	TP	779.971	614546.213	6391622.877			
L5	BP	779.971	614546.213	6391622.877	227.583		127.5778
	EP	1007.553	614726.578	6391484.089			
C4	TP	1007.553	614726.578	6391484.089	209.741	600.0	137° 35' 31.94"
	IP	1113.505	614810.548	6391419.475			
	TP	1217.295	614867.309	6391330.011			
L6	BP	1217.295	614867.309	6391330.011	302.605		147.6066
	EP	1519.900	615029.424	6391074.494			
C5	TP	1519.900	615029.424	6391074.494	500.799	600.0	123° 41' 42.74"
	IP	1785.926	615171.942	6390849.864			
	TP	2020.699	615434.099	6390804.658			

ROAD SHEETS	
ROAD	ALIGNMENT
BACK TOMINGLEY WEST ROAD	MC10
KYALITE ROAD	MC20
McNIVENS ROAD	MC30

REV	DATE	REVISION DETAILS	APPROVED
F	21-06-21	50% CONCEPT DESIGN FOR COUNCIL REVIEW	SOR
E	15-06-21	50% CONCEPT DESIGN FOR CLIENT REVIEW	SOR
D	04-06-21	50% CONCEPT DESIGN FOR INTERNAL REVIEW	SOR

DRAWN: L.BAYNHAM
DESIGNED: L.BAYNHAM
CHECKED: S.O'ROURKE
APPROVED: S.O'ROURKE

PROJECT: NARROMINE SHIRE COUNCIL, HW17 - NEWELL HIGHWAY DEVIATION
56.3km TO 64.1km NORTH OF PARKES

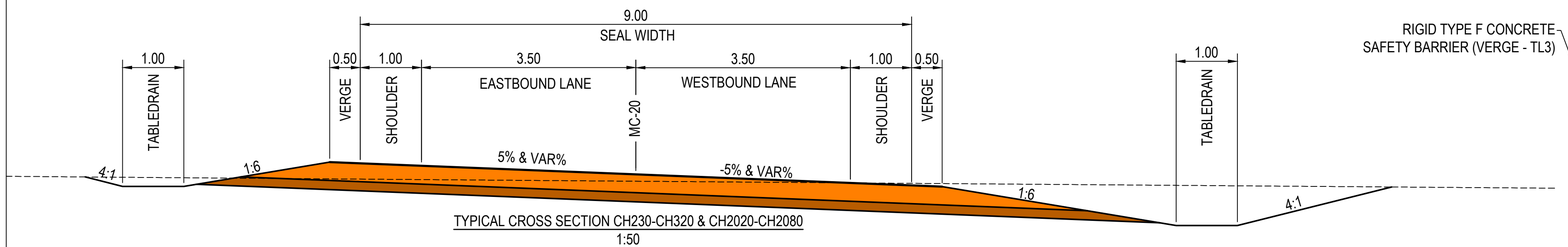
DRAWING TITLE: PLAN OVERVIEW AND ALIGNMENT TABLE (MC20)

CLIENT: TOMINGLEY GOLD OPERATIONS PTY LTD (A wholly owned subsidiary of Alkane Resources Ltd)

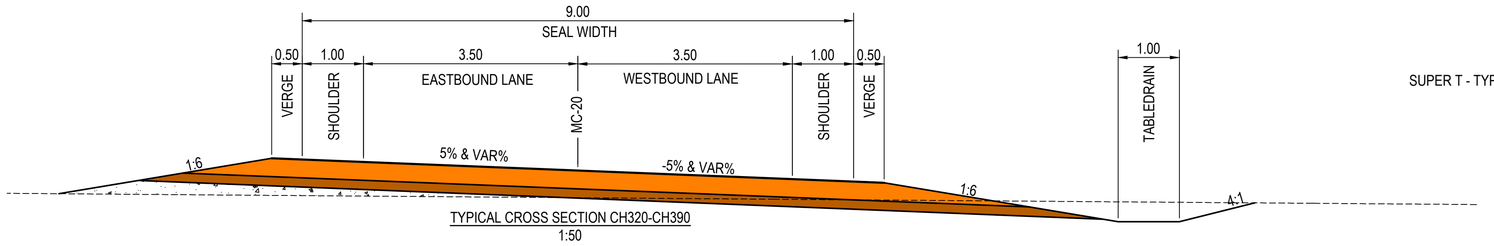
constructive solutions
providing total solutions

50% CONCEPT

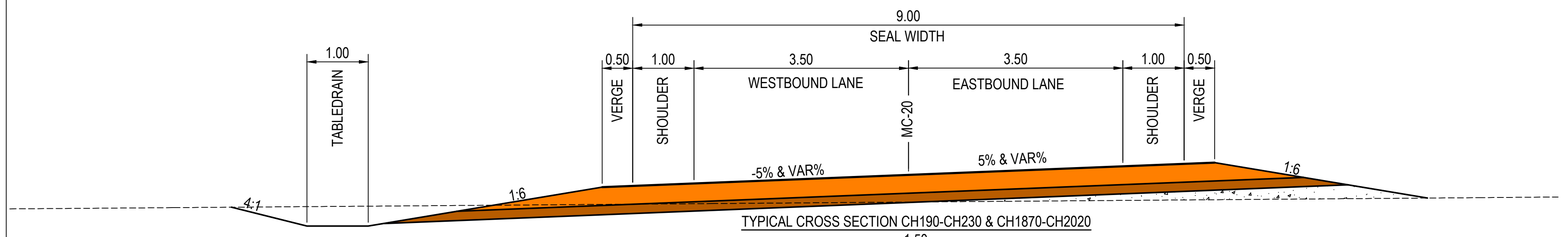
TfNWS REGISTRATION No.	SIZE
2019116	A1
DRAWING NUMBER	REV
2019116-2001	F



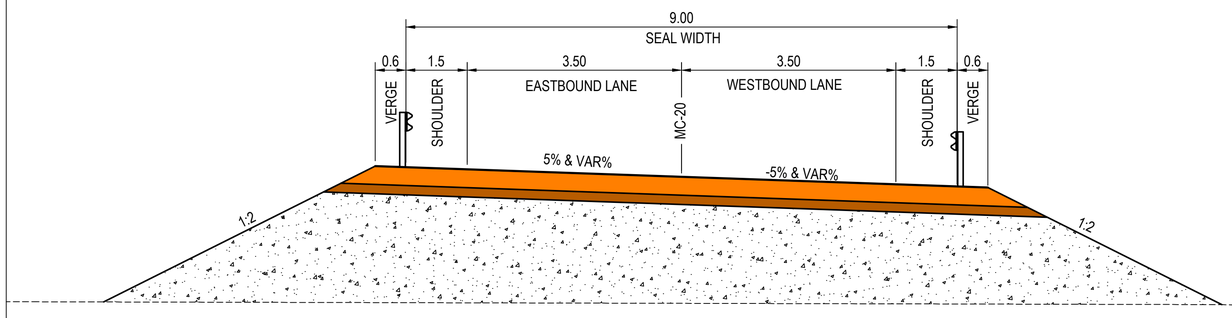
TYPICAL CROSS SECTION CH230-CH320 & CH2020-CH2080
1:50



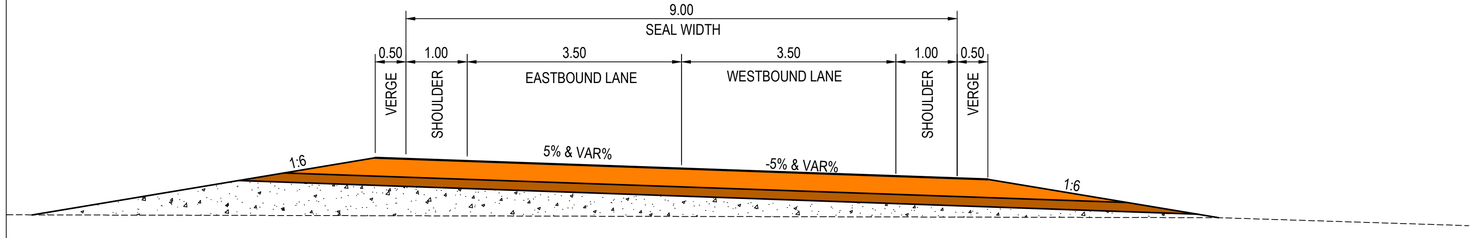
TYPICAL CROSS SECTION CH320-CH390
1:50



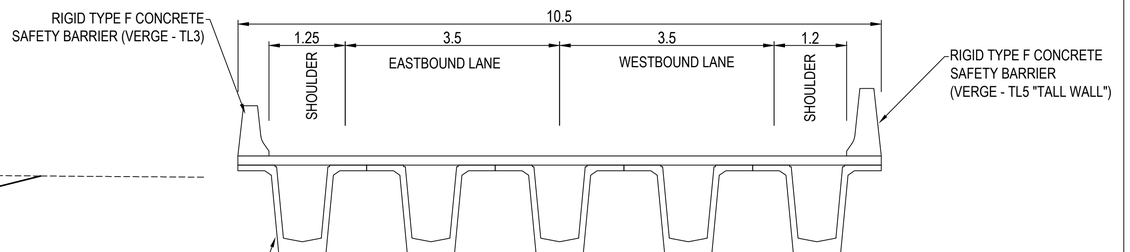
TYPICAL CROSS SECTION CH190-CH230 & CH1870-CH2020
1:50



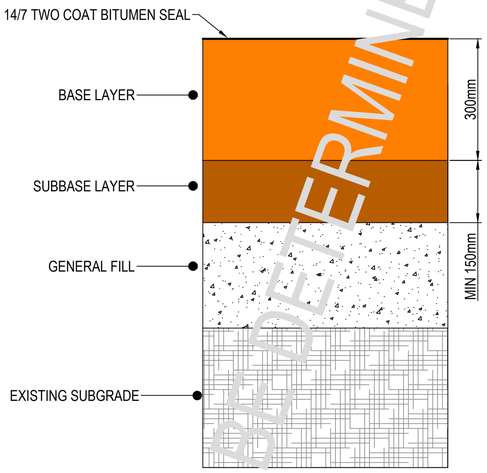
TYPICAL CROSS SECTION CH410-CH810 & CH845.5-CH1130
1:50



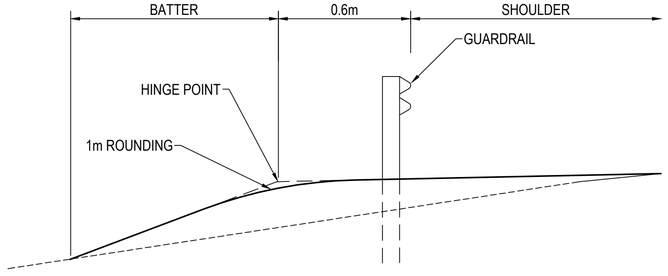
TYPICAL CROSS SECTION CH45-CH190, CH390-CH410 & CH1130-CH1870
1:50



TYPICAL CROSS SECTION BRIDGE
1:50



PAVEMENT DESIGN



VERGE TO BATTER DETAIL (GUARDRAIL)
NTS

REV	DATE	REVISION DETAILS	APPROVED
F	21-06-21	50% CONCEPT DESIGN FOR COUNCIL REVIEW	SOR
E	15-06-21	50% CONCEPT DESIGN FOR CLIENT REVIEW	SOR
D	04-06-21	50% CONCEPT DESIGN FOR INTERNAL REVIEW	SOR

DRAWN: L.BAYNHAM
DESIGNED: L.BAYNHAM
CHECKED: S.O'ROURKE
APPROVED: S.O'ROURKE

PROJECT: NARROMINE SHIRE COUNCIL, HW17 - NEWELL HIGHWAY DEVIATION
56.3km TO 64.1km NORTH OF PARKES

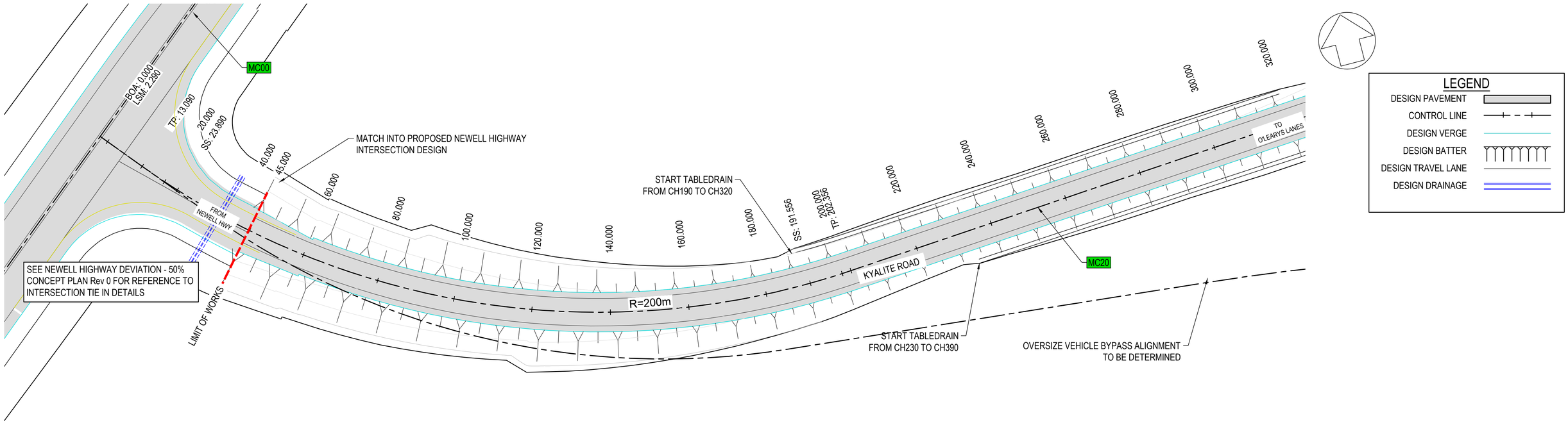
DRAWING TITLE: TYPICAL SECTIONS & PAVEMENT DETAILS (MC20)

