HANSENYUNCKEN

# Construction Environmental Management Plan

## Project: Meadowbank TAFE – Multi-Trades and Digital Technology Hub

**Job No: SC130**

**Rev: C – November 2020**

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# 1 Document Information

## 1.1 Review & Approval

| Review | | | |
|---|---|---|---|
| **Position** | **Name** | **Sign** | **Date** |
| HY Authorised Person | | | |
| Project Manager | Vanja Krumpacnik | | |
| Snr Contracts Administrator | Michael Gibson | | |
| Contracts Administrator | | | |
| Snr Site Manager | Eugene Godfrey | | |
| Site Safety Officer | Mustafa Aktas | | |
| Site Engineer | Michael McKinley | | |
| Cadet | Lucas Choi | | |
| Cadet | Adam Rowston | | |
| Services & Commissioning | Richard O'Sullivan | | |
| Design Manager | Hang Nghiem | | |
| Foreman | | | |
| Foreman | | | |
| Accounts & Admin | | | |
| Leading Hand | | | |
| | | | |
| | | | |
| **Approval** | | | |
| State HSE Manager | Peter Fay | | |
| Project Director | Matt O'Grady | | |

## 1.2 Change Information

| Change Information | | | |
|---|---|---|---|
| **Revision** | **Description** | **Issued by** | **Issue date** |
| A | Issued for use | M.A | August 2020 |
| B | Issued for Submission to DPIE and Certifier | A.R | November 2020 |
| C | Amended Compliance Table in appendix A.6 | A.R | November 2020 |
| | | | |

# 2 Definitions

The following definitions and abbreviations have been used in this Environmental Management Plan. Further definitions and abbreviations are provided in referenced procedures and plans.

| | |
|---|---|
| BIM360 Field | Cloud based QHSE field management software application designed specifically for the construction industry. |
| CEMP | Construction Environmental Management Plan (this document) |
| CNVMSP | Construction Noise and Vibration Management Sub-Plan |
| CTPMSP | Construction Traffic and Pedestrian Management Sub-Plan |
| EPA | State Environment Protection Authority |
| ESD | Ecologically Sustainable Development |
| HSE | Health, Safety & Environment |
| HY | Hansen Yuncken Pty Ltd |
| HYWAY | An information management platform developed by HY utilising Microsoft SharePoint |
| NC | Non-Conformance |
| NGER | National Greenhouse and Energy Reporting |
| MTAFE | Meadowbank TAFE – Multi-Trades and Digital Technology Hub |
| OEH | Office of Environment and Heritage |
| PLN | HY Plan |
| PMP | Project Management Plan |
| POEO | The Protection of the Environment Operations Act |
| PROJ | Project Management |
| REO | Regional Environmental Officer |
| RMS | Roads and Maritime Services |
| S/C | Subcontract(s) or Subcontractor(s) as the context requires |
| Site Safety Supervisor | Site Manager |
| SSC | Site Safety Coordinator |
| SSO | Site Safety Advisor |
| Superintendent | GHD |
| SWMS | Safe Work Method Statement |

# 3 Commitment & Policy

## 3.1 Scope & Application

The Meadowbank Education and Employment Precinct will see TAFE Meadowbank transformed into a technology-focused campus with state-of-the-art facilities including **A New Multi-Trades and Digital Technology Hub (MTH)**. This new state-of-the-art facility will feature modern and active learning spaces for trade discipline and industry engagement with a strong emphasis on digital technologies and cybersecurity.

The scope of works has been split into two separable portions of work in order to achieve the NSW Government's commitment to complete the works concurrently with the new Meadowbank School in Term 1 2022. The separable portions of work for the TAFE project are:

- Separable Portion 2: Main works for the design and construction of the new Multi-Trades and Digital Technology Hub including the two (2) storey aboveground carpark; and
- Separable Portion 3a: Precinct Works including the demolition and make-good of existing Buildings D & E and minor interface works between the new Meadowbank School at the Rhodes Street entry.

Early Works will be carried out under a separate Part 5 planning approval prior to the Main Works State Significant Development Application approval. The Early Works component involves the demolition of the North-Eastern carpark and Building N ready for construction of the MTH.

The Main Works under Separable Portion 2 involves the design and construction of the 6-storey MTH which includes state-of-the-art learning spaces, workshop areas and digitally enabled spaces. The construction of the MTH will provide a variety of learning and breakout spaces for end users which is outlined below:

- Level 1 – Learning Spaces, Gas Lab, TMV Room, Plumbing Workshops incl. Sandpits;
- Level 2 – Welding Workshops, Learning Spaces and Basement Carpark;
- Level 3 – Indoor & Outdoor Workshops (Carpentry, Electro Technology, Multi-Trades Workshop and Storage Area) and Learning Spaces;
- Level 4 – Learning Spaces, Breakout Areas, Industry Engagement Spaces and Café;
- Level 5 – Applied Research Spaces, Seminar Rooms, Learning Spaces and Industry Engagement Spaces; and
- Level 6 – Digital Technology Spaces including but not limited to Cyber Security Rooms, Workshops, Indoor and Outdoor Learning Spaces and Industry Engagement Spaces.

Other works which form part of Separable Portion 2 and 3a are further outlined below:

- Construction of a new two (2) storey aboveground carpark South of the HUB on an existing carpark located within the TAFE precinct;
- Decanting and demolition of Building D and E including make-good;
- Landscaping works across the See Street frontage and building perimeter of the HUB and multi-storey carpark; and
- Installation of new supporting infrastructure, including power and communications infrastructure.

This CEMP has been generated to satisfy the requirements of "*ISO 14001:2015, Environmental management systems – Requirements with guidance for use*" and the "*NSW Government Environmental Management System Guidelines – 3rd edition*". It establishes guidelines and controls for all HY activities that may impact the surrounding environment for the duration of the works, including but not limited to; air, water, land, natural resource use & waste, flora & fauna, and their respective interrelationship. Furthermore, it has been designed to embrace the environmental management requirements, both in terms of the Contract and generally, to demonstrate HY as an environmentally responsible organisation to the broader community.

### 3.1.1 Hours of Work

In line with Conditions C3 of SSD 10349, the proposed hours of work for the project are as follows:

- Monday - Friday: 7am – 6pm
- Saturday: 8am – 1pm
- Sundays and Public Holidays: Nil

In line with Conditions C4 of SSD 10349, provided noise levels do not exceed the existing background noise level plus 5dB, works may also be undertaken during the following hours:

- Monday - Friday: 6pm – 7pm
- Saturday: 1pm – 4pm

### 3.1.2 24 Hour Contact Details

The 24-hour contact details for the project are as follows:

NAME: Eugene Godfrey

M: 0436 857 222

EMAIL: EGodfrey@hansenyuncken.com.au

## 3.2 CEMP Interrelationship with PMP

This CEMP forms part of Hansen Yuncken's Environmental Management and interfaces with the company's Quality & WHS Management Systems. Furthermore, this CEMP is an integral part of Meadowbank TAFE – Multi-Trades and Digital Technology Hub PMP. The following plans referenced within this CEMP form part of the overall PMP for the project and contribute to the environmental management procedures:

- **Project Site Induction** – Ensures all workers onsite are aware of the Environmental Management Plan & also trains all workers onsite on the requirements for controlling: dust & windblown debris, dirt & debris on public roads, protection of stormwater drains, tool & equipment washout, chemical spills, noise disturbance, waste collection & disposal, rubbish & food scraps & excess concrete.
- **Project HSE Risk Assessment** – Identifies what subcontractor onsite are impacted by or the risk of; air quality/dust, archaeology & cultural heritage, chemical spill, flora & fauna, littering, noise disturbance, stormwater contamination & watercourse pollution each month. This will be monitored through task observations scheduled for each month.
- **Construction Noise & Vibration Management Sub-Plan** – Identifies mitigation methods to minimise the risk of noise & vibration to the workers onsite and the surrounding properties.
- **Construction Traffic and Pedestrian Management Plan** – Summarises how construction and pedestrian traffic will be managed on the project to minimise the impact on the existing facility and the neighbours surrounding to the project.
- **Site Layout Plan** – Identifies the location of sediment controls, access routes, truck washout, location of site bins, spill kits, concrete washout.
- **Emergency Response Plan** – Outlines the process to manage the following environmental emergencies; asbestos exposure, water pollution, fire, major fuel spill & chemical spill
- **Audit Management Plan** – Describes the frequency of internal and external environmental audits and the process for closing out any non-conformances raised.

## 3.3 Policy & Objectives

The HY Environmental Policy Statement provides the framework for the development of this CEMP (refer appendix A.1), and details the company's commitment to "*providing a high quality environment, which meets the requirements and expectations of; Clients, Statutory Authorities, Employees and Community Groups*", through the application of "*sustainable development principles, to continually improve environmental performance in minimising impact on, and pollution of, the environment during the construction process"*.

The objective of the Environmental Management Plan is to:

- Satisfy Client requirements related to environmental performance, set out in the Specification for the Works;
- Incorporate and provide mitigation strategies for environmental issues arising from site activities and as detailed in the Meadowbank TAFE – Multi-Trades and Digital Technology Hub Environmental impact assessment document;
- Encourage best practice environmental management through planning, commitment and continuous improvement;
- Prevent and minimize adverse impacts on the environment;
- Identify the potential for, and respond to, environmental incidents and emergency situations and take corrective actions;
- Identify and control possible environmental hazards with the works and HY activities;
- Identify and protect any special environmental characteristics of the site including cultural heritage significance;
- Define roles and responsibilities and allocate the necessary resources
- Ensure environmental training and awareness programmes are provided to employees and subcontractors;
- Establish mechanisms to monitor, evaluate and report progress.

The HY Environment Policy commits the company to achieve the following goals:

- Develop and promote a culture of environmental leadership, responsibility and continual improvement across the HY business;
- Audit, monitor and ensure compliance with environmental legislative and regulatory obligations and other environmental commitments;
- Utilise the resources of HY to lead the way in defining and achieving best environmental practice; and
- Advance and disseminate environmental knowledge and applied environmental management through training, research and engagement with the wider community

A copy of the Environment Policy is contained within the PMP and displayed at the project / site office and induction sheds. HY recognises this implementation will involve effective training of personnel to ensure they fully understand their responsibilities to comply with and monitor the management system. In addition, all site workers are consulted on HY environmental policies & procedures through the following mechanisms: site induction, notice board, site inspections, prestart meetings, subcontractor meetings, team meetings, toolbox talks.

## 3.4 Targets

### 3.4.1 Objective: Reduce waste

**KPI:** Waste minimisation and recycling

**Target:** Construction & Demolition Waste going to landfill <5kg per $m^2$ of GFA

**Responsibility:** HY Site Manager

### 3.4.2 Objective: Comply with all environmental legislation

**KPI:** Number of identified breaches of State or Commonwealth Environmental legislation

**Target:** Nil for duration of project.

**Responsibility:** HY & Subcontractors

### 3.4.3 Objective: Minimise impacts on the environment

**KPI:** Number of significant environmental incidents causing serious harm to the environment

**Target:** Nil for duration of project.

**Responsibility:** HY & Subcontractors

### 3.4.4 Objective: Conduct environmental site inspections to validate environmental conformance

**KPI:** Schedule and undertake regular site inspections

**Target:** > 90% of scheduled HSE inspections

**Responsibility:** HY Site Manager

### 3.4.5 Objective: Minimise and manage environmental complaints

**KPI:** Consult with impacted neighbours and promptly address all complaints

**Target:** ≤ 1 complaint per significant construction milestone

**Responsibility:** HY Site Manager

## 3.5 ESD Vision & Principles

The project provides an opportunity for HY to expand its practical and theoretical knowledge of ESD to a level that is considered 'best practice' status. In line with condition B11, the project requires a 4-star Green Star rating and must include water sensitive urban design measures in the design.

As such, the ESD vision and principles for HY involves:

- Identification and prioritisation of environmental risk based on AS/NZS ISO 31000:2009 and Guidelines HB158:2010, using qualitative likelihood vs. consequence methods.

- Development of management systems which build knowledge and capacity on environmental issues, principles and sustainable behaviours including training and communication.
- Reduced energy and water consumption as well as waste minimisation during the construction process.
- Environmental training and management of trade contractor's activities to ensure that the project ESD objectives are obtained.
- Efficient and effective use of natural resources in a way that maintains the ecological processes on which life depends
- Sustainable use of renewable energy resources.

## 3.6 Environmental Planning

In accordance with the contractual requirements, applicable legislation, and in keeping with proper environmental practices, Hansen Yuncken has instituted a methodology which is reflective of observes the requirement, as set out in ISO 14001:2015.

### 3.6.1 Environmental Aspects & Impact

All activities related to the Meadowbank TAFE – Multi-Trades and Digital Technology Hub, which are enacted by or on behalf of Hansen Yuncken, are identified in the "Project HSE Risk Assessment" (refer Appendix A.4). For each activity the environmental aspects and associated actual and potential impacts are identified as they relate to the following environmental elements:

- Location and Land Use;
- Noise & Vibration;
- Traffic and Access;
- Air Quality;
- Soils, Erosion and Water Quality;
- Terrestrial Flora and Fauna;
- Cultural Heritage;
- Site Contamination; and
- Waste Management.

Environmental impacts are detailed in the "**Project HSE Risk Assessment**" and assessed for significance by using the Risk Matrix. Each identified potential impact is rated (Risk rating) in relation to its predicted likelihood and consequence. Environmental Impacts as applicable to the Meadowbank TAFE – Multi-Trades and Digital Technology Hub are summarised in this CEMP "Environmental Risk Register" (Section 4.3).

### 3.6.2 WORK METHOD STATEMENTS

For each activity rated as a significant risk (i.e. Risk class >M/Medium) to the environment, a further Risk assessment is undertaken and any additional controls identified in a Work Method Statement, detailing the; steps involved, hazards, control measures and persons responsible. Furthermore, a Toolbox Talk will be completed, involving all workers responsible for completing the "Significant Risk" activity.

### 3.6.3 Legal Compliance and Other Requirements

Hansen Yuncken has developed a procedure ("*Legislation Standards and Codes of Practice*"), available on HYWAY to identify legal and other requirements that are applicable to the Meadowbank TAFE – Multi-Trades and Digital Technology Hub and to ensure the accessibility of the information. The procedure shall be referenced and is applicable to those activities and functions that have the potential to interact with the environment.

Furthermore (URL) links are supplied on HYWAY to regulatory body websites and relevant NSW legislation relevant to environmental Aspects and management of the same.

# 4 Implementation

## 4.1 Environmental Awareness

All HY and S/C employees shall receive an induction into the project in accordance with the Site Induction procedure including completing the Site Induction Record Form (FM-CORP-HSE-001).

The induction shall include the requirements for the conduct of activities which have the potential for significant environmental impacts on the project which shall be outlined in the project specific Site Induction Handbook.

This document applies to all HY and S/C employees, environmental awareness is the responsibility of every person working on and associated with the project.

## 4.2 Environmental Impacts of Subcontractor Activities

The environmental impacts of subcontractor activities shall be assessed during the S/C pre-award meeting in accordance with pre-award meeting procedure and the project HSE risk assessment.

## 4.3 Environmental Risk Register

The below table assesses the level of risk associated with each environmental issue prior to the implementation of mitigation measures.

| Environmental Issue | Risk to Project | Responsible Personnel |
|---|---|---|
| **Location & Land use**<br>Residential properties and teaching spaces may be impacted with construction works due to construction noise and dust | Medium | PM, SM, FM, S/C |
| **Noise & Vibration**<br>Construction of the development may result in short term impacts during the project due to the use of heavy machinery and plant as well as construction personnel and vehicle movements. | Medium | PM, SM, FM, S/C |
| **Traffic & Access**<br>During the 80 weeks of construction there will be impacts on the existing facility and the public roads surrounding the project from construction vehicles and deliveries for site. | Medium | PM, SM, FM, S/C |

| | | |
|---|---|---|
| **Air Quality**<br>During the earthworks, stage of the project there is a risk of poor air quality generated by the constructions works. | Medium | PM, SM, FM, S/C |
| **Soils, Erosion, & Water Quality**<br>There is a risk of water pollution from the construction works caused by wind or water movement causing sediment and other materials leaving site. | Medium | PM, SM & FM |
| **Terrestrial Flora & Fauna**<br>The removal of trees during construction works poses minimal risk to landscaped species throughout the area. | Low | PM & SM |
| **Cultural Heritage**<br>It is unlikely that construction works will impact any undisturbed aboriginal artefacts due to the construction zone being in an existing site. | Low | PM & SM |
| **Site Contamination**<br>There is a risk of contamination based on testing conducted prior to construction works commencing (There is a risk of unexpected finds being an existing site). | Low | PM & SM |
| **Waste Management**<br>The risk of the constructions works waste management is low/medium pending the results of existing materials onsite. | Low | PM, SM, FM, S/C |

*PM - Project Manager, SM - Site Manager, FM - Foreman, S/C – Subcontractor, PCA - Private Certifier*

## 4.4 Location and Land Use

### 4.4.1 Site Location

The Meadowbank TAFE construction sites (MTH and Multi-storey Carpark) are located within the current site boundaries of the Meadowbank TAFE campus. Both sites are located adjacent and parallel to See Street and will be accessed via See Street.

The MTH site is located on an existing carpark and a vacated childcare centre. The site will be primarily accessed via See Street with an alternative access point located at the North-Western entrance from Rhodes Street. This alternative entry point will be primarily used for trade personnel access and TAFE truck deliveries. North of the MTH building is the Ausgrid high voltage substation and East across See

Street is low density residential housing. West of the MTH is Building P which is an existing 5 storey structure containing mixed use teaching and hospitality spaces. South of the MTH are 3 existing buildings F, G and Z. Building F & G is a multi-storey structure consisting of mixed-use teaching spaces and Building Z is a single storey art exhibition centre.

The multi-storey carpark is located on an existing carpark adjacent a right of carriageway and electrical easement. The primary entry point to the site is via the existing right of carriageway coming off See Street which will be accessible by TAFE during the construction works. The site is located directly adjacent Building J on the South-Western boundary of the multistorey carpark. This existing Building J is comprised of mixed-use teaching spaces and a childcare centre. Located across See Street to the East are low density residential housing alike to the conditions of the MTH site.

Refer to Appendix A.3 for further information regarding site location.

### 4.4.2 Likely Impacts

The construction works will be restricted to within the boundary of the site with designated entry/exit points thus not interfering with the current use of the remainder of the TAFE site. All construction activities would be carried out with due diligence, duty of care and best management practices.

The proximity of residential properties and teaching facilities to the site including any works along See Street poses a risk. There will be some impacts associated with construction traffic, noise and dust which may affect residents and/or staff, however any effects will be minimal and will be addressed as per below.

### 4.4.3 Mitigation Strategies

- The neighbouring landowners are to be consulted regarding the construction works, predicted program and any access requirements.
- Land disturbance during construction is to be limited to that required to undertake the construction works.
- Construction works to be undertaken in consideration of adjacent vegetation.
- Areas disturbed during construction to be returned to the pre-construction condition.

## 4.5 Noise and Vibration

### 4.5.1 Likely Impacts

Construction of the proposed development will result in short term noise impacts during the 80-week construction period with noisy works to be restricted to set hours as per council requirements.

Heavy vehicle traffic noise will be minimised through set entry and exit routes to and from site with no vehicle lay down within the residential areas.

### 4.5.2 Mitigation Strategies

- Site construction noise will be managed in accordance Construction Noise and Vibration Management Sub-Plan (CNVMSP) developed for this project. The CNVMSP is based on the proposed construction methodology, activities, durations and equipment type and numbers.
- Keep the community informed in relation to noise intensive activities in the immediate area.
- Provide consultation where prolonged or consecutive periods of construction works are planned.
- Construction activities shall be restricted to the hours dictated in the consent SSD 10349.

  - The consent approval stipulates working times to minimise the impact on the community being generally Monday to Friday 7am-6pm, Saturday 8am-1pm, no work on Sundays or public holidays.
- Any noise complaint received will be investigated as soon as practicable. Any practicable and feasible measures to minimise noise will be identified and implemented if required.
- All possible steps to be taken to silence construction equipment where possible.
- Optimum siting of work areas, vehicle and plant parking areas, materials stockpiles and equipment storage areas in locations where potential acoustical impacts will be minimised.
- All plant and machinery used for the project shall be well maintained.
- Ensure workers and contractors are regularly trained (such as toolbox talks) to use equipment in ways to minimise noise.
- "Quacker" reversing alarms to be used for all plant on site where applicable.

For more detailed mitigation strategies related to specific work phases and the relevant mitigation strategies to be adopted, refer to the CNVMSP (Appendix A.7)

## 4.6 Traffic & Access

### 4.6.1 Likely Impacts

Construction would occur over an 80-week period with some increase in traffic in the local area expected. Construction workers will be instructed not to park either within precinct grounds or on-street within the typical daily precinct parking catchment. This includes See Street along the eastern boundary. Construction workers will be encouraged where possible to use the public transport network with regular bus and train services running directly to the Meadowbank precinct. This information will be conveyed to all workers during the site induction process. The construction workforce would vary according to the work being carried out, the construction method and contractor's program.

The increased traffic is not predicted to have an impact on local traffic flow and only a minor inconvenience to local road users is expected. Whilst construction works may cause some inconvenience to residents, any impacts would be minor, localised and short-term.

Construction vehicle routes have been developed with the aim to provide the shortest distances to/from the local and main road network, whilst minimising the impact of construction traffic on the local streets in the immediate vicinity. Alternative routes would not be used without specific prior approval from the relevant authorities. No trucks will be permitted to layover on approach to the construction sites without formal prior approval. Access to this site is anticipated to be primarily via See Street with vehicles approaching from the south. Exiting site is anticipated to be via Rhodes Street to the north of site.

There are no significant construction-related issues or impacts that would not be mitigated by the Construction Traffic and Pedestrian Management Sub-Plan, in Appendix A.7.

### 4.6.2 Mitigation Strategies

- Follow the Construction Traffic and Pedestrian Management Sub-Plan (CTPMSP) based on the detailed construction methodology and use of specific heavy vehicles and construction plant. The CTPMSP includes measures to minimise traffic impacts ensure public safety and has been prepared in accordance with:

  - Traffic Control at Work Sites Manual (RTA, 2010)
  - Australian Standard 1742.3 - 2002 Traffic Control Devices for Works on Roads.
- The CTPMSP has been developed in consultation with TfNSW and Ryde City Council.
- The CTPMSP details hours of operation, heavy vehicle volumes (numbers) and routes, construction staff parking, loading / unloading areas and site access arrangements, all temporary warning, guidance and information signage, and appropriate traffic control devices
- Notify surrounding land owners at least one week in advance of the works
- All vehicles accessing the sites will use the designated access roads
- All roads will be kept clean and free of dust and mud. Where material is tracked onto sealed road, it will be removed so that road pavements are kept safe and trafficable
- All vehicles transporting spoil onsite will be covered and filled to maximum capacity to minimise vehicle movements as required
- All roads, kerbs, gutters and footpaths damaged as a result of construction are to be restored to their pre-construction condition. A dilapidation report will be carried prior to construction
- A dedicated vehicle wash-down area will be established on site
- All traffic shall comply with all applicable traffic laws and regulations including speed limits. All construction vehicles shall comply with the speed limits set for the roads accessing the site
- Construction activities shall be restricted to the hours dictated in the consent SSD 10349.
  - The consent approval stipulates working times to minimise the impact on the community being generally Monday to Friday 7am-6pm, Saturday 8am-1pm, no work on Sundays or public holidays.

## 4.7 Air Quality & Dust Control

In accordance with condition B15a (iii) of SSD 10349, repeated in part as follows; the Construction Environmental Management Plan (CEMP) must include details of; management of dust and odour to protect the amenity of the neighbourhood. This section of the CEMP addresses this condition, outlining the likely impact of air quality and dust control for the various aspects of the construction works, along with the mitigation strategies that will be implemented to minimise these impacts on the neighbourhood.

### 4.7.1 Likely Impacts

The main impact to air quality during construction is expected to arise from the generation of airborne localised dust associated with demolition and earthworks. Given the close proximity of neighbouring properties and existing buildings, there is the potential for impact by dust, particularly during windy conditions.

### 4.7.2 Mitigation Strategies

- Construction vehicles and equipment to be suitably serviced prior to commencement of construction activities and all necessary maintenance to be undertaken during the construction period to meet EPA air quality requirements.
- Excessive use of vehicles and powered construction equipment will be minimised where possible.
- All construction machinery will be turned off when not in use to minimise emissions where possible.
- Construction contractors to monitor dust generation progressively.
- Dust suppression methods including the use of water carts will be adopted where required (i.e. on windy days when earthworks and vehicle movements are generating dust).

- Any stockpiled spoil/fill will be protected to minimise dust generation to avoid sediment moving offsite.
- Vehicles transporting spoil from the site to be covered where required.
- The burning of waste materials will not be permitted on site.

## 4.8 Soil, Erosion & Water Quality

In accordance with condition B15a, (iv) & (v), of SSD 10349, repeated in part as follows; the Construction Environmental Management Plan (CEMP) must include, but is not limited to, details of; (iv) stormwater control and discharge; and (v), measures to ensure that sediment and other materials are not tracked onto the roadway by vehicles leaving the site. This section of the CEMP addresses these conditions, outlining the likely impacts associated with stormwater runoff and the mitigation strategies that will be implemented to ensure that these impacts are minimised. Further to this, in accordance with condition B15e, refer to Appendix A.9 for the Soil and Water Management Sub-Plan.

### 4.8.1 Likely Impacts

Earthworks and general ground disturbances associated with the site works may result in sediment and other materials leaving the site via wind or water movement. This may have the potential to result in the water pollution such as turbidity and nutrient inputs, should sediment wash into stormwater or natural drainage lines.

Aspects of the site identified as potentially impacting on water quality includes:

- Excavation for foundations and site levelling;
- Stockpiling and transportation of excess spoil; and
- General construction waste entering drainage lines

### 4.8.2 Mitigation Strategies

- Construction is to be undertaken in accordance with the Sediment and Soil Erosion Control Plans.
- All erosion and sediment control devices shall be properly maintained for the duration of the work. All structures are to be inspected after rain events and sediment to be removed.
- Any temporary stockpiles should be stabilised using sediment fencing or similar.
- All fuels and other hazardous liquids shall be stored at designated construction compounds.
- All chemicals used for construction shall be stored and used in accordance with the relevant Safety Data Sheets.
- An emergency spill kit shall be kept at the construction compound.
- Workers are to be made aware of the provisions of Section 120 of the POEO Act with regards to water pollution
- Notification to the EPA in accordance with Part 5.7 of the POEO Act is to be undertaken where a pollution incident occurs
- All construction vehicles and equipment are to be maintained in designated areas away from watercourses.
- Construction vehicles shall be appropriately cleaned of any soil or mud prior to leaving each works site at dedicated wash down bays.
- “Clean” stormwater shall be diverted around the site where possible.

- All existing stormwater pits and drains subject to HY construction works will be silt protected with geo-fabric and/or granular socks. Drains will be monitored and maintained by HY.
- Stockpiles to be established at HY approved locations.
- Sediment fences shall be installed at required locations at the perimeter of the site.
- Stormwater shall be diverted to retention basins.
- The location and details of permanent controls shall be included on the Site Layout Plan.
- Erosion and sediment controls shall be inspected as part of the Site HSE Inspection.

## 4.9 Terrestrial Flora and Fauna

### 4.9.1 Likely Impacts

The new Multi Trade Hub and Multi-storey Carpark is located on an existing carpark in a highly modified section of the campus, including various buildings, structures and hardstand areas. The works do not involve the removal of any protected tree species and all trees nominated for removal are approved under the SSD application. In August 2019, EMM undertook an investigation into the presence of microbats within the existing Building N and substation kiosk nominated for demolition. There was no evidence of microbat presence nor was any presence previously recorded. Therefore, the construction activities required for the new MTH and carpark is unlikely to adversely affect any flora or fauna species.

### 4.9.2 Mitigation Strategies

- No vegetation removal or modification is to occur beyond the proposed works areas shown on the plans.
- Fireweed (if applicable) should be removed from site prior to commencement of earth works.
- Carry out landscaping in accordance with the landscape design.
- Any areas of significant flora and fauna value which have been identified on the construction site will remain bunted/ flagged during construction.
- If any additional species are encountered the Site Manager shall arrange for works to be ceased in the area and contact the Superintendent for further directions.

## 4.10 Archaeology & Cultural Heritage

### 4.10.1 Likely Impacts

It is unlikely that the proposed works would disturb any undisturbed Aboriginal objects or sites of historical relics as defined under the Heritage Act 1977. However, if anything is uncovered throughout the demolition/excavation process works shall cease and superintendent notified immediately. Work shall only resume once approval has been granted and appropriate steps to address the find have been undertaken.

### 4.10.2 Mitigation Strategies

- All workers (including contractors) should be made aware that it is illegal to harm an archaeological or culturally significant objects, or historic relics, and if a potential object is encountered during activities, then all work at the site will cease and the OEH will be contacted to advise on the appropriate course of action to allow the appropriate actions to take place prior to resuming work.

## 4.11 Site Contamination

### 4.11.1 Contaminated Soil Risk Assessment

A risk assessment of contaminated soil shall be conducted at the start of the project in accordance with the following procedure for Contaminated Soil Assessment.

As soon as possible after possession of the site by HY, an assessment of actual or potential soil contamination and its impacts shall be undertaken using the Soil Contamination Assessment on BIM 360 Field.

The purpose of the assessment is to provoke whether HY should have an independent third party to provide recommendations or seek wider advice within the company so that the additional knowledge can reduce the risk profile of contaminated soil.

Projects which have the following criteria should fill in this form:

- Projects with a geotechnical report that nominates fill on bore logs
- Projects which do not have a geotechnical report but have a requirement for material to be exported off the site.

### 4.11.2 Identification of Contaminated Soil

During construction, it shall be necessary to monitor soil contamination levels (if any), dust levels and water runoff quality, to ensure that health and environmental standards are not compromised. This is especially important as contaminated soil may be excavated and transported around the site.

Upon discovery of contaminated soil, the HY Site Manager shall arrange for works to be ceased immediately in the area and contact the Superintendent for further directions.

Contaminated waste shall be collected, contained, stored, handled and disposed of in accordance with relevant legislation and codes of practice.

### 4.11.3 Risk of Exposure

It is important to minimise the risk of exposure of construction personnel to soil contaminants by adopting appropriate site controls and industrial hygiene practices. Site controls may include:

- Defining certain areas as contaminated and restricting access to them;
- Appropriate signage;
- Training construction employees in industrial hygiene procedures;
- Keeping non-essential motor vehicles such as personal cars out of contaminated areas;
- Regular medical checks of construction personnel who are exposed to contaminated soils;
- Keeping stockpiles of contaminated material watered down to minimise dust generation in accordance with any water restriction requirements and ensure that runoff is not generated from excessive watering;
- Covering truck loads with tarpaulins and watering material when loading and unloading;
- Wheel washes for trucks and vehicle leaving the contaminated areas;
- Regular road sweeping and cleaning;
- Dust monitoring and adjustment of construction programs to accommodate high risk periods when conditions are windy or very dry; and

- Monitoring of concentrations of volatiles.

Industrial hygiene practices may include:

- Wearing long sleeved shirts and trousers or overalls to minimise dermal exposure;
- Wearing gloves when handling soils;
- Washing hands and faces before eating, drinking or smoking;
- Leaving overalls at site for laundering;
- Showering and washing facilities; and
- Wearing respiratory equipment during times of high dust or volatile emissions.

### 4.11.4 Groundwater Management

In accordance with condition B15a (vi) of SSD 10349, repeated in part as follows; the Construction Environmental Management Plan (CEMP) must include, but is not limited to, details of, (iv) groundwater management plan including measures to prevent groundwater contamination. The Data Gap Investigation, conducted by Trace Environmental, concluded that groundwater is not considered to pose a risk to the Multi-Trade Hub site. This was based on Douglas Partners Limited DSI assessment which considered the detections to be representative of regional groundwater quality common for urban environments. The Douglas Partners Detailed Site (Contamination) Investigation, for the Carpark site, concluded that groundwater is not considered to pose a risk to the site. This was based on the three ground water monitoring wells that were included to depths of approximately 8.0 m bgl and were found dry.

Despite this, the measures outlined in Section 4.11.5 will be adopted to mitigate the potential contamination of groundwater. Furthermore, the unexpected finds protocols outlined in Section 4.11.7 & Section 4.11.8 will be adopted in the event that groundwater is encountered on site.

### 4.11.5 Release of Contaminants to Soil and Groundwater

Water spraying of stockpiles and of soils being loaded and unloaded from trucks, covering of truck loads with tarpaulins and other measures described in the previous section would minimise the potential for dust to be generated.

If heavily contaminated soil is placed in contact with clean soils, contaminants could be mobilized by rainwater or chemical / physical reactions and affect the clean soils to a limited extent.

Similarly, there is a risk that contaminated soil is not clearly differentiated from clean soil and that mistakes could occur which cause the materials to be mixed or wrongly handled or disposed of.

This shall be overcome by implementing a material tracking system for all contaminated soils and ensuring that construction staff are trained how to use the system.

This shall involve documenting areas containing contaminated soil and putting signage near stockpiles that indicated the type of material present and its contamination status.

It shall also require supervision and documentation of all movements of contaminated materials around the site.

Avoiding contact between stormwater and contaminated soils is difficult to achieve if larger areas of a site are being exposed within a short period, because it does not allow for minimizing the amount of soil that is uncovered or placed in temporary stockpiles.

Therefore, it is necessary to manage stormwater in such a way that it does not mobilize contaminants and transfer them to clean areas.

This may be achieved by:

- Covering stockpiles of contaminated soil;
- Placing stockpiles of contaminated soil on bitumen or other sealed areas;
- Installation of adequate bunding or other approved method to contain runoff;
- Collecting stormwater run-off from stockpile areas; and
- Analytical testing of collected stormwater prior to its release.

Erosion and sediment control procedures in accordance with the relevant Code of Practice may also be applied, but with the additional objective of keeping water that is exposed to contaminated soils separate from water that has only come into contact with clean soils.

Groundwater could potentially be impacted by contaminants mobilized from stockpiled contaminated soil or by buried material.

Minimising runoff from stockpiles, as outlined above would reduce the risk to groundwater.

Land filling of contaminated material which is below the relevant criteria for soil contamination above the water table and capping the landfill area with low permeability material would minimise the risk of groundwater contamination from infiltration of stormwater into buried soils.

### 4.11.6 Heavy Metal Contamination

Any suspicious industrial wastes encountered will be immediately isolated to enable these assumptions to be confirmed by analytical testing.

### 4.11.7 Mitigation Strategies

- In the event that unexpected conditions are encountered during development work or between sampling locations which may pose a contamination risk, all works should stop, and an environmental consultant shall be engaged to inspect the site and address the issue.
- A Salinity Management Plan is to be prepared for the project as per REF requirements.

### 4.11.8 Unexpected Finds

In accordance with Condition B15g & h, of SSD 10349, unexpected finds protocols must be included within the CEMP to outline the process to be followed in the event that unexpected contamination and /or Aboriginal/non-Aboriginal heritage is found through the duration of the project. Unexpected Finds shall be addressed in compliance with the Hansen Yuncken's Unexpected Finds protocol listed below:

**Unexpected Finds Protocols – General**

1. Immediately cease work and contact site foreman
2. Site Foreman to construct temporary barricading to prevent worker access to the unexpected substance(s) and install appropriate stormwater/sediment controls
3. Site foreman to contact Client and arrange inspection by environmental consultant
4. Environmental consultant to undertake detailed inspection and sampling & analysis as per the documented sampling procedures outlined in the RAP. Environmental consultant to assess field screening and/or analytical results against documented site assessment criteria in the RAP
5. If substance assessed as not presenting an unacceptable risk to human health Site foreman to remove safety barricades and environmental controls and continue work
    a. Site Foreman to remove barricades and environmental controls and continue work.
6. If substance assessed as presenting an unacceptable risk to human health
    a. Environmental consultant to supervise remediation and undertake validation/clearance as per the remediation/validation/clearance plan
    b. Environmental consultant to submit assessment/validation/clearance to site foreman for distribution to Client and appropriate regulatory authorities.
    c. Site Foreman to remove barricades and environmental controls and continue work.

**Unexpected Finds Protocol – Asbestos and Contamination**

If asbestos is detected in unexpected areas prior to, or during, site development works the following 'Unexpected Finds Protocol' will apply:

a. Upon discovery of suspected asbestos containing material, the site manager is to be notified and the affected area closed off by the use of barrier tape and warning signs. Warning signs shall be specific to Asbestos Hazards and shall comply with the AS1319-1994 – Safety Signs for the Occupational Environment.

b. An Occupational Hygienist is to be notified to inspect the area and confirm the presence of asbestos and to determine the extent of remediation works to be undertaken. A report detailing this information would be compiled by the Occupational Hygienist and provided to the Principal (or their representative) and the site manager.

c. The location of the identified asbestos material would be surveyed using sub-meter Differential Global Positioning System (DGPS).

d. If the impacted soil is to be disposed off site, it should be classified in accordance with the DECCW's Waste Classification Guidelines (2008) and disposed of, as a minimum, as asbestos contaminated waste to a suitably licensed landfill. In dry and windy conditions the stockpile would be lightly wetted and covered with plastic sheet whilst awaiting disposal.

e. All work associated with asbestos in soil would be undertaken by a contractor holding a class ASA Licence. WorkCover must be notified 7 days in advance of any asbestos works.

f. Monitoring for airborne asbestos fibres is to be carried out during the soil excavation in asbestos contaminated materials.

g. Documentary evidence (weighbridge dockets) of correct disposal is to be provided to the Principal (or their representative).

h. At the completion of the excavation, a clearance inspection is to be carried out and written certification is to be provided by an Occupational Hygienist that the area is safe to be accessed and worked. If required, the filling material remaining in the inspected area can be covered/sealed by an appropriate physical barrier layer of non-asbestos containing material prior to sign–off.

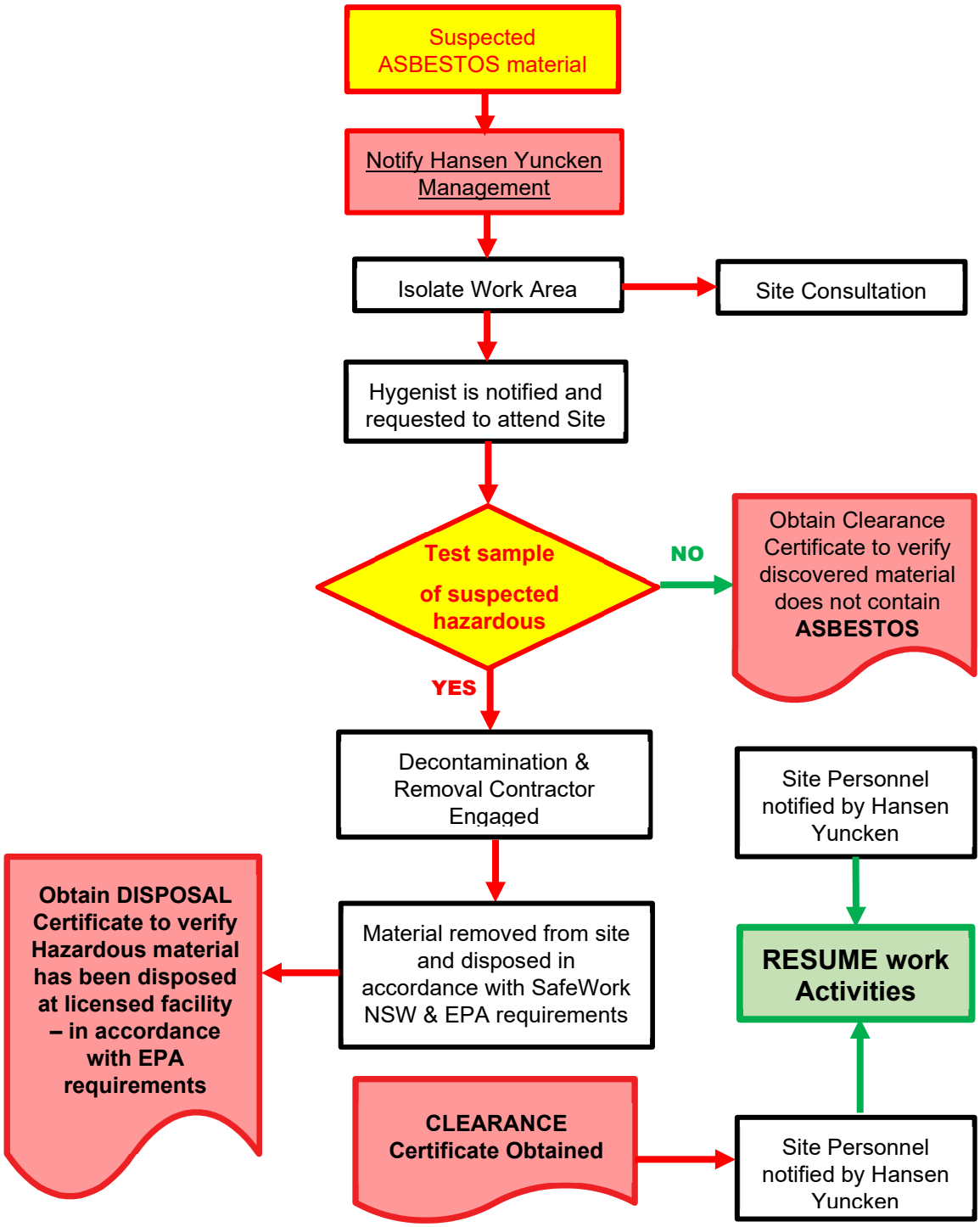
i. Validation samples would be collected from the remedial excavation to confirm the complete removal of the asbestos containing materials. If the asbestos pipes/conduits are uncovered, then sampling density would typically comprise one sample per 10-20 linear meter (depending on the length of the pipe). If asbestos debris are found, then the sampling density would typically comprise 1 sample per 5 metre x 5 metre grid.

j. The sampling locations should be surveyed using a sub-meter DGPS.

k. Details are to be recorded in the site record system.

l. Following clearance by an Occupational Hygienist, the area may be reopened for further excavation or construction work.

## Unexpected Finds Protocol - ASBESTOS



### Unexpected Finds Protocol - Buried Structures

In the unlikely event that buried structures such as Underground Storage Tanks (USTs) are encountered during site works, the structure(s) and any associated pipe-work should be managed /removed as follows:

a. Upon discovery of structure, the site foreman is to be notified and the area barricaded;

b. Visual identification of the tank and associated pipe-work;

c. Remove and dispose of the structure and associated pipe-work by a qualified contractor. In the case of an UST, the tank must be removed in accordance with Australian Institute of Petroleum (AIP) Code of Practice and Australian standards;

d. Excavate and stockpile impacted materials (based on field observations) for classification;

e. Validation of the remedial pit by a qualified environmental consultant for the contaminants of concern at the following sampling density:

   i) Base of tank pit excavation - 1 sample per 25 $m^2$ (i.e. 5m x 5 m grid);

   ii) Side of tank pit excavation - 1 sample per 10 linear metre (minimum of 1 sample per side) and 1 sample per 2m – 3m depth interval;

   iii) Fuel feed lines/pipe-work - 1 sample per 10 linear metre and 2 - 3 depth interval; and

   iv) QA/QC sampling and analysis in accordance with the Project Quality Management Plan.

f. If required, “chase out’ all of materials in the remediation pit identified to be impacted by petroleum/hydrocarbons and further validation sampling and analysis as required to assess appropriate removal of impacted materials;

g. Waste classification and off-site disposal of impacted materials in accordance with the project Environmental Management Plan or the Waste Management Plan; and

h. Inclusion of validation, waste classification and disposal documents (including landfill dockets and, in the case of USTs, tank and pipe work destruction certificates) in the validation report.

### Unexpected Finds Protocol - Volatile Contaminants

Based on the findings of the previous assessments, and noting the nature of the filling and soil encountered at the site the potential for the site being impacted by volatile contaminants would be extremely low.

In the highly unlikely event that significant quantities of volatile compounds are detected, then appropriate gas mitigation strategies may be required as per ANZECC (1999) Guidelines for the Assessment of On-site Containment of Contaminated Soil.

If impacts due to volatile contaminants are detected in the area to be capped, the nature and extent of the impacts of the volatile contaminants should be established as a first step before an appropriate remedial strategy.

### Unexpected Finds Protocol – Aboriginal & non-Aboriginal Heritage

Upon discovery of aboriginal or historical artefacts or anything considered to be of archaeological interest the Site Manager shall arrange for works to be ceased in the area and contact the Client for further directions.
The Project Team will take all necessary measures to protect the artefacts from being damaged or destroyed.
Works will not re-commence in the area until a written instruction from the Superintendent is received.

