

# Liverpool Hospital Redevelopment

Main Works

Construction Traffic and Pedestrian Management Plan



Prepared by: Stantec Australia Pty Ltd for Lendlease

on 20/11/2024

Reference: 301400194170566

Issue #: E



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#### Quality Record

| Issue | Date       | Description                                                                                | Prepared By       | Checked By      | Approved By   | Signed            |
|-------|------------|--------------------------------------------------------------------------------------------|-------------------|-----------------|---------------|-------------------|
| A     | 12/10/2021 | For stakeholder review                                                                     | Mackenzie Brinums | Brett Maynard   | Brett Maynard | Brett Maynard     |
| B     | 28/10/2021 | Final incorporating TfNSW comments                                                         | Mackenzie Brinums | Brett Maynard   | Brett Maynard | Brett Maynard     |
| C     | 11/02/2022 | Final to also reference Condition B18                                                      | Mackenzie Brinums | Brett Maynard   | Brett Maynard | Brett Maynard     |
| D     | 04/04/2022 | Final incorporating Council comments                                                       | Mackenzie Brinums | Brett Maynard   | Brett Maynard | Brett Maynard     |
| E     | 20/11/2024 | Addition of MSCP SSD condition reference for S2 car park scope – no other document changes | Helen Aberra      | Heiko Obermaier | Brett Maynard | <i>B. Maynard</i> |

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GTA Report (NSW)



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# 1. INTRODUCTION

01

## 1.1. Background

Lendlease has been contracted to undertake the Liverpool Hospital Redevelopment Main Works design and construction package. The redevelopment involves the construction of a new multi-storey Integrated Services Building (ISB) providing new treatment and support services that will integrate with the existing hospital. The works also include the refurbishment of certain existing hospital facilities.

Lendlease has engaged Stantec to prepare a Construction Traffic and Pedestrian Management Plan (CTPMP) to examine the impacts of the construction works on the surrounding road network and to detail the proposed construction traffic and pedestrian management measures.

Specifically, this CTPMP seeks to address Condition B12, B15 and B19 of the project approval (SSD 10389) and Condition B13 of the project approval (SSD 10388 – as relevant to the Stage 2 at-grade car park scope only). The condition requirements and the location where the requirements have been addressed are outlined in Table 1.1. This CTPMP functions as a sub-plan to the broader Construction Environmental Management Plan which has been prepared by others to address Condition B10 and B11 of the project approval (SSD 10389).

**Table 1.1: Consent condition requirements**

| Condition          | Condition requirements                                                                                                                                                                                                                                                                       | Document reference         |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| B12<br>(SSD 10389) | 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 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                |
|                    | (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 3.3, 3.4, 3.7      |
| B13<br>(SSD 10388) | 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 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                |
|                    | (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; and                                                                 | Section 4.1, 4.2, 4.3, 4.4 |
|                    | (d) detail heavy vehicle routes, access and parking arrangements.                                                                                                                                                                                                                            | Section 3.3, 3.4, 3.7      |
| B15<br>(SSD 10389) | 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                                                       | Section 5                  |



| Condition          | Condition requirements                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Document reference    |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
|                    | (b) minimise conflicts with other road users<br>(c) minimise road traffic noise<br>(d) ensure truck drivers use specified routes.                                                                                                                                                                                                                                                                                                                                                         |                       |
| B18<br>(SSD 10389) | Prior to the commencement of construction, the Applicant must provide sufficient parking facilities on-site for heavy vehicles, except where separate works zone have been approved, to ensure that construction traffic associated with the development does not utilise public and residential streets or public parking facilities.                                                                                                                                                    | Section 3.4, 3.5      |
| B19<br>(SSD 10389) | Prior to the commencement of construction, the Applicant must submit a Construction Worker Transportation Strategy to the satisfaction of 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 for information. | Section 6             |
| B27<br>(SSD 10389) | Prior to the commencement of relevant construction works, compliance with the following requirements must be submitted to the Certifier:<br>(a) all vehicles must enter and leave the site in a forward direction                                                                                                                                                                                                                                                                         | Section 3.4           |
|                    | (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, must be in accordance with the latest version of AS 2890.2                                                                                                                                                                                                                                                            | Appendix B            |
|                    | (c) the safety of vehicles and pedestrians accessing adjoining properties, where shared vehicle and pedestrian access occurs, is to be addressed.                                                                                                                                                                                                                                                                                                                                         | Section 3.4, 4.1, 4.2 |
| C14<br>(SSD 10389) | All construction vehicles are to be contained wholly within the site, except if located in an approved on-street work zone, and vehicles must enter the site or an approved on-street work zone before stopping unless directed otherwise by traffic control.                                                                                                                                                                                                                             | Section 3.4, 3.5      |
| C16<br>(SSD 10389) | The public way (outside of any approved construction works zone) must not be obstructed by any materials, vehicles, refuse, skips or the like, under any circumstances.                                                                                                                                                                                                                                                                                                                   | Section 3.5           |

This report sets out an overview of the following with regard to the proposed construction methodology:

- site accesses
- requirement for work zones
- anticipated heavy vehicle movements
- heavy vehicle routes to and from the site
- construction worker parking and transport
- proposed methods for managing pedestrians, cyclists, public transport and general traffic.

This report has been prepared by engineers who hold the Transport for NSW (TfNSW) Prepare a Work Zone Traffic Management Plan certification. Details of the accredited engineers are as follows:

- Mackenzie Brinums – Certification No. 0051848769
- Brett Maynard – Certification No. 052374425.

## 1.2. Consultation

In accordance with the requirements of the Consent Conditions, Condition B12(b) this CTPMP must be developed in consultation with TfNSW and Liverpool City Council (Council).

This CTPMP was prepared and submitted to TfNSW for review and comment. The CTPMP has subsequently been updated to address these comments. Evidence of consultation with TfNSW is provided in Appendix A.

The CTPMP was also issued to Council on 3 September 2021 via the required online portal in parallel (and in support of) an application for a work zone on Goulburn Street. Council raised no comments on the CTPMP and the work zone application was subsequently approved.

Lendlease will continue to liaise with TfNSW and Council throughout construction 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, October 2020.
- Australian Standard AS1742.3:2019 Manual of Uniform Traffic Control Devices – Traffic control for works on roads.
- other documents and data as referenced in this report.

## 2. EXISTING CONDITIONS

02



## 2.1. Location

Liverpool Hospital is located to the east of Liverpool CBD and generally involves the land bounded by Elizabeth Street to the south, Goulburn Street to the west, Campbell Street to the north and the railway and Scrivener Street to the east. More broadly, the Hume Highway is aligned to the north and west of Liverpool, while Newbridge Road bounds Liverpool on its southern side.

The surrounding properties to Liverpool Hospital predominantly include residential, educational and industrial uses, while commercial and retail uses are located further towards the Liverpool CBD to the west.

The location of the subject site and its surrounding environs is shown in Figure 2.1.

Figure 2.1: Subject site and its environs



Base image source: Sydney

## 2.2. Transport Network

### 2.2.1. Road Hierarchy

Roads are classified according to the functions they perform. The main purpose of defining a road's functional class is to provide a basis for establishing the policies which guide the management of the road according to their intended service or qualities.

In terms of functional road classification, State roads are strategically important as they form the primary network used for the movement of people and goods between regions, and throughout the State. Transport for NSW (TfNSW) is responsible for funding, prioritising and carrying out works on State roads. State roads generally include roads classified as freeways, state highways, and main roads under the Roads Act 1993, and the regulation to manage the road system is stated in the Australian Road Rules.

TfNSW defines four levels in a typical functional road hierarchy, ranking from high mobility and low accessibility, to high accessibility and low mobility. These road classes are:

**Arterial Roads** – Controlled by Roads and Maritime, typically no limit in flow and designed to carry vehicles long distance between regional centres.

**Sub-Arterial Roads** – Managed by either Council or Roads and Maritime under a joint agreement. Typically, their operating capacity ranges between 10,000 and 20,000 vehicles per day, and their aim is to carry through traffic between specific areas in a sub region or provide connectivity from arterial road routes (regional links).

**Collector Roads** – Provide connectivity between local sites and the sub-arterial road network, and typically carry between 2,000 and 10,000 vehicles per day.

**Local Roads** – Provide direct access to properties and the collector road system and typically carry between 500 and 4,000 vehicles per day.

### 2.2.2. Surrounding Road Network

#### Campbell Street

Campbell Street is a local road aligned in an east-west direction close to the northern boundary of the site. It is a two-way road with one lane in each direction, set within an approximately 13 metre carriageway. Near the site, 2P and accessible parallel parking is permitted on both sides of the road. Campbell Street is signposted as a 40km/h high pedestrian activity area at its eastern end and also involves a school zone near Liverpool Girls High School.

Campbell Street is shown in Figure 2.2 and Figure 2.3.

Figure 2.2: Campbell Street (looking east)



Figure 2.3: Campbell Street (looking west)



#### Goulburn Street

Goulburn Street is a collector road aligned in a north-south direction to the west of the site. It is a two-way road configured with one lane in each direction, set within an approximately 12.5 metre carriageway. Near the site, 1P parallel parking is permitted on both sides of the road. Campbell Street is signposted as a 40km/h high pedestrian activity area adjacent to the hospital and is a key north-south route through Liverpool, connecting with the Hume Highway to the north.

Goulburn Street is shown in Figure 2.4 and Figure 2.5.

Figure 2.4: Goulburn Street (looking north)



Figure 2.5: Goulburn Street (looking south)



### Elizabeth Street

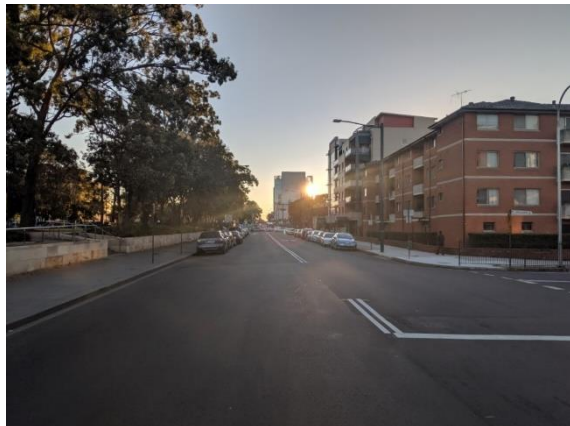
Elizabeth Street is a collector road aligned in an east-west direction to the south of the site. It is a two-way road configured with one lane in each direction, set within an approximately 12.5 metre carriageway. Near the site, 1P parallel parking is permitted on both sides of the road. Elizabeth Street is signposted as a 40km/h high pedestrian activity area near the hospital.

Elizabeth Street is shown in Figure 2.6 and Figure 2.7.

Figure 2.6: Elizabeth Street (looking east)



Figure 2.7: Elizabeth Street (looking west)



### Forbes Street

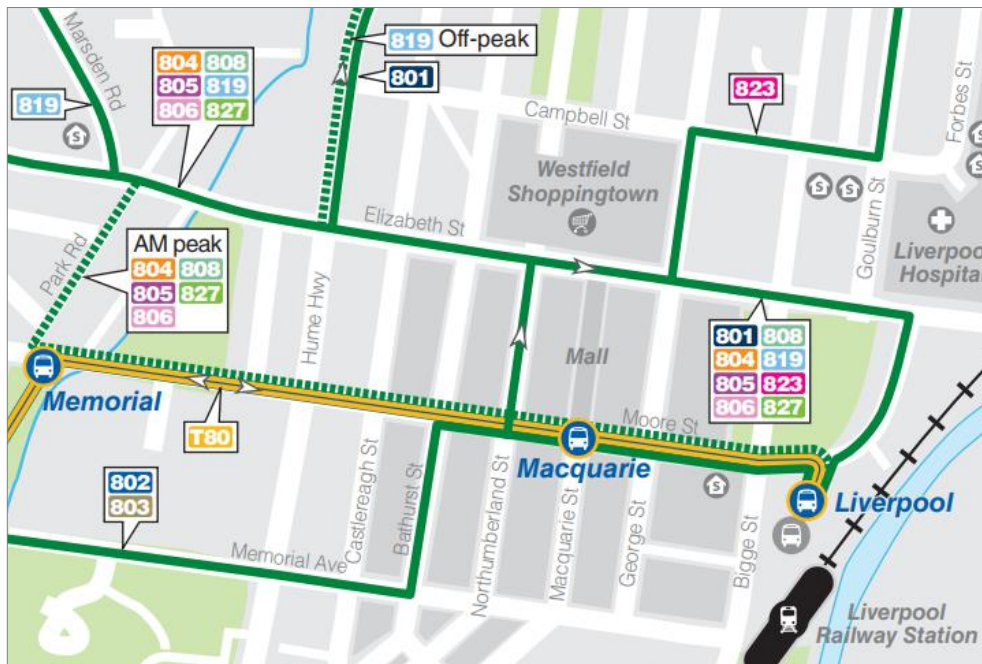
Forbes Street is a local road aligned in a north-south direction to the north of the site. It is a two-way road configured with one lane in each direction, set within an approximately 12.5 metre carriageway. Unrestricted kerbside parking is permitted on both sides of the road outside of school pick-up and drop-off times. An approximately 70-metre-long school bus zone is located on the eastern side of the road at its southern end. Forbes Street is signposted as a 40km/h high pedestrian activity area and also involves a school zone outside of Liverpool Girls and Boys High School.

Forbes Street is shown in Figure 2.8 and Figure 2.9.





Figure 2.12: Transit Systems bus network map



Source:  
[https://static1.squarespace.com/static/5a668f1080bd5e34d18a7e76/t/5b06206e88251b0847afd7a2/1527128181142/17620\\_TS\\_R3\\_network\\_map\\_20171126.pdf](https://static1.squarespace.com/static/5a668f1080bd5e34d18a7e76/t/5b06206e88251b0847afd7a2/1527128181142/17620_TS_R3_network_map_20171126.pdf)

## 2.4. Walking and Cycling Infrastructure

Liverpool Hospital is well serviced by surrounding walking infrastructure, with footpaths provided on both sides of most surrounding roads. The existing Elizabeth Street pedestrian (zebra) crossing is a key pedestrian facility along this route as it serves as a safe crossing point when travelling between Liverpool Station and the Liverpool Hospital main entrance.

The intersection of Elizabeth Street/ Goulburn Street is also the only unsignalised intersection between the hospital and the CBD, however a pedestrian (zebra) crossing is provided on the northern leg of the intersection to improve pedestrian amenity and safety at this location.

There is also a strong desire line between the hospital campus and the Health Services Building/ Ingham Institute across Campbell Street between Forbes Street and Goulburn Street, with this section of Campbell Street also a key route for students and staff associated with the Liverpool Girls and Boys High Schools.

Signalised pedestrian crossings are generally provided on all legs of surrounding signalised intersections near Liverpool Hospital, further improving the safety of pedestrians surrounding the Precinct.

There are marked shared paths along the eastern side of Goulburn Street (north of Campbell Street), which then changes to the western side of Goulburn Street (south of Campbell Street) to divert cyclists away from the hospital frontages. The lower 30km/h CBD speed limit and wide carriageway widths of most surrounding roads are also ideal for encouraging cycling (for more confident riders).



### 3. OVERVIEW OF CONSTRUCTION ACTIVITIES

03

## 3.1. Description of Construction Activities

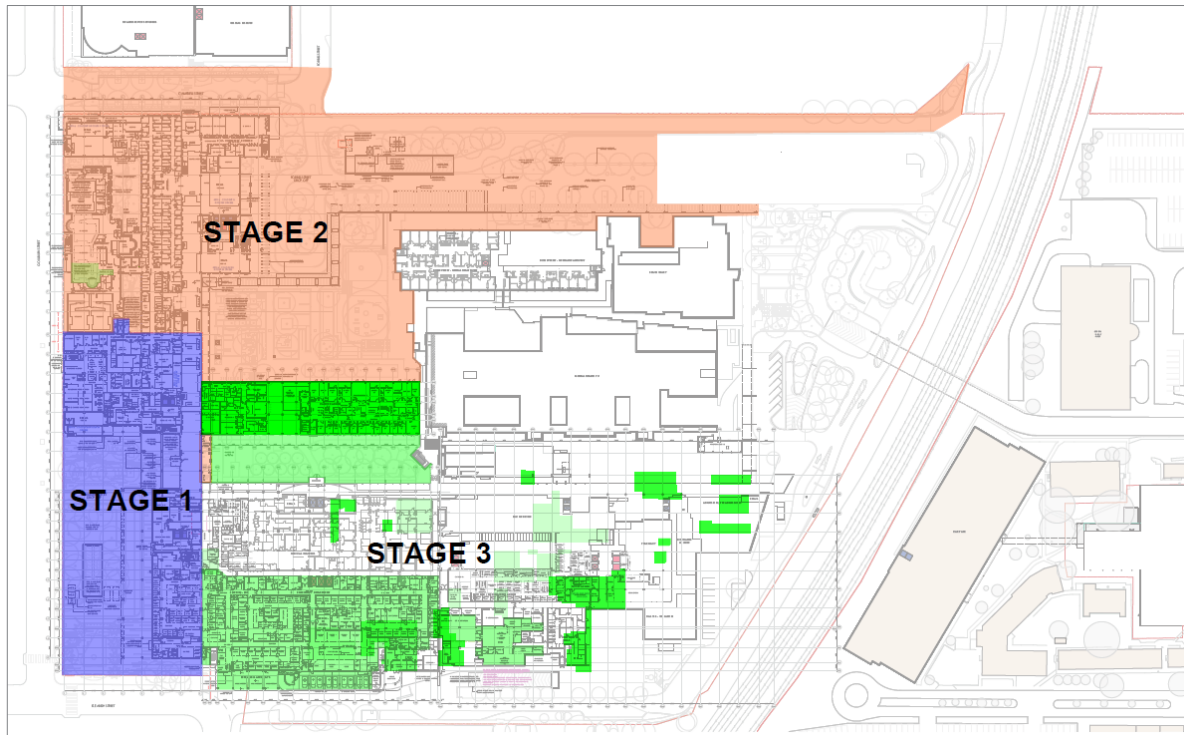
The Liverpool Hospital Redevelopment project involves the construction of a new multi-storey ISB providing new treatment and support services that will integrate with the existing hospital. The works also include the refurbishment of certain existing hospital facilities.

The expected duration of the main works is 64 months or around 5.5 years, with the project expected to commence in November 2021 and be completed by March 2027. The key milestones for the project are shown in Table 3.1 corresponding to the staging plan in Figure 3.1.

**Table 3.1: Stages of the project**

| Stage                   | Description                     | Start Date     | End Date       | Duration  |
|-------------------------|---------------------------------|----------------|----------------|-----------|
| Stage 1 - ISB           | Site establishment              | August 2021    | August 2021    | 1 month   |
|                         | Demolition                      | November 2021  | March 2022     | 4 months  |
|                         | Excavation                      | February 2022  | April 2022     | 3 months  |
|                         | Structure                       | March 2022     | October 2022   | 8 months  |
|                         | Fit-out and public domain works | September 2022 | September 2023 | 13 months |
| Stage 2 - ISB           | Site establishment              | November 2023  | December 2023  | 2 months  |
|                         | Demolition                      | December 2023  | June 2024      | 7 months  |
|                         | Excavation                      | June 2024      | September 2024 | 3 months  |
|                         | Structure                       | October 2024   | June 2025      | 9 months  |
|                         | Fit-out and public domain works | February 2025  | March 2026     | 13 months |
| Stage 3 - Refurbishment | -                               | November 2021  | March 2027     | 64 months |

Figure 3.1: Staging plan



Source: Lendlease

## 3.2. Work Hours

In accordance with Conditions C4 to C9, construction, including the delivery of materials to and from the site, may only be carried out between the following hours:

- Monday to Friday 7:00am and 6:00pm
- Saturday 8:00am and 1:00pm
- Sunday/ public holiday no work.

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

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

Notification of such construction activities must be given to affected residents before undertaking the activities or as soon as is practical afterwards.

Concrete finishing works may be undertaken outside of the hours outlined above (including the use of a helicopter float), unless directed otherwise by the Planning Secretary, with these activities restricted to the following times (over and above the hours outlined above):

## OVERVIEW OF CONSTRUCTION ACTIVITIES

- Friday 6:00pm and 10:00pm
- Saturday 1:00pm and 10:00pm.

Concrete finishing works permitted during the extended work hours must only be undertaken where managed by an Out-of-Hours Work Protocol, prepared in consultation with the EPA and Council, and approved by the Planning Secretary.

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

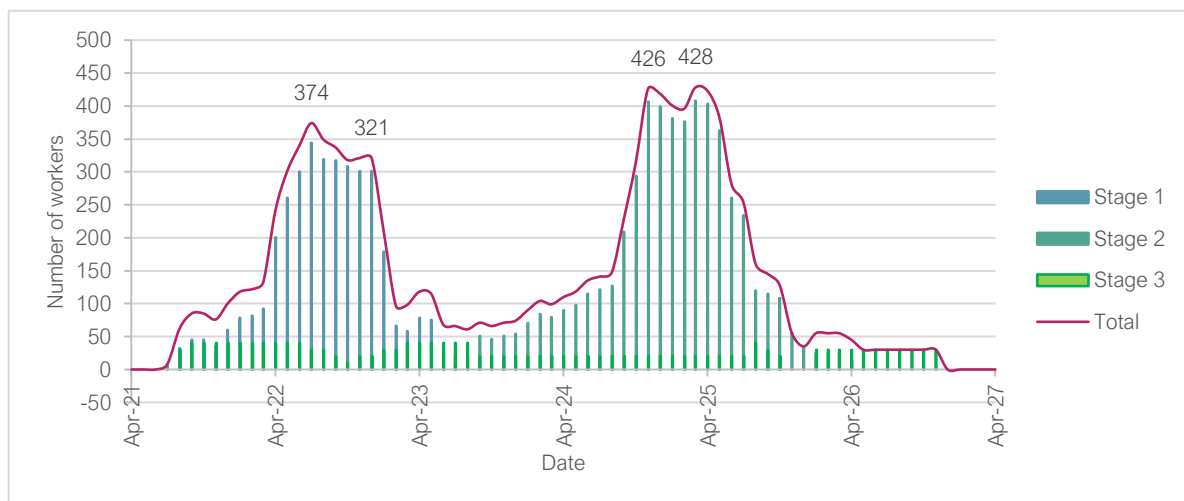
- Monday to Friday 9:00am and 12:00pm, and between 2:00pm and 5:00pm
- Saturday 9:00am and 12:00pm.

Lendlease will be responsible for instructing and controlling all sub-contractors regarding the hours of work.

### 3.3. Construction Worker Parking

It is anticipated that there will be on average up to 160 workers on-site at any given time during construction activities, with a maximum of 350-400 workers on-site during peak Stage 1 activities between May to November 2022 and 400-450 workers on-site during peak Stage 2 activities between October 2024 and April 2025. An indicative profile of the number of construction workers expected for the duration of the project is provided in Figure 3.2.

