Narrabeen Education Precinct - Narrabeen North Public School

Construction Traffic Management Plan

6 Namona Street, North Narrabeen NSW 2101
5/07/2023
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Project	Narrabeen Education Precinct - Narrabeen North Public School
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Revision History

Revision No.	Date	Details	Author	Approved by
01	02/06/2023	Issue	A. Tan, M. Kong	D. Choi
02	20/06/2023	Issue	A. Tan, M. Kong	D. Choi
03	05/07/2023	Issue	A. Tan, J. Lam	J. Laidler

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APPENDICES

1 Introduction

1.1 Introduction

Ason Group was previously engaged by School Infrastructure NSW to prepare a preliminary Construction Traffic Management Plan (CTMP) for the proposed redevelopment of Narrabeen North Public School (NNPS) (the Proposal) located at 6 Namona Street, North Narrabeen (the Site). The Preliminary CTMP (reference: P2008r01v12) was issued to Johnstaff on 01 March 2023 and submitted to Northern Beaches Council (Council).

Council subsequently provided comments on P2008r01v12 and requested a revised CTMP to include an option for construction vehicle access in and out of the Site.

This revised CTMP addressed Council's requirements and outlines the principles that shall be adopted by the ADCO for the project.

1.2 Site Description

The subject sites are located at 6 and 10 Namona Street, North Narrabeen (referred to as the Narrabeen Education Precinct) and falls within the local government area of Northern Beaches Council. The Narrabeen Education Precinct has a total area of 9.84 hectares.

Narrabeen North Primary School (NNPS) is located on the northern side of Namona Street, North Narrabeen and is legally described as Lot 3 Deposited Plan (DP) 1018621. NNPS is surrounded by residential dwellings to the east, grassed sporting fields (Warriewood Valley Sportsground) to the north and Northern Beaches Indoor Sports Centre to the west. NNPS contains two (2) Binishell domes (Block A and Block B) which are identified as a local heritage item under the Pittwater Local Environmental Plan 2014. The two (2) Binishell Domes are listed as State significant on DoE's Section 170 Heritage and Conservation Register. The Double Binishell Dome (Block B) is listed on the State Heritage Register (SHR).

Narrabeen Sports High School (NSHS) is located on the southern side of Namona Street and is legally described as Lot 12 DP 1119562. NSHS is surrounded by Pittwater Road to the east, Pittwater Sports Centre to the south and Mullet Creek to the west. See site aerial map in **Figure 1**.

Figure 1: Site Aerial Map, Source: Nearmap

1.3 Overall Principles of Construction Traffic Management

The overall principles of traffic management during construction activities include:

- Minimising the impact on pedestrian and cyclist safety and movements
- Maintaining appropriate public transport and school bus access
- Minimising the impact on existing traffic on adjacent roads and intersections
- Minimising the loss of on-street parking
- Maintaining access to/from adjacent properties
- Restricting construction vehicle movements to designated routes to/from the site
- Managing and controlling construction vehicle activity near the site
- Ensuring construction activity is carried out in accordance with Council's approved hours of work.

1.4 Project Representatives & Stakeholders

This report has been prepared by a consultant who holds a SafeWork NSW Work Health & Safety Traffic Control Work card, accredited for the 'Prepare a Work Zone Traffic Management Plan'. Details of the accredited consultant are provided below:

- James Laidler Ticket No. TCT0031686
- Alan Tan Ticket No. SOC5116945

This Preliminary Construction Traffic Management Plan has been prepared to meet the requirements outlined in Appendix A and Appendix E, Section E.2 of the Transport for NSW Traffic Control at Work Sites Technical Manual (Issue No. 6.1, 2022).

Through the preparation of the detailed CTMP, the following project representatives and stakeholders should be consulted in the development of the traffic management strategy:

TABLE 1: PROJECT REPRESENTATIVES AND STAKEHOLDERS

Organisation	Name	Role
Contractor (ADCO)	Spencer Jamieson	Senior Project Manager
Ason Group	James Laidler	Senior Traffic Engineer
Ason Group	Alan Tan	Traffic Engineer
Northern Beaches Council	Jeremy Smith	Park Assets and Projects Manager
Transport for NSW	Customer Journey Planning Staff	Customer Journey Planning

1.5 Authority Requirements

This CTMP forms part of this process and outlines the proposed construction traffic management arrangements associated with the development in accordance with Conditions 17, 29, 42 and 44 of the approved application: DA2022/1649, dated 09 June 2023 as follows:

17. Construction Traffic Management Plan

A revised Construction Traffic Management Plan (CTMP) and report shall be prepared by a TfNSW accredited person and submitted to and approved by the Northern Beaches Council Traffic Team prior to issue of any Construction Certificate or Relevant Crown Certificate.

Due to heavy traffic congestion throughout the school surrounds, truck movements will be restricted during the major school peak times being 8.00-9.30am and 2.30-4.00pm. Truck movements must be agreed with Council's Traffic prior to submission of the CTMP.

The CTMP must address following:

¡ The proposed phases of construction works on the site, and the expected duration of each construction phase

¡ The proposed order in which works on the site will be undertaken, and the method statements on how various stages of construction will be undertaken

¡ Make provision for all construction materials to be stored on site, at all times

¡ The proposed areas within the site to be used for the storage of excavated materials, construction materials and waste containers during the construction period

¡ The proposed method of access to and egress from the site for construction vehicles, including access routes and truck rates through the Council area and the location and type of temporary vehicular crossing for the purpose of minimising traffic congestion and noise in the area, with no access across public parks or reserves being allowed

¡ The proposed method of loading and unloading excavation and construction machinery, excavation and building materials, formwork and the erection of any part of the structure within the site. Wherever possible mobile cranes should be located wholly within the site

¡ Make provision for parking onsite. All Staff and Contractors are to use the basement parking once available

¡ Temporary truck standing/ queuing locations in a public roadway/ domain in the vicinity of the site are not permitted unless approved by Council prior

¡ The proposed development involves works within the Narrabeen Education Precinct, no heavy vehicle movements or construction activities effecting vehicle and pedestrian traffic are permitted in school zone hours (8:00am-9:30am and 2:30pm-4:00pm weekdays).

¡ Include a Traffic Control Plan prepared by a person with suitable RMS accreditation for any activities involving the management of vehicle and pedestrian safety

¡ The proposed manner in which adjoining property owners will be kept advised of the timeframes for completion of each phase of development/construction process. It must also specify that a minimum Fourteen (14) days notification must be provided to adjoining property owners prior to the implementation of any temporary traffic control measure

¡ Include a site plan showing the location of any site sheds, location of requested Work Zones, anticipated use of cranes and concrete pumps, structures proposed on the footpath areas (hoardings, scaffolding or shoring) and any tree protection zones around Council street trees

¡ Take into consideration the combined construction activities of other development in the surrounding area. To this end, the consultant preparing the CTMP must engage and consult with developers undertaking major development works within a 250m radius of the subject site to ensure that appropriate measures are in place to prevent the combined impact of construction activities, such as (but not limited to) concrete pours, crane lifts and dump truck routes. These communications must be documented and submitted to Council prior to work commencing on site

¡ The proposed method/device to remove loose material from all vehicles and/or machinery before entering the road reserve, any run-off from the washing down of vehicles shall be directed to the sediment control system within the site

¡ Specify that the roadway (including footpath) must be kept in a serviceable condition for the duration of construction. At the direction of Council, undertake remedial treatments such as patching at no cost to Council

¡ The proposed method of support to any excavation adjacent to adjoining properties, or the road reserve. The proposed method of support is to be designed and certified by an appropriately qualified and practising Structural Engineer, or equivalent.

¡ Proposed protection for Council and adjoining properties

¡ The location and operation of any on site crane

The CTMP shall be prepared in accordance with relevant sections of Australian Standard 1742 – "Manual of Uniform Traffic Control Devices", RMS' Manual – "Traffic Control at Work Sites".

All fees and charges associated with the review of this plan is to be in accordance with Council's Schedule of Fees and Charges and are to be paid at the time that the Construction Traffic Management Plan is submitted.

Reason: To ensure public safety and minimise any impacts to the adjoining pedestrian and vehicular traffic systems.

29. Demolition Traffic Management Plan

As the proposed development works within the Narrabeen Education Precinct, a Demolition Traffic Management Plan (DTMP) shall be prepared by a suitably accredited person and submitted to and approved by the Northern Beaches Council Traffic Team prior to commencing any demolition work.

Due to heavy traffic congestion and pedestrian activity throughout the school surrounds, truck movements will be restricted during the major school peak times being 8.00-9.30am and 2.30- 4.00pm.

The DTMP must:-

¡ Make provision for all construction materials to be stored on site, at all times.

¡ The DTMP is to be adhered to at all times during the project.

¡ Specify construction truck routes and truck rates. Nominated truck routes are to be distributed over the surrounding road network where possible.

¡ Provide for the movement of trucks to and from the site, and deliveries to the site. Temporary truck standing/ queuing locations in a public roadway/ domain in the vicinity of the site is not permitted unless prior approval is granted by Council's Traffic Engineers.

¡ The proposed development works are within the Narrabeen Education Precinct, no heavy vehicle movements or construction activities effecting vehicle and pedestrian traffic are permitted in school zone hours (8:00am-9:30am and 2:30pm-4:00pm weekdays.

¡ Include a Traffic Control Plan prepared by an TfNSW accredited traffic controller for any activities involving the management of vehicle and pedestrian traffic.

¡ Specify that a minimum fourteen (14) days notification must be provided to adjoining property owners prior to the implementation of any temporary traffic control measures.

¡ Include a site plan showing the location of any site sheds, location of requested Work Zones, anticipated use of cranes, structures proposed on the footpath areas (hoardings, scaffolding or temporary shoring) and extent of tree protection zones around Council street trees.

¡ Take into consideration the combined construction activities of other development in the surrounding area. To this end, the consultant preparing the DTMP must engage and consult with developers undertaking major development works within a 250m radius of the subject site to ensure that appropriate measures are in place to prevent the combined impact of construction activities. These communications must be documented and submitted to Council prior to work commencing on site.

¡ Specify spoil management process and facilities to be used on site.

¡ Specify that the roadway (including footpath) must be kept in a serviceable condition for the duration of demolition. At the direction of Council, the applicant is to undertake remedial treatments such as patching at no cost to Council.

The DTMP shall be prepared in accordance with relevant sections of Australian Standard 1742 – "Manual of Uniform Traffic Control Devices", RMS' Manual – "Traffic Control at Work Sites".

All fees and charges associated with the review of this plan is to be in accordance with Council's Schedule of Fees and Charges and are to be paid at the time that the Demolition Traffic Management Plan is submitted.

Reason: This condition is to ensure public safety and minimise any impacts to the adjoining pedestrian and vehicular traffic systems. The DTMP is intended to minimise impact of construction activities on the surrounding community, in terms of vehicle traffic (including traffic flow and parking) and pedestrian amenity adjacent to the site.

42. Implementation of Demolition Traffic Management Plan

All works and demolition activities are to be undertaken in accordance with the approved Demolition Traffic Management Plan (DTMP). All controls in the DTMP must be maintained at all times and all traffic management control must be undertaken by personnel having appropriate TfNSW accreditation. Should the implementation or effectiveness of the DTMP be impacted by surrounding major development not encompassed in the approved DTMP, the DTMP measures and controls are to be revised accordingly and submitted to Council for approval. A copy of the approved DTMP is to be kept onsite at all times and made available to the accredited certifier or Council on request.

Reason: To ensure compliance and Council's ability to modify the approved Construction Traffic Management Plan where it is deemed unsuitable during the course of the project.

