



# Greenwich Hospital Proposed Seniors Health Campus River Road, Greenwich

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Construction Traffic and Pedestrian  
Sub-Management Plan



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## 1.0 Introduction

A Development Application (SSD-13619238) has been approved by the Department of Planning for demolition of existing hospital buildings and the staged construction of new hospital facilities with integrated healthcare uses at 97-115 River Road, Greenwich (Figure 1).

This report has been prepared in satisfaction of Consent Condition N° C15 of which requires submission of a Construction Traffic Management Plan as part of the Construction Certificate documentation.

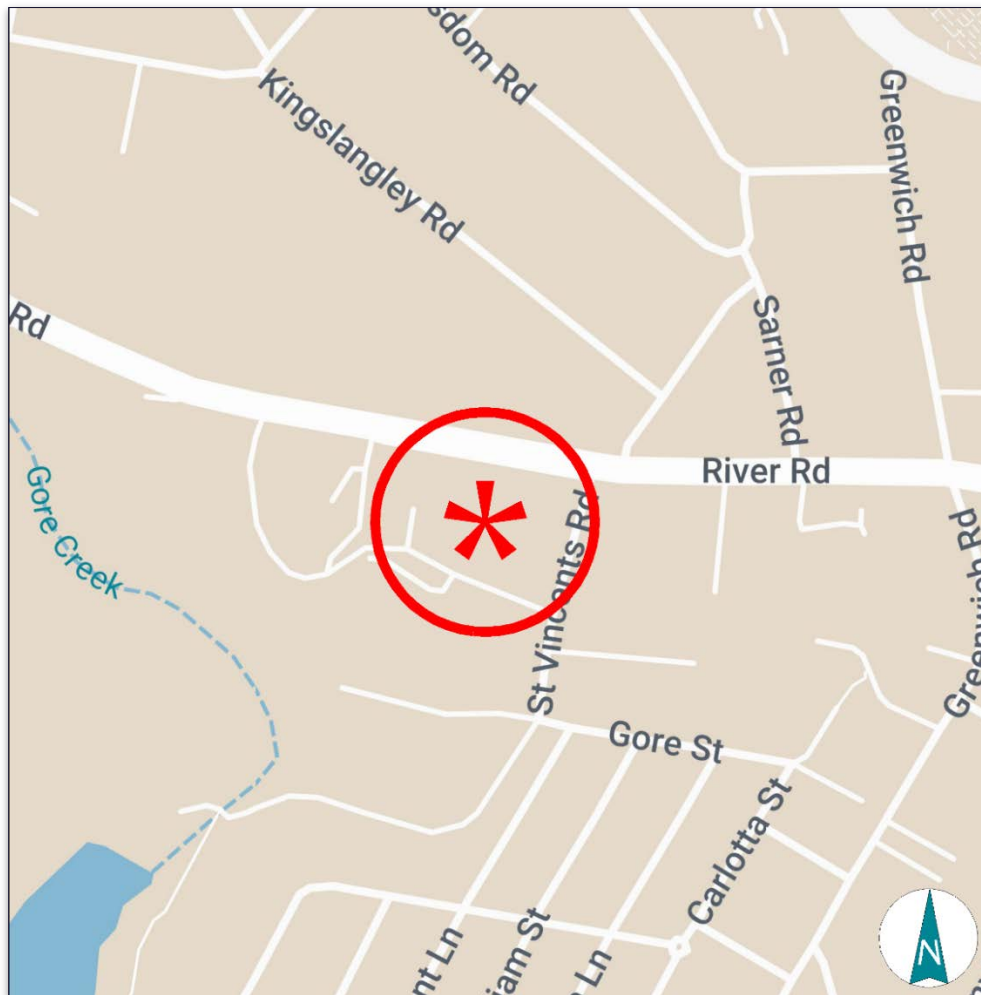


Figure 1 - Site Location

## 2.0 Proposed Development Scheme

### 2.1 Site, Context & Existing Circumstances

The Greenwich Hospital site (Figure 2) is a consolidation of Lots 3 & 4 in DP584287 which occupies an irregular shaped area of some 3.37ha located on the southern side of River Road adjacent to Gore Creek Reserve.



*Figure 2 - Site Boundary*

The surrounding landuses comprise medium/large single dwelling residential properties while other significant uses in the vicinity include:

- Greenwich Public School which is situated directly opposite the site on the northern side of River Road
- Lane Cove Country (Golf) Club located a short distance to the west of the site.
- Royal North Shore Hospital Precinct located to the north-east of the site.

The Hospital provides rehabilitation with an integrated day therapy and home-based rehabilitation services, inpatient palliative care services and day respite services as well as psycho geriatric assessment and inpatient care. The various services provided by the Hospital are located in a number of buildings erected in a fragmented fashion throughout the site.

The Hospital has 74 beds and staff are rostered on over 3 shifts per day with a maximum day of 26 specialists and 75 staff. There are also:

- a hydrotherapy pool also available for outpatients
- outpatient palliative care
- overnight respite

Carparking is located throughout the site with a total of some 150 spaces.

Vehicle access comprises, a traffic signal controlled entry/exit connection to River Road at the western site boundary, a combined entry/exit driveway on St Vincents Road and another access driveway on River Road towards the centre of the frontage.

Details of the existing site development are provided on the plan in Appendix A.

## 2.2 Proposed Development

The approved development involves a 4 stage process which will permit the existing Hospital activities to continue to function throughout the construction processes. The proposed development stages which are incorporated in this CTMP comprise:

**Stage 1      Early Works**

Early and Infrastructure works

**Stage 2      Main Hospital Building**

Demolition of eastern wing of existing hospital, demolition of Bluegum Lodge and Construction of the new Hospital building

**Stage 3      Seniors Living (shown in the Appendix E plans as Stages 3&4)**

Demolition of the remaining existing Hospital building and Riverglen and construction of the new Seniors Living buildings

Stage 4 which involves the construction of a respite building is not being undertaken as part of the current works.

The completed development will comprise:

- Hospital RACF complex on the eastern part of the site with:
  - Administration Staff 60
  - Specialists 56
  - Sub-acute hospital with 65 inpatient beds and 25 staff
  - 12 Consulting Rooms staff included above
  - RACF with 65 beds and 15 staff
  - Ancillary elements (café etc.)
  - Porte cochere and short term parking
  - Basement parking
  - Respite with 10 beds and 6 staff
  
- The Supported Seniors Living complex in 2 blocks on the western part of the site:
  - Seniors apartments
    - 10 x 1 bed
    - 64 x 2 bed (or 1 bed and study)
    - 15 x 3 bed
    - Total 89 apartments
  - Staff are included in hospital administration staff numbers
  - Ancillary elements
  - Basement car parking with supplementary at-grade visitor parking.

The vehicle access arrangements will largely remain as existing although the driveway near the centre of the River Road frontage will be modified and limited to left turn IN/OUT only (apart from emergency vehicles). The hospital porte cochere will connect to this access and there will be internal circulation roadway with connections to the various parking areas and loading dock. Importantly, interconnection will enable all vehicles to utilise the traffic signal-controlled access point on River Road.

Details of the approved development scheme are provided on the plans prepared by Bickerton Masters which are reproduced in part in Appendix B.

## 3.0 Road Network and Traffic Conditions

### 3.1 Road Network

The road network serving the site (Figure 3) comprises:

- *Pacific Highway* – a State Road and arterial route providing the major north/ south connection between Sydney and Hornsby
- *River Road* – a Regional Road and sub-arterial route which connects between Longueville and Crows Nest
- *Greenwich Road* – collector route which links to the Pacific Highway
- *St Vincents Road* – a local access road which connects across River Road

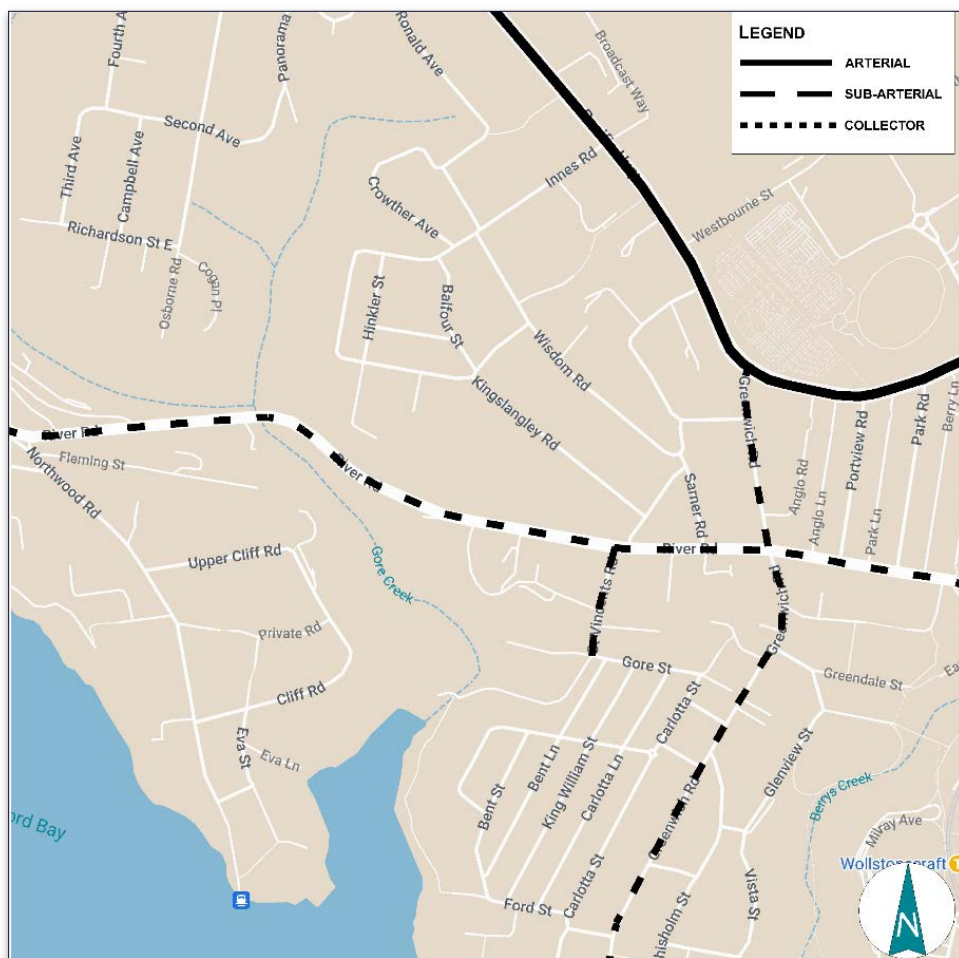


Figure 3 - Road Network



### 3.2 Traffic Controls

The traffic controls which have been applied to the road system in the vicinity of the site (Figure 4) comprise:

- the traffic signals at the River Road/Greenwich Road and Pacific Highway/Greenwich Road intersections
- the traffic signals on River Road at the main Hospital access (see details overleaf)
- the 50 kmph speed limit on St Vincents Road and River Road where there is a section of 40 kmph School Speed Zone in the vicinity of the Public School
- the GIVEWAY signage at the River Road and St Vincents Road intersection and pedestrian crossing over the northern side of St Vincents Road
- the BUS ZONES (with shelters) on each side of River Road adjacent to traffic signal controlled access and at St Vincents Road
- the “light traffic” restriction for vehicles travelling southerly from River Road along St Vincents Road however, this does not apply to vehicles accessing the hospital site due to the provisions of the Road Rules.



Figure 4 - Traffic Controls





### 3.3 Transport Conditions

An indication of the existing traffic conditions in the vicinity of the site is provided by surveys undertaken as part of the traffic assessment undertaken for the SSDA application and the existing peak traffic circumstance are indicated on Figure 5 for the “network peak periods”.

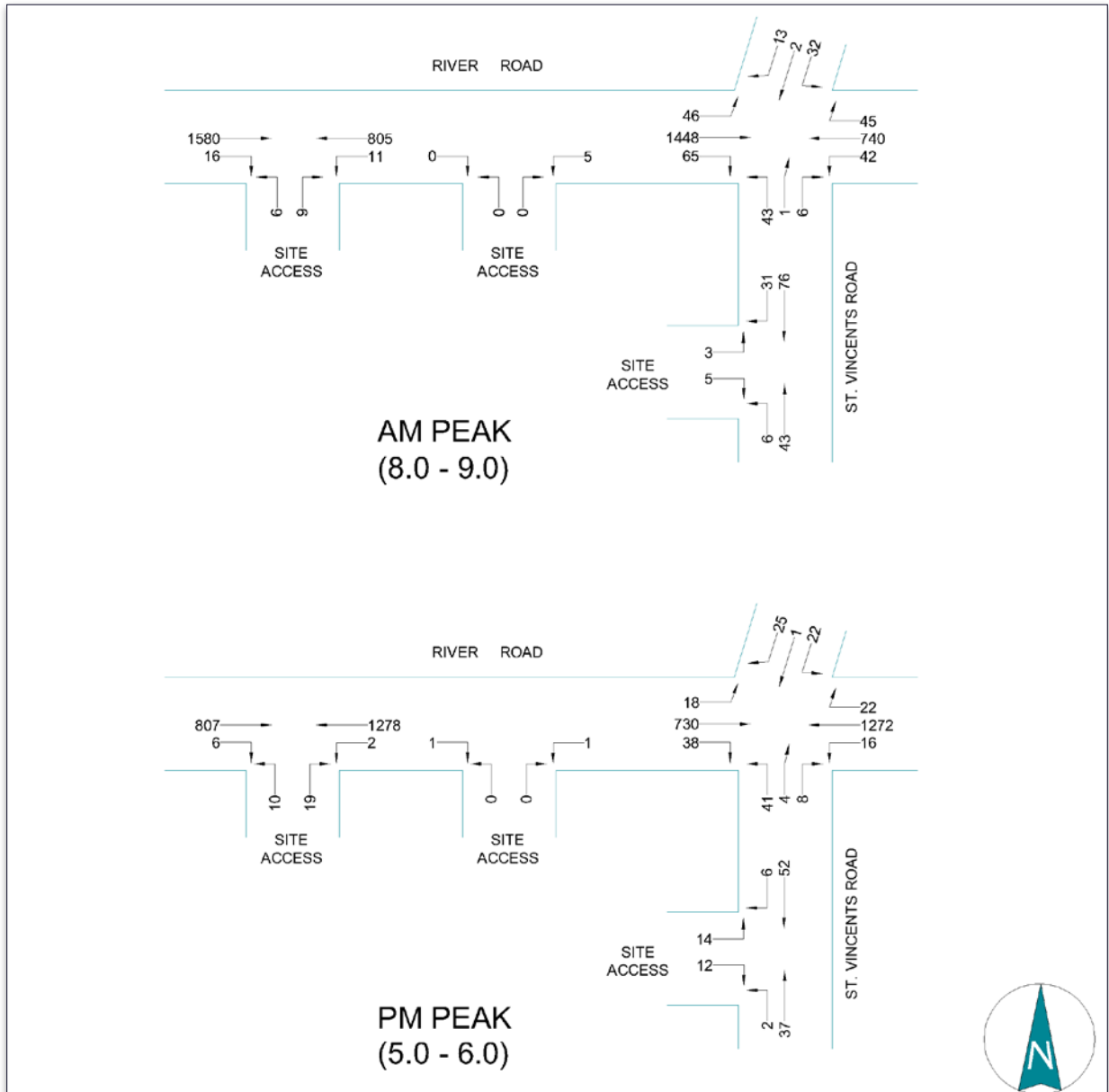


Figure 5 - Peak Traffic Movements

The operational performance of the River Road/Hospital access and River Road/St Vincents Road intersections has been assessed with SIDRA and the results of that assessment are summarised in the following while the criteria for interpreting SIDRA results is reproduced overleaf.

	AM		PM	
	LOS	AVD	LOS	AVD
River Road/Hospital Access	A	5.4	A	12.4
River Road/St Vincents Road	A-C	3.5	A-C	3.2

The SIDRA results indicate that these intersections operate quite satisfactorily at the present time.

### 3.4 Transport Services

The site is serviced by the Route 261 and 265 bus services which provide access to railway stations and interchange with other bus services (particularly those that operate along the Highway and at the railway stations). The Route 261 service operates along River Road between Lane Cove and the City via Longueville, Northwood and Crows Nest and North Sydney. This route operates as a 6 days per week service with a number of weekday services extending to Chatswood. Bus stops are provided on either side of River Road adjacent to the Hospital’s signalised access and also in the vicinity of St Vincents Road.

The Route 265 service operates along Greenwich Road and River Road (part) connecting between Lane Cove and McMahons Point via St Leonards, Crows Nest and North Sydney. This service operates on a full-time basis on weekdays with peak period frequencies of 30 minutes and 60-minute frequencies at other times and daytime on Saturdays. Bus stops for this service are located either side of St Vincents Road at the River Road intersection.

Details of the Route 261 and 265 buses and the interconnecting services are provided in Appendix D.

### 3.5 Bicycles and Pedestrians

There are existing footpaths along River Road (southern side in part) and along St Vincents Road while pedestrian movements are also enhanced by the traffic signal-controlled crossings at the Hospital access signals, and the traffic signal-controlled crossings at the River Road and Greenwich Road intersection.

# Criteria for Interpreting Results of SIDRA Analysis

## 1. Level of Service (LOS)

LOS	Traffic Signals and Roundabouts	Give Way and Stop Signs
'A'	Good	Good
'B'	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
'C'	Satisfactory	Satisfactory but accident study required
'D'	Operating near capacity	Near capacity and Accident Study required
'E'	At capacity; at signals incidents will cause excessive delays. Roundabouts require other control mode	At capacity and requires other control mode
'F'	Unsatisfactory and requires additional capacity	Unsatisfactory and requires other control mode

## 2. Average Vehicle Delay (AVD)

The AVD provides a measure of the operational performance of an intersection as indicated on the table below, which relates AVD to LOS. The AVD's listed in the table should be taken as a guide only as longer delays could be tolerated in some locations (ie inner city conditions) and on some roads (ie minor side street intersecting with a major arterial route).

Level of Service	Average Delay per Vehicle (secs/veh)	Traffic Signals, Roundabouts	Give Way and Stop Signs
A	Less than 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory but accident study required
D	43 to 56	Operating near capacity	Near capacity and accident study required
E	57 to 70	At capacity; at signals incidents will cause excessive delays. Roundabouts require other control mode	At capacity and requires other control mode

## 3. Degree of Saturation (DS)

The DS is another measure of the operational performance of individual intersections.

For intersections controlled by **traffic signals** both queue length and delay increase rapidly as DS approaches 1, and it is usual to attempt to keep DS to less than 0.9. Values of DS in the order of 0.7 generally represent satisfactory intersection operation. When DS exceeds 0.9 queues can be anticipated.

For intersections controlled by a **roundabout or GIVE WAY or STOP signs**, satisfactory intersection operation is indicated by a DS of 0.8 or less.

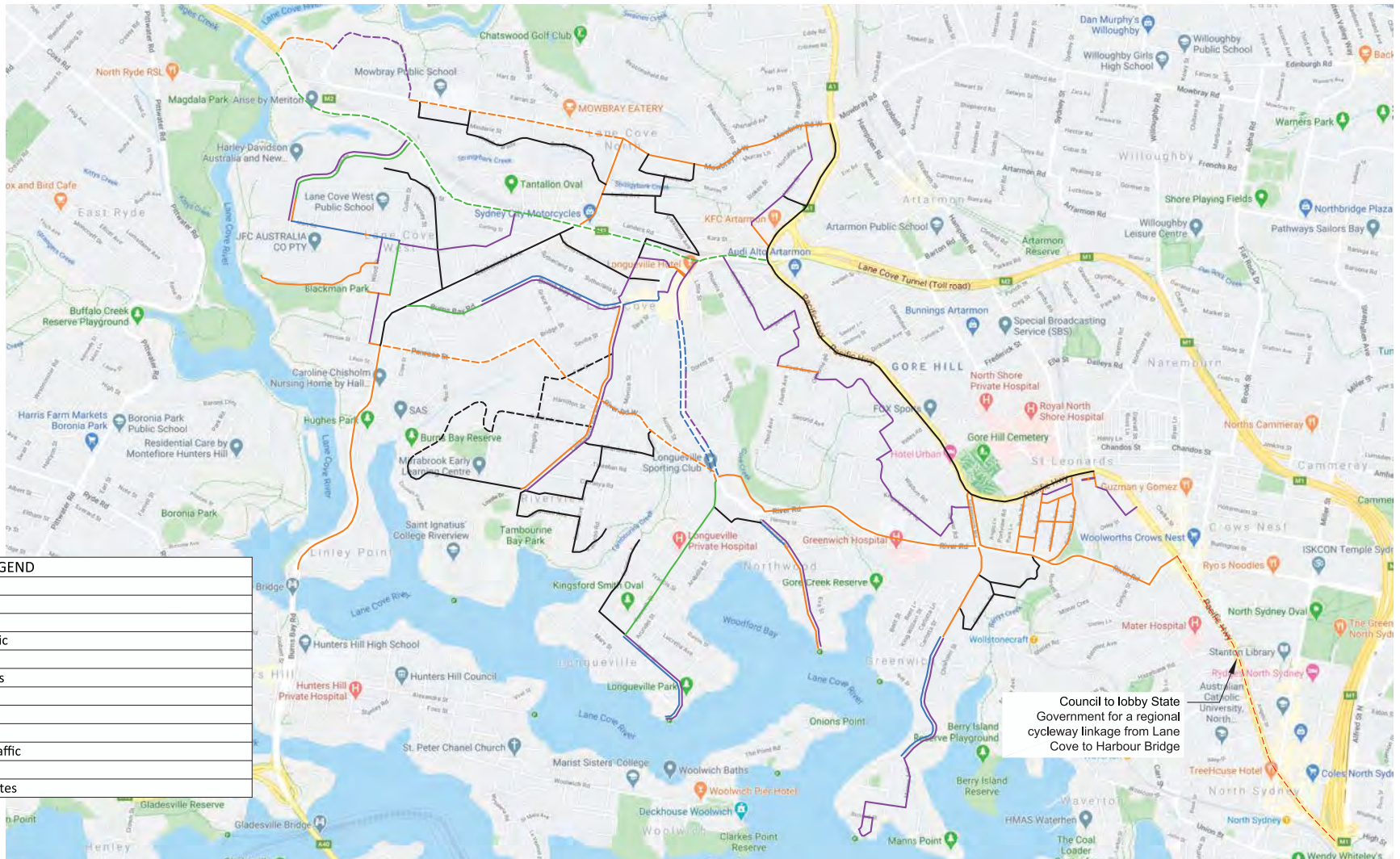
There is an existing bicycle route along River Road/Penrose Street westwards from Longueville Road and it is proposed to extend this route easterly past the site to Greenwich Road with connection to the north, south and east from there as shown on the details overleaf.





# Attachment 2 – Proposed Bicycle Routes

## Short Term Routes



LEGEND	
Existing Routes	
	Existing Bike Path
	Existing Bike Lane
	Existing Mixed Traffic
	Existing SUP
	2013 Existing Routes
Proposed Routes	
	Proposed Bike Path
	Proposed Bike Lane
	Proposed Mixed Traffic
	Proposed SUP
	2013 Proposed Routes

## 4.0 Staging, Methodology and Processes

The proposed stages are identified on the plans provided in Appendix E while the proposed methodology and processes are described in the Construction Management Plan reproduced in Appendix F.

The envisaged timing for the stages is as follows:

### Stage 1

- Early Works - 50 weeks

### Stage 2

- Site Establishment - 6 weeks
- Demolition - 5 weeks
- Excavation - 18 weeks
- Construction & Fitout - 114 weeks

### Stage 3

- Site Establishment - 3 weeks
- Demolition - 10 weeks
- Excavation - 12 weeks
- Construction - 70 weeks



## 5.0 Construction Traffic Management Plan

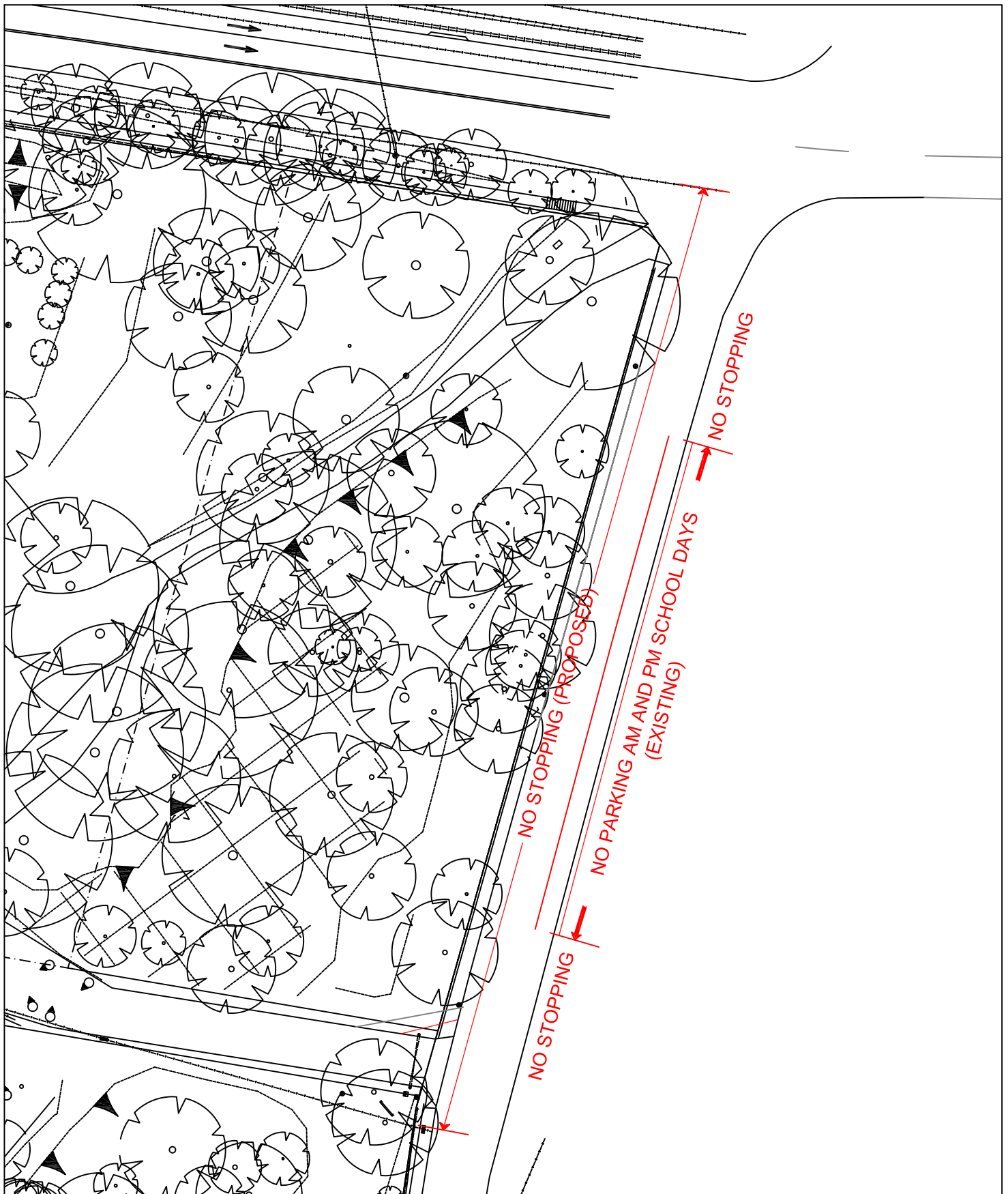
### 5.1 Mitigation Measures

The proposed measures to mitigate potential road safety and efficiency during construction (Condition C15(d)) comprise:

- prohibit all right turn egress movements into River Road (including from St Vincents Road but excepting at the traffic signal controlled access) for all trucks associated with the construction works
- provide specific measures in St Vincents Road including:
  - prohibition of parking along the western kerb (See Figure 6)
  - widen Hospital access connection to accommodate large trucks
  - provide synchronised Traffic Controllers so that trucks are precluded from passing on St Vincents Road
- widen the Hospital access connection at the middle of the site frontage to accommodate large trucks
- provide “fenced off” Stage areas to restrict non-bonifide pedestrian and vehicle movements
- provide Traffic Controllers at each vehicle access point to ensure pedestrian and cyclists crossing safety
- prepare specific Traffic Management Plans for the infrequent access of any vehicles larger than Truck and Dog

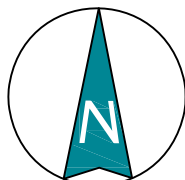
### 5.2 Construction Vehicle Routes

All truck movements associated with the construction process will access the site via the routes illustrated in Figure 7 for any potential concurrent heavy vehicle movements entering and exiting the site, there will be “call up” procedures in place with a site gatekeeper organising truck movements via UHF to minimise potential queuing on site. Trucks will only be required to use St Vincents Road during Stage 2 and will not access during school arrival & departure times (8:00am – 9:00am and 2:30pm – 3:30pm School days)



**NOTE**

This drawing has been prepared using vehicle modelling computer software AutoTrack V5.00a in conjunction with AutoCAD 2013. The vehicle used is based upon vehicle data provided by Austroads and incorporates a reasonable degree of tolerance. However, it is not possible to account for all vehicle types/characteristics and/or driver ability.



**PROPOSED PARKING SIGNAGE**

**FIG 6**

### 5.3 Truck Movements

It is anticipated that the construction works will involve the following heavy vehicle types:

Vehicle Type	Length
Semi-Trailer (very infrequent)	19m
Truck & Dog	18.1m
Heavy Rigid Vehicles (HRV)	12.5m
Medium rigid vehicles (MRV)	8.8m
Small rigid vehicles (SRV)	6.4m
Mobile cranes	9.8m - 13.5m
Concrete trucks	8.8m
Concrete pump	8.8m
Excavator, Bobcat, Forklift, Manitou	< 8.8m
Utility vehicle/Van	5.2m (B99)

The envisaged truck movements will be:

	Truck Visitations			
	Bulk Excavation	Structure	Fitout	Landscaping etc.
Per Day	30 – 40*	25 – 30**	30**	20**
Per Hour	6 – 8	5	6	4

\* Truck and Dog units

\*\* HRV and Smaller

The access movement of heavy vehicles will be specifically minimised and not allowed at all during the school arrival/departure times (8.00 am – 9.00 am and 2.30 pm – 3.30 pm) while the delivery/dispatch of any heavy plant will occur outside of normal commuter peak times. Any infrequent required access movements for semi-trailers (large structured components or machinery) will be subject to separate specific traffic management plans.

Details of the assessment of access truck movements are provided in Appendix G.



## 5.4 Construction Hours

The envisaged construction hours are:

7:30 am to 5:30 pm	Monday to Friday
8:00 am to 1:00 pm	Saturday
No work	Sunday and Public Holidays

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

9:00 am and 12 pm	Monday to Friday
2:00 pm and 5:00 pm	Monday to Friday
9:00 am and 12 pm	Saturday

Construction activities may be undertaken outside of these hours subject to the conditions specified in Consent Conditions D5, 6 & 7.

Noise from construction activities shall comply with the Protection of the Environment Operations (Noise Control Regulation 2017).

## 5.5 Works Zone

There will be no requirement for any on-street Works Zone for the works. There will be adequate space within the site for materials storage and truck manoeuvring, certified traffic controllers will be located on St Vincents Road at the site access points and within the site to assist with truck movements.

## 5.6 Site Induction

All workers and visitors employed on the site by the appointed contractor (including sub-contractors) will be required to undergo a formal 'site induction' process, and all the inductions will be performed specifically to each trade according to Workcover OH & S requirements.

The induction will include details of approved access routes to and from the construction site for site staff and delivery vehicles, parking arrangements, as well as standard environmental, WHS, driver protocols and emergency procedures. The agreed work hours must be included as part of this induction.

## 5.7 Traffic Guidance Scheme

The TGS presents traffic management principles, with detailed information for work site operations contained in the TfNSW Traffic Control at Work Sites Technical Manual Version 6.1 dated 28 February 2022. The control of traffic at work sites must be undertaken with reference to WorkCover requirements and RCC Workplace Health and Safety Manuals.

The TGS is prepared by a Certified Traffic Controller (under TfNSW regulations) in accordance with Australian Standards 1742.3. The TGS includes:

- The proposed works site
- Traffic control signage

The TGSs for the construction processes are provided in Appendix H.

## 5.8 Pedestrian Management

Pedestrians walking along the site frontage and Stage boundaries will be protected by temporary construction fencing. TfNSW accredited traffic controllers shall always supervise all vehicle movements into and out of the site ensuring pedestrians have right of way and are separated from the vehicle movements at all times.

## 5.9 Impact on Emergency Vehicle Access

The proposed works will not adversely affect access to the site by emergency vehicles. Emergency protocols on the site would specify a requirement for a traffic controller to assist with emergency access on the site. Any truck movements to the site and any incident point would be suspended and cleared. Consequently, any potential impacts on emergency access would be effectively managed throughout the works.



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

As such, there would be no impacts on the provision of existing emergency vehicle access to the site or other neighbouring properties as a result of the proposed construction activities.

## 5.10 Road Serviceability

Shaker grids and brush clean will be employed to prevent/rectify any wheel tracking or spoil spillage on the public road.

The contractor will ensure that the roads in the vicinity of the site remain in clean and serviceable states during the construction. Any damage to kerbs, signage, trees, footpaths etc., will be repaired or replaced to the satisfaction of the Council.

## 5.11 Parking

Limited on-site parking will be provided for construction workers, and they will be:

- encouraged to utilise public transport or car pool
- provided with secure on-site storage for their tools and materials.

While Consent Condition C25 refers to the provision of construction worker parking on the site the circumstances will be somewhat unique in that it will be essential to provide parking in Stages 1&2 for the continuing operation of the hospital. This requirement and the limitations of the site result in the inability of producing any significant on-site parking for construction workers until such time that the basement carparking constructed in Stage 2 can be made available for workers.

Parking for hospital staff and visitors will be reduced in Stage 1 and 2 however, this will be offset by the temporary transfer of hospital elements (e.g. Hydrotherapy) and the reduction of some elements.

Following the completion of Stage 1 and 2, there will be some 200 parking spaces available for the new Hospital.



## 5.12 Materials Handling

All materials are to be unloaded and stored within the site at all times. Loading/unloading of materials will occur from the Loading Areas by crane or with the assistance of trolleys/forklifts. No materials will be placed or left on any Council road or footpath areas at any time.

## 5.13 Public Notification and Consultation

The building contractor would prepare on-going notification letters that would be emailed to the relevant authorities and adjoining property owners and the adjacent school to advise of the timeframes for each phase of the development/construction process and any related changes. The notification will be provided a minimum of 7 days prior to the implementation of any temporary traffic control measure or change to access, traffic or parking arrangements.

The CT&P Sub Management Plan was submitted to TfNSW and Council on 22.10.24. TfNSW responded on 30.10.24 and advised that “if they had any issues or concerns they would arrange a meeting”. There has been no further correspondence from TfNSW. Council advised on 5.11.24 that because of the expressed concerns of residents they did not favour construction access on St Vincents Street. Subsequent to this the proposed truck access arrangements have changed so that trucks would only use St Vincents Street in Stage 2 and the Road Safety Audit has been completed.

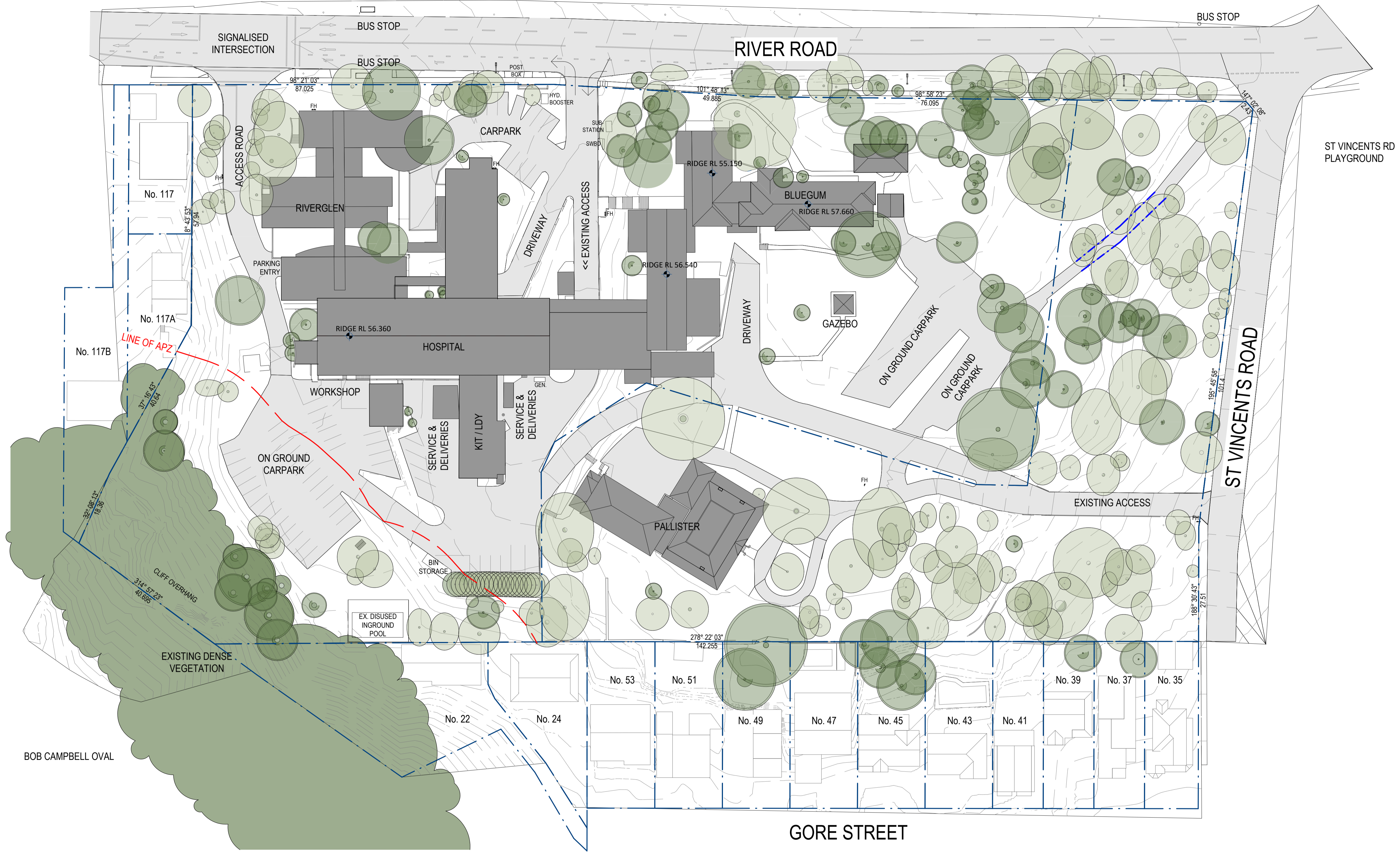
## 5.14 Road Safety Audit

Consent Condition C15(c) requires the undertaking of a Road Safety Audit of St Vincents Road to address any identified safety concerns associated with construction vehicles accessing the site at this location. The completed Road Safety Audit is provided in Appendix I.

