

TURNER TRAFFIC

RNA Pilot Manufacturing and Research Facility Construction Traffic and Pedestrian Management Sub-Plan

Hindmarsh Constructions

17 June 2024

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Project Number 018

RNA Pilot Manufacturing and Research Facility
Construction Traffic and Pedestrian Management Sub-Plan

TURNER TRAFFIC
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DOCUMENT VERIFICATION

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This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

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1. INTRODUCTION

Turner Traffic was commissioned by Hindmarsh on behalf of Health Infrastructure to prepare a Construction Traffic and Pedestrian Management Sub-Plan (CTPMSP) for the site at 192 Balaclava Road, Macquarie Park. The land to be developed comprises of one lot (Lot 70 DP1276815) within the Macquarie University site.

This CTPMSP responds to parts of Consent Condition B15 of Consent SSD-51811458 and has been prepared by a suitably accredited person. This CTPMSP must be prepared that provides details of exactly how the demolition and construction will be managed over the course of the works.

This document focuses on how traffic and pedestrian safety will be managed. Note that the provision of any information in this CTPMSP will not exempt the Contractor/Developer from correctly fulfilling all other conditions relevant to the development consent for the above site.

2. DESCRIPTION OF PROPOSED WORKS

2.1 LOCATION AND SITE DESCRIPTION

The site (192 Balaclava Road, Macquarie Park) is located on east side of Gymnasium Road and south of Culloden Road within the Ryde Council Local Government Area. Figure 1 shows the site location and its surrounding context.

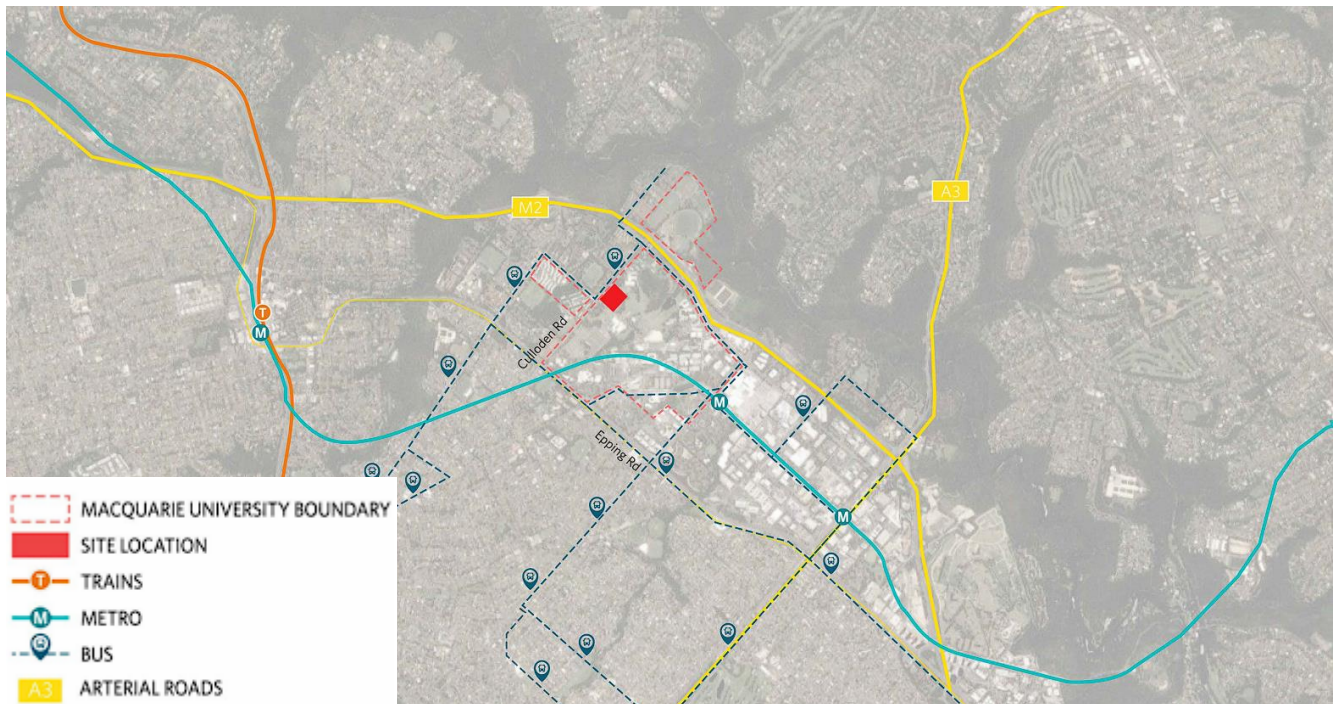


Figure 1: Site context (source HDR)

2.2 DESCRIPTION OF THE WORKS

This CTPMSP details the proposed demolition and construction activities that will be carried out on the site to develop the site. It is proposed to use the existing N3 carpark site to develop a new research facility. Construction and operation of a single storey RNA Pilot Research and Manufacturing Facility with mezzanine plant level, including:

- earthworks, tree removal and demolition.
- construction of an internal road.
- carpark alterations and provision of bicycle parking.
- utility works.
- signage.
- landscaping works. A site plan of the site is shown in Figure 2.



Figure 2: Site plan

2.3 CONSTRUCTION PROGRAMME

It is estimated that an 18 month construction programme will be required for the works.

Works are expected to start in July 2024 and be completed in January 2026.