44. Implementation of Construction Traffic Management Plan

All works and construction activities are to be undertaken in accordance with the approved Construction Traffic Management Plan (CTMP). All controls in the CTMP must be maintained at all times and all traffic management control must be undertaken by personnel having appropriate TfNSW accreditation. Should the implementation or effectiveness of the CTMP be impacted by surrounding major development not encompassed in the approved CTMP, the CTMP measures and controls are to be revised accordingly and submitted to Council for approval. A copy of the approved CTMP is to be kept onsite at all times and made available to Council on request.

Reason: To ensure compliance of the developer/builder in adhering to the Construction Traffic Management procedures agreed and are held liable to the conditions of consent.

ADCO will not commence construction until this CTMP is approved by Council; and implement the most recent version of the CTMP approved by Council for the duration of construction.

TABLE 2: RESPONSE TO DA2022/1649

Condition No.	Condition	Response
17	*A revised Construction Traffic Management Plan (CTMP) and report shall be prepared by a TfNSW accredited person and submitted to and approved by the Northern Beaches Council Traffic Team prior to issue of any Construction Certificate or Relevant Crown Certificate.*	Noted
	Due to heavy traffic congestion throughout the school surrounds, truck movements will be restricted during the major school peak times being 8.00-9.30am and 2.30-4.00pm. Truck movements must be agreed with Council's Traffic prior to submission of the CTMP. *The CTMP must address following:*	Section 2.2

	The proposed order in which works on the site will be undertaken, and the method statements on how various stages of construction will be undertaken	Section 2.1 Section 2.3
	Make provision for all construction materials to be stored on site, at all times	Section 2.6
	The proposed areas within the site to be used for the storage of excavated materials, construction materials and waste containers during the construction period	Section 2.6
	The proposed method of access to and egress from the site for construction vehicles, including access routes and truck rates through the Council area and the location and type of temporary vehicular crossing for the purpose of minimising traffic congestion and noise in the area, with no access across public parks or reserves being allowed	Section 2.4 Appendix B
	The proposed method of loading and unloading excavation and construction machinery, excavation and building materials, formwork and the erection of any part of the structure within the site. Wherever possible mobile cranes should be located wholly within the site	Section 2.3 Section 2.6
	Make provision for parking onsite. All Staff and Contractors are to use the basement parking once available	Section 3.3
	Temporary truck standing/ queuing locations in a public roadway/ domain in the vicinity of the site are not permitted unless approved by Council prior	Section 2.4 Section 3.2
	The proposed development involves works within the Narrabeen Education Precinct, no heavy vehicle movements or construction activities effecting vehicle and pedestrian traffic are permitted in school zone hours (8:00am-9:30am and 2:30pm-4:00pm weekdays).	Section 2.2
	Include a Traffic Control Plan prepared by a person with suitable RMS accreditation for any activities involving the management of vehicle and pedestrian safety	Section 1.4 Appendix B
	The proposed manner in which adjoining property owners will be kept advised of the timeframes for completion of each phase of development/construction process. It must also specify that a minimum Fourteen (14) days notification must be provided to adjoining property owners prior to the implementation of any temporary traffic control measure	Section 2.2
	Include a site plan showing the location of any site sheds, location of requested Work Zones, anticipated use of cranes and concrete pumps, structures proposed on the footpath areas (hoardings, scaffolding or shoring) and any tree protection zones around Council street trees	Section 2.5 Section 2.6 Section 3.1 Section 3.5
	Take into consideration the combined construction activities of other development in the surrounding area. To this end, the consultant preparing the CTMP must engage and consult with developers undertaking major development works within a 250m radius of the subject site to ensure that appropriate measures are in place to prevent the combined impact of construction activities, such as (but not limited to) concrete pours, crane lifts and dump truck routes. These communications must be documented and submitted to Council prior to work commencing on site	Section 3.10

	The proposed method/device to remove loose material from all vehicles and/or machinery before entering the road reserve, any run-off from the washing down of vehicles shall be directed to the sediment control system within the site	Section 3.2 Appendix C
	Specify that the roadway (including footpath) must be kept in a serviceable condition for the duration of construction. At the direction of Council, undertake remedial treatments such as patching at no cost to Council	Section 4.1
	The proposed method of support to any excavation adjacent to adjoining properties, or the road reserve. The proposed method of support is to be designed and certified by an appropriately qualified and practising Structural Engineer, or equivalent.	Not applicable
	Proposed protection for Council and adjoining properties	Section 3.1 Section 3.5 Section 3.6
	The location and operation of any on site crane	Section 2.6
	The CTMP shall be prepared in accordance with relevant sections of Australian Standard 1742 – "Manual of Uniform Traffic Control Devices", RMS' Manual – "Traffic Control at Work Sites".	Section 3.5 Section 3.8
	All fees and charges associated with the review of this plan is to be in accordance with Council's Schedule of Fees and Charges and are to be paid at the time that the Construction Traffic Management Plan is submitted.	Noted
29	*Reason: To ensure public safety and minimise any impacts to the adjoining pedestrian and vehicular traffic systems.*	Noted
	As the proposed development works within the Narrabeen Education Precinct, a Demolition Traffic Management Plan (DTMP) shall be prepared by a suitably accredited person and submitted to and approved by the Northern Beaches Council Traffic Team prior to commencing any demolition work.	All items required by the DTMP has been covered in this CTMP – see below
	Due to heavy traffic congestion and pedestrian activity throughout the school surrounds, truck movements will be restricted during the major school peak times being 8.00-9.30am and 2.30- 4.00pm. *The DTMP must:-*	Section 2.2
	Make provision for all construction materials to be stored on site, at all times.	Section 2.6
	The DTMP is to be adhered to at all times during the project.	Noted
	Specify construction truck routes and truck rates. Nominated truck routes are to be distributed over the surrounding road network where possible.	Section 2.4
	Provide for the movement of trucks to and from the site, and deliveries to the site. Temporary truck standing/ queuing locations in a public roadway/ domain in the vicinity of the site is not permitted unless prior approval is granted by Council's Traffic Engineers.	Section 2.4 Section 3.2

	The proposed development works are within the Narrabeen Education Precinct, no heavy vehicle movements or construction activities effecting vehicle and pedestrian traffic are permitted in school zone hours (8:00am-9:30am and 2:30pm-4:00pm weekdays.	Section 2.2
	Include a Traffic Control Plan prepared by an TfNSW accredited traffic controller for any activities involving the management of vehicle and pedestrian traffic.	Section 1.4 Appendix B
	Specify that a minimum fourteen (14) days notification must be provided to adjoining property owners prior to the implementation of any temporary traffic control measures.	Section 2.2
	Include a site plan showing the location of any site sheds, location of requested Work Zones, anticipated use of cranes, structures proposed on the footpath areas (hoardings, scaffolding or temporary shoring) and extent of tree protection zones around Council street trees.	Section 2.5 Section 2.6 Section 3.1 Section 3.5
	Take into consideration the combined construction activities of other development in the surrounding area. To this end, the consultant preparing the DTMP must engage and consult with developers undertaking major development works within a 250m radius of the subject site to ensure that appropriate measures are in place to prevent the combined impact of construction activities. These communications must be documented and submitted to Council prior to work commencing on site.	Section 3.10
	Specify spoil management process and facilities to be used on site.	Section 2.1 Section 2.3 Section 3.2 Appendix C
	Specify that the roadway (including footpath) must be kept in a serviceable condition for the duration of demolition. At the direction of Council, the applicant is to undertake remedial treatments such as patching at no cost to Council.	Section 4.1
	The DTMP shall be prepared in accordance with relevant sections of Australian Standard 1742 – "Manual of Uniform Traffic Control Devices", RMS' Manual – "Traffic Control at Work Sites".	Section 3.5 Section 3.8
	All fees and charges associated with the review of this plan is to be in accordance with Council's Schedule of Fees and Charges and are to be paid at the time that the Demolition Traffic Management Plan is submitted.	Noted
	Reason: This condition is to ensure public safety and minimise any impacts to the adjoining pedestrian and vehicular traffic systems. The DTMP is intended to minimise impact of construction activities on the surrounding community, in terms of vehicle traffic (including traffic flow and parking) and pedestrian amenity adjacent to the site.	Noted

42	*All works and demolition activities are to be undertaken in accordance with the approved Demolition Traffic Management Plan (DTMP). All controls in the DTMP must be maintained at all times and all traffic management control must be undertaken by personnel having appropriate TfNSW accreditation. Should the implementation or effectiveness of the DTMP be impacted by surrounding major development not encompassed in the approved DTMP, the DTMP measures and controls are to be revised accordingly and submitted to Council for approval. A copy of the approved DTMP is to be kept onsite at all times and made available to the accredited certifier or Council on request.* *Reason: To ensure compliance and Council's ability to modify the approved Construction Traffic Management Plan where it is deemed unsuitable during the course of the project.*	Noted
44	*All works and construction activities are to be undertaken in accordance with the approved Construction Traffic Management Plan (CTMP). All controls in the CTMP must be maintained at all times and all traffic management control must be undertaken by personnel having appropriate TfNSW accreditation. Should the implementation or effectiveness of the CTMP be impacted by surrounding major development not encompassed in the approved CTMP, the CTMP measures and controls are to be revised accordingly and submitted to Council for approval. A copy of the approved CTMP is to be kept onsite at all times and made available to Council on request.* *Reason: To ensure compliance of the developer/builder in adhering to the Construction Traffic Management procedures agreed and are held liable to the conditions of consent.*	Noted

1.6 Project Details

1.6.1 The Proposal

The proposed Narrabeen Education Precinct development includes the redevelopment of Narrabeen North Public School (NNPS). The Narrabeen North Public School has been identified by the NSW Department of Education (DoE) as requiring upgrade works.

The works at NNPS upgrade the school includes the demolition of existing buildings (Blocks H and J) and the construction of three (3) new buildings with the refurbishment of three (3) existing buildings (Blocks B, K and V).

DA2022/1649 approved the following works at NNPS:

- Demolition of existing buildings (Blocks H and J); and
- Construction of a new two (2) storey building containing administration facilities, a multi-purpose hall and an out-of-school-hours care (OSHC) facility on the ground floor with staff facilities and amenities on the first floor; and a New Covered Outdoor Learning Area (COLA).

The proposed development does not seek to increase staff or student numbers.

Reference should be made to the reduced plans for NNPS provided in **Figure 2**.