# Appendix A

## Plan of Existing





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REV	DATE	DETAILS	INITIALS
P4	2021.06.16	ISSUE TO CONSULTANTS	NAH
P3	2021.04.20	CAD ISSUE	NAH
P2	2021.04.08	ISSUE TO CONSULTANTS	NAH
P1	2021.03.11	ISSUE TO CONSULTANTS	NAH



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CLIENT: **HammondCare**  
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REVISION: **P4**  
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 DRAWN: NAH CHECKED: SCALE: 1 : 500 @A1

DRAWING No: **SW-AR-0100**

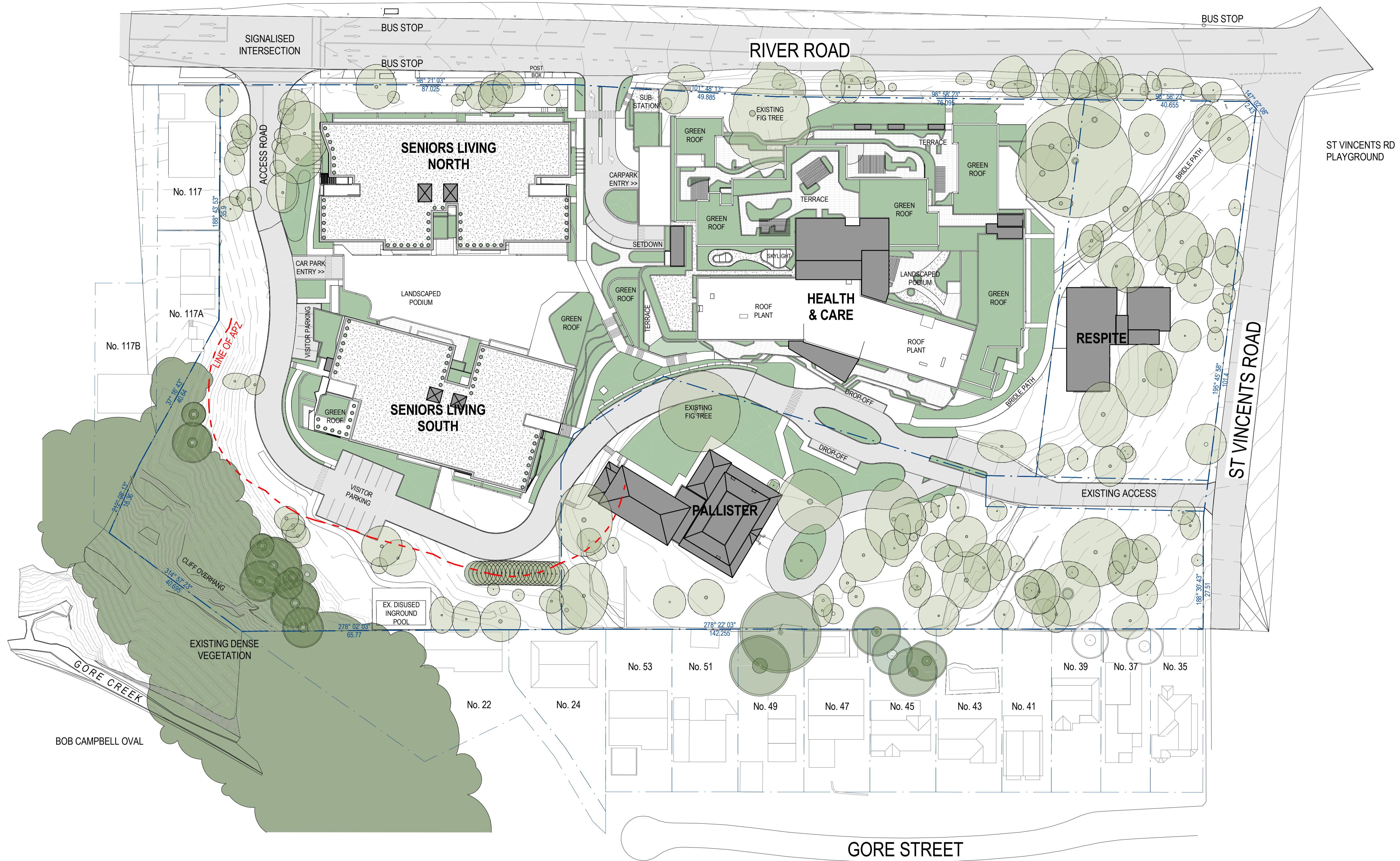
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# Appendix B

## Development Plans





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P19	2022.05.06	EIS LODGEMENT ISSUE	NAH
P18	2022.04.29	EIS LODGEMENT ISSUE FOR CLIENT REVIEW	NAH
P17	2022.04.14	UPDATED DRAFT LODGEMENT PACK	NAH
P16	2022.04.08	LODGEMENT ISSUE FOR CLIENT SIGNOFF	AMac
P15	2022.04.01	FINAL DRAFT LODGEMENT ISSUE	AMac



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CLIENT:  
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 RIVER RD, GREENWICH

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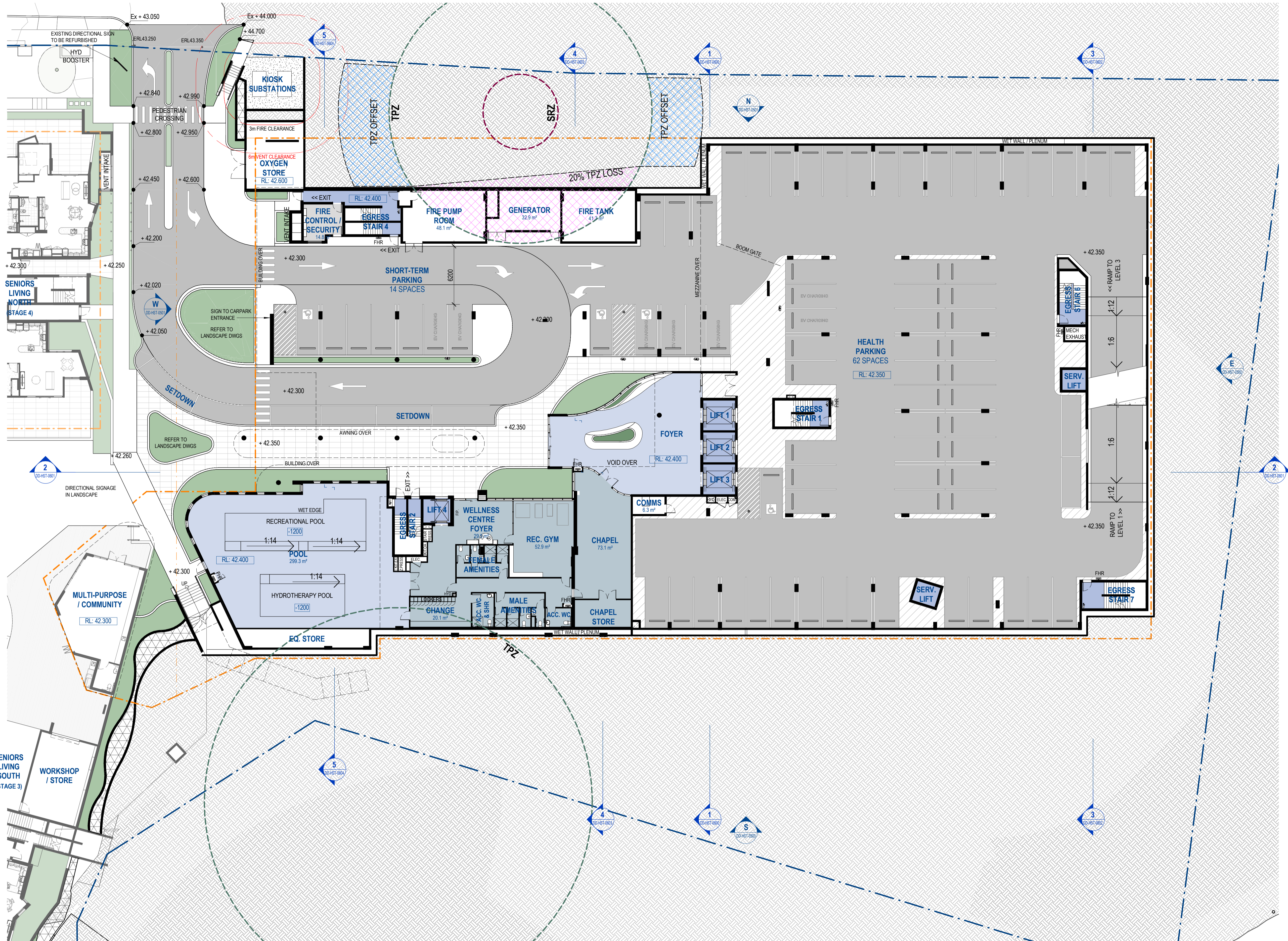
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 C:\\_Revit Projects\HST-AR-GREENWICH\_andrewmac\NRYHN.rvt

REV	DATE	DETAILS	INITIALS
P21	2022.05.06	EIS LODGEMENT ISSUE	NAH
P20	2022.04.29	EIS LODGEMENT ISSUE FOR CLIENT REVIEW	NAH
P19	2022.04.14	UPDATED DRAFT LODGEMENT PACK	NAH
P18	2022.04.08	LODGEMENT ISSUE FOR CLIENT SIGNOFF	AMac
P17	2022.04.01	FINAL DRAFT LODGEMENT ISSUE	AMac



SYMBOL		DESCRIPTION	
	ROOM NAME	Room Name	
	ROOM NUMBER	Room Number	
	000	Detail Number of Section / Elevation	
	000	Sheet Number of Section / Elevation	
		Planning Envelope	
		Property Boundary	

SYDNEY  
 (02) 9261 8333  
 STUDIO 3, LEVEL 3  
 35 BUCKINGHAM STREET  
 SURRY HILLS 2010, NSW  
 www.bickertonmasters.com.au

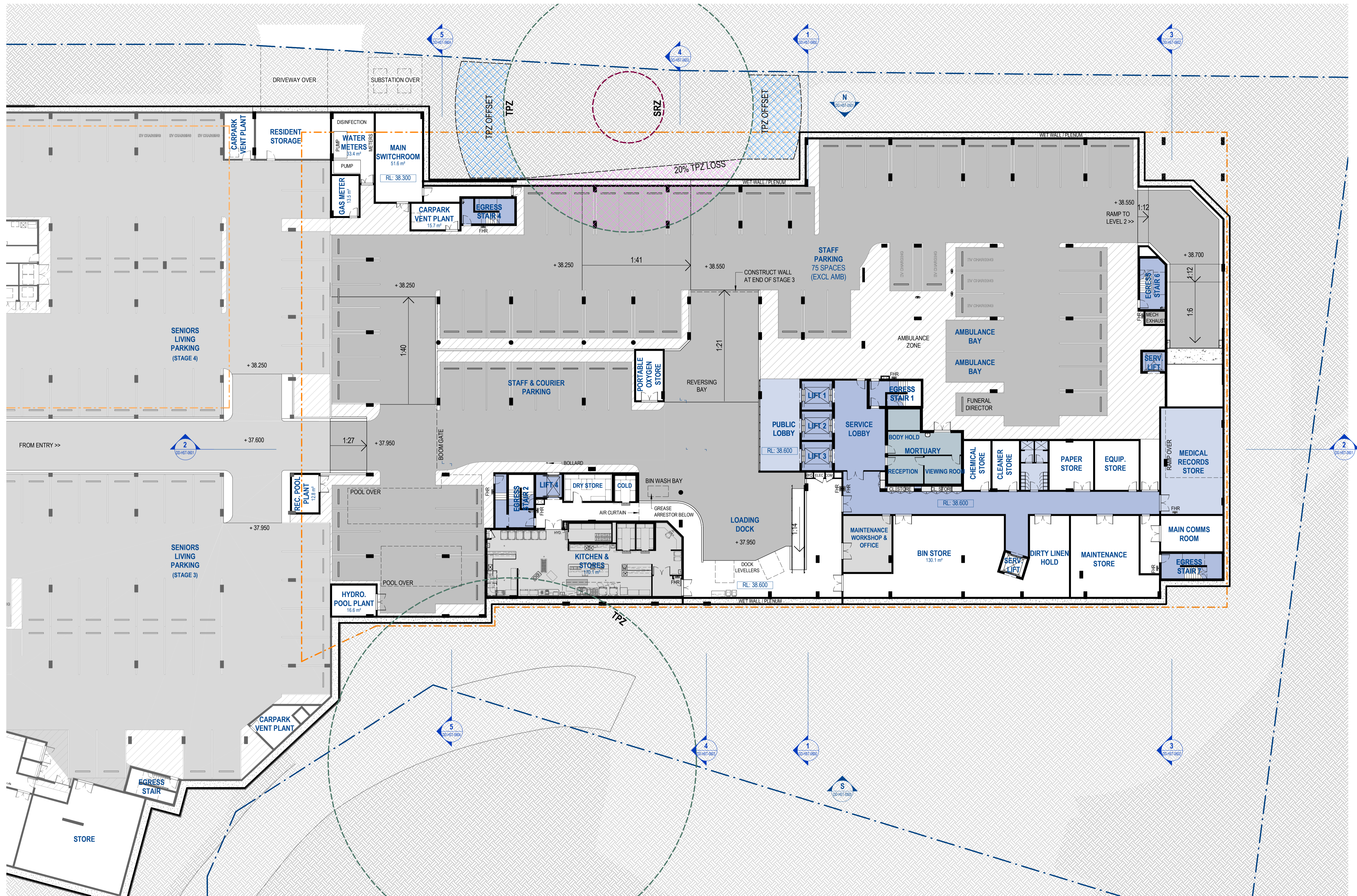


CLIENT:  
**HammondCare**  
 Champion Life  
 PROJECT: 01605  
**GREENWICH HOSPITAL  
 REDEVELOPMENT**  
 RIVER RD, GREENWICH

REVISION: DRAWING No:  
**P21 DD-HST-0101**  
 DATE:  
 DRAWING TITLE:  
**H&C - OVERALL PLAN - L2**  
 DRAWN: NAH CHECKED: SCALE: 1:200 @A1  
 NSW NOMINATED ARCHITECT: ANDREW MASTERS (9037) 6/05/2022 5:30:40 PM

**APPROVAL ISSUE**  
 NOT FOR CONSTRUCTION





1:200 @A1  
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REV	DATE	DETAILS	INITIALS
P22	2022.05.06	EIS LODGEMENT ISSUE	NAH
P21	2022.04.29	EIS LODGEMENT ISSUE FOR CLIENT REVIEW	NAH
P20	2022.04.14	UPDATED DRAFT LODGEMENT PACK	NAH
P19	2022.04.08	LODGEMENT ISSUE FOR CLIENT SIGNOFF	AMac
P18	2022.04.01	FINAL DRAFT LODGEMENT ISSUE	AMac



SYMBOL		DESCRIPTION	
	Room Name		Room Number
	Detail Number of Section / Elevation		Sheet Number of Section / Elevation
	Planning Envelope		Property Boundary

**APPROVAL ISSUE**  
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SYDNEY  
 (02) 9261 8333  
 STUDIO 3, LEVEL 3  
 35 BUCKINGHAM STREET  
 SURRY HILLS 2010, NSW  
 www.bickertonmasters.com.au

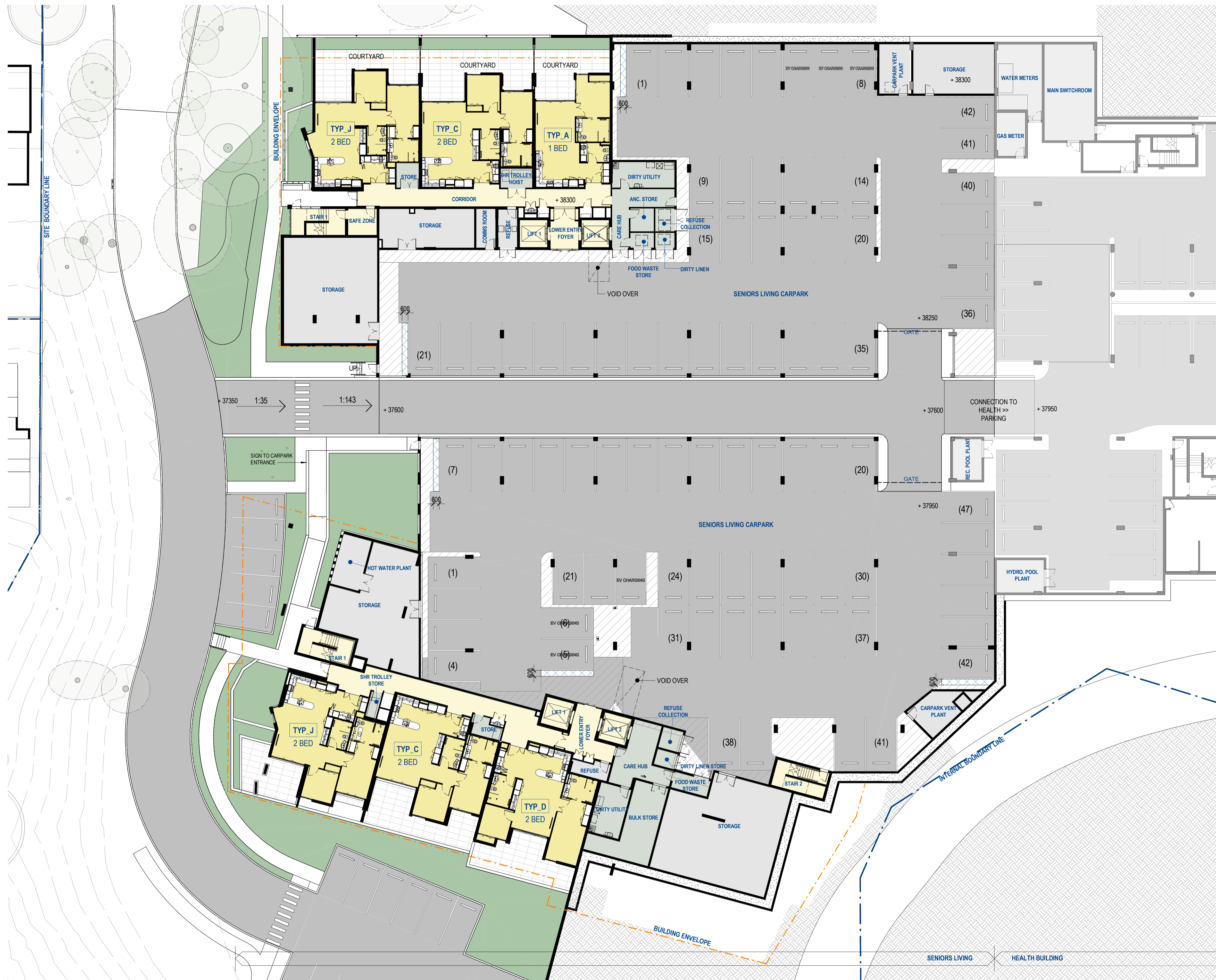
CLIENT:  
**HammondCare**  
 Champion Life  
 PROJECT: 01605  
**GREENWICH HOSPITAL  
 REDEVELOPMENT**  
 RIVER RD, GREENWICH

REVISION: P22  
 DATE:  
 DRAWING TITLE:  
**H&C - OVERALL PLAN - L1**  
 DRAWN: NAH  
 CHECKED:  
 SCALE: 1:200 @A1  
 DRAWING No:  
**DD-HST-0100**









1:200 @ A1

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REV	DATE	DETAILS	INITIALS
P12	2022.05.06	EIS LODGEMENT ISSUE	NAH
P11	2022.04.29	EIS LODGEMENT ISSUE FOR CLIENT REVIEW	NAH
P10	2022.04.14	UPDATED DRAFT LODGEMENT PACK	NAH
P9	2022.04.08	LODGEMENT ISSUE FOR CLIENT SIGNOFF	MLL
P8	2022.04.01	FINAL DRAFT LODGEMENT ISSUE	MLL



SYDNEY  
 (02) 9261 8333  
 STUDIO 3, LEVEL 3  
 35 BUCKINGHAM STREET  
 SURRY HILLS 2010, NSW  
[www.bickertonmasters.com.au](http://www.bickertonmasters.com.au)



CLIENT:  
**HammondCare**  
 Champion Life

PROJECT: 01605  
**GREENWICH HOSPITAL  
 REDEVELOPMENT**  
 RIVER RD, GREENWICH

REVISION: **P12**  
 DATE: 09/01/21  
 DRAWING TITLE:  
**SL - OVERALL PLAN - L1**

DRAWN: NAH CHECKED: SCALE: 1:200 @A1

**APPROVAL ISSUE**  
 NOT FOR CONSTRUCTION

DRAWING No:  
**DD-SL-0100**

# Appendix C

## Traffic Survey Results





# R.O.A.R. DATA

Reliable, Original & Authentic Results

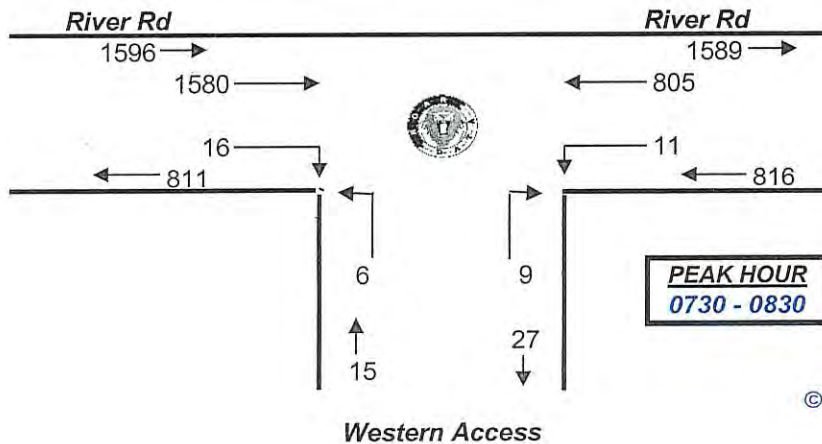
Ph.88196847, Mob.0418-239019

## All Vehicles

Time Per	WEST <i>River Rd</i>		SOUTH <i>Western</i>		EAST <i>River Rd</i>		TOTAL
	<u>I</u>	<u>R</u>	<u>L</u>	<u>R</u>	<u>L</u>	<u>I</u>	
0700 - 0715	282	4	0	0	3	122	411
0715 - 0730	395	4	1	3	1	183	587
0730 - 0745	378	4	1	3	4	165	555
0745 - 0800	380	5	1	2	2	187	577
0800 - 0815	428	5	2	3	2	214	654
0815 - 0830	394	2	2	1	3	239	641
0830 - 0845	329	3	0	1	1	161	495
0845 - 0900	384	2	1	0	3	198	588
<b>Period End</b>	<b>2970</b>	<b>29</b>	<b>8</b>	<b>13</b>	<b>19</b>	<b>1469</b>	<b>4508</b>

Peak Per	WEST <i>River Rd</i>		SOUTH <i>Western</i>		EAST <i>River Rd</i>		TOTAL
	<u>I</u>	<u>R</u>	<u>L</u>	<u>R</u>	<u>L</u>	<u>I</u>	
0700 - 0800	1435	17	3	8	10	657	2130
0715 - 0815	1581	18	5	11	9	749	2373
<b>0730 - 0830</b>	<b>1580</b>	<b>16</b>	<b>6</b>	<b>9</b>	<b>11</b>	<b>805</b>	<b>2427</b>
0745 - 0845	1531	15	5	7	8	801	2367
0800 - 0900	1535	12	5	5	9	812	2378

<b>PEAK HR</b>	<b>1580</b>	<b>16</b>	<b>6</b>	<b>9</b>	<b>11</b>	<b>805</b>	<b>2427</b>
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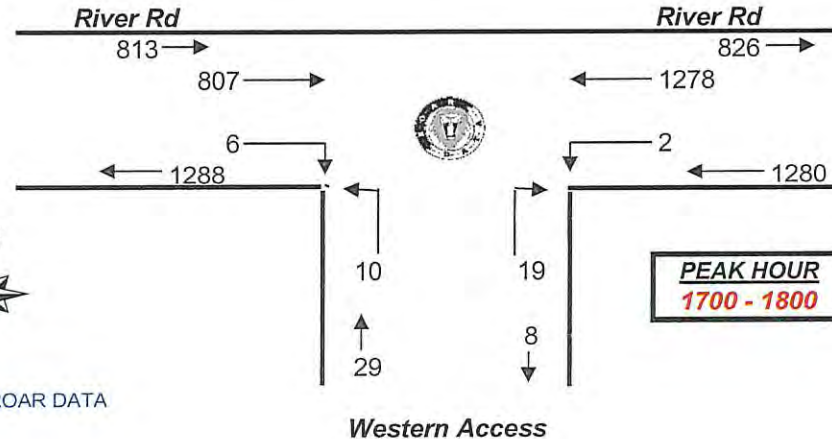
Client : BarkerRyanStewart  
 Job No/Name : 6595 GREENWICH HOSPITAL Counts  
 Day/Date : Thursday 12th October 2017

## All Vehicles

Time Per	WEST <i>River Rd</i>		SOUTH <i>Western</i>		EAST <i>River Rd</i>		TOTAL
	<u>I</u>	<u>R</u>	<u>L</u>	<u>R</u>	<u>L</u>	<u>I</u>	
1600 - 1615	173	1	8	9	1	308	500
1615 - 1630	176	2	11	10	2	257	458
1630 - 1645	168	2	9	7	1	321	508
1645 - 1700	161	1	5	2	1	319	489
1700 - 1715	191	2	3	7	1	331	535
1715 - 1730	179	3	4	7	0	285	478
1730 - 1745	228	0	1	2	0	379	610
1745 - 1800	209	1	2	3	1	283	499
<b>Period End</b>	<b>1485</b>	<b>12</b>	<b>43</b>	<b>47</b>	<b>7</b>	<b>2483</b>	<b>4077</b>

Peak Per	WEST <i>River Rd</i>		SOUTH <i>Western</i>		EAST <i>River Rd</i>		TOTAL
	<u>I</u>	<u>R</u>	<u>L</u>	<u>R</u>	<u>L</u>	<u>I</u>	
1600 - 1700	678	6	33	28	5	1205	1955
1615 - 1715	696	7	28	26	5	1228	1990
1630 - 1730	699	8	21	23	3	1256	2010
1645 - 1745	759	6	13	18	2	1314	2112
<b>1700 - 1800</b>	<b>807</b>	<b>6</b>	<b>10</b>	<b>19</b>	<b>2</b>	<b>1278</b>	<b>2122</b>

<b>PEAK HR</b>	<b>807</b>	<b>6</b>	<b>10</b>	<b>19</b>	<b>2</b>	<b>1278</b>	<b>2122</b>
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# R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Fax 88196849, Mob.0418-239019

Client :T.T.P.A.

Job No/Name :1784 GREENWICH Hospital

Day/Date :Thursday 20th May 21

## All Vehicles

Time Per	WEST		SOUTH		EAST		TOTAL
	River Rd		Minor Access		River Rd		
	<u>I</u>	<u>R</u>	<u>L</u>	<u>R</u>	<u>L</u>	<u>I</u>	
0700 - 0715		0	0	1	2		3
0715 - 0730		1	1	0	1		3
0730 - 0745		1	0	1	3		5
0745 - 0800		1	1	0	2		4
0800 - 0815		1	0	1	3		5
0815 - 0830		0	1	0	1		2
0830 - 0845		1	2	0	4		7
0845 - 0900		0	0	1	1		2
Period End	0	5	5	4	17	0	31

## All Vehicles

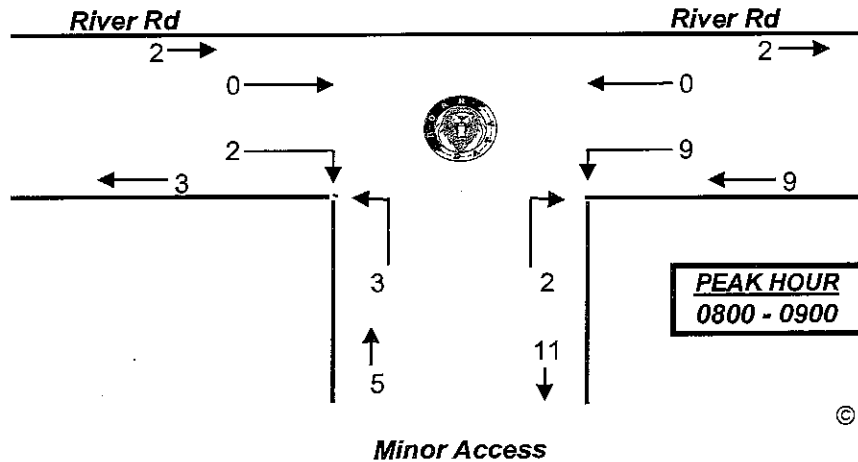
Time Per	WEST		SOUTH		EAST		TOTAL
	River Rd		Minor Access		River Rd		
	<u>I</u>	<u>R</u>	<u>L</u>	<u>R</u>	<u>L</u>	<u>I</u>	
1600 - 1615		0	1	0	1		2
1615 - 1630		0	0	0	1		1
1630 - 1645		0	0	0	0		0
1645 - 1700		0	0	0	1		1
1700 - 1715		0	1	1	2		4
1715 - 1730		1	1	0	1		3
1730 - 1745		1	0	1	1		3
1745 - 1800		0	0	0	0		0
Period End	0	2	3	2	7	0	14

Peak Per	WEST		SOUTH		EAST		TOTAL
	River Rd		Minor		River Rd		
	<u>I</u>	<u>R</u>	<u>L</u>	<u>R</u>	<u>L</u>	<u>I</u>	
0700 - 0800	0	3	2	2	8	0	15
0715 - 0815	0	4	2	2	9	0	17
0730 - 0830	0	3	2	2	9	0	16
0745 - 0845	0	3	4	1	10	0	18
0800 - 0900	0	2	3	2	9	0	16

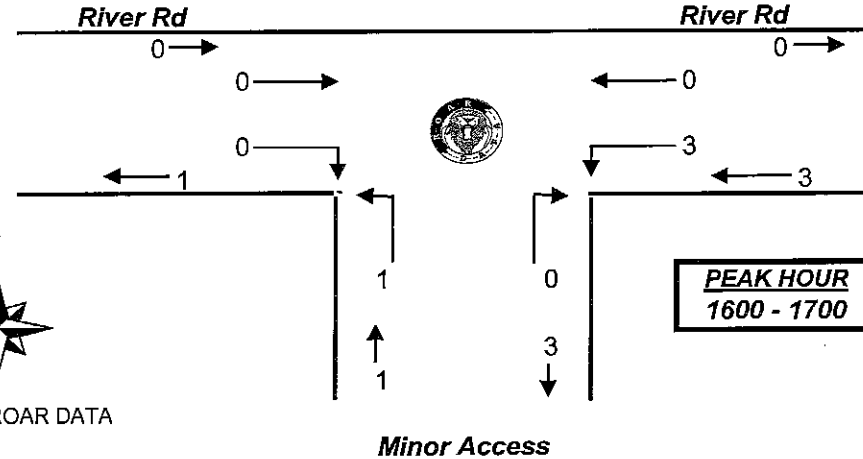
Peak Per	WEST		SOUTH		EAST		TOTAL
	River Rd		Minor		River Rd		
	<u>I</u>	<u>R</u>	<u>L</u>	<u>R</u>	<u>L</u>	<u>I</u>	
1600 - 1700	0	0	1	0	3	0	4
1615 - 1715	0	0	1	1	4	0	6
1630 - 1730	0	1	2	1	4	0	8
1645 - 1745	0	2	2	2	5	0	11
1700 - 1800	0	2	2	2	4	0	10

PEAK HR	0	2	3	2	9	0	16
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PEAK HR	0	0	1	0	3	0	4
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© Copyright ROAR DATA



Minor Access



# R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Fax 88196849, Mob.0418-239019

Client :T.T.P.A.  
 Job No/Name :1784 GREENWICH Hospital  
 Day/Date :Thursday 20th May 21

### All Vehicles

Time Per	NORTH		WEST		SOUTH		TOTAL
	St.Vincents		Hospital		St.Vincents		
	<u>T</u>	<u>R</u>	<u>L</u>	<u>R</u>	<u>L</u>	<u>T</u>	
0700 - 0715	8	3	2	0	2	4	19
0715 - 0730	10	3	1	1	1	5	21
0730 - 0745	11	2	2	2	2	10	29
0745 - 0800	9	2	1	0	2	10	24
0800 - 0815	14	3	1	2	4	9	33
0815 - 0830	9	7	0	1	2	12	31
0830 - 0845	11	7	1	0	0	10	29
0845 - 0900	12	2	0	0	2	14	30
<b>Period End</b>	<b>84</b>	<b>29</b>	<b>8</b>	<b>6</b>	<b>15</b>	<b>74</b>	<b>216</b>

### All Vehicles

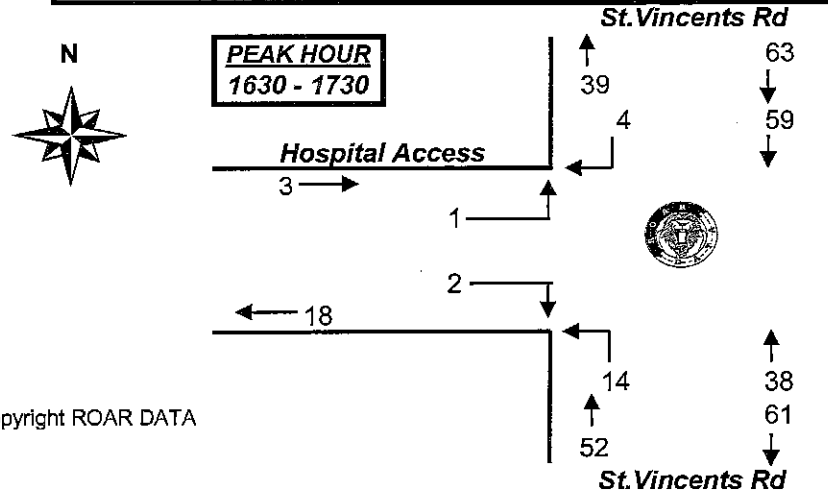
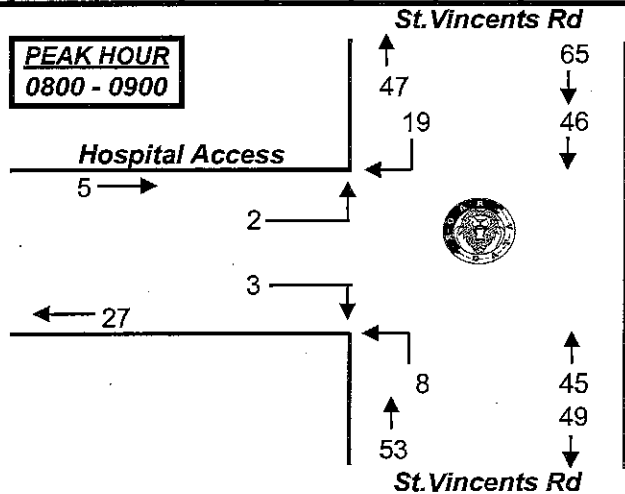
Time Per	NORTH		WEST		SOUTH		TOTAL
	St.Vincents		Hospital		St.Vincents		
	<u>T</u>	<u>R</u>	<u>L</u>	<u>R</u>	<u>L</u>	<u>T</u>	
1600 - 1615	12	2	1	0	4	10	29
1615 - 1630	14	1	1	1	3	9	29
1630 - 1645	14	0	0	0	3	11	28
1645 - 1700	12	1	1	0	1	12	27
1700 - 1715	15	2	0	2	5	10	34
1715 - 1730	18	1	0	0	5	5	29
1730 - 1745	16	0	1	0	2	5	24
1745 - 1800	15	1	0	0	2	6	24
<b>Period End</b>	<b>116</b>	<b>8</b>	<b>4</b>	<b>3</b>	<b>25</b>	<b>68</b>	<b>224</b>

Peak Per	NORTH		WEST		SOUTH		TOTAL
	St.Vincents		Hospital		St.Vincents		
	<u>T</u>	<u>R</u>	<u>L</u>	<u>R</u>	<u>L</u>	<u>T</u>	
0700 - 0800	38	10	6	3	7	29	93
0715 - 0815	44	10	5	5	9	34	107
0730 - 0830	43	14	4	5	10	41	117
0745 - 0845	43	19	3	3	8	41	117
<b>0800 - 0900</b>	<b>46</b>	<b>19</b>	<b>2</b>	<b>3</b>	<b>8</b>	<b>45</b>	<b>123</b>

Peak Per	NORTH		WEST		SOUTH		TOTAL
	St.Vincents		Hospital		St.Vincents		
	<u>T</u>	<u>R</u>	<u>L</u>	<u>R</u>	<u>L</u>	<u>T</u>	
1600 - 1700	52	4	3	1	11	42	113
1615 - 1715	55	4	2	3	12	42	118
<b>1630 - 1730</b>	<b>59</b>	<b>4</b>	<b>1</b>	<b>2</b>	<b>14</b>	<b>38</b>	<b>118</b>
1645 - 1745	61	4	2	2	13	32	114
1700 - 1800	64	4	1	2	14	26	111

<b>PEAK HR</b>	<b>46</b>	<b>19</b>	<b>2</b>	<b>3</b>	<b>8</b>	<b>45</b>	<b>123</b>
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<b>PEAK HR</b>	<b>59</b>	<b>4</b>	<b>1</b>	<b>2</b>	<b>14</b>	<b>38</b>	<b>118</b>
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# R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Fax 88196849, Mob.0418-239019

Client :T.T.P.A.

