Stormwater Management Plan

Upgrade to Cammeray Public School

Revision D

Project Reference: 132562

March 2025

Prepared For:

Department of Education (DoE)

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REV	ISSUE/AMENDMENT	WRITTEN BY	REVIEWED BY	DATE
A	REF Issue	AN/AM/YC	YC	16.01.2025
B	Review Updates	YC	YC	18.02.2025
C	Updates due to Arborist	YC	YC	25.02.2025
D	Updated REF Preamble received 04/03/2025	YC	YC	05.03.2025

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1 Introduction

1.1 Proponent

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

1.2 Landowner

The Minister for Education and Early Learning is the Landowner.

This Stormwater Management Plan has been prepared to support a Review of Environmental Factors (REF) for the Department of Education (DoE) for the upgrade of the Cammeray Public School (CPS) (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 and in consideration of the stakeholder and community participation plan.

The proposed activity is for upgrade to the existing CPS at 68 Palmer Street, Cammeray NSW 2062 (the site).

The purpose of this report is to provide information on how the new proposed activity will affect stormwater run-off and to demonstrate the measures that have been taken to minimise the impact on the surrounding buildings. This scope does not include rectifying the existing stormwater system or overland flow paths.

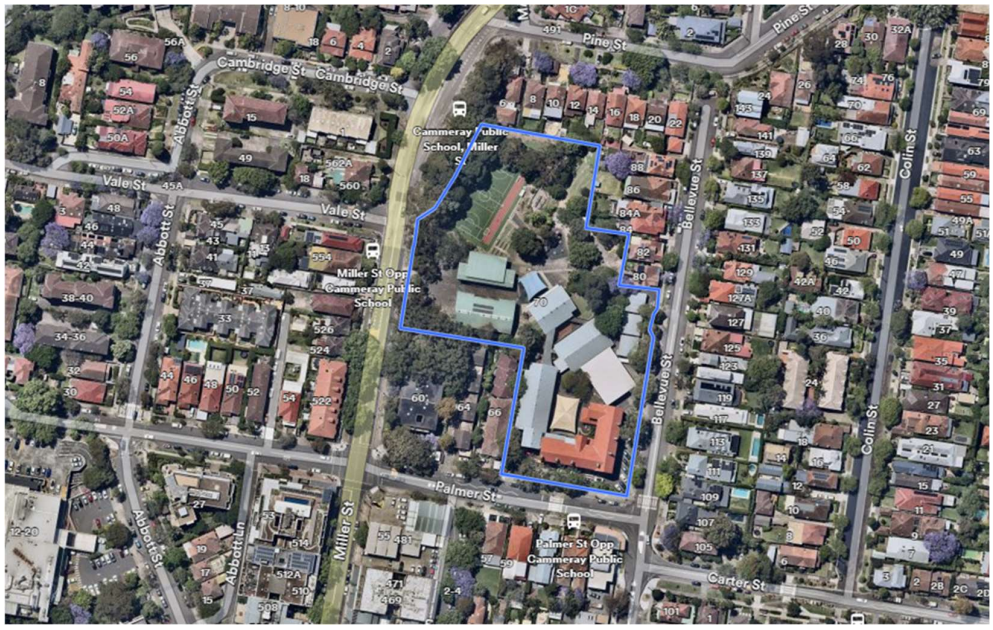


Figure 1: Aerial image of the site, outlined in blue (Source: NearMap, taken 30 October 2024)

2 Site Description

2.1 Existing Site Description

CPS is located at 68 Palmer Street, Cammeray on the northern side of Palmer Road, bound by Palmer Street to the south, Bellevue Street to the east and Miller Street to the west. The site has an area of 1.36 ha and comprises 11 allotments, legally described as:

- Lot 11 DP 837836
- Lot 1 DP 316130
- Lot 1 DP 316706
- Lot 1 DP 123406
- Lot 2 DP 174370
- Lot 1 DP 174370
- Lot 4 Sec 35 DP 758790
- Lot 5 Sec 35 DP 758790
- Lot 66 DP 1049613
- Lot 3 DP 571310
- Lot 4 DP 571310

The site currently comprises an existing co-education primary (K-6) public school with 6 permanent buildings, 3 demountable structures, covered walkways linked at multiple levels, play areas, on-grade parking, sports court, covered outdoor learning area (COLA) and vegetation/green spaces with mature trees.

