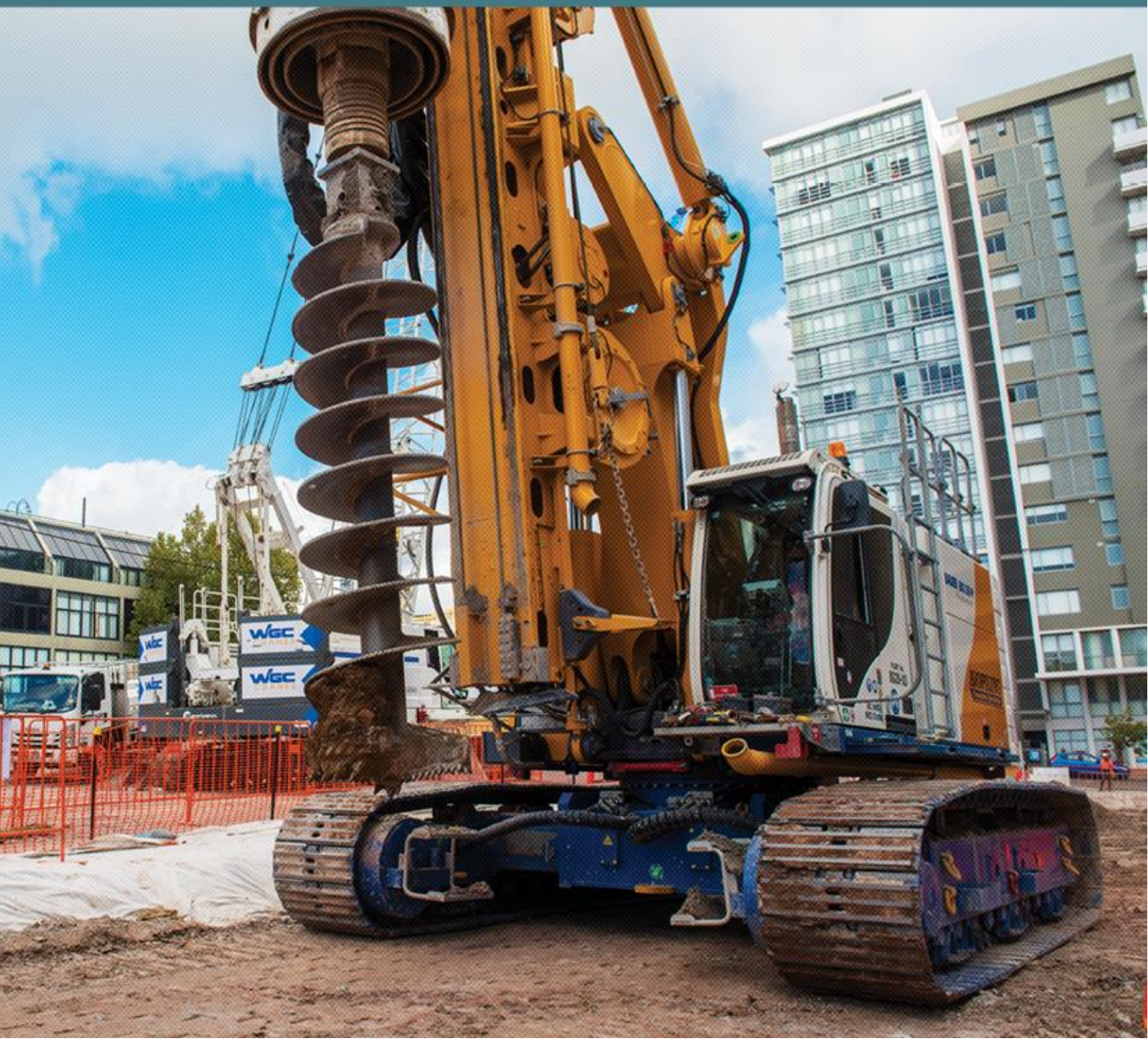
EASTERN TUNNELLING PACKAGE
John Holland CPB Contractors Ghella JV

JOHN HOLLAND CPB Ghella

Construction Traffic Management Plan

Pyrmont East – Stage 2: Site Establishment & Excavation – Rev 4



Construction Traffic Management Plan

Pyrmont East – Stage 2, Rev 4 – Site Establishment & Excavation

Project number	7040
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Document approval

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Definitions

Table 1: Definitions and abbreviations

Abbreviation	Definition
CJP	Customer Journey Planning
CoA	Condition of Approvals
CTMF	Construction Traffic Management Framework
CTMP	Construction Traffic Management Plan
DPE	Department of Planning and Environment
EIS	Environmental Impact Assessment
EPA	Environmental Protection Authority
ETP	Eastern Tunnelling Package
JCG JV	John Holland, CPB Contractors and Ghella Joint Venture
HRV	Heavy Rigid Vehicle (12.5m in length)
LTC	Local Traffic Committee
OSOM	Oversize and / or Overmass
PMP	Pedestrian Movement Plan
REMMs	Revised Environmental Management Measures
RMS	(Former) Roads and Maritime Services
RTS	Response to Submissions Report
SMIC	Sydney Metro Industry Curriculum
SSI	State Significant Infrastructure
TCaWS	Traffic Control at Work Site
TCG	Traffic Control Group
TfNSW	Transport for NSW
TGS	Traffic Guidance Scheme
TMC	Transport Management Centre
TTLG	Traffic and Transport Liaison Group
VMP	Vehicle Movement Plan
VMS	Variable Message Sign

Part A: Overview

1. Introduction

1.1. Purpose

This site-specific Construction Traffic Management Plan (this Plan) is applicable to the construction of the Sydney Metro West - Eastern Tunnelling Package (ETP Works or the Project). This plan describes site and task specific details and considers the traffic management initiatives that will be established to minimise disruption and ensure the safety of the wide range of stakeholders potentially affected by the works, including but not limited to, motorists, pedestrians, cyclists, public transport users, local residents, business owners and workers engaged in the Project. It provides details of how John Holland CPB Ghella Joint Venture (JCG JV) will identify, prevent and manage traffic impacts associated with the construction site specific construction scope detailed within the CTMP.

This plan has been prepared to address the requirements of the:

- State Significant Infrastructure (SSI) 19238057 Infrastructure Approval (dated 24 August 2022) and relevant conditions of the Sydney Metro West Concept Schedule 2 of SSI 10038 Infrastructure Approval (dated 11 March 2021) (Infrastructure Approvals)
- Sydney Metro West – Stage 2 – Phasing Report (Phasing Report)
- Sydney Metro Construction Environmental Management Framework (CEMF), Version 4.3
- Environmental Impact Statement (EIS) and the Response to Submissions Report, including the Revised Environmental Mitigation Measures (REMMs)
- Contractual requirements including the ETP Deed and General and Particular Specifications
- Applicable legislation.

1.2. Objectives Targets and Key Performance Indicators

The primary objectives and principles of this CTMP are:

Table 2 - Primary Objectives and Principles

Objectives	Targets	Key Performance Indicators
Minimising the impacts on traffic delays and road safety	No traffic delays or road safety incidents attributed to the project	Number of delays and road safety incidents attributed to the project
Minimising disruption to private properties and local businesses	No avoidable complaints associated with traffic disruption to private properties and local businesses	Number of avoidable complaints associated with traffic disruption to private properties and local businesses
Minimising impacts on existing pedestrian footpaths, cycleways, and nearby parking facilities.	No impacts which would result in a delay of more than 5 minutes	Number of impacts resulting in a delay of more than 5 minutes
Ensuring coordination between Sydney Metro West and Transport for NSW (TfNSW) through Traffic and Transport Liaison Group (TTLG) and Traffic Control Group (TCG) to manage any cumulative impacts with surrounding projects.	No unforeseen cumulative impacts with surrounding projects	Number of unforeseen cumulative impacts

Ensuring traffic impacts are within the scope permitted by TfNSW, Sydney Metro West and associated councils	No traffic impacts outside the scope permitted by TfNSW, Sydney Metro and associated Councils	Number of traffic impacts outside the scope permitted by TfNSW, Sydney Metro and associated Councils
Meet the requirements of the Project brief, Project Specifications, CoA, REMMs, and TfNSW Traffic Control at Work Sites (TCaWS) Manual	Meet all requirements of the Project brief, Project Specifications, CoA, REMMs, and TfNSW Traffic Control at Work Sites (TCaWS) Manual	No breaches of the requirements of the Project brief, Project Specifications, CoA, REMMs, and TfNSW Traffic Control at Work Sites (TCaWS) Manual
Ensure full compliance with relevant legislative requirements, CoA and revised environmental management measures (REMMs).	Full compliance with relevant legislative requirements, CoA and revised environmental management measures (REMMs)	No breaches associated with the relevant legislative requirements, CoA and revised environmental management measures (REMMs)
Manage construction traffic and movements to and from construction support sites to ensure pedestrian, cyclist and motorist safety.	No incidents or accidents associated with construction traffic movements	Number of incidents or accidents associated with construction traffic movements
Minimise disruptions on the road network within the vicinity of the construction support sites.	Disruptions on the road network within the vicinity of the construction support sites kept as low as reasonably practical	Number of disruptions on the road network within the vicinity of the construction support sites

1.3. Context and Interface with other plans

This site specific CTMP should be read in conjunction with the overarching CTMP.

The purpose of the project's Overarching Construction Traffic Management Plan is to detail the overall traffic and transport management strategies proposed by JCG JV. The site specific CTMP (this plan) details the traffic management arrangements and initiatives specific to the site and the particular scope(s) of work detailed.

1.4. Consultation and Approval

Comments and inputs on the EIS received from the community, business owners and operators, local Councils, state government entities were considered in the preparation of this Plan. JCG JV will actively engage with relevant councils, TfNSW, Customer Journey Planning (CJP), Customer Journey Management (CJM), Sydney Buses, and Transdev (Sydney Light Rail operators) in developing and finalising this Plan. Any comments received from agencies and JCG JV's response to these comments will be provided. in

Consultation of this CTMP will be undertaken in accordance with the requirements of the CTMF, including the TCG and the TTLG. Any comments received from agencies and JCG JV's response to these comments will be provided in Appendix G.

A copy of this CTMP will be submitted to the Planning Secretary for information before commencement of construction in the area identified and managed within the relevant CTMP.

No works detailed within this CTMP are expected to trigger approval through the Local Traffic Committee (LTC).

1.5. Sub-Plan Structure

Table 3: Plan structure

Part	Details
Part A: Overview	This section clearly defines: ▪ Project overview ▪ Proposed work methodology ▪ Assessment of traffic and transport impacts ▪ Communication strategies ▪ Proposed mitigation measures
Part B: Implementation Plan	This section outlines the key aspects for managing controls on this Project including: ▪ Expectations ▪ How they will be met ▪ Responsibilities ▪ Associated deliverables
Part C: Annexure	Further documents and information that support this Plan include: ▪ Swept path analysis ▪ Traffic guidance scheme ▪ Road safety audit report ▪ Vehicle movement plan ▪ Stakeholder communications ▪ Council approved Work Zones

1.6. Construction Traffic Management Plan Staging

A single Construction Traffic Management Plan will be developed for Pyrmont East, the plan will be updated in stages to address the traffic strategy for the various construction packages. The stages, scope and target date for submission of the CTMP revision is detailed in table 4.

Table 4: Plan Staging

CTMP Stage/ Revision	Scope	Target Submission Date
Stage 1 – Demolition	• Demolition of mid-rise commercial properties at 37-69 Union Street	Approved
Stage 2 – Site Establishment & Excavation	• Establishment of construction driveways • Establishment of Class A and Class B hoardings • Erection of an acoustic shed and tower crane • Establishment of an ancillary facility on Union Street southern footpath and parking lane	Submitted
Stage 3 – Tunnelling & Lining	• Excavation and lining of the station and crossover cavern. • Excavation of station shaft	Jan 24

2. Project Overview

2.1. Background

Sydney Metro West is a new 24-kilometre metro line that will connect Greater Parramatta with the Sydney CBD via stations at Westmead, Parramatta, Sydney Olympic Park, North Strathfield, Burwood North, Five Dock, The Bays, Pyrmont and Hunter Street (Sydney CBD).

The planning process for Sydney Metro West was assessed as a staged infrastructure application under section 5.20 of the *Environment Planning and Assessment Act 1979* (EP&A Act).

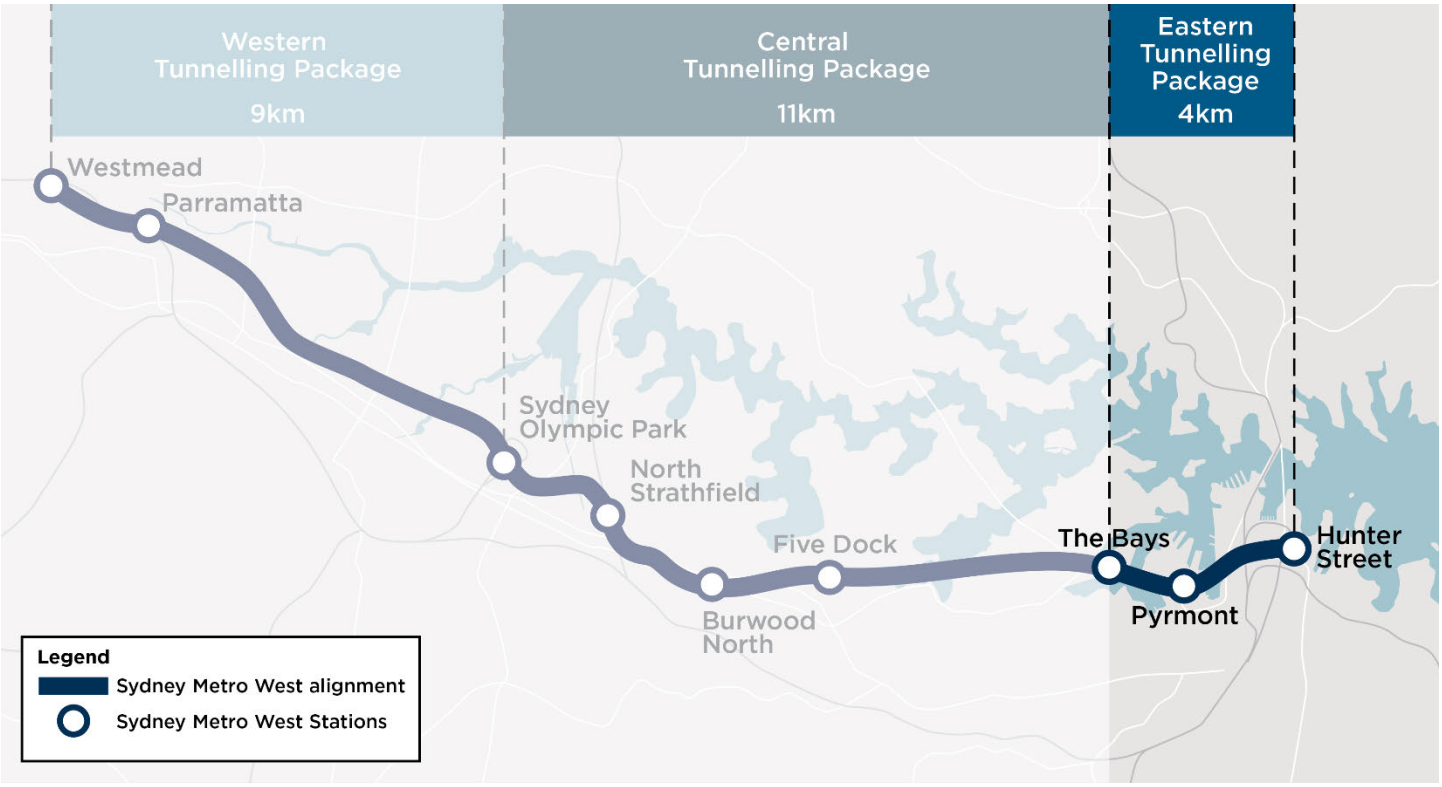
Stage 1 of the development, the Sydney Metro West Concept and major civil construction work for Sydney Metro West between Westmead and The Bays (SSI-10038 Schedule 2), was approved on 11 March 2021 and includes:

- Construction of a new passenger rail infrastructure between Westmead and the central business district of Sydney, including:
  - Tunnels, stations (including surrounding areas) and associated rail facilities
  - Stabling and maintenance facilities (including associated underground and overground connections to tunnels)
- Modification of existing rail infrastructure, including stations and surrounding areas
- Ancillary development.

Stage 2 of the planning approval process, the ETP Works, includes all major civil construction work including station excavation (Pyrmont Station and Hunter Street Station (Sydney CBD) and tunnelling between The Bays and Sydney CBD (Figure 1).

It is noted that the existing Sydney Metro West precast facility at Eastern Creek will be utilised in the delivery.

Figure 1: Sydney Metro West alignment



2.2. Project Scope

The ETP Works (construction) involves the delivery of:

- Enabling works such as demolition, utility supply to construction sites, utility adjustments and modifications to the existing transport network
- Mined crossover cavern construction.

- 4.2 km of TBM tunnel excavation, 650m of mined tunnels and 7 cross passage excavation, from The Bays to Sydney CBD
- Excavation for two new underground metro stations at Pyrmont and Hunter Street
- Construction of a turnback, crossover tunnels and caverns at the eastern end of the tunnel section
- A concrete segment facility for use during construction located at Eastern Creek (outside of the scope of this Sub-plan).

2.3. Project Phasing

Reflecting the outcomes of a detailed environmental risk assessment, the ETP Works will be delivered through a phased approach. This approach, detailed in the Phasing Report, includes Low Impact Works as defined under the SSI 19238057 Infrastructure Approval and the activity-based phases for construction (Table 5).

Table 5 - Overview of ETP Works Phasing

Phase	Description	Indicative timing	Environmental documentation	Consultation and approvals
Low Impact Works	Activities defined as Low Impact Works under SSI 19238057 Infrastructure Approval, including survey work, investigations, utility relocations, installation of environmental controls and initial demolition works	Project award to May 2023	▪ Low Impact Works Plan ▪ Low Impact Works DNVIS	▪ ER endorsement
Preliminary Works	Including works within the existing sites and critical enabling works which are required to be conducted outside of standard hours	March to May 2023	▪ Preliminary CEMP ▪ Environmental Procedures ▪ Project-wide Out of Hours Works DNVIS	▪ Stakeholder consultation ▪ ER endorsement
Tunnelling, Excavation and Associated Works (addressed in this Sub-plan)	Including the Preliminary Works (not completed prior to approval of the final CEMP), demolition of existing industrial premises, site establishment, piling and shaft excavation, tunnelling, and decommissioning	May 2023 onward	▪ CEMP ▪ Sub-plans ▪ Environmental Procedures ▪ DNVISs (TBA)	▪ Stakeholder consultation ▪ ER endorsement ▪ DPE approval (as determined by the Phasing Report)

The construction works at the Pyrmont East construction site are to be undertaken over a duration of approximately 24 months, with 3 months for the site access and demolition works. Site establishment & shaft excavation works are to be undertaken over a duration of approximately 7 months, which forms the scope of this CTMP. Following the initial temporary shaft excavation, tunnelling and lining will commence. The estimated timeline of the proposed works is summarised as follows:

- Demolition – May 2023 to August 2023 (3 months)
- Site Establishment & Shaft Excavation – October 2023 to July 2024 (9 Months)
- Tunnelling & Lining – July 2024 to December 2025 (17 months)

2.4. Hours of Work

The standard working hours have been defined in the CSSI CoA as:

- Monday to Friday – 7:00am to 6:00pm
- Saturday – 8:00am to 6:00pm
- Sunday and public holiday – No work.

The proposed extended standard construction hours for the construction activities at the Pyrmont East construction site are consistent with the CSSI CoA.

Deliveries of material and haulage of spoil will be undertaken between the hours of 7:00am to 10:00pm. OSOM vehicles will be required to undertake deliveries and pickups outside of the approved construction hours in accordance with Road Occupancy Licence and Council permit conditions. These OSOM movements will be completed in accordance with the OOHW Protocol detailed below.

Establishment of hoardings around the perimeter of the site may require occupation of the adjacent roadway. In circumstances where the adjacent roadway occupation is required, works will also be undertaken in accordance with the conditions of Road Occupancy Licences, Council permits and the OOHW Protocol.

Prior to construction commencement, an OOHW Protocol will be prepared by Sydney Metro in accordance with Condition D24. The OOHW Protocol provides a process for the consideration, management, and approval of work outside the approved construction hours that is not subject to an EPL.

The aim of the OOHW Protocol is to ensure that OOHW not subject to an EPL are assessed and managed via a rigorous process to identify the associated risk of adverse impacts on sensitive receivers including:

- Justification for why OOHW need to occur
- Consideration of the OOHW against the relevant NMLs and vibration criteria, and providing a determination of low or high-risk work
- Processes for selecting and implementing mitigation measures for residual impacts in consultation with the community, including respite periods consistent with the requirements of Condition D27 and D37
- Procedures to facilitate the coordination of OOHW with those approved under an EPL or undertaken by a third party, to ensure appropriate respite is provided and is consistent with the requirements of Condition D36
- An approval process for OOHW that considers risks, proposed mitigation, management and coordination, and includes review and approval by the AA for low-risk activities and by the Planning Secretary for high-risk activities
- Details of notification requirements for affected receivers for all approved OOHW, including notification to the Planning Secretary for approved low risk OOHW.

3. Legal and Other Requirements

3.1. Legislation

According to Roads Act 1993 – Section 138, it is required that a person obtains the consent of the appropriate Roads Authority for the erection of a structure, or the carrying out of a work in, on or over a public road, or the digging up or disturbance of the surface of a public road. If the applicant is a Public Authority, the Roads Authority must consult with the applicant before deciding whether or not to grant consent or concurrence.

TfNSW has the power, under the Roads Act 1993 – Division 3 – Section 62 to take Roads Authority powers from relevant local councils. This power may be exercised by TfNSW for the duration of the proposed works for the Sydney Metro West – Eastern Tunnelling Project.

3.2. Guidelines

The following guidelines and standards have been used during the development of this CTMP:

- Construction Traffic Management Framework (Response to Submissions Report - Appendix C)
- Traffic Control at Worksites Manual v6-1
- Relevant Australian Standards, including but not limited to AS1742.3 and AS1743
- Austroads Guidelines and RMS Supplements
- TfNSW Guidelines for Road Safety Audit Practices (2011)
- TfNSW QA Specifications

3.3. Other Environmental Requirements

The transport and traffic associated environmental requirements are listed in Table 15 and Table 16, along with cross reference to the sections of the report, in which the requirements have been addressed.

4. Existing Environment

4.1. Site Context

The proposed Pyrmont East construction site is located to the north of Pyrmont Bridge Road, bounded by Union Street and Edward Street as shown in Figure 2.

The Pyrmont East construction site was previously occupied by three-storey commercial buildings with at-grade parking and loading facilities provided at the centre of the site at 37-69 Union Street. The commercial buildings have been demolished during the demolition stage as detailed in a separate CTMP.

The Pyrmont East construction site is surrounded by mixed land uses, with majority being multi-storey buildings. The Star Sydney is located to the north of the site whereas Darling Harbour and Australian National Maritime Museum are located to the east of the site.

Figure 2: Locality of the Pyrmont East Construction Site

Basemap Source: Nearmap, last accessed on 07/02/2023

4.2. Abutting Road Network

The road network surrounding the subject site comprises the following:

Pyrmont Bridge Road is generally a four-lane, two-way classified state and Council Road, connecting Bridge Road to the west and Union Street to the east. Between Harris St and Union St, it is classified as Council Road. Pyrmont Bridge Road intersects with Pyrmont Street via a signalised junction with formal pedestrian crossings provided on all approaches of the intersection. On-street parking is prohibited on Pyrmont Bridge Road at all times. Pyrmont Bridge Road is a 40km/h Local Traffic Area in the vicinity of the Pyrmont East construction site.

Pyrmont Street is a two-lane, two-way road to the north of Pyrmont Bridge Road, connecting to Point Street. To the south of Pyrmont Bridge Road, it is a four-lane, one-way road with two lanes connecting to Western Distributor on ramp and two southbound lanes terminating at a cul-de-sac before Pier Street. Outside of clearway restriction hours, 2P on-street metered parking is generally available on both sides of Pyrmont Steet. Pyrmont Street is a 40km/h Local Traffic Area in the vicinity of the Pyrmont East construction site.

Union Street, to the east of Pyrmont Street, is a two-lane, two-way road whereas to the west of Pyrmont Street, it is a one-lane, one-way road for eastbound traffic in a 10km/h shared zone. Union Street connects with Darling Drive / Murray Street to the east and with Harris Street / Miller Street to the west. Shared bicycle paths and metered parking are available along sections of Union Street. To the east of Pyrmont Street, the eastbound and westbound kerbside lanes generally provide 2P metred parking zone for 24 hours. To the west of Pyrmont Street, the kerbside lane is a 1P metred parking zone for 24 hours.

Edward Street is a two-lane, two-way road, connecting Pyrmont Bridge Road to the south and a cul-de-sac just north of Union Street. To the south of Union Street, the southbound kerbside lane is a 2P metred parking lane for 24 hours whereas the northbound kerbside lane consists of unrestricted motorbike parking and a loading zone / 2P metred parking area. The loading zone applies between 7am and 6pm (Monday – Friday) and the 2P metred parking area applies between 6pm and 10pm (Monday – Friday) and 8am-10pm on Saturdays and public holidays. To the north of Union Street, the northbound kerbside lane is a No Parking zone between 6pm and 10pm (Friday – Saturday) and a 2P metred parking zone at all other times whereas the southbound kerbside lane is a 2P metred parking zone for 24 hours.

Western Distributor is a classified state road providing connection between the Sydney Harbour Bridge, Sydney CBD, Victoria Road and City West Link. It intersects with Pyrmont Bridge Road via an on ramp and off ramp facilities. On-street parking is prohibited at all times on Western Distributor.

Darling Drive is a two-way divided road connecting Union Street / Murray Street to the north and Ultimo Road to the south. On-street parking is prohibited along this road. Darling Drive intersects with Pier Street via an on ramp provided off the roundabout interchange, adjacent to ICC Sydney Theatre.

4.3. Active Transport Infrastructure

Footpaths are generally provided along the majority of roads in the vicinity of the proposed Pyrmont East construction site, except for Western Distributor. Signalised crossings are available at majority of the intersections. Pedestrian activities are generally high considering the proximity of the site to commercial and retail land uses, as well as licensed entertainment venues. A 40km/h Local Traffic Area has been established around the site vicinity on Pyrmont Bridge Road, Edward Street and Union Street.

Cycling infrastructure around the construction site consists of an off-road shared user path along Pyrmont Bridge Road, cycling route along Miller Street, Union Street and Darling Drive north of the Convention light rail stop. South of the convention centre Darling Drive has a separated off-road cycleway. These routes are detailed in Figure 3.

The separated off-road cycleways along Miller Street and Union Street provides cyclists an alternative route to Pyrmont Bridge Rd avoiding the construction site interfaces.

Figure 3: Pyrmont East Construction Site Cycling Map

4.4. Public Transport Infrastructure

The Pyrmont East construction site is served by extensive public transport services as it is located within close proximity to commercial and retail, shopping centres and Darling Harbour precincts. Public transport services around the site vicinity includes trains, buses, light rail and ferries.

The nearest train services can be accessed at Town Hall train station, which provides connection to other suburban hubs across the Sydney Greater Metropolitan Area. Town Hall train station is located approximately 1km walking distance (13-minute walk) from the Pyrmont East construction site via the Pyrmont footbridge.

Light rail services can be accessed at the surrounding light rail stops, including Pyrmont Bay, Convention, the Star Sydney, John Street Square, Fish Market and Wentworth Park light rail stops. All of these light rail stops form part of the L1 Dulwich Hill Line, which provides connection between Central and Dulwich Hill. The closest light rail stop to the Pyrmont East construction site is Pyrmont Bay, which is located approximately 130m walking distance (1-minute walk) from the site.

Bus stops are located along Harris Street, Pirrama Road and Miller Street with bus services providing connection to a number of major precincts including the Sydney CBD, Bondi, Rozelle and Parramatta. Night bus services are also available within the vicinity of the construction site to accommodate the night travel

demand induced by the surrounding licenced and entertainment venues. The closest bus stop is located on Harris Street, just north of Pyrmont Bridge Road, which is a 210m walking distance (3-minute walk) from the Pyrmont East construction site.

Ferry services can be accessed at Pyrmont Bay wharf, which is located approximately 300m walking distance (4-minute walk) from the Pyrmont East construction site. The F4 Pyrmont Bay ferry line services this wharf, which provides connection between Pyrmont Bay and Circular Quay.

The public transport network context in the vicinity of the subject site is shown in Figure 4.

Figure 4: Pyrmont East Construction Site Transport Network

Source: EIS Chapter 6 – Transport and Traffic (2021)

4.5. Existing Traffic Volume

A summary of the 2021 peak hour traffic volume on the surrounding road network of the Pyrmont East construction site as documented in the EIS is provided in Table 6. A summary of the 2021 existing intersection performance surrounding the site is provided in Table 7.

The EIS Technical Report 1 – Traffic and Transport (Section 3.3) outlines that a comparison was undertaken between the existing traffic volumes for pre COVID-19 conditions in March 2019 and post COVID-19 conditions in March 2021 to determine the effects of the COVID-19 pandemic on modelled traffic. The comparison showed that changes in traffic volume were minimal between a typical traffic month of 2021 and 2019 (less than five per cent). As a result, it is considered that the existing traffic volumes collected in March 2021 accurately represent traffic conditions regardless of the impacts of and can be concluded that the March 2021 traffic survey data accurately represent traffic conditions.

Table 6: Existing Peak Hour Traffic Volume at the Surrounding Roads

Road Section	Direction	AM Peak Hour Volume (vehicles per hour)	PM Peak Hour Volume (vehicles per hour)
Pyrmont Bridge Road east of Bank Street	Eastbound	1,270	760
	Westbound	380	530
Harris Street north of Pyrmont Bridge Road	Northbound	470	350
	Southbound	210	270
Harris Street north of Fig Street / Western Distributor	Northbound	600	520
	Southbound	910	780
Pyrmont Street north of Pyrmont Bridge Road	Northbound	200	150
	Southbound	290	490
Union Street west of Edward Street	Eastbound	40	120
	Westbound	50	160
Darling Drive east of Murray Street	Northbound	310	280
	Southbound	210	170

Source: EIS Chapter 6 – Transport and Traffic (2021)

Table 7: Existing Peak Hour Surrounding Intersection Performance

Intersection	Peak Hour	Demand Flow	Average delay (seconds per vehicle)	Level of Service
Pyrmont Bridge Road and Bank Street	AM	2,760	67	E
	PM	2,836	>100	F
Pyrmont Bridge Road and Harris Street	AM	1,671	25	B
	PM	1,556	36	C
Pyrmont Bridge Road and Pyrmont Street	AM	1,456	17	B
	PM	1,445	23	B
Darling Drive, Union Street and Murray Street	AM	911	24	B
	PM	820	29	C
Darling Drive and Harbourside Access Road	AM	471	4	A
	PM	440	2	A
Union Street and Edward Street	AM	284	16	B
	PM	445	18	B
Union Street and Pyrmont Street	AM	531	11	A
	PM	734	17	B
Harris Street and Allen Street	AM	1,488	27	B
	PM	1,354	29	C
Harris Street, Fig Street and Western Distributor	AM	3,421	60	E
	PM	2,939	45	D

Source: EIS Chapter 6 – Transport and Traffic (2021)

The modelled intersection performance shows that most of the intersections currently perform satisfactorily at Level of Service (LoS) C or better, with the exception of the following intersections:

- Pyrmont Bridge Road / Bank Street intersection – during AM and PM peak hour
- Harris Street / Fig Street / Western Distributor intersection – during AM and PM peak hour

The Pyrmont Bridge Road / Bank Street intersection currently operates at LoS F due to the high traffic volume on the northern and southern approaches of Bank Street and the downstream queuing from the Western Distributor onto the westbound / northbound on ramp and Bank Street, which prevents vehicles from Pyrmont Bridge Road to turn left and right into the Western Distributor on ramp.

The Harris Street / Fig Street / Western Distributor intersection currently operates at LoS F due to the high traffic volume on all approaches.

4.6. Existing Use of the Site

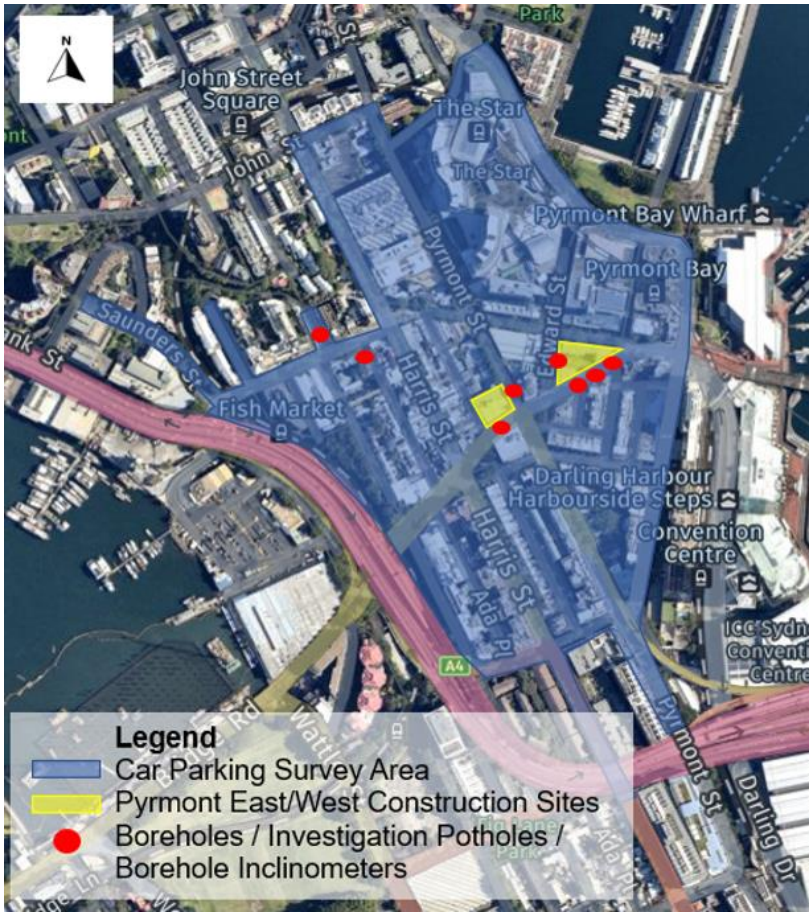
Prior to Stage 1 Demolition works, the Pyrmont East site was occupied by a commercial premise consisting of two three-storey commercial buildings. There were car park and loading facilities centrally located within the site, which indicates that the previous site would generate traffic movements from the car parking and loading facilities. Demolition of the commercial buildings to make way for the Pyrmont East site eliminated traffic movements generated by the existing use of the site.

The site has been taken over by JCG JV since May 2023 to carry out demolition works. Subsequently, the site has been transitioning from Stage 1 Demolition works to Stage 2 Site Establishment and Shaft Excavation works (this CTMP), to then Stage 3 which would include Tunnelling and Lining works.

4.7. Existing On-Street Parking

JCG JV conducted a parking survey to establish the existing parking demand surrounding the Pyrmont construction sites within an area confirmed and agreed by TfNSW, SM and CJP as shown in Figure 5.

Figure 5: Extent of the Parking Survey around Pyrmont Construction Sites



The parking survey undertaken in December 2022 indicates the overall survey area provides in the order of 788 parking spaces in the Pyrmont survey area, of which the frontage roads of the Pyrmont East construction site provide in the order of 77 parking spaces.

A summary of the existing peak parking occupancy is shown as follows:

- Union Street, Edward Street, Hardwood Street, Union Lane, Little Edward Street (within 100m radius of the site): 87% on an average for both weekday and weekend.
- Overall parking survey area: the peak parking demand was 70% on an average for both weekday and weekend.

Table 8: Parking Supply and Occupancy around the Pyrmont East Construction Site

Location	Existing Parking Spaces	Existing Peak Parking Occupancy Rate	
		Average Weekday	Average Weekend
Union Street, Edward Street, Hardwood Street, Union Lane, Little Edward Street (within 100m radius of the site)	77	87%	87%
Overall Parking Survey Area (refer to Figure 5)	788	70%	70%

4.8. Concurrent Nearby Developments

Nearby major projects, which have been approved or under construction and are likely to overlap with the proposed construction works at the Pyrmont East site include the following:

- **The New Sydney Fish Market** involves building a new Sydney Fish Market, which will include a waterfront promenade. The works are currently underway and are expected to be completed in 2024.

- **Cockle Bay Wharf Development** involves the construction of a 43-storey mixed-use building, land bridge across the Western Distributor, public open space and site interface works. The SSD application for the construction stage is currently undertaken, hence the work program has not been made available.

- **The Western Distributor Transport Corridor** involves road network improvements to improve safety and efficiency at key traffic bottle necks, or pinch points on the Western Distributor and reduce the flow on effect of incidents on surrounding roads. Works include; modification of the Pyrmont Bridge Rd and Bank St intersection by upgrading the Pyrmont Bridge Rd off ramp to two lanes, construction of a new ramp from Fig Street to provide direct access to Darling Harbour, and modification of the intersection at Allen and Harris Streets.

- **Harbourside Shopping Centre Redevelopment** involves the redevelopment of the existing Harbourside shopping centre including a new retail shopping centre, residential apartment tower, and improvements to the public domain.

A summary of the estimated construction traffic generation of the above major projects and the associated cumulative impacts with the subject site are discussed in Section 6.9. Ongoing review of cumulative heavy vehicle traffic generation and coordination of heavy vehicle routes used by these major projects would be routinely undertaken between JCG JV and CJP to minimise the impacts on the surrounding road network.

5. Work Methodology

5.1. Proposed Construction Stages

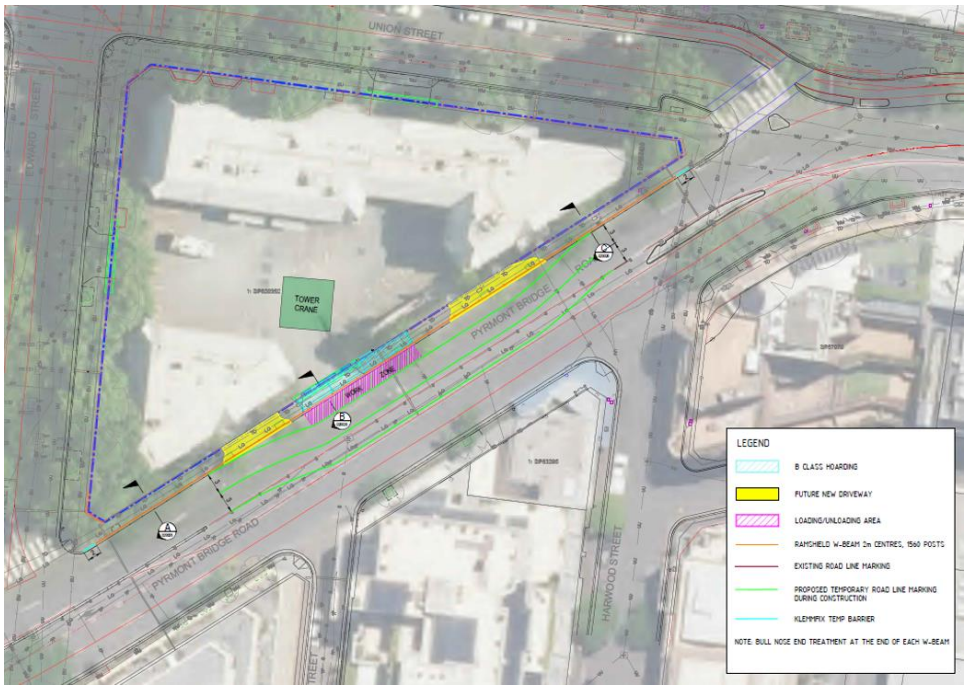
This CTMP details the scope of works required following demolition to establish the site for tunnelling works. Site establishment works includes; securing the site, construction of a capping beam, establishment of a tower crane, construction of an acoustic shed to service the tunnelling operation, construction of a vehicle access deck, establishment of construction HV power supply, temporary realignment of Pyrmont Bridge Road and guardrail installation along Pyrmont Bridge Rad to provide public protection. Construction staging for the various phases of the Pyrmont site establishment works are detailed in Appendix I.

5.1.1. Securing the Site & Public Protection

A-Class hoarding will be installed around the full perimeter of the Pyrmont East site. The installation works will be completed under short term footpath closures and in accordance with Council permitting requirements. The hoarding will be installed in stages, the first stage of the A-Class hoarding will be installed during the demolition works, this hoarding will later be transferred on top of the capping beam progressively as the capping beam is completed between October 2023 and January 2024.

Class B hoarding will be installed along a short section of Pyrmont Bridge Road to provide public protection under the lifting zone between the work zone and the site, as detailed in Figure 6.

Figure 6: Pyrmont Bridge Road Work Zone, Road Realignment and Public Protection

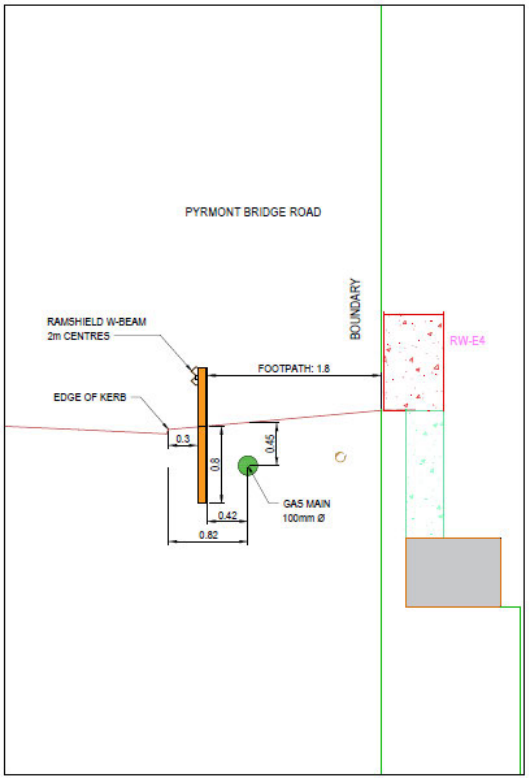


5.1.2. Pyrmont Bridge Road Guardrail

The proximity of the proposed shaft excavation and the associated works along the perimeter of the site, requires engineering protection measures to prevent vehicles entering the excavation and protect the workforce in the temporary work areas.

Due to the limited width of the existing footpath along the southern side of Pyrmont Bridge Road, a W-Beam guardrail system has been implemented along the back of kerb. The temporary installation was completed in September 2023 and will be removed once the construction of the capping beam is finished, which is expected to be completed in January 2024. The extent of the guardrail is detailed in Figure 7.

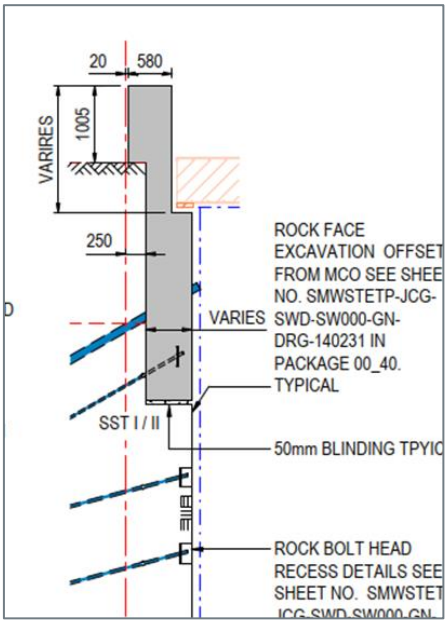
Figure 7: Pyrmont Bridge Road Guardrail Cross Section



5.1.3. Capping Beam Construction

Construction of a capping beam is required around the perimeter of the proposed shaft to provide flood and vehicle protection for the shaft and tunnel excavation. The capping beam outer face must be constructed along the property boundary as detailed in Figure 8. The working area required to construct the capping beam will necessitate short term footpath closures, these will be implemented during the preparation, formwork and concrete placing activities.

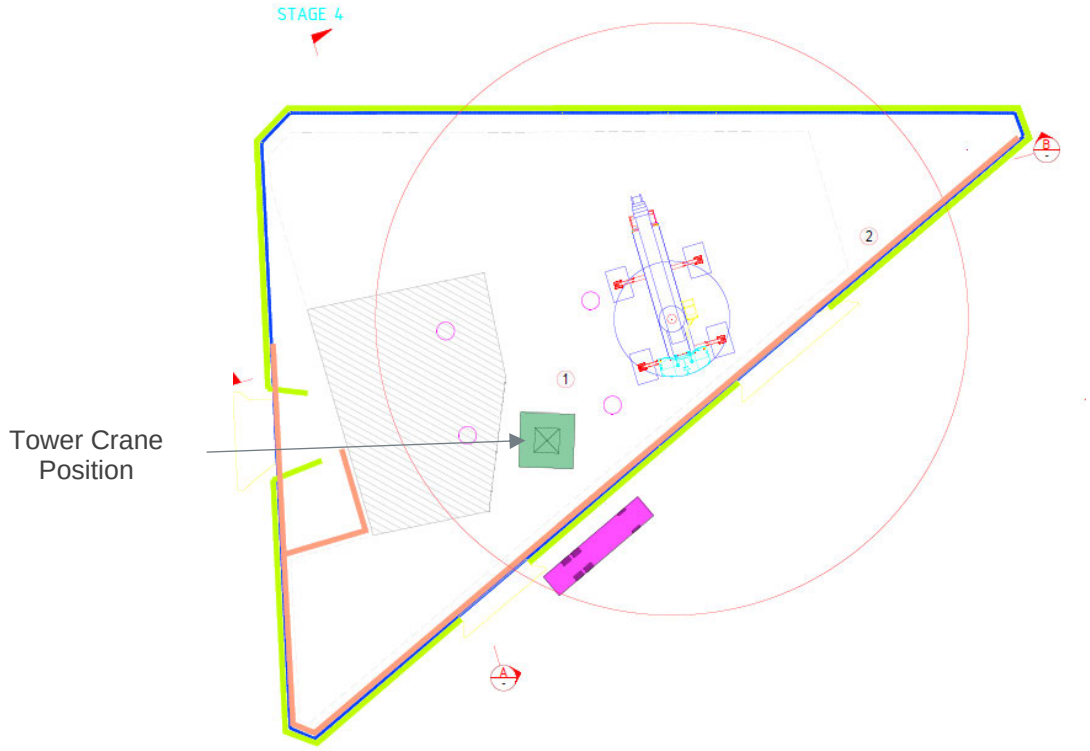
Figure 8: Capping Beam Cross Section



5.1.4. Tower Crane Establishment

The methodology for establishing the acoustic shed and access decks requires the use of a tower crane. The tower crane has been established roughly in the middle of the site as shown in Figure 9.