Job No/Name :1784 GREENWICH Hospital

Day/Date :Thursday 20th May 2021

All Vehicles Time Per	NORTH			WEST			SOUTH			EAST			TOT
	St.Vincent's Rd			River Rd			St.Vincent's Rd			River Rd			
	L	I	R	L	I	R	L	I	R	L	I	R	
0700 - 0715	3	0	1	3		8	5	0	0	1		6	27
0715 - 0730	4	0	3	3		9	5	0	0	5		7	36
0730 - 0745	6	0	2	6		12	9	0	1	4		7	47
0745 - 0800	8	0	5	9		8	10	0	0	3		9	52
0800 - 0815	12	1	5	12		12	7	1	2	8		12	72
0815 - 0830	5	0	5	15		6	9	1	1	12		10	64
0830 - 0845	8	1	4	13		12	13	0	4	12		14	81
0845 - 0900	11	0	1	16		12	12	0	1	8		12	73
Period End	57	2	26	77	0	79	70	2	9	53	0	77	452

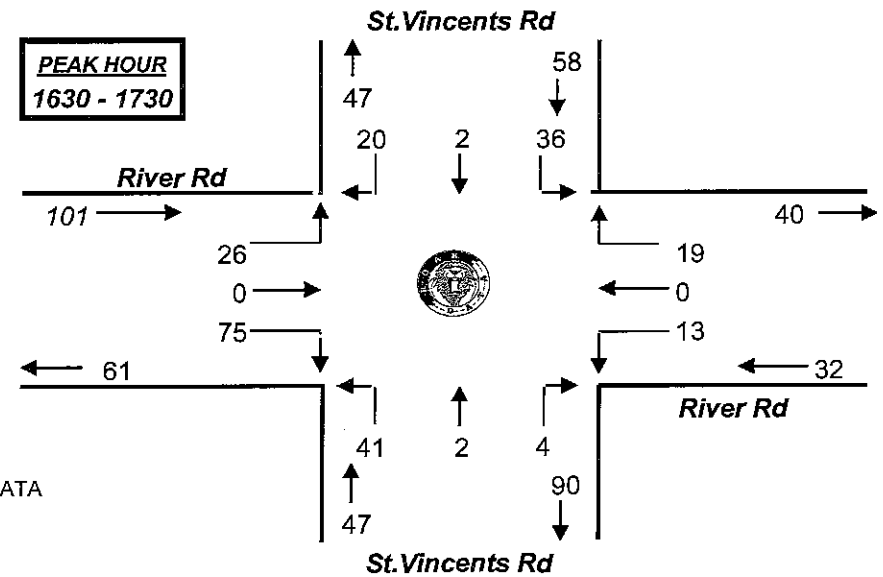
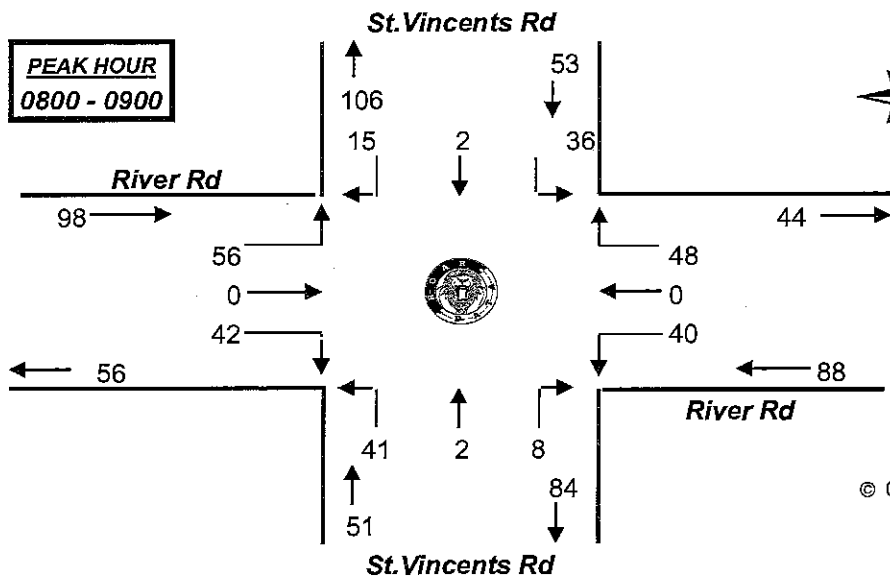
All Vehicles Time Per	NORTH			WEST			SOUTH			EAST			TOT
	St.Vincent's Rd			River Rd			St.Vincent's Rd			River Rd			
	L	I	R	L	I	R	L	I	R	L	I	R	
1600 - 1615	3	3	6	3		11	8	0	2	3		2	41
1615 - 1630	6	0	6	4		11	9	1	0	3		3	43
1630 - 1645	9	0	2	7		18	13	0	0	4		3	56
1645 - 1700	12	1	7	5		20	12	1	0	3		4	65
1700 - 1715	8	1	6	7		19	6	1	2	3		7	60
1715 - 1730	7	0	5	7		18	10	0	2	3		5	57
1730 - 1745	11	0	3	5		13	6	1	3	6		6	54
1745 - 1800	6	0	3	5		10	5	0	1	4		4	38
Period End	62	5	38	43	0	120	69	4	10	29	0	34	414

Peak Time	NORTH			WEST			SOUTH			EAST			TOT
	St.Vincent's Rd			River Rd			St.Vincent's Rd			River Rd			
	L	I	R	L	I	R	L	I	R	L	I	R	
0700 - 0800	21	0	11	21	0	37	29	0	1	13	0	29	162
0715 - 0815	30	1	15	30	0	41	31	1	3	20	0	35	207
0730 - 0830	31	1	17	42	0	38	35	2	4	27	0	38	235
0745 - 0845	33	2	19	49	0	38	39	2	7	35	0	45	269
0800 - 0900	36	2	15	56	0	42	41	2	8	40	0	48	290

Peak Time	NORTH			WEST			SOUTH			EAST			TOT
	St.Vincent's Rd			River Rd			St.Vincent's Rd			River Rd			
	L	I	R	L	I	R	L	I	R	L	I	R	
1600 - 1700	30	4	21	19	0	60	42	2	2	13	0	12	205
1615 - 1715	35	2	21	23	0	68	40	3	2	13	0	17	224
1630 - 1730	36	2	20	26	0	75	41	2	4	13	0	19	238
1645 - 1745	38	2	21	24	0	70	34	3	7	15	0	22	236
1700 - 1800	32	1	17	24	0	60	27	2	8	16	0	22	209

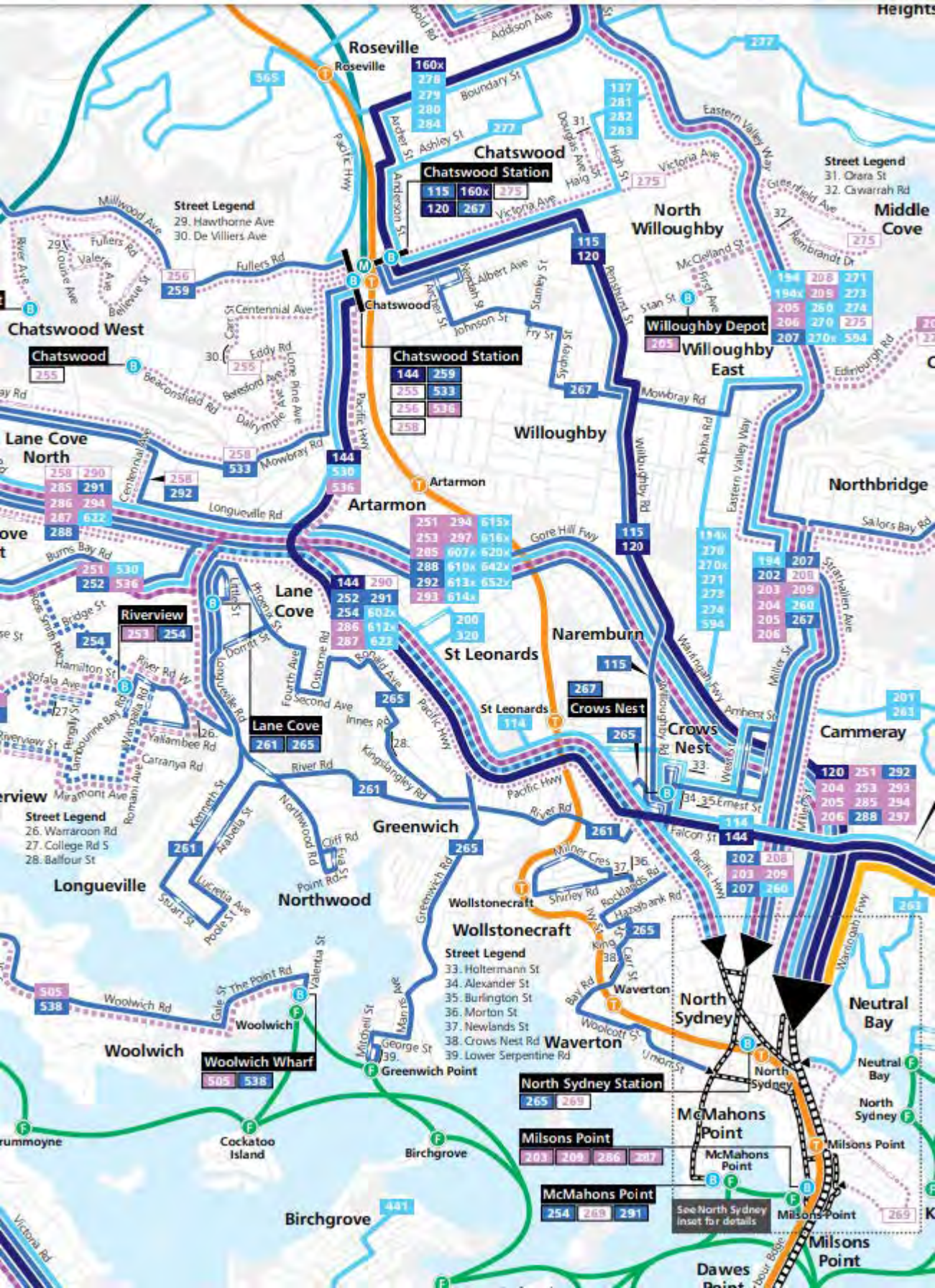
PEAK HOUR	L	I	R	L	I	R	L	I	R	L	I	R	TOT
0800 - 0900	36	2	15	56	0	42	41	2	8	40	0	48	290

PEAK HOUR	L	I	R	L	I	R	L	I	R	L	I	R	TOT
1630 - 1730	36	2	20	26	0	75	41	2	4	13	0	19	238



# Appendix D

## Public Transport Maps



**Street Legend**  
 29. Hawthorne Ave  
 30. De Villiers Ave

**Street Legend**  
 31. Orara St  
 32. Cawvarrah Rd

**Chatswood West**  
 Chatswood  
 255

**Chatswood Station**  
 115 160x 275  
 120 267

**Willoughby Depot**  
 205  
**Willoughby East**  
 194 208 271  
 194x 205 273  
 205 260 274  
 206 270 275  
 207 270x 594

**Chatswood Station**  
 144 259  
 255 533  
 256 536  
 258

**Lane Cove North**  
 258 290  
 285 291  
 286 294  
 287 622  
 288

**Riverview**  
 253 254

**Lane Cove**  
 144 290  
 252 291  
 254 602x  
 286 612x  
 287 622

**Artarmon**  
 251 294 615x  
 253 297 618x  
 285 607x 620x  
 288 610x 642x  
 292 613x 652x  
 293 614x

**Longueville**  
 261 265

**Lane Cove**  
 261 265

**St Leonards**  
 200  
 320

**Crows Nest**  
 267  
**North Sydney**  
 265

**Cammeray**  
 120 251 292  
 204 253 293  
 205 285 294  
 206 288 297

**Woolwich**  
 505 538

**Woolwich Wharf**  
 505 538

**Wollstonecraft**  
 265

**Street Legend**  
 33. Holtermann St  
 34. Alexander St  
 35. Burlington St  
 36. Morton St  
 37. Newlands St  
 38. Crows Nest Rd  
 39. Lower Serpentine Rd

**North Sydney Station**  
 265 269

**Milsons Point**  
 203 209 286 287

**McMahons Point**  
 254 269 291

See North Sydney inset for details

**Neutral Bay**  
 269

**Dawes Point**

**Milsons Point**  
 269

# Route 261



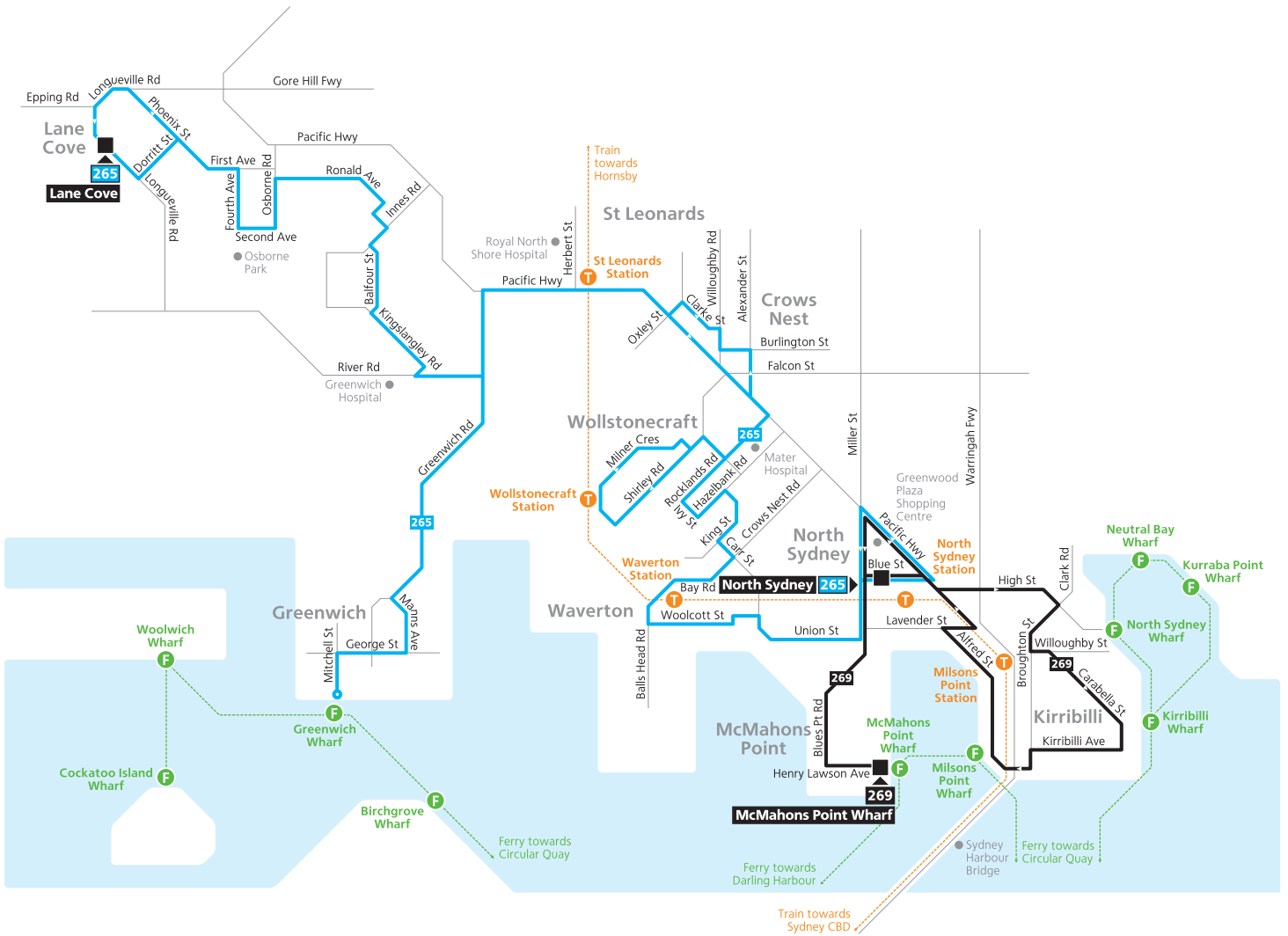
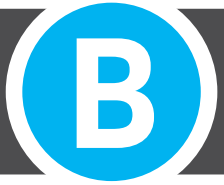
## Legend

- Bus route
- - - Diversion/extended route
- 261** Bus route number
- 261 Bus route start/finish
- Metro line/station
- Train line/station
- Ferry wharf

Diagrammatic Map  
Not to Scale



# Routes 265, 269



### Legend

- Bus route
- 265 Bus route number
- Bus route start/finish
- T— Train line/station
- F- Ferry route/wharf

Diagrammatic Map  
Not to Scale

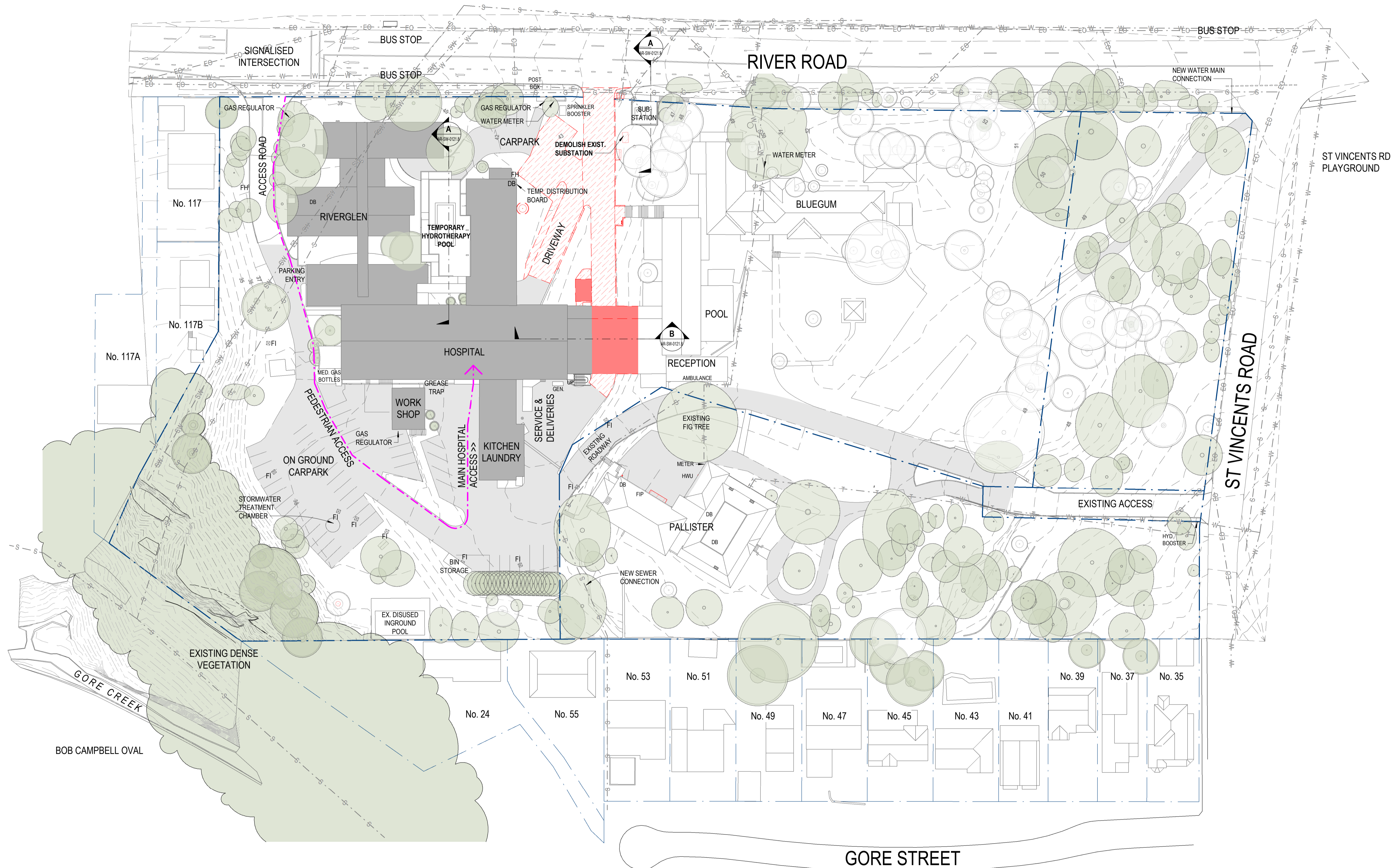
# Appendix E

## Construction Staging Plans



**STAGE 1 - SCOPE OF EXTERNAL DEMOLITION WORKS**

- DEMOLISH EXISTING ROADWAY.
- DEMOLISH EXISTING BRIDGE LINK. REFER TO STRUCTURAL DWGS FOR TEMPORARY SUPPORT.
- DEMOLISH EXISTING BUILDINGS.



1: 500 @ A1

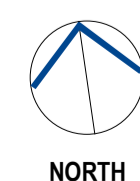
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P2	2023.04.04	STAGE 1 - 100% ISSUE	NAH
P1	2023.01.16	75% ISSUE TO ROBERTS CO.	AMac



NORTH

**NOTE: EXTENT OF DEMOLITION TO EXISTING HOSPITAL BUILDING DEMOLISHED IN STAGE 1 TO BE CONFIRMED.**

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STUDIO 3, LEVEL 3  
35 BUCKINGHAM STREET  
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Champion Life  
PROJECT: 01605  
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REDEVELOPMENT  
RIVER RD, GREENWICH

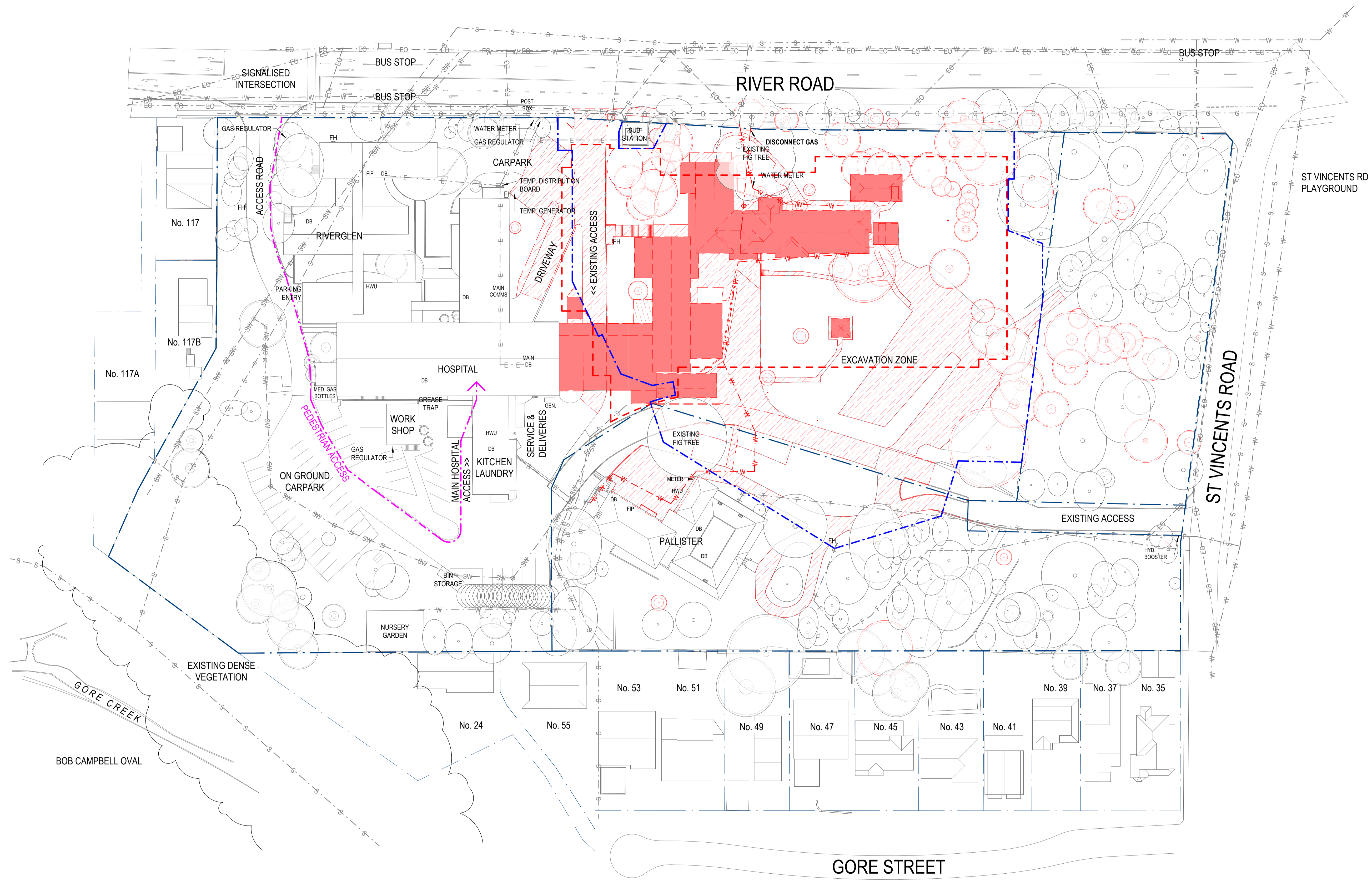
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DATE: 11/30/22  
DRAWING TITLE: **STAGE 1 - EXTERNAL WORKS - DEMOLITION**  
DRAWING No: **AR-SW-0121.7**  
DRAWN: \_\_\_\_\_ CHECKED: \_\_\_\_\_ SCALE: 1: 500 @A1

NSW NOMINATED ARCHITECT: ANDREW MASTERS (9037) 4/04/2023 8:46:03 AM









**STAGE 2 - SCOPE OF EXTERNAL DEMOLITION WORKS**

- GENERAL**
- DEMOLISH EXISTING ROADWAY.
  - DEMOLISH EXISTING BRIDGE LINK. REFER TO STRUCTURAL DWGS FOR TEMPORARY SUPPORT.
  - DEMOLISH EXISTING BUILDINGS.

- HYDRAULIC**
- ISOLATE AND CAP GAS SUPPLY TO BLUEGUM AND THE EXISTING HOSPITAL.
  - LOCATE AND REMOVE THE EXISTING SEWER FROM BLUEGUM AND CAP THE SERVICE TO ENABLE STAGE 1 DEMOLITION.

- STRUCTURAL**
- PILING WALLS AS INDICATED ON STRUCTURAL DRAWINGS, PARTICULARLY TO SUPPORT THE EXISTING HOSPITAL.
  - DETAILS INDICATING THE DEMOLITION OF THE EXISTING BRIDGE LINK AT THE UPPER LEVEL OF THE HOSPITAL AND SUPPORT TO EXISTING FOUNDATIONS AND ROOF BEING RETAINED THROUGH STAGE 2.



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C1	02/09/2024	FOR CONSTRUCTION	SP
P11	08.07.2024	PRELIMINARY DBP ISSUE	ZB
P10	07.06.2024	STAGE 1 PRELIMINARY ISSUE	NAH
P9	29.02.2024	CLIENT ISSUE	ZB
P8	22.09.2023	90% ISSUE	NAH
P7	30.06.2023	80% ISSUE	NAH
P6	16.01.2023	75% ISSUE TO ROBERTS CO.	AMac



**LEGEND - SITE DEMOLITION PLAN**

	SITE BOUNDARY		EXISTING SERVICE TO REMAIN
	STAGING LINE		EXISTING SERVICE DEMOLISHED (REFER TO CONSULTANT DRAWINGS)
	EXTENT OF EXCAVATION (APPROXIMATE)		
	EXISTING TO REMAIN		
	DEMOLISHED (SURFACE)		
	DEMOLISHED (BUILDING)		

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CLIENT:  
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Champion Life

PROJECT: 01605  
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RIVER RD, GREENWICH

REVISION: **C1**  
DATE:  
DRAWING TITLE:  
**STAGE 2.1 PLAN - DEMOLITION**

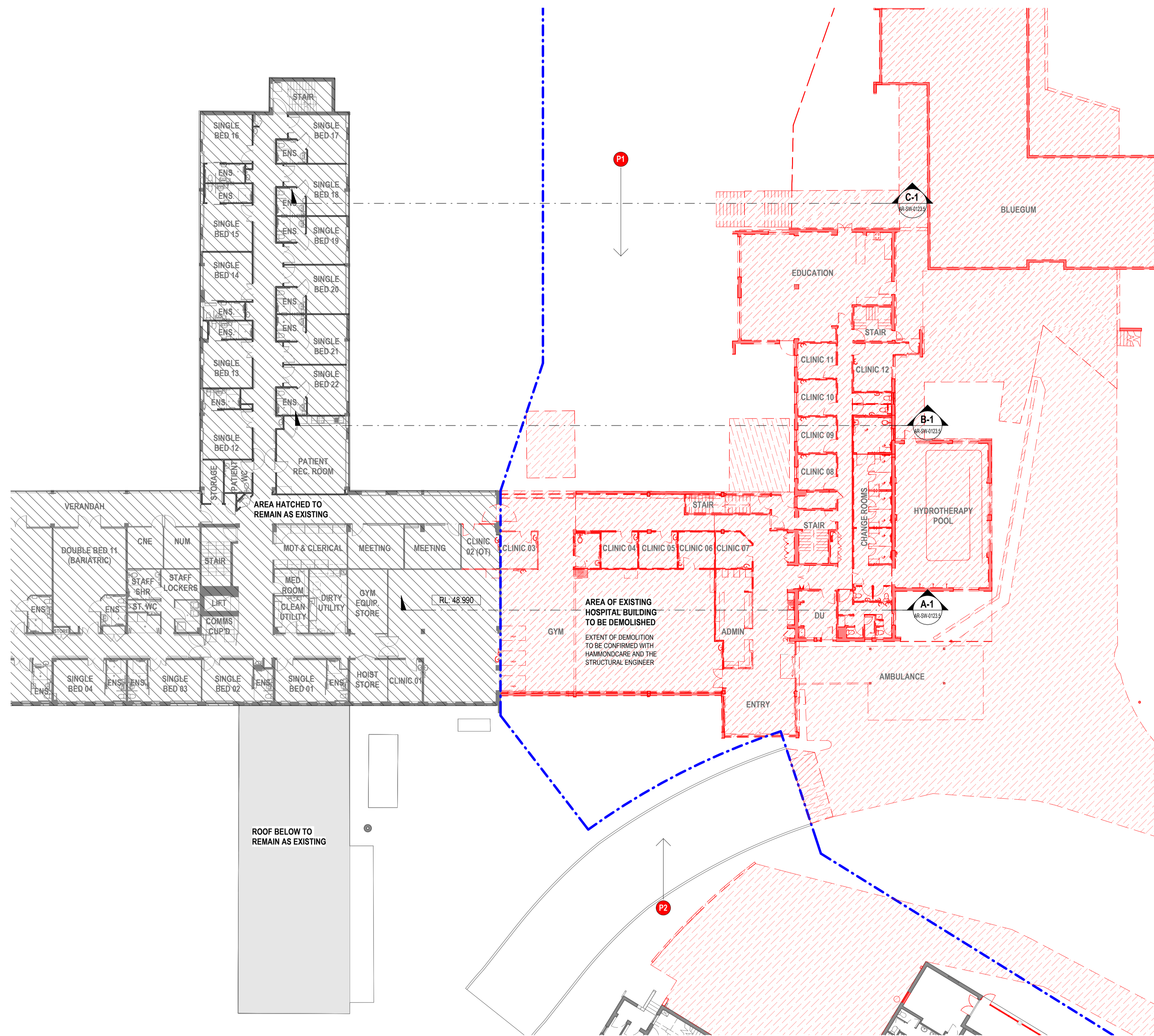
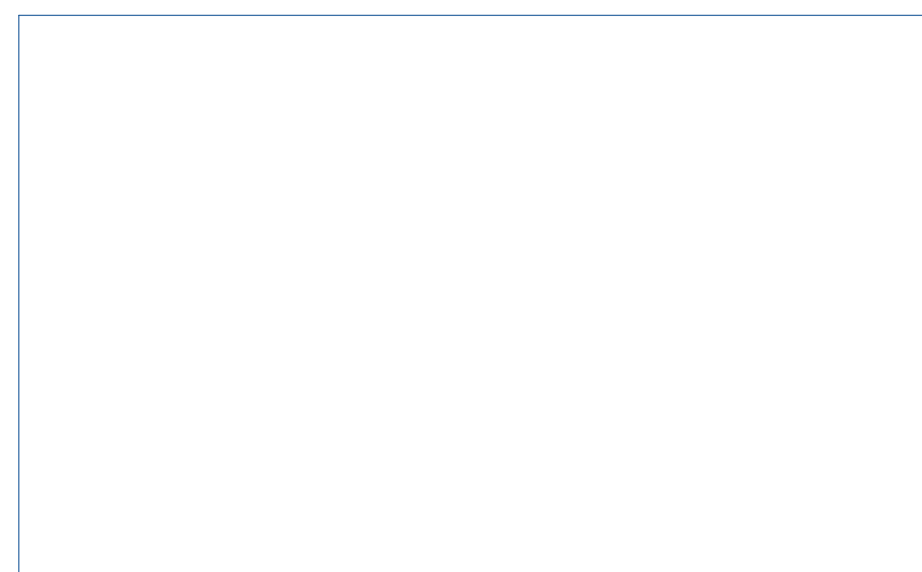
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**AR-SW-0122**

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**FOR CONSTRUCTION**





VIEW P1: RED HIGHLIGHTED AREA OUTLINES PART OF BUILDING TO BE DEMOLISHED IN STAGE 2



VIEW P2: RED HIGHLIGHTED AREA OUTLINES PART OF BUILDING TO BE DEMOLISHED IN STAGE 2

**STAGE 2 - SCOPE OF INTERNAL DEMOLITION WORKS**

- DEMOLISH EXISTING JOINERY, FIXTURES, AND FITTINGS.
- DEMOLISH EXISTING WALLS.
- REFER TO WRITTEN SCOPE OF WORKS FOR MORE DETAIL.

**STAGE 2 - SCOPE OF EXTERNAL DEMOLITION WORKS**

- DEMOLISH EXISTING ROADWAY.
- DEMOLISH EXISTING BRIDGE LINK. REFER TO STRUCTURAL DWGS FOR TEMPORARY SUPPORT.
- DEMOLISH EXISTING BUILDINGS.
- REFER TO WRITTEN SCOPE OF WORKS FOR MORE DETAIL.

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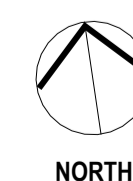
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P4	2024.06.07	STAGE 1 PRELIMINARY ISSUE	NAH
P3	2023.04.04	STAGE 1 - 100% ISSUE	NAH
P2	2023.02.17	ISSUE TO CONSULTANTS	NAH
P1	2023.01.16	75% ISSUE TO ROBERTS CO.	AMac



**LEGEND - DEMOLITION PLAN**

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	SITE BOUNDARY		DEMOLISHED (SURFACE)
	STAGING LINE		DEMOLISHED (CUT)
	SITE IMAGES		EXISTING TO REMAIN
	DEMOLITION NOTES		

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Champion Life

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REVISION: DRAWING No:  
**P4** **AR-SW-0123.3**

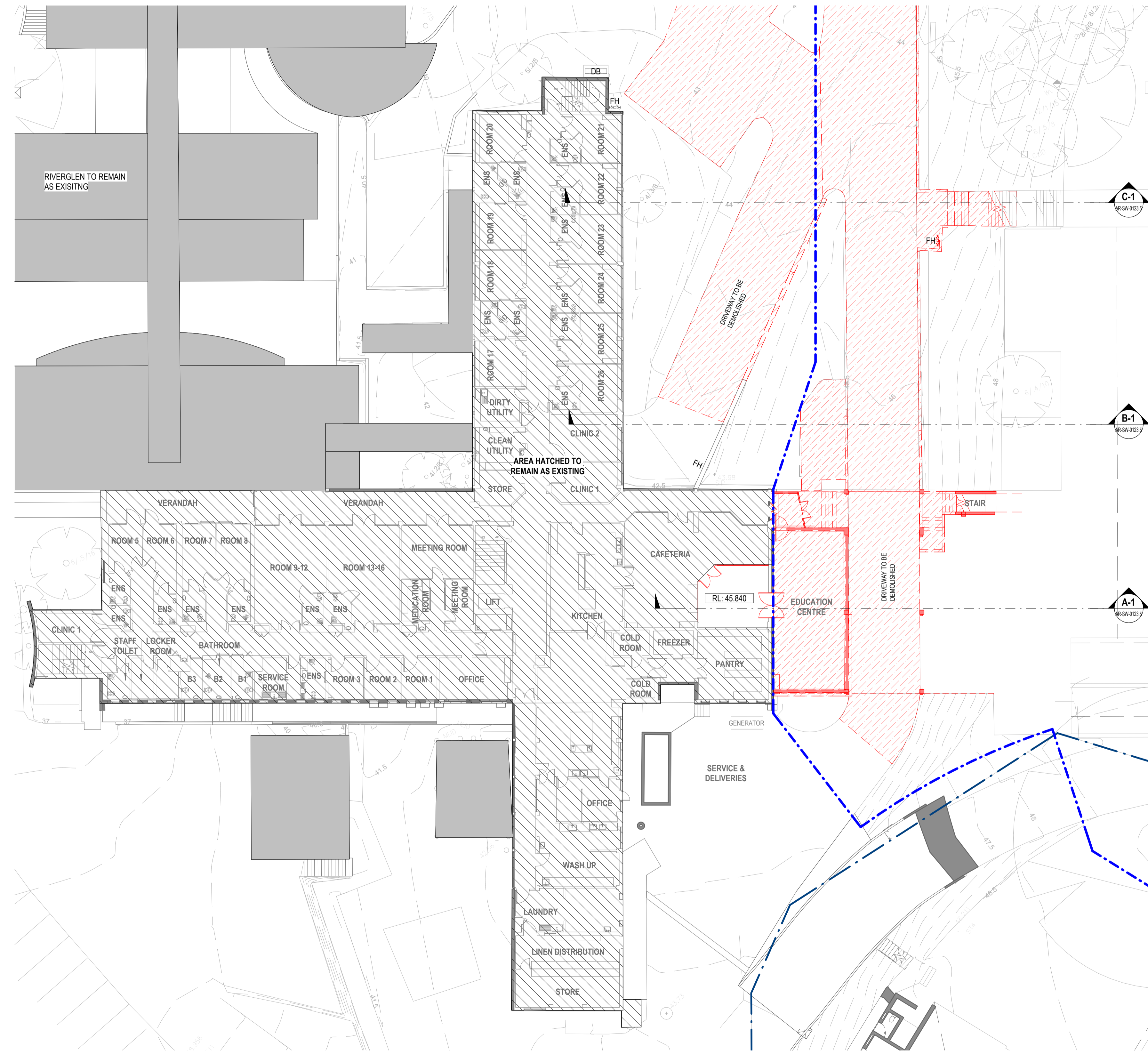
DATE: 11/30/22

DRAWING TITLE:  
**STAGE 2 - EXISTING HOSPITAL LEVEL 2 -  
DEMOLITION**

DRAWN: ZB, NAH CHECKED: SCALE: 1: 200 @A1

NSW NOMINATED ARCHITECT: ANDREW MASTERS (9037) 7/06/2024 9:49:42 AM





**STAGE 2 - SCOPE OF EXTERNAL DEMOLITION WORKS**

- DEMOLISH EXISTING ROADWAY.
- DEMOLISH EXISTING BRIDGE LINK. REFER TO STRUCTURAL DWGS FOR TEMPORARY SUPPORT.
- DEMOLISH EXISTING BUILDINGS.
- REFER TO WRITTEN SCOPE OF WORKS FOR MORE DETAIL.

