

## Traffic Management Plan

# Sydney Metro City and Southwest Sydney Yard Access Bridge

## K26-SYAB-PLN-012: Construction Traffic Management Plan

### Document and revision history

Document details	
Title	Construction Traffic Management Plan
Client	Sydney Metro City & Southwest
Client reference no.	SMCSW 141: I-440
Laing O'Rourke contract no.	K26

### Revisions

Revision	Date	Description	Prepared by	Approved by
1	13 February 2017	Issue for Approval	Emelye Coleridge	Huw Griffiths
2	13 March 2017	Revised following SM comments	Emelye Coleridge	Huw Griffiths
3	20 April 2017	Revised to include stakeholder comments	Emelye Coleridge	Huw Griffiths
4	24 May 2017	TCPs 007, 008 & 008a amended. RSA added	Emelye Coleridge	Huw Griffiths
5	30 May 2017	Swept paths at STA for oversized removed from south bound	Emelye Coleridge	Huw Griffiths

### Management reviews

Review date	Details	Reviewed by

Controlled:	YES	Copy no.:	Uncontrolled:	NO
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# Traffic Management Plan

## 1.0 Purpose

### 1.1 Purpose

This document has been prepared to assist LORAC staff to implement traffic and pedestrian / passenger management control measures when carrying out construction and related works located at the **SYAB** project sites. This Traffic Management Plan (TMP) has been prepared as a sub-plan to the Construction Environmental Management Plan (CEMP) and Construction and Site Management Plan (CSMP).

The term 'traffic', wherever used in this TMP, encompasses both vehicles and pedestrians movement.

Traffic management shall be undertaken in a manner that shall provide for the safety of all LORAC staff, subcontractors and the public and ensure that road and footpath users are not exposed to foreseeable risks. 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 impacts, if any, as a result of the works for the SYAB 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 Construction Traffic Management Framework produced for the project. Refer to Section 9.0 for Reference Documents. ”.

### 1.2 Scope

This document addresses the systems and procedures that should be followed to warn, inform and guide Traffic past, through or around all works related to project site.

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

To ensure minimal disruption to the general public and work on site the control and management of traffic should involve the co-ordination and control of the following:

- All delivery trucks and their loading and unloading.
- Vehicular and pedestrian traffic past the work area.

It is understood that, as the majority of the works will be occurring within the rail corridor of Sydney Yard, the key purpose of this TMP relates to the deliveries of materials and plant/equipment to/from the proposed project access/egress points, as well as pedestrian management at these key interfaces.

It is not practicable for this TMP to cover all situations that could arise, it may therefore be necessary for the relevant person in control of the traffic management for a specific activity on site to modify the control measures to address the particular circumstances based on the hazard(s) identified.

### 1.3 Review and Update

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

The TMP 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. City Of Sydney (CoS)
2. Roads and Maritime (RMS) / Transport Management Centre (TMC)
3. Environmental Representative (ER)
4. Sydney Trains (for information)
5. STA Buses (for information)

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.

## Traffic Management Plan

### 1.4 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 LOR 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:
  - peak period traffic between (morning (7:00am -10:00am) and afternoon (4:00pm -7:00pm)).
  - Increased pedestrian movements between 12:00pm-2:00pm on Eddy Avenue
  - To avoid school start and finish times (start (8:00am – 9:30am) and finish (2:30pm to 4:00pm))
- Due to the area covered by the contract scope of works, the greater scope has been broken down into 3 key areas of work for effective management. This includes the Eddy Avenue Access Point, The STA Bus Depot Access Point and the Regent St Site Location (refer to Figure 1).
  - Work Area SY – Eddy Avenue – Gate 2
    - Eddy Avenue Access
  - Work Area MS – STA Bus Depot: - Gate 1
    - STA Bus Depot Access Gate
  - Work Area RS – Regent St: - Gate 3
    - Regent Street New Access Point & Site
- Queuing and idling of construction vehicles will not be permitted. This shall be managed by engaging trusted suppliers, nominating holding areas and scheduling deliveries. A planned holding area for 2-3 Heavy vehicles shall be located within STA buses depot (as agreed with STA buses)
- 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
- Prior to any work taking place that affects pedestrians and traffic safety (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 pedestrian access into the site / Rail Corridor.
- Engineer-certified crash attenuators are to be fitted to all shadow vehicles

### 1.5 Responsibilities

#### 1.5.1 Key Personnel

Name	Position	Role	Phone Number
Chris York	Superintendent	Safe Implementation of Traffic Control	0477 318 201
Emelye Coleridge	Construction Manager	Out of Hours contact for incidents	0488 284 575
TBC	Blue Card	Traffic Controller	TBC
TBC	Yellow Card	Apply Traffic Control Plans	TBC
TBC	Red Card	Select / Modify Traffic Control Plans	TBC
TBC	Orange	Design Traffic Control Plans	TBC

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

#### 1.5.2 LORAC Foremen

LORAC Foremen have responsibilities for two areas of traffic management, the **Work Area (anywhere where works are being undertaken)** and **Employees** under their control. LORAC Foreman shall ensure the following for each area of responsibility:

## Traffic Management Plan

### Work Area

- A documented traffic management risk assessment is completed by relevant Traffic Management Subcontractor engaged by LORAC and the procedures and control measures implemented on site.
- Approval is obtained from the relevant authority before any work in a road reserve is commenced by LORAC or a person working on the LORAC's behalf.
- Road users, pedestrians and LORAC staff can continue with their respective undertakings in relative safety and with the minimum of inconvenience.
- 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 commence 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 traffic management plan is reviewed regularly to ensure it is still suitable.
- If any person is injured / traffic is affected the incident is reported to the Project Manager (LORAC), Project Manager (Sydney Metro), TMC (Operations Manager, if applicable).
- In the event of an incident/accident, the following information is recorded using E-T-8-0918 Incident Investigation:
  - Names and addresses of those involved.
  - Names and addresses of any witnesses.
  - Actual types of signs and devices at the site.
  - Photographs of signs and devices at the site at the time of the incident.
  - Details of the surface and the width dimension of the travelled path.
  - Details of any hazard at the site.
  - Details of the prevailing weather.

### Employees

- Workers are competent to work on or near the roadways.
- Workers have a general awareness of traffic safety 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 enquiry.
- 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.
  - Hearing protection (where appropriate).
  - Eye protection (where appropriate).

#### 1.5.3 All Other Persons

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

- Always take reasonable care for their safety and that of those around them.
- Follow the applicable requirements of this traffic management plan.

## Traffic Management Plan

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- **Prior** to proceeding with any work, contact their supervisor or a LORAC Site Management Team member for clarification of any requirement applicable under this traffic management plan, if they are uncertain of what is required or how it is implemented.
- Provide appropriate notification of deliveries to the nominated Site Contact.
- Wear high visibility vest or shirt where required under this TMP.
- Always obey the applicable road rules for pedestrians 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 when parking or parked, and adhering to the LORAC identified Restricted Parking Zones (refer to Figure 3). Any workers associated with the construction site must park their vehicles wholly within the site boundaries or in off street parking facilities. Workers associated with the site will not occupy public on-street parking spaces as shown in Figure 3 .

### 1.5.4 Safety Requirements

The following safety requirements are covered as follows:

- a) Chain of Responsibility – refer K26-LOR-PLN-013 Work Health and Safety Management Plan (Approved by Sydney Metro)
- b) Driver training – refer K26-LOR-PLN-007 Workforce Development, Industry Development and Training Management Plan (Approved by Sydney Metro)
- c) Requirements for safety accessories for trucks – refer SM PS-ST-221 Sydney Metro Principal Contractor Health and Safety Standard

## Traffic Management Plan

### 2.0 Traffic Management

#### 2.1 Traffic Management

When an LORAC Site Management Team members, subcontractors or their workers conducts work on the road or footpath it creates an abnormal situation that requires the provision of suitable signage, barricading, guarding, etc for users including vehicular and pedestrian traffic.

Regardless of the nature of the works, the complexity or how long it shall take, the purpose of this TMP is to ensure the safety of the Site Management Team, subcontractors, their workers and the users of the road and to minimise the inconvenience to all parties.

The basic communication requirements of the traffic management plan 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 advanced to arrange deliveries.

##### 2.1.1 Main Works Guidelines

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

- 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. 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.
- No road closures are proposed, therefore route diversions for general traffic is not required. No changes to speed zones are 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 that is able to direct and guide, not only the labour, but pedestrians around the works.
- The Traffic Control Plan (TCP) will be generated by the relevant Traffic Control Subcontractor in reference to SM ES-ST-214: G10 – Traffic and Transport Management.
- 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 LORAC and prepared by RMS accredited personnel with the appropriate and current qualification as outlined RMS G10 clause 1.5.3. There will be 3 no TCP areas required for the works, Draft TCP's are available within Appendix B:
  - o Lee St Access to STA Bus Depot (inclusive of management of construction traffic in the Depot)
  - o Eddy Avenue Access to Sydney Yard
  - o Lane closure on Regent St to facilitate safe working for works on the footpath
- Traffic control signs shall be erected in accordance with the standard distances as specified in the RMS Traffic Control at Work Sites Manual. Due diligence should be exercised when erecting traffic control signs within the vicinity of potential obstructions, such as adjacent roadside objects or parked vehicles on-street. It is to the discretion of the Traffic Controllers to position signs that are clearly visible for road users providing adequate information.

##### 2.1.2 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.

The SYAB offices will be accessed via the STA Bus Depot off Lee St for all staff access and deliveries. This will be the principal point of entry for the Project. Eddy Avenue will be utilised for works in Sydney Yard side of the bridge and Regent St will be utilised for the landscaping and deck construction once demolition of the existing terraces has been completed. Refer Appendix D for further details.

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

- Monitor the number of access points in use – currently proposed to have two access points (Eddy Avenue and Lee St via the STA Bus Depot). These access points are both currently in use by Sydney Trains.



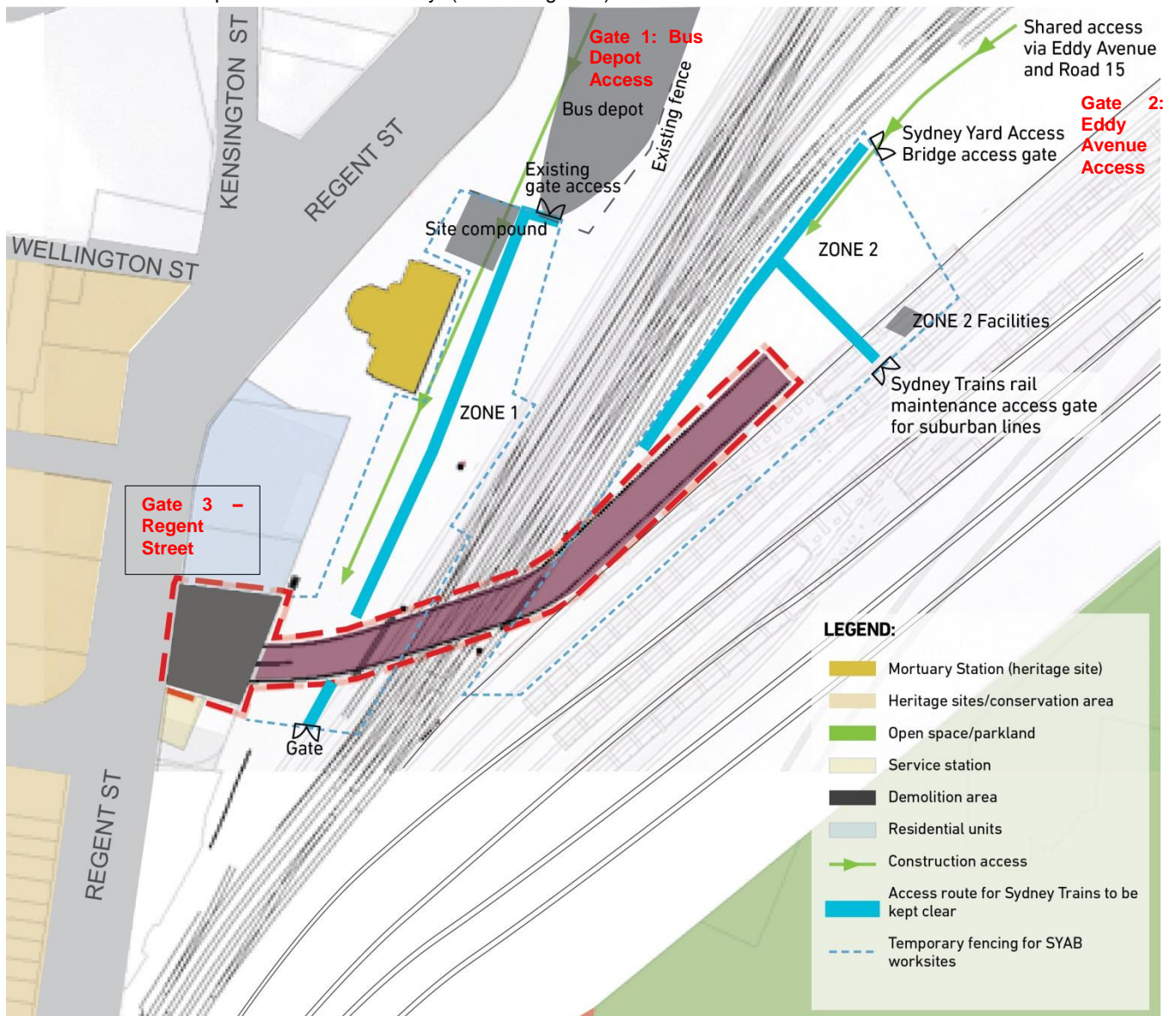
## Traffic Management Plan

- Ensure the access points nominated can accommodate the turning movement of the largest vehicles that will be accessing the site as required. Currently Lee St is to **be left in and right out** only until such time as the signage is modified to read **“No right turn signage - STA and Construction Vehicles Excepted”** and established in agreement with STA buses. Eddy Avenue will be limited for oversized vehicles also with a weight limit restriction of 30t.
- Segregation of pedestrians and cyclists from site access points will not be feasible, Traffic control will be utilised to manage this interface. Where required Pedestrians and Cyclists will be held briefly to allow safe vehicle movements as per TCP (refer Appendix B)
- Ensure all access points are clearly visible to approaching traffic and signposted accordingly.

The nominated access points are existing railway access gates via existing easements. Once demolition is complete on Regent St, there will be an additional access created to undertake the bridge construction works. This will be limited to the landscaping and deck construction only and will eventually form part of the finished works. It is not envisaged that any additional or new access points shall be established through adjacent properties.

### Work Areas –

Due to the restricted size of the contract scope of works, there will be only 2 no main access points to the project, with Regent St used to access that portion of the works only. (refer to Figure 1).



**Figure 1: Access Points**  
**Sign-On/Site Cabin Points –**

Selection of the STA Bus Depot access gates as the principle delivery location has been established because of the location of site sign-on and site cabin locations, whereby these facilities will be utilised to manage deliveries to the site.

## Traffic Management Plan

### SYAB – Access Points

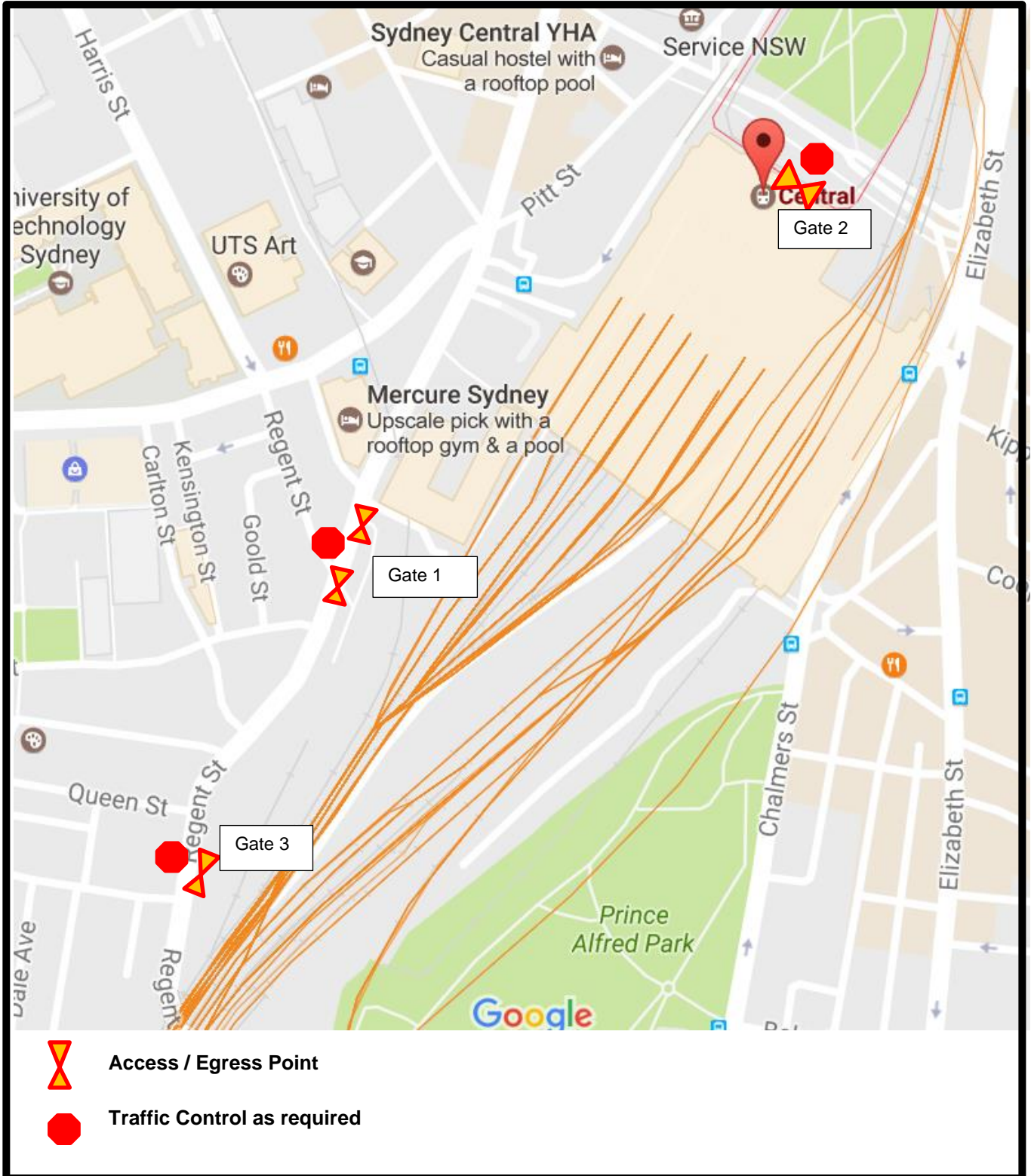


Figure 2: Access Egress Points

## Traffic Management Plan

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### Traffic Demand

The relevant person for LORAC/subcontractor shall determine the most suitable time of the day to conduct any work this TMP is applicable to and ensure that sufficient road reserve space remains open to provide an acceptable level of service and convenience to all users taking into account normal and peak hour traffic.

### Works on Regent St

Works required on Regent St is as follows:

- Lane closures overnight to install hoarding for demolition of the buildings.
  - o Hoarding licence from CoS
  - o ROL from RMS for lane closures
- Modifications to the footpath to create a new access onto the bridge from Regent St
  - o ROL from RMS for lane closures (nights / weekends)
  - o Driveway application approval from CoS

#### 2.1.3 Traffic Routing

The LORAC Site Manager/Relevant Foreman 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.

#### 2.1.4 Parking

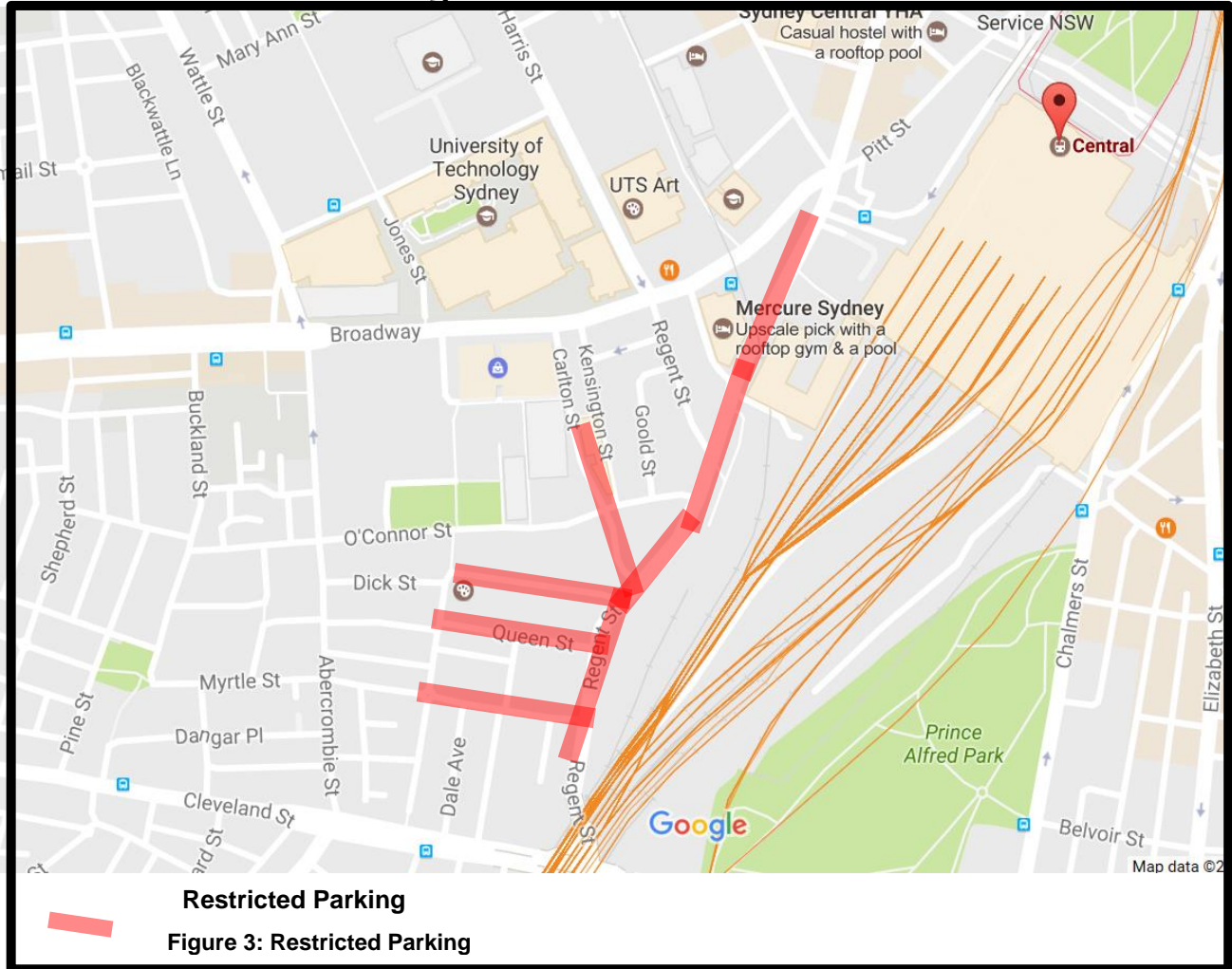
As site space is limited and access shall only be granted to approved vehicles that comply with the site requirements of flashing light, reversing alarm and reversing camera, personal vehicles will not be permitted onto the worksite except under direction of the Construction Manager or Superintendent.

As the construction works are adjacent to commercial, industrial and residential areas, to minimise impact to the surrounding areas, street parking of private vehicles will not be permitted, LORAC employees and Subcontract staff will utilise public transport whenever possible. This will form part of the Site Induction and will be policed by the LORAC Superintendent. It is not envisaged that the works will block access for either pedestrian or vehicles to businesses or residences.

No construction related parking will be permitted within surrounding residential streets surrounding the identified key site points of access, or, within surrounding commercial, industrial or retail areas to the site points of access. This applies to street parking as well as public carparks within the nominated areas. This is defined in the below figure where 'red' lines indicate the Restricted Parking Zones to be observed during the project.

## Traffic Management Plan

### SYAB – Restricted Parking Zone for Site Personnel



## Traffic Management Plan

### Traffic Control (LORAC Works on Carriageways)

Traffic control shall be provided by the relevant LORAC Site Management Team member or subcontractor, as applicable, where required under this TMP or the SWMS for the activity undertaken.

The relevant person for LORAC/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 plan shall be developed if, and when, road or footpath occupancy is required to complete project scope works.

#### 2.1.5 Non-Vehicular Traffic

LORAC's Site Manager/Relevant Foreman shall ensure traffic management includes provisions for the following where applicable:

- Pedestrians, including those with disabilities.
- School children, bicycles and toy vehicles.

#### 2.1.6 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:

Figure 2

WE	Date of Possession	Proposed Track Access Point	Deliveries, these may be 2-4 weeks in advance, and up to a week after
35	25&26/02/17	Eddy Ave	Light vehicles
37	11&12/03/17	Eddy Ave	Light vehicles, minimal construction plant
40	1&2/04/17	Eddy Ave	Light vehicles, minimal construction plant
44	29&30/04/17	Bus Depot off Regent St	Standard construction plant
45	6&7/05/17	Bus Depot off Regent St & Eddy Ave	Standard construction plant
9	26&27/08/17	Bus Depot off Regent St	Standard construction plant
10	2&3/09/17	Bus Depot off Regent St & Eddy Ave	Heavy Construction Plant
15	7&8/10/17	Bus Depot off Regent St	Heavy Construction Plant
16	14&15/10/17	Bus Depot off Regent St & Eddy Ave	Heavy Construction Plant
18	28&29/10/17	Bus Depot off Regent St & Eddy Ave	Heavy Construction Plant
29	13&14/01/18	Bus Depot off Regent St & Eddy Ave	Contingency
30	20&21/01/18	Bus Depot off Regent St & Eddy Ave	Contingency
38	17&18/03/18	Bus Depot off Regent St & Eddy Ave	Contingency

#### 2.1.7 Deliveries for works

Deliveries are classed as either Light Vehicles (site utes), Standard Construction Plant (delivery of excavators, piling rigs, pothole trucks, bogies, concrete agis etc), Heavy Construction Plant (beam and grider deliveries, precast deliveries, tower crane deliveries)

Considerations for Deliveries are as follows:

- Material Deliveries may be required 2-4 weeks prior to these possessions outlined in section 2.1.6, this will require traffic control at site access locations.
- Spoil disposal will be required upto 1-2 weeks following 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.

## Traffic Management Plan

- OOHW notifications will be organised in advance of the delivery. Appropriate licences for oversized loads will be in place prior to delivery. All Heavy Vehicles will be managed in accordance with the CoR Management Plan (refer WHSMP).

The following activities will require Standard Construction deliveries or Heavy Construction Plant. This listing will be updated as subcontracts are let and methodologies and plant can be confirmed with subcontractors:

- Tower Crane: 20 x semitrailer movement, 1 x 400t All Terrain Crane – this will be over 5 days and will be repeated for demob
- Precast Elements: Approximately 20 x semitrailer movements, half each to Lee St / Eddy Ave – this will be over 5 days each side
- Steel Girders: Approximately 20 x semitrailer or jinker movements to Lee St – this will be over 10 days
- Quarry Products for RE Wall: Approximately 40 movements to Eddy Ave – this will be over 4 days
- Spoil Removal: approximately 60 movements, half each to Lee St / Eddy Ave – this will be intermittent over the construction period
- Demolition Rubble Removal: Approximately 20 movements to Lee St – this will be over 4 days
- Piling: 6 delivery / removals of Piling Rig on Semitrailer, 2 movements to each access point
- Concrete Deliveries: approximately 120 agi deliveries, 30 to each to Lee St, Eddy Ave and Regent St – this will be over 8 days
- Staff: Approximately 6 vehicles to access per day to Lee St

### 2.1.8 Emergency Response following 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.

No road closures are proposed that will influence that operation of emergency and service vehicles. 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 impacts to emergency and service vehicles are expected to be negligible.

### 2.1.9 Haulage and Delivery Options

LORAC recognises the effective management of haulage and delivery operations is not only integral to the success of the SYAB 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 impacts 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 which are approved for RAV and HML for certain heavy vehicles to travel along.

Due to the size of the proposed bridge girders, some deliveries may be classified as Oversize and/or overmass (OSOM) vehicles. Loads that fall into this category, will require special permit issued by RMS and CoS in advance of delivery, the requirements are outlined <http://www.rms.nsw.gov.au/business-industry/heavy-vehicles/road-access/restricted-access-vehicles/oversize-overmass/index.html> and a Oversize & over mass vehicle permit application must be completed [http://www.cityofsydney.nsw.gov.au/\\_data/assets/pdf\\_file/0007/238075/Oversize-And-over-mass-vehicle-permit-application.pdf](http://www.cityofsydney.nsw.gov.au/_data/assets/pdf_file/0007/238075/Oversize-And-over-mass-vehicle-permit-application.pdf)

Refer to Appendix A for Haul Routes. Note that relevant local councils and/or RMS permission is required should construction vehicles greater than the allowable load limit require access to roads that contain restrictions.

The locations of schools and childcare centres along haulage routes and segment transport 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).

## Traffic Management Plan

- Identifying and assessing the potential sensitivity of other receivers along the alternate routes condition.

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 and segment transport will be avoided during school pick up and drop off periods.

The below figures (refer to Appendix A) identify LORAC's proposed Heavy Vehicle Access Routes for site arrival and departure for the identified key points of site access. Refer to Appendix A – Heavy Vehicle Access Route Detail for narrative detail of these proposed routes.

### 2.1.10 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 commencement of use by such vehicles. Copies of the Road Dilapidation Report must be provided to CoS within three (3) weeks of completing the surveys and no later than one (1) month before the use of local roads by heavy vehicles.

The proposed roads that to be surveyed are as follows:

1. Eddy Avenue
2. Regent Street
3. Lee Street

Any damage to the road that occurs within the swept paths zones as shows in Appendix A. If the damage is as result of the works and is agreed with RMS / CoS. The damage shall be rectified so as to restore the road to at least the condition it was before construction commenced as identified in the Road Dilapidation Report(s).

## 2.2 LORAC Works on the Roadway

### 2.2.1 LORAC Controlled Work

This section applies to LORAC controlled work that requires part closure of the adjacent road to allow pedestrians to pass the work site. The Site Manager/Relevant Foreman shall ensure the following:

- Work involving a simple lane closure:
  - 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/CoS which includes Temporary Works approvals from CoS, details of requirements and applications here <http://www.cityofsydney.nsw.gov.au/development/building-and-construction-approvals/construction-regulation/temporary-works>

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

### 2.2.2 Vehicular Traffic Safety and Convenience

To achieve the least disruption and inconvenience to vehicular traffic, LORAC's Site Manager/Relevant Foreman 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 adjacent traffic lane.