## 4.12 Waste Management

In accordance with condition B15d, the Construction Waste Management Plan (CWMSP) has been completed for the project and is contained with Appendix A.8. In accordance with B15i, the CWMSP details waste classification and validation measures including the treatment and allocation of waste for the project. A summary of the Waste Classification is shown below.

| Tree Removal | | | | |
|---|---|---|---|---|
| Materials on Site | | Destination/Treatment | | |
| Type of Material | Estimated Volume ($m^3$) | Onsite (Reuse/Recycle) | Offsite (Reuse/Recycle) | Disposal (Landfill) |
| Trees & Shrubs | 5,280 $m^3$ | Due to the large volume of material and the site's topography and ongoing usages, there will be limited opportunities for onsite reuse (i.e. chipping/ mulching) | All trees and shrubs removed from the site should be sent for processing at a facility licenced to accept these materials | Any material that cannot be reused (e.g. diseased trees or contaminated material) will be disposed of at will be disposed of at licenced landfill facility |
| **Services Diversions** | | | | |
| Materials on Site | | Destination/Treatment | | |
| Type of Material | Estimated Volume ($m^3$) | Onsite (Reuse/Recycle) | Offsite (Reuse/Recycle) | Disposal (Landfill) |
| Soil, Rock | 3,000 $m^3$ | Some materials may be retained onsite for reuse as fill in services trenches | Uncontaminated materials removed from the site should be reused as clean fill by waste contractor | Any unsuitable orcontaminated material that cannot be reused will be disposed of at licenced landfill facility |
| Existing Pipework | 70 $m^3$ | On-site reuse unlikely to be feasible, due to age of materials and difficulty involved in repurposing | Should be sent to a licenced recycling facility, depending on the type of material | Any unsuitable or contaminated material that cannot be reused will be disposed of at licenced landfill facility |
| Metal from Fire Hydrant Booster Assembly | 10 $m^3$ | No on-site reuse unlikely to be feasible, due to age of materials and difficulty involved in repurposing | Should be sent to a licenced recycling facility with above pipework material | No disposal to landfill |
| General Waste | 10 $m^3$ | N/A | N/A | Disposal to landfill |
| **Shoring Walls** | | | | |
| Materials on Site | | Destination/Treatment | | |
| Type of Material | Estimated Volume ($m^3$) | Onsite (Reuse/Recycle) | Offsite (Reuse/Recycle) | Disposal (Landfill) |
| Soil, Rock | 50 $m^3$ | Some materials may be retained onsite for reuse as fill in services trenches or shoring walls | Uncontaminated materials removed from the site should be reused as clean fill by waste contractor | Any unsuitable or contaminated material that cannot be reused will be disposed of at licenced landfill facility |
| Excess Concrete | 5 $m^3$ | Separated on site and crushed for use in paving and/or temporary internal road construction | Any materials not reused on site should be sent to a licenced recycling facility | No disposal to landfill |
| General Waste | 5 $m^3$ | N/A | N/A | Disposal to landfill |

| Bulk Earthworks (Including Remediation) | | | | |
|---|---|---|---|---|
| Materials on Site | | Destination/Treatment | | |
| Type of Material | Estimated Volume ($m^3$) | Onsite (Reuse/Recycle) | Offsite (Reuse/Recycle) | Disposal (Landfill) |
| Soil, Rock, Grass | 25,000 $m^3$ | Some materials may be retained onsite for reuse as fill in services trenches | Uncontaminated materials removed from the site should be reused as clean fill by waste contractor | Any unsuitable or contaminated material that cannot be reused will be disposed of at licenced landfill facility |
| General Waste | 20 $m^3$ | N/A | N/A | Disposal to landfill |
| Contaminated Materials | TBD* | Containment and treatment methods used will depend on the type of material, if any, that is encountered during bulk earthworks activities | | |

### 4.12.1 Waste Reduction

The main source of waste associated with the construction works would be demolished material (bricks, concrete, steel etc.) resulting from the demolition and refurbishment of existing buildings. It is likely that some excess building materials will be produced due to the construction work such as miscellaneous waste associated with packaging and transport of plant and equipment and various other manufactured items forming part of the augmentation works. Waste generated as a result of construction will be minimised, recycled, reused or recovered, where practical.

HY has accepted the challenge to reduce waste on construction projects, particularly in materials transferred to landfill.

The strategy for reducing the waste on the project will be made up of three strategies as detailed below in order of priority. The prime objective is to keep the amount of materials transferred to landfill from this project to the minimum possible amount.

1. Reduce the amount of waste material produced on the project by ensuring that only enough materials required to perform the works are ordered.
2. Any excess materials from particular work areas are to be retained and incorporated into other work areas where practical.
3. Encourage “just in time” delivery of construction materials (minimum storage on site) to reduce the potential of loss / waste due to damage prior to usage.

### 4.12.2 Non-Recyclable Waste

Non-recyclable waste will be disposed of at an EPA approved landfill or transfer station. Provide details

### 4.12.3 Waste Collection & Disposal

Appropriate waste bins are to be provided by HY and made available to all S/C.

All S/C shall be directed to place waste in the bins provided. This shall be included in the Site Induction.

Waste collection points are nominated on the Site Layout Plan.

### 4.12.4 Waste Reporting

Waste generation is monitored by HY on monthly basis to ensure that the company’s waste reduction objectives are achieved. Waste disposal quantities are monitored monthly by HY to ensure compliance.

The Project Administrator shall record waste disposal data on BIM360 Field using the waste record checklist.

Waste quantities from the PMR shall be entered into the State HSE Database for analysis and reporting against HY Waste reduction targets.

### 4.12.5 Concrete Waste & Washout

Concrete trucks and pumps shall be washed out at designated locations as shown on the site layout plan. Washout of concrete pumps and AGI's in other areas will not be permitted.

Washout shall be captured using membranes or other suitable means and allowed to set.

Waste shall be placed in bins for disposal with site waste.

Excess concrete shall be returned to the concrete plant for disposal or re-use.

### 4.12.6 Mitigation Strategies

- Accurate written records are to be kept such as:
  - Who transported the waste (company name, ABN, vehicle registration and driver details, date and time of transport, description of waste)
  - Copies of waste dockets/receipts for the waste facility (date and time of delivery, name and address of the facility, it's ABN, contact person).
- The construction contractor to ensure that waste generated by the works is transported to a place that can lawfully accept it as per Section 143 of the *Protection of the Environment Operations Act* 1997.
- The removal of any asbestos containing material if found is only to undertaken by an appropriately licenced contractor as per WorkCover NSW requirements and current guidelines.
- All waste, including excess spoil be recycled where practicable
- Trucks transporting spoil off site to be covered.
- The EPA is to be notified immediately of any pollution incidents or harm to the environment (as defined under Part 5.7 of the POEO Act).

## 4.13 Visual

### 4.13.1 Likely Impacts

The Meadowbank TAFE project has minimal visual impact to neighbouring properties and is well screened by existing trees and other building structures. In addition, all temporary fencing shall be installed neatly with shade cloth and maintained throughout the duration of the works.

### 4.13.2 Mitigation Strategies

- Construct landscaping in accordance with the design documentation to reduce visual impacts of the new development.

## 4.14 Environmental Complaints

Complaints received regarding HY's Environmental Impacts or performance shall be recorded as Complaint in accordance with the HSE Incident Procedure. Actions to be taken to address the complaint.

## 4.15 Fuel & Chemical Spills

Response to major fuel spills shall be implemented in accordance with the fuel spill procedure in the Emergency Response Plan. The requirements for storage of large fuel and chemical quantities are not expected for this project.

A spill kit shall be located adjacent to fuel and chemical storage and dispensing areas.

## 4.16 Hazardous Materials

Hazardous materials shall be controlled in accordance with Hazardous Materials procedure.

## 4.17 External Lighting

In accordance with condition B15a (vii) of SSD 10349, the external lighting to the proposed Multi-Trades and Digital Technology Hub and carpark complies with AS4282-2019 – Control of the Obstructive Effects of Outdoor Lighting. Please refer to Appendix A.5 for the certificate verifying the compliance with these Australian Standards.

## 4.18 Community Consultation and Complaints Handling

In accordance with condition B15a (vii) of SSD 10349, community consultation and complaints handling are primarily the responsibility of the Client. Hansen Yuncken will provide assistance where possible to ensure that the Client is complying with the requirements of the Community Communication Strategy developed for the project.

### 4.18.1 Community Consultation

Community consultation is primarily the responsibility of the client. Hansen Yuncken will ensure that the relevant strategies/outcomes are incorporated within the relevant management plans and construction process where possible. The main channels that the client is planning on conducting consultation is through the following:

- Community information phone line
- Advertising (print)
- Call centre scripts
- Community contact cards
- CRM database
- Display boards
- Phone call or teleconferencing
- FAQs
- Information Booths
- Information Sessions (drop in)
- Information Pack
- Newsletters
- Notifications

- Technical Reference Group
- Website
- Works notifications
- Letterbox drops

The above have been extracted from Table 3 and Appendix A of the Community Communication Strategy.

### 4.18.2 Complaints Handling

The primary form of assistance that Hansen Yuncken will provide is through the complaints handling process. During the project delivery phase, a complaint defined as in regards to construction impacts – *such as* – safety, dust, noise, traffic, congestion, loss of parking, contamination, loss of amenity, hours of work, property damage, property access, service disruption, conduct or behaviour of construction workers or other environmental impacts. If a complaint is made directly to Hansen Yuncken, it will be redirected to the following SINSW communication channels:

- Phone: 1300 482 651
- Email: schoolinfrastructure@det.nsw.gov.au

Upon receipt of the complaint from the Project Director, Hansen Yuncken will endeavour to close out the complaint in a timely manner. The complaint will be logged to ensure that the impact of future construction works that may impact the community in a similar manner are minimised.

# 5 Measurement & Evaluation

## 5.1 Environmental Incidents & Emergencies

### 5.1.1 Environmental Incidents

Incidents resulting in potential or actual environmental damage shall be reported and investigated in accordance with the HSE Incident Procedure and recorded on BIM360 using the HSE incident report

### 5.1.2 Environmental Emergencies

Preparation for and response to the environmental impacts of emergency events shall be conducted in accordance with the project Emergency Response Plan. The environmental impacts controlled in ERP are;

**Asbestos Exposure**

In the event that during works, personnel become accidentally exposed to asbestos, the following procedures shall be followed:

1. Personnel in the immediate affected area shall cease work and immediately go to the emergency showers on site.
2. All contaminated clothing is to be removed and placed into a thick plastic bag. The plastic bag must then be tightly sealed and labelled as "Asbestos Contaminated Clothing".
3. Personnel are to immediately decontaminate themselves in a shower and a clean set of clothes to be re-issued.
4. Asbestos contaminated clothing is to be industrially cleaned or disposed of appropriately

**Water Pollution**

An incident involving actual or potential harm to human or environmental health must be reported immediately to the EPA.

Firstly, call 000 if the incident presents an immediate threat to human health or property. Fire and Rescue NSW, the NSW Police and the NSW Ambulance Service are the first responders, as they are responsible for controlling and containing incidents.

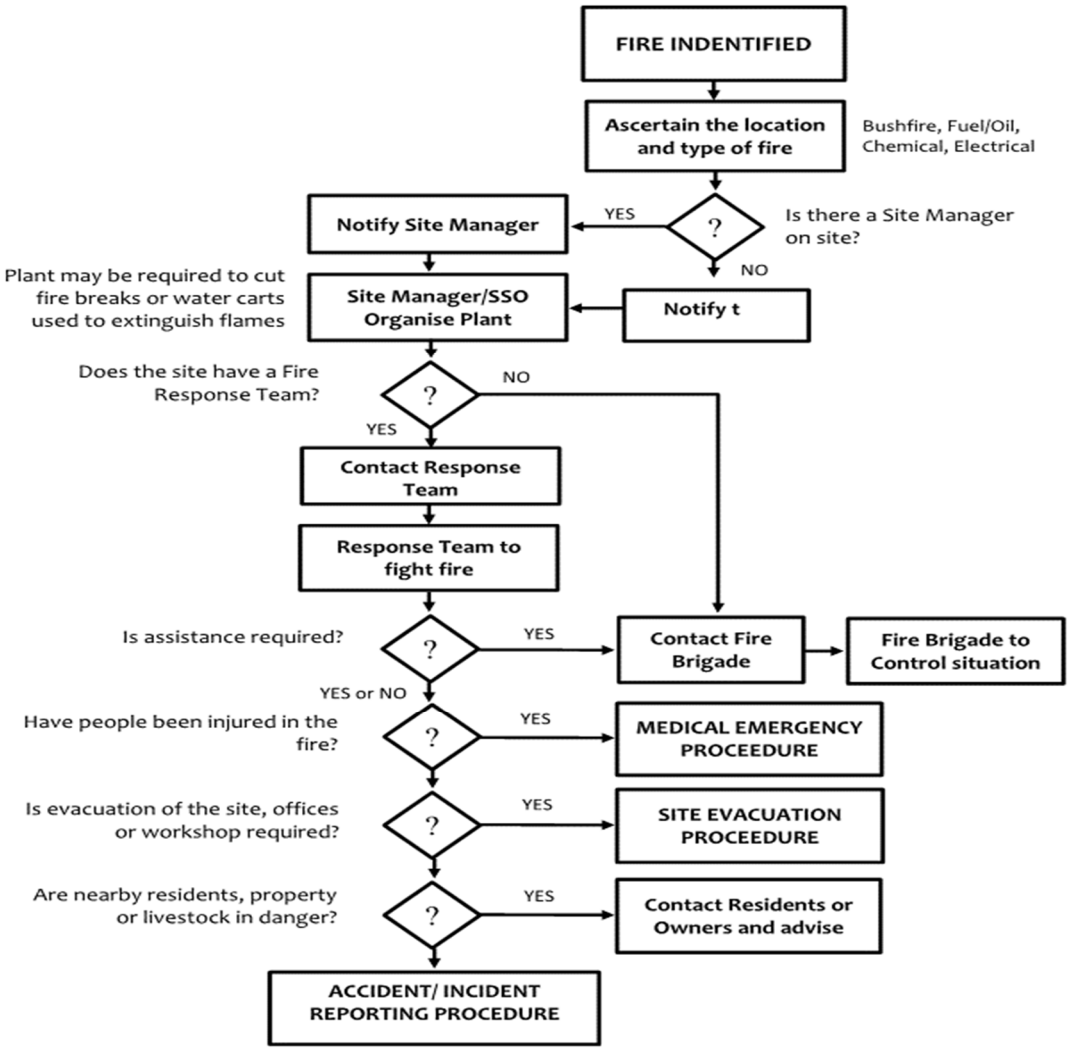
If the incident does not require an initial combat agency, or once the 000 call has been made, notify the HY Site Manager who will notify the relevant authorities in the following order. The 24-hour hotline for each authority is given when available:

**EPA Environment Line on 131 555**

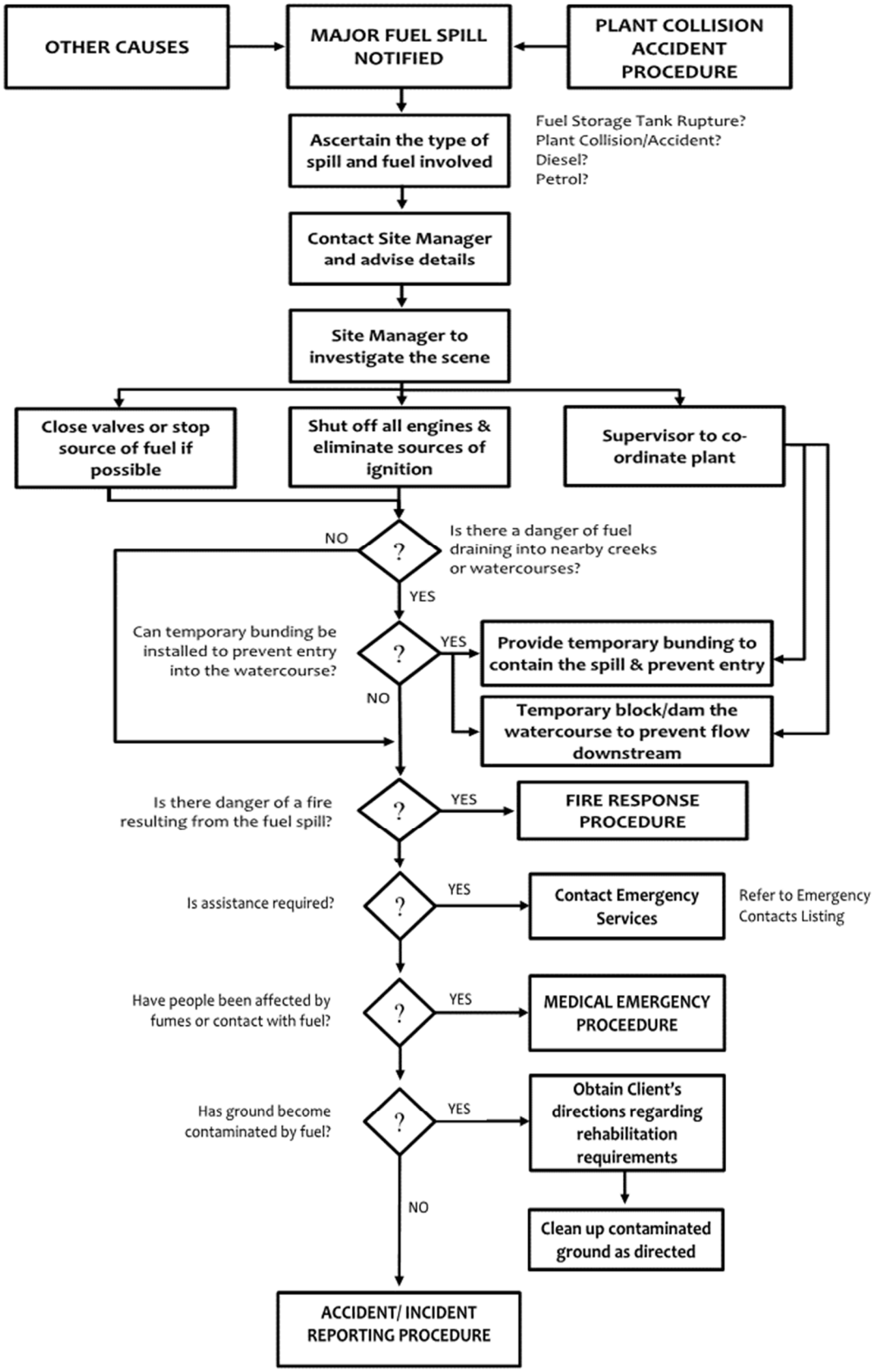
**Safework NSW Authority – phone 13 10 50 (Where appropriate)**

**City of Ryde Council – phone 9952 8222**

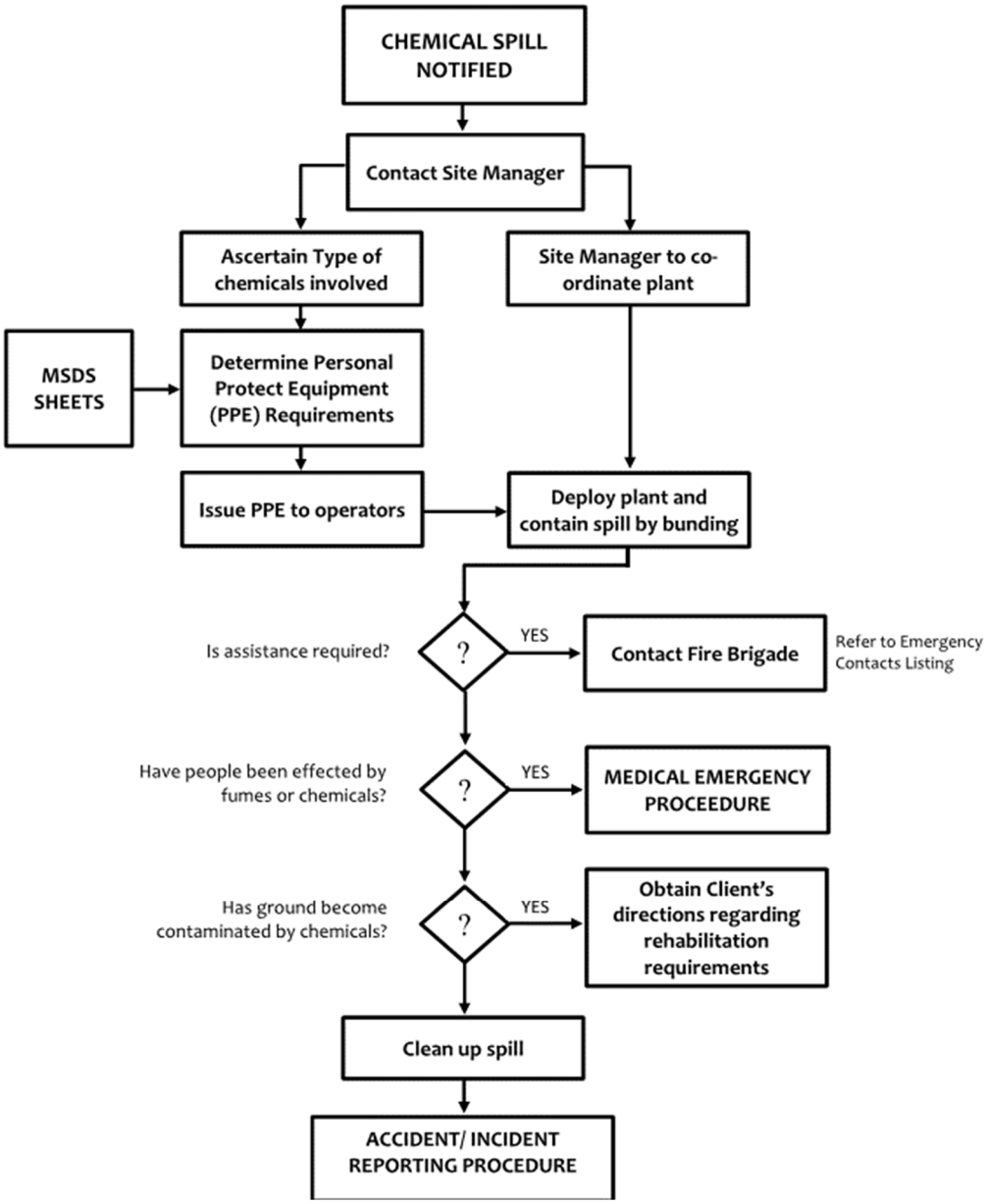
**Fire**


FIRE INDENTIFIED
Ascertain the location and type of fire
Bushfire, Fuel/Oil, Chemical, Electrical
Is there a Site Manager on site?
YES
NO
Notify Site Manager
Notify t
Plant may be required to cut fire breaks or water carts used to extinguish flames
Site Manager/SSO Organise Plant
Does the site have a Fire Response Team?
NO
YES
Contact Response Team
Response Team to fight fire
Is assistance required?
YES
Contact Fire Brigade
Fire Brigade to Control situation
YES or NO
Have people been injured in the fire?
YES
MEDICAL EMERGENCY PROCEEDURE
Is evacuation of the site, offices or workshop required?
YES
SITE EVACUATION PROCEEDURE
Are nearby residents, property or livestock in danger?
YES
Contact Residents or Owners and advise
ACCIDENT/ INCIDENT REPORTING PROCEDURE

**Major Fuel Spill**



**Chemical Spill**




## 5.2 Environmental Inspections & Audits

### 5.2.1 Non-Conformances

Inspections & audits of the site including environmental controls shall be conducted in accordance with the procedure for Site HSE Inspections & the project Audit Management Plan. The following inspections will be conducted onsite throughout the time on the project:

- Fortnightly site inspections,
- Monthly task observations,
- 3 monthly internal audits,

Where an item has been assessed as Non-Conformance (NC) during any internal inspection an issue shall be raised in BIM360 Field to bring the activity or process into compliance with requirements. The issue(s) shall be recorded in BIM360 Field and allocated to the relevant contractor/subcontractor.

The independent consultant in writing shall raise all items assessed as non-conformance during external audits and HY will address all issues and close out within the time frame advised.

### 5.2.2 Reporting & Corrective Actions

All nonconformances will result in corrective action being undertaken. The significance of nonconformities shall be evaluated in terms of their impact on:

- operating costs,
- cost of nonconformity and its correction,
- product performance,
- regulatory requirements
- client satisfaction, and
- any other risks

HY project management shall undertake the following actions to investigate the causes of nonconformities specific to the project in order to prevent recurrence.

- Identify nonconformities that relate to; products, QMS processes, resources, client complaints and subcontractors and outsourced work.
- Review and determine the causes of nonconformities using problem solving tools such as the root cause analysis process – Process Workflow flowchart – to determine the underlying root cause(s) of the nonconformity;
- Evaluate the need for corrective action to minimise the occurrence of identified nonconformities;
- Determine and implement the corrective action needed;
- Monitor the corrective actions taken and record the results to determine if further improvement is necessary to get it right;
- Actions taken to eliminate the cause of nonconformity must flow from the root cause analysis and may involve changes to product, process, resources, methods, equipment, etc. or any combination of these;
- Records of the actions taken, and follow-up activities shall be monitored and maintained by the project;
- Ensure timely completion of any open corrective action; and
- Monitor corrective Action records on an ongoing basis, for any recurrence of the nonconformity where corrective action was taken.

## 5.3 National Greenhouse & Energy Reporting (NGER)

### 5.3.1 National Reporting Guidelines

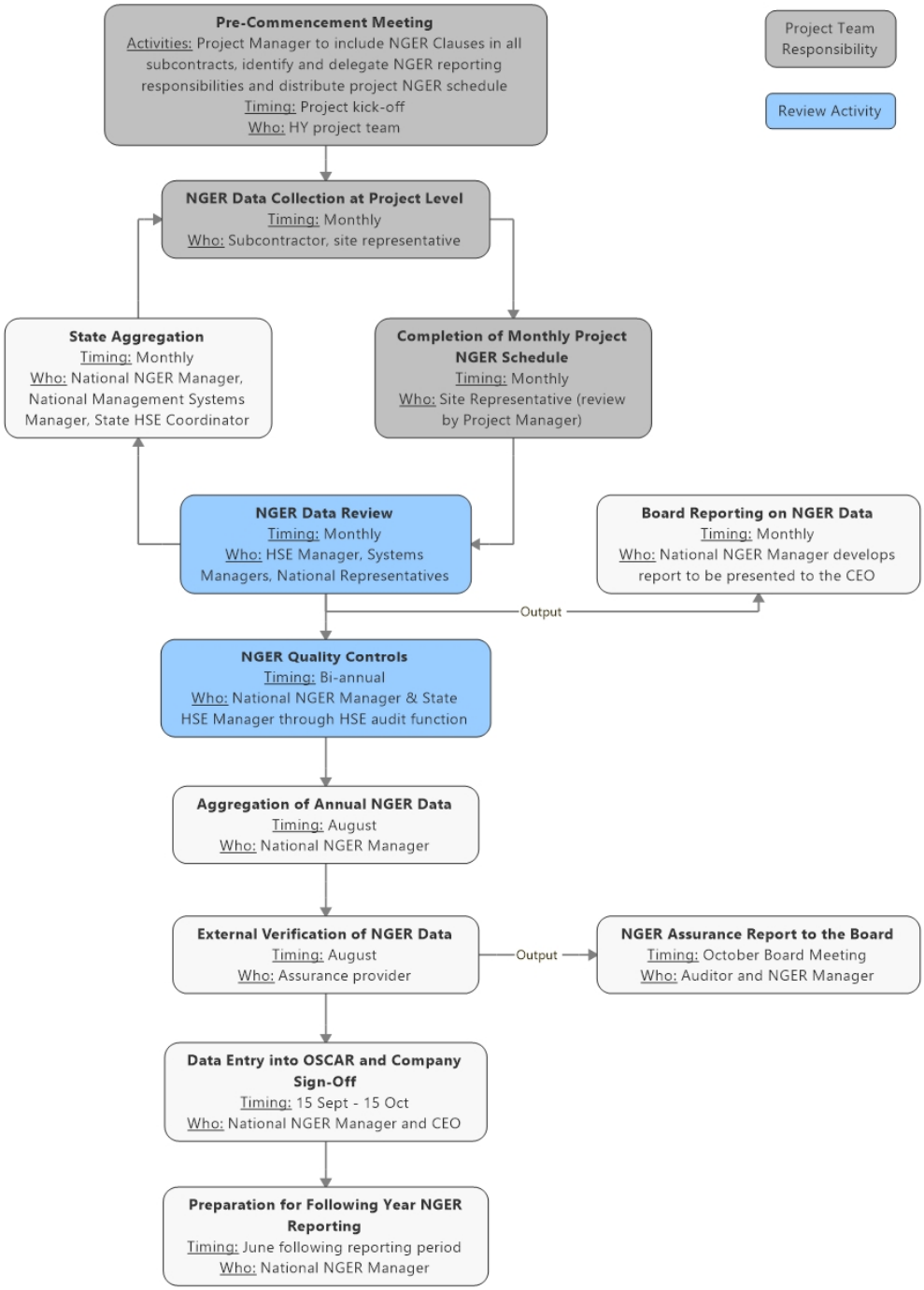
The purpose of the National Greenhouse and Energy Reporting Guidelines is to help corporations understand their obligations under the National Greenhouse and Energy Reporting Act 2007 (the Act).

### 5.3.2 Reporting Thresholds

HY's has been assessed and determined to be below the corporate group reporting thresholds – detailed in the below table. Notwithstanding this, all natural gas and electricity consumption is recorded monthly

on BIM360 Field and collated for national reporting. Furthermore, all site mobile plant and equipment fuel consumption is registered on BIM360 Field and incorporated in the HY greenhouse gases (CO2-e) annual report (NGER).

### 5.3.3 NGER Reporting process




### 5.3.4 NGER Data Collection

NGER data shall be collected and recorded on BIM360 Field using the Site Electricity and Natural Gas Usage Checklist

# 6 References

Environmental Planning and Assessment Act 1979 No 203

Environmental Planning and Assessment Regulation 2000

Protection of the Environment Operations Act 1997 (NSW)

Protection of the Environment Operations (General) Regulation 2009

ISO 14001; 2015 Environmental management systems - Requirements with guidance for use

AS/NZS ISO 31000:2009 Risk management – Principles and guidelines

HB158:2010 Delivering assurance based on ISO 31000:2009 – Risk management – Principles and guidelines

NSW Government Environmental Management Guidelines – Construction Procurement (Edition 4 - December 2019)

# 7 Appendices

## A.1 Hansen Yuncken Environmental Policy Statement

HANSENYUNCKEN

### ENVIRONMENT POLICY

Hansen Yuncken Pty Ltd is committed to providing a high quality environment in the building and construction industry, which meets the requirements and expectations of Clients, Statutory Authorities, Employees and Community Groups.

Hansen Yuncken recognises that impacts on the environment in the building and construction industry relate not only to the process of construction but also to the design and subsequent use of the buildings constructed. Hansen Yuncken affirms its commitment to applying sustainable development principles to all facets of the building and construction process and to continually improve our performance in minimising the impact on, and pollution of, the environment during the construction process.

In achieving this Hansen Yuncken is committed to the implementation, maintenance and improvement of a Management System meeting the requirements of Australian and International Standard AS/NZS ISO 14001.

The National Executive Committee shall review Environmental objectives and set performance targets each year. State Managers, through their line management structure, are accountable for ensuring all employees and subcontractors achieve these objectives and targets.

The Company's Environmental performance shall be monitored against established performance targets and the results reported to the Board of Directors on the regular basis.

Hansen Yuncken affirm that they have a legal obligation to comply with relevant Environmental legislation, standards and codes of practice as the minimum level of performance and a professional obligation to acknowledge the views of Environmental and Community Groups.

Hansen Yuncken acknowledges that environmental excellence can only be achieved and maintained by a clear unequivocal direction of all levels of management, stimulating a participative atmosphere and sense of pride in our environmental achievements by all employees and trade contractors, and through recognition by concerned groups in obtaining this.

Peter Salveson
Chief Executive Officer
May 2018

Page 1 of 1

## A.2 Environmental Management Accreditation - ISO14001

### CERTIFICATE OF REGISTRATION

# Hansen Yuncken Pty Ltd

**SCP, Building 1, Level 3, 75-85 O'Riordan Street, Alexandria NSW 2015 Australia**
**Suite 12, 125 Bull Street, Newcastle West NSW 2302 Australia**
**and transient sites**
ABN 38 063 384 056

complies with the requirements of

**ISO 9001:2015**
Quality Management Systems – Requirements
and
**ISO 14001:2015**
Environmental Management Systems – Requirements with guidance for use

for the following capability:

This registration covers the Quality and Environmental Management Systems for the provision of project management and the design and construction of commercial, industrial and institutional buildings and civil engineering works.

Registered by:
**Quality Control Services (Environmental) Pty Ltd**
ABN 85 102 935 195
10 Rosina Street Woodcroft South Australia 5162 Australia

This certificate is subject to the Terms and Conditions for Certification, and relevant program rules. Currency of certification can be validated at www.qcse.com.au/certified-register, and www.jas-anz.org/our-directory/certified-organisations; it remains the property of QCSE Pty Ltd and must be returned upon request.

Certificate Number: 160052022
Issue Date: 26 February 2019

Original Certification: 23 February 2010
Expiry Date: 22 February 2022

CAStone

Cheryl Stone
Certification Manager

QCSE

QMS/EMS Certified Company
Licence Number: Q0160

IAF QMS 010

Quality Control Services QCS ENVIRONMENTAL

JAS-ANZ
www.jas-anz.org/register

## A.3 Site Location Plan

## A.4 HSE Project Risk Assessment

HANSENYUNCKEN

# PROJECT HSE RISK ASSESSMENT

This Project HSE Risk Assessment is to be used as aguide when completing the monthly Project High Risk Identification assessment on HYWAY Site Management Dashboard in accordance with the Project HSE Risk Assessment procedure and should be conducted at the time of Construction programme statusing to assess hazards and risks for next month. Hazards with residual risk from the Design WHS Risk Assessment (if applicable) are also to be considered.

| | |
|---|---|
| **RELEVANT PROCEDURE:** | Project HSE Risk Assessment |
| **PROJECT:** | Meadowbank TAFE - Multi-Trades and Digital Design Hub |
| **JOB NO:** | SC130 |
| **ASSESSED BY:** | Mustafa Aktas |
| **ASSESSMENT DATE:** | 19 - 06 - 2020 (FOR INFORMATION ONLY) - PLEASE REFER ALSO TO HY RISK IDENTIFIER ON HY-WAY |

| **RISK ASSESSMENT TABLE** | | **Consequence** | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| **Likelihood** | | Significant | Major | Moderate | Minor | Insignificant |
| A | Very Likely | High | High | High | Medium | Medium |
| B | Likely | High | High | Medium | Medium | Medium |
| C | Possible | High | Medium | Medium | Medium | Low |
| D | Remotely Possible | Medium | Medium | Medium | Low | Low |
| E | Very Unlikely | Medium | Medium | Low | Low | Low |
| NA | Not applicable | NA | NA | NA | NA | NA |

| | **RISK ASSESSMENT** | | | **CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)** | |
|---|---|---|---|---|---|
| **HAZARD** (Include additional project specific hazards as required) | **L** | **C** | **Class** | **Legislation, Standards & Codes of Practice** | **Enter Details of Specific Controls Required** |
| **Amenities** | | | | | |
| Access | B | 4 | Medium | NSW Code Of Practice: Managing the work Environment and Facilities | Road base pedestrian footpaths will be provided and maintained along with awning roof cover over the site ameneties. The compound area is fenced off to protect workers from moving plant, trucks and vehicles |
| Location and nature of workplace | B | 4 | Medium | NSW Code Of Practice: Managing the work Environment and Facilities | All amenities are set up in a compound area at the main entry to site making it easy for access and egress in emergency situations |
| Housekeeping | B | 4 | Medium | NSW Code Of Practice: Managing the work Environment and Facilities | A full time cleaner is engaged to manage and maintain all amenities. |
| Seating | B | 4 | Medium | NSW Code Of Practice: Managing the work Environment and Facilities | Sufficient seating is in place for all workers to rest, take breaks and eat lunch |
| Lighting (Poor) | C | 4 | Medium | NSW Code Of Practice: Managing the work Environment and Facilities | Lighting is setup in all amentities for safe access |
| Air Quality | B | 4 | Medium | NSW Code Of Practice: Managing the work Environment and Facilities | Windows, fans and airconditioning are installed to all site sheds |
| Hot and Cold Environment | C | 4 | Medium | NSW Code Of Practice: Managing the work Environment and Facilities | Air conditioning installed to all lunch sheds |
| Drinking water | C | 4 | Medium | NSW Code Of Practice: Managing the work Environment and Facilities | Bubbler set up at lunch sheds and varoius locations throughout site |
| Dining Facilities | C | 4 | Medium | NSW Code Of Practice: Managing the work Environment and Facilities | Clean and tidy tables are available in all lunch sheds. There is sufficient space for all workers to site down and have lunch |
| Hand washing | C | 4 | Medium | NSW Code Of Practice: Managing the work Environment and Facilities | Warm water, soap and hand dryers are available in the toilets |
| Shower Facilities | B | 4 | Medium | NSW Code Of Practice: Managing the work Environment and Facilities | Hot showers are provided on site |
| Change Room | C | 4 | Medium | NSW Code Of Practice: Managing the work Environment and Facilities | Change rooms with benching and coat hooks are proivded on site for workers to change clothes |
| **Air Quality** | | | | | |
| Dust from plant & truck movements | B | 4 | Medium | Meadowbank TAFE WHS Plan | Water cart to conduct regular laps of the site spraying water on the ground to keep dust settled particularly where there is high plant and truck movements. Temporary water has been installed at several locations around site. |
| Refuelling of plant and equipment | C | 4 | Medium | AS/NZS 1715 Selection, use and maintenance of respiratory protective devices<br>AS/NZS 1716 Respiratory protection devices | All refuelling is to be conducted in well ventilated areas only. Refuelling to be conducted clear of any hot works on site such as grinding, welding etc |
| Concrete cutting / coring | E | 5 | Low | NSW Cutting & Drilling Concrete & Other Masonry Products 1996 | Water must be used to minimise dust. Demolition saws take preference over dry cutting with a masonry blade on an angle grinder. Rubble to cleaned up immediately. Slurry to be cleaned up immediately |
| **Access/ Egress and movements around site** | | | | | |
| Workers entering site without Hansen Yuncken permission would be unaware of any specific site hazards eg, asbestos, gas lines, high risk construction work etc | C | 3 | Medium | NSW Code Of Practice: Consultation, coordination and cooperation | All workers must be site inducted by Hansen Yuncken prior to entering site. This is clearly marked on the contact details sign at the main entry to site. Subcontractors must give Hansen Yuncken site staff sufficient notice prior to workers attending site to be site inducted. All workers on site to display a HY Meadowbank TAFE photo ID at all times and sign into the site attendance register on a Daily Basis after they have been Inducted. |
| Visitors entering site without Hansen Yuncken permission would be unaware of site hazards eg, asbestos, gas lines etc | C | 3 | Medium | NSW Code Of Practice: Consultation, coordination and cooperation | All visitors must sign in at the site office prior to entering site. Signs have been erected clearly stating this. Visitors must display a ID card and be escorted by an inducted guide at all times. Visitors entering site must have approval from the Site Manager. |
| Pedestrians/ workers walking around site being struck by vehicles/trucks/ plant moving around site | D | 1 | Medium | NSW Code of Practice: Moving Plant On Construction Sites | Bunted/fenced off pedestrian pathways have been erected on site to keep pedestrians clear of areas where there are high movements of vehicles/ trucks and plant. All subcontractors using moving plant must have a HRCW SWMS which details how to protect other workers in the area from being struck by the plant. All plant must have a flashing light, horn and reversing beeper. Vehicles/ trucks must turn their flashing lights on. There is a 10km/h speed limit on site. All workers have been told at the site induction to be aware of moving plant on site and keep clear whenever possible. Only workers who are involved with the task are to be in the vicinity of the plant. HY have instructed all subcontractors to train their workers through pre-start meetings on how to approach moving plant and equipment. Haul roads for plant and vehicles are to be maintained. Pedestrians are to avoid walking on haul road whenever possible. Plant operators are to keep reversing to a minimum. Pedestrians that need to approach moving plant are to do so from the front of the machine and are to gain the operators attention by waving arms and yelling out to the operator. No person is to approach the machine until the operator has stopped moving the machine and signalled that it is safe to approach. Spotters working with machines must always stand in an area where they are visible to the operator. A site spotter/ delineation plan has been proposed to and approved by the site safety committee. This plan states areas where a spotter is mandatory for all plant and vehicle movements. This plan is posted on the site notice board. |
| Public being struck by trucks entering and exiting site | D | 3 | Medium | NSW Code Of Practice: How to manage work health and safety risks | Traffic control is in place managing vehicle and pedestrian movements at main entry to site |
| Subcontractors bringing vehicles onto site without Hansen Yuncken permission | D | 4 | Low | Meadowbank TAFE Traffic Management Plan | All subcontractors must seek approval from the Hansen Yuncken Site Manager prior to bringing vehicles/ trucks onto site. |
| Workers slipping/ tripping over on muddy/ uneven ground | C | 3 | Medium | Meadowbank TAFE WHS Management Pan | Pedestrian pathways have been constructed to minimise slip and trip hazards. Wheel ruts, eroded ground, muddy haul roads and pathways are to be bladed back to solid ground as required. On rain days the foreman & safety committee (when established) is to walk the site prior to work commencing and determine which areas are safe for work and which areas are no go zones. |
| Vehicles becoming bogged or losing traction whilst entering/ exiting and driving around site | E | 4 | Low | | Vehicles to be driven on solid ground only. No vehicles will be allowed to drive on muddy terrain |
| Collisions between plant on site | E | 3 | Low | | Sufficient distance to be kept between all plant on site. Flashing light, horn and reversing beeper must be working. Plant and vehicles to stay on haul roads whenever possible. Site speed limit is 10km/h |
| Too many vehicles parked on site creating restricted access around site | NA | 4 | NA | | No Parking onsite.unless a designated area has been provided by Hansen Yuncken for Subcontractor or Visitor Parkin. |

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# PROJECT HSE RISK ASSESSMENT

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| B | Likely | High | High | Medium | Medium | Medium |
| C | Possible | High | Medium | Medium | Medium | Low |
| D | Remotely Possible | Medium | Medium | Medium | Low | Low |
| E | Very Unlikely | Medium | Medium | Low | Low | Low |
| NA | Not applicable | NA | NA | NA | NA | NA |

| **HAZARD** (Include additional project specific hazards as required) | **RISK ASSESSMENT** L | C | Class | **CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)** Legislation, Standards & Codes of Practice | Enter Details of Specific Controls Required |
|---|---|---|---|---|---|
| **Asbestos** | | | | | |
| Workers being exposed to the asbestos contaminated soil (ACM) at various locations around site | NA | 3 | NA | Working with asbestos guide 2008 | An independent Environmental consultant ( JBS&G ) has been engaged by HY and whilst the contamination scope is outside of HY's contractural obligations, under the direction and approval of DOJ, HY can engage JBS&G identify any areas that may potentially deemd to contain asbestos contaminated soil or material on site. An unexpedted finds protocol can be established that will also address the 'remedial action plan / strategy' to be adopted in such instance. |
| Unidentified finds of asbestos | D | 3 | Medium | Meadowbank TAFE Asbestos Management Plan | If asbestos is found stop work immediately and notify HY site staff immediately whom will arrange for the asbestos to be removed safely. Area to be closed off with bunting/ red white tape and warning signage |
| Unidentified finds of asbestos | D | 3 | Medium | Code of Practice: How to manage and control asbestos in the workplace | Warning signage and red/white tape to be used to prevent unauthorised persons entering the area. Air monitors to be installed and all workers in the area must wear appropriate PPE as defined in SWMS. |
| Unidentified finds of asbestos | D | 3 | Medium | Code of Practice: How to safely remove asbestos | Warning signage and red/white tape to be used to prevent unauthorised persons entering the area. Air monitors to be installed and all workers in the area must wear appropriate PPE as defined in SWMS. |
| Unidentified finds of asbestos | D | 3 | Medium | NWHSC 2002 - 2005 Safe Removal of Asbestos | Warning signage and red/white tape to be used to prevent unauthorised persons entering the area. Air monitors to be installed and all workers in the area must wear appropriate PPE as defined in SWMS. |
| Unidentified finds of asbestos | D | 3 | Medium | NWHSC 2018 - 2005 Management & Control of Asbestos | Warning signage and red/white tape to be used to prevent unauthorised persons entering the area. Air monitors to be installed and all workers in the area must wear appropriate PPE as defined in SWMS. |
| **Atmosphere - Contaminated/ Flammable** | | | | | |
| Flammable fumes from fuel containers | A | 4 | Medium | NSW Code of Practice: Storage and Handling of Dangerous Goods | Fuel to be stored in fuel storage areas only. Fuel drums are to be placed back in the fuel storage area after refuelling has been completed. No refuelling near any hot works being undertaken. All subcontractors must have a 'refuelling SWMS' |
| Unsafe storage of fuel | C | 4 | Medium | AS/NZS 2430 Classification of hazardous areas | Fuel must be stored in ventilated cages. No fuel to be stored in shipping containers |
| Fumes from spray selear application to carpark slab | D | 4 | Low | AS1318 Use of colour for the marking of physical hazards and the identification of certain equipment in industry | Applicators must wear mask whilst spray painting. Warning signage to be erected and all other personnel not involved with the task are to be clear of the area |
| **Biological Hazards** | | | | | |
| Disease from unhygienic facilities and amenities | E | 4 | Low | NSW Code Of Practice: HIV and other blood-born pathogens in the workplace<br>Meadowbank TAFE WHS Management Plan<br>NSW: Code Of Practice: Work Place Amenities | A cleaner has been engaged by Hansen Yuncken to clean amenities on a weekly basis. Amenities to be kept clean and tidy at all times |
| **Bomb Threat** | | | | | |
| Persons unaware of what to do in the event of an emergency | E | 5 | Low | HY Emergency Response Plan<br>AS 2293 Emergency escape lighting and exit signs for buildings<br>AS 3745: 2002 Emergency Control Organisation and Procedures For Buildings, Structures and Workplaces | Emergency response procedure is explained to all workers at the site induction. HY to practice fire drills every 6 months to ensure the system is working. |
| **Changes in design** | | | | | |
| Changes in design could result in new hazards not being identified | D | 4 | Low | Meadowbank TAFE WHS Management Plan | All design changes must be risk assessed by HY. Subcontractor SWMS will be reviewed by HY as required |
| **Craning & Hoisting Operations** | | | | | |
| Persons/ other trades on site walking into the crane slew area may be struck by crane or load | C | 1 | High | AS 2550: Cranes, hoists & winches - Safe Use<br>Meadowbank TAFE WHS Plan | The work area around all cranes must be fully barricaded eg bunting and signposted to keep other workers clear. |
| Slings or chains failing resulting in loss of load | C | 1 | High | AS 1418.1: Cranes, hoists and winches – General Requirements<br>AS 4991 Lifting Devices<br>Meadowbank TAFE WHS Plan | Subcontractors must keep an up to date register of all chains and slings. All equipment must be visually checked daily prior to use. |
| Crane out riggers sinking in ground resulting in crane rolling over | D | 1 | Medium | NWHSC 1010: National Standard for Plant<br>Meadowbank TAFE WHS Plan | Subcontractor SWMS to detail craning and hoisting operations. Subcontractor to communicate with HY staff and obtain a plant setup permit prior to setting up cranes to ensure outriggers are not set up over underground services or in unstable ground conditions. |
| Crane striking structures whilst slewing | B | 2 | High | AS 1418.10(Int): Cranes, hoists and winches - Elevating work platforms<br>Meadowbank TAFE WHS Plan | Dogman and crane operator to constantly communicate with each other. Crane operator to take directions from dogman only. |

