



Construction Traffic Management Plan – North Strathfield Construction Site Stage 1B

SMWSTCTP-AFJ-NST-TF-PLN-000003 Revision 8

Sydney Metro West – Central Tunnelling Package



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1. INTRODUCTION

1.1 CTMP CHANGE SUMMARY

Throughout the duration of the project, updates to CTMPs may be required. These updates may result in changes to the CTMP to cater for changes in regulations, scope of work changes, or for other reasons to maintain the safe and efficient operation of the project. Changes associated with this revision are as detailed below, within Table 1.

TABLE 1: CTMP CHANGE SUMMARY

CTMP Revision	Date of Revision	Summary of changes
06	05/03/2025	This CTMP has been updated to better demonstrate traffic conditions at completion of AFJV's CTP works at North Strathfield. The update consists of: - The replacement of Traffic Staging plan: AFJVCTP-TGS-0601 with the approved Temporary Works Design: SMWSTCTP-AFJ-NST-SN350-TW-307200 - Other updates throughout to better represent the current stage of works i.e. deleting redundant information and changes to wording where required.
07	21/03/2025	This CTMP has been updated to address CJP comments on the revision 06 submission. Section 4.1.7 has been relocated to Section 6 to provide better document consistency.
08	29/04/2025	This CTMP has been updated to address CJP comment on the revision 07 submission. The primary adjustments include providing detail that this CTMP remains affective post substantial completion of AFJV's CTP works. This CTMP will remain affective during the transitional handover services arrangement.

1.1.1 PROJECT BACKGROUND

The Sydney Metro West Central Tunnelling Package involves the construction of 11.5km of twin tunnel metro line from The Bays Precinct to Sydney Olympic Park, which will be connected with the Sydney Metro City & Southwest and double the rail capacity to/from Sydney CBD.

FIGURE 1: OVERVIEW OF SYDNEY METRO WEST



The Acciona Ferrovia Joint Venture (AFJV) will deliver the Project in partnership with NSW Government and Sydney Metro (SM).

2. PURPOSE AND SCOPE

2.1 PURPOSE

AFJV aims to maintain a safe environment for all road users by effectively maintaining traffic flows during the works and managing construction vehicles to/from the work sites.

This Construction Traffic Management Plan (CTMP) has been prepared to meet the following requirements for the North Strathfield metro station site as part of the Sydney Metro West – Central Tunnelling Package (the Project):

- The Project's General Specifications Section 2.11 and Section 5.1.11.1
- EIS Technical Paper 1 – Traffic and Transport Mitigation Measures
- EIS Construction Traffic Management Plan Framework
- Minister for Planning and Public Spaces' Concept and Stage 1 Conditions of Approval (COA) for the State Significant Infrastructure (SSI 10038).

The scope of this CTMP is to detail the traffic changes associated with construction of the North Strathfield metro station. This CTMP and the documents referenced in the CTMP have been prepared in accordance with the relevant standards and guidelines.

AFJV will provide safety measures to a wide range of stakeholders potentially affected by the works including but not limited to motorists, pedestrians, cyclists, public transport users, local residents and property owners, business owners and workers/staff engaged on the Project.

2.2 OBJECTIVES

The primary objectives and principles of this CTMP are:

- Keeping traffic delays to a minimum
- Minimising disruption to businesses
- Minimising disturbance to the environment
- Ensuring traffic impacts are within the scope permitted by Transport for NSW (TfNSW), Sydney Metro (SM) and City of Canada Bay Council.
- Ensure the safety of employees, contractors and road users.
- Meet the requirements of the Project brief, project specifications, COA and TfNSW Traffic Control at Work Sites (TCaWS) Manual 2020.

3. EXISTING TRAFFIC CONDITIONS

3.1 CONCORD ROAD

Concord Road is a classified state road which provides a link between Rhodes and Strathfield via Concord West. Concord Road is a two-way road in the north-south alignment with two traffic lanes in both directions. Short term parking is available along some sections on the east side of Concord Road, and a number of No Parking zones are provided on the west side of Concord Road. Clearway restrictions are present along both sides of the road during the weekday morning and evening peak periods. The posted speed limit of Concord Road is 60km/h.

3.2 QUEEN STREET

Queen Street between Wellbank Street and Pomeroy Street is a regional road and is a local road in other road sections. Queen Street is a two-lane, two-way road parallel to the rail corridor with pedestrian access to North Strathfield train station provided north of Wellbank Street. A Kiss & Ride facility is provided on the west side of Queen Street both north and south of Wellbank Street.

Queen Street is a two-lane, two-way road with a carriageway width of approximately 13m. Restricted parking (1P to 2P) is provided between Wellbank Street and Waratah Street on both sides of Queen Street, and unrestricted parking is permitted north of Waratah Street along both sides of the road. Queen Street has a speed limit of 50km/h.

During CTMP Stage 1A, the road was reduced to a 40km/h Roadwork Speed limit. The Northbound Kiss and Ride and the parking between Wellbank Street and Pomeroy Road was also removed.

3.3 WELLBANK STREET

Wellbank Street is a regional road which forms a part of the link between Concord Road and Homebush Bay Drive. Wellbank Street primarily serves direct access to residential properties and a laneway to the rear of existing businesses along the east side of Queen Street. Wellbank Street is a two-lane, two-way road with a carriageway width of approximately 12.5m. Parking is permitted along both sides of the road with restricted timed parking for a 45m section immediately east of Queen Street. The default speed limit of Wellbank Street is 50km/h.

3.4 WARATAH STREET

Waratah Street is a two-way local road serving as direct access to local residential and business properties. Waratah Street has a carriageway width of approximately 12.4m with parking permitted along both sides of the road. The default speed limit on Waratah Street is 50km/h.

3.5 CTMP STAGE 1A

CTMP Stage 1A was installed in October of 2022, its installation resulted in Queen Street being reduced to a 40km/h Roadwork speed zone and on all side streets approaching the project site. This CTMP 'Stage 1B' will supersede Stage 1A.

3.6 EXISTING TRAFFIC VOLUMES

The Environmental Impact Statement for Sydney Metro West Stage 1 (Chapter 10 Transport and Traffic) documents the existing traffic volumes around North Strathfield metro station construction site, as shown in Table 2.

TABLE 2: EXISTING TRAFFIC VOLUME (2019)

Road	Location	Direction	AM Peak Traffic Volume (vph)	PM Peak Traffic Volume (vph)
Queen Street		Northbound	400	490

Road	Location	Direction	AM Peak Traffic Volume (vph)	PM Peak Traffic Volume (vph)
	North of Wellbank Street	Southbound	430	440
Wellbank Street	East of Queen Street	Eastbound	340	380
		Westbound	410	410
Waratah Street	West of Concord Road	Eastbound	60	50
		Westbound	60	40
Concord Road	South of Wellbank Street	Northbound	1,230	810
		Southbound	610	890

Reference: EIS

3.7 PUBLIC TRANSPORT NETWORK

The existing bus service network within the vicinity of North Strathfield metro station construction site is shown in Figure 2. The rail and bus route services travelling in the surrounding area of North Strathfield metro station construction site are detailed in Table 3.

Bus Routes 410 and 458 serve North Strathfield via Concord Road. The nearest bus stops are located at:

- Concord Road, north and south of Wellbank Street
- Wellbank Street, east of Concord Road.

The bus stops adjacent the site do not serve STA buses, but service school buses and on-demand services. Additional information in relation to the proposed modification to bus stops is included in Section 5.6 - Public Transport.

FIGURE 2: PUBLIC TRANSPORT NETWORK SURROUNDING NORTH STRATHFIELD METRO STATION CONSTRUCTION SITE

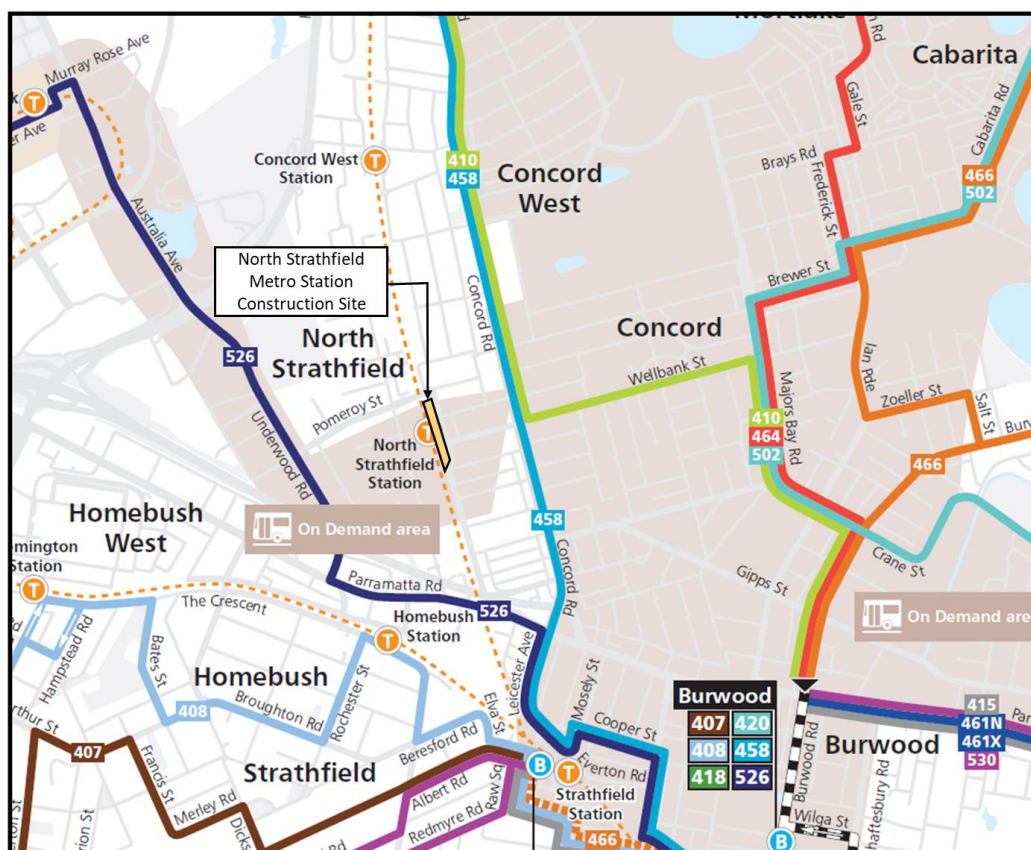


TABLE 3: PUBLIC TRANSPORT SERVICES AND FREQUENCIES

Public Transport	Route No.	Route Description	Typical Weekday Service Frequencies (No. of Services)	
			AM Peak (7:00am – 9:00am)	PM Peak (4:00pm – 6:00pm)
Rail	T9	Hornsby to North Shore via City	16	16
Bus	410	Hurstville to Macquarie Park	11	9
	458	Ryde to Burwood	5	4
School Bus	574	Rosebank College	1	1
	575	Rosebank College	1	0
	665	Domremy Catholic College	1	1
	674	Rosebank College	1	1
	710	Homebush Boys High School	0	1
	713	Homebush Boys High School	1	0
	760	Concord High School	1	1
	761	Concord High School	1	1

3.8 PEDESTRIAN AND CYCLIST NETWORK

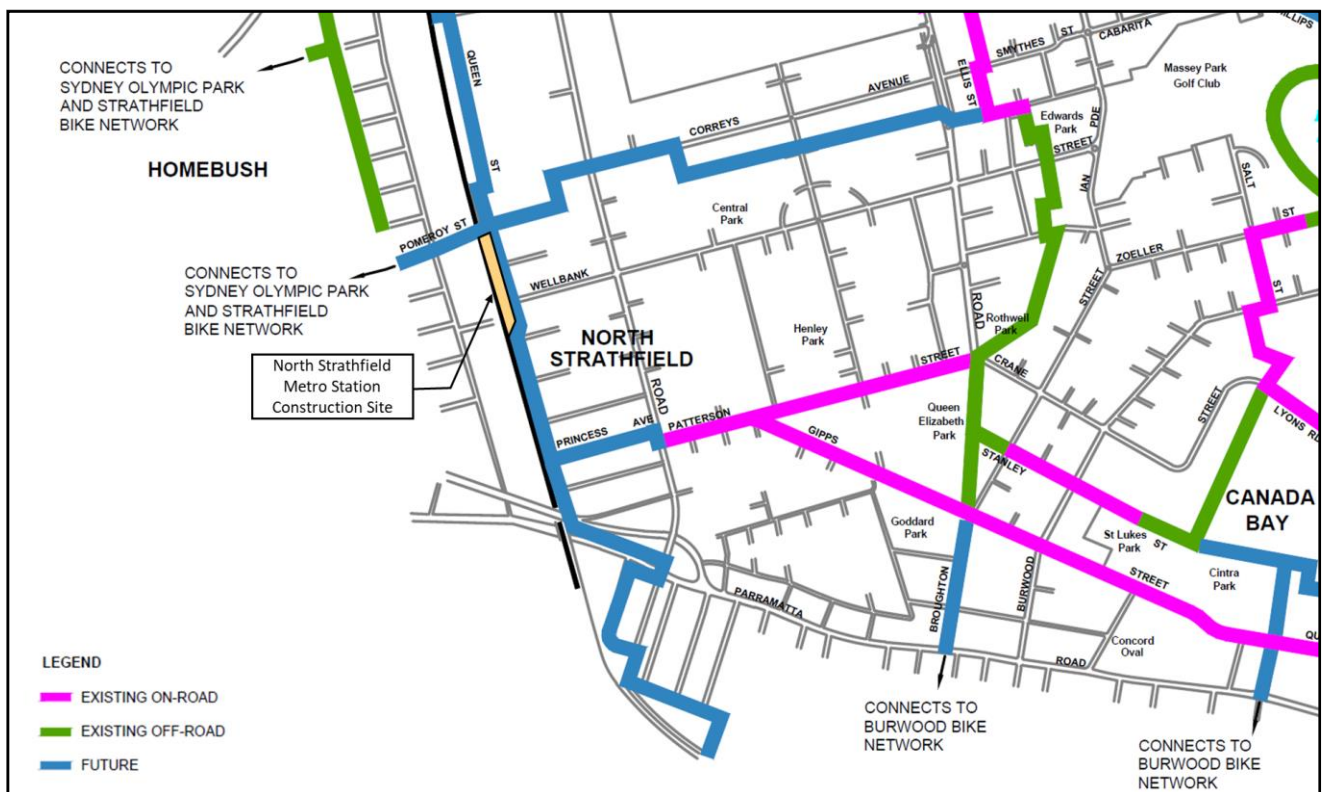
Established footpaths are provided along both sides of all roads.

A raised pedestrian crossing is located on Queen Street, north of Wellbank Street providing safe and prioritised crossing opportunities. Further, this is the entrance to North Strathfield railway station and access to the west side of the rail corridor via Hamilton Street East and Pomeroy Street.

There are no cycling routes in the immediate vicinity of the site. However, It's noted there's a 'Bike Locker Hire' available, located approximately 30 meters South of the of North Strathfield train station and therefore it's expected that cyclists do use the area. In addition George Street, Pomeroy Street Queen Street and Princess Avenue are identified as part of the M4 Cycleway Diversion route, used during special events. The Spring Cycle event also Utilises Wellbank Street, Queen Street and Pomeroy Street.

A future cycle route on Queen Street, Pomeroy Street and Princess Avenue has been identified on the City of Canada Bay bike network map as shown in Figure 3.

FIGURE 3: SURROUNDING CYCLE NETWORK



Source: City of Canada Bay Bike Network Map (January 2019)

3.9 ON-STREET PARKING

The existing on-street parking in the near vicinity of North Strathfield metro station construction site is shown in Figure 4.

Short-term parking is provided along the local business frontages on Queen Street, Wellbank Street and Waratah Street.

FIGURE 4: SURROUNDING ON-STREET PARKING



4. GENERAL CONSTRUCTION DETAILS

The North Strathfield site is an existing roadwork area, as outlined within previous CTMP 'Stage 1A' (SMWSTCTP-AFJ-NST-TF-PLN-000001). CTMP Stage 1A was approved and installed during October of 2022 and facilitated:

- The re-alignment of Queen Street.
- Removal of the Northbound parking on Queen Street.
- Installation of barriers.
- Relocation of the Kiss & Ride to Wellbank Street.

This CTMP is "Stage 1B", and supersedes the previous Stage 1A. A summary of the CTMPs for North Strathfield is further detailed below within table 4.

TABLE 4: NORTH STRATHFIELD CTMP SUMMARY

CTMP NAME	DOCUMENT NUMBER	STATUS	DESCRIPTION
North Strathfield Stage 0	SMWSTCTP-AFJ-NST-TF-PLN-000002	Superseded	Start site establishment
North Strathfield Stage 1A	SMWSTCTP-AFJ-NST-TF-PLN-000001	Superseded	• Re-align Queen Street • Install barriers • Remove Northbound Parking
North Strathfield Stage 1B (THIS CTMP)	SMWSTCTP-AFJ-NST-TF-PLN-000003	Currently installed	• Install pedestrian crossings, close footpath and relocate Bus Stop • Installation of a site access point, north of the pedestrian crossing near Pomeroy Street to facilitate dewatering & shotcrete activities. • Construction of a longer-term solution for the tram ramps at both the level zebra crossings on Queen Street.

This CTMP was progressively installed in phases, these phases are further detailed below.

4.1 STAGE 1B – PHASE 1 (INSTALLED 3RD MARCH 2023)

Installation of temporary pedestrian crossings on Queen Street, to facilitate a long-term footpath closure and relocation of the Bus Stop currently located on the Western side of Queen Street. Following Installation of the footpath closure and relocation of the Bus Stop, the Station team will expand the current station site and continue with excavation and piling works.

4.2 STAGE 1B – PHASE 2 (FIRST USE 7TH AUGUST 2023)

Installation of a temporary site access and egress point at the northern end of the station site. The additional access point facilitating access to the water tanks and shotcrete works.

4.3 STAGE 1B – PHASE 3 (INSTALLATION COMPLETED 8TH SEPTEMBER 2023)

Phase 3 traffic arrangements and site activities will remain unchanged during this phase. The purpose of this Phase 3 will be to construct:

- Kerb buildouts / islands at the northern most pedestrian crossing on Queen Street.
- Concrete pram-ramps, inset from the kerb, in place of the existing temporary AC ramps at both level pedestrian crossings on Queen Street.
- Upgrade pedestrian fencing to fortress fencing
Installation of thermoplastic line marking at each pedestrian crossing, instead of the existing waterborne line marking.

4.4 OTHER TCS WORKS

To support the operation of site activities, TCS works where undertaken at the intersection of Concord Road and Wellbank Street (TCS0967), this included:

- Trenching across Wellbank Street and Concord Road.
- Installation of conduits and underground services.
- Adjustment of kerbs, posts and pram ramps.

4.5 STATION BOX WORKS

During all phases detailed above, Station box works have been ongoing, and include:

- Establishment of site facilities
- Installation of hoarding
- Pilling works
- Excavation works
- Deliveries of plant and materials
- Dewatering activities
- Shotcrete activities
- Demobilisation of plant offices and material at completion of AFJV's CTP works

4.6 CONSTRUCTION PROGRAM

At the time of the CTMP update (rev 08), AFJV has achieved Substantial Completion of the construction works at NST on 15 April 2025. AFJV remains responsible for the construction site under a transitional handover services arrangement with Sydney Metro. AFJV has not been advised of the end date for this arrangement and this CTMP will remain in place until such time as Sydney Metro direct AFJV to hand back the site to Sydney Metro or a Follow-On Contractor. It is noted that the anticipated timing of the next works contractor is (Q2 to Q3 2026).

4.7 CONSTRUCTION WORKING HOURS

The proposed construction activities would be carried out on the following working days and hours:

- Monday to Friday: 7:00am – 6:00pm
- Saturday: 8:00am – 2:00pm

Works outside of these hours will occur on occasion. These works will only occur following notification to residents, businesses and stakeholders, times will generally be restricted to approved ROL times only.

4.8 HAULAGE ROUTES

The designated haulage routes to be used by heavy vehicles is detailed below. In addition to the routes approved within the Environmental Impact Statement (EIS). An alternative outbound route via Queen Street, Pomeroy Street and Underwood Road, towards Homebush Bay Drive, will continue to be used. This alternative outbound route was approved as part of CTMP Stage 0. In regard to this additional route, no further changes are being proposed as part of this CTMP Stage 1B.

