CONSTRUCTION TRAFFIC MANAGEMENT PLAN

Sydney Metro West – Western Tunnelling Package

Parramatta Site Operations

December 2022 to May 2026

Document Reference #:	**SMWSTWTP-GLO-PTA-TF-PLN-000002**
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Document Details

Document Title	**Parramatta Site Operations**
Project Name	**Sydney Metro West – Western Tunnelling Package**
Client	**Sydney Metro**
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Revision History

Rev	Date	Comments
A	17 Oct 22	Initial submission
B	17 Nov 22	Revised from SM Comments. Refer to Appendix E Stakeholder Consultation to find the completed comments sheet detailing the updates. Additional documents added: Appendix G – Design Drawing Appendix H – Portable VMS Strategy Appendix I – Ped Boom gate Risk Assessment Appendix J – Swept Paths
C	20 Dec 22	Refer to Appendix E Stakeholder Consultation to find the completed comments sheet detailing all of the updates. Some updates from SM Comments include: - Section 3.4 & 3.4.3 Updated - Appendix D – Added Design Drawing RSA information - Appendix G – Design Drawings - Added Section 3.3.3 – Water Treatment Plant - Added Appendix K – Vehicle Management Plan
D	24 May 23	Some updates for this release include: - Removed some existing conditions in section 2 that are already covered in the overarching TMP - 3.2.3 Diaphragm Wall Cage Delivery - Section 4.3 Heavy vehicle swept paths updated - Appendix I Additional swept paths added for OSOM vehicles on nightshift movements - Removed information on works completed, including Macquarie Lane, George Street and Horwood Place - Removed Appendix for Portable VMS used for the traffic switch - Removed TGS relevant to works completed - Proposed work dates updated in table 3.1

Document Authorisation

Action Type	Position	Name	Signature	Date Signed
Prepared by	Traffic Manager			24 May 23
Reviewed by	Project Manager			24 May 23
I hereby confirm this activity and all associated work, have been appropriately planned and the relevant resources are available to conduct the work in accordance with the agreed method. I hereby approve this activity to commence, as the stated controls applications are the most appropriate and are in accordance with the Risk Matrix.				
Approved by	Deputy Project Director			24 May 23

NOTES: *Once all signatures have been obtained, the Document Author is responsible for ensuring the signed and approved hard and soft copies are uploaded on to the project share drive or passed to the Responsible Person for filing.*

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1 INTRODUCTION

Sydney Metro is Australia's biggest public transport project, with the vision "to transform Sydney with a world-class metro." In 2024, Sydney will have 31 metro stations and more than 66 kilometres of new metro rail, revolutionising the way Australia's biggest city travels. By the end of the decade, the network will be expanded to include 46 stations and more than 113 kilometres of world-class metro for Sydney.

Sydney Metro West is a new 24-kilometre metro line with stations confirmed at Westmead, Parramatta, Sydney Olympic Park, North Strathfield, Burwood North, Five Dock, The Bays, Pyrmont and Hunter Street in the Sydney CBD.

On completion in 2030, the Sydney Metro West project will support a growing city and deliver world-class metro services to more communities. This new underground railway will connect Greater Parramatta and the Sydney CBD.

This once-in-a-century infrastructure investment will transform Sydney for generations to come, doubling rail capacity between the two CBDs, linking new communities to rail services, and supporting employment growth and housing supply. The Sydney Metro West project is expected to create about 10,000 direct and 70,000 indirect jobs during construction.

The new 24-kilometre Sydney Metro West tunnel and excavation works for nine new stations will be delivered in three contracts—the Western Tunnelling Package (WTP), the Central Tunnelling Package (CTP) and the Eastern Tunnelling Package (ETP).

The Gamuda Australia and Laing O'Rourke Consortium (GLC) will deliver the Sydney Metro West (SMW) Western Tunnelling Package (WTP), which includes:

- Westmead Station box excavation, including temporary support, stub tunnels, partially mined station cavern and crossover cavern including permanent lining and support
- Parramatta Station, including excavation of station box and associated support
- Clyde Maintenance and Stabling Facility (MSF), including permanent dive structure, portal, spur running tunnels, spur tunnel junction cavern, bulk earthworks, civil structures, utilities corridor, road crossing and creek diversion
- Rosehill Services Facility, including shaft excavation, permanent lining and lateral support
- A precast segment manufacturing facility at Eastern Creek
- Demolition and site clearance works
- Tunnelling between Sydney Olympic Park (SOP) and Westmead. Tunnelling will be undertaken by placing the tunnel boring machines (TBMs) at the Rosehill Services Facility box and retrieved out at the SOP Station Box and then placed back at the Rosehill Services Facility and retrieved at the Westmead Station Box. No surface works are proposed at SOP except for the retrieval of the TBM.

1.1 Purpose

This Parramatta site specific Construction Traffic Management Plan (CTMP or this plan) has been developed by Gamuda Australia Laing O'Rourke (GLC) to identify the traffic management measures at the Parramatta worksite for site operations associated with the Sydney Metro West Western Tunnelling Package (WTP Works).

This plan sets out the traffic management initiatives that will be deployed to minimise disruption and ensure the safety of the wide range of stakeholders potentially affected by the WTP works including but not limited to motorists, pedestrians, cyclists, public transport users, local residents, property owners, business owners and workers/ staff.

1.2 Parramatta Construction Traffic Management Plans

Plan #	Plan name	Description	Status
SMWSTWTP-GLO-1NL-NL000-TF-PLN-00001	Project Wide CTMP	Overarching Traffic Management Plan	Approved
SMWSTWTP-GLO-PTA-TF-PLN-00001	Parramatta Site Establishment	For works to establish the Parramatta site	Approved
SMWSTWTP-GLO-PTA-TF-PLN-00002	Parramatta Site Operations	Site Operating Conditions at Parramatta December 2022 to March 2026	**THIS PLAN**
Plans have been prepared in accordance with SSI 10038 Planning Approval Condition D85 and will be submitted to the Planning Secretary of the NSW Department of Planning and Environment for information prior to the commencement of any construction in the area identified and managed within this CTMP			

Table 1 - Parramatta CTMP status

1.3 Objectives

GLC are committed to striving to achieve the objectives as outlined in the CTMF and the environmental performance outcomes, namely:

1. Minimising disruption and maintaining safety for all road users including pedestrians, cyclists, motorists and public transport users and providers
2. Ensuring construction traffic access, the arterial network as soon as practicable on route to and immediately after leaving the construction site
3. Minimising change to traffic operations and kerbside access
4. Minimising construction traffic generation during network peak periods, as outlined in the EIS
5. Maintaining access to properties, businesses, and utility providers/ maintainers
6. Remain incident and injury free to workers and members of the public
7. Working collaboratively with other stakeholders and other major projects to mitigate traffic and transport impacts

2 LOCALITY AND EXISTING CONDITIONS

The site is located in the Parramatta Central Business District (CBD) and is bounded by Macquarie Street to the south, premises on Church Street to the west, George Street to the north and Macquarie Lane to the east as shown on Figure 2-1

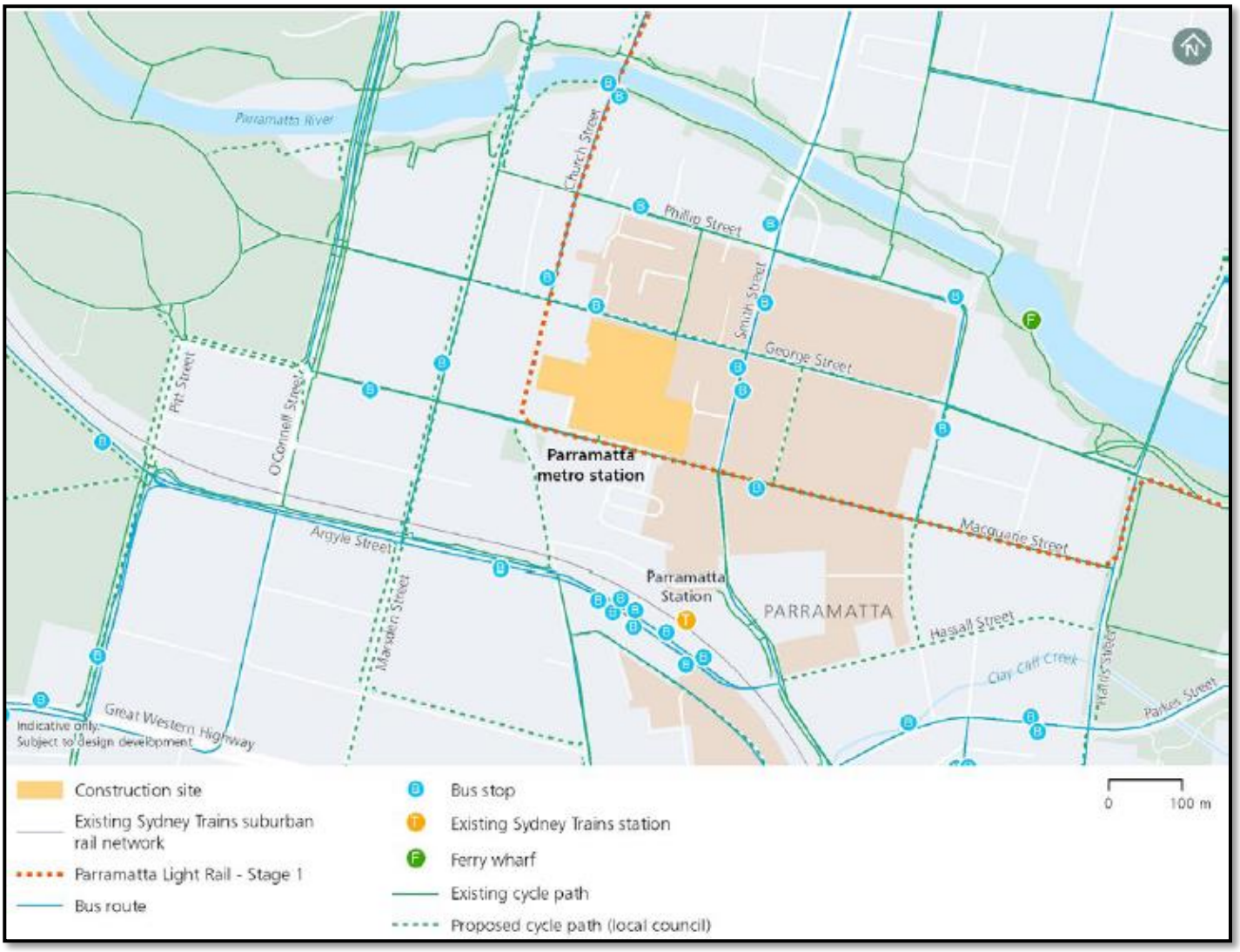


Figure 2-1: Site locality

2.1 George Street

George Street is a local road under the care and control of the City of Parramatta Council. It starts at O'Connell Street in the west and ceases at Arthur Street to the east. George Street runs in an east west direction. The speed limit is 40km/hr between O'Connell Street and Harris Street and is 50km/hr outside of these locations, refer to Figure 2-2.

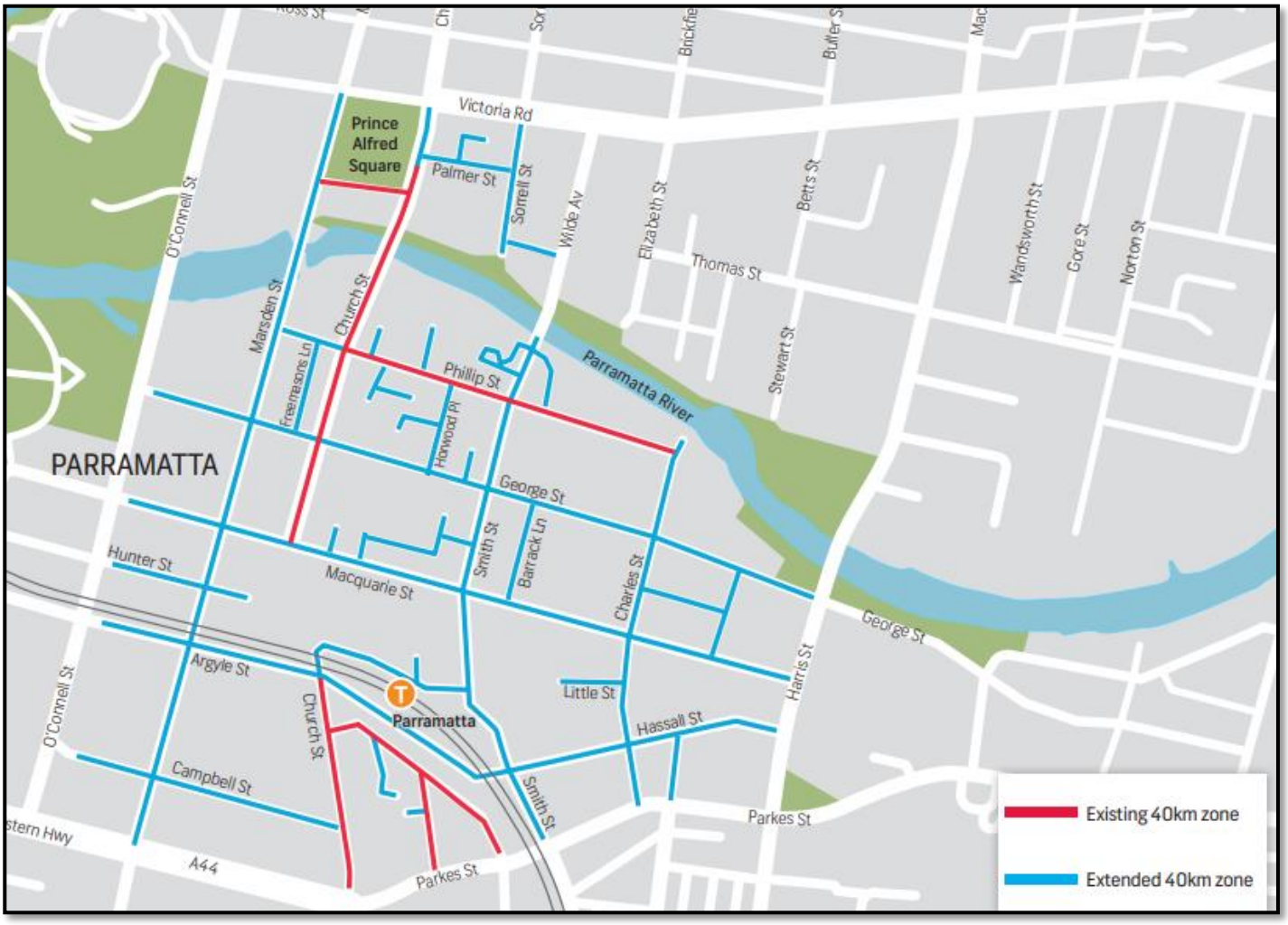


Figure 2-2: Parramatta CBD 40km speed zones (source: City of Parramatta)

The street serves as the main 'high' street of Parramatta. The Justice precinct is located to the west of the site, with Eat Street (the main café/ restaurant area) along Church Street.

Traffic signals exist at a number of intersections along George Street including:

- O'Connell Street
- Marsden Street
- Church Street
- Smith Street
- Charles Street and
- Harris Street

Footpaths are generally provided along all streets within the Parramatta CBD. George Street is also noted as a moderate to difficult cycle route between Charles Street and Arthur Street.

Bus stops are located on both sides of George Street between Church Street and Smith Street as shown on Figure 2-3. No other routes are serviced by these bus stops.

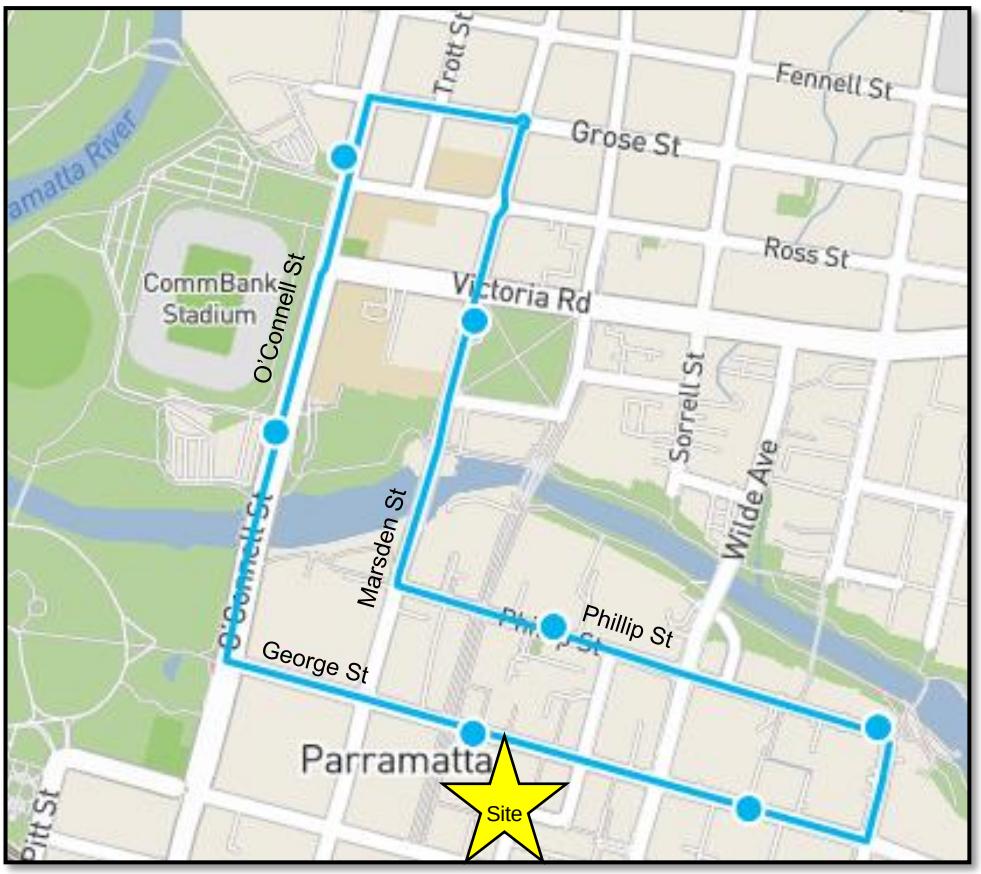


Figure 2-3: Route 900 bus stops on George Street

Parking is typically time restricted with the Parramatta CBD, as noted on Figure 2-4.

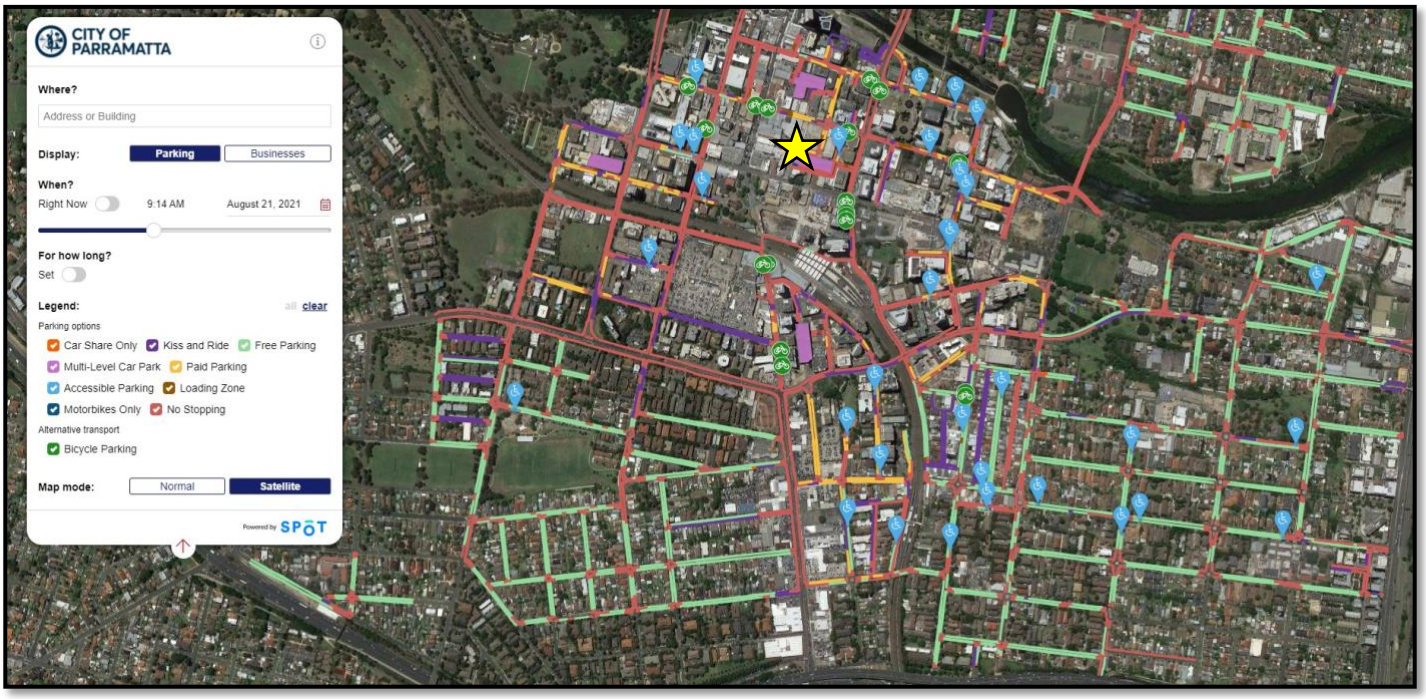


Figure 2-4: Parking restrictions in the Parramatta CBD

2.2 Church Street

Church Street sections between Parramatta Square to Darcey Street (Parramatta rail lines) and between the rail line through to the Great Western Highway are a local road under the care and control of the City of Parramatta Council. Between Factory Street and Macquarie Street Church St is a declared transitway, refer to **Error! Reference source not found.**. Outside of these locations, Church Street is a state road, refer to **Error! Reference source not found.**. It starts at North Rocks Road and ceases at the Parramatta rail lines. It then restarts south of the rail line and continues onto the Great Western Highway. Church Street runs in a north south direction. The speed limit is 40km/hr within the local road section.

Traffic signals exist at a number of intersections along Church Street including:

- North Rocks Road
- Barney Street
- Dunlop Street
- Factory Street
- Pennant Hills Road
- Grose Street
- Victoria Road
- Phillip Street
- George Street
- Macquarie Street
- Campbell Street
- Parkes Street
- Raymond Street
- M4 Motorway and

- Great Western Highway

There is no public transport operating along Church Street, however, it is the route of the Parramatta Light Rail which is due to open in 2023 however trams will be conducting testing and commissioning prior to opening to the public. The route of the light rail through the Parramatta CBD is shown on Figure 2-5, below.

Figure 2-5: Parramatta Light Rail route

No parking is provided along Church Street between George Street and Macquarie Street. Further north and south of this area, the parking is generally restricted. Footpaths are provided on both sides of the street.

2.3 Macquarie Street

Macquarie Street is a local road between Pitt Street and Church Street under the care and control of the City of Parramatta council. Macquarie Street is a declared transitway between Church Street and Harris Street**Error! Reference source not found.**. It starts at Pitt Street and ceases at Harris Street. Macquarie Street runs in an east west direction. The existing speed limit is 40km/hr between O'Connell Street and Harris Street and 50km/hr between O'Connell Street and Pitt Street. No public transport operates along Macquarie Street. However, the opening of the light rail will see services operating along Macquarie Street between Church Street and Harris Street, refer to Figure 2-5 above.

Parking is time restricted west of Church Street but Macquarie Street is generally closed to traffic, east of Horwood Place to Smith St. Macquarie Street has footpaths on both sides of the street.

2.4 Smith Street

Smith Street is a local road under the care and control of the City of Parramatta Council. It starts at Wilde Avenue and ceases Station Street. Smith Street generally runs in a north south direction. The speed limit is 40km/hr. Parking is generally restricted due to the presence of bus lanes along Smith Street in both directions.

A number of bus routes operate along Smith Street as noted in Table 2-1.

Table 2-1: Smith Street bus routes

Bus route	Between		Service start and finish
500N	Parramatta	Sydney CBD	0130-0523
501	Parramatta	Central Station	0515-0915
521	Parramatta	Eastwood	0605-1841
523	Parramatta	West Ryde	0550-1919
524	Parramatta	Ryde	0520-1934
525	Parramatta	Strathfield	0540-2325
546	Parramatta	Epping	0629-2155
549	Parramatta	Epping	0500-2215
550	Parramatta	Macquarie Park	0415-0350
552	Parramatta	Oatlands	0956-1432
600	Parramatta	Hornsby	0530-0342

Bus route	Between		Service start and finish
601	Parramatta	Rouse Hill	0505-0025
603	Parramatta	Rouse Hill	0712-1925
604	Parramatta	Dural	0525-2358
606	Parramatta	Winston Hills	0550-2349
609	Parramatta	North Parramatta (Loop)	0600-1923
625	Parramatta	Pennant Hills	0545-1920
706	Parramatta	Blacktown	0537-2135

2.5 Horwood Place

Horwood Place was previously a local road under the care and control of the City of Parramatta Council; however, Sydney Metro purchased some of the road. Horwood Place starts at Macquarie Street and ends at Phillip Street. The section owned by Sydney Metro is between Macquarie Street and George Street. The speed limit within the Sydney Metro site is 10km/hr, the public road section is 40km/hr as noted on Figure 2-2. Public parking has been removed between Macquarie St and George St. Public vehicle access is provided from Macquarie Street through to Macquarie Lane and George Street to Phillip Street. The existing footpaths between Macquarie Street and George Street on Horwood Place are not open to the general public with pedestrians using the Church Street, Macquarie Street, Smith Street and George Street footpaths.

2.6 Macquarie Lane and car park

Macquarie Lane was previously a local road under the care and control of the City of Parramatta Council; however, Sydney Metro purchased the area. Macquarie Lane starts from Horwood Place and ends at Smith Street. There is a small car park off Macquarie Lane which is also owned by Sydney Metro.

3 SITE OPERATIONS

Time: December 2022 to March 2026

Duration: 34 months

The site operations work will consist of the following:

Table 3-1: Works overview and proposed dates of works

Works	Proposed Dates
Construction of Macquarie Lane	Completed 1 April 2023
Opening of the new George St pedestrian access to the businesses that have access to the small section of Horwood Place. This includes the closure of the Horwood Pl footpath that currently provides access to the businesses and the installation of construction vehicle gates into the northern section of the site	Opened 1 April 2023
Switch traffic from Horwood Place onto the new road connecting Macquarie Street to Smith Street	Completed 1 April 2023
Driveway works on George St and relocation of road light pole	Opened 1 April 2023 – Final completion 19 June 2023
Construction of the water treatment plant	May 2023 to Sept 2023
Construction of diaphragm wall to form the Parramatta station box excavation including the installation of a bentonite farm with approximately 12,000m^3 of spoil to be removed	Jun 2023 to Apr 2024
Excavation of the station box from existing ground level with approximately 140,000m^3 to be removed from the site. The excavation will require mobilisation and demobilisation of oversized plant and equipment. Approximately 128,000m^3 to be removed from the site	Nov 2023 to Mar 2026
Installation of excavation support including of steel walers and struts to support the diaphragm wall as the excavation progresses with approximately 2000 tonnes of steel to be delivered to the site	Nov 2023 to Nov 2025
Excavation, primary and secondary lining of two tunnel nozzles at the eastern side of the station box requiring mobilisation and demobilisation of oversized plant and equipment for the excavation and lining works, resulting in the removal of approximately 2500m3 of material	Mar 2024 to Jul 2024
Continuation of the archaeological clearance of the site. This will clear the station box and western side of the Parramatta site with approximate volume of material to be removed being 3000m^3	Jan 2023 to May 2023
Construction of the tunnel cross passages (5#) from Parramatta to Westmead	Mar 2025 to Sept 2025

Works	Proposed Dates
Construction of the temporary Civic Link from George Street to Macquarie Street, which includes a 4m wide public access walkway between George Street and Macquarie Street	Nov 2023 to May 2024
Demobilisation of the Parramatta site including removal of facilities and all equipment and plant with the import of material to level and tidy up the site for handover.	May 2026

3.1 Working hours

The standard construction hours for the project are as noted in the Ministerial Conditions of Approval (MCoA D35) are:

a) 7AM to 6PM Monday to Friday
b) 8AM to 6PM Saturdays and
c) at no time on Sundays or public holidays

3.2 Construction Works

3.2.1 George St at New Public Entry/Exit Driveway Works

A new driveway has been built on George Street towards the western boundary of the Parramatta construction site. This new driveway has a 15m concrete layback, refer to Figure 3-1. The new driveway provides egress for the trucks leaving the tunnelling site and will also provide access/ egress to the businesses fronting both George Street and Church Street which have access to the closed section of Horwood Place. A street light pole remains in the middle of the site exit driveway as it requires a power outage to relocate to the east of the driveway. These works have been scheduled for the 19 June 2023 which will relocate the pole and finalise the driveway construction.

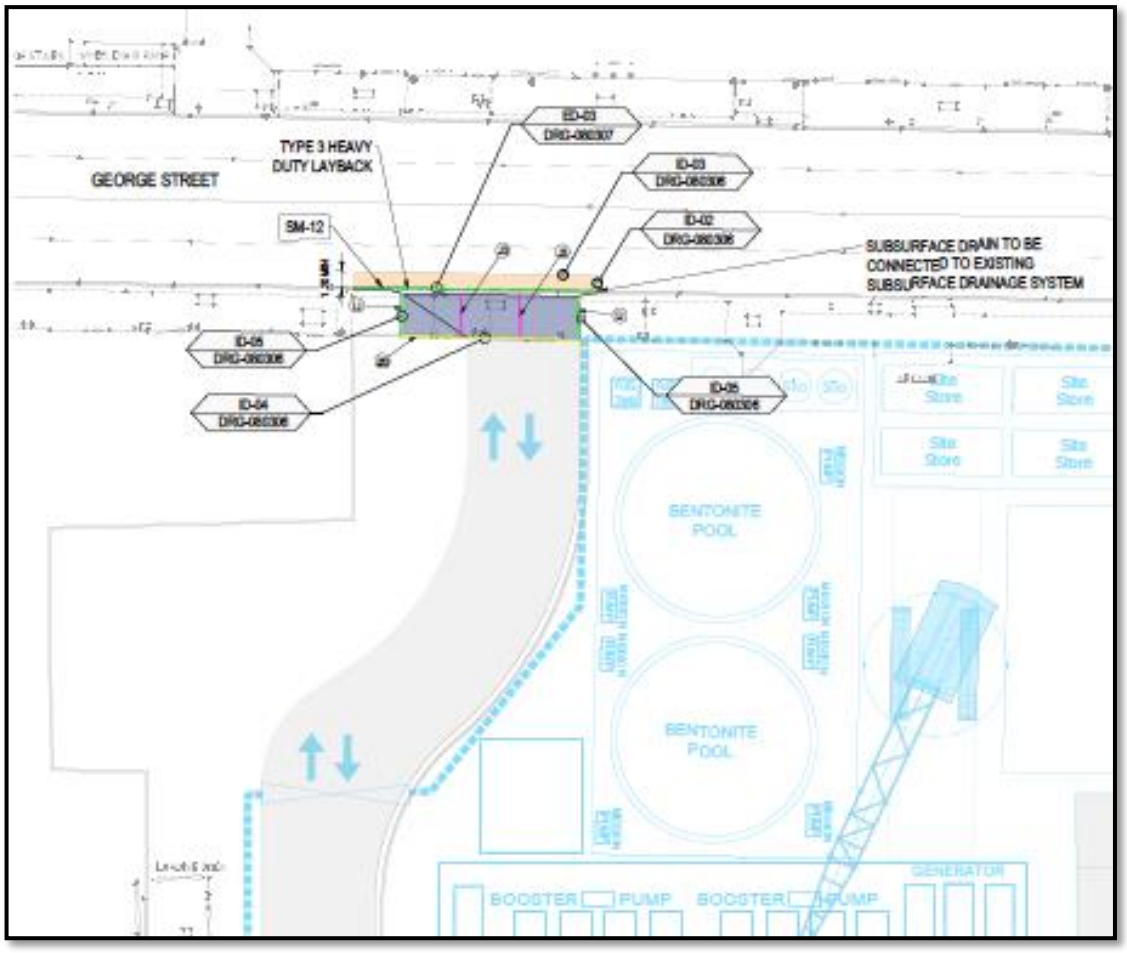


Figure 3-1:Driveway works on George Street

3.2.2 Construction of water treatment plant

A water treatment plant is being constructed to the south of Macquarie Lane. A slip lane in Macquarie Lane in front of the water treatment plant allows for vehicles to not impact through traffic whilst delivering to the site. The construction is expected to be completed by September 2023 with one (1) heavy vehicle a day expected to be onsite to deliver equipment to be installed. Once operational one (1) vehicle is expected to access the water treatment plant a week to deliver chemicals and supplies.

3.2.3 Diaphragm Wall Cage Deliveries

The diaphragm wall will be built in panels with 4 steel cages required per panel. Each 22m Oversize vehicle will carry a single cage to site from St Marys under its permitted conditions. Deliveries will occur Sunday to Thursday during the hours of 10pm to 2am totalling 15 cage deliveries per week. The first deliveries will start on the 8th of June 2023 and run through until mid-January 2024, Trucks, once arrived onsite, will remain fully within our site and will be unloaded during the day. So, the first delivery for the week will need to leave Parramatta site by 10pm Sunday night to make it back before 2am Monday morning. Refer to Appendix I for the swept paths.

3.3 Operating Conditions

All construction related heavy vehicles will turn left from George Street into gate 1 onto Horwood Place and all will egress via the new driveway at gate 2. Traffic control including boom gate operation will be implemented on the new driveway to provide a separation between heavy vehicle movements associated with the site operations and public vehicles, pedestrians and any cyclists using the footpath during site operating hours, refer to Figure 3-2. Gate 3 will remain down and only operate when construction vehicles need to exit and there are no conflicting public vehicle movements.

One vehicle a week will deliver chemicals to the water treatment plant off Macquarie Lane at gate 7 using the dedicated slip lane. The carpark on Macquarie Lane will accommodate 10 light vehicles with movements limited as the spots will be allocated to a restricted group of users. Gate 4 is for Emergency Service access to the site office. Gate 5 and 6 will be used for moving waste from the water treatment plant to site. Refer to Appendix J Vehicle Management Plan

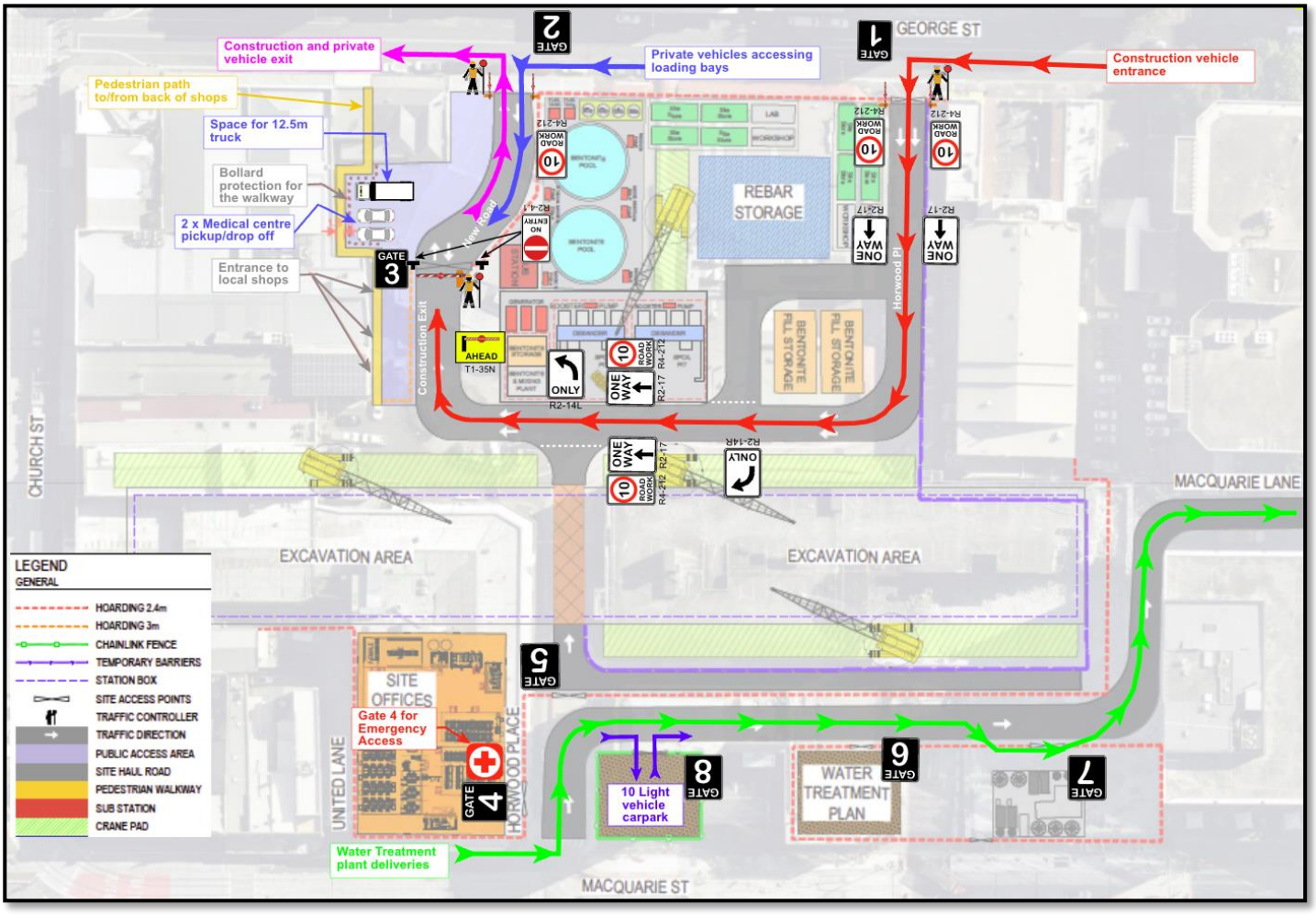


Figure 3-2: Vehicle access/ egress Parramatta site

3.3.1 Impact on traffic flow

The EIS for the Sydney Metro West Stage 1 project, noted for light vehicles that the site operations phase of the works would have distinct peak travel periods, typically prior to post the standard construction hours and that light vehicle numbers would be fairly constant over the workday, refer to Figure 3-3

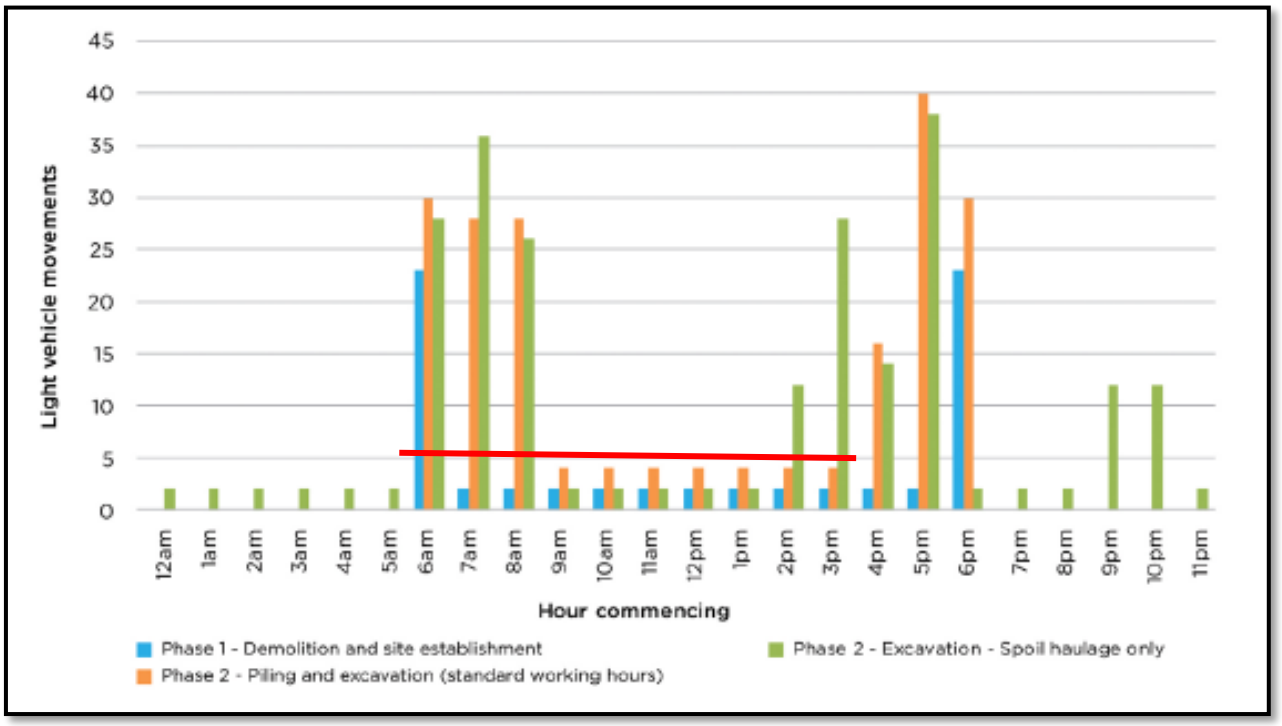


Figure 3-3: EIS light vehicle movements

For heavy vehicle movements, the EIS predicted movements were reduced during the AM and PM peak periods and evenly spread over the course of the rest of the work day, refer to Figure *3-4*. It should be noted that the EIS nominated Parramatta as a 24hour site – the Parramatta site will typically operate between the standard working hours as noted in section 3.1.

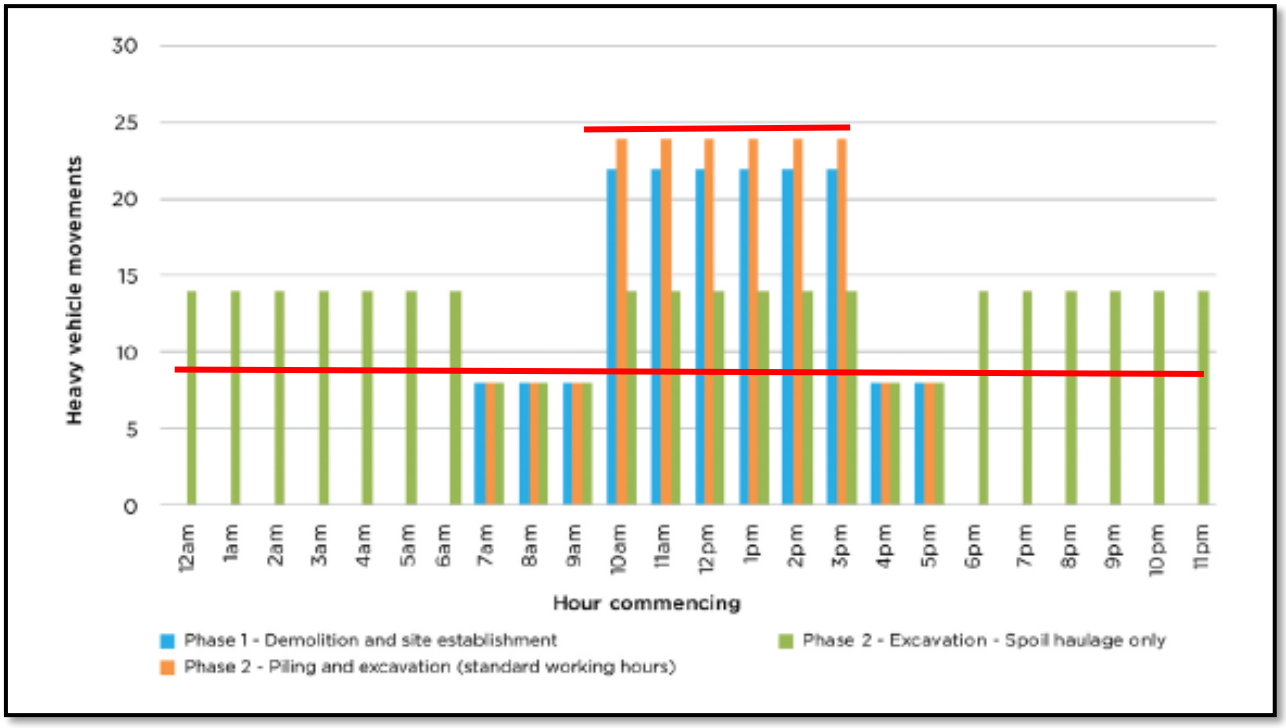


Figure 3-4: EIS hourly heavy vehicle movements (source: EIS Chapter 10 page 10-13)

A comparison of traffic volumes during the site operations is provided in Table *3-2* for heavy vehicle movements although light vehicle traffic data is best shown in Figure 3-3: EIS light vehicle movements due to the number fluctuations during the AM and PM peak periods, GLC will not exceed the number of light vehicle movements detailed in the EIS.

Table 3-2: Comparison of EIS and GLC Site Operations heavy vehicle movements (numbers) per hour

Time	EIS Heavy	GLC Heavy	EIS Heavy	GLC Heavy
	Phase 2 (orange)		Phase 2 (green)	
7AM to 10AM	8(4)	8(4)	8 (4)	8 (4)
10AM to 4PM	24(12)	24(12)	14 (7)	14 (7)
4PM to 6PM	8(4)	8(4)	8 (4)	8 (4)
6PM to 6AM	0	0	14(7)	14(7)

3.3.2 Impact on public transport

There are no proposed changes to public transport operations during the site operations phase of works. Parramatta Light Rail will commence operations during this time, however, with the rerouting of heavy vehicles from Macquarie Street onto George Street, there will be little interaction between the light rail and heavy vehicles associated with the site operations.

3.3.3 Impact on active transport

Pedestrian access to the back of the businesses fronting George Street and Church Street is from George Street, refer to Figure 3-5. The walkway is 1.8m wide and concreted with protection from vehicles where required with bollards set into the concrete.

All other footpaths will remain open unless an ROL and Council permit is submitted and approved for short term works.

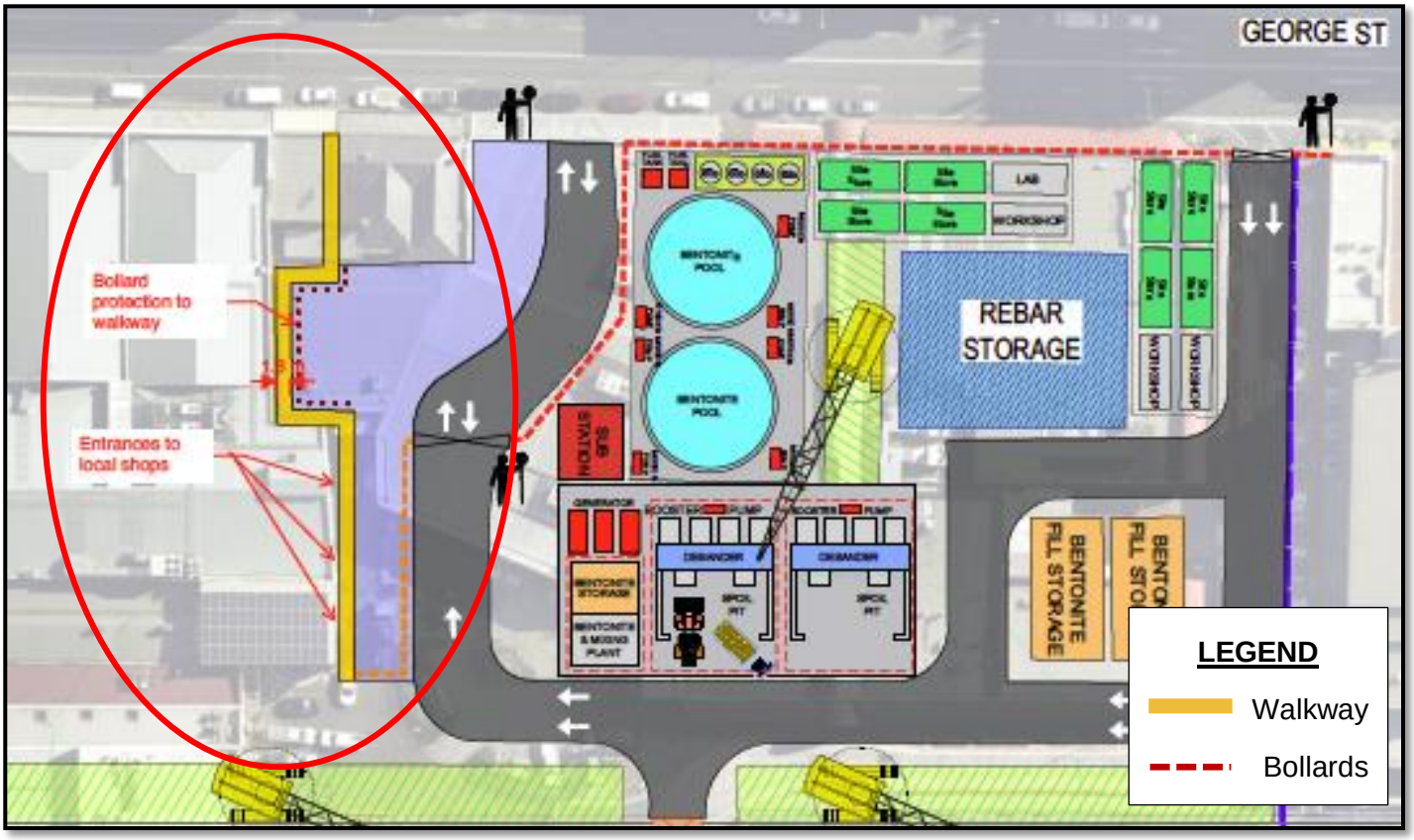


Figure 3-5: Proposed pedestrian access

TfNSW have also implemented a Be truck aware campaign which aims to show road users, the challenges that truck drivers face every day. Truck aware decals as shown on Figure 3-6 were installed at the locations shown on Figure 3-7 during the site establishment phase of works. Decals will be inspected every 6 months and replaced where required.

Figure 3-6: Truck Aware decal

Figure 3-7: Truck Aware decal locations

3.3.4 Impact on properties and utilities

There will be no impact to existing properties during the site operations works other than that noted in this CTMP.

GLC will ensure that access to all utilities and properties will be maintained during works, unless otherwise agreed with the relevant utility owner, landowner or occupier. Where access is affected, GLC will reinstate the access to an equivalent standard within one month of the completion of works, or as agreed by the landowner or occupier. Access to the rear of Church Street properties will be retained for pedestrians.

GLC will provide public access at all times to the rear of the properties and businesses on Church Street and George Street. Pedestrian access, for customers and staff, to the Pharmacy, DK Design and Habitation will be through the walkway link from George St to the rear of the buildings. GLC will provide two pick up/ drop off car spots at the rear of the Church St properties. Access to these properties will be via a walkway from the car parking spots to the Pharmacy, Design businesses entrance. This walkway will be fenced in part and decal marked on the pavement in others due to the walkway being in front of the roller shutters to adjacent businesses. Management of the car parking spots will be by the GLC traffic control. The rear of the properties has one fire escape door from the IGA building. An agreed muster point will be arranged with the building management. The muster point will be on the new access road behind Church Street. This will require all vehicle movements to be stopped from the construction site until the evacuation is complete and the access road has been cleared. As this site will continue to change property owners and tenants will be kept up to date with all changes to access, both vehicle and pedestrian. All community engagement and communications will be in line with Sydney Metro's OCCS. During site operations, GLC will proactively plan to minimise impacts to nearby properties and businesses.

3.3.5 Impact on parking

The parking within Horwood Place was previously removed by the demolition contractor. Parking has been removed on George Street for the George Street driveway. Refer to Figure 3-8 for a summary of the parking changes.