HANSENYUNCKEN

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| | | Consequence | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| | **Likelihood** | Significant | Major | Moderate | Minor | Insignificant |
| A | Very Likely | High | High | High | Medium | Medium |
| B | Likely | High | High | Medium | Medium | Medium |
| C | Possible | High | Medium | Medium | Medium | Low |
| D | Remotely Possible | Medium | Medium | Medium | Low | Low |
| E | Very Unlikely | Medium | Medium | Low | Low | Low |
| NA | Not applicable | NA | NA | NA | NA | NA |

| | RISK ASSESSMENT | | | CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks) | |
|---|---|---|---|---|---|
| **HAZARD** (Include additional project specific hazards as required) | **L** | **C** | **Class** | **Legislation, Standards & Codes of Practice** | **Enter Details of Specific Controls Required** |
| **Concrete** | | | | | |
| Concrete Pumping - overload formwork structure | C | 2 | Medium | NSW Code Of Practice: Pumping Concrete 1993 | Spotter to be used when positioning boom over formwork, registered engineer signoff of formwork structures prior to concrete pours. |
| Trip hazard after excess concrete has cured | B | 4 | Medium | Environmental Protection Act 1994 | Back to plant policy for large amounts of excess concrete |
| Slip hazard from excess water and slurry on the ground/ concrete washout | B | 4 | Medium | Meadowbank TAFE WHS Plan | Concrete washout to be set up in area where water will not run over pedestrian pathways. Generally plastic is rolled out on the ground. The hopper is washed out onto the plastic, the concrete cures then is placed in a skip bin the following day |
| Slurry and wet concrete entering stormwater drains | D | 3 | Medium | Meadowbank TAFE WHS Plan | The concrete washout area will constantly move on site to suite site conditions. The HY site foreman will determine where the wash out area will be on the day of any concrete pours. |
| No designated washout area could result in truck drivers washing out wherever they please leaving the site messy and untidy | D | 4 | Low | Meadowbank TAFE WHS Plan | Excess concrete from washing out the pump is to be placed onto plastic, allowed to set then placed into the skip bin with a telehandler |
| Concrete cutting / coring - dust | B | 4 | Medium | Meadowbank TAFE WHS Plan | Water must be used to minimise dust. Demolition saws take preference over dry cutting with a masonry blade on an angle grinder. Rubble to cleaned up immediately. Slurry to be cleaned up immediately |
| Strike PT cables whilst cutting concrete | C | 3 | Medium | Meadowbank TAFE WHS Plan | Review As Construicted Drawings, consult Structrular engineer and obtain permission to proceed. Enact Cutting and Coring Permit prior to any works commencing |
| **Confined Space** | | | | | |
| Poor ventilation inside in-ground pits | C | 4 | Medium | NWHSC 1009: Safe Working in a Confined Space<br>AS 2865: Confined Spaces<br>NSW Code of Practice: Confined spaces | No chemicals are to be used inside in-ground pits. Close supervision of all men working inside pits at all times. Lid to be kept open at all times. Sparging up of pits is to be conducted as pit risers are installed to minimise the need to enter the pit afterwards |
| Workers unable to easily enter and exit trenches | D | 3 | Medium | Meadowbank TAFE WHS Plan | All trenches over 1.5m must be benched at 1:1 at a maximum of 1.5m or battered at 45 degrees. A ramp or steps must be cut into the trench for easy pedestrian access. |
| Workers being overcome by fumes building up in open trenches | D | 3 | Medium | NSW WHS Regulation 2011: Part 4.3 Confined spaces | All open trenching has good ventilation. Refuelling does not occur inside open trenches. Oxy acetylene equipment is kept clear of open trenching. |
| **Contaminated Soil** | | | | | |
| Exposure to contaminated soil which has not been identified | C | 3 | Medium | AS 4482: Guide to the investigation & sampling of sites with potentially contaminated soil<br>NSW Environment Operations Act 1997 | All subcontractors that will excavate onsite to have a SWMS for 'unexpected finds'. All workers have been instructed at the site induction to stop work immediately and notify Hansen Yunken site staff whom will take action to make the area safe. |
| Exposure to contaminated soil which has not been identified | D | 3 | Medium | Meadowbank TAFE WHS Plan | A soil validation investigation has been carried out on site by suitably qualified consultant at 10 x 10m grids to determine existance of any contaminants prior to any excavation being undertaken. |
| **Deliveries To Site** | | | | | |
| Delivery vehicle drivers unaware of site hazards | A | 4 | Medium | NSW Code of Practice: Moving Plant On Construction Sites: 2004 | All delivery drivers must complete a 'delivery driver induction' prior to entering site. A delivery driver induction is an abridged induction similar to a visitors induction. |
| Delivery vehicle unloading in an unsafe area eg. in an area where there is mobile plant or pedestrians frequently moving past | C | 2 | Medium | Meadowbank TAFE Site WHS Plan | The subcontractor supervisor must have good communication with the delivery driver and escort him to the work area where the delivery is to be unloaded. The s/c supervisor must take charge and assist the driver to unload materials from the truck. |
| Pedestrians/ other workers in the area being struck by materials as they are being unloaded from the truck | A | 4 | Medium | Meadowbank TAFE Traffic Management Plan | All delivery drivers are told at the 'delivery driver induction' to be aware of any pedestrians/ other workers in the area. Delivery drivers must ensure they have enough space to unload/ load materials from trucks safely. If they have any problems they must notify HY staff immediately whom will assist the driver to undertake their task safely. Subcontractors must manage and supervise their deliveries on site. Subcontractors must spot the driver whilst materials are being unloaded and warn other workers in the area to keep well clear. |
| Untrained delivery drivers using plant to unload goods | E | 3 | Low | Meadowbank TAFE Site WHS Plan | SWMS must be in place for subcontractors using plant to unload their delivery |
| **Drugs & Alcohol** | | | | | |
| Persons under the influence of drugs or alcohol are at high risk of injuring themselves or others | E | 4 | Low | Alcohol and other drugs in the workplace guide - 2006 | Persons assumed to be under the influence of drugs or alcohol will be stopped from working immediately. Their employer will be notified who will investigate and take appropriate action as per their drug and alcohol policy. |
| | | | | | |

HANSENYUNCKEN

# PROJECT HSE RISK ASSESSMENT

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| **RELEVANT PROCEDURE:** | Project HSE Risk Assessment |
| **PROJECT:** | Meadowbank TAFE - Multi-Trades and Digital Design Hub |
| **JOB NO:** | SC130 |
| **ASSESSED BY:** | Mustafa Aktas |
| **ASSESSMENT DATE:** | 19 - 06 - 2020 (FOR INFORMATION ONLY) - PLEASE REFER ALSO TO HY RISK IDENTIFIER ON HY-WAY |

**RISK ASSESSMENT TABLE**

| | | Consequence | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| | **Likelihood** | Significant | Major | Moderate | Minor | Insignificant |
| A | Very Likely | High | High | High | Medium | Medium |
| B | Likely | High | High | Medium | Medium | Medium |
| C | Possible | High | Medium | Medium | Medium | Low |
| D | Remotely Possible | Medium | Medium | Medium | Low | Low |
| E | Very Unlikely | Medium | Medium | Low | Low | Low |
| NA | Not applicable | NA | NA | NA | NA | NA |

| | RISK ASSESSMENT | | | CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks) | |
|---|---|---|---|---|---|
| **HAZARD** (Include additional project specific hazards as required) | **L** | **C** | **Class** | **Legislation, Standards & Codes of Practice** | **Enter Details of Specific Controls Required** |
| **Dust** | | | | | |
| Disruption/ nuisance to neighbours and client | D | 5 | Low | NSW Code of Practice: Control Of Workplace Hazardous Substances | Shade cloth installation to site perimeter fence to contain all dust within the construction site. |
| Eye injuries and respirable damage to workers | D | 4 | Low | AS/NZS 1336 Recommended practices for occupational eye protection | Water carts and hoses used to keep dust to a minimum. Plant and trucks to move at low speeds to keep dust settled. Eye protection to be worn for any task that creates large amounts of dust |
| Dust from wall chasing | NA | 4 | NA | AS/NZS 1715 Selection, use and maintenance of respiratory protective devices | Dust must be minimised whilst wall chasing by way of vTAFEum system. Workers must wear dust mask whilst wall chasing. Rooms are to be swept frequently to minimise dust |
| Concrete cutting / coring | E | 4 | Low | AS/NZS 1716 Respiratory protection devices<br>NSW Cutting & Drilling Concrete & Other Masonry Products 1996<br>Meadowbank TAFE WHS Plan | Water must be used to minimise dust. Demolition saws take preference over dry cutting with a masonry blade on an angle grinder. Rubble to cleaned up immediately. Slurry to be cleaned up immediately . HY Cutting amnd Coring permit in place. |
| **Electricity** | | | | | |
| Electrocution from faulty/ damaged electrical equipment | D | 1 | Medium | AS/NZS 3017: Electrical installations - Testing & inspection guidelines | All power tools/ leads must be visually checked daily and tested and tagged monthly. Damaged leads and power tools are not to be used on site. Lead are to be elevated off the ground to minimise risk of electrical leads being damaged. |
| Electrocution from faulty/ damaged Distribution boards | NA | 1 | NA | Meadowbank TAFE WHS Plan | HY DB Board checklist to be completed for all DB boards. All temporary distribution boards will be inspected, tested and tagged monthly. All RCD's to be padlocked and only reset by a qualified electrician. |
| Workers tripping on leads | C | 4 | Medium | AS/NZS 3199 Approval & test specification for cord extension sets | All power leads must be elevated off the ground. A maximum of 5m may be on the ground for general movements in the area whilst using the power tool. |
| Electrocution from temporary construction wiring being damaged | B | 1 | High | NSW Low Voltage Electrical Work 2002 | All temporary construction must be labelled with 'yellow temporary construction wiring tape'. All temporary construction wiring will be inspected and recorded on the site HSE inspection report weekly.<br>All temporary electrical installations to be certified as installed in line with current regulations and standards. |
| Working around energised live Substation | B | 2 | High | AS/NZS 3000: Electrical Installations | All subcontractors conducting excavation works must obtain a permit to dig from HY site staff. A plan with existing underground services must be attached to the permit to dig. |
| Workers piggy backing leads | C | 3 | Medium | AS 3012: Electrical Installations - Construction & Demolition Sites | Portable generators must be used if electrical leads cant reach from the DB board to the work area so a power source is close to the work area. |
| Disruption to the TAFE facility from shutting down power without notification could have major implications | D | 1 | Medium | AS/NZS: 3000 Electrical Installations | Notice of disruption process will be in place prior to any services shutdowns outside site perimeter |
| | | | | AS 3190: Approval & test specification - Residual current devices | |
| | | | | AS/NZS 3001 Electrical installations - Relocatable premises and their site installations | |
| | | | | NSW: Code Of Practice: Electrical Practices for Construction Work | |
| | | | | AS3760: 2010 In-service safety inspection and testing of electrical equipment | |
| | | | | NSW Code Of Practice: Electrical Practices for Construction Work 2007 | |
| **Emergency Services Unavailability** | | | | | |
| Injured person may not receive first aid treatment in a sufficient amount of time | E | 3 | Low | WHS Act 2011<br>Code of Practice: First Aid<br>HY emergency response plan | Emergency contact details are displayed on the site safety notice board in the lunch shed and in the first aid room. All HY site staff have senior first aid training. 2 type A first aid kits required in the site office. One portable and one fixed to the wall. Defibrillator required in the first aid room. The first aid facilities have been setup in accordance with Code Of Practice: First Aid taking into account the number of workers on site, response times and types of injuries which may occur on site. |
| Site Emergencies | C | 3 | Medium | WHS Regulation 2011 | HY emergency response plan details actions to be taken for different types of emergencies |
| **Erosion/ Loss of Topsoil** | | | | | |
| Sediment entering stormwater systems | E | 4 | Low | Environmental Protection Act 1994 | All stormwater pits to be covered with sediment control fabric. Sediment barrier to be erected around the low perimeter of site perimeter fencing in accordance with the site sediment control plan. Sediment control to be inspected weekly and recorded on the site HSE inspection report. All de-watering of site must be pumped into damns or tanks. The water must be flocked, tested and approved by HY prior to being pumped into the existing stormwater system. Permit to discharge required to any release into the SW system. |
| Erosion causing perimeter scaffolding to become unstable | E | 3 | Low | Meadowbank TAFE Environmental Management Plan | All perimeter scaffolding to be checked following significant rainfall and rectified by scaffolder as required. |

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| | **RISK ASSESSMENT** | | | **CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)** | |
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| **HAZARD** (Include additional project specific hazards as required) | **L** | **C** | **Class** | **Legislation, Standards & Codes of Practice** | **Enter Details of Specific Controls Required** |
| **Existing services** | | | | | |
| Damage to existing services could cause major disruption to the client eg. live power, security cables etc. | D | 3 | Medium | NSW Code Of Practice: Excavation 2004<br>Meadowbank TAFE WHS Plan | Subcontractors are available to repair services in the event they are damaged |
| PLANT OPERATORS STRIKING UNDERGROUND SERVICES WHILST UNDERTAKING TRENCHING/ EXCAVATION WORKS | C | 1 | High | Ausgrid National Standard NS 156 - Working near or around underground cables<br>Meadowbank TAFE WHS Plan | A permit to dig system is in place on this site. All known existing services have been marked up on the site plans. Pot holing and hand digging must occur when working around existing services. Striking existing underground services has been listed as a hazard on all subcontractor SWMS involving excavation works |
| Excavators digging trenches accidently striking recently installed and charged up hydrant lines throughout the site | E | 2 | Medium | Jemena Guidelines Construction Activities Near & Over Jemena Gas Networks Assets<br>Meadowbank TAFE WHS Plan | A plan has been issued to all subcontractors notifying them of existing services |
| **Explosive Powered Tools** | | | | | |
| Eye and hearing damage | E | 4 | Low | Meadowbank TAFE WHS Plan | Eye and hearing protection must be worn. Workers must be closely supervised by their supervisor |
| **Excavations** | | | | | |
| Excavation over 1.5m | C | 3 | Medium | NSW Code Of Practice: Excavation 2000 | All trenches over 1.5m must be benched at 1:1 at a maximum of 1.5m or battered at 45 degrees unless stated otherwise by a geotechnical engineers report. A ramp or steps must be cut into the trench for easy pedestrian access.Shoring boxes to be used for trenches greater than 1.5 m deep if benching is not possible |
| Large stockpiles of spoil creating blind spots for plant operators and truck drivers | E | 3 | Low | NSW Code Of Practice: Moving Plant On Construction Sites 2004 | Plant operators must neatly stockpile all spoil and limit the height of the stockpile to maintain good vision. Plant operators are to avoid stockpiling spoil next to bends on haul roads. |
| Trench collapse trapping workers | D | 2 | Medium | AS 2763 Vibration and shock - hand transmitted vibration - guidelines for measurement and assessment of human exposure | Any trenching in unstable ground is to be benched/ battered. If the excavation reaches rock or shale and benching/ battering is not practical geotechnical engineers signoff is required. A ramp must also be cut into the end of trench for emergency access/ egress. |
| Plant eg. mobile crane set up too close to a trench could result in trench collapse and plant roll over | C | 2 | Medium | Meadowbank TAFE WHS Management Plan | All plant must be set up clear of the zone of influence |
| Plant outriggers sinking into ground resulting in plant roll over. | C | 1 | High | AS 3798 Guidelines on earthworks for commercial & residential developments | Plant must only be set up on solid ground and sufficient pig sty packing/ sole plates placed underneath out riggers. Sole plates are to be used underneath EWP stabilizers if the ground is soft. Ground conditions to be constantly checked during and after rain fall. |
| Open trenches restricting access for vehicles and pedestrians around site | C | 4 | Medium | NSW Dial Before U Dig Legislation | Pedestrian / vehicle/ plant access must be kept clear at all times around site. Alternative access routes are to be set up prior to trenching across pathways and roadways. |
| Building materials/ stockpiles stored near trench could result in trench collapse | C | 3 | Medium | | Materials and equipment must not be stored within the 'zone of influence' |
| Different trades working in the same area at the same time could strike each other with mobile plant | B | 2 | High | | Daily pre-starts and SWMS detail how to work around moving plant on site including plant used by other trades eg. spotters, barricade the work area, signage etc |
| Damage to existing buildings from vibrations caused by machinery | NA | 4 | NA | | Vibration from earthworks to be monitored by HY and subcontractors |
| **Formwork** | | | | | |
| Formwork collapse | C | 1 | High | Code of Practice: Formwork | Formwork must be certified by a qualified engineer that it is structurally sound and able to safely support loads that may be applied by the concrete pour, workers, reinforcement & crane lifted loads.<br>Once engineer's inspection complete ensure any additional back propping is installed if required.<br>Place plant and materials on formwork and falsework only where allowed for by the design and when the structure or deck is sufficiently constructed so it is able to bear the load |
| Fall from heights | C | 1 | High | | Spread first section of joist on beam from intermediate work platform and only access the deck to start laying ply once the joist are down and handrail is in place.<br>Use scaffold to gain access to deck to start laying plywood<br>When you sheet up to 1.8m from end of joist lay next section of joist<br>NEVER sheet to the end of the joist even if there is a catch deck in place<br>Lay joist across bearers fixed at a spacing of 450 maximum to prevent any possibility of falls while construction of the deck.<br>Establish working areas for steelfixers & other trades. A 'formwork only' zone should be maintained behind the leading edge. This zone should be clearly demarcated by signage and a barrier.<br>Protect open penetrations with edge protection (e.g. handrails) or cover securely. Cast5in metal mesh with a small aperture (e.g. 50 x 50 mm mesh size or smaller) for small penetrations. Paint ply covers with appropriate warnings (e.g. "PENO" or similar) and fasten securely. |
| Cuts/ impalement on starter bars | B | 3 | Medium | | Safety caps to be fitted to all starter bars wherever there is a risk that a person may fall on one. |
| **Fall prevention/ arrest equipment** | | | | | |
| Failure of fall arrest equipment | C | 1 | High | HY emergency response plan<br>AS/NZS 1891: Industrial fall arrest systems and devices | All safety harnesses and lanyards must be visually checked daily. Safety harness is the last form of control and other forms of fall protection should be used such as perimeter scaffolding, EWP, handrails etc<br>Maintenance and inspection records in subcontractor safety management plans to be kept up to date<br>Roof anchor points must be certified prior to use<br>Rescue procedure for rescuing persons in fall arrest must be developed prior to persons using safety harnesses |

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| **HAZARD** (Include additional project specific hazards as required) | **L** | **C** | **Class** | **Legislation, Standards & Codes of Practice** | **Enter Details of Specific Controls Required** |
| **Fall from heights** | | | | | |
| Workers falling into open trenches | C | 3 | Medium | AS 1418.1: Cranes, hoists and winches – General Requirements | All open trenches must be bunted off at least 1m from the edge of the trench. Where there are high movements of pedestrians an plant then a solid barrier such as a temporary mesh |
| Workers falling into open penetrations (eg in-ground pits) | C | 3 | Medium | WHS Regulation 2011 Part 4.4 Falls | All penetrations to be covered with and secured and the wording "peno" or "do not remove" sprayed onto the plywood |
| Workers falling from ladders | C | 3 | Medium | NSW Code Of Practice: Managing the risk of falls at workplaces | Ladders are to used in accordance with the HY ladder policy. Ladders are the last resort for height access and other means of height access should be used eg EWP's, mobile scaffolding, platform ladders etc. Standard A frame ladders can be used but only for short duration works or tight restricted spaces such as small rooms where a scissor lift will not fit. Ladders with 4 steps or less are not permitted on site |
| Bricklayers falling from trestle scaffold | C | 1 | High | AS 4576: Guidelines for scaffolding | Bricklayers must install a handrail to the scaffold and a ladder for safe access/egress. Trestle scaffold must be set up correctly on solid ground |
| Fall from scaffold | E | 3 | Low | AS 1576: Scaffold general requirements | Modular stairs to be installed at the same time as decks are installed for safe access to each deck. Handrails must be installed from deck below prior to accessing the deck above. Ends must be closed off with trannys. Scaffolder will erect 'danger scaffold incomplete' signage until the scaffold is ready for use and a handover certificate has been issued to HY. All trades have been made aware not to alter the scaffold under any circumstance. |
| Personnel falling into open trenches or off the edges of batters and excavations | D | 3 | Medium | Meadowbank TAFE Emergency Response Plan | All open trenches and along the top edge of batters must be bunted off at least 1m from the edge of the trench. Deep trenching must be benched every 1.5m so that a person can only fall a maximum of 1.5m. |
| Fall from mobile scaffold | B | 3 | Medium | Scaffold erection guide (comes with scaffold) | All mobile scaffolding must be built as per the manufacturers instructions. Handrails and midrails must be in place. Any scaffold where a person can fall more than 4m must be erected by a licenced scaffolder. |
| Workers falling from heights | C | 2 | Medium | Meadowbank TAFE WHS Plan | Roof access permit must be obtained by the roofer prior to accessing the roof. Perimeter scaffold or handrail must be in place for fall protection. Safety mesh must be installed correctly as per Code Of Practice: Safe Work On Roofs: Part 1 |
| Falls into bored piers | B | 2 | High | AS/NZS 1892 Portable Ladders | Bored piers must be fully covered with plywood or mesh to eliminate risk of workers falling into the hole. Deep excavation signs are to be erected and the are fully bunted off. Best practice is to fill the hole with concrete as soon as possible. |
| **Falling objects** | | | | | |
| Pallets of blocks stacked too high could tip over and injure a person | A | 4 | Medium | Workcover Bricklayers guide | Pallets of blocks must be stacked on level ground no more than 2 pallets high |
| Scaffold parts could fall/ be knocked off the deck and injure workers below | NA | 2 | NA | AS 1576: Scaffold general requirements | All excess scaffold material must remain on the ground. No excess scaffold material is to be left lying on scaffold decks |
| Formwork and reo materials falling from deck onto persons below | C | 2 | Medium | | All FRP materials must be stacked neatly clear from edge of deck. If this is not possible then kick boards must be put in place |
| Building material and tools falling from scaffold decks | C | 2 | Medium | Meadowbank TAFE WHS Plan | Edge boards to be fitted to all scaffold decks. Materials stored on scaffolding is to be kept to a minimum and removed from decks daily. If possible do not store materials on scaffold at all. |
| Falling materials from EWP's | C | 2 | Medium | AS/NZS 2210 Occupational protective footwear | No worker is to walk underneath an elevated EWP. All EWP operation must have a spotter or the area must be fully barricaded off with red/white tape, bunting or flagging or signage in place |
| Loose materials and rocks from walls of trenches falling onto workers within the trench | D | 3 | Medium | AS/NZS 1800 Occupational protective helmets - Selection, care & use | N/A this month. No access to any open trenches for workers unless the walls of the trench are stable. Geotech sign off required for trenching over 1.5m |
| Materials left behind after works finish eg. loose bolts, off cuts etc | C | 2 | Medium | AS/NZS 1801 Occupational protective helmets | Work areas at heights must be checked daily and loose items brought down to ground level. |
| **Fauna (protected or endangered species)** | | | | | |
| Snakes and insects in long grass | D | 3 | Medium | Environmental Protection Act<br>Meadowbank TAFE Environmental Management Plan | Weeds and long grass alongside pedestrian pathways around the site are to be cut back with a wipper snipper |
| **Fire** | | | | | |
| Chemical and fuel spills may cause a fire | E | 1 | Medium | Meadowbank TAFE Emergency Response Plan | A;BE Powder type fire extinguishers are installed at several locations strategically placed around the site |
| Sparks from hot works eg welding, grinding may cause a fire | D | 3 | Medium | AS 2444: Portable fire extinguishers & fire blankets - selection and location<br>AS/NZS 1850 Portable fire extinguishers - Classification, rating and performance testing | All subcontractors must obtain a hot works permit from HY staff. The permit will detail any controls required for undertaking the task |
| Flammable materials stored on site may ignite from hot works in the area | D | 2 | Medium | NSW Code of Practice: Control Of Workplace Hazardous Substances | Hazardous materials must be stored in cool, dry areas away from ignition sources and flammable material signage installed. |
| Fuel drums could catch on fire from sources of ignition | B | 4 | Medium | AS 3745 Emergency control organisation and procedures for buildings, structures and workplaces | Fuel drums are to be put away when not in use in a storage cage in a well ventilated area |
| Workers could be seriously injured whilst attempting to extinguish fire | E | 1 | Medium | AS 2444 Portable fire extinguishers and blankets - Selection & location | All workers are told at site induction not to place themselves at risk and not to try and fight the fire |
| Time taken to obtain fire extinguisher in the event of an emergency | D | 1 | Medium | AS/NZS 1841 Portable fire extinguishers | Fire extinguishers are places strategically around site for easy/ fast access. Locations of fire extinguishers are on the site layout plan |
| Poor maintenance of fire extinguishers | E | 1 | Medium | AS 2375 Guide to the selection, care & use of clothing for protection against heat & fire | Fire extinguishers are to be tagged every 6 months by a competent person |
| Breach of Total Fire Ban | NA | 5 | N/A | AS 1851 Maintenance of fire protection systems & equipment | Hansen Yuncken have appiplied to the local Fire Brigade in writing for an exemption. This has been approved as per Schedule 14 (D) of the NSW Government Gazette No. 11 |

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| **First aid** | | | | | |
| Persons unaware of what to do if an individual requires first aid | E | 5 | Low | WHS Regulation 2011 | Emergency response plan posted on site notice board. All workers explained of the location of the first aid room and contact details for site first aiders. |
| Injured person not receiving first aid treatment quickly enough due to the site being so large | D | 3 | Medium | Work injury management and workers compensation act 1988 | Site staff to communicate by way of mobile phones and 2 way radios. A first aid room is set up in the HY compound area. Within the first aid room is a fixed type A kit and portable type A kit for rapid response. |
| It may not be possible to take the injured person to the first aid room because of the seriousness of their injuries | E | 4 | Low | First aid in the workplace: Code of Practice: July 2012 | Access routes to be kept clear around site for emergency vehicles |
| Inadequate first aid supply's | E | 3 | Low | Meadowbank TAFE WHS Plan | First aid room to be set up with portable and fixed first type A first aid kits, stretcher, defibrillator, ice packs, sun cream, eye wash and examination couch as per Code of Practice: First Aid . |
| Inadequately trained first aiders/ insufficient number of first aiders | E | 3 | Low | Meadowbank TAFE Emergency Response Plan | HY Site Foreman must have Apply First Aid type certification. HY Safety Officer must have Occupational First aid certificate |
| Persons working alone unable to raise the alarm | E | 3 | Low | Meadowbank TAFE Emergency Response Plan | No person is to work alone. There must be another person in the area at all times. This is told to all workers at site induction |
| Heart attack/ stroke | E | 1 | Medium | Meadowbank TAFE Emergency Response Plan | Defibrillator to be kept in first aid room |
| Number of buildings | E | 5 | Low | Meadowbank TAFE Emergency Response Plan | 5 - all easily accessible for pedestrians or vehicles |
| Maximum Number of levels on each building | E | 5 | Low | Meadowbank TAFE Emergency Response Plan | 1 - All have internal stair access |
| Time taken to walk to furthest point on site | D | 4 | Low | Meadowbank TAFE Emergency Response Plan | 6 minutes - from first aid room to furthest point on site |
| Nearest Hospital | D | 4 | Low | Meadowbank TAFE Emergency Response Plan | Blacktown Hospital |
| Nearest Medical centre | D | 4 | Low | Meadowbank TAFE Emergency Response Plan | Stanhope Gardens Medical centre |
| Maximum time to medical service | D | 4 | Low | Meadowbank TAFE Emergency Response Plan | 1min |
| Maximum number of workers | D | 4 | Low | Meadowbank TAFE Emergency Response Plan | >100 |
| Number of other persons | E | 4 | Low | Meadowbank TAFE Emergency Response Plan | Expected to have a maximum of 3-4 at any one time |
| Site hours | E | 5 | Low | Meadowbank TAFE Emergency Response Plan | 7:00am - 5:00pm Monday - Friday 8:00am - 4:00pm Saturday. No Works on Sundays or Public Holidays. A first aid qualified person from Hansen Yuncken is on site at all times |
| Average hours worked by a worker | E | 5 | Low | Meadowbank TAFE Emergency Response Plan | Workers generally work 8-9 hours per day |
| Remote or isolated works | E | 4 | Low | Meadowbank TAFE Emergency Response Plan | Workers are not permitted to work alone. There must be atleast 2 workers in the same area at all times. Due to the nature of the site it is unlikely any worker will be isolated or work alone |
| Types of injuries over the last 12 months | E | 4 | Low | Meadowbank TAFE Emergency Response Plan | Majority of types of injuries include: cuts and abrasions, minor eye injuries, insect bites, sprains and strains, back injuries and dislocations |
| Incidents not resulting in injury | E | 5 | Low | Meadowbank TAFE Emergency Response Plan | Incidents have occurred where excavator operators have struck existing live underground electrical cables - defibrillator will be required in the event persons are electrocuted |
| Other | E | 3 | Low | Meadowbank TAFE Emergency Response Plan | Occasionally workers have fallen ill (not work related) however these people are sent to a Doctor for further treatment |
| Cuts and abrasions | C | 4 | Medium | Meadowbank TAFE Emergency Response Plan | Type A first aid kit has contents for treating these types of injuries |
| Sprains and strains | D | 4 | Low | Meadowbank TAFE Emergency Response Plan | Ice packs and instant cold packs to be available |
| Eye injuries | D | 3 | Medium | Meadowbank TAFE Emergency Response Plan | Eye wash station to be set up in first aid room |
| Burns | E | 4 | Low | Meadowbank TAFE Emergency Response Plan | Burn cream and non adherent wound dressings |
| Fractures | D | 4 | Low | Meadowbank TAFE Emergency Response Plan | Type A first kit and a stretcher for moving injured workers |
| Dislocations | D | 4 | Low | Meadowbank TAFE Emergency Response Plan | Type A first aid kit has triangle slings |
| Poisoning and toxic effect of substances | E | 5 | Low | Meadowbank TAFE Emergency Response Plan | Safety data sheets available for all substances used. Oxy viva system to be kept in first aid room |
| Heat stroke | D | 4 | Low | Meadowbank TAFE Emergency Response Plan | Ice packs and cold water on standby. Subcontractors have been addressed at side induction to take breaks, work in shade wherever possible., job rotation etc |

HANSENYUNCKEN

# PROJECT HSE RISK ASSESSMENT

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| **RELEVANT PROCEDURE:** | Project HSE Risk Assessment |
| **PROJECT:** | Meadowbank TAFE - Multi-Trades and Digital Design Hub |
| **JOB NO:** | SC130 |
| **ASSESSED BY:** | Mustafa Aktas |
| **ASSESSMENT DATE:** | 19 - 06 - 2020 (FOR INFORMATION ONLY) - PLEASE REFER ALSO TO HY RISK IDENTIFIER ON HY-WAY |

| RISK ASSESSMENT TABLE | | Consequence | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| Likelihood | | Significant | Major | Moderate | Minor | Insignificant |
| A | Very Likely | High | High | High | Medium | Medium |
| B | Likely | High | High | Medium | Medium | Medium |
| C | Possible | High | Medium | Medium | Medium | Low |
| D | Remotely Possible | Medium | Medium | Medium | Low | Low |
| E | Very Unlikely | Medium | Medium | Low | Low | Low |
| NA | Not applicable | NA | NA | NA | NA | NA |

| | RISK ASSESSMENT | | | CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks) | |
|---|---|---|---|---|---|
| **HAZARD** (Include additional project specific hazards as required) | **L** | **C** | **Class** | **Legislation, Standards & Codes of Practice** | **Enter Details of Specific Controls Required** |
| **Ground Collapse/poor ground** | | | | | |
| Plant roll over from sinking in unstable ground conditions | C | 3 | Medium | Meadowbank TAFE WHS Plan | Subcontractors to complete a plant risk assessment prior to operating plant. Plant will not be operated in unstable ground conditions. If the ground is too soft or uneven then the ground will be bladed back to solid ground prior to plant operating on it. All subcontractors must obtain a HY plant setup permit prior to operating plant with outriggers. Concrete boom pumps and mobile cranes must obtain a geotechnical engineers report stating the ground is stable and able to take the weight of the crane and load being lifted. Site to be inspected by the Site Manager and HSR following heavy rain prior to work commencing the next day |
| Vehicles/ plant could become bogged in soft muddy ground | D | 4 | Low | National Standard For Plant: 10:10 (1994) | Temporary roadways have been rolled and compacted to keep ground stable, No plant to work on unstable ground accessed in wet weather prestart to be conducted after each inclement weather event |
| Pedestrian slip and trip hazards from muddy/ uneven ground | E | 3 | Low | Meadowbank TAFE WHS Plan | Crusher dust has been spread over pedestrian pathways to minimise slip and trip hazards. Plant is to be used to blade back ruts and muddy ground to minimise slip and trip hazards for workers in the area particularly on rain days |
| Trucks and vehicles tracking mud and dirt onto road from muddy tyres | E | 3 | Low | Meadowbank TAFE WHS Plan<br>Meadowbank TAFE Environmental Management Plan | Shaker grid installed at site entrance. High pressure water blaster to be used to wash tyres if required |
| Pedestrians/ workers tripping over in deep wheel ruts left by plant movements | E | 3 | Low | Meadowbank TAFE WHS Plan | Wheel ruts are to be bladed/ levelled out to minimise trip hazards around site |
| **Hazardous Chemicals** | | | | | |
| Spillage of fuels and chemicals | C | 3 | Medium | AS 1940: The storage and handling of flammable and combustible liquids<br>Meadowbank TAFE Environmental Management Plan | A spill kit is kept in the site office. Any drums of fuel larger than 20 litres must be bunded. All trades are to set up a hazardous substance storage are next to their site containers with signage erected 'no smoking', 'Danger Fuel Storage area' etc |
| Unsafe storage of oxy acetylene equipment | C | 3 | Medium | AS 4332 The storage and handling of gases in cylinders<br>Meadowbank TAFE Environmental Management Plan | Oxygen and acetylene bottles are to be stored in separate ventilated cages 3m apart at the end of each day and appropriate warning signage erected. |
| Mix matched storage of hazardous substances could cause a chemical reaction | C | 3 | Medium | NWHSC 2017 - 2001 Storage & Handling of Dangerous Goods | Only substances of the same class can be stored together as per the Safety Data sheet for the products |
| | | | | AS 3780: The storage & handling of corrosive substances | |
| | | | | NWHSC 2011: Preparation of Material Safety Data Sheets | |
| | | | | Meadowbank TAFE WHS Plan | |
| | | | | NSW Code of Practice: Control Of Workplace Hazardous Substances | |
| | | | | NWHSC 1015 - 2001 Storage & Handling of Dangerous Goods | |
| | | | | NWHSC 2011 - 2003 Preparation of Material Safety Data Sheets | |
| | | | | NWHSC 2007 - 1994 Control of Workplace Hazardous Substances | |
| | | | | NWHSC 2012 - 1994 Labelling of Workplace Hazardous Substances | |
| | | | | NWHSC 2014 - 1995 Carcinogenic Substances | |
| **Heat stress** | | | | | |
| Sun burn | D | 4 | Low | NSW Code Of Practice Work in hot or cold environments 2001 | Sun cream is available in the site office. Singlets are banned. Workers are encouraged at the site induction to wear long sleeve pants and shirts. |
| Hot temperatures may cause persons to become dehydrated resulting in illness, headaches, fainting etc | E | 4 | Low | NSW Hot & Cold Environments 2001 | Air conditioned lunch sheds. Subcontractors to work in shaded area wherever possible. |
| | | | | NSW Code Of Practice: Managing the work Environment and Facilities | |
| | | | | Meadowbank TAFE WHS Plan | |
| **Heavy lifting (over normal crane operation)** | | | | | |

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| **ASSESSMENT DATE:** | 19 - 06 - 2020 (FOR INFORMATION ONLY) - PLEASE REFER ALSO TO HY RISK IDENTIFIER ON HY-WAY |

| **RISK ASSESSMENT TABLE** | | **Consequence** | | | | |
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| | **RISK ASSESSMENT** | | | **CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)** | |
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| **HAZARD** (Include additional project specific hazards as required) | **L** | **C** | **Class** | **Legislation, Standards & Codes of Practice** | **Enter Details of Specific Controls Required** |
| Manual handling injuries | E | 4 | Low | WHS Regulation 2011 Part 4.2 Hazardous Manual Tasks | Team lifts for heavy items. Subcontractors SWMS must list manual handling as a hazard and controls put in place. Mechanical lifts wherever possible |
| Back injuries | E | 3 | Low | Meadowbank TAFE WHS Plan | Bend knees, keep a straight back, don't twist |
| Block and tackle use | NA | 4 | NA | NCOP for Manual Tasks 2007<br>National Standard for Manual Tasks - 2007<br>NCOP for the Prevention of Musculoskeletal Disorders Caused From Performing Manual Tasks | Use of block, tackle and slings is to be used in accordance with SWMS. Slings are to wrapped around a solid structure only. Slings to be wrapped by dogman and riggers only |
| | | | | NSW Manual Handling Resource 2004 | |
| | | | | Code of Practice: Hazardous Manual Tasks | |
| **Hot Works** | | | | | |
| Sparks from welding, grinding or using oxy acetylene may cause a fire if flammable materials are in the area | C | 4 | Medium | AS 1674: Safety in welding and allied processes | A hot works permit must be obtained by the subcontractor.. All sources of ignition to be removed from the area prior to hot works occurring |
| Fire and injury to others from persons using angle grinders | A | 4 | Medium | Meadowbank TAFE hot works permit | Conduct all grinding away from flammable materials and other workers I the area. Be ware of direction of flying sparks |
| Welders flash to other trades | B | 4 | Medium | Meadowbank TAFE WHS Plan | Welding screens and warning signage must be erected to protect other trades from welders flash if others are within a 10m radius of the work area |
| | | | | Code Of Practice: Welding Processes | |
| **Hygiene (poor)** | | | | | |
| Unhygienic facilities could result in workers becoming ill and contracting diseases | D | 4 | Low | NSW Code Of Practice: Managing the work environment and facilities | A cleaner has been engaged by Hansen Yuncken to clean amenities on a daily basis. All amenities to be kept clean and rubbish bins emptied daily |
| Trades not putting rubbish and off cuts in bins provided creating trip hazards | D | 4 | Low | NSW Code Of Practice: Amenities for construction work 1997 | Improvement notices to be issued to subcontractors who do not keep the site neat and tidy |
| Inadequate facilities for general site rubbish | D | 4 | Low | Meadowbank TAFE WHS Plan | Skip bins to be placed on site at various locations and changed over regularly |
| **Lifting Over Public/outside site** | | | | | |
| Injury to pedestrians/ public | NA | 4 | NA | AS 1742.3-2009: Manual of uniform traffic control devices - Traffic control for works on roads<br>Meadowbank TAFE WHS Plan<br>Meadowbank TAFE Trafficl Management Plan<br>Road Management Act 2004 | No lifting of building materials outside of the construction fence unless traffic control and diversions are in place and the subcontractor has seeked approval from the HY Site Manager |
| **Manual Handling** | | | | | |
| Back injuries/sprains and strains | C | 3 | Medium | HY Glove and clip policy | Team lifts for heavy items. Mechanical aids eg. telehandler to be used wherever possible. Building material to be dropped off as close to the work area as possible to minimise carrying distance. |
| Cuts to hands | C | 4 | Medium | WHS Regulation 2011 Part 4.2 Hazardous Manual Tasks | Gloves to be worn for manual handling tasks as per Hansen Yuncken glove & clip policy |
| | | | | NSW Code Of Practice: Hazardous Manual Tasks | |
| | | | | AS/NZS 2161 Occupational protective gloves | |
| | | | | Meadowbank TAFE WHS Plan | |

