



Sydenham Metro Upgrade Construction Traffic Management Plan

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1. Introduction

1.1 Purpose

The purpose of this Construction Traffic Management Plan is to ensure the safety of the public and maintain an accessible and efficient road network for all road users.

This document has been prepared to help John Holland Laing O'Rourke Joint Venture (JHLOR JV) staff to implement traffic and pedestrian/passenger management control measures when carrying out construction and related works located on the Sydenham Metro upgrade project sites. This Construction Traffic Management Plan (CTMP) has been prepared as a sub-plan to the Construction Environmental Management Plan (CEMP) and Construction and Site Management Plan (CSMP). It is prepared to meet to requirements set out in the Construction Traffic Management Framework (CTMF) version 2.5.

The term 'traffic', wherever used in this CTMP, encompasses both vehicles and pedestrians movement. A vehicle is defined as a motorcar, bus, truck, motorcycle, and bicycle.

Traffic management shall be undertaken in a manner that shall provide for the safety of all JHLOR JV staff, subcontractors and the public and ensure road and footpath users are not exposed to foreseeable risks and issues. The aim of the plan is to understand the works involved and their locations and determine the management requirements to mitigate pedestrian and traffic related impact, if any, resulting from the works for the Sydenham Metro upgrade project.

This document has been prepared in line with the Critical State Significant Infrastructure (CSSI) approval of January 2017 and is in line with the CTMF produced for the project. Refer to Section 9 for Reference Documents.

1.2 Objectives

The following traffic management objectives will apply to the construction of the project:

- Minimise disruption to traffic operation, road users, pedestrians, cyclists and access to adjoining properties (private and public)
- Maximise the safety for the workers, by isolating work areas from traffic flows, applying low exposure work methods, education and the installation of appropriate traffic control
- Limit obstructions and restrictions, and when required, provide alternatives to maintain access for local community, transport operators (buses) including over-dimension load movements and commercial developments
- Encourage sustainable transport options by site workers.

Additional objectives for the construction traffic and transport management of the Sydenham Metro upgrade work were outlined in the Sydney Metro Chatswood to Sydenham Submissions and Preferred Infrastructure Report Table 11-2 and are as follows:

- Network connectivity, safety and efficiency of the transport system in the vicinity of the project are managed to minimise impacts.
- The safety of the transport system customers is maintained
- Impacts on network capacity and the level of service are effectively managed
- Works are compatible with existing infrastructure and future transport corridors

The table also laid out the following Environmental Performance Outcomes:

- The project would minimise impacts to the road network

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- Pedestrian and cyclist safety would be maintained
 - Effective coordination would be carried out to minimise cumulative network impacts
 - Access to properties would be maintained.

1.3 Scope

The Sydenham Metro Upgrade project contains the following work:

- Services facility next to the Southern Dive Structure;
- Conversion of platforms 1 and 2 of Sydenham Station to metro operation;
- Provide southern turnback for the Chatswood to Sydenham section of the project; and
- Stabling facility to the north of Sydenham Station; next to the Southern Dive Structure.

The Sydenham Metro upgrade Site Layout and Works Location are highlighted in Figure 1.

This document provides guidance on the systems and procedures that should be followed to warn, inform, guide, and manage traffic past, through or around all works related to project site. Specifically, the deliveries of materials and plant/equipment to/from the proposed project access/egress points, as well as bicycle and pedestrian management at these key interfaces.

All workers, employees, subcontractors, employers and the management team, involved in the construction of the project shall adhere to this Construction Traffic Management Plan.

After the Sydney Coordination Office has endorsed this CTMP, it is to be submitted to RMS for approval before construction commences. A copy of any CTMP approved by the RMS must be submitted to the Secretary for information.

This CTMP will be in use for the entire duration of the Sydenham Metro upgrade works. The indicative duration of the project is until Mid 2021. Throughout this period there are numerous rail possessions to facilitate the project scope. Any works undertaken that impact the local or state road / pedestrian network will be presented and discussed at the TTLG and TCG forums



Figure 1 – SSJ Site Layout

1.4 Review and Update

As per the requirements of SMR Project Administration, Section 2.2, the plan will be reviewed at periods not exceeding 12 months, or if issues relating to compliance are raised (e.g. after audits).

The CTMP shall be amended to include all significant changes to traffic management requirements and will be submitted to the relevant authorities for their approval as follows.

1. Roads and Maritime (RMS)
2. Sydney Coordination Office (SCO)
3. Environmental Representative (ER)
4. Inner West Council (IWC)
5. Sydney Trains (for information)
6. STA Buses (for information)

As per CoA C8, construction must not start until the CEMP and all CEMP sub-plans have been approved by the Secretary.

The CEMP must be endorsed by the ER, then submitted to the Secretary for approval. This is to be completed no later than one month before start of construction.

This Sub-plan as approved by the secretary, whilst including any minor amendments approved by the ER, must be implemented for the duration of construction.

Where construction results in a worsening of the matters identified in Condition E81(a)-(o), the measures identified in the CTMP shall be reviewed in consultation with the Traffic and Transport Liaison Group (TTLG), as relevant. Any changes to conditions as part the CTMP must be submitted to the RMS for approval after Sydney Coordination Office endorsement and implemented.

1.5 General Requirements

- The selected Traffic Control subcontractor will be responsible for the management of all traffic throughout the delivery phase, any issues raised are to be issued to JHLOR JV who will resolve these with the assistance of our specialist Traffic Control subcontractor.
- Where possible, deliveries will be scheduled to occur outside the following periods:
 - Weekday peak periods – morning (6:00am – 10:00am) and afternoon (3:00pm – 7:00pm), as per the CTMF.
 - School Zone operating times (8:00am – 9:30am) and (2:30pm to 4:00pm).
- Approved working hours are as follows:
 - Standard hours (as per CoA E36):
 - 7:00 am – 6:00 PM Monday to Friday, inclusive
 - 8:00 AM – 1:00 PM Saturday
 - At no time on Sundays or Public Holidays
 - Weekend Possession Work: 6:00 AM – 6:00 PM (as per Possession schedule)
- Truck movements should be minimised during peak periods within commercial centres:
 - 7am – 10am Monday to Friday

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- 4pm – 7pm Monday to Friday
 - Haulage and delivery of spoil and materials may be undertaken 24 hours per day, seven days per week, subject to CoA E47.
 - Due to the residential nature of some of the surrounding streets, queuing, circulating and idling of heavy/construction vehicles will not be permitted. This shall be managed by engaging trusted suppliers and scheduling deliveries and heavy vehicle movements. Vehicles may only 'wait' inside the worksite.
 - All traffic controllers shall hold Roads and Maritime Services (RMS) Traffic Controller 'Blue Card' and wear the required Personal Protective Equipment (PPE) at all times (e.g. helmets, safety boots and high visibility vests, etc).
 - During all works on site, the following precautions shall be taken:
 - A traffic controller shall direct traffic and excavation trucks using a **"STOP / SLOW"** sign.
 - All trucks involved in the works shall follow a set route to minimise traffic disruption
 - Before any work taking place that affects pedestrians and traffic safety, accessibility, and efficient movement (e.g. hoarding, work to footpath and driveway, work above footpath, etc.), all required notification are to be given to the relevant authorities (e.g. Police, Councils, State Transport Department) and/or permits/licences obtained and the work is to be adequately supervised to ensure the required conditions of any applicable permits are met at all times.
 - All access gates to the construction site must be always either manned or locked to prevent public access into the site/Rail Corridor.
 - Engineer-certified crash attenuators are to be fitted to all shadow vehicles

1.6 Hierarchy of Access

This CTMP was developed following the hierarchy of access defined in the CTMF Section 2.3 – Hierarchy of Access. This section lists the following hierarchy of access, ordered from highest to lowest priority:

1. Incidents and emergency services access
2. Events (special and unplanned)
3. Pedestrians
4. Cyclists
5. Other public transport users – buses, coaches and light rail
6. Service vehicles
7. Coaches
8. Taxis
9. Kiss and ride and rideshare
10. Private vehicles

1.7 Responsibilities

1.7.1 Key Personnel

Table 1 lists the key personnel involved with the Sydenham Metro Upgrade works.

Table 1 – Key Personnel for Sydenham Metro upgrade

Name	Position	Phone Number
Tony Deacy	Project Lead	0467 762 987
Paul Dalziel	Construction Manager	0437 475 070
Matthew McKimmie	Interface Manager	0499 075 555
Yuga Balakrishna	Construction Manager - Rail	0438 656 587
James Moran	Site General Superintendent	0447 606 356
Brenton Holmes	Senior Project Engineer - Station	0412 900 494
D&D Group (staff name to be confirmed)	Traffic Controller (Blue Card)	tbc
D&D Group (staff name to be confirmed)	Implement TCPs (Yellow Card)	tbc
D&D Group (staff name to be confirmed)	Select and Modify TCPs (Red Card)	tbc
D&D Group (staff name to be confirmed)	Design and Inspect TCPs (Orange Card)	tbc

Note: Names will be provided on placement of subcontract for Traffic Control.

Refer to the CEMP for the environmental responsibilities of each key role in Table 1.

1.7.2 JHLOR JV Foremen

JHLOR JV Foremen have responsibilities for two areas of traffic management, the **Work Area (anywhere where works are being undertaken)**, including areas covered by Traffic Control Plans (TCPs) and **Employees** under their control.

For any long-term works (longer than a shift) the JHLOR JV Site Supervisor will continually conduct traffic management inspections to ensure safe movement of traffic and the protection of persons and property through and/or around the worksite. The Site supervisor will ensure all traffic control measures will be installed in accordance with approved TCPs as advised by an authorised “Yellow Card” holder.

JHLOR JV Site Supervisor shall ensure the following for each area of responsibility:

Work Area

- A documented traffic management risk assessment is completed by relevant Traffic Management Subcontractor engaged by JHLOR JV and the procedures and control measures implemented on site.
- Approval is obtained from the relevant authority before any work in a road reserve (public areas on and surrounding the road) is commenced by JHLOR JV or a person working on the JHLOR JV's behalf.
- Road users, pedestrians and JHLOR JV staff can continue with their respective undertakings in relative safety and with the minimum of inconvenience.

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- All site related works are correctly barricaded and sign-posted using the relevant approved signs.
 - All signs and devices used are in good condition and are removed at the completion of the work.
 - All site related works do not start until all signage is in place, even in an emergency it is essential that safety is observed for both staff and road/footpath users.
 - All lamps are:
 - Switched off during daylight hours.
 - Checked at night time to confirm they are working and correctly aligned.
 - The Construction Traffic Management Plan is reviewed regularly to ensure it is still suitable.
 - Incidents are to be managed in accordance with the CEMP.
 - In the event of a traffic related incident, co-ordination would be carried out with the Sydney Coordination Office and / or the Transport Management Centre's Operations Manager.
 - The Secretary must be notified as soon as possible and in any event within 24 hours of any incident.
 - Notification of an incident under Conditions of Approval A41 must include:
 - The time and Date of the incident
 - Details of the incident
 - Must identify any non-compliance with this approval.
 - For situations where statutory notification is given to the EPA as required under the Protection of the Environment Operations Act 1997 in relation to the CSSI, the notification must also be provided to the Secretary within 24 hours of the notification being given to the EPA.

Employees

The JHLOR JV Site Supervisor shall ensure the following for each areas of responsibility:

- Workers are competent to work on or near the roadways.
- Workers have a general awareness of traffic safety, accessibility, and efficient movement issues.
- Workers are informed of the public relations aspect of their work and instructed they should not allow themselves to be provoked by members of the public. Workers will be provided with cards detailing the correct number to call in the event of a public inquiry.
- Workers are to provide appropriate notification of deliveries to nominated Site Contact.
- All workers have access to and will use the following safety equipment and PPE:
 - High visibility vest or shirt.
 - UV protection eyewear and sunscreen (SPF 30 standard or better).
 - Wide brimmed hat/safety helmet.
 - Steel cap safety footwear.
 - Appropriate clothing to protect against UV radiation.

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- Gloves.
 - Hearing protection (where appropriate).
 - Eye protection (where appropriate).
 - Ensure workers associated with the site will not occupy public on-street parking spaces.

Controls will be reviewed when there is an incident, non-conformance, legislative change, annual review of plan, complaint.

1.7.3 [Principal Contractor](#)

The Principal Contractor is responsible for training needs and requirements of their personnel. The minimum requirements are:

- Site induction
- Regular Toolbox Talks
- Topic specific environment training

The site induction is to be provided to all site personnel. This must include:

- Training purpose, objectives and key issues
- Contractor's environmental policy and key performance indicators
- Due diligence, duty of care and responsibilities
- Relevant conditions of any environmental licence and/or the relevant conditions of approval
- Site specific issues and controls including those described in the environmental procedures
- Reporting procedure for environmental hazards and incidents
- Communication protocols.

The Principal Contractor is to ensure the provision of driver training, instruction and information of the haulage routes, potential changes, common road users and hazards/risks along the routes.

Toolbox talks are to be regularly held to provide workers with a project or site-wide update, including any key or recurring environmental issues.

Topic specific environmental training will be undertaken for relevant site personnel.

A Training Needs Analysis is to be undertaken, which:

- Identifies the competency requirements of staff that hold environmental roles and responsibilities documented within the CEMP and sub-plans.
- Identifies appropriate training events and the frequency of training to achieve and/or maintain these competency requirements.
- Implements a documented training schedule which plans attendance at training events, provides mechanisms to notify staff of their training requirements and identifies staff that fail to attend scheduled training events or have overdue training requirements.
- Identifies that all staff are to receive an environmental induction and undertake environmental incident management training.

Principal Contractors must agree on site inspection frequency with Environmental Representatives (refer to Section 1.7.4). They are also required to undertake internal environmental audits. These include:

- Compliance with approval, permit and licence conditions.
- Compliance with the E&SMS, CEMP, SMP, sub-plans and procedures.
- Community consultation and complaint response.
- Environmental training records.
- Environmental monitoring and inspection results.

The Principal Contractor will document and detail any non-compliances resulting from the monitoring, inspections and audits as described in CEMF Section 3.13. Transport for NSW must be made aware of all non-compliances in a timely manner.

Corrective actions must be developed and implemented in order to rectify the non-compliances and preventative actions in order to prevent the reoccurrence of the non-compliance. These non-compliances are to be recorded in a register which must list the non-compliance, corrective actions and preventative actions.

Transport for NSW or the ER may raise non-compliances against environmental requirements.

Principal Contractors will maintain appropriate records, to be retained onsite for the duration of works, and for no less than 7 years in total. These records must be made readily available to Transport for NSW (or their representative) upon request. Records must be maintained of:

- Site inspections, audits, monitoring, reviews or remedial actions.
- Documentation as required by performance conditions, approvals, licences and legislation.
- Modifications to site environmental documentation (eg CEMP, sub-plans and procedures).
- Other records as required by the Construction Environmental Management Framework (CEMF).

Compliance reports detailing the outcome of any environmental surveillance activity including internal and external audits (refer to CEMF Section 3.13) will be produced by the Principal Contractors Environmental Manager or delegate. These reports will be submitted to Transport for NSW at an agreed frequency.

1.7.4 Environmental Representative

- An Environmental Representative (ER) is to be nominated under Condition A22 of the CoA.
- Works are not to start until an ER has been approved by the Secretary.
- Recommendations made by the ER are to be considered and implemented.
- The ER is to review this document.
- The ER is to review the results of any monitoring undertaken as a requirement of the EPL.
- Undertake regular inspections at a frequency agreed with the Principal Contractor.
- The ER may raise non-compliances against environmental requirements.

1.7.5 Acoustics Advisor

- A suitably qualified and experienced Acoustics Advisor (AA) who is independent of the project and construction personnel, must be nominated by the Proponent and engaged for the duration of construction and for no less than six (6) months following operation of the CSSI.
- The details of the nominated AA must be submitted to the Secretary for approval no later than one (1) month before commencement of works, or within another timeframe as agreed with the Secretary. The Proponent may nominate additional suitably qualified and experienced persons to assist the lead Acoustics Advisor for the Secretary's approval.
- The proponent must cooperate with the AA by:
 - Providing access to the noise and vibration monitoring activities as they take place;
 - Providing for review of noise and vibration plans, assessments, monitoring reports, data and analyses undertaken; and
 - Considering any recommendations to improve practices and demonstrating, to the satisfaction of the AA, why any recommendation is not adopted.
- An Acoustic Advisor (AA) is to be approved by the Secretary before undertaking activities generating noise and vibration in excess of the Noise Management Level derived from the Construction Noise Guideline.
- Works in excess of the Noise Management Level must be approved by the AA prior to commencement.
- Any out of hours construction activities are to be endorsed by the AA in accordance with Condition E47 of the CoA.'
- Construction works are not to commence until traffic noise impacts have been assessed in the Construction Noise and Vibration Impact Study (CNVIS) and are approved by the AA.

1.7.6 [All Other Persons](#)

All other persons carrying out work activities on or immediately next to the site shall:

- Always take reasonable care for their safety and of those around them.
- Follow the applicable requirements of this Construction Traffic Management Plan.
- **Before** proceeding with any work, contact their supervisor or a JHLOR JV Site Management Team member for clarification of any requirement applicable under this Construction Traffic Management Plan, and any other relevant permits, plans or approvals.
- Provide appropriate notification of deliveries to the nominated Site Contact.
- Wear high visibility vest or shirt where required under this CTMP.
- Always obey the applicable road rules for pedestrians, riders, and drivers.
- Always follow safe driving practices, including using the correct thoroughfare in accordance with any posted speed limits and safety requirements in a manner that does not put at risk their safety or that of any other persons (e.g. passengers, fellow workers or members of the public).
- Always avoid creating any form of safety hazard or unreasonable delays when parking or parked, and adhering to the JHLOR JV identified Restricted Parking Zones (refer to **Figure 4**). Any workers associated with the construction site must park their vehicles wholly within the site boundaries. Workers associated with the site will not occupy public on-street parking spaces.

1.7.7 [NSW Fire and Rescue](#)

NSW Fire and Rescue is primarily responsible for rendering safe, and cleaning up after, incidents involving flammable or hazardous substances, vapours, gases or liquid spillage, as well as an actual fire or explosion. Information on procedures to be followed and properties of hazardous chemicals are detailed in:

- NSW Environmental Protection Authority
(<http://www.epa.nsw.gov.au/licensing/Dutytonotify.htm>) Safe Work NSW Codes of Practice
- RMS policy procedure – Procedure for Managing Hazardous Chemicals
- Contractors' CEMP.

1.7.8 Security

- The worksites will have appropriate arrangements to discourage entry without approval and minimise vandalism. All access points to worksites will have lockable gates.
- Appropriate information signs will be provided at worksites to identify the Project and contact persons.
- Refer to Security Management Plans for further details.

1.7.9 Safety Requirements

The following safety requirements to be followed include:

- Chain of Responsibility – Sydenham Metro upgrade specific plan is under development (to be approved by Sydney Metro)
- Driver training – Sydenham Metro upgrade specific plan is under development (to be approved by Sydney Metro)
- Requirements for safety accessories for trucks – refer SM PS-ST-221 Sydney Metro Principal Contractor Health and Safety Standard

Relevant documents which are not yet complete will be incorporated into the CTMP once they are finalised and approved.

1.7.10 Environmental Requirements

Issue specific environmental monitoring will be undertaken as required or as additionally required by approval, permit or licence conditions. The results of any monitoring undertaken as a requirement of the EPL will be published on the Principal Contractor's, or a project specific, website within 14 days of obtaining the results.

Environmental inspections will include:

- Surveillance of environmental mitigation measures by the Site Supervisor.
- Periodic inspections by the Principal Contractor's Environmental Manager (or delegate) to verify the adequacy of all environmental mitigation measures. This will be documented in a formal inspection record.

Regular site inspections by the ERs and TfNSW representatives at a frequency to be agreed with the Principal Contractor. Refer to Section 1.7.4.

Principal Contractors will be required to undertake internal environmental audits. Internal audits will include:

- Compliance with approval, permit and licence conditions.
- Compliance with the E&SMS, CEMP, SMP, sub-plans and procedures.

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- Community consultation and complaint response.
 - Environmental training records.
 - Environmental monitoring and inspection results.

Transport for NSW (or an independent environmental auditor) will also undertake periodic audits of the Principal Contractor's E&SMS and compliance with the environmental aspects of contract documentation, including this Construction Environmental Management Framework.

Transport for NSW or the ER may raise non-compliances against environmental requirements.

Control of records is to be undertaken in accordance with CEMP Section 12 – Document Control and Records.

Detailed management plans of performance of traffic controls are to be undertaken in accordance with the following sections of the CEMP:

- Section 12 – Document Control and Records
- Section 14:
 - 14.1 Non Compliances and Corrective Actions
 - 14.2 Monthly Environmental Reporting
 - 14.3 Compliance Reporting
 - 14.4 Additional Environmental Assessments

2. Traffic Management

2.1 Traffic Management

When JHLOR JV Site Management Team members, subcontractors or their workers conduct work on the road or footpath it creates an abnormal situation that requires the provision of suitable signage, barricading, guarding, etc. for users including vehicles, bicycles, and pedestrians.

Regardless of the nature of the works, the complexity or how long it shall take, the purpose of this CTMP is to ensure the safety of the Site Management Team, subcontractors, their workers, members of the public, other users of the road and pathways/footpaths, and to minimise the inconvenience (loss of accessibility, increased delays) to all parties.

The basic communication requirements of the Construction Traffic Management Plan and TCPs are to provide:

- Advance warning of a change in traffic conditions in time for the users to adjust.
- Information and guidance as to where to go to safely negotiate the work site. That is, delineation of travel path and its separation from the work site and any necessary barricading.
- Appropriately advise the nominated site contact in advance to arrange deliveries.

In the event of a traffic related incident, coordination will be carried out with the Transport Management Centre's Operations Manager.

2.1.1 Main Works Guidelines

The following general principles will be adopted and used before/during the works:

- Heavy and construction vehicles should follow the approved haulage routes in the EIS.
- It is important that no construction vehicles use streets and footpaths that have not been approved for use by RMS and the relevant Local Authority (Inner West Council). Should vehicles exceed the prescribed restrictions of any subject roads proposed for construction usage, the appropriate permission and/or approval from the governing authority will be required.
- Due consideration and caution must be exercised for the safety of other road users that may be in the vicinity.
- The movement of materials and plant/equipment in the proximity of pedestrians/commuters and other road users should consider implementing a spotter who is able to direct and guide, not only the labour, but pedestrians around the works.

2.1.2 Road Occupancy Licences

Road Occupancy Licences (ROL) will be required to undertake traffic control restricting flow of traffic in locations listed in Section 8. This will be applied for before works starting using RMS Online Planned Incident System (OPLINC) under the guidance of SM ES-FT-460 ROL Application. The lodgement and approval procedure will be as per the CTMF.

- ROLs are to be approved by the Transport Management Centre with endorsement by the Sydney Coordination Office, in addition to permits/applications required by IWC.
- ROLs must be approved before undertaking any works.
- ROLs on state roads and within 100m of traffic signals are to be issued by the Transport Management Centre
- The ROL must be applied in conjunction with the approved TCP

- The ROL must be in accordance with SM ES-ST-214: G10 – Traffic and Transport Management
- A ROL register of traffic incidents and crashes at worksites must be maintained by the contractor. This register is to be tabled, upon request, at TCG meetings. If action is considered necessary to address the matters of complaint, an appropriate recommendation will be forwarded to the Principal.
- ROLs must be submitted at least 10 business days before the intended works start date.
- The project name is to be clearly stated on all ROL applications to allow for accurate assessment by the relevant authorities.
- Minimum lane width of 3.2m for buses will need to be maintained when applying for ROLs on a road with a bus route. This width is increased to 3.5m where the road curves.
- All works associated with the ROL should be conducted in accordance with the approval conditions, for example;
 - Do not obstruct driveways, and access to, nearby properties
 - A minimum clearance of 3.0 metres for the clear lane must be ensured at all times for traffic
 - Traffic controllers are to conduct slow/stop procedures to help with vehicle movements
 - Traffic controllers are to help pedestrians around the work area
- All partial / full road and / or footpath closures proposed will be submitted to council as per their approval process.

2.1.3 Traffic Control Plans

- Traffic Control Plans (TCP) are required to provide advance warning of a change in traffic conditions in time for the users to adjust. They provide information and guidance about where to go to safely negotiate the work site. That is, delineation of travel path and its separation from the work site and any necessary barricading.
- Traffic Control Plans (TCP) will be generated by the relevant Traffic Control Subcontractor in reference to SM ES-ST-214: G10 – Traffic and Transport Management, Australian Standard AS1742.3 and Traffic Control at Worksites Manual (RMS).
- TCPs must be approved by the relevant authority before undertaking any works
- The TCP will be used to indicate the worksite arrangements.
- The TCP shall be prepared by the designated traffic control subcontractor, and should be developed based on construction layout drawings, Traffic Control at Works Sites manual (TCWS) and works programs supplied by JHLOR JV and prepared by RMS accredited personnel with the appropriate and current qualification as outlined RMS G10 clause 1.5.3.
- For any proposed adjustment of the speed limit, an application must be made to RMS for a roadwork speed limit zone. Proposed Sydenham Metro upgrade works do not include any permanent speed limit adjustments
- For any works impacting on the operation of, or require the reconstruction or adjustments to, traffic signals, consultation with RMS and approval of the traffic signal design plans is required before the start of any work. This will require entering in to a Works Authorisation Deed (WAD) with RMS. See Section 2.1.4 Traffic Control Signal Construction for further details. Traffic control signs shall be erected in accordance with the standard distances as specified in the RMS Traffic Control at Work Sites Manual.

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- Due diligence should be exercised when erecting traffic control signs within the vicinity of potential obstructions, such as nearby roadside objects or parked vehicles on-street. Traffic Controllers to position signs that are clearly visible for road users providing adequate information.
 - Several indicative TCPs have been created for this project. The following are available in Appendix B – Traffic Control Plans:
 - Access 1 & 1B: Entry and exit of AV
 - Access 2&3: Entry and Exit of AV
 - Access 5,6, 7 Underpass: Entry and Exit of AV
 - Access 10: Advance Truck Warning
 - Access 11: Advance Truck Warning
 - Access 12: Advance Truck Warning
 - Access 13: Advance Truck Warning

Access 8 (Carrington Road) is not located on a through road, and trucks drive straight into site. Vehicles travelling northbound on Carrington Road have long sight lines to trucks exiting the access point. Vehicles travelling eastbound on Myrtle Street have right of way at its intersection with Carrington Road and should not be affected by truck movements. It is not considered necessary for a TCP to be implemented for Access 8.

There are currently no TCPs for Access 9, as the design for the proposed access through the park is still being undertaken. When the design has progressed further or the requirement for use of vehicular / plant access is deemed required TCPs can be created, this CTMP will be updated if this access is utilised.

Since non-possession work is low impact type inspection activities, TCPs for non-possession work will be produced on a case-by-case basis and submitted for approval as needed.

All new TCP's, together with any TCP updates, will be captured within Addendum 1 to this CTMP.

- Construction Vehicles and Plant Truck and dogs are proposed to be used in the project. The access points that truck and dogs will be accessing has yet to be determined. Haulage routes, swept paths, and traffic volumes will be updated when more details have been established.
- Heavy vehicles are to be equipped with safety technology and equipment to improve vehicle safety, visibility and the detection of vulnerable road users.
- Construction vehicles shall only be granted access if they comply with the site requirements of flashing light, reversing alarm and reversing camera, personal vehicles will not be permitted onto the worksite.
- All trucks would enter and exit construction sites in a forward gear, where feasible and reasonable, specific TCP's will be undertaken where this condition cannot be met.

Additionally, it is required that:

- The engines of all on-site vehicles and plant would be switched off when not in use for an extended period.
- Plant would be well maintained and serviced to minimise emissions. Emissions from plant would be considered as part of pre-acceptance checks.

- Construction site layout and placement of plant would consider air quality impacts to nearby receivers.
- Hard surfaces would be installed on long term haul routes and regularly cleaned.
- All vehicles carrying loose or potentially dusty material to or from the site would be fully covered.

Heavy Vehicle Volumes

The anticipated heavy vehicle volumes are attached in Appendix H – Truck Volumes.

The highest heavy vehicle volume per day per site access is 30. The highest heavy vehicle of volume for a possession config is 50 per day, which is lower than the 54 vehicles per day that is stated in the Sydenham Metro Upgrade EIS. It is anticipated that this volume of traffic will have a negligible impact on the road network. Even if the peak number of deliveries all occurred outside the peak hours of road operation, this would result in around 50 vehicles over 5 hours, which is expected to have a negligible impact on the road network.

2.1.4 Traffic Control Signal Construction (TCS)

Current proposed Sydenham Metro upgrade work will not require reconstruction or adjustments to traffic signals. It is anticipated that the first signals to be commissioned will be carried out during February 2020, where permanent signals will be installed in Sydenham Rd (adjacent 51 Sydenham Road). The executed WAD from 23rd May 18 will be adhered to and any subsequent requirements for deviation to the WAD must be agreed with RMS in line with CI 4.3 and CI 30.1 of the WAD.

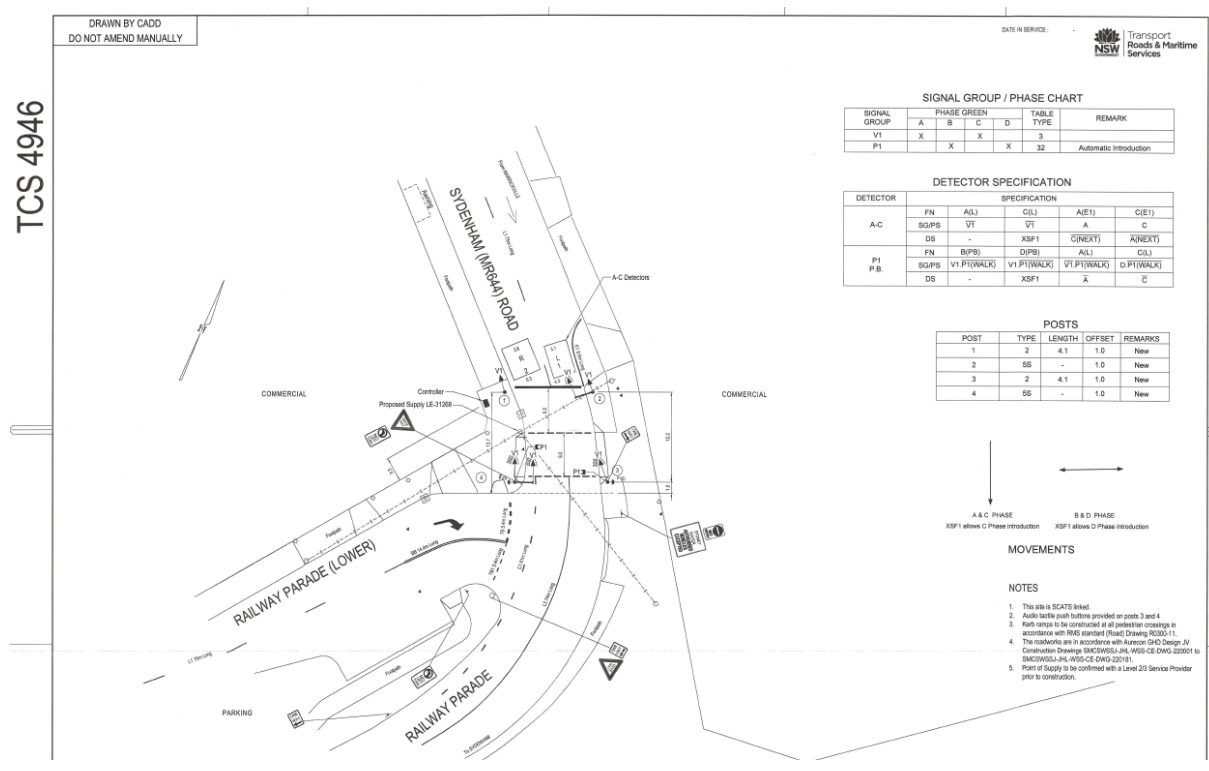


Figure 2: TCS4946 Design Layout

Works shall be carried out by an RMS prequalified TCS contractor, and shall be compliant to RMS G10 Traffic Management and SI/TCS/8 Installation and reconstruction of Traffic Light Signals.

2.1.5 Site Access

The most hazardous movement for construction vehicles occurs when the vehicle is entering or exiting the construction site, whereby drivers and pedestrians do not anticipate vehicles to be turning into, or entering, traffic flows. If possible, trucks are to enter and exit the site in a forward direction. If this is unable to be achieved, traffic control is to be provided. The proposed haulage routes are shown in Appendix A – Heavy Vehicle Access Route Details.

The Fraser Park compound will be the main sign-on point for the Sydenham Metro upgrade project as well as equipment deliveries. This will be the principal point of entry for the Project. It will receive deliveries and arrange for combining of loads and materials for distribution to the various worksites to mitigate the potential impact of construction traffic.

Access Locations

Access gates to the rail corridor are at the following locations:

- Access 1 (in via Edgeware Road, out via Railway Parade and Edinburgh Road)
- Access 1A (in via Edgeware Road, out via Railway Parade and Edinburgh Road)
- Access 2 and 3 (via Bolton Street)
- Access 4 (via Hogan Avenue)
- Access 5 and 6 (via Marrickville Road and the underpass to Fraser Park Rail Access gates)
- Access 7 (via Marrickville Road and the underpass to Fraser Park Compound)
- Access 8 (via Carrington Road, past pumping station)
- Access 9 (via Unwins Bridge Road, through Tillman Park)
- Access 10 (via Way Street, through Sydenham Maintenance Centre)
- Access 11 (via Railway Parade, into Sydney Trains Geotechnical Services facility)
- Access 12 (via Sydenham Road, into 11 Sydenham Road Compound)
- Access 13 (via Garden Street, into 11 Sydenham Road Compound)
- Access S1 (via Sydney Steel Rd)
- Access 14 (via Lord Street, into the Rail Corridor)

Refer Appendix B – Traffic Control Plans for further details.

To provide a safe entry and exit to the work site from safe access points or gates JHLOR JV will:

- Monitor the number of access points in use. Access points 1, 2, 3, 4, 5, 6, 8 and 11 are currently in use by Sydney Trains.
- Ensure the access points nominated can accommodate the turning movement of the largest vehicles that will be accessing the site as required.
- All entry points are suitable for HRVs, however the following Access points are unsuitable for a 19.0m articulated vehicle:
 - Access 2;
 - Access 8 (due to height and path width); and
 - Access 11.

-
- Utilise traffic control to manage the interface of pedestrians, cyclists and access points. Segregation of pedestrians and cyclists from site access points will not be feasible. Where required, Pedestrians and Cyclists will be held briefly to allow safe vehicle movements as per TCP (refer Appendix B – Traffic Control Plans)
 - Ensure all access points are clearly visible to approaching traffic and signposted accordingly.
 - Potentially remove parking on Marrickville Road, at the entrance to the underpass to allow for vehicles to enter the site.
 - Ensure heavy vehicles do not queue or circulate on residential streets but enter through the access gates as soon as possible after arriving. Vehicle arrivals will be managed to avoid any waiting outside the worksite.
 - Manage vehicle arrivals to avoid any 'waiting' outside the worksite. Some access gates are located on or near residential streets, construction vehicles must not queue on these roads, but enter through the gate as soon as possible after arriving.

The access point are existing railway access gates via existing driveways and easements and will not need to be modified.

Vehicle access to and from construction sites would be managed to ensure pedestrian, cyclist and motorist safety. Depending on the location, this may require manual supervision, physical barriers, temporary traffic signals and modifications to existing signals or, on occasions, police presence.

Construction sites would be managed to minimise construction staff parking on surrounding streets. The following measures would be implemented:

- Encouraging staff to use public or active transport
- Encouraging ride sharing
- Provision of alternative parking locations and shuttle bus transfers where feasible and reasonable.

Transport for NSW would work with local councils to minimise adverse impacts of construction on parking and other kerbside use in local streets, such as loading zones, bus zones, taxi zones and coach zones.

Temporary Removal of Car Spaces

The routes to some access gates are along residential streets with on-street parking, which restricts the road width available for heavy vehicles to manoeuvre. Parking may have to be removed on one side of the road and this may affect the parking options for residents and visitors of the street. If required further consultation with residents/businesses and Council's approval will be obtained. Where longer term additional temporary car parking adjustments are necessary that require the alteration of signposting. This will be approved through Inner West Council and their Local Traffic Committee which meets monthly

During possessions indicated in Appendix G – Schedule of Possessions, the residential street of Bolton Street will be affected. It is expected around 6 spaces on Bolton Street will be affected to provide access for heavy vehicles. The road occupancy during rail possessions is not to be used for parking. Additionally, access to gate 13 will require some spaces to be removed. Refer to Appendix B – Traffic Control Plans.

The construction of Sydney Water pit access ramp at Garden St, will require removal of parking, the TCP will be presented to relevant stakeholders, ROL's will be agreed and approved by IWC before commencement of works.

It should be noted any road occupancy will require approval from Inner West Council with local residents also being consulted before activities starting. No private workers vehicles will be allowed to park on surrounding residential streets.

Parking changes may be required to have approval from the local traffic committee and IWC.

Land Parcels which fall within Construction Lease agreements between Sydney Metro and Inner West Council will experience both temporary and permanent parking loss for the duration of the Project work and the finalised project scope will define end state parking .

Work Areas and Haulage Routes

There will be one main site access point to the project, and 12 satellite entrances as shown in Figure 1. Further details of haulage routes are contained in Appendix A – Heavy Vehicle Access Route Details.

Traffic Demand

The relevant person for JHLOR JV/subcontractor shall determine the most suitable time of the day (in accordance with the approved working hours) to conduct any work this CTMP is applicable to, and ensure sufficient road reserve space remains open to provide an acceptable level of service, safety, and convenience to all users taking into account normal and peak hour traffic.

2.1.6 [Traffic Routing](#)

The JHLOR JV Site Manager/Relevant Site Supervisor shall determine the most effective means of routing general and specific traffic through, past or around site as required by on-site and offsite work activities.

There are a number of mobility restrictions in and around the project site, including one way streets shown in Figure 3, and weight limits shown in Figure 4. These restrictions have been alleviated by planning heavy movements in accordance with Appendix A – Heavy Vehicle Access Route Details.

The most effective means of routing general and specific traffic through, past or around the site is based on-site and off-site work activities.

The identified mobility restrictions in and around the project site such as weight limits, headroom clearance, one-way streets and restricted turns are identified as follows::

- One-way Streets (Figure 3)
 - Shirlow Street (between Garden Street and Sydenham Road)
 - Buckley Street
 - Sydenham Road (between Buckley Street/Shirlow Street and Gleeson Avenue)
 - Railway Parade (Northbound between Gleeson Avenue and Buckley Street)
 - Railway Road
 - Swain Street
 - Darley Street
 - Lord Street
 - Mary Street
 - Entry road to Tillman Park
- Clearance restrictions (Figure 3):
 - 4.7m headroom clearance on Railway Parade below Bedwin Road.
 - 5.0m headroom clearance in the underpass from Marrickville Road to Fraser Park and the Portuguese Community Club.
 - 3.6m headroom clearance at the entrance to gate 8, off Carrington Road.
- 3T maximum weight (Figure 4):
 - Lord Street
 - Florence Street
 - Silver Street
 - Edith Street
 - Mary Street
 - Grove Street
 - Sutherland Street
 - Frederick Street
 - Yelverton Street
 - George Street
 - Henry Street
 - Railway Road
 - Park Road
 - Terry Street
 - Samuel Street

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- Lymerston Street
 - O'Hara Street
 - Edgeware Road, 10pm – 6am
 - Campbell Street, South of Unwin Bridge Road
 - 2T maximum weight (Figure 4)
 - Calvert Street
 - Swept paths for 19m articulated vehicle show access to and from Access 1 via Bedwin Road would overrun kerbs, but access from Edgeware Road and exit to Railway Parade and Edinburgh Road is suitable with traffic management to hold oncoming traffic.
 - Swept paths for 19m articulated vehicle show access to and from Access 2, 3 and 4 via Hogan Avenue and Bolton Street is suitable with traffic management to hold oncoming traffic at Bolton Street.
 - Swept paths for 19m articulated vehicle show the left turn from the Fraser Park access to Marrickville Road would be required to enter the eastbound lane to complete the manoeuvre. Turning right does not obstruct traffic and will be the preferred exit route for this vehicle.
 - No right turn from Gleeson Avenue northbound to Burrows Avenue.

The restrictions have been considered in planning heavy vehicle movements given in Appendix A – Heavy Vehicle Access Route Details.



Figure 3 – One-way Streets around Sydenham Metro upgrade



Figure 4 – Tonnage Limits for SMU Surrounding Roads

2.1.7 Bus Routes and Stops

During specific construction activities there may be a need to relocate bus stops. These requirements will be identified in advance. Any relocation of bus stops would be carried out by Transport for NSW in consultation with Roads and Maritime Services, the relevant local council and bus operators. Wayfinding and customer information would be provided to notify customers of relocated bus stops.

During possession works on the rail corridor at Sydenham Station, rail replacement buses will be used to transport passengers from Sydenham Station to stations further down the rail line. This may involve closing the kerbside lane with water-filled barriers on Railway Parade in order to provide sufficient space for the pedestrians to stand and wait for buses. The plans for this action are currently being developed, and when approved, the CTMP is to be updated.

2.1.8 Post Boxes and other Roadside Furniture

The post box located on 59 Railway Road, Marrickville, NSW, 2204 (-33.913924, 151.166745) will be relocated as part of Sydenham Metro upgrade works. The proposed location is to be determined following consultation with Australia Post and Inner West Council with cognisance of existing parking singposting and spaces. Additionally, no roadside furniture will be affected by the Sydenham Metro upgrade work.

2.1.9 Traffic Control (JHLOR JV Works on Carriageways)

Traffic control shall be provided by the relevant JHLOR JV Site Management Team member or subcontractor, as applicable, where required under this CTMP or the Safe Work Method Statement (SWMS) for the activity undertaken.

Traffic control and the relevant plans must be approved by RMS and / or Inner West Council on Local Roads.

The relevant person for JHLOR JV/subcontractor shall ensure:

- The level of control implemented is suitable for all traffic conditions occurring during the work activity e.g. traffic controller, police, other means of traffic control.
- Traffic control measures take into consideration emergency vehicles and vehicles with special requirements such as buses, their stops and terminals.
- Specific Traffic Control Plans shall be developed if, and when, Works Zones, road or footpath occupancy is required to complete project scope works.

2.1.10 Non-Vehicular Traffic

JHLOR JV's Site Manager/Relevant Site Supervisor shall ensure traffic management includes provisions for all pedestrians and cyclists, including the following where applicable:

- Pedestrians, including those with disabilities;
- School children;
- Bicycles, skateboards.

2.1.11 Schedule of Possession Work

The following Possessions have been nominated for the delivery of the works and will coincide with the peak traffic control requirements for the project. The minimum traffic control required for each possession can be seen in Appendix B – Traffic Control Plans.

Appendix G – Schedule of Possessions lists the possessions for the project.

2.1.12 [Deliveries for works](#)

Deliveries are classed as either Light Vehicles (site utes), Standard Construction Plant (delivery of excavators, piling rigs, pothole trucks, bogies, concrete agitators, etc.), Heavy Construction Plant (beam and girder deliveries, precast deliveries, tower crane deliveries). Refer to Appendix A – Heavy Vehicle Access Route Details for a summary of expected vehicles.

Considerations for Deliveries are as follows:

- Material Deliveries may be required 2-4 weeks before these possessions outlined in Appendix F – Not used, this will require traffic control at site access locations.
- Spoil disposal will be required up to 1-2 weeks after these possessions that will require traffic control at the site access locations.
- All deliveries shall be coordinated with the relevant Site Contact in advance of the delivery.
- Out of Hours Works (OOHW) notifications will be organised in advance of the delivery if required. Appropriate licences for oversized loads will be in place before delivery. All Heavy Vehicles will be managed in accordance with the Chain of Responsibility, National Heavy Vehicle Regulator (refer WHSMP).

2.1.13 [Emergency Response after Construction Traffic Incidents](#)

The Emergency Response Plan contained within Appendix 8 of the Construction Health and Safety Management Plan (CHSMP) shall be implemented for construction traffic incidents and in consultation with relevant stakeholders including Sydney Trains and the Rail Safety Management System. The Emergency Response Plan has been developed in accordance with the SM PS-ST-221 Sydney Metro Principal Contractor Health and Safety Standard.

No road closures are proposed that will influence the operation of emergency and service vehicles other than the proposed Burrows Road closure, all works associated with this will be presented and discussed with emergency services (TTLG). The delivery of materials and plant/equipment are expected to occur during designated loading zone hours and locations (through existing access gates to the rail corridor); therefore, the impact to emergency and service vehicles are expected to be negligible.

The nearest emergency services are located at the following areas:

- Fire: Marrickville Fire Station – 309 Marrickville Road, Marrickville NSW 2204
- Police: Marrickville Police Station – 89-101 Despointes St, Marrickville NSW 2204
- Public Hospital: Royal Prince Alfred – 50 Missenden Rd, Camperdown NSW 2050

2.1.14 [Haulage, Spoil Removal and Delivery Options](#)

JHLOR JV recognises the effective management of haulage and delivery operations is not only integral to the success of the Sydenham Metro upgrade project, but additionally necessary to minimise the impact on the road network and community.

Haul and delivery truck routes to and from construction sites and access points will be developed in key consideration of minimising impact on local streets and maximising use of arterial roads using Higher Mass Limit (HML) routes as outlined by Roads and Maritime Service (RMS) as part of their Intelligent Access Program (IAP) and Restricted Access Vehicle (RAV) routes.

RMS has roads and zones throughout Sydney that are approved for RAV and HML for certain heavy vehicles to travel along.

Relevant local councils and/or RMS permission is required should construction vehicles greater than the allowable load limit require access to roads containing restrictions. These haulage routes must be approved by the RMS following endorsement by Sydney Coordination Office and consultation with the TTLG (s). Refer to Appendix A – Heavy Vehicle Access Route Details.

The locations of schools and childcare centres along haulage routes would be considered during the route identification. Where schools and childcare centres are identified on proposed haulage routes, these roads would be avoided wherever feasible and reasonable to do so. This will be achieved by:

- Assessing alternative access routes around the school or childcare.
- Determining if they are suitable for heavy construction traffic (road weight limits, surface conditions, grades, road geometry and other accessibility considerations).
- Identifying and assessing the potential sensitivity of other receivers along the alternate routes.

Where passing schools and childcare centres cannot be avoided, the presence of the sensitive area will be communicated to the vehicle driver and need for safe and careful driving in accordance with all applicable road rules will be reinforced. Wherever practicable, high volume usage of haulage routes will be avoided during School Zone Times (8:00am – 9:30am and 2:30pm – 4:00pm).

JHLOR JV uses an in vehicle monitoring system (IVMS) to monitor compliance with road rules etc. There is also a GIS component to track location.

Due to the location of the work areas and the nature of the work, spoil removal by non-road measures is not feasible. The rail corridor is unable to be used for this purpose. The operation of trucks carrying spoil will be minimised during peak hours outlined in CoA E80

2.1.15 Dilapidation Surveys

As required in condition E90, a Road Dilapidation Report must be prepared for local roads proposed to be used by heavy vehicles for the purposes of the CSSI before the start of use by such vehicles. The report will record the condition of roads, footpaths, stormwater pits and pipes, and kerb and gutter assets. Copies of the Road Dilapidation Report must be provided to IWC within three (3) weeks of completing the surveys and no later than one (1) month before the use of local roads by heavy vehicles. Refer to **Figure 5**.

Dilapidation survey of the following roads and footpaths completed at the end of June 2018 are:

- Saywell Street
- Shirlow Street
- Sydenham Road
- Garden Street
- Railway Parade – Marrickville
- Lower Railway Parade - Marrickville
- Buckley Street
- Marrickville Road
- Gleeson Avenue
- Burrows Avenue

-
- Railway Road
 - Bolton Street
 - Hogan Avenue
 - Unwins Bridge Road
 - Bedwin Road
 - Railway Parade - Newtown
 - Edgeware Road
 - Edinburgh Road

Dilapidation survey of the following roads and footpaths completed at the end of August 2018 are:

- Carrington Road
- Myrtle Street
- Victoria Road
- Fitzroy Street
- Way Street

Dilapidation survey of the following roads and footpaths completed at the end of January 2021 are:

- Sydney Steel Road

If damage to roads occurs as a result of construction of CSSI, the Proponent must either (at the landowner's discretion):

- compensate the landowner for the damage so caused. The amount of compensation may be agreed with the landowner; or
- rectify the damage so as to restore the road to at least the condition it was before construction commenced as identified in the Road Dilapidation Report(s).

Refer to the Property Management Plan for details of remedial actions and the process to be followed regarding dilapidation surveys and corrective measures.

2.1.16 Traffic Staging

Traffic staging is expected to be as follows:

- Gleeson Avenue Bridge works and subsequent traffic changes – January 2020
- Bedwin Road Bridge works and subsequent traffic changes – March 2021 to July 2021
- Sydenham Road and Railway Parade works and subsequent traffic changes – January 2019 to March 2021
- Burrows Avenue and Bolton Street works and subsequent traffic changes – December 2018 to May 2021

The areas requiring traffic staging are shown in Appendix D – Traffic Staging, Site Boundaries and Hoardings.

The approval process for Traffic Staging Plans is:

- RMS roads: apply to RMS, and consult through TCG/TTLG.
- Council roads: apply through IWC, and consult through TCG/TTLG.

2.1.17 Hoardings and Site Boundaries

Project boundaries and hoardings will be developed on a per-access basis as the project progresses. Details are available in Appendix D – Traffic Staging, Site Boundaries and Hoardings. The use of hoardings for project areas on council land/roads will require approval from RMS and/or IWC, alongside consultation through TCG/TTLG.



Figure 5 – Dilapidation Survey Report Scope

2.2 Pedestrian Management

Pedestrian Movement Plans (PMPs) are required for each instance where changes to pedestrian routes will be required, such as closing footpaths. PMPs are to be developed in accordance with RMS Traffic Control at Worksites Manual Version 4, and CEMF Clause 8.1(h). Pedestrian routes for workers are available in Appendix C – Vehicle Management Plans, Pedestrian Movement Plans, and Worker Walking Routes.

Additional enhancements for pedestrian, cyclist and motorist safety in the vicinity of the construction sites would be implemented during construction. This would include measures such as:

1. Use of speed awareness signs in conjunction with variable message signs near construction sites to provide alerts to drivers
2. Community educational events that allow pedestrians, cyclists or motorists to sit in trucks and understand the visibility restrictions of truck drivers, and for truck drivers to understand the visibility from a bicycle; and a campaign to engage with local schools to educate children about road safety and to encourage visual contact with drivers to ensure they are aware of the presence of children
3. Specific construction driver training to understand route constraints, expectations, safety issues, human error and its relationship with fitness for work and chain of responsibility duties, and to limit the use of compression braking
4. Use of In Vehicle Monitoring Systems (telematics) to monitor vehicle location and driver behaviour
5. Safety devices on construction vehicles that warn drivers of the presence of a vulnerable road user located in the vehicles' blind spots and warn the vulnerable road user that a vehicle is about to turn.

Where existing footpath routes used by pedestrians and / or cyclists are affected by construction, a condition survey would be carried out to confirm they are suitable for use (eg suitably paved and lit), with any necessary modifications to be carried out in consultation with the Inner West Council.

The stairs on the western side of the overhead bridge have been closed to prevent pedestrians from entering the work zone.

The footpath on the corner of Gleeson Ave and Burrows Ave(West) in the final design requires installation of some traffic bollards to protect the rail infrastructure from traffic impacts. As an interim until the design is agreed with RMS/IWC, a temporary solution may be required to protect assets during construction commissioning events on the rail infrastructure. This temporary protection on the footpath has been agreed in principal with IWC and will be installed in compliance with this CTMP and certified design.

The swept path assessment, pedestrian management TCP and actions from the Road Safety Audit related to pedestrian routes which are to be implemented on the intersection of Burrows Avenue and Hogan Avenue has been provided with Section 10.8, Appendix I.

2.3 Traffic Modelling

As per CoA E78, traffic modelling is to be undertaken for this project as required by the Traffic and Transport Liaison Group (TTLG). The modelling must demonstrate that construction and operational traffic can be managed to minimise disruption to traffic network operations, the public, pedestrians, bicycles, and public transport network transport services. As of the issue date of this document, the TTLG has not required modelling to be undertaken.

2.4 JHLOR JV Works on the Roadway

2.4.1 JHLOR JV Controlled Work

This section applies to JHLOR JV controlled work requiring part closure of the nearby road to allow pedestrians to pass the work site. The Site Manager/Relevant Site Supervisor shall ensure the following:

2.4.1.1 *Work involving a lane closure:*

- An ROL must be approved and received from the appropriate consent authority
- A TCP is completed showing all protective devices, their delineation.
- A written list is prepared of all devices required for the task.
- Approval from RMS/IWC which includes construction approvals from IWC, details of requirements and applications here <https://www.marrickville.nsw.gov.au/en/development/building-and-certification/construction-certificates/>
- Traffic control and delineation to be installed as per approved TCP

2.4.1.2 *Work involving a road closure:*

- An ROL must be approved and received from the appropriate consent authority
- Any road closure must be presented and agree with Inner west council and their traffic committee which meets monthly
- A TCP is completed showing all protective devices, their delineation.
- A written list is prepared of all devices required for the task.
- Approval from RMS/IWC which includes construction approvals from IWC, details of requirements and applications here <https://www.marrickville.nsw.gov.au/en/development/building-and-certification/construction-certificates/>
- Traffic control and delineation to be installed as per approved TCP
- Sydney Metro, Temporary Transport Programme (TTP) has developed a separate CTMP with the SMU project to cover the temporary busing arrangements during the Christmas rail shutdown and the closure of Burrows Avenue. (Document Number SMCSWSSJ-JHL-WSS-TF-PLN-000003)

A road closure on the Sydenham Metro upgrade project will be required on Burrows Ave between Hogan Ave and Swain Street. This road closure will be required to facilitate precast installation to new Sydenham Station Concourse being constructed through 2019 and 2020, these road closures will align with planned rail possessions.

All the above documents and approvals are to be filed on site with this CTMP.

2.4.2 Vehicular Traffic Safety and Convenience

To achieve the least disruption and inconvenience to vehicular traffic, JHLOR JV's Site Manager/Relevant Site Supervisor shall ensure:

- Only the minimum practicable length and width of road is closed off at any given time.
- The control measures used provide sufficient width within the work area for the safety of the workers i.e. at least 1.2m clearance between edge of work area and edge of nearby traffic lane.

2.5 Parking Management Plan

The upgrade work involves working within a live rail environment. This limits the type of work activities which can be carried out during standard construction hours. The project will work during available Sydney Trains (ST) rail track possession weekends. The successful delivery of the project is reliant on working with and maximising scope of work during track possessions to deliver critical activities that are constrained by working within a live rail environment. This will involve an increase number of plant, machinery and workforce arriving and departing site during numerous shifts.

During standard construction hours, the project is committed to reducing project vehicles travelling along local roads and will encourage the workforce to:

- use public transport
- car pool/share
- to reduce congestion park away from surrounding areas and walk to site
- avoid impact to parking options for residents and local community

Generally, possessions are granted for a 48 hour period from 2am Saturday to 2am Monday. Working during a possession results in an increase in the number of plant, machinery and workforce on site. This will potentially impact the local community with increased noise and traffic movements.

During possession weekends, a sizable portion of the workforce will arrive to site in their project vehicles due to:

- no trains operating
- limited public bus operations on the weekends
- buses replacing trains do not operate 24 hours but work shifts are around the clock
- increased travelling time to workforce if using available public transport
- potential risk to workforce – fatigue management

Parking may have to be removed on some streets to allow heavy vehicles to manoeuvre into sites. Removed parking will be shown on the Traffic Control Plans. If required, further consultation with residents/businesses and Council's approval will be obtained.

During possessions indicated in Appendix G – Schedule of Possessions, the residential street of Bolton Street will be affected. It is expected around 6 spaces on Bolton Street will be affected to provide access for heavy vehicles. The road occupancy during rail possessions is not to be used for parking. Additionally, Access 13 will require some spaces to be removed. Refer to Appendix B – Traffic Control Plans.

It should be noted any road occupancy will require approval from Inner West Council with local residents also being consulted before activities starting.

Where existing parking is removed to facilitate construction activities, alternative parking facilities would be provided where feasible and reasonable. Due to the limited parking removed to facilitate Sydenham Metro upgrade works, it is not deemed necessary to implement alternative parking facilities at the current stage of planning.

3. Traffic Signage and Control

Traffic signage and control must be in accordance with the RMS Traffic Control at Work Sites Manual.

3.1 Appropriate Signing

3.1.1 Principles of Signing

JHLOR JV's Site Manager/Relevant Site Supervisor shall ensure, no matter how briefly the work site is occupied, careful consideration is given to signing of the site to:

- Provide advance warnings and physical protection to drivers of changes in the surface of the roadway and/or in the changed traffic conditions and personnel and/or plant are engaged in work.
- Adequately instruct and guide traffic safely through, past or around the work site.
- Provide separation of the travel path and the works area.

JHLOR JV's Site Manager/Relevant Site Supervisor shall ensure the following important principles are observed about traffic management signage:

- Signs and devices comply with those listed in AS 1742.3
- Signs and devices are to be erected and displayed before work commences.
- On approaches to the work area signs are erected in the following sequence and then removed in the reverse order.
 - Advance warning signs.
 - Other warning signs.
 - Instruction signs
- Signs are placed within the driver's line of sight and at the same time not obscure other traffic devices from the driver's line of sight.
- All signs and devices are placed in the most advantageous positions having regard for the location and nature of the hazard, and the warning being conveyed, to provide the maximum visual impact for approaching traffic. Such signs and devices shall have an adequate clear view in advance of them (minimum 50m for 60 km/h, minimum 100m for 100 km/h).
- Signs and devices are placed in a manner and position so they are not obscured from view by vegetation or parked vehicles.
- Signs and devices are placed in a manner and position so as not to become a possible hazard to workers, pedestrians or vehicles (e.g. divert traffic into an undesirable path).
- Signs and devices shall be regularly checked for effectiveness and maintained in a satisfactory condition.
- Signs and devices are selected and placed in a manner so as not to require a driver to disobey a law unless so directed by an authorised officer such as a police officer.
- Permanent signs which conflict with the signs required for the temporary work situation are covered or removed.
- Signs and devices are removed from the site when practical once the hazard ceases to exist. This not only restores the road/footpath to normal but is also an essential part of maintaining the credibility of the signs.

Directional signage and line marking would be used to direct and guide drivers and pedestrians past construction sites and on the surrounding network. This would be supplemented by Variable Message Signs to advise drivers of potential delays, traffic diversions, speed restrictions, or alternate routes.

3.1.2 Erection and Location of Signs

JHLOR JV's Site Manager/Relevant Site Supervisor and the nominated Traffic Controller shall ensure:

- All road signs are used with approved stands or erected on posts set into the ground, where permitted by the relevant authorities.
- All signs are placed in the most advantageous position, having regard for the nature of the hazard and the warning being conveyed, to provide the maximum visual impact for approaching drivers.
- Where signs are erected on posts set into the ground the following applies:
 - On kerbed roads signs should be located back from the face of the kerb not less than 300mm, and no more than 1.0m.
 - The lower edge of the height of the sign should be at least 2.2m above the kerb or footpath to avoid being struck by pedestrians or cyclists and to be visible above parked vehicles.
- Where the signs are erected on temporary stands for short term work, if they are erected in kerbed areas, the provisions outlined above for post-mounted signs shall be followed.

3.1.3 Advance and Intermediate Advance Warning Signs

Advance and Intermediate Advance Warning Signs alert approaching vehicles of changed road conditions so road users may negotiate any travel path at an acceptable level of risk.

- For JHLOR JV purposes the Advance Warning Signs are limited to:
 - Workers Ahead
 - Roadwork Ahead
- Intermediate Advance Warning Signs are used where, in addition to a general warning of the onset of the roadwork, a warning is needed either of a specific action of a driver or of the condition of the road. The intermediate advance warning signs for JHLOR JV purposes are:
 - Detour Ahead
 - Prepare to Stop
- The minimum distance for positioning of the advance warning signs shall be $2 \times D$ metres where D is the speed limit in km/h or the approach speed where it is significantly different from the speed limit, e.g. if the approach speed is about 60 km/h then the sign is placed at 120m.
- The distance shall be measured from the sign position to the beginning of the taper area or the beginning of the diversion associated with the work site.
- Where there is more than one advance sign position, such as for Detours, etc., then the advance sign nearest the work area shall be placed $2 \times D$ metres from the transition area, and the other advance sign positions at spacing of D metres further in advance of work area. e.g. "Detour Ahead" sign would be at the $2 \times D$ spacing with the "Roadwork Ahead" sign at the D metres spacing.
- Advance warning signs for vehicular traffic are not required in the following situations:

- Where work is sufficiently remote from the roadway that no action or extra vigilance is required of a driver other than would be normally required on that section of road.
- Where approach speeds are so low that no devices are needed to give advance warning; i.e. signs and devices can be seen in plenty of time for drivers to take necessary action.

3.2 Traffic Control

3.2.1 Approach Taper Partially Closed Lane

If a roadway has to be partially closed, an appropriate taper should be marked in the transition (taper) area and, wherever possible, should be located so its full length is visible to approaching traffic.

Traffic cones or bollards are used after the appropriate advance signs on the approach side of the hazard, forming a taper from the kerb to the outer limits of the clearance area. Table 2 below provides a guide to the recommended taper length for two-lane, two-way roads to be closed for various approach speeds based on a lane width of 3.5m. This is sourced from Table 5.2 of the RMS Traffic Control at Work Sites Manual.

The distances in the columns in the **Table 2** are applied as follows:

Table 2 – RMS Recommended Taper Lengths

Approximate speed of traffic km/h	Recommended taper length, m		
	Traffic control at beginning of taper	Lateral shift taper	Merge taper
45 or less	15	0	15
46 - 55	15	15	30
56 – 65	30	30	60
66 - 75	N/A	70	115
76 - 85	N/A	80	130
86 – 95	N/A	90	145
96 – 105	N/A	100	160
Greater than 105	N/A	110	180

Source: RTA Traffic Control at Worksites 2010 Section 5.2

JHLOR JV's Site Manager/Relevant Site Supervisor shall ensure the requirements and recommendations for signs and devices in each of the areas identified above are as follows:

Advance Warning Area - General Requirements for the display of advance warning signs and devices will vary according to factors such as the speed of approaching traffic, the degree to which the hazard requires modification of speed or diversion of travel path, or extra vigilance for other reasons, and the sight distance available to the hazard, including sight obstruction caused by other traffic.

Transition (Taper) Area - If a roadway has to be partially closed, an appropriate taper should be marked in the transition (taper) area and, wherever possible, should be located so its full length is visible to approaching traffic.

Work Area/Clearance Area

- The work area is where the work is physically being carried out and is preceded by a clearance area that provides a safety barrier.
- The clearance area should be large enough to accommodate any work trucks or plant etc., however, if the work is hidden from approaching traffic (e.g. by a crest or curve) the clearance area should extend back to a point where it can be adequately seen by approaching traffic.

Termination Area - Signs indicating the end of the works and where appropriate, terminating a roadwork speed limit zone, are placed at the end of the termination.

Traffic control at beginning of taper

Applicable at a location where there is a traffic controller just before a taper. (e.g. into a single lane being controlled by a controller).

Diverge taper (lateral shift)

Applicable where traffic is simply required to shift laterally without conflict with another stream of traffic.

Merge taper

Applicable where one lane of traffic is required to merge onto another lane of traffic.

3.2.2 [Traffic Controller's Check](#)

Traffic Controllers shall record that all the appropriate signs and traffic control requirements have been implemented according to the approved traffic control plan in place.

3.2.3 [Termination Taper](#)

This is the area indicating the end of the works. The use of three traffic cones or bollards should be sufficient in a taper. The typical spacing would be 5.0 to 15.0m.

4. Delineation at Work Site - Travel Paths

4.1 Delineation of the Travel Path

Suitable, adequate and appropriate delineation of the travel path is perhaps the greatest need of road users. To give satisfactory guidance for road users, traffic control measures shall provide for both short and long range delineation for the travel path and must be continuous and unambiguous.

Long range delineation provides drivers with an advance view of the site indicating the general direction of the trafficable path and short range delineation guides the driver through the works once they have entered.

Depending on the circumstances, movement of traffic in connection with a work site shall be achieved in one of the following ways:

- Through the work area.
- Past the work the area

It should be noted that for Sydenham Metro upgrade, there will no delineations from travel paths required. Minor alterations may be necessary during possessions as detailed in Appendix G – Schedule of Possessions.

4.1.1 Through the Work Area

This will be applicable only on the actual worksite and will not be used for traffic of the general public.

Access to the Sydney Water facility Sydenham Pit & Drainage Pumping Station must be maintained at all times.

4.1.2 Past the Work Area

Where the traffic is conducted past the work area there needs to be a minimum distance of 1.2m clearance between the edge of the work area and the edge of the travel path as a no-go buffer zone. This clearance shall be defined on both sides of the travel path to avoid inadvertent intrusion by any persons and shall be provided by the use of containment fences such as barrier tapes, mesh fences, interconnected lightweight units or bollard fences.

4.2 Worksites

If workers are present at the work site at all times, then the bollard and tape type barriers are sufficient. It is proposed under this CTMP that diversion of pedestrians onto lane closures will be required; however, a risk assessment will be undertaken for each TCP when they are developed to determine the appropriateness of using bollards and tape type barriers.

During possession bus operations on Railway Parade, pedestrians may be required to occupy the roadside lane. Buses will pick up passengers from lane adjacent to the kerbside lane. Passengers will be separated from the road travel lanes by water-filled barriers.

4.3 Vehicle Movement Plan (VMP), Pedestrian Movement Plan (PMP) and Worker Walking Routes

Vehicle Movement Plans will be developed with pedestrian movements incorporated in them. It is envisaged that the following plans will be required:

- Access 4,
- Access 11

These will be incorporated into the TCP for the site entrances, which will be produced when required.

PMPs are required for each instance where changes to pedestrian routes will be required, such as closing footpaths. These will also be incorporated into relevant TCPs. Refer to Appendix C – Vehicle Management Plans, Pedestrian Movement Plans, and Worker Walking Routes.

5. Traffic Controllers

5.1 Traffic Controllers

Where JHLOR JV works require vehicles to be stopped or slowed down to navigate through or past the work site then it shall be necessary to use qualified RMS Blue Card Holding Traffic Controllers. The selected Traffic Controller Subcontractor will be responsible for the management of all traffic throughout the delivery phase.

A Traffic Controller is a person who has graduated from an accredited course to Traffic Controller. Traffic controllers are also required to maintain a log book of traffic control related information. Traffic Controllers are required to implement the approved TCP for the subject work area. All activities should be conducted in accordance with Section 3. A summary of expectations of traffic controllers is listed in 5.1.3 below.

5.1.1 Use of Traffic Controllers

Some typical situations where traffic controllers can be used are shown in **Table 3** below.

Table 3 – Typical Situations for Traffic Controllers

Situation	Purpose
One lane of a two-lane/two-way road is closed.	Restrict traffic flow to a single direction and alternate direction of flow over available width of carriageway.
Conditions at the work site are such that low speed operations are essential.	Warn or slow down the traffic.
Plant or machinery regularly crosses or enters an existing road.	Avoid conflict between plant/machinery and road traffic.
Sight distance to the work site is limited.	Control and warn motorists of the presence of work machinery and/or personnel.

5.1.2 Number of Traffic Controllers

One (1) Traffic Controller may be used operating alone with a STOP/SLOW bat and any other relevant signs provided that all of the following conditions are met:

- Will be utilised only for management of pedestrians / cyclists on footpath

Two (2) or more Traffic controllers equipped with two-way radios should be used for all other conditions.

5.1.3 Traffic Controller(s) Role and Responsibility:

- Ensure all relevant signs and devices are in place before starting traffic control.
- Wear high visibility clothing and carry their traffic control identification.
- Maintain an approved logbook to record experience gained as a trainee Traffic Controller.
- Not obstruct drivers' view of or be partially hidden by other road signs and devices.
- Give definite and clear signals.

-
- When two traffic controllers are used, be visible to one another or have radio communication so the flow of traffic from each direction can be coordinated.
 - Traffic will be held only to allow single HV movements to be made and then released.
 - Follow all other relevant procedures and requirements contained in the relevant TCP or JSA/SWMS for the activity undertaken.
 - Pedestrian managers will be utilised during track possessions if pedestrian crossings are effected by Sydenham Metro upgrade's traffic controls and temporary bussing configurations. If required they are to work in conjunction with Sydney Trains Pedestrian Marshals located within the vicinity of the station.

6. Work on Footpaths

6.1 Pedestrian Considerations

Due consideration to pedestrians shall be given before proceeding with JHLOR JV works on or next to footpaths. By definition, catering for pedestrians means catering for the different modes of travel used such as walking, cycling or for people with different characteristics such as disabilities. It also means JHLOR JV shall consider that pedestrians are often distracted or in a hurry.

Vulnerable road users will be specifically targeted with safety measures as per the SM PS-ST-221 Sydney Metro Principal Contractor Health and Safety Standard to minimise the road safety risks to pedestrians, cyclists and motorcyclists in the vicinity of the Sydenham Metro upgrade construction sites. Measures specific to Sydenham Metro upgrade include, but are not limited to:

- Heavy vehicles equipped with systems to improve vehicle safety, visibility and the detection of vulnerable road users
- Mandatory completion of Sydney Metro City & Southwest project specific Heavy Vehicle Driver Introduction Training for frequent deliveries.

It is expected that for Sydenham Metro upgrade, pedestrian interactions will be minimal. Most plant movements will occur during the specified possessions in **Table 2**. Interactions with pedestrians/cyclists will be as follows:

- Access 11 – interface of vehicles crossing footpath only, managed by traffic controllers as required

Pedestrian / cyclists will be held by traffic controllers to allow single movements only and then released, consideration of this will be taken in any design and plan for travel paths.

Under CTMF Section 9.5, the Disability Discrimination Act 1992 will be adopted with kerb ramps or other measures provided at road crossings in the works areas. Footpath widths are to be sufficient to provide for two-way pedestrian traffic. Prams, strollers and wheelchairs are to be able to pass each other without requiring temporary widening of the footpath from its existing condition before construction start. If narrowing of footpath width is required, it is to be approved by the relevant authorities. Current modifications to footpaths are shown on the Pedestrian Movement Plans (PMPs), which are incorporated into the relevant TCPs. Any further changes to footpaths must follow the above requirements.

6.2 Width of Travel Path

Footpaths and walking paths are to be designed in accordance with the most recent edition of Austroads Guide to Road Design Part 6A: Pedestrian and Cyclist Paths. Section 5.1.2 of this document details the minimum width of footpaths.

- For a low demand footpath, the desirable minimum width is to be 1200mm
- In constrained areas an absolute minimum of 1000mm can be used but this is not desirable.
- People who use wheel chairs require a clear width of 1200 mm. This does not allow two wheelchairs travelling in opposite directions to pass each other, so passing areas are to be provided at regular intervals.
- High volume pedestrian areas are to have a minimum width of 2400mm.
- If it is not practical to provide the above widths on the footpath it may be necessary to consider part closure of the road together with appropriate barriers.
- Appropriate ramps are to be implemented if pedestrians are directed onto another footpath in accordance with the Disability Discrimination Act 1997.

- TCP and ROL's will provide details required for any approvals by RMS / TMC / IWC

6.3 Pedestrian Safety Points

The following pedestrian safety points should be included in the final control measures by the JHLOR JV supervisor. These points should be observed before the work is commenced. This is not an exhaustive list and should be updated by the supervisor according to the circumstances at the work site.

6.3.1 All pedestrians

- Always look at the pedestrian's routes.
 - Routes are free of any slip or trip hazards
 - Pedestrians safely negotiate the work site
 - Pedestrians can safely negotiate any "squeeze" points in and around the work site.
- Check that the pedestrians' routes are continuous through/next to the work site
- Determine the most applicable time of the day to conduct the works taking into account both normal and peak hour times.
- Determine what is the most appropriate means for pedestrians to negotiate (through, past or around) the worksite.
- Where applicable ensure any barriers erected do not force pedestrians to cross at an inappropriate location.

6.3.2 Elderly Pedestrians

- Travel path is relatively smooth and clear of overhanging foliage.
- The work site adequately illuminated.

6.3.3 Young Pedestrians

- Barriers have been erected to guide children past or through the work site.
- Travel paths remain continuous through the scheme.
- Ensure no road signs/devices obstruct the vision of or visibility to younger pedestrians.
- Manage parking of JHLOR JV vehicles to maximise the sight lines.

6.3.4 Intoxicated Pedestrians

- Assess whether there is potential for intoxicated pedestrians in the area.
- Ensure appropriate barriers in place to guide them past or through the work site.
- Ensure drivers given every chance of seeing pedestrians.
- Manage parking of JHLOR JV vehicles to maximise the sight lines.

6.3.5 People with Disabilities or Prams

- Ensure the work site be identified by visually impaired people.
- The travel path must be sufficient to cater for wheelchairs, prams, etc.

7. Consultation with Relevant Stakeholders

Communication with community, commuters and community stakeholders will be undertaken as per the approved Sydenham Metro upgrade Community Communications Strategy (CCS) – SMCSWSSJ-JHL-WSS-CL-PLN-000023. Communication with other stakeholders will be undertaken as per the Sydenham Metro upgrade Interface Management Plan SMCSWSSJ-JHL-WSS-IF-PLN-000019_3.

Sydney Metro (SM) will maintain responsibility for liaison and consultation with Government elected representatives, if required for the purpose of traffic management.

Consultation with the relevant stakeholders listed below is to be undertaken on a monthly frequency for the duration of works.

Before undertaking any work associated with partial closure of any road or footpath or any other interaction with transport infrastructure, the following stakeholders must be appropriately consulted with to ensure all requirements are addressed.

WestConnex and Metro TSE sites are located near Sydenham Metro upgrade work areas. Coordination meetings with representatives from these projects will be held regularly to minimise cumulative impacts and avoid conflicting activities.

Monthly Interface meetings with Inner West Council are also used to present relevant items presented at TCG that Inner West Council representatives may have not been available. Where required on an as needs basis Inner West Council and the Sydenham Metro upgrade project hold as required meetings to discuss impacts to their roads and footpaths.

Station / Site	SCO	BDA	Sydney Trains	RMS	WCC	NSC	CoS	IWC	TMC
Sydenham Metro upgrade	TCG/TTLG	N/A	N/A	TCG/TTLG	N/A	N/A	N/A	TCG/TTLG	TCG/TTLG

Legend:

SCO-Sydney Coordination Office; **BDA** – Barangaroo Delivery Authority; **RMS** – Roads and Maritime Services; **WCC** – Willoughby City Council; **NSC** – North Sydney Council; **CoS** – City of Sydney Council; **IWC** – Inner West Council; **TMC** – Transport Management Centre

The stakeholders have been consulted in the following forums: Traffic Transport & Liaison Group TTLG (monthly) & Traffic Control Group TCG (weekly). A summary of this is provided below and further in Appendix F – Not used.

Date	Interaction	Subject	Stakeholder	Comments
31/01/18	Briefing	Sydenham Metro upgrade Project overview, key milestones, early works scope, Q&A	TTLG	Nil
28/02/18	Meeting	Project overview, access gates, works undertaken, upcoming works, CTMP status	TTLG	Sydenham Metro upgrade CTMP must consider interfaces with TSE and WestConnex
13/03/18	Meeting	Pre-construction minor works & CTMP approvals	TCG	Nil
22/03/18	Meeting	Sydenham Metro upgrade Weekend 48 Possession Work	TCG	Nil
27/03/18	Meeting	CCTV Survey to Stormwater Lines, Borehole work	TCG	
10/04/18	Meeting	Nil	TCG	Nil
17/04/18	Meeting	Nil	TCG	Nil
24/4/18	Meeting	Sydenham Metro upgrade Geotechnical Investigation Work Lane Closure	TCG	
8/05/18	Meeting	Nil	TCG	Nil
15/05/18	Meeting	Nil	TCG	Nil
May – Apr 19	Meeting	Works update for traffic impacts	TCG	Ongoing addressed weekly or at frequency required

The TTLG consists of representatives from the following stakeholders:

- John Holland Laing O'Rourke Joint Venture
- Sydney Metro
- Sydney Coordination Office
- Fire & Rescue NSW
- Sydney Coordination Office
- Laing O'Rourke John Holland Joint Venture
- Willoughby Council
- State Transit Authority
- Tunnel and Station Excavation (TSE) Project Members
- North Sydney Council

-
- Roads and Maritime Services
 - Transport for NSW
 - Barangaroo Development Authority Ambulance
 - Laing O'Rourke

Refer to Appendix F – Not used for further detail.

7.1 Notifications

Project monthly and activity specific notifications will include details of the type and extent of work being undertaken as well as the expected impact to traffic and transport. Any changes to conditions will be notified via notification and email at least seven days before changes to traffic and access arrangements are made including:

Significant traffic management changes, detours and traffic disruptions will be advertised in local newspapers at least seven days before any change occurs.

Copies of project notifications will also be sent to Inner West Council via council@innerwest.nsw.gov.au by the SMU projects Community Placeholder manager.

Any changes made to the public domain must be submitted to the Inner West Council, which will be referred to the Local Traffic Committee.

7.2 Community

The CCS outlines the JHLOR JV's approach to managing communications and engagement during design and construction of the Sydenham Metro upgrade as part of the Sydney Metro City & Southwest program of work.

This CCS describes the engagement approach, processes, procedures and tools that will be used to provide timely, accurate and relevant information to the community. The CCS aims to maximise stakeholder and community understanding of the project activities, objectives and benefits, timing of potential impacts and available mitigation measures.

A number of communications tools will be used to notify the community of any upcoming changes to traffic conditions that have the potential to impact them, including:

- Monthly and specific notifications
- Traffic alert emails
- Variable Message Signs
- Static signage
- Advertisements
- Sydney Metro website
- Sydney Metro social media
- Doorknocks and other meetings

Access to existing properties and buildings would be maintained at all times and any temporary changes or closures only implemented in consultation with and following agreement from property owners.

Some of the mitigation measures include:

- Proactively advising community of upcoming work to ensure they are fully informed of potential impacts
- Providing early notification of changes and one on one meetings if required

-
- Ensuring the community understands how they can find out more information and who to contact in case they have an enquiry or complaint.
 - Develop communication and way finding strategies for people with reduced visibility, people from non-English speaking backgrounds and for people with a disability
 - Provide traffic management signage to safely direct vehicles and pedestrians around the construction site
 - Provide timely and effective responses to complaints and enquiries
 - Use of social media for long term / permanent changes

7.3 Businesses

The Sydenham Metro upgrade Business Management Plan (BMP) identifies businesses potentially affected by the Sydenham Metro upgrade work and proposes communication and engagement strategies to mitigate impacts and encourage cooperation. The BMP is a sub-plan of the Community Communications Strategy (CCS).

This BMP has been prepared in accordance with the Transport for NSW's (TfNSW) Sydney Metro City & Southwest Overarching Community Communications Strategy (OCCS) that outlines TfNSW's policies and instructions relating to managing engagement and ongoing consultation with business owners, the Ministers' Conditions of Approval (CoA) and the principles of best practice.

The BMP outlines how the JHLOR JV will consult with local businesses regarding impacts from temporary changes to vehicle access and/or increased road traffic, temporary changes to pedestrian access and temporary changes or closure of nearby parking

7.4 Special Events

There are no special events currently organised within the area for the duration of Sydenham Metro upgrade works. However, there are annually occurring events, but the dates have not yet been set. Examples are the Heaps Gay event in January each year and Good Friday events. JHLOR JV will liaise with IWC to coordinate work around events. If any special events are planned, works will coordinated with those events and any specific road closures.

