Construction Traffic and Pedestrian Management Sub-Plan (CTPMSP)

Shoalhaven Hospital Redevelopment

Prepared for John Holland Group

20 September 2024

Reference: 221659

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Contents

Revision Register

Rev	Date	Prepared by	Reviewed by	Approved by	Remarks
P1	18/04/2023	C. L. Ip	E. Cowdery M. Babbage	-	Preliminary draft
P2	27/04/2023	C. L. Ip	E. Cowdery M. Babbage	-	Preliminary draft
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1.0 Preliminary Information

1.1 Background Information

TTW has been engaged by John Holland to prepare a Construction Traffic and Pedestrian Management Sub-Plan (CTPMSP) for the Shoalhaven Hospital Redevelopment located at 2 Scenic Drive, Nowra NSW, within the Shoalhaven City Council local government area (LGA). The objective of the project is to enhance the medical services in the Shoalhaven area by constructing a new acute services building (ASB) while retaining the existing hospital buildings and car parks.

The purpose of this sub-plan is to outline the measures that will be implemented to manage construction traffic and pedestrian movements during the construction phase. This sub-plan aims to ensure the safety of all personnel, visitors, and members of the public who may be affected by construction activities. This sub-plan covers the management of construction traffic and pedestrian movements within and nearby the boundaries of the Shoalhaven Hospital Redevelopment project site. It includes measures to manage the movement of construction vehicles, the provision of pedestrian access, and the management of public access to the site.

1.2 Response to Development Consent

The project's development consent, dated 5 April 2023, has been provided to TTW. Key issues pertaining to the Construction Traffic and Pedestrian Management Sub-Plan, as shown in Table 1.1, have been addressed and cross-referenced in different sections of this report.

Table 1.1: Development Consent Conditions

	Key items		**Comments and References**
B18.	The Construction Traffic and Pedestrian Management Sub-Plan (CTPMSP) must be prepared to achieve the objective of ensuring safety and efficiency of the road network and address, but not be limited to, the following:		
(a)	Be prepared by a suitably qualified and experienced person(s);		*The authors of this document are qualified traffic engineers. CV's are attached at Appendix C.*
(b)	Be prepared in consultation with Council and TfNSW;		*Section 1.3*
(c)	Detail:		
	(i)	Measures to ensure road safety and network efficiency during construction in consideration of potential impacts on general traffic, cyclists and pedestrians and bus services;	**Section 5.0, 5.3**
	(ii)	Measures to ensure the safety of vehicles and pedestrians accessing adjoining properties where shared vehicle and pedestrian access occurs;	**Section 5.0, 5.4**
	(iii)	Heavy vehicle routes, access and parking arrangements;	**Section 4.3, 4.4**

	Key items		Comments and References
	(iv)	The swept path of the longest construction vehicle entering and exiting the site in association with the new work, as well as manoeuvrability through the site, in accordance with the latest version of AS 2890.2;	**Appendix A**
	(v)	Arrangements to ensure that construction vehicles enter and leave the site in a forward direction unless in specific exceptional circumstances under the supervision of accredited traffic controller(s); and	**Section 4.4**
	(vi)	Any temporary access roads or footpaths from Shoalhaven Streets to the existing loading dock must comply with the CTPMSP.	**Section 3.2**
B21.	A Driver Code of Conduct must be prepared and communicated by the Applicant to heavy vehicle drivers and must address the following:		
(a)	Minimise the impacts of earthworks and construction on the local and regional road network;		*Section 4.6*
(b)	Minimise conflicts with other road users;		*Section 4.6*
(c)	Minimise road traffic noise;		*Section 4.6*
(d)	Ensure truck drivers use specified routes;		*Section 4.6*
B22.	Prior to the commencement of construction, the Applicant must provide sufficient parking facilities, including for heavy vehicles and for site personnel, to ensure that construction traffic associated with the development does not utilise public and residential streets or public parking facilities.		*Section 5.2*
B26.	Prior to the commencement of construction, evidence of compliance of construction parking and access arrangements with the following requirements must be submitted to the Certifier:		
(a)	All vehicles must enter and leave the site in a forward direction;		*Section 4.4*
(b)	The swept path of the longest construction vehicle entering and exiting the site in association with the new work, as well as manoeuvrability through the site, is in accordance with the latest version of AS 2890.2; and		*Appendix A*
(c)	The safety of vehicles and pedestrians accessing adjoining properties, where shared vehicle and pedestrian access occurs, has been addressed.		*Section 5.3*

	Key items	Comments and References
C4.	Construction, including the delivery of materials to and from the site, may only be carried out between the following hours: - between 7am and 6pm, Mondays to Fridays inclusive; and - between 8am and 1pm, Saturdays. No work may be carried out on Sundays or public holidays.	*Section 3.4*
C6.	Construction activities may be undertaken outside of the hours in condition C4 and C5 if required:	
(d)	For the delivery, set-up and removal of construction cranes, where notice of the crane-related works is provided to the Planning Secretary and affected residents at least seven days prior to the works;	*Section 3.4*
C10.	All construction vehicles (excluding site personnel vehicles) are to be contained wholly within the site, except if located in an approved on-street work zone, and vehicles must enter the site or an approved on-street work zone before stopping.	*Section 4.5*
C14.	The Applicant must ensure construction vehicles (including concrete agitator trucks) do not arrive at the site or surrounding residential precincts outside of the construction hours of work outlined under condition C4.	*Section 4.4*

1.3 Authority Consultation

This sub-plan has been developed in consultation with Transport for New South Wales (TfNSW) and Shoalhaven City Council (SCC), and will be subject to ongoing review and revision as required. A copy of this sub-plan will be provided to these parties prior to implementation. Any changes to the sub-plan will be communicated to the relevant personnel as necessary.

A preliminary revision of this Plan was provided to both Council (to Scott Haylett, Development Engineering Coordinator) and TfNSW (to Andrew Lissenden, Development Case Officer) on 27th April 2023. Table 1.2 outlines the key components of responses received from Council and TfNSW and how each item has been addressed in this updated CTPMSP. Full consultation records are also attached at Appendix D.

Table 1.2: Response to Authority Consultation

Item	Submission Author	Key Comments	Response and References
1	**Transport for NSW**	**Section 4.3 – Construction Vehicle Routes and 4.4 – Construction Traffic Management:** Figure 4.1 shows the arrival and departure routes for construction vehicles going past St Michaels Primary School (e.g. North Street and Shoalhaven Street). While TfNSW notes that one of the measures to be used to ensure safety will be scheduling construction vehicle movements, where possible, outside of peak hours, it is unclear as to how school vehicle and school pedestrian movement conflicts will be minimised. TfNSW believes that consideration should be given to no trucks being permitted to arrive at or depart from the construction site during the school drop-off and pick-up periods of 8.00 am – 9:30 am and 2:30 pm and 4.00 pm on school days. This ensures that construction vehicle traffic and school vehicle and pedestrian movement conflicts are minimised.	*Refer to Section 4.3* As requested by Council (refer to Item 6), TTW have reviewed the construction vehicle routes in more detail and this has included swept path analysis for key intersections. As a result of this analysis, the only suitable construction vehicle routes for 20m semi-trailers and Heavy Rigid Vehicles will pass by St Michaels Primary School. However, this has been minimised so North Street is not utilised but only Shoalhaven Street, which is also further away from the main school entry and where majority of pedestrian activity is expected. Truck and Dogs, Medium Rigid Vehicles or smaller vehicles arriving from/departing to the north will be able to use the secondary access routes which do not pass the school. Furthermore, truck arrivals and departures will be scheduled outside of school peak hours wherever possible.
2	**Transport for NSW**	**Section 4.7 – Traffic Guidance Scheme:** TfNSW notes the comments made about over size over mass (OSOM) loads and reiterates that prior to transporting any OSOM loads, the applicant/proponent must review the approved routes for their vehicle and if required obtain a National Heavy Vehicle Regulator (NHVR) OSOM permit for each OSOM load. As part of the application, the applicant proponent must demonstrate to the NHVR that the arrangements for the route are acceptable, and all relevant approvals have been obtained (e.g. approvals required to do alterations to the existing classified road network (approval will be required from TfNSW for this work) or the local road network (approval will be required from SCC for this work)).	*Refer to Section 4.7* Commentary has been added regarding the requirement for vehicle routes to be approved for OSOM loads.

Item	Submission Author	Key Comments	Response and References
3	**Transport for NSW**	**<u>Section 5.2 – Contractor Parking:</u>** TfNSW does not agree with: • the assumption used that 20% of the construction workforce will travel by public transport noting the regional location of the site, the limited public transport options and times available and the assessment of public transport use undertaken as part of the original Environmental Impact Statement. TfNSW believes that it would be under 2% of construction works that would use public transport; and • the statement that "construction workers will be discouraged to travel to the site via private vehicle to minimise impacts to local traffic". TfNSW believes that the majority of construction workers will be aiming to get to the development site in the easiest/most efficient way (i.e. by private vehicles). TfNSW acknowledges the concerns that have been raised by the SCC about the limited on-street car parking that is currently available and the impacts that the lack of free on-site car parking to service the construction workforce will have on the existing limited supply of on-street parking surrounding the development site, noting that the development will be restricting kerbside parking in certain sections along Shoalhaven Street and North Street, as outlined in the relevant TGS plans. In addition to the above, no details have been provided on where contractor parking will be made available within the development site or on adjoining land so as to minimise impacts on the existing on-street car parking availability (e.g. free parking provided in the adjoining multi-storey car park). Noting this will impact local roads that are managed by SCC further discussion	*Refer to Section 5.2* The construction worker parking strategy has been updated so that the travel mode splits are in accordance with the Journey to Work Census data for the local region, including a 90% mode split for private vehicle usage. John Holland has advised that at least 40 (and up to 60) on-site parking spaces will be available during the early works and bulk excavation stages of the project. This is sufficient to support the expected demand of 36 vehicles, which is calculated as 90% of the typical workforce. Parking arrangements for subsequent phases of the project are currently being investigated by John Holland in discussion with Council and will be finalised and detailed in future revisions of this CTMPSP prior to the issue of the relevant construction certificate.

Item	Submission Author	Key Comments	Response and References
		should be had with SCC and an agreement reached on how construction/contractor worker parking will be managed prior to the finalisation of the draft CTPMSP.	
4	**Transport for NSW**	**Compliance:** Limited details could be found in the draft CTPMSP on how the requirements in the document will be monitored during the development's construction to ensure the requirements of the plan are being complied with and what actions will be taken should it be identified that there is a situation where the requirements of the plan are not being complied with. TfNSW is of the opinion that ongoing monitoring and compliance are important to ensure minimal impacts on the road network in terms of both safety and efficiency.	*Refer to Section 5.2* John Holland has advised that weekly random inspections will be undertaken to monitor on-street parking and ensure that workers are only using designated parking areas.
5	**Transport for NSW**	**Complaints:** Limited details could be found in the draft CTPMSP on how concerns/complaints received from members of the public and/or adjacent landowners will be received and investigated and how members of the public and adjacent land owners will be advised of this process both prior to construction commencing and during construction.	*Refer to Section 5.8* John Holland has advised that a 24-hour complaints number is available and will be displayed across the site at the vehicle gates and pedestrian gate on Shoalhaven Street.
6	**Shoalhaven City Council**	Hyam St is not suitable for access to/from the North for heavy vehicles as it does not appear that a truck and dog would be able to safely navigate the turn from/into Shoalhaven St without imposing additional temporary parking restrictions. Suggested access is from North St via either Bridge Rd or Moss St, though even these may require further investigation to ensure all required construction vehicles can navigate critical intersections without disruption. Proposed routes to/from the south are considered acceptable given the lower expected traffic volume from this direction. Access arrangements generally satisfactory. However, Council requires further information regarding the proposed	*Refer to Section 4.3* Swept path analysis has been undertaken to assess the suitability of Hyam Street for construction vehicle usage. The Hyam Street / Shoalhaven Street intersection can accommodate vehicle movements for up to and including a 20m semi-trailer. However, the Hyam Street / Bridge Road intersection can only accommodate a Truck and Dog, Medium Rigid Vehicle or smaller vehicle. Therefore, the construction vehicle routes have been updated so that the primary route does not include the Hyam Street / Bridge Road intersection. The proposed routes also seek to

Item	Submission Author	Key Comments	Response and References
		timing of phasing of the works to better understand how long each phase is proposed to take. Parking arrangements proposed are not compliant with Condition B22 and cannot be accepted as outlined below.	address Item 1 and avoid passing St Michaels Parish Primary School on North Street. *Refer to Section 3.2 and 3.3* Phase 1(a) and 1(b) are expected to carry through from commencement of works (June 2023) until approximately August 2023. Phase 2 would be the approximate configuration until completion of ASB works (around late 2025).
7	**Shoalhaven City Council**	As outlined above, the Construction Traffic and Pedestrian Management Sub-Plan (CTPMSP) does not comply with this condition. The CTMPSP needs to be reviewed and amended to demonstrate compliance with this condition. Council would be agreeable to having a collaborative discussion regarding potential parking solutions for site personnel.	*Refer to Section 5.2* Regarding parking arrangements, the timing and phasing or works under the subject Construction Certificate (CC1) have been reduced in scope. The available on-site parking within the relevant works phases under CC1 now comply with Condition B22. Parking arrangements for subsequent phases of the project are currently being investigated by John Holland in discussion with Council and will be finalised and detailed in future revisions of this CTMPSP prior to the issue of the relevant construction certificate. *Refer also to item 3 above.*

2.0 Existing Environment

2.1 Site Location

The current hospital site, situated within the Shoalhaven City Council local government area, is located at 2 Scenic Drive, Nowra NSW. It is bordered by Scenic Drive to the north and west, Shoalhaven Street to the east, and North Street to the south. The site's shape is determined by the Shoalhaven River to the north and west, while the south is primarily residential, and the east is largely mixed-use zoned. Figure 2.1 below illustrates the site's position within the local road network.

Figure 2.1: Site Location

2.2 Site Access

Currently, the primary access point to the main hospital car park, including the multi-storey car park, is via Scenic Drive. The Cancer Care Centre car park has two access points, one from Scenic Drive and the other from North Street. The Scenic Drive car park entrance also provides access to the Grand Pacific Health Centre car park. Several smaller car parks catering to specialised medical services are located towards the north of Scenic Drive, including access to the staff car park.

For construction, contractor parking is located on the corner of Shoalhaven Street and North Street. Contractors and project staff are to access the car park via Colyer Street, and depart via North Street. On-street signage has been installed to assist with such arrangement.

2.3 Road Network

2.3.1 Local Roads

Shoalhaven Street

Running along the eastern perimeter of the hospital site, Shoalhaven Street features a single travel lane in each direction and has a speed limit of 50 km/h. At the southern end of the road, adjacent to the greenspace area, a school zone is in effect. On-street parking is permitted on both sides of the road with no restrictions. The hospital service entry and preschool can be accessed via Shoalhaven Street.

North Street

The southern boundary of the site is defined by North Street, which features a single lane in each direction and has a posted speed limit of 50 km/h. A school zone is in effect at certain times. On-street parking is unrestricted on both sides of the road.

There are two driveways for the Cancer Care Centre and GP clinic car park, they can be accessed from North Street. The carpark entrance for the under construction pre-school is also located along North Street.

Scenic Drive

Scenic Drive is situated to the north and west of the hospital, following the course of the river. It has one lane of traffic in each direction and a speed limit of 50 km/h. Along the hospital frontage on Scenic Drive, there are several sections of 90° parking bays, as well as two areas for parallel parking. On the opposite side of the road, there is a no parking zone that spans the entire length of the site.

The primary entrance to the hospital, which provides access to the main car park, is on Scenic Drive. Emergency access is also available from Scenic Drive, as well as an emergency drop-off area. At the southern end of Scenic Drive, access to the Cancer Care Centre and the General Pacific Health Centre is available.

Bridge Road

Bridge Road is situated to the east of the hospital. The southbound direction has two travel lanes, which eventually convert into a single lane. The northbound direction has a single travel lane throughout its length, and has a posted speed limit of 50 km/h. Bridge Road provides a connection between Princes Highway and North Street for construction vehicles approaching from or leaving to the north. On-street parking is not restricted.

Hyam Street

Hyam Street is local road sandwiched between Shoalhaven Street to the west and Bridge Road to the east. The street has a posted speed limit of 50 km/h. It provides a major connection between construction vehicles approaching from or leaving to the north. On-street parking is not restricted.

Local residential streets

Surrounding the hospital are residential streets, including *Mandalay Avenue*, *Colyer Avenue*, *Hyam Street*, *Osbourne Street*, *Keft Avenue*, and *Lamonds Lane*. These roads share common characteristics such as a 50 km/h speed limit, with certain areas designated as school zones. Unrestricted on-street parking is available along these roads, which feature one travel lane in each direction.

2.3.2 Regional and State Roads

Princes Highway

The Princes Highway, which is a significant state road linking the northern and southern sides of the Shoalhaven River, is also a key route for construction traffic accessing the site and is regularly used by heavy vehicles. The highway serves as a connection between Sydney and the southern coast of NSW.

Bolong Road

Bolong Road is a regional road in the vicinity of the site that provides a direct connection to Princes Highway. It has two travel lanes in each direction and a speed limit of 60 km/h. Bolong Road may be used for construction traffic accessing the site and will be able to accommodate heavy vehicles.

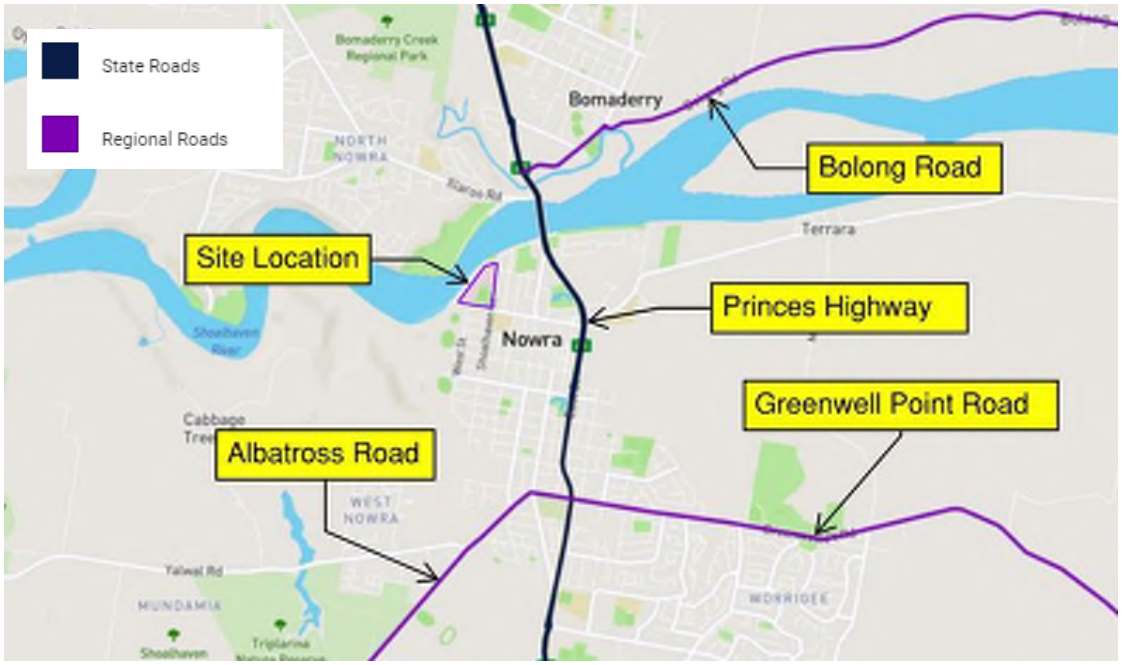


Figure 2.2: Classified Road Network
Source: NSW Road Network Classifications map (TfNSW)

2.4 Transport Modes

2.4.1 Private Vehicles

On-Street Parking

Scenic Drive offers 70 parking spaces with 90° parking bays and a 2-hour time limit, as well as two parallel parking zones that can accommodate around 10 cars. However, parking is not permitted on the opposite side of the road.

Shoalhaven Street and North Street allow unrestricted on-street parking on both sides of the road.

Off-Street Parking

Figure 2.3 illustrates the allocation of parking on the current hospital campus, which has a combined parking capacity of 693 car parking spaces, 5 spaces for ambulance parking, and 19 car parking spaces at the

preschool site. It should be noted that these are not for use by project staff and sub-contractors. Table 2.1 provides further details on the parking distribution.

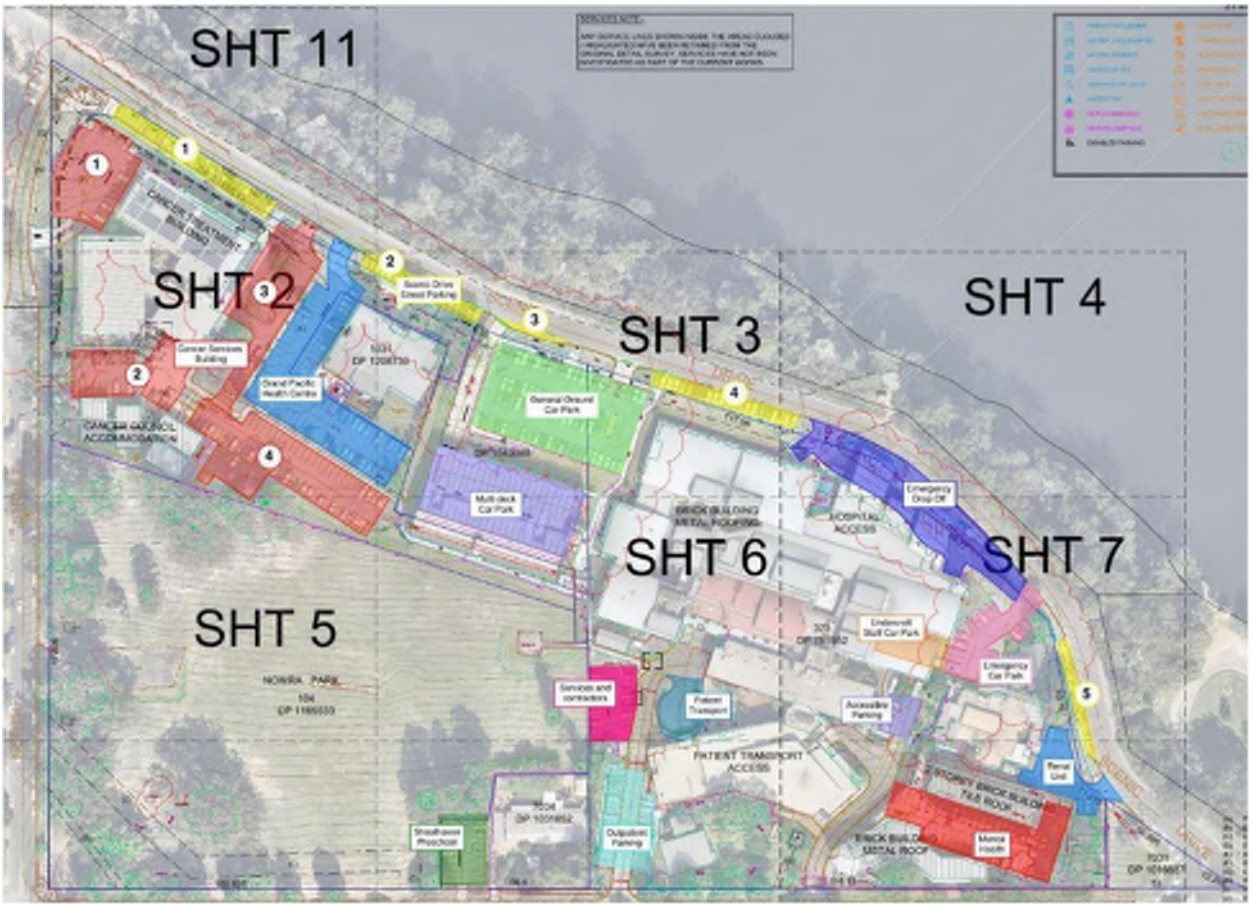


Figure 2.3: On-site Car Parking Modules

Table 2.1: Car Parking Spaces Breakdown

Parking Area		General	Accessible	Total Cars	Ambulance
Cancer Care Centre	Area 1	32	2	34	0
	Area 2	20	2	22	0
	Area 3	5	2	7	0
	Area 4	58	0	58	0
	Total	**115**	**6**	**121**	**0**
Grand Pacific Health Centre	GP Health Centre	64	2	66	0
	Total	**64**	**2**	**66**	**0**
Shoalhaven Hospital	Scenic Dr Area 1	28	0	28	0
	Scenic Dr Area 2	20	0	20	0
	Scenic Dr Area 3	3	0	3	0
	Scenic Dr Area 4	22	0	22	0
	Scenic Dr Area 5	7	0	7	0
	General Ground Car Park	72	4	76	0
	Multi-deck Car Park	230	0	230	0
	Emergency Drop Off	0	2	2	5
	Emergency Car Park	15	1	16	0
	Renal Unit	8	0	8	0
	Mental Health	31	2	33	0
	Outpatient Parking	21	0	21	0
	Services and Contractors	18	0	18	0
	Accessible Parking	0	4	4	0
	Patient Transport	3	0	3	0
	Undercroft Staff Car Park	15	0	15	0
	Total	**493**	**13**	**506**	**5**
Total		**672**	**21**	**693**	**5**
Shoalhaven Preschool	Preschool	17	2	19	0
	Total	**17**	**2**	**19**	**0**

The existing multi-storey car park consists of 3.5 storeys, containing 230 parking spaces, with 7 split deck levels ranging from Level -1 to Level 5.

2.4.2 Emergency Drop-off

The current drop-off bay located on Scenic Drive is intended for emergency drop-offs and can be accessed via the one-way loop. It allows vehicles to discharge their passengers at the main entrance of the emergency unit. With a capacity of 3 – 4 vehicles at a time, the bay is approximately 30m long. Its layout and location are illustrated in Figure 2.4.

Figure 2.4: Emergency Drop-off

2.4.3 Public Transport

There are two bus stops located adjacent to the hospital site, one on Scenic Drive and the other on Shoalhaven Street, they provide connections to nearby suburbs and regions, as well as rail services.

Bus

There are four bus operators providing services to the site:

- Shoalbus
- Nowra Coaches
- Stuart's Coaches
- Kennedy's Bus & Coach

Figure 2.5 illustrates the locations of nearby bus stops, while Table 2.2 provides information on the corresponding routes and frequencies.

Figure 2.5: Bus Stop Locations

Table 2.2: Bus Routes, Stops and Frequency

Bus Route	Nearby Bus Stops	Frequency
Shoalbus		
Route 130 - Gerringong to Nowra via Gerroa, Berry & Nowra TAFE	Shoalhaven Hospital, Shoalhaven St	Mon – Fri: 10:05, 14:23, 16:27
Route 130 - Nowra to Gerringong via Nowra TAFE, Berry & Gerroa		Mon – Fri: 13:04, 15:04
Route 131 - Bomaderry to Nowra via Bomaderry Station (Loop Service)	Shoalhaven Hospital, Scenic Dr	Mon – Fri: 10:11, 11:51, 12:46, 13:51 Sat: 10:56, 15:11
Route 132 - Nowra to North Nowra (Loop Service)	Bridge Rd opp Shoalhaven Council	Mon – Fri: approx. every 2 hrs Sat: approx. every 2 hrs
	Post Office and School of Arts	
Route 139 - Shoalhaven Heads to Nowra via Bomaderry Station	Shoalhaven Hospital, Shoalhaven St	Mon – Fri: 10:11, 13:51 Sat: approx. every 3 hrs from 10:00 to 16:40
Route 139 - Nowra to Shoalhaven Heads via Bomaderry Station	Bridge Rd opp Shoalhaven Council	Mon – Fri: approx. every 2-4hrs from 08:00 to 14:40 Sat: approx. every 3-4 hrs from 08:50 to 15:15
	Post Office and School of Arts	
Stuart's Coaches		
Route 120 - Callala and Currarong to Nowra via Myola	Nowra Bus Terminal, Stewart Pl	Mon – Fri: 08:20, 14:55 Sat: 14:55
Route 120 - Nowra to Currarong and Callala via Myola		Mon – Fri: 09:20, 12:20 Sat: 09:20, 12:20
Nowra Coaches		
Route 101 - Bomaderry to Worrigee via Nowra (Loop Service)	Shoalhaven Hospital, Scenic Dr	Mon – Fri: approx. every 1.5-2 hrs Sat: approx. every 2 hrs
Route 102 - Bomaderry to Vincentia via Nowra & St Georges Basin (Loop Service)	Shoalhaven Hospital, Scenic Dr	Mon – Fri: 10:47 Sat: 13:00, 16:50 Sun: 13:00
Route 103 - Nowra to Hyams Beach via Erowal Bay	Nowra Bus Terminal, Stewart Pl	Mon – Fri: 10:17
Route 103 - Hyams Beach to Nowra via Erowla Bay	Kinghorne St at Junction St	Mon – Fri: 15:10
Kennedy's Bus & Coach		
Route 110 - Greenwell Point to Bomaderry Station via Worrigee Rd & Nowra	Shoalhaven Hospital, Shoalhaven St	Mon – Fri: 08:20, 10:48, 16:25* Sat: 10:32*, 15:28*, 17:41*
Route 110 – Bomaderry Station to Greenwell Point via Nowra Worrigee Rd		Mon – Fri: 08:20, 17:30 Sat: 13:10*, 15:52*
Route 111 - Orient Pnt to Bomaderry Stn via Culburra, Terara Village & Nowra Intg	Shoalhaven Hospital, Shoalhaven St	Mon -Fri: 07:32*, 08:20, 10:48, 15:48*, 17:04* Sat: 10:31*, 15:27*, 17:42*
Route 111 - Bomaderry Stn to Orient Pnt via Nowra Intg, Terara Village & Culburra		Mon – Fri: 08:37*, 13:15, 17:30 Sat: 08:37*, 13:10*, 15:53*
Route 112 - Kangaroo Valley to Nowra via Cambewarra & Bomaderry	Shoalhaven Hospital, Shoalhaven St	Mon – Fri: 08:25, MW14:00*, TTF14:48*, 16:16* Sat: 08:17*, 11:37*, 15:52*, 18:08*
Route 112 – Nowra to Kangaroo Valley via Bomaderry & Cambewarra		Mon – Fri: 07:31*, TTF08:45*, MW09:31*, 13:32 Sat: 07:31*, 11:01*, 15:26*, 17:40*

*Indicates this service must be pre-booked

MW = Service only runs on Monday and Wednesday

TTF = Service only runs on Tuesday, Thursday, and Friday

Train

Bomaderry train station offers connections to the Intercity Trains South Coast Line between Bomaderry and Kiama. Trains operate at intervals of 1-2 hours on weekdays and about every 2 hours on weekends and public holidays. Passengers must switch at Kiama for Sydney services.

Figure 2.6 demonstrates the location of the train station.

Figure 2.6: Train Station Location

The distance between the hospital site and the nearest train station, Bomaderry, is approximately 3km by road, which takes about 35 minutes to walk. In addition to walking, several bus routes are available to provide connections between the hospital and the train station.

- Route 101
- Route 102
- Route 103
- Route 110
- Route 111
- Route 112
- Route 131
- Route 135
- Route 120

2.4.4 Active Transport

Pedestrian Facilities

The surrounding local network's existing and missing footpaths sections are presented in Figure 2.7.

The frontage along Shoalhaven Street has footpaths on both sides of the road, except for the section in front of Nowra Recreation Park, where footpaths are missing on one side of the road. On North Street, footpaths are missing on both sides of the road adjacent to the site boundary. The southern half of the Scenic Drive frontage has adequate footpaths on both sides of the road. However, on the northern half, footpaths are only present on the hospital side of the road.

The intersection of Shoalhaven Street and Scenic Drive has median strips on two of the three legs of the intersection. However, the roundabout at the intersection of Shoalhaven Street and North Street does not have any median strips.

The streets that are residential and adjacent to the hospital site generally lack pedestrian infrastructure, while the streets that are more commercial and have pedestrian-generating developments such as Bridge Road and Graham Street have sufficient infrastructure.

Signalised intersections are present at the junctions of the Princes Highway and North Street/Bridge Road.

Figure 2.7: Pedestrian Infrastructure

One shelter with benches is available at the Scenic Drive bus stop, which is located on the hospital side of the road. Similarly, the bus stop on Shoalhaven Street is also situated on the hospital side of the road, eliminating the need for pedestrians to cross the road to reach either bus stop.

The Nowra Bridge Project (outlined further in Section 5.10) includes plans to build off-road shared paths and footpaths along Princes Highway between the Bolong Road intersection and the Moss Street intersection, as well as a 3.5-metre-wide shared path across the bridge linking the Illaroo Road intersection to the Bridge Road intersection.

Cycling Facilities

The neighbouring road network's existing and proposed bicycle routes are shown in Figure 2.8, with Scenic Drive being an existing shared path route. The site frontage along North Street is proposed as a shared path route.