Figure 9: Establishment of a tower crane



Erection of the crane was completed using a 400 tonne mobile crane established within the Pyrmont East site. The components for the tower crane will be transported to the site on semi-trailers and unloaded from the proposed work zone on Pyrmont Bridge Rd.

Following completion of the establishment works, the tower crane will be demobilised from site, this scope will be subject of a separate CTMP.

5.1.5. Access Deck

The access deck is required to provide through access for heavy vehicles from Edward Street to Pyrmont Bridge Road and provide for a secondary access/egress for concrete agitators from Pyrmont Bridge Road. The General arrangement for the access decks is shown in Figure 10. The deck will be prefabricated in transportable sections and brought to site on a semi-trailer. The components will be unloaded from the proposed work area on Pyrmont Bridge Rd using the tower crane. It is expected that four loads per day will be required during the deck assembly phase.

Figure 10: Access deck general arrangement

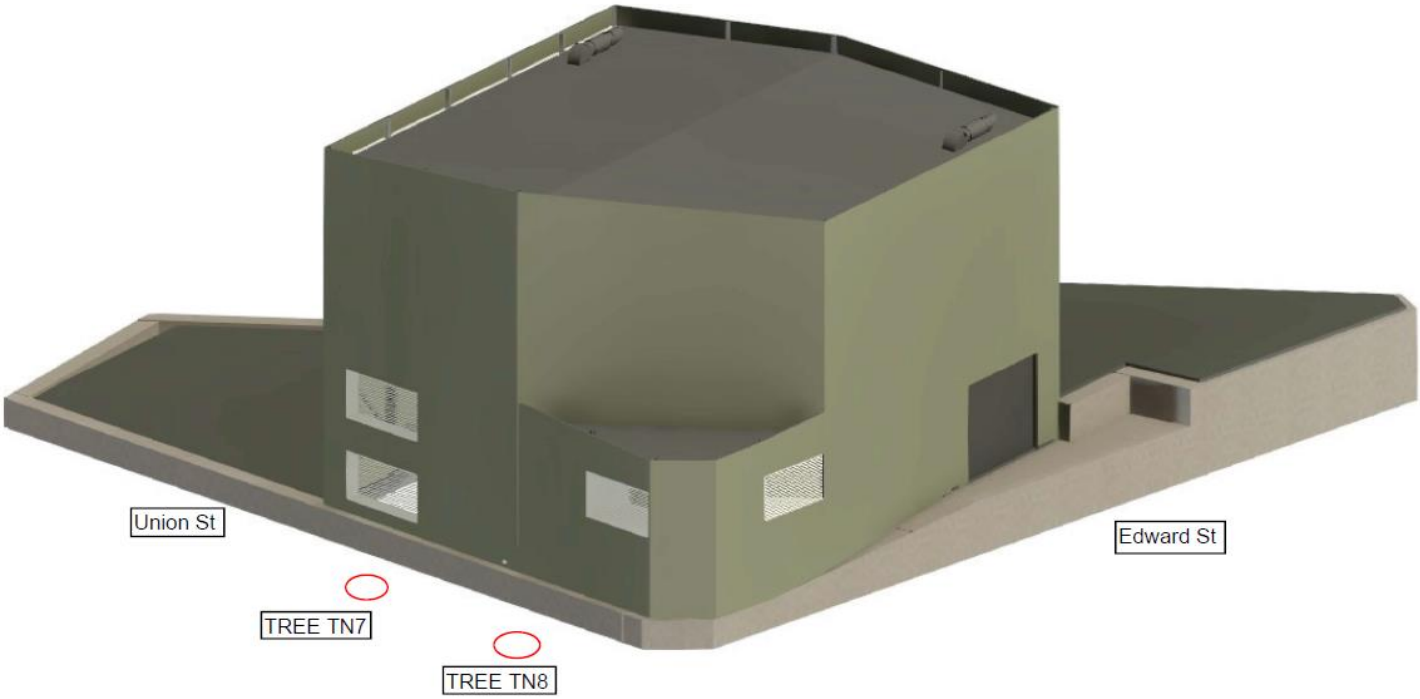
5.1.6. Acoustic Shed

An acoustic shed must be constructed over a large portion of the site to service the planned tunnelling operation. The shed will house two gantry cranes for the spoil logistics and materials handling operations, and will provide for an access off Edward Street and an egress onto Pyrmont Bridge Road. An isometric view of the shed is provided in Figure 11. It will be constructed up to the property boundary on Union Street, Edward Street and a short section of Pyrmont Bridge Road.

Installation of the structural steel components are expected to be installed generally from within the construction site. While the plant and equipment are expected to be contained within the site, exclusion zones must be implemented, which will require short term footpath closures during the establishment works. Delivery of the larger structural steel components will be brought to site on semi-trailer and unloaded in the proposed work area on Pyrmont Bridge Road.

Cladding the external faces of the shed will also require short term footpath closures, and occupation of parking spaces for the positioning of elevated work platforms.

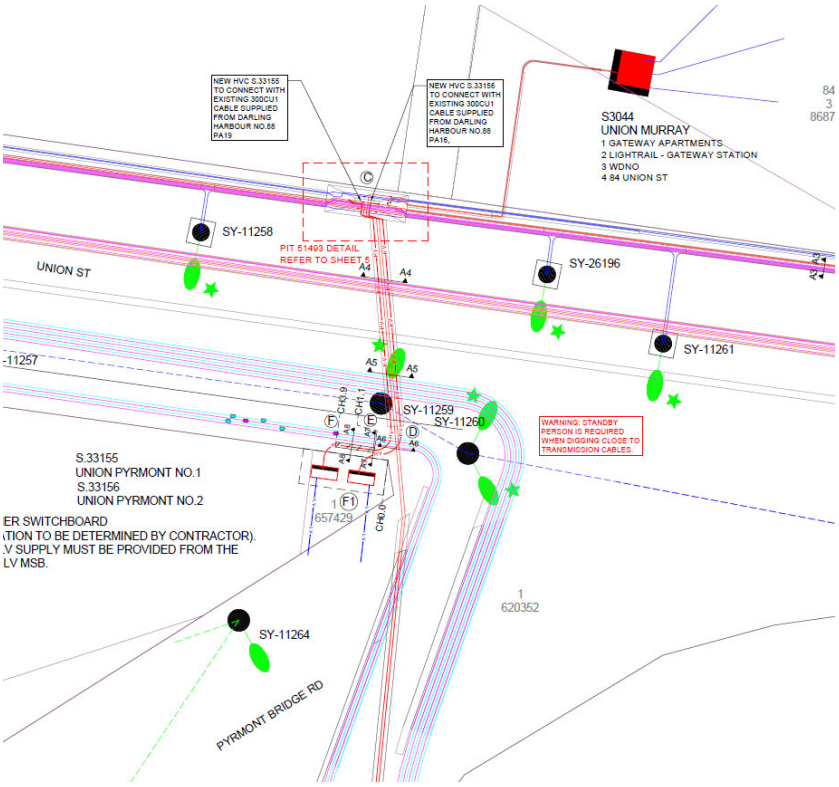
Figure 11: Isometric View of the Acoustic Shed



5.1.7. High Voltage Construction Power Supply

To service the tunnelling operation, a High Voltage power supply is required. As detailed in Figure 12, this supply will be taken from the existing Ausgrid underground network on Union Street and will require a small amount of excavation within the Union Street road corridor. The excavation scope will require short term footpath and lane closures in accordance with Council and TfNSW permitting and licence requirements.

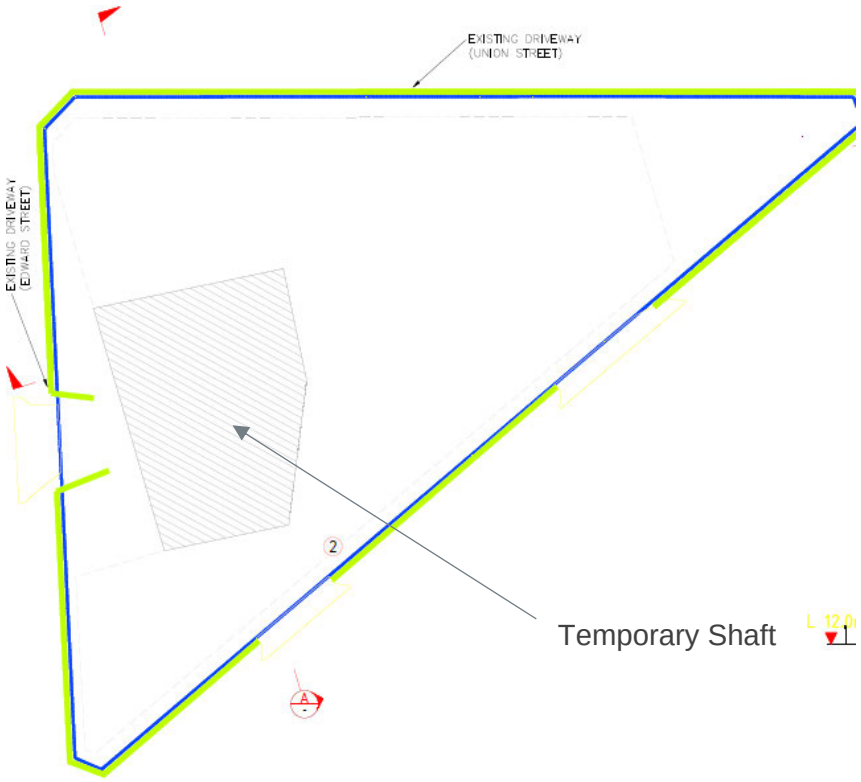
Figure 12: High Voltage Power Supply Required



5.1.8. Temporary Shaft Excavation

The first stage of the excavation process will be to excavate a temporary shaft, providing access to tunnelling excavation of the station cavern. The temporary shaft located close to Edward Street as detailed in Figure 13, is approximately 50m x 60m and will extend to around 35m deep.

Figure 13: Temporary Shaft



5.2. Proposed Site Access Arrangement

The following driveways will be used during the Stage 2 construction works, including site establishment, shaft and cavern excavation, lining operation, and tunnelling operation, as shown in Figure 15:

- One new driveway on Edward Street, located 30m north of Pyrmont Bridge Road (western boundary of the site)
- Two new driveways on Pyrmont Bridge Road, located approximately 30m and 65m east of Edward Street (southern boundary of the site)

The existing driveway in Edward Street will be used as an access and egress gate during initial concrete capping beam works during the site establishment phase. The driveway will be removed and access via the driveway constructed during the demolition stage utilised. The new Edward Street driveway will be retained from the Stage 1 Demolition works and used as an access driveway during the Stage 2 works.

The existing Union Street driveway along the northern boundary of the site, which was utilised in Stage 1 during the demolition of the southern buildings, will be maintained for use during site establishment activities works including concrete shoring works, piling, steel platform and acoustic shed erection. The Union Street driveway will be made redundant with all egress movements to be undertaken via the Pyrmont Bridge Road driveways once shaft excavation commences. The removal of the Union Street driveway will create two additional on-street parking spaces on the southern side of Union Street. These amended parking arrangements, subject to Council's approval, are shown in Figure 14. The implementation of this arrangement will take place after the completion of Site Establishment, which is targeted for July 2024.

The existing driveway in Pyrmont Bridge Road will be removed and two driveways will be constructed during the demolition stage. The western driveway will operate as a two-way driveway, while the eastern driveway will be egress only.

The proposed access arrangement is facilitated by a truck access deck located within the site. This access deck will provide connection between the access and egress driveways, while taking into consideration the difference in reduced level of the two proposed driveways.

Figure 14: Proposed Union Street Parking for when the Union Street Driveway becomes Redundant

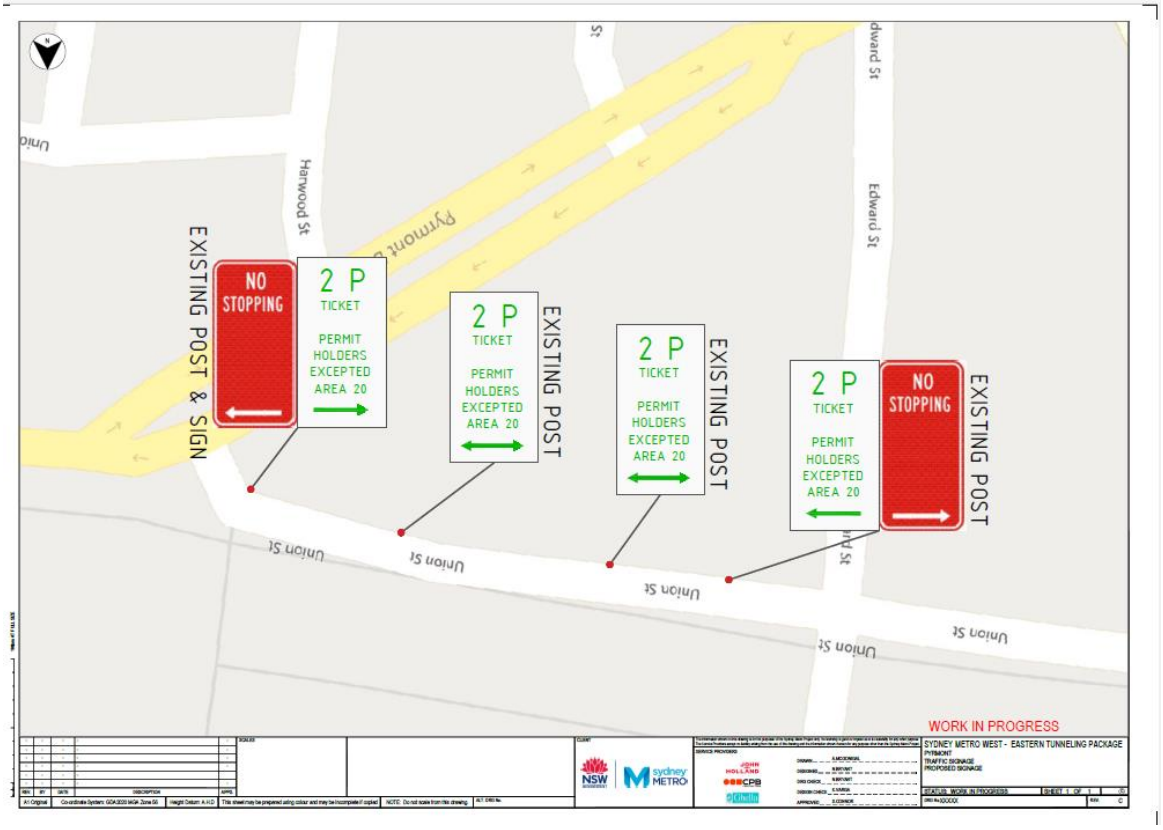
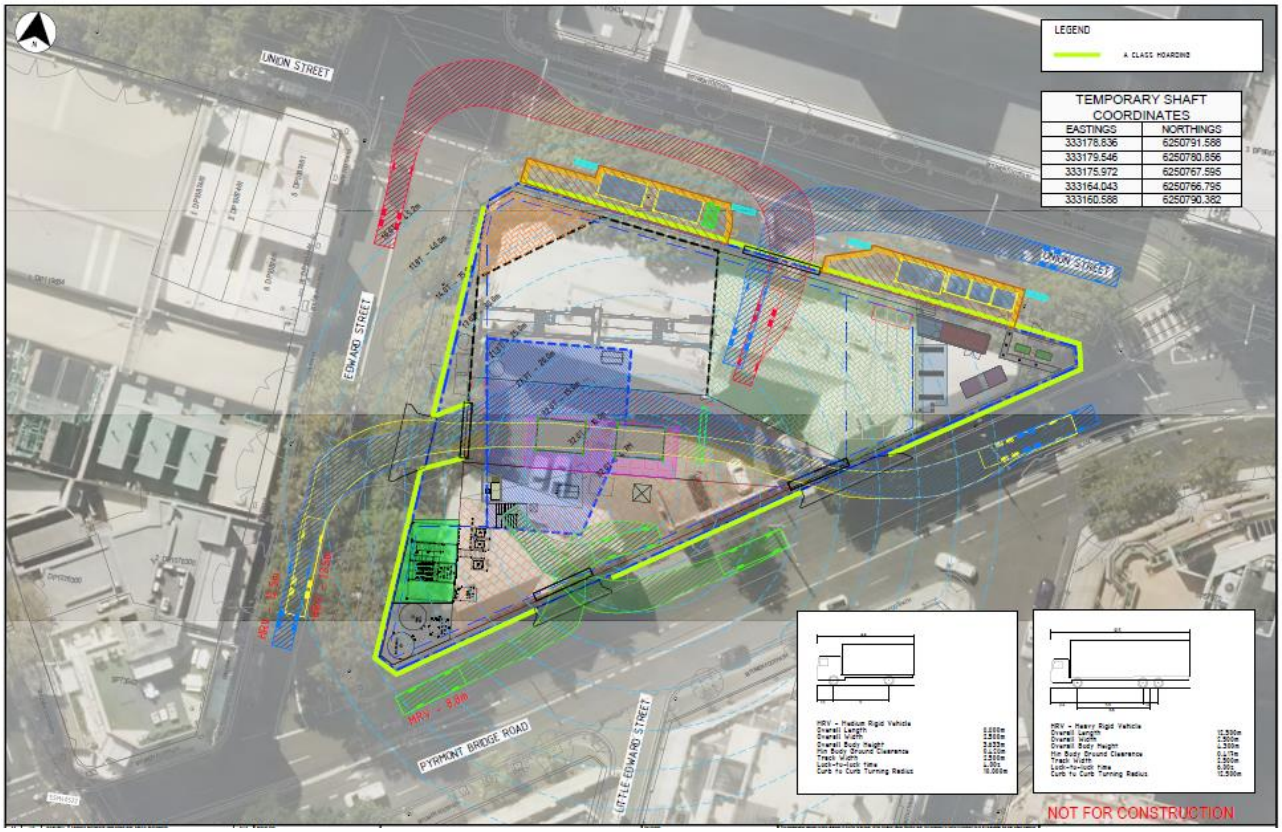


Figure 15: Site Access Arrangement



Edward Street and Pyrmont Bridge Road were identified as part of the revised EIS construction haulage route in the Response to Submissions Report (RTS), hence the proposed site access arrangement is consistent with the RTS. Therefore, no major impacts are expected from the proposed site access / egress arrangement.

Typically, 12.5m Heavy Rigid Vehicle (HRV) will be used during the site establishment phase for both spoil haulage and material deliveries. Larger 19m long semi-trailers will be required during site establishment for delivery of long steel members for the construction of acoustic sheds and access decks. These loads will be brought into Pyrmont Bridge Road and unloaded via the proposed work zone, the vehicles will then follow the outbound route as detailed in the Pier Street HVLR (Appendix H). In some cases, the 19m long semi-trailers will need to enter the site via Edward Street and exit via Pyrmont Bridge Road or Union Street. Swept path drawings have shown that this manoeuvre requires the larger vehicles cross over the centreline and will therefor require implementation of traffic control to manage the opposing direction of traffic. These loads would be scheduled during low traffic periods, either late night, early mornings or interpeak periods, refer to Appendix B for the indicative TGS for the use of traffic controllers and the associated signs. Truck symbolic signs will also be installed on approaches to the driveway to alert motorists of the turning trucks.

For any traffic arrangements requiring to stop traffic, an ROL will be required, which will be subject to a separate review and approval process.

The frequency of 19m semi-trailer deliveries is expected to be infrequent, approximately 4 movements per day, of which the majority is expected to be unloaded on Pyrmont Bridge Road.

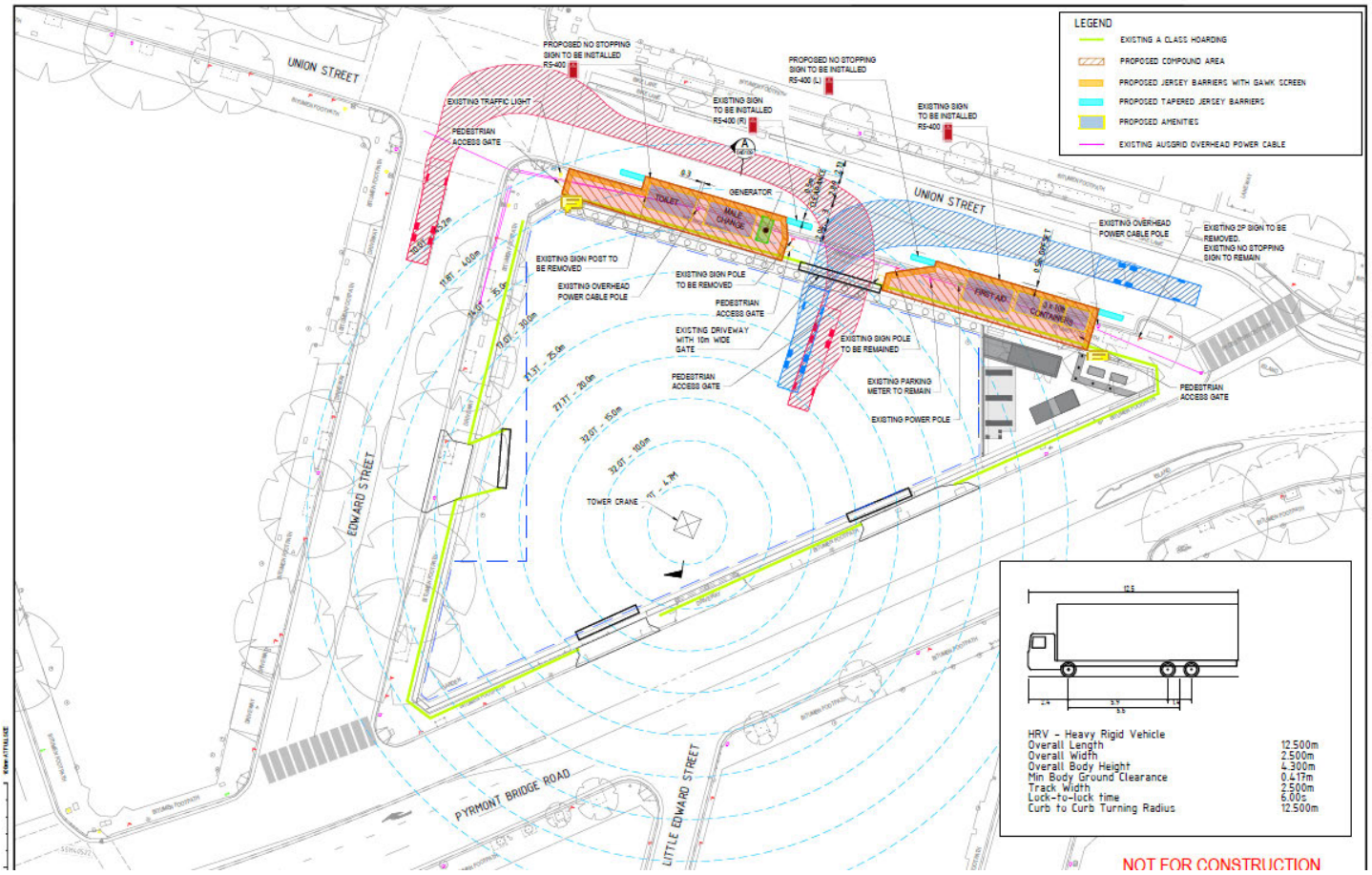
Refer to the swept path diagrams in Appendix A for the 12.5m long HRV and 19m semi-trailer entering and exiting the site. All construction vehicles will enter and exit the site in a forward direction where possible. Some variation to these access routes will need to be implemented due to width, swept path and access constraints. These variations will only occur in accordance with an approved TGS, ROL and/or Council approval, where applicable. Vehicles already on the frontage roads will have right of way. Traffic controllers will be deployed at the site access gates to manage pedestrian activities across the footpaths and facilitate construction vehicle movements in and out of the site.

5.3. Union Street Ancillary Facility

JCGJV plans to utilise the kerb parking lane and footpath on the southern side of Union Street, between Pyrmont Bridge Road and Edward Street, as an ancillary facility. This will result in the unavailability of eight 2-hour parking spaces 24/7 and a 10m No parking zone across the existing driveway. However, the existing No Stopping restrictions at both ends will remain unchanged. The ancillary facility will be defined by concrete barriers and gawking screens, set back 500mm from the travelling lane. Please refer to Figure 16 and Appendix K for a visual representation of the proposal. The ancillary facility will be implemented subject to CoS approval.

The ancillary facility is required during the site establishment, for approximately 6 months. There are limited spaces available on site to safely construct the acoustic shed and other site facilities. By relocating the site sheds and the toilet blocks to the Union St ancillary facility, it will assist with the site establishment works and create a safer work environment.

Figure 16: Indicative Union Street Ancillary Facility

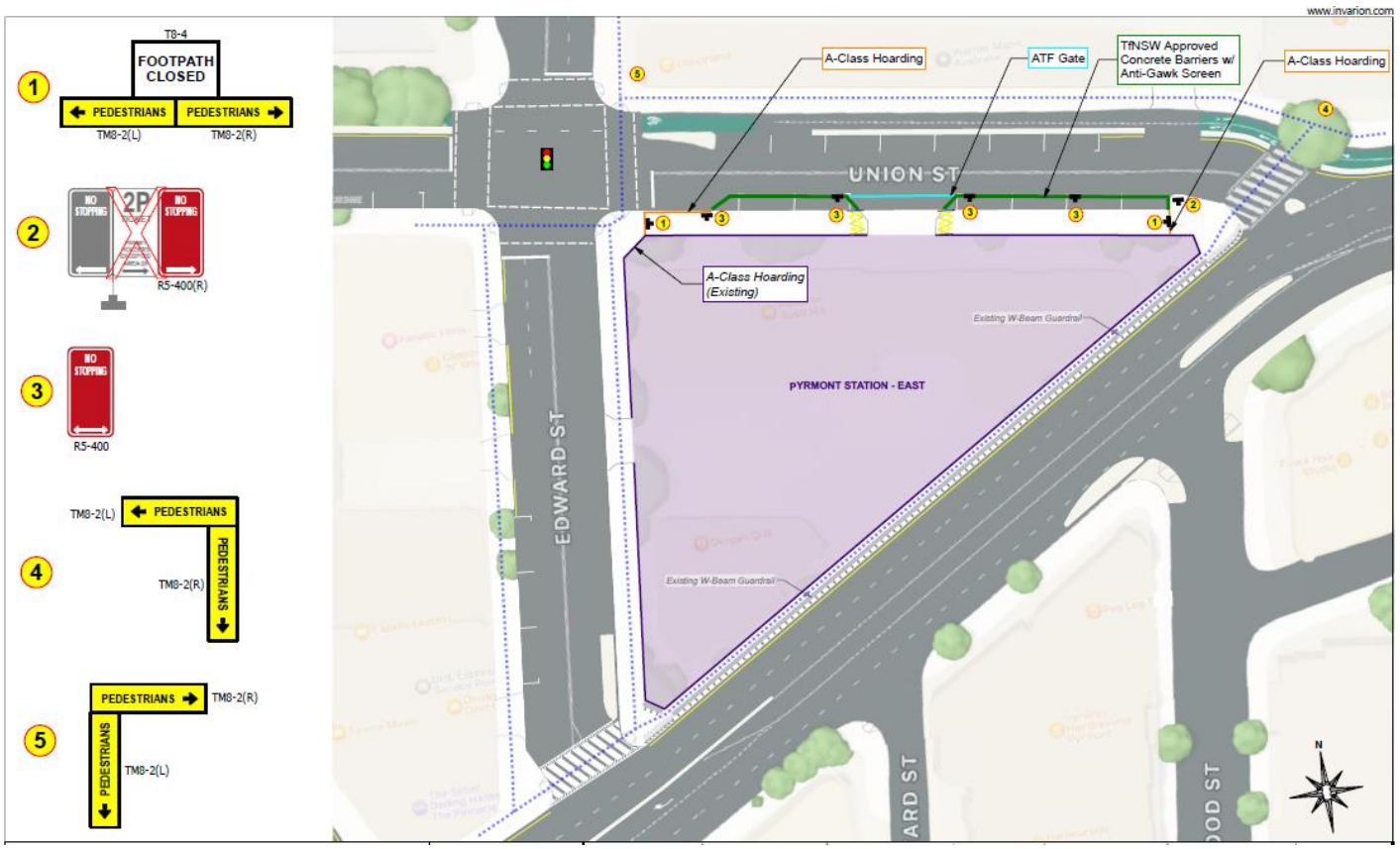


Based on a recent parking utilization survey conducted along Union Street's surroundings, it has been observed that the on-street parking spaces are not consistently fully utilized, and there are available parking spaces within the survey zones.

Furthermore, a recent pedestrian count survey has been conducted in the morning peak, inter peak and afternoon peak on Union Street's southern footpath, between Edward Street and Pyrmont Bridge Road. The results indicate low volume of pedestrian traffic using the subject footpath. For more detailed findings from both surveys, please refer to the updated Construction Parking & Access Strategy (CPAS).

To manage the closure of the southern side of Union Street footpath, a Traffic Guidance Scheme (TGS) has been developed and is presented in Figure 17 below. The pedestrian detour has been carefully planned to minimize the impact on walking distance, and there are safe alternative road crossings available at both ends of the closure. Edward Street offers traffic signal-controlled pedestrian crossing, while Pyrmont Bridge Road has a marked pedestrian crossing.

Figure 17: Indicative Footpath Closure/Detour TGS



The proposed is intended to be utilised from January 2024 until July 2024. Following this period, the parking will be reinstated to the current arrangement, with the addition of a parking space in the location of the redundant driveway.

5.4. Haulage Routes

5.4.1. Arrival Routes

The approved primary heavy vehicle arrival routes adopted for Pyrmont East construction site to minimise traffic disruptions are shown in Appendix D, and in Figure 18 and Figure 19 and can be summarised as follows:

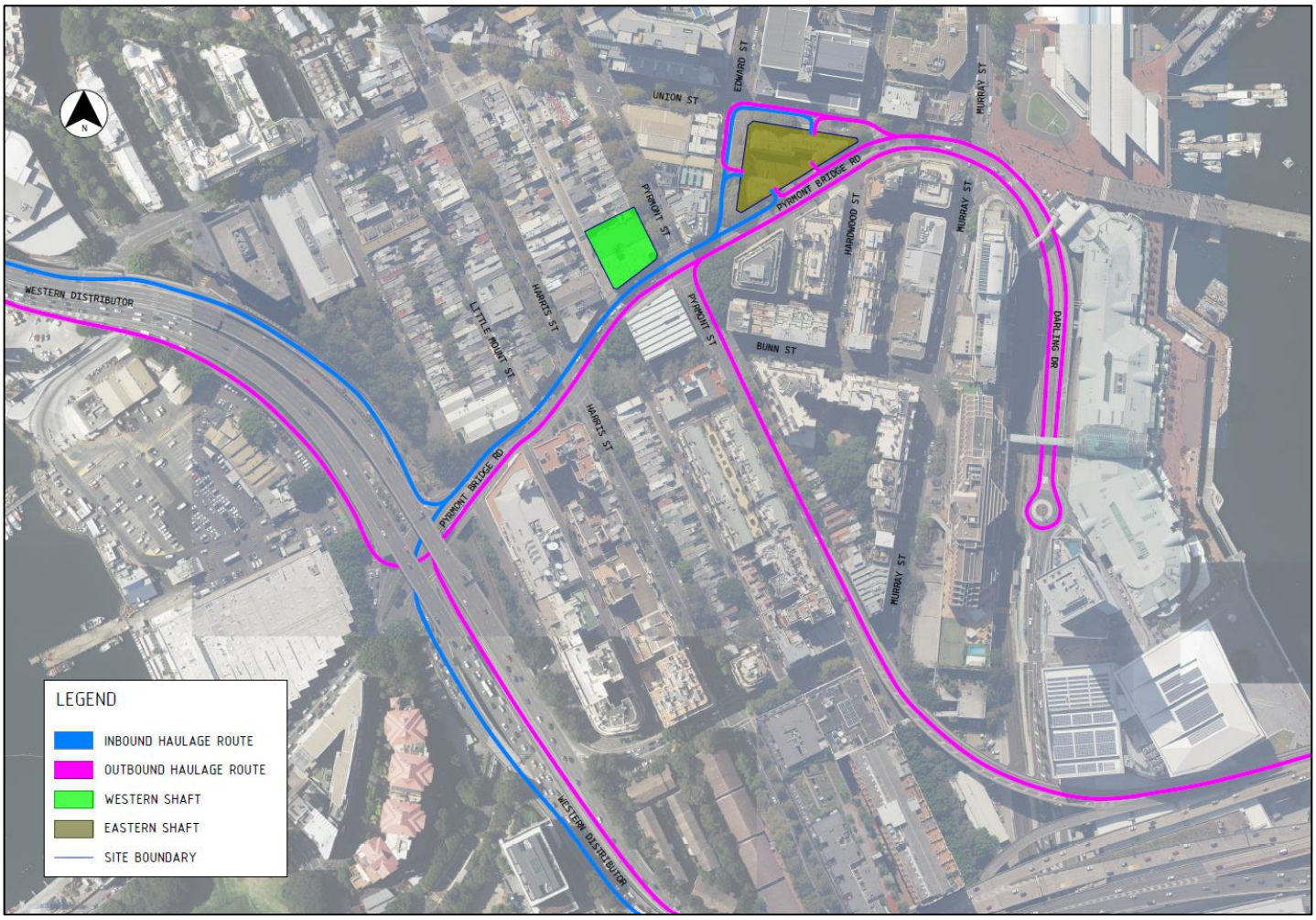
- All construction vehicles to come from via the Western Distributor,
- Take the Pyrmont Bridge Road off ramp and head east onto Pyrmont Bridge Road,
- Turn left into the Pyrmont East construction site,
- Alternative 1, turn left onto Edward Street then turn right into the Pyrmont East construction site,
- Alternative 2, turn left onto Edward Street then turn right onto Union Street then turn right into the Pyrmont East construction site.

5.4.2. Departure Routes

The approved primary heavy vehicle departure routes adopted for the Pyrmont East construction site are also shown in Appendix D and Figure 18, and can be summarised as follows:

- Construction vehicles to turn left onto Pyrmont Bridge Road from the site and proceed eastbound,
- Alternative 1, right turn out of the site onto Union Street and left turn onto Pyrmont Bridge Road,
- Alternative 2, right turn out of the site onto Edward Street and right turn onto Union Street and left turn onto Pyrmont Bridge Road,
- Turn onto Darling Drive and continue southbound,
- Perform a “U” turn manoeuvre at the Darling Drive roundabout,
- Proceed northbound to Pyrmont Bridge Road and left onto Pyrmont Street towards Sydney Harbour Bridge,
- Alternative 3, proceed northbound to Pyrmont Bridge Road and onto the Western Distributor.

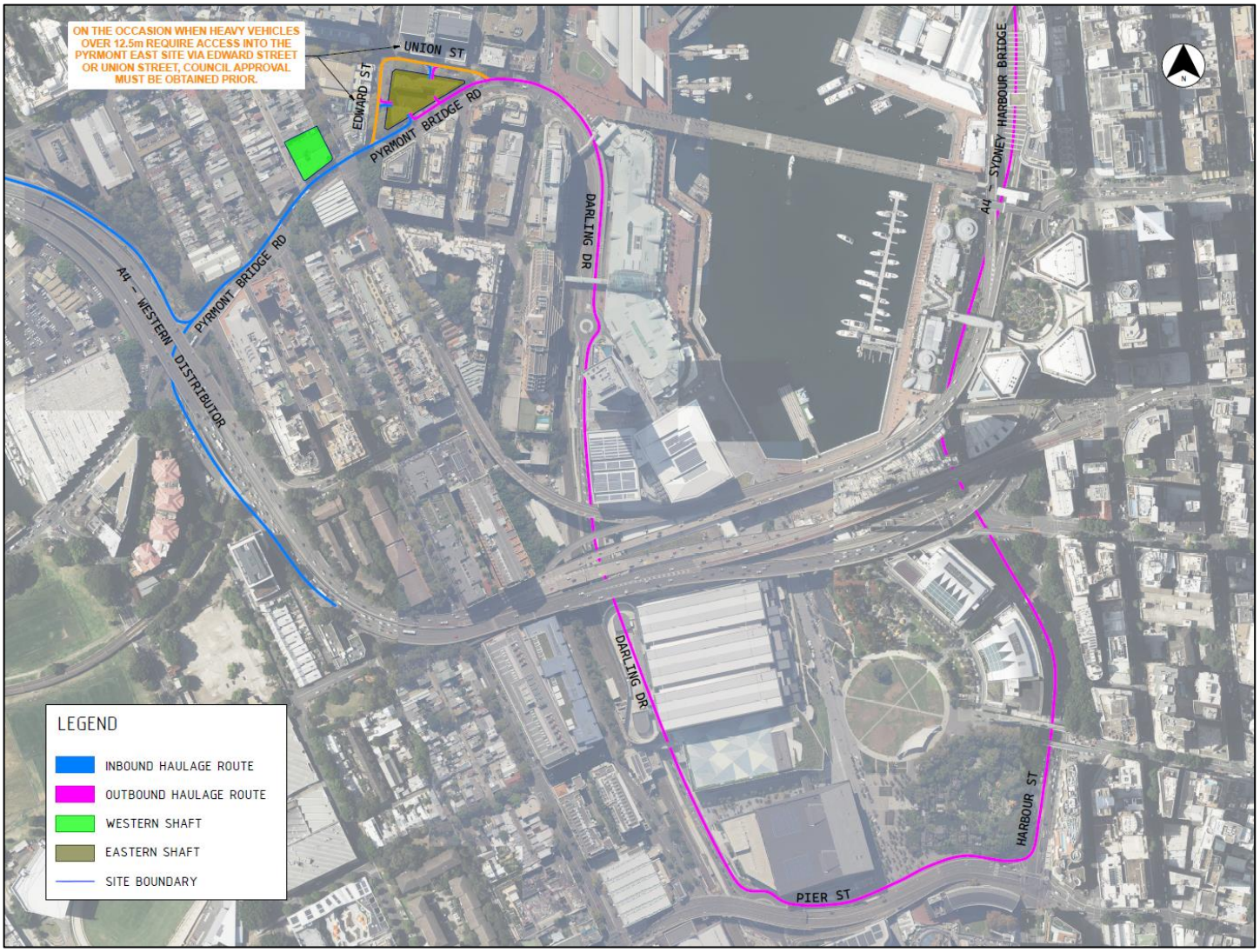
Figure 18: Approved Construction Haulage Route for Pyrmont



The approved heavy vehicle departure routes for HV greater than 12.5m in length shown in Figure 19, which cannot negotiate the “U” turn manoeuvre at the Darling Drive roundabout and for other construction vehicles whose destination is to the north is:

- Left turn out the site onto Pyrmont Bridge Road,
- or right turn out of the site onto Union St and left turn onto Pyrmont Bridge Road,
- or right turn out of the site onto Edward Street and turn right onto Union Street and left onto Pyrmont Bridge Road,
- Proceed southbound on Darling Drive,
- Left onto Pier Street,
- Left onto Harbour Street and proceed northbound to Sydney Harbour Bridge.

Figure 19: Additional Approved Haulage Route for the Pyrmont East Construction Site



5.4.3. Additional Outbound Haulage Route (Approved HVLR is attached in Appendix H)

JCG JV recognise that effective management of haulage operations is not only critical to the success of the project, but it is also necessary to minimise the impacts on the road network and increase pedestrian safety. The proposed additional haulage route has been selected on the basis that trucks are to utilise State and Regional Roads, where possible, before traveling on local roads. Sensitive areas such as schools, aged care facilities and childcare facilities have been avoided, where possible.

The JCG JV proposed haulage route for the Pyrmont East excavation and tunnelling works is consistent with the inbound routes proposed in the revised EIS haulage routes (RTS), which are shown in Appendix D. Additionally, Figure 19 outlines the additional approved outbound route, which includes the utilissation of Pier Street and Harbour Street. Further details regarding this route can be found in the associated HVLR, included in Appendix H. This additional route is required to;

- Reduce the possible risk between truck movements and cyclists whilst the construction vehicles perform the U- turn at the roundabout (north of Convention light rail stop) should the approved outbound route be followed,
- Heavy vehicles larger than 12.5m would not be able to perform a “U” turn at the Darling Drive roundabout.

The additional haulage route will be communicated and adhered to by drivers through the implementation of a Drivers Code of Conduct, which would be made available to the relevant personnel during the site induction training. All drivers will undergo the mandatory project-specific induction training provided by JCG JV.

It is understood that oversize and / or overmass (OSOM) vehicles may be required to deliver bulky items / machineries and the City of Sydney Council could approve the access of these vehicles on the road network. Relevant permits would be obtained through permit application process prior to the operations of any OSOM vehicles on the road network.

5.4.4. Real Time Monitoring

The locations of all heavy vehicles used for spoil haulage will be monitored in real time and the records of monitoring will be made available electronically to the Planning Secretary and the Environmental Protection Authority (EPA) upon request for a period of no less than one year following the completion of the construction.

The real time monitoring will be undertaken using a Telematic system to track and analyse construction vehicle movements. Telematics are able to analyse real-time traffic data, allowing JCG JV to manage its construction vehicles fleet more efficiently by predicting arrival times and communicate directly with construction workers.

The GPS tracking feature allows JCG JV to determine the speed and location of the fleet to better manage the construction vehicle movements by determining pinch-points and adjust accordingly. If drivers are found to not comply with the posted speed limit, the traffic manager will receive notifications, enabling immediate actions to mitigate the unsafe driver behaviour.

The construction vehicles will be restricted to use only the approved vehicle routes and avoid any unapproved local roads unless it is permitted for specific works by the authorities. Geofencing will be used to set a boundary from local roads to ensure vehicles only travel along the designated roads and stay out of areas, which they should not operate. Alerts can be triggered when vehicles are entering / leaving the designated route, with the data such as speed and location can be logged into the system.

5.5. Construction Workforce

JCG JV proposes a peak workforce of 115 construction workers at any one time for the site establishment, excavation and tunnelling works. A peak construction workforce of 120 construction workers was identified in the EIS for the Pyrmont East construction site. Therefore, the impacts associated with construction workforce traffic generation would be no worse than what was identified in the EIS.

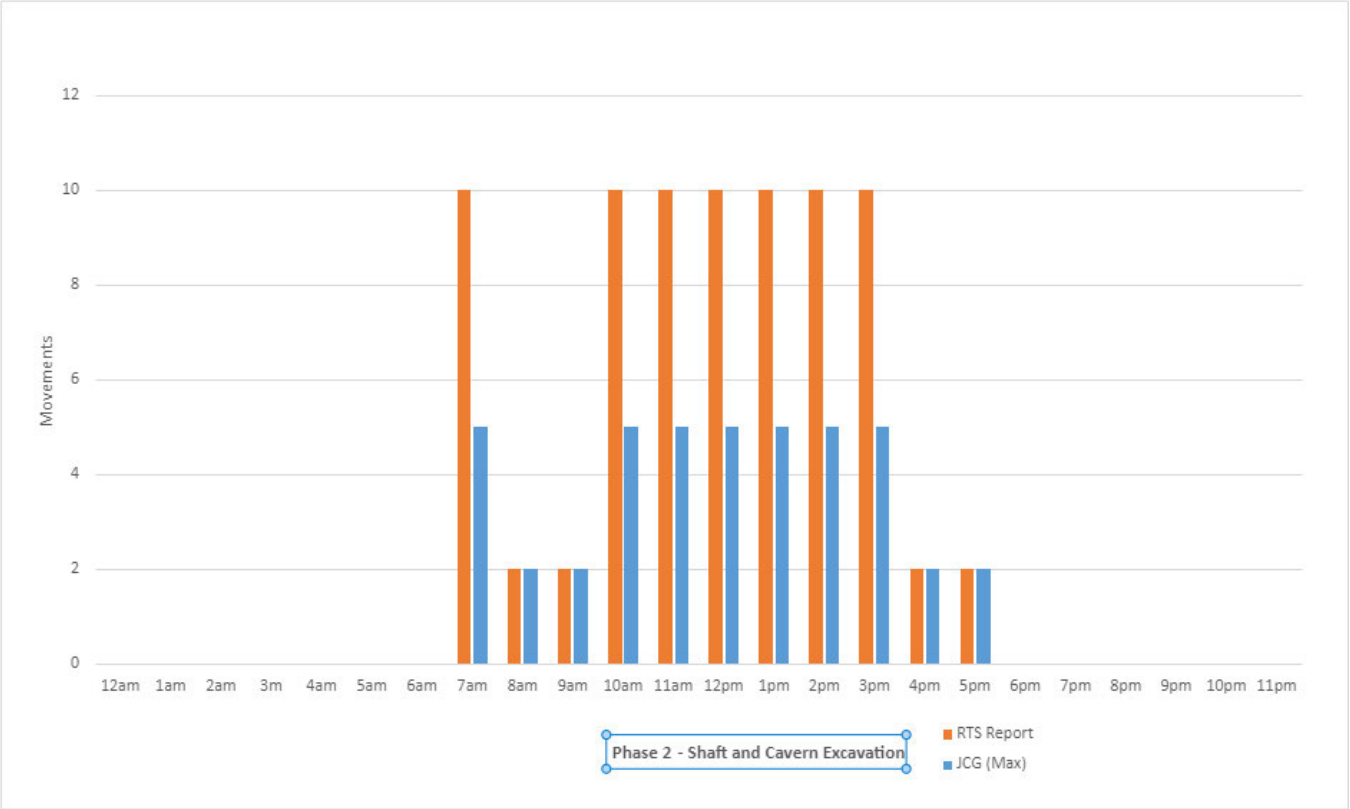
5.6. Construction Worker Parking

Construction worker parking will not be provided for the Pyrmont East construction site. Construction workers will be instructed not to park in any on-street parking spaces, and to make use of the extensive public transport network available and commercial parking facilities in the vicinity of the site to minimise the parking impacts on the surrounding road network. Carpooling will be strongly encouraged amongst construction workers to minimise the number of vehicles on the road network.