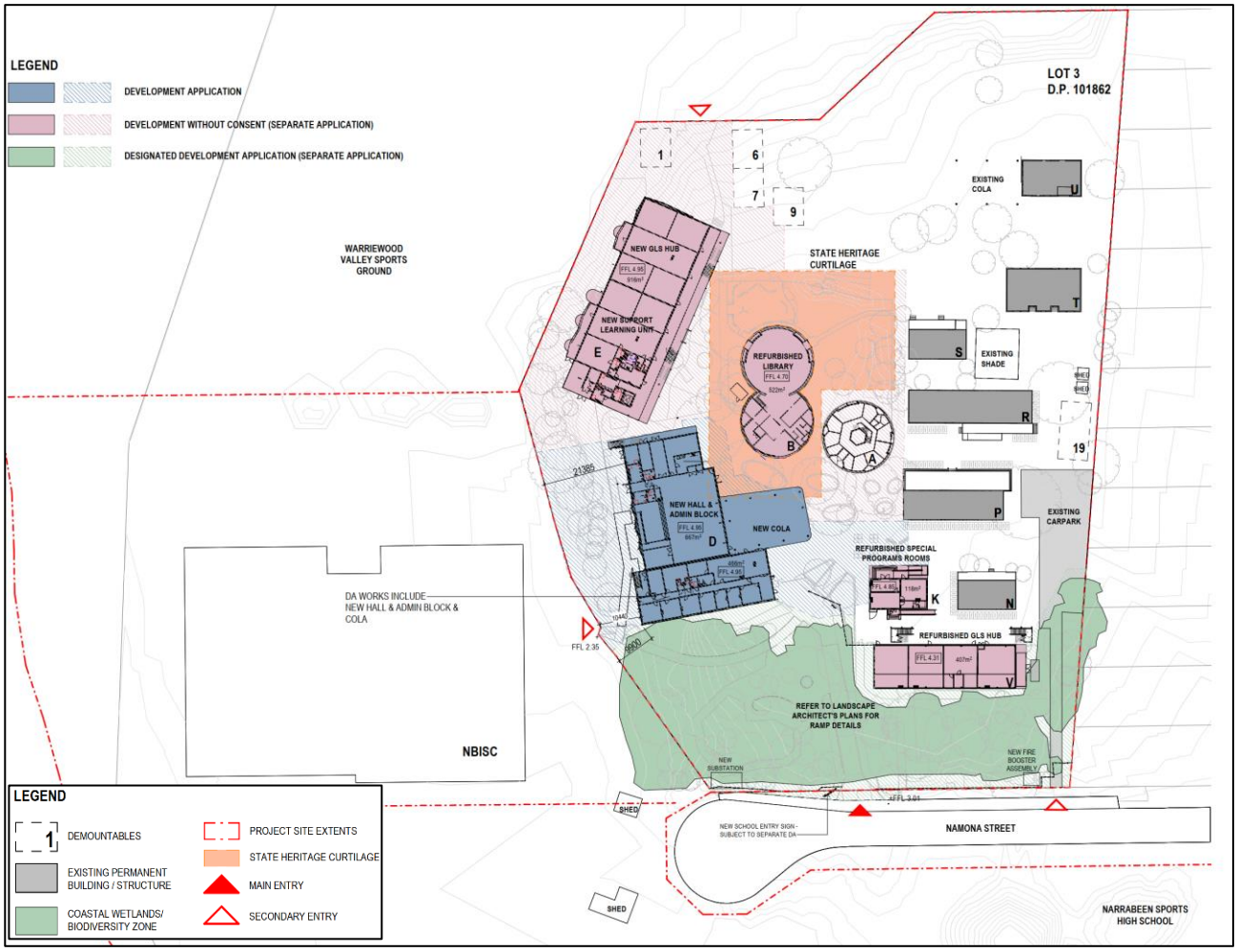


Figure 2: Proposal Architectural Site Plan (received 23 August 2022)

1.6.2 Site Location

The subject site, Narrabeen North Public School (NNPS) is located at 6 Namona Street, North Narrabeen and falls within the local government area of Northern Beaches Council. A description of the School is provided below:

TABLE 3: SITE DESCRIPTION

School	Title	Approximate Area (Ha)
NNPS	Lot 3 / DP 1018621	2.4

The school is located approximately 21km to the northeast of the Sydney CBD, surrounded by local businesses and low-density residential dwellings. The Warriewood Square Shopping Centre is located within 750m walking distance of north of the School.

Narrabeen North Public School is currently a primary school and includes the following building and facilities:

- Two (2) Binidomes;
- Six (6) Homebase buildings;
- Fourteen (14) demountable Homebase buildings;
- One (1) library;
- One (1) staff building;
- One (1) programs / craft building;
- One (1) Covered Outdoor Learning Area (COLA);
- A number of outdoor spaces;
- At-grade car parking accommodating 20 formal car parking spaces, inclusive of 1 accessible car space and 16 informal car spaces accessed via Namona Street;
- Three (3) pedestrian accesses are as follows:
  - One (1) pedestrian access point from Warriewood Valley Sportsground
  - One (1) pedestrian access point from Namona Street; and
  - One (1) pedestrian access point from the Northern Beaches Indoor Sports Centre (NBISC) car park.
- 94 on-site bicycle parking spaces.

The Site and surrounding context are demonstrated in **Figure 3** below.

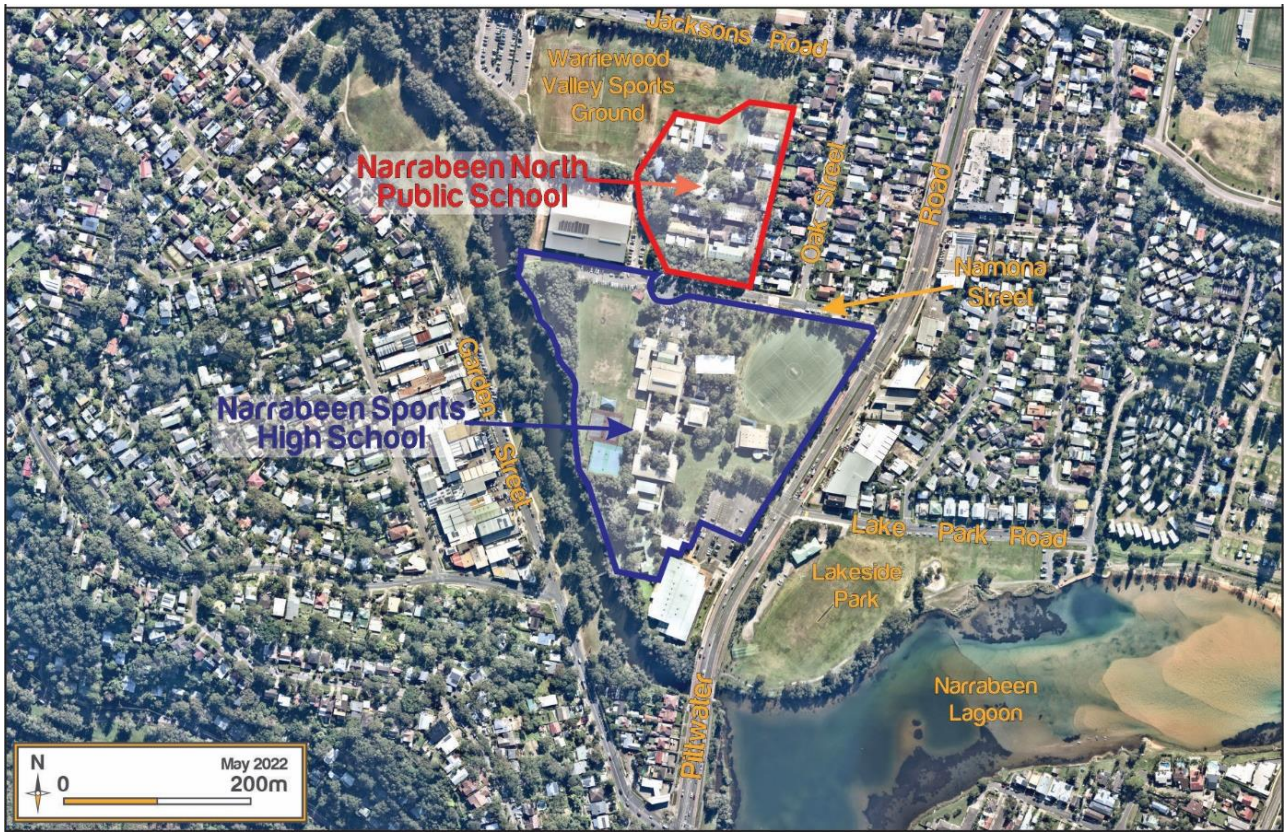


Figure 3: Site Location and Context

1.6.3 Existing Site Transport Facilities

As it relates to travel planning, the Schools and immediate surroundings of the schools provide the following transport facilities:

- On-site bicycle parking rails (94 spaces);
- On-site car parking spaces for staff (20 formal spaces and 16 informal spaces);
- Constructed concrete footpaths along the Namona Street frontage
- A bus zone on either side of Namona Street fronting both schools (approximately 35m along the northern side and 55m along the southern side).
- Existing school crossing on Namona Street

The existing arrangements are presented in **Figure 4**, **Figure 5** and **Figure 6.**

Figure 4: Existing Transport Facilities

Figure 5: Existing Parking Restrictions

Figure 6: Existing Pedestrian Facilities

1.7 Site Related Data

1.7.1 Road Details

The key roads in the proximity of the site are summarised in **Figure 7** with reference to the site plan and road hierarchy in **Table 4.**

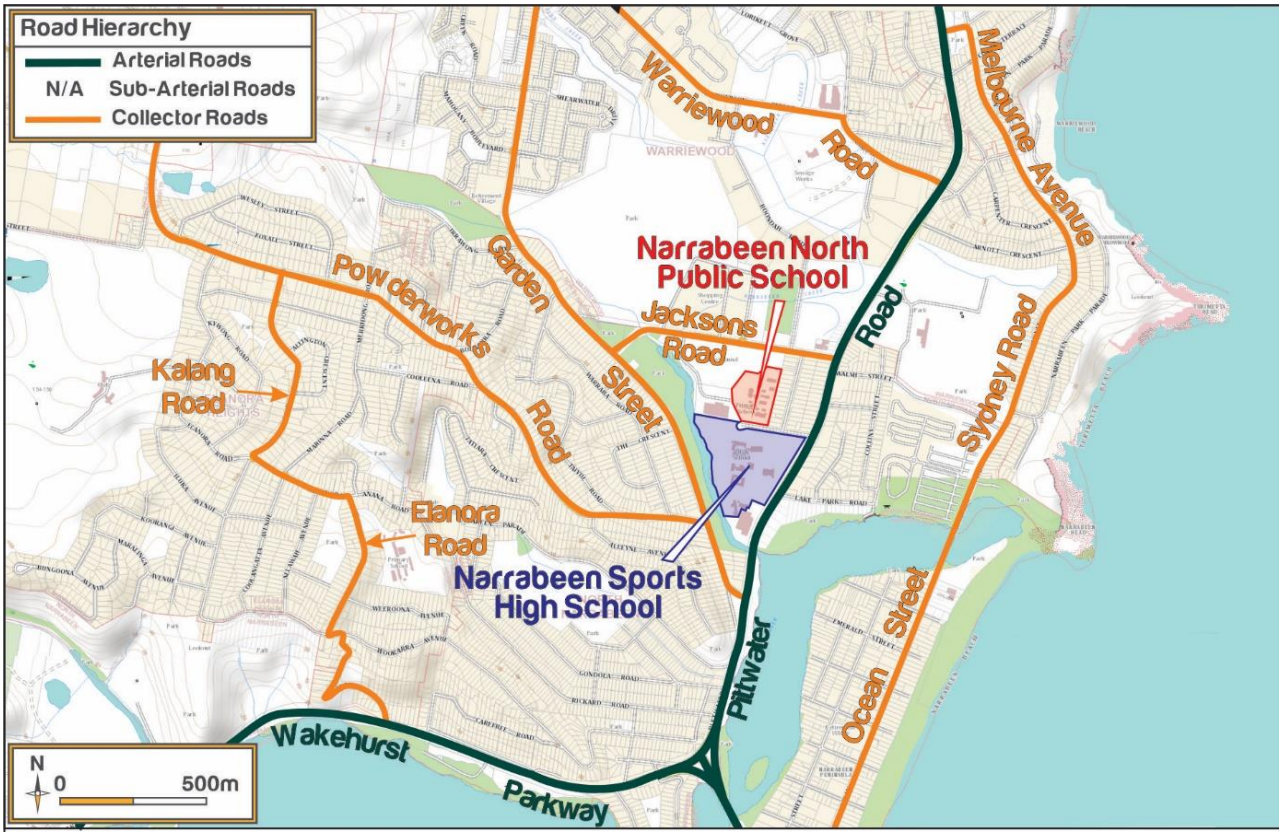


Figure 7: Road Hierarchy

TABLE 4: KEY ROADS

Road Name	Road Classification	AADT[1] (vpd)[2]	Speed Limit[3]
Pittwater Road	State Road	16,165	70 km/h
Namona Street	Local Road	530	50 km/h
Jacksons Road	Local Road	5,355	50 km/h
Oak Street	Local Road	TBC	50 km/h
Garden Street	Regional Road	TBC	50 km/h

1.7.2 Crash History

A review of the TfNSW *Centre for Road Safety* database has been undertaken to establish the crash history within the immediate vicinity of the Site. The results are based on crashes over a five-year period between 2016 and 2020. Locations of recorded crashes are shown in **Figure 8** and details summarised in **Table 5.**

A review of the crashes indicates that the majority of crashes occurred along Pittwater Road, with three crashes occurring at the Pittwater Road/Berry Avenue intersection, five crashes occurring at the Pittwater Road/Namona Street intersection, two crashes occurring at the Pittwater Road/Lake Park Road signalised intersection and three crashes occurring at the Pittwater Road/Garden Street signalised intersection. The data indicates a majority of the crashes were attributed to “Right Through” RUM Descriptions, comprising approximately 62% of all recorded crashes.