## 2.3 Typical Road Works Control Layout

The figure below illustrates a typical road works control layout plan for a work site. This will be required at the Regent St Site only.

LORAC's Site Manager/Relevant Foreman shall ensure that those components that are relevant to their work site are identified and the appropriate traffic management scheme applied in each particular case.

## Traffic Management Plan

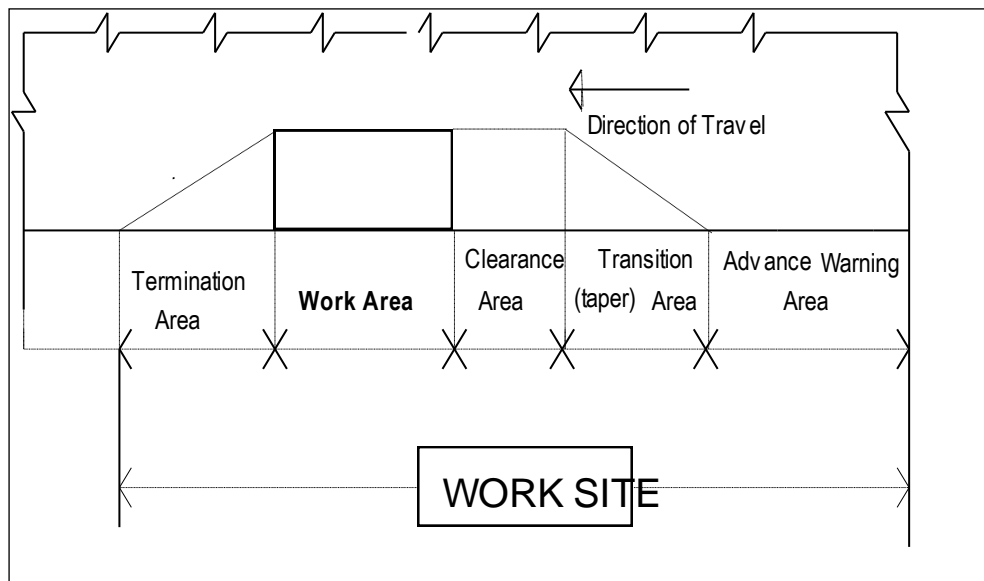


Figure 4

### 2.4 Work Site Signage

LORAC's Site Manager/Relevant Foreman 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 (see Clause 4.1) and, wherever possible, should be located so that 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 roadworks speed limit zone, are placed at the end of the termination.

**Note:** For further details see Section 3 - Traffic Signage and Control.



## Traffic Management Plan

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### 3.0 Traffic Signage and Control

#### 3.1 *Appropriate Signing*

##### 3.1.1 *Principles of Signing*

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

- Provide advance warnings to drivers of changes in the surface of the roadway and/or in the changed traffic conditions and that 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.

LORAC's Site Manager/Relevant Foreman shall ensure the following important principles are observed regarding traffic management signage:

- Signs and devices comply with those listed in AS 1742.3
- Signs and devices are 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.

##### 3.1.2 *Erection and Location of Signs*

LORAC's Site Manager/Relevant Foreman 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 300 mm no more than 1.0m. On urban roads that are not kerbed the distances given for rural areas above should apply. The height of the sign should be about 2.2m above the kerb or footpath to reduce the interference from parked cars.
  - Where the signs are erected on temporary stands for short term work they should be 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 LORAC purposes the Advance Warning Signs are limited to:

## Traffic Management Plan

- Workers Ahead
- Roadwork Ahead
- Intermediate Advance Warning Signs are used where, in addition to a general warning of the onset of the roadworks, 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 LORAC purposes are:
  - Detour Ahead
  - Prepare to Stop
- The minimum distance for positioning of the advance warning signs shall be 2 x 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 about 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 x D m from the transition area, and the other advance sign positions at spacing of x D further in advance of work area, e.g. “Detour Ahead” sign would be at the 2 x D spacing with the “Roadwork Ahead” sign at the x D 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 that 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 1 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.

The distances in the columns in the Table 1 are applied as follows:

#### Traffic control at beginning of taper

Applicable at a location where there is a traffic controller just prior to a diverge (e.g. into a single lane that is being controlled by a controller).

#### Diverge taper

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 traffic control plan in place.

Table 1

Table 2 - Taper Lengths			
RECOMMENDED TAPER LENGTH			
Approx. Approach Speed	Traffic Control at Beginning of Taper	Diverge Taper	Merge Taper
less than 60 km/h **	15 m	15 m	30 m

## Traffic Management Plan

60 to 80 km/h	30 m	70 m	140 m
81 to 100 km/h	30 m	90 m	180 m
More than 100 km/h	30 m	100 m	200 m
<b>** - Typically a low speed residential or commercial street.</b>			

### 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.

## Traffic Management Plan

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### 4.0 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.

##### 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

##### 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 has been undertaken and due to the short duration of the lane closures, bollards and tape will be utilised with localised speed restrictions

#### 4.3 Vehicle Movement Plan and Pedestrian Movement Plan

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

1. Eddy Avenue access to Sydney Yard
2. STA Bus Depot access to Mortuary Siding

VMP / PMP for the roadside at STA Bus Depot and Regent St will be incorporated in the TCP for these two entrances.

Refer Appendix C

## Traffic Management Plan

### 5.0 Traffic Controllers

#### 5.1 Traffic Controllers

Where LORAC 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.

##### 5.1.1 Use of Traffic Controllers

Some typical situations where traffic controllers can be used are shown in Table 2 below.

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.
Construction machinery regularly crosses or enters an existing road.	Avoid conflict between construction and road traffic.
Sight distance to the work site is limited.	Control and warn motorists of the presence of works 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) shall:

- Check the existing speed limit is 60 km/h or less. If the speed limit is in excess of 60 km/h reduce in steps of 20 km/h with approximately 500 m intervals between successive signs.
- Ensure that all relevant signs and devices are in place before commencing traffic control.
- Prohibit parking on both sides of the carriageway between the “Prepare to Stop” sign and the start of the works. This parking prohibition should also apply to LORAC vehicles.
- Ensure an adequate escape path is available at the control position before commencing.
- Stand clear of other workers.
- Stand facing the traffic but just outside the path of vehicles.
- Is possible, stand in a position that allows them to see both the end of the work nearest to them and the other controller, if applicable.
- Ensure they are visible at dawn, dusk, against low morning, evening sun and when in shadow on a sunny day and if traffic control is required at night-times ensure the control site is illuminated.
- Stand so that they can see and be seen by approaching vehicles from at least one and a half times the speed limit in metres.
- Where possible, limit the delay to traffic to a desirable maximum of about 15 minutes.
- 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 that the flow of traffic from each direction can be co-ordinated.
- Traffic will be held only to allow single HV movements to made and then released.

## Traffic Management Plan

### 6.0 Work on Footpaths

#### 6.1 Pedestrian Considerations

Due consideration to pedestrians shall be given before proceeding with LORAC works on or adjacent 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 that LORAC shall take into account the fact 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 SYAB construction sites. Measures specific to SYAB 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; and

Interaction for the SYAB project with pedestrians/cyclists will be as follows:

- a) Eddy Avenue – interface of vehicles crossing footpath only, managed by traffic controllers as required
- b) Lee St to Bus Depot – interface of vehicles crossing footpath only, manage by traffic controllers as required
- c) Regent St – interface during erection of Class B hoarding and ongoing use of said hoarding, interface of vehicles crossing footpath during construction works, removal of two number trees, works on footpath to lower it and protect services

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.

#### 6.2 Width of Travel Path

- People with ambulant disabilities (i.e. using a walking aid) require a clear width of 1,000 mm.
- People who use wheel chairs require a clear width of 1,200 mm.
- 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, etc.
- Approvals of hoarding from CoS will be in place prior to modifications to Regent Street footpath. Refer to <http://www.cityofsydney.nsw.gov.au/development/building-and-construction-approvals/temporary-structures/hoardings-and-scaffolding>
- TCP and ROL's will provide details required for any approvals by RMS / TMC / CoS

#### 6.3 Pedestrian Safety Points

The following pedestrian safety points should be included in the final control measures by the LORAC 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. For example can pedestrians safely negotiate the work site? Can they negotiate any "squeeze" points in and around the work site?
- Check that the pedestrians' routes are continuous through/adjacent 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 the site? That is either through, past or around the site?
- Where applicable ensure that any barriers erected do not force pedestrians to cross at an inappropriate location.

##### 6.3.2 Elderly Pedestrians

- Is the travel path relatively smooth and clear of overhanging foliage?
- Is the work site adequately illuminated?

##### 6.3.3 Young Pedestrians

- Are barriers erected to guide children past or through the work site?
- Are travel paths continuous through the scheme?
- Shall any road signs/devices obstruct the vision of or visibility to, the young pedestrian?
- Can parking of the LORAC vehicles be managed to maximise the sight lines?

## Traffic Management Plan

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### 6.3.4 Intoxicated Pedestrians

- Is the area one in which intoxicated pedestrians can be expected?
- Where appropriate are barriers in place to guide them past or through the work site?
- Are drivers given every chance of seeing the pedestrian?
- Can parking of the LORAC vehicles be managed to maximise the sight lines?

### 6.3.5 People with Disabilities or Prams

- Can the work site be identified by visually impaired people?
- Is the width of the travel path sufficient to cater for wheelchairs, prams, etc?

### 6.3.6 Construction Traffic and Vehicles

- When considering the traffic control measures it should be noted that construction traffic and vehicles needs to be taken into account as this can affect the traffic control measures adopted.

## Traffic Management Plan

### 7.0 Consultation with Relevant Stakeholders

All communication with Stakeholders is to be through Sydney Metro Delivery Office. SYABs engagement strategy aims to inform and engage community and relevant stakeholders in a constructive, transparent and fair process. To ensure this happens, detailed and timely information will be provided to Sydney Metro to assist them with fulfilling the consultation and notification requirements. Further details of LORAC's commitment to community consultation can be obtained from the Community Liaison Implementation Plan (CLIP). The CLIP presents the strategy's objectives, guiding principles, delivery framework, issues management approach and the communication tools and protocols that will support the strategy's implementation.

Prior to the partial closure of any road or footpath the following stakeholders must be appropriately considered for consultation in relation to the road occupancy to ensure that all requirements are addressed):

Station / Site	SCO	BDA	Sydney Trains	RMS	WC	NSC	CoS	IWC	TMC
Central	TCG /TTLG	N/A	N/A	TCG/ TTL G	N/A	N/A	TCG/ TTLG	N/A	TCG/ TTLG

#### Legend:

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

The stakeholders will be consulted in the following forums: Traffic Transport & Liaison Group TTLG (monthly) & Traffic Control Group TCG (weekly)

Special events will be co-ordinated with the works. The STA Bus Depot may experience increased useage at the weekend and this will be co-ordinated with possession weekends. Interface with Sydney Light Rail at Eddy Avenue will be an ongoing undertaking to ensure that they do not block access to our works for critical delivery items.

#### 7.1 Tree Removal

There at 2No trees on Regent Street that are to be removed. A comprehensive Tree Report (by a qualified Arborist AQF Level 5) and approval by **Karen Sweeney** of CoS the trees shall be removed. Lane closures required will utilise the TCP's as attached in Appendix B.

#### 7.2 STA Bus Depot

Inteface has been undertaken between Sydney Metro, Laing O'Rourke and STA Buses to agree access arrangements through the STA Bus Depot.

Agreements for access include:

- Access through the bus depot will be as per the existing PMP / VMP that STA use.
- Weekly email of planned deliveries (commenced)
- Use of the STA Bus depot as holding area (2-3 vehicles) has been agreed, with holding permitted outside of the hours of Mon-Fri 0700 – 1000 & 1400 – 1900. Within these hours access allowed but no parking
- No parking for private vehicles at any time



## Traffic Management Plan

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### 8.0 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 will be attached to this Management Plan as they are developed:

1. Accessing Eddy Avenue
2. Accessing the STA Bus Depot from Lee St
3. Accessing Abutment A from Regent St
4. Specialised Haulage Routes and accessing OSOM vehicles in at the STA Bus Depot
5. Lane closure on Regent St to facilitate safe access for hoarding erection and services / footpath works

Road Occupancy Licences (ROL) will be required to undertake traffic control restricting flow of traffic in locations listed above. This will be applied for prior to works commencing 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:

1. Girder Delivery
2. Precast Concrete Delivery
3. Some craneage as required

These will be supplied in advance of the planned movement and will dictate the path that the vehicle must take.

### 8.1 Road Safety Audit

Road Safety Audits are required as follows:

- a) The Road Safety Assessment for the new Regent St entrance is linked to CDR2 as is based on the Regent St entrance layout. It will be issued as part of the CDR2 submission, undertaken by GHD
- 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 Audit on this CTMP attached in Appendix E

### 9.0 Reference Documentation

SM ES-ST-214: G10Traffic and Transport Management

(a) RMS Traffic Control at Worksites Manual

(b) Relevant Austroads Guides

(c) RMS Supplements to Austroads and Australian Standards

SM PS-ST-221: Sydney Metro Principal Contractor Health and Safety Standard

SM ES-FT-460 ROL Application

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 Document

## Traffic Management Plan

### 10.0 Appendices

#### Appendix A – Heavy Vehicle Access Route Details

- Proposed Heavy Haul Route – Left into STA Bus Depot
- Proposed Heavy Haul Route – Right into STA Bus Depot
- Swept Paths (Final Arrangement) Regent St Gate 3
- Swept Paths STA Bus Depot
- Swept Paths Eddy Avenue

Table 3: Access Information

Work Area	Access Gate	Arrival Information	Departure Information
Work Area RS – Regent St	Gate 3	Exit left (south bound only) from Regent St into the worksite	Exit left from access gates onto Regent St
Work Area MS – STA Bus Depot	Gate 1	Left in from Lee St heading South permitted into the STA Bus Depot Right in from Lee St heading North permitted into the STA Bus Depot once signage has been modified to include access for construction vehicles	Exit under existing signage and traffic lights onto Lee St
Work Area SY – Eddy Avenue	Gate 2	Exit left (west bound only) from Eddy Avenue into the worksite <b>30T LIMIT</b>	Exit left from access gates onto Eddy Avenue

Table 4: Planned Vehicles

Vehicle	Vehicle Classification	Vehicle Details	Carrying	Access			Designation
				STA	Eddy	Regent	
Concrete Agi	General Access Vehicle (GAV)	H – 3.550m W – 2.460 L – 7.800	Concrete	From / To North From / To South From / To West	From / To North From / To South From / To West	From / To North From / To South From / To West	GAV
Low Loader	Restricted Access Vehicle (RAV) Class 1	H – varies subject to load W – 2.500m to 4.500m L – 17.500m to 20.000m	Piling Rig Excavators Manitou EWP	From / To North From / To South From / To West	N/A	N/A	RAV Class 1
Line Pump	GAV	H – 3.25m W – 2.5m L – 11.2m	N/A	From / To North From / To South From / To West	From / To North From / To South From / To West	From / To North From / To South From / To West	GAV
16m Concrete Pump	GAV	H – 3.25m W – 2.5m L – 11.9m	N/A	From / To North From / To South From / To West	From / To North From / To South From / To West	From / To North From / To South From / To West	GAV
Bogie Tipper	GAV	H – 2.900m W – 2.465m L – 11.345m	Quarry Products	From / To North From / To South From / To West	From / To North From / To South From / To West	From / To North From / To South From / To West	GAV
12m Rigid (including HIAB)	GAV	H – 3.550m W – 2.500m L – 11.200m	Pile Cages Precast Concrete Products Smaller site sheds	From / To North From / To South From / To West	From / To North From / To South From / To West	N/A	GAV (unless modified by load carried)
Semi-Trailer	Restricted Access Vehicle (RAV) Class 1	H – 4.25m W – 3m L – 19m	Site Sheds (3m width) Steel Reinforcement Precast Concrete Products Tower Crane sections	From / To North From / To South From / To West	From / To North From / To South From / To West	N/A	RAV Class 1
400t Crane	Restricted Access Vehicle (RAV) Class 1	H – 4.000m W – 3.000m L – 18.456m	N/A	From / To North From / To South From / To West	N/A	N/A	RAV Class 1
100t Crane	Restricted Access Vehicle (RAV) Class 1	H – 3.995m W – 2.750m L – 13.000m	N/A	From / To North From / To South From / To West	N/A	N/A	RAV Class 1
Jinker	Restricted Access Vehicle (RAV) Class 3	TBC, 28m beam	Steel Bridge Girders	From / To North From / To South From / To West	N/A	N/A	RAV Class 1 Construction Regulation Unit Approval required
Semi-Trailer (Hoarding for Regent St)	Restricted Access Vehicle (RAV) Class 1	H – 4.25m W – 2.5m L – 19m	Hoarding /Scaffolding for Demolition	N/A	N/A	From / To North From / To South From / To West	RAV Class 1 Construction Regulation Unit Approval required for footpath closure overnight RMS Lane Closure Approval required for 2 no lanes Sth Bound overnight

**Legend**

Enter Town or Suburb name here:  
 Enter a location

**Network Disclaimer**

The networks are available for short combinations (up to 19 metres long) and B-doubles that comply with the requirements contained in the Heavy Vehicle National Law (HVNL); the National Class 2 Heavy Vehicle B-double Authorisation (Notice) and the adjoining NSW Schedule and for Higher Mass Limits (HML) the New South Wales Higher Mass Limits Declaration 2015. These networks are based on a maximum vehicle width of 2.5 metres and are subject to sign-posted restrictions.

**GML and CML networks**

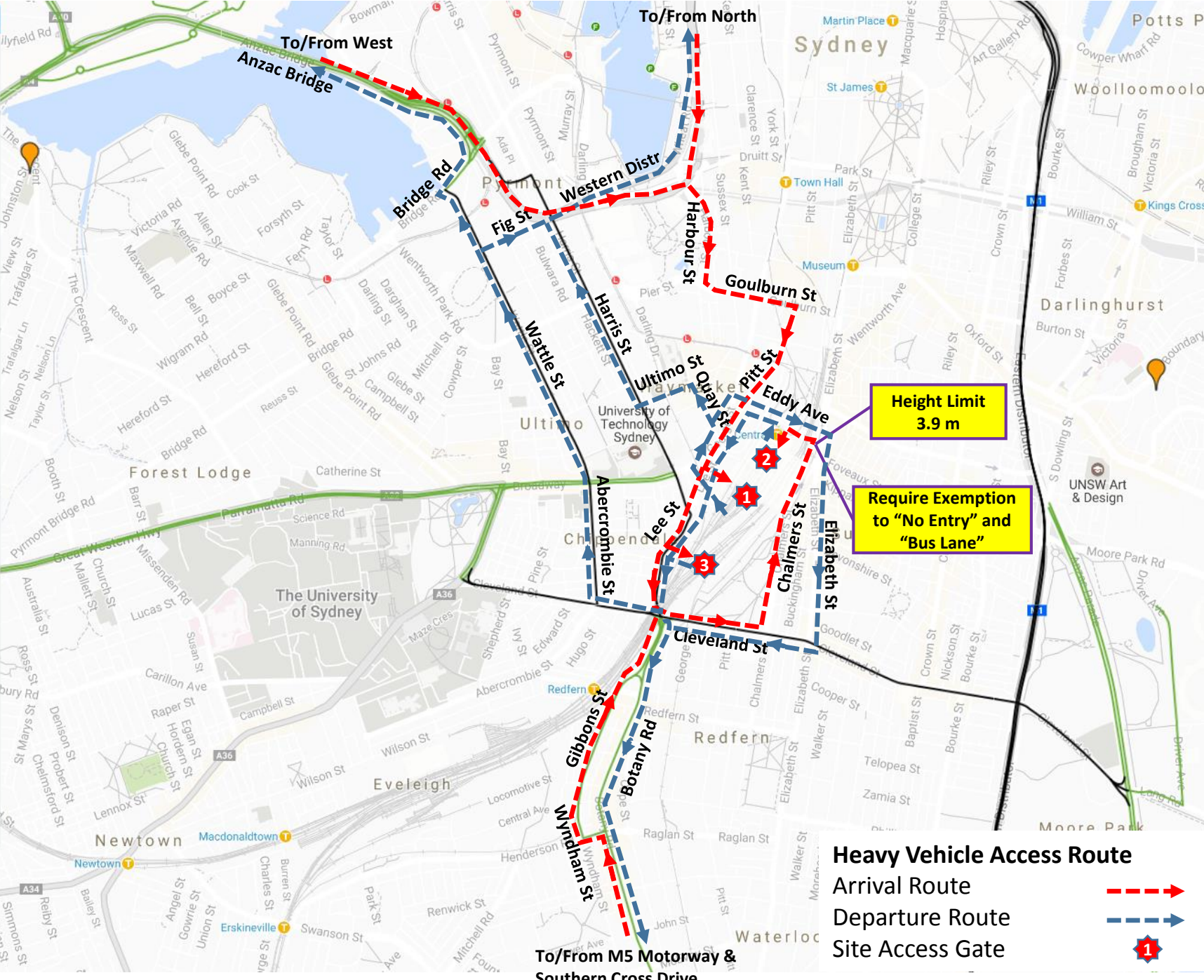
- 19m B-double Routes (over 50 tonnes)
- 23m B-double Routes
- 25/26m B-double Routes
- Approved Routes With Travel Conditions
- Exception Routes (not approved)
- Approved Areas
- Approved Areas with Travel Conditions
- Restricted Intersections
- Restricted Intersections with Conditional Access
- Low Clearance Bridge (< 4.3m) - Through Traffic on Bridge
- Low Clearance Bridge (< 4.3m) - Through Traffic under Bridge

**HML network**

**Road Trains**

**4.6m High Vehicles**

**NSW Reference Layers**



**Heavy Vehicle Access Route**

Arrival Route - - - - ->

Departure Route - - - - ->

Site Access Gate 1

To/From M5 Motorway & Southern Cross Drive

**Legend**

Enter Town or Suburb name here:  
 Enter a location

**Network Disclaimer**

The networks are available for short combinations (up to 19 metres long) and B-doubles that comply with the requirements contained in the Heavy Vehicle National Law (HVNL); the National Class 2 Heavy Vehicle B-double Authorisation (Notice) and the adjoining NSW Schedule and for Higher Mass Limits (HML) the New South Wales Higher Mass Limits Declaration 2015. These networks are based on a maximum vehicle width of 2.5 metres and are subject to sign-posted restrictions.

**GML and CML networks**

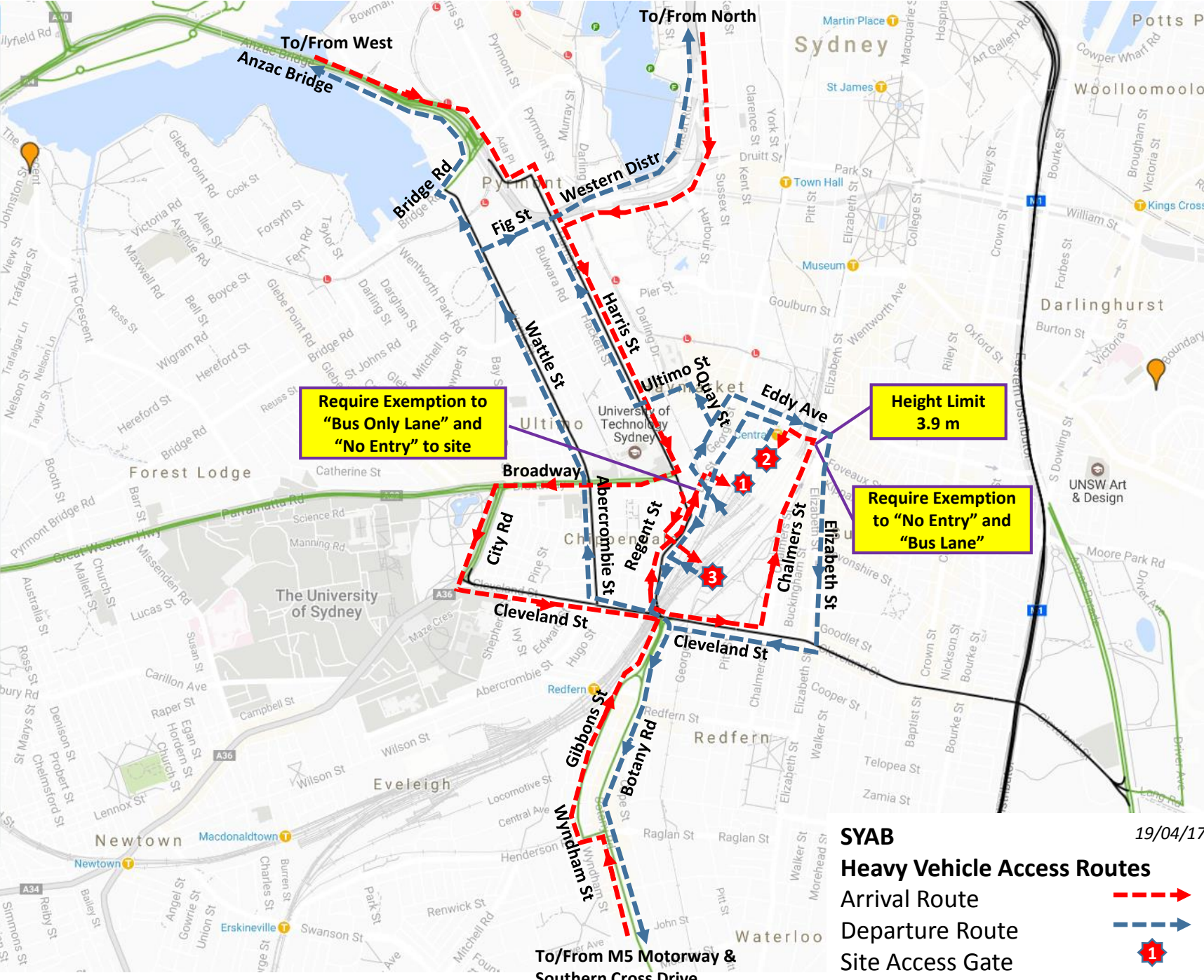
- 19m B-double Routes (over 50 tonnes)
- 23m B-double Routes
- 25/26m B-double Routes
- Approved Routes With Travel Conditions
- Exception Routes (not approved)
- Approved Areas
- Approved Areas with Travel Conditions
- Restricted Intersections
- Restricted Intersections with Conditional Access
- Low Clearance Bridge (< 4.3m) - Through Traffic on Bridge
- Low Clearance Bridge (< 4.3m) - Through Traffic under Bridge

**HML network**

**Road Trains**

**4.6m High Vehicles**

**NSW Reference Layers**



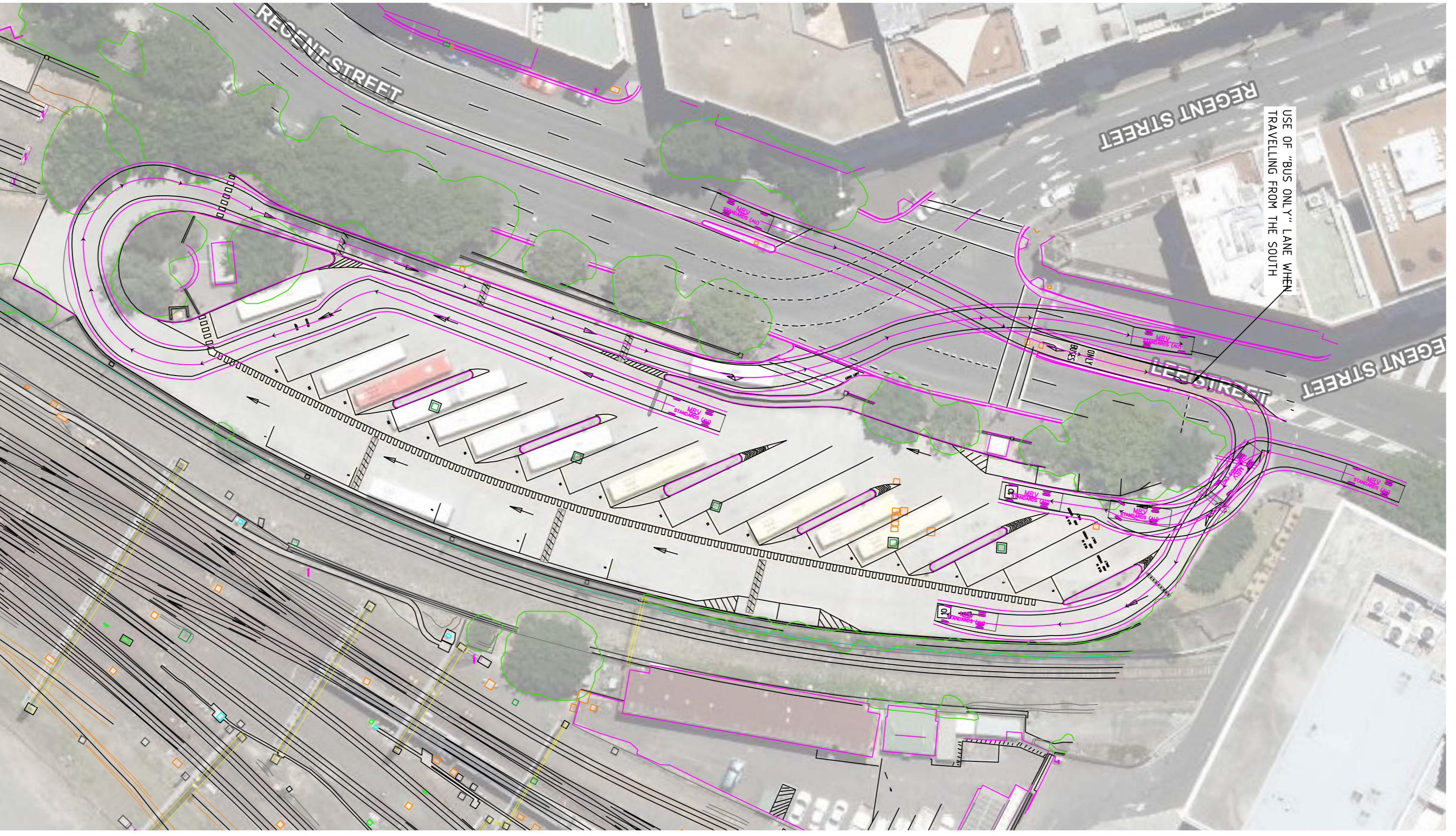
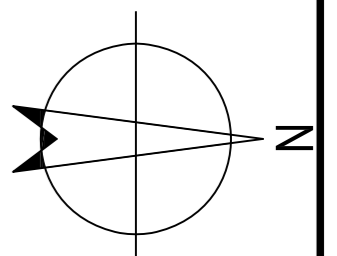
Require Exemption to "Bus Only Lane" and "No Entry" to site