2.4 HOURS OF OPERATION

The construction activities will be carried out in the following days and times, as per the conditions of consent to limit nuisance to noise sensitive areas:

- Monday to Friday: 7am - 6pm
- Saturday: 8am - 1pm
- No works to be undertaken on Sundays or public holidays.

Notwithstanding the general hours above, provided noise levels do not exceed existing background noise level of +5dB, works may also be carried out during the following hours:

- Monday to Friday: 6pm - 7pm
- Saturdays: 1pm - 4pm.

Construction activities may be undertaken outside of the above hours if required:

- (a) by the Police or a public authority for the delivery of vehicles, plant or materials; or
- (b) in an emergency to avoid the loss of life, damage to property or to prevent environmental harm; or
- (c) where the works are inaudible at the nearest sensitive receivers; or
- (d) for the delivery, set-up and removal of construction cranes, where notice of the crane related works is provided to affected residents at least seven days prior to the works; or
- (e) where a variation is approved in advance in writing by the Planning Secretary or her nominee if appropriate justification is provided for the works.

Notification of such construction activities as referenced in condition C6 must be given to affected stakeholders (including potentially affected university campus users/occupants) before undertaking the activities or as soon as is practical afterwards.

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

- (a) 9am to 12pm, Monday to Friday;
- (b) 2pm to 5pm Monday to Friday; and
- (c) 9am to 12pm, Saturday.

The Contractor/Developer will comply with development consent for hours of construction.

3. PROPOSED MEASURES AND IMPACTS

3.1 CONSTRUCTION VEHICLE TYPES

Construction vehicles that will be utilised for the proposed construction activities include:

- Small Rigid Vehicles (SRV) including smaller deliveries up to 6.4m length
- Medium rigid trucks (MRV) i.e. 6 or 8 wheeler bogies with lengths of up to 8.8m
- Heavy Rigid Vehicles (HRV) i.e. up to 12.5m long trucks
- Articulated vehicles (AV) i.e. semi trailers up to 19m length

Swept paths for the site access are provided in Appendix A. On a daily basis it is also expected that smaller utes and vans will access the site. Special permits and approval from Council will be required to bring in larger and oversize vehicles during the works if required. These will be managed on a case by case basis in close consultation with City of Ryde Council.

3.2 TRUCK ROUTES AND CONTROLS

The site will be primarily accessed via the Culloden Road, with Gymnasium Road providing secondary access as per the preliminary transport assessment included in the SSD application. To minimise impacts on local traffic routes, the following would be adhered to:

- The site induction and regular toolbox meetings would include procedures for construction vehicles accessing the site.
- Drivers would adhere to the nominated construction vehicle routes shown in Figure 3.
- The approved truck route plan shall form part of the contract and will be distributed to all truck drivers.
- Drivers would be made aware of the local area traffic, pedestrian and cyclist activities.
- Drivers would be made aware of the local area speed limits.
- No queuing and truck marshalling is to occur on public roads near the site without Council approval.

The proposed construction vehicle routes accessing the site are shown in Figure 3 and detailed below, originating via the state road network. Key inbound traffic routes for construction vehicles will be:

- From M2 south, Talavera Road, Culloden Road and/or Gymnasium Road
- From M2 north, Christie Road bridge, Talavera Road, Culloden Road and/or Gymnasium Road
- From Epping Road North, Culloden Road and/or Gymnasium Road

- From Epping Road South, Culloden Road and/or Gymnasium Road (not permitted from 6am – 10am, Monday to Friday, alternative route during this time is along Herring Road, Talavera Road, Culloden Road Gymnasium Road).

Key outbound traffic routes for construction vehicles will be:

- To M2 south, by Gymnasium Road and/or Culloden Road, Talavera Road and Christie Road
- To M2 north, by Gymnasium Road and/or Culloden Road, Talavera Road and M2 ramp (across from Herring Road)
- To Epping Road North, by Gymnasium Road and/or Culloden Road, Waterloo Road and Vimiera Road (right turns are not permitted from Culloden Road onto Epping Road).
- To Epping Road South, by Gymnasium Road and/or Culloden Road.