The existing school buildings are clustered towards the southern portion of the site and comprise both single and 2 storey buildings. The northern portion of the site contains the sports court, vegetable garden and play equipment. The north-western portion of the site is heavily vegetated with trees of high landscape significance that are protected with fencing.

The site is identified as a locally listed heritage item (I0019) under Schedule 5 Environmental Heritage pursuant to the North Sydney Local Environmental Plan 2013 (NSLEP). The school is also identified in the Plateau Heritage Conservation Area (HCA) (Part 2 Schedule 5 of the NSLEP). The school is listed on the Department of Education (DoE) Section 170 Heritage Conservation Register as 'Cammeray Public School'. The site is approximately 115m from a State heritage item (I0004) being the electricity substation at 143 Bellevue Street and in close proximity to locally heritage listed items.

2.2 Proposed Activity Description

The proposed activity involves upgrades to the existing CPS, including the following:

- Construction of 4 new permanent teaching spaces in a two-storey building incorporating 2 general learning spaces and 2 practical activity areas
- New egress lift and stairs for access to all building levels
- External covered walkways connecting the new building to the existing school network
- Landscaping and external works including compensatory planting
- Upgrades to site infrastructure and services to support the new buildings
- Removal of 3 temporary (demountable) classrooms from the eastern side of the school
- 50 bicycle parking spaces

The intent of the activity is to provide 4 permanent teaching spaces (PTS) plus 2 practical activity areas (PAA) across a two-storey addition, adjoining Building E. This will result in CPS retaining the capacity

of a 'large' school (553-1,000 students) under EFSG (SINSW Education Facilities Standards and Guidelines).

2.3 Existing Flooding Conditions

North Sydney Council's Floodplain Risk Management Study and Plan indicates that the immediately surrounding areas are subject to flooding, it, however, indicates that the subject school site is 'flood free'. This was also confirmed by a recent Flood impact study by Orion dated 18/02/2025. This comments in this report does not take into consideration the Tree Protection Zone as advised by the Arborist.

3 Proposed Development Activity

The proposed activity involves upgrades to the existing CPS, and the Civil engineering works related to this upgrade will be discussed below.

Figure 2 below shows the scope of works for the proposed activity.