CLIENT: TOMINGLEY GOLD OPERATIONS PTY LTD (A wholly owned subsidiary of Alkane Resources Ltd)

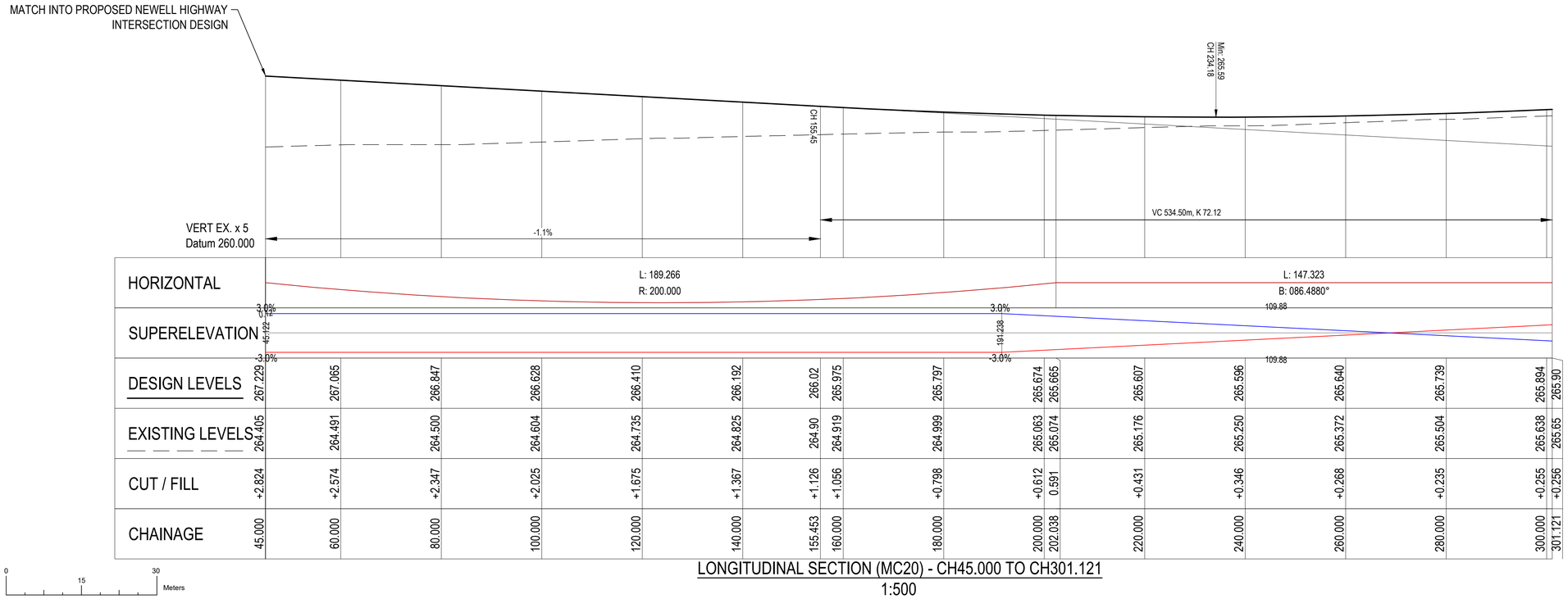
constructive solutions
providing total solutions

50% CONCEPT

TfNWS REGISTRATION No.	SIZE
2019116	A1
DRAWING NUMBER	REV
2019116-2010	F



PLAN
1:500



LONGITUDINAL SECTION (MC20) - CH45.000 TO CH301.121
1:500

REV	DATE	REVISION DETAILS	APPROVED
F	21-06-21	50% CONCEPT DESIGN FOR COUNCIL REVIEW	SOR
E	15-06-21	50% CONCEPT DESIGN FOR CLIENT REVIEW	SOR
D	04-06-21	50% CONCEPT DESIGN FOR INTERNAL REVIEW	SOR

DRAWN: L.BAYNHAM
DESIGNED: L.BAYNHAM
CHECKED: S.O'ROURKE
APPROVED: S.O'ROURKE

PROJECT: NARROMINE SHIRE COUNCIL, HW17 - NEWELL HIGHWAY DEVIATION
56.3km TO 64.1km NORTH OF PARKES

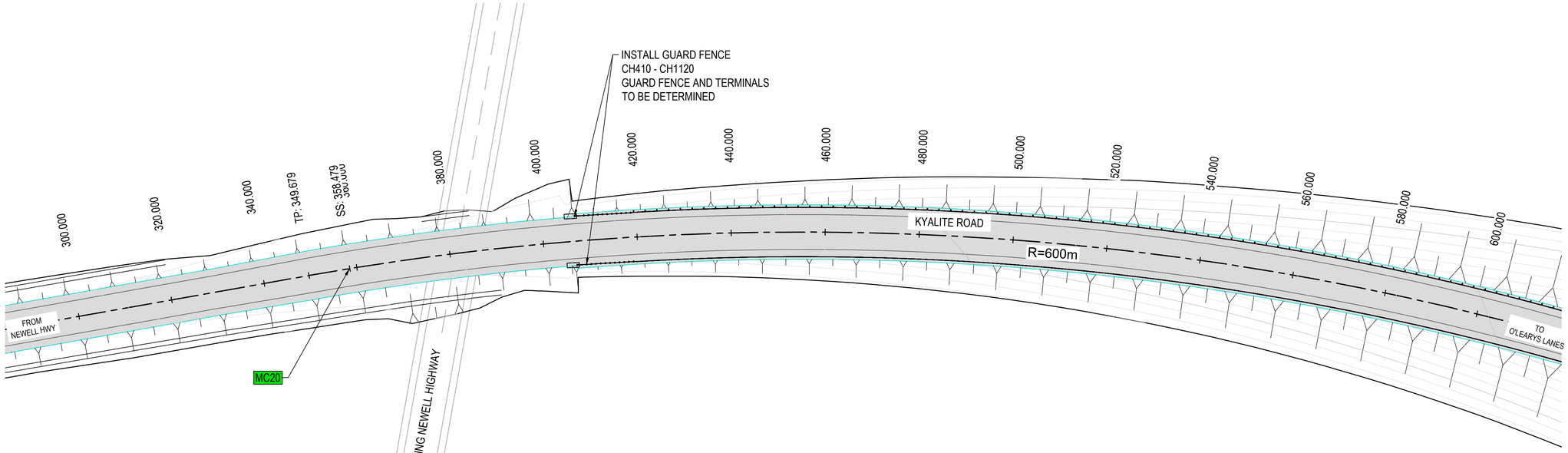
DRAWING TITLE: PLAN VIEW AND LONGITUDINAL SECTION - SHEET 1 OF 7 (MC20)

CLIENT: TOMINGLEY GOLD OPERATIONS PTY LTD
(A wholly owned subsidiary of Alkane Resources Ltd)

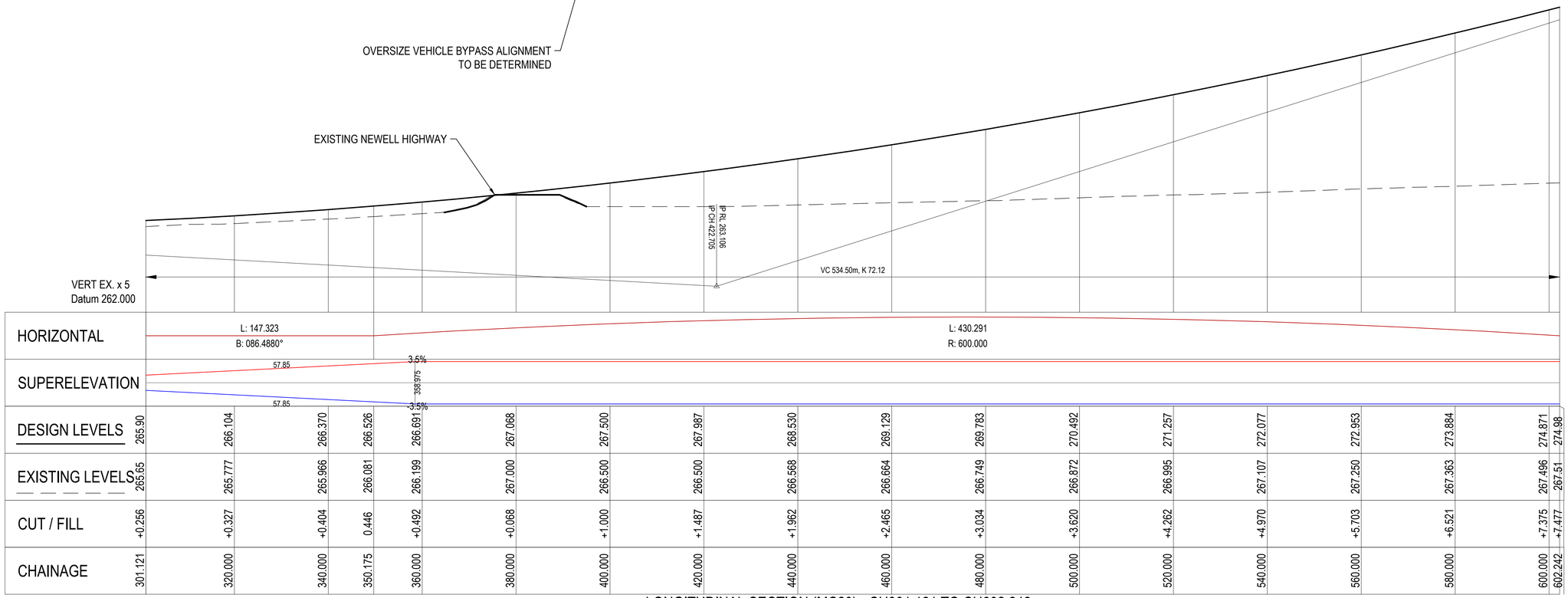
constructive solutions
providing total solutions

50% CONCEPT

TfNWS REGISTRATION No.	SIZE
2019116	A1
DRAWING NUMBER	REV
2019116-2101	F



PLAN
1:500



0 15 30 Meters

LONGITUDINAL SECTION (MC20) - CH301.121 TO CH602.242
1:500

LEGEND
- DESIGN PAVEMENT
- CONTROL LINE
- DESIGN VERGE
- DESIGN BATTER
- DESIGN TRAVEL LANE
- DESIGN DRAINAGE

REV	DATE	REVISION DETAILS	APPROVED
F	21-06-21	50% CONCEPT DESIGN FOR COUNCIL REVIEW	SOR
E	15-06-21	50% CONCEPT DESIGN FOR CLIENT REVIEW	SOR
D	04-06-21	50% CONCEPT DESIGN FOR INTERNAL REVIEW	SOR

DRAWN: L.BAYNHAM
DESIGNED: L.BAYNHAM
CHECKED: S.O'ROURKE
APPROVED: S.O'ROURKE

PROJECT: NARROMINE SHIRE COUNCIL, HW17 - NEWELL HIGHWAY DEVIATION
56.3km TO 64.1km NORTH OF PARKES

DRAWING TITLE: PLAN VIEW AND LONGITUDINAL SECTION - SHEET 2 OF 7 (MC20)

