



Stormwater Management Report

Upgrades to Milton Public School

Project Reference: 132568

April 2025

Prepared For: School Infrastructure NSW

9 Thomas Street, Milton

Meinhardt

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REV	DATE	WRITTEN BY	REVIEWED BY	APPROVED BY
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01	14.02.2025	BK	LM	BL
02	04.04.2025	BK	HM	BL
03	08.04.2025	BK	HM	BL

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2. Contact Details

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3. Background information

The NSW Department of Education (DoE) is the proponent and determining authority pursuant to Section 5.1 of the Environmental Planning and Assessment Act 1979 (EP&A Act).

The project is seeking approval for a Development Without Consent (REF) application under Part 5 of the EP&A Act.

4. Introduction

This Stormwater Management Report has been prepared to support a Review of Environmental Factors (REF) for the NSW Department of Education (DoE) for Ulladulla Public School upgrade (the activity).

The purpose of the REF is to assess the potential environmental impacts of the activity prescribed by State Environmental Planning Policy (Transport and Infrastructure) 2021 (T&I SEPP) as “development permitted without consent” on land carried out by or on behalf of a public authority under Part 5 of the Environmental Planning and Assessment Act 1979 (EP&A Act). The activity is to be undertaken pursuant to Chapter 3, Part 3.4, Section 3.37 of the T&I SEPP.

This document has been prepared in accordance with the Guidelines for Division 5.1 assessments (the Guidelines) by the Department of Planning, Housing, and Infrastructure (DPHI) as well as the Addendum Division 5.1 guidelines for schools. The purpose of this report is to examine and consider the relevant environmental factors outlined in the Guidelines and the Environmental Planning and Assessment Regulations 2021, specifically under Section 170, Section 171, and Section 171A of the EP&A Regulation.

5. Site Description

The site is located at 9 Thomas Street, Milton, NSW, 2538 (the site). The site is legally referred to as Lot 1 in Deposited Plan 861814 and is within the Shoalhaven Local Government Area (LGA) and has an approximate area of 4 hectares. An aerial photograph of the site is provided at **Figure 1**.

The site is zoned SP2 Educational Establishment and existing development comprises various buildings, sports facilities and play space associated with Milton Public School. Milton Public School currently comprises 24 permanent teaching spaces (PTS) and 12 demountable teaching spaces (DTS). The site contains two locally heritage listed buildings (Building A and Q).

The site is predominantly cleared; however, there is existing vegetation interspersed throughout the site and significant trees are present along the northern and western boundary of the site. There is a gradual slope downwards from the south-east to the north-east of the site.

The site is an irregularly shaped lot with a narrow frontage along Thomas Street. Pedestrian and vehicular access is provided from Thomas Street and from Wason Street. Milton Public School is adjoined by low density residential properties to the south, west and east and Milton Rainforest Reserve is located to the north.

Figure 1 Aerial Photograph



Source: Urbis, April 2025

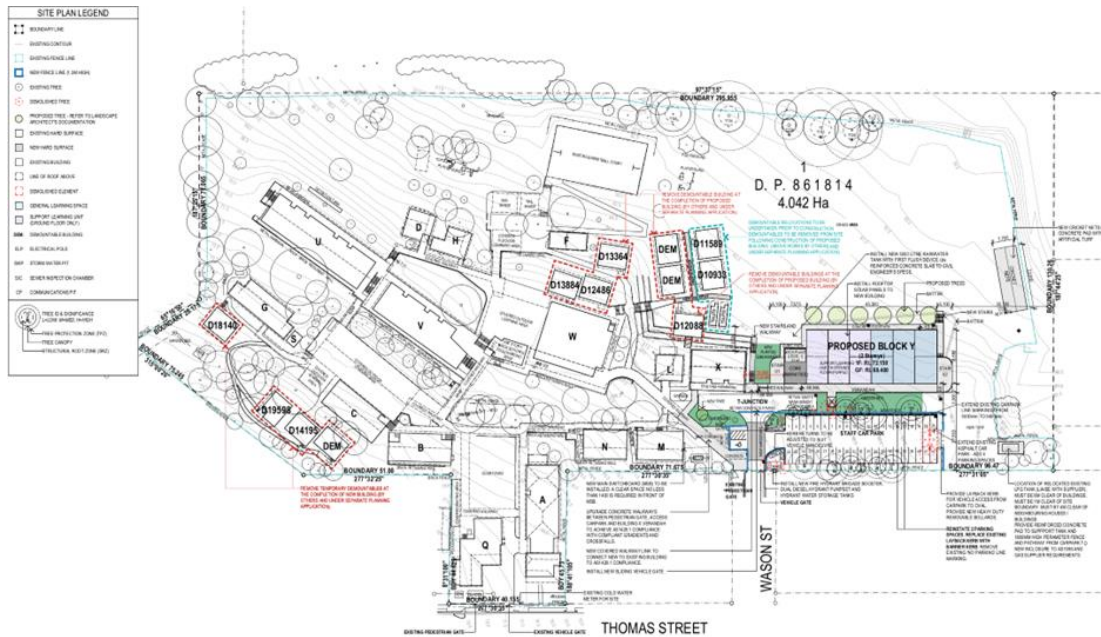
6. Proposed Activity Description

The proposed activity relates to upgrades to Milton Public School. Specifically, the proposed activity comprises the following:

- Construction of a new two-storey home base building.
- Installation of additional solar panels.
- Relocation of existing cricket nets to the eastern boundary of site.
- Construction of new stairs and covered walkways linking the new building to the existing school.
- Construction of new fencing.
- Construction of new hardstand area.
- Minor alterations to the existing staff car park.
- Tree removal.
- External landscape works.

Any works relating to demountable or the water tank will proceed via a separate planning pathway.