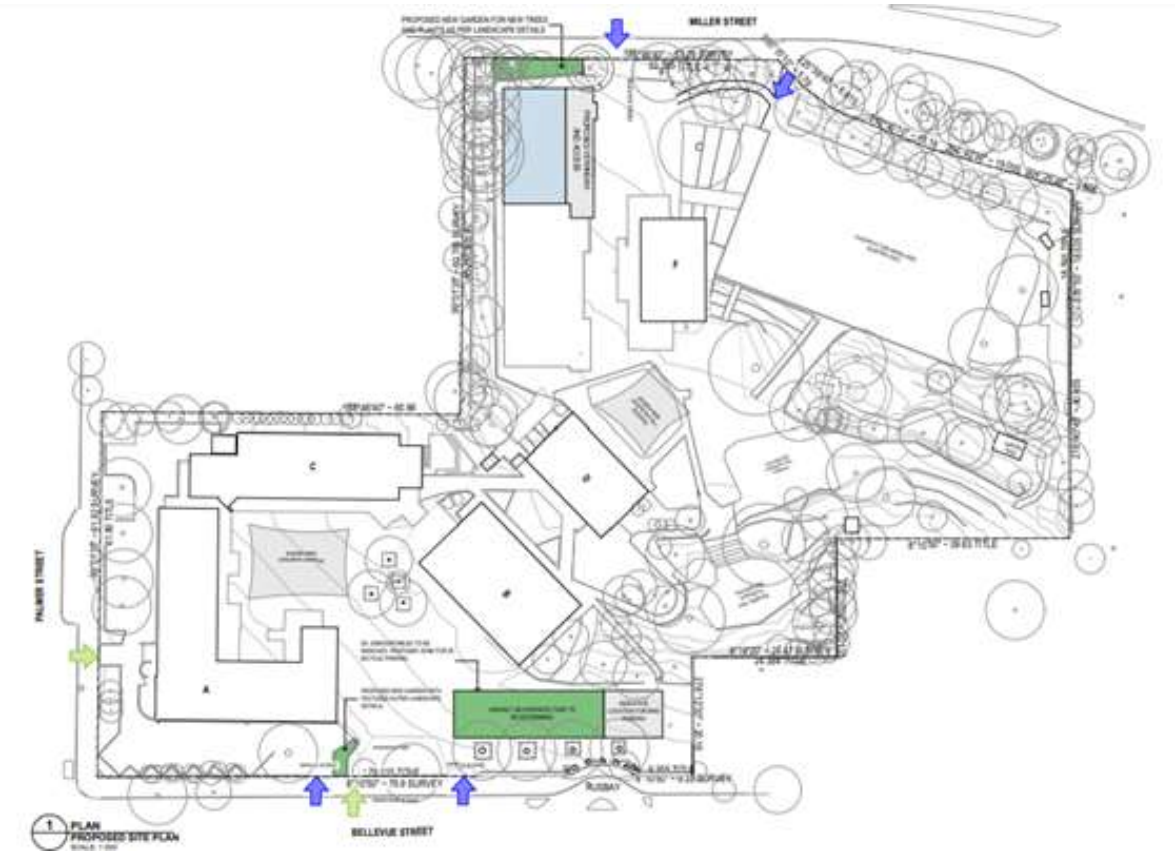


Figure 2: Proposed Scope of Works (Source: Fulton Trotter Architects, Proposed Site Plan_Rev 6)

3.1 Earthworks

The earthwork quantities associated with the proposed development activity are provided in the figures below:

- Cut – 17 m^3
- Fill – 9 m^3

The majority of the earthworks involve cut and will require export of approximately 8 m^3 of cut material.

3.2 Legal Point of Discharge (LPoD)

The Legal Point of Discharge is to an internal stormwater pit near the proposed activity.

Refer to Appendix A for the Stormwater Layout plan for the proposed development activity.

3.3 Stormwater Drainage Strategy

In support of the proposed development activity, additional stormwater drainage or hydraulic pipes will be provided to convey generated stormwater run-off from the roof, into the existing stormwater drainage network. Roof water run-off is the main reason for adding additional stormwater pits and pipes.

Meinhardt's preliminary recommendation is that no detention storage or quality treatment is required due to the existing site condition is 100% impervious asphalt surface being replaced with 100% impervious roof structured building.

The new roof is drained via rainwater downpipes that connects into a new stormwater pit and pipe system that drains into an existing stormwater pit as indicated on the Stormwater Layout Plan as included in Appendix A of this report.

It is to be noted that pits and pipes have been removed on the southern side of the new building at the request of the client due to the impact of the Tree Protection Zone and possible loss of significant trees should any excavation proceed in this area. This area will remain untouched with respect to civil services and the existing overland flow path will remain to drain as per the existing drainage strategy (confined between the existing retaining wall and existing/new suspended building wall).

It should be noted that all existing stormwater structures and outlets are to be maintained regularly to ensure that the existing building as well as the new building is not affected by the overland flow that drains on the south side of these buildings.

Great care is to be taken by the contractor when working near existing retaining walls when installing new proposed stormwater pits and pipes to the west of the new building. These works have been documented in the SID Risk Register. Please refer to Appendix A for the Stormwater Site works plan.

3.3.1 Stormwater Quantity Management / Detention

No detention is proposed as the existing site condition is 100 % impervious asphalt surface being replaced with building with a 100% impervious roof structure.

3.3.2 Stormwater Quality Management Strategy

No quality management is proposed as the existing site condition is 100% impervious asphalt surface being replaced with building with a 100% impervious roof structure.