There are also other proposed on-road bicycle routes in the local network, such as Colyer Road, Bridge Road, the Princes Highway, and the remaining eastern section of North Street.

The Nowra Bridge Project's proposed off-road shared paths would enhance cycling amenities along the Princes Highway and the newly built bridge, similarly to the pedestrian infrastructure improvements.

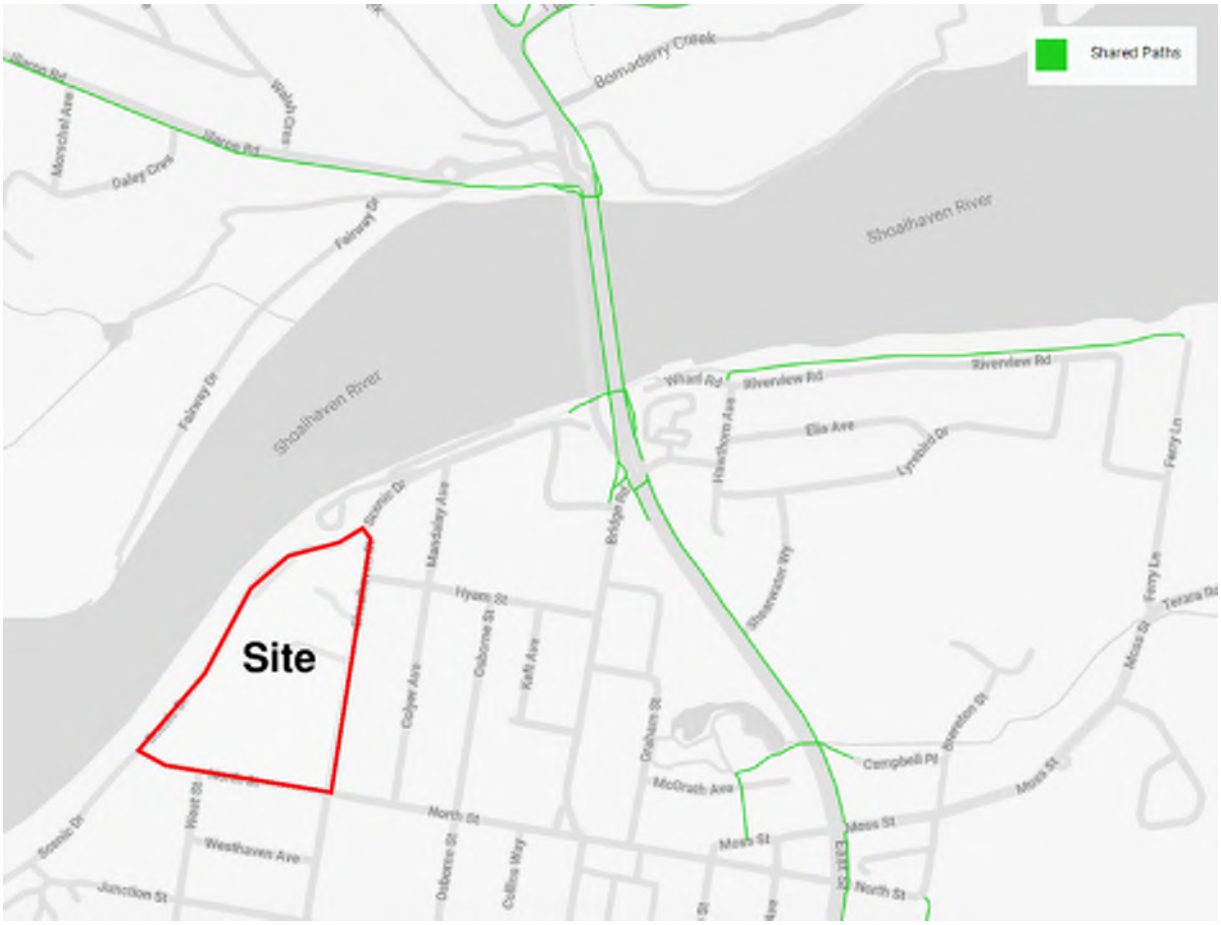


Figure 2.8: Nowra Cycling Infrastructure
Source: TfNSW Cycleway Finder (accessed: 8th May 2023)

3.0 Overview of Construction

3.1 Scope of Works

The Shoalhaven Hospital Redevelopment consists of the following two milestones:

Milestone 1 – New Acute Services Building *(SSDA)*: Construction of a seven-storey hospital building with rooftop plant, helipad, ambulance entry from Shoalhaven Street, loading dock and mortuary parking, including demolition works, earthworks, tree removal and landscaping.

Milestone 2 – Refurbishment of Existing Buildings: Refurbishing the existing hospital's block A, B, D and R.

The objective of the project is to enhance the medical services in the Shoalhaven area by constructing a new acute services building while retaining the existing hospital buildings and car parks.

3.2 Site Layout and Access

Construction vehicle access varies depending on the phase of the construction project and is outlined in the following sections. Detailed swept path analysis demonstrating construction vehicle access is provided in Appendix A. Any traffic control requirements to allow construction vehicle access are outlined in Section 4.7, with various Traffic Guidance Scheme (TGS) plans provided in Appendix B.

Indicative timing of each phase is shown in Table 3.1.

Table 3.1: Project phases and timing

Phase	Timing
1(a) and 1(b)	June 2023 – February 2026
2	January 2026 – March 2027

3.2.1 Phase 1(a)

During phase 1(a), the main access point – Gate 1, could be accessed off North Street, this access is primarily used for main deliveries and site activities. Gate 2 is established at the southeast corner of the site, near the North Street / Shoalhaven Street intersection, to facilitate the setup of the site office, however this will only be used intermittently during construction works of Phase 1. Gate 3 and 4, located along Shoalhaven Street, will also be utilised as required. Furthermore, a temporary access road will also be constructed to allow continued hospital operations (particularly, access to the existing loading dock and bulk oxygen tank) during construction. Figure 3.1 provides an overview of the construction access points.

It is important to note that access to the entry point at the southeast corner of the site will require trucks to mount the roundabout, and may require reverse movements when exiting the site. As such, these movements will need to be completed under traffic control as shown in TGS. To ensure safety and smooth traffic flow for local road users

The designated path for the 20-metre articulated vehicle and the GMK5250L crane will traverse over the nearby median islands and roundabout, and may require reverse movements when exiting the site. As such, the presence of a qualified traffic controller on-site is crucial to ensure smooth traffic flow for local road users and prevent disruptions caused by construction vehicles.

The existing service road (north of the existing preschool) at this phase will continue to be fully operational.

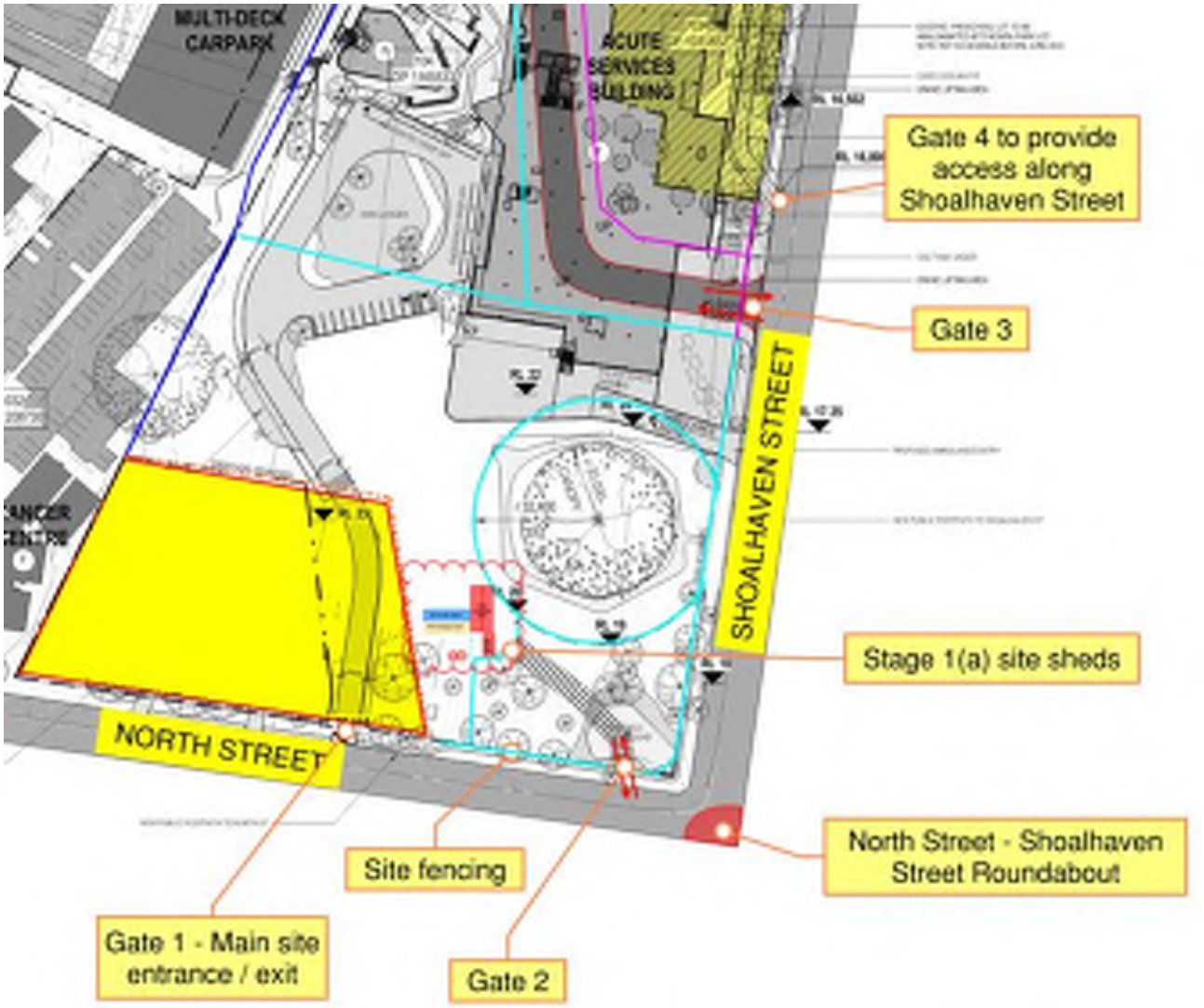


Figure 3.1: Phase 1(a) Construction Access Points
Source: John Holland Group

3.2.2 Phase 1(b)

During phase 1(b), construction access will be relocated to the future ambulance bay entry layback on Shoalhaven Street, as illustrated in Figure 3.2, as sheds and service connections are continually being installed. This will also provide access for the construction of the main site office and amenities.

The construction of the temporary access road and driveway is expected to be completed and fully operational at this phase. Access to the existing loading dock for hospital operations will be available via the temporary road, as the existing service road will be unavailable during phase 1(b) due to the construction of the new medical gas access road.

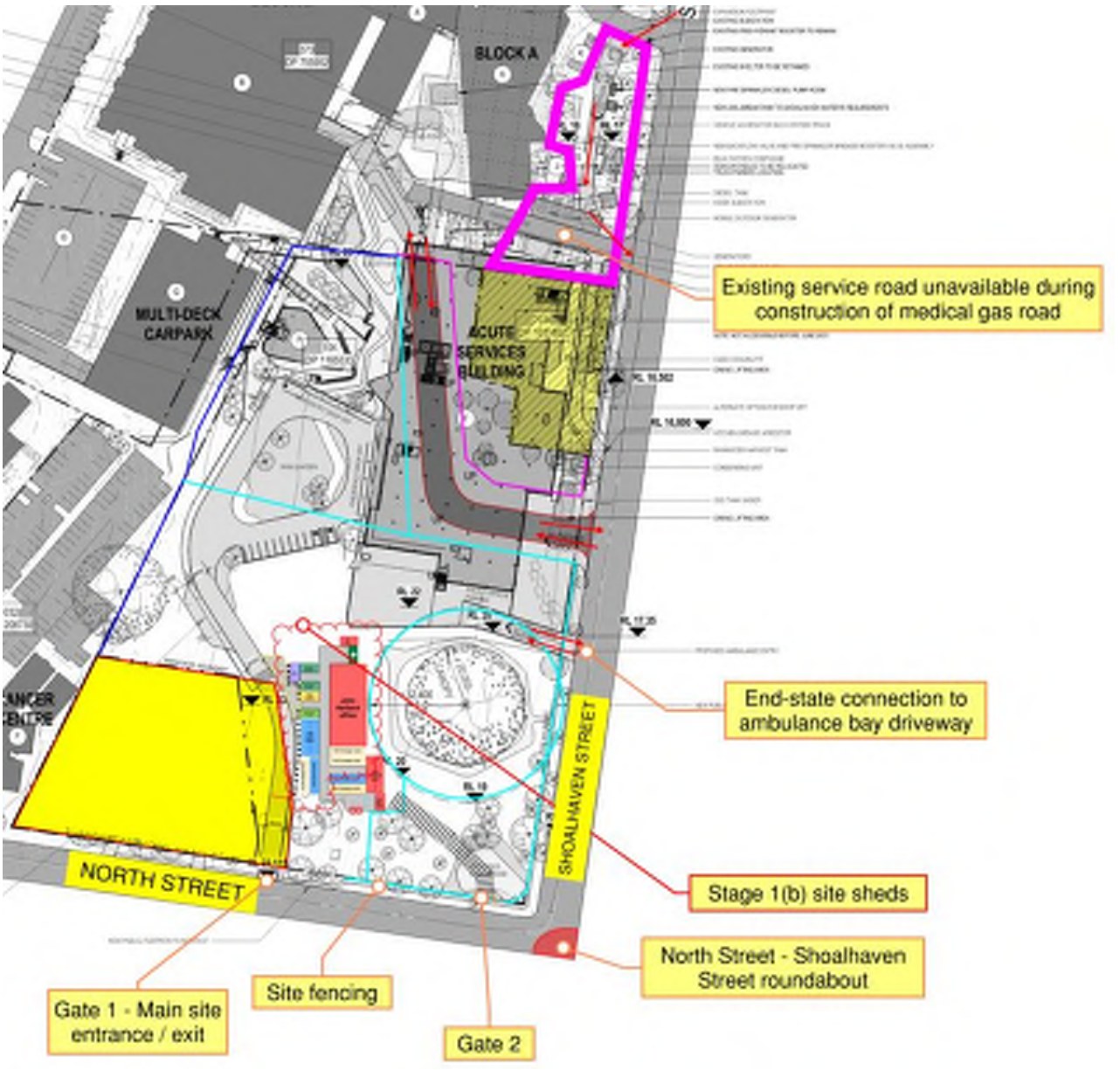


Figure 3.2: Phase 1(b) Construction Access Points
Source: John Holland Group

3.2.3 Phase 2

Gate 1 to the east of the relocated preschool site will be available for construction access on North Street. Following the full establishment of the site, the site will be divided into two main areas: the upper pad and the lower pad, with both accessible via Shoalhaven Street. Access to the upper pad will be via Gate 2, while access to the lower pad will be through Gate 3. It is important to note that the previous vehicle entry point to the southeast corner of the site will no longer be available due to the full development of the site office. Personnel accessing the site office will be able to do so via a pedestrian gate on North Street. Finally, the use of the existing service road will resume as the construction of the new medical gas compound and access road, marked up in pink in Figure 3.2, will be completed.

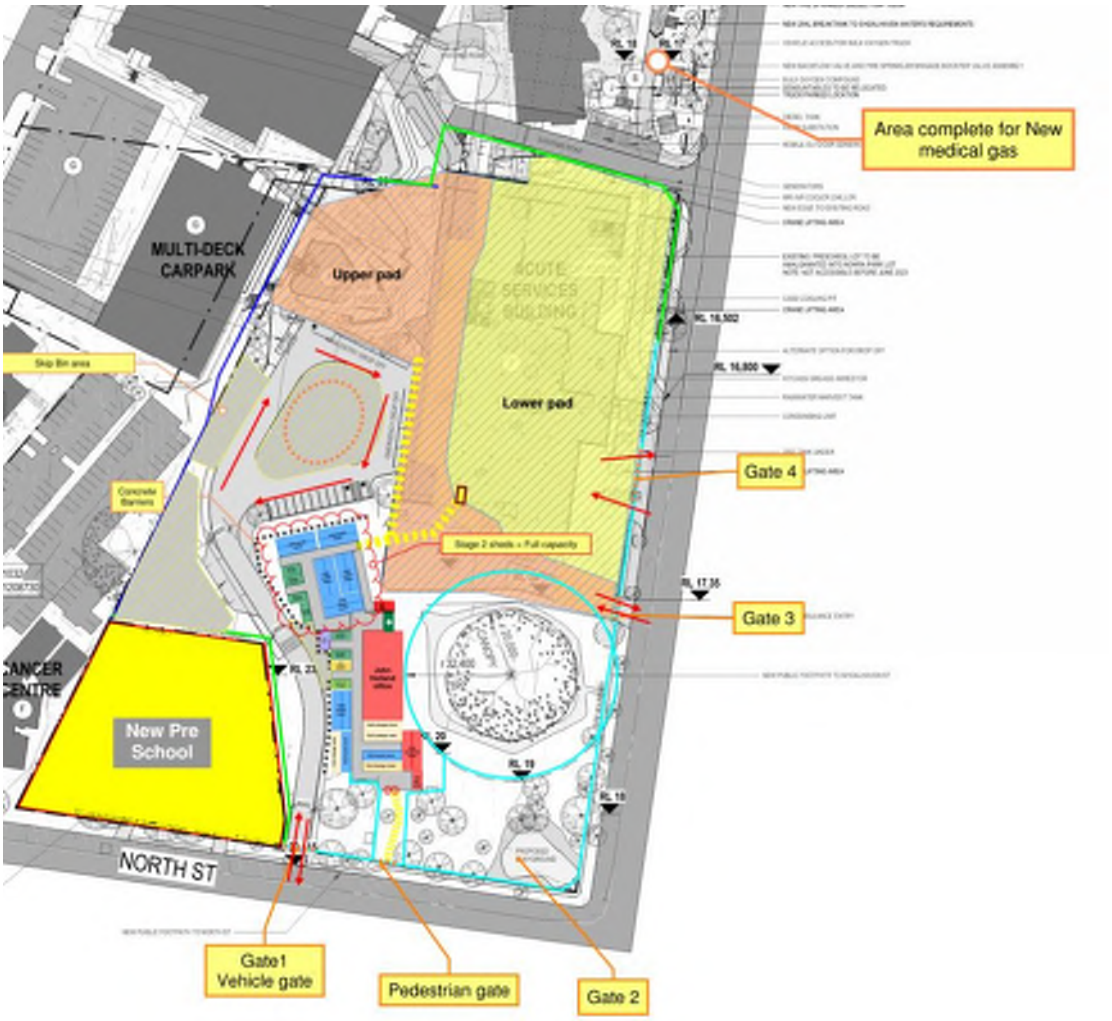


Figure 3.3: Phase 2 Construction Access Points
Source: John Holland Group

3.3 Construction Program

The projected duration of the proposed construction works is expected to span about 3 years, with a planned initiation in June 2023 and completion in March 2027. The project is divided into two distinct milestones, each with an expected timeline outlined in Table 3.2. Notably, these construction stages may coincide with one another during the development process.

Table 3.2: Construction Staging Details

Works Description	Commencement	Completion
Milestone 1 – New Acute Services Building	**May 2023**	**November 2025**
Demolition / Tree Clearing / Civil Works New Broadway BOC Delivery Area	May 2023	August 2023
Bulk Excavation, Piling	August 2023	October 2023
Footings, Inground Services & level 00	October 2023	December 2023
Superstructure (level L1 – L4)	December 2023	June 2024
Superstructure (Level L5 – L7)	April 2024	August 2024
Internal Fitout and Services, Building Envelop	March 2024	January 2025
Landscaping and External Works, Excluding Public Domain Works	February 2025	September 2025
Public Domain Works	July 2025	October 2025
Milestone 2 – Refurbishment of Existing Buildings	**January 2026**	**March 2027**
Block A	January 2026	March 2027
Block B	January 2026	March 2027
Block D – Renal	January 2026	March 2027
Block R	January 2026	March 2027
Validation, Contingency & Completion	January 2026	March 2027

3.4 Hours of Operation

The hours of work will be in accordance with Condition C4 of the consent, which has been reproduced below for reference:

Construction, including the delivery of materials to and from the site, may only be carried out between the following hours:

- *between 7am and 6pm, Mondays to Fridays inclusive; and*
- *between 8am and 1pm, Saturdays*
- *No work may be carried out on Sundays or public holidays*

John Holland will oversee and manage all sub-contractors with regards to work hours. Any work outside the scheduled construction hours must receive prior approval from the appropriate authorities, and this may include delivering large equipment or cranes to the site.

3.5 Construction Workforce

The size of the construction workforce depends on the project's work schedule. It is estimated that there will be a maximum of 30 workers during the early works phase from May to June, and about 50 workers during the bulk excavation phase from June to December, as demonstrated in Table 3.3.

Table 3.3: Construction Workforce Numbers

Project Stage	Typical number of workers	Peak number of workers
Early works	20	30
Bulk excavation	40	50

During subsequent construction phases (subject to future construction certificates), the workforce will increase to a peak of 360. However, on average, it is estimated that the number of workers will be around 240.

4.0 Construction Traffic Management

4.1 Construction Vehicles

It is expected that the primary construction vehicles that will be used on the site are 12.5m Heavy Rigid Vehicles (HRVs) and 19m Truck and Dog vehicles for the delivery of construction materials. In addition, Articulated Vehicles of up to 20 metres in length will also require access to the site. Mobile cranes up to 250T may also be used occasionally.

4.2 Construction Traffic Volumes

Based on the extent of the project and proposed construction stages, vehicle volumes will vary, Table 4.1 outlines the anticipated number of the key arrivals of the project. Values provided in this table are indicative of the key project stages only. At other times, vehicle volumes will likely be lower (in particular, lower than the superstructure phase).

Table 4.1: Construction Traffic Volumes

Phase/Works Description	Average Arrivals to Site Per Day
Bulk Excavation	25 Truck and Dogs
Superstructure	120 trucks, including 100 concrete trucks, 10 formwork trucks, and 10 others

4.3 Construction Vehicle Routes

The proposed construction vehicle routes are shown in Figure 4.1. Swept path analysis for key intersections along the proposed construction routes are included in Appendix A.

As shown in Figure 4.1, St Michael's Catholic Parish Primary School is situated in close proximity to the section of Shoalhaven Street that will be utilised by construction vehicles. Therefore, to minimise safety concerns and avoid traffic congestion, truck movements will be scheduled outside the school's peak drop-off and pick-up periods (8:00am to 9:30am and 2:30pm to 4:00pm) wherever possible.

Secondary construction vehicle routes are provided as shown in Figure 4.1 for use by Truck and Dogs, 8.8m Medium Rigid Vehicles (MRVs) or smaller vehicles. Due to constraints at the Hyam Street / Bridge Street intersection, this route cannot be used for 20m semi-trailers or 12.5m HRVs. For instances where Truck and Dogs, MRVs or smaller vehicle types are arriving or departing to the site during school peak hours, this secondary route should be used to avoid overlapping with school pick up or drop off activity.

Construction vehicles will be required to mount the roundabout at the North Street / Shoalhaven Street intersection on approach to and departure from the site. Therefore, trucks turning at the roundabout or travelling through the roundabout when arriving the site must be completed under traffic control. For details of the relevant traffic control arrangements, refer to Section 4.7.

Figure 4.1: Construction Vehicle Routes

Inbound Vehicles

Incoming construction vehicles are expected to travel along Princes Highway as shown in Figure 4.1.

Primary route:

- Approach from Princes Highway
- Turn left or right onto Bridge Road
- Turn right onto Shoalhaven Street

Secondary route (for approach from the north only):

- Approach from Princes Highway
- Turn right onto Bridge Road
- Turn right onto Hyam Street
- Turn left onto Shoalhaven Street

Outbound Vehicles

Construction vehicles are expected to depart via the Princes Highway as shown in Figure 4.1.

Primary route:

- Exit the site and head southbound on Shoalhaven Street

- Turn left onto Worrigee Street
- Turn left or right onto Princes Highway

Secondary route (for departure to the north only):

- Exit the site and head northbound on Shoalhaven Street
- Turn right onto Hyam Street
- Turn left onto Bridge Road
- Turn left onto Princes Highway

4.4 Construction Traffic Management

There is sufficient space available within the site for trucks to load and unload without impacting surrounding areas. Emergency vehicles will have unrestricted access to all parts of the site, neighbouring properties, and local roads without any hindrance. Traffic controllers will be employed as necessary to ensure the safe and efficient movement of vehicles, pedestrians, and workers on the site.

All vehicle movements will be conducted during approved work hours, with delivery and removal trucks scheduled to arrive and depart outside peak hours to avoid causing traffic congestion. If the site reaches maximum capacity, any vehicles arriving after that will be expected to reschedule their delivery.

Vehicles will move in a forward direction within the site, and any exceptional movements will be performed under the supervision of accredited traffic controllers. Communication between the site and vehicles will be maintained to stagger their arrival and minimise traffic disruptions during peak hours when there will be significant pedestrian and cyclist activity.

Several measures will be implemented to ensure the safety of active transport users during construction, including scheduling construction vehicle movements outside peak hours where possible, prohibiting pedestrians from entering or passing through specific areas, and installing appropriate signage to notify staff and patients of detours and prohibited areas.

Construction vehicle access points will be manned by traffic controllers to prevent unauthorised or unsafe access by vehicles or pedestrians. Refer to Section 4.7 for details regarding the required traffic control and TGS plans to be in place for each construction activity.

4.5 Work Zones

All loading and unloading activities are planned to take place within the construction site, as outlined previously. This negates the need for an on-street works zone to facilitate these activities during the proposed construction works.

4.6 Driver Code of Conduct

The Driver Code of Conduct has been developed to comply with Condition B20 of the consent. This document will be distributed to site workers and drivers as necessary.

The objectives of the Driver Code of Conduct are to minimise the impact on the road network, reduce conflicts with other road users, limit road traffic noise, and ensure drivers use the designated routes for accessing and leaving the site.

It is recommended to establish a program or a checklist to ensure that truck drivers comply with the Driver Code of Conduct.

Driver Code of Conduct

Minimise Impacts to Road Network

To minimise the impacts of earthworks and construction on the local and regional road network:

- Always obey all applicable road rules and laws
- Drivers to obey road speed limit and reduce the speed while approaching nearby intersections. Heavy braking can damage the roads.
- Drivers should avoid local, narrow roadways where possible.
- Drivers should follow specified truck routes (see Figure 4.2 and Section 4.3 of CTPMSP, and enquire if unsure)

Figure 4.2: Construction Vehicle Routes

Minimise Conflicts with other Road Users

To minimise conflicts with other road users including pedestrians, cyclists or private vehicle drivers:

- Drivers should be mindful of pedestrians and cyclists along all haulage routes
- Drivers should not obstruct access to any public roads, residential driveways, or pedestrian footpaths
- All loading and unloading will occur wholly within the site
- Drivers should exit the site in a forward motion and check their left and right twice while exiting to ensure the safety of pedestrians, cyclists and other vehicles is maintained
- Upon exiting, drivers must wait for a suitable gap in traffic. The Roads Act does not give any special treatment to trucks exiting a construction site, but the vehicles on the road have the right-of-way
- Drivers should obey the traffic controllers while entering and exiting the site

- Drivers should be aware of site's surrounding conditions including speed limits, other traffic controls and pedestrian routes. This information can be presented to drivers during site inductions
- Drivers should be aware that construction vehicle movements are to be scheduled outside of peak traffic periods where possible.

Minimise Road Traffic Noise

To minimise the noise impacts on the community resulting from driving heavy vehicles:

- Drivers should reduce speed to reduce instances and severity of compression braking, including when approaching speed humps or raised zebra crossings
- Limit any excessive or unnecessary use of horns, in particular outside of working hours

Environmental Control

For safe environmental management:

- Construction vehicle wheels shall be cleaned prior to leaving the site to prevent transport or dust, dirt, or gravel from the worksite onto the road network or pedestrian footpaths.
- All loads are to be sealed or covered when entering or leaving the site. Loading of disposable material into vehicles leaving the site is to occur only within site.

4.7 Traffic Guidance Scheme

A total of 12 site-specific TGSs have been prepared for the site to address the traffic control requirements throughout the various construction phases and activities. The TGSs have been designed in accordance with the requirements of the TfNSW Traffic Control at Work Sites Technical Manual and AS 1742.3 (2019).

The TGS plans are included in Appendix B and demonstrate the proposed signage and other traffic control measures that are required to be implemented for the following activities:

- TC1 - General layout for construction phase 1(a)
- TC2 - General layout for construction phase 1(b)
- TC3 - General layout for construction phase 2
- TC4 - Driveway construction of the main entry/construction gate 1
- TC5 - Driveway construction of the ambulance bay/construction gate 2
- TC6 - Driveway construction of the temporary access road/construction gate 3
- TC7 - Driveway construction of the loading bay & drop-off
- TC8 - Reverse manoeuvre in/out of the service road
- TC9 - Construction vehicle access to the southeast construction access point
- TC10 - Construction vehicle access to construction gate 1
- TC11 - Construction vehicle access to construction gate 2
- TC12 - Construction vehicle access to construction gate 3

General layout TGSs (TC1 to TC3) outline the typical requirements for day-to-day construction activities. This includes the type, location and placement of various traffic and regulatory signages and controls, as well as the responsibilities of the traffic controller for managing traffic and pedestrian flow and maintaining safety.

Driveway construction TGSs (TC4 to TC6) include additional traffic control measures to be implemented during driveway construction activities. This includes road or footpath closures, or instructions on how to safely navigate through the construction zone, including speed limits, road markings, and temporary signages.

Construction vehicle access TGSs (TC9 to TC12) contain the required traffic control measures to be implemented while construction trucks are entering/exiting each of the access gates.

If any oversized vehicles required to access the site doesn't comply with mass, dimension or operating requirements set out in a gazette notice, John Holland will be responsible for obtaining an Oversize Overmass (OSOM) vehicle access permit and approval from the National Heavy Vehicle Regulator (NHVR) prior to any such traffic movements. The proposed travelling routes for such vehicle must also be reviewed and approved. As part of the application, John Holland must demonstrate to the NHVR that the arrangements for the route are acceptable, and all relevant approvals, such as approvals for local road alterations, have been obtained.

Furthermore, to facilitate the movements of construction vehicles, and to minimise disruption to local traffic, kerbside parking will be temporarily restricted in certain sections along Shoalhaven Street and North Street, as outlined in the relevant TGS plans.

It is noted that access to the entry point at the southeast corner of the site will require trucks to mount the roundabout and may require reverse movements when exiting the site. As such, these movements will need to be completed under traffic control, as shown in TC9, to the presence of a qualified traffic controller.

5.0 Construction Impact

5.1 Local Traffic

To minimise traffic impacts from the construction works, truck movements to and from the site will be scheduled outside peak hours wherever feasible. All deliveries and construction activities are to be confined within the site, with no impact to passing traffic, except where managed under qualified traffic control. Construction vehicle access via Shoalhaven Street and North Street, specifically reverse movements performed by heavy trucks, will be done under the supervision of qualified traffic controllers as per the relevant TGS plans provided in Appendix B. Users will be informed about construction traffic movements through warning signs, as specified in the TGS.

The volume of contractor traffic during peak hours is expected to be minimal compared to the total volumes of traffic on local roads. Existing travel lanes along all local roads will remain operational at full capacity during construction.

On-site traffic controllers will carefully manage manoeuvring and merging of construction trucks at Shoalhaven Street and North Street to maintain traffic flow. To prevent traffic congestion, small deliveries shall use suitable gaps in traffic (as per the normal right-of-way scenario) without holding up the flow. If the relevant loading area is occupied, vehicles shall be appropriately stored within other areas of the site and not queue on the roadway, or shall be turned away and rescheduled if necessary. While recirculating to the site, vehicles shall park legally only in designated parking zones and only for as long as necessary, in accordance with relevant road rules.

5.2 Contractor Parking

Table 5.1 presents an extract of the 2016 Census Journey to Work (JTW) data of commuters in Nowra, offering insights into the prevailing travel modes of the construction workforce. While the 2021 JTW data is also accessible, it is important to note that the data was collected during the COVID-19 pandemic and hence does not necessarily accurately represent the typical mode split of the area.