8. Required Documentation

It is proposed that the following Traffic Control Plans (TCP) will be developed further as required with the Traffic Control Supplier as the works progress. These are in Appendix B – Traffic Control Plans and will be updated included in CTMP as they are developed and agreed with TCG/Inner West Council:

- Access 1 and 1A – in via Edgeware Road, out via Railway Parade and Edinburgh Road, additional TCP's added for works within Sydney Geotech compound, refer Appendix J for deliveries and ARTC underbore emergency gate access for Sydney Trains
- Access 2 and 3 – via Bolton Street
- Access 4 – via Hogan Avenue
- Access 5, 6 and 7 – via Marrickville Road and the underpass to Fraser Park Rail Access gates.
- Access 11 – via Railway Parade.

Road Occupancy Licences (ROL) will be required to undertake traffic control restricting flow of traffic in locations listed above. This will be applied for before works starting using OPLINC 2 under the guidance of SM ES-FT-460 ROL Application. The lodgement and approval procedure will be as per the CTMF.

Permits for oversized or over mass limit vehicles (OSOM) will be required for the following:

- Girder Delivery
- Precast Concrete Delivery
- Some craneage as required.

These will be supplied in advance of the planned movement and will dictate the path the vehicle must take. A separate TMP will be provided for oversized or over mass limit vehicles (OSOM).

Access 8 is used to access the Marrickville Sewage Pumping Station SP0271. This site is heritage listed due to its significance in terms of history, aesthetics, and state. The access gate and property is owned by Sydney Water. Consultation with this agency will be required to allow vehicles to use the access.

Access 9 will be constructed through Tillman Park. It will be necessary to close the park (either partially or completely) to allow construction and to enable vehicles to access the site. Consultation with Council will be required for this project and a CTMP specific to the construction of this access may be necessary.

Access 10 is located near the Sydenham Maintenance Centre. This land falls under the Marrickville (Meeks Road) Railway substation. Collaboration with NSW Trainlink, Sydney Trains, and Railcorp will be necessary to allow access to this site.

8.1 Road Safety Audit

Road Safety Audits would be carried out at each construction site. Audits would address vehicular access and egress, and pedestrian, cyclist and public transport safety.

Road Safety Audits are required as follows:

- (a) The Road Safety Assessment to be completed for the scope of Sydenham Metro upgrade. It will be issued as part of the Road Safety Audit results within a report prepared by the third party auditor
- (b) The Road Safety Audits required for the TCPs will be undertaken on initial implementation by the Traffic Control Site Supervisors, who will audit that the setup is as per the TCP and is in line with road safety requirements
- (c) Road Safety Audits are to be undertaken in accordance with RMS' Guidelines for Road Safety Audit Practices (2011).

All Road Safety Audits are to be submitted to TTLG/TCG alongside the CTMP.

A Road Safety Audit of the first revision of this CTMP was undertaken by Bitzios Consulting staff who had no prior involvement on the project. Day and night site visits were carried out on Thursday 5 April 2018. The findings were incorporated into revision 2 of this CTMP. The Road Safety Audit report is attached in Appendix E – Road Safety Audit.

Road Safety Audits must be prepared in consultation with the TTLG. The initial Road Safety Audit undertaken at this stage was submitted to TTLG/TCG as part of the CTMP on 5 June 2018.

A second Road Safety Audit was undertaken by Bitzios Consulting staff with no prior involvement with the project on Thursday 6 July 2018. JHLOR JV is currently providing responses. Once the RSA responses have been closed, the RSA will be issued to the TTLG for review, and the CTMP will be updated.

Road Safety Audits are proposed to be undertaken in the following situations:

- Prior to the implementation of any new TCPs that have not had an RSA undertaken before
- At 6-monthly intervals to ensure that the TCPs are being implemented correctly
- The road signage and/or linemarking is modified as part of the project work
- There is a change of the project access points
- There is a significant change in project scope
- Any major traffic incidents that occur as a result of project work

9. Reference Documentation

- SM ES-ST-214: G10 Traffic and Transport Management
- SM PS-ST-221: Sydney Metro Principal Contractor Health and Safety Standard
- SM ES-FT-460 ROL Application
- RMS Traffic Control at Worksites Manual. Version 4
- Relevant Austroads Guides
- RMS Supplements to Austroads and Australian Standards
- RMS Traffic Control at Worksite Manual
- AS 1742.3 Manual of uniform traffic control devices Part3: Traffic control devices for works on roads
- Construction Traffic Management Framework - Sydney Metro City and Southwest
- Ministers Conditions of Approval Mod 3
- Revised Environmental Mitigation Measures
- Construction Environmental management Framework
- Staging Report - Sydney Metro City and Southwest

10. Appendices

10.1 Appendix A – Heavy Vehicle Access Route Details

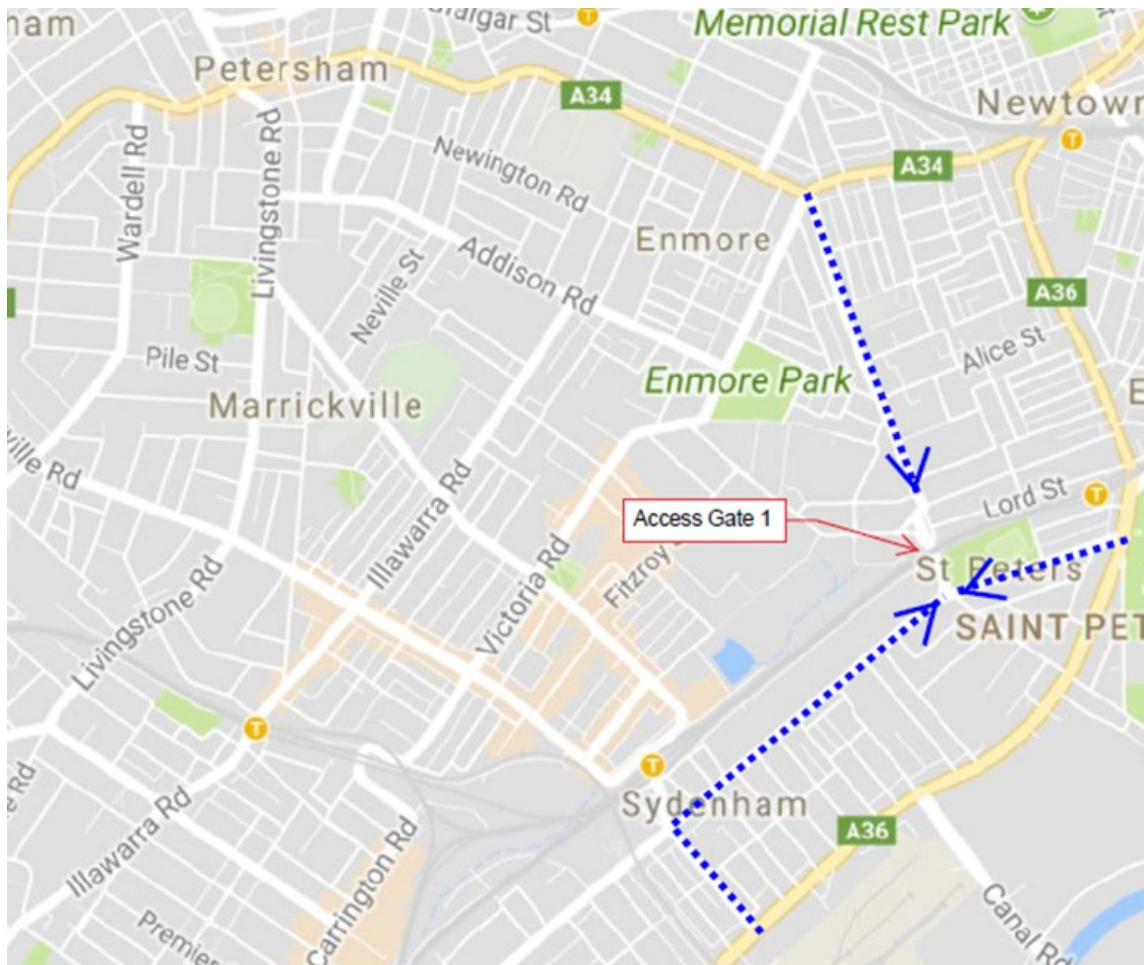
Appendix A-1: Planned Vehicles

Table 4 – Planned Vehicles

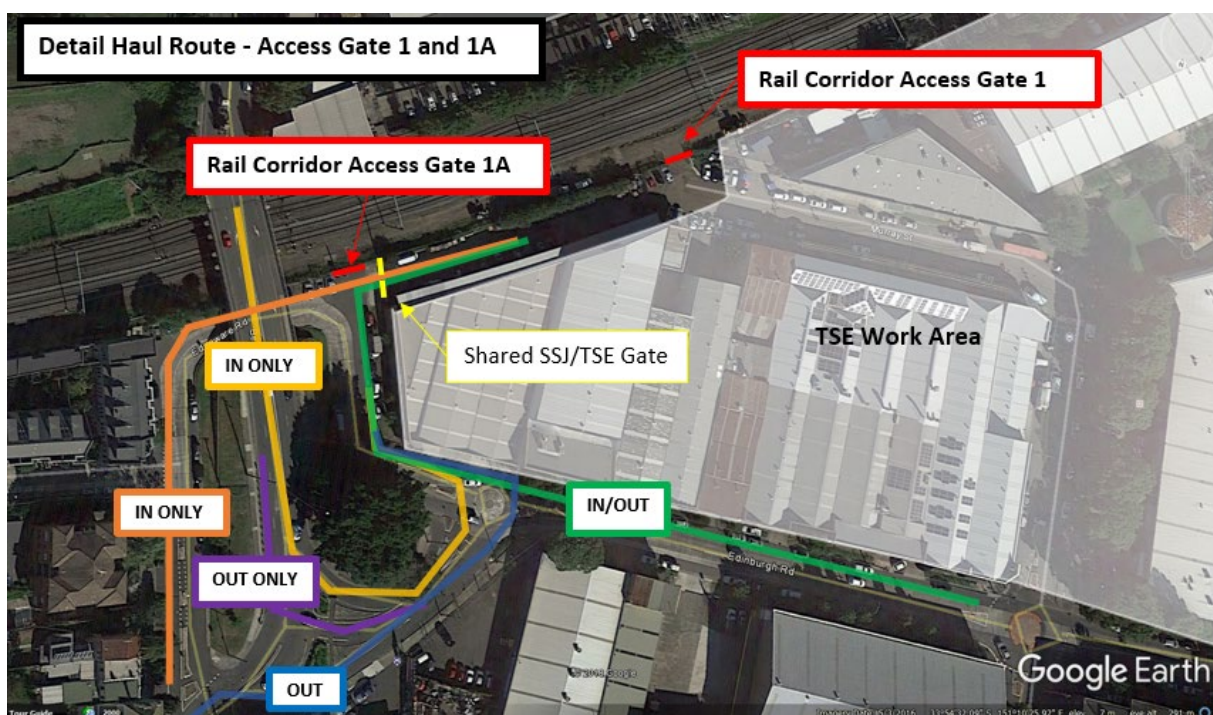
Vehicle	Vehicle Classification	Vehicle Details	Carrying	Access										Designation
				1	2	3	4	5, 6, 7	8	9	10	11	12, 13	
500T Crane	Restricted Access Vehicle (Class 1)	H – 3.0m W – 4.00m L – 20.0m	500T Crane	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	From / To North From / To South From / To East From / To West	RAV Class 1
Truck and dog	Restricted Access Vehicle (Class 1)	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	RAV Class 1
Semi-trailer	Restricted Access Vehicle (Class 1)	H – 4.20m W – 3.20m L – 19.0m	TBD	From / To North From / To South From / To East From / To West	N/A	From / To North From / To South From / To East From / To West	From / To North From / To South From / To East From / To West	From / To North From / To South From / To East From / To West	N/A	From / To North From / To South From / To East From / To West	From / To North From / To South From / To East From / To West	N/A	From / To North From / To South From / To East From / To West	RAV Class 1
Bogie	GAV	H – 3.00m W – 3.20m L – 7.20m	TBD	From / To North From / To South From / To East From / To West	From / To North From / To South From / To East From / To West	From / To North From / To South From / To East From / To West	From / To North From / To South From / To East From / To West	From / To North From / To South From / To East From / To West	From / To North From / To South From / To East From / To West	From / To North From / To South From / To East From / To West	From / To North From / To South From / To East From / To West	From / To North From / To South From / To East From / To West	From / To North From / To South From / To East From / To West	GAV
Rigid	GAV	H – 3.8m W – 2.5m L – 12.0m	TBD	From / To North From / To South From / To East From / To West	From / To North From / To South From / To East From / To West	From / To North From / To South From / To East From / To West	From / To North From / To South From / To East From / To West	From / To North From / To South From / To East From / To West	From / To North From / To South From / To East From / To West	From / To North From / To South From / To East From / To West	From / To North From / To South From / To East From / To West	From / To North From / To South From / To East From / To West	From / To North From / To South From / To East From / To West	GAV

Appendix A-2: Heavy Vehicle Haulage Routes

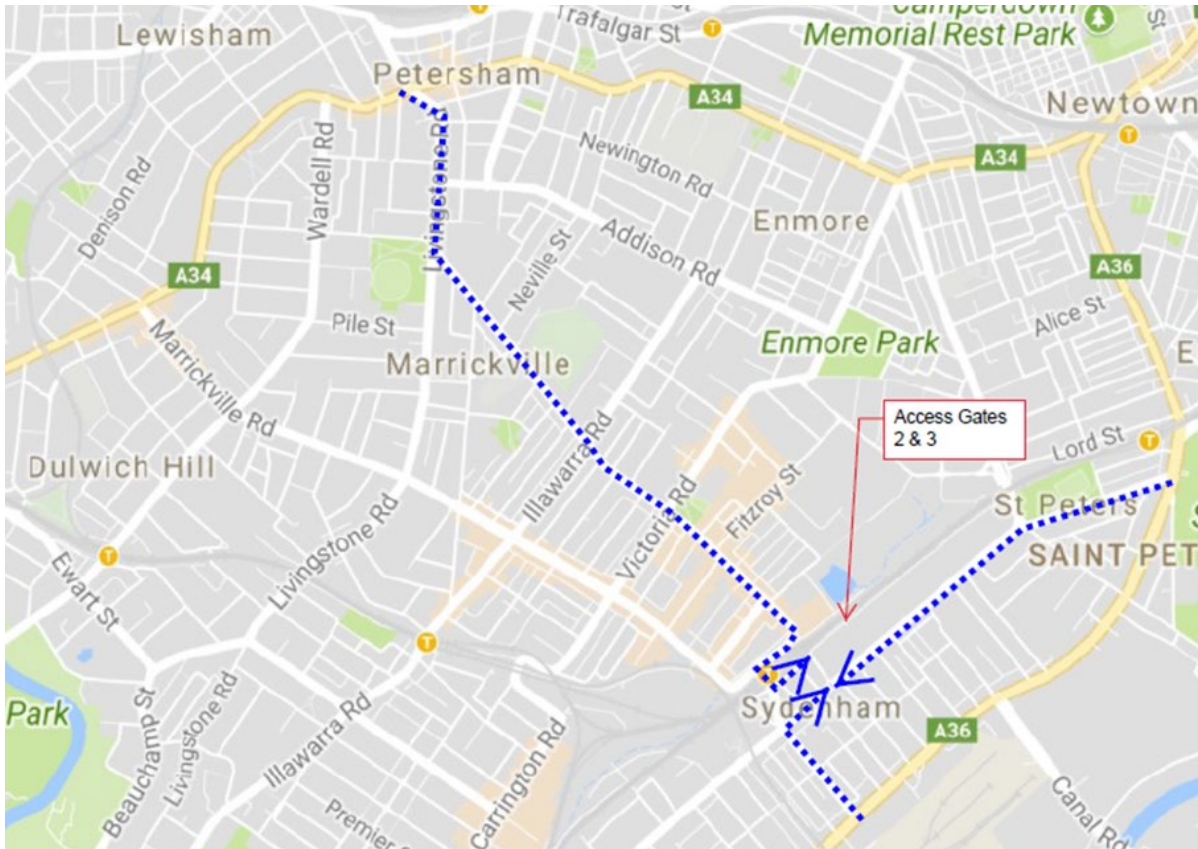
A-2-1: Access 1 Overview



A-2-2: Access 1 Detail



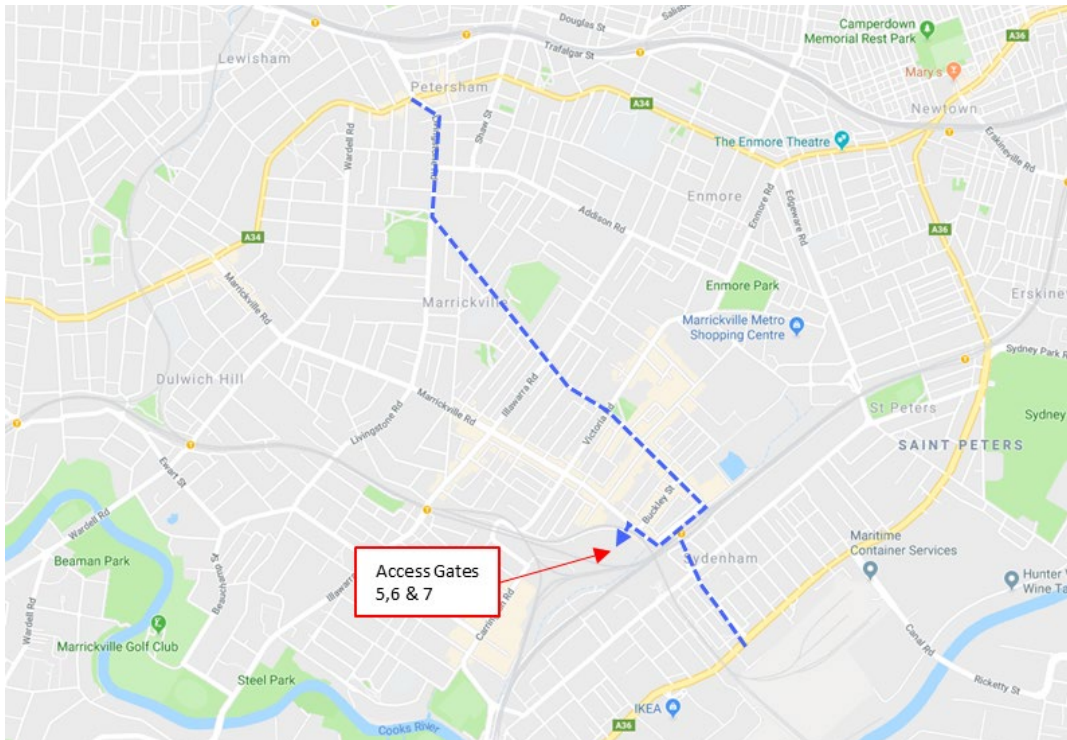
A-2-3: Access 2, 3 and 4 Overview



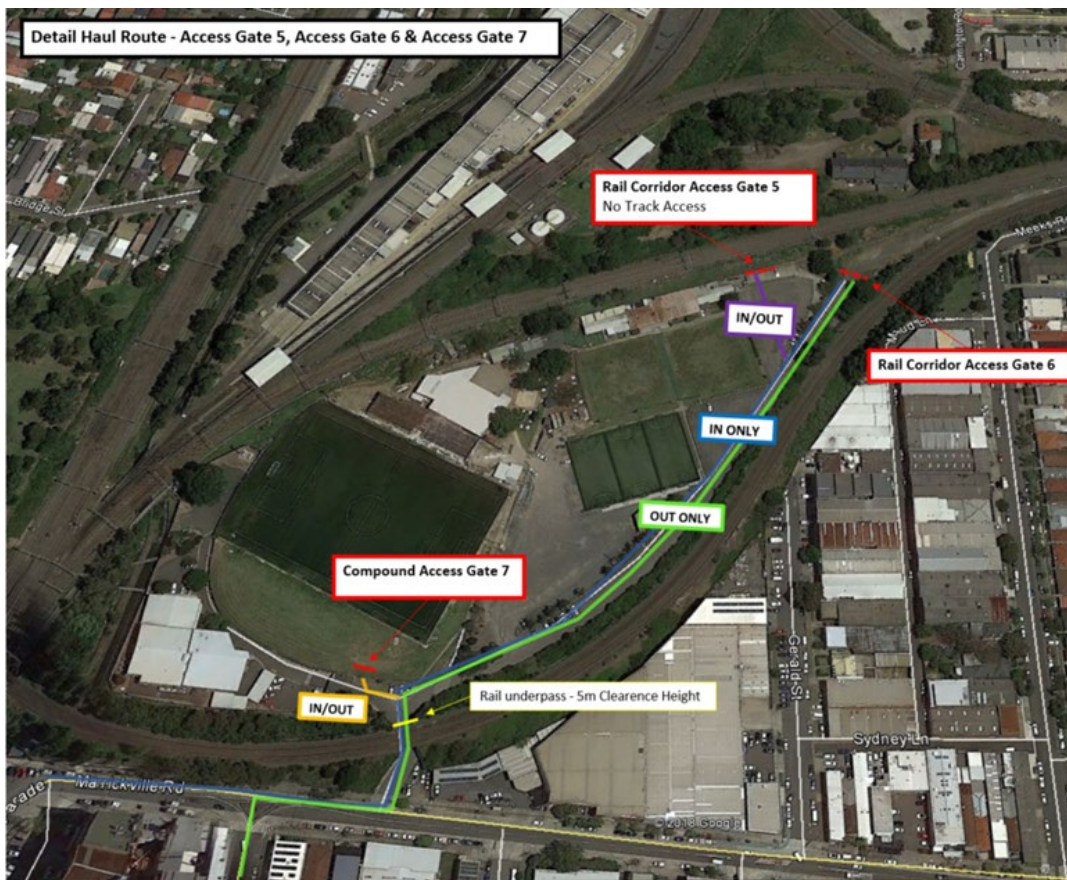
A-2-4: Access 2, 3 and 4 Detail



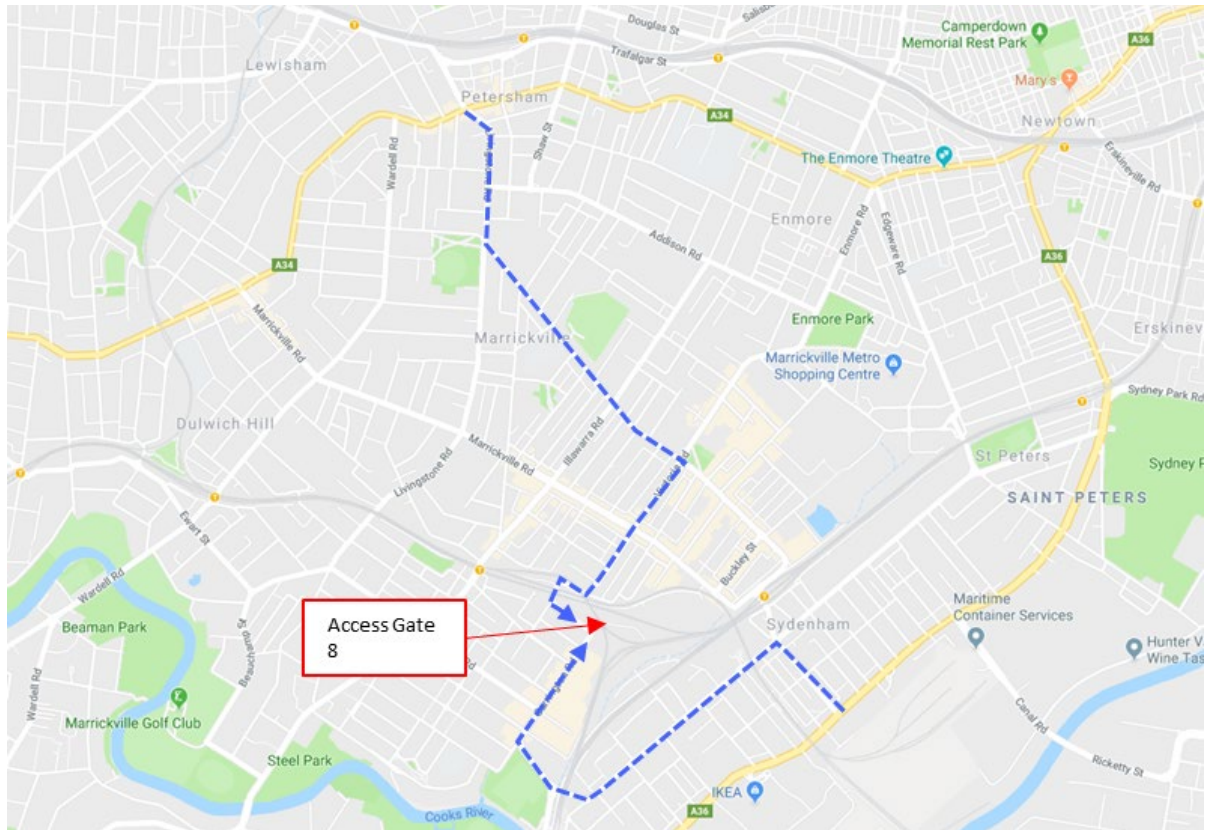
A-2-5: Access 5, 6, and 7 Overview



A-2-6: Access 5, 6, and 7 Detail



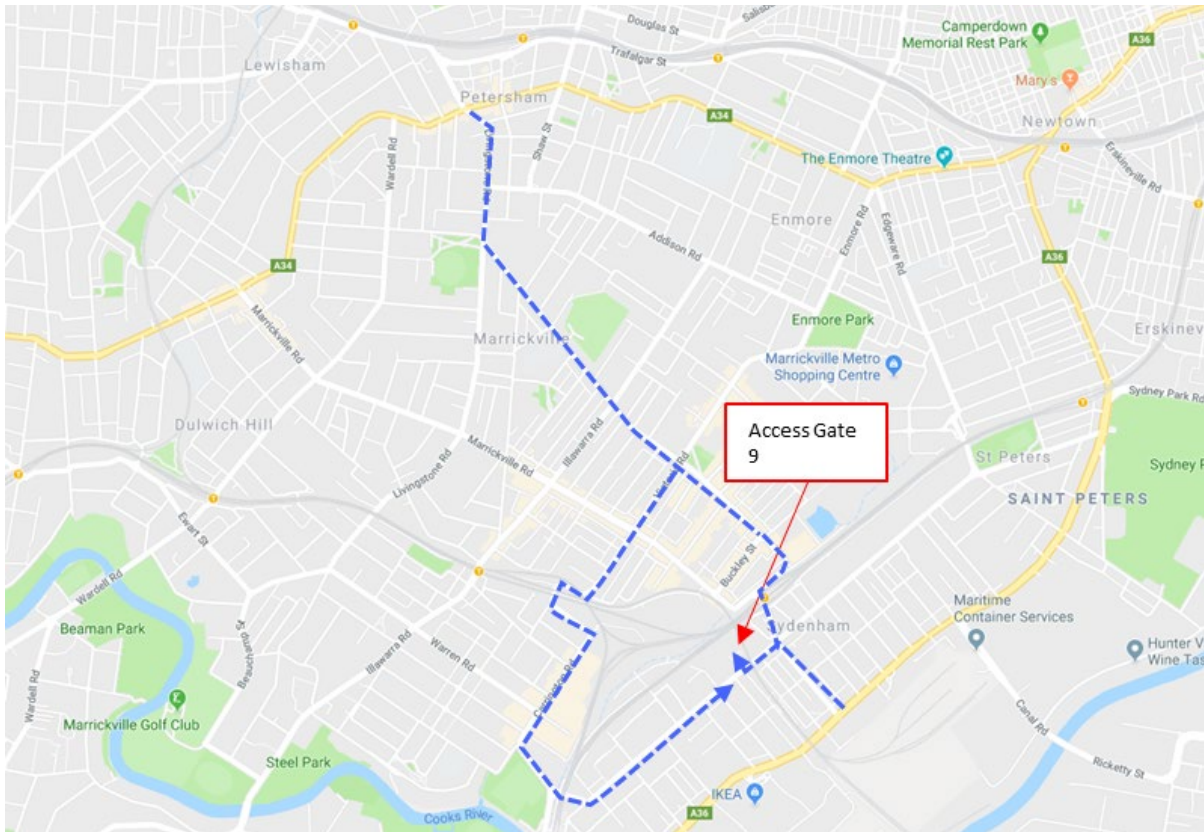
A-2-7: Access 8 Overview



A-2-8: Access 8 Detail



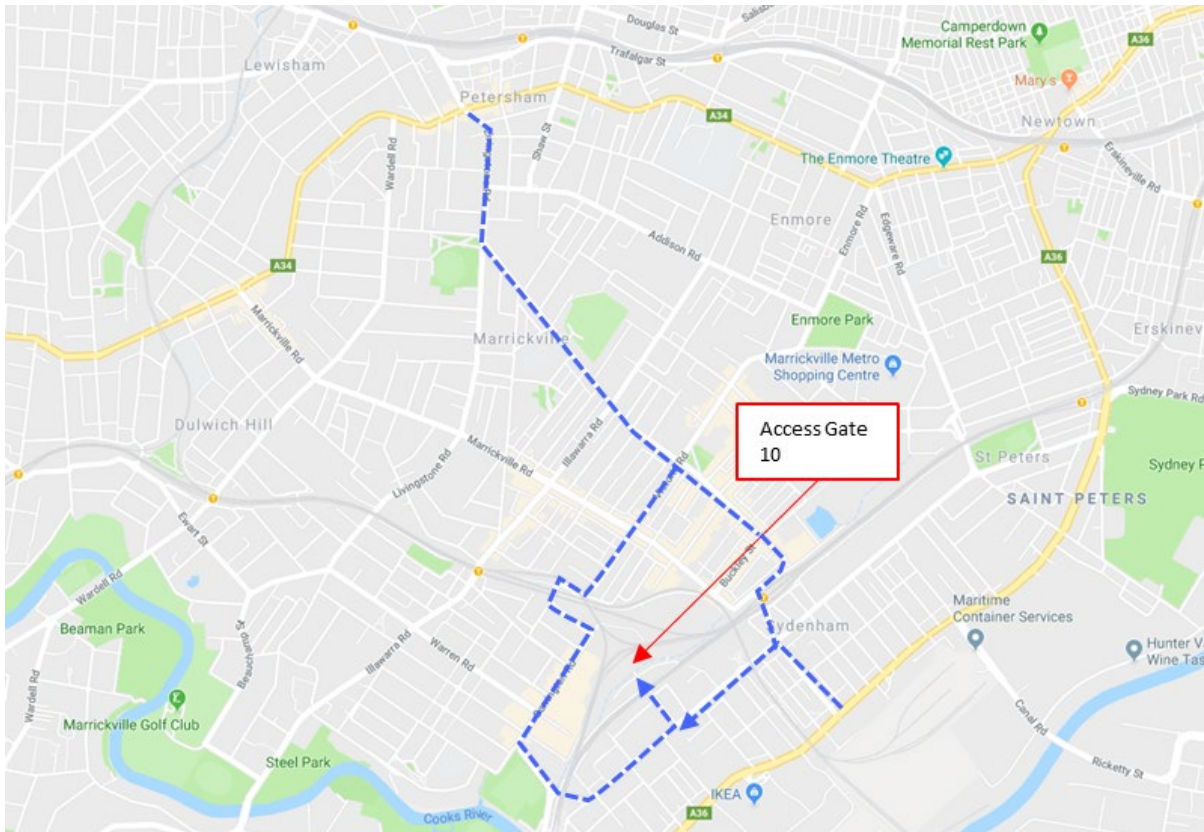
A-2-9: Access 9 Overview



A-2-10: Access 9 Detail



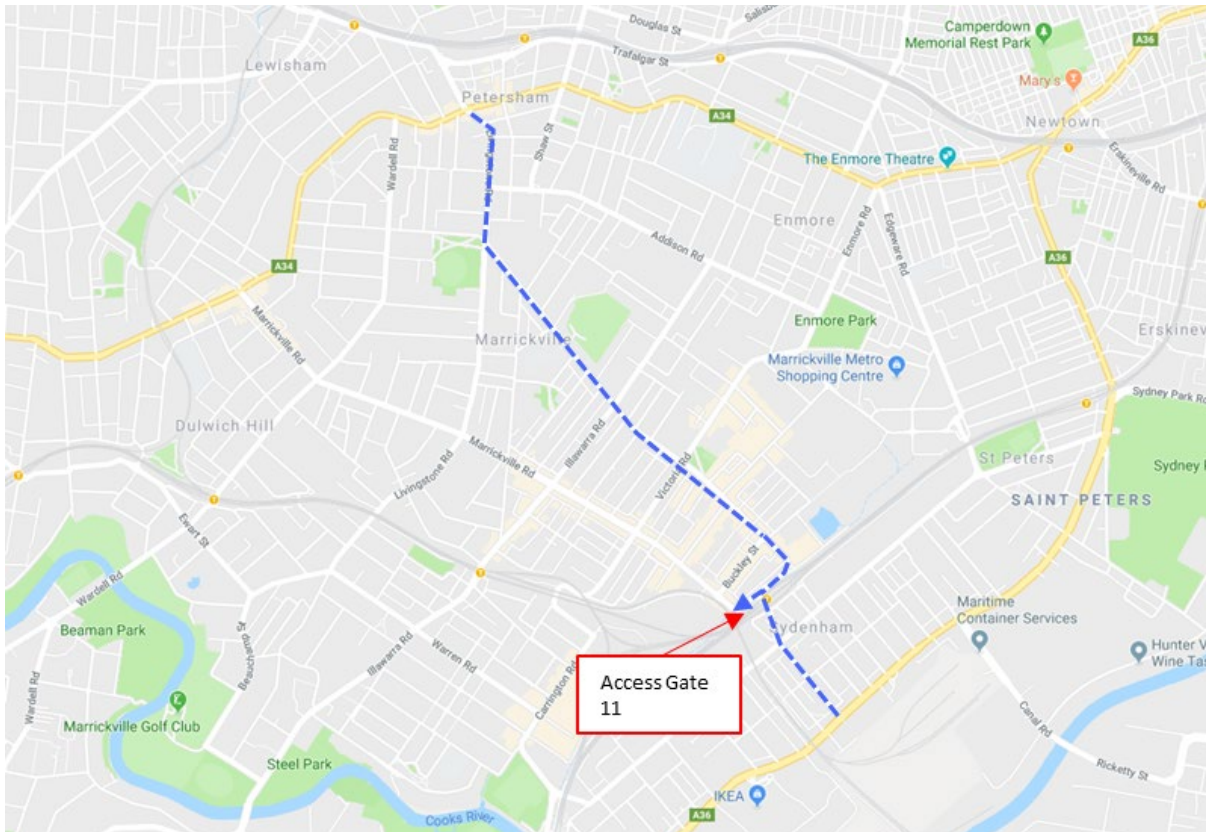
A-2-11: Access 10 Overview



A-2-12: Access 10 Detail



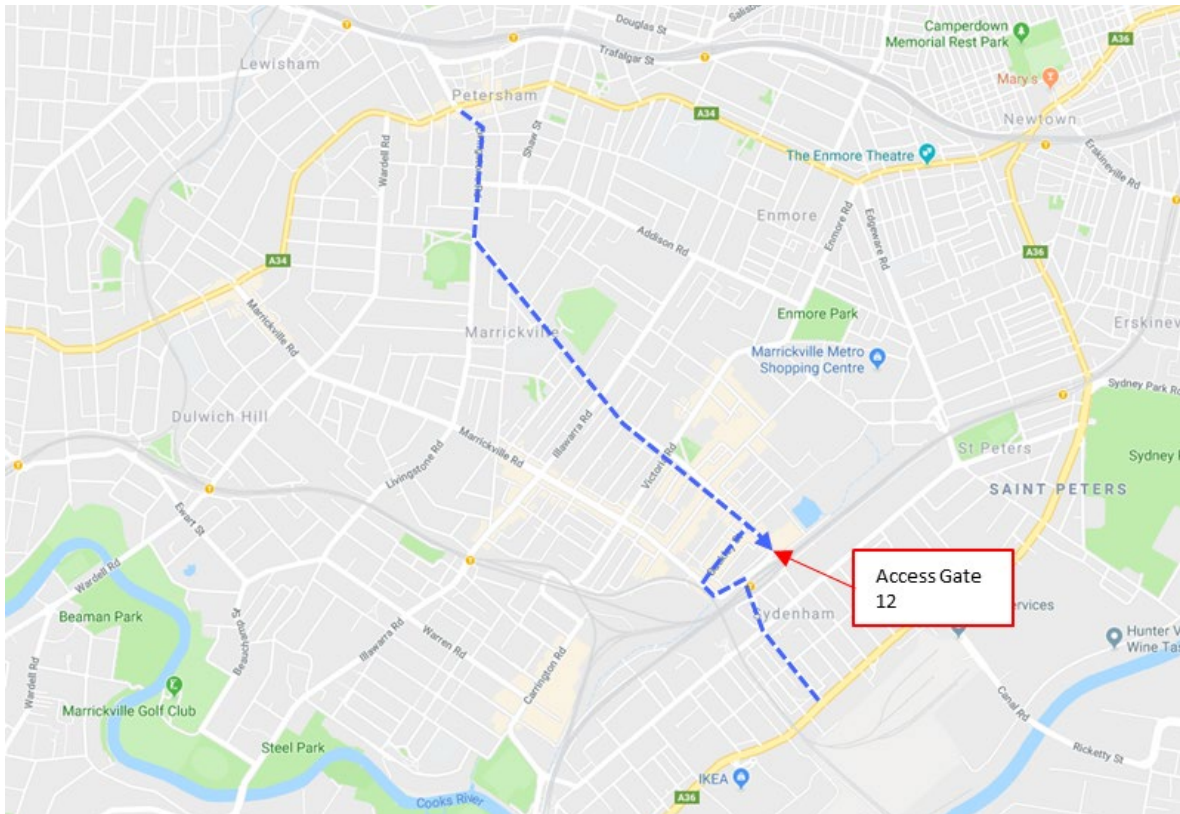
A-2-13: Access 11 Detail



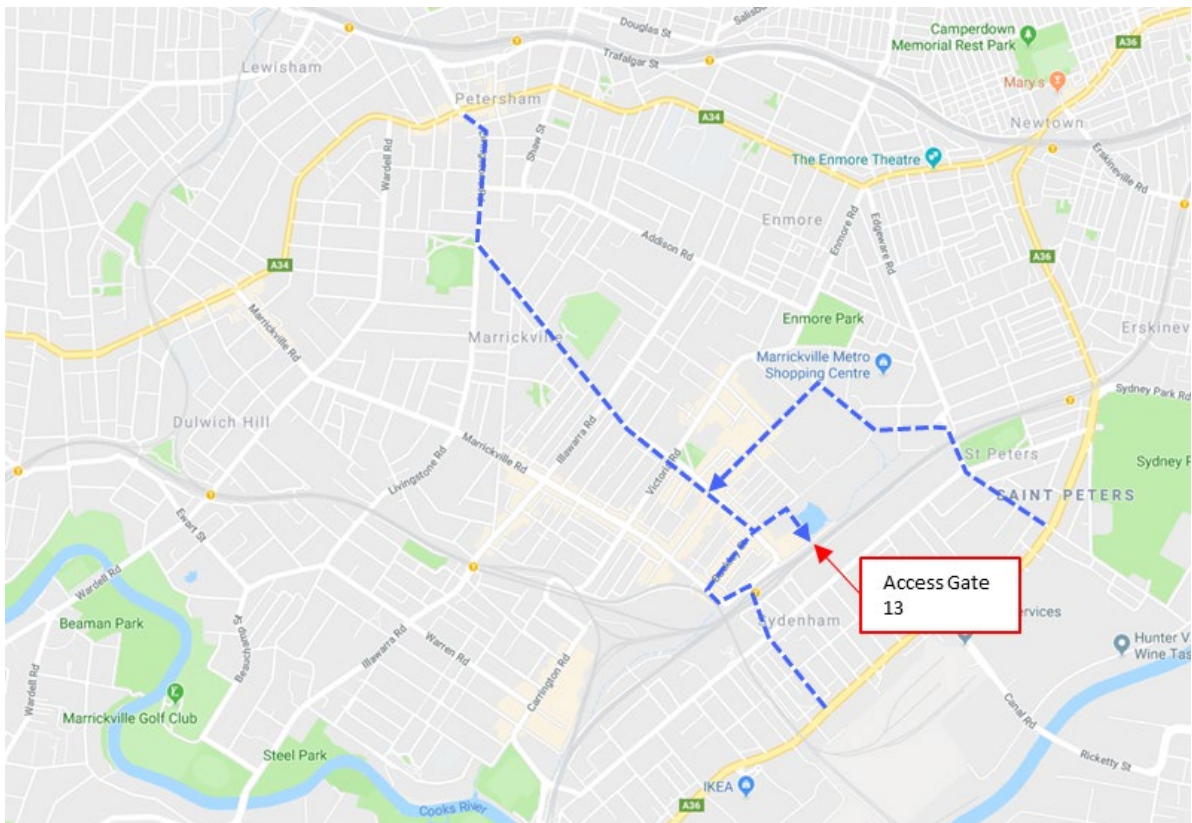
A-2-14: Access 11 Detail



A-2-15: Access 12 Overview



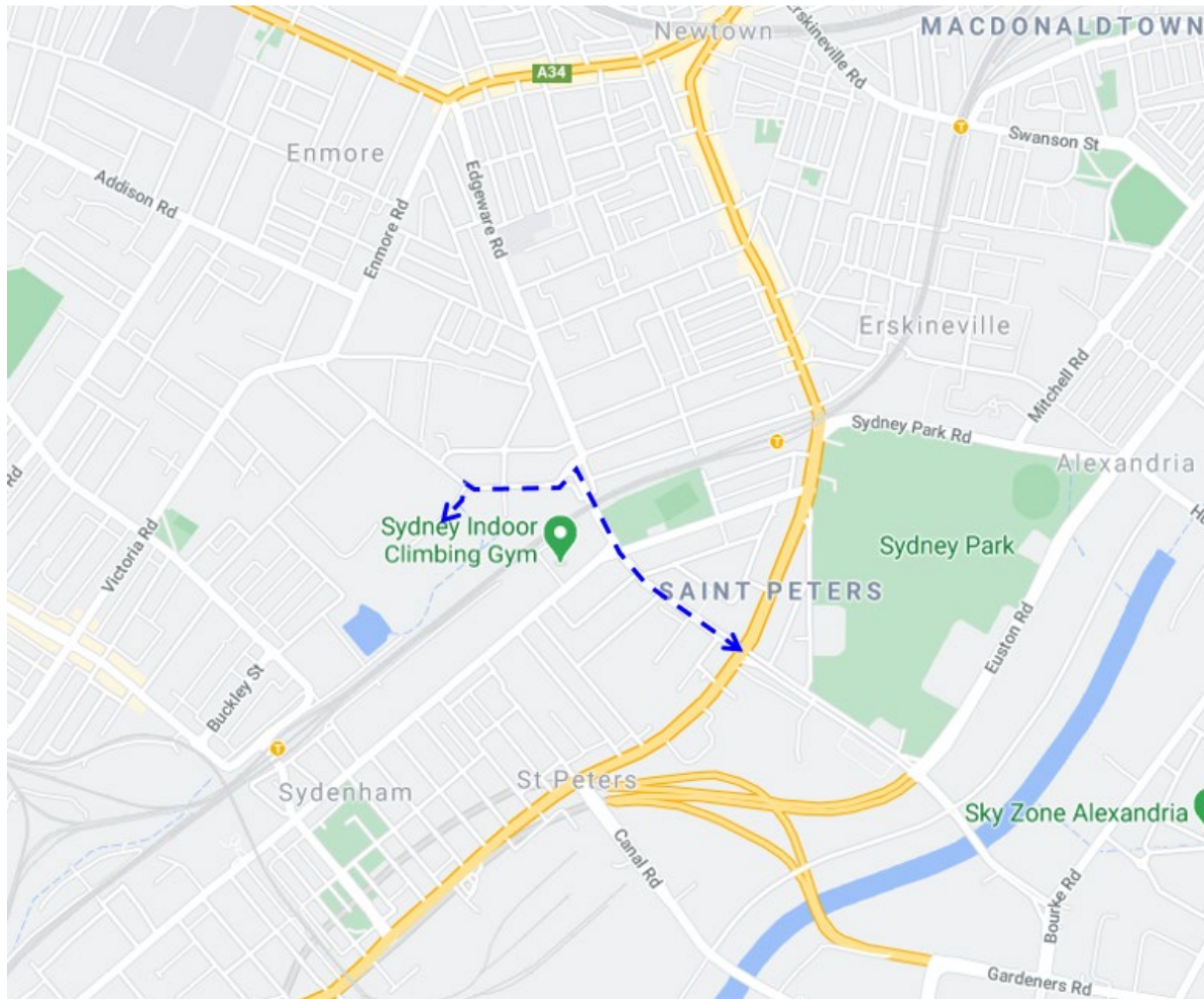
A-2-16: Access 13 Overview



A-2-17: Access 12, and 13 Detail



A-2-18: Access S1 Overview



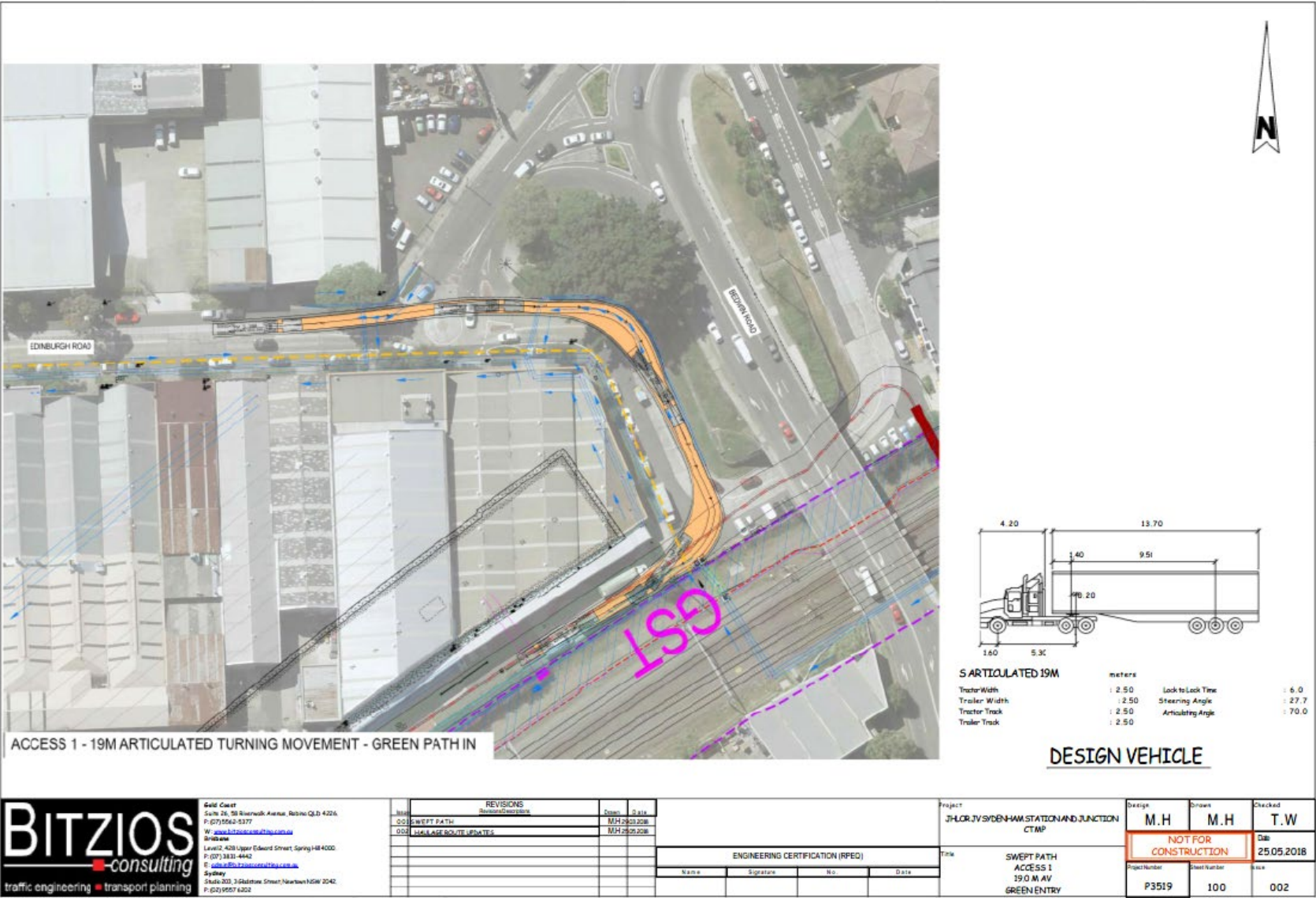
Appendix A-3: Heavy Vehicle Swept Paths

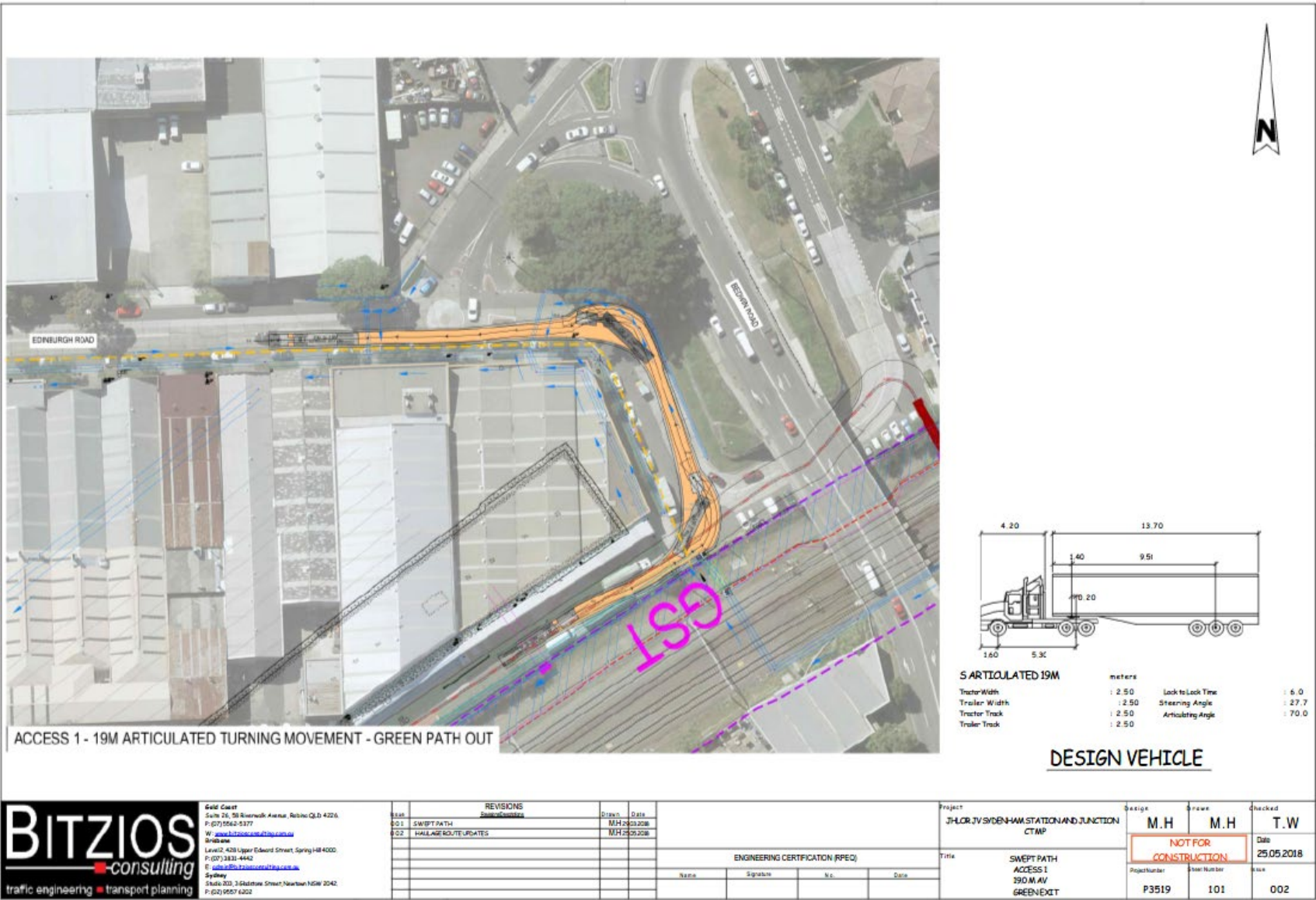
The swept paths and TCPs from the Sydenham Metro upgrade pre-works CTMP are included as the manoeuvres are still used in the Sydenham Metro upgrade main works Swept paths are provided to demonstrate the spatial requirements for heavy vehicles at all gates, except for the following locations:

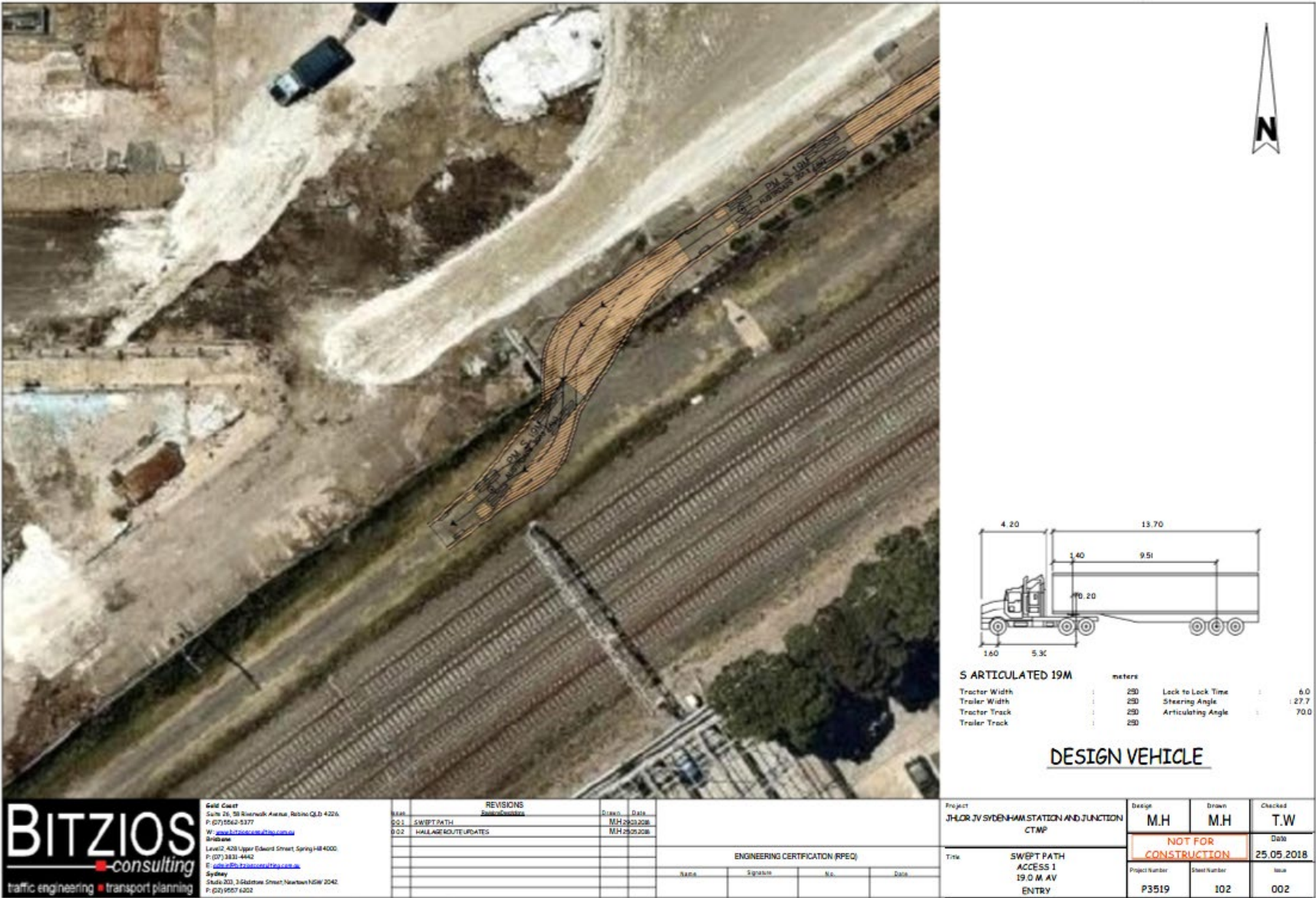
- Access 4: site layout to be determined.
- Access 7: site layout to be determined.
- Access 9: site layout to be determined.

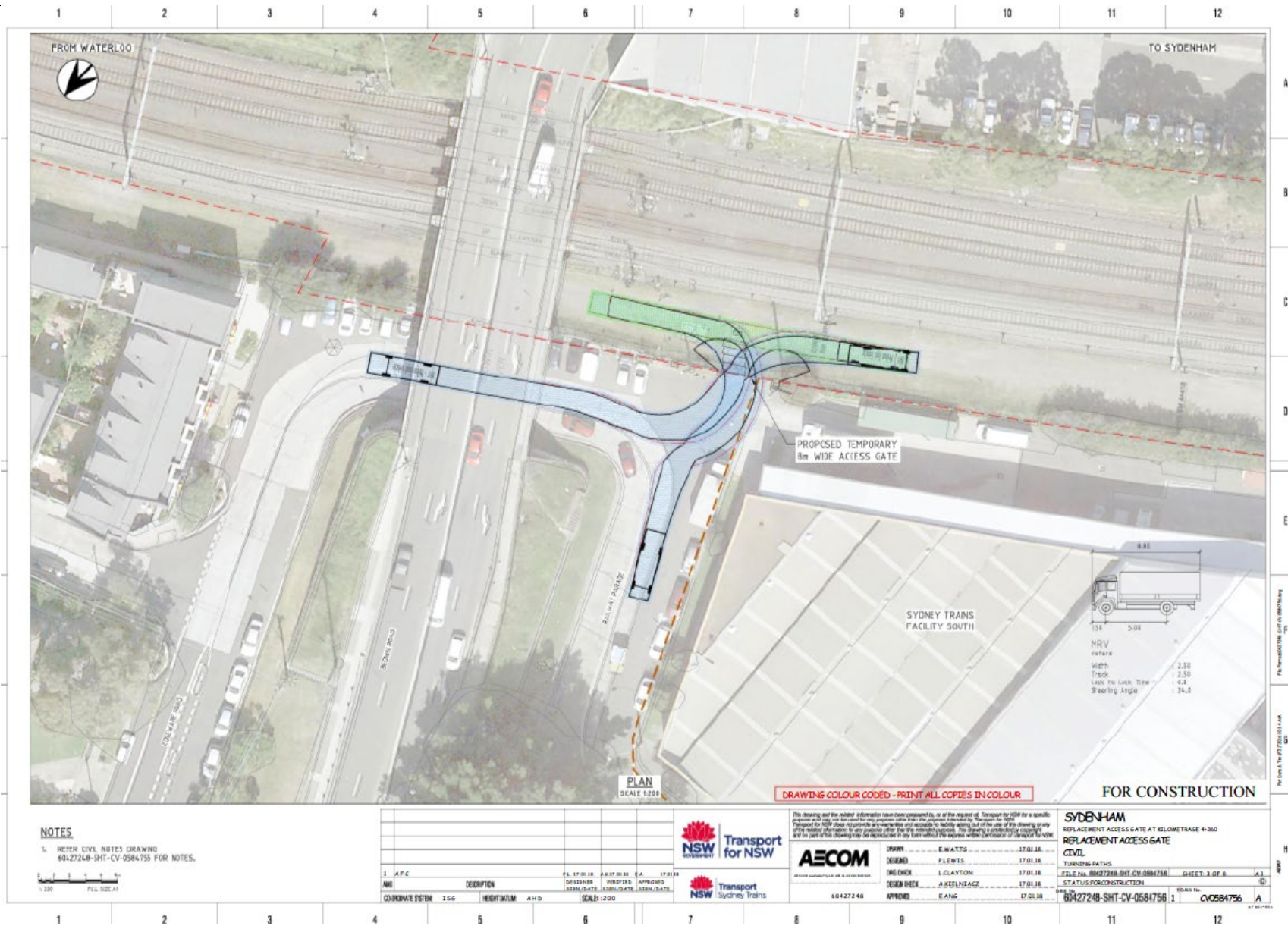
Sheet Number	Location	Vehicle	Action
100	Access 1	19.0 M AV	Entry
101	Access 1	19.0 M AV	Exit
102	Access 1	19.0 M AV	Entry
584756 – Rev A	Access 1A	12.5 M HRV	Entry and Exit
103	Access 2&3	19.0 M AV	Entry
104	Access 2&3	19.0 M AV	Exit
105	Access 2	12.5 M HRV	Entry
106	Access 2&3	12.5 M HRV	Turn Around
107	Access 3	19.0 M AV	Entry
108	Access 5, 6, and 7	19.0 M AV	Entry
109	Access 5, 6, and 7	19.0 M AV	Exit
110	Access 5	19.0 M AV	Entry
111	Access 5	19.0 M AV	Exit
112	Access 5	19.0 M AV	Entry
113	Access 5	19.0 M AV	Exit
114	Access 5	12.5 M HRV	Entry
115	Access 5	12.5 M HRV	Exit
116	Access 6	19.0 M AV	Entry
117	Access 6	19.0 M AV	Exit
118	Access 8	12.5 M HRV	Entry
119	Access 8	12.5 M HRV	Exit
120	Access 10	12.5 M HRV	Entry
121	Access 10	12.5 M HRV	Entry
122	Access 10	12.5 M HRV	Entry
123	Access 10	12.5 M HRV	Entry
124	Access 10	12.5 M HRV	Entry
125	Access 10	12.5 M HRV	Exit

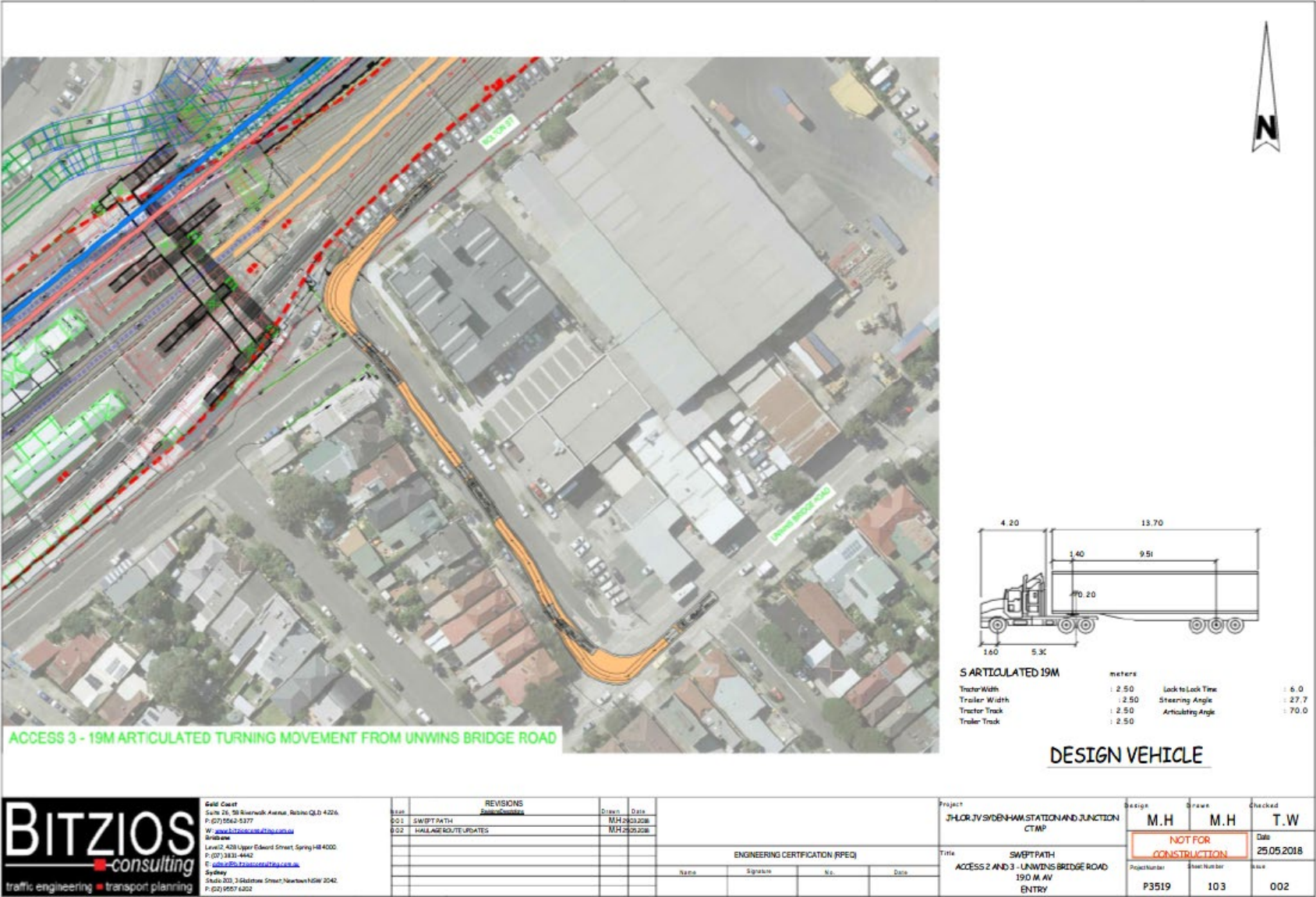
Sheet Number	Location	Vehicle	Action
126	Access 10	12.5 M HRV	Exit
127	Access 10	12.5 M HRV	Exit
128	Access 10	12.5 M HRV	Exit
129	Access 10	12.5 M HRV	Exit
130	Access 11	19.0 M AV	Entry
131	Access 11	12.5 M HRV	Entry
132	Access 11	12.5 M HRV	Exit
133	Access 12	19.0 M AV	Entry
134	Access 12	19.0 M AV	Exit
135	Near Access 12	12.5 M HRV	Entry
136	Near Access 12	12.5 M HRV	Exit
137	Access 13	12.5 M HRV	Entry
138	Access 13	12.5 M HRV	Entry
139	Access 13	12.5 M HRV	Entry
140	Access 13	12.5 M HRV	Entry
141	Access 13	12.5 M HRV	Entry
142	Access 13	12.5 M HRV	Entry
143	Access 13	12.5 M HRV	Exit
144	Access 13	12.5 M HRV	Exit
145	Access 13	12.5 M HRV	Exit
146	Access 13	12.5 M HRV	Exit
147	Access 13	12.5 M HRV	Exit
148	Access 13	12.5 M HRV	Exit
	Access 12C	12.5 M HRV	Entry
	Access 12C	20M Articulated	Entry
	Access S1	19.0 M AV	Entry & Exit
	Access 14	12.5 M HRV	Entry & Exit

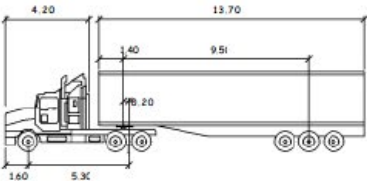












S ARTICULATED 19M		metres		
Tractor Width	230	Lock to Lock Time	6.0	
Tractor Width	250	Steering Angle	27.7	
Tractor Track	250	Articulating Angle	70.0	
Trailer Track	250			

DESIGN VEHICLE

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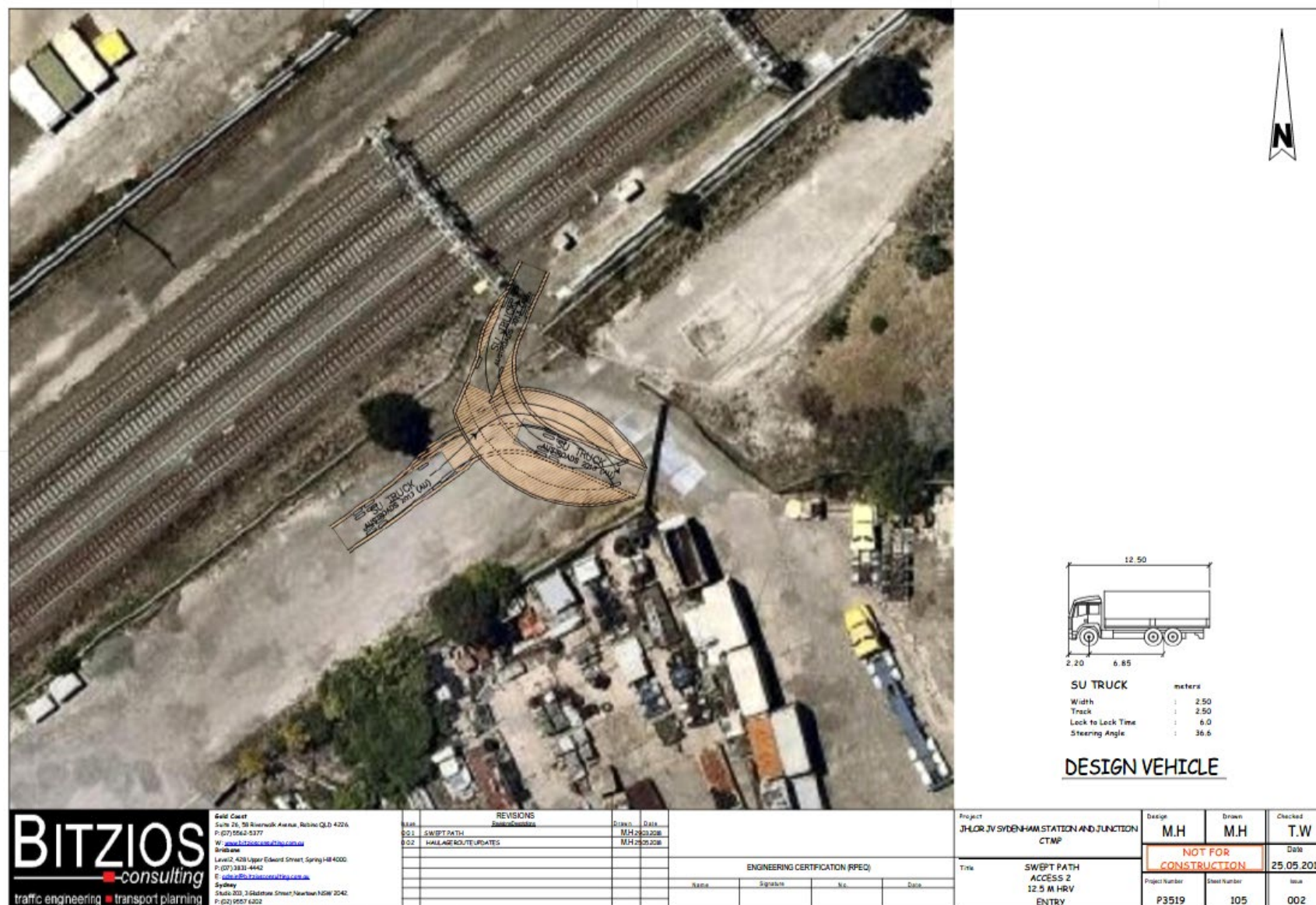
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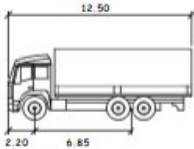
REVISIONS		Revised	Date
001	SWEEP PATH	M.H.	28/03/2018
002	HAZARD ROUTE UPGRADES	M.H.	28/03/2018

ENGINEERING CERTIFICATION (REQD)			

Project	JHL JV SYDENHAM STATION AND JUNCTION CTMP	Design	M.H.	Drawn	M.H.	Checked	T.W.
Title	SWEEP PATH ACCESS 2 AND 3 - BURROWS AVENUE 190 MAV EXIT	NOT FOR CONSTRUCTION		Date	25.05.2018		
Project Number	P3519	Sheet Number	104	Issue	002		

Swept





SU TRUCK meters
Width : 2.50
Track : 2.50
Lock to Lock Time : 6.0
Steering Angle : 36.6

DESIGN VEHICLE

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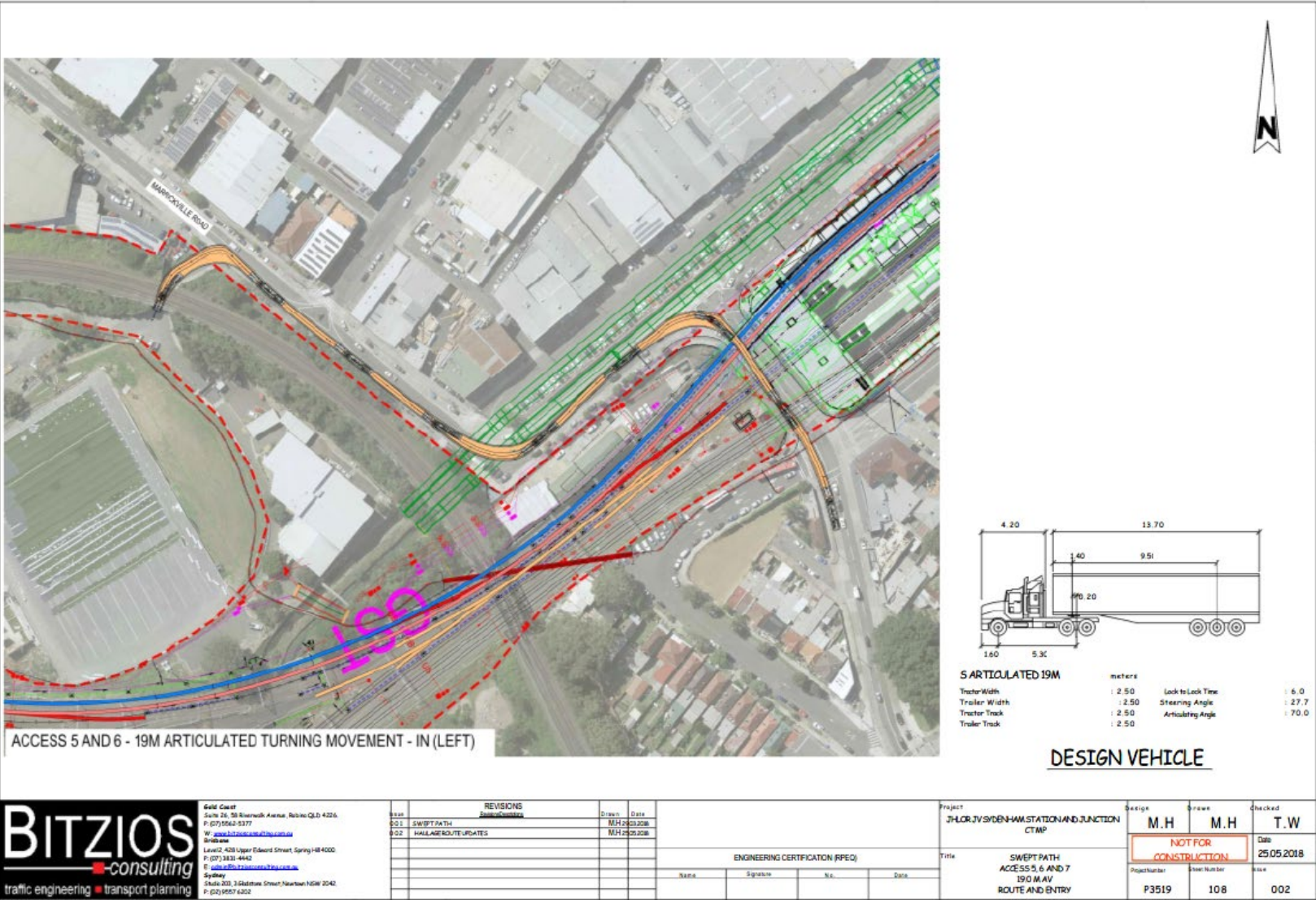
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REVISIONS		Drawn	Check
Date			
001	SWEPT PATH	M.H	25.05.2018
002	HALLAGE ROUTE UPDATES	M.H	25.05.2018

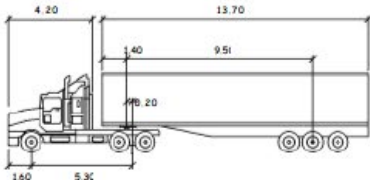
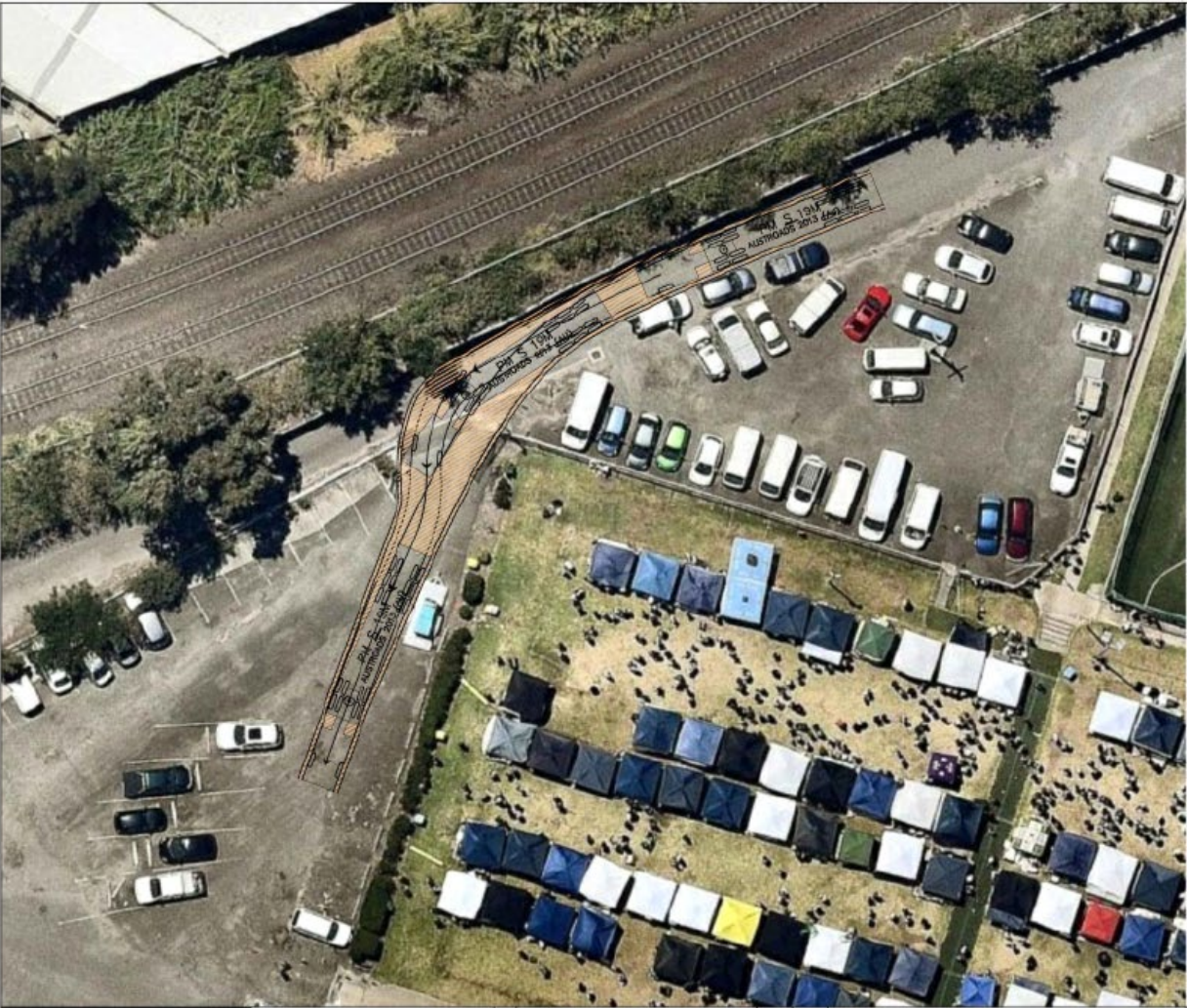
ENGINEERING CERTIFICATION (RPEQ)			
Name	Signature	Nr.	Date

Project JHLOR JV SYDENHAM STATION AND JUNCTION CTMP	Design M.H	Drawn M.H	Checked T.W
	NOT FOR CONSTRUCTION		Date 25.05.2018
Title SWEPT ACCESS 2 AND 3 12.5 M HRV TURN AROUND	Project Number P3519	Sheet Number 106	Issue 002









S ARTICULATED 19M			
Tractor Width	250	Lock to Lock Time	6.0
Trailer Width	250	Steering Angle	27.7
Tractor Track	250	Articulating Angle	70.0
Trailer Track	250		

DESIGN VEHICLE

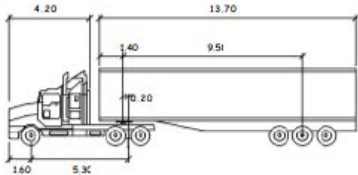
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REVISIONS			
REV	DESCRIPTION	DATE	BY
0.1	SWEEP PATH	MH 28.03.2018	
0.2	HAZARD ROUTE UPDATES	MH 28.03.2018	

ENGINEERING CERTIFICATION (REQ)			
Name	Signature	No.	Date

Project	JHL JV SYDENHAM STATION AND JUNCTION CTMP		
	Design	Drawn	Checked
Title	M.H	M.H	T.W
	NOT FOR CONSTRUCTION		
SWEEP PATH ACCESS 5 GATE 19.0 M AV ENTRY	Project Number	Sheet Number	Date
	P3519	110	25.05.2018
		Issue	002



S ARTICULATED 19M			
Tractor Width	250	Lock to Lock Time	6.0
Trailer Width	250	Steering Angle	27.7
Tractor Track	250	Articulating Angle	70.0
Trailer Track	250		

DESIGN VEHICLE

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REVISIONS		DATE	DATE
0.01	SWEEP PATH	10/11/2018	10/11/2018
0.02	HAZARD ROUTE UPDATES	10/11/2018	10/11/2018

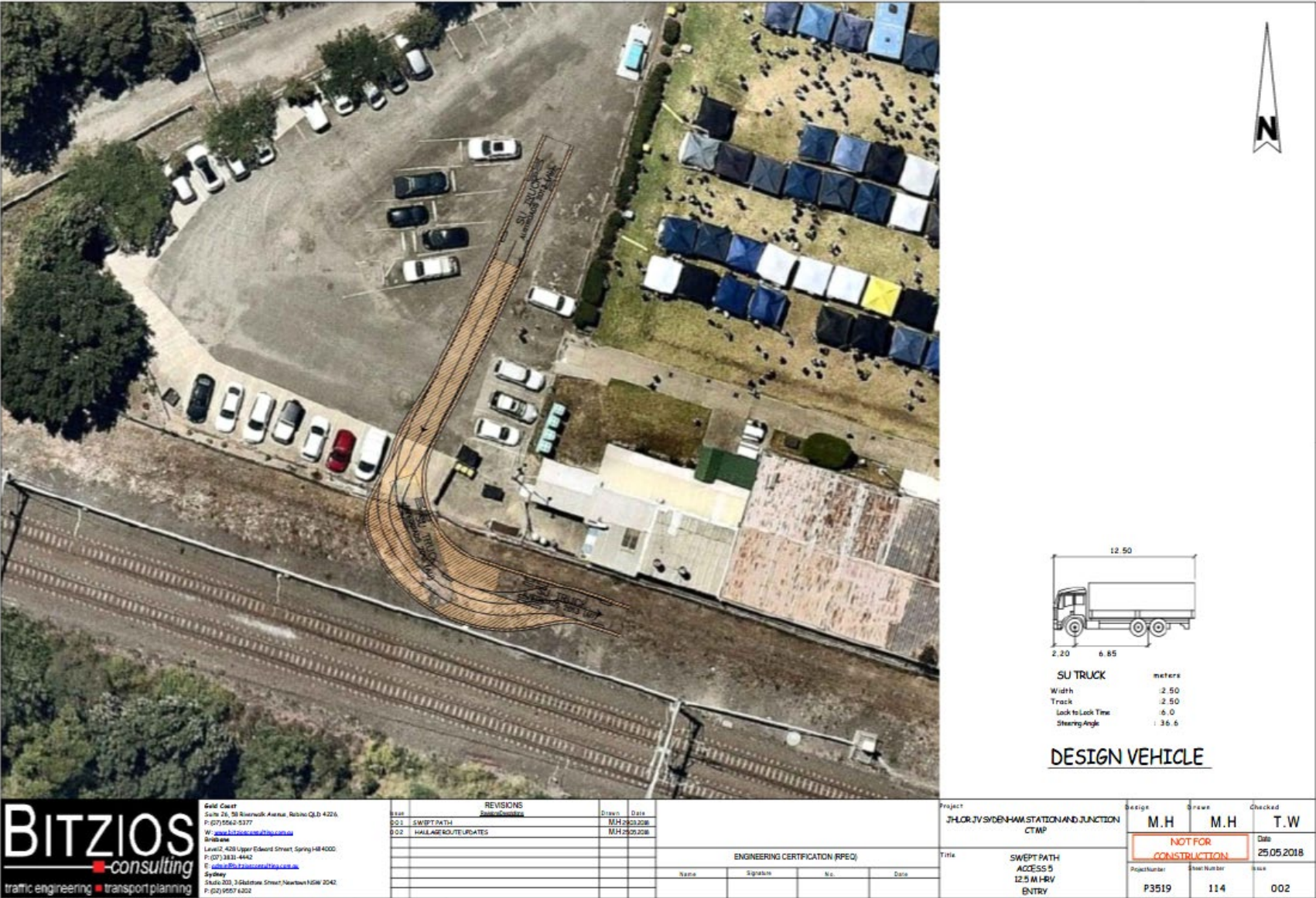
ENGINEERING CERTIFICATION (REQ)

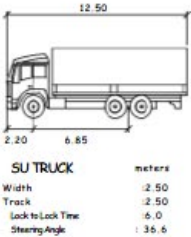
Signature	Date
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Project	JHL JV SYDENHAM STATION AND JUNCTION CTMP
Title	SWEEP PATH ACCESS 5 19.0 M AV ENTRY

Design	M.H	Drawn	M.H	Checked	T.W
NOT FOR CONSTRUCTION				Date	25.05.2018
Project Number	P3519	Sheet Number	112	Issue	002







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REVISIONS		Drawn	Date
001	SWP PATH	M.H.	25.05.2018
002	HALLAGE ROUTE UPDATES	M.H.	25.05.2018

ENGINEERING CERTIFICATION (RPEQ)			
Name	Signature	No.	Date

Project	JHL OR JV SYDENHAM STATION AND JUNCTION CTMP		
	Design	Drawn	Checked
Title	M.H.	M.H.	T.W.
	NOT FOR CONSTRUCTION		
Sheet Number	Date		
	25.05.2018		
Project Number	Sheet Number	Issue	
P3519	115	002	



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REVISIONS		Drawn	Date
001	SWEEP PATH	M.H.	25.05.2018
002	HAULAGE ROUTE UPDATES	M.H.	25.05.2018

ENGINEERING CERTIFICATION (RPEC)			
Name	Signature	No.	Date

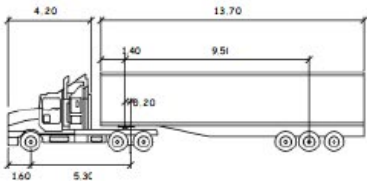
Project JHL JV SYDENHAM STATION AND JUNCTION CTMP	Design M.H.	Drawn M.H.	Checked T.W.
	NOT FOR CONSTRUCTION		Date 25.05.2018
Title SWEEP PATH ACCESS 6 19.0 M AV ENTRY	Project Number P3519	Sheet Number 116	Issue 002

North arrow pointing up with 'N'.

