

Endorsed



Date: 30 September 2022

# TRAFFIC MANAGEMENT STRATEGY

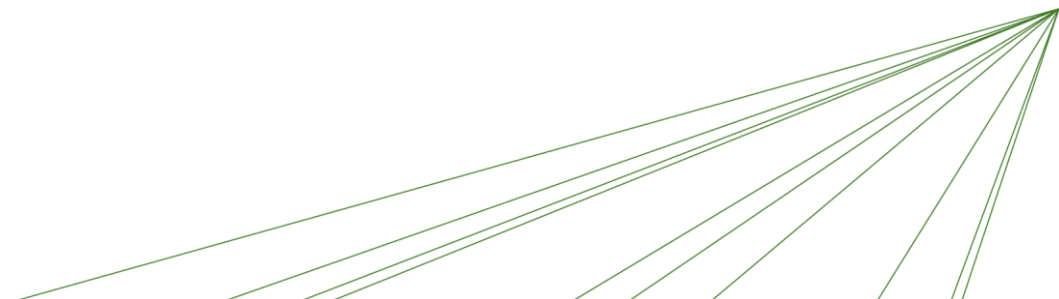
## NEW BRIDGEWATER BRIDGE

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 PROJECT: NEW BRIDGEWATER BRIDGE PROJECT  
 LOCATION: BRIDGEWATER, TASMANIA, AUSTRALIA  
 PROJECT NO: 2024

Revision History

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# 1 INTRODUCTION & CONTEXT

## 1.1 Purpose

This Traffic Management Strategy (TMS) and the broader Project Management System describe the strategic and methodological management approach to be used by MCD for the delivery of the New Bridgewater Bridge Tasmania.

This Traffic Management Strategy has been developed by a suitably qualified person to set the goals, principles, and initiatives that will guide the development, delivery and ongoing review of traffic management for the life of the Project.

Our Traffic Management Strategy is the highest-level controlling document within the traffic management discipline. It ensures that traffic management activities undertaken by MCD are compliant with PSR and AS1742.3 Part 3: Traffic Control Devices for Works on Roads requirements and will consistently work towards the same set of priorities and principles.

This strategy aims to provide guidance to:

- Provide a safe environment for the public and construction personnel
- Minimise the impact on and disruption to traffic
- Cater for the needs of all traffic including drivers, pedestrians and public transport users
- Communicate Special Event Impacts to the public and road users
- Coordinate traffic management and communication with other contractors regarding planned works within and around the site
- Monitor the performance of the impacted roads during the delivery phase
- Maintain consistent traffic management treatment along road corridors
- Minimise public interaction with construction vehicles and activities
- Minimise delays and disruption to all road users
- Provide road users with information required to plan their journeys during the works
- Minimise disruptions to affected businesses, properties and land adjacent to the construction works
- Ensure the latest standards in relation to traffic management are followed

The safety of project personnel, road users and the general public is of paramount importance to MCD. This TMS will ensure the planning, design, and implementation of the Local Traffic Management Plans (TMPs) that provide a safe and practical environment for all.

## 1.2 Project Background



**Figure 1-1: Photograph of Current Vertical Lift Bridge completed in 1946**

The Australian and Tasmanian governments have committed \$786 million to the new river crossing at Bridgewater, which is the largest ever investment in a single transport infrastructure project in Tasmania's history.

The Bridgewater Bridge is a critical part of the transport and freight link between the state's north and south, and the project will support growth and commercial development in Hobart's outer northern suburbs.

The road and rail bridge carries the Midland Highway and South Railway Line across the Derwent River connecting Granton and Bridgewater. The steel truss vertical lift bridge and specially-built (built in early 1800's convict labour) causeway connect the Hobart suburbs of Bridgewater and Granton. Completed in 1946, the bridge accommodates a two-lane highway, a single-track railway, and a grade-separated footpath.

There are a number of network performance and safety issues associated with the existing bridge which impact road and vessel movements. The reliance on lift span operations for marine vessels can cause highway traffic delays, particularly during peak holiday periods, and the existing bridge maintenance costs are significant.

Final design for the new bridge and interchanges includes two lanes in each direction and new interchanges at Bridgewater and Granton.

Other features include:

- a speed limit of at least 80km/h
- a shared path for cyclists and pedestrians
- safety screens and barriers
- a navigation clearance consistent with the Bowen Bridge
- a grade separated interchange will connect the Brooker and Lyell highways
- better connections to local roads in Bridgewater and Granton.

Significant construction work will also include:

- earthworks, including cuttings and embankments and retaining walls to support the new bridge approaches and road upgrades

- temporary ancillary facilities during construction including water quality controls, site offices, construction/demolition compounds, pre-cast production and batching plants, stockpile sites
- permanent operational water quality controls and noise mitigation
- utility relocations
- temporary traffic staging
- site rehabilitation and landscaping works.

### **1.3 Objectives**

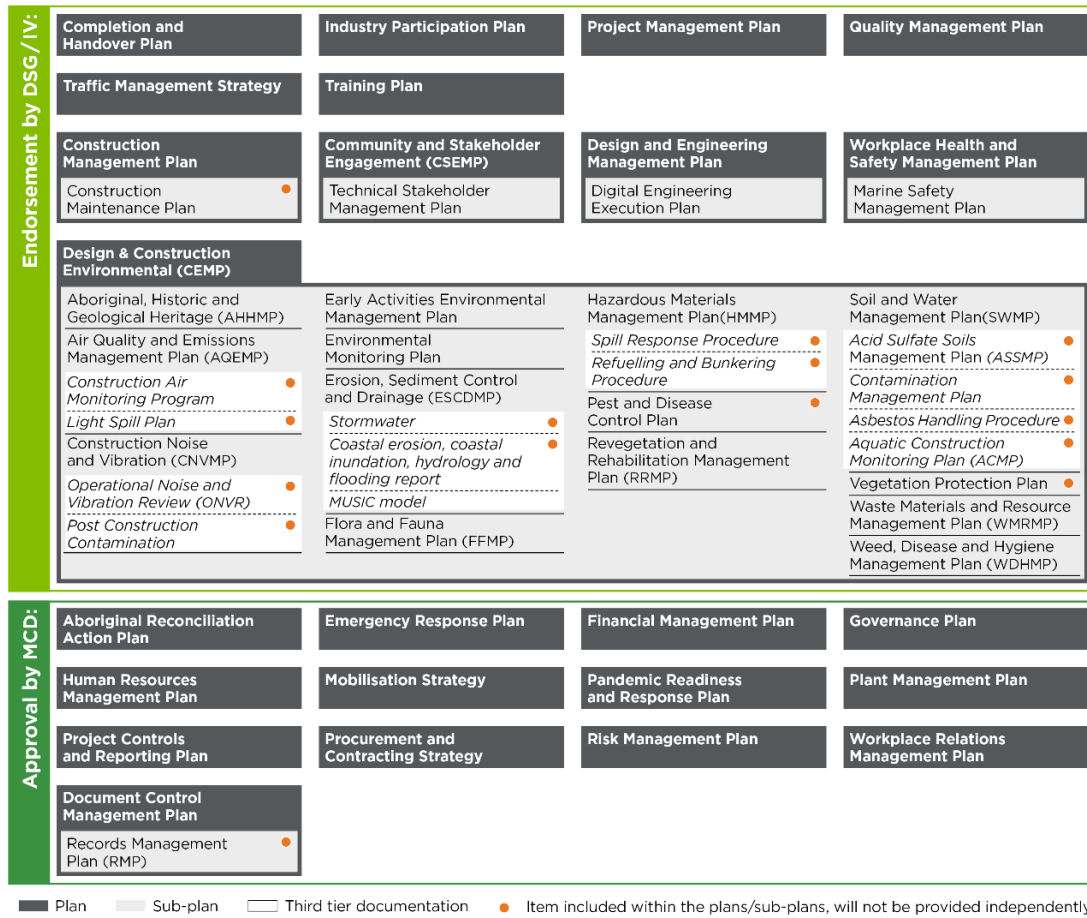
The specific objectives of the Plan are as follows:

- Protect road user and worker safety
- Minimise network impact
- Deliver reliable, optimised travel times
- Protect MCD's reputation and brand
- Efficient and dynamic planning based on network intelligence
- Early and frequent user communication and engagement
- Safety-first culture led from the top-down
- Consistent, predictable traffic management and diversion configurations
- Consider the needs of active transport users
- Coordinate effectively with interfacing Road Operators on incident response

This Strategy details the strategic objectives and initiatives and broad approaches required to achieve safe and efficient traffic management across the Project Term, supporting the Development Activities and optimising the experience of users.

### **1.4 Relationship to Other Plans**

The list of project plans and approvers can be found in the figure below.



**Figure 1-2: Management Plans**

More specifically, this Plan shall be read in conjunction with the project management plans listed in the table below as well as the MMS procedures and processes referenced within:

**Table 1-1: Other Specific Project Management Plans**

Management Plan Number	Management Plan Title
2024-MCD-0000-PLA-PRJ-0029	Quality Plan
2024-MCD-0000-PLA-PRJ-0027	Project Management Plan
2024-MCD-0000-PLA-PRJ-0008	Design & Construction Environmental Management Plan
2024-MCD-0000-PLA-PRJ-0009	Design and Engineering Management Plan
2024-MCD-0000-PLA-PRJ-0010	Community and Stakeholder Engagement Management Plan
2024-MCD-0000-PLA-PRJ-0039	Workplace Health and Safety Management Plan
2024-MCD-0000-PLA-PRJ-0033	Traffic Management Strategy
2024-MCD-0000-PLA-PRJ-0034	Training Plan
2024-MCD-0000-PLA-PRJ-0013	Emergency Response Plan

## 1.5 Abbreviations, Terms and Definitions

Aconex	Electronic Document and Records Management System for the project
AS	Australian Standard
DSG	Department of State Growth
EAD	Early Activities Deed
ERP	Emergency Response Plan
IV	Independent Verifier
KPI	Key Performance Indicators
LOS	Level of Service
MCD	McConnell Dowell
MMS	McConnell Dowell Management System
NBB	New Bridgewater Bridge
PTMP	Project Traffic Management Plan
PSTR	Project Scope and Technical Requirements
ROL	Road Occupancy License
RSA	Road Safety Audit
SUP	Share user Path
TCP	Traffic Control Plan
TGS	Traffic Guidance Scheme
TMLG	Transport Management Liaise Group
TMP	Local Worksite Traffic Management Plan
TMS	Traffic Management Strategy
VMS	Variable Message Signs

## 1.6 Compliance Matrix

Table 1-2: Compliance with the Deed/PSTR Matrix

PSTR Requirement	Sub-Requirement	Plan Reference
35.8 (a) The Contractor's Project Traffic Management Plan must identify how the Contractor will comply with the traffic management requirements of the D&C Deed to the satisfaction of the Department and all relevant Authorities		TMS - Section 1.6 (this Section)



PSTR Requirement	Sub-Requirement	Plan Reference
35.8 (b) The plan must provide for constant monitoring and review of Work under this D&C Deed to ensure continued compliance with the Contractor's Project Traffic Management Plan.		TMS section 1.4 and section 7 for monitoring
35.8 (c) The Contractor's Project Traffic Management Plan must comply with the requirements of the D&C Deed, including the PSTR, and address the following key issues:	I. the requirements of section 2.8 of the PSTR;	TMS section 7 and 10
	II. the requirements of PSTR Appendix 12 for traffic and transport management during the Work under this D&C Deed;	TMS section 3 and 4
	III. safety and amenity of road users and the public;	TMS Section 5 – Construction & Traffic Interface
	IV. temporary lane or road closures, detours and other disruptions to traffic flows and access for pedestrians, cyclists and disabled persons including identification of additional traffic generated on Local Roads as a consequence of these disruptions;	Section 5, 10 and Appendix A
	V. provisions for monitoring Local Roads affected by the D&C Activities;	TMS section 7
	VI. site security, site access and signage, including a schedule of temporary signage required for the D&C Activities;	TMS section 5.9,
	VII. Project identification including signs to acknowledge Government initiatives;	Section 5.9
	VIII. traffic (or road user) delay management;	TMS section 7 Traffic monitoring
	IX. numerical identification of structures;	Section 5.8 Refer to MCD-RFI-000113 for request to State for information
	X. speed limit signage;	Section 5.9
	XI. traffic transfer arrangements and procedures;	TMS section 5.10

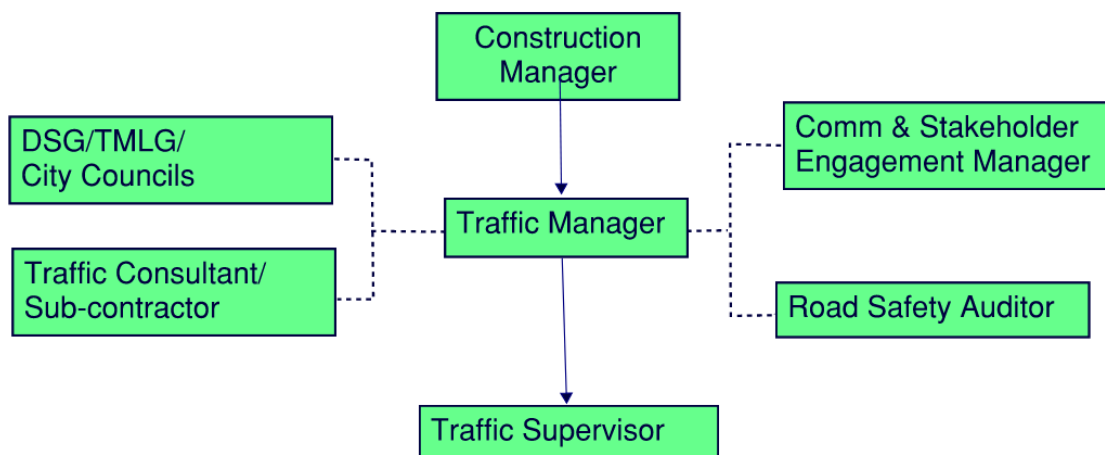
PSTR Requirement	Sub-Requirement	Plan Reference
	XII. provisions for special events;	TMS section 6.4
	XIII. provisions for maintenance;	TMS section 7
	XIV. frequency of inspections; and	TMS section 7
	XV. emergency and local Incident response plans.	TMS section 8
35.8 (d) The Contractor's Project Traffic Management Plan must contain details of the traffic management responsibilities of all relevant construction staff in regard to all aspects of the D&C Activities, including maintenance during construction.		TMS - section 2
35.8 (e) The Contractor's Project Traffic Management Plan must contain a draft of all traffic control plans to be submitted and/or approved by the relevant Authority for the Work under this D&C Deed.		TMS section 10 and appendix A Detailed Local TMP with TCP will be submitted progressively
<b>Major Project Permit No.: MPP2201 requirements</b>		
31. Prior to the commencement of works that impact on traffic, a Construction Traffic Management Strategy prepared by a suitably qualified person, must be provided to the satisfaction of the Commission, and provided to Derwent Valley, Glenorchy and Brighton councils for information		TMS section 1. Construction Traffic Management Strategy is developed by suitably qualified person
32. The Construction Traffic Management Strategy must include:		
	32.1. details of how advice of delays to motorist will be communicated;	TMS section 7 Traffic Monitoring and section 6
	32.2. consideration of all property access and road uses including vehicles, light and heavy, public transport, pedestrian and cyclists;	TMS section 5 and section 10

PSTR Requirement	Sub-Requirement	Plan Reference
	32.3. how contractor parking will be managed to minimise impact on public on street parking;	TMS section 5.7. Further details will be provided in TMP
	32.4. measures to minimise adverse impact on access for commercial and residential properties;	TMS section 5.4 and section 10
	32.5. details of the staging of construction outside and within the existing road network;	TMS Section 10
	32.6. a requirement to maintain at least 1 lane of traffic flow in each direction along the Midland Highway, except that traffic may be stopped for the purposes of raising the lifting span on the existing bridge for operational and maintenance purposes, and traffic may be stopped in one or both directions for short periods for the purposes of construction of specific work (including installation of bridge spans, street lighting, gantries and other overhead structures) which cannot safely be constructed without affecting traffic, in which case such periods shall be minimised to the maximum extent permissible;	TMS section 3.2 and section 10
	32.7. utilising existing road corridors (such as Old Main Road), new road corridors, or Crown land located between existing and new road corridors, as detour routes whilst interchanges are under construction;	TMS section 10.2
	32.8. advanced warning signage placed on the southern approach to the Bowen Bridge on the Brooker Highway (prior to Elwick Road junction) and Midland Highway on the northern approach to the East Derwent Highway roundabout to provide a detour route and reduce traffic flow through the construction site;	TMS section 7. Further advance signs details will be provided in the local TMP
	32.9. a requirement that a construction traffic management plan be prepared in accordance with Australian Standard, AS1742.3:2019; and	TMS section 1 and section 11
	32.10. details of how public access to the playground and informal walking track at Nielson Esplanade will be retained during construction.	TMS section 10.2. Further details will be provided in site specific local TMP

## 2 ROLES AND RESPONSIBILITIES

MCD will establish a traffic management team to implement this TMS and develop site specific local TMPs/TCPs for each traffic stage and major traffic events in accordance with the strategies outlined within this PSTR and AS1742.3 and Traffic Control for Works on Roads – Tasmania Guide.

The team will lead by Traffic Manager, Figure 1 outlines the traffic management team structure for the Delivery phase of the Project.



Key roles and responsibilities relating to the development and the implementation of the TMP are described below.

### 2.1 Construction Manager

The Construction manager is responsible for:

- Ensuring all work under the Area Manager’s control is planned in a manner that both considers and adapts to traffic management impacts and issues.
- Verifying that all staff assigned to this project are adequately qualified and/or experienced in their relevant technical discipline to perform the duties of their position in a satisfactory manner.
- Ensuring that all staff carrying out functions, which would affect or be affected by, traffic management, are adequately trained.
- Verifying that all staff are familiar with the MCD procedures and have ready access to them.
- Ensuring that the project is appropriately resourced to ensure that the required objectives for traffic management are achieved.
- Advising the project manager of any changes in operating procedures.

## 2.2 Traffic Manager / Traffic Engineer

The Traffic Manager is responsible for:

- Establish and manage the Traffic Management team.
- Develop Construction Traffic Management Strategy
- Attend and contribute to the consultative processes required to gain input for and approval of the TMPs, including the Traffic & Transport Liaison Group (TTLG).
- Ensure the wider New Bridgewater Bridge Project team understands traffic management activities and actively communicates Project traffic requirements and expectations.
- Engaging suitable, prequalified specialist traffic management consultants and subcontractors for the planning, implementation and review of Local Worksite Traffic Management Plans.
- Ensuring all workers and subcontractors under the control of the Traffic Manager are properly inducted and instructed in the requirements of the Traffic Management Strategy (TMS) pertaining to their part of the work.
- Ensuring traffic management performed by subcontractors complies with the TMS and is co-ordinated with other traffic management on site.
- Ensuring on a daily basis that all signage and traffic barriers are in place in accordance with the approved Worksite Traffic Management Plans (TMP) via completion of relevant TMP checklists
- Engaging road safety audits (where required under the PSTR) and implementing actions from road safety audits into revised TMP.
- Development and documentation of detailed worksite traffic management plans in consultation with the construction manager.
- Providing industry best practise advice for the management of traffic operations; and undertaking traffic analysis of existing traffic conditions to verify the adequacy of any proposed TMP.
- Develop and maintain, in consultation with the Communications and Community Engagement team, a strong relationship with DSG, Councils and other parties relevant to traffic associated with the Project.
- Management of the timely development of Local Traffic Management Plans and Traffic Guidance Schemes/Traffic Control Plans.
- Management of Subcontractors preparing Traffic Management Plans, Traffic Guidance Schemes and associated activities, including traffic analysis, on-road advance information signage (variable message signs and static signs) and monitoring equipment.

## 2.3 Traffic Supervisor

The Traffic Supervisor is responsible to the Traffic Manager for:

- Conformance of all operations under the Traffic Supervisor's control to the required standards of traffic management operations.
- Assisting the construction manager and traffic manager in the management of the traffic management subcontractors.
- Identifying and recommending solutions to any traffic management issues.

## 2.4 Communications and Stakeholder Engagement Manager

The Communications and Stakeholder Manager is responsible to the Project Director and working closely with the Construction Manager and Traffic Manager for:

- Direct contact for the public/local community regarding any disruptions due to traffic management.
- Producing, reviewing and performing the functions required in communication plans.
- Provide public relations advice to key project managers as required.
- Identifying and recommending solutions to public complaints on traffic management issues.

## 2.5 Road Safety Auditor

The Road Safety Auditor is responsible to the Traffic Manager for:

- Undertaking independent desktop Road Safety Audits of the long-term Traffic Management Plans/ Traffic control plans.
- Onsite post-implementation audits for long-term TCPs.
- Provision of industry best practice advice for the management of traffic operations.
- Ongoing advice on any road safety concern noticed by MCD or raised by stakeholders.

MCD will engage Senior Road Safety Auditor to undertake audits on the long-term traffic control plans.

# 3 OPERATIONAL REQUIREMENTS

## 3.1 General

(a) The D&C Activities must comply with the following:

- i. construction works must not extend over more than 7 KM of a through carriageway at any one time; and
- ii. the sharing of a single trafficable lane by traffic traveling in two (2) opposing directions of flow at any one time (through the use of slow/stop signs or portable traffic signals) is not permitted.

(b) During the D&C Activities temporary traffic lanes must be a minimum of 3.2m in width. Inside and outside shoulders of minimum width 0.5 meters must be provided at all times.

(c) As a condition precedent to the closure of any part of the Existing Bridgewater Bridge for the purpose of carrying out D&C Activities, one two-lane carriageway of the New Bridgewater Bridge must be opened to traffic.

## 3.2 Lane Availability

(a) For the duration of the D&C Activities, the Contractor must ensure that at least the following lane availability (including ramp lane availability) is provided along the Brooker Hwy and Midland Hwy route:

- (iii) one (1) lane in each direction suitable for a posted speed limit of 60kph at all times, except short term requirements of 40 km/h posted speed (only when approved by the State's Representative)

and in accordance with AS 1742.3 where workers on foot within 1.2m from the live traffic lane where no protective barrier can be provided.

## 4 PROJECT TRAFFIC MANAGEMENT PLAN

### 4.1 Traffic Management Strategy

The Traffic Management Strategy (TMS) or PSTR definition Project Traffic Management Plan (this document) identifies and defines the requirements, management processes, obligations and responsibilities for traffic management during the construction of the Project in accordance with the Project objectives and requirements under PSTR. The procedures and processes described in this TMS and other Sub-plans will ensure that all statutory and Project specific conditions as defined in the applicable codes, performance specifications and the contract are complied with during the construction of the Project.

This TMS will outline the overall traffic management arrangements, durations, impacts and mitigation strategies for a particular area and outline how work activities will be carried out in a safe and efficient manner.

The TMS details the specific road safety and traffic management measures that will be applied by the MCD whilst undertaking the construction works. The TMS is based on the principles and the obligations under the PSTR Appendix 35, Appendix 12, Australian Road Rules, MUTCD, Austroads Guide to Traffic Management and the requirements of relevant road authorities standards, guidelines and other key stakeholders. The TMS identify the construction impacts resulting from the proposed work activities involved, provide a detailed assessment of these impacts and describe the control measures that will be applied to address the impacts on the existing road network and the local community. Compliance with all project requirements will also be demonstrated in the TMS. The TMS also include the associated preliminary traffic control plans:

**Table 4-1: Project Traffic Management Plan Framework**

#### Traffic Management Strategy (TMS)

- Is the principle document from which individual Local TMPs and TCPs will be developed;
- Outlines the overall traffic management methodology for the delivery phase including preliminary traffic staging plans
- Outlines the requirements and management processes for traffic management activities
- Outline the obligations and responsibilities of MCD for the project



#### Local Traffic Management Plans (TMP)

- Outlines the overall traffic management arrangements (including TCPs) for each specific project area:
  - Southern Interchange
  - Northern Interchange
- Details specifics of the overall works area such as construction activities, work hours and durations, traffic impact including remedial measures required for the traffic operations, public transport and pedestrian movements specific local impacts and mitigation strategies and access arrangements to properties
- Outlines how work activities will be carried out in a safe and efficient manner specific to each area
- Consultation and communication of impacts



#### Traffic Control Plans (TCP) / Traffic Guidance Schemes (TGS)

- Are prepared for each construction sequences identified in area specific TMP
- Are a basis for design for temporary traffic works approved in the area TMP
- Each TCP for sequence will be detailing:
  - Details of all roadways, lane or road closures
  - Traffic barrier types, locations, details, extents, and terminal end treatments.
  - Details Vertical and horizontal geometry of affected roads, pathways and the like,
  - Drainage provisions, including aquaplaning prevention measures and pavement drainages
  - Pedestrian and cyclist provisions
  - Public transport provisions
  - Parking provisions
  - Construction site egress
  - Access provisions for business and their customers;
  - Services access
  - Lighting provisions including temporary lighting
  - Workers and road user safety provisions
  - Independent Road Safety audit and;
  - Additional traffic modelling / analysis provided as appropriate or requested by the relevant Authority

TCP will be included detailed drawings identifying the nature and location of all temporary measures contemplated including, delineation, traffic barriers, surface finishes and traffic signs and lines



## 4.2 Local Traffic Management Plans

Local Traffic Management Plans (TMPs) will be produced for the components of the Works that have an impact on and around existing roadways.

The Project corridor is to be divided into two works precincts. The separate TMP will be developed for each of the precinct areas.

1. Southern Interchange
2. Northern Interchange

A Local Traffic Management Plan (TMP) will be prepared for each above area and additional local TMPs will be developed for any major traffic impact events. In accordance with the section 12.2.3.2 of the PSTR Appendix 12 each Local TMP will include as a minimum;

- Details of the location, nature and duration of the works
- describe traffic arrangements which provide for any necessary sequencing of the D&C Activities while minimising disruption and confusion to motorists, traffic on roads surrounding the Construction Site, emergency vehicles, pedestrians and bicyclists;
- provide details of how safety will be maintained for all workers and road users on the Construction Site and on the roads surrounding the Construction Site that are affected by the D&C Activities, including vehicle occupants, pedestrians, bicyclists and workers;
- provide details of the process proposed for consultation with, and notification of the community, businesses and road users in advance of the alterations to existing traffic conditions. Timely notification must be given to the Department, the travelling public, emergency services, adjacent landowners and businesses of impending changes to traffic conditions. This process must take cognisance of any requirements of the State's Representative with respect to public notifications;
- provide details of how the effect of construction on the road network external to the Construction Site will be minimised or eliminated wherever possible;
- provide details of how the Contractor will make provision for the passage of over dimension, over weight and hazardous / dangerous goods vehicles;
- provide details of how the Contractor will make provision for emergency vehicles, including details of access to and through the Construction Site;
- provide details of how the Contractor will make provision for crossing of the trafficked highway lanes;
- provide details of the Contractor's provisions for pedestrians and bicyclists;
- provide details of how the Contractor will make provisions for Tasmania Police to carry out law enforcement;
- provide details of the Contractor's provisions for maintaining access to private properties;
- provide details on the participation of a senior member of the Contractor's site personnel on the traffic and transport liaison group;
- include the names and contact details of the Contractor's nominated out-of-hours traffic representatives;
- provide details of the Contractor's organisational structure for traffic management issues, which must include a list of the duties and responsibilities of each position nominated in that structure;
- include the requirements of a check list for audit purposes; and
- be consistent with all relevant Design Documentation and all relevant Design Reference Documents.

Each TMP will outline the overall traffic management arrangements, durations, impacts and mitigation strategies for a particular area and outline how work activities will be carried out in a safe and efficient manner. Additional TMPs will be added when the need arises – such as sub-phases of road construction. Long-term construction traffic control plan (TCP) for the related phase will be included in the TMP.

#### **4.2.1 SUBMISSION PROCESS FOR LOCAL TMP**

In accordance with the section 12.2.3.3 of the PSTR Appendix 12, MCD will:

- a) Prepare and obtain consent for each Local TMP from the Department and all relevant Authorities. Each Local TMP is a Project Plan for the purposes of the D&C Deed.
- b) Prior to submitting each Local TMP to relevant Authorities for consent, each Local TMP must be submitted to the State's Representative and the Independent Verifier pursuant to Clause 2.10 of the D&C Deed and the State's Representative and the Independent Verifier must not have given a notice under Clause 2.10(c)(ii) of the D&C Deed.
- c) A copy of each Local TMP consented to by all relevant Authorities must be submitted to the State's Representative and the Independent Verifier 15 Business Days prior to the date of commencement of construction activities within the area of the respective Separable Portion.
- d) Each consented Local TMP must be implemented and monitored to ensure that it is continually effective and be further developed where necessary and in response to incidents and traffic disruptions.
- e) Revisions of a Local TMP will be prepared and submitted to the relevant authorities and the State's Representative and the Independent Verifier according to the processes noted above.

### **4.3 Traffic Control Plan**

In accordance with the requirements of the PSTR 12.2.4, MCD will submit a Traffic Control Plan/Traffic Guidance Scheme (TCP) with each application for a ROL. Each TCP will clearly detail the revised traffic arrangements at all locations affected by a road occupancy (including Lane Closure or Posted Speed Reduction). Each TCP will include the following details:

- details of all Temporary Roadways, detours, traffic infrastructure and lane closures;
- details of measures to avoid and manage delay and ensure the safety of all road users;
- details of provisions for over-dimension, overweight and hazardous/dangerous goods vehicles, including those detailed in the Design Documentation;
- details of provisions for emergency vehicles;
- details of provisions for Tasmania Police to carry out law enforcement;
- details of provisions for the crossing of highway trafficked lanes;
- details of provisions for pedestrians and bicyclists;
- details of how the community is to be informed in relation to the proposed changes to pre-existing traffic arrangements;
- documentation or fully dimensioned drawings that show:
  - a. temporary signing, including electronic signage;
  - b. other traffic control devices including temporary barriers, barrier terminals, Temporary Pavement Markings and temporary islands;
  - c. the method by which the construction work zone will be physically and visually isolated from road users to create a safe construction environment
- details of how local access to communities and adjacent businesses and private properties will be maintained;

- details of the anticipated effects of construction work on the road network external to the Construction Site and how those effects will be minimised and eliminated wherever possible; and
- a statement of confirmation that the TCP complies with the TMS and the relevant Local TMP.

#### **4.4 Worksite Traffic Management – Hierarchy of Control**

MCD will fulfill its obligations to identify, assess and control traffic hazards associated with working in the road reserve. Traffic is to be managed at a worksite according to the hierarchy of control. This “around”, “through” and “past” hierarchy of traffic management is Austroads best practice and shall be reflected in the local TMP.

- Traffic AROUND the work area – this is the preferred method where available. It requires traffic to be guided around a work area using a detour on other existing roads or on specially constructed side-track. Requirements and recommendations for the operation of side-tracks, detours and temporary crossovers (contraflow) on divided road as given in AGTTM Part 3.
- Traffic THROUGH toe work area – except as provided for short term and low impact works, passage of traffic through a work area will only be permitted where both the traffic and the work can be adequately controlled. Traffic control though use of Portable Traffic Control Devices (PTDC) or manual traffic control are employed as necessary to slow traffic on the immediate approach to an active work area, to stop traffic for short period when required for the movement of plant or other operations or control single line shuttle working.
- Traffic PAST the work area – this is the most complex method of traffic management at sites where complete elimination of traffic from the site is not practicable. Traffic paths past the work area involve a combination of lateral separation, clear warning and delineation.
- Short term / low impact – the control will be applied in situations recognise that the nature of the works is of such low impact that implementing a complex traffic management scheme is likely to increase the overall risk for all workers at site. Traffic management under the “THROUGH” and “PAST” and categories can apply in a short term / low impact situation.

#### **4.5 Control of Traffic Management Plans**

The TMS and all sub-plans and records generated or provided for and during the operation/occupation of the New Bridgewater Bridge Project shall be controlled in accordance with Quality Procedure and Document Control – Project Document, Data and Records Procedure and shall be available for audit purposes.

The Quality Manager issues-controlled copies of the TMS to persons on the distribution list of controlled copies. The Quality Manager records the issue of all copies of the TMS on a Controlled Document Register, which is held on site.

The Plan will be updated to include improvement arising from any reviews and audits of the performance outcomes of the Project Plans and from the DSG, and the Project Certifier.

## 5 CONSTRUCTION & TRAFFIC INTERFACE

### 5.1 Pedestrian & Bicycle Movements

Pedestrian and bicycle provisions will be maintained all time.