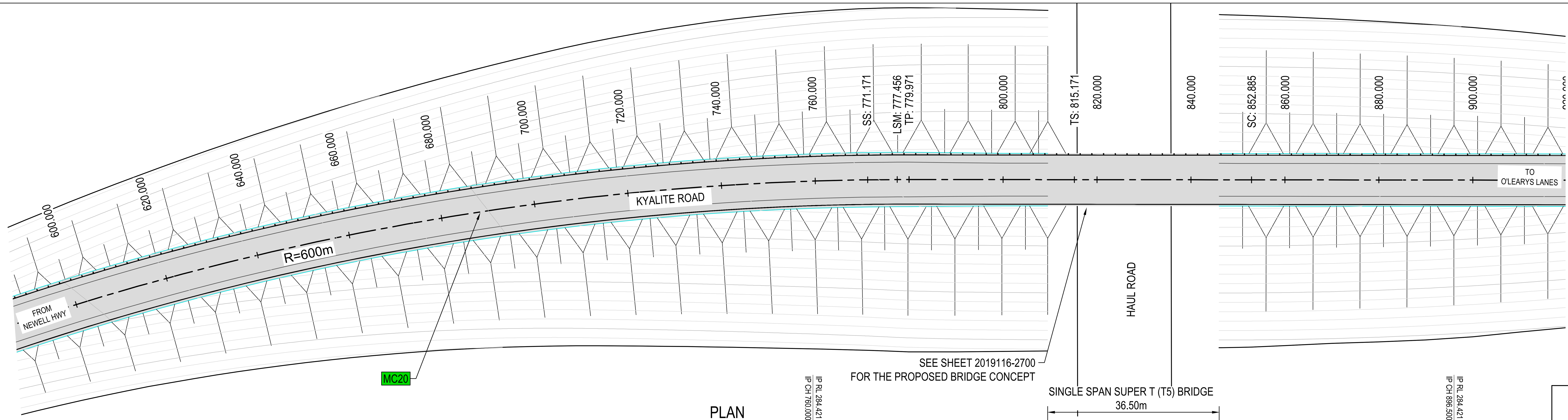
CLIENT: TOMINGLEY GOLD OPERATIONS PTY LTD (A wholly owned subsidiary of Alkane Resources Ltd)

constructive solutions
providing total solutions

50% CONCEPT

TfNWS REGISTRATION No.	SIZE
2019116	A1
DRAWING NUMBER	REV
2019116-2102	F

PLAN
1:500

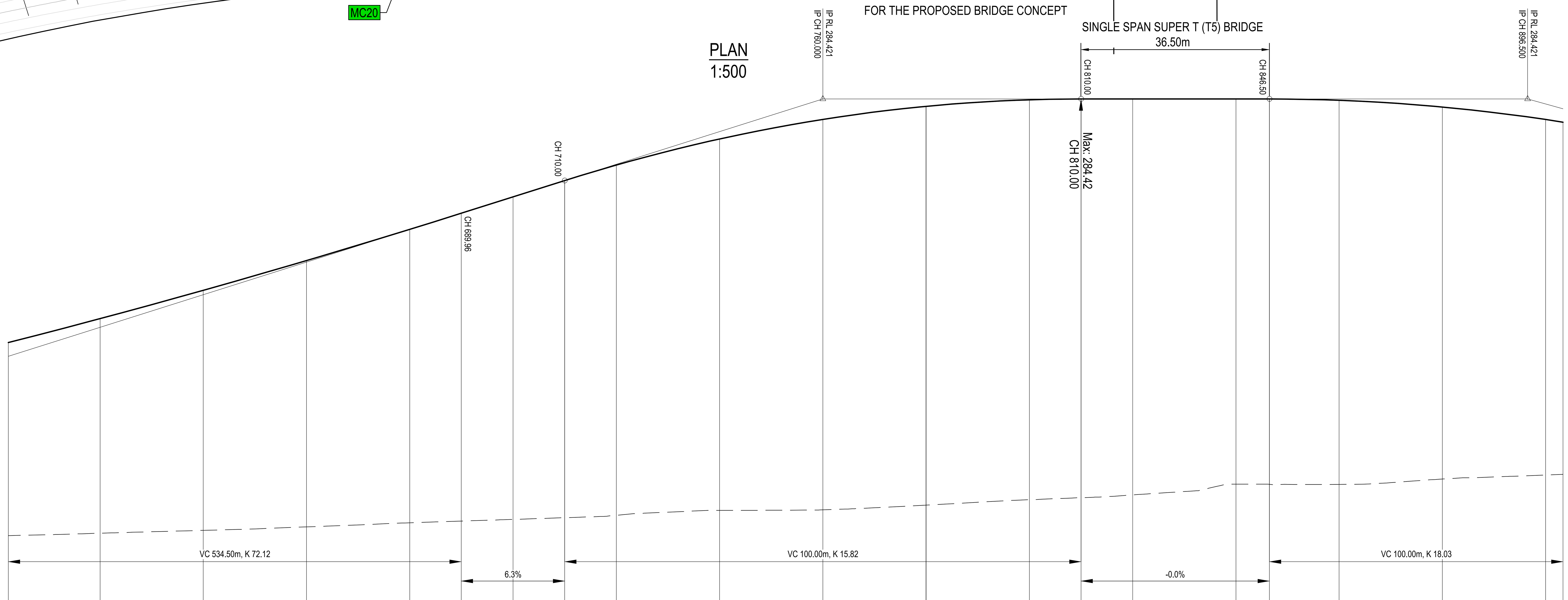


SEE SHEET 2019116-2700
FOR THE PROPOSED BRIDGE CONCEPT

SINGLE SPAN SUPER T (T5) BRIDGE
36.50m

LEGEND

- DESIGN PAVEMENT
- CONTROL LINE
- DESIGN VERGE
- DESIGN BATTER
- DESIGN TRAVEL LANE
- DESIGN DRAINAGE



VERT EX. x 5
Datum 265.000

HORIZONTAL: L: 430.291, R: 600.000 | L: 227.583, B: 127.5778°

SUPERELEVATION: 169.42 / 169.42; 3.5% 6.29; -3.5% 6.29; 771.666; 777.952; 37.71; 815.666; 37.71; -3.00%; 853.380; -3.00%

CHAINAGE	DESIGN LEVELS	EXISTING LEVELS	CUT / FILL
602.242	274.98	267.51	+7.477
620.000	275.913	267.601	+8.312
640.000	277.011	267.712	+9.298
660.000	278.164	267.847	+10.316
680.000	279.372	268.007	+11.365
689.957	279.99	268.07	+11.923
700.000	280.629	268.137	+12.492
710.000	281.26	268.20	+13.058
720.000	281.861	268.297	+13.564
740.000	282.873	268.486	+14.387
760.000	283.631	268.506	+15.124
780.466	284.145	268.693	15.452
780.000	284.136	268.688	+15.448
800.000	284.389	268.898	+15.491
810.000	284.42	268.98	+15.443
820.000	284.421	269.085	+15.335
840.000	284.421	269.500	+14.921
846.500	284.42	269.49	+14.927
860.000	284.370	269.493	+14.877
880.000	284.110	269.700	+14.410
900.000	283.627	269.856	+13.771
903.362	283.52	269.88	+13.640

LONGITUDINAL SECTION (MC20) - CH602.242 TO CH903.382
1:500

0 15 30 Meters

REV	DATE	REVISION DETAILS	APPROVED
F	21-06-21	50% CONCEPT DESIGN FOR COUNCIL REVIEW	SOR
E	15-06-21	50% CONCEPT DESIGN FOR CLIENT REVIEW	SOR
D	04-06-21	50% CONCEPT DESIGN FOR INTERNAL REVIEW	SOR

DRAWN: L.BAYNHAM
DESIGNED: L.BAYNHAM
CHECKED: S.O'ROURKE
APPROVED: S.O'ROURKE

PROJECT: NARROMINE SHIRE COUNCIL, HW17 - NEWELL HIGHWAY DEVIATION
56.3km TO 64.1km NORTH OF PARKES

DRAWING TITLE: PLAN VIEW AND LONGITUDINAL SECTION - SHEET 3 OF 7 (MC20)

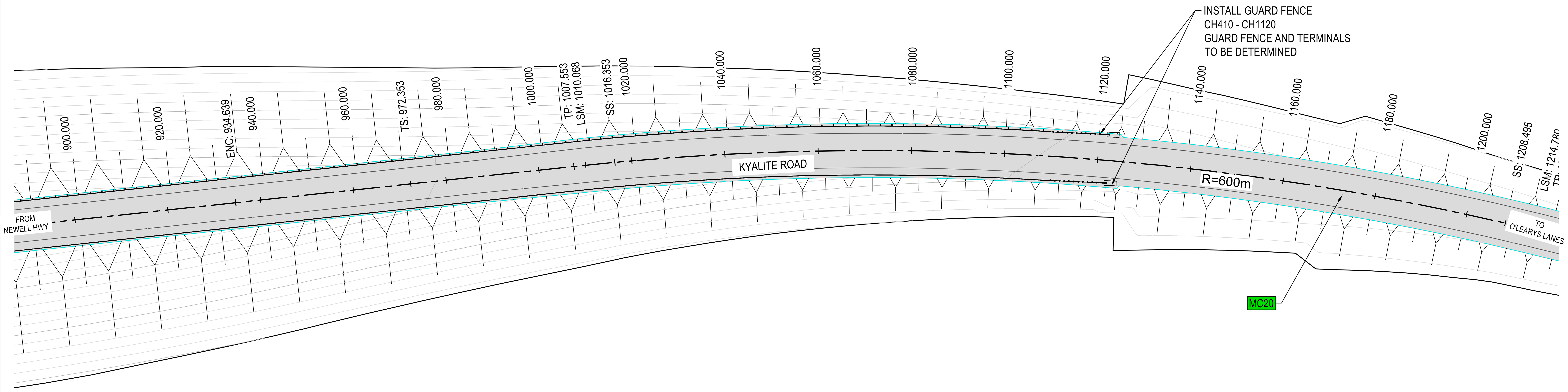
CLIENT: TOMINGLEY GOLD OPERATIONS PTY LTD (A wholly owned subsidiary of Alkane Resources Ltd)

constructive solutions — providing total solutions

50% CONCEPT

TfNWS REGISTRATION No.	SIZE
2019116	A1

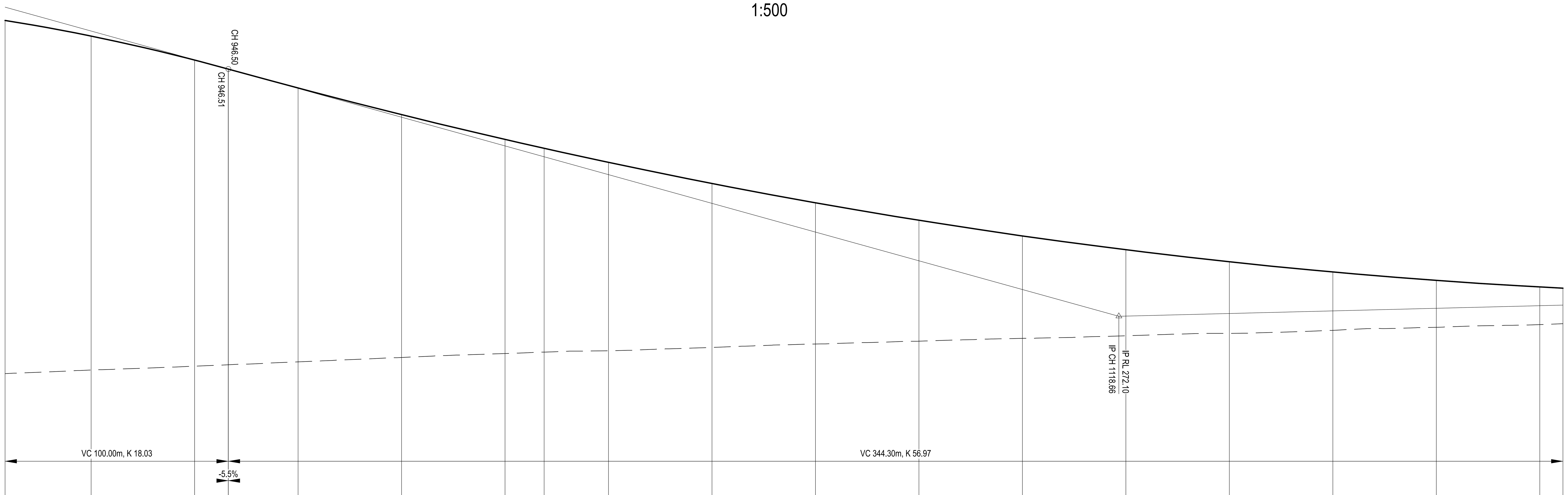
DRAWING NUMBER	REV
2019116-2103	F



LEGEND

- DESIGN PAVEMENT
- CONTROL LINE
- DESIGN VERGE
- DESIGN BATTER
- DESIGN TRAVEL LANE
- DESIGN DRAINAGE

PLAN
1:500



VERT EX. x 5
Datum 265.000

HORIZONTAL: L: 227.583, B: 127.5778° | L: 209.741, R: 600.000

SUPERELEVATION: -3.00% (935.134) — 37.71 — 972.849 — 37.71 — 1010.563 — 6.29 — 3.5% / -3.5% (1016.849)

CHAINAGE	DESIGN LEVELS	EXISTING LEVELS	CUT / FILL
903.362	283.52	269.88	+13.640
920.000	282.923	270.021	+12.902
940.000	281.997	270.169	+11.828
946.500	281.65	270.22	+11.424
946.507	281.65	270.22	+11.423
960.000	280.915	270.339	+10.576
980.000	279.889	270.508	+9.381
1000.000	278.932	270.660	+8.272
1008.049	278.567	270.719	7.848
1020.000	278.046	270.767	+7.279
1040.000	277.230	270.896	+6.334
1060.000	276.484	271.025	+5.459
1080.000	275.808	271.135	+4.673
1100.000	275.203	271.249	+3.954
1120.000	274.668	271.342	+3.326
1140.000	274.203	271.438	+2.765
1160.000	273.808	271.556	+2.252
1180.000	273.484	271.672	+1.812
1200.000	273.229	271.778	+1.451
1204.483	273.18	271.81	+1.373