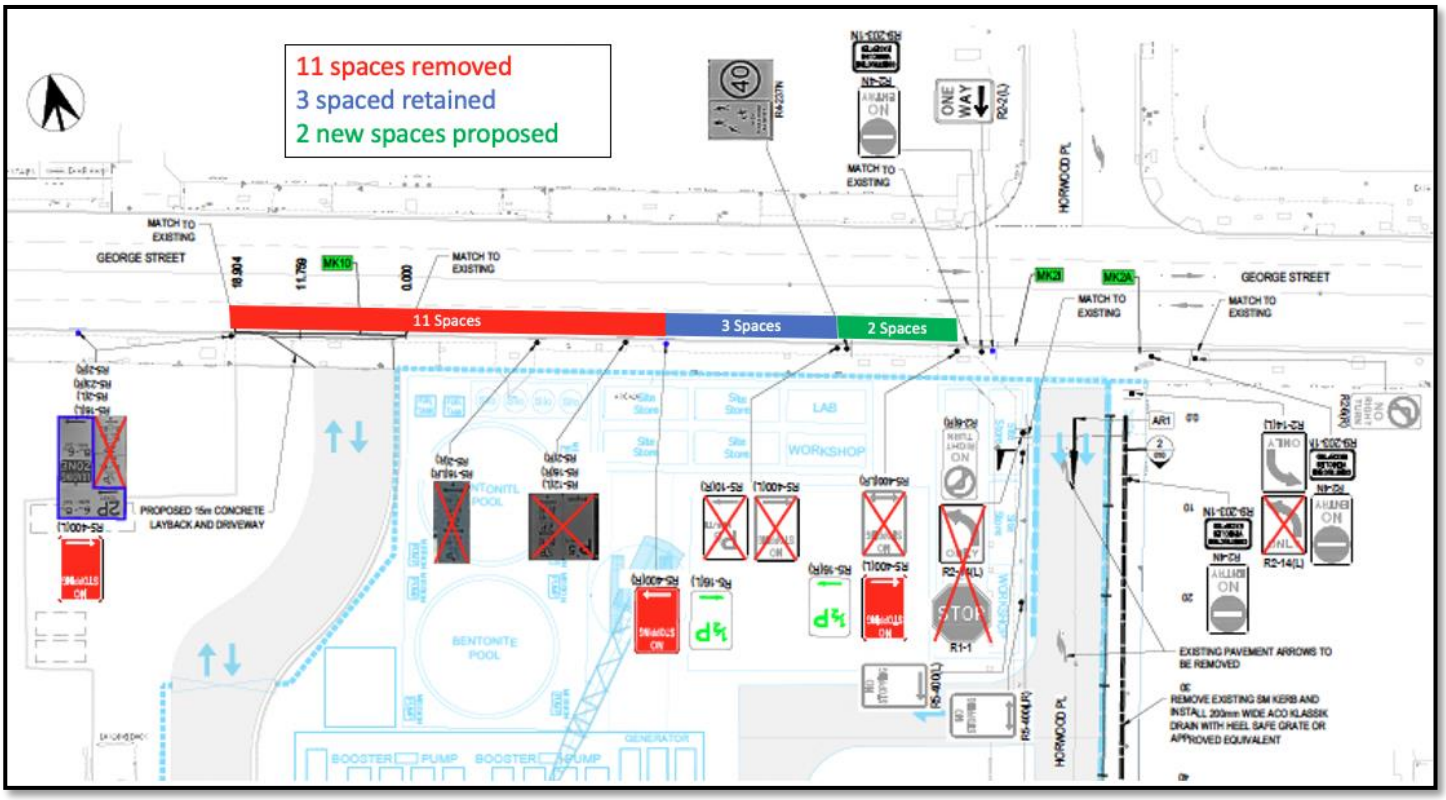


Figure 3-8: Parking impacts associated with the Parramatta Site operations

3.3.6 Cumulative impacts

There are a number of adjacent construction sites within close vicinity of the GLC works. Parramatta Light Rail is accessing and egressing via the Smith Street and Macquarie Street intersection. Holdmark uses Macquarie Street to enter the site with egress via Horwood Place on the new Macquarie Lane to Smith St. Holdmark are doing development works on Macquarie Street, opposite Horwood Place. Regular contact will be maintained throughout the life of the project, through attendance at the Traffic Control Group (TCG) and Traffic and Transport Liaison Group (TTLG).

3.4 Special events

Some of the annual special events held near the Parramatta site are:

- Parramatta Lanes Festival
- Christmas including Carols from Parramatta
- New Year's Eve celebrations – various locations
- Australia Day – various locations around the CBD
- Parramatta Farmers Market held in Centenary Square
- NAIDOC week – July
- Various events at CommBank Stadium

All events throughout the CBD will have minimal to no impact on the operations of our site as GLC works will be fully contained with the Parramatta site, with the exception of Haulage routes. Events like the Parramatta Lanes Festival has already been successfully run in conjunction with GLC site establishment with integration of TGS and communications of the event through the ROL and Council permit process. This will continue throughout the Site Operations works to assist any events impacting site operations.

GLC will continue to interrogate the event websites that provide details on up and coming events as not all events are annual or reoccurring. The event schedules are:

NSW and Sydney Events - Destination NSW

NSW Events & Festivals | Official NSW Tourism Website (visitnsw.com)

City of Parramatta Events

What's On – CommBank Stadium (formerly Bankwest Stadium)

What's on in Sydney Australia - Events (experiencesydneyaustralia.com)

During major special events, defined in *Guide to Traffic and Transport Management for Special Events,* published by NSW Government (version 3.5 July 1, 2018) as a Class One event that has major impacts on the transport and traffic network, GLC will review options to limit our impact by:

- Minimising the level of construction activity and, if necessary, ceasing all construction activity
- Maintaining appropriate access to all areas within the event precinct
- Erection of hoardings, site fencing and gates at key locations with the construction site boundary, to permit pedestrian movements adjacent to the construction site and separate pedestrians from construction vehicles
- Scheduling deliveries to the construction site outside of special event periods

It is noted that Sydney Metro West representatives also attend the monthly Parramatta Events Group (PEG) meetings.

3.5 Staff transport and parking

There will be ten (10) staff parking spots during the site operations phase of the works for allocated light vehicles only. Access and egress will be off the new Macquarie Lane and will have a restricted number of users. Parking for all other vehicles will be available at the GLC's offices. Staff will be encouraged to use public transport to and from the site.

3.6 Traffic Guidance Schemes (TGS) identified works

Works that have been identified as requiring TGS are:

- Pedestrian and vehicle management on George Street to manage the interaction between pedestrians, public vehicles and GLC's heavy vehicles
- Driveway works on George Street
- Stop slow on the shared access road off George Street during site operating times

The TGS are contained within Appendix B.

The Road Occupancy Licenses (ROL) and Council permit applications will be lodged post the external review of the Construction Traffic Management Plan.

3.6.1 Road occupation and restoration

For any works that involve an occupation of the road/ footpath, a Road Occupancy License (ROL) will be sought from the Transport Management Centre (TMC) will be applied for prior to the submission of a ROL from the City of Parramatta Council. ROL through the TMC will be applied for a minimum of 10 business days from the proposed start date. Electronic lodgement of the ROL will be undertaken using TfNSW's OpLinc system.

Council permits will be lodged electronically in accordance with the City of Parramatta Council requirements. For any works where parking is temporary impact, GLC will ensure that the parking removal is staged to minimise the time of parking space occupation.

For any road opening required, the relevant Road Opening Permit (ROP) will be applied for through the existing City of Parramatta Council website. The ROP will also be accompanied by a ROL. Details on the permits required are found at City of Parramatta Council road permits.

A register of permits/ licenses will be maintained through the works period and can be tabled at the TCG, if requested.

4 FLEET MANAGEMENT

Trucks to be used on the project will be compliant with NSW legislation, Sydney Metro's Principal Contractor Health and Safety Standard, relevant Australian Design Rules and vehicle standards and the Heavy Vehicle National Legislation. All heavy vehicle operations will be conducted in accordance with GLC's Chain of Responsibility (CoR) Management Plan, including monitoring of compliance with nominated haulage routes.

A combination of truck types will be used during the site operations works, with trucks being semi-trailers, truck and dog, 12.5m Single Unit trucks and low loaders. All trucks will enter and exit the site in a forward direction, where reasonable and feasible. Where there is a requirement to undertake reversing movements on the public road system, appropriate traffic control will be implemented.

Construction site traffic will be managed to minimise movements during peak periods and movements through school zones during pick up and drop off times. This will be achieved through scheduling of vehicles and staggered start and finish times. GLC will provide sufficient onsite parking for heavy vehicles. This will ensure that vehicles are not idling or queuing on public roads.

At the George Street end of Horwood Place there is approximately 60m of queuing space available ensuring that heavy vehicles can be accommodated on site. Where this is not possible GLC's heavy vehicle will be directed to the Clyde site, as noted above, until sufficient space is available. GLC will coordinate their daily truck movements with other users of Horwood Place.

4.1 Drivers and operators

Operator selection will be based on safety performance criteria. Operators and drivers will be required to have general construction industry induction cards and will be required to attend ongoing general project and site-specific inductions.

All operators will be comprehensively trained with regard to community expectations and impacts from heavy vehicle movements through site inductions and attendance at the Sydney Metro Industry Curriculum (SMIT) – Safe Heavy Vehicle Introduction Skills which provides drivers with the knowledge, skills, motivation and confidence to drive heavy vehicles safely and professionally in an urban built up road environments, whilst undertaking a transport task required on the project. The training course focuses on low risk driver behaviours, shared the road safely with vulnerable road users and reinforces heavy vehicle driver knowledge and skill. The project and site inductions will have a particular focus on operator behaviour. The driver induction process will include safety awareness in relation to all road users, particularly pedestrians and cyclists along George Street.

4.2 Heavy vehicle routes and compliance

Generally, the heavy vehicle routes will be via arterial roads/ freeways/ tollways. Where possible the routes have considered the requirements of the Environmental Impact Statement (EIS). It is noted that the EIS for this site shows access via Macquarie Street, O'Connell Street and George Street, refer to Figure *4-1*, The EIS also notes another route into site from Wilde Avenue/ Smith Street with a right turn onto George Street – however, this movement is a banned movement so it is not feasible. GLC will enter site via the alternate inbound route 1 of Harris St then left onto George St and left into site. Exit from site will be via the primary outbound route left out of site onto George St and then left onto O'Connell St to the Great Western Highway.

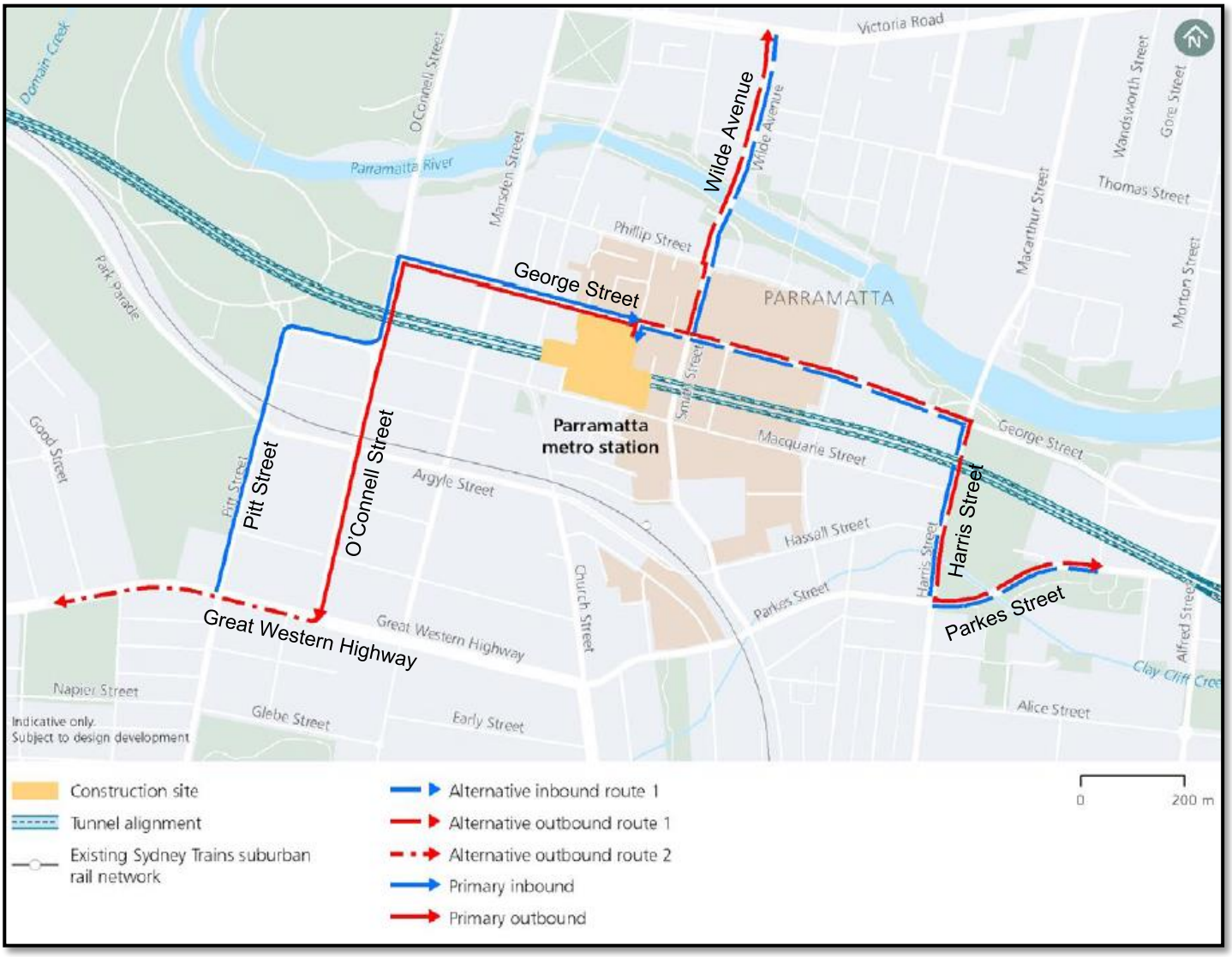


Figure 4-1: EIS nominated heavy vehicle routes

Refer to Appendix C for the proposed routes to the closest motorway.

4.3 Heavy vehicle Swept Paths

The swept paths from James Ruse Dr to the site entry and out via George St and O'Connell St have been assessed for both 19m semis and truck and dogs. 22m semis have been assessed for the travel under OSOM approved permits and times for the Diaphragm wall steel cage deliveries. The swept path movements for Macquarie Lane have also been checked with details in Appendix I Swept Paths.

4.4 Permits / Over dimensional vehicles

Permit issue for vehicles greater than 4.5 tonnes is through the National Heavy Vehicle Regulator (NHVR). This applies to particular special purse vehicles (SPV) such as mobile cranes and other oversize/ over ass (OSOM) vehicles.

For over dimensional vehicles, generally vehicles that are greater than 25m in length or 3,5m width require a pilot(s). Extremely long or wide vehicles will require an escort (fee payable). Permits will be applied for by the transport operator.

Oversize vehicles will be required at this site for the delivery of large plant and piling rigs. These deliveries will occur outside of peak hours. Contractors will manage their own permits.

5 MINISTERIAL CONDITIONS OF APPROVAL

There are a number of plans/ reports that are required under the Ministerial Conditions of Approval (MCoA) as noted in Appendix A and included in subsequent appendices of this CTMP, where required.

5.1 Heavy Vehicle Local Road (HVLR) report

A Heavy Vehicle Local Road is to be provided to the Planning Secretary for approval, for use of local roads not identified in the EIS or other planning documents. The report would include the following:

a) A swept path analysis
b) Demonstration that the use of local roads by Heavy Vehicles for the CSSI will not compromise the safety of pedestrians and cyclists of the safety of two way traffic flow on two way roadways
c) Details as to the date of completion of the road dilapidation surveys for the subject local roads and
d) Measures that will be implemented to avoid where practicable the use of local roads past schools, aged care facilities and child care facilities during their peak operation times and
e) Written advice from an appropriately qualified professional on the suitability of the proposed Heavy Vehicle route which takes into consideration items a) to d).

The routes proposed to be used are as per the EIS and therefore the requirement for a HVLR is not applicable

5.2 Construction Parking and Access Strategy (CPAS)

A Construction Parking and Access Strategy is to be provided to the Planning Secretary for approval at least one (1) month before the commencement of construction that reduces the availability of existing parking. The approved strategy will be implemented before impacting on street parking. The CPAS identifies and provides mitigation measures to alleviate the impacts form on and off street parking changes during construction. The CPAS includes the following:

a) Achieving the requirements of MCoA D90 which includes:
    a) Minimise parking on public roads
    b) Minimise idling and queuing on state and regional roads
    c) Not carry out marshalling of construction vehicles near sensitive land user(s)
    d) Not block or disrupt access across pedestrian or shared user paths at any time unless alternate access is provided and
    e) Ensure spoil haulage vehicles adhere to the nominated haulage routes identified in the CTMPs
b) Confirmation and timing of the removal of on and off street parking associated with construction of stage 1 of the CSSI
c) Parking surveys of all parking spaces to be removed or occupied by the project workforce to determine current demand during peak, off peak, school drop off and pickup, weekend periods and during special events
d) Consultation with affected stakeholders utilising exiting on and off street parking stock which will be impacted as a result of construction

e) Assessment of the impacts to on and off street parking stock taking into consideration occupation by the project workforce, outcomes of consultation with affected stakeholders and considering the impacts of special events

f) Identification of reasonable and practicable mitigation measures to manage impacts to stakeholders as a result of on and off street parking changes including but not necessarily limited to, staged removal and replacement of parking, provision of alternative parking arrangements, managed staff parking arrangements and working with relevant council(s) to introduce parking restrictions adjacent to work sites and compounds or appropriate residential parking schemes.

g) Where resident parking schemes already exist, off road parking facilities must be provided for the project workforce

h) Mechanisms for monitoring, over appropriate intervals (not less than six (6) months), to determine the effectiveness of implemented mitigation measures

i) Details of shuttle bus service(s) to transport the project workforce to construction sites from public transport hubs and off site car parking facilities, where these are provided, and between construction sites

j) Provision of contingency measures should the results of mitigation or monitoring indicate implemented measures are ineffective and

k) Provision of reporting of monitoring results to the Planning Secretary and relevant Council(s) at six (6) monthly intervals

A copy of that CPAS is provided in Appendix C.

5.3 Road dilapidation report

Road dilapidation reports were provided for the local roads used by construction vehicles during the site operations phase of works. These reports were undertaken prior to the use of these roads. A copy of the report(s) were provided to the relevant road authority within three (3) weeks of completion of the survey and no later than one (1) month before the road is used.

If damage to roads occurs as a result of heavy vehicle use associated with the construction works, GLC, will, at the relevant road authority's discretion:

- Compensate the relevant road authority for the damage so caused or
- Rectify the damage to restore the road to at least the condition it was in pre-work as identified in the road dilapidation report

6 COMMUNITY AND CONSULTATION

6.1 Communications and the community

Table *6-1* notes the notifications to be provided to the local community and travelling public for the site establishments works, associated with this CTMP.

Any enquiries, compliments or complaints will be directed to GLC's communications team via

- Information line 1800 612 173
- Email metrotunnelsGLC@transport.nsw.gov.au
- Mailing address Sydney Metro West, PO BOX K659, Haymarket, NSW 1240

Table 6-1:Proposed community notifications

Notification	Applicable?
Newsletters	Yes
Construction email updates	Yes
Fact sheets	Yes
Site signage	Yes
GLC website	Pending
Variable Message signs	To be implemented for the Macquarie Lane changes refer to Appendix H

6.2 Stakeholders

Various stakeholders will be consulted for further development of this CTMP. Stakeholder details that have been consulted are provided in Table *6-2*.

Table 6-2: Stakeholder consultation details

Stakeholder	Date	Consultation type
Traffic Control Group	2nd June 2022	Presentations
Traffic and Transport Liaison Group	30th June 2022	Presentation
Customer Journey Planning	17th Oct, 17th Nov, 20th Dec 2022 and 24 May 2023	Submission of CTMP
Sydney Metro West	17th Oct, 17th Nov, 20th Dec 2022 and 24 May 2023	Submission of CTMP
City of Parramatta Council	17th Oct, 17th Nov, 20th Dec 2022 and 24 May 2023	Submission of CTMP
Refer to Appendix E for more detailed correspondence of Stakeholder consultation		

6.2.1 Emergency Services

Relevant Emergency Services will be informed, in a timely manner of relevant activities proposed within this CTMP. The initial communication to these stakeholders will be via the TTLG. Regular updates will be provided to Emergency Services representatives noting changes to the road network, changes to road conditions and worksite access locations. This communication will be via emails through the GLC communications team. Access to properties for emergency vehicles will be provided at all times.

7 OTHER CONSIDERATIONS

7.1 Road safety audits

Road safety audits will be undertaken during the development of the CTMP and upon implementation of the long term work site, refer to Appendix D.

7.2 Inspections and monitoring

Typical inspections and monitoring is as per Table *7-1* (source TfNSW's TCAWS)

Table 7-1: inspections and frequency

Stage	Activity	Purpose
Planning	TGS verification	To ensure that the TGS selected or designed is suitable for the works and location
During temporary traffic management	Weekly inspections	To ensure that the CTMP and relevant TGS are appropriate and operating safely, effectively and efficiently
	Shift inspection	To ensure that the TGS is implemented as designed. This includes at a minimum twice per shift and when: A. TGS is installed/ changed or updated B. At regular frequency after work commences (every 2 hours) C. Once aftercare arrangements have been installed, if required
	CTMP review	To ensure that the CTMP controls are achieving the required outcomes
	Road safety audits	To identify road safety crash potential and areas of risk that could lead to traffic crashes
Post completion	Post completion inspection	To ensure that the site has been demobilised as planned and is safe for opening to traffic

7.4 Emergency and incident management

In the event of an incident that has the potential to impact traffic or public transport, at sites managed by GLC, GLC will ensure that traffic control resources are provided. These resources include:

- Traffic control personnel
- Traffic control vehicle containing:
    - Barrier boards
    - Cones/ bollards
    - Flashing arrow
    - Signs
    - Spill kit

GLC will report all traffic incidents to Sydney Metro, the Transport Management Centre (13 17 00) and Customer Journey Planning.

7.5 On site contacts

Site contacts are provided in Table *7-2*.

Table 7-2: Site contacts

Name	Position	Organisation	Contact #	Email
Daniel Kelly	Logistic Manager	GLC	0437 315 649	Daniel.kelly@glcwtp.com.au
Brendan McNally	Traffic Manager	GLC	0411 114 953	Brendan.mcnally@glcwtp.com.au
David Leaver	Project Manager	GLC	0419 382 572	David.leaver@glcwtp.com.au
Andy Thompson	Surface Works Construction Manger	GLC	0423 479 033	Andy.thompson@glcwtp.com.au
Olivia Rich	Place Manager	GLC	0447 145 403	olivia.rich@glcwtp.com.au

A COMPLIANCE TABLES

Table 7-3: Relevant Ministerial Conditions of Approval

Requirement	Details	Where addressed
MCoA D80	Access to all utilities and properties must be maintained during works, unless otherwise agreed with the relevant utility owner, landowner, or occupier	Section 3.3.4
MCoA D81	Any property access physically affected by the CSSI must be reinstated to at least an equivalent standard, unless otherwise agreed by the landowner or occupier. Property access must be reinstated within one (1) month of the work that physically affected the access is completed or in any other time frame agreed with the landowner or occupier	Section 3.3.4
MCoA D85	Construction Traffic Management Plans (CTMPs) must be prepared in accordance with the Construction Traffic Management Framework. A copy of the CTMPs must be submitted to the Planning Secretary for information before the commencement of any construction in the area identified and managed within the relevant CTMP	This plan
MCoA D86	Local roads proposed to be used by Heavy Vehicles to directly access construction sites that are not identified in the documents listed in Condition A1 of this schedule must be approved by the Planning Secretary and be included in the CTMP	Section 5.1
MCoA D87	All requests to the Planning Secretary for approval to use local roads under Condition D86 must include the following: a) A swept path analysis b) Demonstration that the use of local roads by Heavy Vehicles for the CSSI will not compromise the safety of pedestrians and cyclists of the safety of two-way traffic flow on two-way roadways c) Details as to the date of completion of the road dilapidation surveys for the subject local roads and d) Measure that will be implemented to avoid where practicable the use of local roads past schools, aged care facilities and child care facilities during their peak operation times and	Section 5.1

Requirement	Details	Where addressed
	e) Written advice from an appropriately qualified professional on the suitability of the proposed Heavy Vehicle route which takes into consideration items a) to d) of this condition	
MCoA D88	Before any local road is used by a Heavy Vehicle for the purposes of construction of Stage 1 of the CSSI, a Road Dilapidation Report must be prepared for the road. A copy of the Road Dilapidation Report must be provided to the Relevant Road Authority(s) within three (3) weeks of completion of the survey and at no later than one (1) month before the road being used by Heavy Vehicles associated with the construction of Stage 1 of the CSSI	Sections 5.1 and 5.3
MCoA D89	If damage to roads occurs as a result of the construction of Stage 1 of the CSSI, the Proponent must either (at the Relevant Road Authority's discretion): a) Compensate the Relevant Road Authority for the damage so caused or b) Rectify the damage to restore the road to at least the condition it was in pre-work as identified in the Road Dilapidation Report	Section 5.3
MCoA D90	Vehicles associated with the project workforce (including light vehicles and Heavy Vehicles) must be managed to: a) Minimise parking on public roads	Section 3.3.5
	b) Minimise idling and queuing on state and regional roads	Section 4
	c) Not carry out marshalling of construction vehicles near sensitive land user(s)	Section 4
	d) Not block or disrupt access across pedestrian or shared user paths at any time unless alternate access is provided and	Section 3.3.3
	e) Ensure spoil haulage vehicles adhere to the nominated haulage routes identified in the CTMP	Section 4.2
MCoA D91	A Construction Parking and Access Strategy must be prepared to identify and mitigate impacts resulting from on and off street parking changes during construction. The Construction Parking and Access Strategy must include, but not necessarily limited to:	Appendix C

Requirement	Details	Where addressed
	a) Achieving the requirement of Condition D90 above b) Confirmation and timing of the removal of on and off street parking associated with construction of Stage 1 of the CSSI c) Parking surveys of all parking spaces to be removed or occupied by the project workforce to determine current demand during peak, off peak, school drop off and pick up, weekend periods and during special events d) Consultation with affected stakeholder utilising existing on and off street parking stock which will be impacted as a result of construction e) Assessment of the impacts to on and off street parking stock taking into consideration, occupation by the project workforce, outcomes of consultation with affected stakeholders and considering the impacts of special events. f) Identification of reasonable and practicable mitigation measures to manage the impacts to stakeholders as a result of on and off street parking changes including but not necessarily limited to, staged removal and replacement of parking, provision of alternative parking arrangements, managed staff parking arrangements and working with relevant council(s) to introduce parking restrictions adjacent to work sites and compounds or appropriate residential parking schemes g) Where residential parking schemes already exist, off road parking facilities must be provided for the project workforce h) Mechanisms for monitoring, over appropriate interval (not less than 6 months) to determine the effectiveness of implemented mitigation measures i) Details of shuttle bus service(s) to transport the project workforce to construction sites from public transport bubs and off site car parking facilities (where these are provided) and between construction sites j) Provision of contingency measures should the results of mitigation or monitoring indicate implemented measures are ineffective and k) Provision of reporting or monitoring results to the Planning Secretary and Relevant Council(s) at six (6) monthly intervals	

Requirement	Details	Where addressed
MCoA D92	The Construction Parking and Access Strategy must be submitted to the Planning Secretary for approval at least one (1) month before the commencement of any construction that reduces the availability of existing parking. The approved Construction Parking and Access Strategy must be implemented before impacting on on-street parking and incorporated into the CTMPs	Section 5.2 and Appendix C
MCoA D93	During construction, all reasonably practicable measures must be implemented to maintain pedestrian, cyclists and vehicular access to, and parking in the vicinity of businesses and affected properties. Disruptions are to be avoided, and where avoidance is not possible, minimised. Where disruption cannot be minimised, alternate pedestrian, cyclists and vehicular access, and parking arrangements must be developed in consultation with affected businesses and implemented before the disruption. Adequate signage and directions to businesses must be provided before, and for the duration of any disruption	Section 3.3.4
MCoA D94	A Traffic and Transport Liaison Group(s) must be established in accordance with the Construction Traffic Management Framework to inform the development of CTMPs	Refer to the latest overarching CTMP SMWSTWTP-GLO-1NL0NL00-TF-PLN-000001 Section 9.3.1**Error! Reference source not found.**
MCoA D95	Supplementary analysis and modelling as required by Sydney Metro and/ or the Traffic and Transport Liaison Group(s) must be undertaken to demonstrate that construction and operational traffic can be managed to minimise disruption to traffic network operations including changes to and the management of pedestrians, bicycle and public transport networks, public transport services, and pedestrian and cyclist movements. Revised traffic management measures must be incorporated into the CTMPs	Refer to the latest overarching CTMP SMWSTWTP-GLO-1NL0NL00-TF-PLN-000001 Section 9.3.1
MCoA D97	Permanent road works, including vehicular access, signalised intersection works, and works relating to pedestrians, cyclist and public transport users must be subject to safety audits, demonstrating consistency with relevant design, engineering and safety standards and guidelines. Safety audits must be prepared in consultation with the relevant Traffic and Transport Liaison Group before the completion and use of the subject infrastructure and must be made available to the Planning Secretary upon request	Not relevant to the CTMP – Refer to Design process

Requirement	Details	Where addressed
MCoA D98	Safe pedestrian and cyclist access must be maintained around construction sites during construction. In circumstances where pedestrian and cyclist access is restricted or removed due to construction activities, a proximate alternate route which complies with the relevant standards must be provided and signposted before the restriction or removal of the impacted access	Section 3.3.3
MCoA D99	Opportunities to maximise spoil material removal by non-road methods must be investigated and implemented where reasonably practicable to minimise movements by road	Not available for this site

Table 7-4: Relevant Revised Environmental Management Measures

Requirement	Impact/ issue	Details	Where addressed
TT1	Changes to the network	The community would be notified in advance of proposed road and pedestrian network changes through appropriate forms of community liaison	Section 6
TT2	Traffic incidents	In the event of a traffic related incident coordination would be carried out with Transport for NSW including Transport Coordination and/ or Traffic Management Centre's Operations Manager	Section 7.3
TT3	Emergency vehicle access	Access to properties for emergency vehicles would be provided for at all times	Section 3.3.4
TT4	Road safety	Vehicle access to and from construction sites would be managed to maintain pedestrian, cyclists and motorist safety. Depending on the location this may require manual supervision, physical barriers, temporary traffic signals and modifications to existing signals or on occasions police presence	Section 3.3.3

Requirement	Impact/ issue	Details	Where addressed
TT5	Road safety	Additional enhancements for pedestrian, cyclist and motorist safety near the construction sites would be implemented during construction. This would include measures such as: • Assessing the suitability of construction haulage routes through sensitive land use areas with respect to road safety	Not applicable as routes are per the EIS
		• Deployment of speed awareness signs in conjunction with variable message signs near construction sites to provide alerts to drivers	Not installed due to existing low speed environment
		• Providing community education and awareness about sharing the road safely with heavy vehicles	Section 3.3.3
		• Specific construction driver training to understand the route constraints, safety and environmental considerations such as sharing the road safety with other road users and limiting the use of compression braking	Section 4.1
		• Requiring technology and equipment to improve vehicle safety, eliminate heavy vehicle blind spots and motor vehicle location and driver behaviour	Refer to Project Wide CTMP and Chain Of Responsibility Management Plan
TT6	Road safety	• All trucks would enter and exit construction sites in a forward direction, where reasonable and feasible	Section 4 and Appendix K
TT7	Congestion	Construction site traffic would be managed to minimise movements during peak periods	Section 4
TT8	Congestion	Construction site traffic immediately around construction sites (WMS, PMS, BNS and FDS) would be managed to minimise vehicle movements through school zones during pick up and drop off times	Section 4

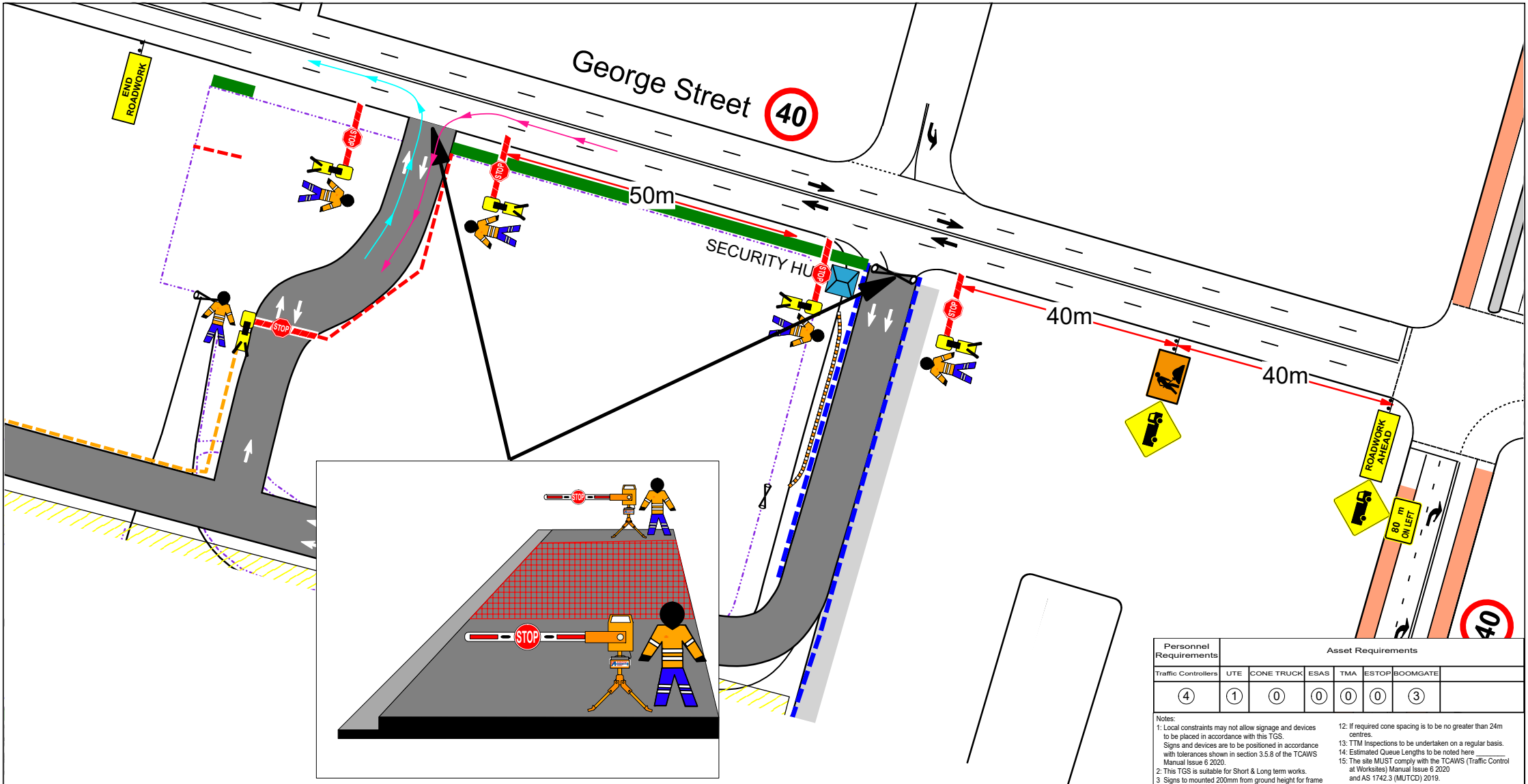
Requirement	Impact/ issue	Details	Where addressed
TT9	Congestion	Opportunities to minimise impacts at the Alexandra Avenue/ Bridge Road intersection would be determined in consultation with Transport for NSW	Applicable to Westmead site as noted in the REMM
TT10	Loss of parking	Where existing parking is removed to facilitate construction activities, consultation would occur with the relevant local council to investigate opportunities to provide alternative parking facilities	Section 6
TT11	Loss of parking	Construction sites would be managed to minimise the number of construction workers parking on surrounding streets by: ● Encouraging workers to use public or active transport ● Encouraging ride sharing ● Provision of alternative parking locations and shuttle bus transfers where feasible and reasonable	Appendix 0
TT12	Change of bus stop locations	Any temporary closure or relocation of bus stops and kiss and ride facilities would be carried out in consultation with Transport for NSW including Transport Coordination (for relevant locations), the relevant local council and bus operators. Wayfinding and customer information would be provided to notify customers of relocated bus stops	Applicable to Westmead (WMS), North Strathfield (NSMS), Burwood North (BNS) and The Bays (TBS) only as noted in the REMM
TT13	Bus priority	Opportunities to improve bus priority along the temporary detour at Westmead metro station construction site would be investigated during detailed design	Applicable to Westmead site as noted in the REMM
TT14	Active transport	Pedestrian and cyclist access would be maintained during the temporary closure of Alexandra Avenue at Westmead. Wayfinding and customer information would be provided to guide pedestrians and cyclists to alternative routes	Applicable to Westmead site as noted in the REMM
TT15	Impacts on active transport	Where existing cyclists facilities, (eg: bicycle parking) would be temporary unavailable to facilitate construction	Section 3.3.3

Requirement	Impact/ issue	Details	Where addressed
		activities, suitable replacements facilities would be provided for this duration	
TT17	Impacts on special events	During major special events, impacts to the transport and traffic network would be reduced by, (as necessary) ● Minimising the level of construction activity and, if necessary, ceasing all construction activity ● Maintaining appropriate access to all areas within the event precinct ● Erection of hoardings, site fencing and gates at key locations with the construction site boundary, to permit pedestrian movements adjacent to the construction site and separate pedestrians from construction vehicles ● Scheduling deliveries to the construction site outside of special event periods	Section 0
TT18	Property access	Access to existing properties and buildings would be maintained in consultation with property owners	Section 3.3.4
TT19	Construction vehicle impacts	Traffic control measures required at the Parramatta metro station construction site access on Gorge Street would be determined in consultation with Transport for NSW	This CTMP
C11	Occurrence of cumulative impacts	Coordination and consultation with the following stakeholders would occur, where required, to manage the interface of projects under construction at the same time: ● Transport for NSW including Transport Coordination ● Department of Planning, Industry and Environment ● Sydney Trains ● NSW Trains ● Sydney Buses ● Sydney Water ● Port Authority of NSW	Section 6

Requirement	Impact/ issue	Details	Where addressed
		• Sydney Motorways Corporation • Emergency Services providers • Utility providers • Construction contractors Coordination and consultation with these stakeholders would include: • Provision of regular updates to the detailed construction program, construction sites and haul routes • Identification of key potential conflict points with other construction projects • Developing mitigation strategies in order to manage conflicts. Depending on the nature of the conflict this could include: – Adjustments to the Sydney Metro construction program work activities or haul routes or adjustments to the program activities or haul routes of other construction projects – Coordination of traffic management arrangements between projects	

B TRAFFIC GUIDANCE SCHEMES

TGS#	Location	Between		Time of Day	Traffic control	Works	Impacts
TGS-020	George Street	At site entry		Day	Stop slow for pedestrian/ vehicle management	Site operations	Minimal movements during peak periods
TGS-020	George Street	At site exit		Day	Stop slow for pedestrian/ vehicle management	Site operations	Minimal movements during peak periods
TGS-332811	George Street	West of Horwood Place	East of Church Street	Day/ Night	Parking lane and footpath closure	Driveway works	Undertaken outside of peak pedestrian times



Personnel Requirements	Asset Requirements						
Traffic Controllers	UTE	CONE TRUCK	ESAS	TMA	ESTOP	BOOMGATE	
4	1	0	0	0	0	3	

Notes:
1: Local constraints may not allow signage and devices to be placed in accordance with this TGS. Signs and devices are to be positioned in accordance with tolerances shown in section 3.5.8 of the TCAWS Manual Issue 6 2020.
2: This TGS is suitable for Short & Long term works.
3 Signs to mounted 200mm from ground height for frame mounted and 2.2m for post mounted.
4: This TGS is based on guidelines provided within the TCAWS Manual Issue 6 2020.
5: For Night works adequate lighting is to provided at all control points.
6: Pedestrians MUST be monitored and assisted at all times and suitable controls implemented.
7: If not already noted, The existing speed limits are to be noted on this plan.
8: The value of speed limits displayed shall match the speed zone approval.
9: Signage used in the TGS is to be B Size.
10: Ensure all approval requirements are met prior to commencing set up.
11: Cover all conflicting & Contradicting road signage & devices where required.
12: If required cone spacing is to be no greater than 24m centres.
13: TTM Inspections to be undertaken on a regular basis.
14: Estimated Queue Lengths to be noted here _____
15: The site MUST comply with the TCAWS (Traffic Control at Worksites) Manual Issue 6 2020 and AS 1742.3 (MUTCD) 2019.

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

Name:_____

PWZTMP Card Number:_____

Exp Date: _____

Date:_____ Sign:_____

Reason for modification:_____

TRAFFIC CONTROL TO STOP PEDESTRIANS FOR SITE ENTRY/EXIT

Revisions

No:	Date:	Time:	Description:	Appr:
0	10/10/22	04:15pm	Issued for Implementation	MC
1	12/10/22	02:15pm	Add second Pedestrian Management	MC
2				
3				
4				
5				
6				

CLIENT: GAMUDA / LAING O'ROUKE CONSORTIUM

GAMUDA Australia
LAING O'ROURKE

SCALE: 1:750
Original Size A3

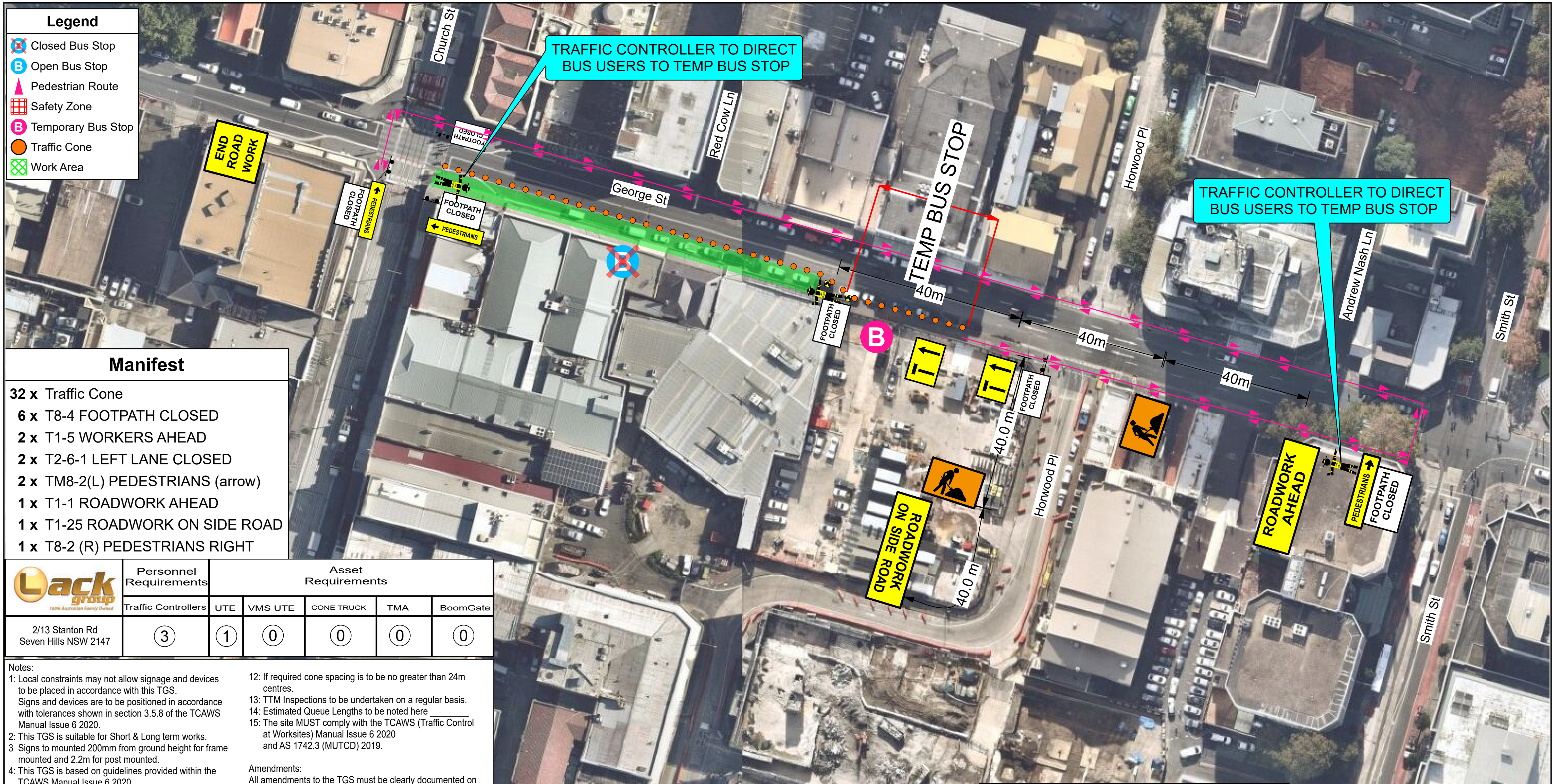
Lack group
Planning Division Ph: 02 8319 4898
Email : LGP@Lackgroup.com.au

PROJECT: GLC - SYDNEY METRO WEST - WTP
TITLE: GEORGE ST PARRAMATTA

WORK ACTIVITY: SITE ENRTY/EXIT
TGS NUMBER: 020
PAGE NO: 1 of 1

Drawn By: Peter Ingram	Certification Type : PWZ	Certification Number: 0051 721 258	Signed:
Approved By: Morgan Cross	Certification Type : PWZ	Certification Number: TCT0052862	Signed:
Implemented by:	Certification Type :	Certification Number:	Signed:

N



Legend

- Closed Bus Stop
- Open Bus Stop
- Pedestrian Route
- Safety Zone
- Temporary Bus Stop
- Traffic Cone
- Work Area

Manifest

- 32 x Traffic Cone
- 6 x T8-4 FOOTPATH CLOSED
- 2 x T1-5 WORKERS AHEAD
- 2 x T2-6-1 LEFT LANE CLOSED
- 2 x TM8-2(L) PEDESTRIANS (arrow)
- 1 x T1-1 ROADWORK AHEAD
- 1 x T1-25 ROADWORK ON SIDE ROAD
- 1 x T8-2 (R) PEDESTRIANS RIGHT

Lack group	Personnel Requirements	Asset Requirements				
	Traffic Controllers	UTE	VMS UTE	CONE TRUCK	TMA	BoomGate
2/13 Stanton Rd Seven Hills NSW 2147	3	1	0	0	0	0

Notes:
1: Local constraints may not allow signage and devices to be placed in accordance with this TGS. Signs and devices are to be positioned in accordance with tolerances shown in section 3.5.8 of the TCAWS Manual Issue 6 2020.
2: This TGS is suitable for Short & Long term works.
3 Signs to mounted 200mm from ground height for frame mounted and 2.2m for post mounted.
4: This TGS is based on guidelines provided within the TCAWS Manual Issue 6 2020.
5: For Night works adequate lighting is to provided at all control points.
6: Pedestrians MUST be monitored and assisted at all times and suitable controls implemented.
7: If not already noted, The existing speed limits are to be noted on this plan.
8: The value of speed limits displayed shall match the speed zone approval.
9: Signage used in the TGS is to be B Size.
10: Ensure all approval requirements are met prior to commencing set up.
11: Cover all conflicting & Contradicting road signage & devices where required.
12: If required cone spacing is to be no greater than 24m centres.
13: TTM Inspections to be undertaken on a regular basis.
14: Estimated Queue Lengths to be noted here ________
15: The site MUST comply with the TCAWS (Traffic Control at Worksites) Manual Issue 6 2020 and AS 1742.3 (MUTCD) 2019.

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

Name:______________________

PWZTMP Card Number:______________________

Exp Date:______________________

Date:______________ Sign:______________

Reason for modification:______________________

BUS DRAW IN AND DRAW OUT LENGHTS

BUS STOP DIMENSIONS (m)	STANDARD	LONG RIGID	ARTICULATED
Length of Bus	12.5m	14.5m	18.0m
Minimum Draw-out Length	6.0m	6.5m	8.0m
Minimum Draw-in Length	11.5m	14.0m	14.0m
Bus Zone Length for one Bus	30.0m	35.0m	40.0m

BUS STOP NOTES:

STOP NAME: GEORGE & CHURCH
STOP ID#:2150105
-Temporary bus zone to be the same length as impacted stop.
-Sufficient draw in/out space for buses at any impacted stop or temporary stop.

Revisions No:	By:	Date:	Description:	Appr:
1	PI	09/09/2022	Issued for Implementation	MC
2	PI	09/09/2022	Issued for Implementation	MC
3				
4				
5				

Disclaimer:
This guidance scheme is for Traffic Management purposes only. Lack Group Traffic disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages and costs you might incur as a result of the information being inaccurate or incomplete in any way, and for any reason. This plan is drawn in accordance with the TCAWS manual.

GAMUDA Australia
LAING O'ROURKE

Original Size A3 | SCALE 1:750
Planning Division Ph: 02 8319 4898 | Email : LGP@Lackgroup.com.au
Client Contact: Nicole O'Conner
Contact Number: 0419 720 719

Job Location: George St Parramatta		Work Activity: SHOULDER CLOSURE	
Client: GAMUDA / LAING O'ROURKE CONSORTIUM		Drawing Number: 332811	
Drawn By: Peter Ingram	Certification Type : PWZ	Certification Number: 0051 721 258	Signed:
Approved By: Morgan Cross	Certification Type : PWZ	Certification Number: TCT0052862	Signed:
Implemented by:	Certification Type :	Certification Number:	Signed:

N W E S

C CONSTRUCTION PARKING AND ACCESS STRATEGY

(Provided separately)

D ROAD SAFETY AUDIT REPORT

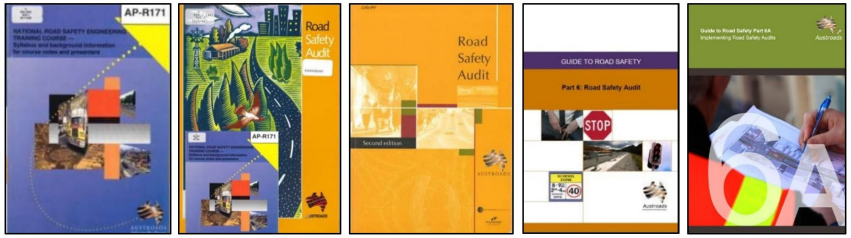
Road Safety Audit Report

Sydney Metro West – Western Tunnelling Package

Practical
Independent
Specialised

Road/Area	George Street, Smith Street and Macquarie Street, Parramatta		**Road Safety Audits Reference**	RSA-13233
Traffic Stage/Phase	Parramatta Site Operations		**Report Date**	17 October 2022
Audit Stage	*Desktop* Traffic Guidance Scheme		**Lead Auditor** **Second Auditor**	Raj Muthusamy (Level III RMS) Peter Harris (Level III RMS)
Client	**Sue Lewis Consulting**		**TMP / Drawings**	Parramatta Site Operations CTMP, Doc. No.:SWMSTWTP-GLO-PTA-TF-PLN-000002, Rev A, Date 13 October 2022. Included following TGS: 026, 020, 023, 024, 010, 011, 114 (2 sheets) and 025.
Client Contact	Sue Lewis		**Report Provider**	Road Safety Audits

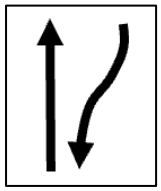
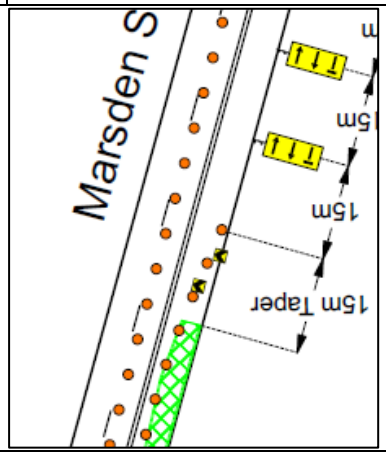
Desktop TGS General Scope: The scope of the audit is to assess the plans on their merits and in the context of the road environment, with standards and guidelines as a reference.

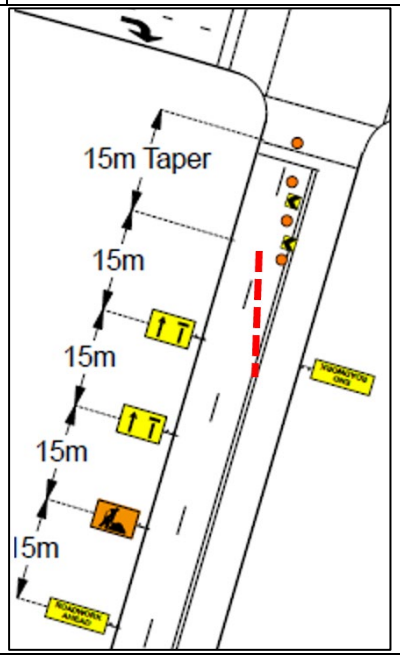


Raj Muthusamy
Senior Road Safety Auditor
CPEng, RPEQ, NER,
BE (Civil)

Peter Harris
Senior Road Safety Auditor
CPEng, RPEQ, NER, BE (Civil),
BB (Bus. Admin.)