Table 5.1: Extract of Travel Mode Split
Note: Values may not add to totals shown due to rounding
Source: ABS Census TableBuilder

Travel Mode	Mode Share (%)
Car, as driver	90%
Car, as passenger (carpooling)	6%
Walk only	2%

Table 5.2: Vehicle Numbers

Project Stage	Typical workforce numbers	Parking demand	Number of parking spaces available
Early Works	20	18	≥ 40
Bulk Excavation	40	36	≥ 40

As illustrated in Table 5.1, the majority of workers, approximately 90%, are expected to commute by private vehicle, while around 6% will opt for carpooling. In order to alleviate any additional strain to on-street parking, John Holland will utilise the top level of the multideck carpark, with approximately 20 spaces, for site management, while allocating at least 20 (and up to 40) on-site car parking spaces during the early works and bulk excavation phase, as depicted in Figure 5.1. Therefore, a total of at least 40 parking spaces will be provided for worker parking which will satisfy the demand of the project's early phases, as shown in Table 5.2.

During the civil works phase of the construction project, parking arrangements will be coordinated with the showground facilities, subject to approval from the SCC (Shoalhaven City Council). It should be noted that parking arrangements for subsequent phases of the project will be updated in future revisions of this sub-plan.

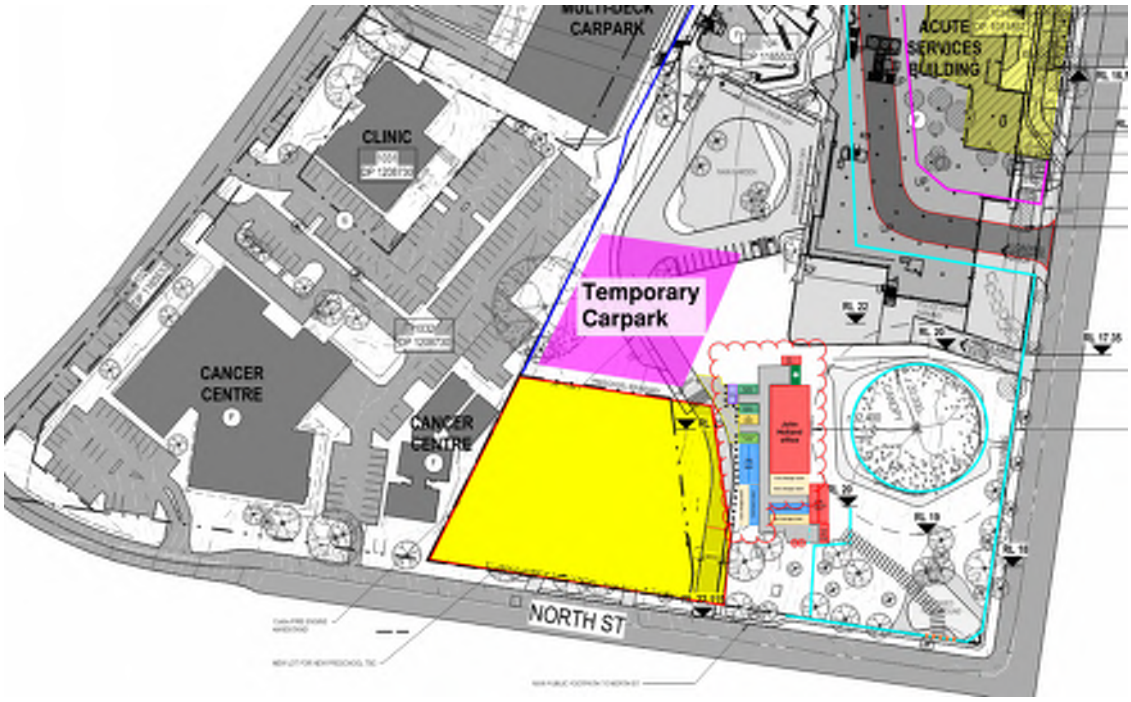


Figure 5.1: On-site Temporary Carpark
Source: John Holland Group

In order to prevent tradespeople from using street parking, John Holland will carry out weekly random inspections to monitor the situation. If any instances of street parking are detected in the vicinity, letters will be placed on the windscreens of the vehicles, and site access cards will be revoked as a consequence. To facilitate these inspections, John Holland will maintain a record of all trades' vehicle registration numbers. That said, it is strongly recommended that workers utilise public or active transport whenever feasible, to minimise disruptions to local traffic and on-street parking.

Heavy vehicle parking will be provided parking on site. John Holland will ensure that construction vehicles associated with the development do not park on nearby roads or within public parking facilities.

Based on the above, the proposed works would not generate any significant impact on the surrounding streets.

5.3 Pedestrians and Cyclists

The footpath located along Shoalhaven Street will remain functional during construction, with suitable traffic control measures to be implemented for any anticipated footpath closures. Access for pedestrians along Scenic Drive bordering the western perimeter of the site will be retained throughout all phases of the project. Consequently, the construction work proposed will have a minimal impact on nearby pedestrian activities.

Additionally, as stated in Section 4.3, construction vehicle activities will be scheduled outside peak hours where possible to ensure pedestrian safety. As a result, pedestrian amenity and safety near the site will not be significantly impacted by the movement of construction traffic. In order to safeguard pedestrians and cyclists, the construction site will be enclosed by fencing along all boundaries. Safety measures to protect pedestrians and cyclists, will be maintained in accordance with the relevant TGS plans. While the temporary access road is in operation, jersey kerb barriers will provide protection to the temporary footpath, with sufficient clearance from adjacent traffic lanes and driveways in accordance with AS 1742 and AS 2890.

5.4 Public Transport

A bus stop is located near the proposed medical gas tank drop-off service road, and there may be occasional instances where the paths of buses and trucks overlap, resulting in minimal impacts on local traffic. Nonetheless, it is important to note that such occurrences are highly unlikely and are not expected to cause significant delays on local roads or have consequential effects on nearby streets.

5.5 Emergency Vehicles

Emergency services access to all adjacent properties will be maintained under the existing conditions, with no impacts as a result of the construction works. Emergency vehicle access within the construction site, if required, will be managed on a case-by-case basis.

5.6 Public Infrastructure

On infrequent occasions when particularly large vehicles are required to access the site, some mounting or crossing of public kerbs and medians may be necessary. John Holland shall repair any damage to this infrastructure if large vehicles are required to mount the devices. Any other road markings damaged as a result of vehicles associated with the construction shall be repaired as a responsibility of the builder.

5.7 Site Safety

Construction work and operations must be confined within the site. To separate the existing infrastructures from the site, various protective barriers will be utilized. During phase 1(a) and (b), temporary fencing will be established along the new temporary access road, while 1.8m high chain mesh fences will be erected along North Street and Shoalhaven Street. Additionally, new Class A Hoarding will be placed around the lower pad and the new Pre-School during Phase 2.

It is essential to ensure the safety of passing traffic and pedestrians at all times.

5.8 Communication of Works

Before any site work commences, the surrounding neighbourhood will be notified of the commencement of work. The notification shall contain relevant information or comments, and will be distributed in accordance with the Construction Management Plan developed by John Holland.

A dedicated 24-hour complaint hotline, reachable at 0466 577 767, has been established for the convenience of the general public to report any concerns or grievances related to the construction project. The hotline number will be prominently displayed at the vehicle gates on North Street and Shoalhaven Street, as well as the pedestrian gate on Shoalhaven Street, ensuring easy access for those seeking to file a complaint.

As part of the site induction procedure, all contractors will be informed about this CTPMSP, the relevant TGS plans, and their responsibilities to comply with these plans.

5.9 Neighbouring Properties

Construction activities will be confined within the site, ensuring that Shoalhaven Street and North Street remain accessible to the public throughout the construction period. Hence, properties located near the perimeter of the construction zone will not be affected by the works. As a result, all properties surrounding the site will continue to be fully accessible during the construction period, just as they are under existing conditions.

5.10 Nearby Construction Projects

A new bridge over the Shoalhaven River on the Princes Highway at Nowra is being developed by TfNSW. In addition to the bridge construction, the project entails upgrades to the road and intersections along the Princes Highway. Figure 5.2 provides an overview of the proposed works, which involve:

- Princes Highway upgrade between Bolong Road and Moss Street
  - Includes 3 northbound and 3 southbound lanes
- Bridge Road intersection upgrade
  - Includes 2 southbound right turn lanes from Princes Highway into Bridge Street
  - Include 1 left turn lane from Bridge Street to Princes Highway
- Removing the intersection of Bridge Road and Scenic Drive
- A 3.5-metre-wide shared use path on the western side of the bridge connecting the Illaroo Road intersection to the Bridge Road intersection
- Off road shared paths and footpaths along length of road upgrade

The ongoing construction works are scheduled to conclude by mid-2024, coinciding with the hospital construction program. Nonetheless, the upgrade project is not likely to significantly affect the local traffic as it is assumed that the Princes Highway, which is already extensively used by trucks, can accommodate the extra heavy vehicle trips generated by the project. Additionally, the construction vehicle routes will not be affected as the bridge will remain fully accessible throughout the project.

Moreover, it is expected that construction worker parking for both projects will have a minimal impact on the local road network. This is due to the considerable distance between the construction sites, and the on-site parking provided for the hospital redevelopment project.

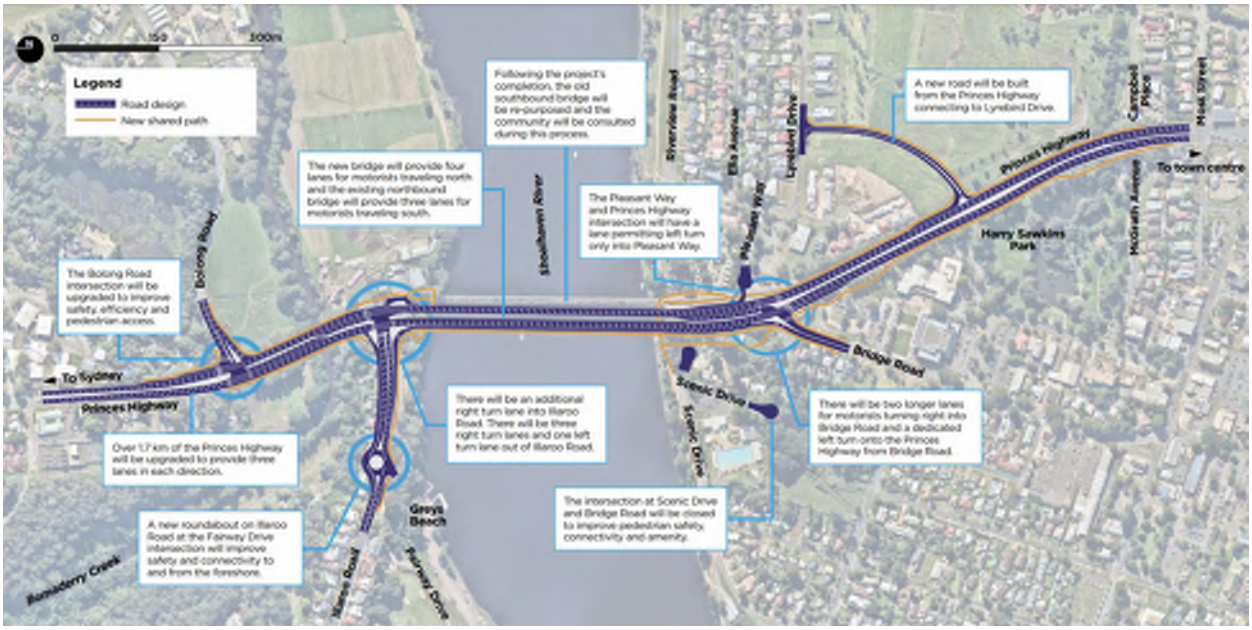


Figure 5.2: Nowra Bridge Works

Source: TfNSW Detailed Design Overview Map July 2020

From 24 February 2023, all five existing lanes of the Princes Highway between Bridge Road and Illaroo Road have been temporarily shifted west onto the new bridge for work to be carried out to prepare for the final configuration of the highway. Truck drivers are expected to follow the temporary arrangement as shown in Figure 5.3.

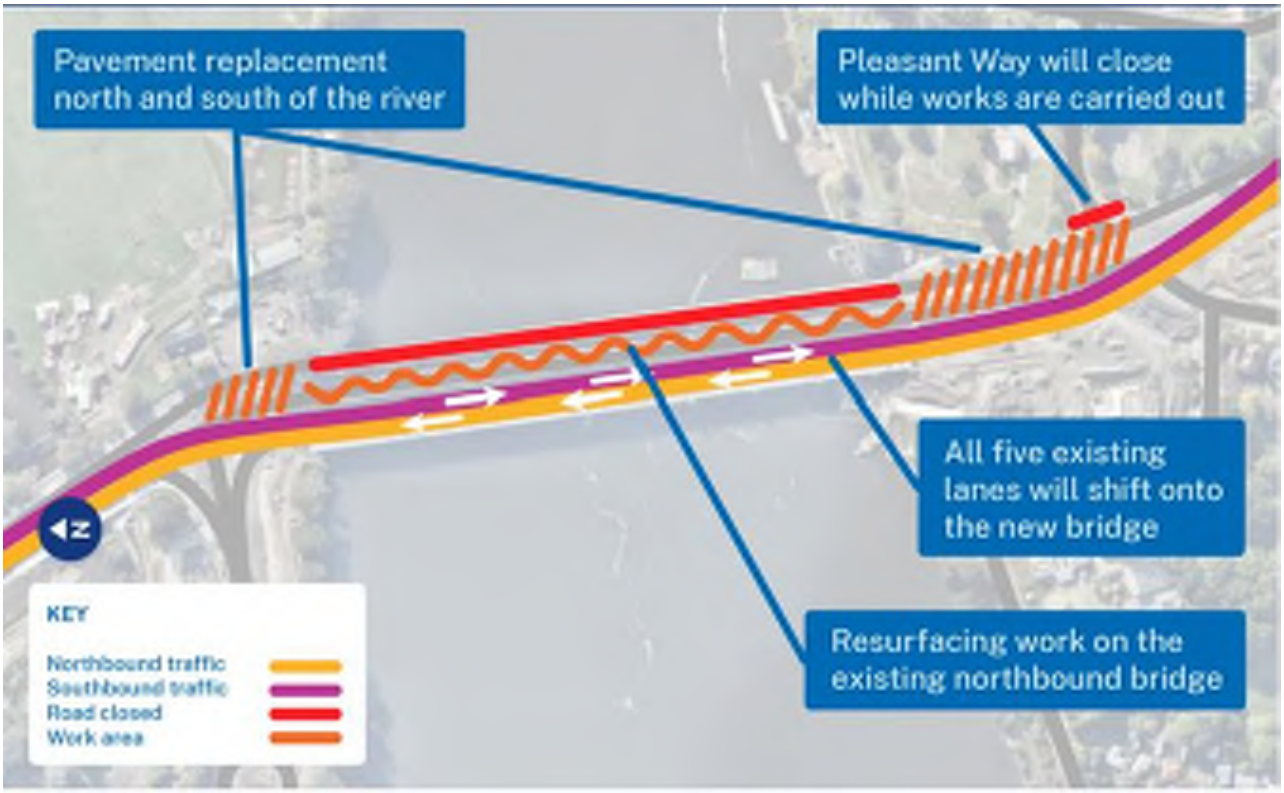
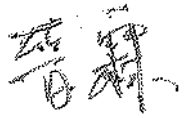


Figure 5.3: Temporary Traffic Changes of New Nowra Bridge
Source: TfNSW Nowra Bridge Project Update February 2023

6.0 Conclusion

This CTPMSP for the Shoalhaven District Memorial Hospital Redevelopment project has been developed to ensure the safe and efficient movement of construction traffic to and from the site. This sub-plan identifies potential traffic impacts associated with the use of heavy construction vehicles and traffic generated by construction worker vehicles. The sub-plan also outlines measures to manage these impacts, including traffic control, and the use of public and active transport, to promote the safety of all road users, and to minimise disruption to local traffic.

Throughout the development and implementation of the CTPMSP, regular updates will be provided to the local community and relevant authorities regarding the progress of the construction activities and any potential disruptions to traffic flow. By following the measures outlined in this sub-plan, impacts on the surrounding road network will be minimised.

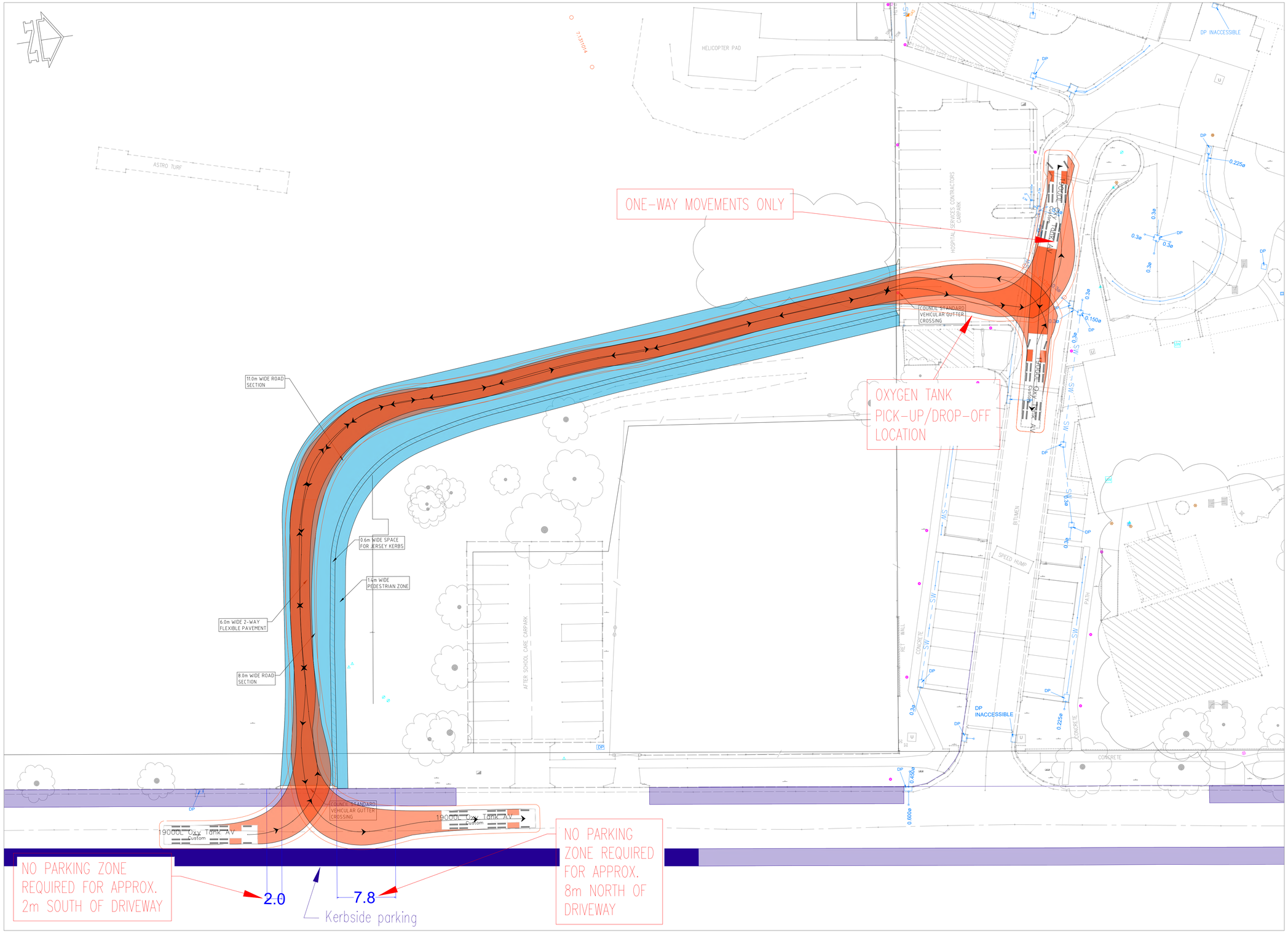
Prepared by	Reviewed by	Authorised by
		
CHUN LAM (IVAN) IP	**MICHAEL BABBAGE**	**PAUL YANNOULATOS**
Traffic Engineer	Associate (Traffic)	Technical Director

EMMA COWDERY

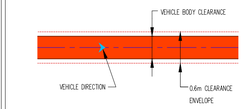
Traffic Engineer

Appendix A

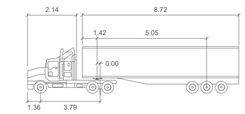
Swept Path Analysis



SWEPT PATH LEGEND:



NOTE: 600mm CLEARANCE IN ACCORDANCE WITH AS2890.2



19000L Oxy Tank AV

	meters		
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Trailer Width	: 2.50	Steering Angle	: 28.3
Tractor Track	: 2.50	Articulating Angle	: 70.0
Trailer Track	: 2.50		

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Rev	Description	Eng	Draft	Date
B	FOR INFORMATION	CI	CI	27/04/23
A	FOR INFORMATION	CI	CI	18/04/23

Contractor
JOHN HOLLAND
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PYRMONT NSW 2009
AUSTRALIA

Engineer
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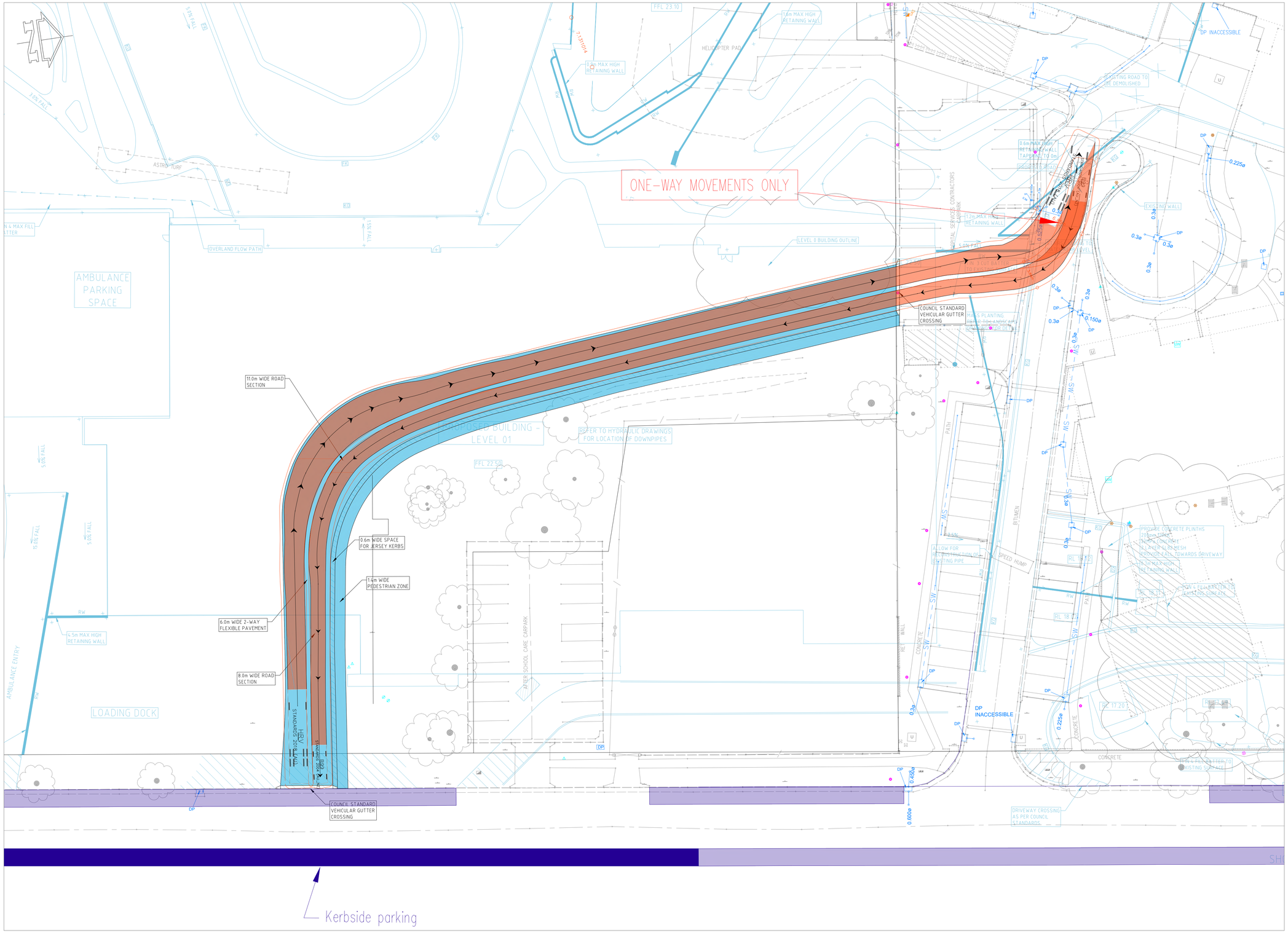
612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060

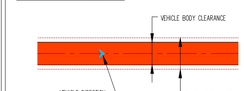
Project
SHOALHAVEN DISTRICT MEMORIAL HOSPITAL REDEVELOPMENT

Sheet Subject
SWEPT PATH PLAN
TEMPORARY ACCESS ROAD
19KL TANKER

Scale : A1 1:250
Drawn CI
Authorised MB
Job No 221659
Drawing No TTR11Z001
Revision B
Plot File Created: Apr 27, 2023 - 10:16am



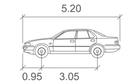
SWEPT PATH LEGEND:



NOTE: 600mm CLEARANCE IN ACCORDANCE WITH AS2890.2

HRV

	meters
Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 36.7



B99

	meters
Width	: 1.94
Track	: 1.84
Lock to Lock Time	: 6.0
Steering Angle	: 33.9

THIS DRAWING HAS BEEN PREPARED USING COLOUR

FileName: SHR-TTW-PRJ-DRG-TTR112002.dwg - USER: ivan - Plot File Created: Apr 27, 2023 - 10:15am

Rev	Description	Eng	Draft	Date
B	FOR INFORMATION	CI	CI	27/04/23
A	FOR INFORMATION	CI	CI	18/04/23

Contractor
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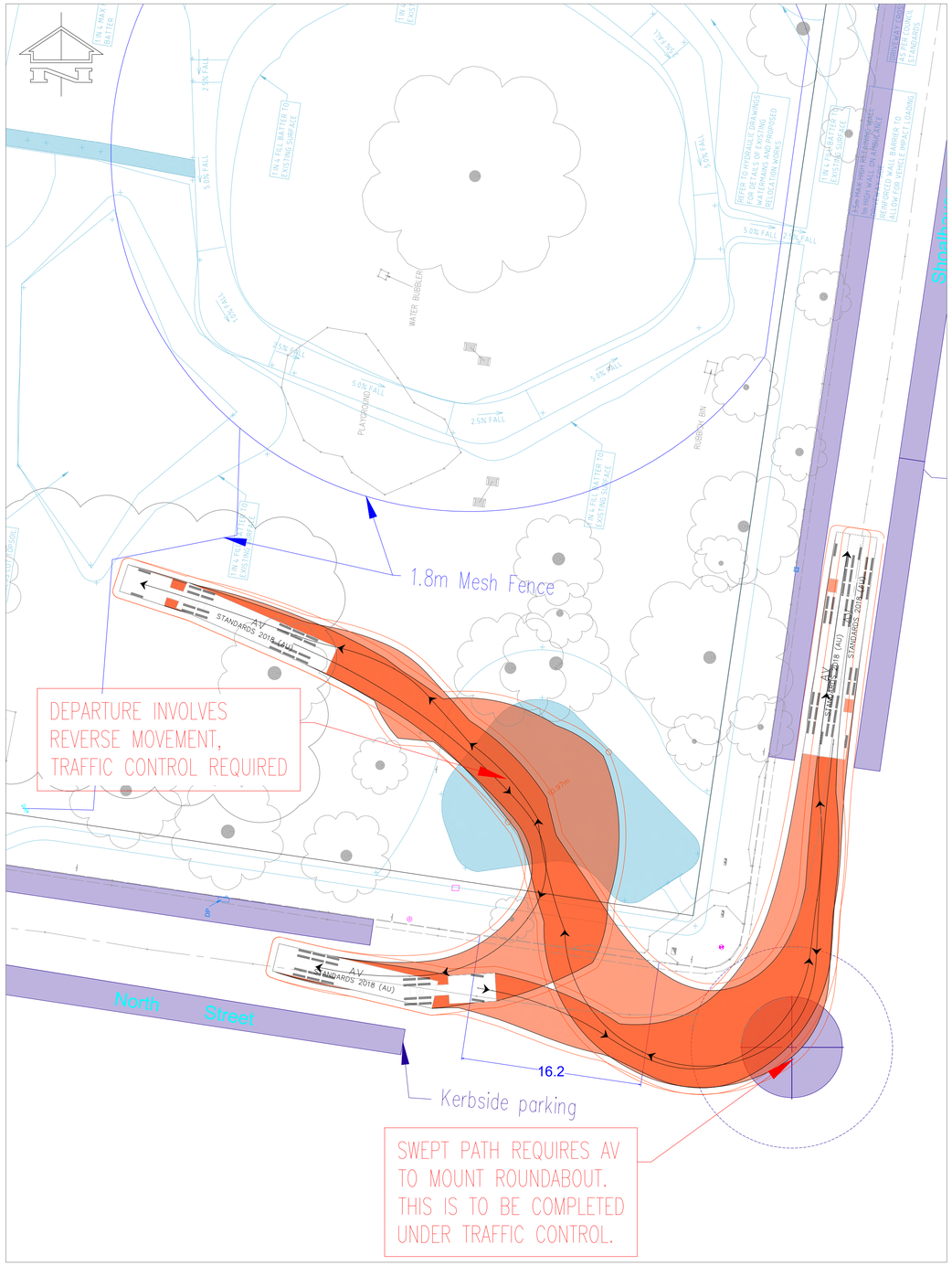
Project
SHOALHAVEN DISTRICT MEMORIAL HOSPITAL REDEVELOPMENT

Sheet Subject
SWEPT PATH PLAN
TEMPORARY ACCESS ROAD
B99 PASSING HRV

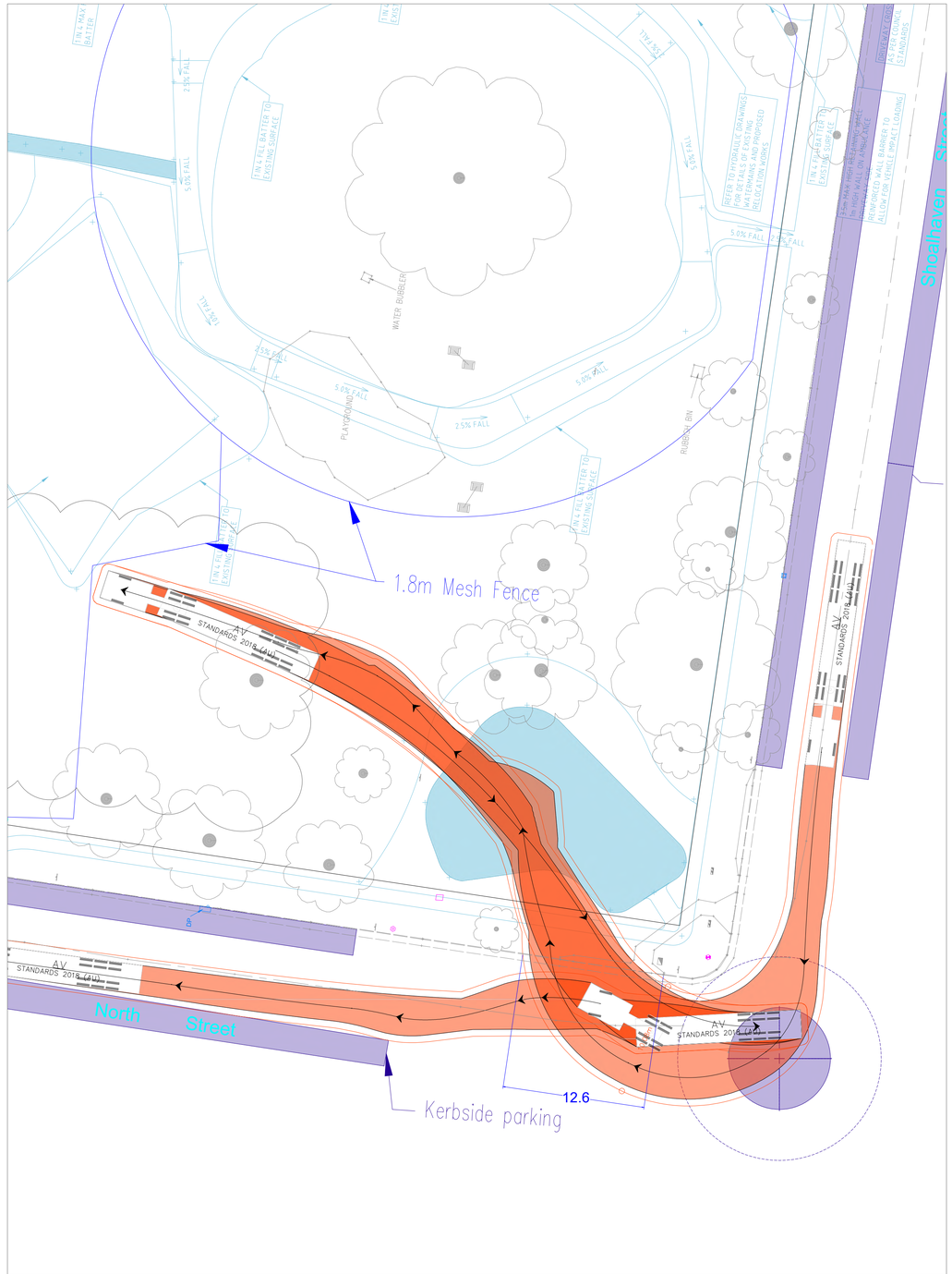
Scale : A1	Drawn	Authorised
1:250	CI	MB

Job No	Drawing No	Revision
221659	TTR11Z002	B

Plot File Created: Apr 27, 2023 - 10:15am

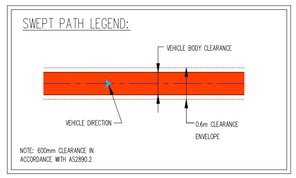


SHOALHAVEN STREET DEPARTURE
SCALE 1: 250

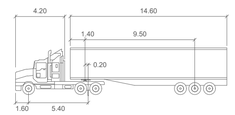


NORTH STREET DEPARTURE
SCALE 1: 250

SWEPT PATH LEGEND:



NOTE: 600mm CLEARANCE IN ACCORDANCE WITH AS2890.2



AV

	meters		
Tractor Width	: 2.50	Lock to Lock Time	: 6.0
Trailer Width	: 2.50	Steering Angle	: 28.3
Tractor Track	: 2.50	Articulating Angle	: 72.0
Trailer Track	: 2.50		

0 2.5 5 7.5 10 12.5 15 17.5 20m

1:250 A1 1:500 A3

THIS DRAWING HAS BEEN PREPARED USING COLOUR

FileName: SHR-TTW-PR-J-DRG-TTR11Z003.dwg - USER: Ivani - Plot File Created: Apr 18, 2023 - 3:32pm

Rev	Description	Eng	Draft	Date
A	FOR INFORMATION	CI	CI	18/04/23

Contractor
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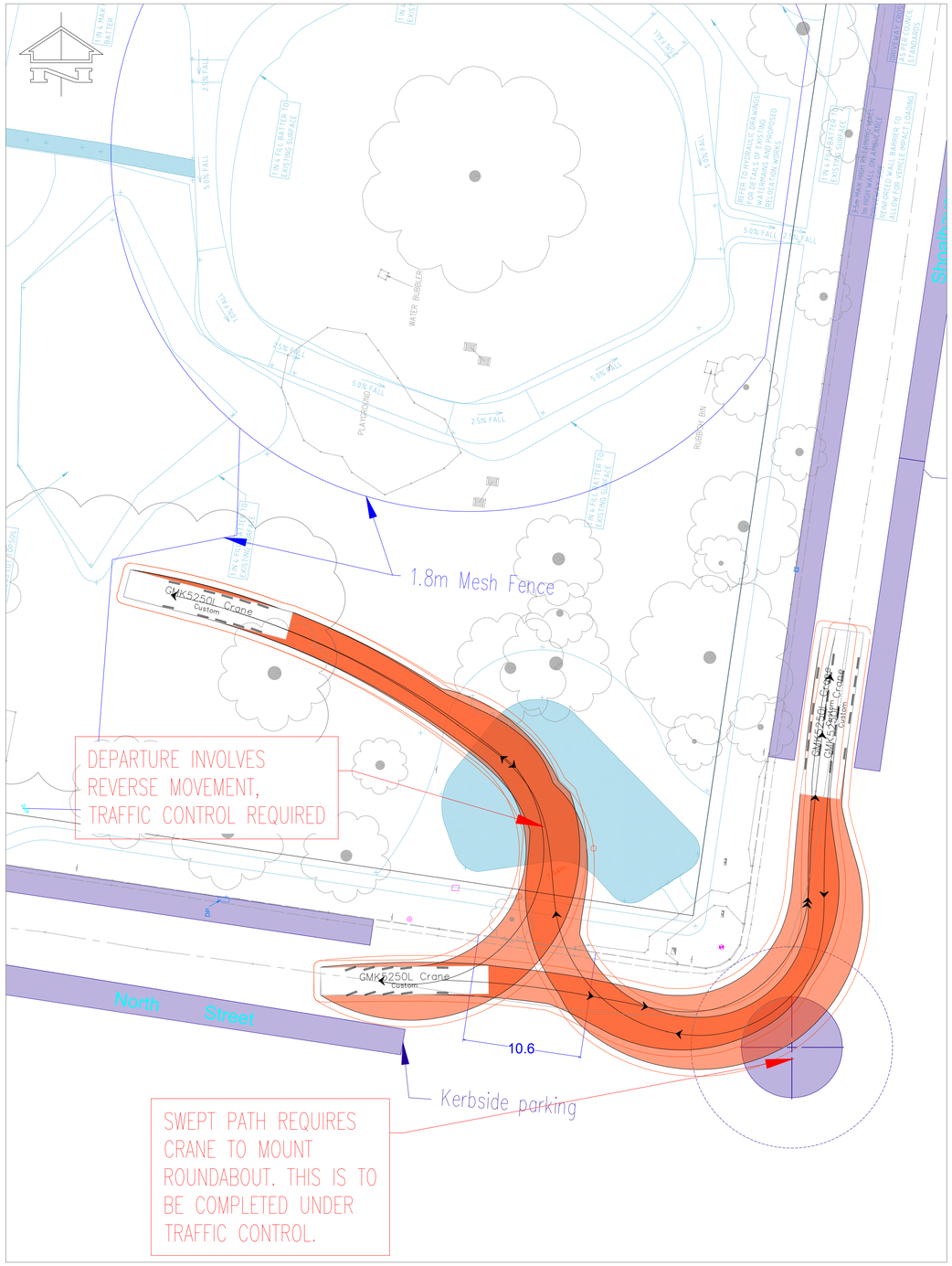
Project
SHOALHAVEN DISTRICT MEMORIAL HOSPITAL REDEVELOPMENT

Sheet Subject
SWEPT PATH PLAN
CONSTRUCTION ACCESS
SITE OFFICES
20M ARTICULATED VEHICLE

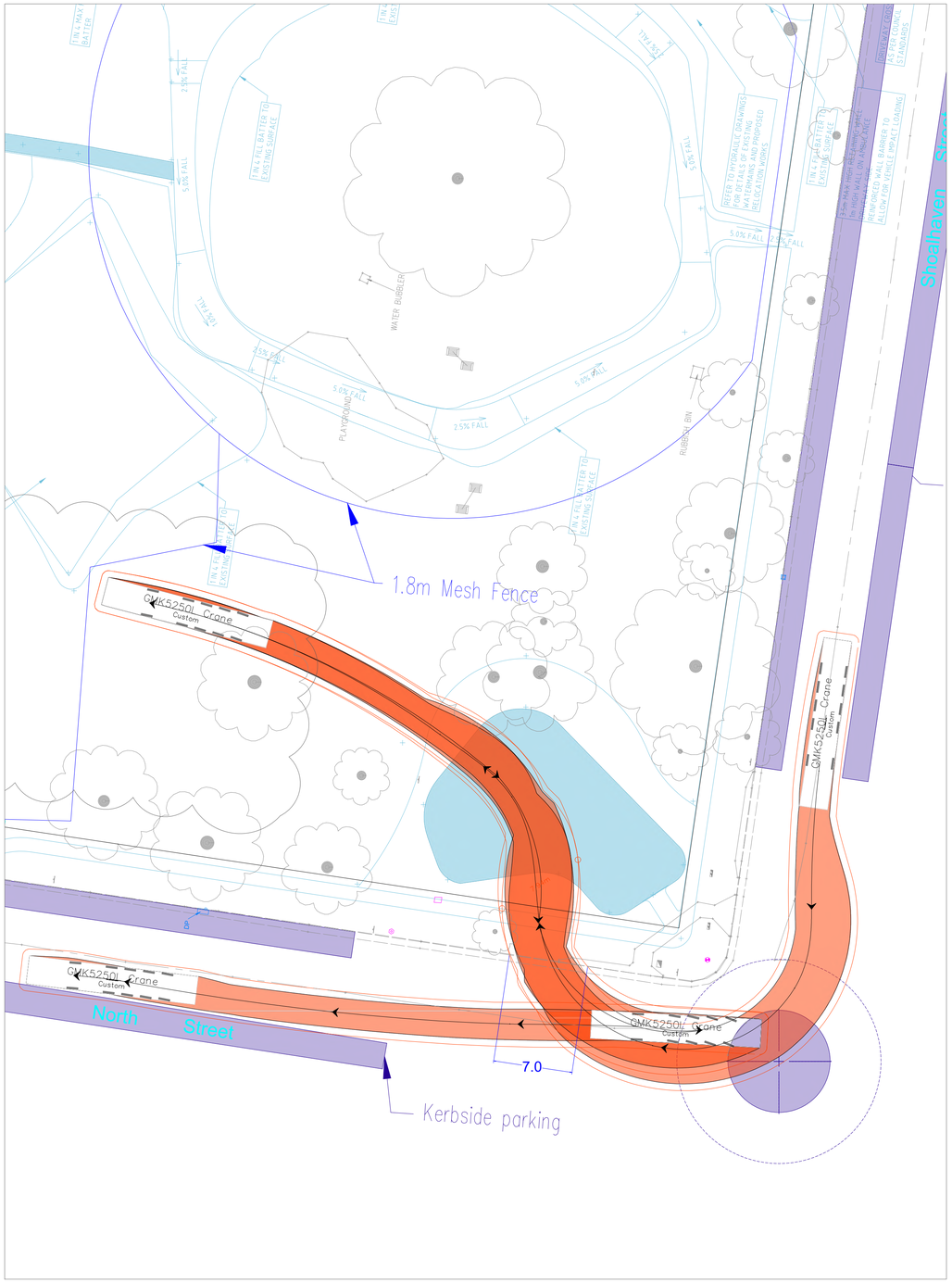
Scale : A1	Drawn	Authorised
1:250	CI	MB

Job No	Drawing No	Revision
221659	TTR11Z003	A

Plot File Created: Apr 18, 2023 - 3:32pm

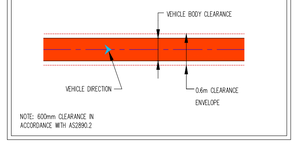


SHOALHAVEN STREET DEPARTURE
SCALE 1: 250

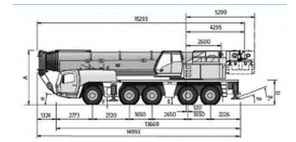


NORTH STREET DEPARTURE
SCALE 1: 250

SWEPT PATH LEGEND:



NOTE: 600mm CLEARANCE IN ACCORDANCE WITH AS2890.2



THIS DRAWING HAS BEEN PREPARED USING COLOUR

0 2.5 5 7.5 10 12.5 15 17.5 20m

1:250 A1 1:500 A3

FileName: SHR-TTW-PRJ-DRG-TTR11Z004.dwg - USER: ivan - Plot File Created: Apr 18, 2023 - 3:35pm

Rev	Description	Eng	Draft	Date
A	FOR INFORMATION	CI	CI	13/04/23

Contractor
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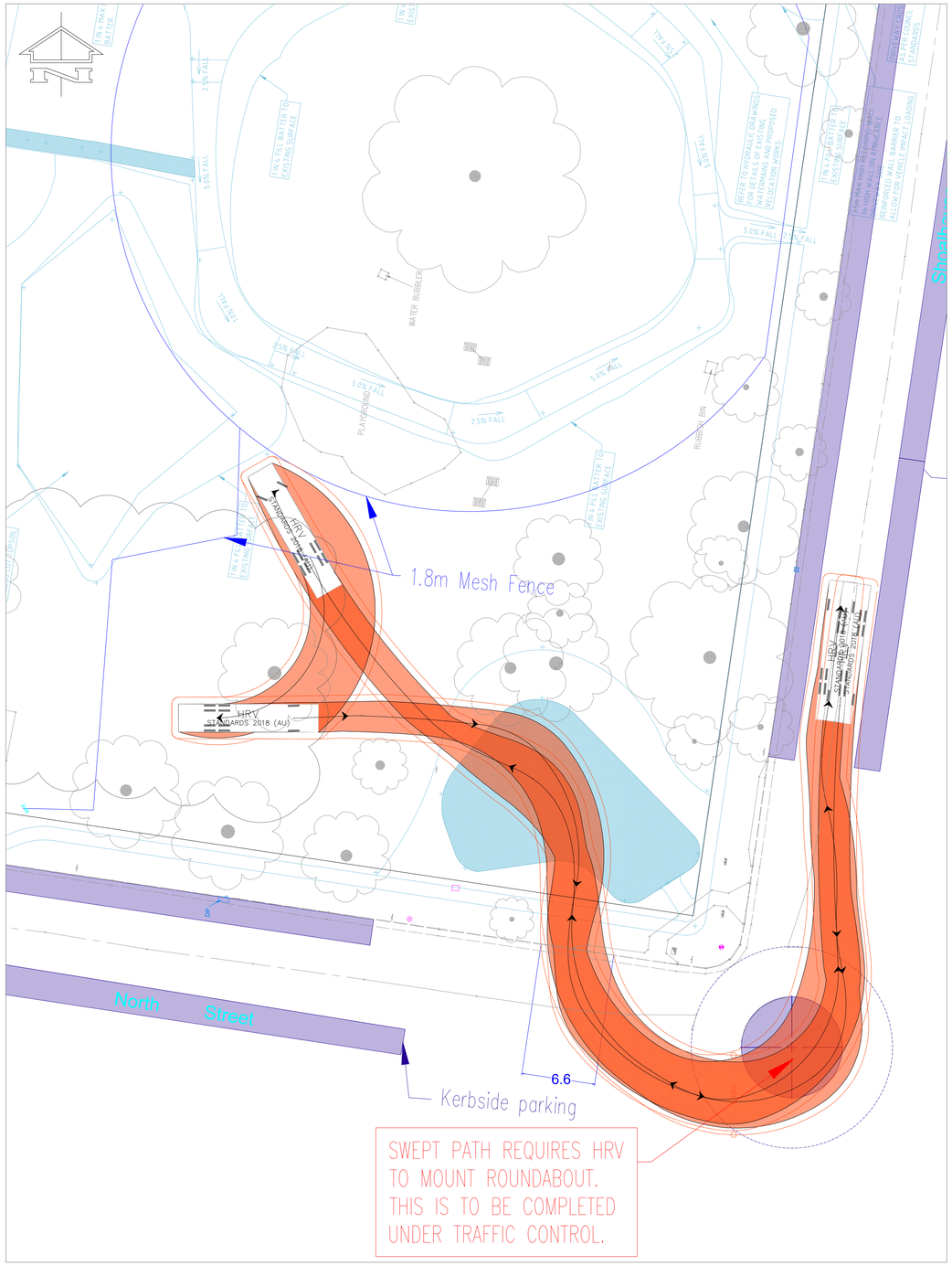
Project
SHOALHAVEN DISTRICT
MEMORIAL HOSPITAL
REDEVELOPMENT

Sheet Subject
SWEPT PATH PLAN
CONSTRUCTION ACCESS
SITE OFFICE
250T CRANE

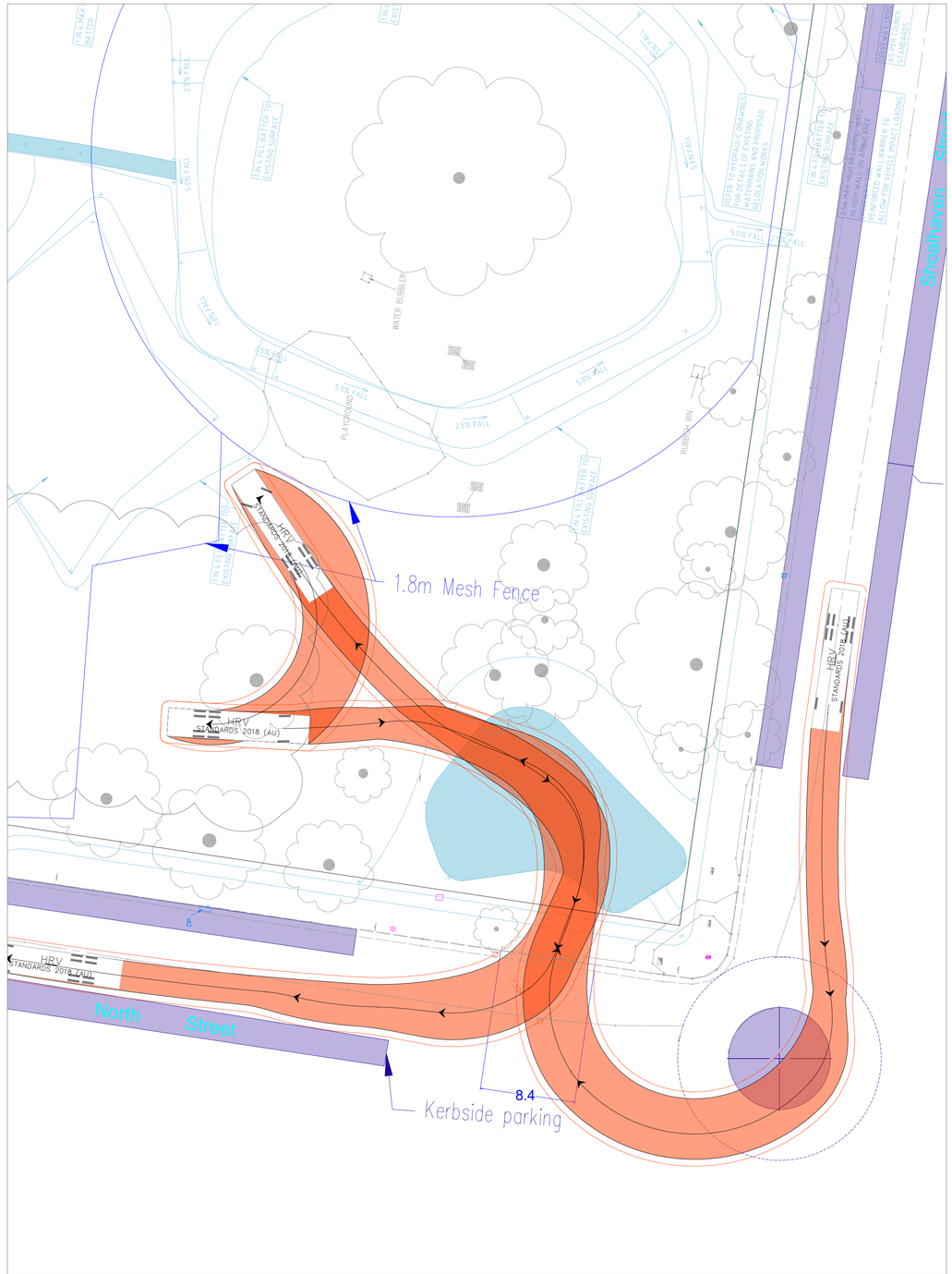
Scale : A1	Drawn	Authorised
1:250	CI	MB

Job No	Drawing No	Revision
221659	TTR11Z004	A

Plot File Created: Apr 18, 2023 - 3:35pm

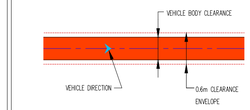


SHOALHAVEN STREET DEPARTURE
SCALE 1: 250

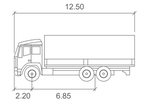


NORTH STREET DEPARTURE
SCALE 1: 250

SWEPT PATH LEGEND:



NOTE: 600mm CLEARANCE IN ACCORDANCE WITH AS2890.2



HRV

	meters
Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 36.7

THIS DRAWING HAS BEEN PREPARED USING COLOUR

FileName: SHR-TTW-PR-DRG-TTR112005.dwg - USER: Ivani - Plot File Created: Apr 18, 2023 - 3:37pm

Rev	Description	Eng	Draft	Date
A	FOR INFORMATION	CI	CI	18/04/23

Contractor
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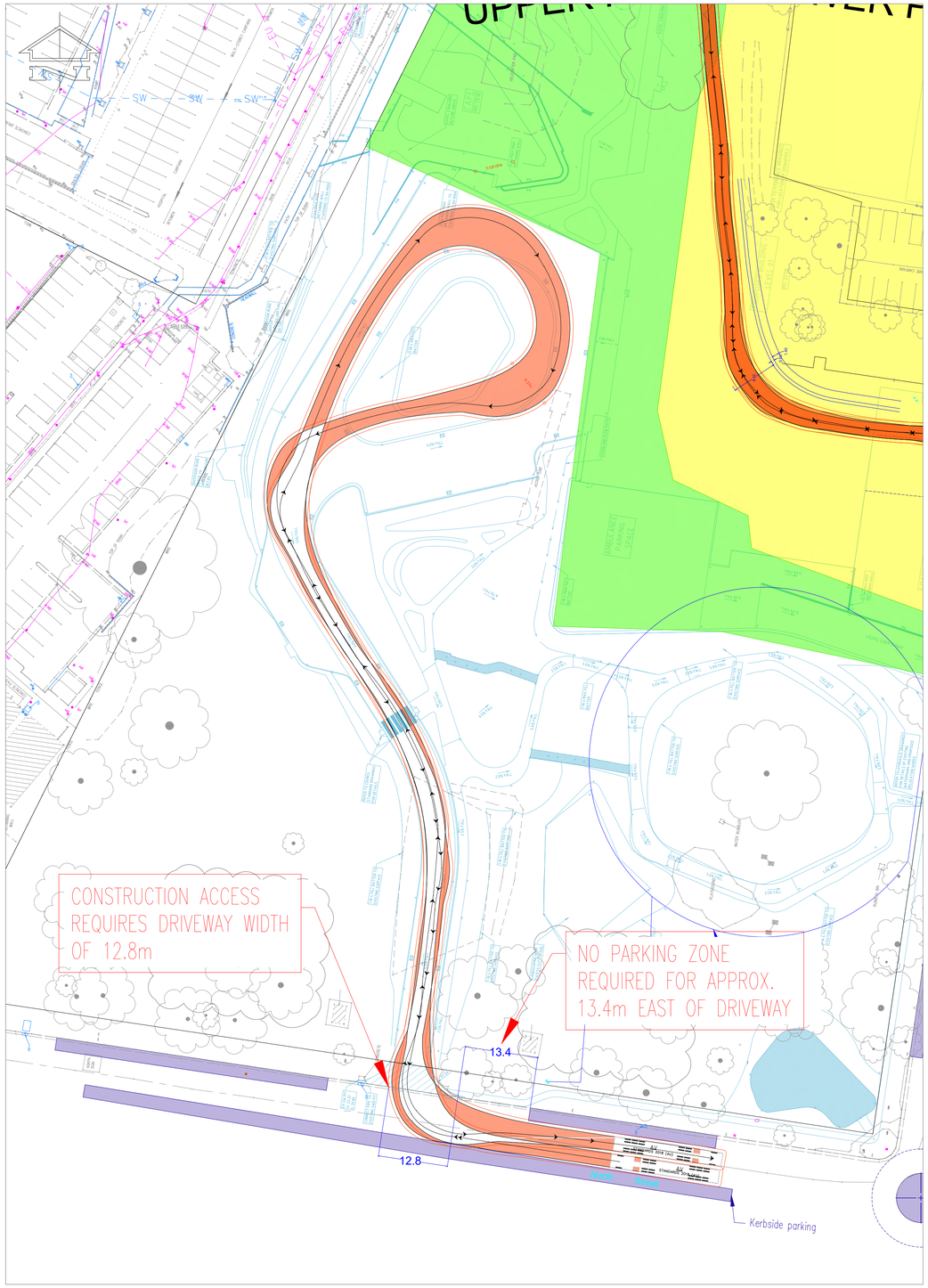
Project
SHOALHAVEN DISTRICT MEMORIAL HOSPITAL REDEVELOPMENT

Sheet Subject
SWEPT PATH PLAN
CONSTRUCTION ACCESS
SITE OFFICES
HEAVY RIGID VEHICLE

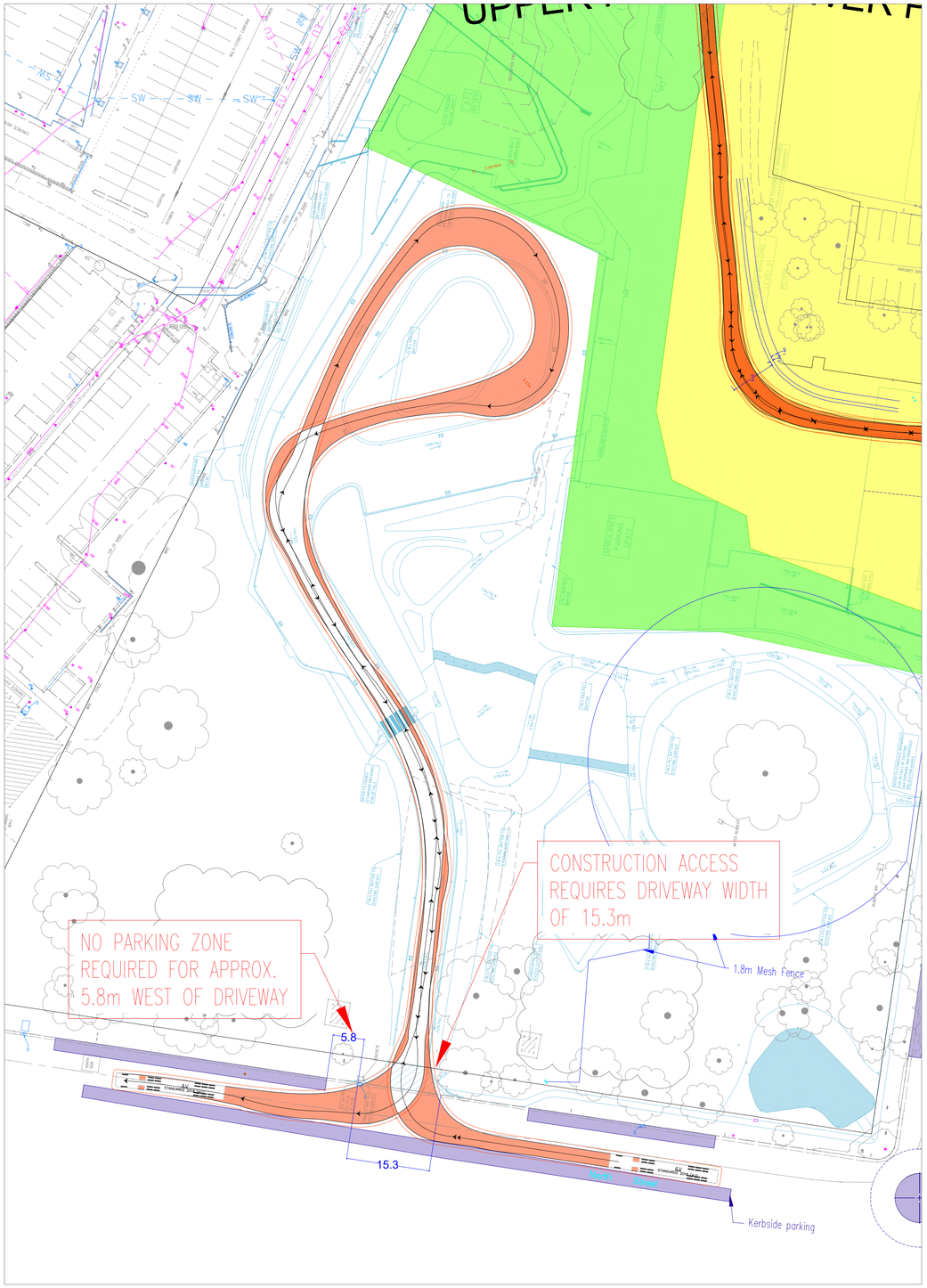
Scale : A1	Drawn	Authorised
1:250	CI	MB

Job No	Drawing No	Revision
221659	TTR11Z005	A

Plot File Created: Apr 18, 2023 - 3:37pm

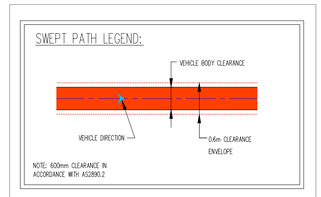


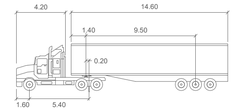
EASTBOUND DEPARTURE
SCALE 1: 500



WESTBOUND DEPARTURE
SCALE 1: 400

0 5 10 15 20 25 30 35 40m
1:500 A1 1:1000 A3





AV

	meters		
Tractor Width	: 2.50	Lock to Lock Time	: 6.0
Trailer Width	: 2.50	Steering Angle	: 28.3
Tractor Track	: 2.50	Articulating Angle	: 72.0
Trailer Track	: 2.50		

THIS DRAWING HAS BEEN PREPARED USING COLOUR

FileName: SHR-TTW-PRJ-DRG-TTR112006.dwg - USER: ivan - Plot File Created: Apr 18, 2023 - 3:40pm

Rev	Description	Eng	Draft	Date
A	FOR INFORMATION	CI	CI	18/04/23

Contractor
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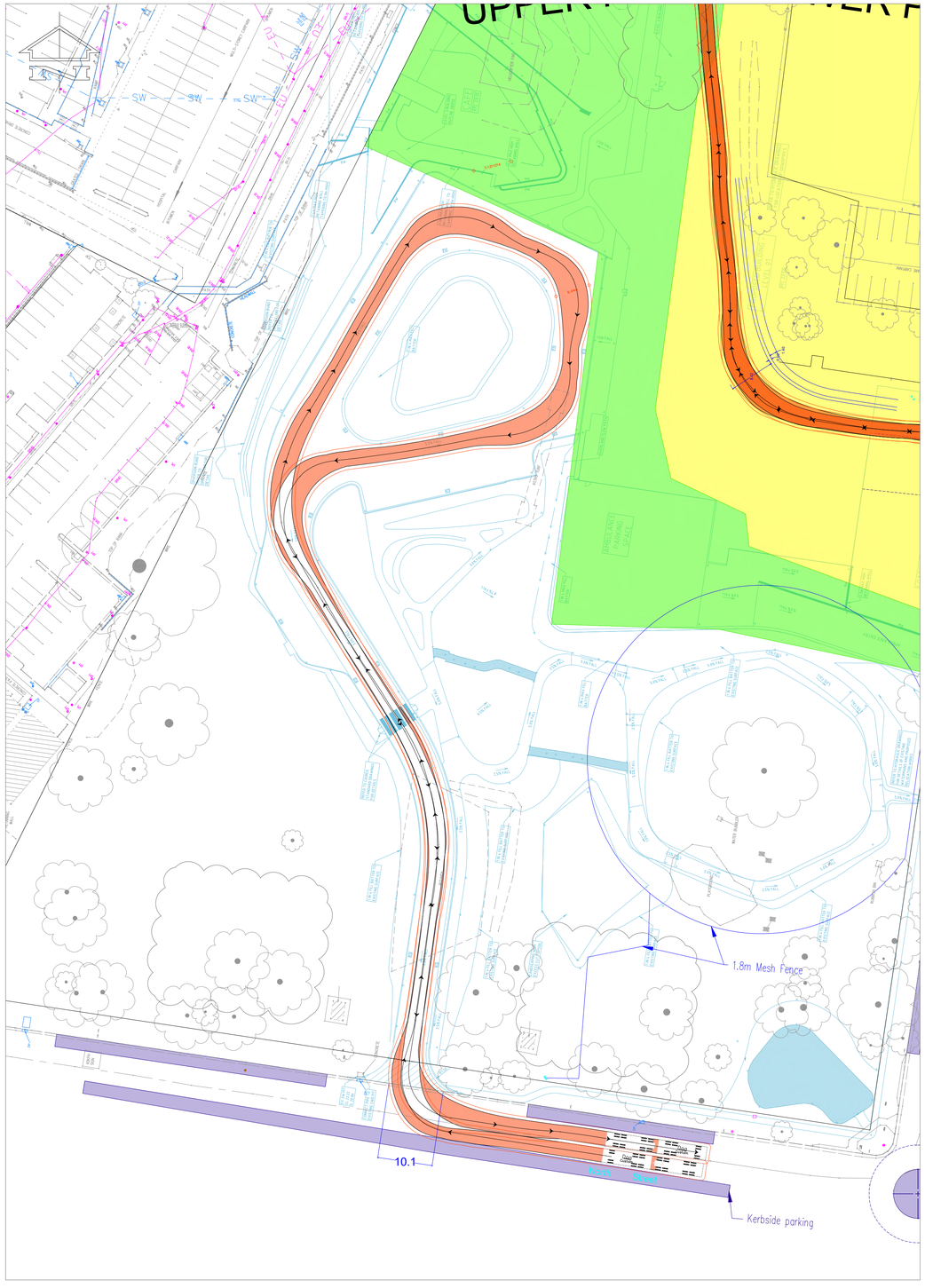
Project
SHOALHAVEN DISTRICT MEMORIAL HOSPITAL REDEVELOPMENT