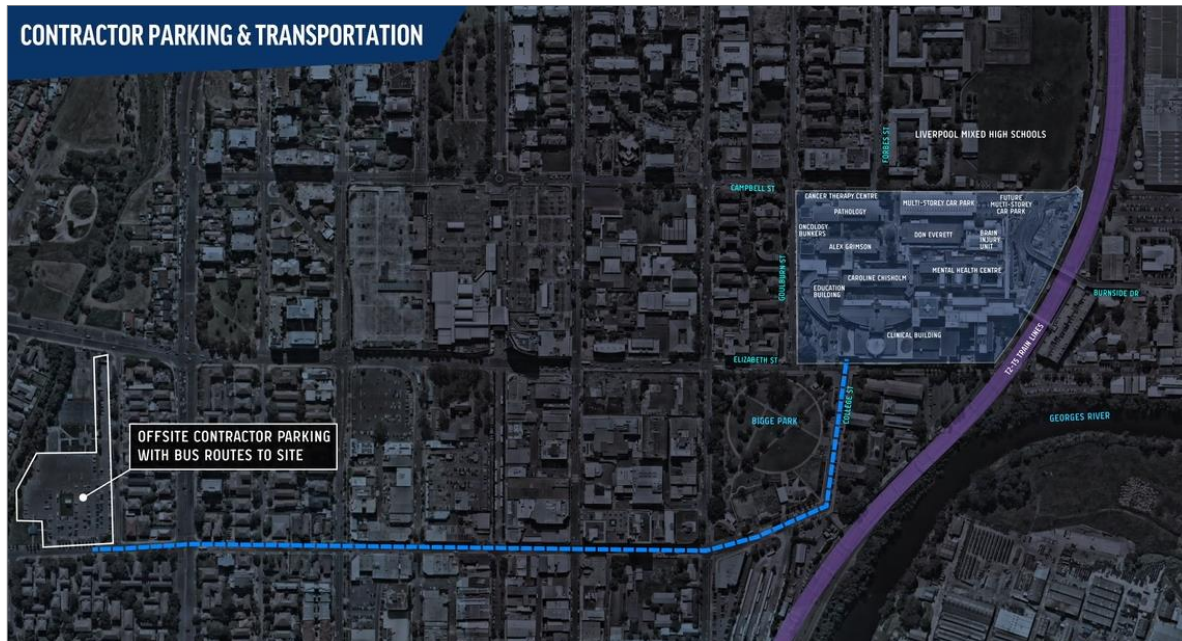
Figure 3.2: Expected number of construction workers for duration of the project



Given the existing high demand for hospital car parking, no on-site parking will be provided for construction workers. Off-site contractor parking will be available at the Collimore Park car park, which is located outside of Liverpool CBD and is serviced by frequent bus services including the 853 and 854 bus routes connecting with the hospital as shown in Figure 3.3. It is understood that while there is typically high demand for this car park on weekdays outside of COVID-19 restrictions associated with other workers in Liverpool CBD, construction workers generally arrive much earlier in the morning when parking demand within the car park is low. Aerial imagery taken in August 2021 indicates demand for the car park during the middle of the day is currently around 20 per cent of its capacity and would be able to cater for some construction worker parking.



Figure 3.3: Off-site contractor parking



Source: Lendlease

Given the site's proximity to high frequency and wide-ranging public transport services, workers will be encouraged to use public transport to access the site where practical. During site induction, workers will be informed of the existing bus and train network servicing the site. Appropriate arrangements will be made for any equipment/ tool storage and drop-off requirements.

### 3.4. Construction Site Access

All loading/ unloading relating to the construction works will take place wholly within the bounds of the construction site or within approved work zones as discussed further in Section 3.5. The construction site access arrangement for Stage 1 and Stage 2 will generally be consistent throughout the duration of the works. A summary is presented as follows.

For Stage 1, four construction accesses are proposed as follows:

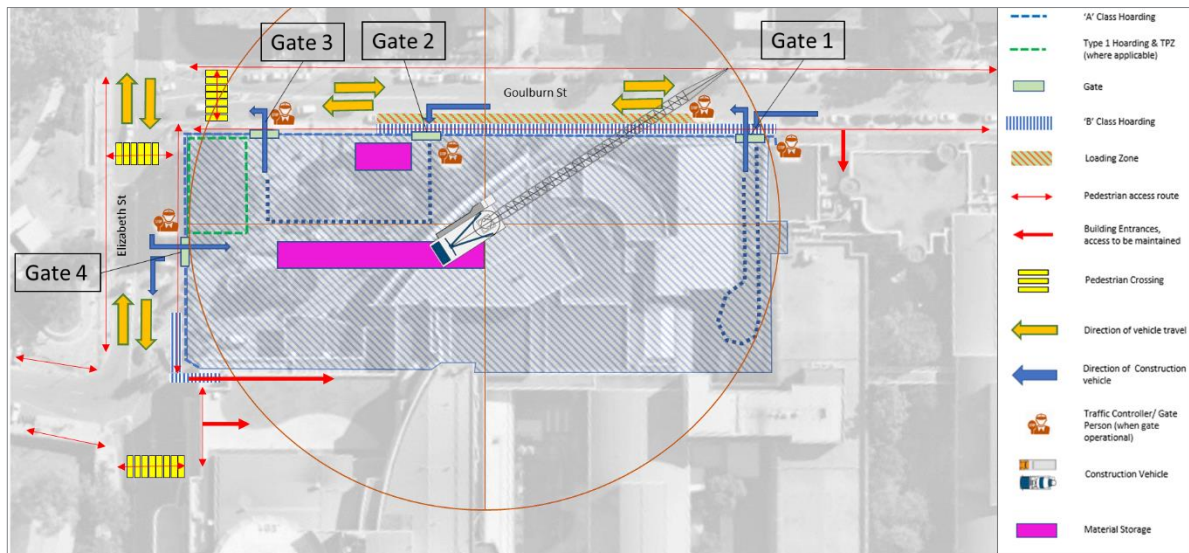
- Gate 1: Two-way driveway on Goulburn Street in the same location as the existing access to the Alex Grimson loading dock. This access will only be used at the beginning of Stage 1 during demolition and civil works, with the remaining Gates 2, 3 and 4 being used for the remainder of Stage 1.
- Gate 2: One-way entry driveway on Goulburn Street.
- Gate 3: One-way exit driveway on Goulburn Street.
- Gate 4: Two-way driveway on Elizabeth Street in the same location as the existing hospital main entrance driveway.

For Stage 2, a single construction access is proposed on Campbell Street near Forbes Street in a similar location to the existing hospital access.

The proposed site access arrangements for Stage 1 and 2 are shown Figure 3.4 and Figure 3.5 respectively.

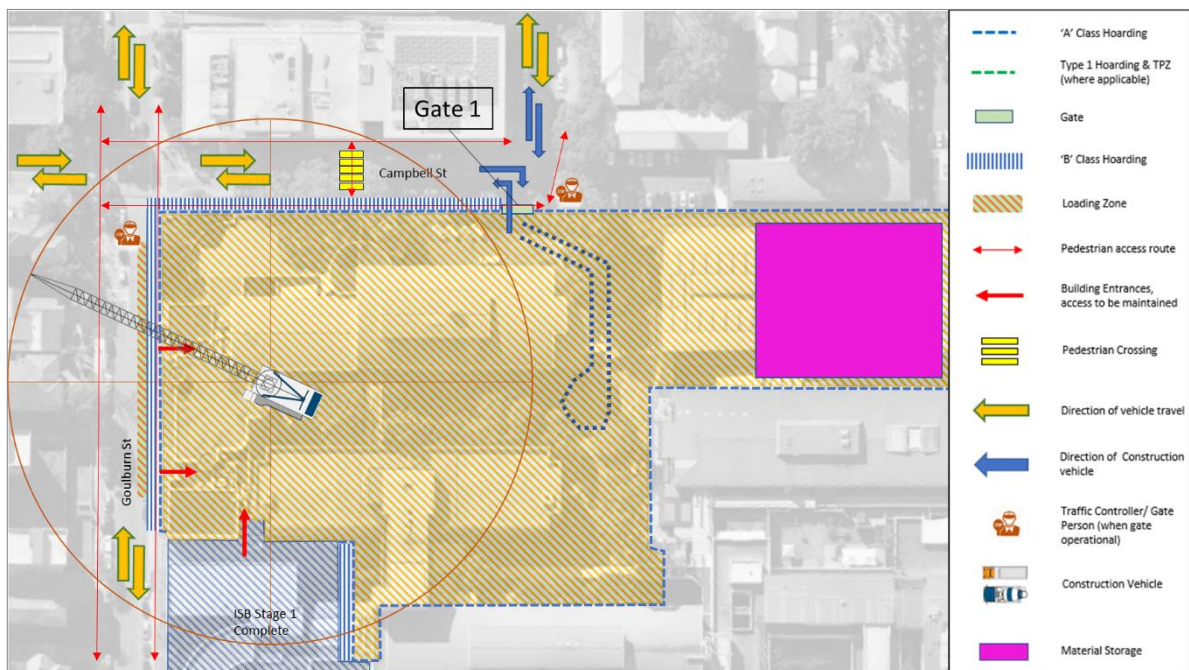
## OVERVIEW OF CONSTRUCTION ACTIVITIES

Figure 3.4: Stage 1 construction site layout



Base image source: Lendlease

Figure 3.5: Stage 2 construction site layout



Base image source: Lendlease

Site accesses will be used by vehicles up to and including 12.5-metre heavy rigid vehicles and 18.1-metre truck-and-dog combinations in size, while larger vehicles including 19-metre articulated vehicles will be required to load/ unload from work zone(s) located on Goulburn Street. Swept paths have been completed for the anticipated vehicles accessing the site and are provided in Appendix B. Swept paths along the approach routes to the site indicate some constraint for articulated vehicles at the Bigge Street/ Campbell Street and Campbell Street/ Goulburn Street intersections, whereby these construction vehicles would temporarily be required to cross the centreline of the road when turning at the intersections. To manage this

impact, deliveries by 19-metre articulated vehicles will be scheduled and traffic management will in place to temporarily hold traffic in the opposing direction while these construction vehicles are turning.

It is noted that Gate 4 for Stage 1 on Elizabeth Street will be in the same location as the previous access to the main entrance pick-up and drop-off area and ramp down to Car Park 1. This access (and the hospital main entrance) has recently been closed to general traffic and will only be used by construction vehicles. General vehicles seeking to pick-up and drop-off passengers are currently being directed to use other drop-off areas around the hospital near Entrance N, L and/or J, while modifications will be completed in the basement to allow two-way access into Car Park 1 from Car Park 3. The adjacent bus zone on Elizabeth Street will not be impacted by the proposed works, noting Gate 4 is in the same location as a previous access to the hospital. All construction vehicles will be contained within the site or approved work zones. As per the NSW Road Rules, only buses are permitted to stop within the bus zone.

Due to the proximity of the Goulburn Street pedestrian (zebra) crossing to Gate 3, 12.5 metre heavy rigid vehicles in size or larger will be required to turn right out of Gate 3 to avoid conflict with the associated refuge island adjacent to the crossing.

Accredited site personnel will be positioned at all site accesses when in use, to manage pedestrian movements when construction vehicles are entering/ exiting the site. All vehicles will enter and exit the site in a forward direction in accordance with Condition B27 of the Consent Conditions. 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.

### 3.5. On-Street Works Zone

It is proposed to provide on-street work zones along the eastern side of Goulburn Street for both Stage 1 and 2, as shown in Figure 3.4 and Figure 3.5. For Stage 1, the work zone will commence south of Gate 1 and extend for a length of approximately 70 metres. For Stage 2, the work zone will be shifted further north on Goulburn Street and commence south of the existing bus zone, also extending for a length of approximately 70 metres. The work zones will accommodate vehicles up to 19-metre articulated vehicles and will allow for loading and unloading activities.

The work zones will result in the temporary loss of approximately 12 on-street car parking spaces, which are currently subject to 1P parking restrictions. The work zones will be operational for the approved work hours. Outside work zone periods, existing kerbside parking restrictions will be retained.

The public way (outside of any approved work zones) will not be obstructed by any materials, vehicles, refuse, skips, etc. throughout the construction works in accordance with Condition C16 of the Consent Conditions.

### 3.6. Construction Vehicle Volumes

The site will have various types of construction vehicles accessing the site. The largest construction vehicles will include 12.5-metre heavy rigid vehicles, 18.1-metre truck-and-dog combinations and 19-metre articulated vehicles. Approval from National Heavy Vehicle Regulator (NHVR) is required for vehicles prohibited on the public roads without consent from the regulator.

It is expected that there will be on average around 40 trucks per day, or up to eight trucks per hour. During peak construction vehicle activity which is expected to occur on concrete pour days, up to 80 trucks per day or 15 trucks per hour could be expected. Construction vehicle movements will be minimised as much as



## OVERVIEW OF CONSTRUCTION ACTIVITIES

possible during the road network peak periods, with an average of around four vehicles per hour expected during these periods for typical days. On peak activity days, such as when concrete pours are occurring, there is limited opportunity to reduce truck movements during road network peak periods as consistent supply is required throughout the day.

### 3.7. Construction Vehicle Routes

Generally, construction vehicles will have origins and destinations from a wide variety of locations throughout Sydney. However, all construction vehicles will be restricted to the State and Regional road network where practicable. Broadly speaking, vehicles would approach the hospital from the Hume Highway and require use of local roads to reach the relevant site access point. The construction vehicle routes are detailed below and shown in Figure 3.6 and Figure 3.7. These are generally consistent with that approved as part of the Infrastructure Works phase of the project. No queuing or marshalling of construction vehicles will be permitted on public roads.

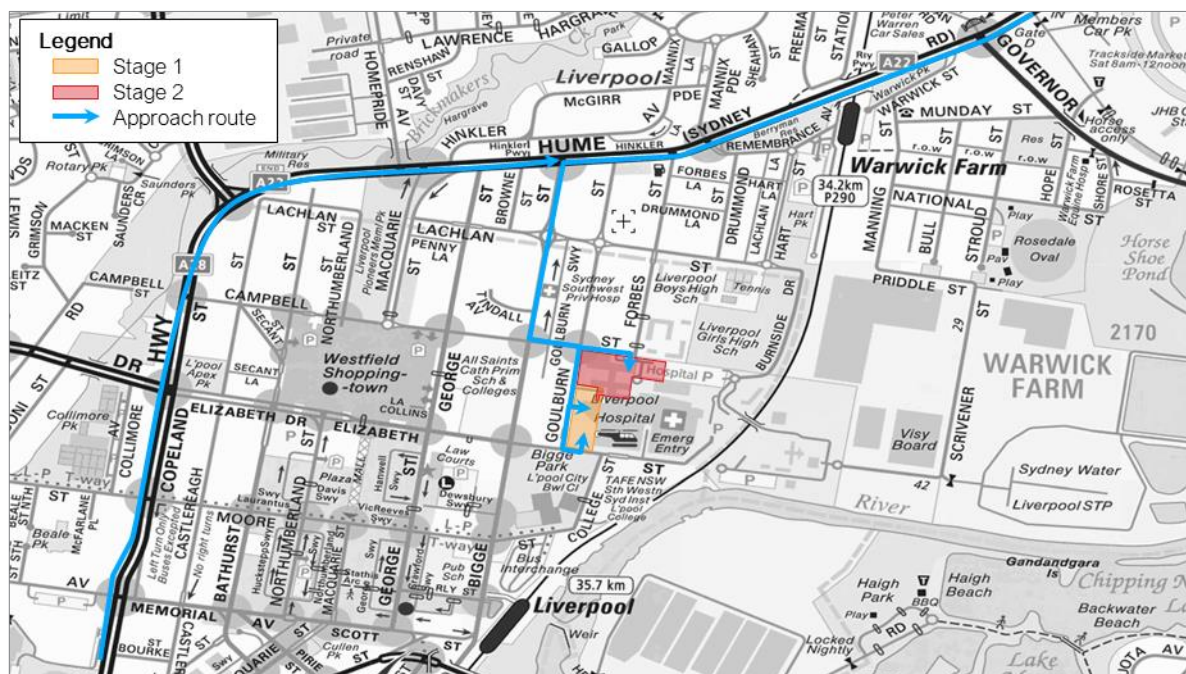
#### Approach Routes

- North/ South: Hume Highway, Bigge Street, Campbell Street, Goulburn Street/ Elizabeth Street

#### Departure Routes

- North/ South: Goulburn Street, Campbell Street, Bigge Street, Hume Highway or Goulburn Street/ Elizabeth Street, Bigge Street, Hume Highway

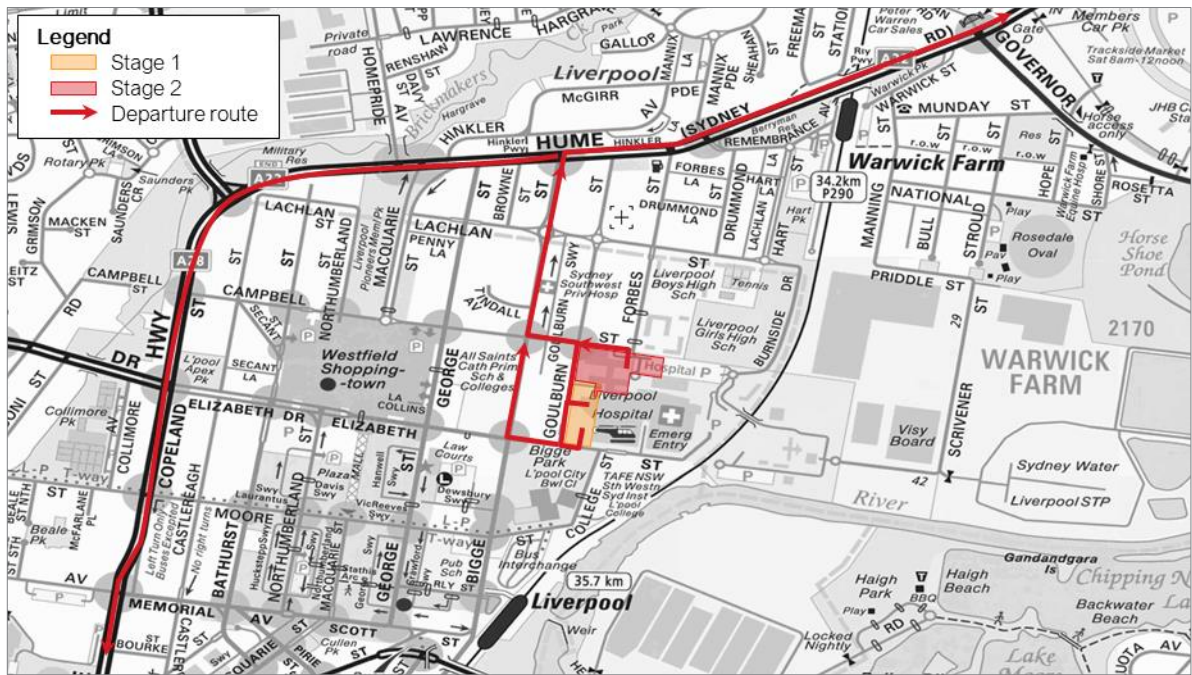
Figure 3.6: Construction vehicle approach routes



Base image source: <http://www.street-directory.com.au/>

# OVERVIEW OF CONSTRUCTION ACTIVITIES

Figure 3.7: Construction vehicle departure routes



Base image source: <http://www.street-directory.com.au/>



## 4. CONSTRUCTION PEDESTRIAN AND TRAFFIC MANAGEMENT

04

### 4.1. Traffic Guidance Schemes

Detailed information for work site operations is contained in the Traffic Control at Work Sites manual (TfNSW, 2020). The control of traffic at work sites must be undertaken with reference to SafeWork requirements and any other relevant Workplace Health and Safety manuals.

The proposed traffic guidance schemes (formerly known as traffic control plans) which have been prepared by Commercial TC Pty Ltd and are provided in Appendix C, include the following considerations:

- Construction vehicle activity, including the loading/ unloading of trucks to be conducted within the work site or work zone.
- Pedestrians and all passing vehicles will maintain priority.
- Clear definition of the work site boundary to be provided by erection of A and B Class hoardings around the site boundaries.
- All signage will be clean, clearly visible and not obscured.
- All construction vehicle activity will be minimised during peak periods, where possible.

### 4.2. Pedestrian Management

Pedestrian movements will be maintained through the provision of a mixture of A-Class hoarding/ fencing and B-Class hoarding along the perimeter of the site to the extent shown in Figure 3.4 and Figure 3.5. For Stage 1, B-Class hoarding will be located along the footpath adjacent to the work zone and Gate 1, as well as near the relocated hospital main entrance on Elizabeth Street. For Stage 2, B-Class hoarding will be located along the Goulburn Street and Campbell Street frontages of the work site. A-Class hoarding/ fencing will be located around all other boundaries of the work site.

Considering the above, pedestrian and cyclist movements are generally not expected to be impacted along the site frontages. Notwithstanding, should any footpaths need to be closed temporarily, appropriate measures will be put in place to divert pedestrians to the footpath on the other side of the road. Traffic guidance schemes have been prepared in the event that the Goulburn Street or Campbell Street footpaths need to be closed and are provided in Appendix C.

### 4.3. Public Transport

Overall, the construction activities are not expected to impact existing public transport services near the site. The recent closure of the main entrance access from Elizabeth Street and proposed conversion to a construction vehicle access is not expected to impact the adjacent Elizabeth Street bus stop. Existing kerbside restrictions are retained near this access including a bus zone immediately to the west of the driveway access and a no stopping zone across the driveway and to the east. As per the NSW Road Rules, only buses are permitted to stop within a bus zone, while vehicles are not permitted to stop within a no stopping zone. As such, visitors will not be able to set down passengers in this area. Wayfinding is currently in place around the hospital including on the construction hoarding to direct visitors to the other pick-up and drop-off areas near Entrances J, L and N as discussed further in Section 4.5.

### 4.4. Traffic Impacts

Some minor increases in average delay to vehicles at surrounding key intersections such as on Bigge Street can be expected at times during the construction period as is typical for large construction sites. That said, truck movements will be minimised as much as possible during road network peak hours.

As part of any site induction, drivers should be specifically alerted to the pedestrian activity associated with the broader hospital, with appropriate care and safety on both approach and departure.

### 4.5. Main Entrance Closure

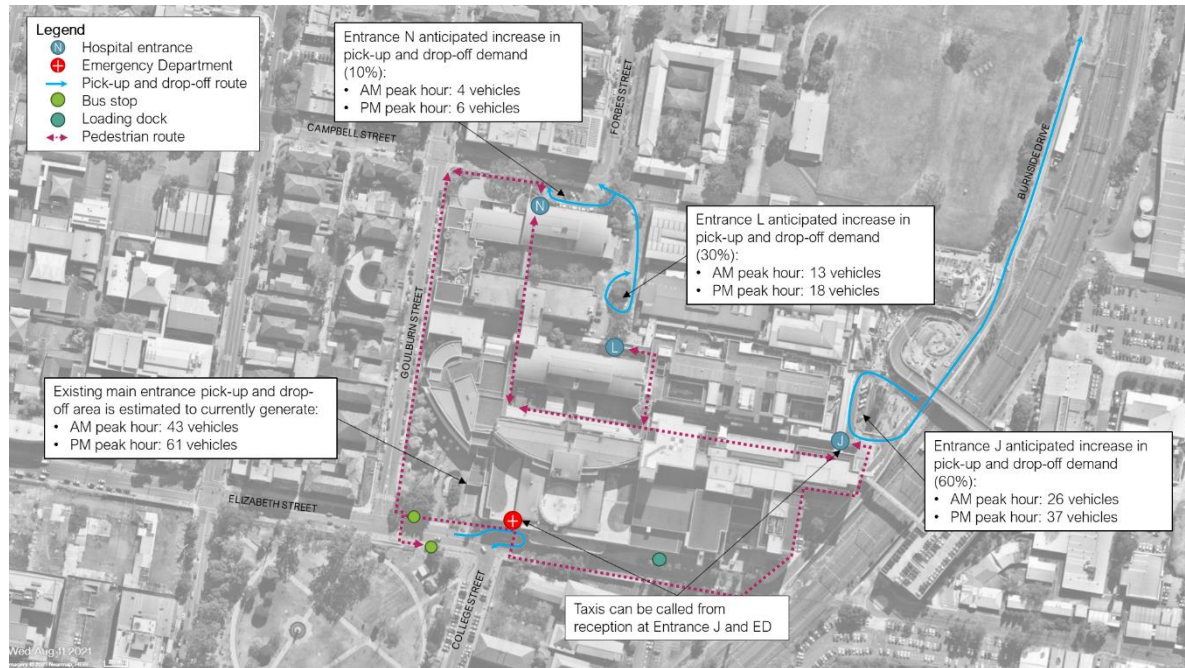
As mentioned in Section 3.4, the main hospital entrance has recently been closed to general traffic, with people directed to enter via Entrance N, L and/or J and/ or use the pick-up and drop-off areas associated with these entrances. A detailed wayfinding/ signage strategy has been developed to direct pedestrians and vehicles from the existing main entrance to these accesses and pick-up and drop-off areas during the construction works, with the diversion routes summarised in Figure 4.1.

Traffic surveys completed on Tuesday 9 April 2019 at the main entrance access from Elizabeth Drive indicate the existing pick-up and drop-off area in this location currently generates up to 43 vehicles in the AM peak hour and 61 vehicles in the PM peak hour. With the closure of this access and pick-up and drop-off area, this demand will be redistributed to the other pick-up and drop-off zones around the hospital. A summary of the anticipated redistribution of these vehicles is provided in Figure 4.1.