Sydney Metro West – Western Tunnelling Package Parramatta Site Operations				
	Audit Point	**Treatment Option**	**Sue Lewis Consulting** Responder:	
			Response[x]	**Status**[y]
TGS 026, 020, 023, 024, 010 & 025				
1.	No road safety issues are raised.	Nil. Note only. Risk: N/A	Noted	Closed
TGS 011				
2.	**Signage** Footpath closure warning signs and pedestrian direction signs to the respective crossing locations are not shown in the drawing.	Include signage. Risk: N/A	TGS amended	Closed

Sydney Metro West – Western Tunnelling Package Parramatta Site Operations				
	Audit Point	**Treatment Option**	**Sue Lewis Consulting** Responder: **Response**[x]	**Status**[y]
TGS 114 Sheet 1				
3.	**Signage** The southbound lane on Marsden Street is shown as terminating ahead on the proposed lane status signs. This message is incorrect as the southbound is not being terminated but instead is diverted across the centreline onto the opposing traffic lane. There is potential for some drivers to stop abruptly based on the assumption that the southbound lane is terminated and the presence of the barrier line.	It is suggested that the lane status sign be amended to show 1 northbound lane and a skewed arrow for southbound traffic to depict the need for drivers to cross the centreline.  Risk: Low	TGS amended	Closed
				

Sydney Metro West – Western Tunnelling Package Parramatta Site Operations				
	Audit Point	**Treatment Option**	**Sue Lewis Consulting** Responder: **Response**[x]	**Status**[y]
4.	**Northbound Lane Merge** Northbound traffic on Marsden Street (southern leg) is merged into one lane at the intersection. This effectively requires the driver to concentrate on the merge as well as stop at the traffic signals. Requiring the driver to perform two tasks (merging and stopping) increases the potential for crashes or drivers not stopping at a red signal.	It is suggested that the termination of the northbound lane merge be shifted 15m from then hold line at the intersection. This would allow traffic to be in a single lane after completing the merge when approaching the hold line and traffic signals. All of the advance warning signs would also have to shift 15m south. Risk: Low	TGS amended	Closed
				

Explanatory Notes

Short Format: This 'short format' report has been pioneered by RSA (Road Safety Audits) since 2008, initiated through requests by clients to assist their processes, for ease with stakeholders, and for timeliness. It is typically confined in use to construction traffic management and typically for discrete packages of plans / areas and often for large projects with repetitious small audit sections. The use of this format assumes that the reader/s know what a road safety audit is and how to respond to it.

Projects: Audit points are often raised in projects in relation to: 1. specific themes (e.g. the use of a safety barrier type), or 2. the treatment of particular locations. Once key issues have been initially raised, they will not necessarily be re-raised in future audits. This will depend on the issue, the RSA's perception of the client's assessment and understanding of the issue, and other factors. Therefore, discrete audits as part of a project should be read and actioned by a **project representative who is familiar with the audit history**.

Responding: Although the client receiving the report does not have to agree to the audit findings/suggestions, the issues and associated risks should be carefully considered. A written response should be made to all of the audit findings raised, then signed off by the responsible person from the project team.

[X]**Response**: The responder should focus on and consider the **audit point**, regardless of whether the audit team's suggested treatment option is feasible / appropriate / agreed to.

[Y]**Status**: The status of the issue as it sits with the Project. i.e. 'actioned', 'closed', 'pending information / further guidance'.

Language:
Austroads Road Safety Audit Part 6 suggests that the organisation responding to the audit provides a risk assessment. However, RSA will at times offer a guide of 'high' 'medium' and 'low' risk, which is based on a professional appraisal of the risk ('severity' and 'frequency') for the responder to use as a guide. Other language commonly used and its intent is as follows:

- 'Urgent': Needs immediate attention / changes as per RSA suggestion or similar.
- 'Recommend' / 'Serious' / 'Important': Must be robustly reviewed. Most likely requires a change to avoid a high-risk road environment for one or more user groups.
- 'Should' / 'Suggest' / 'Significant': Based on the view of the RSA team the suggestion should be done, but it concedes that there could be reasons why inaction or alternative action may be preferred. Must be robustly reviewed by contractor and where relevant with key traffic engineering project stakeholders.
- 'Review' / 'Consider': RSA is raising an observation but has no *strong* opinion on the outcome and need for changes. Project should review because it's not an immediate and high risk and may not be immediately obvious to RSA the reasons for the practice / setup / behaviour. May need monitoring.
- 'Minor': Typically, a low road-safety consequence / compliance issues (to guidelines or plans) / administrative controls. Unlikely to increase risk of crash.
- 'Note': Little or no road safety significance. Typically added to give a complete picture of the design, site, context, analysis, auditors understanding.

Intent of Issues Listing Order: Audit points might be clustered according to location, theme, or time. When this is not done and the audit comprises an uncategorised list of points, the key issues are often discussed first. However, there is no official ordering of points, and they should all be read on their merits and on the basis of the language guide above.
References: 1. Austroads Guide to Road Safety – Road Safety Audit – (2019) 6 and 6A; 2. AS 1742.3 – 2019; 2. State specific codes and guidelines re: Traffic Control at Work Sites; and 3. Design: 1. Austroads guidelines and 2. state-specific supplements and technical publications as relevant.

Safe System: Austroads GRS-RSA6A encourages practitioners to adopt safe system principles within the road safety audit. Safe system (roads) calls for a design to not allow serious injury and fatalities to occur for the expected road users and the typical crash types expected for that design type. This design-objective is considered within this road safety audit as a good practice objective. However, in practice, safe system-based analysis of risks and treatment options is typically not adopted for traffic management stage audits in the same way as it is in design stage audits.

Process and Quality: RSA's quality assurance process is based on its senior auditors having a rich experience base, but also utilises customised checklists designed for niche areas in traffic engineering/road design (e.g. safety barriers, pavement shaping, CBD traffic management), in conjunction with a four-layer audit process: 1. on-site inspection; 2. media and data capture and review; 3. specialist / second auditor input; and (where warranted) 4. secondary blinded reviews.

Audit Coverage: The audit has attempted to balance the safety needs of all road users. As per Austroads guidelines, the suggestions provided have attempted to be realistic/feasible and commensurate with the actual risk posed. Suggestions are made from a safety perspective only, and are made in the absence of full project knowledge and design constraints. RSA can provide a detailed risk assessment / issue evaluation report upon request. The audit raises potential safety risks noted / observed / anticipated by the audit team, and in particular the higher-risk issues. However, a road safety audit is undertaken by people, highly influenced by the experience, views and limitations of the individual team members. It is expected that the project team has competence to identify safety issues itself as the project progresses, and to ask the audit team further questions where necessary.

Sydney Metro Parramatta Package 1 & 2 – 100% Detailed Design Road Safety Audit

304100777

Report Date

6 August 2022

Prepared for:

Cardno now Stantec (on behalf of the Gamuda Laing O'Rourke Joint Venture)

Prepared by:

Cardno now Stantec

Revision	Description	Author		Quality Check		Independent Review	
A	Rev A submission	H.Calvey	06/09/22				
B	Rev B submission	H.Calvey	09/09/22				

This document entitled Sydney Metro Parramatta Package 1 and 2 – 100% Detailed Design Road Safety Audit was prepared by Stantec Consulting Services Inc. ("Stantec") for the account of the Gamuda Laing O'Rourke Joint Venture (the "Client"). Any reliance on this document by any third party is strictly prohibited. The material in it reflects Stantec's professional judgment in light of the scope, schedule and other limitations stated in the document and in the contract between Stantec and the Client. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. In preparing the document, Stantec did not verify information supplied to it by others. Any use which a third party makes of this document is the responsibility of such third party. Such third party agrees that Stantec shall not be responsible for costs or damages of any kind, if any, suffered by it or any other third party as a result of decisions made or actions taken based on this document.

Prepared by 
(signature)

Hayden Calvey

Reviewed by _____
(signature)

Approved by _____
(signature)

Table of Contents

LIST OF TABLES

LIST OF FIGURES

Project Summary

Project Number:	304100777
Final Report Date:	09/09/2022
Draft Report Date:	06/09/2022
Title of Audit:	Sydney Metro Parramatta Package 1 & 2 – 100% Detailed Design Road Safety Audit
Location of Audit:	Parramatta, NSW
Project Description:	The purpose of this project is to establish the Parramatta Metro Station construction site, and minimise the impacts of construction traffic movements around the site. This project is part of the Western Tunnelling Package needed to enable the construction of Sydney Metro West.
Purpose of Audit:	The aim of this Road Safety Audit (RSA) is to assess the proposed design in the context of the existing conditions, design plans and the interface between the existing and proposed works. The audit aims to identify current risks across the area within the scope with due regard to all transport modes.
State:	NSW
Stage of Audit:	Detailed Design
Client Company:	Cardno now Stantec (on behalf of the Gamuda Laing O'Rourke Joint Venture)
Client Contact:	Jason Fong
Client Phone:	+61 2 9496 7721
Client Email:	jason.fong@cardno.com.au
Audit Date:	Wednesday 1 August 2022
Audit Team:	Hayden Calvey (Level 3) Siavash Shahsavaripour (Level 2)

1.0 PROJECT DESCRIPTION

The Gamuda Australia and Laing O'Rourke Consortium (GALC) have engaged Cardno now Stantec (Cardno) to undertake a Detailed Design stage Road Safety Audit (RSA) for the Parramatta Metro Station Enabling Works (the Project).

The Project is understood to be delivered across four packages of work as summarized in the following table.

RIA Package Reference	Updated Package	Description
RIA-WTP-01	Package 3 (PTA-05)	Haulage Route from James Ruse Drive to site and from site to Great Western Highway
RIA-WTP-02 A & B	Package 1 (PTA-06)	George Street Local Area Works
	Package 4 (PTA-07)	TCS Design of George Street and Horwood Place intersection
RIA-WTP-03	Package 2 (PTA-08)	Macquarie Lane Works and George Street Driveway Kerb Designs
RIA-WTP-04	Package 3 (PTA-09)	Haulage Route from James Ruse Drive to site and from site to Great Western Highway

The Detailed Design RSA has been prepared for Package 1 and 2 listed above, 100% designs.

1.1 AUDIT STAGE

A site inspection of the audit sites was carried out during day and night conditions on Wednesday 13 July 2022. The weather conditions during the during the day and night inspections were cloudy, but dry.

A summary of the different types of audit stages is described below.

Table 1 Audit Stages

Project Phase	Type of Road Safety Audit	Project Stage Description	Typical Considerations
Pre-construction	Strategic Design	Conducted at the completion of the strategic design stage of the project life cycle. The strategic design stage is where broad options for a proposed project are determined. Also known as the feasibility stage.	▪ Route choice ▪ Continuity of road network ▪ Intersection / interchange type

	Concept Design	Conducted at the completion of the concept design stage of the project life cycle. The concept stage is where options are examined for a proposed project and a preferred option is selected. Also known as the preliminary design stage.	▪ Horizontal and vertical alignments ▪ Intersection layouts ▪ Access locations ▪ Road user groups
	Detailed Design	**Conducted at the completion of the detailed design stage of the project life cycle. The detailed design stage is where a design is completed to sufficient detail to commence construction.**	▪ **General road layout and alignment** ▪ **Intersection layouts** ▪ **Signage / linemarking** ▪ **Drainage / lighting** ▪ **Roadside furniture**
Construction	Roadworks	Conducted at the commencement of each stage of the roadworks where changes affect traffic operations, traffic travel path characteristics, or traffic roadside characteristics during the construction stage of the project life cycle. This may be a one-off. Also known as a road work traffic scheme stage.	▪ Changed traffic conditions ▪ Speed zone schemes ▪ Signage / linemarking ▪ Hazards / barriers
	Pre-opening	Conducted immediately after the completion of construction of the entire project works or the construction of roadworks stage and where possible prior to the road / path being used by traffic.	▪ Detailed inspection of new scheme and tie ins with existing road ▪ All user groups
Post-construction	Finalisation	Conducted on an existing road, path or road network some time after the completion of the construction of road infrastructure works. It is typically conducted once road user patterns have settled following the works, or immediately prior to the change-over of ownership or responsibility in regard to the assets or network operations following the works. Also known as post-opening stage.	▪ Design standards ▪ Road condition / dilapidation ▪ Horizontal / vertical alignment ▪ Driver behaviour
	Existing Road	Conducted on an existing road, path or road network where no recent construction works were undertaken.	

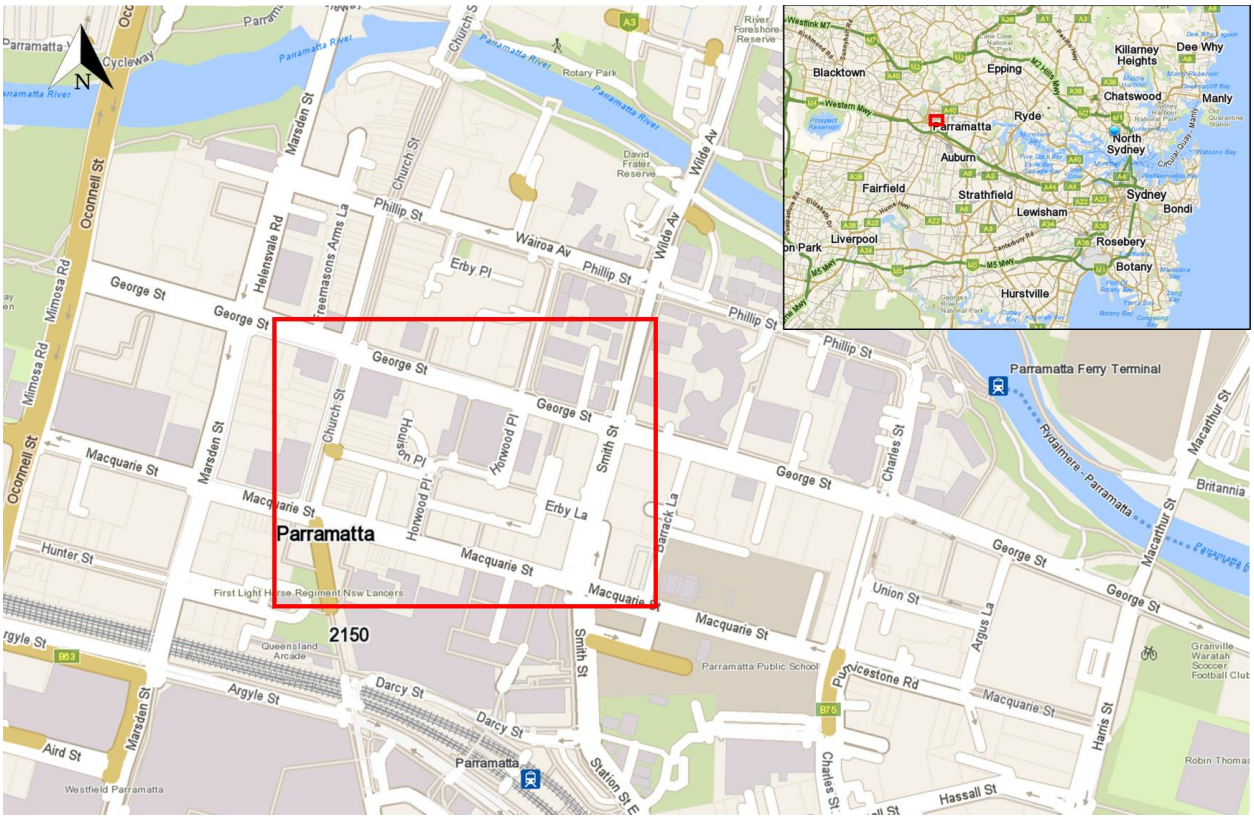
The audit was generally undertaken in accordance with TfNSW's Guidelines for Road Safety Audit Practices (2011) and the Austroads Guide to Road Safety Part 6: Road Safety Audit (2022).

To the best of the auditors' ability, the audit has taken into consideration traffic volume / classification, climatic impacts and all road user groups where applicable.

1.2 STUDY AREA

The study area locations and site locality is shown below in **Figure 1**.

Figure 1 Locality Plan



1.3 AUDIT TEAM

The audit team and client details are shown in **Table 2**.

Table 2 Audit Team and Client Details

Role		
Client (Sponsor)	Cardno now Stantec (on behalf of GALC)	
Client Contact	Jason Fong	Senior Civil Engineer
Client Email	jason.fong@cardno.com.au	
Lead Auditor	Hayden Calvey	Level 3 Auditor
Lead Auditor Email	hayden.calvey@cardno.com.au	
Team Member	Siavash Shahsavaripour	Level 2 Auditor

1.4 AUDIT PROGRAM

The audit program details are shown in **Table 3**.

Table 3 Audit Program

Activity	Date	Attendees
Opening Meeting	29/08/2022	Hayden Calvey, Jason Fong, Lachlan Nichols, Anson Chang
Site Inspection	05/09/2022	Siavash Shahsavaripour
Draft Report	06/09/2022	RSA Report (DRAFT for comment)
Completion Meeting	09/09/2022	Hayden Calvey, Lachlan Nichols
Final Report	09/09/2022	RSA Report (Final for issue)

1.5 BACKGROUND INFORMATION

A copy of the supplementary report entitled *Design Report, Sydney Metro West – Western Tunnelling Package, Parramatta Local Area* Works (Cardno, 2022) was supplied to the audit team.

1.6 REFERENCE PLANS

To undertake the audit, 100% detailed design plans entitled *Sydney Metro West Package 1 – George Street Access Road Parramatta Enabling Works Stage 2 Detailed Design (Rev A, Stage 2 Detailed Design – 100%, dated 21.07.22)* and *Sydney Metro West Package 2 – Macquarie Lane/George Street Parramatta Enabling Works Stage 3 Detailed Design 100% (Rev A, Stage 3 Detailed Design – 100%, undated)* were reviewed, inclusive of the sheets shown below in **Table 4** and **Table 5**.

Table 4 Package 1 Design Documentation

Drawing No.	Revision	Title
SMWSTWTP-GLO-PTA-SN600-CV-DRG-060001	A	COVER SHEET
SMWSTWTP-GLO-PTA-SN600-CV-DRG-060002	A	LAYOUT PLAN
SMWSTWTP-GLO-PTA-SN600-CV-DRG-060003	A	DRAWING INDEX
SMWSTWTP-GLO-PTA-SN600-CV-DRG-060004	A	GENERAL NOTES
SMWSTWTP-GLO-PTA-SN600-CV-DRG-060005	A	SURVEY LEGEND
SMWSTWTP-GLO-PTA-SN600-CV-DRG-060010	A	TYPICAL SECTIONS
SMWSTWTP-GLO-PTA-SN600-CV-DRG-060020	A	SETOUT SCHEDULES
SMWSTWTP-GLO-PTA-SN600-CV-DRG-060101	A	GENERAL ARRANGEMENT PLAN
SMWSTWTP-GLO-PTA-SN600-CV-DRG-060110	A	LONGITUDINAL SECTION – MK1A
SMWSTWTP-GLO-PTA-SN600-CV-DRG-060111	A	LONGITUDINAL SECTION – MK1C
SMWSTWTP-GLO-PTA-SN600-CV-DRG-060112	A	LONGITUDINAL SECTION – MK1E
SMWSTWTP-GLO-PTA-SN600-CV-DRG-060113	A	LONGITUDINAL SECTION – MK1C
SMWSTWTP-GLO-PTA-SN600-CV-DRG-060114	A	LONGITUDINAL SECTION – MD10
SMWSTWTP-GLO-PTA-SN600-CV-DRG-060115	A	LONGITUDINAL SECTION – MH10
SMWSTWTP-GLO-PTA-SN600-CV-DRG-060123	A	CROSS SECTIONS – MK1B
SMWSTWTP-GLO-PTA-SN600-CV-DRG-060201	A	STORMWATER & UTILITIES PLAN
SMWSTWTP-GLO-PTA-SN600-CV-DRG-060210	A	DRAINAGE PROFILE
SMWSTWTP-GLO-PTA-SN600-CV-DRG-060300	A	PAVEMENT NOTES
SMWSTWTP-GLO-PTA-SN600-CV-DRG-060301	A	PAVEMENT PLAN
SMWSTWTP-GLO-PTA-SN600-CV-DRG-060302	A	PAVEMENT DETAILS – SHEET 1
SMWSTWTP-GLO-PTA-SN600-CV-DRG-060303	A	PAVEMENT DETAILS – SHEET 2
SMWSTWTP-GLO-PTA-SN600-CV-DRG-060304	A	PAVEMENT DETAILS – SHEET 3
SMWSTWTP-GLO-PTA-SN600-CV-DRG-060501	A	TURNING PATH PLAN – SHEET 1
SMWSTWTP-GLO-PTA-SN600-CV-DRG-060502	A	TURNING PATH PLAN – SHEET 2
SMWSTWTP-GLO-PTA-SN600-CV-DRG-060503	A	TURNING PATH PLAN – SHEET 3

Table 5 Package 2 Design Documentation

Drawing No.	Revision	Title
SMWSTWTP-GLO-PTA-SN600-CV-DRG-080001	A	COVER SHEET
SMWSTWTP-GLO-PTA-SN600-CV-DRG-080002	A	LAYOUT PLAN
SMWSTWTP-GLO-PTA-SN600-CV-DRG-080003	A	DRAWING INDEX
SMWSTWTP-GLO-PTA-SN600-CV-DRG-080004	A	GENERAL NOTES

SMWSTWTP-GLO-PTA-SN600-CV-DRG-080005	A	SURVEY LEGEND
SMWSTWTP-GLO-PTA-SN600-CV-DRG-080010	A	TYPICAL SECTIONS
SMWSTWTP-GLO-PTA-SN600-CV-DRG-080021	A	SETOUT PLAN – SHEET 1
SMWSTWTP-GLO-PTA-SN600-CV-DRG-080022	A	SETOUT PLAN – SHEET 2
SMWSTWTP-GLO-PTA-SN600-CV-DRG-060101	A	GENERAL ARRANGEMENT PLAN – SHEET 1
SMWSTWTP-GLO-PTA-SN600-CV-DRG-060102	A	GENERAL ARRANGEMENT PLAN – SHEET 2
SMWSTWTP-GLO-PTA-SN600-CV-DRG-080110	A	LONGITUDINAL SECTION – MK0A
SMWSTWTP-GLO-PTA-SN600-CV-DRG-080111	A	LONGITUDINAL SECTION – MK2A
SMWSTWTP-GLO-PTA-SN600-CV-DRG-080112	A	LONGITUDINAL SECTION – MK2I
SMWSTWTP-GLO-PTA-SN600-CV-DRG-080113	A	LONGITUDINAL SECTION – MK4A
SMWSTWTP-GLO-PTA-SN600-CV-DRG-080114	A	LONGITUDINAL SECTION – MT0A
SMWSTWTP-GLO-PTA-SN600-CV-DRG-080115	A	LONGITUDINAL SECTION – MH10 & MK0I
SMWSTWTP-GLO-PTA-SN600-CV-DRG-080123	A	CROSS SECTIONS – MK0A – SHEET 1
SMWSTWTP-GLO-PTA-SN600-CV-DRG-080124	A	CROSS SECTIONS – MK0A – SHEET 2
SMWSTWTP-GLO-PTA-SN600-CV-DRG-080201	A	STORMWATER & UTILITIES PLAN – SHEET 1
SMWSTWTP-GLO-PTA-SN600-CV-DRG-080202	A	STORMWATER & UTILITIES PLAN – SHEET 2
SMWSTWTP-GLO-PTA-SN600-CV-DRG-080210	A	DRAINAGE PROFILE
SMWSTWTP-GLO-PTA-SN600-CV-DRG-080300	A	PAVEMENT NOTES
SMWSTWTP-GLO-PTA-SN600-CV-DRG-080301	A	PAVEMENT PLAN – SHEET 1
SMWSTWTP-GLO-PTA-SN600-CV-DRG-080305	A	PAVEMENT PLAN – SHEET 2
SMWSTWTP-GLO-PTA-SN600-CV-DRG-080306	A	PAVEMENT DETAILS – SHEET 1
SMWSTWTP-GLO-PTA-SN600-CV-DRG-080307	A	PAVEMENT DETAILS – SHEET 2
SMWSTWTP-GLO-PTA-SN600-CV-DRG-080304	A	PAVEMENT DETAILS – SHEET 3
SMWSTWTP-GLO-PTA-SN600-CV-DRG-080501	A	TURNING PATH PLAN – SHEET 1
SMWSTWTP-GLO-PTA-SN600-CV-DRG-080502	A	TURNING PATH PLAN – SHEET 2
SMWSTWTP-GLO-PTA-SN600-CV-DRG-080503	A	TURNING PATH PLAN – SHEET 3
SMWSTWTP-GLO-PTA-SN600-CV-DRG-080504	A	TURNING PATH PLAN – SHEET 4
SMWSTWTP-GLO-PTA-SN600-CV-DRG-080505	A	TURNING PATH PLAN – SHEET 5
SMWSTWTP-GLO-PTA-SN600-CV-DRG-080506	A	TURNING PATH PLAN – SHEET 6
SMWSTWTP-GLO-PTA-SN600-CV-DRG-080507	A	TURNING PATH PLAN – SHEET 7

1.7 ASSUMPTIONS AND EXCLUSIONS

At the time of the audit, no exclusions were presented to the audit team.

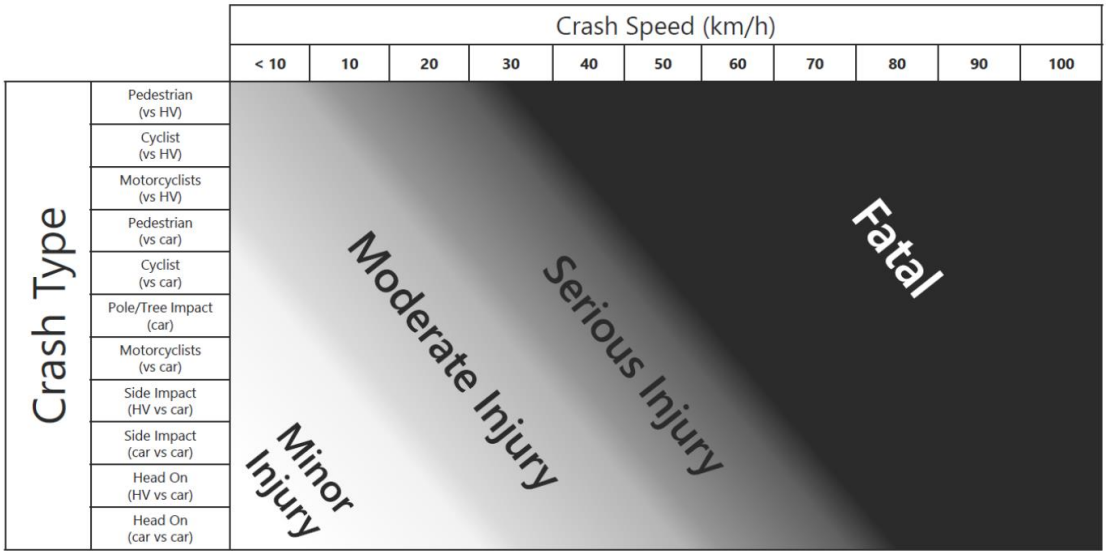
2.0 AUDIT RISK ASSESSMENT TECHNIQUE

For each of the safety issues identified, the level of risk with each has been determined. **Table 6** and **Figure 2** are extracted from the *Austroads Guide to Road Safety Part 6: Road Safety Audit* (2022) and have been used in the assessment of risk for this audit.

Table 6 Road Safety Audit Risk Matrix (Austroads 2022)

Road Safety Audit Risk Matrix			Severity				
			Insignificant	Minor	Moderate	Serious	Fatal
			Property damage	Minor first aid	Major first aid and/or presents to hospital (not admitted)	Admitted to hospital	Death within 30 days of the crash
Likelihood	Almost certain	Once per quarter	Medium	High	High	Extreme (FSI)	Extreme (FSI)
	Likely	Every quarter to 1 year	Medium	Medium	High	Extreme (FSI)	Extreme (FSI)
	Possible	Every 1 to 3 years	Low	Medium	High	High (FSI)	Extreme (FSI)
	Unlikely	Every 3 to 7 years	Negligible	Low	Medium	High (FSI)	Extreme (FSI)
	Rare	7 years+	Negligible	Negligible	Low	Medium (FSI)	High (FSI)

Figure 2 Severity Guidance Sheet (Austroads 2022)



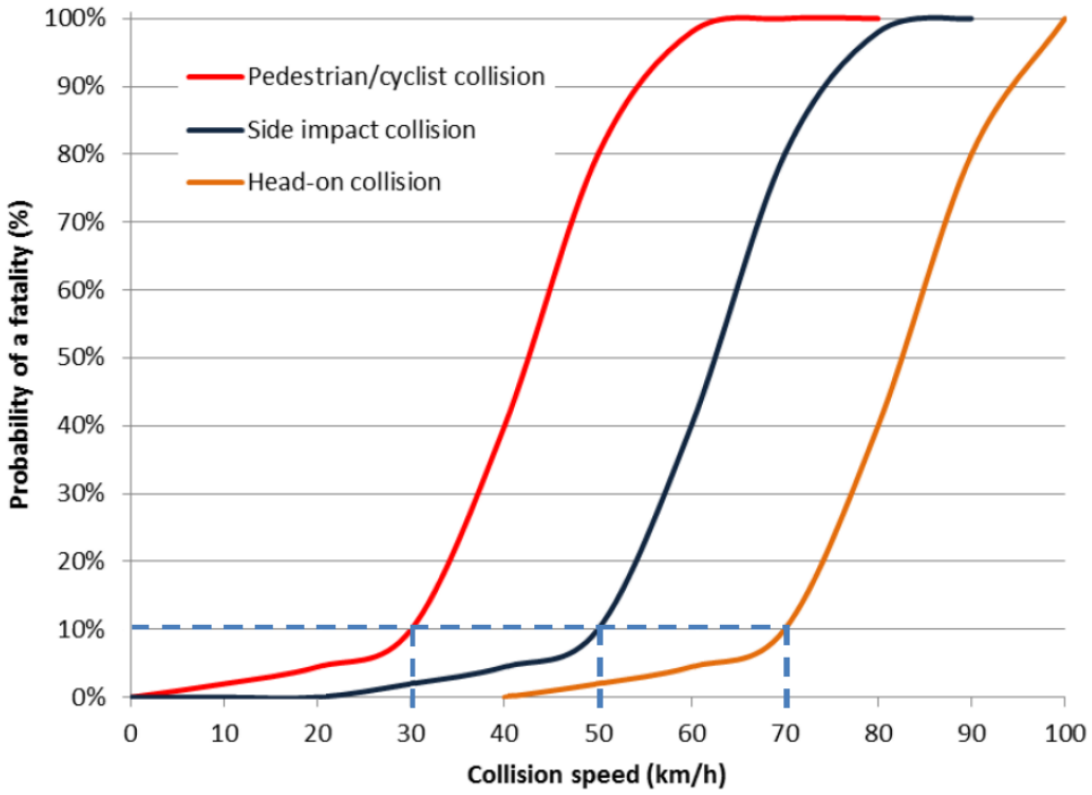
The corresponding priorities for mitigation are categorised as:

- Negligible – no action required
- Low – should be corrected or the risk reduced if the treatment cost is low
- Medium – should be corrected or the risk significantly reduced, if the treatment cost is moderate, but not high
- High – should be corrected or the risk significantly reduced, even if the treatment cost is high
- Extreme – must be corrected regardless of cost.

Austroads also provides guidance on the relationship between travel speeds, vehicle stopping distances and the resulting impact forces with respect to the human body and its tolerances. This is further explained by the chance of survival for some crash examples below and in

- Pedestrian struck by vehicle 20 to 30km/h
- Motorcyclist struck by vehicle (or falling off) 20 to 30km/h
- Side-impact vehicle striking a pole or tree 30 to 40km/h
- Side-impact vehicle to vehicle crash 50km/h
- Head-on vehicle to vehicle (equal mass) crash 70km/h.

Figure 3 Relationship between Collision Speed and Probability of Fatality

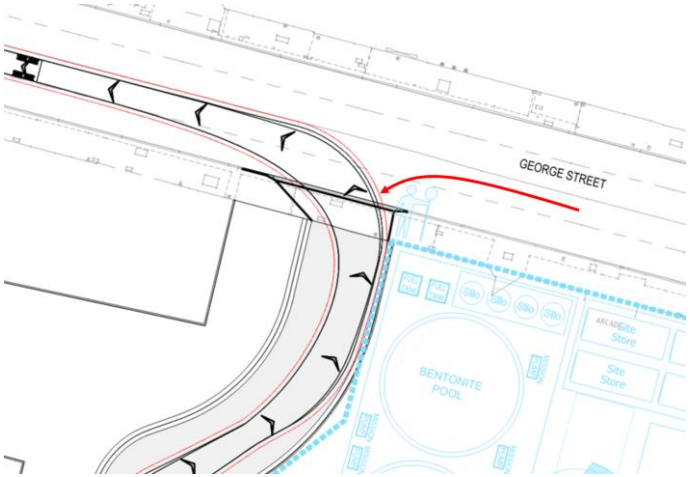


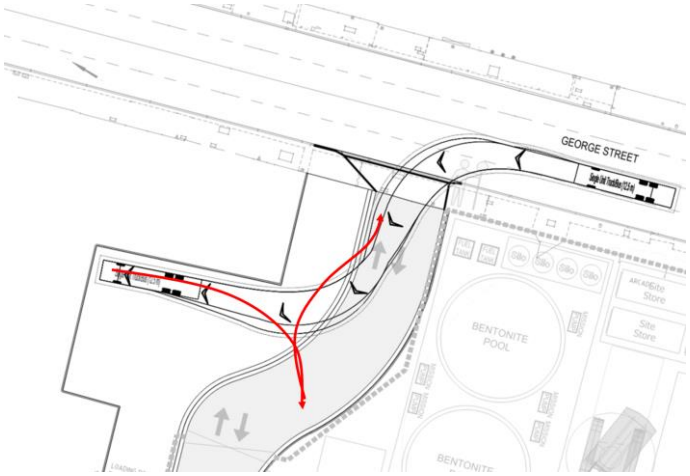
Source: Integrating Safe System with Movement and Place for Vulnerable Road Users (Austroads, 2020)

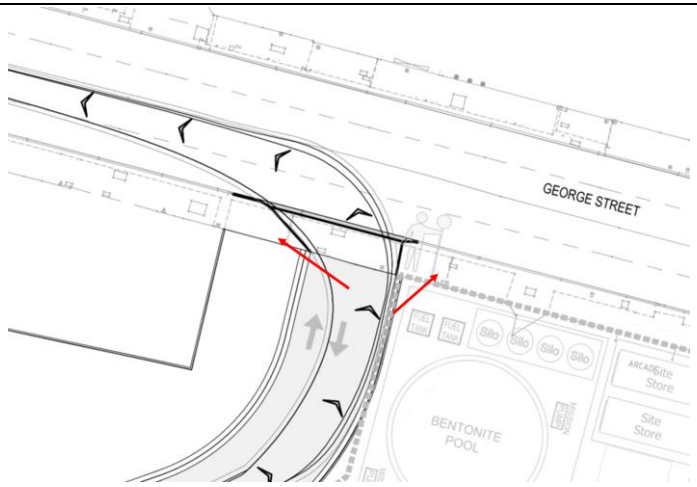
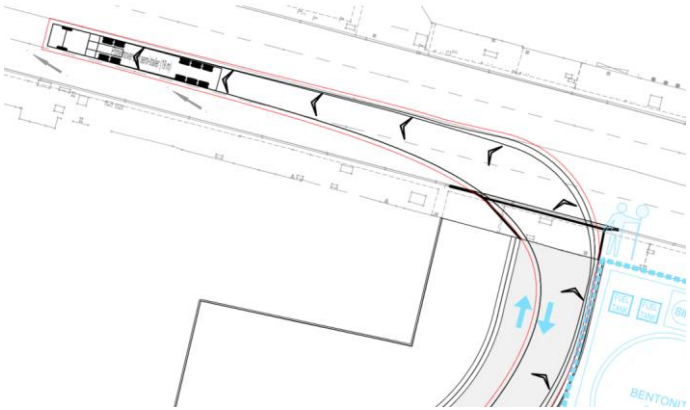
3.0 AUDIT FINDINGS

The audit findings are listed in **Table 7** and **Table 8** below.

Table 7 Package 1 Audit Findings

Audit Finding Reference and Location	Safety Hazard Findings	Likelihood	Severity	Level Of Risk	Project Managers Response
1. Conflict between Construction Vehicles and Commercial Vehicles	The swept path analysis shows exiting vehicles to George Street require the full width of the access road. This results in opposing vehicles unable to pass when entering the Commercial loading docks via George Street. There is a risk this results in abrupt stopping within George Street resulting in rear-end crashes. 	Possible	Minor	Medium	Traffic control will be used when larger vehicles (19m semi and truck and dog) are performing these movements. Traffic control personnel and a boom gate will be placed at the entrance of the driveway to stop traffic coming into the site while construction vehicles are leaving site.
2. Commercial Vehicle exit paths	The HRV exit path is not shown. There is a risk that that the HRV is unable to exit from the loading position shown in the plans, requiring multiple manoeuvres adjacent to the existing building and access road. There is a risk of property damage due to	Possible	Insignificant	Low	The turning movement reversing will be shown on future packages. This movement can be

	excessive manoeuvres required, or potential increased probability of an incident with workers in the area due to the tight turning area resulting in low speed pedestrian crashes. 				performed. Pedestrian exclusion line marking has been placed in to limit pedestrian movements in the reverse turning area of the truck. Traffic control personnel and a boom gate will be placed at the entrance of the driveway to stop traffic coming into the site while construction vehicles are leaving site.
3. Sight lines to pedestrian	The access road is abutted adjacent to construction compound. The swept paths show vehicles require the full width of the driveway to exit, reducing sight distance to pedestrians on the footpath. There is a risk that poor sight distance to pedestrians will increase the probability of a vehicle to pedestrian crash.	Possible	Serious	High	Traffic control will be used when larger vehicles (19m semi and truck and dog) are performing these movements.

					
4. Exit path clearance	The swept paths show the entering HRV and exiting Semi-trailer clearance encroach into the opposing travel lanes. There is a risk that vehicles in the opposing travel lanes will shy away from the centreline, potentially encroaching into the adjacent kerbside lane, or abrupt breaking within George Street eastbound. This may result in low speed side swipes or rear-ends. 	Unlikely	Minor	Low	Traffic control will be used when larger vehicles (19m semi and truck and dog) are performing these movements. Turning movements have been revised to minimized this impact.

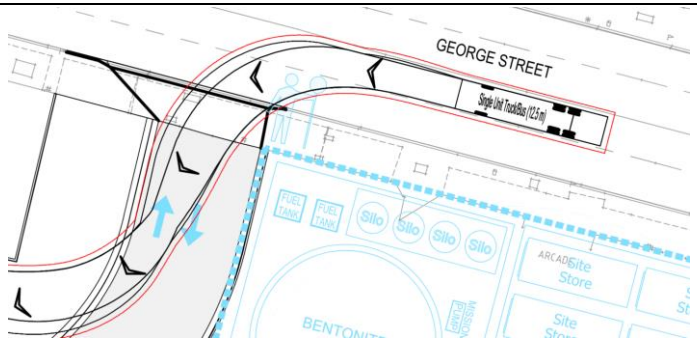
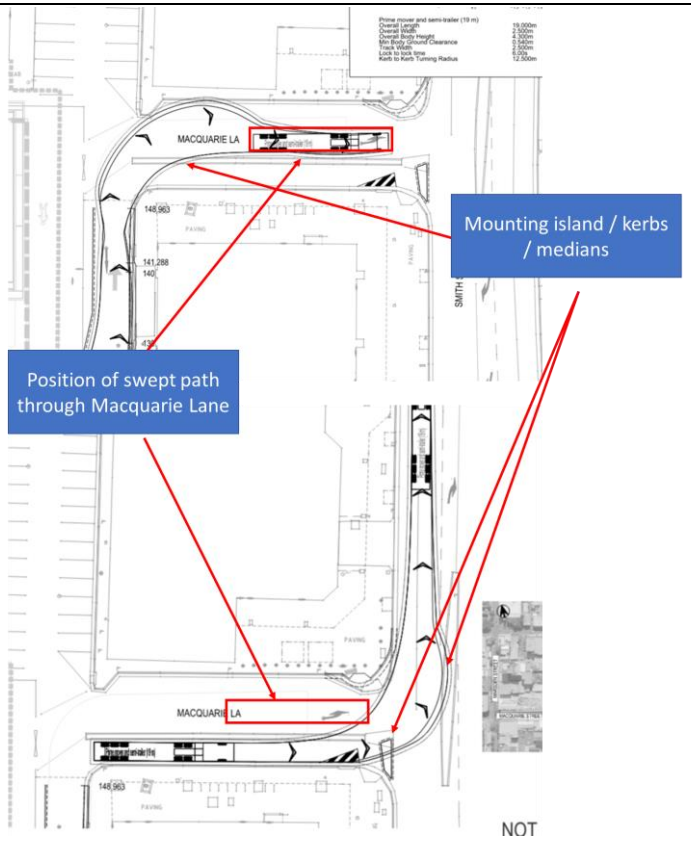
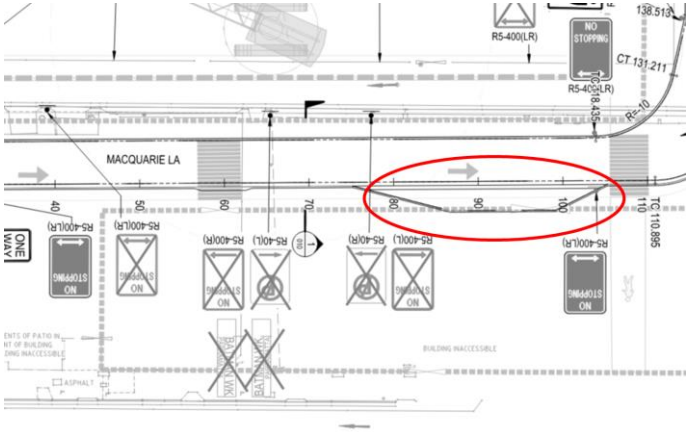
					

Table 8 Package 2 Audit Findings

Audit Finding Reference and Location	Safety Hazard Findings	Likelihood	Severity	Level Of Risk	Project Managers Response
1. Construction Exit Path	The Semi-trailer turn path through Macquarie Lane is different to the exit path from Macquarie Lane onto Smith Street. There is a risk that semi-trailers will be require multiple manoeuvres to exit the laneway, resulting in potential property damage or increased probability of a pedestrian crash. The probability is also increased where the semi-trailer is required to mount proposed islands / medians within Macquarie Lane.	Possible	Serious	High (FSI)	Revised turnpaths have been provided to correct this movement. The movement can be undertaken without reversing manoeuvres.

					
2. Placement of rigid barriers	There are currently rigid barriers / bollards in place along Macquarie Street. It is unclear if these types of barriers will be retained and need to be considered as part of the Package 2 works. The swept paths do not appear to consider the placement or barriers along Macquarie Street and as such there is a risk of property damage to vehicles manoeuvring into Macquarie Lane.	Unlikely	Insignificant	Negligible	Turn paths have been revised provided to show the ultimate movements. The rigid barriers are temporary and will be relocated prior to revised Macquarie Lane being open to the public.
3. Vehicle clearance	The swept path manoeuvring for the semi-trailer indicates the vehicle body and clearance is close and in some cases encroaches beyond the kerb. The placement of proposed	Possible	Insignificant	Low	The movements for 19m semi trailers are limited and this will not be used for 19m

	signage at corners and along Macquarie Lane likely pose a risk to damage and low speed crashes with large trucks maneovuring through Macquarie Lane.				semi construction traffic. This is a low speed environment and limited to one direction which prevents obstruction to traffic flow.
4. Indented zone	There is an indented zone within Macquarie Lane, however the proposed signage suggest this is “No Stopping”. The audit has not considered any risks associated with the usage of this zone. 	Note only			Signage to be revised to allow for maintenance vehicles.

4.0 RESPONDING TO THE AUDIT REPORT

A project manager is under no obligation to accept the findings outlined in this audit report. This report simply provides the opportunity for the project manager to review potential problems highlighted by the auditors.

A formal road safety audit report should be responded to in writing.

It should be noted that this audit will be recorded on the NSW Register of Road Safety Auditors and the project manager should expect email notification from the register to confirm the audit has been carried out.

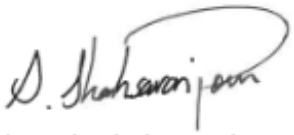
4.1 FORMAL STATEMENT

We, the undersigned, declare that we have reviewed the material and data listed in this report and identified the safety and operational deficiencies above.

It should be noted that while every effort has been made to identify potential safety hazards, no guarantee could be made that every deficiency has been identified.

We recommend that points of concern be investigated and necessary corrective actions are undertaken.

Hayden Calvey
Level 3 Road Safety Auditor
Team Leader



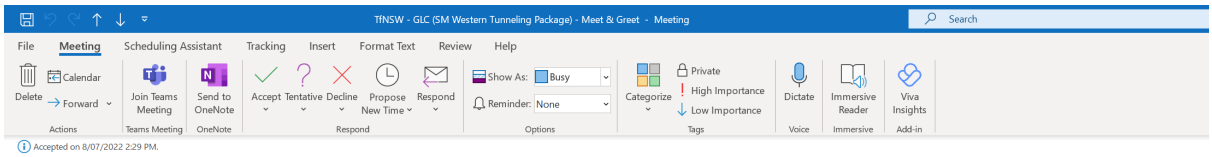
Siavash Shahsavaripour
Level 2 Road Safety Auditor
Team Member

Hazard ID	Source Reference	System / activity	Location (Temp Works Design Scheme No)	Top Level Hazard	Hazard	Hazard Cause/s	End Consequence How does it cause injury of fatality to a human	Existing Controls	Initial Risk Ranking Sydney Metro: Likelihood	Consequence	Risk Ranking	Autogenerated	Proposed Safety Control	Adopt / Reject Control	Reasons for Rejection	Safety Requirement ID (Refer to Requirements Database)	Safety Requirement	Safety Requirement Status	Residual Risk Sydney Metro: Likelihood	Consequence	Risk Ranking	Overall SFAIRP Argument for Hazard	SFAIRP finalised in Design??	Assumption / Dependency	Further Actions	Hazard Owner	Hazard Status	Hazard Change Control History	Notes
Unique number allocated to the risk For WTP ise SMW-Location Code-HAZ-Consecutive Number	Provide a reference to show how the hazard was generated (e.g. author of hazard / PHA subject and date, review of other hazard log name/ version and date of review)	The system of interest with respect to the hazard (e.g. Tunnel, Station Box, Dive, EW, TW etc)	Clear and unambiguous description of the location (e.g. Rosehill DWall, Clyde TW etc)	State one of the following options (as applicable to the hazard / risk identified): TE-01 Train Collision TE-02 Derailment TE-03 Train Object Collision TE-04 Train Person Collision TE-05 Passenger/staff on Train Incident TE-06 MTS Staff Incident TE-07 Platform Train Interface Incident TE-08 Evacuation TE-09 Structural Failure TE-10 Station Incident TE-11 Electrocution TE-12 Fire & Smoke	Brief description of the hazard scenario Description should be understandable to any professional and must not include any abbreviations unless widely known (e.g. CCTV) Description should describe the 'potential for harm'	List all causes, each to be on a separate line A cause is a reason, not just a trigger	All consequences should be listed and the 'worst case credible' consequence should be identified and used to assess likelihood and consequence Consequence should be expressed in terms of harm to people (death or injury), for example, "<5 death", "<5 minor injury", "<5 major injury"	List all engineering safety controls with requirement ID from DOORS that are taken into account in the initial risk ranking using separate numeric ID as in: 1) First control (Requirement ID) 2) Second control (Requirement ID) or add extra lines to the spreadsheet to contain separate controls	Classification of Risk based on an initial assessment taking into consideration of the Existing Controls Likelihood, Consequence and Risk rating assessed using the Sydney Metro and Sydney Trains safety risk criteria	Classification of Risk based on an initial assessment taking into consideration of the Existing Controls Likelihood, Consequence and Risk rating assessed using the Sydney Metro and Sydney Trains safety risk criteria		List all additional safety controls using separate numeric ID as in 1) First control 2) Second control or add extra lines to the spreadsheet to contain separate controls **Control Naming:** **DC1,2,3 etc for design phase controls** **CC1,2,3, etc for construction phase control** **OC1,2,3 etc for O&M Control**	Allocation of whether each recorded additional safety control is being implemented. Select one of the following options against each safety control: **Adopt** the control has been deemed practicable and has been or is to be implemented i.e. DC1-Adopt **Investigate** Undertake further assessment to determine whether the control is practicable i.e. CC1-Investigate **Reject** The control is not deemed practicable and will not be implemented i.e. OC1-Reject	Details of the justification as to why a control has been rejected This may include a cross reference to other documentation which contains detailed justification (e.g. risk report, briefing papers) i.e. OC1-Rejected by xxx due to yyy	Cross reference to the requirements database record ID for each safety requirement i.e. DC1-requirement ID by GLD	This is a version of each safety control worded appropriately for it to be used as a safety requirement This entry will be used as the basis for an export of safety controls into the requirements database (e.g. DOORS)	Cross reference to the status of each safety requirement based on that recorded in the requirements database Coordinated with GLD	Classification of Risk based on a further assessment taking into consideration of the Adopted Safety Control(s) Likelihood, Consequence and Risk rating assessed using the Sydney Metro and Sydney Trains safety risk criteria	Classification of Risk based on a further assessment taking into consideration of the Adopted Safety Control(s) Likelihood, Consequence and Risk rating assessed using the Sydney Metro and Sydney Trains safety risk criteria	Autogenerated	Select one or more of the following options (as applicable): 1) Compliance to one or more standards that assures safety (these standards must be listed in the controls) 2) Alignment with industry best practice in NSW, Australia or other comparable railway jurisdiction (specify which) 3) Controls have been developed through one or more workshops attended by a suitable range of SMEs and confirmed 'no further controls could be identified' (ensure workshop is referenced in the "Hazard source ref" column) 4) Evaluated via Quantified Risk Assessment or semi-quantified risk assessment process (provide cross reference to the QRA report) 5) One or more controls have been evaluated using Gross Disproportionality Assessment to establish that the cost is not grossly disproportionate to the safety benefit gained (provide cross reference to the assessment and the applicable controls)					Select one of the following options: **Open** Hazard identified **Resolved** Action to close the hazard has been agreed but not implemented or verified **Closed at Design** Action to close the hazard has been completed and verified (i.e. control measure is verified with evidence in design) **Closed** Action to close the hazard has been validated (i.e. control measure is confirmed to be implemented) **Transferred** Action taken to transfer the risk to another change activity (i.e. project) or to another business unit as part of the management of post implementation activities **Cancelled** The identified hazard has been determined not to be a credible risk or is considered to be a duplicate of another hazard	As the hazard is updated, include details of change history with link to safety journal	Include notes providing further context on management of the hazard
SMW-PTA-HAZ-TW4	Design Meeting 2/09/22	Road	Package 2 - Macquarie Lane	N/A	Interaction between construction vehicles and light vehicles	Shared use of the road for construction vehicles accessing the truck bay/private driveway and light vehicles	Collision between vehicles at low speeds <5 minor injury	1) Adequate sight distance has been incorporated into the design 2) Low design speeds due to tight turn movements	Unlikely - L4	Moderate - C4	C		CC4 - Traffic management to be implemented when truck movements occur through Macquarie Lane. OC4- Temporary signage to warn vehicles of presence of construction vehicles on Macquarie Lane.	NIL	NIL	SMW-PTA-HAZ-CC4 SMW-PTA-HAZ-OC4	NIL	NIL	Rare - L5	Moderate - C4	D	• All regulatory requirements met. • All applicable GS/PS requirements met or resolved. • All applicable standards are met or resolved • The right combination of reasonably practicable safety controls representing contemporary good practice have been identified and implemented. • The risk has been managed to an adequate level of safety, and the residual risk is considered SFAIRP.	Yes	NIL	N/A	GLC Parramatta Design Manager	Closed at Design	NIL	NIL
SMW-PTA-HAZ-TW5	Design Meeting 2/09/22	Road	Package 2 - Macquarie Lane	N/A	Interaction between pedestrians and vehicles in Macquarie Lane	Footpaths or pedestrian access have not been provided through Macquarie Lane	Pedestrians struck by vehicles at low speeds <5 major injury	None	Possible - L3	Major - C3	B		DC5 - Temporary no pedestrian signage to be provided during construction to exclude pedestrians from entering Macquarie Lane from the carpark or Smith Street.	NIL	NIL	SMW-PTA-HAZ-DC5	NIL	NIL	Rare - L5	Major - C3	C	• All regulatory requirements met. • All applicable GS/PS requirements met or resolved. • All applicable standards are met or resolved • The right combination of reasonably practicable safety controls representing contemporary good practice have been identified and implemented. • The risk has been managed to an adequate level of safety, and the residual risk is considered SFAIRP.	Yes	NIL	N/A	GLC Parramatta Design Manager	Closed at Design	NIL	NIL
SMW-PTA-HAZ-TW6	Design Meeting 2/09/22	Road	Package 2 - Macquarie Lane	N/A	Interaction between vehicles leaving Macquarie Lane turning left onto Smith Street and vehicles travelling through Smith Street	Vehicles turning left onto Smith Street unaware of through traffic	Collision between vehicles <5 major injury	1) Left turn only signage and line marking	Unlikely - L4	Major - C3	C		DC6 - Stop sign and stop line marking to be provided on Macquarie Lane at the Smith Street exit.	NIL	NIL	SMW-PTA-HAZ-DC6	NIL	NIL	Rare - L5	Major - C3	C	• All regulatory requirements met. • All applicable GS/PS requirements met or resolved. • All applicable standards are met or resolved • The right combination of reasonably practicable safety controls representing contemporary good practice have been identified and implemented. • The risk has been managed to an adequate level of safety, and the residual risk is considered SFAIRP.	Yes	NIL	N/A	GLC Parramatta Design Manager	Closed at Design	NIL	NIL
SMW-PTA-HAZ-TW7	Design Meeting 2/09/22	Road	Package 2 - Macquarie Lane	N/A	Interaction between vehicles leaving the public carpark including heading south into Macquarie Lane in the wrong direction	Vehicles unaware of one way/no entry into Macquarie Lane	Collision between vehicles at low speeds <5 minor injury	1) Adequate sight distance has been incorporated into the design 2) Low design speeds due to tight turn movements	Unlikely - L4	Moderate - C4	C		DC7 - No entry/stop signs and line marking to be provided to prevent vehicles entering Macquarie Lane in the wrong direction from the carpark.	NIL	NIL	SMW-PTA-HAZ-DC7	NIL	NIL	Rare - L5	Moderate - C4	D	• All regulatory requirements met. • All applicable GS/PS requirements met or resolved. • All applicable standards are met or resolved • The right combination of reasonably practicable safety controls representing contemporary good practice have been identified and implemented. • The risk has been managed to an adequate level of safety, and the residual risk is considered SFAIRP.	Yes	NIL	N/A	GLC Parramatta Design Manager	Closed at Design	NIL	NIL
SMW-PTA-HAZ-TW8	Design Meeting 2/09/22	Road	Package 2 - George Street	N/A	Pedestrian traffic entering the site through Horwood Place	Pedestrians unaware of no entry into Horwood Place	Pedestrians struck by construction vehicles at low speeds <5 major injury	1) Hoarding and physical barriers to prevent pedestrians using the footpath into Horwood Place during construction	Unlikely - L4	Major - C3	C		DC8 - Temporary signage to be provided to prevent pedestrians from entering Macquarie Lane at Horwood Place during construction.	NIL	NIL	SMW-PTA-HAZ-DC8	NIL	NIL	Rare - L5	Major - C3	C	• All regulatory requirements met. • All applicable GS/PS requirements met or resolved. • All applicable standards are met or resolved • The right combination of reasonably practicable safety controls representing contemporary good practice have been identified and implemented. • The risk has been managed to an adequate level of safety, and the residual risk is considered SFAIRP.	Yes	NIL	N/A	GLC Parramatta Design Manager	Closed at Design	NIL	NIL
SMW-PTA-HAZ-TW9	RSA 06/09/22	Road	Package 2 - Macquarie Lane	N/A	Multiple manouvres for semi-trailers and reversing movements	The Semi-trailer turn path through Macquarie Lane is different to the exit path from Macquarie Lane onto Smith Street. There is a risk that semi-trailers will be require multiple manoeuvres to exit the laneway, resulting in potential property damage or increased probability of a pedestrian crash. The probability is also increased where the semi-trailer is required to mount proposed islands / medians within Macquarie Lane.	Pedestrians struck by construction vehicles at low speeds, damage to property <5 major injury	None	Possible - L3	Major - C3	B		DC9 - Provide turn paths to demonstrate that 19m semis can travel from Macquarie Lane through to Smith Street without reversing manoeuvres.	NIL	NIL	SMW-PTA-HAZ-DC9	NIL	NIL	Rare - L5	Major - C3	C	• All regulatory requirements met. • All applicable GS/PS requirements met or resolved. • All applicable standards are met or resolved • The right combination of reasonably practicable safety controls representing contemporary good practice have been identified and implemented. • The risk has been managed to an adequate level of safety, and the residual risk is considered SFAIRP.	Yes	NIL	N/A	GLC Parramatta Design Manager	Closed at Design	NIL	NIL
SMW-PTA-HAZ-TW10	RSA 06/09/22	Road	Package 2 - Macquarie Lane	N/A	Collision between heavy vehicles and rigid barriers/bollards	There are currently rigid barriers / bollards in place along Macquarie Street. It is unclear if these types of barriers will be retained and need to be considered as part of the Package 2 works. The swept paths do not appear to consider the placement or barriers along Macquarie Street and as such there is a risk of property damage to vehicles manoeuvring into Macquarie Lane.	Damage to property, no injury	The rigid barriers are temporary and will be relocated prior to revised Macquarie Lane being open to the public.	Unlikely - L4	Insignificant - C6	D		DC10 - Provide turn paths to show that the ultimate movements following the removal of temporary rigid barriers/bollards can be undertaken.	NIL	NIL	SMW-PTA-HAZ-DC10	NIL	NIL	Rare - L5	Insignificant - C6	D	• All regulatory requirements met. • All applicable GS/PS requirements met or resolved. • All applicable standards are met or resolved • The right combination of reasonably practicable safety controls representing contemporary good practice have been identified and implemented. • The risk has been managed to an adequate level of safety, and the residual risk is considered SFAIRP.	Yes	NIL	N/A	GLC Parramatta Design Manager	Closed at Design	NIL	NIL
SMW-PTA-HAZ-TW11	RSA 06/09/22	Road	Package 2 - Macquarie Lane	N/A	Turn paths encroaching on kerbs	The swept path manoeuvring for the semi-trailer indicates the vehicle body and clearance is close and in some cases encroaches beyond the kerb. The placement of proposed signage at corners and along Macquarie Lane likely pose a risk to damage and low speed crashes with large trucks manoeuvring through Macquarie Lane.	low speed collision with signage at corners	This is a low speed environment and limited to one direction which prevents obstruction to traffic flow. The movements for 19m semi trailers are limited and this will not be used for 19m semi construction traffic.	Possible - L3	Insignificant - C6	D		DC11 - Provide turn paths to demonstrate that 19m semis can travel from Macquarie Lane through to Smith Street without impacting kerbs and signage.	NIL	NIL	SMW-PTA-HAZ-DC11	NIL	NIL	Unlikely - L4	Insignificant - C6	D	• All regulatory requirements met. • All applicable GS/PS requirements met or resolved. • All applicable standards are met or resolved • The right combination of reasonably practicable safety controls representing contemporary good practice have been identified and implemented. • The risk has been managed to an adequate level of safety, and the residual risk is considered SFAIRP.	Yes	NIL	N/A	GLC Parramatta Design Manager	Closed at Design	NIL	NIL
SMW-PTA-HAZ-TW12	Sustainability Workshop 29/09/22	Road	Package 2 - George Street Driveway and Macquarie Lane	N/A	Slips, trips and falls	Potential trip hazard due to the wear and tear associated with the wearing of the fibre reinforced concrete surface	Minor Injury <5	Existing footpath is concrete paved	Likely - L2	Minor - C5	C		DC12 - Provide regular steel reinforcement for footpath areas as opposed to fibre reinforced concrete to reduce risk of trip hazards due to wear and tear of the pavement surface.	NIL	NIL	SMW-PTA-HAZ-DC12	NIL	NIL	Unlikely - L4	Minor - C5	D	• All regulatory requirements met. • All applicable GS/PS requirements met or resolved. • All applicable standards are met or resolved • The right combination of reasonably practicable safety controls representing contemporary good practice have been identified and implemented. • The risk has been managed to an adequate level of safety, and the residual risk is considered SFAIRP.	Yes	NIL	N/A	GLC Parramatta Design Manager	Closed at Design	NIL	NIL

E STAKEHOLDER CONSULTATION

Organisation	Consultation method
GLC Communications Team	Emails and Meetings
GLC Design Drawings meetings and workshops	Emails and Meetings
Sydney Metro	CTMP Feedback on Document Comments

19 July - TfNSW Workshop for Parramatta and Westmead LAWs



Accepted on 8/07/2022 2:29 PM.