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| | RISK ASSESSMENT | | | CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks) | |
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| **HAZARD** (Include additional project specific hazards as required) | **L** | **C** | **Class** | **Legislation, Standards & Codes of Practice** | **Enter Details of Specific Controls Required** |
| **Mobile Plant** | | | | | |
| Mobile plant could strike a pedestrian worker on site | C | 1 | High | NWHSC 1010: National Standard for Plant | All trades are warned of moving plant at the site induction. High vis vests are to be worn at all times. All workers on site must keep well clear of plant on site and gain the operators attention prior to approaching any plant. Only workers involved with the task are to be with in the work areas of plant. People working within the work area of plant must be visible to the operator at all times. |
| Mobile plant could crash into a structure or open trench | D | 3 | Medium | Meadowbank TAFE WHS Plan | Trained, experienced, qualified workers to operate plant only. Plant operator competency statement to be issued to HY for any plant which does not require a legislated ticket. |
| Pedestrians/ workers being struck by mobile plant | C | 1 | High | AS 2294 Earth moving machinery - Protective Structures<br>AS 4602 High Visibility Safety Garments | A combination of controls must be put into place and detailed in sub contractors SWMS eg. barricade the area, erect signage, use a spotter etc. Bunted off pedestrian pathways have been erected on site to keep pedestrians clear of areas where there are high movements of vehicles/ trucks and plant. All subcontractors using moving plant must have a SWMS which details how to protect other workers in the area from being struck by the plant. All plant must have a flashing light, horn and reversing beeper. Vehicles/ trucks must turn their flashing lights on. There is a 10km/h speed limit on site. All workers have been told at the site induction to be aware of moving plant on site and keep clear whenever possible. Only workers who are involved with the task are to be in the vicinity of the plant. HY have instructed all subcontractors to train their workers through pre-start meetings on how to approach moving plant and equipment. Access routes for plant and vehicles are to be maintained. Pedestrians are to walk along the side of access routes whenever possible. Plant operators are to keep reversing to a minimum. Pedestrians that need to approach moving plant are to do so from the front of the machine and are to gain the operators attention by making verbal conatct and eye contact with the operator. No person is to approach the machine until the operator has stopped moving the machine and signalled that it is safe to approach. Spotters working with machines must always stand in an area where they are visible to the operator. |
| Plant roll over on unstable ground | E | 3 | Low | Model Code of Practice - Managing the Risks of Plant in the Workplace | Plant operator and HY site staff must assess conditions and determine if the ground is stable for plant. If the plant has out riggers then they must be fully extended. Subcontractors must obtain a 'plant setup permit' from Hansen Yuncken prior to setting up any plant with outriggers eg. concrete boom pumps, cranes, frannas etc |
| Possibility of scissor lift being driven off edge of concrete slab resulting in scissor lift tipping over | NA | 2 | NA | Model Code of Practice - Managing the Risks of Plant in the Workplace | A timber bump stop must be installed to the edge of the slab whenever EWP's are used close to the edge of a slab |
| Crushing Injury from scissor or boom lift | C | 1 | High | Model Code of Practice - Managing the Risks of Plant in the Workplace | Provide onsite training, Instruction and supervision<br>Pre starts and Toolbox talks to be done as consultation with person's affected by the controls outlined.<br>Only person's with EWP ticket to operate Scissor Lift<br>No Person to work isolated or alone on an EWP<br>2 person team as a minimum , whilst using a EWP, 1 person to spot and also assist with task<br>All Personnel to be trained by a qualified person from the hire company on the specific EWP, as not all EWP's are the same.<br>Prior to use, completion of a logbook check is to be done<br>All faults are to be immediately reported to supervisor and machine is to be tagged out<br>Personnel using EWP must be aware of the emergency response protocol of that specific EWP<br>Person operating scissor lift must be able to communicate clearly to spotter/work partner(team) |
| | | | | | |
| **Needle stick Injury** | | | | | |
| Injured person could contract a disease | E | 2 | Medium | NSW Code Of Practice: HIV and other blood-born pathogens in the workplace | Workers injured by needle stick to be sent to the nearest medical centre |
| Workers unaware of what to if a needle is found | E | 4 | Low | Meadowbank TAFE WHS Plan | Workers to be told at site induction that if they find a needle on site they are not to touch it and report it to HY staff immediately |
| Inadequate disposal facilities for needles found on site | E | 4 | Low | NSW: Code Of Practice: Work Place Amenities | Sharps clean up kit to be kept in site office at all times |
| **Noise** | | | | | |
| Hearing damage from general construction noise eg. power tool usage, jack hammering etc. | B | 3 | Medium | AS/ANZ 1269: Occupational Noise Management | Hearing protection to be worn when using power tools or loud equipment. Signage to be erected to warn other trades of excessive noise. A noise monitor is available in the site office. The noise monitor is available for use on site safety walks |
| Disruption to client and neighbours | D | 5 | Low | NWHSC 1007 - 2000 National Standard for Occupational Noise<br>NWHSC 2009 - 2004 Noise Mgt & Protection of Hearing at Work | Notice of disruption to be issued to client if required. Work to be conducted within approved hours of DA contract only |
| | | | | AS/NZS 1269 Occupational noise management<br>AS/NZS 1270 Acoustics - hearing protectors<br>AS 2436 Guide to noise control on construction, maintenance & demolition sites | |
| | | | | NSW Noise Management & Protection of Hearing at Work 1996 | |
| | | | | AS 2436: Guide to noise control on construction, maintenance & demolition sites | |
| | | | | AS 2012: Acoustics – Measurement of Airborne Noise Emitted by Earthmoving Machinery & Agricultural Tractors | |
| | | | | Meadowbank TAFE WHS Plan | |
| | | | | AS/NZS 1270: Acoustics - hearing protectors | |
| **Overhead Power lines** | | | | | |
| Power lines over main entry to site | C | 4 | Medium | Meadowbank TAFE WHS Plan | All plant and workers must keep clear of overhead power lines as per Code Of Practice: Work near overhead power lines |
| | | | | NSW Code of Practice: Work near overhead power lines 2006 | |

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| **HAZARD** (Include additional project specific hazards as required) | **L** | **C** | **Class** | **Legislation, Standards & Codes of Practice** | **Enter Details of Specific Controls Required** |
| **Plant & Equipment** | | | | | |
| Plant failure may cause serious injury to workers | D | 3 | Medium | NWHSC 1010: National Standard for Plant | HY plant verification reports to be completed for all plant. Maintenance records to be submitted to HY as evidence machine is safe for operation. Plant risk assessments to be conducted for all high risk work. Plant operators must conduct pre-start safety inspections of their machine daily and report faults to their supervisors |
| Poorly maintained ladders and scaffolding failing/ collapsing | D | 3 | Medium | AS/NZS 1892: Portable Ladders | No timber ladder on HY sites. Ladders must be in good condition. Electricians must use fibre glass ladders. All workers are aware of the HY ladder policy posted on the wall in the lunch shed. Extension ladders must be tied off at the top landing. Scaffolding to be visually checked daily and full inspection monthly or after adverse weather |
| Use of damaged ladders | D | 3 | Medium | AS 4576: Guidelines for scaffolding | Ladders to be checked for damage weekly on the site safety walk |
| Lifting gear failure | D | 1 | Medium | AS/NZS 4994: Temporary edge protection | All lifting gear: soft slings, lifting chains must be visually checked daily prior to use for damage. Damaged lifting gear is to be withdrawn from service. |
| Scaffold collapse/ fall from scaffold | NA | 1 | NA | AS/NZS 1891.1 2007 Industrial fall arrest systems - harnesses and ancillary equipment | Scaffold handover certificate to be issued to HY prior to anyone accessing the scaffold. Scaffold to be inspected minimum monthly and after heavy rain. Scaffold will also be inspected on weekly safety walks. Mobile scaffolds to be built as per manufacturers instructions. Scaffold where a person can fall more than 4m must be erected by a licenced scaffolder. No person is to alter the scaffold what so ever. Any issues with scaffold is to be reported to the Site Manager immediately. |
| Multiple mobile plant interaction/ contact | D | 1 | Medium | Meadowbank TAFE WHS Plan | Plant operators must communicate by way of 2 way radios, eye contact and spotters |
| Vehicle and plant exhaust fumes | D | 4 | Low | HY ladder policy | Use of electric scissor lifts onside buildings only. All other diesel powered machines are used in open well ventilated areas |
| **Post Tensioning** | | | | | |
| Accidental drilling or cutting into PT cable | NA | 2 | NA | | N/A this month. All subcontractors to0 obtain permit to cut concrete/ core. This permit will detail location of PT cables if applicable |
| **Plant & Equipment Washout** | | | | | |
| Water from cleaning plant and equipment creating a muddy/ slippery surface | D | 4 | Low | Environmental Protection Act 1994 | Washout area to be determined on a daily basis as the site changes. The wash out area must not allow water to flow over pedestrian foot paths |
| Muddy and contaminated water entering stormwater system | D | 4 | Low | HY environmental management plan | Sediment control to be placed around the washout area |
| **Pressurised Gas Mains** | | | | | |
| Excavator buckets striking UNDERGROUND GAS LINES | D | 1 | Medium | NSW Code Of Practice: Excavation Work 2000 | A permit to dig system is in place on this site. All known existing services have been marked up on the site plans. Pot holing must occur when working around existing services. Only toothless buckets are to be used when digging in the vicinity of gas lines. Striking existing underground services has been listed as a hazard on all subcontractor SWMS involving excavation works |
| | | | | Meadowbank TAFE WHS Plan | |
| | | | | Jemena guidelines construction activities near and over Jemena has network assets | |
| **Scaffold** | | | | | |
| Fall from heights over 2m | NA | 1 | NA | WHS Regulation 2011: Part 3.1 Managing risks to health and safety | |
| Fall from heights whilst forming up and pouring concrete | NA | 3 | NA | AS4576: Guidelines for scaffolding | |
| Insufficient safe means of access onto Ground Floor Slab from Basement Slab level | NA | 5 | NA | AS1576: Scaffold general requirements | |
| Insufficient egress from building in the event of an emergency | NA | 5 | NA | Meadowbank TAFE WHS Plan | |
| Inadequate development of scaffold plan | NA | 5 | NA | | |
| Possible scaffold overload resulting in scaffold collapse - materials and workers | NA | 4 | NA | | |
| Scaffold sinking into soft ground compromising structural integrity | NA | 3 | NA | | |
| **Sediment and erosion control** | | | | | |
| Mud, dirt and sediment polluting stormwater systems | C | 4 | Medium | Environmental Protection Act 1994 | HY Sediment Erosion Control plan Rev. 3 |
| Mud, dirt and sediment polluting stormwater systems | C | 4 | Medium | Meadowbank TAFE Environmental Management Plan | Silt barriers to be installed around low areas of site to catch all rain fall. All stormwater pits to be covered in silt control. All vehicles tyres must be washed clean of mud prior to leaving site. Silt socks to be placed in front of stormwater drains in gutters. Inspections to be carried out weekly by HY using the Site HSE inspection report |

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| **HAZARD** (Include additional project specific hazards as required) | **L** | **C** | **Class** | **Legislation, Standards & Codes of Practice** | **Enter Details of Specific Controls Required** |
| **Site Lighting** | | | | | |
| Sun glare restricting plant operators visibility | C | 4 | Medium | WHS Regulation 2011 | Sunglasses to be worn by plant operators as required. Certain tasks may also be conducted at different times of the day to stop the sun becoming an issue. |
| Lighting (Poor) | D | 4 | Low | NSW Code Of Practice: Managing the work Environment and Facilities | Ensure that task area has adequate natural light and if natural light is not adequate provide artificial lighting |
| **Slips/Trips** | | | | | |
| Workers slipping or tripping on rough/ uneven/ muddy/ slippery ground | C | 3 | Medium | AS/NZS 2210 Occupational protective footwear<br>Meadowbank TAFE WHS Plan | Pedestrian pathways to be kept clear of rubbish and material. Safe access around site to be maintained at all times. Gravel/ crusher dust to be placed on slippery/ muddy surfaces. Blading back of ruts and muddy ground conditions to be conducted as required. Bunted off pedestrian pathways are installed around main access routes throughout site for safe pedestrian access, this way people can use the pathway then branch out to their specific work area with minimal risk of slipping over in muddy conditions |
| **Structural Support** | | | | | |
| Masonry walls collapsing in high winds | D | 1 | Medium | National Code of Practice for Precast, Tilt Up and Concrete Elements in Building Construction 2008 | Masonry walls must be adequately braced with timbers every 2m until core filled |
| Formwork collapse | D | 1 | Medium | AS 3850:Tilt Up Concrete Construction | Engineers sign off required to pouring of any concrete |
| Precast concrete panel collapse if structural steel is inadequately braced | NA | 1 | NA | NSW Code of Practice: Formwork 1998 | Structural steel must be signed off by engineer prior to installation of precast concrete panels |
| Structural steel collapse | D | 1 | Medium | AS 4991: Lifting devices | Structural steel must be erected by qualified dogmen and riggers. Subcontractor must submit ITP's to Hansen Yuncken. Hansen Yuncken to complete QC Compliance audit report: Structural Steel checklist |
| **Synthetic fibres** | | | | | |
| Unsafe handling of roof insulation | D | 4 | Low | NSW Code of Practice: Safe use of synthetic mineral fibres | Install roof insulation as per Safety Data Sheet and SWMS |
| **Temperature Extremes** | | | | | |
| Dehydration | E | 3 | Low | | Workers are encouraged to drink plenty of water. Water bubbler available at site lunch sheds |
| Sunburn | C | 3 | Medium | | Workers must wear are shirt on site. Singlets are not allowed. Sun cream is available to everyone and is kept in the site office |
| Heat stress | E | 3 | Low | | Workers are encouraged to work in the shade wherever possible and take regular breaks whenever required. |
| **Tilt –up or Precast Concrete Work** | | | | | |
| Structural steel support collapse | NA | 1 | NA | AS 3850:Tilt Up Concrete Construction | HY precast panel installation checklist must be completed and all relevant documentation submitted, reviewed and approved by HY prior to installation of precast panels |
| Injury to other workers/ trades | NA | 1 | NA | AS 4991: Lifting devices | Precast panel installation must be closely monitored by HY Management and conducted in accordance with SWMS . The work area around the crane must be clearly closed off to other trades with bunting, flagging or red/white tape. Spotters must be used to |
| Plant failure | NA | 1 | NA | National Code of Practice for Precast, Tilt Up and Concrete Elements in Building Construction 2008 | All maintenance records and plant safety verification reports must maintained and kept up to date |
| Failure of lifting points on precast panels | NA | 1 | NA | AS 2550: Cranes, hoists & winches - Safe Use | Subcontractor ITP's must be submitted and reviewed by HY prior to erection of precast panels , engineered lifting points used to install precast. Lifting gear register in place |
| Concrete may not have cured to specified strength | NA | 2 | NA | | HY precast panel installation checklist must be completed and all relevant documentation submitted, reviewed and approved by HY prior to installation of precast panels |
| Crane roll over on unstable ground | NA | 1 | NA | AS 1418.1: Cranes, hoists and winches – General Requirements | Plant setup permit must be obtained by subcontractor prior to standing crane |
| Exceed SWL of crane | NA | 2 | NA | AS 2321: Short link chain for lifting purposes | Work to SWL chart for crane at all times |
| Lifting gear failure | NA | 3 | NA | National Code of Practice for Precast, Tilt Up and Concrete Elements in Building Construction 2008 | Riggers must inspect all lifting gear prior to use. Damaged lifting equipment must not be used. Lifting gear registers and certificates must be issued to HY prior to use. |
| Poor communication between crane operator and dogmen | NA | 3 | NA | | Dogman and crane operator to constantly communicate with each other. Crane operator to take directions from dogman only. |

HANSENYUNCKEN

# PROJECT HSE RISK ASSESSMENT

This Project HSE Risk Assessment is to be used as aguide when completing the monthly Project High Risk Identification assessment on HYWAY Site Management Dashboard in accordance with the Project HSE Risk Assessment procedure and should be conducted at the time of Construction programme statusing to assess hazards and risks for next month. Hazards with residual risk from the Design WHS Risk Assessment (if applicable) are also to be considered.

| | |
|---|---|
| **RELEVANT PROCEDURE:** | Project HSE Risk Assessment |
| **PROJECT:** | Meadowbank TAFE - Multi-Trades and Digital Design Hub |
| **JOB NO:** | SC130 |
| **ASSESSED BY:** | Mustafa Aktas |
| **ASSESSMENT DATE:** | 19 - 06 - 2020 (FOR INFORMATION ONLY) - PLEASE REFER ALSO TO HY RISK IDENTIFIER ON HY-WAY |

**RISK ASSESSMENT TABLE**

| | | Consequence | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| | **Likelihood** | Significant | Major | Moderate | Minor | Insignificant |
| A | Very Likely | High | High | High | Medium | Medium |
| B | Likely | High | High | Medium | Medium | Medium |
| C | Possible | High | Medium | Medium | Medium | Low |
| D | Remotely Possible | Medium | Medium | Medium | Low | Low |
| E | Very Unlikely | Medium | Medium | Low | Low | Low |
| NA | Not applicable | NA | NA | NA | NA | NA |

| | RISK ASSESSMENT | | | CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks) | |
|---|---|---|---|---|---|
| **HAZARD** (Include additional project specific hazards as required) | **L** | **C** | **Class** | **Legislation, Standards & Codes of Practice** | **Enter Details of Specific Controls Required** |
| **Traffic Management** | | | | | |
| Vehicles/ trucks speeding on site | B | 3 | Medium | AS 1742.3-2009: Manual of uniform traffic control devices - Traffic control for works on roads | 10km/h speed limits signs are erected around site. Drivers must give way to pedestrians. Delivery driver inductions for all drivers entering site. Hazard or flashing lights must be turned on |
| Vehicles parking and blocking access roads | B | 4 | Medium | | Vehicles to be used for loading/unloading purposes only and are to be parked off site if not required for work purposes |
| Blind spots creating collisions between vehicles | E | 3 | Low | | Warning signs to be erected at blind spots |
| Vehicle congestion on Birmingham Ave | A | 4 | Medium | | Traffic control is in place at Birmingham Ave. A traffic controller is in place full time at the entry to site to coordinate all delivery drivers, trucks and vehicles coming onto site. |
| Pedestrians entering site being struck by trucks and vehicles | C | 2 | Medium | | A fenced off pathway with signage has been installed along the driveway from the street to the site office to keep all pedestrians off the road used by plant and trucks. Pedestrians and vehicles have been seperated theough entry/ exit by way of concrete jersy kerbs |
| **Tree lopping** | | | | | |
| Tree lopping | B | 4 | Medium | | Area to be delimeated and HRCW for falling from heights and Plant and Equipment |
| **Vehicle & plant exhaust fumes** | | | | | |
| Workers overcome by exhaust fumes from plant | E | 1 | Medium | NSW Code of Practice: Control Of Workplace Hazardous Substances | Plant to be operated in open areas with good ventilation only. Electric scissor lifts to be used inside buildings only. No petrol/ diesel powered equipment used inside buildings |
| **Ventilation (poor)** | | | | | |
| Workers overcome by fumes when using chemicals | E | 1 | Medium | NSW Code of Practice: Control Of Workplace Hazardous Substances<br>AS/NZS 1715 Selection, use and maintenance of respiratory protective devices<br>AS/NZS 1716 Respiratory protective devices | MSDS to be read and understood by all workers prior to work commencing |
| **Violence** | | | | | |
| Workers arguing and fighting | D | 4 | Low | Violence in the workplace guide 2002 | Zero tolerance for fighting on site - instant dismissal |
| Prisioners/Detainees inciting workers or vice versa | D | 3 | Medium | NSW Workplace Bullying 2008 | All workers are instructed not to talk to the Prisioners at the site induction |
| **Waste Management/ Littering** | | | | | |
| Inadequate bins on site to dispose of rubbish | E | 3 | Low | WHS Act/ Regulation 2011 | Skip bins to be placed at various locations around site which are easy to access. Bins for food scraps are to be placed at the front of all lunch sheds |
| Bins attracting rodents | D | 4 | Low | | Food scrap bins to be bagged and changed regularly |
| Having to walk long distances to dispose of rubbish | D | 4 | Low | | Numerous skip bins to be on site close to all work areas |
| Workers littering the site with rubbish and off cuts instead of disposing of rubbish in bins provided | D | 4 | Low | | Suspension/ improvement notices to be issued to subcontractors who leave the site untidy |
| **Water Contaminants** | | | | | |
| Clean water around site becoming contaminated with mud | E | 4 | Low | | Clean rain water is diverted around site by way of swales and sediment control |
| **Working at Height above 2m** | | | | | |
| Workers dropping tools and material onto persons below | C | 1 | High | NSW Code of practice: Safe work on roofs part 1 | "Danger workers above" signage to be erected. If there are other trades in the immediate area then red/white tape will be erected to create an exclusion zone. |
| Scaffolders falling from heights during erection process | C | 1 | High | WHS Regulation 2011 Part 4.4 Falls | Install handrail, mid-rails and toe-boards where scaffolders are working from deck below while building using the approved control methods such as the 1m rule or Advanced guardrail systems |
| Perimeter scaffold collapse | C | 1 | High | AS 4576: 1995 Guidelines for scaffolding | Check and confirm the suitability of the subgrade prior to basing out the scaffolding<br>Confirm areas where trenches have been laid<br>Visually check ground for stability, use sole boards where required or get others to compact areas<br>Do not allow scaffold to exceed 4.0 m in height without being tied to the structure and braced or stabilised to an approved design<br>Do not allow standards to be erected and left unsupported<br>Each standard will be braced in a minimum of two directions. A brace is defined as a ledger or transom<br>Scaffolds from which a person can fall more than 4 metres must be constructed and certified by a licensed scaffolder.<br>Secure materials at height & isolate area below where there is risk of falling objects causing injury to persons below.<br>No scaffold alterations are to be undertaken except by licensed scaffolder.<br>Close off access to incomplete scaffolds, for example, install tube barricades and warning signs "Scaffold Incomplete"<br>Ensure all scaffold is checked and secure before issuing handover docket and attaching Scafftag. |
| Workers falling from roof | A | 1 | High | HY HSE procedure 9.46 Working at height | Roof access permit must be obtained by the workers prior to accessing the roof. Perimeter scaffold or handrail must be in place for fall protection. Safety mesh must be installed correctly as per Code Of Practice: Safe Work On Roofs: Part 1 |
| Mobile scaffold collapse | B | 1 | High | NSW Code of Practice: Managing the risk of falls at workplaces | |
| Workers falling from perimeter scaffold | C | 1 | High | AS 1577 Scaffold Planks | Perimeter scaffolds to be inspected weekly using the site HSE inspection report. All workers are advised at site induction strictly not to alter any scaffolding |
| Fall from ladder | C | 3 | Medium | AS/NZS 4488 Industrial rope access systems - Selection, use & maintenance | Ladders must be used in accordance with HY ladder policy. An Aconex has been issued on ladder use to all subcontractors. EWP's, mobile scaffold and platform ladders take first preference over standard A frame ladders. |
| Fall from EWP/ boom lift | B | 1 | High | AS/NZS 1891 Industrial fall arrest systems & devices<br><br>AS/NZS 4994 Temporary edge protection | WP ticket required to operate boom lift >11m . EWPAA yellow car required for EWP <11m. Ground conditions to be checked prior to operation. Harnesses and lanyards must be maintained and kept in good condition |
| Fall from scissor lift | B | 1 | High | NWHSC - Prevention of Falls in General Construction 2008 | Timber or angle to be installed to the edge of concrete slabs to stop scissor lifts accidently being driven off edge of slab. Scissor lift operators must have a EWPAA yellow card or WP type ticket. Stabilizers and sole plates must be used for rough terrain scissors used on soft ground |

HANSENYUNCKEN

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| **PROJECT:** | Meadowbank TAFE - Multi-Trades and Digital Design Hub |
| **JOB NO:** | SC130 |
| **ASSESSED BY:** | Mustafa Aktas |
| **ASSESSMENT DATE:** | 19 - 06 - 2020 (FOR INFORMATION ONLY) - PLEASE REFER ALSO TO HY RISK IDENTIFIER ON HY-WAY |

| **RISK ASSESSMENT TABLE** | | **Consequence** | | | | |
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| | | 1 | 2 | 3 | 4 | 5 |
| **Likelihood** | | Significant | Major | Moderate | Minor | Insignificant |
| A | Very Likely | **High** | **High** | **High** | **Medium** | **Medium** |
| B | Likely | **High** | **High** | **Medium** | **Medium** | **Medium** |
| C | Possible | **High** | **Medium** | **Medium** | **Medium** | Low |
| D | Remotely Possible | **Medium** | **Medium** | **Medium** | Low | Low |
| E | Very Unlikely | **Medium** | **Medium** | Low | Low | Low |
| NA | Not applicable | NA | NA | NA | NA | NA |

| | **RISK ASSESSMENT** | | | **CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)** | |
|---|---|---|---|---|---|
| **HAZARD** (Include additional project specific hazards as required) | **L** | **C** | **Class** | **Legislation, Standards & Codes of Practice** | **Enter Details of Specific Controls Required** |
| Inadequately installed roof perimeter handrail | B | 1 | **High** | NSW Identification Tool for Aluminium Mobile Scaffolds 2008 | Installation certificate must be issued to HY prior to any worker accessing roof. Installation manual to be available on site so it can be confirmed the handrail has been installed as per the manufacturers specifications. |

HANSENYUNCKEN

# PROJECT HSE RISK ASSESSMENT

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| A | Very Likely | High | High | High | Medium | Medium |
| B | Likely | High | High | Medium | Medium | Medium |
| C | Possible | High | Medium | Medium | Medium | Low |
| D | Remotely Possible | Medium | Medium | Medium | Low | Low |
| E | Very Unlikely | Medium | Medium | Low | Low | Low |
| NA | Not applicable | NA | NA | NA | NA | NA |

| | **RISK ASSESSMENT** | | | **CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)** | |
|---|---|---|---|---|---|
| **HAZARD** (Include additional project specific hazards as required) | **L** | **C** | **Class** | **Legislation, Standards & Codes of Practice** | **Enter Details of Specific Controls Required** |
| **Potential Emergencies - preparation for and response to potential emergency events assessed high or medium risk to be defined in the Emergency Response Plan** | | | | | |
| Arrested fall in a harness | C | 2 | Medium | HY Procedure for Emergency Response | All subcontractors using harnesses in boom lifts must have a rescue procedure as part of their SWMS. Generally rescue will be by using the ground controls at the base of the machine or by using a second boom lift to retrieve the suspended casualty. |
| Bomb threat | E | 4 | Low | HY Procedure for Emergency Response | Procedure for bomb threats is part of the HY Emergency Response Plan |
| Confined Space Rescue | E | 3 | Low | HY Procedure for Emergency Response | Procedure for confined space rescue is part of the HY Emergency Response Plan |
| Cyclone | NA | | | HY Procedure for Emergency Response | N/A on the Meadowbank TAFE Project |
| Drowning | E | 5 | Low | HY Procedure for Emergency Response | Trenches are to be de-watered prior to any person working in around the area. |
| Electric shock | D | 1 | Medium | HY Procedure for Defibrillators | Electric shock procedure detailed in the HY Emergency response plan |
| Emergency services unavailability | NA | 1 | NA | HY Procedure for Emergency Response | N/A on the Meadowbank TAFE Project. |
| Fire | D | 2 | Medium | AS 3745 Emergency control organisation and procedures for buildings, structures and workplaces<br>AS/NZS 1221 Fire hose reels<br>AS/NZS 1841 Portable fire extinguishers<br>AS/NZS 1850 Portable fire extinguishers - Classification, rating and performance testing<br>AS 1851 Maintenance of fire protection systems & equipment<br>AS 2375 Guide to the selection, care & use of clothing for protection against heat & fire<br>AS 2444 Portable fire extinguishers and blankets - Selection & location | Fire procedure detailed in the HY emergency response plan |
| First Aid (inadequate resources) | E | 3 | Low | HY Procedure for Emergency Response | First aid room to be set up with portable and fixed first type A first aid kits, stretcher, defibrillator, ice packs, sun cream, eye wash and examination couch as per Code of Practice: First Aid . (Refer to first aid assessment ) |
| Gas line contact or damage | D | 2 | Medium | HY Procedure for Emergency Response | Jemena contact details are part of the HY Emergency response plan |
| Major rock fall/landslip | E | 4 | Low | HY Procedure for Emergency Response | Rockall procedure detailed in the HY Emergency response plan |
| Major Fuel/Chemical Spill | E | 3 | Low | HY Procedure for Emergency Response | Fuel/ Chemical spill is part of the HY emergency response plan |
| Medical Emergency | D | 3 | Medium | HY Procedure for Emergency Response | Medical emergency is part of the HY emergency response plan |
| Overhead power line contact or arcing | C | 2 | Medium | HY Procedure for Emergency Response | Contact with overhead power lines is part of the HY emergency response plan |
| Precast Panel Collapse | NA | 1 | NA | HY Procedure for Emergency Response | Precast panel collapse is part of the HY emergency response plan |
| Structural failure/collapse | NA | 1 | NA | HY Procedure for Emergency Response | Structural collapse is part of the HY emergency response plan |
| Trench collapse | D | 1 | Medium | HY Procedure for Emergency Response | Trench collapse is part of the HY emergency response plan |
| | | | | | |

## A.5 External Lighting Compliance

JHA

ABN 48 612 666 172

Sydney | Brisbane

Level 23, 101 Miller St
North Sydney NSW 2060

PO Box 3
North Sydney NSW 2059
Ph (02) 94371000

6 October 2020

Richard O'Sullivan

Hansen Yunken

75-85 O'Riordan St
Alexandria NSW 2015

## DESIGN CERTIFICATE – SSD CONDITION ITEM B15 VII

**SUBJECT PREMISES : TAFE MEADOWBANK – CWC1**

Addressing Item B15 Construction Environmental Management Plan item viii, of the CWC1 matrix and design document check list, the proposed lighting associated with the Shoring Walls, Excavation, Remediation Activities will be in accordance with normal engineering practice, and will meet the requirements of the Building Code of Australia and relevant Australian Standards. In particular, the design will be in accordance with the following:

- AS 4282-2019 Control of the obtrusive effects of outdoor lighting

I am an appropriately qualified and competent person in this area and as such can certify that the design will comply with the above and which are detailed on the drawings attached.

| | |
|---|---|
| **Full Name of Designer:** | Marc Estimada |
| **Qualifications:** | B. Eng (Electrical) Hons.<br>MIEAust CPEng NER 2903203 |
| **Address of Designer:** | Level 23, 101 Miller Street, North Sydney NSW 2060 |
| **Business Telephone No:** | (02) 9437 1000 |
| **Name of Employer:** | JHA Consulting Engineers Pty Ltd |

Yours sincerely,

Marc Estimada
Director

## A.6 Construction Traffic and Pedestrian Management Sub-Plan (CTPMSP)

**Multi-Trades and Digital Technology Hub and carpark (SSD 10349): Submission of Construction Traffic and Pedestrian Management Sub-Plan in accordance with Condition B16, B21, B23 & B30**

| Condition | Condition requirements | Document reference |
|---|---|---|
| B16 | The Construction Traffic and Pedestrian Management Sub-Plan (CTPMSP) must be prepared to achieve the objective of ensuring safety and efficiency of the road network and address, but not limited to, the following; | Multi-Trades and Digital Technology Hub, TAFE NSW Meadowbank, Phase 2 Construction Traffic and Pedestrian Management Plan Rev B Dated 05/11/2020 Reference: N183633 |
| | (a) be prepared by a suitably qualified and experienced person(s); | Section 1.1 Background<br>SSD 10349 – B16 – CTPMSP CV – Brett Maynard_2020 bw |
| | (b) be prepared in consultation with Council and TfNSW; | Section 1.2 Consultation<br>Appendix E Stakeholder Correspondence |
| | (c) detail the measures that are to be implemented to ensure road safety and network efficiency during construction in consideration of potential impacts on general traffic, cyclists and pedestrians and bus services; | Section 4.1 Traffic Control Plan<br>Section 4.2 Pedestrian and Cyclist Management<br>Section 4.3 Public Transport<br>Section 4.4 Traffic Impacts |
| | (d) detail heavy vehicle routes, access and parking arrangements; | Section 3.5 Construction Site Access<br>Section 3.7 Construction Traffic Routes |
| | (e) a swept path assessment is to be carried out, showing that the largest vehicles can manoeuvre safely at all intersections along the proposed approach and departure routes. The swept path assessment must also demonstrate that the largest heavy vehicle is capable of accessing and vacating the construction site and/or work zone in a safe and efficient manner; | Appendix A Swept Path Assessment |
| | (f) include location of all proposed work zones; | No work zones are proposed for works associated with EWP2 (Stage 1) |

| | | |
|---|---|---|
| **B16** | (g) details of the haulage routes and the construction hours; | Section 3.3 Hours of Operation<br>Section 3.7 Construction Traffic Routes |
| | (h) details of estimated number and type of construction vehicle movements including morning and afternoon peak and off-peak movements for each stage of construction; | Section 3.6 Construction Traffic Volumes<br>Section 4.8 Existing and Future Developments |
| | (i) details of the construction program highlighting details of peak construction activities and proposed construction staging; | Section 3.1 Description and Duration of Works<br>Section 4.8 Existing and Future Developments |
| | (j) any potential impacts to general traffic, cyclists, pedestrians and bus services within the vicinity of the site from construction vehicles during the construction of the proposed works; | Section 4.2 Pedestrian and Cyclist Management<br>Section 4.3 Public Transport<br>Section 4.4 Traffic Impacts |
| | (k) cumulative impacts of the proposed construction and ongoing projects within a 250m radius of the site including the Meadowbank Schools Project (SSD 9343); | Section 4.8 Existing and Future Developments |
| | (l) detail appropriate measures that are to be implemented to ensure road safety and network efficiency is maintained during construction to minimise potential impacts on general traffic, cyclists, pedestrians and bus services as well as surrounding residents; | Section 4.1 Traffic Control Plan<br>Section 4.2 Pedestrian and Cyclist Management<br>Section 4.3 Public Transport<br>Section 4.4 Traffic Impacts |
| | (m) comply with relevant sections of the following documents:<br>(i) Australian Standard AS1742.3 – Manual of Uniform Traffic Control Devices Part 3: Traffic control for works on roads (AS1742.3);<br>(ii)TfNSW's Traffic Control at Work Sites (Technical Manual); and<br>(iii) Part 8.1 (Construction Activities) of City of Ryde Development Control Plan. | Section 1.3 References |
| **B21** | A Driver Code of Conduct must be prepared and communicated by the Applicant to heavy vehicle drivers and must address the following: | Appendix C Driver Code of Conduct |

| | | |
|---|---|---|
| **B21** | (a) minimise the impacts of earthworks and construction on the local and regional road network; | Appendix C – Section C.3 Haulage Routes and Timing of Transport |
| | (b) minimise conflicts with other road users; | Appendix C – Section C.3 Haulage Routes and Timing of Transport & C.4 Safe Driving Practices |
| | (c) minimise road traffic noise; and | Appendix C – Section C.4 Safe Driving Practices & C.5 Maintenance Requirements |
| | (d) ensure truck drivers use specified routes. | Appendix C – Section C.3 Haulage Routes and Timing of Transport |
| **B23** | Prior to the commencement of construction, the Applicant must submit a Construction Worker Transportation Strategy to the Certifier. The Strategy must detail the provision of sufficient parking facilities or other travel arrangements for construction workers in order to minimise demand for parking in nearby public and residential streets or public parking facilities. A copy of the strategy must be submitted to the Planning Secretary and Council for information. | Appendix D Construction Worker Transportation Strategy |
| **B30** | Prior to the commencement of construction, evidence of compliance with the following requirements must be submitted to the Certifier and a copy provided to Council for information:<br>(a) all vehicles must enter and leave the site in a forward direction; | Section 3.5 Construction Site Access |
| | (b) the swept path of the longest construction vehicle entering and exiting the site in association with the new work, as well as manoeuverability through the site, is in accordance with the latest version of AS2890.2; and | Appendix A Swept Path Assessment |
| | (c) the safety of vehicles and pedestrians accessing adjoining properties, where shared vehicle and pedestrian access occurs, has been addressed. | Section 4.1 Traffic Control Plan<br>Section 4.2 Pedestrian and Cyclist Management<br>Appendix B Traffic Control Plans |
| **B14** | (a) detailed baseline data; | Section 2 Existing Conditions |

| | | |
|---|---|---|
| B14 | (b) details of:<br>(i) the relevant statutory requirements (including any relevant approval, licence or lease conditions); | Section 1.3 References |
| | (ii) any relevant limits or performance measures and criteria; and | Section 3.3 Hours of Operation |
| | (iii) the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures; | Not Applicable |
| | (c) a description of the measures to be implemented to comply with the relevant statutory requirements, limits, or performance measures and criteria; | Section 4 Construction Pedestrian and Traffic Management |
| | (d) a program to monitor and report on the:<br>(i) impacts and environmental performance of the development; | Section 4.10 Site Inspections and Record Keeping |
| | (ii) effectiveness of the management measures set out pursuant to paragraph (c) above; | Section 4.10 Site Inspections and Record Keeping |
| | (e) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible; | Not Applicable |
| | (f) a program to investigate and implement ways to improve the environmental performance of the development over time; | Not Applicable |
| | (g) a protocol for managing and reporting any:<br>(i) incident and any non-compliance (specifically including any exceedance of the impact assessment criteria and performance criteria); | Section 4.10 Site Inspections and Record Keeping |
| | (ii) complaint; | Section 4.10 Site Inspections and Record Keeping |
| | (iii) failure to comply with statutory requirements; and | Section 4.10 Site Inspections and Record Keeping |
| | (h) a protocol for periodic review / update of the plan and any updates in response to incidents or matters of non-compliance. | Not Applicable |

# Multi-Trades and Digital Technology Hub

TAFE NSW Meadowbank

Phase 2 Construction Traffic and Pedestrian Management Plan

Prepared by: GTA Consultants (NSW) Pty Ltd for Hansen Yuncken

on 09/11/2020

Reference: N183633

Issue #: C

GTAconsultants

# Multi-Trades and Digital Technology Hub

## TAFE NSW Meadowbank
## Phase 2 Construction Traffic and Pedestrian Management Plan

Client: Hansen Yuncken

on 09/11/2020

Reference: N183633

Issue #: C

### Quality Record

| Issue | Date | Description | Prepared By | Checked By | Approved By | Signed |
|---|---|---|---|---|---|---|
| A | 4/11/2020 | Issued for Council and TfNSW endorsement | Mackenzie Brinums | Brett Maynard | Brett Maynard | Brett Maynard |
| B | 5/11/2020 | Minor amendments | Mackenzie Brinums | Brett Maynard | Brett Maynard | Brett Maynard |
| C | 9/11/2020 | Updated Appendix E | Mackenzie Brinums | Brett Maynard | Brett Maynard | B.T. Maynard. |

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# 1. INTRODUCTION

01

## 1.1. Background

Hansen Yuncken commissioned GTA Consultants (GTA) in August 2020 to prepare a Construction Traffic and Pedestrian Management Plan (CTPMP) for Phase 2 of the Early Works for the Meadowbank TAFE Multi-Trades and Digital Technology Hub (MTDTH) and multi-storey car park (MSCP) project. Phase 2 of the Early Works stage of the project includes:

- Tree removal
- Services diversions
- Shoring walls
- Bulk earthworks (including remediation).

A CTPMP was previously prepared for Phase 1 of the Early Works dated 31 August 2020 which included site establishment and demolition works. A further CTPMP will be submitted for the main building and infrastructure works at the conclusion of the detailed design phase.

Specifically, this CTPMP seeks to address Condition B16, B21, B23 and B30 of the project approval (SSD 10349). The condition requirements and the location where the requirements have been addressed are outlined in Table 1.1.

Table 1.1: Consent condition requirements

| Condition | Condition requirements | Document reference |
|---|---|---|
| B16 | A Construction Traffic and Pedestrian Management Sub-Plan (CTPMSP) must be prepared to achieve the objective of ensuring safety and efficiency of the road network and address, but not be limited to, the following:<br>(a) be prepared by a suitably qualified and experienced person(s) | Section 1.1 |
| | (b) be prepared in consultation with Council and TfNSW | Section 1.2 and Appendix E |
| | (c) detail the measures that are to be implemented to ensure road safety and network efficiency during construction in consideration of potential impacts on general traffic, cyclists and pedestrians and bus services | Section 4.1, 4.2, 4.3, 4.4 |
| | (d) detail heavy vehicle routes, access and parking arrangements | Section 3.5, 3.7 |
| | (e) a swept path assessment is to be carried out, showing that the largest vehicles can manoeuvre safely at all intersections along the proposed approach and departure routes.<br>The swept path assessment must also demonstrate that the largest heavy vehicle is capable of accessing and vacating the construction site and/or work zone in a safe and efficient manner | Appendix A |
| | (f) include location of all proposed work zones | No work zones are proposed for Phase 2 of the Early Works (Stage 1) |
| | (g) details of the haulage routes and the construction hours | Section 3.3 and 3.7 |
| | (h) details of estimated number and type of construction vehicle movements including morning and afternoon peak and off-peak movements for each stage of construction | Section 3.6 and 4.8 |
| | (i) details of the construction program highlighting details of peak construction activities and proposed construction staging | Section 3.1 and 4.8 |

| Condition | Condition requirements | Document reference |
|---|---|---|
| | (j) any potential impacts to general traffic, cyclists, pedestrians and bus services within the vicinity of the site from construction vehicles during the construction of the proposed works | Section 4.2, 4.3, 4.4 |
| | (k) cumulative impacts of the proposed construction and ongoing projects within a 250m radius of the site including the Meadowbank Schools Project (SSD 9343) | Section 4.8 |
| | (l) detail appropriate measures that are to be implemented to ensure road safety and network efficiency is maintained during construction to minimise potential impacts on general traffic, cyclists, pedestrians and bus services as well as surrounding residents. | Section 4.1, 4.2, 4.3, 4.4 |
| | (m) comply with relevant sections of the following documents:<br>(i) Australian Standard AS1742.3 - Manual of Uniform Traffic Control Devices Part 3: Traffic control for works on roads (AS1742.3);<br>(ii) TfNSW's Traffic Control at Work Sites (Technical Manual); and<br>(iii) Part 8.1 (Construction Activities) of City of Ryde Development Control Plan. | Section 1.3 |
| B21 | A Driver Code of Conduct must be prepared and communicated by the Applicant to heavy vehicle drivers and must address the following:<br>(a) minimise the impacts of earthworks and construction on the local and regional road network | Appendix C – Section C.3 |
| | (b) minimise conflicts with other road users | Appendix C – Section C.3, C.4 |
| | (c) minimise road traffic noise | Appendix C – Section C.4, C.5 |
| | (d) ensure truck drivers use specified routes. | Appendix C – Section C.3 |
| B23 | Prior to the commencement of construction, the Applicant must submit a Construction Worker Transportation Strategy to the Certifier. The Strategy must detail the provision of sufficient parking facilities or other travel arrangements for construction workers in order to minimise demand for parking in nearby public and residential streets or public parking facilities. A copy of the strategy must be submitted to the Planning Secretary and Council for information. | Appendix D |
| B30 | Prior to the commencement of construction, evidence of compliance with the following requirements must be submitted to the Certifier and a copy provided to Council for information:<br>(a) all construction vehicles must be able to enter and leave the site in a forward direction | Section 3.5 |
| | (b) the swept path of the longest construction vehicle entering and exiting the site in association with the new work, as well as manoeuvrability through the site, is in accordance with the latest version of AS 2890.2 | Appendix A |
| | (c) the safety of vehicles and pedestrians accessing adjoining properties, where shared vehicle and pedestrian access occurs, has been addressed. | Section 4.1, 4.2 and Appendix B |

The following report sets out an assessment with consideration of the following:

- site accesses
- requirement for works zones
- anticipated heavy vehicle movements
- heavy vehicle routes to and from the site
- requirements for pedestrians and cyclists.

This CTPMP has been prepared by engineers who hold the Transport for NSW (TfNSW) Prepare a Works Zone Traffic Management Plan certification. Details of the accredited engineers are provided below:

- Mackenzie Brinums - Certification No. 0051848769, exp. 7 November 2021
- Brett Maynard - Certification No. 0052374425, exp. 21 May 2023.

## 1.2. Consultation

In accordance with the requirements of the Consent Conditions, Condition B16(b) this CTPMP must be developed in consultation with Council and TfNSW.

A Phase 1 Early Works CTPMP has previously been developed in consultation with Council. A draft Phase 1 Early Works CTPMP was submitted to Council on 27 August 2020. Following a round of comments, the Early Works CTPMP was finalised and submitted to Council on 11 September 2020.

The Phase 2 Early Works CTPMP builds on the Phase 1 Early Works CPTMP, with much of the proposed construction traffic and pedestrian management measures consistent with the early works stage with updated to construction vehicle accesses and anticipated size and frequency of construction vehicles deliveries. A draft version of Phase 2 Early Works CPTMP was provided to Council and TfNSW on 8 October 2020, with comments and outcomes of subsequent discussions incorporated into this final report. A copy of the correspondence with Council and TfNSW provided in Appendix E.

A meeting was also held with Council on 31 August 2020 with regard to the cumulative construction traffic impact of the Schools @ Meadowbank Education and Employment Precinct (SMEEP) project and the Meadowbank TAFE project. Following this meeting, a cumulative traffic impact technical note was prepared, with key details incorporated into this CTPMP and summarised in Section 4.8.

Hansen Yuncken will continue to liaise with Council and TfNSW throughout the construction of the project to satisfy any concerns with the proposed construction methodology and/or materials handling.

## 1.3. References

In preparing this report, reference has been made to the following:

- Traffic Control at Work Sites manual, TfNSW, July 2018
- Australian Standard AS1742.3:2019 Manual of Uniform Traffic Control Devices – Traffic control for works on roads
- Part 8.1 (Construction Activities) of City of Ryde Development Control Plan
- plans prepared by Hansen Yuncken as referenced in this report
- other documents and data as referenced in this report.

# 2. EXISTING CONDITIONS

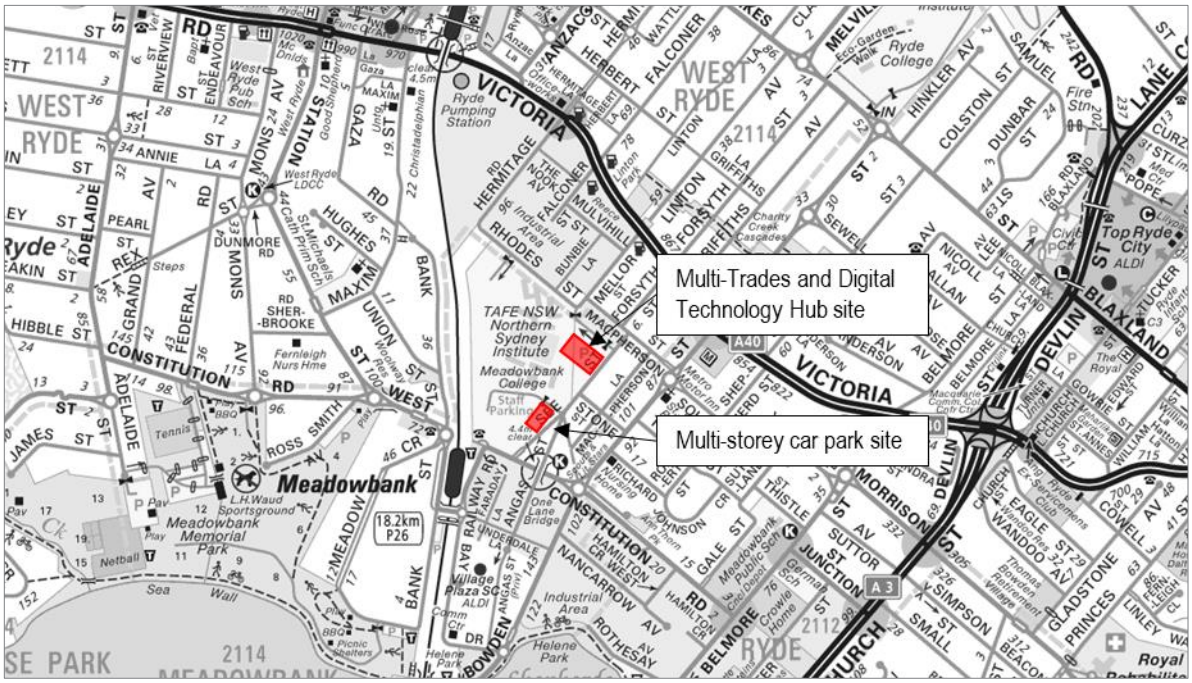
02

## 2.1. Site Location and Local Context

The TAFE NSW Meadowbank campus (herein referred to as Meadowbank TAFE) is located approximately 15 kilometres north west of Sydney CBD. The proposed new MTDTH building will occupy the north eastern corner of the existing Meadowbank TAFE campus, which presently contains an at-grade car parking area. The MSCP will be located in place of the existing at-grade staff car park adjacent to Block J. The Meadowbank TAFE campus is bounded by Macpherson Street and an Ausgrid substation to the north, See Street to the east and the rail corridor to the west. Meadowbank Railway Station is located at the southern boundary of the site.