0 15 30 Meters

LONGITUDINAL SECTION (MC20) - CH903.382 TO CH1204.483
1:500

REV	DATE	REVISION DETAILS	APPROVED
F	21-06-21	50% CONCEPT DESIGN FOR COUNCIL REVIEW	SOR
E	15-06-21	50% CONCEPT DESIGN FOR CLIENT REVIEW	SOR
D	04-06-21	50% CONCEPT DESIGN FOR INTERNAL REVIEW	SOR

DRAWN: L.BAYNHAM
DESIGNED: L.BAYNHAM
CHECKED: S.O'ROURKE
APPROVED: S.O'ROURKE

PROJECT: NARROMINE SHIRE COUNCIL, HW17 - NEWELL HIGHWAY DEVIATION
56.3km TO 64.1km NORTH OF PARKES

DRAWING TITLE: PLAN VIEW AND LONGITUDINAL SECTION - SHEET 4 OF 7 (MC20)

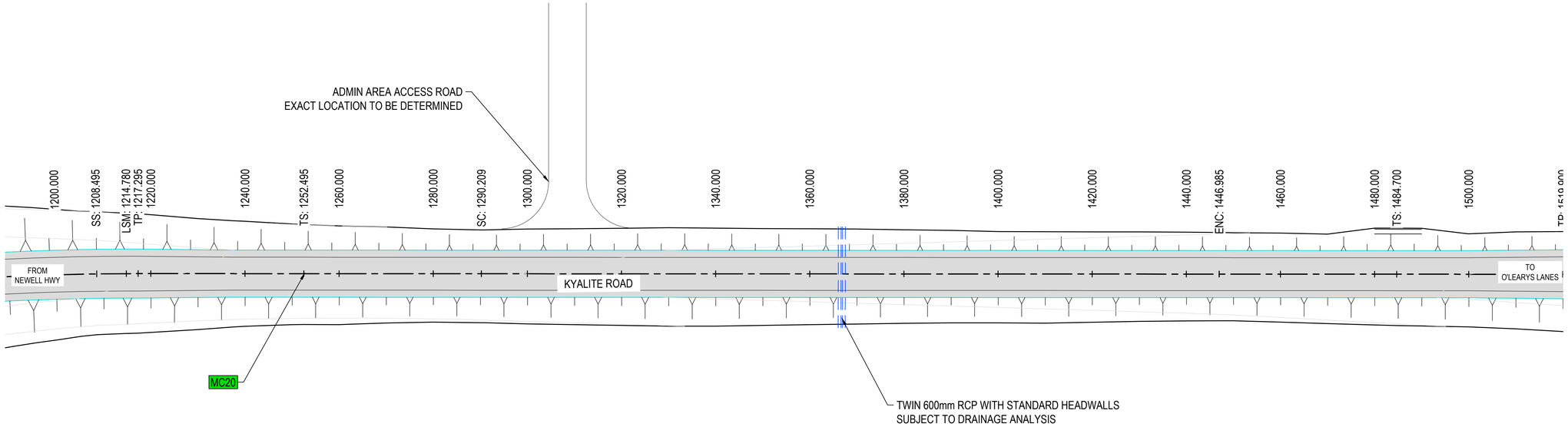
CLIENT: TOMINGLEY GOLD OPERATIONS PTY LTD (A wholly owned subsidiary of Alkane Resources Ltd)

constructive solutions
providing total solutions

50% CONCEPT

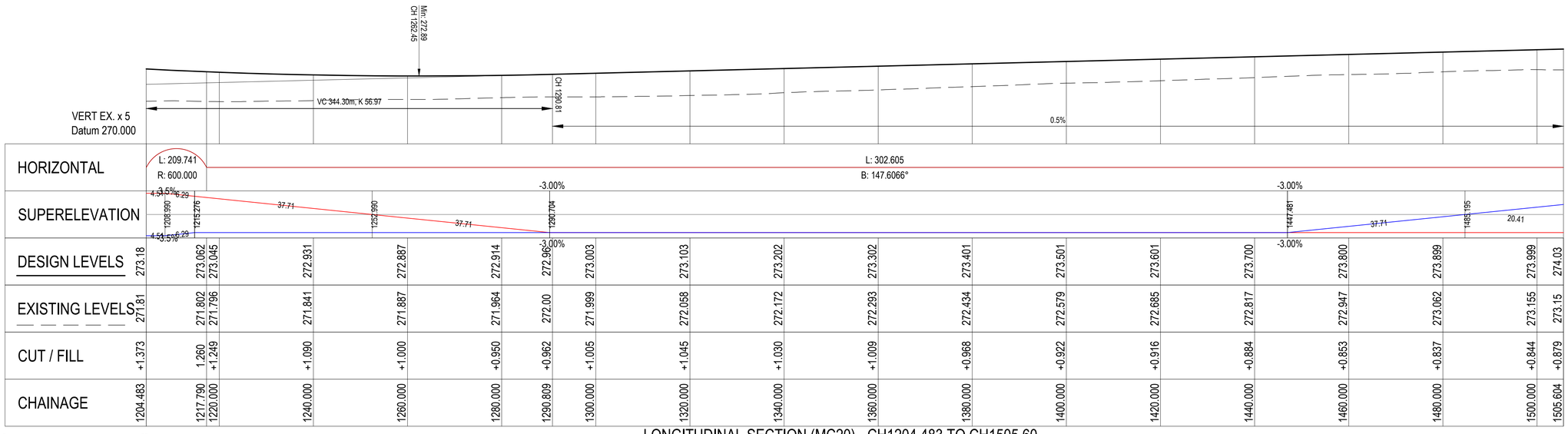
TfNWS REGISTRATION No.	SIZE
2019116	A1

DRAWING NUMBER	REV
2019116-2104	F



PLAN
1:500

LEGEND
- DESIGN PAVEMENT
- CONTROL LINE
- DESIGN VERGE
- DESIGN BATTER
- DESIGN TRAVEL LANE
- DESIGN DRAINAGE



LONGITUDINAL SECTION (MC20) - CH1204.483 TO CH1505.60
1:500

REV	DATE	REVISION DETAILS	APPROVED
F	21-06-21	50% CONCEPT DESIGN FOR COUNCIL REVIEW	SOR
E	15-06-21	50% CONCEPT DESIGN FOR CLIENT REVIEW	SOR
D	04-06-21	50% CONCEPT DESIGN FOR INTERNAL REVIEW	SOR

DRAWN: L.BAYNHAM
DESIGNED: L.BAYNHAM
CHECKED: S.O'ROURKE
APPROVED: S.O'ROURKE

PROJECT: NARROMINE SHIRE COUNCIL, HW17 - NEWELL HIGHWAY DEVIATION
56.3km TO 64.1km NORTH OF PARKES

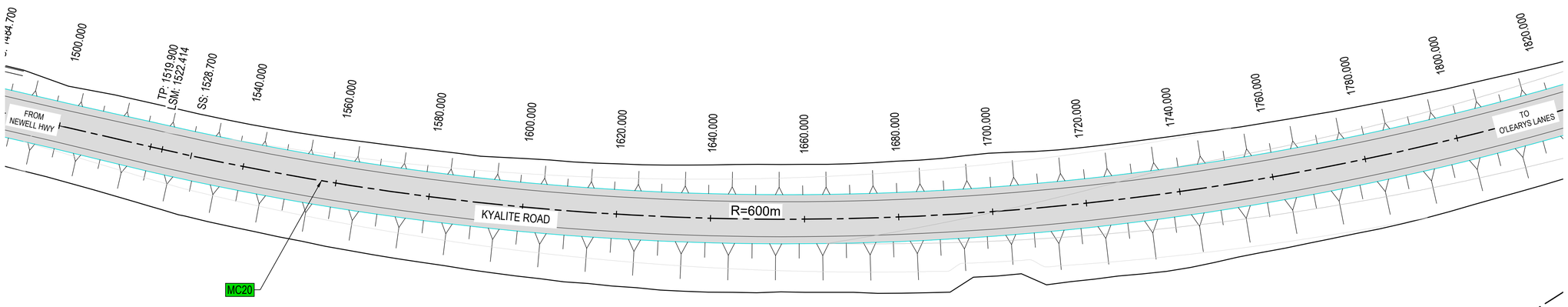
DRAWING TITLE: PLAN VIEW AND LONGITUDINAL SECTION - SHEET 5 OF 7 (MC20)

CLIENT: TOMINGLEY GOLD OPERATIONS PTY LTD (A wholly owned subsidiary of Alkane Resources Ltd)

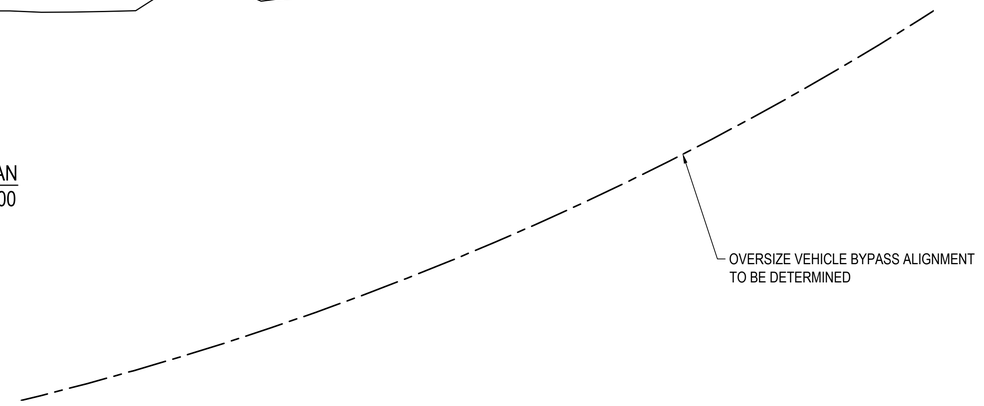
constructive solutions
providing total solutions

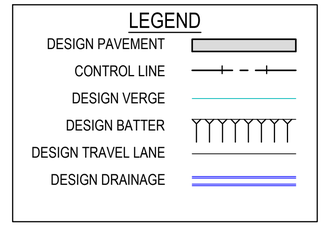
50% CONCEPT

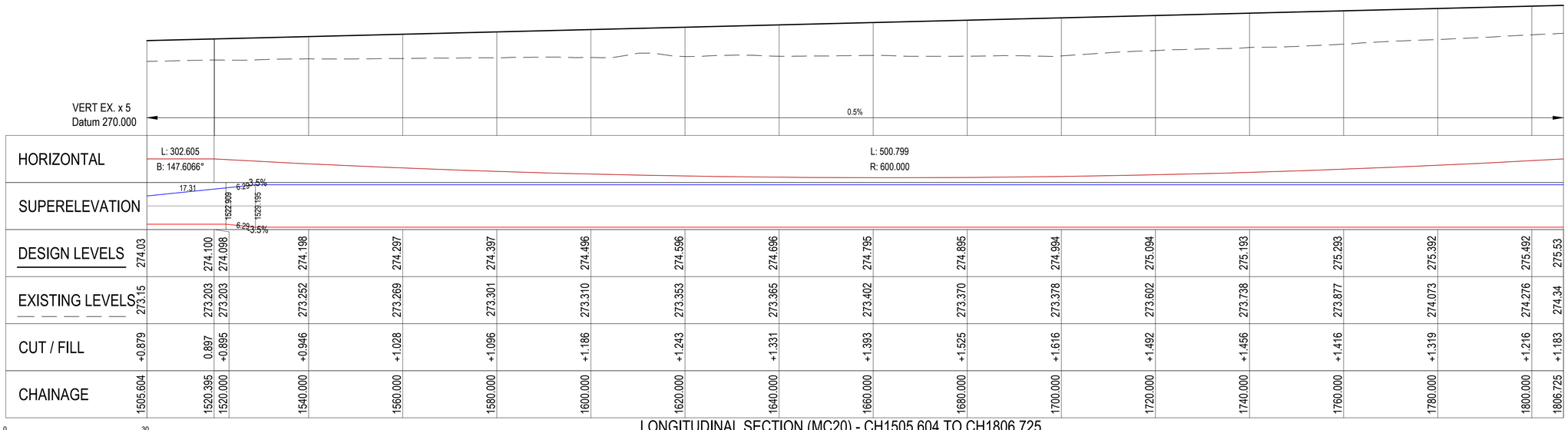
TfNWS REGISTRATION No.	SIZE
2019116	A1
DRAWING NUMBER	REV
2019116-2105	F



PLAN
1:500







0 15 30 Meters

LONGITUDINAL SECTION (MC20) - CH1505.604 TO CH1806.725
1:500

REV	DATE	REVISION DETAILS	APPROVED
F	21-06-21	50% CONCEPT DESIGN FOR COUNCIL REVIEW	SOR
E	15-06-21	50% CONCEPT DESIGN FOR CLIENT REVIEW	SOR
D	04-06-21	50% CONCEPT DESIGN FOR INTERNAL REVIEW	SOR