For the Northern Interchange, Pedestrian bridge on Midland Highway will remain open as long as possible for crossing over the Highway traffic in Stage 2. Sometime in mid-2023 temporary traffic signalised pedestrian crossing will be provided to replace the pedestrian bridge to facilitate full construction of the embankment and pavements

MCD will adopt the following process to manage impacts on pedestrian and bicycle facilities:

- Pedestrian and bicycle facilities will be maintained in their existing location throughout the construction phase where possible
- Where pre-existing engineered pedestrian and/or bicyclist pathways, including all surface types (asphalt, concrete or gravel) are impacted by the D&C Activities, MCD will provide alternative routes using temporary pathways. All temporary pathways must be of a standard not less than that of pre-existing pathways, including the standard of lighting
- Where a large volume of pedestrian and/or bicycle traffic has to cross the Construction Site, consideration must be given to directing pedestrians and bicycle traffic to suitably constructed and protected temporary crossings
- All temporary pathways and crossings must be clearly delineated, signed and fenced to prevent easy access to the remainder of the Construction Site. All required signs will be provided adjacent to the pathway to clearly indicate that access to the remainder of the Construction Site is absolutely prohibited
- No existing crossings will be closed without providing a suitable temporary alternative

MCD traffic manager and field crews will identify existing pedestrian infrastructure to determine potentially affected pedestrian and cycle facilities and identify key impacts during the preparation of the Local TMPs/TCPs.

All footpath and crossing treatments will be implemented in accordance with relevant Austroads guidance and / or similar to existing conditions, including:

- All footpaths adjacent to or within works areas will be clearly delineated, signed, and fenced to prevent access to Works areas, and will be sufficiently separated from vehicular traffic
- Pedestrians will be segregated from live vehicular traffic by fence/ safety barriers where required
- Pedestrian traffic controllers will be used where required at temporary road crossings and other areas of high pedestrian usage, or where safety issues exist for short term works
- Temporary fencing and signage will be used to prevent pedestrian access to construction areas
- Appropriate pedestrian detour signage will be provided to guide/direct pedestrians where detours and closures are in effect and minimise any inconvenience caused.

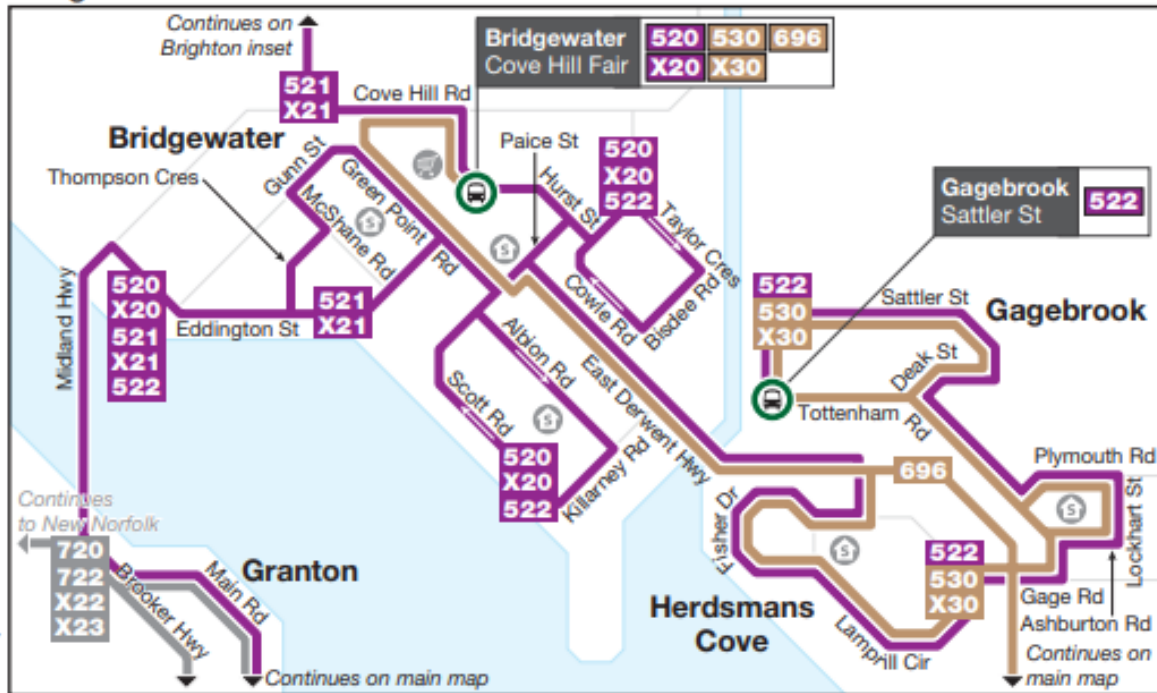
Our design of treatments will ensure that the impact on community amenity and business access and visibility is considered, through engagement with our Communications and Community Stakeholder Engagement team.

Stagewise pedestrian provisions/impacts are discussed in section 7. These will be further detailed in the local TMP and site-specific TCPs.

## 5.2 Public Transport Interface

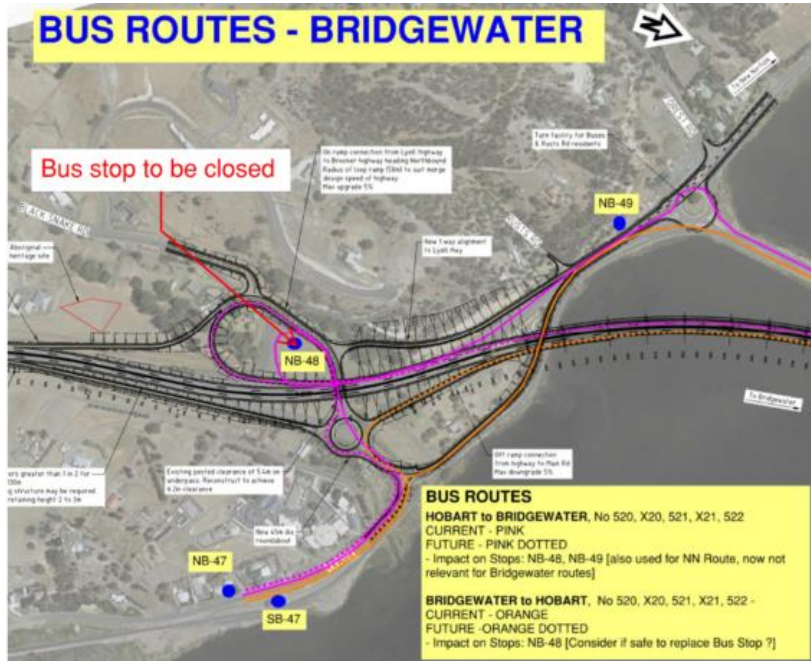
There are multiple bus routes that utilise the Midland Highway, Brooker Highway, Main Road, and Gunn Street corridor as can be seen from the current Metro Tasmania public transport network map for Bridgewater.

**Bridgewater inset**

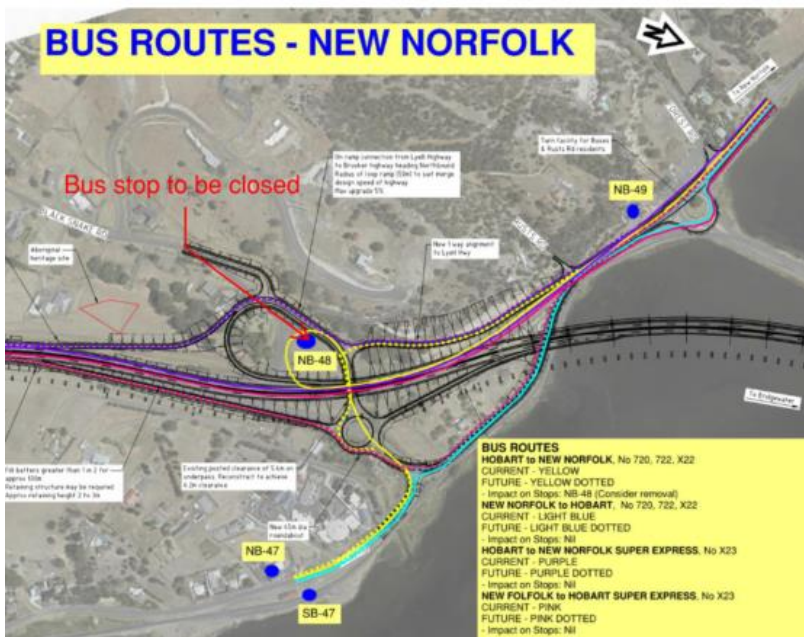


**Public Transport Impact during the interchange works:** MCD reviewed various options for constructing the southern interchange along the alignment.

**Hobart - Bridgewater (No 520, X20, 521, X21 and 522):**



**Hobart – New Norfolk (No 720, 722, X22 and X23):**



MCD will consider maintaining all existing bus stops where possible and they shall have appropriate pedestrian access to and from the location and they shall be signposted.

The bus stop on Gunn Street and Midland Highway will be required to be relocated in Stage 2.

A bus stop on the Black Snake Road northbound ramp is rarely used as such this bus stop would need to be closed. This has been agreed with relevant authority – Metro Tasmania.

This impact is further discussed in section 10 and more detail will be provided in the TMP during the delivery phase and agreed upon with Metro Tasmania.

The stakeholder and communications manager shall provide advance notice to Metro Tasmania representatives so that they inform their users of changes in a timely manner.

### **5.3 Construction Access and Egress**

The design of particular site access and egress points to / from the road network will be developed during the detailed planning of the works within Local TMP/TCPs. Measures that may be employed to control, and restrict access to the site include:

- Lockable gates
- Klemmfix
- Bollards
- Gate signs.

Where necessary, additional controls should be used to prevent tracking of dirt / mud onto the road. These controls may include wheel washes or rumble grids.

A site access / egress locality plan will be provided upon implementation of the first work zone. The site locality map is to be updated when the site access / egress points are installed or removed. The site locality map is the responsibility of the Traffic Manager.

The proposed site access points are located on the preliminary TCP which will be further updated and detailed with signs in local TMP submission.

### **5.4 Access to Properties and Businesses**

Property and business access shall be taken into consideration when creating Local Traffic Management Plans (TMP) and Traffic Control Plans (TCP). Where access cannot be maintained and is required, alternative parking shall be provided as close as practicable to where it is required. In the circumstances where this cannot be provided, other solutions may need to be considered such as conducting works outside of normal business hours.

Prior to conducting works on property access points, property owners shall be consulted to determine the best time to conduct the works that will reach a compromise of minimal impact to the property owners whilst being efficient to the construction works.

Section 10 of the TMS discussed preliminary arrangement along the Old Main Road and likely impact on properties and businesses.

### **5.5 Heavy Vehicle Routes**

A minimum lane width of 3.2m and a 0.5m shoulder between barriers will be provided throughout the project on over-dimensional routes to accommodate the majority of wide loads. Where is only one lane, barriers will be installed on only one side at a time or wider if barriers are both side on one lane carriageway then width provisions clear 5.5m to accommodate over masses vehicle will be considered in the TMP planning.

Long term traffic control plans will be checked for:

Highway - Design vehicle - B-Double and checked vehicle B-Triple swept paths and

Other roads as per PSR - B-Double vehicle swept paths.

## 5.6 Road Safety barriers

Temporary safety barriers will be used to contain and redirect errant vehicles so as to prevent them from leaving the roadway and/or entering the work site. The design of a safety barrier, including barrier end treatments, must meet the requirements specified in AS/NZS 3845.1, AS 1742.3, and the PSTR Appendix 12.

Separation requirements to work site will be finalised in accordance with the PSTR Appendix 12 Table 12.2.7-1.

**Table 5-1: Separation Requirements**

Traffic Speed	Distance from Edge Line of Traffic Lane to Hazard			
	0.5* - 3 Metres	3 – 6 Metres	6 – 9 Metres	9 + Metres
90-100km/hr	Concrete Barrier	Concrete Barrier	Water Filled Barrier	As determined by a Risk Assessment
70-80km/hr	Concrete Barrier	Water Filled Barrier	Delineation	As determined by a Risk Assessment

Note: the traffic speed during roadworks must be the highest speed, which will allow the passage of vehicles in safety, but in no instance will exceed the original posted speed prior to roadworks.

\*0.5 metre shoulder must be provided. No hazards are permitted between 0-0.5 metres from the edge line of the traffic lane.

### Concrete Barriers

Typically, Delta Bloc or J-J Hook barriers (6m units) or a similar barrier system MASH TL3 will be used throughout the Project where long-term worksites are to be established in areas with speed limits of 60km/h or less.

### Waterfilled Barriers

Waterfilled MASH TL2 or a similar barrier system will be used throughout the Project where long-term worksites are to be established in areas with speed limits of 40km/h and works occur within clear zone.

### End Treatments

The following end treatments are to be used:

- Quadguard CZ and TAU-II units' rated MASH TL3 or Absorb M TL3/TL2 rated for 80km/h will be used on highway.

## 5.7 Worksite parking

The MCD Group will provide sufficient dedicated carparking facilities in our work compounds at Northern and Southern interchange project sites.

These car parks will be of adequate size to service road and bridge construction and the daytime schedule of surface works.



## 5.8 Numerical identification of Structures

The numerical identification of structures along the project road corridor is not required in the Traffic Management Strategy. This structure number will be included in the Local TMP and TCPs and discussed if any impacts. These structure identification numbers for major structures will be obtained from DSG. This information on structure numbering has been requested via MCD-RFI-000113, once information has been received, MCD will update plans accordingly and re-issue.

## 5.9 Information signages, distance information, advance warning signs and speed limit signages

All temporary roadworks and regulatory signage will be installed in accordance with the AS 1742.3. Existing regulatory signage will be maintained and relocated as appropriate. All redundant signage will be removed.

All long term and temporary signage and equipment will comply with the requirements of the AS 1742.3, Part 3: Works on Roads and PSTR Appendix 12.7.6.

- (i) Temporary signage, including static signs and electronic signs (including VMS), will comply with the relevant provisions of PSTR Appendices 21 and 22. Motorists will be informed of proposed traffic rearrangements at least 10 Business Days before the rearrangement. This may be undertaken with static signs or VMS.
- (ii) Directional signage must be provided where a route has changed during construction and to minimise driver confusion. Directional signage must be provided on Temporary Roadways, detours, private property accesses, pedestrian and bicyclist pathways.
- (iii) Details of proposed temporary signage including speed limit signs will be included as part of each TCP.

Section 10 of this document provide our strategy on speed signs on various highway and roads as under:

Brooker Highway, Midland Highway – 60km/h speed maintained, except stage 2 Midland Highway northbound temporary diversion on the Old Main Road when speed will be reduced to 40km/hr

Black Snake Road, Main Road, Gunn St, Old Main Road – speed will be reduced to 40km/hr.

## 5.10 Traffic transfer arrangement and procedure

MCD will have the following procedure for starting traffic management works on site and for traffic transfer arrangements:

- Only traffic controllers inducted onto the project induction will be permitted to attend the worksite.
- All traffic controllers are to attend pre-start where they will be provided with information on the day's work and any changes that will take place on-site.
- Traffic Manager or supervisor will provide approved TCPs for daily works
- Traffic controllers will read and understand the pre-start document and work scope and will then provide their signatures.
- If the traffic controller is receiving a handover from another crew, then the hand over sheet/notes will be included in the pre-start.

## 6 STAKEHOLDER ENGAGEMENT & COMMUNICATION

### 6.1 Traffic & Transport Liaison Group

The Traffic & Transport Liaison Group (TTLG) will be established at the project start-up and will meet regularly to plan and manage access and monitor traffic performance along the corridor during the works. The TTLG will be a meeting convened by the Project Traffic Manager.

At each TTLG meeting, MCD Traffic Manager will present a list of TMPs, details of the timing of upcoming TMP implementations and discuss the traffic, transport and road safety matters associated with the D&C activities including:

- Safety of road users and road workers
- Construction traffic staging (existing and proposed)
- Traffic arrangement, including changes in traffic flows and traffic management works and parking restrictions
- Community concerns and comments
- Impacts on road-based public transport operations
- Impact on pedestrians and bicycle and
- Communication strategies and actions

MCD consider that as a minimum, the TTLG will comprise the following representatives:

- DSG Traffic Representative (Chair)
- DSG Stakeholder Comms Manager
- Local Council Traffic Engineer
- Tasmania Police
- Emergency Services
- Bus Operators – Metro Tasmania
- MCD Traffic Manager and Construction Representative
- MCD Community and Stakeholder Relations Manager

The traffic and transport liaison group must meet at least once every two weeks, or at such frequency that is acceptable to all members of the group. The MCD Traffic Manager will also provide an agenda and minutes of the meeting. Frequency of TTLG meeting will be discussed and agreed upon between all TTLG members. It is likely to be conducted on a monthly basis.

### 6.2 Local Council

Where required, MCD will brief the local council (Derwent Valley, Glenorchy and Brighton councils) on proposed traffic management arrangements. During these briefings, we will highlight key requirements in our TMPs and address any concerns.

We expect that the council will be primarily interested in long-term traffic management activities that change existing road geometry and conditions on local roads.

MCD will engage with the Council on a regular basis via TMLG to ensure the following key items are addressed as a minimum:

- Stakeholder awareness of proposed activities and associated traffic management.

- MCD awareness of stakeholder interests/concerns, particularly in locations that interface with schools, retail areas (i.e. shopping), and industrial sections.
- Discussion on amendments to TMPs and re-submission as required.
- Preparation and implementation of advanced communication to local residents, shared path users and road users based on accepted TMPs.

### 6.3 Stakeholder Notification Requirements

All proposed works detailed in the TMPs shall be advertised once the TMP has been approved by the State’s Representative and notification timeframes shall be in accordance with the requirements of the PSTR. These requirements will be in accordance with PSTR Appendix 12 Section 12.2.5.3 and table 12.2.5-1 and include:

**Table 6-1: Minimum Requirements for the Dissemination of Information to the Community**

Requirements	Frequency
Provide full details on the impacts of the D&C Activities on the road network and traffic systems on the project website.	Updated on a weekly basis.
Provide temporary large driver advisory advance notice static signposting on roads approaching the Construction Site. The minimum size is to be 1800 x 1200 with the design to satisfy AS 1743.	Provided at least 3 weeks prior to implementation of traffic route alterations.
Provide temporary large direction signposting to direct motorists to residences and businesses directly affected by the D&C Activities. The minimum size is to be 1800 x 1200 with the design to satisfy AS 1743.	Adhoc basis depending on impact caused by the construction work.
Provide temporary notices and signposting at bus stops detailing any changes to bus routes, bus stops, timetables and service frequencies due to the D&C Activities.	Provided at least 10 days prior to a change to any bus service.
Provide temporary notices and signposting at pedestrian and bicyclist crossings in the Construction Site and routes around the Construction Site detailing any changes to these facilities due to the D&C Activities.	Provided at least 10 days prior to a change to any pedestrian or bicycle route.
Provide variable message signs (VMSs)	Provided at least 10 days prior to implementation of traffic route alterations.
Provide radio advertising, including negotiating with each radio station and implementing a protocol for publicising every traffic change through their traffic reporters, including paid advertisements if necessary.	At least 7 days prior to any planned change in traffic conditions
Provide full details on the impacts of the D&C Activities on the road network and traffic systems in the newsletters issued as part of the community involvement and consultation process.	Every two months.

Requirements	Frequency
Provide leaflets to letterboxes of local properties, residences and businesses outlining the Project, its current and next construction stage and changes and impacts on traffic conditions, including traffic route alterations, on-street parking conditions, the number of traffic lanes and turn movements, changes to bicyclist and pedestrian crossings and access routes and changes to bus routes, service frequencies and stops.	Prepare and distribute leaflets at least two weeks prior to the start of every activity that involves a change to the road network, traffic conditions and traffic systems of three or more days duration. Distribute to all properties, residences and businesses directly affected by, and/or within 500 m of, the changes to the road network, traffic conditions and traffic systems.
Provide full details on the impacts of the D&C Activities on the road network and traffic systems in all the public displays (refer PSTR Section 9.5).	Display at least two weeks prior to the start of every activity that involves a change to the road network and traffic systems of three or more days duration
Provide e-mail, telephone and postal contacts for interaction with the community and to receive comments concerning traffic issues associated with the D&C Activities	Available at all times during the D&C Activities.
Maintain a register of all comments and complaints received from the community, including details on the date received, location, subject matter, name and address of the member of the community, actions taken, responses given and any information related to the issues. Provide a summary report to the State's Representative on the contents and status of the register.	Maintain the register continuously. Provide the report monthly
The Department maintains a Roadworks Roundup published on the Transport Services website every Monday morning that advises the community of scheduled works taking place on the State Road network over the following two-week period – refer: <a href="https://www.transport.tas.gov.au/road/closures_delays">https://www.transport.tas.gov.au/road/closures_delays</a> . (Refer PSTR CI 9.9(b))	The Contractor must submit to the State's Representative details of new works or amendments to existing works that require traffic management by COB Wednesday of every week (submission day) such that the works can be included in the Roadworks Roundup that will be published the following Monday, noting that any new works entered in the Roadworks Roundup cannot begin before the following Monday after publication, which will ensure that the public has a minimum 7 and maximum 14 days' notice of upcoming work.

## 6.4 Special events and other events of public interest (if any) on road capacity

During the D&C phase, a number of Community Special Events are scheduled to occur within the vicinity of the project works. These special events will be taken into consideration when developing our traffic management plans and appropriate durations of the TCPs will be identified.

The short-term lane closures will not be undertaken during any special events, including major commercial, sporting or cultural events, where lane closures would cause unacceptable levels of disruption to the traffic operations associated with such events.

MCD will coordinate with the special event organiser to ensure the proposed event will not impact on the project TMP/TCP and will provide input into Special Event TMP.

MCD will also prepare construction event specific Local TMP/TCPs for events such as the delivery of Bridge Beams, or the delivery and installation of oversize, prefabricated construction components for Bridge to ensure that the unique traffic management demands of these events are addressed and managed. These TMP/TCP will outline the specific characteristics, impacts of these events and subsequent resolution strategies

## 7 TRAFFIC MONITORING

### 7.1 Travel Time Monitoring

As per the PSTR App 12A, MCD proposed to use proven technology such as “Mooven” or “Real Time Traffic” system to monitor travel time and other required traffic data between six way-points for the project delivery phase. This system gathers information via Google maps and performs travel time calculations between the nominated points along the routes.

Table 7.1: Waypoints to capture traffic data at both directions.

Name (PSTR Table 12A.1)		MCD way points: (Monitoring in both directions)
Northbound	The southern approach to the Bowen Bridge on the Brooker Highway (prior to Elwick Road junction) (Major Project permit) (VMS Location)	
	Brooker Highway before Granton/Austin Ferry Off Ramp	
	Brooker Highway between Granton Roundabout and Southbound Main Road Off-Ramp	
	Lyell Highway before the Tarrants Road intersection (VMS Location)	
Midland Highway before the East Derwent Highway Roundabout		
Southbound	Midland Highway on the northern approach to the East Derwent Highway (Major Project permit) (VMS Location)	
	Boyer Road before the Riverside Drive intersection	
	Gunn Street before the Nielsen Esplanade intersection	

The additional waypoints at (The southern approach to the Bowen Bridge on the Brooker Highway (prior to Elwick Road junction) and Midland Highway on the northern approach to the East Derwent Highway) are included as per Major Project permits condition 32.8.

Midland Highway before the East Derwent Highway Roundabout which can be combined with Midland Highway on the northern approach to the East Derwent Highway.

MCD will provide a weekly spreadsheet with the following information:

- Travel time for the entire length;
- Delay for the entire length (when compared to the free flow speed);
- Average speed for the entire length;
- Travel time between Waypoints;
- Delay between Waypoints; and
- Average speed between Waypoints.

Mooven is widely used at various projects in Australia and New Zealand for the purpose of live travel time monitoring and reporting system. MCD will provide direct access to the Mooven web-based system to a DSG representative to access online travel time information.

The MCD group will review and develop the temporary ITS requirement on VMS locations for travel time information displays as per Major Project Permit section 32.8.

## 7.2 Compliance of TMPs and TCPs

Routine traffic inspections of the site will be undertaken to ensure the suitability and compliance of TMPs. The inspections will be recorded on the applicable document(s) below.

- Short Term Traffic Management – ‘Traffic Management Inspection Checklist
- Long Term Traffic Management – ‘Traffic Management Inspection Checklist – Daily checks

TMPs will outline the requirement for inspection, monitoring, review, auditing and reporting as per the PSTR Table 12.2.6-1.

The following additional inspections may be required, depending on the complexity of the TMP and associated TCPs:

- At the start of the works (including the process of erecting traffic control devices).
- At each major change to the TMP.
- Whenever the operation of a TMP results in unexpected significant disruption to traffic.
- At the request of the site safety committee or a health and safety representative.
- Any hazards identified on inspection checklists will be immediately corrected, recorded and reported to the Supervisor and then recorded on the Hazard Register.

Traffic controllers involved in the set-up of traffic management control devices on site will be suitably licenced and trained. Records of these licenses and training will be in the form of a traffic control ticket.

## 7.3 Monitoring and Controlling Activities

The Traffic Manager will monitor, coordinate and control activities to ensure lane closures take no longer than planned. Activities will include:

- Conducting proactive planning during construction meetings. All construction events that require short-term traffic management through the use of lane closures will be reviewed to determine if works can be undertaken in the same closure.

- Ensuring the traffic controlling subcontractor engaged for the project has a team leader who oversees all crews required for a traffic event. This will ensure a seamless set-up of each TCP.
- Planning key activities with all necessary parties prior to works commencing and permits being issued. During these meetings, discussion topics will include: hold points, the roles of all subcontractors and expectations for their performance, and any additional items required to successfully demobilise the road closure within the time constraints.
- Conducting contingency planning for works during all occupations. Planning meetings for key activities will enable previously unidentified issues to be addressed prior to an event. These contingencies may include additional resources and equipment, the example of secondary back-up equipment being available onsite in the event of a breakdown.
- Monitoring progress and embedding decision point at critical times in the construction program. On the hourly programs, hold points will highlight the key decision points that will allow works to continue or identify if a particular issue has caused time to elapse too far and an overrun is likely to occur.

In the event of an overrun, the following procedure will be followed:

- Notify – MCD site representative to immediately notify MCD Construction Manager/Traffic Manager and DSG and emergency services (if required).
- During high impact works, MCD Site or Traffic representative will continually update DSG regarding the work progress and any possibility of overrun if identified.
- Assess and Respond – MCD representative to assess the severity of the incident including traffic delays. Safety of the road users and workforce is paramount, and no undue risks will be taken. If safe to do so, the MCD representative will take all necessary steps to return the network to normal operating conditions.
- Investigate – gather information, undertake an investigation, determine contributing factors and communicate findings.

## 7.4 Contingency Traffic Management

The Day-to-Day traffic will be monitored with the Mooven or similar application which provides 24/7 live travel time as discussed in the above section. In the case of unusual but foreseeable circumstances, such as a traffic incident that causes long queues or requires vehicles to detour, the following procedure will be followed:

- Notify – DSG representative immediately and emergency services (if required).
- Assess and Respond – MCD Traffic Manager to assess the severity of the delays or any traffic incident. Safety of the workforce and public is paramount, and no undue risks will be taken.
- Arrange any additional traffic control from the Traffic control subcontractor.
- Remove any traffic setup implemented on site where possible
- Will take all necessary steps to return the network to existing operating conditions and continue monitoring travel time during this time via Mooven.
- Investigate – gather information, undertake an investigation, determine contributing factors and communicate findings.

## 7.5 Maintenance

MCD will maintain throughout the D&C Activities all of the traffic management measures and controls it provides (including Temporary Roadways and detours) for the purpose of satisfying the traffic and transport management requirements of the PSTR (section 12.2.10 of Appendix 12)

MCD will undertake the maintenance activities within the response times specified in Table 4.2.1-1 (Appendix 12), following the earlier of the notification to MCD or identification by the MCD. Unless otherwise specified the response times indicate the maximum times to attend the site and to initiate actions to repair or make the work or infrastructure safe, including the control or detouring of traffic. Critical responses are required when the situations warrant urgent attention due to impacts on road and traffic safety or efficiency.

Table 4.2.1-1 Maintenance Activities and Response Time

Maintenance Activity	Response Time
Rectify minor signal fault where signal is part of the Contractor's traffic management measures and controls	Critical response – 2 hrs Otherwise, 24 hrs
Restore faulty detectors.	Within seven days
Repair damage caused by an Incident on the Construction Site that is preventing the safe and continuous passage of traffic.	2 hours
Replace missing minor temporary regulatory sign.	4 hours
Replace other missing temporary sign.	Critical response – 2 hrs Otherwise, within three days
Repair damaged sign causing a hazard to road users.	2 hrs to attend; and 4 hrs to repair
Repainting of faded temporary pavement and line marking (in accordance with section line marking must be clearly visible at all times and under all weather conditions).	Critical response – 24 hrs Otherwise, 2 wks
Repair of minor pavement and channelisation failure, including temporary medians and new jersey barriers.	24 hrs Critical response – 4 hrs
In relation to any traffic route alteration, increased Incidents or anything that prevents the safe and continuous passage of vehicles at the posted speeds.	Critical response – 1 hr Otherwise, 4 hrs to repair
Repair major pavement failure that requires closure of at least 1 trafficable lane on a Department Road or Local Road.	1 hour to attend; and 4 hours to repair

## 8 EMERGENCY RESPONSE PLAN

Incidents during construction including traffic accidents will be managed in accordance with the MCD Emergency Response Plan (ERP) developed for the New Bridgewater Bridge Project plan. This will be developed and implemented prior to beginning any major work on site. The ERP includes the following items:

- Notifications to the DSG representatives.



- Emergency lane, carriageway or road closures and the associated notifications, reporting
- Access for emergency vehicles through the worksite shall be maintained at all times so far as practicable.
- Staff training in the necessary response to implement the ERP.
- Project support to police and emergency services.

A list of emergency contacts, inclusive of local emergency services will be prepared and displayed on site noticeboards. Contacts shall be inclusive of the following:

**Table 8.1: Emergency Project Contacts**

Organisation	Name and CONTACT DETAILS
<b>MCD - Superintendent</b>	Shane Perry – 0419 998 471
<b>MCD – Construction Manager</b>	Ed McPhillips – 0458 305 771
<b>MCD – Traffic Manager</b>	David Lehane – 0417 508 301 (To be replaced with full-time Traffic Manger on 22/8/22)
<b>MCD – Community &amp; Stakeholder Manager</b>	Ally Hicks – 0414 077 356
<b>MCD - Project After Hours Number</b>	Shane Perry – 0419 998 471 or David Lehane – 0417 508 301

**Table 8.2: Emergency Contacts**

ENTITY	CONTACT DETAILS
<b>Police, Fire, Ambulance</b>	000
<b>DSG Transport Control Centre</b>	(03) 6166 3369

## 9 INDUCTION & TRAINING

The requirements of this Project Traffic Management Plan shall be communicated to the wider group through site inductions and training. Senior site personnel shall conduct the training to ensure construction personnel are aware of the traffic requirements of the TMS and the requirements of the specific Local Traffic Management Plans.

Where subcontractors are utilised, they shall be responsible for providing occupation-specific training for their own employees and the maintenance of the associated records. Any specific issues or task requirements shall be relayed to subcontractors at the project site induction.

Induction records shall be kept and maintained on site. These shall also include personnel competencies and licences.

## 10 LOCAL TMP & CONCEPT DRAFT TCP

The New Bridgewater Bridge project while linear, is a large and complex infrastructure project to be delivered in a highly trafficked environment.

The project site encompasses the junction of the Midland Highway and Brooker Highway, Tasmania’s main north south arterial, and Lyell Highway, which is the gateway to the upper Derwent Valley and Central Plateau regions of the state.

By beginning thorough project delivery planning and a robust traffic management strategy, any potential disruptions to the states transport network can be minimised.

The key considerations made during the planning and development of the bridge superstructure and road alignment was the traffic management arrangement and minimisation of interface with existing traffic. The project corridor is divided into two sections for traffic staging purposes.

- Southern Interchange
- Northern Interchange

The Southern and Northern interchange will have separate TMP documents detailing the proposed traffic management arrangements. There will also be separate TMP’s for site-specific bridge works, including traffic restriction requirements during the delivery of the beams and girders.

## 10.1 TMP Southern Interchange

The construction activities at Southern Interchange will be completed in five stages/substages as noted below. Each traffic stage will have a specific Local Traffic Management Plan.