3.4 Construction Phase

Pollutants typically generated during construction phase are described in the table below.

Pollutant	Sources
Litter (Gross Pollutants)	Paper, construction packaging, food packaging, cement bags.
Sediment	Unprotected exposed soils and stockpiles during earthworks and building.
Hydrocarbons	Fuel and oil spills, leaks from construction equipment.
Toxic materials	Cement slurry, asphalt prime, solvents, cleaning agents, wash waters.
pH altering substances	Acid sulphate soils, cement slurry and wash waters.

Table 1- Pollutants typically generated during the construction phase

4 Erosion and Sediment Control

Management of stormwater run-off during construction is necessary to avoid pollution of downstream waterways from sediment and gross pollutant loading.

Please refer to Appendix B for the initial Erosion and Sediment Control Plan. This plan will be used as a live document as construction progresses on site by the contractor.

Impacts of inadequate erosion and sediment control downstream from the site include:

- traffic safety problems;
- blocked drains;
- local flooding problems;
- aesthetic pollution of drainage paths; and
- damage to local ecosystems.

Best practice erosion and sediment controls must be installed to minimise the discharge of sediment laden run-off during construction. Erosion and sediment control plans shall be developed during detailed design phase and must be continually maintained and amended as required to minimise environmental harm.

Erosion and sediment control plans are based on three sets of control measures:

- drainage control;
- erosion control; and
- sediment control.

These control measures must be maintained in an effective operational condition. Sediment disposal from site is to occur to the satisfaction of council. Defects in erosion and sediment control devices, such as sediment fences, are to be inspected and documented. Upon Inspection, the Contractor is to determine whether the device should be replaced or repaired. Documentation is to include how the damage was caused and what measures can be implemented to reduce the possibility of repeat occurrences. Any damage to either permanent or temporary water quality control structures or devices is to be immediately rectified at the contractor's expense.

Other measures include, but is not limited to the following:

- Temporary access to site with shaker pad
- An indicative stockpile area with sediment fence around it during construction.
- Geotextile inlet pit filters or sandbags to be placed around existing stormwater pits.

The design of these measures is to be in accordance with the Landcom "Blue Book".

The effectiveness of the erosion and sediment control devices can be monitored by visual audits. All ESC measures are to be inspected:

- at least daily (when work is occurring on site) or weekly (when work is not occurring on site);
- within 24 hours of expected rain; and
- within 18 hours of a rainfall event (i.e. an event of sufficient intensity and duration to mobilise sediment on site).

Drainage paths are to be inspected to ensure the sediment fences are not being bypassed as a result of soil erosion.

Sediment laden run-off shall be prevented from entering neighbouring properties. This shall be achieved by landscaping disturbed areas immediately after and prior to a rainfall event.

5 Maintenance and Monitoring Requirements

Periodic maintenance and monitoring of stormwater devices proposed in this report is crucial to ensure effective operation and design life.

Inspect field inlet grates, pits and underground pipes for blockage or damage at least 6 monthly or after significant rainfall event. The gross pollutant filter baskets within inlet pits and bioretention basin shall be inspected and maintained preferably by the manufacturer to avoid damage to units and to ensure adequate cleaning and record keeping. For the first 12 months routine inspections of treatment devices shall be carried out monthly with routine clean out at alternate months. Results of the initial 12 months maintenance program shall be used to determine future maintenance intervals. Refer to manufactures maintenance and monitoring methodology for specific details.

Maintenance of ESC measures must occur in accordance with Table 2 where applicable.

ESC Measure	Maintenance Trigger	Timeframe for Completion of Maintenance
Sediment basins (where applicable)	When settled sediment exceeds the volume of the sediment storage zone	Within 7 days of the inspection.
Other ESC measures	The capacity of ESC measures falls below 75%.	By the end of the day.

Table 2 - ESC Maintenance Requirements

Sediment accumulation on ESC devices is to be removed and disposed of to the satisfaction of Council.