DRAWN: L.BAYNHAM
DESIGNED: L.BAYNHAM
CHECKED: S.O'ROURKE
APPROVED: S.O'ROURKE

PROJECT: NARROMINE SHIRE COUNCIL, HW17 - NEWELL HIGHWAY DEVIATION
56.3km TO 64.1km NORTH OF PARKES

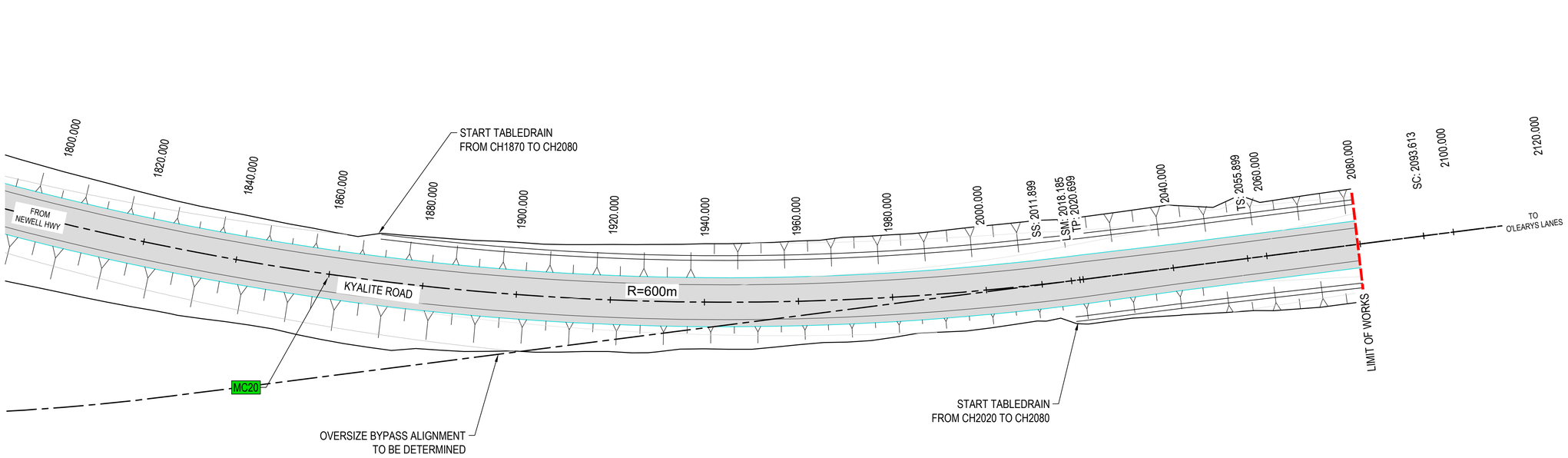
DRAWING TITLE: PLAN VIEW AND LONGITUDINAL SECTION - SHEET 6 OF 7 (MC20)

CLIENT: TOMINGLEY GOLD OPERATIONS PTY LTD (A wholly owned subsidiary of Alkane Resources Ltd)

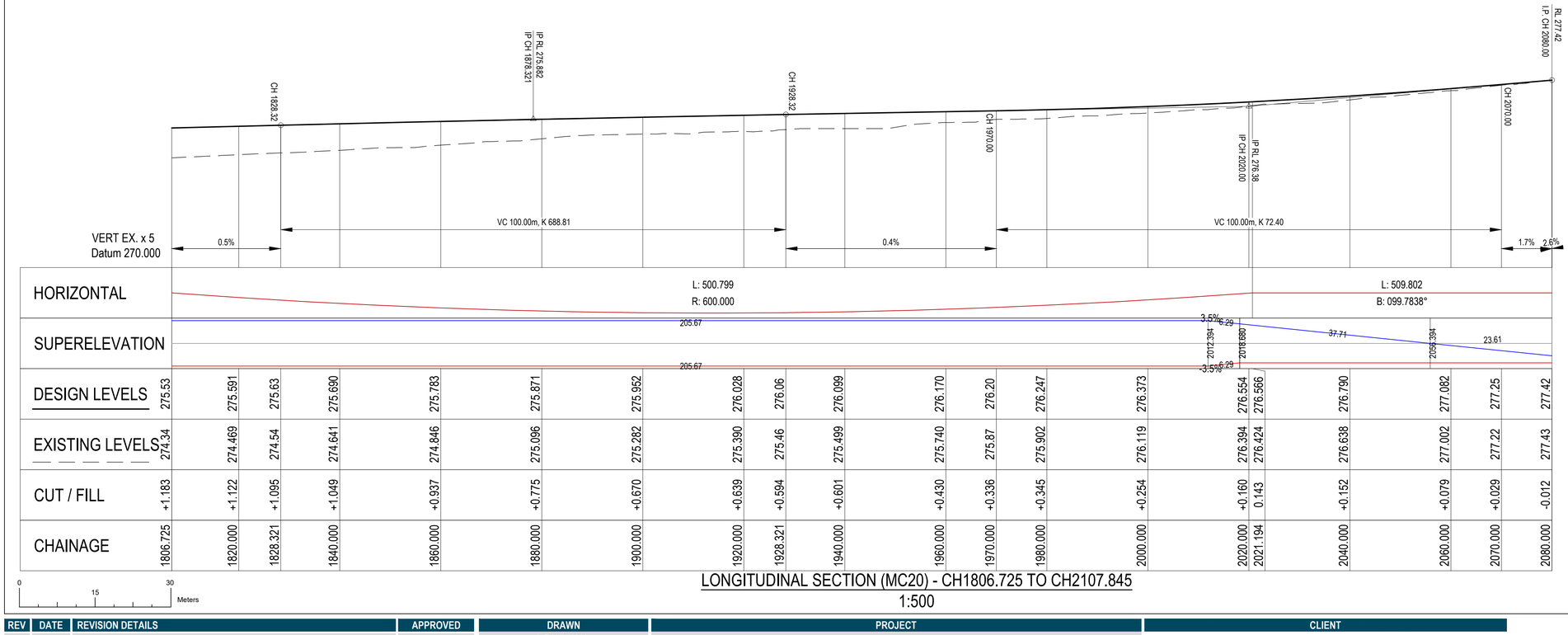
constructive solutions
providing total solutions

50% CONCEPT

TfNWS REGISTRATION No.	SIZE
2019116	A1
DRAWING NUMBER	REV
2019116-2106	F



PLAN
1:500



LONGITUDINAL SECTION (MC20) - CH1806.725 TO CH2107.845
1:500

REV	DATE	REVISION DETAILS	APPROVED
F	21-06-21	50% CONCEPT DESIGN FOR COUNCIL REVIEW	SOR
E	15-06-21	50% CONCEPT DESIGN FOR CLIENT REVIEW	SOR
D	04-06-21	50% CONCEPT DESIGN FOR INTERNAL REVIEW	SOR

DRAWN: L.BAYNHAM
DESIGNED: L.BAYNHAM
CHECKED: S.O'ROURKE
APPROVED: S.O'ROURKE

PROJECT: NARROMINE SHIRE COUNCIL, HW17 - NEWELL HIGHWAY DEVIATION
56.3km TO 64.1km NORTH OF PARKES

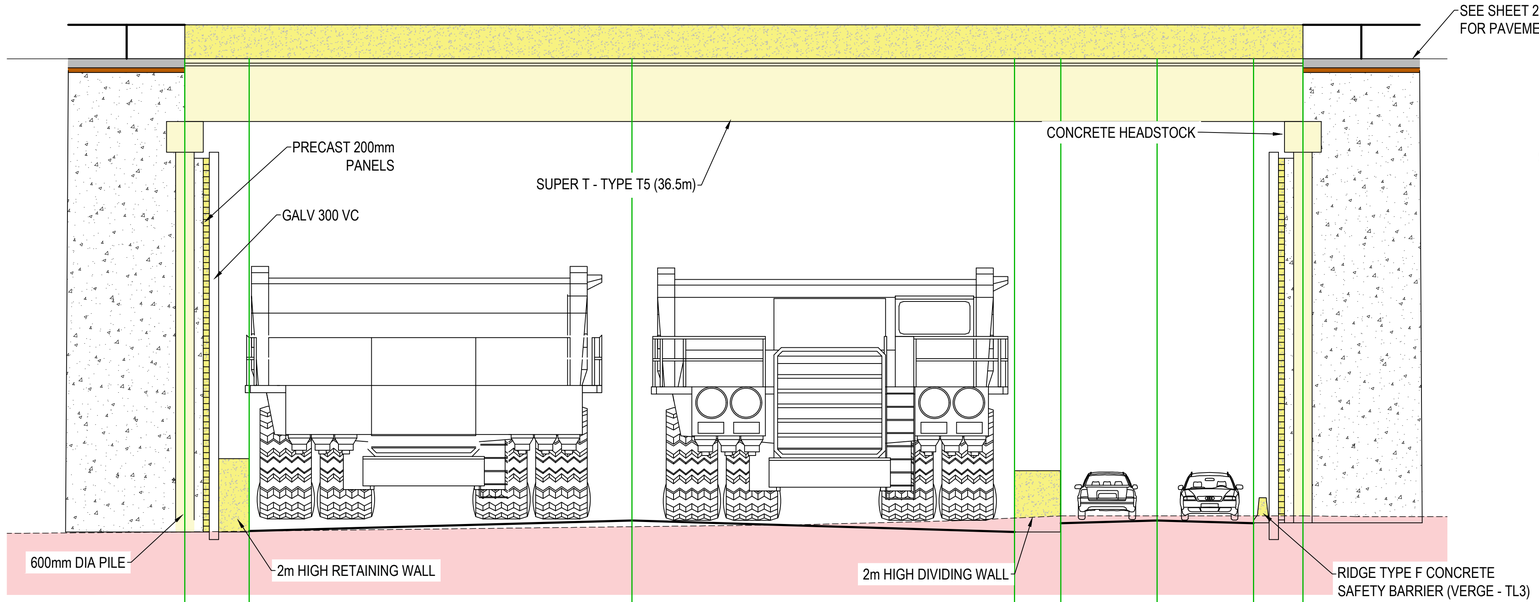
DRAWING TITLE: PLAN VIEW AND LONGITUDINAL SECTION - SHEET 7 OF 7 (MC20)

CLIENT: TOMINGLEY GOLD OPERATIONS PTY LTD (A wholly owned subsidiary of Alkane Resources Ltd)

constructive solutions
providing total solutions

50% CONCEPT

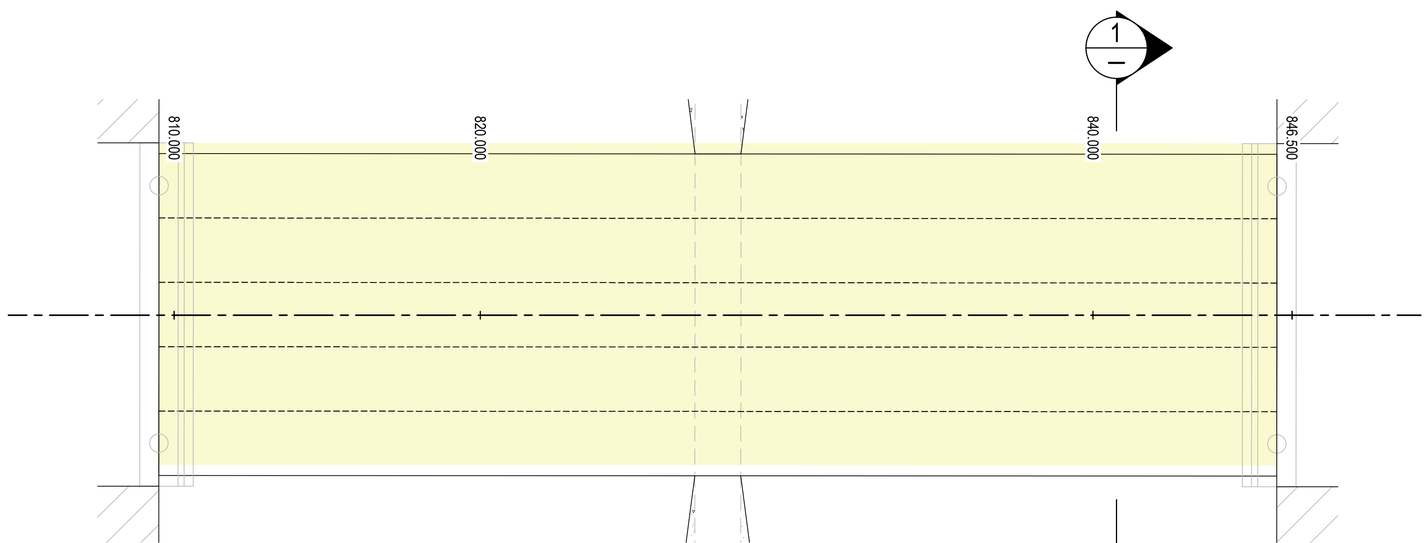
TfNWS REGISTRATION No.	SIZE
2019116	A1
DRAWING NUMBER	REV
2019116-2107	F