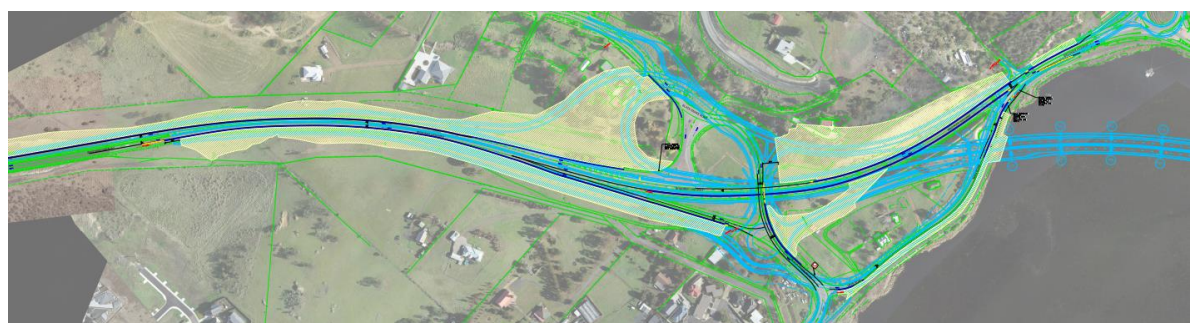
- Stage 1: Brooker Highway traffic on existing alignment and work offsite
- Stage 1A: Southbound Off Main Road traffic on to Temporary off-ramp
- Stage 1B: Black Snake Road on temporary alignment
- Stage 2: Brooker Highway traffic on temporary alignment
- Stage 3: Brooker Highway traffic on New Bridge and complete tie-in and finishing works

Each stage will have site-specific TCP. The summary of each stage with the preliminary TCP and associated works and traffic impacts is discussed below section:

### 10.1.1 STAGE 1: BROOKER HIGHWAY TRAFFIC ON EXISTING ALIGNMENT & WORK OFFSITE

The temporary barriers will be installed along Brooker Highway and Main Road to separate the proposed work areas from live traffic. In addition to the permanent works, the temporary southbound off-ramp will be constructed to facilitate the closure of the Main Road southbound off-ramp in Stage 1A.

#### Preliminary draft TCP Stage 1



Refer to Drawing No: for large-scale drawings

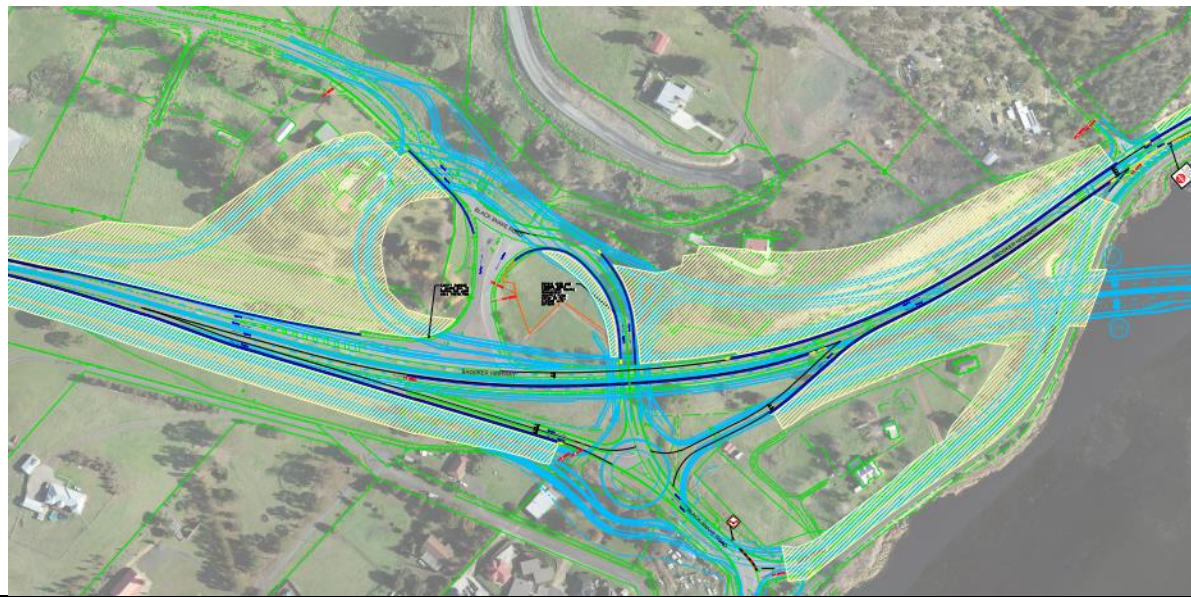
Drawing Number	MCD-TMS-DRG-S-001 (1-9 sheets)
Duration	Oct 2022 to April 2023
Stage 1 Scope of works	<p>The following activities will be completed within Stage 1:</p> <ul style="list-style-type: none"> <li>Construct a section of the permanent southbound off-ramp to Black Snake Road, which includes a temporary connection from Brooker Highway as an alternative to the Main Road southbound off-ramp. The new temporary southbound off-ramp will facilitate the full closure of the Main Road off-ramp (between Brooker Highway and Black Snake Road) to commence Stage 1A works.</li> <li>Construction of on and off-ramps.</li> <li>Pavement, service and utility works along Brooker Highway behind safety barriers.</li> <li>Investigation works – to facilitate test pile works at Main Road, we will be required to realign the southbound Main Rd as shown in the Stage 1 Sheet 5 Insert. Further details and exact duration will be provided in the TMP.</li> </ul>
Constructability and Operating condition	<p>Barriers will be installed along Brooker Highway in both directions to separate work areas from live traffic. Brooker Highway will operate with one lane in each direction with a posted speed limit of 60km/h atleast 300m prior to the start of the work zone (at the southern end) and continue onto the bridge. All signage will be included in the detailed TMP / TCP submission for each stage of work and will comply with relevant Austroads and AS standards.</p> <p>This will allow starting works off-road behind barriers.</p>
Impact on Traffic Flow	<ul style="list-style-type: none"> <li>Brooker Highway will operate with a single lane in each direction.</li> <li>The Main Road southbound off-ramp (between Brooker Highway and Black Snake Road) will operate as a one-way road with vehicles only permitted to travel in the eastbound direction. The speed limit will be 40km/h within this section of the road.</li> <li>Black Snake Road will operate with 3.2m lane widths and a 40km/h speed limit between Brooker Highway and Main Road.</li> </ul> <p>The above changes in the road network are not expected to cause any significant impacts on traffic flow.</p>
Impact on Public Transport	<p>The public transport bus route will be maintained during the Stage 1 arrangement. The bus stop on Black Snake Road will be closed. This has been agreed in principle with the relevant authority.</p>
Impact on Pedestrian	<p>No impacts to the existing pedestrian arrangement during Stage 1A. Existing Pedestrian and bicycle provisions will be maintained at all times. If any footpath is closed or detoured for works, a sealed footpath will be provided.</p> <p>Pedestrian provision will be provided as per DDA compliant.</p>
Access to local business and resident	<p>No impact to any access to local businesses or residents.</p>

Any parking impact	No impact – No existing parking within the vicinity of the worksite.
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**10.1.2 STAGE 1A: SOUTHBOUND OFF MAIN ROAD TRAFFIC ON TEMPORARY RAMP**

The existing Main Road southbound off-ramp will be closed in Stage 1A with traffic to utilise the new temporary off-ramp that was constructed in Stage 1.

**Preliminary draft TCP Stage 1A:**



Drawing Number	MCD-TMS-DRG-S-001A (1-9 sheets)
Duration	April 2023 to June 2023
Stage 1A Scope of works	<p>The following activities will be completed within Stage 1A:</p> <ul style="list-style-type: none"> <li>• Construct temporary pavement along the southern side of Black Snake Road, commencing west of Brooker Highway.</li> <li>• Continue construction of on and off-ramps</li> <li>• Continue pavement, service and utility works along Brooker Highway behind safety barriers.</li> </ul>
Constructability and Operating condition	<p>Traffic will now be utilising the temporarily constructed southbound off-ramp to access Main Road / Black Snake Road. This will allow the full closure of the Main Road southbound off-ramp to provide a safer and larger working area for the main bridge structure.</p> <p>Barriers are installed along Brooker Highway in both directions to separate work areas from live traffic. Brooker Highway will operate with one lane in each direction with a posted speed limit of 60km/h.</p>
Impact on Traffic Flow	<ul style="list-style-type: none"> <li>• Brooker Highway will operate with a single lane in each direction with a posted speed of 60km/h.</li> <li>• The Main Road southbound off-ramp (between Brooker Highway and Black Snake Road) will be fully closed, with all traffic to utilise the temporary off-ramp that was constructed in Stage 1.</li> </ul>

	<ul style="list-style-type: none"> <li>Black Snake Road will operate with 3.2m lane widths and a 40km/h speed limit between Brooker Highway and Main Road.</li> </ul> <p>The above changes in the road network are not expected to cause any significant impacts on traffic flow.</p>
Impact on Public Transport	All bus services are to be maintained; bus routes will utilise the new temporary southbound off-ramp to access Main Road / Black Snake Road.
Impact on Pedestrian	No impacts to the existing pedestrian arrangement during Stage 1A. Existing Pedestrian and bicycle provisions will be maintained at all times. If any footpath is closed or detoured for works, a sealed footpath will be provided. Pedestrian provision will be provided as per DDA compliant.
Access to local business and resident	Access to local businesses and residents will be maintained at all times. During the construction/widening of Black Snake Road if any works impact the resident's access, then it will be discussed and agreed upon with the owner prior to implementation on site. Further details will be included in the respective Local TMP
Any parking impact	N/A – No existing parking within the vicinity of the worksite.

### 10.1.3 STAGE 1B: BLACK SNAKE ROAD ON TEMPORARY ALIGNMENT

On completion of the pavement widening on Black Snake Road in Stage 1A. The road will be re-aligned to the south to provide a safe working area to the north to complete the permanent structure and temporary roundabout for the diversion that will take place in Stage 2.

#### Preliminary draft TCP Stage 1B:



Drawing Number	MCD-TMS-DRG-S-001B (1-9 sheets)
Duration	June 2023 to Jan 2024
Stage 1B Scope of works	The following activities will be completed within Stage 1B:

	<ul style="list-style-type: none"> <li>• Complete temporary roundabout and other temporary widening work to facilitate the Stage 2 arrangement.</li> <li>• Continue construction works for the permanent on and off-ramps behind barriers</li> <li>• Continue pavement, service, and utility works along Brooker Highway behind barriers.</li> </ul>
Constructability and Operating condition	<p>Black Snake Road will be re-aligned to the south onto the pavement constructed in Stage 1A.</p> <p>Barriers are installed along Brooker Highway in both directions to separate work areas from live traffic. Brooker Highway will operate with one lane in each direction with a posted speed limit of 60km/h.</p>
Impact on Traffic Flow	<ul style="list-style-type: none"> <li>• Brooker Highway operating with a single lane in each direction with a posted speed of 60km/h.</li> <li>• The Main Road southbound off ramp (between Brooker Highway and Black Snake Road) will be fully closed, with all traffic to utilise the temporarily constructed off ramp that was constructed in Stage 1.</li> <li>• Black Snake Road will be re-aligned and have a posted speed limit of 40km/h. Barriers will be installed on the northern side of Black Snake Road.</li> </ul> <p>The above changes in the road network are not expected to cause any significant impacts on traffic flow.</p>
Impact on Public Transport	<p>All bus services to be maintained, bus routes will utilise the new temporary southbound off ramp to access Main Road / Black Snake Road.</p>
Impact on Pedestrian	<p>No impacts to the existing pedestrian arrangement during Stage 1B. Existing Pedestrian and bicycle provisions will be maintained all time. If any footpath is closed or detour for works, similar sealed footpath will be provided.</p> <p>Pedestrian provision will be provided as per DDA compliant</p>
Access to local business and resident	<p>Access to local business and residents will be maintained at all times. During the construction / widening of Black Snake Road if any works impact on the resident's access, then it will be discussed and agreed upon with the owner prior to implementation on site. Further details will be included in respective Local TMP</p>
Any parking impact	<p>N/A – No existing parking within the vicinity of the worksite.</p>

#### 10.1.4 STAGE 2: BROOKER HIGHWAY TRAFFIC ON TEMPORARY ALIGNMENT & CONSTRUCTION BRIDGE

On completion of the new northbound on and off-ramps, additional temporary pavement widening and the roundabout, Brooker Highway traffic will be switched onto the temporary alignment to facilitate the construction of the Bridge and the main carriageway. The large and unobstructed working area will allow construction activities to occur safely and efficiently with minimal interaction with local traffic. It is intended to complete the majority of the bridge works within Stage 2.

**Preliminary draft TCP Stage 2:**



Drawing Number	MCD-TMS-DRG-S-002 (1-9 sheets)
Duration	Jan 2024 to Oct 2024
Stage 2 Scope of works	<p>The following activities will be completed within Stage 2:</p> <ul style="list-style-type: none"> <li>• Complete the bridge structure and Brooker Highway main carriageway.</li> <li>• Complete the southbound on and off ramps</li> <li>• Black Snake Bridge will be constructed during stage 2</li> </ul>
Constructability and Operating condition	<p>Brooker Highway traffic will be diverted on to the temporary alignment along the newly constructed northbound on and off ramps. Traffic will travel through the temporary roundabout at the Black Snake Road intersection.</p> <p>The roundabout will provide access to Brooker Highway northbound and southbound, Black Snake Road and Main Road. Barriers will be installed along Brooker Highway in both directions before and after the temporary diversion. Brooker Highway will operate with one lane in each direction with a posted speed limit of 60km/h.</p> <p>During this stage, there will requirement of short-term Black Snake Road closures for Bridge construction. This will be night-time up to five shifts. The Black Snake Road will remain open in the daytime.</p>
Impact on Traffic Flow	<p>Brooker Highway will operate with a single lane in each direction with a posted speed of 60km/h.</p> <p>A right turn movement into Black Snake Road from Brooker Highway is permitted under this arrangement. Vehicles will only be permitted to turn left from Black Snake Road to Brooker Highway. Vehicles intending on travelling southbound will be required to use the roundabout to U-turn.</p> <p>The Roundabout has been designed for a 26m B-Double and checked for OSOM vehicle movements.</p> <p>A traffic assessment has been conducted to understand the impact on traffic flow after the diversion of traffic through the temporary roundabout.</p>

	<p>The proposed traffic movements at the temporary roundabout are based on volumes obtained from the O-D matrix report.</p> <p>Sidra modelling was conducted for the AM and PM peak for the proposed temporary roundabout (Brooker Hwy/Black snake Road) and Granton Roundabout (Lyell Hwy/Brooker Hwy &amp; Midland Hwy) with results shown below,</p> <p>Temporary roundabout (Brooker Hwy/Black snake Road)</p> <p><u>AM Peak</u></p> <ul style="list-style-type: none"> <li>• An overall LOS A and East approach LOS C</li> <li>• Delays are less than 1 minute</li> <li>• DoS 0.88</li> <li>• Maximum queue on North approach – 205m</li> </ul> <p><u>PM Peak</u></p> <ul style="list-style-type: none"> <li>• An overall LOS B</li> <li>• Delays are less than 1 minute</li> <li>• DoS 0.94</li> <li>• Maximum queue on south approach – 229.5 m</li> </ul> <p>Granton Roundabout (Lyell Hwy/Brooker Hwy &amp; Midland Hwy)</p> <p><u>AM Peak</u></p> <ul style="list-style-type: none"> <li>• An overall LOS A and west approach LOS B</li> <li>• Delays are less than 1 minute</li> <li>• DoS 0.54</li> <li>• Maximum queue on North approach – 20.2 m</li> </ul> <p><u>PM Peak</u></p> <ul style="list-style-type: none"> <li>• An overall LOS A with west approach LOS B</li> <li>• Delays are less than 1 minute</li> <li>• DoS 0.488</li> <li>• Maximum queue on south approach – 31.5 m</li> </ul> <p>The above assessment shows that both of the roundabouts will be operating at an acceptable LOS.</p> <p>The results show a 230m maximum queue length during peak hours in a single direction, however, delays are expected to be less than 1 minute.</p> <p>It is likely that during the construction phase some through traffic will use an alternate route via E Derwent Highway – Goodwood Rd. This route could also be promoted with the use of Advanced VMS messaging if required.</p> <p>The roundabout SIDRA analysis sheets are attached in Appendix B.</p> <p>MCD has noted the concern raised by IV on the temporary roundabout proposed in Stage 2. The following measures have been taken to ensure that roundabout operates satisfactorily,</p> <ol style="list-style-type: none"> <li>1. After the implementation of Stage 2, MCD will monitor road user behaviour and if there are any issues observed</li> </ol>
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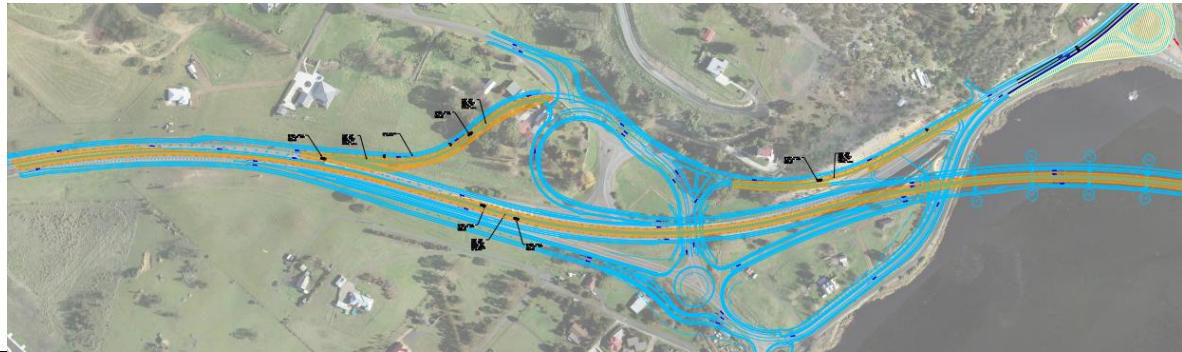


	<p>with poor gap selection, then considerations will be made for improving operations during peak hours through the deployment of traffic controllers on site during peak hours. The traffic controllers will prioritise traffic movements on Brooker Highway if any delays or queues are observed, this will be done by holding traffic on Black Snake Road (during the PM peak) to clear out traffic on Brooker Highway when required.</p> <ol style="list-style-type: none"> <li>2. An independent Road Safety Auditor will undertake a day and night audit; they will be instructed to undertake the day audit during the AM/PM peak period. Any safety issues identified in the audit will be reviewed by MCD with appropriate measures taken to address the issue.</li> <li>3. MCD has also implemented Mooven travel time monitoring – we will encourage Brooker Highway through traffic to use the alternate route via E Derwent Highway – Goodwood Rd. This alternate route via E Derwent Highway takes approximately 3 minutes longer to Hobart/Bridgewater than Brooker Highway, therefore if any delays are observed by motorists on Brooker Highway this alternative route will be used more regularly. Live travel time can be displayed on the advanced VMS, which will be linked to Mooven travel times.</li> <li>4. Traffic travelling westbound on Black Snake Road (intending on going to Hobart) will be encouraged to travel southbound towards Abbotsfield Road to access Brooker Highway. Appropriate VMS messaging, traffic signs and Comms strategy will be considered to encourage this movement.</li> </ol>
Impact on Public Transport	All bus services to be maintained. Bus routes will be diverted along the Stage 2 alignment
Impact on Pedestrian	<p>There is minimum to no pedestrian movement on the west side of the Highway. Temporary pedestrian crossing provisions will be provided at the roundabout. MCD on-site observations indicate minimal pedestrian movements. MCD will undertake a survey and assessment to confirm the above. Once the assessment has been completed a suitable pedestrian crossing arrangement will be proposed (pedestrian refuge or pedestrian-operated traffic signals). Further details will be provided in Stage 2 - TMP / TCP submission.</p> <p>Pedestrian provision will be provided as per DDA compliant.</p>
Access to local business and resident	<p>During the Brooker Highway underpass works, Black Snake Road will be closed under short-term traffic management likely during night shifts up to 6 shifts. The impacted Black Snake Road users and residents will be notified. The impact on the resident's access will be discussed and alternate routes will be agreed upon.</p> <p>Further details will be included in the respective Local TMP.</p>
Any parking impact	N/A – No existing parking within the vicinity of the worksite.

### 10.1.5 STAGE 3: OPENING TRAFFIC ON NEW BRIDGE AND COMPLETING FINISHING WORKS

On completion of the new Brooker Highway bridge and main carriageway in the Stage 2 arrangement. The Brooker Highway traffic will be switched onto the ultimate alignment. The Stage 3 southern interchange will be implemented at the same time as the Stage 3 northern interchange. New Bridgewater Bridge will be open in Stage 3. Below is a summary of the Stage 3 arrangement.

#### Preliminary draft Stage 3:



Drawing Number	MCD-TMS-DRG-S-003 (1-9 sheets)
Duration	Oct 2024 to May 2025
Stage 3 Scope of works	<p>The following activities will be completed within Stage 3:</p> <ul style="list-style-type: none"> <li>• Complete tie-in works along the ramps and remove any redundant temporary pavement.</li> <li>• Finishing works – wearing course, median works and kerb and channel installation.</li> <li>• Road furniture, signs, and line marking</li> </ul>
Constructability and Operating Conditions	<p>Brooker Highway will operate along the ultimate alignment with a minimum of one lane open in each direction to facilitate any incomplete works along the median.</p> <p>All permanent ramps will be open for operation.</p> <p>Short-term lane closures will be implemented for all the remaining works on the permanent alignment.</p>
Impact on Traffic Flow	<p>Brooker Highway will operate along the ultimate alignment with a minimum one lane open in each direction with posted speed 60km/hr.</p> <p>The above changes in the road network are not expected to cause any significant impacts on traffic flow.</p>
Impact on Public Transport	All bus services to operate on the permanent arrangement.
Impact on Pedestrian	Pedestrian and cyclist provisions will operate on the permanent arrangement.
Access to local business and resident	Permanent design arrangements will be in place.
Any parking impact	Permanent design arrangements will be in place.

## 10.2 TMP Northern Interchange

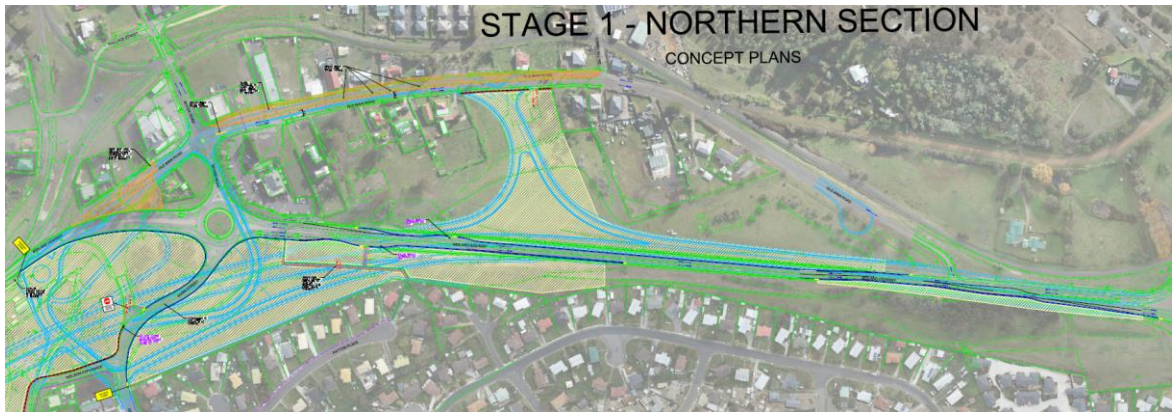
The construction activities at the northern interchange will be completed in four stages as shown below. Each traffic stage will have a specific Local Traffic Management Plan.

- Stage 1: Midland Highway traffic on the existing alignment
- Stage 1A: Construction of the eastern side of Old Main Road
- Stage 2: Midland Highway traffic on temporary alignment
- Stage 3: Midland Highway traffic onto ultimate alignment & finish median and tie in works.

Each stage will have a site-specific TCP. The summary of each stage and its traffic impacts is discussed below, with reference to the preliminary TCP.

### 10.2.1 STAGE 1: MIDLAND HIGHWAY TRAFFIC ON EXISTING ALIGNMENT & OLD MAIN ROAD ONE WAY

Temporary barriers will be installed along Midland Highway to separate work areas from live traffic. Works will commence on either side of Midland Highway with lanes transitioning across as required. Gunn Street will be open to Nielson Esplanade. Works on the western half of Old Main Road will commence whilst maintaining two-way traffic flow on the eastern half.

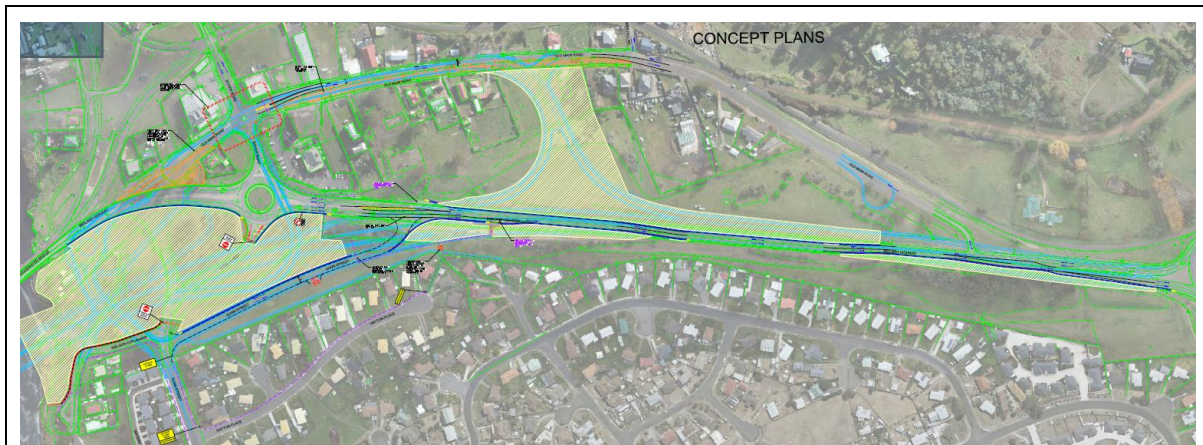
Preliminary draft TCP Stage 1:	
	
Refer to Drawing No: for large scale drawing	
Drawing Number	MCD-TMS-DRG-N-001 (1-5 sheets)
Duration	Oct 2022 to Jan 2023
Stage 1 Scope of works	<p>The following activities will be completed within Stage 1:</p> <ul style="list-style-type: none"> <li>• Commence construction activities on the new Bridgewater bridge.</li> <li>• Southbound off-ramp</li> <li>• Midland Highway widening works</li> <li>• Construction of the western half of Old Main Road</li> </ul>
Constructability and Operating Conditions	<p>Midland Highway: Temporary barriers to be installed along Midland Highway to separate work areas from live traffic. A single lane in each direction will be maintained along the main carriageway and two lanes to be maintained at the approaches of the roundabouts. This will allow construction activities to commence on the new bridge and Midland Highway widening works</p>

	Old Main Road: Lane to be re-aligned and narrowed to accommodate the work area on the western half. Two-way traffic will be maintained on Old Main Road. This arrangement will allow Old Main Road pavement works to be completed in two stages.
Impact on Traffic Flow	<ul style="list-style-type: none"> <li>• Midland Highway will operate with a single lane in each direction and two lanes at the approaches of the roundabouts, with a posted speed of 60km/h.</li> <li>• Gunn Street will be open until the construction of a new southbound off-ramp and temporary connection to Midland Highway is complete and will provide replacement access from Midland Hwy to Gunn Street</li> <li>• Old Main Road to operate as a two-way arrangement. Speed limits will be reduced to 40km/h during works.</li> </ul> <p>The above changes are not expected to cause any major delays in traffic flow.</p>
Impact on Public Transport	The bus service will remain the same route – no impact in this stage.
Impact on Pedestrian	Existing pedestrian access will be maintained from Gunn Street to the pedestrian bridge at Midland Highway. The footpath that runs through the proposed work areas will be fenced off on either side to separate pedestrians from the worksite. If any footpath is closed or detoured for works, a sealed footpath will be provided. Pedestrian provision will be provided as per DDA compliant.
Access to local business and resident	All property access is to be maintained along Old Main Road. Works across driveways will be completed during off-peak periods and with consultation with the owners of the property.
Any parking impact	Existing Parking on Old Main Rd for the business will be maintained in coordination with business owners. Any short-term impact on parking will be discussed and agreed upon with business owners.

### 10.2.2 STAGE 1A: CONSTRUCTION EASTERN SIDE ON OLD MAIN ROAD

Work areas will remain the same as the Stage 1 arrangement with the exception to Old Main Road. Traffic will now travel along the completed western side of Old Main Road, whilst a work area will be established on the eastern side to complete pavement, kerb & channel and footpath works. Bollards will be placed to delineate the work area and during works, a shadow vehicle and appropriate road work signage will be installed as required.

**Preliminary draft TCP Stage 1A: Construction of the eastern side of Old Main Road**



Refer Drawing No: for large scale drawing

Drawing Number	MCD-TMS-DRG-N-001A (1-5 sheets)
Duration	June 2023 to Jan 2024
Stage 2 Scope of works	<p>The following activities will be completed within Stage 1A:</p> <ul style="list-style-type: none"> <li>• Construction of the eastern half of Old Main Road including ramps with additional temporary pavements</li> <li>• Continue construction activities on the new Bridgewater bridge and Midland Highway.</li> <li>• Construction of permanent ramps and additional pavement widening in preparation for the Stage 2 arrangement.</li> </ul>
Constructability and Operating condition	<p>Midland Highway: Lane arrangements to remain the same as Stage 1.</p> <p>Old Main Road: Traffic will now operate on the completed western half of Old Main Road, whilst works resume on the eastern side.</p> <p>Gunn Street will be open at a new location with the left in and left out</p>
Impact on Traffic Flow	<ul style="list-style-type: none"> <li>• Midland Highway operating with a single lane in each direction and two lanes at the approaches of the roundabouts, with a posted speed of 60km/h. The arrangement with 1 lane in each direction and 60km/h speed limit is in accordance with the PSTR. The lanes at the approaches of the roundabout have been increased to two lanes to allow better traffic flow through the intersection. Considering that highway free-flow capacity per lane is 1400-1500 per lane, this setup is not expected to result in any delays.</li> <li>• Gunn Street is open at the new location to access Nielson Esplanade. Gunn Street movements will be limited to left in and left out.</li> <li>• Any closure on Gunn Street will be only short-term lane closures (i.e. shuttle flow arrangements) and will be implemented during off peak hours to place and or remove temporary barriers and set up work areas. This may require up to 5 off-peak shifts.</li> </ul>

	<ul style="list-style-type: none"> <li>• Traffic that wants to turn right into Gunn Street will need to travel to the next roundabout at E Derwent Highway and U-turn.</li> <li>• Traffic that wants to turn right from Gunn Street may use an alternate route via E Derwent Highway</li> <li>• This additional travel is expected to add an additional 2-5 minutes in the travel time for local residents.</li> <li>• Old Main Road to operate as two-way arrangement with traffic. Speed limits will be reduced to 40km/h.</li> </ul> <p>These changes not expected to cause any major delays to traffic flow.</p>
Impact on Public Transport	<p>The bus route to Gunn Street will be maintained. The bus service that turns right into Gunn Street will be required to use the roundabout at E Derwent Highway to U-turn to access Gunn Street.</p> <p>The Gunn Street bus stop location will be removed, with all patrons to utilise bus stop number 50.</p> <p>Bus Stops along Midland Highway will be maintained.</p>
Impact on Pedestrian	<p>Existing pedestrian access will be maintained from Gunn Street to the pedestrian bridge at Midland Highway. The footpath that runs through the proposed work areas will be fenced off on either side to separate pedestrians from the worksite. The existing pedestrian bridge will be maintained.</p> <p>Pedestrian provision will be provided and will be DDA compliant.</p>
Access to local business and resident	<p>All property access is to be maintained along Old Main Road. Works across driveways will be completed during off-peak periods and with consultation with the owners of the property.</p>
Any parking impact	<p>Parking will not be permitted on the Old Main Road during Stage 1A.</p> <p>Further details will be included in the TMP.</p>

### 10.2.3 STAGE 2: MIDLAND HIGHWAY TRAFFIC ON TEMPORARY ALIGNMENT

Midland Highway northbound traffic will be switched onto Old Main Road. Southbound traffic will be switched on to the existing Midland Highway northbound carriageway. This arrangement will facilitate the complete construction of the ultimate alignment, including the Boyer Road underpass except for small 5m wide section, on/off ramps, and the tie-in to the new Midland Highway alignment.