Figure 2 provides an extract of the proposed site plan.



Source: Fulton Trotter, 2025

7. REF Reporting Requirements

This report has been prepared in accordance with environmental mitigation measures and technical stormwater management plan to meet the Shoalhaven Council requirements for the proposed activity. The REF deliverable requirements are presented in **Table 1**.

Item	REF Requirement	Relevant Section of Report
1	Stormwater Management Plan	Section 8.1, 9.0, and 10.0 consider design solutions to mitigate sediment runoff and drainage system throughout construction and early work stage.

Table 1. Relevant REF Requirements

8. Stormwater Quantity Management

Stormwater Drainage Works

Stormwater works proposed consist of:

- A pit and pipe system within the site area to convey minor flows (in accordance with the Major/Minor stormwater strategy approach defined in Australian Rainfall and Runoff). Roof drainage system has been designed, and documented by the Hydraulic Engineer, and is directly discharged to the proposed pits at the rear of the proposed building.
- Onsite detention and water quality measures will not be required under the Shoalhaven Development Control Plan 2014.
- Overland flow paths are provided to cater for upstream catchments to bypass the development site, and to convey major storm flows along the proposed swale at the frontage of the proposed building towards Narrawallee Creek to the Northeast.

The proposed stormwater adjustments are shown in **Figure 3**.

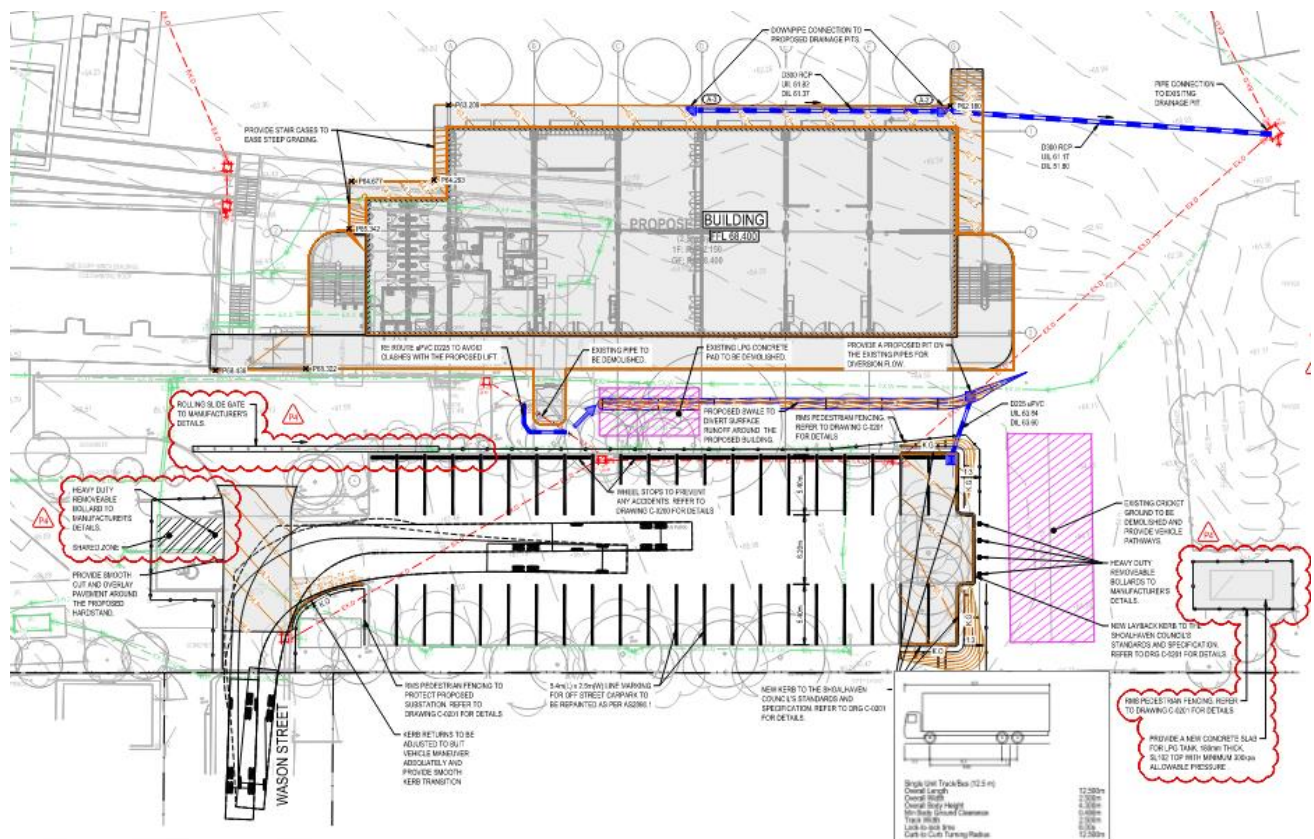


Figure 3. Stormwater System for Proposed Development.

On Site Detention

Council requires the provision of an on-site detention system to ensure that new developments do not increase peak stormwater flows in any downstream area during major storms up to and including 100-year ARI events.

The Shoalhaven Council “Shoalhaven Development Control Plan 2014” in section 5.1.4 sets out the exceptional cases for onsite detention requirements to the proposed development and no OSD tanks to be required. The proposed building site and bus bay zone are not required with onsite detention as specified below:

- The additional is less than 10% of the existing development footprint.
- The overall site impervious areas are less than 50% of the site.

The design criterion for below ground pipe drainage has been adopted from section 5.1.4 of the Development Control Plan and are listed as follows:

- | | |
|---|--------------|
| • Minor Internal Roof and Surface Drainage system | 20-year ARI |
| • Major stormwater event | 100-year ARI |

Catchment Plan

The proposed catchment plan for the site is presented in **Figure 4**. The proposed site’s catchment is comprised of roof drainage. Flows coming from the roof will be conveyed through downpipes which will all discharge into the proposed pits.