S ARTICULATED 19M

Tractor Width	1	250	Lock to Lock Time	1	6.0
Trailer Width	1	250	Steering Angle	1	27.7
Tractor Track	1	250	Articulating Angle	1	70.0
Trailer Track	1	250			

DESIGN VEHICLE



S ARTICULATED 19M		meters			
Tractor Width	:	250	Lock to Lock Time	:	6.0
Trailer Width	:	250	Sheering Angle	:	27.7
Tractor Track	:	250	Articulating Angle	:	70.0
Trailer Track	:	250			

DESIGN VEHICLE

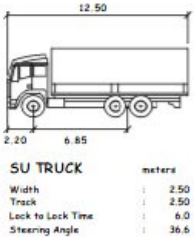
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REVISIONS		Drawn	Date
001	SWEEP PATH	M.H.	25.05.2018
002	TRAFFIC ROUTE UPDATES	M.H.	25.05.2018

ENGINEERING CERTIFICATION (RPEQ)			
Name	Signature	No.	Date

Project	JHL JV SYDENHAM STATION AND JUNCTION CTMP	Design	M.H.	Drawn	M.H.	Checked	T.W.
Title	SWEEP PATH ACCESS 6 19.0 M AV EXIT	NOT FOR CONSTRUCTION		Date	25.05.2018		
Project Number	P3519	Sheet Number	117	Issue	002		



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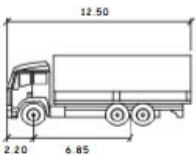
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REVISIONS		DATE	BY
0.01	SWEEP PATH	M.H. 28/03/2018	
0.02	HALLAGE ROUTE UPDATES	M.H. 28/03/2018	

ENGINEERING CERTIFICATION (RPEC)			
NAME	SIGNATURE	NO.	DATE

Project	JHL JV SYDENHAM STATION AND JUNCTION CTMP		
	Design	Drawn	Checked
Title	M.H.	M.H.	T.W.
	NOT FOR CONSTRUCTION		Date
SWEEP PATH ACCESS 8 12.5 M HRV ENTRY	25.05.2018		Issue
	Project Number	Sheet Number	Issue
	P3519	118	002





SU TRUCK	
Width	12.50
Truck	2.20
Lock to Lock Time	6.0
Steering Angle	36.6

DESIGN VEHICLE

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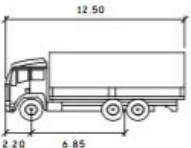
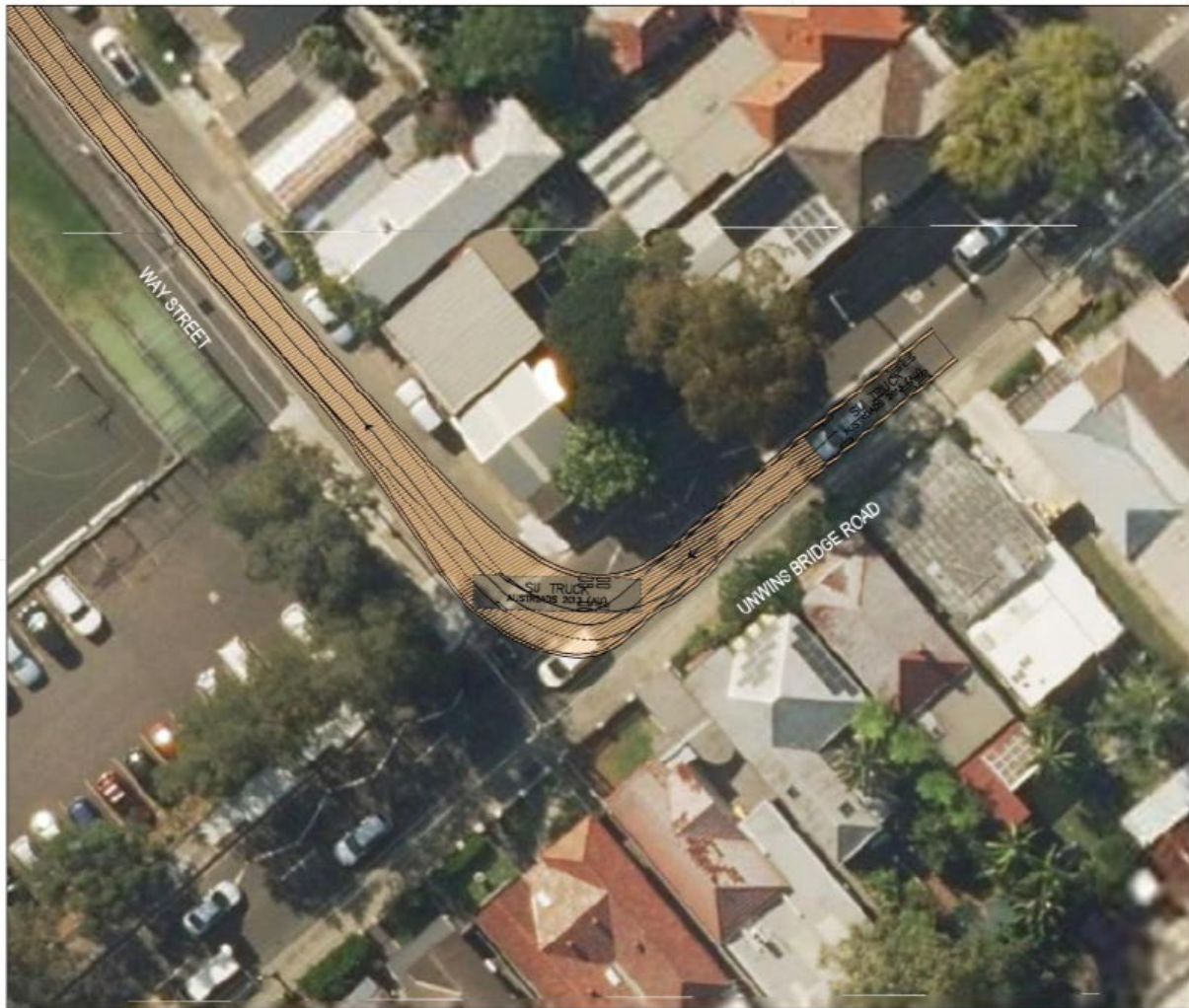
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REVISIONS			
Rev	Description	Drawn	Date
001	SWIFT PATH	M.H.	25.05.2018
002	HALLAGE ROUTE UPDATES	M.H.	25.05.2018

ENGINEERING CERTIFICATION (RPEC)			
NAME	SIGNATURE	DATE	DATE

Project JHLOR JV SYDENHAM STATION AND JUNCTION CTMP		Design	M.H	Drawn	M.H	Checked	T.W
		NOT FOR CONSTRUCTION				Date	25.05.2018
Title	SWIFT PATH ACCESS TO 12.5 M HRV ENTRY ROUTE	Project Number	P3519	Sheet Number	120	Issue	002



SU TRUCK		metres
Width	:	2.50
Track	:	2.50
Lock to Lock Time	:	6.0
Steering Angle	:	36.6

DESIGN VEHICLE

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Rev.	Description	Drawn	Check
0.0.1	SWEEP PATH	M.H.	M.H.
0.0.2	HALLAGE ROUTE UPDATES	M.H.	M.H.

ENGINEERING CERTIFICATION (RPEC)			
Name	Signature	Seal	Date

Project JHLOR JV SYDENHAM STATION AND JUNCTION CTMP	Design M.H.	Drawn M.H.	Checked T.W.
	NOT FOR CONSTRUCTION		Date 25.05.2018
Title SWEEP PATH ACCESS 10 - UNWINS BRIDGE ROAD 12.5 M HRV RIGHT IN	Project Number P3519	Sheet Number 121	Issue 002



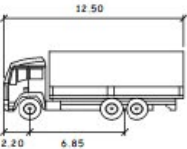
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REVISIONS		Drawn	Date
0.0.1	SWEEP PATH	M.H.	24.03.2018
0.0.2	HAZARD ROUTE UPDATES	M.H.	25.05.2018

ENGINEERING CERTIFICATION (RPEC)			
Name	Signature	Nr.	Date

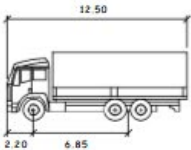
Project JHL OR JV SYDENHAM STATION AND JUNCTION CTMP	Design M.H.	Drawn M.H.	Checked T.W.
	NOT FOR CONSTRUCTION		Date 25.05.2018
Title SWEEP PATH ACCESS 3D 12.50 M HRV ENTRY	Project Number P3519	Sheet Number 122	Issue 002



SU TRUCK meters

Width : 2.50
Track : 2.50
Lock to Lock Time : 6.0
Steering Angle : 36.6

DESIGN VEHICLE



SU TRUCK		parameters
Width	:	2.50
Track	:	2.50
Lock to Lock Time	:	6.0
Steering Angle	:	36.6

DESIGN VEHICLE

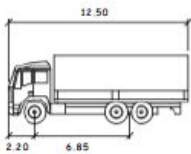
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REVISIONS		Revised By	Date
001	SWEEP PATH	M.H.	25.05.2018
002	HALLAGE ROUTE UPDATES	M.H.	25.05.2018

ENGINEERING CERTIFICATION (REQ)			
NAME	Signature	No.	Date

Project JHL JV SYDENHAM STATION AND JUNCTION CTMP	Design M.H.	Drawn M.H.	Checked T.W.
	NOT FOR CONSTRUCTION		Date 25.05.2018
Title SWEEP PATH ACCESS 10 - WAY STREET 12.5 M HRV ENTRY	Project Number P3519	Sheet Number 123	Issue 002



SU TRUCK		metres
Width	:	2.50
Track	:	2.50
Lock to Lock Time	:	6.0
Steering Angle	:	36.6

DESIGN VEHICLE

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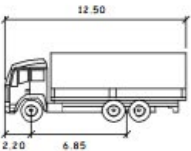
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REVISIONS	
Rev	Date
0.01	SWPT PATH
0.02	HAULAGE ROUTE UPDATES

Rev	Date
0.01	01/04/2018
0.02	01/04/2018
ENGINEERING CERTIFICATION (RPEQ)	
Name	Signature

Project	JHL JV SYDENHAM STATION AND JUNCTION CTMP		
	Design	Drawn	Checked
Title	M.H	M.H	T.W
	NOT FOR CONSTRUCTION		
Date	25.05.2018		
	Project Number	Sheet Number	Issue
	P3519	124	002



SU TRUCK		metres
Width	:	2.50
Track	:	2.50
Lock to Lock Time	:	6.0
Steering Angle	:	36.6

DESIGN VEHICLE

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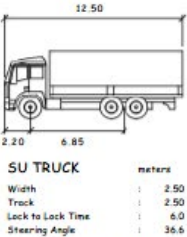
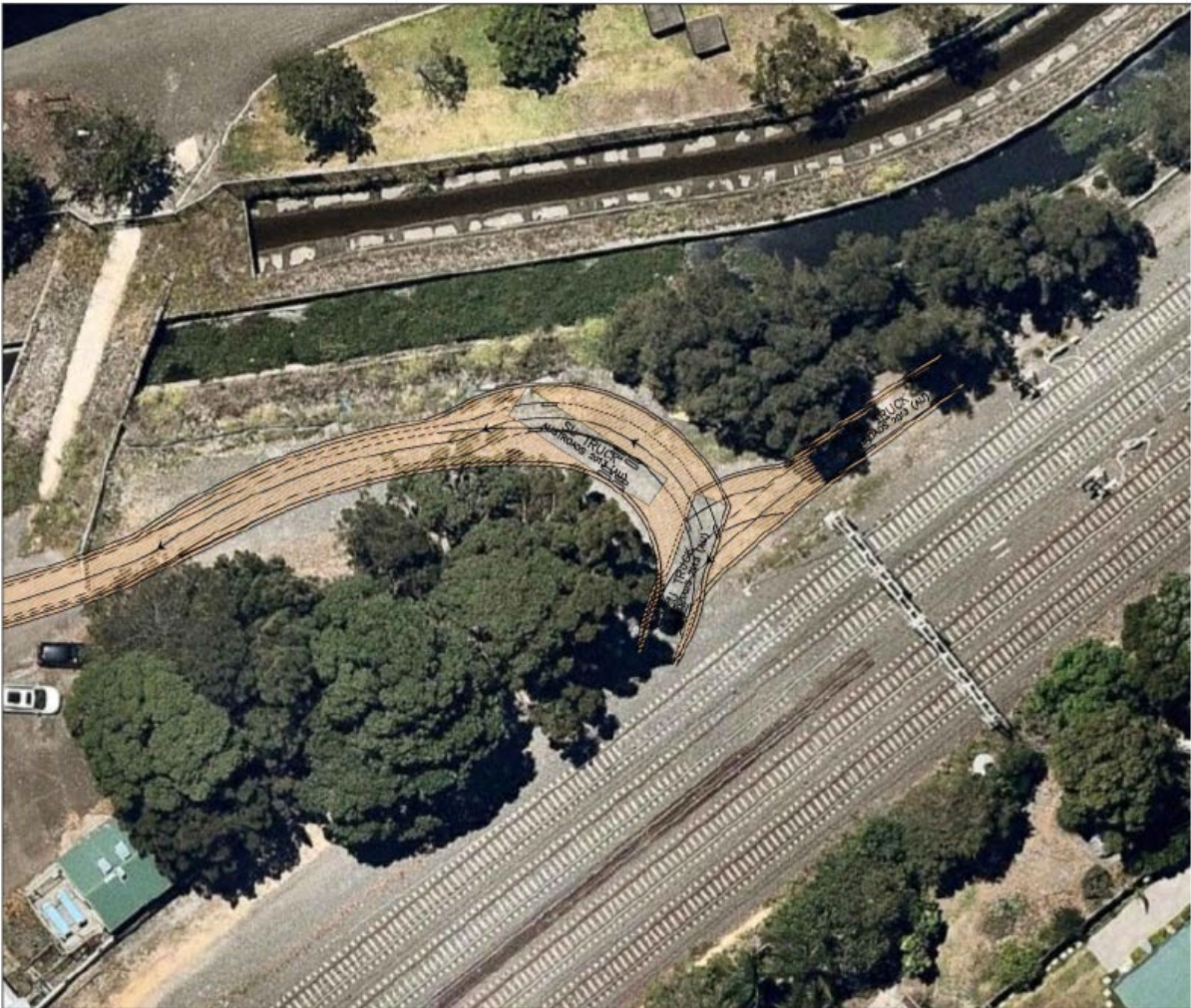
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REVISIONS		Drawn	Check
0.0.1	SWEEP PATH	M.H	25.05.2018
0.0.2	HAZARD ROUTE UPDATES	M.H	25.05.2018

ENGINEERING CERTIFICATION (RPEC)			
Name	Signature	No.	Date

Project	JHL JV SYDENHAM STATION AND JUNCTION CTMP		
	Design	Drawn	Checked
Title	M.H	M.H	T.W
	NOT FOR CONSTRUCTION		Date
SWEPT PATH ACCESS 30 12.5 M HRV EXIT ROUTE	25.05.2018		Issue
	Project Number	Sheet Number	Issue
	P3519	125	002



DESIGN VEHICLE

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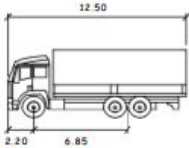
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REVISIONS		Drawn	Date
0-0-1	SWPT PATH	MH	28/03/2018
0-0-2	HALLAGE ROUTE UPDATES	MH	28/03/2018
ENGINEERING CERTIFICATION (REQ)			
NAME	Signature	N/A	Date

Project JHL JV SYDENHAM STATION AND JUNCTION CTMP	Design	Drawn	Checked
	M.H	M.H	T.W
Title SWPT PATH ACCESS 30 12.5 M HRV EXIT	NOT FOR CONSTRUCTION		
	Date	25.05.2018	
Project Number P3519	Sheet Number	Issue	
	126	002	



SU TRUCK	metres
Width	2.50
Track	2.50
Lock to Lock Time	6.0
Steering Angle	36.6

DESIGN VEHICLE

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REVISIONS		Drawn	Date
0.01	SWIFT PATH	MH	25.05.2018
0.02	HAZARD ROUTE UPDATES	MH	25.05.2018
ENGINEERING CERTIFICATION (RPEQ)			

Project JHL JV SYDENHAM STATION AND JUNCTION CTMP	Design M.H	Drawn M.H	Checked T.W
	NOT FOR CONSTRUCTION		Date 25.05.2018
Title SWIFT PATH ACCESS 10 - WAY STREET 12.5 M HRV EXIT	Project Number P3519	Sheet Number 127	Issue 002



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REVISIONS		Drawn	Date
0.0.1	SWEEP PATH	M.H.	25.05.2018
0.0.2	HALLAGE ROUTE UPDATES	M.H.	25.05.2018

ENGINEERING CERTIFICATION (RPEQ)			
Name	Signature	No.	Date

Project JHL JV SYDENHAM STATION AND JUNCTION CTMP	Design M.H.	Drawn M.H.	Checked T.W.
	NOT FOR CONSTRUCTION		Date 25.05.2018
Title SWEEP PATH ACCESS RD 12.5 M HRV EXLT	Project Number P3519	Sheet Number 128	Issue 002

SU TRUCK

meters

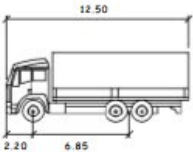
Width : 2.50

Track : 2.50

Lock to Lock Time : 6.0

Steering Angle : 36.6

DESIGN VEHICLE



SU TRUCK		metres
Width	:	2.50
Track	:	2.50
Lock to Lock Time	:	6.0
Steering Angle	:	36.6

DESIGN VEHICLE

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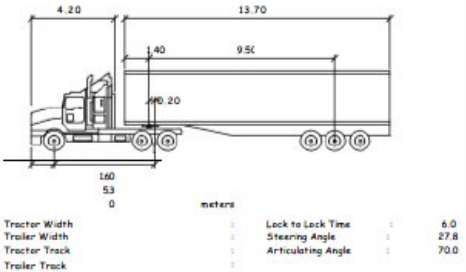
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REVISIONS		Rev	Date
0.0.1	SWEPT PATH	M.H	25.05.2018
0.0.2	HALLAGE ROUTE UPDATES	M.H	25.05.2018

ENGINEERING CERTIFICATION (REQ)			
Name	Signature	Sig	Date

Project	JHLOR JV SYDENHAM STATION AND JUNCTION CTMP		Design	M.H	Drawn	M.H	Checked	T.W
			NOT FOR CONSTRUCTION			Date		
						25.05.2018		
Title	SWEPT PATH ACCESS 10 - UNWINS BRIDGE ROAD 12.5 M HRV RIGHT OUT		Project Number	Sheet Number		Issue		
			P3519	129		002		





DESIGN VEHICLE

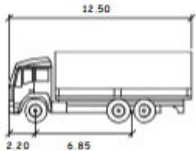
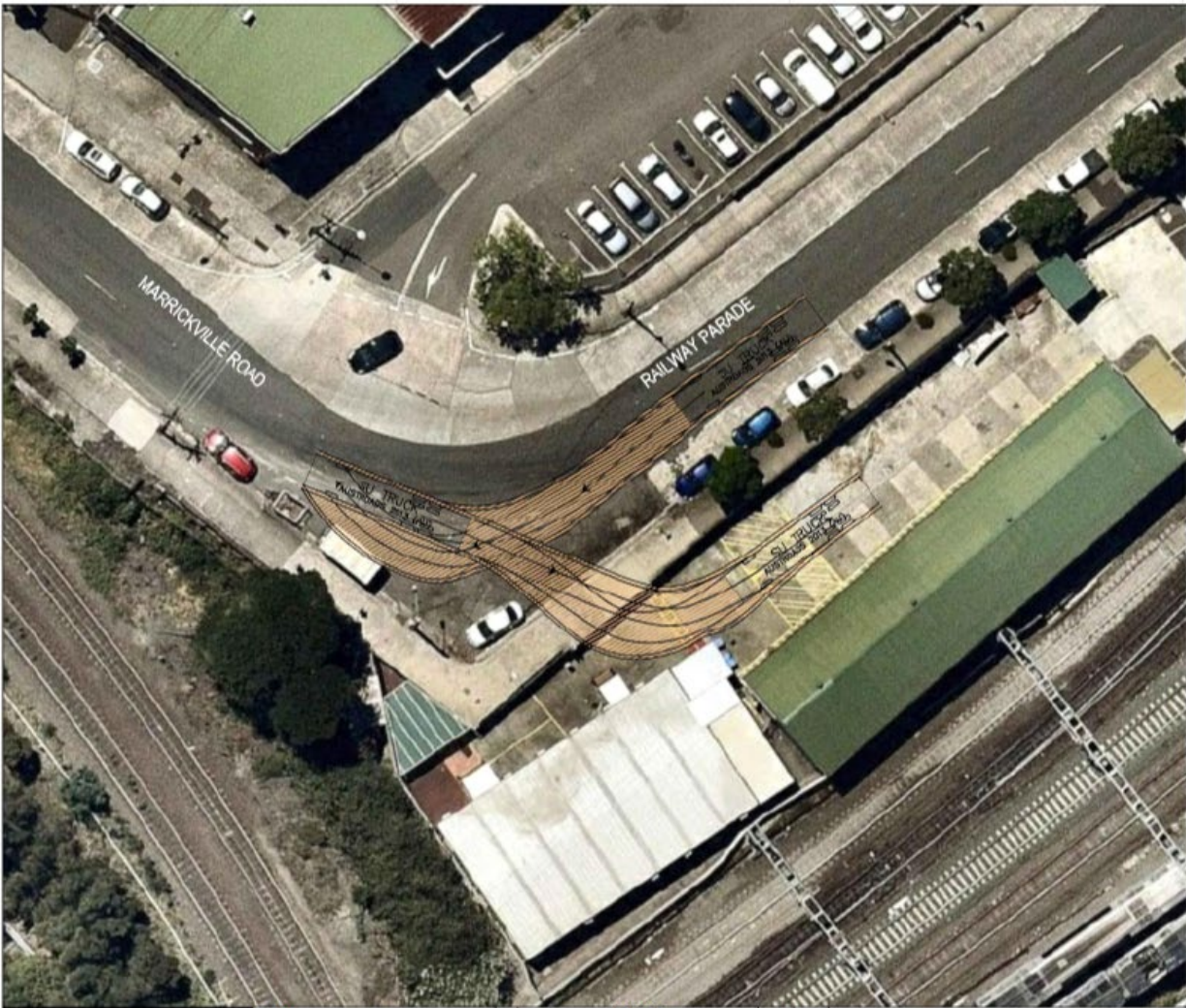
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REVISIONS		Drawn	Date
001	SWEEP PATH	M.H.	25.05.2018
002	HAZARD ROUTE UPDATES	M.H.	25.05.2018

ENGINEERING CERTIFICATION (REQ)			
Name	Signature	No.	Date

Project JHLOR JV SYDENHAM STATION AND JUNCTION CTMP	Design M.H.	Drawn M.H.	Checked T.W.
	NOT FOR CONSTRUCTION		
Title SWEEP PATH ACCESS 11 19.0 M AV ENTRY	Project Number P3519	Sheet Number 130	Date 25.05.2018
	Issue 002		



SU TRUCK meters
Width : 2.50
Track : 2.50
Lock to Lock Time : 6.0
Steering Angle : 36.6

DESIGN VEHICLE

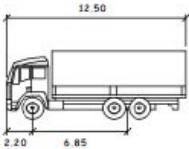
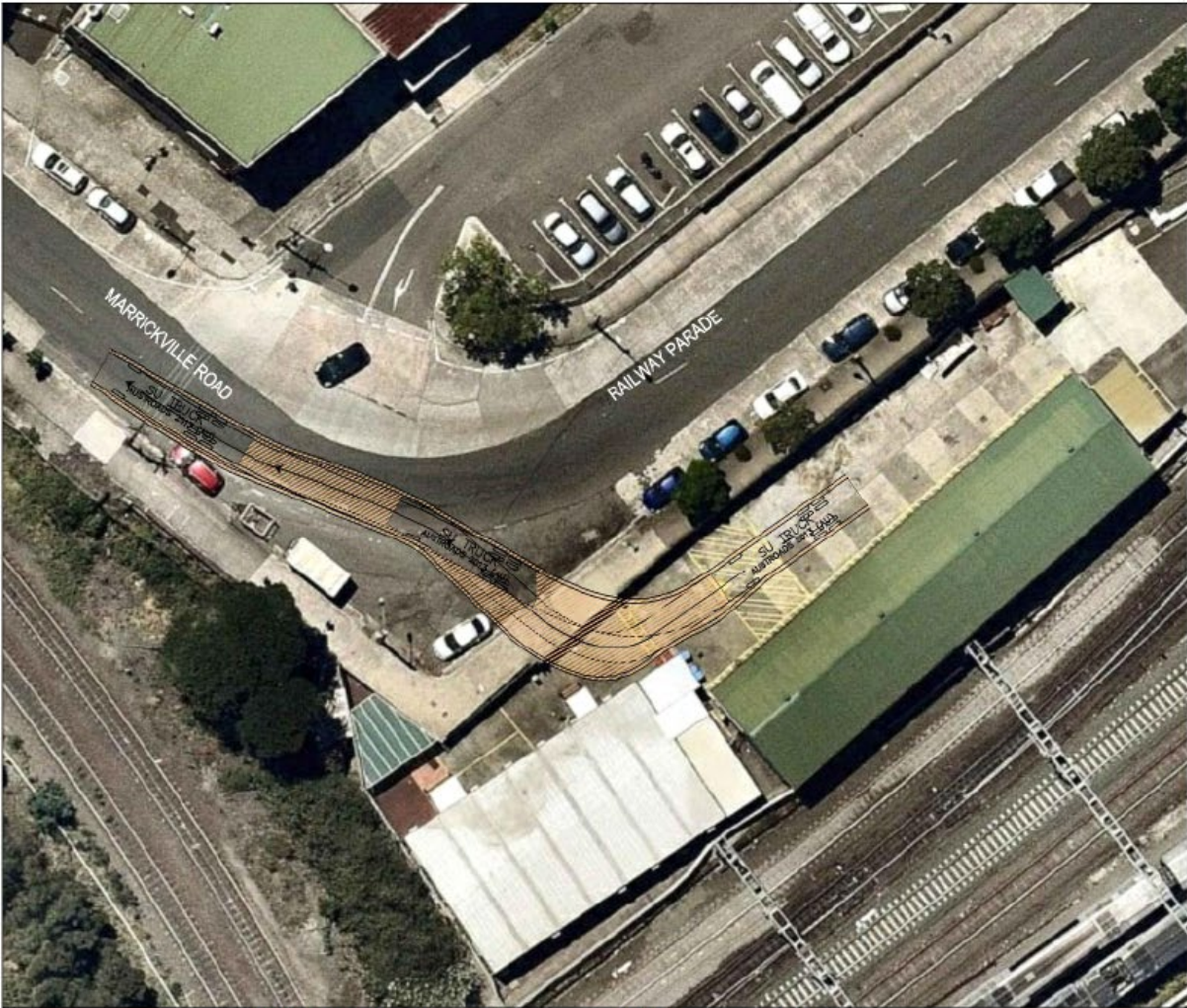
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REVISIONS		Drawn	Date
01	SWEEP PATH	M.H.	25.05.2018
02	SWEEP PATH	M.H.	25.05.2018
03	SWEEP PATH	M.H.	25.05.2018
04	SWEEP PATH	M.H.	25.05.2018
05	SWEEP PATH	M.H.	25.05.2018
06	SWEEP PATH	M.H.	25.05.2018
07	SWEEP PATH	M.H.	25.05.2018
08	SWEEP PATH	M.H.	25.05.2018
09	SWEEP PATH	M.H.	25.05.2018
10	SWEEP PATH	M.H.	25.05.2018

ENGINEERING CERTIFICATION (RPEQ)			
Name	Signature	No.	Date

Project JHL JV SYDENHAM STATION AND JUNCTION CTMP	Design M.H.	Drawn M.H.	Checked T.W.
	NOT FOR CONSTRUCTION		25.05.2018
Title SWEEP PATH ACCESS 11 12.5 M HRV ENTRY	Project Number P3519	Sheet Number 131	Issue 002



SU TRUCK meters
Width : 2.50
Track : 2.50
Lock to Lock Time : 6.0
Steering Angle : 36.6

DESIGN VEHICLE

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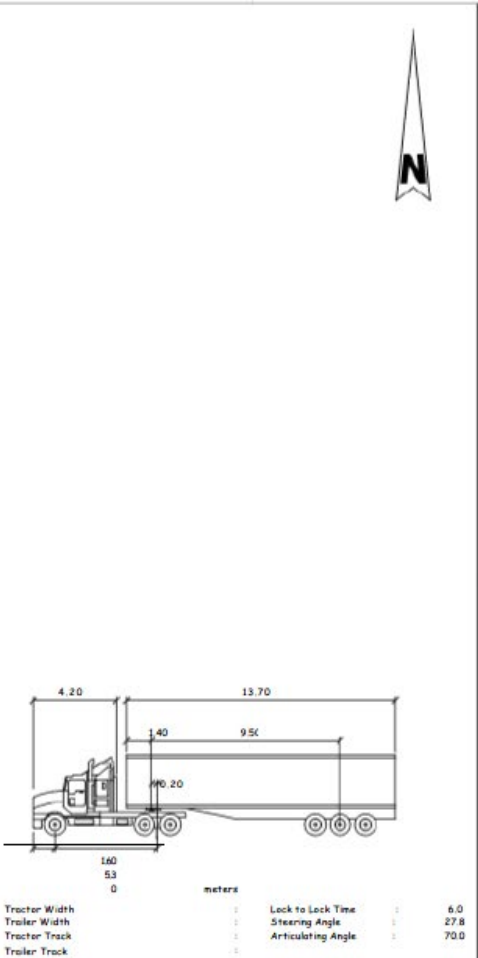
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REVISIONS		Drawn/Checked	Rev.	Date
001	SWEPT PATH	M.H.	20	2018
002	HAZARD ROUTE UPDATES	M.H.	20	2018

Rev.	Date
001	2018
002	2018

ENGINEERING CERTIFICATION (RPEQ)			
Name	Signature	No.	Date

Project	JHL JV SYDENHAM STATION AND JUNCTION CTMP	Design	M.H.	Drawn	M.H.	Checked	T.W.
Title	SWEPT PATH ACCESS 11 12.5 M HRV EXIT	NOT FOR CONSTRUCTION		Date	25.05.2018		
Project Number	P3519	Sheet Number	132	Issue	002		



DESIGN VEHICLE

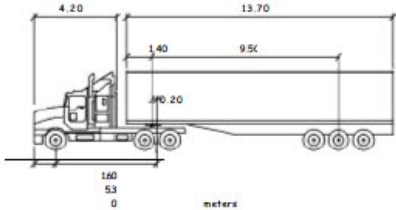
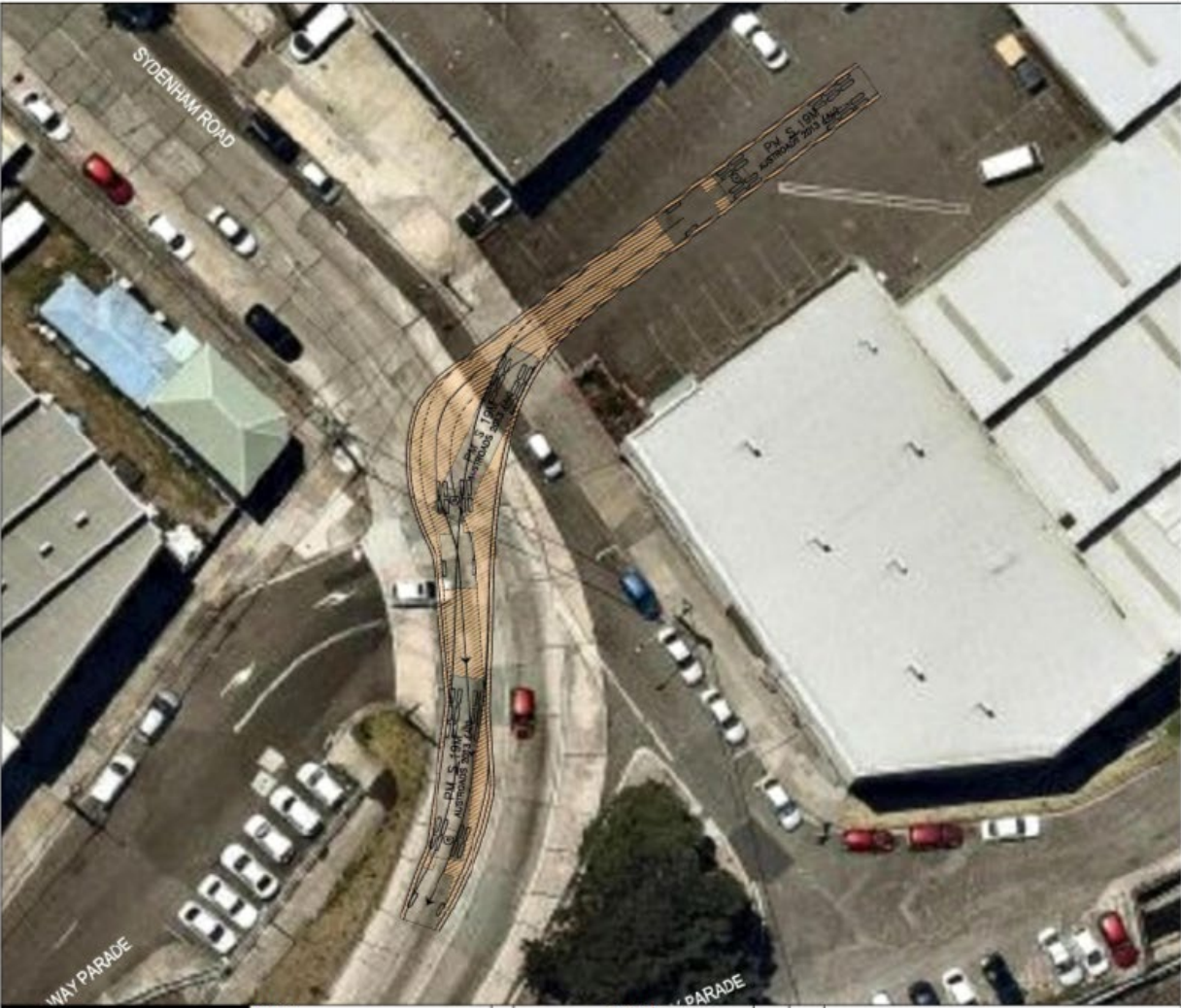
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REVISIONS		Drawn	Date
0.01	SWEEP PATH	M.H.	25.05.2018
0.02	HALLAGE ROUTE UPDATES	M.H.	25.05.2018

ENGINEERING CERTIFICATION (RPEQ)			
NAME	SIGNATURE	N.O.	DATE

Project JHL JV SYDENHAM STATION AND JUNCTION CTMP	Design M.H.	Drawn M.H.	Checked T.W.
	NOT FOR CONSTRUCTION		Date 25.05.2018
Title SWEEP PATH ACCESS 12 19.0 M AV ENTRY	Project Number P3519	Sheet Number 133	Issue 002



Tractor Width	4.20	Lock to Lock Time	6.0
Trailer Width	1.40	Steering Angle	27.8
Tractor Track	1.60	Articulating Angle	70.0
Trailer Track	5.30		

DESIGN VEHICLE

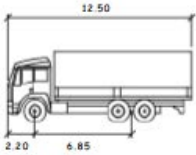
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REVISIONS		Date	Date
001	SWEEP PATH	MH 26/03/2018	
002	HAULAGE ROUTE UPDATES	MH 29/05/2018	

ENGINEERING CERTIFICATION (REQ)			
Name	Signature	Nr.	Date

Project	JHL JV SYDENHAM STATION AND JUNCTION CTMP		
	Design	Drawn	Checked
Title	M.H.	M.H.	T.W.
	NOT FOR CONSTRUCTION		Date
25.05.2018	Project Number	Sheet Number	Issue
	P3519	134	002



SU TRUCK		metres
Width	:	2.20
Track	:	6.85
Lock to Lock Time	:	6.0
Steering Angle	:	36.6

DESIGN VEHICLE

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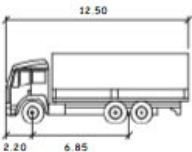
REVISIONS	
Rev	Description
001	SWEPT PATH
002	HAZARD ROUTE UPDATES

Drawn	Check	Date
M.H.	M.H.	25.05.2018
M.H.	M.H.	25.05.2018

ENGINEERING CERTIFICATION (FPEC)			
Name	Signature	No.	Date

Project	JHL JV SYDENHAM STATION AND JUNCTION CTMP
Title	SWEPT PATH RAILWAY PARADE NEAR ACCESS 12 12.5 M HRV ENTRY PATH

Design	Drawn	Checked
M.H.	M.H.	T.W.
NOT FOR CONSTRUCTION		
Project Number	Sheet Number	Issue
P3519	135	002



SU TRUCK	
Width	2.50
Track	2.50
Lock to Lock Time	6.0
Steering Angle	36.6

DESIGN VEHICLE

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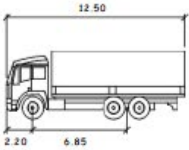
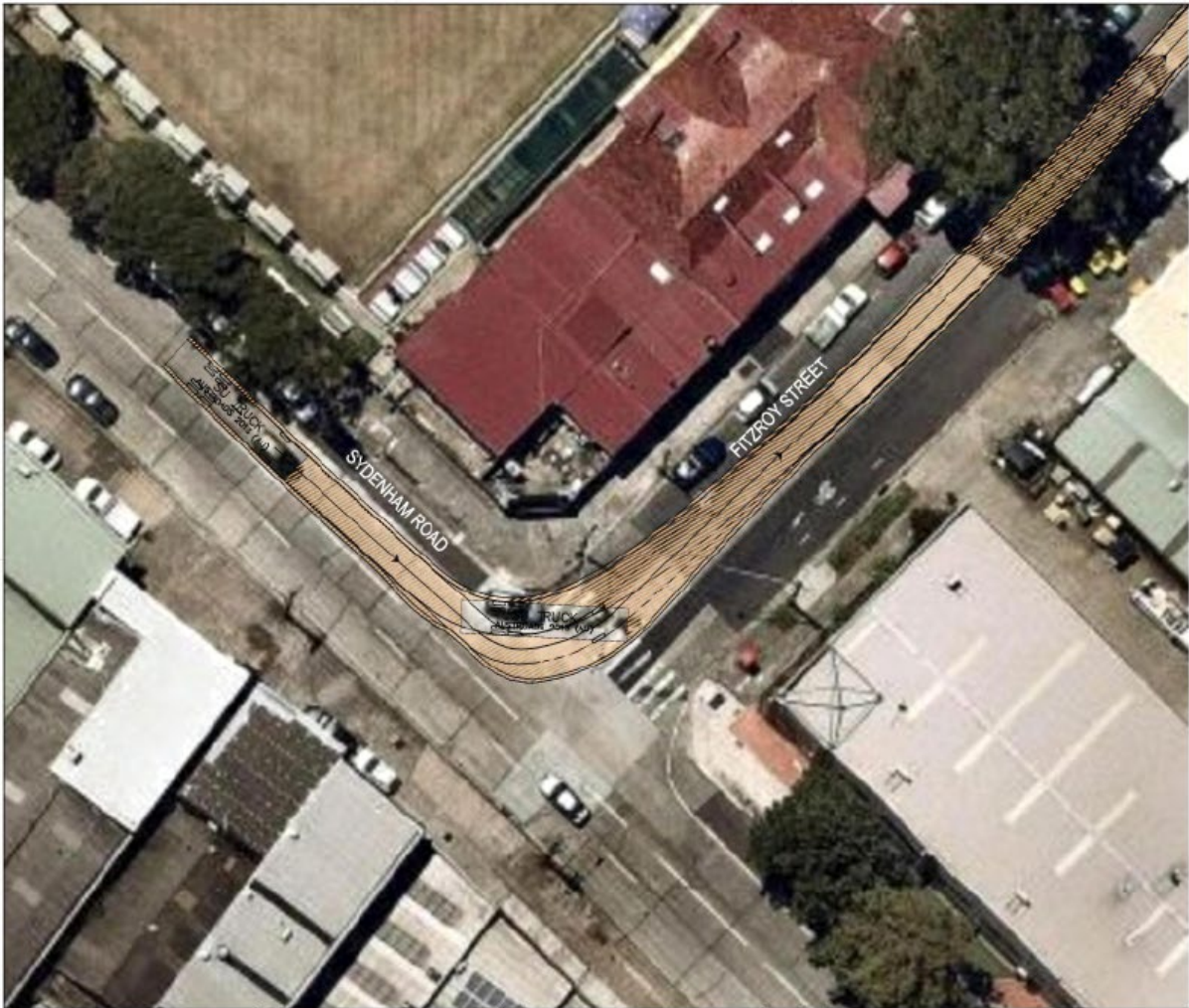
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REVISIONS		Drawn	Date
0.01	SWEPT PATH	MH	25/05/2018
0.02	HAZARD ROUTE UPDATES	MH	25/05/2018

ENGINEERING CERTIFICATION (RPEQ)			

Project JHL JV SYDENHAM STATION AND JUNCTION CTMP	Design M.H	Drawn M.H	Checked T.W
	NOT FOR CONSTRUCTION		Date 25.05.2018
Title SWEPT PATH RAILWAY PARADE NEAR ACCESS 12 12.5 M HRV EXIT PATH	Project Number P3519	Sheet Number 136	Issue 002





SU TRUCK meters
Width : 2.50
Track : 2.50
Lock to Lock Time : 6.0
Steering Angle : 36.6

DESIGN VEHICLE

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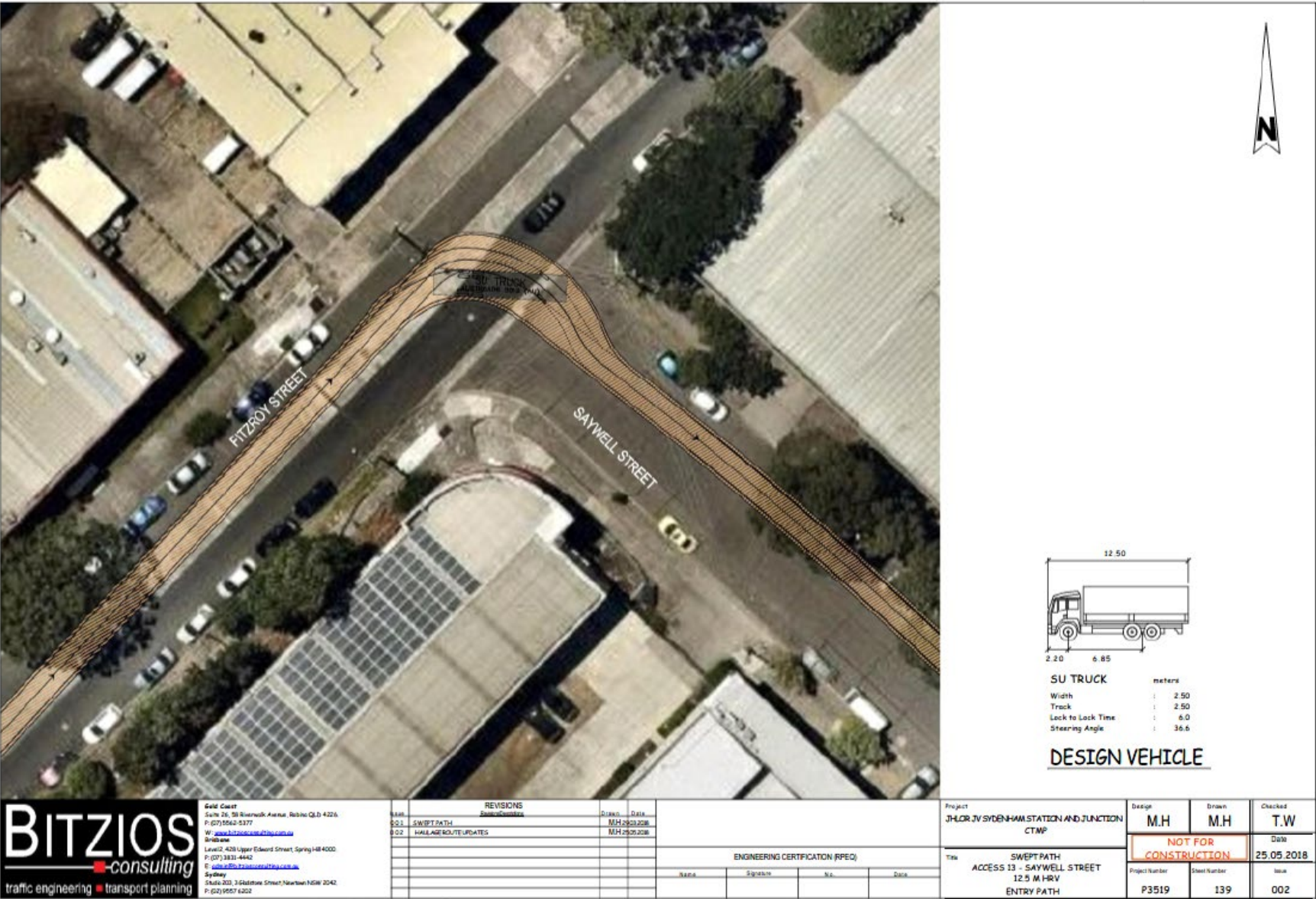
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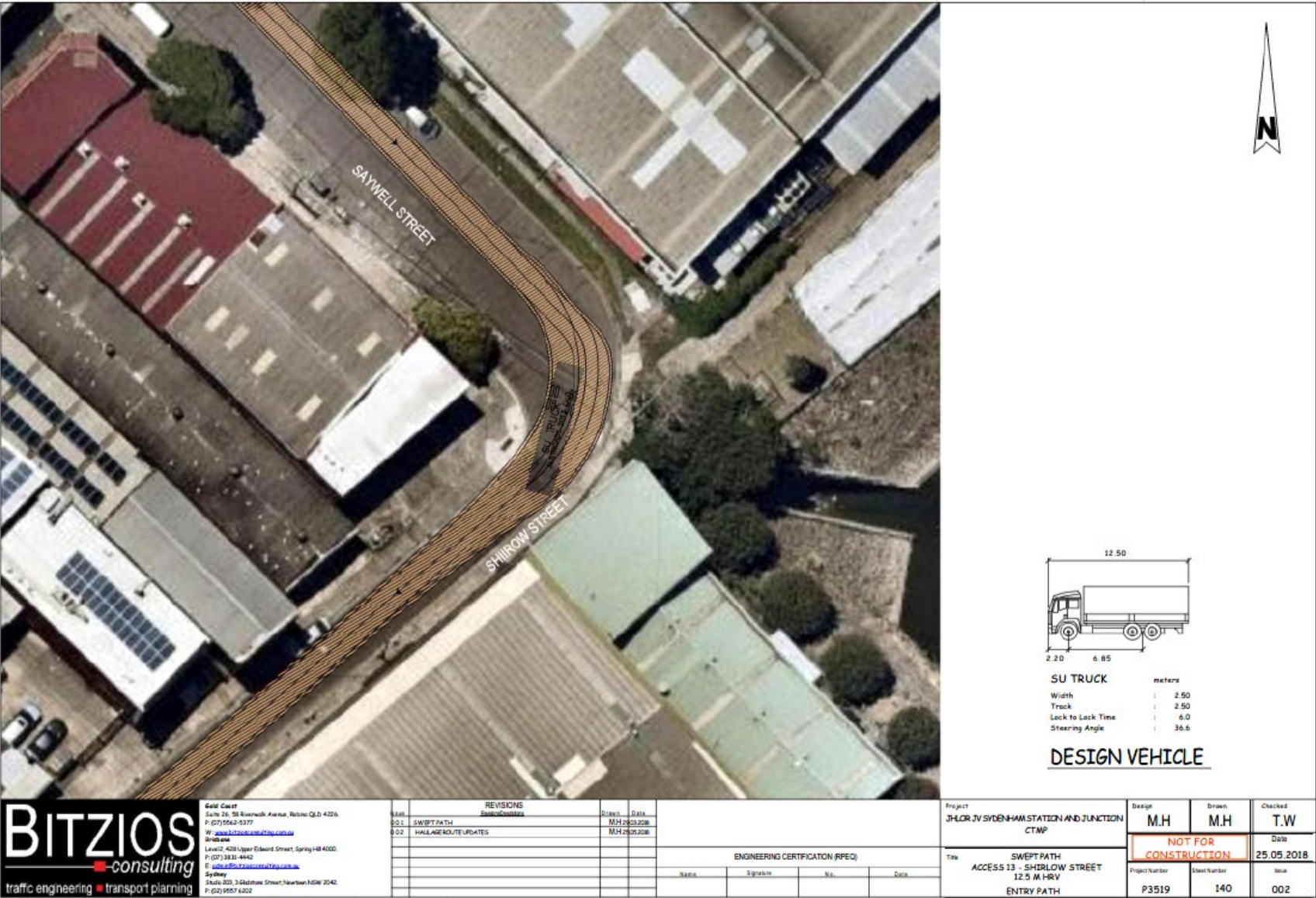
P: (02) 9557 6208

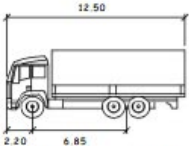
REVISIONS		Drawn	Date
001	SWIFT PATH	MH	25/05/2018
002	HALLAGE ROUTE UPDATES	MH	25/05/2018

ENGINEERING CERTIFICATION (RPEQ)			
Name	Signature	No.	Date

Project	JHL/JV SYDENHAM STATION AND JUNCTION CTMP	Design	M.H	Drawn	M.H	Checked	T.W
Title	SWIFT PATH ACCESS 13 - SYDENHAM ROAD 12.5M HGV ENTRY PATH	NOT FOR CONSTRUCTION		Date	25/05/2018		
Project Number	P3519	Sheet Number	138	Scale	002		







SU TRUCK	
Width	2.50
Track	2.50
Lock to Lock Time	6.0
Steering Angle	36.6

DESIGN VEHICLE

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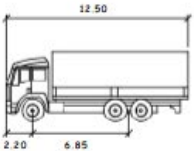
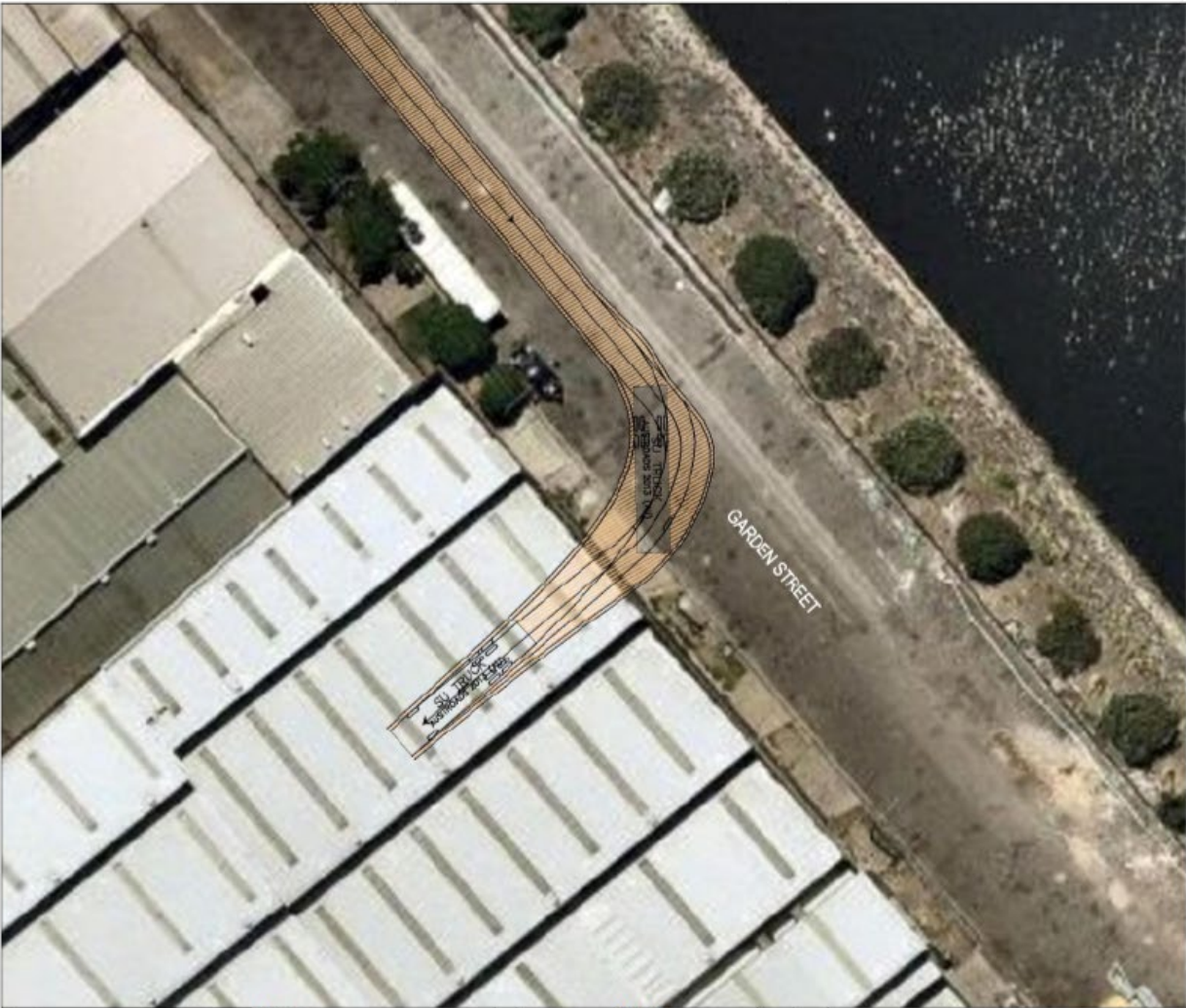
REVISIONS		Drawn	Date
0.01	SWEPT PATH	M.H.	25/05/2018
0.02	MAILAGE ROUTE UPDATES	M.H.	25/05/2018

ENGINEERING CERTIFICATION (RPEC)

Name	Signature	No.	Date

Project	JHLOR JV SYDENHAM STATION AND JUNCTION CTMP
Title	SWEPT PATH ACCESS 13 - GARDEN STREET 12.5 M HRV ENTRY PATH

Design	M.H.	Drawn	M.H.	Checked	T.W.
NOT FOR CONSTRUCTION				Date	25.05.2018
Project Number	P3519	Sheet Number	141	Issue	002



SU TRUCK		metres
Width	:	2.50
Track	:	2.50
Lock to Lock Time	:	6.0
Steering Angle	:	36.6

DESIGN VEHICLE

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F: info@bitzios.com.au

Sydney

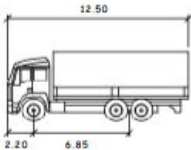
Studio 202, 3-Gladstone Street Newtown NSW 2042

P: (02) 9557 6222

REVISIONS			
Rev.	Description	Drawn	Date
001	SWIPT PATH	MH	25/03/2018
002	HALLWAY ROUTE UPDATES	MH	25/03/2018

ENGINEERING CERTIFICATION (RPEC)			
NAME	SIGNATURE	NO.	DATE

Project JHL JV SYDENHAM STATION AND JUNCTION CTMP	Design M.H	Drawn M.H	Checked T.W
	NOT FOR CONSTRUCTION		Date 25.05.2018
Title SWIPT PATH ACCESS 12.5 M HRV ENTRY	Project Number P3519	Sheet Number 142	Issue 002



SU TRUCK meters

Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 36.6

DESIGN VEHICLE

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traffic engineering • transport planning

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B: 0800 000 000
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E: info@bitzios.com.au
Sydney
Suite 303, 31 Gidley Street, North Sydney NSW 1585
P: (02) 9557 6202

REVISIONS		Drawn	Date
Rev.	Description		
001	SWEPT PATH	M.H.	25.05.2018
002	LANDSCAPE/UTURNS	M.H.	25.05.2018

ENGINEERING CERTIFICATION (RPEQ)			
Name	Signature	No.	Date

Project	JHL JV SYDENHAM STATION AND JUNCTION CTMP	Design	Drawn	Checked
		M.H.	M.H.	T.W.
Title	SWEPT PATH ACCESS 13 12.5 M HRV EXIT PATH	NOT FOR CONSTRUCTION		Date
		Project Number	Sheet Number	Issue
		P3519	143	002



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Sydney
Studio 303, 3-Gladstone Street, Newtown NSW 2042
P: (02) 9557-6202

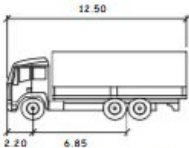
REVISIONS			
Rev.	Description	Drawn	Check
001	SWEEP PATH	M.H.	25.05.2018
002	HAULAGE ROUTE UPDATES	M.H.	25.05.2018

ENGINEERING CERTIFICATION (RPEQ)			
Name	Signature	Nr.	Date

Project	JHLOR JV SYDENHAM STATION AND JUNCTION CTMP
Title	SWEEP PATH ACCESS 13 12.5 M.HRV EXIT

Design	Drawn	Checked
M.H.	M.H.	T.W.
NOT FOR CONSTRUCTION		
Project Number	Sheet Number	Issue
P3519	144	002





SU TRUCK		metres
Width	:	2.20
Track	:	2.50
Lock to Lock Time	:	6.85
Steering Angle	:	36.6

DESIGN VEHICLE

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Studio 202, 3-4a St Johns Street, Newtown NSW 2042

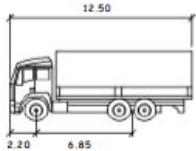
P: (02) 9557-6222

REVISIONS		Drawn	Date
001	SWEEP PATH	MH	25/03/2018
002	HAZARD ROUTE UPDATES	MH	28/03/2018

ENGINEERING CERTIFICATION (REQ)			
Name	Signature	No.	Date

Project	JHL JV SYDENHAM STATION AND JUNCTION CTMP		
	Design	Drawn	Checked
Title	M.H	M.H	T.W
	NOT FOR CONSTRUCTION		Date
Access 13 - SHERLOW STREET 12.5 M HRV EXIT PATH	Project Number	Sheet Number	Issue
	P3519	146	002
25.05.2018			





SU TRUCK	metres
Width	2.50
Track	2.50
Lack to Lack Time	6.0
Steering Angle	36.6

DESIGN VEHICLE

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Driveline

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Sydney

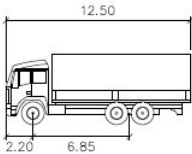
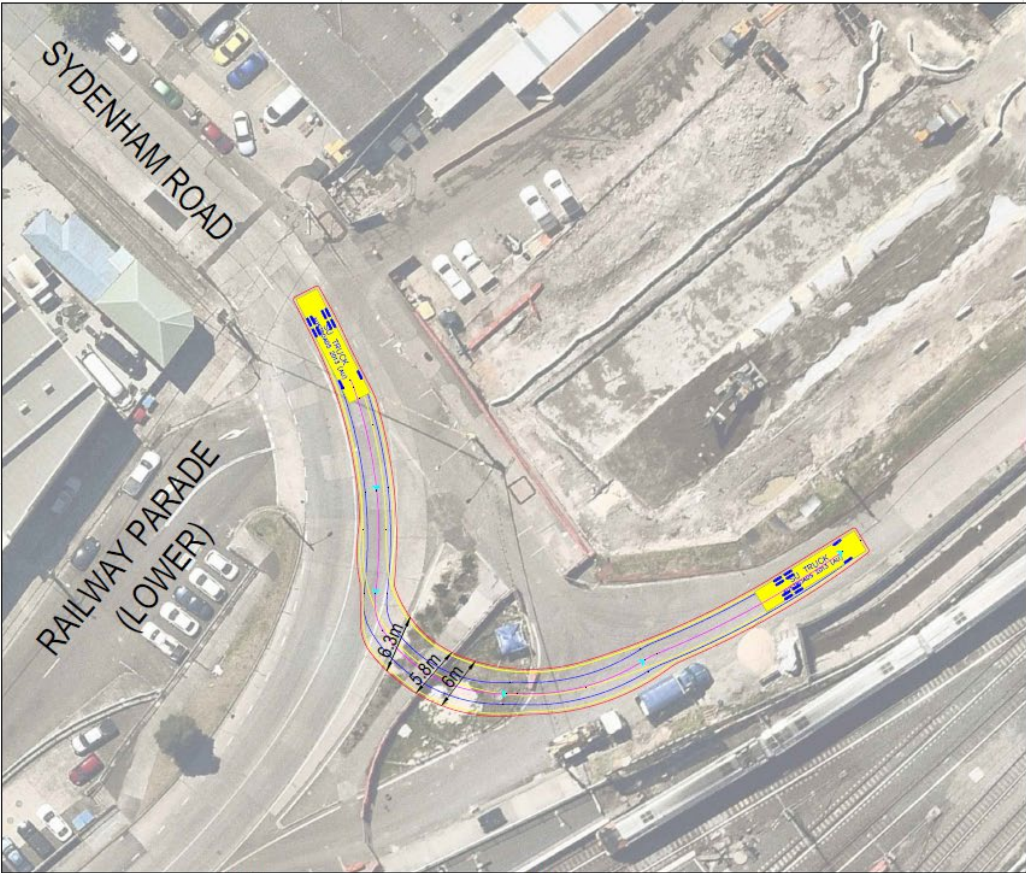
Studio 203, 3 Gladstone Street, Newtown NSW 2042

P: (02) 9557-6302

REVISIONS		Drawn	Date
001	SWEEP PATH	M.H	25.05.2018
002	HALLAGE ROUTE UPDATES	M.H	25.05.2018
ENGINEERING CERTIFICATION (RPEQ)			
Name	Signature	N/A	Date

Project		Design	Drawn	Checked
JHLOR JV SYDENHAM STATION AND JUNCTION CTMP		M.H	M.H	T.W
Title		NOT FOR CONSTRUCTION		Date
SWEEP PATH		Project Number	Sheet Number	Issue
ACCESS 13 - SYDENHAM ROAD		P3519	148	002
12.5 M HRV				
EXIT PATH				





SU TRUCK

Width : 2.50
Track : 2.50
Lock to Lock Time : 6.0
Steering Angle : 36.6

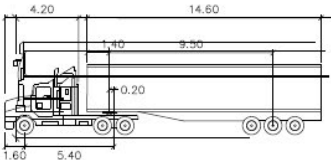
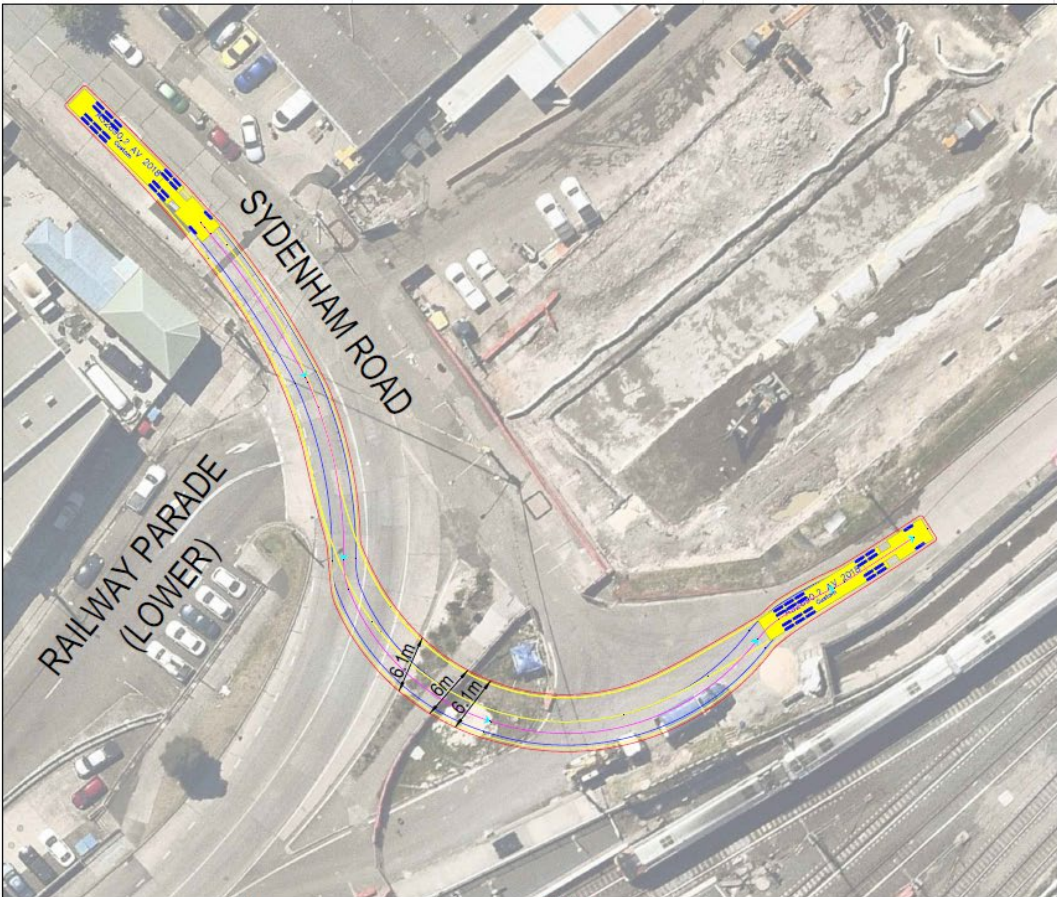
DESIGN VEHICLE

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Sydney
Suite 303, 3 Cleveland Street, Newtown NSW 2042
P: (02) 9557-6202

REVISIONS			
No.	Description	Drawn	Check
001	INITIAL SWEEP PATHS	M.H.	14.11.2019

Project	SYDENHAM STATION AND JUNCTION		
	Design	Drawn	Checked
Title	M.H.	M.H.	A.G.
	NOT FOR CONSTRUCTION		
SYDENHAM ROAD LEFT TO RAILWAY TRIANGLE GATE SIZE TBC	Project Number	Draw Number	Date
	P3519	3	14.11.2019



AS2890.2 AV 2018

Tractor Width	: 2.50	Lock to Lock Time	: 6.0
Trailer Width	: 2.50	Steering Angle	: 27.8
Tractor Track	: 2.50	Articulating Angle	: 70.0
Trailer Track	: 2.50		

DESIGN VEHICLE

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Sydney
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P: (02) 9557-6302

REVISIONS		
Rev	Description	Date
001	INITIAL SWEEP PATHS	MH 14.11.2019

Project	SYDENHAM STATION AND JUNCTION	Design	M.H	Drawn	M.H	Checked	A.G
Title	SWEPT PATH - SCENARIO 2 20.0m ARTICULATED TRUCK SYDENHAM ROAD LEFT TO RAILWAY TRIANGLE GATE SIZE TBC	NOT FOR CONSTRUCTION		Date	14.11.2019		
Project Number	P3519	Drawn Number	2	Issue	001		



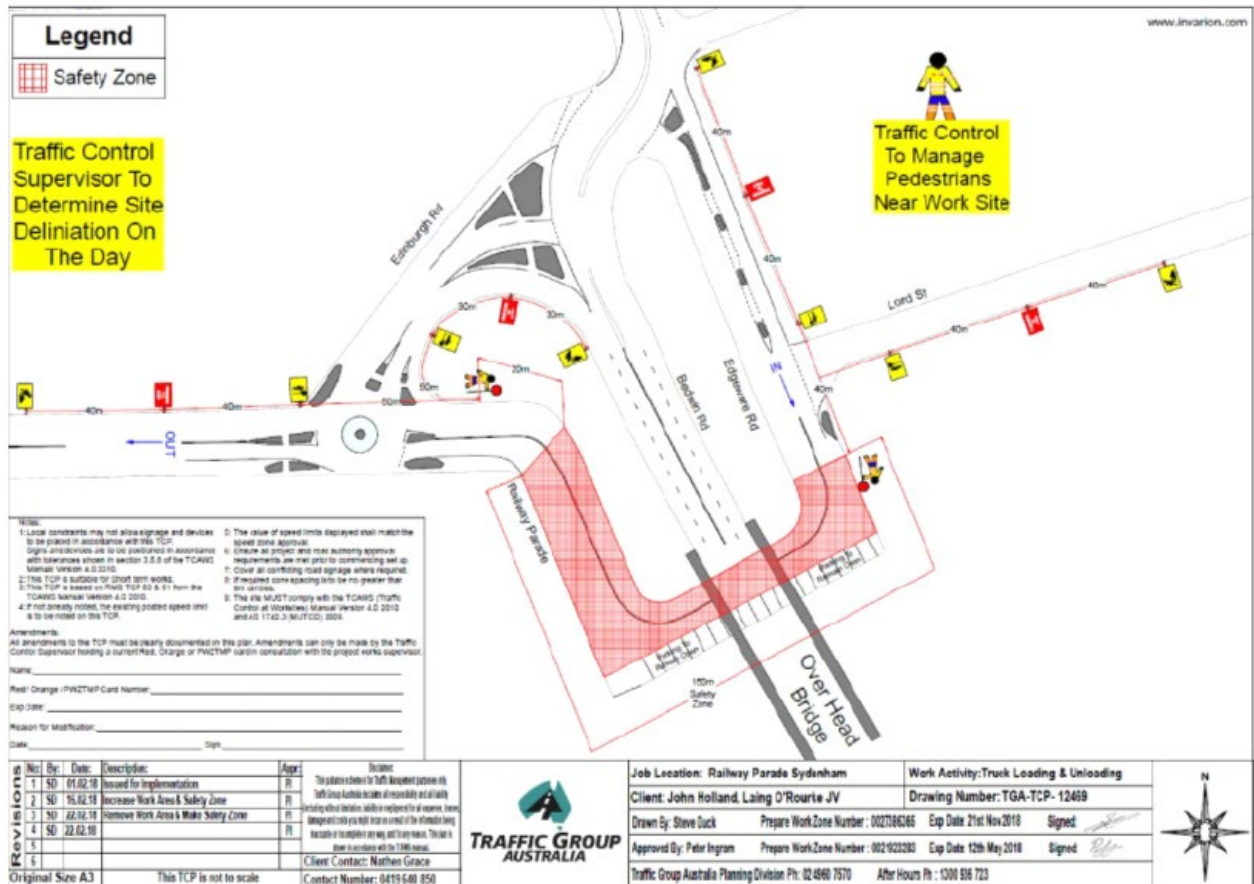
10.2 Appendix B – Traffic Control Plans

The following indicative Traffic Control Plans will be further developed with the Traffic Control Supplier as the works progress. These will be updated if necessary and resubmitted if changed, for approval:

TCP No	Location	Description of Control
12469	Access 1 & 1A	Entry and exit of AV
12484	Access 2 & 3	Entry and Exit of AV
12475	Access 5,6, 7 Underpass	Entry and Exit of AV
P3519.001D Access 10 TCP	Access 10	Advanced Truck Warning (TCP 195 template)
P3519.001D Access 11 TCP	Access 11	Advanced Truck Warning (TCP 195 template)
P3519.001D Access 12 TCP	Access 12	Advanced Truck Warning (TCP 195 template)
P3519.001D Access 13 TCP	Access 13	Advanced Truck Warning (TCP 195 template)