**Preliminary draft TCP Stage 2:**



Refer Drawing No: for large scale drawing	
Drawing Number	MCD-TMS-DRG-N-002 (1-5 sheets)
Duration	Jan 2024 to Nov 2024
Stage 3 Scope of works	<p>The following activities will be completed within Stage 2:</p> <ul style="list-style-type: none"> <li>• Complete works on Midland Highway including on/off ramps</li> <li>• Complete works on the new Bridgewater bridge.</li> </ul>
Constructability and Operating condition	<p>Midland Highway northbound traffic temporarily switched onto the newly completed Old Main Road with two northbound lanes.</p> <p>Midland Highway southbound traffic temporarily switched onto the existing northbound carriageway.</p> <p>This will facilitate the construction of the permanent Midland Highway alignment, including the Boyer Road underpass and bridge approaches.</p> <p>Gunn Street will operate with the left in and left out arrangement.</p>
Impact on Traffic Flow	<ul style="list-style-type: none"> <li>• Midland Highway southbound will operate with a single lane with a posted speed of 60km/h.</li> <li>• Midland Highway northbound lane will be diverted onto Old Main Road with two northbound lanes posted speed 40km/h for section of Old Main Road north of Boyer Rd.</li> <li>• Gunn Street will operate with the left in and left out arrangements. This is not expected to cause any major delays to traffic flow.</li> <li>• A SIDRA model was conducted for the intersection at Boyer Road/Old Main Rd/Midland Hwy with stop control, which shows around a 1-minute delay. The arrangement will be monitored on-site. If more delays are noticed then, a parallel merge lane will be considered. However, traffic that wants to enter Gunn St including buses will need to detour for a U-turn at E Derwent Hwy Roundabout.</li> <li>• The Old Main Road / Boyer Road Roundabout will be converted to a T-intersection where Boyer Road will operate as a left-in and left-out arrangement.</li> </ul>

Impact on Public Transport	<p>The bus service that operates along Midland Highway will now use the new temporary Midland Highway alignment.</p> <p>Temporary bus stops will be in place along Old Main Road north of the Boyer Road intersection as required.</p>
Impact on Pedestrian	<p>Existing pedestrian access will be maintained from Gunn Street to the pedestrian bridge at Midland Highway as long as possible.</p> <p>During the stage 2 arrangement, the pedestrian bridge will be removed at some point and replaced with a temporary pedestrian-operated signal arrangement. In this setup, pedestrians will only need to cross one lane (southbound). The Pedestrian bridge will be maintained as long as possible.</p> <p>Similar pedestrian crossing provisions will also be provided on Old Main Road at the north of Boyer Rd to cross realigned northbound Midland highway.</p> <p>Pedestrian provision will be provided and will be DDA compliant.</p> <p>Departure DSR009 has been submitted to DSG from PSTR Appendix 12 CI 12.2.9.1 (c)</p>
Access to local business and resident	<p>All property access is to be maintained along Old Main Road.</p> <p>Properties on the west side of Old Main Road will have access left in and left out.</p> <p>Properties on the east side of Old Main Road will have access right in and right out</p>
Any parking impact	<p>Parking will be banned on either side of Old Main Road for the duration of Stage 2.</p>

### 10.2.4 STAGE 3: MIDLAND HIGHWAY ON PERMANENT ALIGNMENT AND FINISHING WORKS

On completion of works in Stage 2, all traffic will now be switched onto the new Bridgewater Bridge and Midland Highway. The switch will occur at the same time as the Stage 3 Southern interchange switch.



All remaining tie-in, kerb & channel, and median works will be completed under short-term traffic management arrangements.

**Preliminary draft TCP Stage 3:**



Refer Drawing No: for large-scale drawing

Drawing Number	MCD-TMS-DRG-N-003 (1-5 sheets)
Duration	Nov 2024 to May 2025
Stage 4 Scope of works	<p>The following activities will be completed within Stage 3:</p> <ul style="list-style-type: none"> <li>• Complete missing section Boyer Rd underpass approach</li> <li>• Complete tie-in works along the ramps and removes any redundant temporary pavement.</li> <li>• Finishing works – wearing course, median works, and kerb and channel installation.</li> <li>• Road furniture, signs, and line marking</li> </ul>
Constructability and Operating condition	<p>Midland Highway will operate along the ultimate alignment with a minimum of one lane open in each direction to facilitate any incomplete works along the median.</p> <p>All permanent ramps will be open for operation.</p> <p>Short-term lane closures will be implemented for all the remaining works on the permanent alignment.</p>
Impact on Traffic Flow	<ul style="list-style-type: none"> <li>• Midland Highway will operate with one lane in each direction at the permanent alignment with a posted speed of 60km/h.</li> <li>• Short-term lane closures to be implemented for finishing works.</li> <li>• Old Main Road will be as per the permanent arrangement</li> </ul> <p>The above changes in the road network are not expected to cause any significant impacts on traffic flow.</p>
Impact on Public Transport	All bus services to operate on the permanent arrangement.
Impact on Pedestrian	<p>Pedestrian and cyclist provisions will operate on the permanent arrangement.</p> <p>Pedestrian provision will be provided and will be DDA compliant.</p>
Access to local business and resident	Permanent design arrangements will be in place.

Any parking impact	Permanent design arrangements will be in place.

## 11 REFERENCES

Table 11-1: References

Document Number	Document Title
PSTR Exhibit A	Initial Project Scope and Technical Requirements
PSTR App 35	Requirements for Project Plans
PSTR App 12	Requirements for Traffic and Transport Management
Australian Standard AS 1742.3:2019	Manual of Uniform Traffic Control Devices – Part 3: Traffic Control Devices for Works on Roads
All parts	Austrroads Guide to Traffic Management
All parts	Austrroads Guide to Temporary Traffic Management
Tasmanian Guide	Traffic Control for Works on Roads
Section 167	Traffic Management (Tasmania)

# 12 APPENDIX A TRAFFIC STAGINGS (CONCEPT TRAFFIC CONTROL PLANS)

## 12.1 Concept Traffic Control Plans - Southern Interchange

# BRIDGEWATER BRIDGE STAGE 1 - SOUTHERN SECTION

## CONCEPT PLANS



CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

LEGEND	
	EXISTING CONDITIONS
	ULTIMATE DESIGN
	TEMP LINE MARKING
	PEDESTRIAN MOVEMENT SIGN
	END TREATMENT
	SAFETY BARRIER
	KLEMMFIX
	BOLLARDS
	WORK AREA
	OPTIONAL WORK AREA
	SHORT-TERM WORK AREA

REV	REVISION NOTES	DATE
C	UPDATED WITH DSG AND IV COMMENTS	8/08/2022
B	UPDATED WITH DSG AND IV COMMENTS	4/07/2022
A	CONCEPT PLAN FOR REVIEW	24/05/2022

GENERAL NOTES:  
1. BASE INFORMATION FROM FEATURE SURVEY / ECW.  
2. ALL DIMENSIONS ARE TO FACE OF KERB & CHANNEL.

SCALE

DESIGNED:	IMAM WAZEER
REVIEWED:	MANOJ DHANORKAR

REV: C	DRAWING NO: MCD-TMS-DRG-S-001	SHEET: TITLE PAGE
<b>BRIDGEWATER BRIDGE STAGE 1 - SOUTHERN</b>		
<b>CONCEPT TRAFFIC CONTROL PLAN</b>		



CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

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**BRIDGEWATER BRIDGE  
STAGE 1 - SOUTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**

FOR CONTINUATION REFER TO SHEET 2



FOR CONTINUATION REFER TO SHEET 1

FOR CONTINUATION REFER TO SHEET 3

CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

1 OF 8

LEGEND	
	EXISTING CONDITIONS
	ULTIMATE DESIGN
	TEMP LINE MARKING
	PEDESTRIAN MOVEMENT SIGN
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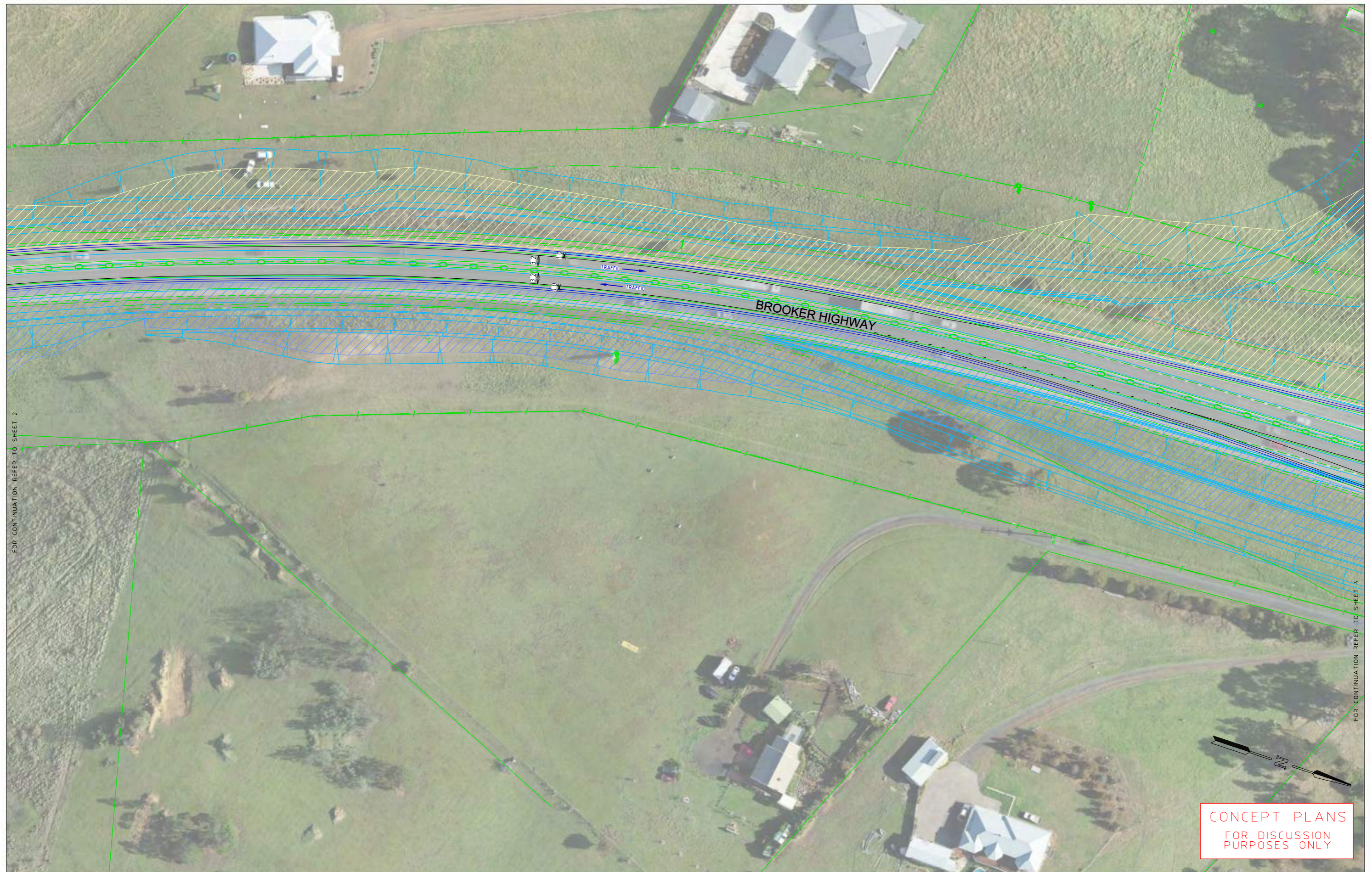
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<b>BRIDGEWATER BRIDGE STAGE 1 - SOUTHERN</b>		
<b>CONCEPT TRAFFIC CONTROL PLAN</b>		



FOR CONTINUATION REFER TO SHEET 2

FOR CONTINUATION REFER TO SHEET 4

CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

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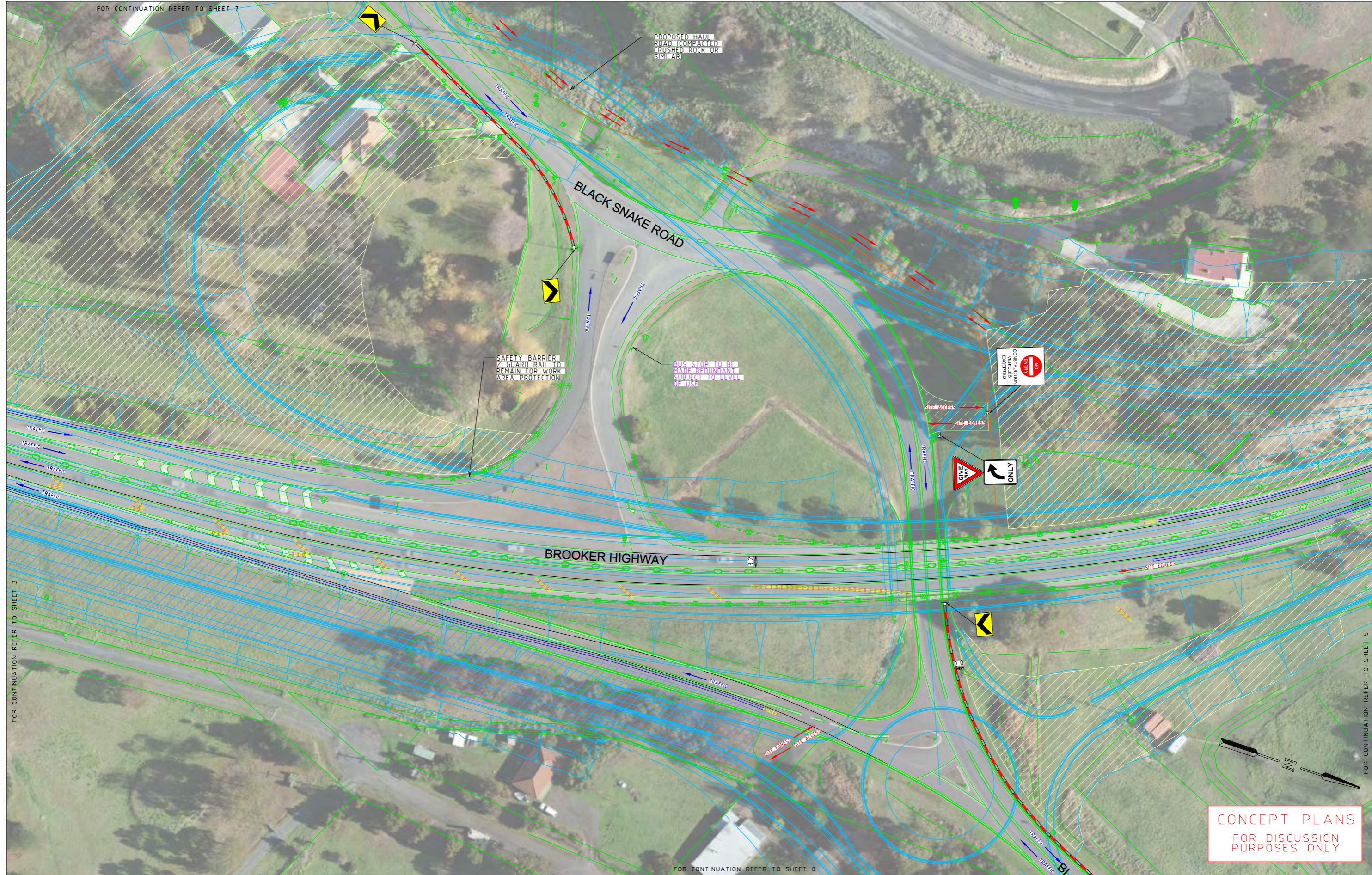
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**BRIDGEWATER BRIDGE  
STAGE 1 - SOUTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**



FOR CONTINUATION REFER TO SHEET 7

FOR CONTINUATION REFER TO SHEET 3

FOR CONTINUATION REFER TO SHEET 5

FOR CONTINUATION REFER TO SHEET 8

CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

LEGEND	
	EXISTING CONDITIONS
	ULTIMATE DESIGN
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**BRIDGEWATER BRIDGE  
STAGE 1 - SOUTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**



FOR CONTINUATION REFER TO SHEET 6



FOR CONTINUATION REFER TO SHEET 4

FOR CONTINUATION REFER TO SHEET 8

CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

LEGEND	
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**BRIDGEWATER BRIDGE  
STAGE 1 - SOUTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**



BUS STOP NUMBER 49 TO BE MAINTAINED

CONSTRUCT TEMPORARY CROSSOVER FOR SITE ACCESS

FOR CONTINUATION REFER TO SHEET 5

CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

LEGEND	
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**BRIDGEWATER BRIDGE  
STAGE 1 - SOUTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**



CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

FOR CONTINUATION REFER TO SHEET 4

LEGEND	
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**BRIDGEWATER BRIDGE  
STAGE 1 - SOUTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**



FOR CONTINUATION REFER TO SHEET 4

FOR CONTINUATION REFER TO SHEET 5

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FOR DISCUSSION  
PURPOSES ONLY

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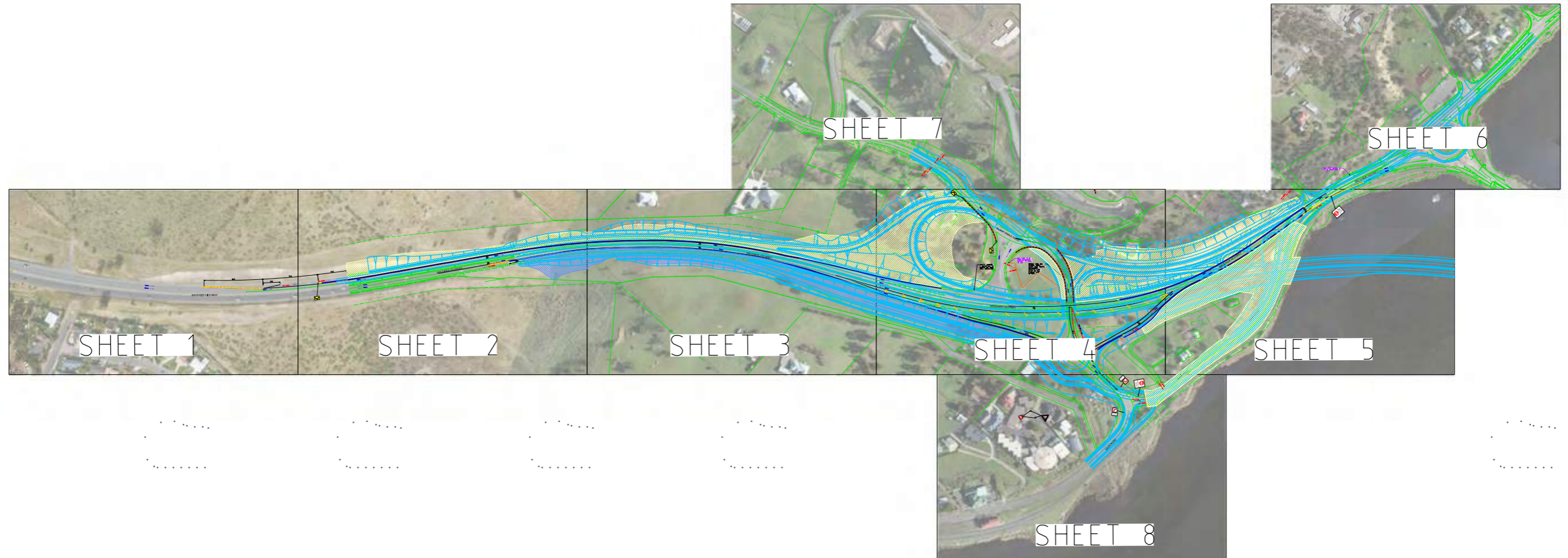
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**BRIDGEWATER BRIDGE  
STAGE 1 - SOUTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**

# BRIDGEWATER BRIDGE STAGE 1A - SOUTHERN SECTION

## CONCEPT PLANS



CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

LEGEND	
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	ULTIMATE DESIGN
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<b>BRIDGEWATER BRIDGE STAGE 1A - SOUTHERN</b>		
<b>CONCEPT TRAFFIC CONTROL PLAN</b>		



CONCEPT PLANS  
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PURPOSES ONLY

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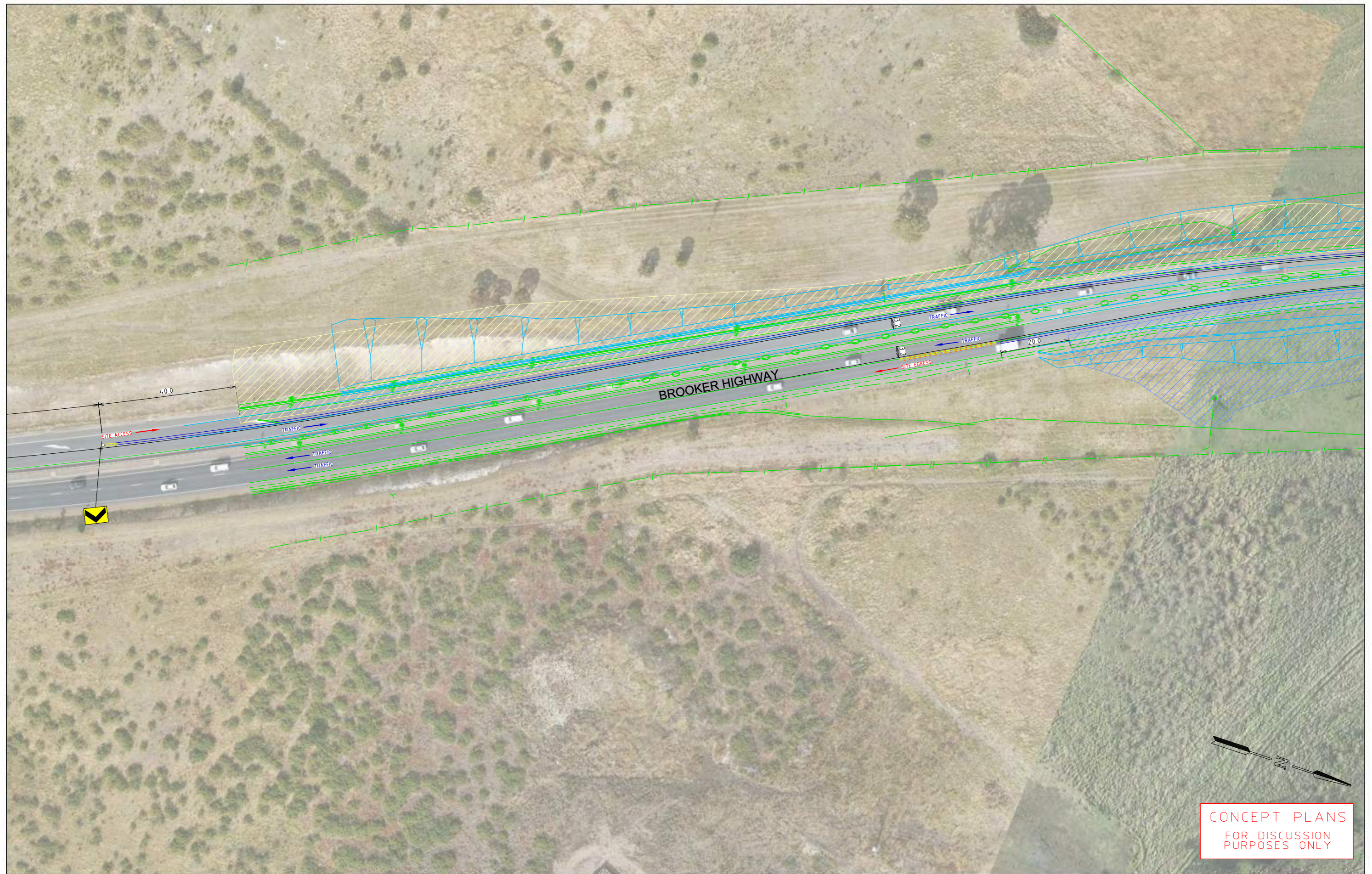
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**BRIDGEWATER BRIDGE  
STAGE 1A - SOUTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**



CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

1 OF 8

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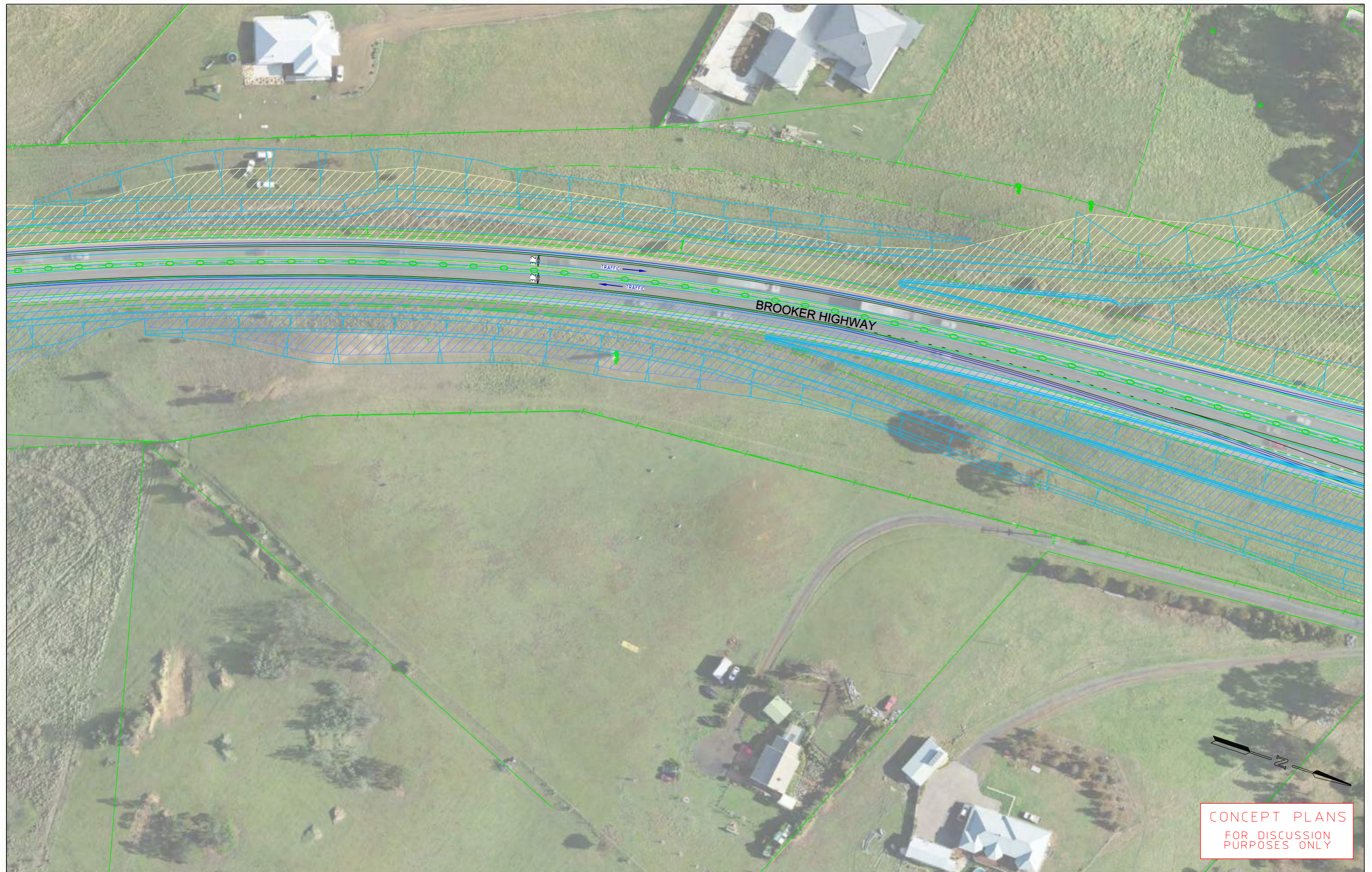
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**BRIDGEWATER BRIDGE  
STAGE 1A - SOUTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**



CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

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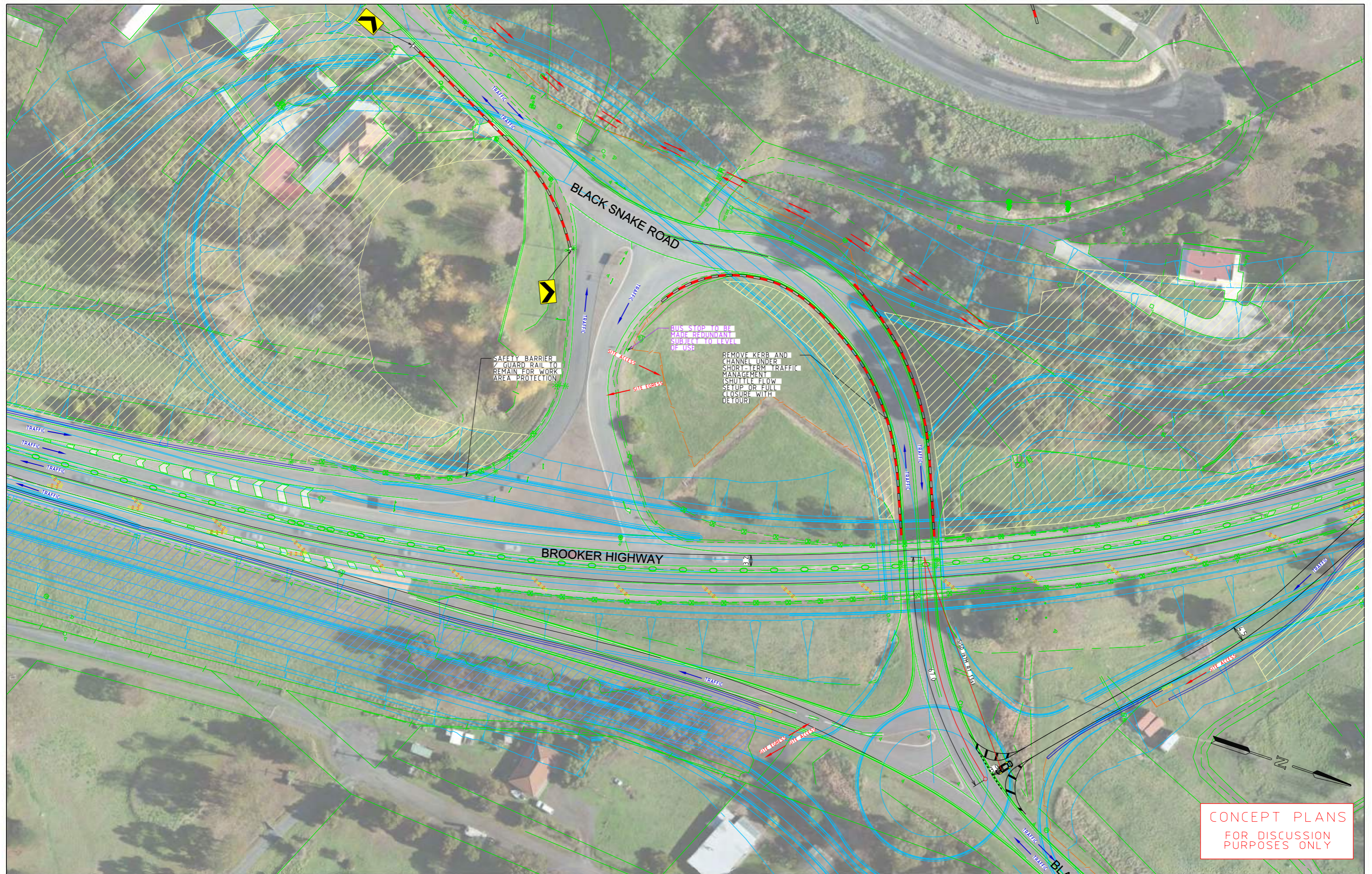
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**BRIDGEWATER BRIDGE  
STAGE 1A - SOUTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**