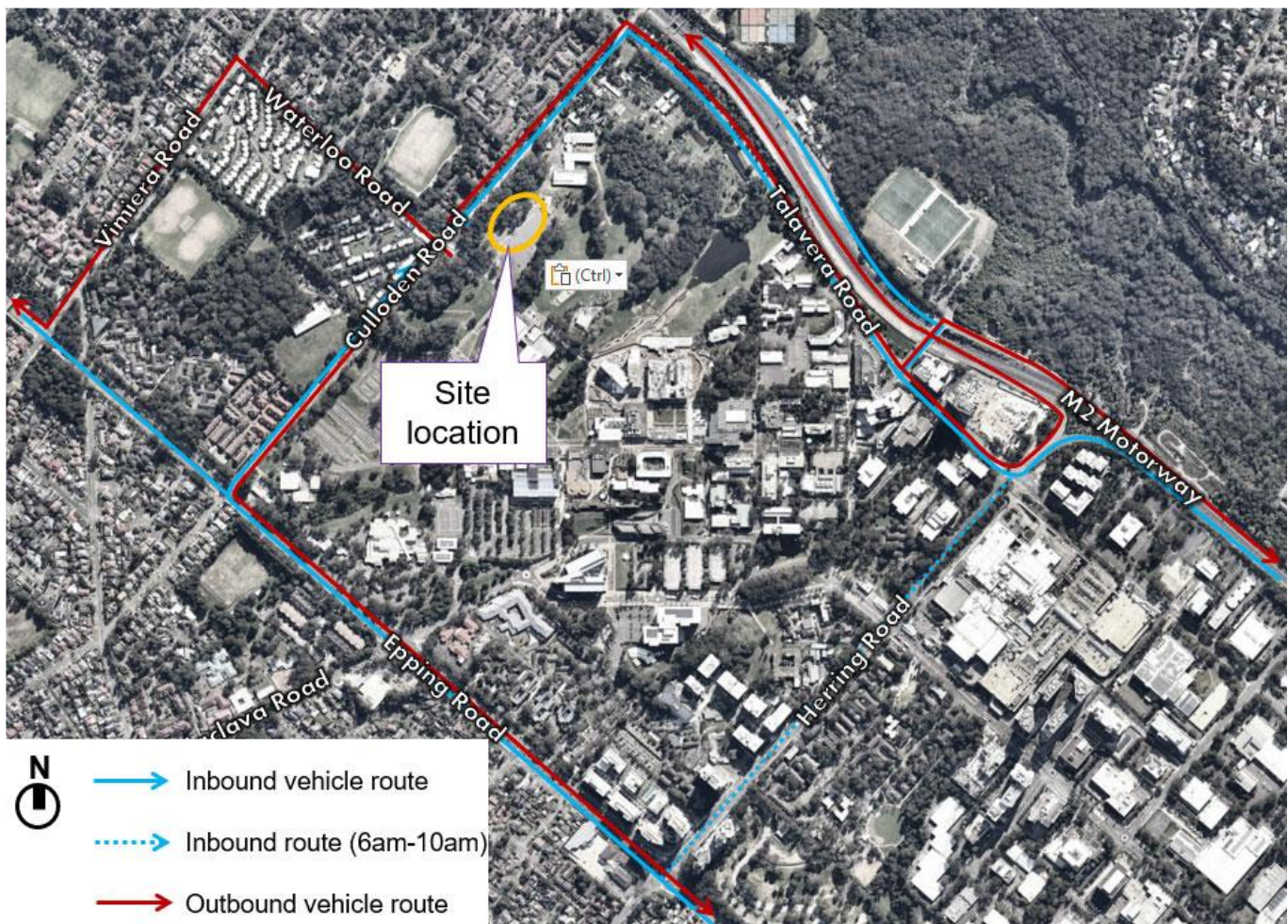


Figure 3: Construction Vehicle Routes (source JMT Consulting)

These routes minimise the local road impacts by providing the shortest distances on the local road network away from sensitive receivers and high pedestrian areas. All other roads outside these routes should be considered as excluded from use by construction traffic including roads with load limits, quiet residential streets or access/turn restricted streets. No roads other than the approved routes will be used by construction vehicles.

Swept path analysis has been undertaken, of movements in and out of the site of a 19m AV and 12.5m HRV travelling via this local road network. Swept paths are provided in the appendix and determine what is possible for these sized vehicles.

Oversize and over-mass vehicles are not allowed to travel on Local Roads (unless approval for a **one-off occasion** is obtained from the Council). Requests to use these vehicles will need to be submitted to the National Heavy Vehicle Regulator (NHVR) 28 days prior to the vehicle's scheduled travel date. For more information, please contact the NHVR on 1300 696 487 or www.nhvr.gov.au.

No queuing or marshalling of trucks is permitted on any public road other than any approved zones discussed previously above.

3.3 CONSTRUCTION VEHICLE ACCESS AND STAGING

This CTPMSP is for the excavation, demolition, and construction of building works, not for road works (if required) associated with the development. Any road works will require the Contractor to separately seek approval from the Council and/or TfNSW for consideration.

As shown in the site layout, there is one main driveway to the site via Culloden Road, which will be a temporary driveway. Gymnasium Road will be a secondary access, which permits access to the site as well. Construction vehicles will access the site via both driveways as shown in Figure 4.



Stage 1 Hoarding



Stage 2 Hoarding

The Contractor/Developer will apply to the Council to organise appropriate approvals for changes to driveways, cranes, and barricades etc if required.

Vehicle movements to and from the site will be undertaken in a forward direction. No reverse manoeuvres to and from the road will be permitted.

The Contractor will obtain a permit from the Council regarding the placing of any plant/equipment on public ways.

3.3.1 Traffic and pedestrian management

Given vehicle access is achieved onto the site, there is no need for traffic control plans. Each stage will manage access for vehicles and will address the following:

- Traffic flow: All traffic on street will be managed by a TCP which will comply with AS 1742.3 and the TfNSW's Traffic Control at Work Sites manual (TCWSM).
- Pedestrian movement: All pedestrian movement including entry, egress and movement around the work area will be in accordance with TfNSW's TCWSM Section 9.3 - Pedestrians. All work areas will be secured with barriers and fencing to ensure that no unauthorised entry for pedestrians is possible.
- Plant movement: All plant movement including entry, egress and movement within the work area in accordance with TfNSW's TCWSM Section 7 - Providing for works traffic.
- Cyclist movement: All cyclist movement including around or adjacent to the work area will be in accordance with TfNSW's TCWSM Section 9.4 - Cyclist.

The CTPMSP provides motorists and pedestrians the clearest notification of the potential hazards created by the new work site

All pedestrian movement including entry, egress and movement around the work area will be in accordance with TfNSW's TCWSM Section 9.3 - Pedestrians and Australian Standard 1742.3. All work areas will be secured with barriers and temporary fencing to ensure that no unauthorised entry for pedestrians is possible.