Figure 8: Crash Locations[1]

TABLE 5: CRASH HISTORY

Reporting Year	Lighting	RUM Description	Location	Injury
2016	Daylight	21-Right through	Pittwater Road/Berry Avenue	Non-Casualty
	Daylight	21-Right through	Pittwater Road/Garden Road	Minor/Other Injury
2017	Daylight	21-Right through	Pittwater Road/Berry Avenue	Non-Casualty
	Daylight	21-Right through	Pittwater Road/Namona Street	Minor/Other Injury
	Daylight	21-Right through	Pittwater Road/Namona Street	Serious Injury
	Daylight	21-Right through	Pittwater Road/Namona Street	Minor/Other Injury
	Daylight	21-Right through	Pittwater Road/Namona Street	Non-Casualty
	Darkness	0-Ped nearside	Pittwater Road/Garden Road	Serious Injury
	Daylight	30-Rear end	Pittwater Road/Lake Park Road	Serious Injury
2018	Daylight	30-Rear end	Pittwater Road/Lake Park Road	Non-Casualty
2019	Daylight	37-Left turn sideswipe	Pittwater Road/Berry Avenue	Serious Injury
2020	Daylight	30-Rear end	Pittwater Road/Namona Street	Moderate Injury
	Darkness	21-Right through	Pittwater Road/Garden Road	Moderate Injury

With consideration of the table above, it is noted that there were 4 x 'right through' crashes (RUM code 21) which occurred at the intersection of Pittwater Road and Namona Street in 2017, indicating that this intersection is a 'black spot.' A rear-end (RUM code 30) incident also occurred at this intersection in 2020.

[1] *https://roadsafety.transport.nsw.gov.au/statistics/interactivecrashstats/lga_stats.html?tablga=4*

Furthermore, the crash data shows that there were 3 crashes at the intersection of Pittwater Road and Garden Road with 2 x 'right through' (RUM code 21) crashes and 1 x 'left turn sideswipe' (RUM code 37) crash.

There were also 3 accidents at the Pittwater Road / Berry Avenue, being 2 x 'right through' (RUM code 21) crashes and 1 x 'pedestrian nearside' (RUM code 0) crash.

1.7.3 Vulnerable Road Users

TABLE 6: VULNERABLE ROAD USERS

Road Name	Pedestrian	Cycling	Public Transport
Jacksons Road	Yes	Yes	Yes / Bus stops
Oak Street	Yes	Yes	No
Namona Street	Yes	Yes	Yes / Bus stops
Pittwater Road	Yes	Yes	Yes / Bus stops

1.8 Stakeholder Engagement

ADCO will liaise with relevant stakeholders regarding construction schedules and truck routes and will raise any potential conflict with stakeholder at the earliest time. Stakeholder consultation actions required by ADCO are detailed in **Table 6**.

TABLE 7: STAKEHOLDER CONSULTATION ACTIONS

Stakeholder	Action
TfNSW	ADCO to submit CTMP to stakeholder. ADCO to liaise with stakeholder to address comments and re-submit final CTMP
Northern Beaches Council	ADCO to submit CTMP to stakeholder. ADCO to liaise with stakeholder to address comments and re-submit final CTMP
NSW Police	ADCO to submit CTMP to stakeholder. ADCO to liaise with stakeholder to address comments and re-submit final CTMP
Emergency Services	ADCO to submit CTMP to stakeholder. ADCO to liaise with stakeholder to address comments and re-submit final CTMP
Transport for NSW	ADCO to submit CTMP to stakeholder. ADCO to liaise with stakeholder to address comments and re-submit final CTMP
Northern Beaches Indoor Sports Centre	ADCO to provide a copy of the CTMP to stakeholder. ADCO to liaise with stakeholder to address concerns where feasible and meet TCAWS 6.1 requirements.

2 Proposed Works and Staging

2.1 Overview of Works

The proposed construction program comprises the following phases and respective durations:

1. Site Establishment June 2023
2. Demolition: July 2023
3. Civil: July - August 2023
4. Substructure: August - September 2023
5. Structure: October - December 2023
6. Fitout: January - April 2024
7. Landscaping / External: May - July 2024

It is noted that during all stages, all vehicle entry and exit movements are to be in a forward direction only, with spoil to be loaded within the site and under the careful supervision of an authorised traffic controller. Accordingly, supervision by an authorised traffic controller would also be required for the movements of vehicles that would cross footpaths within the immediate vicinity of the School during deliveries.

2.2 Proposed Construction Hours

The construction work will vary depending on the phase of construction and associated activities. Construction works however will be undertaken during standard construction-working hours, with no deliveries allowed prior to the AM and PM school bell time as follows:

- Monday to Friday: 7.00 am to 5:00 pm.
- Saturday: 8.00 am to 1.00 pm
- Sunday and Public holidays: No planned work
- No construction deliveries between 8:00 am to 9:30 am, and between 2:30 pm to 4:00 pm on school days.

As far as reasonably practicable, a minimum of 14 days written and verbal notice will be given to neighbours to advise them of any/all works where they may be potentially affected.

It may (on occasions) be necessary to undertake night works to minimise disruption to traffic however any works undertaken outside of these times will only occur with prior approval from Council.

2.3 Construction Vehicles

Construction vehicles will generally incorporate:

- Vehicles up to the dimensions of a Truck + Dog Trailers for removal of spoil and transportation of material.
- Concrete mixer trucks up to 12m in length.

- Vehicles up to the dimension of a 19m long Articulated Vehicle for delivery of material such as steel / façade panels, and roof panels.

Any oversize vehicles using local roads to access the site would require additional Council and/or Transport for NSW approval.

2.4 Truck Routes

It is proposed that construction vehicles will access the Site via the Warriewood Valley Sportsground carpark driveway for all stages of proposed works. From there, the truck will access the Site via the Warriewood Valley Sportsground car park driveway, and then through the southern boundary of Warriewood Valley Sportsground to reach the Site. Trucks will exit the Site via the Warriewood Valley Sportsground car park driveway, turning left onto Jacksons Road and access Pittwater Road from Garden Street.

The proposed construction vehicle access is shown in **Figure 9**.

It is noted that the project team will undertake further consultation with Council regarding the proposed construction access.

The existing footpath will be decommissioned from where it meets the site amenities, and a new temporary pedestrian connection (through heavy duty pedestrian mats) will be installed to facilitate pedestrian movements. The Traffic Guidance Schemes (TGSs) for construction traffic and associated swept path assessments are provided in **Appendix B**.

A copy of the truck route maps shall be provided to all drivers prior to attending the Site.

No trucks are to be queued on local roads unless approved by Council prior. Mobile phones and two-way radios will be used to coordinate truck arrivals.

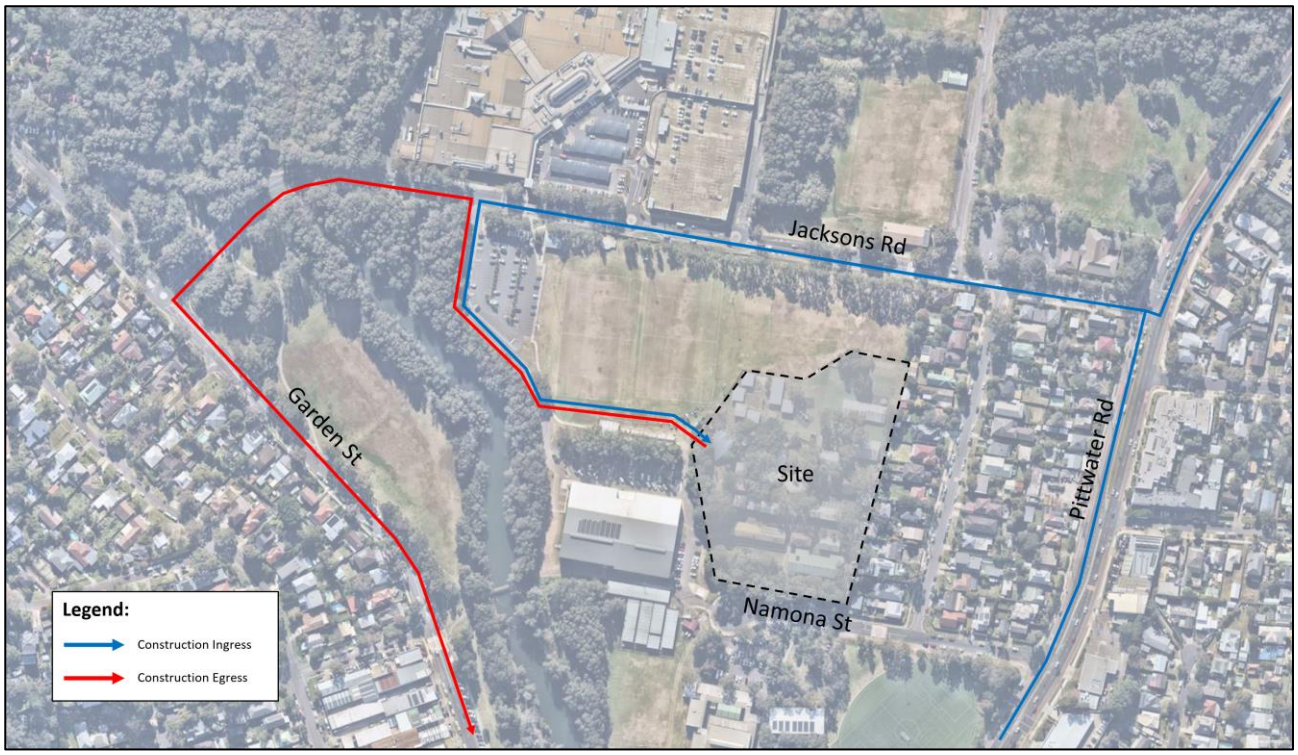


Figure 9: Construction Vehicle Haulage Routes

2.5 Works Zone

It is not expected Works Zone will be required for the construction activities. All civil and construction works will take place within the work site.

However, it is noted that the following permits would be applied for should they be relevant to the proposed construction works:

- For the implementation of any temporary traffic control measures on public road/road-related areas, ADCO will obtain a Road Occupancy Permit (ROP) from Council.
- If excavation and/or road opening work on a public road is required, ADCO will obtain a Road Opening Permit.
- Should a stand construction plant be required, a Stand Plant permit would be required.
- An application must be submitted to store building materials on the footpath or road reserve.
- Should hoarding be required, a hoarding permit is required.
- To barricade parking spaces on a long-term basis for construction purposes, a Works Zone application is required.