Sheet Subject
SWEPT PATH PLAN
CONSTRUCTION ACCESS
GATE 1
20M ARTICULATED VEHICLE

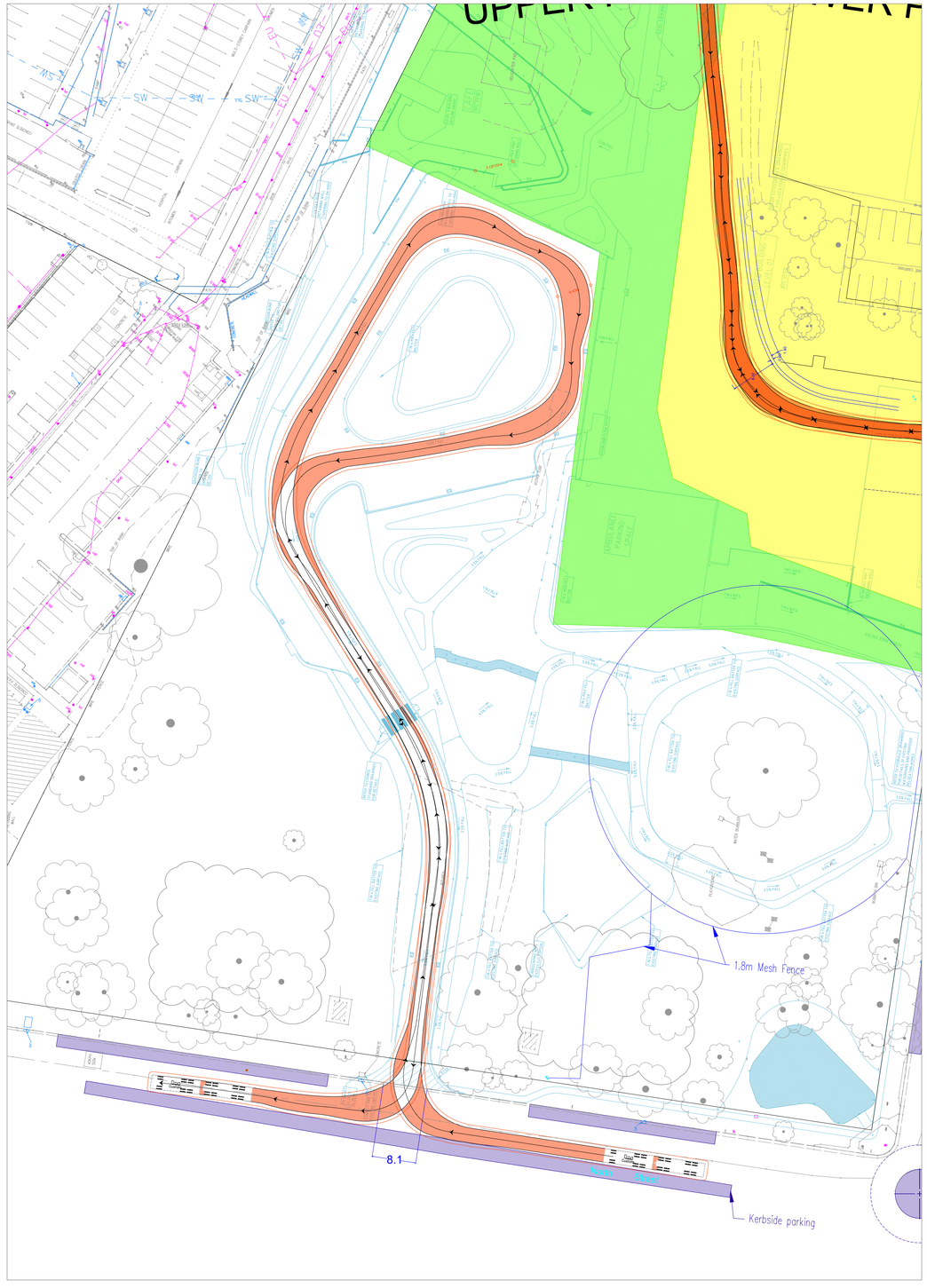
Scale : A1	Drawn	Authorised
1:500	CI	MB

Job No	Drawing No	Revision
221659	TTR11Z006	A

Plot File Created: Apr 18, 2023 - 3:40pm



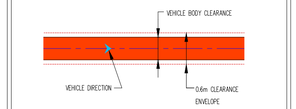
EASTBOUND DEPARTURE
SCALE 1: 500



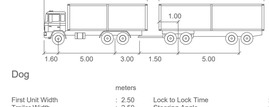
WESTBOUND DEPARTURE
SCALE 1: 400

0 5 10 15 20 25 30 35 40m
1:500 A1 1:1000 A3

SWEPT PATH LEGEND:



NOTE: 600mm CLEARANCE IN ACCORDANCE WITH AS2890.2



Dog

	meters		
First Unit Width	: 2.50	Lock to Lock Time	: 6.0
Trailer Width	: 2.50	Steering Angle	: 30.0
First Unit Track	: 2.50	Articulating Angle	: 70.0
Trailer Track	: 2.50		

THIS DRAWING HAS BEEN PREPARED USING COLOUR

FileName: SHR-TTW-PRJ-DRG-TTR11Z007.dwg - USER: ivan - Plot File Created: Apr 18, 2023 - 3:42pm

Rev	Description	Eng	Draft	Date
A	FOR INFORMATION	CI	CI	18/04/23

Contractor
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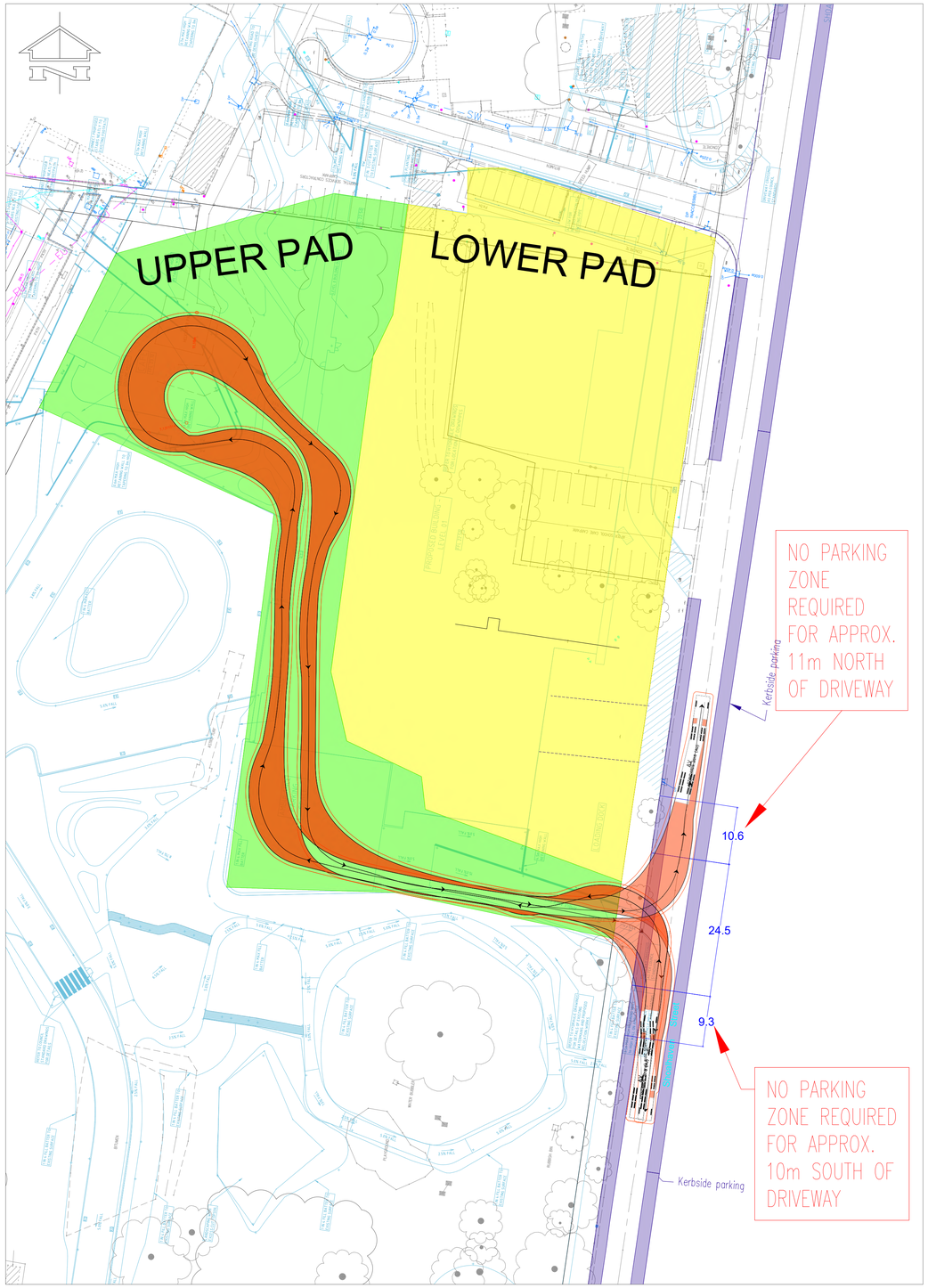
Project
SHOALHAVEN DISTRICT MEMORIAL HOSPITAL REDEVELOPMENT

Sheet Subject
SWEPT PATH ANALYSIS CONSTRUCTION ACCESS GATE 1
TRUCK AND DOG

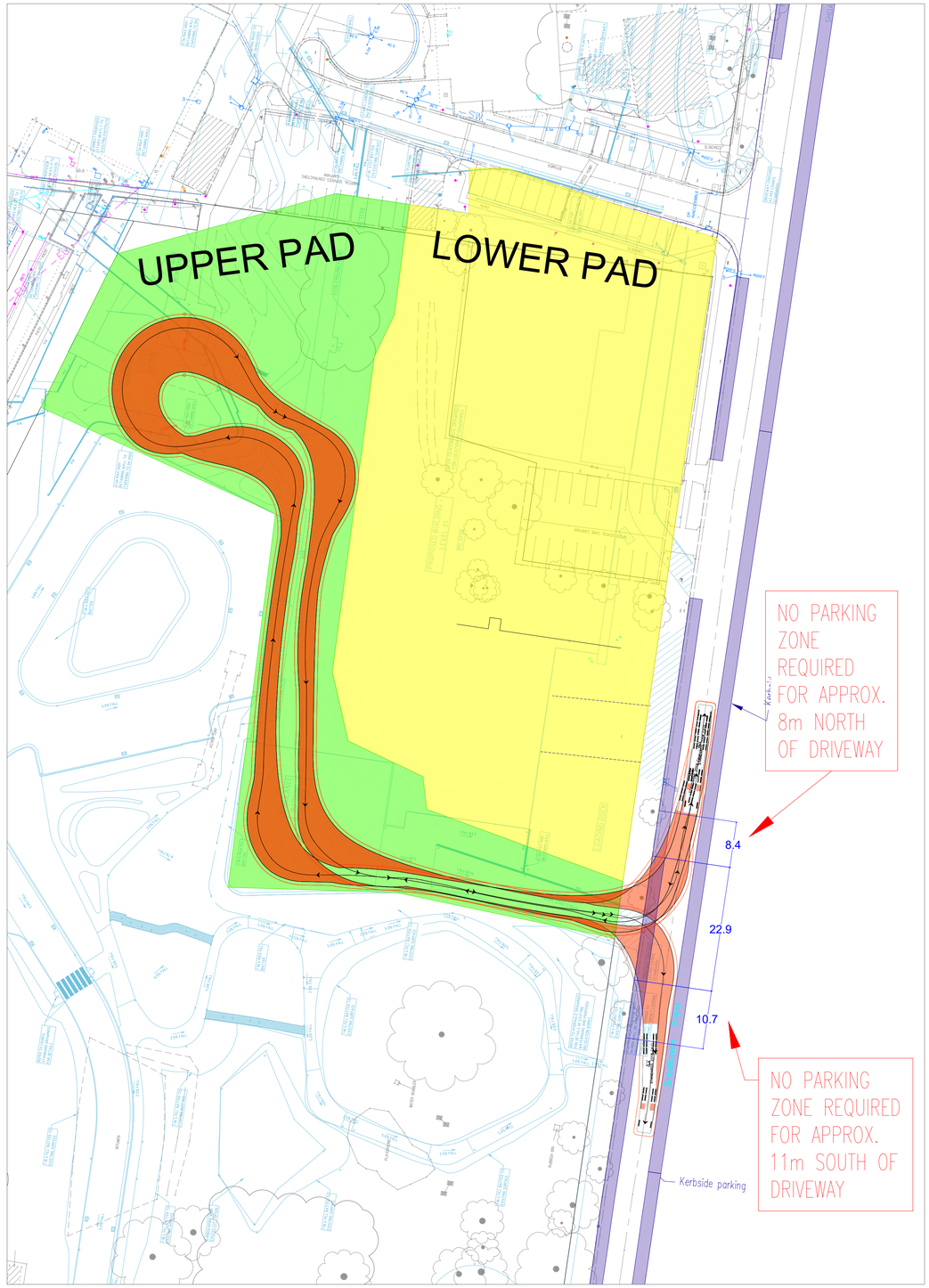
Scale : A1	Drawn	Authorised
1:500	CI	MB

Job No	Drawing No	Revision
221659	TTR11Z007	A

Plot File Created: Apr 18, 2023 - 3:42pm



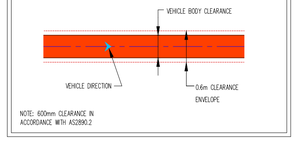
NORTHBOUND ARRIVAL
SCALE 1: 500



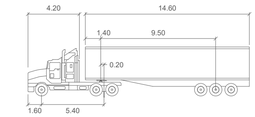
SOUTHBOUND ARRIVAL
SCALE 1: 500

0 5 10 15 20 25 30 35 40m
1:500 A1 1:1000 A3

SWEPT PATH LEGEND:



NOTE: 600mm CLEARANCE IN ACCORDANCE WITH AS2890.2



AV

	meters		
Tractor Width	: 2.50	Lock to Lock Time	: 6.0
Trailer Width	: 2.50	Steering Angle	: 28.3
Tractor Track	: 2.50	Articulating Angle	: 72.0
Trailer Track	: 2.50		

THIS DRAWING HAS BEEN PREPARED USING COLOUR

FileName: SHR-TTW-PRJ-DRG-TTR112008.dwg - USER: ivani - Plot File Created: Apr 18, 2023 - 3:44pm

Rev	Description	Eng	Draft	Date
A	FOR INFORMATION	CI	CI	18/04/23

Contractor
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AUSTRALIA

Engineer
TTW Structural Civil Traffic Façade
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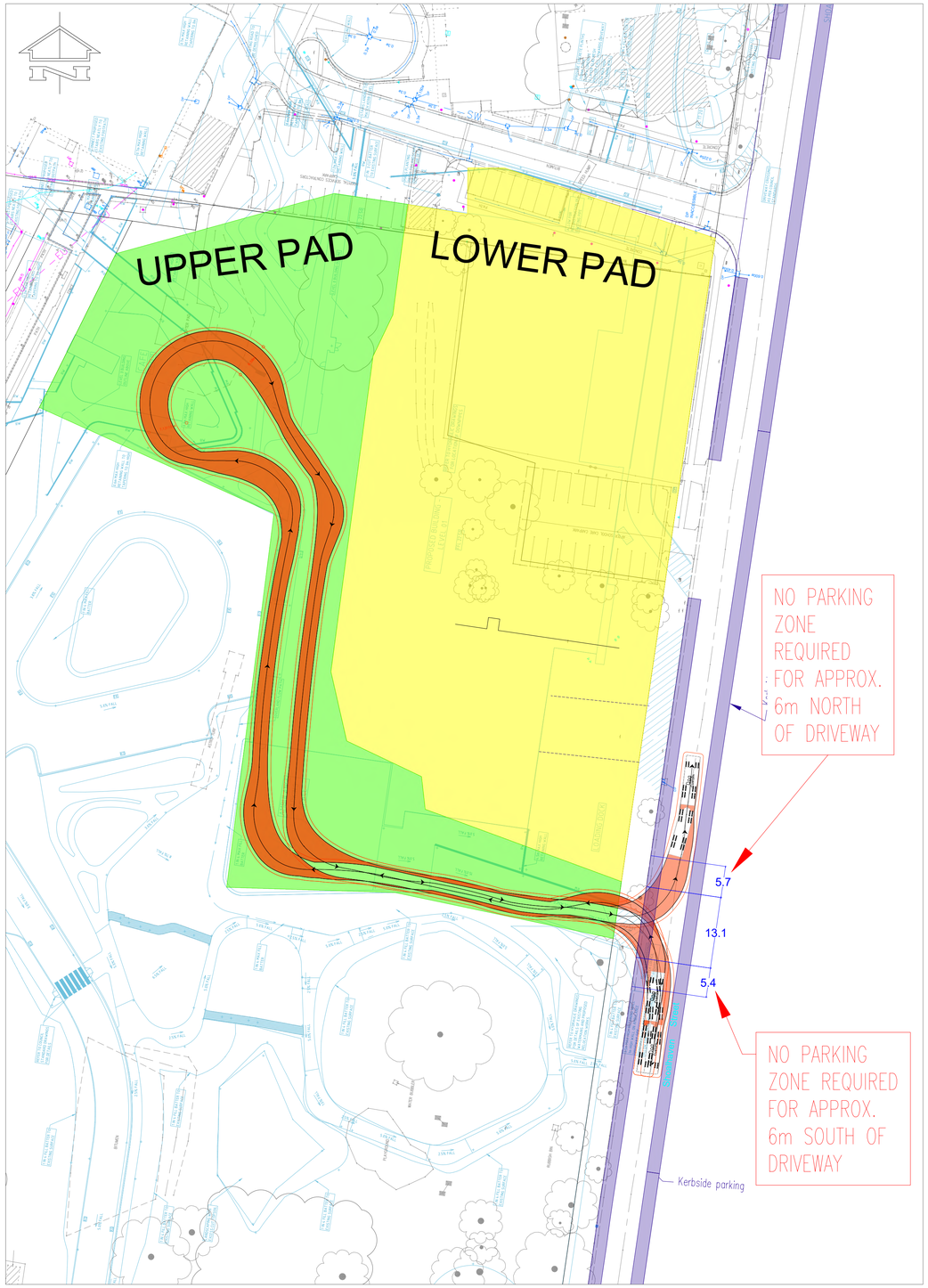
Project
SHOALHAVEN DISTRICT MEMORIAL HOSPITAL REDEVELOPMENT

Sheet Subject
SWEPT PATH PLAN
CONSTRUCTION ACCESS GATE 2
20M ARTICULATED VEHICLE

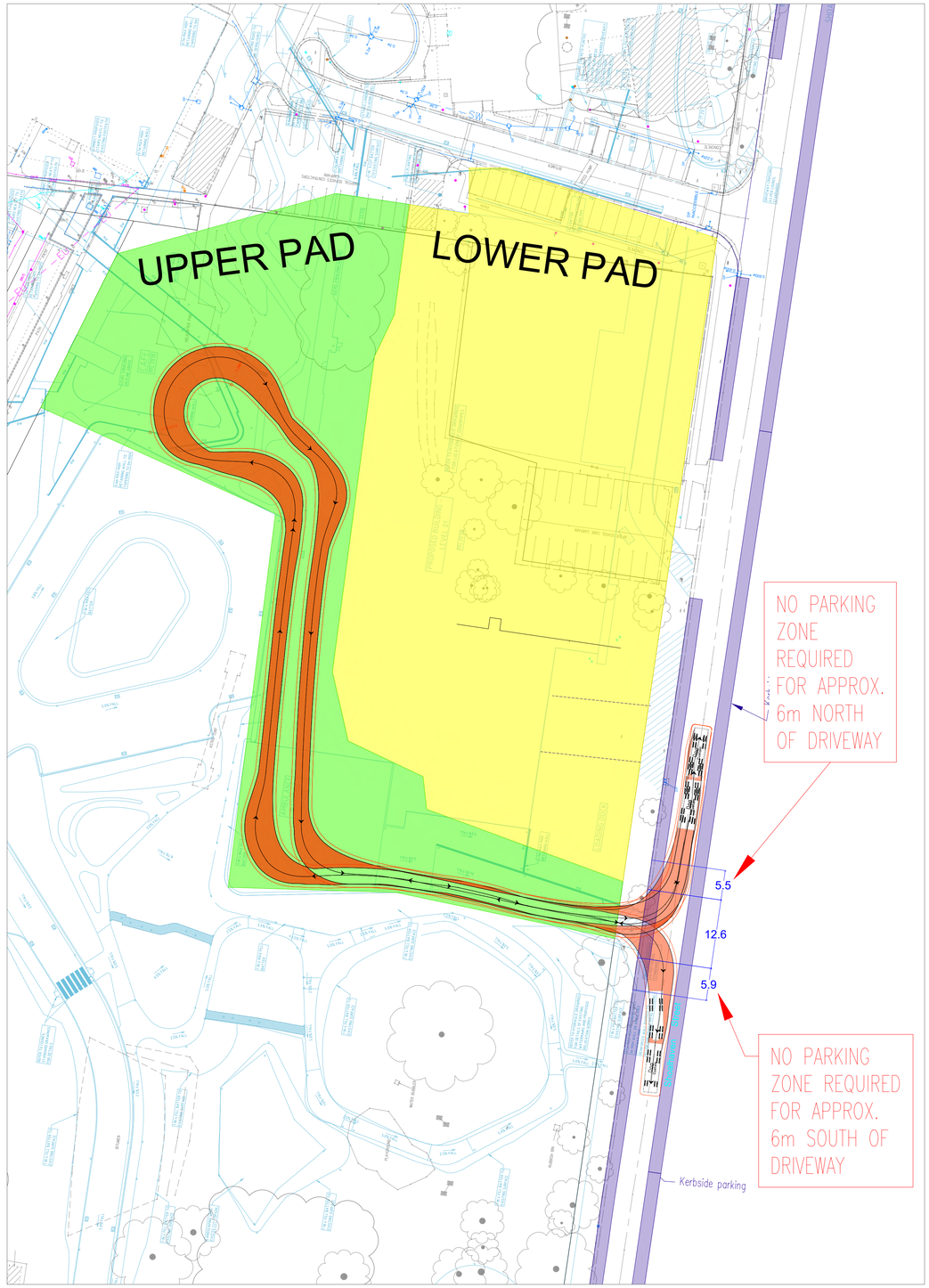
Scale : A1	Drawn	Authorised
1:500	CI	MB

Job No	Drawing No	Revision
221659	TTR11Z008	A

Plot File Created: Apr 18, 2023 - 3:44pm



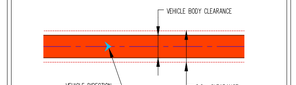
NORTHBOUND ARRIVAL
SCALE 1: 500



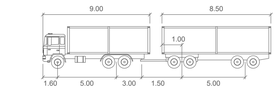
SOUTHBOUND ARRIVAL
SCALE 1: 500

0 5 10 15 20 25 30 35 40m
1:500 A1 1:1000 A3

SWEPT PATH LEGEND:



NOTE: 600mm CLEARANCE IN ACCORDANCE WITH AS2890.2



Dog

meters

First Unit Width	: 2.50	Lock to Lock Time	: 6.0
Trailer Width	: 2.50	Steering Angle	: 30.0
First Unit Track	: 2.50	Articulating Angle	: 70.0
Trailer Track	: 2.50		

THIS DRAWING HAS BEEN PREPARED USING COLOUR

FileName: SHR-TTW-PRJ-DRG-TTR112009.dwg - USER: ivani - Plot File Created: Apr 18, 2023 - 3:46pm

Rev	Description	Eng	Draft	Date
A	FOR INFORMATION	CI	CI	18/04/23

Contractor
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PYRMONT NSW 2009
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Engineer
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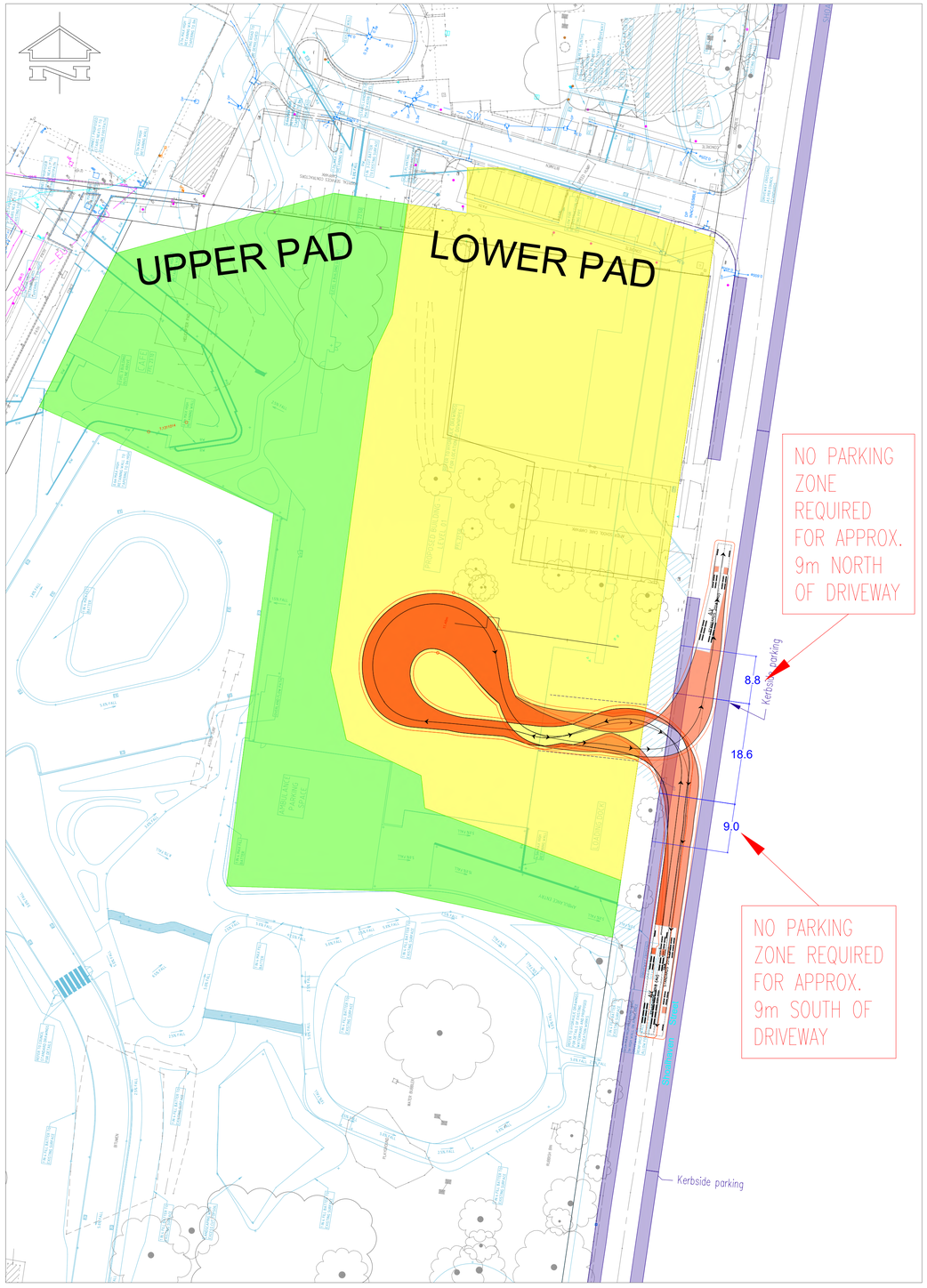
Project
SHOALHAVEN DISTRICT MEMORIAL HOSPITAL REDEVELOPMENT

Sheet Subject
SWEPT PATH PLAN CONSTRUCTION ACCESS GATE 2 - TRUCK AND DOG

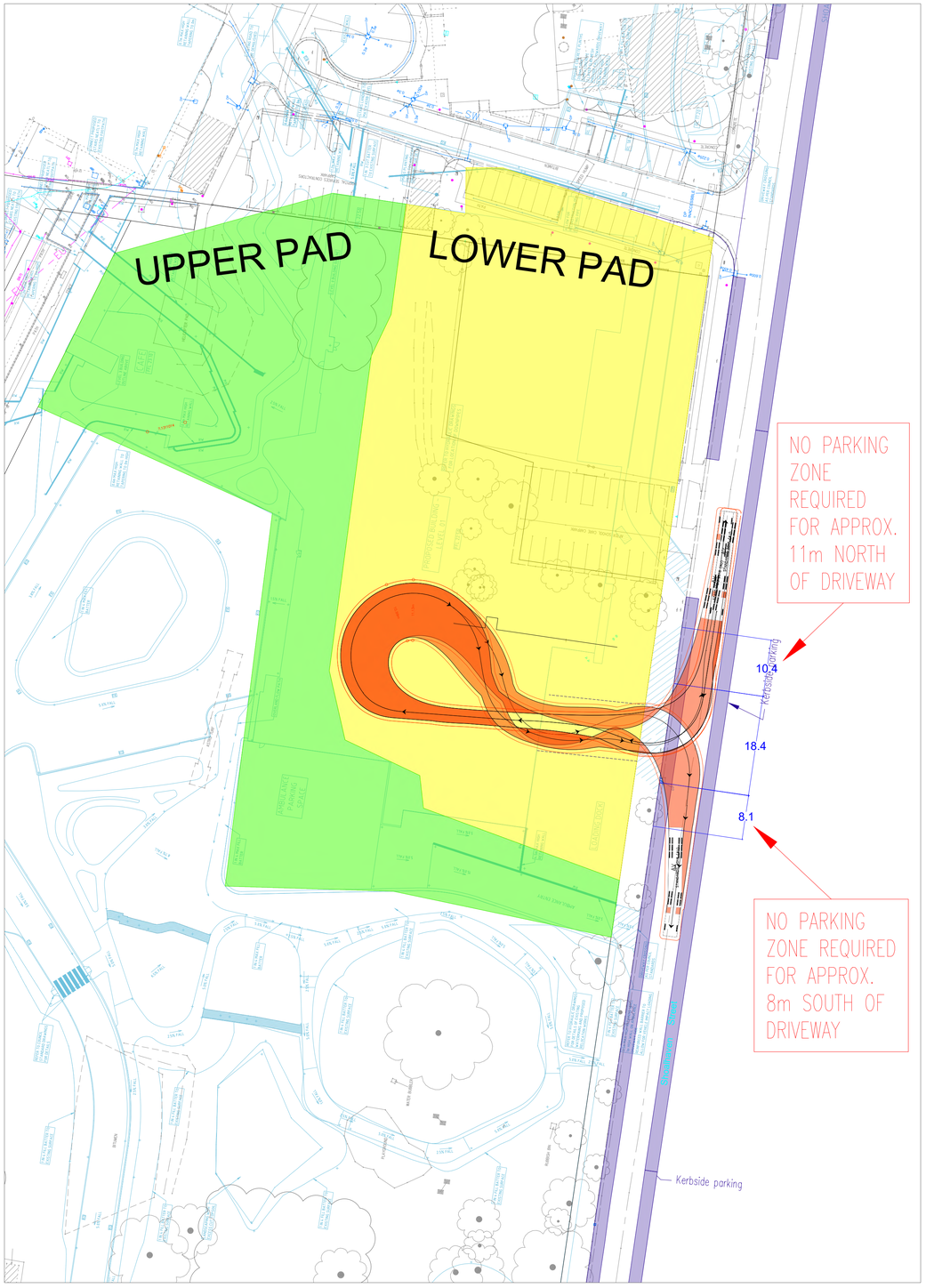
Scale : A1	Drawn	Authorised
1:500	CI	MB

Job No	Drawing No	Revision
221659	TTR11Z009	A

Plot File Created: Apr 18, 2023 - 3:46pm



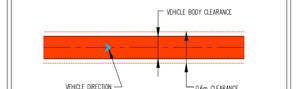
NORTHBOUND ARRIVAL
SCALE 1: 500



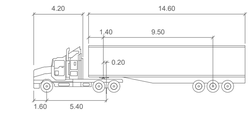
SOUTHBOUND ARRIVAL
SCALE 1: 500

0 5 10 15 20 25 30 35 40m
1:500 A1 1:1000 A3

SWEPT PATH LEGEND:



NOTE: 600mm CLEARANCE IN ACCORDANCE WITH AS2890.2



AV

	meters		
Tractor Width	: 2.50	Lock to Lock Time	: 6.0
Trailer Width	: 2.50	Steering Angle	: 28.3
Tractor Track	: 2.50	Articulating Angle	: 72.0
Trailer Track	: 2.50		

THIS DRAWING HAS BEEN PREPARED USING COLOUR

FileName: SHR-TTW-PR-DWG-TTR11Z010.dwg - USER: ivanr - Plot File Created: Apr 18, 2023 - 3:54pm