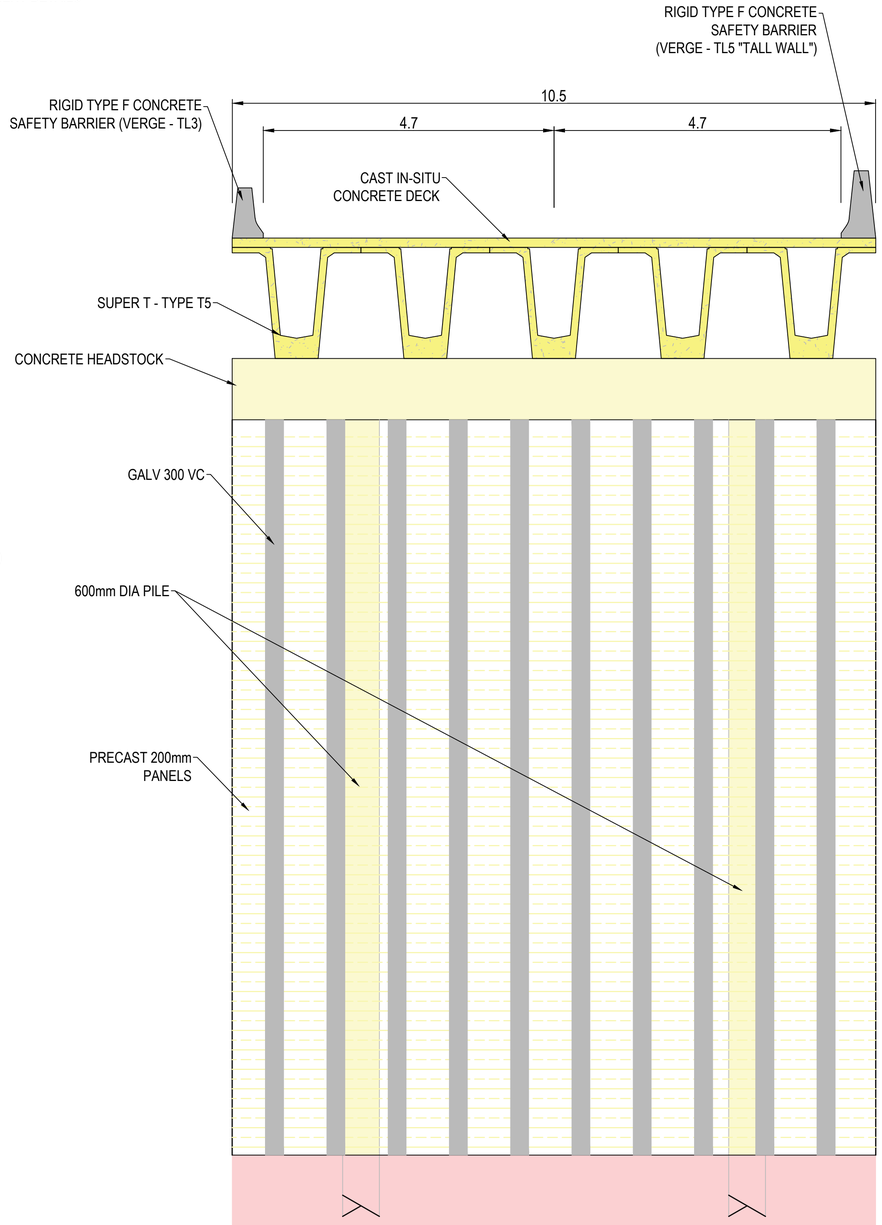
RL 266.000

MC20 - DESIGN LEVEL	284.420	284.420	284.420	284.420	284.420	284.420	284.420	284.420	
HAUL ROAD DESIGN LEVEL		268.945	269.320	268.945	269.226	269.320	269.226		
CHAINAGE	810.000	812.100	824.600	837.100	838.600	841.750	844.900	846.500	

SINGLE SPAN SUPER T BRIDGE - ELEVATION VIEW
1:100



SINGLE SPAN SUPER T BRIDGE - PLAN VIEW
1:100



SECTION 1 — 1
1:50

REV	DATE	REVISION DETAILS	APPROVED
F	21-06-21	50% CONCEPT DESIGN FOR COUNCIL REVIEW	SOR
E	15-06-21	50% CONCEPT DESIGN FOR CLIENT REVIEW	SOR
D	04-06-21	50% CONCEPT DESIGN FOR INTERNAL REVIEW	SOR

DRAWN: L.BAYNHAM
DESIGNED: L.BAYNHAM
CHECKED: S.O'ROURKE
APPROVED: S.O'ROURKE

PROJECT: NARROMINE SHIRE COUNCIL, HW17 - NEWELL HIGHWAY DEVIATION
56.3km TO 64.1km NORTH OF PARKES

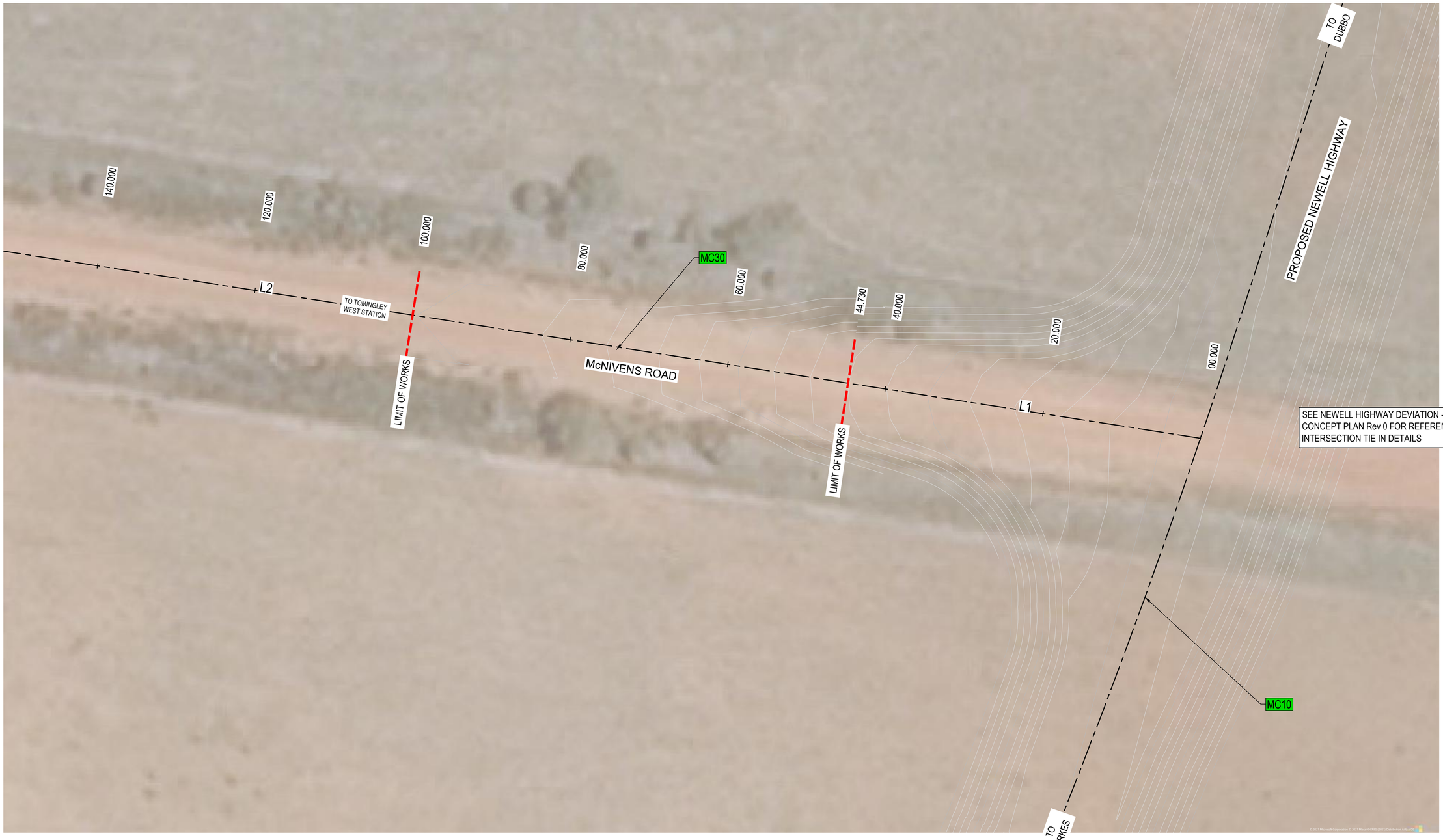
DRAWING TITLE: PROPOSED KYALITE ROAD OVERPASS (MC20)

CLIENT: TOMINGLEY GOLD OPERATIONS PTY LTD (A wholly owned subsidiary of Alkane Resources Ltd)

constructive solutions
providing total solutions

50% CONCEPT

TfNWS REGISTRATION No.	SIZE
2019116	A1
DRAWING NUMBER	REV
2019116-2700	F



PLAN OVERVIEW
1:250

CUL-DE-SAC TO BE CONSTRUCTED AT THE END OF KYALITE AROUND, LOCATED AFTER THE LAST FARM ACCESS

ROAD SHEETS	
ROAD	ALIGNMENT
BACK TOMINGLEY WEST ROAD	MC10
KYALITE ROAD	MC20
McNIVENS ROAD	MC30

0 7.5 15 Meters

Set Out Table for MC-30							
TAG		CHAINAGE	EASTING	NORTHING	LENGTH	RADIUS	BEARING
L1	BP EP	0.000 44.730	614197.157 614152.965	6392325.004 6392331.917	44.730		278.8916
L2	BP EP	44.730 192.581	614152.965 614006.891	6392331.917 6392354.770	147.851		278.8916

REV	DATE	REVISION DETAILS	APPROVED
F	21-06-21	50% CONCEPT DESIGN FOR COUNCIL REVIEW	SOR
E	15-06-21	50% CONCEPT DESIGN FOR CLIENT REVIEW	SOR
D	04-06-21	50% CONCEPT DESIGN FOR INTERNAL REVIEW	SOR

DRAWN: L.BAYNHAM
DESIGNED: L.BAYNHAM
CHECKED: S.O'ROURKE
APPROVED: S.O'ROURKE

PROJECT: NARROMINE SHIRE COUNCIL, HW17 - NEWELL HIGHWAY DEVIATION
56.3km TO 64.1km NORTH OF PARKES

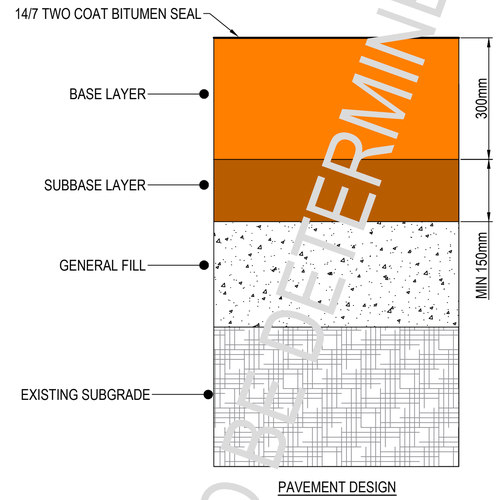
DRAWING TITLE: PLAN OVERVIEW AND ALIGNMENT TABLE (MC30)

CLIENT: TOMINGLEY GOLD OPERATIONS PTY LTD (A wholly owned subsidiary of Alkane Resources Ltd)

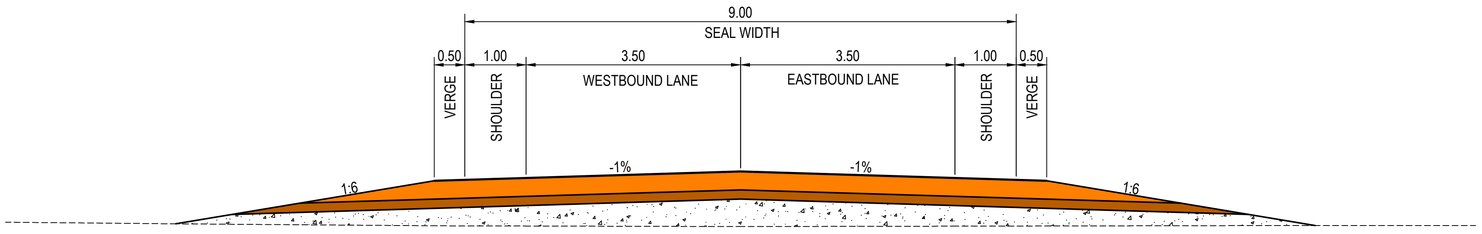
constructive solutions
providing total solutions

50% CONCEPT

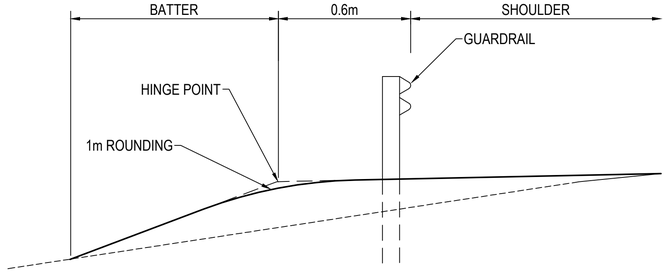
TfNWS REGISTRATION No.	SIZE
2019116	A1
DRAWING NUMBER	REV
2019116-3001	F