North Site

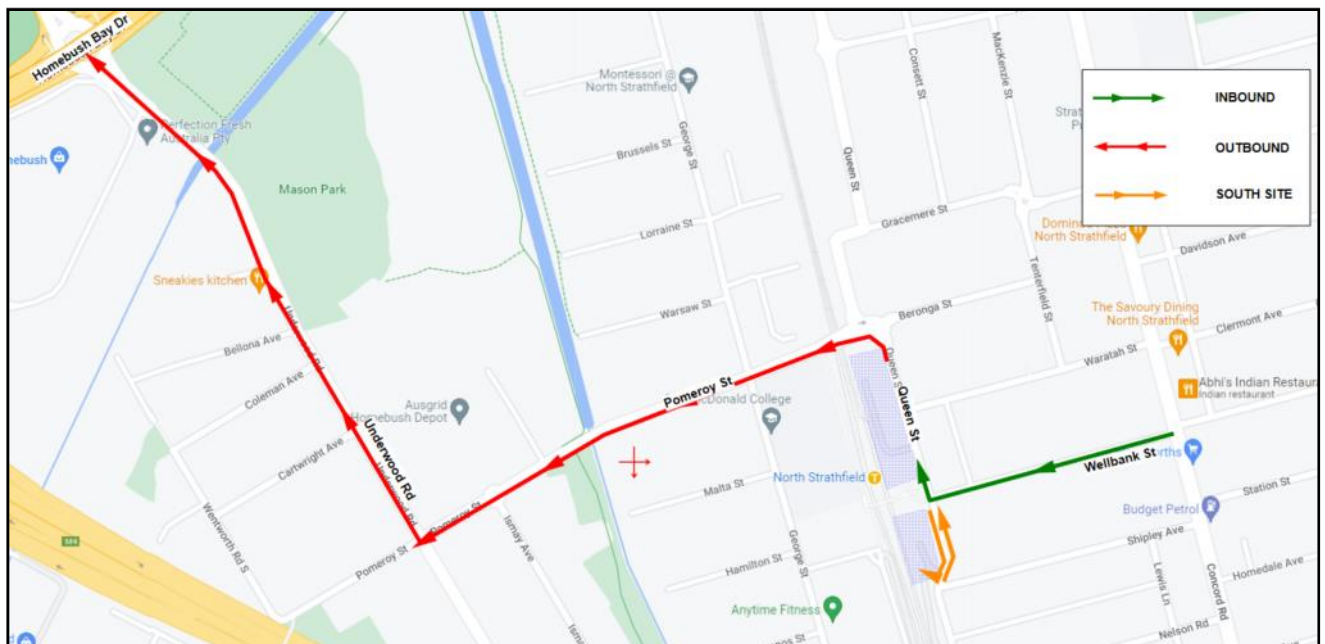
- Inbound Routes

- Heavy Vehicle Route: Concord Road, Wellbank Street and Queen Street (northbound)
- Light Vehicle Route: Concord Road, Wellbank Street and Queen Street (northbound)
- Outbound Routes
 - Heavy Vehicle Route: Queen Street, Pomeroy Street, Underwood Road and Homebush Bay Drive
 - Light Vehicle Route: Queen Street, Pomeroy Street, Underwood Road and Homebush Bay Drive

South Site

- Inbound Routes
 - Heavy Vehicle Route: Concord Road, Wellbank Street and Queen Street (Southbound)
 - Light Vehicle Route: Concord Road, Wellbank Street and Queen Street (Southbound)
- Outbound Routes
 - Heavy Vehicle Route: Queen Street (northbound), Pomeroy Street, Underwood Road and Homebush Bay Drive
 - Light Vehicle Route: Queen Street (northbound), Pomeroy Street, Underwood Road and Homebush Bay Drive

FIGURE 5: CONSTRUCTION VEHICLE ACCESS AND EGRESS



4.9 CONSTRUCTION VEHICLE TYPES AND TURN PATHS

During transitional handover services arrangement various materials will need to be both imported and exported from site. The maximum proposed size of vehicles moving this material is:

- 19m Truck & Dogs
- 7.9m Hino truck for dewatering activities
- 8.4m concrete truck for shotcrete activities
- Max length 8.8m trucks for the south site

Heavy vehicle turn paths can be found within Appendix B of this CTMP.

The sites are only expected to see irregular heavy vehicle movements as part of the transitional handover services arrangement, these construction vehicles will be restricted to dimensions as detailed above.

In addition to the regular construction vehicles movements, on occasion larger over size & over mass (OSOM) deliveries maybe required for the delivery of various materials and plant. These Deliveries will be managed on a case-by-case basis.

It's noted the proposed route has a load limit of General Mass Limit for the Powells Creek bridge, based on a structural assessment provided by council. This will be a consideration for float movements for the site, in some instances OSOM deliveries will need to occur, with the assistance of traffic control via the normal route, and depart across the load limited bridge unladen. Collection of plant which may exceed the load limit of GML will arrive via Underwood Road and Pomeroy Street or an alternate route. It is expected all OSOM deliveries and collections will need to be conducted outside of regular construction hours.

5. CONSTRUCTION TRAFFIC AND TRANSPORT MANAGEMENT

5.1 CONSTRUCTION TRAFFIC VOLUMES

Proposed activities at the construction sites generated up to 230 heavy vehicle movements per day during the peak construction period for spoil removal. With approximately 16 heavy vehicle movements per hour during the AM peak and 8 movements per hour during the PM peak, from approximately June 2023 to January 2024.

During the transitional handover services arrangement from April 2025 until approximately September 2025 (end date subject to extension), these volumes will be much lower and will not exceed the EIS volumes as detailed below within Tables 6 & 7.

TABLE 6: DAILY AND PEAK HOUR CONSTRUCTION TRAFFIC GENERATION DURING PEAK ACTIVITIES

Vehicle Type	Peak Daily Traffic Volume		AM Peak Hour Traffic Volume		PM Peak Hour Traffic Volume	
	EIS	AFJV	EIS	AFJV	EIS	AFJV
Light vehicle	176	176	30	30	30	30
Heavy vehicle	136	230	8	8	8	8
Total	312	406	38	38	38	38

TABLE 7: SUMMARY OF PEAK HOURLY VEHICLE MOVEMENTS

Site:	Expected hourly heavy vehicle volumes						
North Strathfield	0700-0800	0800-0900	0900-1000	At all other times of site operation	1600-1700	1700-1800	Total daily
	8	8	8	Site movements as required, not exceeding daily total.	8	8	230

5.2 LONG TERM TRAFFIC STAGING

A Long-Term Traffic Staging Plan has been prepared in the form of a temporary works design. The Staging Plan shows traffic changes required to accommodate construction works detailed within this CTMP. This plan is also intended to be handed over to Sydney Metro at completion of AFJV's CTP and transitional services works (subject to a future CTMP developed by Sydney Metro or Sydney Metro's nominated follow-on contractor).

The long-term traffic changes detailed within the plan includes:

- Installation of a level pedestrian crossing on Queen Street, South of Wellbank Street.
- Installation of a level pedestrian crossing on Queen Street, South of Pomeroy Street.
- Closure of the western Footpath on Queen Street.
- Relocation of the Bust Stop from the western side of Queen Street, to the Southern side of Wellbank Street.
- Kerb adjustments and pad construction for the new Bus Stop location and Wellbank Street.
- Associated, line marking, signage and island adjustments

A full copy of the traffic staging plan can be found within Appendix A of this CTMP.

5.3 SPEED REDUCTION

A speed reduction to 40km/h was installed during CTMP Stage 1A. Extent of the 40km/h speed reduction is shown in the long-term Traffic Staging Plans within Appendix A. The intent of the this speed reduction is to increase safety of both workers and the public.

There're no changes being proposed to this arrangement as part of this CTMP.

5.4 SHORT TERM TRAFFIC GUIDENCE SCHEMES

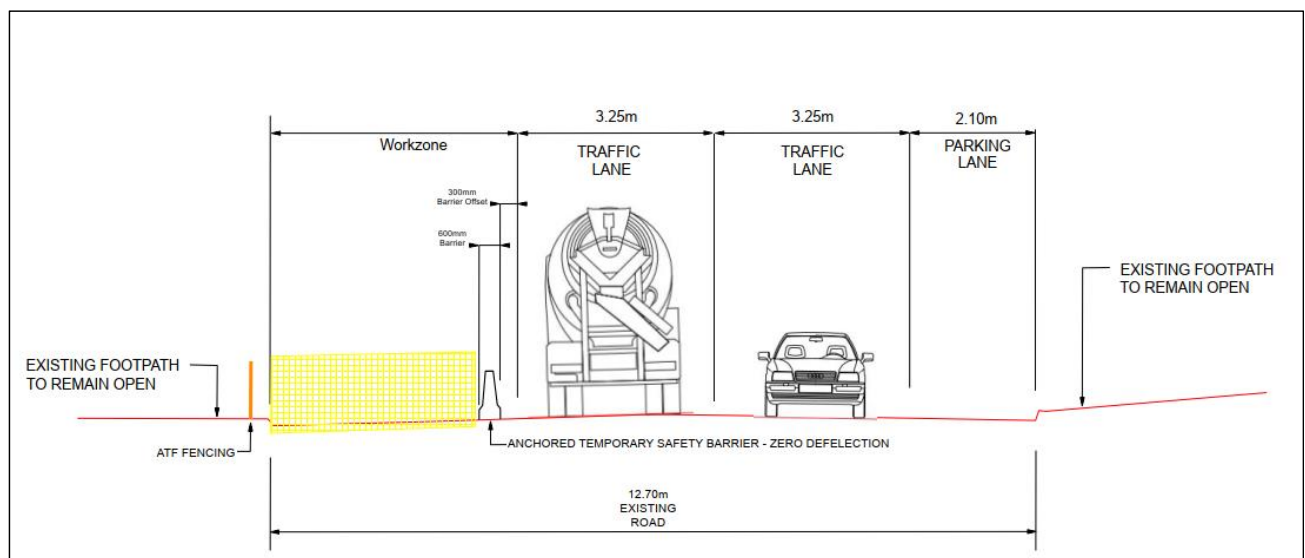
Various Traffic Management measures will be required to facilitate the completion of works outlined within Section 4 of this CTMP. These Traffic Management measures will be detailed in future 'sub plans' to this CTMP and will only be implemented in accordance with approved ROLs, and within consultation with CJP and council where required.

5.5 CROSS SECTION

Travel lanes on Queen Street were reduced from approximately 3.8m to 3.25m as part of the previous CTMP Stage 1A. There're no further adjustments to existing lane widths as part of this CTMP, and; therefore, travel lanes will remain suitable for the school bus route.

The STA Bus Infrastructure Guide requires a minimum width of 3.2m for travel lanes with a straight alignment.

FIGURE 10: TYPICAL CROSS SECTION - QUEEN STREET



5.6 PUBLIC TRANSPORT AND BUS STOP CONSTRUCTION

The existing school Bus Stop and bus zone, located on the west side of Queen Street, has been relocated to the South side of Wellbank Street. The long-term traffic arrangements detailed above, including installation of pedestrian crossing facilities; is designed to facilitate changes to the pedestrian movements resulting from the Bus Stop relocation.

For at-least the first week after relocating the Bus Stop, wayfinding signs were installed to assist in guiding pedestrians to the new Bus Stop location.

Construction of the new Bus Stop on Wellbank Street required kerb adjustments and construction of a new pad. Construction has been carried out as per SMWSTCTP-AFJ-NST-SN350-PV-DRG-030017, a copy of the design can be found within Appendix A of this CTMP.

5.7 PEDESTRIAN AND CYCLIST

As part of the traffic arrangements detailed within Section 5, the Western footpath on Queen Street will be closed between Wellbank Street and Pomeroy Street. Pedestrians will be diverted to the footpath on the East side of Queen Street. The Pedestrian crossing facilities to be installed as part of the traffic changes are intended to facilitate changed pedestrian movements, resulting from the footpath closure.

Additionally, the following mitigation measures will be adopted:

- Traffic Control / Gate Keepers will be in place for each site access and egress point where construction vehicles need to cross a pedestrian path.
- Truck aware decals will be positioned adjacent to each construction site driveway that crosses a pedestrian path.
- 'Look out before you step out' decals will be installed at other strategic locations along the access and egress routes.
- Ongoing monitoring on the effectiveness of mitigation measures will be carried out with additional measures to be considered if necessary.
- Ongoing toolboxes, prestart talks and communication with staff and contractors on the VMPs and associated risks.
- Queen Street speed reduction to 40km/h
- Regular inspections will take place of the footpaths and temporary pram ramps, any deficiencies identified will be recorded and rectified.
- At the location of the proposed dewatering access point, a 250mm reinforced concrete slab is to be constructed, providing a footpath width of min 2m, with a cross fall no greater than 2.5% and grade no greater than 2.19%.

It's noted that George Street, Pomeroy Street, Queen Street and Princess Avenue are identified as part of the M4 Cycleway Diversion route, used during special events. The Spring Cycle event also Utilises Wellbank Street, Queen Street and Pomeroy Street. During the planning of any high impact works that may affect cyclists' routes, this will be taken into consideration.

5.7.1 WESTERN FOOTPATH CLOSURE JUSTIFICATION

During planning of the CTP works, it has been identified that maintaining or relocating the western footpath would be impractical. The reason for this includes:

- The eastern side of the station box capping beam is located on what was the western footpath.
- The worksite access and egress are located on what was the western parking lane.
- The lanes on Queen Street have been reduced to the minimum widths and realigned further to the east to provide enough space to install road safety barriers and hoarding.

The changes noted above within Section 5.7 have been necessary to complete construction works. Additionally, Sydney Metro acquired the land where the footpath and western traffic lane are located with City of Canada Bay Council therefore these areas now formally form part of the North Strathfield Construction Site. The lease for this area currently runs until 2030. On this Basis there is no space to maintain a pedestrian path on the western side of Queen Street.

At completion of CTP works, ongoing maintenance will be required followed by future construction works by follow on contractors. For this reason, the access and egress lanes must be retained, removing these to provide a new pedestrian path on the western side of Queen Street would not be possible.

5.8 ON-STREET PARKING

Parking removal has occurred as part of this CTMP, to accommodate a range of items, including:

- Relocation of the bus stop originally located on the western side of Queen Street
- The installation of new pedestrian crossings
- To facilitate worksite access and egress

Full detail on parking removal is provided within the Construction Parking and Access Strategy (CPAS).

FIGURE 11: PARKING REMOVAL



5.9 WORKFORCE PARKING

AFJV will provide an expected total of approximately 15 parking spaces located within the southern section of the North Strathfield metro station construction site. A deficit of parking, immediately adjacent to the North Strathfield train station is anticipated to be addressed by workers attending site via public transport.

For full details of worker parking arrangements, refer to the Construction Parking and Access Strategy (CPAS).

5.10 ACCESS TO LOCAL PROPERTIES, BUSINESSES AND UTILITIES

Access to all neighbouring properties and businesses in the vicinity of the North Strathfield metro station construction site will be maintained at all times unless agreed with property owners.

Access to all utilities will be maintained during construction unless agreed with the relevant utility owner, landowner or occupier.

Local residents and businesses will be notified via letter box drops and door knock notifications of any proposed traffic changes at least two weeks prior to the works.

5.11 WASTE SERVICES

It's expected there will be no impact to existing waste collection arrangements during use of this CTMP. Notwithstanding, consultation with 'Coordinator Resource Recovery' from City of Canada Bay Council, will be undertaken.

Consultation regarding waste management will be on-going and any disruptions or changes will only occur following agreeance from council.

5.12 INSPECTIONS

On-site inspection and monitoring of this CTMP will be undertaken regularly and in accordance with the Traffic Control At Work Sites (TCAWS) manual version 6.1.

All long-term traffic management arrangements will be inspected post Implementation. Any minor issues identified during the inspection will be recorded and rectified immediately. More significant issues will be recorded for rectification.

Regular inspections will take place of the footpaths and temporary pram ramps, this is further detailed on the VMP found within Appendix D of this CTMP. These inspections will be in addition to the requirements set out within the Overarching Construction Traffic Management Plan.

Where traffic control deficiencies are identified through inspections, this CTMP and associated TGS will be amended, as required, by the Traffic Manager.

All identified issues and status of rectification will be documented.

5.13 ROAD SAFETY AUDIT

When required, a road safety audit will be conducted by a suitably qualified and independent auditor with Level 3 certification and another auditor with Level 2 or higher certification.

Where road safety deficiencies are identified through the audit, the relevant design/implementation will be amended to address the deficiencies.

A copy of the desktop road safety audit is provided in Appendix E.

5.14 SITE INDUCTIONS

All AFJV workers and staff employed on North Strathfield metro station construction site (including sub-contractors) will be required to undergo a site induction.

The induction will include information of the construction site access routes for site staff and construction vehicles, on-site parking location, WH&S, driver protocols and emergency procedures.

All personnel employed with the Project will perform their duties in accordance with the requirements of this CTMP.

5.15 DRIVER TRAINING & COMPLIANCE

Heavy vehicle drivers shall be made fully aware of the traffic management arrangements within and surrounding the site. All drivers will be informed of all site access gates and the access requirements including specific heavy vehicle driver training to ensure the following:

- Appropriate procedures for accessing the site
- Drivers shall adhere to the nominated site access routes mentioned in Section 4.1.9
- Drivers are to be cautious to other road users (pedestrians and cyclists) travelling past the sites, particularly during school pick-up & drop-off times when it's expected pedestrian and vehicular traffic will be higher.
- Drivers shall be aware of the speed restrictions along the site access routes, and

- No queuing and truck marshalling in non-designated areas, this must be wholly contained within the site.
- Drivers are not to park within no stopping areas unless the appropriate traffic control has been implemented in accordance with an approved TGSs and CJP & Council approvals where required.
- Drivers must only enter and exit site as identified on the VMP. Right turn movements and reversing movements into and out of site are not permitted unless, the appropriate traffic control has been implemented in accordance with an approved TGSs and CJP & Council approvals where required.
- Gate Keepers are to be toolboxed of entry and exit requirements

Drivers found disobeying the approved VMP for site access and egress will be given one strike and counselled/retrained. A second occurrence would indicate an unwillingness to work and drive in a manner to ensure safety of themselves and the public, for this reason the driver would be removed from site.

5.16 COMMUNITY CONSULTATION

AFJV has undertaken extensive interaction with residents/businesses near the North Strathfield metro station site. This has included multiple instances of doorknocking all businesses and residents along Queen Street to outline upcoming work, associated impacts including removal of parking along Queen Street. Further, AFJV issues monthly notifications to advise of upcoming work including temporary parking impacts and mitigation measures.

5.17 DIRT AND MUD TRACKING

During site establishment activities, vehicles will need to enter areas of the site that are not hardstand (concrete or bitumen surface). This may result in dirt and mud tracking onto public roadways.

To mitigate this risk:

- During and immediately after rain events, access and egress will be restricted to essential movements only, and where possible restricted entirely.
- Vehicle movements in areas that're not hard stand, will be restricted to essential movements only.
- Installation of cattle grids at the site exit
- Onboarding a street sweeper that will be full time at the North Strathfield site during establishment activities
 - The street sweeper will operate continuously during times when vehicles are leaving site, with exception to, tipping off, refilling water and operator breaks.
- Once site establishment is completed – all vehicles will be restricted to hard stand areas only, this is expected by approximately late July 2023. At this time vehicles will enter site onto a concrete surface, and will not leave the concrete surface before exiting site. Regular cleaning activities will occur to ensure the concrete surface is kept clean to avoid any dirt or mud tracking.

6. PROJECT COMPLETION AND HANDOVER

Substantial completion of AFJV's CTP works occurred on 15th April 2025. AFJV will now continue to maintain the site in accordance with the transitional handover services arrangement.

. Temporary works design: SMWSTCTP-AFJ-NST-SN350-TW-307200 included within Appendix A of this CTMP has been developed to clearly detail the temporary traffic arrangements installed at North Strathfield. The arrangements shown within this design are intended to be handed over to Sydney Metro at completion of CTP works (subject to a future CTMP developed by Sydney Metro or Sydney Metro's nominated follow-on contractor). The anticipated timing of the next works contractor is (Q2 to Q3 2026).

It's noted that due to the location of station box excavation and the associated worksite access & egress, it would not be practical to reinstate the western parking lane and/or footpath to public. Ongoing maintenance will need to occur followed by future construction works. Therefore, the work site access and egress lanes must be retained at completion of CTP works.

6.1 AFTERCARE

It's noted that on approach to completion of AFJV's CTP works, there may be multiple consecutive days where worksite access and egress at North Strathfield will not occur. As a result, the public may become more inclined to use the access and egress lanes to park, drop-off or pick-up. To prevent such issues occurring, an 'aftercare' TGS has been included within Appendix F of this CTMP. This TGS is intended to be installed where there's consecutive days of no worksite access or egress occurring.

7. COMPLIANCE MANAGEMENT

7.1 TRAFFIC AND TRANSPORT LIAISON GROUP

AFJV Traffic Manager will present at the monthly Traffic and Transport Liaison Group (TTLG) meetings for the Project. The TTLG will primarily include representatives from:

- Sydney Metro Delivery Office
- Transport for NSW (TfNSW)
- Customer Journey Management (formerly known as TMC)
- Customer Journey Planning (formerly known as SCO)
- NSW Police
- City of Canada Bay Council
- Representative of any other authority or road user group affected by the Project.

The AFJV Traffic Manager is a member of the TTLG and will act as the authorised representative for the Project in matters related to traffic and transport. The AFJV Traffic Manager provides the following information and related updates to the TTLG:

- Construction site operations and activities
- Traffic operations, including changes in local road network
- Community concerns and comments or feedback
- Issues relating to pedestrians and cyclists or mobility impaired road users.

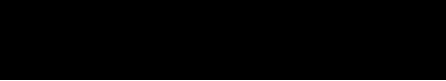
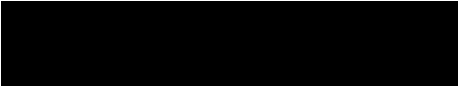
7.2 KEY SITE CONTACTS

Key site contact details are listed in Table 8.

TABLE 8: KEY SITE CONTACT DETAILS

Name	Role	Contract Details

7.3 ROLES AND RESPONSIBILITIES

Roles	Responsibilities
Project Wide Construction Manager 	▪ Reports to the Project Director as part of the Project Management Team. ▪ Accountable for the overall construction delivery of the Surface Works. ▪ Directs the Traffic Manager and ensures work is prioritised to ensure safety of all road users, the community and construction personnel.
Station Box Civil Manager Contact 	▪ Reports to the Construction Director as part of the Project Management Team ▪ Accountable for the overall construction of the Surface Works ▪ Directs the Traffic Manager to prioritise work for the safety of road users, community and construction personnel
Traffic Manager 	▪ Reports to the Project Wide Construction Manager. ▪ Leads the traffic management team. ▪ Implements the CTMP and ensure it is followed. ▪ Ensures risk assessments are done. ▪ Reviews Construction Traffic Management Plans (CTMPs)/ Traffic Guidance Schemes (TGSs or formerly known as Traffic Control Plans)/ Road Occupancy Licence (ROLs) prior to submission to the stakeholders. ▪ Ensures that sub-contractors meet the requirements of the CTMP. ▪ Defines the requirements for traffic management and ensures that they are satisfied through spot checks and audits.
Traffic Coordinator 	▪ Reports to the Traffic Manager. ▪ Develops CTMP/ TGS/ ROL submission. ▪ Ensures that long-term layouts are implemented in accordance with the CTMP/ TGS/ ROL, are safe and are maintained appropriately.