Traffic controllers are proposed to be positioned at these pick-up and drop-off zones for at least the first week after the main entrance closure to monitor demand and ensure vehicles are not parking for an extended period of time, with campus security consultation to agree feasible resource allocation to these areas on an ongoing basis throughout the duration of the works. Should capacity constraints be apparent, particularly around the Entrance J pick-up and drop-off zone, there is potential for the time limit of short term parking near this entrance to be reduced (and/or signage improved) to increase capacity.

Overall, the above measures demonstrate the main entrance closure can be effectively managed throughout the construction works to minimise any associated pedestrian and traffic impacts.

Figure 4.1: Main entrance closure pedestrian and vehicle diversion routes



## 4.6. 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 be unaffected. Emergency protocols on the site would include a requirement for suitably accredited site personnel to assist with emergency access from the street.

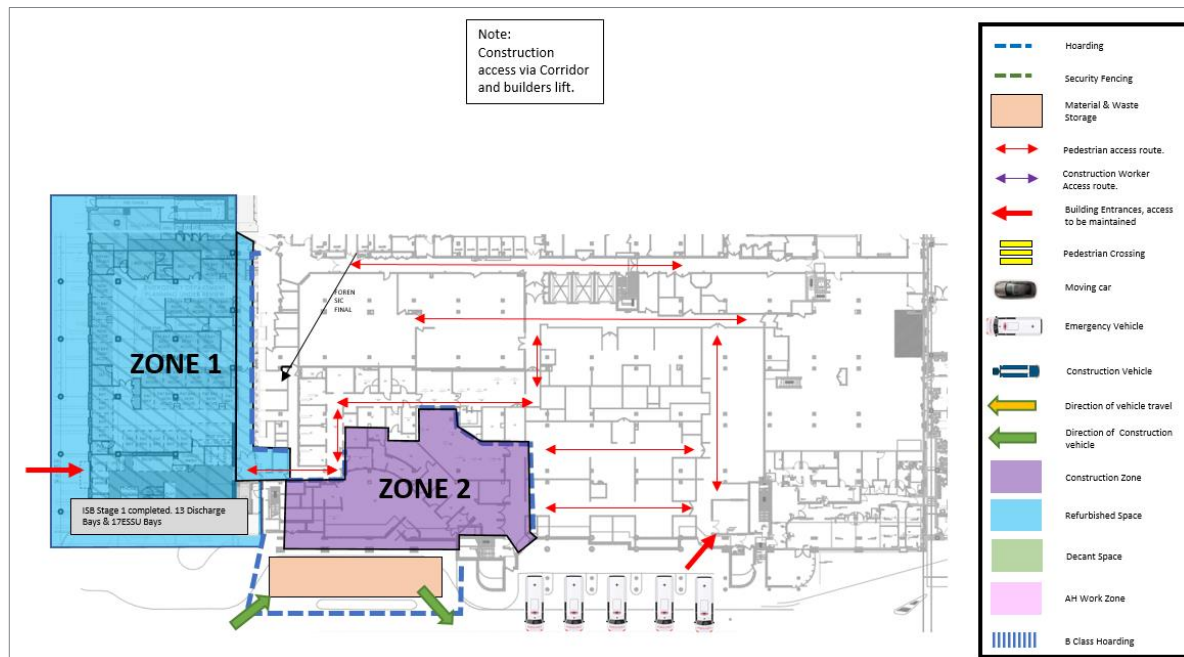
Further, construction vehicle approach and departure routes to/from the primary site access gates avoid Elizabeth Street and the primary ambulance approach routes to the Liverpool Hospital Emergency Department. Emergency vehicles accessing the hospital will be given priority at all times.

Construction works within the Emergency Department will be staged so as to limit any associated impacts. Works around the existing Emergency Department pick-up and drop-off area will commence following completion of Stage 1, including the associated new pick-up and drop-off area as shown in Figure 4.2. Similarly, works around the existing ambulance parking area will commence following completion of the new ambulance parking area in the current location as the existing Emergency Department pick-up and drop-off area, as shown in Figure 4.3.



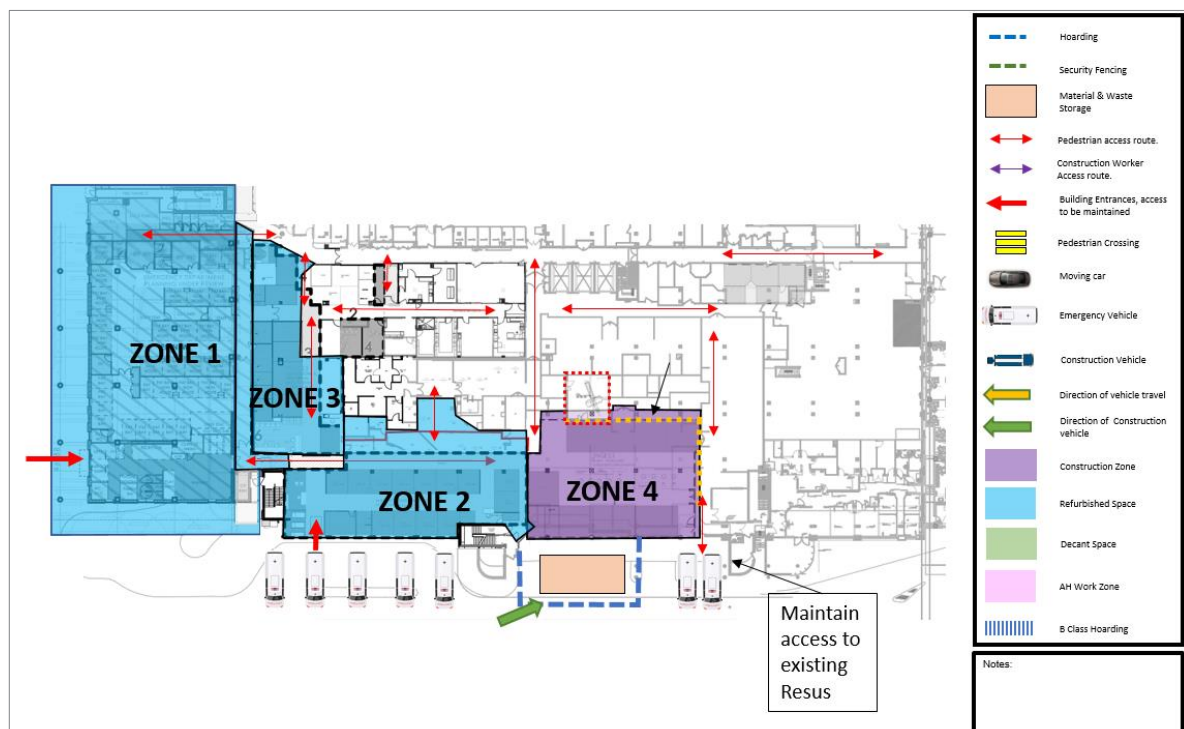
# CONSTRUCTION PEDESTRIAN AND TRAFFIC MANAGEMENT

Figure 4.2: Phase 1 of Emergency Department construction works



Source: Lendlease

Figure 4.3: Phase 2 of Emergency Department construction works



Source: Lendlease

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.

### 4.7. Existing and Future Developments

Construction of the Liverpool Hospital Multi-Storey Car Park (MSCP) project will also be occurring concurrently between August 2021 and January 2022. Lendlease will liaise with the appointed contractor for the new MSCP (ADCO Constructions) and monitor the cumulative impact of the two sites to ensure any traffic impact is minimised. As part of minimising such impacts, the proposed heavy vehicle approach and departure routes for the Main Works project seek to maintain separation between those being used as part of the MSCP project. Specifically, the MSCP project haulage routes include vehicles travelling via Burnside Drive and Hart Street on the eastern side of the hospital, while the proposed haulage routes for the Main Works primarily involve use of Goulburn Street and Bigge Street on the western side of the hospital.

As indicated in Section 3.6, peak construction activity associated with the Main Works is expected to generate around 15 trucks per hour. It is noted that construction activity for the MSCP is currently reducing as it approaches completion (forecast for early 2022), however for the purposes of this assessment a maximum cumulative traffic generation of 30 trucks per hour or 60 heavy vehicle trips has conservatively been assumed for the two projects.

The Transport and Accessibility Impact Assessment<sup>1</sup> submitted to support the SSDA for the Main Works indicates the hospital is expected to generate an additional 270 vehicle trips in the AM peak hour and 190 vehicle trips in the PM peak hour. 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, 60 heavy vehicle movements per hour during peak activity could be considered equivalent to 180 car movements per hour, which is less than the anticipated operational impact of the hospital.

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, again noting that the MSCP project is expected to be completed in early 2022.

In addition, construction is currently underway for upgrades to the Warwick Farm commuter car park and is expected to be completed in early 2022. Heavy vehicles accessing this site would typically use Remembrance Avenue to/from the Hume Highway and are therefore separated from Liverpool Hospital Main Works construction traffic.

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

### 4.8. Traffic Movements in Adjoining Council Areas

No adverse effects are expected from the movement of heavy vehicles through adjacent council areas.

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<sup>1</sup> Liverpool Health and Academic Precinct Main Works Transport and Accessibility Impact Assessment prepared by GTA dated 6 May 2020

### 4.9. Site Inspections and Record Keeping

The construction work would be monitored to ensure that it proceeds as set out in the Construction Management Plan provided by Lendlease. A daily inspection before the start of the construction activity should take place to ensure that conditions accord with those stipulated in the plan and there are no potential hazards. Any possible adverse impacts would be recorded and dealt with if they arise.

### 4.10. Site Induction

All staff employed on the site by Lendlease (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.

## 5. DRIVER CODE OF CONDUCT

05



### 5.1. Context and Purpose

The following Driver Code of Conduct seeks to address Condition B15 of SSD 10389, as reproduced below:

*B15: 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.*

### 5.2. Aims and Strategies

All construction delivery drivers to and from the site are to strictly comply with this Driver Code of Conduct.

Delivery drivers will be provided with this CTPMP which reference the following items:

- Drivers must comply with the haulage routes identified in this CTPMP. This ensures vehicles adhere to main roads to minimise impact on suburban streets and road network.
- Drivers are to comply with all regulatory speed limits and road rules when approaching and leaving the site.
- Driver of a parked vehicle along a traffic lane should not leave vehicle unattended.
- All drivers are to ensure they hold the relevant licenses for the vehicles they are driving in accordance with Statutory requirements.
- Speed limits are to be complied with at all times.
- Noise minimisation techniques are encouraged when approaching and leaving the site to reduce the impact on residents, occupants of the Hospital buildings and surrounding businesses
- Any truck loads are to be covered prior to leaving the site to minimise dust.
- There is to be no parking up trucks outside the construction site.
- All trucks leaving and entering the site are to do so in a forward motion, unless specifically outlined within an approved traffic management plan and traffic control measures in place.
- Additional care is to be taken by drivers in wet weather to ensure the safety of other vehicles, pedestrians and themselves.
- There is zero tolerance to drug and alcohol on site, and drivers may be subject to random testing which is carried out by the site.
- All deliveries will be booked in with the Site Manager/ Foreman for a dedicated time slot agreed 24 hours in advance. Any deliveries not pre-booked will not be accepted and instructed to return to their respective yard.
- Delivery drivers are to ensure that work and rest period requirements as set out by the National Heavy Vehicle Regulator and their fatigue management process are followed.
- Any special deliveries such as Stage 2 steel over bunkers will be wide loads and require special escort(s). Prior approval with TfNSW, Traffic Management Centre (TMC) and/or the National Heavy Vehicle Regulator will be sought and dedicated transport routes agreed.

- Community updates on any delivery changes from the agreed CTPMP will be communicated by the Lendlease Stakeholder Community Manager via a letter drop or email notification.
- Any complaints received by residents or other drivers must be forwarded to Lendlease to capture within the project complaints register. This includes implementing required actions and reporting as required to relevant authorities per the projects SD requirements. Drivers will hold Community Contact Cards for referring any community contact directly to Lendlease.

This code of conduct will be communicated to the delivery drivers via the subcontractors engaged for the works, and also provided to drivers as they enter the construction gate.

Monitoring of Driver Code of Conduct will be by the following:

- Positive or negative feedback received by the residents, and other key stakeholders.
- Analyses during subcontractor audits for EHS performance.

## 6. CONSTRUCTION WORKER TRANSPORTATION STRATEGY

06

## 6.1. Context and Purpose

The following Construction Worker Transport Strategy seeks to address Condition B19 of SSD 10389, as reproduced below:

*B19: Prior to the commencement of construction, the Applicant must submit a Construction Worker Transportation Strategy to the satisfaction of 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 for information.*

## 6.2. Aims and Strategies

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

### 6.2.1. 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 streets.
- Public transport connection information to be made available to workers as well as acknowledgement of the pedestrian connections between the site and Liverpool/ Warwick Farm Stations.
- Lead representatives from subcontractors to be asked to coordinate their respective worker travel arrangements (including shuttle/ car-pooling as appropriate, subject to Government health advice).

### 6.2.2. 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 including Collimore Park car park that limit impact on surrounding residents and schools.
- Encourage car-pooling (subject to Government health advice) to reduce number of cars parking in the designated parking area on-site.
- Request that subcontractors with a significant number of workers implement shuttle bus and/or car-pooling arrangements (subject to Government health advice).
- 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.



### 6.2.3. 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.

# A.STAKEHOLDER CONSULTATION



## Brinums, Mack

---

**From:** Heather Trengove <Heather.Trengove@transport.nsw.gov.au>  
**Sent:** Monday, 18 October 2021 3:21 PM  
**To:** Brinums, Mack  
**Cc:** Maynard, Brett; Hill, Mathew; Puljic, Daniel; Hall, Clare  
**Subject:** RE: [EXT]:RE: Liverpool Hospital Redevelopment CTPMP

Hi Mack,

Thank you for the update and I am comfortable with what you propose. We understand that during concrete pour activities that reducing the number of vehicles is difficult. Could you please add some words to the report to reflect your email.

Also as an update, I have spoken with Zeliha today and comments from their team should be provided to you by COB Friday. Sorry I can't provide more information but it seems they are still pulling their correspondence together.

Kind Regards,

Heather Trengove (nee Gavriel)  
Principal Transport Planner  
Customer Journey Planning  
Greater Sydney  
**Transport for NSW**

T: 0481 482 667  
231 Elizabeth Street, Sydney 2000

**Note: I work Mon, Wed, Thu**

---

**From:** Brinums, Mack [mailto:mackenzie.brinums@stantec.com]  
**Sent:** Monday, 18 October 2021 1:21 PM  
**To:** Heather Trengove <Heather.Trengove@transport.nsw.gov.au>  
**Cc:** Maynard, Brett <brett.maynard@stantec.com>; Hill, Mathew <Mathew.Hill@lendlease.com>; Puljic, Daniel <Daniel.Puljic@lendlease.com>; Hall, Clare <Clare.Hall@lendlease.com>  
**Subject:** RE: [EXT]:RE: Liverpool Hospital Redevelopment CTPMP

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Hi Heather

No issue with providing the wayfinding package – I just wasn't sure if it had been finalised yet however it seems that it has and it's already been implemented on site (it was developed in consultation with Council and the Local Health District). Please see attached.

In terms of vehicle volumes during the peak hours, we've currently detailed that on average around 8 vehicles per hour are expected across the day. We expect that on typical days during the road network peak periods (say 7am-9am and 4pm-6pm) this could be limited to around 4 vehicles per hour on average, which we'll add to the report. However Lendlease have noted that on some peak activity days such as when concrete pours are occurring, there is limited opportunity to reduce construction vehicle volumes during the peak hours as they generally need consistent deliveries throughout the day. We'll include a statement in the report to mention that truck movements will be minimised as much as

possible during road network peak hours. In terms of distribution, Bigge Street is the primary proposed approach and departure route between the Hume Highway and the site, so it can be assumed that the anticipated 4 vehicles per hour on average during the peak hours would travel along Bigge Street.

Regards

**Mack Brinums**

Senior Transportation Engineer

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**From:** Heather Trengove <[Heather.Trengove@transport.nsw.gov.au](mailto:Heather.Trengove@transport.nsw.gov.au)>

**Sent:** Monday, 18 October 2021 11:34 AM

**To:** Brinums, Mack <[mackenzie.brinums@stantec.com](mailto:mackenzie.brinums@stantec.com)>

**Cc:** Maynard, Brett <[brett.maynard@stantec.com](mailto:brett.maynard@stantec.com)>; Hill, Mathew <[Mathew.Hill@lendlease.com](mailto:Mathew.Hill@lendlease.com)>; Puljic, Daniel <[Daniel.Puljic@lendlease.com](mailto:Daniel.Puljic@lendlease.com)>; Hall, Clare <[Clare.Hall@lendlease.com](mailto:Clare.Hall@lendlease.com)>

**Subject:** Re: [EXT]:RE: Liverpool Hospital Redevelopment CTPMP

Hi Mack,

Thank you for the responses. I have one comment that I feel wasn't fully addressed and may have been my fault as I should've separated it into a separate comment to highlight its importance. Point 3. I discuss Bigge Street and the advisement/request that truck movements using Bigge Street are minimised during the peak periods. This is because Bigge Street is an important bus corridor with several bus services that need to be protected.

Could you please provide a response to this comment and something to include in the CPTMP stating that truck movements will be minimised and the likely distribution of movements during these peak hours?

In regards to point 4. I don't see why Lendlease couldn't share this seeing as it will be installed in due course. The request is just so we, as Transport, can ensure we have any measures in place to mitigate impacts to the traffic network. I assume these were shared with council. Did they have any feedback?

Kind Regards,

Heather Trengove (nee Gavriel)

Principal Transport Planner

Customer Journey Planning

Greater Sydney

Transport for NSW

T: 0481 482 667

231 Elizabeth Street, Sydney 2000

**Note: I work Mon, Wed, Thu**

**From:** Brinums, Mack <[mackenzie.brinums@stantec.com](mailto:mackenzie.brinums@stantec.com)>  
**Sent:** Monday, October 18, 2021 9:59:48 AM  
**To:** Heather Trengove <[Heather.Trengove@transport.nsw.gov.au](mailto:Heather.Trengove@transport.nsw.gov.au)>  
**Cc:** Maynard, Brett <[brett.maynard@stantec.com](mailto:brett.maynard@stantec.com)>; Hill, Mathew <[Mathew.Hill@lendlease.com](mailto:Mathew.Hill@lendlease.com)>; Puljic, Daniel <[Daniel.Puljic@lendlease.com](mailto:Daniel.Puljic@lendlease.com)>; Hall, Clare <[Clare.Hall@lendlease.com](mailto:Clare.Hall@lendlease.com)>  
**Subject:** RE: [EXT]:RE: Liverpool Hospital Redevelopment CTPMP

**CAUTION:** This email is sent from an external source. Do not click any links or open attachments unless you recognise the sender and know the content is safe.

Thanks Heather

In the interim, please see below for our responses to your comments. Are you able to review and confirm if you're happy for us to update the CTMP on this basis?

1. Section 3.3 - The development proposes the use of the Collimore Carpark which is supported as it is an offsite location and reduces the likelihood of on-street parking in the vicinity of the hospital to be used. However, there are concerns that this carpark is highly utilised by other workers in the Liverpool CBD. The development should complete an assessment of the carpark to ensure there is adequate capacity for their peak number of workers to be able to park in this location. Secondly, the site should consider that public transport access for their workers (who will most likely arrive and depart at the same times) will reduce the capacity for other public transport users. It is suggested that the site considers a shuttle, especially during the project peak worker periods to reduce disruption/overcrowding of public transport. Aerial imagery from August indicates that the car park is around 20 per cent occupied in the middle of the day on a weekday. While it is noted that this is during COVID restrictions, work from home arrangements are expected to continue for some time. Further to this, construction workers generally start earlier than most other workers within the CBD so we consider this arrangement for some construction worker parking to be accommodated in this car park acceptable. As mentioned in the report however, workers will be encouraged to catch public transport where possible and appropriate tool drop-off arrangements will be made so that workers do not have to transport their tools on public transport each day. Given that construction workers generally arrive before/ depart before CBD workers, any overlap of workers on public transport is expected to be minor. Many CBD workers likely also use Council's free shuttle bus services to travel between the car park and the CBD:  
[http://www.liverpool.nsw.gov.au/\\_data/assets/pdf\\_file/0019/113347/Park-and-Ride-Collimore-Park.pdf](http://www.liverpool.nsw.gov.au/_data/assets/pdf_file/0019/113347/Park-and-Ride-Collimore-Park.pdf)
2. Section 3.4 - Impact to the Bus Stop located on Elizabeth Street adjacent to the proposed Gate 4 has not been considered. The development needs to state and should ensure that all vehicles associated with the development are contained within the site and do not encroach on the bus stop at any time. The bus stop has been considered however it is not impacted by the proposed construction works. We will update the report to clarify this and state that all vehicles will be contained within the site or approved work zones as you've mentioned.
3. Section 4.3 - the statement that public transport won't be impacted is incorrect. The site should assess any impacts that could present at Elizabeth Street due to 1. The carpark being closed (drivers may use the bus stop as a kiss and ride location) and must ensure that the sites construction vehicles do not encroach on the bus stop at any time. It is also noted that there may be peak period impacts to Bigge Street. It is advised that truck movements need to be strictly minimised during commuter peak periods. We do not believe this statement is incorrect. The bus stop will not be impacted by the proposed works. While the driveway will be closed to general traffic and converted to a construction vehicle access, there are existing bus zone and no stopping restrictions along the northern side of Elizabeth Street. The NSW Road Rules state that only buses are permitted to stop within a bus zone, and no vehicles are permitted to stop in a no stopping zone. Wayfinding is proposed



around the hospital including on the construction hoarding to direct vehicles to the other drop-off areas around the hospital.

4. Section 4.5 - The wayfinding strategy mentioned must be provided to Customer Journey Planning - Operations Team to assess the redistribution of traffic and likely impacts to the greater traffic network including our public transport network. I'll check with Lendlease if they can provide information on this, however the TIA that was prepared for the SSDA estimated the redevelopment of the hospital would generate up to an additional 270 vehicle trips in the weekday peak hours once services are operational, so it is not expected that the minor redistribution of up to 60 existing vehicle trips from the main entrance drop-off area to other drop off areas around the hospital would result in any significant impact, particularly in comparison to what we've previously modelled for post-development.
5. Section 4.7 - The concurrent construction of the multi-storey car park needs to be considered within this report. It is likely similar haulage routes will be used and both sites will need to have measures in place to minimise overlap and traffic network issues. As mentioned in the report, the haulage routes we've proposed seek to provide separation between those used for the MSCP (e.g. The MSCP project is understood to use Burnside Drive and Hart Street on the eastern side of the hospital, while we're proposing to primarily use Goulburn Street and Bigge Street on the western side of the hospital). Further to this, peak construction vehicle traffic generation for the main works is expected to be up to 15 trucks per hour. Assuming the same for the MSCP (noting this project is wrapping up and is expected to be completed in early 2022), the cumulative traffic generation of both projects could be up to 30 trucks per hour or 60 movements per hour. Conservatively assuming one heavy vehicle is equivalent to three passenger car units on average, 60 heavy vehicle movements per hour during peak activity could be considered equivalent to 180 car movements per hour, which is less than the anticipated operational impact of the hospital. Again, it is noted that the above construction traffic volume estimates are for peak activity, with typical activity expected to generate less activity. We'll update to include further information on the above. As mentioned in the report already, Lendlease will liaise with the appointed contractor for the new MSCP (ADCO Constructions) and monitor the cumulative impact of the two sites to ensure any traffic impact is minimised.

Happy to discuss if any queries.