5.7. Construction Traffic Generation

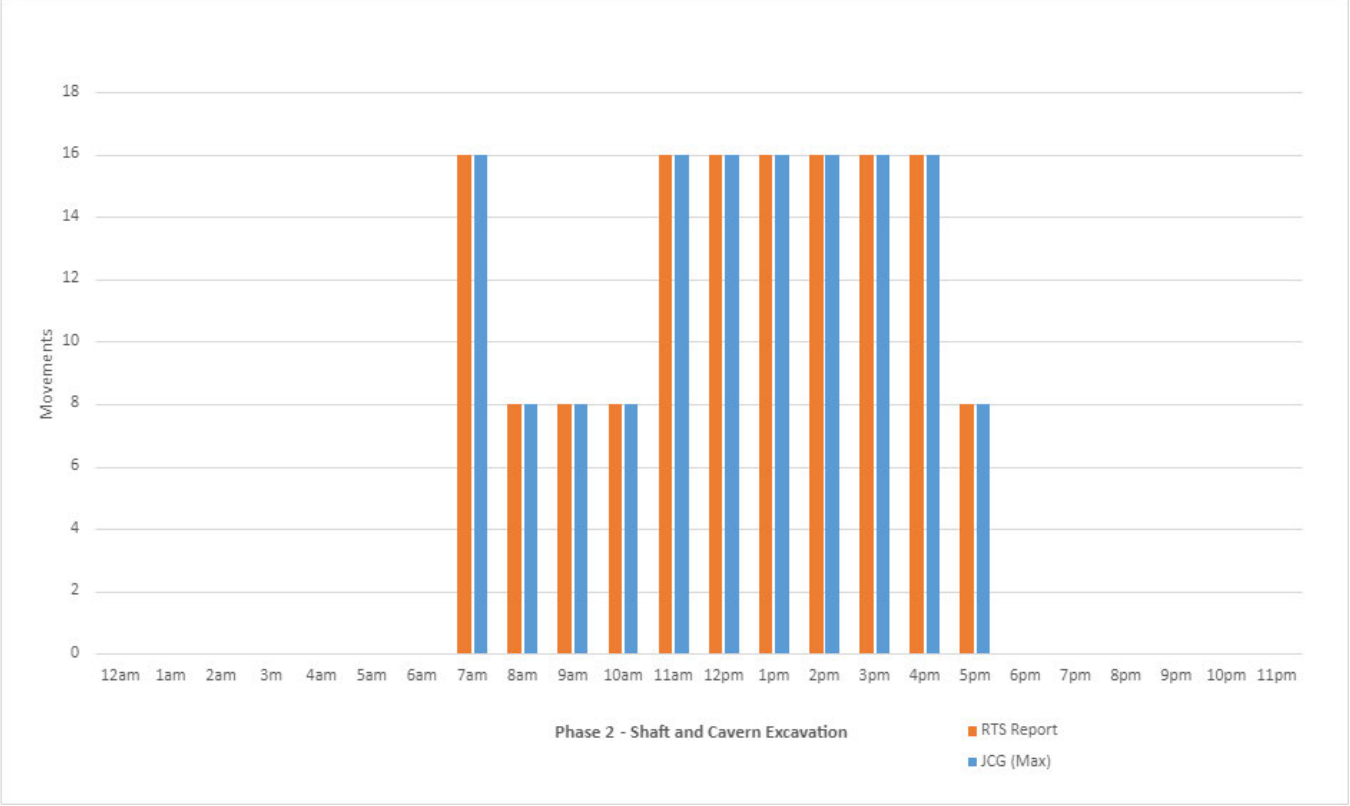
Construction traffic generation at the Pyrmont East construction site during the Stage 2 construction works is not expected to exceed the traffic generation identified in the RTS. Figure 20 and Figure 21 provide a summary of the proposed construction traffic with a comparison with the RTS construction traffic, taking into consideration light vehicle movements and heavy vehicle movements.

Figure 20: Pyrmont East Daily Light Vehicle Movements



Note: Traffic volumes are shown in movements, a vehicle entering then leaving the work site represents two movements.

Figure 21: Pyrmont East Daily Heavy Vehicle Movements



Note: Traffic volumes are shown in movements, a vehicle entering then leaving the work site represents two movements.

The proposed daily traffic generation for the Pyrmont East construction site would be 43 light vehicle movements (in and out), and 144 heavy vehicle movements (in and out) as consistent with the RTS daily estimate.

The proposed peak hour traffic generation would be 5 light vehicle movements (in and out), and 16 heavy vehicle movements (in and out), as consistent with the RTS estimates for the AM and PM peak hours. As such, the traffic impact of the construction traffic volume is expected to be no worse than the RTS modelling results as discussed further in Section 6.1.

Considering that both the Pyrmont East and Pyrmont West construction sites use similar haulage routes, it's important to assess the combined traffic generation on the local road network. Figure 22 and Figure 23 detail the cumulative impact of the two sites.

Figure 22: Combined Pyrmont East & West Light Vehicle Movements

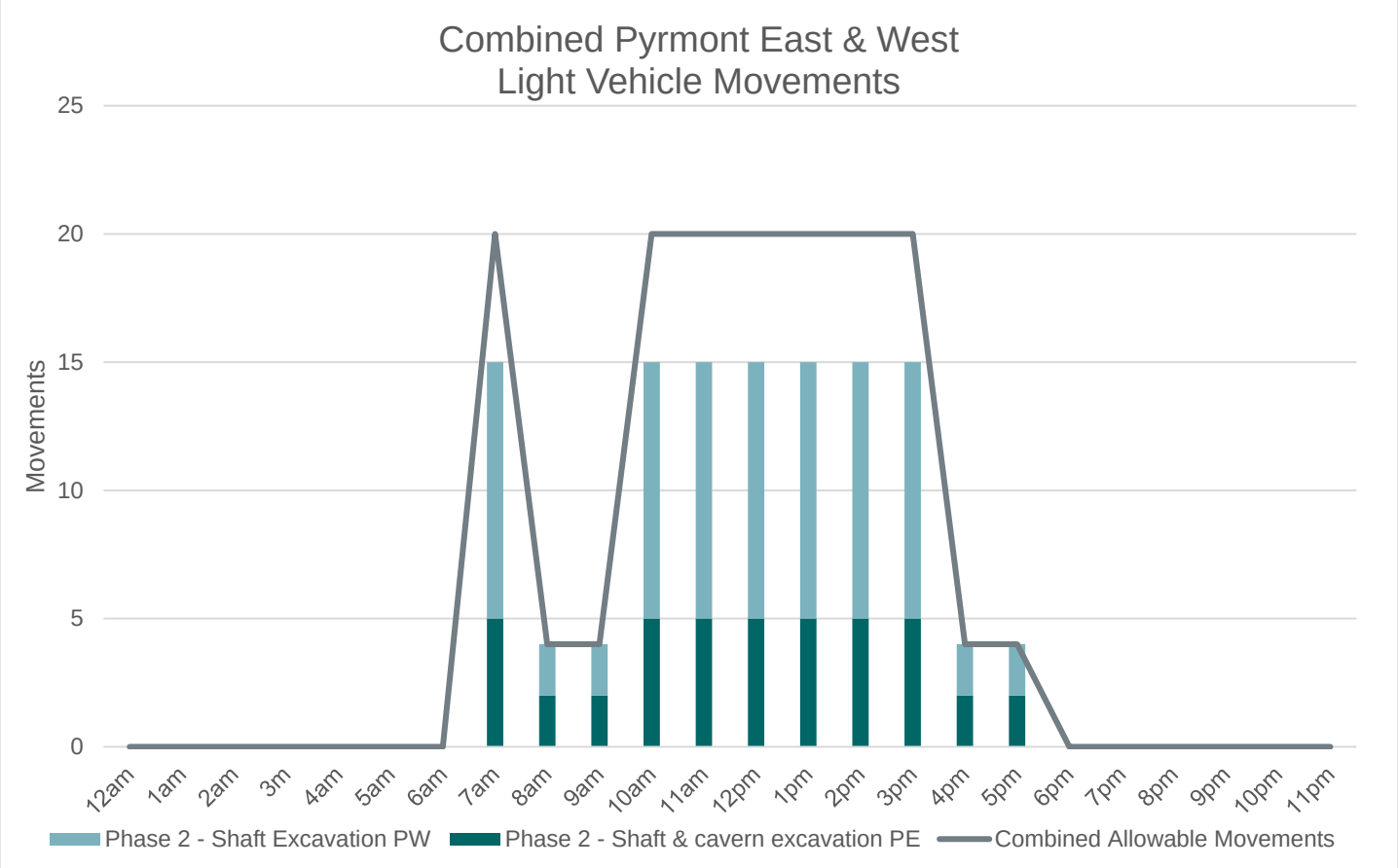
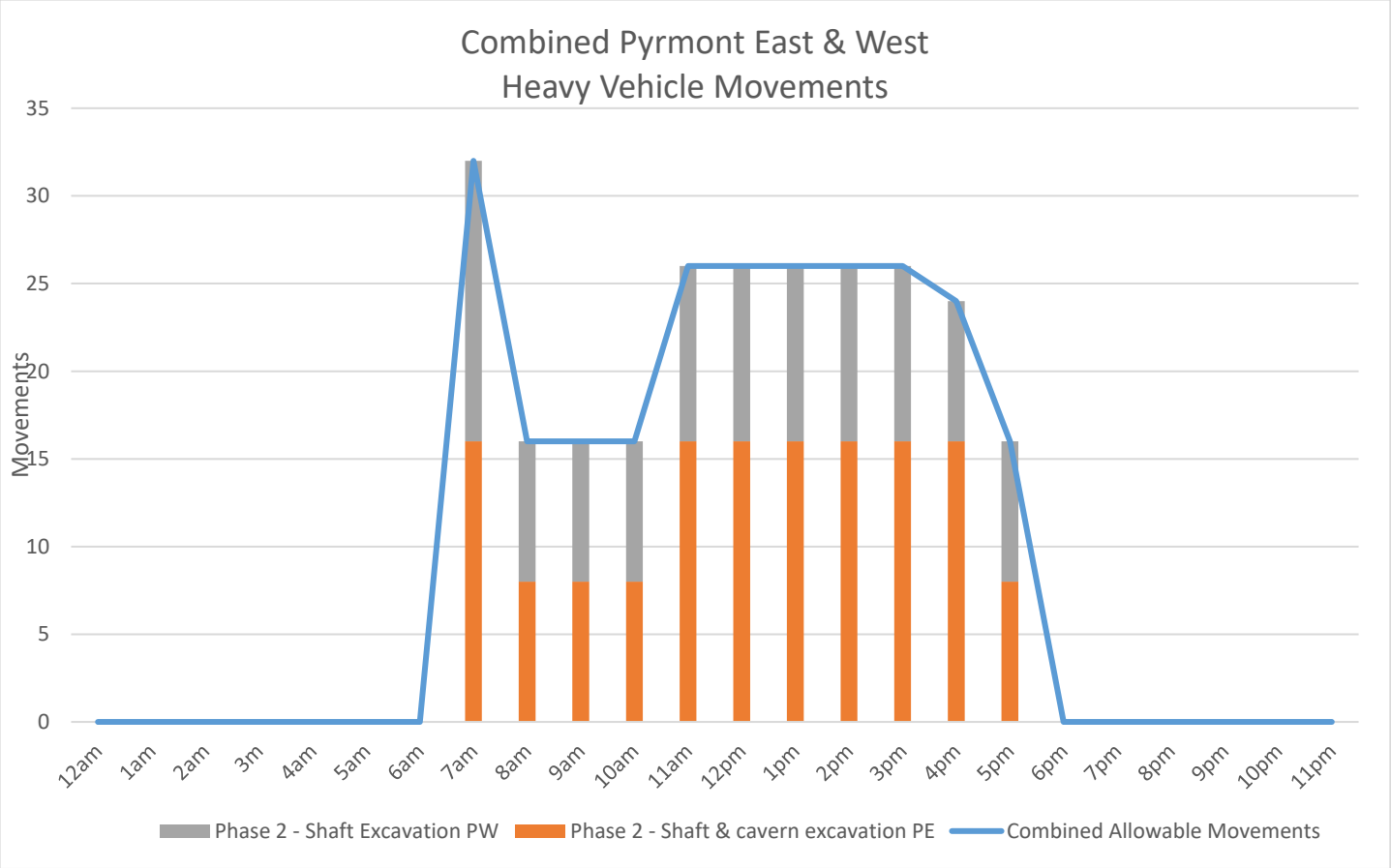


Figure 23: Combined Pyrmont East & West Heavy Vehicle Movements



5.8. Pedestrian and Cyclist Management

Throughout the Stage 2 construction works, pedestrian footpaths surrounding the Pyrmont East construction site will be maintained, except the southern side of Union St between Edward St and Pyrmont Bridge Rd, which will be fully closed to pedestrians between January 24 and July 24. During the site establishment phase, works along the site perimeter such as retention, hoarding and shed construction will be carried out under footpath closures. Pedestrian diversions will be in place as per the approved TGS.

Concertina gates will be used by JCG JV personnel and extended across the pedestrian footpath on both sides of the driveway to temporarily manage pedestrian movements along Edward Street and Pyrmont Bridge Road when the driveway is in use. When the driveway is not in use, the concertina gates would be opened to enable pedestrian movements along the footpath under the B-Class hoarding arrangement.

The traffic controller will not stop pedestrian movements in anticipation. Pedestrians on the footpath will have the right of way at all times. Pedestrian hold time will be minimised to avoid delays to pedestrians. Appropriate signage will be installed prior to the concertina gate to provide advanced warning for pedestrians walking toward the site access driveways.

Relevant information regarding the Project and the nominated contact person will be made available at the site access gate. The construction site will have appropriate arrangements to discourage entry without approval and minimise vandalism. Access gates to the proposed work site will be made lockable to prevent any unauthorised access, which could result in safety issues.

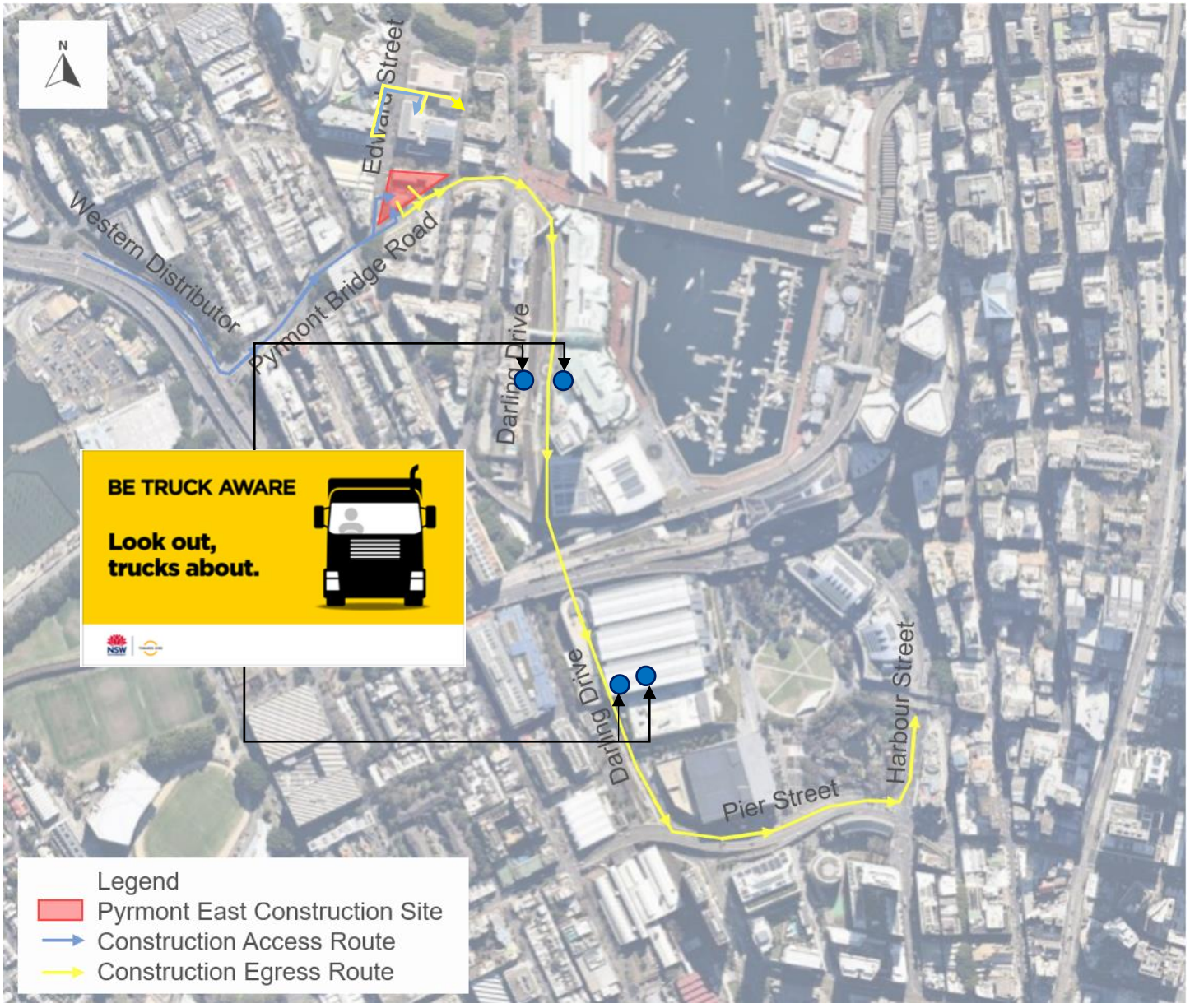
Cyclists and cycle infrastructure around the site vicinity will not be impacted by the proposed works. However, if required, cyclists may be required to follow traffic controller's directions.

The proposed construction haulage routes along Pyrmont Bridge Road and Darling Drive, run adjacent to existing cycleways. The cycleways on Pyrmont Bridge Road are separated from the traffic lane by a raised lane divider, Darling Drive cycleways are delineated by line marking, and a painted cycleway. The cycle paths along Darling Drive extend through the roundabout and will not be affected by the passing trucks along Darling

Drive. Relevant cycling bodies have been notified of the project heavy vehicle haulage route, including the U-turn movement at the Darling Drive roundabout.

Notwithstanding, to mitigate the risks associated with potential heavy vehicle, pedestrian / cyclist interfaces, JCG are proposing to implement a truck awareness campaign. which includes truck awareness pavement markings to be placed on the footpath on either side of the pedestrian crossings on Darling Drive, as shown in Figure 24 subject to City of Sydney's approval. Also includes HV project safety conditions, like side under run protection, blind spot mirrors, driver onboardings etc.

Figure 24: Proposed Location for Truck Aware Decals on Both Sides of Pedestrian Crossings on Darling Drive



Basemap Source: Nearmap, last accessed on 22/12/2022

In addition to the awareness campaign, heavy vehicle drivers will be trained on the nominated haulage routes and the associated interfaces, this will be delivered though the Project Induction, Sydney Metro Industry Curriculum (SMIC) Heavy Vehicle driver training, and toolbox talks.

All heavy vehicles used in the spoil haulage operation will be equipped with ABS brakes and front underrun protection. Furthermore, JCG JV will implement targets for advanced safety features which may include;

electronic stability control, blind spot monitoring, autonomous emergency braking systems, and other vehicle safety technologies.

5.9. Pilot Vehicle

As shown in the Heavy Vehicle Local Road (HVLR) report, a small rigid vehicle will be used as a pilot vehicle with flashing lights and arrow board to guide the 19m semi-trailer along the proposed outbound route from the Pyrmont Street east site towards Harbour Street. This is because the 19m semi-trailer will need to straddle across two left turn lanes on the departure side of the intersection when turning left from Pier Street onto Harbour Street. JCGV will monitor the HV turning movements once they are in operation and re-asses the requirement of a pilot vehicle.

The use of the pilot vehicle is intended to raise general motorists awareness of semi-trailers and to avoid collision with vehicles in the adjacent lane. This mitigation measure is commonly used to manage large vehicle movements amongst general traffic, where required. A TGS indicating the pilot vehicle operation is attached in Appendix B.

Subsequently, the pilot vehicle will leave the haulage route and turn right from Harbour Street onto Erskine Street to make its way back to the Pyrmont East/West site.

The pilot vehicle driver must be qualified either as Traffic Controller or Implement Traffic Control Plans. Two-way radio will be used to communicate with the semi-trailer driver.

5.10. Dilapidation Survey

Road dilapidation surveys has been undertaken on surrounding roads which form part of the proposed construction haulage routes. The surveys identified the existing conditions of the surrounding roads before the start of the Project and the conditions following the completion of the Project.

The condition reports include a written survey, photo and/or video of each road. A copy of the report, including such mechanisms to be considered for the repair of damage to the surrounding road(s) caused by heavy vehicle movements associated with the Project, would be provided to the relevant authorities within three weeks of completing the surveys and no later than one month prior to the commencement of roads being used by construction vehicles.

If damages to roads occur as a result of the Project, JCG JV will either (at the discretion of the relevant road authorities):

- Compensate the landowner for the damage caused.
- Rectify the damage to restore the road to at least the condition it was in pre-construction works as identified in the Road Dilapidation Report.

6. Traffic and Transport Impact

6.1. Impact on Traffic Flow

There is no long-term proposed road or lane closures required to accommodate the proposed works, which is consistent with the EIS. Traffic conditions along the frontage roads will be maintained outside of short-term road occupancy times. There is also no proposed long term roadwork speed zone within the vicinity of the construction site, which is also consistent with the EIS.

The EIS documents the performance of intersections in close proximity to the Pyrmont East and West construction sites, taking into consideration the construction traffic generation of the proposed works. The intersection performance is summarised in Table 9 and considers the construction traffic generation of both the Pyrmont East and the Pyrmont West construction site.

The intersection performance shows that most intersections would continue to operate satisfactorily at LoS C or better, with or without the proposed Pyrmont East and West construction works, except for the Pyrmont Bridge Road / Bank Street intersection which would operate at LoS F, regardless of the construction. Pyrmont Bridge Road / Harris Street intersection would have the LoS reduced from B to C in the AM peak with construction traffic, albeit the intersection LoS is still good.

Table 9: Modelled Intersection Performance – Pyrmont Station Construction Site (during Peak Construction Activates)

Intersection	AM Peak				PM Peak			
	Future year 2024 without construction		Future year 2024 with construction		Future year 2024 without construction		Future year 2024 with construction	
	Delay (sec)	LoS	Delay (sec)	LoS	Delay (sec)	LoS	Delay (sec)	LoS
Pyrmont Bridge Road and Bank Street	>100	F	>100	F	>100	F	>100	F
Pyrmont Bridge Road and Harris Street	26	B	33	C	26	B	22	B
Pyrmont Bridge Road and Pyrmont Street	19	B	21	B	21	B	21	B
Darling Drive, Union Street and Murray Street	26	B	25	B	31	C	31	C
Darling Drive and Harbourside Access Road	4	A	5	A	3	A	3	A
Union Street and Edward Street	15	B	15	B	20	B	14	A
Union Street and Pyrmont Street	14	A	17	B	14	A	14	A
Harris Street and Allen Street	26	B	26	B	28	B	28	B
Harris Street, Fig Street and Western Distributor	56	D	56	D	38	C	38	C

Source: Response to Submission Report – Appendix B Modelled Intersection Performance (2022)

As discussed in Section 5.7, the proposed daily and peak hour construction traffic generation is consistent with the RTS during the site establishment, shaft excavation and cavern excavation stage.

The intersection performance is modelled based on the peak construction activities in 2024, with spare capacity at the key intersections surrounding the Pyrmont East construction site. Given the consistent construction traffic generation with the RTS, traffic impacts associated with the proposed Stage 2 works are expected to be no worse than what is shown in the above intersection performance for the peak construction activities in 2024.

6.2. Impact on Public Transport

The construction works will not result in any major impacts on the public transport network as all bus services, light rail services and ferry services will be maintained for the duration of the proposed works.

There are no public bus routes along the site frontages, except Pyrmont Bridge Road which is used infrequently during Inner West Light Rail replacement and Special Events Divisions. Thus, public transport impact is minimal.

A tool drop-off and storage facility will be provided on-site. This will allow construction workers to drop off and store their tools, allowing them to use public transport to travel to and from the site.

The peak number of construction workers at the Pyrmont East construction site during the Stage 2 construction works is expected to be 115 workers at any one time. The EIS identifies the peak construction workers for the Pyrmont East construction site to be 120 workers at any one time, which is higher than what JCG JV proposes.

It is expected that construction workers would travel to / from the construction site using various public transport modes available within the site vicinity. Considering the small workforce and the trip distribution across different transport modes, the impact on public transport is expected to be minimal and would be no worse than what was identified in the EIS.

6.3. Impact on Pedestrians

During site establishment, works around the site perimeter (retention, hoarding, shed construction) will be undertaken under footpath closures with pedestrian diversions in place according to approved TGS.

Traffic controllers will be deployed where the site access / egress interfaces with pedestrians to manage pedestrian movements across the Edward Street and Pyrmont Bridge Road driveways and construction vehicle movements in and out of the site. Pedestrians on the footpath will always have the right of way. Where required, concertina gates will be used to hold pedestrian movements for a short period of time to facilitate construction vehicle movements and increase the safety of pedestrians traveling past the construction site. This is expected to have minimal impacts on pedestrian walk time.

Advanced warning sign will be erected to warn and inform pedestrians of the changes in travel conditions and the traffic arrangement in place.

Furthermore, a pedestrian count survey was conducted recently to assess the pedestrian usage of Union Street's southern footpath between Pyrmont Bridge Road and Edward Street. The results are shown in Appendix J. Counts indicate there is a low number of pedestrians utilizing the area. This information is important in determining the appropriate measures to be taken during site establishment to ensure the safety and convenience of the limited number of pedestrians who do use the footpath.

6.4. Impact on Cyclists

The proposed works will not result in any major impacts on cyclist activities in close proximity to the construction site. All cycle routes will be maintained for the duration of the proposed works. Construction vehicle turning paths will not encroach any cycle lanes on Union Street, Pyrmont Bridge Road and Darling Drive.

6.5. Impact on Property and Utility Access

No impacts are expected on property and utility access from the proposed works as accesses to all surrounding properties and utilities will be maintained at all times.

6.6. Impact on Emergency Service and Access

The proposed works will not result in any impacts on emergency services and associated emergency accesses to and from nearby properties as emergency accesses to the subject site and neighbouring sites will be maintained at all times.

An Emergency Management Plan is being prepared to detail the standard operating procedures for managing incident and access for emergency services.

In the event of a traffic and transport related incident, the primary point of contact for incident management would be Customer Journey Management (CJM), Customer Journey Planning (CJP), Transport Coordination and TMC's Operations Manager. Ongoing liaison would be undertaken with the police and emergency service agencies throughout the construction period and a 24-hour contact would be made available for 'out-of-hour' emergencies and accesses.

6.7. Impact on On-Street Parking

6.7.1. Edward Street

The CPAS proposed removal of one parking space on the east side of Edward Street to facilitate widening of the driveway.

Reinstatement of the original driveway on Edward Street after Stage 1 demolition works would gain one parking space. Construction of the new driveway on Edward Street south of the original one would require removal of two parking spaces. This results in a net change of removing one parking space, which is consistent with the CPAS.

During the installation of the site shed and its cladding, footpath and parking lane closures will be required along Edward St.

Any proposed parking changes, modifications will be in consultation with CoS, prior to any implementation.

6.7.2. Union Street

As discussed in Section 4.7, the on-street parking in close proximity of the site has an average peak capacity of 87% and the overall parking demand of the whole Pyrmont survey area observed to be 70% across weekdays and weekends. This indicates there is spare capacity on the surrounding on-street parking spaces to accommodate the peak parking demand.

During Stage 2 activities, such as piling, pile caps, acoustic shed construction and OSOM site access, there may be a need for short term parking occupation on either side of Union Street. Permits and licences required occupations will be obtained from CoS and TfNSW prior to implementation.

As noted in Section 5.3, JCGJV plans to utilise the parking lane (and footpath) on the southern side of Union Street, between Pyrmont Bridge Road and Edward Street, as an ancillary facility. If the proposal is to proceed, it will result in the unavailability of eight 2-hour parking spaces 24/7 and a 10m No parking zone across the existing driveway. However, the existing No Stopping restrictions at both ends will remain unchanged. Figure 16 provides a visual representation of this plan.

The proposed ancillary facility is intended to be utilised from January 2024 until July 2024. Following this period, the Union Street parking will be reinstated to the current arrangement, with the addition of a parking space in the location of the redundant driveway. This associated parking configuration is shown in Figure 14.

6.7.3. Pyrmont Bridge Road

There will be no changes to the existing No Parking zone on Pyrmont Bridge Road During the standard peak hours. It is proposed to implement Works Zone outside the site between 10am – 4pm, Mon – Sat, as per the existing ROL lane closure times, and subject to Council's approval. Proposed Work Zone is shown in Appendix E.

As with Edward Street and Union Street, during the site establishment works, short term footpath closures along Pyrmont Bridge Rd will be required.

Linemarking along Pyrmont Bridge Rd northbound, between Edward St and Union St is proposed to be amended to enhance the works zone safety during the site establishment. Linemarking proposal is shown in Appendix F.

6.7.4. Construction Worker Parking

There will be no provision of on-site parking spaces for construction workers. All construction workers will be instructed not to use any off-street parking on the surrounding local roads and to use the extensive public transport available around the construction site as well as the commercial off-street parking facilities. Car sharing amongst construction workers will also be strongly encouraged. These initiatives will be introduced and stressed on during the site induction trainings and toolbox talks.

Furthermore, a tool drop-off and storage facility will be provided on-site. This will allow construction workers to drop off and store their tools, allowing them to use public transport to travel to and from the site. As such, the parking impact associated with construction workers is considered insignificant.

Construction heavy vehicles will park wholly within the site boundary and must not park in the surrounding on-street parking. Callup of heavy vehicles will be managed by an onsite logistics co-ordinator who will use a telematic system to provide visibility of the truck location on the road network and call up trucks as required to ensure vehicles do not queue or idle on public roads.

A heavy vehicle marshalling area has been established on Glebe Island, which will service the Pyrmont sites and allow for the control of truck numbers entering into the site. The marshalling area will also be utilised for construction deliveries, which would minimise the impacts on sensitive land users and reduce the likelihood of construction trucks idling and queuing on state and regional roads.

Therefore, no major impacts are expected on the nearby on-street parking.

6.8. Impact on Special Events

A summary of the special events, which would be held in close proximity to the Pyrmont East construction site include, but are not limited to, those provided in Table 10.

Table 10: Planned Special Events in Close Proximity to the Pyrmont East Construction Site

Indicative Month	Event	Location	Impacted Street
September	Pyrmont Food and Wine Festival	Pirrama Park	Harris Street, Pirrama Road, Murray Street
October	Seven Bridges Walk	Pyrmont Bridge and Pyrmont Village	Anzac Bridge, Pirrama Road, Murray Street. Pyrmont Bridge
December	Pyrmont Village Christmas Concert	Pirrama Park	Pirrama Road
December	Christmas Carols	Union Square	Harris Street, Union Street
February	Sydney Harbour 10k	Pirrama Rd	Pirrama Rd, Pyrmont Bridge Rd
September	Sydney Running Festival	TBA	TBA
May	Sydney Half Marathon	TBA	TBA

Majority of the listed events occur on an annual basis, with the Anzac Day service generally taking place on Anzac Day public holiday, and Christmas Carols and Pyrmont Village Christmas concert taking place on a Friday evening after 6pm. Seven bridges walk usually takes place on a Sunday. These events fall outside of the standard construction working hours, hence no major impacts on the events are expected from the proposed works.

The Pyrmont food and wine festival taking place at Pirrama Park usually extends across one whole weekend in September. Festival attendees are likely to use Pirrama Road, Murray Street and Harris Street to access the festival. These roads are located away from the Pyrmont East construction site and the proposed haulage route. Considering the generally low construction traffic on Saturday and Sunday falling outside of the standard construction work hours, no major construction impacts are expected on the event.

Ongoing liaisons with event organisers and TfNSW and CJP would be undertaken to manage the potential impacts on the event attendees, general public and the construction works.

JCGJV regularly receives the International Conference Centre's (ICC) upcoming event calendar. On special major events days at the ICC, JCGJV will communicate with ICC and manage and defer truck movements where possible. Ongoing conflict checks will be undertaken when information are received from ICC for major events.

6.9. Cumulative Impacts

The EIS identifies the new Sydney Fish Market, Cockle Bay Wharf mixed-use development, The Western Distributor Transport Corridor project and the Harbourside Shopping Centre redevelopment as major projects in close proximity to the Pyrmont East construction site. While these projects have potential to generate traffic and transport impacts, the EIS does not consider these projects would significantly affect the Pyrmont East construction site, therefore no modelling has been undertaken for the cumulative assessment with this proposal on the surrounding road network.

JCGJV regularly receives the International Conference Centre's (ICC) upcoming event calendar. On special major events days at the ICC, JCGJV will communicate with ICC and manage and defer truck movements where possible. Ongoing conflict checks will be undertaken when information are received from ICC for major events.

Given the proposed low volume of HV movement, maximum 4 per day to anticipate using the proposed deviation route, will have minimum impact on Darling Drive.

No other major projects have been identified in the vicinity of the site. Therefore, the cumulative impacts would be no worse than what was identified in the EIS.

7. Environmental Control Measures

There are no significant changes to the road network, active transport, and parking, the expected impacts are minimal for the excavation and tunnelling phase of the works.

However, management and mitigation measurements are to be implemented to minimise any impacts on the road environment which are outlined in the sections below.

7.1. General Traffic Management Measures

Effective traffic and transport management enables the provision of a safe road environment, which contributes to the success of the Project. The following management measures in Table 11 are proposed to minimise the impacts of the proposed works.

Table 11: Traffic Management Measures

Management and Mitigation Measures	Responsibility
Traffic controllers with approved clothing shall be provided to guide and control pedestrians on the footpath while trucks are entering/exiting the site and divert pedestrians around the proposed footpath closure.	Traffic and Transport Manager Site Project Manager
Concertina gates and traffic controller would be deployed to temporarily hold pedestrians on either side of the driveway whenever a truck is entering/ exiting the site.	Site Project Manager Traffic Controller
Nominated construction haulage route would be communicated to truck drivers and adhered to. Where practicable, these routes shall involve using major arterial roads, before using local roads.	Traffic and Transport Manager Site Project Manager
Material haulage would be managed to maximise vehicle loads and minimise vehicle movements, where practicable.	Site Project Manager
All traffic control plans shall comply with AS1742.3:2002 Traffic Control Devices for Works on Roads and Roads and Maritime's Traffic Control at Work Sites.	Traffic and Transport Manager Environmental Officer
General signposting would be displayed on the hoardings with the appropriate warning signs to guide pedestrians across the site access driveways. Signposting would also be displayed at the footpath closure to inform and direct pedestrians onto the nominated detour route.	Site Project Manager
Clean-up crews, including street sweepers, would be available to manage material spills.	Site Project Manager
All loads except loads carrying machineries and metals (steel reinforcement, black iron, heavy steel, etc.) would be covered prior to leaving site.	Site Project Manager
General public access to surrounding areas including commercial, retail and residential properties would be maintained during excavation and construction.	Traffic and Transport Manager Site Project Manager
Hoardings would be utilised to separate pedestrians and site vehicle movements and to provide overhead protection.	Traffic and Transport Manager Site Project Manager
Upon completion of the Sydney Metro station works, vehicular crossings would be removed, and footpath would be restored to at least the state which existed prior to the commencement of the works unless identified as a hand over item to the follow-on Contractor.	Sydney Metro Project Manager

7.2. Traffic Guidance Scheme / Vehicle Movement Plans

Traffic guidance scheme or TGS (previously known as Traffic Control Plan (TCP)) and vehicle movement plan details the arrangement of signage and traffic devices to manage traffic at and around the construction site. The preparation of TGSs generally considers the followings:

- Warning signage for vehicles and pedestrians at the site access to alert them of the presence of heavy vehicle traffic, warn/ inform drivers of changes to the usual road conditions, and to guide drivers through the construction site area.
- Qualified traffic controllers to manage pedestrian and control activities at the proposed site access and proposed footpath closure.
- The movement of trucks to and from the site access would be maintained under normal traffic conditions.
- Pedestrians and all passing cyclists and vehicles will have the right of way at all times.
- The construction site would be separated from pedestrians and general traffic by erection of hoarding around the site boundaries.
- All traffic signage would be clean, clearly visible and not obscured.
- All vehicle movements generated by the proposed works would be minimised during the peak hours, where possible.

The indicative TGS is shown in Appendix B while the VMP is shown in Appendix D.

7.3. Construction Parking Access Strategy

Construction Parking and Access Strategy is being developed to detail the loss of parking resulted from the proposed works, including the loss of parking already identified in the EIS. The plan would outline the parking arrangements including identification of impacts and proposed mitigation measures, where relevant.

8. Compliance Management

8.1. Training and Competency

All construction workers, contractors and utility staff will undergo site induction training for traffic and transport and access management issues. During the induction training, the following items will be communicated:

- Existence and requirements associated with this CTMP
- Relevant legislation and guidelines
- Nominated construction haulage routes
- Construction parking and access / egress requirements

8.2. Inspection and Monitoring

Regular inspections will be conducted by the Foremen for the compliance of the implementation of this CTMP in conformance with the Construction Traffic Management Framework and TCaWS manual. All critical safety defects will be rectified as soon as practicable.

Long-term traffic management setups will be inspected weekly with minor issues recorded and rectified within a reasonable timeframe. More significant issues will be recorded for rectification. The inspections will be documented.

Daily inspections will be undertaken to ensure all traffic management signs and devices are properly located, oriented and maintained in an effective condition.

All critical safety defects caused by the project activities, to any road, footpath, shared path or cycleway which is open to the public will be rectified as soon as practicable. Temporary rectification (e.g. cold mix, plating and etc.) might be used as interim solution prior to permanent rectification works to the conditions it was in prior to the occurrence of the damage.

8.3. Complaints

The comments and complaints received from all relevant stakeholders will be recorded in the Complaints Register. JCG JV team will work toward addressing the complaints to minimise the impacts of the identified issues and increase stakeholders satisfaction. A copy of the Complaints Register will be provided to TfNSW and relevant stakeholders.

8.4. Road Safety Auditing

Road safety audits (both internal and external) will be undertaken to assess the effectiveness of the proposed management measures, compliance with this site-specific CTMP, CoA and other relevant approvals, license and guidelines. The audits will be undertaken by independent road safety auditors to assess the safety performance of new or modified local road, parking, pedestrians and cycle infrastructure (including ancillary facilities) to ensure the requirements of relevant design, engineering and safety guidelines are met.

The audit will be undertaken by an appropriately qualified and experienced road safety auditors during the detailed design development (audits of plans) and audits findings. Recommendations must be actioned prior to the commencement of the construction of the relevant infrastructure.

8.5. Reporting

JCG JV would report to the TMC, TTLG and other stakeholders about all traffic and transport management issues related to the Project. Reporting requirements and responsibilities are documented in the CEMP. Additional reporting associated with traffic and transport issues are outlined below.

8.5.1. Monthly Reporting

A monthly report would be submitted to TfNSW and TMC during construction until the completion of the construction activities. The following components will be routinely reported:

- Current and upcoming critical issues, including those identified by TfNSW, traffic and transport liaison group and other relevant stakeholders, and the proposed measures to address these issues
- Recent and proposed changes to traffic and parking management and their impacts on the operation of the road network and traffic systems
- Media or community information released and proposed to be released
- Recent traffic and pedestrian accidents on and in the vicinity of the proposed construction site and traffic management works, including cumulative totals
- Construction scheduling for the Project works, including the current status of all construction stages and impacts of traffic management and approved ROLs
- Approved and anticipated ROL applications, together with any associated issues of concern to the Project, TfNSW, TTLG and other relevant stakeholders, including comparisons of base-case performance indicators with those for the current and proposed traffic conditions and achieving the specified targets
- Community and media comments and complaints and JCG JV responses to these comments and complaints

8.5.2. TTLG Meeting Reports

Following each TTLG meeting, a report is to be submitted to TTLG and relevant stakeholder groups. The content of the meeting report would include:

- A summary of the existing and proposed ROLs, together with details on the status and critical impacts of the ROLs
- Community and media comments and complaints and JCG JV responses in addressing them.
- Issues of concern identified by the Project, TTLG or relevant stakeholder groups.

9. Review and Improvement

9.1. Continual Improvement

Management reviews will be undertaken as part of the continual improvement process. Continuous improvement of this CTMP will be achieved by the ongoing evaluation of environmental management performance against environmental policies, objectives and targets for the purpose of identifying opportunities for improvement.

The continuous improvement process will be designed to:

- Identify areas of opportunity for improvement of traffic management
- Determine the cause or causes of non-conformance and deficiencies
- Develop and implement a plan of corrective and preventative actions to address any non-conformance and deficiencies
- Verify the effectiveness of the corrective and preventative actions
- Document any changes in procedures resulting from process improvement
- Make comparisons with objectives and targets.

9.2. CTMP Review and Amendment

This CTMP may require to be updated or revised, which would occur where there is a change to the construction scope or methodology, resulting in an increase of the potential impacts on traffic, transport or access. Any revision to the CTMP will require endorsement from TfNSW representatives and depending on the changes, approval from the Planning Secretary prior to the implementation of the update may be required. A copy of the updated CTMP addressing the changes will be distributed to all relevant stakeholders in accordance with the approved document control procedure.

Part B: Implementation Systems and Tools

Part B of this Sub-Plan explains how the traffic and transport impacts of the Project will be minimised. All relevant mitigation measures from the Planning Approval, REMMs, CEMF and EPL are addressed in this Section. Compliance with these systems and tools is required at all times to minimise the risk of unauthorised environmental harm.

Part B contains the following:

- **Expectations and Requirements:** These describe what is required of the Project to implement the objectives of the Environment and Sustainability Policy and achieve the intended environmental performance outcomes
- **JCG JV Response:** These are the specific actions that will be performed to demonstrate compliance with the Elements and Requirements.
- **Responsibility:** These are the people responsible for achieving compliance with the Expectations and Requirements. The key contributor is identified in bold font.
- **Deliverables:** These are the tangible outcomes that will be produced to demonstrate compliance with the Expectations and Requirements.

Element 1: Training

Table 12: Element 1: Training

ID	Expectations/Requirements	JCG JV Response	Responsibility	Deliverables
1.1	All personnel have completed an induction containing relevant traffic information before they are authorised to work on the Project	The traffic component of the site induction will include information on: ▪ site access/ egress arrangements (workers, vehicles) ▪ pedestrian areas and no-go zones ▪ Driver awareness of designated routes Requirements to comply with approved CTMP	People and Culture Manager Traffic and Transport Manager	▪ Induction Presentation
1.2	Personnel are trained and assessed according to the training plan	JCG JV is committed to ongoing training for our personnel and subcontractors to upskill them and ensure we have the best people for the job. Targeted traffic management training will be provided including: ▪ Training and competency for heavy vehicle drivers ▪ Training for the traffic team, such as road safety auditing, will be delivered over the life of the proposed works. RMS certification requirements for the development and implementation of TGS/ CTMP	People and Culture Manager Traffic and Transport Manager Logistics Manager	▪ Signed Heavy Vehicle Code of Conduct ▪ RMS Certification
1.3	Toolbox talks are used to reinforce key management, requirements and lessons learnt	Toolbox talks will be held regularly during construction works and investigations. They will reinforce and reiterate information from inductions.	Approvals, Environment and Sustainability Manager Site Manager	▪ Toolbox records
1.4	All personnel have completed an induction containing relevant traffic information before they are authorised to work on the Project	All construction workers, contractors and utility staff will undergo site induction training for traffic and transport and access management issues. During the induction training, the following items will be communicated: • Existence and requirements associated with this CTMP and site-specific CTMPs • Relevant legislation and guidelines • Nominated construction transport routes • Construction parking and access / egress requirements • improve vehicle safety, eliminate heavy vehicle blind spots, and monitor vehicle location and driver behaviour.	People and Culture Manager Traffic and Transport Manager Logistics Manager	Signed Heavy Vehicle Code of Conduct TfNSW Certification

		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 • Deployment of speed awareness signs in conjunction with variable message signs near construction sites to provide alerts to drivers • Providing community education and awareness about sharing the road safely with heavy vehicles • Specific construction driver training to understand route constraints, safety and environmental considerations such as sharing the road safely with other road users and limiting the use of compression braking • Road safety audits will be carried out in support of Construction Traffic Management Plans Traffic Guidance Schemes in line with the requirements of the Construction Traffic Management Framework, and identified road safety risks will be removed or reduced so far as is reasonably practicable. • Requiring technology and equipment to improve vehicle safety, eliminate heavy vehicle blind spots, and monitor vehicle location and driver behaviour. Driver training and vehicle requirements are outlined in the Sydney Metro Principal Contractor Health and Safety Standard. As described in the Construction Traffic Management Framework heavy vehicle drivers will be made fully aware by the contractor of the construction site traffic management arrangements and site-access requirements, including approach and departure routes and any heavy vehicle noise management measures required. Driver training will consider current best practice and information, including cycle awareness training. The contractor must ensure that regular briefings are provided to drivers on routes, potential changes and impacts on the routes in the form of toolbox talks. Contractors must ensure mandatory completion of the Sydney Metro project-specific heavy vehicle driver introduction training and are required to have systems in place to monitor vehicle locations at all times and report and address any identified non-conformances.		