Height Limit 3.9 m

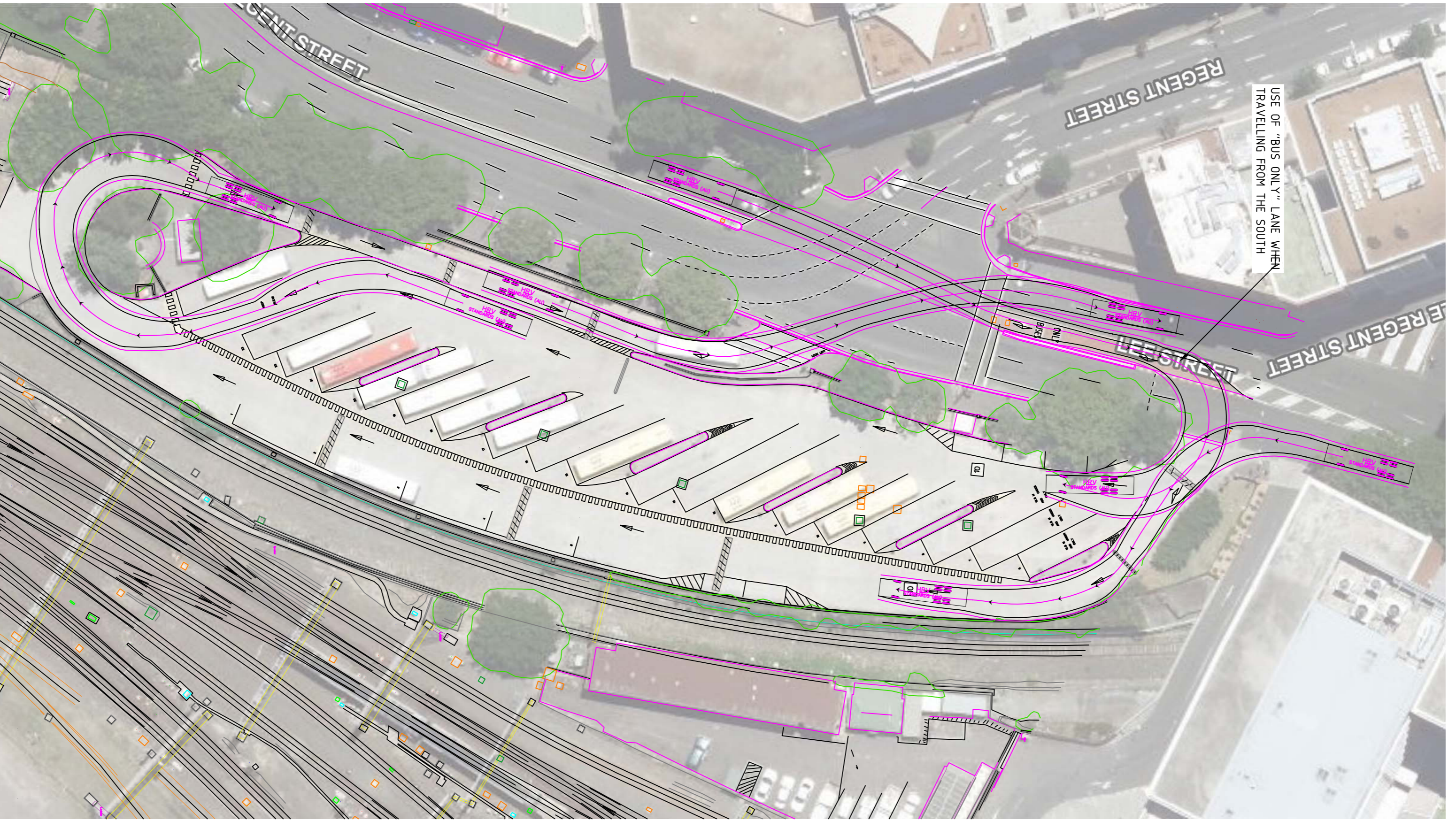
Require Exemption to "No Entry" and "Bus Lane"

Routes for standard Heavy Vehicles Only

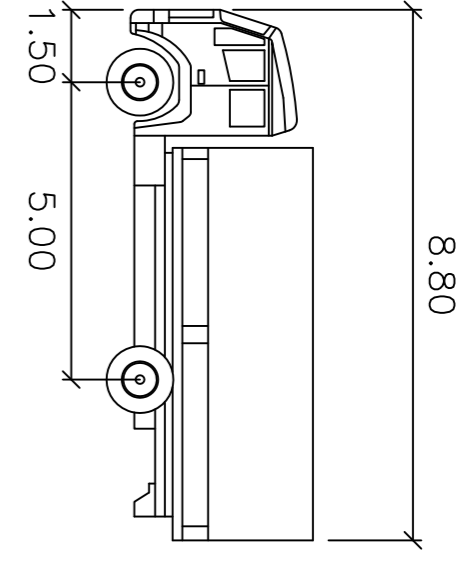
To/From M5 Motorway & Southern Cross Drive



**8.8m MEDIUM RIGID VEHICLE SWEEP PATH**  
SCALE 1:500



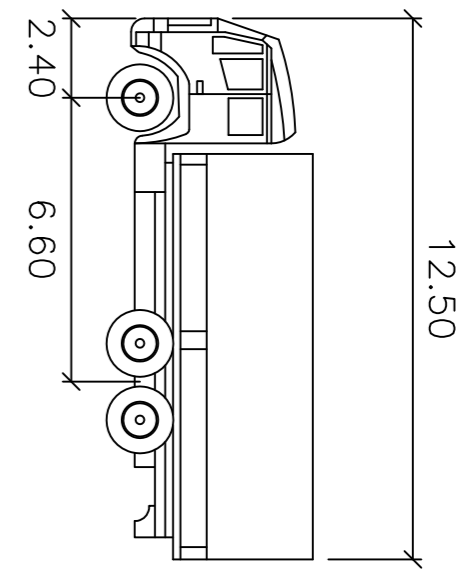
**12.5m HEAVY RIGID VEHICLE SWEEP PATH**  
SCALE 1:500



MRV  
meters

Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 34.0

NOT TO SCALE



HRV  
meters

Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 35.2

NOT TO SCALE

- NOTES:
- ACCESS FOR 8.8m AND 12.5m RIGID VEHICLES AT STA BUS DEPOT REQUIRE THE FOLLOWING:
  - USE OF THE "BUS ONLY" LANE ON LEE STREET WHEN SITE IS ACCESSED FROM THE SOUTH

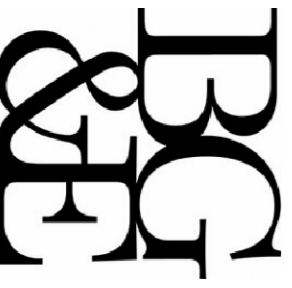


**PLANS BASED ON SIX MAPS IMAGERY ONLY. CONTRACTOR TO CONFIRM ON SITE THAT THE REQUIRED WIDTHS ARE AVAILABLE OR PROVIDED.**

**CONSTRUCTOR**



**SERVICE PROVIDERS**



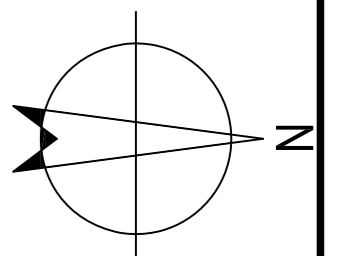
TRAFFIC AND TRANSPORT

DRAWN	DAREN D'SOUZA	2004/17
DESIGNED	SEAN O'LANE	2004/17
DRG CHECK	SEAN O'LANE	2004/17
DESIGN CHECK	BOBY WADELL	2004/17

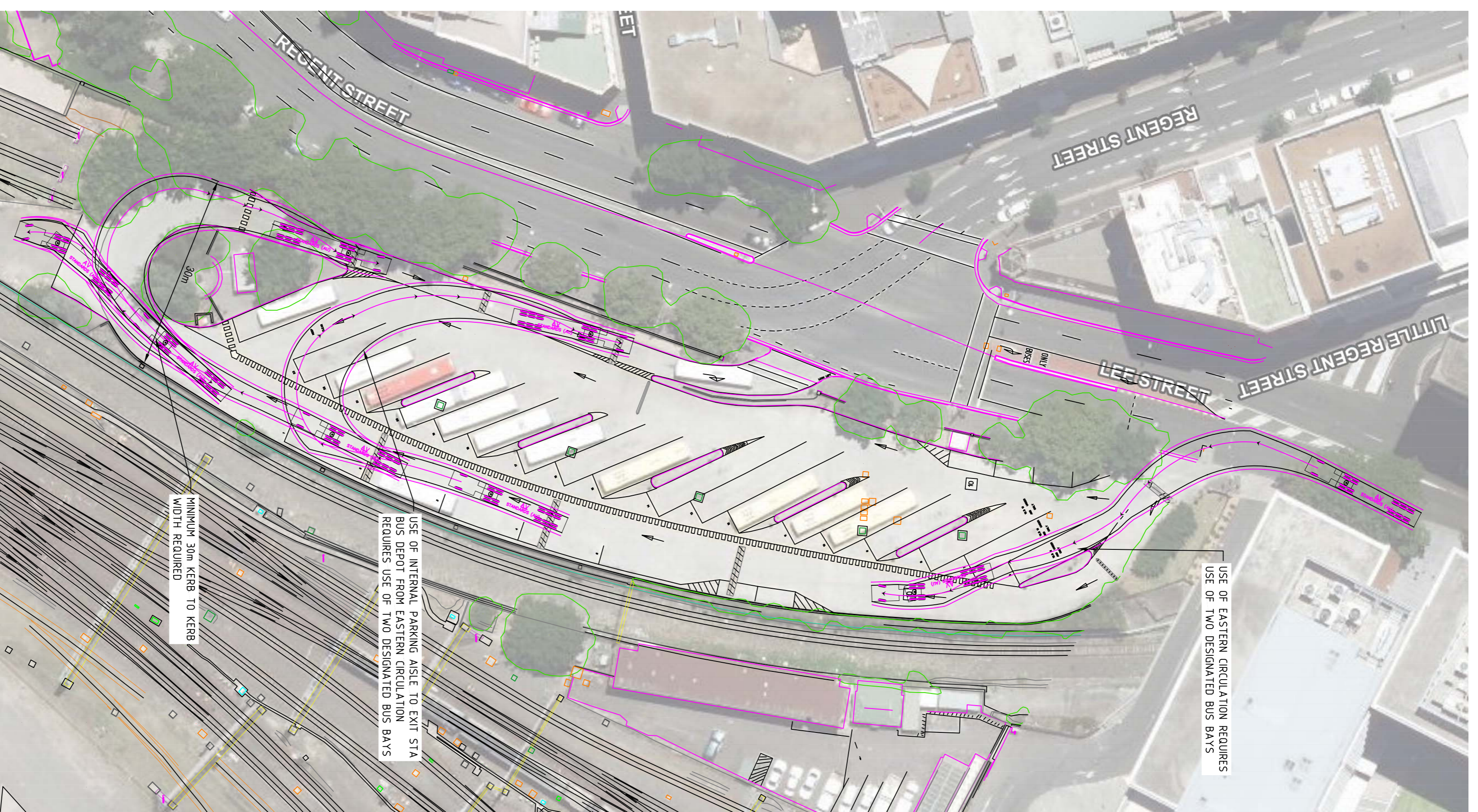
**SYDNEY YARD**

MAIN LINE	0.630KM
CONSTRUCTION VEHICLE ACCESS SWEEP PATHS	
8.8m AND 12.5m RIGID VEHICLES - STA BUS DEPOT	
STATUS: PRELIMINARY	
FILE NO. 212616617 - SK02	SHEET: 2 OF 4
STATUS: PRELIMINARY	
WWR/SRT-GHD-SYY-TF-DWG-000002	A
EDMS No.	

ISSUED FOR INFORMATION	DU / 20/04/17	SC / 20/04/17	RV / 20/04/17
DESIGNER SIGNATURE		VERIFIED SIGNATURE	APPROVED SIGNATURE
DESCRIPTION			
HEIGHT DATUM		SCALE: 1:500	
COORDINATE SYSTEM			

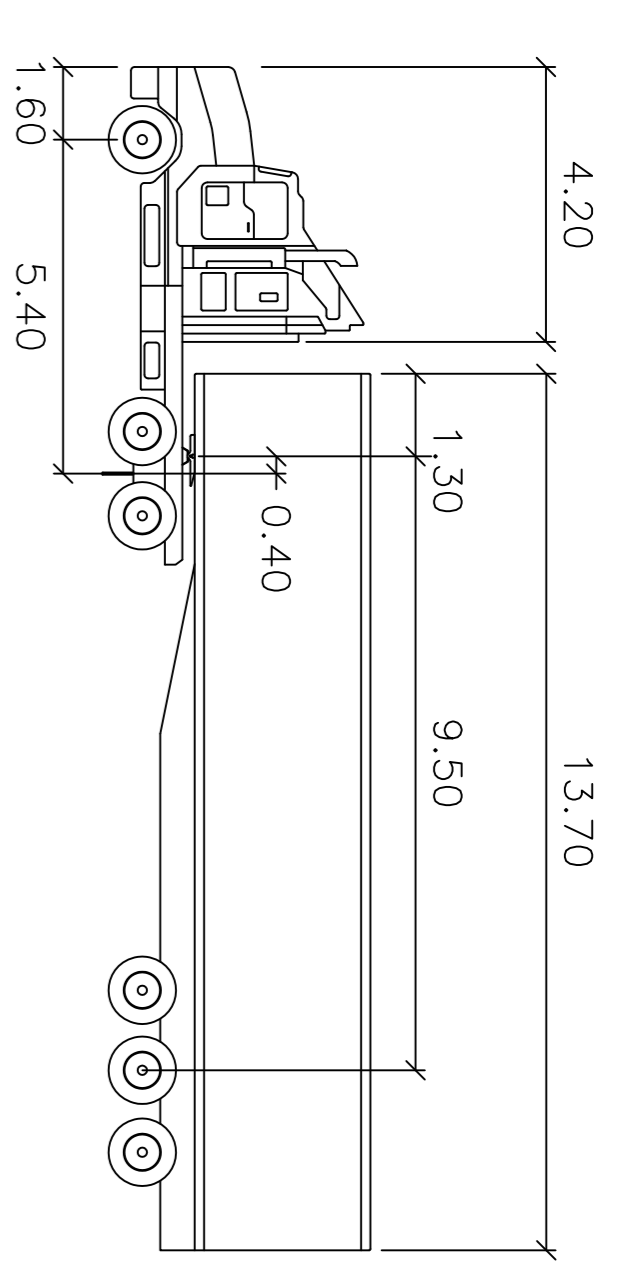


19m SEMI-TRAILER VEHICLE SWEEP PATH  
SCALE 1:500



19m SEMI-TRAILER VEHICLE SWEEP PATH - ALTERNATE ROUTE OPTIONS  
SCALE 1:500

**NOT TO BE USED UNDER REV05 of this CTMP**

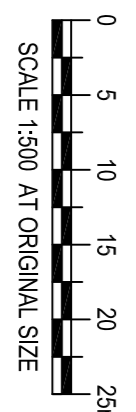


AV	
meters	
Tractor Width	: 2.50
Tractor Width	: 2.50
Tractor Track	: 2.50
Trailer Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 28.3
Articulating Angle	: 70.0

NOT TO SCALE

- NOTES:
- ACCESS FOR 19m SEMI-TRAILER VEHICLE AT STA BUS DEPOT REQUIRES THE FOLLOWING:
  - USE OF THE "BUS ONLY" LANE ON LEE STREET WHEN TRAVELLING FROM THE SOUTH
  - USE OF THE ADJACENT TRAVEL LANE WHEN ENTERING INTO STA BUS DEPOT FROM "BUS ONLY" LANE ON LEE STREET
  - MODIFICATION TO THE NORTH KERB AT DRIVEWAY WHEN TRAVELLING FROM THE SOUTH - KERB TO BE INCREASED BY MINIMUM 2.5m WIDTH
  - OVERALL KERB WIDTH TO BE MINIMUM 16.5m WIDTH
  - USE OF THE EASTERN CIRCULATION ROADWAY REQUIRES MODIFICATION OF EXISTING KERB ISLAND 1m, ALTERNATIVELY USE TWO DESIGNATED BUS BAYS AND KERB MODIFICATION
  - SHOW 1:500
  - USE OF ONE BUS BAY WHEN UTILISING THE INTERNAL PARKING AISLE
  - USE OF INTERNAL PARKING AISLE TO EXIT STA BUS DEPOT FROM EASTERN CIRCULATION REQUIRES THE USE OF TWO DESIGNATED BUS BAYS
  - MINIMUM 30m KERB TO KERB WIDTH REQUIRED IF USING TURNING HEAD

**PLANS BASED ON SIX MAPS IMAGERY ONLY. CONTRACTOR TO CONFIRM ON SITE THAT THE REQUIRED WIDTHS ARE AVAILABLE OR PROVIDED.**



CONSTRUCTOR



SERVICE PROVIDERS



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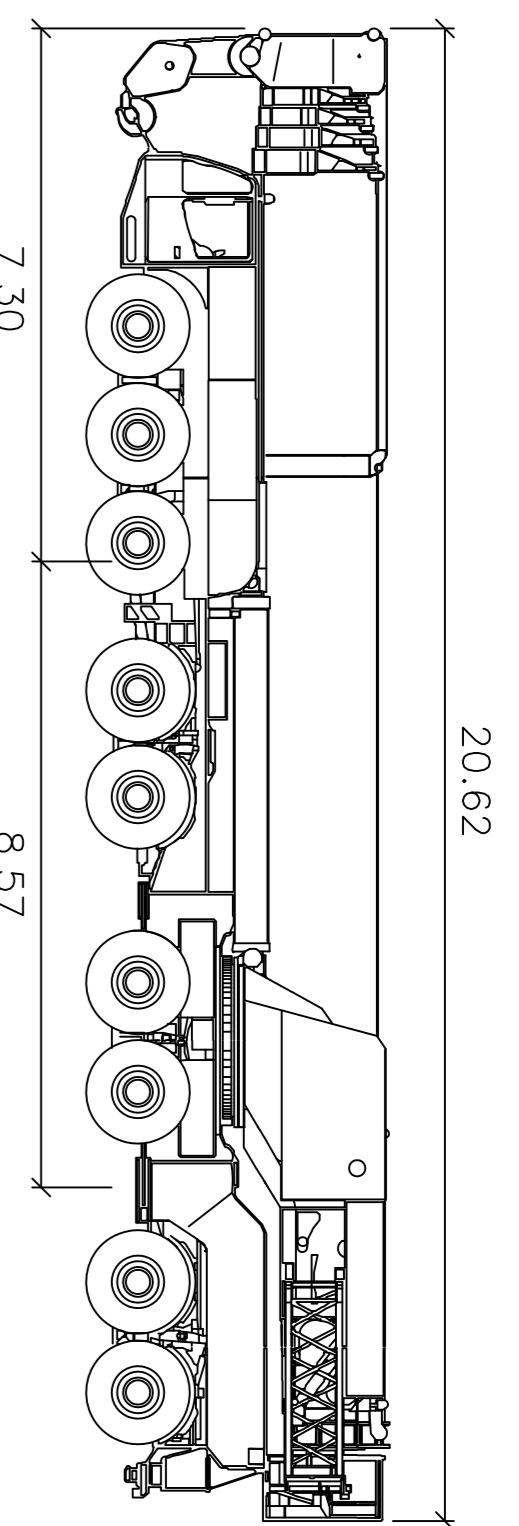
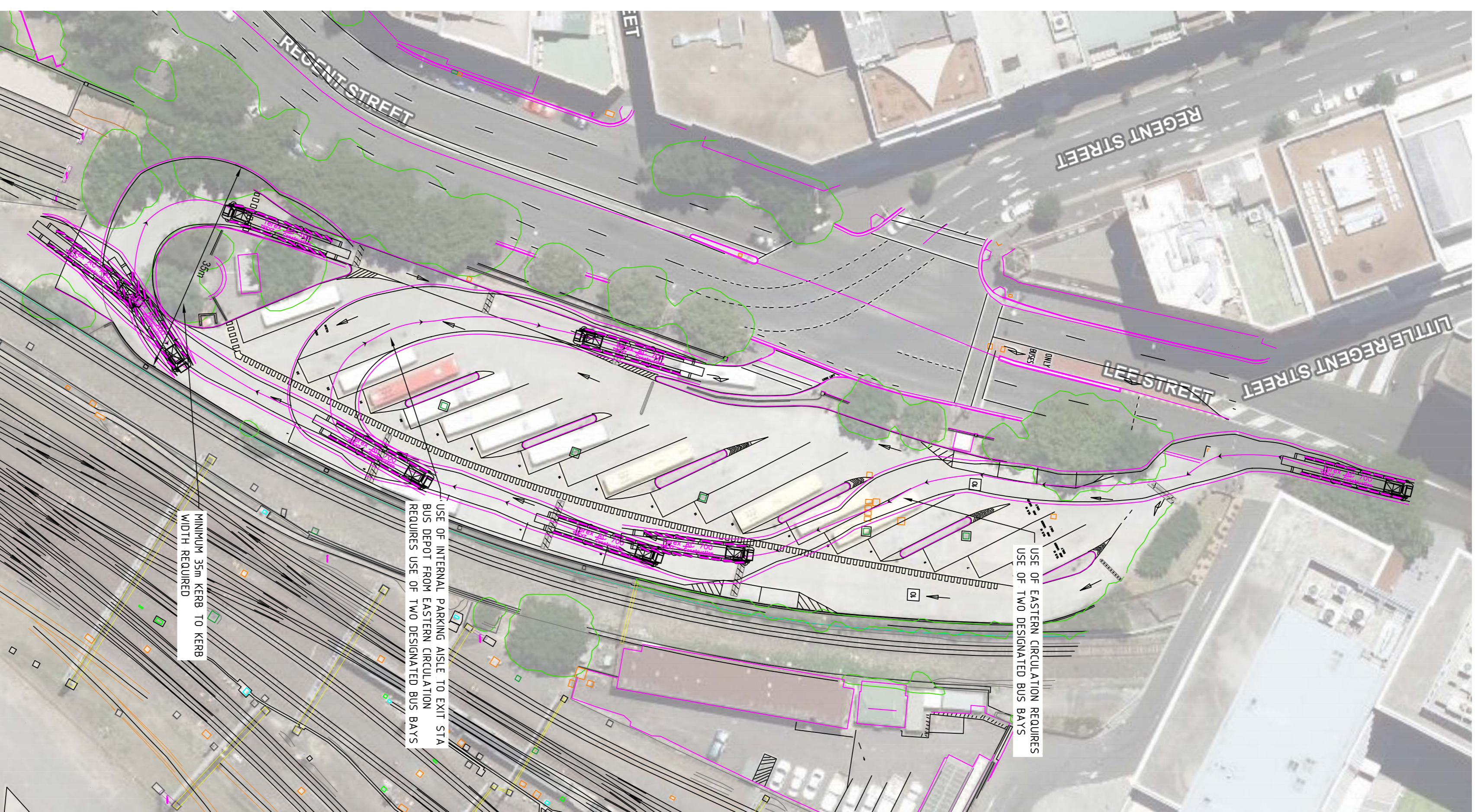
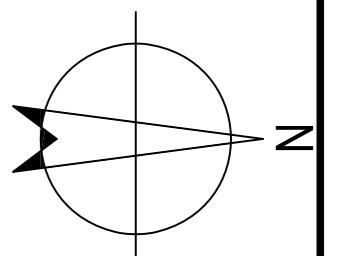


TRAFFIC AND TRANSPORT

DRAWN	DAREN D'SOUZA	2004/17
DESIGNED	SEAN O'LANE	2004/17
DRG CHECK	SEAN O'LANE	2004/17
DESIGN CHECK	BOBBY WADELL	2004/17

**SYDNEY YARD**

MAIN LINE 0.630KM  
 SYDNEY YARD ACCESS BRIDGE  
 CONSTRUCTION VEHICLE ACCESS SWEEP PATHS  
 19m SEMI-TRAILER VEHICLE - STA BUS DEPOT  
 STATUS: PRELIMINARY  
 FILE NO. 212616617 - SK03 | SHEET: 3 OF 4 | A1  
 MWRLSRT-GHD-SYY-TI-DWG-000003 A | FORM NO.



Terex AC 700

Width	: 2.95
Track	: 2.95
Lock to Lock Time	: 6.0
Steering Angle	: 59.0

NOT TO SCALE

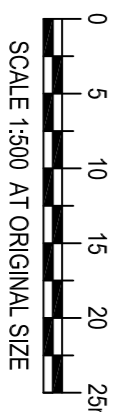
NOTE: MELROSE 400 TONNE LIEBHERR LTM400 ALL-TERRAIN GRABER IS 18.45M IN LENGTH. THIS VEHICLE TURN PATH NOT AVAILABLE IN AUTOCAD LIBRARY. TEREX AC 700 (20.62M IN LENGTH) HAS BEEN ADOPTED.

- NOTES:
- ACCESS FOR MELROSE GRABER AT STA BUS DEPOT REQUIRES THE FOLLOWING:
  - USE OF THE "BUS ONLY" LANE ON LEE STREET WHEN TRAVELLING FROM THE SOUTH
  - USE OF THE ADJACENT TRAVEL LANE WHEN ENTERING INTO STA BUS DEPOT FROM "BUS ONLY" LANE ON LEE STREET
  - MODIFICATION TO THE NORTH KERB AT DRIVEWAY WHEN TRAVELLING FROM THE SOUTH - KERB TO BE INCREASED BY MINIMUM 3.5M WIDTH
  - USE OF THE EASTERN CIRCULATION ROADWAY REQUIRES REMOVAL OF EXISTING KERB ISLAND. ALTERNATIVELY USE TWO DESIGNATED BUS BAYS AS SHOWN TO AVOID KERB MODIFICATION
  - USE OF INTERNAL PARKING AISLE TO EXIT STA BUS DEPOT FROM EASTERN CIRCULATION REQUIRES THE USE OF TWO DESIGNATED BUS BAYS
  - MINIMUM 35M KERB TO KERB WIDTH REQUIRED IF USING TURNING HEAD

**NOT TO BE USED UNDER REV05 of this CTMP**

TEREX AC 700 VEHICLE SWEEP PATH  
SCALE 1:500

TEREX AC 700 VEHICLE SWEEP PATH - ALTERNATE ROUTE OPTIONS  
SCALE 1:500

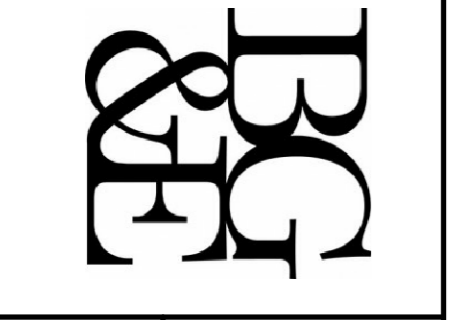
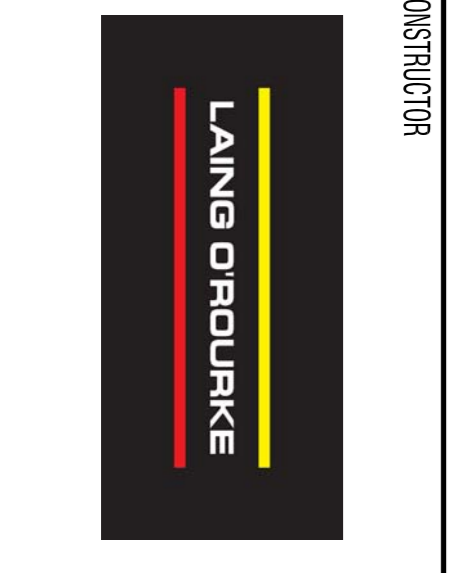


**PLANS BASED ON SIX MAPS IMAGERY ONLY. CONTRACTOR TO CONFIRM ON SITE THAT THE REQUIRED WIDTHS ARE AVAILABLE OR PROVIDED.**

**SYDNEY YARD**  
MAIN LINE 0.630KM  
SYDNEY YARD ACCESS BRIDGE  
CONSTRUCTION VEHICLE ACCESS SWEEP PATHS

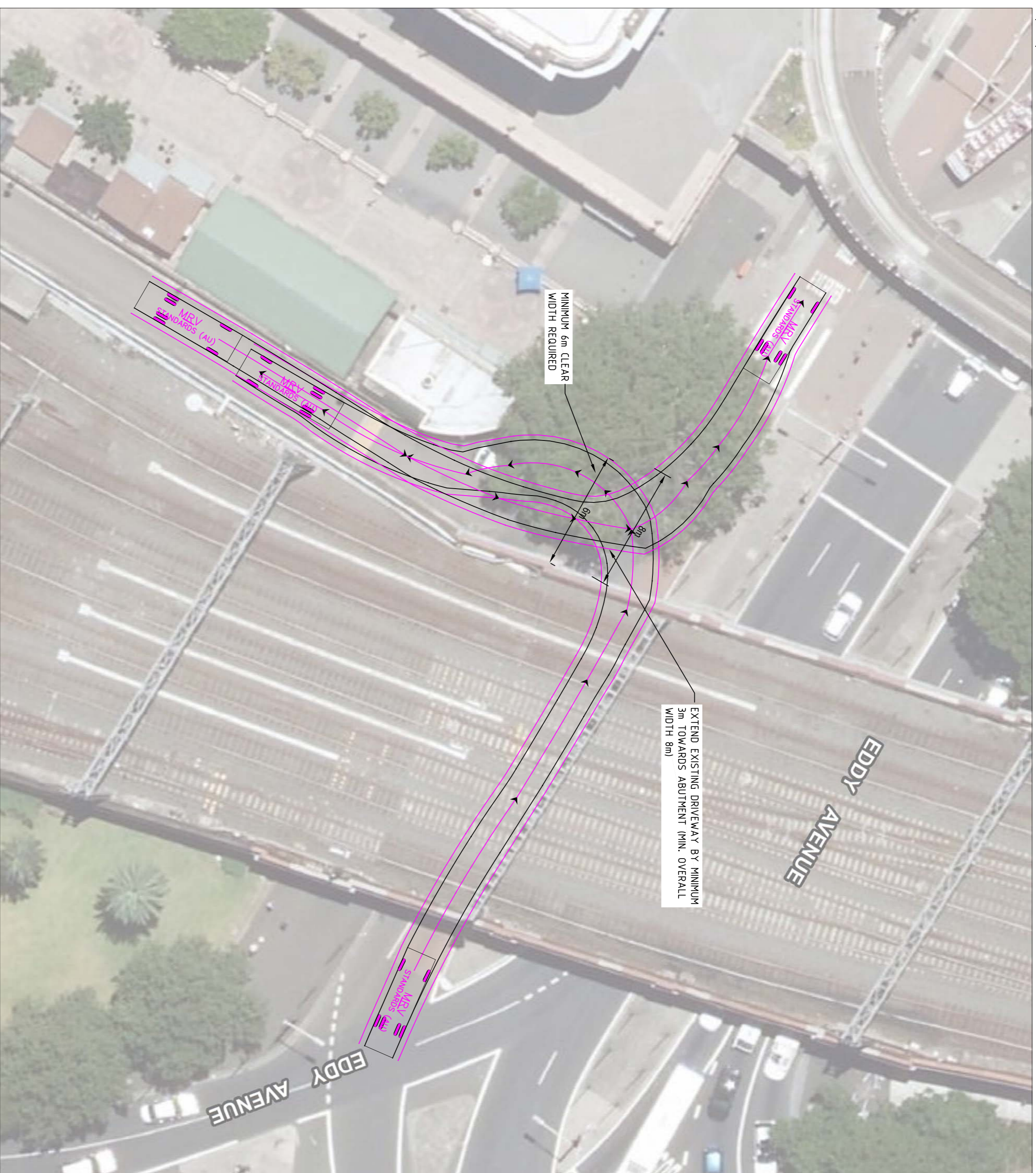
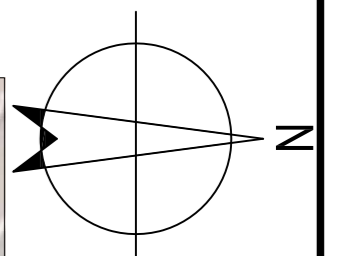
**DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR**