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FOR DISCUSSION  
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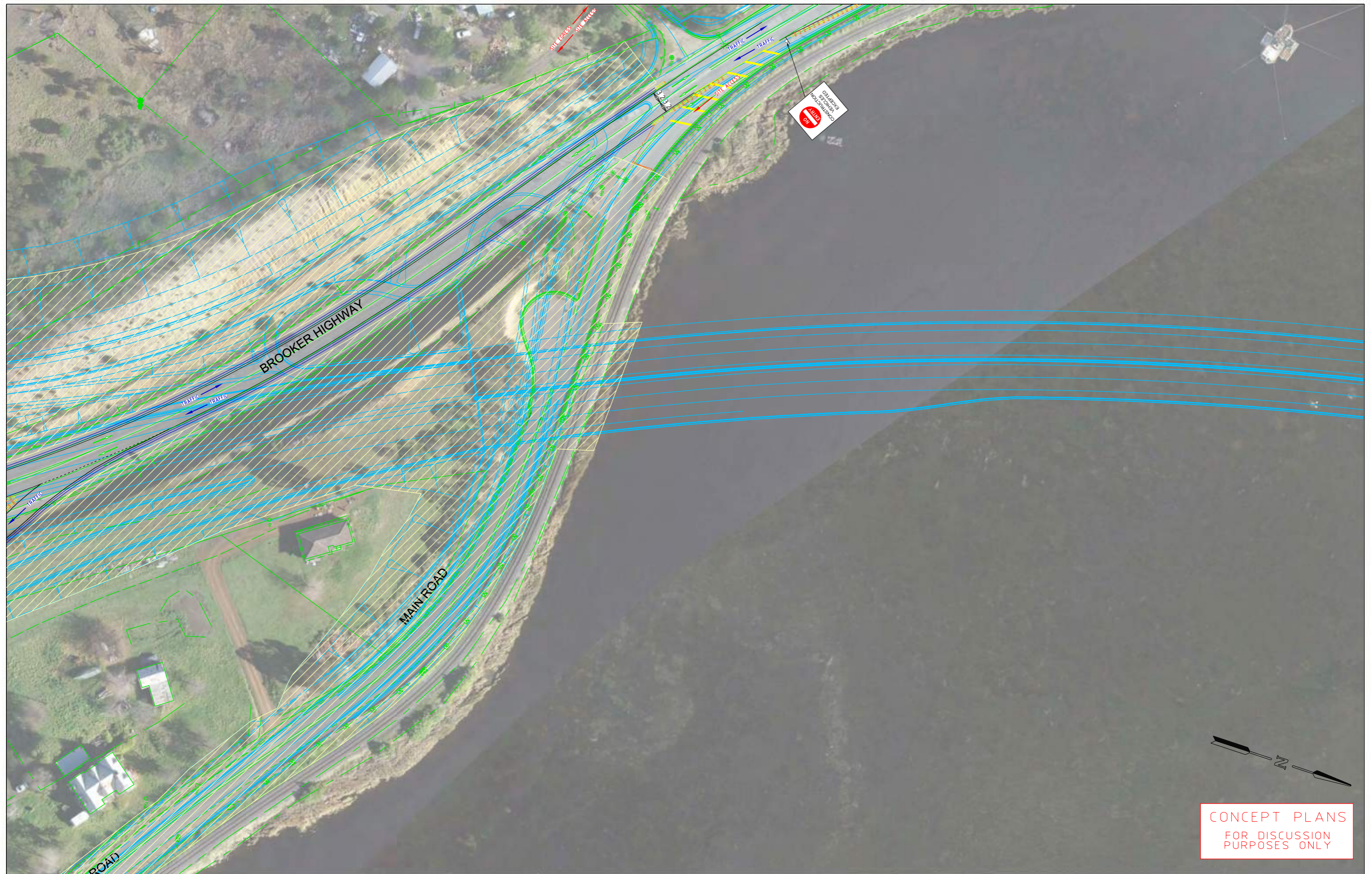
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**BRIDGEWATER BRIDGE  
STAGE 1A - SOUTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**



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**BRIDGEWATER BRIDGE  
STAGE 1A - SOUTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**



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**BRIDGEWATER BRIDGE  
STAGE 1A - SOUTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**



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**BRIDGEWATER BRIDGE  
STAGE 1A - SOUTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**



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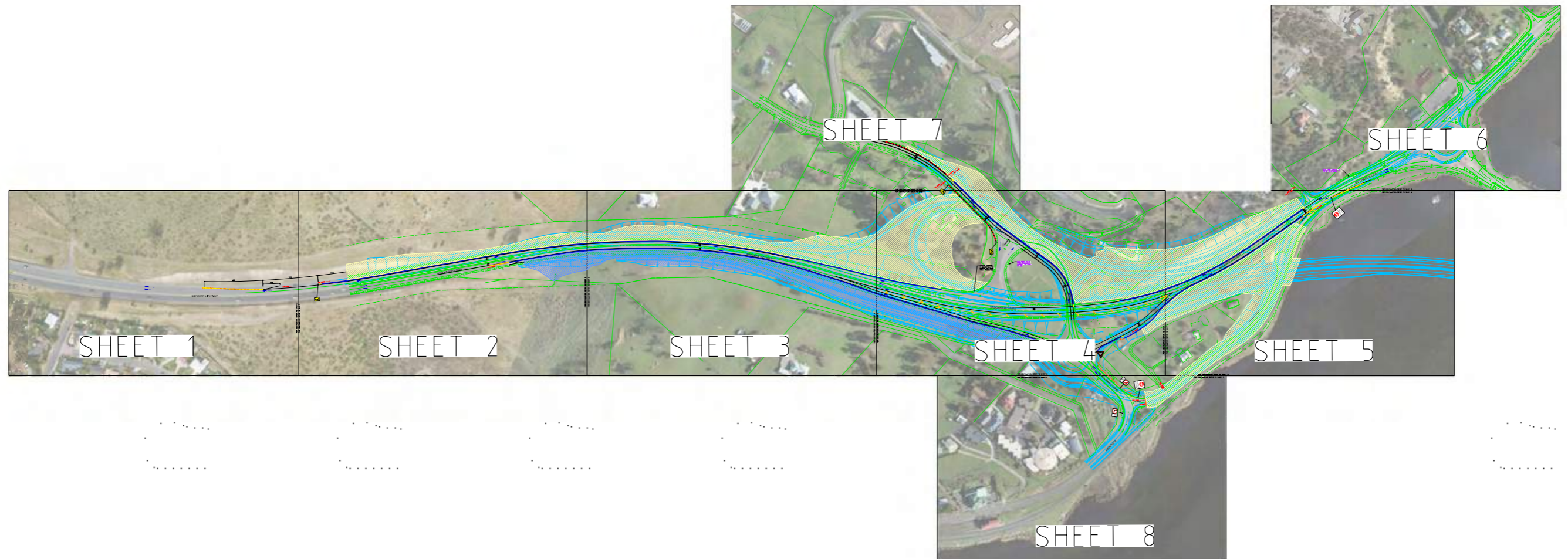
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**BRIDGEWATER BRIDGE  
STAGE 1A - SOUTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**

# BRIDGEWATER BRIDGE STAGE 1B - SOUTHERN SECTION

## CONCEPT PLANS



CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

LEGEND	
	EXISTING CONDITIONS
	ULTIMATE DESIGN
	TEMP LINE MARKING
	PEDESTRIAN MOVEMENT SIGN
	END TREATMENT
	SAFETY BARRIER
	KLEMMFIX
	BOLLARDS
	WORK AREA
	OPTIONAL WORK AREA
	SHORT-TERM WORK AREA

REV	REVISION NOTES	DATE
C	UPDATED WITH DSG AND IV COMMENTS	8/08/2022
B	UPDATED WITH DSG AND IV COMMENTS	4/07/2022
A	CONCEPT PLAN FOR REVIEW	24/05/2022

GENERAL NOTES:  
1. BASE INFORMATION FROM FEATURE SURVEY / ECW.  
2. ALL DIMENSIONS ARE TO FACE OF KERB & CHANNEL.

SCALE



DESIGNED:	IMAM WAZEER
REVIEWED:	MANOJ DHANORKAR

REV: C	DRAWING NO: MCD-TMS-DRG-S-001B	SHEET: TITLE PAGE
<b>BRIDGEWATER BRIDGE STAGE 1B - SOUTHERN</b>		
<b>CONCEPT TRAFFIC CONTROL PLAN</b>		



FOR CONTINUATION REFER TO SHEET 2

CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

LEGEND	
	EXISTING CONDITIONS
	ULTIMATE DESIGN
	TEMP LINE MARKING
	PEDESTRIAN MOVEMENT SIGN
	END TREATMENT
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	BOLLARDS
	WORK AREA
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SCALE

DESIGNED:	IMAM WAZEER
REVIEWED:	MANOJ DHANORKAR

REV: C	DRAWING NO: MCD-TMS-DRG-S-001B	SHEET: 1 OF 8
<b>BRIDGEWATER BRIDGE STAGE 1B - SOUTHERN</b>		
<b>CONCEPT TRAFFIC CONTROL PLAN</b>		



FOR CONTINUATION REFER TO SHEET 1

FOR CONTINUATION REFER TO SHEET 3

CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

1 OF 8

LEGEND	
	EXISTING CONDITIONS
	ULTIMATE DESIGN
	TEMP LINE MARKING
	WORK AREA
	OPTIONAL WORK AREA
	PEDESTRIAN MOVEMENT SIGN
	END TREATMENT
	SAFETY BARRIER
	SHORT-TERM WORK AREA
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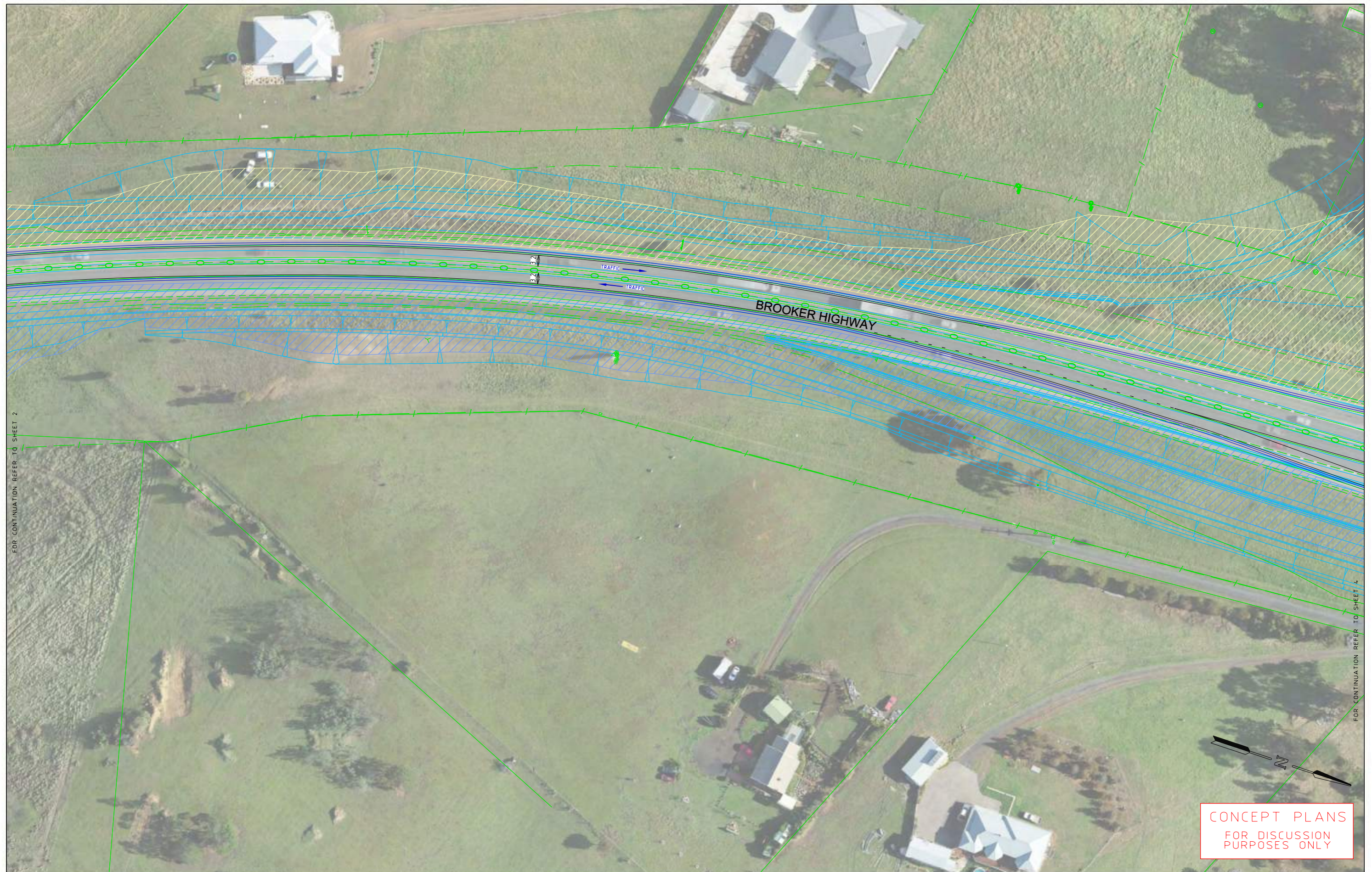
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SCALE

DESIGNED:	IMAM WAZEER
REVIEWED:	MANOJ DHANORKAR

REV: C	DRAWING NO: MCD-TMS-DRG-S-001B	SHEET: 2 OF 8
<b>BRIDGEWATER BRIDGE STAGE 1B - SOUTHERN</b>		
<b>CONCEPT TRAFFIC CONTROL PLAN</b>		





FOR CONTINUATION REFER TO SHEET 2

FOR CONTINUATION REFER TO SHEET 4

CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

LEGEND	
	EXISTING CONDITIONS
	ULTIMATE DESIGN
	TEMP LINE MARKING
	PEDESTRIAN MOVEMENT SIGN
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SCALE

**McCONNELL DOWELL**  
CREATIVE CONSTRUCTION

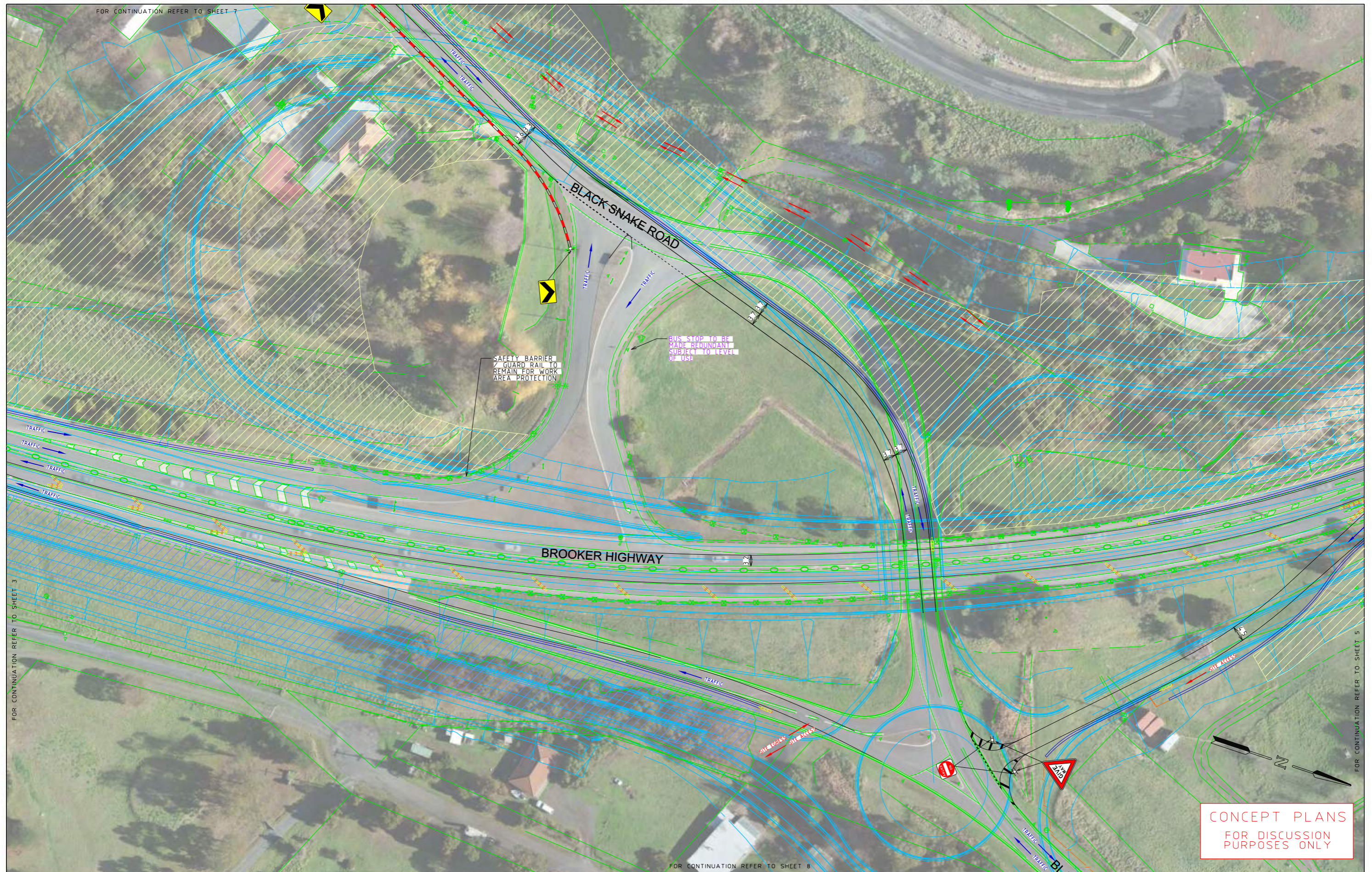
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DESIGNED: IMAM WAZEER  
REVIEWED: MANOJ DHANORKAR

REV: C | DRAWING NO: MCD-TMS-DRG-S-001B | SHEET: 3 OF 8

**BRIDGEWATER BRIDGE  
STAGE 1B - SOUTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**



CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

LEGEND	
	EXISTING CONDITIONS
	ULTIMATE DESIGN
	TEMP LINE MARKING
	PEDESTRIAN MOVEMENT
	SIGN
	END TREATMENT
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SCALE 0 5 10 15 20

**McCONNELL DOWELL**  
CREATIVE CONSTRUCTION

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REV: C DRAWING NO: MCD-TMS-DRG-S-001B SHEET: 4 OF 8

**BRIDGEWATER BRIDGE  
STAGE 1B - SOUTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**



FOR CONTINUATION REFER TO SHEET 4

FOR CONTINUATION REFER TO SHEET 8

CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

LEGEND	
	EXISTING CONDITIONS
	ULTIMATE DESIGN
	TEMP LINE MARKING
	PEDESTRIAN MOVEMENT SIGN
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SCALE

**MCCONNELL DOWELL**  
CREATIVE CONSTRUCTION

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DESIGNED: IMAM WAZEER  
REVIEWED: MANOJ DHANORKAR

REV: C DRAWING NO: MCD-TMS-DRG-S-001B SHEET: 5 OF 8

**BRIDGEWATER BRIDGE  
STAGE 1B - SOUTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**



BUS STOP NUMBER 49  
TO BE MAINTAINED

BROOKER HIGHWAY  
TRAFFIC  
TRAFFIC

CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

FOR CONTINUATION REFER TO SHEET 5

LEGEND	
	EXISTING CONDITIONS
	ULTIMATE DESIGN
	TEMP LINE MARKING
	PEDESTRIAN MOVEMENT SIGN
	END TREATMENT
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CREATIVE CONSTRUCTION

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DESIGNED: IMAM WAZEER  
REVIEWED: MANOJ DHANORKAR

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**BRIDGEWATER BRIDGE  
STAGE 1B - SOUTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**



CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

FOR CONTINUATION REFER TO SHEET 4

LEGEND	
	EXISTING CONDITIONS
	ULTIMATE DESIGN
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**MCCONNELL DOWELL**  
CREATIVE CONSTRUCTION

**Road Safety**  
Traffic Management Solutions

DESIGNED: IMAM WAZEER  
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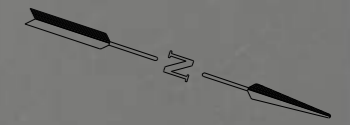
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**BRIDGEWATER BRIDGE  
STAGE 1B - SOUTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**

FOR CONTINUATION REFER TO SHEET 4

FOR CONTINUATION REFER TO SHEET 5



CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

LEGEND	
	EXISTING CONDITIONS
	ULTIMATE DESIGN
	TEMP LINE MARKING
	PEDESTRIAN MOVEMENT SIGN
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**MCCONNELL DOWELL**  
CREATIVE CONSTRUCTION

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DESIGNED: IMAM WAZEER  
 REVIEWED: MANOJ DHANORKAR

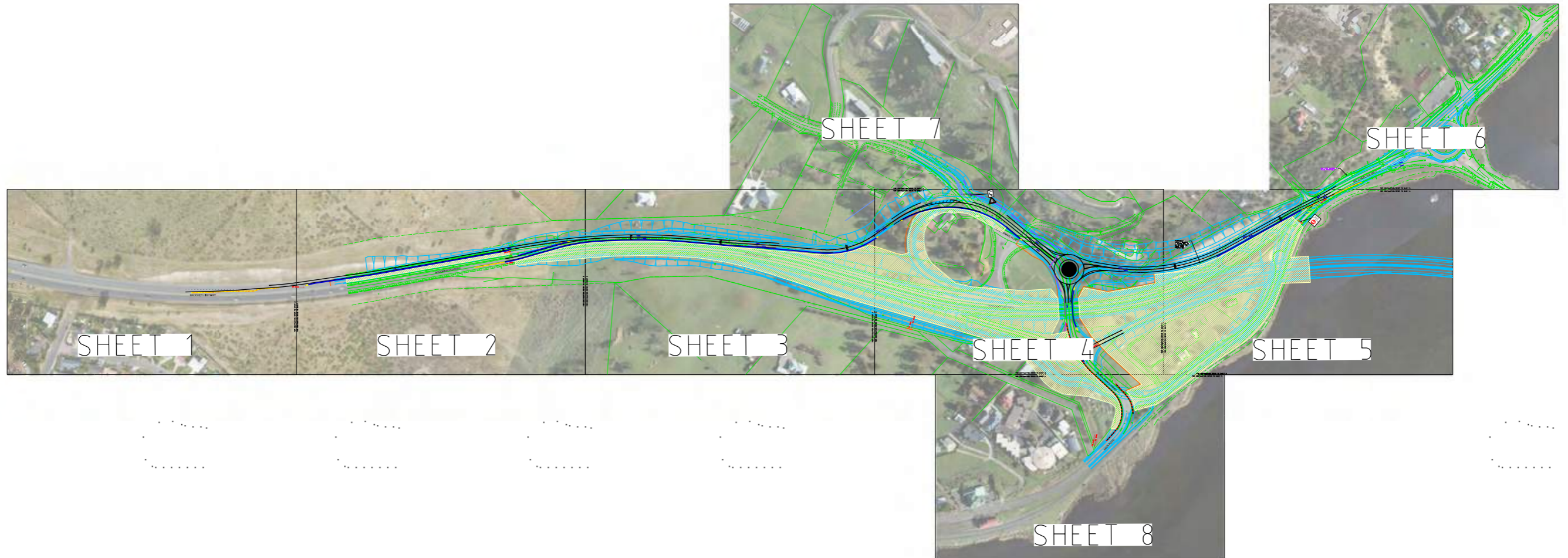
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**BRIDGEWATER BRIDGE  
STAGE 1B - SOUTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**

# BRIDGEWATER BRIDGE STAGE 2 - SOUTHERN SECTION

## CONCEPT PLANS



CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

LEGEND	
	EXISTING CONDITIONS
	ULTIMATE DESIGN
	TEMP LINE MARKING
	PEDESTRIAN MOVEMENT SIGN
	END TREATMENT
	SAFETY BARRIER
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SCALE



DESIGNED: IMAM WAZEER  
REVIEWED: MANOJ DHANORKAR

REV: C	DRAWING NO: MCD-TMS-DRG-S-002	SHEET: TITLE PAGE
<b>BRIDGEWATER BRIDGE STAGE 2 - SOUTHERN</b>		
<b>CONCEPT TRAFFIC CONTROL PLAN</b>		



BROOKER HIGHWAY

CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

LEGEND	
	EXISTING CONDITIONS
	ULTIMATE DESIGN
	TEMP LINE MARKING
	PEDESTRIAN MOVEMENT SIGN
	END TREATMENT
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**MCCONNELL DOWELL**  
CREATIVE CONSTRUCTION

**Road Safety**  
Traffic Management Solutions

DESIGNED: IMAM WAZEER  
REVIEWED: MANOJ DHANORKAR

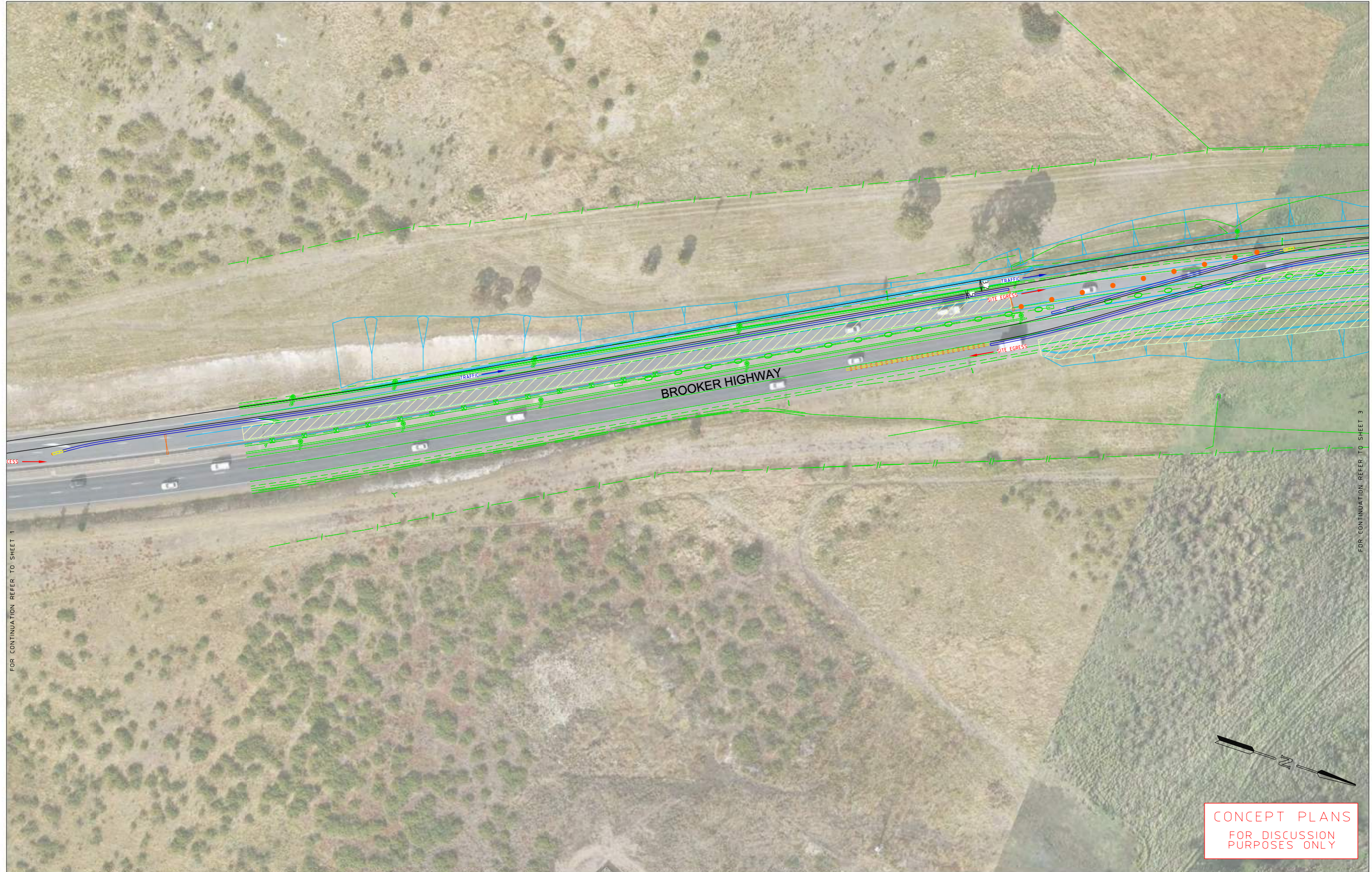
REV: C | DRAWING NO: MCD-TMS-DRG-S-002 | SHEET: 1 OF 8

**BRIDGEWATER BRIDGE  
STAGE 2 - SOUTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**

FOR CONTINUATION REFER TO SHEET 2





FOR CONTINUATION REFER TO SHEET 1

FOR CONTINUATION REFER TO SHEET 3

CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

1 OF 8

LEGEND	
	EXISTING CONDITIONS
	ULTIMATE DESIGN
	TEMP LINE MARKING
	PEDESTRIAN MOVEMENT SIGN
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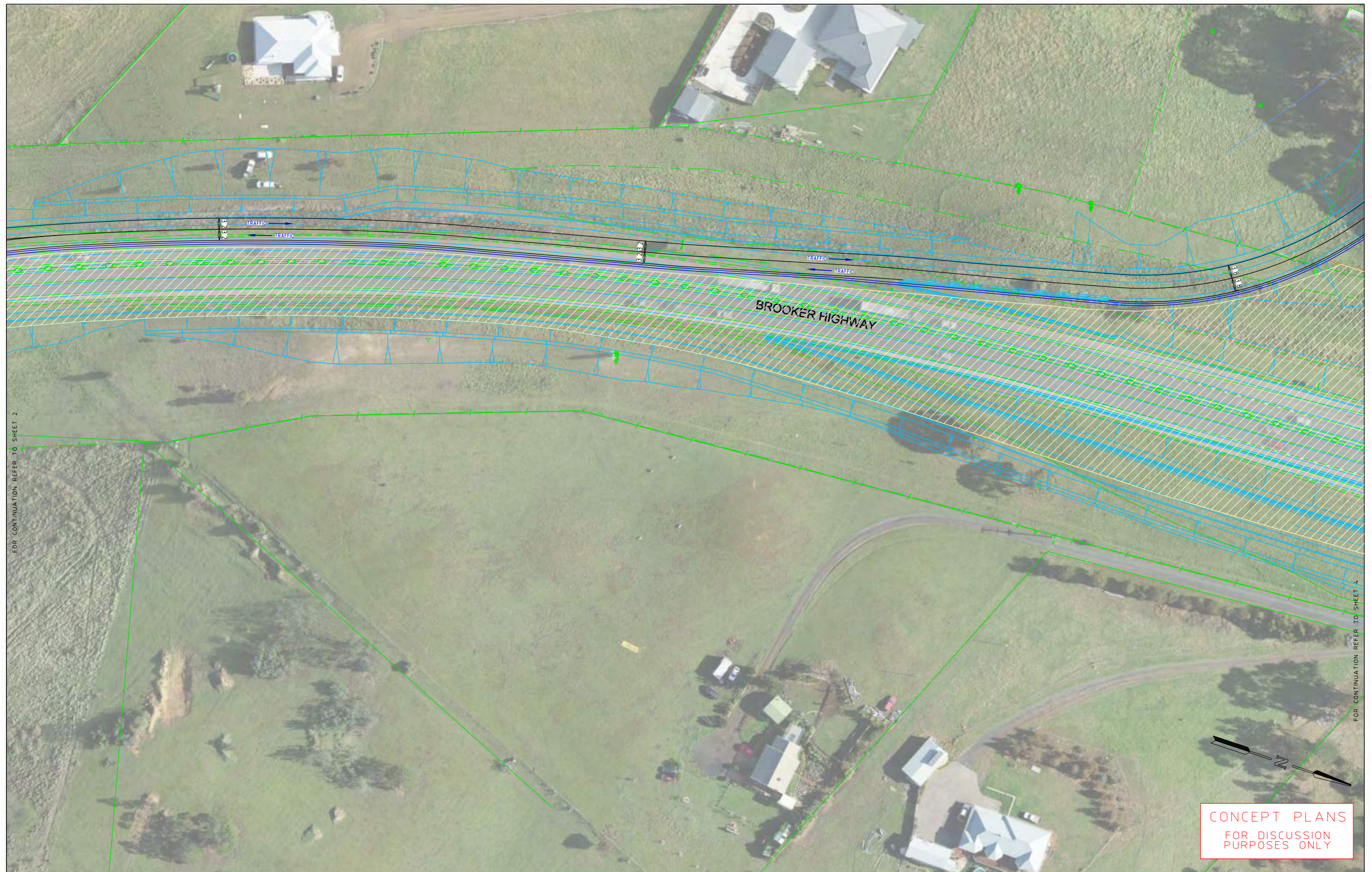
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SCALE

DESIGNED:	IMAM WAZEER
REVIEWED:	MANOJ DHANORKAR

REV: C	DRAWING NO: MCD-TMS-DRG-S-002	SHEET: 2 OF 8
<b>BRIDGEWATER BRIDGE STAGE 2 - SOUTHERN</b>		
<b>CONCEPT TRAFFIC CONTROL PLAN</b>		



FOR CONTINUATION REFER TO SHEET 2

FOR CONTINUATION REFER TO SHEET 4

CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

LEGEND	
	EXISTING CONDITIONS
	ULTIMATE DESIGN
	TEMP LINE MARKING
	PEDESTRIAN MOVEMENT SIGN
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**MCCONNELL DOWELL**  
CREATIVE CONSTRUCTION