TfNSW - GLC (SM Western Tunneling Package) - Meet & Greet

Organizer	Adrian Mientus (GEA)
Time	Tuesday, 19 July 2022 2:00 PM-3:00 PM
Location	Microsoft Teams Meeting
Response	Accepted Change Response

Dear Mohamed,

This invitation is for a Meet and Greet session and to outline the scope and planned packaging and design status.

We propose the agenda below. The emphasis will be on the Road Works. We will also touch on the Project Works scope. Please don't hesitate to contact me if you would like to add to it or adjust it in any manner.

AGENDA:

- **Introductions – SM/GLC including Designers/TfNSW**
- **Design Scope and packaging**
  - **Road Works**
    - **Westmead**
    - **Parramatta**
  - **Project Works**
- **Design program**
- **Designs status**

Best regards,

GAMUDA Australia

Adrian Mientus
Interface and Integration Manager

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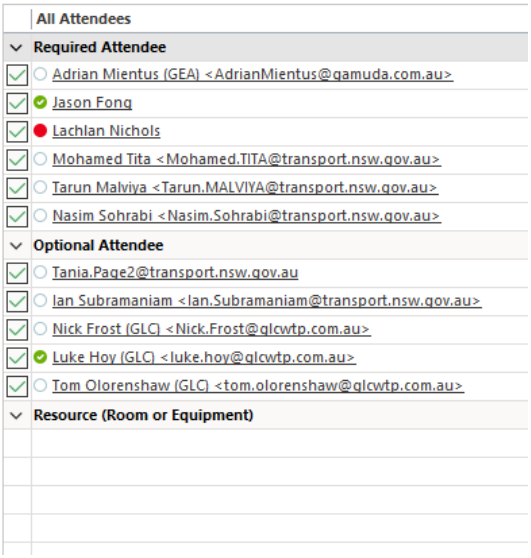
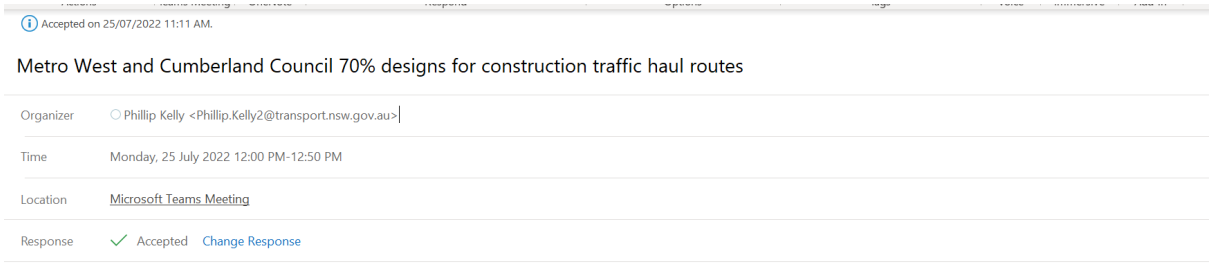


25 July: Cumberland Council – Westmead LAWs



Accepted on 25/07/2022 11:11 AM.

Metro West and Cumberland Council 70% designs for construction traffic haul routes

Organizer	Phillip Kelly <Phillip.Kelly2@transport.nsw.gov.au>
Time	Monday, 25 July 2022 12:00 PM-12:50 PM
Location	Microsoft Teams Meeting
Response	✓ Accepted Change Response

-----Original Appointment-----
From: Phillip Kelly <Phillip.Kelly2@transport.nsw.gov.au>
Sent: Thursday, 14 July 2022 4:52 PM
To: Phillip Kelly; siva.sivakumar; Jai Shankar; Soma Somaskanthan; Tom Olorenshaw (GEA); Adrian Mientus (GEA); Khalil Zeitoun; Edna Vianzon
Cc: Sarah Hussein
Subject: Metro West and Cumberland Council 70% designs for construction traffic haul routes
When: Monday, 25 July 2022 12:00 PM-12:50 PM (UTC+10:00) Canberra, Melbourne, Sydney.
Where: Microsoft Teams Meeting

Please forward to anyone else you believe should attend this presentation by Gamuda Laing O'Rourke about the designs for construction traffic haul route civil works at Westmead

---

Microsoft Teams meeting

Join on your computer or mobile app
Click here to join the meeting

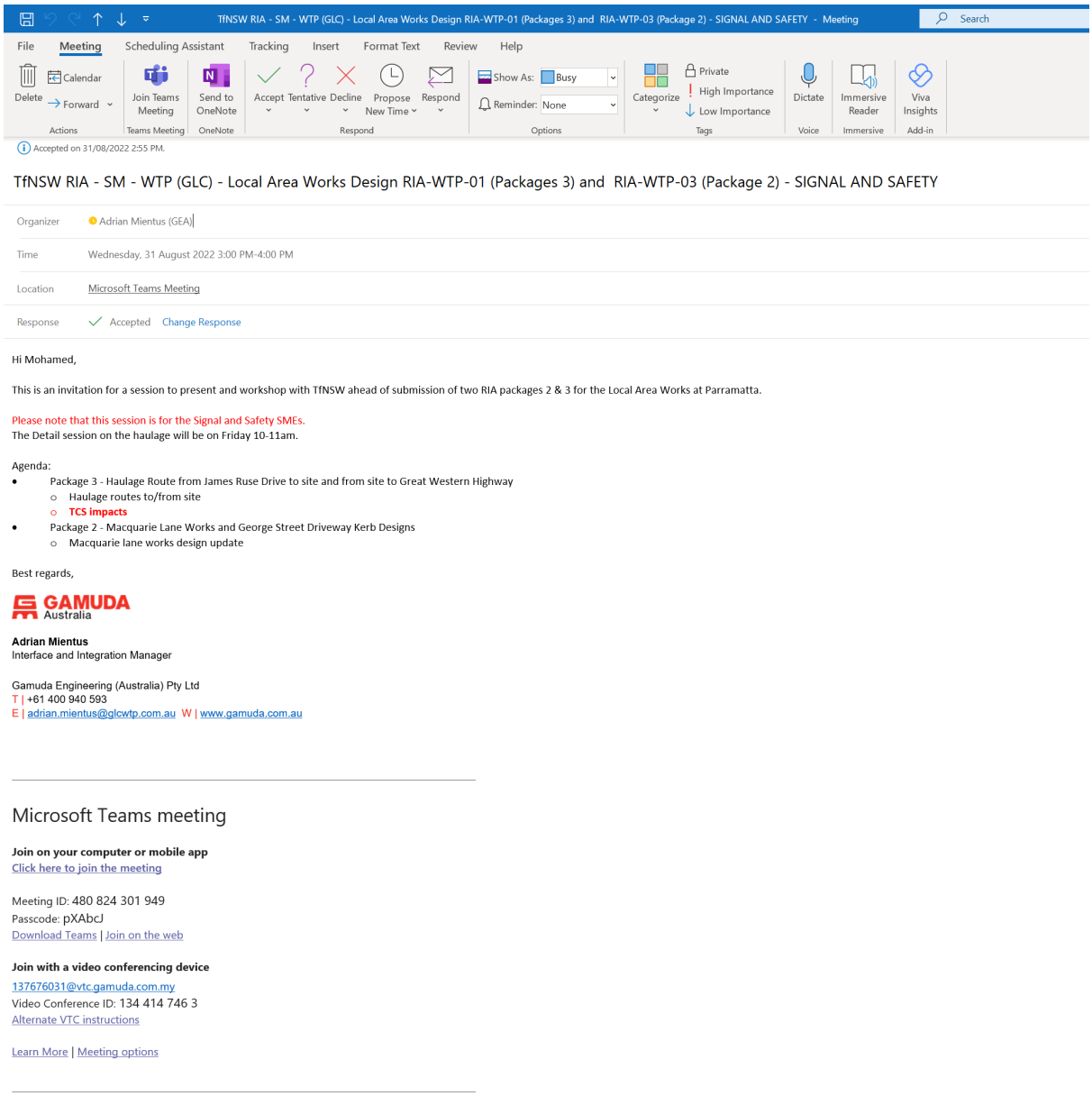
Or join by entering a meeting ID
Meeting ID: 489 467 530 605
Passcode: HcYDf8

Or call in (audio only)
+61 2 9161 1290,,746100101# Australia, Sydney
Phone Conference ID: 746 100 101#
Find a local number | Reset PIN

Learn More | Meeting options

31st August TfNSW workshop – Parramatta LAWs including Macquarie St one way

Operations department attended this session



TfNSW RIA - SM - WTP (GLC) - Local Area Works Design RIA-WTP-01 (Packages 3) and RIA-WTP-03 (Package 2) - SIGNAL AND SAFETY - Meeting

Search

File Meeting Scheduling Assistant Tracking Insert Format Text Review Help

Delete | Calendar | Forward | Join Teams Meeting | Send to OneNote | Accept | Tentative | Decline | Propose New Time | Respond | Show As: Busy | Reminder: None | Categorize | Private | High Importance | Low Importance | Dictate | Immersive Reader | Viva Insights

Actions | Teams Meeting | OneNote | Respond | Options | Tags | Voice | Immersive | Add-in

Accepted on 31/08/2022 2:55 PM.

TfNSW RIA - SM - WTP (GLC) - Local Area Works Design RIA-WTP-01 (Packages 3) and RIA-WTP-03 (Package 2) - SIGNAL AND SAFETY

Organizer: Adrian Mientus (GEA)

Time: Wednesday, 31 August 2022 3:00 PM-4:00 PM

Location: Microsoft Teams Meeting

Response: Accepted Change Response

Hi Mohamed,

This is an invitation for a session to present and workshop with TfNSW ahead of submission of two RIA packages 2 & 3 for the Local Area Works at Parramatta.

Please note that this session is for the Signal and Safety SMEs.
The Detail session on the haulage will be on Friday 10-11am.

Agenda:

- Package 3 - Haulage Route from James Ruse Drive to site and from site to Great Western Highway
  - Haulage routes to/from site
  - **TCS impacts**
- Package 2 - Macquarie Lane Works and George Street Driveway Kerb Designs
  - Macquarie lane works design update

Best regards,

GAMUDA Australia

Adrian Mientus
Interface and Integration Manager

Gamuda Engineering (Australia) Pty Ltd
T | +61 400 940 593
E | adrian.mientus@glcwtp.com.au W | www.gamuda.com.au

Microsoft Teams meeting

Join on your computer or mobile app
Click here to join the meeting

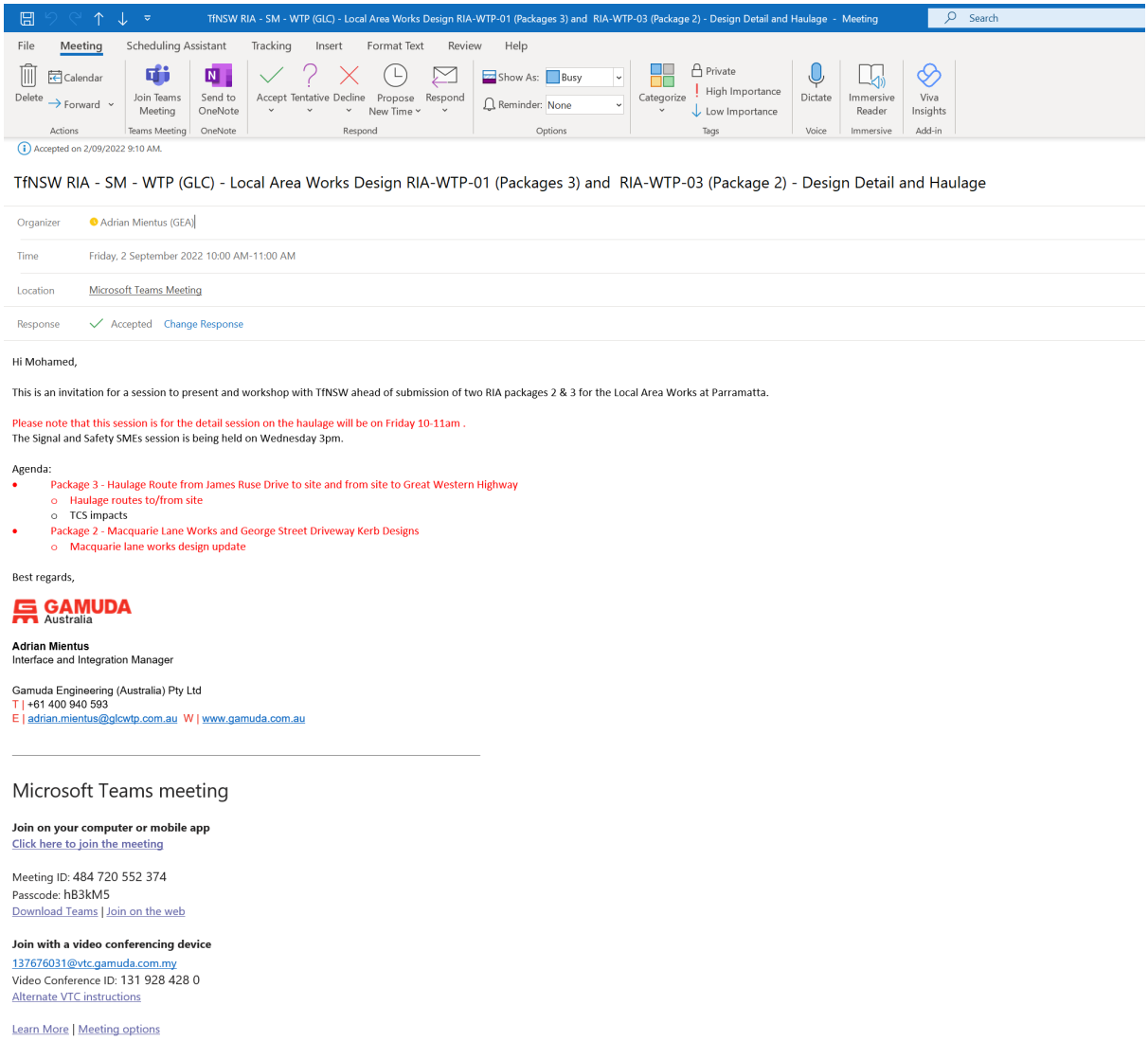
Meeting ID: 480 824 301 949
Passcode: pXAbcJ
Download Teams | Join on the web

Join with a video conferencing device
137676031@vtc.gamuda.com.my
Video Conference ID: 134 414 746 3
Alternate VTC instructions

Learn More | Meeting options

2nd September TfNSW Workshop – Parramatta LAWs including one way Macquarie Lane

Customer Journey Planning department attended this session



TfNSW RIA - SM - WTP (GLC) - Local Area Works Design RIA-WTP-01 (Packages 3) and RIA-WTP-03 (Package 2) - Design Detail and Haulage - Meeting

File | Meeting | Scheduling Assistant | Tracking | Insert | Format Text | Review | Help

Delete | Calendar | Forward | Join Teams Meeting | Send to OneNote | Accept | Tentative | Decline | Propose New Time | Respond | Show As: Busy | Reminder: None | Categorize | Private | High Importance | Low Importance | Dictate | Immersive Reader | Viva Insights

Actions | Teams Meeting | OneNote | Respond | Options | Tags | Voice | Immersive | Add-in

Accepted on 2/09/2022 9:10 AM.

TfNSW RIA - SM - WTP (GLC) - Local Area Works Design RIA-WTP-01 (Packages 3) and RIA-WTP-03 (Package 2) - Design Detail and Haulage

Organizer: Adrian Mientus (GEA)

Time: Friday, 2 September 2022 10:00 AM-11:00 AM

Location: Microsoft Teams Meeting

Response: Accepted Change Response

Hi Mohamed,

This is an invitation for a session to present and workshop with TfNSW ahead of submission of two RIA packages 2 & 3 for the Local Area Works at Parramatta.

Please note that this session is for the detail session on the haulage will be on Friday 10-11am .
The Signal and Safety SMEs session is being held on Wednesday 3pm.

Agenda:

- Package 3 - Haulage Route from James Ruse Drive to site and from site to Great Western Highway
  - Haulage routes to/from site
  - TCS impacts
- Package 2 - Macquarie Lane Works and George Street Driveway Kerb Designs
  - Macquarie lane works design update

Best regards,

GAMUDA Australia

Adrian Mientus
Interface and Integration Manager

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Microsoft Teams meeting

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137676031@vtc.gamuda.com.my
Video Conference ID: 131 928 428 0
Alternate VTC instructions

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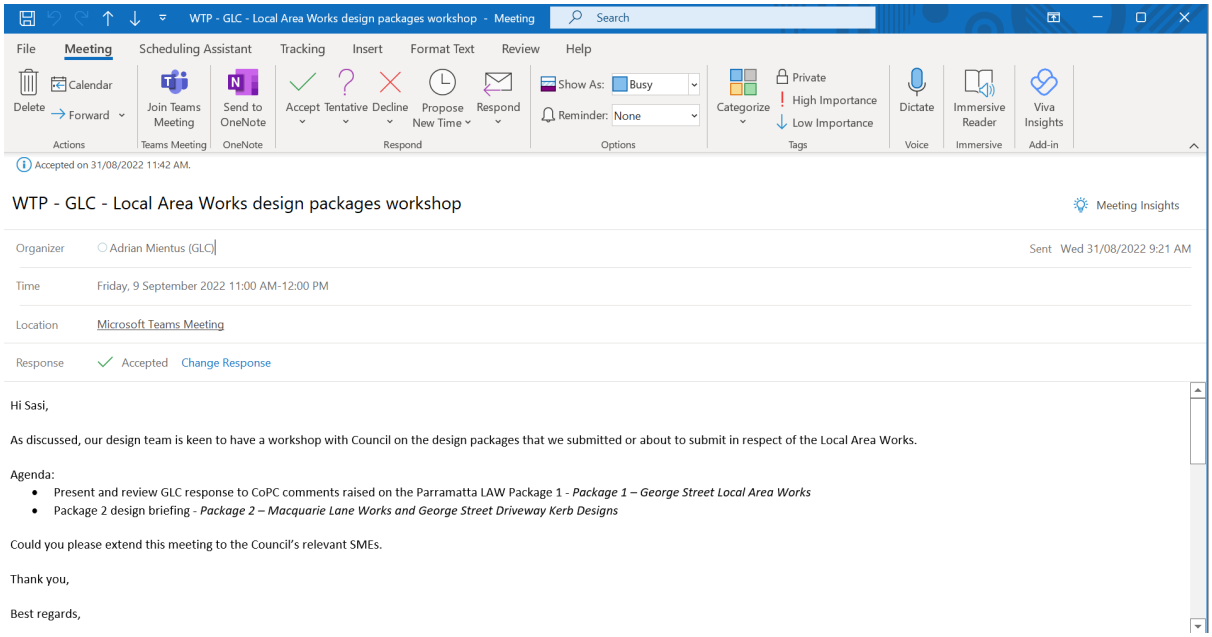
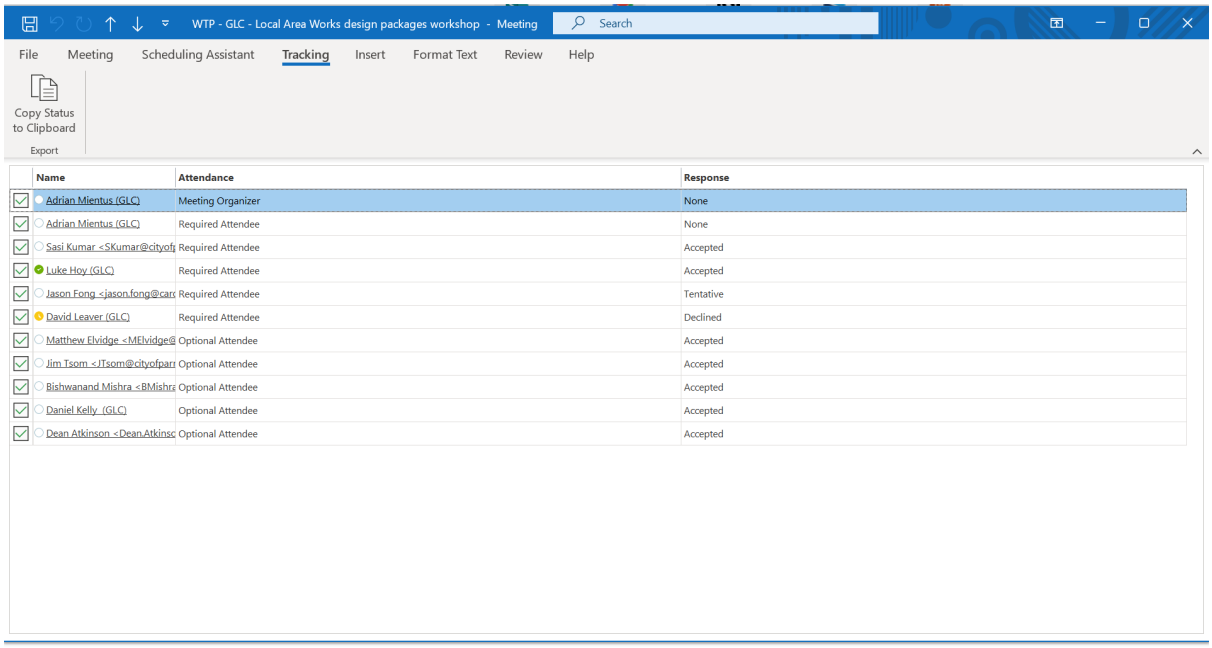
9th September: Parramatta Council Workshop





Appendix E – GLC Parramatta Stakeholder Consultation

Activity	Timing	Stakeholders identified	Tools/materials	Notes	Status
Email	4 October 2022	• CK Design (240 Church Street) • Pharmacy 4 Less (240 Church Street) • Scram Escape Rooms (240 Church Street) • Optimum Med Health (240 Church Street)		Email to businesses with an offer of a meeting. Meetings booked.	Complete
Email	4 October 2022	• Romeo's Food Hall IGA (37-39 George Street)	• Access staging plan	Email to businesses with an offer of a meeting and staging plan attached. No response received.	Complete
Meeting	10 October 2022	• CK Design (240 Church Street) • Pharmacy 4 Less (240 Church Street) • Scram Escape Rooms (240 Church Street) • Optimum Med Health (240 Church Street)	• Access staging plan	Meetings held with businesses to discuss upcoming traffic changes and impacts to access. Businesses were looking forward to pedestrian access off Church Street to the back of their building to be complete.	Complete
Email	11 October 2022	• CK Design (240 Church Street) • Pharmacy 4 Less (240 Church Street) • Scram Escape Rooms (240 Church Street) • Optimum Med Health (240 Church Street)	• Access staging plan	Follow up email post meeting with a copy of the access staging plan.	Complete

Email	11 October 2022	• Richmond School of Business (37-39 George Street) • Lead College (37-39 George Street)		Offer of meeting to discuss delivery vehicle access arrangements. No response received.	Complete
Email	13 October 2022	• Romeo's Food Hall IGA (37-39 George Street)	• Access staging plan	Follow up email to business contact to see if there was any interest in a meeting. No response received.	Complete
Meeting	25 October 2022	• Parramatta City Council communications team	• Access staging plan (Stage 6)	Discussed final state at a high level and advised changes to occur sometime in early 2023.	Complete
Meeting	26 October 2022	• Parramatta Light Rail communications team	• Access staging plan (Stage 6)	Discussed final state at a high level and advised changes to occur sometime in early 2023.	Complete
Email	Early December 2022	• CK Design (240 Church Street) • Pharmacy 4 Less (240 Church Street) • Scram Escape Rooms (240 Church Street) • Optimum Med Health (240 Church Street) • Richmond School of Business (37-39 George Street) • Lead College (37-39 George Street) • Romeo's Food Hall IGA (37-39 George Street)		Keep stakeholders informed of progress and provide an update.	To-do

Notification	TBC - January to March 2023	• 200m radius around worksite	• Notification of work • E-blast to mailing list	January, February and March notifications will include upcoming traffic changes. A standalone notification will be distributed to community when dates of changes are confirmed.	To-do
Email	TBC - January to February 2023	• CK Design (240 Church Street) • Pharmacy 4 Less (240 Church Street) • Scram Escape Rooms (240 Church Street) • Optimum Med Health (240 Church Street) • Richmond School of Business (37-39 George Street) • Lead College (37-39 George Street) • Romeo's Food Hall IGA (37-39 George Street) • 25 Smith Street • 75 George Street • 71 George Street • 65 George Street		Keep stakeholders informed of progress and provide an update.	To-do
Signage	TBC - January to March 2023	N/a	• Corflute signage • VMS	Signage communicating changes.	To-do

F INSPECTIONS AND CHECKLISTS

Audit Details			
Audit Date:		**Audit Time:**	
Address:			
WTP Site:		**Subcontractor:**	
Person completing the audit:			
GLC Supervisor on site:		**Position:**	

Traffic Control Crew Details			
Crew Members:			
Are all the workers inducted on WTP?	Yes ☐	No ☐	Comments:
Are all the workers inducted on the currently Site?	Yes ☐	No ☐	Comments:

Work zone Inspection			
TGS:		**ROL:**	
Is a copy of the location TMP and relevant TGS available?		Yes ☐	No ☐
Is the TGS implemented on the correct way?		Yes ☐	No ☐
Comments or details of action taken:			
Have any adjustments been made to the approval TGS?		Yes ☐	No ☐
If yes, provide details:	Are changes within tolerance? **If no, TGS must be reviewed by a PWZTMP**	Yes ☐	No ☐
	Have changes been approved? **If no, TGS must be approved**	Yes ☐	No ☐
Comments or details of action taken:			
Have all signs and devices been installed in accordance with approval TGS?		Yes ☐	No ☐
Comments or details of action taken:			

Are the PTCD positioned as prescribed on TGS?	Yes ☐		No ☐
Comments or details of action taken:			
Are sign and devices in good condition, clearly visible to road users?	Yes ☐		No ☐
Comments or details of action taken:			
Are all signs mounted level and suitably clear of travel lanes?	Yes ☐		No ☐
Comments or details of action taken:			
Are conflicting or non-applicable signs covered or removed?	Yes ☐	No ☐	N/A ☐
Comments or details of action taken:			
Is temporary delineation installed as prescribed i.e., straight line forming taper?	Yes ☐		No ☐
Comments or details of action taken:			
Are manual traffic controllers clear of travel lane, have suitable escape route?	Yes ☐		No ☐
Comments or details of action taken:			
Are site accesses and egresses well defined and safe for work vehicles?	Yes ☐		No ☐
Comments or details of action taken:			
Are registered trailers i.e., VMS / light towers; suitably clear of travel lanes and delineated?	Yes ☐	No ☐	N/A ☐

Comments or details of action taken:				
Are temporary speed zones operating as prescribed?	Yes ☐	No ☐	N/A ☐	
Comments or details of action taken:				
Are workers on foot / plant clearances been applied / observed?	Yes ☐	No ☐	N/A ☐	
Comments or details of action taken:				
Is the TGS valid for the site activity and operating safely as intended?	Yes ☐	No ☐		
Comments or details of action taken:				
Is TGS appropriate for the current traffic conditions?	Yes ☐	No ☐		
Comments or details of action taken:				
Have potential hazards identified in TGS been addressed? i.e., end-of-queue management	Yes ☐	No ☐		
Comments or details of action taken:				
Has the team leader completed the daily pre-start and risk assessment? **Please attach a copy to this audit**	Yes ☐	No ☐		
Comments or details of action taken:				
Is the Traffic Control crew with adequate PPE?	**Hi Vis Long Sleeves**	Yes ☐	No ☐	
	Pants	Yes ☐	No ☐	

	Hard Hat	Yes ☐	No ☐
	Steel cap boots	Yes ☐	No ☐
	Gloves (clipped when not in use)	Yes ☐	No ☐
	Safety Glasses	Yes ☐	No ☐
Is the crew equipped with 2-way radios	Yes ☐	No ☐	
Is the communication between crew members clear?	Yes ☐	No ☐	
Is any of the crew members showing fatigue signs?	Yes ☐	No ☐	

General overview			
Is the job site safe to continue the works	Yes ☐	No ☐	
If not, what was the immediate corrective action implemented			

Audit Team			
Name:	**Position:**	**Company:**	**Signature:**

Traffic Control company representative			
Name:	**Position:**	**Company:**	**Signature:**

G DESIGN DRAWINGS

H RISK ASSESSMENT ON BOOM GATE USE FOR PEDESTRIANS

Organisation	Assessment method
Grand Group	SWMS page 10
Lack Group	Risk assessment

SAFE WORK METHOD STATEMENT

Physical Security & Traffic Control Operations
(WTP-PW-SWMS-17)

Company Name:	**GRAND GROUP SERVICES PTY LTD**	**Site:**	**Western Tunnelling Package WTP**
ABN:	38 098 332 711	**Site Contact:**	**Ash Talbot** | Senior Logistics Coordinator – Mob 0424 504 288
Address:	PO BOX 915 Fairfield, NSW, 2165	**Project Description:**	Security Services for Construction Project, Traffic Control, Access Control, Customer Service, Static Guarding & Risk Management.
What measures are in place to ensure compliance with the SWMS:	Site Operating Procedures, Induction Training, Toolbox Talks, Supervision, Workplace Inspections, Hazard Register, START Right, STOP Right, Life Saving Rules.		
Person Responsible for reviewing and ensuring SWMS compliance:	Mahmoud Jajieh – NSW Security Risk Consultant Lic. no 000222531 – NSW Traffic Management Licence No. TCT1020305 – Mob 0452300938		
How will the SWMS control measurers be reviewed:	Control measures to be reviewed (and revised if necessary) task/methods change or unexpected issues arise		
SWMS review date:	25 Oct 2022 – 24 Oct 2023	**Reviewer's signature:**	
Training Requirements:	Certificate 2 Security Operations First aid Training & Assessment WHS & Pegasus Traffic Control & Implementation	**Licence Minimum Requirements: (Current)**	**NSW RMS certified Driving** **NSW Security Licence Class 1AC** **RMS Traffic Controller Card** **Pegasus & WHS Card**
Relevant Legislation, Codes of Practice and Australian Standards:	Work Health and Safety Act 2011		NSW Security Industry Regulation 2017
	NSW WHS Regulation 2019	ASIAL – The Code	NSW Security Industry Act 1997
	AS/NZS ISO; 31000:2018 Risk Management	NSW Road Rules 2014	AS/NZS 1716:2016 Guards & Patrols AS/NZS 1716:2016 Medical Masks
	AS1742.3 - MUTCD	TCAWS 6.1 & AGTTM	AS/NZS 3845 Road Safety Barrier

Plant, Equipment & PPE | List of Hazards to consider

Equipment and Tools	Hazards to consider	PPE	Hazards to consider
Key Register	Loss of keys / Equipment Malfunctions	**Hard Hat**	Evacuations from centre; Falling Objects
Mobile Phones	Loss of communication / Electric Shock	**Safety Footwear**	Construction areas / Fall from Ladder or Heights
Uniform	Caught in machinery. Misidentification by public.	**Eye Protection**	Plant rooms & biohazards
Internet	Identity theft / Privacy / Cyber-Attack	**Ear Protection**	Plant rooms
Laptop/PC	Electric Shock / Fire	**Face Mask**	Construction – Inhalation of Dust or Fumes & biohazards
CCTV	Equipment Malfunctions	**Hand Protection**	Using tools & biohazards; Collapse
General stationary	Mistreatment resulting in injury	**Illuminating Safety Vest**	Evac, traffic control & dock duties
Printers and Scanners	Electric Shock	**Wet Weather Gear**	Wet Weather
Fire Control Panels	Equipment Malfunctions/ Fire Hazards	**Sunglasses**	Sunlight protection for eyes
Automated Log in System	Equipment Malfunctions	**Hat**	Sun Burn / Heat stroke
Vehicles (Patrol)	Electric Shock / Incidents	**Sunscreen**	Sun Burn / Heat stroke
Radios	Loss of communication / Electric Shock	**Long Sleeve & Pants**	Sun Burn / Heat stroke

SAFE WORK METHOD STATEMENT

High Risk Work:					
Risk of a person falling more than 2 metres	☐	Work on a telecommunication tower	☐	Demolition of load-bearing structure	☐
Likely to involve disturbing asbestos	☐	Temporary load-bearing support for structural alterations or repairs	☐	Work in or near a confined space	☐
Work in or near a shaft or trench deeper than 1.5 m or a tunnel	☐	Use of explosives	☐	Work on or near pressurised gas mains or piping	☐
Work on or near chemical, fuel or refrigerant lines	☐	Work on or near energised electrical installations or services	☐	Work in an area that may have a contaminated or flammable atmosphere	☐
Tilt-up or precast concrete elements	☐	Work on, in or adjacent to a road, railway, shipping lane or other traffic corridor in use by traffic other than pedestrians	☒	Work in an area with movement of powered mobile plant	☒
Work in areas with artificial extremes of temperature	☐	Work in or near water or other liquid that involves a risk of drowning	☐	Diving work	☐

Risk Level Matrix

Likelihood - L	Consequence - C 1	2	3	4	5
5	H	H	A	A	A
4	M	H	H	A	A
3	L	M	H	A	A
2	L	L	M	H	A
1	L	L	M	H	H

Risk Analysis

Likelihood - L		Consequence - C		Score	Action
1	Rare	1	Insignificant		
2	Unlikely	2	Minor	**A - Acute**	Do not Proceed
3	Moderate	3	Moderate	**H - High**	Review Before Start
4	Likely	4	Major	**M - Moderate**	Maintain Control Measures
5	Almost Certain	5	Catastrophic	**L - Low**	Record & Monitor

Hierarchy of Controls	Most Effective					Least Effective
	Elimination	Substitution	Isolation	Engineering	Training & Administrative	PPE

SAFE WORK METHOD STATEMENT

Job Step / Process / Activity	Identify Hazards	Risk Level (R) and the Residual Rating (RR).				Identify Controls / Action Required	Responsible Person
		L	C	R	RR		
1. Issue Personal Protective Equipment and uniform	*Insufficient PPE* *No uniform worn* *Difficulty in identifying security officers*	3	2	**M**	**L**	➢ Ensure site personnel have received and signed for relevant PPE. ➢ Grand Group Services uniform shows the public that the person wearing this uniform is the security officer onsite to assist in any help they need or to report. Uniform is also to be used for site visibility during operational hours.	Site Security
2. Establishment of site, positioning of tools, plant & equipment	*Not Familiar with site* *Manual handling, possible back strain, impact injury etc.*	3	2	**M**	**L**	➢ Ensure site personnel have completed the project induction and have received Pegasus access card prior to mobilizing to site' ➢ Ensure site personnel have been instructed in manual handling techniques. ➢ Do not engage in any lifting unless informed and trained to do so accordingly to Australian standards.	Site Security
3. Use of two-way radios	*Breakdown in communication.*	2	3	**M**	**L**	➢ Radios are used as a faster and easier form of communication and are to be carried while on duty. ➢ Assure all communication is in working order and in cases of emergency assure other forms of communication are implemented.	Site Security
4. Mobile Phones	*Breakdown of communication.*	2	3	**M**	**L**	➢ Mobile phones are used as a secondary form of communication if radios are out of reception or if customers/workers in the construction complex need to contact security. ➢ Assure personal phone is carried on site as a back-up (if lone work is undertaken)	Site Security
5. Laptop/PC use	*Electric Shock / Fire*	1	3	**M**	**L**	➢ Ensure all leads are tested & tagged as per the RGBY system, and regular hardware maintenance of devices. Assure safe and related use of equipment specified.	Site Security

Job Step / Process / Activity	Identify Hazards	Risk Level (R) and the Residual Rating (RR).				Identify Controls / Action Required	Responsible Person
		L	C	R	RR		
6. Access Control	*Unauthorised persons entering the site to conduct work or cause unrest or disturbance.* *Unauthorised workers are not inducted and/or not qualified to carry out assigned works, which may result in serious injury, death or severe damage to structures and plant.*	2	4	**H**	**L**	➢ Security to monitor and ensure all workers login to Pegasus at Welcome to Site. And when required conduct breath testing of workers selected by Pegasus. ➢ Ensure only visitor approved by GLC (as per the authorised visitor list) are issued a Pegasus Visitors Pass. ➢ For workers who are unable to login to Pegasus, Safety is to be contacted to review this issue preventing login. ➢ Visitor to site who are not on the Authorised Visitors List are directed to call their respective point of contact. Once their host has arrived to Welcome to Site, the host is to seek approval from Senior GLC Management before a Pegasus Visitors Pass is issued. ➢ Full details on the Visitor are to be entered on the Authorised Visitor List.	Security Supervisor

Job Step / Process / Activity	Identify Hazards	Risk Level (R) and the Residual Rating (RR).				Identify Controls / Action Required	Responsible Person
		L	C	R	RR		
7. Patrols of site.	*Personal injury such as strains, muscle tears obtained whilst moving objects.*	2	3	**M**	**L**	➢ Apply lifting techniques and controls. ➢ Identify PPE (Personal protective equipment) for GLC/WTP (Hats, Sunglasses, sunscreen, long sleeve uniform, ear plugs and gloves). Identify PPE for job description, traffic control (Fluorescent Vests, Traffic Wands, Radios, and Phones).	Site Security
	High traffic areas, external hazardous factors, weather conditions, Wildlife contact and dangerous interactions with potential offenders.	2	4	**H**	**M**	➢ Identify form of communication upon emergency or general confirmation of instructions (Two-way radios and or site phones) and follow Grand Group training and protocols when applied to patrol work, dealing with offenders and risk mitigation. **Foot patrols are only to be conducted on designated walkways and paths.**	Site Security
	Noisy or dust generating equipment in operation – potential damage to hearing, respiratory system.	2	4	**H**	**L**	➢ Obtain appropriate hearing and respiratory protection from supervisor or Grand Group Management.	Site Security
	Injury caused by exposure to hazardous substances. *Damage to skin, could be inhaled if not wearing correct PPE equipment.*	2	3	**M**	**L**	➢ Staff awareness of the storage and handling requirements of particular substances; wear appropriate PPE which includes (although not limited to) gloves, safety footwear, high visibility uniforms, hearing & eye protection.	Site Security

Job Step / Process / Activity	Identify Hazards	Risk Level (R) and the Residual Rating (RR).				Identify Controls / Action Required	Responsible Person
		L	C	R	RR		
8. Use of patrol vehicle	*Vehicle incidents, misuse of Patrol vehicle, electrical shock to persons operating Patrol vehicle, all stated events could cause physical injury and could result in death.*	2	4	**H**	**M**	➢ Staff awareness and training, the use of seat belts, daily inspection of Patrol vehicle and servicing, no tampering with engines or equipment. Follow Standard Operation Procedures and apply a safe work practice when operating Patrol vehicle (road rule law). ➢ Report and isolate Patrol vehicle immediately if broken or experience of any issues related.	Site Security Supervisor/ Security Manager
9. Unsecured Gates/Hoarding Doors	*Trespass by unauthorized persons into a hazardous workspace where Fatal or Severe Risk (FSR) activities, could result in theft, property damage, sabotage, unsupervised works or being a place where no person should be. These events could cause physical injury or result in death.*	2	4	**H**	**M**	➢ All gates & hoarding doors are to keep closed and locked when not in use of access. Any gates and doors found unsecured during patrols are secured and reported. ➢ If assigned to provide security at an unsecure/open gate or hoarding door. ➢ **The Team Member is NOT to leave their position until physically relieved by another Team Member.** ➢ Or if they are directed by a GLC representative, that security overwatch is no longer required.	Site Security Supervisor/ Security Manager
10. Identification of wildlife, fauna	*Wildlife could cause harm and or death; damage of fauna surroundings.*	2	4	**H**	**M**	➢ Do not approach or handle any wildlife or fauna within and around the premises. ➢ Assure appropriate 1st aid procedures, contacts and locations are known in case of unavoidable occurrence.	Site Security
11. Inadequate emergency response	*Trespassing offenses by offenders, criminal activity, vandalism, lack of reception and elongated physical guard back up attendance to scene.*	3	3	**H**	**M**	➢ Follow Grand Group emergency protocols, contact the rover and direct supervisor by 2-way radio or phone for backup and in an emergency dial 000. ➢ Respond as per emergency protocols within GLC/WTP ➢ Maintain your safety, avoiding any verbal or physical confrontations + Lock yourself in your shed while waiting for authorities' attendance on site	Site Security

Job Step / Process / Activity	Identify Hazards	Risk Level (R) and the Residual Rating (RR).				Identify Controls / Action Required	Responsible Person
		L	C	R	RR		
12. Completion of patrols around machinery and work site areas	*Breakdown in communication, intrusion into barricaded areas and machinery boundary areas leading to risk and serious injury and or death*	3	3	**H**	**M**	➢ Follow Grand Group training and protocol, ensure site foot boundaries are known, identify appropriate PPE and instructions from GLC/WTP management team. ➢ Keep away from heavy machinery works in progress and areas of hazard if relevant/ applicable. ➢ **Foot patrols are only to be conducted on designated walkways and paths.**	Site Security
13. Customer/stranger handling	*Information & privacy threats at site, Cooperation, community disputes /interference with project*	4	3	**H**	**M**	➢ When dealing with customers on site follow the Grand Group customer service protocol and media interactions, direct all enquiries to authorised GLC/WTP contact. ➢ Follow your De-escalation training steps ➢ Avoid Confrontation or Any verbal and physical altercations ➢ **And do not comment further.**	Site Security

Job Step / Process / Activity	Identify Psychosocial Hazards	Risk Level (R) and the Residual Rating (RR).				Identify Controls / Action Required	Responsible Person
		L	C	R	RR		
14. Isolated Work – Night Shifts, Sunday, or Public Holidays – Isolated Team members (Parramatta, Westmead, Rosehill, MSF, Clyde Dive)	*Hard Access to resources and communications + Long Hours Shift* *Solo Team Members at night locations may have an accident, medical episode or attacked by an intruder or person with mental health issues.*	3	3	**H**	**M**	➢ Follow Grand Group training and protocol, ensure site foot boundaries are known, identify appropriate PPE and instructions from GLC/WTP management team. ➢ Follow the Grand Group Isolated Workers Policy ➢ Maintain communication with other sites colleagues via 2-Way radios ○ Refer to the Communications Techniques from the SOP – Use Emergency Codes ➢ Maintain welfare check with colleagues and site rover ➢ Advise your direct supervisor in case of any stress.	Site Security

Job Step / Process / Activity	Identify Hazards	Risk Level (R) and the Residual Rating (RR).				Identify Controls / Action Required	Responsible Person
		L	C	R	RR		
15. Fatigue Management	*Team Members working excessive hours, resulting poor attention to duties and compounding existing health conditions.*	3	2	**M**	**L**	➢ Monthly roster template is to be submitted to GGS Senior Management for review and updated weekly to reflect any changes. ➢ Rostering to ensure, where operationally possible, that all Team Members are only rostered for a maximum of four shifts per week. ➢ 11 Hours of rest is required between shifts. ➢ Maximum duration of a shift is 12 hours. ➢ Team members are to be given two whole days rest after five consecutive night shifts. ➢ Any situation where a Team Member is required to work six consecutive night shifts, GGS Senior Management is to be informed, and approval given.	GGS Security Manager
	Team Members who have long journey time from the site to their home, resulting in additional fatigue or accident if driving.	4	2	**H**	**M**	➢ All Team Members shall arrive and depart work as per the GLC standard and not breach the GLC protocol or WTP requirements. ➢ Due to the location of the project, majority of workers take public transport to and from the work site.	GGS Security Manager
	Team Members arriving on site in an already fatigued condition increasing the risk of an injury or accident	3	3	**H**	**L**	➢ GLC Management & Supervision to receive training on how to identify the symptoms of Fatigue Awareness through Pegasus messages, pre-start discussions. Hours and number of shifts worked will be monitored via Onsite Track Easy ➢ Workers to report to their supervisors or Management where they are feeling fatigued ➢ Fatigue Assessment to be undertaken as per requirements of Fatigue Management Plan.	GGS Security Manager
Overall Risk Rating After Controls		**Low – Moderate**					

Traffic Control Operations

Job Step / Process / Activity	Identify Hazards	Risk Level (R) and the Residual Rating (RR).				Identify Controls / Action Required	Responsible Person
		L	C	R	RR		
1. Gate Management (Pedestrians)	*Boom coming into contact with pedestrians while lowering.*	2	4	**H**	**L**	➢ Traffic Controller (TC)/Security Officer (SO) to approach the footpath, on the inside of boom to ensure they can see oncoming pedestrians before lowering the boom. ➢ TC/SO to ensure they have clear view of pedestrians before lowering the boom. 2 x TC/SO to be positioned at the gate during the day to increase visibility of pedestrians. ➢ TC/SO on duty MUST NOT be distracted – Smoking, using phones or wearing earphones, headphones or devices, or listening to music while conducting their duties.	Traffic Controller
	Obstructed view of oncoming pedestrians by Traffic Controllers /Security Officers	3	2	**M**	**L**	➢ TC/SO to stand on the footpath to ensure unobstructed view of pedestrian movement. ➢ TC/SO standing at Northern side of gate beside service station driveway to step forward across footpath and to be able to see around service station signage.	Traffic Controller
	Pedestrians distracted, ignoring instructions or stepping around lowered boom gates.	4	2	**H**	**M**	➢ TC/SO to give verbal directions to pedestrians to stop when booms are lowered. ➢ Additional signage & sign distances to be considered. ➢ TC/SO are NEVER to enter live traffic if pedestrians have stepped around lowered booms. ➢ TC/SO are to always be positioned on either side of the gate while vehicles entering or leaving the site.	Traffic Controller

Job Step / Process / Activity	Identify Hazards	Risk Level (R) and the Residual Rating (RR).				Identify Controls / Action Required	Responsible Person
		L	C	R	RR		
1.1 Gate Management (Pedestrians) Cont.	*Work on, in or adjacent to road, rail or other major traffic corridor. TC/SO positioned in an area where they can be struck by plant or vehicles – no clear escape route.*	3	3	**H**	**M**	➢ Team leader to ensure worker on foot mark-up completed on Traffic Control Plan (TCP). TC/SO to review TCP and ensure understanding of safe zones. TC/SO must stay out of work zone. ➢ Only one truck to travel across at a time.	Traffic Controller
2. Gate Management: (Vehicles)	*TC/SO hit by vehicles enter or exiting the site.*	2	4	**H**	**L**	➢ TC/SO is to set up position to ensure escape route away from traffic lanes and into a protected area or behind cover vehicle. ➢ TC/SO must be visible to oncoming traffic. ➢ TC/SO should be adequately lit during stop/slow operations. ➢ TC/SO to maintain communication with truck drivers via radio from traffic lights for incoming trucks. ➢ Radio communication to be maintained between TC/SO and onsite vehicles. ➢ Truck drivers to comply with speed restrictions within the site.	Traffic Controller
	Member of the public being hit by vehicles entering or exiting the site.	2	4	**H**	**L**	➢ Two TC/SO to staff the gate during daytime hours when pedestrian traffic is at peak. ➢ TC/SO to be positioned on the footpath to ensure clear view of pedestrian activity and movements.	Traffic Controller

Job Step / Process / Activity	Identify Hazards	Risk Level (R) and the Residual Rating (RR).				Identify Controls / Action Required	Responsible Person
		L	C	R	RR		
2.1 Gate Management: (Vehicles) Cont.	*Vehicles entering/exiting gates resulting in collision.*	4	3	**H**	**M**	➢ Radio communication to be maintained TC/SO and drivers entering or exiting the gates. ➢ Drivers entering the site are to be briefed to set their radio to a Channel approved by GLC Management ➢ Radio is to be issued to any vehicle entering the site, that does not have a radio, or as requested by GLC. ➢ Drivers are to be briefed on site protocol and follow the directions of the Traffic Controllers ➢ Ensuring break in traffic flow before allowing vehicles to enter or exit the site. ➢ Clear hand signals to follow radio communications to ensure safe entry/exit.	Traffic Controller
	Unauthorized persons/vehicles entering or attempting to enter the site/work zone.	2	4	**H**	**L**	➢ Prevent unauthorized entry of persons/vehicle ONLY IN A SAFE MANNER. ➢ If unauthorized entry cannot be prevented. IMMEDIATELY raise the alarm to the site supervisor via the radio. ➢ Gates to remain closed when vehicles are not entering or exiting the site. ➢ TC/SO to maintain log of all vehicles entering and exiting the site utilising GLC supplied Tablet and Datascope Materials Booking System. ➢ Incident Report is to be completed IMMEDIATELY.	Traffic Controller
2.2 Gate Management (Vehicles) Cont.	*Team Members not maintaining position in line with scope of works or TGS – Traffic Guidance Schemes.*	2	4	**H**	**L**	➢ Team Members are not to leave their assigned position without permission of the Site Supervisor. ➢ TC/SO are not to sit on chairs, crates or in their vehicles whilst on duty. ➢ Only one Team Member is to have their meal/amenity break at given time.	Traffic Controller

3. Employee Welfare	*Traffic incident causing injury to public/Client or TC/SO*	2	4	**H**	**L**	➢ First Aid Kit & Fire Extinguisher must be in all vehicles. ➢ Move to identified safe zone or use escape route if in immediate danger. ➢ **STOP WORK UNTIL ALL CLEAR IS GIVEN.** ➢ In the event of an emergency, if possible – attempt to rescue any persons in immediate danger (**ONLY IF IT IS SAFE FOR YOU TO DO SO)** ➢ **IMMEDIAELY RAISE THE ALARM** via radio or verbally if there is a threat of immediate danger. ➢ Move to safe position and IMMEDIATELY contact emergency services. ➢ An injured person shall not be moved unless they are in danger of further injury, and only if it is safe to do so, you are confident, competent and trained. ➢ Secure the area and implement traffic management in accordance with RMS Traffic Control Manual, and if it is safe to do so. ➢ Team Members are to contact GGS Operations Management as soon as practical.	Traffic Controller
Overall Risk Rating After Controls				**Low – Moderate**			

Worker consultation, instruction, training, toolbox talks, review, acceptance record:

Only persons who have completed the signoff are authorised to work on the relevant tasks covered by this document.