6 Mitigation Measures

Mitigation measures are required for a Review of Environmental Factors (REF) and are actions or measures to avoid, minimise, rectify (by repairing, rehabilitating or restoring) and/or reduce or eliminate over time (by preservation and maintenance) the adverse environmental impacts of a Division 5.1 Activity under the EP&A Act.

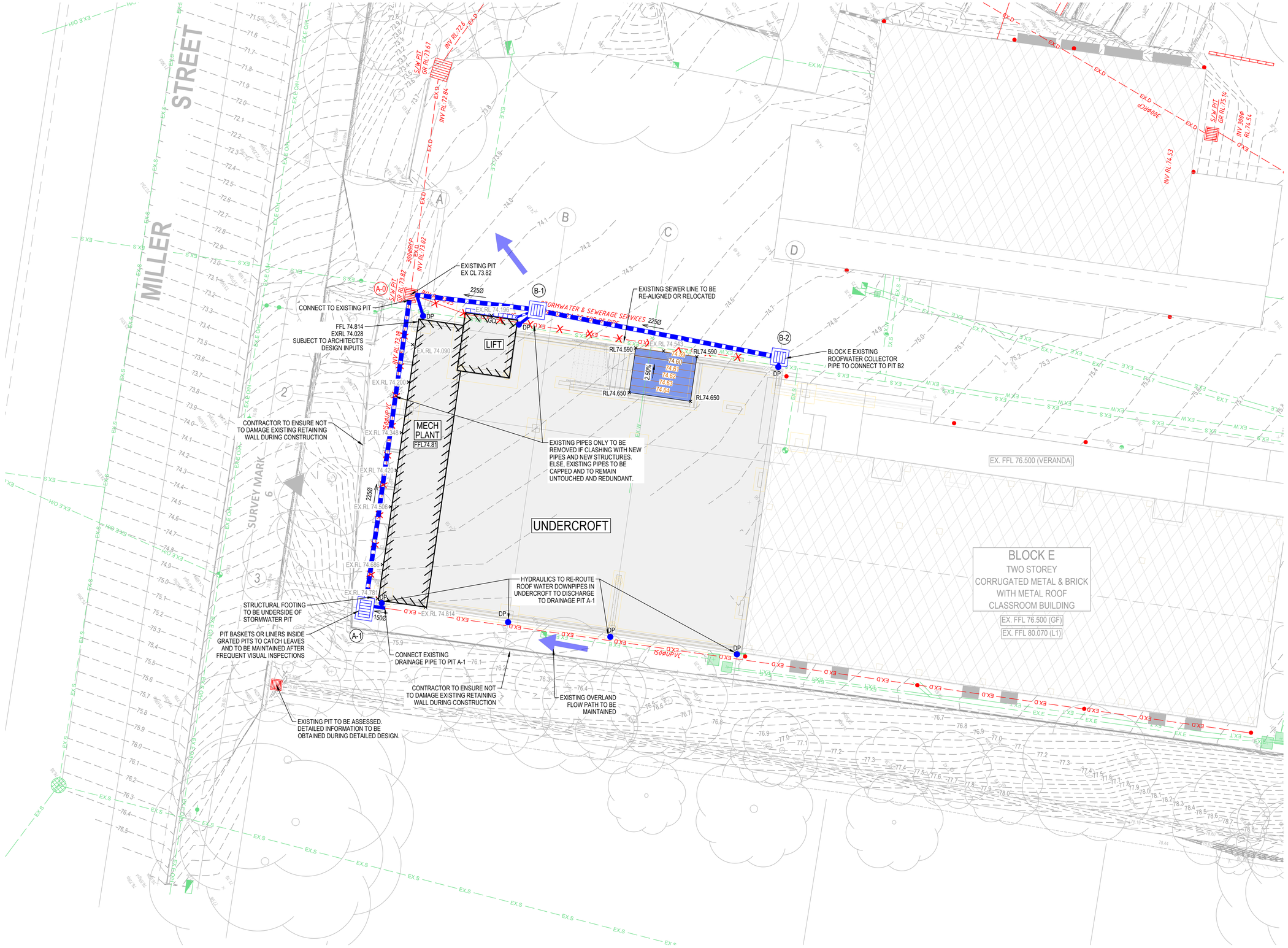
The following mitigation measures discussed throughout this report are summarised as follows:

Mitigation Number/Name	Aspect/Section	Mitigation Measure	Reason for Mitigation Measure
Stormwater Quality Management	Section 3.5	Stormwater runoffs generated by the proposed development activity will be collected through the proposed drainage system and connect into the existing stormwater pit as indicated on the Stormwater Layout Plan	The proposed development activity did not generate an increased in pollutants, so it is not required to reduce pollutants, hence no treatment.
Stormwater Quantity Management	Section 3.4	The proposed development activity flow rate is not required to be mitigated due to replacing 100% impervious asphalt with 100% impervious roof.	No OSD is required due to replacing 100% impervious asphalt with 100% impervious roof structure.
Erosion and Sediment Control	Section 4	Construction pollutants will be mitigated by installing erosion and sediment control devices such as hay bales, sediment fences and geotextile pit filters in the site.	It is necessary to manage stormwater runoff during construction to avoid pollution of downstream waterways from sediment and gross pollutant loading.
Overland Flow Management	Appendix A (Civil Siteworks) Stormwater Surface Flows	Stormwater runoff from the roof is collected via a pit and pipe stormwater drainage system.	The proposed development activity requires design and diversion of surface flows to keep water away from the building.
Existing Overland Flow Management	Section 3.3	The school needs to maintain the existing stormwater structures and outlets to prevent any impact on the existing building and the new building.	During the initial site visit, it was noted that several blocked outlets prevented overland flow from discharging out of the site and impacting the undercroft area of the existing building as mold was visible.

Appendix A:

Civil Siteworks Plan, and

Erosion and Sediment Control Plan



LEGEND

ITEM	DESCRIPTION
156.6	EXISTING SURFACE CONTOURS
156.6	PROPOSED SURFACE CONTOURS
+156.60	EXISTING SURFACE SPOT LEVELS
+156.600	PROPOSED SURFACE SPOT LEVELS
	TITLE BOUNDARY
RW	PROPOSED RETAINING WALL
EX.D	EXISTING STORMWATER DRAIN
225Ø	PROPOSED STORMWATER DRAIN AND FLOW DIRECTION
	SYPHONIC CONNECTION (REFER HYDRAULIC ENGINEERS DRG'S)
AG	PROPOSED 100Ø UPVC AGRICULTURAL DRAIN CLASS 400
EX1	EXISTING STORMWATER PIT
EX2	EXISTING STORMWATER PIT TO BE MODIFIED
1	PROPOSED STORMWATER PIT
GI	100Ø GRATED INLET (UNLESS NOTED OTHERWISE)
DP	DOWNPIPE
IO	INSPECTION OPENING
GD	GRATED TRENCH DRAIN
	OVERLAND FLOW ARROW
	LIGHT DUTY CONCRETE PAVEMENT-PEDESTRIAN
>	PROPOSED CUTOFF SWALE
	STRUCTURAL FOOTING LAYOUT.
EX.S	EXISTING SEWER
EX.G	EXISTING GAS
EX.W	EXISTING WATER
EX.W(R)	EXISTING RECYCLED WATER
EX.E	EXISTING ELECTRICITY
EX.E O/H	EXISTING OVERHEAD ELECTRICITY
EX.E L/V	EXISTING LOW VOLTAGE ELECTRICITY
EX.E H/V	EXISTING HIGH VOLTAGE ELECTRICITY
EX.T	EXISTING TELECOM CABLE
EX.FO	EXISTING FIBRE OPTIC CABLE
EX.NBN	EXISTING NBN COMMS CABLE
X X	EXISTING FEATURES TO BE REMOVED IF CLASHING WITH NEW PIPES AND NEW STRUCTURES. ELSE, EXISTING PIPES TO BE CAPPED AND TO REMAIN UNTOUCHED AND REDUNDANT.
	STRUCTURAL FOOTINGS. REFER TO STRUCTURAL DRAWINGS FOR DETAILS

THESE PLANS ARE BASED UPON THE EXISTING CONDITIONS SURVEY PREPARED BY SDG PTY LTD, REFERENCE No 9009 REV A DATED 21 MAY 2024.