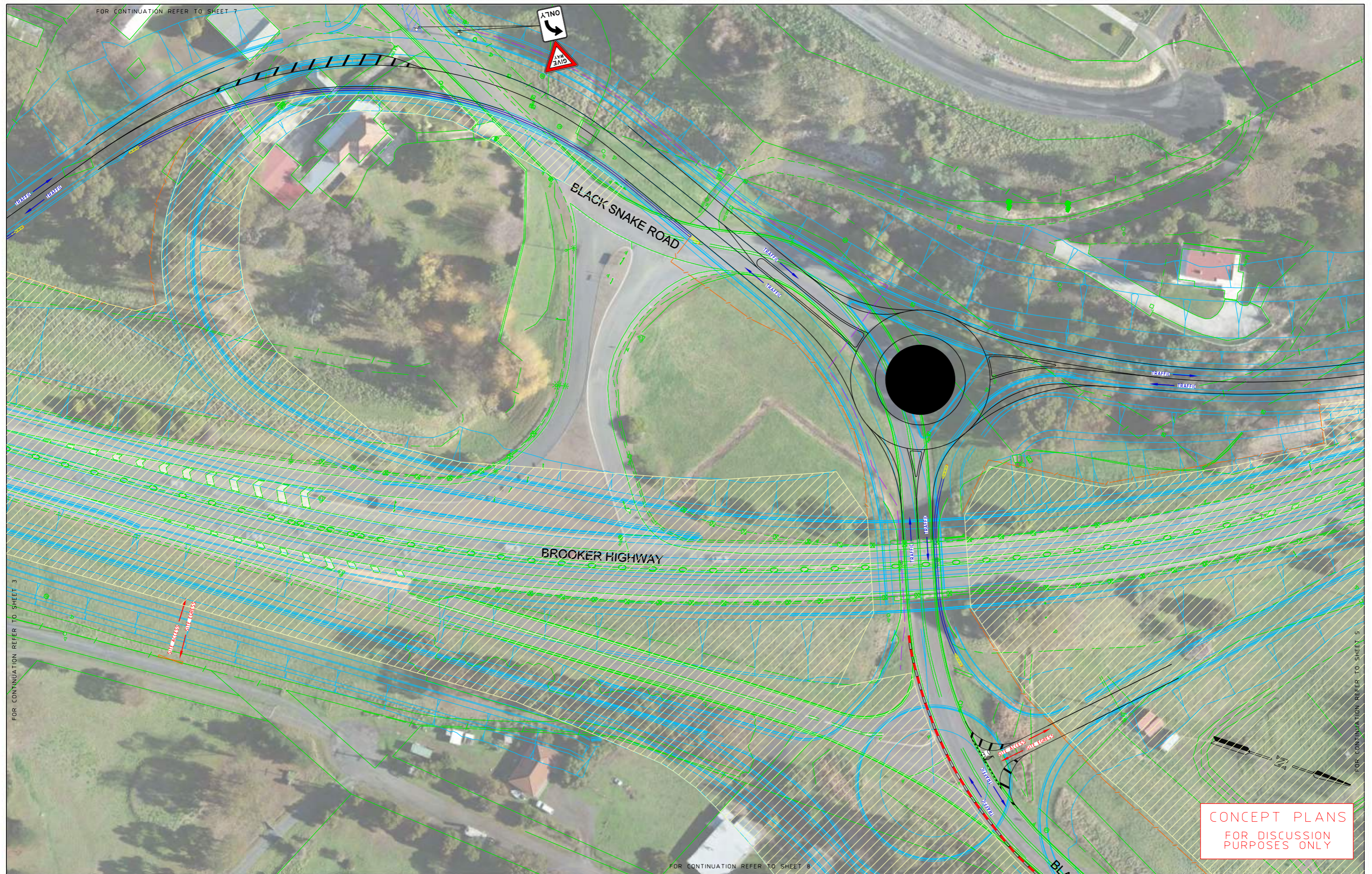
**Road Safety**  
Traffic Management Solutions

DESIGNED: IMAM WAZEER  
REVIEWED: MANOJ DHANORKAR

REV: C DRAWING NO: MCD-TMS-DRG-S-002 SHEET: 3 OF 8

**BRIDGEWATER BRIDGE  
STAGE 2 - SOUTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**



FOR CONTINUATION REFER TO SHEET 7

FOR CONTINUATION REFER TO SHEET 3

FOR CONTINUATION REFER TO SHEET 8

FOR CONTINUATION REFER TO SHEET 5

CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

LEGEND	
	EXISTING CONDITIONS
	ULTIMATE DESIGN
	TEMP LINE MARKING
	PEDESTRIAN MOVEMENT SIGN
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SCALE 0 5 10 15 20

**McCONNELL DOWELL**  
CREATIVE CONSTRUCTION

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DESIGNED: IMAM WAZEER  
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REV: C DRAWING NO: MCD-TMS-DRG-S-002 SHEET: 4 OF 8

**BRIDGEWATER BRIDGE  
STAGE 2 - SOUTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**



PERMANENT SAFETY BARRIER GUARD RAIL TO BE UTILISED FOR WORK AREA PROTECTION

OBSTRUCTED BY BRIDGE HOV 3+ SIGN

FOR CONTINUATION REFER TO SHEET 4

FOR CONTINUATION REFER TO SHEET 8

CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

LEGEND	
	EXISTING CONDITIONS
	ULTIMATE DESIGN
	TEMP LINE MARKING
	PEDESTRIAN MOVEMENT
	END TREATMENT
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**MCCONNELL DOWELL**  
CREATIVE CONSTRUCTION

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Traffic Management Solutions

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REV: C DRAWING NO: MCD-TMS-DRG-S-002 SHEET: 5 OF 8

**BRIDGEWATER BRIDGE  
STAGE 2 - SOUTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**



CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

LEGEND	
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**BRIDGEWATER BRIDGE  
STAGE 2 - SOUTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**

FOR CONTINUATION REFER TO SHEET 5



CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

FOR CONTINUATION REFER TO SHEET 4

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**McCONNELL DOWELL**  
CREATIVE CONSTRUCTION

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Traffic Management Solutions

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REV: C | DRAWING NO: MCD-TMS-DRG-S-002 | SHEET: 7 OF 8

**BRIDGEWATER BRIDGE  
STAGE 2 - SOUTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**

FOR CONTINUATION REFER TO SHEET 4

FOR CONTINUATION REFER TO SHEET 5



CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

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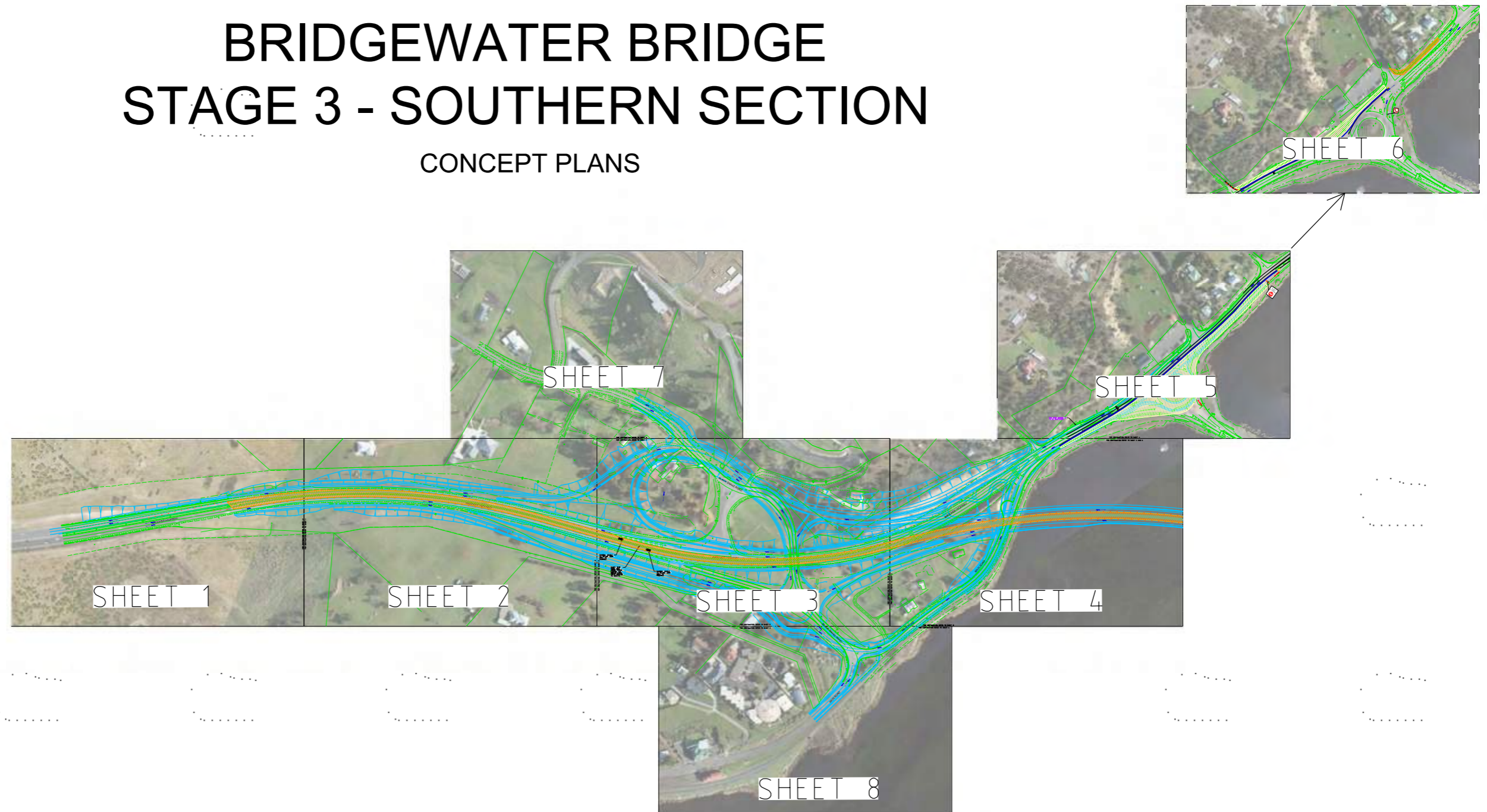
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**BRIDGEWATER BRIDGE  
STAGE 2 - SOUTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**

# BRIDGEWATER BRIDGE STAGE 3 - SOUTHERN SECTION

## CONCEPT PLANS



CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

LEGEND	
	EXISTING CONDITIONS
	ULTIMATE DESIGN
	TEMP LINE MARKING
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CREATIVE CONSTRUCTION

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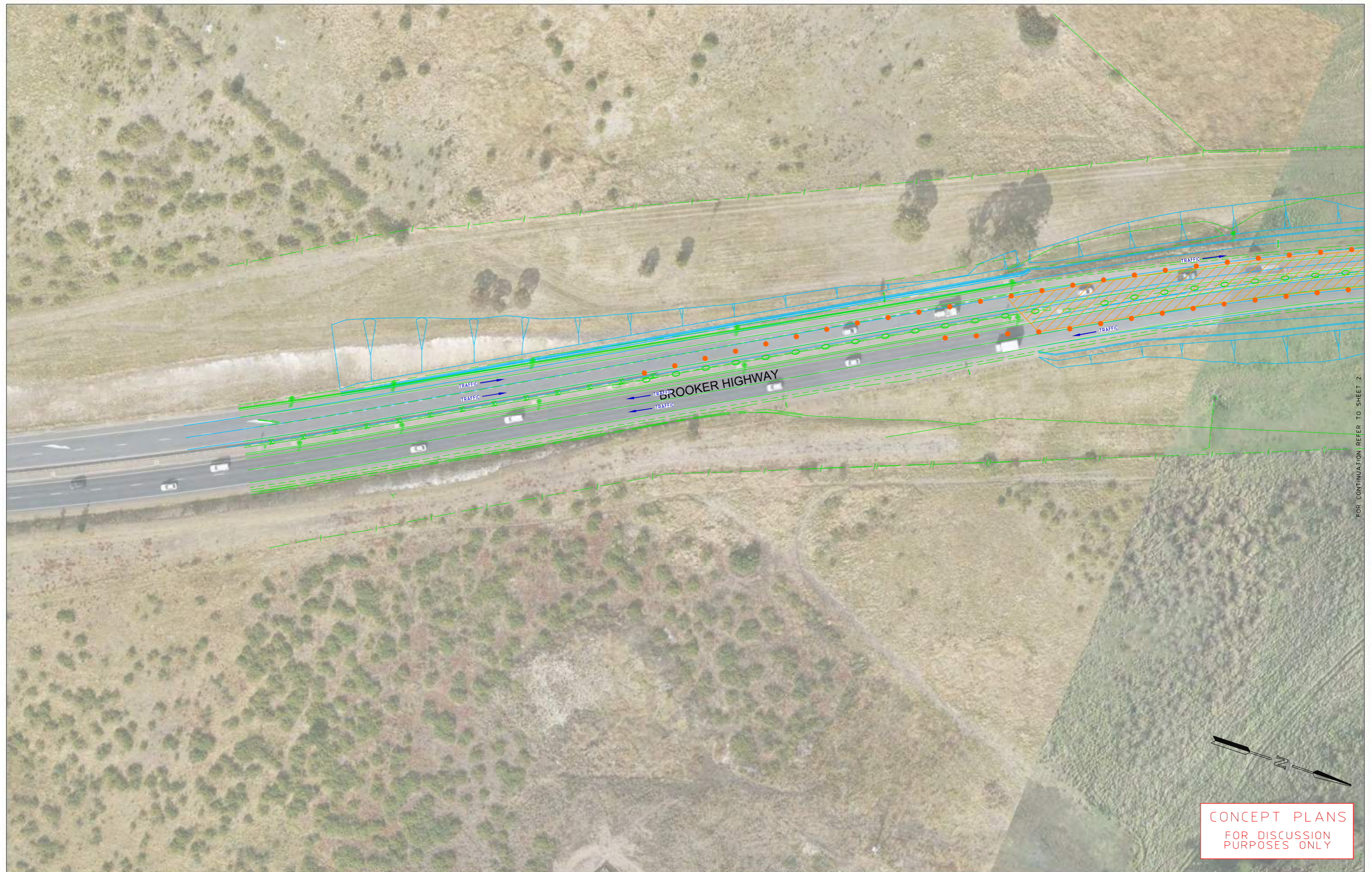
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**BRIDGEWATER BRIDGE  
STAGE 3 - SOUTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**





FOR CONTINUATION REFER TO SHEET 2

CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

1 OF 8

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	ULTIMATE DESIGN
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	BOLLARDS
	WORK AREA
	OPTIONAL WORK AREA
	SHORT-TERM WORK AREA

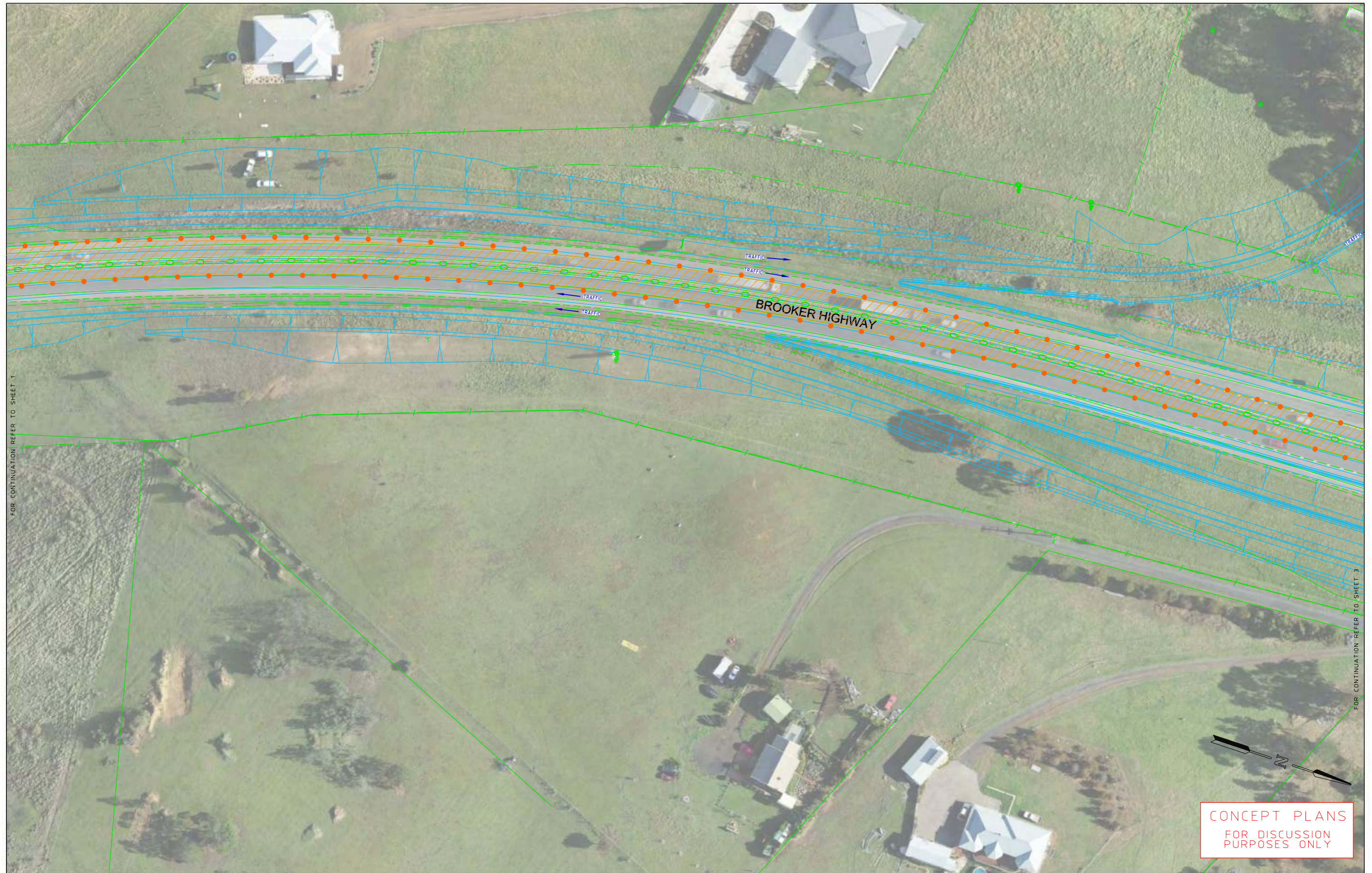
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C	UPDATED WITH DSG AND IV COMMENTS	8/08/2022
B	UPDATED WITH DSG AND IV COMMENTS	4/07/2022
A	CONCEPT PLAN FOR REVIEW	24/05/2022

GENERAL NOTES  
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 2. ALL DIMENSIONS ARE TO FACE OF KERB & CHANNEL.

SCALE

DESIGNED:	IMAM WAZEER
REVIEWED:	MANOJ DHANORKAR

REV: C	DRAWING NO: MCD-TMS-DRG-S-003	SHEET: 1 OF 8
<b>BRIDGEWATER BRIDGE STAGE 3 - SOUTHERN</b>		
<b>CONCEPT TRAFFIC CONTROL PLAN</b>		



FOR CONTINUATION REFER TO SHEET 1

FOR CONTINUATION REFER TO SHEET 3

CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

LEGEND	
	EXISTING CONDITIONS
	ULTIMATE DESIGN
	TEMP LINE MARKING
	PEDESTRIAN MOVEMENT SIGN
	END TREATMENT AREA
	SAFETY BARRIER
	KLEMMFIX
	BOLLARDS
	WORK AREA
	OPTIONAL WORK AREA
	SHORT-TERM WORK AREA

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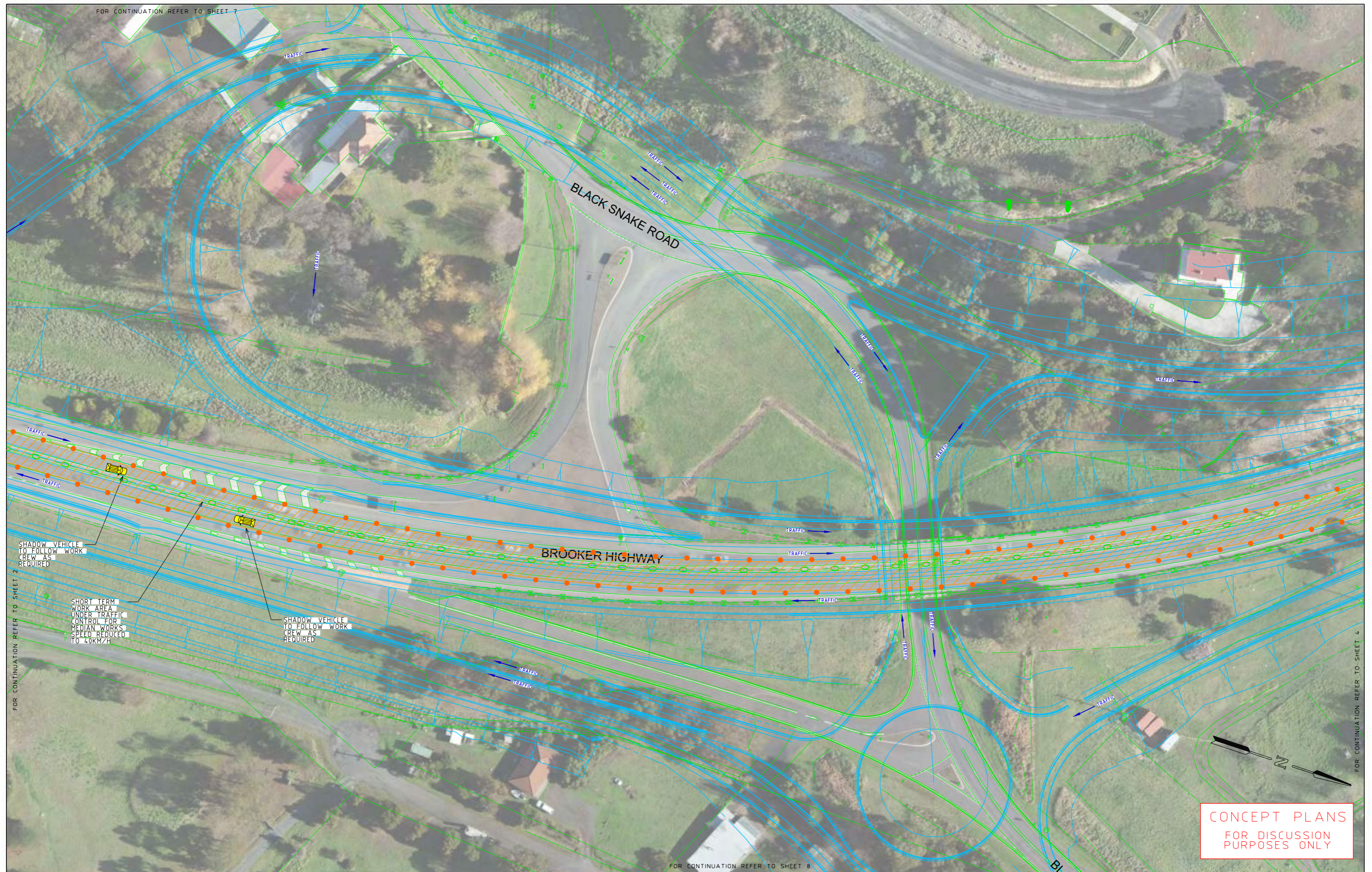
SCALE

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DESIGNED:	IMAM WAZEER
REVIEWED:	MANOJ DHANORKAR

REV: C	DRAWING NO: MCD-TMS-DRG-S-003	SHEET: 2 OF 8
<b>BRIDGEWATER BRIDGE STAGE 3 - SOUTHERN</b>		
<b>CONCEPT TRAFFIC CONTROL PLAN</b>		



FOR CONTINUATION REFER TO SHEET 7

FOR CONTINUATION REFER TO SHEET 2

FOR CONTINUATION REFER TO SHEET 8

FOR CONTINUATION REFER TO SHEET 4

CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

LEGEND	
	EXISTING CONDITIONS
	ULTIMATE DESIGN
	TEMP LINE MARKING
	PEDESTRIAN MOVEMENT SIGN
	END TREATMENT
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SCALE 0 5 10 15 20

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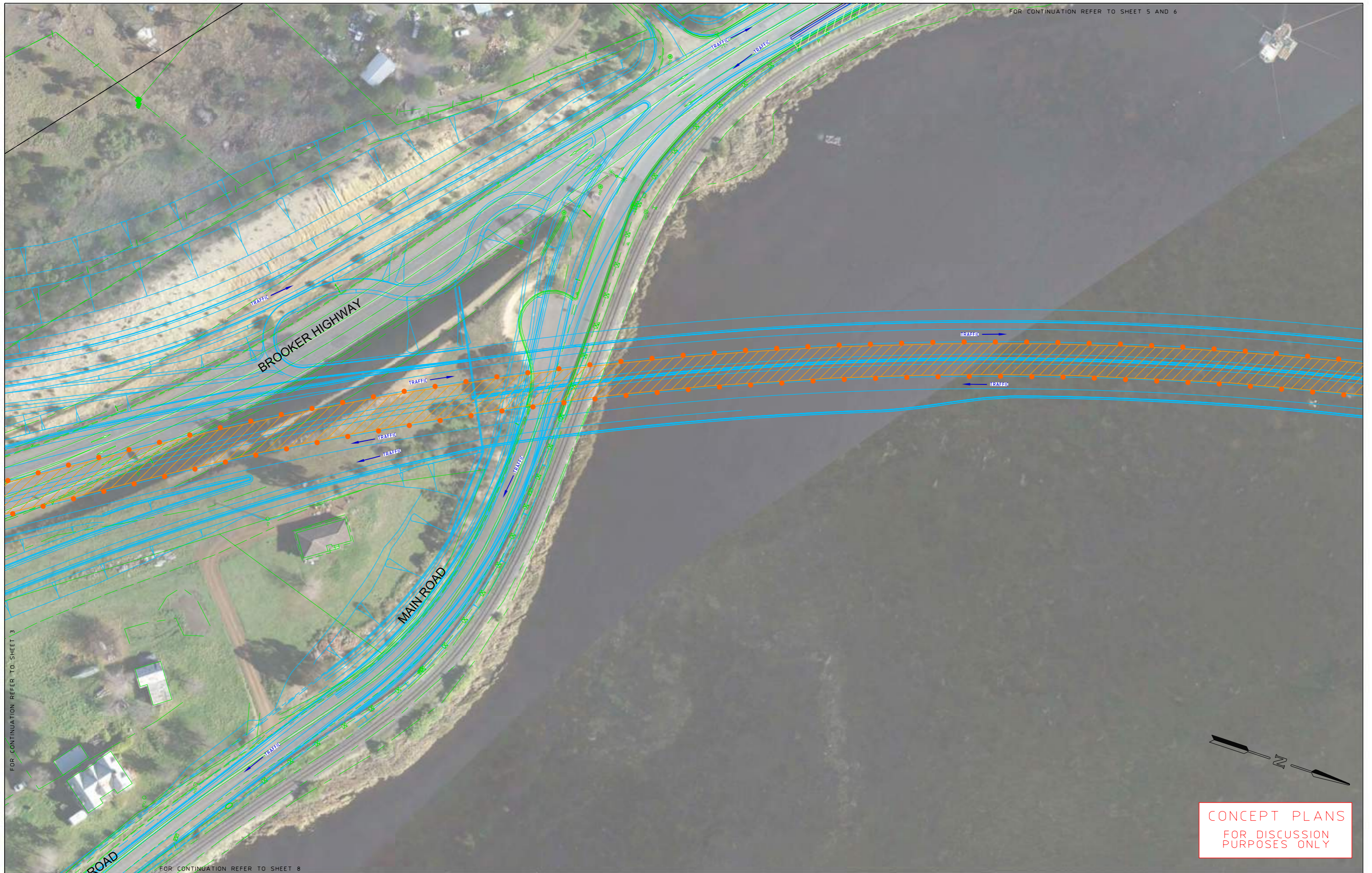
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DESIGNED: IMAM WAZEER  
 REVIEWED: MANOJ DHANORKAR

REV: C DRAWING NO: MCD-TMS-DRG-S-003 SHEET: 3 OF 8

**BRIDGEWATER BRIDGE  
STAGE 3 - SOUTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**



FOR CONTINUATION REFER TO SHEET 3

FOR CONTINUATION REFER TO SHEET 8

CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

LEGEND	
	EXISTING CONDITIONS
	ULTIMATE DESIGN
	TEMP LINE MARKING
	PEDESTRIAN MOVEMENT SIGN
	END TREATMENT
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DESIGNED: IMAM WAZEER  
REVIEWED: MANOJ DHANORKAR

REV: C DRAWING NO: MCD-TMS-DRG-S-003 SHEET: 4 OF 8

**BRIDGEWATER BRIDGE  
STAGE 3 - SOUTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**



CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

LEGEND	
	EXISTING CONDITIONS
	ULTIMATE DESIGN
	TEMP LINE MARKING
	PEDESTRIAN MOVEMENT
	SIGN
	END TREATMENT
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REV: C DRAWING NO: MCD-TMS-DRG-S-003 SHEET: 5 OF 8

**BRIDGEWATER BRIDGE  
STAGE 3 - SOUTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**



CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

LEGEND	
	EXISTING CONDITIONS
	ULTIMATE DESIGN
	TEMP LINE MARKING
	PEDESTRIAN MOVEMENT
	SIGN
	END TREATMENT
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REV: C DRAWING NO: MCD-TMS-DRG-S-001 SHEET: 6 OF 8

**BRIDGEWATER BRIDGE  
STAGE 1 - SOUTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**

FOR CONTINUATION REFER TO SHEET 4



CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

FOR CONTINUATION REFER TO SHEET 3

LEGEND	
	EXISTING CONDITIONS
	ULTIMATE DESIGN
	TEMP LINE MARKING
	PEDESTRIAN MOVEMENT SIGN
	END TREATMENT AREA
	SAFETY BARRIER
	KLEMMFIX
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SCALE

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REV: C | DRAWING NO: MCD-TMS-DRG-S-003 | SHEET: 7 OF 8

**BRIDGEWATER BRIDGE  
STAGE 3 - SOUTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**



FOR CONTINUATION REFER TO SHEET 3

FOR CONTINUATION REFER TO SHEET 4

CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

LEGEND	
	EXISTING CONDITIONS
	ULTIMATE DESIGN
	TEMP LINE MARKING
	PEDESTRIAN MOVEMENT SIGN
	END TREATMENT AREA
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DESIGNED: IMAM WAZEER  
REVIEWED: MANOJ DHANORKAR

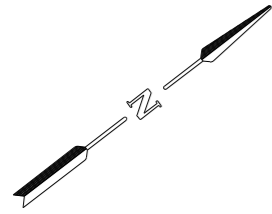
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**BRIDGEWATER BRIDGE  
STAGE 3 - SOUTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**



## 12.2 Concept Traffic Control Plans - Northern Interchange



# BRIDGEWATER BRIDGE STAGE 1 - NORTHERN SECTION

## CONCEPT PLANS



CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

LEGEND	
	EXISTING CONDITIONS
	ULTIMATE DESIGN
	TEMP LINE MARKING
	PEDESTRIAN MOVEMENT SIGN
	END TREATMENT
	SAFETY BARRIER
	KLEMMFIX
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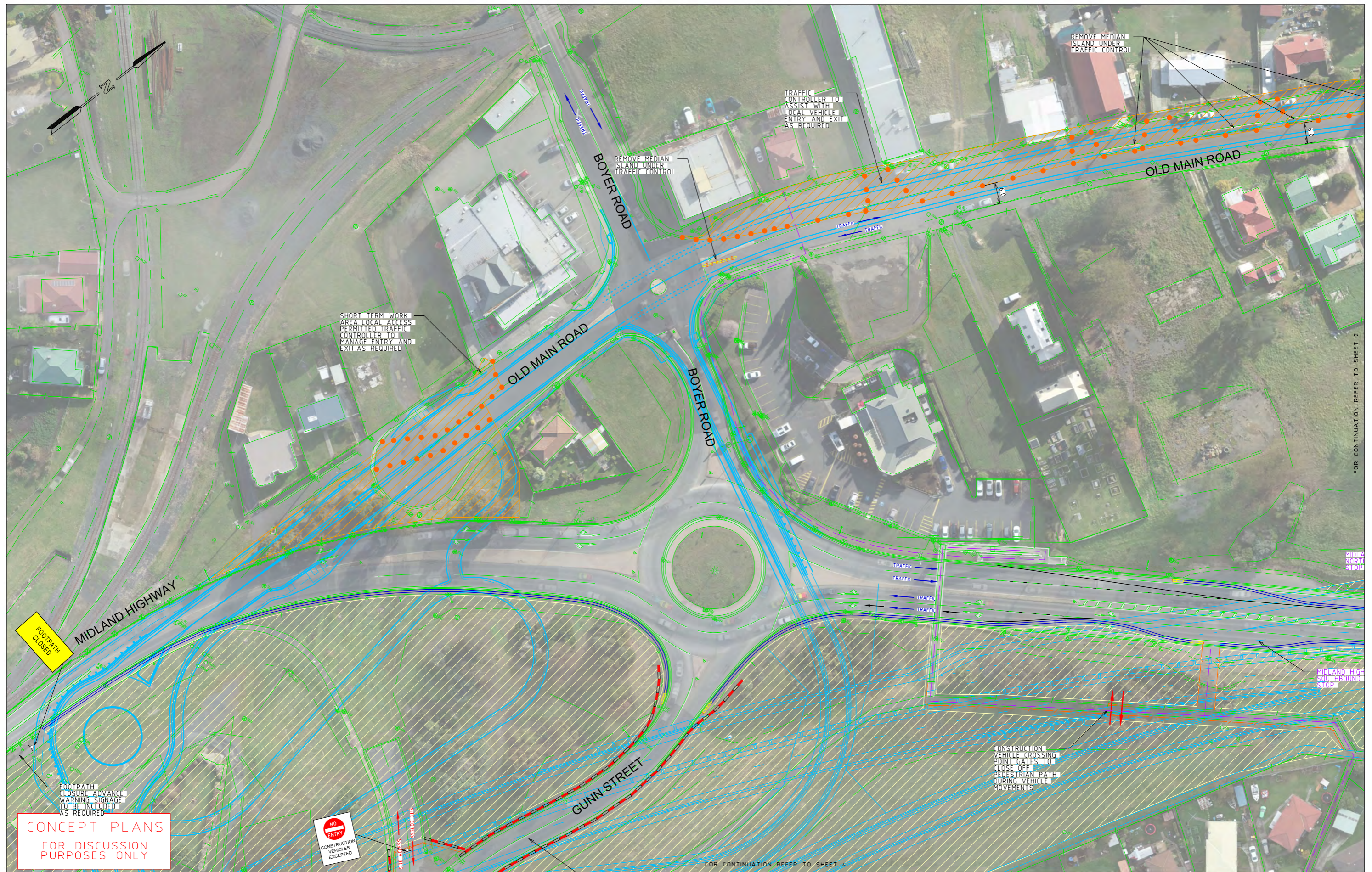
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SCALE