NOTE: Work must be performed in accordance with this SWMS, any Risk Assessment prepared in relation to this work and any relevant Safe Work Procedures.
This SWMS must be accessible for inspection until the energised electrical work to which this SWMS relates is completed. If the SWMS is revised, all versions should be kept.
If a Notifiable incident occurs in relation to the high-risk construction work in this SWMS, the SWMS must be kept for at least 2 years from the date of the Notifiable incident.

I, the undersigned, acknowledge, understand, and accept that:
1. the WHS Policy, relevant Risk Assessments, SWMSs and SOPs for this task have been reviewed, explained and are clearly understood by me,
2. I shall only carry out work for which I am equipped and competent and advised my supervisor of any individual needs,
3. I will comply with all relevant Risk Control Measures, otherwise work must stop immediately,
4. I will be vigilant regarding hazards and the suitability of the identified Risk Control Measures, and
5. I understand that I am authorised and expected to safely stop work and immediately notify my supervisor if a task carries an unacceptable level of risk.

Name of Worker(s):	Date:	Worker signature(s):

Name of Worker(s):	Date:	Worker signature(s):

Name of Worker(s):	Date:	Worker signature(s):

SAFE OPERATING PROCEDURE

Lack Group Personnel Pty Ltd ABN: 85 606 334 552 Lot 1/14 John Duncan Court Varsity Lakes Queensland 4227 Telephone: 07 5568 0708 Fax: 07 5568 0812

Version – ASR-SOP-0006	Issued: 6.0	Revision Date	16th November 2022	Next Review Date	01st January 2023

SOP Title	Portaboom Set Up & Operations

Works Manager	Ashley Talbot ashley.talbot@glcwtp.com.au 0424 504 288	**Client / Principal Contractor (client)**	Gamuda Australia and Laing O'Rourke Consortium Level 8,60 Station Street E, Parramatta NSW 2150
Project Name	Sydney Metro Western Tunnelling Package	**Work Location(s)**	Various Locations – Sydney Metro Western Tunnels
SOP Implementation Date	16/11/2022	**Date SOP Provided to Client/Principal Contractor**	16/11/2022

Work Activity - Select the activities that are undertaken on the project or worksite

☒ Stop Slow Control with Authorised Traffic Controller(s)	☒ Stop Slow with Portable Traffic Control Devices	☐ Lane Closure	☐ Shoulder Closure	☐ Contra Flow	☐ Mobile Works
☒ Pedestrian Control	☐ Gate Management	☐	☐ Other (Please Specify) ……		

High Risk Construction Work

☐ Risk of falls from greater than 2 metres	☐ Temporary load-bearing support structures	☐ Demolition of load-bearing structure	☐ Likely to involve disturbing asbestos
☐ Use of Explosives	☐ Work in confined spaces	☐ Work in or near shaft or trench with an excavated depth greater than 1.5m or a in tunnel	☒ **Work on or near energised electrical installations or services**
☐ Work on or near pressurised gas pipes or mains	☐ Work on or near chemical, fuel or refrigerant lines	☒ **Work on, in or adjacent to road, rail shipping or other major traffic corridor**	☐ Work in an area with contaminated or flammable atmosphere
☐ Work with tilt up or pre-cast concrete	☐ Work in or near a drowning risk	☒ **Work in an area with movement of powered mobile plant**	☐ Diving work
☐ Work in or areas with artificial extremes of temperature	☐ Work on a telecommunications tower	☐ Other (Please Specify) ……	

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Plant and Equipment to be used in this work				
SOPs for additional plant and equipment as identified below must be used in conjunction SWMS for Traffic Management				
☐ Trailer Mounted Variable Message Board	☐ Lighting Tower	☐ Portable Traffic Lights	☐ Trailer mounted C Class Arrow Board	☒ Other Plant or equipment (Please Specify) Portabooms
Details of Maintenance checks for the required plant & equipment				*Maintenance carried out as per manufacturer's instructions* *Check fuel and oil levels daily* *Check tyre pressure weekly or before transit*

Personal Protective Equipment (PPE) - Ensure all PPE meets relevant Australian Standards. Inspect, and replace PPE as needed.					
☒ Foot Protection – safety cap ankle high lace up boots	☒ Head Protection – Hard Hat	☒ Safety Helmet Wide Brim	☒ Hand Protection - Gloves	☒ Eye Protection – Safety glasses tinted (day time only) / clear	☒ Full Length Trousers
☒ Hi Visibility Vest	☒ High Visibility Long Sleeve Shirt	☐ Insect shield or repellent	☐ Hearing Protection	☐ Face Shield	☐ Safety Harness / Lanyard
☐ Dust Mask	☐ Cooling aids	☐ Broad brimmed hat	☐ SPF +30 sunscreen	☐ Long Sleeve Shirts & Full Length Trousers for night works with bio-motion reflective stripes	
☒ PPE specific to the use of Plant or equipment (Please Specify) *If working in the rail corridor (danger zone), rail compliant PPE is mandatory* …….					

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Qualifications / Licences / Competency Required to Undertake the Task

Activity	Qualifications / National Competencies
Control traffic with a stop/slow bat	**General construction induction (White Card)** • CPCCWHS1001 - Prepare to work safely in the construction industry **Traffic Controller** • RIIWHS201D Work safely and follow WHS policies and work procedures • RIICOM201D Communicate in the workplace • RIIWHS205D Control traffic with a stop/slow bat
Implement traffic management plan	**General construction induction (White Card)** • CPCCWHS1001 - Prepare to work safely in the construction industry **Implement Traffic Control Plans** • RIIWHS201D Work safely and follow WHS policies and work procedures • RIICOM201D Communicate in the workplace • RIIWHS302D Implement traffic management plan
Prepare and amend work zone traffic management plan	**General construction induction (White Card)** • CPCCWHS1001 - Prepare to work safely in the construction industry **Prepare a Work Zone Traffic Management Plan** • RIIWHS201D Work safely and follow WHS policies and work procedures • RIIRIS301D Apply risk management processes • RIIGOV401D Apply, monitor and report on compliance systems • RIICWD503D Prepare work zone traffic management plan

Training required to undertake this work

Lack Group Safe Work Method Statements Traffic Management, Site Specific WHS & Traffic Control Risk assessment, Informal training & instruction in the correct use of PPE. Manual handling, Lack Group policies, procedures & work instructions, Client / Project Induction and site requirements. Training / instruction in proper and safe use in accordance with Plant / Equipment Operating Manual, Lack Group's ASR-PRO-0011 Coronavirus (COVID-19) Procedure. Portaboom User Manual

This SOP must be used in conjunction with the Traffic Management Safe Work Method Statement.

Hazardous Materials / Chemicals / Dangerous Goods to be used in this work	☐ Yes	☒ No

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(Please Specify) ……	Has a risk assessment been completed	☐ Yes ☐ No	Is SDS Available	☐ Yes ☐ No

Safety / Emergency Equipment Required

Fire extinguisher in vehicle and brake system on trailer device

Specific Emergency Response Procedures relevant for this work:

Emergency Arrangements: Emergency arrangements including emergencies for High Risk Work are in accordance with Traffic Management SWMS, Project / Client emergency requirements and Lack Group Operational Work Health & Safety Management Plan.

Initial Response to High Risk Work Emergency:

Traffic Control Team Leader shall implement the appropriate process (in accordance with State Road Authority, Project ERP , Lack Group requirements)

1. Perform a Quick Assessment
   - Danger to self
   - Danger to other people at work place
   - Danger to traffic and pedestrians approaching site
   - Impact on Environment
2. When a person has been injured, summon the nominated First Aid Officer and administer First Aid, make person comfortable or telephone 000 for Ambulance.
3. If the injuries require treatment by Ambulance, the work group leader shall telephone 000 and ask for the Ambulance Service (and Police if serious, Fire Brigade where required) and give the operator the following information
   - Your Name and contact number
   - The address of the worksite
   - The nearest cross street/road or access point
   - Number of casualties
   - Type and nature of injuries
4. Place a person near the access point or cross street and guide the Ambulance/Police/ Fire Brigade to the incident site.
5. If the injured person is on or about the roadway, notify the traffic controllers to warn/stop vehicles and pedestrians (if necessary).
6. If needed, shutdown nearby machinery & equipment, safeguard any flammables.
7. Ensure access to accident site is clear, keep onlookers away. Await the arrival of emergency services.
8. Implement Traffic management emergency arrangements in accordance with the State Road Authority relevant issued manual or standards.
9. Implement requirements for securing and preservation of site.
10. Report to the Project Site Supervisor immediately or as soon as practical and safe to do so.

Out of Hours Work

Out of general construction hours, work may be performed under the SWMS. Work times will be as per client requests.

Environmental Requirements

Lack Group will comply with and follow the client / project environmental plan, any including Environmental Control Map.

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Shared work zones / site - works which interface with others				
Have all traffic control personnel attend the pre-work briefing and signed off on attendance.	Yes	☐	No	☐
If no, please specify the reason				
Have risks associated with the activities of other in shared work zones been identified and the control measure and arrangements communicated to all traffic control personnel	Yes	☐	No	☐
If no, please specify the reason				
Have all traffic control personnel been made aware of and signed onto SWMS / SOP or other hazard identification and risk control requirements / documentation to ensure those who could potentially be impacted by are aware of those hazards and arrangements in shared work zones	Yes	☐	No	☐
If no, please specify the reason				
List below activities being undertaken by other, and the HRCW or other high-risk activities. Include the SWMS or other hazard identification and risk control requirements / documentation which has been reviewed and sign by traffic control personnel				

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Preparation and Approval Controls							
Prepared	Natalie King	**Position**	Senior Coordinator LackSafe	**Signature**		**Date**	20/07/2022
Approved	Corey Bolton	**Position**	National Assurance Manager	**Signature**		**Date**	20/07/2022

Person(s) responsible for ensuring implementation, monitoring and compliance with the SWMS / SOP	
Person responsible for ensuring compliance with SWMS:	LackSafe, Executive Manager Operations, Operational Managers/Supervisors and Traffic Control Team Leader
What measures are in place to ensure compliance with the SWMS?	Traffic controllers consulted and trained in SWMS, qualified and competent in their designated roles. Periodic inspections undertaken.
Person responsible for reviewing SWMS control measures:	Traffic Control Team Leaders and Traffic controllers (those workers undertaking the task / activity)

dditional Safety Planning Information

Relevant WHS Legislation / Codes of Practice / Australian Standards referred to in preparation of this SOP.

Workplace Health & Safety Act, Workplace Health & Safety Regulation. National Codes of Practice: How to manage work health and safety risks, Hazardous manual tasks, First Aid in the Workplace, Managing risks of Plant in the workplace, Managing Noise & Preventing hearing Loss at work, Hazardous manual tasks, Construction Work COP.

Australian Standards

AS1742.3 – 2009 Manual of uniform traffic control devices - Traffic control devices for works on roads, AS 4192-2006 Illuminated flashing arrow signs, AS 3845:1999 Road safety barrier systems, AS 31000:2009 Risk management - Principles and guidelines, AS 4602.1:2011 High visibility safety garments - Garments for high risk applications, AS1906.4:2010 Retro reflective materials and devices for road traffic control purposes – High-visibility materials for safety garments, AS1851 Maintenance of Fire Protection Systems and Equipment, AS/NZS 1891.4:Industrial Fall Arrest systems an devices. Part 4: Selection, use and maintenance.

NSW

Workplace Health & Safety Act & Workplace Health & Safety Regulation. Traffic Control at Work Sites (TCAWS) Manual. National Codes of Practice: How to manage work health and safety risks, Hazardous manual tasks, First Aid in the Workplace, Managing risks of Plant in the workplace, Managing Noise & Preventing hearing Loss at work, Hazardous manual tasks, Construction work.

Client specific requirements referred to in the preparation of this SOP

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What are the tasks involved?	What are the hazards and risks? (What is the problem?)	Have the Risks Been Rated in Accordance with Attached Risk Matrix? L=Likelihood; C=Consequence			What are the control measures? (Describe the control measures and how they will be used)	Have the Residual Risks have been rated in accordance with Attached Risk Matrix? L=Likelihood; C=Consequence			Who is the Person Responsible?
Break the job down into sequential steps	Identify the hazards and risks that may cause harm to workers or the public.	L	C	Rating	Describe what will be done to control the risk. What will you do to make the activity as safe as possible?	L	C	Rating	Identify who will ensure control is in place
GENERAL PREPARATION AND PRE-OPERATIONAL ACTIVITIES									
Training and competency of operators in the safe setup and operation of the Portaboom unit and accessories	Hazards Operators not trained or competent on the setup and utilisation of the Portaboom and accessories Risks Equipment damage, incident or injury	L2	C4	High	Operators to be trained on the Safe Operating Procedures (SOP) and familiar with the User Manual. Operators to be trained and sign onto this Safe Work Method Statement (SWMS) and any relevant site-specific risk assessment.	L5	C4	Low	Traffic Control Team Leader Traffic controller/s;
Pre-Operational Inspection Work area check	Hazard Person, vehicle or equipment struck by reversing vehicle Worker crushed between trailer and vehicle Risk	L3	C3	High	Check for other vehicle, site and pedestrian movement in the area around the trailer A spotter is to be used when reversing and must keep visual contact with driver using side mirror. All reversing is at walking speed only.	L5	C3	*Moderate*	Traffic Control Team Leader Traffic controller/s;

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Break the job down into sequential steps	Identify the hazards and risks that may cause harm to workers or the public.	L	C	Rating	Describe what will be done to control the risk. What will you do to make the activity as safe as possible?	L	C	Rating	Identify who will ensure control is in place
	Death or serious injury, crush injuries, fractures to workers fractures, skin graze, plant & equipment damage				Vehicle must have an operational reverse squawker. No worker's to be between trailer and vehicle when reversing				
Pre-Operational Inspection Inspection and maintenance of the Portaboom unit and accessories	Hazards Inspection and maintenance program not established, implemented or inconsistent Risks Equipment damage or defective equipment.	L2	C4	High	Ensure a proactive and consistent inspection and maintenance program is established in accordance with the User Manual and manufacturer recommendations (as a minimum). Conduct pre-operational and post-operational inspections of the unit and accessories. If any defects, damage or operational issues are identified that may compromise the effective and safe operation or the unit (or accessories), do not use and arrange for repairs / maintenance to be completed.	L5	C4	Low	Traffic Control Team Leader Traffic controller/s;
Handling and transporting the Portaboom unit and accessories	Hazards Safe handling and transportation practices not established or adopted Risks Equipment damage or injury.	L2	C4	High	The Portaboom unit is fitted with a lifting lug to enable the use of mechanical aid and reduce the need for manual handling practices. Ensure safe manual handling practices are adopted when manoeuvring the unit or fitting accessories considering the distance, terrain, use of the handle and wheels, two-person lifts, load is close to body, back is straight, using legs, line of sight and avoid overhead lifting or awkward movements.	L5	C3	Moderate	Traffic Control Team Leader Traffic controller/s;

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Break the job down into sequential steps	Identify the hazards and risks that may cause harm to workers or the public.	L	C	Rating	Describe what will be done to control the risk. What will you do to make the activity as safe as possible?	L	C	Rating	Identify who will ensure control is in place
					Ensure all equipment is secure for transportation purposes.				
Planning, integration with site treatments and approvals	Hazards Portaboom units and accessories not integrated into planning or site treatment arrangements including access, pedestrian or traffic and associated control plans Risks Delay, noncompliance or incident.	L5	C3	*Moderate*	Ensure Portaboom unit(s) and accessory placement is integrated into existing management plans and or site specific risk assessment. Plans should identify appropriate placement locations, specific operational scope, location of operators and relevant site safety information including rules and personal protective equipment. If utilising Portaboom specific signage, implementation and placement is to be included in the existing management plans and or site specific risk assessment. Relevant approvals are to be obtained and documentation communicated and sighed-off prior to commencement and conclusion (as required).	L5	C4	Low	Traffic Control Team Leader Traffic controller/s;
ON-SITE SETUP AND OPERATIONS									
Inspection of the placement area	Hazards Overhead hazards including powerlines and street signs. Unsuitable terrain and or obstructed positioning.	L4	C3	High	Inspect the proposed placement area for any overhead hazards, unsuitable terrain or visibility obstructions and consider risks and controls as a part of the risk assessment process. Reposition the Portaboom unit(s) to a suitable location away from overhead, obstruction hazards and ensuring	L5	C4	Low	Traffic controller/s;

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Break the job down into sequential steps	Identify the hazards and risks that may cause harm to workers or the public.	L	C	Rating	Describe what will be done to control the risk. What will you do to make the activity as safe as possible?	L	C	Rating	Identify who will ensure control is in place
	Risks Risk of contact with live electricity, breach of exclusion zones, tipping, injury or property damage.				that it is on a level and stable surface, update relevant site management plans and or risk assessments. Communicate any positioning or layout changes with relevant site stakeholders.				
Placement of the Portaboom unit(s) for setup and testing	Hazards Portaboom unit(s) not positioned as planned or in a safe location for setup Risks delay, injury or incident.	L4	C4	Medium	Position the Portaboom unit(s) and relevant accessories as close as safely possible to the placement location to reduce the transition distance. Position / re-position using handle and fitted wheel system. Avoid manually lifting or shuffling the unit(s). Ensure the Portaboom(s) are positioned in the planned placement area for setup and testing. This must be in a safe location to setup and test the unit(s), if on the road, ensure the shaft is facing the footpath.	L5	C4	Low	Traffic Control Team Leader Traffic controller/s;
Setup Portaboom unit(s) with boom arm, stop sign and or relevant accessories	Hazards Portaboom unit(s) or accessories not setup properly or tested prior to operations Risks delay, injury or incident.	L4	C3	High	Ensure the Portaboom is turned off and wheel locking brakes applied prior to fitting attachments and accessories. Connect the boom arm, stop sign and relevant accessories such as traffic lights, pedestrian lights, solar panel, LED boom light, pedestrian button and access controllers as per the SOP. Ensure all attachments and accessories are secure with locking nuts, wing nuts	L5	C4	Low	Traffic Control Team Leader Traffic controller/s;

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What are the tasks involved?	What are the hazards and risks? (What is the problem?)	Have the Risks Been Rated in Accordance with Attached Risk Matrix? L=Likelihood; C=Consequence			What are the control measures? (Describe the control measures and how they will be used)	Have the Residual Risks have been rated in accordance with Attached Risk Matrix? L=Likelihood; C=Consequence			Who is the Person Responsible?
Break the job down into sequential steps	Identify the hazards and risks that may cause harm to workers or the public.	L	C	Rating	Describe what will be done to control the risk. What will you do to make the activity as safe as possible?	L	C	Rating	Identify who will ensure control is in place
					and other locking mechanisms, tighten by hand only. Ensure accessories are connected to the correct port and or socket. Access the control panel and turn the relevant accessories on by flicking the switch upwards. Once the relevant switches are activated, turn the unit on. Once the self-testing cycle is complete, the power light will illuminate green indicating that it is ready. Push the “RED PUSH BUTTON” in the top left hand corner of the control panel to test the operational cycles. Check bounce back operation by pressing the remote whilst holding your hand under the boom arm. Run the same test with the remote control(s). If using the boom arm, prior to concluding the testing sequence, push the “RED PUSH BUTTON” in the top left hand corner of the control panel to move				

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Break the job down into sequential steps	Identify the hazards and risks that may cause harm to workers or the public.	L	C	Rating	Describe what will be done to control the risk. What will you do to make the activity as safe as possible?	L	C	Rating	Identify who will ensure control is in place
					the boom arm into a horizontal position. Extend the Boom Arm to the span required, ensuring that the end of the Boom Arm is at least 500mm from the centre line of the road (when two way traffic operating). Ensure the stop sign is attached and positioned in the intended direction of oncoming traffic. Push the "RED PUSH BUTTON" in the top left hand corner of the control panel to move the boom arm into a vertical position.				
Placement of the Portaboom for live operational positioning	Hazards Portaboom unit(s) not positioned for live operations Risks delay, injury or incident.	L4	C3	High	Disable the brakes and reposition Portaboom unit into "LIVE" Operational Position, ensuring that the treatment is facing the intended audience (traffic, pedestrians or access) - enable the brakes and secure the stability legs. The Portaboom must be positioned in a level and stable surface, consult your supervisor if this cannot be achieved	L5	C4	Low	Traffic Control Team Leader Traffic controller/s;

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Break the job down into sequential steps	Identify the hazards and risks that may cause harm to workers or the public.	L	C	Rating	Describe what will be done to control the risk. What will you do to make the activity as safe as possible?	L	C	Rating	Identify who will ensure control is in place
					(it is not recommended to use the Portaboom on an uneven or unstable surface). In the event of windy or forecasted windy conditions and if Portaboom requires additional stability, sand bags are to be applied to all 4 stability legs for additional stability. Fix sandbag hooks to all 4 stability legs by placing the hook through the hole at the back of the stability leg - add a maximum of 2x sandbags to all stability legs. If using the pedestrian button accessory, position the pedestrian button in close proximity to the Portaboom unit (radius no greater than 4m). Ensure the plate is on a flat surface and secured to the ground to prevent it from falling. Ensure the button is visible and accessible to pedestrians.				
Portaboom operations and monitoring	Hazards Operators not effectively managing and monitoring the Portaboom units(s) Risks delay, injury or incident.	L4	C3	High	Operators to be positioned in a safe area that will allow effective operation of the Portaboom unit(s) including clear line of sight and remote / accessory operational radius. Operators to closely monitor access, traffic and or pedestrian movements.	L5	C4	Low	Traffic Control Team Leader Traffic controller/s;

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Break the job down into sequential steps	Identify the hazards and risks that may cause harm to workers or the public.	L	C	Rating	Describe what will be done to control the risk. What will you do to make the activity as safe as possible?	L	C	Rating	Identify who will ensure control is in place
					If controlling traffic, the operator activates the remote control which raises the boom arm when it is safe for motorists to proceed. If using the traffic light accessory, once the boom arm is completely vertical, the traffic light turns green for the motorists to proceed. If using the traffic light fitted with the pedestrian light accessory, the pedestrian light will turn green once the traffic light has turned red and the boom arm has lowered.				
Portaboom operations and monitoring	Hazards Operators positioned in an unsafe location (impact by plant, vehicles or equipment) Risks delay, serious injury or death.	L4	C3	High	Operator to be positioned in a safe zone off the road and away from plant and equipment ensuring that they are within operating distance of the units (up to 75m) and have a clear line of site on the units and traffic, pedestrians and or access. Operators to ensure they reframe from standing directly under the boom arm and ensure that pedestrians and other stakeholders do the same.	L5	C4	Low	Traffic Control Team Leader Traffic controller/s;
Portaboom operations and monitoring	Hazards Inclement weather and windy conditions	L4	C3	High	Operators to ensure that weather conditions are monitored in the planning and operational stages. If windy conditions are identified, install sandbags on the stability legs and monitoring.	L5	C4	Low	Traffic Control Team Leader Traffic controller/s;

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Break the job down into sequential steps	Identify the hazards and risks that may cause harm to workers or the public.	L	C	Rating	Describe what will be done to control the risk. What will you do to make the activity as safe as possible?	L	C	Rating	Identify who will ensure control is in place
	Risks injury and or property damage.								
Portaboom operations and monitoring	Hazards Slips, trips and falls Risks injury or incident.	L4	C3	High	Operators to move through site / location with care. Check the ground and ensure it is stable to step onto. Step carefully over any curbs or uneven surfaces Relocate objects or vehicles that could impede movement of the trailer. Ensure there is no evidence of spills in the area	L5	C4	Low	Traffic Control Team Leader Traffic controller/s;
SITE PACK UP									
Set up / Pack up item of plant/equipment	**HRCW - Work on, in or adjacent to road** Hazards Portaboom unit(s) or accessories not packed up properly Risks equipment damage or loss, injury or incident.	L3	C3	High	Ensure the revenant approvals, acknowledgements and confirmations have been received from the site stakeholders prior to concluding and packing up the Portaboom unit(s) and accessories. Leave the Portaboom on, remove the sandbags (if installed) and pack-down the stability legs.	L5	C3	*Medium*	Traffic Control Team Leader Traffic controller/s;

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Break the job down into sequential steps	Identify the hazards and risks that may cause harm to workers or the public.	L	C	Rating	Describe what will be done to control the risk. What will you do to make the activity as safe as possible?	L	C	Rating	Identify who will ensure control is in place
					Disable the brakes and position the Portaboom in a safe location, the same position where initial testing was conducted. Enable the brakes and lower the boom arm to remove the stop sign. Once the stop sign has been removed and the boom arm retracted, raise the boom arm to the vertical position and turn the unit off. Detach all accessories and boom arm, stow and secure appropriately.				

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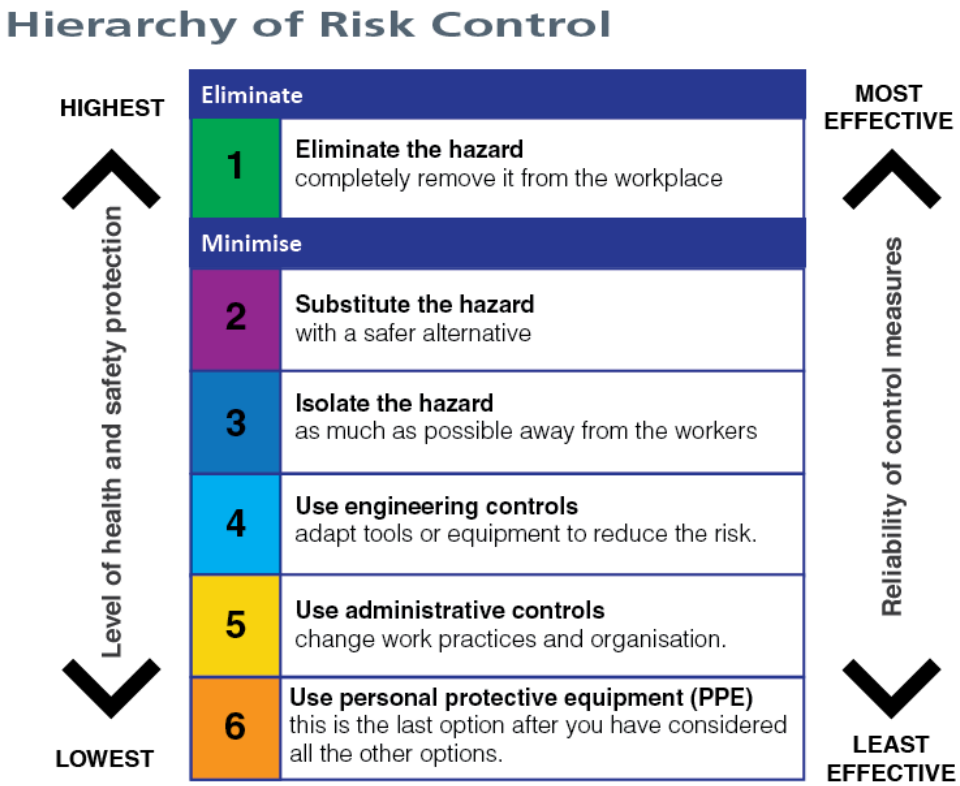
HIERARCHY OF CONTROL

The options at the top of the list are more effective, as they address the hazard (the thing that could cause harm), rather than just reduce the risk (the harm that the hazard could cause).

The hierarchy of controls is as follows:

a) Elimination of the hazard;
b) Substitution e.g. of the equipment or substance;
c) Isolation e.g. distance or enclosure;
d) Engineering controls e.g. guarding;
e) Administrative controls e.g. supervision, training, rotation; and
f) Personal protective equipment.



The provision of personal protective equipment should always be the last control option considered. A combination of controls may be appropriate; however, the combination must be based upon the control hierarchy.

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RISK ANALYSIS MATRIX

		CONSEQUENCE - How severe will the outcome be if an incident occurs				
	Environment	No significant changes to environment and / or highly localised event	Changes from normal conditions within the environment regulatory limits and environmental effects are within site boundaries	Short term and / or well contained environmental effects. Minor remedial actions probably required.	Impacts external ecosystem and considerable remediation is required	Long term environmental impairment with extensive remediation required. Irreversible environmental impact. With loss of valued ecosystem
	Health and Safety (Injury and Diseases)	Illness, first aid or injury not requiring medical treatment	Illness or minor injuries requiring medical treatment	Lost time injury or illness, alternate / restricted injury, or short term occupational illness	Major injury requiring hospitalisation and numerous days lost, or medium term occupational illness	Fatality and / or major injury / permanent disability / chronic disease
		C5: Insignificant	**C4: Minor**	**C3: Moderate**	**C2: Major**	**C1: Critical / Severe**
Is expected to occur frequently during the time of activity or project	**L1: Almost Certain (1 in 10)**	High	High	Extreme	Extreme	Extreme
Expected to occur occasionally during the time of activity or project	**L2: Likely (1 in 100)**	Moderate	High	High	Extreme	Extreme
More likely to occur than not occur during the time of activity or project	**L3: Possible (1 in 1,000)**	Low	Moderate	High	Extreme	Extreme
More likely not to occur than occur during the time of activity or project	**L4: Unlikely (1 in 10,000)**	Low	Low	Moderate	High	Extreme
Not expected to ever occur during the time of activity or project	**L5: Rare (1 in 100,000)**	Low	Low	Moderate	Moderate	High

LIKELIHOOD *What is the likelihood of an incident occurring*

Risk Rating	Action to be taken		
Extreme	**Extreme risk = immediate action required, works must not proceed at this level**	**High**	**High risk = acceptable to proceed only with strict controls or a short duration**
Moderate	**Moderate risk = acceptable to proceed with appropriate controls**	**Low**	**Low risk = acceptable to proceed**

EVALUATION SECTION

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Changes in the work environment, changes in the work method, site specific hazards or changes that occur during the activity identified during site specific assessment			
Job step	Identify the hazards and risks that may cause harm to workers or the public.	Describe what will be done to control the hazards and risks. What will you do to make the activity as safe as possible?	Identify who will ensure control is in place

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Record of Consultation and Induction into Safe Work Methods

By signing this record, I acknowledge that consultation has been provided and I have been given the opportunity to contribute to the identification of hazards associated with this work, and to the formulation of work methods that will enable the work activity to be undertaken safely. I also acknowledge I have been instructed into the safe work methods, and understand them. I have the appropriate competency, qualification and inductions required to undertake the work detailed in this SOP.

First Name	Surname	Signature	Date

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Implement Monitor and Review

Work Health and Safety Regulation requires that the SWMS / SOP describes how control measures are to be implemented, monitored and reviewed. The table below outlines the processes that supervisors must follow to meet these requirements for high risk construction work.

IMPLEMENTATION	MONITORING	REVIEW
To ensure that this SOP is implemented correctly the following must be done – All workers involved in this activity will be competent and have completed all relevant verifications of competency (VOCs), High Risk Work Licences and other relevant licences/tickets/qualifications. Workers involved in this work activity are to be trained in this work activity and the integrated functions of the activity. The workers are to be consulted with prior to commencing this work activity in relation to the proposed work method, the high risk construction work (HRCW) identified as forming part of this activity, the hazards and risks related to this HRCW and the measures to implemented to control the risks. Any changes agreed during the consultation phase are to be incorporated into the SWMS prior to commencing work. All workers are to be trained in the final SWMS / SOP and associated processes and sign off the attached training record. Prior to commencement of the work activity, all relevant permits are to be completed and approved.	The functionality of the SOP is to be monitored by – Conducting a regular program of documented workplace inspections, job observations, testing, data and trend analysis and SWMS field audits to validate the operation of the SOP. SWMS / SOP field audits are to determine level of conformance with actual work. If non-conformances are observed, stop the work immediately and engage the workers in a consultation to why the SWMS or SOP is not being complied with. If the work method has changed, then the SWMS is to be re – written to reflect the current work method and workers retrained in the SOP. Workers are to work in accordance with the SWMS to ensure safe execution of work activity.	A review of a SOP is required to be completed – In the event of an incident occurring; If the SWMS is deemed to be impracticable through consultation with the workers; If new hazards have been identified through risk assessments or hazard alerts; If the work method has changed including changes to the workplace, working environment, a system of work, a process or a procedure; At a minimum of every three months for continuing operations covered by a SWMS; and If an operation covered by a SWMS is restarting after a break in time of greater than two weeks prior to recommencing work. Generic base SWMS will be formally review at least annually When a review is conducted it is to be done in consultation with the workers involved. Reviewing the control measures also involves considering whether a higher order control measure is now reasonably practicable. The WHS management plan should also be reviewed and revised (where necessary) when control measures have been reviewed.
EMERGENCY PREPAREDNESS		
All workplaces must have an emergency plan that covers a range of potential incidents. Rescue equipment and a reliable communication system to contact any necessary emergency services, should be readily accessible at the workplace.	The emergency procedures must clearly explain how to respond and evacuate Workers from the workplace in a controlled manner. Contact numbers for emergency services should be prominently displayed.	A register of all persons who are at the construction workplace on a particular day should be kept so everyone can be accounted for. The emergency plan and evacuation procedures must be tested on a regular basis.

Portaboom Implementation Risk Assessment

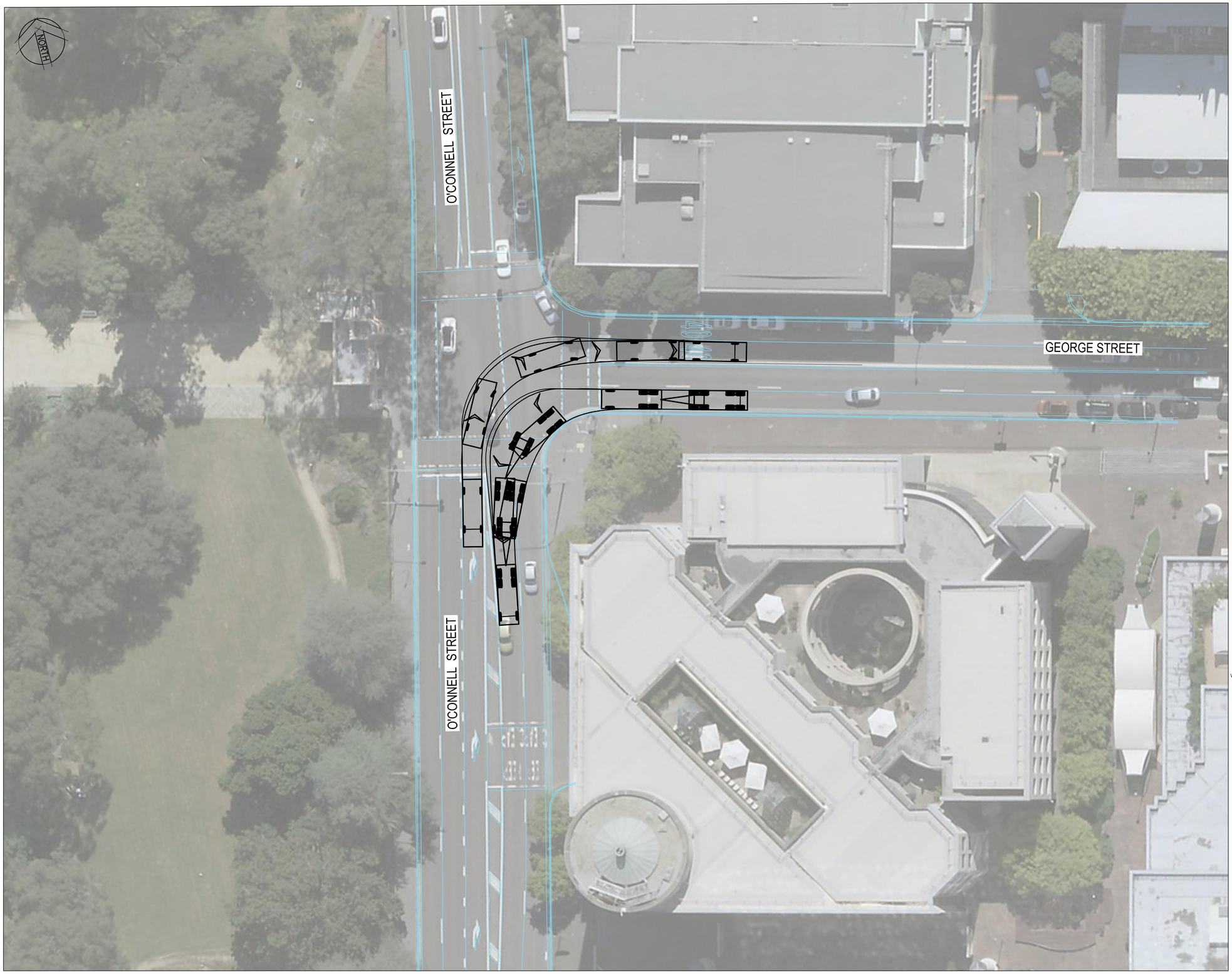
Completed by	
Name:	
Date:	
Site Location:	
TGS Number	
Time Shift Commenced	
Weather Conditions:	☐ Fine ☐ Rain ☐ Cloudy ☐ Hot ☐ Cold ☐ Windy ☐ Dusty ☐ Inclement Conditions
Visibility	☐ Good ☐ Poor ☐ Fog ☐ Night ☐ Day ☐ Other Visibility to oncoming traffic:_____m

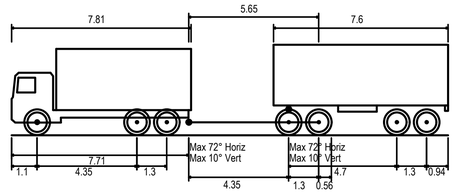
List Unique Site Specific Hazards/Risks Identified onsite

Implementation Checklist			
Are Portabooms required as part of the Traffic Guidance Scheme (TGS)?	☐ Yes	☐ No	☐ N/A
Comments or details of action taken:			
Have considerations been made to the Traffic (pedestrian) volume?	☐ Yes	☐ No	☐ N/A
Comments or details of action taken:			
Is the surface level even, flat and suitable for the implementation of Portabooms?	☐ Yes	☐ No	☐ N/A
Comments or details of action taken:			
Are Operators trained and verified as competent in the use of Portabooms?	☐ Yes	☐ No	☐ N/A
Comments or details of action taken:			
Have considerations been made to the manual handling of Portabooms? (e.g. 2 Traffic Controllers available for lifting/carrying/moving equipment)	☐ Yes	☐ No	☐ N/A
Comments or details of action taken:			
Are there any overhead hazards in the proposed implementation location?	☐ Yes	☐ No	☐ N/A
Comments or details of action taken:			
Is there adequate signage to notify pedestrians of Portaboom ahead?	☐ Yes	☐ No	☐ N/A
Comments or details of action taken:			
Are sign and devices in good condition, clearly visible to oncoming traffic (Pedestrians)?	☐ Yes	☐ No	☐ N/A

Comments or details of action taken:			
Have site conditions changed due to shade, park vehicles, glare, rain, fog, dust etc	☐ Yes	☐ No	☐ N/A
Comments or details of action taken:			
Are there any overhead hazards in the proposed implementation location?	☐ Yes	☐ No	☐ N/A
Comments or details of action taken:			
Is there adequate signage to notify pedestrians of Portaboom ahead?	☐ Yes	☐ No	☐ N/A
Comments or details of action taken:			

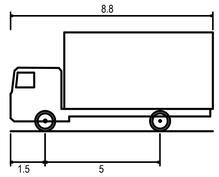
I SWEPT PATHS





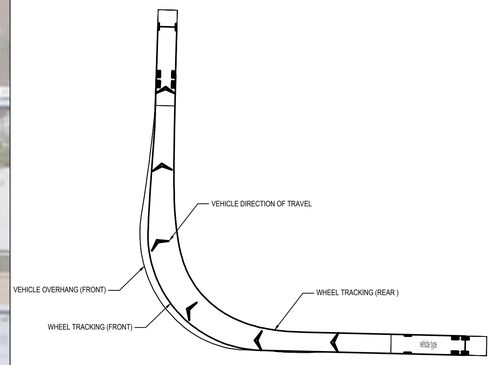
Truck and Dog (19m-50t)

Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	3.940m
Min Body Ground Clearance	0.550m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	9.000m



Service Vehicle (8.8 m)

Overall Length	8.800m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.427m
Track Width	2.500m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	12.500m



VEHICLE TURN PATH

NOT FOR CONSTRUCTION

No.	Amendment Description	Design by	Verified by	Approved by	Date
A01.01				L.N	

SCALES:

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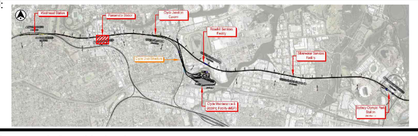
SCALE 1:250 @A1

KEYPLAN:



CLIENT: NSW GOVERNMENT / sydney METRO

PRINCIPAL AEO: GHD / SMEC

SERVICE PROVIDERS: GAMUDA Australia / LAING O'ROURKE / Cardno / now / Stantec

DRAWN		
DESIGNED		
DRG CHECK	L.NICHOLS	
DESIGN CHECK		
APPROVED	J.FONG	

SYDNEY METRO

O'CONNELL ST AND GEORGE ST INTERSECTION
PARRAMATTA ENABLING WORKS
ROADWORKS
TURNING PATHS TRUCK AND DOG (19m) , SERVICE VEHICLE

DOCUMENT No: | SHEET: OF | ©
STATUS: STAGE 3 DETAILED DESIGN | EDMS NO:

DRG No. SMWSTWTP-GLO-PTA-SN600-CV-SKT-090501 | REV A | VER A01.01

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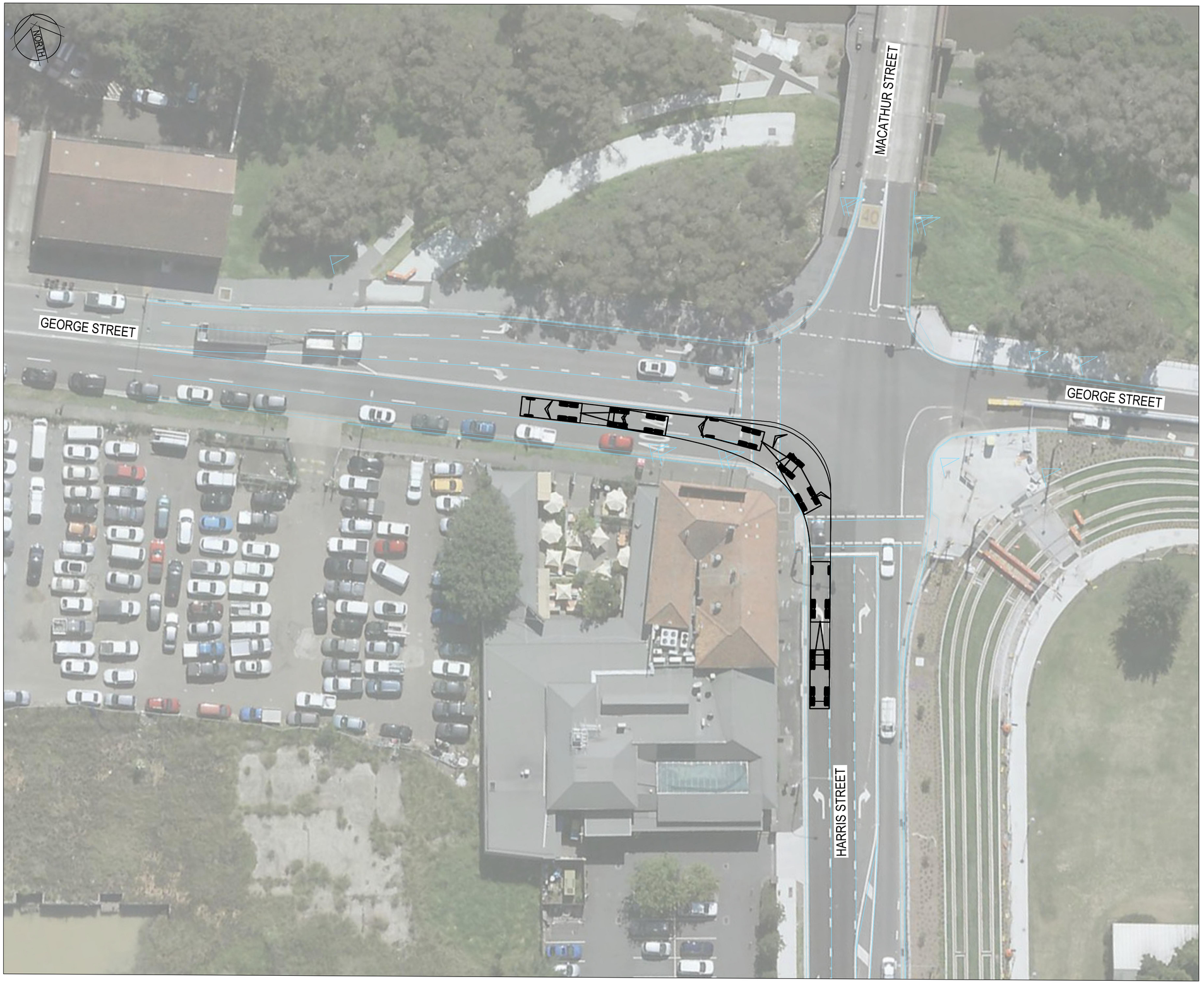

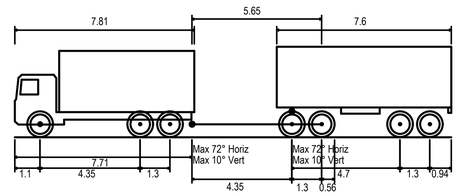

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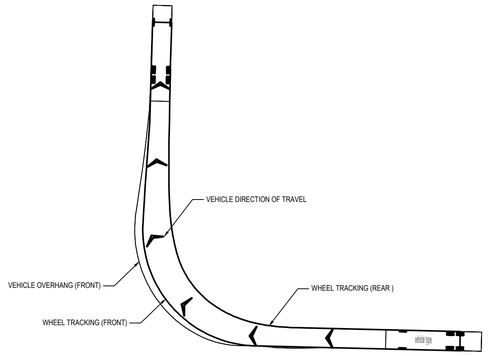


VEHICLE TURN PATH

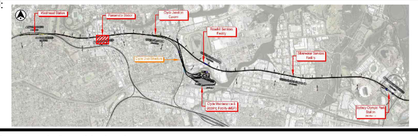
NOT FOR CONSTRUCTION

No.	Amendment Description	Design by	Verified by	Approved by	Date
A01.01				L.N	

SCALES:

0 5 10m
SCALE 1:250 @A1

KEYPLAN:



CLIENT: NSW GOVERNMENT | sydney METRO

PRINCIPAL AEO: GHD | SMEC

SERVICE PROVIDERS: GAMUDA Australia | LAING O'ROURKE | Cardno now Stantec

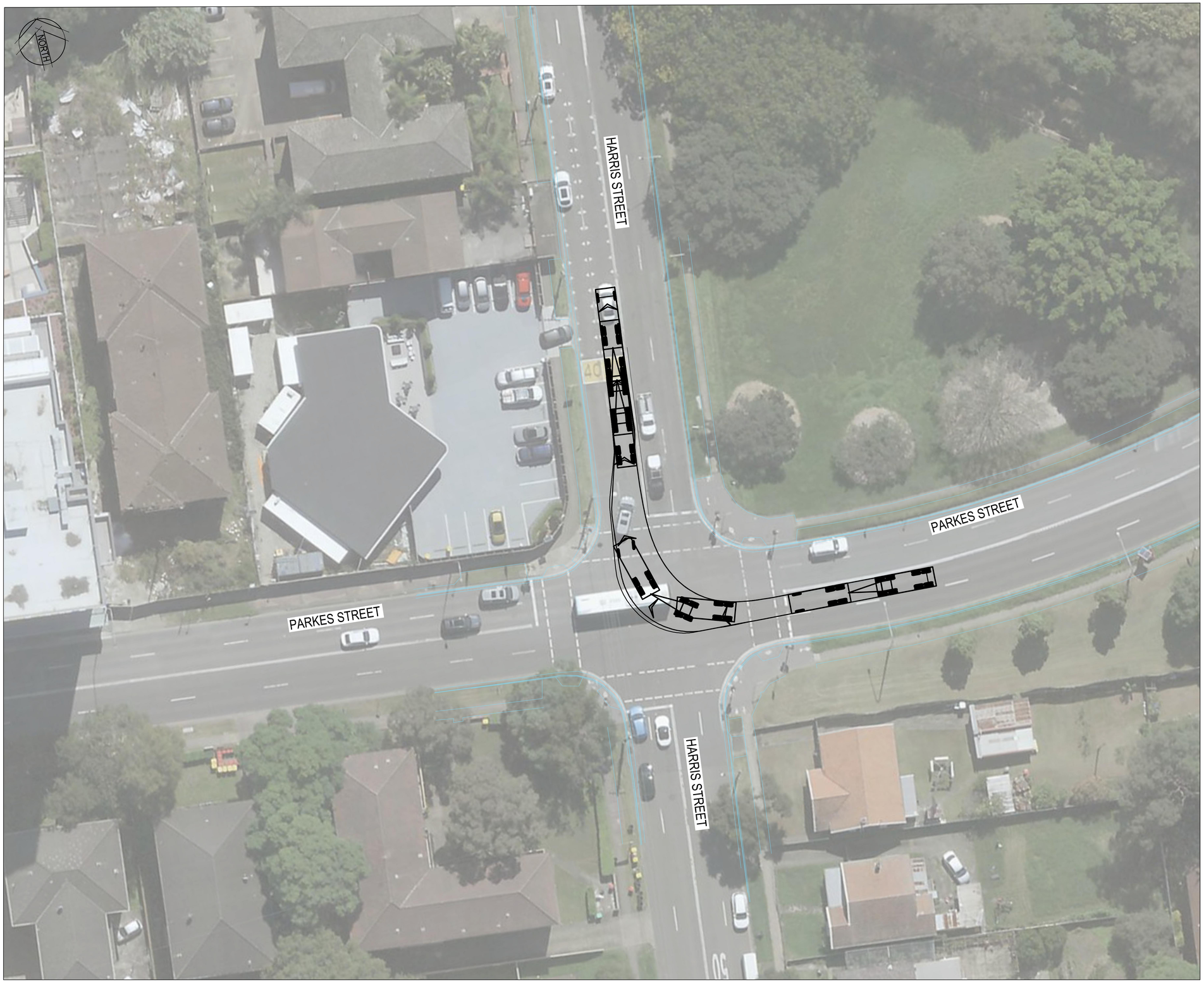
DRAWN		
DESIGNED		
DRG CHECK	L.NICHOLS	
DESIGN CHECK		
APPROVED	J.FONG	

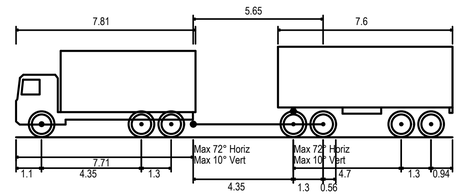
SYDNEY METRO

HARRIS ST AND GEORGE ST INTERSECTION
PARRAMATTA ENABLING WORKS
ROADWORKS
TURNING PATH TRUCK AND DOG (19m)

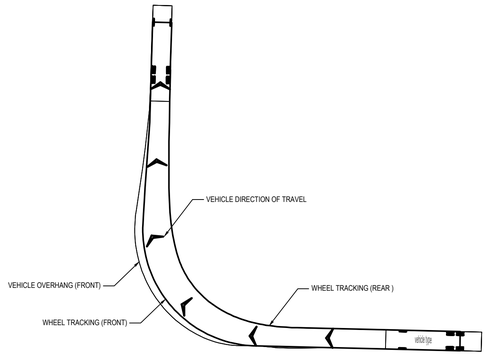
DOCUMENT No: | SHEET: OF | ©
STATUS: STAGE 3 DETAILED DESIGN | EDMS NO:
DRG No. SMWSTWTP-GLO-PTA-SN600-CV-SKT-090502 | REV A | VER A01.01

NA | Co-ordinate System: MGA94, Z56 | Height Datum: | This sheet may be prepared using colour and may be incomplete if copied | NOTE: Do not scale from this drawing.