Element 2: Monitoring and reporting

Table 13: Element 2: Monitoring and reporting

ID	Expectations/Requirements	JCG JV Response	Responsibility	Deliverables
2.1	Worksites are regularly inspected to ensure the adequacy of controls	Weekly inspection of onsite traffic management controls will be undertaken as detailed in our traffic procedures	Traffic and Transport Manager Site Manager	▪ Inspection Reports ▪ Site Diary Entries ▪ Noise and Vibration Monitoring Records
2.2	Traffic management reports are prepared in a timely manner	Works requiring traffic management plans/ permits/ licenses submission will be identified with sufficient time	Traffic and Transport Manager Site Manager	▪ CTMPs / Permits / Licenses applications / approvals in accordance with nominated timelines

Element 3: Auditing, review and improvement

Table 14: Element 3: Auditing, review and improvement

ID	Expectations/Requirements	JCG JV Response	Responsibility	Deliverables
3.1	Road safety audits are to be undertaken	Section 8.4	Traffic and Transport Manager Site Manager	▪ Road Safety Audit Reports
3.2	Audits are undertaken to ensure compliance with the requirement of this CTMP	Procedures for corrective actions are addressed in the CEMP. Audits will be performed in line with the CEMP and this CTMP and associated documents or procedures will be updated if required.	Approvals, Environment and Sustainability Manager Environment Co-ordinators	▪ Audit Reports ▪ Corrective Action Reports
3.3	All non-compliances are reported and actioned	A traffic non-conformance can generally be defined as a failure to comply with: ▪ Project Planning Approval or ▪ Revised Environmental Management Measures Where a non-conformance is raised as part of an audit or an incident or complaint investigation the audit, incident or complaint report may be used to close out the non-conformance and it is not necessary to raise a separate non-conformance reporting process. Corrective and Preventative Actions may also be raised in accordance with the CEMP.	Approvals, Environment and Sustainability Manager Environment Co-ordinators	

Element 4: Project specific requirements

Condition of Approval (SSI 19238057)

Table 15: Conditions of Approval (SSI 19238057)

ID	Requirements (Conditions)	JCG JV Response (refer to this report section)	Responsibility	Timing
D67	Access to all utilities and affected properties must be maintained where practicable, unless otherwise agreed with the relevant utility owner, landowner or occupier.	Section 6.5	Site Project Manager	Commencement of construction
D68	Any property access physically affected by the CSSI must be reinstated to at least an equivalent standard, unless otherwise agreed by the relevant landowner or occupier.	Section 6.5	Site Project Manager	Pending identification of the impact
D69	During construction of the CSSI, all reasonably practicable measures must be implemented to maintain pedestrian, cyclist and vehicular access to, and parking in the vicinity of affected businesses / traders. Disruptions are to be avoided, and where avoidance is not possible, minimised. Where disruption cannot be minimised, alternative pedestrian and vehicular access, and parking arrangements must be developed in consultation with affected businesses / traders and relevant Councils and implemented prior to the disruption. Adequate signage and directions to businesses must be provided before, and for the duration of, any disruption.	Section 6.3, Section 6.4, Section 6.5 and Section 6.7	Site Project Manager Stakeholder and Community Engagement Director Traffic Manager	Pre-construction
D71	The locations of all heavy vehicles used for spoil haulage for the CSSI must be monitored in real time and the records of monitoring be made available electronically to the Planning Secretary and the EPA upon request for a period of no less than one (1) year following the completion of construction.	Section 5.4.4	Traffic Manager	Pre-construction
D72	Construction Traffic Management Plan (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 commencement of any construction in the area identified and managed with the relevant CTMP.	The OCTMP as well as this site-specific CTMP	Traffic Manager	Pre-construction
D73	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 must be approved by the Planning Secretary and be included in the CTMPs.	Separate HVLV report	Traffic Manager	Pre-construction
D74	All requests to the Planning Secretary under Condition D73 must include the following:			

	(a) a swept path analysis;	Separate HVLV report	Traffic Manager	Pre-construction
	(b) demonstration that the use of local roads by heavy vehicles for the CSSI will not compromise the safety of pedestrians and cyclists or the safety of two-way traffic flow on two-way roadways;	Separate HVLV report	Traffic Manager	Pre-construction
	(c) details as to the date of completion of the road dilapidation surveys for the subject local roads;	Separate HVLV report	Interface & Integration Director	Pre-construction
	(d) measures that will be implemented to avoid where practicable the use of roads past schools, aged care facilities and child care facilities during their peak operation times; and	Separate HVLV report	Traffic Manager	Pre-construction
	(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.	Separate HVLV report	Traffic Manager	Pre-construction
D75	Prior to any local road being used by a heavy vehicle for the purposes of construction 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 council 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 the CSSI.	Section 5.10	Interface & Integration Director	Pre-construction
D76	If damage to roads occurs as a result of the construction of the CSSI, the Proponent must either (at the relevant council's discretion):			
	(a) compensate the relevant council for the damage so caused; or	Section 5.10	Interface & Integration Director	Pre-construction
	(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 5.10	Interface & Integration Director	Pre-construction
D77	All vehicles associated the CSSI (including light vehicles and heavy vehicles) must be managed to:			
	(a) minimise parking on public roads;	Section 6.7	Traffic Manager	Construction
	(b) minimise idling and queueing on state and regional roads;	Section 6.7	Traffic Manager	Construction
	(c) not carry out marshalling of construction vehicles near sensitive land user(s);	Section 6.7	Traffic Manager	Construction

	(d) not block or disrupt access across pedestrian or shared user paths at any time unless alternative access is provided; and	Section 6.3	Traffic Manager	Construction
	(e) ensure spoil haulage vehicles adhere to the nominated haulage routes identified in the CTMPs.	Section 5.4	Traffic Manager	Construction
D78	A Construction Parking and Access Strategy must be prepared to identify and mitigate impacts resulting from on and off-street parking changes during construction of the CSSI.	CPAS in a separate document	Traffic Manager	Pre-construction
D79	A Traffic and Transport Liaison Group(s) must be established before construction in accordance with the Construction Traffic Management Framework to inform the development of CTMPs.	Addressed in the OCTMP	Construction Integration Manager	Pre-construction
D80	Supplementary analysis and modelling as required by TfNSW 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 pedestrian, bicycle and public transport networks, public transport services, and pedestrian and cyclist movements. Revised traffic management measures must be incorporated into the CTMPs.	Addressed in the OCTMP	Traffic Manager	Pre-construction
D81	Permanent road works, including vehicular access, signalised intersection works, and works relating to pedestrians, cyclists, and public transport users must be subject to safety audits demonstrating consistency with relevant design, engineering and safety standards and guidelines. Safety audits must be prepared in consultation with the 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.	Section 8.4, Appendix C	Traffic Manager	Pre-construction
D82	Safe pedestrian and cyclist access must be maintained and signposted around CSSI construction sites during construction, including during the operation of festivals and special events, in accordance with the CTMPs. Note: Pedestrian and cyclist access around construction sites must be as direct as reasonably practicable.	Section 6.3, Section 6.4 and Section 6.8	Traffic Manager	Pre-construction
D83	The Proponent must maintain emergency vehicle access, in consultation with TfNSW, relevant Councils and emergency services at all times throughout the CSSI. Measures must be outlined in the Construction Parking and Access Strategy required under Condition D78 above.	Section 6.6 and a separate CPAS document	Site Project Manager Traffic Manager	Pre-construction

Revised Environmental Mitigation Measures

Table 16: Revised Environmental Mitigation Measures

ID	Requirements (REMM)	JCG JV Response (refer to this report section)	Responsibility	Timing
TT1	The community would be notified in advance of proposed road and pedestrian network changes through appropriate forms of community liaison.	Addressed in the OCTMP	Stakeholder and Community Engagement Director	Construction
TT2	In the event of a traffic related incident, coordination would be carried out with Transport for NSW, including Transport Coordination and/or the Transport Management Centre's Operations Manager.	Section 6.6	Traffic Manager	Construction
TT3	Access to properties for emergency vehicles would be provided at all times.	Section 6.6	Site Project Manager	Construction
TT4	Vehicle access to and from construction sites would be managed to maintain pedestrian, cyclist and motorist safety. Depending on the location, this may require manual supervision, physical barriers, temporary traffic signals and modifications to existing signals or, on occasions, police presence.	Section 6.3 and Section 6.4	Site Project Manager Traffic Manager	Construction
TT5	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 ▪ Deployment of speed awareness signs in conjunction with variable message signs near construction sites to provide alerts to drivers ▪ Providing community education and awareness about sharing the road safely with heavy vehicles ▪ Specific construction driver training to understand route constraints, safety and environmental considerations such as sharing the road safely with other road users and limiting the use of compression braking Requiring technology and equipment to improve vehicle safety, eliminate heavy vehicle blind spots, and monitor vehicle location and driver behaviour.	Section 5.4, Section 5.8 and Section 6.1	Traffic Manager Stakeholder and Community Engagement Director People and Culture Director	Construction

TT6	All trucks would enter and exit construction sites in a forward direction, where feasible and reasonable.	Section 5.2	Site Project Manager Traffic Manager	Construction
TT7	Construction site traffic would be managed to minimise movements during peak periods.	Section 7.1	Site Project Manager Traffic Manager	Construction
TT10	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 6.7, Section 6.9 and Section 7	Traffic Manager	Pre-construction
TT11	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.	Section 5.6	Site Project Manager Traffic Manager	Construction
TT18	Access to existing properties and buildings would be maintained in consultation with property owners.	Section 6.5	Site Project Manager Stakeholder and Community Engagement Director	Construction

Construction Environmental Management Framework

Table 17: Construction Environmental Management Framework

ID	Requirements (CEMF)	JCG JV Response (refer to this report section)	Responsibility	Timing
3.3 (a)	Site-specific Construction Traffic Management Plan	This Plan	Traffic and Transport Manager	Construction
(b)	Traffic Guidance Scheme	Section 7.2 Appendix B	Traffic and Transport Manager Environmental Manager	Construction
(c)	Pedestrian Movement Plans	No changes to pedestrian movements proposed	N/A	N/A
(d)	Vehicle Movement Plans	Section 7.2 Appendix D	Traffic and Transport Manager Environmental Manager	Construction
(e)	Parking Management Plan	Refer to the CPAS	Traffic and Transport Manager	Construction

Part C Appendices

Appendix A Swept Path Analysis

LEGEND

A CLASS HOARDING

TEMPORARY SHAFT COORDINATES

EASTINGS	NORTHINGS
333178.836	6250791.588
333179.546	6250780.856
333175.972	6250767.595
333164.043	6250766.795
333160.588	6250790.382

MRV - Medium Rigid Vehicle	
Overall Length	8.800m
Overall Width	2.500m
Overall Body Height	3.633m
Min Body Ground Clearance	0.428m
Track Width	2.500m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	10.000m

HRV - Heavy Rigid Vehicle	
Overall Length	12.500m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.417m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

NOT FOR CONSTRUCTION

100mm AT FULL SIZE

REV.	BY	DATE	DESCRIPTION	APPD.
M	J.F	24/01/24	UNION STREET COMPOUND AREA REVISED	Y.H
L	J.F	10/01/24	8.8m MRV SWEPT PATH AMENDED	C.P
K	Y.F	06/04/23	UPDATED TEMPORARY SHAFT FOOT PRINT & TOWER CRANE LOCATION	S.C.
J	Y.F	23/03/23	SITE LAYOUT REVISED	S.C.
H	Y.F	16/03/23	ADDITIONAL INFORMATION ADDED	S.C.
G	J.F	09/03/23	VEHICLE SWEPT PATHS REVISED	S.C.

SCALES

0 2 4 6 8 10 12m
SCALE 1:200 AT A1 SIZE

CLIENT

NSW GOVERNMENT

sydney METRO

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

JOHN HOLLAND
CPB CONTRACTORS
Ghella

DRAWN J.FAN
DESIGNED Y.FONG
DRG CHECK Y.FONG
DESIGN CHECK D.MAYTOM
APPROVED S.CONNOR

SYDNEY METRO WEST - EASTERN TUNNELING PACKAGE

PYRMONT STATION
SHAFT EXCAVATION
EAST SHAFT SITE LAYOUT - STAGE 2
EXCAVATION

STATUS: WORK IN PROGRESS | SHEET 1 OF 1 | ©

DRG No. SMWSTETP-JCG-PYR-SN150-CV-DRG-045102 | REV. M

A1 Original | Co-ordinate System: GDA2020 MGA Zone 56 | Height Datum: A.H.D | This sheet may be prepared using colour and may be incomplete if copied | NOTE: Do not scale from this drawing. | ALT. DRG No.

NOT FOR CONSTRUCTION

100mm AT FULL SIZE

REV.	BY	DATE	DESCRIPTION	APPD.
-	-	-	-	.
L	J.F	10/01/24	8.8m MRV SWEPT PATH AMENDED	C.P
K	Y.F	06/04/23	UPDATED TEMPORARY SHAFT FOOT PRINT & TOWER CRANE LOCATION	S.C.
J	Y.F	23/03/23	SITE LAYOUT REVISED	S.C.
H	Y.F	16/03/23	ADDITIONAL INFORMATION ADDED	S.C.
G	J.F	09/03/23	VEHICLE SWEPT PATHS REVISED	S.C.

SCALES

0 2 4 6 8 10 12m
SCALE 1:200 AT A1 SIZE

A1 Original | Co-ordinate System: GDA2020 MGA Zone 56 | Height Datum: A.H.D | This sheet may be prepared using colour and may be incomplete if copied | NOTE: Do not scale from this drawing. | ALT. DRG No.

CLIENT

NSW GOVERNMENT | sydney METRO

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SERVICE PROVIDERS

JOHN HOLLAND
CPB CONTRACTORS
Ghella

DRAWN J.FAN
DESIGNED Y.FONG
DRG CHECK Y.FONG
DESIGN CHECK D.MAYTOM
APPROVED S.CONNOR

SYDNEY METRO WEST - EASTERN TUNNELING PACKAGE

PYRMONT STATION
SHAFT EXCAVATION
EAST SHAFT SITE LAYOUT - STAGE 2
EXCAVATION

STATUS: WORK IN PROGRESS | SHEET 1 OF 1 | ©

DRG No. SMWSTETP-JCG-PYR-SN150-CV-DRG-045102 | REV. L

DRIVEWAY TO BE WIDENED BY 225mm TO ENABLE 500mm CLEARANCE ON BOTH SIDES OF THE VEHICLE (AUSTROADS)

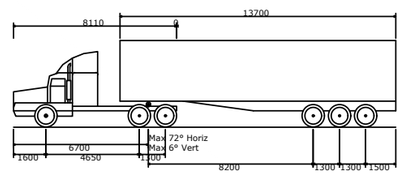
SWEPT PATH ENVELOPE ENCROACHES TWO ON-STREET PARKING SPACES

VEHICLE ENCROACHES THE EDWARD STREET CENTRELINE

NOT FOR

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
500mm clearance		



Prime mover and semi-trailer (19 m)

Overall Length	19000mm
Overall Width	2500mm
Overall Body Height	4300mm
Min Body Ground Clearance	540mm
Track Width	2500mm
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12500mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	FOR INFORMATION	HT	DL	DL	06/10/23

ttpp transport planning

PROJECT

SYDNEY METRO WEST - EASTERN TUNNELLING PACKAGE
PYRMONT EAST - SITE ESTABLISHMENT, EXCAVATION AND TUNNELLING

TITLE

SWEPT PATH ANALYSIS - ENTERING AND EXITING PYRMONT EAST SITE
AUSTROADS 2013 - 19m PRIME MOVER & SEMI-TRAILER

DWG No. 21480-PYR-E-S2-009
FIGURE 2

DATE STAMP
06 OCTOBER 2023

PROJECT No.	SCALE	REV.
21480	1:500 @A3	C

Filename: 21480CAD-PYRMONT-CONDITION 7.4-002-231006-SWEPT PATH.dwg Date: 6 October 2023

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	FOR INFORMATION	HT	DL	DL	06/10/23

ttpp transport planning

PROJECT

SYDNEY METRO WEST - EASTERN TUNNELLING PACKAGE
PYRMONT EAST - SITE ESTABLISHMENT, EXCAVATION AND TUNNELLING

TITLE

SWEPT PATH ANALYSIS - ENTERING AND EXITING PYRMONT EAST SITE
AUSTROADS 2013 - 19m TIPPER TRUCK & DOG

DWG No. 21480-PYR-E-S2-009
FIGURE 3

DATE STAMP
06 OCTOBER 2023

PROJECT No.	SCALE	REV.
21480	1:500 @A3	C

Filename: 21480CAD-PYRMONT-CONDITION 74-002-231006-SWEPT PATH.dwg Date: 6 October 2023

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
500mm clearance		

HRV - Heavy Rigid Vehicle

Overall Length	12500mm
Overall Width	2500mm
Overall Body Height	4300mm
Min Body Ground Clearance	417mm
Track Width	2500mm
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12500mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	FOR INFORMATION	HT	DL	DL	06/10/23

ttpp transport planning

PROJECT

SYDNEY METRO WEST - EASTERN TUNNELLING PACKAGE
PYRMONT EAST - SITE ESTABLISHMENT, EXCAVATION AND TUNNELLING

TITLE

SWEPT PATH ANALYSIS - ENTERING VIA EDWARD STREET AND EXITING VIA PYRMONT BRIDGE ROAD
AS2890.2 - 12.5m HEAVY RIGID VEHICLE

DWG No. 21480-PYR-E-S2-009
FIGURE 4

DATE STAMP
06 OCTOBER 2023

PROJECT No.	SCALE	REV.
21480	1:500 @A3	B

Filename: 21480CAD-PYRMONT-CONDITION 74-002-231006-SWEPT PATH.dwg Date: 6 October 2023

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
500mm clearance		

MRV - Medium Rigid Vehicle

Overall Length	8800mm
Overall Width	2500mm
Overall Body Height	3633mm
Min Body Ground Clearance	428mm
Track Width	2500mm
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	10000mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	FOR INFORMATION	HT	DL	DL	06/10/23

ttpp transport planning

PROJECT
SYDNEY METRO WEST - EASTERN TUNNELLING PACKAGE
PYRMONT EAST - SITE ESTABLISHMENT, EXCAVATION AND TUNNELLING

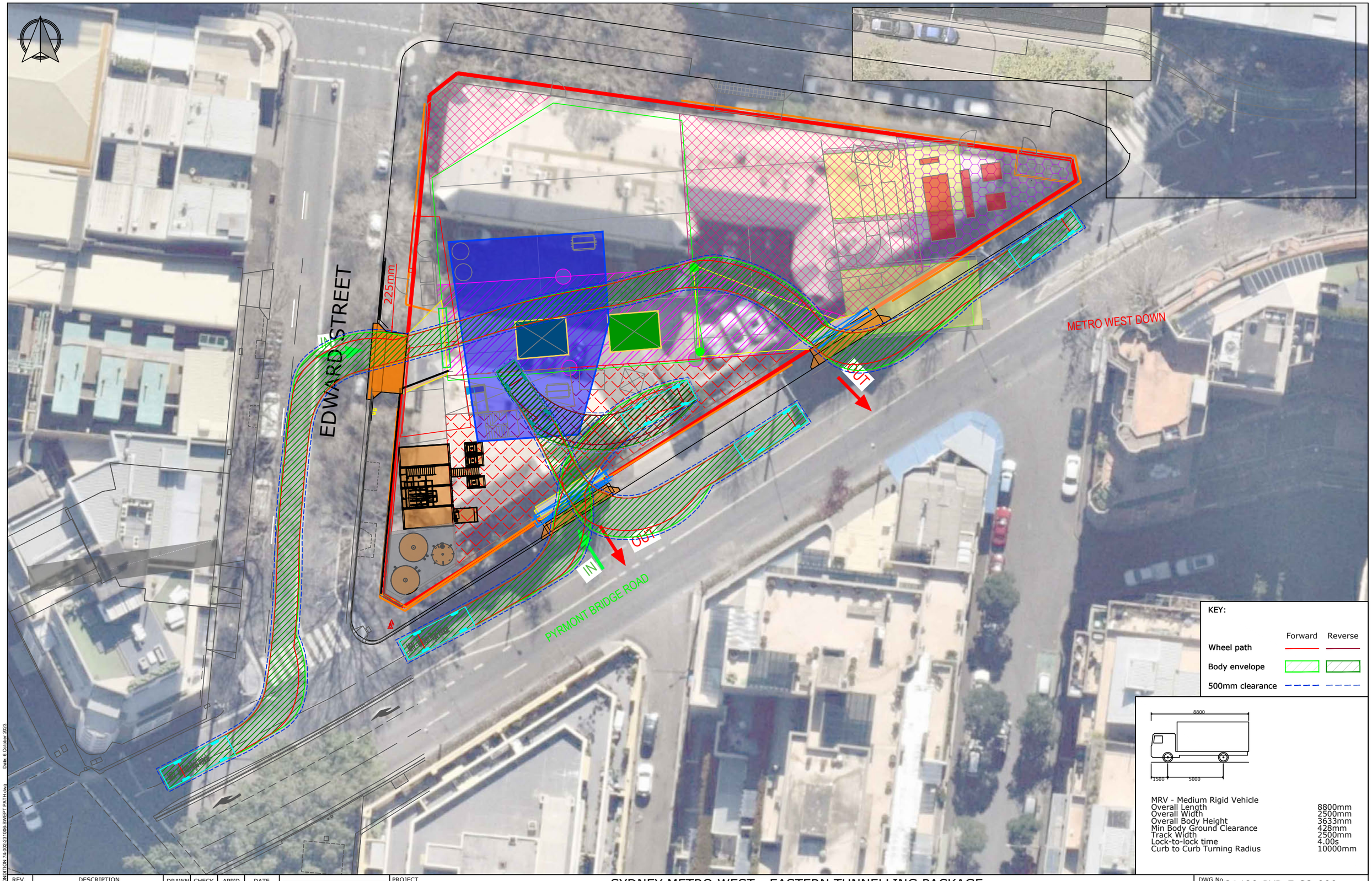
TITLE
SWEPT PATH ANALYSIS - ENTERING AND EXITING VIA PYRMONT BRIDGE ROAD
AS2890.2 - 8.8m MEDIUM RIGID VEHICLE

DWG No. 21480-PYR-E-S2-009
FIGURE 5

DATE STAMP
06 OCTOBER 2023

PROJECT No.	SCALE	REV.
21480	1:500 @A3	B

Filename: 21480CAD\PYRMONT-CONDITION 74-0002-231006-SWEPT PATH.dwg Date: 6 October 2023



REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	FOR INFORMATION	HT	DL	DL	06/10/23

ttpp transport planning

PROJECT
SYDNEY METRO WEST - EASTERN TUNNELLING PACKAGE
PYRMONT EAST - SITE ESTABLISHMENT, EXCAVATION AND TUNNELLING

TITLE
SWEPT PATH ANALYSIS - ENTERING AND EXITING VIA PYRMONT BRIDGE ROAD
AS2890.2 - 8.8m MEDIUM RIGID VEHICLE

DWG No. 21480-PYR-E-S2-009
FIGURE 1

DATE STAMP
06 OCTOBER 2023

PROJECT No.	SCALE	REV.
21480	1:500 @A3	B

Filename: 21480CAD\PYRMONT-CONDITION 74-0002-231006-SWEPT PATH.dwg
Date: 6 October 2023

DRIVEWAY TO BE WIDENED BY 225mm
TO ENABLE 500mm CLEARANCE ON BOTH
SIDES OF THE VEHICLE (AUSTROADS)

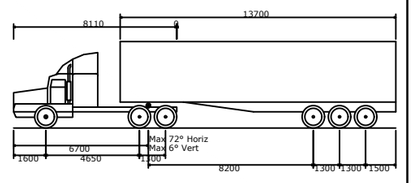
SWEPT PATH ENVELOPE ENCROACHES
TWO ON-STREET PARKING SPACES

VEHICLE ENCROACHES THE EDWARD STREET CENTRELINE

UNION STREET
EDWARD STREET
PYRMONT BRIDGE ROAD
METRO WEST DOWN
225mm
IN
OUT
IN
OUT

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
500mm clearance		



Prime mover and semi-trailer (19 m)

Overall Length	19000mm
Overall Width	2500mm
Overall Body Height	4300mm
Min Body Ground Clearance	540mm
Track Width	2500mm
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12500mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	FOR INFORMATION	SC	DL	DL	28/04/23
B	FOR INFORMATION	SC	DL	DL	27/06/23
C	FOR INFORMATION	SC	DL	DL	30/06/23

ttpp transport planning

PROJECT
SYDNEY METRO WEST - EASTERN TUNNELLING PACKAGE
PYRMONT EAST - SITE ESTABLISHMENT, EXCAVATION AND TUNNELLING

TITLE
SWEPT PATH ANALYSIS - ENTERING AND EXITING PYRMONT EAST SITE
AUSTROADS 2013 - 19m PRIME MOVER & SEMI-TRAILER

DWG No. 21480-PYR-E-S2-009
FIGURE 1

DATE STAMP
30 JUNE 2023

PROJECT No.	SCALE	REV.
21480	1:500 @A3	C

Date: 30 June 2023
Filename: 21480CAD-PYRMONT-E-STAGE2-009-230630-SWEPT PATH.dwg

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	FOR INFORMATION	SC	DL	DL	03/05/23
B	FOR INFORMATION	SC	DL	DL	27/06/23
C	FOR INFORMATION	SC	DL	DL	30/06/23

ttpp transport planning

PROJECT

SYDNEY METRO WEST - EASTERN TUNNELLING PACKAGE
PYRMONT EAST - SITE ESTABLISHMENT, EXCAVATION AND TUNNELLING

TITLE

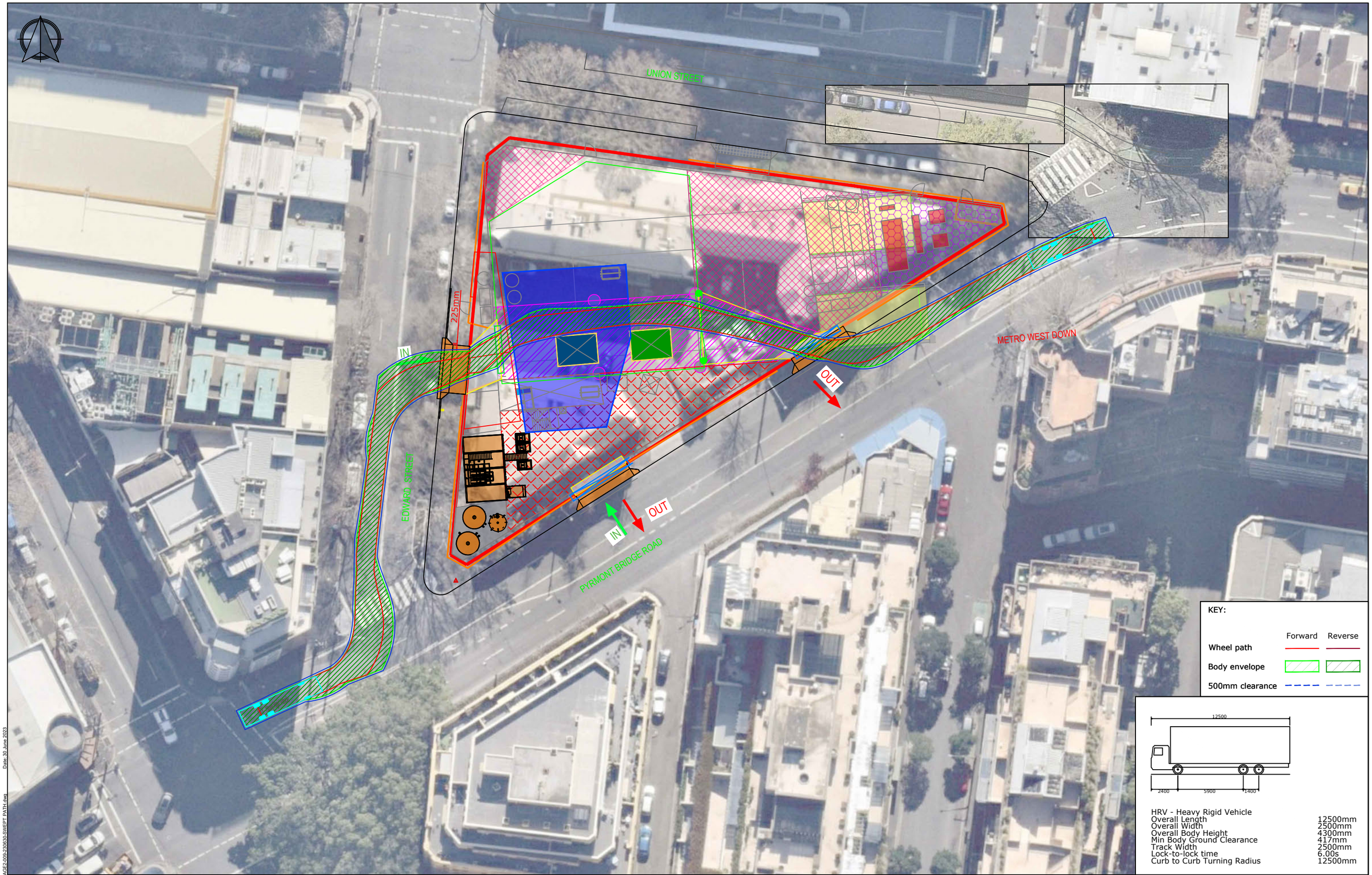
SWEPT PATH ANALYSIS - ENTERING AND EXITING PYRMONT EAST SITE
AUSTROADS 2013 - 19m TIPPER TRUCK & DOG

DWG No. 21480-PYR-E-S2-009
FIGURE 2

DATE STAMP
30 JUNE 2023

PROJECT No.	SCALE	REV.
21480	1:500 @A3	C

Filename: 21480-CAD-PYRMONT-E-STAGE2-009-230630-SWEPT PATH.dwg
Date: 30 June 2023



KEY:

	Forward	Reverse
Wheel path		
Body envelope		
500mm clearance		

HRV - Heavy Rigid Vehicle

Overall Length	12500mm
Overall Width	2500mm
Overall Body Height	4300mm
Min Body Ground Clearance	417mm
Track Width	2500mm
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12500mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	FOR INFORMATION	SC	DL	DL	27/06/23
B	FOR INFORMATION	SC	DL	DL	30/06/23

ttpp transport planning

PROJECT

SYDNEY METRO WEST - EASTERN TUNNELLING PACKAGE
PYRMONT EAST - SITE ESTABLISHMENT, EXCAVATION AND TUNNELLING

TITLE

SWEPT PATH ANALYSIS - ENTERING VIA EDWARD STREET AND EXITING VIA PYRMONT BRIDGE ROAD
AS2890.2 - 12.5m HEAVY RIGID VEHICLE

DWG No. 21480-PYR-E-S2-009
FIGURE 3

DATE STAMP
30 JUNE 2023

PROJECT No.	SCALE	REV.
21480	1:500 @A3	B

Filename: 21480CAD-PYRMONT-E-STAGE2-009-230630-SWEPT PATH.dwg Date: 30 June 2023

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	FOR INFORMATION	SC	DL	DL	27/06/23
B	FOR INFORMATION	SC	DL	DL	30/06/23

ttpp transport planning

PROJECT

SYDNEY METRO WEST - EASTERN TUNNELLING PACKAGE
PYRMONT EAST - SITE ESTABLISHMENT, EXCAVATION AND TUNNELLING

TITLE

SWEPT PATH ANALYSIS - ENTERING VIA EDWARD STREET AND EXITING VIA UNION STREET
AS2890.2 - 12.5m HEAVY RIGID VEHICLE

DWG No. 21480-PYR-E-S2-009
FIGURE 5

DATE STAMP
30 JUNE 2023

PROJECT No.	SCALE	REV.
21480	1:500 @A3	B

Filename: 21480CAD-PYRMONT-E-STAGE2-009-230630-SWEPT PATH.dwg
Date: 30 June 2023

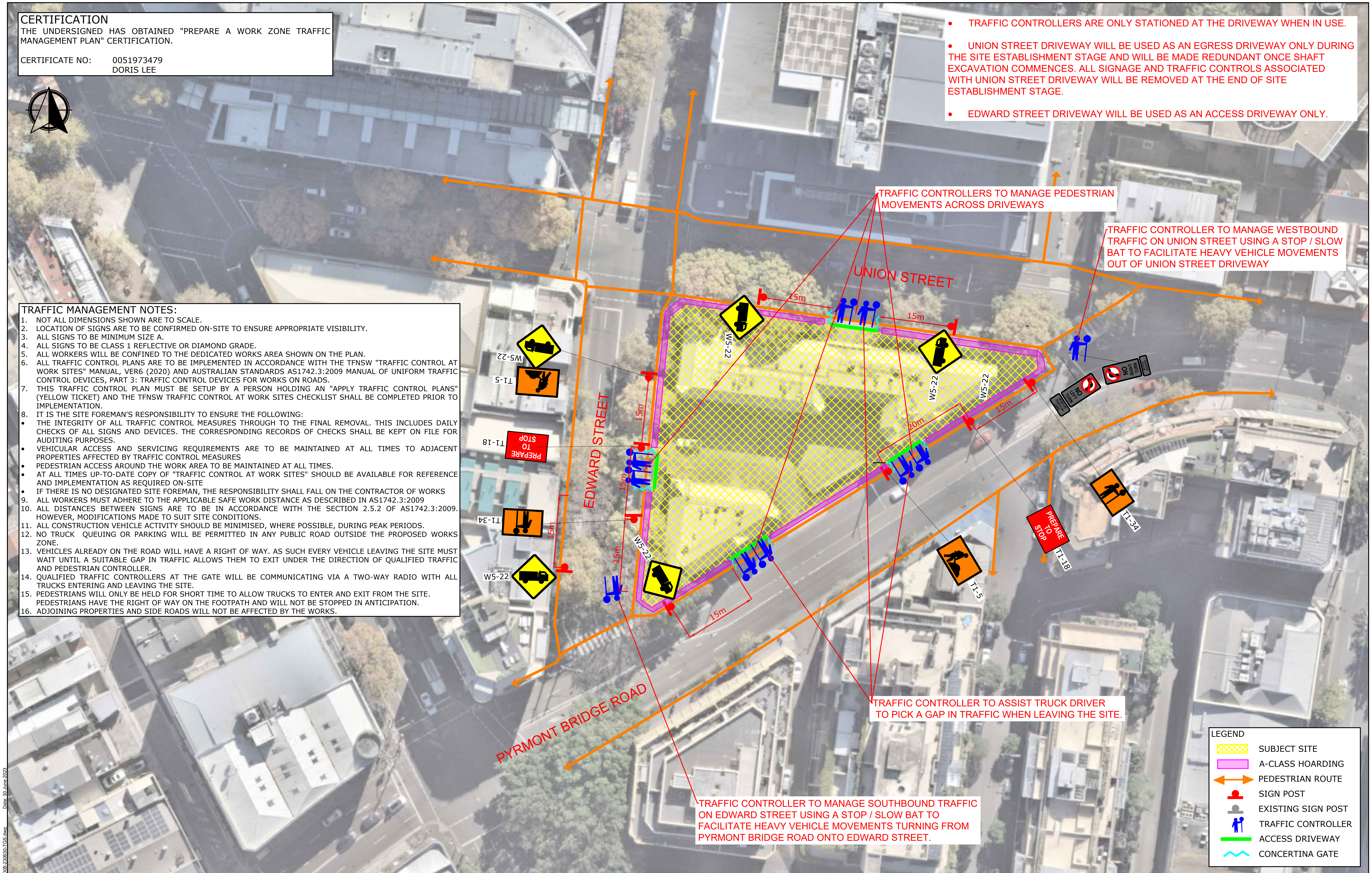
Appendix B Traffic Guidance Schemes

CERTIFICATION

THE UNDERSIGNED HAS OBTAINED "PREPARE A WORK ZONE TRAFFIC MANAGEMENT PLAN" CERTIFICATION.

CERTIFICATE NO: 0051973479
DORIS LEE

- TRAFFIC CONTROLLERS ARE ONLY STATIONED AT THE DRIVEWAY WHEN IN USE.
- UNION STREET DRIVEWAY WILL BE USED AS AN EGRESS DRIVEWAY ONLY DURING THE SITE ESTABLISHMENT STAGE AND WILL BE MADE REDUNDANT ONCE SHAFT EXCAVATION COMMENCES. ALL SIGNAGE AND TRAFFIC CONTROLS ASSOCIATED WITH UNION STREET DRIVEWAY WILL BE REMOVED AT THE END OF SITE ESTABLISHMENT STAGE.
- EDWARD STREET DRIVEWAY WILL BE USED AS AN ACCESS DRIVEWAY ONLY.



TRAFFIC MANAGEMENT NOTES:

1. NOT ALL DIMENSIONS SHOWN ARE TO SCALE.
2. LOCATION OF SIGNS ARE TO BE CONFIRMED ON-SITE TO ENSURE APPROPRIATE VISIBILITY.
3. ALL SIGNS TO BE MINIMUM SIZE A.
4. ALL SIGNS TO BE CLASS 1 REFLECTIVE OR DIAMOND GRADE.
5. ALL WORKERS WILL BE CONFINED TO THE DEDICATED WORKS AREA SHOWN ON THE PLAN.
6. ALL TRAFFIC CONTROL PLANS ARE TO BE IMPLEMENTED IN ACCORDANCE WITH THE TFNSW "TRAFFIC CONTROL AT WORK SITES" MANUAL, VER6 (2020) AND AUSTRALIAN STANDARDS AS1742.3:2009 MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, PART 3: TRAFFIC CONTROL DEVICES FOR WORKS ON ROADS.
7. THIS TRAFFIC CONTROL PLAN MUST BE SETUP BY A PERSON HOLDING AN "APPLY TRAFFIC CONTROL PLANS" (YELLOW TICKET) AND THE TFNSW TRAFFIC CONTROL AT WORK SITES CHECKLIST SHALL BE COMPLETED PRIOR TO IMPLEMENTATION.
8. IT IS THE SITE FOREMAN'S RESPONSIBILITY TO ENSURE THE FOLLOWING:
   - THE INTEGRITY OF ALL TRAFFIC CONTROL MEASURES THROUGH TO THE FINAL REMOVAL. THIS INCLUDES DAILY CHECKS OF ALL SIGNS AND DEVICES. THE CORRESPONDING RECORDS OF CHECKS SHALL BE KEPT ON FILE FOR AUDITING PURPOSES.
   - VEHICULAR ACCESS AND SERVICING REQUIREMENTS ARE TO BE MAINTAINED AT ALL TIMES TO ADJACENT PROPERTIES AFFECTED BY TRAFFIC CONTROL MEASURES
   - PEDESTRIAN ACCESS AROUND THE WORK AREA TO BE MAINTAINED AT ALL TIMES.
   - AT ALL TIMES UP-TO-DATE COPY OF "TRAFFIC CONTROL AT WORK SITES" SHOULD BE AVAILABLE FOR REFERENCE AND IMPLEMENTATION AS REQUIRED ON-SITE
   - IF THERE IS NO DESIGNATED SITE FOREMAN, THE RESPONSIBILITY SHALL FALL ON THE CONTRACTOR OF WORKS
9. ALL WORKERS MUST ADHERE TO THE APPLICABLE SAFE WORK DISTANCE AS DESCRIBED IN AS1742.3:2009
10. ALL DISTANCES BETWEEN SIGNS ARE TO BE IN ACCORDANCE WITH THE SECTION 2.5.2 OF AS1742.3:2009. HOWEVER, MODIFICATIONS MADE TO SUIT SITE CONDITIONS.
11. ALL CONSTRUCTION VEHICLE ACTIVITY SHOULD BE MINIMISED, WHERE POSSIBLE, DURING PEAK PERIODS.
12. NO TRUCK QUEUING OR PARKING WILL BE PERMITTED IN ANY PUBLIC ROAD OUTSIDE THE PROPOSED WORKS ZONE.
13. VEHICLES ALREADY ON THE ROAD WILL HAVE A RIGHT OF WAY. AS SUCH EVERY VEHICLE LEAVING THE SITE MUST WAIT UNTIL A SUITABLE GAP IN TRAFFIC ALLOWS THEM TO EXIT UNDER THE DIRECTION OF QUALIFIED TRAFFIC AND PEDESTRIAN CONTROLLER.
14. QUALIFIED TRAFFIC CONTROLLERS AT THE GATE WILL BE COMMUNICATING VIA A TWO-WAY RADIO WITH ALL TRUCKS ENTERING AND LEAVING THE SITE.
15. PEDESTRIANS WILL ONLY BE HELD FOR SHORT TIME TO ALLOW TRUCKS TO ENTER AND EXIT FROM THE SITE. PEDESTRIANS HAVE THE RIGHT OF WAY ON THE FOOTPATH AND WILL NOT BE STOPPED IN ANTICIPATION.
16. ADJOINING PROPERTIES AND SIDE ROADS WILL NOT BE AFFECTED BY THE WORKS.

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	FOR INFORMATION	SC	DL	DL	27/06/23
B	FOR INFORMATION	SC	DL	DL	28/06/23
C	FOR INFORMATION	SC	DL	DL	30/06/23

ttpp transport planning

PROJECT
SYDNEY METRO WEST - EASTERN TUNNELING PACKAGE
PYRMONT EAST - SITE ESTABLISHMENT, EXCAVATION AND TUNNELLING

TITLE
TRAFFIC GUIDANCE SCHEME

DWG No. 21480-PYR-E-S2-008
FIGURE 1

DATE STAMP 30 JUNE 2023

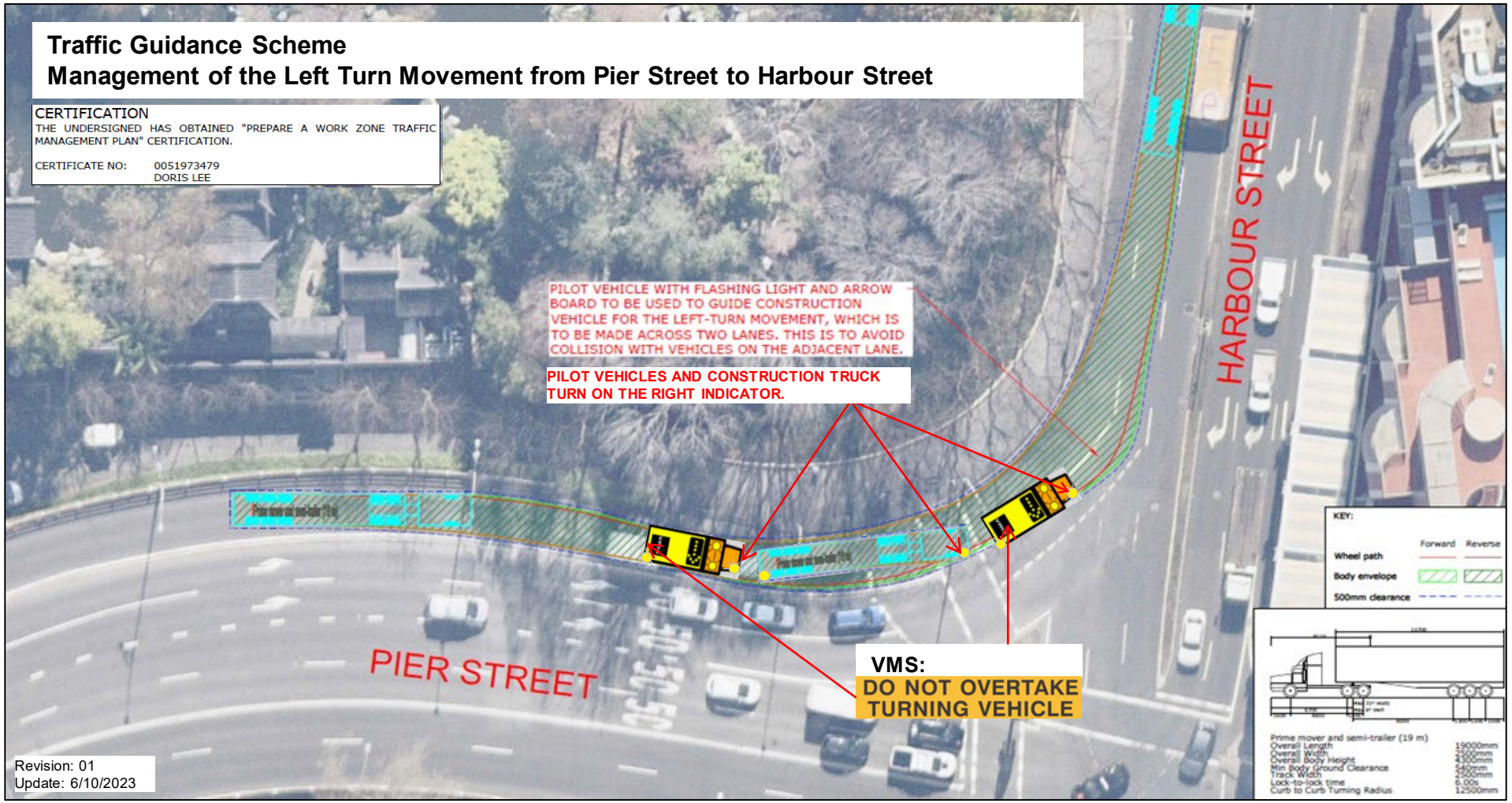
PROJECT No. 21480 | SCALE NTS @A3 | REV. C

Date: 30 June 2023

Traffic Guidance Scheme
Management of the Left Turn Movement from Pier Street to Harbour Street

CERTIFICATION
THE UNDERSIGNED HAS OBTAINED "PREPARE A WORK ZONE TRAFFIC MANAGEMENT PLAN" CERTIFICATION.