TCP 12469

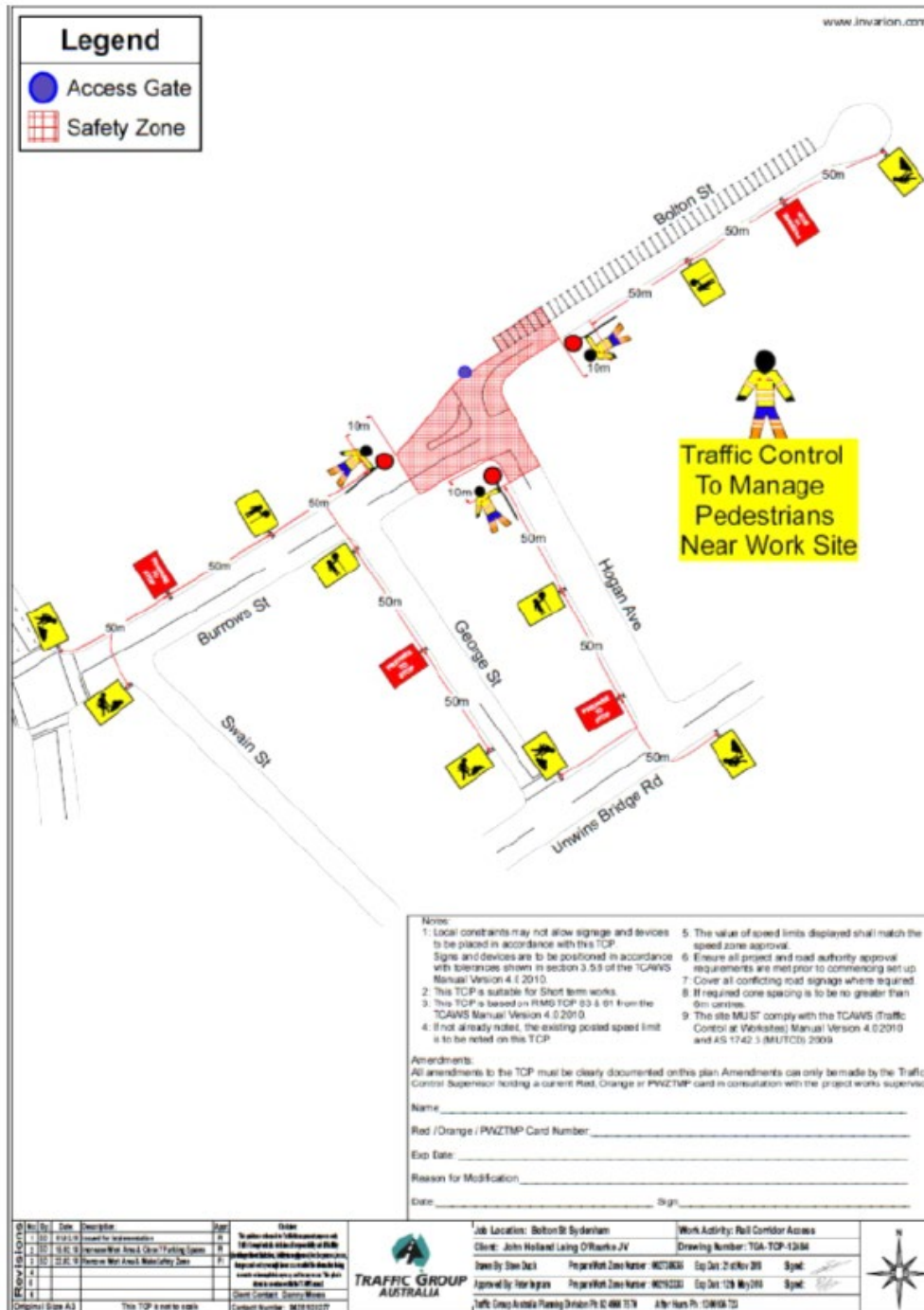
TCP 12469



Additional Notes:

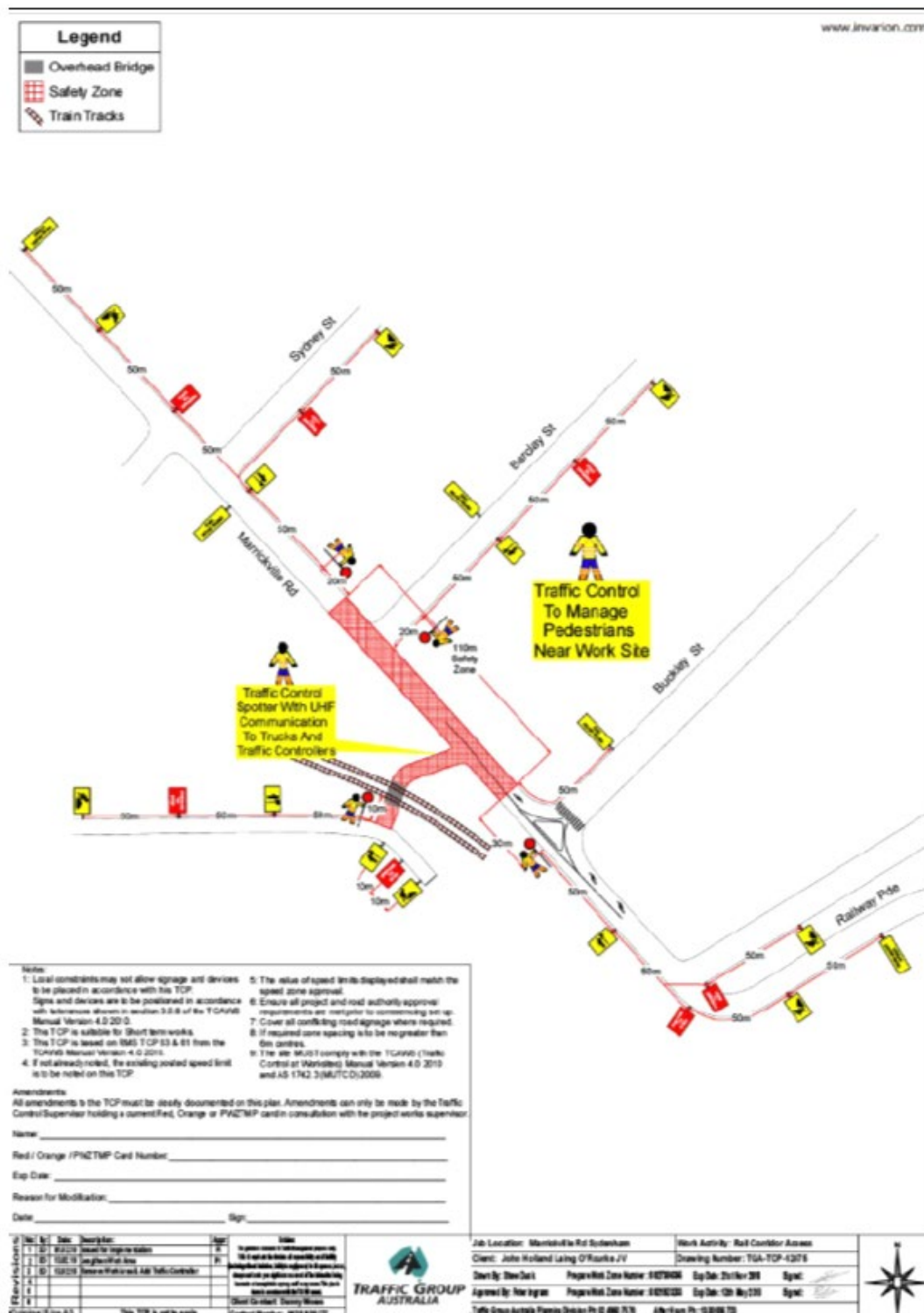
- Future TCPs or revisions of TCPs will be addressed at 6 monthly updates. They are also to include a note to identify risk.
- Advanced warning signs are not to be obscured by parked vehicles

TCP 12484



Additional Notes:

- Future TCPs or revisions of TCPs will be addressed at 6 monthly updates. They are also to include a note to identify risk.
- Advanced warning signs are not to be obscured by parked vehicles

TCP 12475

Additional Notes:

- Future TCPs or revisions of TCPs will be addressed at 6 monthly updates. They are also to include a note to identify risk.
- Advanced warning signs are not to be obscured by parked vehicles

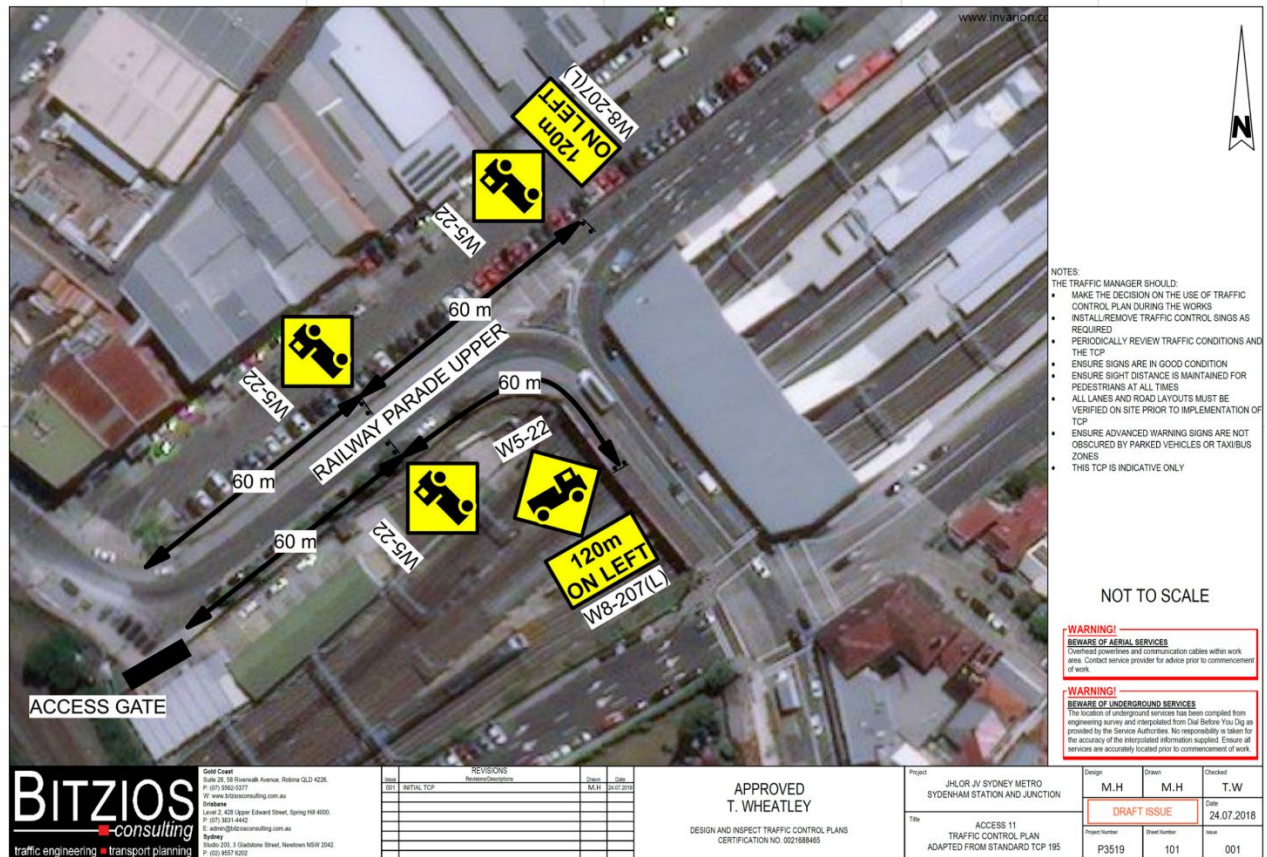
TCP P3519.001D Access 10 TCP



Additional Notes:

- Future TCPs or revisions of TCPs will be addressed at 6 monthly updates. They are also to include a note to identify risk.
- Advanced warning signs are not to be obscured by parked vehicles

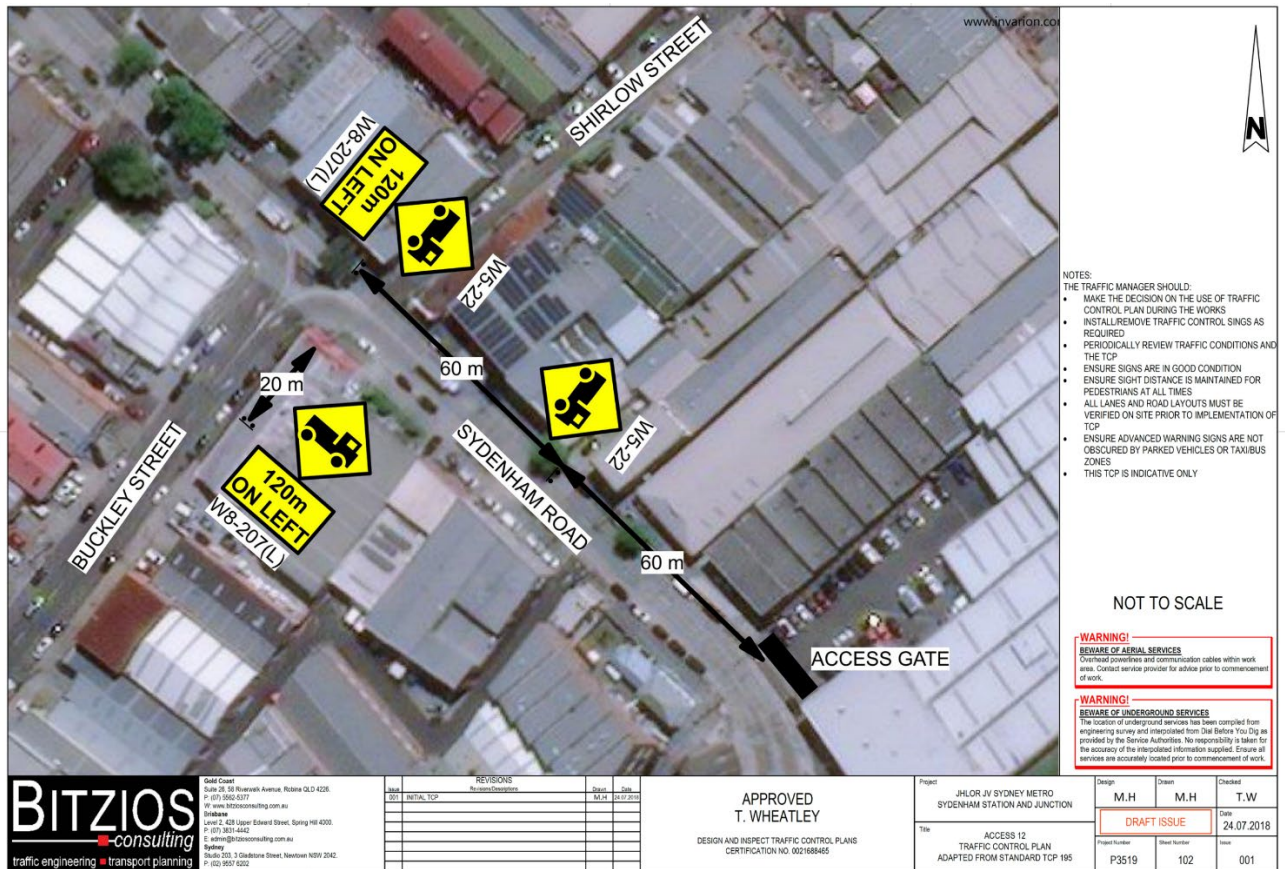
TCP P3519.001D Access 11 TCP



Additional Notes:

- Future TCPs or revisions of TCPs will be addressed at 6 monthly updates. They are also to include a note to identify risk.
- Advanced warning signs are not to be obscured by parked vehicles

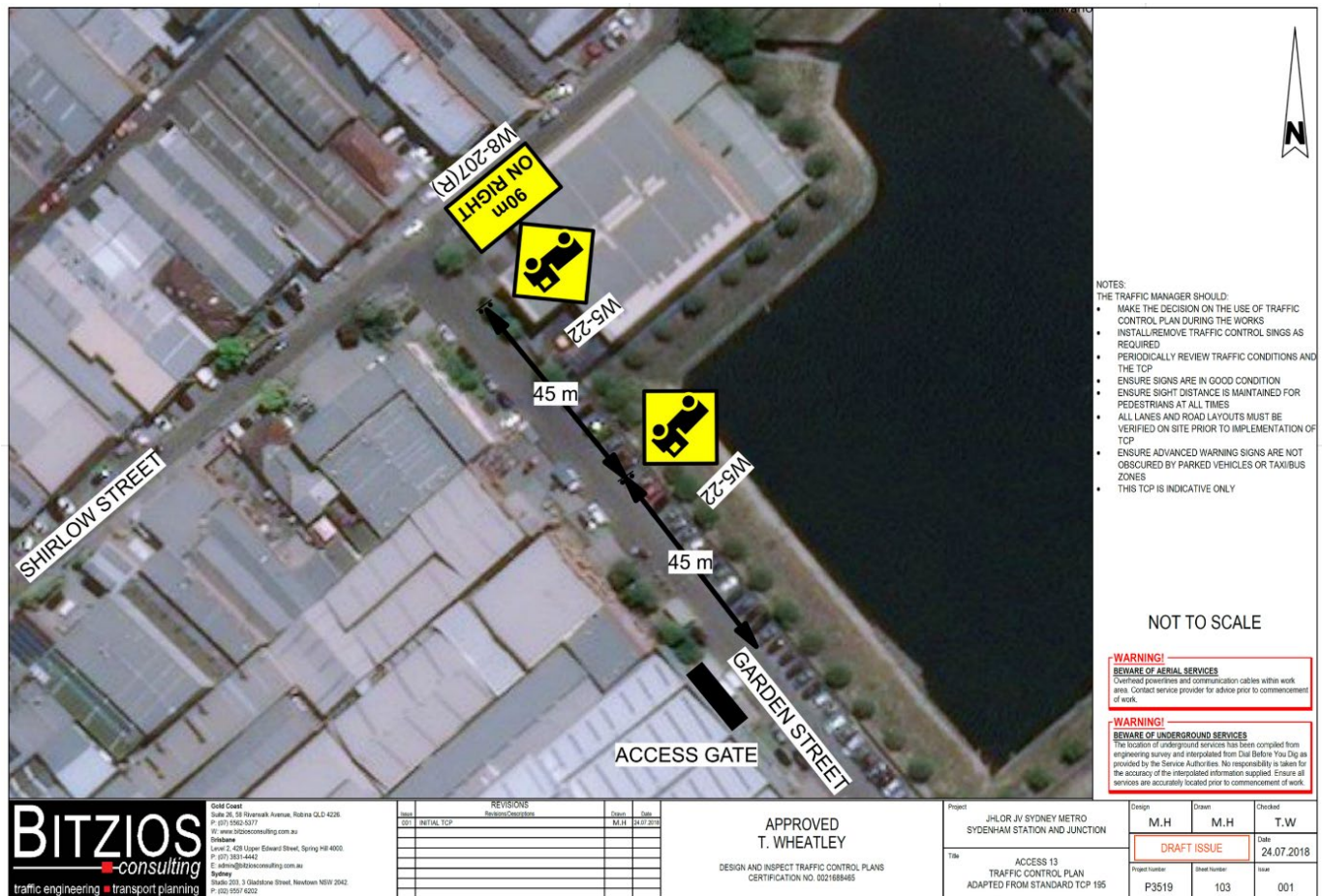
TCP P3519.001D Access 12 TCP



Additional Notes:

- Future TCPs or revisions of TCPs will be addressed at 6 monthly updates. They are also to include a note to identify risk.
- Advanced warning signs are not to be obscured by parked vehicles

TCP P3519.001D Access 13 TCP

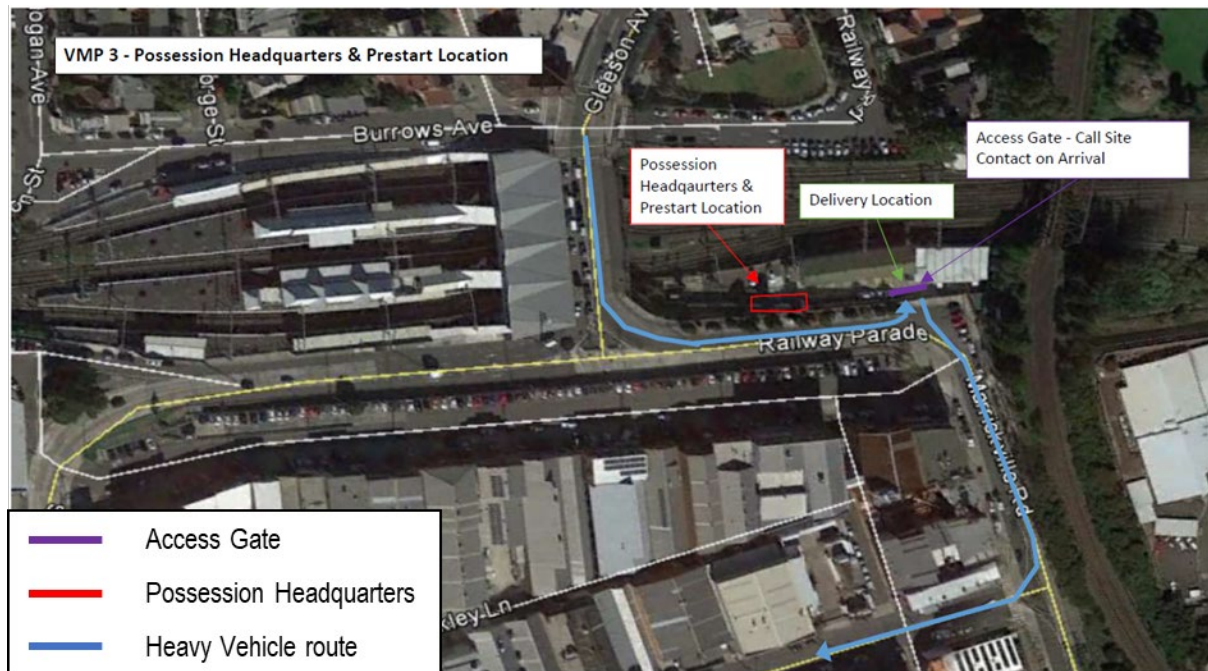


Additional Notes:

- Future TCPs or revisions of TCPs will be addressed at 6 monthly updates. They are also to include a note to identify risk.
- Advanced warning signs are not to be obscured by parked vehicles

10.3 Appendix C – Vehicle Management Plans, Pedestrian Movement Plans, and Worker Walking Routes

Appendix C-1: Delivery Requirements Gate 3 - Possession



Delivery Hours

7am - 6pm Mon- Friday

8am - 6pm Saturday & Sunday (During Possession Weekend)

Prestart Commencement: 6am Sat & Sun

Site Contact

Robert Morgan – 0428814912

Nigel Bucknell – 0458 789 815

Nicola Abrahams – 0429 967 504

Huw Phillips – 0427 402 442

Danny Moses - 0428 928 277 (Secondary Site Contact)

*The delivery day and timeslot is to be arranged the day prior to the delivery. On the day of the delivery or pickup the site contact is to be notified a minimum 1hr before pickup.

Vehicle Route

Vehicles are to only enter and exit site using the route shown in blue.

Vehicle Delivery Restraints

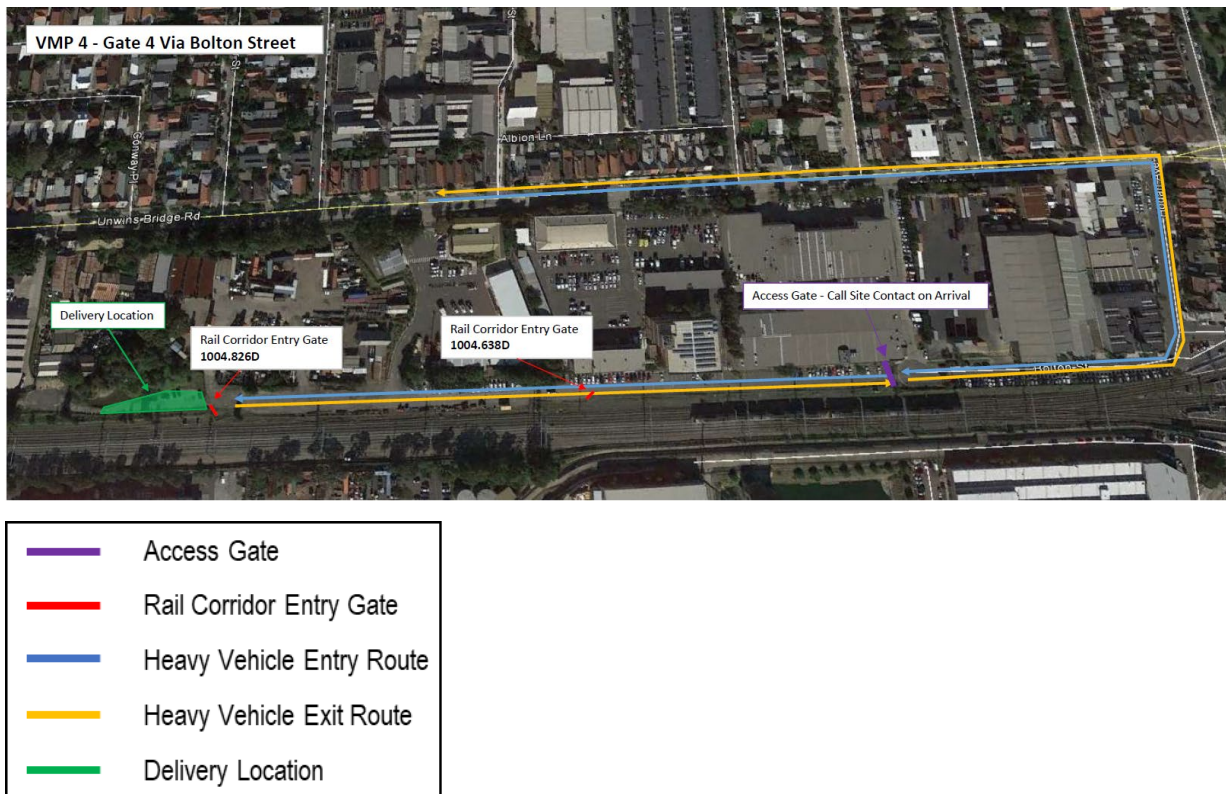
Max Vehicle size = 10m L x 3.2m W x 3m H (4.5T Max Load)

Other Requirements

1) No parking in Geotech Facility or Portuguese Soccer Club for Construction Associated Activities.

2) Shared compound area with Sydney Trains possession. All staff are to be inducted into the Fraser Park project site office

Appendix C-2: Delivery Requirements Gate 4

**Delivery Hours**

7am - 6pm Mon- Friday

8am - 6pm Saturday & Sunday (During Possession Weekend)

Site Contact

Robert Morgan - 0428814912

Danny Moses - 0428 928 277 (Secondary Site Contact)

*The delivery day and timeslot is to be arranged the day prior to the delivery. On the day of the delivery or pickup the site contact is to be notified a minimum 1hr before pickup.

Vehicle Route

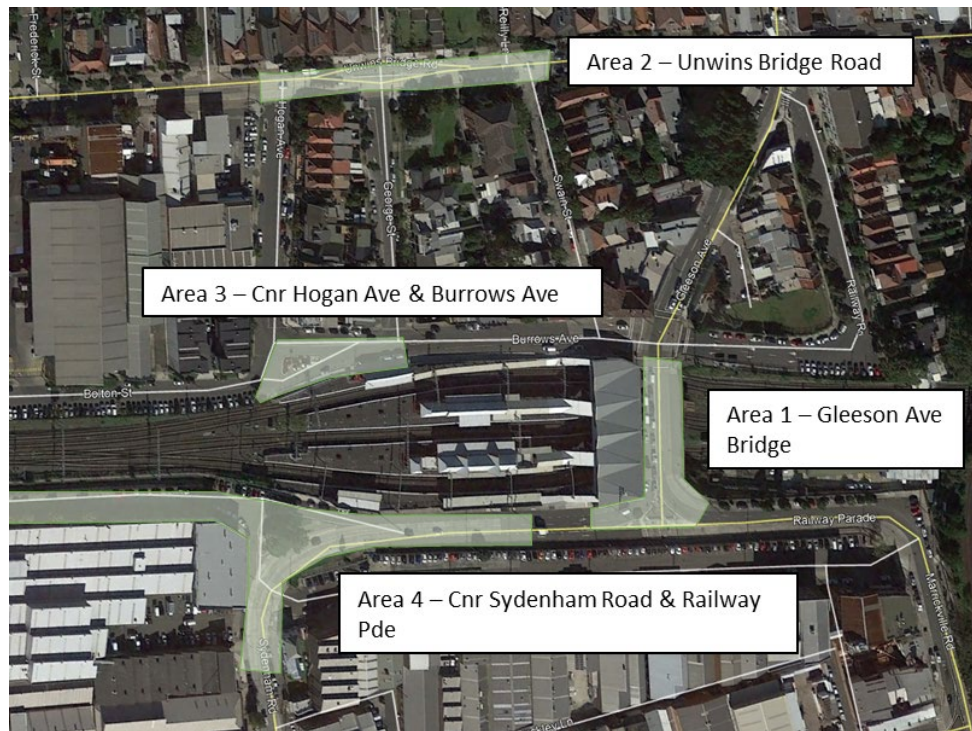
Vehicles are to only enter and exit site using the route shown in blue.

Vehicle Delivery Restraints

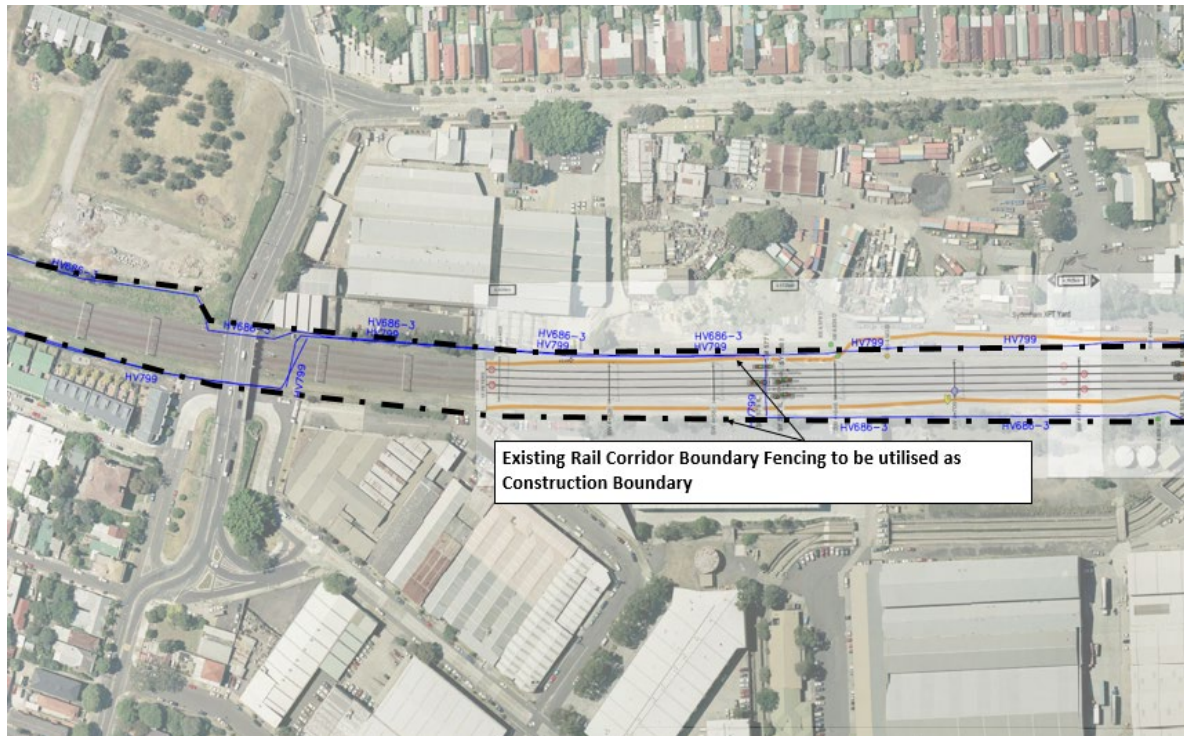
Max Vehicle size = 19m L x 3.2m W x 4.2m H

10.4 Appendix D – Traffic Staging, Site Boundaries and Hoardings

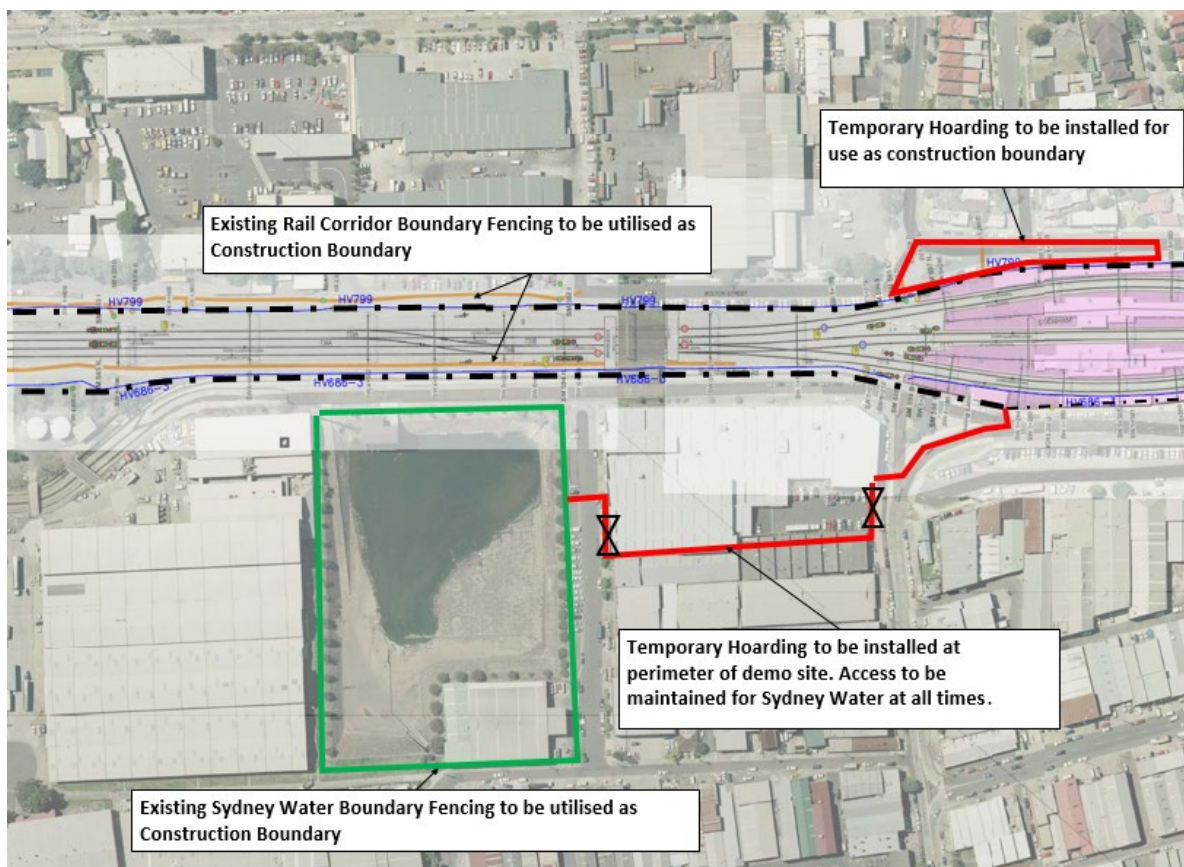
Appendix D-1: Traffic Staging Plans



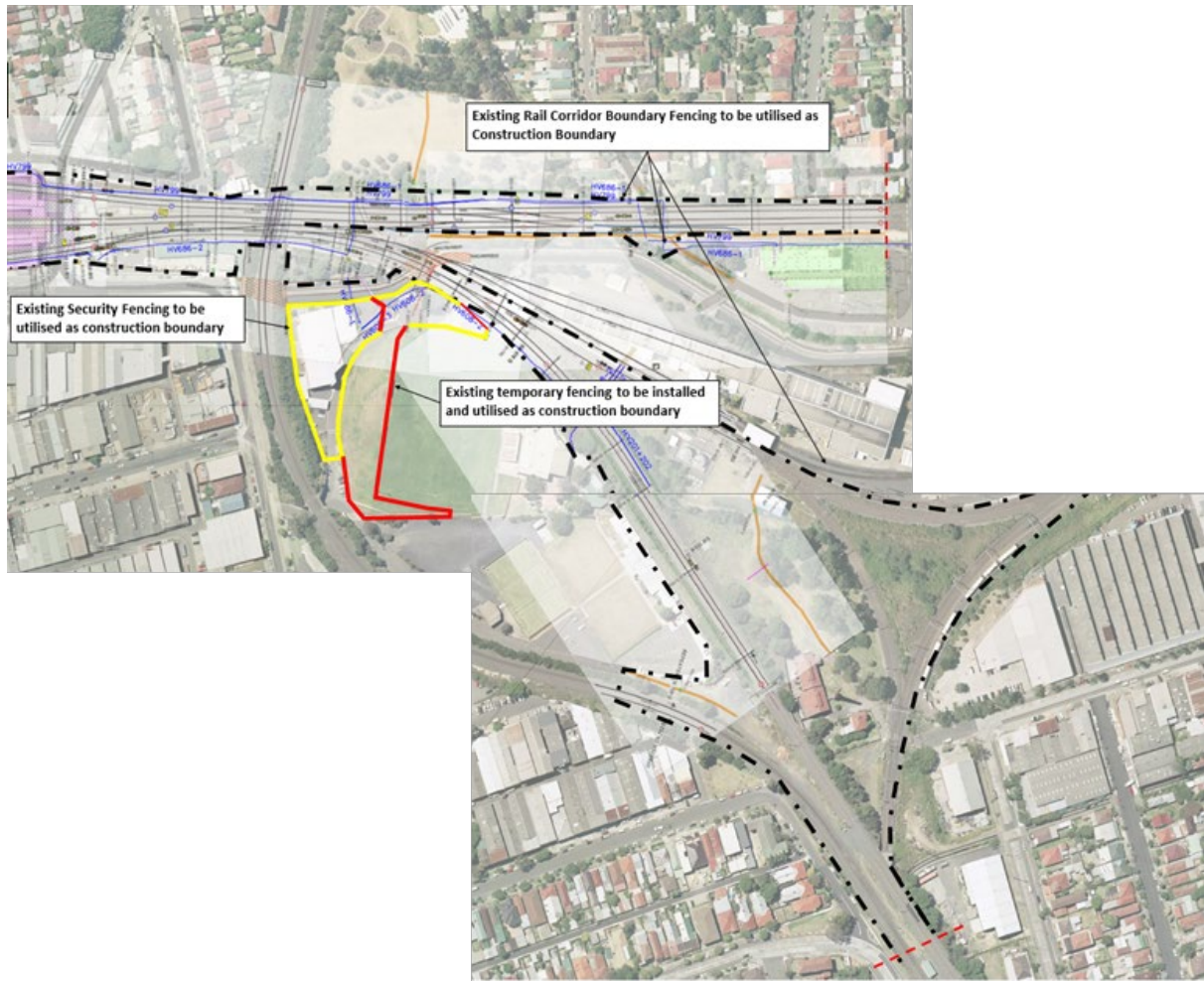
Appendix D-2: Area 1 - Area 1 – Bedwin Road Bridge & TSE



Appendix D-3: Area 2 – City Side of Station & Station Precinct



Appendix D-4: Area 2 – Country Side of Station & Signalling Centre



10.5 Appendix E – Road Safety Audit

A Road Safety Audit was undertaken of the draft of this CTMP on 5 April 2018.

This section is to be completed as RSAs are completed.

Item	Details	JHLOR JV Response	Status
1	Access 1 The swept path appears to be mounting the footpath and raised median near the roundabout and mounting the raised median near the corner of Edinburgh Road/Edgeware Road. It also appears that the swept path will be hitting the existing sign posts. These may result in reduced pedestrian safety and damage to the roadside infrastructure.	Path removed from designated haulage routes	Closed
2	Access 1 The swept path appears to be mounting the raised median near the roundabout and mounting the raised median near the entry of Edinburgh Road. It also appears that the swept path will be hitting the existing sign posts. These may result in reduced pedestrian safety and damage to the roadside infrastructure.	Path removed from designated haulage routes	Closed
3	Access 1 The swept path appears to be mounting the raised median near the roundabout and mounting the raised median near the entry of Edinburgh Road. It also appears that the swept path will be hitting the existing sign posts. These may result in reduced pedestrian safety and damage to the roadside infrastructure.	Path removed from designated haulage routes	Closed
4	Access 1 The existing parking condition frontage to Access 1 does not have any delineation or signage to mark the start/end of the parking area. It would be necessary to ensure that parked vehicles are not within the articulated vehicle manoeuvring path.	TCP marks as restricted parking area. Traffic Controllers to delineate as "No Parking" area	Closed
5	Access 2 and 3 The articulated vehicle reversing arrangement requires the articulated vehicle to reverse from the shoulder of the roadway and enter the roadway in which a vehicle may try to overtake the reversing vehicle. This may lead to vehicular crash.	TCP not required as manoeuvre occurs on private land.	Closed.
6	Access 2 and 3 The existing intersection at Gleeson Ave/Burrows Ave has the right turn banned from Gleeson Ave onto Burrows Ave. Therefore, the proposed manoeuvre as shown on the right is not feasible.	Path removed from designated haulage routes	Closed
7	Access Route 5, 6 and 7 The route for Access 5,6 and 7 overlaps with Access 11 and both routes have separate TCPs. In the instance where TCP of Access 11 is on road, a driver would not have vision of the signs proposed in the TCP for Access 5,6 and 7. This may lead to a forced merge by drivers, especially during commuter peak hours that may result in vehicular crashes.	TCPs are indicative and will be created as required.	Closed

Item	Details	JHLOR JV Response	Status
8	TCP for Access 5,6, and 7 The Traffic controller appears to be conflicting with the bus zone. A driver behind the bus would not have a vision of the traffic controller and the proposed signage, and may not be aware of the temporary arrangement which may be a hazard to other road users.	TCP is indicative, traffic controllers to ensure they stand in an area that allows drivers to have unobstructed view of them.	Closed
9	Access Route 5, 6 and 7 Although the majority of the pedestrians uses the footpath on the northeast side of Marrickville Road, there are pedestrians that prefers to use the other footpath on the southwest side of the road. Therefore, it is critical that the traffic controller manages the pedestrians utilising the footpath as well as traffic entering and leaving the underpass. Especially during night time, the intersection appears to be poorly illuminated and ill-defined.	SMU drivers to be made aware of issues as part of driver training and induction. Pedestrians are to be managed by traffic controllers on site.	Closed
10	Access Route 5, 6 and 7 Vehicles were observed to park at the underpass. Measures to ensure that the area is kept clear would be required to provide adequate manoeuvring area for the articulated vehicle.	TCP is indicative, TCP marks as restricted parking area. Traffic Controllers to delineate as "No Parking" area	Closed
11	Access Route 5, 6 and 7 The ELP at the access to the underpass appears to be very close to the edge of the driveway flare. Swept path appears to be hitting the pole.	Swept path indicates articulated vehicle can navigate without colliding with pole.	Closed
12	Access 11 Inconsistency in CTMP, Figure A-2-8: Access 7 appears to be access 11.	Corrected in CTMP	Closed
13	TCP for Access 11. The point of driver's decision and the taper appears to be too short for vehicles travelling at 50km/h. Drivers may not have adequate time to change lane resulting in a rear end crash or side swipe crash by forcing their way into the adjacent travel lane.	TCP is indicative, taper to be increased in later revisions of TCP.	Closed
14	TCP for Access 11 The proposed sign shows that right and left lane is close ahead, but the existing condition of the road network is that the right and middle lane merges just before the bend. With the impression that both left and right lane close ahead, a driver may try to merge unsafely to the middle lane unsafely.	TCP is indicative, signage to be reviewed in later revisions of TCP.	Closed
15	TCP for Access 11 The lower railway parade is a two-lane two-way road. The proposed sign may be confusing for driver with the impression to drive on the wrong side of the road.	TCP is indicative, signage to be reviewed in later revisions of TCP.	Closed
16	Access 12 The proposed route for access 12 is via Railway Parade and the service road parallel to Railway Parade. The crossway is a high pedestrian desire line to the train station and the service road is a two-lane two-way road. Therefore, this manoeuvre for an articulated vehicle may require more traffic management measures to increase the safety of other road users during the temporary arrangement.	Path removed from designated haulage routes.	Closed

Item	Details	JHLOR JV Response	Status
17	<p>Access 12</p> <p>The manoeuvre to cross Sydenham Road from the service road is not a legal movement. Vehicles exiting the service road are only allowed to do a right movement but to access "Access 12" a slight left turn manoeuvre is required. Pedestrians that crossing the driveway may not be aware of vehicles entering from the service road which may result in collision.</p>	Path removed from designated haulage routes	Closed
18	<p>Access 13</p> <p>It appears that the Garden Street would be a pedestrian desire line towards the station during commuter peak hours (as shown in the figure on the right). Drivers of articulated vehicles utilising this route are required to be aware of the pedestrian activity. The lack of awareness of the pedestrian activity in the area may reduce the safety of pedestrians.</p>	All SMU drivers are to be made aware of major pedestrian routes as part of the driver training and site induction.	Closed
19	<p>Near Access 12</p> <p>There was no TCP to accompany this manoeuvre. It is unclear if the existing parking area will be restricted to allow for this manoeuvre and this is also a pedestrian desire line as mentioned in no.1 Access 13. Therefore, the driver of the truck must be made aware of the pedestrian activity at this area to ensure that the pedestrian safety is not compromised.</p>	Site layout to be updated. Necessity of TCP will be revised once further site details have been developed.	Closed

10.6 Appendix F – Not used

10.7 Appendix G – Schedule of Possessions

The latest schedule of possessions is provided below

Financial Year	Weekend	Date From	Date To	Configuration
2017/2018	15	Saturday, 7 October 2017	Sunday, 8 October 2017	CONFIG. 4
	20	Saturday, 11 November 2017	Sunday, 12 November 2017	CONFIG. 1.
	23	Saturday, 2 December 2017	Sunday, 3 December 2017	CONFIG. 4
	24	Saturday, 9 December 2017	Sunday, 10 December 2017	CONFIG 12
	35	Saturday, 24 February 2018	Sunday, 25 February 2018	Bankstown Line (Includes Flying Junction to Meeks Road on the Illawarra Locals)
	35	Saturday, 24 February 2018	Sunday, 25 February 2018	ARTC
	37	Saturday, 10 March 2018	Sunday, 11 March 2018	CONFIG. 1.
	41	Saturday, 7 April 2018	Sunday, 8 April 2018	CONFIG. 15
	44	Saturday, 28 April 2018	Sunday, 29 April 2018	CONFIG. 4
	48	Saturday, 26 May 2018	Sunday, 27 May 2018	CONFIG 12
	51	Sunday, 17 June 2018	Sunday, 17 June 2018	Bankstown Line
	51	Sunday, 17 June 2018	Monday, 18 June 2018	ARTC
	53	Saturday, 30 June 2018	Sunday, 1 July 2018	CONFIG. 1.
2018/2019				
	2	Saturday, 14 July 2018	Sunday, 15 July 2018	CONFIG. 4
	4	Saturday, 28 July 2018	Sunday, 29 July 2018	CONFIG 15
	5	Saturday, 4 August 2018	Sunday, 5 August 2018	CONFIG 1.(Excludes Central to Hurstville on Illawarra Lines)

8	Saturday, 25 August 2018	Sunday, 26 August 2018	Bankstown Line
8	Saturday, 25 August 2018	Sunday, 26 August 2018	ARTC
10	Saturday, 8 September 2018	Sunday, 9 September 2018	ESR (Including Redfern to Hurstville)
11	Saturday, 15 September 2018	Sunday 16, September 2018	CONFIG 12
20	Saturday, 17 November 2018	Sunday, 18 November 2018	Bankstown Line
20	Saturday, 17 November 2018	Sunday, 18 November 2018	ARTC
21	Saturday, 24 November 2018	Sunday, 25 November 2018	CONFIG 12
23	Saturday, 8 December 2018	Sunday, 9 December 2018	CONFIG 1. (Clear of Lysaghts to Port Kembla)
29	Saturday, 19 January 2019	Sunday, 20 January 2019	CONFIG 4
29	Saturday, 19 January 2019	Sunday, 20 January 2019	Bankstown Line (Clear at Bankstown and Lidcombe to Cabramatta)
29	Saturday, 19 January 2019	Sunday, 20 January 2019	ARTC
36	Saturday, 9 March 2019	Sunday, 10 March 2019	CONFIG 15
39	Saturday, 30 March 2019	Sunday 31 March 2019	CONFIG 1
40	Saturday, 6 April 2019	Sunday, 7 April 2019	CONFIG. 4
44	Saturday, 4 May 2019	Sunday, 5 May 2019	CONFIG. 15
51	Saturday, 22 June 2019	Sunday, 23 June 2019	Bankstown Line
51	Saturday, 22 June 2019	Sunday, 23 June 2019	ARTC

	52	Saturday, 29 June 2019	Sunday, 30 June 2019	CONFIG. 1. (Clear of Lysaghts to Port Kembla)
2019/2020	1	Saturday, 6 July 2019	Sunday, 7 July 2019	CONFIG 12
	7	Saturday, 17 August 2019	Sunday, 18 August 2019	CONFIG. 1 (excludes Coniston to Port Kembla)
	10	Saturday, 7 September 2019	Sunday, 8 September 2019	Bankstown Line
	10	Saturday, 7 September 2019	Sunday, 8 September 2019	ARTC
	16	Saturday, 19 October 2019	Sunday, 20 October 2019	CONFIG. 12
	18	Saturday, 2 November 2019	Sunday, 3 November 2019	CONFIG. 4
	19	Saturday, 9 November 2019	Sunday, 10 November 2019	Bankstown Line
	22	Saturday, 30 November 2019	Sunday, 1 December 2019	CONFIG. 15
	24	Saturday, 14 December 2019	Sunday, 15 December 2019	CONFIG. 1 (Clear of Bondi to Hurstville on Illawarra Lines and Coniston to Port Kembla)
	34	Saturday, 22 February 2020	Sunday, 23 February 2020	Bankstown Line
	34	Saturday, 22 February 2020	Sunday, 23 February 2020	ARTC
	34	Saturday, 22 February 22, 2020	Sunday, 23 February 2020	CONFIG. 4
	36	Saturday, 7 March 2020	Sunday, 8 March 2020	CONFIG. 12
	37	Saturday, 14 March 2020	Sunday, 15 March 2020	CONFIG. 1.
	43	Saturday, 25 April 2020	Sunday, 26 April 2020	Bankstown Line
	43	Saturday, 25 April 2020	Sunday, 26 April 2020	ARTC
	51	Saturday, 20 June 2020	Sunday, 21 June 2020	CONFIG. 4

	52	Saturday, 27 June 2020	Sunday, 28 June 2020	CONFIG. 1(Clear of Bondi to Hurstville on Illawarra Lines and Coniston to Port Kembla).
2020/2021	1	Saturday, 4 July 2020	Sunday, 5 July 2020	CONFIG. 1.
	4	Saturday, 25 July 2020	Sunday, 26 July 2020	CONFIG. 4
	7	Saturday, 15 August 2020	Sunday, 16 August 2020	Bankstown Line
	17	Saturday, 24 October 2020	Sunday, 25 October 2020	CONFIG. 1
	20	Saturday, 14 November 2020	Sunday, 15 November 2020	Bankstown Line
	20	Saturday, 14 November 2020	Sunday, 15 November 2020	CONFIG. 4
	30	Saturday, 23 January 2021	Sunday, 24 January 2021	CONFIG. 1.
	35	Saturday, 27 February 2021	Sunday, 28 February 2021	CONFIG 12
	37	Saturday, 13 March 2021	Sunday, 14 March 2021	Bankstown Line
	42	Saturday, 17 April 2021	Sunday, 18 April 2021	CONFIG. 1.
	47	Saturday, 22 May 2021	Sunday, 23 May 2021	Bankstown Line
	49	Saturday, 5 June 2021	Sunday, 6 June 2021	CONFIG. 4
2021/2022	1	Saturday, 3 July 2021	Sunday, 4 July 2021	CONFIG. 1.
	4	Saturday, 24 July 2021	Sunday, 25 July 2021	CONFIG. 4
	8	Saturday, 21 August 2021	Sunday, 22 August 2021	Bankstown Line
	17	Saturday, 23 October 2021	Sunday, 24 October 2021	CONFIG. 1.
	19	Saturday, 6 November 2021	Sunday, 7 November 2021	Bankstown Line
	20	Saturday, 13 November 2021	Sunday, 14 November 2021	CONFIG. 4

**JOHN
HOLLAND**

10.8 Appendix H – Truck Volumes – NO CHANGE SINCE REV 7

Possession Config No.	Start Date	Finish Date	WE/WK No.	Utilised Access Gates	Est Volumes
Config 12	26/05/2018	27/05/2018	WE48	1,2,3,11	150v/5day
Non - Possession	28/05/2018	16/06/2018		1,2,3,4,5,6,7,11	10v/day
Config BL (Standard)	17/06/2018	17/06/2018	WE51	6,10,11	90v/3day
Non - Possession	18/06/2018	29/06/2018		1,2,3,4,5,6,7,11	10v/day
Config 1 (Standard) All four tracks	30/06/2018	1/07/2018	WE53	2,3,10,11	120v/4day
Non - Possession	2/07/2018	13/07/2018		1,2,3,4,5,6,7,11	10v/day
Config 4	14/07/2018	15/07/2018	WE02	1,11	20v/3day
Non - Possession	16/07/2018	3/08/2018		1,2,3,4,5,6,7,11	10v/day
Config 2 / 15	28/07/2018	29/07/2018	WE04	9,10,11	10v/4day
Non - Possession	30/07/2018	24/08/2018		1,2,3,4,5,6,7,11	10v/day
Config 1 (Reduced) Locals only	4/08/2018	5/08/2018	WE05	10,11	30v/4day
Non - Possession	6/08/2018	24/08/2018		1,2,3,4,5,6,7,11	10v/day
Config BL (Extended)	25/08/2018	26/08/2018	WE08	1,6,10,11	220v/5day
Non - Possession	27/08/2018	7/09/2018		1,2,3,4,5,6,7,11	10v/day
ESR (Extended)	8/09/2018	9/09/2018	WE10	2,3,4	150v/5day
Non - Possession	10/09/2018	14/09/2018		1,2,3,4,5,6,7,11	10v/day
Config 12	15/09/2018	16/09/2018	WE11	1,2,3,4,11	100v/4day
Non - Possession	17/09/2018	21/09/2018		1,2,3,4,5,6,7,11	25v/day
Config 2 / 15	22/09/2018	23/09/2018	WE12	9,10,11	10v/3day
Non - Possession	23/09/2018	17/11/2018		1,2,3,4,5,6,7,11,12,13	25v/day
Config BL (Extended)	17/11/2018	18/11/2018	WE20	1,6,7,10,11	150v/5day
Non - Possession	19/11/2018	23/11/2018		1,2,3,4,5,6,7,11,12,13	25v/day
Config 12	24/11/2018	25/11/2018	WE21	1,2,3,4,6,11	170v/5day
Non - Possession	26/11/2018	7/12/2018		1,2,3,4,5,6,7,11,12,13	25v/day
Config 1 (Extended) ALL 4 TRACKS	8/12/2018	9/12/2018	WE23	1,2,3,4,6,10,11	100v/4day
Non - Possession	10/12/2018	18/01/2019		1,2,3,4,5,6,7,11,12,13	25v/day
Config 4	26/01/2019	28/01/2019	WE30	1,7	20v/3day
Config BL (Extension) + ARTC	26/01/2019	28/01/2019	WE30	1,6,7,8,10,11	250v/5day
Non - Possession	21/01/2019	8/03/2019		1,2,3,4,5,6,7,11,12,13	25v/day
Config 15	9/03/2019	10/03/2019	WE36	1,7	30v/4day
Non - Possession	11/03/2019	29/03/2019		1,2,3,4,5,6,7,11,12,13	25v/day
Config 1 (Standard) All four tracks	30/03/2019	31/03/2019	WE39	1,2,3,4,10,11,7	50v/4day
Non - Possession	1/04/2019	5/04/2019		1,2,3,4,5,6,7,11,12,13	25v/day
Config 4	6/04/2019	7/04/2019	WE40	1,7	40v/4day
Non - Possession	8/04/2019	18/04/2019		1,2,3,4,5,6,7,11,12,13	25v/day

Possession Config No.	Start Date	Finish Date	WE/WK No.	Utilised Access Gates	Est Volumes
ESR (Extended)	19/04/2019	22/04/2019	WE42	3,7	20v/4day
Non - Possession	23/04/2019	3/05/2019		1,2,3,4,5,6,7,11,12,13	25v/day
Config 15	4/05/2019	5/05/2019	WE44	1,7	20v/4day
Non - Possession	6/05/2019	21/06/2019		1,2,3,4,5,6,7,11,12,13	25v/day
Config BL (Extension) + ARTC	22/06/2019	23/06/2019	WE51	1,6,7,8,10	160v/5day
Non - Possession	24/06/2019	28/06/2019		1,2,3,4,5,6,7,11,12,13	25v/day
Config 1	29/06/2019	30/06/2019	WE52	1,2,3,4,7	200v/5day
Non - Possession	1/07/2019	5/07/2019		1,2,3,4,5,6,7,11,12,13	25v/day
Config 12	6/07/2019	7/07/2019	WE01	1,2,3,4,7	150v/5day
Non - Possession	8/07/2019	16/08/2019		1,2,3,4,5,6,7,11,12,13	25v/day
Config 1	17/08/2019	18/08/2019	WE07	2,3,4,7	80v/4day
Non - Possession	19/08/2019	6/09/2019		1,2,3,4,5,6,7,11,12,13	25v/day
Config BL (extension) + ARTC	7/09/2019	8/09/2019	WE10	1,6,7,8,10	350v/7day
Non - Possession	9/09/2019	18/10/2019		1,2,3,4,5,6,7,11,12,13	25v/day
Config 12	19/10/2019	20/10/2019	WE16	1,2,3,4,7	100v/4day
Non - Possession	21/10/2019	TBC		1,2,3,4,5,6,7,11,12,13	25v/day
NEW POSSESSION - OPTION 2 Bankstown - to Marrickville (check isolation) and Locals to Meeks Road	Between WK11-W18 (Sept - Nov) 2019			6,7	160v/4day
Non - Possession	TBC	1/11/2019		1,2,3,4,5,6,7,11,12,13	25v/day
Config 4	2/11/2019	3/11/2019	WE18	1,7	30v/4day
Non - Possession	4/11/2019	8/11/2019		1,2,3,4,5,6,7,11,12,13	25v/day
Config BL (Extension)	9/11/2019	10/11/2019	WE19	1,6,7,10	250v/4day
Non - Possession	11/11/2019	29/11/2019		1,2,3,4,5,6,7,11,12,13	25v/day
Config 15	30/11/2019	1/12/2019	WE22	1	30v/day
Non - Possession	2/12/2019	13/12/2019		1,2,3,4,5,6,7,11,12,13	25v/day
Config 1 (Full)	14/12/2019	15/12/2019	WE24	2,3,4,7	100v/4day
Non - Possession	16/12/2019	23/12/2019		1,2,3,4,5,6,7,8,11,12,13	25v/day
Shutdown Type 1	24/12/2019	27/12/2019		1,6,7,8	350v/7day
Shutdown Type 2	27/12/2019	6/01/2020		1,6,7,8	600v/12day

10.9 Appendix I – Burrows Avenue Traffic and Pedestrian Assessment – NO CHANGE FROM REV 7



Pedestrian Movement RSA

No	Sub heading	Description of required action from Bitzios RSA	Comments JHLORJV	Forecasted close out date	Action owner
1	Alignment of kerb ramps at the pedestrian refuge on Burrows Avenue south of George Street	The kerb ramp on the south side of Burrows Avenue to be constructed in concrete and positioned away from the power pole northeast of the kerb ramp; and	Action close out subject to planned meeting with council 2/11/18 - need to achieve a integrated out come to avoid conflict of temp going to permanent solution	TBC	Metro / JHLORJV
2	Alignment of kerb ramps at the pedestrian refuge on Burrows Avenue south of George Street	The kerb ramp on the north side of Burrows Avenue and the gap in the refuge island are to be adjusted as needed to align with the new kerb ramp on the south side.	Action close out subject to planned meeting with council 2/11/18 - need to achieve a integrated out come to avoid conflict of temp going to permanent	TBC	Metro / JHLORJV
3	Pedestrian crossing point on Hogan Avenue, southeast of Burrows Avenue	Extend a kerb out from the southwest side of Hogan Avenue using Separation Kerb from Saferoads (or similar product) with hazard markers attached facing traffic on Hogan Avenue;	barrier board installed	Closed	
4	Pedestrian crossing point on Hogan Avenue, southeast of Burrows Avenue	On the northeast side of Hogan Avenue, pave the walking surface between the kerb ramp and the existing footpath;	Action close out subject to planned meeting with council 2/11/18 - need to achieve a integrated out come to avoid conflict of temp going to permanent	TBC	Metro / JHLORJV
5	Pedestrian crossing point on Hogan Avenue, southeast of Burrows Avenue	Provide a temporary pedestrian refuge in Hogan Avenue southeast of Burrows Avenue using Rubber Kerbing or Separation Kerb from Saferoads (or similar product). See the swept path analysis on the attached sketch plan for the recommended layout.	Action close out subject to planned meeting with council 2/11/18 - need to achieve a integrated out come to avoid conflict of temp going to permanent solution	TBC	Metro / JHLORJV
6	Pedestrians walking on the road around the barriers on the north side of Burrows Avenue	Keep the water-filled barriers on the eastern corner of Bolton Street/Burrows Avenue intersection to prevent pedestrians crossing to the north side of Burrows Avenue or through the intersection;	No action required - current arrangement agreed	Closed	
7	Pedestrians walking on the road around the barriers on the north side of Burrows Avenue	At the second driveway in Bolton Street (which is used by vehicles less than the first driveway), add a temporary ramp infill to smooth out the upstand at the kerb as an alternative to the kerb ramp on the corner that is blocked by barriers.	Procurement commenced / JV comm's seeking owner of building for driveway access	26/10/2018	AP/BH
8	Pedestrians walking on the road around the barriers on the north side of Burrows Avenue (short term)	Short-term changes (before fencing is erected around the 12 parking spaces at the southwest end of Bolton Street) are as above and: Replace signage T8-3 "USE OTHER PATH" and T8-2 "PEDESTRIANS" at Gate 4 with G6-213-1 (NO PEDESTRIAN ACCESS) and add signs to fence in front of parking spaces directing pedestrians back to cross Bolton Street before the barriers. Install 'No Pedestrian Access' Sign G6-213-1	Procurement commenced / JV comm's seeking owner of building for driveway access	26/10/2018	HP/BH
9	Pedestrians walking on the road around the barriers on the north side of Burrows Avenue(long term)	At the north east end of the new fencing in Bolton Street, add signs facing northeast, T8-3 "USE OTHER PATH" and T8-2 "PEDESTRIANS".	Post WE 20 - when additional parking spaces are taken on Bolton	30/11/2018	HP/BH

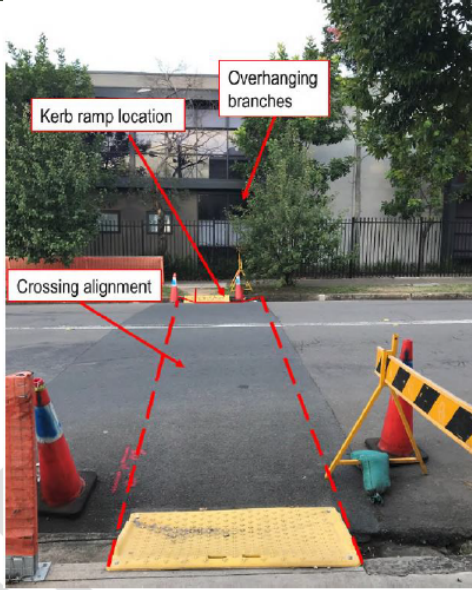
This section summarises the safety issues at the Burrows Avenue crossing location identified during the audit. The audit findings are outlined in **Error!**
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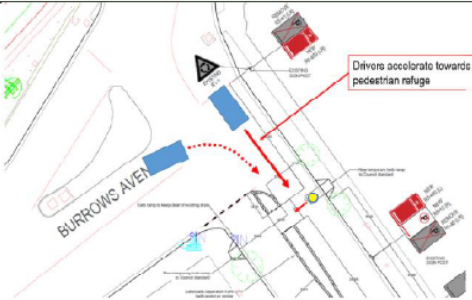
3 Review of JHLOR JV Response

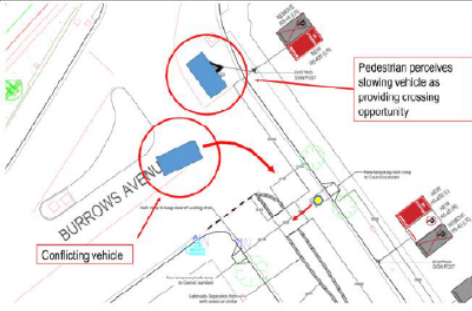
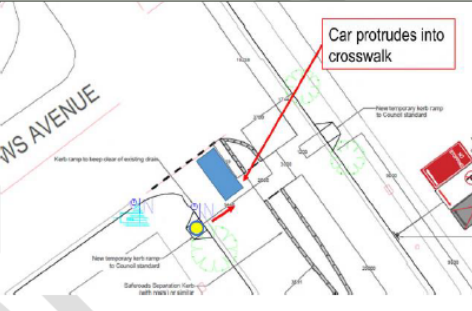
Item	Issue	Risk	Site Illustration	Response	AGJV Review and Response
1	Crossing Alignment The current crossing location and kerb ramp locations do not directly align with one another. Pedestrians unaware of the offset (such as vision impaired or distracted pedestrians) may run into the opposite kerb or roadside objects resulting in injury.	Low		New temporary concrete pram ramps will be aligned.	Agree with response.



2	Kerb Transition Auditors have concerns relating to the transition between the proposed kerb ramp, gutter and road surface on the western side of Hogan Avenue. The cross falls and transitions between each element appear to be abrupt. This may present a trip hazard to pedestrians resulting in an injury. This is particularly dangerous as pedestrian may fall/trip onto the roadway into the path of an approaching vehicle. Wheeled crossing users (i.e. pram, wheelchair) may also have difficulty navigating the crossing at this location.	Medium		Temporary concrete pram ramp will be constructed and asphalt regraded locally as necessary to mitigate this issue.	Agree with response. Regrading to be undertaken to suit DDA compliance i.e. 8 to 1 maximum grade along ramp surface between footway to roadway.
3	Ponding Auditors noted the amount of debris and water present in the gutter at the proposed kerb location on the western side of Hogan Avenue. Ponding of storm water and collection of debris during wet weather may present a slip and/or trip hazard for pedestrians resulting in an injury. This is particularly an issue for mobility impaired and elderly pedestrians.	Low		Temporary concrete pram ramp will be constructed and asphalt regraded locally as necessary to mitigate this issue.	This location is an existing sag point for a large incoming catchment from Hogan Avenue and Burrows Avenue, the ponding of storm water at this location is an existing condition. More frequent maintenance to remove debris to be considered by Council. The proposed solution of epoxy coated steel plate to bridge the sandstone gutter may restrict flow



					<p>and result in additional ponding.</p> <p>Alternative option is the use of a short ACO grated trench drain across the gutter to outlet into the existing channel invert. The existing upstream gutter would need to be regraded for a short length to tie into the trench drain This could be retained for permanent works.</p> <p>Refer to Figure 1 (page 11).</p>
4	<p>Sight Lines</p> <p>Sight lines between drivers approaching from Bolton Avenue and pedestrians on the eastern side of the crossing are poor due to the existing tree north of the proposed kerb ramp. As a result, pedestrians may not see approaching vehicles. Similarly, a driver may not see pedestrians approaching or starting to cross the road. This increases the likelihood of a pedestrian-vehicle collision.</p>	Medium		<p>Trees will be trimmed by IWC maintenance and JHLOR JV. Removal of trees subject to IWC agreement, process to remove trees is as follows under Sydney Metro contract:-</p> <ol style="list-style-type: none"> 1. Arborist Report - 2 weeks 2. Update SMU project tree report with findings from Arborist report – 3 weeks 3. Consistency Assessment to amend project boundary – work zone 	<p>Agree with response.</p> <p>The location of pedestrian crossing is constrained due to existing drainage, trees, pedestrian desire lines and is not feasible to adjust the crossing location to avoid this sightline issue. Additional signage to be installed to warn drivers approaching pedestrian crossing as per response to item 6.</p>


				4. Project ER (Independent Enviro Representative) reviews on behalf of DPE and approves / rejects.	
5	<p>Tree conflict</p> <p>The proposed kerb ramps are to be opposite each other such that the crossway is perpendicular to the kerb. Assuming the western kerb ramp does not move from it's current location (due to proximity to a tree and drainage inlet), the location of the eastern kerb ramp may conflict with branches of the existing tree. This presents a hazard for pedestrians where they may injure themselves by running into overhanging branches. Further, vision impaired pedestrians using canes or other tactile devices may not be aware of the overhanging branches as they are not at ground level.</p>	Low		<p>Trees will be trimmed by IWC maintenance and JHLOR JV to into removal of trees subject to IWC agreement, process to remove trees is as follows under Sydney Metro contract:-</p> <ol style="list-style-type: none"> 1. Arborist Report - 2 weeks 2. Update SMU project tree report with findings from Arborist report – 3 weeks 3. Consistency Assessment to amend project boundary – work zone 4. Project ER (Independent Enviro Representative) reviews on behalf of DPE and approves / rejects. 	Agree with response.

6	<p>Driver Behaviour</p> <p>Due to the priority arrangement at the intersection and the main flow of traffic, drivers from Bolton Avenue have few opportunities to enter the intersection. As a result, drivers were observed to behave in a risky manner and take any opportunity to enter the intersection, including small gaps in traffic. The following issues arise:</p> <ul style="list-style-type: none"> • Drivers may be accelerating excessively to enter the small gap in traffic and therefore be travelling at greater speed towards the pedestrian refuge • Drivers may be pre-occupied avoiding a collision with another approaching vehicle such that they are not aware of a pedestrian already crossing or approaching the crossing. • The likelihood of a vehicle-pedestrian collision is increased as a result. 	Medium		<p>Pedestrian refuge on Hogan Ave reduces the length of crossing for the pedestrians, traffic management to be reviewed / signage on approach to pedestrians refuge improved. I.e. intro of slow signs, pedestrian warning signage coming from Bolton.</p>	<p>Agree with response. Additional signage to be considered to warn drivers from Bolton St approaching the crossing.</p>
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7	<p>Pedestrian Confusion Pedestrians may not be fully aware of the priority arrangement and therefore may be unaware of the vehicle movement that is conflicting with the crossing. A pedestrian may perceive a vehicle slowing down on the approach from Bolton Avenue as providing a crossing opportunity while a vehicle is approaching from Burrows Avenue. This confusion or misperception may increase the likelihood of a pedestrian-vehicle collision.</p>	Medium		<p>Pedestrian refuge on Hogan Ave reduces the length of crossing for the pedestrians, traffic management to be reviewed / signage on approach to pedestrians refugee improved. I.e. intro of slow signs, pedestrian warning signage coming from Bolton.</p>	<p>Agree with response. Additional signage to be considered to warn pedestrians to look towards both Burrows and Bolton.</p>
8	<p>Cars queueing over crossing. It can be expected for a vehicle to overhang into the crosswalk area during busy traffic periods (i.e northbound vehicle giving way to primary vehicle route). Further, pedestrians may be expecting the next vehicle to also stop, which may not be the case (primary movement is left turn into Burrows Avenue, which does not have a conflicting movement). This may increase the likelihood of a pedestrian-vehicle collision.</p>	Low		<p>Cars queuing heading toward Burrows from Hogan will not impact the pedestrians, the left hand turn has priority which is the more frequent movement. Queuing would only be for vehicles heading to Bolton St.</p>	<p>Agree with response.</p>

9	<p>Passenger Drop Off/Pickup</p> <p>Drivers were observed to use the existing No Stopping on the southern kerb near the current pedestrian refuge and at the proposed crossing location to drop off/pick up train station users. Vehicles stopped near this location may block sight lines between approaching pedestrians and drivers, increasing the likelihood of a collision.</p> <p>Vehicles approaching the crossing may also attempt to 'squeeze' past the stopped vehicle, potentially colliding with a pedestrian starting to cross.</p>	Low		Refer revised drawing P3519.004D Issue 004 - blister island detailed to RMS TDT 2011/01a - IWC Park Rangers to attend area and marshal to change behaviour.	Agree with response. Introduction of blister island will assist with prohibiting illegal drop off/pick up in a No Stopping zone.
10	<p>Pedestrian Desire Line</p> <p>Pedestrians were observed to walk from the pedestrian refuge to the eastern kerb on George Street in a diagonal manner as shown. Some pedestrians were observed to not utilise the crossing location and refuge island all together, taking a long diagonal path. Both desire lines increase the crossing time of pedestrians, placing them on the road for a longer period of time and increasing the likelihood of a pedestrian-vehicle collision. Drivers may also not expect a pedestrian at these locations.</p> <p>Further, it can be expected that pedestrians may still follow this desire line in the future (with the proposed pedestrian refuge).</p>	Medium		Review of lux levels – introduce additional lighting as necessary (solar). Mill / resheet locally at pram ramp / refuge location on completion of concrete works.	Response is not relevant to the issue of Pedestrian Desire Lines. It was noted that IWC Park Rangers will attend area and marshal to change behaviour. The appropriate pedestrian crossing facilities have been provided to direct pedestrians safely across Burrows and George St. The only other alternative is to introduce a pedestrian barrier fence east of the crossing to prevent this desire line across to the eastern

					corner of George St. However this may not be practical due to site constraints.
11	Lighting Auditors are concerned about the lighting provided at this crossing location. Only one omni-directional streetlight on a small outreach is observed on the southern kerb and may not sufficiently illuminate the crossing area. This may increase the chance that a pedestrian is not seen by drivers during low light periods (i.e. night), resulting in a vehicle-pedestrian collision.	Medium		Review lux levels in accordance with AS1158.4 or other applicable standard – introduce additional lighting as necessary (solar). Mill / resheet locally at pram ramp / refuge location on completion of concrete works.	Lux survey undertaken at Burrows Road indicated there are low levels of illumination (lux). The proposed street lighting design (in DPK220 & Ausgrid project SC12978) does upgrade the concerned lighting in the area. JHLORJV can construct the proposed street lighting design earlier along the Norther side of Burrows Ave to address this issue.
12	Road Surface Condition The road surface at the crossing location is of poor condition with cracks, ruts, undulations and raised edges within the crossing area, presenting a major trip hazard for pedestrians, particularly the mobility impaired. This may result in an Injury.	Medium		Review lux levels in accordance with AS1158.4 or other applicable standard – introduce additional lighting as necessary (solar). Mill / resheet locally at pram ramp / refuge location on completion of concrete works.	Mill/resheeting would need to be undertaken across the whole crossing length to address this issue, not just at the pram ramp/refuge.