Rev	Description	Eng	Draft	Date
A	FOR INFORMATION	CI	CI	18/04/23

Contractor
JOHN HOLLAND
LEVEL 3,
65 PIRRAMA ROAD
PYRMONT NSW 2009
AUSTRALIA

Engineer
TTW Structural Civil Traffic Façade
612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060

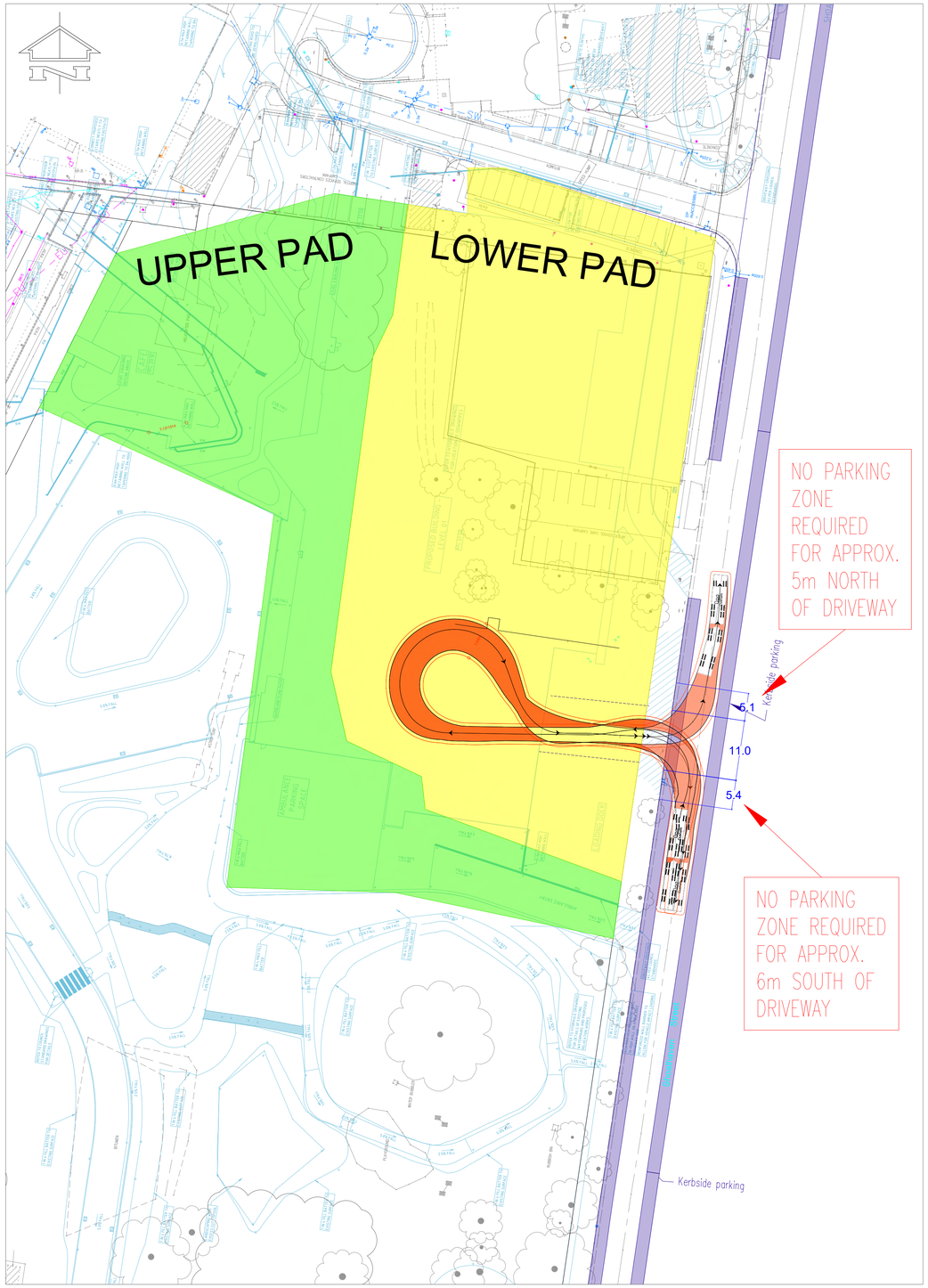
Project
SHOALHAVEN DISTRICT MEMORIAL HOSPITAL REDEVELOPMENT

Sheet Subject
SWEPT PATH PLAN
CONSTRUCTION ACCESS
GATE 3
20M ARTICULATED VEHICLE

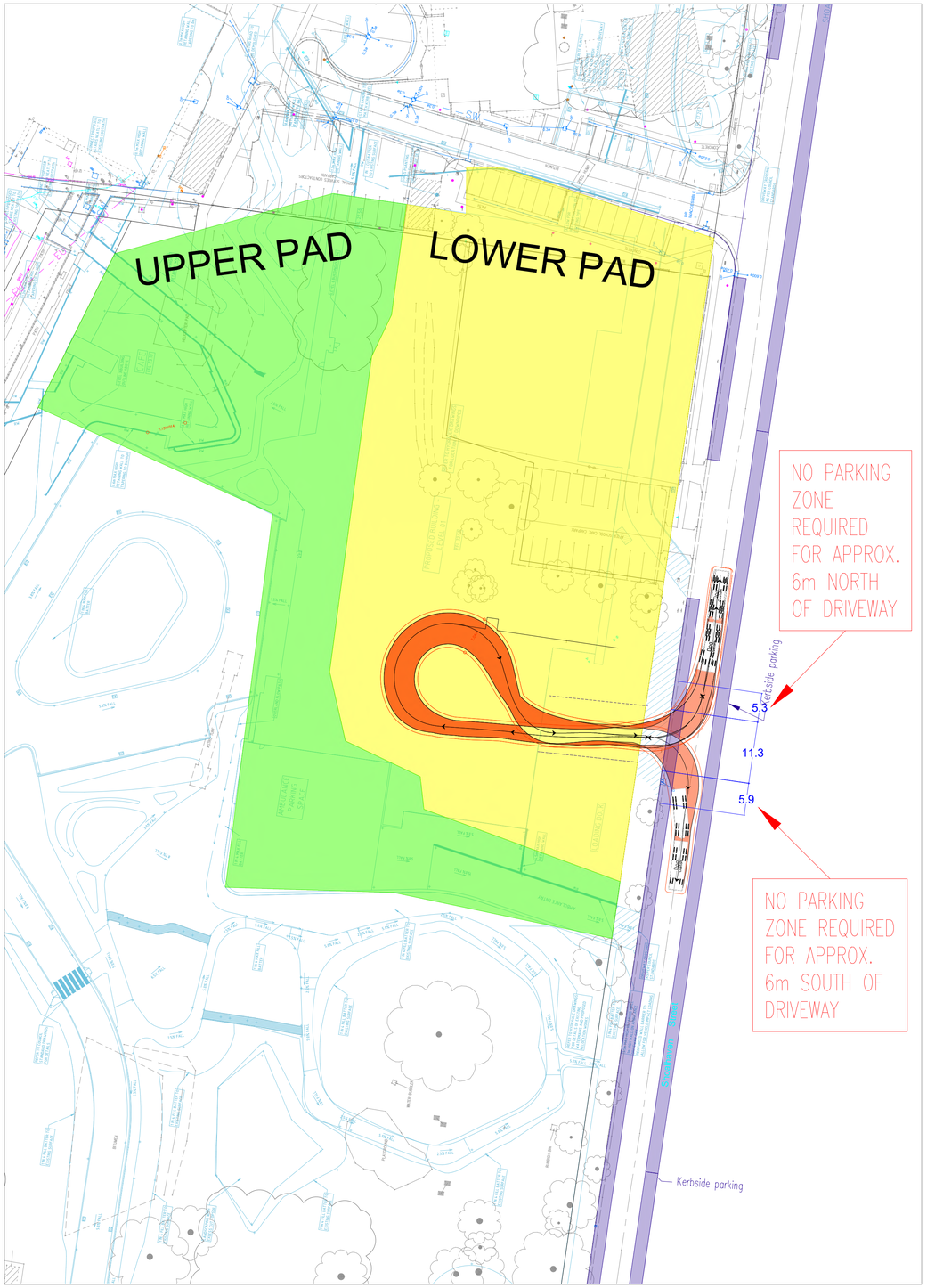
Scale : A1	Drawn	Authorised
1:500	CI	MB

Job No	Drawing No	Revision
221659	TTR11Z010	A

Plot File Created: Apr 18, 2023 - 3:54pm

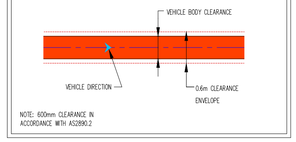


NORTHBOUND ARRIVAL
SCALE 1: 500

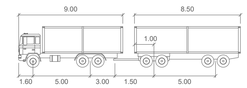


SOUTHBOUND ARRIVAL
SCALE 1: 500

SWEPT PATH LEGEND:



NOTE: 600mm CLEARANCE IN ACCORDANCE WITH AS2890.2



Dog

meters			
First Unit Width	: 2.50	Lock to Lock Time	: 6.0
Trailer Width	: 2.50	Steering Angle	: 30.0
First Unit Track	: 2.50	Articulating Angle	: 70.0
Trailer Track	: 2.50		

THIS DRAWING HAS BEEN PREPARED USING COLOUR

0 5 10 15 20 25 30 35 40m

1:500 A1 1:1000 A3

FileName: SHR-TTW-PRJ-DRG-TTR112011.dwg - USER: ivan - Plot File Created: Apr 18, 2023 - 3:56pm

Rev	Description	Eng	Draft	Date
A	FOR INFORMATION	CI	CI	18/04/23

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Project
SHOALHAVEN DISTRICT MEMORIAL HOSPITAL REDEVELOPMENT

Sheet Subject
SWEPT PATH PLAN CONSTRUCTION ACCESS GATE 3 - TRUCK AND DOG

Scale : A1	Drawn	Authorised
1:500	CI	MB

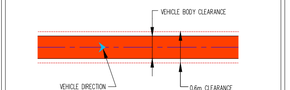
Job No	Drawing No	Revision
221659	TTR11Z011	A

Plot File Created: Apr 18, 2023 - 3:56pm

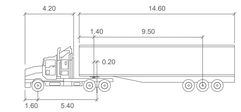
ARRIVAL (RIGHT IN)
SCALE 1: 250

DEPARTURE (LEFT OUT)
SCALE 1: 250

SWEPT PATH LEGEND:

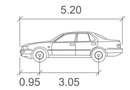


NOTE: 600mm CLEARANCE IN ACCORDANCE WITH AS2890.2



AV

meters			
Tractor Width	: 2.50	Lock to Lock Time	: 6.0
Trailer Width	: 2.50	Steering Angle	: 28.3
Tractor Track	: 2.50	Articulating Angle	: 72.0
Trailer Track	: 2.50		



B99

meters	
Width	: 1.94
Track	: 1.84
Lock to Lock Time	: 6.0
Steering Angle	: 33.9

THIS DRAWING HAS BEEN PREPARED USING COLOUR

FileName: SHR-TTW-PRJ-DRG-TTR-11Z101.dwg - USER: ivani - Plot File Created: May 10, 2023 - 5:51pm

Rev	Description	Eng	Draft	Date
A	FOR INFORMATION	EC	CI	10/05/23

Contractor
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Project
SHOALHAVEN DISTRICT MEMORIAL HOSPITAL REDEVELOPMENT

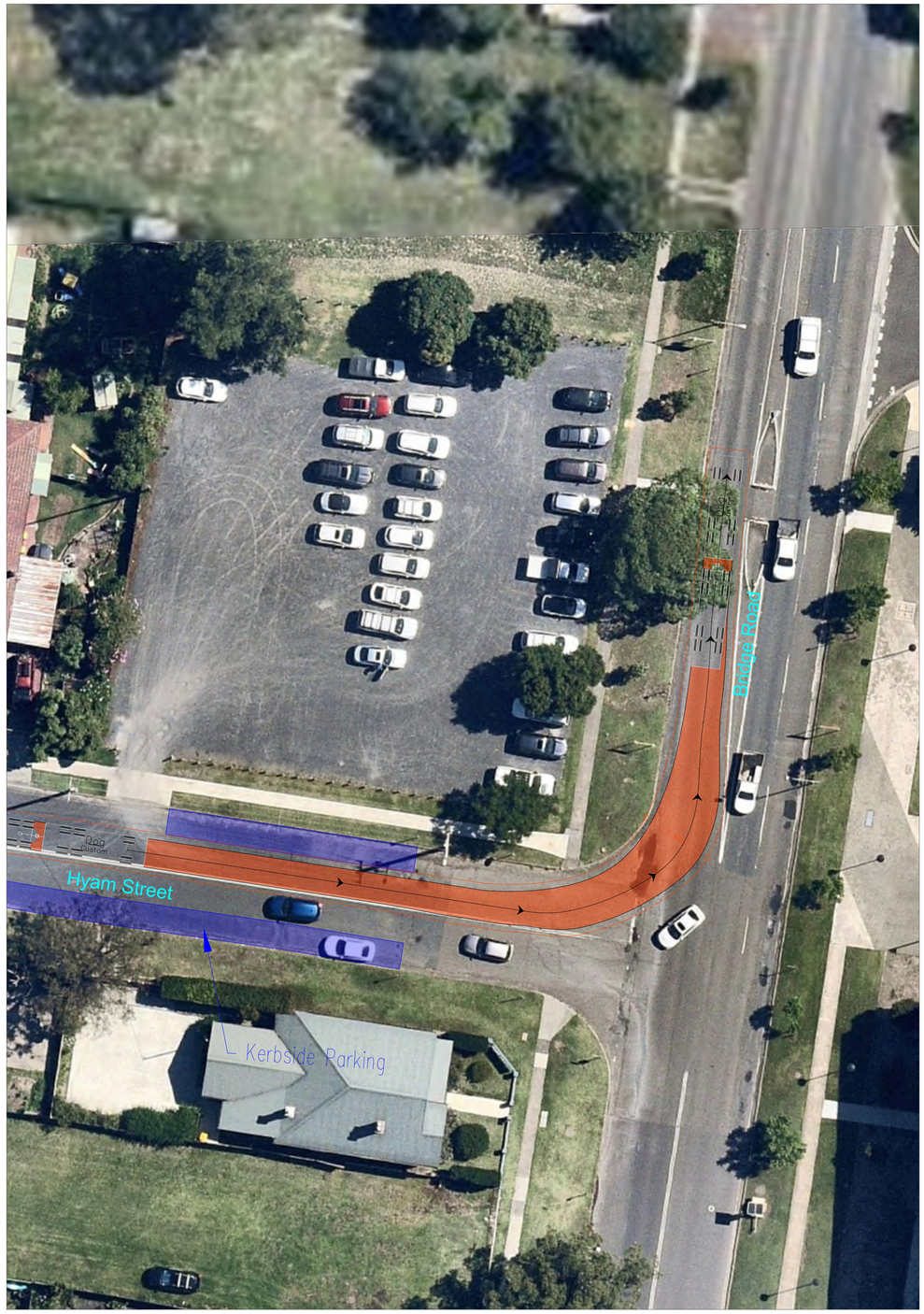
Sheet Subject
SWEPT PATH ANALYSIS
20m ARTICULATED VEHICLE
BRIDGE ROAD - HYAM STREET INTERSECTION

Scale : A1	Drawn	Authorised
1:250	CI	MB

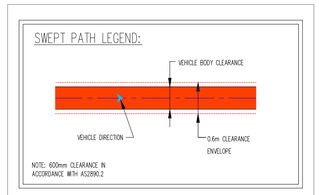
Job No	Drawing No	Revision
221659	TTR-11Z101	A

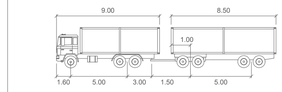
Plot File Created: May 10, 2023 - 5:51pm

ARRIVAL (RIGHT IN)
SCALE 1: 250



DEPARTURE (LEFT OUT)
SCALE 1: 250





Dog

meters

First Unit Width	: 2.50	Lock to Lock Time	: 6.0
Trailer Width	: 2.50	Steering Angle	: 30.0
First Unit Track	: 2.50	Articulating Angle	: 70.0
Trailer Track	: 2.50		

0 2.5 5 7.5 10 12.5 15 17.5 20m

1:250 A1 1:500 A3

THIS DRAWING HAS BEEN PREPARED USING COLOUR

FileName: SHR-TTW-PRJ-DRG-TTR-11Z102.dwg - USER: ivan - Plot File Created: May 10, 2023 - 5:56pm

Rev	Description	Eng	Draft	Date
A	FOR INFORMATION	EC	CI	10/05/23

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Project
SHOALHAVEN DISTRICT MEMORIAL HOSPITAL REDEVELOPMENT

Sheet Subject
SWEPT PATH ANALYSIS TRUCK AND DOG
BRIDGE ROAD - HYAM STREET INTERSECTION

Scale : A1	Drawn	Authorised
1:250	CI	MB

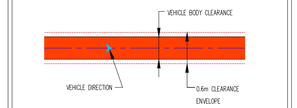
Job No	Drawing No	Revision
221659	TTR-11Z102	A

Plot File Created: May 10, 2023 - 5:56pm

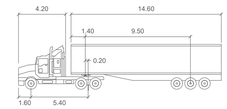
ARRIVAL
SCALE 1: 250

DEPARTURE
SCALE 1: 250

SWEPT PATH LEGEND:



NOTE: 600mm CLEARANCE IN ACCORDANCE WITH AS2890.2



AV

meters

Tractor Width	: 2.50	Lock to Lock Time	: 6.0
Trailer Width	: 2.50	Steering Angle	: 28.3
Tractor Track	: 2.50	Articulating Angle	: 72.0
Trailer Track	: 2.50		

THIS DRAWING HAS BEEN PREPARED USING COLOUR

0 2.5 5 7.5 10 12.5 15 17.5 20m

1:250 A1 1:500 A3

FileName: SHR-TTW-PRJ-DRG-TTR-11Z103.dwg - USER: emmac - Plot File Created: May 10, 2023 - 6:54pm

Rev	Description	Eng	Draft	Date
A	FOR INFORMATION	EC	CI	10/05/23

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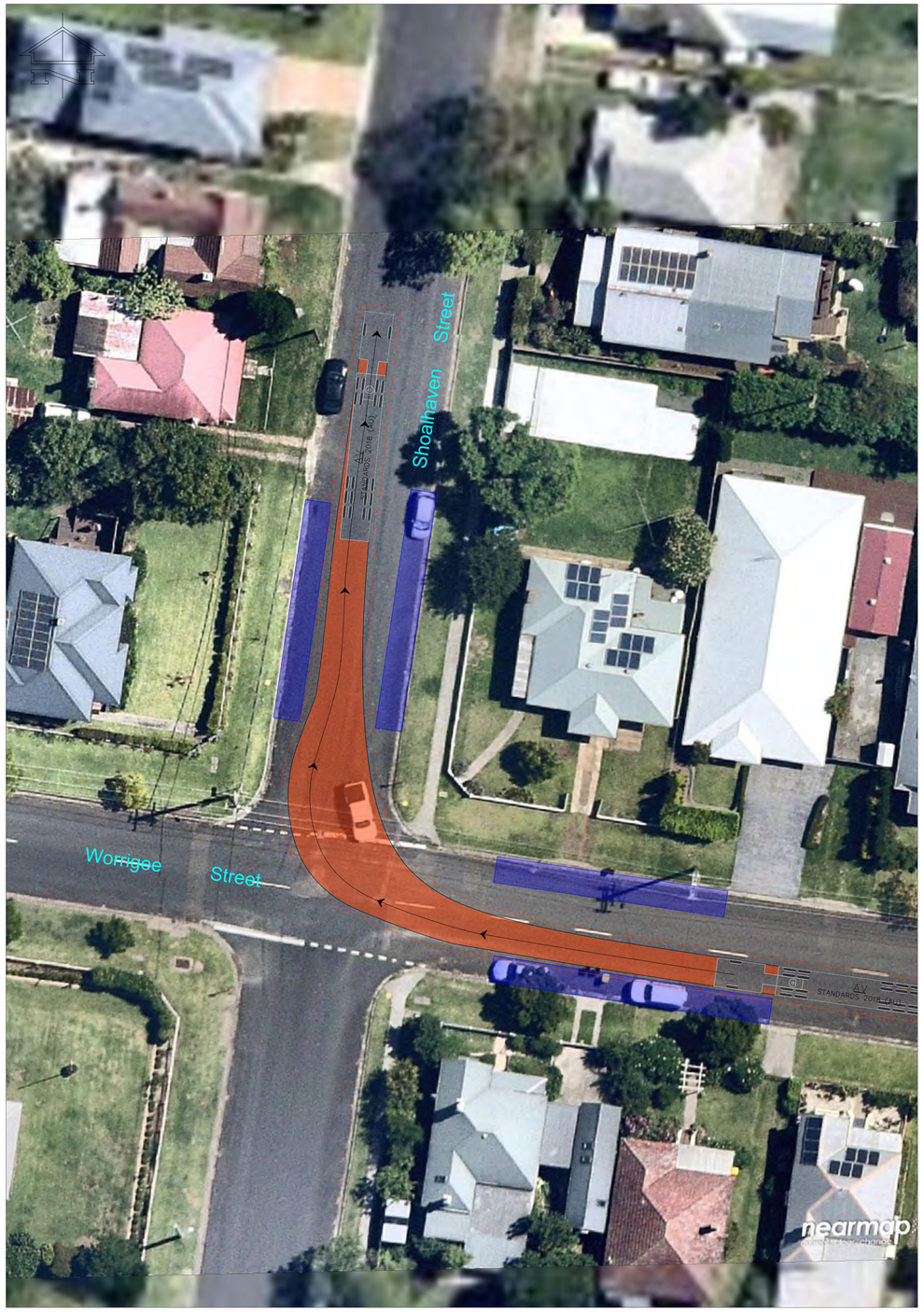
Project
SHOALHAVEN DISTRICT MEMORIAL HOSPITAL REDEVELOPMENT

Sheet Subject
SWEPT PATH ANALYSIS 20m ARTICULATED VEHICLE WORRIGEE STREET ROUNDABOUT

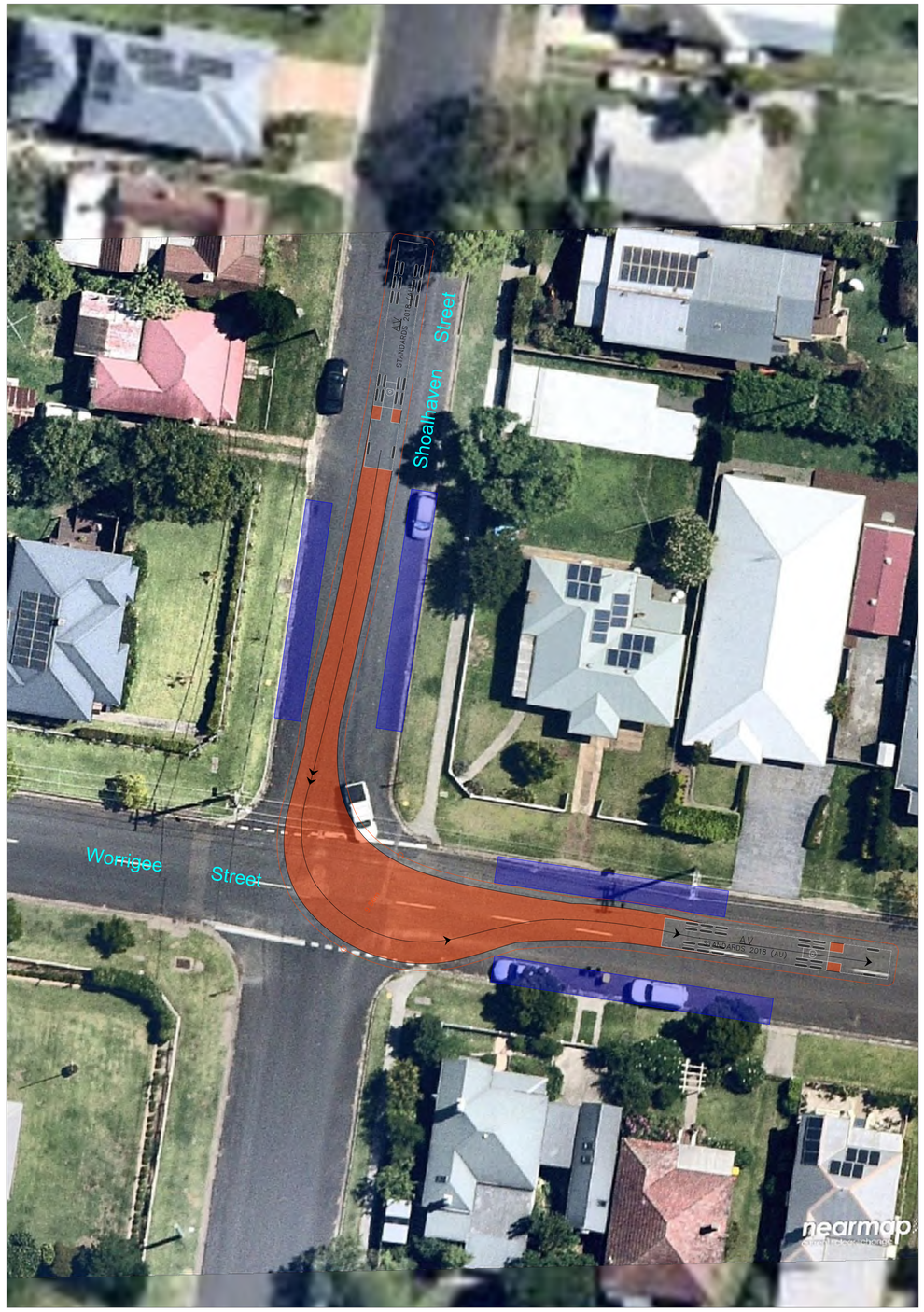
Scale : A1	Drawn	Authorised
1:250	CI	MB

Job No	Drawing No	Revision
221659	TTR-11Z103	A

Plot File Created: May 10, 2023 - 6:54pm

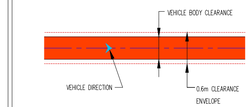


ARRIVAL (RIGHT IN)
SCALE 1: 250

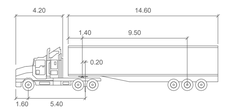


DEPARTURE (LEFT OUT)
SCALE 1: 250

SWEPT PATH LEGEND:



NOTE: 600mm CLEARANCE IN ACCORDANCE WITH AS2890.2



AV

meters

Tractor Width	: 2.50	Lock to Lock Time	: 6.0
Trailer Width	: 2.50	Steering Angle	: 28.3
Tractor Track	: 2.50	Articulating Angle	: 72.0
Trailer Track	: 2.50		

THIS DRAWING HAS BEEN PREPARED USING COLOUR

0 2.5 5 7.5 10 12.5 15 17.5 20m

1:250 A1 1:500 A3

FileName: SHR-TTW-PRJ-DRG-TTR-11Z104.dwg - USER: ivan - Plot File Created: May 10, 2023 - 6:29pm

Rev	Description	Eng	Draft	Date
A	FOR INFORMATION	EC	CI	10/05/23

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612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060

Project
SHOALHAVEN DISTRICT MEMORIAL HOSPITAL REDEVELOPMENT

Sheet Subject
SWEPT PATH ANALYSIS
20m ARTICULATED VEHICLE
WORRIGEE - SHOALHAVEN ST INTERSECTION

Scale : A1	Drawn	Authorised
1:250	CI	MB

Job No	Drawing No	Revision
221659	TTR-11Z104	A

Plot File Created: May 10, 2023 - 6:29pm

Appendix B

Traffic Guidance Schemes

The Traffic Planner

TGS ID TC1-PHASE 1A GENERAL LAYOUT

CLIENT: TTW

PROJECT: Shoalhaven District Memorial Hospital

LOCATION: Shoalhaven Drive, Nowra NSW 2541

SCOPE OF WORKS: Phase 1A General Traffic Management

LCA & MUNICIPALITY: Shoalhaven City Council

DATE: 20/4/2023 TCP EXPIRY: 20/4/2024

TMP LICENCE: TCT0041658 TYPE: PWZ

AUTHOR: Kyle Fieg SIGNATURE: K. Fieg

THIS TRAFFIC GUIDANCE SCHEME IS BASED ON THE NSW RMS TCAW MANUAL V6.1, AUSTROADS GUIDE TO TEMPORARY TRAFFIC MANAGEMENT & AS1742.3-2019

APPROVALS / PERMITS TO BE ONSITE AT ALL TIMES

Required maximum spacing of cones and bollards:

Purpose and usage	Approach speed of traffic km/h	Recommended max spacing,m
All purposes	≤ 55	4
	56 to 75	12
	≥76	18
At divided road crossovers to transfer traffic to the opposing roadway	All Speeds	2
Protecting freshly painted lines	≤75	24
	≥76	60*
Temporary Signposts	≤70	24
	≥70	60

(*This spacing should be reduced on curves or crests or if the row of cones is not clearly defined at night)

Where traffic volumes are high or other conditions warrant it, consideration should be given to reducing the spacing of cones to as close as 1 m to prevent traffic taking a wrong turn through cones or bollards.

Taper Lengths:

Existing Speed Limit	Traffic Control Taper	Lateral Shift Taper	Merge Taper
45 or less	15	15	15
46 to 55	30	15	30
56 to 65	60	30	60
66 to 75		70	115
76 to 85		80	130
86 to 95		90	145
96 to 105		100	160
Greater than 105		110	180

Distance between signs:
<55km/h = 15m 56-65km/h = 45m >66km/h = 1D

TfNSW Roads:
Single sign: 2D for speeds greater than 66 km/h and 1D for speed zones of less than 65 km Multiple signs: 1D for all speed zones

EXISTING POSTED SPEED LIMIT: 50

PLAN SCALE: NTS SHEET SIZE: A3

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Traffic Guidance Scheme has been prepared in accordance with AS1742.3-2019 "Traffic Control Devices for Works on Roads", Road Management Act 2004, Code of Practice Traffic Management 2010, Austroads Guide to Temporary Traffic Management & the TfNSW Roads and Traffic Control Work Sites (TCAWS) Technical Manual V6.1

All approvals/consent documents shall be on site at all times. Traffic controller to wear correctly fitted PPE (personal protective equipment) to AS/NZS 4602 as assess in the site safe work method statements (SWMS), hazard risk assessment. Location of signs shown may be varied slightly during implementation preventing a tripping hazard, improve visibility, effectiveness & not impact on pedestrian walkways (1.2m+ clearance, 1.5m+ curved footpath), cyclists, parking or deliveries unless footpath is closed. Signage is to be class 1 retroreflective signage as per AS/NZS 1742.3-2019. Note that additional traffic controllers/signage may be required.

Traffic controller instructions: all traffic management items must be in place prior to the commencement of the works. Onsite traffic management must have their TfNSW traffic controller ticket (use the stop-slow bat to control traffic), and TfNSW (implement traffic control plans) as a minimum to implement this plan. Traffic controllers will assist local buses & emergency vehicles through the worksite where required. Traffic controllers to remain onsite at all times and ensure the pedestrian and the travelling public's safety at all times. If leaving the site for any reason, they must inform the site supervisor.

Pedestrians are to be physically separated from the worksite at all times with para-webbing or similar to ensure they do not walk into the work site, with 'pedestrians watch your step' signage placed on all approaches to work site. Where pedestrians are to come on/off the kerb a non-slip surface ramp per AS1428 be provided by the client. Minimum mounting height for all short term signage should be 200mm.

The Traffic Planner

TGS ID TC2-PHASE 1B GENERAL LAYOUT

CLIENT: TTW

PROJECT: Shoalhaven District Memorial Hospital

LOCATION: Shoalhaven Street, Nowra NSW 2541

SCOPE OF WORKS: Phase 1B General Traffic Management

LCA & MUNICIPALITY: Shoalhaven City Council

DATE: 20/4/2023 TCP EXPIRY: 20/4/2024

TMP LICENCE: TCT0041658 TYPE: PWZ

AUTHOR: Kyle Fieg SIGNATURE: K. Fieg

THIS TRAFFIC GUIDANCE SCHEME IS BASED ON THE NSW RMS TCAW MANUAL V6.1, AUSTROADS GUIDE TO TEMPORARY TRAFFIC MANAGEMENT & AS1742.3-2019

APPROVALS / PERMITS TO BE ONSITE AT ALL TIMES

Required maximum spacing of cones and bollards:

Purpose and usage	Approach speed of traffic km/h	Recommended max spacing,m
All purposes	≤ 55	4
	56 to 75	12
	≥76	18
At divided road crossovers to transfer traffic to the opposing roadway	All Speeds	2
Protecting freshly painted lines	≤75	24
	≥76	60*
Temporary Signposts	≤70	24
	≥70	60

(*This spacing should be reduced on curves or crests or if the row of cones is not clearly defined at night)

Where traffic volumes are high or other conditions warrant it, consideration should be given to reducing the spacing of cones to as close as 1 m to prevent traffic taking a wrong turn through cones or bollards.