DESIGNED:	IMAM WAZEER
REVIEWED:	MANOJ DHANORKAR

REV: C	DRAWING NO: MCD-TMS-DRG-N-001	SHEET: TITLE PAGE
<b>BRIDGEWATER BRIDGE STAGE 1 NORTHERN</b>		
<b>CONCEPT TRAFFIC CONTROL PLAN</b>		



**CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY**

LEGEND	
	EXISTING CONDITIONS
	ULTIMATE DESIGN
	TEMP LINE MARKING
	PEDESTRIAN MOVEMENT SIGN
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SCALE 0 5 10 15 20

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DESIGNED: IMAM WAZEER  
 REVIEWED: MANOJ DHANORKAR

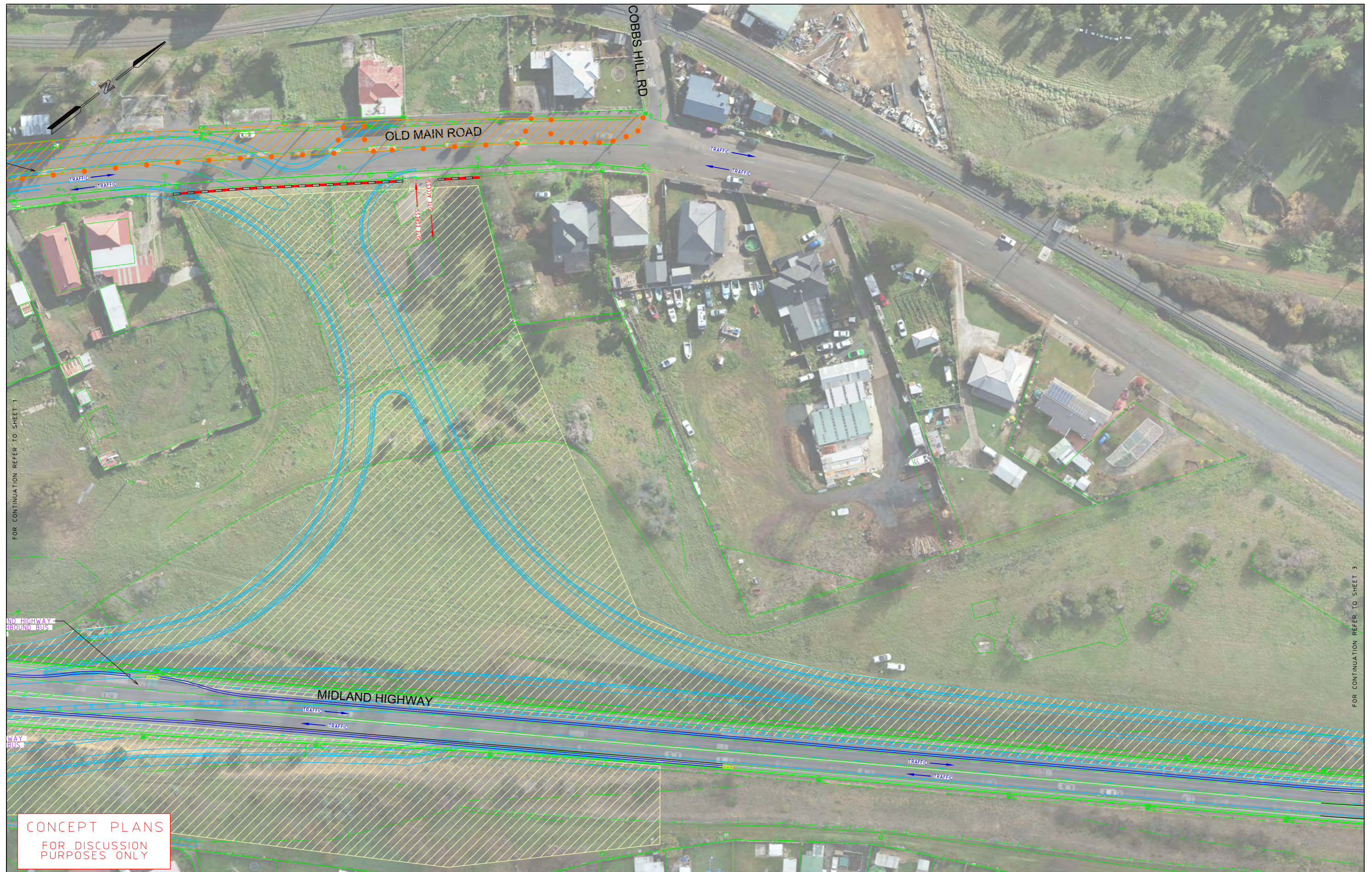
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**BRIDGEWATER BRIDGE  
STAGE 1 NORTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**

FOR CONTINUATION REFER TO SHEET 2

FOR CONTINUATION REFER TO SHEET 4



**CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY**

LEGEND	
	EXISTING CONDITIONS
	ULTIMATE DESIGN
	TEMP LINE MARKING
	PEDESTRIAN MOVEMENT SIGN
	END TREATMENT
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SCALE

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 REVIEWED: MANOJ DHANORKAR

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**BRIDGEWATER BRIDGE  
STAGE 1 NORTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**



FOR CONTINUATION REFER TO SHEET 2

CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

LEGEND	
	EXISTING CONDITIONS
	ULTIMATE DESIGN
	TEMP LINE MARKING
	PEDESTRIAN MOVEMENT SIGN
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 REVIEWED: MANOJ DHANORKAR

REV: C DRAWING NO: MCD-TMS-DRG-N-001 SHEET: 3 OF 4

**BRIDGEWATER BRIDGE  
STAGE 1 NORTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**



FOR CONTINUATION REFER TO SHEET 1  
 COMMENCEMENT OF GUNN STREET CLOSURE TO BE CONFIRMED

BUS STOP NUMBER 50 TO BE MAINTAINED  
 FORWARD PEDESTRIANS  
 TO LIST BUS STOP NUMBER 50

FOOTPATH CLOSED

FOOTPATH CLOSED AHEAD  
 PEDESTRIANS →

BUS STOP NUMBER 50 TO BE MAINTAINED

CONCEPT PLANS  
 FOR DISCUSSION  
 PURPOSES ONLY

LEGEND	
	EXISTING CONDITIONS
	ULTIMATE DESIGN
	TEMP LINE MARKING
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SCALE 0 5 10 15 20

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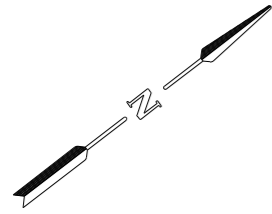
**Road Safety**  
 Traffic Management Solutions

DESIGNED: IMAM WAZEER  
 REVIEWED: MANOJ DHANORKAR

REV: C DRAWING NO: MCD-TMS-DRG-N-001 SHEET: 4 OF 4

**BRIDGEWATER BRIDGE  
 STAGE 1 NORTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**



# BRIDGEWATER BRIDGE STAGE 1A - NORTHERN SECTION

## CONCEPT PLANS



CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

LEGEND	
	EXISTING CONDITIONS
	ULTIMATE DESIGN
	TEMP LINE MARKING
	PEDESTRIAN MOVEMENT SIGN
	END TREATMENT
	SAFETY BARRIER
	KLEMMFIX
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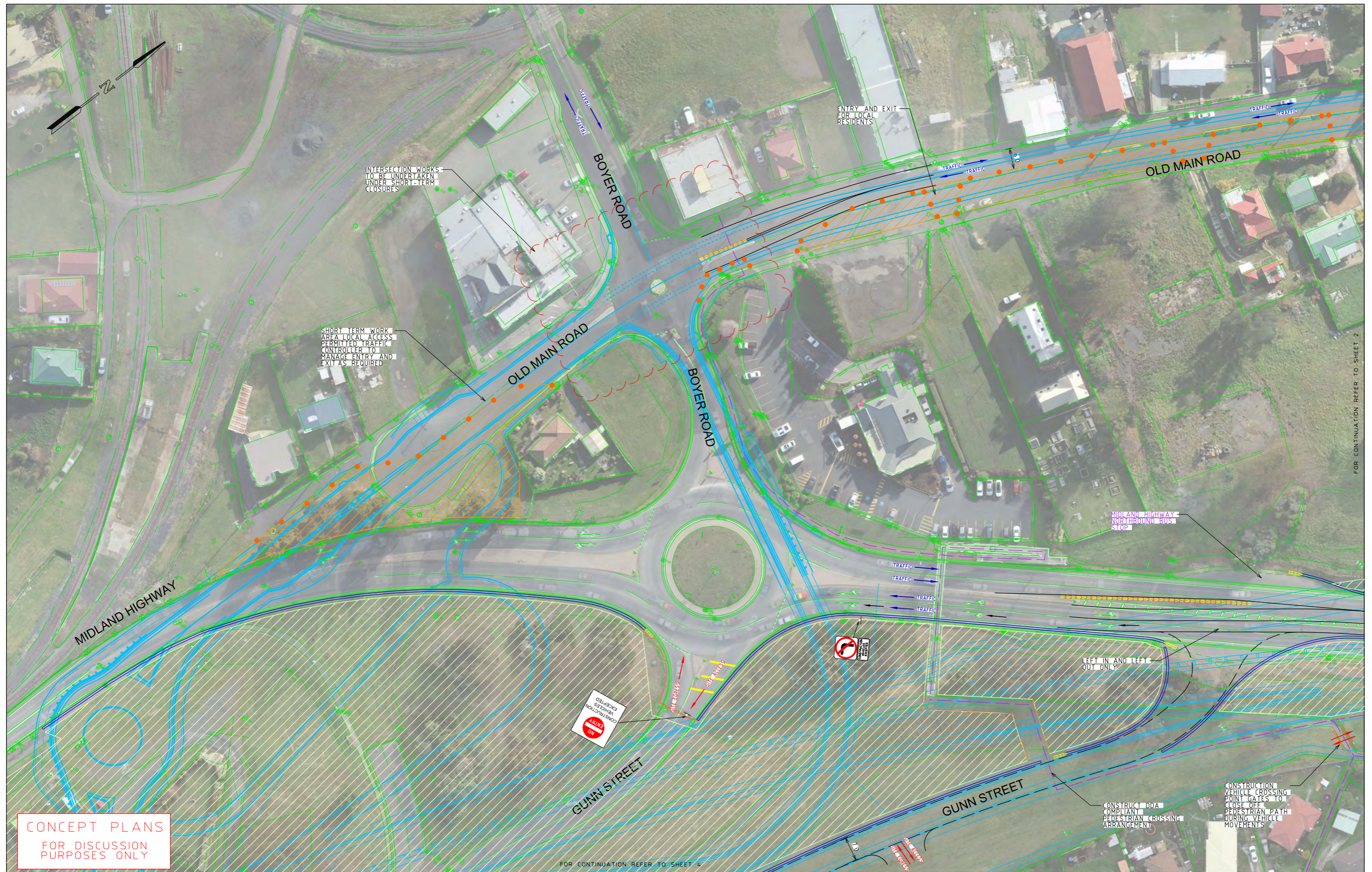
**Road Safety**  
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DESIGNED: IMAM WAZEER  
REVIEWED: MANOJ DHANORKAR

REV: C DRAWING NO: MCD-TMS-DRG-N-001A SHEET: TITLE PAGE

**BRIDGEWATER BRIDGE  
STAGE 1A NORTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**



**CONCEPT PLANS**  
FOR DISCUSSION  
PURPOSES ONLY

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	ULTIMATE DESIGN
	TEMP LINE MARKING
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SCALE 0 5 10 15 20

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REVIEWED: MANOJ DHANORKAR

REV: C DRAWING NO: MCD-TMS-DRG-N-001A SHEET: 1 OF 4

**BRIDGEWATER BRIDGE  
STAGE 1A NORTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**

FOR CONTINUATION REFER TO SHEET 2

FOR CONTINUATION REFER TO SHEET 4





CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

LEGEND	
	EXISTING CONDITIONS
	ULTIMATE DESIGN
	TEMP LINE MARKING
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 REVIEWED: MANOJ DHANORKAR

REV: C DRAWING NO: MCD-TMS-DRG-N-001A SHEET: 2 OF 4

**BRIDGEWATER BRIDGE  
STAGE 1A NORTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**



FOR CONTINUATION REFER TO SHEET 2

**CONCEPT PLANS**  
 FOR DISCUSSION  
 PURPOSES ONLY

LEGEND	
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	ULTIMATE DESIGN
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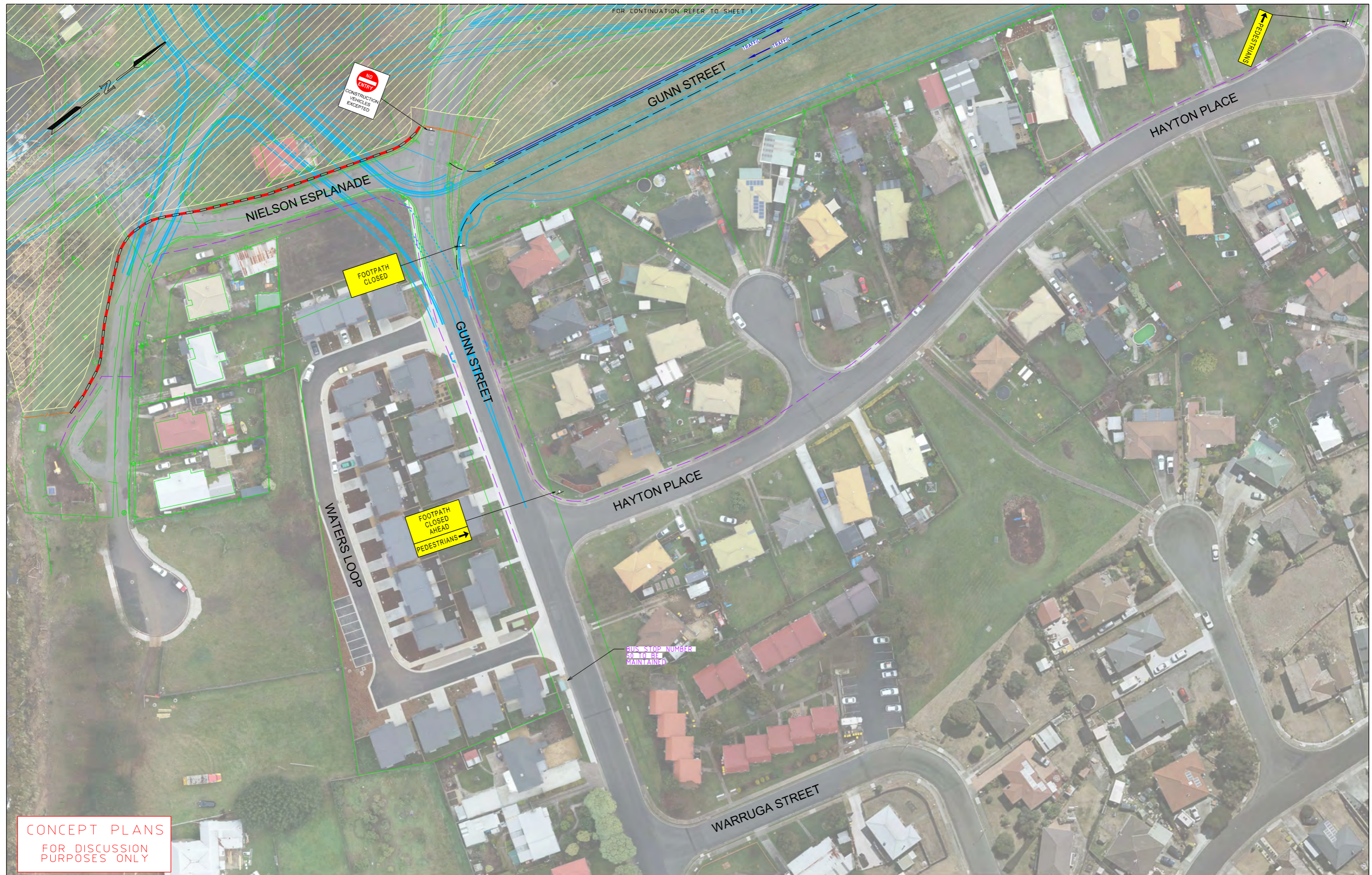
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DESIGNED:	IMAM WAZEER
REVIEWED:	MANOJ DHANORKAR

REV: C	DRAWING NO: MCD-TMS-DRG-N-001A	SHEET: 3 OF 4
<b>BRIDGEWATER BRIDGE          STAGE 1A NORTHERN</b>		
<b>CONCEPT TRAFFIC CONTROL PLAN</b>		

FOR CONTINUATION REFER TO SHEET 1



CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

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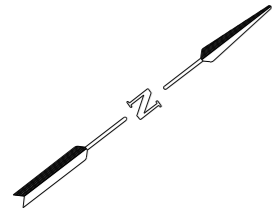
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DESIGNED: IMAM WAZEER  
 REVIEWED: MANOJ DHANORKAR

REV: C DRAWING NO: MCD-TMS-DRG-N-001A SHEET: 4 OF 4

**BRIDGEWATER BRIDGE  
 STAGE 1A NORTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**



# BRIDGEWATER BRIDGE STAGE 2 - NORTHERN SECTION

## CONCEPT PLANS



CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

LEGEND	
	EXISTING CONDITIONS
	ULTIMATE DESIGN
	TEMP LINE MARKING
	PEDESTRIAN MOVEMENT SIGN
	END TREATMENT
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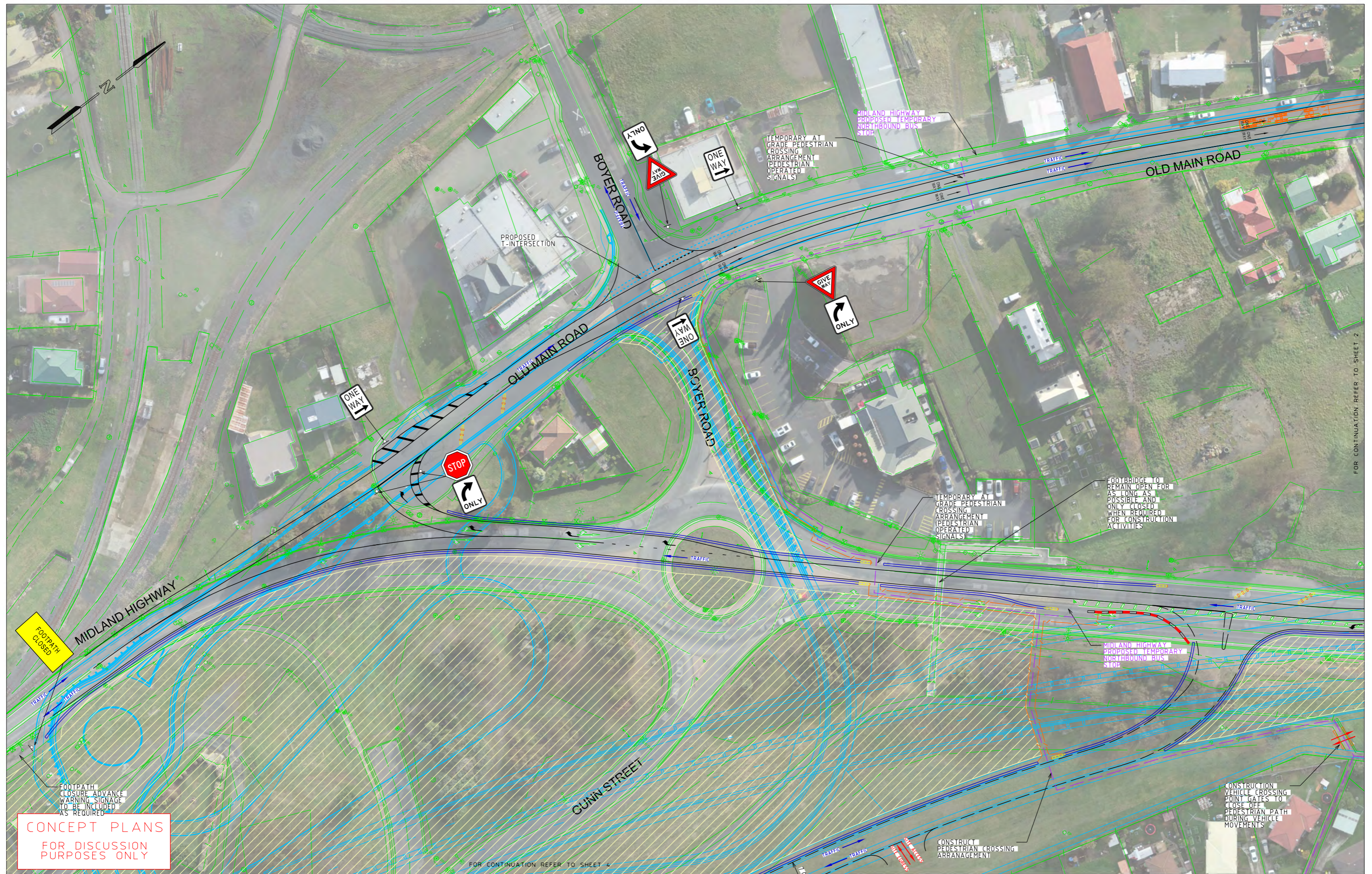
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SCALE



DESIGNED:	IMAM WAZEER
REVIEWED:	MANOJ DHANORKAR

REV: C	DRAWING NO: MCD-TMS-DRG-N-002	SHEET: TITLE PAGE
<b>BRIDGEWATER BRIDGE STAGE 2 NORTHERN</b>		
<b>CONCEPT TRAFFIC CONTROL PLAN</b>		



**CONCEPT PLANS**  
FOR DISCUSSION  
PURPOSES ONLY

LEGEND	
	EXISTING CONDITIONS
	ULTIMATE DESIGN
	TEMP LINE MARKING
	PEDESTRIAN MOVEMENT SIGN
	END TREATMENT
	SAFETY BARRIER
	KLEMMFIX
	BOLLARDS
	WORK AREA
	OPTIONAL WORK AREA
	SHORT-TERM WORK AREA

REV	REVISION NOTES	DATE
C	UPDATED WITH DSG AND IV COMMENTS	09/08/2022
B	UPDATED WITH DSG AND IV COMMENTS	04/07/2022
A	CONCEPT PLAN FOR REVIEW	25/05/2022

GENERAL NOTES  
 1. BASE INFORMATION FROM FEATURE SURVEY / ECW.  
 2. ALL DIMENSIONS ARE TO FACE OF KERB & CHANNEL.

SCALE 0 5 10 15 20

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REV: C DRAWING NO: MCD-TMS-DRG-N-002 SHEET: 1 OF 4

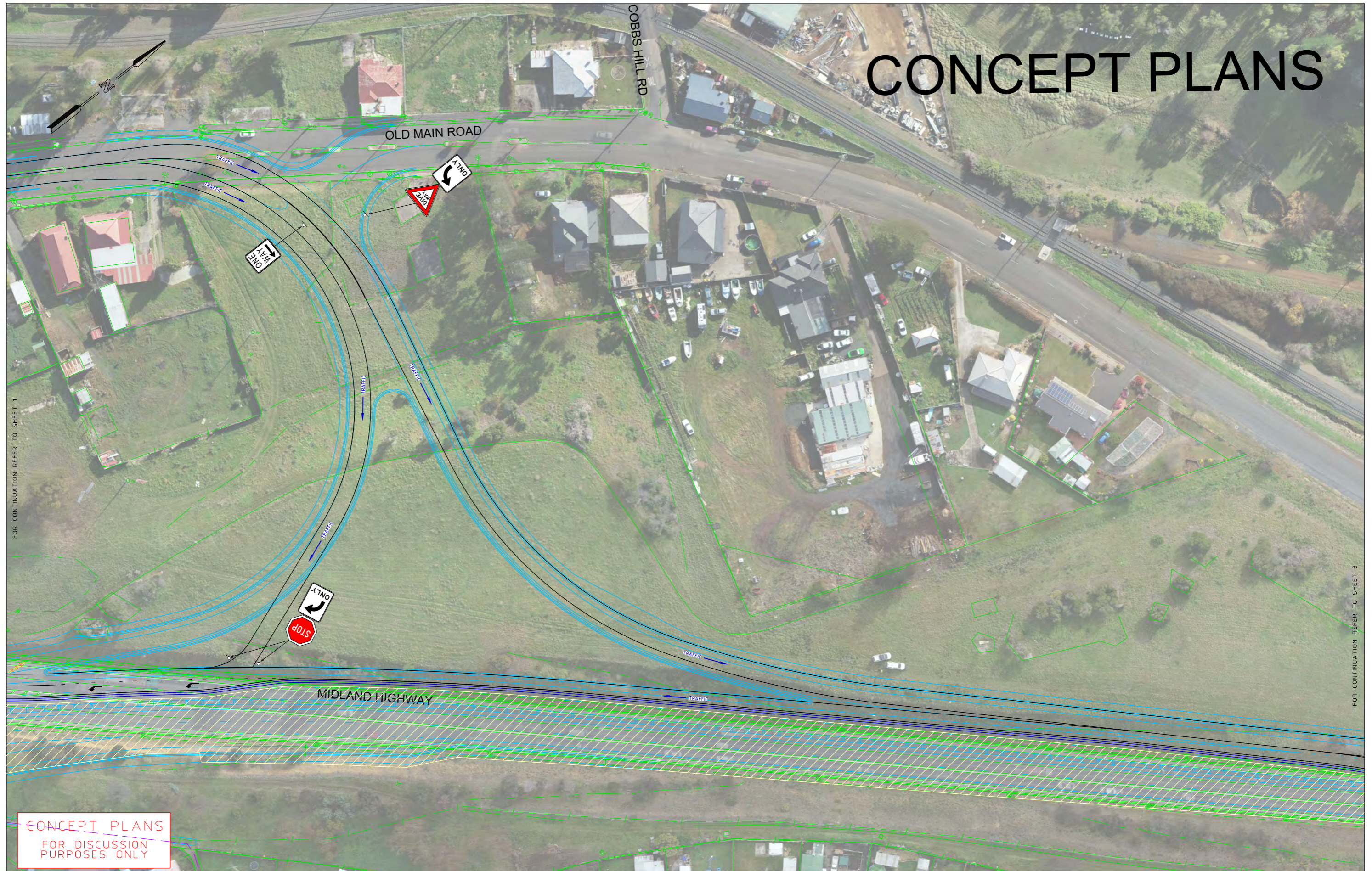
**BRIDGEWATER BRIDGE  
STAGE 2 NORTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**

FOR CONTINUATION REFER TO SHEET 2

FOR CONTINUATION REFER TO SHEET 4

# CONCEPT PLANS



FOR CONTINUATION REFER TO SHEET 1

FOR CONTINUATION REFER TO SHEET 3

CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

LEGEND	
	EXISTING CONDITIONS
	ULTIMATE DESIGN
	TEMP LINE MARKING
	PEDESTRIAN MOVEMENT
	SIGN
	END TREATMENT
	SAFETY BARRIER
	KLEMMFIX
	BOLLARDS
	WORK AREA
	OPTIONAL WORK AREA
	SHORT-TERM WORK AREA

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SCALE 0 5 10 15 20

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**BRIDGEWATER BRIDGE  
STAGE 2 NORTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**



FOR CONTINUATION REFER TO SHEET 2

CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

LEGEND	
	EXISTING CONDITIONS
	ULTIMATE DESIGN
	TEMP LINE MARKING
	PEDESTRIAN MOVEMENT SIGN
	END TREATMENT
	SAFETY BARRIER
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	SHORT-TERM WORK AREA

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 2. ALL DIMENSIONS ARE TO FACE OF KERB & CHANNEL.

SCALE 0 5 10 15 20

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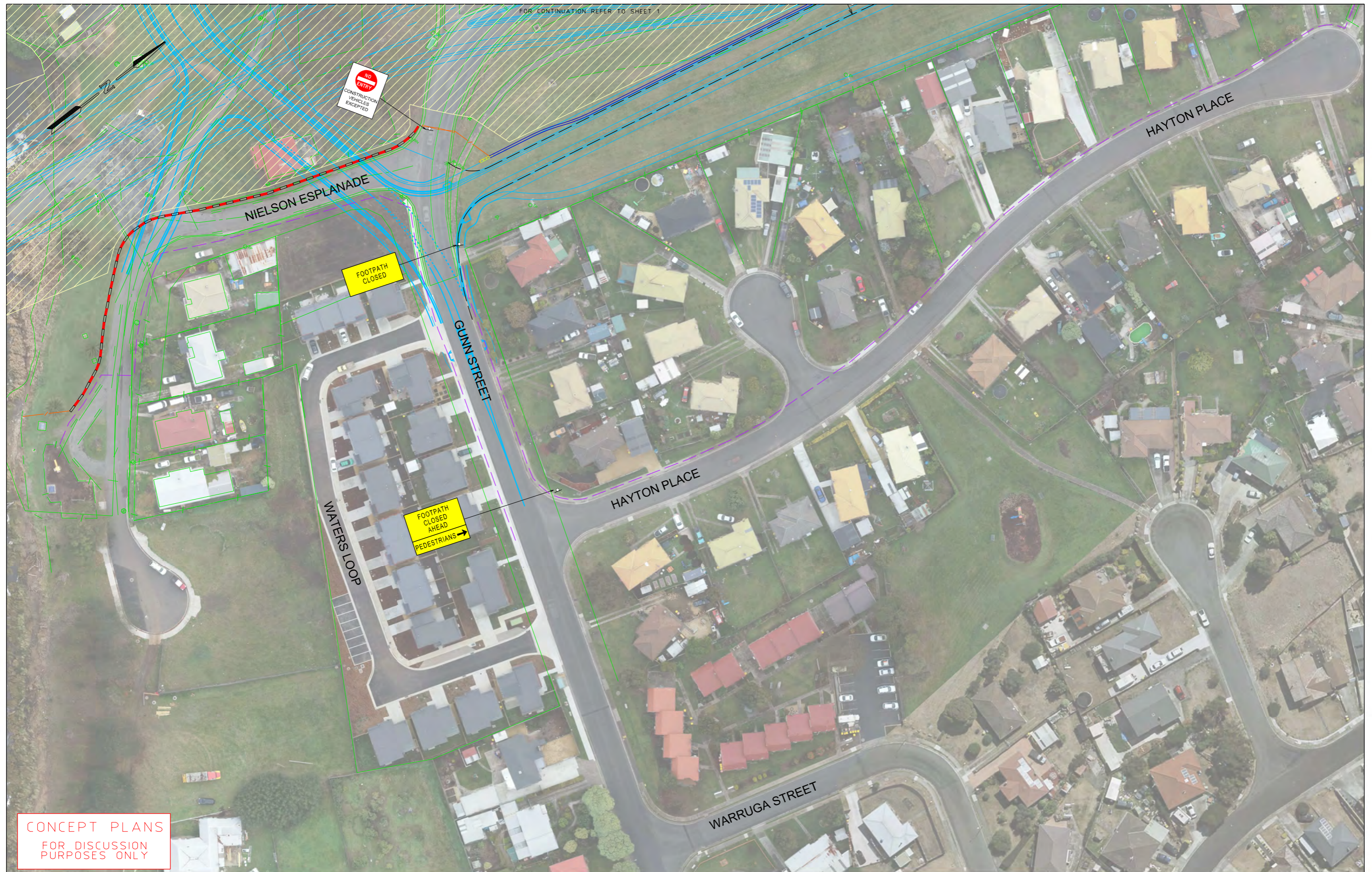
DESIGNED: IMAM WAZEER  
 REVIEWED: MANOJ DHANORKAR

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**BRIDGEWATER BRIDGE  
STAGE 2 NORTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**

FOR CONTINUATION REFER TO SHEET 1



CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

LEGEND	
	EXISTING CONDITIONS
	ULTIMATE DESIGN
	TEMP LINE MARKING
	PEDESTRIAN MOVEMENT SIGN
	END TREATMENT
	SAFETY BARRIER
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	BOLLARDS
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	SHORT-TERM WORK AREA

REV	REVISION NOTES	DATE
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A	CONCEPT PLAN FOR REVIEW	25/05/2022

GENERAL NOTES  
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 2. ALL DIMENSIONS ARE TO FACE OF KERB & CHANNEL.