THESE DESIGN PLANS SHALL BE READ IN CONJUNCTION WITH GEOTECHNICAL REPORT No. A201023.0772.00_A_v1f DATED 14 FEBRUARY 2024 PREPARED BY ADE CONSULTING GROUP. THE PROVISIONS AND RECOMMENDATIONS CONTAINED WITHIN THE REPORT ARE TO BE STRICTLY COMPLIED WITH. ALL COMPACTION REQUIREMENT RESULTS SHALL BE CARRIED OUT IN ACCORDANCE WITH GEOTECHNICAL REPORT RECOMMENDATIONS.

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THE LOCATION AND EXTENT OF PROPOSED SERVICES IS INDICATIVE ONLY AND ARE NOT TO BE USED FOR CONSTRUCTION. REFER TO AUTHORISED DOCUMENTATION BY RELEVANT AUTHORITY FOR CONSTRUCTION DETAILS

WARNING
BEWARE OF UNDERGROUND SERVICES

THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

REV	DESCRIPTION	BY	DES	CHKD	DATE
P1	80% SCHEMATIC DESIGN ISSUE	M.D	M.D	Y.C	06.12.24
P2	95% SCHEMATIC DESIGN ISSUE	M.D	M.D	Y.C	18.12.24
P3	100% SCHEMATIC DESIGN ISSUE	M.D	M.D	Y.C	14.01.25
P4	CHANGE DUE TO EXISTING ELECTRICAL AND COMMS PITS	M.D	M.D	Y.C	19.02.25
P5	CHANGE DUE TO EXISTING ELECTRICAL AND COMMS PITS	M.D	M.D	Y.C	25.02.25

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SCALE 1:100 AT ORIGINAL SIZE (A1)

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CLIENT: NSW GOVERNMENT School Infrastructure NSW