The total catchment area across the proposed site is approximately 0.1624 hectares comprised of roof, concrete, asphalt pavement and footpath zone. Most of the total site area is proposed to drain into the pits. This is comprised of roof, footpath, concrete, and asphalt pavement areas. Overland flow from the southwest corner zone is conveyed along proposed kerb lines and captured through the proposed pits and pipes. Surface runoff at the existing carpark and extended garden bed zone in front of the proposed building allows bypass flow and diversion via the proposed swale at the proposed site to mitigate the water damage and water flow during major storm events.

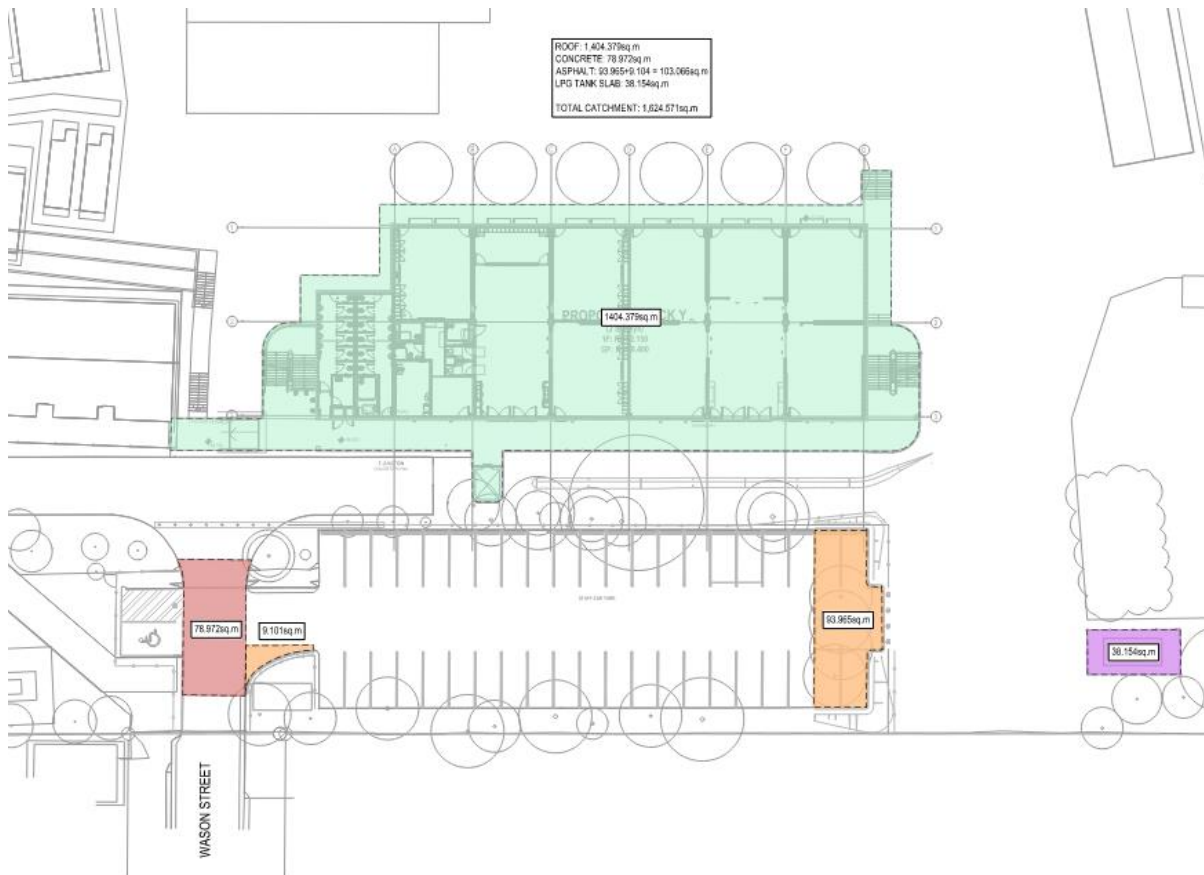


Figure 4. Site Catchment Plan (indicative plan)

9. Stormwater Quality Strategy

In order to meet Shoalhaven Council's requirements for stormwater management, the water quality strategy will need to include treatment of the stormwater prior to discharge to the nominated point of connection, reducing water borne pollutants as per all relevant guidelines.

As the additional development is less than 10% of the existing development footprint at the proposed site, there are no significant environmental impacts and pollutant issues to be anticipated in comparison to pre-developed conditions hence, we do not consider water quality measures.

10. Sediment and erosion management

The site is to be provided with sediment fence, inlet trap and filters.

Although the construction of a sediment basin may be considered unnecessary during the early works stage for sediment runoff in the minor storm event (6 months ARI and 1yr ARI), the provision of a kerb inlet sediment trap and fences provides an area of sediment storage that will reduce the likelihood of sediment runoff. Sediment runoff during minor storm events would be temporarily stored at the frontage

of the proposed building at the grassed area with kerb inlet traps, straw bale, and sediment fences throughout the proposed site (See **Figure 5** below). The existing kerb, straw bale and proposed site around the sediment fences would need to be regularly maintained and cleaned after each rainfall event.