Taper Lengths:

Existing Speed Limit	Traffic Control Taper	Lateral Shift Taper	Merge Taper
45 or less	15	15	15
46 to 55	30	15	30
56 to 65	60	30	60
66 to 75		70	115
76 to 85		80	130
86 to 95		90	145
96 to 105		100	160
Greater than 105		110	180

Distance between signs:
<55km/h = 15m 56-65km/h = 45m >66km/h = 1D

TfNSW Roads:
Single sign: 2D for speeds greater than 66 km/h and 1D for speed zones of less than 65 km Multiple signs: 1D for all speed zones

EXISTING POSTED SPEED LIMIT: 50

PLAN SCALE: NTS SHEET SIZE: A3

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All approvals/consent documents shall be on site at all times. Traffic controller to wear correctly fitted PPE (personal protective equipment) to AS/NZS 4602 as assess in the site safe work method statements (SWMS), hazard risk assessment. Location of signs shown may be varied slightly during implementation preventing a tripping hazard, improve visibility, effectiveness & not impact on pedestrian walkways (1.2m+ clearance, 1.5m+ curved footpath), cyclists, parking or deliveries unless footpath is closed. Signage is to be class 1 retroreflective signage as per AS/NZS 1742.3-2019. Note that additional traffic controllers/signage may be required.

Traffic controller instructions: all traffic management items must be in place prior to the commencement of the works. Onsite traffic management must have their TfNSW traffic controller ticket (use the stop-slow bat to control traffic), and TfNSW (implement traffic control plans) as a minimum to implement this plan. Traffic controllers will assist local buses & emergency vehicles through the worksite where required. Traffic controllers to remain onsite at all times and ensure the pedestrian and the travelling public's safety at all times. If leaving the site for any reason, they must inform the site supervisor.

Pedestrians are to be physically separated from the worksite at all times with para-webbing or similar to ensure they do not walk into the work site, with 'pedestrians watch your step' signage placed on all approaches to work site. Where pedestrians are to come on/off the kerb a non-slip surface ramp per AS1428 be provided by the client. Minimum mounting height for all short term signage should be 200mm.

The Traffic Planner

TGS ID TC3-PHASE 2 GENERAL LAYOUT

Legend

- Temp Fencing
- Site Fencing
- A-Class Hoarding
- Existing Fence
- Access Gate
- Site Sheds
- Skip Bin Zone

CLIENT: TTW

PROJECT: Shoalhaven District Memorial Hospital

LOCATION: North Street, Nowra NSW 2541

SCOPE OF WORKS: Phase 1B General Traffic Management

LCA & MUNICIPALITY: Shoalhaven City Council

DATE: 20/4/2023 TCP EXPIRY: 20/4/2024

TMP LICENCE: TCT0041658 TYPE: PWZ

AUTHOR: Kyle Fieg SIGNATURE: K. Fieg

THIS TRAFFIC GUIDANCE SCHEME IS BASED ON THE NSW RMS TCAW MANUAL V6.1, AUSTROADS GUIDE TO TEMPORARY TRAFFIC MANAGEMENT & AS1742.3-2019

APPROVALS / PERMITS TO BE ONSITE AT ALL TIMES

Required maximum spacing of cones and bollards:

Purpose and usage	Approach speed of traffic km/h	Recommended max spacing,m
All purposes	≤ 55	4
	56 to 75	12
	≥76	18
At divided road crossovers to transfer traffic to the opposing roadway	All Speeds	2
Protecting freshly painted lines	≤75	24
	≥76	60*
Temporary Signposts	≤70	24
	≥70	60

(*This spacing should be reduced on curves or crests or if the row of cones is not clearly defined at night)

Where traffic volumes are high or other conditions warrant it, consideration should be given to reducing the spacing of cones to as close as 1 m to prevent traffic taking a wrong turn through cones or bollards.

Taper Lengths:

Existing Speed Limit	Traffic Control Taper	Lateral Shift Taper	Merge Taper
45 or less	15	15	15
46 to 55	30	15	30
56 to 65	60	30	60
66 to 75		70	115
76 to 85		80	130
86 to 95		90	145
96 to 105		100	160
Greater than 105		110	180

Distance between signs:
<55km/h = 15m | 56-65km/h = 45m | >66km/h = 1D

TfNSW Roads:
Single sign: 2D for speeds greater than 66 km/h and 1D for speed zones of less than 65 km
Multiple signs: 1D for all speed zones

EXISTING POSTED SPEED LIMIT: 50

PLAN SCALE: NTS

SHEET SIZE: A3

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The Traffic Planner

TGS ID TC4 - PHASE 2 - DRIVEWAY CONSTRUCTION

Legend

- Temp Fencing
- Site Fencing
- A-Class Hoarding
- Existing Fence
- Access Gate
- Site Sheds
- Skip Bin Zone
- Cone
- Traffic Controller

CLIENT: TTW

PROJECT: Shoalhaven District Memorial Hospital

LOCATION: North Street, Nowra NSW 2541

SCOPE OF WORKS: Phase 2 Driveway Crossover Construction

LCA & MUNICIPALITY: Shoalhaven City Council

DATE: 20/4/2023 TCP EXPIRY: 20/4/2024

TMP LICENCE: TCT0041658 TYPE: PWZ

AUTHOR: Kyle Fieg SIGNATURE: K. Fieg

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APPROVALS / PERMITS TO BE ONSITE AT ALL TIMES

Required maximum spacing of cones and bollards:

Purpose and usage	Approach speed of traffic km/h	Recommended max spacing,m
All purposes	≤ 55	4
	56 to 75	12
	≥76	18
At divided road crossovers to transfer traffic to the opposing roadway	All Speeds	2
Protecting freshly painted lines	≤75	24
	≥76	60*
Temporary Signposts	≤70	24
	≥70	60

(*This spacing should be reduced on curves or crests or if the row of cones is not clearly defined at night)

Where traffic volumes are high or other conditions warrant it, consideration should be given to reducing the spacing of cones to as close as 1 m to prevent traffic taking a wrong turn through cones or bollards.

Taper Lengths:

Existing Speed Limit	Traffic Control Taper	Lateral Shift Taper	Merge Taper
45 or less	15	15	15
46 to 55	30	15	30
56 to 65	60	30	60
66 to 75		70	115
76 to 85		80	130
86 to 95		90	145
96 to 105		100	160
Greater than 105		110	180

Distance between signs:
<55km/h = 15m 56-65km/h = 45m >66km/h = 1D

TfNSW Roads:
Single sign: 2D for speeds greater than 66 km/h and 1D for speed zones of less than 65 km Multiple signs: 1D for all speed zones

EXISTING POSTED SPEED LIMIT: 50

PLAN SCALE: NTS SHEET SIZE: A3

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The Traffic Planner

TGS ID TC5 - PHASE 2 - DRIVEWAY CONSTRUCTION

Legend

- Temp Fencing
- Site Fencing
- A-Class Hoarding
- Existing Fence
- Access Gate
- Site Sheds
- Skip Bin Zone
- Traffic Controller
- Cone

CLIENT: TTW

PROJECT: Shoalhaven District Memorial Hospital

LOCATION: North Street, Nowra NSW 2541

SCOPE OF WORKS: Phase 2 - Gate 2 Driveway Crossover Construction

LCA & MUNICIPALITY: Shoalhaven City Council

DATE: 20/4/2023 TCP EXPIRY: 20/4/2024

TMP LICENCE: TCT0041658 TYPE: PWZ

AUTHOR: Kyle Fieg SIGNATURE: K. Fieg

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APPROVALS / PERMITS TO BE ONSITE AT ALL TIMES

Required maximum spacing of cones and bollards:

Purpose and usage	Approach speed of traffic km/h	Recommended max spacing,m
All purposes	≤ 55	4
	56 to 75	12
	≥76	18
At divided road crossovers to transfer traffic to the opposing roadway	All Speeds	2
Protecting freshly painted lines	≤75	24
	≥76	60*
Temporary Signposts	≤70	24
	≥70	60

(*This spacing should be reduced on curves or crests or if the row of cones is not clearly defined at night)

Where traffic volumes are high or other conditions warrant it, consideration should be given to reducing the spacing of cones to as close as 1 m to prevent traffic taking a wrong turn through cones or bollards.

Taper Lengths:

Existing Speed Limit	Traffic Control Taper	Lateral Shift Taper	Merge Taper
45 or less	15	15	15
46 to 55	30	15	30
56 to 65	60	30	60
66 to 75		70	115
76 to 85		80	130
86 to 95		90	145
96 to 105		100	160
Greater than 105		110	180

Distance between signs:
<55km/h = 15m 56-65km/h = 45m >66km/h = 1D

TfNSW Roads:
Single sign: 2D for speeds greater than 66 km/h and 1D for speed zones of less than 65 km Multiple signs: 1D for all speed zones

EXISTING POSTED SPEED LIMIT: 50

PLAN SCALE: NTS SHEET SIZE: A3

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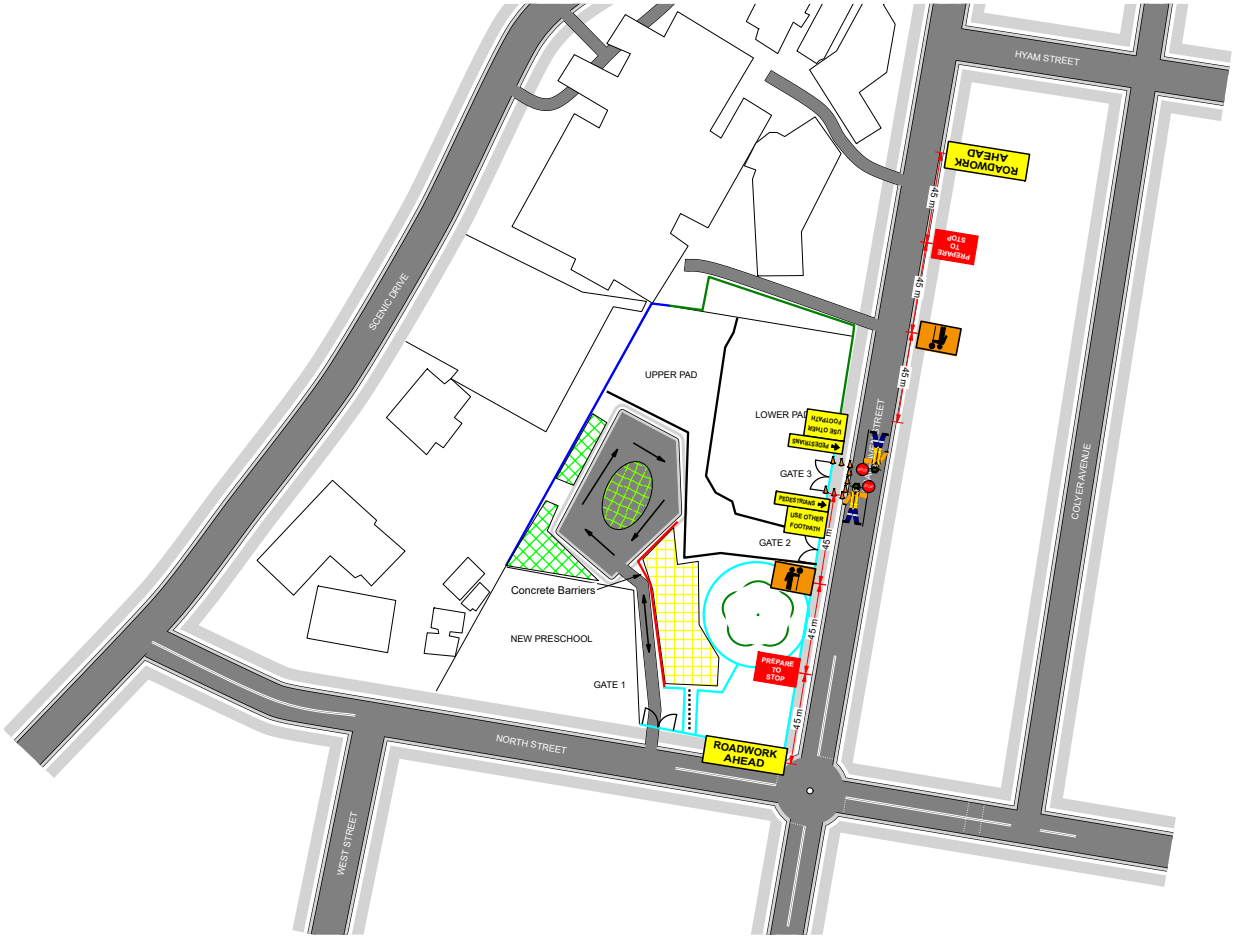
The Traffic Planner

TGS ID TC6 - PHASE 2 - DRIVEWAY CONSTRUCTION



Legend

- Temp Fencing
- Site Fencing
- A-Class Hoarding
- Existing Fence
- Access Gate
- Site Sheds
- Skip Bin Zone
- Traffic Controller
- Cone

CLIENT: TTW

PROJECT: Shoalhaven District Memorial Hospital

LOCATION: North Street, Nowra NSW 2541

SCOPE OF WORKS: Phase 2 - Gate 3 Driveway Crossover Construction

LCA & MUNICIPALITY: Shoalhaven City Council

DATE: 20/4/2023 TCP EXPIRY: 20/4/2024

TMP LICENCE: TCT0041658 TYPE: PWZ

AUTHOR: Kyle Fieg SIGNATURE: K. Fieg

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APPROVALS / PERMITS TO BE ONSITE AT ALL TIMES

Required maximum spacing of cones and bollards:

Purpose and usage	Approach speed of traffic km/h	Recommended max spacing,m
All purposes	≤ 55	4
	56 to 75	12
	≥76	18
At divided road crossovers to transfer traffic to the opposing roadway	All Speeds	2
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	≥76	60*
Temporary Signposts	≤70	24
	≥70	60

(*This spacing should be reduced on curves or crests or if the row of cones is not clearly defined at night)

Where traffic volumes are high or other conditions warrant it, consideration should be given to reducing the spacing of cones to as close as 1 m to prevent traffic taking a wrong turn through cones or bollards.

Taper Lengths:

Existing Speed Limit	Traffic Control Taper	Lateral Shift Taper	Merge Taper
45 or less	15	15	15
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<55km/h = 15m 56-65km/h = 45m >66km/h = 1D

TfNSW Roads:
Single sign: 2D for speeds greater than 66 km/h and 1D for speed zones of less than 65 km Multiple signs: 1D for all speed zones

EXISTING POSTED SPEED LIMIT: 50

PLAN SCALE: NTS SHEET SIZE: A3

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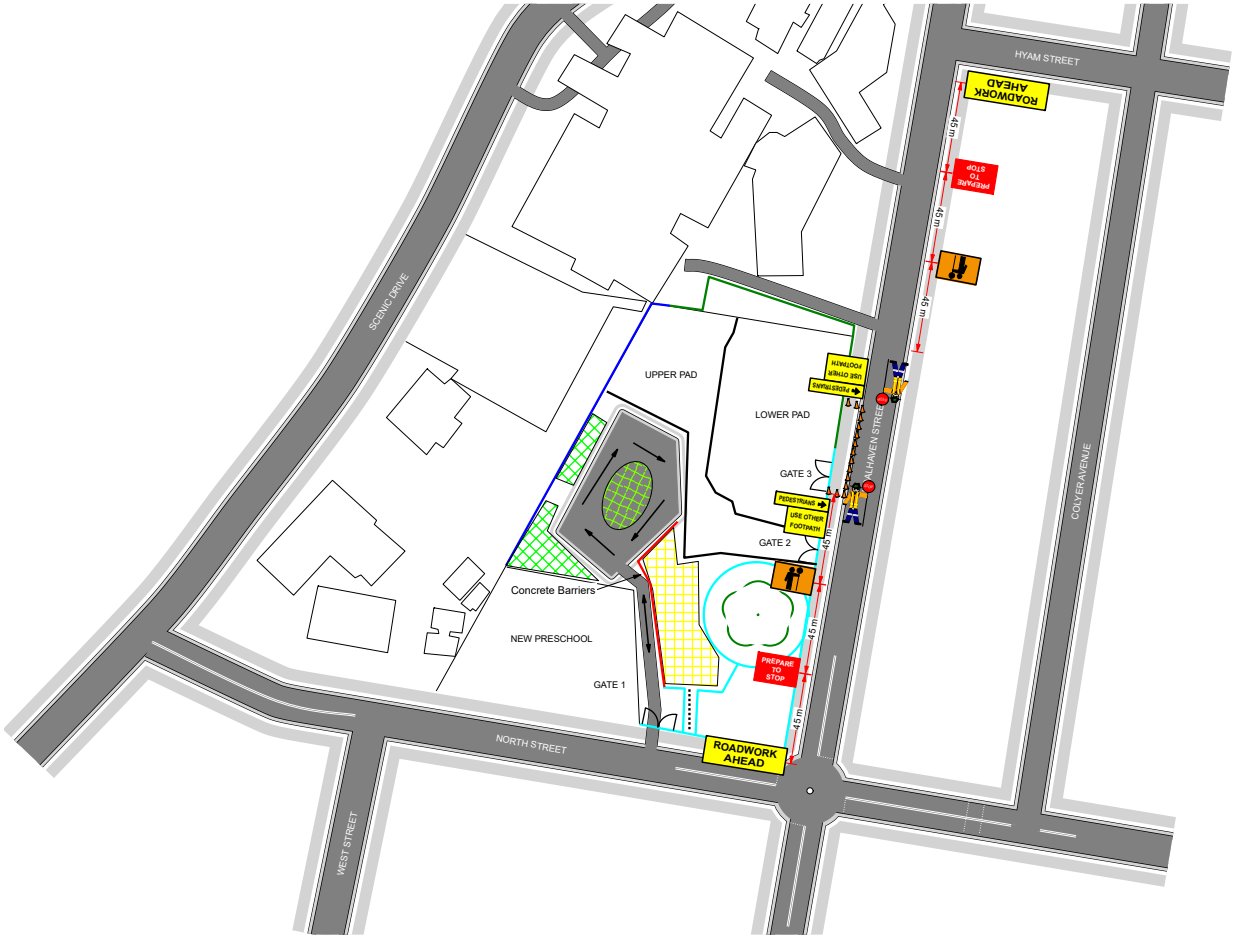
The Traffic Planner

TGS ID TC7 - PHASE 2 - LOADING BAY CONSTRUCTION



Legend

- Temp Fencing
- Site Fencing
- A-Class Hoarding
- Existing Fence
- Access Gate
- Site Sheds
- Skip Bin Zone
- Traffic Controller
- Cone

CLIENT: TTW

PROJECT: Shoalhaven District Memorial Hospital

LOCATION: North Street, Nowra NSW 2541

SCOPE OF WORKS: Phase 2 - Loading Bay & Drop off Driveway Construction

LCA & MUNICIPALITY: Shoalhaven City Council

DATE: 20/4/2023 TCP EXPIRY: 20/4/2024

TMP LICENCE: TCT0041658 TYPE: PWZ

AUTHOR: Kyle Fieg SIGNATURE: K. Fieg

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APPROVALS / PERMITS TO BE ONSITE AT ALL TIMES

Required maximum spacing of cones and bollards:

Purpose and usage	Approach speed of traffic km/h	Recommended max spacing,m
All purposes	≤ 55	4
	56 to 75	12
	≥76	18
At divided road crossovers to transfer traffic to the opposing roadway	All Speeds	2
Protecting freshly painted lines	≤75	24
	≥76	60*
Temporary Signposts	≤70	24
	≥70	60

(*This spacing should be reduced on curves or crests or if the row of cones is not clearly defined at night)

Where traffic volumes are high or other conditions warrant it, consideration should be given to reducing the spacing of cones to as close as 1 m to prevent traffic taking a wrong turn through cones or bollards.

Taper Lengths:

Existing Speed Limit	Traffic Control Taper	Lateral Shift Taper	Merge Taper
45 or less	15	15	15
46 to 55	30	15	30
56 to 65	60	30	60
66 to 75		70	115
76 to 85		80	130
86 to 95		90	145
96 to 105		100	160
Greater than 105		110	180

Distance between signs:
<55km/h = 15m 56-65km/h = 45m >66km/h = 1D

TfNSW Roads:
Single sign: 2D for speeds greater than 66 km/h and 1D for speed zones of less than 65 km Multiple signs: 1D for all speed zones

EXISTING POSTED SPEED LIMIT: 50

PLAN SCALE: NTS

SHEET SIZE: A3

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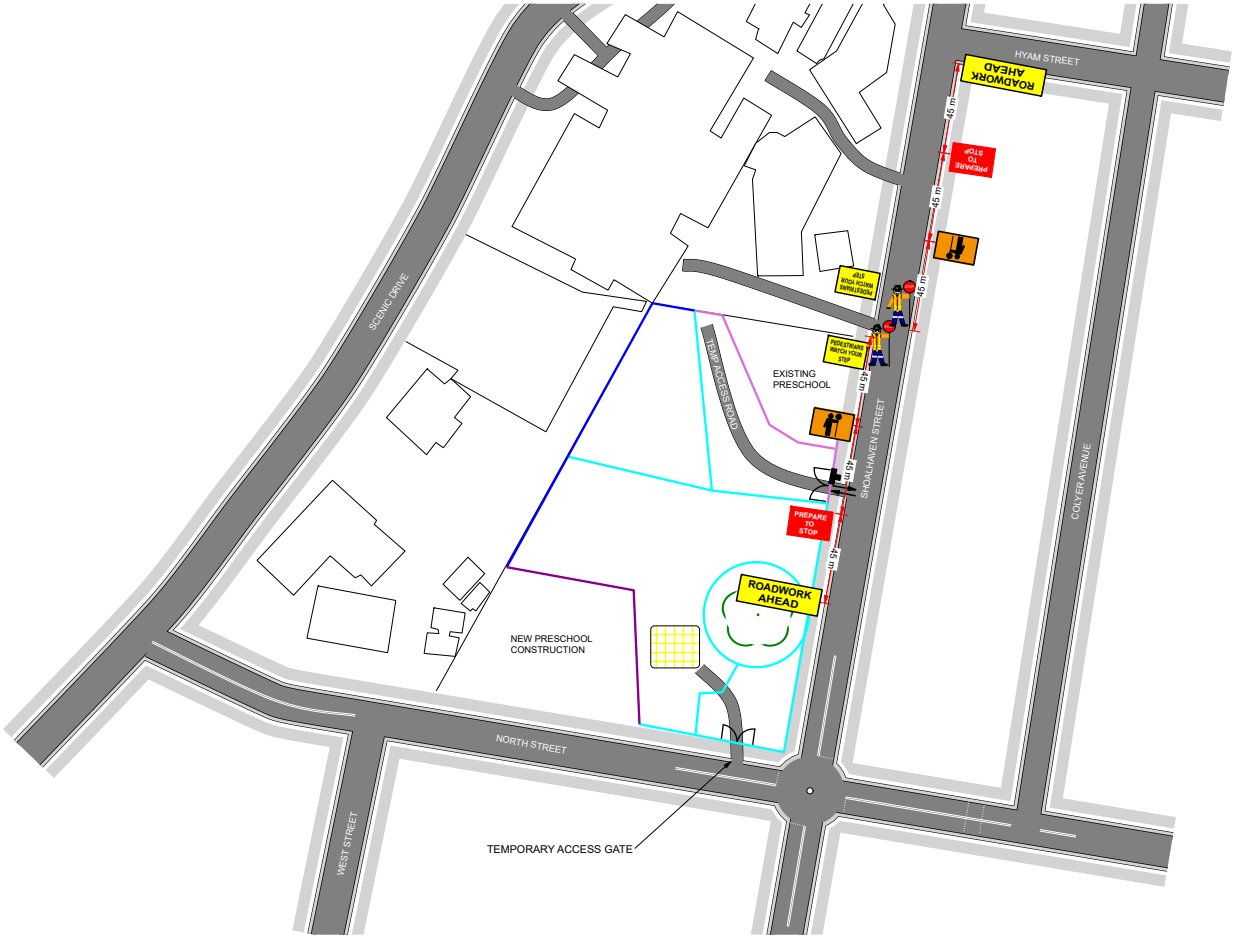
The Traffic Planner

TGS ID TC8 - PHASE 1A REVERSE TRUCKS



Legend

- Access Gate
- Site Sheds
- A-Class Hoarding
- Temp Fencing
- Site Fencing
- Existing Fence
- Traffic Controller

CLIENT: TTW

PROJECT: Shoalhaven District Memorial Hospital

LOCATION: Shoalhaven Drive, Nowra NSW 2541

SCOPE OF WORKS: Traffic Management for reversing of trucks into the site access road.

LCA & MUNICIPALITY: Shoalhaven City Council

DATE: 20/4/2023 TCP EXPIRY: 20/4/2024

TMP LICENCE: TCT0041658 TYPE: PWZ

AUTHOR: Kyle Fieg SIGNATURE: K. Fieg

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APPROVALS / PERMITS TO BE ONSITE AT ALL TIMES

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Purpose and usage	Approach speed of traffic km/h	Recommended max spacing,m
All purposes	≤ 55	4
	56 to 75	12
	≥76	18
At divided road crossovers to transfer traffic to the opposing roadway	All Speeds	2
Protecting freshly painted lines	≤75	24
	≥76	60*
Temporary Signposts	≤70	24
	≥70	60

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Taper Lengths:

Existing Speed Limit	Traffic Control Taper	Lateral Shift Taper	Merge Taper
45 or less	15	15	15
46 to 55	30	15	30
56 to 65	60	30	60
66 to 75		70	115
76 to 85		80	130
86 to 95		90	145
96 to 105		100	160
Greater than 105		110	180

Distance between signs:

<55km/h = 15m | 56-65km/h = 45m | >66km/h = 1D

TfNSW Roads:

Single sign: 2D for speeds greater than 66 km/h and 1D for speed zones of less than 65 km. Multiple signs: 1D for all speed zones

EXISTING POSTED SPEED LIMIT: 50

PLAN SCALE: NTS

SHEET SIZE: A3

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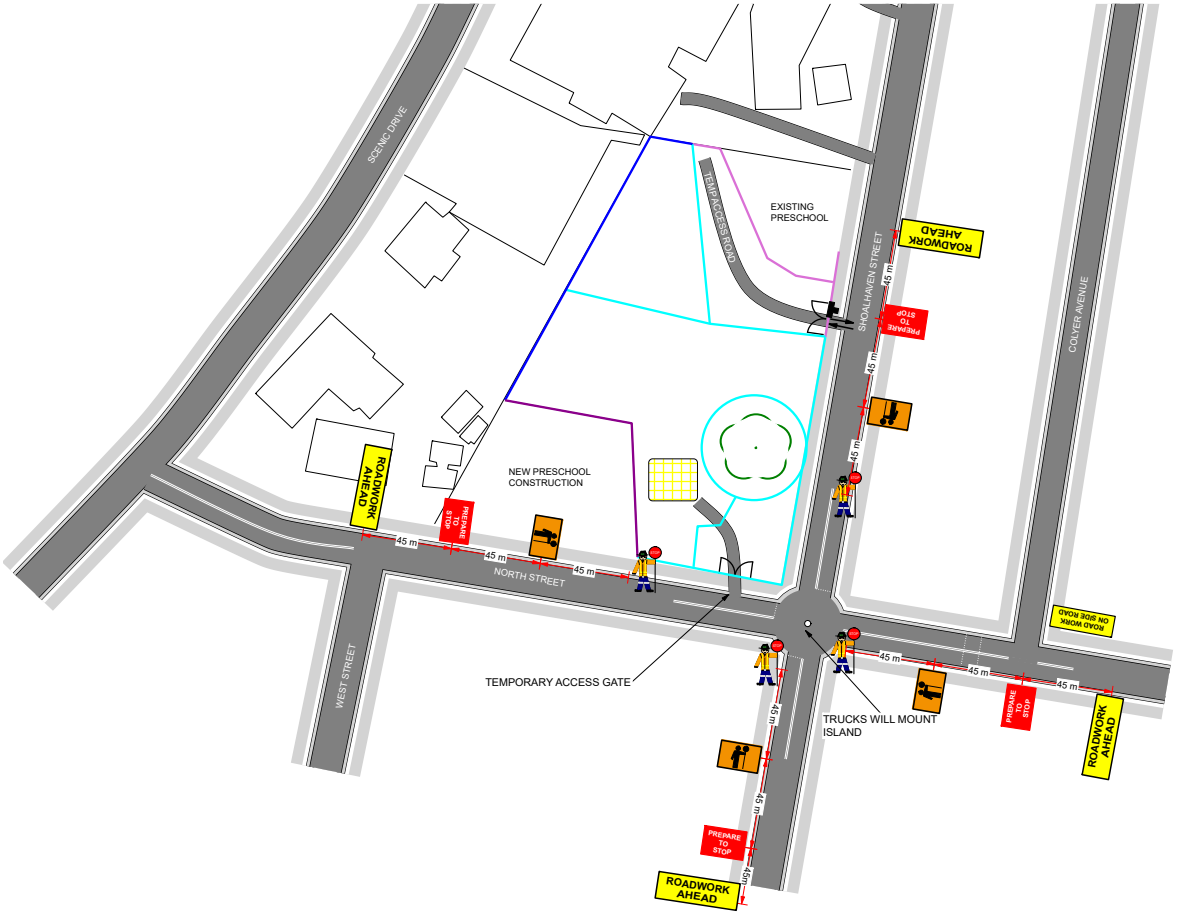
TGS ID TC9 - PHASE 1A VEHICLE ACCESS



Legend

- Access Gate
- Site Sheds
- A-Class Hoarding
- Temp Fencing
- Site Fencing
- Existing Fence
- Traffic Controller

CLIENT: TTW

PROJECT: Shoalhaven District Memorial Hospital

LOCATION: Shoalhaven Drive, Nowra NSW 2541

SCOPE OF WORKS: Traffic Management for construction vehicle access into the site.

LCA & MUNICIPALITY: Shoalhaven City Council

DATE: 20/4/2023 TCP EXPIRY: 20/4/2024

TMP LICENCE: TCT0041658 TYPE: PWZ

AUTHOR: Kyle Fieg SIGNATURE: K. Fieg

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TfNSW Roads:
Single sign: 2D for speeds greater than 66 km/h and 1D for speed zones of less than 65 km Multiple signs: 1D for all speed zones

EXISTING POSTED SPEED LIMIT: 50

PLAN SCALE: NTS SHEET SIZE: A3

Traffic Guidance Scheme has been prepared in accordance with AS1742.3-2019 "Traffic Control Devices for Works on Roads", Road Management Act 2004, Code of Practice Traffic Management 2010, Austroads Guide to Temporary Traffic Management & the TfNSW Roads and Traffic Control Work Sites (TCAWS) Technical Manual V6.1

All approvals/consent documents shall be on site at all times. Traffic controller to wear correctly fitted PPE (personal protective equipment) to AS/NZS 4602 as assess in the site safe work method statements (SWMS), hazard risk assessment. Location of signs shown may be varied slightly during implementation preventing a tripping hazard, improve visibility, effectiveness & not impact on pedestrian walkways (1.2m+ clearance, 1.5m+ curved footpath), cyclists, parking or deliveries unless footpath is closed. Signage is to be class 1 retroreflective signage as per AS/NZS 1742.3-2019. Note that additional traffic controllers/signage may be required.

Traffic controller instructions: all traffic management items must be in place prior to the commencement of the works. Onsite traffic management must have their TfNSW traffic controller ticket (use the stop-slow bat to control traffic), and TfNSW (implement traffic control plans) as a minimum to implement this plan. Traffic controllers will assist local buses & emergency vehicles through the worksite where required. Traffic controllers to remain onsite at all times and ensure the pedestrian and the travelling public's safety at all times. If leaving the site for any reason, they must inform the site supervisor.

Pedestrians are to be physically separated from the worksite at all times with para-webbing or similar to ensure they do not walk into the work site, with 'pedestrians watch your step' signage placed on all approaches to work site. Where pedestrians are to come on/off the kerb a non-slip surface ramp per AS1428 be provided by the client. Minimum mounting height for all short term signage should be 200mm.