Regards

**Mack Brinums**

Senior Transportation Engineer

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---

**From:** Heather Trengove <[Heather.Trengove@transport.nsw.gov.au](mailto:Heather.Trengove@transport.nsw.gov.au)>

**Sent:** Monday, 18 October 2021 9:44 AM

**To:** Brinums, Mack <[mackenzie.brinums@stantec.com](mailto:mackenzie.brinums@stantec.com)>

**Cc:** Maynard, Brett <[brett.maynard@stantec.com](mailto:brett.maynard@stantec.com)>; Hill, Mathew <[Mathew.Hill@lendlease.com](mailto:Mathew.Hill@lendlease.com)>; Puljic, Daniel <[Daniel.Puljic@lendlease.com](mailto:Daniel.Puljic@lendlease.com)>; Hall, Clare <[Clare.Hall@lendlease.com](mailto:Clare.Hall@lendlease.com)>

**Subject:** RE: [EXT]:RE: Liverpool Hospital Redevelopment CTPMP

Hi Mack,

Happy to reach out and see if they have any further comments. I'll get back to you once I hear something.

Kind Regards,

Heather Trengove (nee Gavriel)  
Principal Transport Planner  
Customer Journey Planning  
Greater Sydney  
**Transport for NSW**

T: 0481 482 667  
231 Elizabeth Street, Sydney 2000

**Note: I work Mon, Wed, Thu**

---

**From:** Brinums, Mack [<mailto:mackenzie.brinums@stantec.com>]  
**Sent:** Friday, 15 October 2021 11:54 AM  
**To:** Heather Trengove <[Heather.Trengove@transport.nsw.gov.au](mailto:Heather.Trengove@transport.nsw.gov.au)>  
**Cc:** Maynard, Brett <[brett.maynard@stantec.com](mailto:brett.maynard@stantec.com)>; Hill, Mathew <[Mathew.Hill@lendlease.com](mailto:Mathew.Hill@lendlease.com)>; Puljic, Daniel <[Daniel.Puljic@lendlease.com](mailto:Daniel.Puljic@lendlease.com)>; Hall, Clare <[Clare.Hall@lendlease.com](mailto:Clare.Hall@lendlease.com)>  
**Subject:** RE: [EXT]:RE: Liverpool Hospital Redevelopment CTPMP

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Hi Heather

Appreciated you providing the comments below. I've tried a few times to get in contact with Zeliha this week however haven't had much luck. Are you able to try on your side and confirm if there's any further comments from what you've provided below?

Thanks

**Mack Brinums**  
Senior Transportation Engineer  
Mobile: 0414 600 989  
[mackenzie.brinums@stantec.com](mailto:mackenzie.brinums@stantec.com)  
GTA, now Stantec  
Level 16, 207 Kent Street  
Sydney NSW 2000



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---

**From:** Heather Trengove <[Heather.Trengove@transport.nsw.gov.au](mailto:Heather.Trengove@transport.nsw.gov.au)>  
**Sent:** Monday, 11 October 2021 8:27 AM  
**To:** Brinums, Mack <[mackenzie.brinums@stantec.com](mailto:mackenzie.brinums@stantec.com)>  
**Cc:** Maynard, Brett <[brett.maynard@stantec.com](mailto:brett.maynard@stantec.com)>; Hill, Mathew <[Mathew.Hill@lendlease.com](mailto:Mathew.Hill@lendlease.com)>; Puljic, Daniel <[Daniel.Puljic@lendlease.com](mailto:Daniel.Puljic@lendlease.com)>; Hall, Clare <[Clare.Hall@lendlease.com](mailto:Clare.Hall@lendlease.com)>  
**Subject:** RE: [EXT]:RE: Liverpool Hospital Redevelopment CTPMP

Hi Mack,

I provided my comments to our TfNSW Planning and Programs team on 27<sup>th</sup> September. Zeliha Cansiz was my contact. She is coordinating our TfNSW comments.

However, unofficially I am happy to provide the comments from me and my team.

1. Section 3.3 - The development proposes the use of the Collimore Carpark which is supported as it is an offsite location and reduces the likelihood of on-street parking in the vicinity of the hospital to be used. However, there are concerns that this carpark is highly utilised by other workers in the Liverpool CBD. The development should complete an assessment of the carpark to ensure there is adequate capacity for their peak number of workers to be able to park in this location. Secondly, the site should consider that public transport access for their workers (who will most likely arrive and depart at the same times) will reduce the capacity for other public transport users. It is suggested that the site considers a shuttle, especially during the project peak worker periods to reduce disruption/overcrowding of public transport.
2. Section 3.4 - Impact to the Bus Stop located on Elizabeth Street adjacent to the proposed Gate 4 has not been considered. The development needs to state and should ensure that all vehicles associated with the development are contained within the site and do not encroach on the bus stop at any time.
3. Section 4.3 - the statement that public transport won't be impacted is incorrect. The site should assess any impacts that could present at Elizabeth Street due to 1. The carpark being closed (drivers may use the bus stop as a kiss and ride location) and must ensure that the sites construction vehicles do not encroach on the bus stop at any time. It is also noted that there may be peak period impacts to Bigge Street. It is advised that truck movements need to be strictly minimised during commuter peak periods.
4. Section 4.5 - The wayfinding strategy mentioned must be provided to Customer Journey Planning - Operations Team to assess the redistribution of traffic and likely impacts to the greater traffic network including our public transport network.
5. Section 4.7 - The concurrent construction of the multi-storey car park needs to be considered within this report. It is likely similar haulage routes will be used and both sites will need to have measures in place to minimise overlap and traffic network issues.

Happy to discuss if you have any questions.

Kind Regards,

Heather Trengove (nee Gavriel)  
Principal Transport Planner  
Customer Journey Planning  
Greater Sydney  
**Transport for NSW**

T: 0481 482 667  
231 Elizabeth Street, Sydney 2000

**Note: I work Mon, Wed, Thu**

---

**From:** Brinums, Mack [<mailto:mackenzie.brinums@stantec.com>]

**Sent:** Friday, 8 October 2021 5:09 PM

**To:** Heather Trengove <[Heather.Trengove@transport.nsw.gov.au](mailto:Heather.Trengove@transport.nsw.gov.au)>

**Cc:** Maynard, Brett <[brett.maynard@stantec.com](mailto:brett.maynard@stantec.com)>; Hill, Mathew <[Mathew.Hill@lendlease.com](mailto:Mathew.Hill@lendlease.com)>; Puljic, Daniel <[Daniel.Puljic@lendlease.com](mailto:Daniel.Puljic@lendlease.com)>; Hall, Clare <[Clare.Hall@lendlease.com](mailto:Clare.Hall@lendlease.com)>

**Subject:** RE: [EXT]:RE: Liverpool Hospital Redevelopment CTPMP

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Hi Heather

Just following up again on the below – are you able to confirm on Monday if any comments?

Thanks

**Mack Brinums**

Senior Transportation Engineer

Mobile: 0414 600 989  
mackenzie.brinums@stantec.com

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Level 16, 207 Kent Street  
Sydney NSW 2000



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---

**From:** Brinums, Mack <[mackenzie.brinums@stantec.com](mailto:mackenzie.brinums@stantec.com)>

**Sent:** Wednesday, 22 September 2021 9:22 AM

**To:** [heather.trengove@transport.nsw.gov.au](mailto:heather.trengove@transport.nsw.gov.au)

**Cc:** Maynard, Brett <[brett.maynard@stantec.com](mailto:brett.maynard@stantec.com)>; Hall, Clare <[Clare.Hall@lendlease.com](mailto:Clare.Hall@lendlease.com)>; Hill, Mathew <[Mathew.Hill@lendlease.com](mailto:Mathew.Hill@lendlease.com)>; Puljic, Daniel <[Daniel.Puljic@lendlease.com](mailto:Daniel.Puljic@lendlease.com)>

**Subject:** [EXT]:RE: Liverpool Hospital Redevelopment CTPMP

Hi Heather

Thanks for your call this morning. Please see an updated link below for the draft CTPMP for review. Let me know if any issues with accessing the link.

 [210901rep-N170566 Liverpool Hospital Main Works CPTMP A-Dr3.pdf](#)

Regards

**Mack Brinums**

Senior Consultant

Mobile: 0414 600 989  
mackenzie.brinums@stantec.com

GTA, now Stantec  
Level 16, 207 Kent Street  
Sydney NSW 2000



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---

**From:** Brinums, Mack

**Sent:** Thursday, 16 September 2021 9:36 AM

**To:** Development Sydney <[Development.Sydney@transport.nsw.gov.au](mailto:Development.Sydney@transport.nsw.gov.au)>

**Cc:** Maynard, Brett <[brett.maynard@stantec.com](mailto:brett.maynard@stantec.com)>; Hall, Clare <[Clare.Hall@lendlease.com](mailto:Clare.Hall@lendlease.com)>; Hill, Mathew

<[Mathew.Hill@lendlease.com](mailto:Mathew.Hill@lendlease.com)>; Puljic, Daniel <[Daniel.Puljic@lendlease.com](mailto:Daniel.Puljic@lendlease.com)>

**Subject:** RE: Liverpool Hospital Redevelopment CTPMP

Hi

Just following up on my email to ensure the CTPMP has been received. Are you able to advise who this has been allocated to for review and indicative timing on providing any comments?

Thanks

**Mack Brinums**

Senior Consultant

Mobile: 0414 600 989  
[mackenzie.brinums@stantec.com](mailto:mackenzie.brinums@stantec.com)

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Sydney NSW 2000



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---

**From:** Brinums, Mack

**Sent:** Thursday, 2 September 2021 9:15 AM

**To:** Development Sydney <[Development.Sydney@transport.nsw.gov.au](mailto:Development.Sydney@transport.nsw.gov.au)>

**Cc:** Maynard, Brett <[brett.maynard@stantec.com](mailto:brett.maynard@stantec.com)>

**Subject:** Liverpool Hospital Redevelopment CTPMP

Hi

Please see link below for the Construction Traffic and Pedestrian Management Plan (CTPMP) relating to construction works for the Liverpool Hospital Redevelopment.

 [210901rep-N170566 Liverpool Hospital Main Works CPTMP A-Dr3.pdf](#)

As required by the consent conditions, the CTPMP is required to be developed in consultation with Council and TfNSW. Are you able to please review and let us know if any comments? There are some pretty tight timeframes for commencing construction so if you could get back to us as soon as possible it would be much appreciated.

Any queries, let us know.

Regards

**<span style**

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## Brinums, Mack

---

**From:** Brinums, Mack  
**Sent:** Thursday, 28 October 2021 9:53 AM  
**To:** Brinums, Mack  
**Subject:** RE: Liverpool Hospital Redevelopment CTPMP

---

**From:** Zeliha Cansiz <[Zeliha.Cansiz@transport.nsw.gov.au](mailto:Zeliha.Cansiz@transport.nsw.gov.au)>  
**Sent:** Monday, 25 October 2021 12:16 PM  
**To:** Brinums, Mack <[mackenzie.brinums@stantec.com](mailto:mackenzie.brinums@stantec.com)>  
**Subject:** FW: Liverpool Hospital Redevelopment CTPMP

Hi Mack,

Transport for NSW (TfNSW) provides the following comments in regards to the CTPMP:

Section 3.3 - The development proposes the use of the Collimore Carpark which is supported as it is an offsite location and reduces the likelihood of on-street parking in the vicinity of the hospital to be used. However, there are concerns that this carpark is highly utilised by other workers in the Liverpool CBD. The development should complete an assessment of the carpark to ensure there is adequate capacity for their peak number of workers to be able to park in this location. Secondly, the site should consider that public transport access for their workers (who will most likely arrive and depart at the same times) will reduce the capacity for other public transport users. It is suggested that the site considers a shuttle, especially during the project peak worker periods to reduce disruption/overcrowding of public transport.

Section 3.4 - Impact to the Bus Stop located on Elizabeth Street adjacent to the proposed Gate 4 has not been considered. The development needs to state and should ensure that all vehicles associated with the development are contained within the site and do not encroach on the bus stop at any time.

Section 4.3 - The statement that public transport won't be impacted is incorrect. The site should assess any impacts that could present at Elizabeth Street due to 1. The carpark being closed (drivers may use the bus stop as a kiss and ride location) and must ensure that the sites construction vehicles do not encroach on the bus stop at any time. It is also noted that there may be peak period impacts to Bigge Street. It is advised that truck movements need to be strictly minimised during commuter peak periods.

Section 4.5 - The wayfinding strategy mentioned must be provided to Customer Journey Planning - Operations Team to assess the redistribution of traffic and likely impacts to the greater traffic network including our public transport network.

Section 4.7 - The concurrent construction of the multi-storey car park needs to be considered within this report. It is likely similar haulage routes will be used and both sites will need to have measures in place to minimise overlap and traffic network issues.

[All of the above have been addressed in correspondence with Heather Trengove.](#)

1. Section 3.1 - Revise and update Table 3.1.

[Noted – this has been updated in the final CTPMP.](#)

2. Section 3.4 - Construction gates site access has the potential for conflict of trucks with emergency vehicles. How is this conflict going to be managed? In addition how is heavy vehicle storage and waiting areas will be managed? Gate 4 will severely impact access to the Emergency Centre.

[As mentioned, Gate 4 has historically been the main entrance to the hospital and during the peak hours experiences up to around 60 vehicle trips per hour associated with the drop-off loop, plus additional movements associated with cars access the basement car park. Construction works are anticipated to generate](#)

on average around 8 vehicle movements per hour which will be spread across various access points, and therefore less traffic passing the emergency department access on Elizabeth Street than when the main entrance access was operational. There will also be a traffic controller at this gate when in use.

Gate 3 will hinder operation of the nearby marked foot crossing.

Gate 3 will be restricted to right out, with the swept path for truck and dogs and 12.5m HRVs performing this manoeuvre provided on Page 41 and 42 of the CTPMP. The CTPMP has been updated to reference this restriction.

Swept paths are required to be produced for the truck and dog trailer trucks as well articulated vehicles to access the site access gates.

Swept paths for truck and dogs accessing the site are provided page 40, 42 and 46 of the report. Semi-trailers are not proposed to access the site and will be loaded/ unloaded from the proposed work zones.

The manoeuvres may not be feasible and may require removal of parking and modification of surrounding traffic control facilities.

The swept path assessment provided in Appendix A also confirms no additional loss of on-street parking is required from than that lost for the proposed work zones.

Impact to Bus Stop at Elizabeth Street has not been considered.

The Elizabeth Street bus zone has been considered however it is not expected to be impacted as detailed in my attached response to Heather's comments.

If access to Car Park 1 will be closed what are the peripheral impacts to the road network by displaced parkers?

Car Park 1 will remain open, however will just be accessed via the Car Park 3 access from Burnside Drive. The MSCP is also due to be completed in early 2022. It is noted that the main entrance access has already been closed to general traffic. Based on traffic surveys, there was historically 31-50 vehicles accessing the basement car park from the main entrance which will now be accessing the car park from Burnside Drive. As detailed in my response to Heather's comments, the hospital is expected to generate up to an additional 270 vehicle trips in the weekday peak hours, so the redistribution of the existing trips accessing the drop-off area and CP1 from the main entrance is minor in comparison to what we've previously completed traffic modelling for.

Swept path for semi-trailer access to and from gates have not been produced.

As detailed in Section 3.4 already, semi-trailers are not proposed to access the site and will be loaded/ unloaded in the proposed work zones.

The truck and dog trailer truck paths are tight at low speed and require multiple manoeuvring.

The swept paths do not indicate multiple manoeuvres are required on the surrounding road network. Manoeuvres on-site will be managed by the contractor.

3. Section 3.5 - What is the impact of the operation of proposed on-street works zone to pedestrians movement along the pathways? Will TC be in place?

This is specifically addressed in Section 4.5, with B-Class hoarding in place to maintain pedestrian movement along the footpath while vehicles in the work zone are unloaded via crane.

4. Section 3.6 - Longitudinal storage of construction vehicle arrival how will it be managed?

Deliveries will be scheduled and call-up procedures will be in place to manage arrivals. This is already detailed in Section 3.4.

5. Section 4.3 - Construction activity will impact the operation of the bus stop at Elizabeth Street fronting the hospital. Please assess.

This has already been detailed in the response to Heather's comments. The bus stop is not expected to be impacted. Commentary has been added to the report.

6. Section 4.4 - Traffic impacts need to consider impact to emergency services and vehicles, access to the car park, displaced parking, need to modify traffic control facilities and overall access at intersection whereby long vehicles will swerving onto the opposing travel path. In addition the loss of the car park that provides circulation and a kiss and ride zone for hospital staff and patients will detrimentally impact operation of the hospital if alternative options are not explored?

As mentioned, traffic modelling was completed as part of the SSDA on the basis that the hospital would generate up to an additional 270 additional vehicle trips in the weekday peak hours. As such, the traffic impact of construction works is expected to be minor compared to the operational impact of the hospital redevelopment. A more detailed response is attached. Any on-street parking to be temporarily removed during construction works to accommodate the work zones is along the hospital frontage only, and therefore there is justified use of this kerbside space. Ample parking supply is provided on the hospital campus to accommodate the circa 12 spaces lost for the work zone. The pick-up and drop-off alternatives including the wayfinding strategy as detailed in Section 4.5 have been developed in consultation with Council and the Local Health District and are considered acceptable.

7. Section 4.5 - Entrances N and L do not have similar capacity as per the main entrance being blocked. Capacity analysis is required. The wayfinding strategy and particulars in terms of directional signage and catchment capture needs to be supplied as the re-direction of traffic to the Hospital is critical for its operation for various modes of transport. The implications are a lot wider and need to be considered. The closure of the main entrance will be detrimental to the road network, alter traffic distribution and will cause confusion. Alternatives offered need to be further analysed and developed due to capacity constraints.

As detailed in my response to Heather's comments, the hospital is expected to generate up to an additional 270 vehicle trips in the weekday peak hours, so the redistribution of the existing trips accessing the drop-off area and CP1 from the main entrance is minor in comparison to what we've previously completed traffic modelling for. The wayfinding strategy is attached and has been developed in consultation with Council and the Local Health District. As detailed in the report, management measures will be in place at the alternative drop-off areas around the hospital to manage the slight increase in demand at these locations.

8. Section 4.6 - The statement that construction vehicles will not interfere with Elizabeth Street is not correct.

I don't believe this statement is in the report.

A VMP needs to be developed giving due recognition and priority movement to emergency vehicles. The emergency department construction works and access with the associated drop off area has not been considered properly and the traffic impacts, circulation, impact to ambulance parking and U-turn capability has not been considered in detail.

This strategy has been developed in consultation with the hospital to ensure it addresses all requirements. As detailed in the CTPMP, construction works around the emergency department has been staged so as to minimise any potential impacts as much as possible. Works for the emergency department will take place once Stage 1 is complete and the new drop-off zone from Goulburn Street is open. Similarly, works around the ambulance parking area will only take place once the new ambulance parking area is constructed. The proposed works around the emergency department do not impact the swept paths of vehicles passing this area.

9. Section 4.7 - The concurrent construction of the multi-storey car park needs to be considered within this report as parking is a premium in the area and in high demand. The traffic implications from the cumulative impact are enormous.

This has been addressed in Section 4.7 of the report and subsequent response email attached.

10. Section 6.2.2 - Collimore car park is at capacity as it used by CBD workers and may not be able to absorb the additional traffic from construction and displaced parkers. Capacity analysis of car park and buses to transfer additional loading is required. Contractors carry tools with equipment and require access to them whilst on site. How will this be managed? Solutions offered in Section 6.2.3 are not pragmatic.

As already detailed in Section 3.3 of the report, appropriate arrangements will be made for equipment/ tool storage on-site. The remainder of this comment has been addressed in the email attached.

11. General comments: Will the construction site operate cranes?

Yes, as detailed in Section 3.4.

Impact of cranes to the network during setup and demobilisation is crucial together with on-street loading zones.

Crane setup/ dismantle is subject to a separate one-off application and does not relate to this CTPMP.

Due to the long term impact to the network, 5.5 years of construction, a long term package of works and measures need to be formulated to resolve on-going issues, management of traffic, provision of traffic guidance and an on-going live modification emergency access plan for patients and emergency vehicles.

Noted.

The report has failed to address all these concerns and abovementioned points.

**Please provide your response to the above mentioned matters to [Developments.CJP@transport.nsw.gov.au](mailto:Developments.CJP@transport.nsw.gov.au) for further review.**

Regards,  
Zeliha Cansiz  
Development Assessment Officer  
Planning and Programs  
Greater Sydney  
**Transport for NSW**

M 0460 427 977  
Level 5, 27 Argyle Street Parramatta NSW 2150



I acknowledge the Aboriginal people of the country on which I work, their traditions, culture and a shared history and identity. I also pay my respects to Elders past and present and recognise the continued connection to country.

---

**From:** Brinums, Mack [<mailto:mackenzie.brinums@stantec.com>]  
**Sent:** Thursday, 16 September 2021 9:36 AM  
**To:** Development Sydney <[Development.Sydney@transport.nsw.gov.au](mailto:Development.Sydney@transport.nsw.gov.au)>  
**Cc:** Maynard, Brett <[brett.maynard@stantec.com](mailto:brett.maynard@stantec.com)>; Hall, Clare <[Clare.Hall@lendlease.com](mailto:Clare.Hall@lendlease.com)>; Hill, Mathew <[Mathew.Hill@lendlease.com](mailto:Mathew.Hill@lendlease.com)>; Puljic, Daniel <[Daniel.Puljic@lendlease.com](mailto:Daniel.Puljic@lendlease.com)>  
**Subject:** RE: Liverpool Hospital Redevelopment CTPMP

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Hi

Just following up on my email to ensure the CTPMP has been received. Are you able to advise who this has been allocated to for review and indicative timing on providing any comments?

Thanks

**Mack Brinums**

Senior Consultant

Mobile: 0414 600 989  
mackenzie.brinums@stantec.com

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Sydney NSW 2000



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**From:** Brinums, Mack**Sent:** Thursday, 2 September 2021 9:15 AM**To:** Development Sydney <[Development.Sydney@transport.nsw.gov.au](mailto:Development.Sydney@transport.nsw.gov.au)>**Cc:** Maynard, Brett <[brett.maynard@stantec.com](mailto:brett.maynard@stantec.com)>**Subject:** Liverpool Hospital Redevelopment CTPMP

Hi

Please see link below for the Construction Traffic and Pedestrian Management Plan (CTPMP) relating to construction works for the Liverpool Hospital Redevelopment.

 [210901rep-N170566 Liverpool Hospital Main Works CPTMP A-Dr3.pdf](#)

As required by the consent conditions, the CTPMP is required to be developed in consultation with Council and TfNSW. Are you able to please review and let us know if any comments? There are some pretty tight timeframes for commencing construction so if you could get back to us as soon as possible it would be much appreciated.

Any queries, let us know.