The site location is illustrated in Figure 2.1 and has a primary frontage to See Street. Surrounding properties largely consist of light industrial, low density residential and educational uses.

Figure 2.1: Subject site and environs




Base image source: Sydway

## 2.2. Existing Road Network

### See Street

See Street functions as a local road and near the campus is aligned in a north-south direction. It is a two-way road configured with one travel lane and one parking lane in each direction within an 11-metre wide carriageway. Kerbside parking is permitted on both sides of the road. Parking is generally unrestricted on the eastern side, with a short section of 15-minute time restriction from 8am to 5:30pm, Monday to Friday. On the western side of See Street, the following parking restrictions apply:

- Two-hour time restriction between Macpherson Street and Stone Street, from 8:00am to 9:00pm, Monday to Friday (permit holders excepted)
- 15-minute time restriction between Stone Street and Angas Street, from 7:00am to 5:00pm, Monday to Friday.

Two-hour time restriction between Angas Street and Constitution Road, from 8am to 9pm, Monday to Friday (permit holders excepted).

### Rhodes Street

Rhodes Street functions as a collector road and is aligned in an east-west direction. It is a two-way road configured with one traffic lane and one parking lane in each direction within a 11-metre wide carriageway.

Kerbside parking is permitted on both sides of the road. Rhodes Street carries around 1,100 vehicles per day in the eastbound direction and 1,400 vehicles per day in the westbound direction.

Rhodes Street is shown in Figure 2.2 and Figure 2.3.

Figure 2.2: Rhodes Street (looking east)

Figure 2.3: Rhodes Street (looking east)

### Hermitage Road

Hermitage Road functions as a collector road and is aligned in a north south direction. It is a two-way road configured with one travel lane and one parking lane in each direction within a 10-metre wide carriageway. Kerbside parallel parking is permitted on both sides of the road. Hermitage Road intersects Victoria Road at a signalised intersection, permitting all turning movements.

Hermitage Road carries around 1,700 vehicles per day in the southbound direction and 1,900 vehicles per day in the northbound direction.

Hermitage Road is shown in Figure 2.4.

### Victoria Road

Victoria Road is a classified State Road (TfNSW controlled) and is aligned in an east-west direction. Near the campus, it is a two-way road configured with three travel lanes in each direction. Kerbside parking is not permitted on both sides of the road. The road carriageway is around 20 metres wide.

Victoria Road is shown in Figure 2.5.

Figure 2.4: Hermitage Road (looking south)

Figure 2.5: Victoria Road (looking east)

## Bowden Street

Bowden Street functions as a collector road and is aligned in a north south direction. It is a two-way road configured with one travel lane in each direction within a 12-metre wide carriageway. Bowden Street intersects Victoria Road at a signalised intersection, permitting all turning movements.

Kerbside parking is permitted on both sides of the road, subject to a one to two-hour time restrictions during weekdays between 7:00am and 5:00pm. On the southern approach to Victoria Road, Bowden Street is subject to clearway restrictions along the western side of the road, extending back to the intersection with Macpherson Street.

Bowden Street carries around 4,200 vehicles per day in the northbound direction and 4,700 vehicles per day in the southbound direction.

Bowden Street is shown in Figure 2.6.

## Macpherson Street

Macpherson Street functions as a local road and near the campus is aligned in an east-west direction. It is a two-way road configured with one travel lane and one parking lane in each direction within a 10-metre wide carriageway. Kerbside parking is permitted on both sides of the road, subject to a two-hour time restriction during weekdays between 8:00am and 9:00pm.

Macpherson Street is shown in Figure 2.7.

Figure 2.6: Bowden Street (looking north)

Figure 2.7: Macpherson Street (looking east)

### Mellor Street

Mellor Street functions as a local road and near the campus is aligned in a north-south direction. It is a two-way road configured with one travel lane and one parking lane in each direction within an 11-metre wide carriageway. Mellor Street provides left-in/ left-out access to Victoria Road.

Kerbside parking is permitted on both sides of the road, and is generally unrestricted, with a short section of two-hour time restriction between Mulvihill Street and Victoria Road from 8:30am to 6:00pm, Monday to Friday and from 8:30am to 12:30pm on Saturdays.

### Forsyth Street

Forsyth Street functions as a local road and near the campus is aligned in a north-south direction. It is a two-way road configured with one travel lane and one parking lane in each direction within an 11-metre wide carriageway. Forsyth Street provides left-in/ left-out access to Victoria Road.

Kerbside parking is permitted on both sides of the road, subject to a two-hour time restriction on the western side from 8:00am to 9:00pm, Monday to Friday (permit holders excepted). Kerbside parking on the eastern side is unrestricted.

### Constitution Road

Constitution Road functions as a local road and near the campus is aligned in an east-west direction. It is a two-way road configured with one travel lane in each direction within a 10-metre wide carriageway. No stopping is permitted on Constitution Road, between Railway Road and Bowden Street.

## 2.3. Existing Public Transport

### 2.3.1. Train Services

Meadowbank Railway Station and West Ryde Station are located around 350 metres southwest and 830 metres northwest from the Meadowbank TAFE campus, respectively. Both Meadowbank and West Ryde stations are on the T9 Northern Line, with services running from Epping to Central every 30 minutes.

### 2.3.2. Bus Services

Bus route 507 operates near the campus with the nearest stop located at Meadowbank Railway Station. Bus routes 520, 524, 534 and M52 operate along Victoria Road. The surrounding bus network services are detailed in Table 2.1 and shown indicatively in Figure 2.8.

Table 2.1: Bus service frequency[1]

| Bus route number | Description | AM/ PM peak frequency | Off-peak frequency |
|---|---|---|---|
| 507 | Macquarie University to City Circular Quay via Putney | 30 minutes/ 20 minutes | 60 minutes |
| 513 | Carlingford to Meadowbank Wharf via West Ryde | 30 minutes/ 60 minutes | 60 minutes |
| 520 | Parramatta to City Circular Quay via West Ryde | 30 minutes/ 60 minutes | Infrequent |
| 524 | Ryde to Parramatta via West Ryde | 30 minutes/ 30 minutes | 60 minutes |

| Bus route number | Description | AM/ PM peak frequency | Off-peak frequency |
|---|---|---|---|
| M52 | Parramatta to City Circular Quay (limited stops) | 12 minutes/ 10 minutes | 15 minutes |

Note:
1. Valid from 24 February 2020, sourced from https://transportnsw.info/routes/bus, accessed 6 October 2020

Figure 2.8: Surrounding bus network

Base image source: https://transportnsw.info/document/4247/state_transit_north_shore_and_west_network_map.pdf, dated 6 October 2020

## 2.4. Existing Pedestrian Infrastructure

Pedestrian footpaths are generally provided along all the roads surrounding the campus. Footpaths are generally concrete paths with a width of 1.2 metres. The primary pedestrian link to Meadowbank Station is along See Street and Constitution Road or through the Meadowbank campus. There is no requirement for pedestrians to cross roads along this route to access the station.

There is an existing north-south pedestrian connection through the TAFE NSW campus, which runs between Rhodes Street and Meadowbank Station.

Formal crossing points in vicinity of the Meadowbank campus include the following pedestrian crossings:

- North eastern, north western and south western legs of the Victoria Road/ Hermitage Road intersection (signalised)
- North eastern, south eastern and south western legs of the Victoria Road/ Bowden Street intersection (signalised).

There are also various pedestrian refuges provided on surrounding roads near the site as follows:

- Squire Street, east of Bowden Street
- Bowden Street south of Squire Street

- Macpherson Street, west of Bowden Street
- See Street, north of Constitution Road.

## 2.5. Existing Cyclist Infrastructure

There are limited formal cyclist facilities within the transport network surrounding the campus.

# 3. OVERVIEW OF CONSTRUCTION ACTIVITIES

03

## 3.1. Description and Duration of Works

Phase 2 of the Early Works stage of the project includes:

- Tree removal
- Services diversions
- Shoring walls
- Bulk earthworks (including remediation).

The expected duration of the works is around five months, with the works expected to commence November 2020 and be completed by April 2021.

Phase 2 of the Early Works forms part of Stage 1 of the construction program, as detailed below:

- Stage 1 - EWP2 (Earthworks, Remediation & Shoring Wall)
- Stage 2 - Structure
- Stage 3 - Building Envelope & Fit-out
- Stage 4 - Public Domain Works.

As discussed in Section 1.1, a further CTPMP will be submitted for the main building and infrastructure works (Stages 2-4) at the conclusion of the detailed design phase.

## 3.2. Head Contractor Contact Details

The nominated Hansen Yuncken representative for any required Council or stakeholder contact is:

- Vanja Krumpacnik, Project Manager – 0439 542 674.

Relevant site contact details for the appointed contractor(s) will also be affixed to the fencing around the work site.

## 3.3. Hours of Operation

Construction, including the delivery of materials to and from the site, will be carried out during the following periods:

- Weekdays: 7:00am to 6:00pm
- Saturdays: 8:00am to 1:00pm
- Sundays and public holidays: No works permitted.

Other works that do not exceed the existing background noise level plus 5 dB may also be undertaken during the following hours:

- Weekdays: 6:00pm to 7:00pm
- Saturdays: 1:00pm to 4:00pm.

Rock breaking, rock hammering, sheet piling, pile driving and similar activities may only be carried out between the following hours:

- Weekdays: 9:00am to 12:00pm and 2:00pm to 5:00pm
- Saturdays: 9:00am to 12:00pm.

Hansen Yuncken will be responsible for instructing and controlling all subcontractors regarding the hours of work.

## 3.4. Construction Worker Parking

The anticipated workforce for the Early Works Phase 2 stage is anticipated to average around 35 workers on-site at any given time, with up to a maximum of 45 workers on-site during peak activities. There is limited opportunity for construction worker parking to be provided during the Phase 2 Early Works as the bulk excavation envelope largely extends to the site boundary.

In consultation with Council, temporary parking arrangements at Meadowbank Park will be made available to staff and students of the TAFE during construction of the project, due to the temporary loss of on-site parking to construct the new buildings. It is understood that the Meadowbank Park car parking contains around 400 parking spaces and can accommodate the temporary loss of around 300 spaces on the Meadowbank TAFE site, while any additional available parking can be utilised by construction workers. Meadowbank Park is located around a 10-15 minute walk away from Meadowbank TAFE, with pedestrian footpaths provided on both sides of Constitution Road, connecting the TAFE with the car parks.

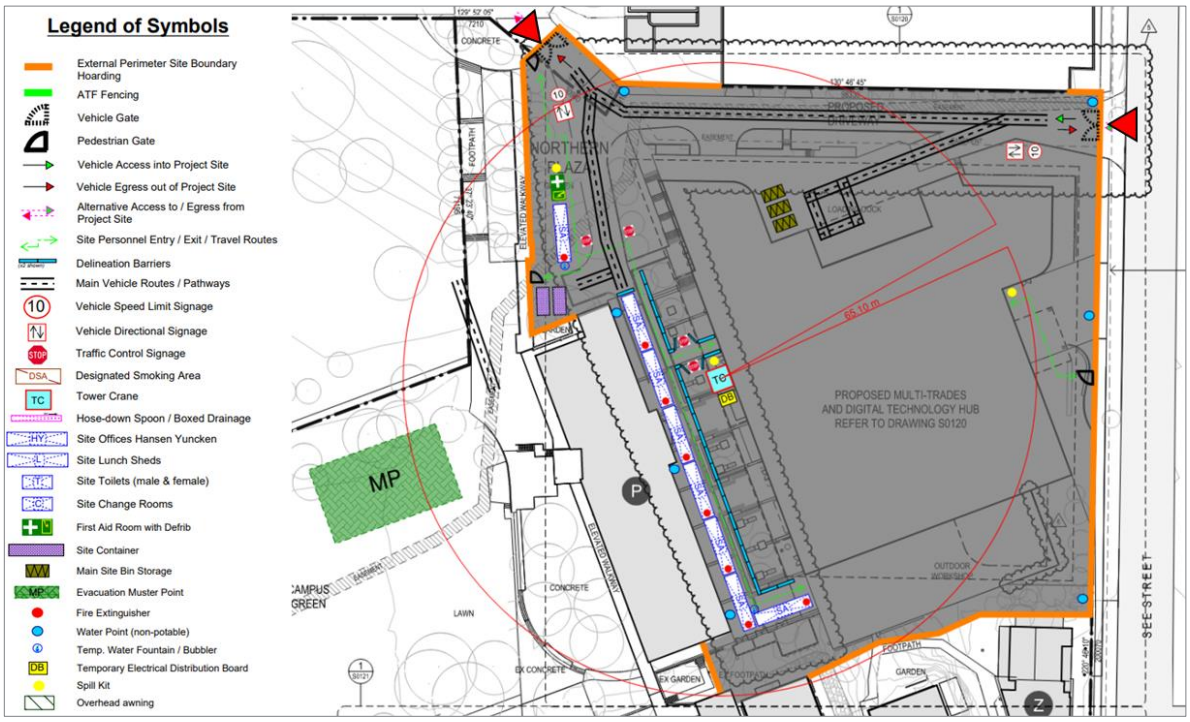
Notwithstanding the above, given the site's proximity to high frequency public transport services, including Meadowbank Railway Station, all workers will be encouraged to use public transport to access the site, with appropriate tool/ equipment drop-off arrangements made. This will be incorporated into the site induction program.

## 3.5. Construction Site Access

Two site accesses are proposed for the MTDTH site, with one utilising the existing crossover on Rhodes Street while the other will be in the same location as the proposed new laneway crossover on See Street. A single site access is proposed for the MSCP site via the existing driveway near the See Street/ Angas Street intersection. The two accesses for the MTDTH site allow for better distribution of construction traffic on the surrounding road network so as to reduce the cumulative impact with the adjacent SMEEP project, which is being constructed concurrently. All vehicles will enter and exit the site in a forward direction. Gates will be located at the accesses to restrict entry to the site.

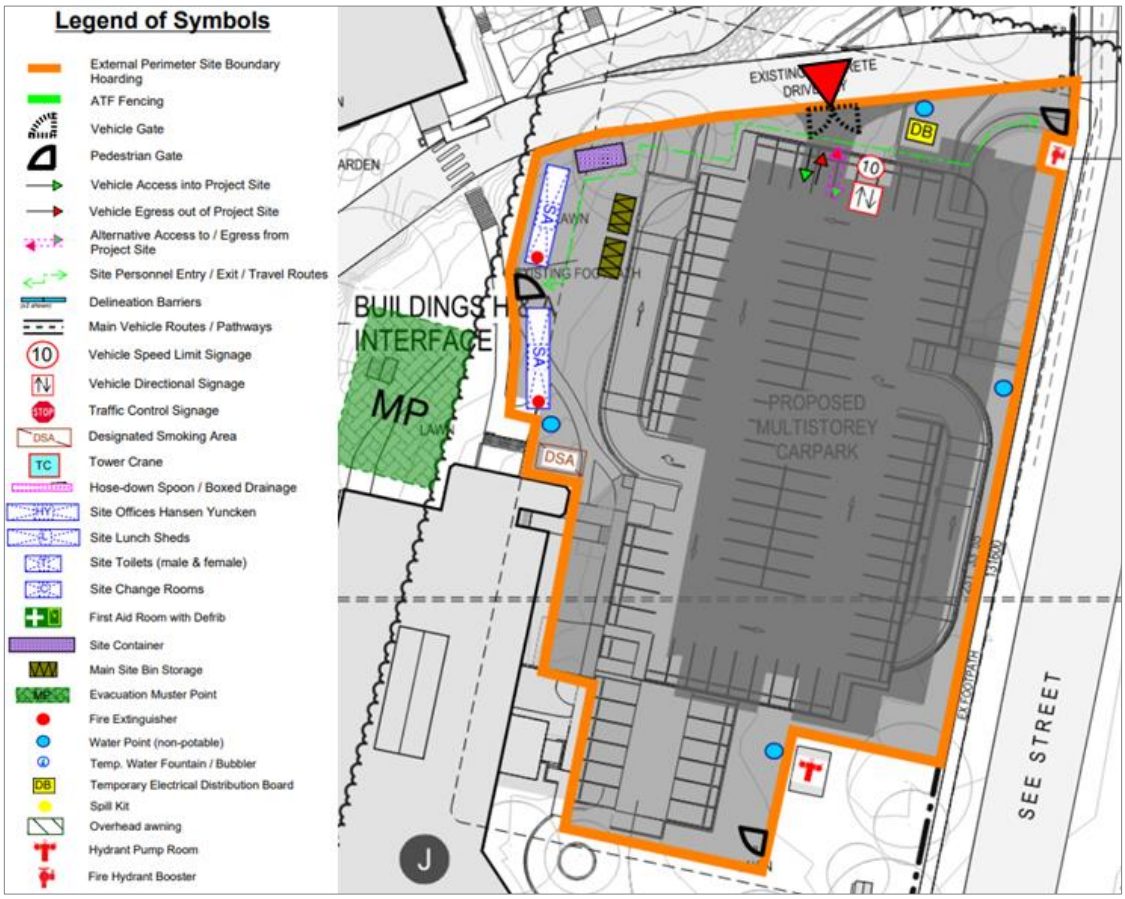
The proposed site access locations are shown in Figure 3.1 and Figure 3.2.

Figure 3.1: MTDTH proposed site access arrangement




Base image source: Hansen Yuncken, drawing reference SC130-SP-PM-DWG-REVA dated 22 September 2020

Figure 3.2: MSCP proposed site access arrangement




Base image source: Hansen Yuncken, drawing reference SC130-SP-PM-DWG-REVA dated 22 September 2020

Construction vehicle access to the site via Rhodes Street will primarily involve 12.5 metre heavy rigid vehicles and 18.1 metre truck and dog combinations. A swept path assessment has been completed on the approach and departure routes between Victoria Road and the site, as shown in Appendix A.

The swept path assessment indicates that there are constraints for long vehicles on the existing local road network, particularly around the corners on Rhodes Street. It is noted that the design vehicles used for swept path analysis are conservative, as they need to represent a broad national vehicle fleet. An on-site demonstration was completed by Roberts Pizzarotti at Rhodes Street/ Mellor Street and Rhodes Street/ Hermitage Road with Council for the SMEEP project, confirming that both 12.5 metre heavy rigid vehicles and the truck and dog combinations are able to navigate these corners without crossing the centreline.

Two on-street spaces will be temporarily removed on See Street at the site access during the proposed works, however these spaces will be permanently removed prior to OC to provide vehicle access to the MTDTH once operational. Swept paths confirm no additional loss of on-street parking on other surrounding roads is required, beyond that removed for the SMEEP project. A signage plan incorporating these changes is provided in Appendix F.

Through consultation with Council, it was agreed that 18.1 metre truck and dog combinations for the MTDTH site will be restricted to entering and exiting via the Rhodes Street access only during Phase 2 of the Early Works, while truck and dogs will be required to use Bowden Street, Stone Street and See Street to access the MSCP site due to no other alternatives being available for site access.

All loading and unloading of materials during the early works stage will be completed on-site. Accredited traffic controllers will be positioned at all site accesses (when in use) to manage pedestrian and general traffic movements as construction vehicles are entering/ exiting the sites. Traffic controllers will also be positioned on the driveway at the See Street/ Angas Street intersection and the internal access road west of the proposed MSCP site access to stop traffic in both directions (when required) accessing the approximately 100 space car park on the western side of the campus.

Queuing or marshalling of construction vehicles will not be permitted on the road network, with call-up procedures to be put in place to manage arrivals.

## 3.6. Construction Traffic Volumes

As previously mentioned, the MTDTH and MSCP sites will be primarily serviced by vehicles of a size up to and including 12.5 metre heavy rigid vehicles and 18.1 metre truck and dog combinations. It is anticipated that there will be on average up to 20 vehicle movements per day, or four vehicle movements per hour in the morning and afternoon peak and off-peak periods. Noting the school zone on See Street, construction vehicle movements on See Street will be limited as much as possible between 8:00am and 9:30am, and between 2:30pm and 4:00pm on school days. It is anticipated that construction traffic volumes using See Street during these times will be up to two movements per hour.

## 3.7. Construction Traffic Routes

Construction traffic will generally have origins and destinations to/ from the north and west of the site. The proposed construction vehicle routes have been selected to minimise the use of local roads and use arterial roads where possible (illustrated in Figure 3.3 and Figure 3.4). The proposed routes are as follows:

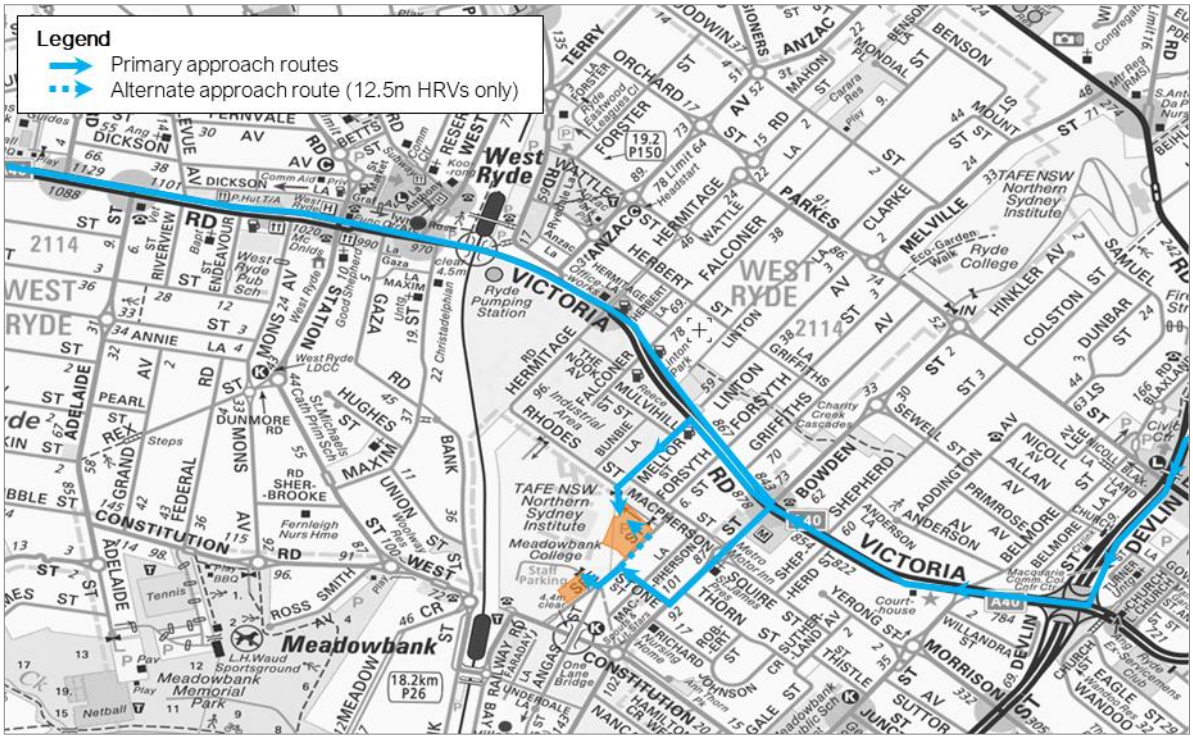
### Approach

- From north:
  - Pennant Hills Road, Silverwater Road, Victoria Road, Bowden Street, Stone Street, See Street
  - Lane Cove Road, Victoria Road, Bowden Street, Stone Street, See Street.
  - Lane Cove Road, Victoria Road, Mellor Street, Rhodes Street.
- From west:
  - M4 Western Motorway, James Ruse Drive, Victoria Road, Bowden Street, Stone Street, See Street
  - Old Windsor Road, Cumberland Highway, James Ruse Drive, Victoria Road, Bowden Street, Stone Street, See Street.

### Departure

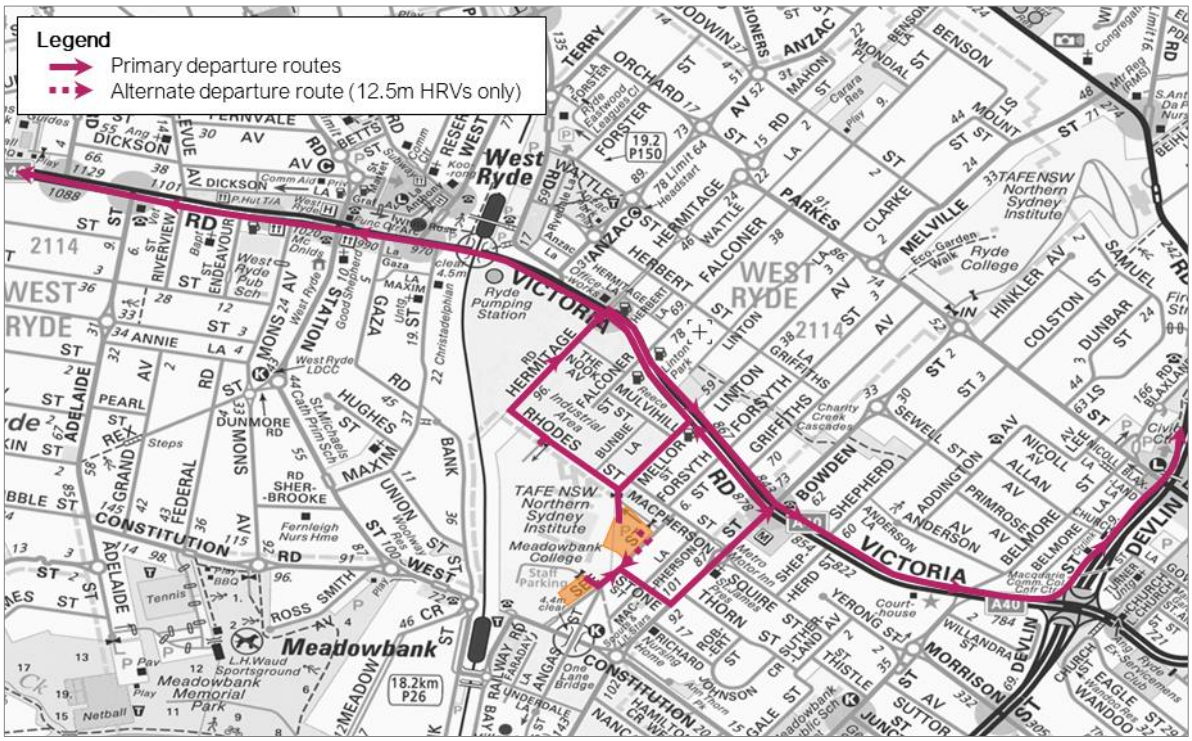
- Towards north:
  - See Street, Stone Street, Bowden Street, Victoria Road, Silverwater Road, Pennant Hills Road
  - Mellor Street, Victoria Road, Silverwater Road, Pennant Hills Road
  - See Street, Stone Street, Bowden Street, Victoria Road, Lane Cove Road.
- Towards west:
  - See Street, Stone Street, Bowden Street, Victoria Road, James Ruse Drive, M4 Western Motorway
  - Mellor Street, Victoria Road, James Ruse Drive, M4 Western Motorway
  - See Street, Stone Street, Bowden Street, Victoria Road, James Ruse Drive, Cumberland Highway, Old Windsor Road
  - Mellor Street, Victoria Road, James Ruse Drive, Cumberland Highway, Old Windsor Road.

Figure 3.3: Construction vehicle approach routes




Base image source: Sydway

Figure 3.4: Construction vehicle departure routes




Base image source: Sydway

# 4. CONSTRUCTION PEDESTRIAN AND TRAFFIC MANAGEMENT

04

## 4.1. Traffic Control Plan

Preliminary Traffic Control Plans (TCP) for the proposed Phase 2 Early Works are included in Appendix B. The TCPs present the principles of traffic management and is subject to WorkCover requirements. The TCPs have been developed with consideration for the requirements of the following documents:

- Traffic Control at Work Sites manual, TfNSW, July 2018
- Australian Standard AS1742.3:2019 Manual of Uniform Traffic Control Devices – Traffic control for works on roads
- Part 8.1 (Construction Activities) of City of Ryde Development Control Plan.

Detailed information for work site operation is contained in the *Traffic Control at Work Sites* manual (TfNSW, 2018). The control of traffic at work sites must be undertaken in accordance with WorkCover requirements and Hansen Yuncken's own workplace health and safety manuals.

The proposed TCPs for the work sites include the following considerations and assumptions:

- Construction vehicle activity, including the loading/ unloading of trucks and all materials handling to be provided within the construction site boundaries at all times.
- Placement of accredited site personnel or traffic controllers to manage construction vehicle access to the site and minimise disruption to through traffic.
- Construction site accesses to provide appropriate sight distances and safe environment for all users.
- Clear definition of the work site boundaries to be provided by erection of construction A-Class hoarding and fencing around the site boundaries adjacent to public roads.
- Pedestrians to be guided around the site via existing footpaths.
- Pedestrian safety to be maintained at all times.
- All signage will be clean, clearly visible and unobstructed.

## 4.2. Pedestrian and Cyclist Management

Pedestrian and cyclist movements will be maintained around the two sites. Traffic controllers will be positioned at site accesses (when in use) throughout the works to temporarily hold pedestrians when vehicles are entering and exiting the site. A-Class hoarding and fencing will be installed around the perimeter of the sites to prevent pedestrian access.

## 4.3. Public Transport

The construction work is not expected to impact existing bus services near the site.

## 4.4. Traffic Impacts

The anticipated heavy vehicle volumes are not expected to have any notable impact on the surrounding road network, noting that any cumulative impacts associated with the concurrent Schools construction will be managed in consultation with the appointed contractor (Roberts Pizzarotti), as discussed further in Section 4.8.

As part of any site induction, drivers will be specifically alerted to the pedestrian activity associated with the TAFE NSW site, with appropriate care and safety at this location by drivers.

## 4.5. Parking Impacts

The construction site accesses are located in the same location as existing driveways and therefore would not result in a loss of parking along the frontages of the site. As mentioned, two on-street spaces will be temporarily removed on See Street at the site access during the proposed works, however these spaces will be permanently removed prior to OC to provide vehicle access to the MTDTH once operational. Swept paths confirm no additional loss of on-street parking on other surrounding roads is required, beyond that removed for the SMEEP project. A signage plan incorporating these changes is provided in Appendix F.

It is noted that the 212 car parking spaces in the main car park will be removed as part of the proposed works. An additional 100 car parking spaces are understood to have been provided in late 2019 as part of a separate planning pathway. This results in a net loss of 112 car parking spaces on campus. Students and staff will be encouraged to make use of the surrounding public transport network while there is a temporary shortfall of parking on-site, considering the site's location adjacent to Meadowbank Station and within walking distance from frequent bus services on Victoria Road.

It is also understood that City of Ryde has also agreed for the car parking adjacent to Meadowbank Park (located to the west of the site) to also be used by staff and students when the main TAFE car park is closed. These car parks are shown in Figure 4.1 and are understood to contain a total of around 400 parking spaces, offsetting the net loss of parking on-site. The car parks are located around a 10-15 minute walk away from Meadowbank TAFE, with pedestrian footpaths provided on both sides of Constitution Road, connecting the TAFE with the car parks.

Figure 4.1: Potential additional off-site car parking

Base image source: Nearmap

## 4.6. Impacts to Neighbouring Properties

Surrounding property access is not expected to be affected during the construction work of the proposed development.

## 4.7. Emergency Vehicle Access

Access to the subject site and adjacent buildings by emergency vehicles would not be affected by the works as road and footpath frontages would remain unaffected during these stages of the works. Emergency protocols on the site would include a requirement for suitably accredited site personnel to assist with emergency access from the street.

Consequently, any potential impacts on emergency access would be effectively managed throughout the works.

Liaison would be maintained with the police and emergency services agencies throughout the construction period and a 24-hour contact would be made available for 'out-of-hours' emergencies and access.

## 4.8. Existing and Future Developments

Construction for the SMEEP project will also be occurring concurrently. Hansen Yuncken will liaise with the appointed contractor (Roberts Pizzarotti) for the new Schools site and monitor the cumulative impact of the two sites to ensure any traffic impact is appropriately managed, in consultation with Council. The Rhodes Street access will be used by heavy vehicles where possible, in order to reduce traffic impacts on residential streets.

A summary of the staging of both projects by month is provided in Table 4.1.

Table 4.1: SMEEP and Meadowbank TAFE project construction staging

| Year | Month | SMEEP project | Meadowbank TAFE project | |
|---|---|---|---|---|
| 2020 | September | Excavation & Piling | Early Works | |
| | October | Excavation & Piling | Early Works | |
| | November | Structure | Excavation & Piling (Stage 1) | |
| | December | Structure | Excavation & Piling (Stage 1) | |
| 2021 | January | Structure | Excavation & Piling (Stage 1) | |
| | February | Structure | Excavation & Piling (Stage 1) | |
| | March | Structure | Excavation & Piling (Stage 1) | |
| | April | Structure | Excavation & Piling (Stage 1) | Structure (Stage 2) |
| | May | Structure | Structure (Stage 2) | |
| | June | Fitout, Landscaping & External Works | Structure (Stage 2) | |
| | July | Fitout, Landscaping & External Works | Structure (Stage 2) | |
| | August | Fitout, Landscaping & External Works | Structure (Stage 2) | Building Envelope & Fitout (Stage 3) |
| | September | Fitout, Landscaping & External Works | Structure (Stage 2) | Building Envelope & Fitout (Stage 3) |

| Year | Month | SMEEP project | Meadowbank TAFE project | |
|---|---|---|---|---|
| | October | Fitout, Landscaping & External Works | Structure (Stage 2) | Building Envelope & Fitout (Stage 3) |
| | November | Fitout, Landscaping & External Works | Building Envelope & Fitout (Stage 2 & 3) | |
| | December | Fitout, Landscaping & External Works | Building Envelope & Fitout (Stage 2 & 3) | |
| 2022 | January | Fitout, Landscaping & External Works | Building Envelope & Fitout (Stage 3) | Demolition & Precinct Works |
| | February | Complete | Building Envelope & Fitout (Stage 3) | Demolition & Precinct Works |
| | March | Complete | Building Envelope & Fitout (Stage 3) | Demolition & Precinct Works |
| | April | Complete | Building Envelope & Fitout (Stage 3) | Demolition & Precinct Works |
| | May | Complete | Building Envelope & Fitout (Stage 3) | Demolition & Precinct Works |
| | June | Complete | Building Envelope & Fitout (Stage 3) | Public Domain Works (Stage 4) |
| | July | Complete | Building Envelope & Fitout (Stage 3) | Public Domain Works (Stage 4) |

Both construction sites will be primarily serviced by vehicles of a size up to and including 12.5 metre heavy rigid vehicles, 18.1-metre truck and dog combinations and 19-metre articulated vehicles. A summary of the anticipated peak number of construction vehicle movements for each project shown by month in Figure 4.2.

Figure 4.2: SMEEP and Meadowbank TAFE anticipated average peak truck movements

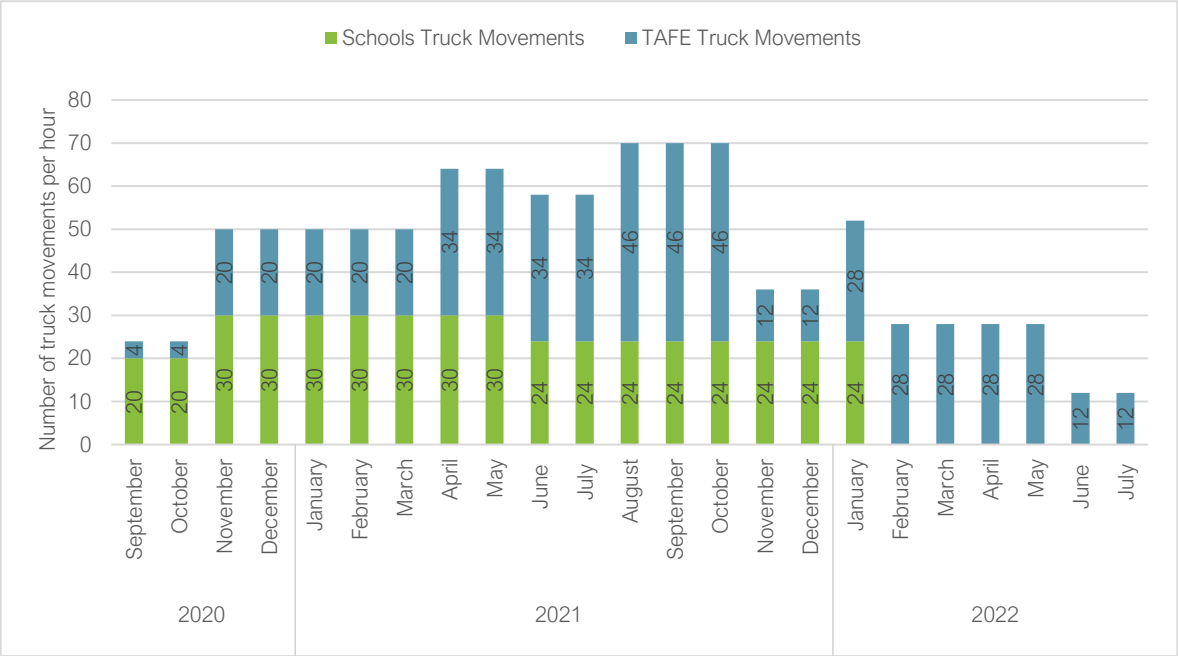



Figure 4.2 indicates the peak cumulative traffic activity with consideration for both construction sites is expected to occur between August and October 2021 with around 35 construction vehicles per hour

(70 construction vehicle movements per hour) accessing the precinct. It is anticipated that larger vehicles (articulated vehicles and truck and dog combinations) will account for up to half of the construction vehicle movements during peak activity (both typical non-concrete pour days and concrete pour days), noting that there is a significant quantity of prefabricated elements for the SMEEP.

The Transport and Accessibility Impact Assessment submitted to support the SSDA for the SMEEP indicates the schools are expected to generate 220 vehicle movements in the AM peak hour in 2022. The traffic generation for the proposed construction works is considered minor in comparison. Conservatively assuming one heavy vehicle is equivalent to three passenger car units on average, 70 heavy vehicle movements per hour during peak activity could be considered equivalent to 210 car movements per hour, which is less than the anticipated operational impact of the schools alone.

Further to this, it is noted that the above construction traffic volume estimates are for peak activity, with typical activity expected to generate less activity. On the basis of the above, it is anticipated that the anticipated construction traffic volumes of both projects throughout the project can be adequately accommodated on the surrounding road network.

In addition, there is ongoing construction work occurring in the Shepherds Bay precinct. Overlap in the use of Bowden Street in this regard is not expected to present any issues, noting the low heavy vehicle volumes anticipated for the early works stage.

Overall, considering the anticipated construction traffic generation of the TAFE development site of around four vehicles per hour, early works activities could not be expected to compromise the safety and/or function of the surrounding road network.

No other existing or future developments of significance are known to be occurring concurrently in the immediate area surrounding the site.

## 4.9. Traffic Movements in Adjoining Council Areas

No adverse impact is expected from the movement of heavy vehicles through adjacent council areas.

## 4.10. Site Inspections and Record Keeping

The construction work would be monitored to ensure that it proceeds as set out in the Construction Management Plan prepared by Hansen Yuncken and this CTPMP. A daily inspection before the start of the construction activity should take place to ensure that conditions accord with those stipulated in the plans and there are no potential hazards. Any potential risks or non-conformances to the CTPMP would be identified, recorded and dealt with if they arise.

## 4.11. Site Induction

All staff employed on the site by Hansen Yuncken (including sub-contractors) would be required to undergo a site induction. The induction would include permitted access routes to and from the construction site for site staff and delivery vehicles, limited parking arrangements, as well as standard environmental, WHS, driver protocols and emergency procedures. The agreed work hours must be included as part of this induction.