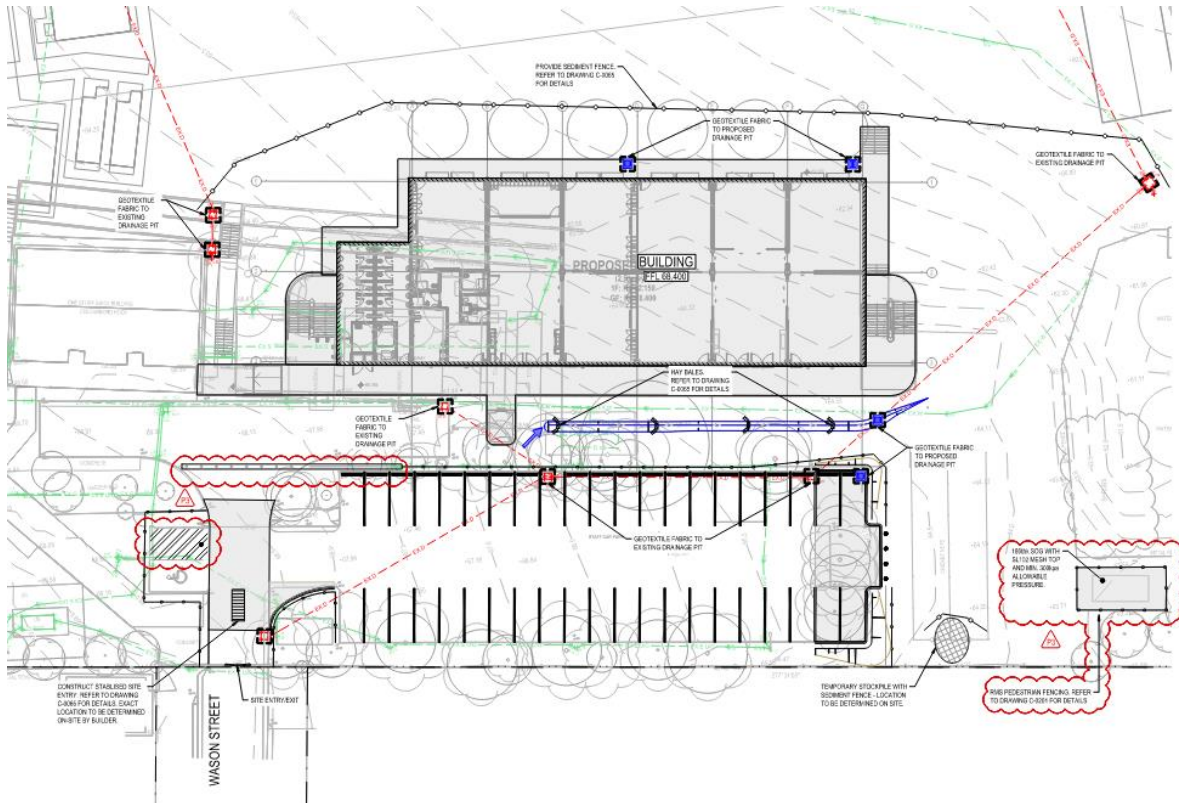
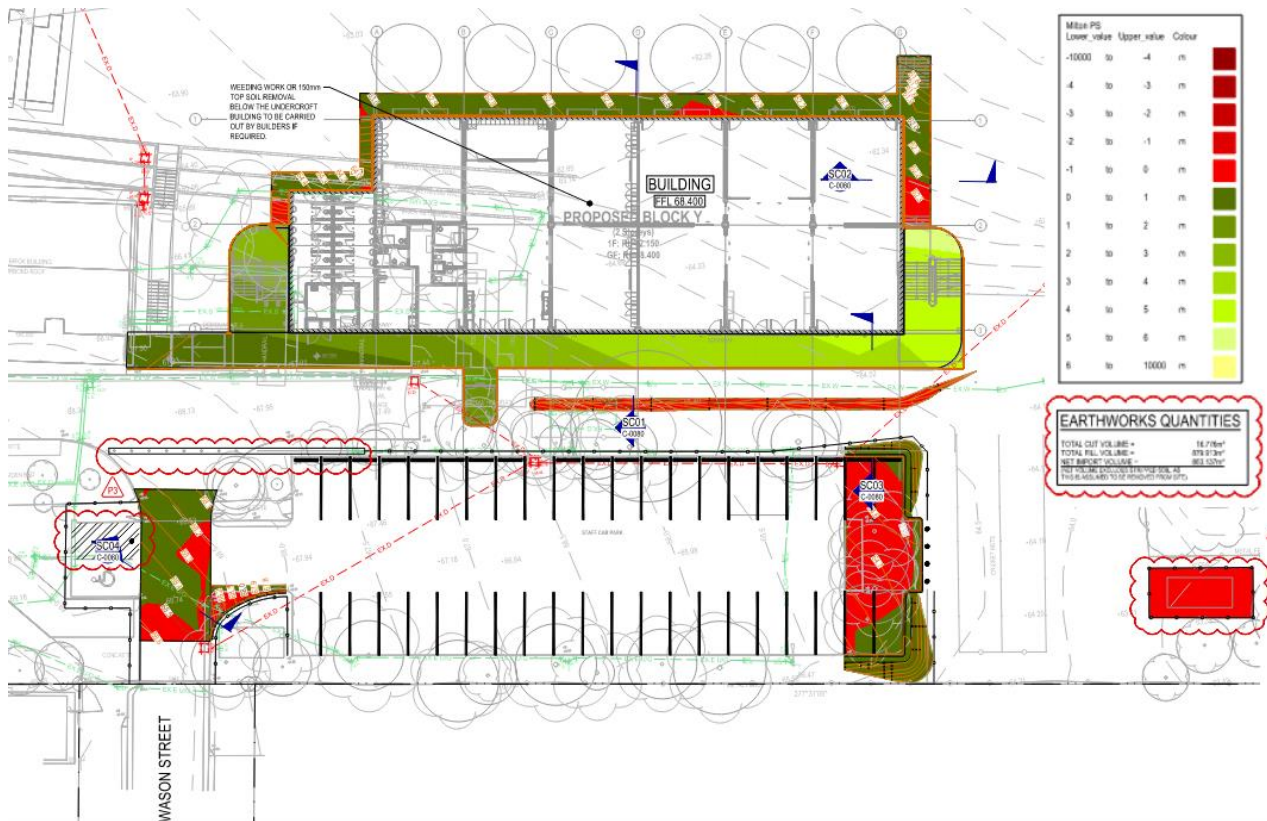


Figure 5. Sediment and erosion control

11. Bulk Earthworks

During bulk earthworks, 150mm topsoil removal, platform for the proposed ramp & footpath, stormwater pipes and pits are expected except the area below the suspended slab. The total volume of bulk is relatively reasonable with approximately 863. 1cu.m fill required which are based on 16. 8cu.m cut and 879. 9cu.m fill respectively (See **Figure 6** below).