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0m 2m 4m 6m 8m 10m

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REV	DATE	DETAILS	INITIALS
P2	2024.06.07	STAGE 1 PRELIMINARY ISSUE	NAH
P1	2023.11.06	UPDATES TO STAGE 1 DEMOLITION	ZB



**LEGEND - DEMOLITION PLAN**

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	SITE BOUNDARY		DEMOLISHED (SURFACE)
	STAGING LINE		DEMOLISHED (CUT)
	SITE IMAGES		EXISTING TO REMAIN
	DEMOLITION NOTES		

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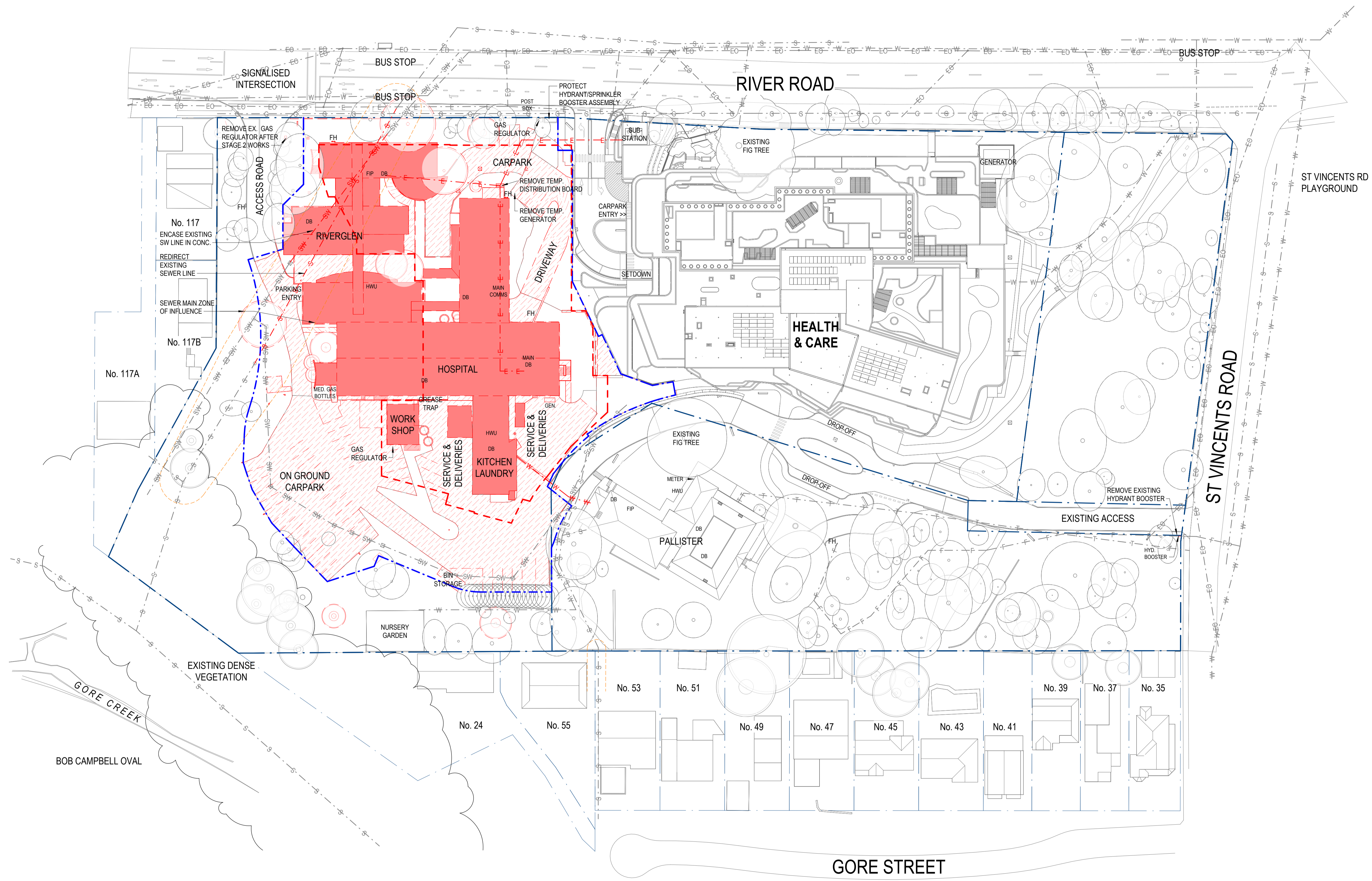
PROJECT: 01605  
GREENWICH HOSPITAL  
REDEVELOPMENT  
RIVER RD, GREENWICH

REVISION: P2  
DATE: 11/03/23  
DRAWING TITLE:  
STAGE 2 - EXISTING HOSPITAL LEVEL 1 -  
DEMOLITION  
DRAWN: ZB, NAH CHECKED: CM SCALE: 1: 200

DRAWING No:  
**AR-SW-0123.1**

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C1	02/09/2024	FOR CONSTRUCTION	SP
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P10	07.06.2024	STAGE 1 PRELIMINARY ISSUE	NAH
P9	29.02.2024	CLIENT ISSUE	ZB
P8	22.09.2023	90% ISSUE	NAH
P7	30.06.2023	80% ISSUE	NAH
P6	16.01.2023	75% ISSUE TO ROBERTS CO.	AMac

**LEGEND - SITE DEMOLITION PLAN**

- SITE BOUNDARY
- STAGING LINE
- EXTENT OF EXCAVATION (APPROXIMATE)
- EXISTING TO REMAIN
- DEMOLISHED (SURFACE)
- DEMOLISHED (BUILDING)
- EXISTING SERVICE TO REMAIN
- EXISTING SERVICE DEMOLISHED (REFER TO CONSULTANT DRAWINGS)

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PROJECT: 01605  
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REVISION: **C1**  
DATE:  
DRAWING TITLE:  
**STAGE 3.1 PLAN - DEMOLITION**

DRAWN: NAH CHECKED: SCALE: 1:500 @A1

DRAWING No:  
**AR-SW-0124**

NSW NOMINATED ARCHITECT: ANDREW MASTERS (9037) 2/09/2024 10:44:36 AM



# Appendix F

# Construction Management

# Plan



---

**DRAFT Construction Management Plan**  
Greenwich Hospital Redevelopment

**December 2022**

---

## Document Details

<b>Title</b>	Construction Management Plan
<b>Client</b>	HammondCare
<b>Document Reference Number</b>	RCO-CMP-PLN-001
<b>Principal Contractor</b>	Roberts Co (NSW) Pty Ltd.
<b>Roberts Co Project No.</b>	21002
<b>ABN</b>	61 620 108 483
<b>Project Address</b>	97-115 River Road, Greenwich

## Document Authorisation

<b>PROJECT MANAGER</b>	<b>SITE MANAGER</b>	<b>EHS MANAGER / COORDINATOR</b>
<b>Date</b>	<b>Date</b>	<b>Date</b>

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# 1 DOCUMENT CONTROL

All changes made to the Construction Management Plan are recorded in the amendment table below. The version number and date of revision for the current document revision are shown in the page 01-footer of the document.

## 1.1 Revision History

Revision	Date	Description of changes	Prepared by	Approved by
01	30/3/2022	Issue for review	PA	
02	11/4/2022	Show hospital traffic	PA	
03	14/04/2022	Amend Staging plans	PA	
04	05/05/2022	Amend - EU comments	PA	
05	09/06/2022	Add Staging Duration	PA	
06	14/12/2022	Staging Amended	PAnd	

## 1.2 Management reviews

Review date	Details	Reviewed by

## 1.3 Controlled copies

Name	Position	Date	Revision

## 2 PROJECT UNDERSTANDING

### 2.1 Proposed Project

### 2.2 The Site

This Construction Management Plan is submitted to the Department of Planning, Industry and Environment (DPIE) in support of a State Significant Development Application (SSD-13619238) for the redevelopment of Greenwich Hospital into an integrated hospital and seniors living facility on land identified as 97-115 River Road, Greenwich (the site). The extent of the site is shown below.



Figure 1 Proposed Site View

The subject proposal is for the detailed design and construction of the facility following its concept approval under SSD-8699. Specifically, SSD-13619238 seeks approval for the following:

- Demolition of the existing hospital building and associated facilities at the site;
- Construction of a new hospital facility and integrated healthcare uses and services, including:
  - A new 7 storey main hospital building.
  - Two new 5-6 storey serviced self-care housing buildings (serviced seniors living);
  - A new 2-3 storey respite care building.



- Construction of associated site facilities and services, including pedestrian and vehicular access and basement parking.
- Site landscaping and infrastructure works; and
- Preservation of Pallister House which will continue to host dementia care and administrative functions

## 2.3 Project Challenges

Our construction methodology has been developed with the mitigation of project challenges in mind, to maintain ongoing safety and managing day to day operations of the project, minimising disruption to the existing hospital operations, the public and site construction personnel.

From our review of the documentation and completed site visits we have identified the following key project challenges.

### 2.3.1 Demolition and Excavation

The project is divided into 4 stages as follows:

- Stage 1 – Early works and external works
- Stage 2 – New Hospital building
- Stage 3 – Two new Seniors Living buildings
- Stage 4 – New Respite Care building

To facilitate the construction of Stage 2 (Main Hospital) the existing structures shown in red in the image below will need to be demolished first and will take up to 6 weeks to complete the scope.

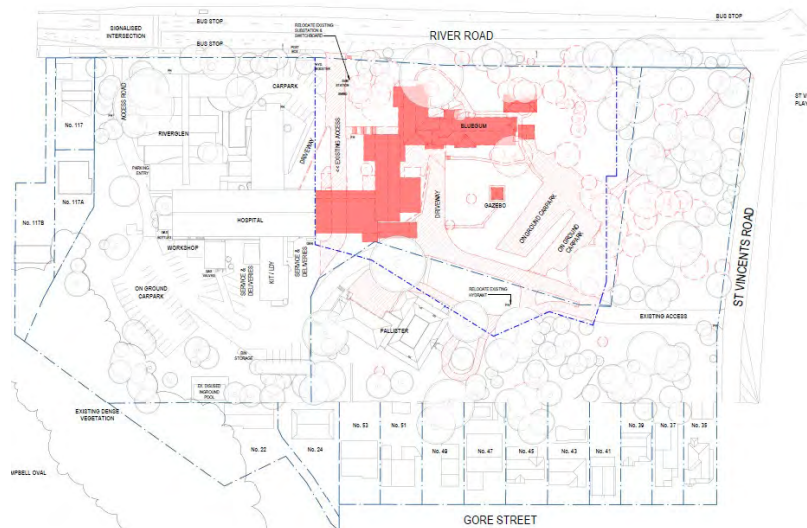
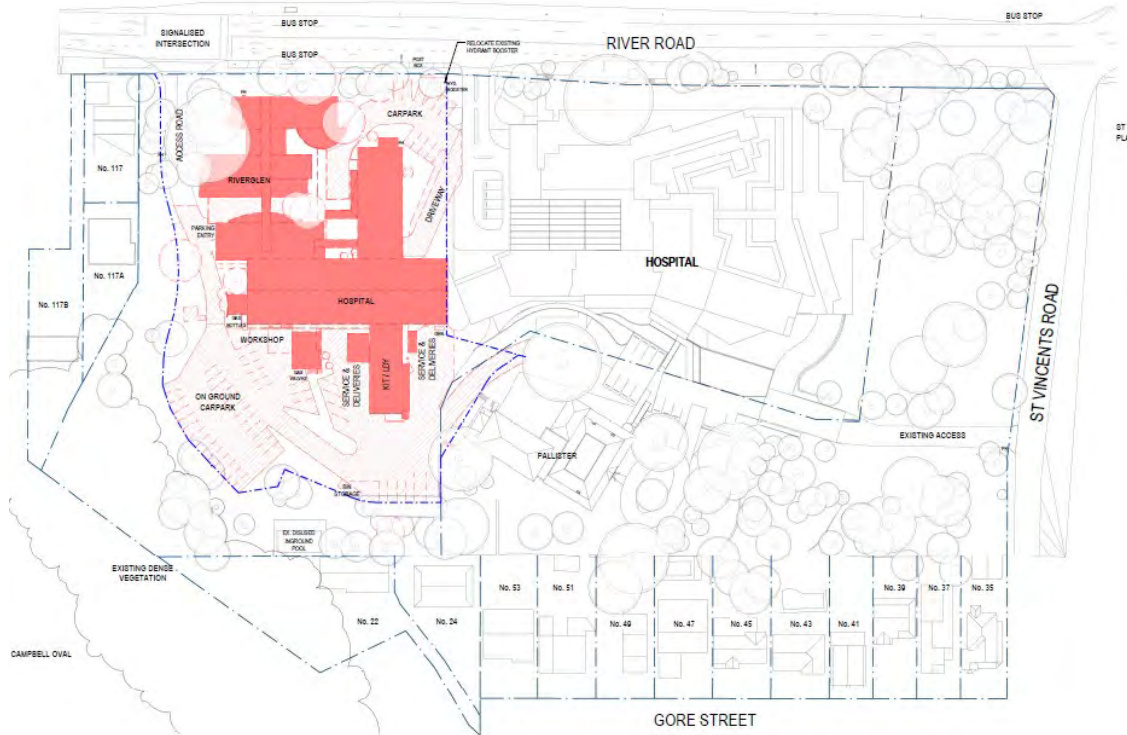


Figure 2 Demolition for Stage 2

Once the main hospital is complete (Stage 2), the remaining existing structures will need to be demolished in a live hospital environment to facilitate the construction of Seniors Living South and North (Stage 3) and the construction of the respite care building (Stage 4).



**Figure 3 Demolition for Stage 3**

Prior to demolition and excavation commencing, detailed dilapidation reports will be compiled on the neighbouring residences to the west. Consideration may also be given to compiling a similar dilapidation report on Pallister House. The dilapidation survey reports can be used as a benchmark against which to set vibration limits for rock excavation, and for assessing possible future claims for damage arising from the works. As dilapidation survey reports are relied upon for the assessment of potential future damage claims, they must be carried out thoroughly with all defects rigorously described (i.e. defect type, defect location, crack width, crack length etc) and defects photographed where practical.

Demolition and excavation will need to be carefully sequenced and completed in order to maintain the stability of the adjacent sections of existing buildings and structures within the site that will remain during the staged construction, the neighbouring buildings and structures and the fill batter slope over the western end of the site. This work will need to be completed using suitably experienced contractors. In this regard, we note that the excavations may extend below the base of adjacent footings supporting existing buildings and structures. We assume that the buildings and structures have generally been founded on bedrock. However, this must be confirmed during demolition by excavating test pits in order to expose the existing footings and confirm the foundation materials.

Based on inspection of these test pits by the structural and geotechnical engineers, the need and extent of underpinning, propping and/or wall strengthening measures can then be determined and detailed. Any

underpins that will be supporting the soil profile will need to be designed to resist lateral loading. During construction, plant, equipment or stockpiles of material must not operate and/or be located west of an exclusion zone defined by a theoretical failure plane line projected up from the toe of the fill batter slope at an angle no steeper than 1V in 2H. On the basis of the investigation results, following demolition, the proposed excavations will encounter the soil profile and penetrate weathered sandstone bedrock over the central and eastern portions of the proposed basement.

Due to the presence of poorly compacted fill, which may extend below Pallister House, its not recommend the use of rock breakers during demolition or rock excavation in close proximity to the building due to the potential for transmission of vibrations which could cause damage, unless the building is founded on, or underpinned to, bedrock. Based on the results of the test pit inspections described above, underpinning of the building may be required. The excavation of the soil profile and extremely weathered bedrock to be readily completed using bucket attachments to tracked excavators. We expect that excavation of low and higher strength bedrock will require small to medium size rock breakers and ripping attachments to the tracked excavators and possibly dozers with ripping tyne attachments. Alternative excavation techniques to reduce vibrations and therefore reduce vibration monitoring could include using a rock grinder on the excavator, or a large excavator mounted rock saw to grid saw the bedrock into blocks that could then be removed using a ripping tyne attachment to the excavator, or locally using drill and split techniques. We also note that 'dropping' of large sections of existing structure during demolition should also be avoided to prevent the generation of potentially damaging vibrations. (Content provided by JKGeotechnics 32507R2rpt).

### 2.3.2 Vibration & Ground Surface Movement Risks

There is a possibility that vibrations from excavation equipment and other site activities may cause damage to adjoining structures within or neighbouring the site if these adjoining structures are not founded on bedrock. The preference is to underpin any adjacent structures to rock. Where adjoining structures are founded on and/or underpinned to rock, the limit for vibrations provided below should be assessed by the structural engineer following review of the dilapidation reports.

Where rock breakers are used during demolition and to excavate bedrock, continuous quantitative vibration monitoring of the neighbouring buildings and structures to the west will be required, to confirm that the peak vibration velocity ( $V_i$ , max) falls within acceptable limits. Subject to review of the dilapidation reports described above, and assuming adjoining structures are founded and/or underpinned on bedrock, the Geotech engineer recommend that the  $V_i$ , max does not exceed 5mm/sec during bedrock excavation using rock breakers, subject to confirmation by the structural engineer.

JK Geotechnics also recommend that consideration be given to similar vibration monitoring of the adjacent sections of hospital buildings that will remain during bedrock excavation using rock breakers. Subject to confirmation by the structural engineer, they recommend that  $V_i$ , max's do not exceed 3mm adjacent to Pallister House and 10mm/sec for the remaining hospital buildings. Should higher vibrations be measured they should be assessed against the Vibration Emission Design Goals as higher vibrations may be acceptable depending on the vibration frequency. JK Geotechnics note that the vibration limits recommended above will reduce the risk of vibration damage to the neighbouring and/or adjacent buildings and structures. However, these vibrations may still result in perceived discomfort or concern to occupants of the neighbouring buildings and/or the hospital buildings. (Content provided by JKGeotechnics 32507R2rpt).

### 2.3.3 Existing Ausgrid Substation

The site is currently being serviced by an existing substation (2386). The figure below shows the AUSGRID network map for this substation and the surrounding area.



Figure 4 Existing HV Network

Existing High Voltage Endeavour Energy network reticulates along River Road and into the current Greenwich site to supply the existing kiosk substation. We can also see that the substation on HammondCare's land also supports the LV street network on River Road. This LV provides power to street lights and residential houses on the opposite side of the road. When this substation is removed and new substation/s are provided for future works, it will be required as part of the certified Level 3 design to either support the existing LV electrical supplies off another substation or support them off the new substation. This will be part of the design process, staging arrangements, and co-ordination with AUSGRID.

There is also an existing electrical easement that encompasses both the existing kiosk substation and the Ausgrid cables that reticulate within HammondCare's property. These easements will require relinquishment as part of the Ausgrid coordination works with the new substations.

## 3 PRE-CONSTRUCTION

### 3.1 Mobilisation and Kick-off Meeting

A start-up workshop will be held and chaired post contract award to meet all project stakeholders and to introduce the RCo team. The workshop will establish an interpersonal framework of integrated goals, roles and processes to encourage cooperation and collaboration which will ultimately result in a successful project. We will also use this meeting to review the risks and mitigation strategies as well as discuss any opportunities for innovation.

We will review preparation, submission and approval of RCO's project-specific plans including:

- Work, Health & Safety management plan
- Workplace Relations management plan
- Quality management plan
- Design management plan
- Environmental management plan
- Training management plan
- Traffic & pedestrian management plan
- Noise & vibration management plant
- Contract construction program
- Waste management plan
- Risk Management plan

Following the kick-off meeting, a regular monthly Project Control Group Meeting will be held to discuss matters including:

- Onsite work, health and safety matters
- Anticipated completion date
- Design and Construction works completed to date
- Construction status against the contract programme
- Matters affecting the Project deliverables
- Potential delays
- Current or pending variations to the Contract
- Progress claims
- Weekly programme reports
- Site instructions required from the Principal.



## 3.2 Industrial Relations

### 3.2.1 Overview

Roberts Co is committed to the effective and proactive management of industrial relations and we recognise that this, coupled with employee and contractor engagement, is a key contributing factor to the successful completion of the project.

We encourage greater flexibility and productivity with the aim of ensuring our Clients get maximum value from the projects we deliver. To achieve this, we will establish a positive and stable industrial relations environment from the start of the project by identifying requirements and providing guidance for Roberts Co and all participants on the project.

Our project team have experience of successfully managing industrial and employee relations on projects. At a minimum, the Company, our subcontractors undertaking works on the project, suppliers and consultants will be managed in accordance with the requirements of the WRMP.

The plan will do this by ensuring a constant focus on the following:

- Consistent and regular communication
- Implementation of initiatives that positively engage the workforce, our stakeholders and the community
- Ensuring the stakeholder relationships are based on transparency, respect and trust;
- Strong Environmental, Health and Safety (EHS) performance
- Provide and foster a work environment that supports cooperative working relationships and reduces the potential for workplace conflict
- Clear and concise processes and procedures that adhere to the legislation governing Industrial Relations, that foster stakeholder understanding and encourage the right behaviours.

This approach is supported by our Industrial Relations Policy.

### 3.2.2 Compliance

Roberts Co will comply with:

- The NSW Code of Practice for Procurement January 2005 ('NSW COP');
- New South Wales Industrial Relations Guidelines, Building and Construction Procurement, September 2017 ('Guidelines'); and
- Code for the Tendering and Performance of Building Work 2016 ('Code'), as amended from time to time.

Roberts Co has a current code compliant Enterprise Bargaining Agreement with our workers and the CFMEU that came into effect in October 2020.

The Project Manager has overall responsibility for ensuring compliance with the WRMP as part of our obligations in relation to contractual requirements, applicable legislation, industrial instruments, Codes and guidelines.



We will:

- Ensure on-site practices and procedures comply with the NSW COP and Guidelines, the Code, the health and safety management plan and WRMP
- Ensure that our subcontractors comply with the NSW COP and Guidelines, the Code and the WRMP; including reviewing their responses to the invitation to tender documentation
- Comply with any reasonable request for access and information from the Construction Compliance Unit (CCU)
- Report all suspected breaches of the Guidelines, or Code, to the CCU and the client agency within 24 hours of becoming aware of the suspected breach
- Allow the CCU to monitor and investigate compliance by interviewing any person, inspect any work, material, machinery, appliance, article or facility; or inspect and copy any record relevant to the project
- Require subcontractors to demonstrate they are meeting their obligations under the WRMP.

The nominated project team have experience in successfully delivering projects with no delays or industrial issues through developing positive working relationships with clients, stakeholders, employees, subcontractors and their representatives. Roberts Co are currently delivering all our live projects in compliance with the Code and Guidelines and are well aware of the requirements in our works.

### 3.2.3 Workplace Relations Management Plan

Project works will be undertaken in accordance with a site specific WRMP (RCo's internal document and not part of this EIS). The WRMP provides the framework for successful delivery of the project with no delays or industrial issues. The framework includes:

- Clear project roles and responsibilities
- Workplace Relations Risk Assessment and Management
- Site Establishment guidelines
- Subcontractor Management standards and procedures
  - Tender evaluation process and review (discussed in more detail within the Procurement Plan section)
  - Contract documentation
  - Subcontractor compliance
  - Managing subcontractor non-compliance
  - Productivity measurement
  - Direct labour management
- Inductions and Mobilisation
- Labour Productivity and Fatigue Management
- Freedom of Association
- Right of Entry
  - Training of staff in right of entry
  - Site security and access
  - Managing right of entry

- Monitoring right of entry
- Employee Representatives
- Grievance Management
- Management of unlawful industrial action

### 3.3 Procurement

To ensure program compliance is maintained at the level of quality required for the proposed hospital redevelopment it is essential the right subcontractors are selected to perform the works who can meet the demands of the project.

Critical packages identified for this project include:

- **Jumpform** – the procurement and erection of the jumpform is critical to achieving the programme dates. As the jumpform will be one of the first elements required on site following hand over of an excavated site, quick design finalisation and procurement of the jumpform will be required. We will award this separately to the Jumpform supplier to secure the system and then novate to the formworker.
- **D&C Services trades** – these will need to be selected prior to Contract award and engaged immediately upon contract award. Services trades will be required to review, verify and develop design to allow core designs to be finalised. Services trades are also critical for finalising inground hydraulic services and basement plantrooms designs.
- **Civil & Retention structures**– the design of the site retention systems and method of excavation is crucial to commence quite early
- **Post Tension** the final design of the structure and have shop drawings coordinated with the services trades is important to maintain program
- **Façade** – early procurement will be key to ensure there is sufficient time to design, prototype and procure the façade elements.

We will adopt a range of approaches in the procurement and subcontractor management phases of the project. These include:

- Preferred trade partners who can bring expertise, value and market experience to the design and delivery of the project will be selected on the basis of their experience, corresponding expertise, safety performance, quality, capacity (both in design and on site) and value for money.
- Key subcontractors that have the capacity and capability to deliver the balance of the trade packages will be invited to tender the works in a competitive environment. These subcontractors will be assessed and only invited to tender if we believe they have the capacity to undertake the works.

Our procurement programme is derived from lead times determined from the overall construction program. Initial focus will be on D&C service subcontractors, structure and façade packages with this early procurement critical to ensure and secure the best fit subcontractor for the respective trade packages.

Procurement of all consultant and subcontractors will be completed in accordance with Roberts Co Procurement Procedure and Procurement Guidelines. Conformance with these guidelines will ensure that subcontractors and suppliers meet the safety, environmental and quality requirements determined by the organisation. We recognise that a robust supplier, service provider and subcontractor network is a key element of a successful and safe business.

Roberts Co has a process for early engagement with the supply chain, including subcontractors. To increase certainty of performance, we will select subcontractors who have been proven on projects and shown their capacity to comply with the relevant legislation and the NSW Code and Guidelines.

The assessment process includes a detailed review of the subcontractor's:

- Track record of industrial relations management on previous projects
- Administration processes and capability (payroll etc)
- Status in relation to any industrial instrument(s)
- Ability to allocate adequate resources that will ensure timely delivery of works on the project
- Experience in delivering the type of project that is being tendered
- History of engagement with employees and their representatives
- Ability to manage employee grievances and industrial relations disputes
- Plan to drive productivity gains on their projects
- Management of their workforce while providing a high quality of work
- History of compliance with applicable legislation, codes and guidelines, as well as any industrial arrangements in place that covers their workers terms and conditions

All potential subcontractors are required to complete a Subcontract Tender Details (STD) form in addition to setting out scope of work requirements that forms part of the Invitation to Tender (ITT) documents issued for each package of works. This is designed so that we can assess compliance with:

- The New South Wales Code and Guidelines
- Employment obligations under the Fair Work Act
- Any industrial instrument(s)
- Work Health and Safety requirements and legislation, as well as past performance
- Contractual obligations as prescribed in the standard forms of contract
- Workforce capacity
- Level of insurances
- Current project workload

The STD document consists of:

- Invitation to Tender Letter (Conditions of tendering, including the NSW model tender and contract documentation)
- Technical scope of works
- Subcontractor Tender Details document that requires tenderers to answer questions relating to:
  - Organisational structure
  - Project and company insurances
  - Types of management plans in place
  - Current workload
  - Workplace health and safety, environmental, quality and industrial relations
  - Permission to allow financial auditing by Roberts Co
- Conditions of contract
- Questions relating to workplace health and safety, environment and quality



## 4 CONSTRUCTION STRATEGY

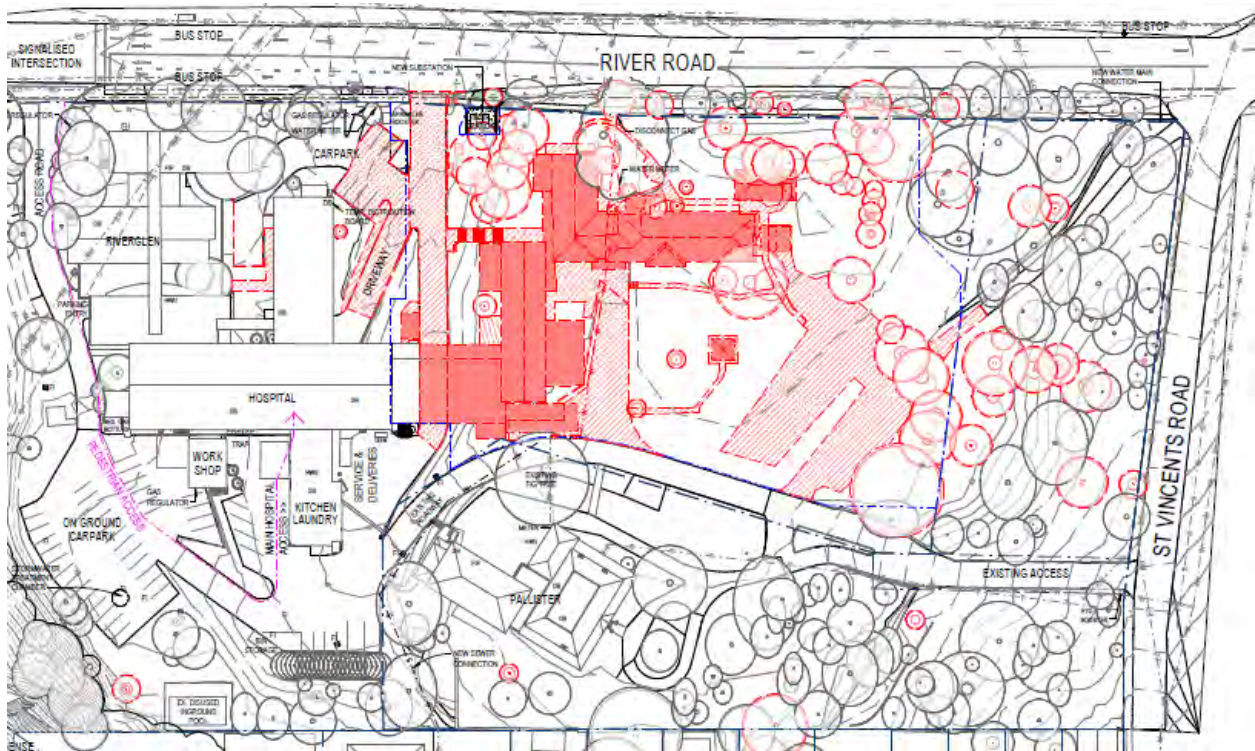
### 4.1 Site Establishment

#### 4.1.1 Site Boundaries

The site compound will fully enclose the works using a combination of A class and B Class Hoardings, as shown on the Site Establishment drawings for all the stages.

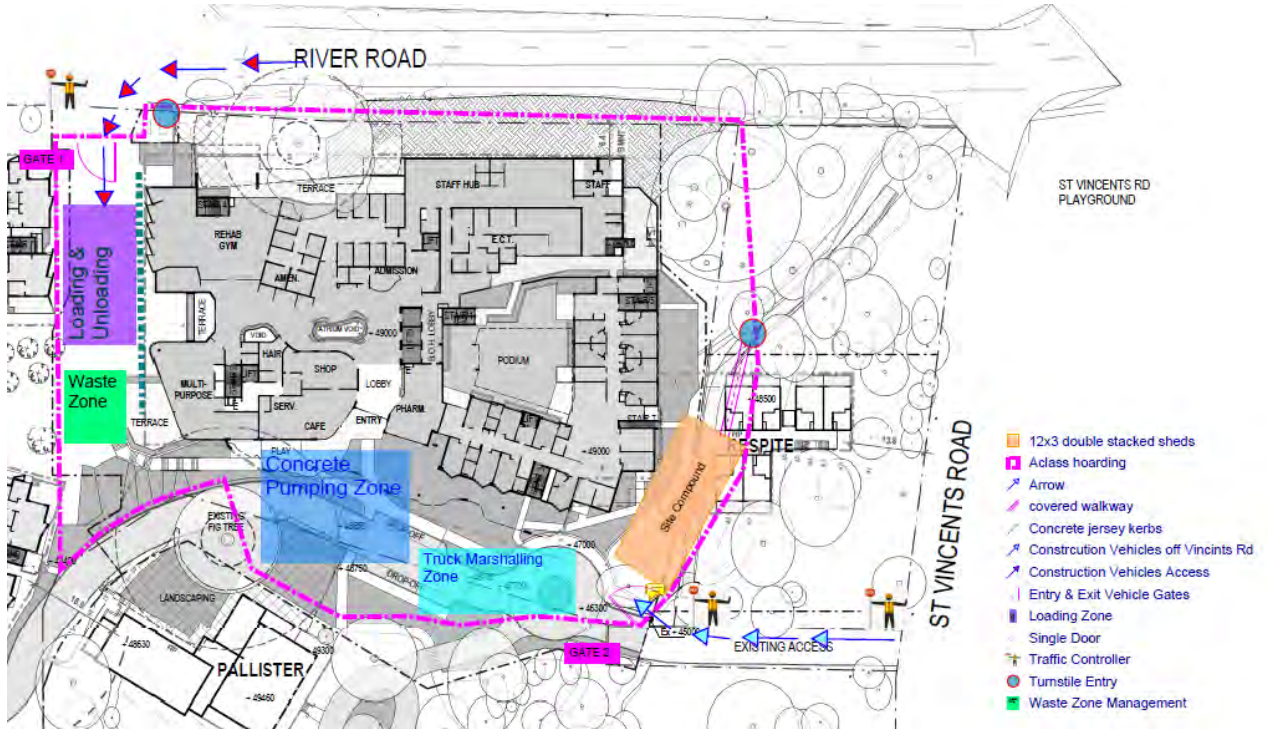
Prior to the installation of A Class Hoardings, we will install temporary fencing. This will be used to demarcate required exclusion zones during the demolition of the structures. Once the demolition of the existing buildings is complete, A Class Hoardings will be erected.

##### 4.1.1.1 Stage 1



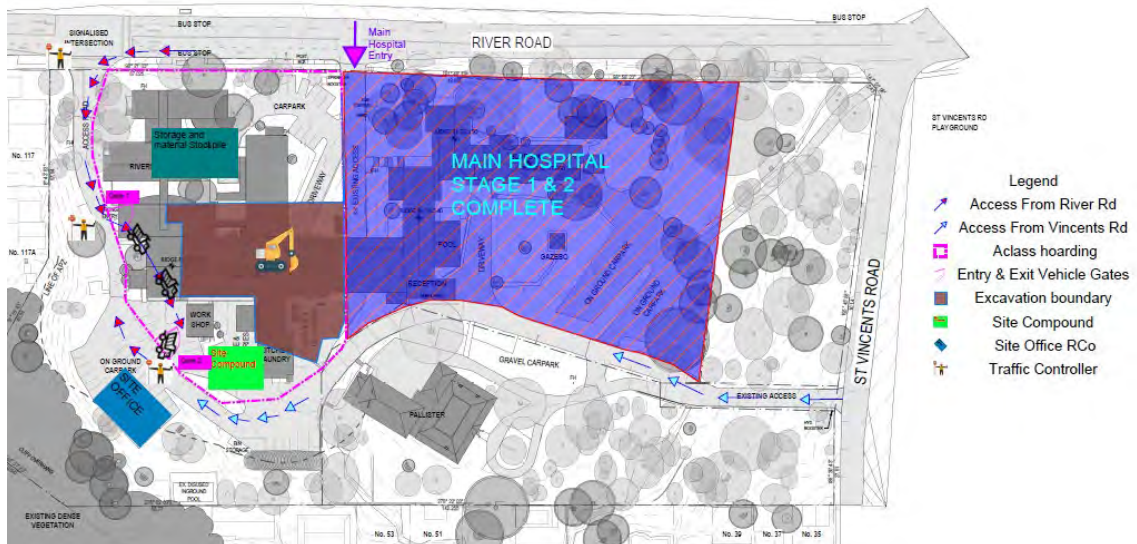
Stage 1 incorporates early works and external works. The scope of works for this stage involves external works (services decommissioning and capping, temporary MSB, new substation, potable water supply, and temporary power and comms supply to hospital and Pallister House). Temporary services to support Stages 2 & 3, temporary hydrotherapy pool and miscellaneous internal works will also be carried out.

4.1.1.2 Stage 2



The image above shows the site boundary for Stage 2 which includes two access gates for construction vehicles and two turnstile gates for workers.

4.1.1.3 Stage 3



Stage 3 boundary will encapsulate the future Stage 3 (Senior Living Buildings) site and provide an area for material handling and storage.