8. CONCLUSION

This CTMP has been prepared to document the proposed construction activities and operations at North Strathfield metro station construction site starting early 2023. The CTMP details the traffic management measures to mitigate the identified traffic and transport impacts that would occur during the peak construction traffic period and through to the end of the transitional handover services arrangement.

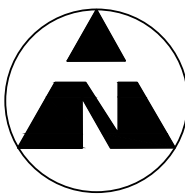
APPENDIX A – LONG TERM TRAFFIC STAGING PLAN / TEMPORARY WORKS DESIGN

SYDNEY METRO WEST

QUEEN STREET

COVER SHEET

HANDOVER WORKS



SHEET NO.	TITLE
DRG-307200	TEMPORARY WORKS AND TRAFFIC STAGING - COVER SHEET
	STAGE 1B - PHASE 3
DRG-307201	TEMPORARY WORKS AND TRAFFIC STAGING - HANDOVER WORKS - SHEET 1
DRG-307202	TEMPORARY WORKS AND TRAFFIC STAGING - HANDOVER WORKS - SHEET 2
DRG-307203	TEMPORARY WORKS AND TRAFFIC STAGING - HANDOVER WORKS - SHEET 3
DRG-307204	TEMPORARY WORKS AND TRAFFIC STAGING - HANDOVER WORKS - SHEET 4

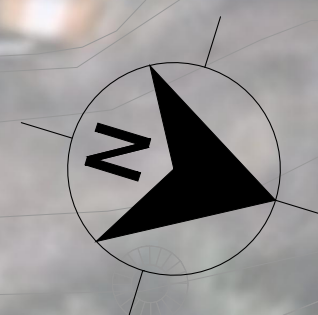
LOCALITY PLAN
NOT TO SCALE

ACCEPTED FOR CONSTRUCTION



INSET A





NOTE:
1. KERB RAMPS TO BE INSTALLED AS PER RMS STD DRG R0300-11.
2. MAXIMUM RAMP SLOPE TO NOT EXCEED 1 ON 8.
3. ALL KERB RAMP ANGLES TO BE 30° UNLESS NOTED OTHERWISE.
4. FOR TEMPORARY LINEMARKING AND SIGNAGE DETAILS REFER TO DRG SMWSTCTP-AFJ-NST-SN350-TW-DRG-307201.

KERB RAMP NO 2 SETOUT POINTS

PT	EASTING	NORTHING	HEIGHT
9	323207.519	6251798.284	17.303
10	323208.090	6251796.367	17.255
11	323208.272	6251795.602	17.378
12	323208.141	6251795.564	17.378
13	323206.614	6251795.916	17.459
14	323206.042	6251797.833	17.480
15	323207.127	6251798.995	17.463
16	323207.258	6251799.034	17.455

WARNING TGSi TO BE INSTALLED AS PER C27 TGSi TACTILE INDICATORS.
KERB RAMP No 2. 1 IN 8 MAXIMUM SLOPE
NEW KERB RAMP TO JOIN NEATLY TO EXISTING CONCRETE FOOTPATH.

FOR TEMPORARY LINEMARKING AND SIGNAGE DETAILS REFER TO DRG SMWSTCTP-AFJ-NST-SN350-TW-DRG-307201.

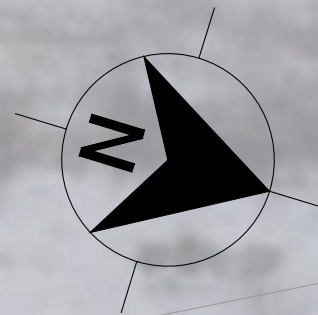
INTERSECTION CONSTRUCTION BY OTHERS, REFER TO CoCB DESIGN FOR DETAILS.

3.6m WIDE ZEBRA CROSSING TO BE PROVIDED.

KERB RAMP NO 1 SETOUT POINTS

PT	EASTING	NORTHING	HEIGHT
1	323219.694	6251202.007	17.420
2	323219.524	6251802.667	17.564
3	323219.729	6251802.729	17.564
4	323221.056	6251802.423	17.552
5	323221.639	6251800.510	17.531
6	323220.709	6251799.513	17.546
7	323220.505	6251799.450	17.542
8	323220.277	6251800.093	17.407

NEW KERB RAMP TO JOIN NEATLY TO EXISTING CONCRETE FOOTPATH.
KERB RAMP No 1. 1 IN 8 MAXIMUM SLOPE
WARNING TGSi TO BE INSTALLED AS PER C27 TGSi TACTILE INDICATORS.



NOTE:
1. KERB RAMPS TO BE INSTALLED AS PER RMS STD DRG R0300-11.
2. MAXIMUM RAMP SLOPE TO NOT EXCEED 1 ON 8.
3. ALL KERB RAMP ANGLES TO BE 45° UNLESS NOTED OTHERWISE.
4. FOR TEMPORARY LINEMARKING AND SIGNAGE DETAILS REFER TO DRG SMWSTCTP-AFJ-NST-SN350-TW-DRG-307202.

CONCRETE RAMP NO 3 SETOUT POINTS

PT	EASTING	NORTHING	HEIGHT
17	323147.399	6251995.982	19.926
18	323146.249	6251999.830	19.888
19	323147.780	6252000.450	20.052
20	323149.031	6251996.307	20.068

TRAFFIC CALMING AUSTRALIA SEMI BARRIER
KERB OR APPROVED EQUIVALENT.
WARNING TGSi TO BE INSTALLED AS
PER C27 TGSi TACTILE INDICATORS.

4.0m TFNSW SM BARRIER KERB OR APPROVED EQUIVALENT. RECESS TOP
OF BARRIER KERB TO ACCEPT HEELSAFE GRATES AND FRAMES.
2/360 x 2000mm GALVANISED HEELSAFE GRATES AND FRAMES. RECESS
TOP OF KERB AND CHANNEL TO ACCEPT HEELSAFE GRATES AND FRAMES.

CONCRETE RAMP No 3. 1 IN 8 MAXIMUM SLOPE

TRAFFIC CALMING AUSTRALIA SEMI BARRIER
KERB OR APPROVED EQUIVALENT.

EXISTING RAISED ISLAND
TO BE REMOVED.

FOR TEMPORARY LINEMARKING AND SIGNAGE DETAILS
REFER TO DRG SMWSTCTP-AFJ-NST-SN350-TW-DRG-307202.

QUEEN STREET

3.6m WIDE ZEBRA CROSSING TO BE PROVIDED.

KERB RAMP NO 4 SETOUT POINTS

PT	EASTING	NORTHING	HEIGHT
21	323157.925	6252003.198	20.103
22	323157.574	6252004.513	20.230
23	323157.719	6252004.558	20.227
24	323159.419	6252003.654	20.301
25	323160.472	6252000.217	20.370
26	323159.565	6251998.507	20.357
27	323159.435	6251998.468	20.357
28	323158.998	6251999.761	20.178

NEW KERB RAMP TO JOIN NEATLY TO
EXISTING CONCRETE FOOTPATH.

KERB RAMP No 4. 1 IN 8 MAXIMUM SLOPE

WARNING TGSi TO BE INSTALLED AS
PER C27 TGSi TACTILE INDICATORS.

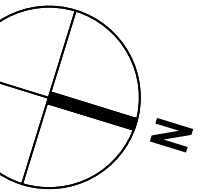
EXISTING TREE TO BE REMOVED.

EXISTING RAISED ISLAND TO REMAIN.

QUEEN STREET

BERONGA STREET

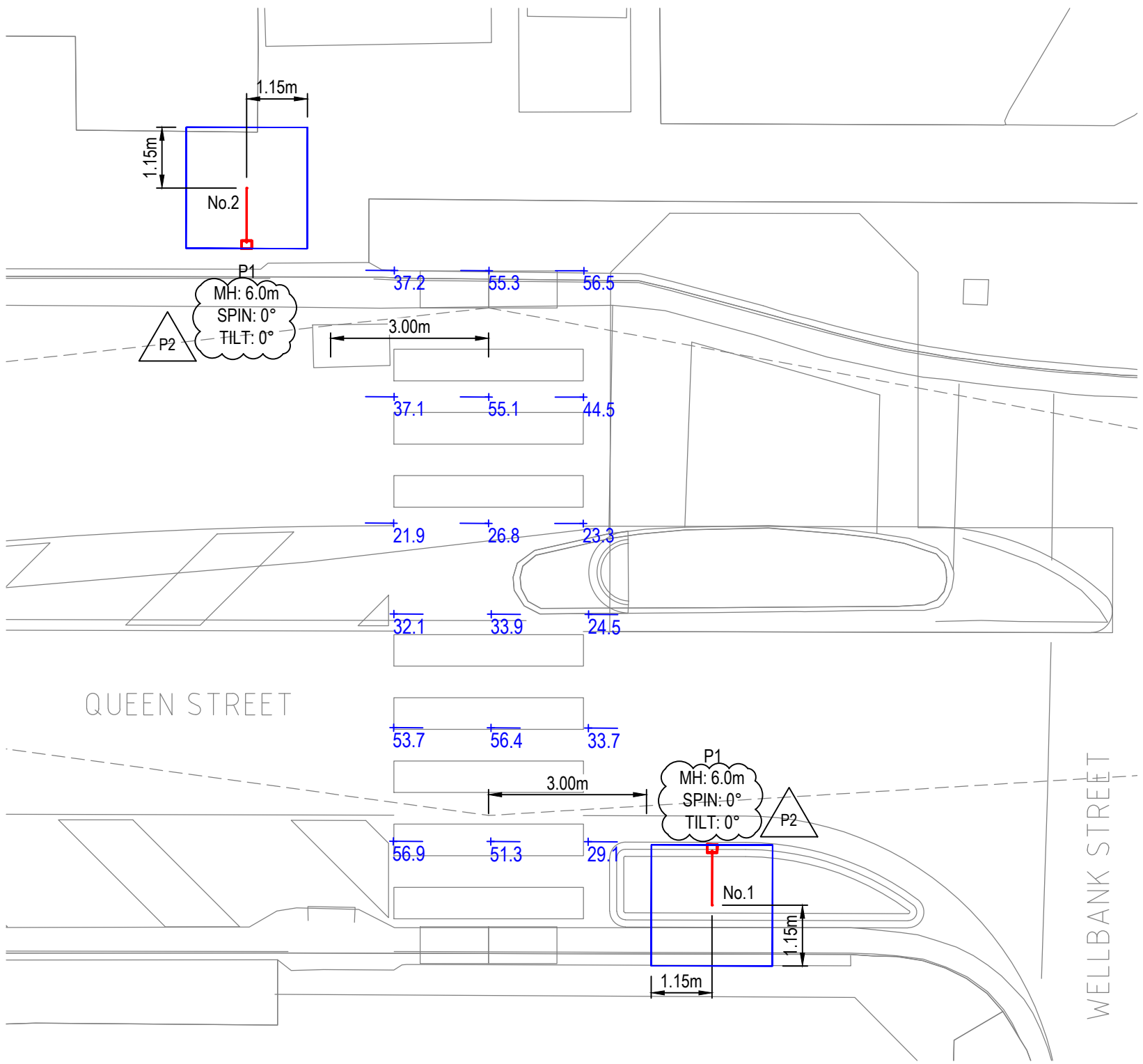
ACCEPTED FOR CONSTRUCTION



LIGHTING SERVICES

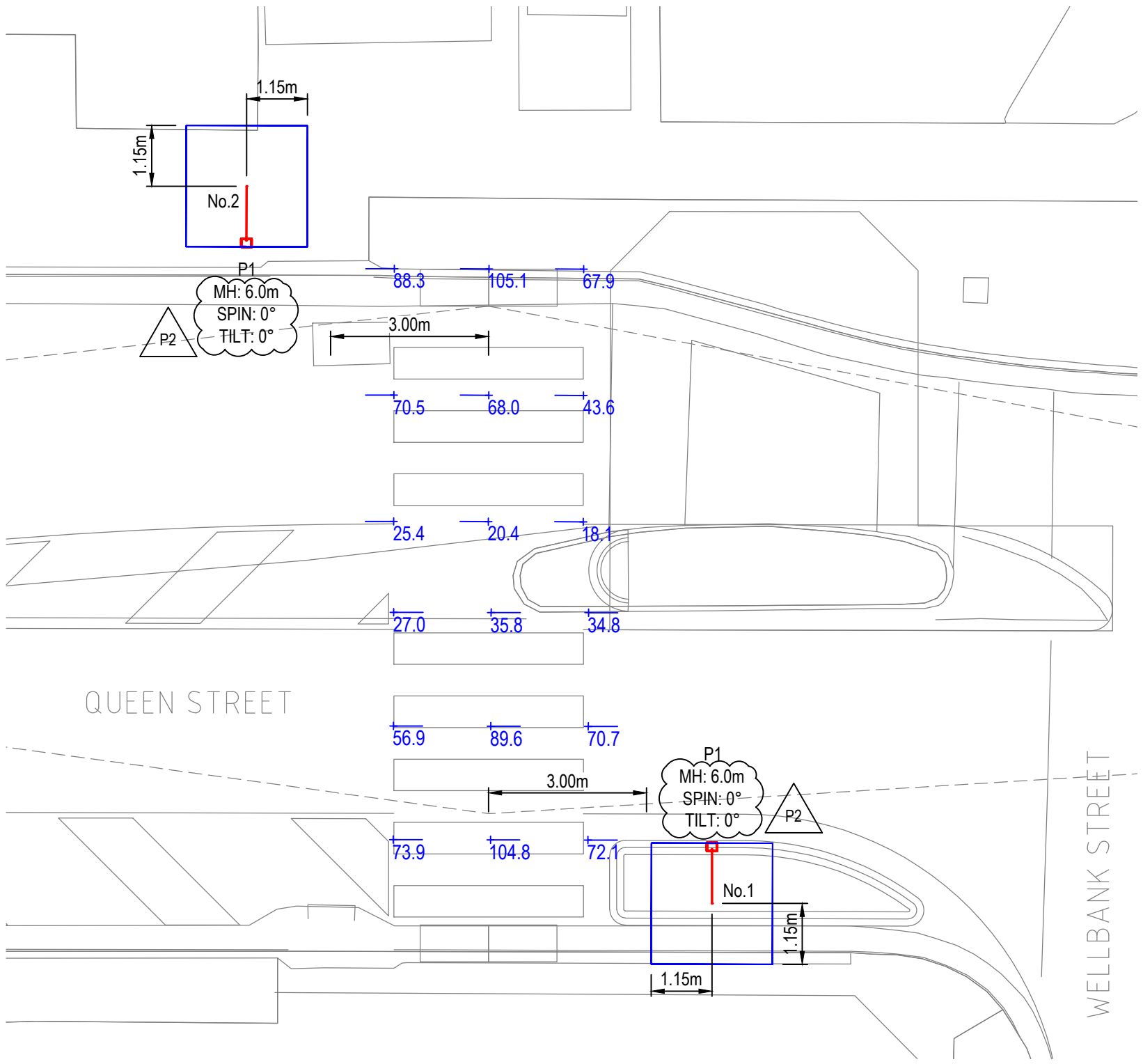
TEMPORARY PEDESTRIAN CROSSING

QUEEN STREET, NORTH STRATHFIELD



VERTICAL ILLUMINANCE CALCULATIONS AT
GROUND LEVEL (A1_A9, AA1_AA9)

SCALE 1:100



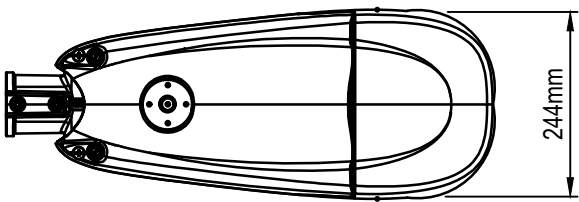
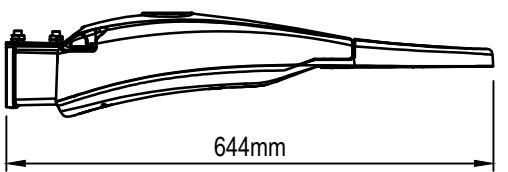
VERTICAL ILLUMINANCE CALCULATIONS AT
1.5m ABOVE GROUND LEVEL (B1_B9, BB1_BB9)

SCALE 1:100

Luminaire Schedule								
Symbol	Qty	Label	Description	Part Code	LLF	Luminaire Lumens	Luminaire Watts	Arm
P1	2	P1	ADLT CREE ENERGY UNO 54W PCL 4000°K ADJUSTABLE POLE MOUNT CIW 3.4m OUTREACH ON RELOCATABLE CONCRETE BLOCK WITH SOLAR PV PANELS AND BATTERY SIZED TO SUIT LOCATION	TRSA-02-PCL-8L-407-54W	1.000	4965lm	54lm	3.4m

Expanded Luminaire Location Summary					
LumNo	Label	X	Y	Z	Tilt
1	P1	323217.9529	6251804.6366	6.0m	0
2	P1	323207.5366	6251792.1768	6.0m	0

Calculation Summary								
Label	Units	Calc Type	Min	PtSpLr	PtSpTb	# Pts	Grid Z	Fixed Meter Aiming
PED CROSSING A1_A9 EV	Lux	Illuminance	24.5	1.85	2.159	9	0	180 90
PED CROSSING AA1_AA9 EV	Lux	Illuminance	21.9	1.8	2.4	9	0	0 90
PED CROSSING B1_B9 EV	Lux	Illuminance	27.0	1.85	2.159	9	1.5	180 90
PED CROSSING BB1_BB9 EV	Lux	Illuminance	18.1	1.8	2.4	9	1.5	0 90



TYPE 'P' DIMENSIONS
N.T.S.

- NOTES:
- LOCATION OF COLUMNS ARE GENERATED AS COORDINATES BY A COMPUTER CALCULATION MODULE (AGI) USING THE PROJECT ROAD ALIGNMENT COORDINATE SYSTEM. HOWEVER COLUMN SETBACK DETAILS & CITY OF CANADA BAY COUNCIL STANDARDS TAKE PRECEDENCE.
 - CONTRACTOR TO KEEP RECORD OF CHANGES AND COORDINATE WITH DESIGNER.

PEDESTRIAN CROSSING CALCULATED TO CATEGORY PX3 OF AS1158.4 ILLUMINATION CALCULATION POINTS COMPLY.

ILLUMINANCE CALCULATIONS HAVE BEEN CARRIED OUT WITH AGI32 - REV 20.9

ALL X & Y COORDINATES ARE APPROXIMATE ONLY AND PRODUCED FROM AGI32.

FOR CONSTRUCTION PURPOSES: A SURVEYOR SHALL CONFIRM EXACT X & Y COORDINATES BASED ON REQUIRED SETBACKS AND PRESENCE OF ANY OTHER SERVICES / OBSTRUCTIONS ON SITE

PUBLIC DOMAIN LIGHTING DESIGN CERTIFICATION

THIS DESIGN HAS BEEN PRODUCED BY WEBB AUSTRALIA NSW PTY LTD AND IS CERTIFIED TO COMPLY WITH THE DESIGN BRIEF AND THE RELEVANT CURRENT SECTIONS OF AS/NZS 1158, EXCEPTING THE LOCATIONS AS AND IF NOTED ON THE DESIGN.

THIS DESIGN CERTIFICATION IS SUBJECT TO THE FOLLOWING CONDITIONS, AND TO THE MAXIMUM EXTENT PERMITTED BY LAW, WEBB DISCLAIMS ANY RESPONSIBILITY OR LIABILITY IN CONNECTION WITH THE FOLLOWING:

- THE DESIGN HAS BEEN BASED UPON INFORMATION RECEIVED BY WEBB FROM THIRD PARTIES. WEBB HAS NOT VERIFIED WHETHER SUCH INFORMATION IS CORRECT OR COMPLETE, AND WEBB CANNOT BE HELD RESPONSIBLE FOR ANY INACCURACIES OR INCOMPLETENESS OF SUCH INFORMATION.
- THE DESIGN MUST BE INSTALLED AS SPECIFIED ON THE DRAWING, AND NO VARIATIONS ARE ALLOWED WITHOUT THE WRITTEN CONSENT OF THE WEBB LIGHTING DESIGN MANAGER.
- CALCULATED RESULTS, SHOWN HEREIN, ARE SUBJECT TO PRACTICAL TOLERANCES SUCH AS PHOTOMETRIC MEASUREMENT, MANUFACTURING VARIATION, CONTROL GEAR / LAMP CHARACTERISTICS, SUPPLY VOLTAGE AND FREQUENCY VARIATIONS ETC.
- WEBB CANNOT BE RESPONSIBLE FOR ENVIRONMENTAL CONDITIONS, WHICH MAY COMPROMISE THE COMPLIANCE OF THE DESIGN.
- THE COMPLIANCE OF THE DESIGN IS DEPENDANT UPON THE LUMINAIRE MANUFACTURER SUPPLYING LUMINAIRES THAT ARE REPRESENTATIVE OF THE DATA CONTAINED WITHIN THE APPROPRIATE REGISTERED LABORATORY PHOTOMETRIC TEST REPORT, AS NOMINATED / REPRESENTED BY THE FILE NUMBER LISTED IN THE LUMINAIRE SCHEDULE CONTAINED IN THIS DESIGN.
- WHERE EXISTING LUMINAIRES HAVE BEEN INCLUDED IN THIS ASSESSMENT OF COMPLIANCE, UNLESS STATED OTHERWISE, THE DATA USED FOR CALCULATIONS IS FOR NEW LUMINAIRES OF CURRENT MANUFACTURE, AND IS NOT NECESSARILY THE PERFORMANCE OF THE EXISTING LUMINAIRES.
- IN PRODUCING THIS DESIGN, NO ACCOUNT HAS BEEN TAKEN FOR SLOPING TERRAIN, CARRIAGEWAYS, CRESTS, VEHICULAR BARRIERS, TREES AND VEGETATION, OR ANY OTHER OBJECT THAT INTERFERES WITH THE STREET LIGHTING DESIGN.
- THE DESIGN IS PREDICTED UPON THE ADOPTION OF A MAINTENANCE REGIME THAT WILL MAINTAIN THE PERFORMANCE OF THE LUMINAIRES TO A LEVEL EQUAL TO OR ABOVE THE MAINTENANCE FACTORS USED IN THE DESIGN.