12. Construction Management

During the construction phase, the maintenance and monitoring of erosion and sediment control measures remain the responsibility of the project Contractor. Details of the inspection frequency expected will need to be noted within the Operational Environmental Management Plan (EMP). If during the construction phase of the development, it is deemed necessary, monitoring of the erosion and sediment control measures will be undertaken by a qualified consultant to determine the impact of construction activities on the subject site only. In addition, an approved inspector from Ocean Protect will have an inspection for maintenance purposes during approved work hours and respite period.

- The Out of School Hours Care (OSHC) proposed hours operational hours could be determined closer to date but can consider typical timings 6.30AM-9.00AM (Before school) and 3.00-6.30PM (After school)
- The exact number of students attending the OSHC could not be confirmed at this stage, however, assume 15% students at the school capacity (150 students)
- The OSHC is Typically run by external/private providers.

13. Mitigation Measures

A summary of mitigation measures is outlined below and detailed in the relevant report sections.

Project Stage	Mitigation Measures	Reason	Relevant
<i>Design(D)</i>		<i>For Mitigation Measure</i>	<i>Section of</i>
<i>Construction(C)</i>			<i>Report</i>
<i>Operation (O)</i>			
D / O	<i>Stormwater Quality Treatment – Treatment measures are not expected. to significantly impact the surrounding receivers and are predicted to comply with design criteria.</i>	<i>To improve water quality to meet the council requirements.</i>	<i>Section 9</i>
C / O	<i>Sediment and erosion control – Sediment and erosion measures are. not anticipated to significantly impact the site by construction and early mitigation of sediment basin, straw bales, inlet traps & filters.</i>	<i>To mitigate sediment and erosion during construction and early work stage.</i>	<i>Section 10</i>
C	<i>All works will be scheduled in accordance with the following: Works to be scheduled taking into account approved works hours, any restrictions relevant to specific tolls / activities and respite periods etc.</i>	<i>To minimize the impact of construction activities on the subject site.</i>	<i>Section 11</i>

14. Evaluation of Environmental Impacts

This report has been prepared to assess the potential environmental impacts that could arise from the development of The Milton Public School 9 Thomas Street, Milton NSW 2538. Water quality and sediment & erosion control are adequately adopted throughout the site during early works and construction phase by water quality tools, sediment fences, and proper mitigation measures and inspection and maintenance work will be scheduled during off peak hours and approved work hours.

Based on the identification of potential issues, and an assessment of the nature and extent of the impacts of the proposed development, it is determined that:

- The extent and nature of potential impacts are low and will not have significant adverse effects on the locality, community and environment.
- Potential impacts can be appropriately mitigated or managed to ensure that there is minimal effect on the locality, community and environment.

15. References

AS/NZ 3500.3:2003 Stormwater Drainage
AS/NZ 1428.1:2009 Design for access and mobility
Architectural plans by Fulton Tratter.
Shoalhaven Council _ DCP_2014_Chapter_G2 p
Watercom – *DRAINS Version 2023.07*

Appendix A – Survey



A1

UTILITY ASSETS LEGEND	
ELECTRICITY	
COMMS TELEPHONE LINE	— T — T —
COMMS OPTICAL FIBRE	— OU — OU —
COMMS HOUSE CONNECTION	— TH — TH —
WATER MAIN	
RECYCLED WATER MAIN	— WR — WR —
WATER HOUSE CONNECTION	— WH — WH —
LOW PRESSURE GAS	
GAS HOUSE CONNECTION	— GH — GH —
SEWER MAIN	
STORMWATER PIPE	— SW — SW — SW —
OVERHEAD ELECTRICITY	— OH — OH — OH —

UTILITY MAPPING NOTES:

- Subsurface utility investigation was undertaken by Atrea Pty Ltd, the plan is to be read in conjunction with the subsurface utility investigation report.
- Positions are based on Astrea Class A & B point surface indicator(s) located during field survey. Confirmation of the exact position should be made to the relevant authorities prior to any excavation work. Other services may still exist.
- This plan shows a representation of the dwg model. This model should be viewed in a cadd environment to interpret this information.
- This utility plan is valid for 28 days starting from the date of the issue, as underground utility works are often updated.
- Electricity cables are not necessarily enclosed in conduits and are not necessarily covered with markers, tape or other indicators of their presence.
- All services have been electronically traced in the field and are shown here for diagrammatic purposes only. Depths shown are approximate only and should be verified prior to works.
- This plan includes information describing the location of subterranean features, which were purported to exist at the time of the survey. This information was compiled from a combination of field techniques and available data from cooperating utility authorities. Whilst all care has been taken in the preparation of this plan of survey, we cannot guarantee that the plan is without flaw of any kind.

SUBSURFACE UTILITY INFORMATION (SUI) AS4588 LOCATION CLASS

Labelling utility information by a classification code allows the user of this information to understand clearly how the information was collected and then place an appropriate amount of reliance on it. Project risks related to underground utilities can then be managed.