2.6 Cranage, Materials Handling, and Waste Material Storage

Specific areas will be available for loading/unloading, materials handling and storage, and worker sheds, etc. Mobile crane will be utilised for materials handling and is it noted that the crane and all materials (including excavated materials, construction materials and waste containers) will be stored wholly on site.

Excavated material will be stored on-site per the Erosion and Sediment Control Plan prepared by Enstruct, attached in **Appendix C.**

Storage of waste containers during construction period will also be wholly on site.

3 Traffic Management

3.1 Construction Mitigation Measures

Construction of the above development would generate a moderate increase in traffic on the surrounding road network. In this regard, the following measures should be undertaken to minimise the impacts of the construction activities of the development:

- A construction fence and Class A Hoarding will be provided along the site boundaries to provide safe pedestrian access. The hoardings will consist of a combination of timber and chain wire fencing along the remaining site boundaries, that will be maintained for the duration of the construction program.
- Traffic control would be required to manage and regulate traffic movements into and out of the Site during construction, with pedestrian priority provided during peak hour periods to maintain accessibility to public transport facilities.
- Disruption to road users would be kept to a minimum by scheduling intensive delivery activities outside of peak network hours.
- Supervised traffic control will be required where two-way flow is restricted over any length of the roadway, depending on the number of truck movements required and would be managed outside of peak hour vehicle and pedestrian activity.

3.2 Vehicle Management

In accordance with TfNSW requirements, all vehicles transporting loose materials will have the entire load covered and/or secured to prevent any large items, excess dust, or dirt particles from depositing onto the roadway during travel to and from the site. All drivers are to be familiar with the Driver Code of Conduct before attending the Site. A copy of the Code is included in **Appendix A.**

All subcontractors must be inducted by the lead contractor to ensure that the procedures are met for all vehicles entering and exiting the construction site. The lead contractors will monitor the roads leading to and from the site and take all necessary steps to rectify any road deposits caused by site vehicles.

Vehicle movements to, from and within the site shall do so in a manner, which does not create unreasonable or unnecessary noise or vibration. No tracked vehicles will be permitted or required on any paved roads. Public roads and access points will not be obstructed by any materials, vehicles, refuse skips, or the like, under any circumstances.

At no stage shall queueing occur on the public road network unless approved by Council prior. A schedule for deliveries of materials and goods will be established prior to a typical workday. The project team will be liaising with the suppliers as well as the truck drivers to ensure deliveries arrive and leave the site with adequate buffer time to prevent queuing.

3.3 Contractor Parking

It is not expected that on-site car parking spaces will be provided for contractors and staff as the School will continue to operate throughout the construction programme.

The contractor will be required to ensure contractors working on the project are aware of no on-site parking being available, and any reliance on on-street parking shall comply with parking restrictions displayed.

Given the site's proximity to high-frequency public transport services, all workers will be encouraged to use public transport to access the site and car-pooling whenever possible, to reduce the reliance on private vehicles and minimise parking demands.

A tool drop-off and storage facility will be provided within the site. This would allow tradespeople to drop off and store their tools and machinery, allowing them to use public transport to travel to/ from the site on a daily basis. Workers will also be informed of appropriate tool/ equipment drop-off and storage arrangements made within site sheds and amenities provided on-site.

Bus schedules will be provided to all workers during site induction to demonstrate alternative modes of transport available.

3.4 Public Transport Services

Construction works are generally not expected to impact existing public transport services as the construction works are expected to be largely contained on-site. The bus stop and zone along Jacksons Road and Pittwater Road will be retained throughout the construction activities.

3.5 Pedestrian and Cyclist Management

During construction, pedestrian movements will be maintained along Jacksons Road and the Namona Street frontage of the site. It is expected that the fencing/hoarding is to be located as close as possible to the property boundary, maintaining maximum footpath width around the Site to minimise the impact on pedestrian amenity.

Specifically, there will be no footpath closure along Namona Street during the school term due to high volumes of pedestrian movements and safety considerations within the vicinity of an operational School.

To ensure pedestrian safety, the construction vehicle movements will be separated from pedestrians via the implementation of Type F Concrete Safety Barrier - MASH TL5. Temporary site fencing will be provided along the south side of the truck access roadway to prevent any pedestrian movement from entering the truck access roadway.

Construction hoarding/fencing will be provided around the perimeter of the site and shall be documented in the Project's Construction Management Plan.

Traffic controller will be present at the truck access to Warriewood Valley Sportsground to manage pedestrian and vehicular traffic (especially during pick-up and drop-off periods) to ensure public safety while construction vehicles enter and exit the site. Also, traffic controls would need to be in accordance with AS1742.3 and RMS 'Traffic Control at Worksites' manual at all times. A heavy-duty temporary pedestrian mat is also provided to connecting the Warriewood Valley Sportsground to NBISC.

Should any unforeseen activities require the temporary closure of any existing pedestrian access, a TGS should be developed and implemented by ADCO to ensure a safe alternative for pedestrians traversing these routes in the vicinity of the site.

3.6 Fencing Requirements

A mix of existing perimeter fencing, and temporary construction fencing will be utilised along the entire boundary of the site and will be maintained for the duration of the construction program. The fencing is to ensure unauthorised persons are kept out of the Site. One Site access gate will be provided along at the Warriewood Valley Sportsground frontage and will be closed at all times outside of the permitted construction hours.

3.7 Authorised Traffic Controller

There is a requirement for authorised traffic controllers to be present throughout the construction stage of the project. The responsibilities include:

- Implementation of the Traffic Guidance Scheme.
- Pedestrian and cyclist management, to ensure that adverse conflicts between vehicle movements and pedestrians do not occur.
- Supervision of all vehicle movements across pedestrian footpaths at all times, and
- Supervision of all loading and unloading of construction materials during the deliveries in the construction phase of the project.

2 traffic controllers will be in place at the truck access into Warriewood Valley Sportsground to hold vehicles as required and ensure pedestrian safety.

3.8 Temporary Traffic Management Method

Traffic management shall be undertaken in accordance with the methodology outlined within the TGSs (**Appendix B**). Traffic and non-vehicle-related road users are expected to be directed around the worksite in order to physically separate the road user from any hazards within the work site.

It is noted that the TGSs place the following signage within the NBISC car park:

- Traffic Controller symbolic sign (T1-34 / TM1-34)
- Prepare to Stop (T1-18 / TM1-18)
- Workers symbolic (T1-5 / TM1-5)

Although the NBISC car park is on private property, the Transport for New South Wales Traffic Control at Work Sites Manual (TCAWS) stipulates the following for the aforementioned signs:

Section 5.4.3 Requirements for traffic controllers – Table 5-11:

'*A PTCD sign relevant to the device used, such as Boom Barrier symbolic (T1-272n) or Signals symbolic sign (T1-30), or a Traffic Controller symbolic sign (T1-34) must be used to give advance warning of the presence of traffic control.*'

6.5.9 Requirements for specific signs – Table 6-10:

'*Workers symbolic (T1-5) – Must be used where worker on foot will be visibly working adjacent to traffic.*'

'*PREPARE TO STOP (T1-18) – Must be used where traffic is required to stop at a PTCD or traffic controller.*'

It is further noted that for the signage to be effective, signage is required to be placed on each approach where vehicular traffic is present. Distances are set based on the speed limit applicable on approach to the Traffic Controller to ensure vehicular drivers in particular have sufficient advance warning and time to slow down and stop the vehicle to ensure safety of traffic controllers, as well as to protect the occupants of vehicles on approach. Based on the values set in TCAWS, and taking into consideration that there is off-street parking and road related areas within the south approach to the temporary access proposed that is located on private property.

The signs located within the NBISC car park is a strict requirement by TCAWS despite being located on private property.

3.9 Worker Induction

All workers and subcontractors engaged on-site would be required to complete a site induction. The induction should include permitted access routes to and from the construction site for all vehicles, as well as standard environmental, work, health and safety (WHS), driver protocols and emergency procedures.

Any workers required to undertake works or traffic control within the public domain would be suitably trained and covered by adequate and appropriate insurance.

3.10 Surrounding Construction Activities

A review of Council's Application Search, there will be only 1 major planned construction site within 400m of the site. This construction activities involve the demolition works and construction of a community centre with associated carparking and landscaping at 2 Jacksons Road, Warriewood.

In addition to the above, it is noted that the construction activities of the adjacent Narrabeen Sports High School are expected to have overlaps with the construction works of the proposed School.

Notwithstanding the above, ADCO will maintain regular contact with the surrounding project contractors to identify any potential overlap of major construction works and cooperate to ensure such overlaps are minimised during the lifecycle of the works.

With the above measures, it is not expected that this level of traffic movement would create any adverse impact on the surrounding road network.

3.11 Traffic Volumes

A summary of the truck movements anticipated during each stage is provided in **Table 8**.

TABLE 8: CUMULATIVE TRAFFIC

Stage	Vehicles up to 12.5m HRVs	Vehicles up to 19m AVs	Total
Site Establishment	20	2	22
Demolition	20	4	24
Civil	5	4	9
Substructure	118	14	132
Structure	180	10	190
Finishes	100	10	110
Landscaping	30	-	30
Demobilisation	30	2	32

4 Monitoring and Review

4.1 Monitoring Program

This CTMP shall be subject to ongoing review and will be updated accordingly. Regular reviews will be undertaken by the on-site coordinator. A review of the CTMP shall occur monthly. All and any reviews undertaken should be documented, however key considerations regarding the review of the CTMP shall be:

- Tracking deliveries against the volumes outlined within the report. Deliveries will be tracked against approved volumes and will keep a vehicle log - including Rego & time of entry - for the purpose of assessing the effectiveness of these monitoring programs.
- To identify any shortfalls and develop an updated action plan to address issues that may arise during construction (Parking and access issues)
- To ensure TGS's are updated (if necessary) by "Prepare a Work Zone Traffic Management Plan" cardholders to ensure they remain consistent with the set-up on-site.
- Regular checks to ensure all loads entering and leaving the site are covered.
- A Dilapidation report shall be undertaken periodically to assess the condition of the road and note whether there has been any reduction in the quality of the road as a result of construction vehicles.

The development of a program to monitor the effectiveness of this CTMP shall be established by ADCO. This process is expected to form part of the monitoring plan required to be included as part of the overarching Construction Environmental Management Plan (CEMP), of which this CTMP forms a part.

The roadway (including the footpath) must be kept in a serviceable condition for the duration of construction. At the direction of Council, undertake remedial treatments such as patching at no cost to Council.

4.2 Work Site Inspections, Recording and Reporting

Recording and reporting of the monitoring programs shall be done in accordance with Section E.3, E.4 and E.5 of the TCAWS Manual. As such, the structure, schedule and frequency of these activities have been considered and identified.

The site inspection verification checklist prior to the start of construction is provided in **Appendix D**.

To inspect, review and audit the temporary traffic management (TTM) arrangements implemented on-site, the following actions are to be undertaken by suitably qualified personnel in accordance with TCAWS 6.1 requirements during all phases of construction, being:

TABLE 9: EXAMPLE REVIEW OF ACTIVITIES

Activity	`		Frequency or Details
Shift Inspections	☐ Yes	☐ No	
Weekly Inspections	☐ Yes	☐ No	
TMP Review	☐ Yes	☐ No	
Road Safety Audit	☐ Yes	☐ No	
Other	☐ Yes	☐ No	
Comments			

Given the length of construction and that no regular works have been proposed outside of the site, monthly TTM inspections are considered to be sufficient.