Regards

**Mack Brinums**

Senior Consultant

Mobile: 0414 600 989  
mackenzie.brinums@stantec.com

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Sydney NSW 2000



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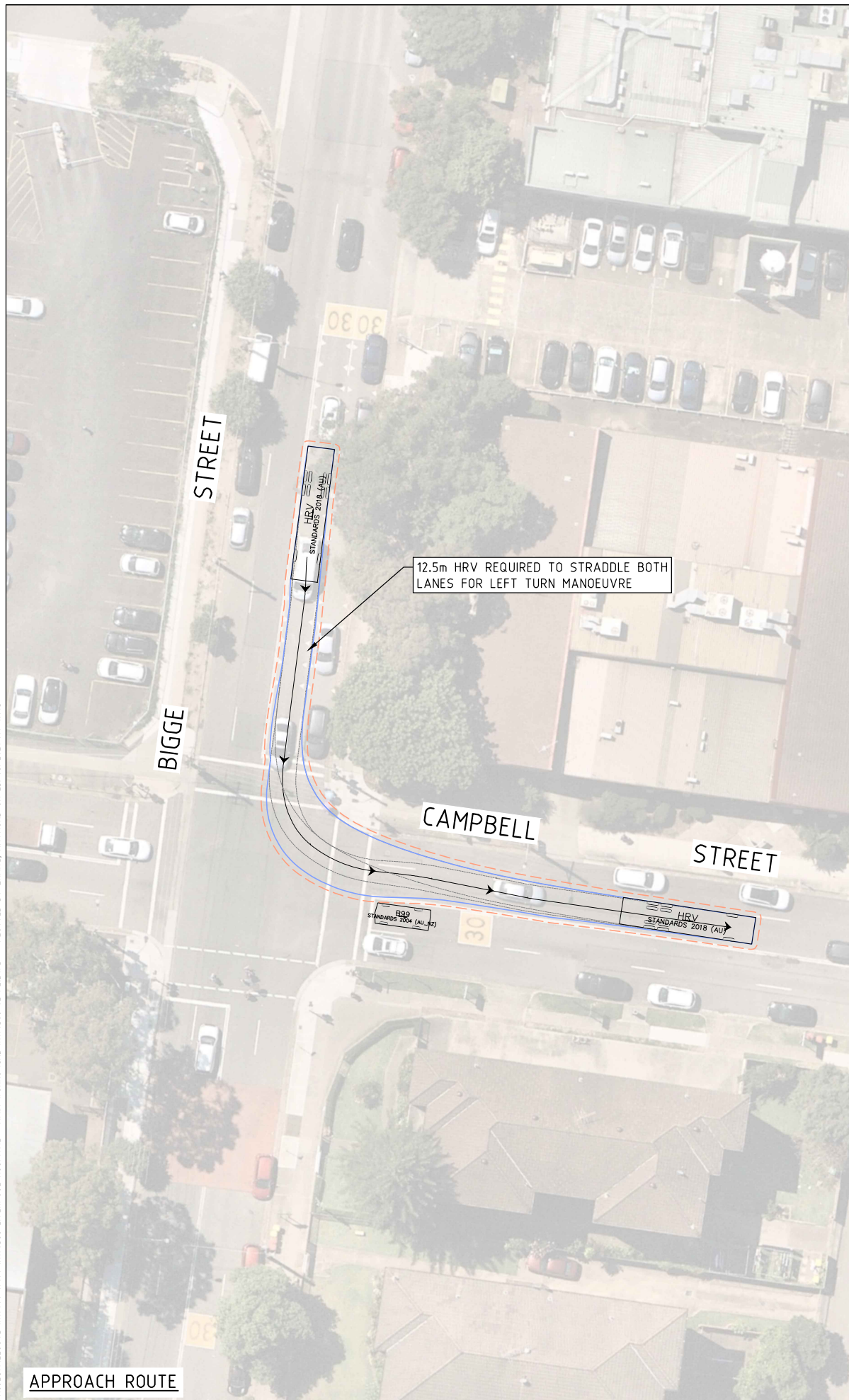
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## B.SWEPT PATH ASSESSMENT

B

\\CORP-ADS\GTADATA\PROJECT\FILESS\YD\INT000-7099\INT0566-02-P2.DWG PLOTTED BY ZHANG, RAYMOND ON 23/08/2021 AT 19:45



APPROACH ROUTE

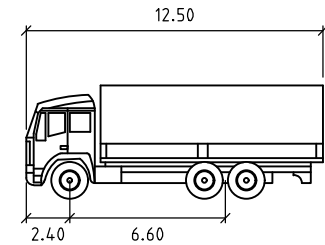


DEPARTURE ROUTE

**SWEPT PATH KEY**

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

ASSUMED SPEED 10km/h



HRV

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

NEARMAP AERIAL IMAGE  
DATED 26.01.2021



**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

APPROVED BY  
B.MAYNARD

DESIGN CHECK  
M.BRINUMS

DATE ISSUED  
23 AUGUST 2021

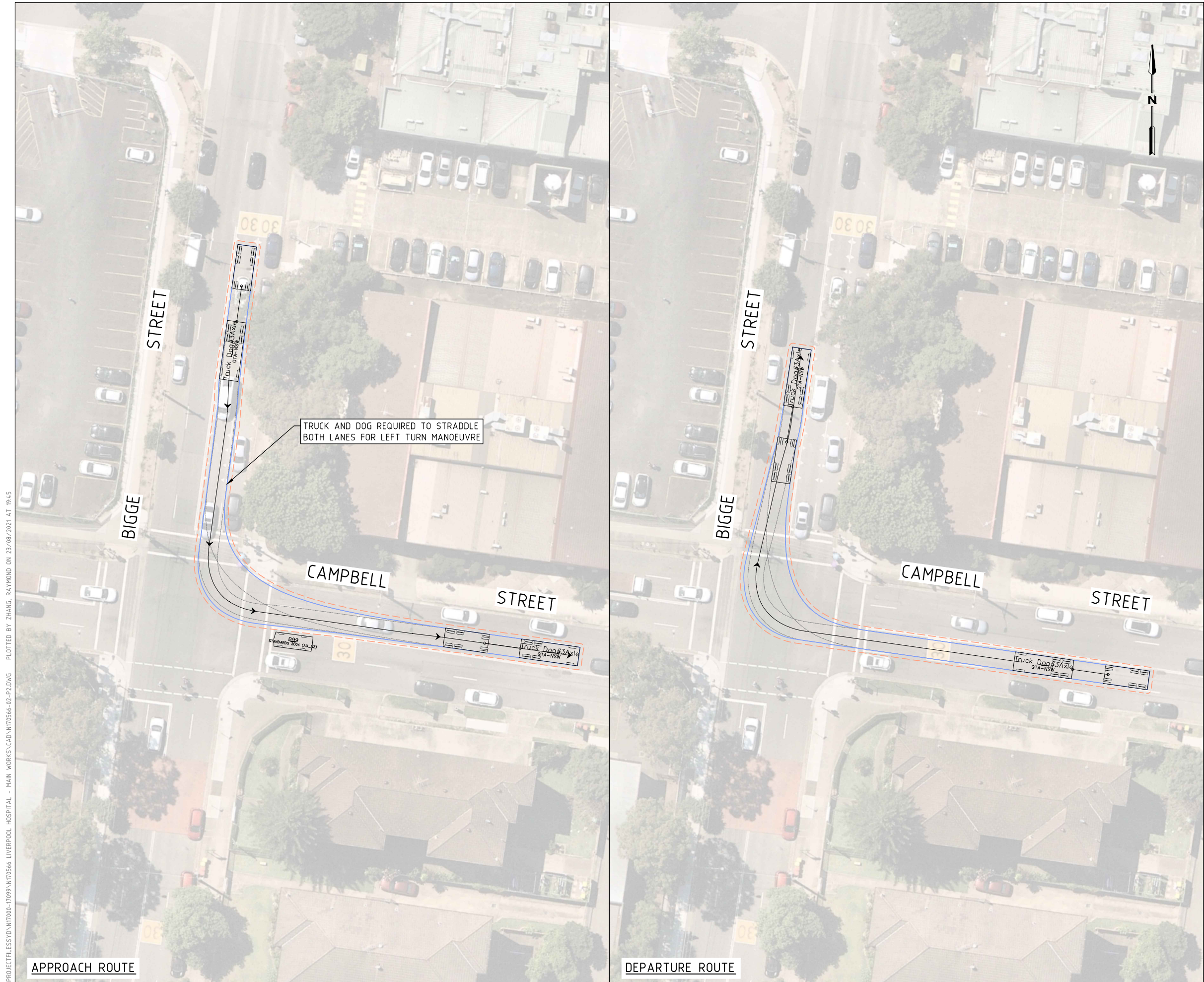
SCALE  
A3 0 2.5 5 10 1:500

CAD FILE NO.  
N170566-02-P2.DWG

LIVERPOOL HOSPITAL

STAGE 1 AND 2  
CONSTRUCTION VEHICLE SWEEP PATH ASSESSMENT  
DRAWING NO. N170566-02-01 SHEET 01 OF 11 ISSUE P2

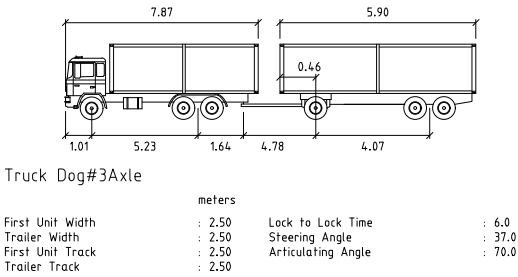




**SWEPT PATH KEY**

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

ASSUMED SPEED 10km/h



\\CORP-ADS\GTADATA\PROJECT\FILESS\VD\INT000-17099\INT0566-02-P2.DWG PLOTTED BY ZHANG, RAYMOND ON 23/08/2021 AT 19:45

APPROACH ROUTE

DEPARTURE ROUTE

NEARMAP AERIAL IMAGE  
DATED 26.01.2021



**PRELIMINARY PLAN**  
FOR DISCUSSION PURPOSES ONLY  
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NOTIFICATION

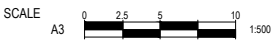
**WARNING**  
BEWARE OF UNDERGROUND SERVICES  
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DESIGNED  
R.ZHANG

DESIGN CHECK  
M.BRINUMS

APPROVED BY  
B.MAYNARD

DATE ISSUED  
23 AUGUST 2021



CAD FILE NO.  
N170566-02-P2.DWG

LIVERPOOL HOSPITAL

**STAGE 1 AND 2  
CONSTRUCTION VEHICLE SWEEP PATH ASSESSMENT**

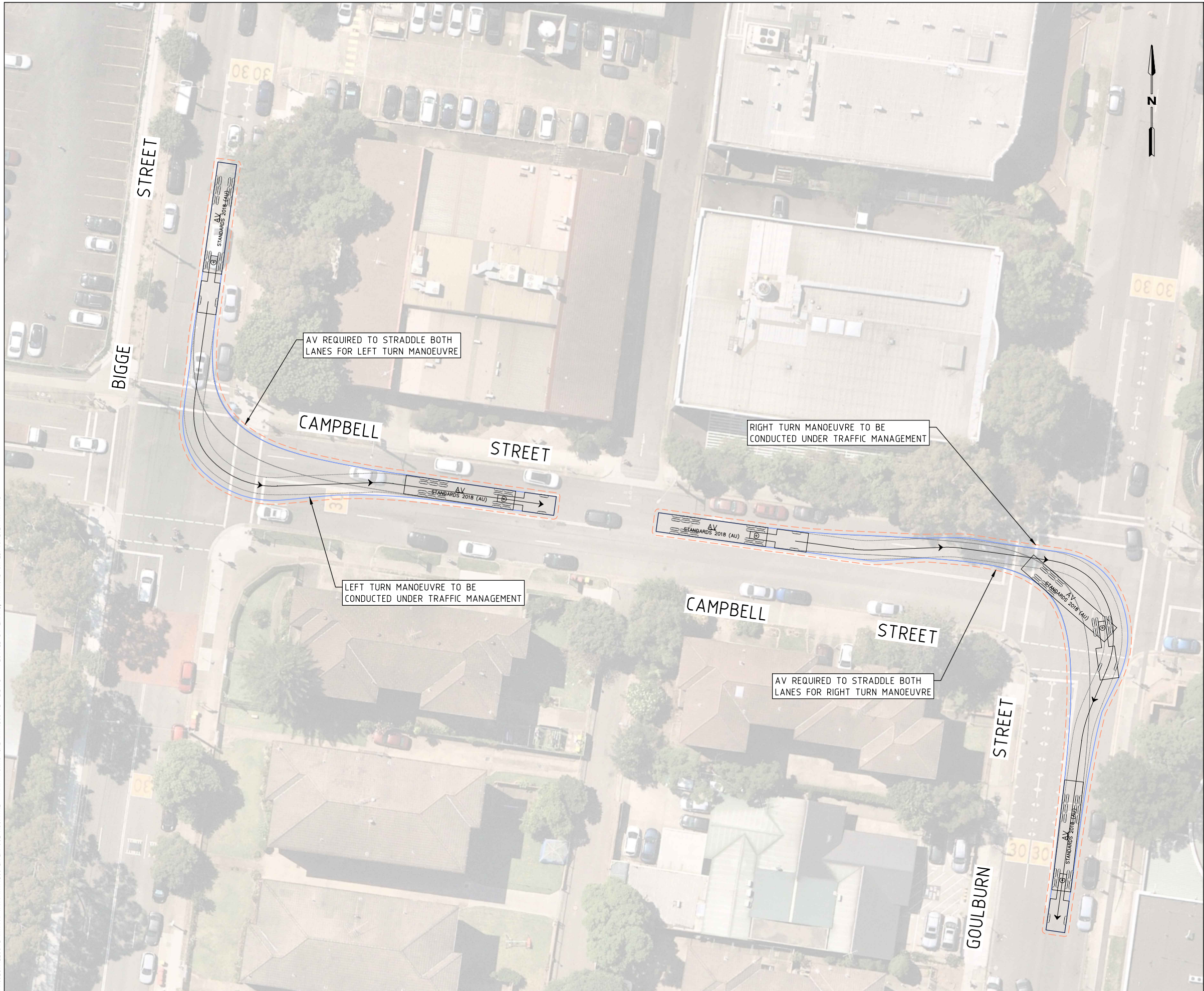
DRAWING NO. N170566-02-02

SHEET 02 OF 11

ISSUE P2



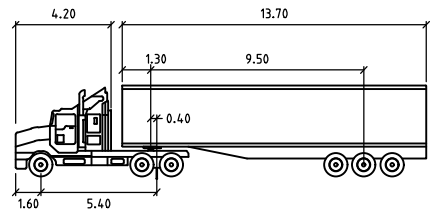
\\CORP-ADS\GTADATA\PROJECT\PROJECT\N17000-17099\INT0566 LIVERPOOL HOSPITAL - MAIN WORKS\CAD\N170566-02-P2.DWG PLOTTED BY ZHANG, RAYMOND ON 23/08/2021 AT 19:45



**SWEPT PATH KEY**

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

ASSUMED SPEED 10km/h



AV AS2890.2

|               |      |                    |      |
|---------------|------|--------------------|------|
| Tractor Width | 2.50 | Lock to Lock Time  | 6.0  |
| Trailer Width | 2.50 | Steering Angle     | 28.3 |
| Tractor Track | 2.50 | Articulating Angle | 70.0 |
| Trailer Track | 2.50 |                    |      |

NEARMAP AERIAL IMAGE  
DATED 26.01.2021



**PRELIMINARY PLAN**  
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DATE ISSUED  
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SCALE  
A3 0 2.5 5 10 1:500

CAD FILE NO.  
N170566-02-P2.DWG

LIVERPOOL HOSPITAL

**STAGE 1 AND 2  
CONSTRUCTION VEHICLE SWEEP PATH ASSESSMENT**

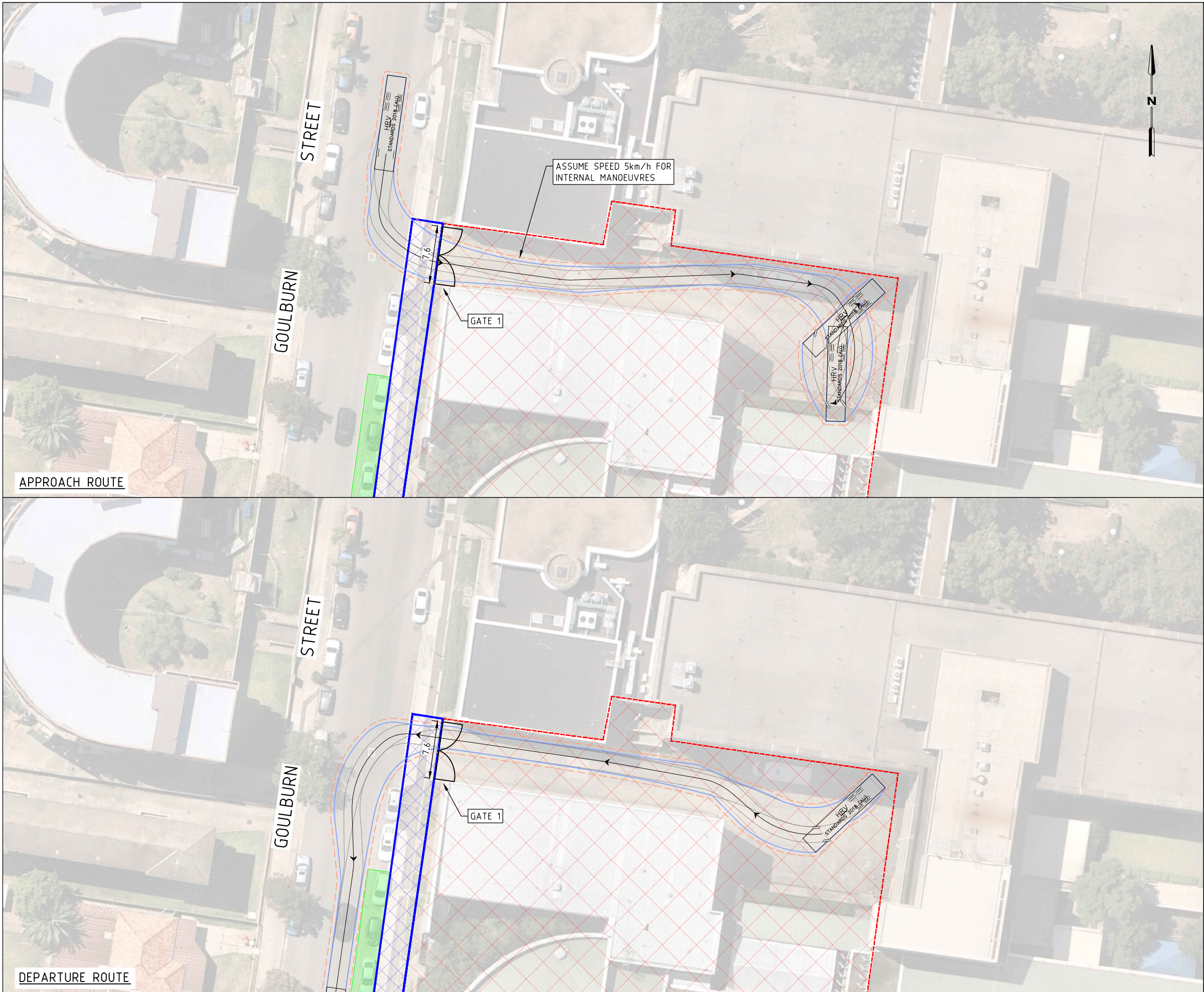
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SHEET 03 OF 11

ISSUE P2

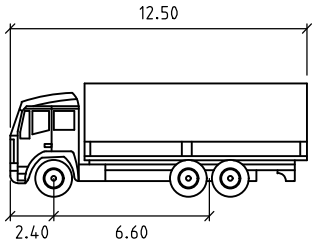


\\CORP-ADS\GTADATA\PROJECT\PROJECT\INT000-17099\INT0566 LIVERPOOL HOSPITAL - MAIN WORKS\CAD\N170566-02-P2.DWG PLOTTED BY ZHANG, RAYMOND ON 23/08/2021 AT 19:45



**SWEPT PATH KEY**

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 500mm CLEARANCE FROM VEHICLE BODY
- ASSUMED SPEED 10km/h



HRV

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

**LEGEND**

- WORK SITE
- B CLASS HOARDING
- A CLASS HOARDING
- CONSTRUCTION GATE
- MATERIAL STORAGE

NEARMAP AERIAL IMAGE  
DATED 26.01.2021



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DESIGNED  
R.ZHANG

DESIGN CHECK  
M.BRINUMS

APPROVED BY  
B.MAYNARD

DATE ISSUED  
23 AUGUST 2021

SCALE  
A3 0 2.5 5 10 1:500

CAD FILE NO.  
N170566-02-P2.DWG

LIVERPOOL HOSPITAL

**STAGE 1 - GATE 1**  
**CONSTRUCTION VEHICLE SWEEP PATH ASSESSMENT**

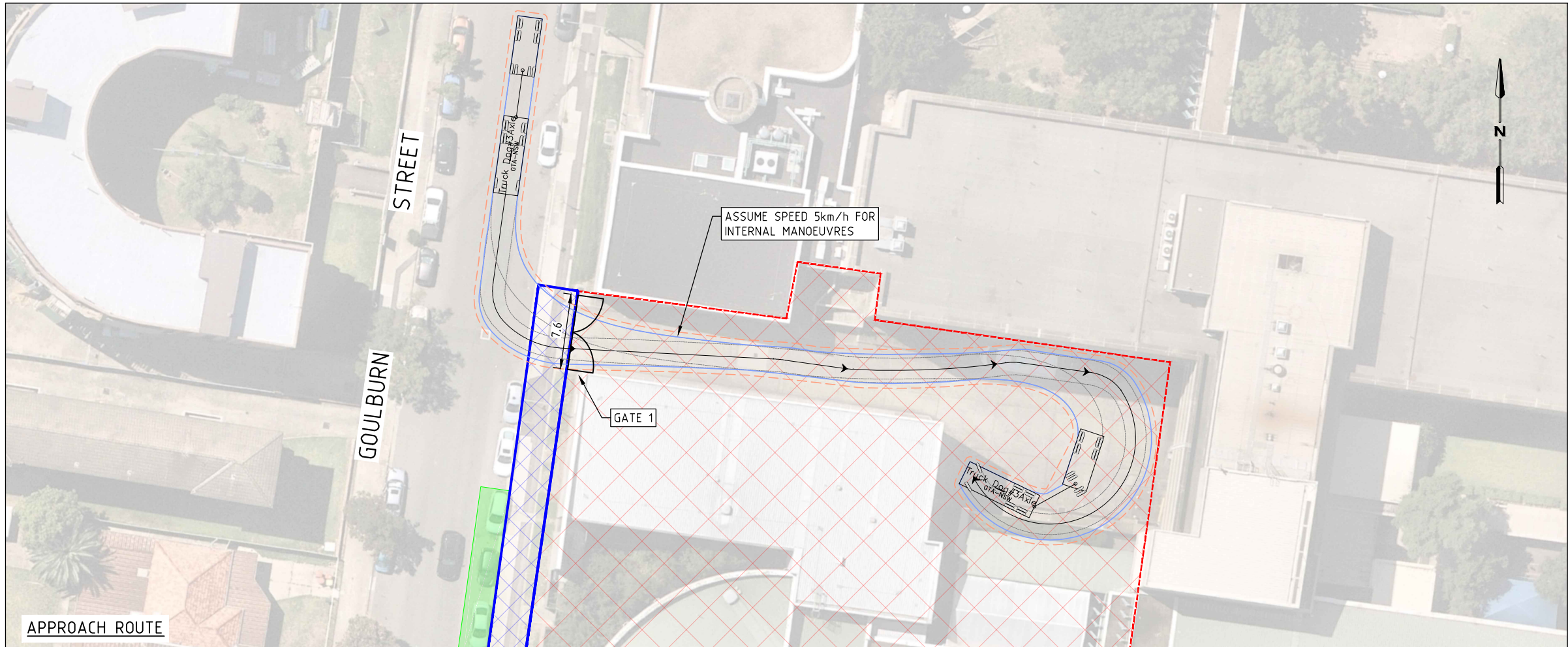
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SHEET 04 OF 11