GENERAL SURVEY LEGEND:

DP - DRAINAGE PIT
FQJM - DRAINAGE JUNCTION MANHOLE
PMH - SEWER MANHOLE
PWHV - HYDRANT
PWSV - STOP VALVE
PQL - GULLY PIT
PQPM - GAS MARKER
PQTP - GAS TEST POINT
PPPL - POWER POLE
PTSP - TELSTRA PIT
TK - TOP OF KERB LP - UP OF GLITTER
PO - PRAM RAMP DW - DRIVEWAY
FP - FOOTPATH TW - TOP OF WALL

CLASS A: Information is the highest possible level of accuracy and is obtained by exposing the underground utility using a on-destructive excavation (pot holing) technique. The vertical information for this locating method is to the top or shallowest part of the located service. The 3D location is recorded by survey as an X, Y, Z coordinate.

CLASS B: Information is collected by designating the horizontal and vertical location of underground utilities by using electromagnetic pipe and cable locators, sondes or flexi-trace, ground penetrating radar and acoustic pulse equipment. This is the most common form of utility locating and although an X, Y and Z axis can be established it is not always entirely accurate due to differing electromagnetic fields, soil conditions and multiple banks of cables affecting the locating signal.

CLASS C: Information is collected by correlating the survey of visible utility surface features such as marker plates or water hydrants and acquired Dial-Before-You-Dig plans to "draw" a string which shows the approximate position of services. This method does not usually show multiple banks of cables and does not always show three dimensional information. Electronically traced locate marks with poor scratchy signals are represented as QL-C.

CLASS D: Information is the most basic level of utility locations using only information based on existing Dial-Before-You-Dig plans and by measuring boundary offsets etc. This method of utility locations should always be treated as an indication of the presence of a service only and should not be used for design. GPR scans are also represented as QL-D as the GPR image cannot be confirmed to its origin point. Depths on GPR scan must be treated as indicative only.



GENERAL SURVEY NOTES:	
• THIS TITLEBLOCK IS AN INTEGRAL PART OF THIS DWG AND SHOULD NOT BE REMOVED	
• COORDINATE SYSTEM MGA 2020	
• LEVEL DATUM IS AHD	
• IT IS THE RESPONSIBILITY OF ANY USER OF THIS DATA TO ENSURE ANY OTHER DATA BEING INTEGRATED IS ON THE SAME COORDINATE SYSTEM	
• REFER TO THE FACE OF THE PLAN FOR TITLE NOTATIONS	
• BOUNDARIES HAVE BEEN DEFINED BY SURVEY	
• CONTOURS ARE INDICATIVE OF LAND FORM. SPOT LEVELS TAKE PRECEDENCE.	

SCALE 1:600	
0 10 20 30 40 50 60	
ORIGIN	SS14194
ORIENTATION	E 266758.984 N 6088996.644
AHD ORIGIN	SS14194-AA153069
	SS14194 RL80.856

CLIENT : SCHOOLS INFRASTRUCTURE
PLAN IN RELATION TO : MILTON PUBLIC SCHOOL
SHOWING : TOPOGRAPHICAL SURVEY AND UTILITY MAPPING IN ACCORDANCE WITH AS4588.1-2019
PURPOSE: ENGINEERING DESIGN
SHEET 01 OF 05

DIGITAL SURVEY SOLUTIONS UTILITY MAPPING	
SUITE 6.01, TRINITY II, TRINITY BUSINESS PARK 39 DELHI ROAD, NORTH RYDE 2113 SCOTT DEVERIDGE 0425 285 270 www.astrea.com.au	
JOB REFERENCE : A4065 DWG No. A4065-TOP&UTIL SURVEYOR: BD DATE OF SURVEY: OCT 2023 UTILITY LOCATOR: LB	
REGISTERED LAND SURVEYOR UNDER THE SURVEYING AND SPATIAL INFORMATION ACT, 2002	
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REV	AMENDMENTS
	DATE



TITLE NOTATIONS:
1. RESERVATIONS AND CONDITIONS IN THE CROWN GRANT
2. EASEMENT TO DRAIN WATER 1 WIDE APPURTENANT TO THE SUBJECT LAND (VIDE DP 1007477)
3. RESTRICTION ON THE USE OF LAND (A) (VIDE DP 1120833)
4. EASEMENT FOR PADMOUNT SUBSTATION 2.75 WIDE AFFECTING THE SUBJECT LAND (DP 1120833) (B)
5. EASEMENT FOR UNDERGROUND CABLES 1 WIDE AFFECTING THE SUBJECT LAND (DP 1120833) (C)

- UTILITY ASSETS LEGEND**
- ELECTRICITY**
- EU - EU
- COMMS TELEPHONE LINE**
- T - T
- COMMS OPTICAL FIBRE**
- OU - OU
- COMMS HOUSE CONNECTION**
- TH - TH
- WATER MAIN**
- WR - WR
- RECYCLED WATER MAIN**
- WR - WR
- WATER HOUSE CONNECTION**
- WH - WH
- LOW PRESSURE GAS**
- GH - GH
- GAS HOUSE CONNECTION**
- GH - GH
- SEWER MAIN**
- S - S
- STORMWATER PIPE**
- SW - SW
- OVERHEAD ELECTRICITY**
- OH - OH

- UTILITY MAPPING NOTES:**
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 - Positions are based on Astrae Class A & B point surface indicator(s) located during field survey. Confirmation of the exact position should be made to the relevant authorities prior to any excavation work. Other services may still exist.
 - This plan shows a representation of the dwg model. This model should be viewed in a cadd environment to interpret this information.
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 - This plan includes information describing the location of subterranean features, which were purported to exist at the time of the survey. This information was compiled from a combination of field techniques and available data from cooperating utility authorities. Whilst all care has been taken in the preparation of this plan of survey, we cannot guarantee that the plan is without flaw of any kind.
- SUBSURFACE UTILITY INFORMATION (SUI) AS488 LOCATION CLASS**
- Labelling utility information by a classification code allows the user of this information to understand clearly how the information was collected and then place an appropriate amount of reliance on it. Project risks related to underground utilities can then be managed.