Should the footpath and existing driveways become a safety hazard for pedestrians, the Contractor/Developer undertakes to temporarily reconstruct the area to maintain safety to Councils satisfaction (e.g. constructed in concrete) and redone at the completion of development works in conjunction with any development application (DA) consent requirements. The Contractor/Developer shall at all times liaise and notify the residents on the continuing works and shall be responsible to resolve all issues and complaints from the residents.

During the implementation of this CTPMSP, the Contractor/Developer will need to continue to consult with Council and Police to ensure that there are no major issues during the course of the traffic control activities (i.e. demolition, excavation, construction and fit out). Should there be any major concerns or problems that are raised by Council and/or the Police, Contractor/Developer will be willing to discuss a solution, and if necessary, review the CTPMSP. The Contractor/Developer shall abide to any reasonable directions from Council and the Police during the course of the development.

If TfNSW accredited traffic controllers are used, they are NOT to stop traffic on the public street(s) to allow trucks to enter or leave the site. They MUST wait until a suitable gap in traffic allows them to assist trucks to enter or exit the site. The Roads Act does not give any special treatment to trucks leaving a construction site - **the vehicles already on the road have right-of-way.**

Pedestrians may be held only for very short periods to ensure safety when trucks are leaving or entering BUT must NOT stop pedestrians in anticipation i.e. **at all times the pedestrians have right-of-way on the footpath not the trucks.**

3.4 CONSTRUCTION TRAFFIC VOLUMES

Construction works including major deliveries and concrete pumping should be undertaken outside of peak traffic times wherever possible to minimise the impact and disruption of traffic flow on the surrounding roads. Time is also a consideration to try and complete as many things as possible in the one day so there is less 'daytime' impact to the residents and road users.

Drivers of vehicles are responsible for driving safely in accordance with the road rules, exercising care and due diligence in and around the work site. The proposed construction activities are anticipated to generate a maximum of 35 trucks at peak each day, equating to up to 4 truck movement per 11-hour work day. In addition, workers will generate on average 80 trips inbound in the AM, and 10 trips outbound in the PM, which are likely to be outside the commuter and University peak hours.

This level of construction traffic is a low volume of traffic and is not expected to adversely impact the surrounding road network.

3.5 PEDESTRIAN AND CYCLIST ACCESS

Ensuring the safety of pedestrians, the services of TfNSW accredited Traffic Controllers will be utilised when required, particularly during multiple truck movements and concrete pours. Otherwise, pedestrians will be made aware of construction works with signage throughout the work area and pedestrian walkways. Chainwire fencing will be provided on the boundary (further detail in Section 3.9.2).

Pedestrian footpaths are available on both sides of surrounding roads. A signalised pedestrian crossing is located on the southern corner of the site.

Pedestrian movements along the surrounding footpaths will be always maintained. If required, TfNSW accredited traffic controllers will be positioned at the two heavy vehicle access driveways on concrete pours and covering major deliveries. They will also manage pedestrian movements when construction vehicles are entering and exiting the site. Given the nearby traffic signal operation, there is not expected to be any additional delay to pedestrians.

Physical barriers to control pedestrian or traffic movements need to be determined by the Council prior to commencement of work.

3.6 EMERGENCY VEHICLE ACCESS

Emergency Services will be advised of the works as required. Access will be made available for Emergency Services at all times within the vicinity of the work site.

Access to the site and neighbouring sites by emergency vehicles will not be affected by the works as the main roads and footpath frontage will be unaffected. Emergency protocols on the

site will include a requirement for suitably accredited site personnel to assist with emergency access from the street.

Contact shall be maintained with the police and emergency services agencies throughout construction and a 24-hour contact would be made available for 'out of hours' emergencies and access. Further detail of the stakeholders is provided in Section 3.10.

3.7 PUBLIC TRANSPORT

No changes to bus stops or services are proposed during the construction activities. Public Transport Services will be advised of the works as required. The development will not affect any bus stops. Workers will be encouraged where possible to take public transport to the site.

3.8 CONSTRUCTION WORKER PARKING

An average of 70-90 construction personnel are expected to work on the site per day. Ample on-site parking will be provided for construction workers during the construction works within the remaining N3 parking area (subject to negotiations with Macquarie University). Any other construction workers will need to utilise paid parking within the University grounds or the surrounding metered on-street parking.

The impact from construction works on local parking will be minimal given the constrained parking environment and site personnel will be encouraged to take public transport. All construction staff would be advised to utilise public transport when travelling to and from the site. The nearest bus stops are located within up to 100m walking distance (approximately 1-2 minutes) north of the site on Culloden Road. Construction staff would be informed in regular toolbox meetings of the available public transport service and discouraged to drive. There will be an ability for workers to store their tools onsite.

3.9 WORKS ZONES AND HOARDING

3.9.1 Works zone and road closures

The Contractor will apply to the Council to organise appropriate approvals for Work Zones and road closures if required, as described in Section 3.3.

All demolition/construction loading and unloading will be within the development site or at an approved "Works Zone".

The Contractor/Developer will apply to the Council to organise appropriate approvals for partial road closures if required.

The Contractor/Developer will apply to TfNSW's Transport Management Centre for approval of any road works on State Roads or within 100m of Traffic Signals and receive an approved Road Occupancy Licence (ROL). A copy of the ROL will be provided to the Council.