SHOULD YOU REQUIRE FURTHER INFORMATION OR CLARIFICATION PLEASE CONTACT THE UNDER SIGNED.

COMPANY REPRESENTATIVE - SIMON CHIU (MIES 2292)
DATE - 28/10/2022

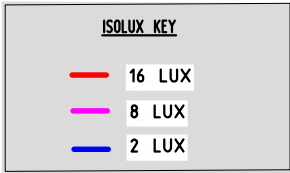
LIGHTING DESIGN DISCLAIMER:
WEBB'S LIGHTING CALCULATIONS AND ASSESSMENT HAVE BEEN PRODUCED USING A COMPUTER MODEL. WHILE WE USE MOST SOPHISTICATED SOFTWARE, THE PROGRAMS OPERATE WITHIN THE LIMITATIONS OF THE PHOTOMETRIC DATA SUPPLIED BY MANUFACTURER, CALCULATION ALGORITHMS AND ASSUMPTIONS OF THE MODEL. THE RESULTS GIVE AN EXCELLENT INDICATION OF THE RELATIVITY AND MAGNITUDE OF ILLUMINANCE, HOWEVER, IT MUST BE EMPHASISED THAT THE FIGURES ARE DERIVED FROM A MODEL AND THE LEVELS MAY NOT EXACTLY CORRESPOND WITH ACTUAL MEASUREMENTS. THE CALCULATIONS ASSUME SURFACE FINISHES AND MAY NOT ALLOW FOR ACTUAL REFLECTANCE AND AMBIENT LIGHT, OR FOR SHADING OR OTHER BLOCKING OBJECTS.

OFFICIAL

FOR REVIEW AND COMMENT

NOTES:

1. LIGHTING DESIGNED TO AS/NZS 1158 - CATEGORY PX2.
2. CONCEPT LIGHTING DESIGN ONLY. NOT TO BE USED FOR CONSTRUCTION.
3. UNLESS NOTED OTHERWISE ALL MOUNTING HEIGHTS ASSUMED ARE:
ORCA 81W AT 6m.
4. UPLIFT ANGLE FOR BOTH ORCA SOLAR LUMINAIRES ARE CONSIDERED
AS 5 DEG.
5. ALL LIGHTING SHALL BE INSTALLED IN ACCORDANCE WITH THE LOCAL
DISTRIBUTION BUSINESS STANDARDS AND REQUIREMENTS.
6. ALL WORKS SUBJECT TO THE APPROVAL OF THE LOCAL DISTRIBUTION
BUSINESS.



Calculation Summary						
Label	CalcType	Units	Avg	Max	Min	Max/Avg
Ped Xing_Ev N1	Illuminance	Lux	72.49	122.9	33.4	1.70
Ped Xing_Ev S1	Illuminance	Lux	87.90	121.4	52.8	1.38

LIGHTING LEGEND

- 81W ORCA SOLAR LUMINAIRE 0.5m OR BRKT ON PROPOSED POLE
- 150W HPS ROADSTER LUMINAIRE 1.5m OR BRKT ON EXISTING POLE
- EXISTING POLE
- IA IMPACT ABSORBING POLE
- (E) = EXISTING
- (N) = NEW

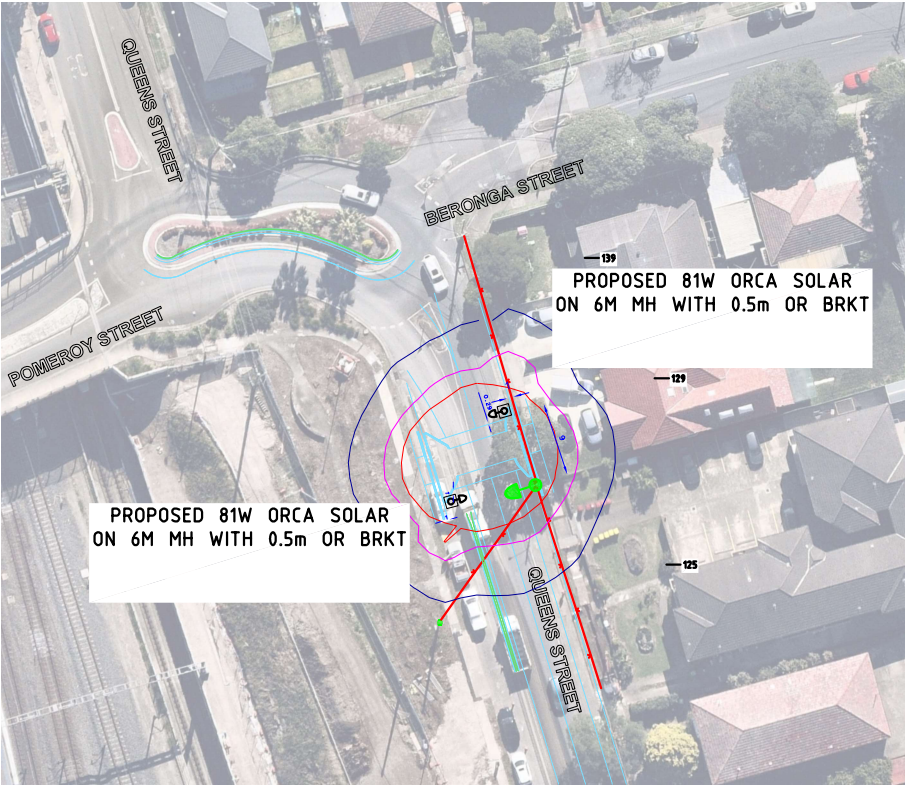
EXISTING SERVICES

- E U/G ELECTRICAL

O/H ELECTRICAL
- D DRAINAGE

S SEWER
- T TELSTRA

W WATER
- G GAS



Obtrusive Light - Compliance Report

AS/NZS 4282:2019, RX - Residences Near Pedestrian Crossing, Curfew
Filename: North Strathfield Ped Xing Obtrusive Cal ORCA Solar

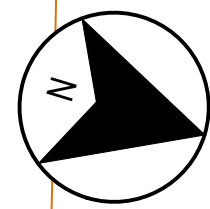
Illuminance
Maximum Allowable Value: 4 Lux

Calculations Tested (9):

Calculation Label	Test Max. Results	Illum.
ObtrusiveLight_1_Ill_Seg1	PASS	0.2
ObtrusiveLight_1_Ill_Seg2	PASS	0.0
ObtrusiveLight_1_Ill_Seg3	PASS	0.8
ObtrusiveLight_1_Ill_Seg4	PASS	0.6
ObtrusiveLight_1_Ill_Seg5	PASS	1.0
ObtrusiveLight_1_Ill_Seg6	PASS	0.0
ObtrusiveLight_1_Ill_Seg7	PASS	1.3
ObtrusiveLight_1_Ill_Seg8	PASS	0.2
ObtrusiveLight_1_Ill_Seg9	PASS	0.1

PRELIMINARY PLAN
FOR DISCUSSION PURPOSES ONLY
SUBJECT TO CHANGE WITHOUT NOTIFICATION

WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATIONS OF UNDERGROUND SERVICES ARE
APPROXIMATE ONLY AND THEIR EXACT POSITION
SHOULD BE PROVEN ON SITE. NO GUARANTEE IS
GIVEN THAT ALL EXISTING SERVICES ARE SHOWN



FROM STRATHFIELD

TO NORTH STRATHFIELD

APPROXIMATE EXTENT OF FLEXIBLE PAVEMENT
(TO BE CONFIRMED ONSITE)

APPROXIMATE EXTENT OF FLEXIBLE PAVEMENT
(TO BE CONFIRMED ONSITE)

APPROXIMATE EXTENT OF RIGID PAVEMENT
(TO BE CONFIRMED ONSITE)

APPROXIMATE EXTENT OF FLEXIBLE PAVEMENT
(TO BE CONFIRMED ONSITE)

APPROXIMATE EXTENT OF FLEXIBLE PAVEMENT
(TO BE CONFIRMED ONSITE)

APPROXIMATE EXTENT OF RIGID PAVEMENT
(TO BE CONFIRMED ONSITE)

ADJOINS PV-DRG-030011

WELLBANK STREET

MCN02

R2

I-4

I-4

40

54

I-4

I-4

54

50.723

E-10

E-10

FP

TF

16.01.2023 -
slab extent

NOTE:

UTILITIES SHOWN ON THE DRAWINGS ARE EXISTING ONLY AND DO NOT SHOW THE DESIGN FOR ANY PROPOSED UTILITIES. REFER TO RELEVANT UTILITIES DESIGN PACKAGES THE PROPOSED UTILITIES DESIGN. CONSTRUCTION IS NOT TO COMMENCE UNTIL THE PROPOSED UTILITY DESIGN IS ISSUED FOR CONSTRUCTION.

LEGEND

- 0000
- CONTROL LINE
BOUNDARY / LOT PROPERTY
METRO SITE BOUNDARY
EXISTING SURVEY
- EXISTING PAVEMENT
METRO CONSTRUCTION SITE
- PAVEMENT TYPE FP
PAVEMENT TYPE M&C
PAVEMENT TYPE F1
PAVEMENT TYPE F2
PAVEMENT TYPE HP
PAVEMENT TYPE MI
PAVEMENT TYPE R1
PAVEMENT TYPE R2
PAVEMENT TYPE TF
WATER BLASTING OR PAVEMENT
TYPE M&C REFER TO NOTE 11
- XXXX
- PAVEMENT TAG
- MXXX
- CONTROL LINE LABEL
- E-1
- EDGE DETAILS
- I-1
- INTERFACE DETAILS
- SUBSURFACE DRAINAGE
PEDESTRIAN FENCE
EXISTING STORMWATER PIT
NEW STORMWATER PIT

NOTES

1. MINIMUM ASPHALT PAVING WIDTH TO BE 1.5 m TO ENABLE MACHINE COMPACTION
2. REFER TO SN350-PV-DRG-030001 AND SN350-PV-DRG-030008 FOR PAVEMENT PROFILE DETAILS.
3. REFER TO SN350-PV-DRG-030002, SN350-PV-DRG-030003 AND SN350-PV-DRG-030009 FOR EDGE DETAILS.
4. REFER TO SN350-PV-DRG-030004 AND SN350-PV-DRG-030010 FOR INTERFACE DETAILS.
5. SAWCUT EXISTING GUTTER (FULL DEPTH) ALONG LIP OF GUTTER AND CAREFULLY REMOVE EXISTING KERB AND GUTTER WITHOUT DAMAGING EXISTING ADJACENT PAVEMENT. ANY DAMAGE TO EXISTING PAVEMENT SHALL BE REINSTATED TO A MINIMUM WIDTH OF 1.5 m AND IS TO MATCH EXISTING.
6. CONCRETE FOOTPATH JOINTING IS TO BE IN ACCORDANCE WITH THE CITY OF CANADA BAY ENGINEERING SPECIFICATION.
7. ALL DIMENSIONS SHOWN IN METERS UNLESS NOTED OTHERWISE.
8. IF EXISTING PAVEMENT MATERIAL IS FOUND THEN PAVEMENT TYPE F1 CAN BE REPLACED WITH PAVEMENT TYPE HP.
9. REFER TO PV-DRG-030005, PV-DRG-030006 AND PV-DRG-030007 FOR JOINTING PLANS.
10. REFER TO SHT NST-SN350-RW-DRG-030003 FOR SECTIONS THROUGH THE RAISED PEDESTRIAN CROSSING.
11. LINEMARKING TO BE REMOVED VIA M&C OR HIGH PRESSURE WATERBLASTING. REMOVAL METHOD IS TO BE AGREED WITH THE PRINCIPAL BASED ON A CONDITION ASSESSMENT CARRIED OUT BY AN INDEPENDENT PARTY BEFORE AND AFTER WATER BLASTING.

OFFICIAL

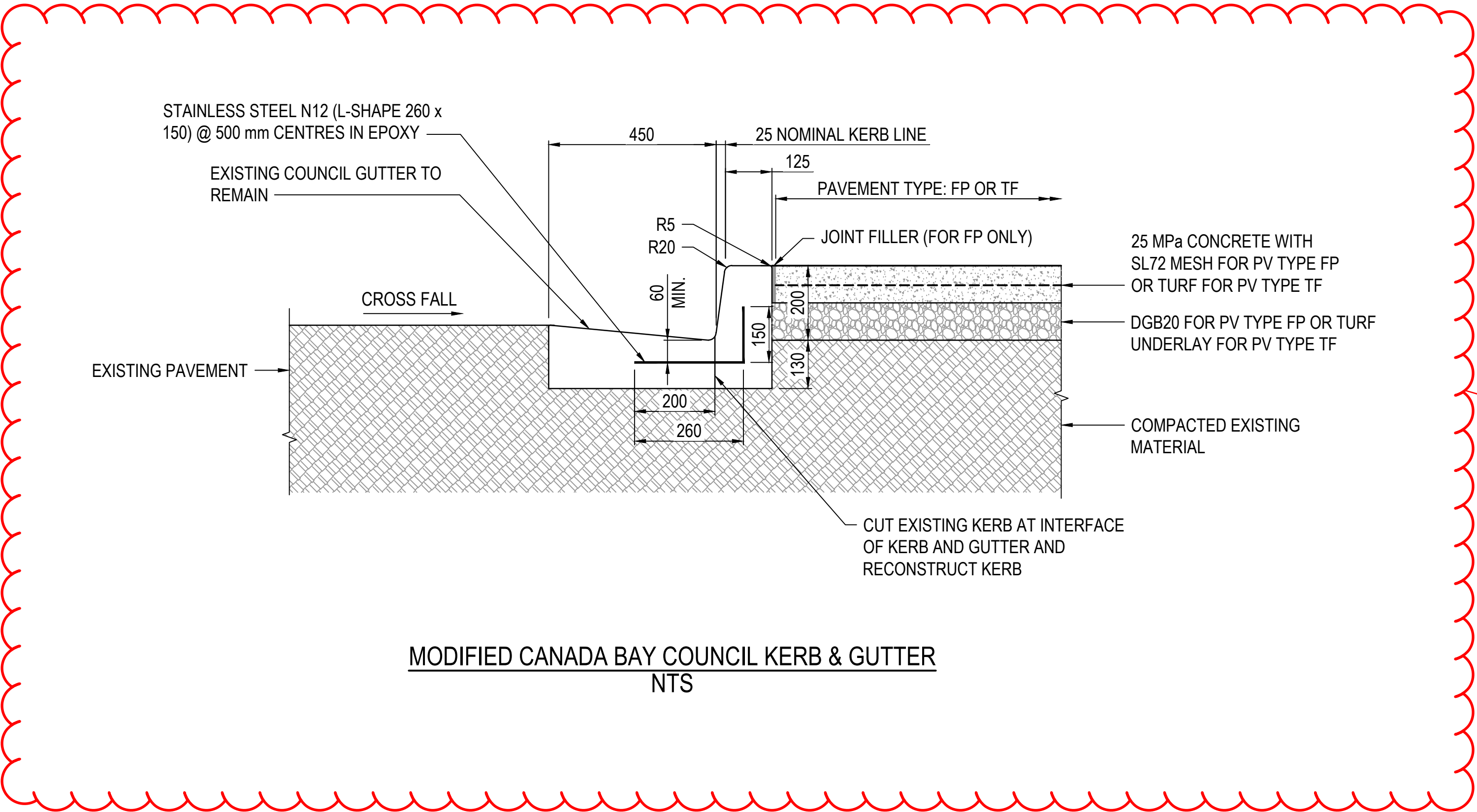
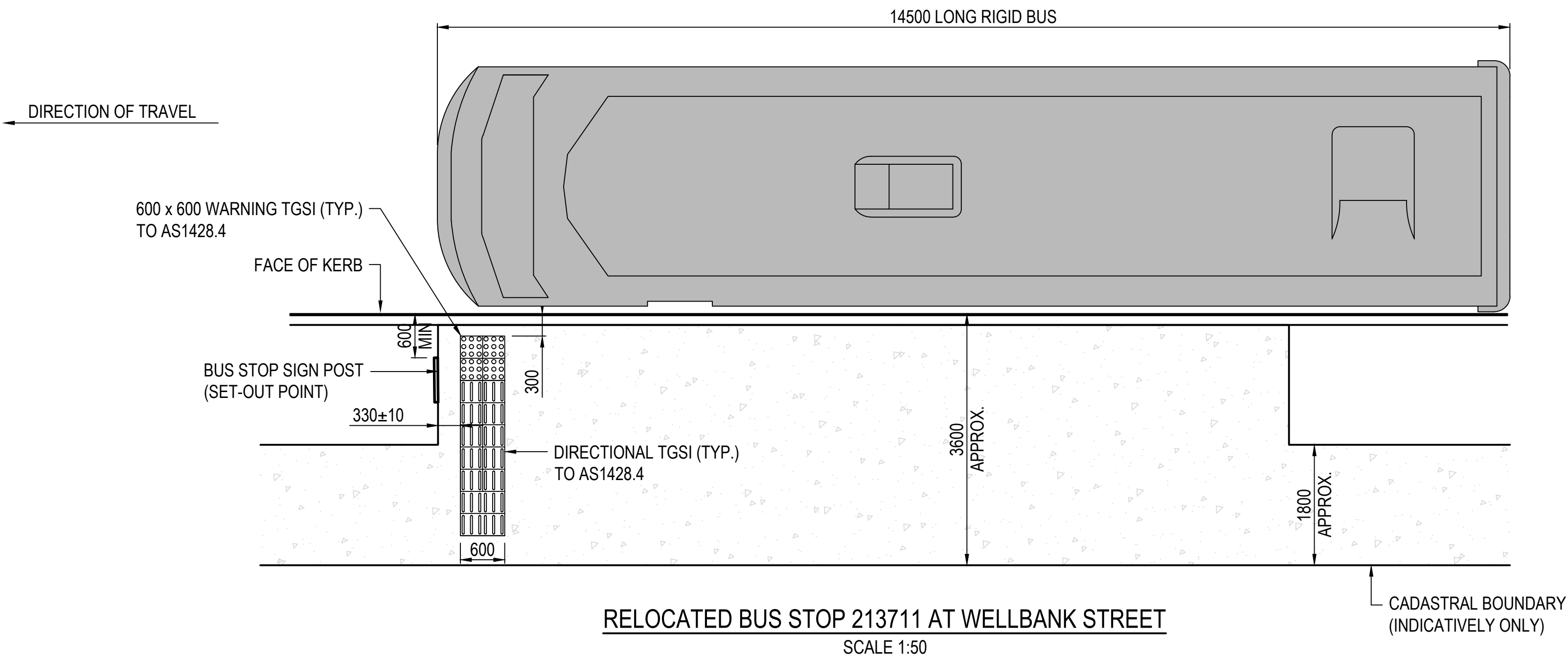
FOR CONSTRUCTION

NOTE:
UTILITIES SHOWN ON THE DRAWINGS ARE EXISTING ONLY AND DO NOT SHOW THE DESIGN FOR ANY PROPOSED UTILITIES. REFER TO RELEVANT UTILITIES DESIGN PACKAGES THE PROPOSED UTILITIES DESIGN. CONSTRUCTION IS NOT TO COMMENCE UNTIL THE PROPOSED UTILITY DESIGN IS ISSUED FOR CONSTRUCTION.

LEGEND

CONTROL LINE
BOUNDARY / LOT PROPERTY
METRO SITE BOUNDARY
EXISTING SURVEY

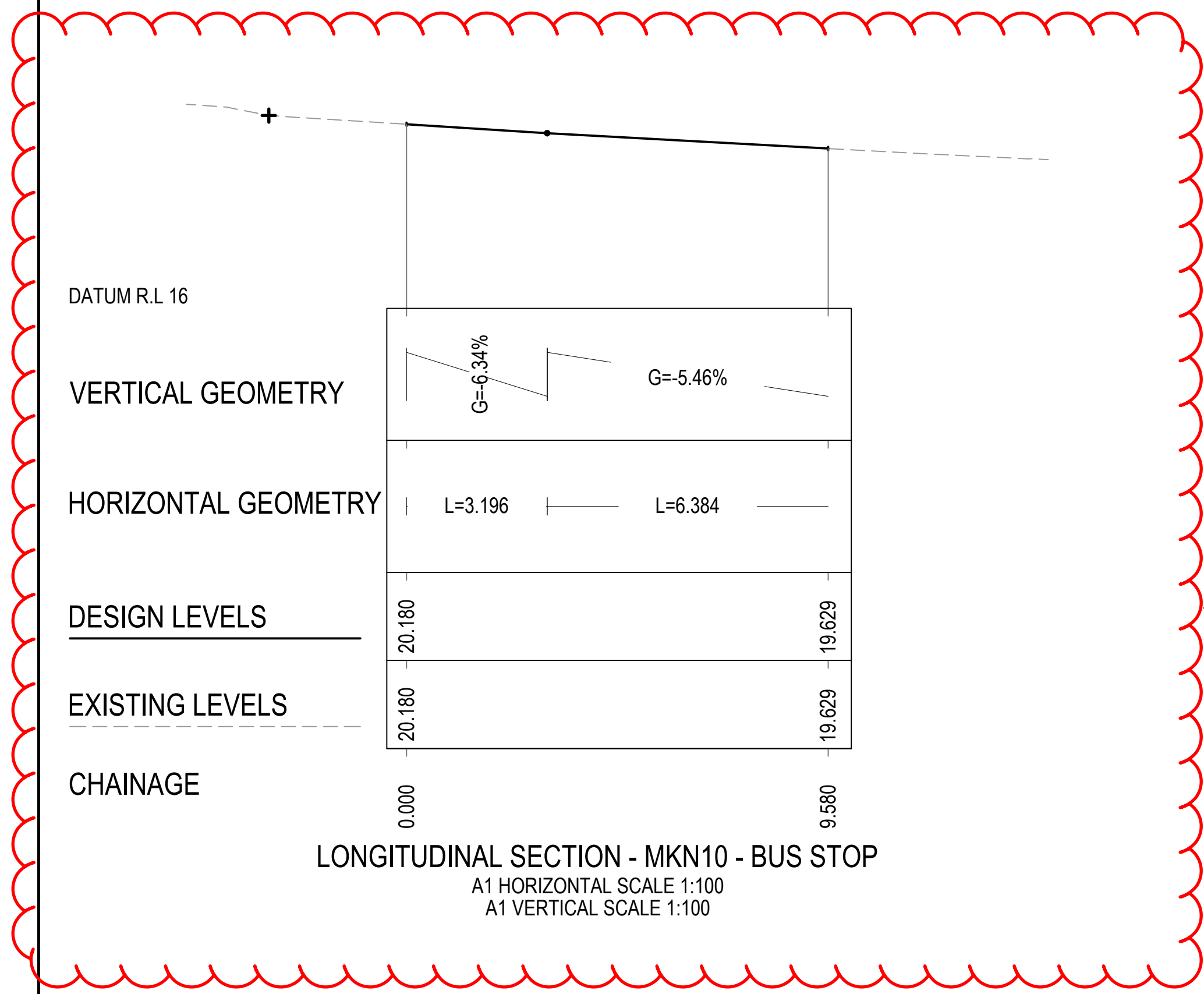
- NOTES**
1. ALL DIMENSIONS SHOWN IN MILLIMETRES UNLESS NOTED OTHERWISE.
 2. REFER TO SN350-CV-DRG-030003 FOR GENERAL NOTES.
 3. REFER TO SN350-CV-DRG-030004 FOR LEGEND.