The Traffic Planner

TGS ID TC10 - PHASE 2 - VEHICLE ACCESS GATE 1

Legend

- Temp Fencing
- Site Fencing
- A-Class Hoarding
- Existing Fence
- Access Gate
- Site Sheds
- Skip Bin Zone
- Traffic Controller

CLIENT: TTW

PROJECT: Shoalhaven District Memorial Hospital

LOCATION: North Street, Nowra NSW 2541

SCOPE OF WORKS: Phase 2 - Vehicle Access Gate 1

LCA & MUNICIPALITY: Shoalhaven City Council

DATE: 20/4/2023 TCP EXPIRY: 20/4/2024

TMP LICENCE: TCT0041658 TYPE: PWZ

AUTHOR: Kyle Fieg SIGNATURE: K. Fieg

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APPROVALS / PERMITS TO BE ONSITE AT ALL TIMES

Required maximum spacing of cones and bollards:

Purpose and usage	Approach speed of traffic km/h	Recommended max spacing,m
All purposes	≤ 55	4
	56 to 75	12
	≥76	18
At divided road crossovers to transfer traffic to the opposing roadway	All Speeds	2
Protecting freshly painted lines	≤75	24
	≥76	60*
Temporary Signposts	≤70	24
	≥70	60

(*This spacing should be reduced on curves or crests or if the row of cones is not clearly defined at night)

Where traffic volumes are high or other conditions warrant it, consideration should be given to reducing the spacing of cones to as close as 1 m to prevent traffic taking a wrong turn through cones or bollards.

Taper Lengths:

Existing Speed Limit	Traffic Control Taper	Lateral Shift Taper	Merge Taper
45 or less	15	15	15
46 to 55	30	15	30
56 to 65	60	30	60
66 to 75		70	115
76 to 85		80	130
86 to 95		90	145
96 to 105		100	160
Greater than 105		110	180

Distance between signs:
<55km/h = 15m 56-65km/h = 45m >66km/h = 1D

TfNSW Roads:
Single sign: 2D for speeds greater than 66 km/h and 1D for speed zones of less than 65 km Multiple signs: 1D for all speed zones

EXISTING POSTED SPEED LIMIT: 50

PLAN SCALE: NTS SHEET SIZE: A3

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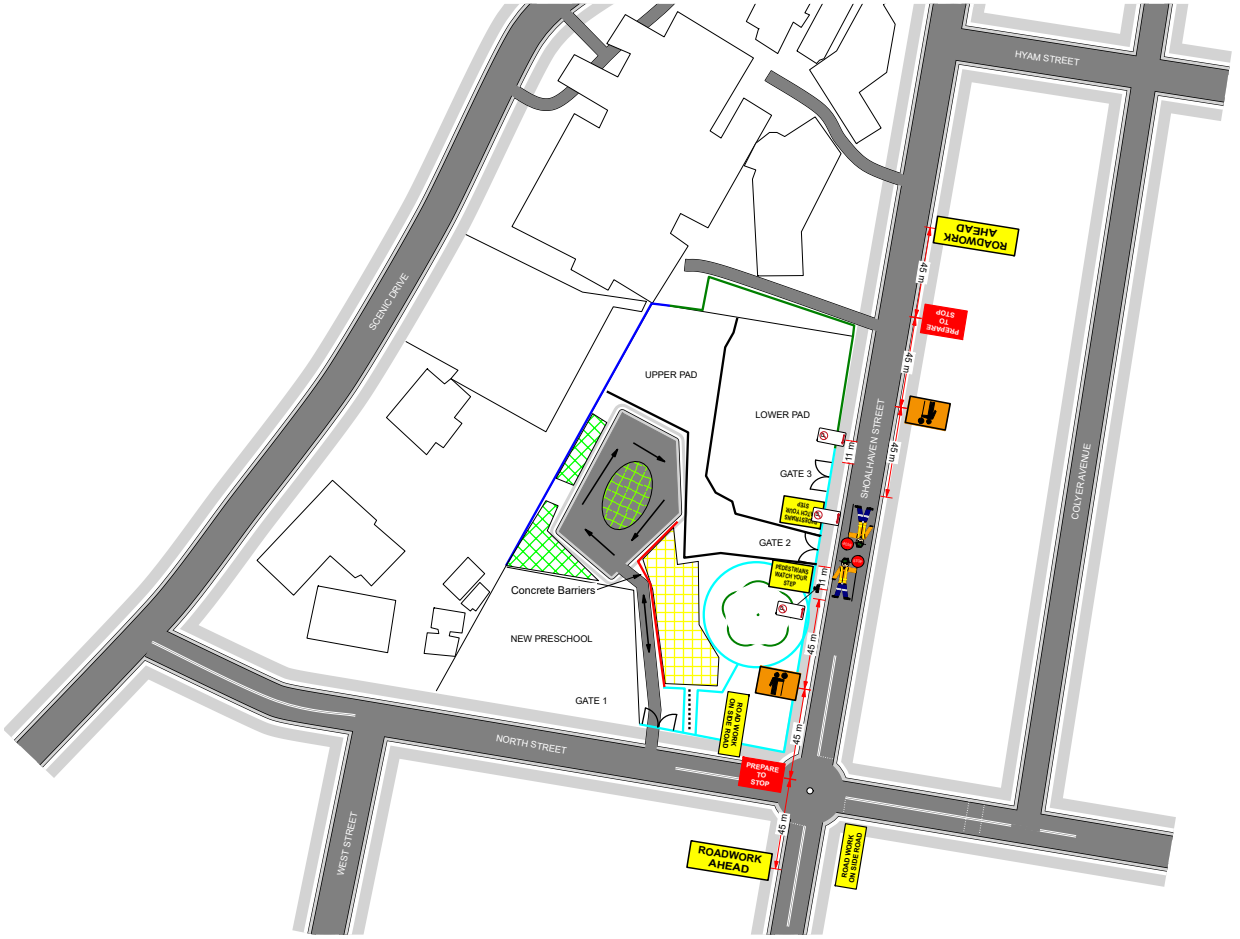
The Traffic Planner

TGS ID TC11 - PHASE 2 - VEHICLE ACCESS GATE 2



Legend

- Temp Fencing
- Site Fencing
- A-Class Hoarding
- Existing Fence
- Access Gate
- Site Sheds
- Skip Bin Zone
- Traffic Controller

CLIENT: TTW

PROJECT: Shoalhaven District Memorial Hospital

LOCATION: North Street, Nowra NSW 2541

SCOPE OF WORKS: Phase 2 - Vehicle Access Gate 2

LCA & MUNICIPALITY: Shoalhaven City Council

DATE: 20/4/2023 TCP EXPIRY: 20/4/2024

TMP LICENCE: TCT0041658 TYPE: PWZ

AUTHOR: Kyle Fieg SIGNATURE: K. Fieg

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	56 to 75	12
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Temporary Signposts	≤70	24
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(*This spacing should be reduced on curves or crests or if the row of cones is not clearly defined at night)

Where traffic volumes are high or other conditions warrant it, consideration should be given to reducing the spacing of cones to as close as 1 m to prevent traffic taking a wrong turn through cones or bollards.

Taper Lengths:

Existing Speed Limit	Traffic Control Taper	Lateral Shift Taper	Merge Taper
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TfNSW Roads:
Single sign: 2D for speeds greater than 66 km/h and 1D for speed zones of less than 65 km Multiple signs: 1D for all speed zones

EXISTING POSTED SPEED LIMIT: 50

PLAN SCALE: NTS

SHEET SIZE: A3

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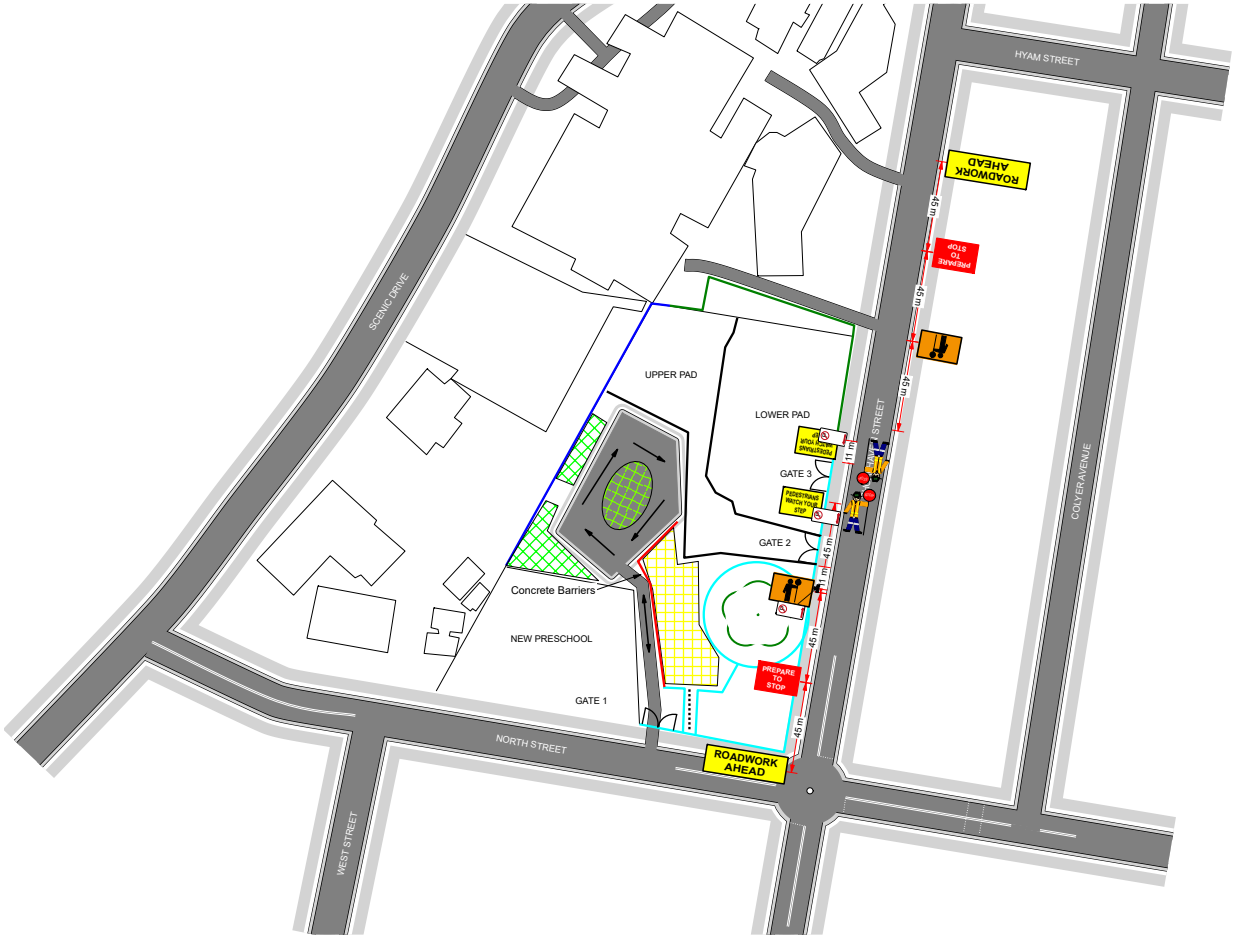
The Traffic Planner

TGS ID TC12 - PHASE 2 - VEHICLE ACCESS GATE 3



Legend

- Temp Fencing
- Site Fencing
- A-Class Hoarding
- Existing Fence
- Site Sheds
- Access Gate
- Skip Bin Zone
- Traffic Controller

CLIENT: TTW

PROJECT: Shoalhaven District Memorial Hospital

LOCATION: North Street, Nowra NSW 2541

SCOPE OF WORKS: Phase 2 - Vehicle Access Gate 3

LCA & MUNICIPALITY: Shoalhaven City Council

DATE: 20/4/2023 TCP EXPIRY: 20/4/2024

TMP LICENCE: TCT0041658 TYPE: PWZ

AUTHOR: Kyle Fieg SIGNATURE: K. Fieg

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PLAN SCALE: NTS

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Appendix C

CVs

Emma Cowdery

Traffic Engineer

BE (Hons) in Civil Engineering

emma.cowdery@ttw.com.au

Experience

2020 – current
Traffic Engineer,
TTW Sydney

During her time at TTW, Emma has been involved in several traffic engineering projects across different sectors including education, health, commercial and community. She has experience in the design development of car parks and other traffic elements such as loading docks and pick-up and drop-off bays, including for multi-storey car parks and to meet complex and specific project requirements. Emma is experienced in the preparation of traffic impact assessments, construction traffic management plans and green travel plans for a range of project types including schools, hospitals and community facilities. She is knowledgeable in intersection modelling and pedestrian mapping and is proficient in several software programs such as SIDRA, Urbano, AutoCAD and AutoTURN Pro.

Education

Pendle Hill High School
Wee Waa High School
Meriden
Neutral Bay Public School
Northmead Creative and Performing Arts High School
Parramatta East Public School
Marsden Park High School
Marsden Park Primary School
Rydalmere Education Campus

Health

Shoalhaven District Memorial Hospital
Cowra Hospital

Residential + Accommodation

NEUE at Macquarie Park
822 Windsor Road, Rouse Hill
Flood Relief Villages, Ballina

Commercial

10 Valentine Avenue, Parramatta
Midtown Centre, Brisbane
CMRI Gene Technologies Building

Community + Public

T-way Cycleway, Parramatta
Ryde Central
Sydney Football Stadium
Kevin Betts Stadium

TTW

Your Partner in Engineering

Michael Babbage

Associate

BE(Hons), Road Safety Auditor (Level 1)

Michael.babbage@ttw.com.au

Experience

2021 – Current
Associate, TTW

2019 – 2021
Senior Traffic Engineer, TTW

2016 – 2018
Traffic Engineer, TTW

Michael is a traffic engineer with a keen interest in designs that really consider the end-user experience, not just the technical requirements. He is involved in all types of projects, from traffic impact assessments, transport planning, construction traffic management, road safety, and car park design, at all stages of the project life cycle.

He has experience in the design development of multi-storey car parks (including for significant transport interchanges, hospitals, and community facilities), drop-off and pick-up facilities, loading docks, and pedestrian facilities. Michael is also a qualified road safety auditor, a TTW service that not only results in safer outcomes for road users on third-party projects but also provides valuable experience and lessons learned for TTW-designed projects. Recently, Michael has been part of TTW's traffic engineering team through an ongoing period of growth and is looking forward to continuing to service the industry with an expanding set of team capabilities.

Schools

Carlingford West Public School
Cronulla High School
Cumberland High School
Denistone East Public School
Glenfield High School and SSPs
Glenwood High School
Hawkesbury Centre of Excellence
John Palmer Public School
Kent Road Public School
Melonba Primary School
Marsden Park High School & Primary School
Pendle Hill High School
Randwick TAFE
Richmond High School
Russell Lea Public School
Rydalmere Education Campus
Shore Physical Education Centre
Smalls Road Public School

Transport

Ashfield Commuter Car Park
Edmondson Park Commuter Car Park
Leppington Commuter Car Park
Merrylands Commuter Car Park
Penrith Commuter Car Park
St Marys Commuter Car Park

Community +Public

Australian Museum Redevelopment
Australian War Memorial
Lane Cove Sport & Recreation Precinct
Merrylands Civic Square
Mona Vale Surf Life Saving Club
NGV Contemporary
Powerhouse Precinct at Parramatta
Ryde Central
Sydney Football Stadium
Sydney Opera House
Thredbo Alpine Resort
Wagga Wagga PCYC
Wilberforce Avenue Car Park, Rose Bay

Aged Care

Edinglassie Village
Lark Ellen Aged Care
Opal Seaside, Warriewood
Pemulwuy Aged Care
RFBI Hawkins Village
SCC Cardinal Gilroy Village

Health

Bankstown-Lidcombe Hospital Emergency Department
Bulli Aged Care Centre of Excellence
Campbelltown Hospital Redevelopment Stage 2
Concord Hospital Redevelopment Stage 1
Hills Private Hospital
Lismore Hospital
Peninsula Private Hospital
Robina Medical Centre
SAN Clinic Parkway
Shellharbour Hospital Redevelopment
Shoalhaven Hospital
The Tweed Hospital
Wyong Hospital Redevelopment

Mixed Use Development

1 Eden Park Drive, Macquarie Park
10 Valentine Avenue, Parramatta
20 Berry Street, North Sydney
21 Harris Street, Pyrmont
60 Union Street, Pyrmont
118 Mount Street, North Sydney
Dicker Data Warehouse & Distribution Centre
Dural Business Park
Macquarie Exchange Precinct MQX4
NECA Training Facility, Chullora

Accommodation + Residential

61 Lavender Street, Milsons Point
105-115 Portman Street, Zetland
135 Queen Street, Woollahra
458-468 George Street, Sydney
700 George Street, Sydney
989-1015 Pacific Highway, Chatswood
Esplanade Norwest
Shell Cove Precinct C2

Michael Babbage

What inspired you to become an engineer?

From a young age I had a keen in interest in the big stuff – roads, bridges, dams, train lines – and hoped to eventually work in the field. Halfway through an engineering degree I worked out that structural engineering wasn't for me (so I'm thankful for the other experts at TTW) but the field of traffic and transport became much more appealing. Moving people around, getting from here to there, and the exciting possibilities of new and emerging technologies.

What is it about the industry that motivates you?

The joy of traffic and transport is that in each project we take on, the correct answer is never the same, and the challenge to find that correct answer each time is a great motivation. It's also motivating knowing that the solutions we develop will end up in the hands of (and under the feet of) residents, students, patients, families, and workers who are relying on our solutions in their daily lives. It's an intimidating challenge but a motivating one.

Residential

61 Lavender Street, Milsons Point
105-115 Portman Street, Zetland
135 Queen Street, Woollahra
137-143 Herring Road, Macquarie Park
700 George Street, Sydney
989-1015 Pacific Highway, Chatswood
Esplanade Norwest
Shell Cove Precinct C2
St Columba's Springwood Planning Proposal

Hotels + Colleges

Four Points by Sheraton, Darling Harbour
Moxy Sydney Airport Hotel
Sydney Airport Ninth Street Hotel
UNE – Robb College
UNE – Wright Block
UNSW – Mulwarree Avenue Student Housing
USYD – St Andrew's College

Retail

Charlestown Square Shopping Centre
Lake Macquarie Fair Shopping Centre
Overseas Passenger Terminal Tenancy 5
Rosebery Engine Yards
The Canopy, Lane Cove
Public Domain
Martin Place Renewal Works
Mitchell Street Plaza, St Leonards
Parks for People – Belrose
Parks for People – Frenchs Forest

Paul Yannoulatos

Technical Director

BE(Hons) Grad Dip LGE CPEng NER

paul.yannoulatos@ttw.com.au

Experience

1996 – Current
Technical Director, TTW

1989 – 1996
Executive Engineer - Chief Engineer, Botany Bay Council

1980 – 1989
Snr Design Engineer, Waverley Municipal Council

1979 – 1980
Surveying Engineer, Denny Linker & Co

1978 – 1979
Engineer Surveyor, Panos Constructions Pty Ltd

Technical Director of Civil and Traffic Engineering at TTW, Paul Yannoulatos has a fervent approach to every project. His work is informed by his experience as a surveyor in local government before he transitioned to engineering in 1980. With 20 years at TTW, Paul's dedication has grown the TTW Civil and Traffic division to be a major player in NSW.

His expertise extends across a folio of sectors including industrial, commercial, education, government projects, expert witness, healthcare, public buildings, parks, residential, subdivisions, traffic and transportation.

Paul has outstanding long-term relationships with both the private and government sectors and has a collaborative approach to ensure that clients receive the target civil and traffic solution.

Accommodation

46 George Street, Sydney
Esplanade Norwest
Abbotsford/Concord – Department of Housing accommodation
Crown on Palmer, Townsville
Shell Cove Precinct 2
UNSW – Kensington and Coogee Colleges, Student Accommodation

Retail

Charlestown Square Shopping Centre
Gateway Plaza, Circular Quay
Lake Macquarie Fair Shopping Centre

Education

Gosford TAFE
CSU Wagga Campus civil and traffic
CSU National Life Sciences Hub
CSU Port Macquarie
USyd Darlington Public Domain
USyd Nanoscience
USyd St Paul's College
Loreto Normanhurst
Meridan School
Rydalmere Education Campus
Cumberland High School
Marsden Park High School
The Kings School
UNSW Bioscience Renewal
UNSW – Scientia (Great Hall), Dalton Upgrade

Art + Culture

ANZAC War Memorial – new café and car park
Luna Park – café, carpark and circus tent
Sydney Football Stadium
Barangaroo Cutaway
National Art Gallery Melbourne

Commercial

Baxter Road Hotel Mascot
Revesby Workers Club
Resmed, Norwest Business Park and Carpark
Riverside Corporate Park

Government + Public

Ryde Central
Lane Cove Council – River Road improvement
City of Canada Bay Council – Blaxland Road Marina
Warringah Council – traffic calming
NSW Department of Justice – Newcastle Courthouse
Parramatta Museum
Taronga Zoo – Eco Retreat, Asian Exhibit
Merrylands Civic Square
Riverstone Village Masterplan
Sydney City Council – Small Parks projects
Queens Square Law Courts

Sports + Leisure

Dee Why Multipurpose Sports Centre
Strathfield Golf Course
Sydney Grammar Prep School, multi-purpose sports court
Abbotsleigh School - multi-purpose sports hall and hockey fields
Royal Sydney Golf Club
Land Cove Sports Centre

Paul Yannoulatos

What is so great about Civil and Traffic engineering?
It's a bit of everything. In these disciplines we get involved in a project very early in the master-planning phase so are able to develop a strong relationship with the client. I enjoy the planning, creativity and being able to influence and advise on a project to achieve the desired result.

Healthcare + Research

Southern Cross Care, Turramurra
Hammondcare - Cardiff, Miranda and Nerringah
UnitingCare - Belrose, Edinglassie Village
Allity Aged Care, Pemulwuy
Catholic Healthcare, Gorman Hill Bathurst
Estia Health - St Ives Development
Cardinal Freeman Village
Northern Beaches Hospital Masterplan
Hornsby Hospital
Newcastle Strategy – John Hunter, Belmont and Mater Hospitals
Royal Prince Alfred
Campbelltown Hospital
Wyong Hospital
Sutherland Hospital
The Tweed Hospital, Tweed Heads
Shoalhaven Hospital
Cowra Hospital
Bathurst Hospital

Accessways + Car Parks

TfNSW – Commuter Carparks – Blacktown, St Marys, Warwick Farm and Seven Hills
Sydney Port Operations at Port Botany
Macquarie University
Science and Humanities Campus, Canberra
Sanitarium Private Hospital
Nepean Hospital
American Embassy
Sydney Uni Carparks

Flood Mitigation

Dunmore Equestrian Centre – flood study
Flood Relief Villages – Ballina Coraki

Subdivision + Infrastructure

Berkeley Road, Wollongong – Industrial 20 lots
Dover Heights - residential 10 lots
Market Drive, Homebush – business 6 ha
IBC Technology Estate – commercial 8.5 ha
Endeavour Enterprise Taren Point - industrial 25 ha

Traffic and Transport

Transportation Study – Westmead Hospital Master Plan
Sydney Airport Ground Transport Interchange and Hotel
Wagga Wagga Transportation and Traffic Study
North Sydney CBD Access Study
Redfern Traffic Management Scheme
Ryde Traffic Management Study
Liverpool CBD – 40km/hr study
Camden Town Centre
St Vincent's Research and Biotechnology Precinct
Kings Avenue Bridge, Canberra
Balfour Park
Woolwich Function Centre
La Perouse – Loop road and park improvements
Ravenswood School for Girls
TfNSW – Commuter Car Parks - Blacktown, St Marys, Warwick Farm, Seven Hills, Granville

Appendix D

Consultation Records

Emma Cowdery

From: Andrew Lissenden <andrew.lissenden@transport.nsw.gov.au>
Sent: Tuesday, 2 May 2023 1:43 PM
To: Emma Cowdery
Cc: Michael Babbage; Paul Yannoulatos; Ivan Ip; Tfnsw ExternalContact48
Subject: TfNSW Comments - Shoalhaven Hospital Redevelopment - Construction Traffic and Pedestrian Management Sub-Plan Consultation (TfNSW Ref: STH21/00089/06)

Hi Emma,

As per the request in your email dated 27 April 2023, Transport for NSW (TfNSW) has reviewed the draft Construction Traffic & Pedestrian Management Sub-Plan (CTPMSP) with reference 221659, Revision P2 dated 27/04/2023 prepared by TTW and provides the comments and suggestions below.

1. **Comments:**

    a. TfNSW notes that the provided plan has been submitted to TfNSW in accordance with Condition B18 of the issued for State Significant Development (SSD) approval 35999468. This condition was not a requirement of TfNSW and has been included in the issued SSD approval by the Department of Planning and Environment (DP&E).

    b. The proposed development will have an impact on the local road network that is managed by Shoalhaven City Council (SCC). As such, TfNSW is of the opinion that the advice/comments provided by SCC are important with any requested amendments being included in the final CTPMSP.

    c. The key state classified road is the Princes Highway to which the development gains access via the local road network.

2. **Suggestions:**

    Further information should be provided in the final CTPMSP to address the following.

    a. Section 2.3.2 – Regional and State Roads: Bolong Road has a speed limit of 60 km/h in sections and not 80 km/h as implied.

    b. Section 2.4.3 – Public Transport: Figure 2.5 incorrectly shows the existing bus stop location. It appears that Google Maps has been used to identify the locations of bus stops as shown in Figure 2.5 and as such some of the locations shown appear to be incorrect (e.g. East Street near Pleasant Way, Bridge Road opposite Shoalhaven Council).

    c. Section 2.4.4 – Active Transport: Figure 2.7 incorrectly shows the existing and missing footpaths on the road network. As above, it appears that Google Maps has been used to identify the locations of footpaths as shown in Figure 2.7. Some of the 'Missing footpath' locations shown appear to be incorrect (e.g. along the western side of the Princes Highway).

d. Section 4.3 – Construction Vehicle Routes and 4.4 – Construction Traffic Management: Figure 4.1 shows the arrival and departure routes for construction vehicles going past St Michaels Primary School (e.g. North Street and Shoalhaven Street). While TfNSW notes that one of the measures to be used to ensure safety will be scheduling construction vehicle movements, where possible, outside of peak hours, it is unclear as to how school vehicle and school pedestrian movement conflicts will be minimised. TfNSW believes that consideration should be given to no trucks being permitted to arrive at or depart from the construction site during the school drop-off and pick-up periods of 8.00 am – 9:30 am and 2:30 pm and 4.00 pm on school days. This ensures that construction vehicle traffic and school vehicle and pedestrian movement conflicts are minimised.

e. Section 4.7 – Traffic Guidance Scheme: TfNSW notes the comments made about over size over mass (OSOM) loads and reiterates that prior to transporting any OSOM loads, the applicant/proponent must review the approved routes for their vehicle and if required obtain a National Heavy Vehicle Regulator (NHVR) OSOM permit for each OSOM load. As part of the application, the applicant proponent must demonstrate to the NHVR that the arrangements for the route are acceptable, and all relevant approvals have been obtained (e.g. approvals required to do alterations to the existing classified road network (approval will be required from TfNSW for this work) or the local road network (approval will be required from SCC for this work)).

f. Section 5.2 – Contractor Parking: TfNSW does not agree with:

   - the assumption used that 20% of the construction workforce will travel by public transport noting the regional location of the site, the limited public transport options and times available and the assessment of public transport use undertaken as part of the original Environmental Impact Statement. TfNSW believes that it would be under 2% of construction works that would use public transport; and
   - the statement that "construction workers will be discouraged to travel to the site via private vehicle to minimise impacts to local traffic". TfNSW believes that the majority of construction workers will be aiming to get to the development site in the easiest/most efficient way (i.e. by private vehicles).

   TfNSW acknowledges the concerns that have been raised by the SCC about the limited on-street car parking that is currently available and the impacts that the lack of free on-site car parking to service the construction workforce will have on the existing limited supply of on-street parking surrounding the development site, noting that the development will be restricting kerbside parking in certain sections along Shoalhaven Street and North Street, as outlined in the relevant TGS plans. In addition to the above, no details have been provided on where contractor parking will be made available within the development site or on adjoining land so as to minimise impacts on the existing on-street car parking availability (e.g. free parking provided in the adjoining multi-storey car park). Noting this will impact local roads that are managed by SCC further discussion should be had with SCC and an agreement reached on how construction/contractor worker parking will be managed prior to the finalisation of the draft CTPMSP.

g. Compliance: Limited details could be found in the draft CTPMSP on how the requirements in the document will be monitored during the development's construction to ensure the requirements of the plan are being complied with and what actions will be taken should it be identified that there is a situation where the requirements of the plan are not being complied with. TfNSW is of the opinion that ongoing monitoring and compliance are important to ensure minimal impacts on the road network in terms of both safety and efficiency.

h. Complaints: Limited details could be found in the draft CTPMSP on how concerns/complaints received from members of the public and/or adjacent land owners will be received and investigated and how members of the public and adjacent land owners will be advised of this process both prior to construction commencing and during construction.

i. Aerial imagery: TfNSW notes that the aerial imagery used in a number of the figures is outdated (e.g. does not show the third bridge crossing of the Shoalhaven River and associated road works that have been completed).

Regards

Andrew Lissenden
Development Case Officer
Development Services, South
Regional and Outer Metropolitan
Transport for NSW

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Wollongong NSW 2500

Transport for NSW

From: Emma Cowdery <emma.cowdery@ttw.com.au>
Sent: Thursday, 27 April 2023 1:56 PM
To: Andrew Lissenden <andrew.lissenden@transport.nsw.gov.au>; Development South <development.south@transport.nsw.gov.au>
Cc: Michael Babbage <michael.babbage@ttw.com.au>; Paul Yannoulatos <Paul.Yannoulatos@ttw.com.au>; Ivan Ip <ivan.ip@ttw.com.au>
Subject: RE: Shoalhaven Hospital Redevelopment - Construction Traffic and Pedestrian Management Sub-Plan Consultation

Hi Andrew,

Thanks for passing on the correct email address. I've reattached the draft CTPMSP here for everyone's information.

Kind regards,
Emma

Emma Cowdery

Subject: FW: Shoalhaven Hospital Redevelopment - Construction Traffic and Pedestrian Management Sub-Plan Consultation

From: Scott Haylett
Sent: Tuesday, May 9, 2023 4:35 PM
To: 'emma.cowdery@ttw.com.au' <emma.cowdery@ttw.com.au>
Cc: Michael Babbage <Michael.Babbage@ttw.com.au>; Paul Yannoulatos <Paul.Yannoulatos@ttw.com.au>; 'ivan.ip@ttw.com.au' <ivan.ip@ttw.com.au>; Jonathan Ash <Jonathan.Ash@shoalhaven.nsw.gov.au>; David Wilson <david.wilson@shoalhaven.nsw.gov.au>; Simon Holt <Simon.Holt@shoalhaven.nsw.gov.au>; Lachlan Jones <Lachlan.Jones@shoalhaven.nsw.gov.au>; Scott Wells <Scott.Wells@shoalhaven.nsw.gov.au>; Gordon Clark <Gordon.Clark@shoalhaven.nsw.gov.au>
Subject: FW: Shoalhaven Hospital Redevelopment - Construction Traffic and Pedestrian Management Sub-Plan Consultation

Hi Emma,

Please refer to Council's comments below relating to the review of the Construction Traffic and Pedestrian Management Sub-Plan submitted and relevant consent conditions:

Condition	SCC Comment
B18)a)	TTW accepted as suitably qualified and experienced.
B18)b)	Consulting currently being undertaken with Council currently. Council would also like to receive a copy of the consultation undertaken with TfNSW for information.
B18)c)(i)	Council are satisfied that the measures proposed address this condition of consent.
B18)c)(ii)	Council are satisfied that the measures proposed address this condition of consent.
B18)c)(iii)	Hyam St is not suitable for access to/from the North for heavy vehicles as it does not appear that a truck and dog would be able to safely navigate the turn from/into Shoalhaven St without imposing additional temporary parking restrictions. Suggested access is from North St via either Bridge Rd or Moss St, though even these may require further investigation to ensure all required construction vehicles can navigate critical intersections without disruption. Proposed routes to/from the south are considered acceptable given the lower expected traffic volume from this direction. Access arrangements generally satisfactory. However, Council requires further information regarding the proposed timing of phasing of the works to better understand how long each phase is proposed to take. Parking arrangements proposed are not compliant with Condition B22 and cannot be accepted as outlined below.
B18)c)(iv)	It has been satisfactorily demonstrated through the swept paths provided that construction vehicles are able to enter, exit and manoeuvre the site in accordance with AS2890.2.
B18)c)(v)	It has been satisfactorily demonstrated through the swept paths provided that construction vehicles are able to enter and exit the site in a forward direction except for Phase 1a. However, it is proposed that this phase is only temporary during the delivery of site facilities and will be conducted under the supervision of a traffic controller so therefore is considered acceptable.
B18)c)(vi)	Council are satisfied that the measures proposed address this condition of consent.
B22	As outlined above, the Construction Traffic and Pedestrian Management Sub-Plan (CTPMSP) does not comply with this condition. The CTMPSP needs to be reviewed and

	amended to demonstrate compliance with this condition. Council would be agreeable to having a collaborative discussion regarding potential parking solutions for site personnel.

If you need any clarification on these comments, please feel free to contact me on the details below.

Regards,

Scott Haylett
Development Engineering Coordinator

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shoalhaven.nsw.gov.au

RESPECT | INTEGRITY | ADAPTABILITY | COLLABORATION