3.9.2 Hoardings/fencing

The Contractor will mobilise the site with required hoardings, materials handling equipment, security, safety controls and site accommodation, to ensure the project is carried out in the most efficient manner possible. Chainwire fencing will be established around the site to protect and restrict access to the public from construction activities.

Establishment of works construction zones and chainwire fencing will require multiple permits, inclusive of a footpath permit from Council, amongst others. The Contractor/Developer will also apply to the Council to organise appropriate approvals for fencing prior to commencement of works.

The project team is to follow the requirements of the Site Establishment prior to commencement of works on site. The Site Team shall work together to action the following tasks:

- Ensure that the site establishment trades have prepared and submitted Safe Works Methods Statements relating to their temporary installations (i.e. electrical connection, drainage and hydraulics connections).
- Establishment of perimeter protection, hoardings, wire fencing, erection of guard railing, quick stage and or mobile scaffold
- Identification, pre-assessment and ongoing observation and photographic recording of adjoining properties to assess and protect the integrity of existing structures, adjacent building foundations, materials, and structures.
- Protection of all Council assets as required, with protection guards, wrapping and bollards; inclusive of utility pits. All to be identified, photographed mapped and regularly assessed with inspections.
- Use of temporary works engineer may be required.
- Dilapidation report of surrounding building to occur prior to commencement of works, including any required internal assessments and photographic records.
- Concurrent with all the above, the Site Team shall instigate a thorough inspection of the site to identify potentially hazardous areas and implement appropriate measures.

Signage will be limited to compliance, regulatory and information signage only, with a focus on presentation and engagement, to be discussed with Council's Place Making team.

Loading/unloading of construction machinery, and building materials, formwork and the erection of any part of the structure are all to be done within the site. Wherever possible mobile cranes should be located wholly within the site.

3.9.3 Public Domain

All services will be searched by the Contractor / locator before any work begins. Due to some service details not in the possession of Council or Dial before You Dig, 'phantom' services may be present. This will require a careful and cautious approach to any work being done, especially

on the footpath. A proposed 'Non Destructive excavations' will be initiated using GPRS (Ground Penetrating Radars) to identify services.

It is anticipated that limited alterations to the public domain infrastructure, inclusive of the paving immediately outside the site, which will be either protected, or removed, as per Council's advice, and reinstated at the completion of the works, at the Contractor/Developer's cost, as guided by Council.

All permissions and works with services authorities; TfNSW, Sydney Water, Aus Grid, NSW Gas and NBN / Telcom providers will take place in a professional, planned and authorized manner, with all applicable pre-approvals in place.

The roadway (including footpath) will be kept in a serviceable condition for the duration of demolition. At the direction of Council, the Contractor/Developer is to undertake remedial treatments such as patching at no cost to Council. Ongoing inspections will take place throughout the project timeline.

3.10 CONSULTATION

All construction staff on the site would be required to attend a site induction. All staff employed on the head contractor (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, workplace health and safety, driver protocols and emergency procedures. The approved work hours must be included as part of this induction.

The induction would inform staff of various protocols and procedures including permitted access routes to/from the construction site and available nearest public transport services and locations. Regular toolbox meetings would be held prior to commencement of any construction activities. Staff would discuss any issues or hazards that were identified and be reminded to utilise public transport services to travel to/from the site.

The construction activities would be monitored to ensure that it proceeds as set out in this CTPMSP.

3.10.1 Neighbouring sites

A community liaison officer has already been introduced to the neighbours and will continue to conduct discussions and communication channels with neighbours, to develop a respectful and effective relationship.

The Community Engagement Strategy will be utilised and can be referenced for an extensive breakdown of communication strategy and touchpoints. Proof of community consultation will be submitted to Council.

A minimum fourteen (14) days notification will be provided to adjoining property owners prior to the implementation of any temporary traffic control measures.

3.10.2 Local residents

Any residents affected by the construction works will be notified by way of letterbox drop and social media and strata management updates, prior to any major works taking place.

3.10.3 Noise

Plant operators should be made aware of their responsibilities in creating excess noise. If there are any noise complaints from neighbouring residents, steps should be taken by the Site Manager to reduce noise output or change the methodology creating the noise. Noise arising from the works will be controlled in accordance with the requirements of the Protection of the Environment Operations Act 1997 and guidelines contained in the New South Wales Environment Protection Authority Environmental Noise Control Manual.

3.11 MITIGATION MEASURES

Mitigation measures will be adopted during the demolition and construction phases to ensure traffic movements have minimal impact on surrounding land uses and the community in general, and would include the following:

- Manage and control construction traffic movements on the adjacent road network and vehicle movements to and from the site;
- Trucks to enter and exit the site in a forward direction;
- Limited amount of parking to be provided for construction workers;
- Restrict construction vehicle activity to designated truck routes;
- Construction access driveways to be managed and controlled by certified site personnel;
- Pedestrian movements across construction access driveways and to/from public transport facilities will be managed and controlled by site personnel where required;
- Pedestrian warning signs and construction safety signs/devices to be utilised in the vicinity of the site and to be provided in accordance with WorkCover requirements;
- Construction activity to be carried out in accordance with the approved hours of work;
- Truck loads would be covered during transportation off-site;
- Establishment and enforcement of appropriate on-site vehicle speed limits(30km/h), which would be reviewed depending on weather conditions or safety requirements;
- Activities related to the works would not impede traffic flow along local roads;
- Materials would be delivered and spoil removed during standard construction hours;
- Construction vehicles not to queue on public roads and be wholly accommodated within the site; and
- Minimal construction traffic movements to/from the site will be made during peak hours to minimise the impact on the wider road network.