CERTIFICATE NO: 0051973479
DORIS LEE



Revision: 01
Update: 6/10/2023

1

T8-4

FOOTPATH CLOSED

PEDESTRIANS ← | PEDESTRIANS →

TM8-2(L) TM8-2(R)

2

NO STOPPING | 2P TICKET PERMIT HOLDERS EXCEPTED AREA 20 | NO STOPPING

R5-400(R)

3

NO STOPPING

R5-400

4

TM8-2(L) PEDESTRIANS ←

PEDESTRIANS

TM8-2(R)

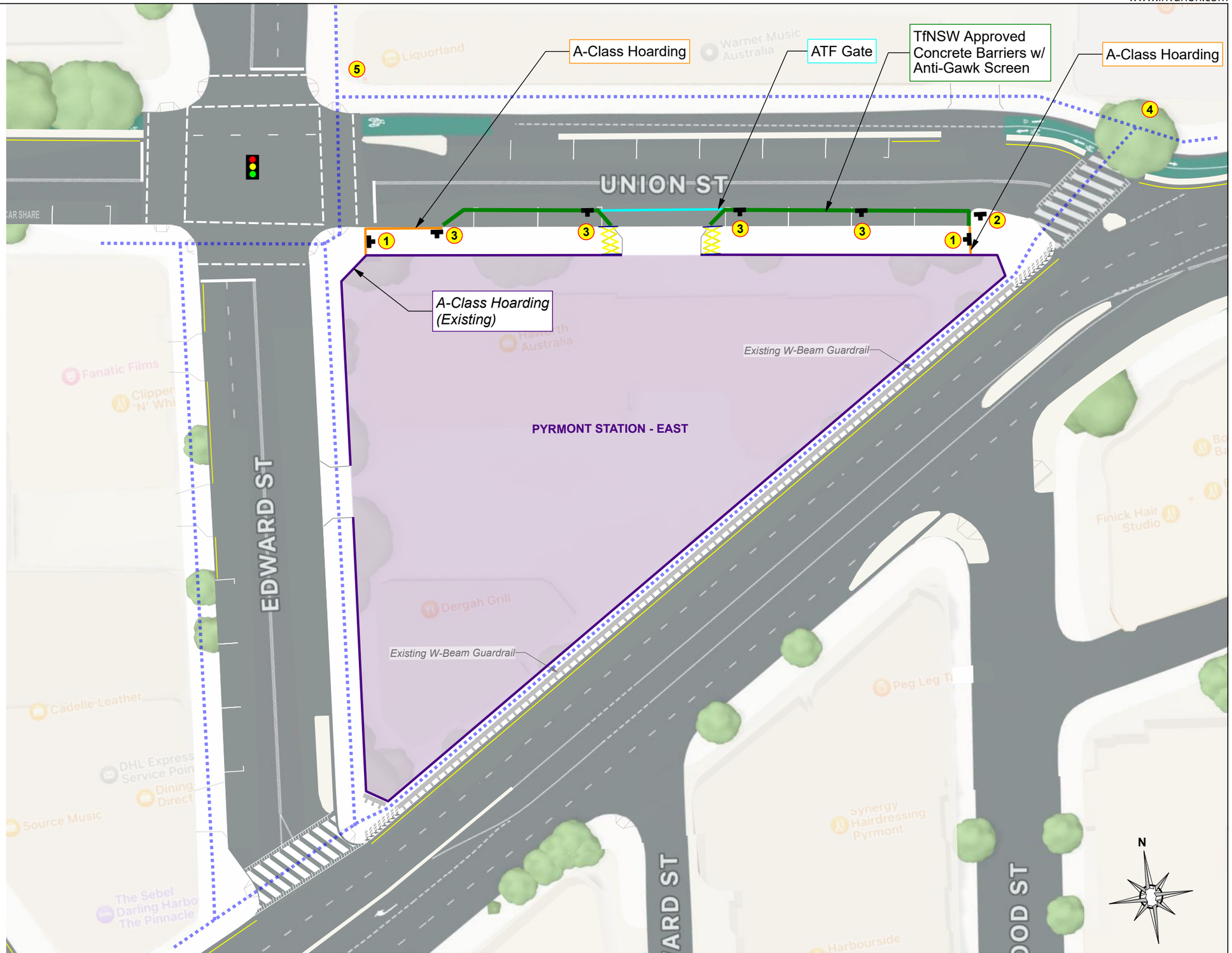
5

PEDESTRIANS →

TM8-2(R)

PEDESTRIANS

TM8-2(L)



PROJECT: SYDNEY METRO WEST - EASTERN TUNNEL PACKAGE

LEGEND

Work Area | Traffic Controller | Retractable Pedestrian Gate | Traffic Cones | Pedestrian Route | Sign (2 posts) | Signalised intersection

Date: 18/12/2023 **Location:** Pyrmont East Station - Union St Compound **Author name:** Corrine Porter **Author accreditation:** TCT0015555 **Signed:** **TCP Number:** SMWETP-TGS-0102 **Page:** 1 of 1

REV - D

Comments:

- THIS IS A SHORT TERM TGS, NOT TO SCALE
- THE CONTRACTOR SHALL ENSURE ALL ROL AND SZA REQUIRMENTS ARE SATISFIED DURING IMPLEMENTATION OF THIS TGS
- ANY EXISTING SIGNAGE THAT CONFLIICTS WITH THIS TGS MUST BE COVERED AT THE START OF SHIFT AND UNCOVERED AT THE END OF SHIFT
- ANY CHANGES REQUIRED, SPEAK TO THE SITE FOREMAN AND THEN MODIFY THIS PLAN IF NECESSARY. ANY CHANGES TO THIS PLAN SHALL BE MARKED ON THIS TGS & SIGNED OFF BY A PWZTMP HOLDER.
- A LANE WIDTH OF 3.5m (MINIMUM) IS TO BE MAINTAINED AT ALL TIMES UNLESS NOTED OTHERWISE
- SHOULDER WIDTH / EDGE CLEARANCE TO TRAFFIC CONES OF 0.5m IS TO BE PROVIDED AT ALL TIMES UNLESS NOTED OTHERWISE
- ALL SIGNAGE TO BE 'B' SIZE UNLESS NOTED OTHERWISE
- SIGNS TO BE POSITIONED IN ACCORDANCE WITH THE TCAWS MANUAL 2022 Issue 6.1
- DIMENSION 'D' IS DETERMINED IN ACCORDANCE WITH THE TCAWS MANUAL 2022 Issue 6.1
- BOLLARDS AND TRAFFIC CONES ARE TO BE INSTALLED IN ACCORDANCE WITH THE 2022 Issue 6.1
- TAPER LENGTHS ARE TO BE IN ACCORDANCE WITH THE TCAWS MANUAL 2022 Issue 6.1
- THE SITE MUST COMPLY WITH THE TCAWS MANUAL 2022 Issue 6.1 AND A.S. 1742.3
- REGULATORY SPEED / ROADWORK SIGNS TO BE REPEATED EVERY 400m UNLESS NOTED OTHERWISE

Appendix C Road Safety Audit, Including the Union St ancillary facility

Pyrmont East Site – Site Establishment, Excavation & Tunnelling

Design Road Safety Audit

Prepared for:

JCG JV

30 June 2023

The Transport Planning Partnership

Pyrmont East Site – Site Establishment, Excavation & Tunnelling

Design Road Safety Audit

Client: JCG JV

Version: V02

Date: 30 June 2023

TTPP Reference: 21480

Quality Record

Version	Date	Prepared by	Reviewed by	Approved by	Signature
V01	29/06/2023	[redacted]	[redacted]	[redacted]	[redacted]
V02	30/09/2023	[redacted]	[redacted]	[redacted]	

Table of Contents

Tables

APPENDICES

1 Road Safety Audit Summary

Audited project:	Pyrmont East Site – Site Establishment, Excavation and Tunnelling
Client:	JCG JV
Project manager:	[redacted]
Email address:	[redacted]
Telephone:	[redacted]
Audit Team:	[redacted] (level 3 lead road safety auditor) [redacted] (level 2 road safety auditor) [redacted] (level 1 road safety auditor)
Audit type:	Design
Commencement meeting:	N/A
Audit date:	28 June 2023
Completion meeting:	Not required

2 Introduction

2.1 Background

This report has been prepared on behalf of JCG JV to present road safety audit findings that have been identified from the proposed traffic control measures for the site establishment, excavation, and tunnelling at the Sydney Metro West Pyrmont East Site. This site is established to be a metro station as part of the Sydney Metro West Eastern Tunnelling Package.

The following driveways will be used by construction vehicles up to 19m long:

- Existing driveway on Edward Street to accommodate the access movement only.
- Existing driveway on Union Street to accommodate access and exit movements.
- A new driveway on Pyrmont Bridge Road to accommodate access and exit movements.

The following driveways will be used by construction for vehicles up to 12.5m long:

- A new driveway on Pyrmont Bridge Road to accommodate access and exit movements.

2.2 Audit Objective

The objective of this Audit is to examine the road safety issues associated with the traffic and pedestrian management controls that will be implemented during the site establishment, excavation, and tunnelling at the Pyrmont East site.

2.3 Procedures and Reference Material

The procedures used are described in the following guidelines:

- Roads and Maritime Services' 2011 Guidelines for Road Safety Audit Practices
- Austroads Guide to Road Safety 2022: Part 6 Road Safety Audits

2.4 Audit Team

The RSA was carried out by the following team:

- [redacted] (RSA-02-0769) – level 3 road safety auditor (lead auditor)
- [redacted] (RSA-02-1207) – level 2 road safety auditor (team member)
- [redacted] (RSA-02-1727) – level 1road safety auditor (team member)

Wayne, Jessica and James are registered road safety auditors with the NSW Centre for Road Safety and are experienced in traffic engineering and design/ inspection of traffic management schemes.

3 Road Safety Audit Program

3.1 Commencement Meeting

A formal meeting was not held.

3.2 Site and Field Audit

The audit team has undertaken a site inspection in day and night conditions for the area covered in the scope of this audit on 28 June 2023. The weather conditions were wet and overcast, visibility was good. The site visit was recorded through photographs and video recordings.

3.3 Completion Meeting

Not required.

4 Road Safety Audit Findings

4.1 Introduction

Table 4.1 provides specific details of the road safety deficiencies and a risk rating as extreme, high, medium, low or negligible. The risk ratings have been based on the risk matrix presented in Table 4.1, which has been adopted from the latest Austroads Guide to Road Safety: Road Safety Audit (2022).

Table 4.1: 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 (includes exposure)	Almost Certain	One per quarter	Medium	High	High	Extreme (FSI)	Extreme (FSI)
	Likely	Quarter to 1-year	Medium	Medium	High	Extreme (FSI)	Extreme (FSI)
	Possible	1 to 3 years	Low	Medium	High	High (FSI)	Extreme (FSI)
	Unlikely	3 to 7 years	Negligible	Low	Medium	High (FSI)	Extreme (FSI)
	Rare	7 years+	Negligible	Negligible	Low	Medium (FSI)	High (FSI)

The terms in Table 4.1 are described below.

Likelihood:

- Almost certain – occurrence once per quarter
- Likely – occurrence once per quarter to once per year
- Possible – occurrence once per year to once every three years
- Unlikely – occurrence once every three years to once every seven years
- Rare – occurrence less than once every seven years.

Severity:

- Insignificant – property damage
- Minor – minor first aid
- Moderate – major first aid and/or presents to hospital (not admitted)
- Serious – admitted to hospital
- Fatal – at scene or within 30 days of the crash.

Priority:

- 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.

4.2 Responding to the Audit Report

As set out in the road safety audit guidelines, the responsibility for the road rests with the project manager, not with the auditor. The project manager is under no obligation to accept the audit findings. Neither is it the role of the auditor to agree to, or approve the project manager's responses to the audit.

The audit provides the opportunity to highlight potential road safety problems and have them formally considered by the project manager in conjunction with all other project considerations.

4.3 Road Safety Audit Findings

The audit findings are documented in Table 4.2 which provides:

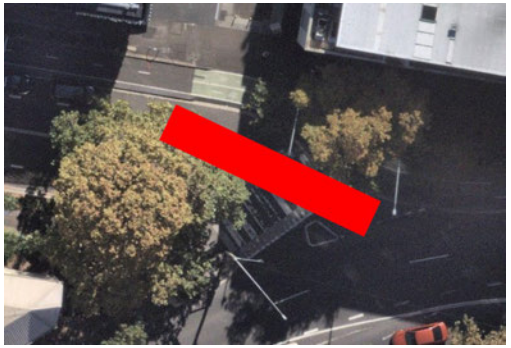
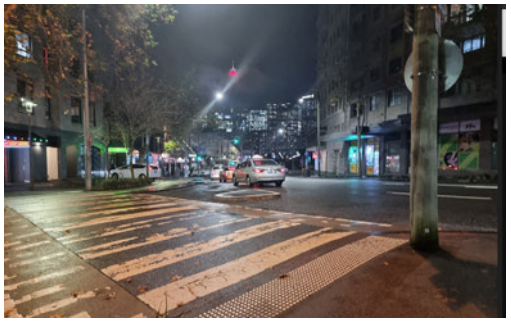
- specific details of the road safety issues identified during the audit
- a risk level rating for each of the road safety audit findings.

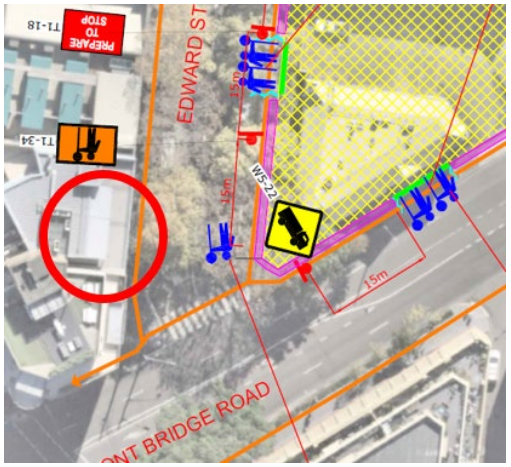
It should be acknowledged that positive attributes of the audited road section have not been discussed. Deficiencies that do not cause a safety problem are also not listed.

In-line with TfNSW's best practice recommendations have not been included in the road safety audit findings.

Table 4.2: Road Safety Audit Findings

Item No.	Location	Descriptions of Findings	Photo	Likelihood	Severity	Risk Rating	Designer Response
1.	Union Street and Pyrmont Bridge Road intersection	19m long semi-trailers may mount the kerb or median island when exiting Union Street onto Pyrmont Bridge Road based on the swept paths. This area is likely to experience high pedestrian traffic due to its proximity with hotels, restaurants, and the Star Casino. Vehicles unable to keep within the roadway may have incidents with pedestrians who are on the footpath.		Rare	Moderate	Low	The revised swept path diagram clearly shows the 19m semi-trailer would not encroach on the kerb and traffic median in Union Street. The revised TGS provides a traffic controller located east of the pedestrian crossing to briefly hold traffic until the semi-trailer has turned left from Union Street onto Pyrmont Bridge Street. This would avoid any conflicts between vehicles travelling in opposite direction in Union Street.

Item No.	Location	Descriptions of Findings	Photo	Likelihood	Severity	Risk Rating	Designer Response
2.	Union Street and Pyrmont Bridge Road intersection	The 'Give Way' line is located approximately 6m in front of the pedestrian crossing, which can accommodate one passenger vehicle. However, pedestrians attempting to use the pedestrian crossing whilst the semi-trailer is at the give way line will be blocked from using the crossing. This area is likely to experience high pedestrian traffic due to its proximity with hotels, restaurants, and the Star Casino. It was noted during the site inspection that queue lengths from the Darling Drive and Murray Street signalised intersection will extend to Union Street, resulting in semi-trailers blocking the crossing for extended periods of time. This may lead to pedestrians either crossing in front or behind the semi-trailer on the roadway which may lead to conflict with vehicles.	 	Unlikely	Serious	High	The 19m trucks will only operate late at night or early mornings to deliver site set up materials only whilst the site is being set up. If it is assessed on location that the issue mentioned in the RSA finding could occur, JCG JV will deploy a traffic controller to manage the matter.
3.	Union Street west exit from driveway	Semi-trailers exiting the Union Street driveway may collide with a parked vehicle on the south side of Union Street. It is unclear if the 'No Stopping' is being lengthened to accommodate the swept path of a 19m semi-trailer exiting the construction site.		Likely	Insignificant	Medium	This parking space will be removed temporarily by relocating the No Stopping sign during the early phase of Stage 2 when 19m semi-trailer will be used. After which, this driveway will be removed to create new parking spaces.

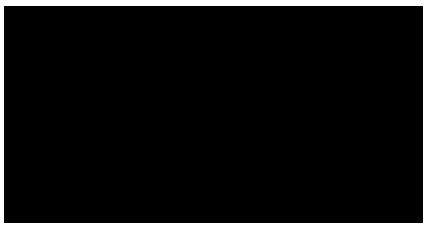
Item No.	Location	Descriptions of Findings	Photo	Likelihood	Severity	Risk Rating	Designer Response
4.	Union Street west approach to driveway	A 'Truck' sign is on the opposite side of Union Street, vehicles approaching from the west may not notice the sign.				Note Only	Noted. Signage is generally located on the flow of the traffic side, but in this case, there is a cycleway next to the road and practically no room on the footpath for signage installation. Therefore, the Truck sign is located on the opposite side of the road.
5.	Union Street west approach to driveway	A 'Truck' sign should be included on Edward Street on the northbound approach to the access on Edward Street.				Note Only	Noted. A truck sign has been added on Edward Street northbound in the TGS.

5 Concluding Statement

The findings and opinions in the report are based on the examination of the specific road and environs, and might not address all concerns existing at the time of the audit.

The auditors have endeavoured to identify features of the road that could be modified in order to improve safety, although it must be recognised that safety cannot be guaranteed since no road can be regarded as absolutely safe.

While every effort has been made to ensure the accuracy of this report, it is made available strictly on the basis that anyone relying on it does so at their own risk without any liability to the Auditors.



Level 3 Lead Road Safety Auditor
The Transport Planning Partnership

Level 2 Road Safety Auditor
The Transport Planning Partnership

Level 1 Road Safety Auditor
The Transport Planning Partnership

Appendix A

Design Drawings

CERTIFICATION

THE UNDERSIGNED HAS OBTAINED "PREPARE A WORK ZONE TRAFFIC MANAGEMENT PLAN" CERTIFICATION.

CERTIFICATE NO: 0051973479
DORIS LEE

- TRAFFIC CONTROLLERS ARE ONLY STATIONED AT THE DRIVEWAY WHEN IN USE.
- UNION STREET DRIVEWAY WILL BE USED AS AN EGRESS DRIVEWAY ONLY DURING THE SITE ESTABLISHMENT STAGE AND WILL BE MADE REDUNDANT ONCE SHAFT EXCAVATION COMMENCES. ALL SIGNAGE AND TRAFFIC CONTROLS ASSOCIATED WITH UNION STREET DRIVEWAY WILL BE REMOVED AT THE END OF SITE ESTABLISHMENT STAGE.
- EDWARD STREET DRIVEWAY WILL BE USED AS AN ACCESS DRIVEWAY ONLY.

TRAFFIC MANAGEMENT NOTES:

1. NOT ALL DIMENSIONS SHOWN ARE TO SCALE.
2. LOCATION OF SIGNS ARE TO BE CONFIRMED ON-SITE TO ENSURE APPROPRIATE VISIBILITY.
3. ALL SIGNS TO BE MINIMUM SIZE A.
4. ALL SIGNS TO BE CLASS 1 REFLECTIVE OR DIAMOND GRADE.
5. ALL WORKERS WILL BE CONFINED TO THE DEDICATED WORKS AREA SHOWN ON THE PLAN.
6. ALL TRAFFIC CONTROL PLANS ARE TO BE IMPLEMENTED IN ACCORDANCE WITH THE TFNSW "TRAFFIC CONTROL AT WORK SITES" MANUAL, VER6 (2020) AND AUSTRALIAN STANDARDS AS1742.3:2009 MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, PART 3: TRAFFIC CONTROL DEVICES FOR WORKS ON ROADS.
7. THIS TRAFFIC CONTROL PLAN MUST BE SETUP BY A PERSON HOLDING AN "APPLY TRAFFIC CONTROL PLANS" (YELLOW TICKET) AND THE TFNSW TRAFFIC CONTROL AT WORK SITES CHECKLIST SHALL BE COMPLETED PRIOR TO IMPLEMENTATION.
8. IT IS THE SITE FOREMAN'S RESPONSIBILITY TO ENSURE THE FOLLOWING:
   - THE INTEGRITY OF ALL TRAFFIC CONTROL MEASURES THROUGH TO THE FINAL REMOVAL. THIS INCLUDES DAILY CHECKS OF ALL SIGNS AND DEVICES. THE CORRESPONDING RECORDS OF CHECKS SHALL BE KEPT ON FILE FOR AUDITING PURPOSES.
   - VEHICULAR ACCESS AND SERVICING REQUIREMENTS ARE TO BE MAINTAINED AT ALL TIMES TO ADJACENT PROPERTIES AFFECTED BY TRAFFIC CONTROL MEASURES
   - PEDESTRIAN ACCESS AROUND THE WORK AREA TO BE MAINTAINED AT ALL TIMES.
   - AT ALL TIMES UP-TO-DATE COPY OF "TRAFFIC CONTROL AT WORK SITES" SHOULD BE AVAILABLE FOR REFERENCE AND IMPLEMENTATION AS REQUIRED ON-SITE
   - IF THERE IS NO DESIGNATED SITE FOREMAN, THE RESPONSIBILITY SHALL FALL ON THE CONTRACTOR OF WORKS
9. ALL WORKERS MUST ADHERE TO THE APPLICABLE SAFE WORK DISTANCE AS DESCRIBED IN AS1742.3:2009
10. ALL DISTANCES BETWEEN SIGNS ARE TO BE IN ACCORDANCE WITH THE SECTION 2.5.2 OF AS1742.3:2009. HOWEVER, MODIFICATIONS MADE TO SUIT SITE CONDITIONS.
11. ALL CONSTRUCTION VEHICLE ACTIVITY SHOULD BE MINIMISED, WHERE POSSIBLE, DURING PEAK PERIODS.
12. NO TRUCK QUEUING OR PARKING WILL BE PERMITTED IN ANY PUBLIC ROAD OUTSIDE THE PROPOSED WORKS ZONE.
13. VEHICLES ALREADY ON THE ROAD WILL HAVE A RIGHT OF WAY. AS SUCH EVERY VEHICLE LEAVING THE SITE MUST WAIT UNTIL A SUITABLE GAP IN TRAFFIC ALLOWS THEM TO EXIT UNDER THE DIRECTION OF QUALIFIED TRAFFIC AND PEDESTRIAN CONTROLLER.
14. QUALIFIED TRAFFIC CONTROLLERS AT THE GATE WILL BE COMMUNICATING VIA A TWO-WAY RADIO WITH ALL TRUCKS ENTERING AND LEAVING THE SITE.
15. PEDESTRIANS WILL ONLY BE HELD FOR SHORT TIME TO ALLOW TRUCKS TO ENTER AND EXIT FROM THE SITE. PEDESTRIANS HAVE THE RIGHT OF WAY ON THE FOOTPATH AND WILL NOT BE STOPPED IN ANTICIPATION.
16. ADJOINING PROPERTIES AND SIDE ROADS WILL NOT BE AFFECTED BY THE WORKS.

TRAFFIC CONTROLLERS TO MANAGE PEDESTRIAN MOVEMENTS ACROSS DRIVEWAYS

TRAFFIC CONTROLLER TO MANAGE WESTBOUND TRAFFIC ON UNION STREET USING A STOP / SLOW BAT TO FACILITATE HEAVY VEHICLE MOVEMENTS OUT OF THE SITE

TRAFFIC CONTROLLER TO ASSIST TRUCK DRIVER TO PICK A GAP IN TRAFFIC WHEN LEAVING THE SITE.

TRAFFIC CONTROLLER TO MANAGE SOUTHBOUND TRAFFIC ON EDWARD STREET USING A STOP / SLOW BAT TO FACILITATE HEAVY VEHICLE MOVEMENTS TURNING FROM PYRMONT BRIDGE ROAD ONTO EDWARD STREET.

UNION STREET
EDWARD STREET
PYRMONT BRIDGE ROAD

15m
20m
W5-22
T1-5
T1-18
T1-34
T1-25

LEGEND
- SUBJECT SITE
- A-CLASS HOARDING
- PEDESTRIAN ROUTE
- SIGN POST
- EXISTING SIGN POST
- TRAFFIC CONTROLLER
- ACCESS DRIVEWAY
- CONCERTINA GATE

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	FOR INFORMATION	SC	DL	DL	27/06/23
B	FOR INFORMATION	SC	DL	DL	28/06/23

ttpp transport planning

PROJECT
SYDNEY METRO WEST - EASTERN TUNNELING PACKAGE
PYRMONT EAST - SITE ESTABLISHMENT, EXCAVATION AND TUNNELLING

TITLE
TRAFFIC GUIDANCE SCHEME

DWG No. 21480-PYR-E-S2-007
FIGURE 1

DATE STAMP
28 JUNE 2023

PROJECT No.	SCALE	REV.
21480	NTS @A3	B

Date: 28 June 2023
Filename: 21480CAD\PYRMONT-E-S2-007-230628-TGS.dwg

DRIVEWAY TO BE WIDENED BY 225mm
TO ENABLE 500mm CLEARANCE ON BOTH
SIDES OF THE VEHICLE (AUSTROADS)

SWEPT PATH ENVELOPE ENCROACHES
TWO ON-STREET PARKING SPACES

VEHICLE ENCROACHES THE EDWARD STREET CENTRELINE

UNION STREET

METRO WEST DOWN

EDWARD STREET

PYRMONT BRIDGE ROAD

225mm

IN

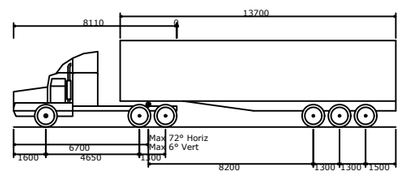
OUT

IN

OUT

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
500mm clearance		



Prime mover and semi-trailer (19 m)

Overall Length	19000mm
Overall Width	2500mm
Overall Body Height	4300mm
Min Body Ground Clearance	540mm
Track Width	2500mm
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12500mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	FOR INFORMATION	SC	DL	DL	28/04/23
B	FOR INFORMATION	SC	DL	DL	27/06/23

ttpp transport planning

PROJECT

SYDNEY METRO WEST - EASTERN TUNNELLING PACKAGE
PYRMONT EAST - SITE ESTABLISHMENT, EXCAVATION AND TUNNELLING

TITLE

SWEPT PATH ANALYSIS - ENTERING AND EXITING PYRMONT EAST SITE
AUSTROADS 2013 - 19m PRIME MOVER & SEMI-TRAILER

DWG No. 21480-PYR-E-S2-006
FIGURE 1

DATE STAMP 27 JUNE 2023

PROJECT No.	SCALE	REV.
21480	1:500 @A3	B

Date: 27 June 2023

Filename: 21480CAD-PYRMONT-E-STAGE2-006-230627-SWEPT PATH.dwg

UNION STREET

EDWARD STREET

PYRMONT BRIDGE ROAD

METRO WEST DOWN

225mm

IN

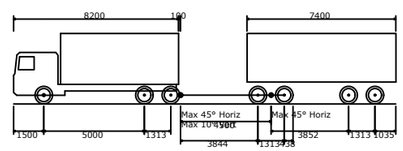
OUT

IN

OUT

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
500mm clearance		



Truck and Dog Trailer 19m

Overall Length	19000mm
Overall Width	2500mm
Overall Body Height	3500mm
Min Body Ground Clearance	427mm
Track Width	2500mm
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	12500mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	FOR INFORMATION	SC	DL	DL	03/05/23
B	FOR INFORMATION	SC	DL	DL	27/06/23

ttpp transport planning

PROJECT

SYDNEY METRO WEST - EASTERN TUNNELLING PACKAGE
PYRMONT EAST - SITE ESTABLISHMENT, EXCAVATION AND TUNNELLING

TITLE

SWEPT PATH ANALYSIS - ENTERING AND EXITING PYRMONT EAST SITE
AUSTROADS 2013 - 19m TIPPER TRUCK & DOG

DWG No. 21480-PYR-E-S2-006
FIGURE 2

DATE STAMP
27 JUNE 2023

PROJECT No.	SCALE	REV.
21480	1:500 @A3	A

Filename: 21480CAD-PYRMONT-E-STAGE2-006-230627-SWEPT PATH.dwg Date: 27 June 2023

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	FOR INFORMATION	SC	DL	DL	27/06/23

ttpp transport planning

PROJECT

SYDNEY METRO WEST - EASTERN TUNNELLING PACKAGE
PYRMONT EAST - SITE ESTABLISHMENT, EXCAVATION AND TUNNELLING

TITLE

SWEPT PATH ANALYSIS - ENTERING VIA EDWARD STREET AND EXITING VIA PYRMONT BRIDGE ROAD
AS2890.2 - 12.5m HEAVY RIGID VEHICLE

DWG No. 21480-PYR-E-S2-006
FIGURE 3

DATE STAMP
27 JUNE 2023

PROJECT No.	SCALE	REV.
21480	1:500 @A3	A

Filename: 21480CAD-PYRMONT-E-STAGE2-006-230627-SWEPT PATH.dwg Date: 27 June 2023

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	FOR INFORMATION	SC	DL	DL	27/06/23

ttpp transport planning

PROJECT
SYDNEY METRO WEST - EASTERN TUNNELLING PACKAGE
PYRMONT EAST - SITE ESTABLISHMENT, EXCAVATION AND TUNNELLING

TITLE
SWEPT PATH ANALYSIS - ENTERING AND EXITING VIA PYRMONT BRIDGE ROAD
AS2890.2 - 12.5m HEAVY RIGID VEHICLE

DWG No. 21480-PYR-E-S2-006
FIGURE 4

DATE STAMP
27 JUNE 2023

PROJECT No.	SCALE	REV.
21480	1:500 @A3	A

Filename: 21480CAD-PYRMONT-E-STAGE2-006-230627-SWEPT PATH.dwg
Date: 27 June 2023

UNION STREET

EDWARD STREET

PYRMONT BRIDGE ROAD

METRO WEST DOWN

225mm

IN

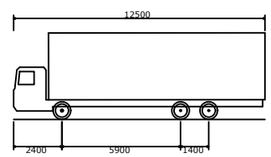
OUT

IN

OUT

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
500mm clearance		



HRV - Heavy Rigid Vehicle

Overall Length	12500mm
Overall Width	2500mm
Overall Body Height	4300mm
Min Body Ground Clearance	417mm
Track Width	2500mm
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12500mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	FOR INFORMATION	SC	DL	DL	27/06/23

ttpp transport planning

PROJECT

SYDNEY METRO WEST - EASTERN TUNNELLING PACKAGE
PYRMONT EAST - SITE ESTABLISHMENT, EXCAVATION AND TUNNELLING

TITLE

SWEPT PATH ANALYSIS - ENTERING VIA EDWARD STREET AND EXITING VIA UNION STREET
AS2890.2 - 12.5m HEAVY RIGID VEHICLE

DWG No. 21480-PYR-E-S2-006
FIGURE 5

DATE STAMP
27 JUNE 2023

PROJECT No.	SCALE	REV.
21480	1:500 @A3	A

Filename: 21480CAD-PYRMONT-E-STAGE2-006-230627-SWEPT PATH.dwg Date: 27 June 2023

UNION STREET

EDWARD STREET

METRO WEST DOWN

IN

OUT

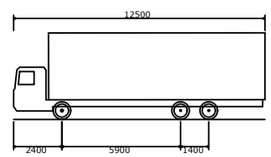
IN

OUT

225mm

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
500mm clearance		



HRV - Heavy Rigid Vehicle

Overall Length	12500mm
Overall Width	2500mm
Overall Body Height	4300mm
Min Body Ground Clearance	417mm
Track Width	2500mm
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12500mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	FOR INFORMATION	SC	DL	DL	27/06/23

ttpp transport planning

PROJECT

SYDNEY METRO WEST - EASTERN TUNNELLING PACKAGE
PYRMONT EAST - SITE ESTABLISHMENT, EXCAVATION AND TUNNELLING

TITLE

SWEPT PATH ANALYSIS - ENTERING AND EXITING VIA UNION STREET
AS2890.2 - 12.5m HEAVY RIGID VEHICLE

DWG No. 21480-PYR-E-S2-006
FIGURE 6

DATE STAMP
27 JUNE 2023

PROJECT No.	SCALE	REV.
21480	1:400 @A3	A

Filename: 21480CAD-PYRMONT-E-STAGE2-006-230627-SWEPT PATH.dwg Date: 27 June 2023

SWEPT PATH ENVELOPE ENCROACHES
ONE ON-STREET PARKING SPACE

UNION STREET

METRO WEST DOWN

OUT

225mm

IN

EDWARD STREET

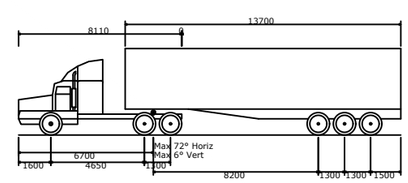
OUT

IN

PYRMONT BRIDGE ROAD

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
500mm clearance		



Prime mover and semi-trailer (19 m)

Overall Length	19000mm
Overall Width	2500mm
Overall Body Height	4300mm
Min Body Ground Clearance	540mm
Track Width	2500mm
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12500mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	FOR INFORMATION	SC	DL	DL	27/06/23

ttpp transport planning

PROJECT
SYDNEY METRO WEST - EASTERN TUNNELLING PACKAGE
PYRMONT EAST - SITE ESTABLISHMENT, EXCAVATION AND TUNNELLING

TITLE
SWEPT PATH ANALYSIS - ENTERING VIA EDWARD STREET AND EXITING VIA UNION STREET
AUSTROADS 2013 - 19m PRIME MOVER & SEMI-TRAILER

DWG No. 21480-PYR-E-S2-006
FIGURE 7

DATE STAMP
27 JUNE 2023

PROJECT No.	SCALE	REV.
21480	1:500 @A3	A

Filename: 21480CAD-PYRMONT-E-STAGE2-006-230627-SWEPT PATH.dwg
Date: 27 June 2023

SWEPT PATH ENCROACHES PEDESTRIAN FOOTPATH, TWO ON-STREET PARKING SPACES. 14m-WIDE DRIVEWAY IS REQUIRED TO ACCOMMODATE 19mSEMI-TRAILER SWEPT PATH ENTERING AND EXITING VIA UNION STREET

UNION STREET

14m

225mm

IN

OUT

METRO WEST DOWN

EDWARD STREET

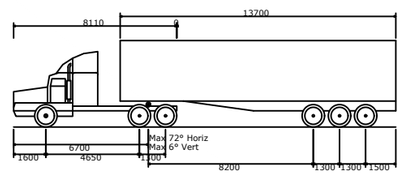
IN

OUT

PYRMONT BRIDGE ROAD

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
500mm clearance		



Prime mover and semi-trailer (19 m)

Overall Length	19000mm
Overall Width	2500mm
Overall Body Height	4300mm
Min Body Ground Clearance	540mm
Track Width	2500mm
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12500mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	FOR INFORMATION	SC	DL	DL	27/06/23

ttpp transport planning

PROJECT

SYDNEY METRO WEST - EASTERN TUNNELLING PACKAGE
PYRMONT EAST - SITE ESTABLISHMENT, EXCAVATION AND TUNNELLING

TITLE

SWEPT PATH ANALYSIS - ENTERING AND EXITING VIA UNION STREET
AUSTROADS 2013 - 19m PRIME MOVER & SEMI-TRAILER

DWG No. 21480-PYR-E-S2-006
FIGURE 8

DATE STAMP
27 JUNE 2023

PROJECT No.	SCALE	REV.
21480	1:500 @A3	A

Filename: 21480CAD-PYRMONT-E-STAGE2-006-230627-SWEPT PATH.dwg Date: 27 June 2023

The Transport Planning Partnership
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02 8437 7800

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Pyrmont East Site – Union Street Southern Side Footpath and Parking Lane Closure

Design Road Safety Audit

Prepared for:

JCG JV

24 January 2024

The Transport Planning Partnership

Pyrmont East Site – Union Street Southern Side Footpath and Parking Lane Closure

Design Road Safety Audit

Client: JCG JV

Version: V02

Date: 24 January 2024

TTPP Reference: 21480

Quality Record

Version	Date	Prepared by	Reviewed by	Approved by	Signature
V01	24/1/2024	[redacted]	[redacted]	[redacted]	-
V02	24/1/2024	[redacted]	[redacted]	[redacted]	-
V03	24/1/2024	[redacted]	[redacted]	[redacted]	-

Table of Contents

Tables

APPENDICES

1 Road Safety Audit Summary

Audited project:	Pyrmont East Site – Site Establishment
Client:	JCG JV
Project manager:	[redacted]
Email address:	[redacted]
Telephone:	[redacted]
Audit Team:	[redacted] (level 3 lead road safety auditor) [redacted] (level 2 road safety auditor)
Audit type:	Design
Commencement meeting:	N/A
Audit date:	23 January 2024
Completion meeting:	Not required

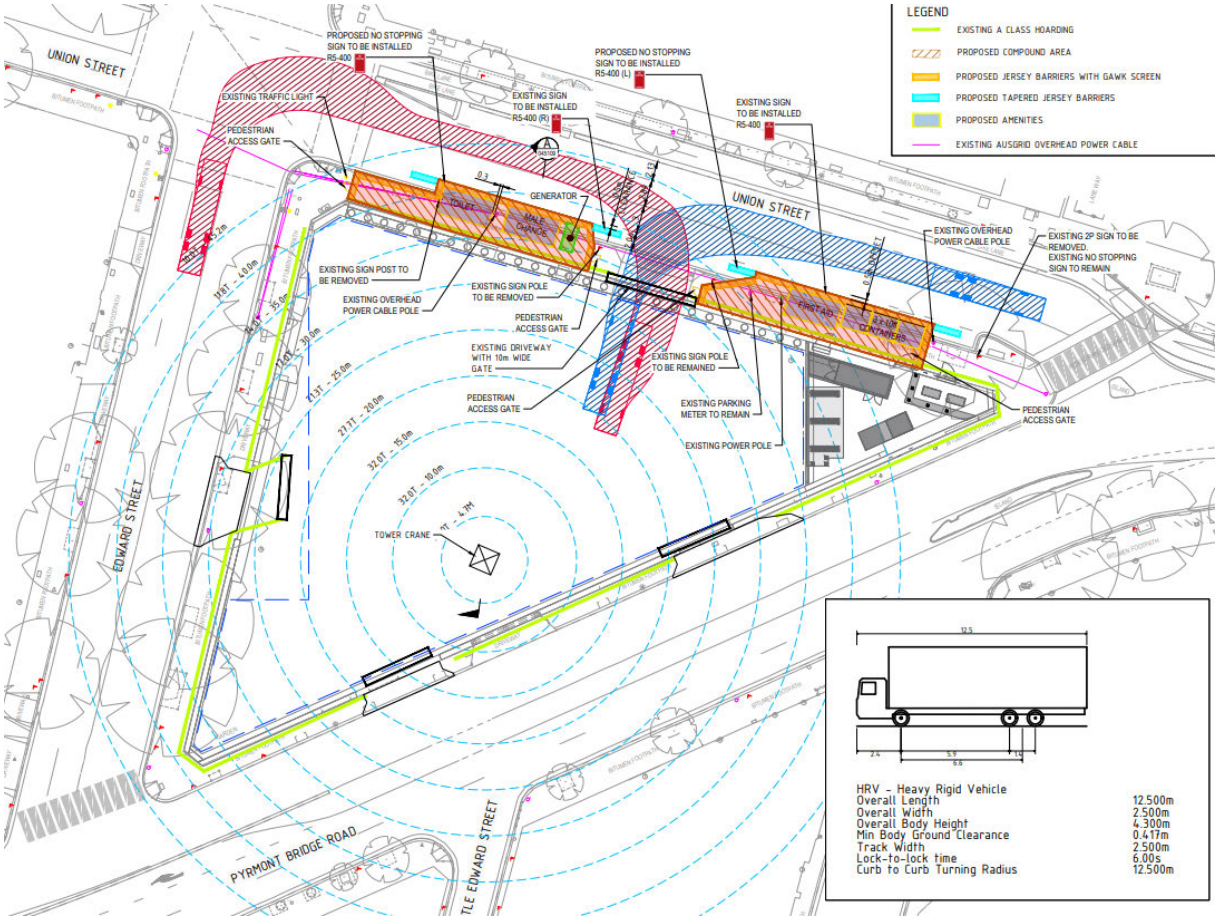
2 Introduction

2.1 Background

This report has been prepared on behalf of JCG JV to present road safety audit findings that have been identified from the traffic control measures for the proposed implementation of a ancillary facility by closing the footpath and parking lane on the southern side of Union Street between Edward Street and Pyrmont Bridge Road in Pyrmont. These works form part of the site establishment stage of works as part of the Sydney Metro West Eastern Tunnelling Package.

The site was the subject of a previous road safety audit however, this audit covers the proposed closure of the footpath and parking lane along the southern side of Union Street between Edward Street and Pyrmont Bridge Road. Parking would also be removed on the southern side of Union Street between Edward Street and Pyrmont Bridge Road to accommodate the ancillary facility for the site.

Figure 2.1: Existing Driveways To be Used during Site Establishment



Closure of the footpath on Union Street would result in diverting pedestrians to alternate pedestrian footpath facilities within the vicinity.

2.2 Audit Objective

The objective of this Audit is to examine the road safety issues associated with the traffic and pedestrian management controls that will be implemented for the ancillary facility.

2.3 Procedures and Reference Material

The procedures used are described in the following guidelines:

- Roads and Maritime Services' 2011 Guidelines for Road Safety Audit Practices
- Austroads Guide to Road Safety 2022: Part 6 Road Safety Audits

2.4 Audit Team

The RSA was carried out by the following team:

- [redacted]RSA-02-0652) – level 3 road safety auditor (lead auditor)
- [redacted] (RSA-02-1207) – level 2 road safety auditor (team member)

Stephen and Jessica are registered road safety auditors with the NSW Centre for Road Safety and are experienced in traffic engineering and design/ inspection of traffic management schemes. Both auditors are independent of the road design process.

3 Road Safety Audit Program

3.1 Commencement Meeting

A formal meeting was not held.

3.2 Site and Field Audit

The audit team has undertaken a site inspection in day and night conditions for the area covered in the scope of this audit on 4 April 2023 as part of the previous audit. The weather condition was fine and visibility was good. The site visit was recorded through photographs and video recordings.

3.3 Completion Meeting

Not required.

4 Road Safety Audit Findings

4.1 Introduction

Table 4.1 provides specific details of the road safety deficiencies and a risk rating as extreme, high, medium, low or negligible. The risk ratings have been based on the risk matrix presented in Table 4.1, which has been adopted from the latest Austroads Guide to Road Safety: Road Safety Audit (2022).

Table 4.1: 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 (includes exposure)	Almost Certain	One per quarter	Medium	High	High	Extreme (FSI)	Extreme (FSI)
	Likely	Quarter to 1-year	Medium	Medium	High	Extreme (FSI)	Extreme (FSI)
	Possible	1 to 3 years	Low	Medium	High	High (FSI)	Extreme (FSI)
	Unlikely	3 to 7 years	Negligible	Low	Medium	High (FSI)	Extreme (FSI)
	Rare	7 years+	Negligible	Negligible	Low	Medium (FSI)	High (FSI)

The terms in Table 4.1 are described below.

Likelihood:

- Almost certain – occurrence once per quarter
- Likely – occurrence once per quarter to once per year
- Possible – occurrence once per year to once every three years
- Unlikely – occurrence once every three years to once every seven years
- Rare – occurrence less than once every seven years.

Severity:

- Insignificant – property damage
- Minor – minor first aid
- Moderate – major first aid and/or presents to hospital (not admitted)
- Serious – admitted to hospital
- Fatal – at scene or within 30 days of the crash.

Priority:

- 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.

4.2 Responding to the Audit Report

As set out in the road safety audit guidelines, the responsibility for the road rests with the project manager, not with the auditor. The project manager is under no obligation to accept the audit findings. Neither is it the role of the auditor to agree to, or approve the project manager's responses to the audit.

The audit provides the opportunity to highlight potential road safety problems and have them formally considered by the project manager in conjunction with all other project considerations.

4.3 Road Safety Audit Findings

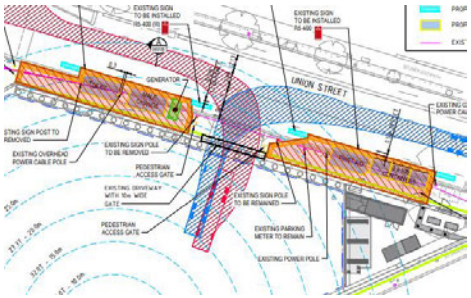
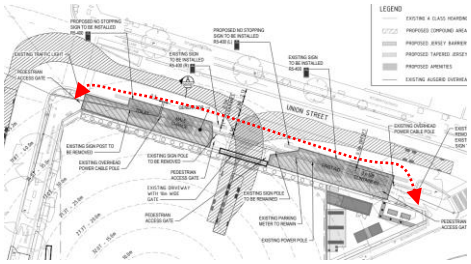
The audit findings are documented in Table 4.2 which provides:

- specific details of the road safety issues identified during the audit
- a risk level rating for each of the road safety audit findings.

It should be acknowledged that positive attributes of the audited road section have not been discussed. Deficiencies that do not cause a safety problem are also not listed.

In-line with TfNSW's best practice recommendations have not been included in the road safety audit findings.

Table 4.2: Road Safety Audit Findings

Item No.	Location	Descriptions of Findings	Photo / Image	Likelihood	Severity	Risk Rating	Designer Response
1	Union Street	The plans show 'jersey barriers with gawk screen' (SIC) located in the parking lane. These barriers would restrict sight distance for trucks exiting the site. There is a risk of a collision with a vehicle leaving the site.		Rare	Moderate	Low	Both sides of the driveway are splayed to accommodate adequate sight distances. The first concrete barrier each side of the driveway are splayed end terminals which further enhances the sight distances in both directions. Union St has a permanent 40km/h speed limit with low traffic volumes
2	Union Street	Although there are pedestrian detour signs and crossing facilities at either end of the footpath closure, pedestrians may still walk around the barriers and on the road along the southern side of Union Street. Pedestrians walking along the carriageway are at risk of being struck by a vehicle. Further, given the site is within an entertainment district with the casino and hotels nearby there is an increased risk of intoxicated pedestrians making poor decisions.		Rare	Serious	Medium	Adequate signposting and temporary fencing will be provided to assist and guide pedestrians around the footpath closure. During working hours, there will be a Traffic Controller on site to further manage pedestrian movements around the site. There will be no parking lane available for pedestrians to walk along the southern side of Union St.
3	Traffic Guidance Scheme	The traffic guidance scheme proposes two pedestrian detour routes via the northern footpath on Union Street and via Pyrmont Bridge Road. The Pyrmont Bridge Road detour route appears to be quite long compared to the Union Street detour route. This may cause pedestrian confusion as multiple detour routes are proposed.		-	-	Note Only.	Noted

5 Concluding Statement

The findings and opinions in the report are based on the examination of the specific road and environs, and might not address all concerns existing at the time of the audit.

The auditors have endeavoured to identify features of the road that could be modified in order to improve safety, although it must be recognised that safety cannot be guaranteed since no road can be regarded as absolutely safe.