PAVEMENT DESIGN



TYPICAL CROSS SECTION CH44.730 TO CH100.000
1:50



VERGE TO BATTER DETAIL (GUARDRAIL)
NTS

REV	DATE	REVISION DETAILS	APPROVED
F	21-06-21	50% CONCEPT DESIGN FOR COUNCIL REVIEW	SOR
E	15-06-21	50% CONCEPT DESIGN FOR CLIENT REVIEW	SOR
D	04-06-21	50% CONCEPT DESIGN FOR INTERNAL REVIEW	SOR

DRAWN	L.BAYNHAM
DESIGNED	L.BAYNHAM
CHECKED	S.O'ROURKE
APPROVED	S.O'ROURKE

PROJECT

NARROMINE SHIRE COUNCIL, HW17 - NEWELL HIGHWAY DEVIATION
56.3km TO 64.1km NORTH OF PARKES

DRAWING TITLE

TYPICAL SECTIONS & PAVEMENT DETAILS (MC30)

CLIENT

TOMINGLEY GOLD OPERATIONS PTY LTD
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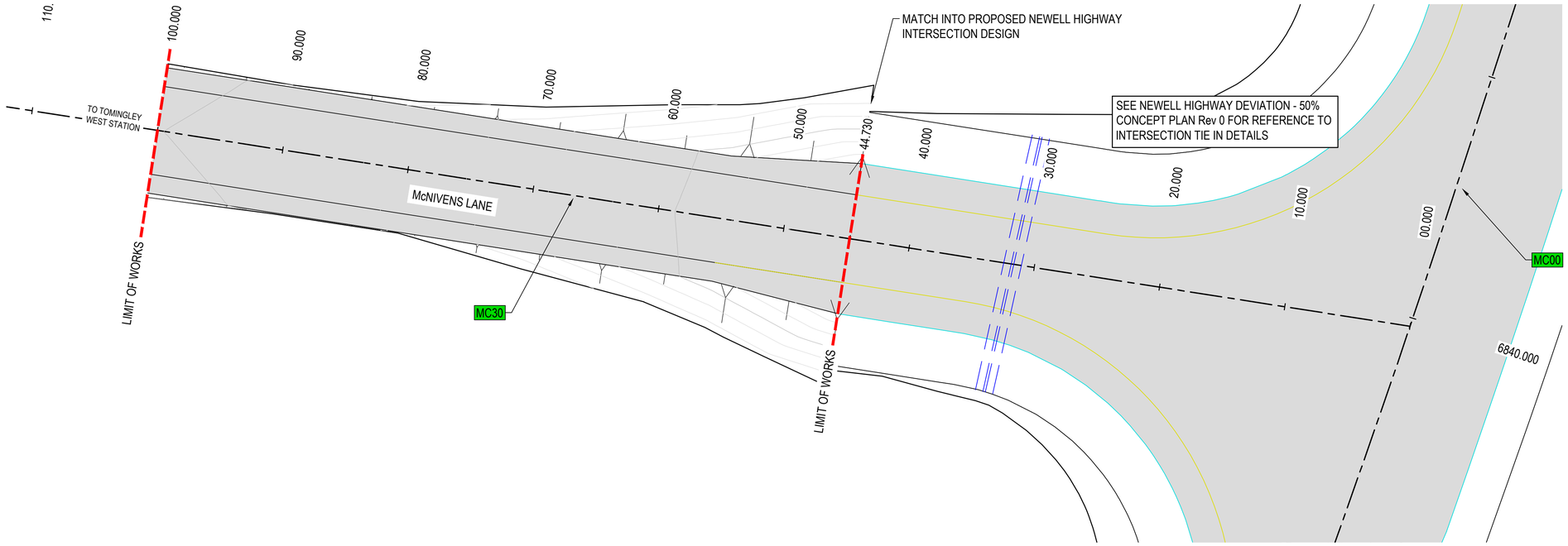
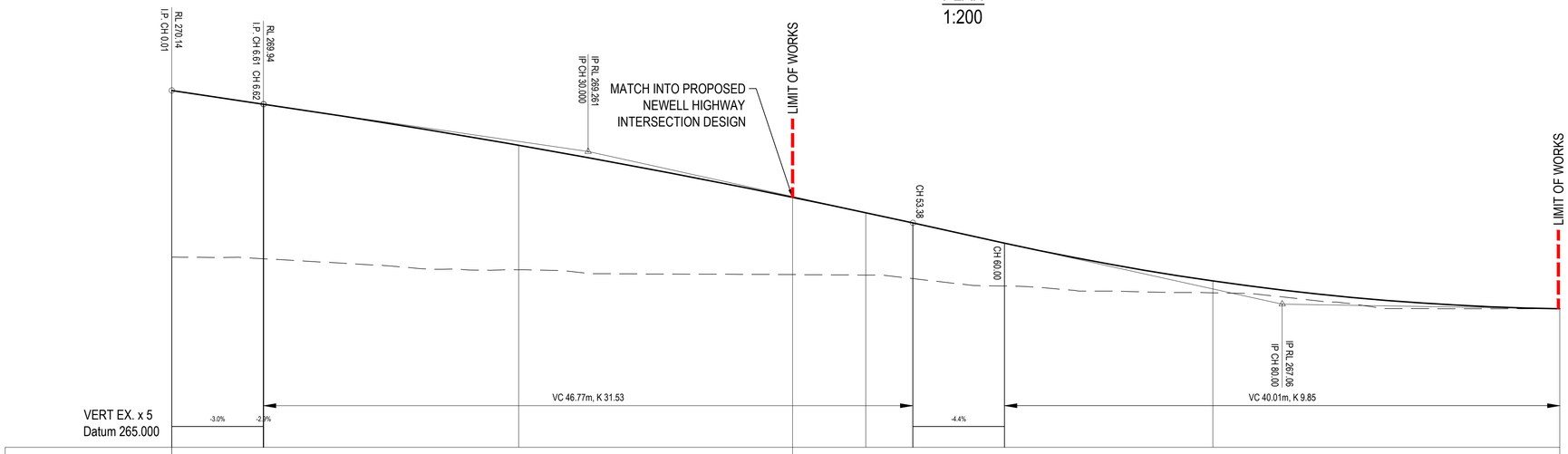
50% CONCEPT

TfNWS REGISTRATION No.	SIZE
2019116	A1
DRAWING NUMBER	REV
2019116-3010	F



PLAN
1:200



HORIZONTAL	L: 44.730 B: 278.8916°						L: 147.851 B: 278.8916°			
DESIGN LEVELS	270.14	269.94	269.353	268.602	268.380	268.23	267.94	267.397	267.00	
EXISTING LEVELS	267.740	267.74	267.72	267.558	267.489	267.482	267.43	267.32	267.226	267.00
CUT / FILL	+2.400	+2.225	+1.795	1.113	+0.898	+0.802	+0.618	+0.171	+0.001	
CHAINAGE	0.000	0.007	6.615	25.000	44.730	50.000	53.385	59.996	75.000	100.000

0 6 12 Meters

LONGITUDINAL SECTION - CH0.000 TO CH100.000
1:200

REV	DATE	REVISION DETAILS	APPROVED
F	21-06-21	50% CONCEPT DESIGN FOR COUNCIL REVIEW	SOR
E	15-06-21	50% CONCEPT DESIGN FOR CLIENT REVIEW	SOR
D	04-06-21	50% CONCEPT DESIGN FOR INTERNAL REVIEW	SOR

DRAWN: L.BAYNHAM
DESIGNED: L.BAYNHAM
CHECKED: S.O'ROURKE
APPROVED: S.O'ROURKE

PROJECT: NARROMINE SHIRE COUNCIL, HW17 - NEWELL HIGHWAY DEVIATION 56.3km TO 64.1km NORTH OF PARKES

DRAWING TITLE: PLAN VIEW AND LONGITUDINAL SECTION (MC30)

CLIENT: TOMINGLEY GOLD OPERATIONS PTY LTD (A wholly owned subsidiary of Alkane Resources Ltd)

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50% CONCEPT

TfNWS REGISTRATION No.	SIZE
2019116	A1
DRAWING NUMBER	REV
2019116-3101	F

Appendix 5: HW17 Realignment - Rural Property Access Locations

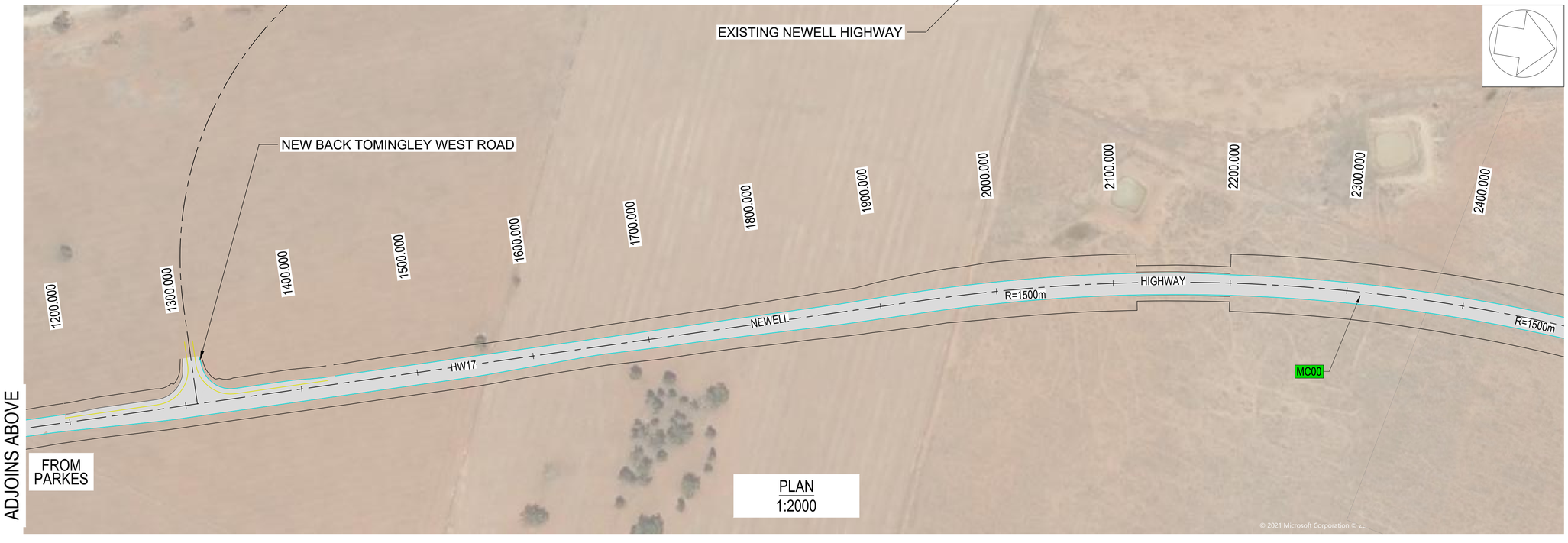
PLAN
1:2000

LEGEND

CONTROL LINE

DESIGN VERGE

DESIGN BATTER



PLAN
1:2000

0 60 120 Meters

REV	DATE	REVISION DETAILS	APPROVED
1	15-07-21	50% CONCEPT DESIGN CLOSE-OUT	SOR
0	14-05-21	50% CONCEPT DESIGN FOR CLIENT & TfNSW REVIEW	SOR
D	12-05-21	50% CONCEPT DESIGN FOR INTERNAL REVIEW	SOR