3.12 DRIVER CODE OF CONDUCT

The contractor will include the following in all subcontract procurement packages:

- a copy of the approved truck routes as previously detailed in this document.
- the approved maximum truck size
- any other entry restrictions, or site access restrictions as agreed to by the authorities.

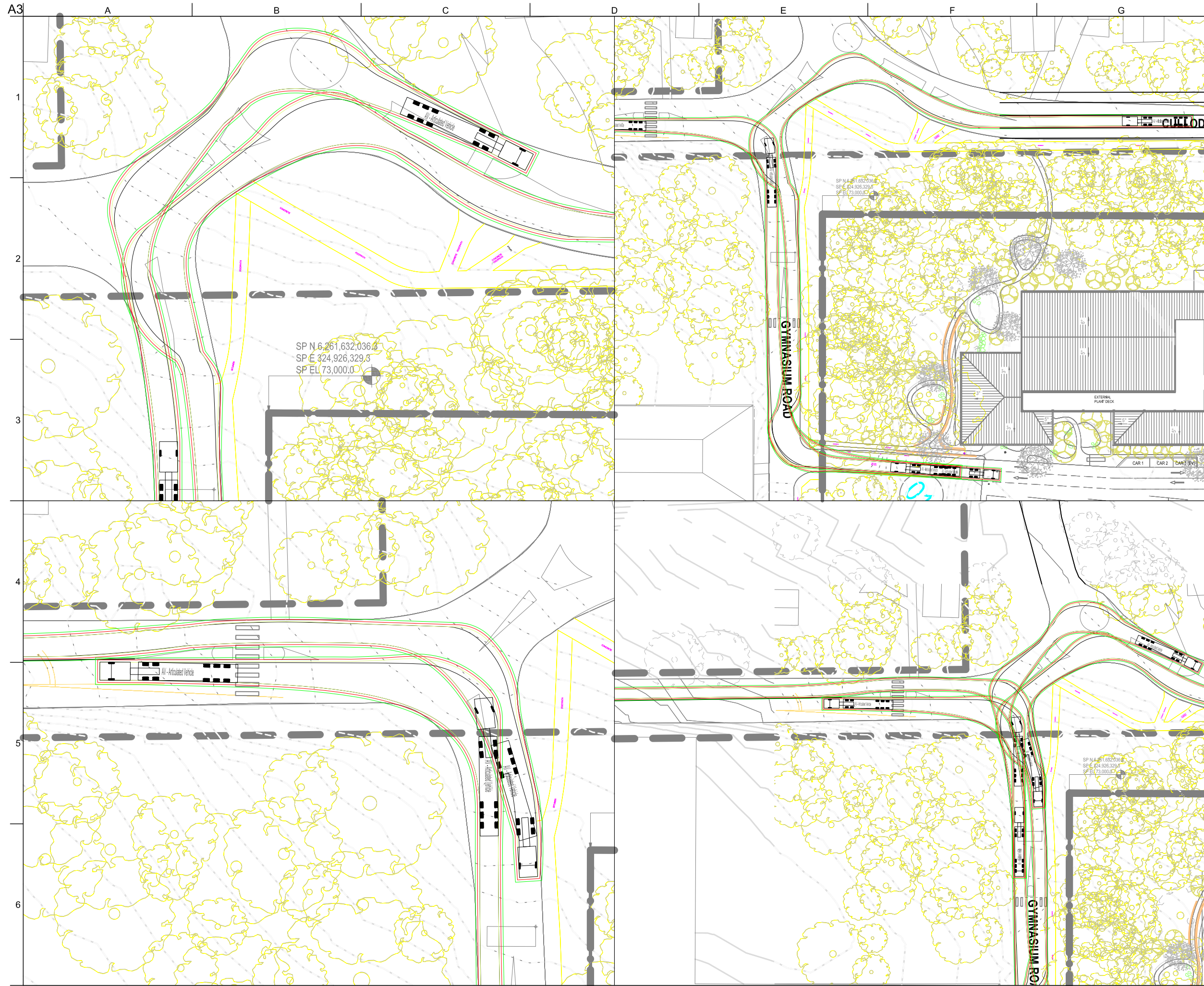
The contractor will be responsible for managing all site access points and monitoring subcontractor behaviour and subcontractor truck access arrangements to ensure compliance with conditions of the contract. They will be responsible for ensuring there is no access to or from the site before or after approved construction hours and no queueing occurs on the surrounding road network.

4. SUMMARY

Based on the findings of this CTPMSP, it is concluded that:

- Construction vehicle movements to and from the site can be satisfactorily accommodated by the surrounding road network.
- The construction activities are expected to generate up to 70 truck movements over a typical 11-hour weekday with up to 90 inbound worker trips in the AM and 90 outbound worker trips in the PM. This level of construction traffic volume is considered low and would not adversely impact the local road network given it is likely to occur outside of normal commuter peak periods.
- The primary construction access will be via a new temporary driveway direct from Culloden Road, with a secondary construction access via the existing N3 access road via Gymnasium Road. Both accesses will allow for forwards in and out movements, for vehicles up to a maximum sized 19m AV will be permitted. On exit, construction vehicles would find suitable gaps in traffic as required.
- Pedestrian movements along the site frontages of the site will be maintained at all times of the construction period. Chainwire fencing will be installed on the perimeter along the remaining N3 parking area, Culloden Road and Gymnasium Road to protect passing pedestrians from construction activities.