Truck and Dog (19m-50t)	
Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	3.940m
Min Body Ground Clearance	0.550m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	9.000m



VEHICLE TURN PATH

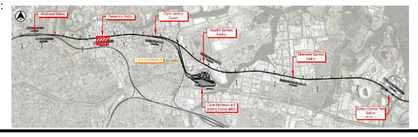
NOT FOR CONSTRUCTION

No.	Amendment Description	Design by	Verified by	Approved by	Date
A01.01				L.N	

SCALES:

0 5 10m
SCALE 1:250 @A1

KEYPLAN:



CLIENT: NSW GOVERNMENT / sydney METRO

PRINCIPAL AEO: GHD / SMEC

SERVICE PROVIDERS: GAMUDA Australia / LAING O'ROURKE / Cardno now Stantec

DRAWN		
DESIGNED		
DRG CHECK	I.NICHOLS	
DESIGN CHECK		
APPROVED	J.FONG	

SYDNEY METRO

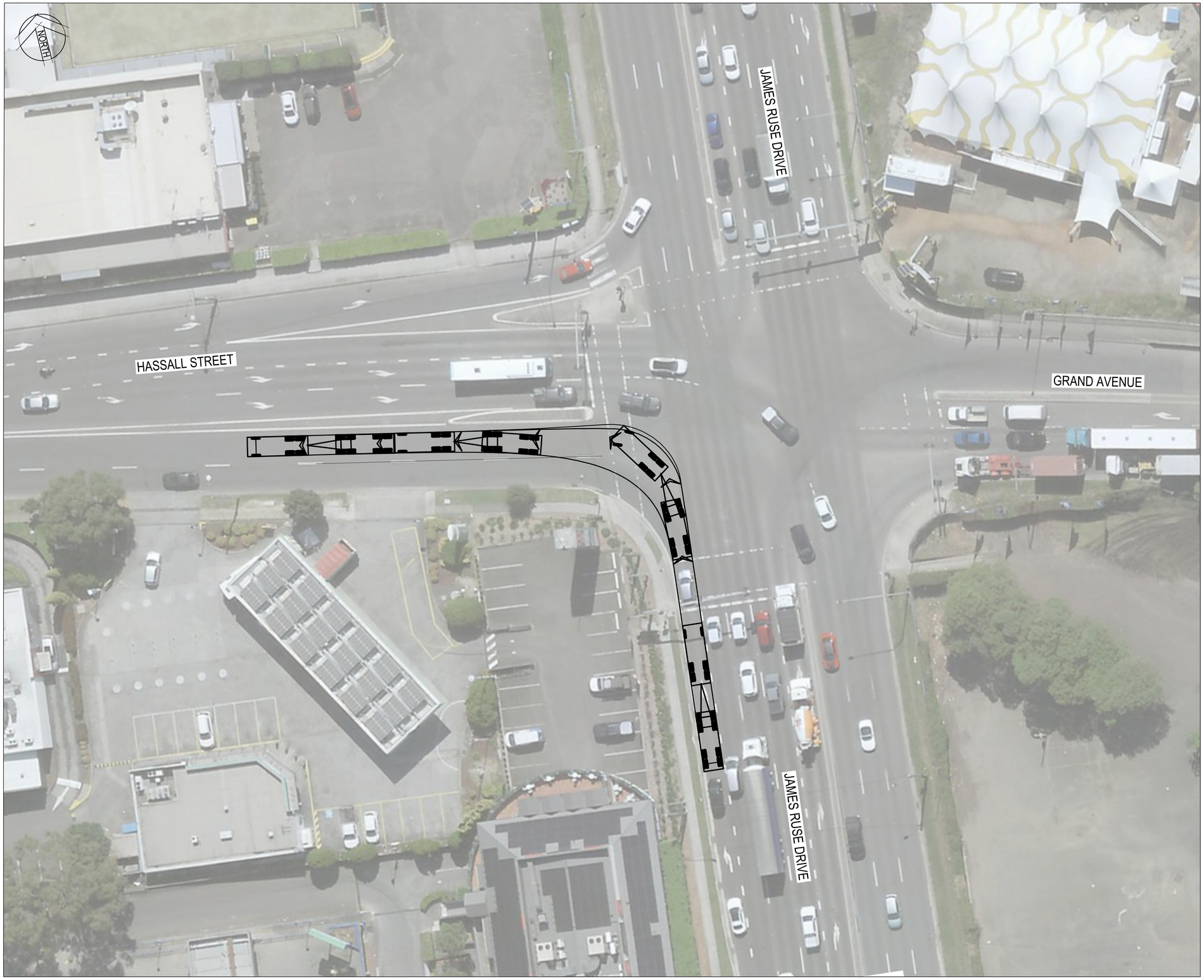
HARRIS ST AND PARKES ST INTERSECTION
PARRAMATTA ENABLING WORKS
ROADWORKS
TURNING PATH TRUCK AND DOG (19m)

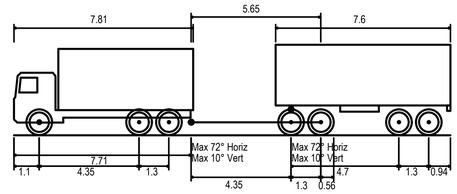
DOCUMENT No: | SHEET: OF | ©

STATUS: STAGE 3 DETAILED DESIGN | EDMS NO:

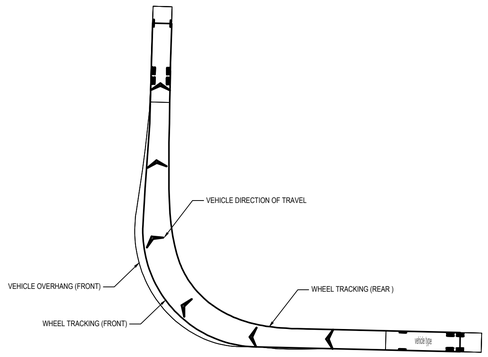
DRG No. SMWSTWTP-GLO-PTA-SN600-CV-SKT-090503 | REV A | VER A01.01

NA | Co-ordinate System: MGA94, Z56 | Height Datum: | This sheet may be prepared using colour and may be incomplete if copied | NOTE: Do not scale from this drawing.





Truck and Dog (19m-50t)	
Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	3.940m
Min Body Ground Clearance	0.550m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	9.000m



VEHICLE TURN PATH

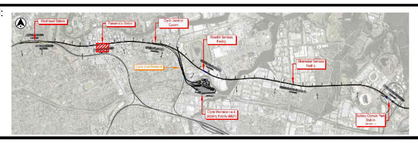
NOT FOR CONSTRUCTION

No.	Amendment Description	Design by	Verified by	Approved by	Date
A01.01				L.N	

SCALES:

0 5 10m
SCALE 1:250 @A1

KEYPLAN:



CLIENT: NSW GOVERNMENT / sydney METRO

PRINCIPAL AEO: GHD / SMEC

SERVICE PROVIDERS: GAMUDA Australia / LAING O'ROURKE / Cardno now Stantec

DRAWN		
DESIGNED		
DRG CHECK	I. NICHOLS	
DESIGN CHECK		
APPROVED	J.FONG	

SYDNEY METRO

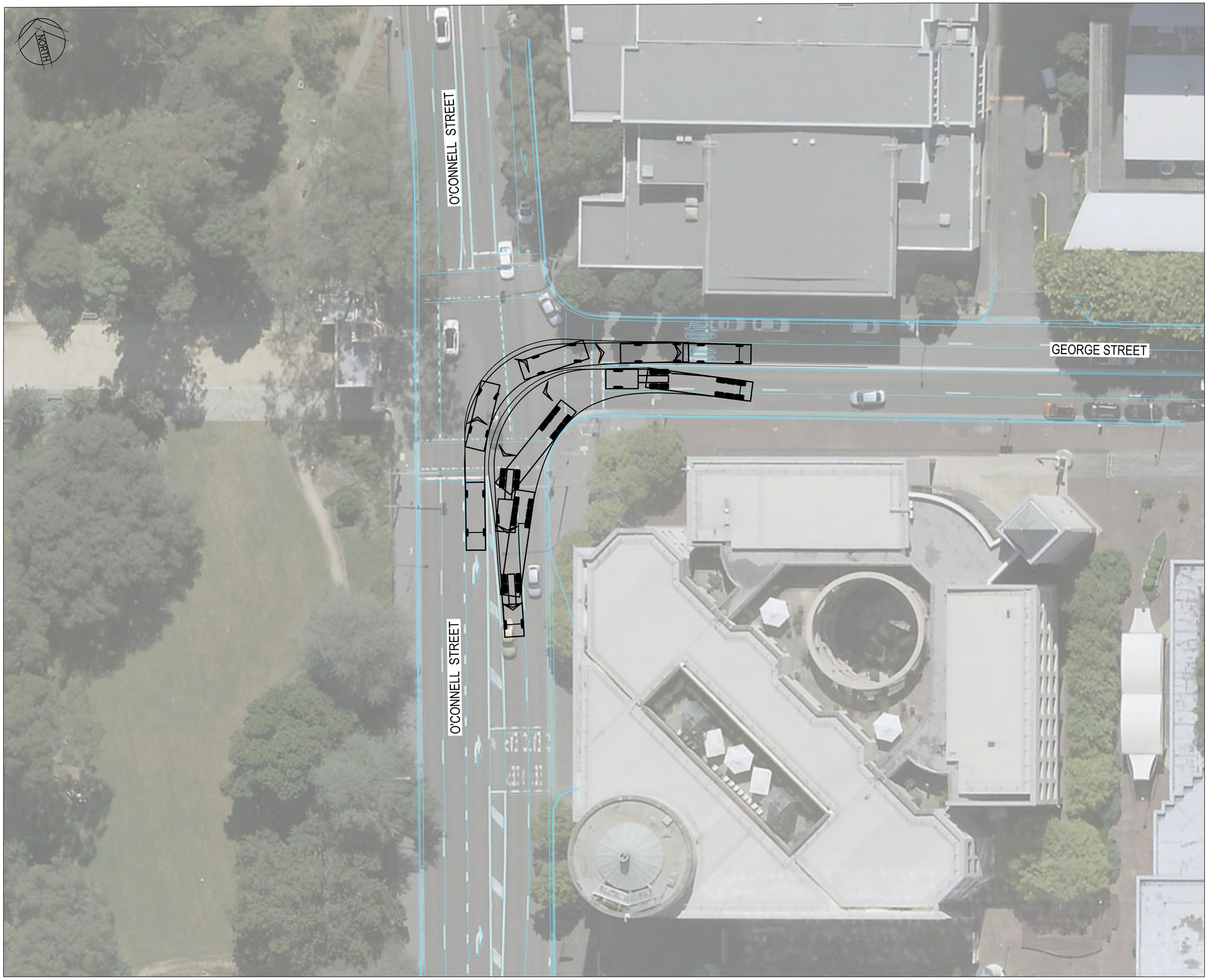
HASSELL ST ANDJAMES RUSE DRIVE INTERSECTION
PARRAMATTA ENABLING WORKS
ROADWORKS
TURNING PATH TRUCK AND DOG (19m)

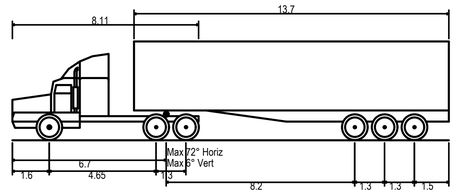
DOCUMENT No: | SHEET: OF | ©

STATUS: STAGE 3 DETAILED DESIGN | EDMS NO:

DRG No. SMWSTWTP-GLO-PTA-SN600-CV-SKT-090504 | REV A | VER A01.01

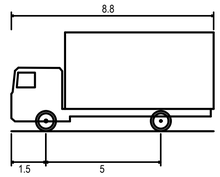
NA | Co-ordinate System: MGA94, Z56 | Height Datum: | This sheet may be prepared using colour and may be incomplete if copied | NOTE: Do not scale from this drawing.





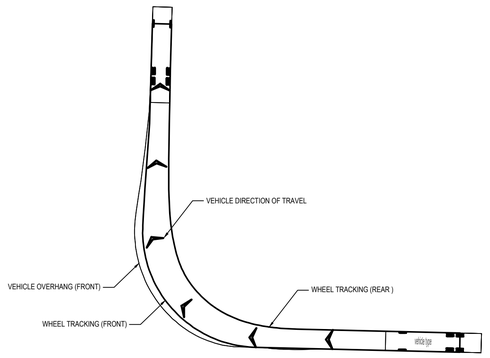
Prime mover and semi-trailer (19 m)

Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.540m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m



Service Vehicle (8.8 m)

Overall Length	8.800m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.427m
Track Width	2.500m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	12.500m



VEHICLE TURN PATH

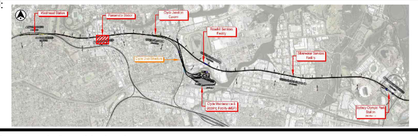
NOT FOR CONSTRUCTION

No.	Amendment Description	Design by	Verified by	Approved by	Date
A01.01				L.N	

SCALES:

0 5 10m
SCALE 1:250 @A1

KEYPLAN:



CLIENT: NSW GOVERNMENT | sydney METRO

PRINCIPAL AEO: GHD | SMEC

SERVICE PROVIDERS: GAMUDA Australia | LAING O'ROURKE | Cardno now Stantec

DRAWN		
DESIGNED		
DRG CHECK	L.NICHOLS	
DESIGN CHECK		
APPROVED	J.FONG	

SYDNEY METRO

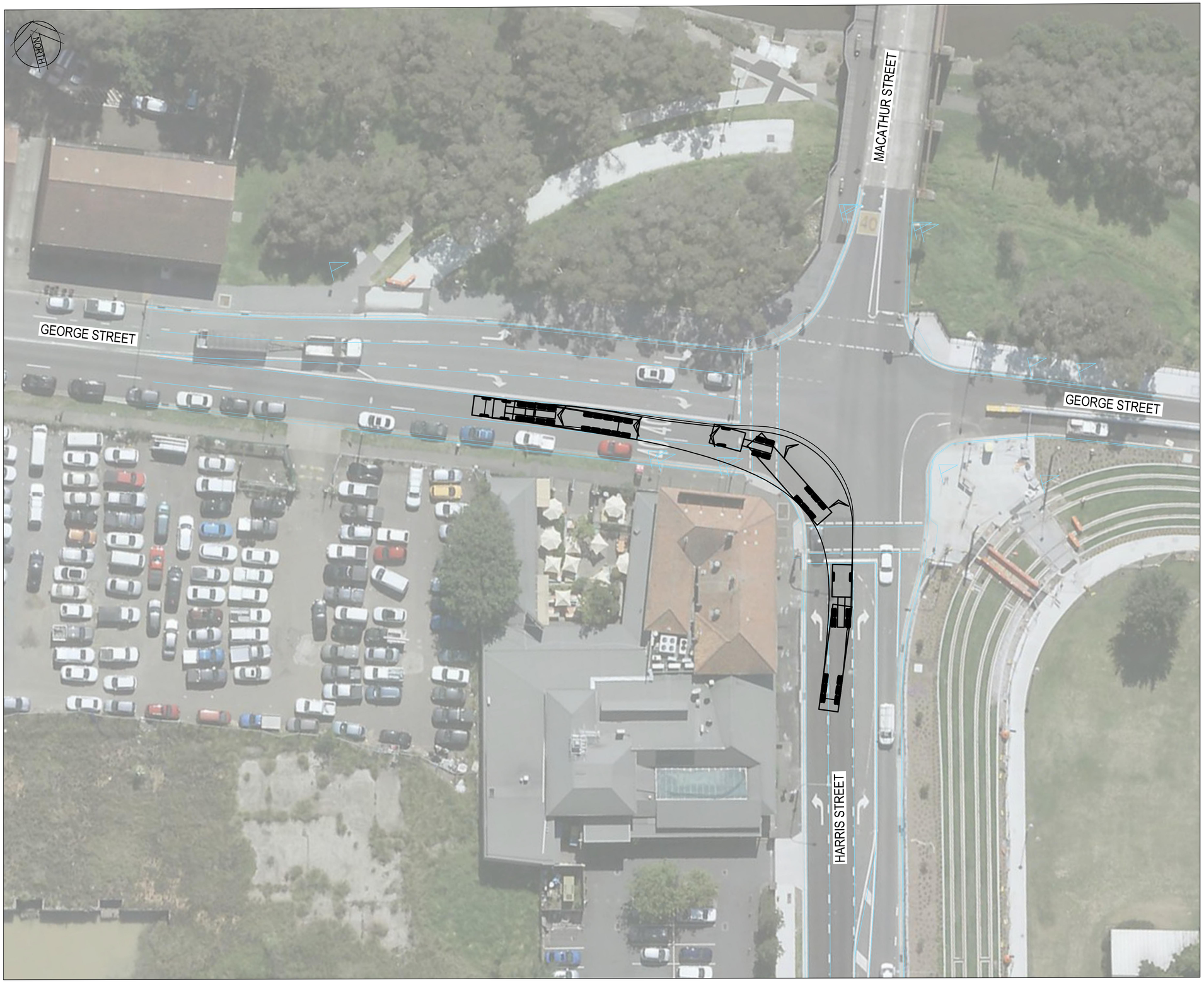
O'CONNELL ST AND GEORGE ST INTERSECTION
PARRAMATTA ENABLING WORKS
ROADWORKS
TURNING PATHS SEMI-TRAILER (19m) , SERVICE VEHICLE

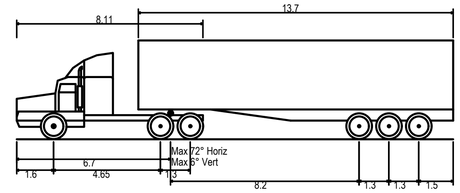
DOCUMENT No: | SHEET: OF | ©

STATUS: STAGE 3 DETAILED DESIGN | EDMS NO:

DRG No. SMWSTWTP-GLO-PTA-SN600-CV-SKT-0905011 | REV A | VER A01.01

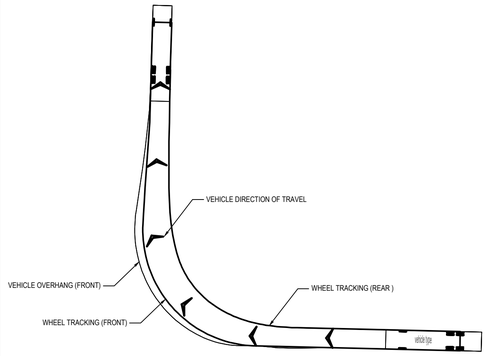
NA | Co-ordinate System: MGA94, Z56 | Height Datum: | This sheet may be prepared using colour and may be incomplete if copied | NOTE: Do not scale from this drawing.





Prime mover and semi-trailer (19 m)

Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.540m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m



VEHICLE TURN PATH

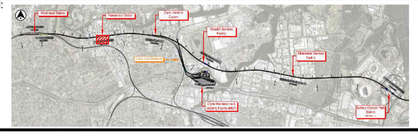
NOT FOR CONSTRUCTION

No.	Amendment Description	Design by	Verified by	Approved by	Date
A01.01				L.N	

SCALES:

0 5 10m
SCALE 1:250 @A1

KEYPLAN:



CLIENT: NSW GOVERNMENT / sydney METRO

PRINCIPAL AEO: GHD / SMEC

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SERVICE PROVIDERS: GAMUDA Australia / LAING O'ROURKE / Cardno / now / Stantec

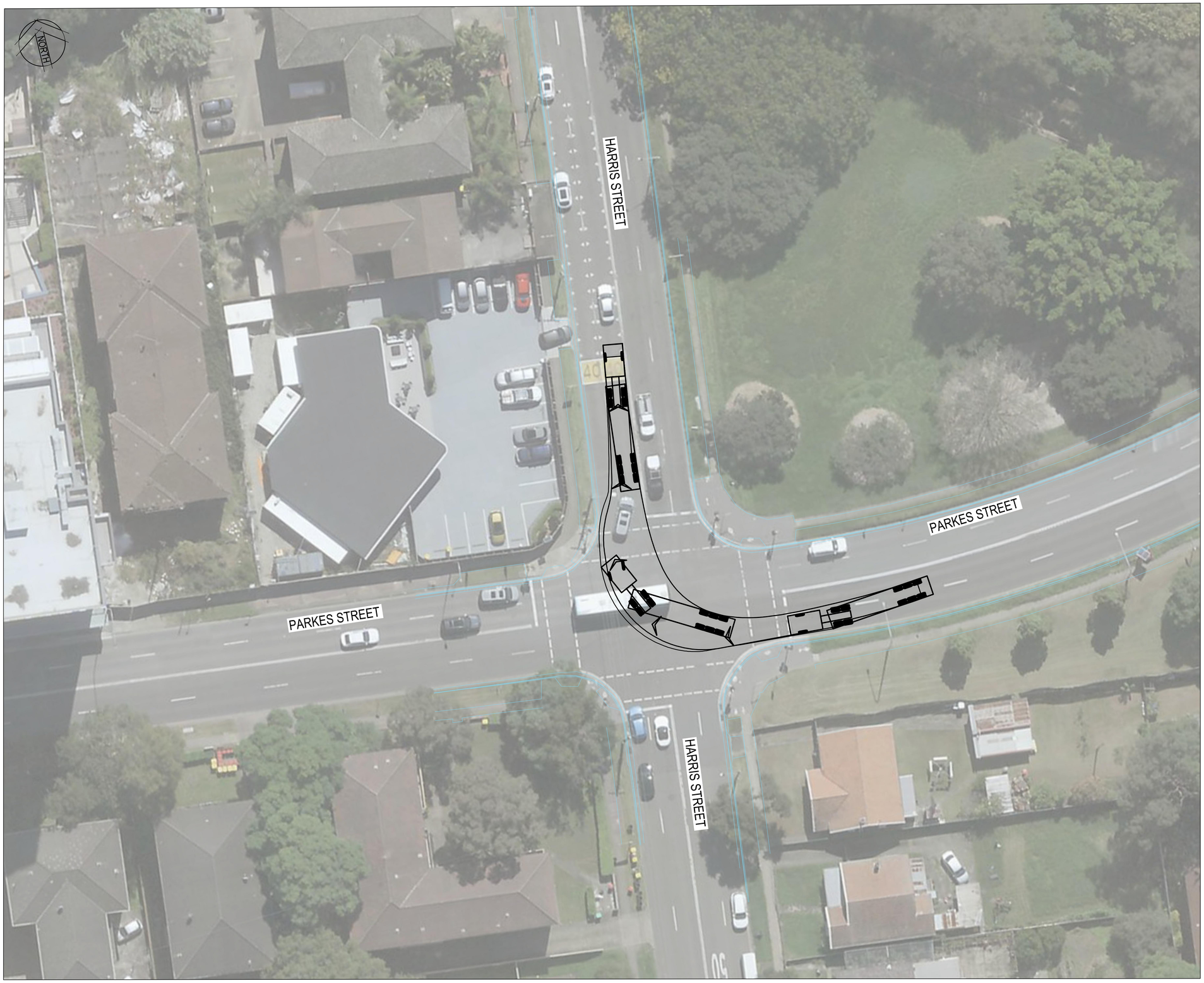
DRAWN		
DESIGNED		
DRG CHECK	L.NICHOLS	
DESIGN CHECK		
APPROVED	J.FONG	

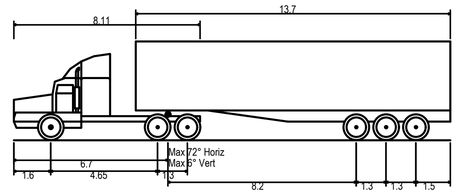
SYDNEY METRO

HARRIS ST AND GEORGE ST INTERSECTION
PARRAMATTA ENABLING WORKS
ROADWORKS
TURNING PATH SEMI-TRAILER (19m)

DOCUMENT No: | SHEET: OF | ©
STATUS: STAGE 3 DETAILED DESIGN | EDMS NO:
DRG No. SMWSTWTP-GLO-PTA-SN600-CV-SKT-090512 | REV A | VER A01.01

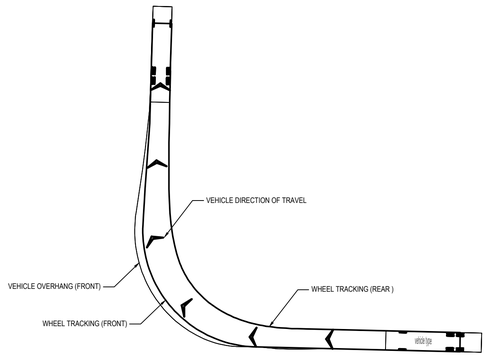
NA | Co-ordinate System: MGA94, Z56 | Height Datum: | This sheet may be prepared using colour and may be incomplete if copied | NOTE: Do not scale from this drawing.





Prime mover and semi-trailer (19 m)

Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.540m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m



VEHICLE TURN PATH

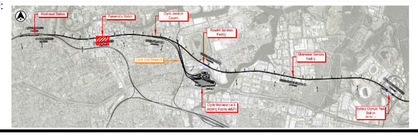
NOT FOR CONSTRUCTION

No.	Amendment Description	Design by	Verified by	Approved by	Date
A01.01				L.N	

SCALES:

0 5 10m
SCALE 1:250 @A1

KEYPLAN:



CLIENT: NSW GOVERNMENT | sydney METRO

PRINCIPAL AEO: GHD | SMEC

SERVICE PROVIDERS: GAMUDA Australia | LAING O'ROURKE | Cardno now Stantec

DRAWN		
DESIGNED		
DRG CHECK	I.NICHOLS	
DESIGN CHECK		
APPROVED	J.FONG	

SYDNEY METRO

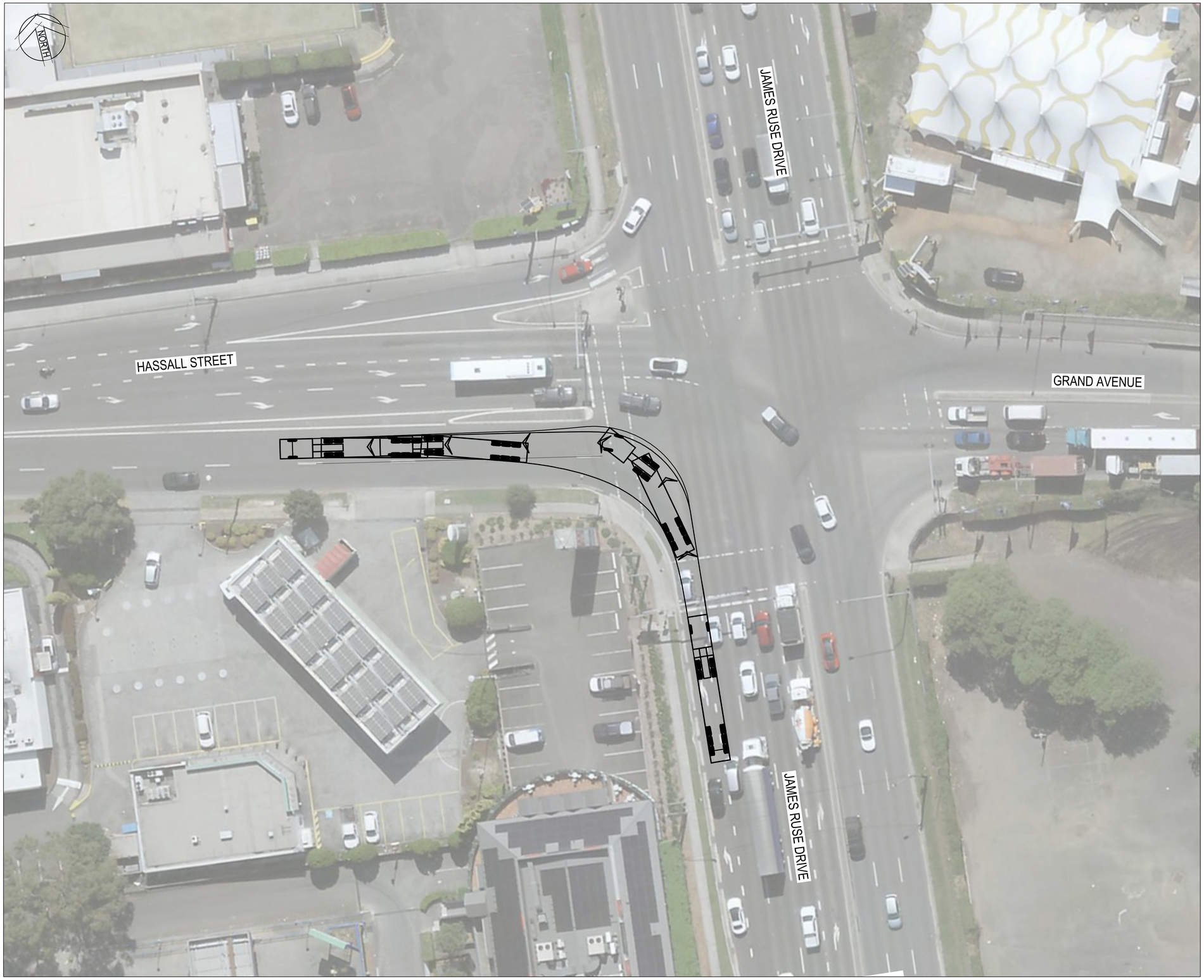
HARRIS ST AND PARKES ST INTERSECTION
PARRAMATTA ENABLING WORKS
ROADWORKS
TURNING PATH SEMI-TRAILER (19m)

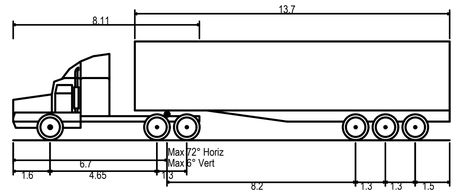
DOCUMENT No: | SHEET: OF | ©

STATUS: STAGE 3 DETAILED DESIGN | EDMS NO:

DRG No. SMWSTWTP-GLO-PTA-SN600-CV-SKT-090513 | REV A | VER A01.01

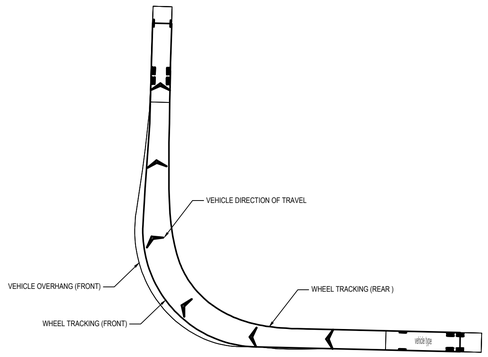
NA | Co-ordinate System: MGA94, Z56 | Height Datum: | This sheet may be prepared using colour and may be incomplete if copied | NOTE: Do not scale from this drawing.





Prime mover and semi-trailer (19 m)

Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.540m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m



VEHICLE TURN PATH

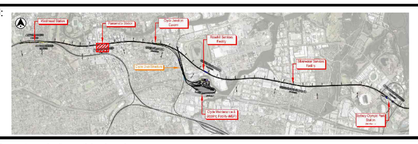
NOT FOR CONSTRUCTION

No.	Amendment Description	Design by	Verified by	Approved by	Date
A01.01				L.N	

SCALES:

0 5 10m
SCALE 1:250 @A1

KEYPLAN:



CLIENT: NSW GOVERNMENT / sydney METRO

PRINCIPAL AEO: GHD / SMEC

SERVICE PROVIDERS: GAMUDA Australia / LAING O'ROURKE / Cardno now Stantec

DRAWN		
DESIGNED		
DRG CHECK	I. NICHOLS	
DESIGN CHECK		
APPROVED	J.FONG	

SYDNEY METRO

HASSELL ST ANDJAMES RUSE DRIVE INTERSECTION
PARRAMATTA ENABLING WORKS
ROADWORKS
TURNING PATH SEMI TRAILER (19m)

DOCUMENT No: | SHEET: OF | ©

STATUS: STAGE 3 DETAILED DESIGN | EDMS NO:

DRG No. SMWSTWTP-GLO-PTA-SN600-CV-SKT-090514 | REV A | VER A01.01

NA | Co-ordinate System: MGA94, Z56 | Height Datum: | This sheet may be prepared using colour and may be incomplete if copied | NOTE: Do not scale from this drawing.

NOT FOR CONSTRUCTION

No.	Amendment Description	Design by	Verified by	Approved by	Date
C	STAGE 3 DETAILED DESIGN - 100% RESUBMISSION	R.C	D.G	L.N	01.12.22
B	STAGE 3 DETAILED DESIGN - 100% RESUBMISSION	R.C	D.G	L.N	04.11.22
A	STAGE 3 DETAILED DESIGN - 100%	R.C	D.G	L.N	13.09.22

SCALES: SCALE 1:250 @A1

KEYPLAN:

CLIENT: NSW GOVERNMENT, Sydney Metro

PRINCIPAL AEO: GHD, SMEC

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SERVICE PROVIDERS: GAMUDA Australia, LAING O'ROURKE, Cardno now Stantec

DRAWN	K.CURLEY	01.12.22
DESIGNED	R.CROWLEY	01.12.22
DRG CHECK	L.NICHOLS	01.12.22
DESIGN CHECK	D.GEERLINGS	01.12.22
APPROVED	J.FONG	01.12.22

SYDNEY METRO WEST
MACQUARIE LANE/GEORGE STREET
PARRAMATTA ENABLING WORKS
ROADWORKS
TURNING PATH PLAN - SHEET 1

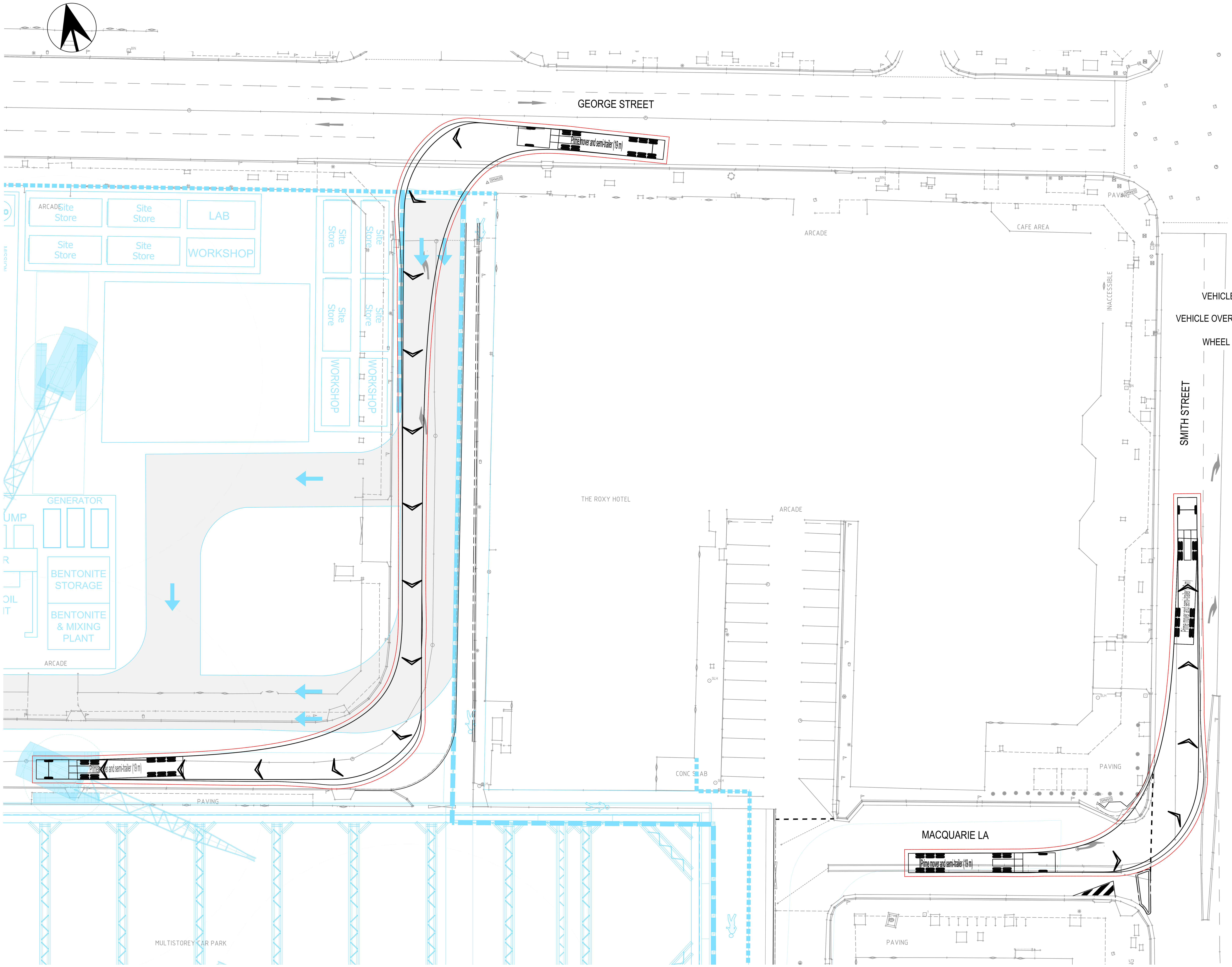
DOCUMENT No: STAGE 3 DETAILED DESIGN | SHEET: 32 OF 42 | ©

STATUS: | EDMS NO:

DRG No. SMWSTWTP-GLO-PTA-SN600-CV-DRG-080501 | REV C | VER

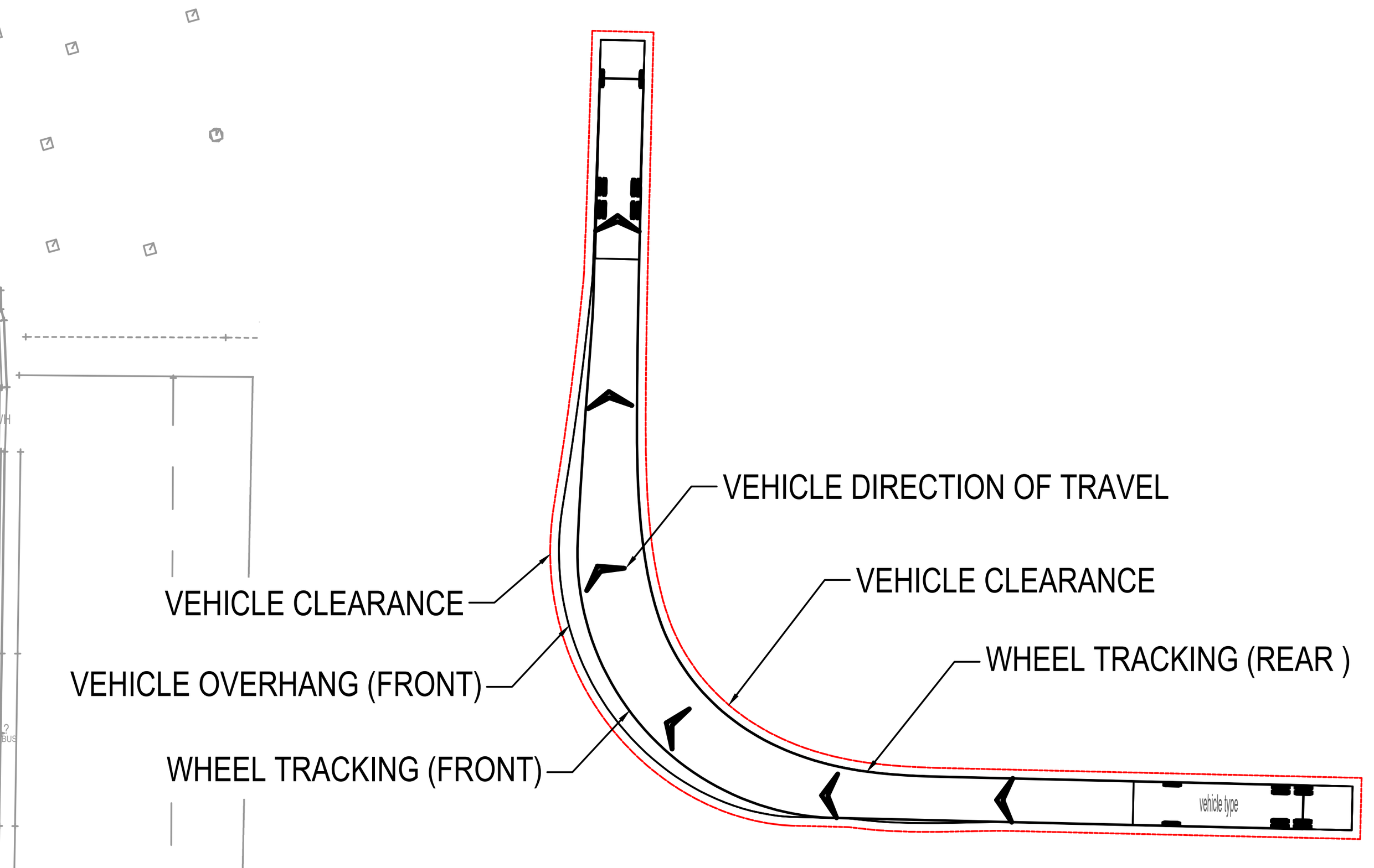
A1 | Co-ordinate System: MGA94, Z56 | Height Datum: | This sheet may be prepared using colour and may be incomplete if copied | NOTE: Do not scale from this drawing.

Cad File: C:\pwwork\sf\SMWSTWTP\dms04843\SMWSTWTP-GLO-PTA-SN600-CV-DRG-080501.dwg
Plot Date: 01/12/22 - 15:12
100mm AT FULL SIZE

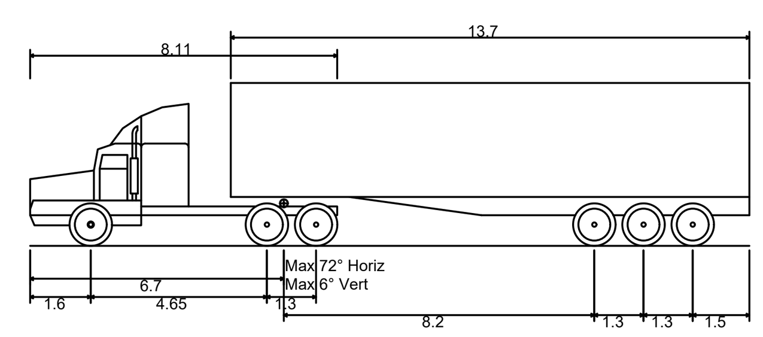


LEGEND

- DESIGN BY OTHERS
- EXISTING SURVEY
- PROPOSED KERB
- PROPOSED LINE MARKING

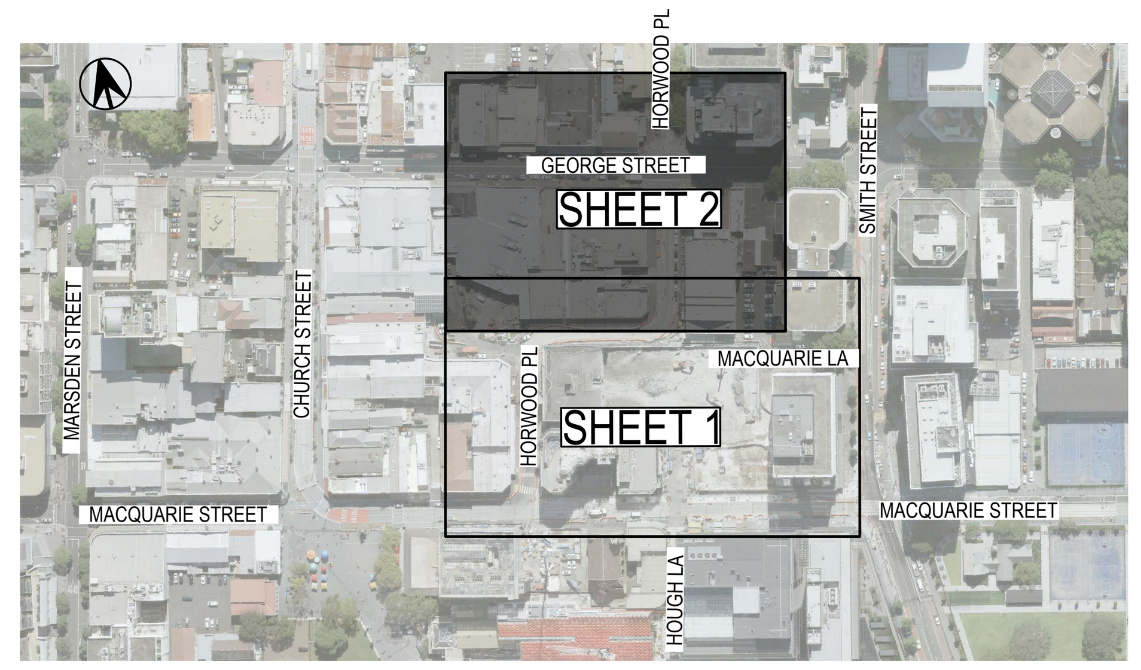


VEHICLE TURN PATH



Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.540m
Track Width	2.500m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	12.500m

PRIME MOVER AND SEMI-TRAILER (19 m)



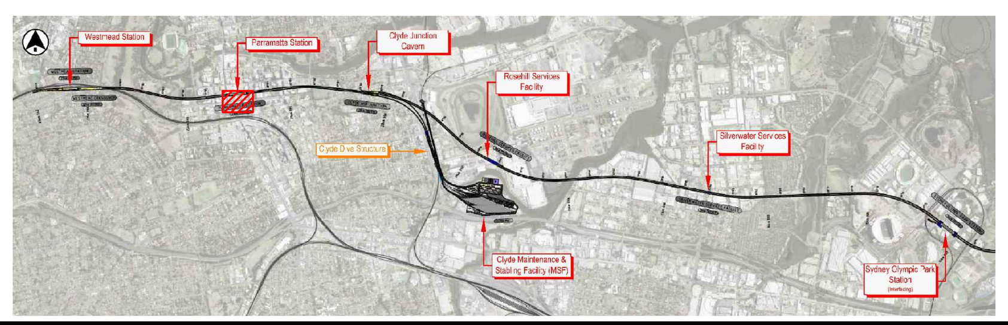
NOT FOR CONSTRUCTION

C	STAGE 3 DETAILED DESIGN - 100% RESUBMISSION	R.C	D.G	L.N	01.12.22
B	STAGE 3 DETAILED DESIGN - 100% RESUBMISSION	R.C	D.G	L.N	04.11.22
A	STAGE 3 DETAILED DESIGN - 100%	R.C	D.G	L.N	13.09.22
No.	Amendment Description	Design by	Verified by	Approved by	Date

SCALES:

SCALE 1:250 @A1

KEYPLAN:



CLIENT:

PRINCIPAL AEO:

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SERVICE PROVIDERS

DRAWN	K.CURLEY	01.12.22
DESIGNED	R.CROWLEY	01.12.22
DRG CHECK	L.NICHOLS	01.12.22
DESIGN CHECK	D.GEERLINGS	01.12.22
APPROVED	J.FONG	01.12.22

SYDNEY METRO WEST

MACQUARIE LANE/GEORGE STREET
PARRAMATTA ENABLING WORKS
ROADWORKS
TURNING PATH PLAN - SHEET 2

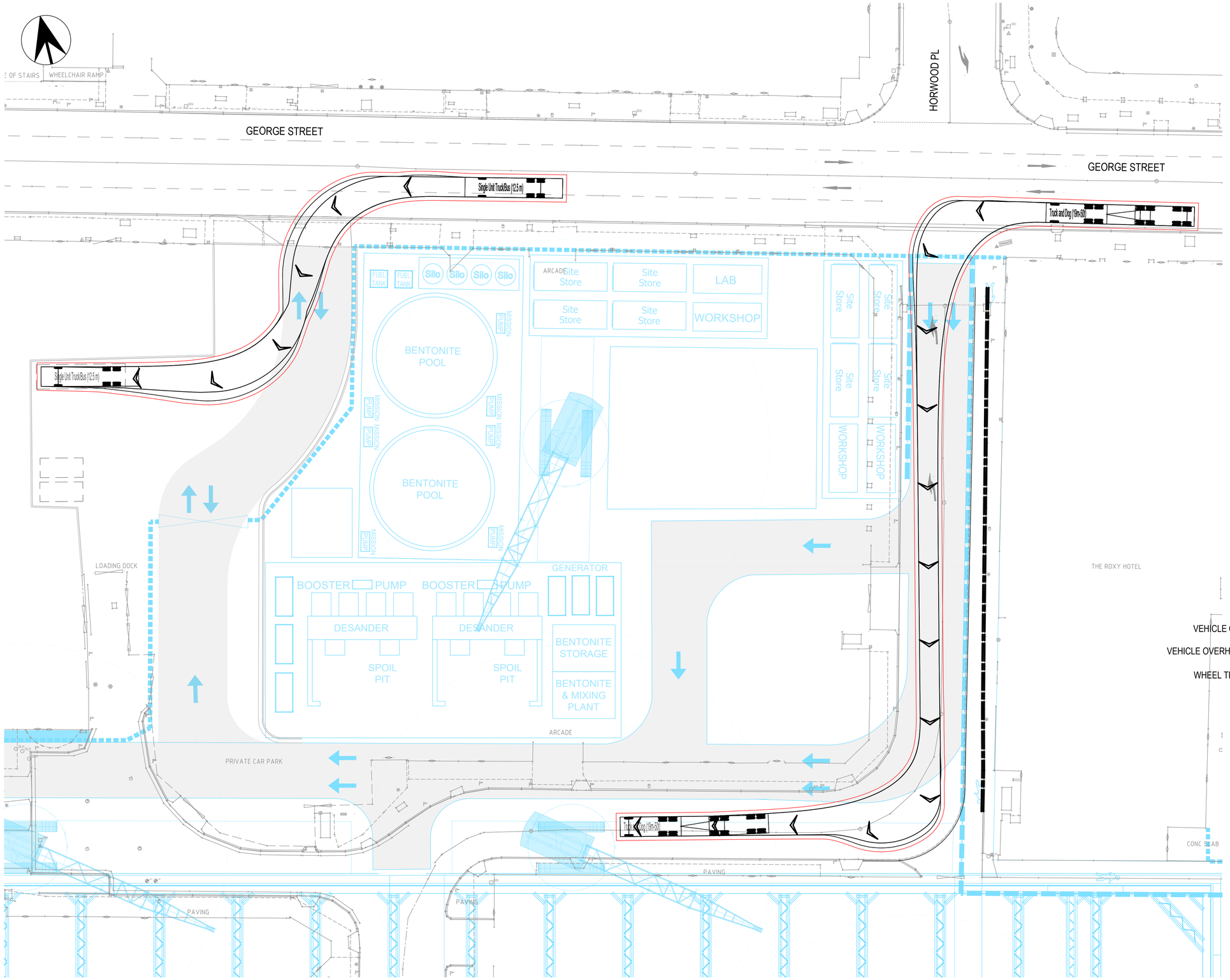
DOCUMENT No: SHEET: 33 OF 42 ©

STATUS: STAGE 3 DETAILED DESIGN EDMS NO:

DRG No. SMWSTWTP-GLO-PTA-SN600-CV-DRG-080502 REV C VER

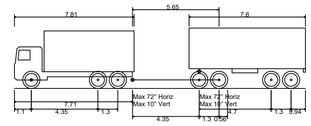
A1 | Co-ordinate System: MGA94, Z56 | Height Datum: | This sheet may be prepared using colour and may be incomplete if copied | NOTE: Do not scale from this drawing.