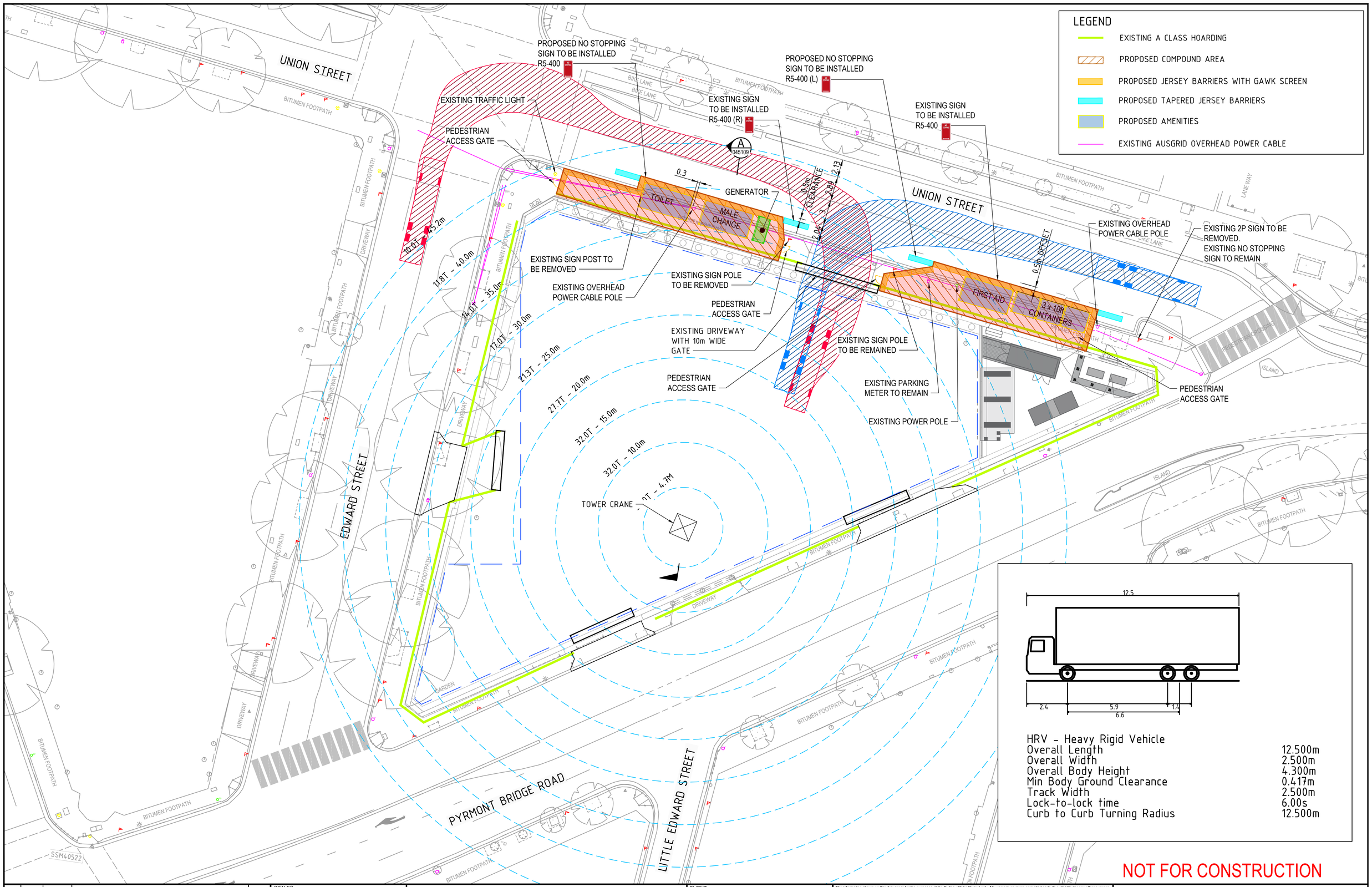
While every effort has been made to ensure the accuracy of this report, it is made available strictly on the basis that anyone relying on it does so at their own risk without any liability to the Auditors.

Level 3 Lead Road Safety Auditor
The Transport Planning Partnership

Level 2 Road Safety Auditor
The Transport Planning Partnership

Appendix A

Design Drawings



HRV - Heavy Rigid Vehicle

Overall Length	12.500m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.417m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

NOT FOR CONSTRUCTION

REV.	BY	DATE	DESCRIPTION	APPD.
-	-	-	-	.
-	-	-	-	-
-	-	-	-	-
C	J.F	18/01/24	RE-ISSUED FOR INFORMATION	B.B
B	J.F	10/01/24	REVISED TO SUIT METRO/DPE COMMENTS	B.B
A	J.F	15/12/23	ISSUED FOR INFORMATION	N.B

A1 Original | Co-ordinate System: GDA2020 MGA Zone 56 | Height Datum: A.H.D | This sheet may be prepared using colour and may be incomplete if copied | NOTE: Do not scale from this drawing. | ALT. DRG No.

SCALES

0 2 4 6 8 10 12m
SCALE 1:200 AT A1 SIZE

CLIENT

NSW GOVERNMENT | sydney METRO

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JOHN HOLLAND | CPB CONTRACTORS | Ghella

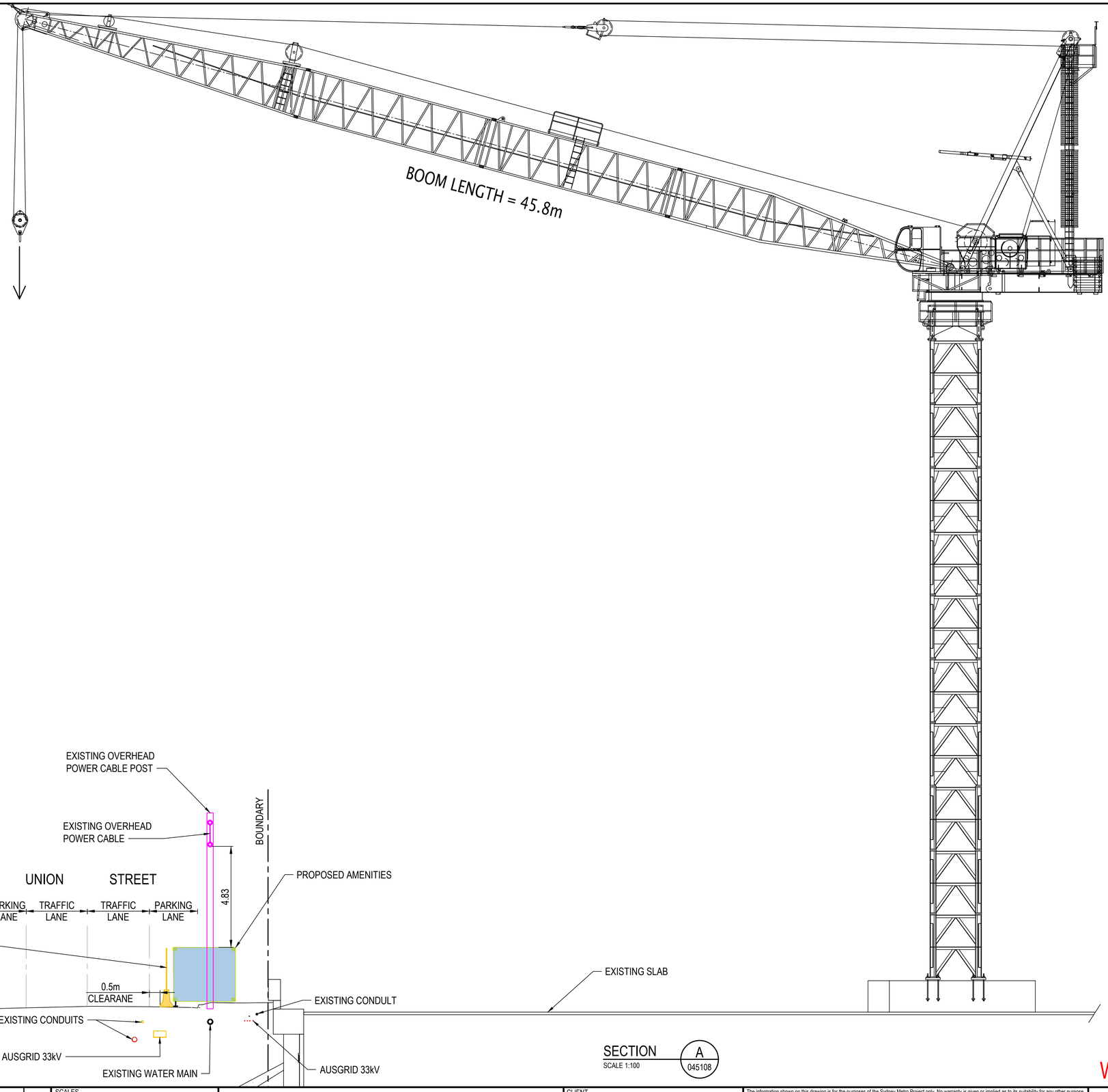
DRAWN J.FAN
DESIGNED -
DRG CHECK Y.HUELSDONK
DESIGN CHECK -
APPROVED N.BRYANT

SYDNEY METRO WEST - EASTERN TUNNELING PACKAGE
PYRMONT STATION
SHAFT EXCAVATION
EAST SHAFT SITE LAYOUT - STAGE 2
SPACE PROOFING FOR RELOCATION OF AMENITIES

STATUS: WORK IN PROGRESS | SHEET 1 OF 1 | ©

DRG No SMWSTETP-JCG-PYR-SN150-CV-DRG-045108 | REV. C

100mm AT FULL SIZE



SECTION A
SCALE 1:100
045108

WORK IN PROGRESS

100mm AT FULL SIZE

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-	-	-	-	-
-	-	-	-	-
B	J.F	22/01/24	ISSUED FOR INFORMATION	B.B
A	J.F	15/12/23	ISSUED FOR INFORMATION	N.B

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DRG CHECK Y.HUELSDONK
DESIGN CHECK -
APPROVED N.BRYANT

SYDNEY METRO WEST - EASTERN TUNNELING PACKAGE

PYRMONT STATION
SHAFT EXCAVATION
EAST SHAFT SITE LAYOUT - STAGE 2
SPACE PROOFING FOR RELOCATION OF AMENITIES SECTION

STATUS: WORK IN PROGRESS | SHEET 1 OF 1 | ©

DRG No SMWSTETP-JCG-PYR-SN150-CV-DRG-045108 | REV. B

A1 Original | Co-ordinate System: GDA2020 MGA Zone 56 | Height Datum: A.H.D | This sheet may be prepared using colour and may be incomplete if copied | NOTE: Do not scale from this drawing. | ALT. DRG No.

1

T8-4

FOOTPATH CLOSED

PEDESTRIANS ← | PEDESTRIANS →

TM8-2(L) TM8-2(R)

2

NO STOPPING | 2P TICKET PERMIT HOLDERS EXCEPTED AREA 20 | NO STOPPING

R5-400(R)

3

NO STOPPING

R5-400

4

TM8-2(L) PEDESTRIANS ←

PEDESTRIANS

TM8-2(R)

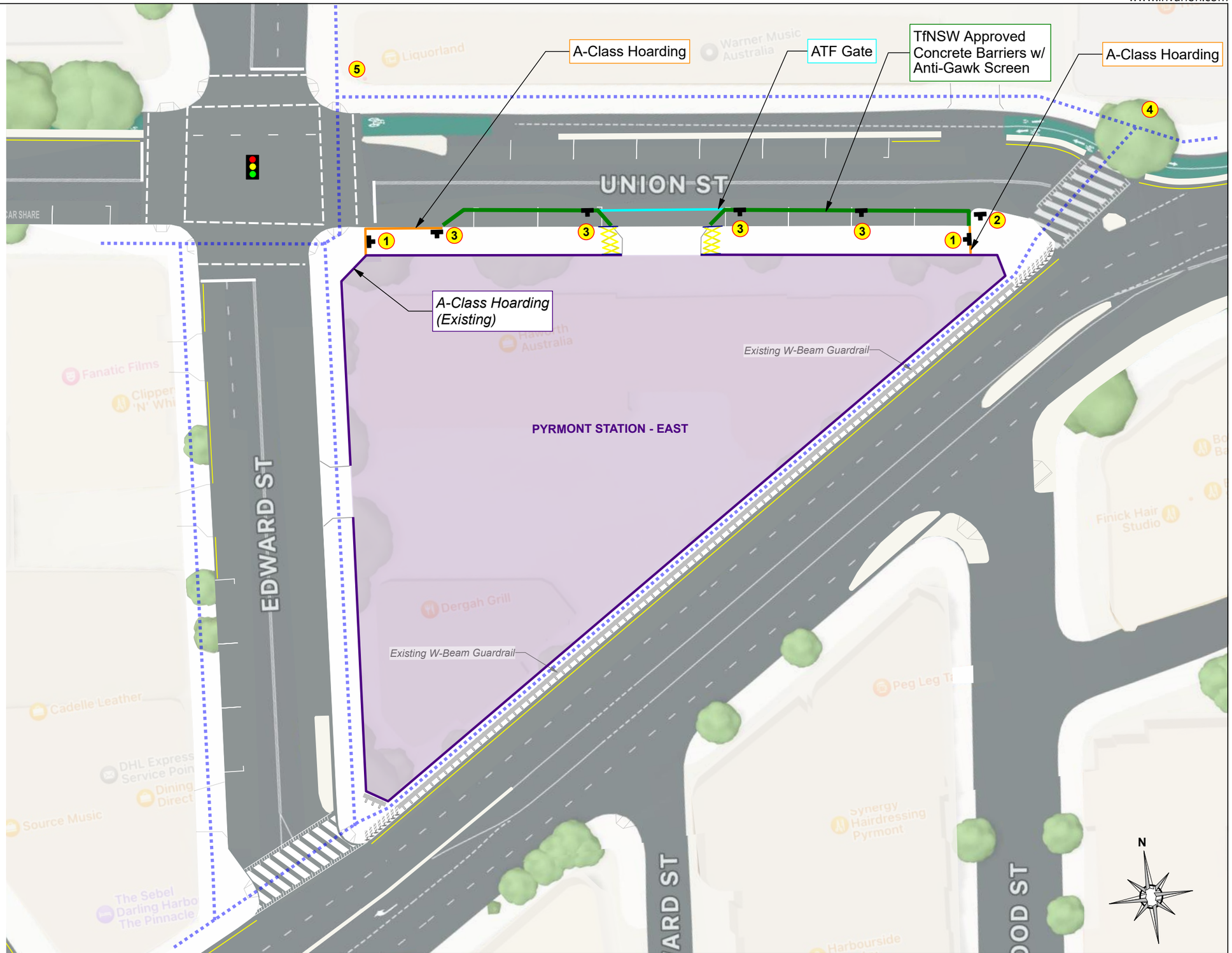
5

PEDESTRIANS →

TM8-2(R)

PEDESTRIANS

TM8-2(L)



PROJECT: SYDNEY METRO WEST - EASTERN TUNNEL PACKAGE

LEGEND

Work Area | Traffic Controller | Retractable Pedestrian Gate | Traffic Cones | Pedestrian Route | Sign (2 posts) | Signalised intersection

Date: 18/12/2023 **Location:** Pyrmont East Station - Union St Compound **Author name:** Corrine Porter **Author accreditation:** TCT0015555 **Signed:** **TCP Number:** SMWETP-TGS-0102 **Page:** 1 of 1

REV - D

Comments:

- THIS IS A SHORT TERM TGS, NOT TO SCALE
- THE CONTRACTOR SHALL ENSURE ALL ROL AND SZA REQUIRMENTS ARE SATISFIED DURING IMPLEMENTATION OF THIS TGS
- ANY EXISTING SIGNAGE THAT CONFLIICTS WITH THIS TGS MUST BE COVERED AT THE START OF SHIFT AND UNCOVERED AT THE END OF SHIFT
- ANY CHANGES REQUIRED, SPEAK TO THE SITE FOREMAN AND THEN MODIFY THIS PLAN IF NECESSARY. ANY CHANGES TO THIS PLAN SHALL BE MARKED ON THIS TGS & SIGNED OFF BY A PWZTMP HOLDER.
- A LANE WIDTH OF 3.5m (MINIMUM) IS TO BE MAINTAINED AT ALL TIMES UNLESS NOTED OTHERWISE
- SHOULDER WIDTH / EDGE CLEARANCE TO TRAFFIC CONES OF 0.5m IS TO BE PROVIDED AT ALL TIMES UNLESS NOTED OTHERWISE
- ALL SIGNAGE TO BE 'B' SIZE UNLESS NOTED OTHERWISE
- SIGNS TO BE POSITIONED IN ACCORDANCE WITH THE TCAWS MANUAL 2022 Issue 6.1
- DIMENSION 'D' IS DETERMINED IN ACCORDANCE WITH THE TCAWS MANUAL 2022 Issue 6.1
- BOLLARDS AND TRAFFIC CONES ARE TO BE INSTALLED IN ACCORDANCE WITH THE 2022 Issue 6.1
- TAPER LENGTHS ARE TO BE IN ACCORDANCE WITH THE TCAWS MANUAL 2022 Issue 6.1
- THE SITE MUST COMPLY WITH THE TCAWS MANUAL 2022 Issue 6.1 AND A.S. 1742.3
- REGULATORY SPEED / ROADWORK SIGNS TO BE REPEATED EVERY 400m UNLESS NOTED OTHERWISE

The Transport Planning Partnership
Suite 402 Level 4, 22 Atchison Street
St Leonards NSW 2065

P.O. Box 237
St Leonards NSW 1590

02 8437 7800

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Appendix D Vehicle Movement Plans

Date: 12/12/2023 **Location:** Pyrmont Station East - HV ≤ 12.5m **Author name:** Corrine Porter **Author accreditation:** TCT0015555 **Signed:** **VMP Number:** SMWETP-VMP-0009 **Page:** 1 of 1

Comments:
- Drivers must be briefed on this VMP
- Use only approved haul routes
- Gatekeeper/s must be in position when gates are in use and the VMP requires it.
- Drivers must adhere to Gatekeepers directions
- Vehicles entering and exiting site must:
  1. Activate roof mounted beacons on approach
  2. radio intention via UHF
  3. Indicate intensions
  4. Turn into/out of site
  5. Exit with caution, ensuring the safety of pedestrian and other road users
  6. Disable roof mounted beacons after egress and speed has reached normal traffic flow.
  7. follow all road rules and speed limits.

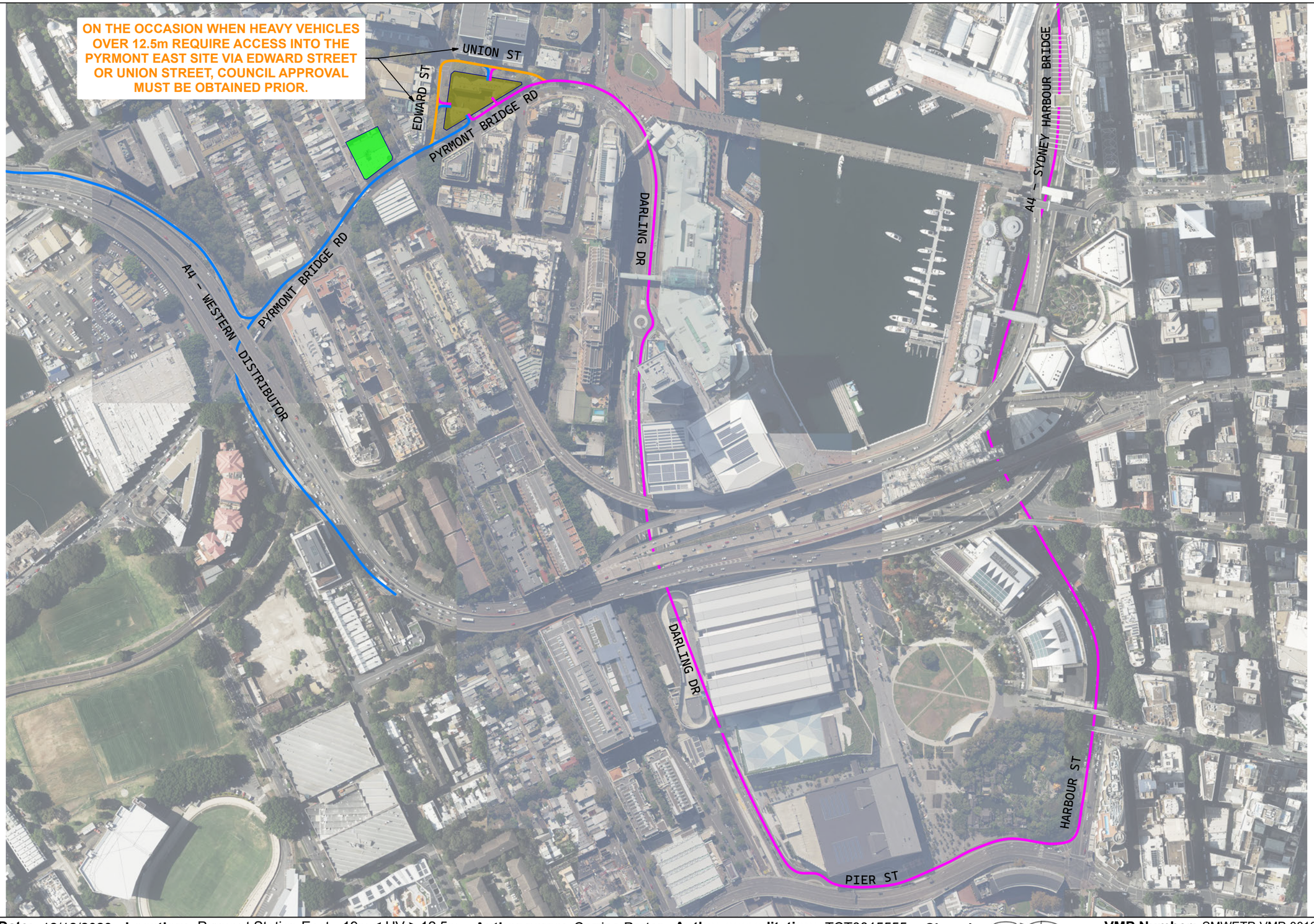
PROJECT: SYDNEY METRO WEST - EASTERN TUNNELLING PACKAGE

REV - 00

LEGEND

- Eastern Shaft
- Western Shaft
- Inbound Haulage Route
- Outbound Haulage Route

N



Date: 12/12/2023 **Location:** Pyrmont Station East - 19m ≤ HV ≥ 12.5m **Author name:** Corrine Porter **Author accreditation:** TCT0015555 **Signed:** **VMP Number:** SMWETP-VMP-0010 **Page:** 1 of 1

Comments:
- Drivers must be briefed on this VMP
- Use only approved haul routes
- Gatekeeper/s must be in position when gates are in use and the VMP requires it.
- Drivers must adhere to Gatekeepers directions
- Vehicles entering and exiting site must:
  1. Activate roof mounted beacons on approach
  2. radio intention via UHF
  3. Indicate intensions
  4. Turn into/out of site
  5. Exit with caution, ensuring the safety of pedestrian and other road users
  6. Disable roof mounted beacons after egress and speed has reached normal traffic flow.
  7. follow all road rules and speed limits.

PROJECT: SYDNEY METRO WEST - EASTERN TUNNELLING PACKAGE

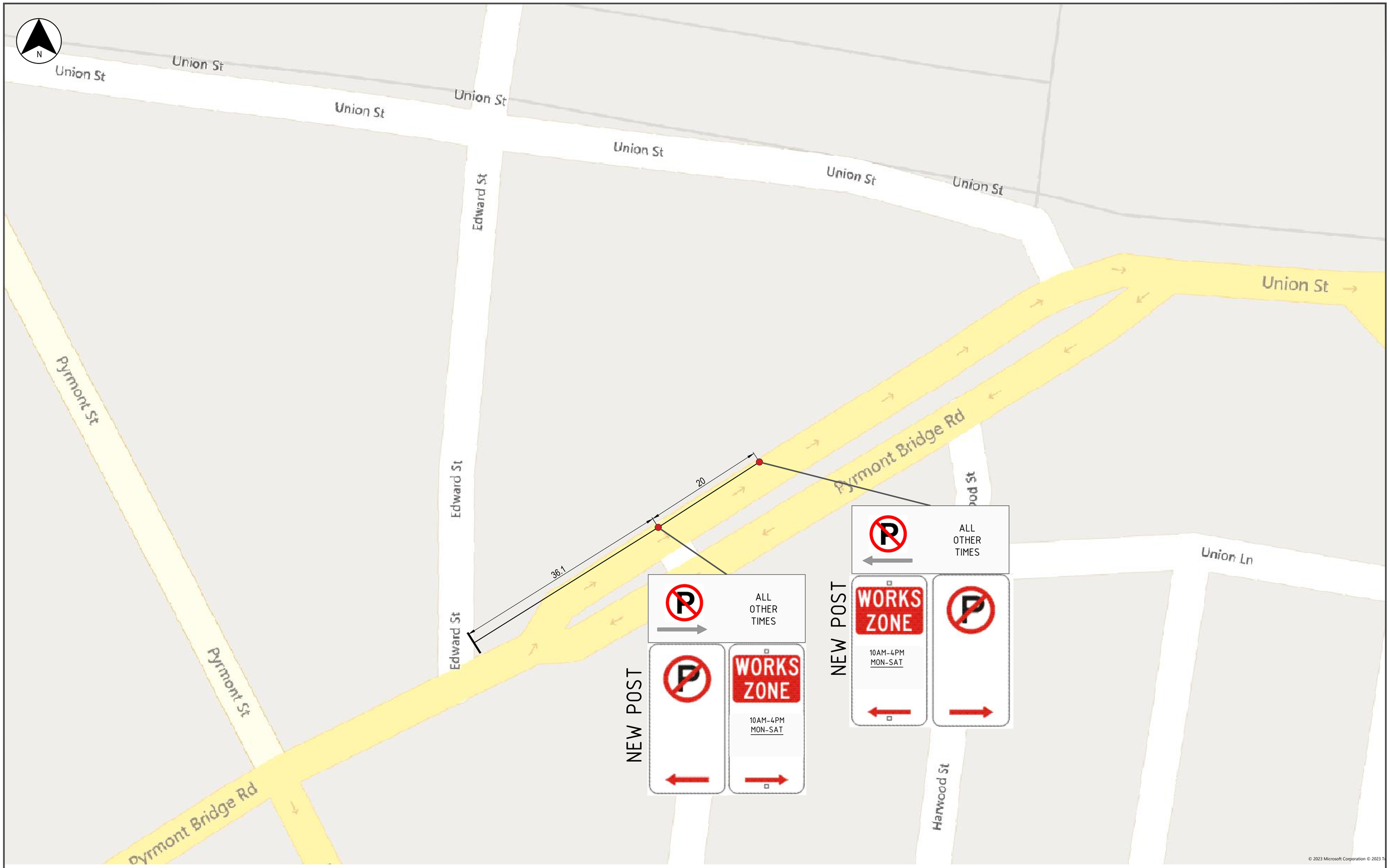
REV - 00

LEGEND

Eastern Shaft	Inbound Haulage Route
Western Shaft	Outbound Haulage Route

N

Appendix E Proposed Works Zones



WORK IN PROGRESS

REV.	BY	DATE	DESCRIPTION	APPD.
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-	-	-	-	-
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SCALES

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JOHN HOLLAND | CPB CONTRACTORS | Ghella

DRAWN A.MCGONIGAL
DESIGNED N.BRYANT
DRG CHECK N.BRYANT
DESIGN CHECK K.VARGA
APPROVED S.CONNOR

SYDNEY METRO WEST - EASTERN TUNNELING PACKAGE
PYRMONT
TRAFFIC SIGNAGE
PROPOSED SIGNAGE

STATUS: WORK IN PROGRESS | SHEET 1 OF 1 | ©

DRG No XXXXX | REV. C

A1 Original | Co-ordinate System: GDA2020 MGA Zone 56 | Height Datum: A.H.D | This sheet may be prepared using colour and may be incomplete if copied | NOTE: Do not scale from this drawing. | ALT. DRG No.

100mm AT FULL SIZE

Appendix F Pyrmont Bridge Road Proposed Guard Rail and Linemarking Layout

LEGEND

- B CLASS HOARDING
- FUTURE NEW DRIVEWAY
- LOADING/UNLOADING AREA
- RAMSHIELD W-BEAM 2m CENTRES, 1560 POSTS
- EXISTING ROAD LINE MARKING
- PROPOSED TEMPORARY ROAD LINE MARKING DURING CONSTRUCTION
- KLEMMFIX TEMP BARRIER

NOTE: BULL NOSE END TREATMENT AT THE END OF EACH W-BEAM

LINKMARKING LEGEND

- 0.1 / 0.1 / 0.1 BL2
- 0.1 LL4
- 0.15 EL1

LINEMARKING IN ACCORDANCE WITH TfNSW DELINEATION AND PAVEMENT MARKING STANDARD TS 05462:1.0 2023

NOT FOR CONSTRUCTION

100mm AT FULL SIZE

REV.	BY	DATE	DESCRIPTION	APPD.
-	-	-	-	-
D	J.F	06/11/23	PROPOSED LINE MARKING REVISED TO SUIT ABJV COMMENTS	B.B
C	J.F	05/10/23	NOTE AND DIMENSION ADDED	N.B
B	A.M	04/09/23	KLEMMFIX BARRIERS ADDED	S.C.
A	J.F	08/08/23	ISSUED FOR INFORMATION	S.C.

SCALES
0 2 4 6 8 10 12m
SCALE 1:200 AT A1 SIZE

CLIENT
NSW GOVERNMENT | sydney METRO

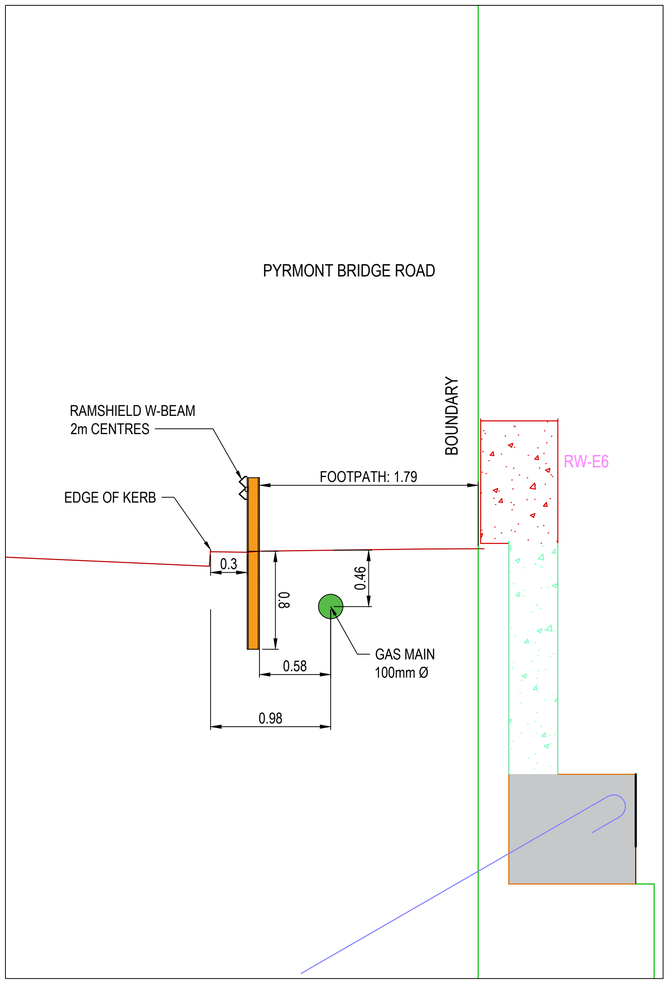
SERVICE PROVIDERS
JOHN HOLLAND | CPB CONTRACTORS | Ghella

DRAWN J.FAN
DESIGNED K. VARGA
DRG CHECK K. VARGA
DESIGN CHECK N.BRYANT
APPROVED S.CONNOR

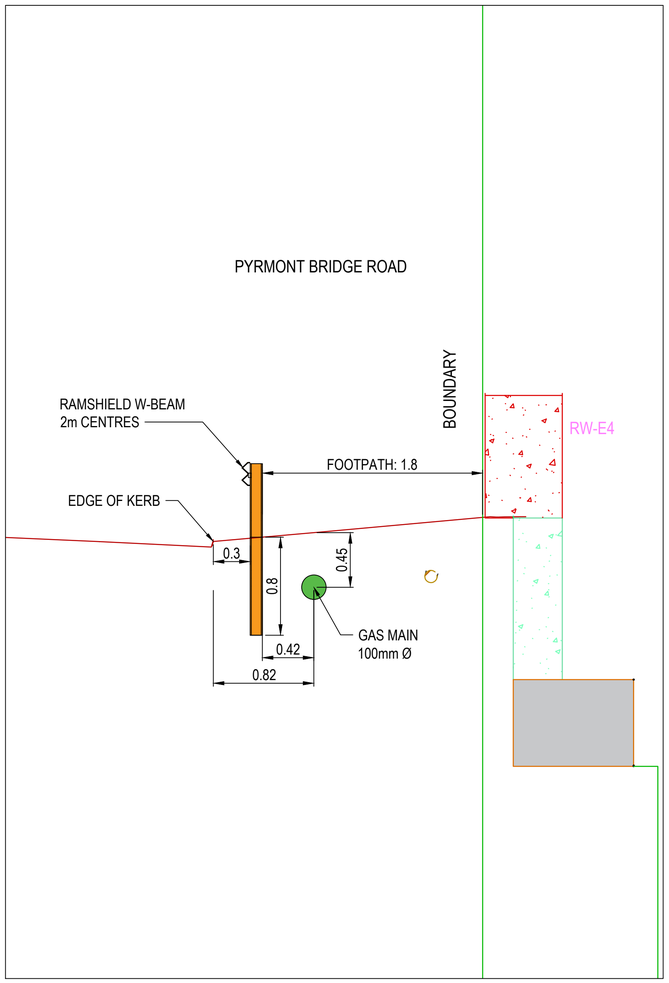
SYDNEY METRO WEST - EASTERN TUNNELING PACKAGE
PYRMONT STATION
EAST SHAFT SITE
TRAFFIC MANAGEMENT PLAN
SIGNING AND PAVEMENT MARKING

STATUS: WORK IN PROGRESS | SHEET 1 OF 2 | ©
DRG No SMWSTETP-JCG-PYR-SN150-CV-SKE-020025 | REV. D

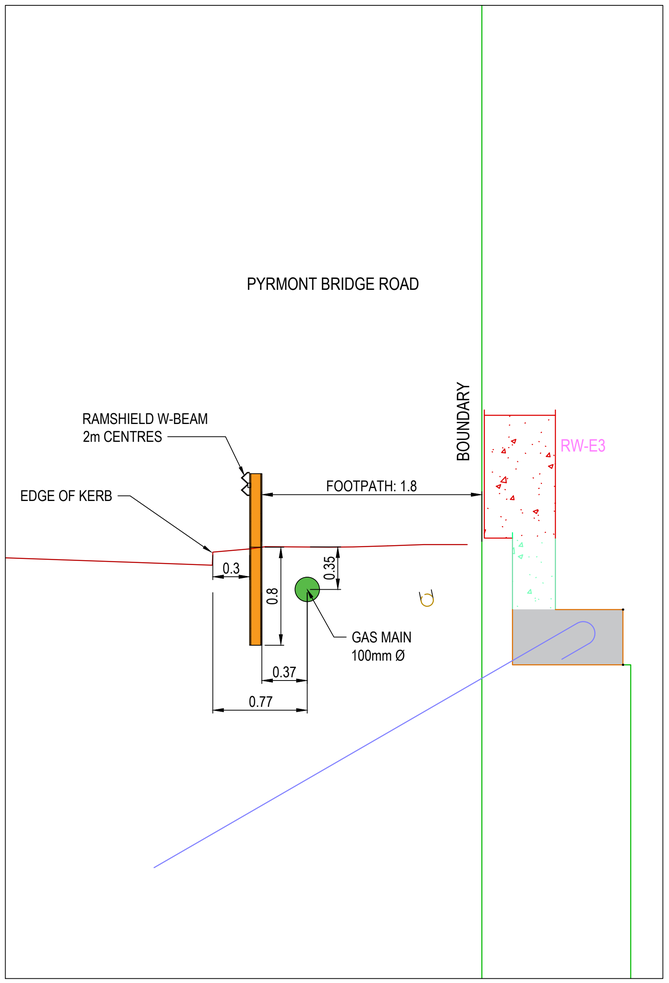
A1 Original | Co-ordinate System: GDA2020 MGA Zone 56 | Height Datum: A.H.D | This sheet may be prepared using colour and may be incomplete if copied | NOTE: Do not scale from this drawing. | ALT. DRG No.



SECTION A
SCALE 1:25m
020025



SECTION B
SCALE 1:25m
020025



SECTION C
SCALE 1:25m
020025

WORK IN PROGRESS

100mm AT FULL SIZE

REV.	BY	DATE	DESCRIPTION	APPD.
A	A.M	16/08/23	ISSUED FOR INFORMATION	S.C

SCALES

CLIENT

NSW GOVERNMENT | sydney METRO

SERVICE PROVIDERS

JOHN HOLLAND | CPB CONTRACTORS | Ghella

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.

DRAWN A MCGONIGAL
DESIGNED K. VARGA
DRG CHECK K. VARGA
DESIGN CHECK N. BRYANT
APPROVED S. CONNOR

SYDNEY METRO WEST - EASTERN TUNNELLING PACKAGE
PYRMONT STATION
EAST SHAFT SITE
TRAFFIC MANAGEMENT PLAN
SIGNAGE AND PAVEMENT MARKING SECTION VIEWS

STATUS: WORK IN PROGRESS | SHEET 2 OF 2 | ©

DRG No. SMWSTETP-JCG-PYR-SN150-CV-SKE-020026 | REV. A

A1 Original	Co-ordinate System: GDA2020 MGA Zone 56	Height Datum: A.H.D	This sheet may be prepared using colour and may be incomplete if copied	NOTE: Do not scale from this drawing. .	ALT. DRG No.

Appendix G Review Comments for Rev 00, Rev 01, Rev 02 and Rev 03

REVIEW COMMENTS SHEET

DOCUMENT NO.	TITLE	VER	STATUS	NO.	DATE	COMPANY	RAISED BY	REVIEW DOC. NO.*	DOCUMENT REF*	DEED REF*	COMMENTS / RESPONSE	COMMENT CATEGORY*	CLOSED OUT
SMWSTETP-JCG-PYR-SN150-TF-PLN-002272	Sydney Metro West - ETP - Construction Traffic Management Plan - Pyrmont East - Stage 2 - Site Establishment, Shaft Excavation & Tunnelling	00.01	S3	01	5/07/2023	SMD	[redacted]	[redacted]		[redacted]		[redacted]	[redacted]
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DOCUMENT NO.	TITLE	VER	STATUS	NO.	DATE	COMPANY	RAISED BY	REVIEW DOC. NO.*	DOCUMENT REF*	DEED REF*	COMMENTS / RESPONSE	COMMENT CATEGORY*	CLOSED OUT
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DOCUMENT NO.	TITLE	VER	STATUS	NO.	DATE	COMPANY	RAISED BY	REVIEW DOC. NO.*	DOCUMENT REF*	DEED REF*	COMMENTS / RESPONSE	COMMENT CATEGORY*	CLOSED OUT
				24	11/07/2023	SCO							

DOCUMENT NO.	TITLE	VER	STATUS	NO.	DATE	COMPANY	RAISED BY	REVIEW DOC. NO.*	DOCUMENT REF*	DEED REF*	COMMENTS / RESPONSE	COMMENT CATEGORY*	CLOSED OUT
					31/07/2023	JCG							

REVIEW COMMENTS SHEET

DOCUMENT NO.	TITLE	VER	STATUS	NO.	DATE	COMPANY	RAISED BY	REVIEW DOC. NO.*	DOCUMENT REF*	DEED REF*	COMMENTS / RESPONSE	COMMENT CATEGORY*	CLOSED OUT
SMWSTETP-JCG-PYR-SN150-TF-PLN-002272	Sydney Metro West - ETP - Construction Traffic Management Plan - Pyrmont East - Stage 2 - Site Establishment, Shaft Excavation & Tunnelling	03.02	S3	53	18/01/2024	SCO	[redacted]	[redacted]		[redacted]	[redacted]	[redacted]	[redacted]
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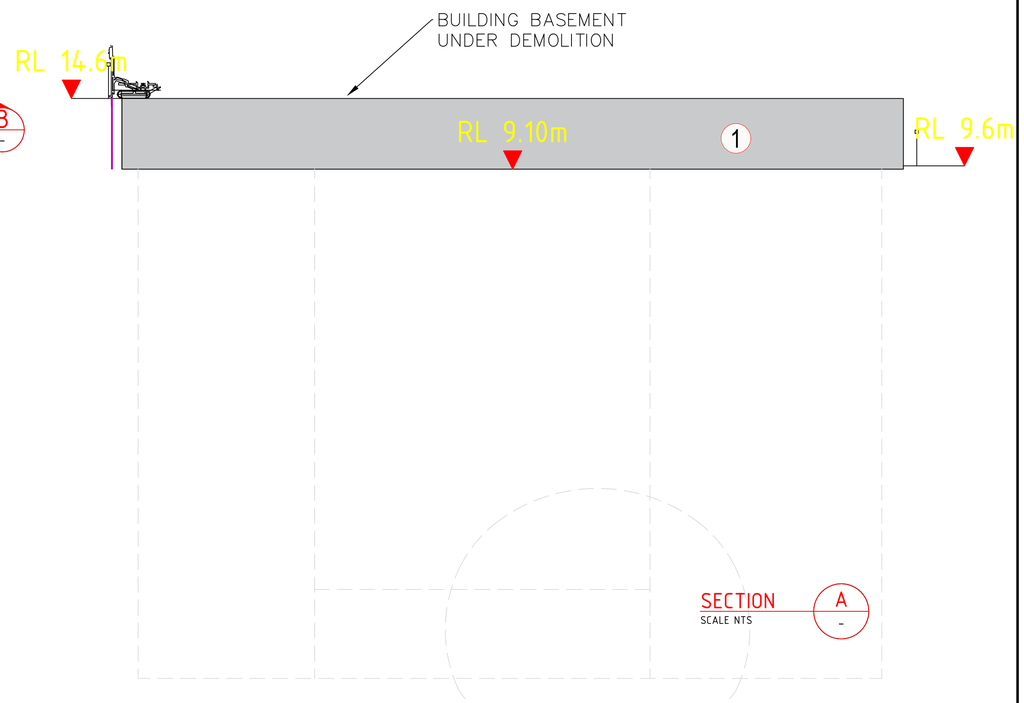
Appendix H Approved HVLR Route

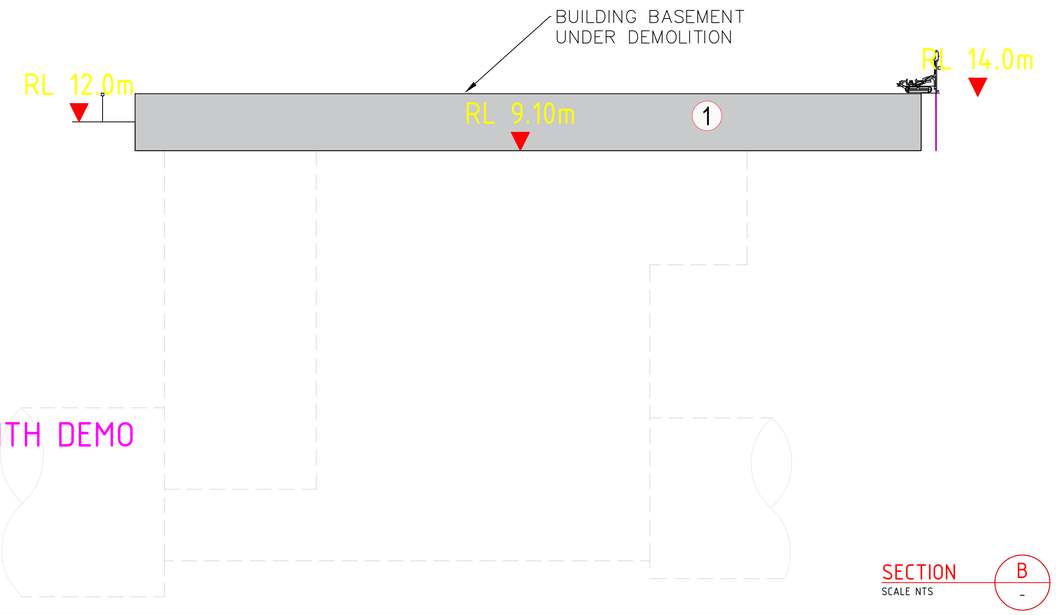
Heavy Vehicle Local Road Report for Use of Local Roads – Pyrmont East and West Construction Sites
(SMWSTETP-JCG-PYR-SN150-TF-RPT-093005 Rev1)

https://jcgjv.com.au/documents/

Appendix I Site Staging Plans

STAGE 1





1 DEMOLITION ONGOING

2 INSTALLATION OF TEMPORARY SCAFFOLD TUBE SHORING IN PARALLEL WITH DEMO

100mm AT FULL SIZE

REV.	BY	DATE	DESCRIPTION	APPD.
00	JV	06.12.2022	.	P.S.

SCALES
0 5 10 15 20 25 30m
SCALE 1:500 AT A1 SIZE

CLIENT
NSW GOVERNMENT | sydney METRO

SERVICE PROVIDERS
JOHN HOLLAND | CPB CONTRACTORS | Ghella

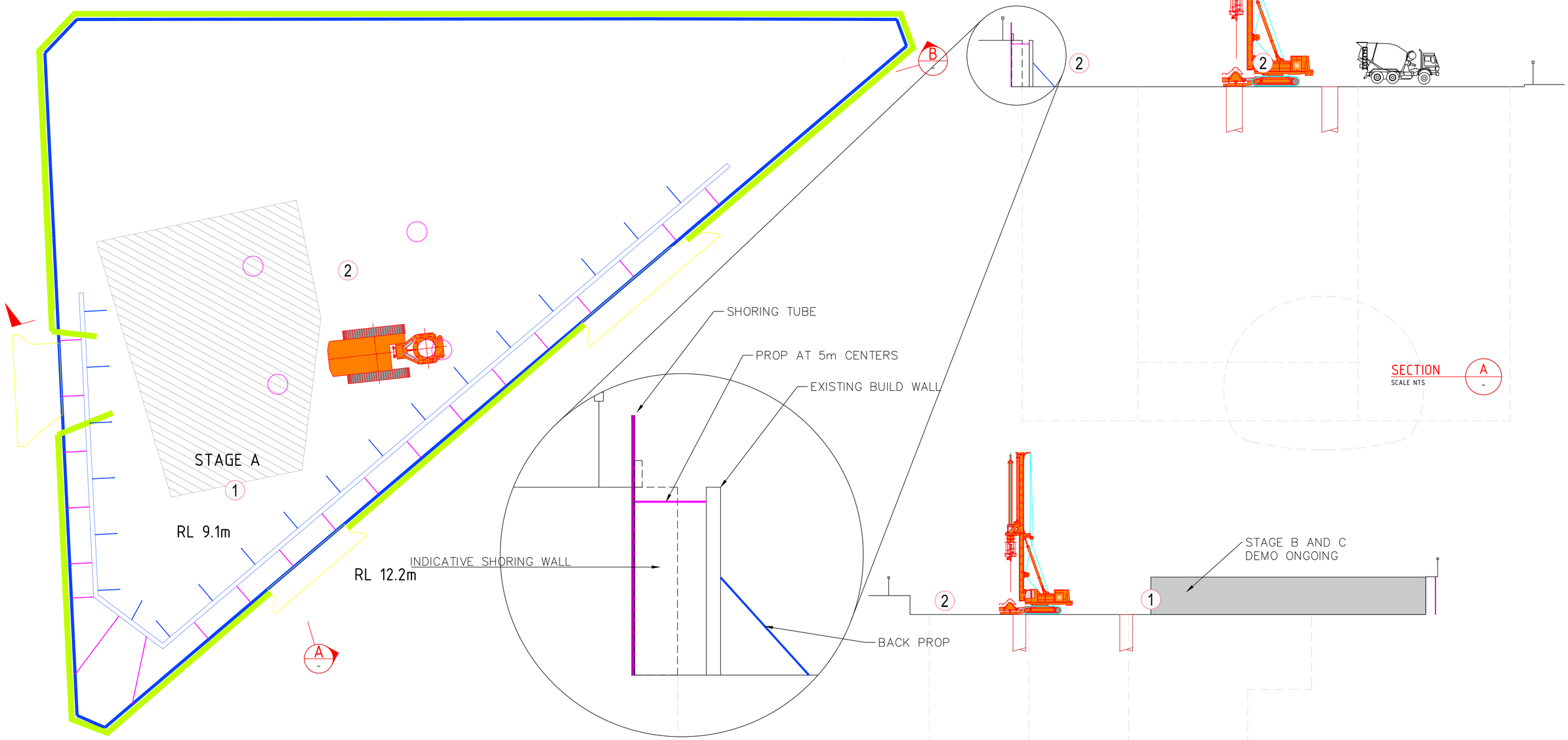
DRAWN YT.FONG
DESIGNED YT. FONG
DRG CHECK B.BENNETTES
DESIGN CHECK B. BENNETTES
APPROVED D.MAYTOM

SYDNEY METRO WEST - EASTERN TUNNELLING PACKAGE
PYRMONT STATION
SITE SETUP
EAST SHAFT SITE ESTABLISHMENT

STATUS: PROJECT MILESTONE | SHEET 1 OF 10 | ©
DRG No. SMWSTETP-JCG-SCB-SN100-CV-SKE-XXXXXX | REV. 01

A1 Original | Co-ordinate System: MGA Zone 56 | Height Datum: GDA2020 | This sheet may be prepared using colour and may be incomplete if copied | NOTE: Do not scale from this drawing. | ALT. DRG No.