NO	DESCRIPTION	DESIGNER SIGN/DATE	CHECKED SIGN/DATE	APPROVED SIGN/DATE
A	ISSUED FOR INFORMATION	DU / 20/04/17	SC / 20/04/17	RV / 20/04/17

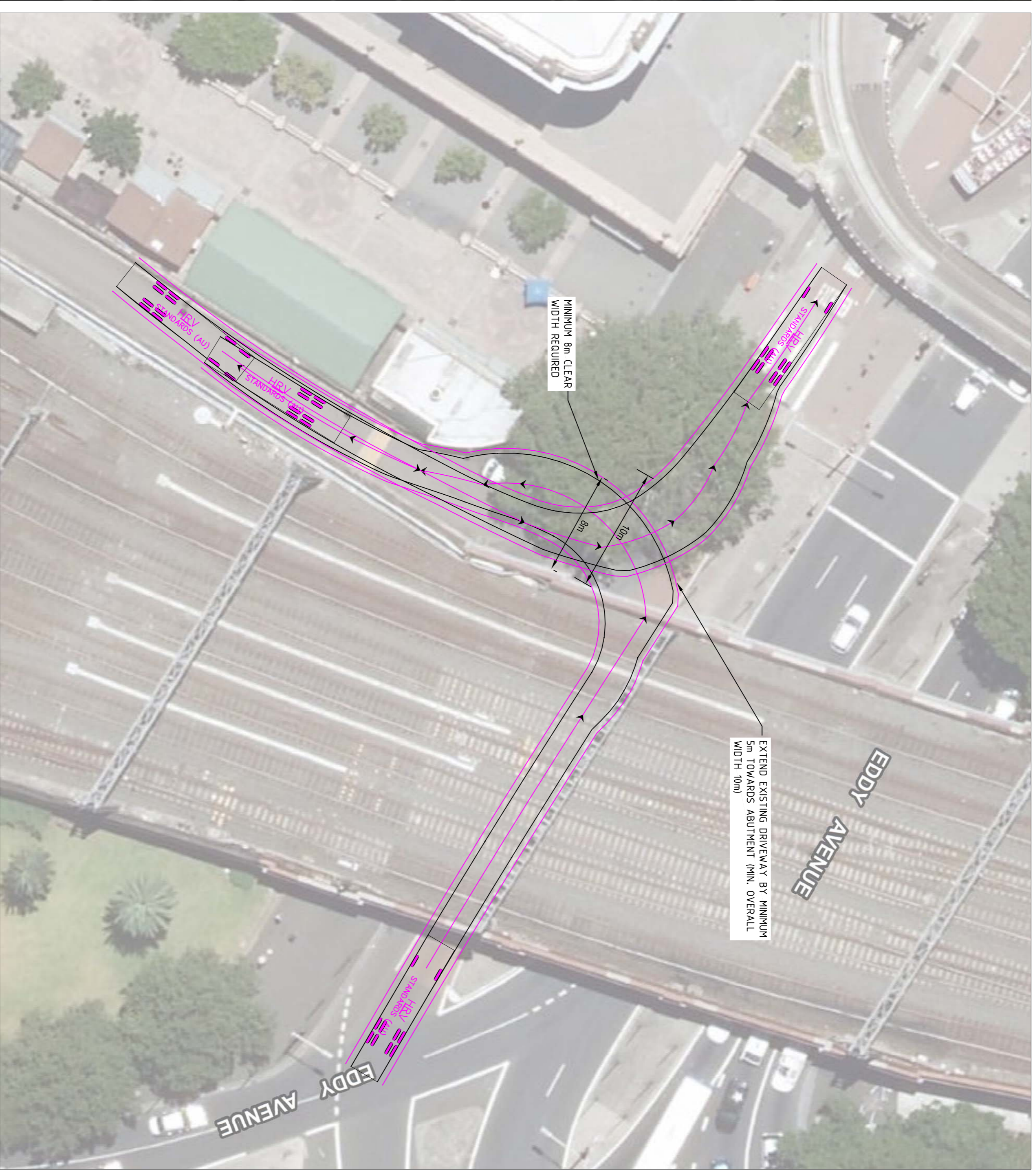


DRAWN	DAREN D'SOUZA	20/04/17
DESIGNED	SEAN O'LANE	20/04/17
DRG CHECK	SEAN O'LANE	20/04/17
DESIGN CHECK	ROBY WADDELL	20/04/17

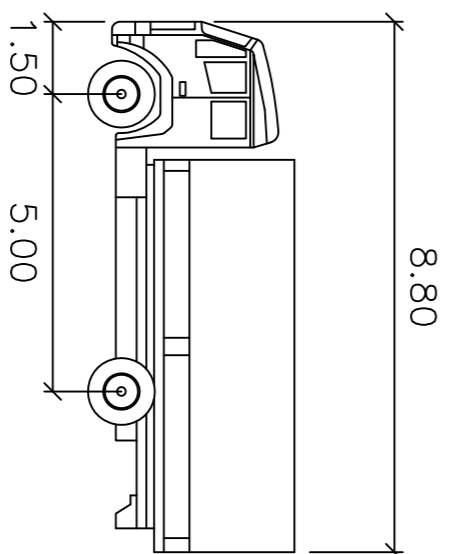
PROJECT NO.	MWR15SRT-GHD-SYY-TI-DWG-000004	A
EDMS NO.		



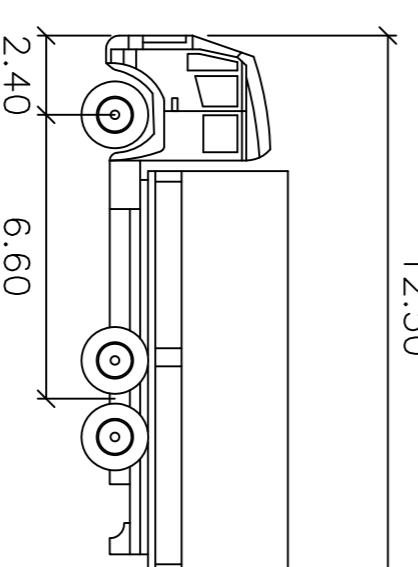
**8.8m MEDIUM RIGID VEHICLE SWEEP PATH**  
SCALE 1:250



**12.5m HEAVY RIGID VEHICLE SWEEP PATH**  
SCALE 1:250

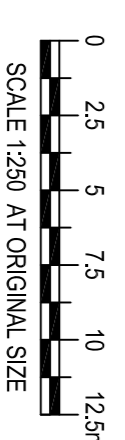


MRV  
meters  
Length : 8.80  
Wheelbase : 5.00  
Front Overhang : 1.50  
Width : 2.50  
Track : 2.50  
Lock to Lock Time : 6.0  
Steering Angle : 34.0  
NOT TO SCALE



HRV  
meters  
Length : 12.50  
Wheelbase : 6.60  
Front Overhang : 2.40  
Width : 2.50  
Track : 2.50  
Lock to Lock Time : 6.0  
Steering Angle : 35.2  
NOT TO SCALE

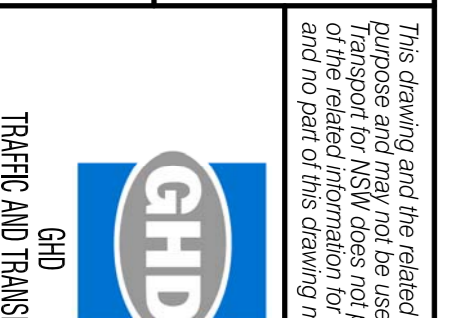
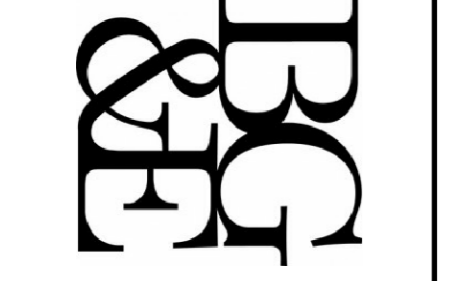
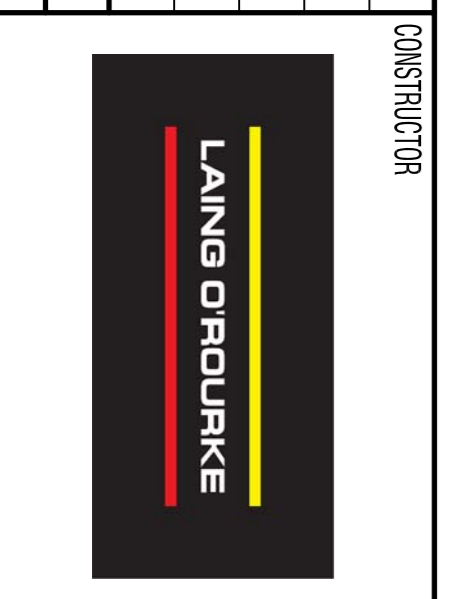
- NOTES:
- ACCESS FOR 8.8m AND 12.5m RIGID VEHICLES VIA EDDY AVENUE REQUIRE THE FOLLOWING:
  - EXISTING DRIVEWAY TO BE EXTENDED BY MINIMUM 1.5m TOWARDS NEARBY ABUTMENT (MINIMUM OVERALL WIDTH 6.5m)
  - MINIMUM CLEAR WIDTH WITHIN DRIVEWAY APPROXIMATELY 6m FOR 8.8m RIGID VEHICLE AND 8m FOR 12.5 RIGID VEHICLE



**PLANS BASED ON SIX MAPS IMAGERY ONLY. CONTRACTOR TO CONFIRM ON SITE THAT THE REQUIRED WIDTHS ARE AVAILABLE OR PROVIDED.**

**DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR**

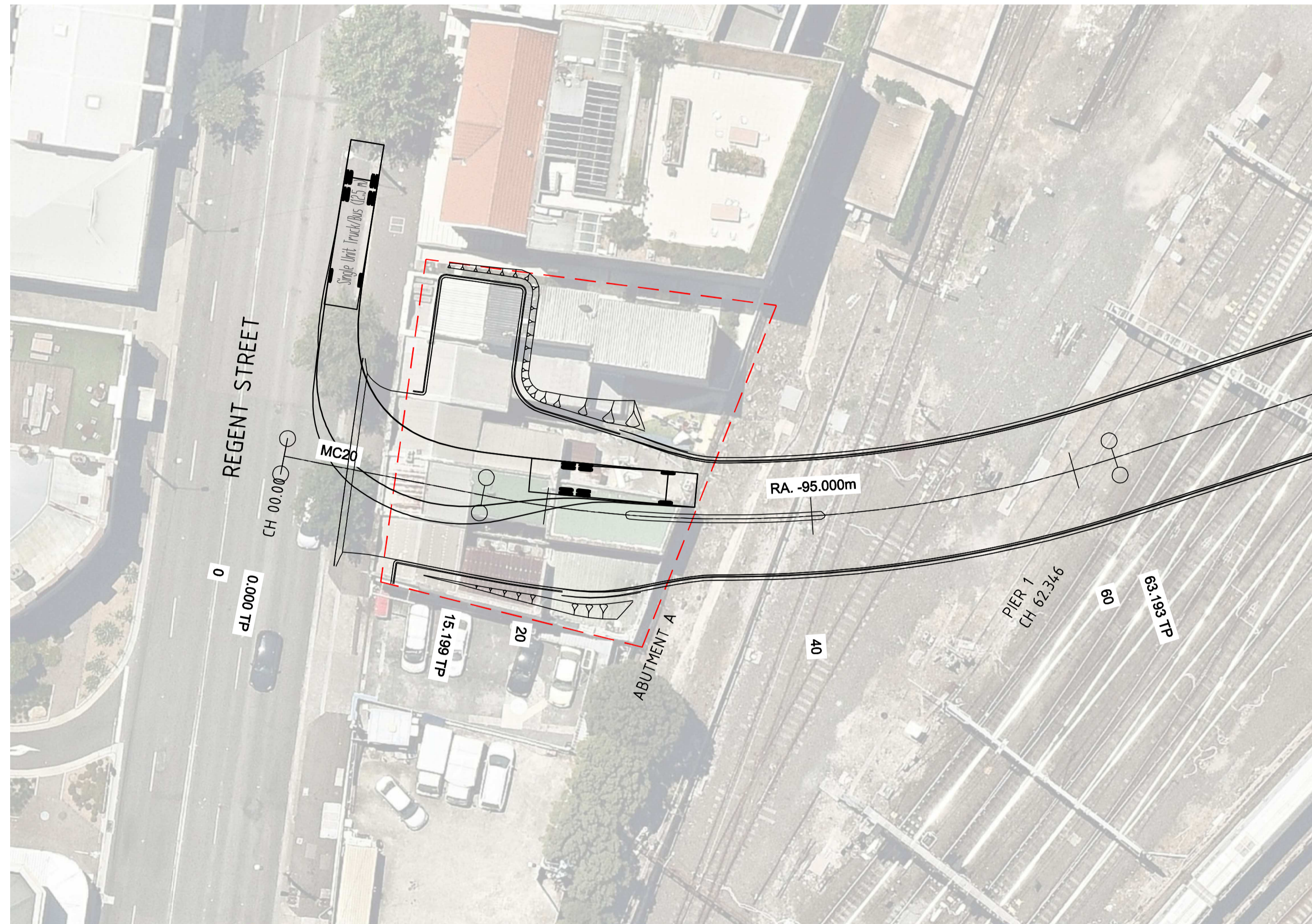
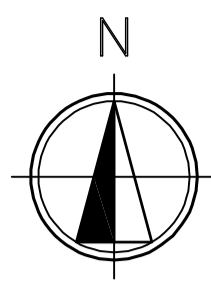
NO.	DESCRIPTION	DESIGNED	CHECKED	APPROVED
A	ISSUED FOR INFORMATION	DU / 20/04/17	SC / 20/04/17	RV / 20/04/17
AND		DESIGNER SIGNATURE	VERIFIED SIGNATURE	APPROVED SIGNATURE



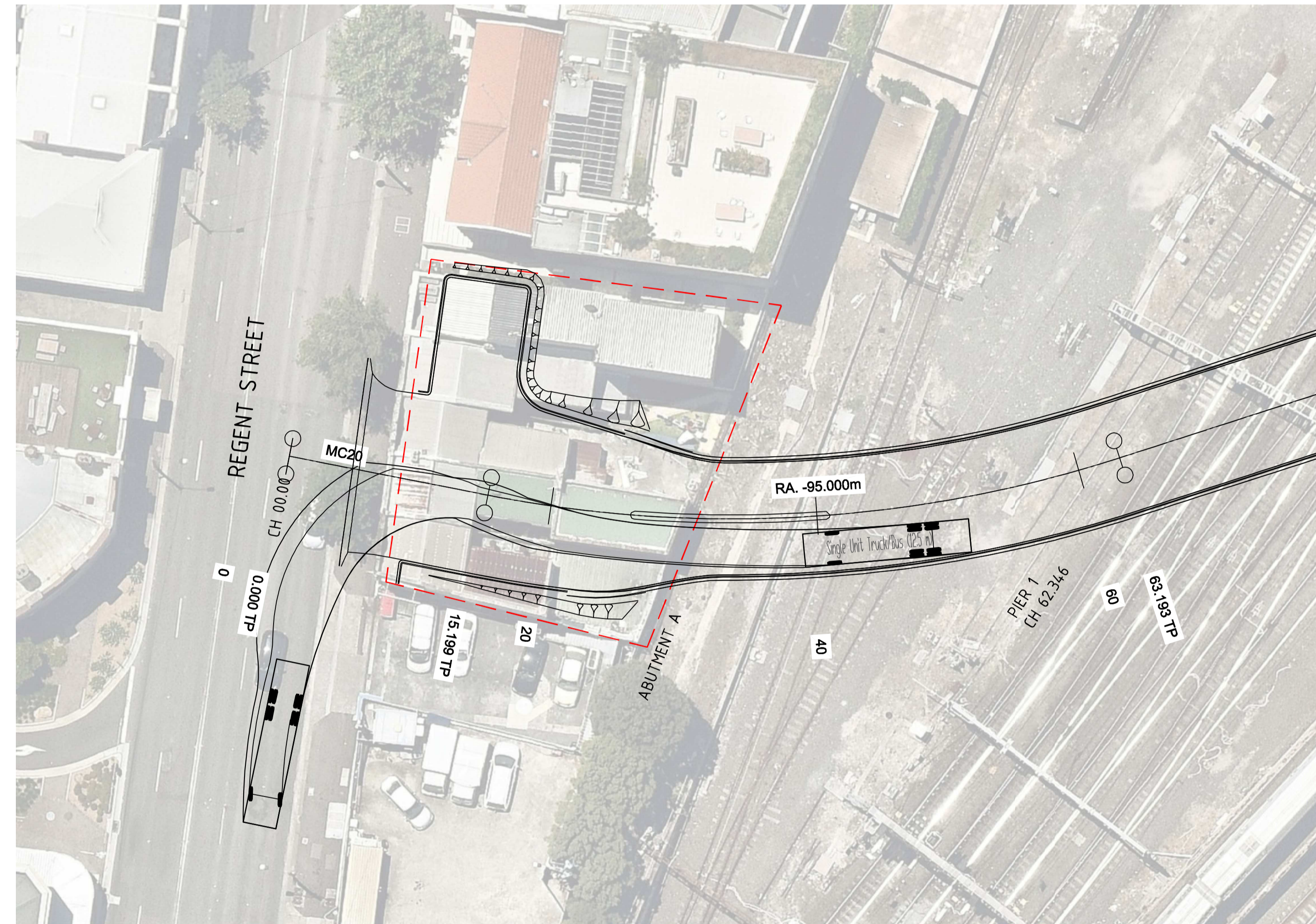
TRAFFIC AND TRANSPORT	DESIGNED	DAREN DISOUZA	20/04/17
	DESIGNED	SEAN CLARKE	20/04/17
	DESIGN CHECK	BOBY VAODELL	20/04/17

<b>SYDNEY YARD</b>	
MAIN LINE	0.6300KM
CONSTRUCTION YARD ACCESS BRIDGE	
CONSTRUCTION VEHICLE ACCESS SWEEP PATHS	
8.8m AND 12.5m RIGID VEHICLES - EDDY AVENUE	
STATUS:	PRELIMINARY
FILE NO.	212616617 - SK01
SHEET:	1 OF 4
DATE:	20/04/17
PROJECT NO.	NW17SLR-GHD-SYY-T-DWG-000001
DATE:	20/04/17
SCALE:	A











12.5m RIGID TRUCK SWEEP PATH - IN  
SCALE 1:250



12.5m RIGID TRUCK SWEEP PATH - OUT  
SCALE 1:250

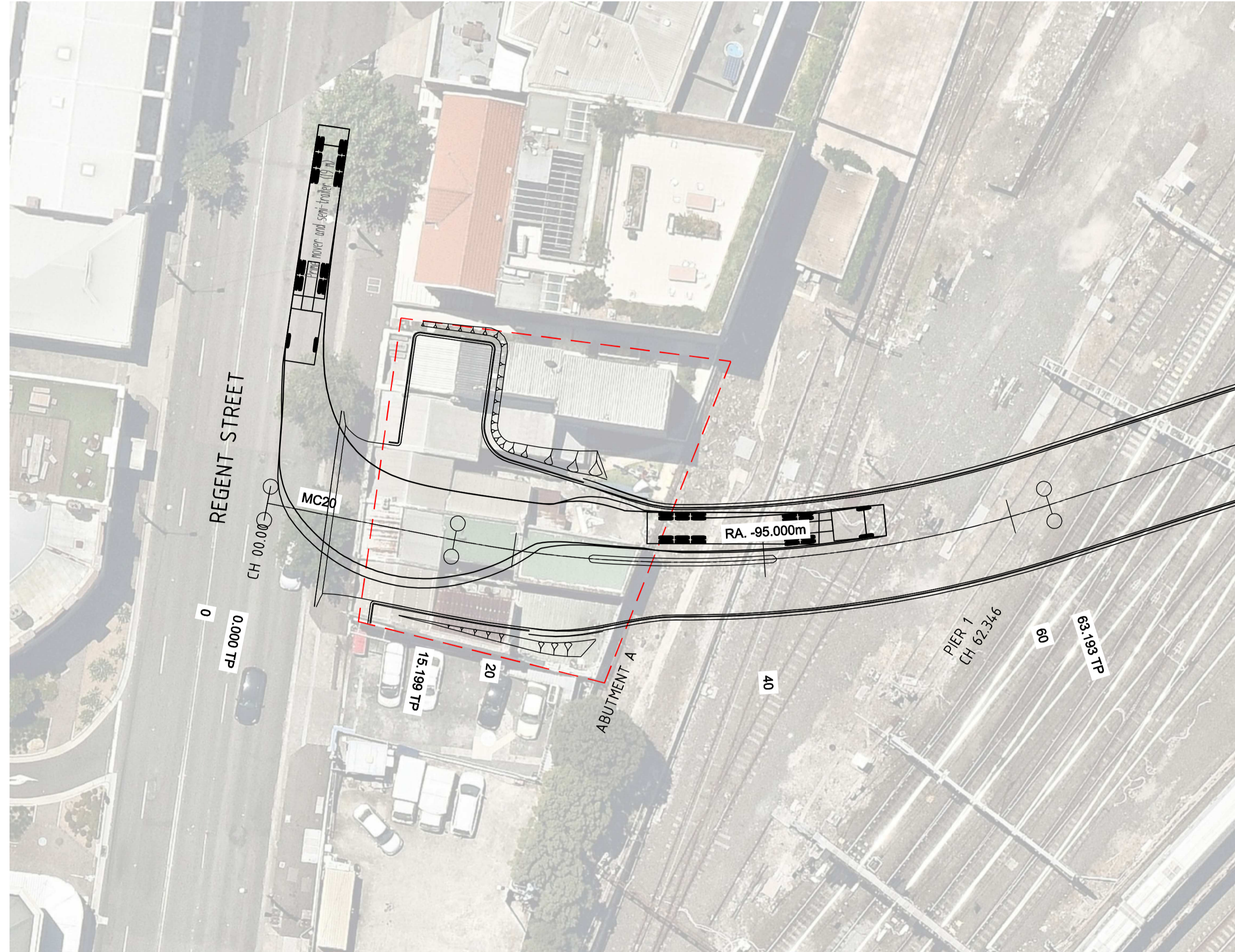
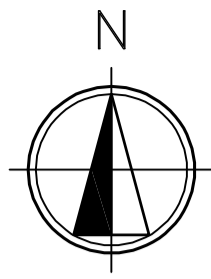
**DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR**

CONSTRUCTOR:		SERVICE PROVIDERS:	
		    	
B	ISSUED FOR TENDER	AH / 04.11.16	
A	ISSUED FOR TENDER	AH / 31.10.16	
AMD	DESCRIPTION	DESIGNER SIGN./DATE	VERIFIED SIGN./DATE
	CO-ORDINATE SYSTEM:	HEIGHT DATUM:	SCALE: 1:250

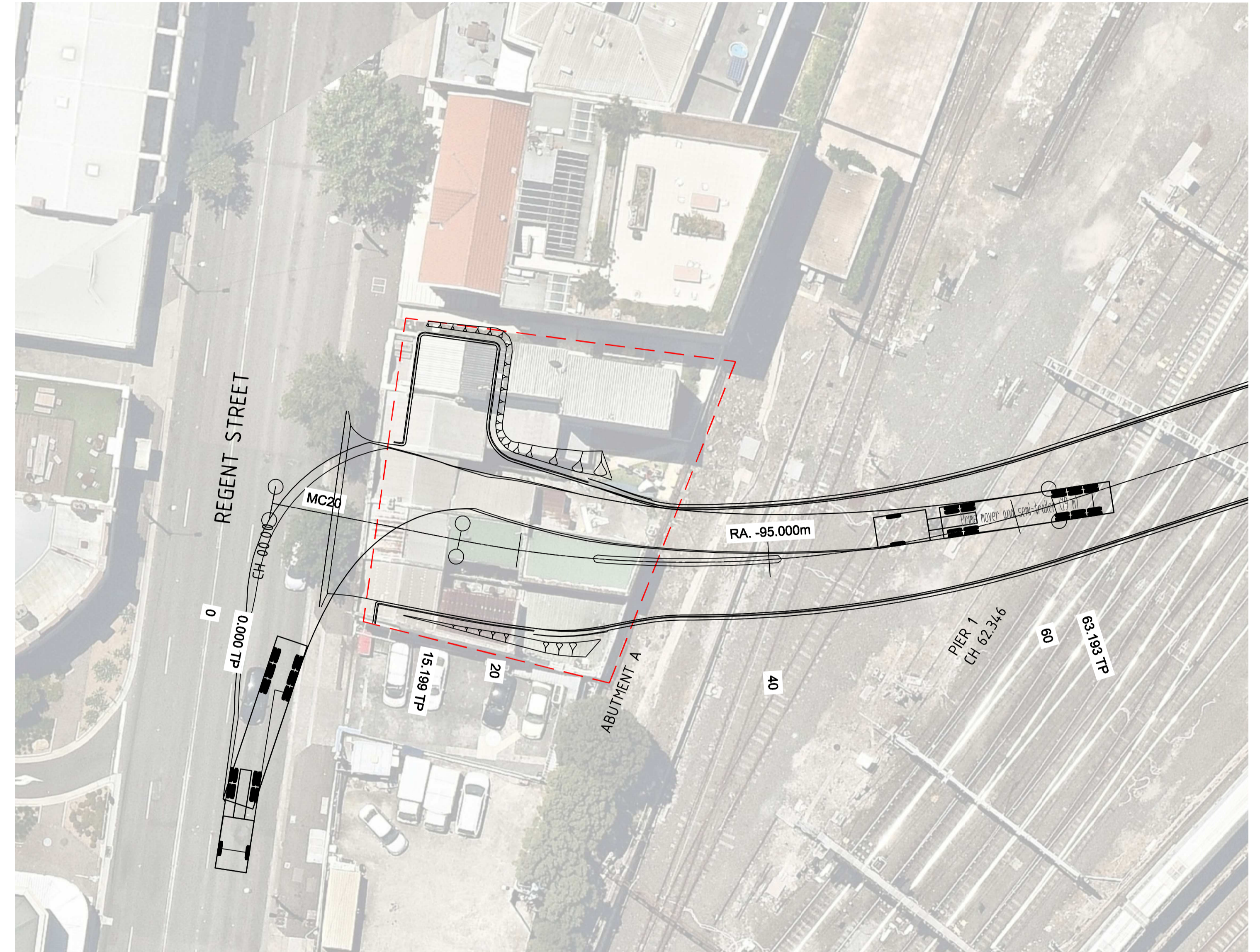
<p><small>This drawing and the related information have been prepared by, or at the request of, Transport for NSW for a specific purpose and may not be used for any purpose other than the purpose intended by Transport for NSW. Transport for NSW does not provide any warranties and accepts no liability arising out of the use of this drawing or any of the related information for any purpose other than the intended purpose. This drawing is protected by copyright and no part of this drawing may be reproduced in any form without the express written permission of Transport for NSW.</small></p>	
<p><b>SYDNEY METRO CITY &amp; SOUTHWEST</b> SYDNEY YARD ACCESS BRIDGE DESIGN DRAWINGS CIRCULATION SWEEP PATHS 12.5m RIGID TRUCK</p>	
<p>STATUS: PRELIMINARY DRG No. NWRLSRT-BGE-SYY-CV-DRWG-0080</p>	

DRAWN	MP	27/09/16
DESIGNED	AH	27/09/16
DRG CHECK		
DESIGN CHECK		
APPROVED		

<p>STATUS: PRELIMINARY</p>		<p>SHEET: 1 OF 7</p>	<p>©</p>
<p>DRG No. NWRLSRT-BGE-SYY-CV-DRWG-0080</p>		<p>B</p>	<p>B</p>