13	<p>The proposed refuge arrangement does not provide kerb buildouts or kerb blisters on Burrows Avenue, particularly on the northern kerbside. A number of issues arise from this:</p> <ul style="list-style-type: none"> • The effective pedestrian crossing distance and crossing time is greater. As a result, some pedestrians may not find a sufficient gap in traffic to cross, and may take more risks to cross in smaller gaps, which may lead to a pedestrian vehicle collision. This is of particular concern for mobility impaired or elderly pedestrians • The longer crossing time means pedestrians are vulnerable to traffic for a longer period of time • To minimise crossing time, it can be expected for pedestrians to wait on the roadway at the edge of the parking lane. This places them closer towards moving traffic without any protective device (kerb or other), which may result in a 'clip' type collision. The length of the no stopping on approach to the refuge (and lack of parked vehicles) may encourage drivers to straddle both lanes, exacerbating the issue above. 	Medium		<p>Refer revised drawing P3519.004D Issue 4 - blister island detailed to RMS TDT 2011/01a on either side new tram ramp. Note widths do not allow a car to stop and allow cars to pass – so No Stopping signage to be retained.</p>	<p>Agree with response, refuge type as per RMS drawing T000962 for two lane, two way with kerb extension to be installed.</p>
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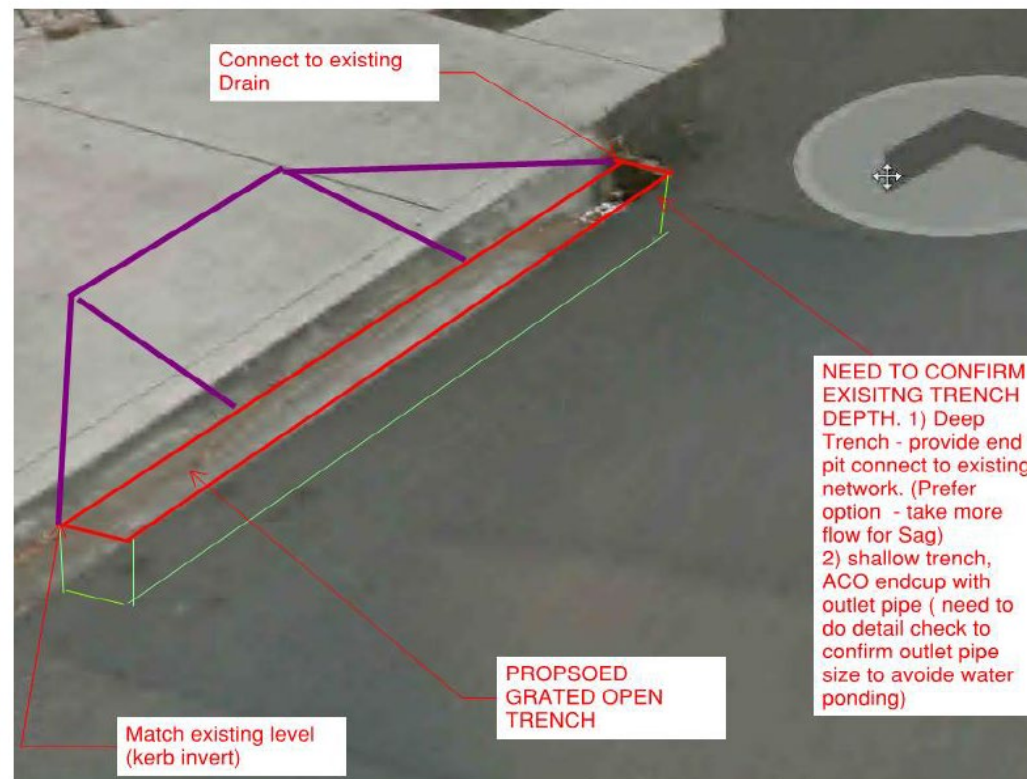
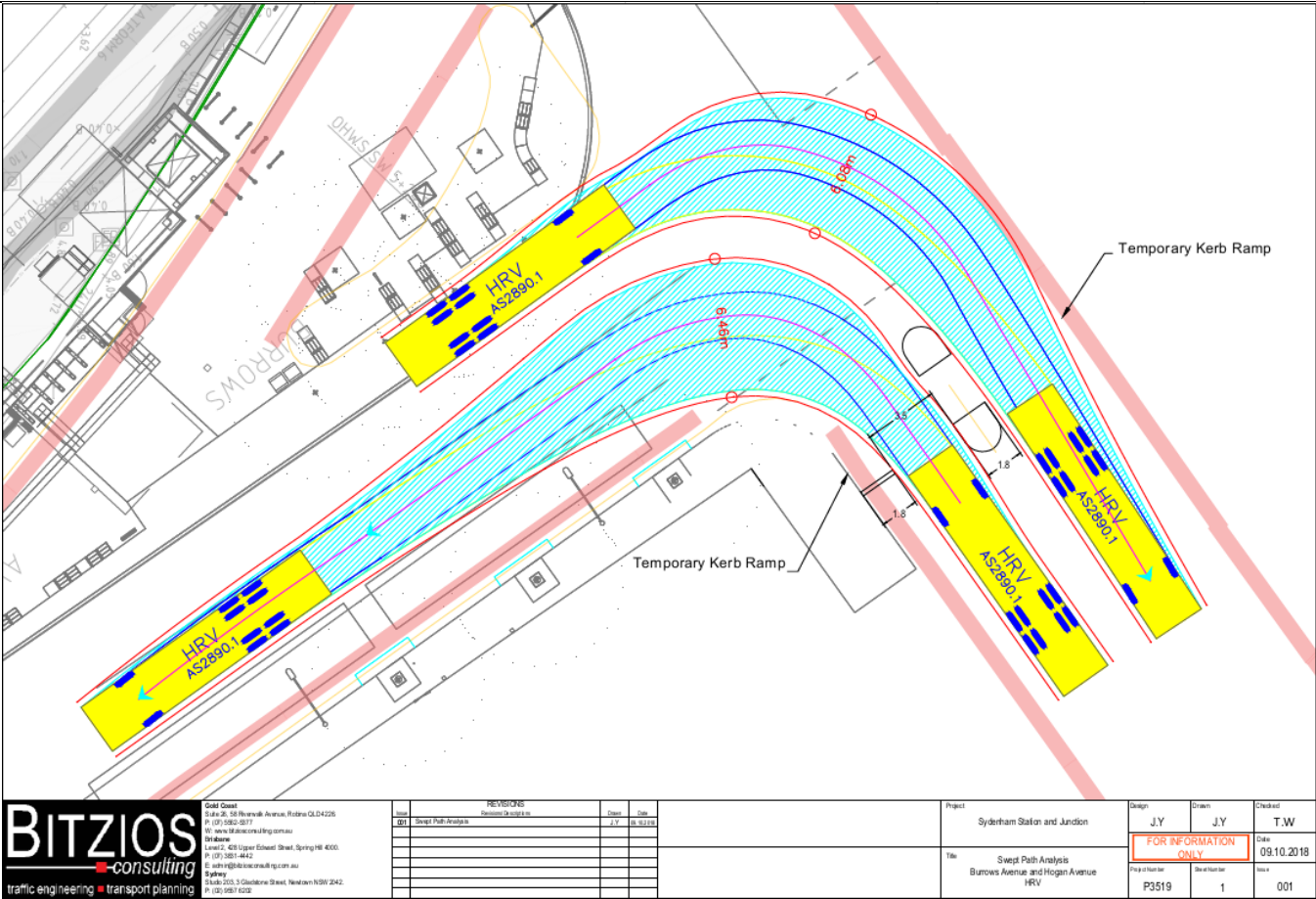
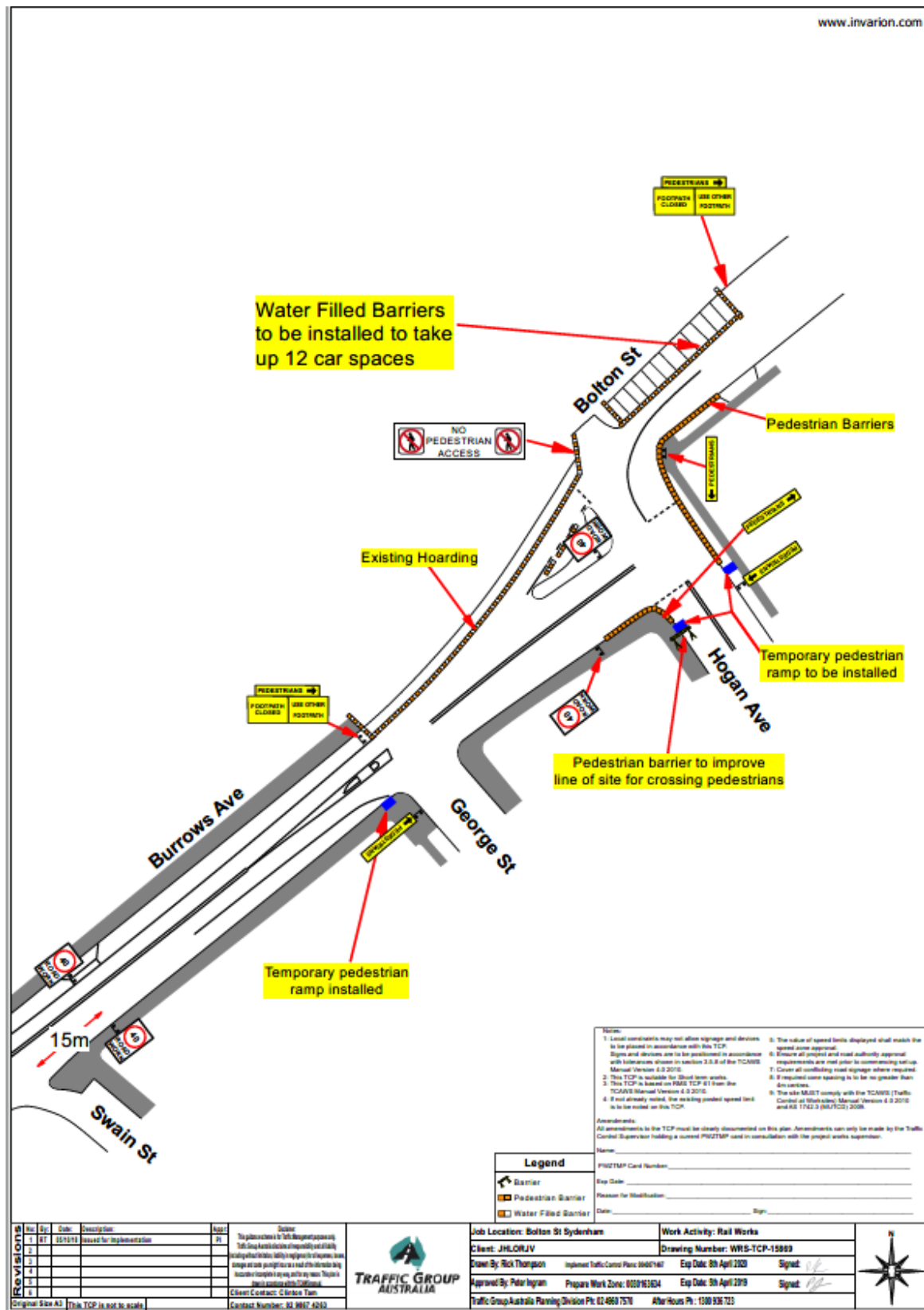


Figure 1 Trench drain (for Item 3: Ponding)

Burrows Avenue Swept Path Assessment



Burrows Avenue Traffic Control Plan



10.10 Appendix J – TCP Register and TCP's

TCP#	LOCATION	FROM	TO	COMMENCING	TRAFFIC CONTROL	WORK	IMPACTS	REV
TGA-TCP-14425	Railway Parade / Northern Plaza	Railway Parade	Railway Parade (40m work area)	Weekend possession	Removal of parking	Standing plant - concrete pump	Minimal impacts to traffic / loss of 10 parking spaces	Rev 4
WRS-TCP-15557	Site set up Fraser Park	100a Marrickville Road	100a Marrickville Road	Aug-18	Removal of road shoulder / pedestrian assistance	Utilities excavation connection to services Road work	No impact to vehicular movements	Rev 4
WRS-TCP-15643	Garden Street	Garden Street	Garden Street (35m work area)	Nov-18	Stop and Go	Construction of Sydney Pit Access Ramp	Minimal impacts to traffic loss of 12 parking spaces	Rev 4
WRS-TCP-15643	Garden Street	Garden Street	Garden Street	Mar-19	Permanent closure of section of Garden Street (construction lease) / road signage and access to gate	Construction Aqueduct	Permanent loss of 75m no impact to traffic as it's a dead end road. Loss of 30 parking spaces	Rev 4

WRS-TCP-15686	Railway Parade	Railway Parade	Sydenham Road	Nov-18	Permanent road closure of this section of Railway Parade	Demolition of 11 Sydney Road Construction of the aqueduct	Permanent closure of this section of road	Rev 4
TGA-TCP-14238	Burrows Avenue	Burrows Avenue	Railway Road (40m work area)	Weekend possession / outside standard construction hours	Removal of parking	Standing plant - concrete pump	Minimal impacts to traffic loss of 15 parking spaces	Rev 4
WRS-TCP-15869	Bolton Street	Bolton Street	Bolton Street	Nov-18	Road signage / Stop and Go when accessing work zone	Construction of Southern Plaza	Minimal impact to traffic / where possible deliveries outside peak	Rev 4
TGA-TCP-15327	Railway Parade / Bedwin Bridge	Railway Parade (Bedwin Bridge)	Railway Parade	Night	Lane closure and stop and Go	Delivery of material / plant into the rail corridor	Minimal impact to traffic as work carried out at night	Rev 4
TGA-TCP-12484	Rail Access gate 2 & 3 Burrows Avenue/Bolton Street (South Plaza)	Burrows Avenue	Bolton Street	When required to access designated rail gate	Stop and Go to manage movements when accessing designated rail access gate	Delivery material/plant into the rail corridor	Minimal impact to traffic / where possible deliveries outside peak	Rev 4
TGA-TCP-12469	Rail access Gate 1 Railway Parade (Bedwin Bridge)	Railway Parade (Bedwin Bridge)	Railway Parade (Bedwin Bridge)	When required to access designated rail access gate	Stop and Go to manage movements when accessing designated rail access gate	Delivery of plant / material into the rail corridor	Minimal impact to traffic / where possible deliveries outside peak	Rev 4
TGA-TCP-13424	Accessing Site compound - Fraser Park Gates 5/6/7	Underpass to Fraser park off Marrickville Road	Fraser Park	As required to access site compound	Stop and Go at underpass off Marrickville Road to manage movements when accessing site compound	Delivery material/plant to site compound	Minimal impact to traffic / where possible deliveries outside peak	Rev 4

TGA-TCP-12475	Accessing Site compound - Fraser Park - Gates 5/6/7	Marrickvillw Road	Fraser Park	As requied to access site compound	Stop and Go - Marrickville Road when accessing site compound - Fraser Park	Delivery material / plant to Fraser Park	Minimal impact to traffic / where possible deliveries outside peak	Rev 4
WRS-TCP-16087	Burrows Avenue	Burrows Avenue intersection Gleeson Avenue	Burrows Avenue intersection Hogan Avenu	December 2018	Lane closure (northern lane)- Stop and Go Assist pedestrians around work zone	Installtion of pedestrian ramp on Burrows Avenue	Moderate impact to traffic	Rev 4
WRS-TCP-16088	Burrows Avenue extension of lane closure to southern lane - vehicle movements managed usign parking lane	Burrows Avenue intersection Gleeson Avenue	Burrows Avenue intersection Hogan Avenue	Dec-18	extend Lane closure to include southern lane - Stop and Go Assist pedestrians around work zone removal of parking	Installtion of pedestrian ramp on Burrows Avenue	Moderate impact to traffic	Rev 4
WRS-TCP-15642 / WRS-TCP-15642#	Hogan Avenue	Hogan Avenue intersection Burrows Avenue	Hogan Avenue	Dec-18	removal of parking	Installtion of pedestrian ramp on Hogan Avenue	Moderate impact to traffic	Rev 4
WRS-TCP-16407 (3 stages for CSR install)	Bolton Street	Bolton St turning circle	Hogan Avenue	Feb-19	Stop Go - removal of parking and waterfilled barrier work zone establishment	CSR install	Parking loss - staged 10 spaces and then 11 spaces	Rev 7

BITZIOS - GATE ACCESS TCP FOR SYDNEY TRAINS GEOTECH	Railway Pde	Marrickville Road	Railway Pde	Feb-19	Coned off area - access managed by 2No traffic control, one for vehicles and one for peds when reversing movement required.	Access to Sydney Trains Geotech building - for maintenance / emergency	loss of 4 parking space	Rev 7
BITZIOS – Sydenham to Bankstown – Sydenham Station HV Crossing Traffic Control Plan – Stage 1: 1 No Lane Occupation Southbound Slow and Parking Burrows Ave (plus footpath)	Gleeson Ave	Gleeson - Burrows Intersection	Gleeson - Burrows Intersection	Feb-19	one lane only under stop/go for through traffic - swept paths have been checked for turning traffic	Trench crossing of Gleeson for 608/2 feeder	lane reduction , pedestrian diversions, steel plates available for temporary reinstatement	Rev 7
BITZIOS - Sydenham to Bankstown – Sydenham Station HV Crossing Traffic Control Plan – Stage 2: Occupy 2 No Southbound Lanes and 1 No Northbound Lane – Stage 2a: (Southbound Closure 3 Lanes)	Gleeson Ave	Gleeson - Burrows Intersection	Gleeson - Burrows Intersection	Feb-19	under stop/go for through traffic - swept paths have been checked for turning traffic	Trench crossing of Gleeson for 608/2 feeder	lane reduction , pedestrian diversions, steel plates available for temporary reinstatement	Rev 7

BITZIOS - Sydenham to Bankstown – Sydenham Station HV Crossing Traffic Control Plan – Stage 2: Occupy 2 No Southbound Lanes and 1 No Northbound Lane – Stage 2b: (Southbound Closure 2 Lanes)	Gleeson Ave	Gleeson - Burrows Intersection	Gleeson - Burrows Intersection	Feb-19	Traffic control under Contraflow - swept paths have been checked for turning traffic	Trench crossing of Gleeson for 608/2 feeder	lane reduction , pedestrian diversions, steel plates available for temporary reinstatement	Rev 7
BITZIOS - Sydenham to Bankstown – Sydenham Station HV Crossing Traffic Control Plan – Stage 3: Occupy 2 No Northbound Lanes and 1 No Southbound Lane Fast plus Footpath – Stage 3a (Northbound Closure 3 Lanes)	Gleeson Ave	Gleeson - Burrows Intersection	Gleeson - Burrows Intersection	Feb-19	one lane only under stop/go for through traffic - swept paths have been checked for turning traffic	Trench crossing of Gleeson for 608/2 feeder	lane reduction , pedestrian diversions, steel plates available for temporary reinstatement	Rev 7

BITZIOS - Sydenham to Bankstown – Sydenham Station HV Crossing Traffic Control Plan – Stage 3: Occupy 2 No Southbound Lanes and 1 No Northbound Lane – Stage 3b (Northbound Closure 2 Lanes)	Gleeson Ave	Gleeson - Burrows Intersection	Gleeson - Burrows Intersection	Feb-19	Traffic control under Contraflow - swept paths have been checked for turning traffic	Trench crossing of Gleeson for 608/2 feeder	lane reduction , pedestrian diversions, steel plates available for temporary reinstatement	Rev 7
WRS-TCP-15633	Railway Pde	Bedwin Rd	Marrickville Rd	23rd Feb 19	Stop / Go to plus lane merge	deliveries	short term access / egress	Rev 7
WRS-TCP-15853	Burrows Ave	Burrows, Bolton and Hogan intersection	Burrows, Bolton and Hogan intersection	Feb-19	Traffic control - intersection under full TC (3No)	Station Concourse construction - off peak weekdays and weekends	short term traffic constraints	Rev 7
WRS-TCP-16661	Railway Pde	Edgeware Rd(Bedwin)	Railway Pde(Bedwin)	23rd Feb 19	Traffic Control - manned gate access	Stop / Go for gate access - infrequent deliveries - off peak and during possession	short term access / egress	Rev 7

BITZIOS - P3519.002D - SYDENHAM TO BANKSTOWN BEDFORD CRESCENT BORING WORKS TRAFFIC CONTROL PLAN BORING OPERATION & PLANT UNLOADING	Bedford Cres	Bedford Cres	Bedford Cres	Feb-26	Removal of parking and lane closure during plant unload	Geotech borehole	parking loss / short term lane reduction	PCTMD
WRS-TCP-16973 WRS-TCP-16974 WRS-TCP-16975	Burrows Avenue	Burrows Avenue	Burrows, Bolton and Hogan intersection	As required to take out slip lane or one lane (Burrows Avenue)	Traffic Control - Contraflow, Stop and Go, assisting pedestrians	Stop / Go for gate access, deliveries, slip lane and one lane for works.	Lane Reduction, pedestrian diversions, slip lane removed.	Rev 8
P3519.003D Ausgrid SC12978 TCPs developed by Bitzios	Sydenham Road Bolton Street Burrows Avenue Hogan Street	N/A	N/A	Late April 2019	Removal of parking, closure of streets and stop/slow around worksite.	Install Ausgrid conduits and cutover network	Parking loss, short term lane loss. Closure of Bolton Street with stop/slow	Rev 8
WRS-TCP-17146	Bolton Street	Hogan Street	Cul-de-sac	May-19	Full road closure	Install Ausgrid conduits and cutover network	Detour through private access road	NA
WRS-TCP-17150	Intersection of Bolton/Hogan/Bu rrows	Bolton/Hogan /Burrows	Bolton/Hogan /Burrows	Jun-19	Full road closure	Install Ausgrid conduits and cutover network	Detour through private access road	NA
WRS-TCP-17151	Hogan Street	Burrows Avenue	Bolton Street	May-19	Single lane closure of Hogan Street	Install Ausgrid conduits and cutover network	Detour through private access road	Rev 8
WRS-TCP-17194	Bolton Street	Hogan Street	Cul-de-sac	May-19	Footpath closure	Install Ausgrid conduits and cutover network	Stop/slow of Bolton Street. Loss of parking on Bolton Street.	Rev 8

WRS-TCP-16945	Way Street	Unwins Bridge Road	Way Street	20-May-19	Traffic Control - deliveries to rail corridor gate	Deliver steel for turnout pre-build	Stop/slow Way Street	Rev 8
WRS-TCP-17400	Bolton Street	Hogan Street	Cul-de-sac	Early July 2019	Close NB lane and keep open 3.2m lane width with stop/slow conditions	Install Ausgrid conduits and cutover network	Stop/slow of Bolton Street. Loss of parking on Bolton Street.	Rev 8
WRS-TCP-17402	Bolton Street	Hogan Street	Cul-de-sac	Early July 2019	Close SB lane and keep open 3.2m lane width with stop/slow conditions	Install Ausgrid conduits and cutover network	Stop/slow of Bolton Street. Loss of parking on Bolton Street.	Rev 8
WRS-TCP-17414 Rev2	Burrows Ave	Gleeson Ave	Burrows Ave	late April 19	Lane Closure / Ped management	Installation of temp protection to Rail boundary	done out with operational buses, left hand turn loss n/s	Rev 8
Type 1 Closure Burrows Ave Lane Closure	Burrows Ave	Gleeson Ave	Hogan Avenue	late April 19	Close EB Lane adjacent to sliplane	Install Precast and lifting works for formwork / falsework	All side roads under stop / go	Rev 8
WRS-TCP-17608	Hogan Ave	Hogan Avenue intersection Burrows Avenue	Hogan Avenue	Late May 2019	Lane closure	Capping and testing of Jemena Gas Pipe	All side roads under stop / go	Rev 8
WRS-TCP-17610	Sydenham Road	Sydenham Rd	Railway Pde	Late May 2019	Shoulder closure	Capping and testing of Jemena Gas Pipe	Shoulder at corner of Sydenham Rd and Railway Pde intersection closed	Rev 8
WRS-TCP-17407	Sydenham Road	Sydenham Rd	Sydenham Road	Mid July 2019	Shoulder closure	HV Feeder 608/3 pole removal	Shoulder at corner of Sydenham Rd and Railway Pde intersection closed	Rev 8

WRS-TCP-17405	Bedwin Road/Railway Pd	Bedwin Road	Railway Pd	Mid July 2019	Temp lane closure	HV Feeder 608/3 pole and wiring removal	Lane closure required	Rev 9
Ferrycarrig 1001	Sydenham Road	Sydenham Road	Sydenham Road	Early July 2019	Lane 2 of 2 closure on Sydenham Road during night shift	Install Ausgrid conduits and cutover network	1 of 2 lanes on Sydenham Road will be closed	Rev 9
Ferrycarrig 1002	Sydenham Road	Sydenham Road	Sydenham Road	Early July 2019	Lane 1 of 2 closure on Sydenham Road during night shift	Install Ausgrid conduits and cutover network	1 of 2 lanes on Sydenham Road will be closed	Rev 9
Ferrycarrig 1003	Sydenham Road	Sydenham Road	Sydenham Road	Late June 2019	Footpath closure on Sydenham Road EB footpath	Install Ausgrid conduits and cutover network	Pedestrians will be moved into the shoulder of Sydenham Road on EB footpath	Rev 9
WRS-TCP-17913	Bolton Street	Botlton St	Hogan Ave	Jun-19	Lane Closure	132kV receival pit	Loss of parking on Bolton St, stop go of traffic.	Rev 9
WRS-TCP-17512	Lower Railway Pde	Sydenham Rd to	Marrickville Rd	WE52 28/7	Parking loss busses - along retaining wall Option	Bussing for tamper	Loss of parking for 120m	Rev 9
WRS-TCP-18024	Lower Railway Pde	Sydenham Rd to	Marrickville Rd	WE52 28/7	Parking loss busses - along Northern kerb line	Bussing for tamper	Loss of parking for 120m	
Ferrycarrig 1074	Sydenham Road	Buckley Street	Railway Parade	Early July 2019	Sydenham Road lane closure	New timber pole for Ausgrid ADSS relocation	Night shift lane closure	Rev 9

Ferrycarrig 1075	Marrickville Road	Gate 11 footpath	Gate 11 footpath	Early July 2019	Remove parking and divert pedestrians - Updated with additional approach sign	Open trenching through footpath for new Ausgrid ADSS conduits	Parking removal and pedestrian diversions through parking area - 3 days	Rev 9 & Rev 10
Ferrycarrig 1072	Lower Railway Pde	Marrickville Road	Buckley Lane	Early July 2019	Marrickville Road lane closure	New timber pole for Ausgrid ADSS relocation	Night shift lane closure	Rev 9
Ferrycarrig 1073	Lower Railway Pde	Sydenham Road	Marrickville Rd	Early July 2019	Footpath closure	New timber pole for Ausgrid ADSS relocation and string new overhead cables	Lane and footpath closure during night shift	Rev 9
Memorandum Addendum to CTMP 9 SMCSWSSJ-JHL-WSS-TF-COR-000001	Burrows	Hogan & Bolton	Gleeson – Burrows Intersection	Oct-19	Mid week lane closure - clarification	Station Concourse construction - reduced traffic flows	Reduced traffic flows	Post Rev 9
WRS-TCP-18105	Way Street, Marrickville	Way Street	Way Street	Jun-19	Way Street/XPT interface	Man XPT centre shunter delivery van	1 x men crew ensuring the XPT movements have priority	Rev 10
WRS-TCP-18334	Sydenham Road	Shirlow Street	Railway Parade	Late June 2019	EB Shoulder closure	Install Level 2 electrical connection to 11 Sydenham Road sheds	Stop/go on footpath for pedestrians	Rev 10

D&D Sydenham Rd EB OW	Sydenham Road	Shirlow Street	Railway Parade	Mid July 2019	EB Lane Closure	Locating and surveying of underground services	Lane closure	Rev 10
D&D Sydenham Rd EB SB	Sydenham Road	Shirlow Street	Railway Parade	Mid July 2019	EB Lane Closure	Locating and surveying of underground services	Lane closure	Rev 10
D&D Hogan Av NB	Hogan Street	Burrows Avenue	Unwins Bridge Road	Mid July 2019	EB/WB Lane Closure	Locating and surveying of underground services	Lane closure	Rev 10
D&D Hogan Ave SB	Hogan Street	Burrows Avenue	Unwins Bridge Road	Mid July 2019	EB/WB Lane Closure	Locating and surveying of underground services	Lane closure	Rev 10
Ferrycarrig 1143	Sydenham Road	Sydenham Road	Marrickville Rd	Late September 2019	Traffic lights manually controlled for 3 nights	Blackout at traffic lights due to ADSS power outage	Traffic lights manually controlled	Rev 10
D&D 15654	Garden Street	Shirlow Street	Railway Pde	Mid Oct 2019	Parking spaces occupied	Storage of materials	car parking occupied	Rev 10
WRS-TCP-18099	Bolton Street	Hogan Street	Private Road	Mid Oct 2019	Lane and shoulder closure. Car spaces taken	Amalgamation of 2 existing TCPs	Car spaces occupied and lane closure	Rev 10
Ferrycarrig 1075	Marrickville Road	Gate 11 footpath	Gate 11 footpath	Early July 2019	Remove parking and divert pedestrians - Updated with additional approach sign	Open trenching through footpath for new Ausgrid ADSS conduits	Parking removal and pedestrian diversions through parking area	Rev 9 & Rev 10
TCP-003A	Burrows Ave	Bolton St	George St	Mid Sept 2019	Lane closure & traffic control	Station Concourse construction - off peak weekdays and weekends	Lane removal and removal of car spaces	Rev 10

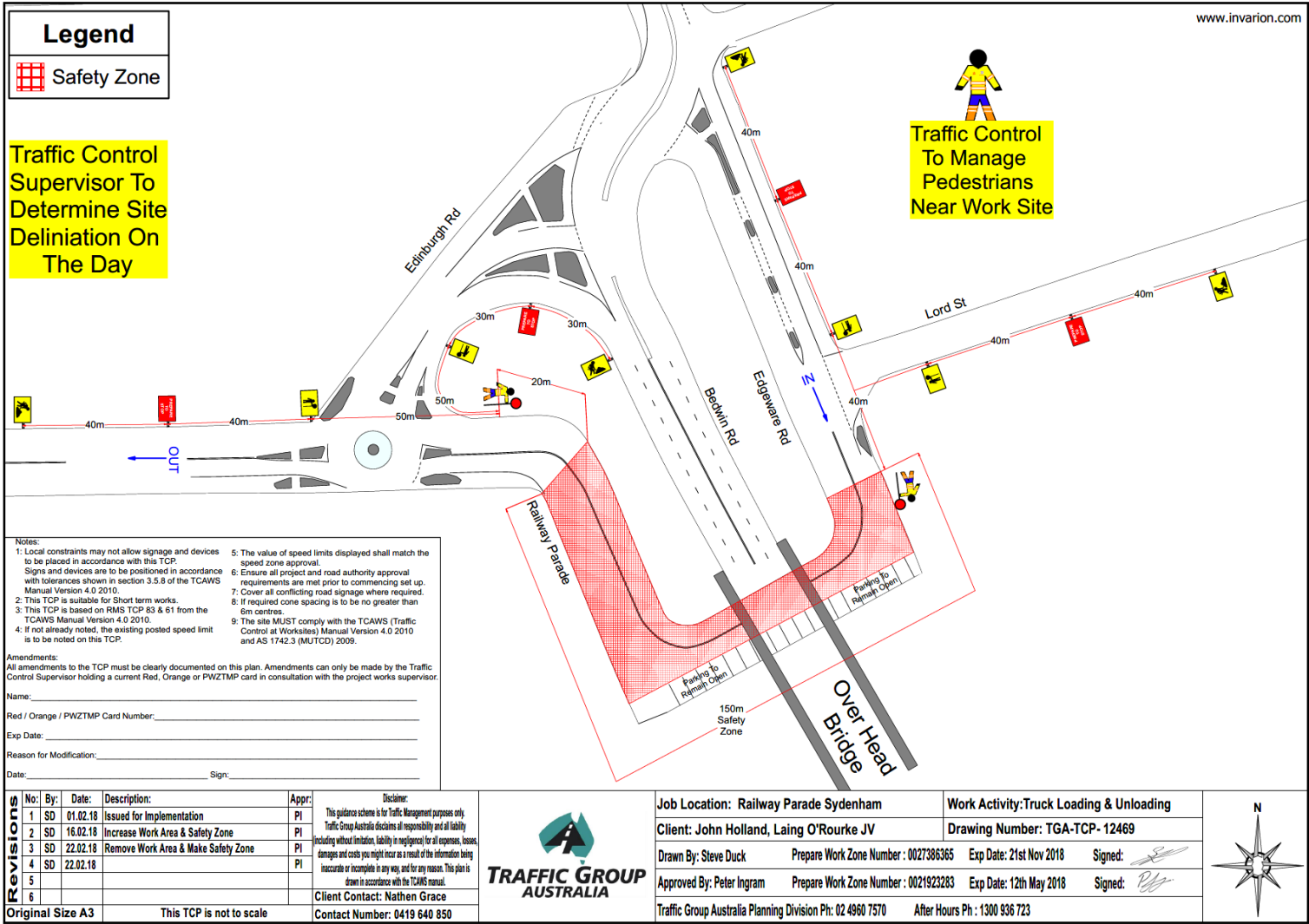
TCP-003B	Bolton Street & Burrows Ave	Bolton St	George St	Oct-19	Lane closure and stop and Go	Amalgamation of 2 existing TCPs	Lane removal and removal of car spaces	Rev 10
TCP-003C	Bolton Street & Private Rd	Bolton St	Private Road	Mid Sept 2019	Lane closure and stop and Go	Rail corridor access	Sholder of road closed	Rev 10
TCP006	Fraser Park (private roads)	Marrickville Rd	Fraser Park	Oct-19	Gate staff and signage to manage truck movments within site	Track material movments to gates 5 & 6	ped path shown for TM's to manage	Rev 11
Ramp plank delivery	Sydenham Rd	Shirlow Street	Lower railway Pde	Oct-19	intermittent stop slow for semi trailer deliviers	deliveris of percast into gate 12A	traffic stopped for no longer than a minute	Rev 11
TCP 104 - 3 (1 of 4)	Sydenham rd	Gate 12	Gate 12	Nov-19	TC to take out parking lane and manage pedestrians	trenching works on footpath (TCS installation)	Parking removed, pedestrians to be managed	Rev 11
TCP 104 – 3 (1 of 4)	Sydenham rd	lower rail Pde	Buckley Lane	Nov-19	TC to take out parking lane and manage pedestrians	trenching works on footpath (TCS installation)	Parking removed, pedestrians to be managed	Rev 11
TCP-008	Way street	Unwins bridge rd	XPT yard	Oct- 19	Update to previous TCP – TC and signage	Deliveries	Stop go for deliveries and school children	Rev 11
TCP 1370	Bolton Street	Bolton St	N/A	Nov - 19	Stop slow, barriers	Trenching for 11KV	Traffic flow	Rev 12
TCP 1371	Bolton Street	Bolton St	N/A	Nov - 19	Stop slow, barriers	Trenching for 11KV	Pedestrians and car spaces	Rev 12
TCP 1372	Bolton Street	Bolton St	N/A	Nov - 19	Stop slow, barriers	Trenching for 11KV	Parking spaces and traffic flow	Rev 12

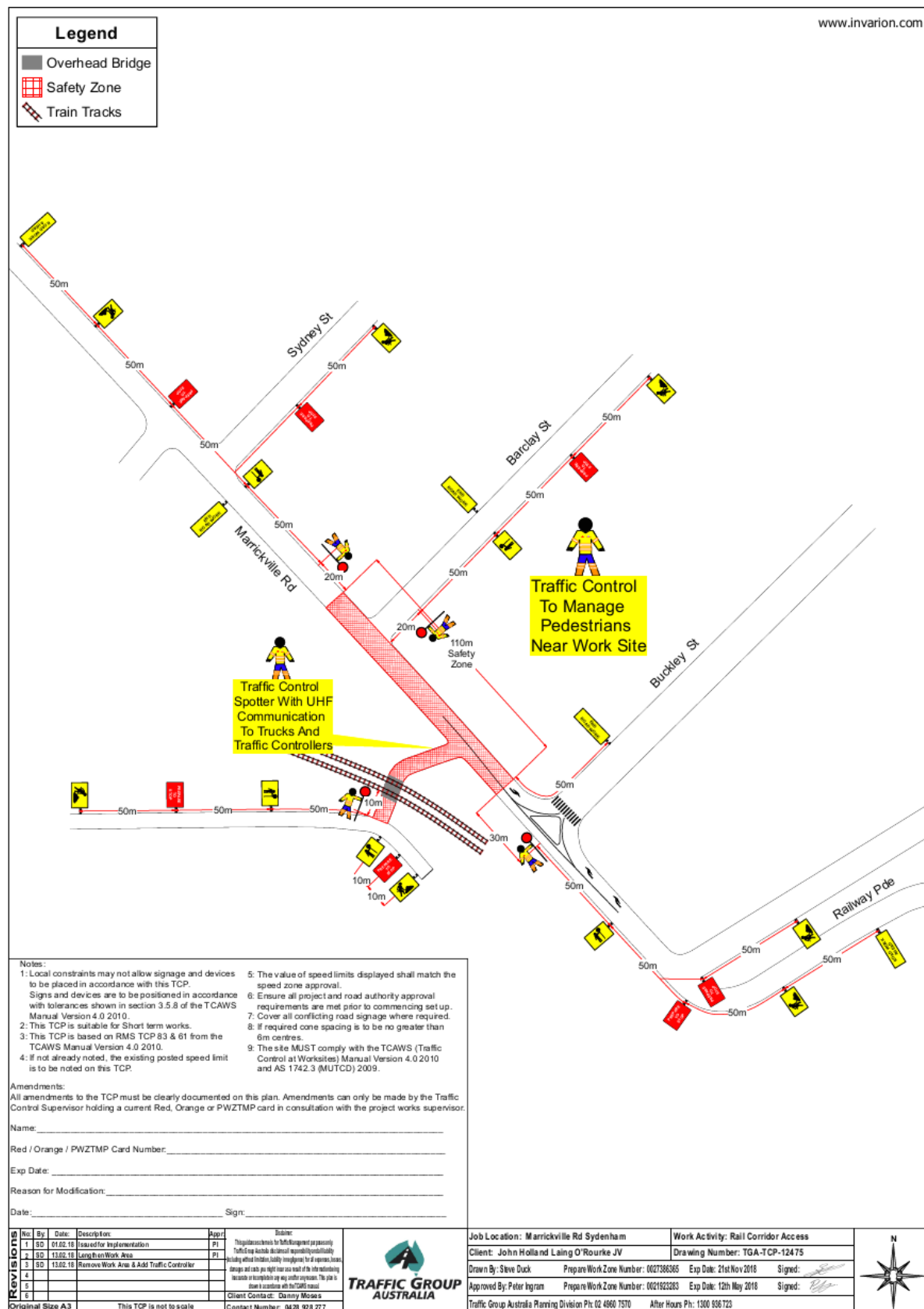
TCP 1373	Bolton Street	Bolton St	Hogan / Burrows	Nov - 19	Stop slow, barriers	Trenching for 11KV	Traffic flow through intersection	Rev 12
TCP 1374	Bolton Street & Hogan	Bolton St	Hogan / Burrows	Nov - 19	Stop slow, barriers	Trenching for 11KV	Nil – in construction site	Rev 12
	Railway Pde	CNR Sydenham Rd	CNR Railway PDE	Nov - 19	Stop Slow, barriers	To establish additional gate and culvert works	Pedestrians to use traffic shoulder	Rev 12
TCP83 - 004	Victoria Rd	Charlotte Ave	Meeks Rd	April - 20	Intermittent stop / slow	Existing rail corridor gate access. Also in endorsed Tranche 1B CTMP	Minor traffic flow	Rev 13
TCP83 - 003	Edgeware Rd	Lord St	Edinburgh Rd round-a-bout	March - 20	Intermittent stop / slow	Corridor Gate relocated to allow for elevated track construction works	Minor traffic flow	Rev 13
TCP83 - 002	Edgeware Rd	Lord St	Darley St	March - 20	Stop slow / lane closure	Overnight sewer inspection	Minor traffic flow	Rev 13
TCP054 - 001	Bedwin Rd	Unwins bridge Rd	Edinburgh Rd	March - 20	Stop slow / lane closure	Overnight sewer inspection	Minor traffic flow	Rev 13
TCP-90	Railway Pde	Sydenham Rd	Marrickville Rd	April - 20	Cover car and stop slow	Services search	Minor traffic flow at night	Rev 14
TCP-091	Burrows Av Southwest bound	George st	Hogan Av	June - 20	Stop slow/ Lane closure	Trenching for Drainage replacement	Minor traffic flow	Rev 14

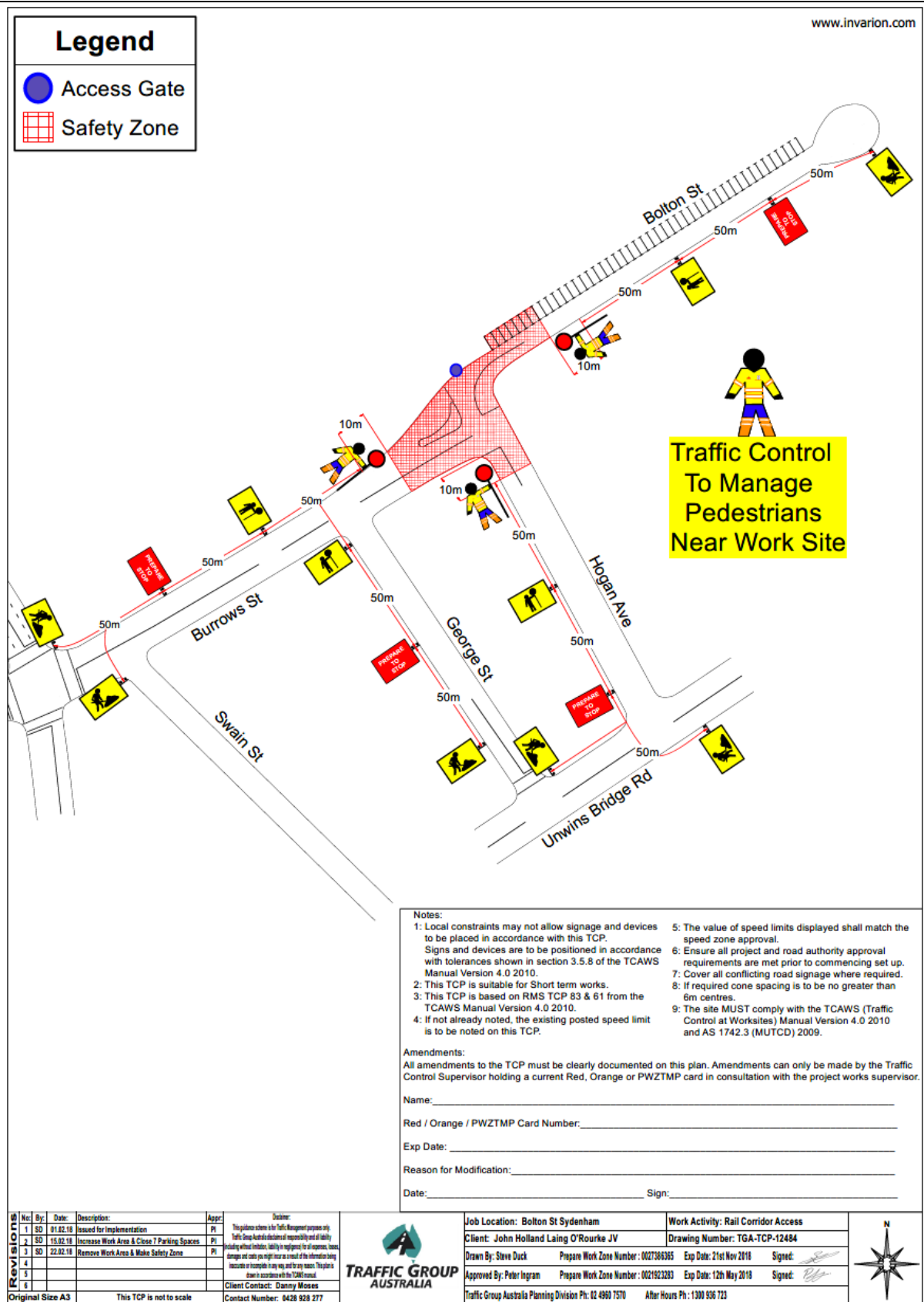
TCP-092	Burrows Av Southwest bound footpath	George St	Hogan Av	June - 20	Ped route onto road. Lane closure stop slow	Trenching for Drainage replacement	Minor traffic flow Alternative ped path	Rev 14
TCP-093	George st Southeast bound	Burrows av	Unwins Bridge rd	June - 20	Stop slow / lane closure	Trenching for Drainage replacement	Minor traffic to George st	Rev 14
TCP-094	George st Northwest bound	Burrows av	Unwins Bridge rd	June - 20	Stop slow / lane closure	Trenching for Drainage replacement	Minor traffic to George st	Rev 14
TCP-096	George st shoulder closure	Burrows av	Unwins Bridge rd	June - 20	Stop slow/ parking removal	Trenching for Drainage replacement	Minor traffic flow Alternative ped path	Rev 14 Updated Rev 17
TCP 61 – Alt access to Geotech yard	Marrickville rd	Railway Pde	Marrickville rd	June - 20	Stop / Slow Removal of car spaces – pedestrian path	Alternative gate location to allow for trenching across the current gate	Loss of two parking spaces and alternative ped path	Rev 16 Updated Rev 17
TCP-097	Burrows Ave	Hogan ave	George st	Aug -20	Stop/ Slow Northern lane closure	Gas underbore works during possession	Traffic flow	Rev 15
TCP-98A	Hogan Ave	Bolton Ave	Unwins bridge road	Aug-20	Stop /slow Northern Lane closure	Gas underbore works during possession	Traffic flow	Rev 15
TCP-98B	Bolton Ave	Hogan Ave	No Through Road	Aug-20	Stop / Slow Lane closure	Gas underbore works during possession	Traffic flow Removal of car spaces	Rev 15
TCP-099	Bolton St	Hogan Ave	Burrows ave	Aug -20	Stop/ slow Southern Footpath closure	Gas underbore works during possession	Traffic flow Alternative ped path	Rev 15 Updated Rev 17

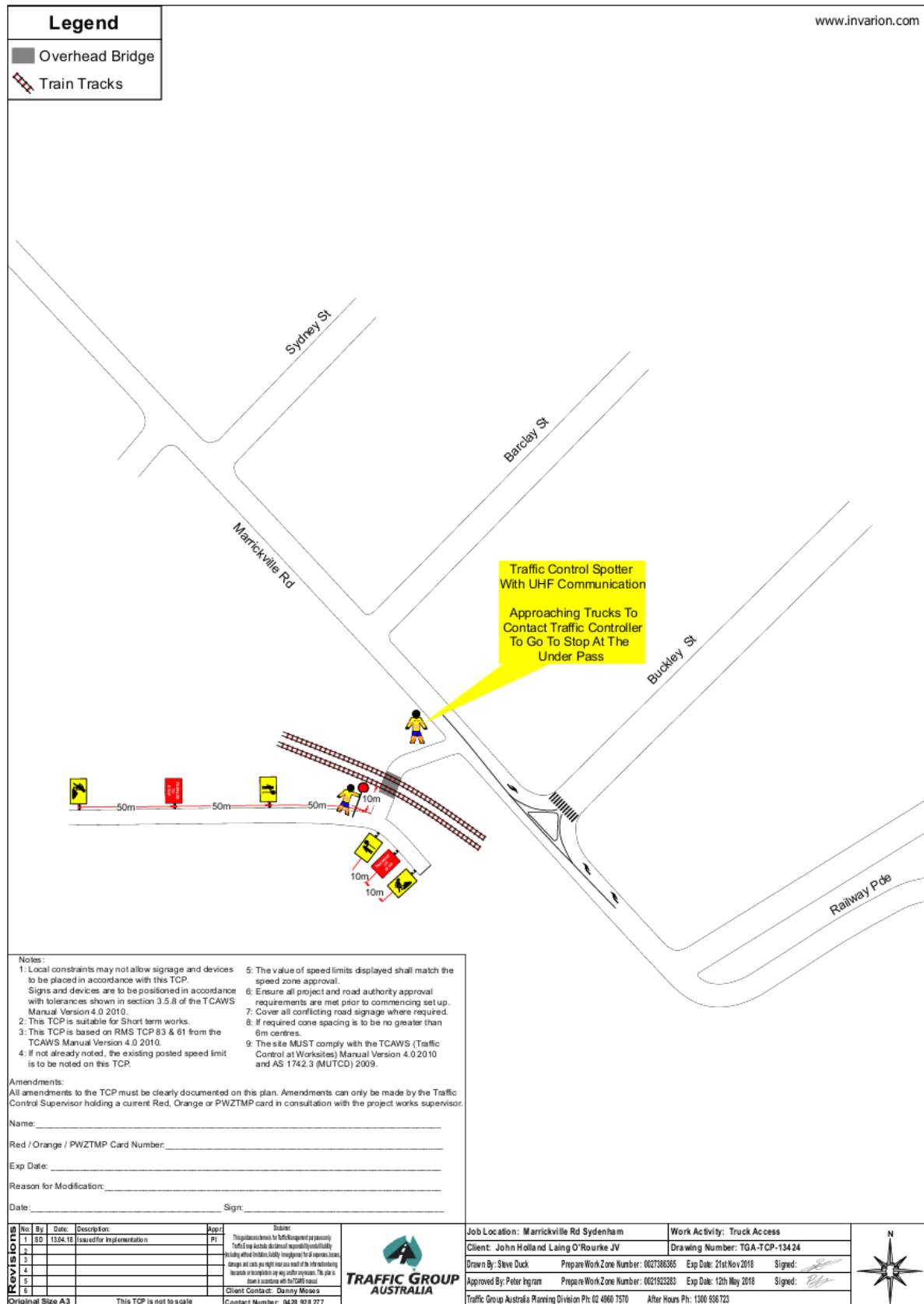
TCP-100	Burrows Ave	Hogan ave	George st	Aug - 20	Stop slow/ parking removal	Gas underbore works during possession	Traffic flow Alternative ped path	Rev 15 Updated Rev 17
TCP 42 May Street	May Street, St Peters	May Ln	Council St	Sept - 20	Part footpath occupation and stop slow	Survey tripod setup on footpath	Minor pedestrian	Rev 16
TCP28 Alt bus layover	Railway Pde	Gleeson ave	Marrickville rd	Aug - 20	Removal of parking spaces	Alternative bus layover location	Parking removed	Rev 16 Update Rev 18
TCP EB	Bedwin Rd	Edgware rd	May st	Dec - 20	Removal of lane Removal of footpath	Installation of concrete barriers and screens	Traffic flow Alternative ped path	Rev 18
TCP WB1	Bedwin Rd	Unwins Bridge rd	Edinburgh rd	Nov - 20	Removal of lane Removal of footpath	Service investigation	Traffic flow Alternative ped path	Rev 18
TCP WB2	Bedwin Rd	Unwins Bridge rd	Edinburgh rd	Dec - 20	Removal of lane Removal of footpath	Installation of concrete barriers and screens	Traffic flow Alternative ped path	Rev 18
TCP Garden St	Garden St	Shirlow St	Railway Parade	Mar – 21	Road Closure	Reconstruction of Roadway	Road Closure	Rev 19
TCP Edgware Rd North	Railway Parade	Edinburgh Rd	Edgware Rd	Mar – 21	Removal of lane Removal of footpath	Install of Screens to Bridge Above	Traffic flow Alternative ped path	Rev 19
TCP Edgware Rd South	Railway Parade	Edgware Rd	Edinburgh Rd	Mar – 21	Stop/ Slow Southern lane closure	Install of Screens to Bridge Above	Traffic flow Alternative ped path	Rev 19

TCP Burrows Ave Footpath	Burrows Ave	Swain St	Hogan Ave	Feb – 21	Parking Lane Closure Pedestrian Diversion	Footpath Remediation Works	Alternative ped path	Rev 19
TCP Lord St	Lord St	Edgeware Rd	John St	Oct – 21	Stop/ Slow	Gate access into rail corridor	N/A	Rev 20



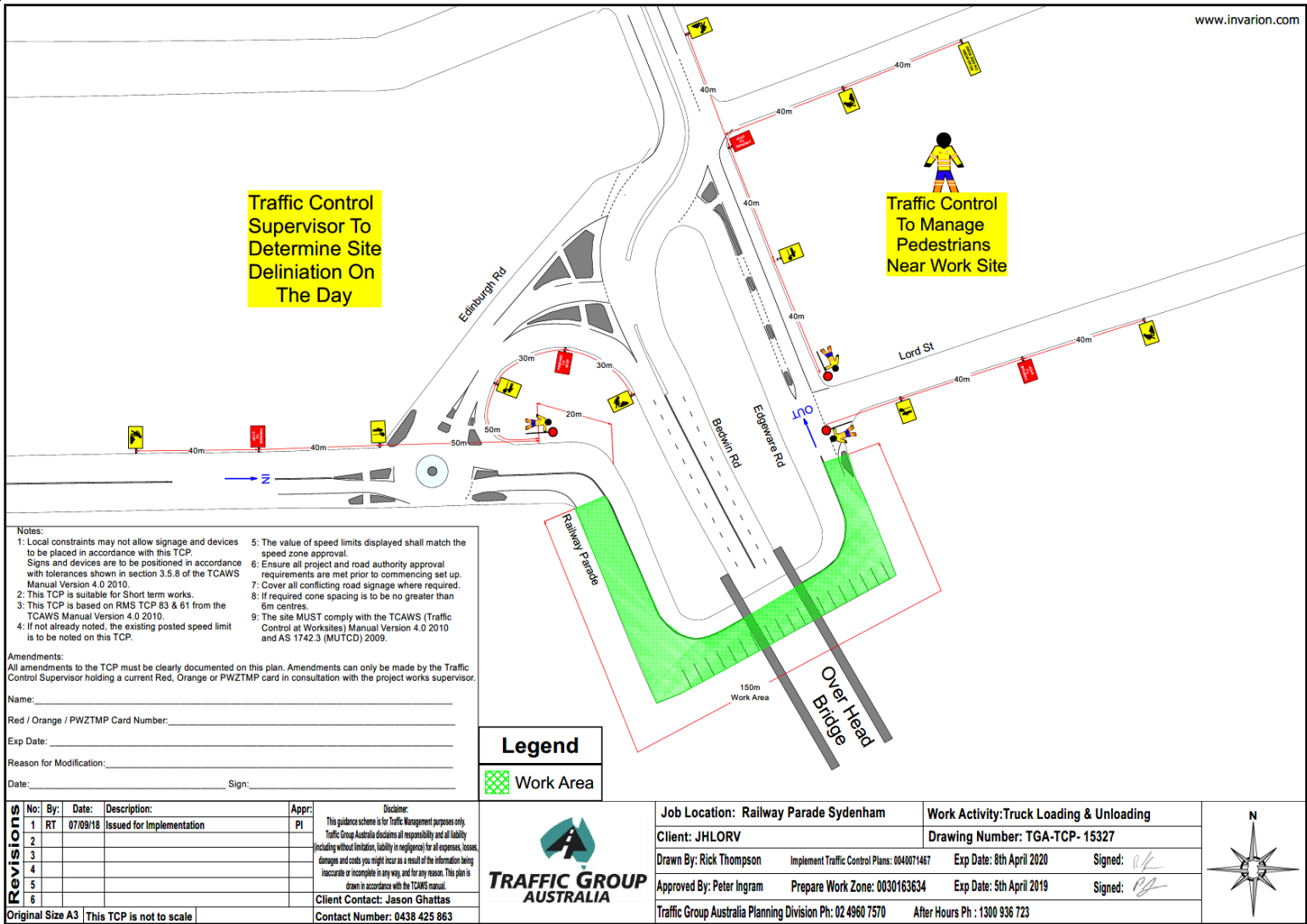


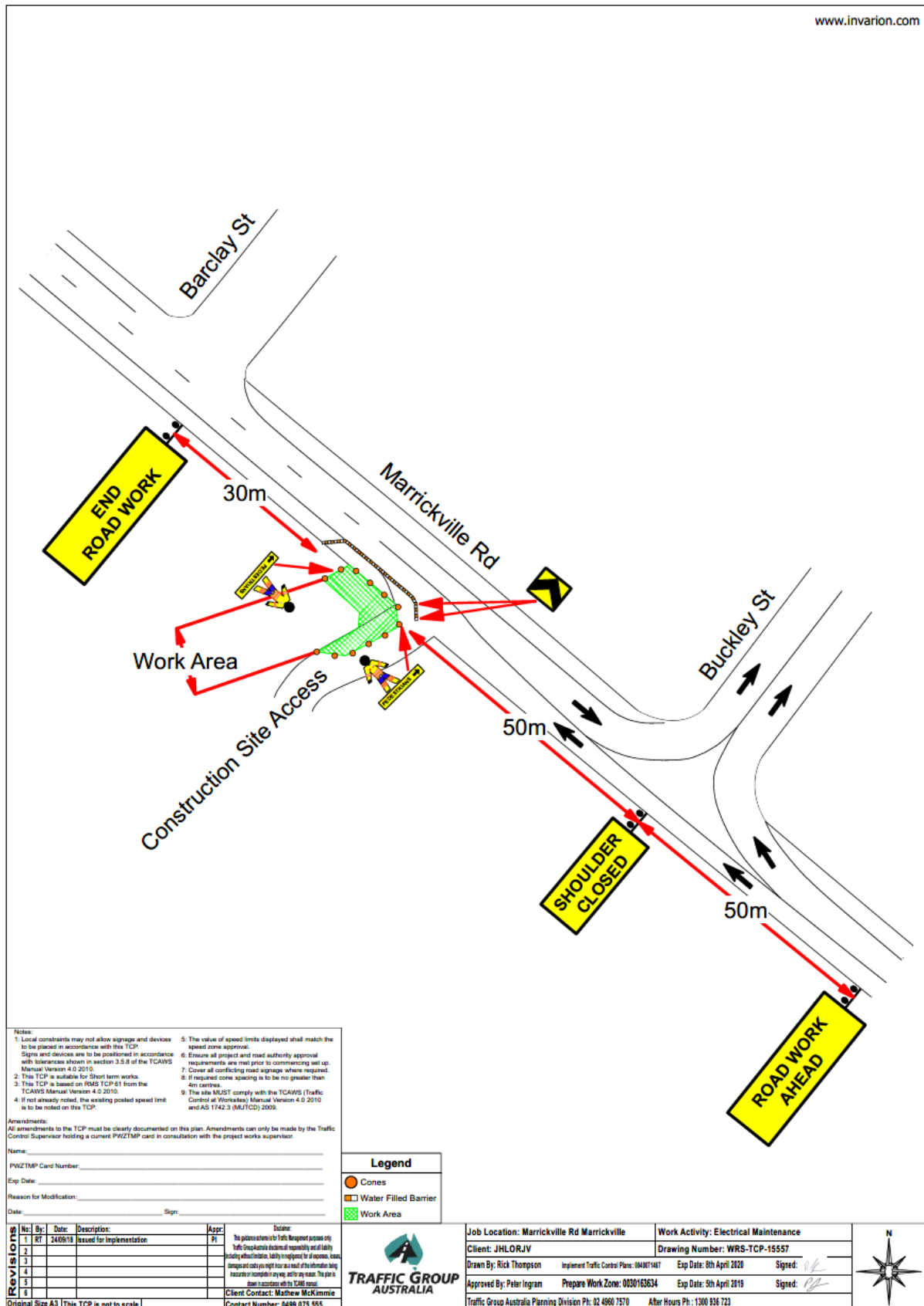


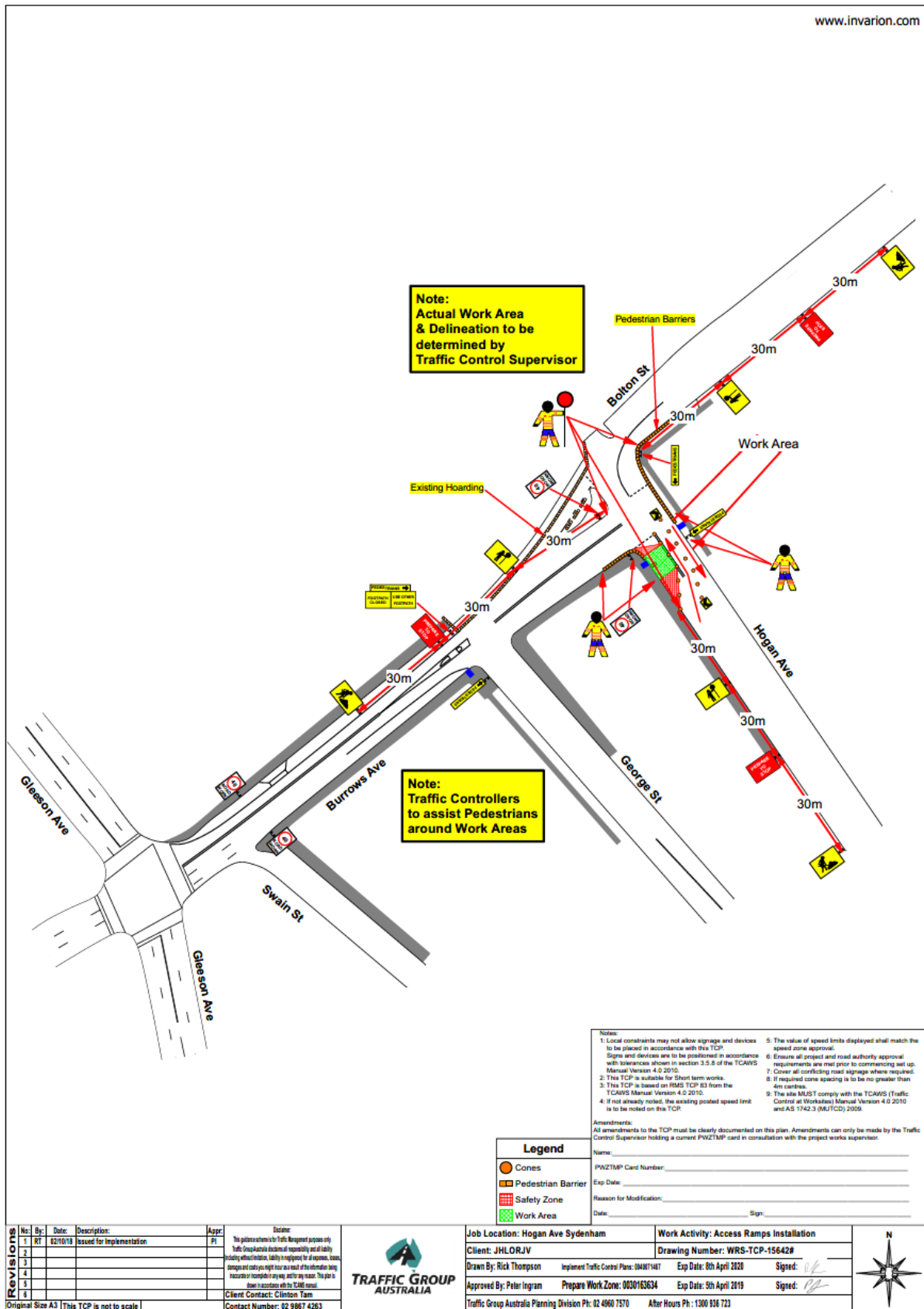




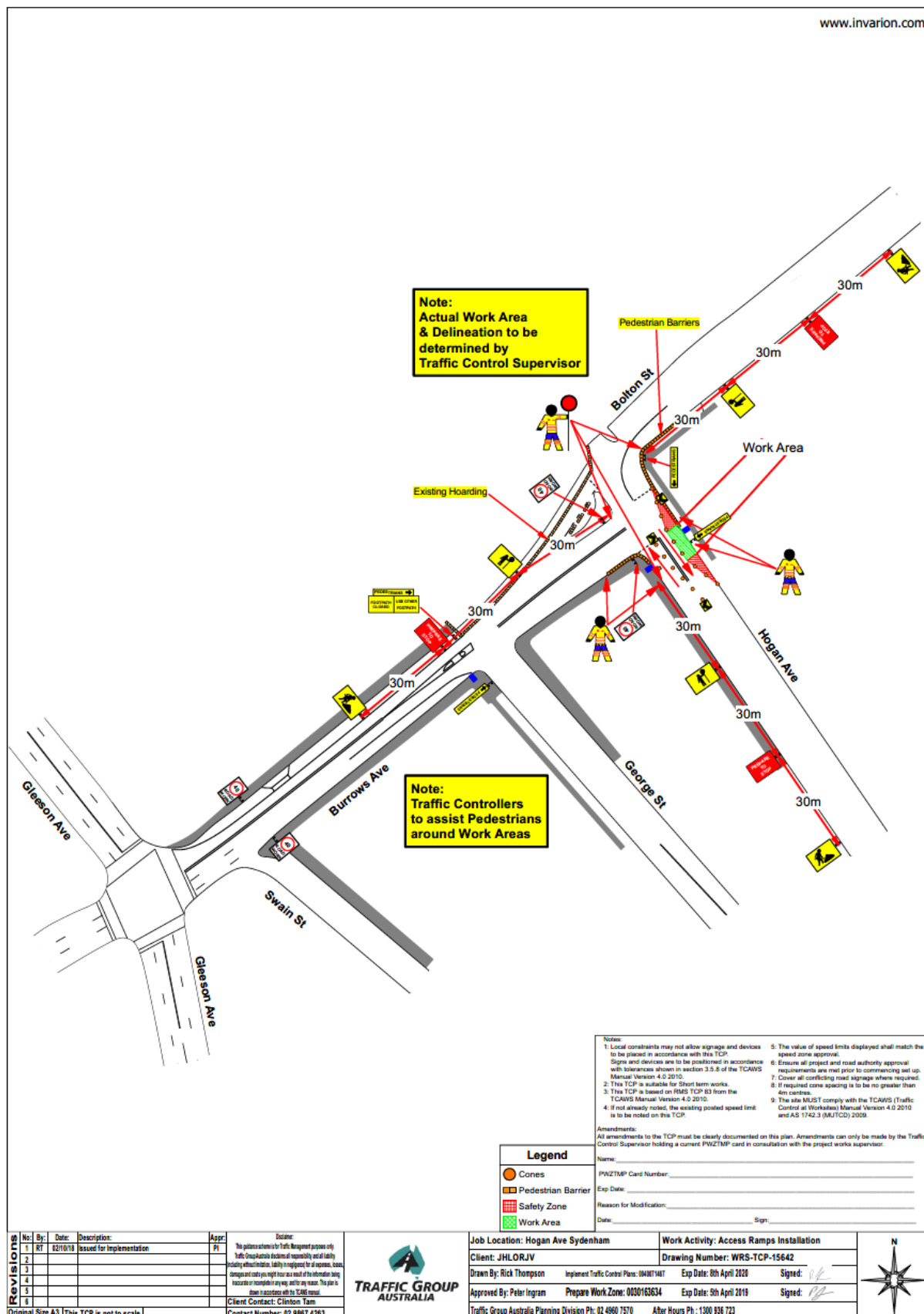




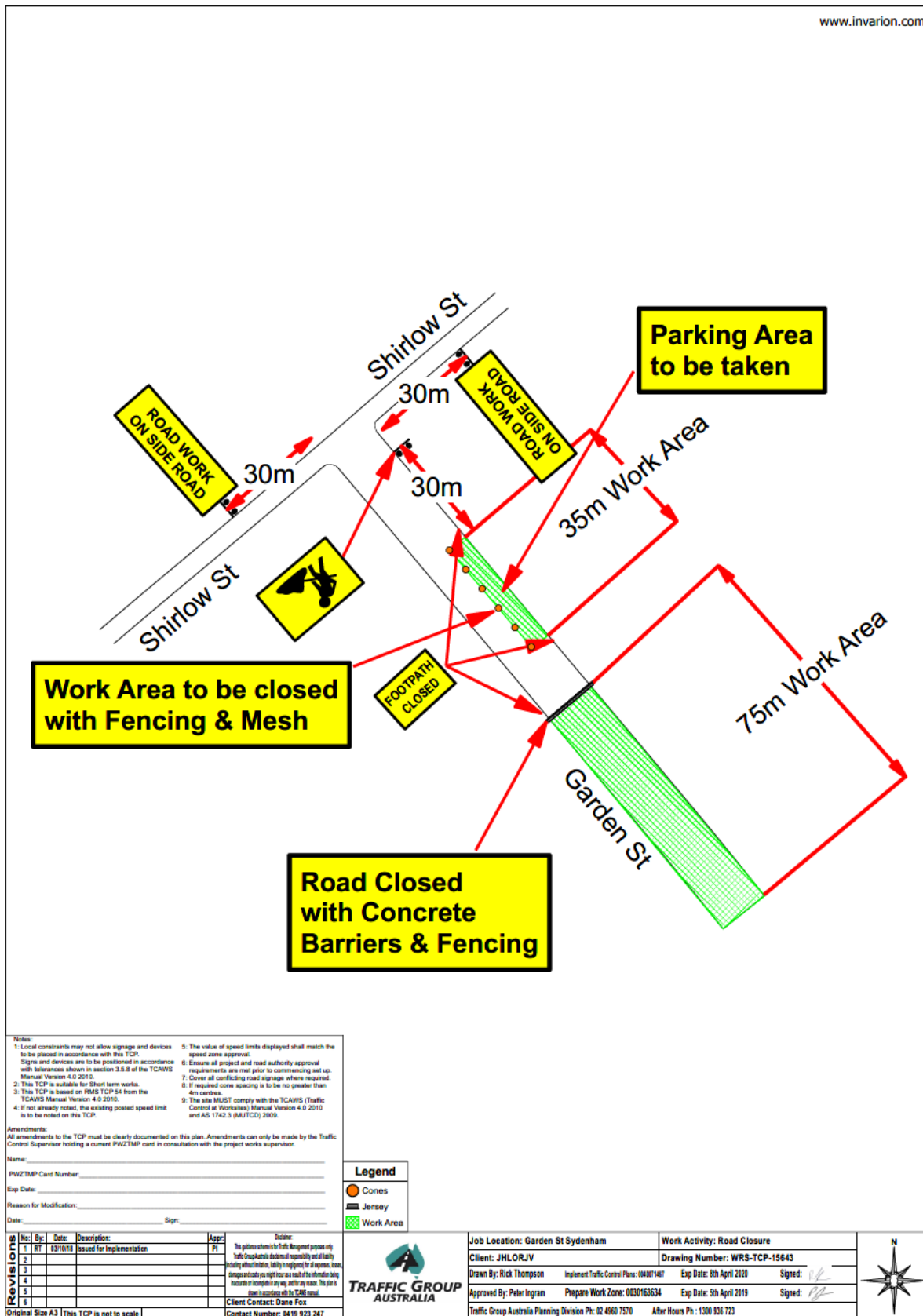


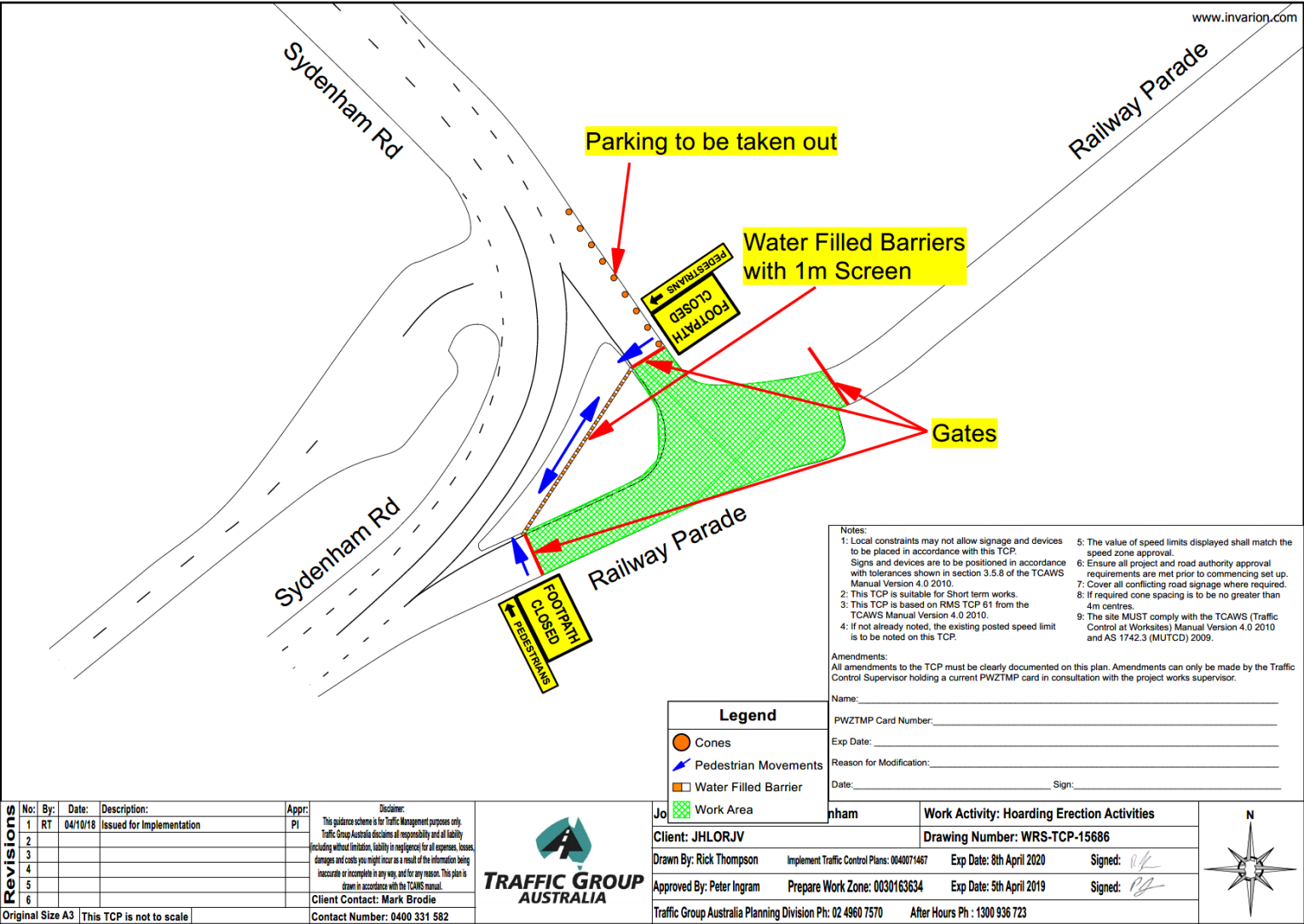


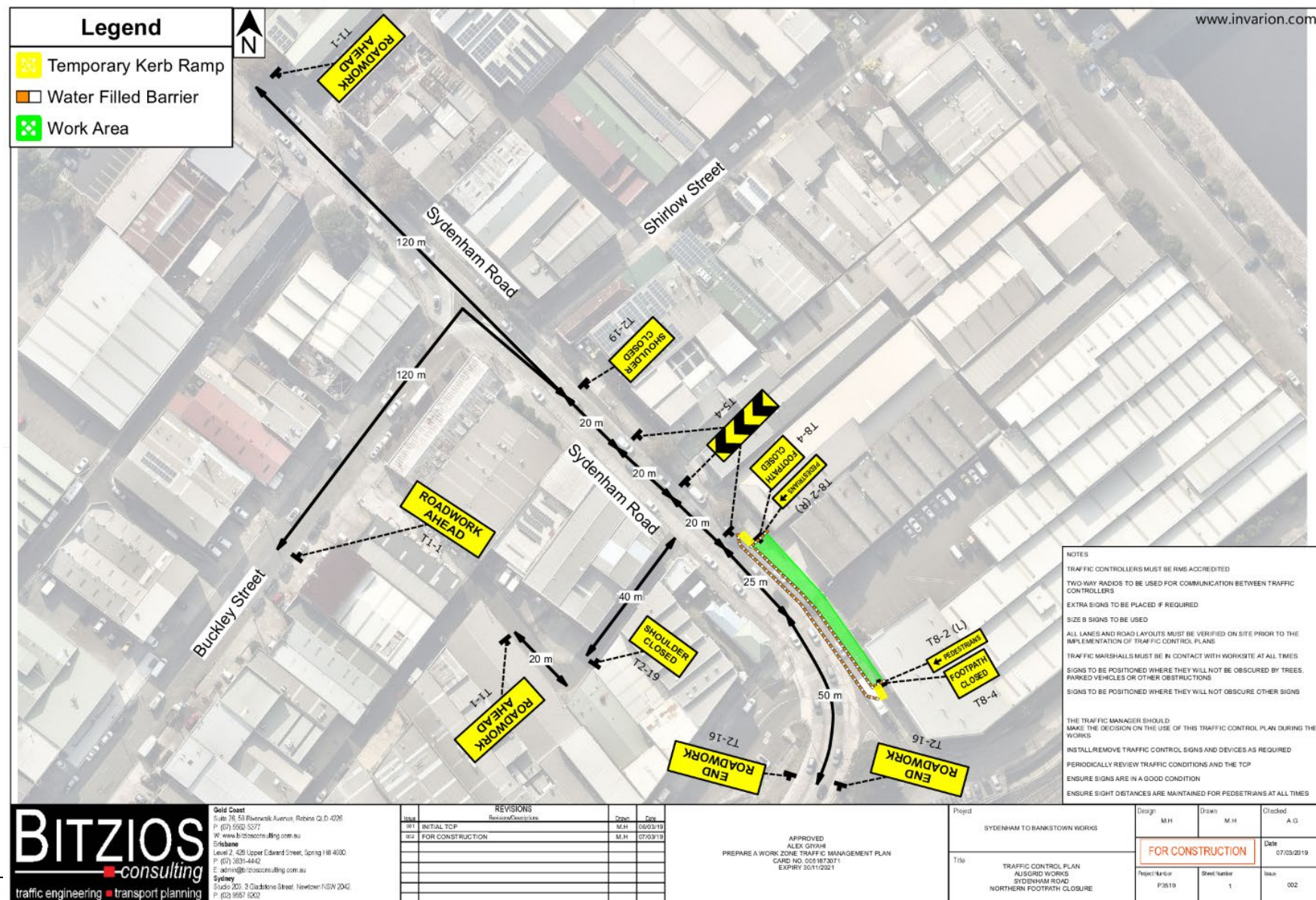
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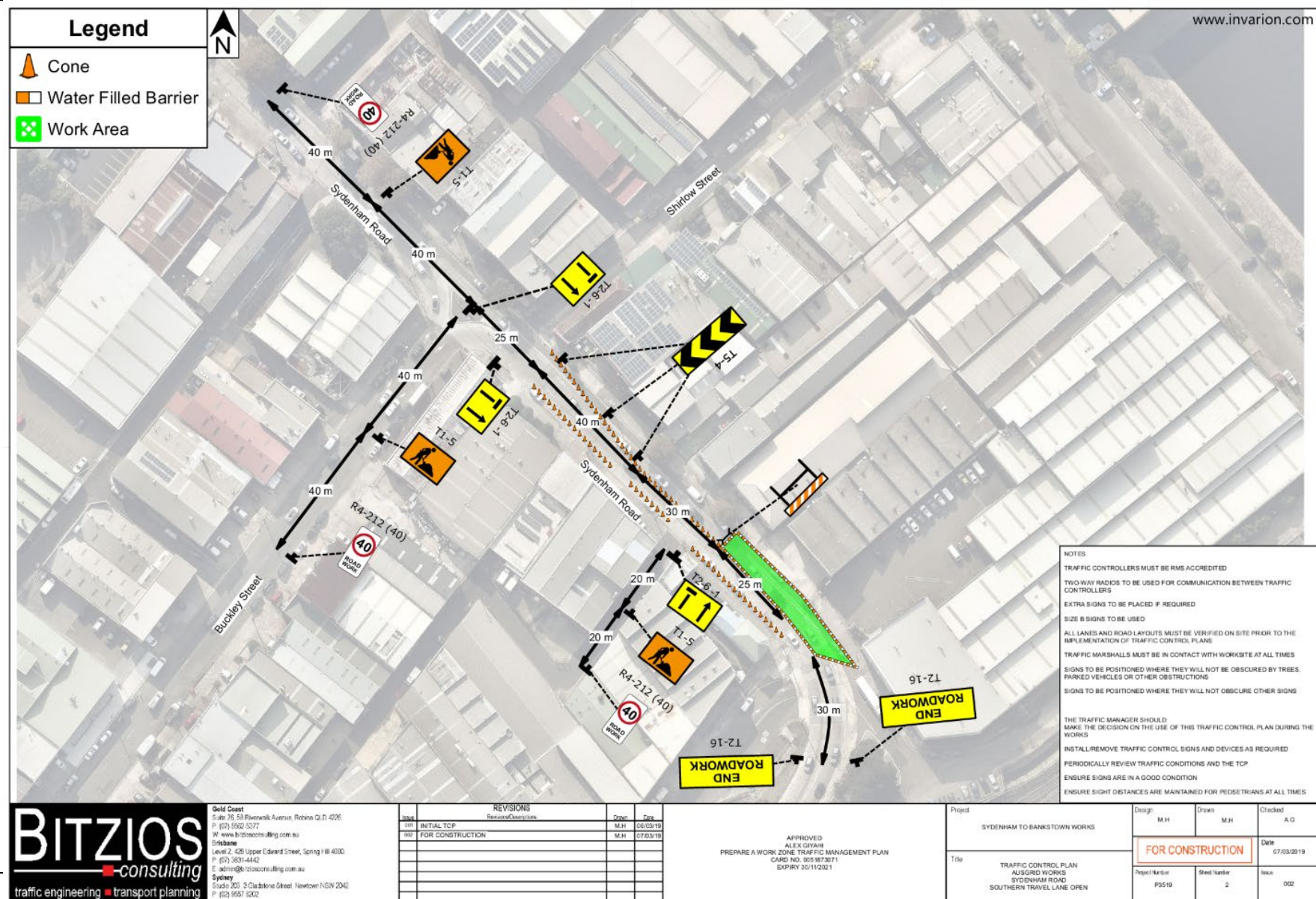


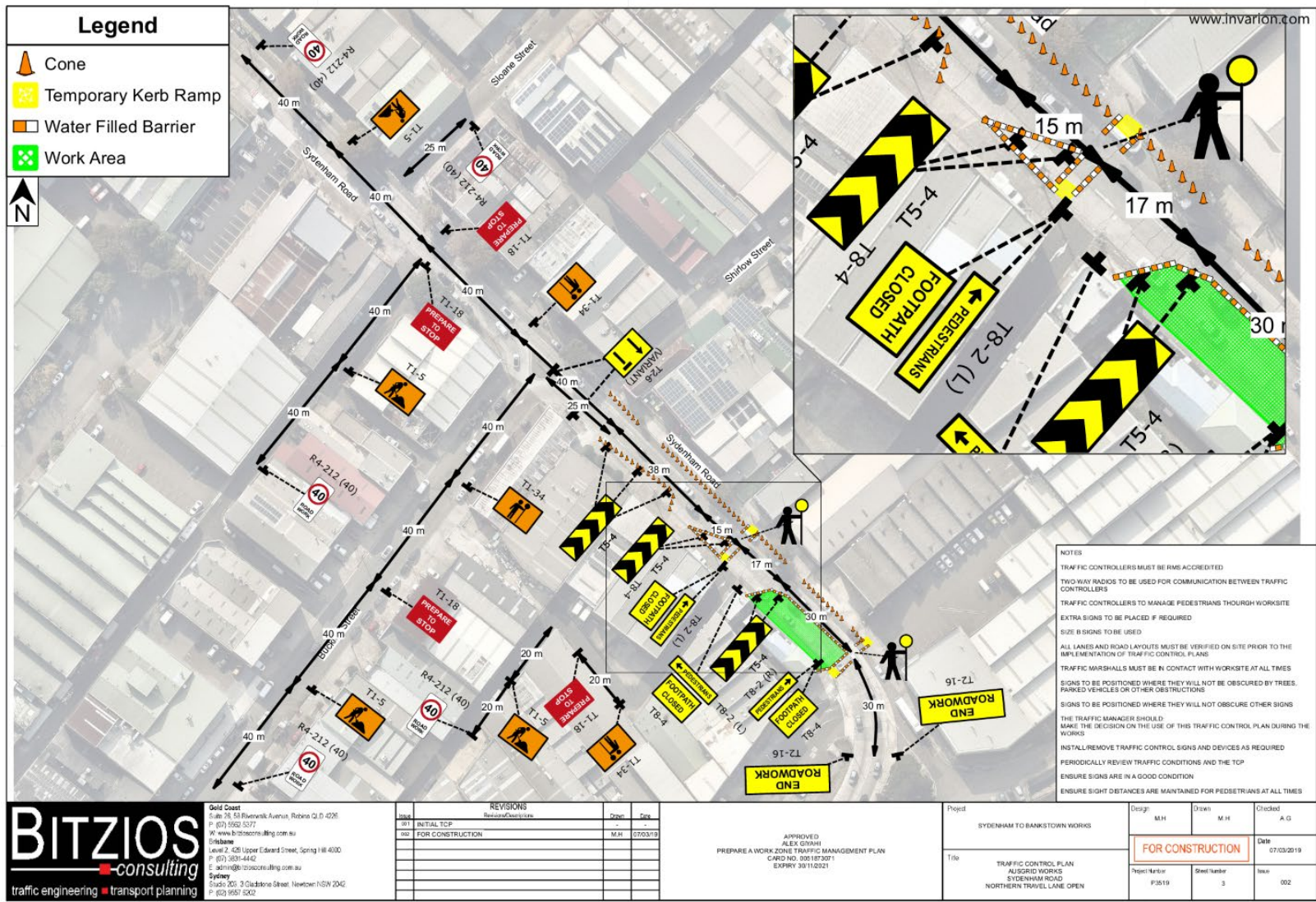
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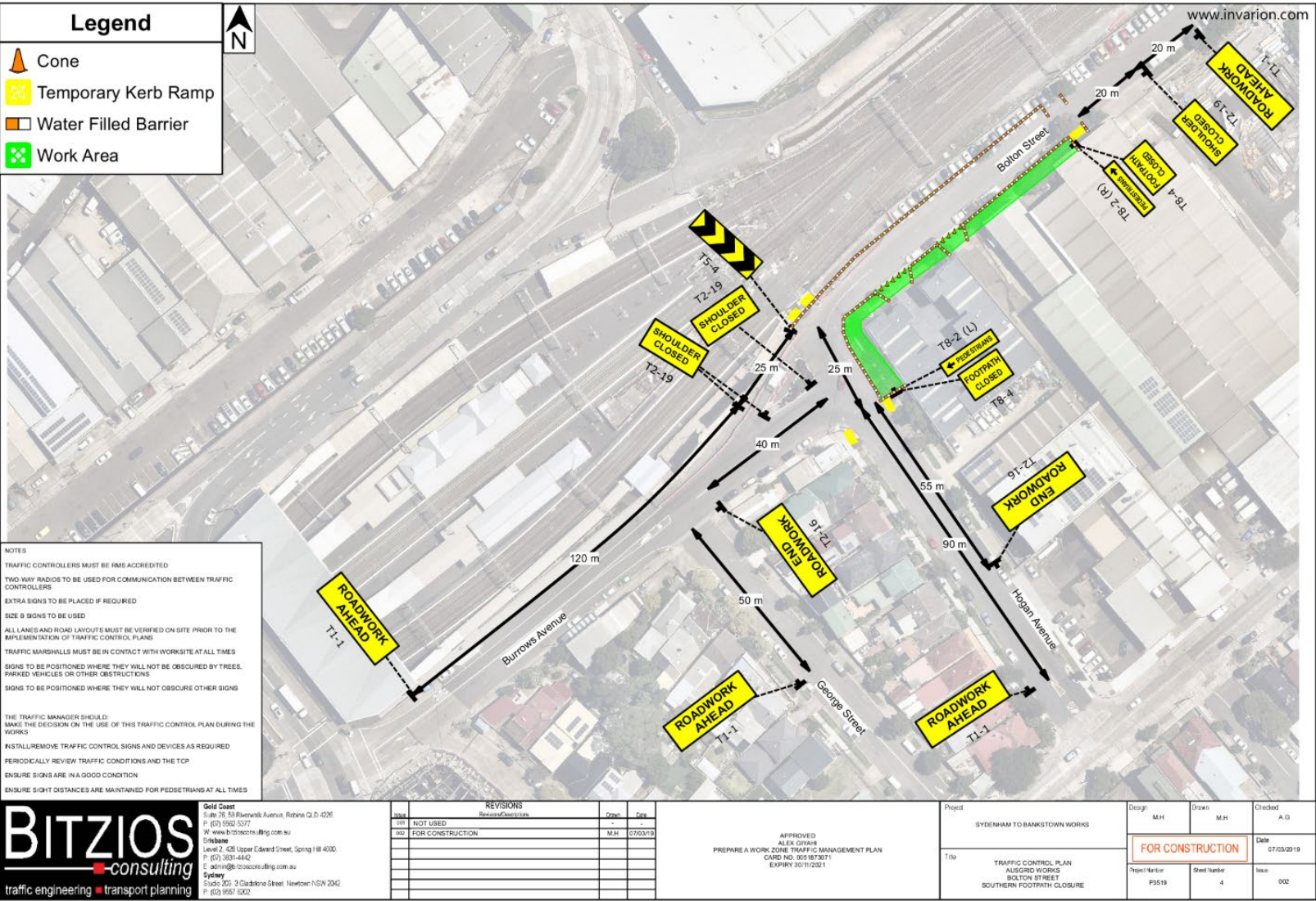