DRAWN	L.BAYNHAM
DESIGNED	L.BAYNHAM
CHECKED	S.O'ROURKE
APPROVED	S.O'ROURKE

PROJECT

NARROMINE SHIRE COUNCIL, HW17 - NEWELL HIGHWAY DEVIATION
56.3km TO 64.1km NORTH OF PARKES

DRAWING TITLE

PROPERTY PLAN - SHEET 1 OF 4

CLIENT

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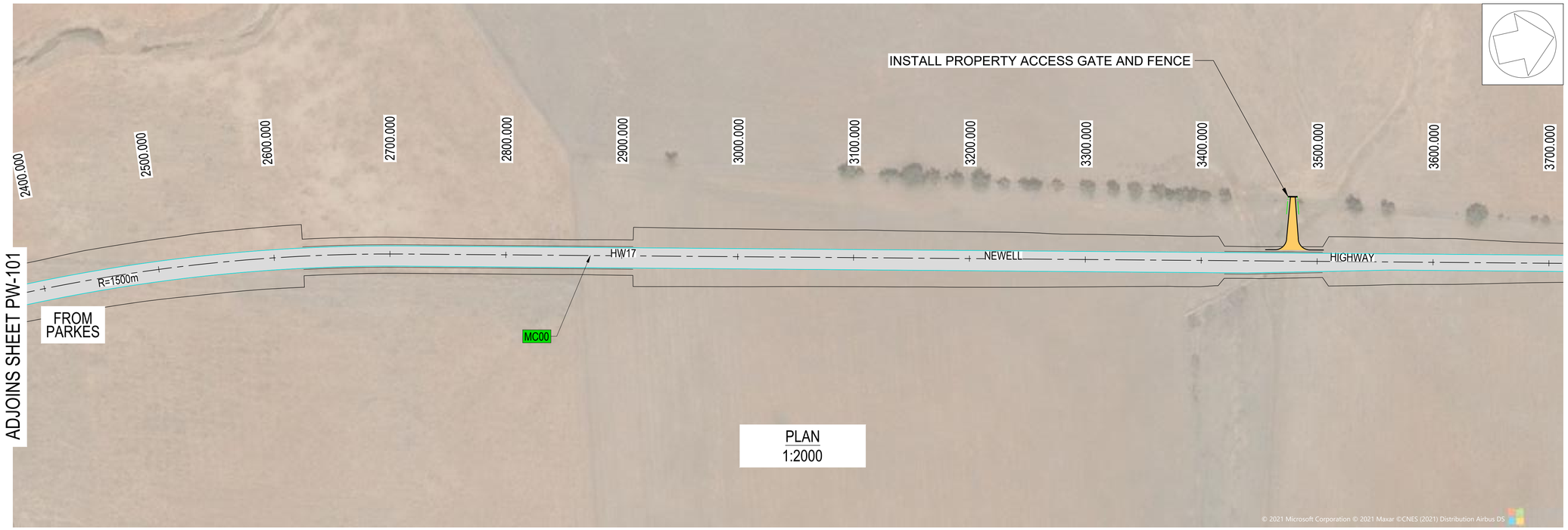
50% CONCEPT DESIGN

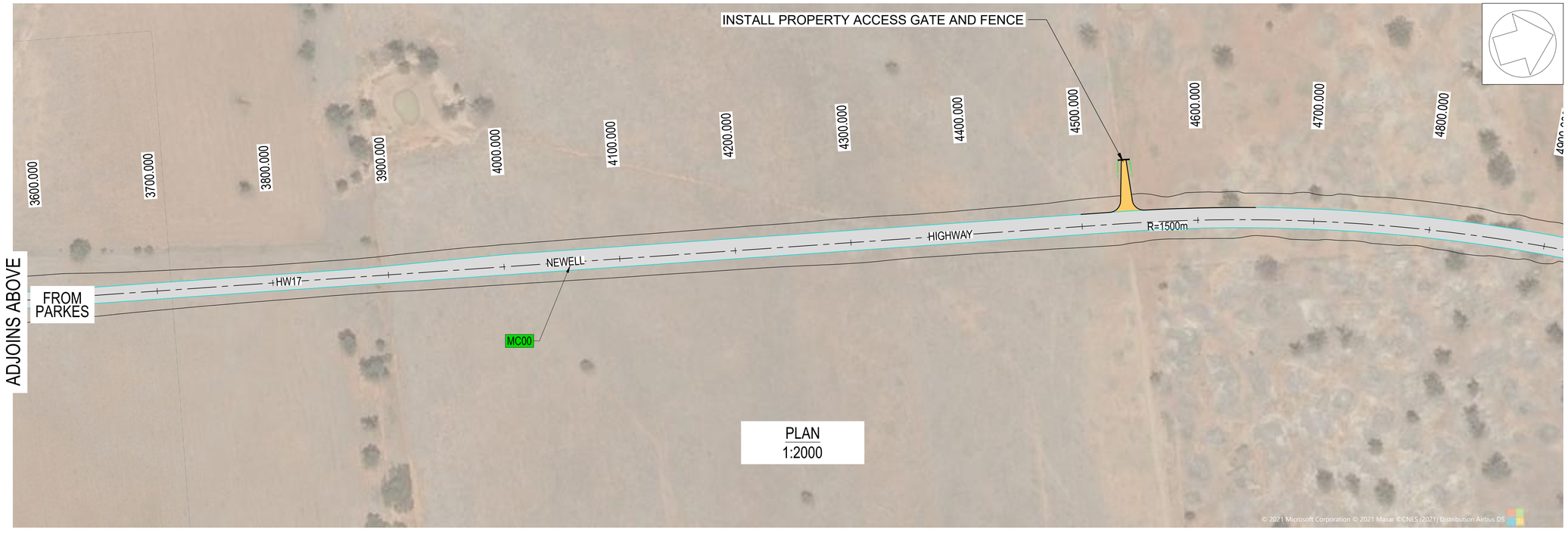
TfNWS REGISTRATION No.	SIZE
TBC	A1
DRAWING NUMBER	**REV**
PW-101	1



PLAN
1:2000

LEGEND

- CONTROL LINE
- DESIGN VERGE
- DESIGN BATTER



PLAN
1:2000

0 60 120
Meters

REV	DATE	REVISION DETAILS	APPROVED
1	15-07-21	50% CONCEPT DESIGN CLOSE-OUT	SOR
0	14-05-21	50% CONCEPT DESIGN FOR CLIENT & TfNSW REVIEW	SOR
D	12-05-21	50% CONCEPT DESIGN FOR INTERNAL REVIEW	SOR

DRAWN	DESIGNED	CHECKED	APPROVED
L.BAYNHAM	L.BAYNHAM	S.O'ROURKE	S.O'ROURKE

PROJECT
NARROMINE SHIRE COUNCIL, HW17 - NEWELL HIGHWAY DEVIATION
56.3km TO 64.1km NORTH OF PARKES

DRAWING TITLE
PROPERTY PLAN - SHEET 2 OF 4

CLIENT
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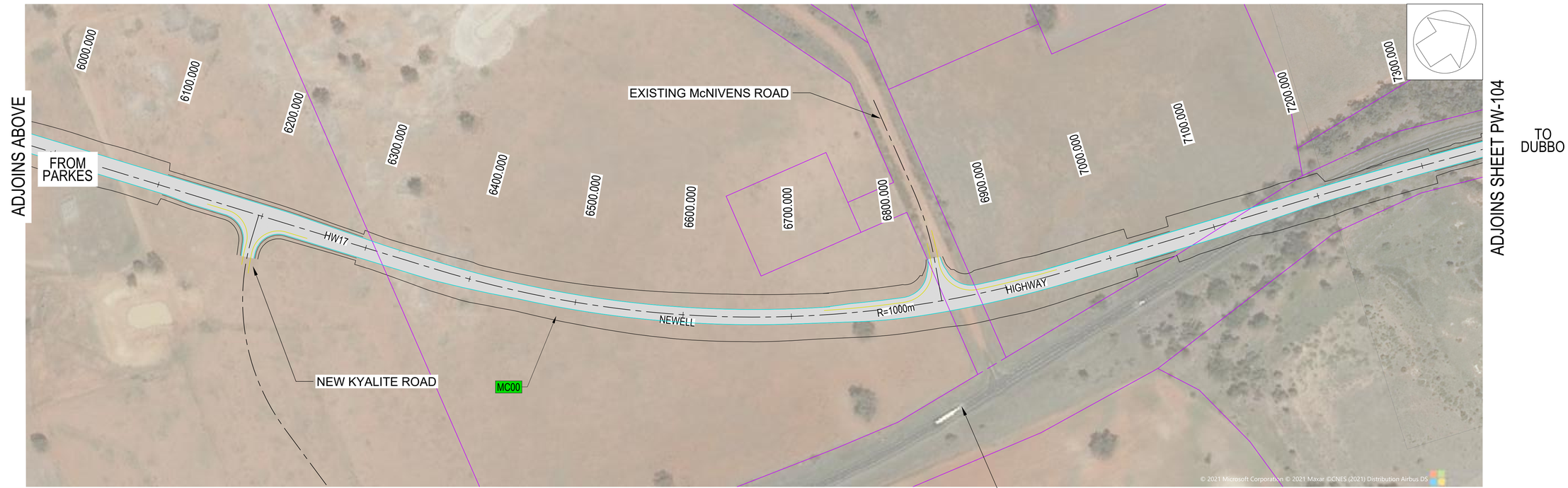
50% CONCEPT DESIGN

TfNWS REGISTRATION No.	SIZE
TBC	A1
DRAWING NUMBER	**REV**
PW-102	1

PLAN
1:2000

LEGEND

- CONTROL LINE
- DESIGN VERGE
- DESIGN BATTER



PLAN
1:2000

0 60 120 Meters

REV	DATE	REVISION DETAILS	APPROVED
1	15-07-21	50% CONCEPT DESIGN CLOSE-OUT	SOR
0	14-05-21	50% CONCEPT DESIGN FOR CLIENT & TfNSW REVIEW	SOR
D	12-05-21	50% CONCEPT DESIGN FOR INTERNAL REVIEW	SOR

DRAWN	DESIGNED	CHECKED	APPROVED
L.BAYNHAM	L.BAYNHAM	S.O'ROURKE	S.O'ROURKE

PROJECT
NARROMINE SHIRE COUNCIL, HW17 - NEWELL HIGHWAY DEVIATION
56.3km TO 64.1km NORTH OF PARKES

DRAWING TITLE
PROPERTY PLAN - SHEET 3 OF 4

CLIENT
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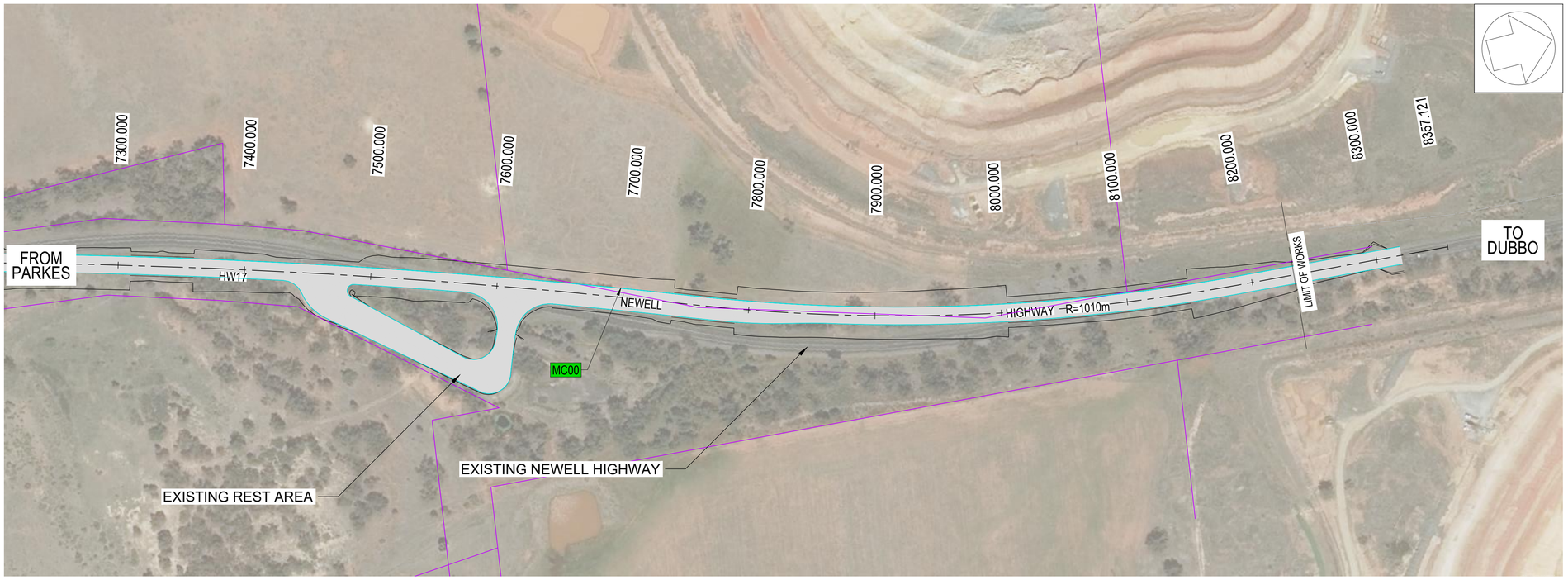
TfNWS REGISTRATION No.	SIZE
TBC	A1
DRAWING NUMBER	**REV**
PW-103	1

ADJOINS SHEET PW-103



LEGEND

- CONTROL LINE
- DESIGN VERGE
- DESIGN BATTER

PLAN
1:2000

0 60 120 Meters

REV	DATE	REVISION DETAILS	APPROVED
1	15-07-21	50% CONCEPT DESIGN CLOSE-OUT	SOR
0	14-05-21	50% CONCEPT DESIGN FOR CLIENT & TfNSW REVIEW	SOR
D	12-05-21	50% CONCEPT DESIGN FOR INTERNAL REVIEW	SOR

DRAWN	DESIGNED	CHECKED	APPROVED
L.BAYNHAM	L.BAYNHAM	S.O'ROURKE	S.O'ROURKE

PROJECT
NARROMINE SHIRE COUNCIL, HW17 - NEWELL HIGHWAY DEVIATION
56.3km TO 64.1km NORTH OF PARKES

DRAWING TITLE
PROPERTY PLAN - SHEET 4 OF 4

CLIENT
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TfNWS REGISTRATION No.	SIZE
TBC	A1
DRAWING NUMBER	REV
PW-104	1

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