APPENDIX A: Swept Paths



TURNER TRAFFIC

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Client
Hindmarsh

Job Title
RNA Facility

Drawing Title
**Swept paths
 19m articulated vehicles
 Culloden Road**

Scale at A3
 1:500 / 1:1000

Discipline
 Transport

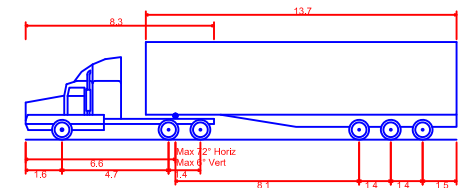
Drawing Status
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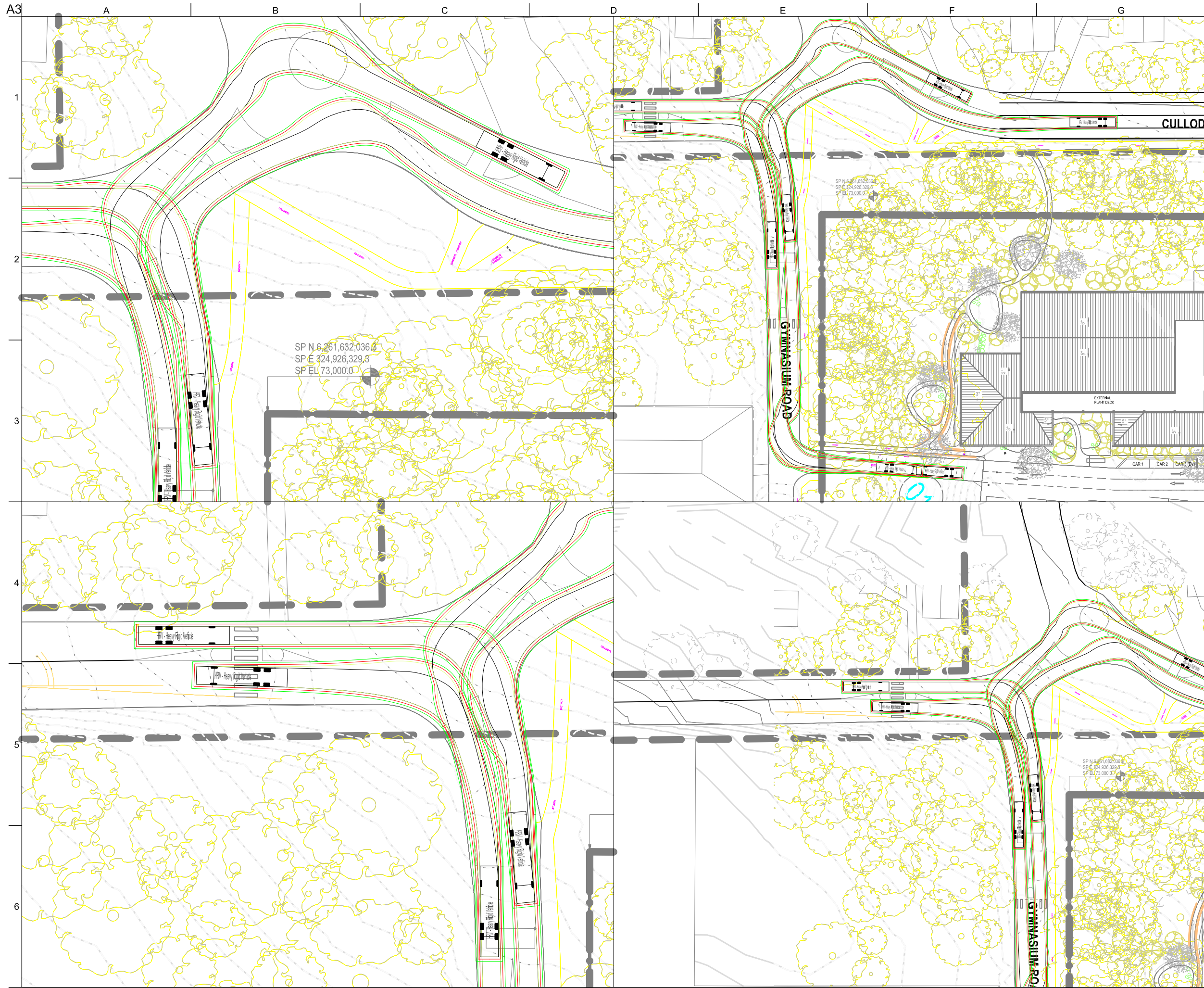
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- 500mm Envelope
- Wheel Envelope

Design Vehicle(s)



AV - Articulated Vehicle	
Overall Length	19.00m
Overall Width	2.50m
Overall Body Height	4.301m
Min Body Ground Clearance	0.418m
Track Width	2.500m
Lock to Lock Time	6.00 sec
Curb to Curb Turning Radius	12.500m