#### 4.1.1.4 Stage 4



#### 4.1.2 Traffic Management

We understand the importance of providing a seamless transport management strategy to ensure construction works do not impede the operation of the Hospital and the public with the following construction vehicle impacts have considered:

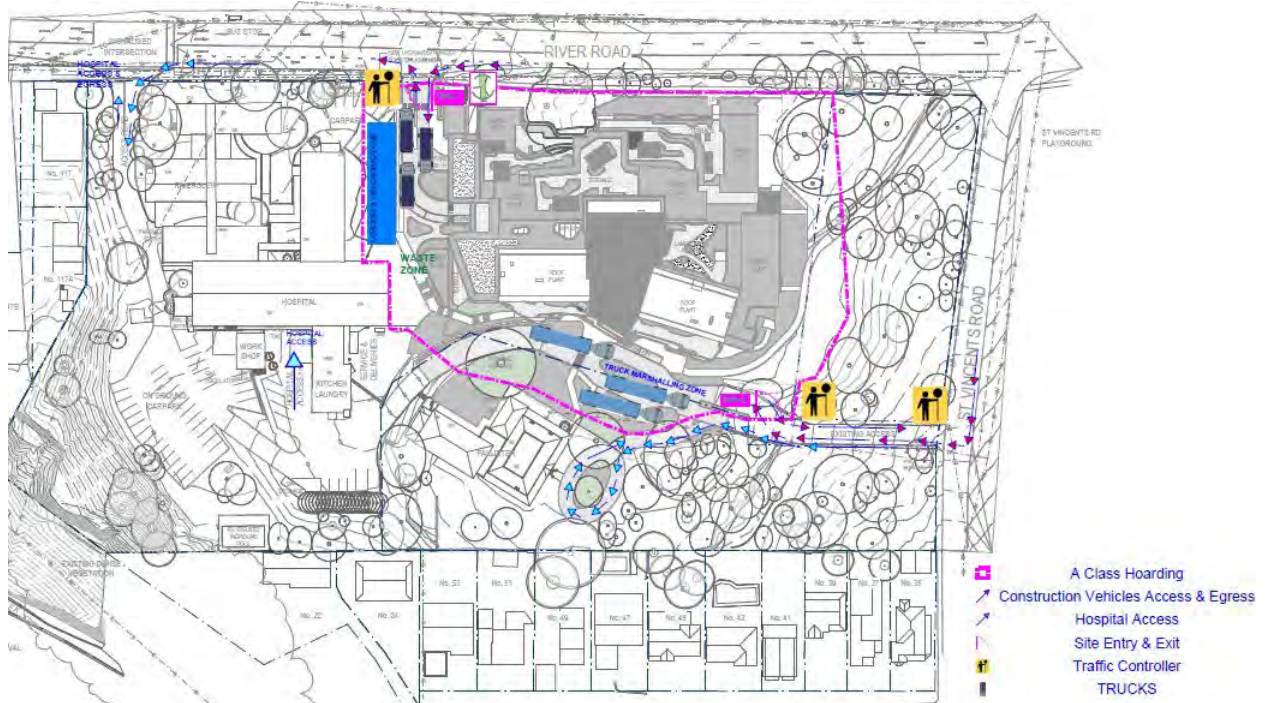
- Reducing impacts to residents on surrounding streets.
- Maintaining vehicle and pedestrian access along St Vincent Road and River Road.

A Construction Traffic Management Plan will be included as part of the final CMP outlining all requirements for construction vehicles during construction works. The Construction Traffic Management Plan will highlight approach and exit routes for construction vehicles to the site as well as confirm swept paths for all construction vehicles within the site. The CMP will be in accordance with TTPA Greenwich Traffic and Parking Assessment, ref 20352.

Subject to Traffic Engineer's input and approval, RCo are considering the following traffic management routes for each stage:



4.1.2.1 Stage 2



For Stages 1 & 2, during all phases of construction, access for construction vehicles will be via St Vincent's Road and River Road.

Based on the scale of the development and the proposed construction programme, the following number of vehicles are expected as summarised in the table below. These construction vehicle volumes are indicative only and would be confirmed following the procurement of subcontractors.

Description	Stage			
	Bulk Excavation	Structure	Fitout and finishes	Landscaping / external works
Deliveries per day	30-40 per day	25-30 per day	30 per day	20 per day
Deliveries per hour	6 - 8 per hour	5 per hour	6 per hour	4 per hour

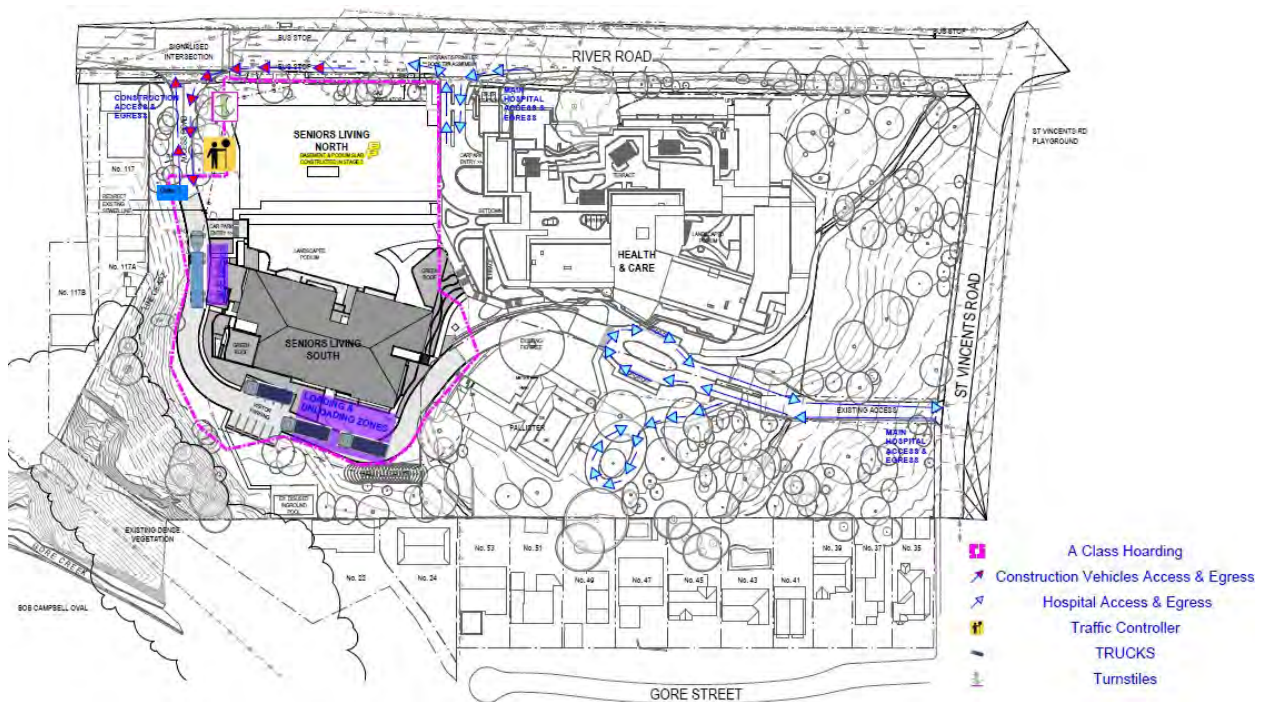
The following vehicle types as outlined in Australian Standards AS2890.2 are expected to be used during the project across all stages:

- 19m Single Articulated Vehicles (AVs) or truck and dogs;
- 12.5m Heavy Rigid Vehicles (HRVs)
- 8.8m Medium Rigid Vehicles (MRVs)
- 6.5m Small Rigid Vehicles (SRVs);
- Utes/vans

The maximum truck size that will likely access the site is a 19m Articulated Vehicle which will carry large construction material. There is provision on-site for these vehicles to turn around and so they will be able to access the site directly and will not require a Works Zone on the adjacent public road system. All heavy goods such as machinery plant will need to be delivered outside of peak traffic hours.

#### 4.1.2.2 Stage 3

Subject to approval from HammondCare, the construction traffic access and egress to construct Stage 3 will be via River Road and St Vincent's Road as noted below.



#### 4.1.2.3 Construction Vehicle Interface with the Public

There will be multiple occasions where construction vehicles will require interface with the public. RCo have developed a site plan and staging to minimise these interfaces and where unavoidable will have strategies in place to ensure there is clear separation between construction and public zones. These strategies include:

1. **Traffic Control**

The primary control for all construction vehicles will be traffic control including traffic controllers and signage. Through a well-planned and effective traffic management strategy we can manage all vehicles entering and existing the site. Traffic Controllers will manage the site gates on River Rd and St Vincent's Rd

2. **Timing of Deliveries**

Deiveries will be scheduled during off peak times where possible to minimise the impact of construction on public traffic.

3. **Slip Lane**

Concrete Pumping activities will be completed from within the site boundary which will further reduce the interface of construction activities with the public.

#### 4.1.3 Scaffold

The leading-edge protection will predominately be provided through implementation of perimeter captive scaffold for all stages, main hospital, and senior living buildings.

#### 4.1.4 Materials Handling

##### 4.1.4.1 Cranage

A crane analysis has been undertaken to ensure the model, position of the cranes and jib radii are the most efficient solution for the building. The tower cranes will have a max radius of 60m will be erected from the main hospital entry off River Rd using a mobile crane.

The exact type of the cranes and the capacity at max radius is yet to be determined once the design has progressed further towards the 50%

No lifting of loads will take place over adjacent properties. The bases of the tower cranes will be secured with a non-climbing screen, preventing the potential for any member of public accessing the cranes. The machine deck access hatches shall be secured at the end of each day and motion detectors shall be installed within the towers with a back to base alarm notifying of any unauthorised persons gaining access to the towers.

The below images show the location of the tower crane for each stage. The erection and dismantling position for the crane for all stages will be using the Hospital Main entry suspended slab.



INTEGRATED MANAGEMENT SYSTEM  
CONSTRUCTION MANAGEMENT PLAN  
GREENWICH HOSPITAL REDEVELOPMENT

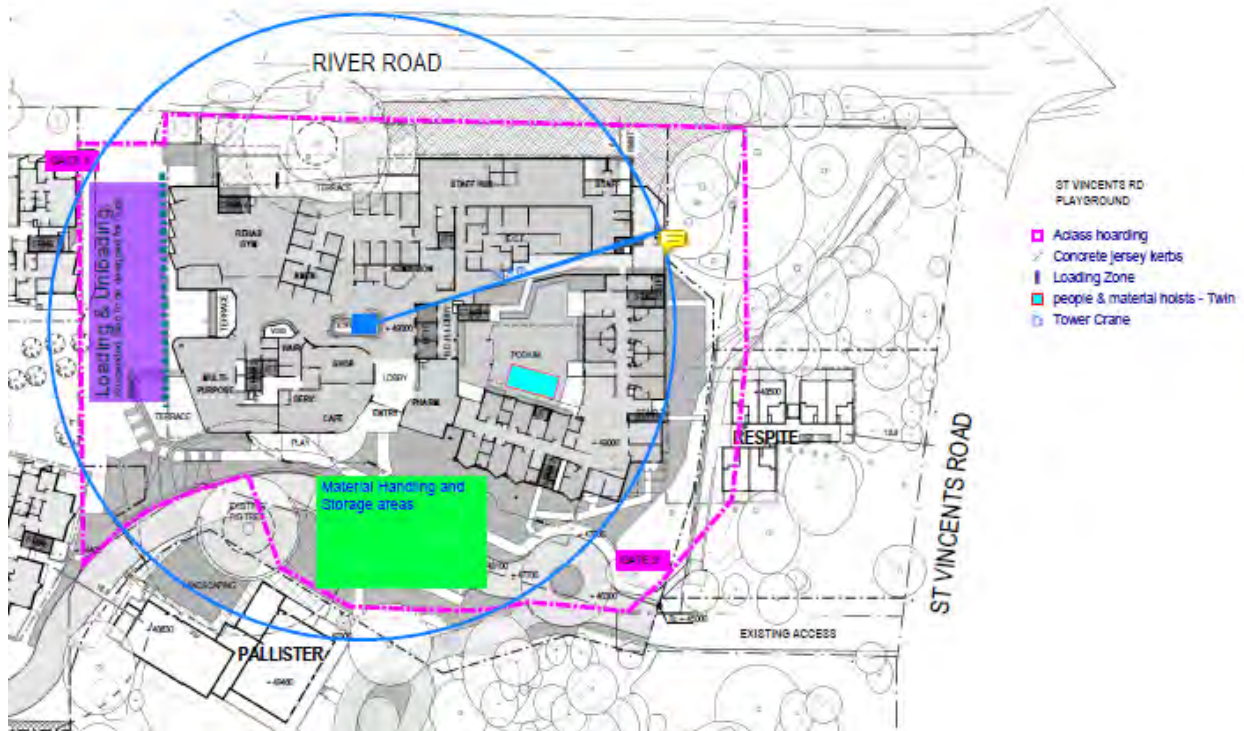


Figure 5 Stage 2 Tower crane location

INTEGRATED MANAGEMENT SYSTEM  
 CONSTRUCTION MANAGEMENT PLAN  
 GREENWICH HOSPITAL REDEVELOPMENT

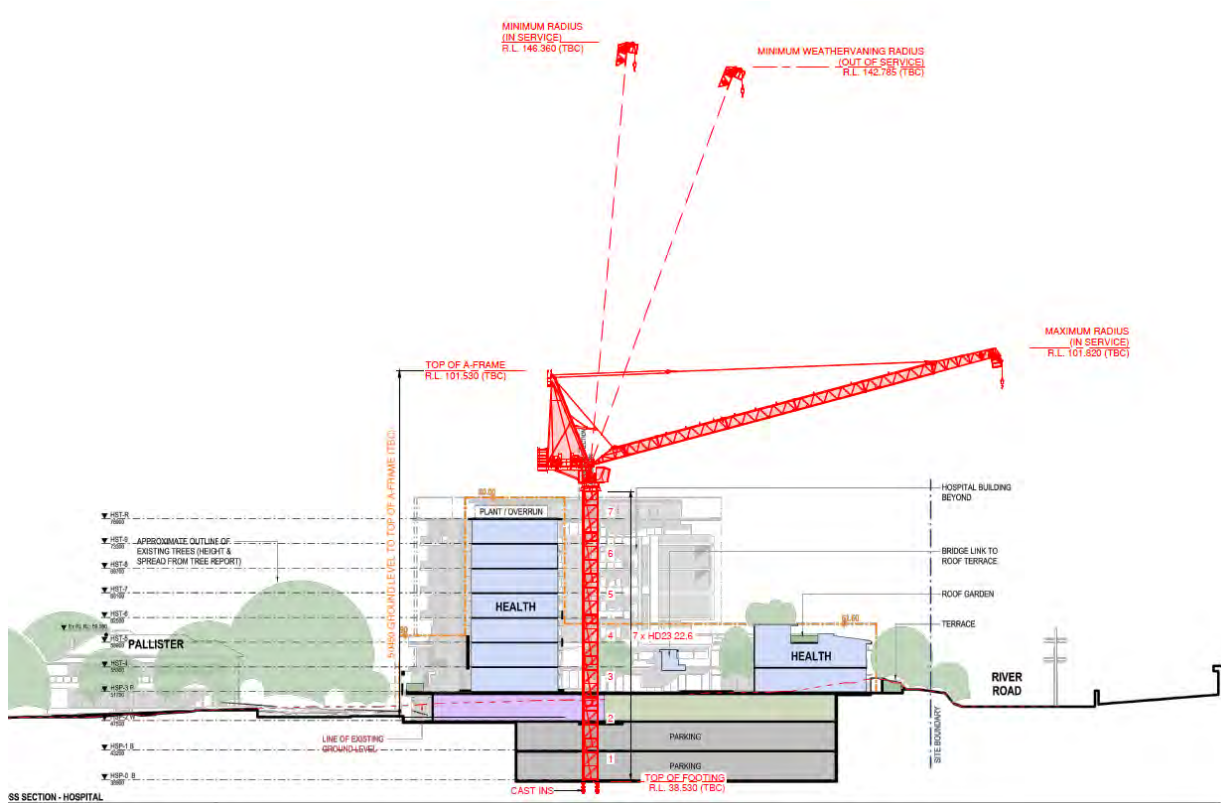


Figure 6 Stage 2 crane elevation



Figure 7 Stage 3 TC location

#### 4.1.4.2 Loading Platform

To feed the project with materials, we will install industry standard retractable loading platforms. They will initially be used to crane formwork, falsework and materials from the floors as the structure is completed. They will then be used to pre-load services trade materials (i.e. duct, pipework, cable tray and the like) and finishing trades materials including the unitised curtain wall façade panels.

Loading platforms will be placed on each level past level 5 of the main hospital.

#### 4.1.4.3 Hoists

One Twin Hoists will be provided on the project servicing the main hospital Stage 2 with one single hoist servicing Stage 3. These hoists will be to service the movement of construction workers throughout the project. The hoist will be high-speed ensuring efficiency throughout the floors. At each hoist location there will be temporary interconnecting scaffold bridges joining both buildings which will also help streamline the movement of workers across the job.



#### 4.1.4.4 Concrete Deliveries & Placement

The suspended slabs and structure will be poured using two 36m Static boom pumps which will be installed on the project. There will be one static boom for each tower which will enable flexibility across the project and enable both vertical and horizontal structural elements to be poured on the same day. The concrete pumps that feed the static tower booms will be set up within the site which will allow full utilisation of the pump's capacity. Each Pump will be arranged so that both pumps can run a two-truck feed whilst maintaining the other loading zone for other critical deliveries. Refer to image below.

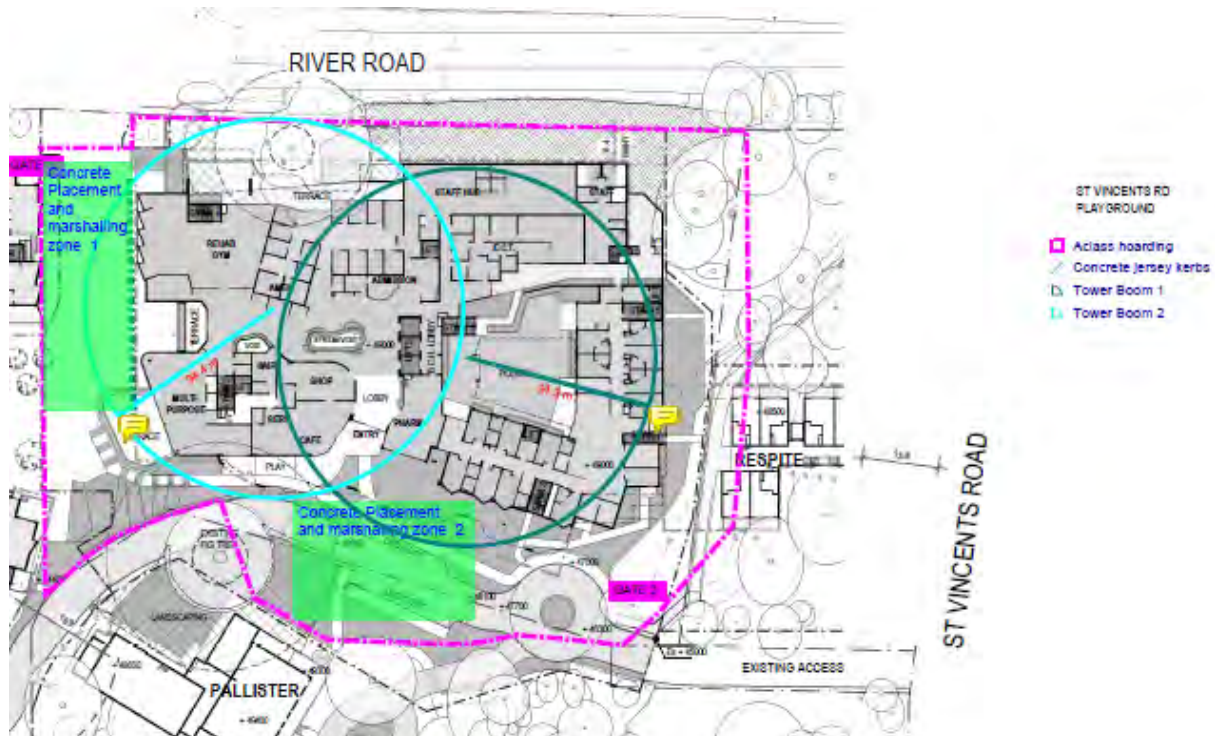


Figure 8 Stage 2 Concrete Placing Booms and Zones

As for Stage 3, the concrete placement will be placed using a 48m concrete boom truck.

#### 4.1.4.5 On Site Storage

On site storage of materials and equipment will be kept to a minimum. Materials and equipment required for site will be delivered to site when required to be incorporated into the construction works. Materials and equipment that do need to be stored on site for a short period shall be stored within the site compound, be neatly stacked and securely strapped. Laydown areas within the job will be nominated and managed.

#### 4.1.4.6 Site Amenities

Temporary site accommodation and amenities for the construction workforce will be provided according to the project staging. The site amenities will include:

- Site accommodation including lunch and change rooms
- Male and female ablution facilities
- Multi-purpose induction, training and meeting rooms
- First Aid facility
- Parent nursing room
- Covered walkways and access stairs.
- Roberts Co Office facilities.

## 4.2 Project Sequencing

The detailed project sequencing for each stage will be described once the design has progressed further into 30% design. In future iterations of this CMP, the sequencing will describe and explain RCo's approach to

- Additional investigation and site acceptance
- Treatment and protection of existing trees
- Early works
- Site Establishment Demolition
- Site retention and excavation
- Substructure
- Superstructure
- Façade
- Services
- Fitout & Finishes
- External works



## 4.3 Staging and Timing

At this stage of the design, it is anticipated that the following Staging and Timing will apply:

- Stage 1
  - All activities 12 weeks
- Stage 2
  - Site establishment 6 weeks
  - Demo 5 weeks
  - Excavation 18 weeks
  - Construction 114 weeks
- Combined Stage 3
  - Site establishment 3 weeks
  - Demo 10 weeks
  - Excavation 12 weeks
  - Construction 70 weeks
- Stage 4
  - Site Establishment 2 weeks
  - Excavation 2 weeks
  - Construction 30 weeks

## 4.4 Site Management

### 4.4.1 Work Hours

We will ensure strict compliance with approved working hours during construction activities. Any requirement for works to take place outside of the approved hours will be sought through the relevant authorities in conjunction with communication protocols for stakeholders and the community. Working hours for the project are:

- 7.30am to 5.30pm Monday to Friday and 7.30am to 3.30pm Saturday.
- No work is to be carried out on Sunday or public holidays without prior approval.

The delivery programme for the works has incorporated the above time constraints and forms the basis of the proposed construction methodologies and overall construction sequencing. Where specific works require extensions of the above times, we will identify works early and communicate with the PCA and Council to ensure all necessary approvals are obtained.

### 4.4.2 Site Security

Roberts Co will ensure there is controlled and secure access to all areas of the site, at all times throughout the duration of the project.

The site will be secured, and access will only be via the turnstiles which operates via a QR code. No one will be able to enter the site without a QR code which is issued after undertaking a site induction via the RCO Subbie App; this includes visitors sign-in. The data we have from the app is very accessible and informative, so we know exactly who is on site and when.

Out of normal hours, we have allowed for regular drive by security inspections of the site. For the last few months of the project, we have allowed for a night-time security guard to protect the Site. We will also have security measures installed around the base of the tower crane to prevent any unauthorised personnel climbing the crane.

#### 4.4.3 Subcontractor Management Strategy

Effective subcontractor management is a critical factor in the successful delivery of the project's objectives and outcomes. We will implement our commercial, contractual and risk management procedures providing governance necessary to manage subcontractors that are engaged for the project. These procedures coupled with the allocation of experienced resources will ensure subcontractors are appropriately selected and managed to achieve the required project outcomes.

Jobpac will be the commercial ERCO system we use to manage subcontractors and the administration of projects commercial functions. Jobpac is a critical software package that will assist the team to manage subcontractor contracts, commitments, progress claims, variations and compliance with administrative requirements. Aconex will manage all correspondence and drawing transmittals on the project.

#### 4.4.4 Stakeholder Management Strategy

Roberts Co appreciate the importance of open and effective communication required to successfully deliver Greenwich Hospital Redevelopment. Communications will be built on the principle of cooperative contracting, enhanced communication, clear definition of roles, responsibility for outcomes, and promoting best practice.

Communication between Roberts Co and the Principal will be honest and sincere and built on respect and trust. With a foundation of effective communication between us and TSA Project Management, communication with stakeholders and the community will prosper.

Our strategic principles for Greenwich Hospital Redevelopment include acting as a good neighbour and ensuring business continuity for surrounding neighbours. We recognise that any works which may impact neighbours and greater community must be communicated early and, in a manner that non construction individuals will be able to understand to enable an informed response.

As part of our planning of the works, the team will identify any disruptive works which will require notification to neighbours and the community. These works may include but are not limited to HV consumer mains works, stormwater connection to existing Sydney Water Assets to the North of the site, authority connections in River Rd and installation and removal of tower cranes. In addition, our engineers will assess impact of works on a case-by-case basis while developing Work Packs for individual activities. As part of the development of Work Packs, the site team will be required to assess impact on neighbours and whether notification is required.



#### 4.4.5 Risk Management

Roberts Co understand the challenges associated with the project. The project has critical construction and services interfaces and requirements that must be understood and managed to successfully deliver the project while providing continuity of surrounding businesses.

Roberts Co will manage risks by implementing our Safety, Quality and Environmental Risk Management processes and will work collaboratively with the TSA and HammondCare in planning construction activities so that any impact, disruption, and potential risk is identified, reviewed, mitigated, planned and communicated as required.

Roberts Co will take the lead role on the disruption risks with site coordination managed by a formal meeting framework comprising of Project Review Group Meetings, Project Meetings, Stakeholder meetings, weekly coordination meetings and specific Risk Workshop Meetings.

As previously highlighted in this document, we have identified the following activities that have the potential to significantly impact the surrounding precinct if not managed effectively and communicated proactively with stakeholders:

- Ausgrid Substation Works
- Authority Mains connections
- Demolition and Excavation
- Tower crane installation and Removal

A formalised Risk Register will remain a live document updated and reviewed throughout the course of the project.

#### 4.4.6 Health, Safety, Environment and Quality

##### 4.4.6.1 WHS Management Plan

Roberts Co considers health and safety as the number one priority on all projects. Our policies and procedures provide a framework to manage risk and accident prevention at the company's workplaces. The Health, Safety and Environment Management System (HSEMS) identifies the positions within the company that are responsible for designing, developing, implementing and enforcing health, safety and welfare in accordance with legislation.

Our team has reviewed the construction activities required for the Project works and have identified high risk construction work activities as defined in the NSW WHS Regulations:

- Risk of a person falling more than 2 metres
- Work likely to involve disturbing asbestos
- Work in or near a shaft or trench deeper than 1.5 m or a tunnel
- Work on or near energised electrical installations or services
- Work in an area with movement of powered mobile plant
- Temporary load-bearing support structures
- Work on or near pressurised gas pipes or mains
- Work on, in or adjacent a road or other traffic corridor in use by traffic other than pedestrians

As an essential step in successfully managing these high-risk constructions activates, our team will create and maintain a Project Risk Register to ensure risks are monitored and catered for at any time. Following the review of our initial risk assessment during tender, our experienced site management team and our EH&S Manager will invite the selection of subcontractors to discuss their Safe Work Method Statement (SWMS) and arrangements to be put in place to make sure the high-risk construction work is performed safely in accordance with the SWMS. Our site team will then monitor the implementation of the SWMS 'on the ground'.

#### 4.4.6.2 Environmental Management

As part of our commitment to acting as a good neighbour on behalf of HammondCare, Roberts Co is committed to ensuring our site activities do not impact negatively on the environment in the project area.

Upon award, will prepare a fully detailed Site Environmental Management Plan that outlines the processes for managing environmental aspects and impacts in accordance with ISO 14001:2015, Protection of Environment Operations Act 1997 and the Protection of Environment Operations (Noise Control) Regulation 2008.

We have identified the following key environmental concerns along with their management strategies to ensure the successful delivery of the works:

Identified Environmental Concern	Management Strategy
Dust & Airborne Contaminates – During Excavation Works	<ul style="list-style-type: none"> <li>– Use water suppression during demolition, cutting and removal of materials from site</li> <li>– Cover stockpiles and using water to prevent dust generation</li> <li>– Use tarpaulins or equivalent on trucks arriving and leaving the site</li> </ul>
Noise and Vibration – During Construction	<ul style="list-style-type: none"> <li>– Select and apply the best work practices to minimise noise impacts, including choice of plant, construction methodologies, timing of activities</li> <li>– Identify noise impacts at sensitive land uses</li> <li>– Monitor noise and vibration during high decibel activities</li> </ul>
Sediment and run off – During Excavation	<ul style="list-style-type: none"> <li>– Develop and implement Site Erosion and Sediment Control Plans (ESCP)</li> <li>– Use sand bagging and geo fabric cloth over drains, silt-traps, along with a sediment basin if required, wheel wash/ cattle grid</li> <li>– Implement stormwater contamination management plan</li> </ul>
Dewatering	<ul style="list-style-type: none"> <li>– Develop Early Works contractor Dewatering Management Plan to collect, treat and remove water from within the excavation</li> </ul>
Pollution and / or contaminants (Paint or Solvents) – During Construction	<ul style="list-style-type: none"> <li>– Apply wash out drums, small trade waste bins, overflow bunds, proper storage of chemicals in cupboards and, as a last resort, spill kits</li> </ul>
Waste Disposal – During Construction	<ul style="list-style-type: none"> <li>– Implement waste management plan throughout project</li> </ul>



	– Minimise waste, separate materials, reuse and recycle.
Hazardous Materials – Prior during trenching excavation works	<ul style="list-style-type: none"> <li>– Remove and dispose of all hazardous materials, including Asbestos Containing Materials in accordance with Safe Work NSW and EPA NSW requirements with minimum impact to the surrounding areas</li> <li>– Prepare and implement hazardous waste management plan</li> </ul>
Site Entry Environmental Control – Pedestrian management and plant/person separation	<ul style="list-style-type: none"> <li>– Provide dedicated pedestrian walkways, exclusion zones and staging zones to separate plant and person and lower risk of flammable atmospheres, and artificial extreme temperatures</li> <li>– Maintain detailed public and construction pedestrian access routes for site.</li> </ul>

An Environmental Control Plan will be developed which includes but is not limited to defining:

- Site layout and boundary, including entry/exit points, pedestrian access ways, internal roads, and clearing limits
- Nearest noise sensitive buildings
- Location and type of sediment and erosion control measures, including size / capacity of detention basins, and wheel wash facilities (specifically during demolition works)
- Identification and management of HAZMAT materials through a contaminated management plan including inspection, sampling, treatment and disposal
- Location of spill containment and clean-up equipment
- Location of worksite waste management facilities
- Hours of work applicable to the worksite (including deliveries, any restrictions on high noise generating activities).
- Location of environmentally sensitive areas (e.g. threatened species, critical habitat, contaminated areas, heritage zones, etc)
- Vegetation and trees to be protected as identified in the Arborist Report
- Location of stormwater drainage and watercourses
- Specific environmental management requirements from licenses, approvals or permit conditions
- Key environmental risk issues and the specific mitigation measures.

The plan will be used in inductions and support site set-up, to review ongoing environmental performance, will be included as information in tender documents to subcontractors (where applicable) and applied in support of ancillary environmental approvals.

Key site entry environmental controls include:

- Security site access gates
- Shaker bays at exits
- Class A and B perimeter hoarding for site separation
- Site security cameras
- Traffic management and traffic controllers

Roberts Co will implement a project specific Plant and Equipment Management Plan for all items on site to ensure maintenance checks are conducted appropriately and when required in accordance with both legislative requirements and our IMS procedures and standards. The following requirements apply:

- Plant will be inspected prior to operation on site, particularly fuel lines, hydraulic hoses, or other items with the potential to impact the environment. Items found to be worn, damaged or otherwise degraded are to be replaced prior to operation
- Plant will be serviced, re-fuelled, and washed down only in approved areas where hydrocarbons can be captured and then properly disposed
- Fuelling will be carried out in bunded areas when fuelling from bulk tanks (where applicable)
- Plant and equipment will be maintained to prevent / fix oil leaks
- Plant will be driven and operated only in approved areas
- Plant will have effective pollution control and sound attenuation devices fitted
- Dedicated Cattle Grid and Wash Down Points will be implemented.

The expected plant and equipment required for the delivery of the project works include, but are not limited to:

- Tower cranes
- 40t, 60t, 100t Mobile Crane
- Fork Lift
- Telehandler
- Man and Materials Hoists
- Formwork hoists
- 2 x Concrete tower booms
- 5t, 14t, 20t and 30t excavators
- 1t Maeda Crane

Project wide environmental risks, obligations, and impacts will be identified and assessed prior to the commencement by the Project Manager and project team, and documents as required, including Project Risk Assessment (PRA); Environmental Risk Action Plans (ERAPs); SWMS, Inspection and Test Plans / check sheets (as appropriate), and Work instructions or procedures (e.g. refuelling and servicing).

All plans will be live and adapted to meet the client's requirements to improve the day to day running of the project.

#### 4.4.6.3 Environmental Record

Roberts Co have not had any fines, incidents or investigations over the previous 3 years and pride ourselves on our exemplary Environmental record. This is largely attributed to our focused and planned approach to environmental management on the projects that ensure all project staff take ownership and responsibility of environmental outcomes.

This approach is supported from Senior Management with the implementation of our Environmental Policy.



#### 4.4.6.4 Waste Management

Roberts Co believes that a tidy site is a safe site, and this principle will be maintained throughout the construction duration. Rubbish bins/skips will be provided at strategic positions around the site, where all subcontractors will be required to clear their rubbish as it accumulates. These bins will be brought down the building in the construction hoists or via the tower crane and loaded via forklift into the large skips. The current location of the waste management compound is to the south west corner of the site establishment zone.

A specific Waste Minimisation Plan will be developed in accordance with the Environmental Management Plan to ensure optimum waste management initiatives are implemented.

Our Waste Management Plan (WMP) is included as a sub plan of the Environmental Management Plan for the Project. The aim of this plan is to work at best practice in minimising the amount of waste produced during the development and manage that waste in order to reduce the amount going to landfill.

The Waste Management Plan will meet regulatory requirements and utilise a waste contractor that has been independently verified for compliance with minimum standards of reporting in accordance with Green Star Benchmarks. In setting standards and to achieve waste re-use and recycling onsite, the site-specific Waste Management Plan will be implemented.

Subcontract trade packages will be prepared and tendered to ensure optimum recycling through waste management achieves the required targets. Due to the restricted site requirements, Roberts Co proposes to have mixed waste bins that will be sorted and recycled off site. This eliminates the potential for comingled waste entering recycling bins. In accordance our Waste Management Plan, detailed recycling programs will be developed for all phases of the works. The site subcontractors will be required to report on extent of recycling achieved and be subject to Environmental Audits.

#### 4.4.6.5 Noise, Dust and Vibration Management

Monitoring of noise emissions, vibration and air quality during the redevelopment works is necessary to maintain the health and wellbeing of people who are involved in the works and of those surrounding the project. In addition, vibration sensitive equipment and assets must also be protected during the works.

Roberts Co's objective is to understand stakeholder's noise and vibration limitations and develop strategies to work within those limits, or where exceedance of the limitations cannot be avoided, investigate with stakeholders' ways to manage planned exceedances at appropriate times. We have identified primary works which will require noise and vibration considerations including demolition and excavation works.

The project team will employ a Noise and Vibration Management Plan which includes:

- Detailed assessment of background conditions to accurately assess noise and vibration impacts of the works
- Provide a direct line of communication between stakeholders to RCo Project Manager
- On site attendance of the Acoustic Engineer to take noise measurements at critical receiver locations
- On site attendance will be conducted during periods of the job expected to generate the most vibration (Inground Works)
- Site attended measurements at key periods will provide a better identification of the noise and any impact to the surrounding environment.

#### 4.4.6.6 Dust Management

Dust shall be suppressed wherever possible to ensure air quality, and to avoid health and safety issues and nuisance to occupants. All waste to be removed from site shall be adequately covered by suitable means to minimize air-borne dust.

The following dust control measures implemented on the project:

- Water hoses during demolition the process for dust suppression
- Regular periodic clean-up of work and staging areas
- Drilling or cutting shall utilise low vibration wet cutting and drilling to further reduce dust emissions
- Other cutting or drilling shall be carried out behind debris screens
- Vacuum attachments to cutting, drilling and grinding tools shall be implemented to further control dust emissions.

#### 4.4.6.7 Air Quality Management

The project team will implement controls to suppress dust and other suspended particles in accordance with legislation and risk management requirements minimising the generation of dust on site and potential emission issues relating to plant and equipment.

The Air Quality Management plan is included within the project EH&S plan. Our strategy would include the installation of air quality monitors where required for civil earthworks. These monitors will record air quality levels. They are also capable of sending a real-time alarm to the project manager to notify of any activities that exceed the limits.

Dust shall be suppressed wherever possible to ensure air quality, and to avoid health and safety issues and nuisance to occupants. All waste to be removed from site shall be adequately covered by suitable means to minimise air-borne dust. Where dust is identified as a risk, strategies to minimise impacts on the public will be used such as additional screening/filters at air intake points to ensure dust does not enter other buildings or residences.

The following dust control measures implemented on the project:

- Clear definition of trafficable and material storage areas to prevent unnecessary vehicle movement into other areas
- Installation of wheel shaker grid and / or wash down facilities at vehicle egress point
- Regular periodic clean-up of work and staging areas
- Drilling or cutting shall utilise low vibration wet cutting and drilling to further reduce dust emissions
- Other Cutting or drilling shall be carried out behind debris screens
- Provide filters to air intake vents
- Road sweepers to maintain the cleanliness of the surrounding roads.



#### 4.4.6.8 Soil and Water Management

We will ensure there is appropriate erosion and sediment control and truck wash facilities for the duration of the demolition and excavation stages. These will be actively managed by the Civils contractor.

In addition, we will ensure dewatering management systems are in place during the construction phase.

#### 4.4.6.9 Hazardous Materials Storage

Some construction materials are classified as hazardous materials, the type of product will determine the method they are to be handled and the storage requirements of the materials.

Roberts Co propose to store all the hazardous materials in a central position that does not pose a threat to the disruption of the surrounding buildings.

Wherever possible alternate materials will be selected that are less hazardous, for instance water-based products in lieu of solvent based products. This is not always practicable and hazardous materials are required to complete the works.

The hazardous material storage area shall be a secure, locked device. It shall include provision for containment of hazardous material as well as spill or leak control – (e.g. bunding to limit the spread of a liquid; warning devices that detect a gas leak). Fire control and emergency response – these are the steps to be taken if containment fails. The hazardous materials storage area will form part of the Site Emergency Plan, in the case of an incident the storage area shall be easily accessible to emergency services and incorporate fire control and monitoring devices relevant to the hazardous materials.

Ventilation of the storage area will be carefully considered in accordance with the requirements of the hazardous material. The location of the storage area shall be located away from any existing building window or intake vent. The area shall be adequately sign posted with warning signs and protected by barriers to prevent inadvertent collisions with vehicle and equipment. The area will undergo regular maintenance, inspections and cleaning to ensure the controls are current for the materials being stored.