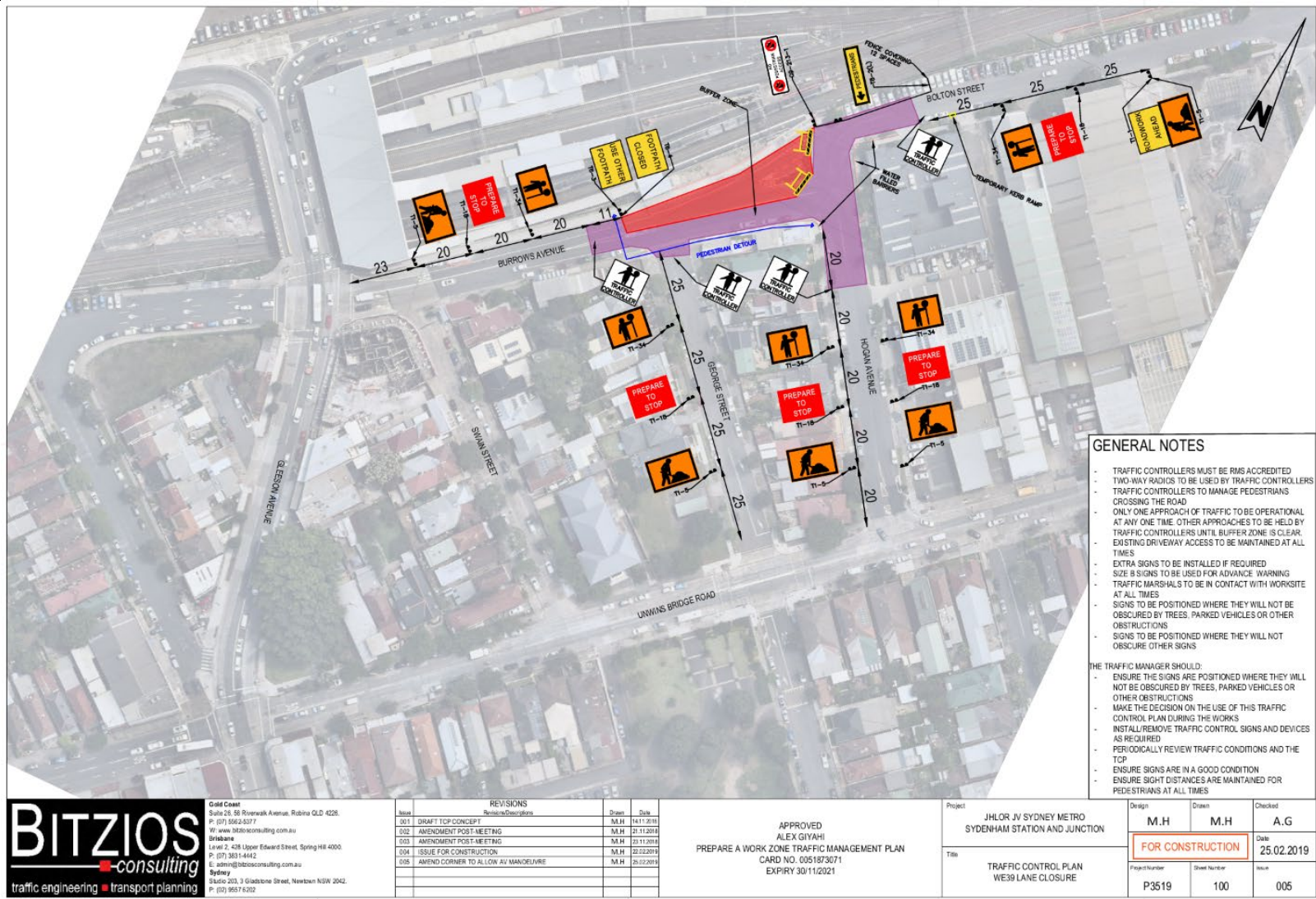


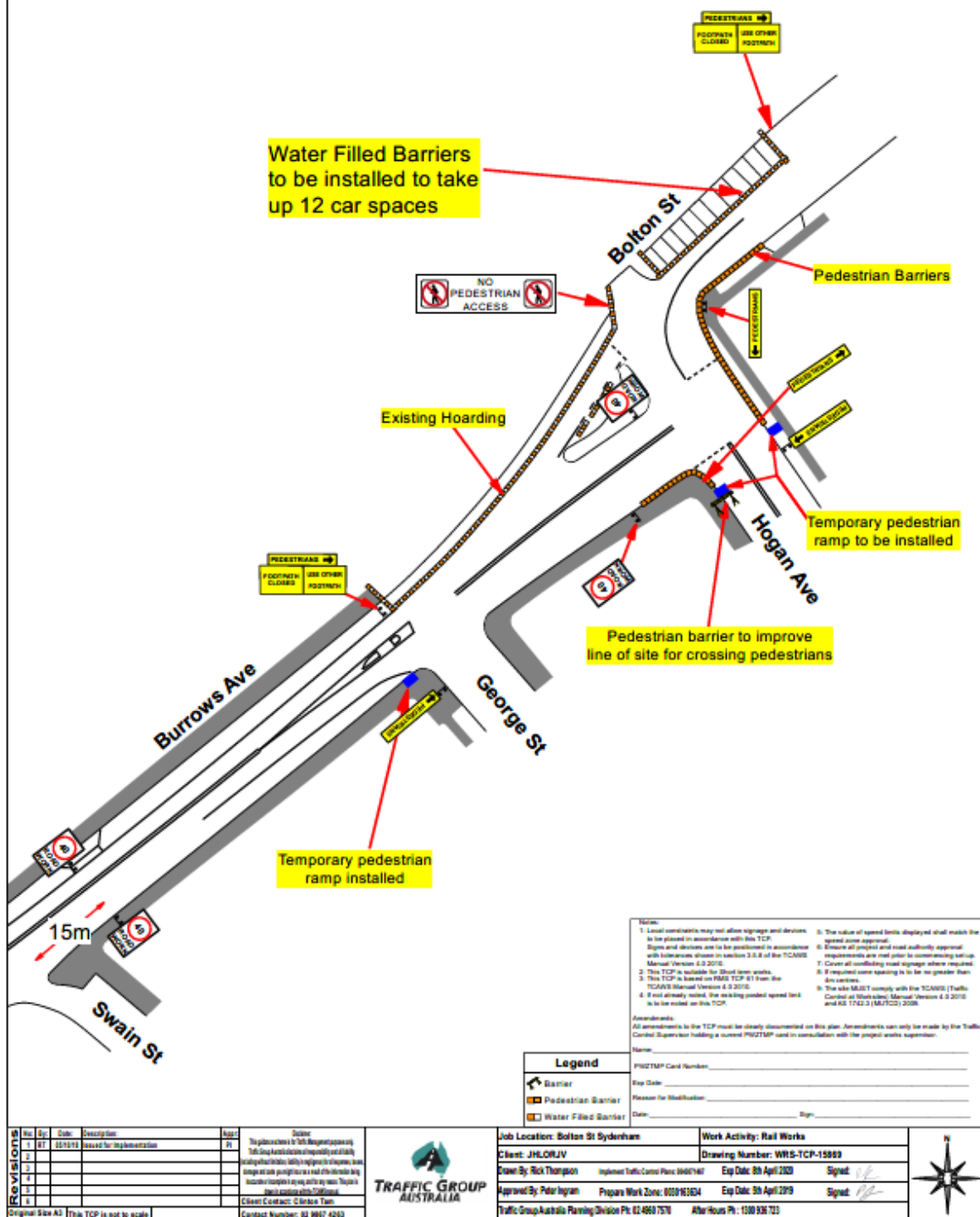


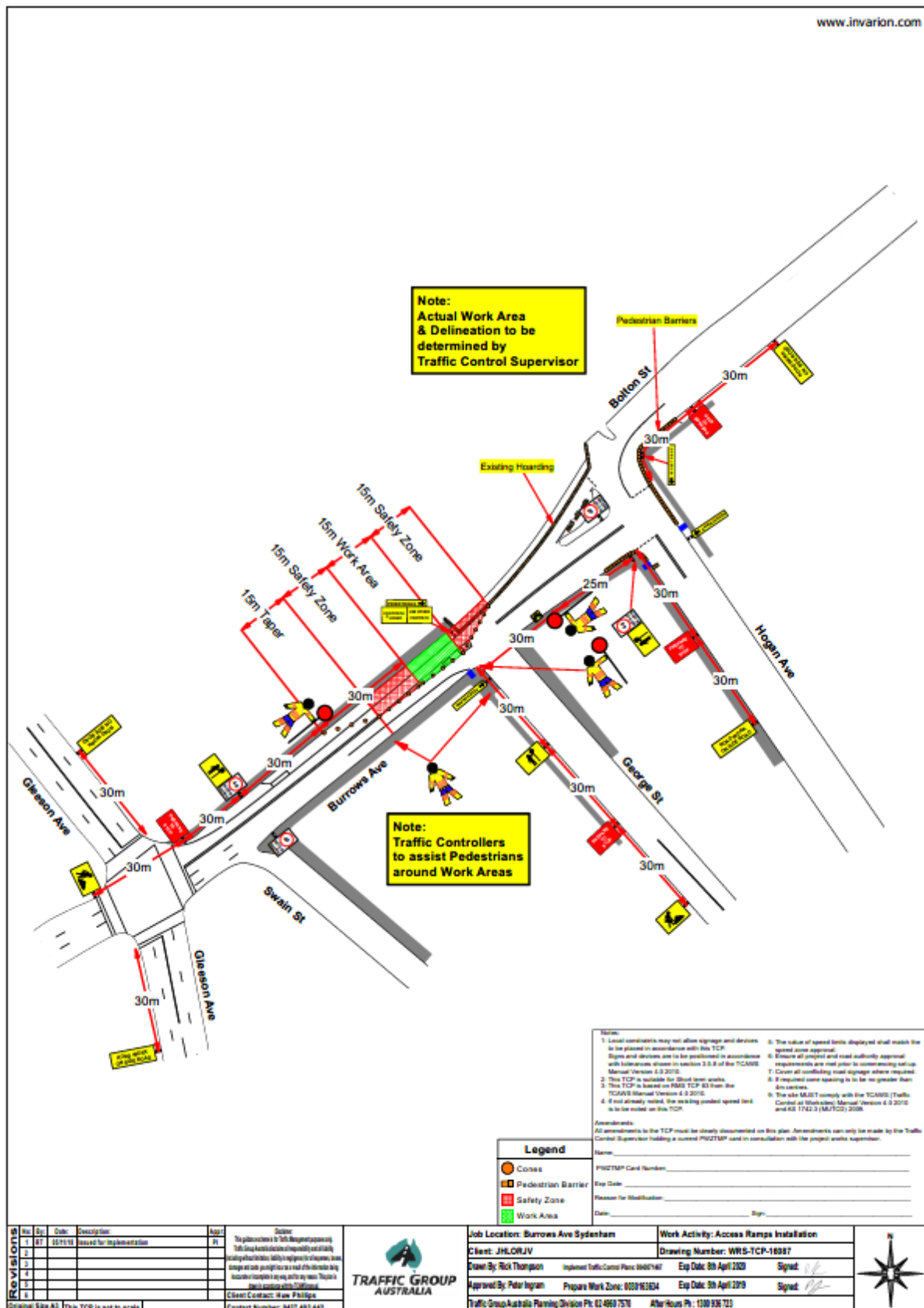


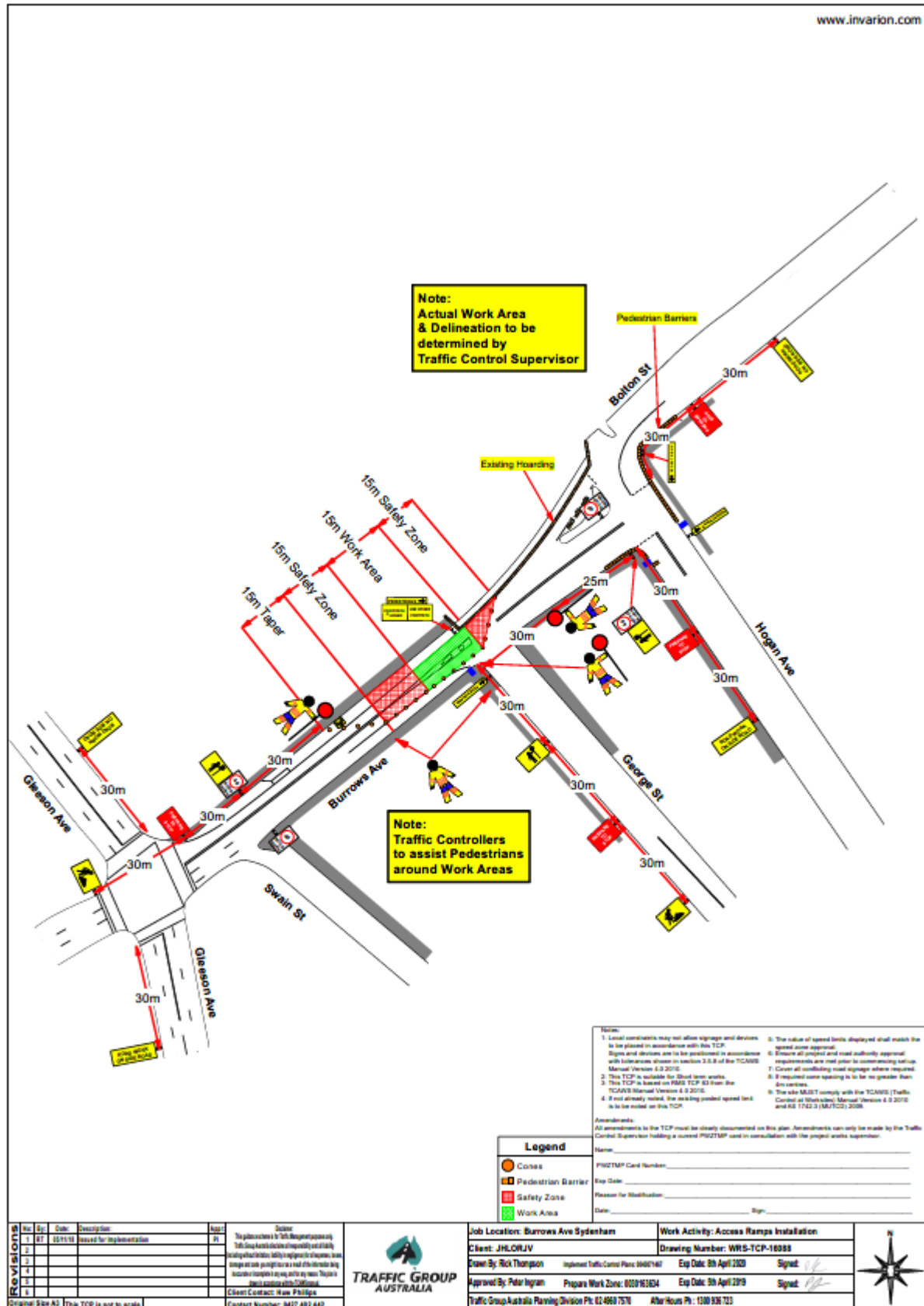


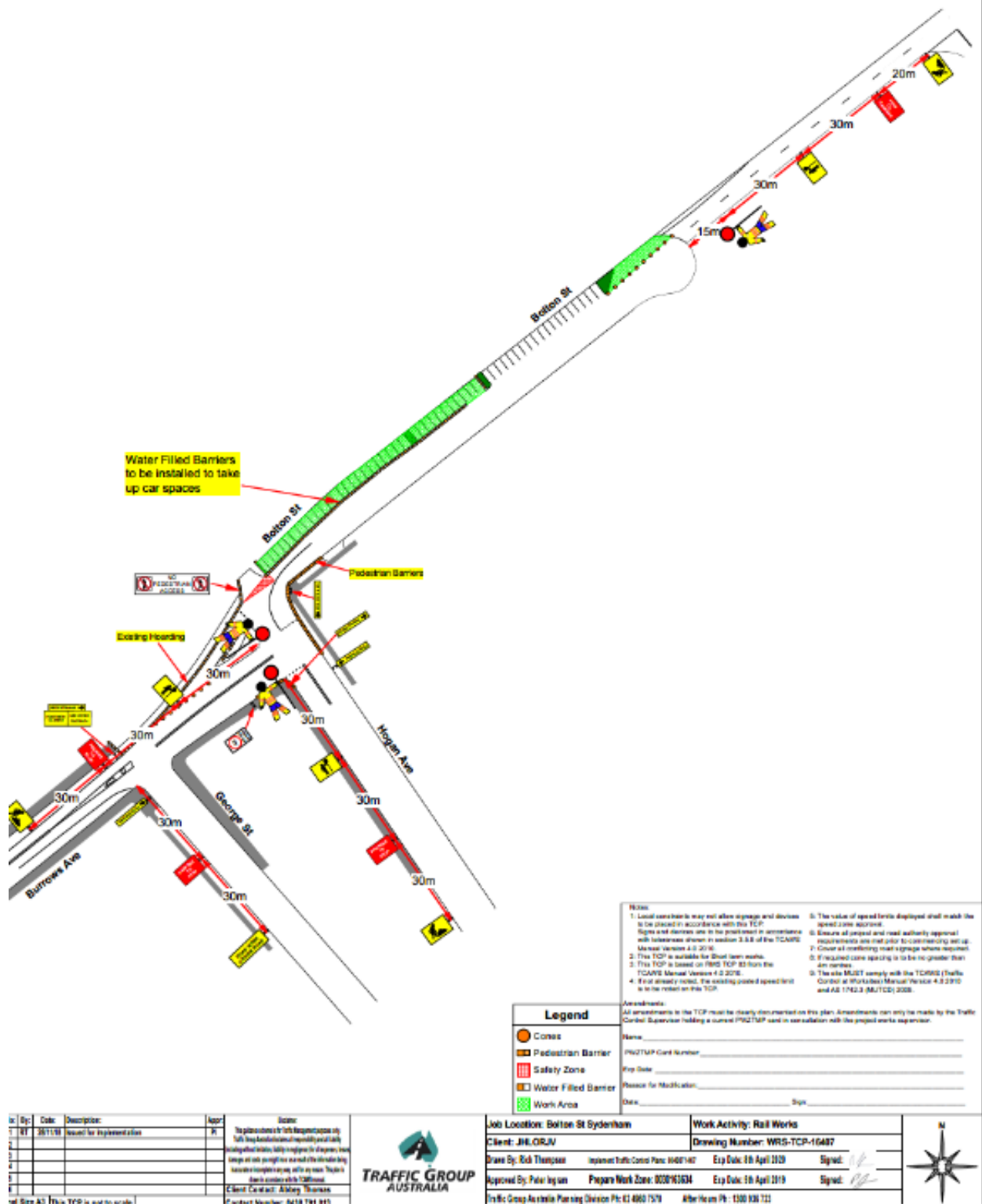




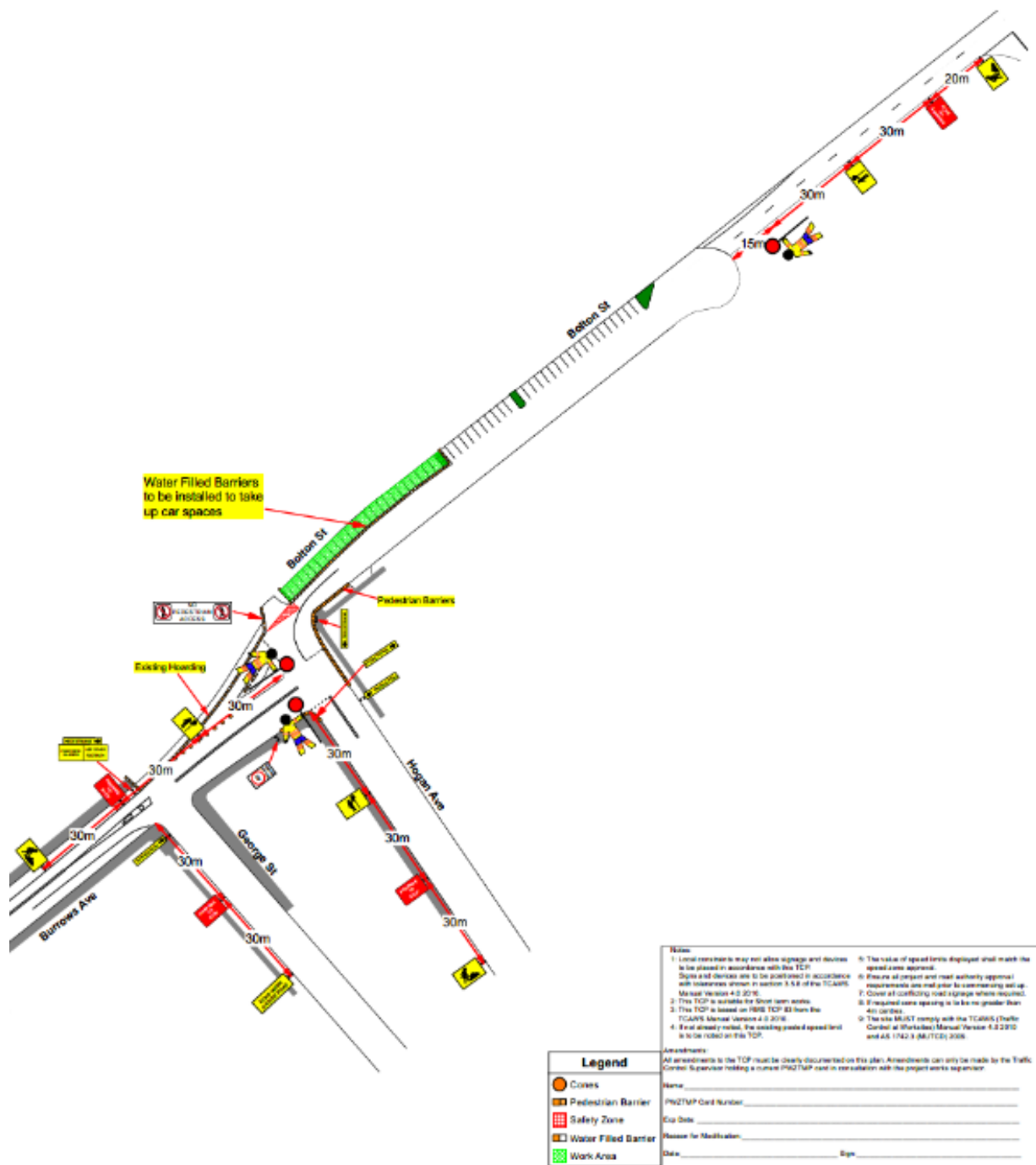




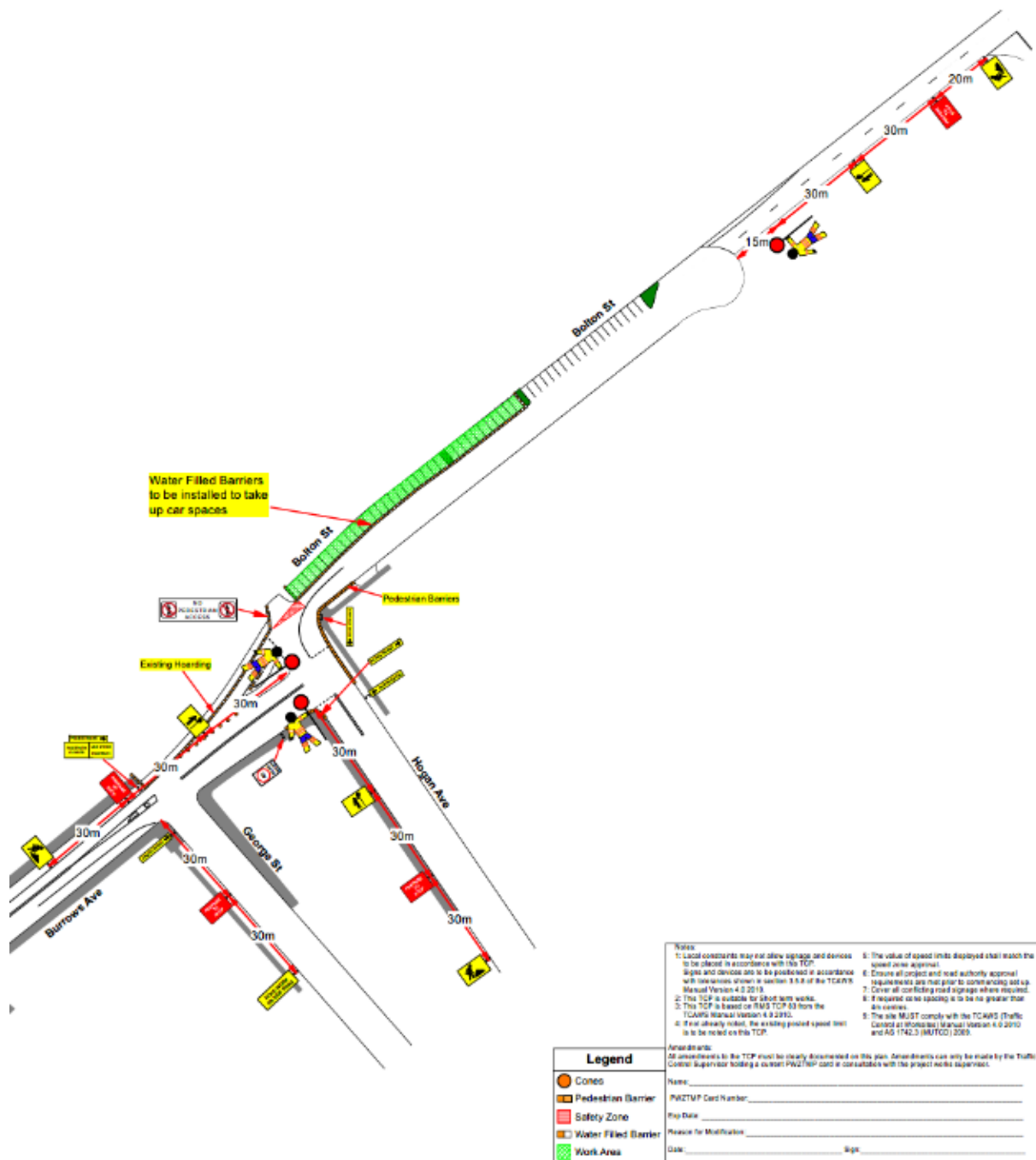




STAGE 1

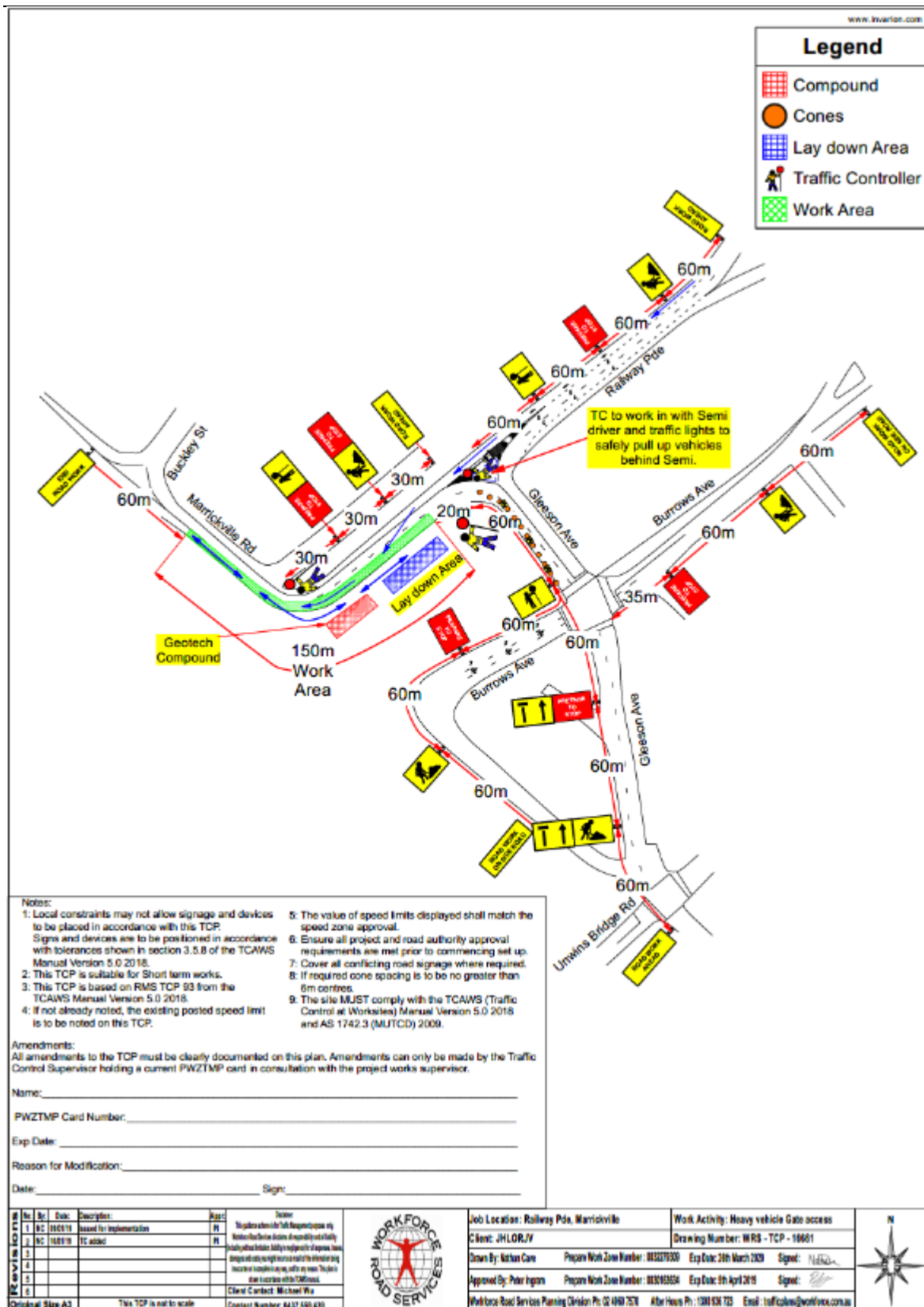


STAGE 2







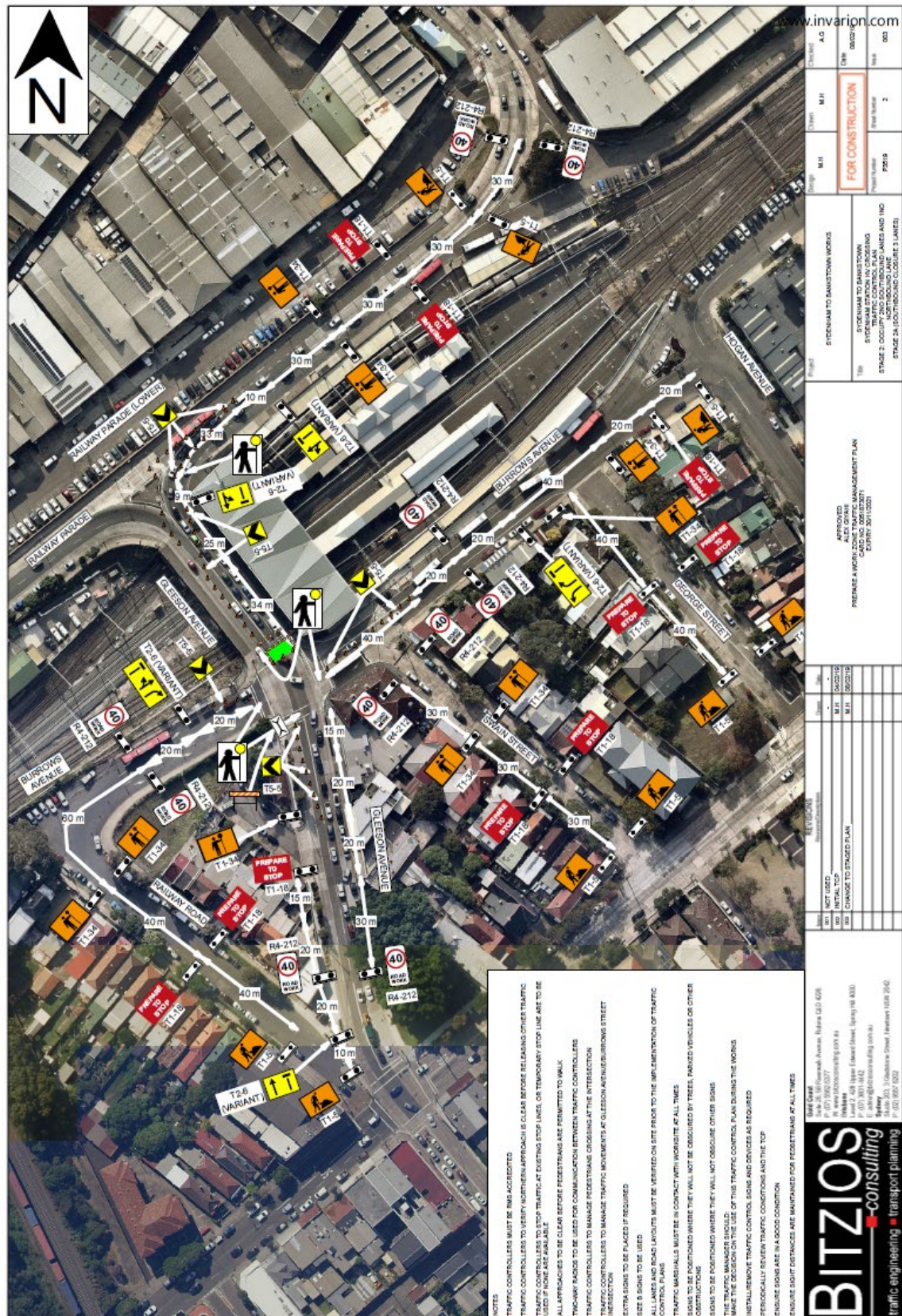




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INVOICES	No.	Seq.	Date	Description	Agent	Status						
	1	001	25/07/19	Issued for Implementation	PA							
	2											
	3											
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<div style="display: flex;"> <div style="width: 30%; border: 1px solid black; padding: 5px; margin-right: 10px;"> <p>The photos shown are to verify damage to property and to verify the location of the damage. It is the responsibility of the client to ensure that the damage and any sought work is a result of the intervening incident in the location and not any other cause or reason. The job is a general assessment of the traffic signs.</p> <p>Client Contact: Yogan Sawakulathane</p> <p>Contact Number: 9638 986 987</p> </div> <div style="width: 65%;"> <div style="display: flex; align-items: center; margin-bottom: 10px;"> <div> <p>TRAFFIC GROUP AUSTRALIA</p> </div> </div> <div style="display: flex; justify-content: space-between;"> <div> <p>Job Location: Bedwin Rd & Railway Pde Sydnam</p> <p>Client: JHLORJV</p> <p>Drawn By: Rick Thompson</p> <p>Approved By: Peter Ingram</p> <p>Traffic Group Australia Planning Division Ph: 02 4560 7570</p> </div> <div> <p>Prepare Work Zone: 0051036159</p> <p>Prepare Work Zone: 0051072158</p> </div> <div> <p>Work Activity: Electrical Maintenance Activities</p> <p>Drawing Number: WR3-TCF-17405</p> <p>Exp Date: 15th September 2021</p> <p>Exp Date: 29th June 2022</p> </div> </div> </div> </div>												
Original Size A3		This TCP is not to scale										

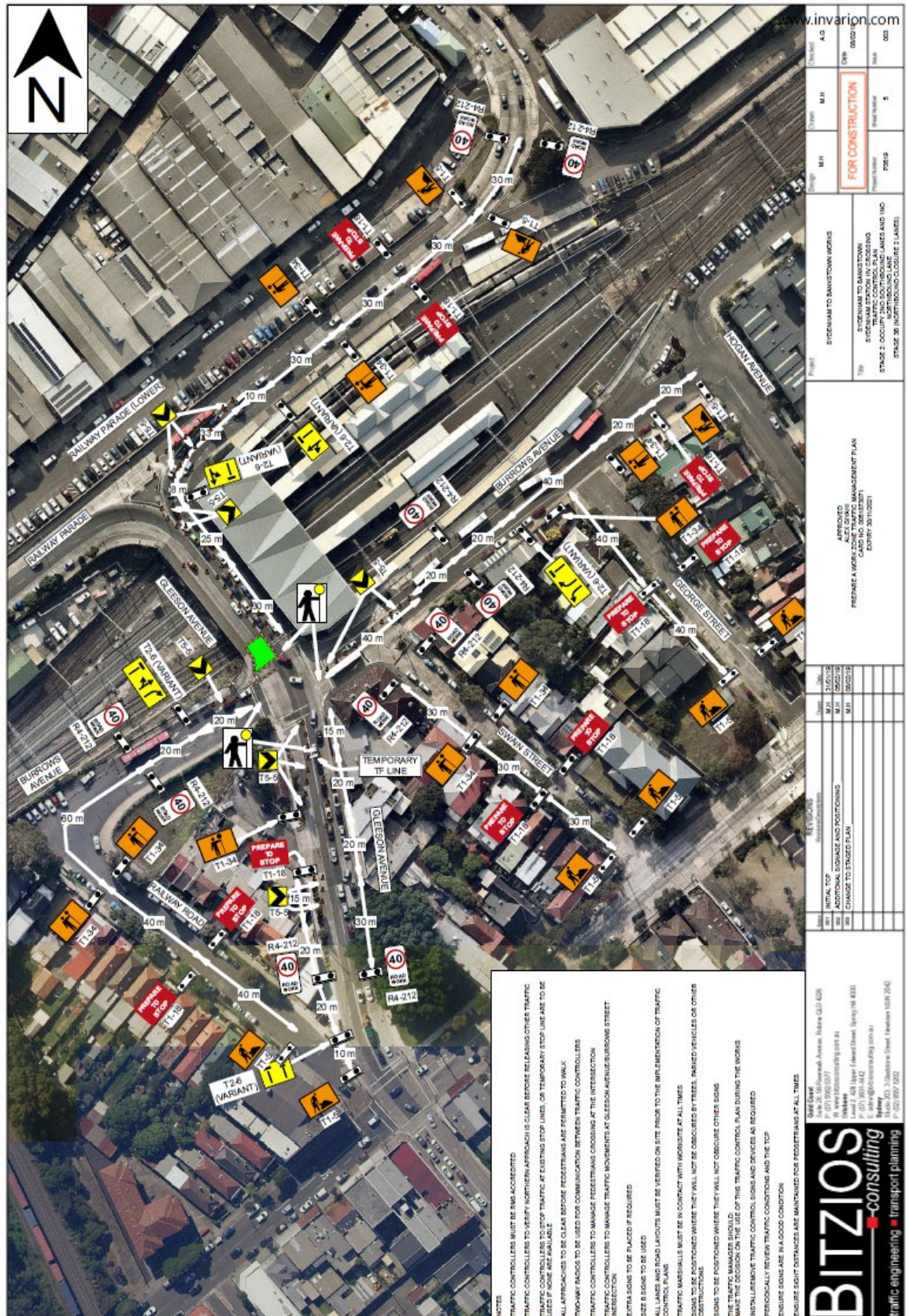




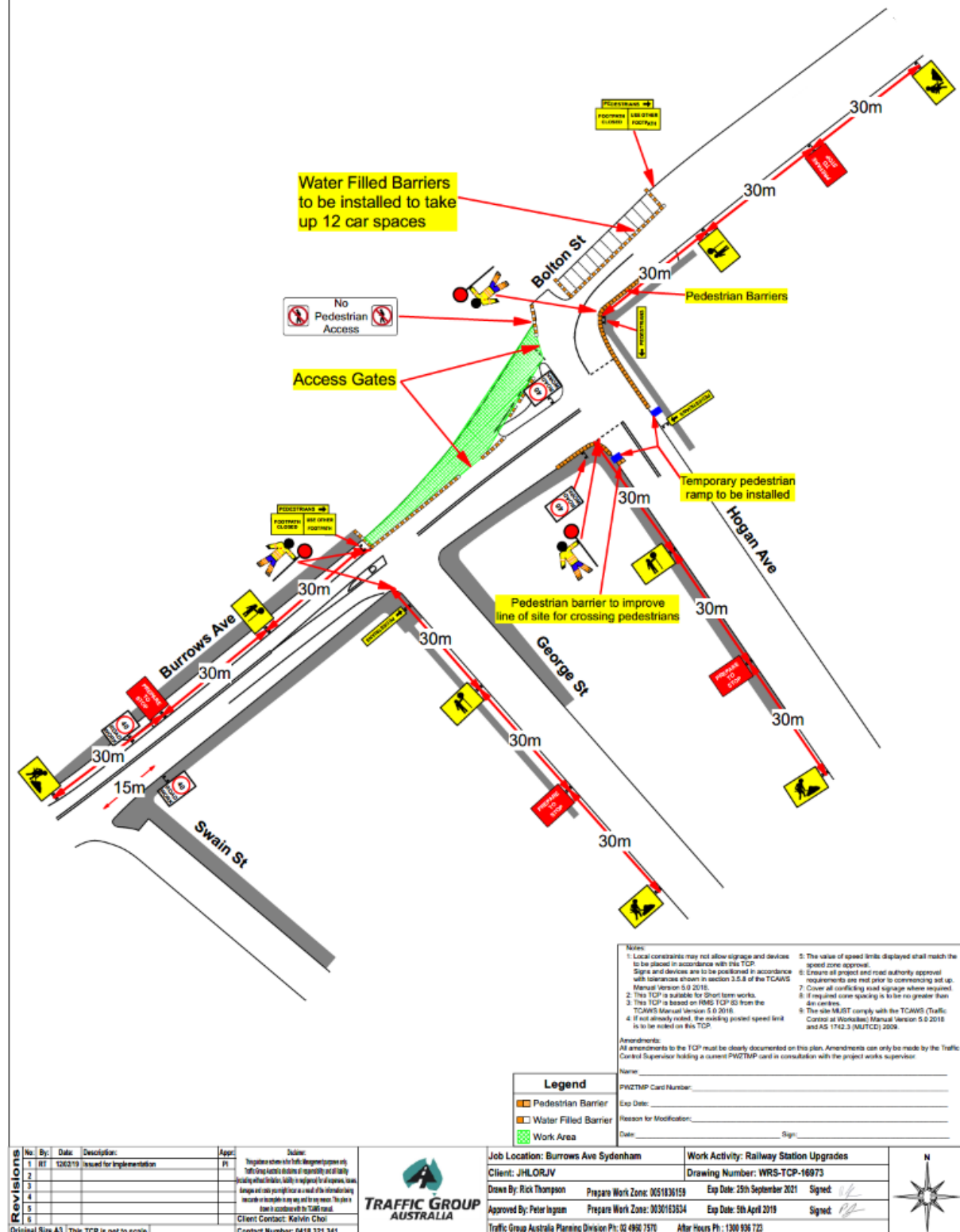




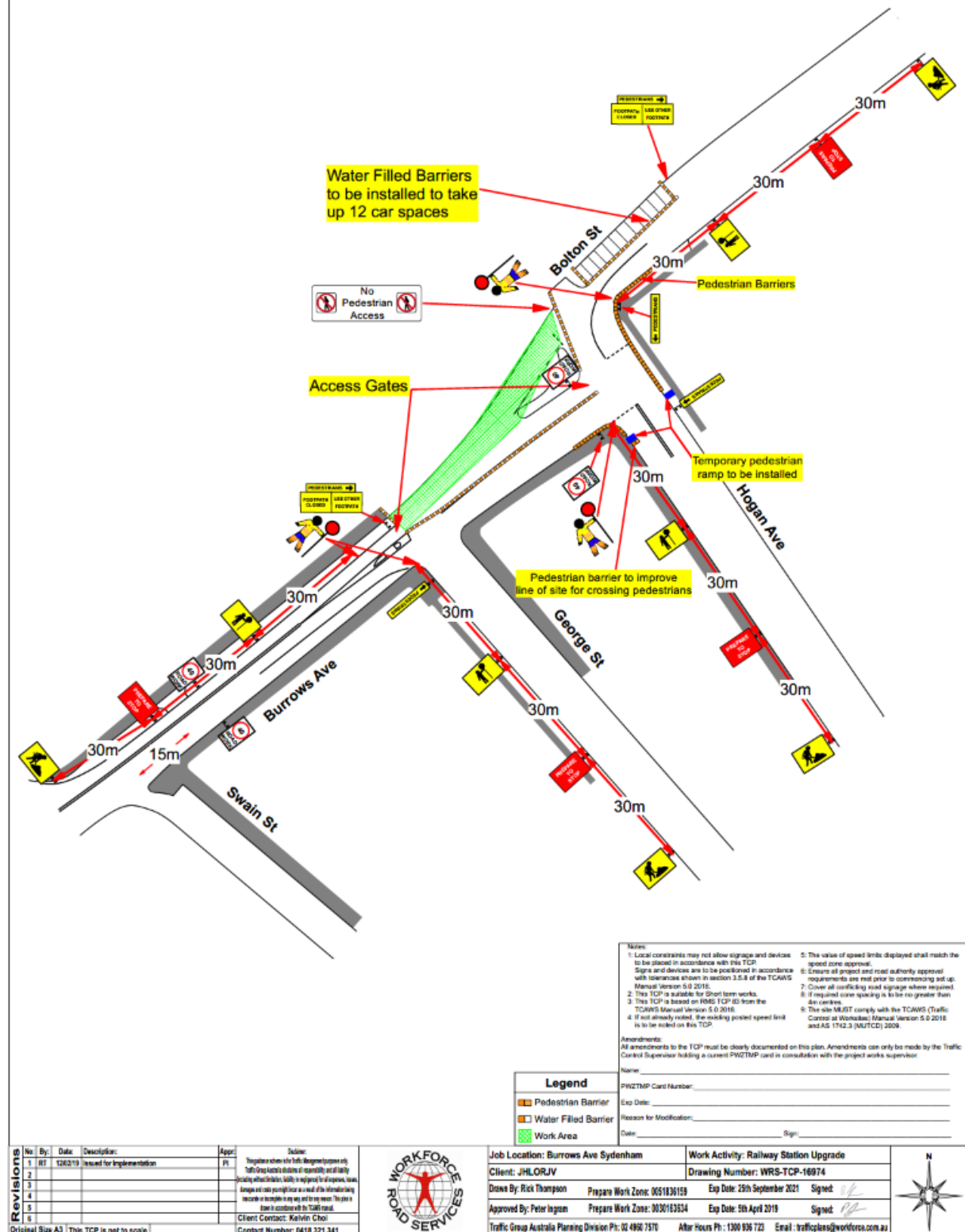




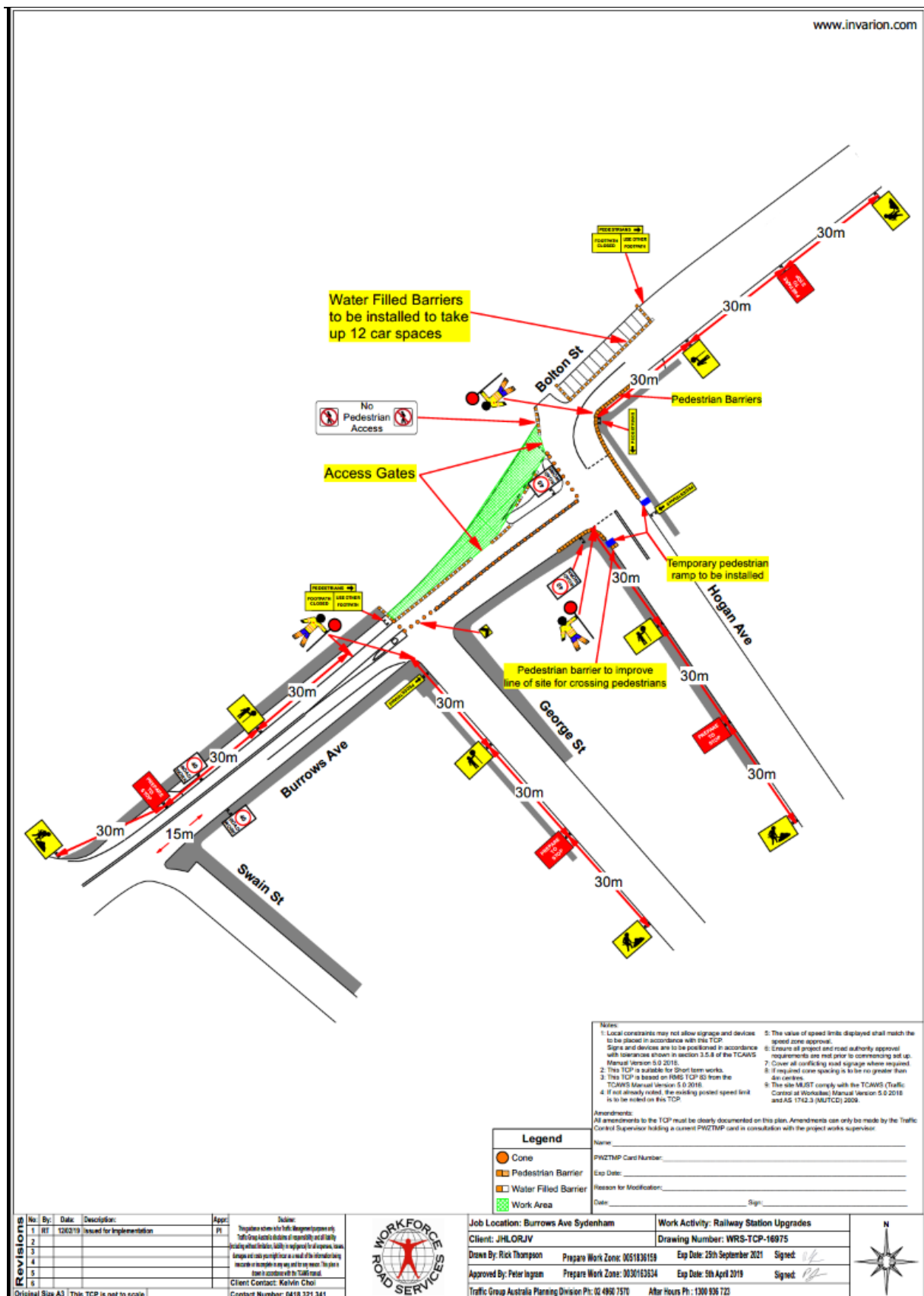
www.invarion.com



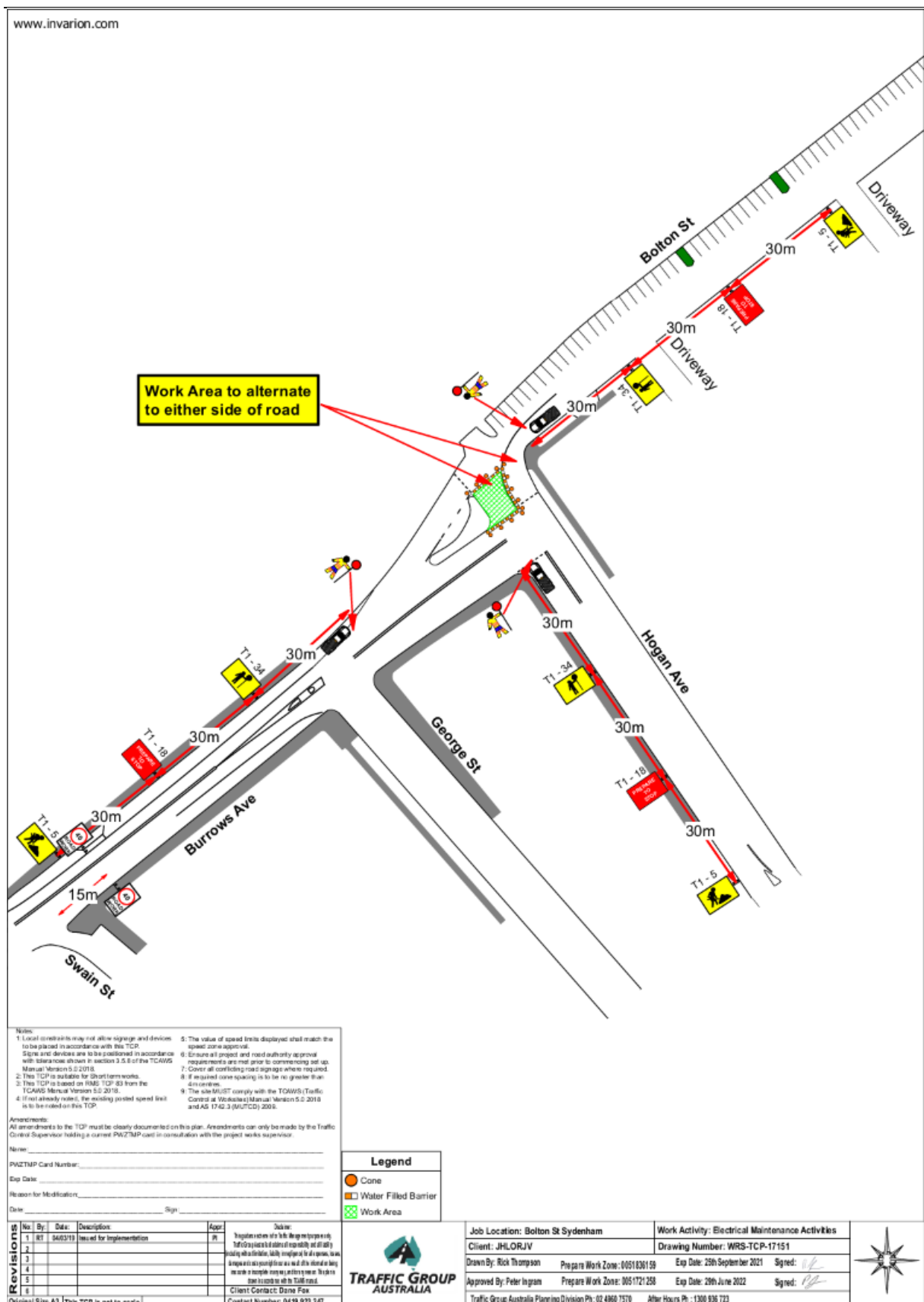
www.invarion.com



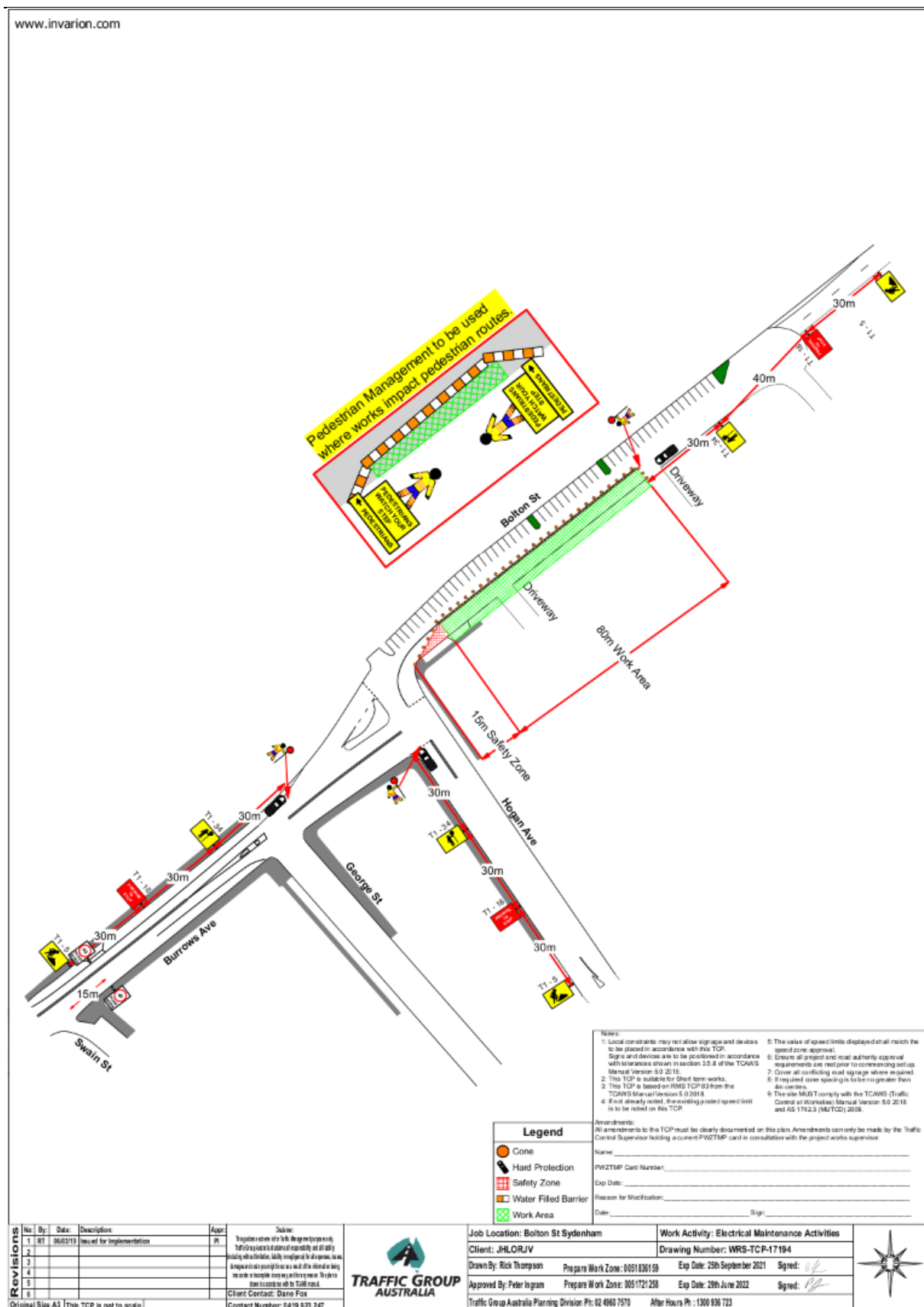
www.invarion.com



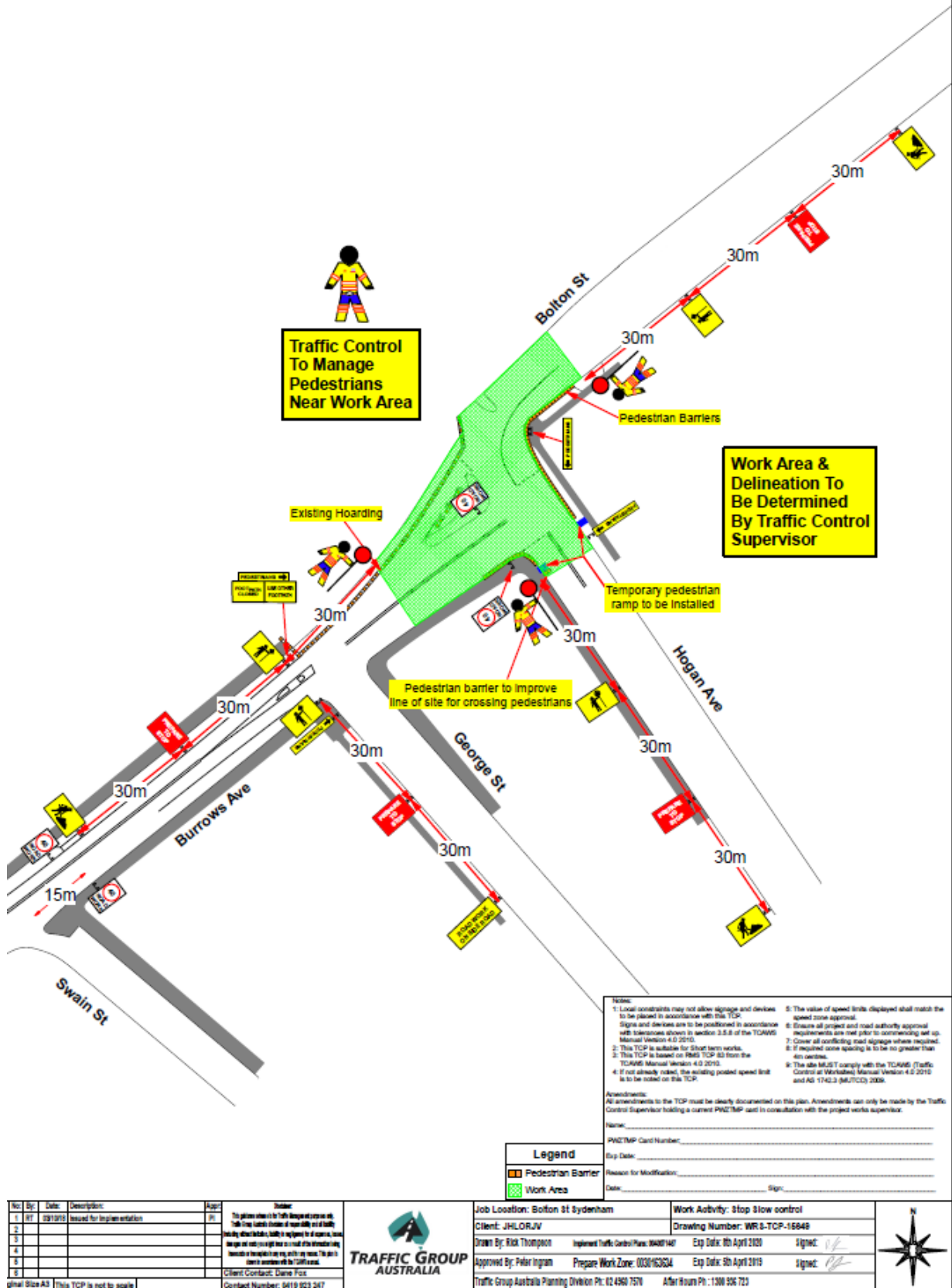
www.invarion.com



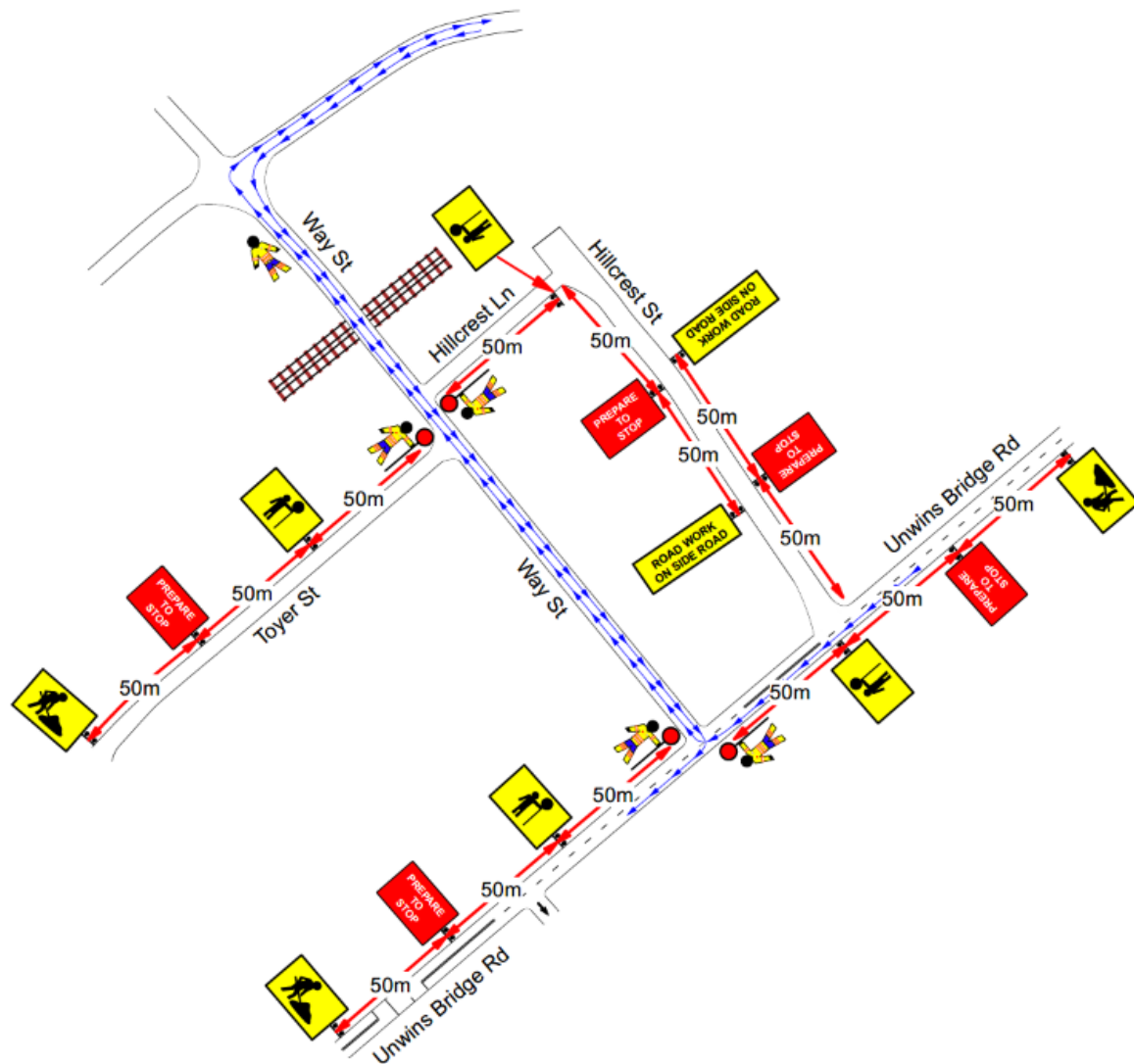
www.invarion.com



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- Notes:**
1. Local constraints may not allow signage and devices to be placed in accordance with this TCP.
 2. Signs and devices are to be positioned in accordance with tolerances shown in section 3.5.8 of the TCAMS Manual Version 5.0 2018.
 3. This TCP is suitable for short term works.
 4. This TCP is based on RMS TCP 83 from the TCAMS Manual Version 5.0 2018.
 5. If not already noted, the existing posted speed limit is to be noted on this TCP.
 6. The value of speed limits displayed shall match the speed zone approval.
 7. Ensure all project and road authority approval requirements are met prior to commencing set up.
 8. Cover all conflicting road signage where required.
 9. If required cone spacing is to be no greater than 4m centres.
 10. The site MUST comply with the TCAMS (Traffic Control at Workplaces) Manual Version 5.0 2018 and AS 1742.3 (MUTCO) 2008.

Amendments:
All amendments to the TCP must be clearly documented on this plan. Amendments can only be made by the Traffic Control Supervisor holding a current PWTMP card in consultation with the project works supervisor.