A	31/05/24	JRT	JRT	JRT
Issue	Date	By	Chkd	Appd



TURNER TRAFFIC

16 Dairy Place
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Client
Hindmarsh

Job Title
RNA Facility

Drawing Title
**Swept paths
 12.5m Heavy Rigid Vehicles
 Culloden Road**

Scale at A3
 1:500 / 1:1000

Discipline
 Transport

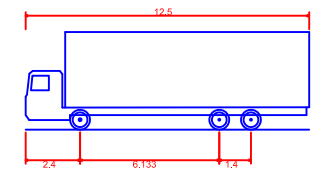
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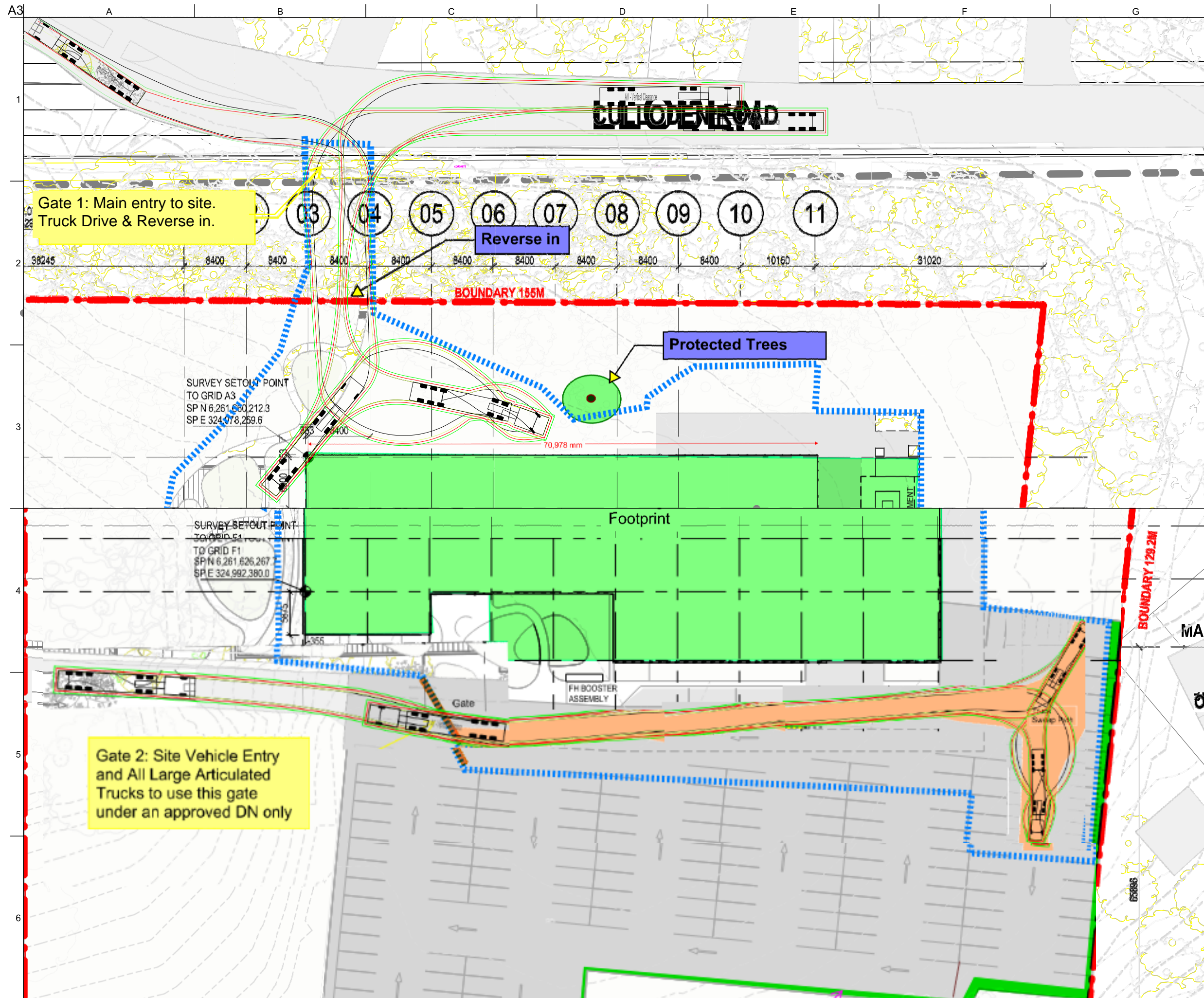
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- Wheel Envelope

Design Vehicle(s)



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

A	31/05/24	JRT	JRT	JRT
Issue	Date	By	Chkd	Appd



TURNER TRAFFIC

16 Dairy Place
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Client
 Hindmarsh

Job Title
 RNA Facility

Drawing Title
 Swept paths
 19m articulated vehicles
 Site access

Scale at A3
 1:500

Discipline
 Transport

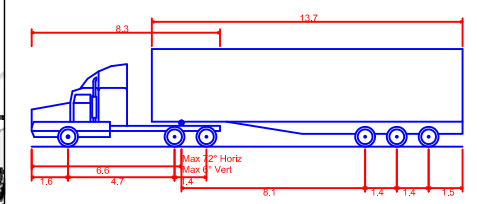
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Draft

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Legend

- Body Envelope
- 500mm Envelope
- Wheel Envelope

Design Vehicle(s)



AV - Articulated Vehicle	19.00m
Overall Length	2.500m
Overall Width	4.301m
Overall Body Height	0.418m
Min Body Ground Clearance	2.500m
Track Width	6.00 sec
Lock to Lock Time	12.500m
Curb to Curb Turning Radius	

A	31/05/24	JRT	JRT	JRT
Issue	Date	By	Chkd	Appd