The hazardous material storage area shall be in accordance with the Safe Work Australia Code of Practice 2005.

#### 4.4.6.10 Progressive Inspections

To ensure a defect free product is delivered at the completion of the project, Roberts Co will conduct progressive inspections with a range of stakeholders throughout the construction works to ensure any potential defects are identified during construction where they can be rectified efficiently. Progressive inspections will be conducted with:

- TSA
- HammondCare
- Design consultants
- BCA and DDA consultants
- PCA
- F&R NSW
- Authorities including: Ausgrid, Sydney Water, Jemena and Council

RCo's methodology is based on being open and transparent. By engaging stakeholders early and conducting inspection we believe that we can provide the best outcome for the project. Stakeholders are afforded the opportunity to provide feedback on the works, provide input based on their experience while also generally feeling part of the project team as opposed to walking at the end of the project.

We welcome the client and its representative to visit the site as often as they like and to contact the Project Manager to arrange a time.

#### 4.4.6.11 Defects Management Methodology

Eliminating defects that arise during construction, or at the very best resolving defects in a timely manner prior to completion, requires the application and proven processes designed to identify and resolve defects in real time. To reduce the occurrence of defects and to ensure they are dealt with in an appropriate and timely manner, we will implement a defects management plan that forms part of the overall Handover and Finalisation Plan. (Internal RCo Quality management Document)

The defects management plan will provide the structure for the site team and subcontractors team that will be designed to:

- Ensure defects and quality issues are not allowed to accumulate
- Ensure inspections are carried out by the workforce and that links are established with the company's quality assurance systems
- Ensure tradesmen and their direct line of supervisors see quality as their responsibility to enable quality issues to be resolved at the lowest possible level.
- Our defects methodology is designed to eliminate defects rapidly without the need for excessive paperwork and administration. We will undertake the following processes utilising real-time data capture of defects and non-conformances as they occur, mitigating the risk of a substantial number of defects at completion.



This system enables:

- A focus on getting things right first time – eliminating the need for costly revisit and rework, as a Roberts Co representative can undertake inspections and sign offs simply via the application, resulting in greater vigilance
- The option to invite consultants to monitor the quality of workmanship and finishes during the course of construction, provides a third level of inspection and reporting prior and during a defect's resolution.
- Defects and Quality inspections to be administered via the one application, with all information in one central repository
- Notification of defects to the applicable tradesmen and direct line supervisors; identifying the exact defect site location on the relevant drawing, the description, images and documentation, along with the required timeframe for rectification
- Ability to report and close out defects at the defect location via the application, using a lightweight mobile device on site, such as iPad or mobile phone, ensuring the defect is closed out only when rectified (not in a site office)
- Enables Roberts Co and TSA to track the closure of all defects and a defects current status
- Maintains real time history of all actions including when the defect was created, when the responsible party took action, and determine programme and cost impacts
- All defects, whether open or closed to be filtered by trade, location and time frame, to ensure holistic overview and review

The defect methodology process via the Roberts Co defects management application will be rigorously applied to the Project and site level quality awareness will be reinforced with quality inspections by the Design Consultants and this process will be an integral part to the installation, commissioning and handover process.

Zutec Field will be used as Defect Management software for the project. This software allows us to manage defects, handover documentation and in the field fire penetration status to provide a single source of truth.

#### 4.4.6.12 Handover Documentation

We will issue the following in hard copies and digital format:

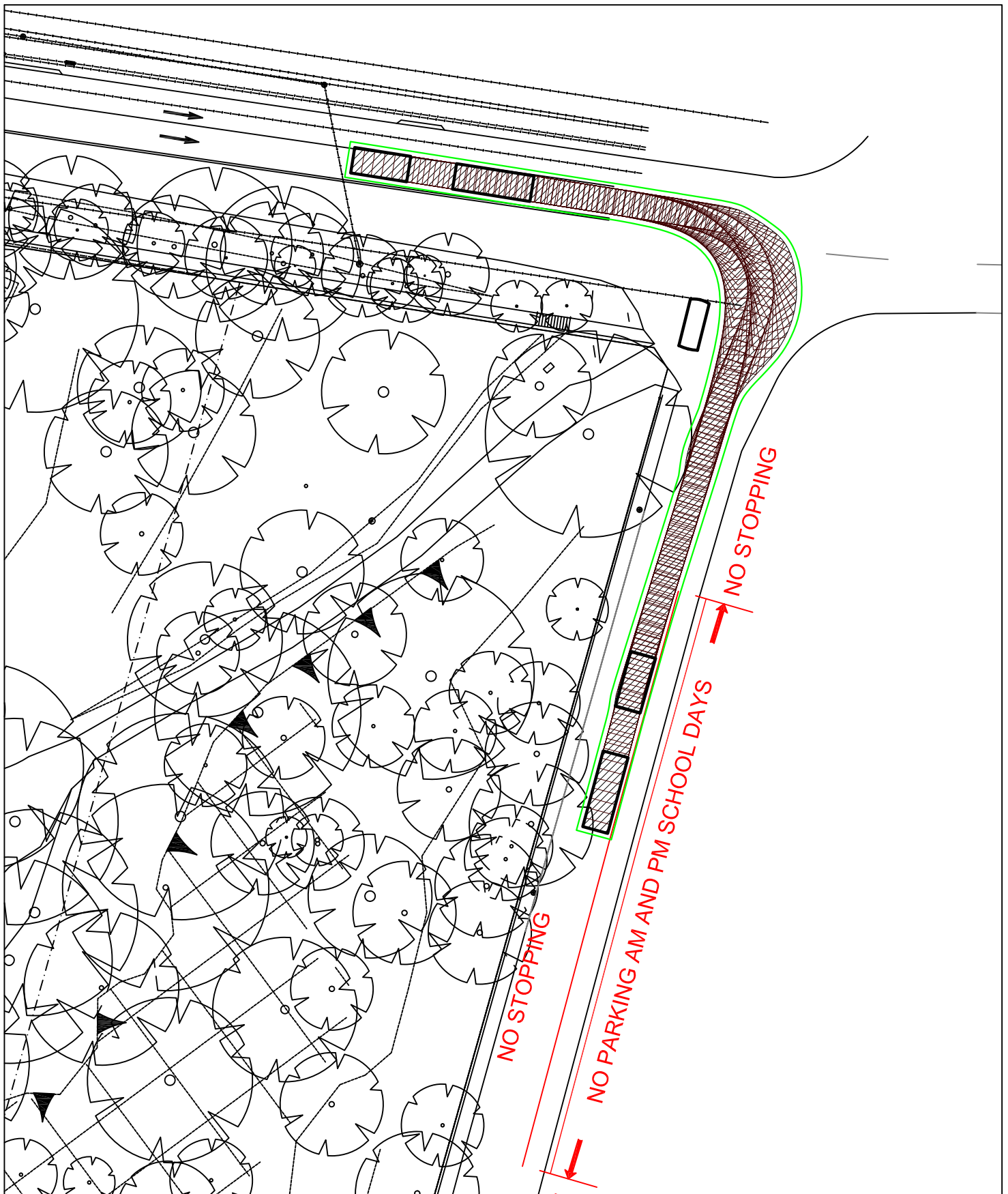
- Draft submission of all Operation and Maintenance Manuals for Principal review – 10 weeks prior to Practical Completion
- Final submission of all Operation and Maintenance Manuals within 4 weeks post Practical Completion
- Draft submission of the Warranties & Spares Register for Principal review – 3 Months Prior to Practical Completion
- Final submission of the Warranties & Spares Register for Practical Completion
- Final BIM model of the Works within 6 weeks of (the later of) Date of Practical Completion and issuance of the Occupancy Certificate

The documentation will be managed using the digital platform Zutec. This software incorporates staged submission of documents as well as a digital workflow process that allows the client and its consultants or representatives to review documentation where required. Handover of the documentation will follow the requirements outlined in the PPR.

# Appendix G

## Turning Path Assessment



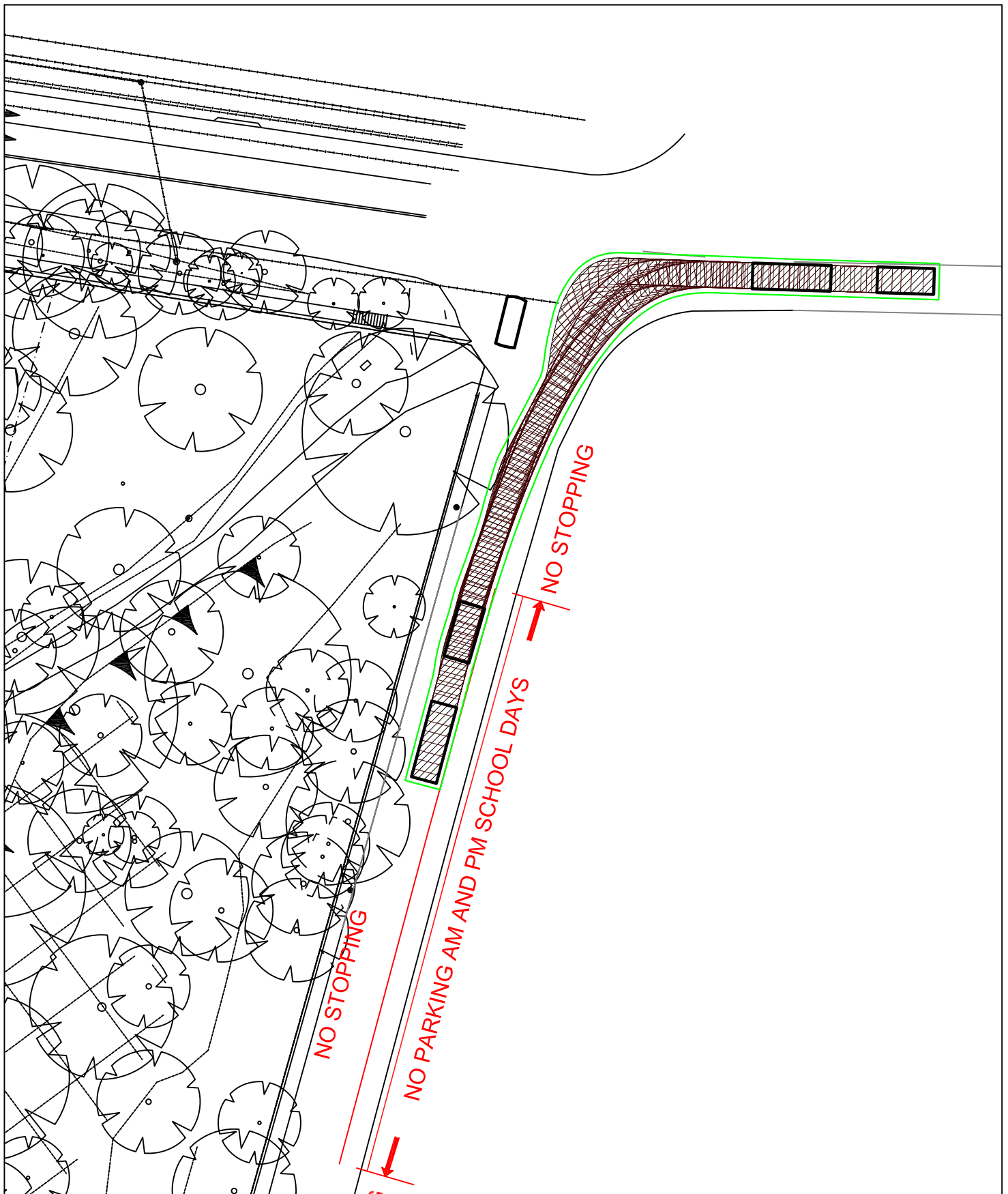


**NOTE**

This drawing has been prepared using vehicle modelling computer software AutoTrack V5.00a in conjunction with AutoCAD 2013. The vehicle used is based upon vehicle data provided by Austroads and incorporates a reasonable degree of tolerance. However, it is not possible to account for all vehicle types/characteristics and/or driver ability.



**SWEPT PATH ANALYSIS  
OF A 17.6m TRUCK AND DOG  
TRAILER TURNING RIGHT INTO  
ST. VINCENTS ROAD**



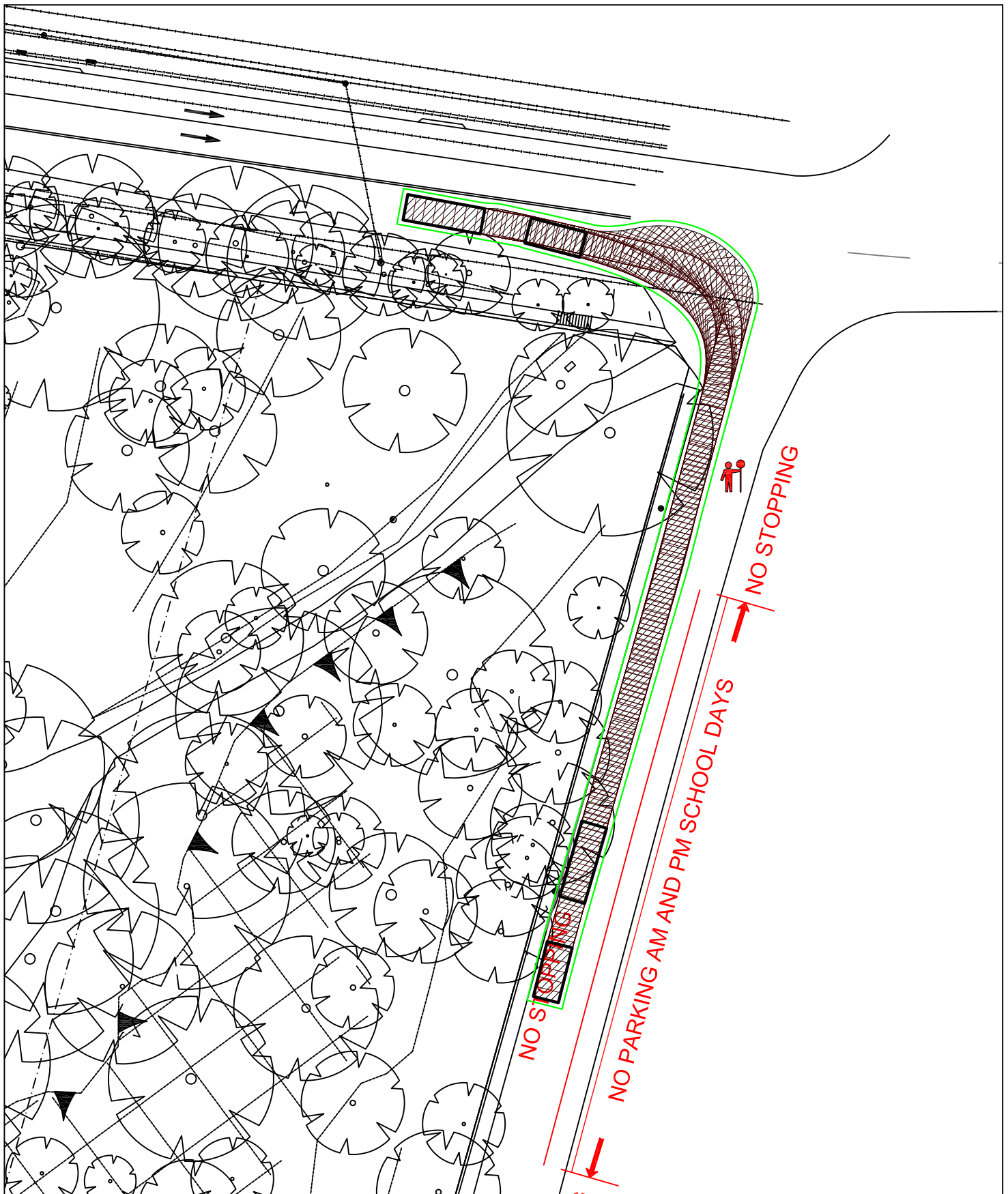
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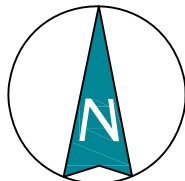
**SWEPT PATH ANALYSIS  
OF A 17.6m TRUCK AND DOG  
TRAILER TURNING LEFT INTO  
ST. VINCENTS ROAD**



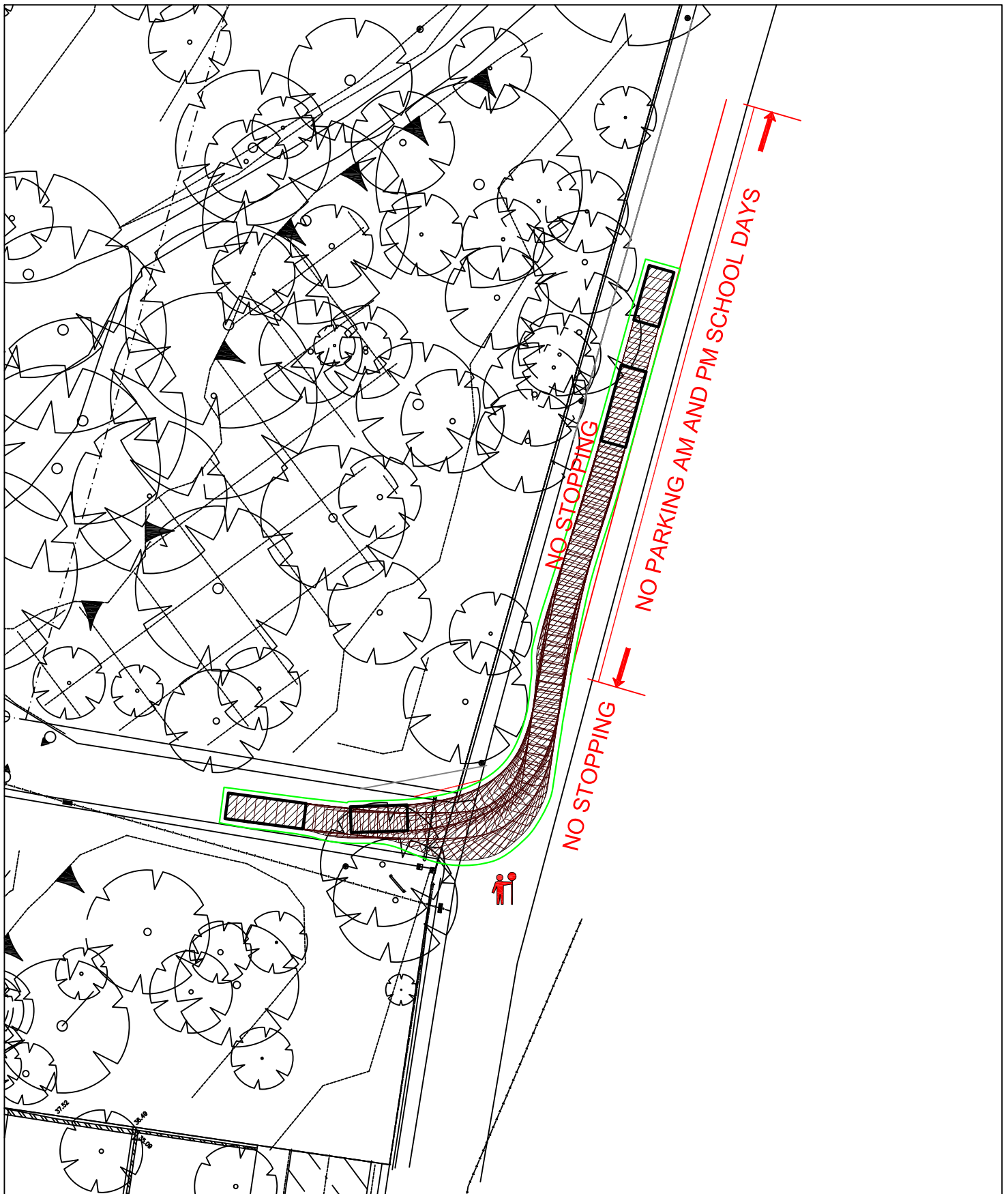


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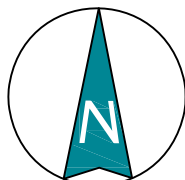


**SWEPT PATH ANALYSIS  
OF A 17.6m TRUCK AND DOG  
TRAILER TURNING LEFT OUT  
OF ST. VINCENTS ROAD**



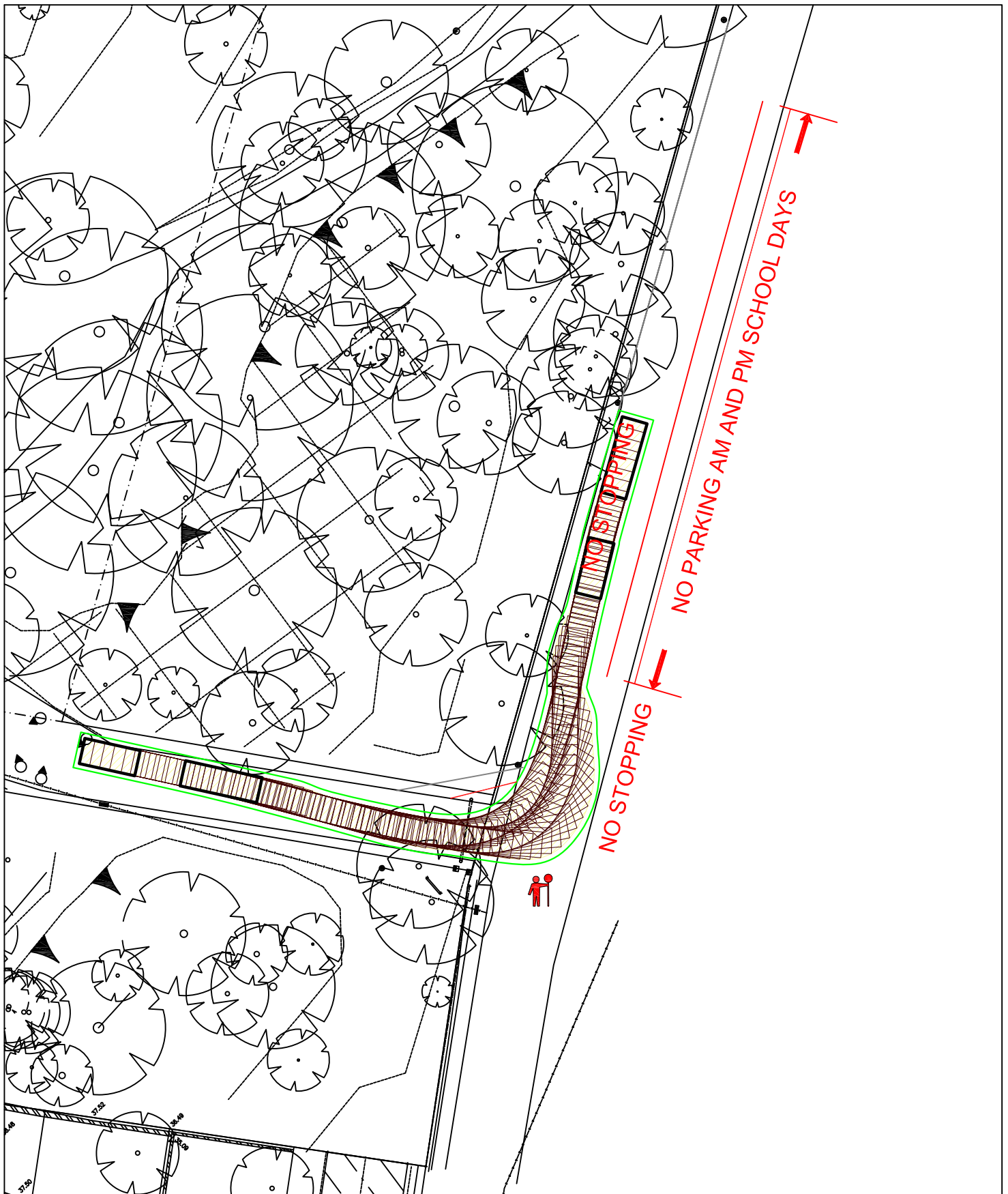
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**SWEPT PATH ANALYSIS  
OF A 17.6m TRUCK AND DOG  
TRAILER ENTERING THE SITE  
FROM ST. VINCENTS ROAD**

**SP 4**



**NOTE**

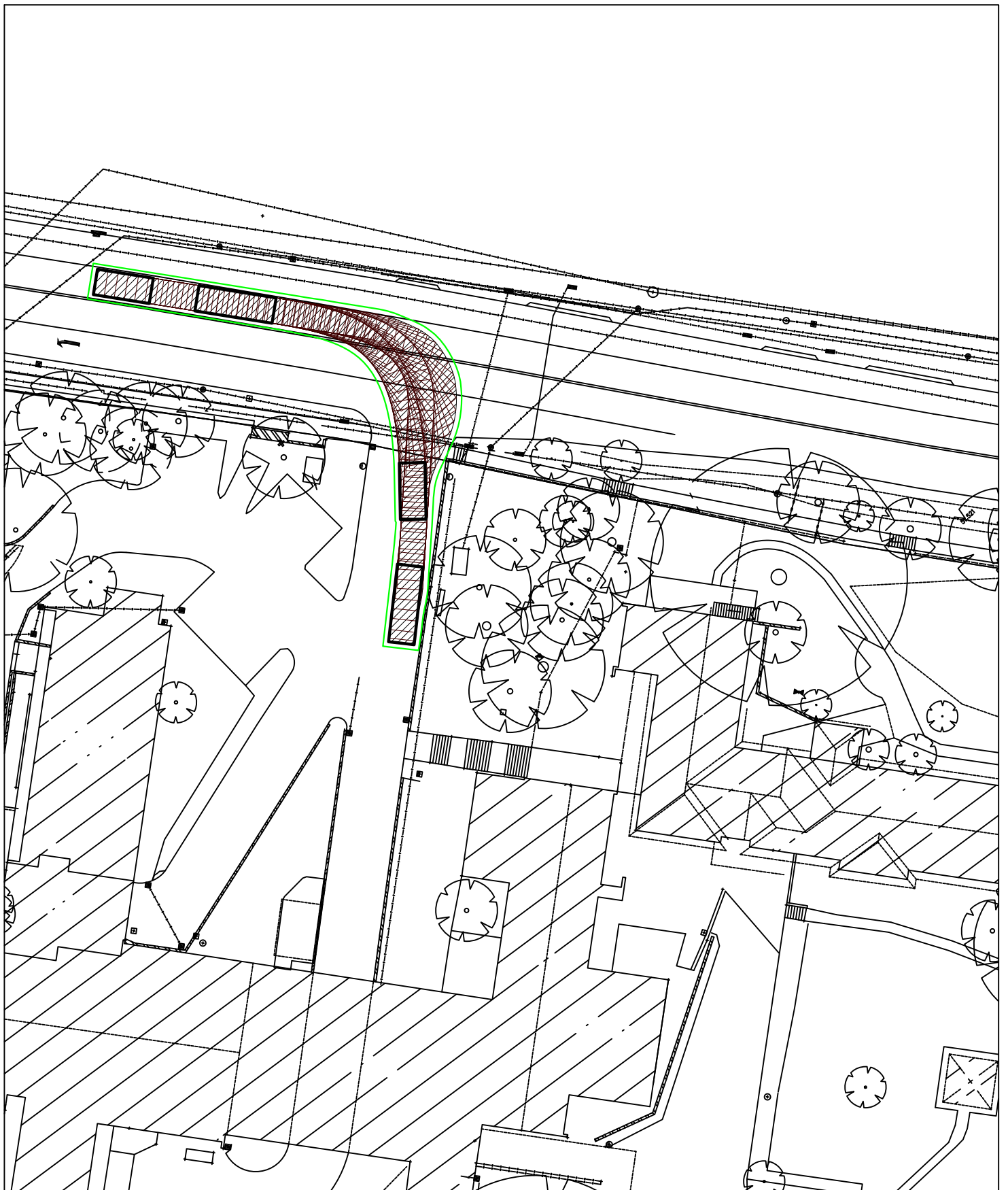
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**SWEPT PATH ANALYSIS  
OF A 17.6m TRUCK AND DOG  
TRAILER EXITING THE SITE  
ONTO ST. VINCENTS ROAD**

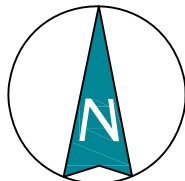
**SP 5**





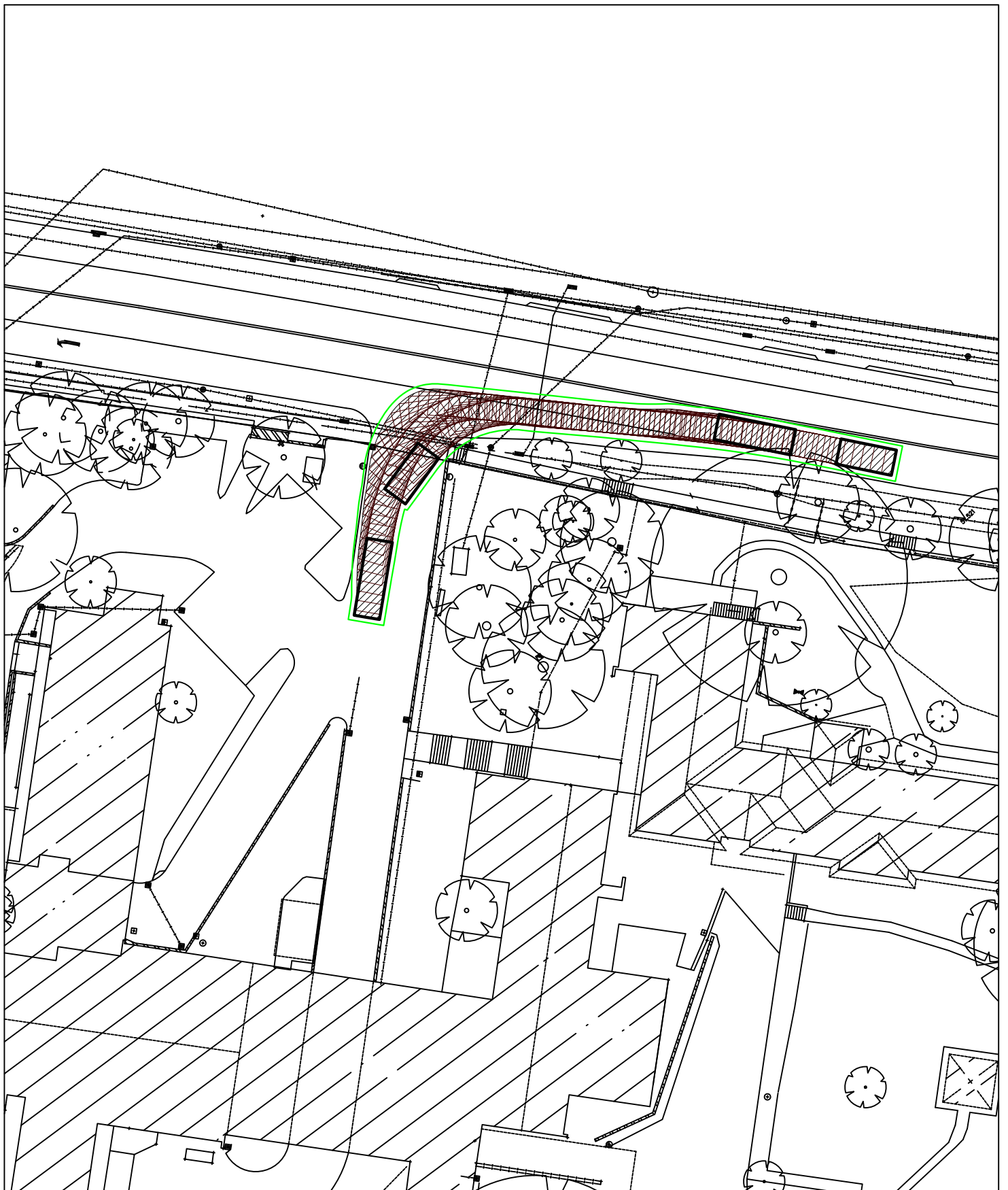
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**SWEPT PATH ANALYSIS  
OF A 17.6m TRUCK AND DOG  
TRAILER ENTERING THE SITE**

**SP 6**



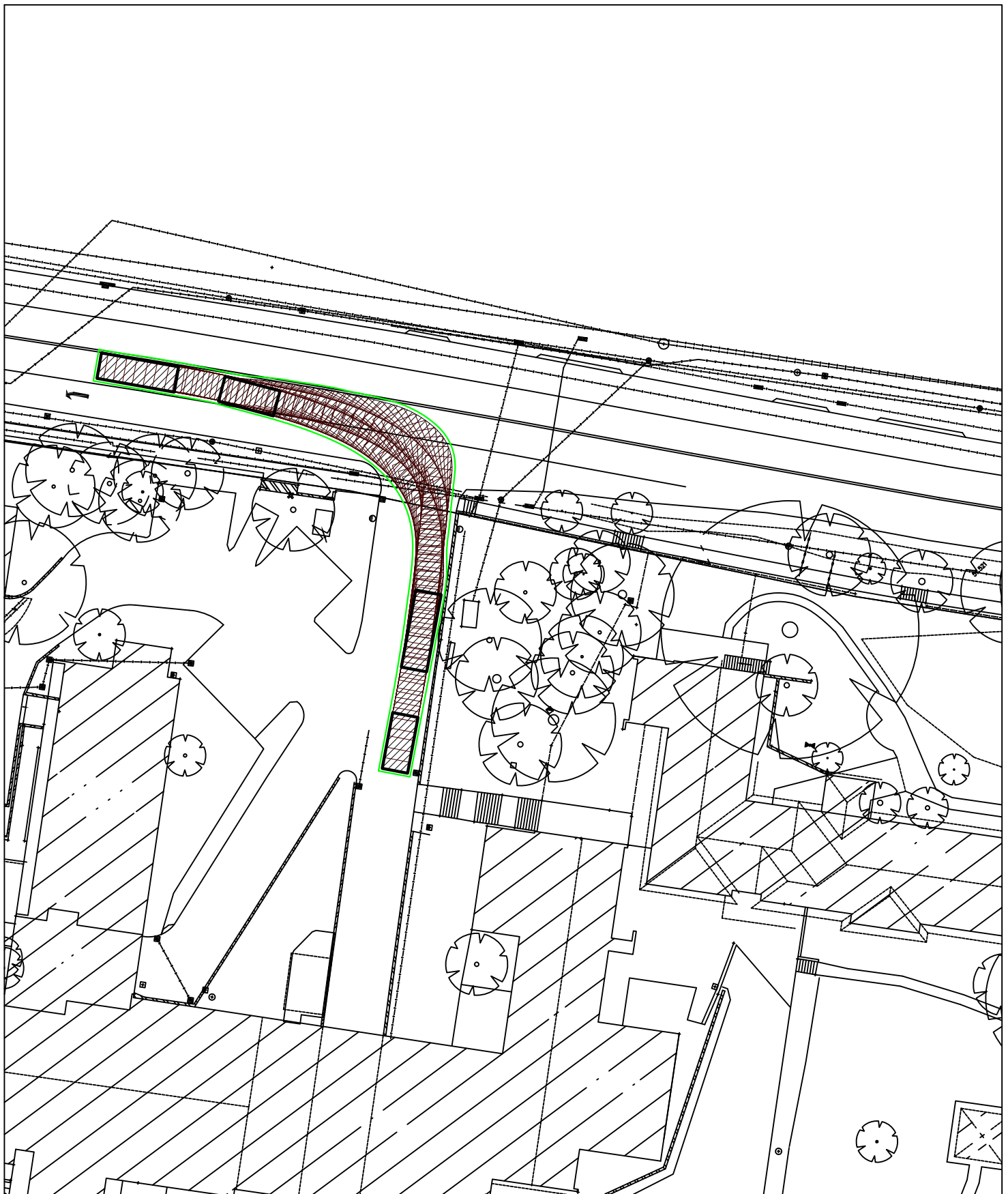
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**SWEPT PATH ANALYSIS  
OF A 17.6m TRUCK AND DOG  
TRAILER ENTERING THE SITE**

**SP 7**



## NOTE

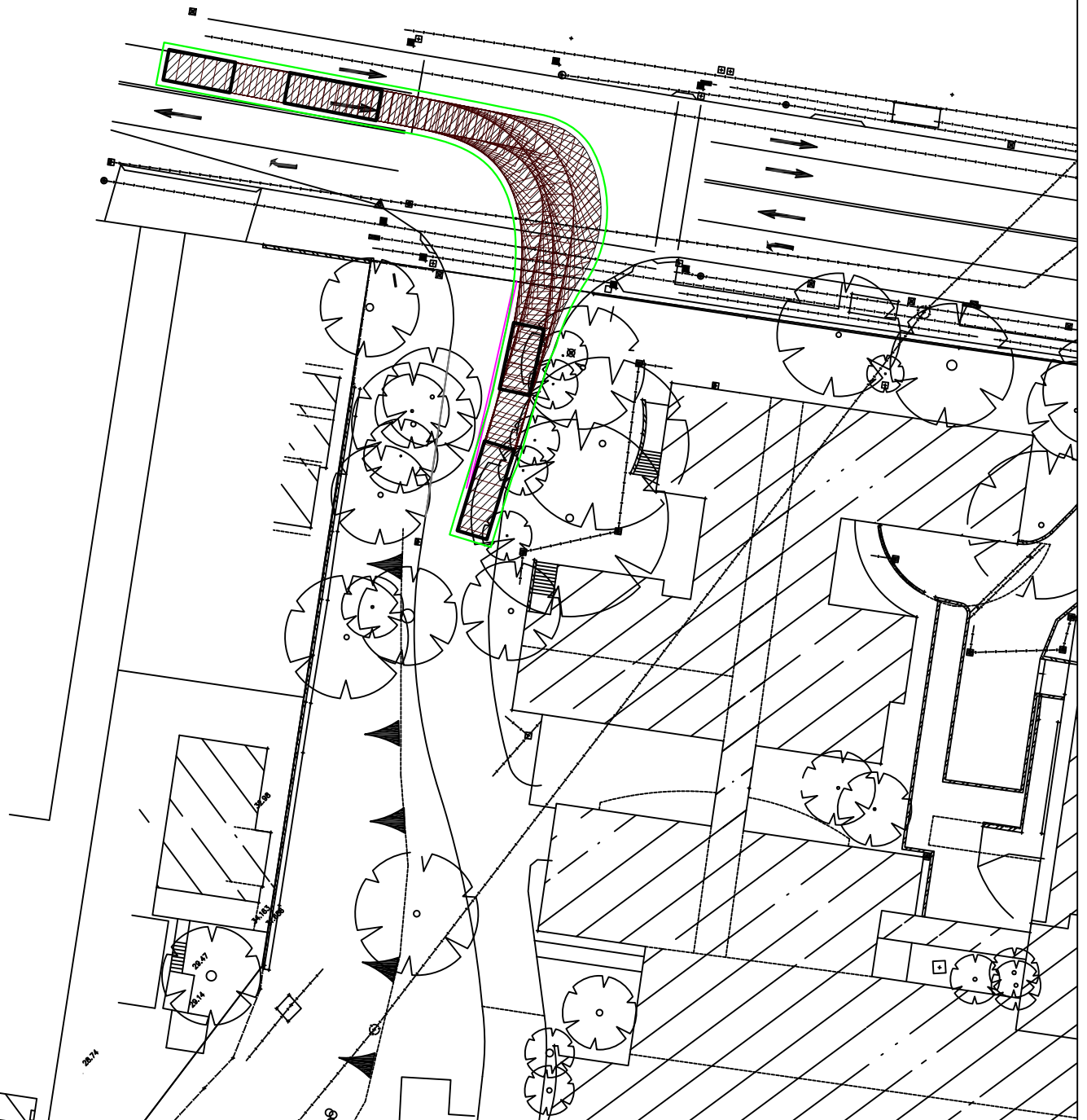
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**SWEPT PATH ANALYSIS  
OF A 17.6m TRUCK AND DOG  
TRAILER EXITING THE SITE**