19m SEMI-TRAILER TRUCK SWEEP PATH - IN  
SCALE 1:250



19m SEMI-TRAILER TRUCK SWEEP PATH - OUT  
SCALE 1:250

**DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR**

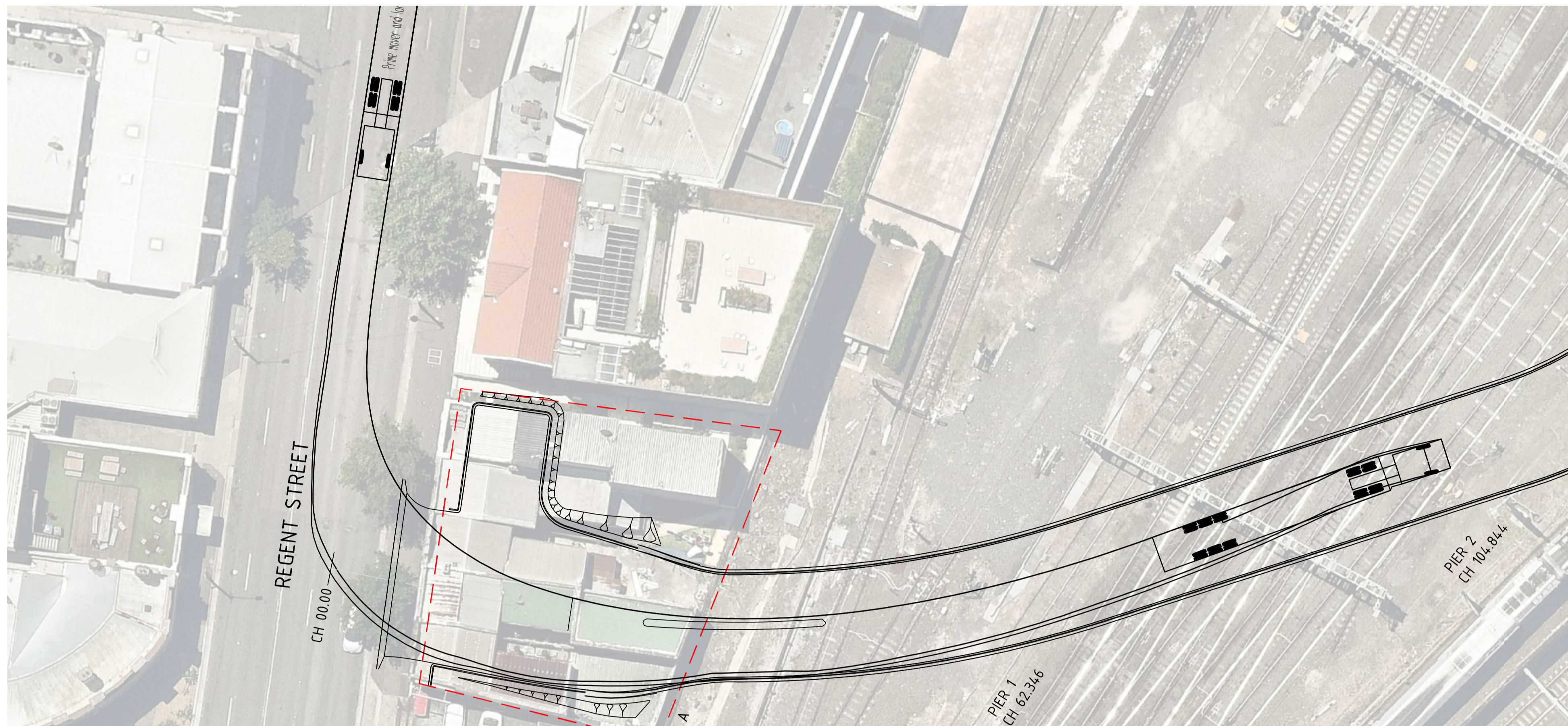
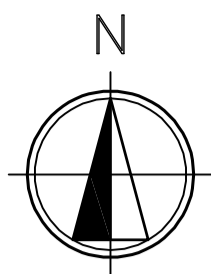
CONSTRUCTOR:			
SERVICE PROVIDERS:	    		
DESCRIPTION	DESIGNER SIGN./DATE	VERIFIED SIGN./DATE	APPROVED SIGN./DATE
B ISSUED FOR TENDER	AH / 04.11.16		
A ISSUED FOR TENDER	AH / 31.10.16		
AMD			
CO-ORDINATE SYSTEM:	HEIGHT DATUM:	SCALE:	1:250

CONSTRUCTOR:			
SERVICE PROVIDERS:	    		
DESCRIPTION	DESIGNER SIGN./DATE	VERIFIED SIGN./DATE	APPROVED SIGN./DATE
B ISSUED FOR TENDER	AH / 04.11.16		
A ISSUED FOR TENDER	AH / 31.10.16		
AMD			
CO-ORDINATE SYSTEM:	HEIGHT DATUM:	SCALE:	1:250

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DRAWN	MP	27/09/16	
DESIGNED	AH	27/09/16	
DRG CHECK			
DESIGN CHECK			
APPROVED			

<b>SYDNEY METRO CITY &amp; SOUTHWEST</b> SYDNEY YARD ACCESS BRIDGE DESIGN DRAWINGS CIRCULATION SWEEP PATHS 19m SEMI-TRAILER TRUCK		
STATUS: PRELIMINARY	SHEET: 2 OF 7	©
DRG No.	NWRLSRT-BGE-SYY-CV-DRWG-0081	B

File Plotted P:\BGE\SYD\16074\100 Draw\1002 Civil\AutoCAD\NWRLSRT-BGE-SYY-CV-DRWG-0081.dwg  
 Plot Date & Time 11/4/2016 4:08 PM  
 Plotted by ANDREW HARROP  
 DF 8011554








25m LOW LOADER TRUCK SWEEP PATH - IN  
SCALE 1:250



25m LOW LOADER TRUCK SWEEP PATH - OUT  
SCALE 1:250

**DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR**

CONSTRUCTOR:		SERVICE PROVIDERS:	
		   	
B	ISSUED FOR TENDER	AH / 04.11.16	
A	ISSUED FOR TENDER	AH / 31.10.16	
AMD	DESCRIPTION	DESIGNER SIGN./DATE	VERIFIED SIGN./DATE
	CO-ORDINATE SYSTEM:	HEIGHT DATUM:	SCALE: 1:250

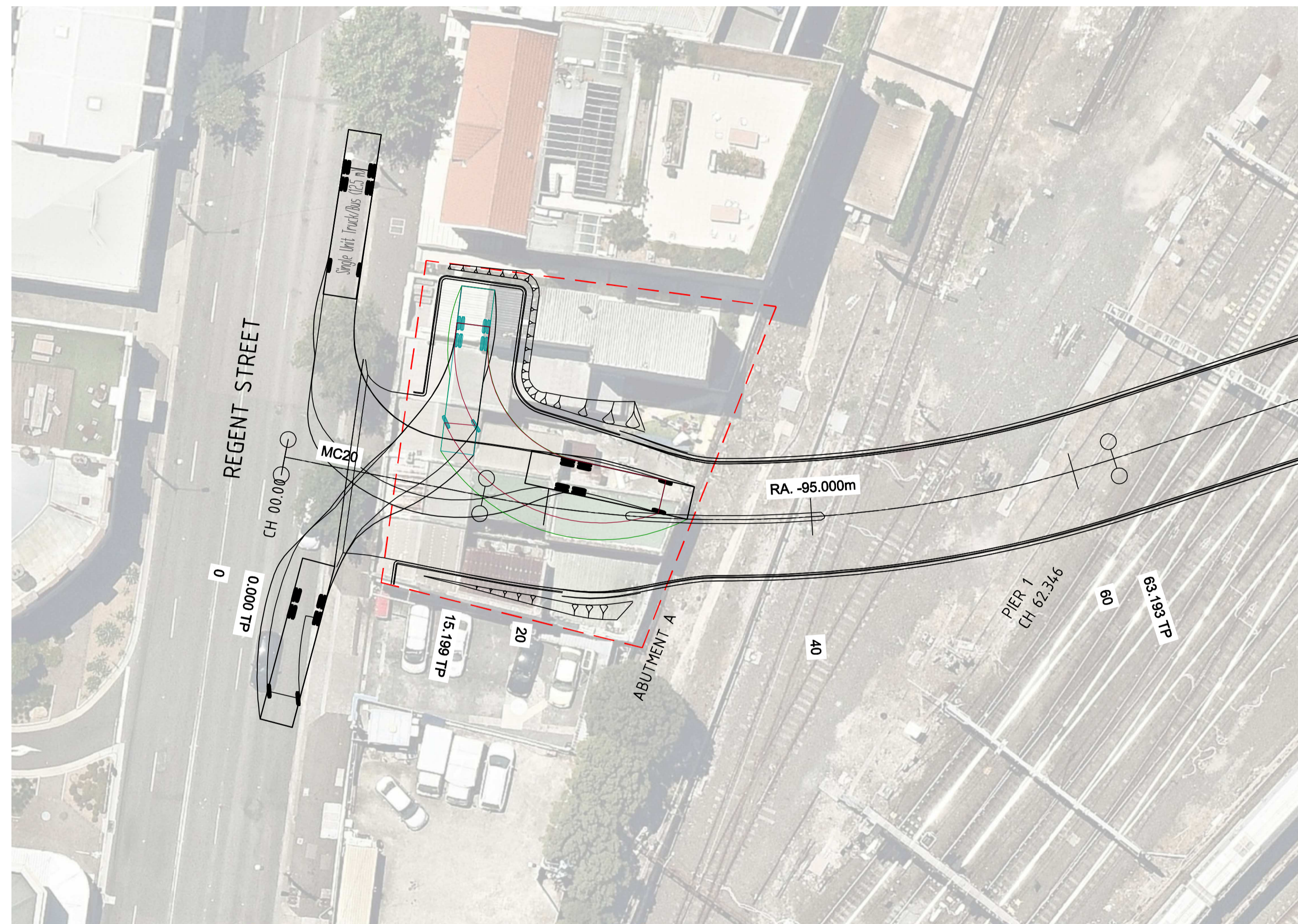
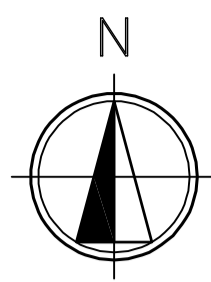
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DRAWN	MP	27/09/16
DESIGNED	AH	27/09/16
DRG CHECK		
DESIGN CHECK		
APPROVED		

**SYDNEY METRO CITY & SOUTHWEST**  
 SYDNEY YARD ACCESS BRIDGE  
 DESIGN DRAWINGS  
 CIRCULATION SWEEP PATHS  
 25m LOW LOADER TRUCK

STATUS: PRELIMINARY SHEET: 3 OF 7  
 DRG No: NWRLSRT-BGE-SYY-CV-DRWG-0082

Plot Date & Time 11/4/2016 4:09 PM  
 File Path: I:\BGE\SYD\6074\100 Draw\1002 Civil\AutoCAD\WRLSRT-BGE-SYY-CV-DRWG-0082.dwg  
 Plotted by ANDREW HARROP



12.5m RIGID TRUCK SWEEP PATH - TURN AROUND (FORWARD IN)  
SCALE: 1:250

**DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR**

B	ISSUED FOR TENDER	AH / 04/11/16		
A	ISSUED FOR TENDER	AH / 31/10/16		
AMD	DESCRIPTION	DESIGNER SIGN./DATE	VERIFIED SIGN./DATE	APPROVED SIGN./DATE
CO-ORDINATE SYSTEM:	HEIGHT DATUM:	SCALE:	1:250	

CONSTRUCTOR:

SERVICE PROVIDERS:

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DRAWN	LO	14/10/2016
DESIGNED	AH	14/10/2016
DRG CHECK		
DESIGN CHECK		
APPROVED		

**SYDNEY METRO CITY & SOUTHWEST**  
SYDNEY YARD ACCESS BRIDGE  
DESIGN DRAWINGS  
CIRCULATION SWEEP PATHS  
12.5m RIGID TRUCK

STATUS: PRELIMINARY	SHEET: 4 OF 7	©
DRG No: NWRLSRT-BGE-SYY-CV-DRWG-0083		B

## Traffic Management Plan

### Appendix B – Traffic Control Plans & ROLs & Haulage Routes

It is proposed that the following Traffic Control Plans will be developed with the Traffic Control Supplier as the works progress. These will be attached to this Management Plan as they are developed and resubmitted if changed for approval:

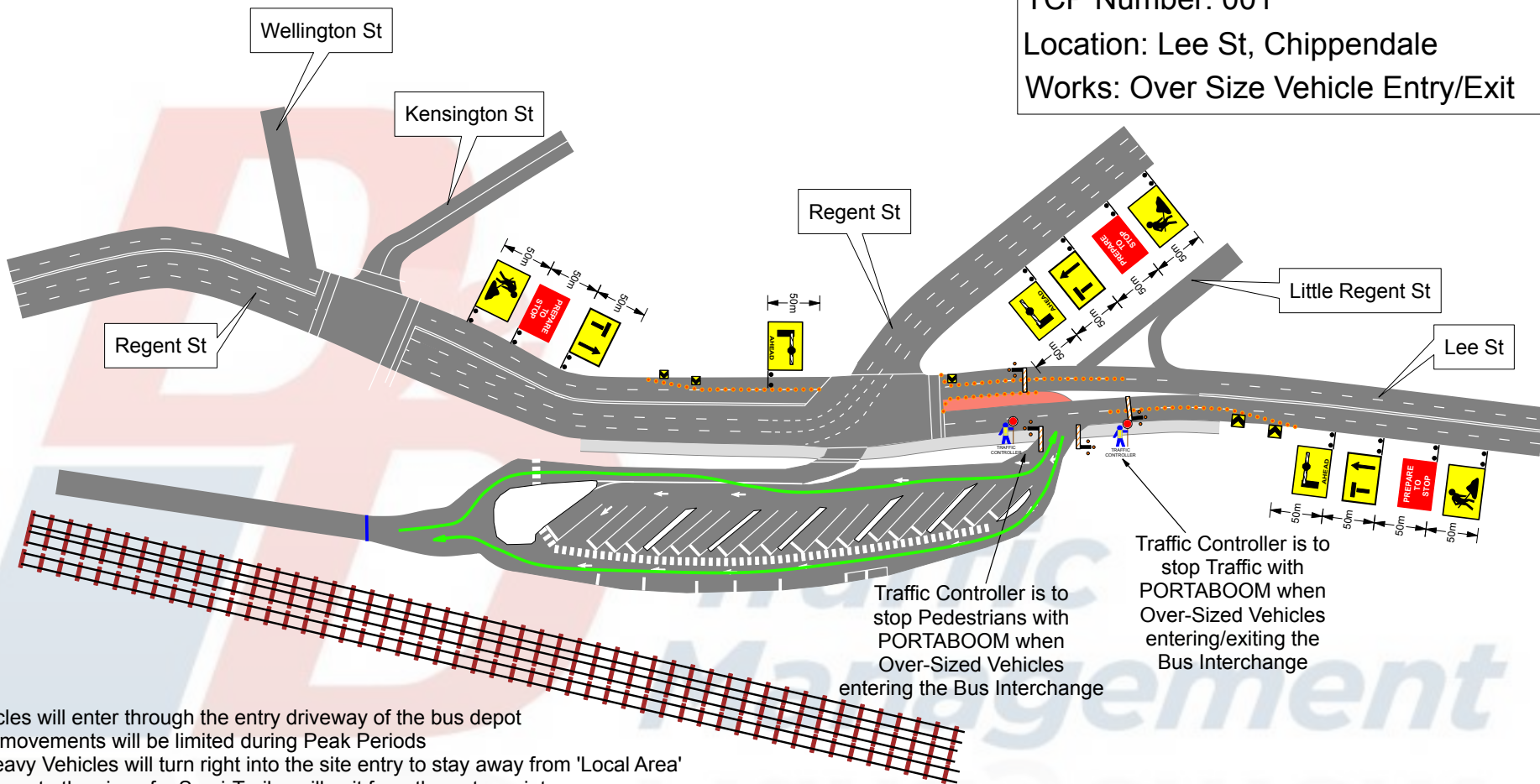
1. Accessing Eddy Avenue
2. Accessing the STA Bus Depot from Lee St
3. Accessing Abutment A from Regent St
4. Specialised Haulage Routes and accessing OSOM vehicles in at the STA Bus Depot
5. Lane closure on Regent St to facilitate safe access for hoarding erection and services / footpath works, which will require an ROL which will be applied for 10 days in advance of works.

It is proposed that the following Haul Routes will be developed with the subcontractors for major deliveries as the works progress. These will be attached to this Management Plan as they are developed:

1. Delivery of Tower Crane including All Terrain assist crane (OSOM)
2. Delivery of Precast Bridge elements (OSOM)
3. Delivery of Structural Steel Girders (OSOM)

TCP No	Location	Description of Control
SYAB-TCP-001	STA	OSOM entry exit through STA Entry point
SYAB-TCP-002	STA internal	Gate Control if required
SYAB-TCP-003	STA	Pedestrian and Cyclist management
SYAB-TCP-003A	STA	Pedestrian / Cyclist management with boom gate
SYAB-TCP-004	STA	Pedestrian and Cyclist management HV Entry Exit
SYAB-TCP-005	STA	Access via right turn
SYAB-TCP-005A	STA	Access via right turn with boom gate
SYAB-TCP-006	Regent Street	Pedestrian Cyclist management at Regent Street
SYAB-TCP-007	Regent St	Regent Street, South Bound lane closure
SYAB-TCP-008	Eddy Avenue	Pedestrian Cycle Management at Eddy Ave
SYAB-TCP-008A	Eddy Avenue	Pedestrian Cycle Management at Eddy Ave with boom gate use

TCP Number: 001  
 Location: Lee St, Chippendale  
 Works: Over Size Vehicle Entry/Exit

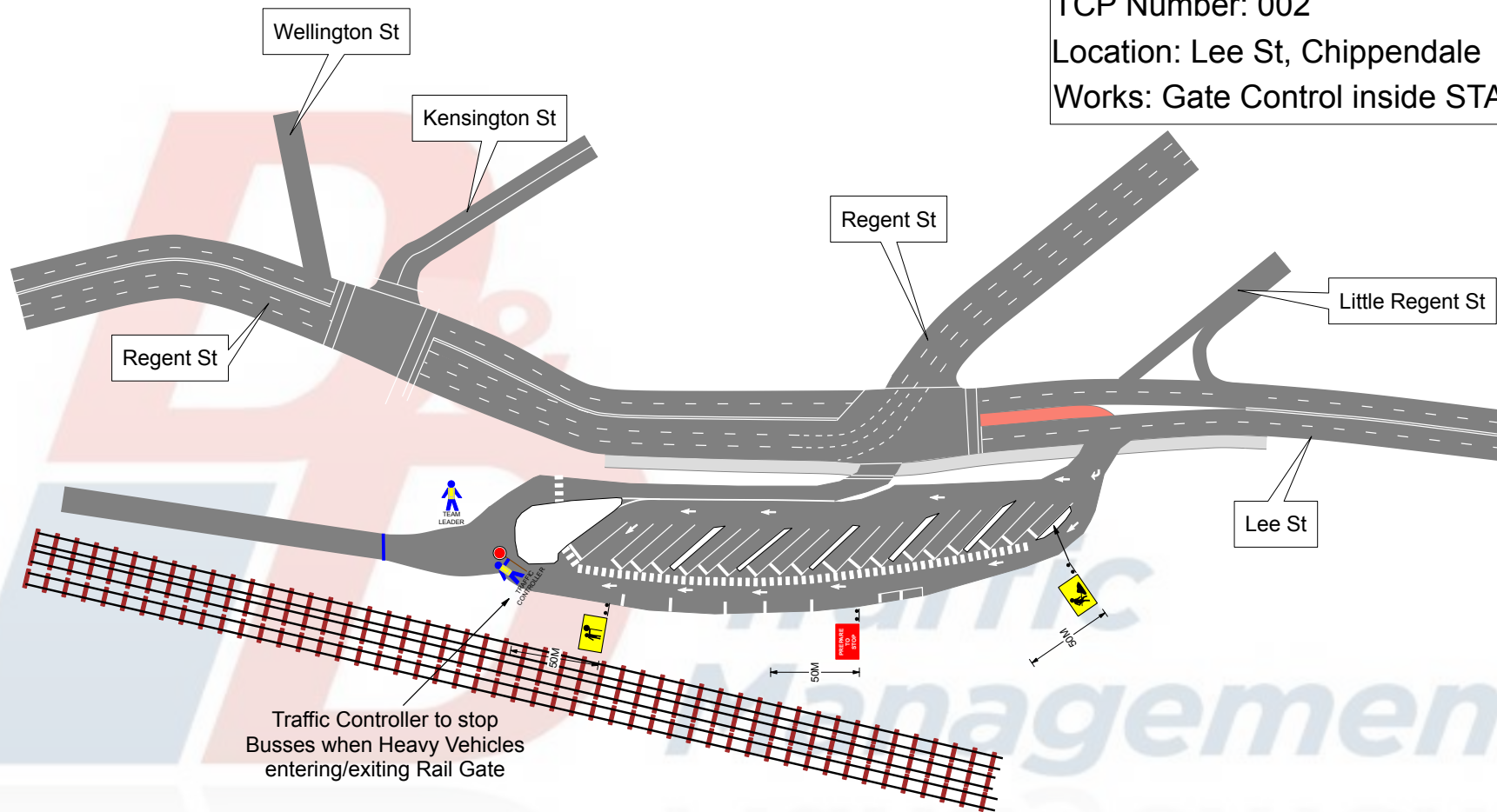


NOTE:

- \* All Vehicles will enter through the entry driveway of the bus depot
- \* Vehicle movements will be limited during Peak Periods
- \* Most Heavy Vehicles will turn right into the site entry to stay away from 'Local Area'
- \* Vehicles up to the size of a Semi-Trailer will exit from the entry point
- \* Oversize Vehicles & Extendable Trailers will need to exit from Entry Point (Green Arrow) ←

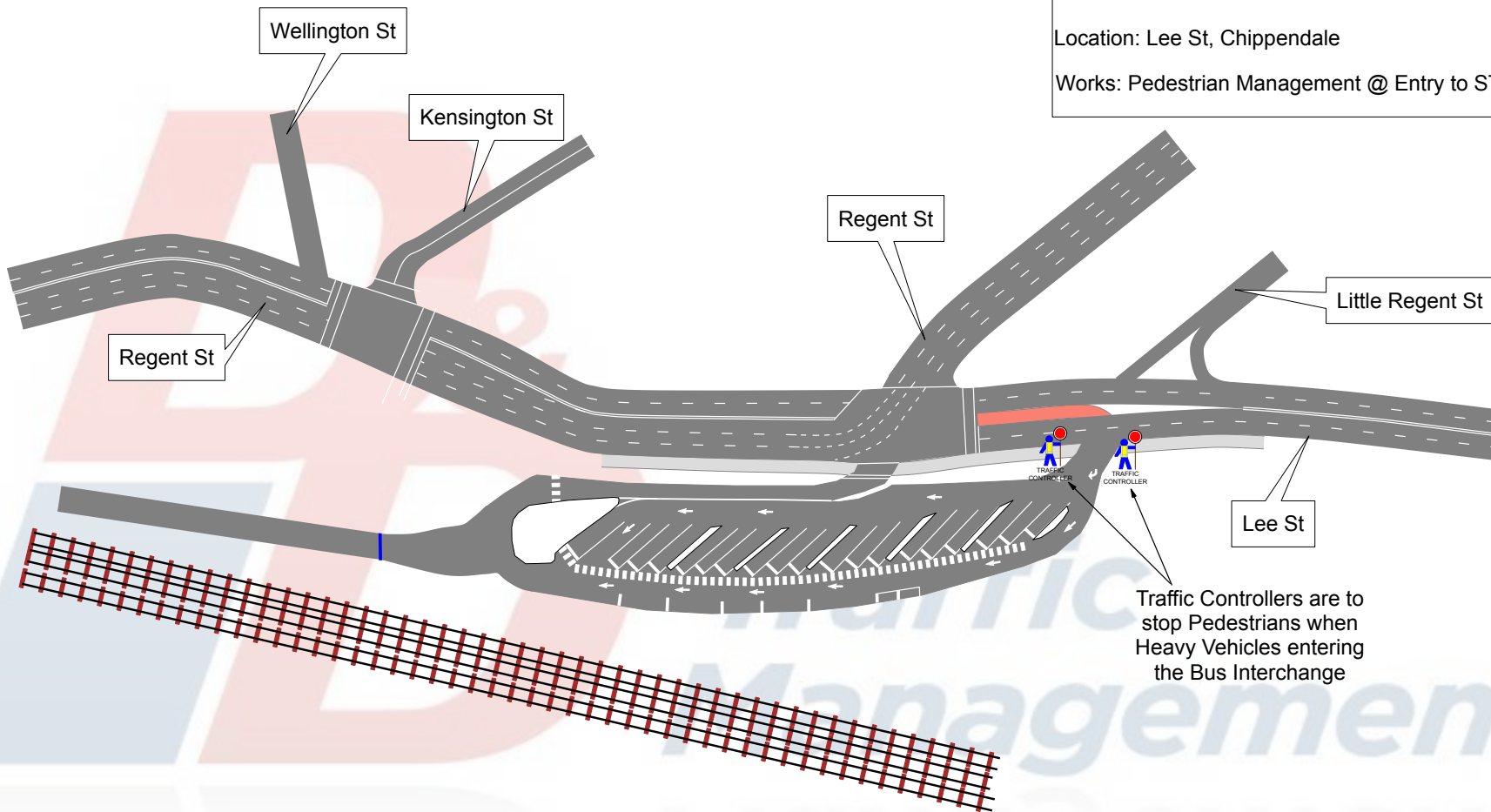
Client: Laing O'Rourke	Revisions	Description	Date	<b>WORKERS ON FOOT</b> NO GO ZONE = RESTRICTED ZONE = SHARED ZONE = SITE EXIT = SITE ENTRY = EVACUATION POINT =	<b>Implemented By</b>				Approximate speed of traffic at beginning of taper	Traffic control at beginning of taper	Lateral shift taper	Merge taper	D = THE SPEED OF TRAFFIC MEASURED IN KM/H 80KM = 80M 70KM = 70M 60KM = 60M 50KM = 50M  SEE SECTION 4.2 TRAFFIC CONTROL AT WORK SITES MANUAL	 Web: www.ddtraffic.com.au Email: sydney@dd-group.com.au Phone: 1300 597 622	
	0	Designed	27-03-17		Name -	45 or less	15	0							
Scope of Works: Sydney Yard Access				Cert No -	46 - 55	15	15	30							
Job location: Lee St, Chippendale				Date -	56 - 65	30	30	60							
Author: Ashley Kelly	Plan No:	USED AS A GUIDE TCP(S)	83	Signed -	66 - 75	N/A	70	115							
Cert. No: 0032737318	LAINGSYDACC-STADEPOT				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							

TCP Number: 002  
 Location: Lee St, Chippendale  
 Works: Gate Control inside STA Depot



Client: <b>Laing O'Rourke</b>	Revisions	Description	Date	<b>WORKERS ON FOOT</b> NO GO ZONE = RESTRICTED ZONE = SHARED ZONE = SITE EXIT = SITE ENTRY = EVACUATION POINT =	<b>Implemented By</b>				Approximate speed of traffic at beginning of taper 45 or less 46 - 55 56 - 65 66 - 75 76 - 85 86 - 95 96 - 105 Greater than 105	Traffic control at beginning of taper 15 15 30 N/A N/A N/A	Lateral shift taper 0 15 30 70 80 90	Merge taper 15 30 60 115 130 145	D = THE SPEED OF TRAFFIC MEASURED IN KM/H 80KM = 80M EG: 70KM = 70M 60KM = 60M 50KM = 50M  SEE SECTION 4.2 TRAFFIC CONTROL AT WORK SITES MANUAL  WORK AREA =	 Web: www.ddtraffic.com.au Email: sydney@dd-group.com.au Phone: 1300 597 622  D&D Traffic Management does not accept liability for implementation of this tcp if not directly involved in its implementation	 PLAN NOT TO SCALE
	0 Designed 27-03-17	Plan No: <b>LAINGSYDACC-STADEPOT</b>	USED AS A GUIDE TCP(S) 83		Name - Cert No - Date - Signed -	Name - Cert No - Date - Signed -									

TCP Number: 003  
 Location: Lee St, Chippendale  
 Works: Pedestrian Management @ Entry to STA Depot



Traffic Controllers are to stop Pedestrians when Heavy Vehicles entering the Bus Interchange

Client: Laing O'Rourke	Revisions	Description	Date	<b>WORKERS ON FOOT</b> NO GO ZONE = RESTRICTED ZONE = SHARED ZONE = SITE EXIT = SITE ENTRY = EVACUATION POINT =	<b>Implemented By</b>				Approximate speed of traffic at beginning of taper Traffic control at beginning of taper Lateral shift taper Merge taper	D = THE SPEED OF TRAFFIC MEASURED IN KM/H 80KM = 80M 70KM = 70M 60KM = 60M 50KM = 50M  SEE SECTION 4.2 TRAFFIC CONTROL AT WORK SITES MANUAL	 Web: www.ddtraffic.com.au Email: sydney@dd-group.com.au Phone: 1300 597 622	
	0	Designed	27-03-17		Name -	45 or less	15	0				
Scope of Works: Sydney Yard Access				Cert No -	46 - 55	15	15	30				
Job location: Lee St, Chippendale				Date -	56 - 65	30	30	60				
Author: Ashley Kelly				Signed -	66 - 75	N/A	70	115				
Cert. No: 0032737318	Plan No:	USED AS A GUIDE TCP(S)	83		76 - 85	N/A	80	130				
	LAINGSYDACC-STADEPOT				86 - 95	N/A	90	145				
					96 - 105	N/A	100	160				
					Greater than 105	N/A	110	180				