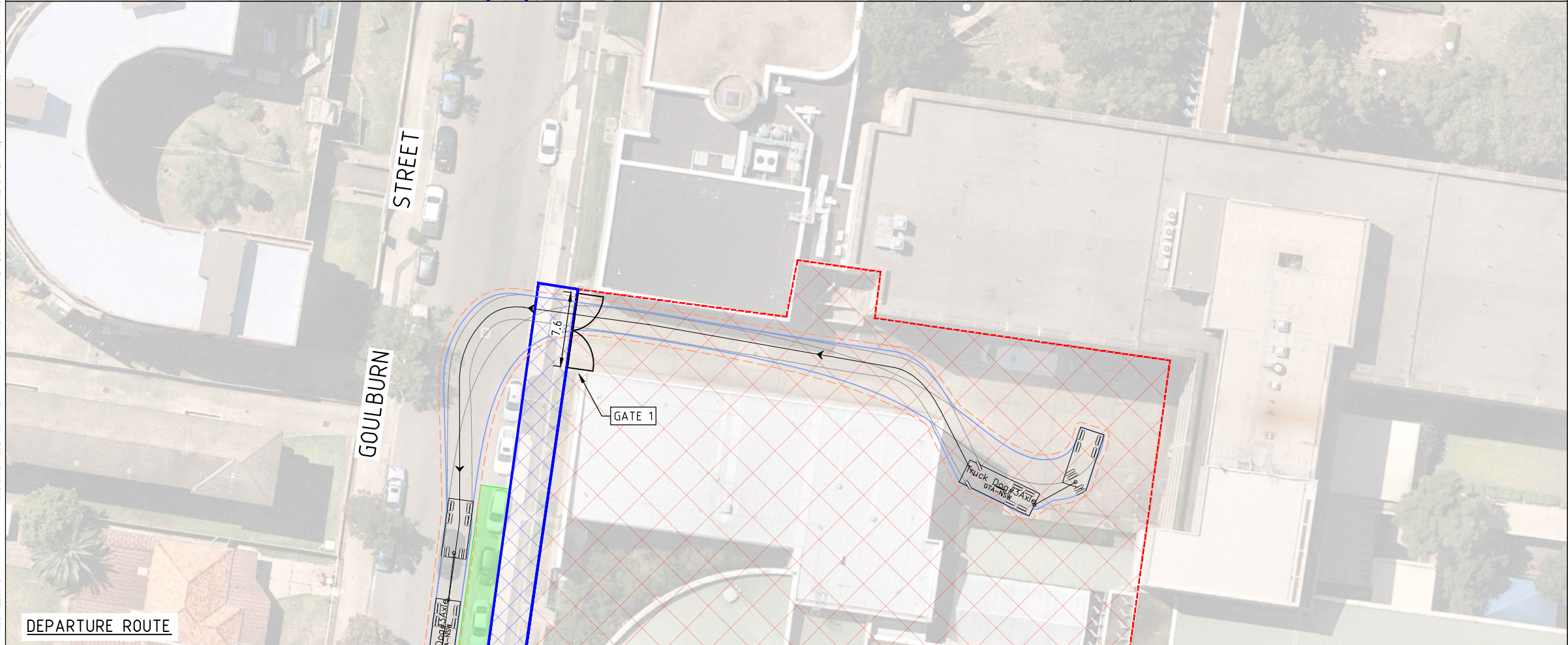
ISSUE P2



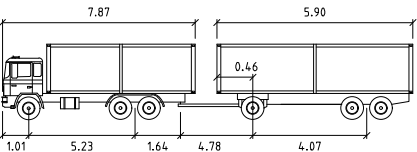
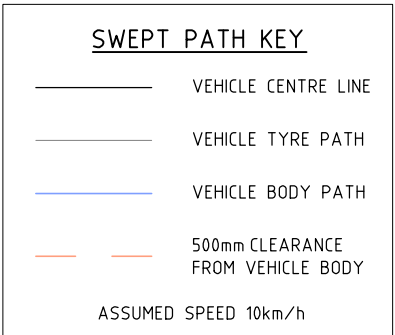
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APPROACH ROUTE



DEPARTURE ROUTE



Truck Dog#3Axle

|                  |        |                    |        |
|------------------|--------|--------------------|--------|
|                  | metres |                    |        |
| First Unit Width | : 2.50 | Lock to Lock Time  | : 6.0  |
| Trailer Width    | : 2.50 | Steering Angle     | : 37.0 |
| First Unit Track | : 2.50 | Articulating Angle | : 70.0 |
| Trailer Track    | : 2.50 |                    |        |

**LEGEND**

- WORK SITE
- B CLASS HOARDING
- A CLASS HOARDING
- CONSTRUCTION GATE
- MATERIAL STORAGE

NEARMAP AERIAL IMAGE  
DATED 26.01.2021



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DESIGNED  
R.ZHANG

DESIGN CHECK  
M.BRINUMS

APPROVED BY  
B.MAYNARD

DATE ISSUED  
23 AUGUST 2021

SCALE  
A3 0 2.5 5 10 1:500

CAD FILE NO.  
N170566-02-P2.DWG

LIVERPOOL HOSPITAL

**STAGE 1 - GATE 1**  
**CONSTRUCTION VEHICLE SWEEP PATH ASSESSMENT**

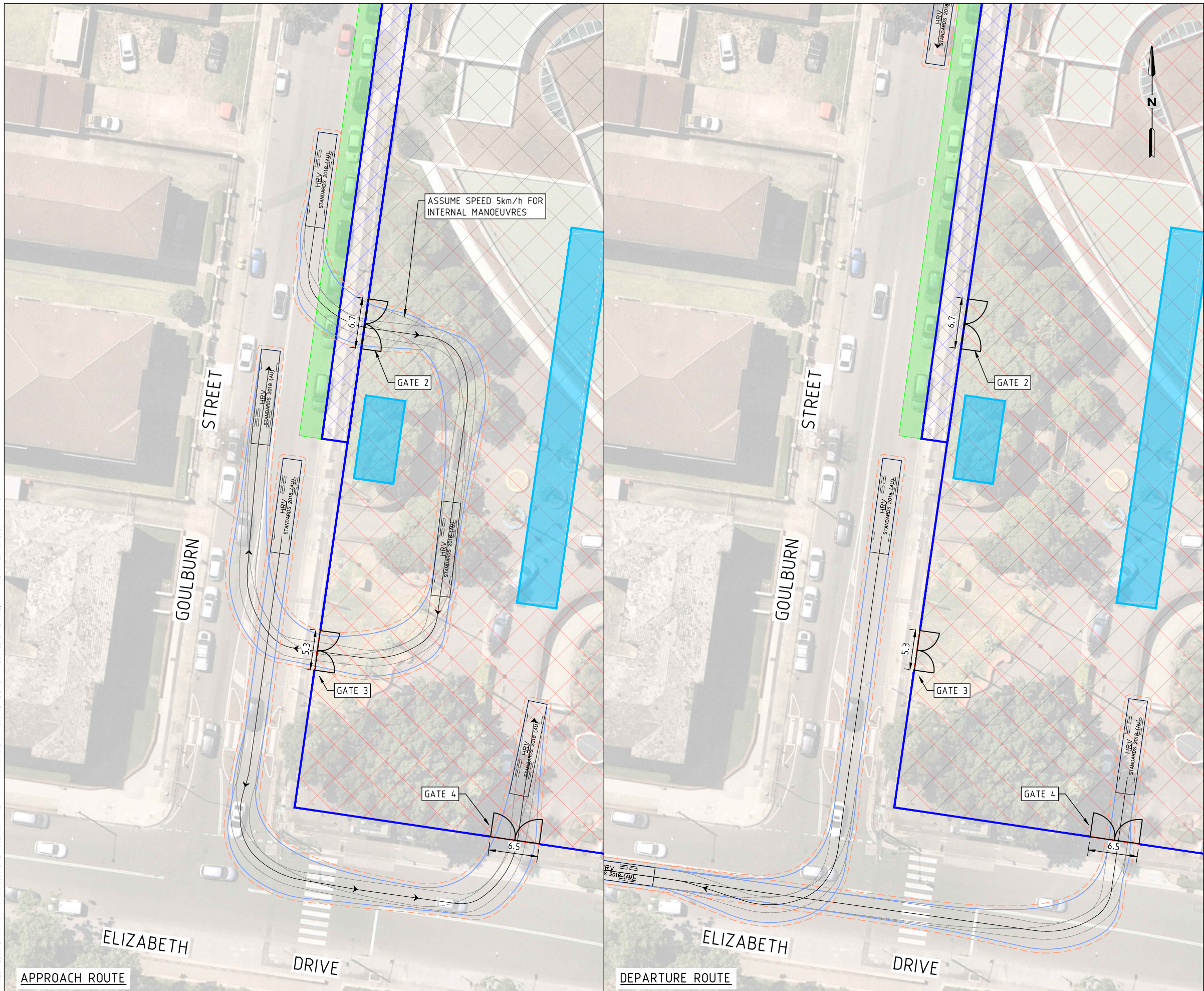
DRAWING NO. N170566-02-05

SHEET 05 OF 11

ISSUE P2



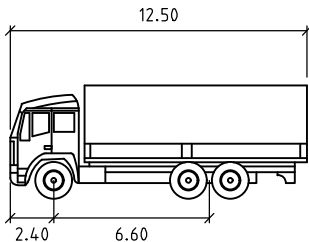
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**SWEPT PATH KEY**

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

ASSUMED SPEED 10km/h



HRV

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

**LEGEND**

- WORK SITE
- B CLASS HOARDING
- A CLASS HOARDING
- CONSTRUCTION GATE
- MATERIAL STORAGE

NEARMAP AERIAL IMAGE  
DATED 26.01.2021



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R.ZHANG  
  
APPROVED BY  
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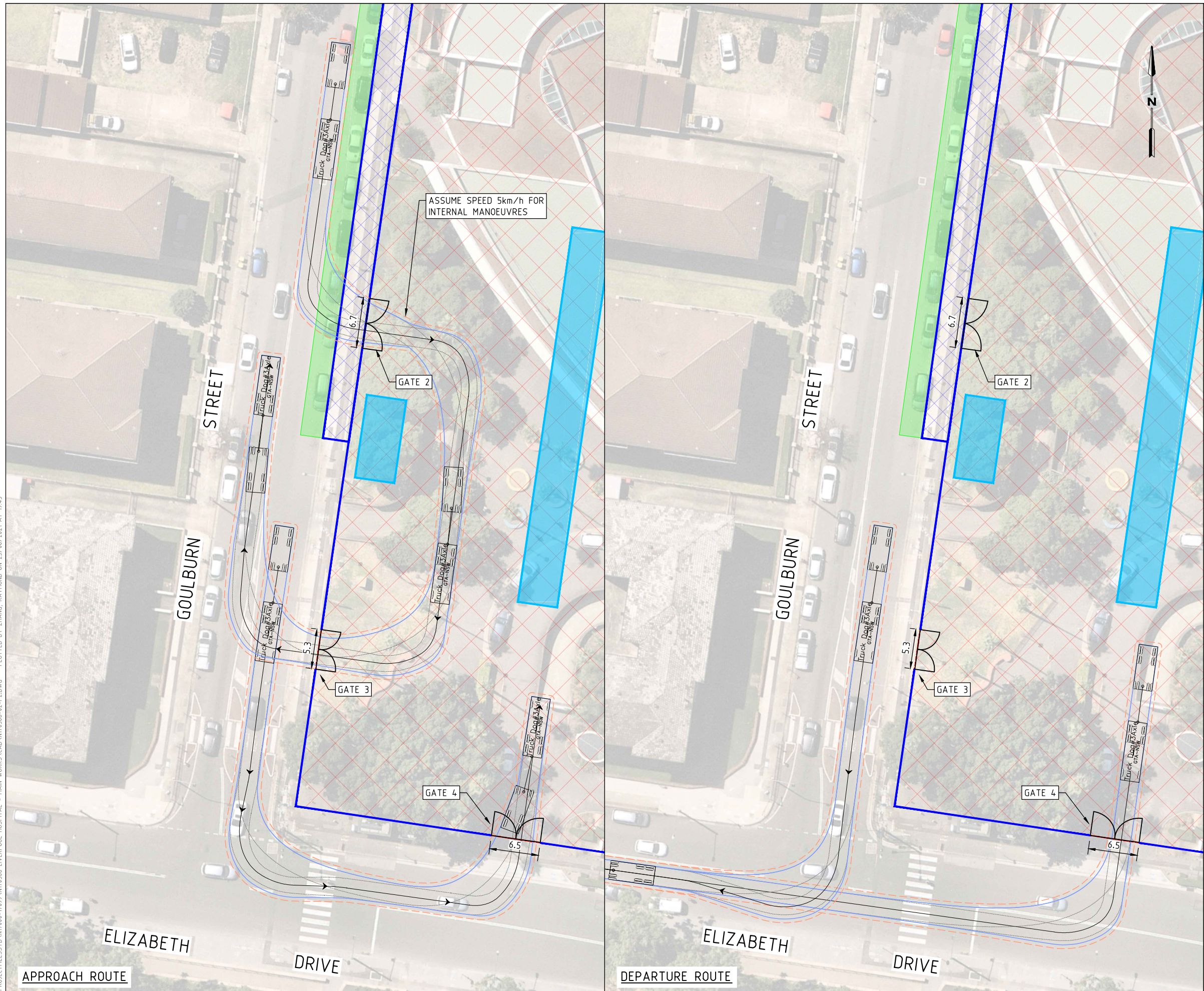
DESIGN CHECK  
M.BRINUMS  
  
DATE ISSUED  
23 AUGUST 2021

SCALE  
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CAD FILE NO.  
N170566-02-P2.DWG

LIVERPOOL HOSPITAL  
  
STAGE 1 - GATES 2, 3 AND 4  
CONSTRUCTION VEHICLE SWEEP PATH ASSESSMENT  
DRAWING NO. N170566-02-06 SHEET 06 OF 11 ISSUE P2



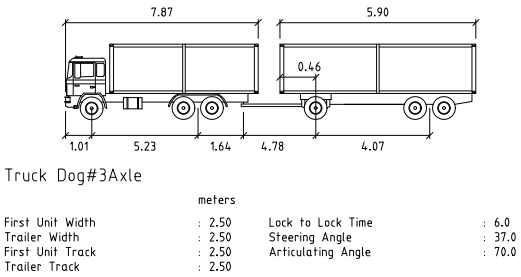
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**SWEPT PATH KEY**

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

ASSUMED SPEED 10km/h



**LEGEND**

- WORK SITE
- B CLASS HOARDING
- A CLASS HOARDING
- CONSTRUCTION GATE
- MATERIAL STORAGE

NEARMAP AERIAL IMAGE  
DATED 26.01.2021



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A3 0 2.5 5 10 1:500

CAD FILE NO.  
N170566-02-P2.DWG

LIVERPOOL HOSPITAL

**STAGE 1 - GATES 2, 3 AND 4  
CONSTRUCTION VEHICLE SWEEP PATH ASSESSMENT**

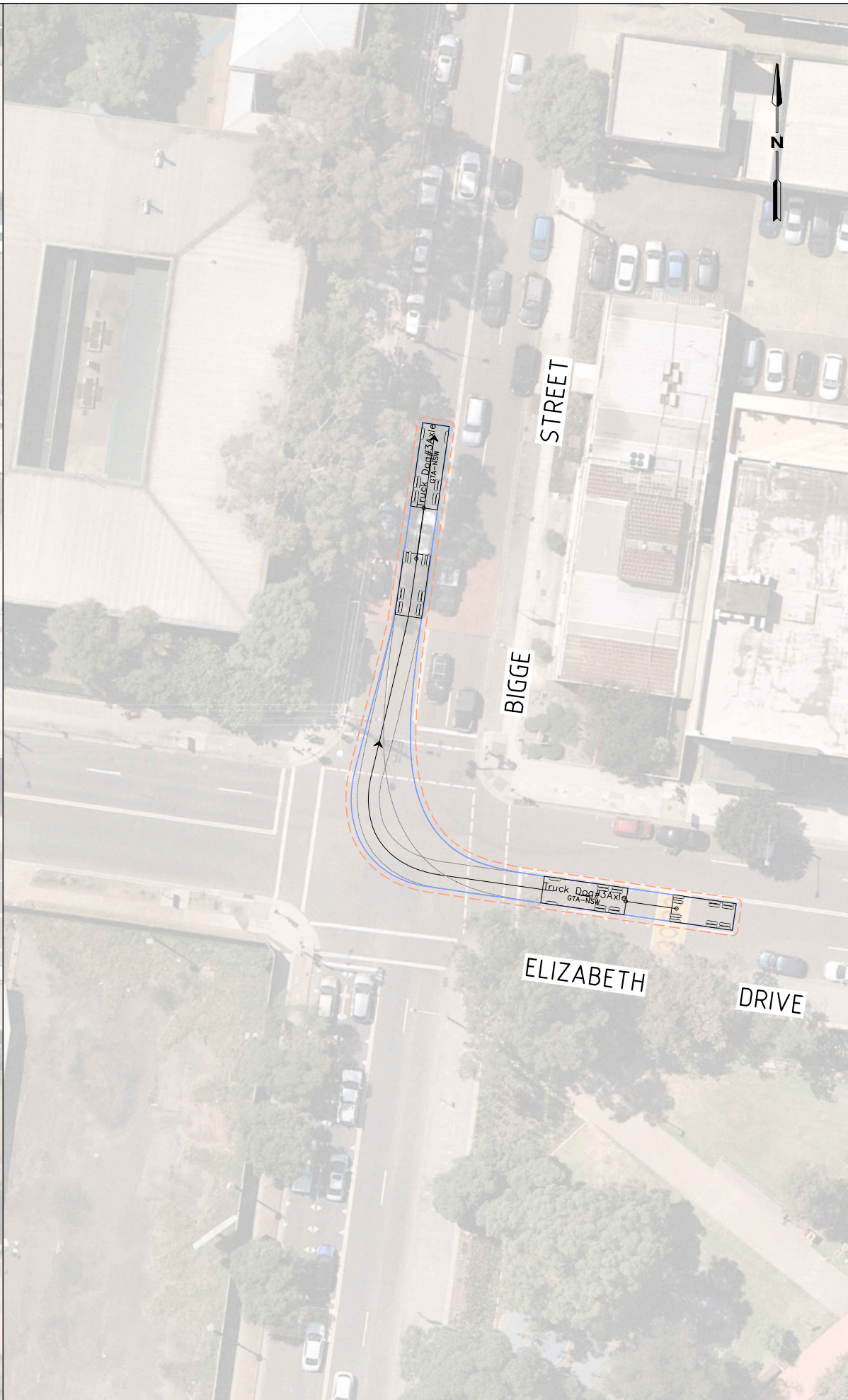
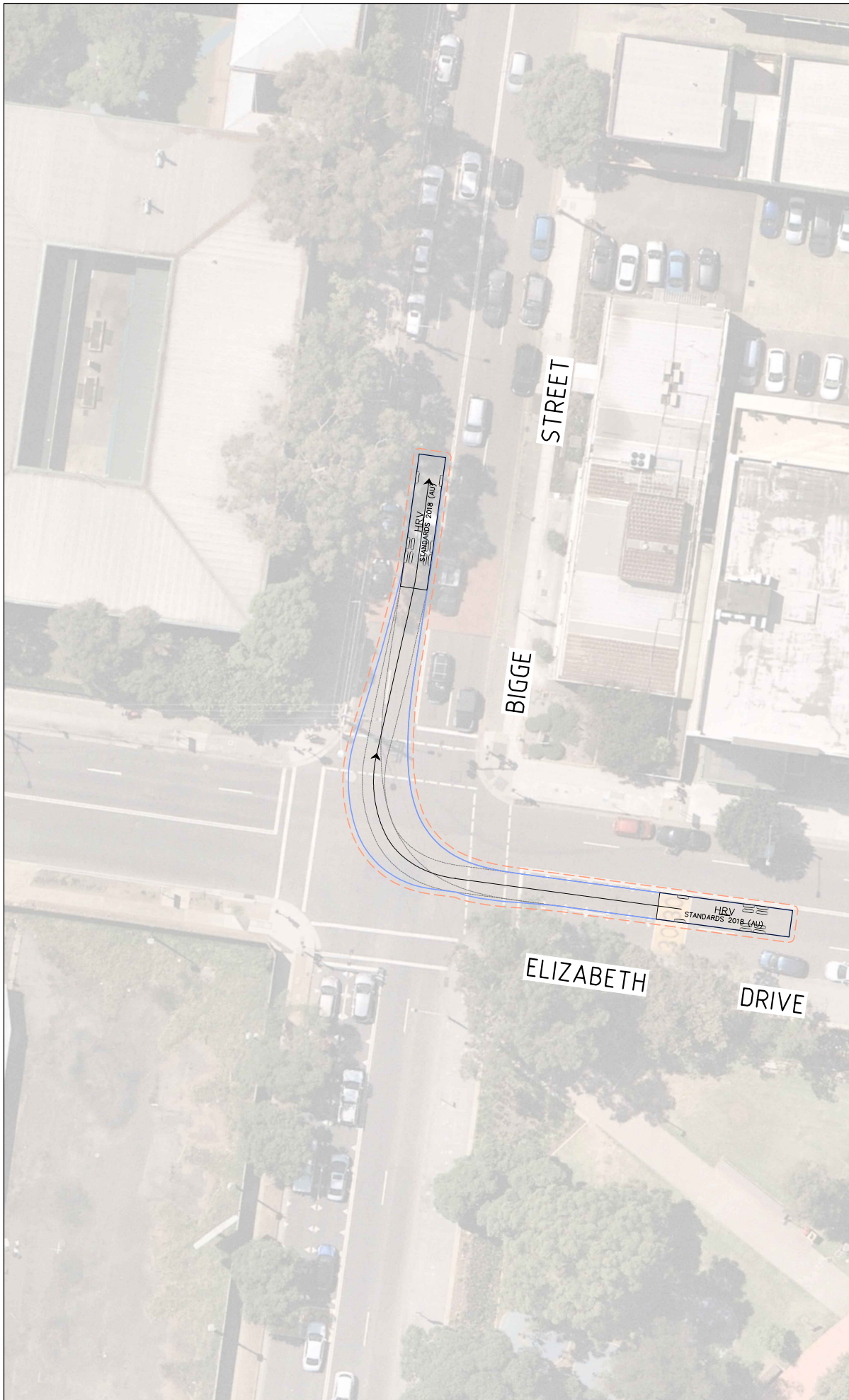
DRAWING NO. N170566-02-07

SHEET 07 OF 11

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 10km/h

12.50

HRV

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

7.87 5.90

Truck Dog#3Axle

|                    | metres |
|--------------------|--------|
| First Unit Width   | : 2.50 |
| Trailer Width      | : 2.50 |
| First Unit Track   | : 2.50 |
| Trailer Track      | : 2.50 |
| Lock to Lock Time  | : 6.0  |
| Steering Angle     | : 37.0 |
| Articulating Angle | : 70.0 |

NEARMAP AERIAL IMAGE  
DATED 26.01.2021



**PRELIMINARY PLAN**  
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SCALE  
A3 0 2.5 5 10 1:500

CAD FILE NO.  
N170566-02-P2.DWG

LIVERPOOL HOSPITAL

**STAGE 1**  
**CONSTRUCTION VEHICLE SWEEP PATH ASSESSMENT**

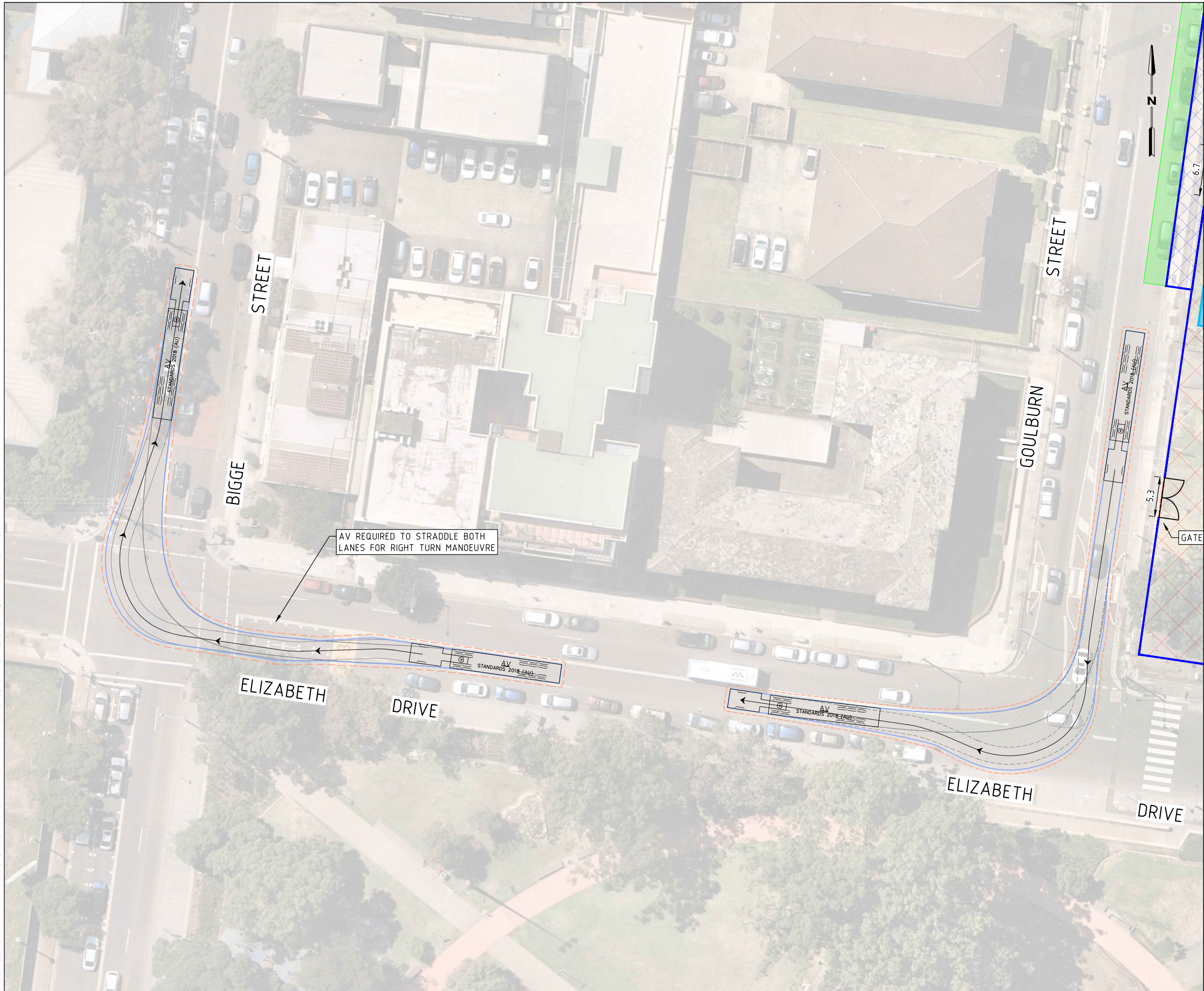
DRAWING NO. N170566-02-08

SHEET 08 OF 11

ISSUE P2



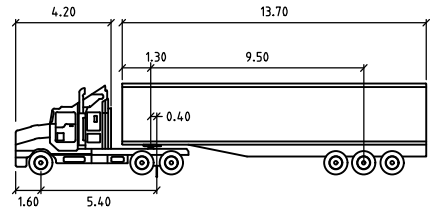
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**SWEPT PATH KEY**