18.01.2023 -
bus stop kerb
detail

OFFICIAL FOR CONSTRUCTION

10m

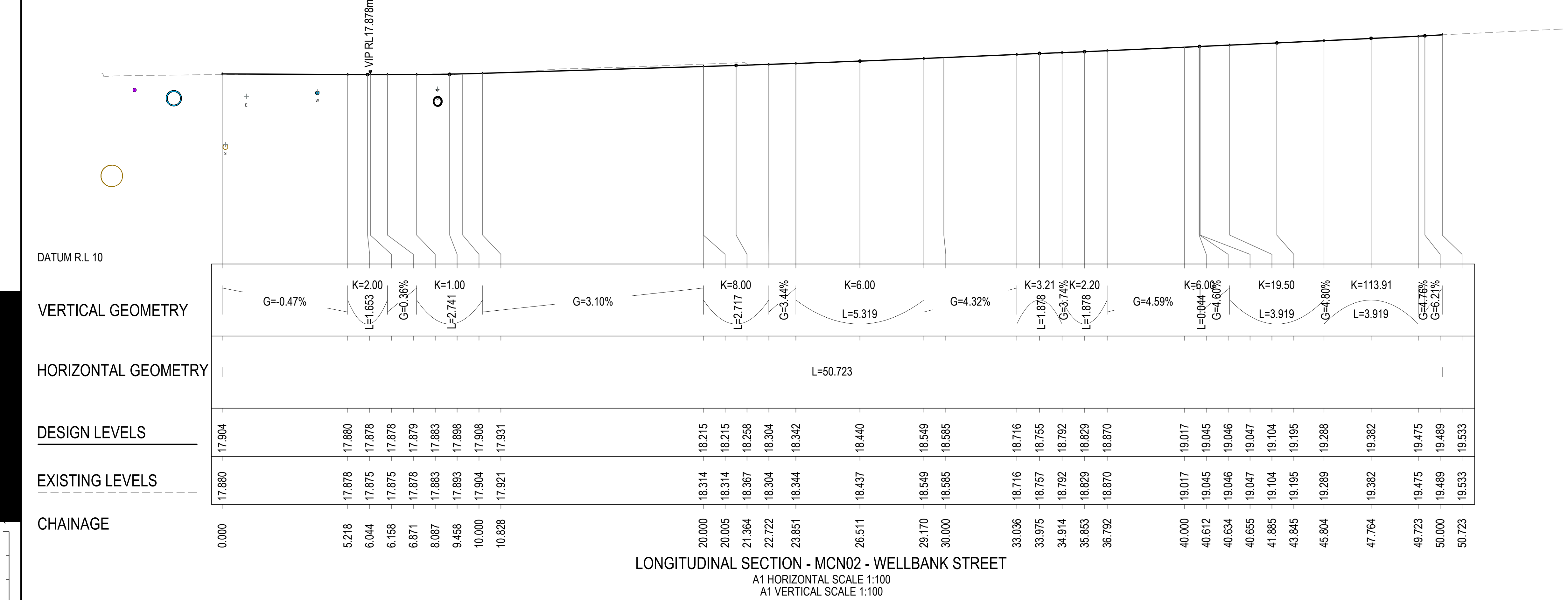


16.01.2023 -
bus stop long
section

NOTE:
UTILITIES SHOWN ON THE DRAWINGS ARE EXISTING ONLY AND DO NOT SHOW THE DESIGN FOR ANY PROPOSED UTILITIES. REFER TO RELEVANT UTILITIES DESIGN PACKAGES THE PROPOSED UTILITIES DESIGN. CONSTRUCTION IS NOT TO COMMENCE UNTIL THE PROPOSED UTILITY DESIGN IS ISSUED FOR CONSTRUCTION.

LEGEND	
	DESIGN SURFACE LEVELS
	EXISTING SURFACE LEVELS
	UTILITY (COMMS)
	UTILITY (ELECTRICAL)
	UTILITY (GAS)
	UTILITY (SEWER)
	UTILITY (WATER)
	UTILITY (STORMWATER INVERT)

NOTE:
1. FOR PAVEMENT PROFILES AND EDGE DETAILS, REFER TO SN350-PV-DRG-030001 TO SN350-PV-DRG-030003.



LONGITUDINAL SECTION - MCN02 - WELLBANK STREET
A1 HORIZONTAL SCALE 1:100
A1 VERTICAL SCALE 1:100

OFFICIAL FOR CONSTRUCTION

DATUM R.L. 17.000

CUT STRINGS

DESIGN
LEVELS

EXISTING
LEVELS

DESIGN
OFFSETS

	MCN02			
	-0.9% -2.1% -5.7%			
	NUL	NLL	LDR	NJR
	-18.204	-18.215	-18.184	-18.093
	-18.204	-18.314	-18.180	-18.093
	-1.200	0.000	1.476	3.076

MCN02 - CH 20.000
A1 HORIZONTAL SCALE 1:100
A1 VERTICAL SCALE 1:50

DATUM R.L. 16.000

CUT STRINGS

DESIGN
LEVELS

EXISTING
LEVELS

DESIGN
OFFSETS

	MCN02			
	-2.8% -1.0% -6.2%			
	NUL	NLL	LDR	NJR
	-18.026	-18.060	-18.045	-17.945
	-18.026	-18.135	-18.118	-17.945
	-1.200	0.000	1.478	3.078

MCN02 - CH 15.000
A1 HORIZONTAL SCALE 1:100
A1 VERTICAL SCALE 1:50

DATUM R.L. 15.000

CUT STRINGS

DESIGN
LEVELS

EXISTING
LEVELS

DESIGN
OFFSETS

	MKN01		MCN02		MKN02	
	4.7% 12.5%		-0.7% 2.1%		-2.1% -6.3% 8.9% 1.8%	
	CFNOL	CENOL	NJR	NJR	CENOL	CFNOL
	-17.886	-17.904	-17.929	-17.877	-17.589	-17.552
	-17.886	-17.864	-17.929	-17.887	-17.576	-17.556
	-6.711	-6.241	-2.489	0.000	2.150	6.054

MCN02 - CH 9.000
A1 HORIZONTAL SCALE 1:100
A1 VERTICAL SCALE 1:50

DATUM R.L. 19.000

CUT STRINGS

DESIGN
LEVELS

EXISTING
LEVELS

DESIGN
OFFSETS

	MKN10	
	2.5%	
	E9L	CBNOL
	-20.193	-20.134
	-20.220	-20.074
	-2.539	-0.150

MCN01 - CH 4.000
A1 HORIZONTAL SCALE 1:100
A1 VERTICAL SCALE 1:50

DATUM R.L. 19.000

CUT STRINGS

DESIGN
LEVELS

EXISTING
LEVELS

DESIGN
OFFSETS

	MKN10	
	2.5%	
	E9L	CBNOL
	-20.313	-20.253
	-20.342	-20.209
	-2.515	-0.150

MCN10 - CH 2.000
A1 HORIZONTAL SCALE 1:100
A1 VERTICAL SCALE 1:50

DATUM R.L. 19.000

CUT STRINGS

DESIGN
LEVELS

EXISTING
LEVELS

DESIGN
OFFSETS

	MKN10	
	0.8% 9.3%	
	E9L	E8L
	-20.465	-20.456
	-20.465	-20.456
	-2.490	-1.328

MCN01 - CH 0.000
A1 HORIZONTAL SCALE 1:100
A1 VERTICAL SCALE 1:50

DATUM R.L. 18.000

CUT STRINGS

DESIGN
LEVELS

EXISTING
LEVELS

DESIGN
OFFSETS

	MKN10	
	2.4%	
	E9L	CBNOL
	-19.973	-19.915
	-19.973	-19.856
	-2.567	-0.150

MCN01 - CH 8.000
A1 HORIZONTAL SCALE 1:100
A1 VERTICAL SCALE 1:50

NOTE:

UTILITIES SHOWN ON THE DRAWINGS ARE EXISTING ONLY AND DO NOT SHOW THE DESIGN FOR ANY PROPOSED UTILITIES. REFER TO RELEVANT UTILITIES DESIGN PACKAGES THE PROPOSED UTILITIES DESIGN. CONSTRUCTION IS NOT TO COMMENCE UNTIL THE PROPOSED UTILITY DESIGN IS ISSUED FOR CONSTRUCTION.

LEGEND

	DESIGN SURFACE LEVELS
	EXISTING SURFACE LEVELS
	UTILITY (COMMS)
	UTILITY (ELECTRICAL)
	UTILITY (GAS)
	UTILITY (SEWER)
	UTILITY (WATER)
	UTILITY (STORMWATER INVERT)

NOTE:

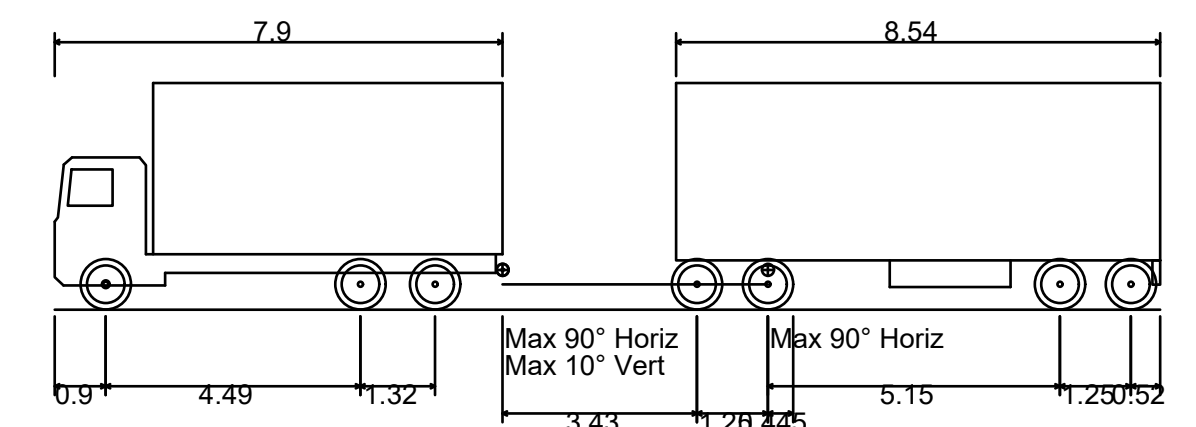
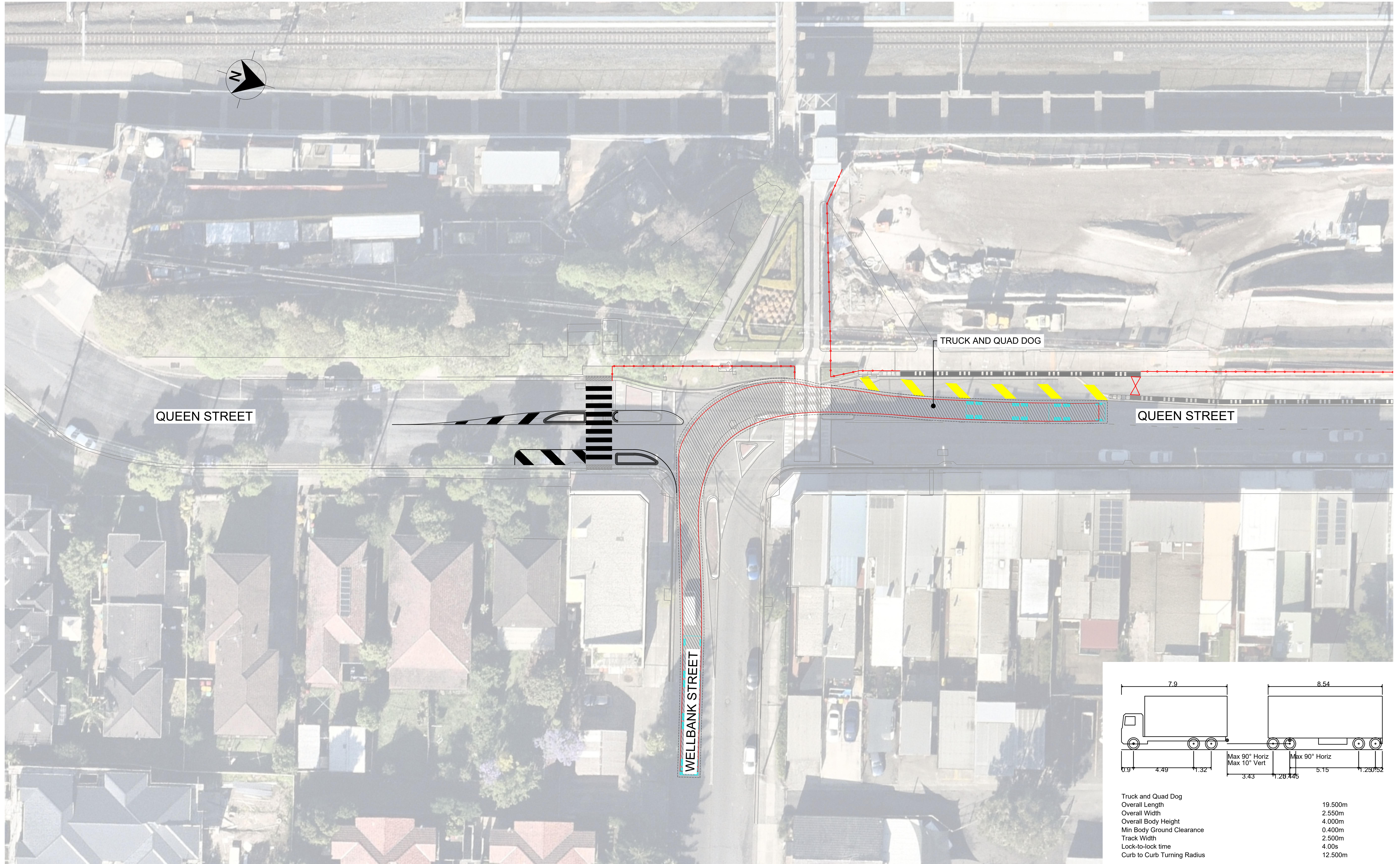
- FOR PAVEMENT PROFILES AND EDGE DETAILS, REFER TO SN350-PV-DRG-030001 AND SN350-PV-DRG-030002.

16.01.2023 -
bus stop cross
sections

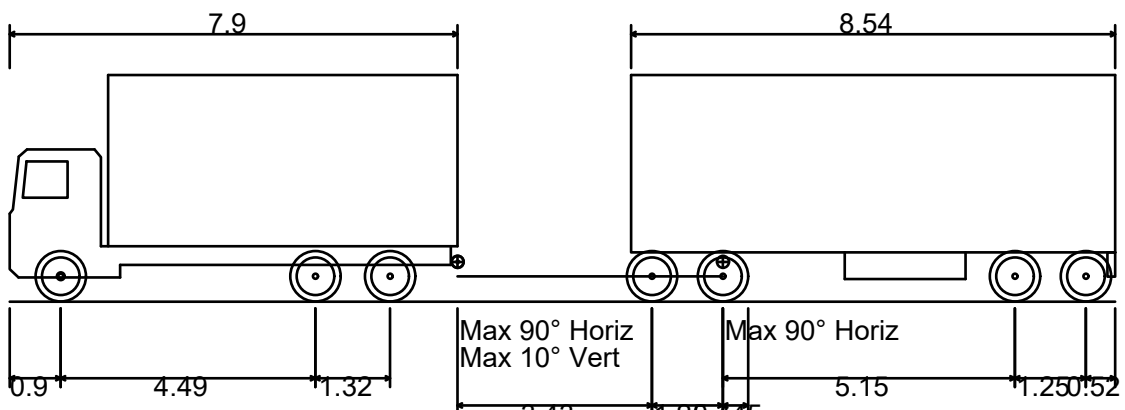
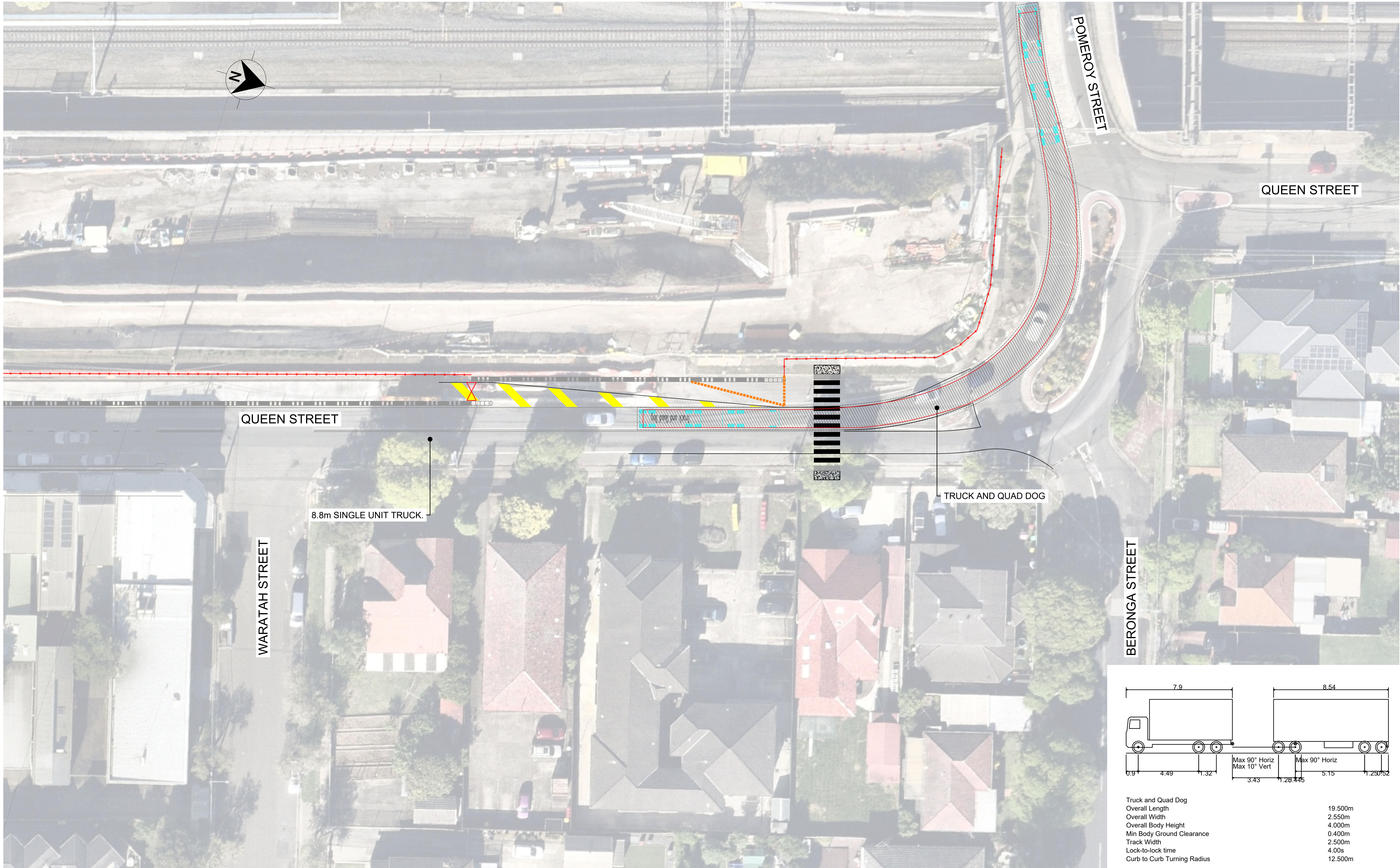
OFFICIAL