SCALE 0 5 10 15 20

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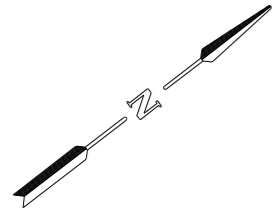
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**BRIDGEWATER BRIDGE  
STAGE 2 NORTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**





# BRIDGEWATER BRIDGE STAGE 3 - NORTHERN SECTION

## CONCEPT PLANS



CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

LEGEND	
	EXISTING CONDITIONS
	ULTIMATE DESIGN
	TEMP LINE MARKING
	PEDESTRIAN MOVEMENT SIGN
	END TREATMENT
	SAFETY BARRIER
	KLEMMFIX
	BOLLARDS
	WORK AREA
	OPTIONAL WORK AREA
	SHORT-TERM WORK AREA

REV	REVISION NOTES	DATE
C	UPDATED WITH DSG AND IV COMMENTS	09/08/2022
B	UPDATED WITH DSG AND IV COMMENTS	04/07/2022
A	CONCEPT PLAN FOR REVIEW	25/05/2022

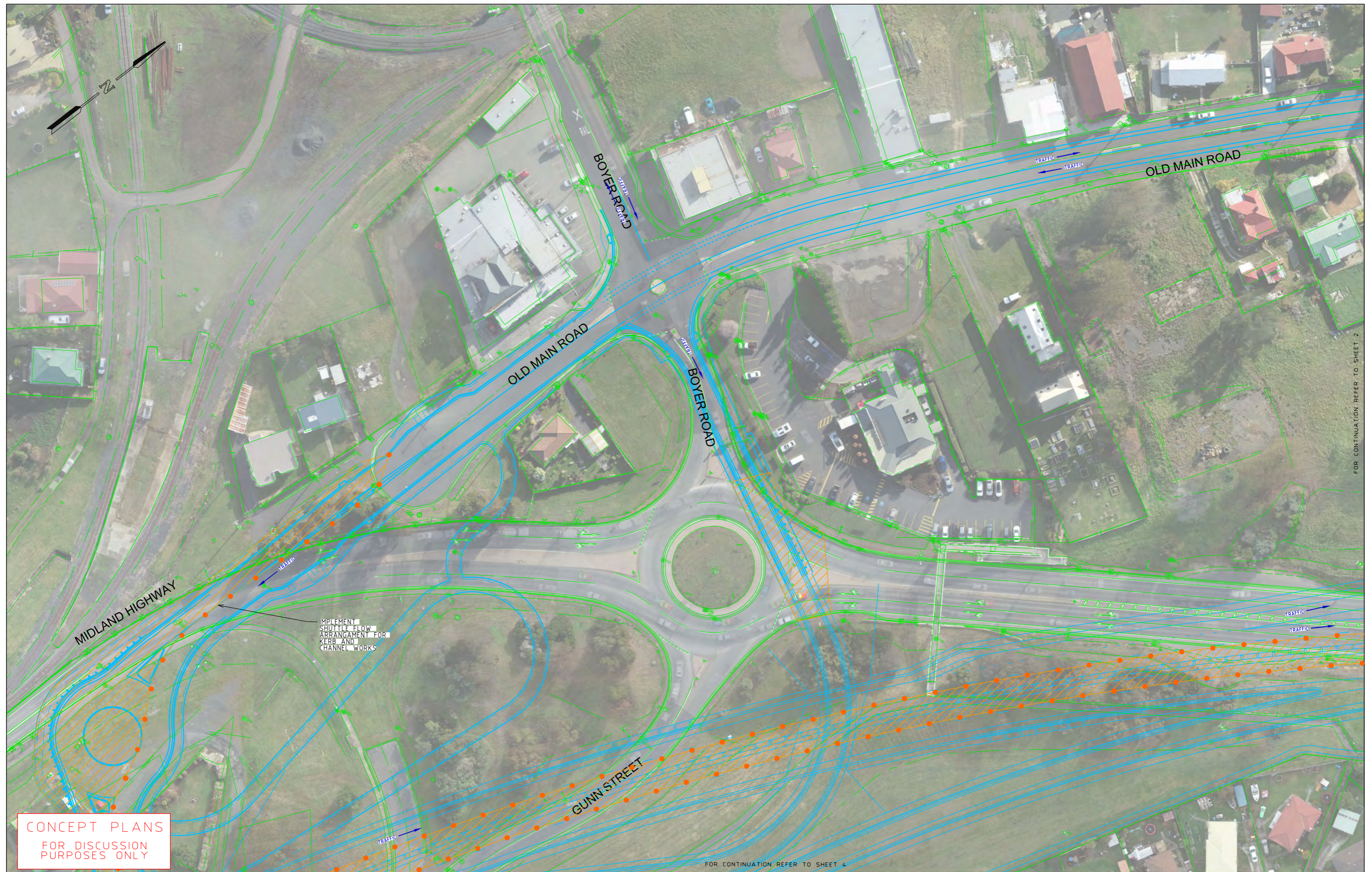
GENERAL NOTES  
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2. ALL DIMENSIONS ARE TO FACE OF KERB & CHANNEL.

SCALE



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REVIEWED:	MANOJ DHANORKAR

REV: C	DRAWING NO: MCD-TMS-DRG-N-003	SHEET: TITLE PAGE
<b>BRIDGEWATER BRIDGE STAGE 3 NORTHERN</b>		
<b>CONCEPT TRAFFIC CONTROL PLAN</b>		



FOR CONTINUATION REFER TO SHEET 2

FOR CONTINUATION REFER TO SHEET 4

**CONCEPT PLANS**  
FOR DISCUSSION  
PURPOSES ONLY

LEGEND	
	EXISTING CONDITIONS
	ULTIMATE DESIGN
	TEMP LINE MARKING
	PEDESTRIAN MOVEMENT SIGN
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SCALE

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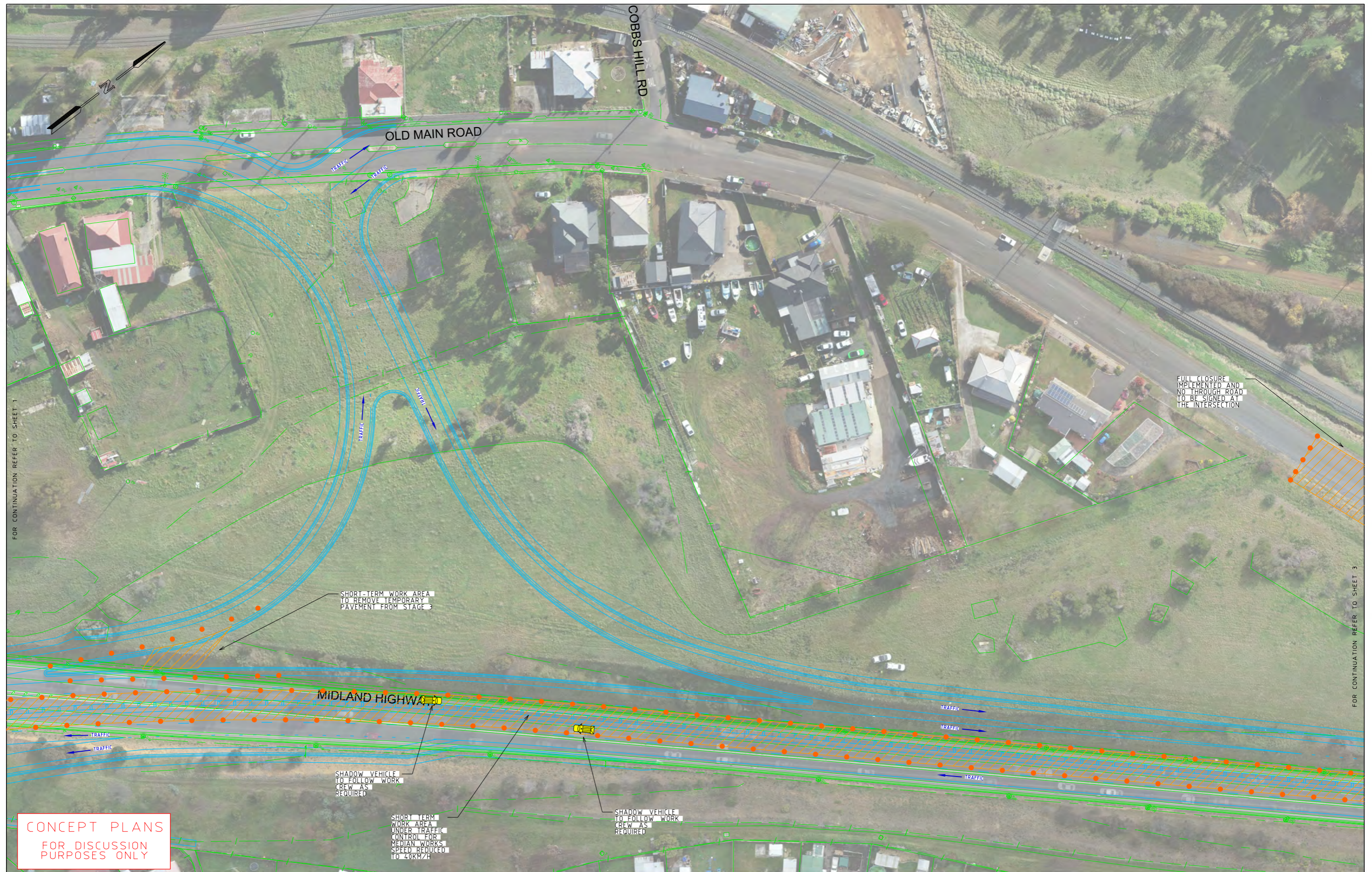
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REV: C DRAWING NO: MCD-TMS-DRG-N-003 SHEET: 1 OF 4

**BRIDGEWATER BRIDGE  
STAGE 3 NORTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**



CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

LEGEND	
	EXISTING CONDITIONS
	ULTIMATE DESIGN
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SCALE 0 5 10 15 20

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**BRIDGEWATER BRIDGE  
STAGE 3 NORTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**



FOR CONTINUATION REFER TO SHEET 2

CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

LEGEND	
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	ULTIMATE DESIGN
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SCALE

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**BRIDGEWATER BRIDGE  
STAGE 3 NORTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**



CONCEPT PLANS  
FOR DISCUSSION  
PURPOSES ONLY

LEGEND	
	EXISTING CONDITIONS
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SCALE

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**BRIDGEWATER BRIDGE  
STAGE 3 NORTHERN**

**CONCEPT TRAFFIC CONTROL PLAN**

## 13 APPENDIX B – SIDRA ASSESSMENET

## SIDRA Traffic assessment for Stage 2 arrangement:

### Introduction

McConnell Dowell has undertaken Sidra modelling for the proposed Stage 2 traffic management arrangements for the Southern and Northern interchange of the New Bridgewater Bridge Project.

### Traffic Volume

The traffic volume for the intersection was obtained from the O-D data provided within PSTR Exhibit A Initial Project Scope & Technical Requirements - Appendix 17.

Traffic volume data for the Temporary roundabout at Black Snake Road and Brooker Highway and Granton Roundabout (Lyell Hwy/ Brooker Hwy/Midland Highway) is developed from the O-D data.

Following assumptions have been made:

1. Construction vehicles will be minimal (less than 1%) so have not been included in the volume.
2. The VMS north of E Derwent Rd and south of Goodwood Road will be displaying and encouraging Brooker Highway and Midland Highway traffic to use alternative routes. There is expected to be up to 10% reduction in traffic volumes as a result of the proposed VMS strategy (VMS to be placed north of E Derwent Hwy and South of Goodwood Road). This will negate the forecasted traffic growth.
3. We assumed 10% heavy vehicle based on O-D data percentages.

The Sidra modelling has been developed for the following intersections:

#### **Southern Interchange:**

1. Temporary roundabout at Brooker Highway and Black Snake Rd and
2. Lyell Hwy & Brooker Hwy & Midland Hwy - Granton Roundabout

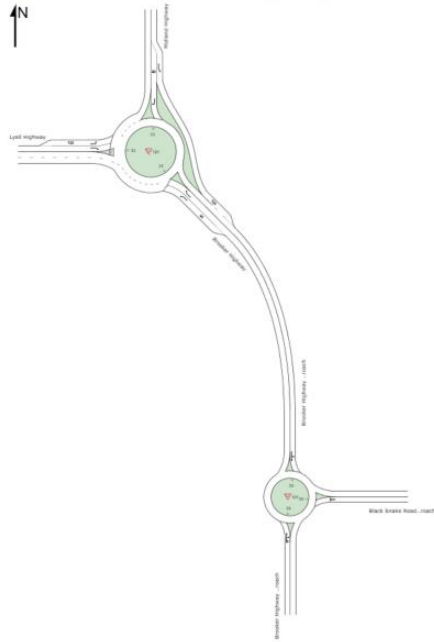
Sidra Summary - Lyell Hwy & Brooker Hwy & Midland Hwy and Temporary Black Snake Road Roundabout (AM Peak)

### NETWORK LAYOUT

Network: N102 [Network2 (Network Folder: General)]

New Network  
Network Category: (None)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.

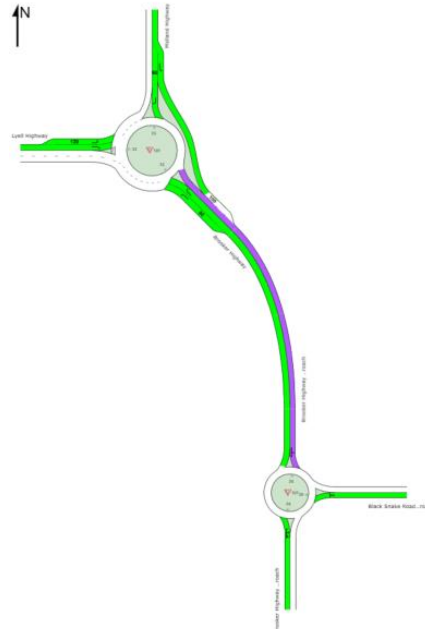


### DEGREE OF SATURATION

Ratio of Demand Volume to Capacity, v/c ratio per lane

Network: N102 [Network2 (Network Folder: General)]

New Network  
Network Category: (None)



SITES IN NETWORK		
Site ID	CCG ID	Site Name
101	NA	NBB Southern Interchange - Roundabout AM Peak Hour

Colour code based on Degree of Saturation

### MOVEMENT SUMMARY

Site: 101 [NBB Southern Interchange - Roundabout AM Peak Hour (Site Folder: General)]

New Site - Brooker Highway & Black Snake Rd  
Site Category: Base Year  
Roundabout

Vehicle Movement Performance											
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn v/c	Aver. Delay soc	Level of Service	95% BACK OF QUEUE		
		[ Total veh/h	HV ] %	[ Total veh/h	HV ] %				[ Veh. veh	Dist ] m	
South: Brooker Highway - South Approach											
2	T1	732	10.0	771	10.0	0.600	4.6	LOS A	7.3	55.1	
3	R2	8	10.0	8	10.0	0.600	10.0	LOS A	7.3	55.1	
3u	U	26	10.0	27	10.0	0.600	12.2	LOS B	7.3	55.1	
Approach		766	10.0	806	10.0	0.600	4.9	LOS A	7.3	55.1	
East: Black Snake Road East Approach											
4	L2	9	10.0	9	10.0	0.392	28.2	LOS C	3.2	24.5	
6	R2	84	10.0	88	10.0	0.392	33.6	LOS C	3.2	24.5	
Approach		93	10.0	98	10.0	0.392	33.1	LOS C	3.2	24.5	
North: Brooker Highway North Approach											
7	L2	115	10.0	121	10.0	0.880	4.6	LOS A	26.9	204.5	
8	T1	1187	10.0	1249	10.0	0.880	4.7	LOS A	26.9	204.5	
Approach		1302	10.0	1371	10.0	0.880	4.7	LOS A	26.9	204.5	
All Vehicles		2161	10.0	2275	10.0	0.880	6.0	LOS A	26.9	204.5	

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).  
Roundabout LOS Method: SIDRA Roundabout LOS.  
Vehicle movement LOS values are based on average delay per movement.  
Intersection and Approach LOS values are based on average delay for all vehicle movements.  
Roundabout Capacity Model: SIDRA Standard.  
Delay Model: SIDRA Standard (Geometric Delay is included).  
Queue Model: SIDRA Standard.  
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).  
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Project: C:\Users\61437\Desktop\Bridgewater\Refer stuff\Project1 - NBB South Interchange roundabout AM.spr



**MOVEMENT SUMMARY**

📍 Site: 101 [Granton Roundabout - Lyell Hwy & Midland Highway & Brokker Hwy (Site Folder: General)]

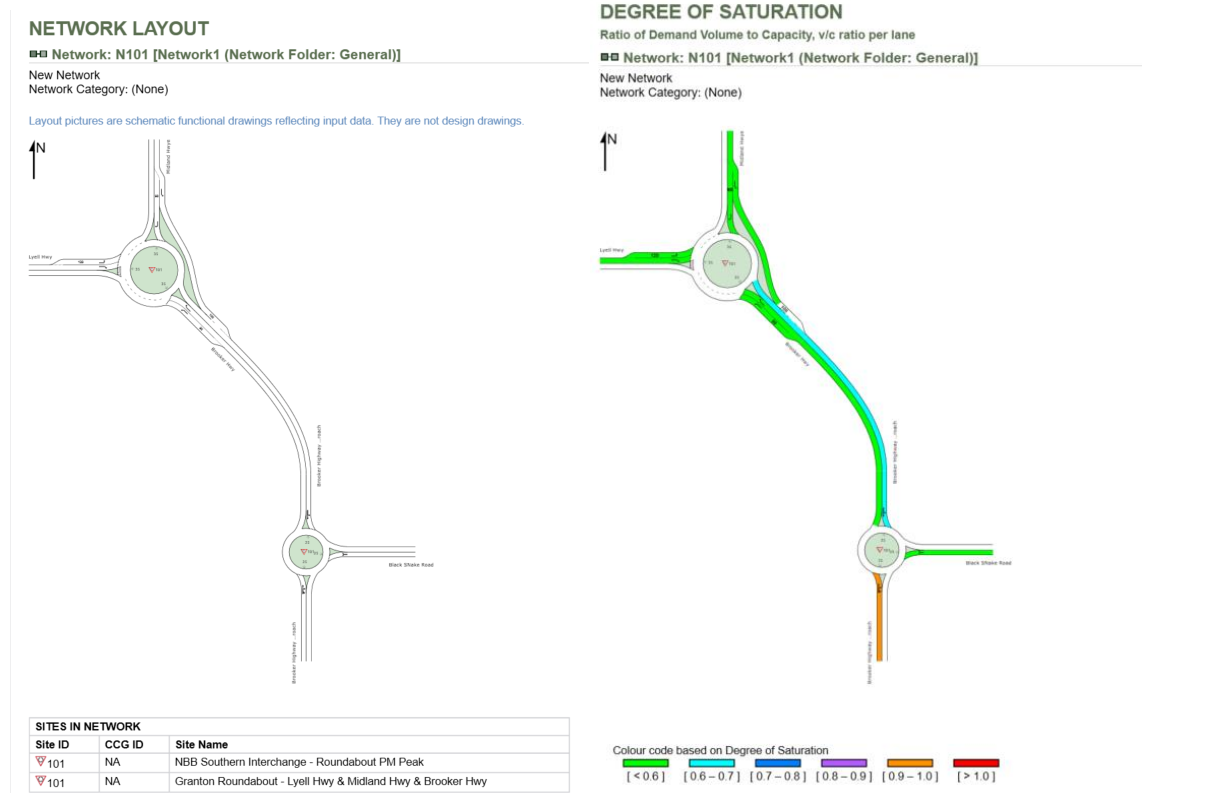
Roundabout at Lyell Hwy & Midland Highway & Brokker Hwy  
Site Category: Existing Design  
Roundabout

Vehicle Movement Performance											
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn v/c	Aver Delay sec	Level of Service	95% BACK OF QUEUE		
		[ Total veh/h	HV ] %	[ Total veh/h	HV ] %				[ Veh. veh	Dist ] m	
SouthEast: Brooker Highway											
21a	L1	213	10.0	224	10.0	0.176	3.0	LOS A	1.0	7.2	
23a	R1	603	10.0	635	10.0	0.375	8.4	LOS A	2.7	20.2	
Approach		816	10.0	859	10.0	0.375	7.0	LOS A	2.7	20.2	
North: Midland Highway											
7a	L1	939	10.0	988	10.0	0.534	5.9	LOS A	0.0	0.0	
9	R2	52	10.0	55	10.0	0.044	10.7	LOS B	0.3	2.1	
Approach		991	10.0	1043	10.0	0.534	6.2	LOS A	0.3	2.1	
West: Lyell Highway											
10	L2	87	10.0	92	10.0	0.117	7.4	LOS A	0.7	5.0	
12a	R1	363	10.0	382	10.0	0.344	11.5	LOS B	2.5	18.9	
Approach		450	10.0	474	10.0	0.344	10.8	LOS B	2.5	18.9	
All Vehicles		2257	10.0	2376	10.0	0.534	7.4	LOS A	2.7	20.2	

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).  
Roundabout LOS Method: SIDRA Roundabout LOS.  
Vehicle movement LOS values are based on average delay per movement.  
Intersection and Approach LOS values are based on average delay for all vehicle movements.  
Roundabout Capacity Model: SIDRA Standard.  
Delay Model: SIDRA Standard (Geometric Delay is included).  
Queue Model: SIDRA Standard.  
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).  
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Project: C:\Users\61437\Desktop\Bridgewater\Refer stuff\Project1 - NBB South Interchange roundabout AM.sip9

## Sidra Summary - Lyell Hwy & Brooker Hwy & Midland Hwy and Temporary Black Snake Road Roundabout (PM Peak)



## PM Peak

### MOVEMENT SUMMARY

Site: 101 [NBB Southern Interchange - Roundabout PM Peak (Site Folder: General)]

New Site - Brooker Highway & Black Snake Rd  
Site Category: Base Year  
Roundabout

Vehicle Movement Performance											
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Sat'n v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		
		[ Total veh/h ]	[ HV ] %	[ Total veh/h ]	[ HV ] %				[ Veh. ]	[ Dist ] m	
South: Brooker Highway - South Approach											
2	T1	978	10.0	1029	10.0	0.936	16.2	LOS B	30.2	229.5	
3	R2	26	10.0	27	10.0	0.936	21.5	LOS C	30.2	229.5	
3u	U	22	10.0	23	10.0	0.936	23.7	LOS C	30.2	229.5	
Approach		1026	10.0	1080	10.0	0.936	16.5	LOS B	30.2	229.5	
East: Black Snake Road											
4	L2	28	10.0	29	10.0	0.436	15.2	LOS B	3.5	26.7	
6	R2	174	10.0	183	10.0	0.436	20.5	LOS C	3.5	26.7	
Approach		202	10.0	213	10.0	0.436	19.8	LOS B	3.5	26.7	
North: Brooker Highway North Approach											
7	L2	95	10.0	100	10.0	0.691	4.3	LOS A	10.7	81.6	
8	T1	851	10.0	896	10.0	0.691	4.3	LOS A	10.7	81.6	
Approach		946	10.0	996	10.0	0.691	4.3	LOS A	10.7	81.6	
All Vehicles		2174	10.0	2288	10.0	0.936	11.5	LOS B	30.2	229.5	

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).  
 Roundabout LOS Method: SIDRA Roundabout LOS.  
 Vehicle movement LOS values are based on average delay per movement.  
 Intersection and Approach LOS values are based on average delay for all vehicle movements.  
 Roundabout Capacity Model: SIDRA Standard.  
 Delay Model: SIDRA Standard (Geometric Delay is included).  
 Queue Model: SIDRA Standard.  
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).  
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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### MOVEMENT SUMMARY

Site: 101 [Granton Roundabout - Lyell Hwy & Midland Hwy & Brooker Hwy (Site Folder: General)]

Existing roundabout at Lyell Hwy & Midland Hwy & Brooker Hwy  
 Site Category: Existing Design  
 Roundabout

Vehicle Movement Performance											
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		
		[ Total veh/h	HV ] %	[ Total veh/h	HV ] %				[ Veh. veh	Dist ] m	
SouthEast: Brooker Hwy											
21a	L1	393	10.0	414	10.0	0.319	3.3	LOS A	2.1	16.3	
23a	R1	757	10.0	797	10.0	0.488	8.6	LOS A	4.1	31.5	
Approach		1150	10.0	1211	10.0	0.488	6.8	LOS A	4.1	31.5	
North: Midland Hwy											
7a	L1	725	10.0	763	10.0	0.412	3.8	LOS A	0.0	0.0	
9	R2	83	10.0	87	10.0	0.063	10.1	LOS B	0.4	2.9	
Approach		808	10.0	851	10.0	0.412	4.5	LOS A	0.4	2.9	
West: Lyell Hwy											
10	L2	104	10.0	109	10.0	0.161	9.0	LOS A	1.0	7.8	
12a	R1	221	10.0	233	10.0	0.248	12.7	LOS B	1.9	14.3	
Approach		325	10.0	342	10.0	0.248	11.5	LOS B	1.9	14.3	
All Vehicles		2283	10.0	2403	10.0	0.488	6.7	LOS A	4.1	31.5	

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).  
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 Project: C:\Users\61437\Desktop\Bridgewater\Refer stuff\Project1 - NBB South Interchange roundabout PM.sip9

The above assessment shows that both of the roundabouts will be operating at an acceptable LOS A and B.

The results show a 230m maximum queue length during peak hours in a single direction, however, delays are expected to be less than 1 minute.

## Northern Interchange

Boyer Rd/ Old Main Road and Midland Highway intersection – STOP control (AM Peak)

### DEGREE OF SATURATION

Ratio of Demand Volume to Capacity, v/c ratio per lane

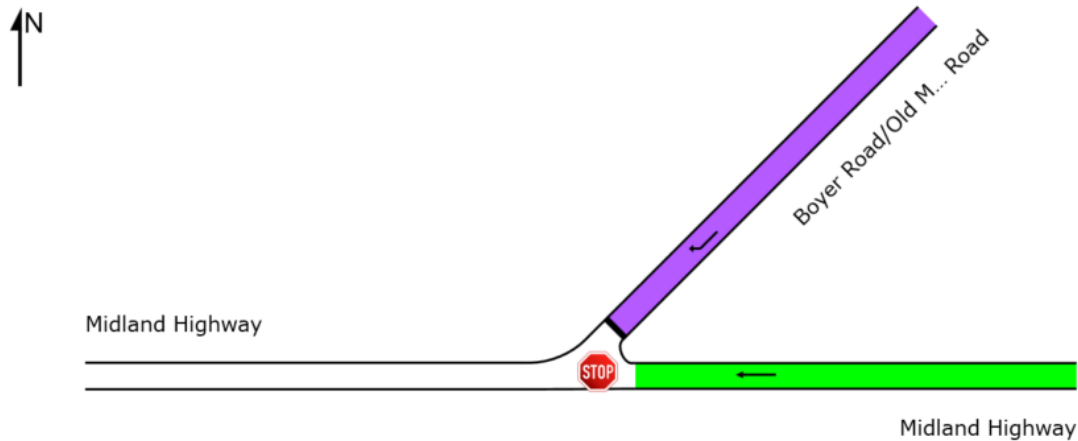
Site: 101 [Northern Interchange - Stage 2 - Boyer Road/Midland Highway (Site Folder: General)]

New Site - Boyer Road to Southbound Midland Highway

Site Category: Proposed Design 1

Stop (Two-Way)

	Approaches		Intersection
	East	Northeast	
Degree of Saturation	0.56	0.89	0.89



### MOVEMENT SUMMARY

Site: 101 [Northern Interchange - Stage 2 - Boyer Road/Midland Highway (Site Folder: General)]

New Site - Boyer Road to Southbound Midland Highway

Site Category: Proposed Design 1

Stop (Two-Way)

Vehicle Movement Performance										
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE	
		[ Total veh/h ]	[ HV ] %	[ Total veh/h ]	[ HV ] %				[ Veh. veh ]	[ Dist ] m
East: Midland Highway										
5	T1	977	10.0	1028	10.0	0.565	0.3	LOS A	0.0	0.0
Approach		977	10.0	1028	10.0	0.565	0.3	NA	0.0	0.0
NorthEast: Boyer Road/Old Main Road										
26a	R1	137	5.0	144	5.0	0.886	65.9	LOS F	5.1	37.0
Approach		137	5.0	144	5.0	0.886	65.9	LOS F	5.1	37.0
All Vehicles		1114	9.4	1173	9.4	0.886	8.4	NA	5.1	37.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Boyer Rd/ Old Main Road and Midland Highway intersection – STOP control (PM Peak)

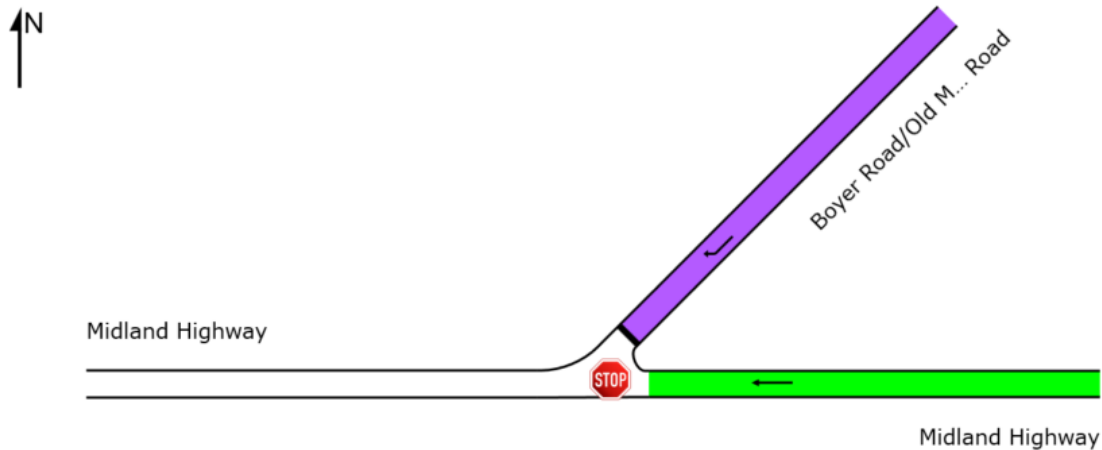
**LEVEL OF SERVICE**

Lane Level of Service

Site: 101 [Northern Interchange - Stage 2 - Boyer Road/Midland Highway PM (Site Folder: General)]

New Site - Boyer Road to Southbound Midland Highway  
Site Category: Base Year  
Stop (Two-Way)

LOS	Approaches		Intersection
	East	Northeast	
LOS	NA	D	NA



Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).  
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).  
Delay Model: SIDRA Standard (Geometric Delay is included).

**MOVEMENT SUMMARY**

Site: 101 [Northern Interchange - Stage 2 - Boyer Road/Midland Highway PM (Site Folder: General)]

New Site - Boyer Road to Southbound Midland Highway  
Site Category: Base Year  
Stop (Two-Way)

Vehicle Movement Performance											
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Sat'n v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		
		[ Total veh/h ]	[ HV ] %	[ Total veh/h ]	[ HV ] %				[ Veh ]	[ Dist ] m	
East: Midland Highway											
5	T1	890	10.0	937	10.0	0.514	0.2	LOS A	0.0	0.0	
Approach		890	10.0	937	10.0	0.514	0.2	NA	0.0	0.0	
NorthEast: Boyer Road/Old Main Road											
26a	R1	114	5.0	120	5.0	0.553	29.9	LOS D	2.1	15.6	
Approach		114	5.0	120	5.0	0.553	29.9	LOS D	2.1	15.6	
All Vehicles		1004	9.4	1057	9.4	0.553	3.6	NA	2.1	15.6	

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).  
Vehicle movement LOS values are based on average delay per movement.  
Minor Road Approach LOS values are based on average delay for all vehicle movements.  
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.  
Delay Model: SIDRA Standard (Geometric Delay is included).  
Queue Model: SIDRA Standard.  
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).  
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Project: C:\Users\61437\Desktop\BridgeWater\Refer stuff\NBB Northern Interchange Stage 2 - Boyer Rd to SB Midland Highway PM peak sip9

The results show a 37m maximum queue length during peak hours and delays are expected about 1 minute. Considering the available alternate route and sufficient storages, the proposed staging arrangement will not impact on Midland Highway traffic performance.