STAGE 2



SECTION A
SCALE NTS

SECTION B
SCALE NTS

1. COMPLETION OF STAGE 1 DEMOLITION (STRUCTURE REMOVED TO GROUND SLAB LEVEL, WALLS ALONG PBR & EDWARD ST REMOVED TO FOOTPATH LEVEL)
2. INSTALL BORED PILES FOR SHED AND PLATFORM KING POSTS
3. DETAILED EXCAVATION, SHORING AND FRP RETAINING WALLS ALONG EDWARD ST AND PBR

REV.	BY	DATE	DESCRIPTION	APPD.
00	JV	06.12.2022	.	P.S.

SCALES
0 5 10 15 20 25 30m
SCALE 1:500 AT A1 SIZE

CLIENT
NSW GOVERNMENT | sydney METRO

SERVICE PROVIDERS
JOHN HOLLAND | CPB CONTRACTORS | Ghella

DRAWN	YT.FONG
DESIGNED	YT. FONG
DRG CHECK	B.BENNETTES
DESIGN CHECK	B. BENNETTES
APPROVED	D.MAYTOM

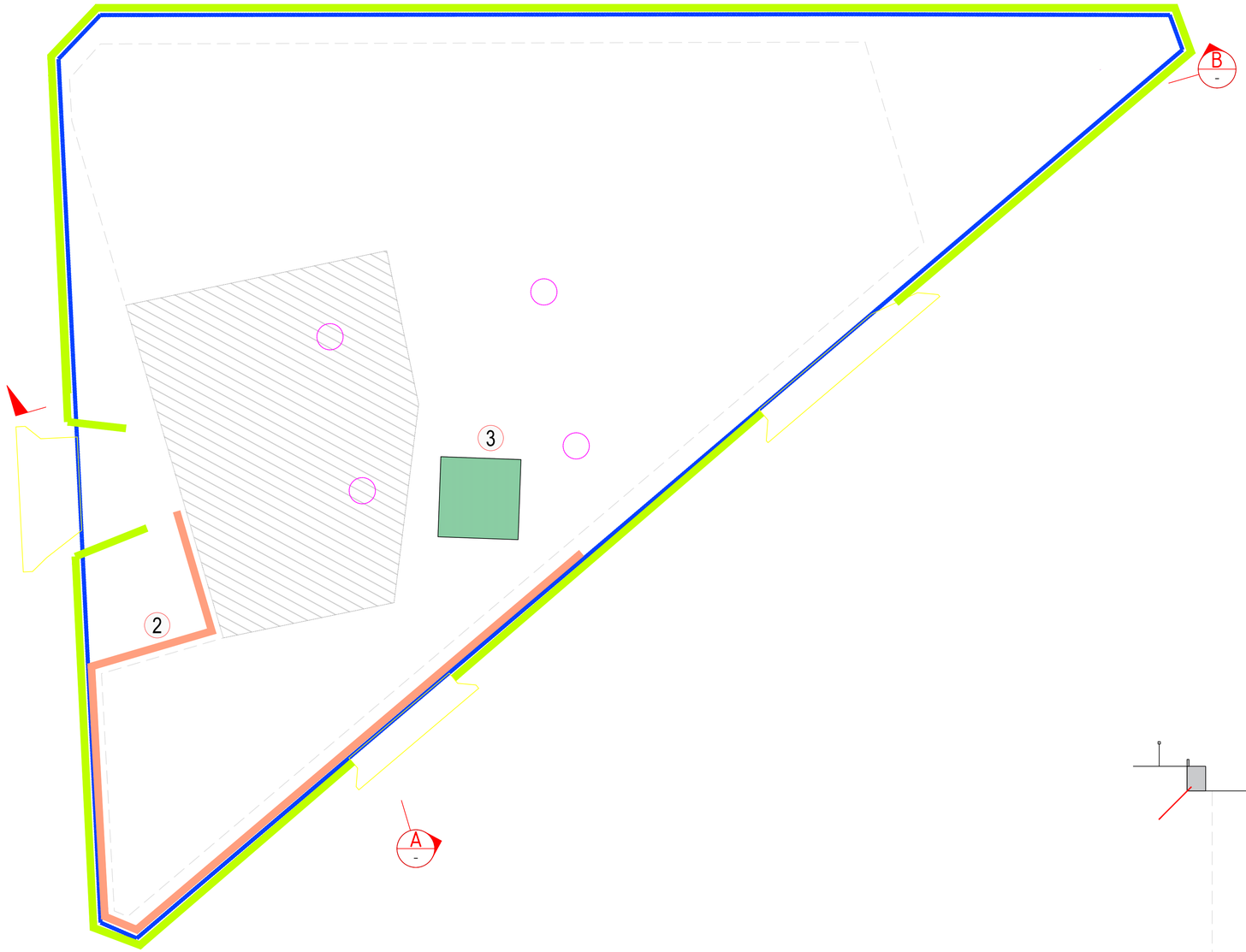
SYDNEY METRO WEST - EASTERN TUNNELLING PACKAGE
PYRMONT STATION
SITE SETUP
EAST SHAFT SITE ESTABLISHMENT

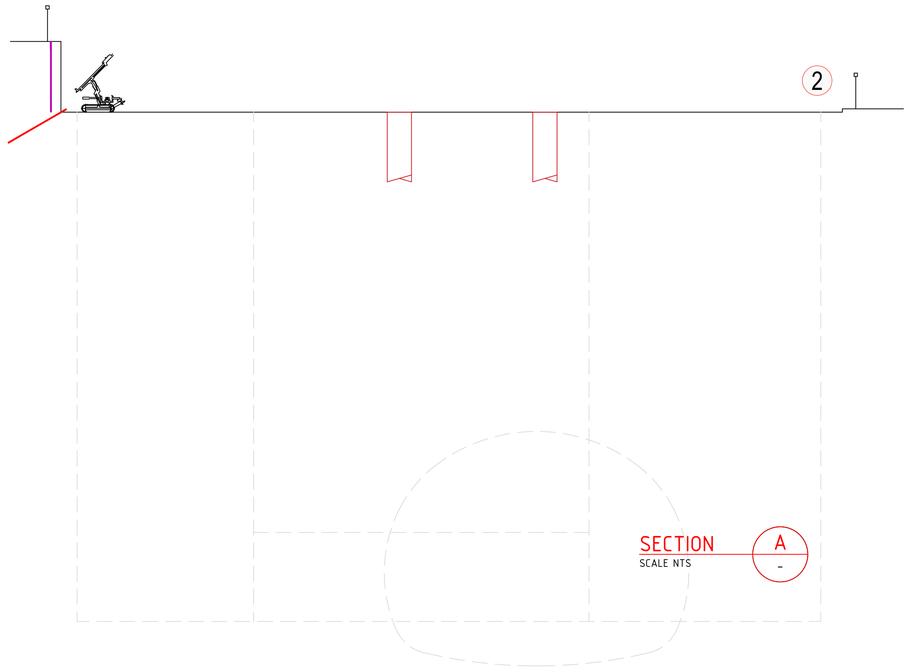
STATUS: PROJECT MILESTONE | SHEET 2 OF 10 | ©
DRG No. SMWSTETP-JCG-SCB-SN100-CV-SKE-XXXXXX | REV. 01

A1 Original | Co-ordinate System: MGA Zone 56 | Height Datum: GDA2020 | This sheet may be prepared using colour and may be incomplete if copied | NOTE: Do not scale from this drawing. | ALT. DRG No.

100mm AT FULL SIZE

STAGE 3





SECTION
SCALE NTS
A
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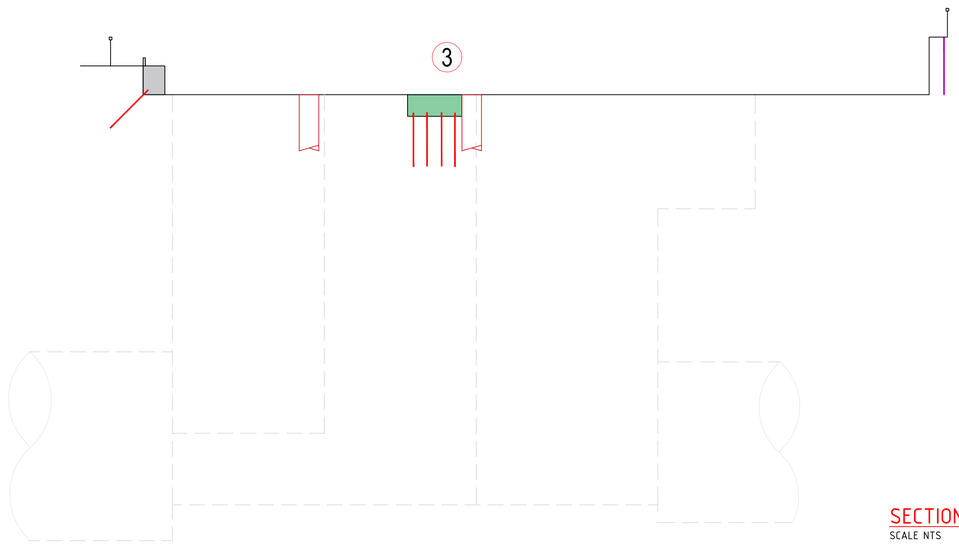


SECTION
SCALE NTS
B
-

1 EXCAVATE CAPPING BEAM , INSTALL ANCHOR, FRP CAPPING BEAM AND UPSTAND BEAM ALONG EDWARD AND PBR
2 INSTALL TOWER CRANE FOUNDATION AND GROUND ANCHOR

100mm AT FULL SIZE

REV.	BY	DATE	DESCRIPTION	APPD.
00	JV	06.12.2022	.	P.S.

SCALES
0 5 10 15 20 25 30m
SCALE 1:500 AT A1 SIZE

CLIENT
NSW GOVERNMENT | sydney METRO

SERVICE PROVIDERS
JOHN HOLLAND | CPB CONTRACTORS | Ghella

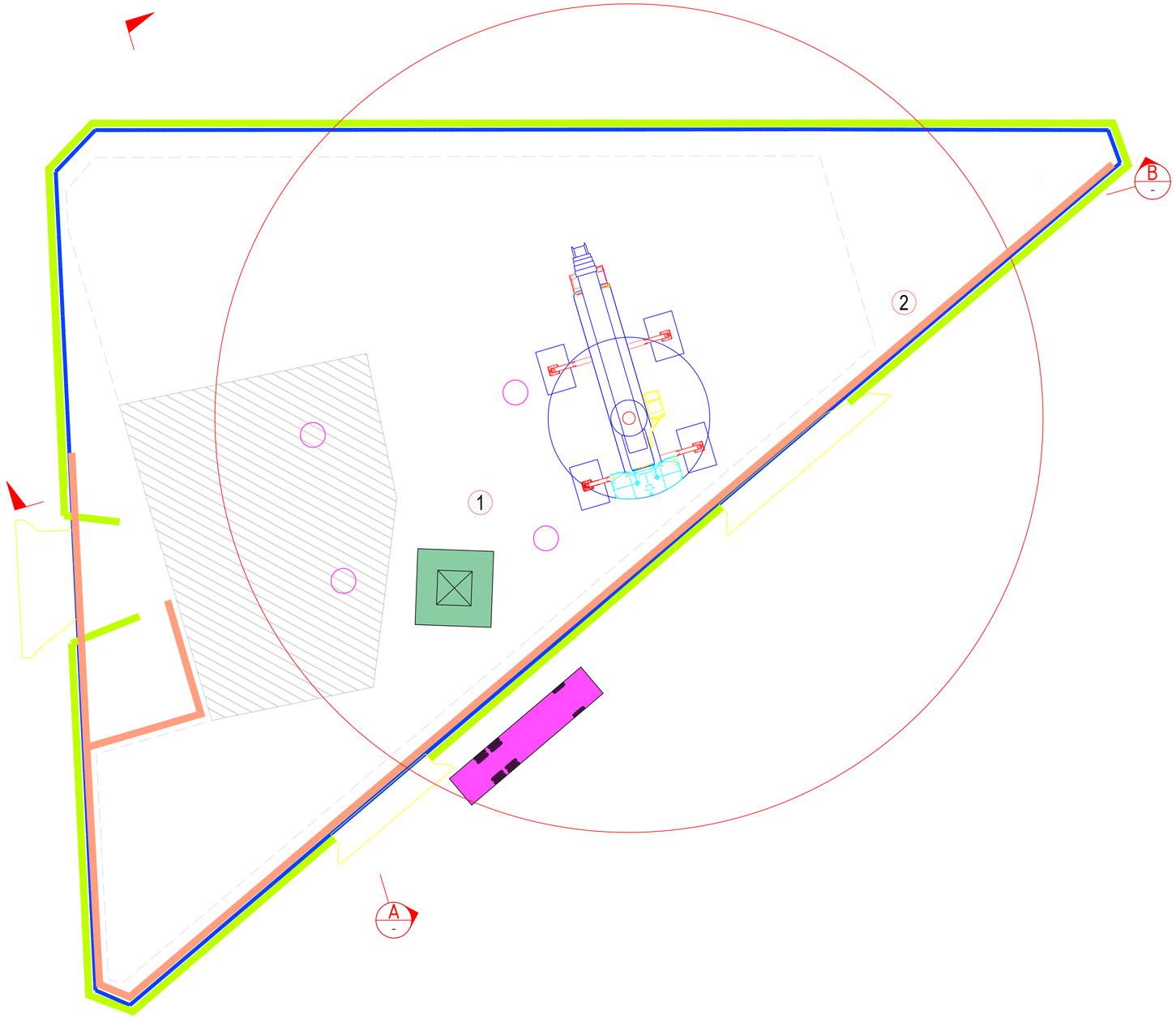
DRAWN YT.FONG
DESIGNED YT. FONG
DRG CHECK B.BENNETTES
DESIGN CHECK B. BENNETTES
APPROVED D.MAYTOM

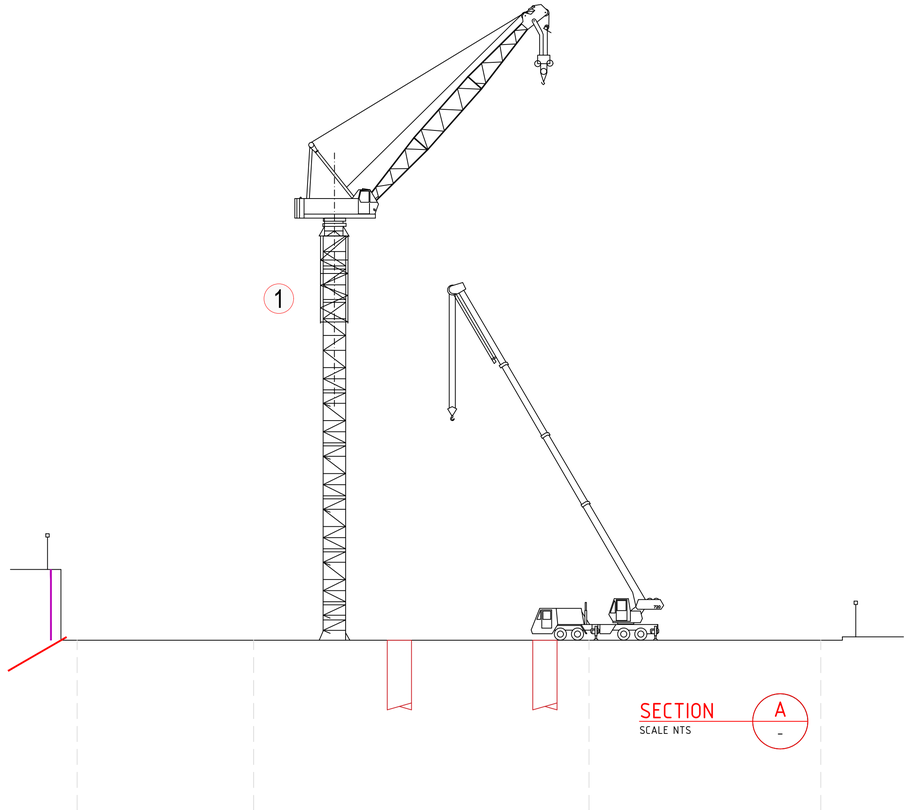
SYDNEY METRO WEST - EASTERN TUNNELLING PACKAGE
PYRMONT STATION
SITE SETUP
EAST SHAFT SITE ESTABLISHMENT

STATUS: PROJECT MILESTONE | SHEET 3 OF 10 | ©
DRG No. SMWSTETP-JCG-SCB-SN100-CV-SKE-XXXXXX | REV. 01

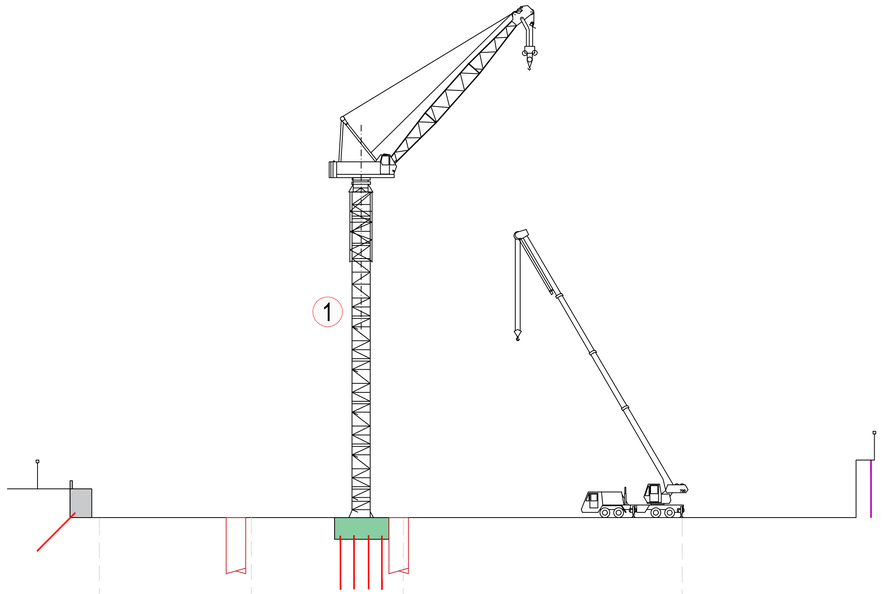
A1 Original | Co-ordinate System: MGA Zone 56 | Height Datum: GDA2020 | This sheet may be prepared using colour and may be incomplete if copied | NOTE: Do not scale from this drawing. | ALT. DRG No.

STAGE 4





SECTION A
SCALE NTS



SECTION B
SCALE NTS

1 INSTALL TOWER CRANE

2 INSTALL ANCHOR, FRP CAPPING BEAM/ UPSTAND BEAM AND TRIM ROCK FACE ALONG PBR

100mm AT FULL SIZE

REV.	BY	DATE	DESCRIPTION	APPD.
00	JV	06.12.2022		P.S.

SCALES
0 5 10 15 20 25 30m
SCALE 1:500 AT A1 SIZE

CLIENT
NSW GOVERNMENT | sydney METRO

SERVICE PROVIDERS
JOHN HOLLAND | CPB CONTRACTORS | Ghella

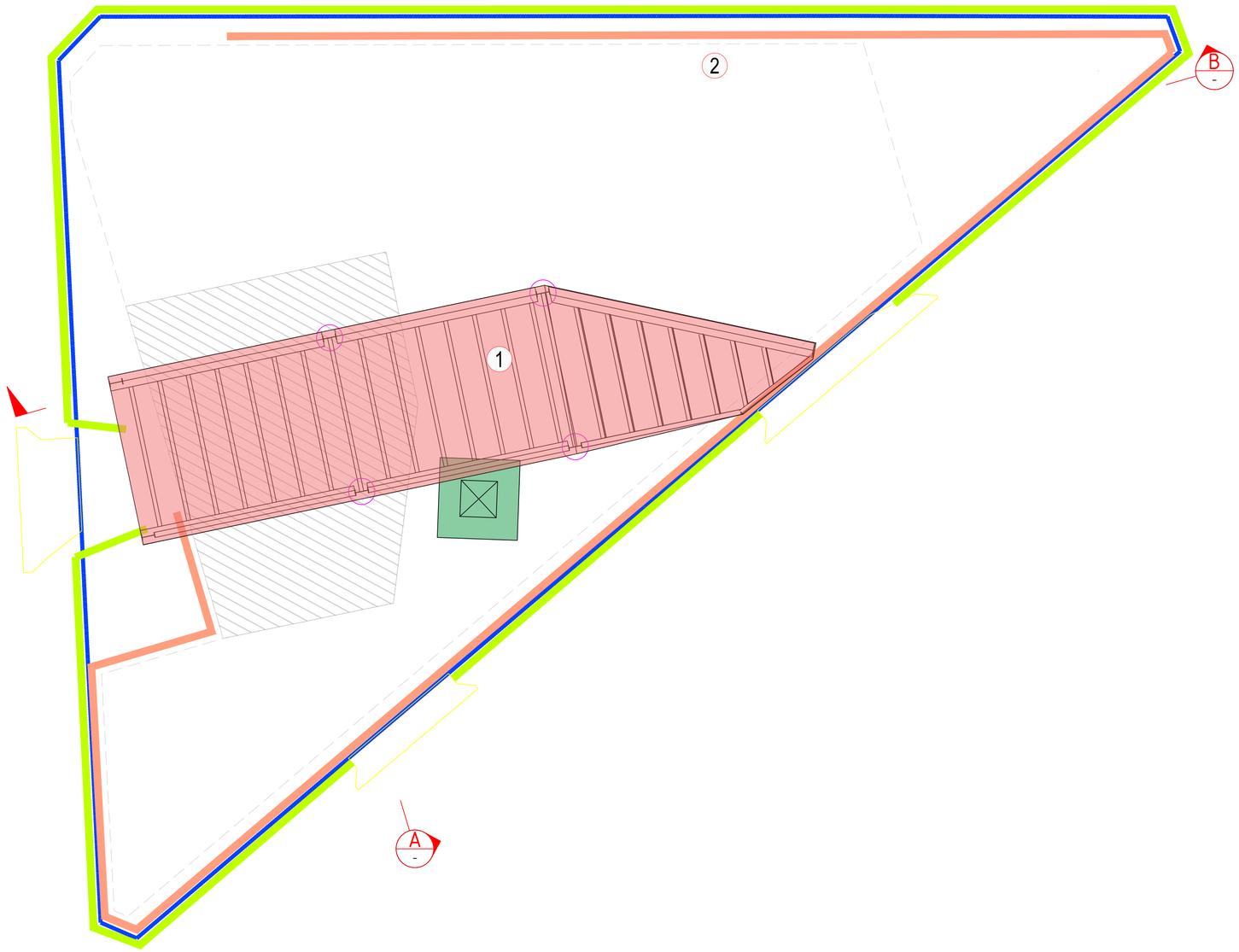
DRAWN	YT.FONG
DESIGNED	YT. FONG
DRG CHECK	B.BENNETTES
DESIGN CHECK	B. BENNETTES
APPROVED	D.MAYTOM

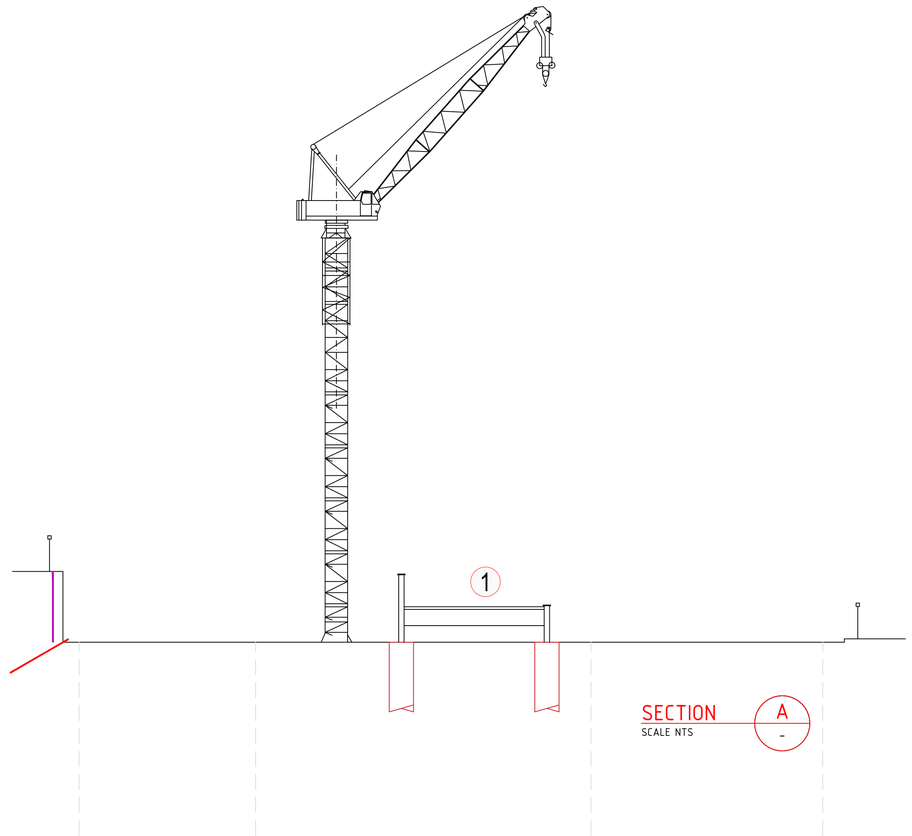
SYDNEY METRO WEST - EASTERN TUNNELLING PACKAGE
PYRMONT STATION
SITE SETUP
EAST SHAFT SITE ESTABLISHMENT

STATUS: PROJECT MILESTONE | SHEET 4 OF 10 | ©
DRG No. SMWSTETP-JCG-SCB-SN100-CV-SKE-XXXXXX | REV. 01

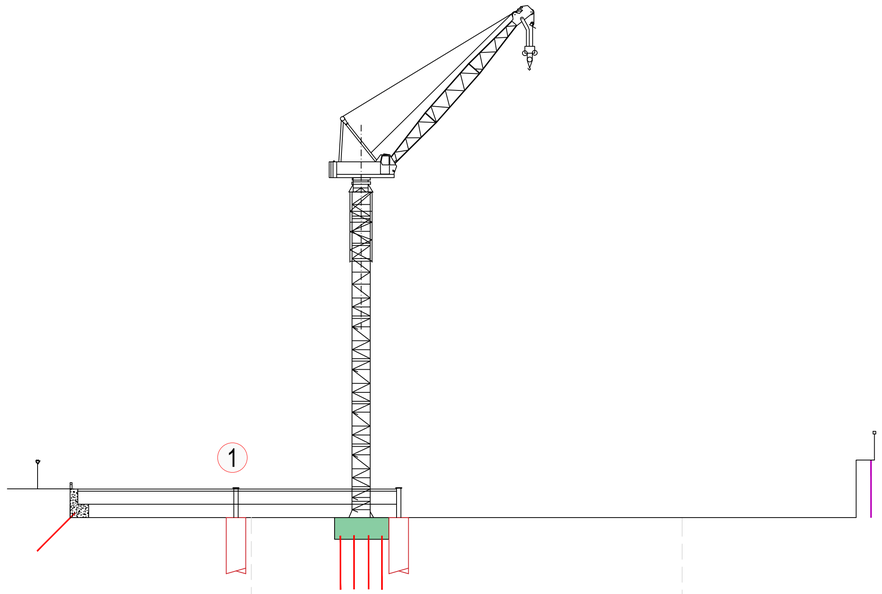
A1 Original | Co-ordinate System: MGA Zone 56 | Height Datum: GDA2020 | This sheet may be prepared using colour and may be incomplete if copied | NOTE: Do not scale from this drawing. | ALT. DRG No.

STAGE 5





SECTION A
SCALE NTS



SECTION B
SCALE NTS

1 INSTALL LOWER DECK WITH TOER CRANE
2 EXCAVATE AND FRP UNION STREET CAPPING BEAM

100mm AT FULL SIZE

REV.	BY	DATE	DESCRIPTION	APPD.
00	JV	06.12.2022		P.S.

SCALES
0 5 10 15 20 25 30m
SCALE 1:500 AT A1 SIZE

CLIENT
NSW GOVERNMENT | sydney METRO

SERVICE PROVIDERS
JOHN HOLLAND | CPB CONTRACTORS | Ghella

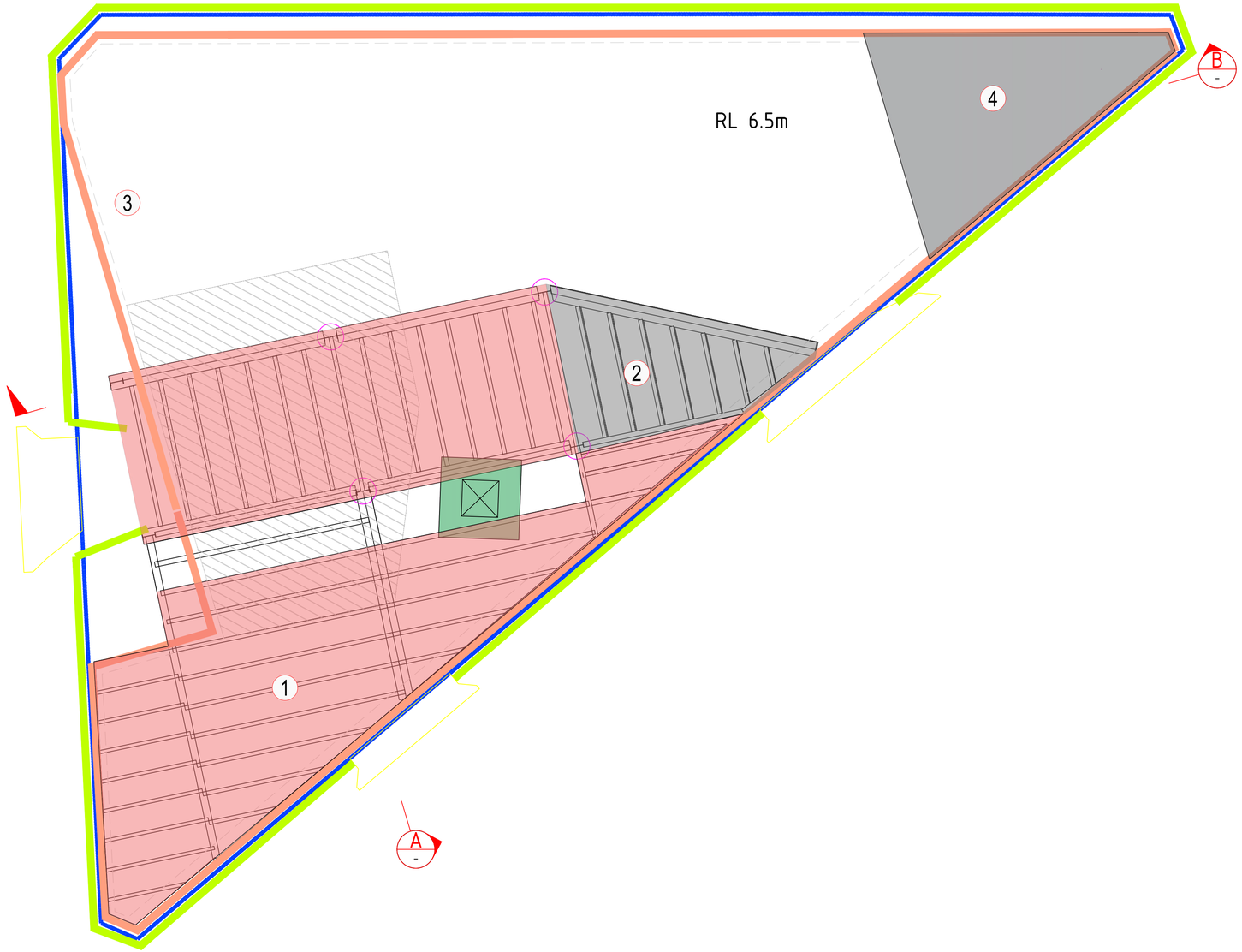
DRAWN	YT.FONG
DESIGNED	YT. FONG
DRG CHECK	B.BENNETTES
DESIGN CHECK	B. BENNETTES
APPROVED	D.MAYTOM

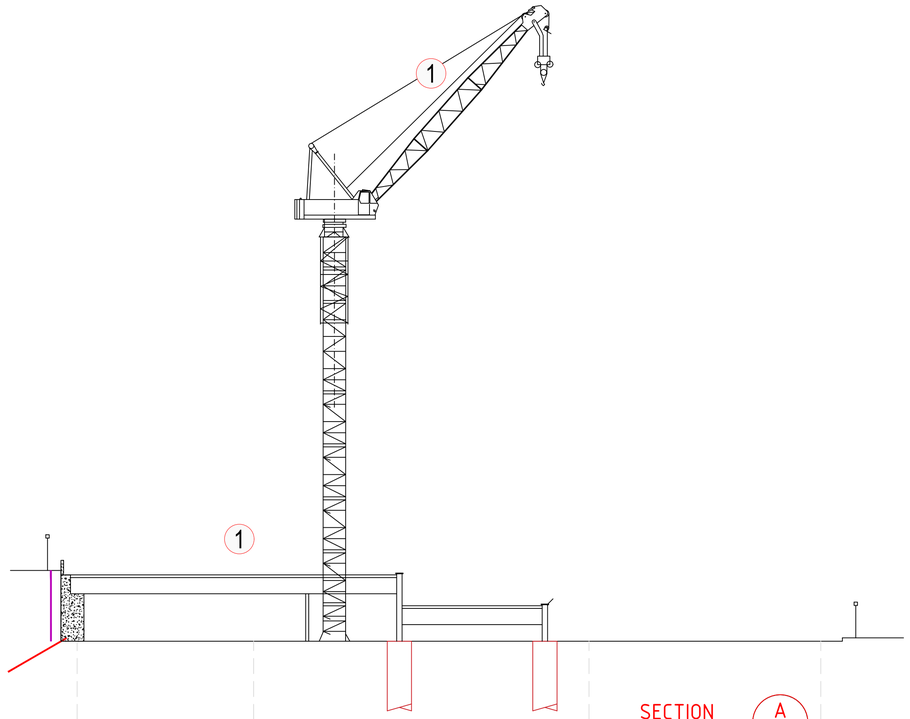
SYDNEY METRO WEST - EASTERN TUNNELLING PACKAGE
PYRMONT STATION
SITE SETUP
EAST SHAFT SITE ESTABLISHMENT

STATUS: PROJECT MILESTONE | SHEET 5 OF 10 | ©
DRG No. SMWSTETP-JCG-SCB-SN100-CV-SKE-XXXXXX | REV. 01

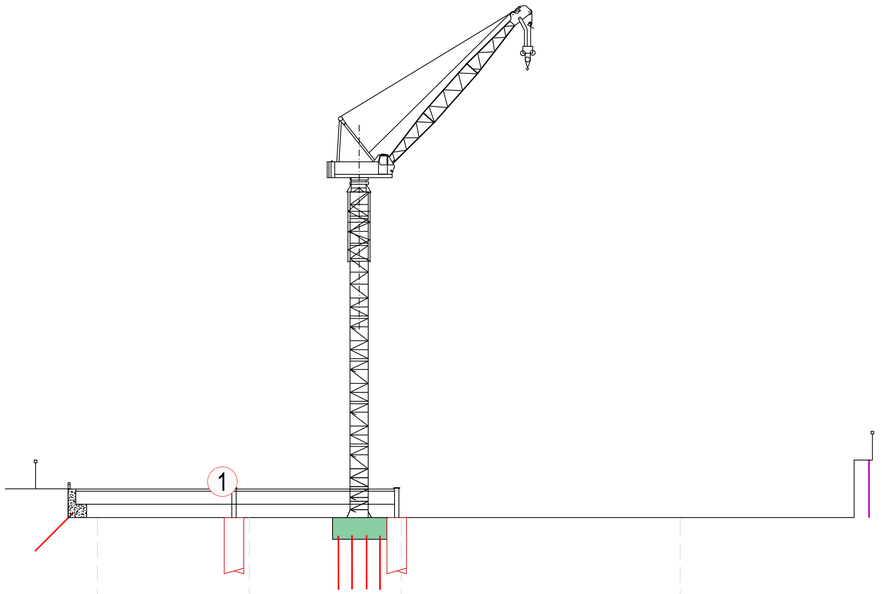
A1 Original | Co-ordinate System: MGA Zone 56 | Height Datum: GDA2020 | This sheet may be prepared using colour and may be incomplete if copied | NOTE: Do not scale from this drawing. | ALT. DRG No.

STAGE 6





SECTION A
SCALE NTS



SECTION B
SCALE NTS

1. INSTALL UPPER DECK WITH TOWER CRANE
2. CONCRETE RAMP ONTO PYRMONT BRIDGE ROAD
3. COMPLETE CAPPING BEAM ALONG UNION & EDWARD STREET
4. INSTALL SUBSTATION SLAB

100mm AT FULL SIZE

REV.	BY	DATE	DESCRIPTION	APPD.
00	JV	06.12.2022	.	P.S.

SCALES
0 5 10 15 20 25 30m
SCALE 1:500 AT A1 SIZE

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NSW GOVERNMENT | sydney METRO

SERVICE PROVIDERS
JOHN HOLLAND | CPB CONTRACTORS | Ghella

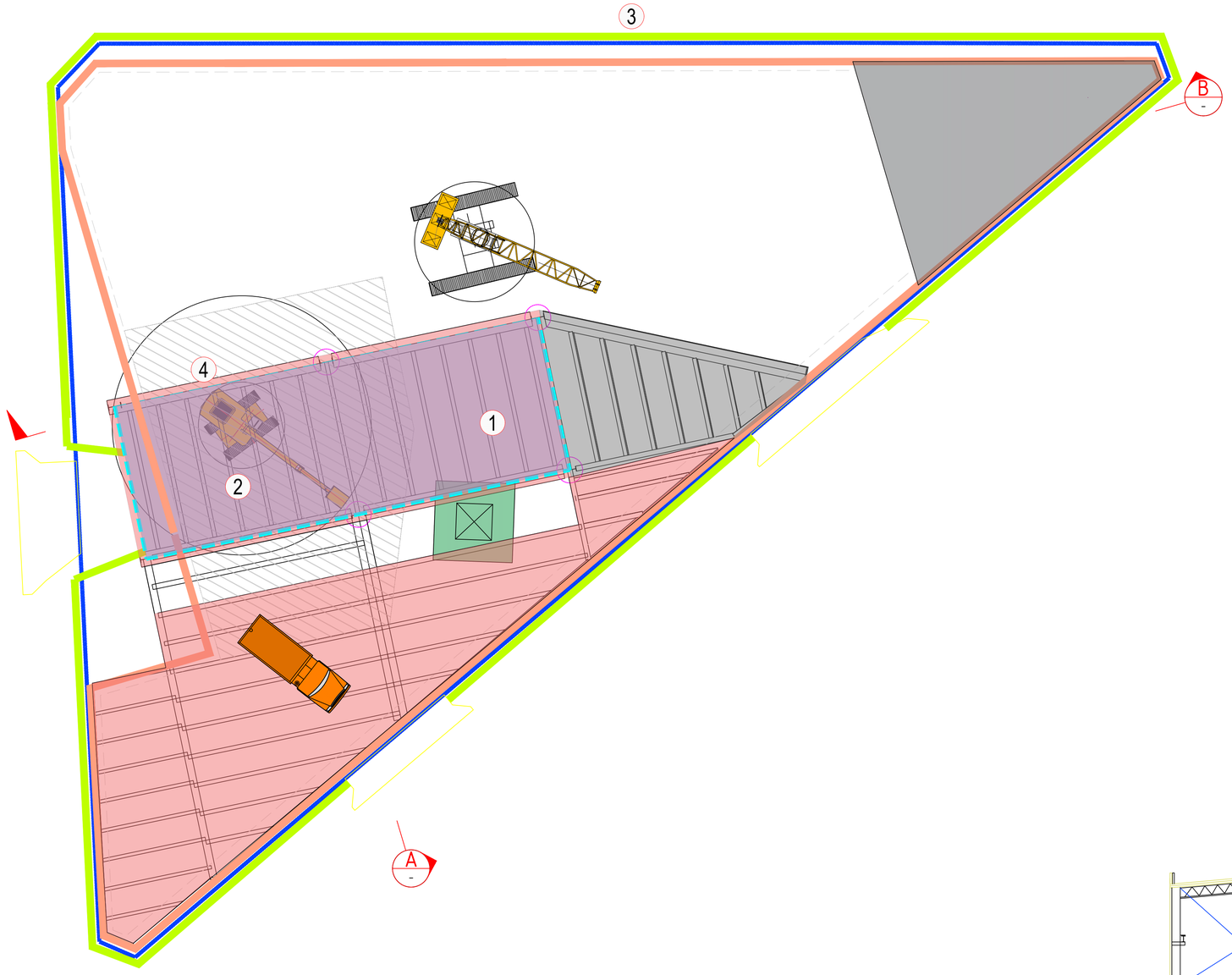
DRAWN	YT.FONG
DESIGNED	YT. FONG
DRG CHECK	B.BENNETTES
DESIGN CHECK	B. BENNETTES
APPROVED	D.MAYTOM

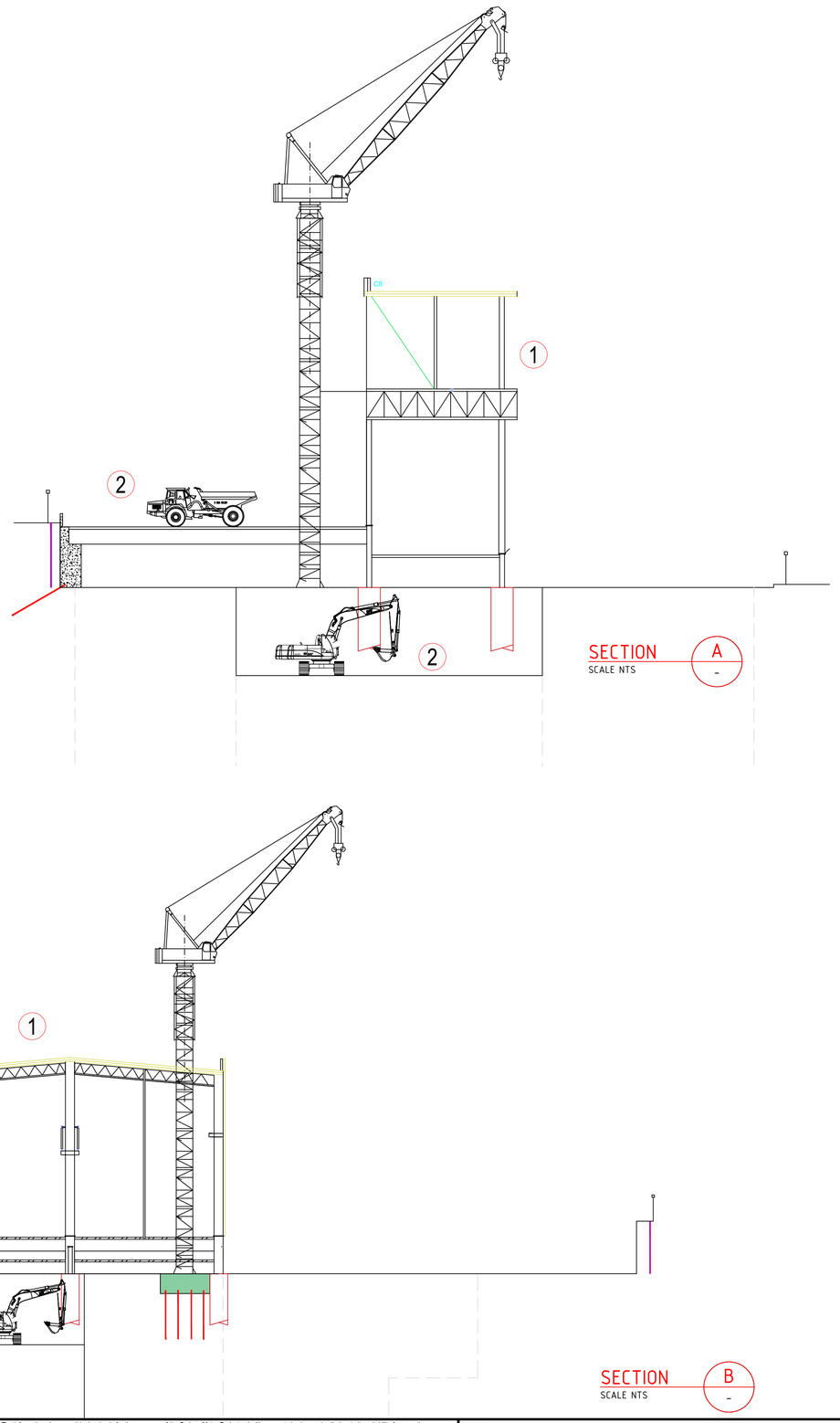
SYDNEY METRO WEST - EASTERN TUNNELLING PACKAGE
PYRMONT STATION
SITE SETUP
EAST SHAFT SITE ESTABLISHMENT

STATUS: PROJECT MILESTONE | SHEET 6 OF 10 | ©
DRG No. SMWSTETP-JCG-SCB-SN100-CV-SKE-XXXXXX | REV. 01

A1 Original | Co-ordinate System: MGA Zone 56 | Height Datum: GDA2020 | This sheet may be prepared using colour and may be incomplete if copied | NOTE: Do not scale from this drawing. | ALT. DRG No.