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

ASSUMED SPEED 10km/h



|               |        |                    |        |
|---------------|--------|--------------------|--------|
| AV AS2890.2   |        |                    |        |
| meters        |        |                    |        |
| Tractor Width | : 2.50 | Lock to Lock Time  | : 6.0  |
| Trailer Width | : 2.50 | Steering Angle     | : 28.3 |
| Tractor Track | : 2.50 | Articulating Angle | : 70.0 |
| Trailer Track | : 2.50 |                    |        |

**LEGEND**

- WORK SITE
- B CLASS HOARDING
- A CLASS HOARDING
- CONSTRUCTION GATE
- MATERIAL STORAGE

NEARMAP AERIAL IMAGE  
DATED 26.01.2021



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SCALE  
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CAD FILE NO.  
N170566-02-P2.DWG

LIVERPOOL HOSPITAL

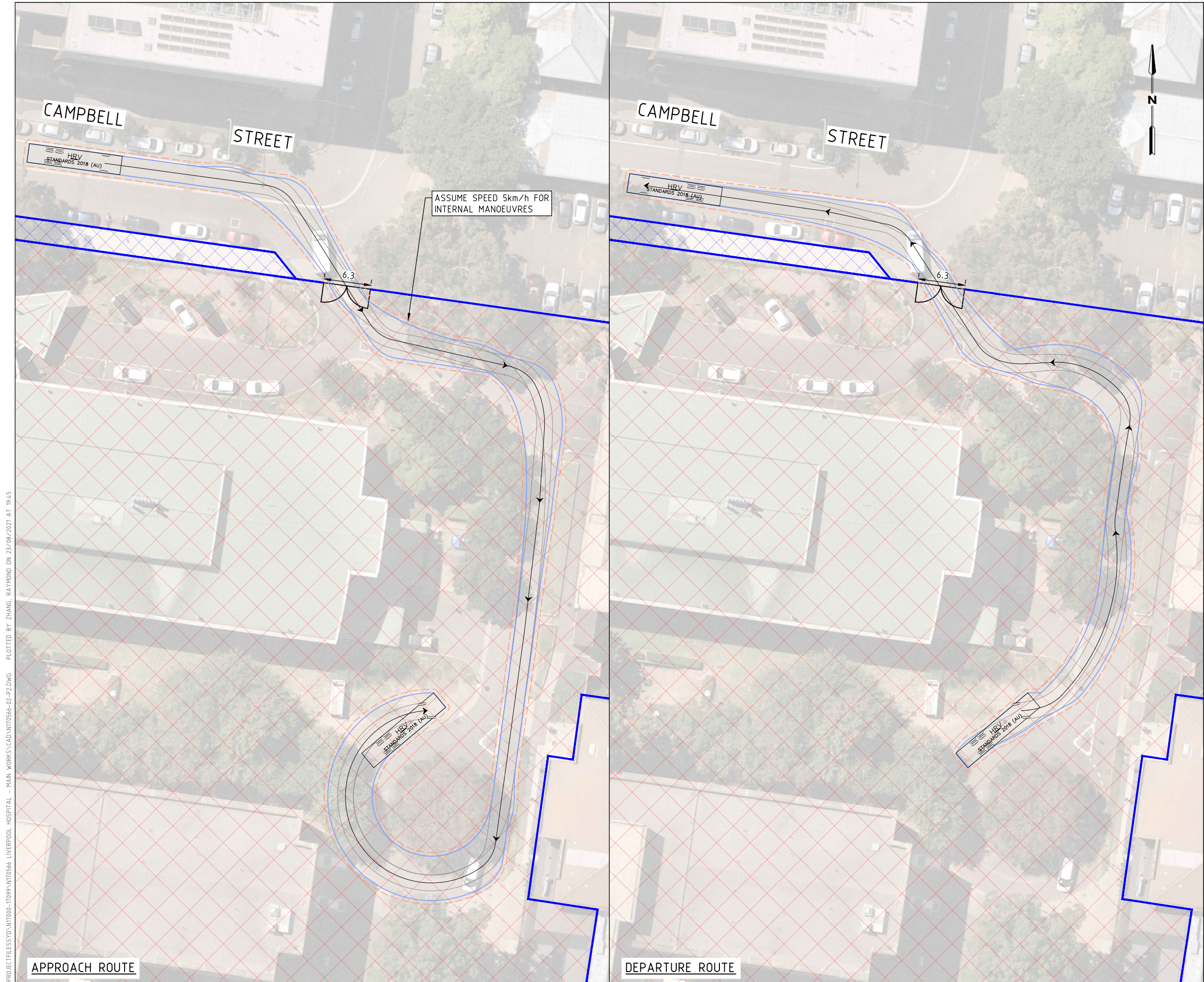
**STAGE 1 AND 2  
CONSTRUCTION VEHICLE SWEEP PATH ASSESSMENT**

DRAWING NO. N170566-02-09

SHEET 09 OF 11

ISSUE P2





**SWEPT PATH KEY**

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

ASSUMED SPEED 10km/h

12.50

HRV

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

**LEGEND**

- WORK SITE
- B CLASS HOARDING
- A CLASS HOARDING
- CONSTRUCTION GATE

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APPROACH ROUTE

DEPARTURE ROUTE

NEARMAP AERIAL IMAGE  
DATED 26.01.2021



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A3 0 2.5 5 10 1:500

CAD FILE NO.  
N170566-02-P2.DWG

LIVERPOOL HOSPITAL

**STAGE 2  
CONSTRUCTION VEHICLE SWEEP PATH ASSESSMENT**

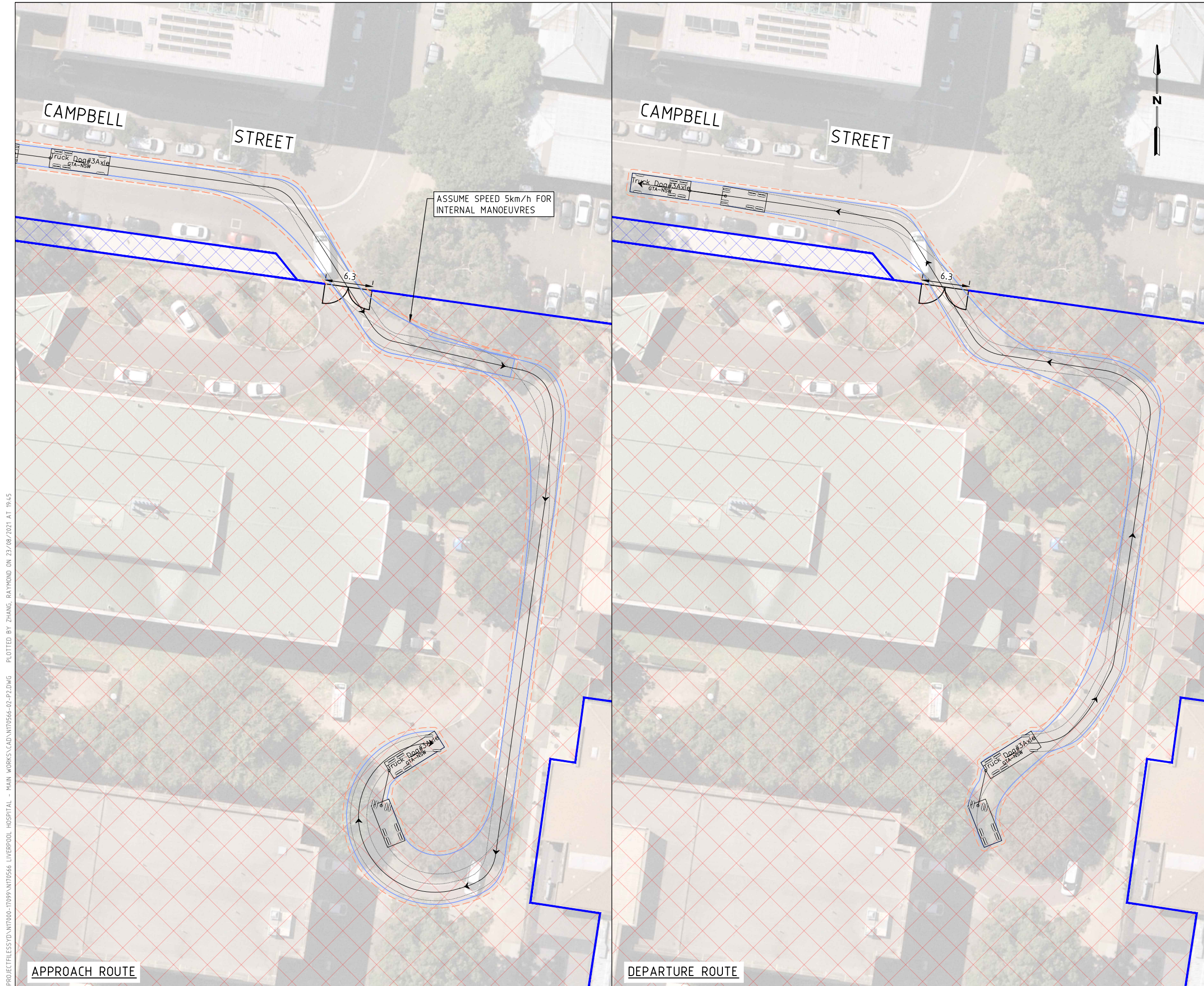
DRAWING NO. N170566-02-10

SHEET 10 OF 11

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 10km/h

Truck Dog#3Axle

Truck dimensions: 7.87m, 5.90m, 0.46m, 1.01m, 5.23m, 1.64m, 4.78m, 4.07m

|                  |        |                    |        |
|------------------|--------|--------------------|--------|
| First Unit Width | : 2.50 | Lock to Lock Time  | : 6.0  |
| Trailer Width    | : 2.50 | Steering Angle     | : 37.0 |
| First Unit Track | : 2.50 | Articulating Angle | : 70.0 |
| Trailer Track    | : 2.50 |                    |        |

**LEGEND**

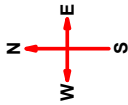
- WORK SITE
- B CLASS HOARDING
- A CLASS HOARDING
- CONSTRUCTION GATE

NEARMAP AERIAL IMAGE  
DATED 26.01.2021

## C. TRAFFIC GUIDANCE SCHEMES







|                                                                                                  |                                                                                                                                            |                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>commercial</b><br>TC PTY LTD<br>Drawn By : Aleksandra Moisejenkova<br>Licence Num: 0051855538 | <b>TRAFFIC CONTROL PLAN</b><br>DATE: 26/07/2021                                                                                            |                                                         | This traffic control plan is drawn to AS1742.3 and the R.T.A. workable manual for traffic control at work sites. It is to be implemented as such. This traffic plan is a GUIDE ONLY and can be altered on site but must be signed by an R.T.A. accredited person.<br>Approach speeds - up to 60km<br>day/night - clear signs to be used<br>all personnel to wear Hi Vis Clothing<br>vehicles to park within the work site<br>R.T.A. certified traffic controllers to be employed. |
|                                                                                                  | LOCATION<br><b>GOULBURN ST , LIVERPOOL</b><br>CUSTOMER<br><b>Stage 1-Setup 2</b><br>TCP No 02.<br><b>WORK ZONE &amp; TRUCKS ENTRY/EXIT</b> | NAME: Aleksandra Moisejenkova<br>Licence No: 0051855538 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

**REPRESENTS LEND LEASE SITE**

**PEDESTRIAN PATHWAY**

**TRUCK DEPARTURE**

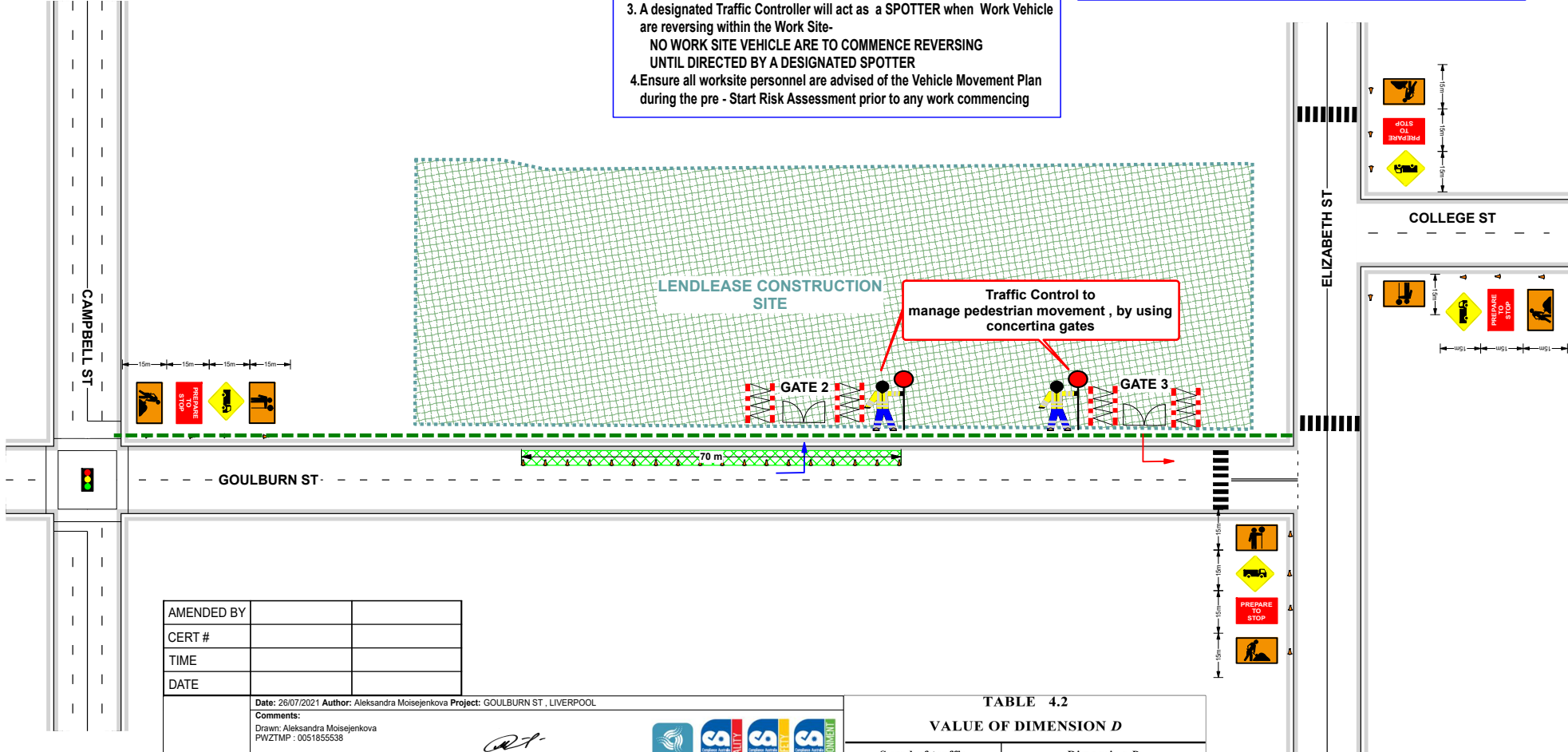
**TRUCK ARRIVAL**

**CONCERTINA GATE**

**WORK ZONE**

Note;

- 1.All work vehicles to be parked on workside of the roadway
- 2.Work vehicle movements will be under the direction of Traffic Control.
3. A designated Traffic Controller will act as a SPOTTER when Work Vehicle are reversing within the Work Site-  
**NO WORK SITE VEHICLE ARE TO COMMENCE REVERSING UNTIL DIRECTED BY A DESIGNATED SPOTTER**
- 4.Ensure all worksite personnel are advised of the Vehicle Movement Plan during the pre - Start Risk Assessment prior to any work commencing



|            |  |  |
|------------|--|--|
| AMENDED BY |  |  |
| CERT #     |  |  |
| TIME       |  |  |
| DATE       |  |  |

Date: 26/07/2021 Author: Aleksandra Moisejenkova Project: GOULBURN ST , LIVERPOOL

Comments:  
 Drawn: Aleksandra Moisejenkova  
 PWZTMP : 0051855538

*[Signature]*

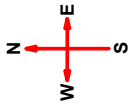
**commercial** TC PTY LTD

DRAWING NOT TO SCALE  
 IF THIS TCP IS IMPLEMENTED BY A TRAFFIC CONTROL COMPANY OTHER THAN COMMERCIAL TC,  
 COMMERCIAL TC BEARS NO LIABILITY FOR THE SET UP AND ACCURACY OF THIS TCP.

RMS Accredited Traffic Controllers will adhere to this TCP according to TCW Manual V6 and relevant SWMS.  
 Signs and Devices are to be placed in accordance with this TCP. Modification may be made by persons holding a RMS "Design and Audit" Qualification only.  
 All signs and devices used must comply with Australian Standards AS1742.3  
 This document is copyright/property of Commercial TC PTY LTD. This drawing shall only be used for the purpose for which it is intended.

Supply Nation MEMBER ISO 9001 ISO 14001 ISO 45001

| TABLE 4.2<br>VALUE OF DIMENSION D |                                    |
|-----------------------------------|------------------------------------|
| Speed of traffic<br>km/h          | Dimension D<br>m                   |
| 45 or less                        | 0 to 5                             |
| 46 to 55                          | 15                                 |
| 56 to 65                          | 45                                 |
| Greater than 65                   | Equal to speed of traffic, in km/h |



|                                                                                                  |                                                                                                |                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|---------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>commercial</b><br>TC PTY LTD<br>Drawn By : Aleksandra Moisejenkova<br>Licence Num: 0051855538 | <b>TRAFFIC CONTROL PLAN</b><br>DATE: 26/07/2021                                                |                                                         | This traffic control plan is drawn to AS1742.3 and the R.T.A. workable manual for traffic control at work sites. It is to be implemented as such. This traffic plan is a GUIDE ONLY and can be altered on site but must be signed by an R.T.A. accredited person.<br>Approach speeds - up to 60km<br>day/night - clear't signs to be used<br>all personnel to wear Hi Vis Clothing<br>vehicles to park within the worksite<br>R.T.A. certified traffic controllers to be employed. |
|                                                                                                  | LOCATION<br><b>GOULBURN ST , LIVERPOOL</b><br>CUSTOMER<br><b>Stage 1-Setup 3</b><br>TCP No 03. | NAME: Aleksandra Moisejenkova<br>Licence No: 0051855538 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

**REPRESENTS LEND LEASE SITE**

**PEDESTRIAN PATHWAY**

**TRUCK DEPARTURE**

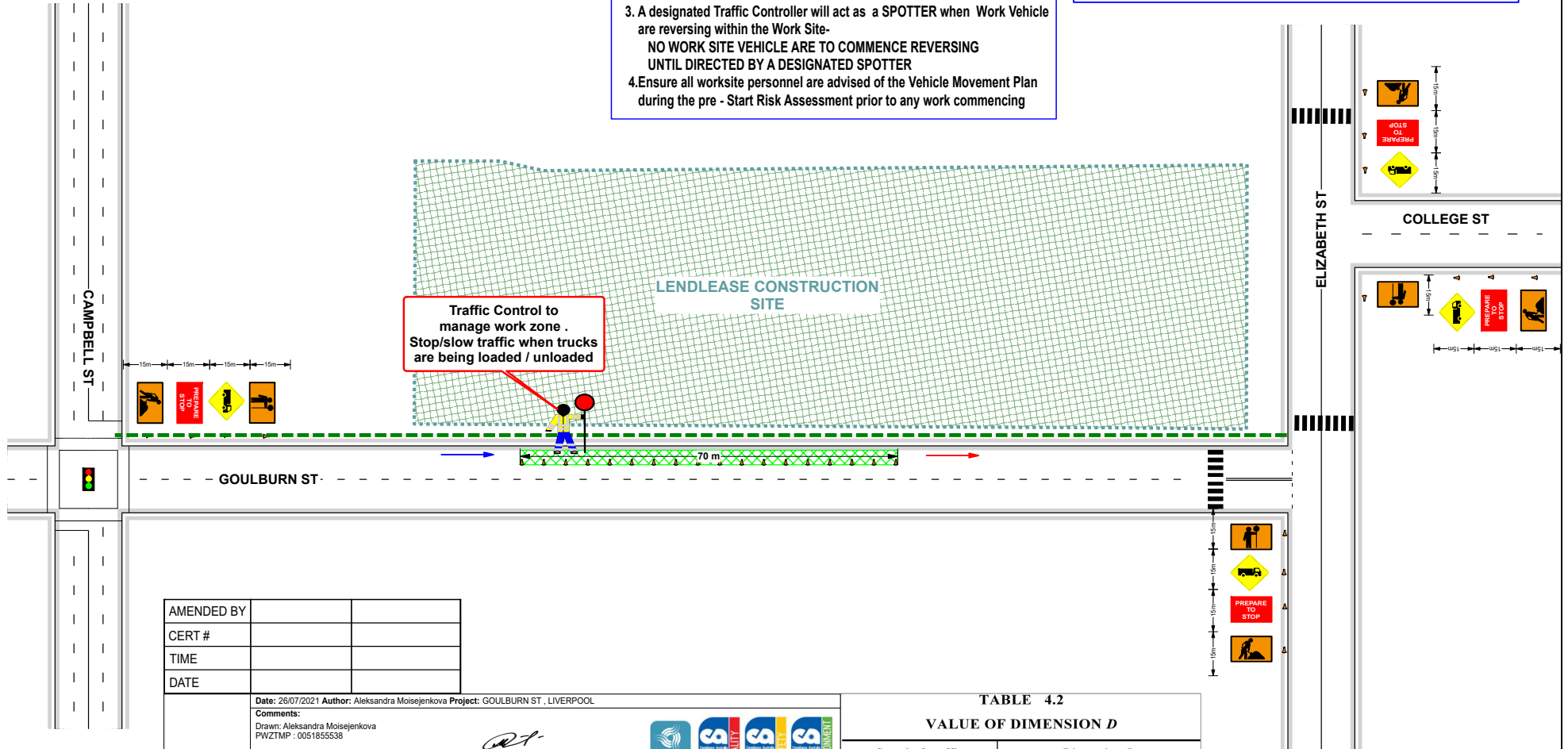
**TRUCK ARRIVAL**

**CONCERTINA GATE**

**WORK ZONE**

Note;

- 1.All work vehicles to be parked on workside of the roadway
- 2.Work vehicle movements will be under the direction of Traffic Control.
3. A designated Traffic Controller will act as a SPOTTER when Work Vehicle are reversing within the Work Site-  
**NO WORK SITE VEHICLE ARE TO COMMENCE REVERSING UNTIL DIRECTED BY A DESIGNATED SPOTTER**
- 4.Ensure all worksite personnel are advised of the Vehicle Movement Plan during the pre - Start Risk Assessment prior to any work commencing



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| AMENDED BY |  |  |
| CERT #     |  |  |
| TIME       |  |  |
| DATE       |  |  |

Date: 26/07/2021 Author: Aleksandra Moisejenkova Project: GOULBURN ST , LIVERPOOL

Comments:  
 Drawn: Aleksandra Moisejenkova  
 PWZTMP : 0051855538

*[Signature]*



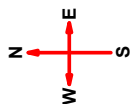
DRAWING NOT TO SCALE  
 IF THIS TCP IS IMPLEMENTED BY A TRAFFIC CONTROL COMPANY OTHER THAN COMMERCIAL TC,  
 COMMERCIAL TC BEARS NO LIABILITY FOR THE SET UP AND ACCURACY OF THIS TCP.