# A.SWEPT PATH ASSESSMENT

A

## SWEPT PATH KEY

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 500mm CLEARANCE FROM VEHICLE BODY

ASSUMED SPEED 15km/hFOR ON-STREET AND 5km/h FOR OFF-STREET MANOEUVRES




HRV

| | meters |
|---|---|
| Width | : 2.50 |
| Track | : 2.50 |
| Lock to Lock Time | : 6.0 |
| Steering Angle | : 35.2 |

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MEADOWBANK TAFE

EARLY WORKS PHASE 2
VEHICLE SWEPT PATH ASSESSMENT

DRAWING NO. N183633-04-01 SHEET 01 OF 15 ISSUE P2


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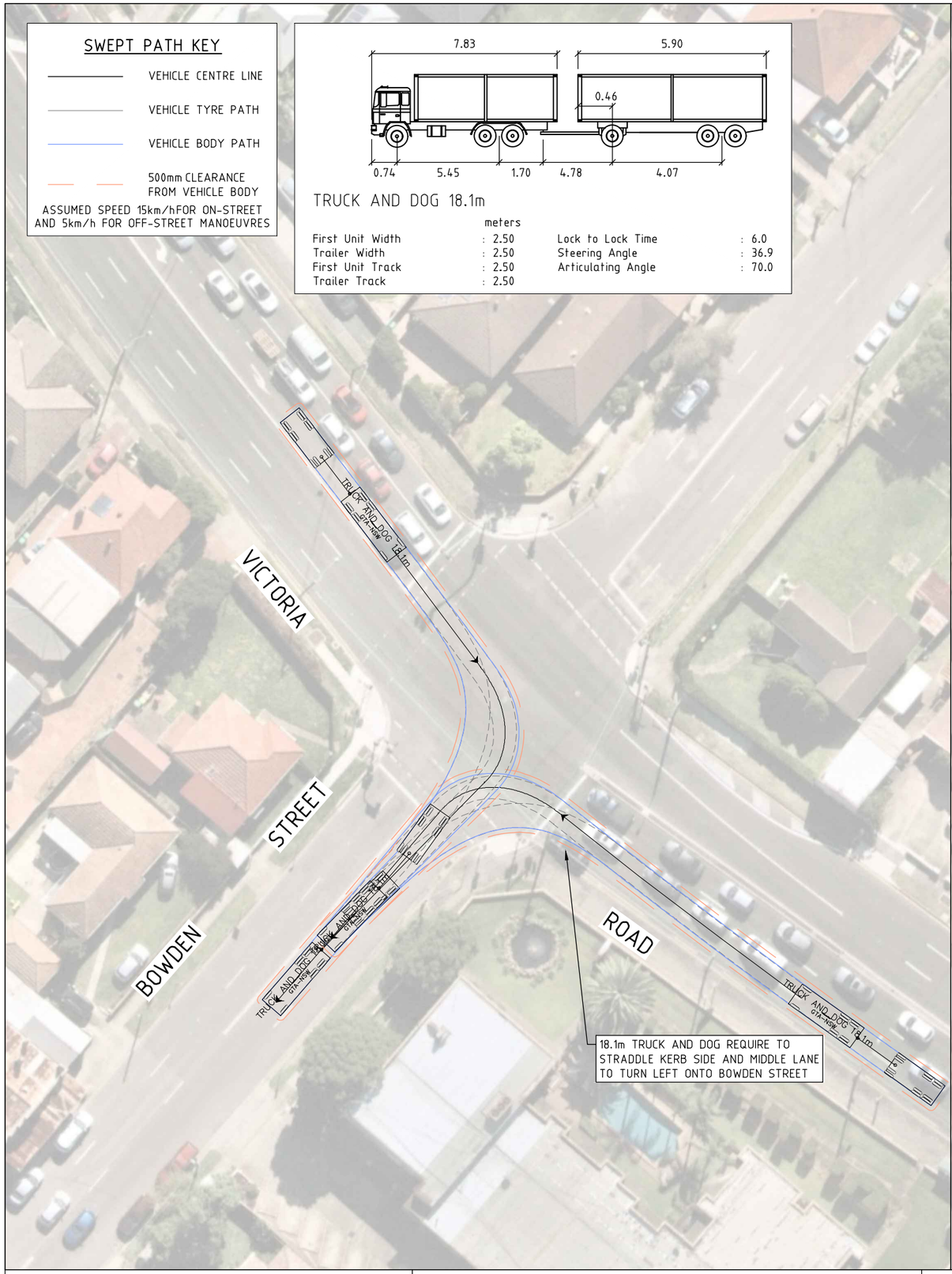
- 500mm CLEARANCE FROM VEHICLE BODY

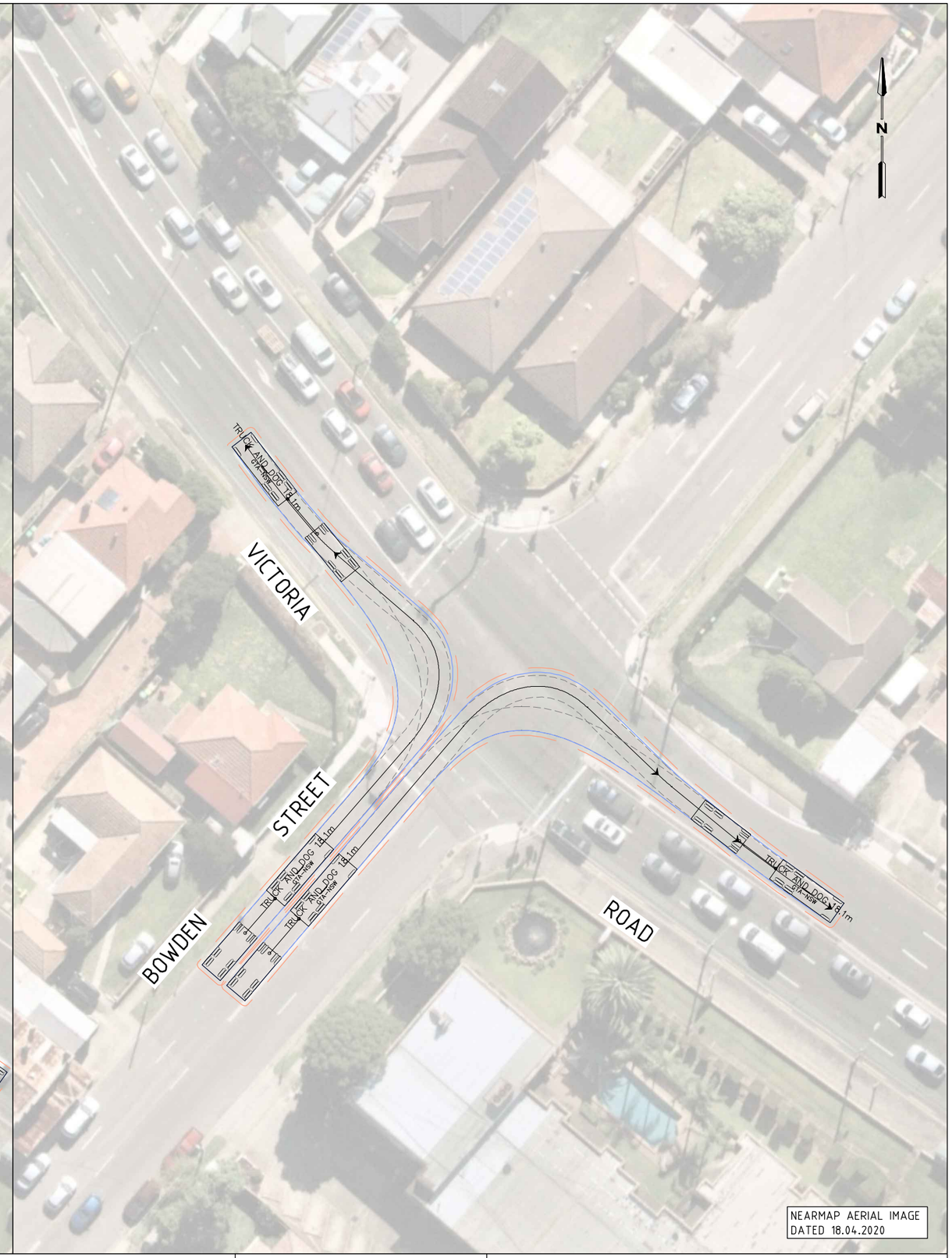
ASSUMED SPEED 15km/hFOR ON-STREET AND 5km/h FOR OFF-STREET MANOEUVRES




TRUCK AND DOG 18.1m

| | meters | | |
|---|---|---|---|
| First Unit Width | : 2.50 | Lock to Lock Time | : 6.0 |
| Trailer Width | : 2.50 | Steering Angle | : 36.9 |
| First Unit Track | : 2.50 | Articulating Angle | : 70.0 |
| Trailer Track | : 2.50 | | |





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EARLY WORKS PHASE 2
VEHICLE SWEPT PATH ASSESSMENT

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EARLY WORKS PHASE 2
VEHICLE SWEPT PATH ASSESSMENT

DRAWING NO. N183633-04-03 SHEET 03 OF 15 ISSUE P2

## SWEPT PATH KEY

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 500mm CLEARANCE FROM VEHICLE BODY

ASSUMED SPEED 15km/hFOR ON-STREET AND 5km/h FOR OFF-STREET MANOEUVRES




TRUCK AND DOG 18.1m

| | meters | | |
|---|---|---|---|
| First Unit Width | : 2.50 | Lock to Lock Time | : 6.0 |
| Trailer Width | : 2.50 | Steering Angle | : 36.9 |
| First Unit Track | : 2.50 | Articulating Angle | : 70.0 |
| Trailer Track | : 2.50 | | |

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VEHICLE SWEPT PATH ASSESSMENT

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## SWEPT PATH KEY

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 500mm CLEARANCE FROM VEHICLE BODY

ASSUMED SPEED 15km/hFOR ON-STREET AND 5km/h FOR OFF-STREET MANOEUVRES




HRV

| | meters |
|---|---|
| Width | : 2.50 |
| Track | : 2.50 |
| Lock to Lock Time | : 6.0 |
| Steering Angle | : 35.2 |

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## VEHICLE SWEPT PATH ASSESSMENT

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## SWEPT PATH KEY

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- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 500mm CLEARANCE FROM VEHICLE BODY

ASSUMED SPEED 15km/hFOR ON-STREET AND 5km/h FOR OFF-STREET MANOEUVRES




TRUCK AND DOG 18.1m

| | meters | | |
|---|---|---|---|
| First Unit Width | : 2.50 | Lock to Lock Time | : 6.0 |
| Trailer Width | : 2.50 | Steering Angle | : 36.9 |
| First Unit Track | : 2.50 | Articulating Angle | : 70.0 |
| Trailer Track | : 2.50 | | |

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VEHICLE SWEPT PATH ASSESSMENT

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## SWEPT PATH KEY

VEHICLE CENTRE LINE

VEHICLE TYRE PATH

VEHICLE BODY PATH

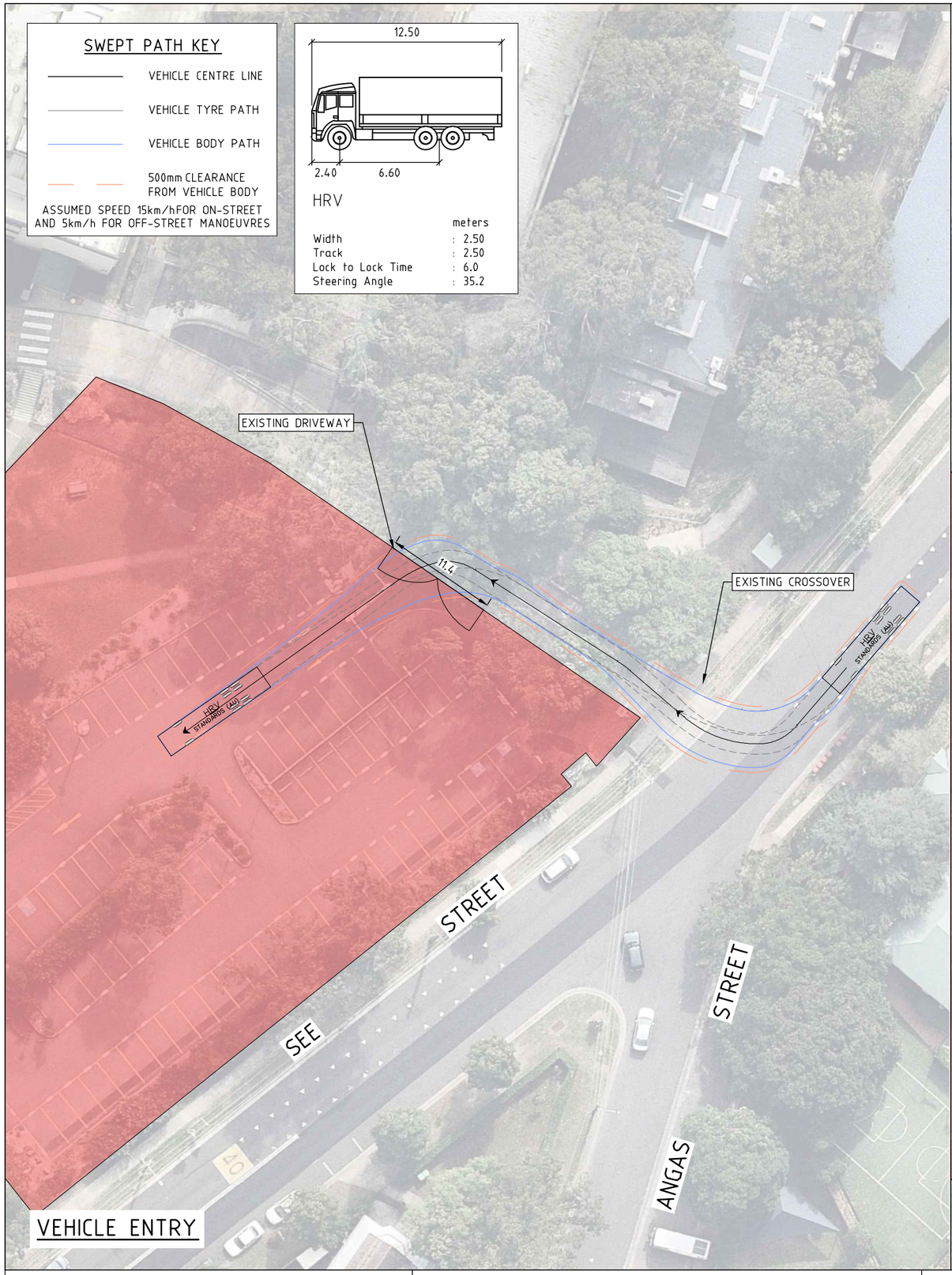
500mm CLEARANCE FROM VEHICLE BODY

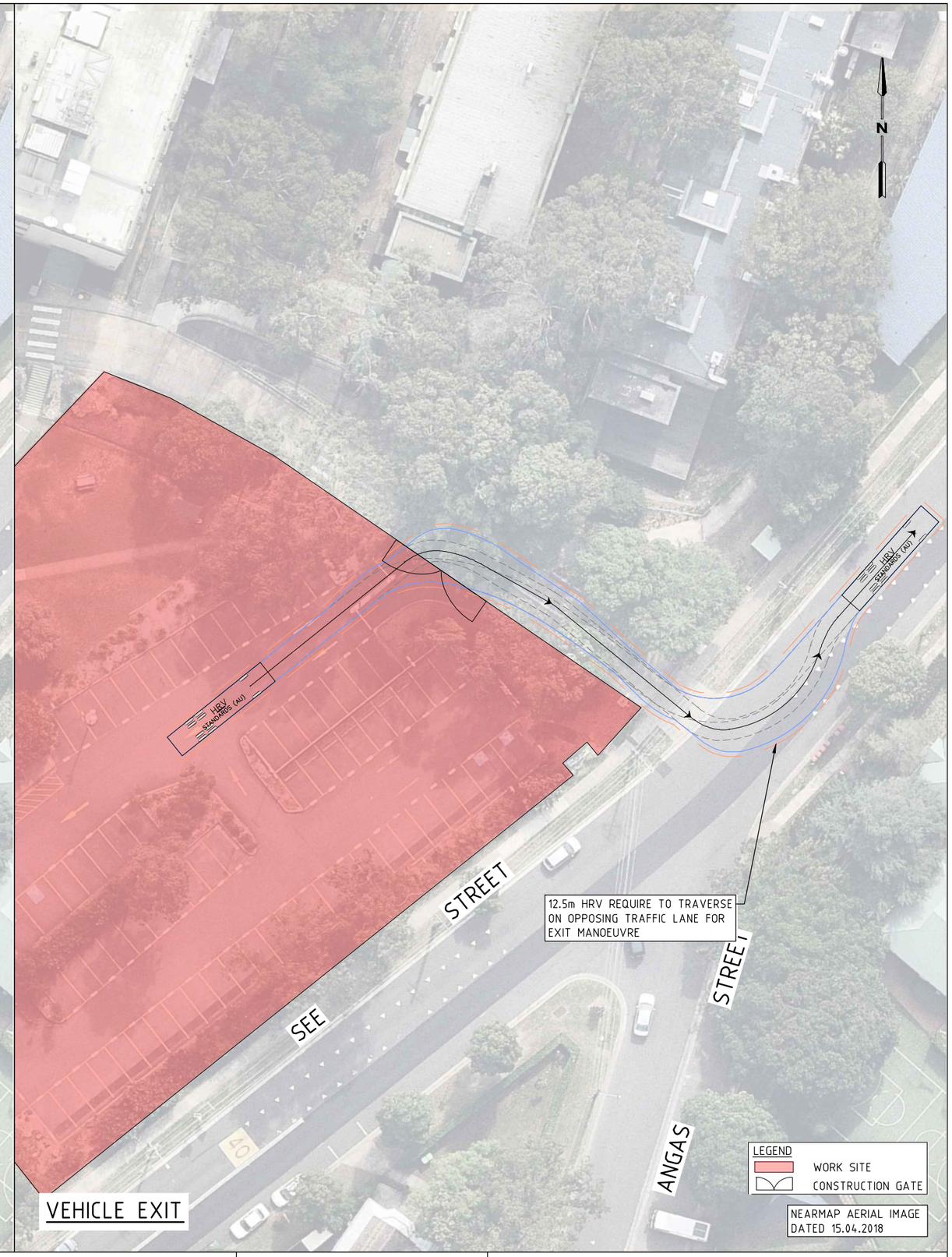
ASSUMED SPEED 15km/hFOR ON-STREET AND 5km/h FOR OFF-STREET MANOEUVRES




HRV

| | meters |
|---|---|
| Width | : 2.50 |
| Track | : 2.50 |
| Lock to Lock Time | : 6.0 |
| Steering Angle | : 35.2 |





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# MEADOWBANK TAFE
# MULTI-STOREY CAR PARK
# EARLY WORKS PHASE 2
# VEHICLE SWEPT PATH ASSESSMENT

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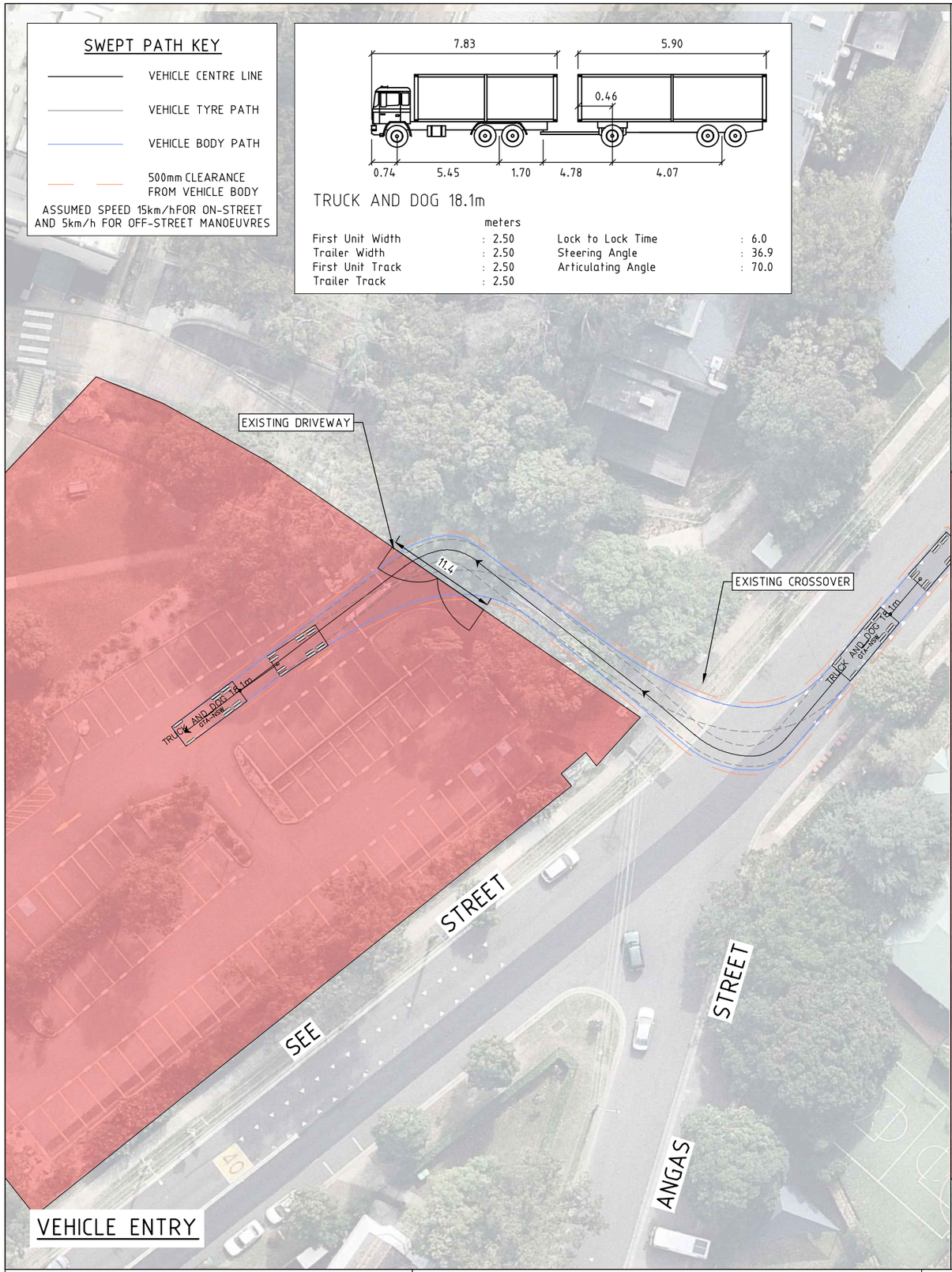
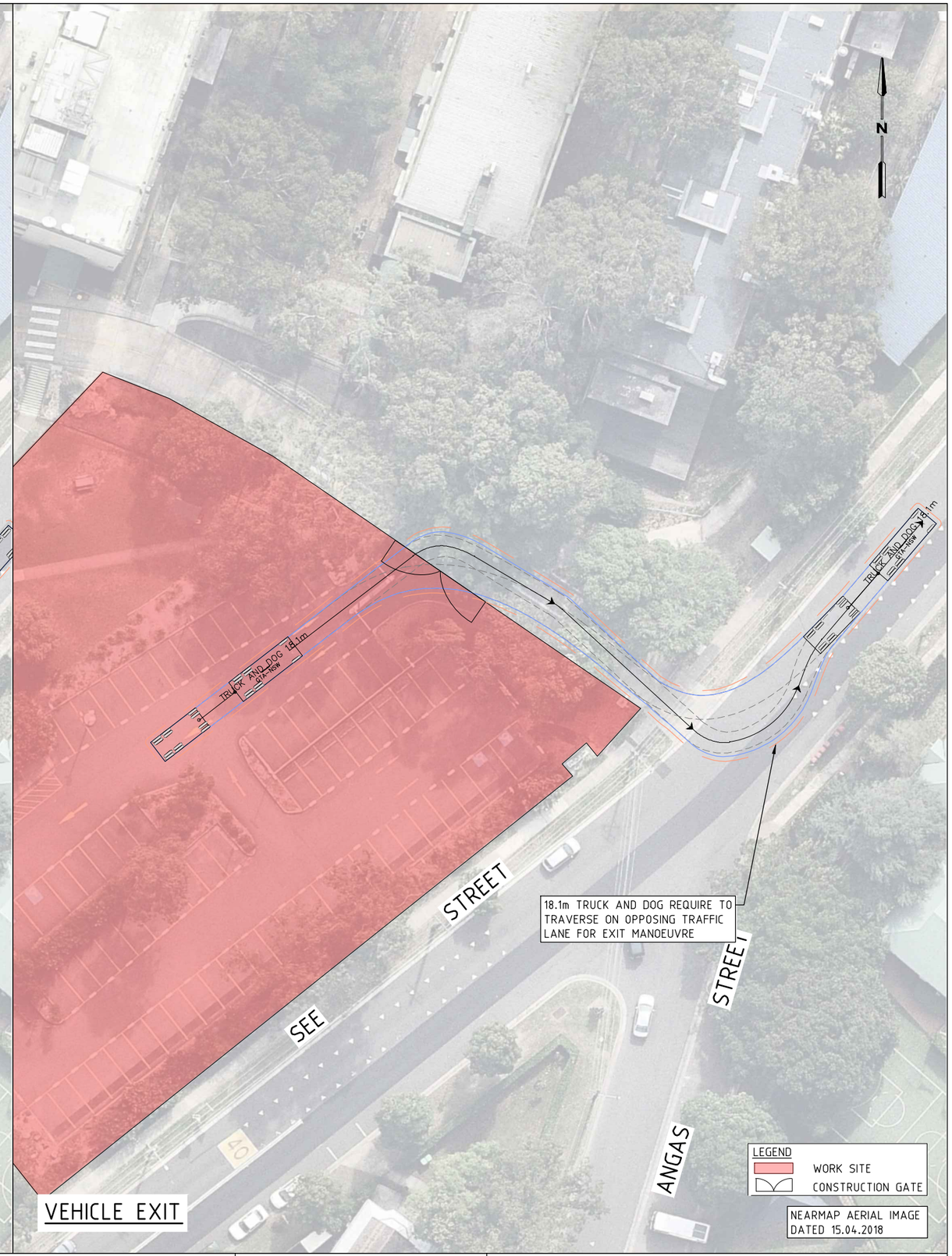
ASSUMED SPEED 15km/hFOR ON-STREET AND 5km/h FOR OFF-STREET MANOEUVRES




## TRUCK AND DOG 18.1m

| | meters | | |
|---|---|---|---|
| First Unit Width | : 2.50 | Lock to Lock Time | : 6.0 |
| Trailer Width | : 2.50 | Steering Angle | : 36.9 |
| First Unit Track | : 2.50 | Articulating Angle | : 70.0 |
| Trailer Track | : 2.50 | | |





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# MEADOWBANK TAFE
# MULTI-STOREY CAR PARK
# EARLY WORKS PHASE 2
# VEHICLE SWEPT PATH ASSESSMENT

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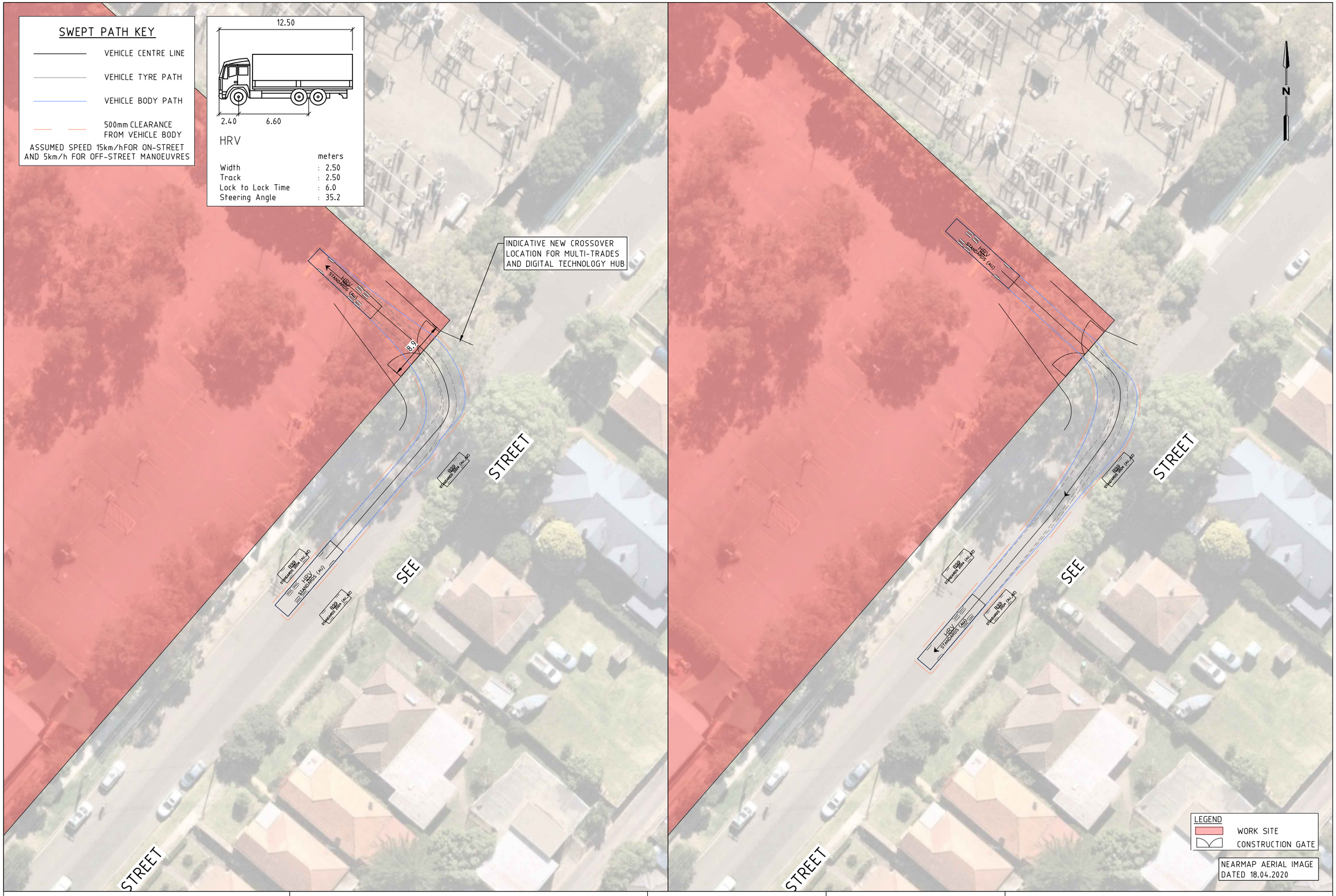


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MEADOWBANK TAFE
MULTI-TRADE AND DIGITAL TECHNOLOGY HUB
EARLY WORKS PHASE 2
VEHICLE SWEPT PATH ASSESSMENT

DRAWING NO. N183633-04-09 SHEET 09 OF 15 ISSUE P2

\\GTA.COM.AU\PROJECTFILES\PROJECTFILES\YD\N18300-18399\N183633 MEADOWBANK EDUCATION PRECINCT - CONSTRUCTION HY\CAD\N183633-04-P2.DWG PLOTTED BY RAYMOND ZHANG ON 13/10/2020 AT 12:11

## SWEPT PATH KEY

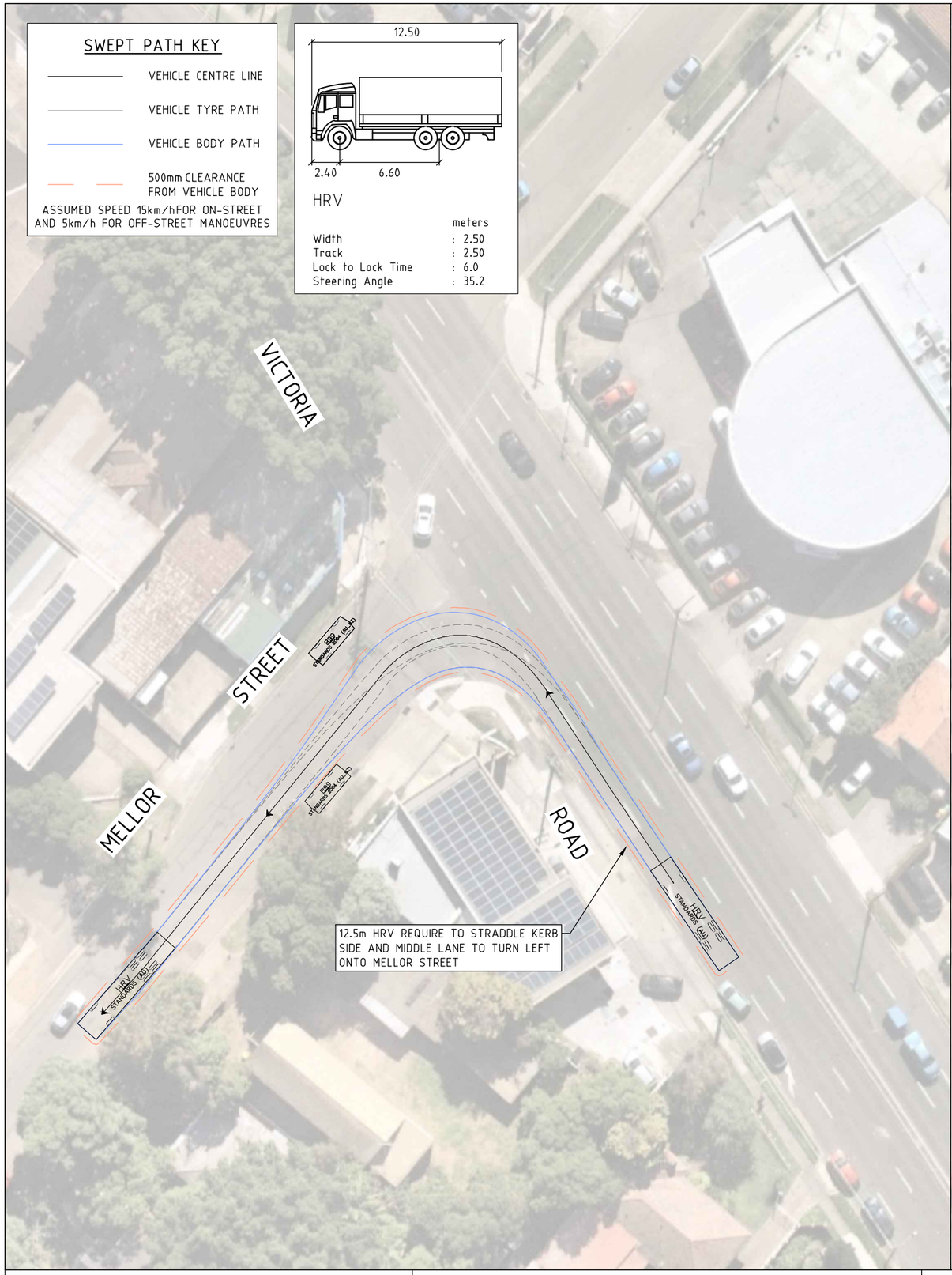
- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 500mm CLEARANCE FROM VEHICLE BODY

ASSUMED SPEED 15km/hFOR ON-STREET AND 5km/h FOR OFF-STREET MANOEUVRES




HRV

| | meters |
|---|---|
| Width | : 2.50 |
| Track | : 2.50 |
| Lock to Lock Time | : 6.0 |
| Steering Angle | : 35.2 |



NEARMAP AERIAL IMAGE
DATED 18.04.2020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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.

DESIGNED R.ZHANG
DESIGN CHECK M.BRINUMS
APPROVED BY B.MAYNARD
DATE ISSUED 13 OCTOBER 2020

SCALE A3 0 2.5 5 10 1:500
CAD FILE NO. N183633-04-P2.DWG

MEADOWBANK TAFE

EARLY WORKS PHASE 2
VEHICLE SWEPT PATH ASSESSMENT

DRAWING NO. N183633-04-10 SHEET 10 OF 15 ISSUE P2


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## SWEPT PATH KEY

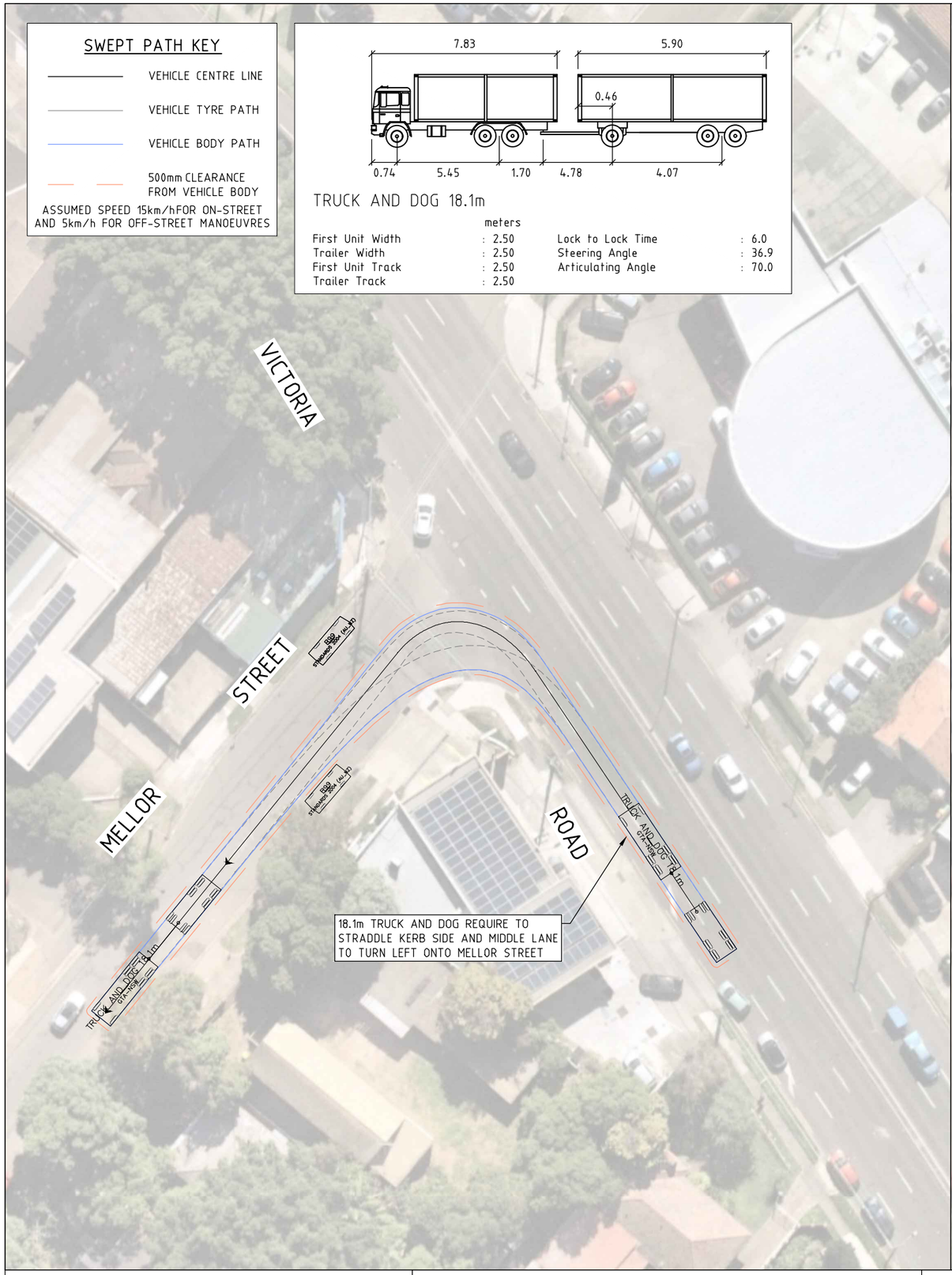
- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 500mm CLEARANCE FROM VEHICLE BODY

ASSUMED SPEED 15km/hFOR ON-STREET AND 5km/h FOR OFF-STREET MANOEUVRES




TRUCK AND DOG 18.1m

| | meters | | |
|---|---|---|---|
| First Unit Width | : 2.50 | Lock to Lock Time | : 6.0 |
| Trailer Width | : 2.50 | Steering Angle | : 36.9 |
| First Unit Track | : 2.50 | Articulating Angle | : 70.0 |
| Trailer Track | : 2.50 | | |



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CAD FILE NO. N183633-04-P2.DWG

MEADOWBANK TAFE

EARLY WORKS PHASE 2
VEHICLE SWEPT PATH ASSESSMENT

DRAWING NO. N183633-04-11 SHEET 11 OF 15 ISSUE P2


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## SWEPT PATH KEY

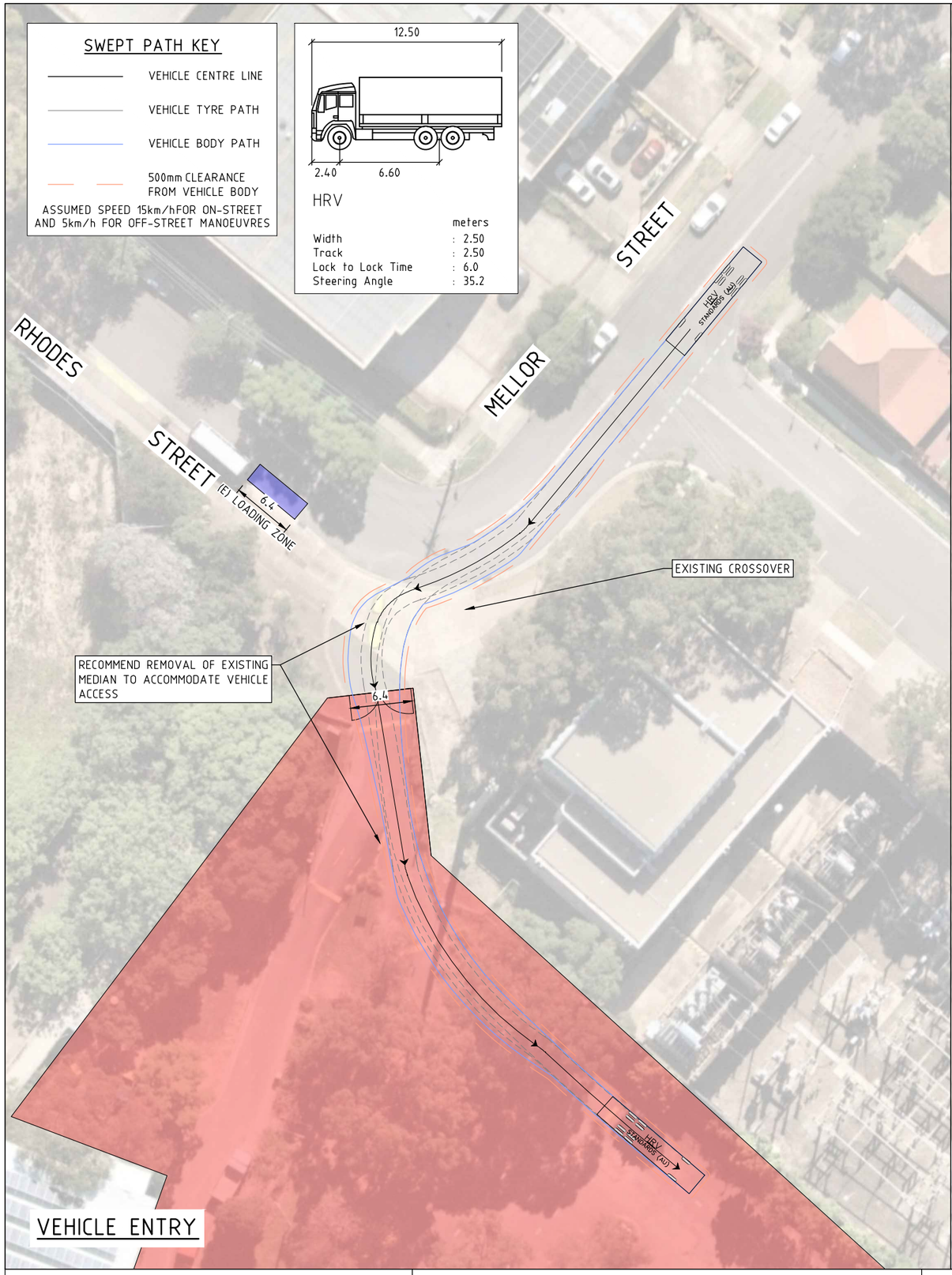
- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 500mm CLEARANCE FROM VEHICLE BODY

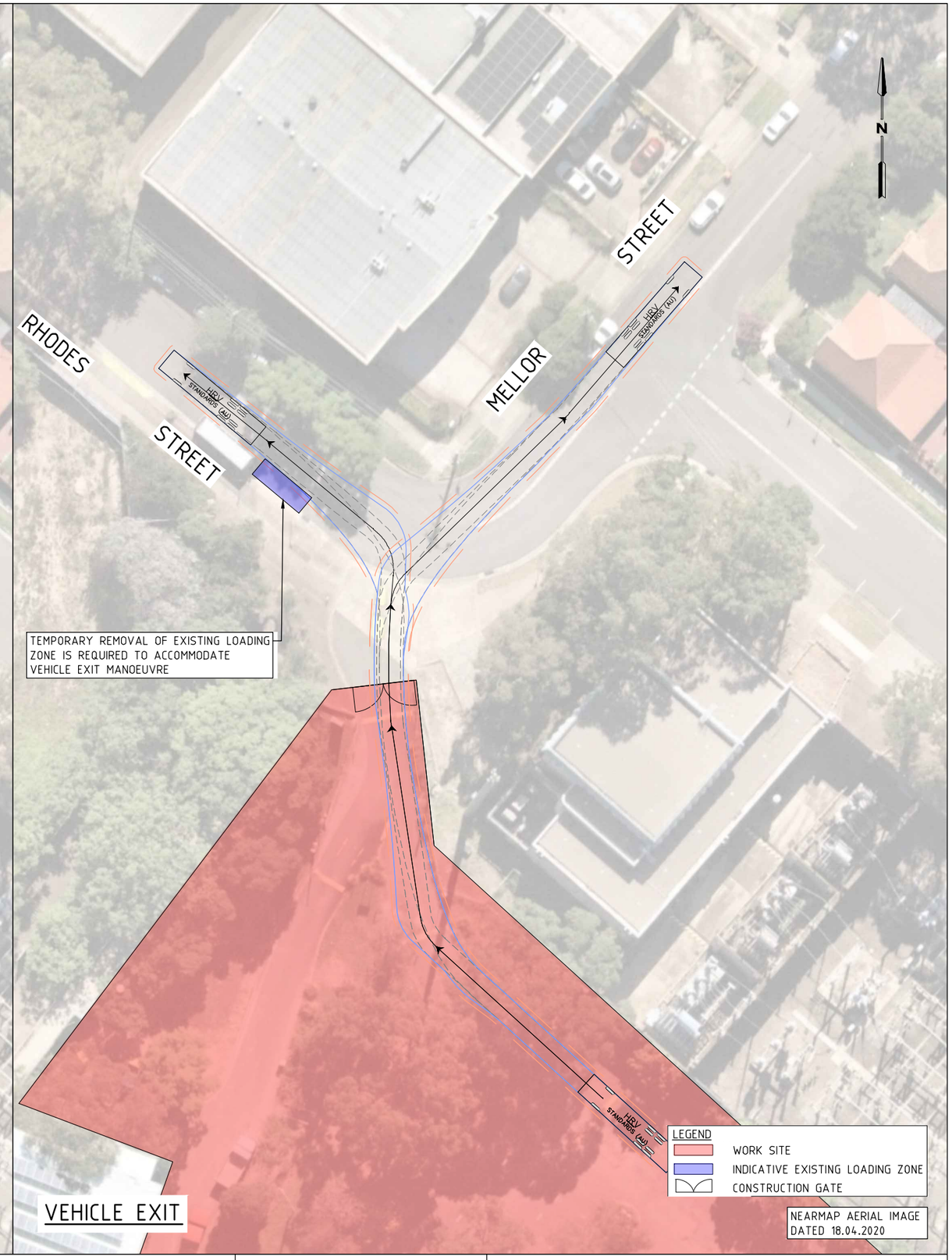
ASSUMED SPEED 15km/hFOR ON-STREET AND 5km/h FOR OFF-STREET MANOEUVRES




HRV

| | meters |
|---|---|
| Width | : 2.50 |
| Track | : 2.50 |
| Lock to Lock Time | : 6.0 |
| Steering Angle | : 35.2 |





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| | |
|---|---|
| DESIGNED R.ZHANG | DESIGN CHECK M.BRINUMS |
| APPROVED BY B.MAYNARD | DATE ISSUED 13 OCTOBER 2020 |