Name: _____

PWTMP Card Number: _____

Exp Date: _____

Reason for Modification: _____

Date: _____

Signature: _____

No	By	Date	Description	Appr	Decline
1	RT	08/02/19	Issued for Implementation	PI	
2					
3					
4					
5					
6					

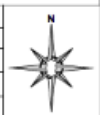
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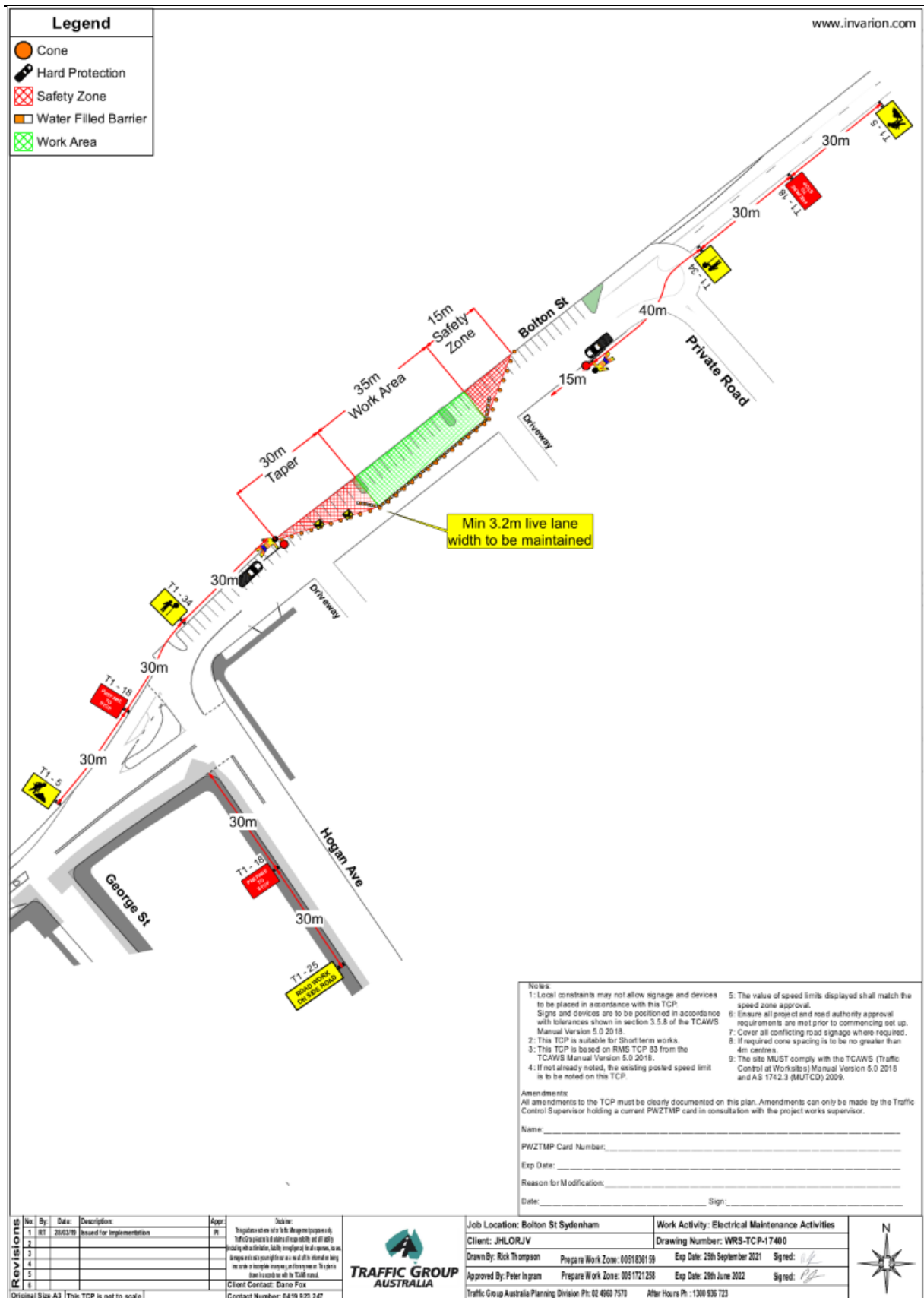
Client Contact: Michael Wu
Contact Number: 0437 559 439

Legend
▲ Truck Route

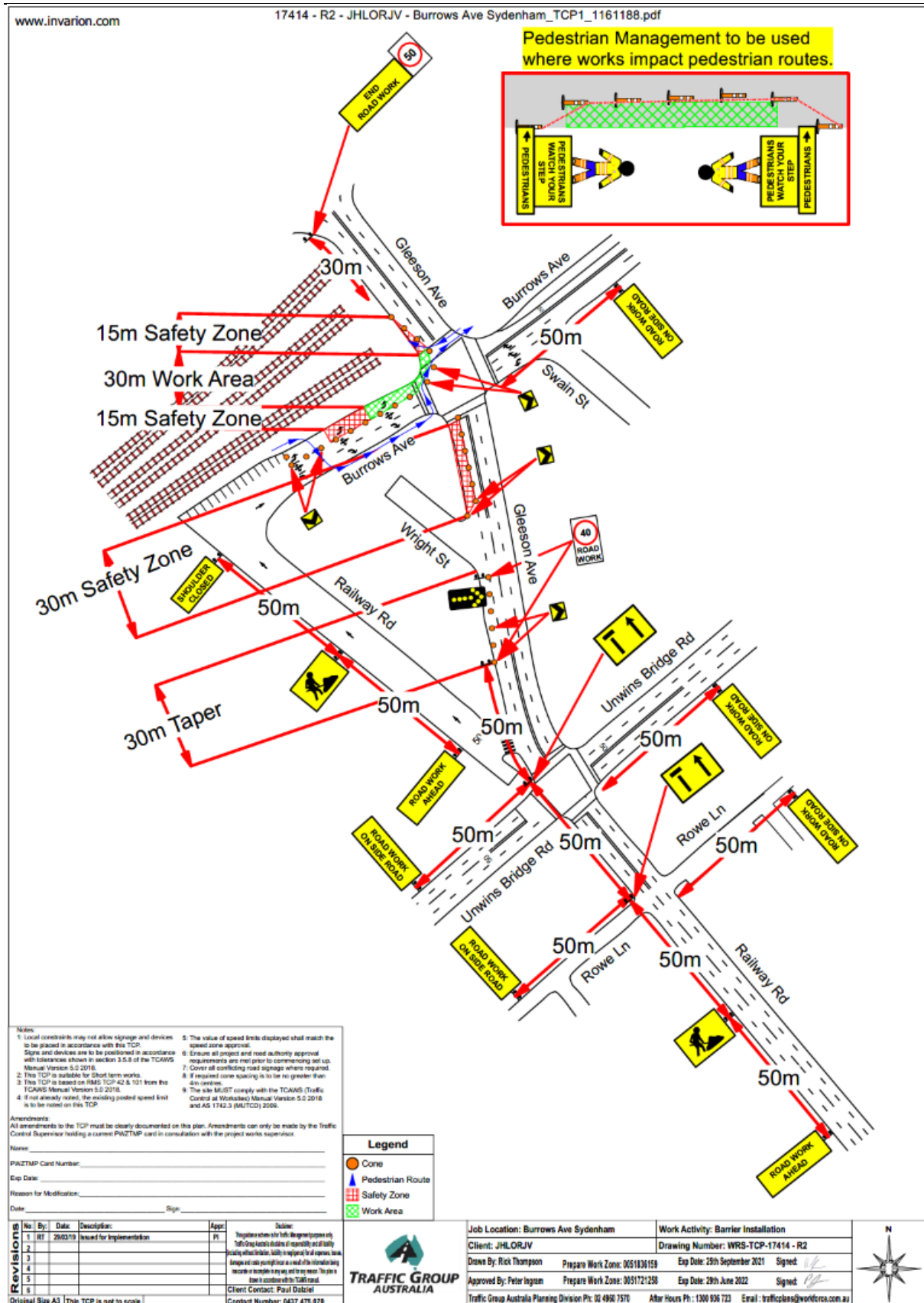


Job Location: Way St Marrickville	Work Activity: Truck Deliveries
Client: JHLORJV	Drawing Number: WRS-TCP-16945
Drawn By: Rick Thompson	Prepare Work Zone: 0051836159
Approved By: Peter Ingram	Prepare Work Zone: 0030153534
Traffic Group Australia Planning Division Ph: 02 4960 7570	Exp Date: 25th September 2021
	Exp Date: 5th April 2019
	After Hours Ph: 1300 936 723

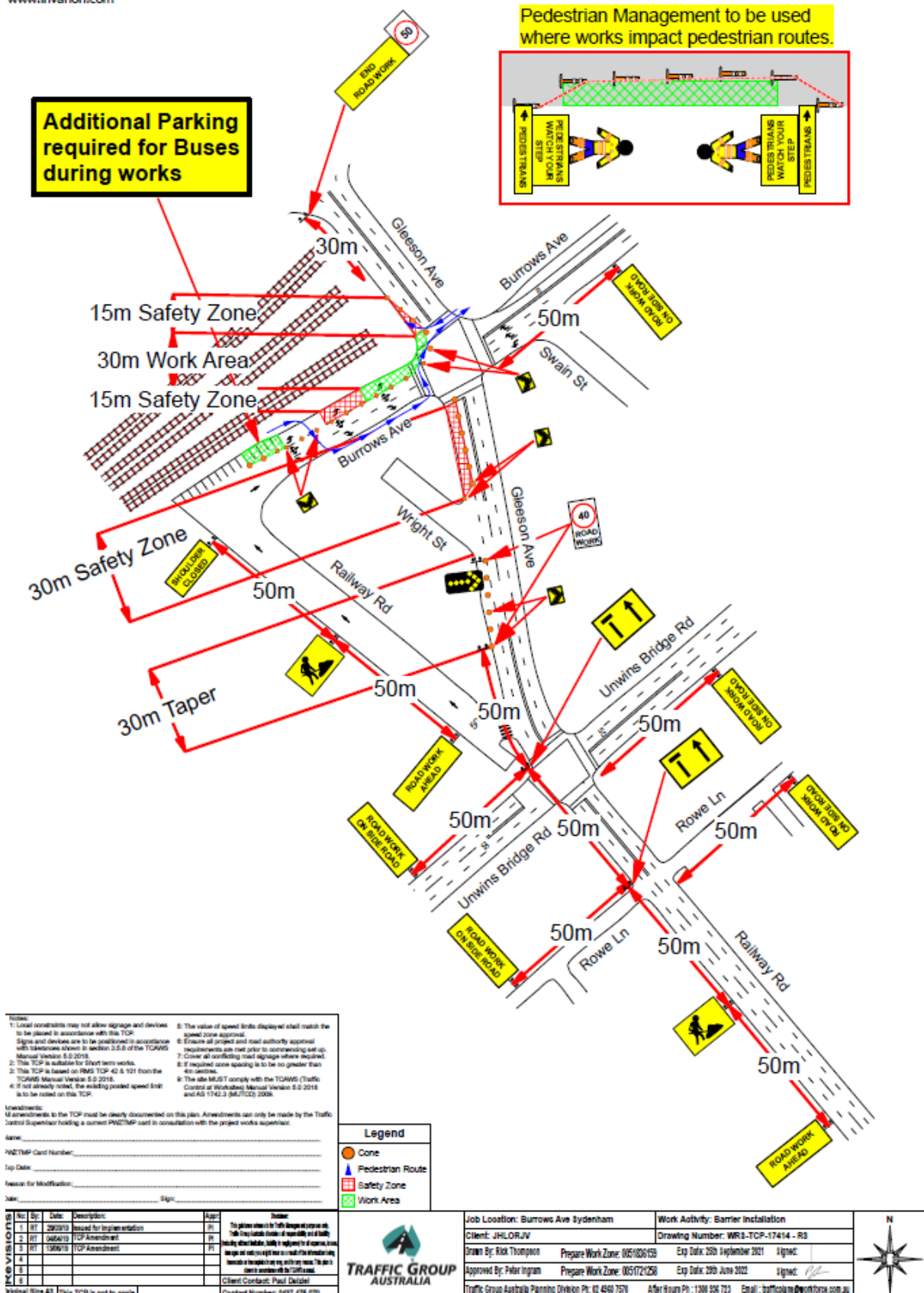


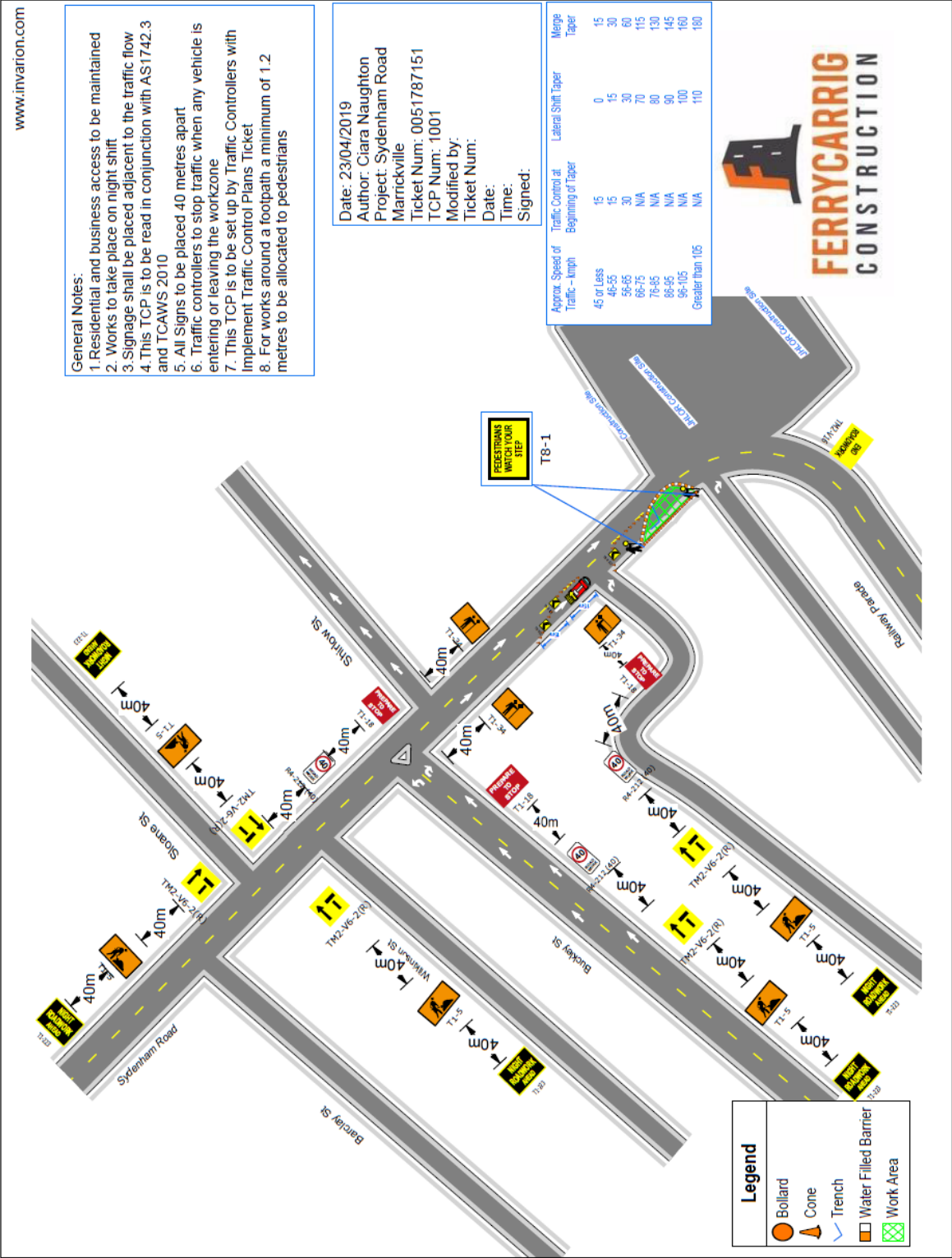




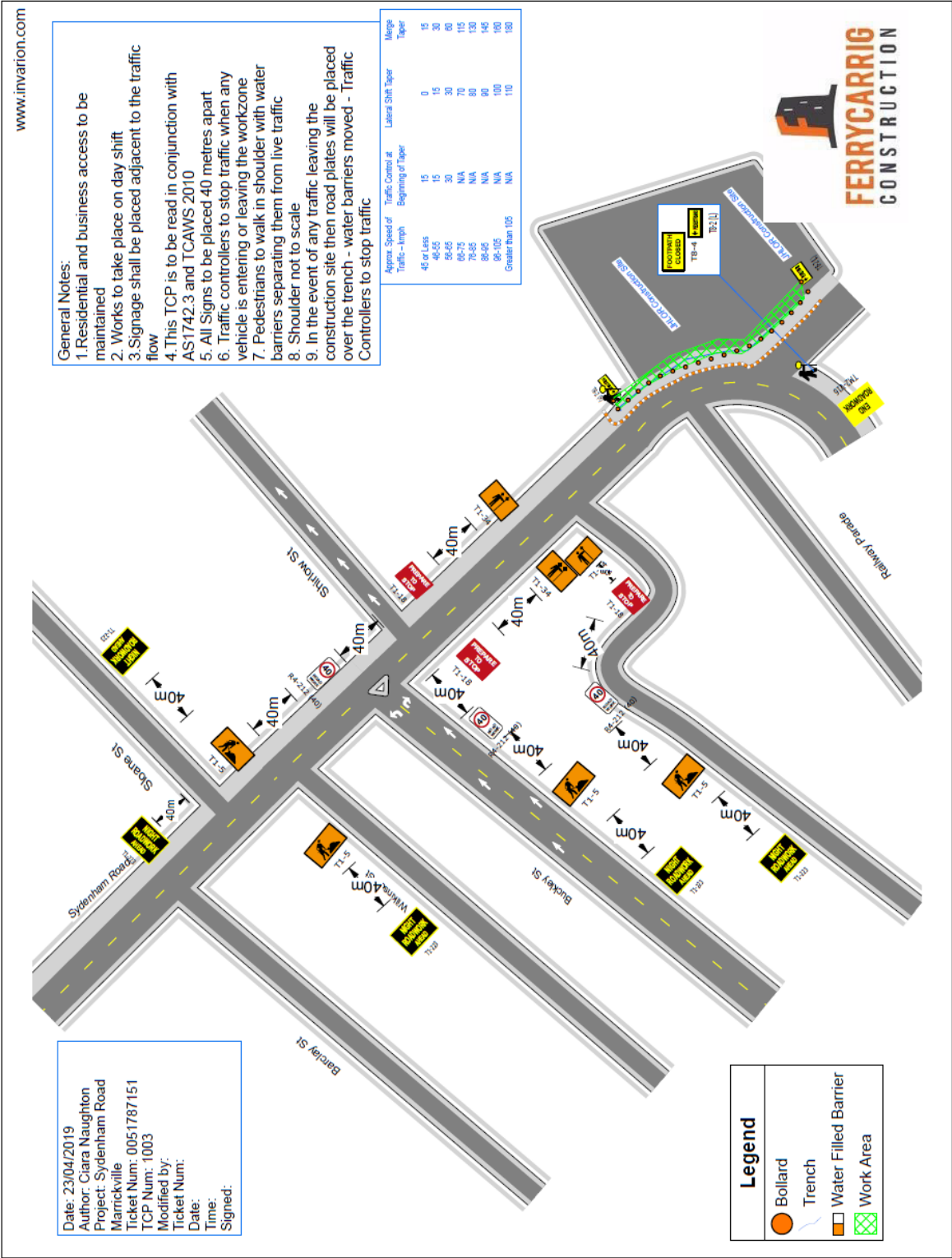


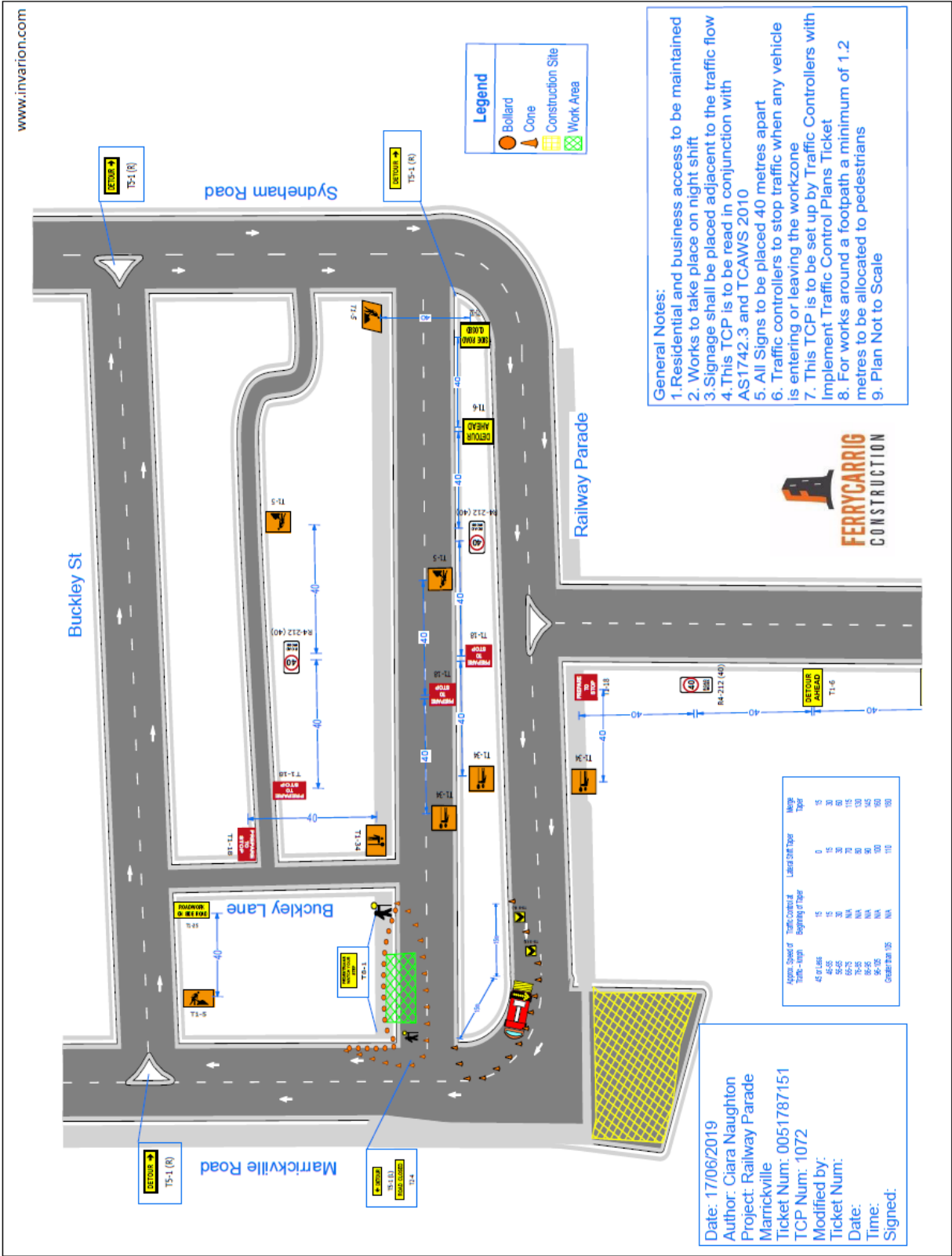
www.invarion.com

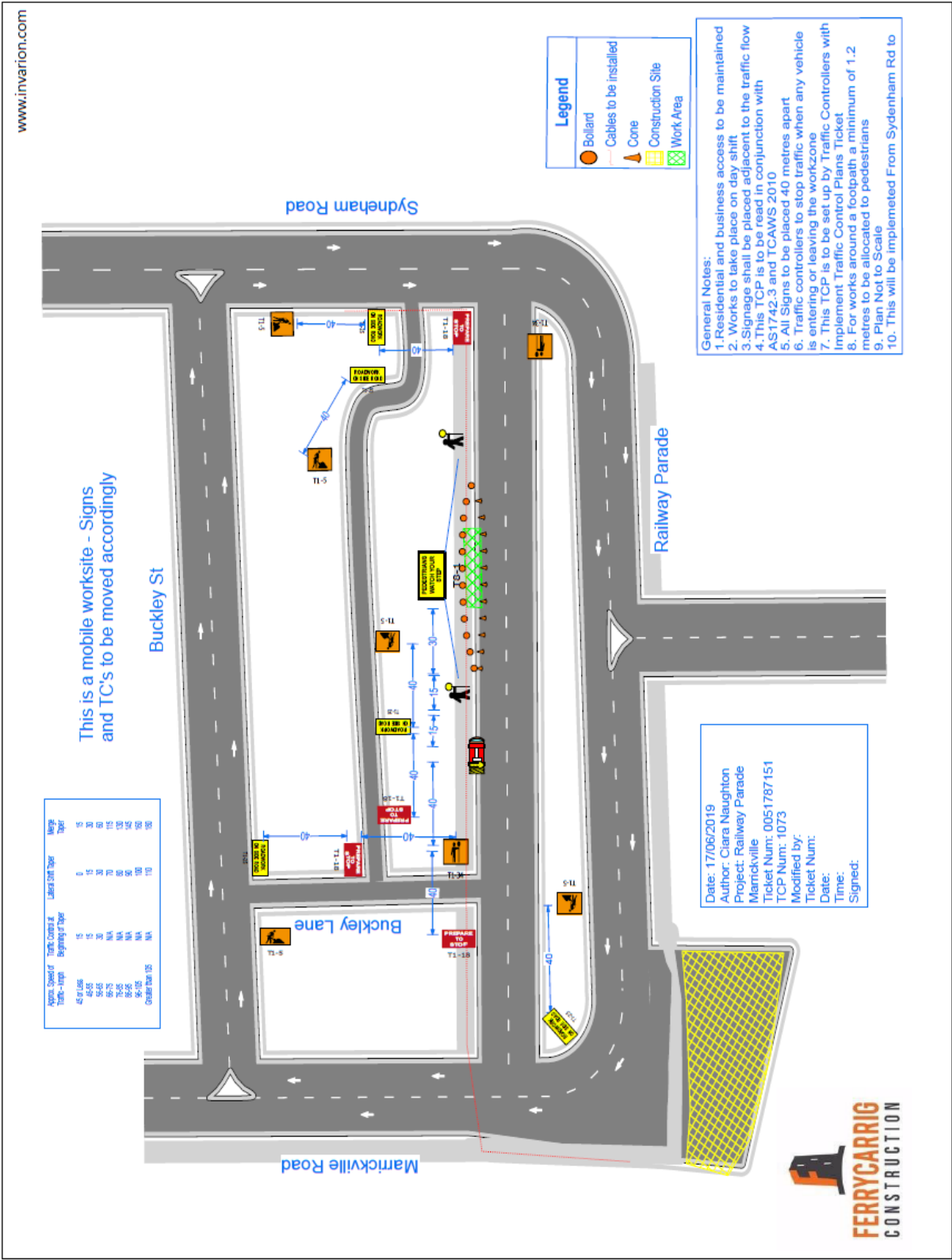


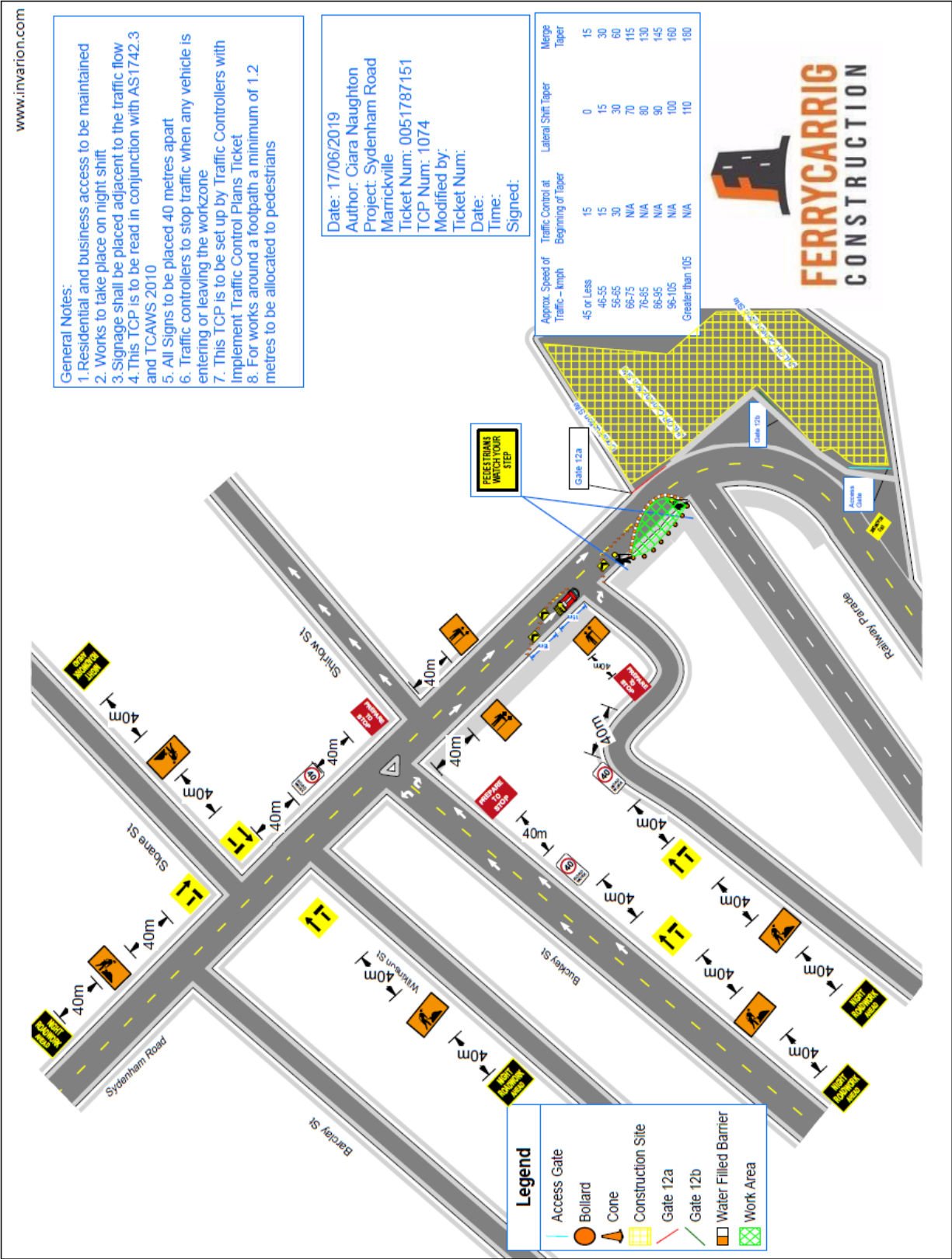


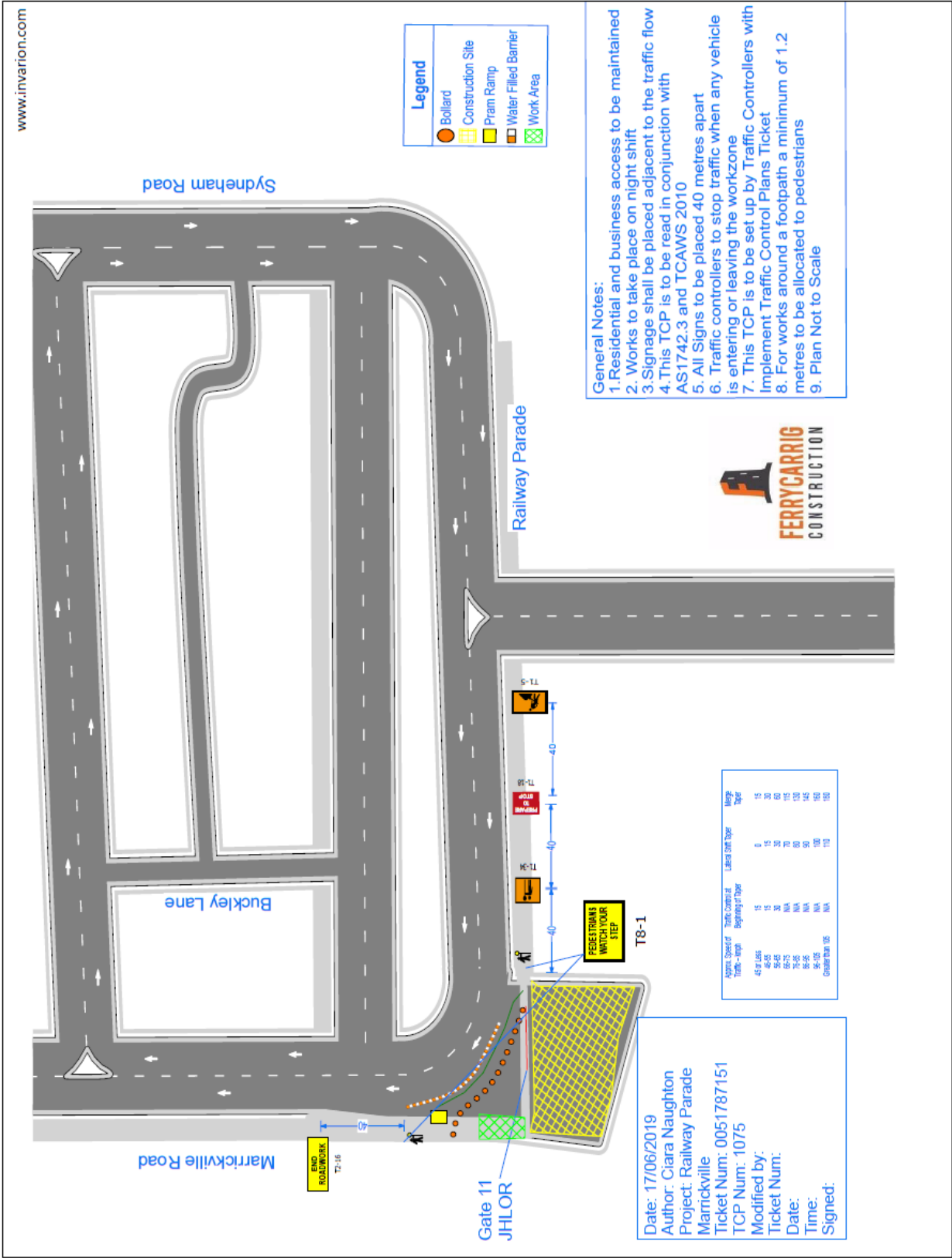


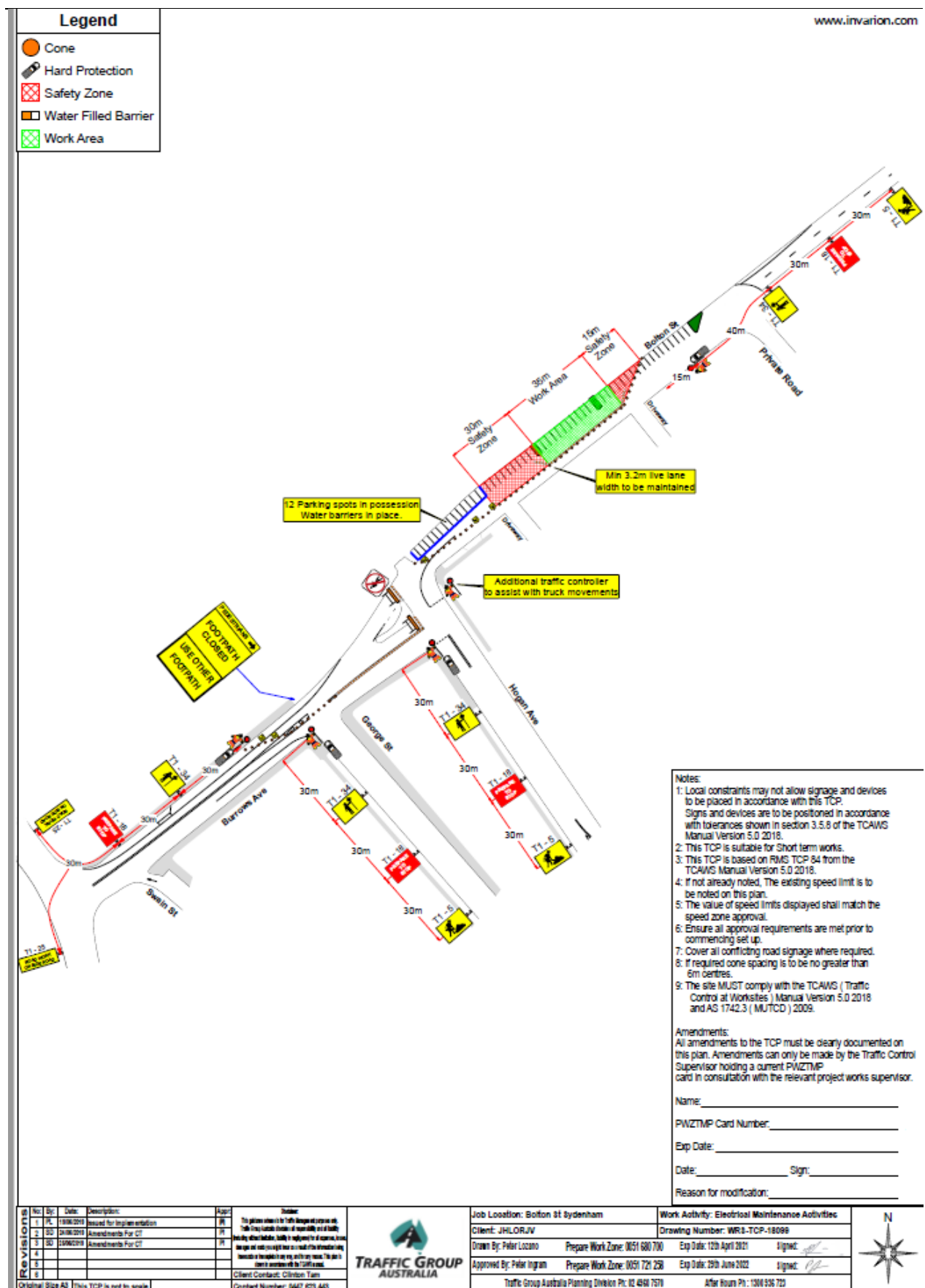


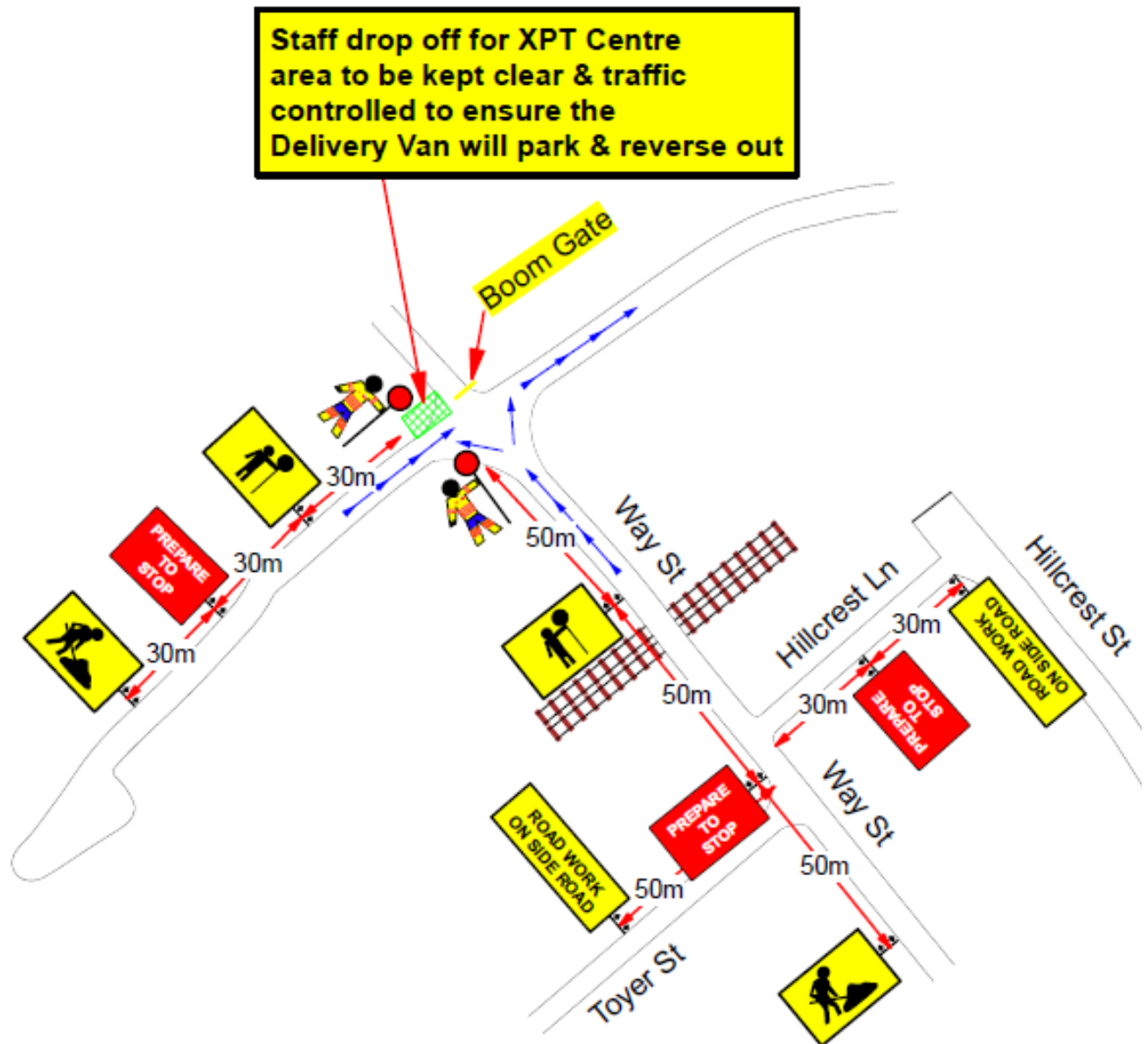












Notes:

- Local authorities may install signage and devices to be placed in accordance with this TCP.
- Signs and devices are to be positioned in accordance with the relevant section 3.5.8 of the TCAGS Manual Version 5.0 (2018).
- This TCP is suitable for short term works.
- This TCP is based on 100km/h TCP ID from the TCAGS Manual Version 5.0 (2018).
- If not already noted, the existing posted speed limit is to be noted on this TCP.
- The value of speed limit displayed shall match the speed zone approval.
- Where all project and local authority approval requirements are met prior to commencing set up.
- Control all conflicting road signage where required.
- If required, cone spacing is to be no greater than 4m centres.
- The site MUST comply with the TCAGS (Traffic Control at Workplaces) Manual Version 5.0 (2018) and AS 1742.3 (MUTCD) 2008.

Instructions:

Amendments to the TCP must be clearly documented on this plan. Amendments can only be made by the Traffic Control Supervisor holding a current PM2TMP card in consultation with the project works supervisor.

Rev: _____

PM2TMP Card Number: _____

Exp Date: _____

Reason for Modification: _____

Rev: _____

No	By	Date	Description	Appr	Author
1	BT	20/09/19	Issued for implementation	BT	
2					
3					
4					
5					
6					
7					
8					

Client Contact: Yoga Baskarvela

Approved: _____

Project Manager: _____



Work Area

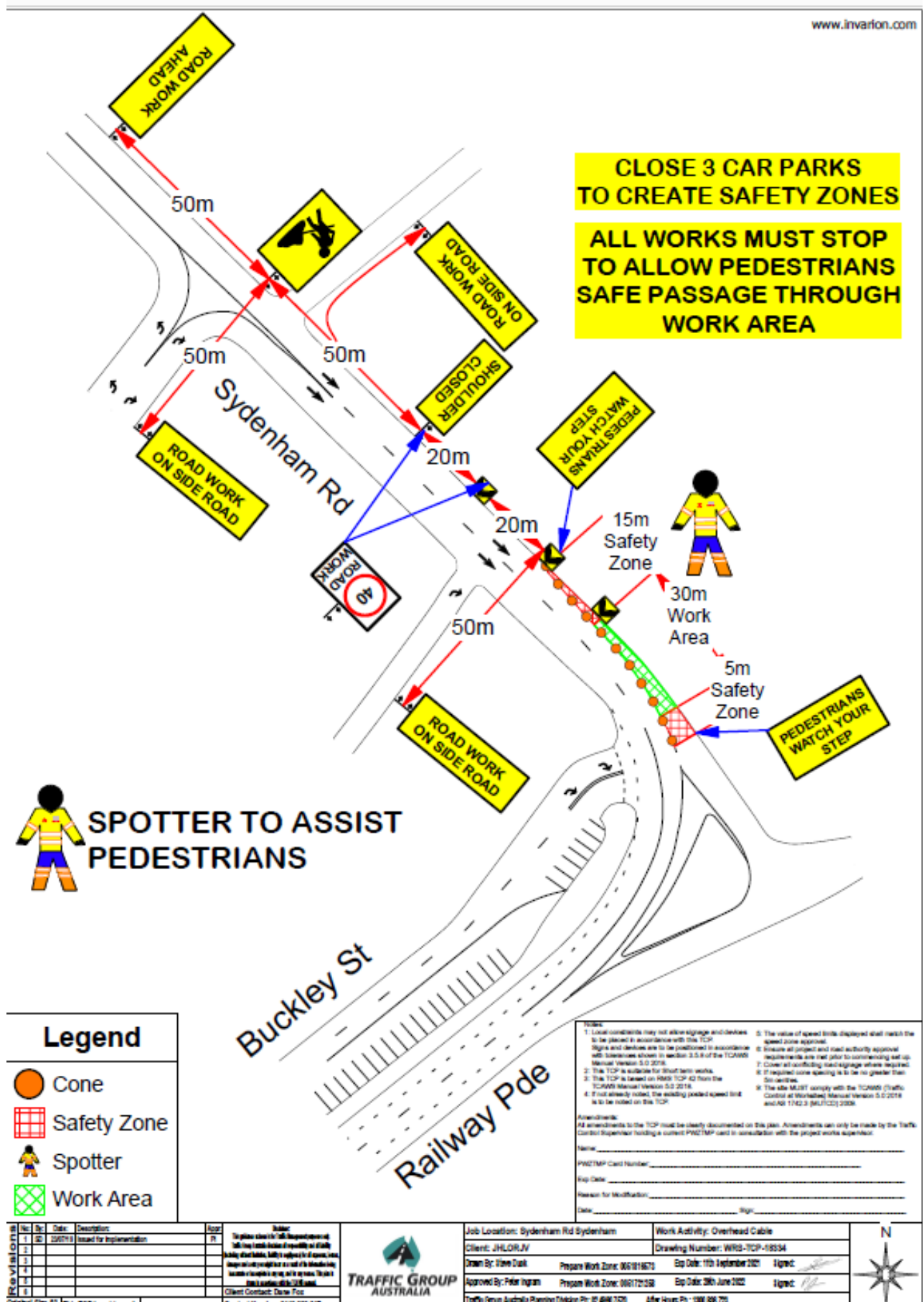


TRAFFIC GROUP AUSTRALIA



Job Location: Way St Marrickville	Work Activity: Delivery Van Movements
Client: JHLORUV	Drawing Number: WSS-TCP-18106
Drawn By: Rob Thompson	Prepare Work Zone: 06/08/19
Approved By: Peter Ingram	Exp Date: 28th September 2021
Prepare Work Zone Number: 1677258	Exp Date: 28th June 2021
Traffic Group Australia Planning Division Ph: 02 8866 7676	After Hours Ph: 1300 896 775