RMS Accredited Traffic Controllers will adhere to this TCP according to TCW Manual V6 and relevant SWMS.  
 Signs and Devices are to be placed in accordance with this TCP. Modification may be made by persons holding a RMS "Design and Audit" Qualification only.  
 All signs and devices used must comply with Australian Standards AS1742.3  
 This document is copyright/property of Commercial TC PTY LTD. This drawing shall only be used for the purpose for which it is intended.

TABLE 4.2

VALUE OF DIMENSION D

| Speed of traffic<br>km/h | Dimension D<br>m                   |
|--------------------------|------------------------------------|
| 45 or less               | 0 to 5                             |
| 46 to 55                 | 15                                 |
| 56 to 65                 | 45                                 |
| Greater than 65          | Equal to speed of traffic, in km/h |



Drawn By : Aleksandra Moisejenkova  
Licence Num: 0051855538

DATE: 26/07/2021

LOCATION  
CUSTOMER  
TCP No 04.

GOULBURN ST , LIVERPOOL  
Stage 1-  
FOOTPATH CLOSURE

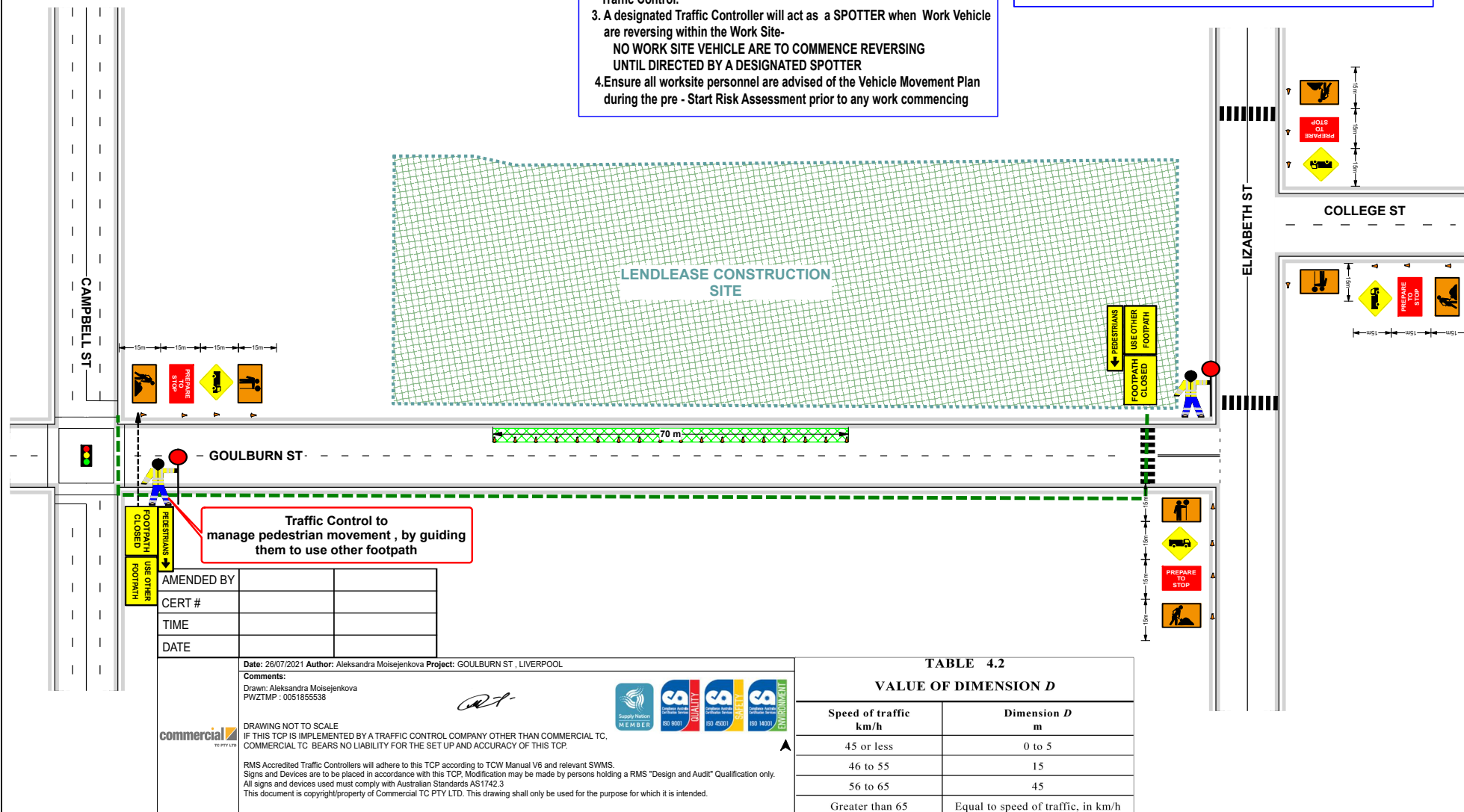
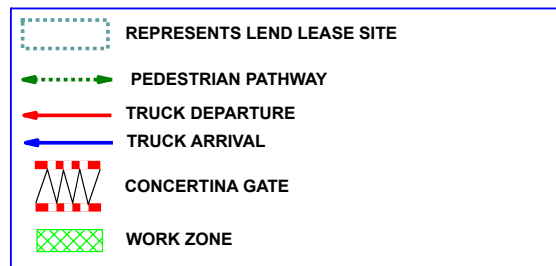
NAME: Aleksandra Moisejenkova  
Licence No: 0051855538

## TRAFFIC CONTROL PLAN

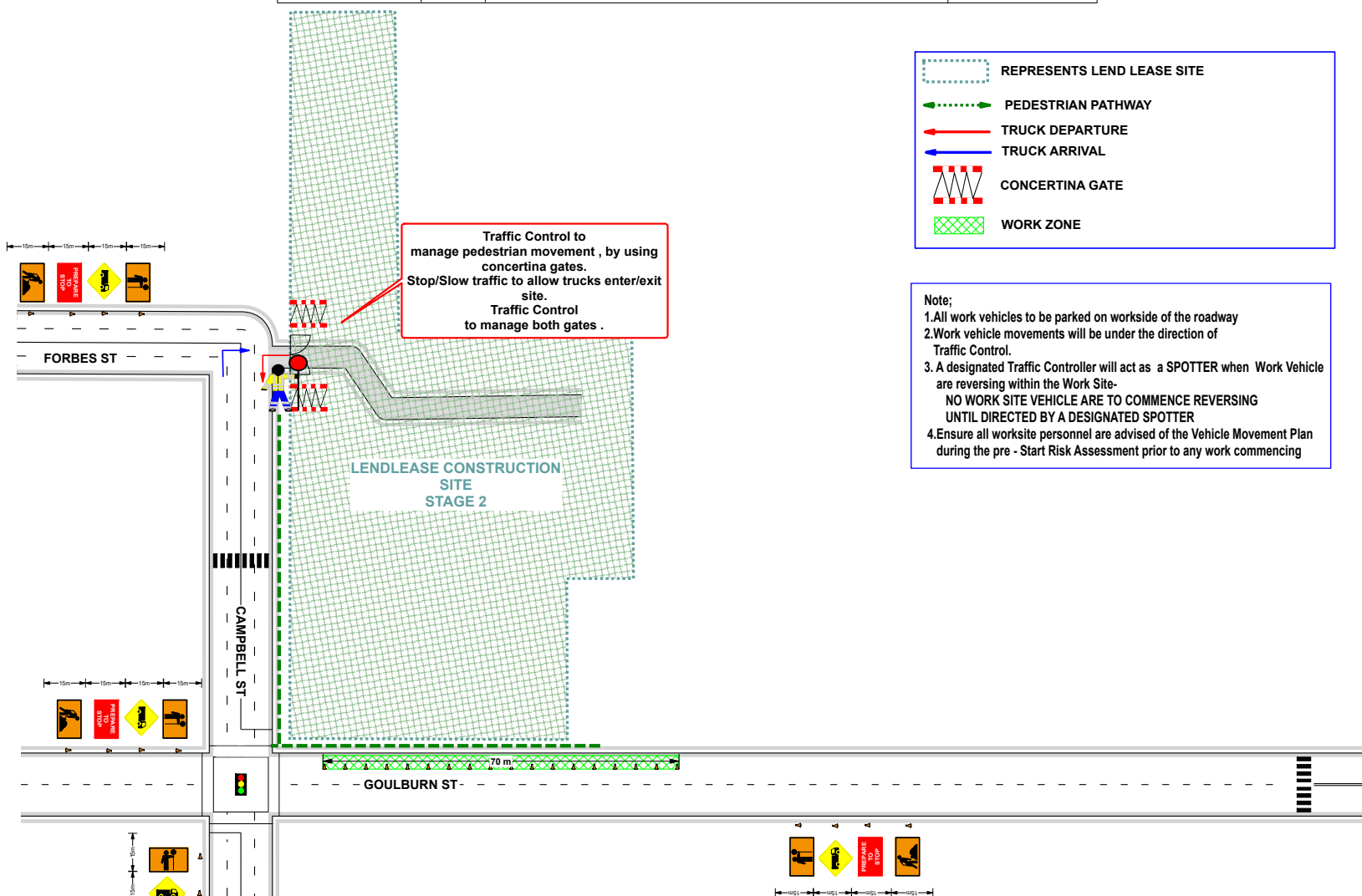
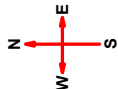
This traffic control plan is drawn to AS1742.3 and the R.T.A. workable manual for traffic control at work sites. It is to be implemented as such. This traffic plan is a GUIDE ONLY and can be altered on site but must be signed by an R.T.A. accredited person. Approach speeds - up to 60km daylight - clear signs to be used all personnel to wear Hi Vis Clothing vehicles to park within the worksite R.T.A. certified traffic controllers to be employed.

### Note;

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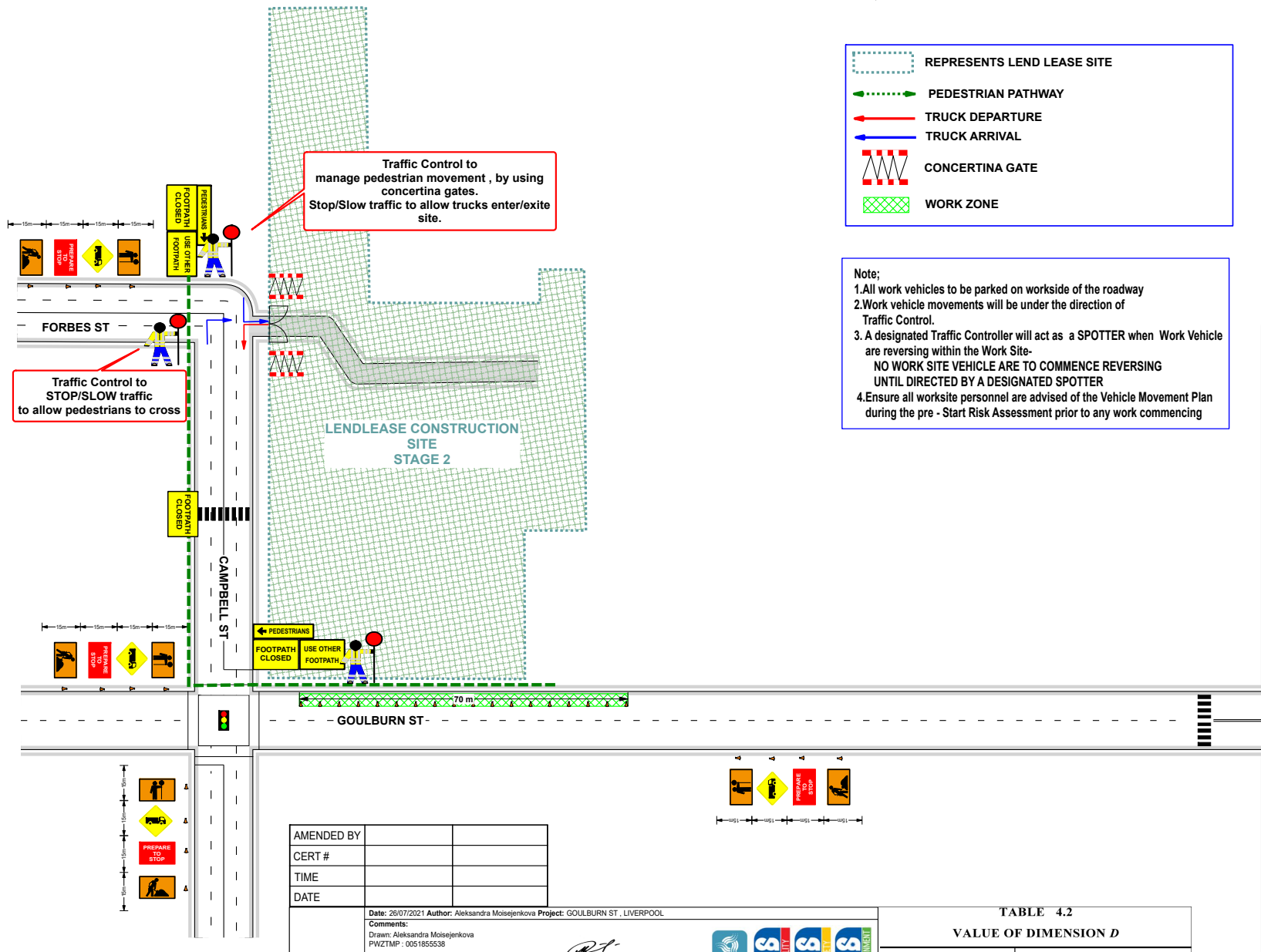
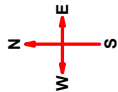
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| AMENDED BY |  |  |
| CERT #     |  |  |
| TIME       |  |  |
| DATE       |  |  |

Date: 26/07/2021 Author: Aleksandra Moisejenkova Project: GOULBURN ST , LIVERPOOL

Comments:  
Drawn: Aleksandra Moisejenkova  
PWZTMP : 0051855538

TABLE 4.2  
VALUE OF DIMENSION D

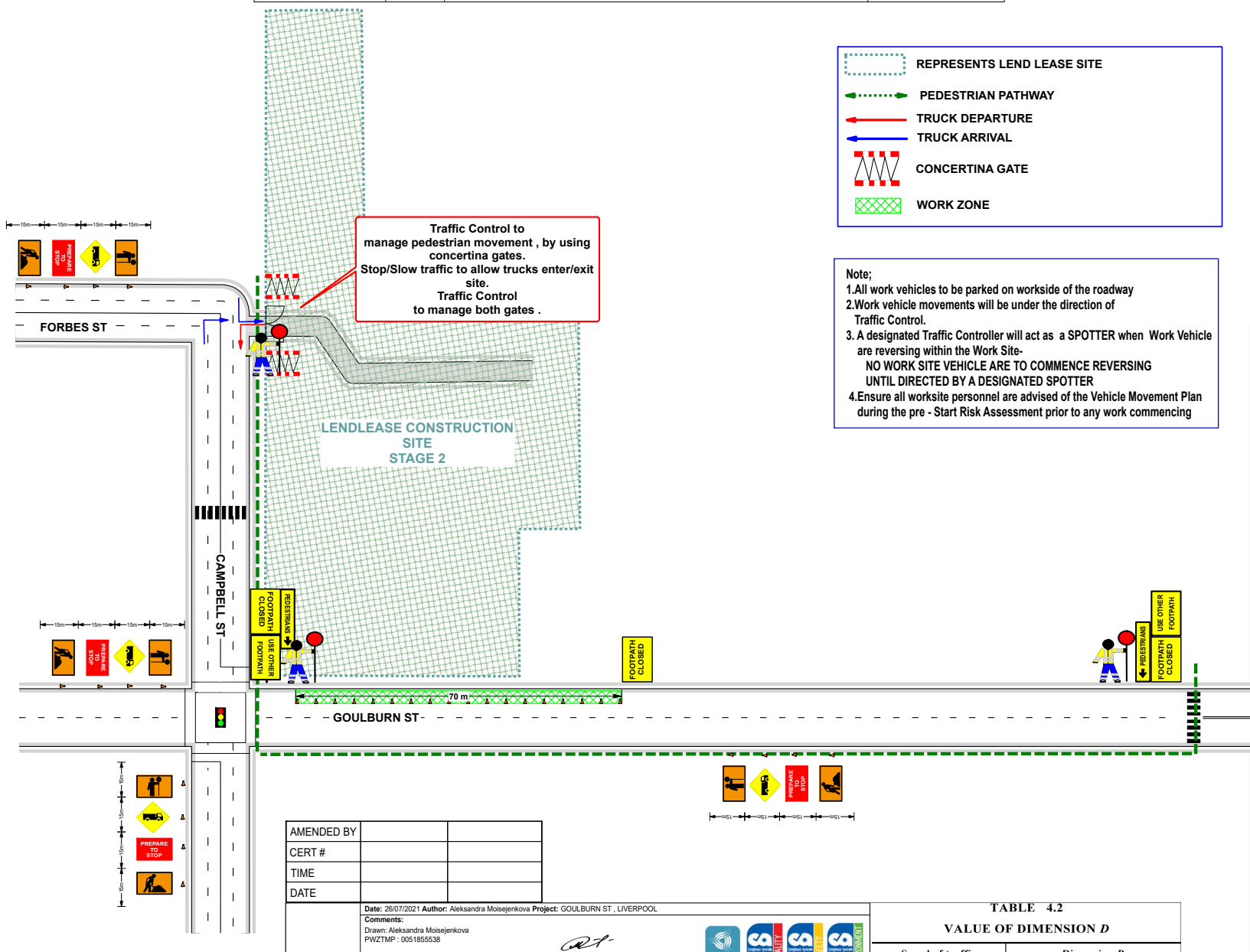
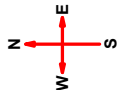
| Speed of traffic<br>km/h | Dimension D<br>m                   |
|--------------------------|------------------------------------|
| 45 or less               | 0 to 5                             |
| 46 to 55                 | 15                                 |
| 56 to 65                 | 45                                 |
| Greater than 65          | Equal to speed of traffic, in km/h |



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| AMENDED BY |  |
| CERT #     |  |
| TIME       |  |
| DATE       |  |

Date: 26/07/2021 Author: Aleksandra Moisejenkova Project: GOULBURN ST , LIVERPOOL

Comments:  
Drawn: Aleksandra Moisejenkova  
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| DATE       |  |

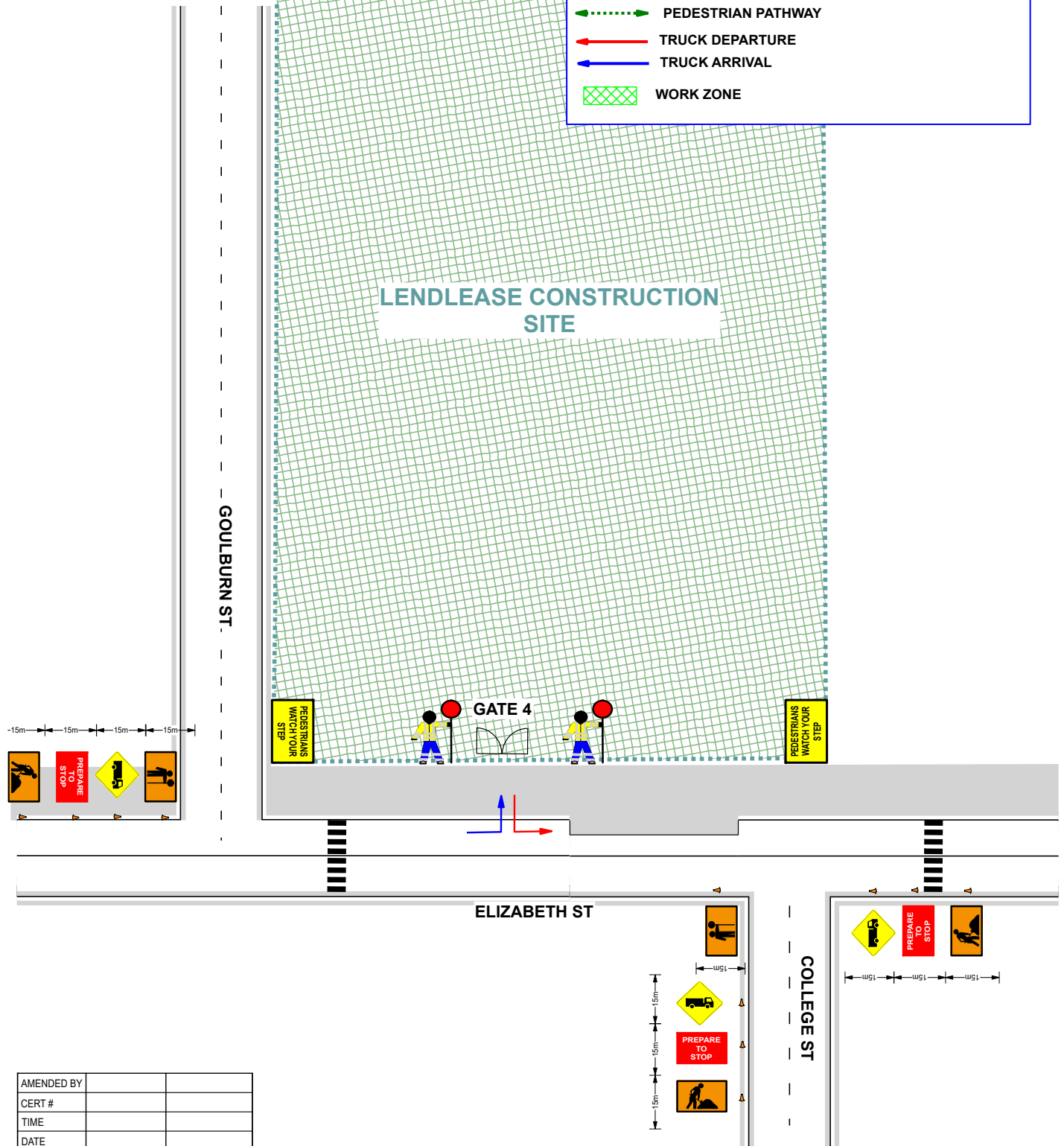
Date: 26/07/2021 Author: Aleksandra Moisejenkova Project: GOULBURN ST , LIVERPOOL

Comments:  
Drawn: Aleksandra Moisejenkova  
PWZTMP : 0051855538

TABLE 4.2  
VALUE OF DIMENSION D

| Speed of traffic<br>km/h | Dimension D<br>m                   |
|--------------------------|------------------------------------|
| 45 or less               | 0 to 5                             |
| 46 to 55                 | 15                                 |
| 56 to 65                 | 45                                 |
| Greater than 65          | Equal to speed of traffic, in km/h |





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| AMENDED BY |  |
| CERT #     |  |
| TIME       |  |
| DATE       |  |

Date: 29/07/2021 Author: Aleksandra Moisejenkova Project: ELIZABETH ST , LIVERPOOL

Comments:  
Drawn: Aleksandra Moisejenkova  
PWZTMP : 0051855538

*AM*



**TABLE 4.2**  
**VALUE OF DIMENSION D**

| Speed of traffic<br>km/h | Dimension D<br>m                   |
|--------------------------|------------------------------------|
| 45 or less               | 0 to 5                             |
| 46 to 55                 | 15                                 |
| 56 to 65                 | 45                                 |
| Greater than 65          | Equal to speed of traffic, in km/h |