STAGE 7





1. COMMENCE HIGH SHED INSTALLATION
2. SWITCH SITE ACCESS BETWEEN EDWARDS STREET AND PBR
3. CLOSE UNION STREET ACCESS AND COMPLETE CAPPING BEAM FRP
4. COMMENCE TEMPORARY SHAFT EXCAVATION WITH TOWER CRANE SPOIL REMOVAL VIA EDWARD STREET

100mm AT FULL SIZE

REV.	BY	DATE	DESCRIPTION	APPD.
00	JV	06.12.2022	.	P.S.

SCALES
0 5 10 15 20 25 30m
SCALE 1:500 AT A1 SIZE

CLIENT
NSW GOVERNMENT | sydney METRO

SERVICE PROVIDERS
JOHN HOLLAND | CPB CONTRACTORS | Ghella

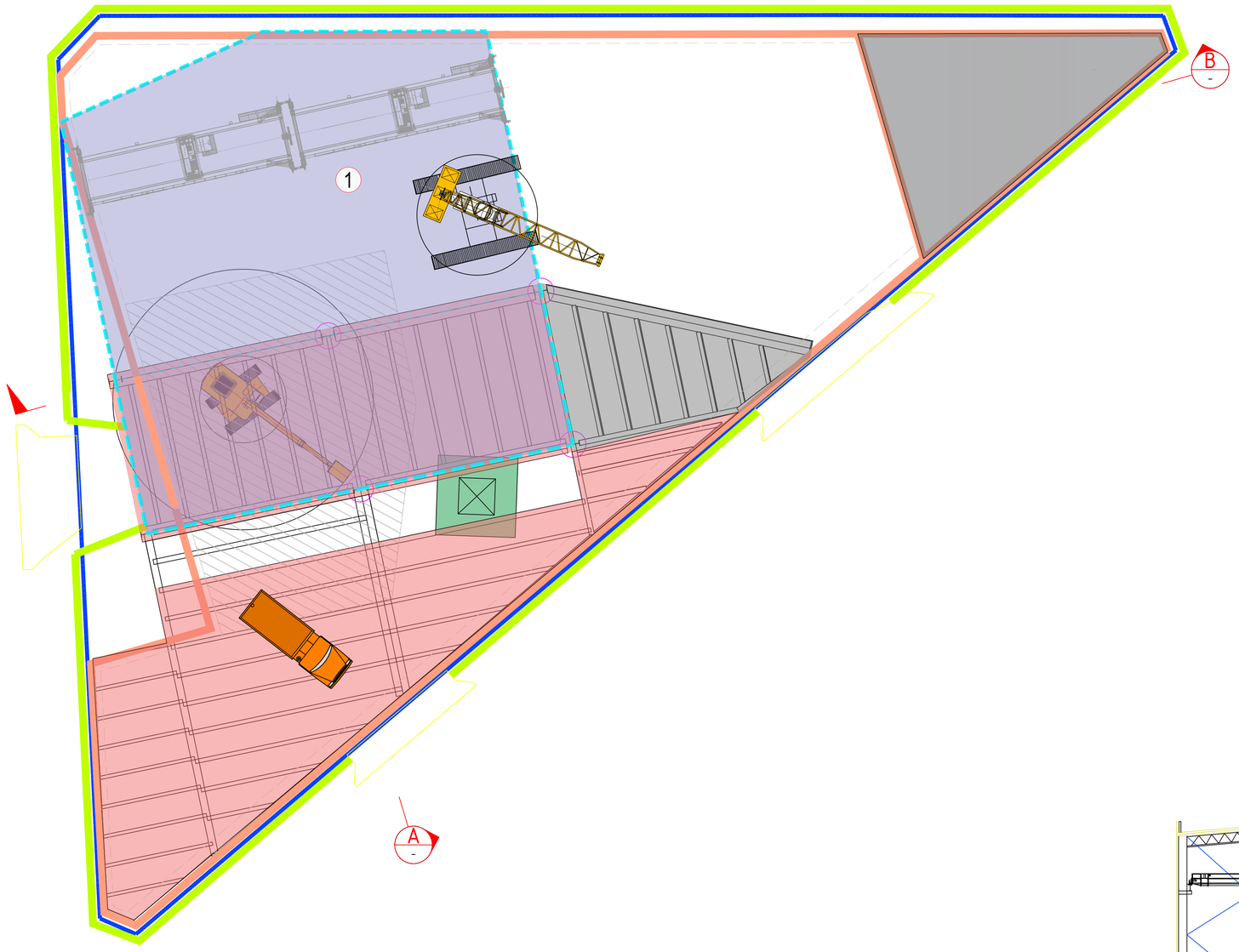
DRAWN YT.FONG
DESIGNED YT. FONG
DRG CHECK B.BENNETTES
DESIGN CHECK B. BENNETTES
APPROVED D.MAYTOM

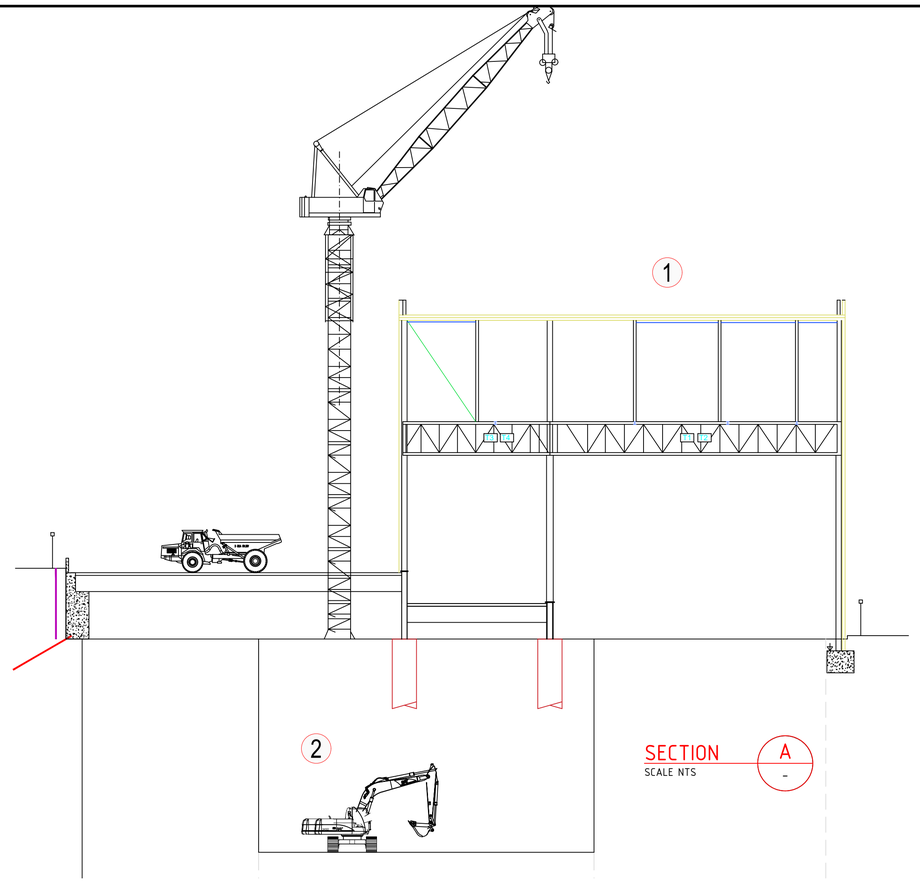
SYDNEY METRO WEST - EASTERN TUNNELLING PACKAGE
PYRMONT STATION
SITE SETUP
EAST SHAFT SITE ESTABLISHMENT

STATUS: PROJECT MILESTONE | SHEET 7 OF 10 | ©
DRG No. SMWSTETP-JCG-SCB-SN100-CV-SKE-XXXXXX | REV. 01

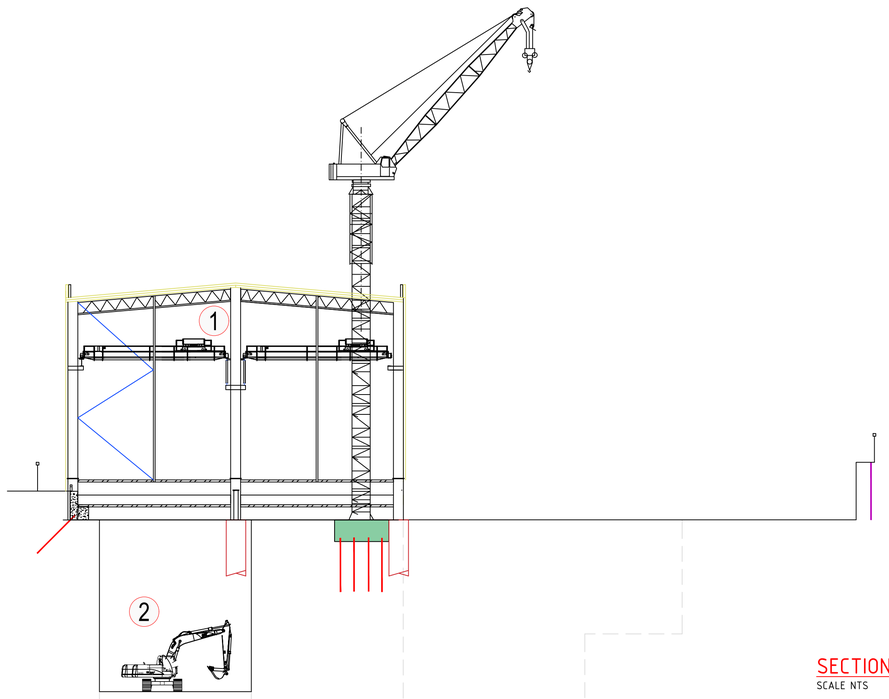
A1 Original | Co-ordinate System: MGA Zone 56 | Height Datum: GDA2020 | This sheet may be prepared using colour and may be incomplete if copied | NOTE: Do not scale from this drawing. | ALT. DRG No.

STAGE 8





SECTION A
SCALE NTS



SECTION B
SCALE NTS

1 INSTALL SHED INSTALL, INSTALL AND COMMISSION GANTRY CRANES
2 CONTINUE TEMPORARY SHAFT EXCAVATION

100mm AT FULL SIZE

REV.	BY	DATE	DESCRIPTION	APPD.
00	JV	06.12.2022	.	P.S.

SCALES
0 5 10 15 20 25 30m
SCALE 1:500 AT A1 SIZE

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NSW GOVERNMENT | sydney METRO

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SERVICE PROVIDERS
JOHN HOLLAND | CPB CONTRACTORS | Ghella

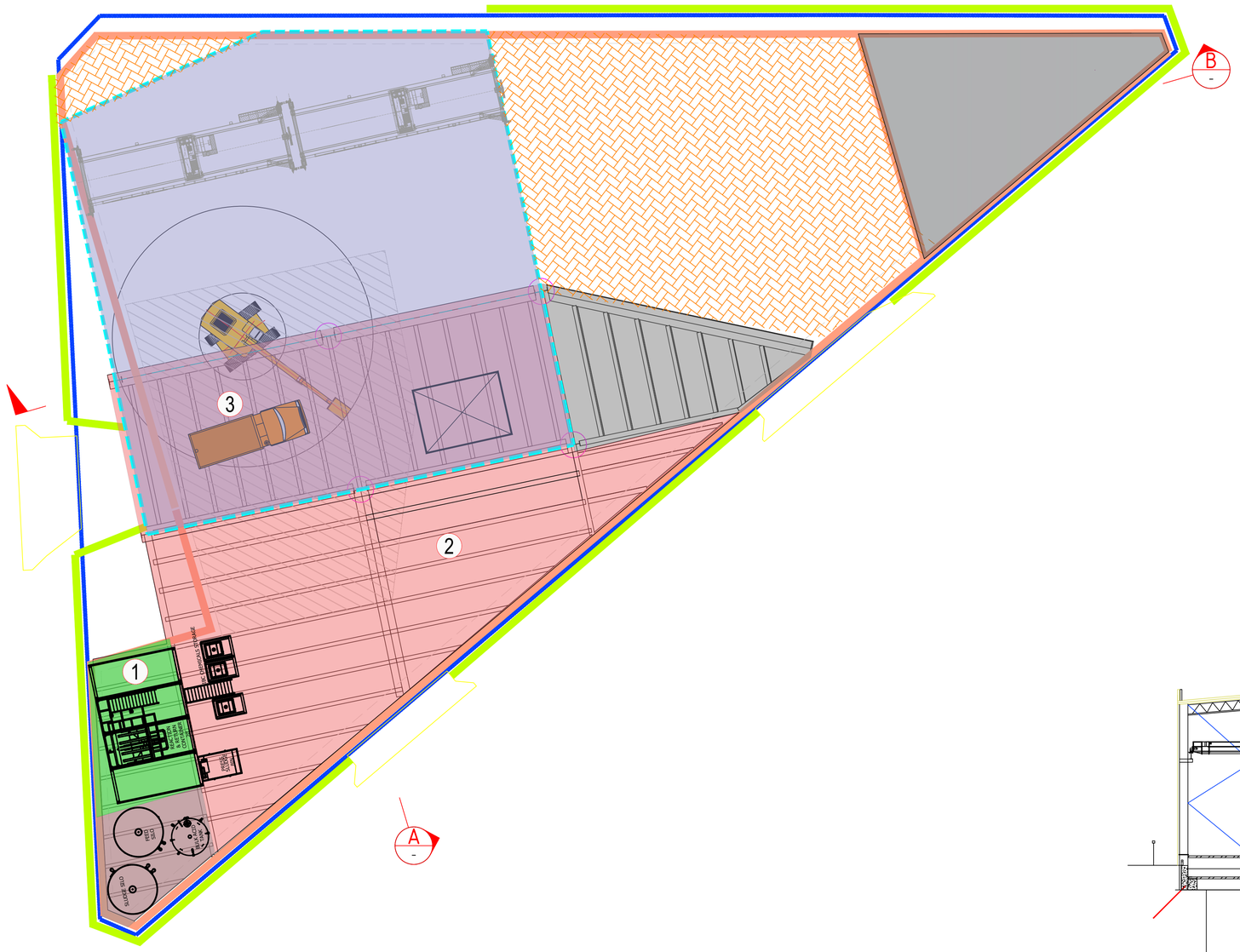
DRAWN YT.FONG
DESIGNED YT. FONG
DRG CHECK B.BENNETTES
DESIGN CHECK B. BENNETTES
APPROVED D.MAYTOM

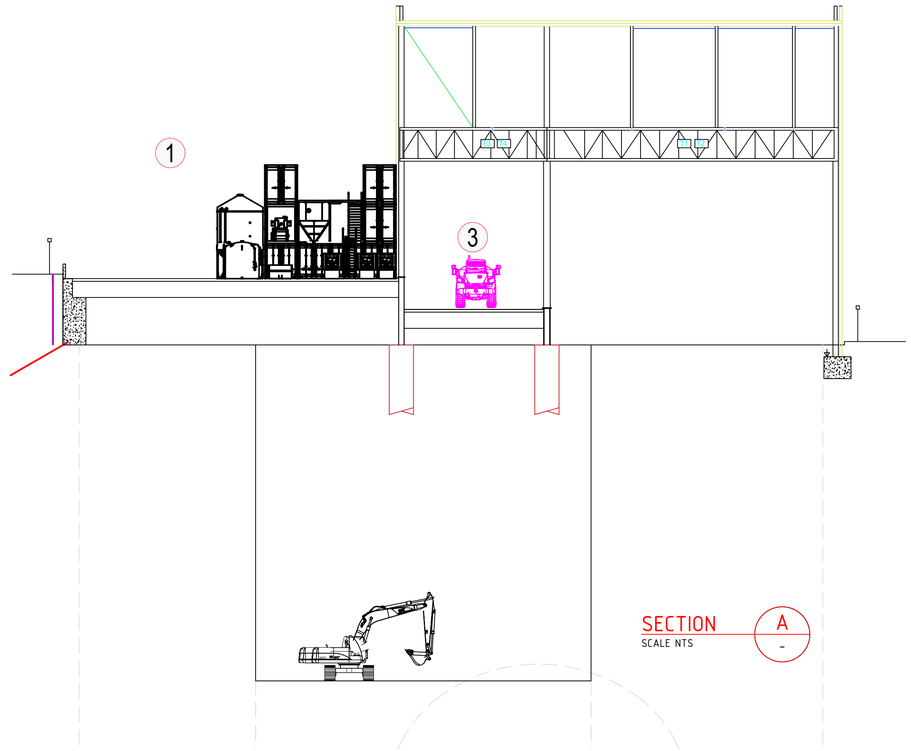
SYDNEY METRO WEST - EASTERN TUNNELLING PACKAGE
PYRMONT STATION
SITE SETUP
EAST SHAFT SITE ESTABLISHMENT

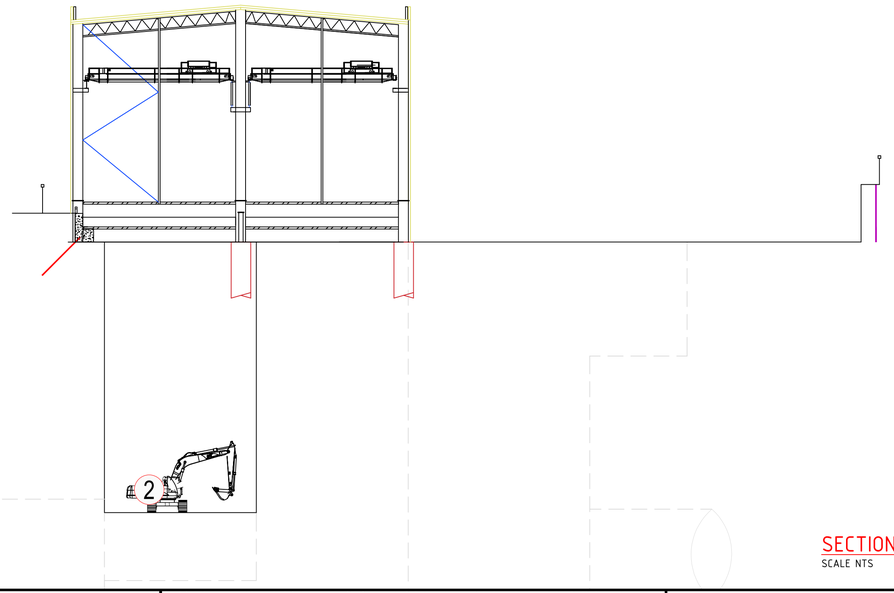
STATUS: PROJECT MILESTONE | SHEET 8 OF 10 | ©
DRG No. SMWSTETP-JCG-SCB-SN100-CV-SKE-XXXXXX | REV. 01

A1 Original | Co-ordinate System: MGA Zone 56 | Height Datum: GDA2020 | This sheet may be prepared using colour and may be incomplete if copied | NOTE: Do not scale from this drawing. | ALT. DRG No.

STAGE 9







1 INSTALL WATER TREATMENT PLANT
2 REMOVE TOWER CRANE AND CLOSE GAP ON UPPER DECK
2 SWAP SPOIL REMOVAL IN ACOUSTIC SHED

100mm AT FULL SIZE

REV.	BY	DATE	DESCRIPTION	APPD.
00	JV	06.12.2022	.	P.S.

SCALES
0 5 10 15 20 25 30m
SCALE 1:500 AT A1 SIZE

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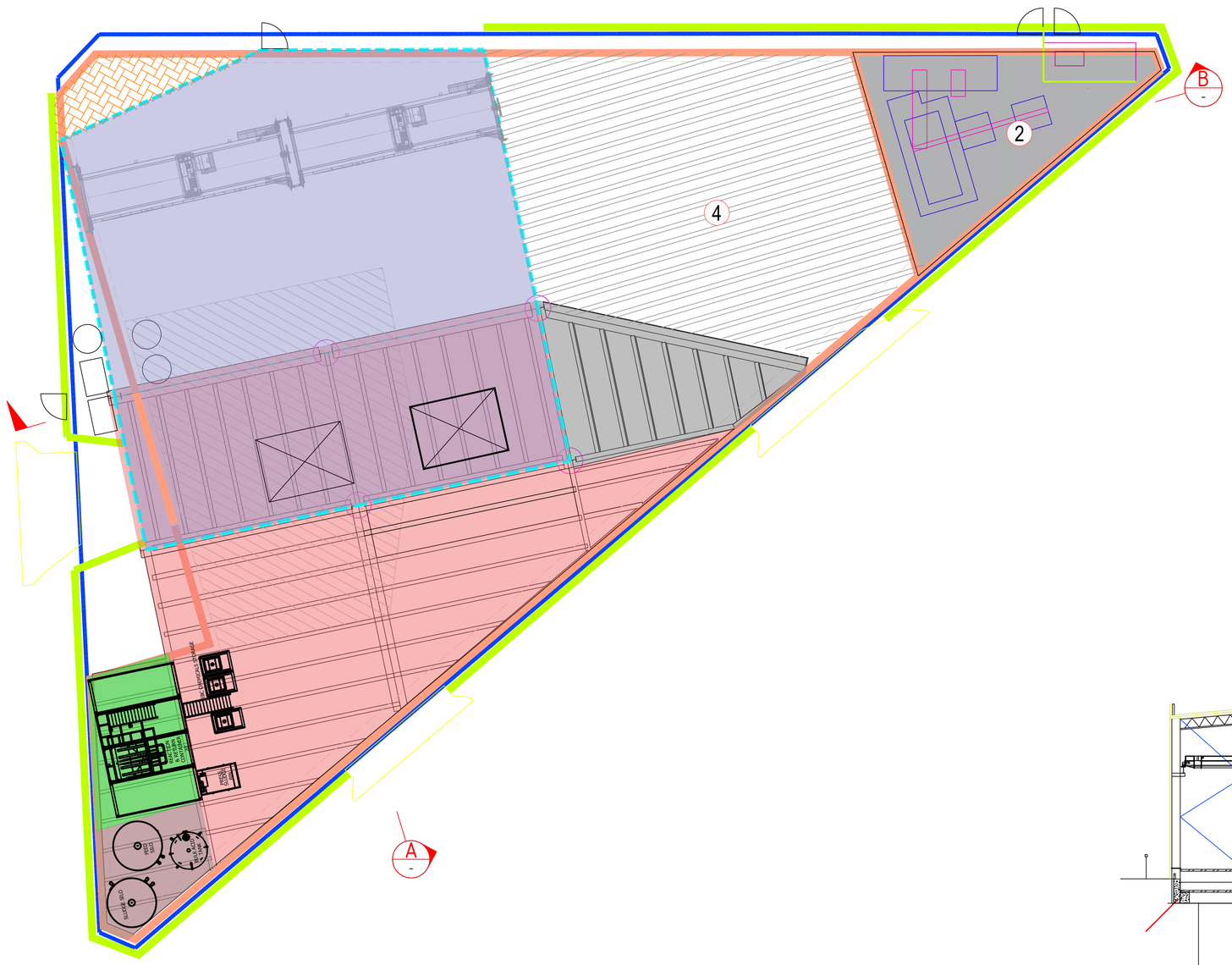
DRAWN YT.FONG
DESIGNED YT. FONG
DRG CHECK B.BENNETTES
DESIGN CHECK B. BENNETTES
APPROVED D.MAYTOM

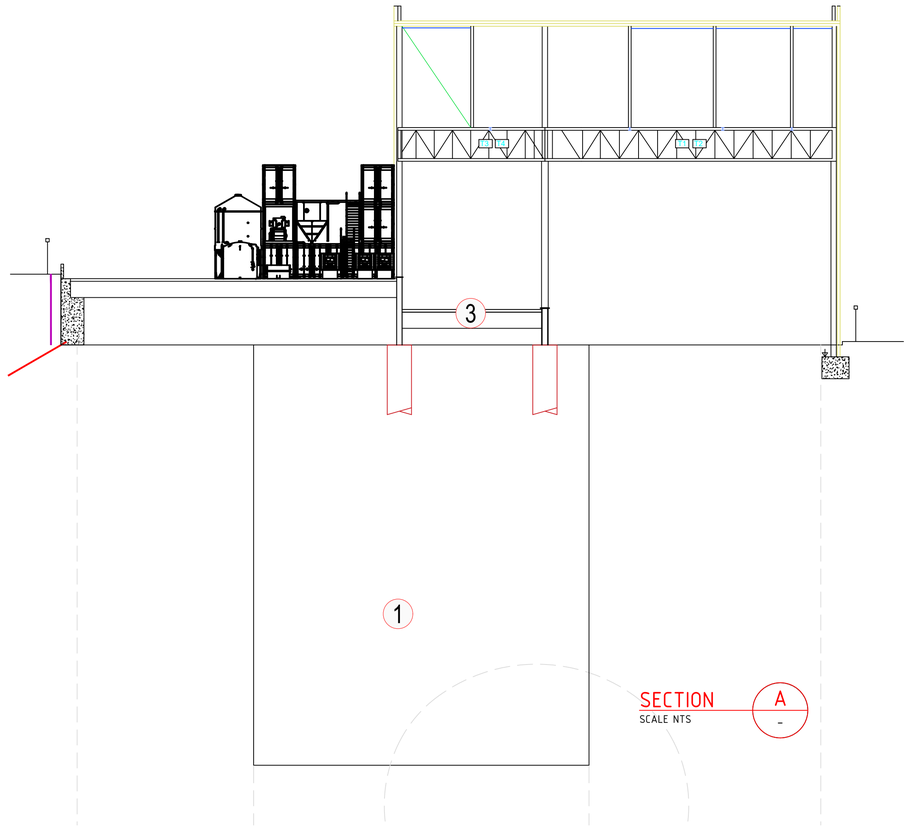
SYDNEY METRO WEST - EASTERN TUNNELLING PACKAGE
PYRMONT STATION
SITE SETUP
EAST SHAFT SITE ESTABLISHMENT

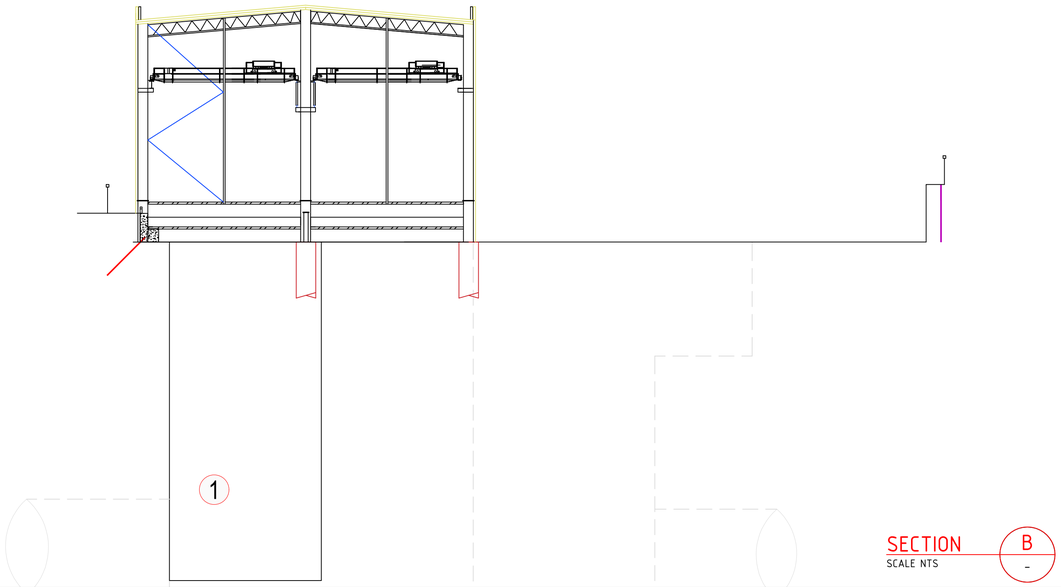
STATUS: PROJECT MILESTONE | SHEET 9 OF 10 | ©
DRG No. SMWSTETP-JCG-SCB-SN100-CV-SKE-XXXXXX | REV. 01

A1 Original | Co-ordinate System: MGA Zone 56 | Height Datum: GDA2020 | This sheet may be prepared using colour and may be incomplete if copied | NOTE: Do not scale from this drawing. | ALT. DRG No.

STAGE 10







1. COMPLETE TEMPORARY SHAFT EXCAVATION
2. INSTALL SITE TEMPORARY POWER
3. READY FOR ROADHEADER EXCAVATION
4. FINAL SIE OFFICE SETUP

100mm AT FULL SIZE

REV.	BY	DATE	DESCRIPTION	APPD.
00	JV	06.12.2022		P.S.

SCALES
0 5 10 15 20 25 30m
SCALE 1:500 AT A1 SIZE

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SERVICE PROVIDERS
JOHN HOLLAND | CPB CONTRACTORS | Ghella

DRAWN	YT.FONG
DESIGNED	YT. FONG
DRG CHECK	B.BENNETTES
DESIGN CHECK	B. BENNETTES
APPROVED	D.MAYTOM

SYDNEY METRO WEST - EASTERN TUNNELLING PACKAGE

PYRMONT STATION
SITE SETUP
EAST SHAFT SITE ESTABLISHMENT

STATUS: PROJECT MILESTONE | SHEET 10 OF 10 | ©

DRG No. SMWSTETP-JCG-SCB-SN100-CV-SKE-XXXXXX | REV. 01

A1 Original | Co-ordinate System: MGA Zone 56 | Height Datum: GDA2020 | This sheet may be prepared using colour and may be incomplete if copied | NOTE: Do not scale from this drawing. | ALT. DRG No.

Appendix J Union Street Pedestrian Count Survey

Pedestrian Traffic Counts

Location: Union St, Southern Side between Pyrmont Bridge Road and Edward St Date: Wed 8/11/23 Weather: Sunny 27°

AM Peak 07:30 – 09:30

Times	Direction: N, S, E, W	Pedestrian Numbers by direction	15 min Total	Hourly Total
07:30 – 07:45	E	4	7	-
	W	3		
07:45 – 08:00	E	2	4	-
	W	2		
08:00 – 08:15	E	4	6	-
	W	2		
08:15 – 08:30	E	3	5	0730 - 0830
	W	2		22
08:30 – 08:45	E	5	8	0745 - 0845
	W	3		23
08:45 – 09:00	E	4	9	0800 – 0900
	W	5		28
09:00 – 09:15	E	7	10	0815 – 0915
	W	3		32
09:15 – 09:30	E	5	9	0830 – 0930
	W	4		36

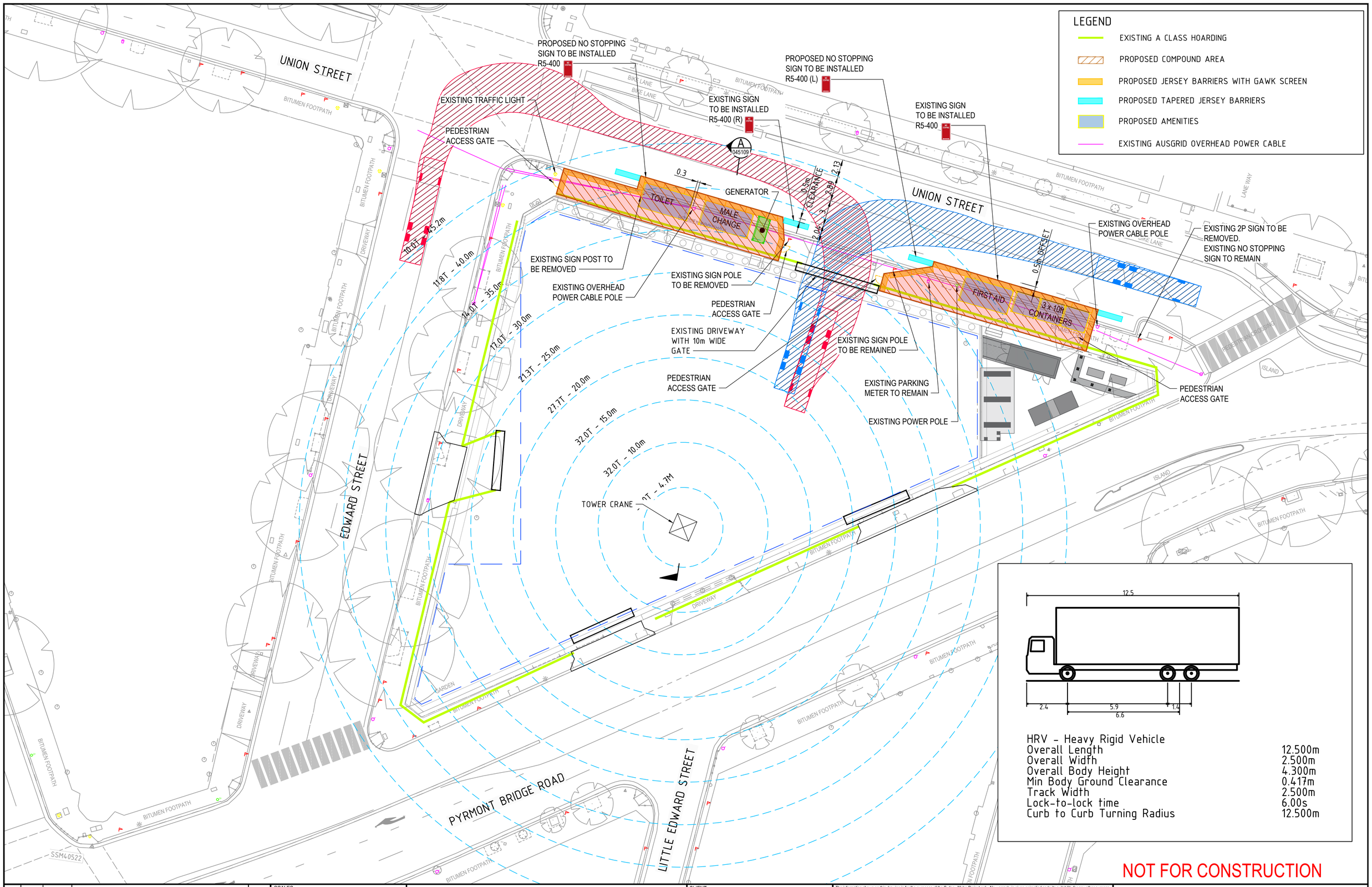
Inter Peak 12:30 – 14:30

Times	Direction: N, S, E, W	Pedestrian Numbers by direction	15 min Total	Hourly Total
12:30 – 12:45	E	4	6	-
	W	2		
12:45 – 13:00	E	2	4	-
	W	2		
13:00 – 13:15	E	2	5	-
	W	3		
13:15 – 13:30	E	4	6	12:30 - 13:30
	W	2		21
13:30 – 13:45	E	3	5	12:45 – 13:45
	W	2		20
13:45 – 14:00	E	7	9	13:00 – 14:00
	W	2		25
14:00 – 14:15	E	3	7	13:15 – 14:15
	W	4		27
14:15 – 14:30	E	4	10	13:30 – 14:30
	W	6		31

PM Peak 15:30 – 17:30

Times	Direction: N, S, E, W	Pedestrian Numbers by direction	15 min Total	Hourly Total
15:30 – 15:45	E	5	7	-
	W	2		
15:45 – 16:00	E	5	9	-
	W	4		
16:00 – 16:15	E	2	5	-
	W	3		
16:15 – 16:30	E	4	6	15:30 – 16:30
	W	2		27
16:30 – 16:45	E	3	5	15:45 – 16:45
	W	2		25
16:45 – 17:00	E	3	6	16:00 – 17:00
	W	3		22
17:00 – 17:15	E	5	9	16:15 – 17:15
	W	4		26
17:15 – 17:30	E	5	9	16:30 – 17:30
	W	4		29

Appendix K Indicative Union Street Ancillary Facility Plan



HRV - Heavy Rigid Vehicle

Overall Length	12.500m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.417m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

NOT FOR CONSTRUCTION

REV.	BY	DATE	DESCRIPTION	APPD.
-	-	-	-	.
-	-	-	-	-
-	-	-	-	-
C	J.F	18/01/24	RE-ISSUED FOR INFORMATION	B.B
B	J.F	10/01/24	REVISED TO SUIT METRO/DPE COMMENTS	B.B
A	J.F	15/12/23	ISSUED FOR INFORMATION	N.B

A1 Original | Co-ordinate System: GDA2020 MGA Zone 56 | Height Datum: A.H.D | This sheet may be prepared using colour and may be incomplete if copied | NOTE: Do not scale from this drawing. | ALT. DRG No.

SCALES

0 2 4 6 8 10 12m
SCALE 1:200 AT A1 SIZE

CLIENT

NSW GOVERNMENT | sydney METRO

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SERVICE PROVIDERS

JOHN HOLLAND | CPB CONTRACTORS | Ghella

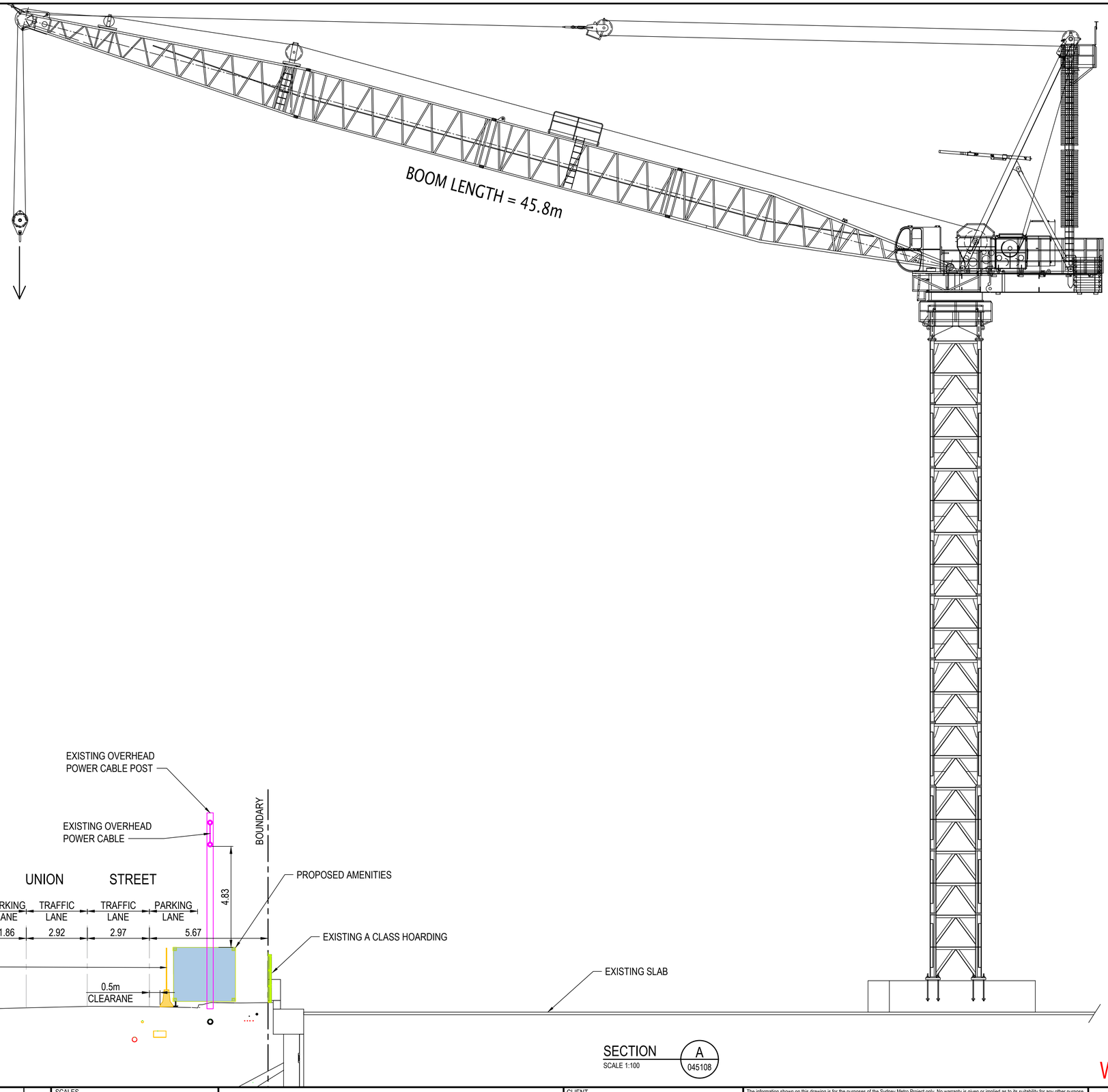
DRAWN J.FAN
DESIGNED -
DRG CHECK Y.HUELSDONK
DESIGN CHECK -
APPROVED N.BRYANT

SYDNEY METRO WEST - EASTERN TUNNELING PACKAGE
PYRMONT STATION
SHAFT EXCAVATION
EAST SHAFT SITE LAYOUT - STAGE 2
SPACE PROOFING FOR RELOCATION OF AMENITIES

STATUS: WORK IN PROGRESS | SHEET 1 OF 1 | ©

DRG No SMWSTETP-JCG-PYR-SN150-CV-DRG-045108 | REV. C

100mm AT FULL SIZE



SECTION A
SCALE 1:100
045108

WORK IN PROGRESS

REV.	BY	DATE	DESCRIPTION	APPD.
-	-	-	-	.
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
B	J.F	22/01/24	ISSUED FOR INFORMATION	B.B
A	J.F	15/12/23	ISSUED FOR INFORMATION	N.B

SCALES

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NSW GOVERNMENT | sydney METRO

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SERVICE PROVIDERS

JOHN HOLLAND | CPB CONTRACTORS | Ghella

DRAWN J.FAN
DESIGNED -
DRG CHECK Y.HUELSDONK
DESIGN CHECK -
APPROVED N.BRYANT

SYDNEY METRO WEST - EASTERN TUNNELING PACKAGE

PYRMONT STATION
SHAFT EXCAVATION
EAST SHAFT SITE LAYOUT - STAGE 2
SPACE PROOFING FOR RELOCATION OF AMENITIES SECTION

STATUS: WORK IN PROGRESS | SHEET 1 OF 1 | ©

DRG No SMWSTETP-JCG-PYR-SN150-CV-DRG-045108 | REV. B

A1 Original | Co-ordinate System: GDA2020 MGA Zone 56 | Height Datum: A.H.D | This sheet may be prepared using colour and may be incomplete if copied | NOTE: Do not scale from this drawing. | ALT. DRG No.

100mm AT FULL SIZE

Appendix L Approval

[redacted]

From: [redacted]
Sent: Monday, 29 January 2024 11:52 AM
To: [redacted]
Cc: [redacted]
Subject: FW: Sydney Metro West - ETP - Construction Traffic Management Plan - Pyrmont East - Stage 2 - Site Establishment, Shaft Excavation & Tunnelling - Rev 04 - Issued for CJP approval

Hi [redacted]

Transport for NSW, Customer Journey Planning, Project & Service Changes hereby approve the following Construction Traffic and Transport Management Plan:

Project:	Sydney Metro West – Eastern Tunnelling Package
Title:	Pyrmont East – Stage 2: Site Establishment & Excavation
Document Number:	SMWSTETP-JCG-PYR-SN150-TF-PLN-002272
Revision:	04

This approval is subject to the following requirements being met:

- Apply to and obtain approval from TMC for ROLs for any required lane closures and/or Speed Zone Authorisations as part of the ROL;
- All temporary lane closures to be implemented in accordance with Transport for NSW Traffic Control at Worksites Technical Manual Issue No.6;
- Conduct a Road Safety Audit post implementation of the road closure and address any issues identified in the Road Safety Audit and Risk Assessment
- Regularly monitor the implemented traffic arrangements, traffic queues and road conditions along the adjacent road network, to identify any operational/safety issues and rectify in consultation with stakeholders, including CJP and TMC as required;
- Approval of this CTTMP does not constitute approval of the Traffic Guidance Schemes therein.
- Ensure close liaison with CJP post implementation of the road closures to allow for a coordinated management of traffic impacts; and
- Ensure the requirements of the Communication Strategy in the TMP, in consultation with CJP, are fulfilled prior to the implementation of the TMP.
- addressing any issues raised by Council, STA, Taxi Council, residents/businesses or Emergency Services in the CTMP approval process;
- addressing the requirements arising as an outcome of the Local Traffic Committee meeting.

[redacted]
Operations Manager | Project & Service Changes
Customer Journey Planning | Greater Sydney
Transport for NSW

M [redacted]
Transport Management Centre | 25 Garden Street, Eveleigh NSW 2015

Transport for NSW

OFFICIAL

From: [redacted] via InEight Document <system@teambinder.com>
Sent: Thursday, 25 January 2024 4:24 PM
To: [redacted]
Subject: Sydney Metro West - ETP - Construction Traffic Management Plan - Pyrmont East - Stage 2 - Site Establishment, Shaft Excavation & Tunnelling - Rev 04 - Issued for CJP approval

Document Transmittal

Transmittal No:	SMWSTETP-SMD-TX-003423
Contract No:	ETP - 00013/13102 - Eastern Tunnel Package
Sub Contract:	ETP
Date:	25 January 2024, 04:24 PM

Issued	Name
By	[redacted]

Issued	Name
To	[redacted]
Cc	[redacted]

[redacted]

Reason for Issue	Issued for Review		
Respond By Message	Your Response is required by	**Respond By Date**	09 February 2024
Subject	**Sydney Metro West - ETP - Construction Traffic Management Plan - Pyrmont East - Stage 2 - Site Establishment, Shaft Excavation & Tunnelling - Rev 04 - Issued for CJP approval**		

Dear Review Team Member,

Please find the Sydney Metro West - ETP - Construction Traffic Management Plan - Pyrmont East - Stage 2 - Site Establishment, Shaft Excavation & Tunnelling - Rev 04, attached issued for your Approval

Issued for Approval by COB: 09 February 2024

This transmittal supports JCG JV submission under SMWSTETP-JCG-TX-002110, 25 January 2024.

Please note:

- Workflow has been activated for relevant reviewers. Please review the contractor's response and mark your comment as 'Closed-Out' if applicable.
- Mark your review as 'Complete' once done (use the 'checkbox' on the Document Review screen).
- If you are a cc in this transmittal, it has been issued for Information Only and there is no requirement to review.
- The lead reviewer for this document is [redacted], please consult with them if your comment needs to remain open.

Kind Regards,

[redacted]
Document Controller

Sydney Metro West - ETP

Click here to download all Transmittal files.

Item	Document No	Title	Rev	Sts	Type	Design Package No.	Alt Doc No
1	SMWSTETP-JCG-PYR-SN150-TF-PLN-002272	Sydney Metro West - ETP - Construction Traffic Management Plan - Pyrmont East - Stage 2 - Site Establishment, Shaft Excavation & Tunnelling	04.01	S3	PLN		SMWSTETP-JCG-PYR-SN150-TF-PLN-002272

TeamBinder Transmittal Reference: {73B75479-211A-44F1-9A07-2C5E1A9937FE}