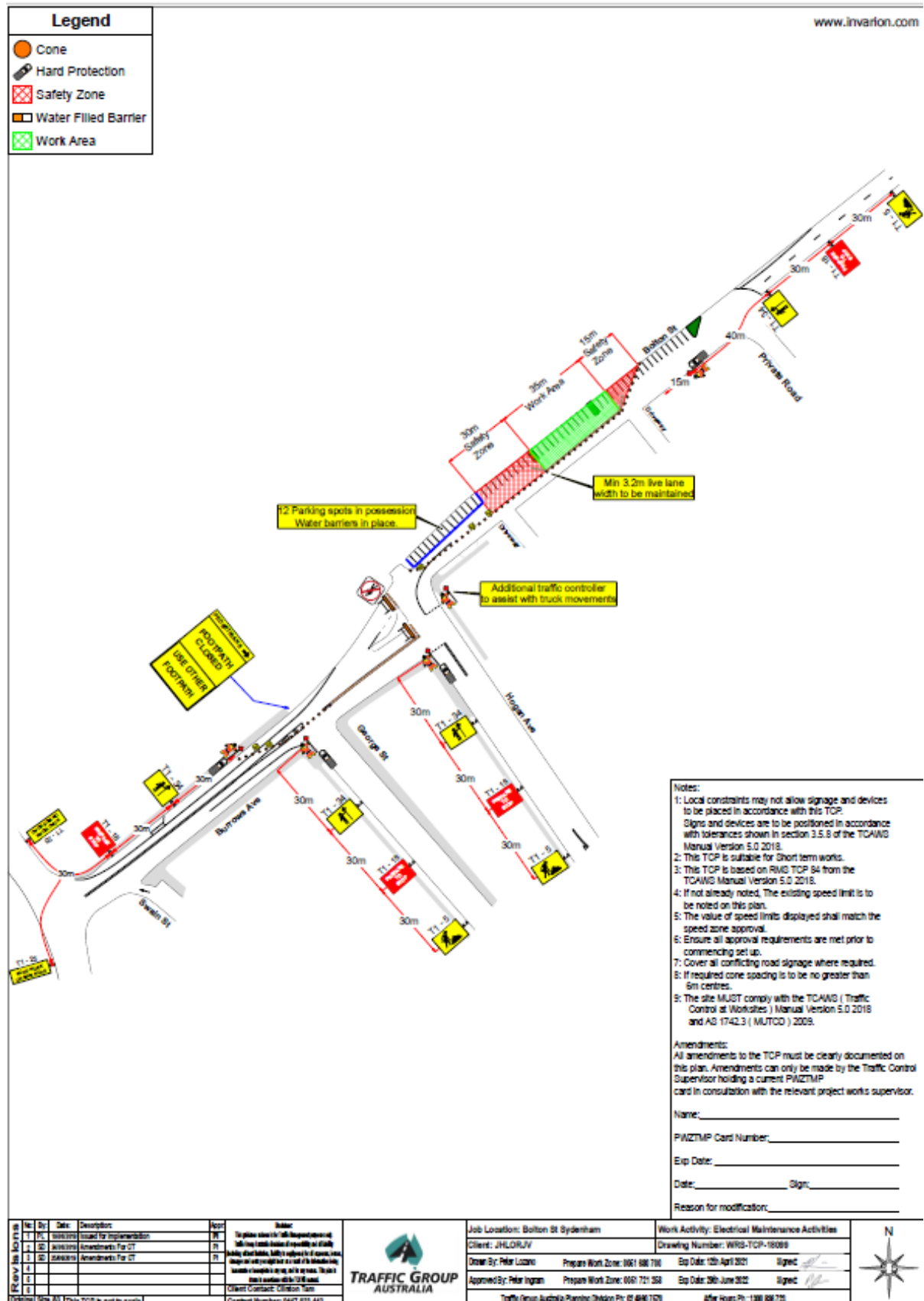


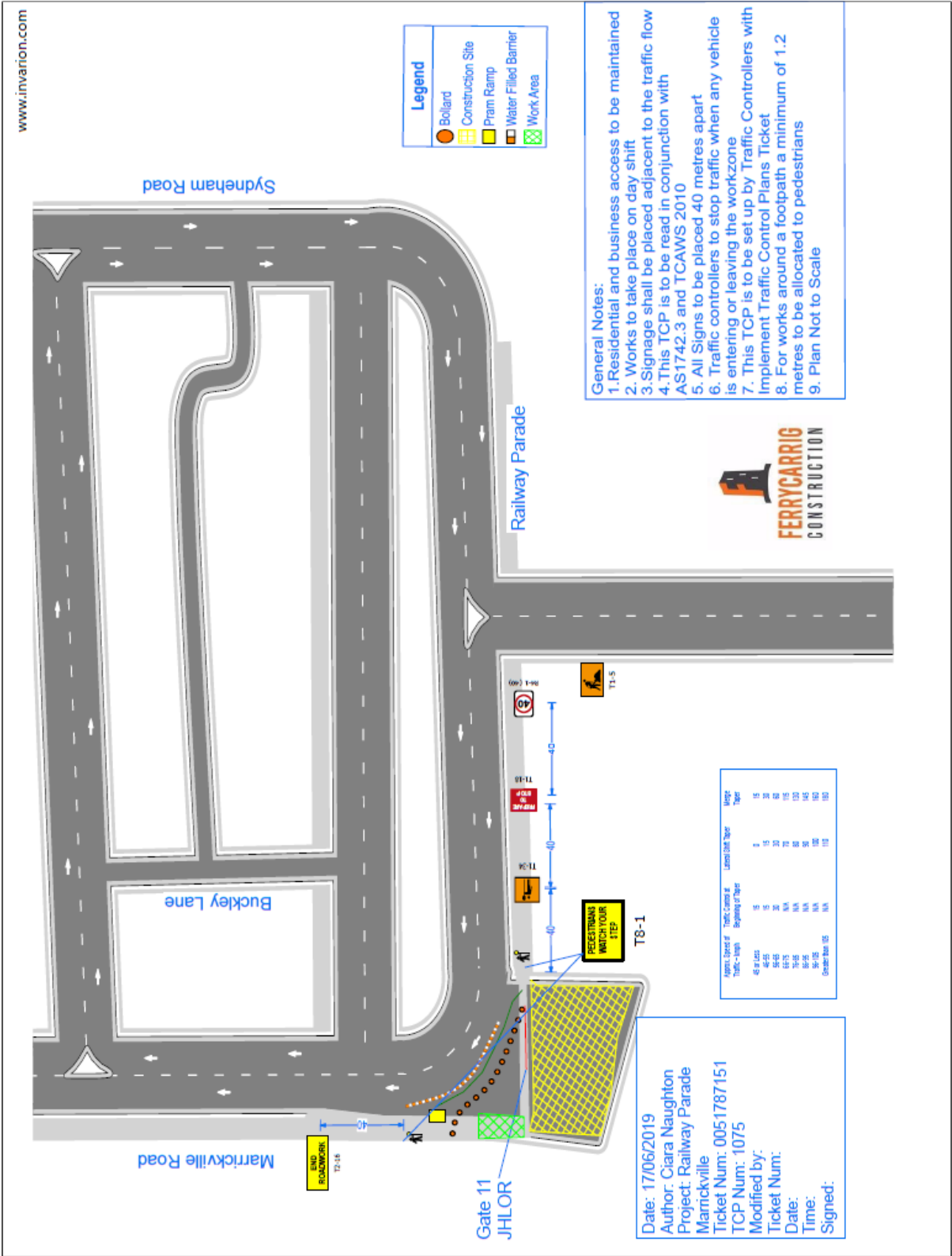






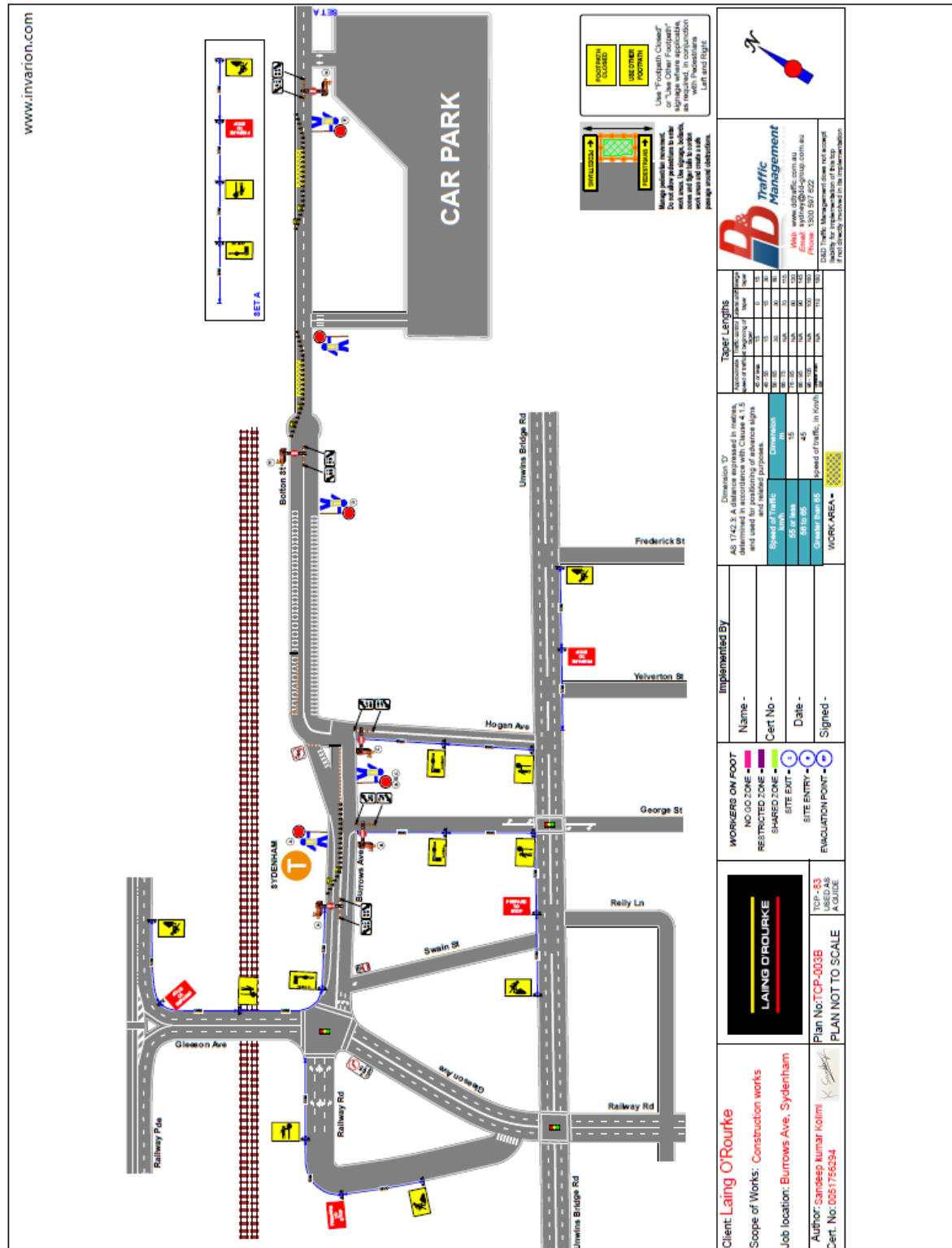


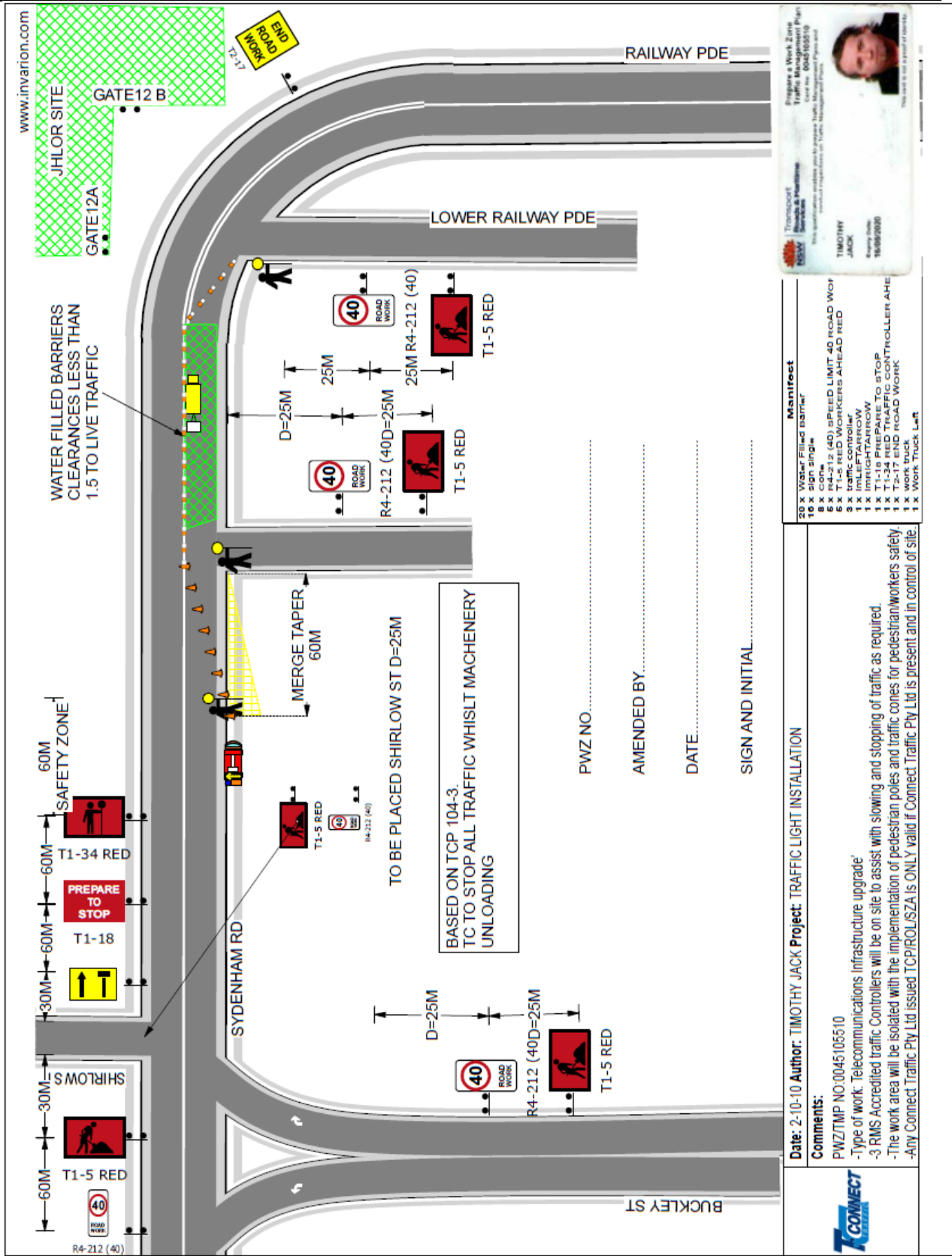


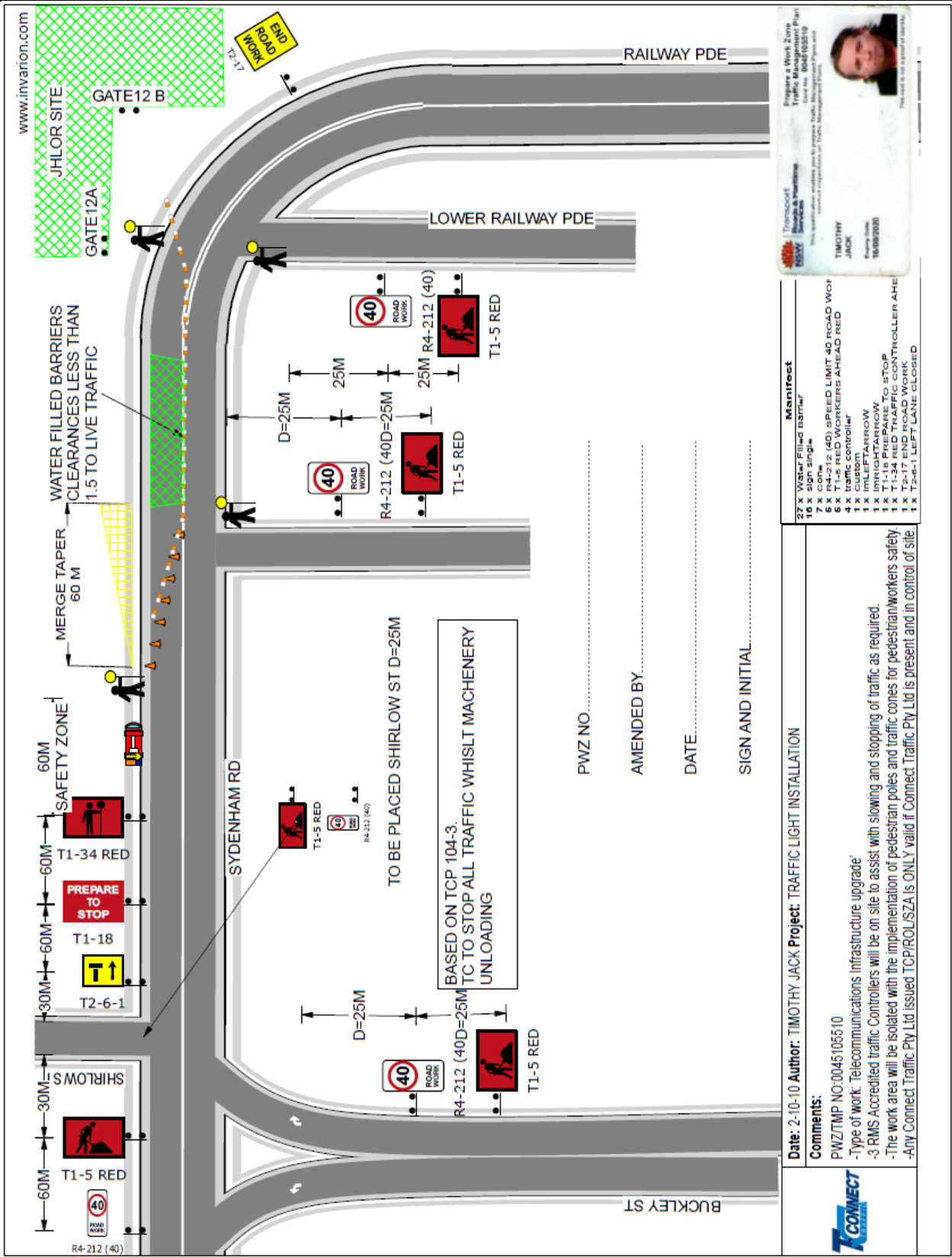






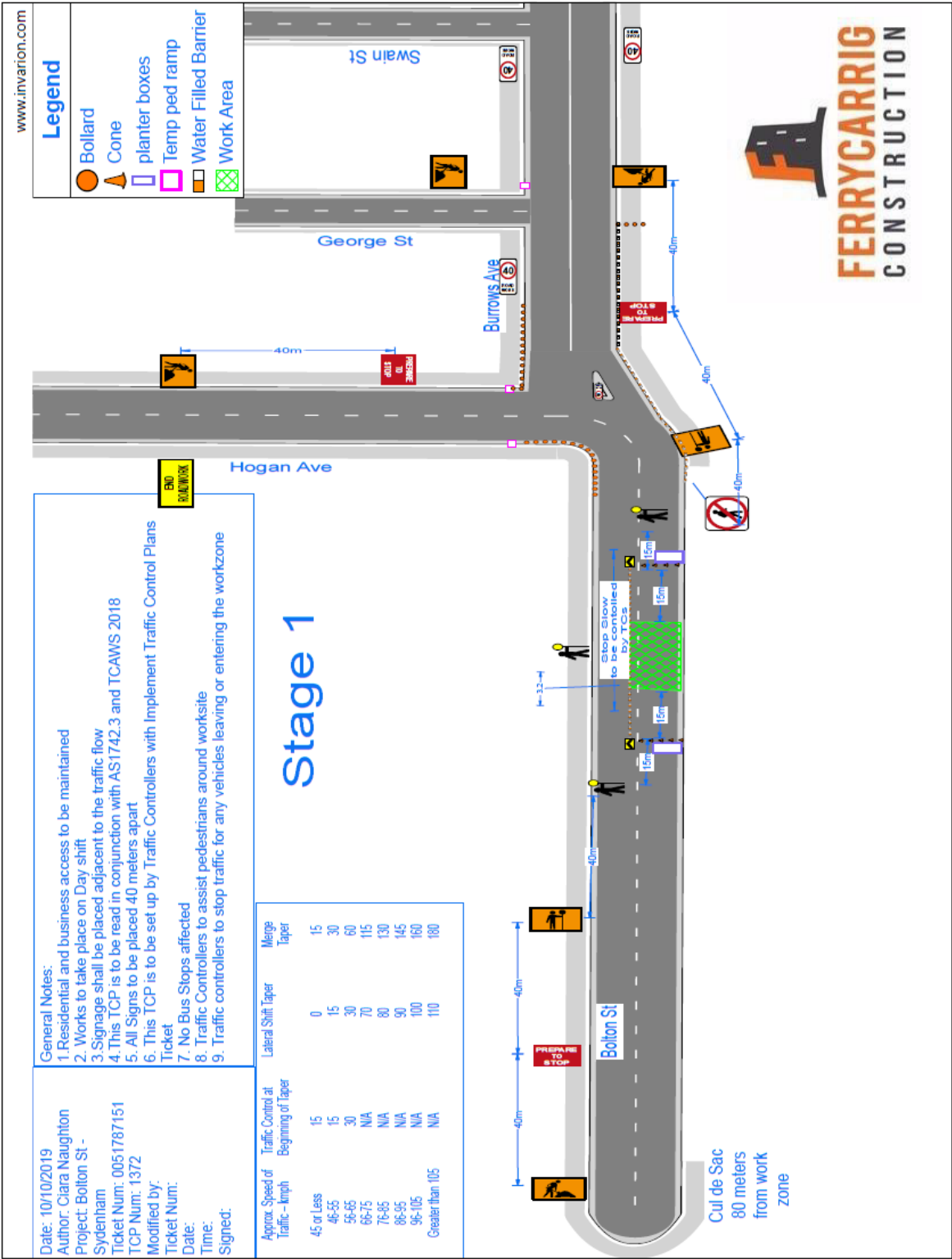






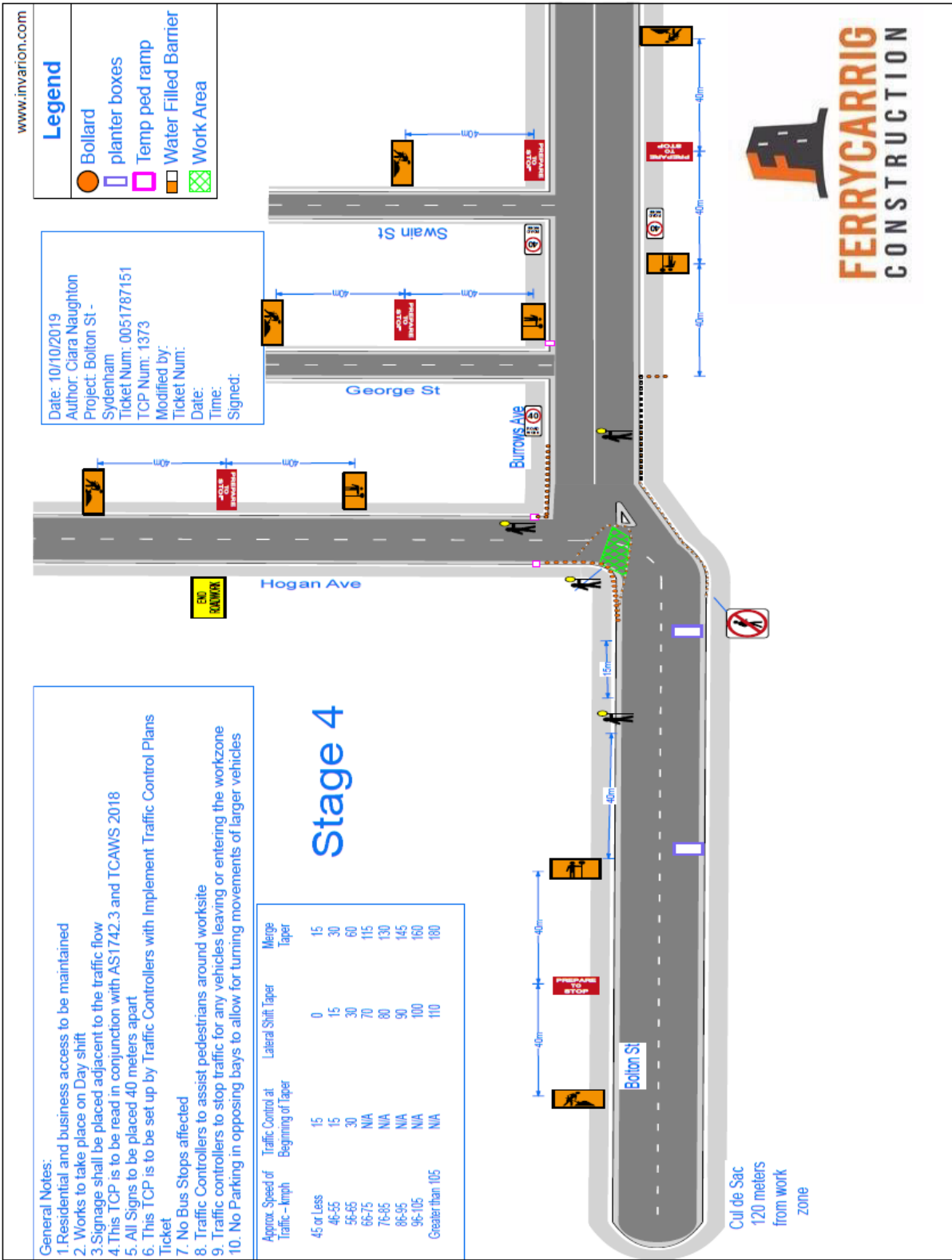




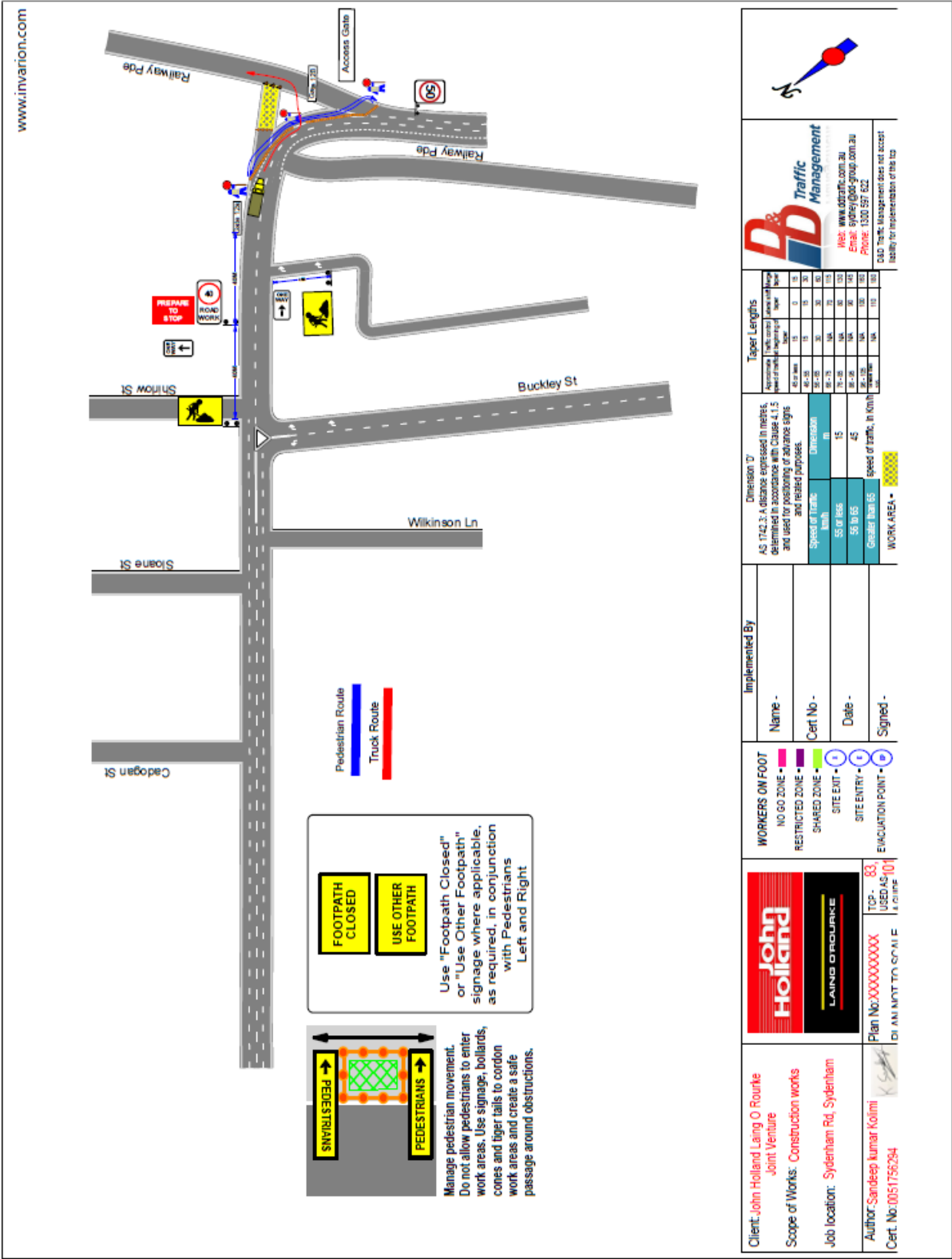










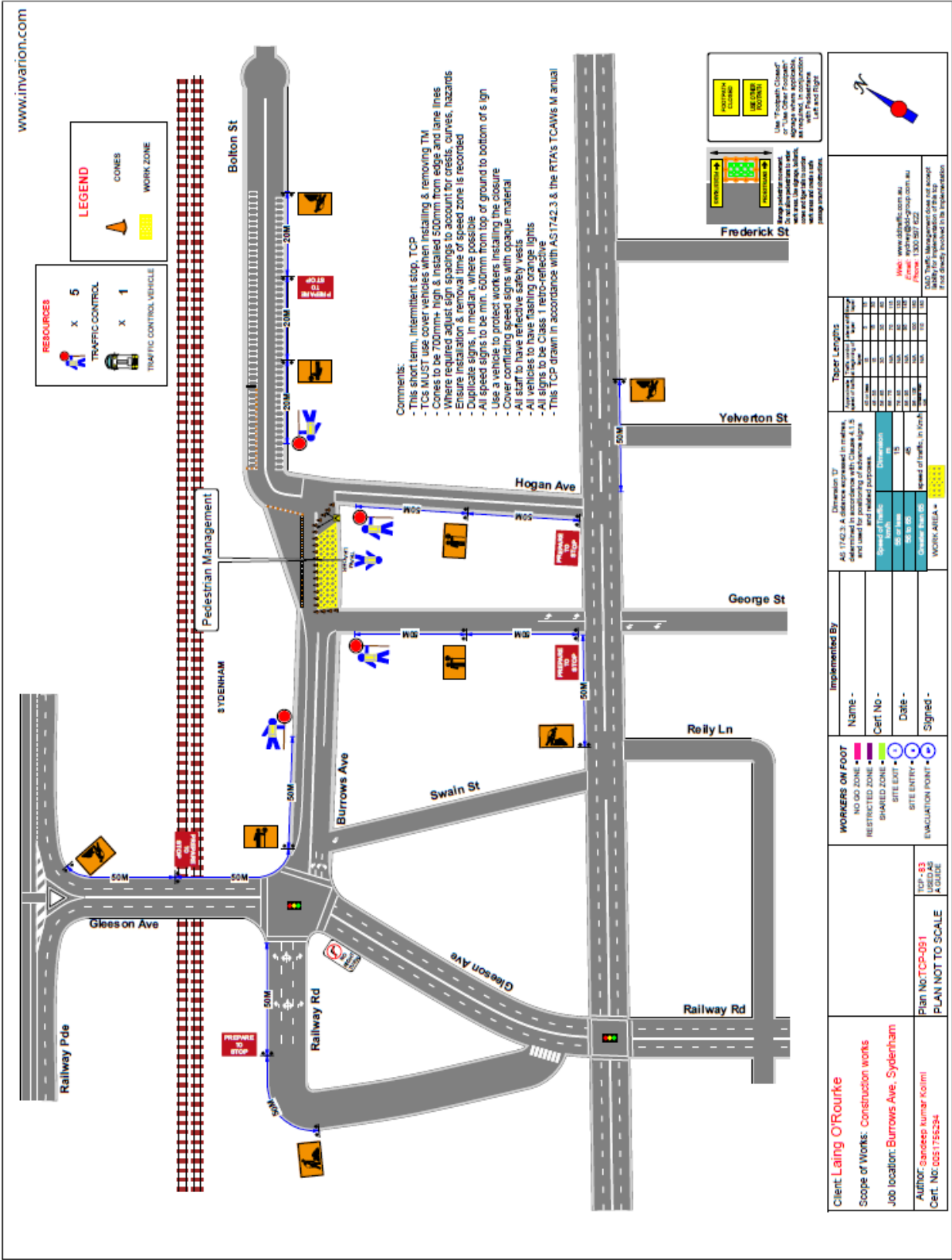








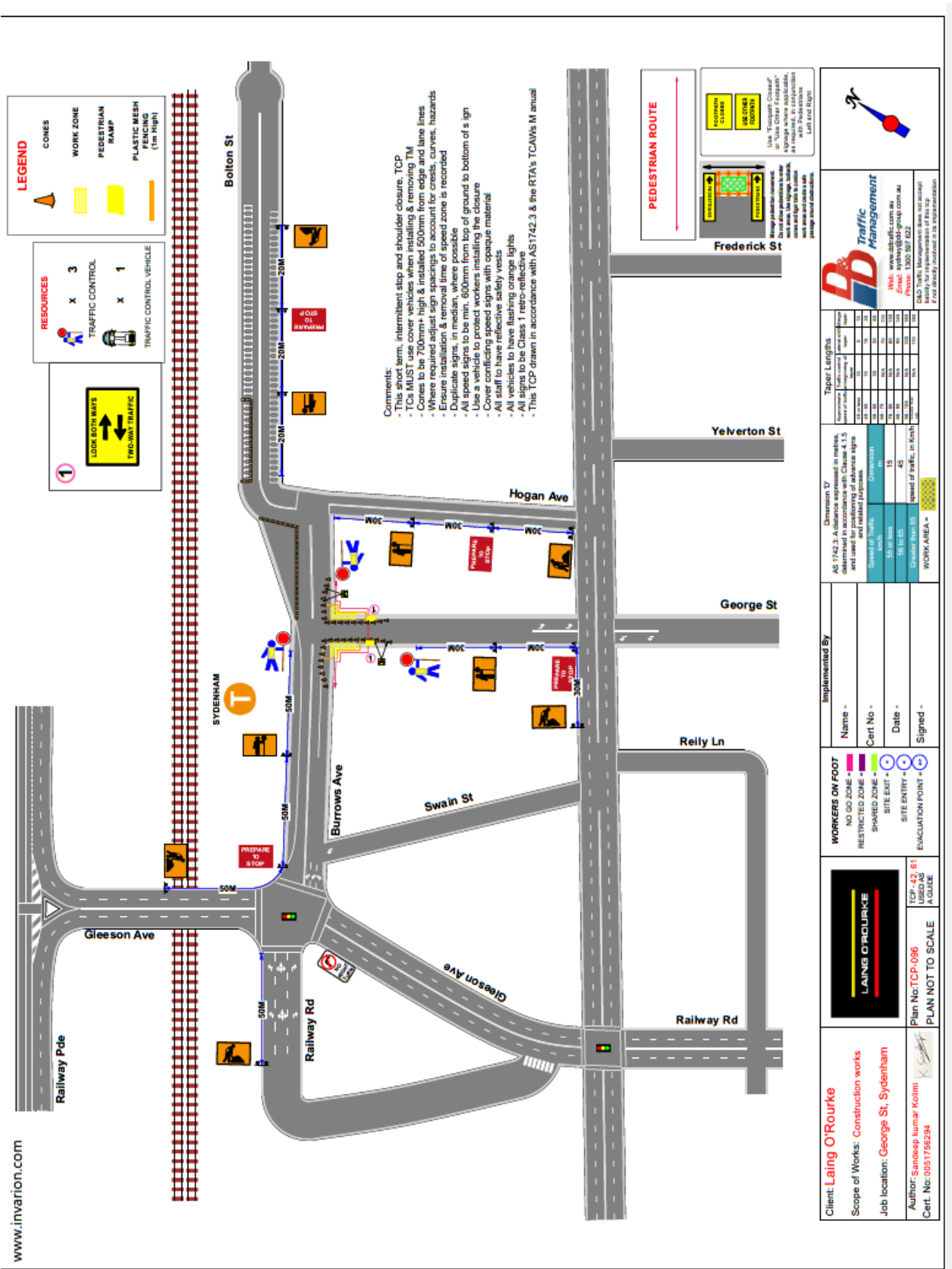










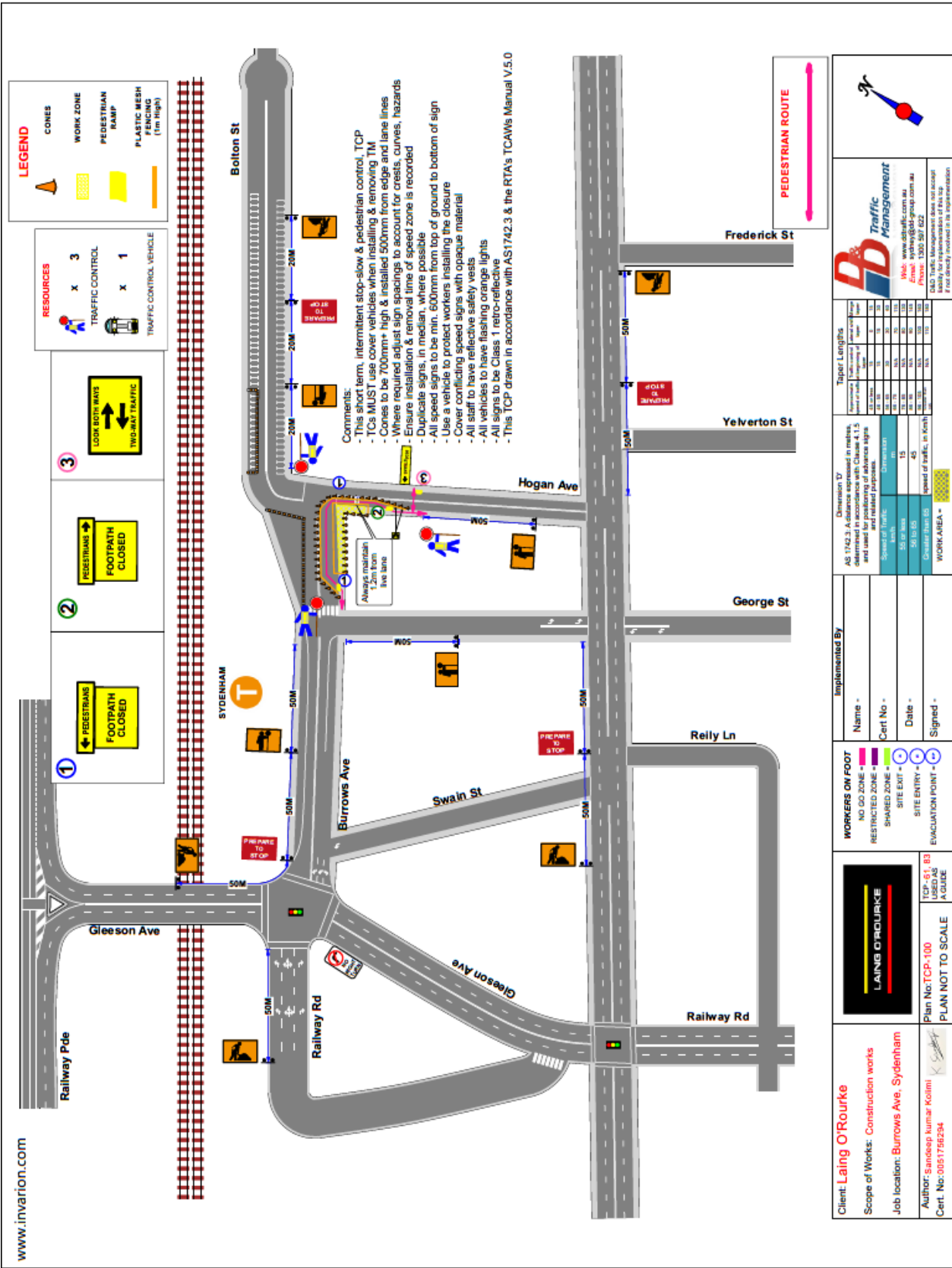


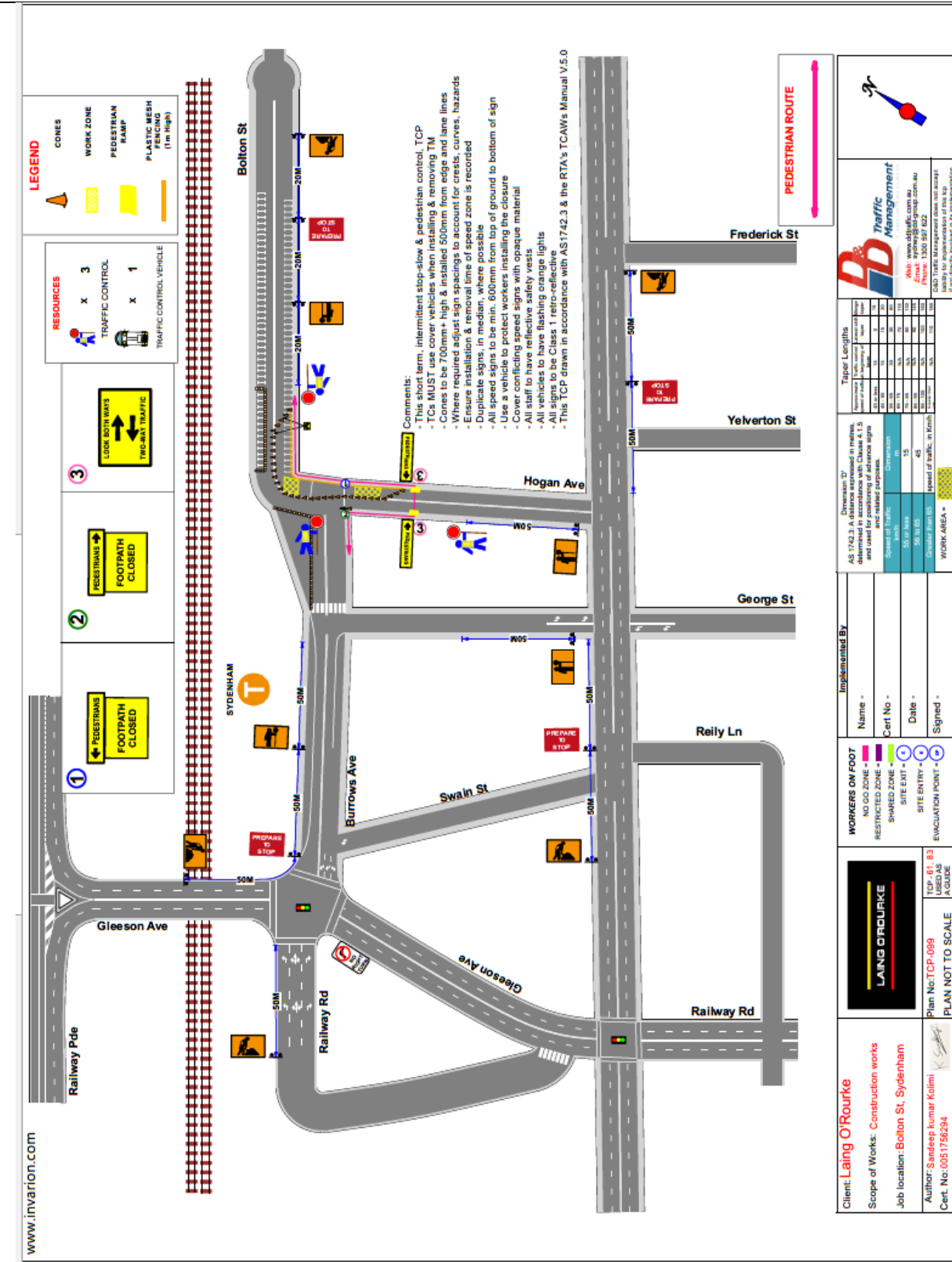


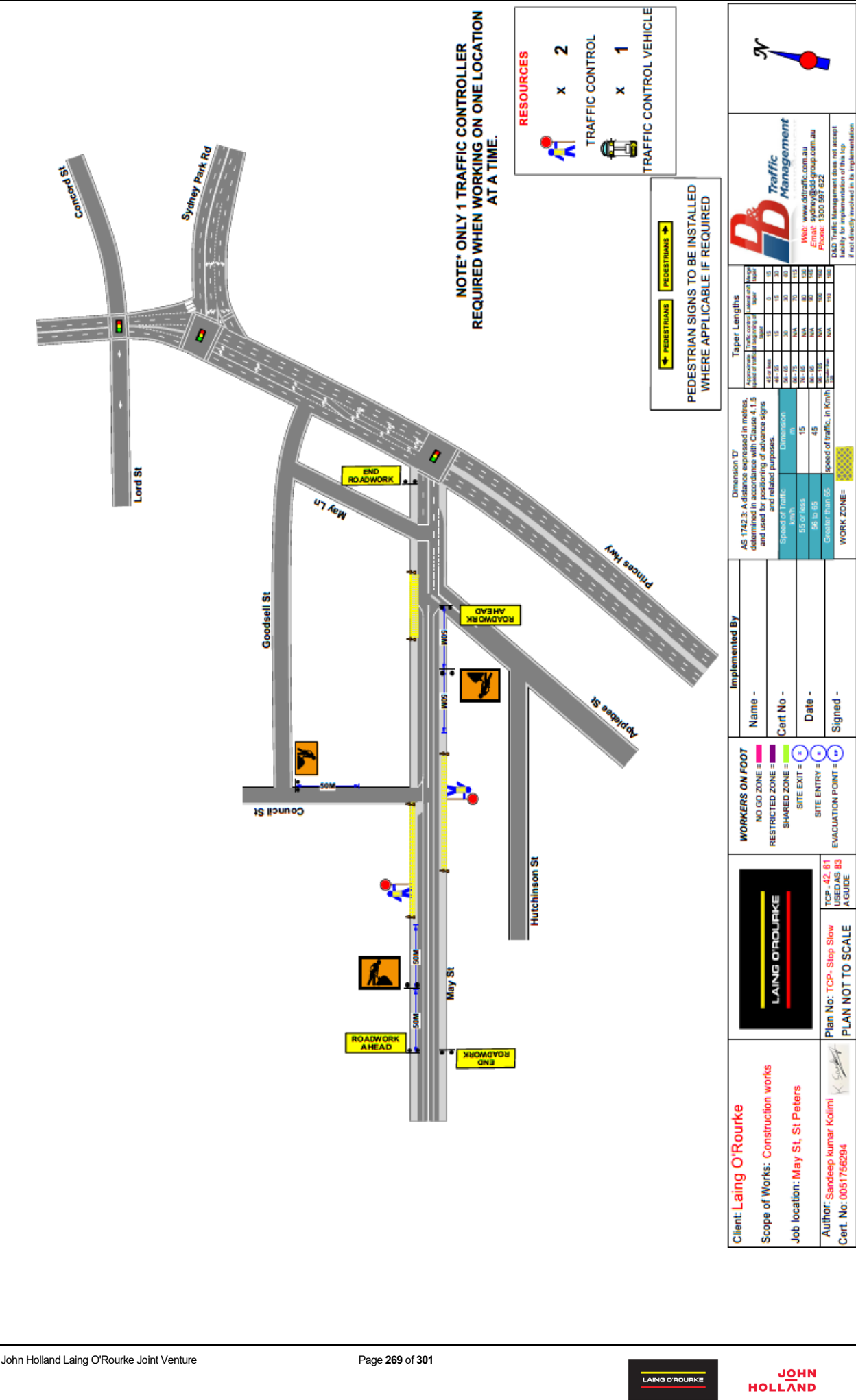




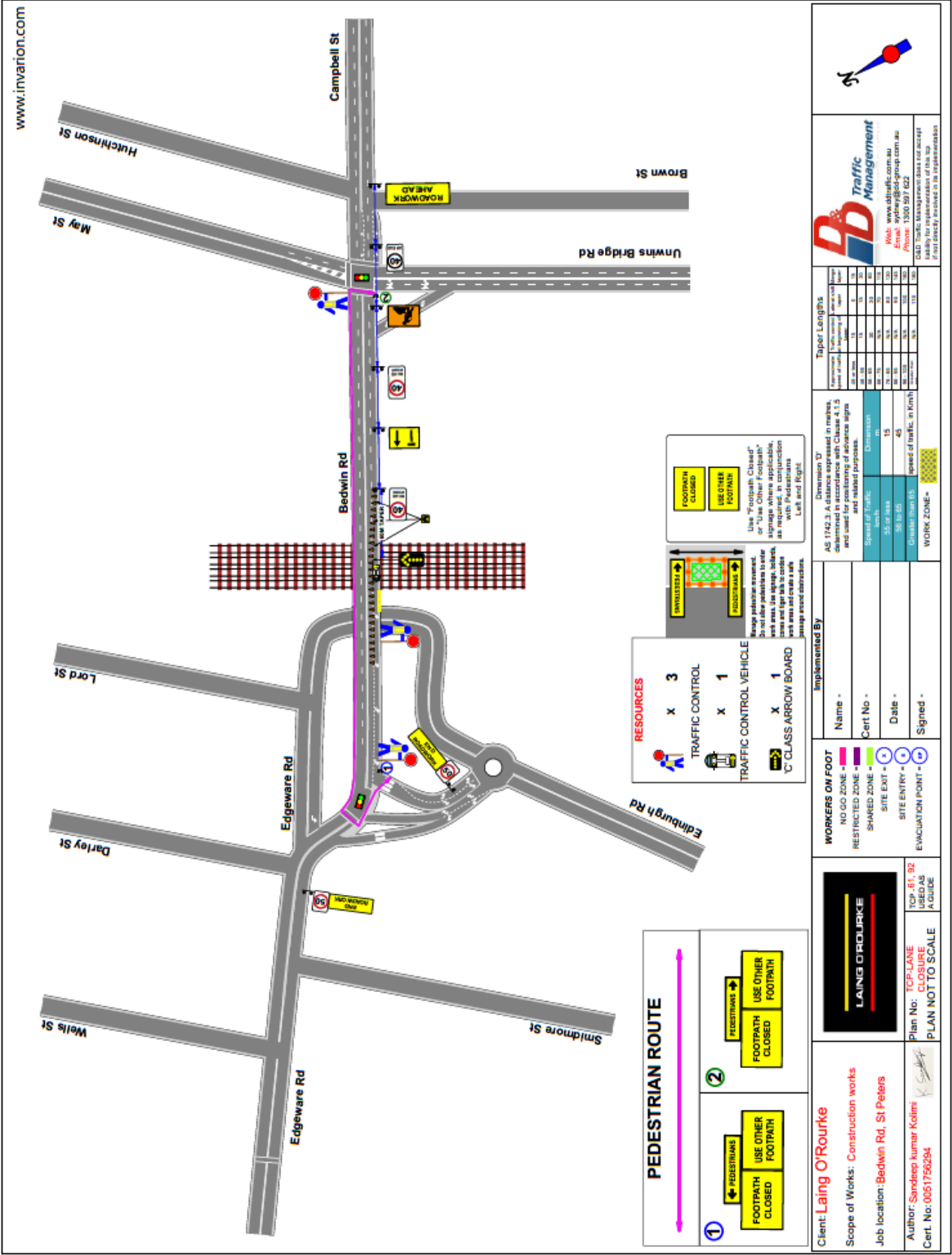




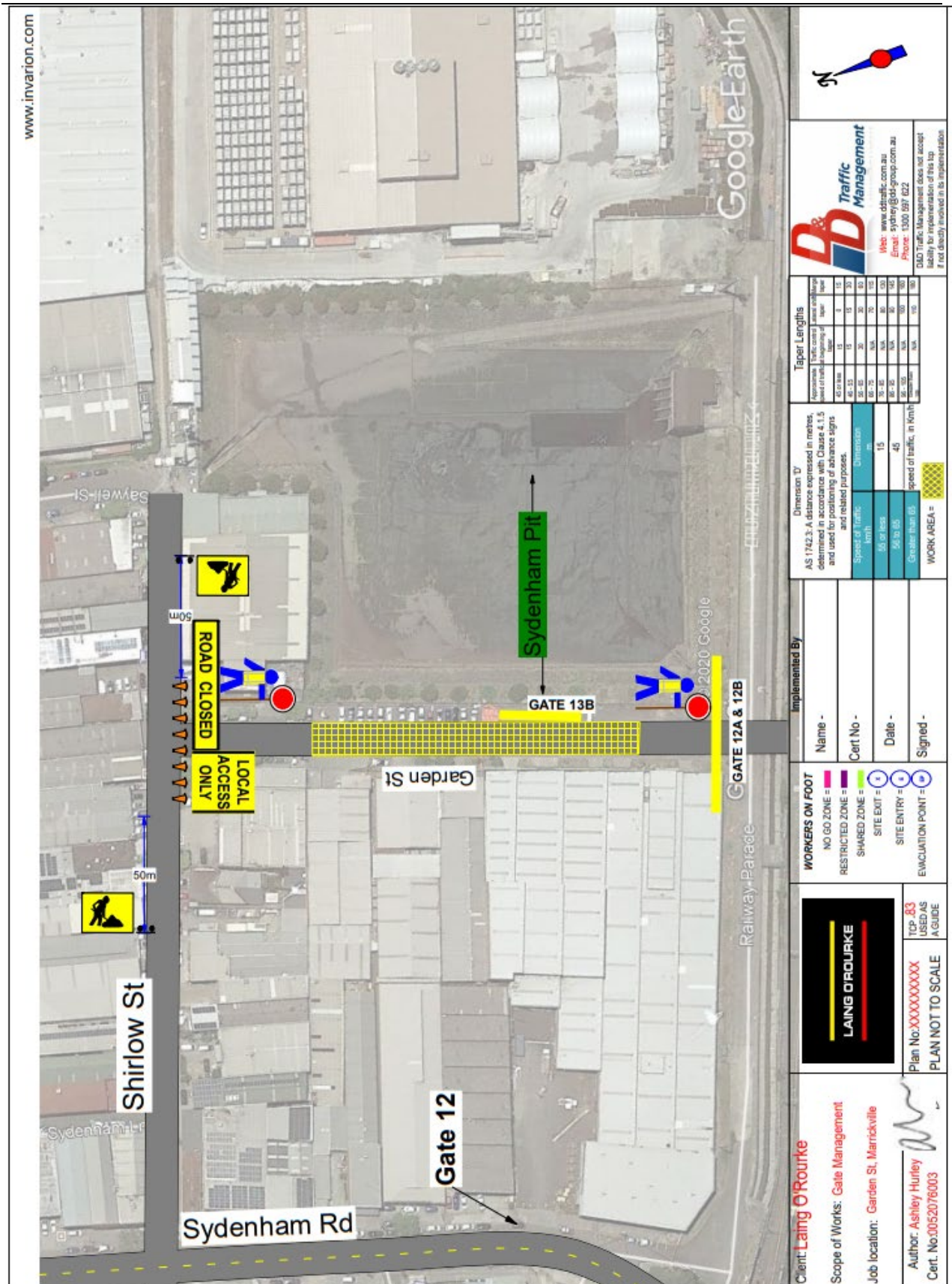




















10.11 Appendix L – CoA Compliance Matrix – NO CHANGE FROM REV 7**Conditions of Approval, Construction Traffic Management Framework, Construction Environmental Management Framework, and Revised Environmental Mitigation Measures Compliance Matrix**

The Project was assessed as a Critical State Significance Infrastructure (CSSI) by the Minister for Planning and Environment under Section 115ZB of the EP&A Act. The Minister's Conditions of Approval (CoA) were granted on 9 January 2017 with conditions. A construction traffic management sub-plan is required as part of the Construction Environmental Management Plan (CEMP) for the project under CoA C3 (h). The construction traffic conditions of approval are outlined in conditions E75-91 and addressed in the Sydenham Metro Upgrade Construction Traffic Management Sub-plan as outlined below. Additionally, the Revised Environmental Mitigation Measures also provides guidance on required actions during construction works and have been referenced accordingly below.

Conditions of Approval (CoA)	Requirement	Document Reference
A23	Works must not commence until an ER nominated under Condition A22 of this approval in respect of such works has been approved by the Secretary.	Refer to Section 1.7.4
A24	<p>From commencement of construction until completion of construction, the approved ER must:</p> <ul style="list-style-type: none"> (a) receive and respond to communications from the Secretary in relation to the environmental performance of the CSSI; (b) consider and inform the Secretary on matters specified in the terms of this approval; (c) consider and recommend any improvements that may be made to work practices to avoid or minimise adverse impact to the environment and to the community; (d) review all documents required to be prepared under the terms of this approval, ensure they address any requirements in or under this approval and if so, endorse them before submission to the Secretary (if required to be submitted to the Secretary) or before implementation (if not required to be submitted to the Secretary). For documents requiring specialist review and/or endorsement the ER is not required to endorse the specialist content; (e) regularly monitor the implementation of all documents required by the terms of this approval for implementation in accordance with what is stated in the document and the terms of this approval; (f) review the Proponent's notification of incidents in accordance with Condition A41 of this approval; (g) as may be requested by the Secretary, help plan, attend or undertake Department audits of the CSSI, briefings, and site visits; (h) if conflict arises between the Proponent and the community in relation to the environmental performance of the CSSI, follow the procedure in the Community Communication Strategy approved under Condition B3 of this approval to attempt to resolve the conflict, and if it cannot be resolved, notify the Secretary; (i) review any draft consistency assessment that may be carried out by the Proponent, and provide advice on any additional mitigation measures required to minimise the impact of the work; (j) consider any minor amendments to be made to the CEMP, CEMP sub-plans and monitoring programs that comprise updating or are of an administrative nature, and are consistent with the terms of this approval and the CEMP, CEMP sub-plans and monitoring programs approved by the Secretary and, if satisfied such amendment is necessary, approve the amendment. This does not include any modifications to the terms of this approval; (k) assess the impacts of minor ancillary facilities as required by Condition A18 of this approval; and 	Refer to Section 1.7.4

Conditions of Approval (CoA)	Requirement	Document Reference
	(l) prepare and submit to the Secretary and other relevant regulatory agencies, for information, a monthly Environmental Representative Report detailing the ER's actions and decisions on matters for which the ER was responsible in the preceding month (or other timeframe agreed with the Secretary). The Environmental Representative Report must be submitted within seven (7) days following the end of each month for the duration of works and construction of the CSSI, or as otherwise agreed with the Secretary.	
A25	<p>A suitably qualified and experienced Acoustics Advisor (AA), who is independent of the design and construction personnel, must be nominated by the Proponent and engaged for the duration of construction and for no less than six (6) months following operation of the CSSI.</p> <p>The details of the nominated AA must be submitted to the Secretary for approval no later than one (1) month before commencement of works, or within another timeframe as agreed with the Secretary. The Proponent may nominate additional suitably qualified and experienced persons to assist the lead Acoustics Advisor for the Secretary's approval.</p> <p>The Proponent must cooperate with the AA by:</p> <ul style="list-style-type: none"> (a) providing access to noise and vibration monitoring activities as they take place; (b) providing for review of noise and vibration plans, assessments, monitoring reports, data and analyses undertaken; and (c) considering any recommendations to improve practices and demonstrating, to the satisfaction of the AA, why any recommendation is not adopted. 	Refer to Section 1.7.5
A26	Any activities generating noise and vibration in excess of the Noise Management Level derived from the Interim Construction Noise Guideline must not commence until an AA, nominated under Condition A25 of this approval, has been approved by the Secretary.	Refer to Section 1.7.5
A27	<p>The approved AA must:</p> <ul style="list-style-type: none"> (a) receive and respond to communication from the Secretary in relation to the performance of the CSSI in relation to noise and vibration; (b) consider and inform the Secretary on matters specified in the terms of this approval relating to noise and vibration; (c) consider and recommend, to the Proponent, improvements that may be made to work practices to avoid or minimise adverse noise and vibration impacts; (d) review all noise and vibration documents required to be prepared under the terms of this approval and, should they be consistent with the terms of this approval, endorse them before submission to the Secretary (if required to be submitted to the Secretary) or before implementation (if not required to be submitted to the Secretary); (e) regularly monitor the implementation of all noise and vibration documents required to be prepared under the terms of this approval to ensure implementation is in accordance with what is stated in the document and the terms of this approval; (f) notify the Secretary of noise and vibration incidents in accordance with Condition A41 of this approval; (g) in conjunction with the ER, the AA must: <ul style="list-style-type: none"> i. consider requests for out of hours construction activities and determine whether to endorse the proposed activities in accordance with Condition E47; ii. as may be requested by the Secretary or Complaints Commissioner, help plan, attend or undertake audits of noise and vibration management of the CSSI including briefings, and site visits; iii. if conflict arises between the Proponent and the community in relation to the noise and vibration performance during construction of the CSSI, follow the procedure in the Community Communication 	Refer to Section 1.7.5

Conditions of Approval (CoA)	Requirement	Document Reference
	<p>Strategy approved under Condition B3 of this approval to attempt to resolve the conflict, and if it cannot be resolved, notify the Secretary;</p> <p>iv. consider relevant minor amendments made to the CEMP, relevant sub-plans and noise and vibration monitoring programs that require updating or are of an administrative nature, and are consistent with the terms of this approval and the management plans and monitoring programs approved by the Secretary and, if satisfied such amendment is necessary, endorse the amendment. This does not include any modifications to the terms of this approval;</p> <p>v. assess the noise impacts of minor ancillary facilities as required by Condition A18 of this approval; and</p> <p>vi. prepare and submit to the Secretary and other relevant regulatory agencies, for information, a monthly Noise and Vibration Report detailing the AAs actions and decisions on matters for which the AA was responsible in the preceding month (or other timeframe agreed with the Secretary). The Noise and Vibration Report must be submitted within seven (7) days following the end of each month for the duration of construction of the CSSI, or as otherwise agreed with the Secretary.</p>	
A41	The Secretary must be notified as soon as possible and in any event within 24 hours of any incident.	Refer to Section 1.7.2 All incidents to be managed in accordance with CEMP.
A42	Notification of an incident under Condition A41 of this approval must include the time and date of the incident, details of the incident and must identify any non-compliance with this approval.	Refer to Section 1.7.2 All incidents to be managed in accordance with CEMP.
A43	Any requirements of the Secretary or Relevant Public Authority (as determined by the Secretary) to address the cause or impact of an incident reported in accordance with Condition A41 of this approval, must be met within the timeframe determined by the Secretary or relevant public authority.	All incidents to be managed in accordance with CEMP.
A44	If statutory notification is given to the EPA as required under the POEO Act in relation to the CSSI, such notification must also be provided to the Secretary for information within 24 hours after the notification was given to the EPA.	Refer to Section 1.7.2
C3	<p>The following CEMP sub-plans must be prepared in consultation with the relevant government agencies identified for each CEMP sub-plan and be consistent with the CEMP and CEMP referred to in Condition C1. The Construction Traffic Management Plan must also be prepared in accordance with the Construction Traffic Management Framework as required by Condition E81.</p> <p>(a) Noise and Vibration (b) Biodiversity (c) Air Quality (d) Soil and Water (e) Groundwater (f) Heritage</p>	This document. CTMF included in compliance matrix.
C4	<p>The CEMP sub-plans must state how:</p> <p>(a) the environmental performance outcomes identified in the EIS as amended by the PIR as modified by these conditions will be achieved; (b) the mitigation measures identified in the EIS as amended by the PIR as modified by these conditions will be implemented; (c) the relevant terms of this approval will be complied with; and (d) issues requiring management during construction, as identified through ongoing environmental risk analysis, will be managed.</p>	Refer to Section 1.3 Refer to Section 2.1 Refer to Section 3.1, 3.2

Conditions of Approval (CoA)	Requirement	Document Reference
C5	The CEMP sub-plans must be developed in consultation with relevant government agencies. Where an agency(ies) request(s) is not included, the Proponent must provide the Secretary justification as to why. Details of all information requested by an agency to be included in a CEMP sub-plan as a result of consultation and copies of all correspondence from those agencies, must be provided with the relevant CEMP sub-plan.	Refer to Section 7 Refer to Appendix F – Not used
C6	Any of the CEMP sub-plans may be submitted to the Secretary along with, or subsequent to, the submission of the CEMP but in any event, no later than one (1) month before commencement of construction.	Refer to Section 1.4
C7	The CEMP must be endorsed by the ER and then submitted to the Secretary for approval no later than one (1) month before the commencement of construction or within another timeframe agreed with the Secretary.	Refer to Section 1.4
C8	Construction must not commence until the CEMP and all CEMP sub-plans have been approved by the Secretary. The CEMP and CEMP sub-plans, as approved by the Secretary, including any minor amendments approved by the ER, must be implemented for the duration of construction. Where the CSSI is being staged, construction of that stage is not to commence until the relevant CEMP and sub-plans have been approved by the Secretary.	Refer to Section 1.4
E36	Construction, except as allowed by Condition E48 (excluding cut and cover tunnelling), must only be undertaken during the following standard construction hours: (a) 7:00am to 6:00pm Mondays to Fridays, inclusive; (b) 8:00am to 1:00pm Saturdays; and (c) (c) at no time on Sundays or public holidays.	Refer to Section 1.5
E44	Notwithstanding Condition E36 construction associated with the CSSI may be undertaken outside the hours specified under those conditions in the following circumstances: (a) for the delivery of materials required by the NSW Police Force or other authority for safety reasons; or (b) where it is required in an emergency to avoid injury or the loss of life, to avoid damage or loss of property or to prevent environmental harm; or (c) where different construction hours are permitted or required under an EPL in force in respect of the construction; or (d) construction that causes LAeq(15 minute) noise levels: i. no more than 5 dB(A) above the rating background level at any residence in accordance with the Interim Construction Noise Guideline (DECC, 2009), and ii. no more than the noise management levels specified in Table 3 of the Interim Construction Noise Guideline (DECC, 2009) at other sensitive land uses, and iii. continuous or impulsive vibration values, measured at the most affected residence are no more than those for human exposure to vibration, specified in Table 2.2 of Assessing Vibration: a technical guideline (DEC, 2006), and iv. intermittent vibration values measured at the most affected residence are no more than those for human exposure to vibration, specified in Table 2.4 of Assessing Vibration: a technical guideline (DEC, 2006); or (e) where a negotiated agreement has been reached with a substantial majority of sensitive receivers who are within the vicinity of and may be potentially affected by the particular construction, and the noise management levels and/or limits for ground-borne noise and vibration (human comfort) cannot be achieved. All agreements must be in writing and a copy forwarded to the Secretary at least one (1) week before the works commencing; or (f) construction approved through an Out of Hours Work Protocol referred to in Condition E47, provided the relevant council, local residents and other affected stakeholders and sensitive receivers are informed of the timing	N/A: CEMP Section 4.2 outlines that the project will be constructed under Sydney Trains Environment Protection Licence (EPL) 12208, thereby CoA E44 does not apply.

Conditions of Approval (CoA)	Requirement	Document Reference
	<p>and duration at least five (5) days and no more than 14 days before the commencement of the works.</p> <p>Note: This condition does not apply where an EPL is in force in respect of the construction.</p>	
E47	<p>An Out of Hours Work Protocol for the assessment, management and approval of work outside of standard construction hours, as defined in Condition E36 of this approval, must be prepared in consultation with the EPA and submitted to the Secretary for approval before construction commences for works not subject to an EPL. The protocol must include:</p> <ul style="list-style-type: none"> (a) the identification of low and high risk construction activities; (b) a risk assessment process in which the AA reviews all proposed out of hours activities and identifies their risk levels; (c) a process for the endorsement of out of hours activities by the AA and approval by the ER for construction activities deemed to be of: <ul style="list-style-type: none"> i. low environmental risk; or ii. high risk where all construction works cease by 9pm. <p>All other high risk out of hours construction must be submitted to the Secretary for approval unless otherwise approved through an EPL.</p> <p>The protocol must detail standard assessment, mitigation and notification requirements for high and low risk out of hours works, and detail a standard protocol for referring applications to the Secretary.</p>	Refer to Construction Noise and Vibration Management Plan.
E48	<p>Notwithstanding Condition E36 of this approval and subject to Condition E47, the following activities may be undertaken 24 hours per day, seven (7) days per week:</p> <ul style="list-style-type: none"> (a) tunnelling and associated support activities (excluding cut and cover tunnelling); (b) excavation within an acoustic enclosure; (c) excavation at Central without an acoustic enclosure; (d) station and tunnel fit out; and (e) haulage and delivery of spoil and materials. 	Refer to Section 1.5
E75	<p>The CSSI must be designed, constructed and operated with the objective of integrating with existing and proposed road and related transport networks and minimising adverse changes to the safety, efficiency and, accessibility of the networks, and facilitate an improved level of service in relation to permanent and operational changes. Detailed design and assessment of related traffic, parking, pedestrian and cycle accessibility impacts and changes shall be undertaken:</p> <ul style="list-style-type: none"> (a) in consultation with, and to the reasonable requirements of the Traffic and Transport Liaison Group(s) established under Condition E77; (b) in consideration of existing and future demand, connectivity (in relation to permanent changes), performance and safety requirements; (c) to minimise and manage local area traffic impacts; (d) to ensure access is maintained to property and infrastructure; and (e) to meet relevant design, engineering and safety guidelines, including Austroads, Australian Standards, and RMS (RTA) requirements. <p>Copies of civil, structural and traffic signal design plans shall be submitted to the Relevant Road Authority for consultation before the commencement of the relevant works.</p>	<p>Refer to Section 2</p> <p>Refer to Section 7</p>
E76	<p>Permanent road works, including vehicular access, signalised intersection works, and works relating to pedestrians, cyclists, and public transport users must be subject to safety audits demonstrating consistency with relevant design, engineering and safety standards and guidelines. Safety audits must be prepared in consultation with the Traffic and Transport Liaison Group before the completion and use of the subject infrastructure and must be made available to the Secretary upon request.</p>	<p>Permanent works Safety Audit will be undertaken by design consultant as part of Critical Design Review (CDR) submission.</p> <p>Refer to Section 8.1</p>

Conditions of Approval (CoA)	Requirement	Document Reference
E77	<p>The Proponent must establish a Traffic and Transport Liaison Group(s) (TTLGs) to inform traffic and transport management measures during construction and operation of the CSSI. Management measures must be coordinated with and approved by the RMS following endorsement by the Sydney Coordination Office and consultation with the Relevant Roads Authority.</p> <p>The TTLG must comprise representatives from the Relevant Road Authority(ies) (including the RMS, relevant Councils, and the Barangaroo Delivery Authority as appropriate), transport operators (including bus and taxi operators), emergency services and Port Authority of NSW as required. The TTLG must be consulted on to inform the preparation of the Construction Traffic Management Plan(s) and Interchange Access Plan(s).</p>	<p>TTLG/TCG instigated by Sydney Metro, JHLOR JV in attendance</p> <p>Refer to Section 7</p> <p>Refer to Appendix F – Not used</p>
E78	<p>The Proponent must undertake supplementary analysis and modelling as required by the TTLG to demonstrate that construction and operational traffic can be managed to minimise disruption to traffic network operations, public including changes to and the management of pedestrian, bicycle and public transport networks transport services, pedestrian and cyclist movements. Revised traffic management measures, must be incorporated into the Construction Traffic Management Plan(s), Interchange Access Plan(s) and Station Design and Precinct Plan(s).</p>	<p>CTMP required approval by RMS / TMC / CoS / Sydney Metro, refer Section 7 for stakeholder engagement</p>
E79	<p>The Proponent must consult with the Relevant Road Authority regarding the use of any weight restricted road by heavy vehicles.</p>	<p>Refer to Section 2.1.11</p> <p>Refer to Section 2.1.14</p>
E80	<p>The Proponent must minimise truck movements during peak periods within commercial centres. Peak periods are from 7am to 10am and 4pm to 7pm Monday to Friday.</p>	<p>Refer to Section 1.5</p> <p>Refer to Section 2.1.14</p>
E81	<p>The Proponent must prepare and implement a Construction Traffic Management Framework (CTMF). The CTMF must be prepared in consultation with TTLG(s) and submitted to the Secretary for approval no later than one (1) month before the commencement of construction (or within any other timeframe agreed with the Secretary). The CTMF will set out the approach to managing issues across the CSSI and include but not be limited to:</p> <ul style="list-style-type: none"> (a) construction site access, including the efficient and safe egress and ingress of vehicles, consistent relevant Austroads, Australian Standards and RMS requirements; (b) the erection and maintenance of hoardings, scaffolds and associated structures on roads; (c) short and long term lane and road closures including those associated with plant, crane and other operations between the road reservation and construction site; (d) cumulative construction vehicle management from surrounding developments; (e) bus stop and associated facilities relocation and service rerouting; (f) short and long term works zones on roads adjacent to the construction site; (g) mail zone and associated facilities relocation; (h) short and long term works within the road reservation; (i) regulatory, advisory and other signage changes and modifications; (j) parking management, including on and off street and remote parking and access; (k) heavy vehicle management, the restriction (unless otherwise approved) of heavy vehicles to certain routes and the minimisation of heavy vehicle traffic in peak traffic periods; (l) special event management; (m) the retention and reinstatement of emergency and property access; (n) the retention of user and passenger safety, including pedestrians, cyclists, public transport users, including at stops and related facilities; (o) incident response planning around construction worksites; and 	<p>CTMF completed by Sydney Metro.</p> <p>Refer to compliance matrix below</p>

Conditions of Approval (CoA)	Requirement	Document Reference
	(p) monitoring of transport and access related impacts attributable to the CSSI.	
E82	Construction Traffic Management Plans (CTMPs), consistent with the CTMF required in Condition E81, must be prepared for each construction site in consultation with the TTLG(s), and submitted to the RMS for approval following Sydney Coordination Office endorsement before construction commences at the relevant construction site. A copy of any Construction Traffic Management Plans approved by the RMS must be submitted to the Secretary for information.	Refer to Section 1.3 Refer to Section 7 Refer to Appendix F – Not used
E83	Where construction results in a worsening of the matters identified in Condition E81(a)-(o), the Proponent must review the measures identified in the CTMPs in consultation with the TTLG(s), as relevant. Any changes to conditions as part the CTMPs must be submitted to the RMS for approval following Sydney Coordination Office endorsement and implemented.	Refer to Section 1.4 Refer to Section 2.1.15 Dilapidation Report
E84	Notwithstanding the above, the Proponent must investigate opportunities to maximise spoil removal by non-road methods and schedule final track laying as soon as practicable following completion of tunnelling with a view to transporting materials and equipment for station fit-out, systems and commissioning by rail to minimise truck movements in town centres and the Sydney CBD. The findings of the investigation must be reported to the Secretary before commencement and before completion of tunnel spoil generation as relevant. A decision to not adopt spoil haulage or materials delivery by non-road methods must be demonstrated to the satisfaction of the Secretary.	Refer to Section 2.1.14
E85	Heavy vehicle haulage must not use local roads unless no feasible alternatives are available.	Refer Appendix A – Heavy Vehicle Access Route Details Refer Appendix B – Traffic Control Plans
E86	During construction, measures must be implemented to maintain pedestrian and vehicular access to, and parking in the vicinity of, businesses and affected properties. Alternative pedestrian and vehicular access, and parking arrangements must be developed in consultation with affected businesses. Such arrangements must be outlined in the Business Management Plan required in Condition E64 and implemented as required. Adequate signage and directions to businesses must be provided before, and for the duration of, any disruption.	Refer to Section 2.1.5 Refer to Section 1 Refer to Appendix C – Vehicle Management Plans, Pedestrian Movement Plans, and Worker Walking Routes
E87	Permanent road works, including vehicular access, signalised intersection works, and works relating to pedestrians, cyclists and public transport users will be subject to safety audits demonstrating consistency with relevant design, engineering and safety standards and guidelines. Safety audits must be included within each relevant CTMP and carried out in consultation with the TTLG before the completion and use of the subject infrastructure and must be made available to the Secretary on request.	Refer to Section 8.1 Refer to Appendix E – Road Safety Audit
E88	Details of haulage routes and heavy vehicle sizes to transport material to and from any construction site must be specified in the Construction Traffic Management Plan(s) and be approved by the RMS following endorsement by Sydney Coordination Office and consultation with the TTLG (s).	Refer to Section 2.1.14 Refer to Appendix A – Heavy Vehicle Access Route Details
E90	A Road Dilapidation Report must be prepared for local roads proposed to be used by heavy vehicles for the purposes of the CSSI before the commencement of use by such vehicles. Copies of the Road Dilapidation Report must be provided to the Relevant Council within three (3) weeks of completing the surveys and no later than one (1) month before the use of local roads by heavy vehicles.	Refer to Section 2.1.15
E91	If damage to roads occurs as a result of construction of CSSI, the Proponent must either (at the landowner's discretion): (a) compensate the landowner for the damage so caused. The amount of compensation may be agreed with the landowner; or	Refer to Section 2.1.15 Remedial actions to be undertaken as per Property Management Plan.

Conditions of Approval (CoA)	Requirement	Document Reference
	(b) rectify the damage so as to restore the road to at least the condition it was before construction commenced as identified in the Road Dilapidation Report(s).	
E92	<p>The Proponent must develop an Interchange Access Plan for each station to inform the final design of transport and access facilities and services, including footpaths, cycleways, passenger facilities, parking, traffic and road changes, and integration of public domain and transport initiatives around and at each station. The Interchange Access Plan(s) must consider walking and cycling catchments and take into account:</p> <ul style="list-style-type: none"> (a) station access hierarchy consistent with the transport planning principles defined in the EIS; (b) safe, convenient, efficient and sufficient access to stations and transfer between transport modes (including subterranean connections and the safeguarding of additional entrances in response to land use change and patronage demand); (c) the maintenance or improvement of pedestrian and cyclists level of service within a justified proximity to stations; (d) current transport initiatives and plans; (e) opportunities and constraints presented by existing and proposed transport and access infrastructure and services; (f) patronage changes resulting from land use, population, employment, transport infrastructure and service changes; (g) integration with existing and proposed transport infrastructure and services; (h) pedestrian, cycle, bus, taxi, vehicle and emergency vehicle access and parking infrastructure and service changes; (h) legislative requirements and applicable guidelines; (i) safety audits, including but not limited to a review of traffic facility and cycle changes to ensure compliance with Austroads design criteria; (j) final design, infrastructure, management and service measures and the level of access and service to be achieved for all users; and (k) the contents of the Interchange Operations and Maintenance Plan (IOMP) and operational management provisions for future operational requirements, including maintenance, security and management responsibilities. <p>The Interchange Access Plan(s) must be prepared in consultation with the TTLG and the Design Review Panel and must be supported by traffic and transport analysis. Where necessary, consultation must also be undertaken with major landholders adjoining station precincts. The Plan(s) must detail a delivery and implementation program which must be provided to and agreed by the Secretary before commencement of permanent aboveground facilities at any station site.</p>	This CTMP will be updated when the Interchange Access Plan is approved.
E93	<p>In developing the Interchange Access Plan(s), the Proponent must consider:</p> <ul style="list-style-type: none"> (a) traffic and accessibility design requirements; and (b) the Station Design and Precinct Plan(s) required by Condition E101. 	This CTMP will be updated when the Interchange Access Plan is approved.
E95.1	Before approval of the Interchange Access Plan or Station Design and Precinct Plan relevant to the Sydenham Station upgrade and Sydney Metro Trains Facility South, the Proponent must, in consultation with the TTLG, investigate opportunities for dedicated cycle connections between Sydenham Station and Marrickville Station. Where opportunities for such connections are identified, the relevant Interchange Access Plan and/or Station Design and Precinct Plan must include provision for delivery of any connections.	This CTMP will be updated when the Interchange Access Plan is approved.
E96	The Interchange Access Plan(s) must be reviewed by a qualified traffic and transport professional(s), independent of the detailed design process for the CSSI, having regard to the requirements of this approval.	This CTMP will be updated when the Interchange Access Plan is approved.
E97	The Proponent must provide adequate bicycle infrastructure at stations that form part of the project, and provide adequate areas for future expansion of that infrastructure.	N/A to CTMP

Conditions of Approval (CoA)	Requirement	Document Reference
E98	The Proponent must undertake an audit of bicycle patronage at stations and end-of-trip facility adequacy 12 and 36 months following commencement of operation of the project to ensure the level of bicycle parking and end-of-trip facilities available are adequate in terms of both quantity and quality. The audit must be undertaken with the Relevant Council(s), RMS, Bicycle NSW and relevant local bike user groups.	N/A to CTMP

Construction Traffic Management Framework (CTMF)		
2.1	<p>All Sydney Metro City & Southwest construction activity must comply with the following principles:</p> <ul style="list-style-type: none"> (a) A safe road and pathway network for construction personnel and the public (vehicular, cyclist and pedestrian) must be made at all work sites including alternative movement paths as a result of site works. (b) Minimise delays to traffic and pedestrians in the immediate vicinity of work sites as much as practicable. (c) Minimise construction traffic generation during network peak periods to the maximum numbers outlined in the EIS, unless otherwise agreed by the relevant authorities (such as Sydney Coordination Office (SCO), RMS or local council). It is an RMS operational imperative that the capacity and efficiency of the network is not reduced, particularly during the peak periods of 6:00am to 10:00am and 3:00pm to 7:00pm, Monday to Friday (excluding public holidays). (d) Coordinate works so that road users do not encounter a series of delays in quick succession and so that the cumulative impact of multiple closures does not lead to unexpected congestion. (e) Implement appropriate operational and other measures to ensure the safety of vulnerable road users (refer to Section 9.5). (f) Maintain access for residents and businesses. (g) Keep road users (vehicular, cyclists and pedestrians) informed about: <ul style="list-style-type: none"> i. The location, date, time and duration of works, to enable informed decisions by the road user regarding times and routes of travel. ii. Likely travel delays. iii. Alternative routes, if applicable. (h) Present a professional and helpful interface with road users during all parts of the construction process. (i) Consider potential impacts on pedestrians and cyclists. (j) Keep public transport users informed of changes, due to construction. (k) Meet other RMS and SCO operational imperatives listed in Appendix C. 	<p>Refer to Section 1.5</p> <p>Refer to Section 1.7</p> <p>Refer to Section 2</p> <p>Refer to Section 4</p> <p>Refer to Section 6</p> <p>Refer to Section 7</p>
2.2	<p>Priority will be given to providing adequate guidance to pedestrians, cyclists, drivers and the community prior to the commencement of any works. Priority will also be given to responding appropriately to issues and events that may arise during the works. As part of this strategy, some key traffic management measures include:</p> <ul style="list-style-type: none"> (a) The provision of directional signage and line marking to direct and guide drivers, cyclists and pedestrians past work sites and to suitable alternative routes (if required) on the surrounding road network. (b) Notification of proposed changes and duration using newspapers (local or majors), radio, project website, social media and direct community engagement (as required). (c) On-going or direct co-ordination with the Transport Management Centre (TMC) and the SCO, to mitigate congestion and provide rapid response should incidents or increased congestion occur as a direct result of the works. Notification of incidents or congestion should also be relayed to the Sydney Metro Delivery Office immediately (refer to Section 8.3). The direct contact numbers of the contract-wide and site-specific lead contractors should be provided to the TMC and SCO. The contract-wide 	<p>Refer to Section 3</p> <p>Refer to Section 4</p> <p>Refer to Section 7</p>

Construction Traffic Management Framework (CTMF)		
	<p>lead contractor is responsible for ensuring the direct contact numbers are current during any stage of construction.</p> <p>(d) Management and coordination of construction vehicle access to and from the work sites across pedestrian paths. The type of traffic management to be employed will be dependent on, and adjusted according to, the volume of pedestrians, passing traffic and the volume of construction vehicle activities for the site. The types of management could include manual supervision, physical barriers, temporary/portable traffic signals (where approved by RMS, BDA or council) or modification to existing traffic signals (where approved by RMS).</p> <p>(e) Ensuring that access to existing properties and businesses is maintained during the period of the works, or suitable alternative.</p> <p>(f) Retain existing on-street parking and restrictions, as far as is practicable.</p>	
2.3	In identifying the most appropriate form of traffic management for each site, consideration should be given to the priorities of the potential different users.	Refer to Section 1.6
3.3.1	This CTMF provides the framework within which subsequent contract-specific and site-specific CTMPs will be prepared.	Refer to Section 1
3.3.2	A contract-wide Construction Traffic Management Plan (CTMP) will be prepared by contractors, covering the full spatial extent of their works and multiple sites.	Refer to this document
3.3.3	Contractors will also prepare more detailed site-specific Construction Traffic Management Plans (CTMPs). These will be developed by the contractor for each work site and identify proposed heavy vehicle routes, traffic and parking management measures. These plans will be developed in consultation with the TTLG and TCG meetings.	All SMU work areas are covered by this CTMP.
3.3.4	<p>The site-specific CTMPs provide the basis for preparation of the Traffic Control Plans (TCP) and Road Occupancy Licence (ROL) applications.</p> <p>Vehicle movement plans should be included in site-specific CTMPs prepared by a suitably qualified person for the contractor. The VMP should also include the proposed site access points and how these are to be managed.</p> <p>Wherever it is necessary to divert or warn pedestrians of works the PMP should be included in the CTMP prepared by the contractor. This may be a stand-alone document.</p>	<p>Refer to Section 2</p> <p>Refer to Section 2.1.2</p> <p>Refer to Section 4.3</p> <p>Refer to Appendix B – Traffic Control Plans</p> <p>Refer to Appendix C – Vehicle Management Plans, Pedestrian Movement Plans, and Worker Walking Routes</p> <p>ROLs to be developed/obtained for specific works</p>
4.1	Traffic and Transport Liaison Group (TTLG)	Refer to Section 7
4.2	Traffic Control Group (TCG)	Refer to Section 7
4.3	Government stakeholders	Refer to Section 7
5	All external communication with the community, including businesses, must follow the guidelines set out in the Sydney Metro City & Southwest Community Communication Strategy.	<p>Refer to Section 7</p> <p>Refer to Section 1</p>
5.1	Owners and operators of potentially affected properties and businesses will be consulted throughout the delivery of the Project and notified well in advance of any works that may potentially disrupt access to their property.	<p>Refer to Section 7</p> <p>Refer to Section 1</p>
5.2	Activity specific communications strategies are required to be developed prior to any traffic event. These strategies should include details of the work, impacts and proposed mitigation measures	Refer to Section 7
5.3	The contractor's Stakeholder and Community Manager will be responsible for ensuring a system is in place to advise the Sydney Metro City & Southwest Project Communications Team, the TTLG and other key stakeholders each time proposed changes are to be made to traffic arrangements	Refer to Section 7

Construction Traffic Management Framework (CTMF)		
5.4	Appropriate signposting, whether static or Variable Message Signs (VMS), should be located and installed to provide for the easy and safe passage of vehicles, pedestrians and cyclists. This also includes public transport users accessing facilities such as bus stops.	Refer to Section 3
6.1	Notwithstanding the Project SSI Approval being secured under Part 5.1 of the EP&A Act, Sydney Metro contractors will be required to secure all required statutory approvals prior to the commencement of works.	Refer to Section 2
6.2	The agencies that may have a potential interest in the traffic management measures proposed for each Project construction site are outlined in table 6-1 (CTMF).	Refer to Section 7
6.3	<p>Construction Traffic Management Plans will require approval and consideration by several key stakeholders. Contractors should assess the overall required approval times at the beginning of the Project to provide adequate scheduling of the preparation and submission of the CTMPs.</p> <p>Condition E82 requires “Construction Traffic Management Plans (CTMPs), consistent with the CTMF required in Condition E81, must be prepared for each construction site in consultation with the TTLG(s), and submitted to RMS for approval following Sydney Coordination Office endorsement before construction commences at the relevant construction site.”</p> <p>In addition, Condition E83 requires that “Where construction results in a worsening of the matters identified in Condition E81 (a)-(o), the Proponent must review the measures identified in the CTMPs in consultation with the TTLG(s), as relevant. Any changes to the CTMPs must be submitted to RMS for approval following Sydney Coordination Office endorsement and implemented.”</p>	This document
6.4	Whenever it is proposed to occupy or close a lane or road during the construction program for each of the sites, the approval of the closure will require the contractor to apply for a Road Occupancy Licence (ROL) from the Transport Management Centre (TMC) and/or the local council.	Refer to Section 2.1.2 and 2.1.3
6.5	An application must be made to RMS for any proposed adjustment of the speed limit on the road network, whether they are proposed as temporary measures for work zones and road occupancies or for longer periods such as the duration of the construction works at a site	Refer to Section 2.1.3
6.6	Special event coordination	Refer to Section 1
6.7	Any temporary or permanent works that impact on the operation of, or require the reconstruction or adjustments to, traffic signals require close consultation with RMS and approval of the traffic signal design plans, prior to the commencement of any work. This will require entering in to a Works Authorisation Deed (WAD) with RMS.	Refer to Section 2.1.3
6.8	Prior approval for the passage of any proposed over-size or over-mass vehicles is required from the National Heavy Vehicle Regulator, RMS for state roads, or councils for regional or local roads, and an authorisation permit issued prior to the operation of the vehicle.	Refer to Section 8
6.9	<p>Any proposed adjustments or relocation of bus routes and stops to facilitate construction works require the prior approval of TfNSW, SCO, RMS, the local council and affected bus operators.</p> <p>Any proposed adjustments or relocation of bus shelters associated with bus stop changes or construction works require the approval of the local council and affected bus operators.</p> <p>Customer information and wayfinding information for any relocated bus stops is to be provided before, and after, the relocation works have been carried out.</p>	Refer to Section 2.1.7
6.10	Consultation regarding the relocation and/or adjustments to post boxes and the associated kerbside ‘mail zone’ will be required to be undertaken with Australia Post and the relevant road authority prior to any relocations occurring. In some instances, post boxes may be able to be relocated, however there will be instances where the post box, for heritage requirements, will not be able to be relocated. These post boxes will need to be protected to ensure that they are not damaged during construction works.	Refer to Section 2.1.8

Construction Traffic Management Framework (CTMF)		
	Adjustments or relocation of other roadside furniture or modifications to signposting such as advisory signs or regulatory signs will require consultation and approval of the owner. In most cases this will be the local council. Changes to regulatory signposting and linemarking on local and Regional roads will require a submission to the Local Traffic Committee for agreement.	
6.11	Where possible, the contractor should endeavour to secure all necessary council approvals under delegation to avoid the need for approvals to be secured through the Local Traffic Committee and council meetings.	Refer to Section 2.1 Refer to Section 7 Refer to Section 1 Refer to Section 8
6.12.1	Condition E90 of the conditions of approval states "Road Dilapidation Report must be prepared for local roads proposed to be used by heavy vehicles for the purposes of the CSSI before the commencement of use by such vehicles. Copies of the Road Dilapidation Report must be provided to the Relevant Council within three (3) weeks of completing the surveys and no later than one (1) month before the use of local roads by heavy vehicles."	Refer to Section 2.1.15 Remedial actions to be undertaken as per Property Management Plan.
6.13.2	Contractors must have systems in place to ensure compliance with 'chain of responsibility' legislation, including the Heavy Vehicle National Law and regulations, at all times.	Refer to Section 2.1.12
7.1	Designated access routes for heavy vehicle movements during demolition, construction and spoil removal will be along the arterial (state) road network as much as practically possible. Condition E85 requires that heavy vehicles must not use local roads unless no feasible alternatives are available. Details of any proposed routes for heavy vehicle access will be developed in consultation with the relevant state or local government authority and detailed in the appropriate section of the site-specific CTMP (Condition E88).	Refer to Section 2.1.12 Refer to Section 2.1.14 Refer to Appendix A – Heavy Vehicle Access Route Details
7.2	Heavy vehicle movements must be managed in accordance with construction and traffic management principles of the CTMP. Each site-specific CTMP will need to demonstrate how marshalling facilities will need to be used to manage truck movements and reduce congestion.	Refer to Section 2.1.5
7.3	During some stages of the works at each of the sites there may be a requirement for using kerb space on adjacent streets for short-term parking or unloading for deliveries to the site. Applications for a Works Zone will be undertaken by the contractor to the relevant authority (council for local and Regional roads and RMS for State roads). The use of a Works Zone should be minimised as much as practicable. Where approved, Works Zone locations are to be included in site specific CTMPs. In general, Works Zones will not be permitted within existing bus zones and their operating times, unless arrangements have been approved for the relocation of the bus zone.	Refer to Section 2.1.9
7.4.1	The assumption for all site specific CTMPs is that there will be no provision, either on the road or within the work site, for worker parking. Workers should be encouraged to use public transport in travelling to and from the work sites.	Refer to Section 2.1.5 Refer to Section 2.1.7 Refer to Section 2.5 During rail possessions, some road occupancy may be required. IWC approval will be sought as well as consultation with local residents.
7.4.2	To mitigate the potential impact of construction traffic the provision of a centralised Project centre should be considered. This centre could receive deliveries and arrange for combining of loads and materials for distribution to the various worksites. This may be incorporated into the truck marshalling and logistics facility and should address the intent of planning condition E81.	Refer to Section 2.1.5

Construction Traffic Management Framework (CTMF)		
7.4.3	<p>Heavy vehicle drivers should be made fully aware by the contractor of the worksite traffic management arrangements and site-access requirements, including approach and departure routes, and any heavy vehicle noise management measures required. Driver training should consider current best practice and information, including cycle awareness training.</p> <p>The contractor is to ensure that regular briefings are provided to drivers on routes, potential changes and impacts on the routes in the form of toolbox talks.</p> <p>Contractors must ensure mandatory completion of the Sydney Metro City & Southwest project-specific heavy vehicle driver introduction training.</p> <p>Contractors are required to have systems in place to monitor vehicle locations at all times and address any identified non-conformances.</p>	<p>Refer to Section 1.7.9</p> <p>Refer to Section 2.1.5</p> <p>Refer to Section 2.1.14</p> <p>Refer to Section 6.1</p>
7.4.4	<p>Contractors must have systems in place to ensure compliance with 'chain of responsibility' legislation, including the Heavy Vehicle National Law and regulations, at all times. All necessary heavy vehicle approvals and permits (for example, over-size, over-mass, etc.) must be obtained from the relevant road manager. Specific 'chain of responsibility' requirements are further outlined in Sydney Metro Principal Contractor Health and Safety Standard.</p>	<p>Refer to Section 1.7</p> <p>Refer to Section 1.7.9</p> <p>Refer to Section 8</p>
9.1	<p>Details of the proposed erection and maintenance of hoardings, scaffolds and associated structures shall be documented in the Construction Traffic Management Plans in accordance with the SSI approval (Condition E81). Where reasonable and feasible, all worksite boundaries will be clearly defined with the use of hoardings. The CTMPs will identify the boundaries and detail accesses for the site, the footpath and road controls. Activities within the worksite are excluded from the CTMPs, except in relation to ensuring the movement of construction traffic in and out of the worksite is physically possible and can be done safely.</p> <p>Worksites include any gantries or other structures associated with the site layouts. The site specific CTMPs will consider these interactions and the impacts of gantries, etc. on the road and footpaths.</p>	<p>Refer to Section 1</p> <p>Refer to Section 2.1.17</p> <p>Refer to Appendix D – Traffic Staging, Site Boundaries and Hoardings</p> <p>Existing rail corridor fences to separate worksite boundary.</p>
9.2	<p>Hoardings will be required to be erected around the construction sites to protect the site and any passing pedestrians and vehicles. These may also need to provide site facilities for the workers on the site due to the constrained nature of the sites. The erection of hoardings around the sites will require the consideration and approval of the local council, and BDA for sites at Barangaroo.</p>	<p>Refer to Section 2.1.17</p> <p>Refer to Appendix D – Traffic Staging, Site Boundaries and Hoardings</p> <p>Existing rail corridor fences to separate worksite boundary.</p>
9.3	<p>The worksites will have appropriate arrangements to discourage entry without approval and minimise vandalism. All access points to worksites will have lockable gates.</p> <p>Appropriate information signs will be provided at worksites to identify the Project and contact persons.</p> <p>Contractors will be required to develop and prepare Security Management Plans based on the site-specific security threats (hazards) identified. Requirements for Security Management Plans are outlined in the SM PS-ST-221 Sydney Metro Principal Contractor Health and Safety Standard.</p>	<p>Refer to Section 1.7.9</p> <p>Refer to Section 6.1</p>
9.4	<p>The consideration of safety and security issues for pedestrians will be considered at all worksites. Any hoardings or other structures on the site boundaries will have lighting in accordance with current standards, particularly where existing street lighting is removed or obscured because of the site works. In those locations where this occurs, supplementary lighting is to be provided to meet the current standards.</p>	<p>Refer to Section 1.7.6</p> <p>Refer to Section 2.1.17</p> <p>Refer to Section 6.1</p> <p>Refer to Section 6.3</p>
9.5	<p>The contractor is to adopt applicable vulnerable road user safety measures, as per the SM PS-ST-221 Sydney Metro Principal Contractor Health and Safety Standard, to minimise the road safety risks to pedestrians, cyclists and motorcyclists on route to, and near, construction sites.</p> <p>a. The deployment of speed awareness signs in conjunction with variable message signs.</p>	<p>Refer to Section 1.7.9</p> <p>Refer to Section 3</p> <p>Refer to Section •</p> <p>Refer to Section 6.1</p> <p>Refer to Section 1</p>

Construction Traffic Management Framework (CTMF)		
	<ul style="list-style-type: none"> b. Heavy vehicles equipped with safety technology and equipment to improve vehicle safety, visibility and the detection of vulnerable road users. c. Provision of driver training, instruction and information of the haulage routes, potential changes, common road users and hazards/risks along the routes. d. Mandatory completion of Sydney Metro City & Southwest project-specific heavy vehicle driver introduction training. e. Contractor engagement in shared experience educational events and involvement in promoting road safety awareness in collaboration with TfNSW. <p>Where worksites have an impact on footpaths, consideration must be given to the requirements of all pedestrians and especially where there is the potential for vulnerable road users, such as school children, elderly people and mobility impaired people. This is to include condition surveys of affected footpath areas to ensure that they are suitable and appropriate for use.</p> <p>DDA requirements will be adopted with kerb ramps or other measures provided at road crossings. Footpath widths are required to provide for two-way pedestrian traffic allowing for prams or strollers and wheelchairs to pass each other without requiring temporary widening from their existing width prior to construction commencement. Narrowing of the footpath width, if required, is to be approved by the relevant authorities.</p> <p>Where high numbers of vulnerable road users are using a footpath, special provision and design consideration may be required to mitigate any impacts.</p>	
10.2	<p>Road Safety Audits will be undertaken by the contractor during the four stages outlined below.</p> <ul style="list-style-type: none"> (a) Detailed design phase (b) Pre-opening phase (c) Road Safety Audits of temporary work/Construction Traffic Management Plans (d) Road Safety Audit procedure 	<p>Refer to Section 8.1</p> <p>Refer to Appendix E – Road Safety Audit</p>
11.1	<p>The individual CTMPs for each of the sites will provide details on the various construction and traffic related issues, and measures to mitigate those issues (where possible)</p>	<p>SMU involves one main worksite and several nearby work areas. Therefore this CTMP is an individual site CTMP</p>

Construction Environmental Management Framework (CEMF)		
3.3	<ul style="list-style-type: none"> a. Principal Contractors are required to prepare and implement a Construction Environmental Management Plan (CEMP) relevant to the scale and nature of their scope of works. The CEMP shall comprise of a main CEMP document, issue specific sub plans, activity specific procedures and site based control maps. The CEMP shall illustrate the relationship between other plans required by the contract, in particular those that relate to design management. b. Depending on the scope and scale of the works, TfNSW may decide to streamline the CEMP and sub-plan requirements. For example, depending on the risk associated with particular environmental issues it may be appropriate to remove the need for a sub plan, or replace with a procedure as part of the CEMP. c. The CEMP will cover the requirements of the relevant planning approval documentation, the conditions of all other permits and licences, the Principal Contractor's corporate EMS, the environmental provisions of the contract documentation and this Construction Environmental Management Framework. d. As a minimum the CEMP will: <ul style="list-style-type: none"> i. Include a contract specific environmental policy; ii. Include a description of activities to be undertaken during construction; 	<p>Refer to CEMP</p> <p>Refer to Section 1.2</p> <p>Refer to Section 1.7.1</p> <p>Refer to Section 1.7.10</p> <p>Refer to Section 1.7.9</p>

Construction Environmental Management Framework (CEMF)		
	<ul style="list-style-type: none"> iii. For each plan under the CEMP include a matrix of the relevant Conditions of Approval or Consent referencing where each requirement is addressed; iv. For each plan under the CEMP, set objectives and targets, and identify measurable key performance indicators in relation to these; v. For each role that has environmental accountabilities or responsibilities, including key personnel, provide a tabulated description of the authority and roles of key personnel, lines of responsibility and communication, minimum skill level requirements and their interface with the overall project organisation structure; vi. Assign the responsibility for the implementation of the CEMP to the Environment Manager, who will have appropriate experience. The Principal Contractor's Project Director will be accountable for the implementation of the CEMP; vii. Identify communication requirements, including liaison with stakeholders and the community; viii. Include induction and training requirements and a summary of the Training Needs Analysis required in Section 3.9(b); ix. Management strategies for environmental compliance and review of the performance of environmental controls; x. Processes and methodologies for surveillance and monitoring, auditing and review, and reporting on environmental performance including environmental compliance tracking; xi. Include procedures for emergency and incident management, non-compliance management, and corrective and preventative action; and xii. Include procedures for the control of environmental records. <p>e. The CEMP and associated sub-plans will be reviewed by TfNSW and/or an independent environmental representative (see Section 3.11) prior to any construction works commencing. Depending on the Conditions of Approval, the CEMP and certain sub-plans may also require the approval of the Department of Planning and Environment (DP&E).</p> <p>f. Where a corresponding systems document exists within the Sydney Metro Integrated Management System, the Principal Contractor's procedures will be required to be consistent with any requirements in those documents.</p>	
3.4	<p>Construction Environmental Management Sub-Plans</p> <p>a. Subject to Section 3.3(c) and Section 3.2(c) the Principal Contractor will prepare issue-specific environmental sub-plans to the CEMP and SMP which address each of the relevant environmental impacts at a particular site or stage of the project. Issue specific sub-plans will include:</p> <ul style="list-style-type: none"> – Spoil management. – Groundwater management. – Soil and water management. – Traffic and transport management. – Noise and vibration management. – Heritage management. – Flora and fauna management. – Visual amenity management. – Carbon and energy management. – Air quality management. – Waste management. <p>b. Additional detail on the minimum requirements for these sub plans is provided in Sections 6-17 of this CEMP.</p>	This document, and refer to other CEMP sub-plans.
3.7	<p>a. Prior to the commencement of construction the Principal Contractor will prepare a Road Dilapidation Report for all local public roads proposed to be used by heavy vehicles.</p>	Refer to Section 2.1.15
3.8	<p>Principal Contractors will identify hold points, beyond which approval is required to proceed with a certain activity. Example activities include vegetation removal and water discharge. Hold points will be documented in relevant CEMPs.</p>	Refer to Section 2.1.15

Construction Environmental Management Framework (CEMF)		
3.9	<p>a. Principal Contractors will be responsible for determining the training needs of their personnel. As a minimum this will include site induction, regular toolbox talks and topic specific environmental training as follows:</p> <p>The site induction will be provided to all site personnel and will include, as a minimum:</p> <ul style="list-style-type: none"> – Training purpose, objectives and key issues. – Contractor's environmental policy and key performance indicators. – Due diligence, duty of care and responsibilities. – Relevant conditions of any environmental licence and/or the relevant conditions of approval – Site specific issues and controls including those described in the environmental procedures – Reporting procedure for environmental hazards and incidents – Communication protocols. <p>b. Toolbox talks will be held on a regular basis in order to provide a project or site wide update, including any key or recurring environmental issues.</p> <p>c. Topic specific environmental training, eg erosion and sediment control training will be undertaken for relevant site personnel as determined by the Principal Contractor.</p> <p>d. Principal Contractors will conduct a Training Needs Analysis which:</p> <ul style="list-style-type: none"> a. Identifies the competency requirements of staff that hold environmental roles and responsibilities documented within the Construction Environmental Management Plan and sub-plans. b. Identifies appropriate training events and the frequency of training to achieve and/or maintain these competency requirements. c. Implements a documented training schedule which plans attendance at training events, provides mechanisms to notify staff of their training requirements, and identifies staff that fail to attend scheduled training events or who have overdue training requirements. d. Identifies that all staff are to receive an environmental induction and undertake environmental incident management training. 	Refer to Section 1.7.3
3.13	<p>a. Issue specific environmental monitoring will be undertaken as required or as additionally required by approval, permit or licence conditions.</p> <p>b. The results of any monitoring undertaken as a requirement of the EPL will be published on the Principal Contractor's, or a project specific, website within 14 days of obtaining the results.</p> <p>c. Environmental inspections will include:</p> <ul style="list-style-type: none"> – Surveillance of environmental mitigation measures by the Site Supervisor. – Periodic inspections by the Principal Contractor's Environmental Manager (or delegate) to verify the adequacy of all environmental mitigation measures. This will be documented in a formal inspection record. <p>d. Regular site inspections by the ERs and TfNSW representatives at a frequency to be agreed with the Principal Contractor.</p> <p>e. Principal Contractors will be required to undertake internal environmental audits. Internal audits will include:</p> <ul style="list-style-type: none"> – Compliance with approval, permit and licence conditions. – Compliance with the E&SMS, CEMP, SMP, sub-plans and procedures. – Community consultation and complaint response. – Environmental training records. – Environmental monitoring and inspection results. <p>f. TfNSW (or an independent environmental auditor) will also undertake periodic audits of the Principal Contractor's E&SMS and compliance with the environmental aspects of contract documentation, including this Construction Environmental Management Framework.</p>	<p>Refer to Section 1.7.3</p> <p>Refer to Section 1.7.4</p> <p>Refer to Section 1.7.10</p>

Construction Environmental Management Framework (CEMF)		
3.14	<p>a. Principal Contractors will document and detail any non-compliances arising out of the above monitoring, inspections and audits. TfNSW will be made aware of all non-compliances in a timely manner.</p> <p>b. Principal Contractors will develop and implement corrective actions to rectify the non-compliances and preventative actions in order to prevent the re-occurrence of the non-compliance. Contractors will also maintain a register non compliances, corrective actions and preventative actions.</p> <p>c. TfNSW or the Environmental Representative may raise non-compliances against environmental requirements.</p>	<p>Refer to Section 1.7.3</p> <p>Refer to Section 1.7.4</p> <p>Refer to Section 1.7.10</p>
3.15	<p>a. Principal Contractors will maintain appropriate records of the following:</p> <ul style="list-style-type: none"> – Site inspections, audits, monitoring, reviews or remedial actions. – Documentation as required by performance conditions, approvals, licences and legislation. – Modifications to site environmental documentation (eg CEMP, sub-plans and procedures). – Other records as required by this Construction Environmental Management Framework. <p>b. Records will be retained onsite for the duration of works.</p> <p>c. Additionally records will be retained by the Principal Contractor for a period of no less than 7 years in total. Records will be made available in a timely manner to TfNSW (or their representative) upon request.</p> <p>d. Compliance reports detailing the outcome of any environmental surveillance activity including internal and external audits (refer to Section 3.13) will be produced by the Principal Contractors Environmental Manager or delegate. These reports will be submitted to TfNSW at an agreed frequency.</p>	<p>Refer to Section 1.7.3</p> <p>Refer to Section 1.7.4</p> <p>Refer to Section 1.7.10</p>
4.1	<p>a. Throughout construction, Sydney Metro and the Principal Contractors will work closely with stakeholders and the community to ensure they are well informed regarding the construction works.</p> <p>b. Stakeholders and the community will be informed of significant events or changes that affect or may affect individual properties, residences and businesses. These will include:</p> <ul style="list-style-type: none"> – Significant milestones. – Design changes. – Changes to traffic conditions and access arrangements for road users and the affected public. – Construction operations which will have a direct impact on stakeholders and the community including noisy works, interruptions to utility services or construction work outside of normal work hours. 	Refer to Section 7
5.1	<p>Working Hours</p> <p>a. The following Standard working hours are between 7am – 6pm on weekdays and 8am – 1pm on Saturdays.</p> <p>b. Works which can be undertaken outside of standard construction hours without any further approval include:</p> <ul style="list-style-type: none"> – Those which have been described in respective environmental assessments as being required to take place 24/7. For example, tunnelling and underground excavations and supporting activities will be required 24/7. – Works which are determined to comply with the relevant Noise Management Level at sensitive receivers. – The delivery of materials outside of approved hours as required by the Police or other authorities (including RMS) for safety reasons. – Where it is required to avoid the loss of lives, property and / or to prevent environmental harm in an emergency. – Where written agreement is reached with all affected receivers. <p>c. Principal Contractors may apply for EPA approval to undertake works outside of normal working hours under their respective Environment Protection Licences.</p>	Refer to Section 1.5

Construction Environmental Management Framework (CEMF)		
5.2	<p>Site Layout</p> <p>a. Principal Contractors will consider the following in the layout of construction sites:</p> <ul style="list-style-type: none"> – Aim to minimise the requirement for reversing, especially of heavy vehicles. 	Refer to Section 2.1
6.3	<p>Spoil Mitigation</p> <p>a. Examples of spoil mitigation measures include:</p> <ul style="list-style-type: none"> – Implementing the spoil re-use hierarchy. – Handling spoil to minimise potential for air or water pollution. – Minimise traffic impacts associated with spoil removal 	<p>Refer to Section 1.5</p> <p>Refer to Section 2.1.14</p>
8.1	<p>Construction Traffic Management Objectives</p> <p>a. The following traffic management objectives will apply to the construction of the project:</p> <ul style="list-style-type: none"> – Minimise disruption to traffic operation, road users, pedestrians, cyclists and access to adjoining properties (private and public) – Maximise the safety for the workers, by isolating work areas from traffic flows, applying low exposure work methods, education and the installation of appropriate traffic control – Limit obstructions and restrictions, and when required, provide alternatives to maintain access for local community, transport operators (buses) including over-dimension load movements and commercial developments – Encourage sustainable transport options by site workers. 	<p>Refer to Section 2.1</p> <p>Refer to Section 4.3</p> <p>Refer to Section 1</p>
8.2	<p>Construction Traffic Management Implementation</p> <p>a. Principal Contractors will develop and implement a Construction Traffic Management Plan for their scope of works. The Construction Traffic Management Plan will as a minimum:</p> <ul style="list-style-type: none"> – Implement the traffic and transport mitigation measures as detailed in the environmental approval documentation. – be developed in consultation with the relevant road authority, Central Business District Co-ordination Group (CBDCG) and / or transport operator. – set out the overall traffic management resources, processes and procedures for the management of traffic and transport during construction of the Project Works and Temporary Works. – include Construction Traffic Control Plans setting out the specific traffic and transport management arrangements to be implemented at specific locations during the construction of the Project Works and Temporary Works. – includes a Traffic Route Management Plan that identifies: <ul style="list-style-type: none"> o traffic generation from other major infrastructure developments, impacts from construction traffic and haulage routes, o types and volumes of construction vehicles and associated route and time restrictions, o potential traffic disruptions and temporary and permanent detours, and o management, mitigation and restoration measures. – Includes a Parking Management Plan that identifies: <ul style="list-style-type: none"> o parking requirements and on and offsite parking arrangements and associated impacts, o remote parking arrangements and associated access between sites and public transport nodes, o alternate parking arrangements for displaced parking, and o communication and parking management measures. – Includes Site Specific Traffic Access and Management Plans which detail: 	<p>Refer to Section 2.1</p> <p>Refer to Section 2.1.3</p> <p>Refer to Section 2.1.7</p> <p>Refer to Section 2.5</p> <p>Refer to Section 4.3</p> <p>Refer to Section 6</p> <p>Refer to Section 7</p> <p>Refer to Appendix A – Heavy Vehicle Access Route Details</p> <p>Refer to Appendix B – Traffic Control Plans</p> <p>Refer to Appendix C – Vehicle Management Plans, Pedestrian Movement Plans, and Worker Walking Routes</p>

Construction Environmental Management Framework (CEMF)		
	<ul style="list-style-type: none"> ○ Site access and associated route and turning movements and the design and signalisation of intersections, ○ Potential activities that could result in the disruption to traffic and transport networks, including pedestrian, cyclist and public transport networks and during special events. ○ The timing to limit disruptions to the road and transport networks, ○ The maintenance of access to and safety of transport networks, parking and property. ○ Service facilities and station sites, and other locations identified by the relevant road authority or transport regulator. ○ details responses to the management of an event that directly involves or impacts on traffic and transport networks. <p>b. TfNSW and its Contractors will undertake liaison with agencies and the community regarding traffic management. This may involve:</p> <ul style="list-style-type: none"> – Establishment of a Traffic and Transport Liaison Group which could consist of representatives from Sydney Metro Contractors, TfNSW, CBD CG, Westconnex, RMS, NSW Police, relevant councils, emergency services, and bus operators the group would review: <ul style="list-style-type: none"> ○ Road Occupancy Licence (ROL) applications to monitor potential cumulative impacts from multiple ROLs operating concurrently in one area. ○ be consulted on the preparation of the Construction Traffic Management Plan. – Consultation with the CBD CG in relation to the approval of Construction Traffic Management Plans, supporting plans, or related licences for works in the CBD. 	
8.3	<p>Construction Traffic Mitigation</p> <p>a. Examples of traffic mitigation measures include:</p> <ul style="list-style-type: none"> – Minimising heavy vehicle movements during peak traffic times. – Avoidance of local road for heavy vehicle routes, where feasible. – Providing safe pedestrian and cyclist movements around the worksites. 	<p>Refer to Section 2.1</p> <p>Refer to Section 6</p> <p>Refer to Appendix A – Heavy Vehicle Access Route Details</p> <p>Refer to Section 1</p>

Revised Environmental Mitigation Measures (REMMs)		Document Reference	Responsible Party
T1	Ongoing consultation would be carried out with (as relevant to the location) the CBD Coordination Office, Roads and Maritime Services, Sydney Trains, NSW Trains, the Port Authority of NSW, Barangaroo Delivery Authority, local councils, emergency services and bus operators in order to minimise traffic and transport impacts during construction.	Refer to Section 7	Construction Team
T2	Road Safety Audits would be carried out at each construction site. Audits would address vehicular access and egress, and pedestrian, cyclist and public transport safety.	Refer to Section 8.1	Construction Team
T3	Directional signage and line marking would be used to direct and guide drivers and pedestrians past construction sites and on the surrounding network. This would be supplemented by Variable Message Signs to advise drivers of potential delays, traffic diversions, speed restrictions, or alternate routes.	Refer to Section 3 Refer to Appendix B – Traffic Control Plans	Construction Team
T4	In the event of a traffic related incident, co-ordination would be carried out with the CBD Coordination Office and / or the Transport Management Centre's Operations Manager.	Refer to Section 1.7 Refer to Section 2.1 Refer to Section 7	Construction Team
T5	The community would be notified in advance of proposed road and pedestrian network changes through media channels and other appropriate forms of community liaison.	Refer to Section 1	Construction Team

Revised Environmental Mitigation Measures (REMMs)		Document Reference	Responsible Party
T6	Vehicle access to and from construction sites would be managed to ensure pedestrian, cyclist and motorist safety. Depending on the location, this may require manual supervision, physical barriers, temporary traffic signals and modifications to existing signals or, on occasions, police presence.	Refer to Section 2.1.5 Refer to Appendix B – Traffic Control Plans Refer to Appendix C – Vehicle Management Plans, Pedestrian Movement Plans, and Worker Walking Routes	Construction Team
T7	Additional enhancements for pedestrian, cyclist and motorist safety in the vicinity of the construction sites would be implemented during construction. This would include measures such as: (1) Use of speed awareness signs in conjunction with variable message signs near construction sites to provide alerts to drivers (2) Community educational events that allow pedestrians, cyclists or motorists to sit in trucks and understand the visibility restrictions of truck drivers, and for truck drivers to understand the visibility from a bicycle; and a campaign to engage with local schools to educate children about road safety and to encourage visual contact with drivers to ensure they are aware of the presence of children (3) Specific construction driver training to understand route constraints, expectations, safety issues, human error and its relationship with fitness for work and chain of responsibility duties, and to limit the use of compression braking (4) Use of In Vehicle Monitoring Systems (telematics) to monitor vehicle location and driver behaviour (5) Safety devices on construction vehicles that warn drivers of the presence of a vulnerable road user located in the vehicles' blind spots and warn the vulnerable road user that a vehicle is about to turn.	Refer to Section 1.7.8 Refer to Section 1.7.9 Refer to Section 2.1.5 Refer to Section 2.1.14 Refer to Section 2.2 Refer to Section 6.1 Refer to Section 6.3	Construction Team
T8	Access to existing properties and buildings would be maintained in consultation with property owners.	Refer to Section 1	Construction Team
T9	All trucks would enter and exit construction sites in a forward gear, where feasible and reasonable.	Refer to Section • Refer to Appendix C – Vehicle Management Plans, Pedestrian Movement Plans, and Worker Walking Routes	Construction Team
T10	Any relocation of bus stops would be carried out by Transport for NSW in consultation with Roads and Maritime Services, the CBD Coordination Office (for relevant locations), the relevant local council and bus operators. Wayfinding and customer information would be provided to notify customers of relocated bus stops.	Refer to Section 2.1.7	Roads and Maritime Services Transport for NSW Inner West Council Bus Operators
T12	Construction sites would be managed to minimise construction staff parking on surrounding streets. The following measures would be implemented:	Refer to Section 2.1.5 Refer to Section 2.1.7	Construction Team Transport for NSW

Revised Environmental Mitigation Measures (REMMs)		Document Reference	Responsible Party
	<ul style="list-style-type: none"> Encouraging staff to use public or active transport Encouraging ride sharing Provision of alternative parking locations and shuttle bus transfers where feasible and reasonable. <p>Transport for NSW would work with local councils to minimise adverse impacts of construction on parking and other kerbside use in local streets, such as loading zones, bus zones, taxi zones and coach zones.</p>		Inner West Council
T13	Construction site traffic would be managed to minimise movements in the AM and PM peak periods.	Refer to Section 1.5	Construction Team
T14	Construction site traffic immediately around construction sites would be managed to minimise movements through school zones during pick up and drop off times.	Refer to Section 1.5	Construction Team
T19	Where existing parking is removed to facilitate construction activities, alternative parking facilities would be provided where feasible and reasonable.	Refer to Section 2.1.5 Refer to Section 2.5	Construction team
T21	The potential combined impact of trucks from multiple construction sites would be further considered during the development of Construction Traffic Management Plans.	Refer to Section 2 This will be managed through the weekly TCG and monthly TTLG meetings Refer to Section 7 and Appendix F – Not used	Construction team
T22	Where existing footpath routes used by pedestrians and / or cyclists are affected by construction, a condition survey would be carried out to confirm they are suitable for use (eg suitably paved and lit), with any necessary modifications to be carried out in consultation with the relevant local council.	Refer to Section 2.1.15 Refer to Section 6 Refer to Section 7 Surveys to be undertaken prior to commencing works. Works approval to be sought in consultation with IWC.	Construction Team Inner West Council
BI1	Specific consultation would be carried out with businesses potentially impacted during construction. Consultation would aim to identify and develop measures to manage the specific construction impacts for individual businesses.	Refer to Section 7. SMU to provide Sydney Metro required information to consult with businesses and identify measures to manage impacts.	
BI2	A business impact risk register would be developed to identify, rate and manage the specific construction impacts for individual businesses.	Refer to Section 7. SMU to provide Sydney Metro required information to consult with businesses and identify measures to manage impacts.	
BI3	Appropriate signage would be provided around construction sites to provide visibility to retained businesses.	Refer to Section 2 Refer to Section 3	

Revised Environmental Mitigation Measures (REMMs)		Document Reference	Responsible Party
SO2	Specific consultation would be carried out with sensitive community facilities (including aged care, child care centres, educational institutions and places of worship) potentially impacted during construction. Consultation would aim to identify and develop measures to manage the specific construction impacts for individual sensitive community facilities.	Refer to Section 7 SMU to provide Sydney Metro required information to consult with community members and identify measures to manage impacts.	
AQ1	The engines of all on-site vehicles and plant would be switched off when not in use for an extended period.	Refer to Section •	
AQ2	Plant would be well maintained and serviced to minimise emissions. Emissions from plant would be considered as part of pre-acceptance checks.	Refer to Section •	
AQ3	Construction site layout and placement of plant would consider air quality impacts to nearby receivers.	Refer to Section •	
AQ4	Hard surfaces would be installed on long term haul routes and regularly cleaned.	Refer to Section •	
AQ6	All vehicles carrying loose or potentially dusty material to or from the site would be fully covered.	Refer to Section •	

Management Requirements Minor – Stakeholder and Community Liaison		Document Reference
7.3 (e)	The Contractor must issue the Notifications for the following: (v) changes to traffic conditions requiring traffic alerts;	Refer Section 1
7.3 (f)	The Contractor must ensure that all Notifications include all required details, including the following: (v) the type of equipment used and likely impacts of the work including noise, vibration, traffic, access and dust;	Refer Section 1
7.3 (g)	The Contractor must issue traffic alerts by email, seven days before changes to traffic and access arrangements are made, to all key traffic and transport stakeholders including: (i) relevant Authorities; and (ii) transport operators, including bus, coach and taxi operators.	Refer Section 1
7.3 (h)	The Contractor must provide and erect signage that identifies changes to traffic and access arrangements, seven days before the changes take place, for the following events: (i) making changes to pedestrian routes; (ii) impacting on cycle ways; (iii) changing traffic conditions; and (iv) disrupting access to bus stops.	Refer Section 1
7.4 (b)	The Contractor must advertise all significant traffic management changes, detours, traffic disruptions and work outside any working hours contained in the Planning Approvals at least seven days before any detour, disruption, work or change occurs. These adverts must be placed in local newspapers that cover the geographical areas of the Contractors Activities.	Refer Section 1
7.8.1(b)	The Contractor must only publish on the website: (iv) environmental, sustainability, transport, traffic and noise and vibration reports (and the executive summaries of these reports) that are publicly available.	Refer Section 1

Management Requirements Minor – PA		Document Reference
2.2	The timing for the initial submission of the Management Plans to the Principal's Representative for review in accordance with the requirements of the Contract is nominated below in Table 2.2 of this MR-minor PA.	Refer Section 1.4