SCALE A3 0 2.5 5 10 1:500

CAD FILE NO. N183633-04-P2.DWG

MEADOWBANK TAFE
MULTI-TRADE AND DIGITAL TECHNOLOGY HUB
EARLY WORKS PHASE 2
VEHICLE SWEPT PATH ASSESSMENT

DRAWING NO. N183633-04-12 SHEET 12 OF 15 ISSUE P2


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## SWEPT PATH KEY

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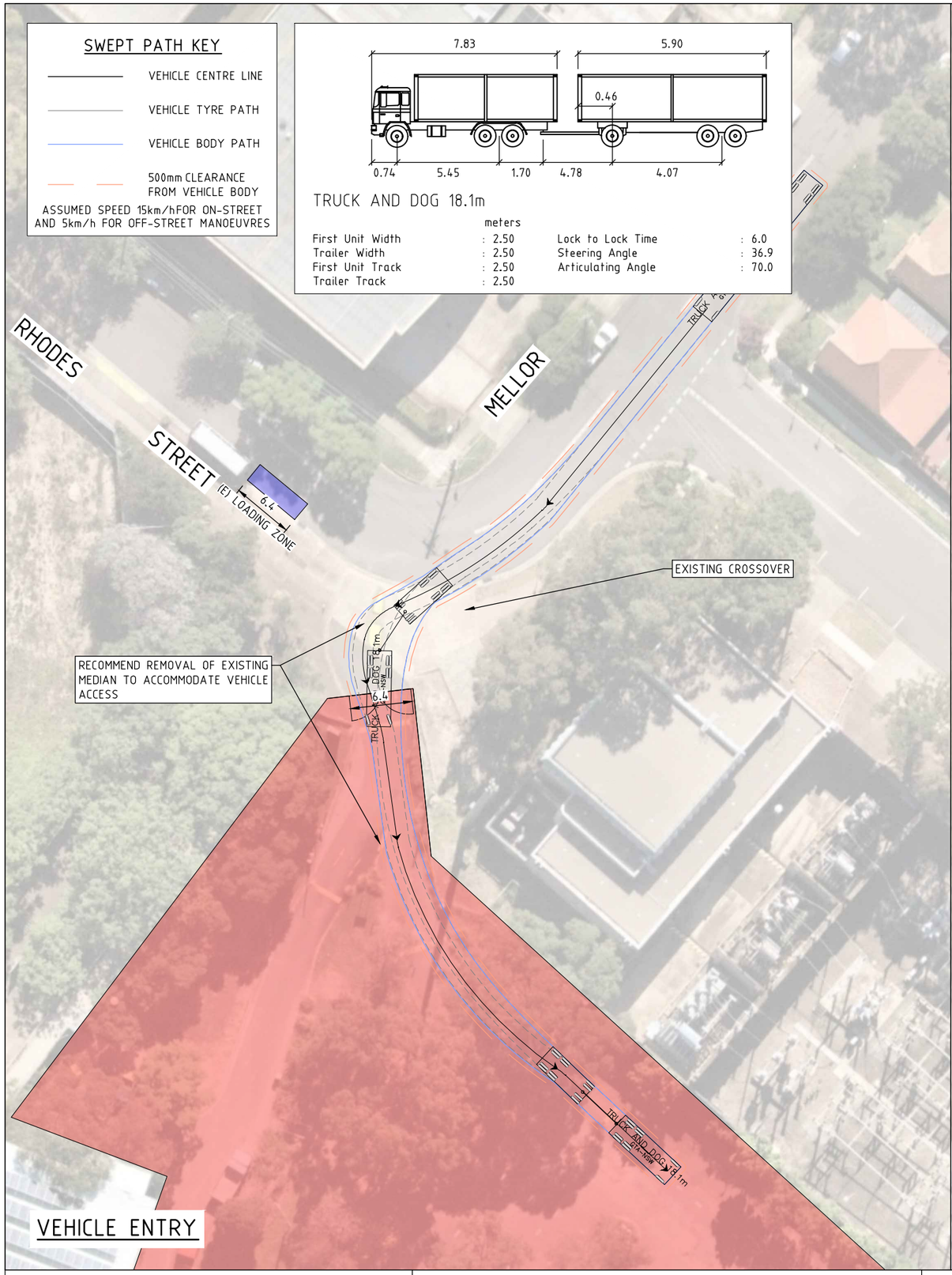
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 500mm CLEARANCE FROM VEHICLE BODY

ASSUMED SPEED 15km/hFOR ON-STREET AND 5km/h FOR OFF-STREET MANOEUVRES

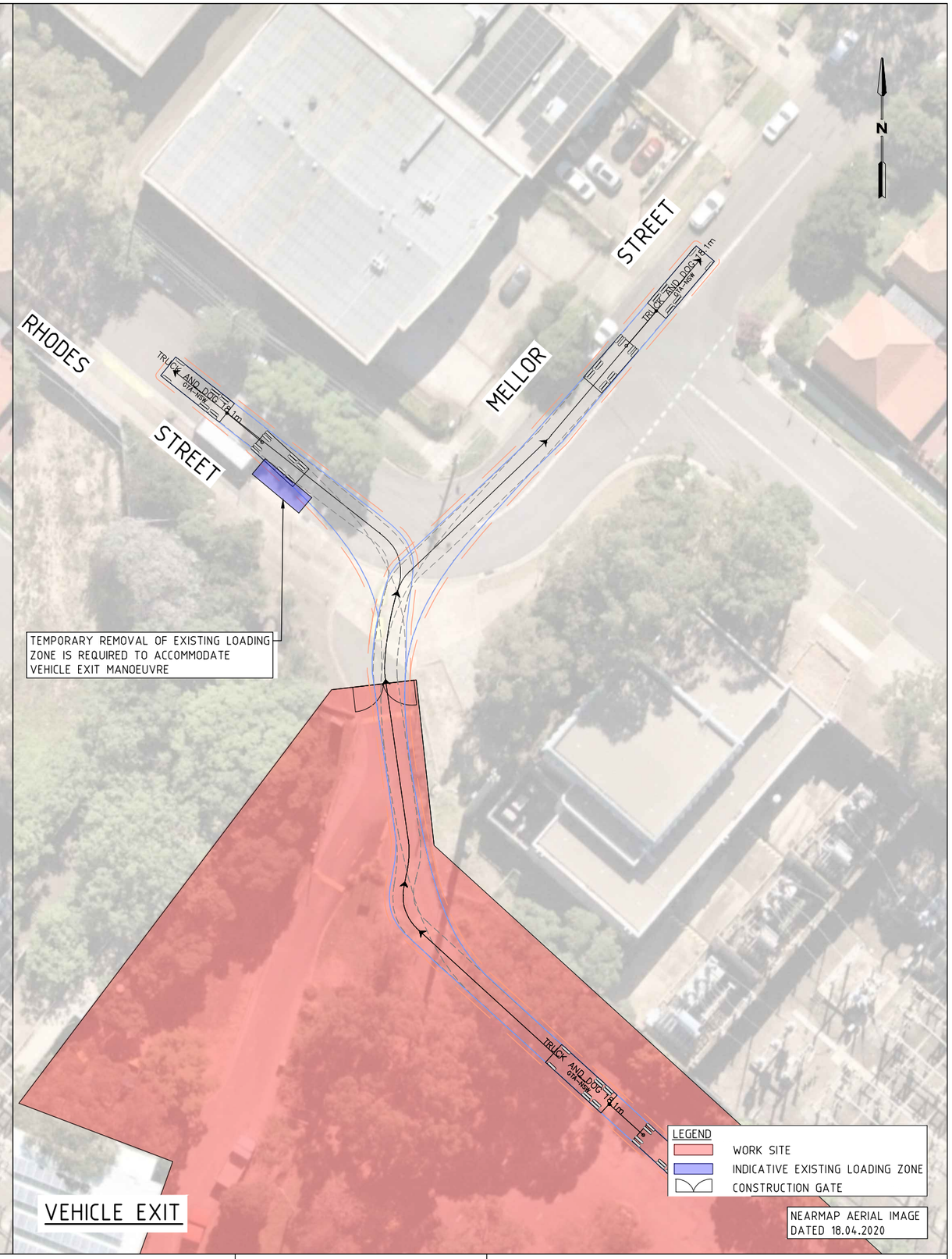



TRUCK AND DOG 18.1m

| | meters | | |
|---|---|---|---|
| First Unit Width | : 2.50 | Lock to Lock Time | : 6.0 |
| Trailer Width | : 2.50 | Steering Angle | : 36.9 |
| First Unit Track | : 2.50 | Articulating Angle | : 70.0 |
| Trailer Track | : 2.50 | | |




VEHICLE ENTRY




VEHICLE EXIT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DESIGN CHECK M.BRINUMS
APPROVED BY B.MAYNARD
DATE ISSUED 13 OCTOBER 2020

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CAD FILE NO. N183633-04-P2.DWG

MEADOWBANK TAFE
MULTI-TRADE AND DIGITAL TECHNOLOGY HUB
EARLY WORKS PHASE 2
VEHICLE SWEPT PATH ASSESSMENT

DRAWING NO. N183633-04-13 SHEET 13 OF 15 ISSUE P2


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## SWEPT PATH KEY

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- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 500mm CLEARANCE FROM VEHICLE BODY

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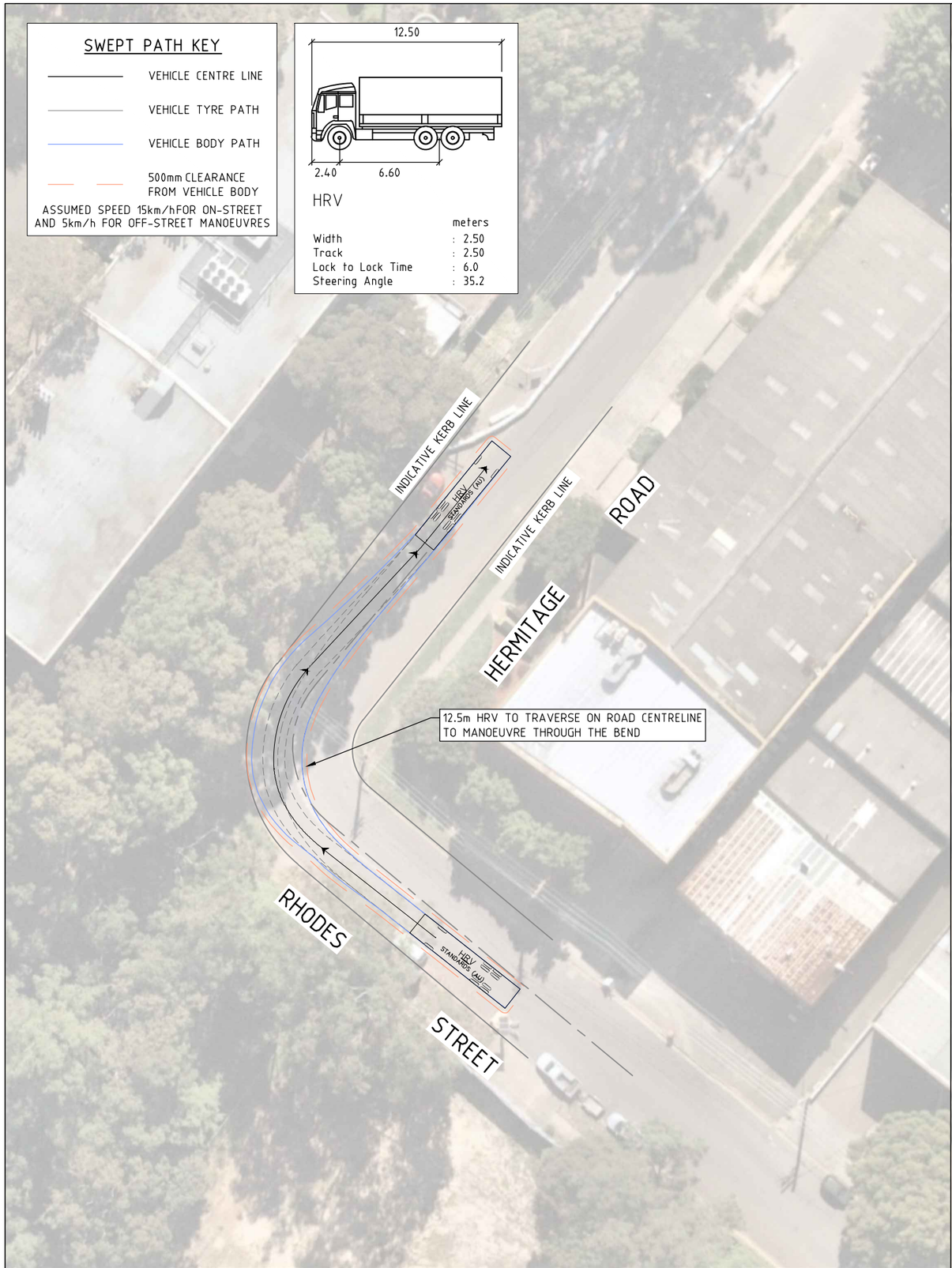
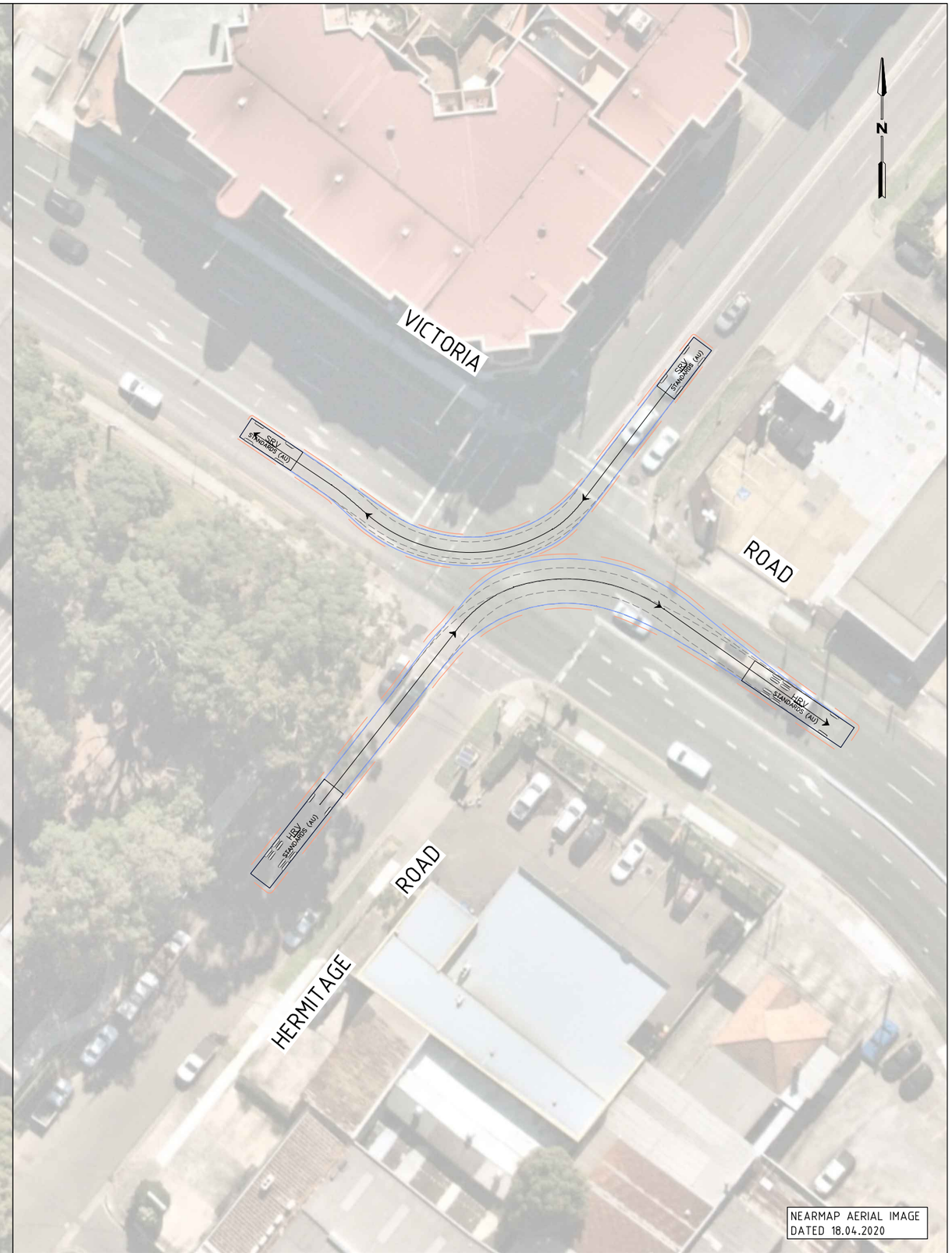
HRV

| | meters |
|---|---|
| Width | : 2.50 |
| Track | : 2.50 |
| Lock to Lock Time | : 6.0 |
| Steering Angle | : 35.2 |





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MEADOWBANK TAFE

EARLY WORKS PHASE 2
VEHICLE SWEPT PATH ASSESSMENT

DRAWING NO. N183633-04-14 SHEET 14 OF 15 ISSUE P2


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ASSUMED SPEED 15km/hFOR ON-STREET AND 5km/h FOR OFF-STREET MANOEUVRES




## TRUCK AND DOG 18.1m

| | meters | | |
|---|---|---|---|
| First Unit Width | : 2.50 | Lock to Lock Time | : 6.0 |
| Trailer Width | : 2.50 | Steering Angle | : 36.9 |
| First Unit Track | : 2.50 | Articulating Angle | : 70.0 |
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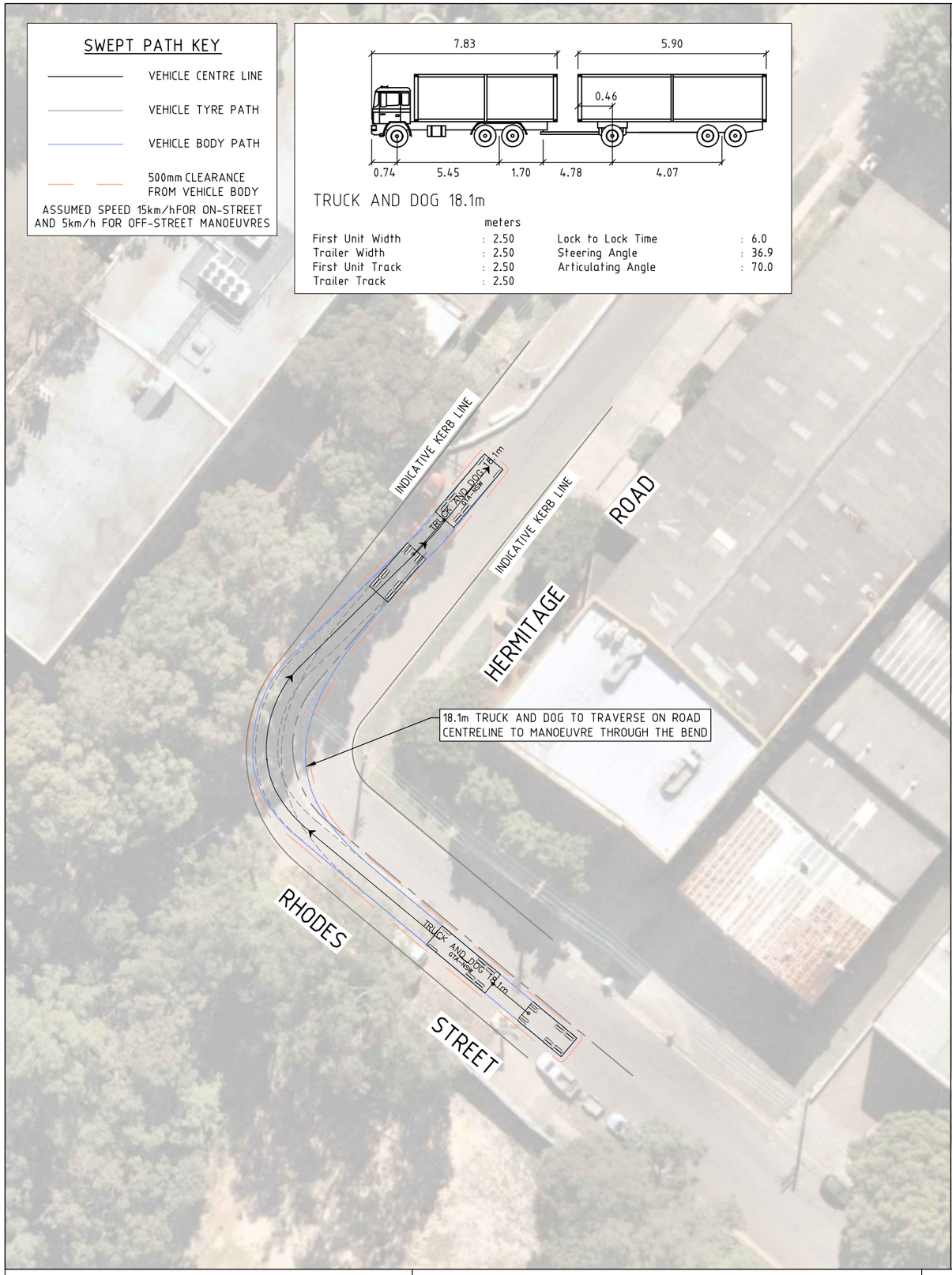


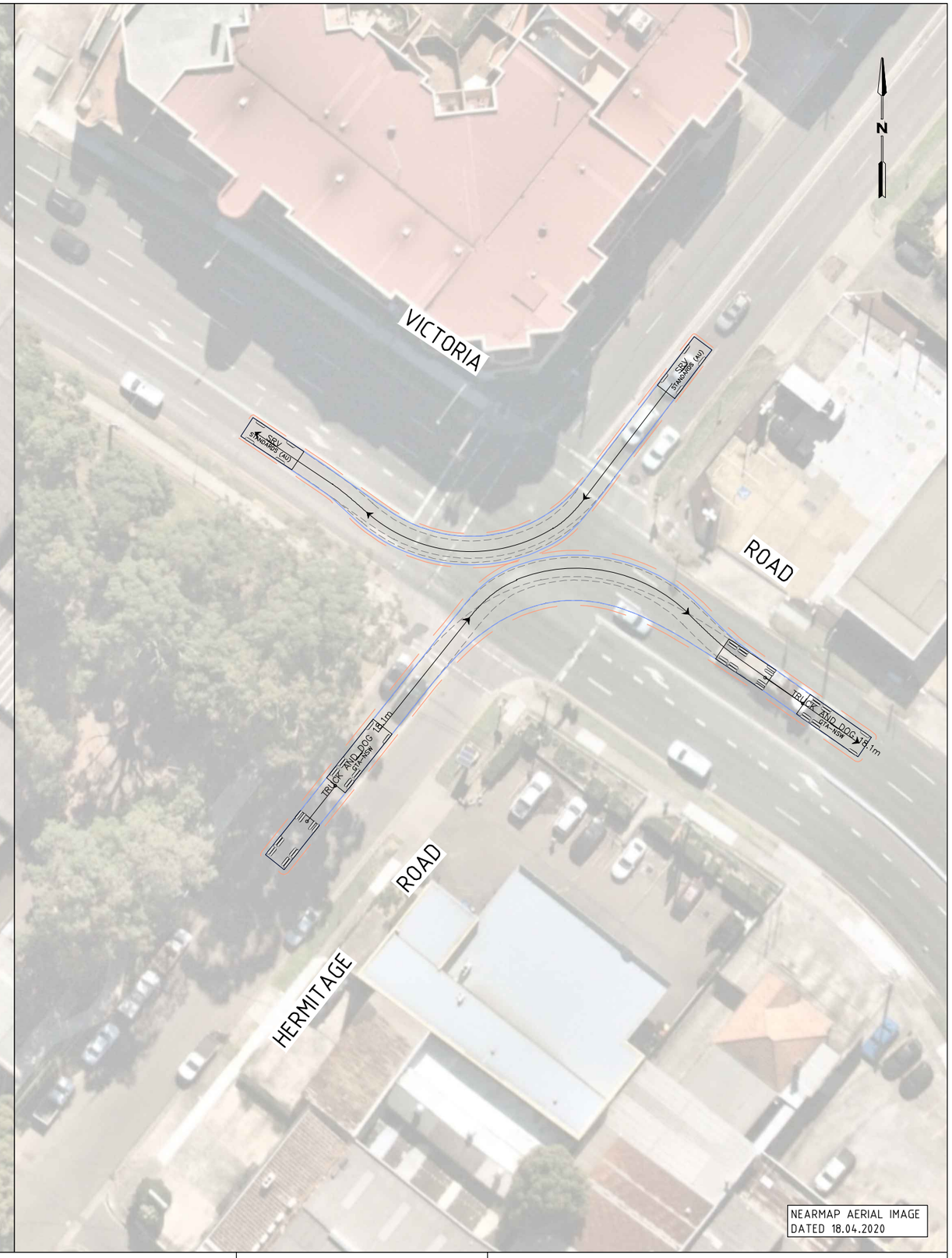


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SUBJECT TO CHANGE WITHOUT NOTIFICATION

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DESIGNED R.ZHANG
DESIGN CHECK M.BRINUMS
APPROVED BY B.MAYNARD
DATE ISSUED 13 OCTOBER 2020

SCALE A3 0 2.5 5 10 1:500
CAD FILE NO. N183633-04-P2.DWG

MEADOWBANK TAFE

EARLY WORKS PHASE 2
VEHICLE SWEPT PATH ASSESSMENT

DRAWING NO. N183633-04-15 SHEET 15 OF 15 ISSUE P2


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# B.TRAFFIC CONTROL PLANS

B

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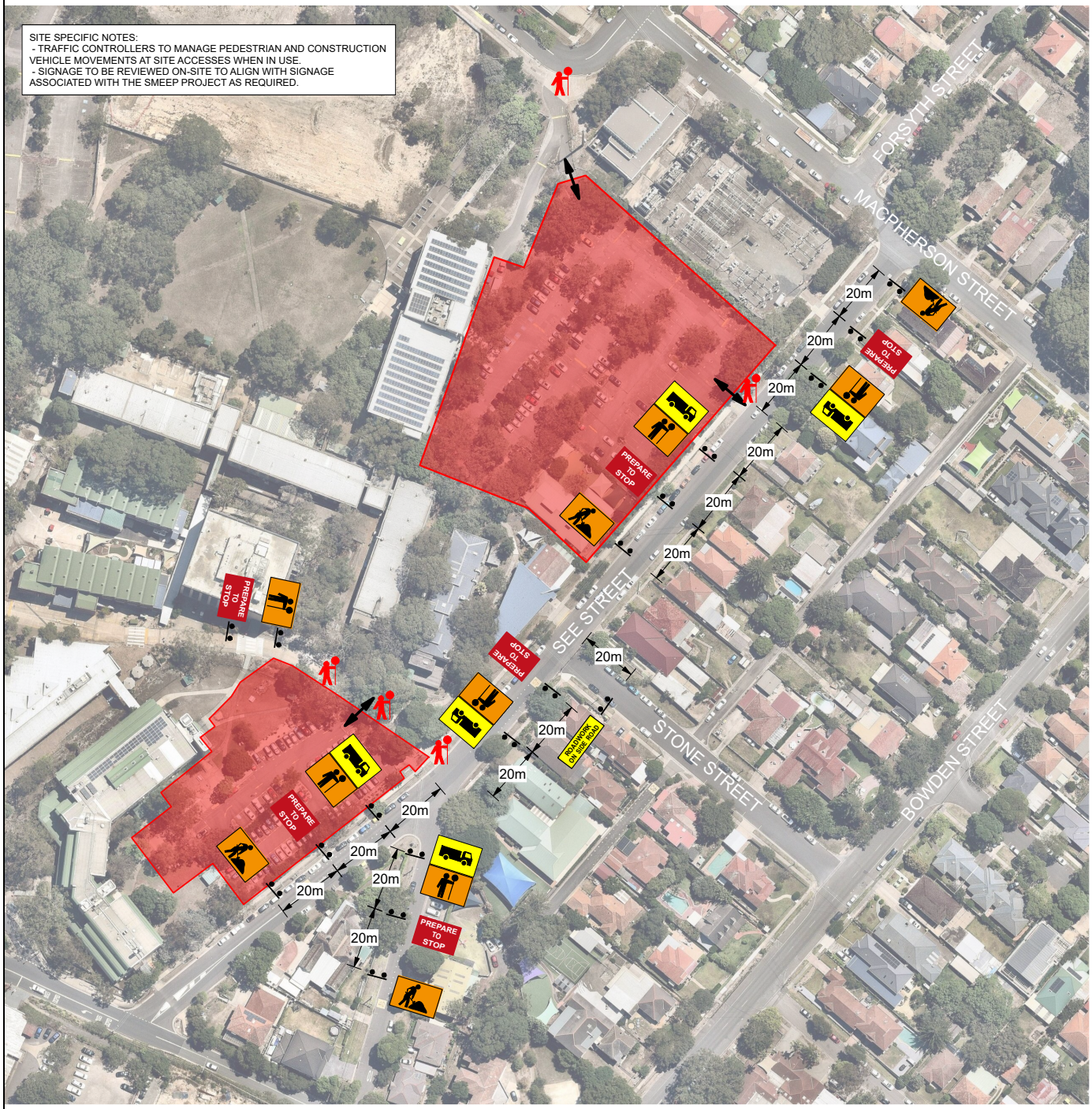


TRAFFIC MANAGEMENT NOTES:
1. NOT ALL DIMENSIONS SHOWN ARE TO SCALE.
2. LOCATION OF SIGNS ARE TO BE CONFIRMED ON-SITE TO ENSURE APPROPRIATE VISIBILITY.
3. ALL SIGNS TO BE MINIMUM SIZE A.
4. ALL SIGNS TO BE CLASS 1 RETROREFLECTIVE.
5. ALL TRAFFIC CONTROL PLANS ARE TO BE IMPLEMENTED IN ACCORDANCE WITH THE RMS "TRAFFIC CONTROL AT WORK SITES" MANUAL, VER 5 (RMS 2018) AND AUSTRALIAN STANDARDS AS1742.3:2009 MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, PART 3: TRAFFIC CONTROL DEVICES FOR WORKS ON ROADS.
6. THIS TRAFFIC CONTROL PLAN MUST BE SETUP BY A PERSON HOLDING AN "IMPLEMENT TRAFFIC MANAGEMENT PLAN" TICKET AND THE RMS TRAFFIC CONTROL AT WORK SITES CHECKLIST SHALL BE COMPLETED PRIOR TO IMPLEMENTATION.
7. THE ACCREDITTED PERSONNEL SHALL IMPLEMENT THE APPROVED TCP BEFORE ANY PHYSICAL WORK COMMENCES AND ENSURE A COPY OF THE TCP IS KEPT ON-SITE. THE ACCREDITTED PERSONNEL SHALL ALSO DRIVE THROUGH THE SITE BEFORE WORKS BEGIN TO ENSURE THAT THE TCP HAS BEEN IMPLEMENTED CORRECTLY AND THAT IT WILL WARN, INSTRUCT AND GUIDE ROAD USERS AS DESIGNED. ANY VARIATIONS MADE TO THE PLAN MUST BE MARKED ON THE PLAN AND INITIALLED BY THE ACCREDITTED PERSONNEL.
8. IT IS THE RESPONSIBILITY OF AN ACCREDITTED PERSONNEL WITH A 'PREPARE A WORK ZONE TRAFFIC MANAGEMENT PLAN' TICKET TO ENSURE THE FOLLOWING:
- THE INTEGRITY OF ALL TRAFFIC CONTROL MEASURES THROUGH TO THE FINAL REMOVAL. THIS INCLUDES DAILY CHECKS OF ALL SIGNS AND DEVICES. THE CORRESPONDING RECORDS OF CHECKS SHALL BE KEPT ON FILE FOR AUDITING PURPOSES.
- VEHICULAR ACCESS AND SERVICING REQUIREMENTS ARE TO BE MAINTAINED AT ALL TIMES TO ADJACENT PROPERTIES AFFECTED BY TRAFFIC CONTROL MEASURES.
- AT ALL TIMES AN UP-TO-DATE COPY OF "TRAFFIC CONTROL AT WORK SITES" SHOULD BE AVAILABLE FOR REFERENCE AND IMPLEMENTATION AS REQUIRED ON-SITE.
9. ALL WORKERS WILL BE CONFINED TO THE DEDICATED WORKS AREA SHOWN ON THE PLAN.
10. IF THE WORKSITE IS LEFT UNATTENDED IT IS THE CONTRACTOR'S DUTY TO ENSURE THAT THE APPROPRIATE MEASURES ARE TAKEN TO PROVIDE A SAFE ENVIRONMENT FOR VEHICLES AND PEDESTRIANS TO RELEVANT AUSTRALIAN STANDARDS.
11. TRAFFIC CONTROLLERS (T1-34) AND PREPARE TO STOP (T1-18) SIGNS ARE TO BE COVERED OR REMOVED WHEN TRAFFIC CONTROLLER/S ARE NOT ON SITE.
12. ALL SIGNAGE IS TO BE CLEAN, CLEARLY VISIBLE AND NOT OBSCURED.
13. ROADWORK SIGNS TO BE COVERED OR REMOVED WHEN WORKERS ARE NOT ON SITE.
14. ALL WORKERS MUST ADHERE TO THE APPLICABLE SAFE WORK DISTANCE AS DESCRIBED IN AS1742.3:2009.
15. ALL DISTANCES BETWEEN SIGNS ARE TO BE IN ACCORDANCE WITH SECTION 2.5.2 OF AS1742.3:2009. HOWEVER, MODIFICATIONS CAN BE MADE TO SUIT SITE CONDITIONS.

**LEGEND**

- WORK AREA
- A-CLASS HOARDING/ FENCING
- CONSTRUCTION VEHICLE ACCESS
- TRAFFIC CONTROLLER
- SIGNPOST

CERTIFICATION
THE UNDERSIGNED HAS COMPLETED AND OBTAINED:
- PREPARE A WORK ZONE TRAFFIC MANAGEMENT PLAN

CERTIFICATE NO: 0051848769 (MACKENZIE BRINUMS)

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MEADOWBANK TAFE

EARLY WORKS PHASE 2
TRAFFIC CONTROL PLAN 1

DATE: 07/10/2020
DRAWING NO. N183633-02-01-P1

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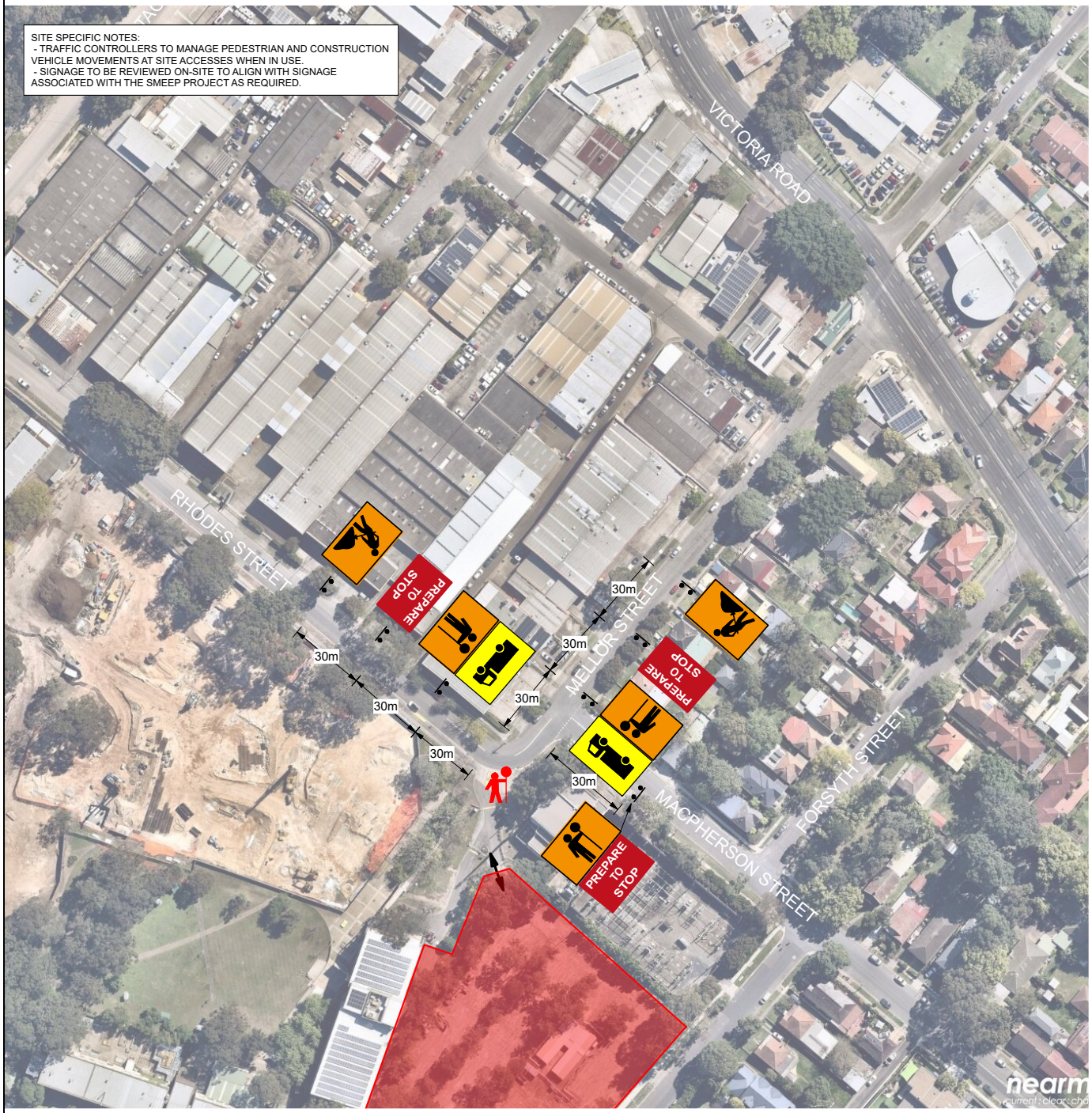


TRAFFIC MANAGEMENT NOTES:

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- VEHICULAR ACCESS AND SERVICING REQUIREMENTS ARE TO BE MAINTAINED AT ALL TIMES TO ADJACENT PROPERTIES AFFECTED BY TRAFFIC CONTROL MEASURES.
- AT ALL TIMES AN UP-TO-DATE COPY OF "TRAFFIC CONTROL AT WORK SITES" SHOULD BE AVAILABLE FOR REFERENCE AND IMPLEMENTATION AS REQUIRED ON-SITE.
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**LEGEND**

- WORK AREA
- A-CLASS HOARDING/ FENCING
- CONSTRUCTION VEHICLE ACCESS
- TRAFFIC CONTROLLER
- SIGNPOST

CERTIFICATION
THE UNDERSIGNED HAS COMPLETED AND OBTAINED:
- PREPARE A WORK ZONE TRAFFIC MANAGEMENT PLAN

CERTIFICATE NO: 0051848769 (MACKENZIE BRINUMS)

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MEADOWBANK TAFE

EARLY WORKS PHASE 2
TRAFFIC CONTROL PLAN 2

DATE: 13/10/2020
DRAWING NO. N183633-02-02-P2

# C. DRIVER CODE OF CONDUCT

C

## C.1. Context and Purpose

The following driver code of conduct seeks to address Condition B21 of SSD 10349, as reproduced below:

*B21: A Driver Code of Conduct must be prepared and communicated by the Applicant to heavy vehicle drivers and must address the following:*

*(a) minimise the impacts of earthworks and construction on the local and regional road network*

*(b) minimise conflicts with other road users*

*(c) minimise road traffic noise*

*(d) ensure truck drivers use specified routes.*

This code of conduct will be communicated to all site workers during the site induction process. Workers will be reminded of the requirements of the code of conduct regularly in toolbox meetings.

## C.2. Travel Speeds

All vehicles associated with the Meadowbank TAFE site are required to travel within the posted speed limits on public roads. In situations where driver's visibility and traffic safety on public roads is affected by weather-related conditions such as heavy rainfall or fog, construction vehicles should reduce their speed limit until visibility and traffic safety has improved.

## C.3. Haulage Routes and Timing of Transport

All construction vehicles associated with the Meadowbank TAFE site will follow the designated approach and departure routes. These routes are detailed below and shown in Figure C.1 and Figure C.2.

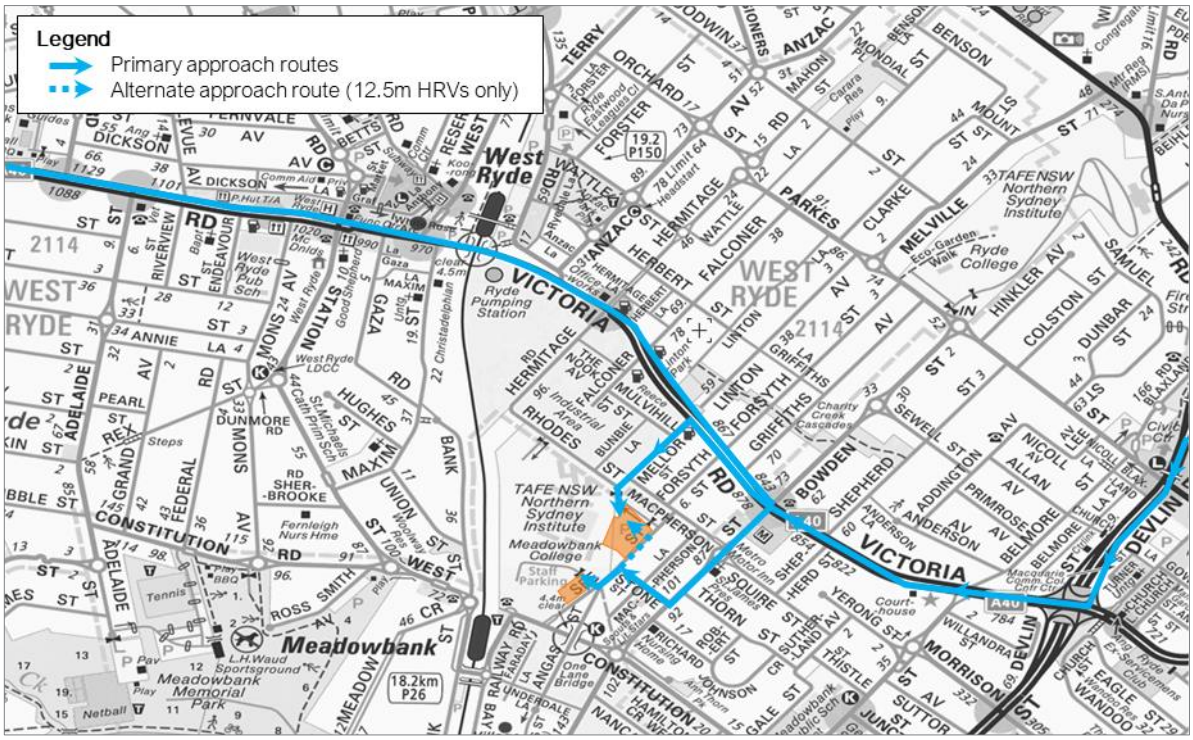
### Approach

- From north:
  - Pennant Hills Road, Silverwater Road, Victoria Road, Bowden Street, Stone Street, See Street
  - Lane Cove Road, Victoria Road, Bowden Street, Stone Street, See Street.
  - Lane Cove Road, Victoria Road, Mellor Street, Rhodes Street.
- From west:
  - M4 Western Motorway, James Ruse Drive, Victoria Road, Bowden Street, Stone Street, See Street
  - Old Windsor Road, Cumberland Highway, James Ruse Drive, Victoria Road, Bowden Street, Stone Street, See Street.