TITLE: CIVIL SITEWORKS PLAN

PROJECT: CAMMERAY PUBLIC SCHOOL
68 PALMER STREET, CAMMERAY NSW 2062

STATUS: SCHEMATIC DESIGN
NOT TO BE USED FOR CONSTRUCTION

DRAWN	DESIGNED	CHECKED	APPROVED	DATE	SCALE @ A1
M.D	M.D	Y.C			1:100

PROJECT No: 132562
DRAWING No: CPS-MHT-00-00-DR-C-0101
REV: P5

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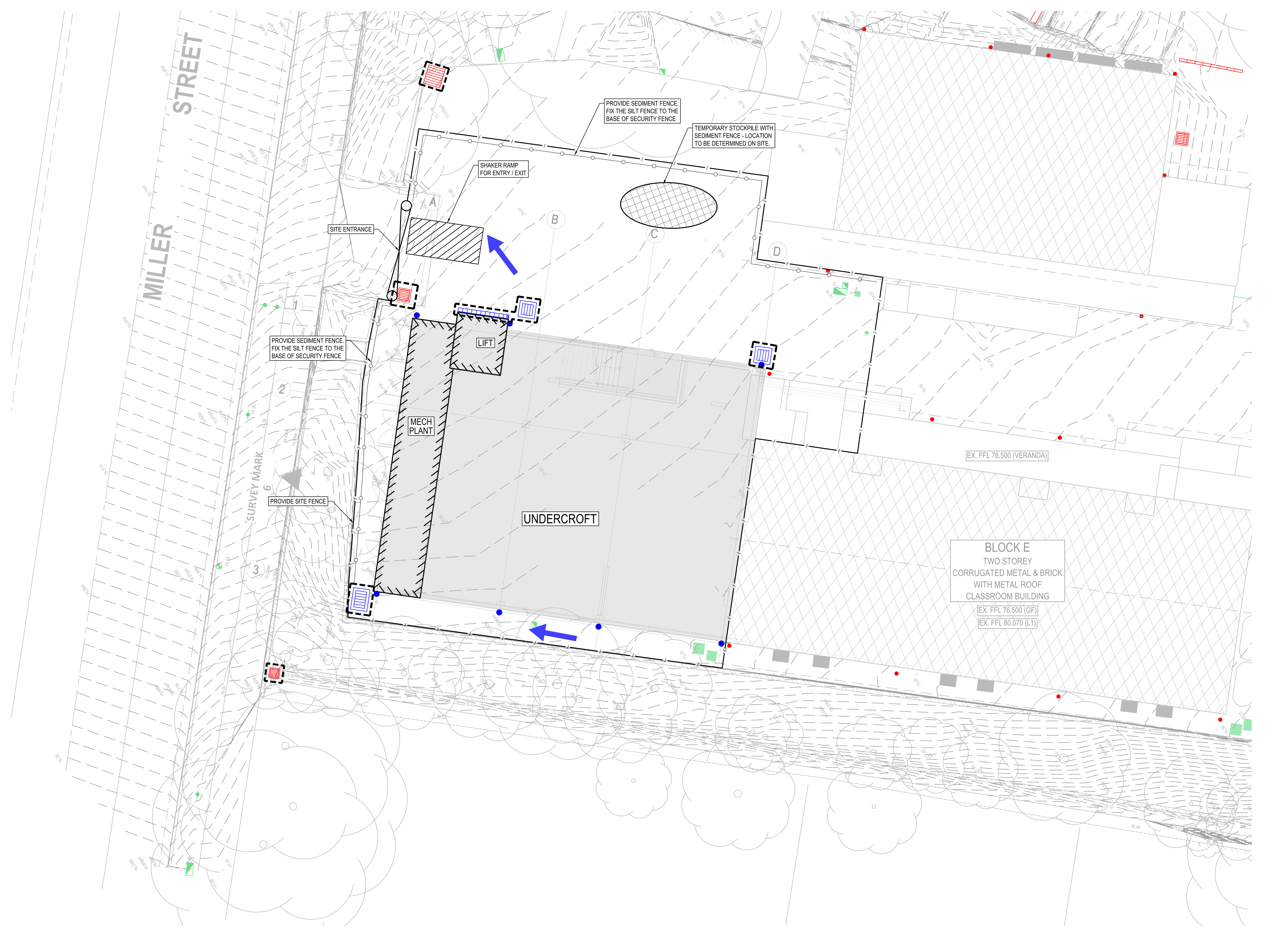

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EX.W	EXISTING WATER
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EX.E	EXISTING ELECTRICITY
EX.E.OH	EXISTING OVERHEAD ELECTRICITY
EX.E.LV	EXISTING LOW VOLTAGE ELECTRICITY
EX.E.HV	EXISTING HIGH VOLTAGE ELECTRICITY
EX.T	EXISTING TELECOM CABLE
EX.FO	EXISTING FIBRE OPTIC CABLE
EX.NBN	EXISTING NBN COMMS CABLE
X X	EXISTING FEATURES TO BE REMOVED
	EXISTING TREE
	HOARDING/SECURITY FENCE
	SEDIMENT FENCE
	BUILDING OUTLINE
	SITE ACCESS GATE
	SHAKER RAMP FOR ENTRY/EXIT
	TEMPORARY STOCKPILE (LOCATION TBC ON-SITE)
	GEOTEXTILE PIT FILTER / FILTER SURROUND INSTALLED ON EXISTING PIT
	SANDBAGS INSTALLED ON EXISTING PIT
	OVERLAND FLOW ARROW

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CLIENT
NSW GOVERNMENT School Infrastructure NSW

PROJECT
CAMMERAY PUBLIC SCHOOL
68 PALMER STREET, CAMMERAY NSW 2062

TITLE
EROSION AND SEDIMENT CONTROL PLAN

STATUS
SCHEMATIC DESIGN
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DRAWN	DESIGNED	CHECKED	APPROVED	DATE	SCALE @ A1
M.D	M.D	Y.C			1:100

PROJECT No	DRAWING No	REV
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