4.3 Contingency Plan

A contingency plan shall be established by ADCO and is to be included in the overarching CEMP. Notwithstanding, **Table 10** outlines an indicative plan to be undertaken by the builder in the event that the monitoring program identifies the management plan is not effective in managing the construction impacts.

TABLE 10: CONTINGENCY PLAN

Risk		Condition Green	Condition Amber	Condition Red
Construction Movements	Trigger	Construction traffic volume is in accordance with permissible and programmed volume and time constraints	Construction traffic volumes exceed programmed volume but are within permissible volume constraints	Construction traffic volumes exceed permissible volume and time constraints
	Response	No response required	Review and investigate construction activities, and where appropriate, implement additional remediation measures such as: • Review CTMP and update where necessary • Provide additional training.	As with Condition Amber, plus; • If it is concluded that construction activities were directly responsible for the exceedance, submit an incident report to government agencies. • Stop all transportation into and out of the site.
	Trigger	No construction vehicle movement during peak periods	Construction vehicle movement close to peak periods	Construction vehicle movement during peak periods
	Response	No response required Continue monitoring program	Review and investigate construction activities, and where appropriate, implement additional remediation measures such as: • Provide additional training (including toolbox talks and further notification of Driver Code of Conduct)	As with Condition Amber, plus; • If it is concluded that construction activities were directly responsible for the exceedance, submit an incident report to government agencies. • Stop all transportation into and out of the site. • Review CTMP and update where necessary.
Queuing	Trigger	No queuing identified	Queuing identified within the site	Queuing identified on the public road

	Response	No response required Continue monitoring program	Review the delivery schedule prepared by the builder. If drivers are not following the correct schedule, then they should be provided with additional training and an extra copy of the Driver Code of Conduct	As with Condition Amber, plus • Review and investigate construction activities. • If it is concluded that construction activities were directly responsible for the exceedance, submit an incident report to government agencies. • The temporary halting of activities and resuming when conditions have improved. • Stop all transportation into and out of the site. • Review CTMP and update where necessary and provide additional training.
Noise	Trigger	Noise levels do not exceed imposed noise constraints	Noise levels in minor excess of imposed noise constraints	Noise levels are greatly in excess of imposed noise constraints
	Response	No response required	Undertake all feasible and reasonable mitigation and management measures to minimise noise impacts.	As with Condition Amber If noise levels cannot be kept below applicable limits, then a different construction method or equipment must be utilised.
Traffic Guidance Scheme	Trigger	No observable issues	Minor inconsistencies with TGS to onsite operations	Near miss or incident occurring regardless of/as a result of the TGS being implemented
	Response	No response required	Traffic Controller to amend TGS on site and keep a log of all changes	Stop work until an investigation has been undertaken into the incident. There are to be changes made to the TGS to ensure that the safety of all workers, students and civilians is catered for.
Dust	Trigger	No observable dust	Minor quantities of dust in the air and tracking onto the road	Large quantities of dust in the air and tracking onto the road
	Response	No response required	Review and investigate construction activities and respective control	As with Condition Amber.

			measures, where appropriate. Implement additional remedial measures, such as: • Deployment of additional water sprays • Relocation or modification of dust-generating sources • Check the condition of vibrating grids to ensure they are functioning correctly. • The temporary halting of activities and resuming when conditions have improved	• If it is concluded that construction activities were directly responsible for the exceedance, submit an incident report to government agencies. • Implement relevant responses and undertake an immediate review to avoid such occurrences in the future.

Appendix A. Driver Code of Conduct

Drivers Code of Conduct

Safe Driving Policy for Narrabeen North Public School, 6 Namona Street, North Narrabeen.

Objectives of the Drivers Code of conduct

- To minimise the impact of earthworks on the local and regional road network;
- To minimise conflict with other road users;
- To minimise road traffic noise; and
- To ensure truck drivers use specified heavy vehicle routes between the Site and the sub-regional road network.

Code of Conduct

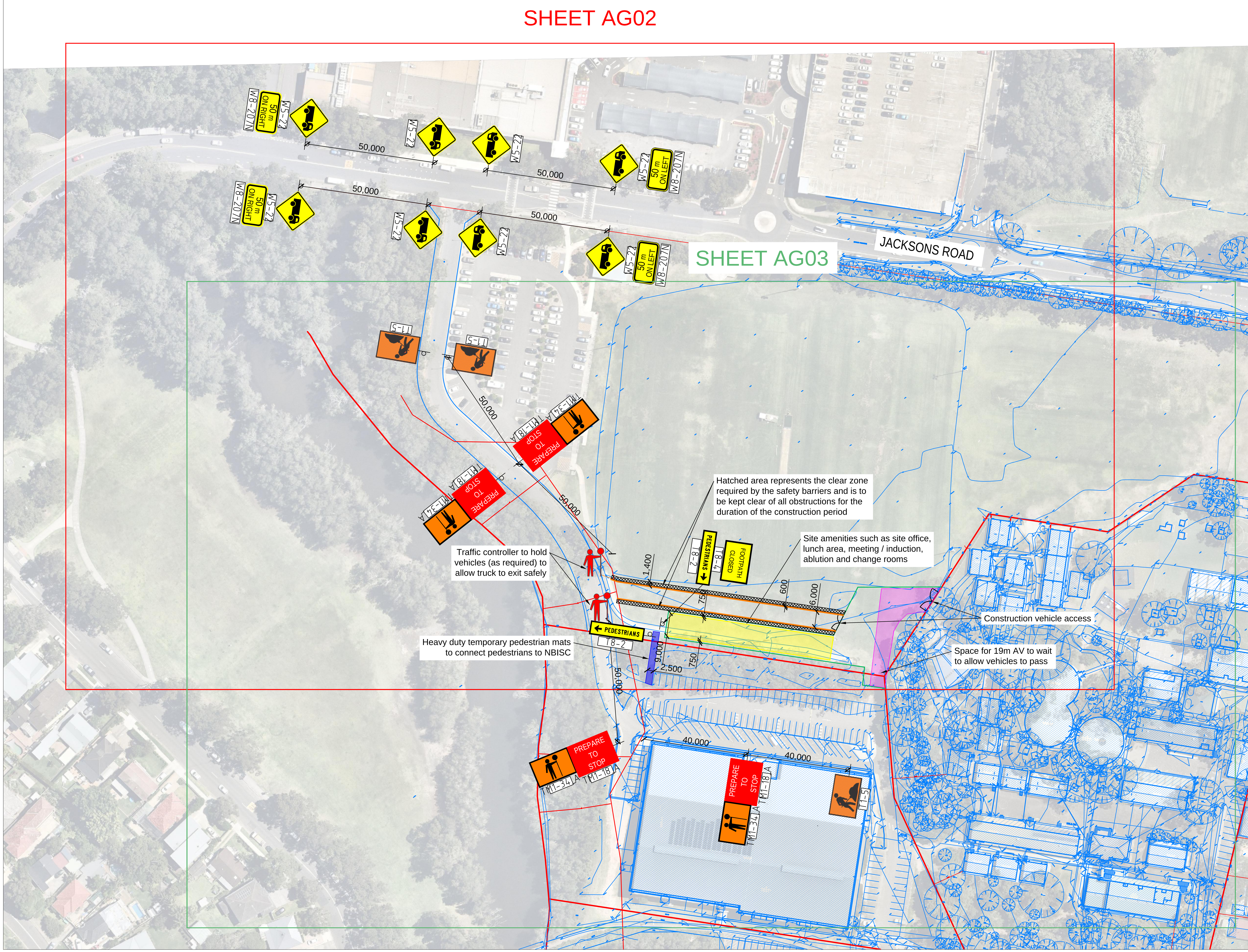
All vehicle operators accessing the site must:

- Take reasonable care for his or her own personal health and safety;
- Not adversely, by way of actions or otherwise, impact on the health and safety of other persons;
- Notify their employer if they are not fit for duty prior to commencing their shift;
- Obey all applicable road rules and laws at all times;
- In the event of an emergency vehicle behind your vehicle, pull over and allow the emergency vehicle to pass immediately;
- Contact the site manager utilizing two-way radio or similar devices on approach to the Site to be assigned an access location
- Obey the applicable driving hours in accordance with legislation and take all reasonable steps to manage their fatigue and not drive with high levels of drowsiness;
- Obey all on-site signposted speed limits and comply with directions of traffic control supervisors in relation to movements in and around temporary or fixed work areas;
- Ensure all loads are safely contained/restrained, as necessary;
- Drive over devices – located at the site's access – to vibrate off and wash off any loose material attached to heavy vehicles;
- Operate their vehicles in a safe and professional manner, with consideration for all other road users;
- Hold a current Australian State or Territory-issued driver's license;
- Notify their employer or operator immediately should the status or conditions of their driver's license change in any way;
- Comply with other applicable workplace policies, including a zero tolerance of driving while under the influence of alcohol and/or illicit drugs;
- Not use mobile phones when driving a vehicle or operating equipment. If the use of a mobile device is required, the driver shall pull over in a safe and legal location prior to the use of any mobile device;
- Advise management of any situations which you know, or think, may present a threat to workplace health and safety;
- Drive according to prevailing conditions (such as during inclement weather) and reduce speed, if necessary; and
- Have necessary identification documentation at hand and ready to present to security staff on entry and departure from the Site, as necessary, to avoid unnecessary delays to other vehicles.

Crash or incident Procedure

- Stop your vehicle as close to it as possible to the scene, making sure you are not hindering traffic. Ensure your own safety first, then help any injured people and seek assistance immediately if required.
- Ensure the following information is noted:
  - Details of the other vehicles and registration numbers;
  - Names and addresses of the other vehicle drivers;
  - Names and addresses of witnesses; and
  - Insurers details.
- Give the following information to the involved parties:
  - Name;
  - Address; and
  - Company details
- If the damaged vehicle is not occupied, provide a note with your contact details for the owner to contact the company.
- Ensure that the police are contacted should the following circumstances occur:
  - If there is a disagreement over the cause of the crash;
  - If there are injuries; and/or
  - If you damage property other than your own.
- As soon as reasonably practical, report all incident details to your manager.