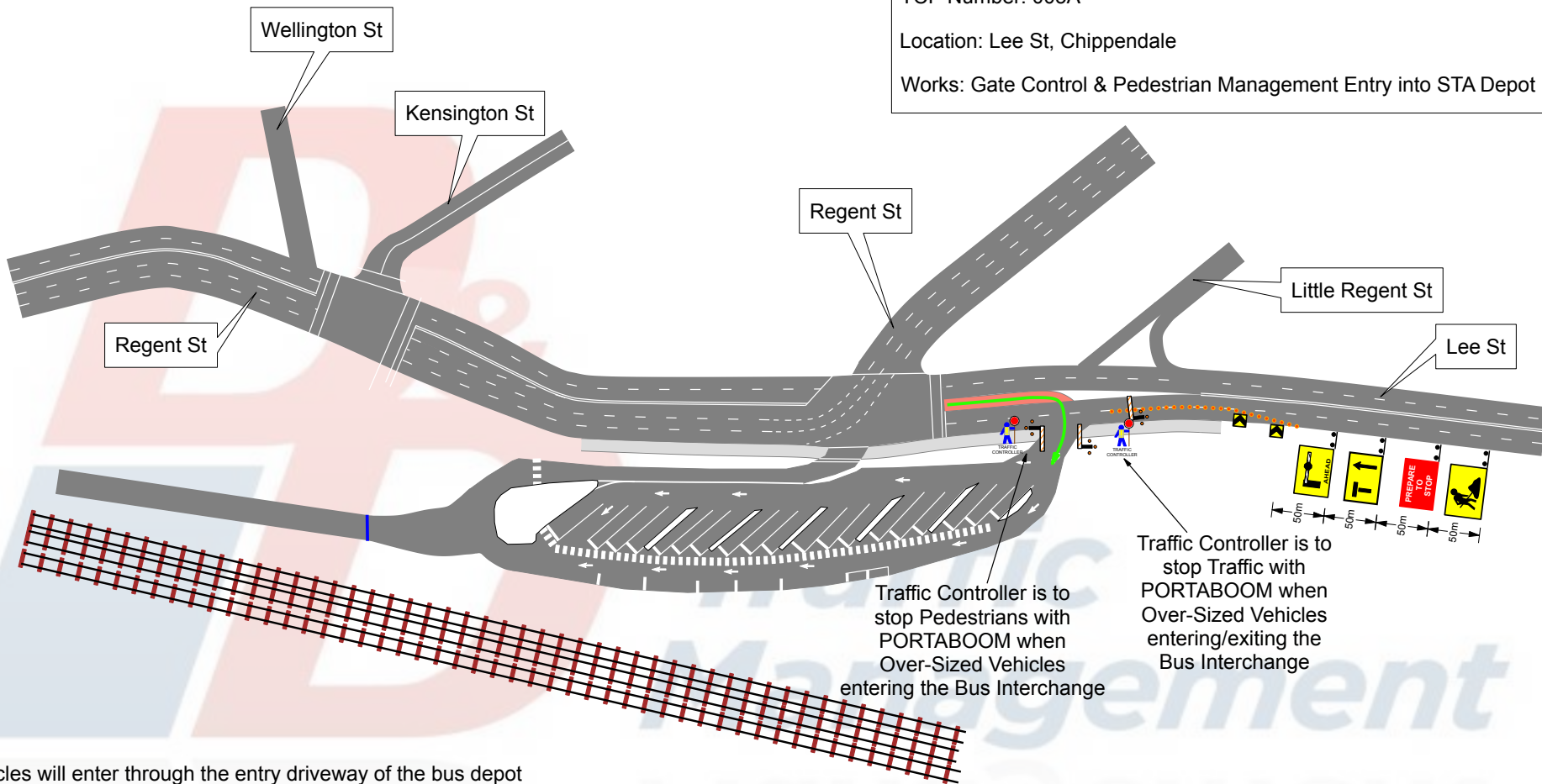








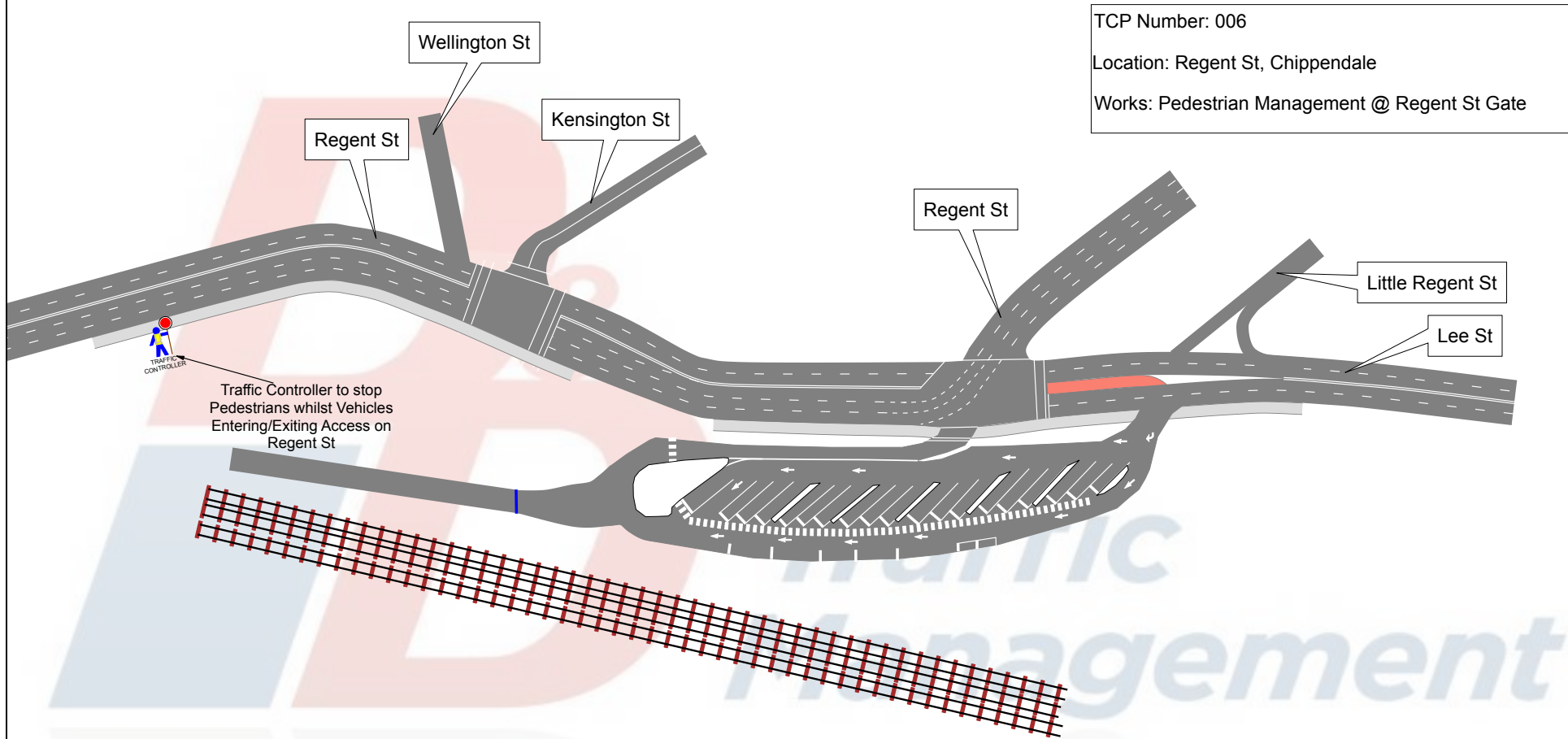
TCP Number: 005A  
 Location: Lee St, Chippendale  
 Works: Gate Control & Pedestrian Management Entry into STA Depot



NOTE:

- \* All Vehicles will enter through the entry driveway of the bus depot
- \* Vehicle movements will be limited during Peak Periods
- \* Most Heavy Vehicles will turn right into the site entry to stay away from 'Local Area'

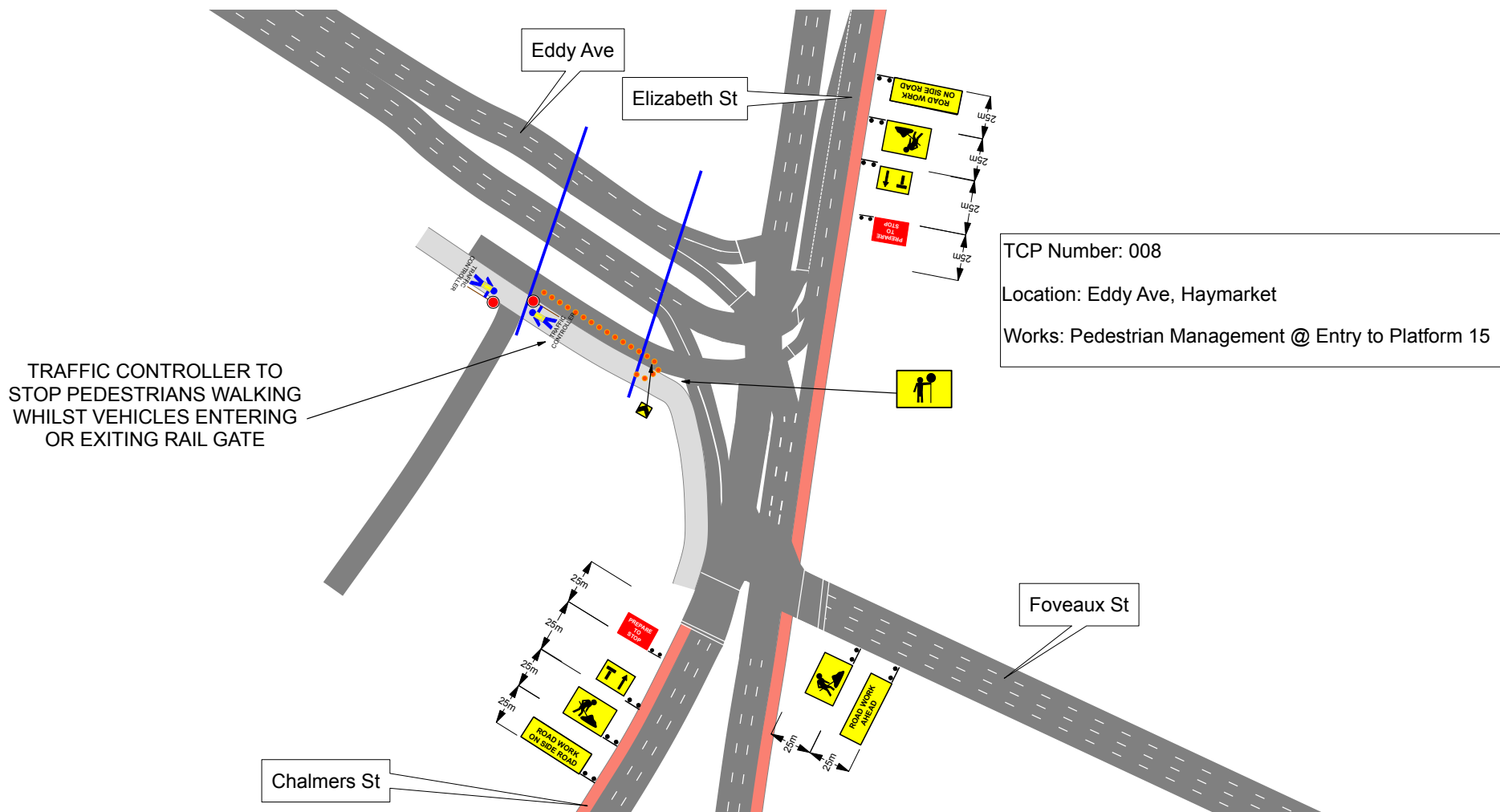
Client: <b>Laing O'Rourke</b>	Revisions	Description	Date	<b>WORKERS ON FOOT</b> NO GO ZONE = RESTRICTED ZONE = SHARED ZONE = SITE EXIT = SITE ENTRY = EVACUATION POINT =	<b>Implemented By</b>				Approximate speed of traffic at beginning of taper	Traffic control at beginning of taper	Lateral shift taper	Merge taper	D = THE SPEED OF TRAFFIC MEASURED IN KM/H 80KM = 80M 70KM = 70M 60KM = 60M 50KM = 50M  SEE SECTION 4.2 TRAFFIC CONTROL AT WORK SITES MANUAL	 Web: www.ddtraffic.com.au Email: sydney@dd-group.com.au Phone: 1300 597 622	
	0	Designed	27-03-17		Name -	45 or less	15	0							
Scope of Works: <b>Sydney Yard Access</b>				Cert No -	46 - 55	15	15	30							
Job location: <b>Lee St, Chippendale</b>				Date -	56 - 65	30	30	60							
Author: <b>Ashley Kelly</b>	Plan No:	USED AS A GUIDE TCP(S)	83	Signed -	66 - 75	N/A	70	115							
Cert. No: <b>0032737318</b>	<b>LAINGSYDACC-STADEPOT</b>				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							



TCP Number: 006  
 Location: Regent St, Chippendale  
 Works: Pedestrian Management @ Regent St Gate

Client: <b>Laing O'Rourke</b>	Revisions	Description	Date	<b>WORKERS ON FOOT</b> NO GO ZONE = RESTRICTED ZONE = SHARED ZONE = SITE EXIT = SITE ENTRY = EVACUATION POINT =	<b>Implemented By</b>				Approximate speed of traffic at beginning of taper	Traffic control at beginning of taper	Lateral shift taper	Merge taper	D = THE SPEED OF TRAFFIC MEASURED IN KM/H 80KM = 80M EG: 70KM = 70M 60KM = 60M 50KM = 50M  SEE SECTION 4.2 TRAFFIC CONTROL AT WORK SITES MANUAL	 Web: <a href="http://www.ddtraffic.com.au">www.ddtraffic.com.au</a> Email: <a href="mailto:sydney@dd-group.com.au">sydney@dd-group.com.au</a> Phone: 1300 597 622	
	0	Designed	27-03-17		Name -	45 or less	15	0							
Scope of Works: <b>Sydney Yard Access</b>				Cert No -	46 - 55	15	15	30							
Job location: <b>Regent St, Chippendale</b>				Date -	56 - 65	30	30	60							
Author: <b>Ashley Kelly</b>				Signed -	66 - 75	N/A	70	115							
Cert. No: <b>0032737318</b>	Plan No: <b>LAINGSYDACC-REGENT</b>	USED AS A GUIDE TCP(S)	83		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							





Client: <b>Laing O'Rourke</b>	Revisions	Description	Date	<b>WORKERS ON FOOT</b> NO GO ZONE = RESTRICTED ZONE = SHARED ZONE = SITE EXIT = SITE ENTRY = EVACUATION POINT =	<b>Implemented By</b>				Approximate speed of traffic at beginning of taper	Traffic control at beginning of taper	Lateral shift taper	Merge taper	D = THE SPEED OF TRAFFIC MEASURED IN KM/H 80KM = 80M 70KM = 70M 60KM = 60M 50KM = 50M  SEE SECTION 4.2 TRAFFIC CONTROL AT WORK SITES MANUAL	 Web: www.ddtraffic.com.au Email: sydney@dd-group.com.au Phone: 1300 597 622	 PLAN NOT TO SCALE
	0	Designed	27-03-17		Name -	45 or less	15	0							
Scope of Works: <b>Sydney Yard Access</b>				Cert No -	46 - 55	15	15	30							
Job location: <b>Eddy Ave, Haymarket</b>				Date -	56 - 65	30	30	60							
Author: <b>Ashley Kelly</b>	Plan No:	USED AS A GUIDE TCP(S)		Signed -	66 - 75	N/A	70	115							
Cert. No: <b>0032737318</b>	<b>LAINGSYDACC-EDDY</b>	83			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							

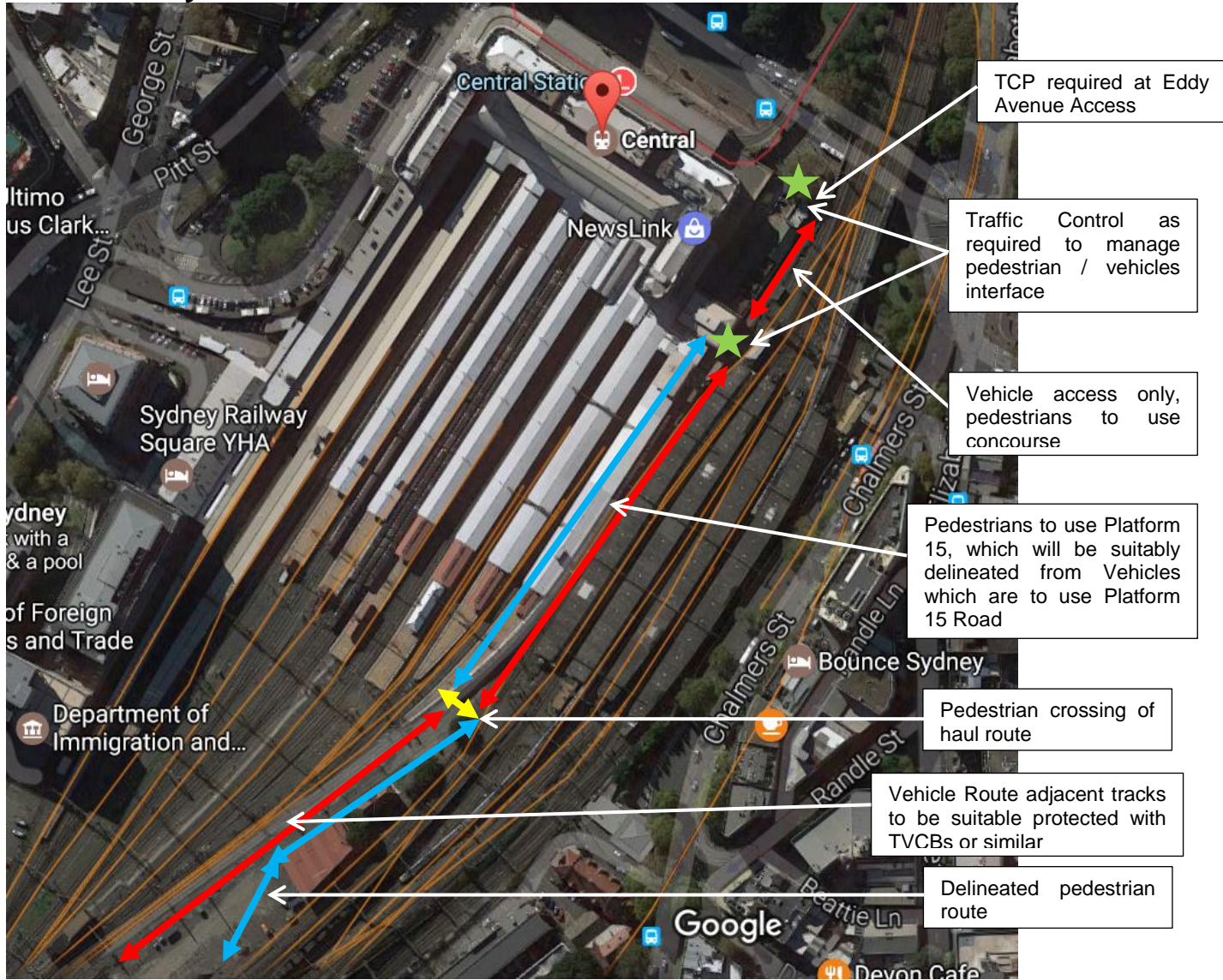




## Traffic Management Plan

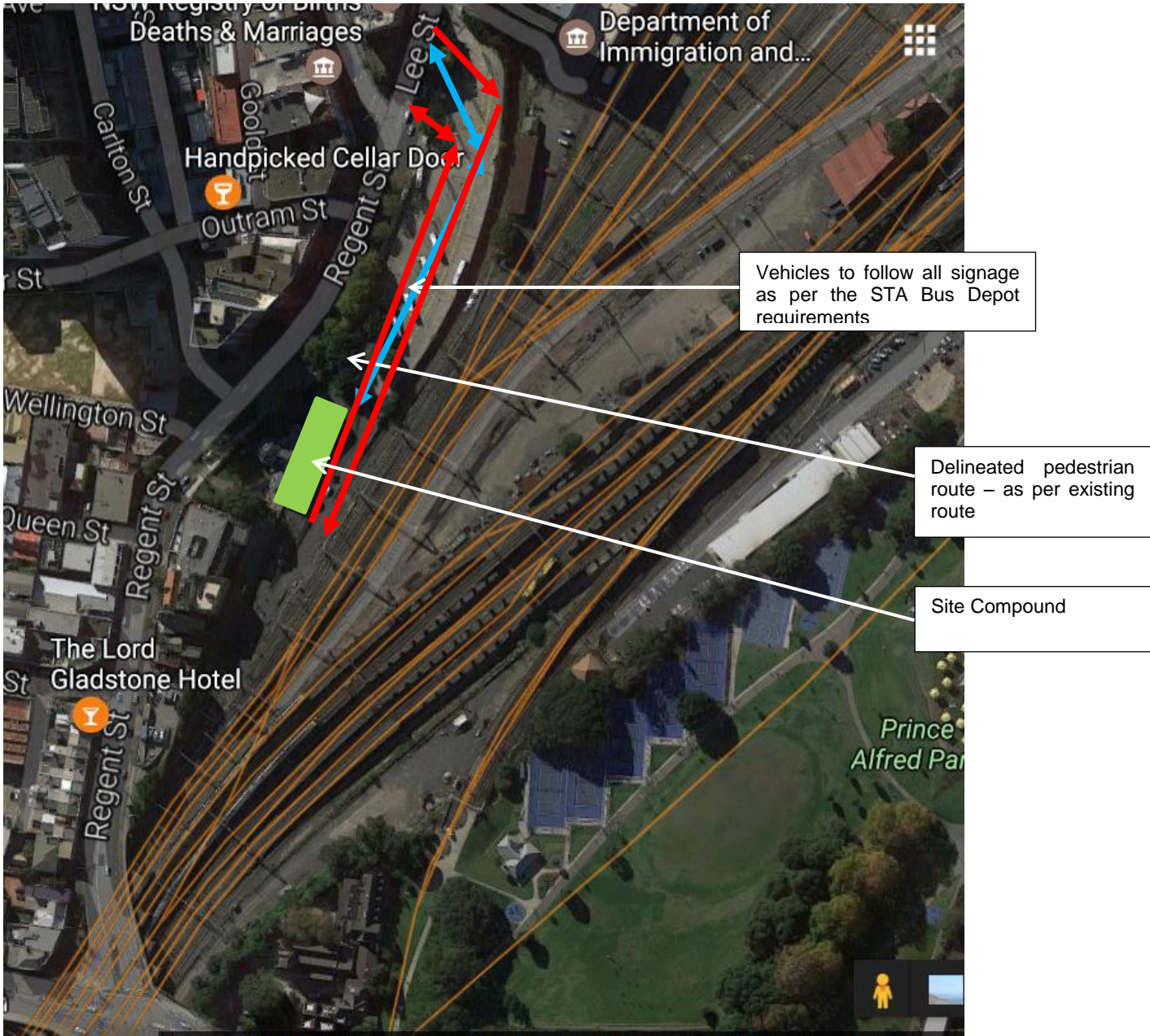
### Appendix C – Vehicle Management Plans and Pedestrian Management Plans

#### Gate 2: Eddy Avenue VMP / PMP



## Traffic Management Plan

### Gate 1: Mortuary Siding VMP / PMP



Process	Document owner	Step	Gateways	Document type
Enabling Process	Project Team (Ops/Const.. & HSEQ)	2257 – HSEQ Compliance	7 – 8	Template (T)

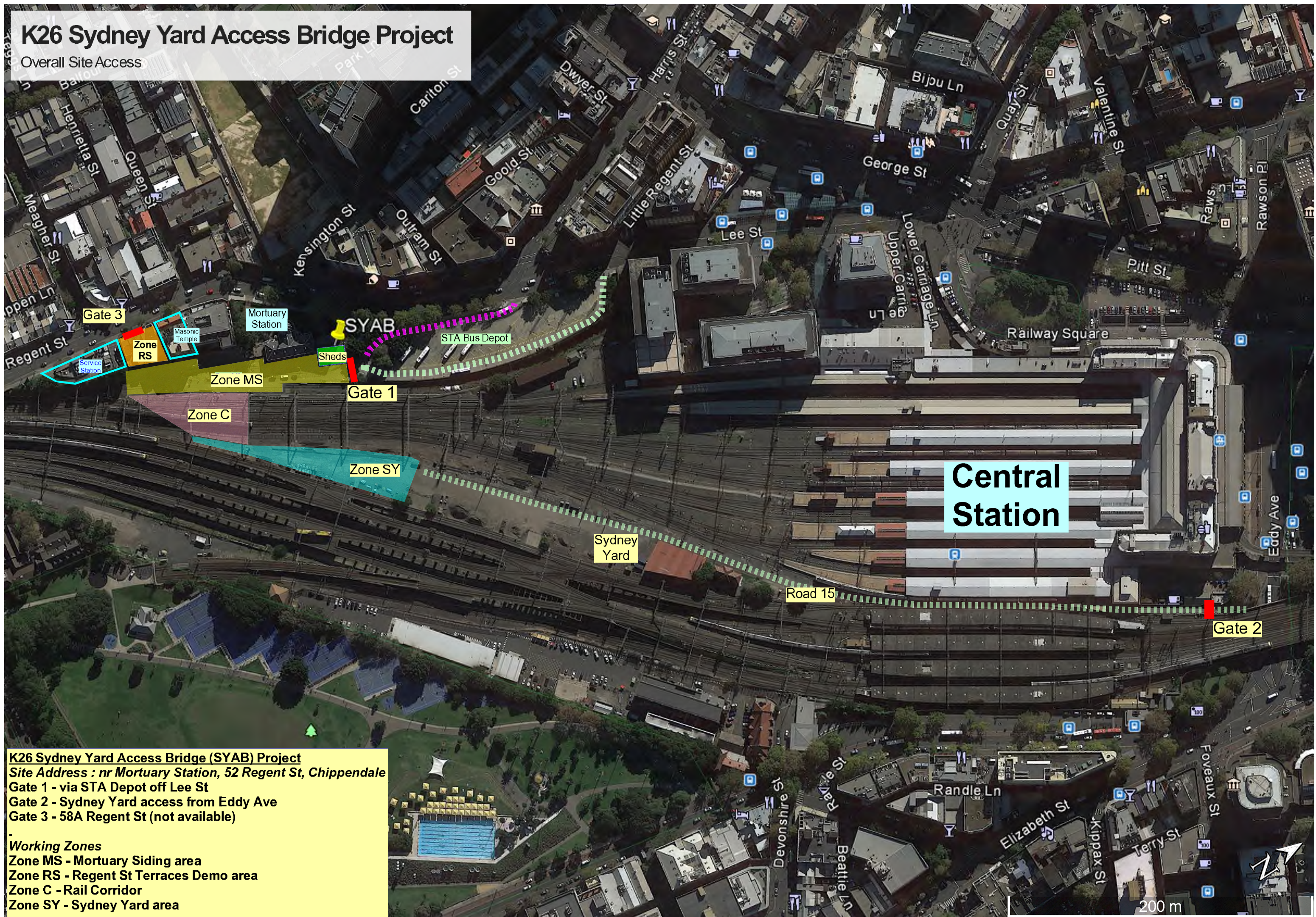
## Traffic Management Plan

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### *Appendix D - Site Zones and Access Points*

# K26 Sydney Yard Access Bridge Project

Overall Site Access



**K26 Sydney Yard Access Bridge (SYAB) Project**  
Site Address : nr Mortuary Station, 52 Regent St, Chippendale  
Gate 1 - via STA Depot off Lee St  
Gate 2 - Sydney Yard access from Eddy Ave  
Gate 3 - 58A Regent St (not available)

**Working Zones**  
Zone MS - Mortuary Siding area  
Zone RS - Regent St Terraces Demo area  
Zone C - Rail Corridor  
Zone SY - Sydney Yard area

## Traffic Management Plan

### Appendix E - Road Safety Audit

Item	Details	LORAC Response	Status
4.1-1	The northbound right turn from Lee Street into the construction site is marked "ONLY BUSES" and therefore cannot be used by construction traffic. Changes to remove this marking are in progress.	This is currently in review with RMS, and will be addressed prior to use of ONLY BUSES lane	Closed
4.1-2	There is a risk that heavy vehicles attempting to use Regent Street southbound to turn left into the Lee Street right turn bay may overhang into the next lane. This leads to the risk of traffic build-up.	There is a TCP in place to manage OSOM vehicles, where vehicles are not GAV. Deliveries will be avoided in peak hour to avoid queueing of vehicles in through lanes.	Closed
4.2-1	There is no 40 km/hr road work speed limit noted on Kensington Street. This may result in vehicles entering the work area at excessive speeds.	TCP 007 amended to suit	Closed
4.3-1	Signs on Chalmers Street are likely to confuse traffic as they indicate roadworks are ahead, but give no indication of where the roadworks are. This confusion may result in road users ignoring the given warnings when entering Eddy Avenue.	TCP 008 / 008a amended to suit	Closed
4.3-2	Due to the proximity of the Sydney Light Rail and Sydney Yard Access Bridge construction works, there is a possibility that SLR and SYAB vehicles will attempt to use the access at the same time. There is a risk that both sites may have different traffic control plans leading to mismanagement of the plan.	SYAB have been in discussions with SLR, and all TCPs will be firstly advised and then assessed against the SLR works in progress at that time.	Closed
4.3-3	All vehicles wishing to enter the construction site from Foveaux Street must be in the second lane from the left. Attempted entry from other lanes will result in crossing lane lines through the intersection. There is no documentation showing this restriction.	There is no plan for SYAB construction vehicles to use Foveaux Street to access the project	Closed
4.3-4	The southbound right turn from Elizabeth Street into the construction site is marked "BUSES ONLY" and therefore cannot be used by construction traffic. There is no indication in the CTMP on whether this is intended to be used. There is also no indication to buses travelling along Elizabeth Street that there are changed conditions in Eddy Avenue, this may result in buses entering the construction site at excessive speeds.	There is no plan for SYAB construction vehicles to use Elizabeth St South Bound to access the project. TCP 008 / 008a modified to suit	Closed



**Laing O'Rourke**

Sydney Metro City & Southwest - Sydney Yard Access  
Bridge  
Detailed Design (Stage 5) Road Safety Audit

May 2017

# Disclaimer

*This report: has been prepared by GHD for Laing O'Rourke and may only be used and relied on by Laing O'Rourke for the purpose agreed between GHD and the Laing O'Rourke as set out in Section 1.1 of this report.*

*GHD otherwise disclaims responsibility to any person other than Laing O'Rourke arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.*

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

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

*The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.*

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# Appendices

Appendix A - (Corrective Action Requests)

# 1. Introduction

## 1.1 Purpose of this report

This report has been prepared to review the SYAB CTMP and to document the safety deficiencies identified as part of a Stage 5 (Existing Conditions) Road Safety Audit (Austroads 2009) of the Sydney Metro City & Southwest - Sydney Yard Access Bridge traffic control plan. The Audit aims at improving safety conditions for road users by identifying existing safety issues. In accordance with Roads and Maritime Standards, proposals for treatment of risks are not provided. This is not a review for compliance with RMS Traffic Control at Worksites, but a site review of the proposed traffic management associated with the construction of the Sydney Yard Access Bridge.

## 1.2 Background

GHD was commissioned by Laing O'Rourke to provide engineering consultancy services for the Sydney Metro City & Southwest - Sydney Yard Access Bridge which will provide heavy vehicle access from Regent Street into the Sydney Yard at Central Station in order to facilitate the construction of the Sydney Metro works.