FOR CONSTRUCTION

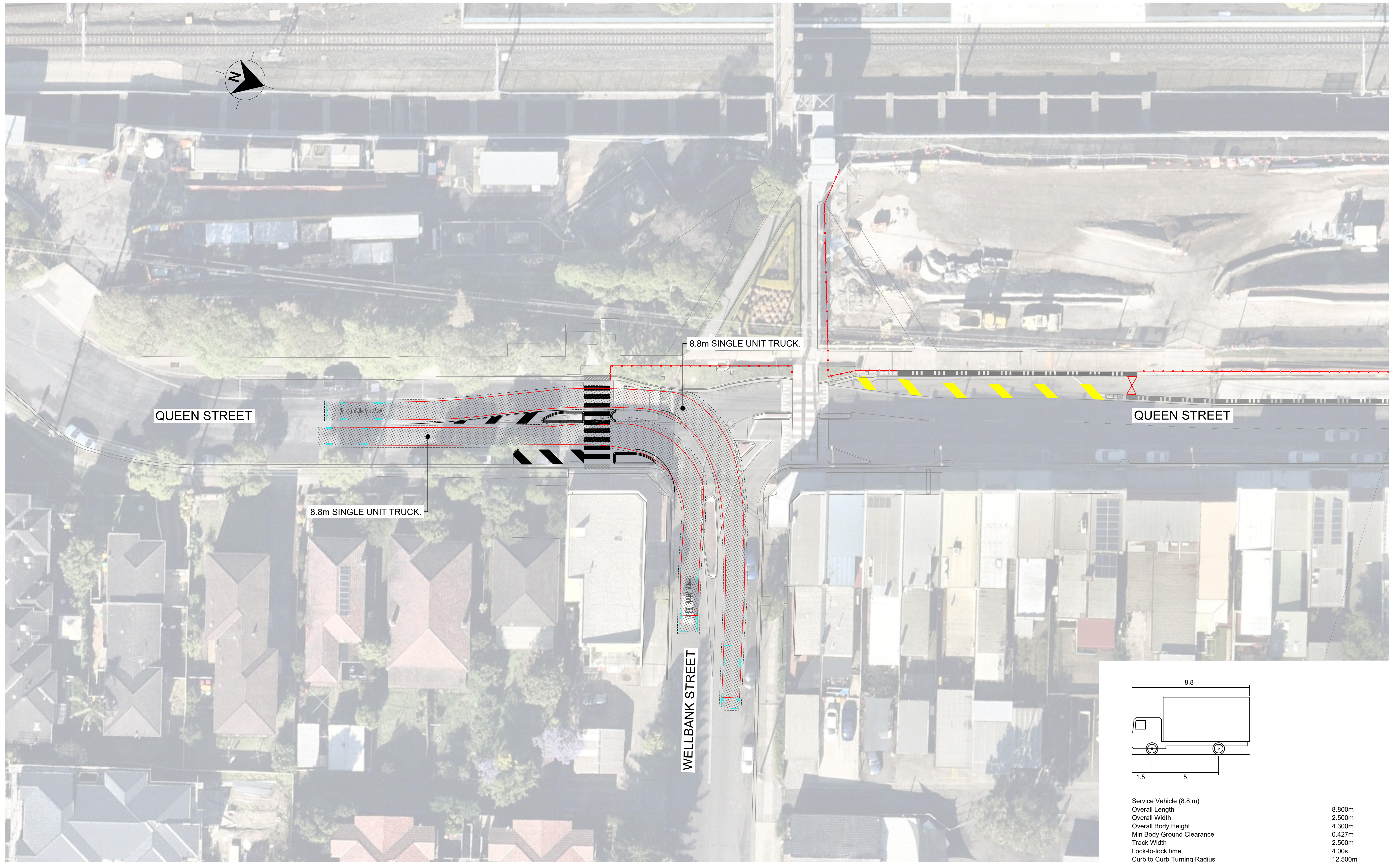
APPENDIX B – TURN PATH ANALYSIS



Truck and Quad Dog	
Overall Length	19.500m
Overall Width	2.550m
Overall Body Height	4.000m
Min Body Ground Clearance	0.400m
Track Width	2.500m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	12.500m

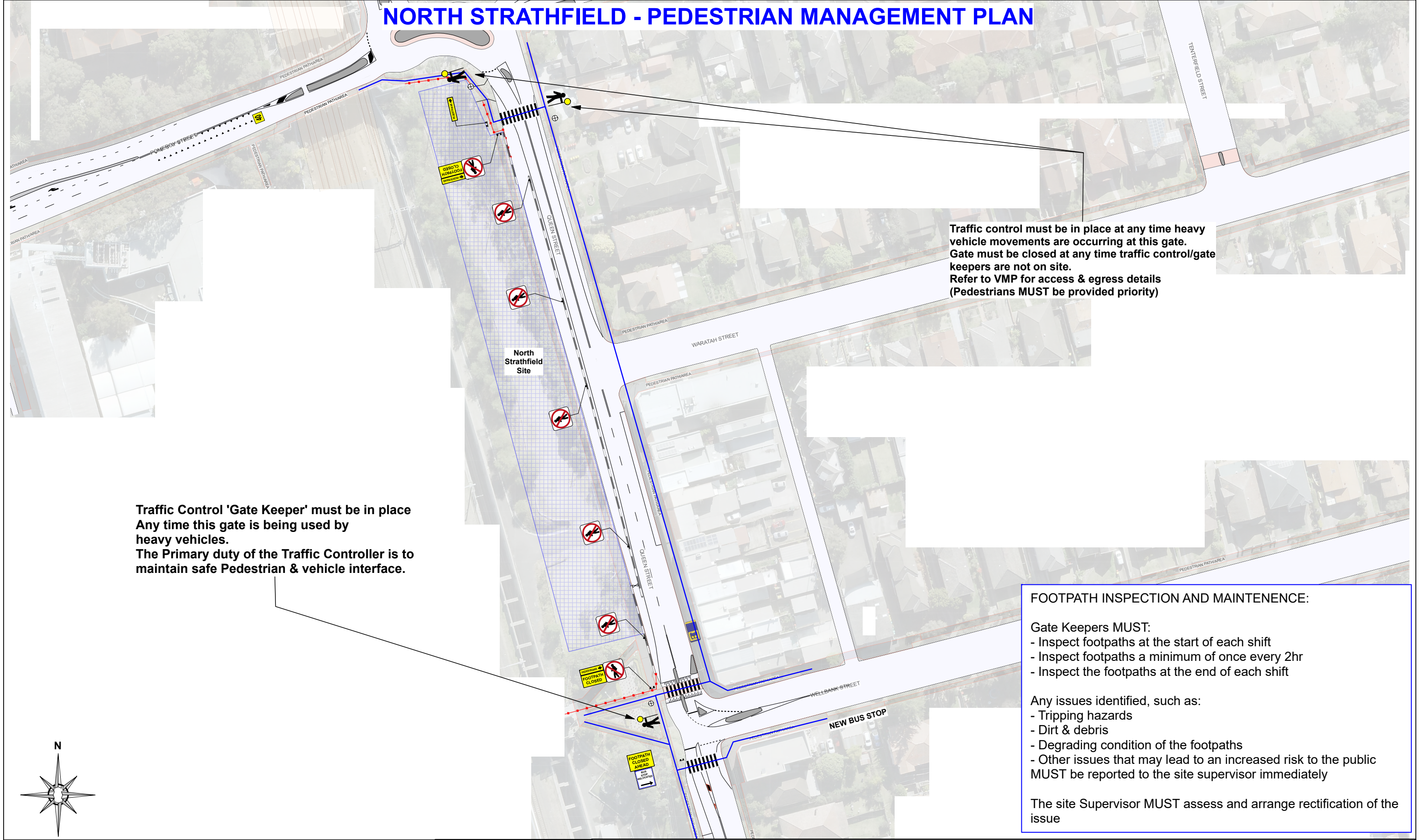


Truck and Quad Dog	
Overall Length	19.500m
Overall Width	2.550m
Overall Body Height	4.000m
Min Body Ground Clearance	0.400m
Track Width	2.500m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	12.500m



APPENDIX C – PEDESTRIAN MANAGEMENT PLAN

NORTH STRATHFIELD - PEDESTRIAN MANAGEMENT PLAN



PROJECT: SYDNEY METRO WEST - CENTRAL TUNNEL PACKAGE

LEGEND



Workzone



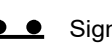
Traffic Controller



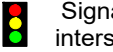
Fencing



Pedestrian Route



Sign (2 posts)

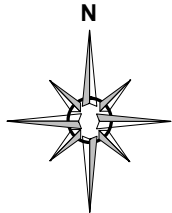
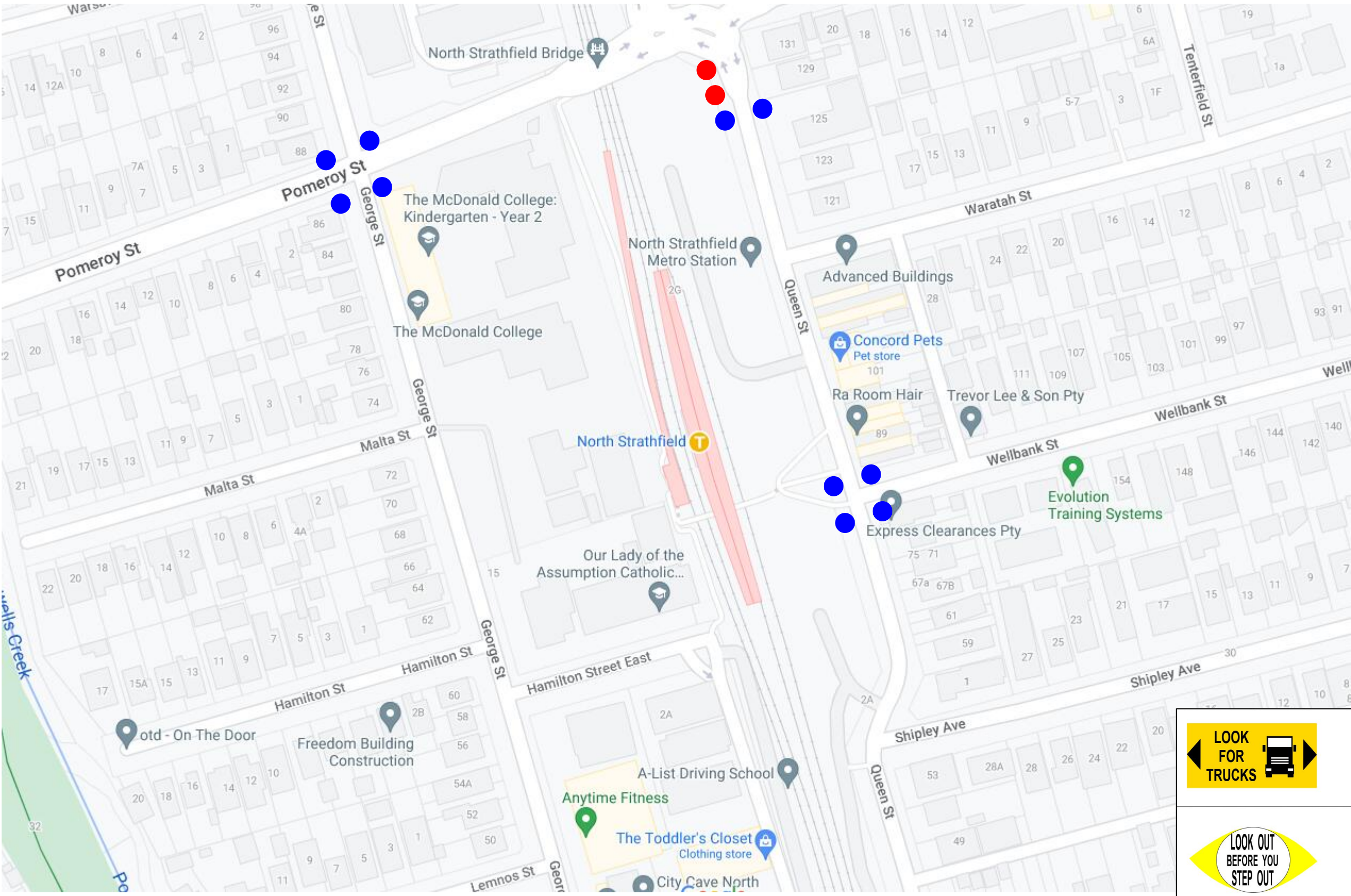


Signalised intersection



Arrow-board location

NORTH STRATHFIELD - PEDESTRIAN MANAGEMENT PLAN



PROJECT: SYDNEY METRO WEST - CENTRAL TUNNEL PACKAGE

LEGEND

- Workzone
- Traffic Controller
- Fencing
- Pedestrian
- Sign (2 posts)
- Signalled intersection
- Arrow-board location



TGS Number:

AFJVCTP-TGS-0468

Traffic Guidance Scheme - Options & Risk Assessment

Location Details

Road Queen Street Suburb North Strathfield Side Street Wellbank Street

Direction N E S W Speed of road 50 km/h Speed of Side Streets 50 km/h

Options Assessment

Method selected Around Past ThroughReason for selection Traffic can pass while maintaining sufficient worker/traffic offset.

Risk Assessment

Section 1 - Does the TGS Involve Detours of traffic? YES NO (If answered no proceed to section 2)Enter
Risk
Rating

	YES	NO	Enter description of risks if answered no to any question	
1.1 Are Detour routes suitable for all vehicles classes being detoured?	☐	☐		
1.2 Is Access to local residence and business Maintained	☐	☐		
1.3 Are Detour signs located at decision points, to clearly guide motorists through the detour?	☐	☐		
1.4 Can roads and intersections used as detour routes, accommodate the additional traffic volumes?	☐	☐		
1.5 Is the same level of safety maintained for turn movements? e.g. Traffic using signalized intersections being sent through a detour route that involves turn movements at non-signalized intersections.	☐	☐		

Section 2 - Does the TGS involve Stop/Slow arrangements? YES NO (If answered no proceed to section 3)Enter
Risk
Rating

	YES	NO	Enter description of risks if answered no to any question	
2.1 Are escape routes clearly defined on the TGS, clear and safe to use?	☐	☐		
2.2 Is a PTCO used in place of a manual Traffic Controller where existing speed is greater than 45km/h?	☐	☐		
2.3 Is the operating speed of the road 60km/h or less where Traffic Control or PTCO are in use?	☐	☐		
2.4 Are x4 Traffic Cones placed on the edge or center line, approaching the Traffic Controller or PTCO?	☐	☐		
2.5 Is Prepare to stop and Traffic Control or PTCO symbolic signs installed?	☐	☐		
2.6 Do Traffic Control and PTCO positions have adequate lighting during low light conditions	☐	☐		
2.7 Does sight distance of at least 1.5D exist on approach to Traffic Control or PTCO	☐	☐		

Section 3 - General

YES NO

Enter description of risks if answered no to any question

Enter
Risk
Rating

3.1 Does the TGS define minimum clearances required of workers to live traffic, are distances compliant?	☐	☐	NA	
3.2 Are worker symbolic signs to be placed in advance of areas where workers will be visible to traffic?	☐	☐	NA	
3.3 Are all signs placed at correct distances? i.e. D for multiple signs, 2D for single sign above 60km/h	☐	☐	NA	
3.4 Are Taper lengths compliant and not placed in areas with poor sight distance?	☐	☐	NA	
3.5 Are lane status signs placed in advance of a lane merge?	☐	☐	NA	
3.6 Are the correct Tapers being used? i.e. Merge Taper, Traffic Control Taper, Lateral Shift Taper.	☐	☐	NA	
3.7 Does the TGS clearly define transition zones between tapers on multilane roads, are they compliant?	☐	☐	NA	
3.8 Does the TGS clearly define Buffer areas, are they compliant and at least 30m in length?	☐	☐	NA	
3.9 Does the TGS clearly define site access and egress for work vehicles, is impact to traffic, managed?	☐	☐	NA	
3.10 Does the TGS clearly define pedestrian routes, are the routes suitable for all pedestrians?	☐	☐	NA	
3.11 Does the TGS consider Cyclists, can Cyclists transverse the site safely?	☒	☐		

Section 4 - Other Hazards & Risks

4.1

4.2

4.3

Risk Management

Any Risks Identified identified during the above Risk Assessment must be assessed, with control measures listed below. Control measures must meet the WHS Risk Management Hierarchy of controls framework.

Item	Control Measures	Remaining risk rating	Risk evaluation Matrix							
			Risk ratings: Very high - VH High - H Medium - M Low - L	Consequence						
				Insignificant C6	Minor C5	Moderate C4	Major C3	Severe C2	Catastrophic C1	
				Almost certain L1	M	H	H	VH	VH	VH
				Very likely L2	M	M	H	H	VH	VH
			Likely L3	L	M	M	H	H	VH	
			Unlikely L4	L	L	M	M	H	H	
			Very unlikely L5	L	L	L	M	M	H	
			Almost unprecedented L6	L	L	L	L	M	M	

APPENDIX D – VEHICLE MOVEMENT PLAN (VMP)

VEHICLE MOVEMENT PLAN

Load Restriction - General Mass Limit (GML)

UHF: 12

DE-WATERING
AREA:
Left in & out
Forward in & out
ONLY

SITE EGRESS

Traffic Control 'Gate Keeper' must be in place
Any time there're truck movements at the
dewatering area.
The Primary duty of the Traffic Controller is to
maintain safe Pedestrian & vehicle interface.
(Pedestrians MUST be provided priority)

DE-WATERING
ACCESS
ROUTE

SITE ACCESS

SOUTH SITE
ACCESS
ROUTE
MAX VEHICLE LENGTH 8.8m

FOOTPATH INSPECTION AND MAINTENANCE:

- Gate Keepers MUST:
- Inspect footpaths at the start of each shift
 - Inspect footpaths a minimum of once every 2hr
 - Inspect the footpaths at the end of each shift
- Any issues identified, such as:
- Tripping hazards
 - Dirt & debris
 - Degrading condition of the footpaths
 - Other issues that may lead to an increased risk to the public
- MUST be reported to the site supervisor immediately

The site Supervisor MUST assess and arrange rectification of the issue

Traffic Control 'Gate Keeper' must be in place
Any time this gate is being used by
heavy vehicles.
The Primary duty of the Traffic Controller is to
maintain safe Pedestrian & vehicle interface.

Date: 05/04/2023 Location: North Strathfield Site

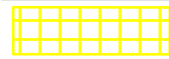
- Comments:
- Drivers must be briefed on this VMP
 - Gatekeeper/s must be in position when gates are in use and the VMP requires it.
 - Drivers must adhere to Gatekeepers directions
 - Vehicles entering and exiting site must:
 1. Activate roof mounted beacons on approach
 2. radio intention via UHF
 3. Indicate intentions
 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.
 - Use only approved haul routes

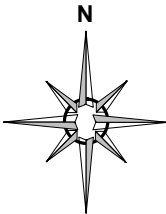
VMP Approved by

PROJECT: SYDNEY METRO WEST - CENTRAL TUNNEL PACKAGE

Rev02

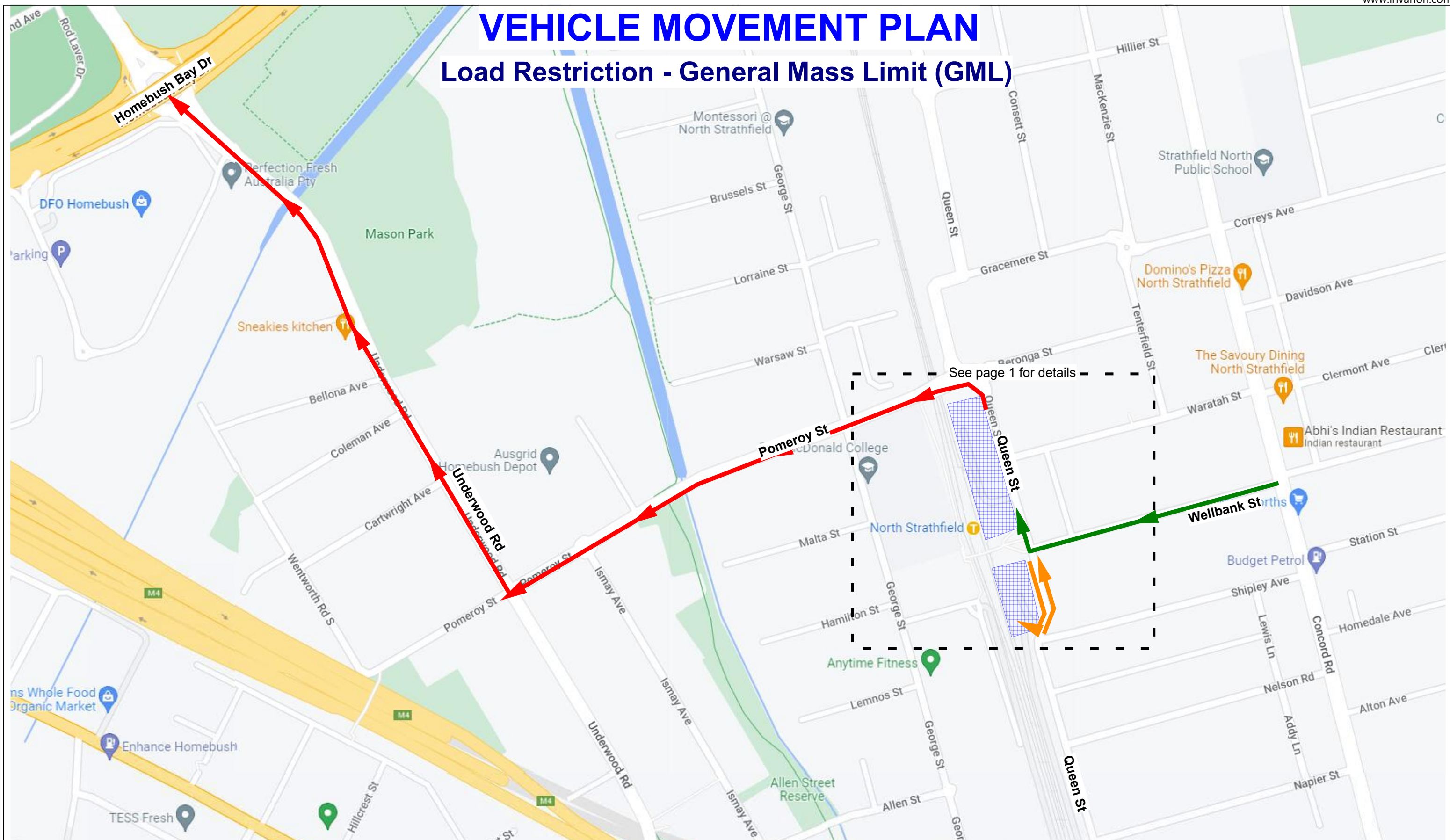
LEGEND

	Workzone		Signalised intersection
	Access		Other movement
	Egress		



VEHICLE MOVEMENT PLAN

Load Restriction - General Mass Limit (GML)