Appendix B. Traffic Guidance Scheme and Swept Path Assessment



TGS GENERAL NOTES

- ALL PUBLIC ROADS WILL HAVE A SPEED LIMIT OF 50KM/H UNLESS IDENTIFIED OTHERWISE
- NOT ALL DIMENSIONS SHOWN ARE TO SCALE
- LOCATION OF SIGNS ARE TO BE CONFIRMED ON-SITE TO ENSURE APPROPRIATE VISIBILITY
- ALL SIGNS ARE TO BE MINIMUM SIZE A
- ALL SIGNS ARE TO BE CLASS 1 RETROREFLECTIVE
- ALL TRAFFIC CONTROL PLANS ARE TO BE IMPLEMENTED IN ACCORDANCE WITH TFNSW'S TRAFFIC CONTROL AT WORK SITES TECHNICAL MANUAL ISSUE 6 (RELEASED 2020) AND AUSTRALIAN STANDARDS AS1742.3:2019 MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, PART 3: TRAFFIC CONTROL DEVICES FOR WORKS ON ROADS
- THIS TRAFFIC CONTROL PLAN MUST BE SET UP BY A PERSON HOLDING AN "IMPLEMENT TRAFFIC MANAGEMENT PLAN" TICKET AND TFNSW'S TRAFFIC CONTROL AT WORK SITES CHECKLIST SHALL BE COMPLETED PRIOR TO IMPLEMENTATION

- THE ACCREDITED PERSONNEL SHALL IMPLEMENT THE APPROVED TCP BEFORE ANY PHYSICAL WORK COMMENCES AND ENSURE A COPY OF THE TCP IS KEPT ON-SITE. THE ACCREDITED PERSONNEL SHALL ALSO DRIVE THROUGH THE SITE BEFORE WORKS BEGIN TO ENSURE THAT THE TCP HAS BEEN IMPLEMENTED CORRECTLY AND THAT THE IT WILL WARN, INSTRUCT AND GUIDE ROAD USERS AS DESIGNED. ANY VARIATIONS TO THE PLAN MUST BE MARKED ON THE PLAN AND INITIALED BY THE ACCREDITED PERSONNEL
- IT IS THE RESPONSIBILITY OF THE AN ACCREDITED PERSONNEL WITH A 'PREPARE A WORK ZONE TRAFFIC MANAGEMENT PLAN' TO ENSURE THE FOLLOWING:
    * THE INTEGRITY OF ALL TRAFFIC CONTROL MEASURE THROUGH TO THE FINAL REMOVAL. THIS INCLUDES DAILY CHECKS OF ALL SIGNS AND DEVICES. THE CORRESPONDING RECORDS OF CHECKS SHALL BE KEPT ON FILE FOR AUDITING PURPOSES.
    * VEHICULAR ACCESS AND SERVICING REQUIREMENTS ARE TO BE MAINTAINED AT ALL TIMES TO ADJACENT PROPERTIES AFFECTED BY TRAFFIC CONTROL MEASURES
    * AT ALL TIMES AN UP-TO-DATE COPY OF "TRAFFIC CONTROL AT WORK SITES" SHALL BE AVAILABLE FOR REFERENCE AND IMPLEMENTATION AS REQUIRED ON-SITE

- ALL WORKERS WILL BE CONFINED TO THE DEDICATED WORKS AREA SHOWN ON THE PLAN
- IF THE WORKSITE IS LEFT UNATTENDED IT IS THE CONTRACTOR'S DUTY TO ENSURE THAT THE APPROPRIATE MEASURES ARE TAKEN TO PROVIDE A SAFE ENVIRONMENT FOR VEHICLES AND PEDESTRIANS TO RELEVANT AUSTRALIAN STANDARDS
- TRAFFIC CONTROLLER (T1-34) AND PREPARE TO STOP (T1-18) SIGNS ARE TO BE COVERED OR REMOVED WHEN TRAFFIC CONTROLLER/S ARE NOT ON SITE.
- ALL SIGNAGE IS TO BE CLEAN, CLEARLY VISIBLE AND NOT OBSCURED
- ALL WORKERS MUST ADHERE TO THE APPLICABLE SAFE WORK DISTANCE AS DESCRIBED IN AS1742.3:2019
- ALL DISTANCES BETWEEN SIGNS ARE TO BE IN ACCORDANCE WITH SECTION 2.5.2 OF AS1742.3:2019. HOWEVER, MODIFICATIONS CAN BE MADE TO SUIT SITE CONDITIONS
- IF REQUIRED, A TGS MUST BE SELECTED, DEVELOPED AND IMPLEMENTED BY A SUITABILITY QUALIFIED PERSON (PWZTMP AND ITCP QUALIFICATIONS)

Designer	Approver
Full Name: Siew Hwee Kong	Full Name: Dora Choi
Role: Principal Traffic Engineer	Role: Principal Lead
Division / Organisation: Ason Group	Division / Organisation: Ason Group
SafeWork NSW Card Number: TCT1030659	SafeWork NSW Card Number: TCT0021456
Signature:	Signature:
Date: 05/07/2023	Date: 05/07/2023

AMENDMENTS

REV	DATE	DESCRIPTION	DRW	CHK	APP
04	05.07.23	TGS for NNPS construction vehicle routes	AT	MK	DC
03	02.06.23	TGS for NNPS construction vehicle routes	AT	MK	DC
02	02.06.23	TGS for NNPS construction vehicle routes	AT	MK	DC
01	31.05.23	TGS for NNPS construction vehicle routes	AT	MK	DC

GENERAL NOTES

This drawing is provided for information purposes only and should not be used for construction.
Survey Plan prepared by CMS Surveyors Pty Ltd, received 20.01.2023.
Aerial image obtained from NearMap, dated 18.05.2022.
Default speed limit of 50km/h for built up area to applies to Jacksons Road.
Swept path assessments completed at 10 km/h and 300mm clearance.
Design vehicle: 19m AV Check Vehicle: 19m AV

DESIGNED: Alan Tan	PAPER SIZE: A1	CLIENT: ADCO Constructions Pty Ltd	DOCUMENT INFORMATION: Traffic Guidance Scheme
CHECKED BY: D. CHOI	DATE: 05.07.2023	PROJECT: AG 2008B	Construction Vehicle Access into Narrabeen North Public School
APPROVED BY: D. CHOI	SCALE: NOT TO SCALE	Narrabeen Education Precinct	DRAWING STATUS: Final

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Sydney NSW 2000
info@asongroup.com.au

FILE NAME	SHEET
AG2008B-01-v04.dwg	AG01

PLOT DATE: 5/07/2023 2:40:51 PM | CAD REFERENCE: C:\Users\Alan Tan\Ason Group\Ason Group Team Site - 2008B\Projects\Design\AG2008B-01-v04.dwg | Alan Tan |

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Designer	Approver
Full Name: Siew Hwee Kong	Full Name: Dora Choi
Role: Principal Traffic Engineer	Role: Principal Lead
Division / Organisation: Ason Group	Division / Organisation: Ason Group
SafeWork NSW Card Number: TCT1030659	SafeWork NSW Card Number: TCT0021456
Signature:	Signature:
Date: 05/07/2023	Date: 05/07/2023

AMENDMENTS

REV	DATE	DESCRIPTION	DRW	CHK	APP
04	05.07.23	TGS for NNPS construction vehicle routes	AT	MK	DC
03	02.06.23	TGS for NNPS construction vehicle routes	AT	MK	DC
02	02.06.23	TGS for NNPS construction vehicle routes - Optn 2	AT	MK	DC
01	31.05.23	TGS for NNPS construction vehicle routes - Optn 2	AT	MK	DC

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Aerial image obtained from NearMap, dated 18.05.2022.
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Design vehicle: 19m AV Check Vehicle: 19m AV

DESIGNED	PAPER SIZE
Alan Tan	A1
CHECKED BY	DATE
D. CHOI	05.07.2023
APPROVED BY	SCALE
D. CHOI	1:500

CLIENT

ADCO Constructions Pty Ltd

PROJECT

AG 2008B

Narrabeen Education Precinct

DOCUMENT INFORMATION

Traffic Guidance Scheme

Construction Vehicle Access into Narrabeen North Public School

DRAWING STATUS	FILE NAME	SHEET
Final	AG2008B-01-v04.dwg	AG02

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Suite 17.02, Level 17, 1 Castlereagh St
Sydney NSW 2000
info@asongroup.com.au

TGS GENERAL NOTES

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- NOT ALL DIMENSIONS SHOWN ARE TO SCALE
- LOCATION OF SIGNS ARE TO BE CONFIRMED ON-SITE TO ENSURE APPROPRIATE VISIBILITY
- ALL SIGNS ARE TO BE MINIMUM SIZE A
- ALL SIGNS ARE TO BE CLASS 1 RETROREFLECTIVE
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SafeWork NSW Card Number: TCT1030659	SafeWork NSW Card Number: TCT0021456
Signature:	Signature:
Date: 05/07/2023	Date: 05/07/2023

Hatched area represents the clear zone required by the safety barriers and is to be kept clear of all obstructions for the duration of the construction period

Site amenities such as site office, lunch area, meeting / induction, ablution and change rooms

Traffic controller to hold vehicles (as required) to allow truck to exit safely

Heavy duty temporary pedestrian mats to connect pedestrians to NBISC

Construction vehicle access

Space for 19m AV to wait to allow vehicles to pass

LEGEND

- SIGN AND POST
- SITE FENCING
- SITE AMENITIES
- TURNAROUND AREA
- HEAVY DUTY PEDESTRIAN MAT
- TYPE F CONCRETE BARRIER - MASH TL5
- CLEAR ZONE
- TRAFFIC CONTROLLER
- CONSTRUCTION VEHICLE GATE ACCESS

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DESIGNED: Alan Tan	PAPER SIZE: A1
CHECKED BY: D. CHOI	DATE: 05.07.2023
APPROVED BY: D. CHOI	SCALE: 1:500

CLIENT
ADCO Constructions Pty Ltd

PROJECT
AG 2008B
Narrabeen Education Precinct

DOCUMENT INFORMATION

Traffic Guidance Scheme
Construction Vehicle Access into Narrabeen North Public School

DRAWING STATUS: Final
FILE NAME: AG2008B-01-v04.dwg
SHEET: AG03

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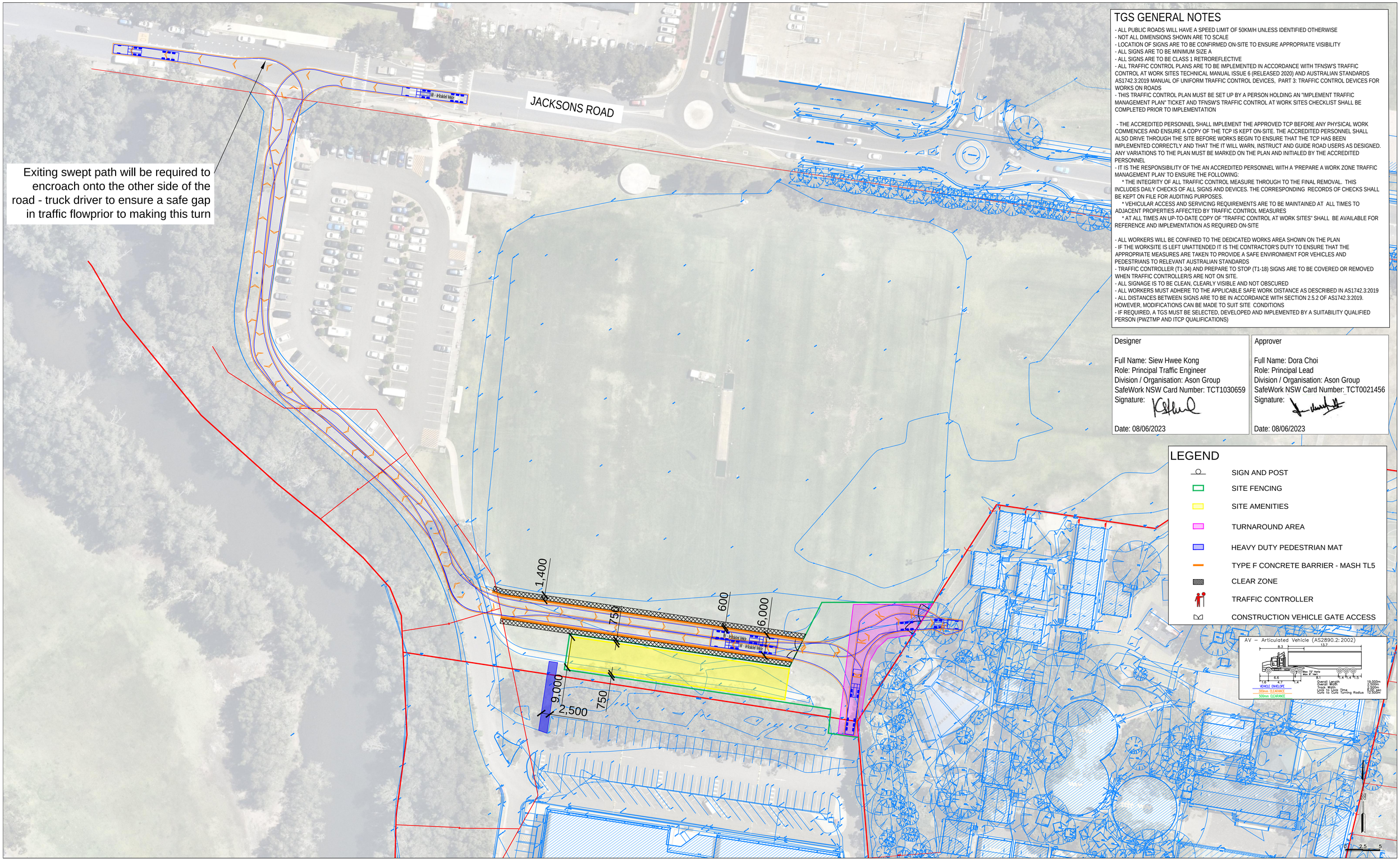
Sydney NSW 2000
info@asongroup.com.au