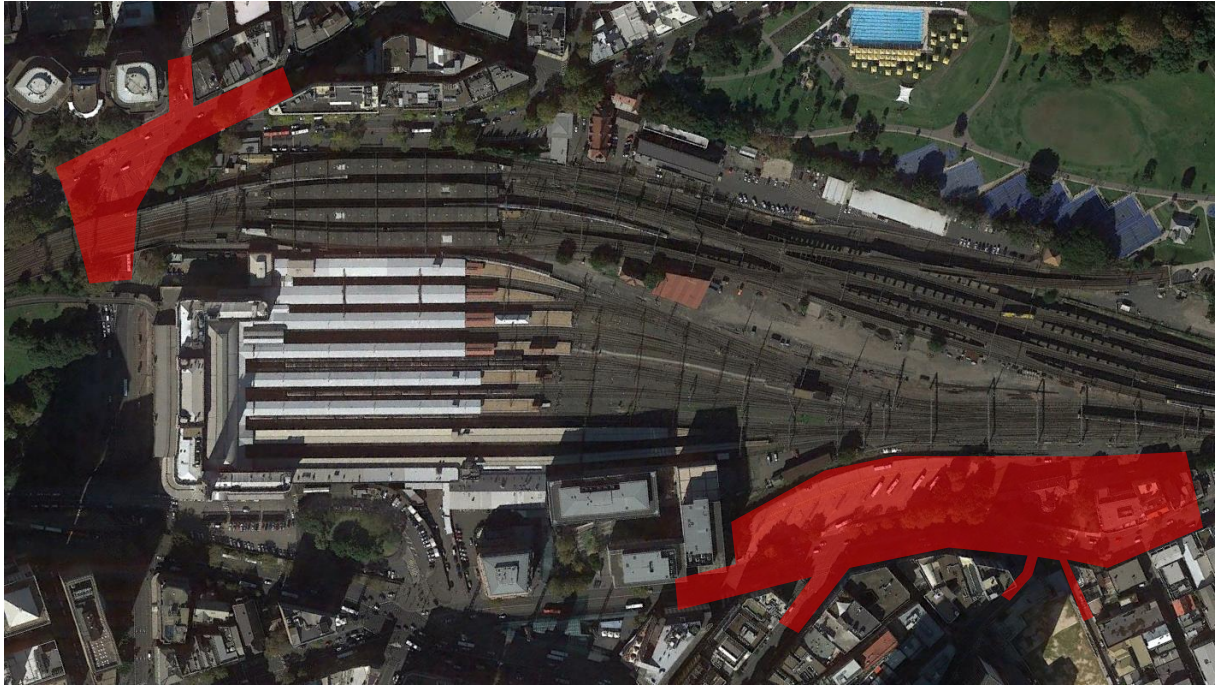
GHD has since been requested to carry out an additional road (Stage 5) Road Safety Audit for the Sydney Yard Access Bridge traffic control plan.

## 1.3 Study area location

The Road Safety Audit includes two sites of interest:

- The access point to the Rail Corridor at Eddy Avenue, Surry Hills.
- The intersection between Regent Street, Kensington Street and Lee Street, Chippendale.

The location of the site is shown in Figure 1 below.



**Figure 1 – Study Area**

## 2. Objectives Process Evaluation Criteria

### 2.1 Objectives of the Road Safety Audit

A road safety audit (RSA) is “a formal examination of a future road or traffic project or an existing road, in which an independent, qualified team reports on the project’s crash potential and safety performance” (Austroads 2009).

### 2.2 Process of the Road Safety Audit

The road safety audit followed a standard practice in identifying safety related issues. It involved a site visit during both daylight and night conditions in addition to a desktop assessment to provide appropriate recommendations. Standard issues such as sight distance, speed zones, lighting, safety barriers, approach road alignment, delineation, line marking and signage, intersection layout and conditions (amongst others) were assessed with respect to safety. The audit is structured around a standard checklist provided in the Austroads “Guide to Road Safety: Part 6 – Road Safety Audits” and RMS’s Guidelines for Road Safety Audit Practices, July 2011”.

### 2.3 Criteria used to assess the levels of risk

Risk levels have been assigned for each deficiency identified along the route by the audit team and are based on the criteria set out in the Austroads guide. These risk levels have been determined based on the deficiency’s frequency and severity. Definitions of the different levels of frequency and severity have been reproduced in Table 1 and Table 2 below from Austroads Guide to Road Safety, Part 6: Road Safety Audit, 2009.

**Table 1 Summary of frequency descriptions**

Frequency	Description
Frequent	Once or more per week
Probable	Once or more per year (but less than once a week)
Occasional	Once every five or ten years
Improbable	Less often than once every ten years

**Table 2 Summary of severity description**

Severity	Description
Catastrophic	Likely multiple deaths
Serious	Likely death or serious injury
Minor	Likely minor injury
Limited	Likely trivial injury or property damage only

Austroads Guide to Road Safety, Part 6: Road Safety Audit, 2009, provides definitions for four different levels of risk, namely, “intolerable”, “high”, “medium” or “low”. Extracts of the risk assessment matrix from Austroads are provided below in Table 3.

**Table 3 Summary of levels of risk**

		Frequency			
		Frequent	Probable	Occasional	Improbable
Severity	Catastrophic	Intolerable	Intolerable	Intolerable	High
	Serious	Intolerable	Intolerable	High	Medium
	Minor	Intolerable	High	Medium	Low
	Limited	High	Medium	Low	Low

It is noted that as a consequence of the Austroads guide not adopting a more objective risk ratings process, the risk rating reported in all Road Safety Audits are subjective. As a result, the audit findings can be skewed towards reporting risks as “high” and “intolerable”.

***Care should be taken by the appropriate decision maker when using these results to justify an outcome.***

Of the four possible risk ratings levels (i.e. Intolerable, high, medium or low) a description of their priority are defined below in Table 4.

**Table 4 Priority to levels of risk**

Level of Risk	Description of Priority to Risk Rating
Intolerable:	A significant road safety risk requiring immediate urgent attention.
High:	A high road safety risk requiring immediate or urgent attention.
Medium:	A road safety risk that may lead to crashes and that requires attention as soon as reasonably practicable.
Low:	A lower road safety risk that requires attention. Remedial action may be carried out on a non-urgent basis, such as in conjunction with routine road maintenance or other planned work.

## 2.1 Road safety categories

Road safety audit categories are utilised to assist the management of corrective actions and the monitoring of road safety deficiency trends. A list of the available categories is scheduled in Table 5 below which have been derived from the Roads and Maritime Services (RMS) road safety categories information sheet.

**Table 5 Road Safety Audit Categories**

Category	Examples
Access Impact	Property developments, traffic generators, rest areas, emergency vehicles, service vehicles, maintenance, vehicles breakdowns, etc.
Auxiliary Lanes	Overtaking lanes, passing lanes, tapers, merges, etc.
Bridge Structures	Road bridge, pedestrian bridge, rail bridges etc.
Bus Infrastructure	Bus lanes, bus facilities, bus stops etc.
Cycle Infrastructure	Cycleways, on-road facilities, off-road facilities, cycle routes etc.
Delineation	Guide posts, pavement markings, reflectors, warning signs etc.
Heavy Vehicle Infrastructure	Inspection bays, facilities, provisions, routes etc.
Intersection	Roundabouts, T-junctions, cross junctions etc.
Landscaping	Shrubs, trees etc.
Lighting	Street lighting, tunnel lighting etc.
Miscellaneous	Matters not covered by categories listed.
Network Effects	Road function, traffic composition, traffic volume, traffic characteristics, route choice, impact of continuity with the existing network etc.
Special Road User Infrastructure	Trains, ferries, trams, equestrian, stock, special events etc.
Pedestrian Infrastructure	Pathways, pedestrian crossings, pedestrian fencing etc.
Road Alignment and Cross Section	Sight distance, visibility, readability by drivers, glare, widths, shoulders, crossfalls, batter slopes, drains etc.
Road Pavement	Pavement defects, skid resistance, ponding, loose stones material etc.
Roadside Activities	Roadside advertising, road side designs, vending etc.
Roadside hazards	Clearzones, utility poles, culverts, bridge structures, trees etc.
Speed Zones	Speed limits, speed zones, design speed, school zones etc
Traffic Management and Operation	Staging of works, temporary traffic control, detours, peak tidal flows, clearways, parking etc.
Traffic Management Devices	Threshold treatments, road humps, kerb extensions, slow points etc.
Traffic Signals	Signal phasing, bus signals, bicycle signals pedestrian signals etc.
Traffic Signs	Regulatory signs, warning signs, guide signs etc.
Tunnel Structures	Road tunnels, pedestrian tunnels, cycle tunnels etc.

## 3. Administration & Supporting Material

### 3.1 Road Safety Audit team

The road safety audit team comprised the following accredited auditors with the NSW Centre for Road Safety's Register of Road Safety Auditors:

#### Audit team member(s)

Anthony Penn GHD Pty Ltd, Parramatta.

Auditor ID: RSA-02-0366

Level of Certification: 3

#### Audit team member(s)

Sean Clarke GHD Pty Ltd, Sydney.

Auditor ID: RSA-02-0891

Level of Certification: 3

#### Audit team member(s)

Michael Potts GHD Pty Ltd, Parramatta.

Auditor ID: RSA-02-0966

Level of Certification: 3

### 3.2 Site inspection and audit

#### 3.2.1 Time and date

The day-time site visit and audit along the study area was undertaken on Tuesday 16<sup>th</sup> May 2017, following a commencement meeting at Laing O'Rourke's site office.

The night-time site visit and audit was also undertaken on Tuesday 16<sup>th</sup> May 2017.

#### 3.2.2 Weather conditions

The weather condition during the day and night audit was fine with a dry road surface during the audit.

#### 3.2.3 Commencement meeting

A project commencement meeting was undertaken via phone between GHD's Kevin Brady and the GHD road safety team. The meeting purpose was to discuss the project scope, status, limitations, specific safety issues and other relevant project information.

#### 3.2.4 Completion meeting

A project completion meeting is undertaken after delivery of the draft audit report to discuss issues discovered during the road safety audit to allow for the completion of the final report.

### 3.3 References & documentation audited

- RMS Guidelines for Road Safety Audit Practices, July 2011;
- Austroads "Guide to Road Safety, Part 6: Road Safety Audit", 2009;

- NSW Bicycle Guidelines Version 1.2, July 2005;
- RMS supplements to Austroads;
- Austroads Guidelines; and
- RMS Technical Directions, guidelines, manuals and other reference materials.

### **3.4 Limitations of this audit**

The following limitations are associated with this audit and report:

- Scope of work outlined in Road Safety Audit Brief;
- Documentation provided by GHD and Laing O'Rourke via email
- CTMP, revision 02; and
- Proposal for Road Safety Audit dated 20 April 2017, GHD ref 210919036-62565.



## 4. Findings

### 4.1 TCP005 – Lee Street

1. The northbound right turn from Lee Street into the construction site is marked “ONLY BUSES” and therefore cannot be used by construction traffic. Changes to remove this marking are in progress.
2. There is a risk that heavy vehicles attempting to use Regent Street southbound to turn left into the Lee Street right turn bay may overhang into the next lane. This leads to the risk of traffic build-up.



Figure 2 – Buses Only marking on Lee Street

### 4.2 TCP007 – Regent Street

1. There is no 40 km/hr road work speed limit noted on Kensington Street. This may result in vehicles entering the work area at excessive speeds.

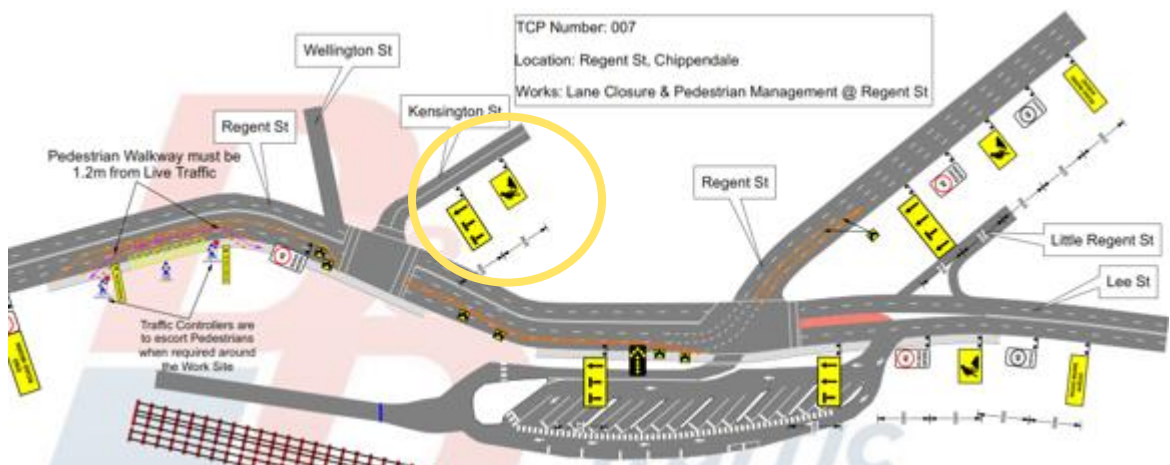
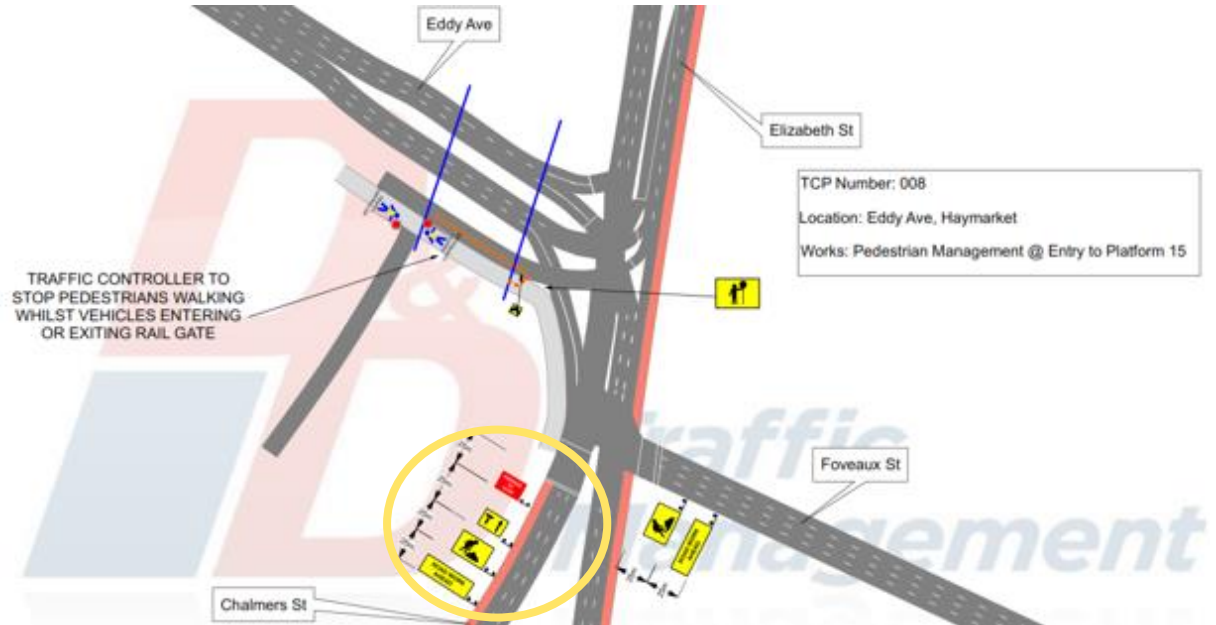


Figure 3 – TCP007 Showing Lack of 40 km/hr Speed Limit

### 4.3 TCP008 – Eddy Avenue

1. Signs on Chalmers Street are likely to confuse traffic as they indicate roadworks are ahead, but give no indication of where the roadworks are. This confusion may result in road users ignoring the given warnings when entering Eddy Avenue.



**Figure 4 – TCP008 Showing location of signs on Chalmers St**

2. Due to the proximity of the Sydney Light Rail and Sydney Yard Access Bridge construction works, there is a possibility that SLR and SYAB vehicles will attempt to use the access at the same time. There is a risk that both sites may have different traffic control plans leading to mismanagement of the plan.



**Figure 5 – Sydney Light Rail Construction Site**

3. All vehicles wishing to enter the construction site from Foveaux Street must be in the second lane from the left. Attempted entry from other lanes will result in crossing lane lines through the intersection. There is no documentation showing this restriction.

4. The southbound right turn from Elizabeth Street into the construction site is marked "BUSES ONLY" and therefore cannot be used by construction traffic. There is no indication in the CTMP on whether this is intended to be used. There is also no indication to buses travelling along Elizabeth Street that there are changed conditions in Eddy Avenue, this may result in buses entering the construction site at excessive speeds.



**Figure 6 – Elizabeth Street Southbound "BUSES ONLY" Right Turn**

## 5. Audit statement

We certify that in carrying out this audit we have reviewed the available information and have endeavoured to identify features in order to improve safety, although it must be recognised that safety cannot be guaranteed since no road can be regarded as absolutely safe.

The problems identified have been noted in this report and readers are urged to seek further specific technical advice on matters raised and not rely solely on the report.

It is the opinion of the auditors that through the site review of the proposed traffic management associated with the construction of the Sydney Yard Access Bridge the traffic management proposed is safe under the conditions witnessed during the road safety audit.

Signed

Date

Audit Team Leader

Anthony Penn, GHD Pty Ltd, Parramatta. Auditor ID: RSA-02-0366

Signed

Date

Audit Team Member

Michael Potts, GHD Pty Ltd, Parramatta. Auditor ID: RSA-02-0367

# Appendices

# **Appendix A** - (Corrective Action Requests)

Not used.



GHD

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Document Status

Revision	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
Draft	HA	A Penn		A Penn		18/5/17



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Process	Document owner	Step	Gateways	Document type
Enabling Process	Project Team (Ops/Const.. & HSEQ)	2257 – HSEQ Compliance		Template (T)

## Traffic Management Plan

### Sydney Yard Access Bridge – Addendum to CTMP rev 05

#### Routes and Access for Bridge Girders and Tower Crane elements

This addendum is additional information to the approved CTMP rev 05 produced for the Sydney Yard Access Bridge. It deals with the access arrangements for mobilising and demobilising the Favco M2480D Tower Crane and delivery of the Bridge Girders from Curi Curi to the bridge site in Chippendale.

Information provided includes:

- TMP from Markham Brothers Haulage for the OSOM routes (Girders)
- Combined schedule of required ROL for implementation of TCP
- Truck listing with dimensions from Marris Cranes
- Truck listing with dimensions from Alfabs Steel
- TCP 001 for OSOM access / egress into STA Bus Depot (previously approved as part of the CTMP rev05)
- TCP 009 (rev01) for George / Pitt / Lee / Quay St intersection to enable turning of the girders in the intersection
- Swept Paths for the Girders at the George / Pitt / Lee / Quay St intersection
- Swept Paths for the Girders into the STA Bus Depot, including detail at the driveway entrance

The programme of works will entail 10 days of Tower Crane setup from 25<sup>th</sup> September, followed by 9 no OSOM Girder deliveries spread between 11<sup>th</sup> October and the 2<sup>nd</sup> November. This will be followed by Tower Crane demobilisation for 10 days starting from the 13<sup>th</sup> November.

The trailers / dolly being provided for the Girder deliveries have a rear steer on the dolly that is operated remotely. The operator will be placed at the pinch points shown on the Swept Paths to ensure that the trailers remain 300mm off the kerb at all times to avoid damage to the existing infrastructure.

The trailer closes to 22m long x 2.5m wide. It will come out the bus depot entrance under traffic control, turn right onto Pitt st, right into Eddy Ave, left onto Elizabeth, left into Hay, left onto Pitt and head west. This route is dictated by the SLR works

Approval is sort for the above routes and access arrangements, noting that the planned turn in George / Pitt / Lee / Quay St is the only way to get the over length girders to the STA Bus Depot Access driveway.



# Markham Brothers Haulage Pty Ltd

## Transport Management Plan

### Transport of Steel Girder

From Allfabs Pty Ltd - Weston NSW to Haymarket NSW

Draft Copy (2)

#### 1. Movement Details:

##### Dimensions of Steel Girder

Width: 2.2m  
Length: 41.0m  
Height: 1.5m  
Weight: 43.5T

##### Dimensions of Combination

Width: 3.4m  
Length: 45.0m  
Height: 4.6m  
Weight: 70.0T

##### Configuration

Prime Mover:  
Kenworth K108 – Rego: BP15EL  
Tare: 10.0 Tonne  
Dimensions: 6.5m Long x 4.2m High x 2.5m Wide

Leading Dolly:  
MTE 2 x 8 Dolly – Rego: 1THI033  
Tare: 5.0 Tonne  
Dimensions: 6.2m Long x 1.8m high x 2.5m Closed Width

Trailing Rear Steer Jinker:  
MTE 4 x 8 Rear Steer Jinker – Rego 1TKM957  
Tare: 11.3 Tonne  
Dimensions: 9.8m Long x 1.4m High x 2.5m Closed Width

**Proposed Commencement Date & Time**

1 x 45m long load to be transported commencing \*\*\* Oct 2017 until \*\*\* Oct 2017

**Proposed Schedule of Movements**

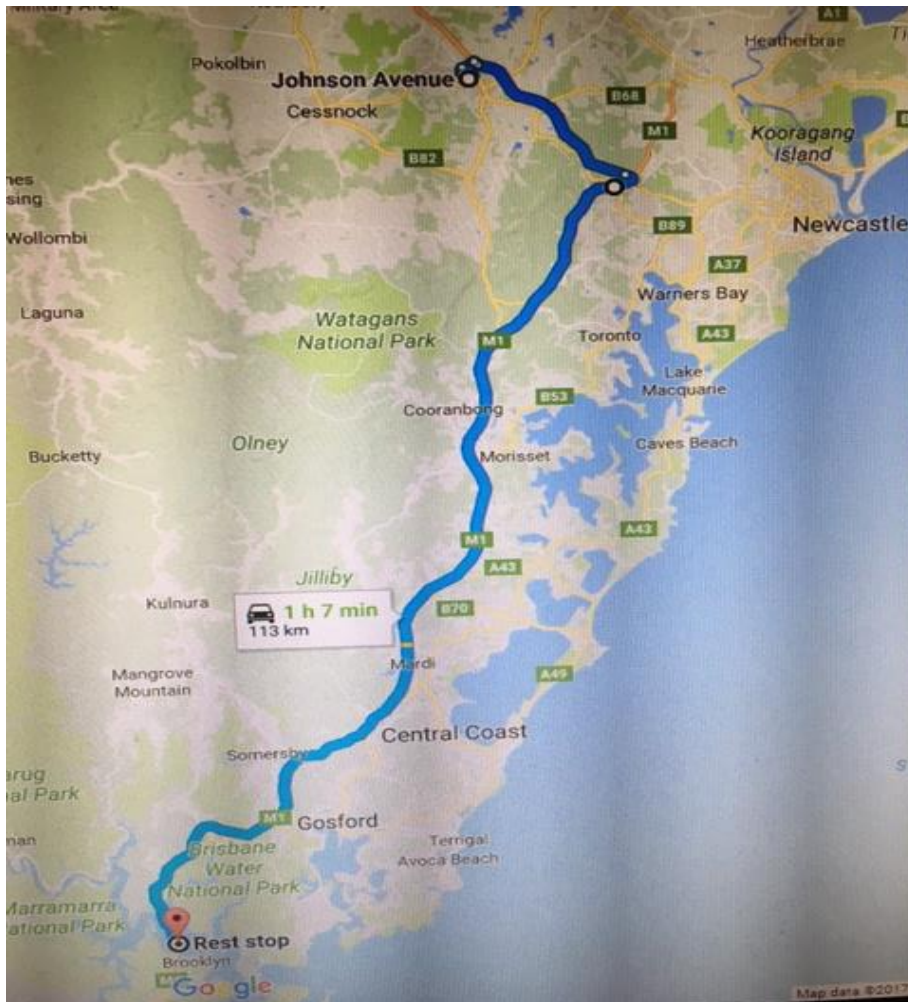
**/10/17 (1 <sup>st</sup> Leg)	Steel Girder	Driver TBA	Movement depart Weston at 1.00pm and arrive Mooney Mooney rest area at 3.00pm
**/10/17 (2 <sup>nd</sup> leg)	Steel Girder	Driver TBA	Movement departs Mooney Mooney rest area 12.00am and arrives Haymarket 3.30am

**Proposed Route 1<sup>st</sup> Leg:**

Depart Alfabs Pty Ltd yard via Johnson Ave - Weston, turn left onto Mitchell Ave, right onto Government Rd, right onto Hart Rd, right onto Hunter Express way, vere left onto M1  
Continue along M1 to Mooney Mooney rest area. (Allowing queued traffic to clear wherever possible).

Distance 105 kms. (Estimated Time 2 hrs)

1<sup>st</sup> Leg Movement Weston NSW to Mooney Mooney NSW – Distance 105 km

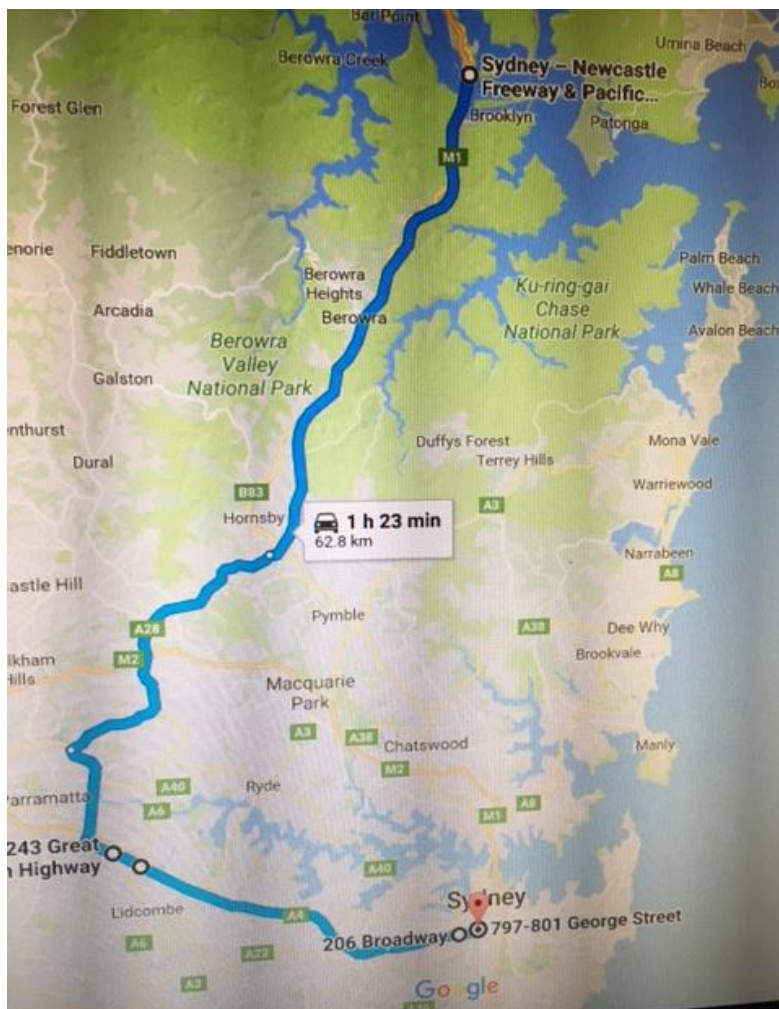


**Proposed Route – 2<sup>nd</sup> Leg:**

Depart Mooney Mooney rest area south along M1, left onto Pennant Hills Rd, left onto James Ruse Dr, left onto Parramatta Rd at end of M4, onto Broadway / George St, right turn or Reverse into Lee St. (Allowing queued traffic to clear wherever possible).

Distance 51kms (Estimated Time 3.5 hrs)

2<sup>nd</sup> Leg Movement Mooney Mooney NSW to Haymarket NSW – Distance 51kms



## **2. Emergency Contacts and Plans:**

Police / Fire / Ambulance	000
Transport Management Centre (TMC)	131 700
Standby Truck	02 49 321 911
Walter Wright Cranes Pty Ltd	02 40 286 216
Driver – TBA	TBA
Heavy Towing – O’Neils (Mick)	0407 672 999
Markham Brothers Haulage Coordinator (Danny)	0429 680 438

Movement to be controlled by police and pilots using UHF 29 & 40.

General movement configuration is – Pilot No 1, Police, Load, Pilot No 2 and Pilot No 3.

In the event of an emergency situation such as a truck breakdown, flat tyre etc the load will be moved to the left lane and shoulder to ensure minimal traffic impacts, police are to direct and manage traffic as appropriate. Pilots accompanying the movement must follow the directions of police at all times. In such instances the TMC will be promptly advised so that necessary warnings can be made.

Where a tow is required, the trailer will be detached from the prime mover and a standby truck will be arranged to continue the movement. In such instances the TMC will be promptly advised, and police will direct and manage traffic as required.

If police decide that the movement should be suspended as a result of time or potential traffic impacts, the trailer with the load will be moved to a safe parking location and the TMC will be notified.

In the event of bad weather such as heavy rain, a decision will be made by Markham Brothers Haulage Pty Ltd in conjunction with Allfabs Pty Ltd by the afternoon of the movement date. All relevant parties will be notified at this time and a suitable alternate date for the movement will be arranged. This will require further consultation with relevant parties.

Where bad weather is encountered along the way the movement is to proceed to the nearest and safest area suitable that can accommodate the load. A decision will be made by the police and Markham Brothers Haulage Pty Ltd as to whether the movement is to proceed any further. In the event of any delay encountered the TMC will be contacted.

## **3. Communication Protocol:**

A pre departure meeting will be held 15 minutes prior to the commencement of the movement.

Communication between parties involved in the movement will occur on UHF 40. All parties will be informed of this channel in the pre departure meeting held before the movement along with all procedures outlined in this document.

All communications between police, pilots and other heavy vehicles will occur on UHF 40 unless otherwise specified.


**4. Contact with Road Managers / Other Authorities / Public:**

Movement into the city area is proposed to be conducted at night to ensure that there are minimal disruptions to the road network, other road users and local businesses. The TMC has been contacted to ensure that Road Occupancy License (ROL) holders are aware of the movement and timings for each section of this movement have been provided in this TMP to assist with planning and traffic coordination.


**5. Route Survey of Proposed Route:**

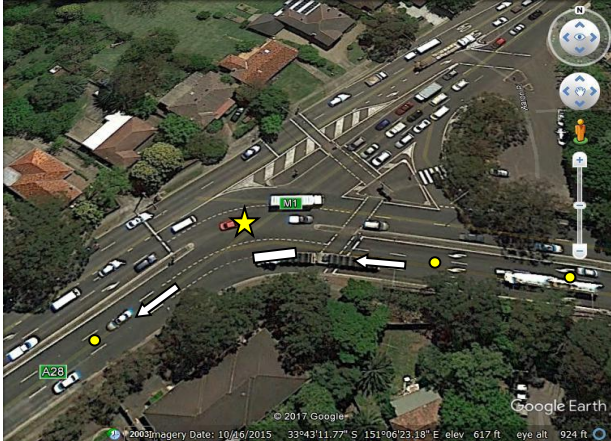
The following diagrammatic representations are used throughout the route survey.