## Departure

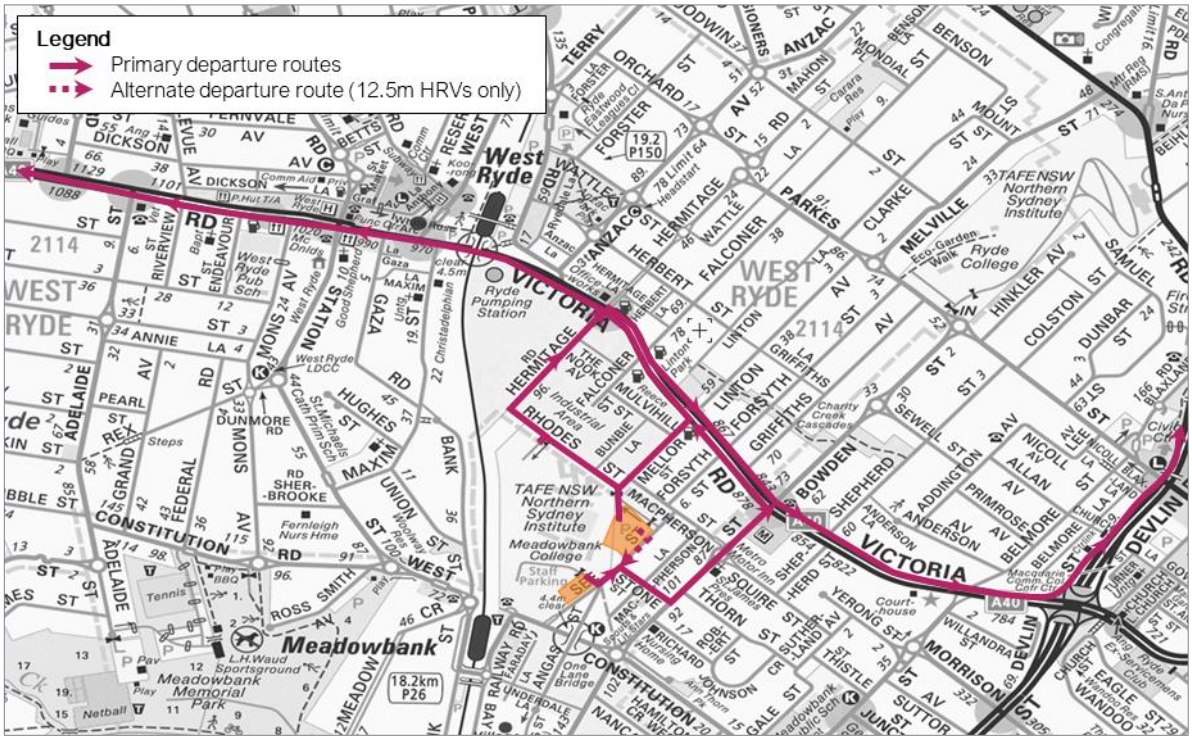
- Towards north:
  - See Street, Stone Street, Bowden Street, Victoria Road, Silverwater Road, Pennant Hills Road
  - Mellor Street, Victoria Road, Silverwater Road, Pennant Hills Road
  - See Street, Stone Street, Bowden Street, Victoria Road, Lane Cove Road.
- Towards west:
  - See Street, Stone Street, Bowden Street, Victoria Road, James Ruse Drive, M4 Western Motorway
  - Mellor Street, Victoria Road, James Ruse Drive, M4 Western Motorway
  - See Street, Stone Street, Bowden Street, Victoria Road, James Ruse Drive, Cumberland Highway, Old Windsor Road
  - Mellor Street, Victoria Road, James Ruse Drive, Cumberland Highway, Old Windsor Road.

Figure C.1: Construction vehicle approach routes




Base image source: Sydway

Figure C.2: Construction vehicle departure routes




Base image source: Sydway

## C.4. Safe Driving Practices

The operators of all vehicles associated with the Meadowbank TAFE site should maintain a high level of awareness and respect for all other road users. All on-site staff will receive a site induction, which will include details regarding the TMP and this code of conduct. Regular toolbox meetings will be held to maintain awareness of required controls. Details of the traffic and access training and induction will focus on:

- objectives of the TMP
- mitigation measures required to be implemented
- traffic and access monitoring and reporting requirements
- incident investigation and response protocols.

Training is to be provided prior to start-up of any traffic and access related management tasks and updated if task, equipment or procedures are expected to change (or have changed).

The following requirements should be adhered to at all times:

- obey all laws and regulations
- do not drive whilst under the influence of alcohol, drugs, nor any medication which may affect ability to drive
- be medically fit to drive at all times and inform site coordinators upon awareness of any medical condition which may affect ability to drive

- drive in a considerate manner at all times and respect the rights of others to use and share the road space
- be respectful to neighbouring properties when entering and exiting the site
- report all vehicle defects to the relevant employer. Serious defects must be corrected immediately, or an alternative vehicle supplied
- any vehicle crash or incident resulting in injury or significant damage to property must be reported to the police
- report any near misses
- always adhere to the site working hours
- only drive construction vehicles when conducting works related to the project
- securely fasten and cover loads, as appropriate
- keep vehicles clean and in good mechanical condition to reduce environmental impacts
- extra care should be taken when driving at dawn or dusk
- vehicles must give way to pedestrians, cyclists and emergency vehicles.

## C.5. Maintenance Requirements

The operators of all vehicles associated with the Meadowbank TAFE site should implement a high level of maintenance. The following requirements would be adhered to at all times:

- Ensure vehicles comply with relevant State legislation in relation to roadworthiness and modifications.
- Undergo regular vehicle checks and maintenance.
- Ensure vehicles have correctly fitted mufflers to minimise noise disturbance.

# D. CONSTRUCTION WORKER TRANSPORTATION STRATEGY

D

# APPENDIX: CONSTRUCTION WORKER TRANSPORTATION STRATEGY

## D.1. Context and Purpose

The following Construction Worker Transport Strategy seeks to address Condition B23 of SSD 10349, as reproduced below:

*B23: Prior to the commencement of construction, the Applicant must submit a Construction Worker Transportation Strategy to the Certifier. The Strategy must detail the provision of sufficient parking facilities or other travel arrangements for construction workers in order to minimise demand for parking in nearby public and residential streets or public parking facilities. A copy of the strategy must be submitted to the Planning Secretary and Council for information.*

This strategy has been developed to minimise the impact of construction workers accessing the site by vehicular means with respect to available parking in surrounding streets.

## D.2. Aims and Strategies

The following Aims and Strategies will be implemented for the project.

### D.2.1. Public and Active Transport

#### Aim

- Construction workers will be encouraged to use public and active transport to access the site.

#### Strategy

- Site induction to include limitations on parking on-site and in surrounding street.
- Public transport connection information to be made available to workers as well as acknowledgement of the pathways from Meadowbank Station through the Meadowbank TAFE to the worker access gates at the work sites.
- Lead representatives from subcontractors to be asked to coordinate their respective worker travel arrangements (including shuttle/ car-pooling as appropriate).

### D.2.2. Parking on Public Roads

#### Aim

- Encourage workers not to park on local public roads.

#### Strategy

- Include in Site Induction restrictions on parking on local public roads and reinforce in toolbox talks.
- Treat as “CBD site” with no parking available in immediate vicinity of work.
- Advise suitable alternatives away from the site that limit impact on surrounding residents.
- Encourage car-pooling to reduce number of cars parking in the designated parking areas on-site where provided and the Meadowbank Park car park.
- Request that subcontractors with a significant number of workers implement car-pooling arrangements.
- Encourage site staff and management to work remotely where practicable.
- Monitor surrounding streets periodically and issue warnings if workers found to be using on-street parking.

### D.2.3. Deliveries and Equipment storage

#### Aim

- Reduce the need for workers to access site with personal vehicles.

#### Strategy

- Secure areas to be made available within site to allow storage of materials, tools and equipment, reducing vehicular activity to the site.
- Equipment and tools to be modularised in shipping containers where practical to reduce multiple small deliveries in personal vehicles.
- Where small deliveries are required, dedicated “drop-off” and “pick-up” zones within site to be identified to reduce on-site parking.

# E. STAKEHOLDER CORRESPONDENCE

E

## Mackenzie Brinums

**From:** Yafeng (Alex) Zhu <YafengZ@ryde.nsw.gov.au>
**Sent:** Monday, 12 October 2020 1:47 PM
**To:** Mackenzie Brinums
**Cc:** John Begley; Brett Maynard; Hang Nghiem; Vanja Krumpacnik
**Subject:** RE: Meadowbank TAFE - Early Works Phase 2 CTMP

Hi Mackenzie,

As per our conversation, I have no issues with the transport arrangements described in your email below for Phase 2 of the early works.

Kind regards,

Alex

**Yafeng (Alex) Zhu**
Senior Coordinator - Transport Development
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**From:** Mackenzie Brinums <Mackenzie.Brinums@gta.com.au>
**Sent:** Monday, 12 October 2020 1:19 PM
**To:** Yafeng (Alex) Zhu <YafengZ@ryde.nsw.gov.au>
**Cc:** John Begley <JohnB@ryde.nsw.gov.au>; Brett Maynard <brett.maynard@gta.com.au>; Hang Nghiem <HNghiem@hansenyuncken.com.au>; Vanja Krumpacnik <vkrumpacnik@hansenyuncken.com.au>
**Subject:** RE: Meadowbank TAFE - Early Works Phase 2 CTMP

Hi Alex

As discussed just now, HY have indicated they will remove semi trailers from the EW Phase 2 works however will need them for the Main Works which can be addressed at a later stage.

They're okay with limiting truck and dog movements to in and out via the Rhodes Street access for the multi trades hub site, and can accommodate a turnaround area on site in this stage to ensure they enter and exit in a forward

direction. The MSCP site however will still need truck and dogs and therefore these will need to approach/ depart via Stone and Bowden.

Can you confirm all okay with the above and we'll finalise the report.

Thanks

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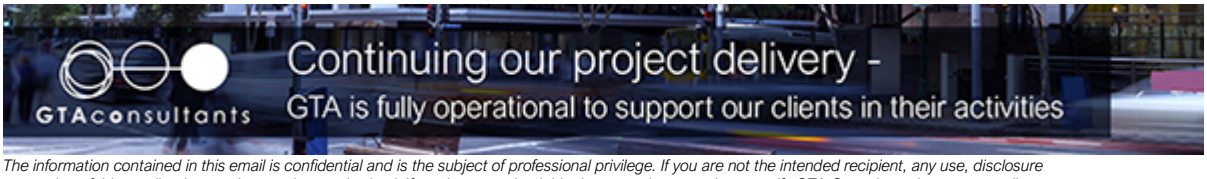


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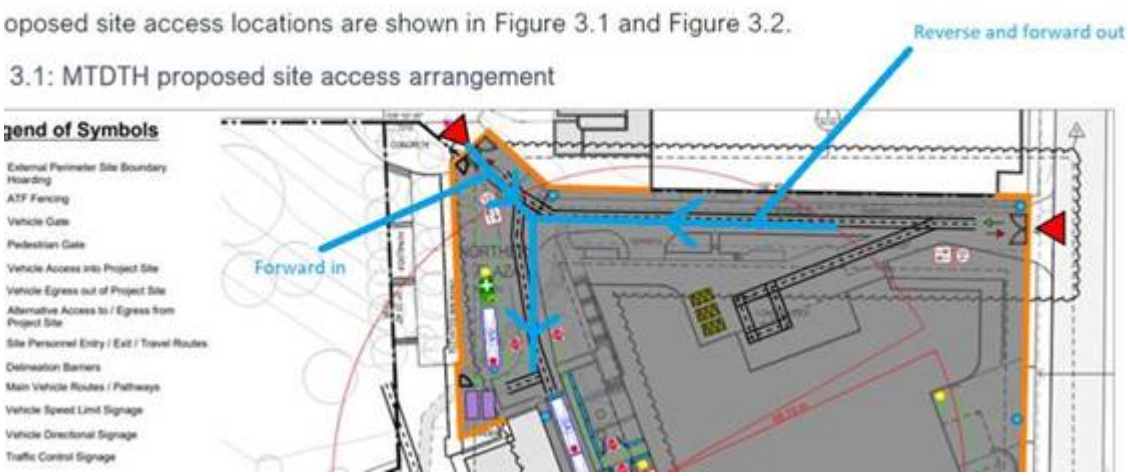
---

**From:** Yafeng (Alex) Zhu <YafengZ@ryde.nsw.gov.au>
**Sent:** Monday, 12 October 2020 12:23 PM
**To:** Mackenzie Brinums <Mackenzie.Brinums@gta.com.au>
**Cc:** John Begley <JohnB@ryde.nsw.gov.au>; Brett Maynard <brett.maynard@gta.com.au>; Hang Nghiem <HNghiem@hansenyuncken.com.au>; Vanja Krumpacnik <vkrumpacnik@hansenyuncken.com.au>
**Subject:** RE: Meadowbank TAFE - Early Works Phase 2 CTMP

Hi Mackenzie,

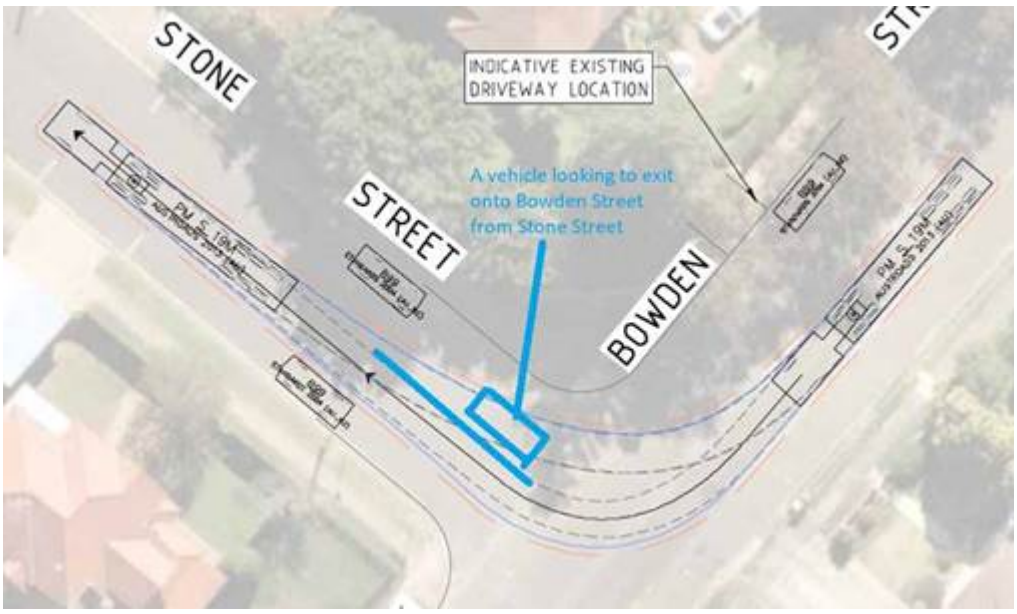
Thanks for your comments. See my responses below:

1) Can you provide a swept path assessment that demonstrates how 19m semis and 18.1m truck and trailers cannot turnaround on site. From Figure 3.1 in the CTMP, there appears to be room within the site that allows for such vehicles to turn around on site (see markup below).




2) The swept path of the 19m semi and the 18.1m truck and trailers indicate that such vehicles cannot make a right turn into Stone Street from Bowden Street, when a vehicle is looking to exit Stone Street onto Bowden Street (see markup below). It's a similar situation for a semi/truck & dog making a right turn from Stone Street into See Street, based on the turning paths. For these reasons, it would be

preferable to have these construction vehicles use Mellor/Hermitage/Rhodes Street rather than Bowden/Stone/See Street as indicated in my previous email.




Kind regards,

Alex

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**From:** Mackenzie Brinums <Mackenzie.Brinums@gta.com.au>
**Sent:** Monday, 12 October 2020 8:56 AM
**To:** Yafeng (Alex) Zhu <YafengZ@ryde.nsw.gov.au>
**Cc:** John Begley <JohnB@ryde.nsw.gov.au>; Brett Maynard <brett.maynard@gta.com.au>; Hang Nghiem <HNghiem@hansenyuncken.com.au>; Vanja Krumpacnik <vkrumpacnik@hansenyuncken.com.au>
**Subject:** RE: Meadowbank TAFE - Early Works Phase 2 CTMP

Thanks Alex for the quick response.

See comments below in red. In summary, all okay to remove the reference to the temporary barrier on Mellor Street however we need access via See Street, Stone Street and Bowden Street due to various reasons listed below. Can you confirm all okay and we'll finalised the report?

Give me a call if any issues.

Thanks

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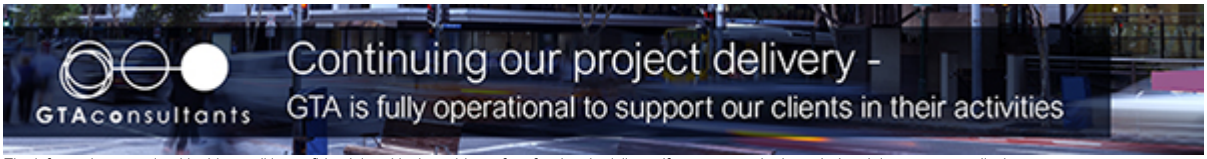


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**From:** Yafeng (Alex) Zhu <YafengZ@ryde.nsw.gov.au>
**Sent:** Friday, 9 October 2020 5:34 PM
**To:** Mackenzie Brinums <Mackenzie.Brinums@gta.com.au>
**Cc:** John Begley <JohnB@ryde.nsw.gov.au>; Brett Maynard <brett.maynard@gta.com.au>; Hang Nghiem <HNghiem@hansenyuncken.com.au>; Vanja Krumpacnik <vkrumpacnik@hansenyuncken.com.au>
**Subject:** RE: Meadowbank TAFE - Early Works Phase 2 CTMP

Hi Mackenzie,

I have reviewed the CTMP for Stage 2 of the early works associated with the multi-trades hub building within the Tafe campus and provide the following comments:

1) Page 16 of the CTMP proposes temporary barriers across driveways abutting Mellor Street to the north of Mulvihill Street to assist with minimising the impedance of a 19m semi travelling along this route from Victoria Road. This measure is considered to be excessive and unnecessary, as vehicles exiting from these driveways have to give way to traffic already on the public road by law. All okay with removing reference to this in the report.

2) It is recommended that the 18.1m long truck and dog and 19m long semi be restricted to Victoria Road/Mellor Street/Rhodes Street/Hermitage Road only and the nominated construction vehicle route comprising Victoria Road/Bowden Street/Stone Street/See Street be restricted to heavy vehicles up to the size of a 12.5m long HRV. This will eliminate the need for temporary removal of on-street parking within See Street along the site frontage and at the north-western corner of the intersection of Bowden St/Stone St, which would require the builder to apply for a **road activity permit with Council**. Access via Bowden, Stone and See is unavoidable given the MSCP site can only be accessed via See Street. The loss of two parking spaces is as a result of the location of the proposed construction vehicle access (and ultimate state access) and not because of the swept paths. Using the See Street access for the MTDTH for entry is also preferred given the site slopes down from See Street the Rhodes Street access. The

swept paths indicate that no loss of parking is required at the Bowden/ Squire intersection as shown below by the location of marked parked cars. Further, once excavation reaches a certain level and turning around on site is not possible, 19m semis will only be able to enter via the See Street access and exit via Hermitage or Mellor due to swept path constraints on the departure route via Stone and Bowden Street. Also, a HRV negotiating the roundabout intersection of Bowden Street and Squire Street would have less impact on the central island compared with a 18.1m long truck and dog. Please be aware that the builder could be held responsible for any unacceptable damages to the public road infrastructure associated with construction vehicle movements to/from the site. Noted

Kind regards,
Alex

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**From:** Mackenzie Brinums <Mackenzie.Brinums@gta.com.au>
**Sent:** Thursday, 8 October 2020 12:15 PM
**To:** Yafeng (Alex) Zhu <YafengZ@ryde.nsw.gov.au>
**Cc:** John Begley <JohnB@ryde.nsw.gov.au>; Julien Quan <JulienQ@ryde.nsw.gov.au>; Brett Maynard <brett.maynard@gta.com.au>; Hang Nghiem <HNghiem@hansenyuncken.com.au>; Vanja Krumpacnik <VKrumpacnik@hansenyuncken.com.au>
**Subject:** Meadowbank TAFE - Early Works Phase 2 CTMP
**Importance:** High

Hi Alex

Please see the link below for the draft Early Works Phase 2 CTMP relating to the Meadowbank TAFE project for your review. This builds on the Early Works Phase 1 CTMP previous provided and will be updated down the track to incorporate details on the Main Works methodology. If you could get back to us with any comments as soon as possible to allow us to finalise, it would be much appreciated.

https://gtaconsultantsaul-my.sharepoint.com/:b:/g/personal/mackenzie_brinums_gta_com_au/ETwNSnvXwadNkywlGusEvcMBOpnjlJdx_aaFsRgvfakF6g?e=haCd7P

Please don't hesitate to contact either Brett or myself should you have any queries.

Regards

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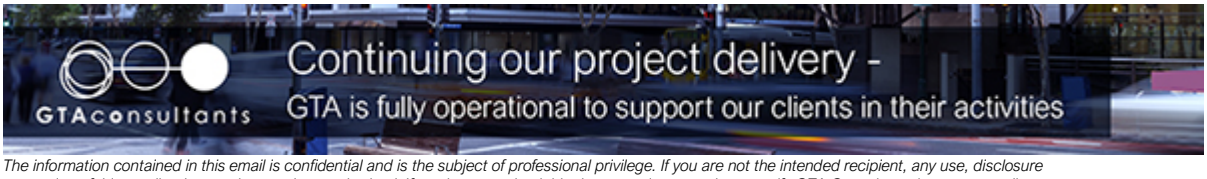


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## Mackenzie Brinums

**From:** Mitch Ryan <mitchell.ryan@transport.nsw.gov.au>
**Sent:** Thursday, 29 October 2020 2:50 PM
**To:** Mackenzie Brinums
**Cc:** Peter Carruthers; Brett Maynard; Hang Nghiem; Yafeng (Alex) Zhu
**Subject:** RE: Meadowbank TAFE - Early Works Phase 2 CTMP
**Attachments:** CTMP - TAFE NSW, Meadowbank - Issue A - 08102020.pdf

Good afternoon Mackenzie,

The responses provided are mostly fine, though it would be useful to quantify what constitutes a limited construction vehicle presence in the school zone hours.

Our intention is not to create difficulties, it is understood that the constructability is impacted where scheduling has to work around such conditions. What is a concern is the impact that construction traffic has near school and accordingly a standard condition is to prohibit construction vehicles during school zone hours where there will be impacts. In this instance I have accepted and utilised the wording of 'limiting' to allow some flexibility but it's equally arbitrary in that this leaves it open for interpretation.

Notably in this exact location, TfNSW has recently received ministerial correspondence regarding parking controls around this school and issues with pick up and drop off facilities. Council has recently carried out investigation works and proposed changes to address the issues of congestion. It would be a poor outcome if additional construction traffic were to exacerbate these conditions or negate any improvements the proposed changes may bring.

So that being said, it would be great if the proposed changes in the report can quantify what limited movements looks like.

In the interim, please see attached concurrence from TfNSW for the Early Work & Excavation & Piling

Kind Regards,

Mitchell Ryan
Network & Safety Officer
Land Use, Networks & Development
Greater Sydney (Planning and Programs)
**Transport for NSW**

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Level 5, 27 Argyle Street Parramatta NSW 2150

---

**From:** Mackenzie Brinums [mailto:Mackenzie.Brinums@gta.com.au]
**Sent:** Wednesday, 28 October 2020 5:32 PM
**To:** Mitch Ryan <mitchell.ryan@transport.nsw.gov.au>
**Cc:** Peter Carruthers <Peter.CARRUTHERS@transport.nsw.gov.au>; Brett Maynard <brett.maynard@gta.com.au>; Hang Nghiem <HNghiem@hansenyuncken.com.au>; Yafeng (Alex) Zhu <YafengZ@ryde.nsw.gov.au>
**Subject:** RE: Meadowbank TAFE - Early Works Phase 2 CTMP

Hi Mitch

Thanks for your comments. Please see below our responses in red. Can you please confirm all okay with the below and we'll update the report to reflect.

Thanks

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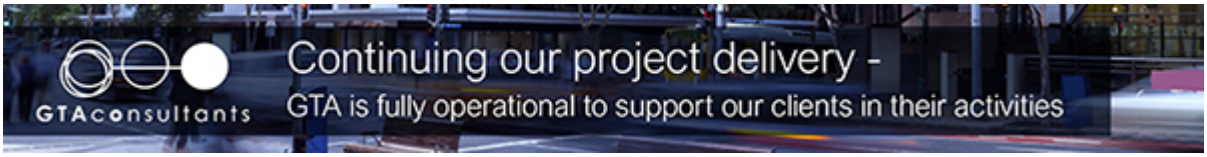


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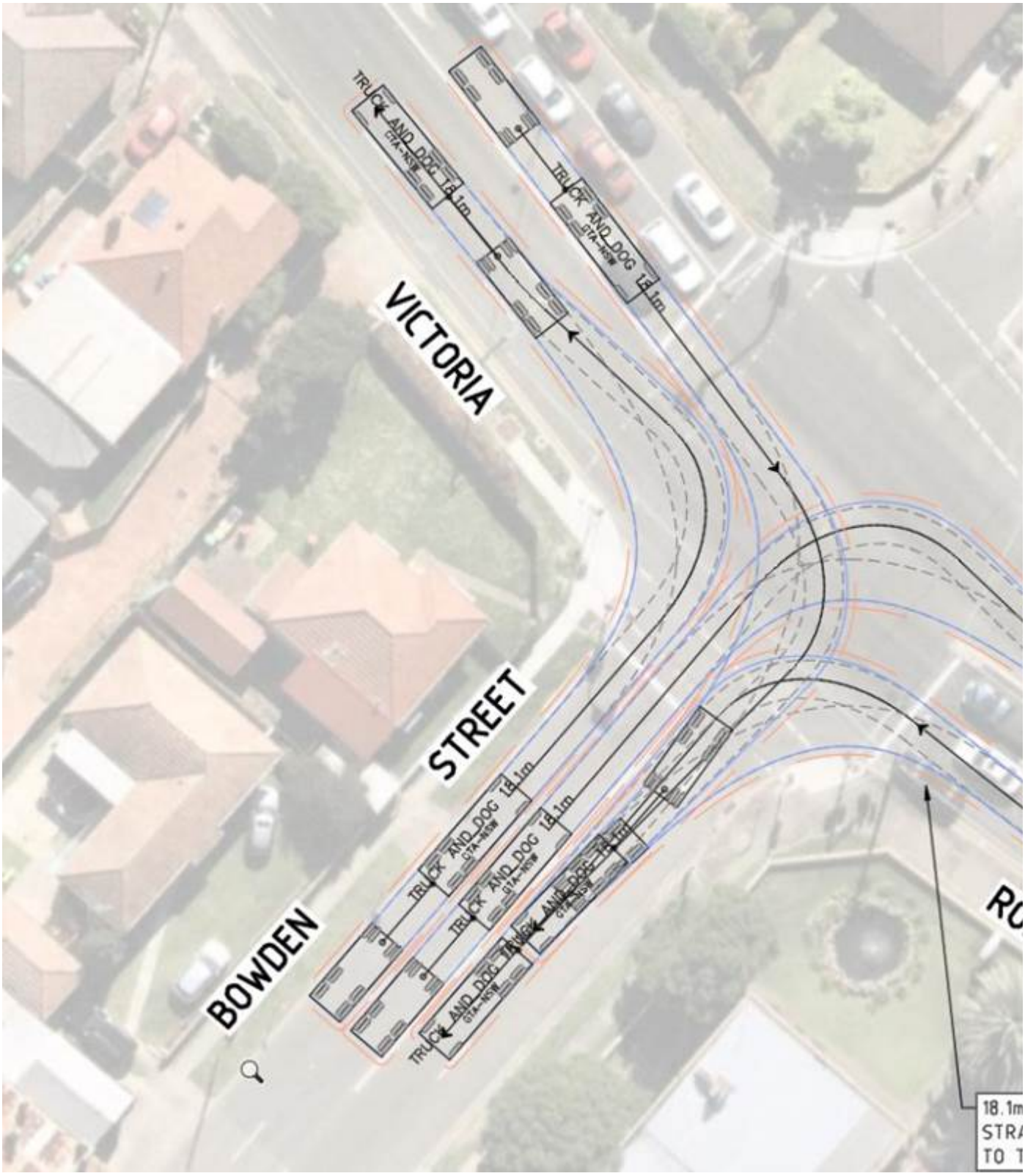
**From:** Mitch Ryan <mitchell.ryan@transport.nsw.gov.au>
**Sent:** Wednesday, 28 October 2020 2:03 PM
**To:** Mackenzie Brinums <Mackenzie.Brinums@gta.com.au>
**Cc:** Peter Carruthers <Peter.CARRUTHERS@transport.nsw.gov.au>; Brett Maynard <brett.maynard@gta.com.au>; Hang Nghiem <HNghiem@hansenyuncken.com.au>; Yafeng (Alex) Zhu <YafengZ@ryde.nsw.gov.au>
**Subject:** RE: Meadowbank TAFE - Early Works Phase 2 CTMP

Dear all,

Before TfNSW provide concurrence on this CTMP, please note and address the comments below:

- While not demonstrated it appears that an 18.1m vehicles cannot achieve a left turn from Bowden Street into Victoria Road **while** a concurrent 18.1m Truck & Dog turning right from Victoria Road into Bowden Street. This may be possible to achieve if the truck and dog exiting Bowden St straddles both lanes of Bowden Street however this will impact the efficiency of Bowden Street. Coordination to avoid these simultaneous movements is challenging. See below for screenshot confirming truck and dogs can enter right in and exit left out (from kerbside lane only) of Bowden Street concurrently.




- Further to the above, while it appears from our assessment that all HRV turns can be achieved with concurrent 18.1m movements, this should be checked. See above screenshot. The manoeuvring area of a HRV is less than that of a truck and dog and therefore based on the swept path provided above, a HRV exiting left out of Bowden Street could occur while a truck and dog is entering right into Bowden Street.
- 19m AV movements from Mellor Street, left into Victoria Road, have significant impact to Victoria Road in that they impact all three lanes in order to achieve their movements. While it is unlikely that TfNSW will support this movement, please provide further details breaking down the expected number of 19m AV movements as CTMP does not detail this down beyond noting the majority is HRV's and 18.1m vehicles with some 19m semis, and that larger vehicles account for approx. half of all movements. This doesn't distinguish between 18.1m and 19m AV's which have different impacts / swept paths. Semis are no longer being proposed as part of Early Works Phase 2. That said, they will be needed for the Main Works stage and we'll take this comment on board when preparing the CTPMP for these works.

- Construction movements are in close proximity to the Italian Bilingual School. Construction movements should be limited in school drop off and pick up times (8-930am and 2.30-4pm). We'll provide commentary in the report stating that construction vehicles accessing the See Street accesses will be limited as much as possible during school zone times.
- While parking changes are understood to be facilitating this construction, their approval needs to be given in Local Traffic Committee prior to implementation. This can be via an expedited electronic voting item, at councils discretion. Noted.

Kind Regards,

Mitchell Ryan
Network & Safety Officer
Land Use, Networks & Development
Greater Sydney (Planning and Programs)
**Transport for NSW**

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Level 5, 27 Argyle Street Parramatta NSW 2150

---

**From:** Mackenzie Brinums [mailto:Mackenzie.Brinums@gta.com.au]
**Sent:** Monday, 26 October 2020 3:17 PM
**To:** Mitch Ryan <mitchell.ryan@transport.nsw.gov.au>; Dean Simmonds <Dean.SIMMONDS@transport.nsw.gov.au>
**Cc:** Peter Carruthers <Peter.CARRUTHERS@transport.nsw.gov.au>; Brett Maynard <brett.maynard@gta.com.au>; Hang Nghiem <HNghiem@hansenyuncken.com.au>
**Subject:** RE: Meadowbank TAFE - Early Works Phase 2 CTMP
**Importance:** High

Hi Mitch

Just following up again on this. I suspect there's no comments, however can you please confirm so we can address the relevant consent condition?

Thanks

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www.gta.com.au

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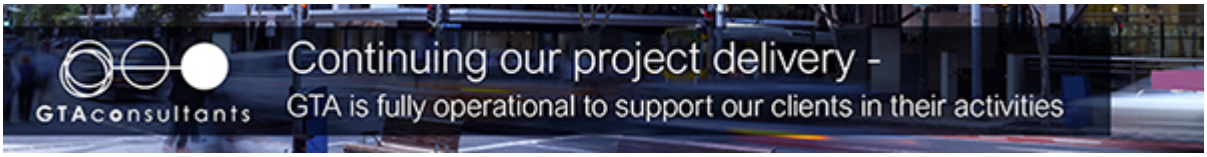


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**From:** Dean Simmonds <Dean.SIMMONDS@transport.nsw.gov.au>
**Sent:** Thursday, 22 October 2020 1:55 PM

**To:** Mitch Ryan <mitchell.ryan@transport.nsw.gov.au>
**Cc:** Mackenzie Brinums <Mackenzie.Brinums@gta.com.au>; Peter Carruthers <Peter.CARRUTHERS@transport.nsw.gov.au>
**Subject:** FW: Meadowbank TAFE - Early Works Phase 2 CTMP

Hi Mitch,

Can you please get in touch with Mackenzie.

Thanks,

Dean Simmonds
Senior Manager Network & Safety Services
Land Use, Networks & Development
Greater Sydney
**Transport for NSW**

**T** (02) 8849 2004
Level 5, 27 Argyle Street, Parramatta NSW 2150

---

**From:** Mackenzie Brinums [mailto:Mackenzie.Brinums@gta.com.au]
**Sent:** Thursday, 22 October 2020 11:55 AM
**To:** Dean Simmonds <Dean.SIMMONDS@transport.nsw.gov.au>
**Cc:** Brett Maynard <brett.maynard@gta.com.au>
**Subject:** FW: Meadowbank TAFE - Early Works Phase 2 CTMP

Hi Dean

I've been advised you're likely the best person to speak to in regards to the below email trail and confirming if TfNSW has any comments on the attached CPTMP for the Meadowbank TAFE project. We're looking at finalising the report this week so if you could get back to us as soon as possible with any feedback it would be much appreciated.

Alternatively, let us know if there's another contact at TfNSW we should be liaising with.

Kind regards

Mackenzie Brinums
Senior Consultant
GTA Consultants
P 02 8448 1800 D 02 8448 1813 M 0414 600 989
Level 16, 207 Kent Street, Sydney, NSW 2000
Mackenzie.Brinums@gta.com.au
www.gta.com.au

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**From:** Mackenzie Brinums <Mackenzie.Brinums@gta.com.au>
**Sent:** Wednesday, 21 October 2020 2:46 PM
**To:** Development Sydney <Development.Sydney@rms.nsw.gov.au>
**Cc:** Brett Maynard <brett.maynard@gta.com.au>
**Subject:** RE: Meadowbank TAFE - Early Works Phase 2 CTMP

Hi

Just following up on my email below from a couple of weeks ago. Are you able to advise if TfNSW has any comments on our CTMP report?

Thanks

Mackenzie Brinums
Senior Consultant
GTA Consultants
P 02 8448 1800 D 02 8448 1813 M 0414 600 989
Level 16, 207 Kent Street, Sydney, NSW 2000
Mackenzie.Brinums@gta.com.au
www.gta.com.au

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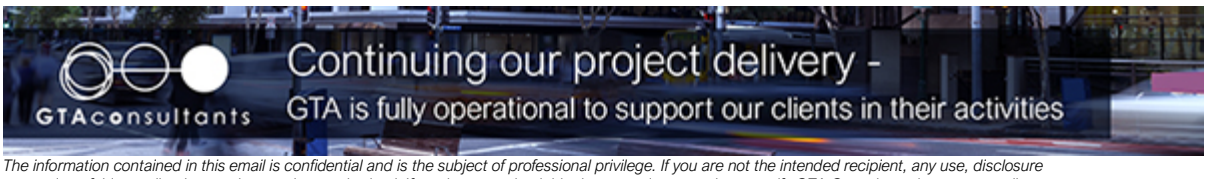


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**From:** Mackenzie Brinums <Mackenzie.Brinums@gta.com.au>
**Sent:** Thursday, 8 October 2020 12:23 PM
**To:** Mitch Ryan <mitchell.ryan@transport.nsw.gov.au>
**Cc:** Development Sydney <Development.Sydney@rms.nsw.gov.au>; Brett Maynard <brett.maynard@gta.com.au>; Hang Nghiem <HNghiem@hansenyuncken.com.au>; Vanja Krumpacnik <VKrumpacnik@hansenyuncken.com.au>
**Subject:** Meadowbank TAFE - Early Works Phase 2 CTMP

Hi Mitch

Please see the link below for the draft Early Works Phase 2 CTMP relating to the Meadowbank TAFE project for your review. This CTMP will be updated down the track to incorporate details on the Main Works methodology. If you could get back to us with any comments (or confirmation that TfNSW has no comments) as soon as possible to allow us to finalise and tick off the Consent Condition (B16b) relating to consultation with TfNSW, it would be much appreciated.

https://gtaconsultantsaul-my.sharepoint.com/:b:/g/personal/mackenzie_brinums_gta_com_au/ETwNSnvXwadNkywlGusEvcMBOpnjlJdx_aaFsRgvfakF6g?e=haCd7P

Please don't hesitate to contact either Brett or myself should you have any queries.

Regards

Mackenzie Brinums
Senior Consultant
GTA Consultants
P 02 8448 1800 D 02 8448 1813 M 0414 600 989
Level 16, 207 Kent Street, Sydney, NSW 2000
Mackenzie.Brinums@gta.com.au
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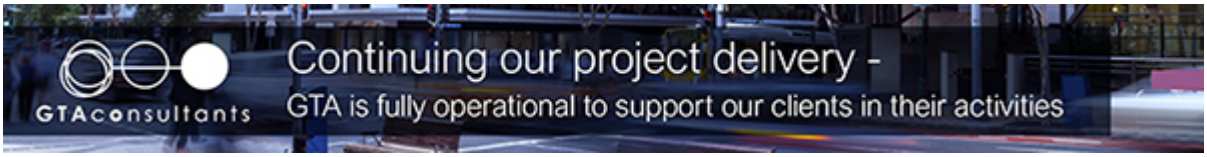


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# & R Q V W U X F W L 0 D Q D J H P H Q

## Site Details

| | |
|---|---|
| **Address:** 2 Rhodes Street, Meadowbank | **LGA:** City of Ryde |
| **Ref / Issue:** N183633 / A | **Date of TMP:** 08 October 2020 |
| **Council Contact Name:** Yafeng (Alex) Zhu | **Council Contact Number:** (02) 9952 8383 |

## Construction Traffic Management Plan (CTMP) ±Early Works + Excavation & Piling

| | |
|---|---|
| **Truck Movements (per day):**<br>Average: 20 truck movements/day<br>Inc. adjacent Development: 50 truck movements/day (SMEEP and TAFE combined) | **Agreed Times:**<br>7 am - 6 pm \| Monday to Friday,<br>8 am - 1 pm \| Saturday, and<br>No work on Sunday or public holiday(s) |
| **Construction Duration:** 7 months | **Road Occupancy Licence:** Not Required |
| **Swept Paths Required:** Yes | **Swept Paths Provided:** Yes |
| **Risk Rating (Low, Medium, High):** Medium | |

## Conditions of Approval:

The submission from **GTA Consultants (GTA) on behalf of Hansen Yuncken** commissioned has satisfactorily addressed the necessary requirements of the CTMP and is **Recommended for Concurrence** subject to the following:

- x Any Traffic Control Plans (TCP) prepared are to comply with A51742.3 and RMS's "Traffic Control at Worksites" manual (2018) and be signed by a person with RMS certification to prepare TCP's. A copy of the TCP is to be held on site at all times by the responsible traffic controllers.
- x A Road Occupancy Licence (ROL) should be obtained from Transport Management Centre for any works that may impact on traffic flows on State Roads during construction activities.
- x Largest vehicle accessing site will be a 18.1 Truck & Dog combination
- x Construction vehicle movements are to be limited during school drop-off (8.00am to 9.30am) and pick up (2.30pm to 4.00pm) times on school days.
- x Provision of TfNSW accredited traffic controllers to assist truck and pedestrian movements;
- x No traffic should be stopped along any Victoria Road, or any other State Road;
- x All vehicles will ingress and egress the site in a forward facing manner, with a left in left out treatment. No reversing is to be permitted in or out of the site
- x Barricades and signs to be provided in accordance with Australian Standards;
- x Appropriate advanced signage to warn drivers about changes in road conditions;
- x Access be maintained for emergency vehicles at all times;
- x Any additional conditions that Council may require.

**Recommended:**

| | |
|---|---|
| **Network & Safety Officer:** Mitchell Ryan | **Comments:** Concurred |
| **Signed:** | **Date:** 29/10/2020 |

| | |
|---|---|
| **Network & Safety Manager:** Peter Carruthers | **Comments:** Approved |
| **Signed:** | **Date:** 29/10/2020 |

# Post Approval ±Consultation

Consultation needs to be meaningful, done with courtesy and respect and be well documented. These are people/ organisations that we need to be building meaningful relationships with.

Conditions of all consent can require consultation with a range of stakeholders. Consultation in the post approval world needs to be well documented to satisfy the condition requirements.

Examples include Council, service providers (eg. Electricity gas etc.), consult with local bus provider and TfNSW.

Read each condition carefully, any reference to consult triggers consultation.

Typically on State Significant Development, there will be a specific consultation condition as to how this piece can be appropriately addressed.

Consultation is not:

- x A token gesture
- x Done at the end of the piece of work,
- x An email to the relevant stakeholder with no response;
- x A meeting with the stakeholder with no meeting minutes.

Consultation is:

- x Meaningful
- x Done prior to the requirement,
- x Captures an outcome,
- x Identifies matters resolved,
- x Identifies matters unresolved,
- x Any disagreements are disclosed; and
- x How we are going to address unresolved matters?

How to capture all the relevant details on consultation requirements? Any consultation requirement in a condition is required to be accompanied with the following table:

**Post Approval Consultation Record**

| | |
|---|---|
| Identified Party to Consult: | City of Ryde Council |
| Consultation type: | Teleconference and email conversations |
| When is consultation required? | Prior to construction |
| Why | B16. A Construction Traffic and Pedestrian Management Sub-Plan (CTPMSP) must be prepared to achieve the objective of ensuring safety and efficiency of the road network and address, but not be limited to, the following:<br>(b) be prepared in consultation with Council and TfNSW; |
| When was consultation scheduled/held | City of Ryde Council:<br>x 8/20/20<br>x 9/10/20<br>x 12/10/20 |
| Identify persons and positions who were involved | Yafeng (Alex) Zhu (City of Ryde Council)<br>Mackenzie Brinums (GTA) |
| Provide the details of the consultation | A draft CPTMP was provided to Council on 8/10/20 for review and comment. Following receipt of comments, the CPTMP was updated to address the comments, with details of consultation provided in Appendix E of the report. |
| What specific matters were discussed? | Construction vehicle approach and departure routes<br>Proposed types of construction vehicles<br>Construction vehicle swept paths<br>Construction vehicle volumes |
| What matters were resolved? | All of the above. |
| What matters are unresolved? | N/A |
| Any remaining points of disagreement? | N/A |
| How will SINSW address matters not resolved? | N/A |

# Post Approval ±Consultation

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Conditions of all consent can require consultation with a range of stakeholders. Consultation in the post approval world needs to be well documented to satisfy the condition requirements.

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How to capture all the relevant details on consultation requirements? Any consultation requirement in a condition is required to be accompanied with the following table:

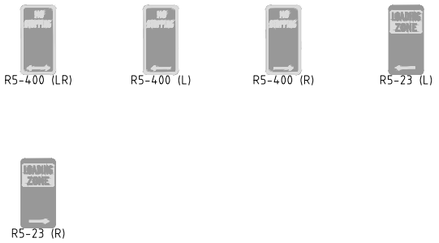
**Post Approval Consultation Record**

| | |
|---|---|
| Identified Party to Consult: | TfNSW |
| Consultation type: | Teleconference and email conversations |
| When is consultation required? | Prior to construction |
| Why | B16. A Construction Traffic and Pedestrian Management Sub-Plan (CTPMSP) must be prepared to achieve the objective of ensuring safety and efficiency of the road network and address, but not be limited to, the following:<br>(b) be prepared in consultation with Council and TfNSW; |
| When was consultation scheduled/held | TfNSW:<br>x 8/20/20<br>x 28/10/20<br>x 29/20/20 |
| Identify persons and positions who were involved | Mitch Ryan (TfNSW)<br>Mackenzie Brinums (GTA) |
| Provide the details of the consultation | A draft CPTMP was provided to TfNSW on 8/10/20 for review and comment. Following receipt of comments, the CPTMP was updated to address the comments, with details of consultation provided in Appendix E of the report. |
| What specific matters were discussed? | Construction vehicle approach and departure routes<br>Proposed types of construction vehicles<br>Construction vehicle swept paths<br>Construction vehicle volumes |
| What matters were resolved? | All of the above. |
| What matters are unresolved? | N/A |
| Any remaining points of disagreement? | N/A |
| How will SINSW address matters not resolved? | N/A |

# F. SIGNAGE PLAN

F

## EXISTING SIGNAGE SCHEDULE




## RELOCATED/ NEW SIGNAGE SCHEDULE

## LEGEND

WORK SITE

NEARMAP AERIAL IMAGE
DATED 18 APRIL 2020

GTA consultants
www.gta.com.au

Melbourne 03 9851 9600
Sydney 02 8448 1800
Brisbane 07 3113 5000
Adelaide 08 8334 3600
Perth 08 6169 1000

nearmap.com

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.

| | |
|---|---|
| DESIGNED R.ZHANG | DESIGN CHECK M.BRINUMS |
| APPROVED BY B.MAYNARD | DATE ISSUED 7 OCTOBER 2020 |

SCALE A3 0 5 10 20 1:1000

CAD FILE NO. N183633-05-P1.DWG

# MEADOWBANK TAFE

## EARLY WORKS PHASE 2
## SIGNAGE PLAN

DRAWING NO. N183633-05-01 SHEET 01 OF 02 ISSUE P1

\\GTA.COM.AU\PROJECTFILES\PROJECTFILES\SYD\N18300-18399\N183633 MEADOWBANK EDUCATION PRECINCT - CONSTRUCTION HY\CAD\N183633-05-P1.DWG PLOTTED BY RAYMOND ZHANG ON 07/10/2020 AT 12:12