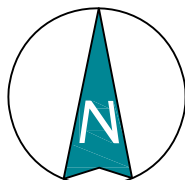
**SP 8**



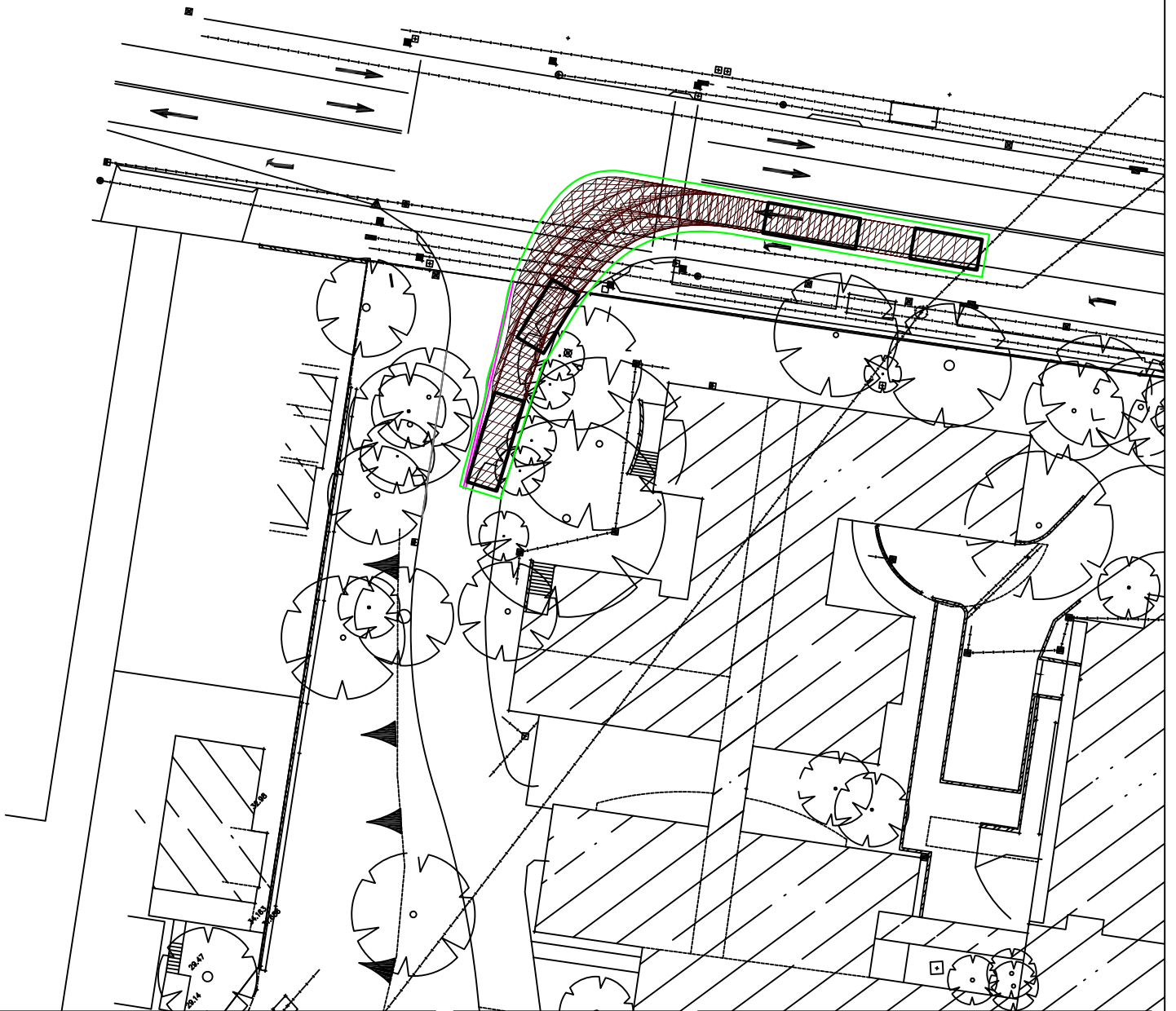


**NOTE**

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**SWEPT PATH ANALYSIS  
OF A 17.6m TRUCK AND DOG  
TRAILER ENTERING THE SITE**



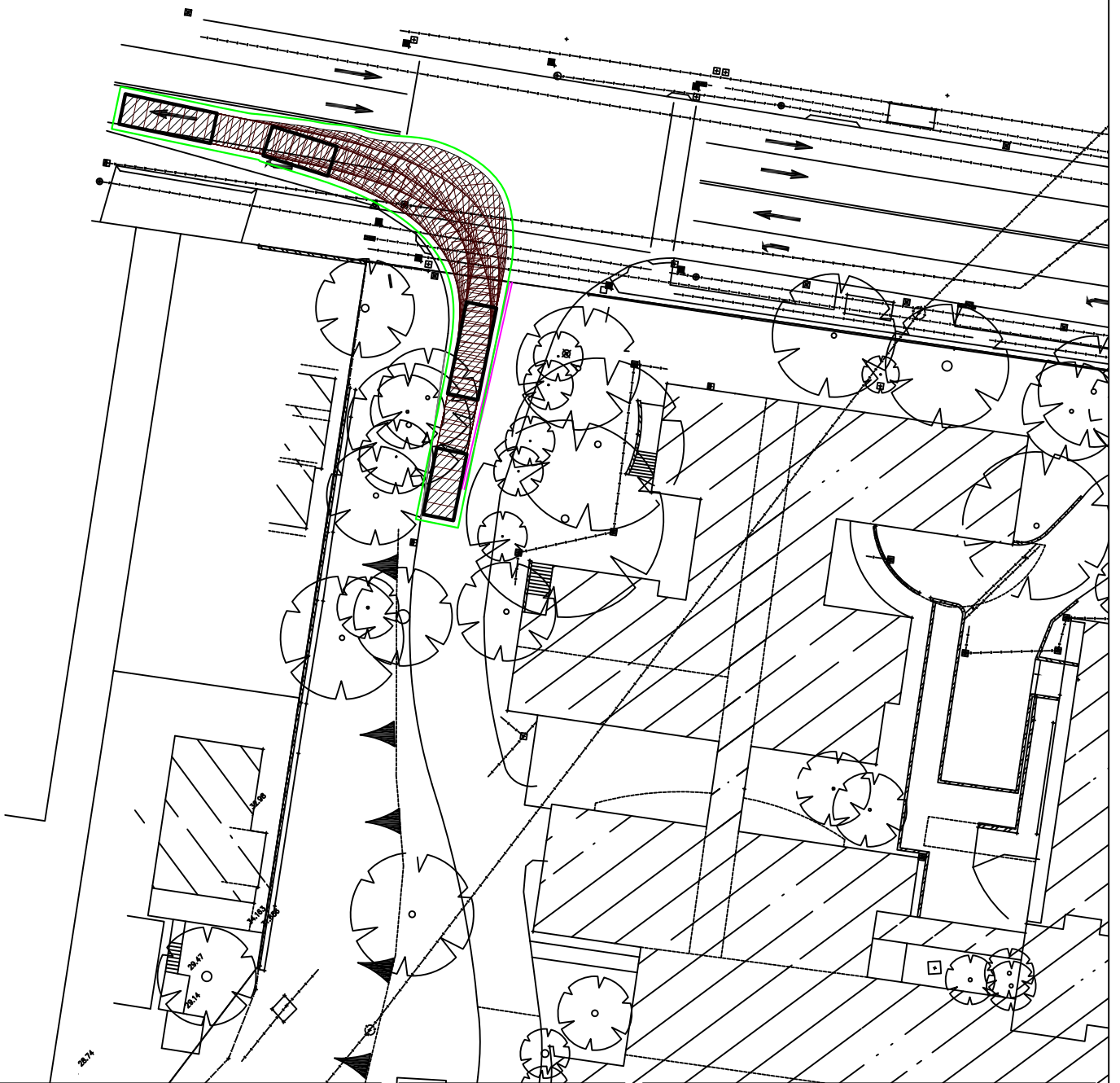
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**SWEPT PATH ANALYSIS  
OF A 17.6m TRUCK AND DOG  
TRAILER ENTERING THE SITE**

**SP 10**



**NOTE**

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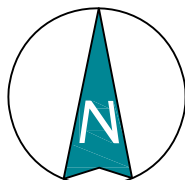
**SWEPT PATH ANALYSIS  
OF A 17.6m TRUCK AND DOG  
TRAILER EXITING THE SITE**





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**SWEPT PATH ANALYSIS  
OF A 17.6m TRUCK AND DOG  
TRAILER EXITING THE SITE**

# Appendix H

## Traffic Guidance Schemes

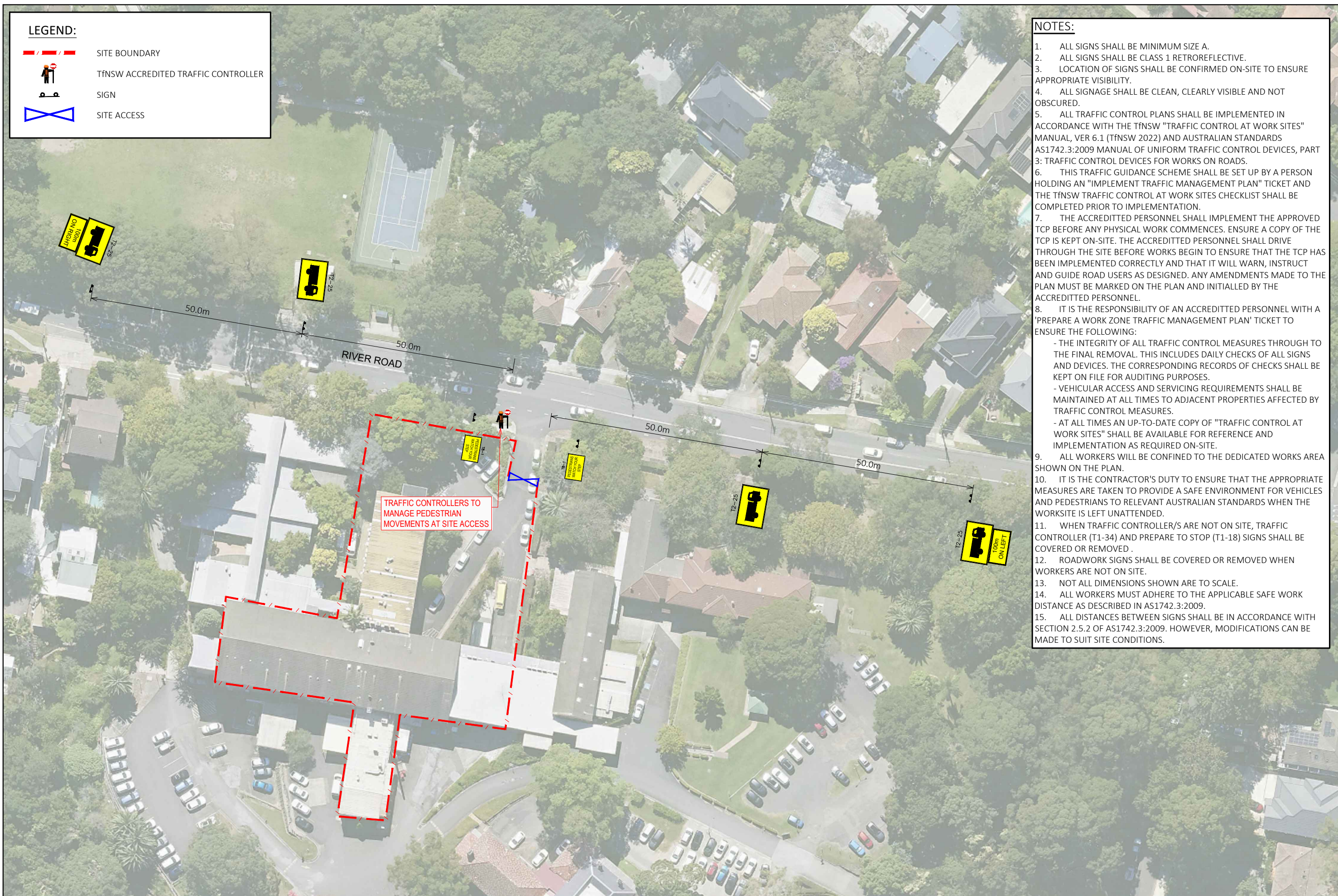


**LEGEND:**

-  SITE BOUNDARY
-  TfNSW ACCREDITED TRAFFIC CONTROLLER
-  SIGN
-  SITE ACCESS

**NOTES:**

1. ALL SIGNS SHALL BE MINIMUM SIZE A.
2. ALL SIGNS SHALL BE CLASS 1 RETROREFLECTIVE.
3. LOCATION OF SIGNS SHALL BE CONFIRMED ON-SITE TO ENSURE APPROPRIATE VISIBILITY.
4. ALL SIGNAGE SHALL BE CLEAN, CLEARLY VISIBLE AND NOT OBSCURED.
5. ALL TRAFFIC CONTROL PLANS SHALL BE IMPLEMENTED IN ACCORDANCE WITH THE TfNSW "TRAFFIC CONTROL AT WORK SITES" MANUAL, VER 6.1 (TfNSW 2022) AND AUSTRALIAN STANDARDS AS1742.3:2009 MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, PART 3: TRAFFIC CONTROL DEVICES FOR WORKS ON ROADS.
6. THIS TRAFFIC GUIDANCE SCHEME SHALL BE SET UP BY A PERSON HOLDING AN "IMPLEMENT TRAFFIC MANAGEMENT PLAN" TICKET AND THE TfNSW TRAFFIC CONTROL AT WORK SITES CHECKLIST SHALL BE COMPLETED PRIOR TO IMPLEMENTATION.
7. THE ACCREDITED PERSONNEL SHALL IMPLEMENT THE APPROVED TCP BEFORE ANY PHYSICAL WORK COMMENCES. ENSURE A COPY OF THE TCP IS KEPT ON-SITE. THE ACCREDITED PERSONNEL SHALL DRIVE THROUGH THE SITE BEFORE WORKS BEGIN TO ENSURE THAT THE TCP HAS BEEN IMPLEMENTED CORRECTLY AND THAT IT WILL WARN, INSTRUCT AND GUIDE ROAD USERS AS DESIGNED. ANY AMENDMENTS MADE TO THE PLAN MUST BE MARKED ON THE PLAN AND INITIALLED BY THE ACCREDITED PERSONNEL.
8. IT IS THE RESPONSIBILITY OF AN ACCREDITED PERSONNEL WITH A 'PREPARE A WORK ZONE TRAFFIC MANAGEMENT PLAN' TICKET TO ENSURE THE FOLLOWING:
  - THE INTEGRITY OF ALL TRAFFIC CONTROL MEASURES THROUGH TO THE FINAL REMOVAL. THIS INCLUDES DAILY CHECKS OF ALL SIGNS AND DEVICES. THE CORRESPONDING RECORDS OF CHECKS SHALL BE KEPT ON FILE FOR AUDITING PURPOSES.
  - VEHICULAR ACCESS AND SERVICING REQUIREMENTS SHALL BE MAINTAINED AT ALL TIMES TO ADJACENT PROPERTIES AFFECTED BY TRAFFIC CONTROL MEASURES.
  - AT ALL TIMES AN UP-TO-DATE COPY OF "TRAFFIC CONTROL AT WORK SITES" SHALL BE AVAILABLE FOR REFERENCE AND IMPLEMENTATION AS REQUIRED ON-SITE.
9. ALL WORKERS WILL BE CONFINED TO THE DEDICATED WORKS AREA SHOWN ON THE PLAN.
10. IT IS THE CONTRACTOR'S DUTY TO ENSURE THAT THE APPROPRIATE MEASURES ARE TAKEN TO PROVIDE A SAFE ENVIRONMENT FOR VEHICLES AND PEDESTRIANS TO RELEVANT AUSTRALIAN STANDARDS WHEN THE WORKSITE IS LEFT UNATTENDED.
11. WHEN TRAFFIC CONTROLLER/S ARE NOT ON SITE, TRAFFIC CONTROLLER (T1-34) AND PREPARE TO STOP (T1-18) SIGNS SHALL BE COVERED OR REMOVED.
12. ROADWORK SIGNS SHALL BE COVERED OR REMOVED WHEN WORKERS ARE NOT ON SITE.
13. NOT ALL DIMENSIONS SHOWN ARE TO SCALE.
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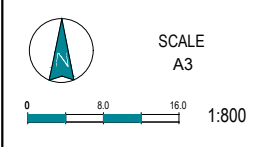


TRAFFIC CONTROLLERS TO MANAGE PEDESTRIAN MOVEMENTS AT SITE ACCESS

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97-115 RIVER RD, GREENWICH NSW 2065  
 STAGE 1 EARLY WORKS  
 TRAFFIC GUIDANCE SCHEME

DRAWING REF NO. 20352-V1.5-TGS SHEET NO. 01 OF 03 ISSUE DATE 26 November 2024



**CERTIFICATION**  
 THE DESIGNER AND THE REVIEWER ARE CURRENT CARDHOLDER OF TRAFFIC CONTROL WORK: PREPARE WORKS ZONE

DESIGNER:  
 NAME: AIDAN GARDNER  
 CARD NO.: TCT1053356  
 CLASS: PREPARE WORK ZONE

*Member*

REVIEWER:  
 NAME: LACHLAN ELLSON  
 CARD NO.: TCT0041903  
 CLASS: PREPARE WORK ZONE

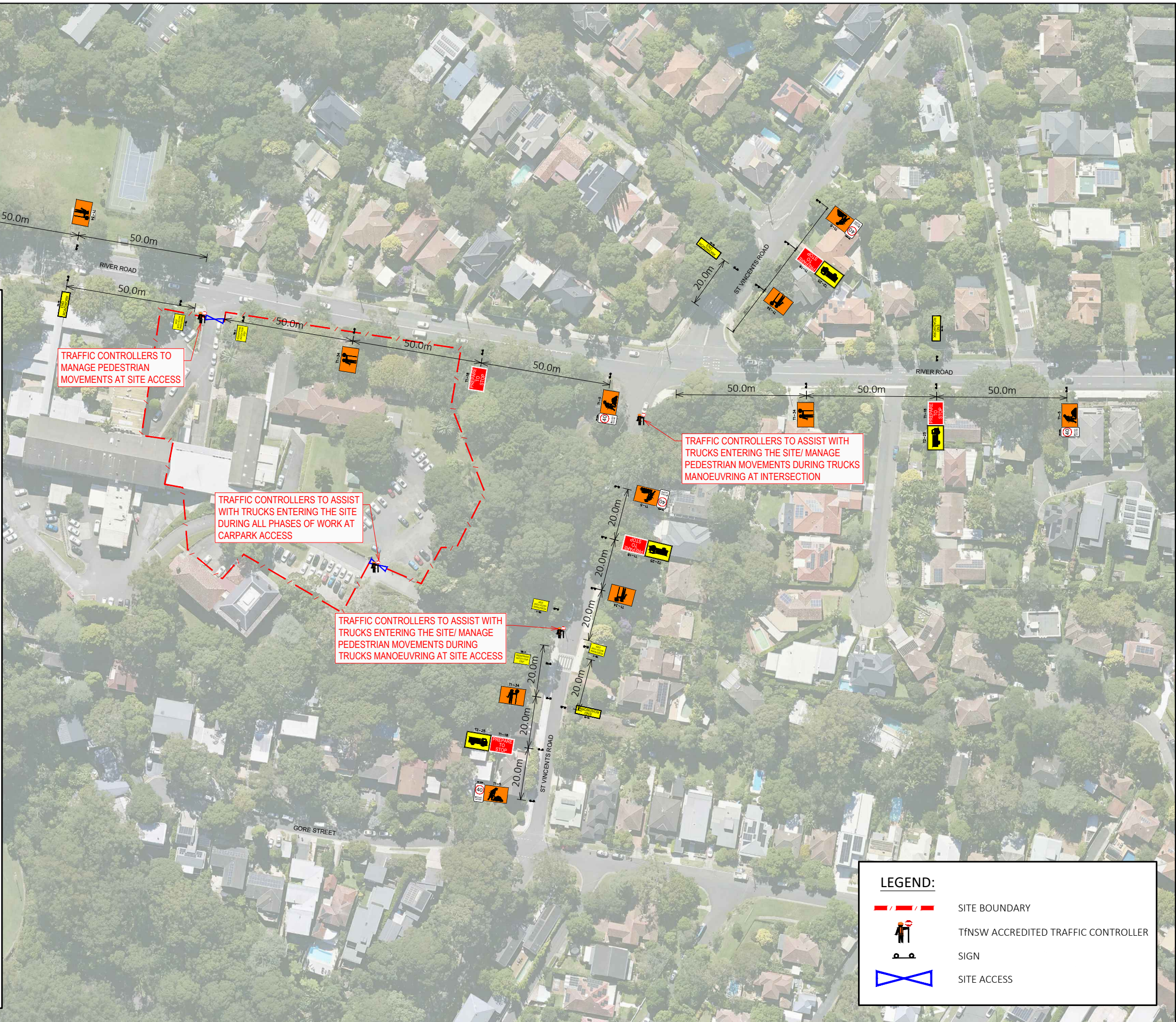
*Ellison*

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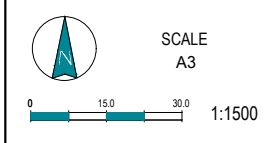
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**97-115 RIVER RD, GREENWICH NSW 2065  
STAGE 2 MAIN HOSPITAL BUILDING  
TRAFFIC GUIDANCE SCHEME**

DRAWING REF NO. 20352-V1.5-TGS SHEET NO. 02 OF 03 ISSUE DATE 26 November 2024



**CERTIFICATION**  
THE DESIGNER AND THE REVIEWER ARE CURRENT CARDHOLDER OF TRAFFIC CONTROL WORK: PREPARE WORKS ZONE

DESIGNER:  
NAME: AIDAN GARDNER  
CARD NO.: TCT1053356  
CLASS: PREPARE WORKS ZONE

*Member*

REVIEWER:  
NAME: LACHLAN ELLSON  
CARD NO.: TCT0041903  
CLASS: PREPARE WORKS ZONE

*Ellison*






**LEGEND:**

- SITE BOUNDARY
- TfNSW ACCREDITED TRAFFIC CONTROLLER
- SIGN
- SITE ACCESS

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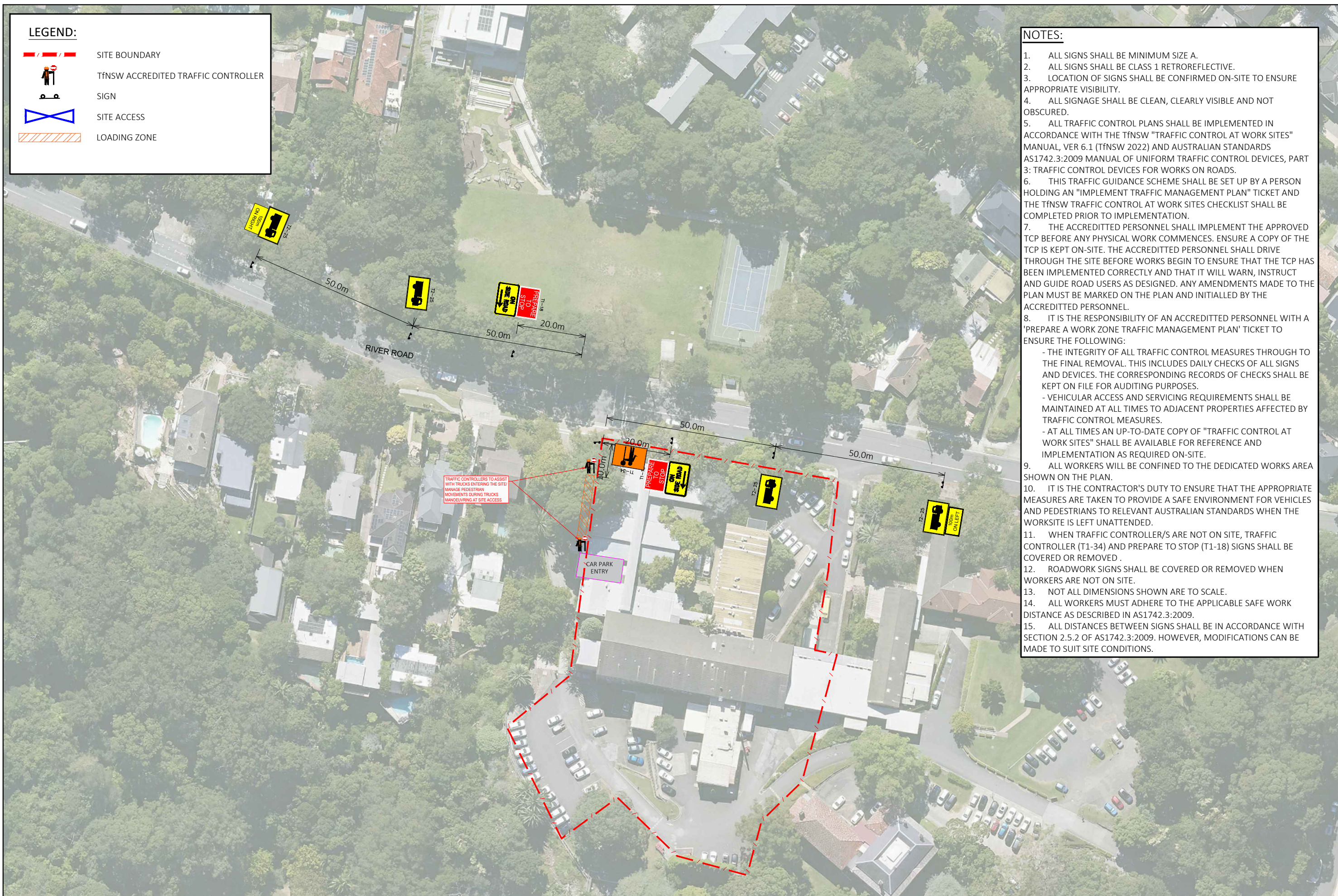


**LEGEND:**

-  SITE BOUNDARY
-  TfNSW ACCREDITED TRAFFIC CONTROLLER
-  SIGN
-  SITE ACCESS
-  LOADING ZONE

**NOTES:**

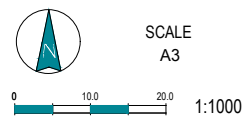
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97-115 RIVER RD, GREENWICH NSW 2065  
 STAGE 3 SENIORS LIVING  
 TRAFFIC GUIDANCE SCHEME

DRAWING REF NO. 20352-V1.5-TGS SHEET NO. 03 OF 03 ISSUE DATE 26 November 2024



**CERTIFICATION**  
 THE DESIGNER AND THE REVIEWER  
 ARE CURRENT CARDHOLDER OF  
 TRAFFIC CONTROL WORK: PREPARE  
 WORKS ZONE

DESIGNER:  
 NAME: AIDAN GARDNER  
 CARD NO.: TCT1053356  
 CLASS: PREPARE WORK ZONE

*Aidan Gardner*

REVIEWER:  
 NAME: LACHLAN ELLSON  
 CARD NO.: TCT0041903  
 CLASS: PREPARE WORK ZONE

*Lachlan Ellson*

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# Appendix I

## Road Safety Audit



# Greenwich Hospital - Proposed Seniors Health Campus River Road, Greenwich

## **Project Phase: Construction Road Safety Audit Report**

Prepared for: Hammond Care Pty Ltd

November 2024

Report No: PT124067r01\_V7

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## 1. Introduction

This report presents findings of a Pre-Construction Road Safety Audit Report of the proposed construction traffic arrangements to support the redevelopment of the Greenwich Hospital to provide a Senior Health Campus.

The preparation of this report has been based on both a review of the Construction Traffic Management Sub Plan (sub CTMP) report prepared by Transport and Traffic Planning Associates dated October 2024 and site visit of the location. Further, the draft Construction Management Plan prepared by Roberts Co dated December 2022.

The need for the Road Safety Audit is a requirement of the following State Significant Development Application (SSDA) condition of consent:

*“a road safety audit of St Vincents Road and incorporate any measures required to address any identified safety concerns associated with construction vehicles accessing the site from this street.”*

The aim of the audit is to independently examine the road environment and in this instance construction arrangements and identify potential risks to public safety as a result of the proposed construction and therefore reduce the likelihood of accidents on and around the road precinct. The audit will attempt to identify any associated road safety hazards, for all road users, and offer recommendations for corrective actions.

## 2. Existing Road Development / Conditions

The following presents a summary of existing site and traffic conditions.

### 2.1 Site Location

The existing hospital is located on the south – west corner of the priority controlled intersection of the River Road / St Vincents Road and includes three (3) entry / exit driveways serving the site. The driveway in St Vincents Road is located immediately north of an existing pedestrian crossing and allows for all movements. A further driveway is located centrally to the frontage in River Road and allows for all movements. No specific turn lane facilities are provided in this location. A third vehicle access is located adjacent to the western boundary of the site and is controlled by traffic signals and allows for all movements. The site location and access driveways are shown below in **Figure 1**:

**Figure 1 – Site Location & Access Driveways**



The existing driveway arrangements of the site are shown below in **Figure 2**, **Figure 3** and **Figure 4**.



Figure 2 – St Vincents Road Driveway Access



Figure 3 – Eastern Driveway River Road



Figure 4 – Western Signalised Driveway River Road



## 2.2 Classification Criteria

It is usual to classify roads according to a road hierarchy in order to determine their functional role within the road network. Changes to traffic flows on the roads can then be assessed within the context of the road hierarchy. Roads are classified according to the role they fulfil and the volume of traffic they should appropriately carry. The RTA has set down the following guidelines for the functional classification of roads.

- Arterial Road – typically a main road carrying over 15,000 vehicles per day and fulfilling a role as a major inter-regional link (over 1,500 vehicles per hour)
- Sub-arterial Road – defined as secondary inter-regional links, typically carrying volumes between 5,000 and 20,000 vehicles per day (500 to 2,000 vehicles per hour)
- Collector Road – provides a link between local roads and regional roads, typically carrying between 2,000 and 10,000 vehicles per day (250 to 1,000 vehicles per hour). At volumes greater than 5,000 vehicles per day, residential amenity begins to decline noticeably.
- Local Road – provides access to individual allotments, carrying low volumes, typically less than 2,000 vehicles per day (250 vehicles per hour).

## 2.3 Existing Road Network

The existing / future road network around the site is described below:



River Road – is a Regional Road and sub-arterial route which connects between Longueville and Crows Nest. Across the frontage of the site, the road includes a carriageway width of some 12.0m with a two travel lanes in each direction and a posted speed limit of 60km/hr. The road is a key bus corridor through the area. The intersection of River Road / St Vincents Road includes a priority controlled intersection with no separate turn lanes.

St Vincents Road – is a local street linking River Road in the north with a peninsular of residential development to the south. The road includes a carriageway width of some 7.5-8.0m north of the existing pedestrian crossing to 6.0m to the south of the pedestrian crossing. Parallel parking is permitted on both sides of the street. However, southbound on street parking is restricted during school peak periods as shown below in [Photo 1](#).

**Photo 1 - School Peak Parking Restrictions Southbound St Vincents Road**



St Vincents Road includes a 2.0m wide all weather path on its eastern side which connects to a raised marked footcrossing immediately south of the driveway access to the hospital. A narrower 1.2m wide path is provided on the western side and connects to River Road as shown below in



Photo 2 – Existing 2.0m All Weather Path Eastern Side St Vincents Road with Marked Footcrossing South of Driveway Access



Photo 3 – Existing 1.2m All Weather Path Western Side St Vincents Road





Of note, Greenwich Public School is located directly opposite the subject site in River Road which is expected to be the source of the school peak parking restrictions with parents parking in St Vincents Road and making their way to / from the school via the existing traffic signals at the Greenwich Hospital western vehicle access.



### 3. Project Description

As stated in the CTMP report<sup>1</sup>, at the completion of the development, the hospital will include the following:

- *Hospital RACF complex on the eastern part of the site with:*
  - *Administration Staff 60*
  - *Specialists 56*
  - *Sub-acute hospital with 65 inpatient beds and 25 staff*
  - *12 Consulting Rooms staff included above*
  - *RACF with 65 beds and 15 staff*
  - *Ancillary elements (café etc.)*
  - *Porte cochere and short term parking*
  - *Basement parking*
  - *Respite with 10 beds and 6 staff*
- *The Supported Seniors Living complex in 2 blocks on the western part of the site:*
  - *Seniors apartments*
  - *10 x 1 bed*
  - *64 x 2 bed (or 1 bed and study)*
  - *15 x 3 bed*
  - *Total 89 apartments*
  - *Staff are included in hospital administration staff numbers*
  - *Ancillary elements*
  - *Basement car parking with supplementary at-grade visitor parking.*

*The vehicle access arrangements will largely remain as existing although the driveway near the centre of the River Road frontage will be modified and limited to left turn IN/OUT only (apart from emergency vehicles). The hospital porte cochere will connect to this access and there will be internal circulation roadway with connections to the various parking areas and loading dock. Importantly, interconnection will enable all vehicles to utilise the traffic signal-controlled access point on River Road.*

---

<sup>1</sup> Greenwich Hospital Proposed Seniors Health Campus River Road, Greenwich CTMP Report – TTPA October 2024



## 4. Supporting Information

### 4.1 Construction Traffic and Pedestrian Sub-Management Plan / Construction Traffic Management Plan (CTMP)

As stated above, the basis of this RSA is the Construction Traffic Sub Management Plan (sub CTMP) report prepared by Transport and Traffic Planning Associates dated October 2024 and a draft Construction Management Plan prepared by Roberts Co dated December 2022.

In particular, the proposed arrangements in St Vincents Street given its current supporting road in providing a component of parent parking for Greenwich Public School.

The project original was divided into four (4) stages as described below:

- Stage 1 – Early works and external works
- Stage 2 – New Hospital building
- Stage 3 – Two new Seniors Living buildings
- Stage 4 – New Respite Care building

The sub CTMP report identifies the following stages of construction:

#### Stage 1

- Early Works - 50 weeks

#### Stage 2

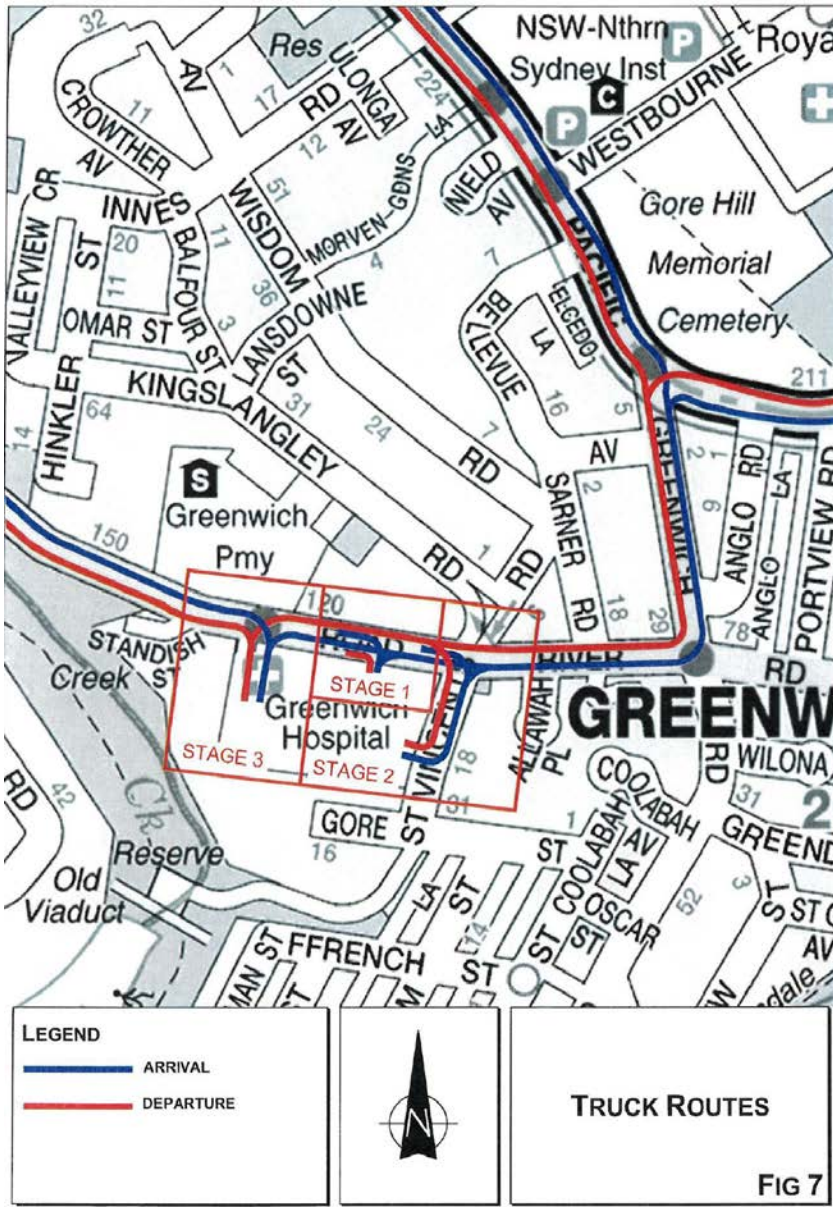
- Site Establishment - 6 weeks
- Demolition - 5 weeks
- Excavation - 18 weeks
- Construction & Fitout - 114 weeks

#### Stage 3

- Site Establishment - 3 weeks
- Demolition - 10 weeks
- Excavation - 12 weeks
- Construction - 70 weeks

As confirmed above, Stage 4 is *not* part of the current proposed works.