CLASS A: Information is the highest possible level of accuracy and is obtained by exposing the underground utility using a on-destructive excavation (pot holing) technique. The vertical information for this locating method is to the top or shallowest part of the located service. The 3D location is recorded by survey as an X, Y, Z coordinate.

CLASS B: Information is collected by designating the horizontal and vertical location of underground utilities by using electromagnetic pipe and cable locators, sondes or flexi-trace, ground penetrating radar and acoustic pulse equipment. This is the most common form of utility locating and although an X, Y and Z axis can be established it is not always entirely accurate due to differing electromagnetic fields, soil conditions and multiple banks of cables affecting the locating signal.

CLASS C: Information is collected by correlating the survey of visible utility surface features such as marker plates or water hydrants and acquired Dial-Before-You-Dig plans to "draw" a string which shows the approximate position of services. This method does not usually show multiple banks of cables and does not always show three dimensional information. Electronically traced locate marks with poor scratchy signals are represented as QL-C.

CLASS D: Information is the most basic level of utility locations using only information based on existing Dial-Before-You-Dig plans and by measuring boundary offsets etc. This method of utility locations should always be treated as an indication of the presence of a service only and should not be used for design. GPR scans are also represented as QL-D as the GPR image cannot be confirmed to its origin point. Depths on GPR scan must be treated as indicative only.

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- FJUM - DRAINAGE JUNCTION MANHOLE
- PRMH - SEWER MANHOLE
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- PWVS - STOP VALVE
- PQUL - GULLY PIT
- PGPM - GAS MARKER
- POTP - GAS TEST POINT
- PPPL - POWER POLE
- PTSP - TELSTRA PIT
- TK - TOP OF KERB
- LP - UP OF GLITTER
- PO - PRAM RAMP
- DW - DRIVEWAY
- FP - FOOTPATH
- TW - TOP OF WALL

SCALE 1:200

GDA 2020

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GENERAL SURVEY NOTES:

- THIS TITLER/LOCK IS AN INTEGRAL PART OF THIS DWG AND SHOULD NOT BE REMOVED
- COORDINATE SYSTEM MGA 2020
- LEVEL DATUM IS AHD
- IT IS THE RESPONSIBILITY OF ANY USER OF THIS DATA TO ENSURE ANY OTHER DATA BEING INTEGRATED IS ON THE SAME COORDINATE SYSTEM
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GDA 2020

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39 DELHI ROAD, NORTH RYDE 2113
SCOTT DEVERIDGE 0425 285 270
www.astrea.com.au

Astrea

JOB REFERENCE : A4065
DWG No. A4065-TOPO&UTIL

DATE OF SURVEY: OCT 2023

UTILITY LOCATOR: LB

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REV **AMENDMENTS** **DATE**

SCOTT DEVERIDGE
REGISTERED LAND SURVEYOR
UNDER THE SURVEYING AND SPATIAL INFORMATION ACT, 2002

I/D 7453



A1

UTILITY ASSETS LEGEND	
ELECTRICITY	
COMMS TELEPHONE LINE	— T — T —
COMMS OPTICAL FIBRE	— OU — OU —
COMMS HOUSE CONNECTION	— TH — TH —
WATER MAIN	
RECYCLED WATER MAIN	— WR — WR —
WATER HOUSE CONNECTION	— WH — WH —
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SEWER MAIN	
STORMWATER PIPE	— SW — SW — SW —
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FJ - FLOW JUNCTION
FJMH - FLOW JUNCTION MANHOLE
PW-HY - HYDRANT
PW-SV - STOP VALVE
PQUL - GULLY PIT
PPM - GAS MARKER
PPPT - GAS TEST POINT
PPPL - POWER POLE
PTSP - TELSTRA PIT
TK - TOP OF KERB
LP - LIP OF GUTTER
PO - PRAM RAMP
DW - DRIVEWAY
FP - FOOTPATH
TW - TOP OF WALL

GENERAL SURVEY NOTES:

- THIS TITLER LOCK IS AN INTEGRAL PART OF THIS DWG AND SHOULD NOT BE MOVED
- COORDINATE SYSTEM MGA 2020
- LEVEL DATUM IS AHD
- IT IS THE RESPONSIBILITY OF ANY USER OF THIS DATA TO ENSURE ANY OTHER DATA BEING INTEGRATED IS ON THE SAME COORDINATE SYSTEM
- REFER TO THE FACE OF THE PLAN FOR TITLE NOTATIONS
- BOUNDARIES HAVE BEEN DEFINED BY SURVEY
- CONTOURS ARE INDICATIVE OF LAND FORM. SPOT LEVELS TAKE PRECEDENCE.