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Division / Organisation: Ason Group	Division / Organisation: Ason Group
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Signature:	Signature:
Date: 08/06/2023	Date: 08/06/2023

LEGEND

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- SITE AMENITIES
- TURNAROUND AREA
- HEAVY DUTY PEDESTRIAN MAT
- TYPE F CONCRETE BARRIER - MASH TL5
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CHECKED BY: D. CHOI	DATE: 05.07.2023
APPROVED BY: D. CHOI	SCALE: 1:500

CLIENT

ADCO Constructions Pty Ltd

PROJECT

AG 2008B

Narrabeen Education Precinct

DOCUMENT INFORMATION

Swept Path Assessment

Construction Vehicle Access into Narrabeen North Public School

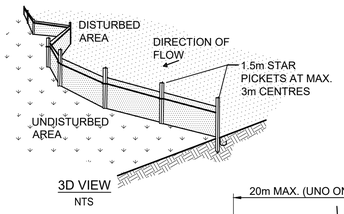
DRAWING STATUS	FILE NAME	SHEET
Final	AG2008B-01-v04.dwg	AG04

asongroup
Suite 17.02, Level 17, 1 Castlereagh St
Sydney NSW 2000
info@asongroup.com.au

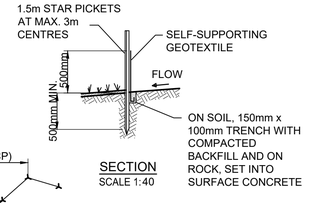
Appendix C. Erosion and Sediment Control Plan

PLAN
SCALE:NTS

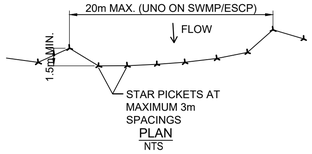
TO BE PRINTED IN FULL COLOUR



3D VIEW
NTS



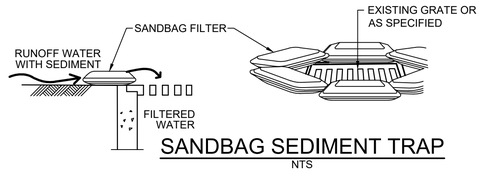
SECTION
SCALE 1:40



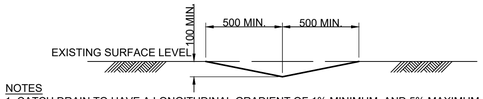
PLAN
NTS

SILTATION FENCE DETAIL

NOTES
1. CONSTRUCT SEDIMENT FENCE AS CLOSE AS POSSIBLE TO PARALLEL TO THE CONTOURS OF THE SITE.
2. DRIVE 1.5m LONG STAR PICKETS INTO GROUND, 3 METRES APART.
3. DIG A 200mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
4. BACKFILL TRENCH OVER BASE OF FABRIC.
5. FIX SELF-SUPPORTING GEOTEXTILE TO UPSLOPE SIDE OF POSTS WITH WIRE TIES OR AS RECOMMENDED BY GEOTEXTILE MANUFACTURER.
6. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.

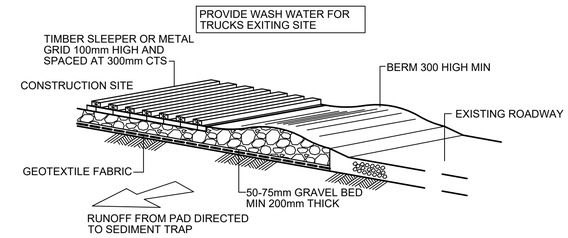


SANDBAG SEDIMENT TRAP
NTS



NOTES
1. CATCH DRAIN TO HAVE A LONGITUDINAL GRADIENT OF 1% MINIMUM, AND 5% MAXIMUM.
2. RUNOFF FROM CATCH DRAIN TO BE DIRECTED TO SUITABLE SEDIMENT FILTER OR SEDIMENT TRAP.

TYPICAL SECTION THROUGH CATCH DRAIN ON A FLAT TERRAIN
SCALE 1:20



TEMPORARY CONSTRUCTION VEHICLE EXIT
NTS

LEGEND

- Siltation Fence
- Sandbag Sediment Trap
- Overland Flow Path
- Catch Drain

EROSION AND SEDIMENT CONTROL NOTES

1. All work shall be generally carried out in accordance with
   (A) Local authority requirements,
   (B) EPA - Pollution control manual for urban stormwater,
   (C) LANDCOM NSW - Managing Urban Stormwater: Soils and Construction ("Blue Book").
2. Erosion and sediment control drawings and notes are provided for the whole of the works. Should the Contractor stage these works then the design may be required to be modified. Variation to these details may require approval by the relevant authorities.
   The erosion and sediment control plan shall be implemented and adapted to meet the varying situations as work on site progresses.
3. Maintain all erosion and sediment control devices to the satisfaction of the superintendent and the local authority.
4. When stormwater pits are constructed prevent site runoff entering the pits unless silt fences are erected around pits.
5. Minimise the area of site being disturbed at any one time.
6. Protect all stockpiles of materials from scour and erosion. Do not stockpile loose material in roadways, near drainage pits or in watercourses.
7. All soil and water control measures are to be put back in place at the end of each working day, and modified to best suit site conditions.
8. Control water from upstream of the site such that it does not enter the disturbed site.
9. All construction vehicles shall enter and exit the site via the temporary construction entry/exit.
10. All vehicles leaving the site shall be cleaned and inspected before leaving.
11. Maintain all stormwater pipes and pits clear of debris and sediment. Inspect stormwater system and clean out after each storm event.
12. Clean out all erosion and sediment control devices after each storm event.

Sequence Of Works

1. Prior to commencement of excavation the following soil management devices must be installed.
1.1. Construct silt fences below the site and across all potential runoff sites.
1.2. Construct temporary construction entry/exit and divert runoff to suitable control systems.
1.3. Construct measures to divert upstream flows into existing stormwater system.
1.4. Construct turf lined swales.
1.5. Provide sandbag sediment traps upstream of existing pits.
2. Construct geotextile filter pit surround around all proposed pits as they are constructed.
3. On completion of pavement provide sand bag kerb inlet sediment traps around pits.

WATER QUALITY TESTING REQUIREMENTS

Prior to discharge of site stormwater, groundwater and seepage water into council's stormwater system, contractors must undertake water quality tests in conjunction with a suitably qualified environment consultant outlining the following:

- Compliance with the criteria of the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2000)
- If required subject to the environmental consultants advice, provide remedial measures to improve the quality of water that is to be discharged into Councils storm water drainage system.This should include comments from a suitably qualified environmental consultant confirming the suitability of these remedial measures to manage the water discharged from the site into Councils storm water drainage system. Outlining the proposed, ongoing monitoring, contingency plans and validation program that will be in place to continually monitor the quality of water discharged from this site. This should outline the frequency of water quality testing that will be undertaken by a suitably qualified environmental consultant.

rev	date	description	drn	ch'k
C	15/06/23	ISSUE FOR 80% DRAFT DETAIL DESIGN	RGU	PAL
B	02/06/23	ISSUE FOR CROWN DESIGN VERIFICATION		
		CERTIFICATE FOR TREE REMOVAL ONLY	RGU	PAL
A	19/05/23	ISSUE FOR CROWN DESIGN VERIFICATION CERTIFICATE	RGU	PAL

rev	date	description	drn	ch'k

NSW GOVERNMENT Education School Infrastructure

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project
NARRABEEN EDUCATION PRECINCT
NAMONA STREET STREET, NORTH
NARRABEEN, NSW, 2101

drawing title
NARRABEEN NORTH PUBLIC SCHOOL EROSION AND SEDIMENT CONTROL PLAN & DETAILS SHEET 1

status: FOR APPROVAL

scale at A1	drawn	checked	approved
AS SHOWN	MZV	PAL	PAL

project no.	sheet	rev.
6683	NEP-ENSTRU-00-XX-DR-C-1001	C

Appendix D. Verification Checklist

TGS verification checklist

TGS Verification must be undertaken after selecting or designing a TGS as a confirmation of appropriateness prior to approval for use. A PWZTMP or TGS qualified person must undertake this verification.

Completed by:			
Name:	Siew Hwee Kong	**Signature:**	
Qualification	PWZTMP # TCT1030659		

TGS details:				
TMP Reference:	P2008Br01v3 CTMP_ Narrabeen North Public School, North Narrabeen	**TGS Reference:**		
Date:	5/07/2023	**Review type**	☑ Site Inspection	☐ Desktop Review
Sources used for desktop review	N/A			

Site details			
Street name:	Namona Street	**Confirmed posted speed limits:**	50km/h, 40km/h School Zone
Street name:		**Confirmed posted speed limits:**	
Street name:		**Confirmed posted speed limits:**	

List unique site-specific Hazards / Risks identified on site. **E.g., utilities, infrastructure, vegetation, schools,**
n/a

TGS details					
Have the below been addressed on the TGS for this location?					
Traffic volumes	☑ Yes	☐ No	☐ N/A	**Details**	Traffic volumes have been assessed for Namona Street, Jackson Road, Oak Street and Pittwater Road / Namona Street intersection
Predicted queue length	☑ Yes	☐ No	☐ N/A	**Details**	Warriewood Valley Sportsground access road is a local road, and there is sufficient distance available to manage any potential internal queuing without disrupting traffic flow on Jackson Road.
Shoulder widths	☐ Yes	☐ No	☑ N/A	**Details**	Warriewood Valley Sportsground access road and the other roads within the Site have no sealed road shoulder.
Sight distances	☑ Yes	☐ No	☐ N/A	**Details**	Straight road with no obstructions and good sight distance.
Existing infrastructure	☑ Yes	☐ No	☐ N/A	**Details**	Existing street trees, light poles, or other infrastructure identified in site survey.
Transport services	☑ Yes	☐ No	☐ N/A	**Details**	There is a school bus stop along Namona Street frontage of the Site and will not be affected by the construction works, due to no deliveries during peak school hours.
Pedestrian generators	☑ Yes	☐ No	☐ N/A	**Details**	Narrabeen North Public School, Narrabeen Sports High School, Warriewood Valley Sportsground, and Northern Beaches Indoor Sports Centre are all pedestrian generators around the Site. TGS prepared to ensure vehicular traffic are isolated from pedestrian pathways, with traffic controller provided to manage locations where vehicles are expected to cross pedestrian pathways.
Appropriate site access	☑ Yes	☐ No	☐ N/A	**Details**	Appropriate site access for largest vehicle designed and swept path assessment prepared.
Appropriate escape route for traffic controllers	☑ Yes	☐ No	☐ N/A	**Details**	Traffic controllers have adequate space adjacent to ensure an appropriate escape route is available.