All truck movements associated with the construction process will access the site via the routes illustrated in Figure 7 below for any potential concurrent heavy vehicle movements entering and exiting the site, there will be "call up" procedures in place with a site gatekeeper organising truck movements via UHF to minimise potential queuing on site.



As confirmed above access via St Vincents Road would only occur during Stage 2 of construction. All access for Stage 3 would occur via the western signalised intersection access in River Road.

#### 4.2 St Vincents Road Arrangements

Following a review of the CTMP report, the following is noted on matters pertaining to access and management of St Vincents Road during Stage 2 of construction.



Figure 5 - Stage 2 Construction Traffic Management Arrangements

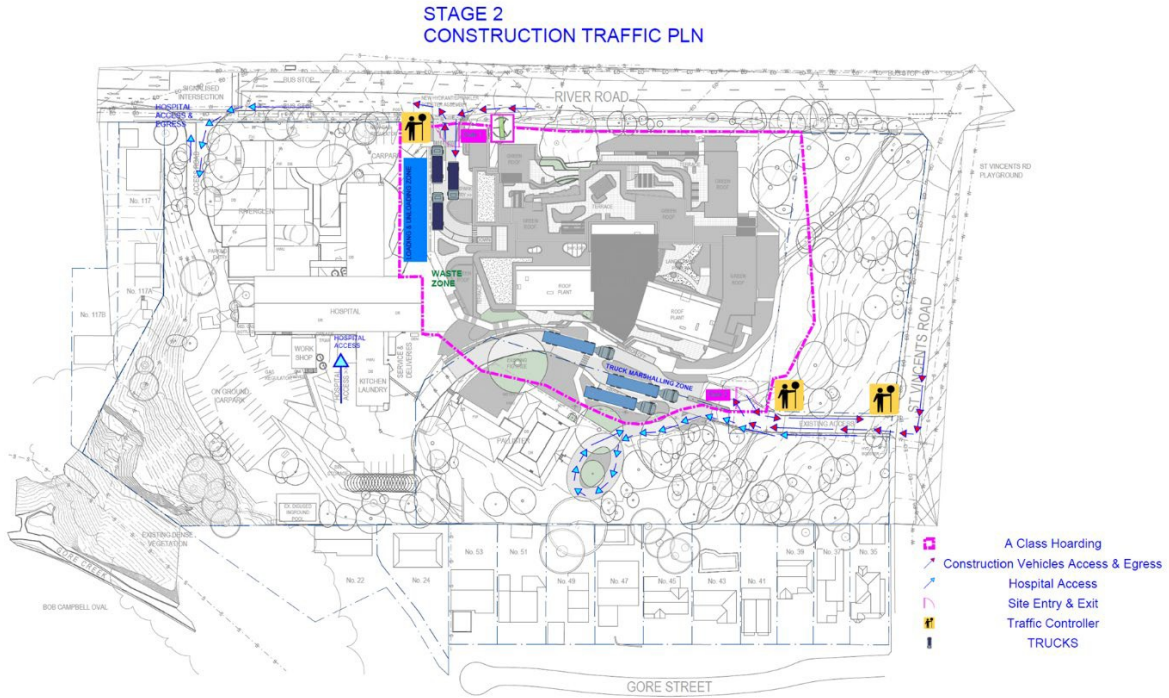


Figure 6 – Truck & Dog Right Turn River Road into St Vincents Road Turn Path

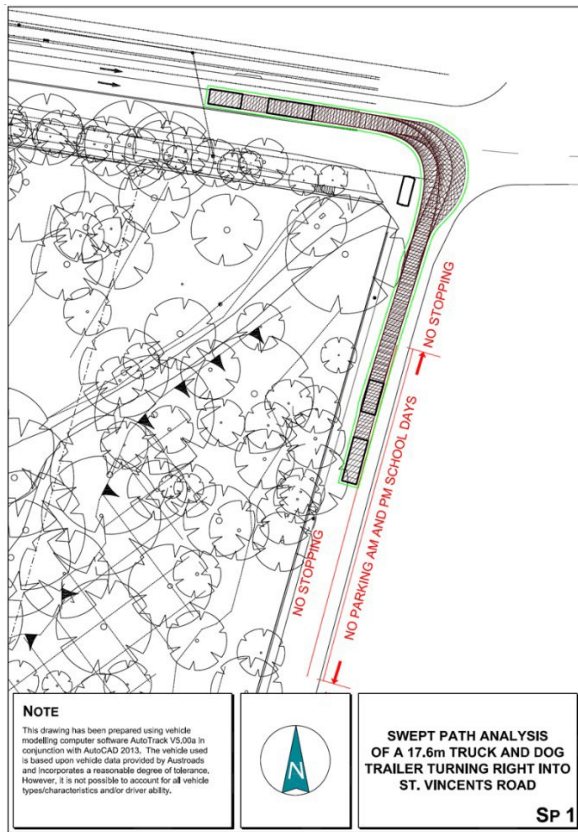


Figure 7 – Truck & Dog Left Turn River Road into St Vincents Road Turn Path

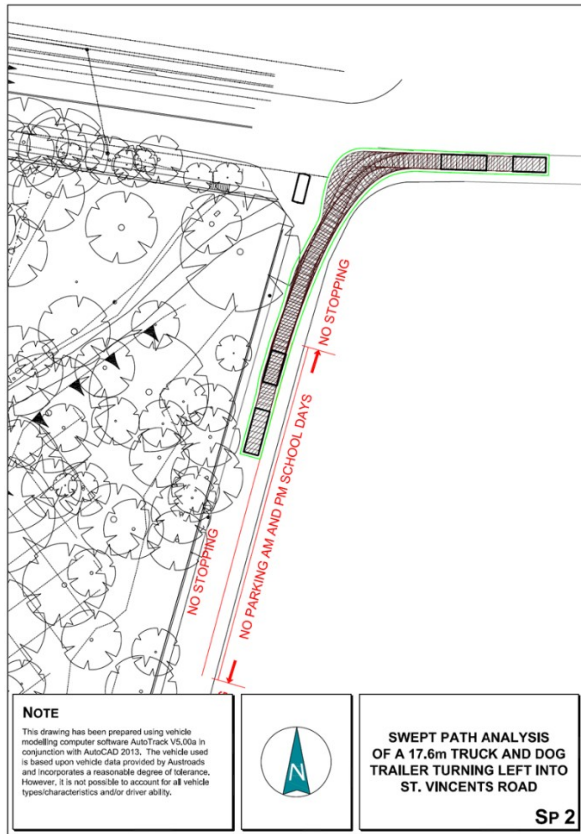


Figure 8 – Truck & Dog Left Turn St Vincents Road into River Road Turn Path

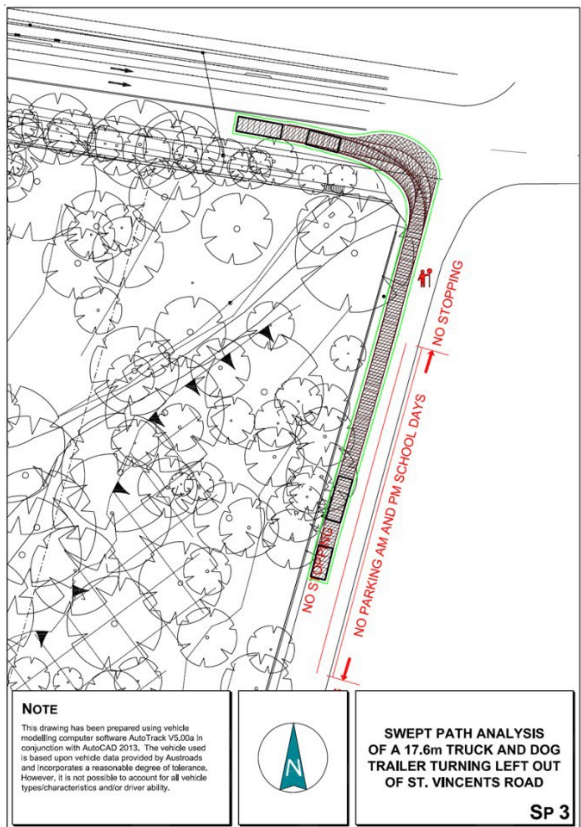




Figure 9 – Truck & Dog Right Turn St Vincents Road into Site Turn Path

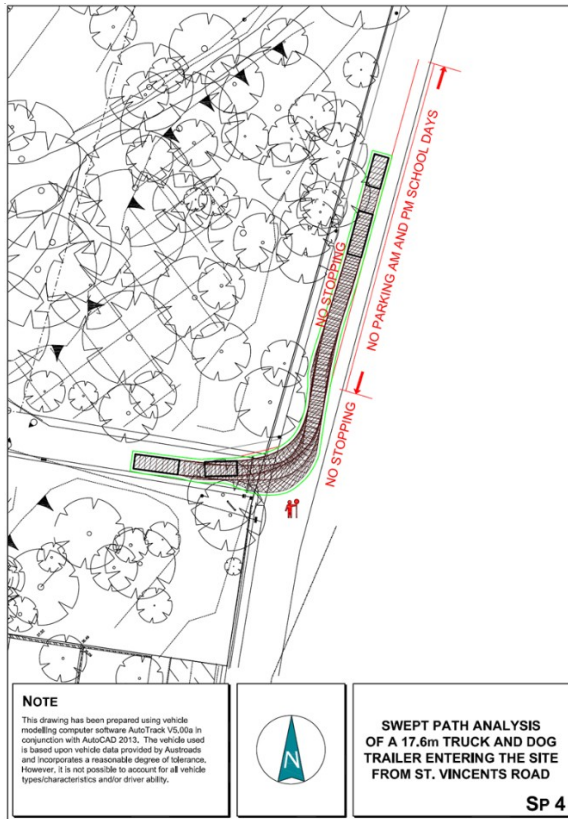
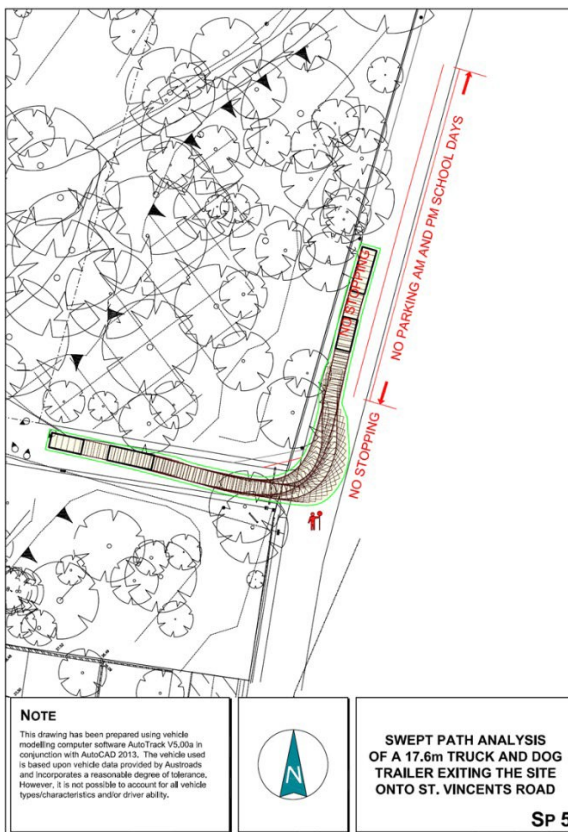
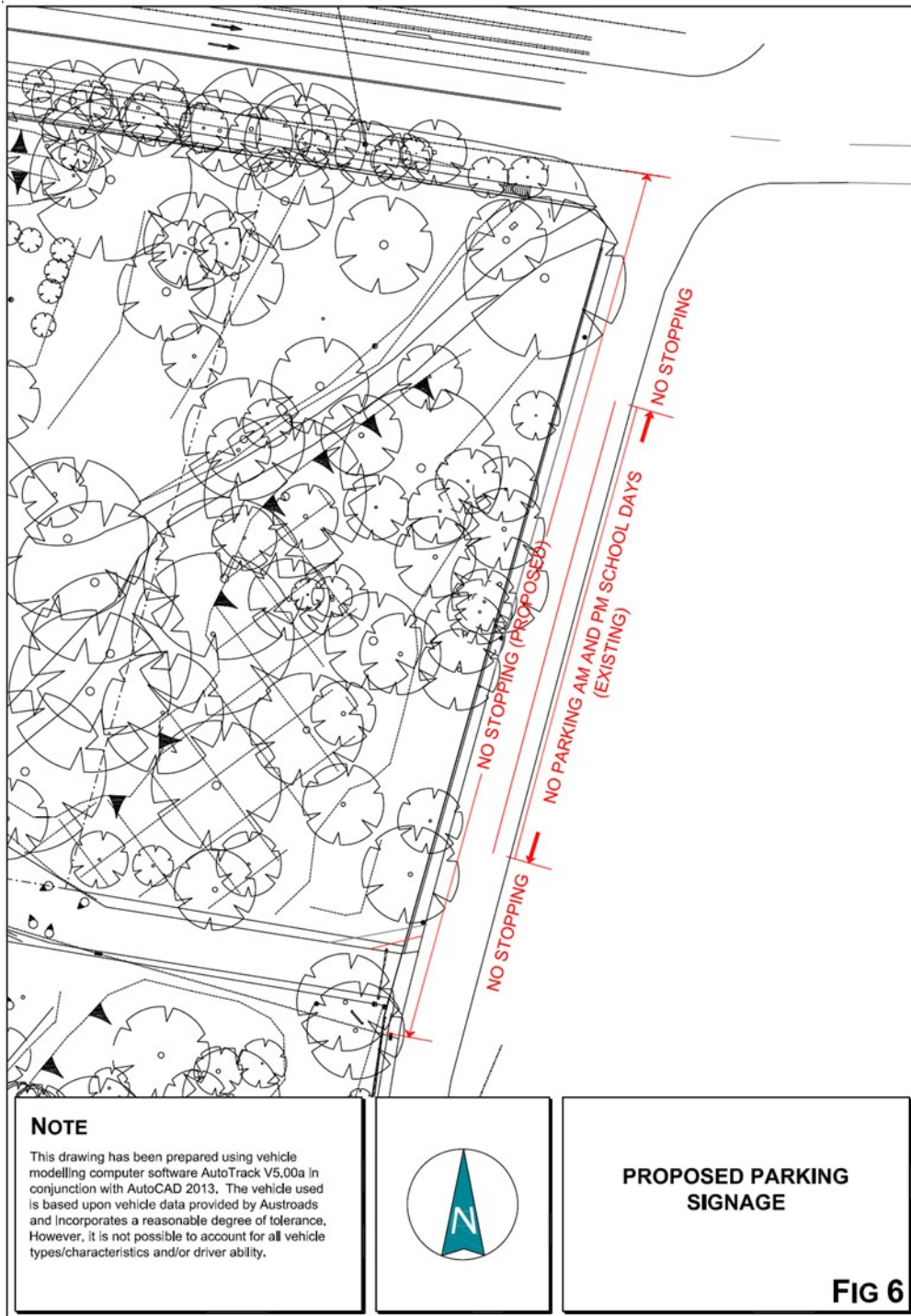


Figure 10 – Truck & Dog Left Turn Site into St Vincents Road Turn Path



It is also noted that a No Stopping zone is proposed along the western side of St Vincents Road between the access driveway to the site and River Road to provide greater width of trafficable pavement during construction. This is shown below in [Figure 11](#).

**Figure 11 – No Stopping Zone Proposed Western Side of St Vincents Road During Construction**







- AUSTRROADS - Guide to Road Safety - Part 3: Speed Limits and Speed Management
- Australian Standards AS 1742 (Parts 1 and 2) - Manual of Uniform Traffic Control Devices
- Australian Standards AS 1428 – Access for Persons with Disabilities
- Australian Standards AS 2890.1 – Off Street Car Parking Facilities
- Australian Standards AS 2890.2 Parking Facilities for Commercial Vehicles

#### 4.4 Road Safety Audit Program

##### 4.4.1 Background

A Road Safety Audit is a series of formal checks of road and traffic works, both existing and future, in relation to their accident potential and safety performance. It is conducted by a team independent to the project to provide an independent and objective safety assessment. The purpose of this audit process is to pro-actively manage road safety by identifying and addressing risks associated with road safety deficiencies.

##### 4.4.2 Audit Stage

This Pre Construction Road Safety Audit Report examined sub CTMP and CTMP reports as stated in Section 4.1 of this report prepared Transport and Traffic Planning Associates and Roberts Co respectively. The audit was undertaken in accordance with both the RTA – TD 2003/RS03-V2 - Technical Direction for Road Safety Practitioners - Policy for road safety audits of construction and reconstruction projects (August 2005) and Austroads – Guide to Road Safety - Part 6: Road Safety Audit (2009).

##### 4.4.3 Audit Program

The audit focuses on a desktop audit of the proposed construction management arrangements in particular for Stages 1 and 2 where access via St Vincents Road is proposed. The audit was conducted by a Level 3 and Level 2 Accredited Road Safety Auditors, currently listed with the Register of Road Safety Auditors, NSW.

#### 4.5 Audit Objectives

This road safety audit is limited in assessing potential road safety risks i.e. accident potential, for all users of the project, irrespective of the design standards adopted. The Road Safety Audit does not rate a project, check compliances with standards nor substitute for proper design checks. A Road Safety Audit does not specify details of corrective actions required in a design but may make specific recommendations for follow up by the design team.

The objectives of the audit are therefore to: -

- Identify and eliminate potential safety hazards for all road users likely to use the roadway, including traffic, pedestrians and cyclists.
- Ensure that measures to eliminate or reduce future safety problems are fully considered, prior to the roadwork commencing.
- Improve safety risks associated with the project and prevent the development of new accident locations.
- Make recommendations to remove or reduce identified road safety deficiencies.

- Provide a Risk Assessment rating of identified safety deficiencies that is a product of the likelihood of an accident occurring (probability/exposure) and the severity of the outcome should an accident occur.





## 4.6 Audit Process Summary

Audited Project:	Greenwich Hospital - Proposed Seniors Health Campus Pre Construction
Detail Design Drawings:	As detailed in Section <a href="#">4.1</a>
Audit For:	Hammond Care Pty Ltd
Project Manager: Positive Traffic Pty Ltd	Dean Brodie Phone: 0414 462247 <a href="mailto:Dean@positivetraffic.com.au">Dean@positivetraffic.com.au</a>
Audit Team:	Dean Brodie (Accredited Auditor Level 3) Audit ID: RSA-02-0606 Julius Boncato (Accredited Auditor Level 2) Audit ID: RSA-02-1420
Audit Type:	Pre Construction
Inspection Date:	23 October 2024 ( <a href="#">Appendix A</a> for Site Inspection Photos)
Audit Date:	24 October 2024
Completion Date:	12 November 2024



## 5. Audit Findings & Recommendations

### 5.1 General Comments

In response to the applicable condition of consent repeated below for reference:

*“a road safety audit of St Vincents Road and incorporate any measures required to address any identified safety concerns associated with construction vehicles accessing the site from this street.”*

Overall, construction vehicle access to / from St Vincents Road for Stage 2 of the project is considered a viable method of access which can be safely managed. The turning path assessments of the largest vehicle for construction, a truck and dog 17.6m long vehicle, at the intersection of River Road / St Vincents Road indicates no specific issues with safety. Sight distance in both directions for exiting traffic is satisfactory to the east and less so to the west.

However, exiting trucks would benefit from breaks in traffic flow generated by the traffic signals in River Road to the west of St Vincents Road.

The following provides areas of concern with the documentation which details the traffic management of St Vincents Road

### 5.2 Deficiency Log

The identified deficiencies noted in the signage and line marking drawings for the proposed access arrangements are tabulated below.

Table 1 - Deficiency Log

No.	Item	Description	Risk	Audit Team Assessment/Comment	Client Representative Comment
1.	Inconsistent CTMP / TGS Plans	Discrepancies in TGS and CTMP traffic management plans	Low	Consistency of information in particular placement of traffic controls and signage should be considered across all plans to avoid confusion	The CTMP was only a draft document prepared for the SSDA. In terms of traffic control and signage, it is superseded by the TGS and the CT&P Sub-Management Plan
2.	TGS Plan	Advisory signage for trucks turning around St Vincents Road intersection	Med	Consideration for expansion of TGS signage plan to include 'trucks turning' advisory signage for St Vincents Road / River Road intersection	The Trucks Turning signage at the River Road/St Vincents Road intersection have been added to the TGS.
3.	Protection of pedestrians on south – west corner of St Vincents Road intersection	Provision of barrier separation of pedestrians using poor condition pathway on south – west corner of St Vincents Road intersection	High	Consideration for removable barriers to provide separation to pedestrians / large vehicles.	The use of the water filled barriers would be problematic due to the narrow width of the footpath. It is proposed to extend the existing “pipe rail” fence (see Photo 4) around the corner to terminate just before the Truck Load restriction sign where pedestrians will be able to cross St Vincents Road.

No.	Item	Description	Risk	Audit Team Assessment/Comment	Client Representative Comment
4.	Driveway Access Grades	Existing steep grade of St Vincents Road access	High	Confirm suitability of driveway for large vehicle access having regard to existing steep grades and limited grade transitions	The builder (Hindmarsh) has considered this issue, and the response is provided on the letter reproduced overleaf indicating that the grade of the access road will not present a problem for construction vehicles.
5.	School Consultation	Plan of Management for School communications	Med	Consideration of an ongoing communications strategy for school parents / staff parking advisory of any changes to on-street parking availability and construction activities	Section 5.13 of the Sub-Management Plan has been upgraded to specifically deal with communications with the school.
6.	Movement of large vehicles during school peak periods	Ambiguity of sub CTMP references to heavy vehicle access during school peak periods	High	Access by large heavy vehicles during school peak periods should be avoided in all instances	Section 5.3 of the Sub-Management Plan has been amended to clarify this.



26 November 2024

Mr Ross Nettle  
Transport and Traffic Planning Associates  
Suite 604, Level 6  
10 Help Street  
Chatswood NSW 2067

**Greenwich Hospital - RSAR Item 6.4, Access Driveway Gradient**

Dear Ross,

In response to the Road Safety Audit Item 4 deficiency (Ramp-grade) I have reviewed the site survey and confirm that the maximum grade is 1:6.36 and this is within the AS2890.2 maximum criteria of 1:6.5. I note that the AS2890.2 grade and transition criteria are very conservative and I have inspected the road with our experienced truck operators. Excavations in particular often involve steeply graded accesses and it is our consensus that trucks will not experience any difficulties accessing particularly as:

- they will enter upgrade unloaded and exit downgrade loaded
- the surface of the road is scored to enhance traction

The proposed site procedures in relation to the access will include:

- regular inspection to ensure safe conditions at all times
- ensuring that any spoil and leaves are quickly removed (a condition of the Environmental Management Plan)
- the installation of standard "grade warning" signage

It is apparent that tips are normally closed during inclement weather, and this will be constrained when demolition and spoil can be removed. The existing speed hump will be removed as recommended in the RSA.

Yours Sincerely,



Mark Reynolds  
Senior Project Manager  
State: NSW

## 6. Design Issues

### 6.1 Item 1 – Inconsistent CTMP / TGS Plans **LOW**

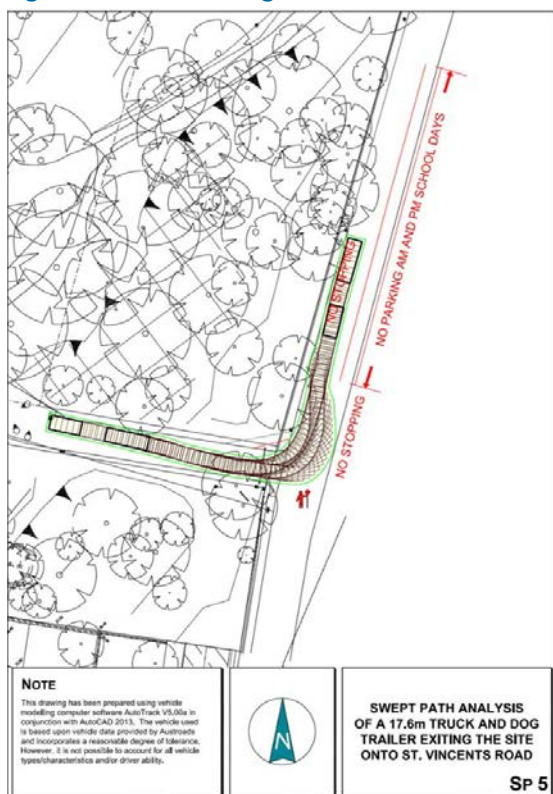
It is noted that the plans provided in the sub CTMP report and CTMP report do not match in terms of the placement of stop / go personnel during periods of access via St Vincents Road. In addition, all TGSs should be prepared in accordance with the latest AS 1742.3, TCAWS or Austroads. For example, the notes on the TGS reference sign spacing to be in accordance with AS 1742.3:2009. However, the latest version no longer mentions sign spacing.

As shown in **Figure 12** above, stop / go personnel are proposed at the driveway access and the intersection of St Vincents Road / River Road. However, in the plans provided the sub-CTMP report, these same personnel are shown either as a single person near the driveway access or two (2) personnel internally managing the steep driveway.

The provision of a stop / go person at the intersection of St Vincents Road / River Road is not ideal and would be near an environment of a high volume undulating road (River Road). It would also not be ideal to hold traffic in River Road given its topography.

The turn path assessment of a truck and dog vehicle exiting the access driveway shows the full width of St Vincents Road is required to exit the site of which the proposed temporary No Stopping zone on the western side of St Vincents Road would benefit large vehicle egress. The exit movement by large vehicles would benefit from provision of a stop / go person on the northern side of the access driveway. This is shown below.

**Figure 13 – Truck & Dog Left Turn Site into St Vincents Road Turn Path**



On the basis that stop / go personnel are present on both sides of the access driveway in St Vincents Road, the arrangements would be considered a safely manageable arrangement. Further, relevant advanced warning signs would be required for placement on approach to the traffic controllers.

### 6.2 Item 2 – TGS Plan - MED

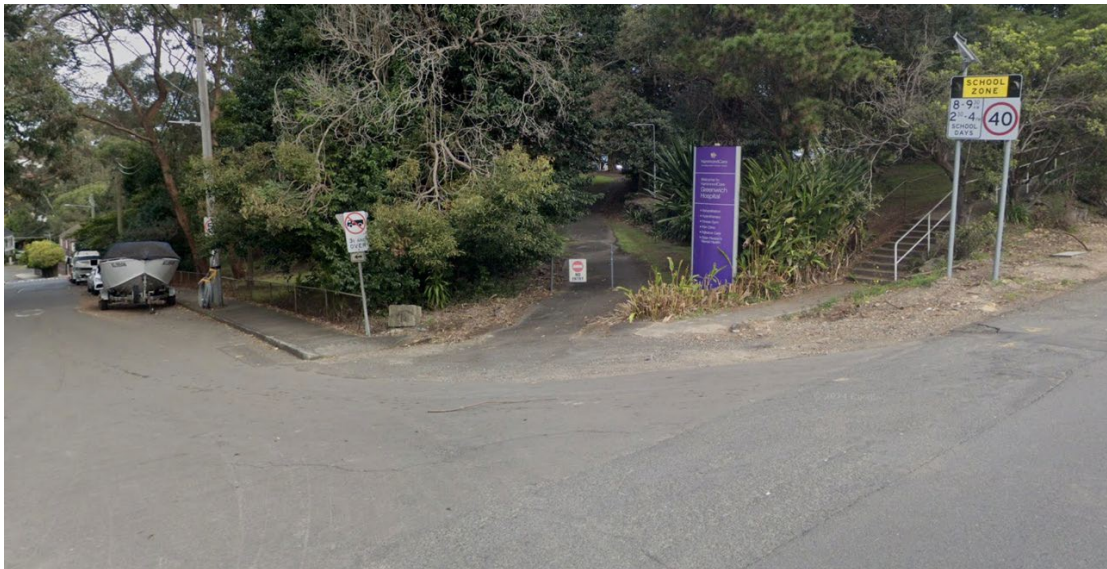
During Stage 2 of construction where St Vincents Road would be utilised by large trucks, motorists would benefit from advisory signage in River Road and in St Vincents Road south of 'trucks turning'.

### 6.3 Item 3 – Protection of pedestrians on south – west corner of St Vincents Road intersection - HIGH

The desire line between the school and St Vincents Road is along the southern side of River Road and initially to the footpath on the western side of St Vincents Road. However, as the existing school peak No Parking zone promotes the kerbside as Kiss and Drop, students / parents seek to cross St Vincents Road at River Road to its eastern side which no facility is provided and safety is compromised with the increase in large turning vehicles.

The poor condition footpath is shown below in [Photo 5](#).

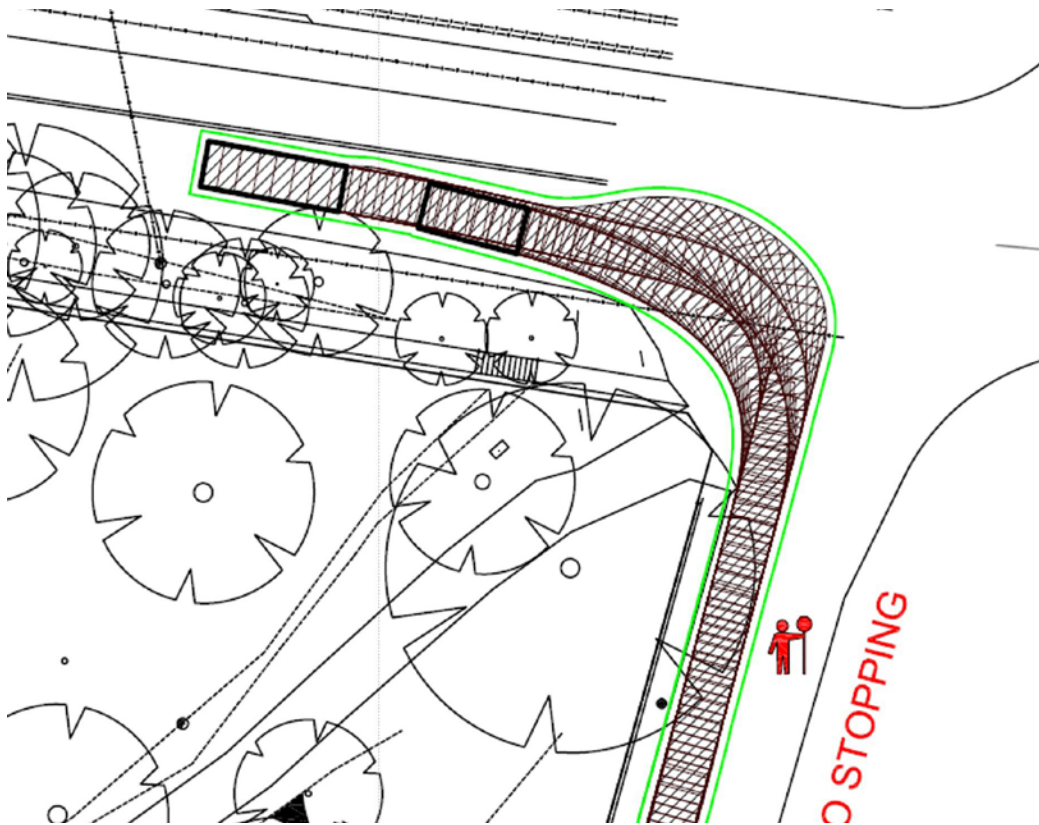
**Photo 4 – Poor Condition Footpath – South / Western Corner of St Vincents Road Intersection with River Road**



The provision of a removal barrier (water filled barrier, barrier boards) around the bend on the western side of the intersection would prevent students / parents from crossing near the intersection and instead make their way to the safer crossing point in the form of the raised marked footcrossing to the south of the driveway access. As this would be controlled by stop / go personnel, the movement of pedestrians across the driveway access can also be managed safely.



Any barrier should be below driver height of 1.15m to avoid any restriction to sight lines for exiting traffic. The barrier would also provide a physical separation between pedestrians within this desire line and large left turning vehicles.

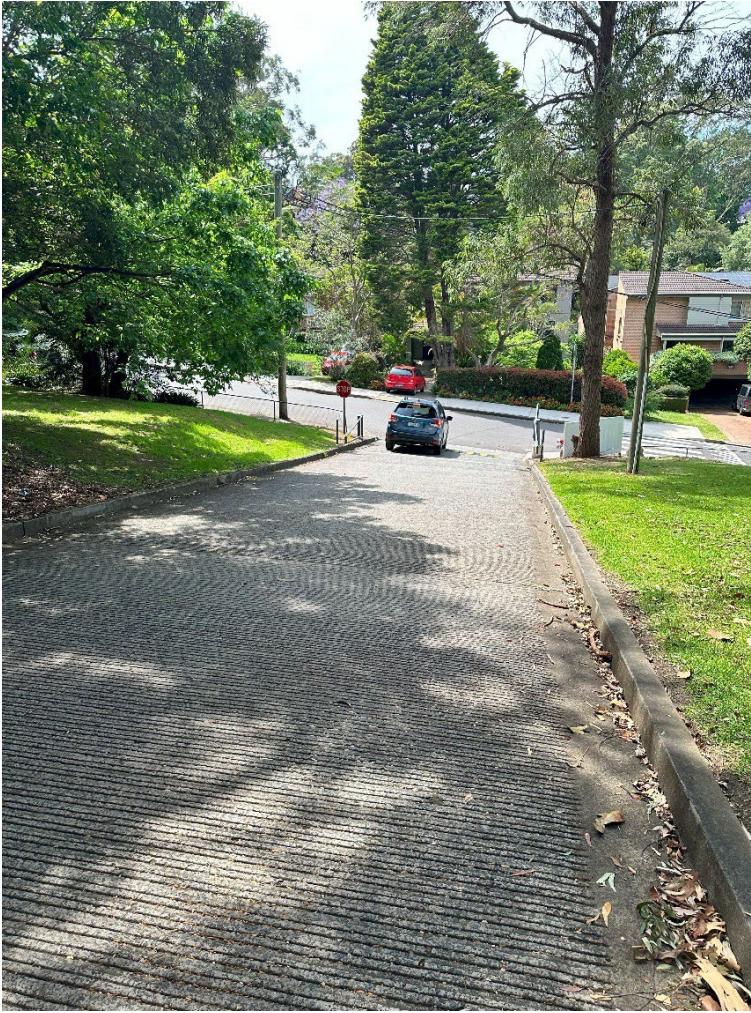


On the basis the truck movements do not occur during school peak times, there would be no trucks present along St Vincents Rd at the same time there are heightened school pedestrian movements.

#### 6.4 Item 4 – Driveway Access Grades - MED

The steep nature of the driveway access which is proposed for use by heavy laden large vehicles was noted to not include any grade transitions between St Vincents Road and into the site. This is shown below in [Photo 6](#).

Photo 5 – Steep Driveway Access



The deep groove brushed finish of the driveway also confirms its steep nature. That is, the maximise traction for vehicles in particular during inclement weather.

Consideration should be given for the temporary removal of the existing rubber speed hump at the base of the ramp to remove the potential for large heavy vehicles to loss traction with the pavement.

On the basis the driveway grade is known (sourced from the survey), confirmation with vehicle operators should be considered confirm the access driveway grade is suitable for heavy laden truck / dog vehicles during fine and inclement weather periods.

#### 6.5 Item 5 – School Communications Strategy - MED

Given the role of St Vincents Road for parent vehicle parking and pedestrian students, the safety of both parents and students would benefit from an ongoing understanding of any changes to parking in St Vincents Road and construction activities and when they are to occur. Safe routes of travel should be considered as part of such types of communications.

## 6.6 Item 6 – Access By Large Vehicles School Communications Strategy - HIGH

Given the role of St Vincents Road for the parking of parent vehicles and includes the direct all weather pathway connection to the school (via the River Road traffic signals), it would be prudent to ensure that no movement of heavy vehicles occurred during morning and afternoon school peak periods.

It is noted that the sub CTMP report stated the following on this matter:

*The access movement of heavy vehicles will be specifically minimised during the school arrival/departure times (8.00 am – 9.00 am and 2.30 pm – 3.30 pm) while the delivery/dispatch of any heavy plant will occur outside of normal commuter peak times. Any infrequent required access movements for semi-trailers (large structured components or machinery) will be subject to separate specific traffic management plans.*

To minimise risk to students and parents during morning and afternoon school peak periods (during the operation of the No Parking zone in St Vincents Road) that no heavy vehicle access is available via St Vincents Road.



## 7. Formal Statement & Sign Off

We, Dean Brodie and Julius Boncato declare that we have reviewed the material and data listed in this report, inspected the site and identified the safety and operational deficiencies noted. The team assessing these drawings are all accredited Road Safety Auditors.

We declare that the audit team have had no involvement, nor provided any input into the preparation of the sub CTMP or CTMP reports for the proposed redevelopment of the Greenwich Hospital.

It should be noted that while every effort has been made to identify potential safety hazards, no guarantee can be made that every deficiency has been identified. We recommend that the issues identified in the Deficiency Log be assessed, signed off and actions implemented, where considered necessary, by the design team prior to finalisation of the design drawings.

Signed:



**Dean Brodie**  
Road Safety Auditor - Level 3  
Lead Auditor  
RMS Id: RSA-02-0606  
November 2024  
Positive Traffic Pty Ltd



**Julius Boncato**  
Road Safety Auditor – Level 2  
RMS Id: RSA- RSA-02-1420  
November 2024  
PDC Consultants Pty Ltd



**Client Representative**

I have reviewed the material and data in this report, assessed the deficiencies noted, commented and discussed in conjunction with the Design Team. Corrective actions have been taken where required.

Signed:

Date:



## 8. Appendix A – Site Inspection Photographs

