Cad File: C:\pwworkdir\SMWSTWTP\dms04843\SMWSTWTP-GLO-PTA-SN600-CV-DRG-080502.dwg
Plot Date: 01/12/22 - 15:14
100mm AT FULL SIZE



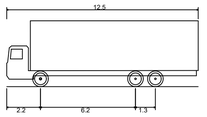
LEGEND

- DESIGN BY OTHERS
- EXISTING SURVEY
- PROPOSED KERB
- PROPOSED LINE MARKING



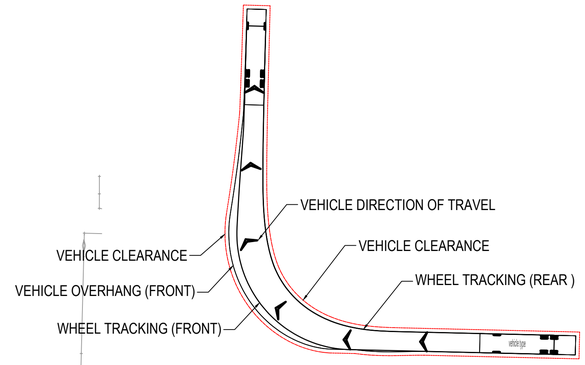
Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	3.940m
Min Body Ground Clearance	0.550m
Track Width	2.500m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	9.000m

TRUCK AND DOG (19m-50t)

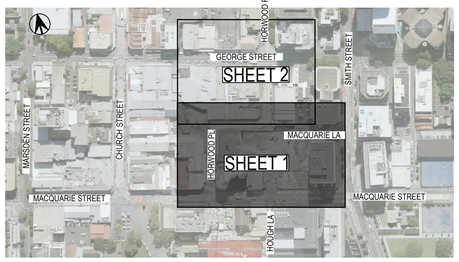


Overall Length	12.500m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.490m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

SINGLE UNIT TRUCK/BUS (12.5 m)



VEHICLE TURN PATH



NOT FOR CONSTRUCTION

No.	Amendment Description	Design by	Verified by	Approved by	Date
C	STAGE 3 DETAILED DESIGN - 100% RESUBMISSION	R.C	D.G	L.N	01.12.22
B	STAGE 3 DETAILED DESIGN - 100% RESUBMISSION	R.C	D.G	L.N	04.11.22
A	STAGE 3 DETAILED DESIGN - 100%	R.C	D.G	L.N	13.09.22

SCALES:

0 5 10m
SCALE 1:250 @A1

KEYPLAN:

CLIENT: NSW GOVERNMENT / sydney METRO

PRINCIPAL AEO: AHD / SMEC

The information shown on this drawing is for the purposes of the Sydney Metro Project only. No warranty is given or implied as to its suitability for any other purpose. The Service Providers accept no liability arising from the use of this drawing and the information shown thereon for any purpose other than the Sydney Metro Project.

SERVICE PROVIDERS: GAMUDA Australia / LAING O'ROURKE / Cardno / now / Stantec

DRAWN	K.CURLEY	01.12.22
DESIGNED	R.CROWLEY	01.12.22
DRG CHECK	L.NICHOLS	01.12.22
DESIGN CHECK	D.GEERLINGS	01.12.22
APPROVED	J.FONG	01.12.22

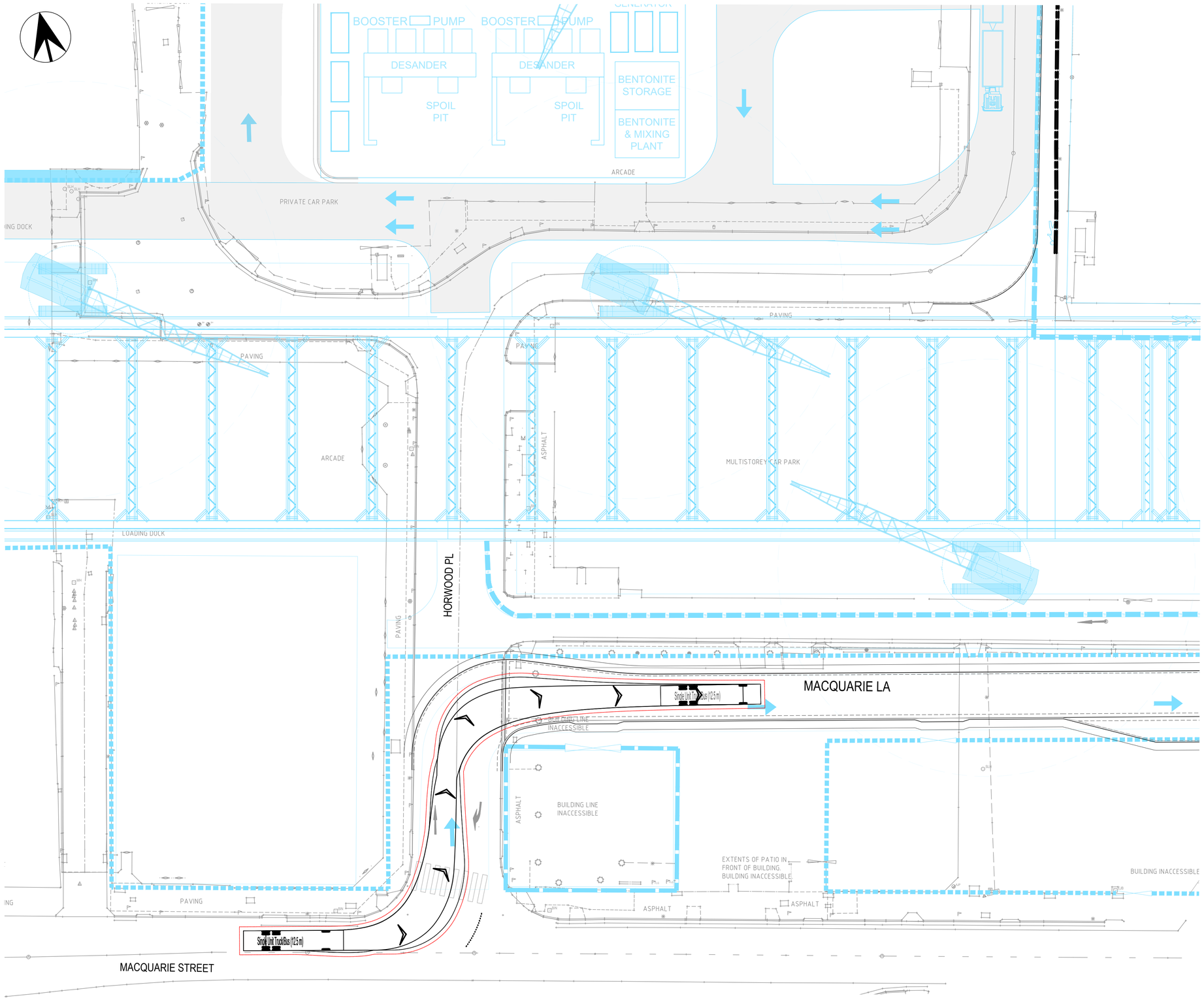
SYDNEY METRO WEST

MACQUARIE LANE/GEORGE STREET
PARRAMATTA ENABLING WORKS
ROADWORKS
TURNING PATH PLAN - SHEET 3

DOCUMENT No: | SHEET: 34 OF 42 | ©
STATUS: STAGE 3 DETAILED DESIGN | EDMS NO:
DRG No. SMWSTWTP-GLO-PTA-SN600-CV-DRG-080503 | REV C | VER

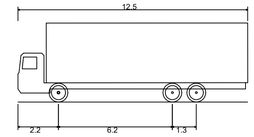
A1 | Co-ordinate System: MGA94, Z56 | Height Datum: | This sheet may be prepared using colour and may be incomplete if copied | NOTE: Do not scale from this drawing.

Cad File: C:\pwwork\dir\SMWSTWTP\dms94843\SMWSTWTP-GLO-PTA-SN600-CV-DRG-080503.dwg
Plot Date: 01/12/22 - 15:10
100mm AT FULL SIZE



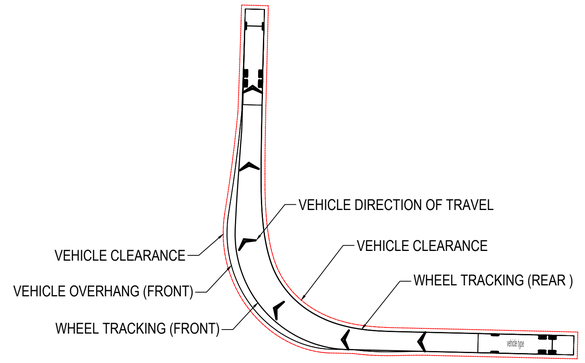
LEGEND

- DESIGN BY OTHERS
- EXISTING SURVEY
- PROPOSED KERB
- PROPOSED LINE MARKING

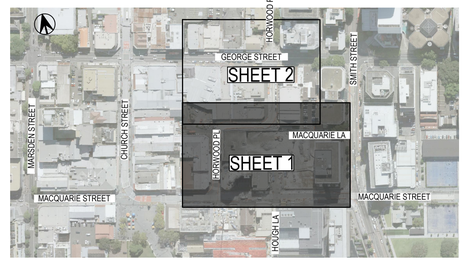


Overall Length	12.500m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.490m
Track Width	2.500m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	12.500m

SINGLE UNIT TRUCK/BUS (12.5 m)



VEHICLE TURN PATH



NOT FOR CONSTRUCTION

No.	Amendment Description	Design by	Verified by	Approved by	Date
C	STAGE 3 DETAILED DESIGN - 100% RESUBMISSION	R.C	D.G	L.N	01.12.22
B	STAGE 3 DETAILED DESIGN - 100% RESUBMISSION	R.C	D.G	L.N	04.11.22
A	STAGE 3 DETAILED DESIGN - 100%	R.C	D.G	L.N	13.09.22

SCALES:

0 5 10m
SCALE 1:250 @A1

KEYPLAN:

CLIENT: NSW GOVERNMENT | sydney METRO

PRINCIPAL AEO: AHD | SMEC

SERVICE PROVIDERS: GAMUDA Australia | LAING O'ROURKE | Cardno now Stantec

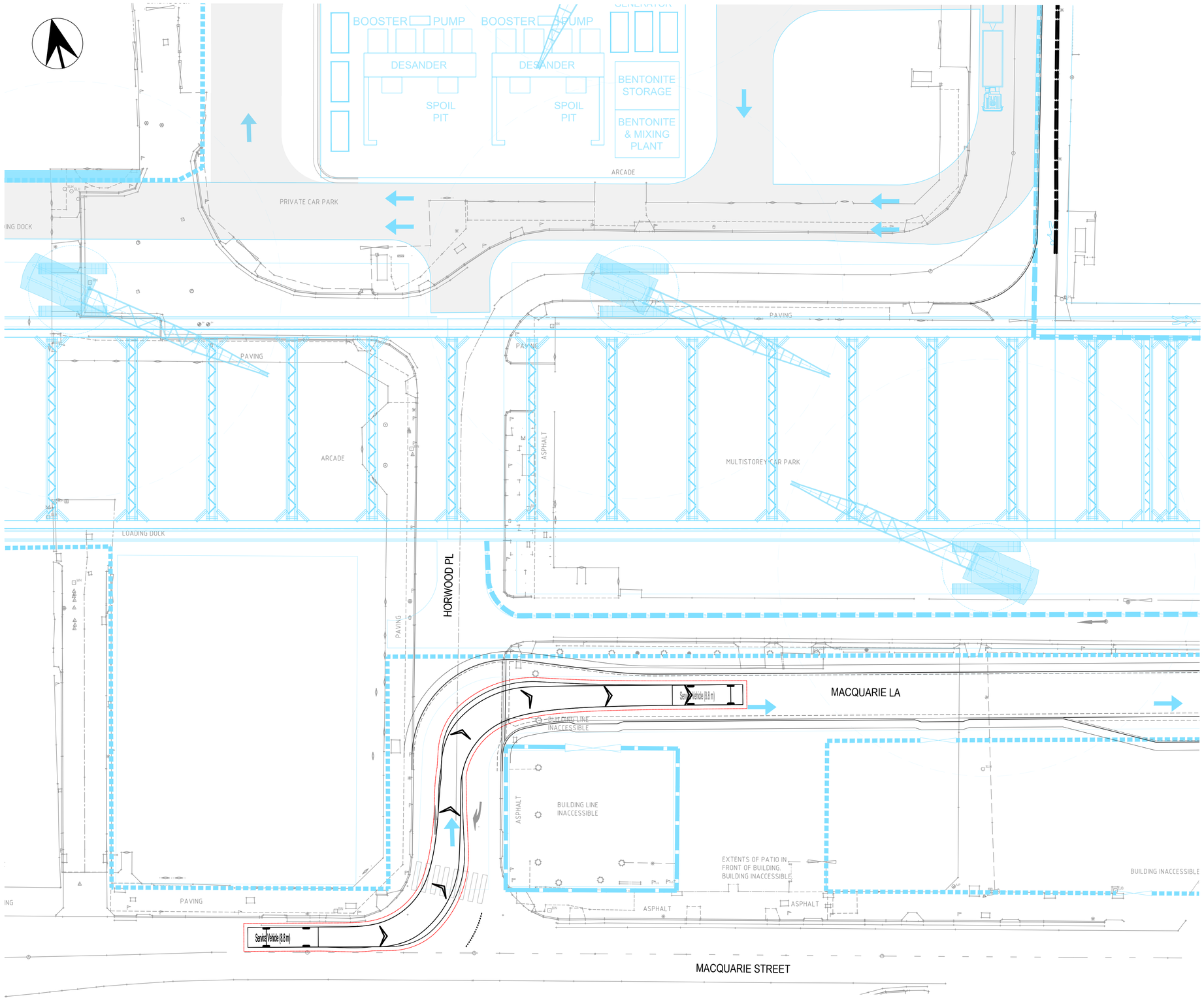
DRAWN	K.CURLEY	01.12.22
DESIGNED	R.CROWLEY	01.12.22
DRG CHECK	L.NICHOLS	01.12.22
DESIGN CHECK	D.GEERLINGS	01.12.22
APPROVED	J.FONG	01.12.22

SYDNEY METRO WEST

MACQUARIE LANE/GEORGE STREET
PARRAMATTA ENABLING WORKS
ROADWORKS
TURNING PATH PLAN - SHEET 4

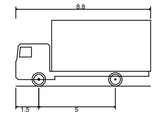
DOCUMENT No: SHEET: 35 OF 42 ©
STATUS: STAGE 3 DETAILED DESIGN EDMS NO:
DRG No. SMWSTWTP-GLO-PTA-SN600-CV-DRG-080504 REV C VER

A1 | Co-ordinate System: MGA94, Z56 | Height Datum: | This sheet may be prepared using colour and may be incomplete if copied | NOTE: Do not scale from this drawing.



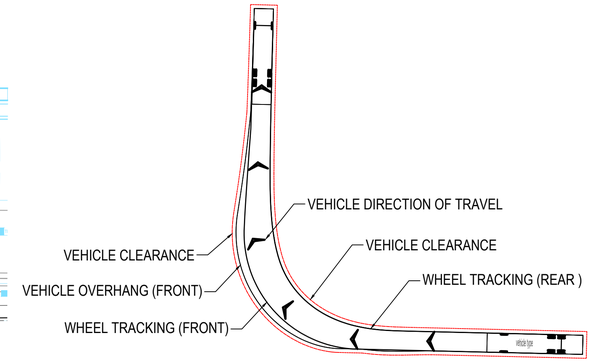
LEGEND

- DESIGN BY OTHERS
- EXISTING SURVEY
- PROPOSED KERB
- PROPOSED LINE MARKING

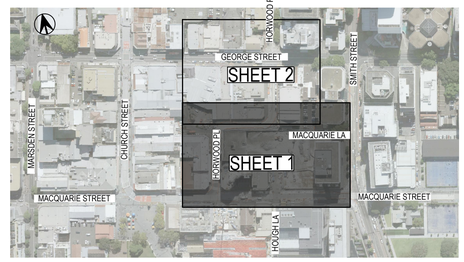


Overall Length	8.800m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.427m
Track Width	2.500m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	12.500m

SERVICE VEHICLE (8.8 m)



VEHICLE TURN PATH



NOT FOR CONSTRUCTION

No.	Amendment Description	Design by	Verified by	Approved by	Date
C	STAGE 3 DETAILED DESIGN - 100% RESUBMISSION	R.C	D.G	L.N	01.12.22
B	STAGE 3 DETAILED DESIGN - 100% RESUBMISSION	R.C	D.G	L.N	04.11.22
A	STAGE 3 DETAILED DESIGN - 100%	R.C	D.G	L.N	13.09.22

SCALES:

0 5 10m
SCALE 1:250 @A1

KEYPLAN:

CLIENT: NSW GOVERNMENT | sydney METRO

PRINCIPAL AEO: GHD | SMEC

SERVICE PROVIDERS: GAMUDA Australia | LAING O'ROURKE | Cardno now Stantec

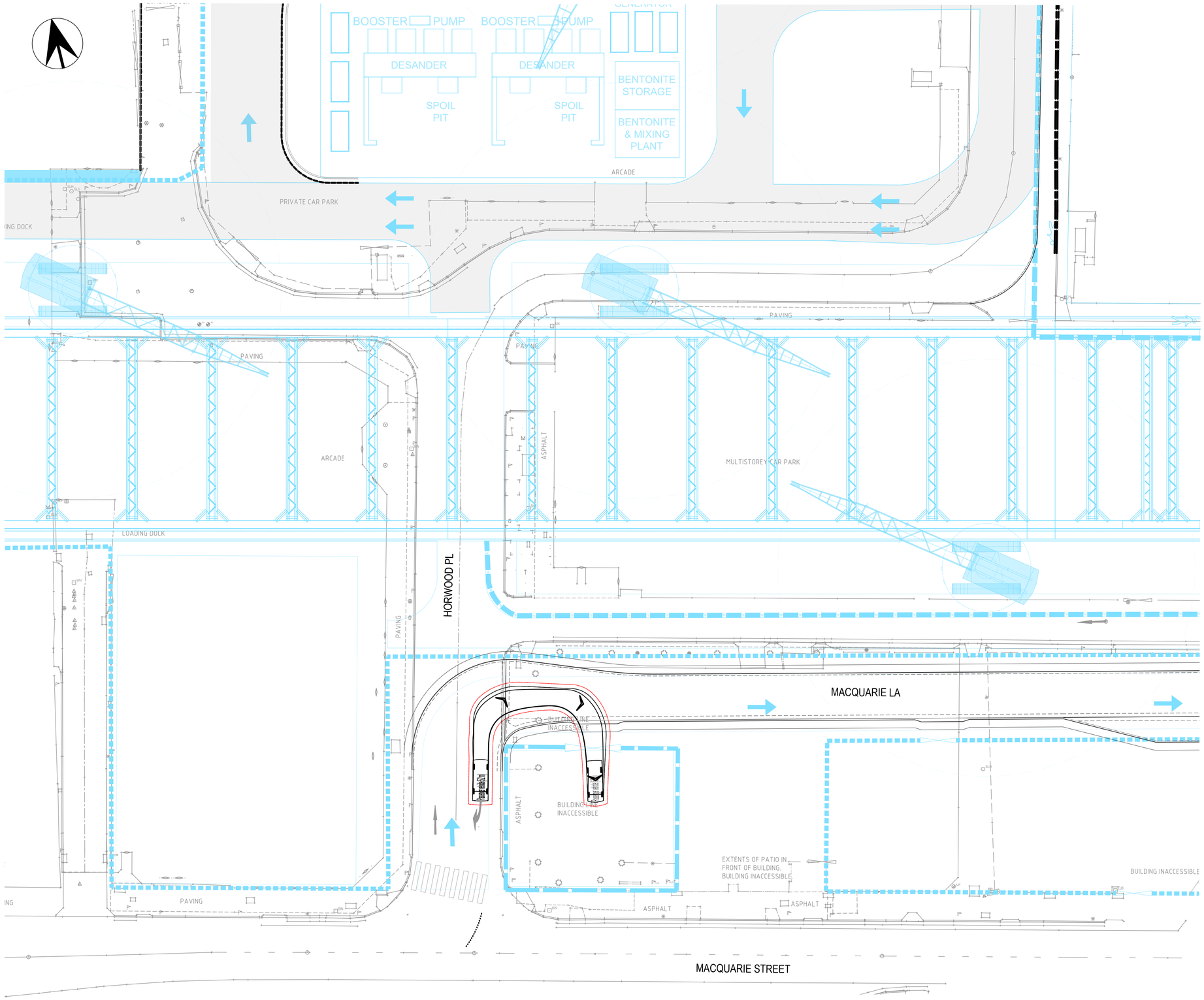
DRAWN	K.CURLEY	01.12.22
DESIGNED	R.CROWLEY	01.12.22
DRG CHECK	L.NICHOLS	01.12.22
DESIGN CHECK	D.GEERLINGS	01.12.22
APPROVED	J.FONG	01.12.22

SYDNEY METRO WEST

MACQUARIE LANE/GEORGE STREET
PARRAMATTA ENABLING WORKS
ROADWORKS
TURNING PATH PLAN - SHEET 5

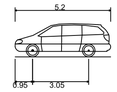
DOCUMENT No: SHEET: 36 OF 42 ©
STATUS: STAGE 3 DETAILED DESIGN EDMS NO:
DRG No. SMWSTWTP-GLO-PTA-SN600-CV-DRG-080505 REV C VER

A1 | Co-ordinate System: MGA94, Z56 | Height Datum: | This sheet may be prepared using colour and may be incomplete if copied | NOTE: Do not scale from this drawing.



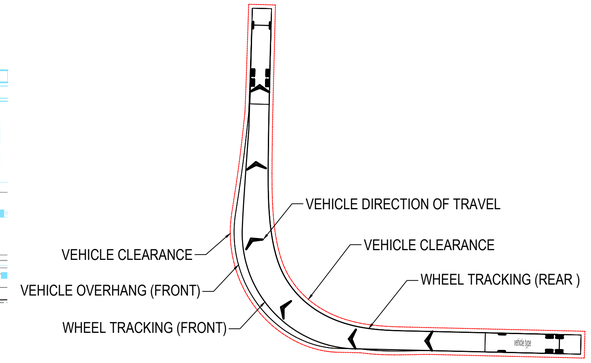
LEGEND

- DESIGN BY OTHERS
- EXISTING SURVEY
- PROPOSED KERB
- PROPOSED LINE MARKING



Overall Length	5.200m
Overall Width	1.940m
Overall Body Height	1.804m
Min Body Ground Clearance	0.295m
Track Width	1.840m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	6.300m

PASSENGER VEHICLE (5.2 m)



VEHICLE TURN PATH

NOT FOR CONSTRUCTION

No.	Amendment Description	Design by	Verified by	Approved by	Date
C	STAGE 3 DETAILED DESIGN - 100% RESUBMISSION	R.C	D.G	L.N	01.12.22
B	STAGE 3 DETAILED DESIGN - 100% RESUBMISSION	R.C	D.G	L.N	04.11.22
A	STAGE 3 DETAILED DESIGN - 100%	R.C	D.G	L.N	13.09.22

SCALES:

0 5 10m
SCALE 1:250 @A1

KEYPLAN:

CLIENT: NSW GOVERNMENT | sydney METRO

PRINCIPAL AEO: GHD | SMEC

SERVICE PROVIDERS: GAMUDA Australia | LAING O'ROURKE | Cardno now Stantec

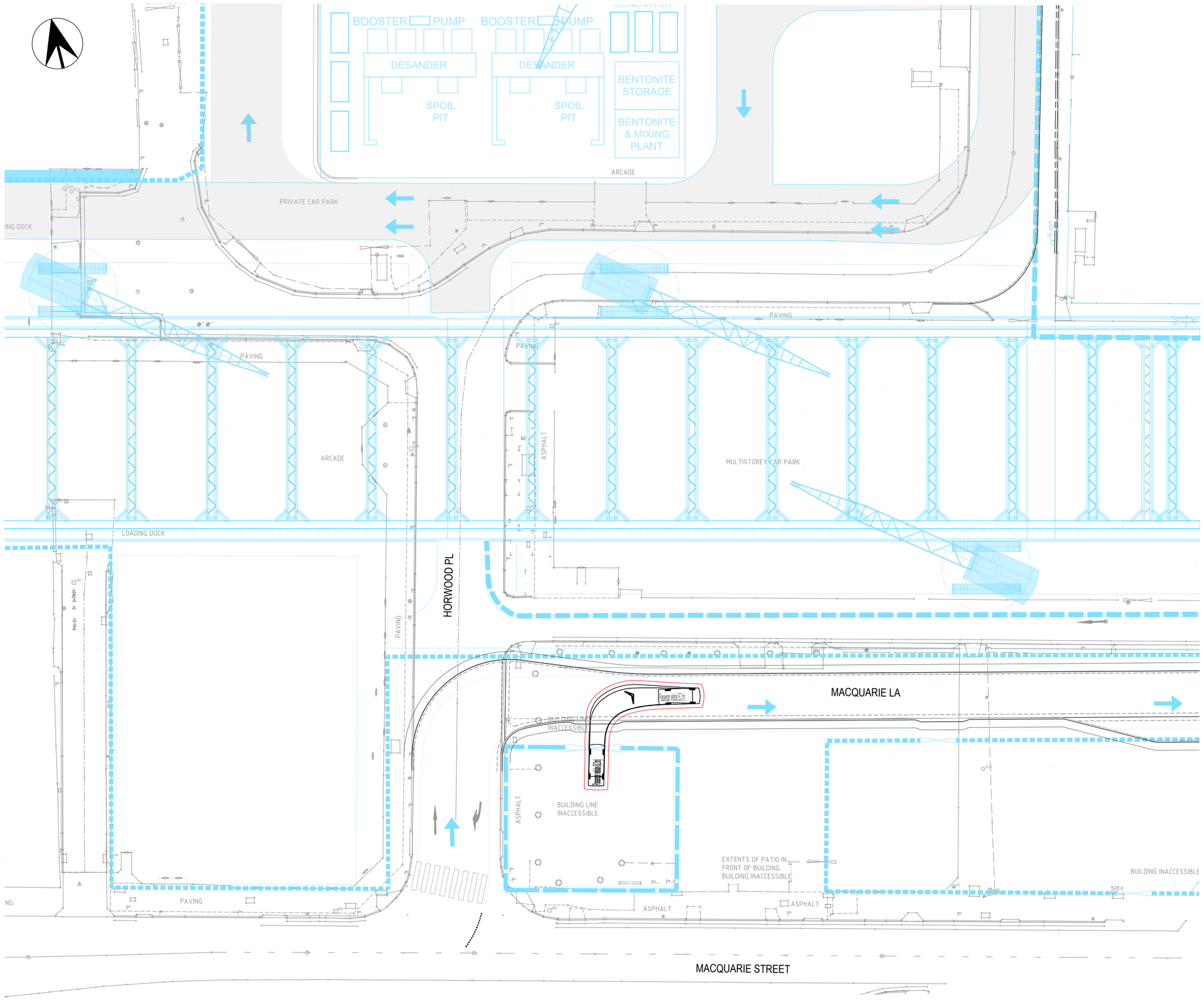
DRAWN	K.CURLEY	01.12.22
DESIGNED	R.CROWLEY	01.12.22
DRG CHECK	L.NICHOLS	01.12.22
DESIGN CHECK	D.GEERLINGS	01.12.22
APPROVED	J.FONG	01.12.22

SYDNEY METRO WEST

MACQUARIE LANE/GEORGE STREET
PARRAMATTA ENABLING WORKS
ROADWORKS
TURNING PATH PLAN - SHEET 6

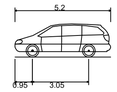
DOCUMENT No: | SHEET: 37 OF 42 | ©
STATUS: STAGE 3 DETAILED DESIGN | EDMS NO:
DRG No. SMWSTWTP-GLO-PTA-SN600-CV-DRG-080506 | REV C | VER

A1 | Co-ordinate System: MGA94, Z56 | Height Datum: | This sheet may be prepared using colour and may be incomplete if copied | NOTE: Do not scale from this drawing.



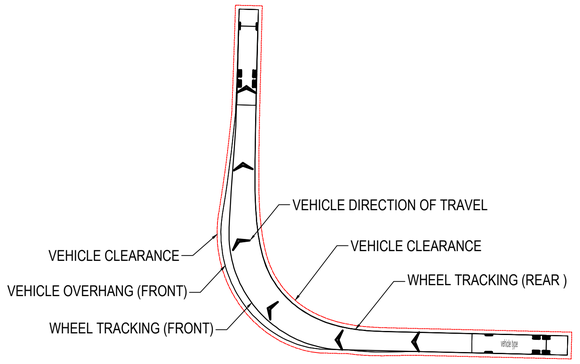
LEGEND

- DESIGN BY OTHERS
- EXISTING SURVEY
- PROPOSED KERB
- PROPOSED LINE MARKING

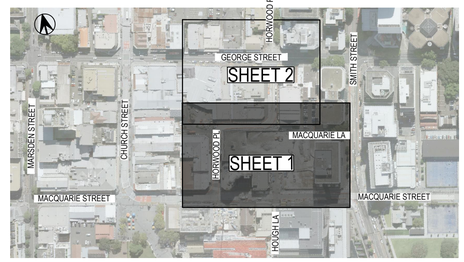


Overall Length	5.200m
Overall Width	1.940m
Overall Body Height	1.804m
Min Body Ground Clearance	0.295m
Track Width	1.840m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	6.300m

PASSENGER VEHICLE (5.2 m)



VEHICLE TURN PATH



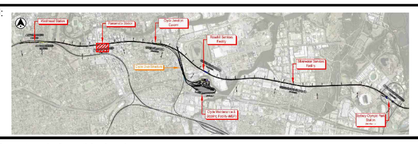
NOT FOR CONSTRUCTION

No.	Amendment Description	Design by	Verified by	Approved by	Date
C	STAGE 3 DETAILED DESIGN - 100% RESUBMISSION	R.C	D.G	L.N	01.12.22
B	STAGE 3 DETAILED DESIGN - 100% RESUBMISSION	R.C	D.G	L.N	04.11.22
A	STAGE 3 DETAILED DESIGN - 100%	R.C	D.G	L.N	13.09.22

SCALES:

0 5 10m
SCALE 1:250 @A1

KEYPLAN:



CLIENT: NSW GOVERNMENT / sydney METRO

PRINCIPAL AEO: GHD / SMEC

SERVICE PROVIDERS: GAMUDA Australia / LAING O'ROURKE / Cardno now Stantec

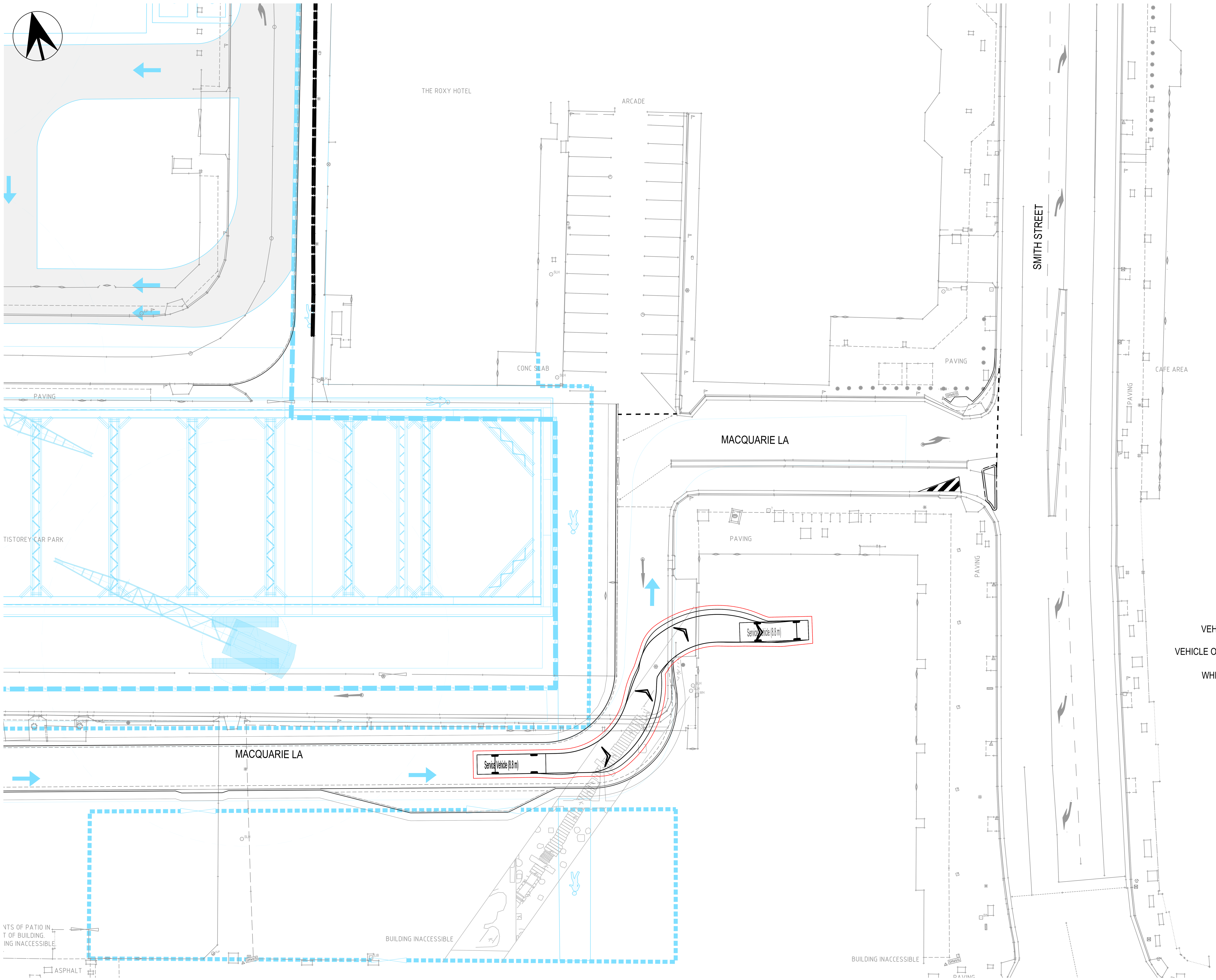
DRAWN	K.CURLEY	01.12.22
DESIGNED	R.CROWLEY	01.12.22
DRG CHECK	L.NICHOLS	01.12.22
DESIGN CHECK	D.GEERLINGS	01.12.22
APPROVED	J.FONG	01.12.22

SYDNEY METRO WEST

MACQUARIE LANE/GEORGE STREET
PARRAMATTA ENABLING WORKS
ROADWORKS
TURNING PATH PLAN - SHEET 7

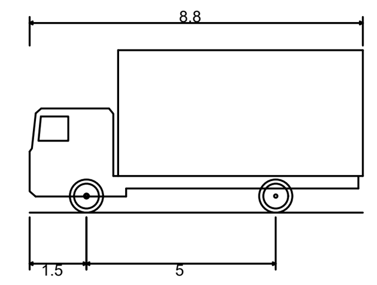
DOCUMENT No: | SHEET: 38 OF 42 | ©
STATUS: STAGE 3 DETAILED DESIGN | EDMS NO:
DRG No. SMWSTWTP-GLO-PTA-SN600-CV-DRG-080507 | REV C | VER

A1 | Co-ordinate System: MGA94, Z56 | Height Datum: | This sheet may be prepared using colour and may be incomplete if copied | NOTE: Do not scale from this drawing.



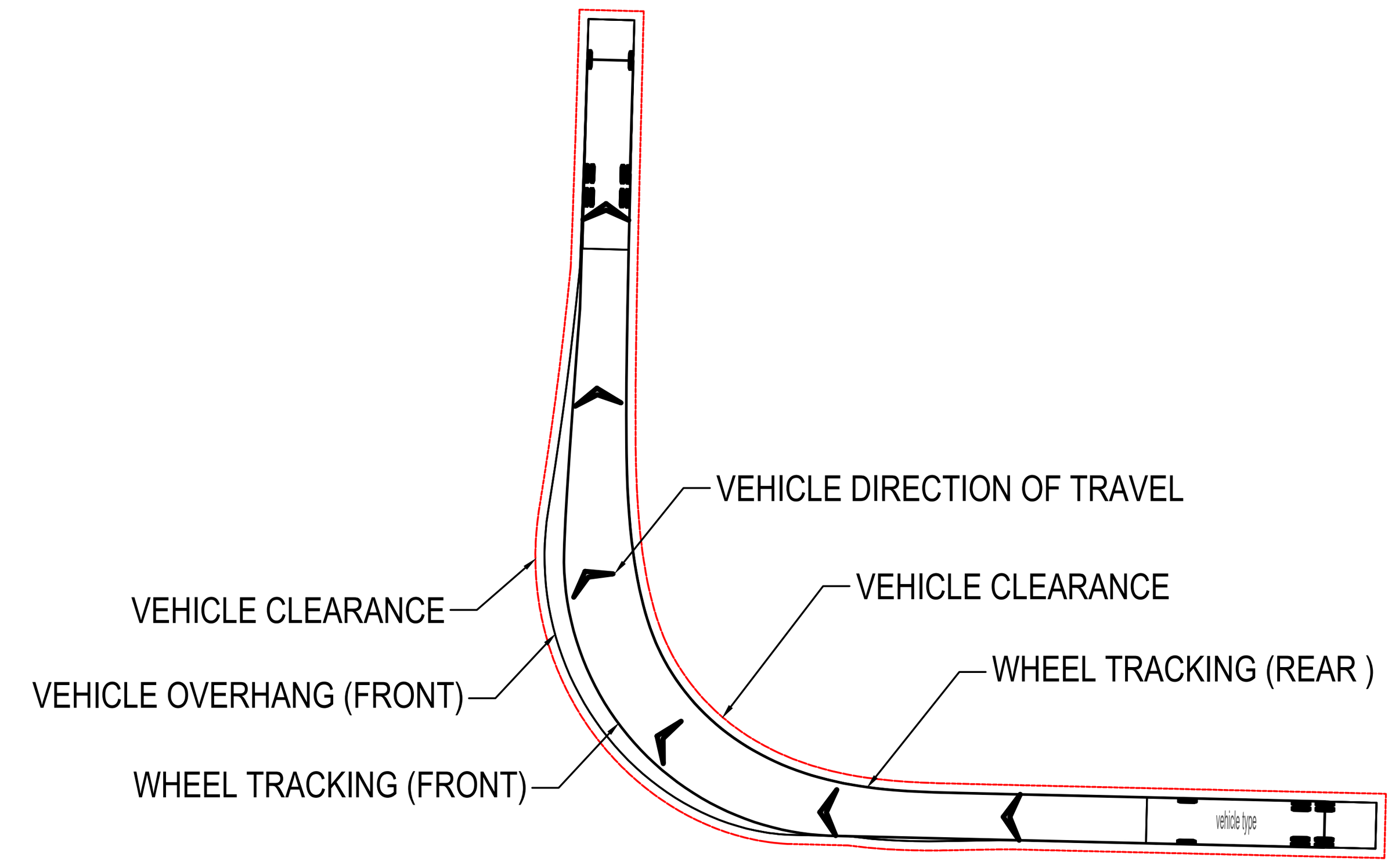
LEGEND

(light blue line)	DESIGN BY OTHERS
(grey line)	EXISTING SURVEY
(black line)	PROPOSED KERB
(thick black line)	PROPOSED LINE MARKING

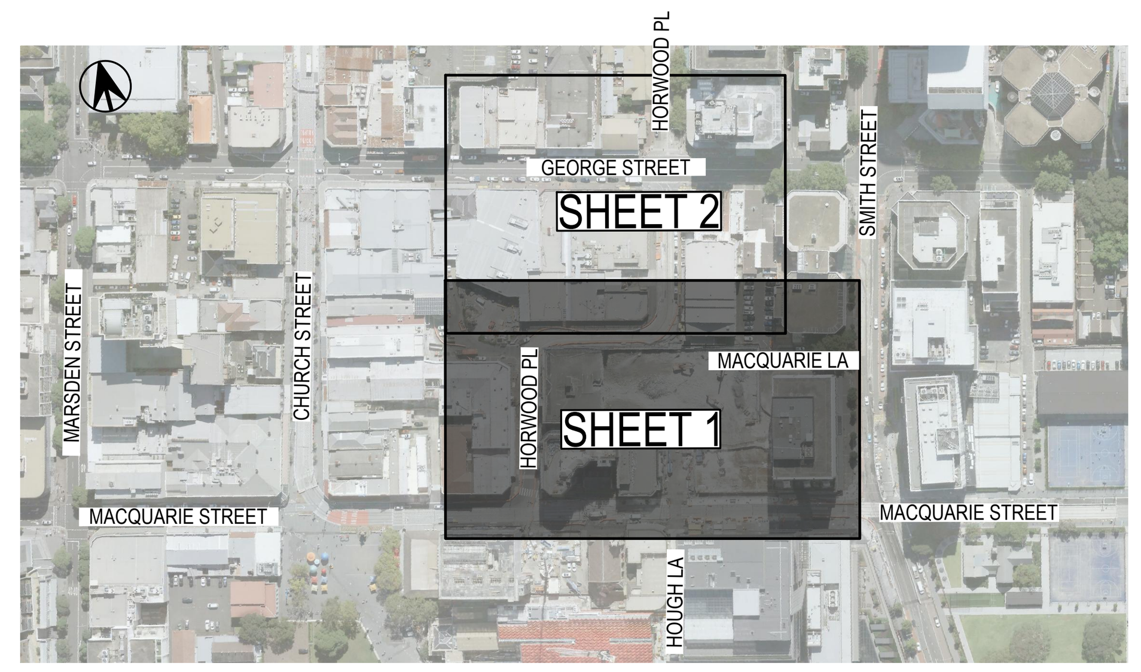


Overall Length	8.800m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.427m
Track Width	2.500m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	12.500m

SERVICE VEHICLE (8.8 m)



VEHICLE TURN PATH



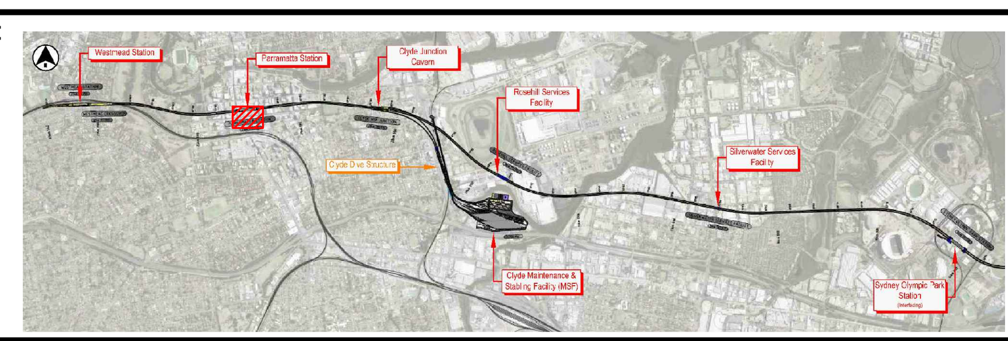
NOT FOR CONSTRUCTION

No.	Amendment Description	Design by	Verified by	Approved by	Date
C	STAGE 3 DETAILED DESIGN - 100% RESUBMISSION	R.C	D.G	L.N	01.12.22
B	STAGE 3 DETAILED DESIGN - 100% RESUBMISSION	R.C	D.G	L.N	04.11.22
A	STAGE 3 DETAILED DESIGN - 100%	R.C	D.G	L.N	13.09.22

SCALES:

0 5 10m
SCALE 1:250 @A1

KEYPLAN:



CLIENT: NSW GOVERNMENT — sydney METRO

PRINCIPAL AEO: GHD SMEC

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SERVICE PROVIDERS: GAMUDA Australia, LAING O'ROURKE, Cardno now Stantec

DRAWN	K.CURLEY	01.12.22
DESIGNED	R.CROWLEY	01.12.22
DRG CHECK	L.NICHOLS	01.12.22
DESIGN CHECK	D.GEERLINGS	01.12.22
APPROVED	J.FONG	01.12.22

SYDNEY METRO WEST

MACQUARIE LANE/GEORGE STREET
PARRAMATTA ENABLING WORKS
ROADWORKS
TURNING PATH PLAN - SHEET 8

DOCUMENT No: | SHEET: 39 OF 42 | ©

STATUS: STAGE 3 DETAILED DESIGN | EDMS NO:

DRG No. SMWSTWTP-GLO-PTA-SN600-CV-DRG-080508 | REV C | VER

A1 | Co-ordinate System: MGA94, Z56 | Height Datum: | This sheet may be prepared using colour and may be incomplete if copied | NOTE: Do not scale from this drawing.

Cad File: C:\pwworkdir\SMWSTWTP\dms04843\SMWSTWTP-GLO-PTA-SN600-CV-DRG-080508.dwg

Plot Date: 01/12/22 - 14:51

100mm AT FULL SIZE

THE ROXY HOTEL

ARCADE

SMITH STREET

CAFE AREA

PAVING

CONC SLAB

TISTOREY CAR PARK

MACQUARIE LA

Service Vehicle (8.8 m)

Service Vehicle (8.8 m)

BUILDING INACCESSIBLE

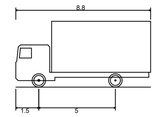
BUILDING INACCESSIBLE

ASPHALT

YTS OF PATIO IN
T OF BUILDING.
ING INACCESSIBLE.

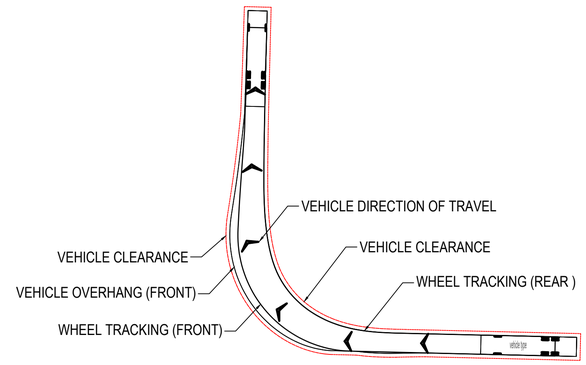
LEGEND

DESIGN BY OTHERS
EXISTING SURVEY
PROPOSED KERB
PROPOSED LINE MARKING



Overall Length	8.800m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.427m
Track Width	2.500m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	12.500m

SERVICE VEHICLE (8.8 m)



VEHICLE TURN PATH

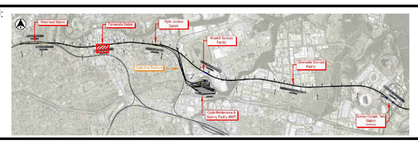
NOT FOR CONSTRUCTION

No.	Amendment Description	Design by	Verified by	Approved by	Date
C	STAGE 3 DETAILED DESIGN - 100% RESUBMISSION	R.C	D.G	L.N	01.12.22
B	STAGE 3 DETAILED DESIGN - 100% RESUBMISSION	R.C	D.G	L.N	04.11.22
A	STAGE 3 DETAILED DESIGN - 100%	R.C	D.G	L.N	13.09.22

SCALES:

0 5 10m
SCALE 1:250 @A1

KEYPLAN:



CLIENT: NSW GOVERNMENT / sydney METRO

PRINCIPAL AEO: GHD / SMEC

SERVICE PROVIDERS: GAMUDA Australia / LAING O'ROURKE / Cardno now Stantec

DRAWN	K.CURLEY	01.12.22
DESIGNED	R.CROWLEY	01.12.22
DRG CHECK	L.NICHOLS	01.12.22
DESIGN CHECK	D.GEERLINGS	01.12.22
APPROVED	J.FONG	01.12.22

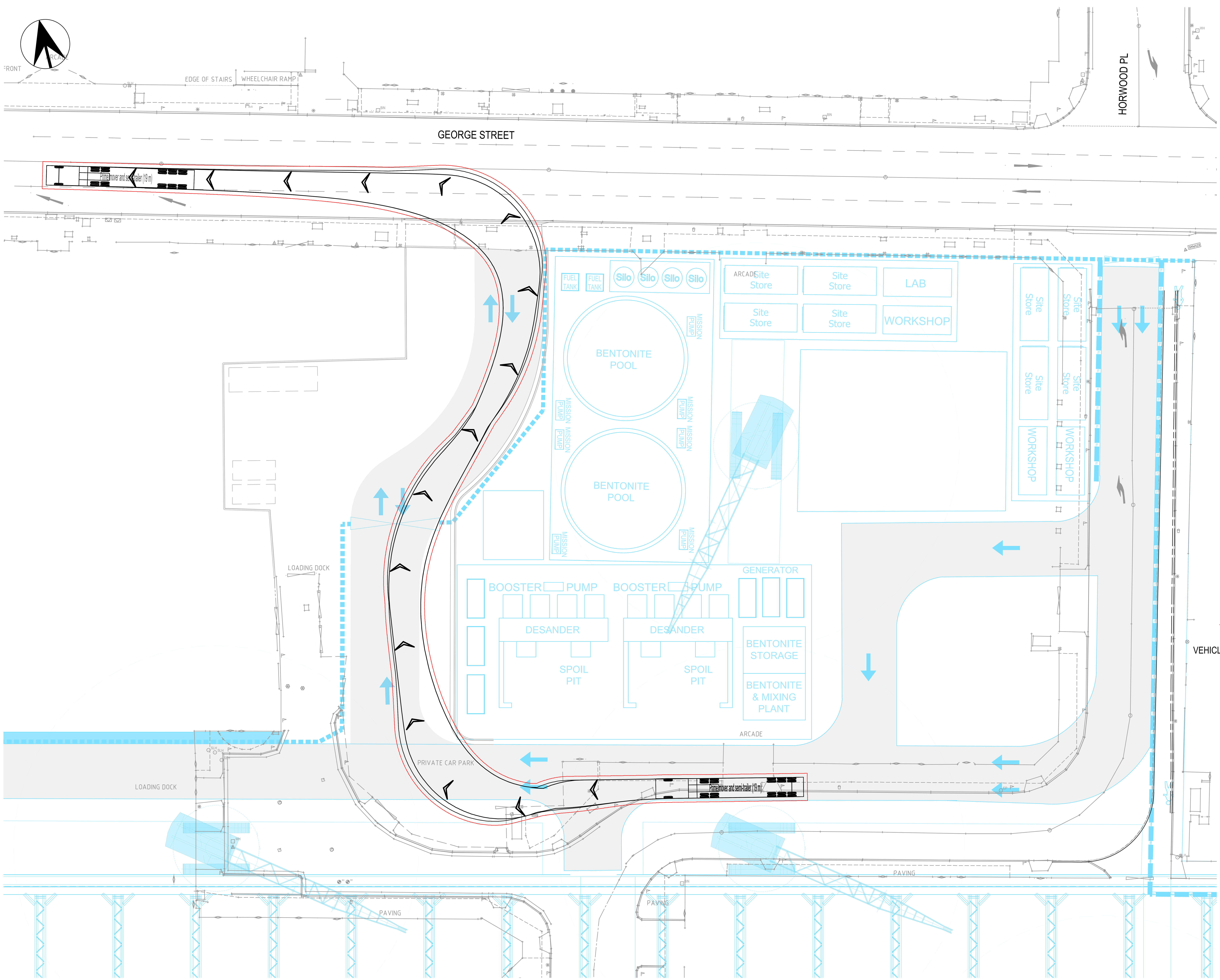
SYDNEY METRO WEST

MACQUARIE LANE/GEORGE STREET
PARRAMATTA ENABLING WORKS
ROADWORKS
TURNING PATH PLAN - SHEET 9

DOCUMENT No: SHEET: 40 OF 42 ©
STATUS: STAGE 3 DETAILED DESIGN EDMS NO:
DRG No. SMWSTWTP-GLO-PTA-SN600-CV-DRG-080509 REV C VER

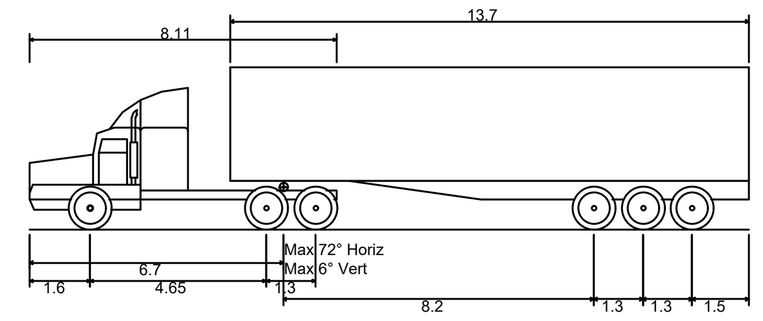
NA | Co-ordinate System: MGA94, Z56 | Height Datum: | This sheet may be prepared using colour and may be incomplete if copied | NOTE: Do not scale from this drawing.