SCALE 1:200

GDA 2020

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GENERAL SURVEY NOTES:	
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SCALE 1:200	
ORIGIN	SS14194
ORIENTATION	E 266758 984 N 6088996.644
AHD ORIGIN	SS14194-AA153069
AHD ORIGIN	SS14194 RL80.856

CLIENT : SCHOOLS INFRASTRUCTURE	PLAN IN RELATION TO : MILTON PUBLIC SCHOOL
SHOWING : TOPOGRAPHICAL SURVEY AND UTILITY MAPPING IN ACCORDANCE WITH AS4588.1-2019	PURPOSE: ENGINEERING DESIGN
SHEET 03 OF 05	

DIGITAL SURVEY SOLUTIONS
UTILITY MAPPING
SUITE 6.01, TRINITI II, TRINITI BUSINESS PARK
39 DELHI ROAD, NORTH RYDE 2113
SCOTT DEVERIDGE 0425 285 270
www.astrea.com.au

JOB REFERENCE : A4065
DWG No. A4065-TOPO&UTIL
SURVEYOR: BD
DATE OF SURVEY: OCT 2023
UTILITY LOCATOR: LB

SCOTT DEVERIDGE
REGISTERED LAND SURVEYOR
UNDER THE SURVEYING AND SPATIAL INFORMATION ACT, 2002

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Astrea

REV	AMENDMENTS	DATE



TITLE NOTATIONS:
1. RESERVATIONS AND CONDITIONS IN THE CROWN GRANT
2. EASEMENT TO DRAIN WATER 1 WIDE APPURTENANT TO THE SUBJECT LAND (VIDE DP 1007477)
3. RESTRICTION ON THE USE OF LAND (A) (VIDE DP 1120833)
4. EASEMENT FOR PADMOUNT SUBSTATION 2.75 WIDE AFFECTING THE SUBJECT LAND (DP 1120833) (B)
5. EASEMENT FOR UNDERGROUND CABLES 1 WIDE AFFECTING THE SUBJECT LAND (DP 1120833) (C)

UTILITY ASSETS LEGEND	
ELECTRICITY	
COMMS TELEPHONE LINE	— T — T —
COMMS OPTICAL FIBRE	— OU — OU —
COMMS HOUSE CONNECTION	— TH — TH —
WATER MAIN	
RECYCLED WATER MAIN	— WR — WR —
WATER HOUSE CONNECTION	— WH — WH —
LOW PRESSURE GAS	
GAS HOUSE CONNECTION	— GH — GH —
SEWER MAIN	— S — S —
STORMWATER PIPE	— SW — SW — SW —
OVERHEAD ELECTRICITY	— CH — CH — CH —

UTILITY MAPPING NOTES:
1. Subsurface utility investigation was undertaken by Atrea Pty Ltd, the plan is to be read in conjunction with the subsurface utility investigation report.
2. Positions are based on Astrea Class A & B point surface indicator(s) located during field survey. Confirmation of the exact position should be made to the relevant authorities prior to any excavation work. Other services may still exist.
3. This plan shows a representation of the dwg model. This model should be viewed in a cadd environment to interpret this information.
4. This utility plan is valid for 28 days starting from the date of the issue, as underground utility works are often updated.
5. Electricity cables are not necessarily enclosed in conduits and are not necessarily covered with markers, tape or other indicators of their presence.
6. All services have been electronically traced in the field and are shown here for diagrammatic purposes only. Depths shown are approximate only and should be verified prior to works.
7. This plan includes information describing the location of subterranean features, which were purported to exist at the time of the survey. This information was compiled from a combination of field techniques and available data from cooperating utility authorities. Whilst all care has been taken in the preparation of this plan of survey, we cannot guarantee that the plan is without flaw of any kind.
SUBSURFACE UTILITY INFORMATION (SUI) AS4588 LOCATION CLASS
Labelling utility information by a classification code allows the user of this information to understand clearly how the information was collected and then place an appropriate amount of reliance on it. Project risks related to underground utilities can then be managed.

CLASS A: Information is the highest possible level of accuracy and is obtained by exposing the underground utility using a on-destructive excavation (pot holing) technique. The vertical information for this locating method is to the top or shallowest part of the located service. The 3D location is recorded by survey as an X, Y, Z coordinate.
CLASS B: Information is collected by designating the horizontal and vertical location of underground utilities by using electromagnetic pipe and cable locators, sondes or flexi-trace, ground penetrating radar and acoustic pulse equipment. This is the most common form of utility locating and although an X, Y and Z axis can be established it is not always entirely accurate due to differing electromagnetic fields, soil conditions and multiple banks of cables affecting the locating signal.
CLASS C: Information is collected by correlating the survey of visible utility surface features such as marker plates or water hydrants and acquired Dial-Before-You-Dig plans to "draw" a string which shows the approximate position of services. This method does not usually show multiple banks of cables and does not always show three dimensional information. Electronically traced locate marks with poor scratchy signals are represented as QL-C.
CLASS D: Information is the most basic level of utility locations using only information based on existing Dial-Before-You-Dig plans and by measuring boundary offsets etc. This method of utility locations should always be treated as an indication of the presence of a service only and should not be used for design. GPR scans are also represented as QL-D as the GPR image cannot be confirmed to its origin point. Depths on GPR scan must be treated as indicative only.

GENERAL SURVEY LEGEND:
DP - DRAINAGE PIT
FJUM - DRAINAGE JUNCTION MANHOLE
PSMH - SEWER MANHOLE
PWHV - HYDRANT
PWSV - STOP VALVE
PQUL - GULLY PIT
PQPM - GAS MARKER
PQTP - GAS TEST POINT
PPPL - POWER POLE
PTSP - TELSTRA PIT
TK - TOP OF KERB LP - LIP OF GUTTER
PO - PRAM RAMP DW - DRIVEWAY
FP - FOOTPATH TW - TOP OF WALL

SCALE 1:200

0 5 10 15 20

ORIGIN SS14194
E 266758 984 N 6088996.644
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DWG No. A4065-TOPO&UTIL		
SURVEYOR: BD		SCOTT DEVERIDGE
DATE OF SURVEY: OCT 2023		REGISTERED LAND SURVEYOR
UTILITY LOCATOR: LB		UNDER THE SURVEYING AND SPATIAL INFORMATION ACT, 2002
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REV	AMENDMENTS	DATE



A1

UTILITY ASSETS LEGEND	
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COMMS OPTICAL FIBRE	— OU — OU —
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ORIENTATION	SS14194-AA153069
AHD ORIGIN	SS14194 RL80 856

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