Date: 05/04/2023 **Location:** North Strathfield Site

Comments:

- Drivers must be briefed on this VMP
- 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 intentions
 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.
- Use only approved haul routes



PROJECT:

SYDNEY METRO WEST - CENTRAL TUNNEL PACKAGE

LEGEND



Workzone



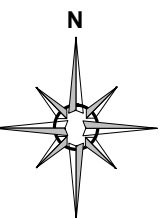
Signalised intersection

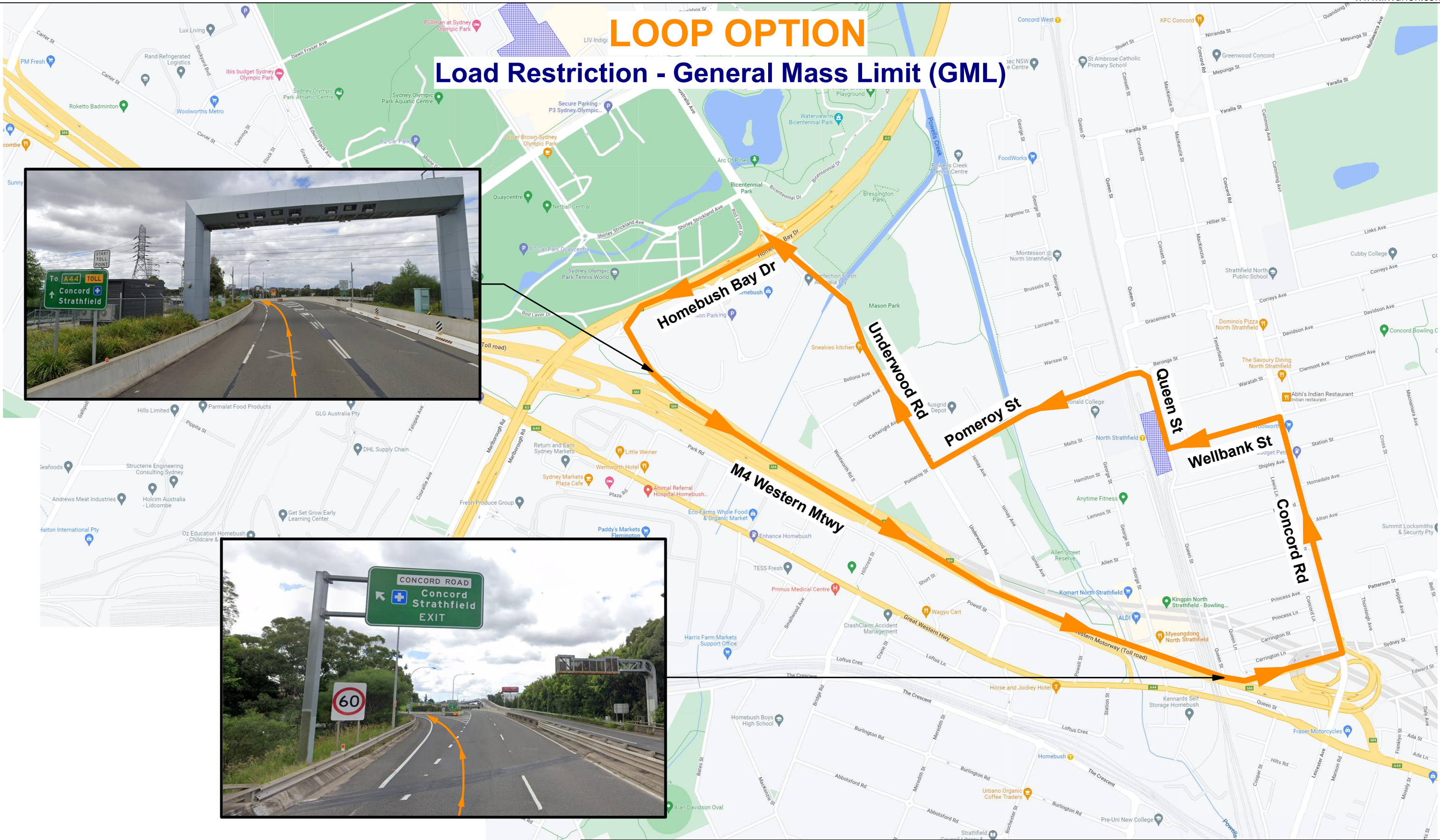


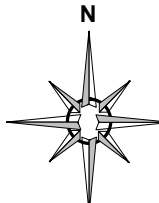
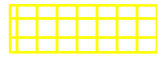
Access



Egress





	Date: 24/11/2022 Location: Sydney Olympic Park site		PROJECT: SYDNEY METRO WEST - CENTRAL TUNNEL PACKAGE				
	Comments: - Drivers must be briefed on this VMP - Gatekeeper/s must be in position when gates are on 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. - Use only approved haul; routes		LEGEND				
				Workzone			Signalised intersection
				Access			Loop option
			Egress				

APPENDIX E – ROAD SAFETY AUDIT REPORT

Road Safety Audit

Detailed Design Stage Audit

Sydney Metro West

Queen Street

Handover Works

Prepared for: CivLink Consulting

Document no.: 24002-DOC-RSA-DD-001_Rev 1

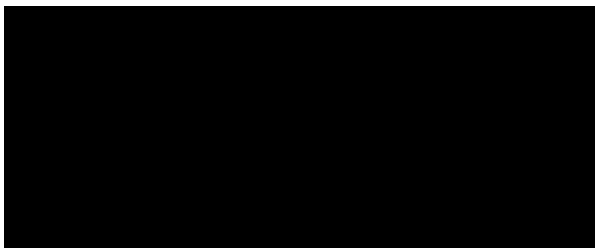
Revision: 1

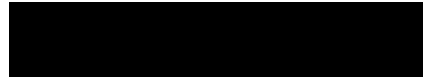
Issue Date: 19th April 2024



Document Control Sheet

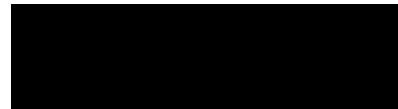
Issue No	1	
Document Status	Issued for use	
Date	19/04/2024	
Issued to		
Prepared By		
Reviewed By		





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1. INTRODUCTION	4
1.1 Background	4
2. PROJECT DESCRIPTION	4
3. SCOPE OF AUDIT	4
4. METHODOLOGY	5
4.1 Audit Process.....	5
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4.3 Statement of Independence.....	5
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5. AUDIT FINDINGS	6
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5.2 Risks to Road Safety	7
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1. INTRODUCTION

1.1 Background

[REDACTED] was commissioned by [REDACTED] in April 2024 to undertake a detailed design stage road safety audit on Queen Street Handover Works Detailed Design.

This report presents the findings of the design desktop road safety audit.

2. PROJECT DESCRIPTION

The Sydney Metro West project is an underground railway connecting Greater Parramatta and the Sydney (CBD).

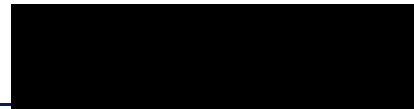
The Queen Street Handover works include the modification of pedestrian crossing facilities on Queen Street between Pomeroy Street and Wellbank Street. Within the audit site along Queens Street, there are local businesses, a bus stop, pedestrian footpaths, street parking and private residences. Wellbank Street and Queen Street (North) are State-controlled roads whilst Queens Street (South) is a local road.



Figure 1 – Desktop audit scope extents (Source from www.google.com)

3. SCOPE OF AUDIT

This Road Safety Audit (RSA) has been conducted as a ‘Detailed Design’ Road Safety Audit as per *Austroads Guide to Road Safety: Part 6 – Road Safety Audit (2022)*, with the aim of identifying safety risks and hazards within the Detailed Design drawings for Queen Street handover works.



The objective of the audit is to assist in improving the safety of the proposed traffic staging and to ensure that the design considers all foreseeable road users.

The scope of the audit undertaken included the following:

- All road users impacted by the modification of pedestrian crossings on Queen Street;
- The road corridor on Queen Street within the extents of the audit site;
- All side streets within vicinity of the audit site.

4. METHODOLOGY

4.1 Audit Process

The road safety audit was undertaken in accordance with the requirements of the *Austroads Guide to Road Safety: Part 6 - Road Safety Audit (2022)* and included the following tasks:

- desktop review of the 'Detailed Design' documentation provided by the client;
- identify road safety issues and assign a 'risk level' for risk mitigation; and
- prepare and submit road safety audit report to the client;

4.2 Audit Team

The team comprised of:

Name	RSA Accreditation	Auditor ID	Role
			Lead Auditor
			Level 2 Auditor

4.3 Statement of Independence

are independent from the design team and have not been involved in the development of the traffic staging plans or associated traffic documentation prepared for Sydney Metro West works.

The audit has been carried out independently of the design teams in accordance with *Austroads Guide to Road Safety: Part 6 - Road Safety Audit*.

4.4 Site Inspections

No site inspections were undertaken for this audit:

4.5 Reference Material

The design standards/manuals referenced during the audit include:

- *Austroads Guide to Road Safety: Part 6: Road Safety Audit (2022)*;
- *Austroads "Guide to Road Design"*;
- *Austroads Guide to Temporary Traffic Management (AGTTM)*;

- *NSW Centre for Road Safety, Guidelines for Road Safety Audit Practices;*
- *TfNSW Delineation and Pavement Marking Standard;*
- Google Maps and Google Street View images

4.6 Detailed Design Drawings

Drawing No.	Drawing Title	Revision
SMWSTCTP- AFJ- NST-SN350-TW-DRG-307200	Cover Sheet	A
SMWSTCTP- AFJ- NST-SN350-TW-DRG-307201	Handover Works - Sheet 1	A
SMWSTCTP- AFJ- NST-SN350-TW-DRG-307202	Handover Works - Sheet 2	A
SMWSTCTP- AFJ- NST-SN350-TW-DRG-307203	Handover Works - Sheet 3	A
SMWSTCTP- AFJ- NST-SN350-TW-DRG-307204	Handover Works - Sheet 4	A

5. AUDIT FINDINGS

5.1 Safe Systems Approach

The Safe Systems approach in road safety is aimed at eliminating deaths and serious injuries amongst users of the road system. This is to be considered in all activities within the road safety management of a road network, including road safety audits. The Safe Systems philosophy accepts that people make mistakes that can lead to road crashes and the human body has a limited physical ability to tolerate crash forces before harm occurs.

Whilst the road safety audit process identifies various risks and hazards associated with all crash types, severities and user groups, the present focus of the road safety audits is to eliminate fatal and serious injuries (FSI).

Austroads Guide to Road Safety: Part 6 – Road Safety Audit (2022) notes the predominant crash types that result in FSI as:

- ‘Head-on’ where one vehicle crosses onto the opposing side of the road and impacts another vehicle ($\geq 70\text{km/hr}$);
- ‘Intersection’ where side-impacts (right angle) involving vehicles from adjacent directions ($\geq 50\text{km/hr}$);
- ‘Run off road’ where vehicle leaves the carriageway (side impact with a rigid object) ($\geq 40\text{km/hr}$); and
- ‘Vulnerable road user’ where pedestrians, cyclists, motorcyclists, the elderly, children, etc involved ($\geq 30\text{km/hr}$).

Rear-end crashes are also an important cause of serious injury. The above crash types are known to result in FSI outcomes in relatively lower speed environments.

The severity guidance sheet in **Figure 2** below is reproduced from *Austroads Guide to Road Safety: Part 6 – Road Safety Audit Figure 10.3*. This guidance sheet is used in conjunction with the Risk Matrix shown in **Figure 3** in determining the ‘priority’ for risk mitigation.

		Crash Speed (km/h)										
		< 10	10	20	30	40	50	60	70	80	90	100
Crash Type	Pedestrian (vs HV)											
	Cyclist (vs HV)											
	Motorcyclists (vs HV)											
	Pedestrian (vs car)											
	Cyclist (vs car)											
	Pole/Tree Impact (car)											
	Motorcyclists (vs car)											
	Side Impact (HV vs car)											
	Side Impact (car vs car)											
	Head On (HV vs car)											
	Head On (car vs car)											

Figure 2 – The severity guidance sheet – general indication only - to be used with the risk matrix (Figure 3)

5.2 Risks to Road Safety

The list of road safety issues contained in **Appendix A** of this report include a ‘risk level’ for risk mitigation which is based on criteria set out in the *Austrroads Guide to Road Safety: Part 6 – Road Safety Audit* and summarised in **Figure 3** below:

			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)

*see Severity Guidance Sheet

Safe System crash outcome threshold

Figure 3 – Austrroads RSA risk matrix

5.3 Identified Road Safety Issues

A summary of the audit findings is tabulated in **Appendix A**.

Temporary traffic management deficiencies that do not cause a safety risk to road users are not listed, however the auditors may note some issues (“Comment only”) that may assist in improving road safety aspects associated with the temporary traffic management arrangement, or they wish to bring to the attention of the client / project manager.



5.4 Responding to the Audit Report

As set out in *Austroads Guide to Road Safety: Part 6 – Road Safety Audit (2022)* Clauses 11.3 and 11.4, the responsibility for the road design always rests with the client / project manager, and not with the auditor. A client / project manager is under no obligation to accept the safety issues identified in the audit. Also, it is not the role of the auditor to agree to or approve of the client's / project manager's response to the audit. Rather, the audit provides the opportunity to highlight potential safety issues and have them formally considered by the client / project manager (with possible input from designer(s) and/or specialist advisors), in conjunction with all other project considerations.

This formal road safety audit report should be responded to in writing. The responses should indicate either acceptance or rejection of the safety issue identified. Reasons are usually provided where a road safety deficiency is rejected.

A summary of the audit findings is tabulated in **Appendix A**. Columns are provided for the client / project manager to provide a response.

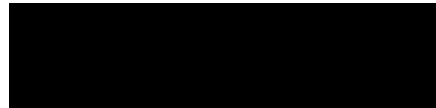
5.5 Disclaimer

This report contains findings based on a review of the project site and documentation provided by [REDACTED] as listed in Part 4.6 of this report. While the information and data provided in this report has been prepared with due care by members of the audit team, the audit team cannot guarantee its accuracy.

[REDACTED] representatives should not rely solely on the contents of this report or draw inferences to other sites. Users must seek appropriate expert advice in relation to their own circumstances.

The audit team does not warrant, guarantee, or represent that this report is free from errors or omissions or that the information is exhaustive. Information in this report may become inaccurate without notice and may be wholly or partly incomplete or incorrect. Before relying on the information in this report, users should carefully evaluate the accuracy, completeness, and relevance of the information for their purpose. This will be the case with any road safety audit.

Subject to any responsibilities implied in law which cannot be excluded, the audit team is not liable to any party for any losses, expenses, damages, liabilities or claims whatsoever, whether direct, indirect, or consequential, arising out of or referable to the use of this report, however caused whether in contract, tort, statute or otherwise.

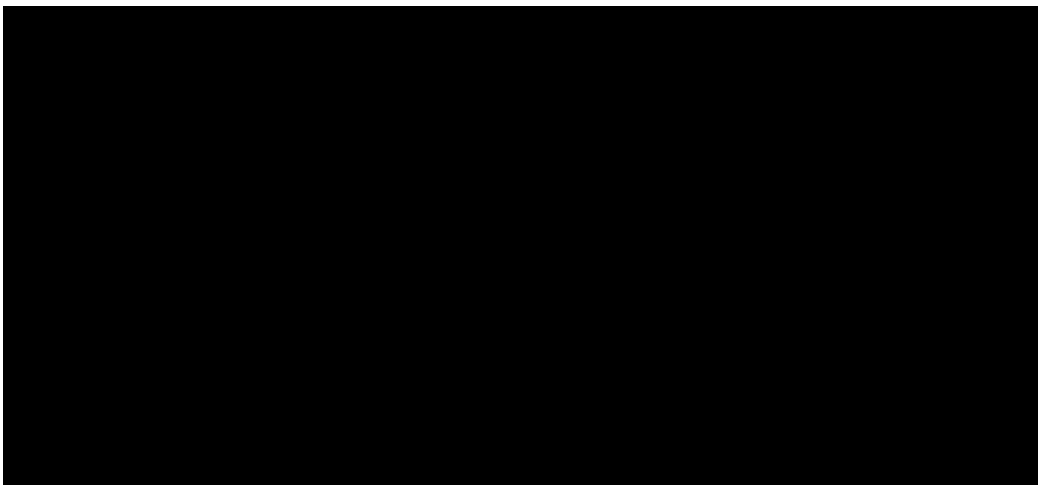


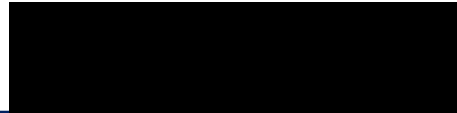
6. CONCLUDING STATEMENT

We, the undersigned, hereby confirm that we have reviewed the Detailed Design drawings for Queen Street Handover Works.

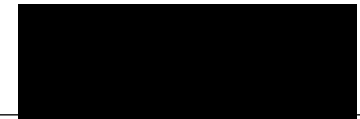
The audit was conducted within the *NSW Centre for Road Safety: Guidelines for Road Safety Audit Practices (RMS, July 2011)* and *Austroads Guide to Road Safety: Part 6 – Road Safety Audit (2022)*, for the purpose of identifying any safety issues prior to the implementation of the Queen Street Handover Works traffic staging.

While every care and diligence has been taken to identify potential safety concerns, as detailed in this report, we do not warrant that every safety issue has been identified.

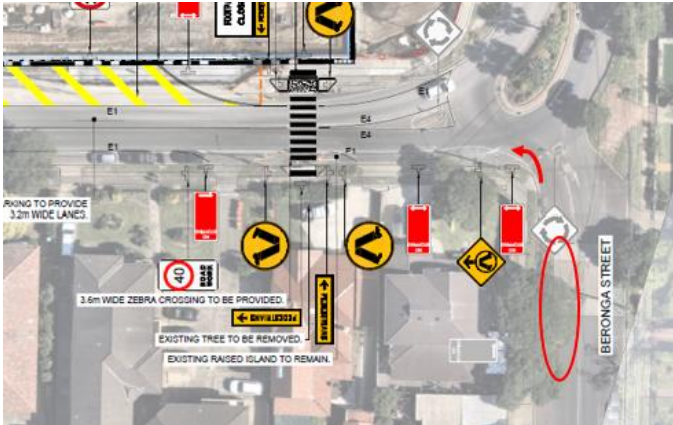




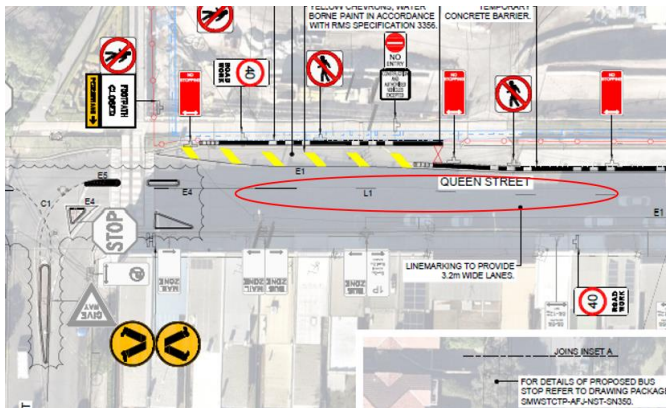
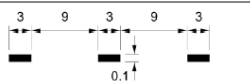
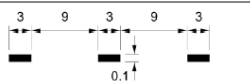
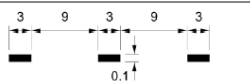
APPENDIX A – Audit Findings



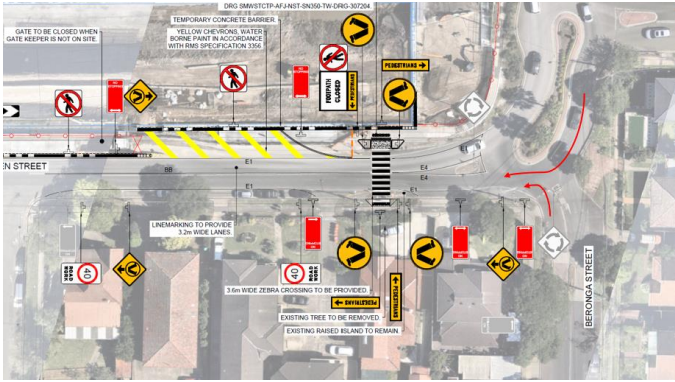
Appendix A - Audit Findings

Item No.	Location	Issue	Priority	Action & Comments
1	Beronga Street Westbound	Due to the alignment of Beronga Street to Queen Street and the proximity of the new pedestrian crossing to the Beronga Street intersection, the approach sight distance to the pedestrian crossing for 'Beronga Street' traffic is limited. Motorists turning left from Beronga Street may not have view of pedestrians waiting to cross the pedestrian crossing. This may affect motorists' ability to stop in time at the pedestrian crossing which may lead to: i. pedestrian strikes resulting in fatal or severe injuries; ii. abrupt vehicle stops causing rear end collisions resulting in vehicle damage and / or injury to occupants	Likelihood	Sight-lines have been checked (and are now marked on the plan for reference purposes). It is noted that traffic coming from Beronga Street does have less available sight-line. However, traffic coming from Beronga Street is also travelling a much lower speeds (estimated at 5-10km/h), available sight-line at these speeds is sufficient.
			Unlikely	
			Severity	
			Serious	
			Risk Level	
			High (FSI)	
				