Cad File: C:\pwwork\dri\SMWSTWTP\dms04843\SMWSTWTP-GLO-PTA-SN600-CV-DRG-080509.dwg
Plot Date: 01/12/22 - 14:49
100mm AT FULL SIZE



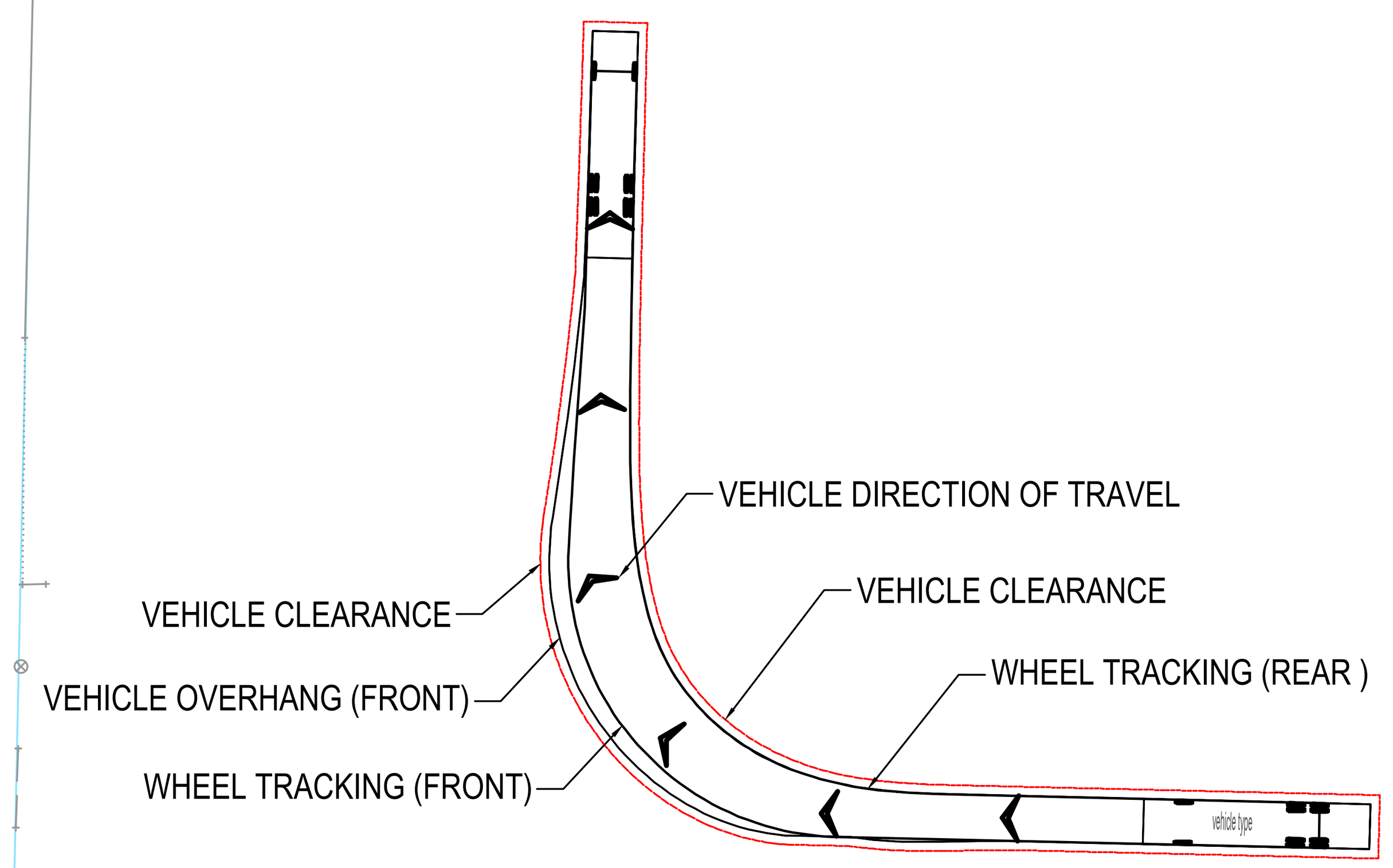
LEGEND

	DESIGN BY OTHERS
	EXISTING SURVEY
	PROPOSED KERB
	PROPOSED LINE MARKING

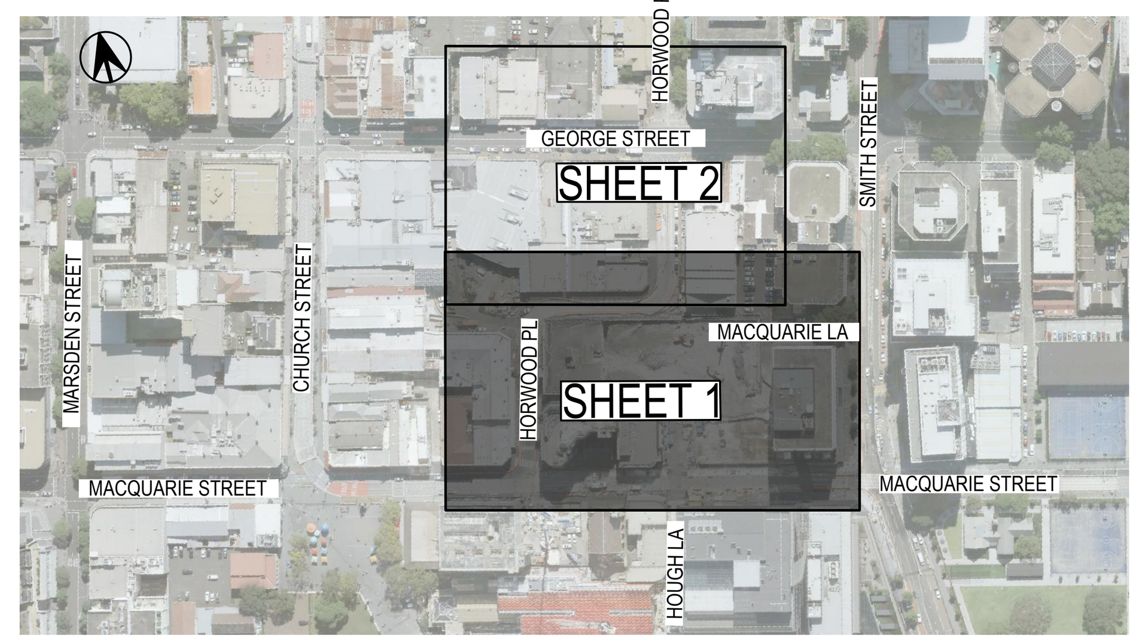


Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.540m
Track Width	2.500m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	12.500m

PRIME MOVER AND SEMI-TRAILER (19m)



VEHICLE TURN PATH



NOT FOR CONSTRUCTION

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Plot Date: 01/12/22 - 15:45
100mm AT FULL SIZE

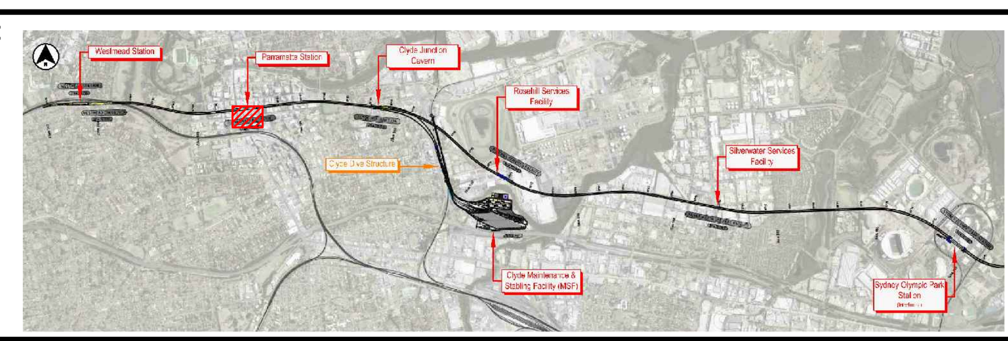
No.	Amendment Description	Design by	Verified by	Approved by	Date
B	STAGE 3 DETAILED DESIGN - 100% RESUBMISSION	R.C	D.G	L.N	01.12.22
A	STAGE 3 DETAILED DESIGN - 100% RESUBMISSION	R.C	D.G	L.N	04.11.22

NA | Co-ordinate System: MGA94, Z56 | Height Datum: | This sheet may be prepared using colour and may be incomplete if copied

SCALES:

0 5 10m
SCALE 1:250 @A1

KEYPLAN:



NOTE: Do not scale from this drawing.

CLIENT: NSW GOVERNMENT | sydney METRO

PRINCIPAL AEO: GHD | SMEC

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SERVICE PROVIDERS: GAMUDA Australia | LAING O'ROURKE | Cardno | Stantec

DRAWN	K.CURLEY	01.12.22
DESIGNED	R.CROWLEY	01.12.22
DRG CHECK	L.NICHOLS	01.12.22
DESIGN CHECK	D.GEERLINGS	01.12.22
APPROVED	J.FONG	01.12.22

SYDNEY METRO WEST

MACQUARIE LANE/GEORGE STREET
PARRAMATTA ENABLING WORKS
ROADWORKS
TURNING PATH PLAN - SHEET 10

DOCUMENT No: | SHEET: 41 OF 42 | ©
STATUS: | EDMS NO:
DRG No. SMWSTWTP-GLO-PTA-SN600-CV-DRG-080510 | REV B | VER

Cad File: C:\pwworkdir\SMWSTWTP\dms04843\SMWSTWTP-GLO-PTA-SN600-CV-DRG-080511.dwg

Plot Date: 01/12/22 - 14:47

100mm AT FULL SIZE

NOT FOR CONSTRUCTION

No.	Amendment Description	Design by	Verified by	Approved by	Date
B	STAGE 3 DETAILED DESIGN - 100% RESUBMISSION	R.C	D.G	L.N	01.12.22
A	STAGE 3 DETAILED DESIGN - 100% RESUBMISSION	R.C	D.G	L.N	04.11.22

SCALES: SCALE 1:250 @A1

KEYPLAN:

CLIENT: NSW GOVERNMENT; sydney METRO

PRINCIPAL AEO: GHD, SMEC

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SERVICE PROVIDERS: GAMUDA Australia; LAING O'ROURKE; Cardno now Stantec

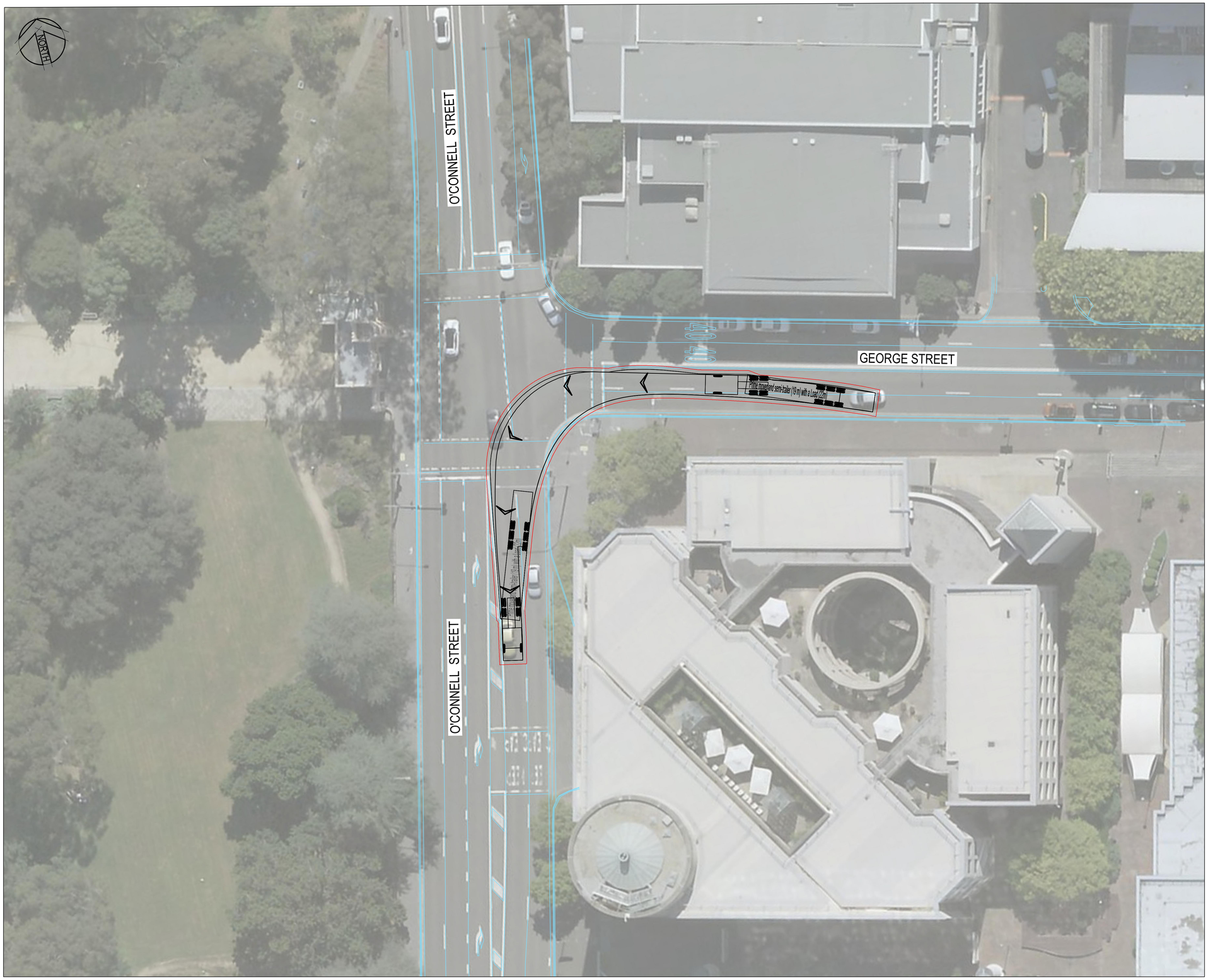
DRAWN	K.CURLEY	01.12.22
DESIGNED	R.CROWLEY	01.12.22
DRG CHECK	L.NICHOLS	01.12.22
DESIGN CHECK	D.GEERLINGS	01.12.22
APPROVED	J.FONG	01.12.22

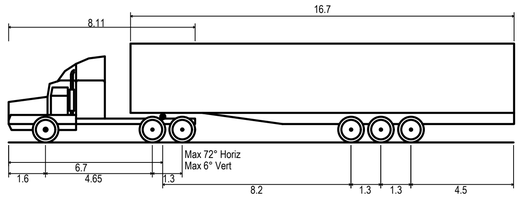
SYDNEY METRO WEST

MACQUARIE LANE/GEORGE STREET
PARRAMATTA ENABLING WORKS
ROADWORKS
TURNING PATH PLAN - SHEET 11

DOCUMENT No:
SHEET: 42 OF 42 ©
STATUS:
EDMS NO:
DRG No. SMWSTWTP-GLO-PTA-SN600-CV-DRG-080511
REV B
VER

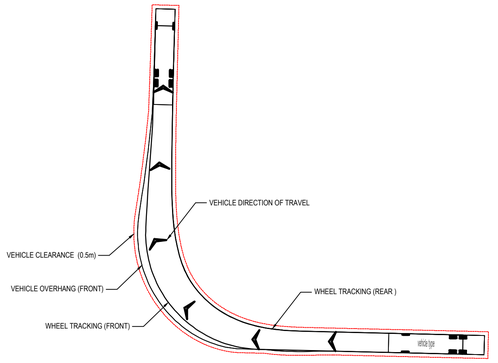
NA | Co-ordinate System: MGA94, Z56 | Height Datum: | This sheet may be prepared using colour and may be incomplete if copied | NOTE: Do not scale from this drawing.





Prime mover and semi-trailer with a load (22 m)

Overall Length	22.000m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.540m
Track Width	2.500m
Kerb to Kerb Turning Radius	15.000m



VEHICLE TURN PATH

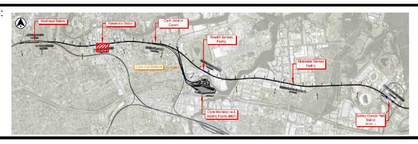
NOT FOR CONSTRUCTION

No.	Amendment Description	Design by	Verified by	Approved by	Date
A01.01				L.N	

SCALES:

0 5 10m
SCALE 1:250 @A1

KEYPLAN:



CLIENT: NSW GOVERNMENT | sydney METRO

PRINCIPAL AEO: GHD | SMEC

SERVICE PROVIDERS: GAMUDA Australia | LAING O'ROURKE | Stantec

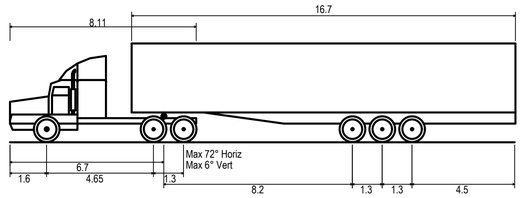
DRAWN C.ALVAREZ
DESIGNED S.PISENYA
DRG CHECK K.CURLEY
DESIGN CHECK L.NICHOLS
APPROVED J.FONG

DRAFT

SYDNEY METRO
O'CONNELL ST AND GEORGE ST INTERSECTION
PARRAMATTA ENABLING WORKS
ROADWORKS
TURNING PATHS SEMI-TRAILER (22m)

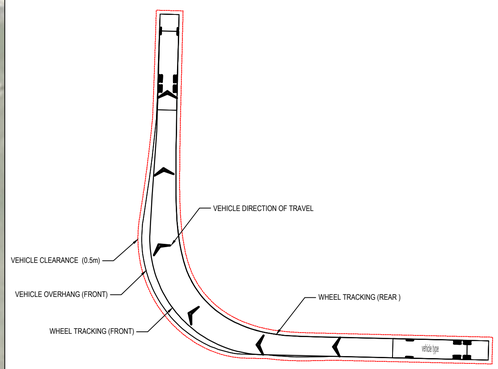
DOCUMENT No: SHEET: 1 OF 1 ©
STATUS: STAGE 3 DETAILED DESIGN EDMS NO:
DRG No. SMWSTWTP-GLO-PTA-SN600-CV-SKT-090511 REV A VER A01.01

NA | Co-ordinate System: MGA94, Z56 | Height Datum: | This sheet may be prepared using colour and may be incomplete if copied | NOTE: Do not scale from this drawing.



Prime mover and semi-trailer with a load (22 m)

Overall Length	22.000m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.540m
Track Width	2.500m
Kerb to Kerb Turning Radius	15.000m



VEHICLE TURN PATH

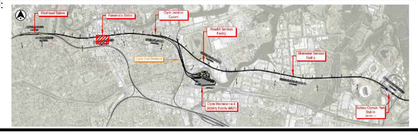
NOT FOR CONSTRUCTION

No.	Amendment Description	Design by	Verified by	Approved by	Date
A01.01				L.N	

SCALES:

0 5 10m
SCALE 1:250 @A1

KEYPLAN:



CLIENT: NSW GOVERNMENT / sydney METRO

PRINCIPAL AEO: GHD / SMEC

SERVICE PROVIDERS: CAMUDA Australia / LAING O'ROURKE / Stantec

DRAWN G.ALVAREZ
DESIGNED S.PISENYA
DRG CHECK K.CURLEY
DESIGN CHECK L.NICHOLS
APPROVED J.FONG

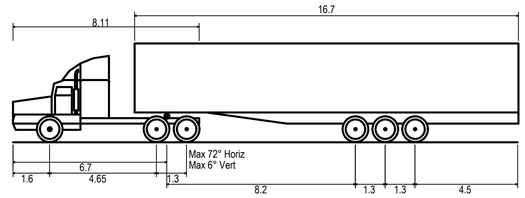
DRAFT

SYDNEY METRO

HARRIS ST AND GEORGE ST INTERSECTION
PARRAMATTA ENABLING WORKS
ROADWORKS
TURNING PATH SEMI-TRAILER (22m) SHEET 1

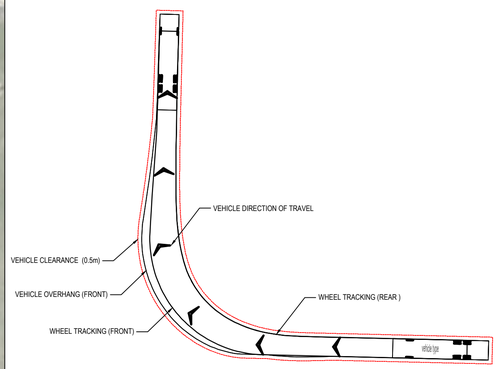
DOCUMENT No: SHEET: 1 OF 2 ©
STATUS: STAGE 3 DETAILED DESIGN EDMS NO:
DRG No. SMWSTWTP-GLO-PTA-SN600-CV-SKT-090512 REV A VER A01.01

NA | Co-ordinate System: MGA94, Z56 | Height Datum: | This sheet may be prepared using colour and may be incomplete if copied | NOTE: Do not scale from this drawing.



Prime mover and semi-trailer with a load (22 m)

Overall Length	22.000m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.540m
Track Width	2.500m
Kerb to Kerb Turning Radius	15.000m



VEHICLE TURN PATH

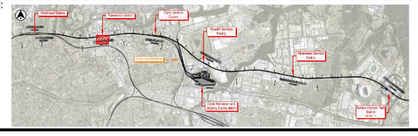
NOT FOR CONSTRUCTION

No.	Amendment Description	Design by	Verified by	Approved by	Date
A01.01				L.N	

SCALES:

0 5 10m
SCALE 1:250 @A1

KEYPLAN:



CLIENT: NSW GOVERNMENT / sydney METRO

PRINCIPAL AEO: GHD / SMEC

SERVICE PROVIDERS: CAMUDA Australia / LAING O'ROURKE / Stantec

DRAWN G.ALVAREZ
DESIGNED S.PISENYA
DRG CHECK K.CURLEY
DESIGN CHECK L.NICHOLS
APPROVED J.FONG

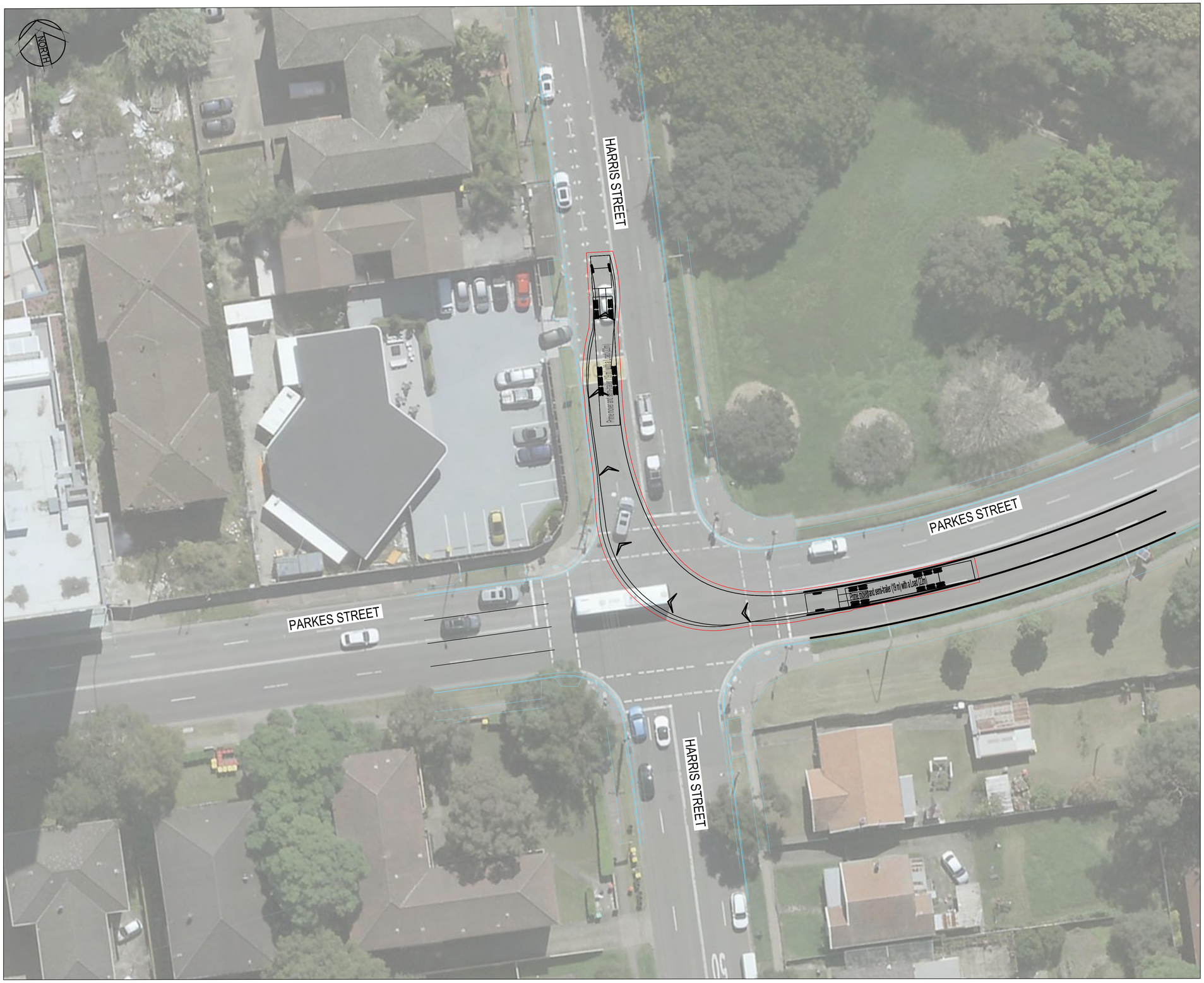
DRAFT

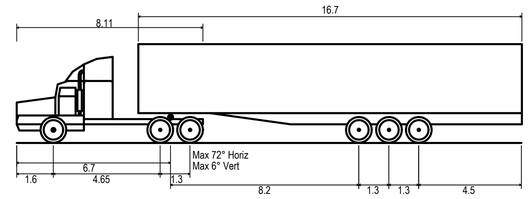
SYDNEY METRO

HARRIS ST AND GEORGE ST INTERSECTION
PARRAMATTA ENABLING WORKS
ROADWORKS
TURNING PATH SEMI-TRAILER (22m) SHEET 2

DOCUMENT No: SHEET: 2 OF 2 ©
STATUS: STAGE 3 DETAILED DESIGN EDMS NO:
DRG No. SMWSTWTP-GLO-PTA-SN600-CV-SKT-090513 REV A VER A01.01

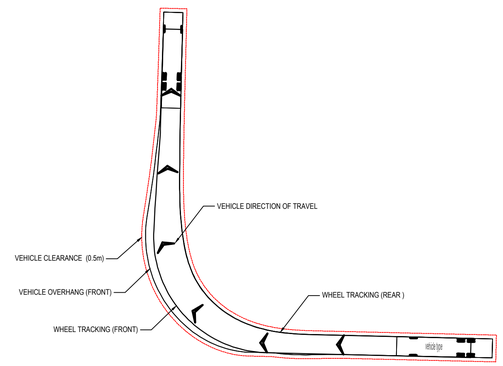
NA | Co-ordinate System: MGA94, Z56 | Height Datum: | This sheet may be prepared using colour and may be incomplete if copied | NOTE: Do not scale from this drawing.





Prime mover and semi-trailer with a load (22 m)

Overall Length	22.000m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.540m
Track Width	2.500m
Kerb to Kerb Turning Radius	15.000m



VEHICLE TURN PATH

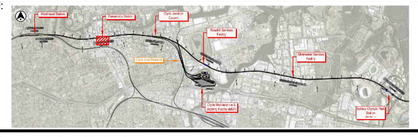
NOT FOR CONSTRUCTION

No.	Amendment Description	Design by	Verified by	Approved by	Date
A01.01				L.N	

SCALES:

0 5 10m
SCALE 1:250 @A1

KEYPLAN:



CLIENT: NSW GOVERNMENT / sydney METRO

PRINCIPAL AEO: GHD / SMEC

SERVICE PROVIDERS: CAMUDA Australia / LAING O'ROURKE / Stantec

DRAWN G.ALVAREZ
DESIGNED S.PISENYA
DRG CHECK K.CURLEY
DESIGN CHECK L.NICHOLS
APPROVED J.FONG

DRAFT

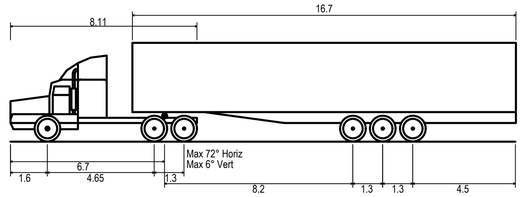
SYDNEY METRO

HARRIS ST AND PARKES ST INTERSECTION
PARRAMATTA ENABLING WORKS
ROADWORKS
TURNING PATH SEMI-TRAILER (22m)

DOCUMENT No: SHEET: 1 OF 1 ©
STATUS: STAGE 3 DETAILED DESIGN EDMS NO:
DRG No. SMWSTWTP-GLO-PTA-SN600-CV-SKT-090514 REV A VER A01.01

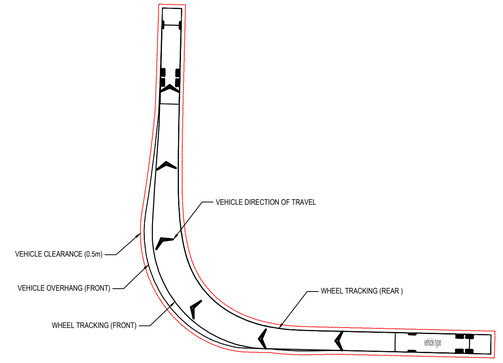
NA	Co-ordinate System: MGA94, Z56	Height Datum:	This sheet may be prepared using colour and may be incomplete if copied

NOTE: Do not scale from this drawing.



Prime mover and semi-trailer with a load (22 m)

Overall Length	22.000m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.540m
Track Width	2.500m
Kerb to Kerb Turning Radius	15.000m



VEHICLE TURN PATH

NOTE:

1. TURN PATH WAS UNDERTAKEN USING NEAR MAP AERIAL IMAGERY ONLY.

NOT FOR CONSTRUCTION

No.	Amendment Description	Design by	Verified by	Approved by	Date
A01.01				L.N	

SCALES: 0 5 10m — SCALE 1:250 @A1

KEYPLAN:

CLIENT: NSW GOVERNMENT | sydney METRO

PRINCIPAL AEO: GHD | SMEC

SERVICE PROVIDERS: GAMUDA Australia | LAING O'ROURKE | Stantec

DRAWN	G.ALVAREZ
DESIGNED	S.PISENYA
DRG CHECK	K.CURLEY
DESIGN CHECK	L.NICHOLS
APPROVED	J.FONG

DRAFT

SYDNEY METRO

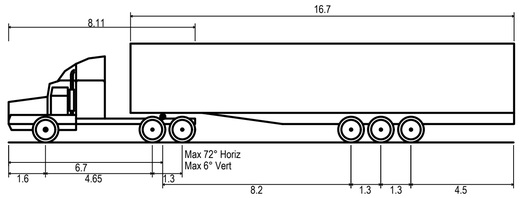
HASSALL ST AND JAMES RUSE DRIVE INTERSECTION
PARRAMATTA ENABLING WORKS
ROADWORKS
TURNING PATH SEMI TRAILER (22m)

DOCUMENT No: | SHEET: 1 OF 1 | ©

STATUS: STAGE 3 DETAILED DESIGN | EDMS NO:

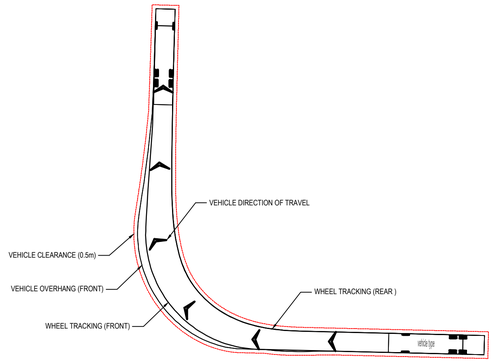
DRG No. SMWSTWTP-GLO-PTA-SN600-CV-SKT-090515 | REV A | VER A01.01

NA | Co-ordinate System: MGA94, Z56 | Height Datum: | This sheet may be prepared using colour and may be incomplete if copied | NOTE: Do not scale from this drawing.



Prime mover and semi-trailer with a load (22 m)

Overall Length	22.000m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.540m
Track Width	2.500m
Kerb to Kerb Turning Radius	15.000m



VEHICLE TURN PATH

NOTE:

1. TURN PATH WAS UNDERTAKEN USING NEAR MAP AERIAL IMAGERY ONLY.

NOT FOR CONSTRUCTION

No.	Amendment Description	Design by	Verified by	Approved by	Date
A01.01				LN	

SCALES:

0 5 10m
SCALE 1:250 @A1

KEYPLAN:

CLIENT: NSW GOVERNMENT | sydney METRO

PRINCIPAL AEO: GHD | SMEC

SERVICE PROVIDERS: GAMUDA Australia | LAING O'ROURKE | Stantec

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DRAWN	C.ALVAREZ
DESIGNED	S.PISENYA
DRG CHECK	K.CURLEY
DESIGN CHECK	L.NICHOLS
APPROVED	J.FONG

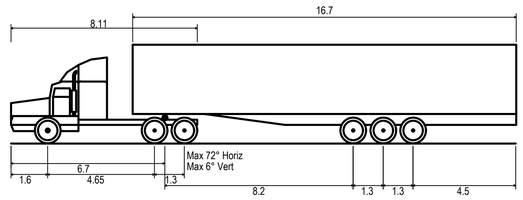
DRAFT

SYDNEY METRO

O'CONNELL ST AND GREAT WESTERN HIGHWAY INTERSECTION
PARRAMATTA ENABLING WORKS
ROADWORKS
TURNING PATHS SEMI-TRAILER (22m)

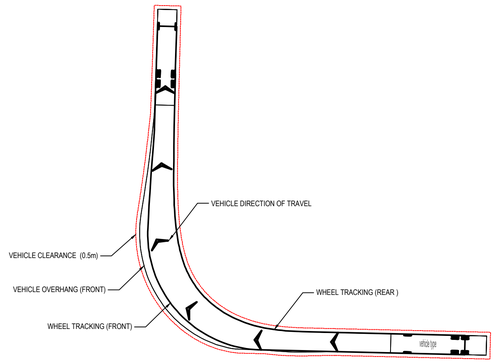
DOCUMENT No: SHEET: 1 OF 1 ©
STATUS: STAGE 3 DETAILED DESIGN EDMS NO:
DRG No. SMWSTWTP-GLO-PTA-SN600-CV-SKT-090516 REV A VER A01.01

NA | Co-ordinate System: MGA94, Z56 | Height Datum: | This sheet may be prepared using colour and may be incomplete if copied | NOTE: Do not scale from this drawing.



Prime mover and semi-trailer with a load (22 m)

Overall Length	22.000m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.540m
Track Width	2.500m
Kerb to Kerb Turning Radius	15.000m



VEHICLE TURN PATH

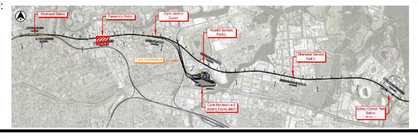
NOT FOR CONSTRUCTION

No.	Amendment Description	Design by	Verified by	Approved by	Date
A01.01				L.N	

SCALES:

0 5 10m
SCALE 1:250 @A1

KEYPLAN:



CLIENT: NSW GOVERNMENT | sydney METRO

PRINCIPAL AEO: GHD | SMEC

SERVICE PROVIDERS: GAMUDA Australia | LAING O'ROURKE | Stantec

DRAFT

DRAWN	G.ALVAREZ
DESIGNED	S.PISENYA
DRG CHECK	K.CURLEY
DESIGN CHECK	L.NICHOLS
APPROVED	J.FONG

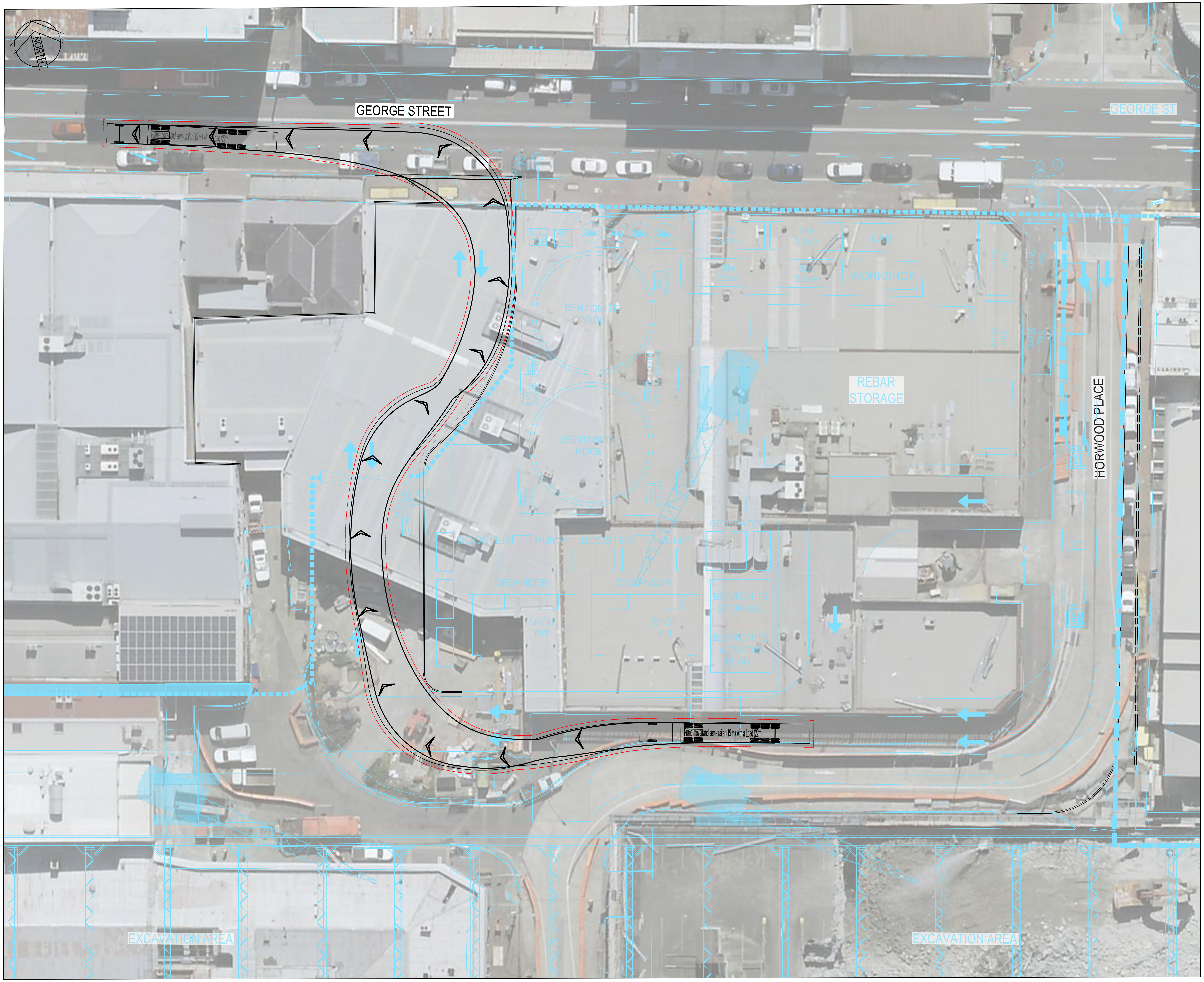
SYDNEY METRO

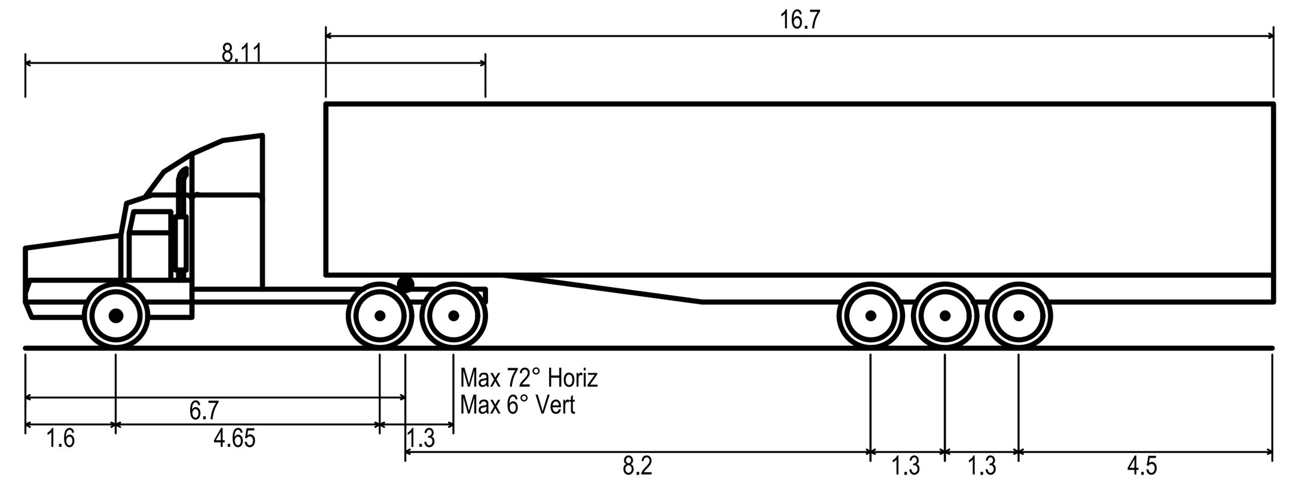
GEORGE ST
PARRAMATTA ENABLING WORKS
ROADWORKS
TURNING PATH SEMI-TRAILER (22m) SHEET 1

DOCUMENT No:	SHEET: 1 OF 1	©
STATUS: STAGE 3 DETAILED DESIGN	EDMS NO:	
DRG No. SMWSTWTP-GLO-PTA-SN600-CV-SKT-090517	REV A	VER A01.01

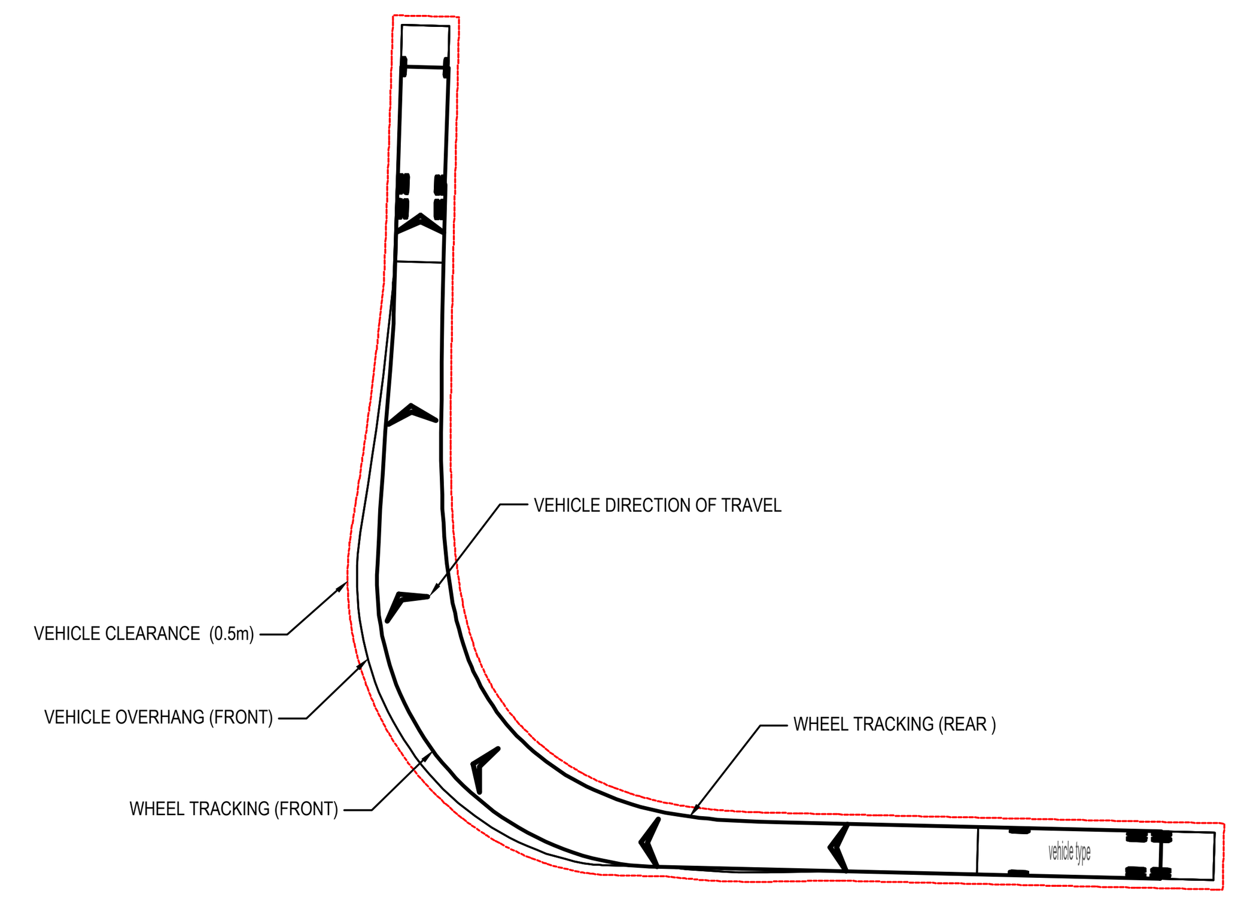
NA	Co-ordinate System: MGA94, Z56	Height Datum:	This sheet may be prepared using colour and may be incomplete if copied

NOTE: Do not scale from this drawing.





Prime mover and semi-trailer with a load (22 m)	
Overall Length	22.000m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.540m
Track Width	2.500m
Kerb to Kerb Turning Radius	15.000m



VEHICLE TURN PATH

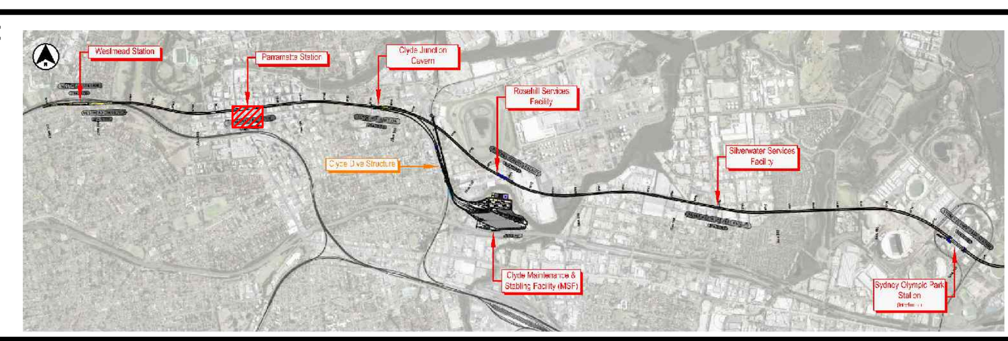
NOT FOR CONSTRUCTION

No.	Amendment Description	Design by	Verified by	Approved by	Date
A01.01				L.N	

SCALES:

0 5 10m
SCALE 1:250 @A1

KEYPLAN:



NA | Co-ordinate System: MGA94, Z56 | Height Datum: | This sheet may be prepared using colour and may be incomplete if copied | NOTE: Do not scale from this drawing.

CLIENT: NSW GOVERNMENT | sydney METRO

PRINCIPAL AEO: GHD | SMEC — DESIGN JOINT VENTURE

SERVICE PROVIDERS: GAMUDA Australia | LAING O'ROURKE | Stantec

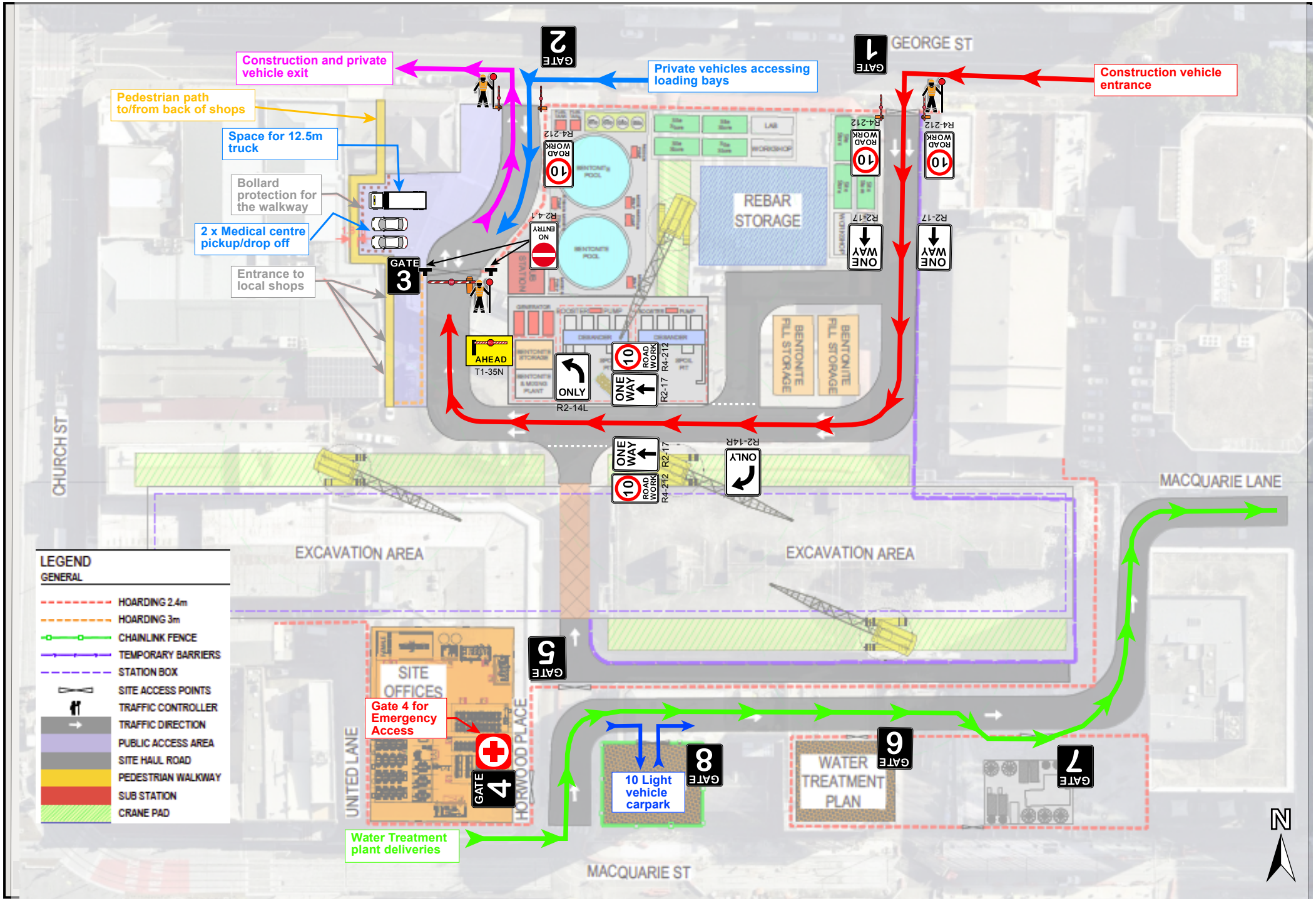
DRAWN	G.ALVAREZ
DESIGNED	S.PISENYA
DRG CHECK	K.CURLEY
DESIGN CHECK	L.NICHOLS
APPROVED	J.FONG

DRAFT

SYDNEY METRO
GEORGE ST
PARRAMATTA ENABLING WORKS
ROADWORKS
TURNING PATH SEMI-TRAILER (22m) SHEET 2

DOCUMENT No: | SHEET: 1 OF 1 | ©
STATUS: STAGE 3 DETAILED DESIGN | EDMS NO:
DRG No. SMWSTWTP-GLO-PTA-SN600-CV-SKT-090518 | REV A | VER A01.01

J VEHICLE MANAGEMENT PLAN


Construction and private vehicle exit
Pedestrian path to/from back of shops
Space for 12.5m truck
Bollard protection for the walkway
2 x Medical centre pickup/drop off
Entrance to local shops
Private vehicles accessing loading bays
Construction vehicle entrance
GEORGE ST
GATE 1
GATE 2
GATE 3
REBAR STORAGE
AHEAD
T1-35N
ONLY
R2-14L
ONE WAY
R2-17
ROAD WORK
R4-212
ENTRY NO
R2-4.1
BENTONITE FILL STORAGE
CHURCH ST
EXCAVATION AREA
EXCAVATION AREA
MACQUARIE LANE
MACQUARIE ST
SITE OFFICES
Gate 4 for Emergency Access
GATE 4
GATE 5
UNITED LANE
HORWOOD PLACE
10 Light vehicle carpark
GATE 8
WATER TREATMENT PLAN
GATE 9
GATE 7
Water Treatment plant deliveries
LEGEND
GENERAL
HOARDING 2.4m
HOARDING 3m
CHAINLINK FENCE
TEMPORARY BARRIERS
STATION BOX
SITE ACCESS POINTS
TRAFFIC CONTROLLER
TRAFFIC DIRECTION
PUBLIC ACCESS AREA
SITE HAUL ROAD
PEDESTRIAN WALKWAY
SUB STATION
CRANE PAD
N