★	Police Pilot
●	Pilot Vehicle
▭	Load
➡	Direction of Travel
↔	Measurement

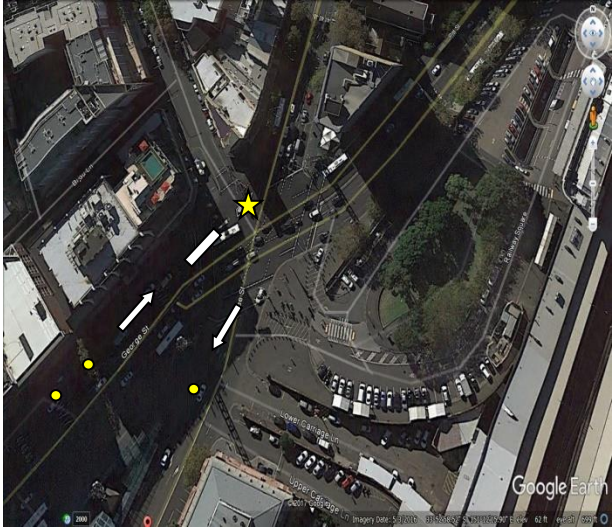
<b>Pinch Point / Intersection</b>	<b>Procedures</b>
<p>Left turn from Johnson Ave onto Mitchell Ave Intersection</p> 	<p>Intersection to be controlled by police, with assistance of pilots. Permission to enter intersection to be granted by police. Rear pilots to advise the load driver of clearances between the load and any vehicles or street furniture that may be encountered throughout the manoeuvre.</p> <p><i>Standard Highway travel: Pilot 1, Police, Load, Pilot 2, Pilot 3.</i></p>



<b>Pinch Point / Intersection</b>	<b>Procedures</b>
<p data-bbox="185 315 730 348"><i>Right turn Hart Rd to Hunter Express Way</i></p> 	<p data-bbox="818 315 1419 504">Forward pilot to increase distance in front of the load to inform oncoming traffic and other heavy vehicles of the turn width of the load, thus allowing them time to pull into a safe area until the load passes.</p> <p data-bbox="818 508 1334 579">Permission the enter intersection to be granted by police.</p> <p data-bbox="818 583 1419 735">Rear pilots to advise the load driver of clearances between the load and any vehicles or street furniture that may be encountered throughout the manoeuvre.</p> <p data-bbox="818 777 1276 848"><i>Standard Highway travel: Pilot 1, Police, Load, Pilot 2, Pilot 3.</i></p>

<b>Pinch Point / Intersection</b>	<b>Procedures</b>
<p data-bbox="185 1081 711 1152"><i>Left turn from M1 onto Pennant Hills Rd Intersection</i></p> 	<p data-bbox="818 1081 1393 1194">Intersection to be controlled by police, with assistance of pilots. Permission to enter intersection to be granted by police.</p> <p data-bbox="818 1199 1419 1350">Rear pilots to advise the load driver of clearances between the load and any vehicles or street furniture that may be encountered throughout the manoeuvre.</p> <p data-bbox="818 1543 1276 1614"><i>Standard Highway travel: Pilot 1, Police, Load, Pilot 2, Pilot 3.</i></p>

Pinch Point / Intersection	Procedures
<p data-bbox="188 243 748 310">Left turn from Pennant Hills Rd onto James Ruse Drive Intersection</p> 	<p data-bbox="821 243 1421 506">Intersection to be controlled by police, with assistance of pilots. Permission to enter intersection to be granted by police. Rear pilots to advise the load driver of clearances between the load and any vehicles or street furniture that may be encountered throughout the manoeuvre.</p> <p data-bbox="821 709 1276 779"><i>Standard Highway travel: Pilot 1, Police, Load, Pilot 2, Pilot 3.</i></p>

Pinch Point / Intersection	Procedures
<p data-bbox="188 1136 464 1167">George St into Lee St</p> 	<p data-bbox="821 1136 1421 1325">Forward pilot to increase distance in front of the load to inform oncoming traffic and other heavy vehicles of the turn width of the load, thus allowing them time to pull into a safe area until the load passes. Permission the enter intersection to be granted by police. Rear pilots to advise the load driver of clearances between the load and any vehicles or street furniture that may be encountered throughout the manoeuvre. Best option will be to reverse down Lee street, to access site.</p> <p data-bbox="821 1682 1276 1751"><i>Standard Highway travel: Pilot 1, Police, Load, Pilot 2, Pilot 3.</i></p>

**6. Pull Over Locations:** *(To allow queued traffic to clear)*

To Be Advised

**7. Other Matters / Comments:**

Abandoned vehicles at intersections may cause difficulties during some turning manoeuvres.

Markham Brothers Haulage investigated this route on 26<sup>th</sup> Aug 2017 and encountered no problems and recommend reversing down Lee St to access site.

SYAB - Combined Access Requirements for Tower Crane and Girders

19/09/2017

WE	Date		Time for OOH	Works	OSOM on Lee St ROL	Pitt/George /Lee ROL	Time for ROL	Reasoning
	25-Sep	Monday	2300 Sun - 0700 Mon	Day 1: delivery of Grove 400t Crane	Yes		2300 - 0500	OSOM deliveries
	26-Sep	Tuesday		Day 2: Tower Crane erection				
	27-Sep	Wednesday		Day 3: Tower Crane erection				
	28-Sep	Thursday	2300 Wed - 0700 Thu	Day 4: OSOM deliveries, Tower Crane erection	Yes		2300 - 0500	OSOM deliveries
	29-Sep	Friday	2300 Thu - 0700 Fri	Day 5: OSOM deliveries, Tower Crane erection	Yes		2300 - 0500	OSOM deliveries
WE 14	30-Sep	Saturday	2300 Fri - 1800 Sat	Day 6: OSOM, Tower Crane erection	Yes		2300 - 0500	OSOM deliveries
	1-Oct	Sunday	2300 Sat - 1800 Sun	Day 7: OSOM deliveries, Tower Crane erection	Yes		2300 - 0500	OSOM deliveries
	2-Oct	Monday						
	3-Oct	Tuesday	2300 Mon - 0700 Tue	Day 8: OSOM deliveries, Tower Crane erection / Boom erection	Yes		2300 - 0500	OSOM deliveries
	4-Oct	Wednesday	0300 Wed - 0700 Wed	Day 9: Boom erection				Boom needs low winds, early morning provides this
	5-Oct	Thursday	2300 Wed - 0700 Thu	Day 10: Grove 400t Crane leaves, Commissioning	Yes		2300 - 0500	OSOM deliveries
	6-Oct	Friday	2300 Thu - 0700 Fri	Contingency Grove 400t Crane leaves	Yes		2300 - 0500	OSOM deliveries
WE 15	7-Oct	Saturday	0600 - 1630	Possession				
	8-Oct	Sunday	0600 - 1630	Possession				
	9-Oct	Monday						
	10-Oct	Tuesday						
	11-Oct	Wednesday						
	12-Oct	Thursday	0200 Mon - 0700 Mon, 24hrs	BG4 Delivery 1 & Delivery 2	Yes	Yes	2300 - 0500	OSOM delivery, lift off beam, trailer OSOM leaves
	13-Oct	Friday	24hrs	BG4 Contingency Delivery, Welding 24hrs	Yes	Yes	2300 - 0500	OSOM delivery, lift off beam, trailer OSOM leaves, Possession driven to have beam to lift, works quiet
WE 16	14-Oct	Saturday	24hrs	Welding 24hrs				Possession driven to have beam to lift, works quiet
	15-Oct	Sunday	24hrs	Welding 24hrs				Possession driven to have beam to lift, works quiet
	16-Oct	Monday	24hrs	Welding 24hrs				Possession driven to have beam to lift, works quiet
	17-Oct	Tuesday	24hrs	Welding 24hrs				Possession driven to have beam to lift, works quiet
	18-Oct	Wednesday	24hrs	Welding 24hrs				Possession driven to have beam to lift, works quiet
	19-Oct	Thursday	0200 Mon - 0700 Mon, 24hrs	BG3 Delivery, Welding 24hrs	Yes	Yes	2300 - 0500	OSOM delivery, lift off beam, trailer OSOM leaves
	20-Oct	Friday	24hrs	Welding 24hrs				Possession driven to have beam to lift, works quiet
WE 17	21-Oct	Saturday	0200 Sat - 0400 Mon	Possession - erect steel				Possession
	22-Oct	Sunday		Possession - erect steel				Possession
	23-Oct	Monday	0200 Mon - 0700 Mon 2100 Mon - 0500 Tue	BG5 Delivery, Possession - erect steel	Yes	Yes	2300 - 0500	OSOM deliveries, lift off trailer as trailer OSOM too to leave, possession
	24-Oct	Tuesday	0200 Tue - 0700 Tue 2100Tue - 0500 Wed	BG6 Delivery, Possession - erect steel	Yes	Yes	2300 - 0500	
	25-Oct	Wednesday	0200 Wed - 0700 Wed 2100 Wed - 0500 Thu	BG7 Delivery, Possession - erect steel	Yes	Yes	2300 - 0500	
	26-Oct	Thursday	0200 Thu - 0700 Thu 2100 thu - 0500 Fri	BG8 Delivery, Possession - erect steel	Yes	Yes	2300 - 0500	
WE 18	27-Oct	Friday	2300 Fri - 0400 Mon	Possession - erect steel				Possession
	28-Oct	Saturday		Possession - erect steel				Possession
	29-Oct	Sunday						
	30-Oct	Monday						
	31-Oct	Tuesday						
	1-Nov	Wednesday	0200 Wed - 0700 Wed	BG1 Delivery	Yes	Yes	2300 - 0500	OSOM delivery, lift off beam, trailer OSOM leaves
	2-Nov	Thursday	0200 Thu - 0700 Thu	BG2 Delivery	Yes	Yes	2300 - 0500	OSOM delivery, lift off beam, trailer OSOM leaves
	3-Nov	Friday						
WE 19	4-Nov	Saturday	2000 Sat - 0700 Sun	Possession - erect steel				Possession
	5-Nov	Sunday		Possession - erect steel				Possession
	6-Nov	Monday	2030 Mon - 0500 Tue	Possession - erect steel				Possession
	7-Nov	Tuesday	2030 Tue - 0500 Wed	Possession - erect steel				
	8-Nov	Wednesday	2030 Wed - 0500 Thu	Possession - erect steel				
	9-Nov	Thursday	2030 Thu - 0500 Fri	Possession - erect steel				
WE 20	10-Nov	Friday						
	11-Nov	Saturday						
	12-Nov	Sunday						
	13-Nov	Monday	2300 - 0700	Day 1: Gove 400t Crane arrives, Commence Tower Crane demob	Yes		2300 - 0500	OSOM Deliveries
	14-Nov	Tuesday	2300 - 0700	Day 2: Remove Boom, OSOM removals, crane demob	Yes		2300 - 0500	OSOM Deliveries, low wind in morning to remove boom
	15-Nov	Wednesday	2300 - 0700	Day 3: OSOM removals, tower crane demob	Yes		2300 - 0500	OSOM Deliveries
	16-Nov	Thursday	2300 - 0700	Day 4: OSOM removals, tower crane demob	Yes		2300 - 0500	OSOM Deliveries
	17-Nov	Friday	2300 - 0700	Day 5: OSOM removals, tower crane demob	Yes		2300 - 0500	OSOM Deliveries
WE 21	18-Nov	Saturday	2300 - 0700					
	19-Nov	Sunday	2300 - 0700					
	20-Nov	Monday		Day 6: OSOM removal, tower crane demob	Yes		2300 - 0500	OSOM Deliveries
	21-Nov	Tuesday		Day 7: OSOM removals, tower crane demob	Yes		2300 - 0500	OSOM Deliveries
	22-Nov	Wednesday		Day 8: tower crane demob				
	23-Nov	Thursday	2300 - 0700	Day 9: tower crane demob				
	24-Nov	Friday		Day 10: tower crane demob				
WE 22	25-Nov	Saturday	2300 - 0700	Day 11: Grove 400t Crane leaves	Yes		2300 - 0500	OSOM Deliveries
	26-Nov	Sunday						

Figure 3: Delivery sequence

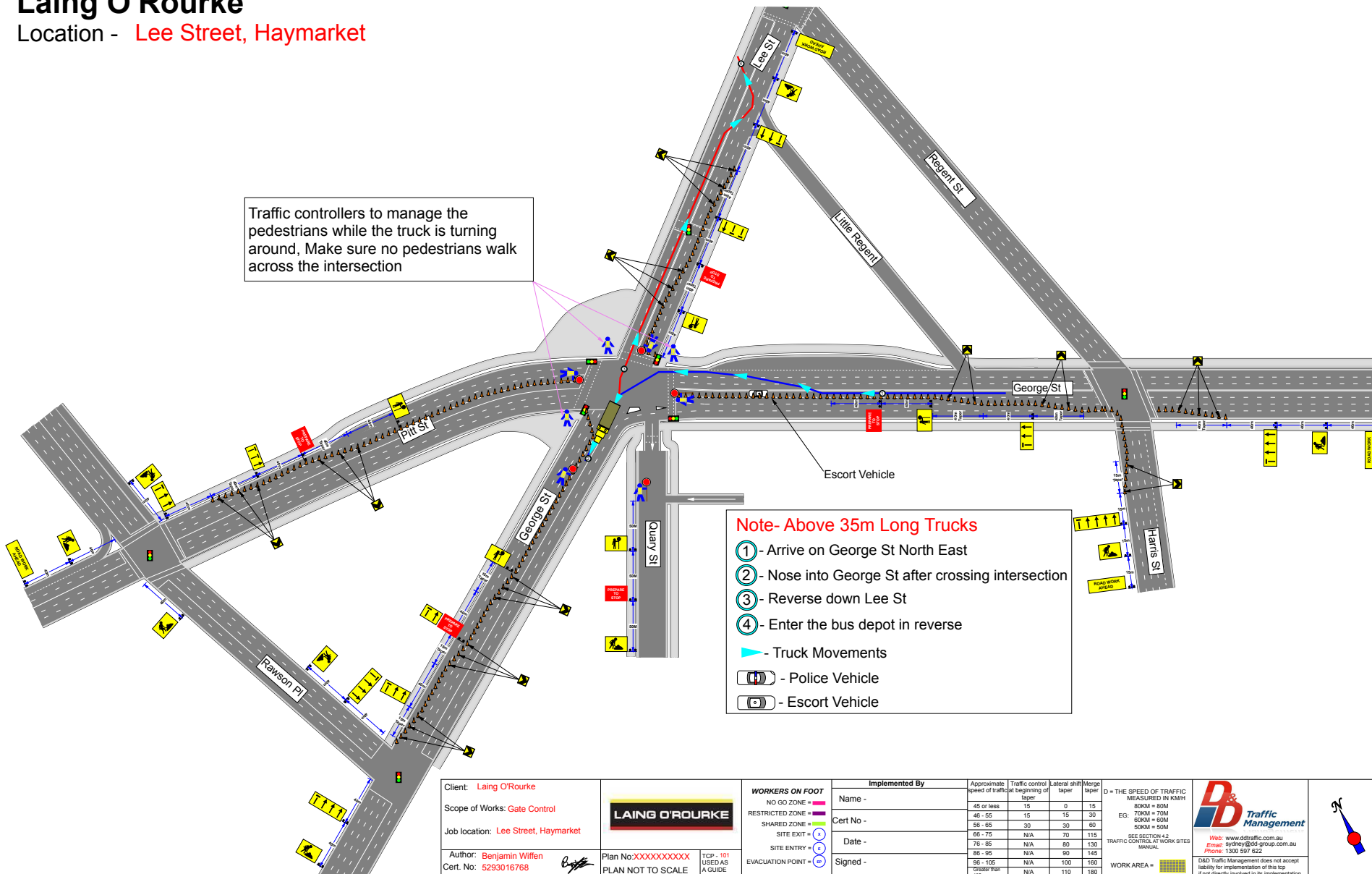
Item	WE17			WE18				WK19 - Mid Week				
	BG4 Section 1	BG4 Section 2	BG3	BG5	BG6	BG7	BG8	BG1	BG2	CH1	Span 1 Cross Girders	Span 2 Cross Girders
<b>Delivery Date</b>	Thurs 12/10	Fri 13/10	Thurs 19/10	Mon 23/10	Tue 24/10	Wed 25/10	Thu 26/10	Wed 1/11	Thurs 2/11	Wed 18/10	Thurs 2/11	Sun 15/10
<b>Time</b>	2-3am	2-3am	2-3am	2-3am	2-3am	2-3am	2-3am	2-3am	2-3am	7-8 am	7-8 am	7-8 am
<b>Length</b>	29m	28.2m	41m	24.7m	23.6m	27.4m	31.1m	33.2m	27.8m	5.8m	9m	8.3m
<b>Truck Length</b>	33m	32m	45m	28m	28m	31m	35m	38m	32m	18m	18m	18m
<b>Police Escort</b>	Yes	TBC	Yes	TBC	TBC	TBC	TBC	Yes	TBC	No	No	No
<b>Vehicle Escort</b>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
<b>Weight</b>	28.5t	28.8t	43.5t	14.6t	14.1t	15.6t	15.3t	35t	29.6t	11.6t	14.5t	14.4t
<b>Haul Route</b>	From Newcastle - Pennant Hills Rd - James Ruse Drive - M4 - Parramatta Rd - Broadway			From Newcastle - Pennant Hills Rd - James Ruse Drive - M4 - Parramatta Rd - Broadway				Pennant Hills Rd - James Ruse Drive - M4 - Parramatta Rd - Broadway		Pennant Hills Rd - James Ruse Drive - M4 - Parramatta Rd - Broadway		
<b>Access at Depot</b>	George - Pitt - reverse into Lee - wrong side Lee - into Depot	George - Pitt - reverse into Lee - wrong side Lee - into Depot	George - Pitt - reverse into Lee - wrong side Lee - into Depot	George - Lee - Depot				George - Pitt - reverse into Lee - wrong side Lee - into Depot	George - Pitt - reverse into Lee - wrong side Lee - into Depot	George - Lee - Depot	George - Lee - Depot	George - Lee - Depot
<b>Access through Depot</b>	Turn	Turn	Turn	Drive through	Drive through	Drive through	Drive through	Turn	Turn	Drive through	Drive through	Drive through
<b>Access into Yard</b>	Reverse in	Reverse In	Reverse In	Drive In	Drive In	Drive In	Drive In	Reverse In	Reverse In	Drive In	Drive In	Drive In
<b>Exit</b>	Depot - Lee - George - Broadway	Depot - Lee - George - Broadway	Depot - Lee - George - Broadway	Depot - Lee - George - Broadway	Depot - Lee - George - Broadway	Depot - Lee - George - Broadway	Depot - Lee - George - Broadway	Depot - Lee - George - Broadway	Depot - Lee - George - Broadway	Depot - Lee - George - Broadway	Depot - Lee - George - Broadway	Depot - Lee - George - Broadway
<b>Traffic Control - Street</b>	TCP XXA	N/A	TCP XXA	TCP XXB	TCP XXB	TCP XXB	TCP XXB	TCP XXA	TCP XXB	N/A		N/A
<b>Traffic Control - Bus Depot</b>	TCP 002	N/A	TCP 002	TCP 002	TCP 002	TCP 002	TCP 002	TCP 002	TCP 002	N/A		N/A
<b>Swept Paths Required</b>	George/Pitt Intersection STA Entrance STA Exit	N/A	George/Pitt Intersection STA Entrance STA Exit	STA Entrance STA Exit	STA Entrance STA Exit	STA Entrance STA Exit	STA Entrance STA Exit	George/Pitt Intersection STA Entrance STA Exit	STA Entrance STA Exit	N/A	N/A	N/A



# Laing O'Rourke

Location - Lee Street, Haymarket

Traffic controllers to manage the pedestrians while the truck is turning around. Make sure no pedestrians walk across the intersection



- Note- Above 35m Long Trucks**
- ① - Arrive on George St North East
  - ② - Nose into George St after crossing intersection
  - ③ - Reverse down Lee St
  - ④ - Enter the bus depot in reverse
- ▶ - Truck Movements
  - 🚓 - Police Vehicle
  - 🚒 - Escort Vehicle

Client: **Laing O'Rourke**  
 Scope of Works: **Gate Control**  
 Job location: **Lee Street, Haymarket**



Author: **Benjamin Wifien**  
 Cert. No: **5293016768**

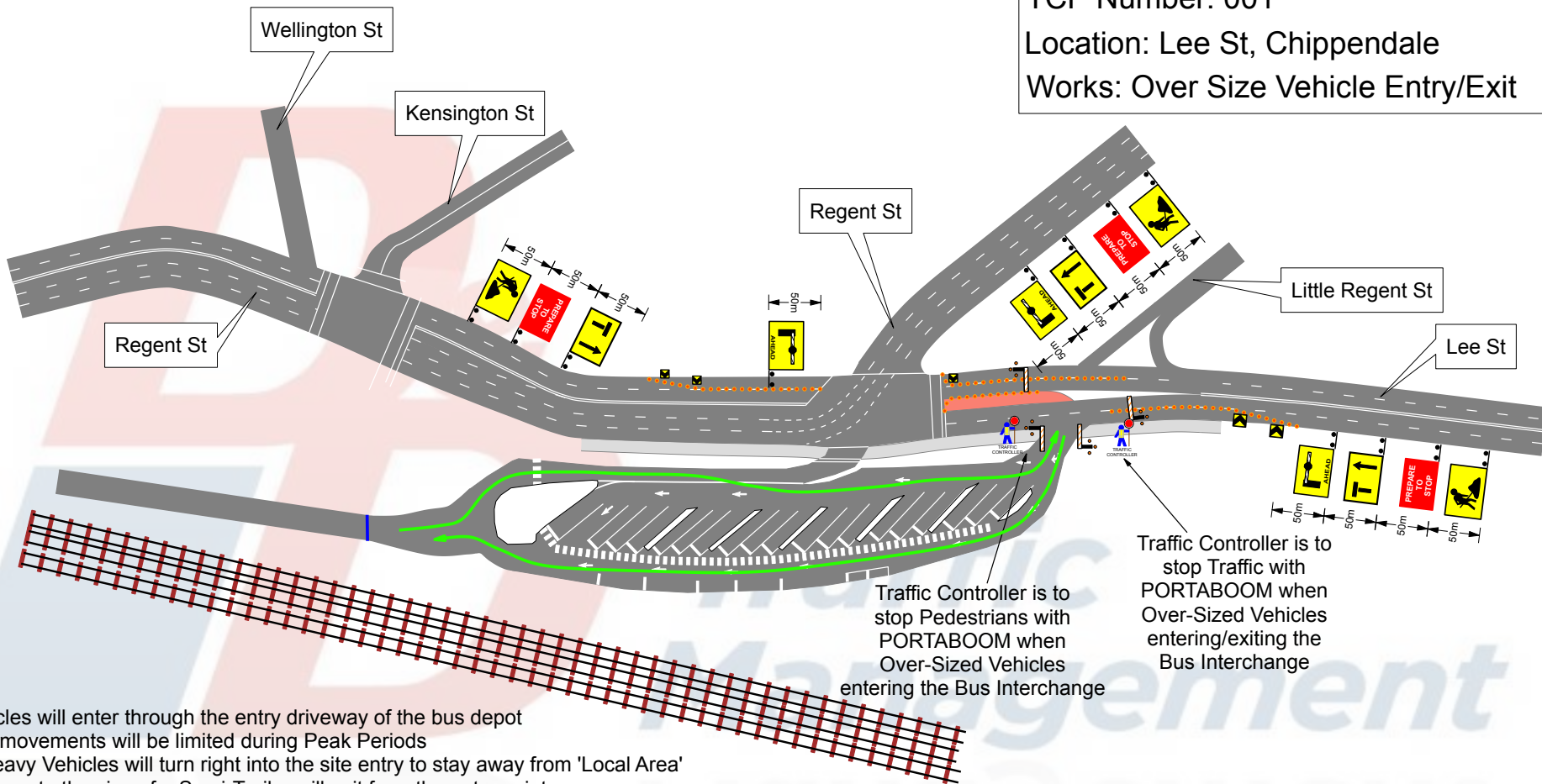
Plan No:XXXXXXXXX TCP - 101  
 USED AS A GUIDE  
 PLAN NOT TO SCALE

WORKERS ON FOOT	Implemented By	Approximate speed of traffic	Traffic control at beginning of taper	Lateral shift taper	Merge taper	D = THE SPEED OF TRAFFIC MEASURED IN KM/H
NO GO ZONE - [Red]	Name -	45 or less	15	0	15	80KM = 80M
RESTRICTED ZONE - [Blue]	Cert No -	46 - 55	15	15	30	70KM = 70M
SHARED ZONE - [Green]	Date -	56 - 65	30	30	60	60KM = 60M
SITE EXIT - [Yellow]	Signed -	66 - 75	N/A	70	115	50KM = 50M
SITE ENTRY - [Blue]		76 - 85	N/A	80	130	
EVACUATION POINT - [Red]		86 - 95	N/A	90	145	
		96 - 105	N/A	100	160	
		Greater than 105	N/A	110	180	

**D&B Traffic Management**  
 Web: [www.dbttraffic.com.au](http://www.dbttraffic.com.au)  
 Email: [sydney@dbtgroup.com.au](mailto:sydney@dbtgroup.com.au)  
 Phone: 1300 597 622



TCP Number: 001  
 Location: Lee St, Chippendale  
 Works: Over Size Vehicle Entry/Exit

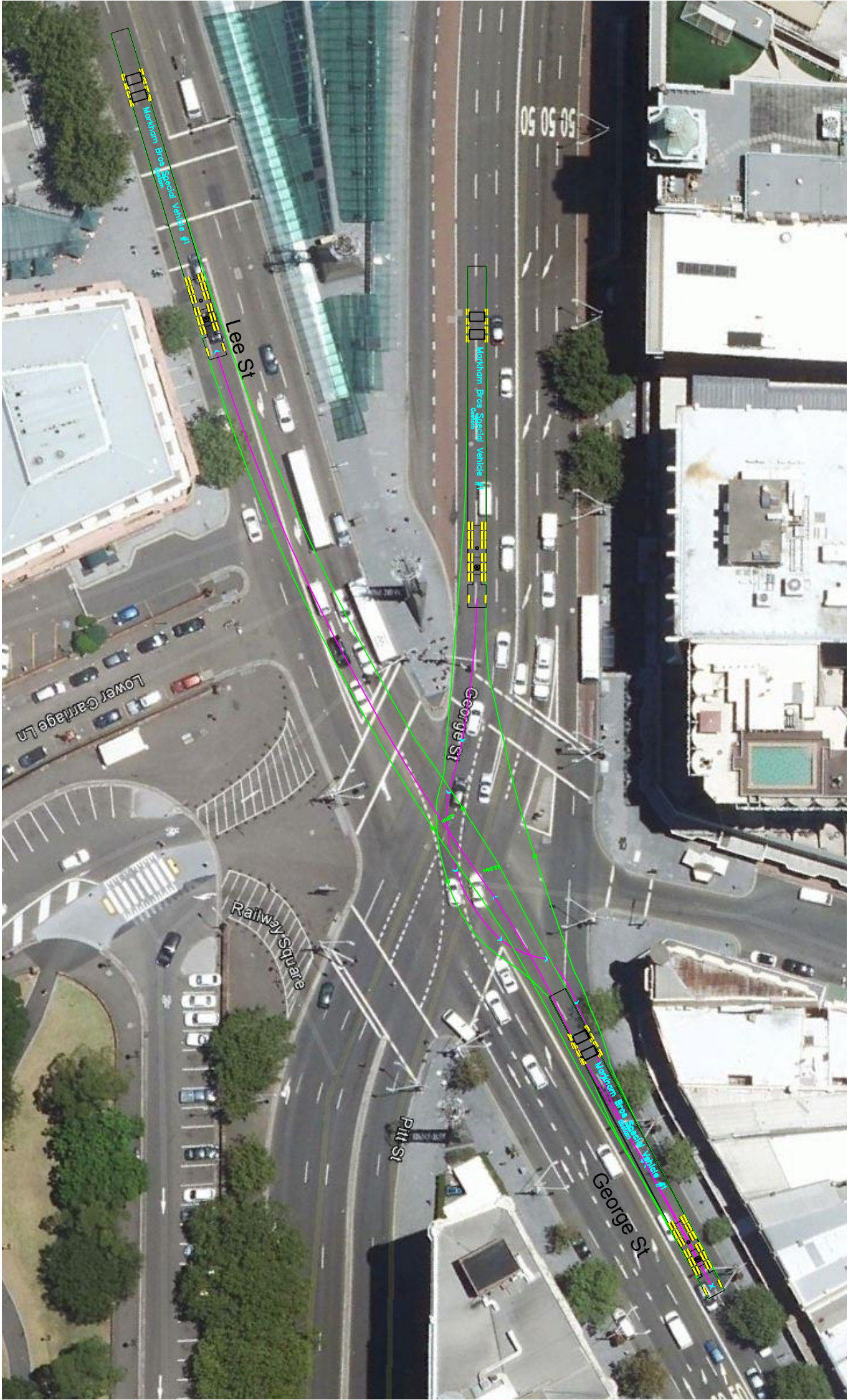


NOTE:

- \* All Vehicles will enter through the entry driveway of the bus depot
- \* Vehicle movements will be limited during Peak Periods
- \* Most Heavy Vehicles will turn right into the site entry to stay away from 'Local Area'
- \* Vehicles up to the size of a Semi-Trailer will exit from the entry point
- \* Oversize Vehicles & Extendable Trailers will need to exit from Entry Point (Green Arrow) ←

Client: Laing O'Rourke	Revisions	Description	Date	<b>WORKERS ON FOOT</b> NO GO ZONE = <span style="color: red;">█</span> RESTRICTED ZONE = <span style="color: magenta;">█</span> SHARED ZONE = <span style="color: green;">█</span> SITE EXIT = <span style="border: 1px solid blue; border-radius: 50%; padding: 2px;">X</span> SITE ENTRY = <span style="border: 1px solid blue; border-radius: 50%; padding: 2px;">E</span> EVACUATION POINT = <span style="border: 1px solid blue; border-radius: 50%; padding: 2px;">EP</span>	<b>Implemented By</b>				Approximate speed of traffic at beginning of taper 45 or less 46 - 55 56 - 65 66 - 75 76 - 85 86 - 95 96 - 105 Greater than 105	Traffic control at beginning of taper 15 15 30 N/A N/A N/A	Lateral shift taper 0 15 30 70 80 90 100 110	Merge taper 15 30 60 115 130 145 160 180	D = THE SPEED OF TRAFFIC MEASURED IN KM/H 80KM = 80M 70KM = 70M 60KM = 60M 50KM = 50M  SEE SECTION 4.2 TRAFFIC CONTROL AT WORK SITES MANUAL  WORK AREA = <span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background-color: #cccccc;"></span>	 Web: www.ddtraffic.com.au Email: sydney@dd-group.com.au Phone: 1300 597 622	
	0	Designed	27-03-17		Name - Cert No - Date - Signed -	D&D Traffic Management does not accept liability for implementation of this tcp if not directly involved in its implementation	PLAN NOT TO SCALE								







107 m

Image © 2017 Aerialstreetx

0.00

50.00

0.00

50.00

Devonshire St tunnel

Regent St

Kensington St

Outram St

Gold St

Little Regent St

Lee St

Google

19/9/17.

ACCESS TO BUS DEPOT

Department of Immigration  
 driveway.

- Key
- █ Extent of path
  - █ Rear Dolly
  - Footpath flush with road
  - █ Brick wall of Bus Depot
  - kerb
  - fence line