Item No.	Location	Issue	Priority	Action & Comments												
3	Queen Street North of Wellbank Street	There is lane line (L1) separating northbound and southbound traffic on Queen Street, north of Wellbank Street.  Although the dimensions of a lane line (LL1) and dividing line (DL1) are the same, the use of the incorrect lane type may cause motorist confusion during periods of low visibility (night, fog, rain) as the retroreflective raised markers on lane lines (LL1) are unidirectional only. <table><tr><th>Line type</th><th>Use</th><th>Dimensions (m)</th><th>Colour</th></tr><tr><td>LL1</td><td>Lane line (broken) for multi-lane roads including expressways</td><td></td><td>White</td></tr><tr><td>DL1</td><td>Dividing line on a two-lane road</td><td></td><td>White</td></tr></table>	Line type	Use	Dimensions (m)	Colour	LL1	Lane line (broken) for multi-lane roads including expressways		White	DL1	Dividing line on a two-lane road		White	Likelihood	Noted, plan updated accordingly
			Line type	Use	Dimensions (m)	Colour										
			LL1	Lane line (broken) for multi-lane roads including expressways		White										
			DL1	Dividing line on a two-lane road		White										
			Unlikely													
Severity																
Minor																
Risk Level																
			Low													



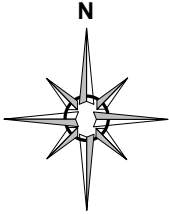
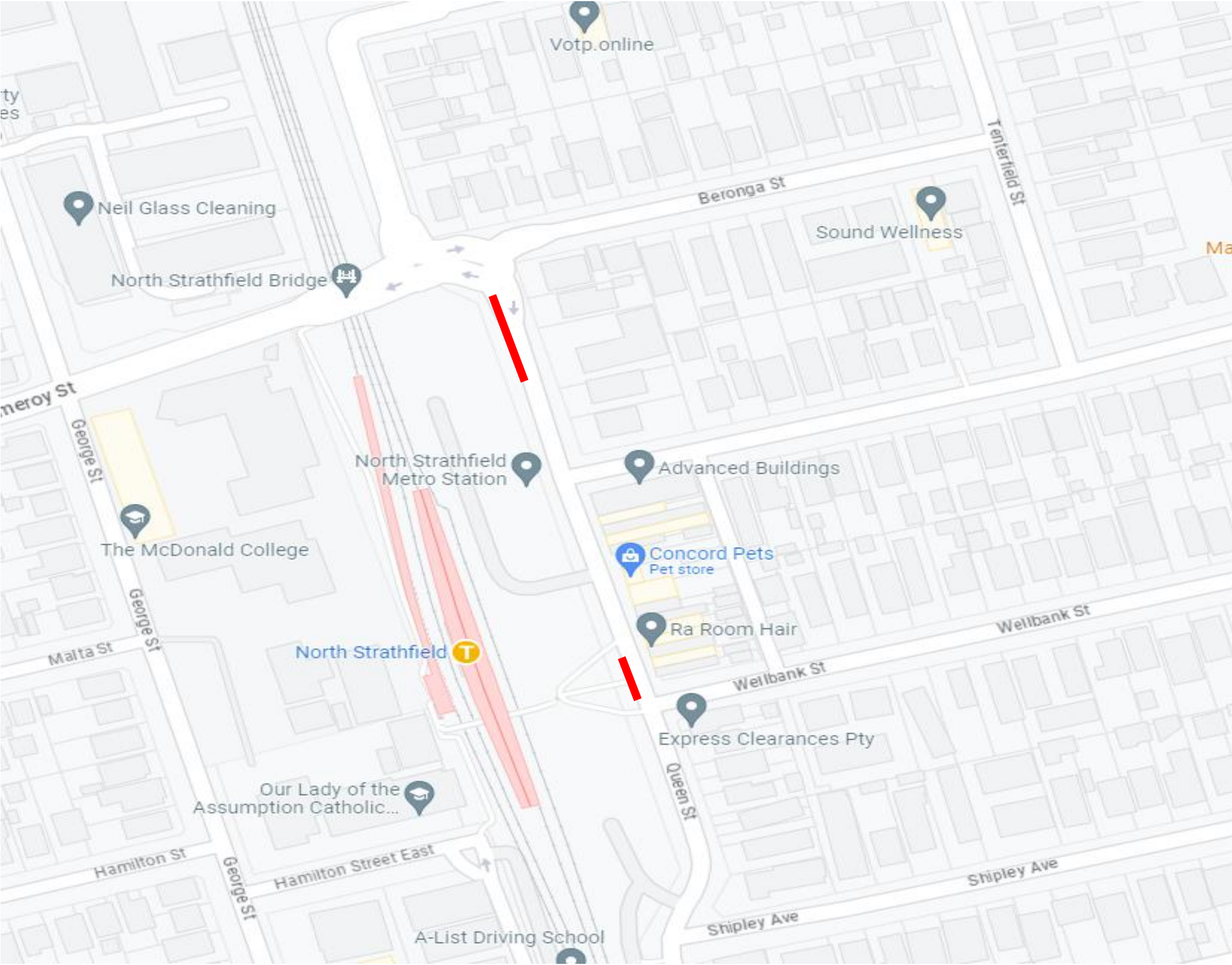
Item No.	Location	Issue	Priority	Action & Comments
4.	Queen Street Pomeroy Street Beronga Street	Due to the proximity of the pedestrian crossing on Queen Street to the roundabout on Pomeroy Street, motorists might queue in the roundabout during peak periods (AM and PM) as they give way to pedestrians using the crossing.  Vehicles queued through the roundabout will block Beronga Street traffic from exiting. This may lead to driver frustration causing motorists to undertake unsafe manoeuvres to exit Beronga Street resulting in vehicle collisions.	Likelihood	Noted, investigations were undertaken to place this crossing in a different location, the alternative was found to likely result in pedestrians walking on the roadway (following desire lines). Having no pedestrian crossing or a crossing that did not cater for desire lines was considered to outweigh this risk.
			Unlikely	
			Severity	
			Minor	
			Risk	
			Low	
5.		Minor drafting errors identified: 1. Linemarking designations not in accordance with TfNSW Delineation and Pavement Marking Standard (2023) 2. R3-1 signs on Queen Street southbound approach to Wellbank Street are drawn as new / to be installed.		Comment only Noted, plan updated accordingly

APPENDIX F – AFTERCARE TRAFFIC GUIDANCE SCHEME

TRAFFIC GUIDANCE SCHEME

Worker offset from traffic	
Within 1.5m	- Speed reduced to 40km/h or below - Delineation of worksite - Shadow vehicle or reduce speed BELOW 40km/h
1.5m to 3m	- Speed reduction to 60km/h or below - Delineation of worksite - Shadow vehicle or reduce speed BELOW 60km/h
3m to 6m	- Speed reduction to 80km/h or below - delineation of worksite - Shadow vehicle or reduce speed BELOW 80km/h
Each location of work is to be assessed to consider site conditions, including: Driver compliance, road configuration and geometry. If deemed required, additional controls are to be implemented, and noted within the Risk Assessment.	

Excavation works	
Depth less than 200mm	- Address within the risk assessment on the last page of this plan - Delineate the area - Separate the area from pedestrians and the public
Depth over 200mm but less than 500mm	- Address within the risk assessment on the last page of this plan - Delineate the area - Separate the area from pedestrians and the public - Traffic speed 40km/h or below if within 3m of the traffic lane - Traffic speed 60km/h or below if more than 3m from traffic lane
Depth over 500mm	- Traffic Manager approval - A number of other controls will be required and detailed on the plan, this may include: barriers, lane closures, speed reductions and other controls, as determined by the Traffic Manager in consultation with the Construction Team.



PROJECT: SYDNEY METRO WEST - CENTRAL TUNNEL PACKAGE

LEGEND



Workzone



Traffic Controller



Traffic Cones



Pedestrian Route



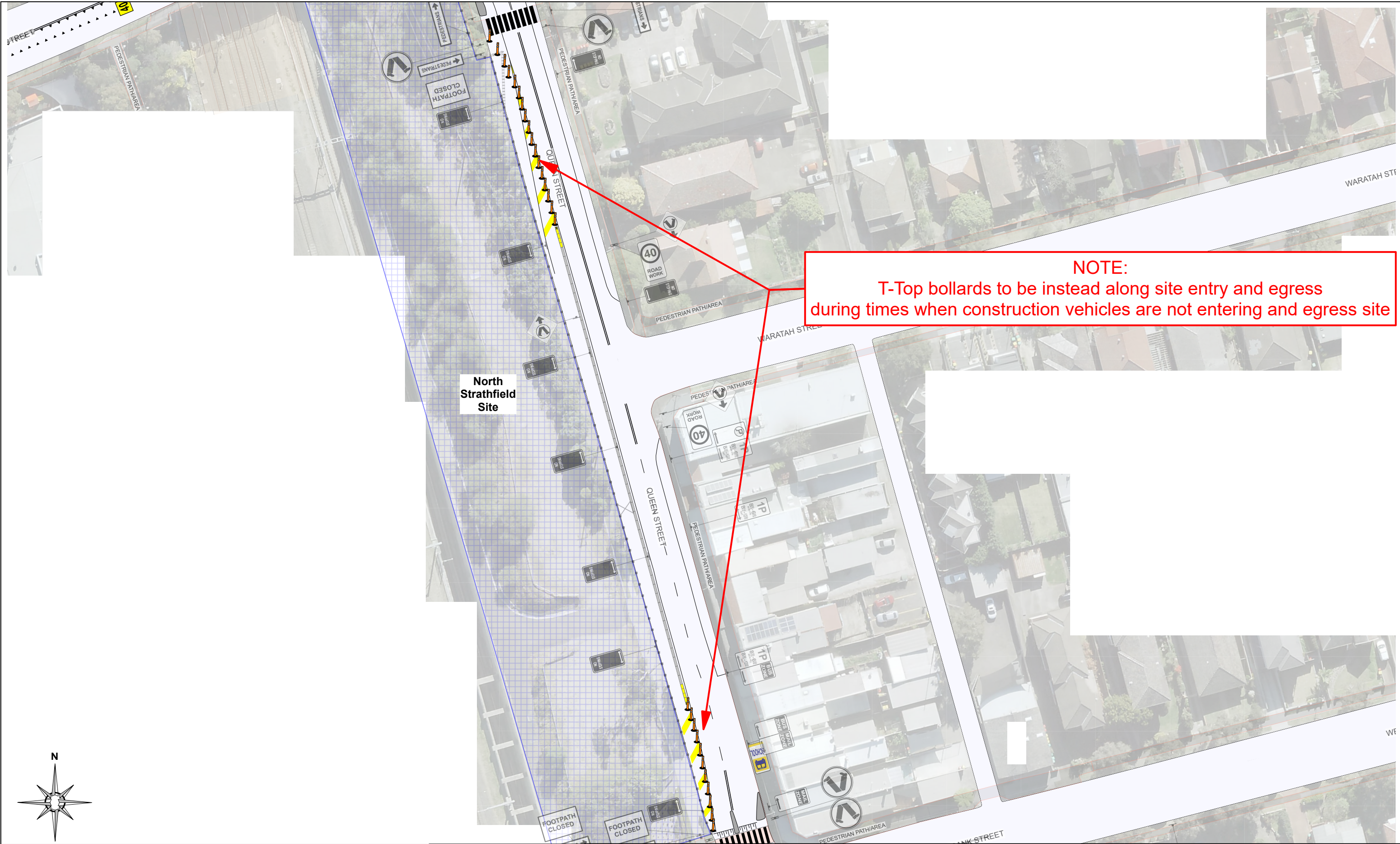
Sign (2 posts)



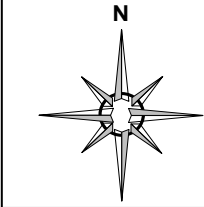
Signalised intersection



Arrow-board location



NOTE:
T-Top bollards to be instead along site entry and egress during times when construction vehicles are not entering and egress site



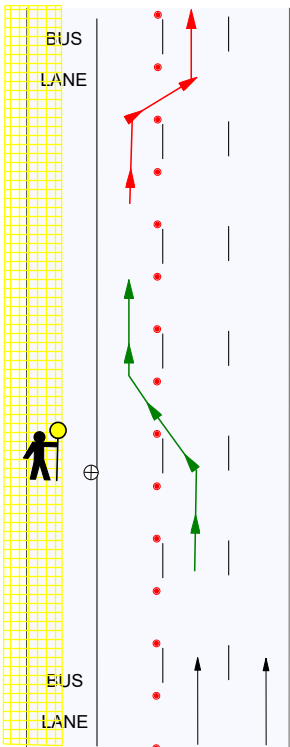
PROJECT: SYDNEY METRO WEST - CENTRAL TUNNEL PACKAGE

LEGEND

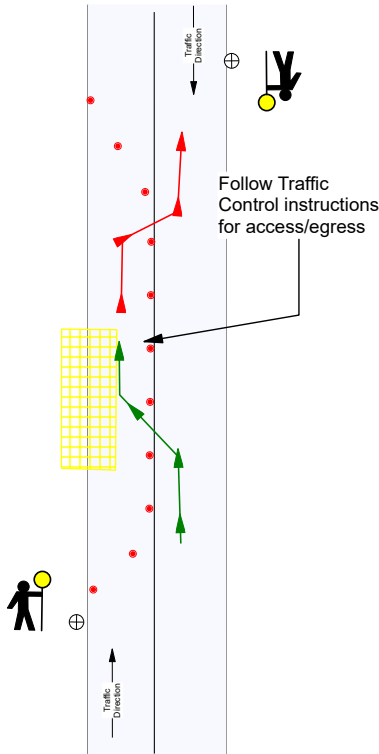
- Workzone
- Traffic Controller
- Traffic Cones
- Pedestrian Route
- Sign (2 posts)
- Signalised intersection
- Arrow-board location

Site Access & Egress, generic examples

MULTI LANE ROAD



SIGNLE LANE ROAD



Access:

1. Any vehicles entering site, must be fitted with at-least x1 flashing/rotating beacon and a working UHF radio.
2. Vehicle entering site is to activate the beacon and announce intent via use of UHF radio min 100m in advance of the access location.
3. Vehicle entering site must activate the indicator (blinker).
4. Vehicle entering site is to steadily reduce speed (no sudden breaking) before entering site.

Traffic Control are ensure access point has been determined at prestart, and is controlled to ensure safe movements.

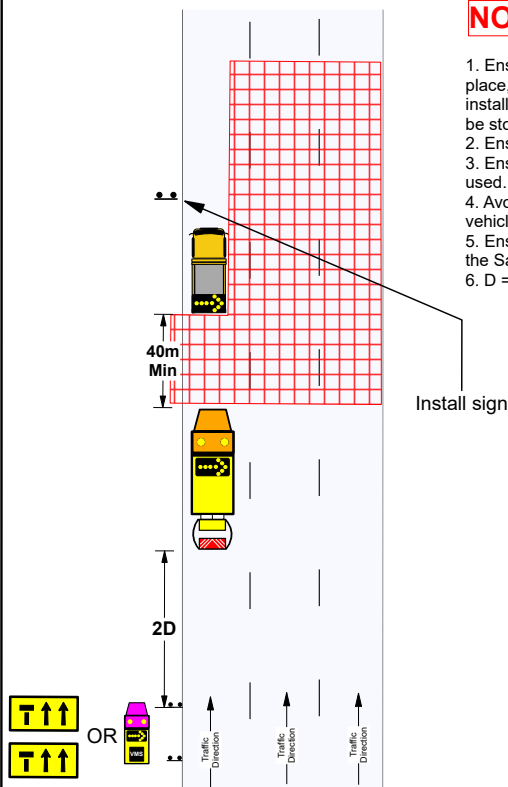
Egress:

1. Any vehicles exiting site, must be fitted with at-least x1 flashing/rotating beacon and a working UHF radio.
2. Vehicle exiting site is to ensure the beacon has been activated and announce intent via use of UHF radio, prior to attempting egress.
3. Vehicle exiting site must activate the indicator (blinker).
4. Vehicle exiting site is to Give-Way to public traffic and only exit site, when a clear gap exists AND Traffic Control has advised 'safe to do so'.
5. Vehicle exiting site is to ensure the beacon has been deactivated, AFTER exiting site and the vehicle speed has increased to match the speed limit.

Traffic Control are ensure Egress point has been determined at prestart, and is controlled to ensure safe movements.

Traffic Control site setup, generic examples

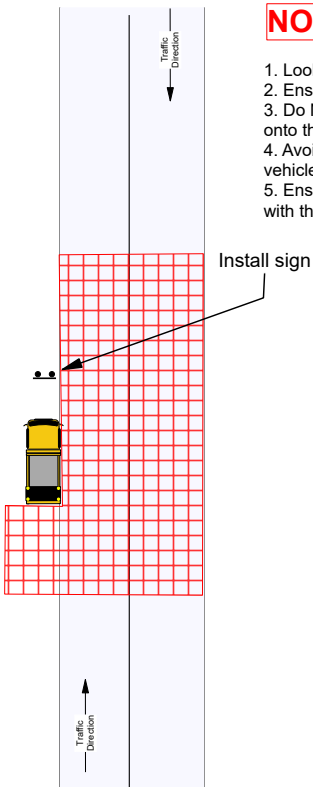
MULTI LANE ROAD 60km/h or below



NOTES:

1. Ensure advance warning VMS vehicle is in place, or x2 static lane status signs have been installed, in advance of the area where the TMA will be stopping.
2. Ensure vehicle mounted warning devices are on
3. Ensure vehicle mounted arrow boards are on and used.
4. Avoid entering areas behind the traffic control vehicle or on the road (as shown in red).
5. Ensure you have read, understand and comply with the Safe Work Method Statement.
6. D = speed limit in meters

SIGNLE LANE ROAD 60km/h or below



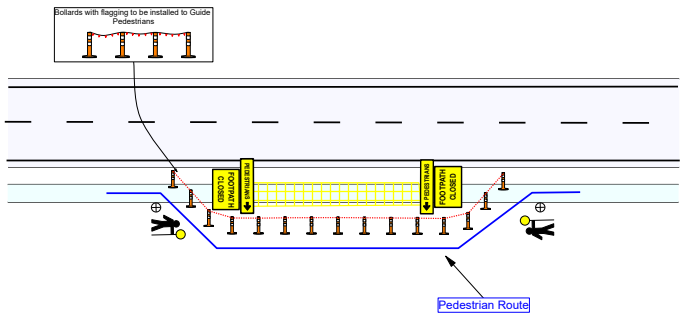
NOTES:

1. Look for a safe location to pull over
2. Ensure vehicle mounted warning devices are on
3. Do NOT use the arrow board to direct vehicles onto the incorrect side of the road.
4. Avoid entering areas behind the traffic control vehicle or on the road (as shown in red).
5. Ensure you have read, understand and comply with the Safe Work Method Statement.

Pedestrian management, generic examples

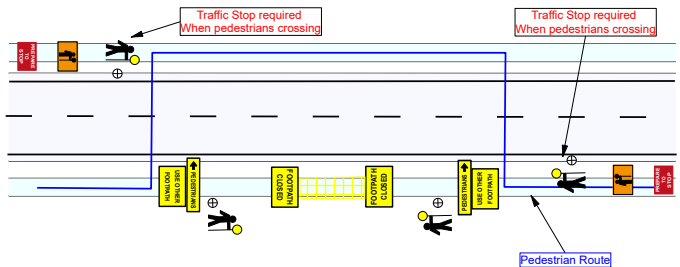
Option 1: Divert Pedestrians around the worksite

- THIS IS NOT A TRAFFIC CONTROL PLAN this is a Pedestrian Management plan only, refer to a Traffic Control Plan for setup on roadway.
- Bollards and flagging to be used to guide pedestrians.
- Traffic Controllers to guide pedestrians around the worksite
- Pedestrian diversion area MUST be clear, level, easily traversable for all pedestrians and free from any hazards



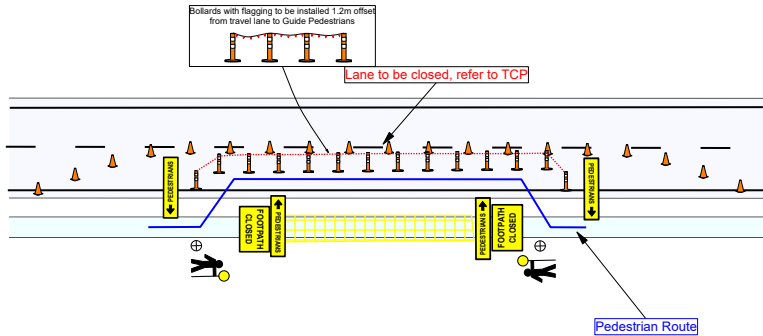
Option 2: Divert Pedestrians onto the adjacent footpath

- THIS IS NOT A TRAFFIC CONTROL PLAN this is a Pedestrian Management plan only, refer to a Traffic Control Plan for setup on roadway.
- Traffic Controllers to Stop traffic in accordance with an approved Traffic Control Plan when pedestrians cross the road.
- Traffic Controllers to guide pedestrians.
- Pedestrian diversion area MUST be clear, level, easily traversable for all pedestrians and free from any hazards



Option 3: Divert Pedestrians around the worksite using the roadway

- THIS IS NOT A TRAFFIC CONTROL PLAN this is a Pedestrian Management plan only, refer to a Traffic Control Plan for setup on roadway.
- Bollards and flagging to be used to guide Pedestrians, Bollards and flagging to be offset Minimum of 1.5m from the travel lane.
- Traffic speed to be reduced to 40km/h
- Traffic Controllers to guide pedestrians around the worksite
- Pedestrians diversion area MUST be clear, level, easily traversable for all pedestrians and free from any hazards
- Traffic Lane or Shoulder to be closed in accordance with an approved Traffic Control Plan.



IMPORTANT:

1. For Shared Paths - minimum 3m width must be maintained.
2. For Footpaths - minimum 1.5m width must be maintained.
3. If the existing width of a Shared Path or Footpath is less then 3m or 1.5m respectively, the existing width must be maintained.
4. When the above is not possible, changes to Paths must be detailed on the TGS.

PROJECT: SYDNEY METRO WEST - CENTRAL TUNNEL PACKAGE

LEGEND



Workzone



Traffic Controller



Traffic Cones



Pedestrian Route



Sign (2 posts)



Signalised intersection



Arrow-board location

Refer to TCAWS Table 3-4 for descriptions of Likelihood and Consequence measures