



Stormwater Management Report

Upgrades to Milton Public School

Project Reference: 132568

April 2025

Prepared For: School Infrastructure NSW

9 Thomas Street, Milton

Meinhardt

Level 4, 66 Clarence Street
Sydney, NSW 2000

P. 02 9399 3088 | F. 02 9319 7508
www.meinhardtgroup.com

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REV	DATE	WRITTEN BY	REVIEWED BY	APPROVED BY
00	17.01.2024	BK	LM	BL
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

Brian Kim
Civil Project Engineer
02 8252 0428
Brian.Kim@meinhardtgroup.com

Brad Lusty
NSW Regional Lead
0415 369 695
Brad.lusty@meinhardtgroup.com

Meinhardt Australia Pty Ltd
Level 4, 66 Clarence St
Sydney, NSW 2000
www.meinhardtgroup.com

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

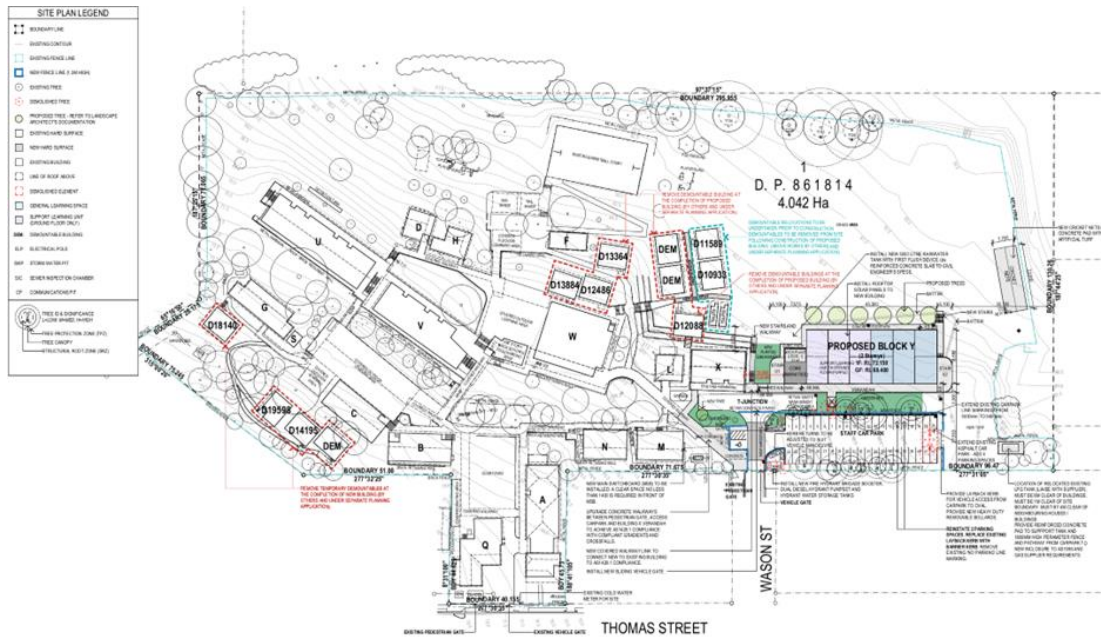
6. Proposed Activity Description

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

Stormwater Drainage Works

- 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.

DOWNPIPE CONNECTION TO PROPOSED DRAINAGE PITS

0.00 RCP
UL 01.87
DL 01.17

0.00 RCP
UL 01.87
DL 01.17

0.00 RCP
UL 01.87
DL 01.17

PIPE CONNECTION TO EXISTING DRAINAGE PIT

PROVIDE STAIR CASES TO GASS STEEP GRADING

PROPOSED BUILDING

1F: 800 x 150
GF: 800 x 400

RE-ROUTE MPVC D225 TO AVOID CLASHES WITH THE PROPOSED LIFT

EXISTING PIPE TO BE DEMOLISHED

EXISTING LPS CONCRETE PAD TO BE DEMOLISHED

PROVIDE A PROPOSED PIT ON THE EXISTING PIPES FOR DIVERSION FLOW

PROPOSED BAILEY TO DIVERT SURFACE RUNOFF AROUND THE PROPOSED BUILDING

PIPE PEDESTAL FENCING REFER TO DRAWING C-001 FOR DETAILS

0.00 MPVC
UL 03.94
DL 03.90

ROLLING SLIDE GATE TO MANUFACTURERS DETAILS

HEAVY DUTY REMOVABLE BOLLARDS TO MANUFACTURERS DETAILS

SHARED ZONE

PROVIDE SMOOTH CUT AND OVERLAY PAVEMENT AROUND THE PROPOSED PAVED ZONE

WHEEL STOP TO PREVENT ANY ACCIDENTS REFER TO DRAWING C-003 FOR DETAILS

EXISTING CONCRETE GRADING TO BE DEMOLISHED AND PRODUCE SHALE PATHWAYS

HEAVY DUTY REMOVABLE BOLLARDS TO MANUFACTURERS DETAILS

NEW LAYBACK HERE TO 1% SHOULDERED CONC'S STANDARDS AND SPECIFICATION REFER TO DRG C-001 FOR DETAILS

PROVIDE A NEW CONCRETE SLAB FOR LPG TANK, 300mm THICK, SIZED TOP WITH MINIMUM 300mm ALLOWABLE PRESSURE

PROFETRIAN FENCING TO PROTECT PROPOSED SUBSTATION REFER TO DRAWING C-001 FOR DETAILS

3.4m (11) x 7.0m (23) WALL LINE MARKING FOR OFF STREET CARPARK TO BE REPAIRED AS PER AS0801

KERB RETURNS TO BE ADJUSTED TO SUIT VEHICLE MANOEUVRE APPROPRIATELY AND PROVIDE SMOOTH KERB TRANSITION

NEW KERB TO THE SHOULDERED CONC'S STANDARDS AND SPECIFICATION REFER TO DRG C-001 FOR DETAILS

Single Unit Truck/Bus (12.5 m)

Overall Length	12.500m
Overall Width	2.500m
Overall Height	4.200m
Min. Body Ground Clearance	0.400m
Trailer Width	2.500m
Lock-to-lock Wdg	0.900m
Lock-to-lock Turning Radius	12.500m

7

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.

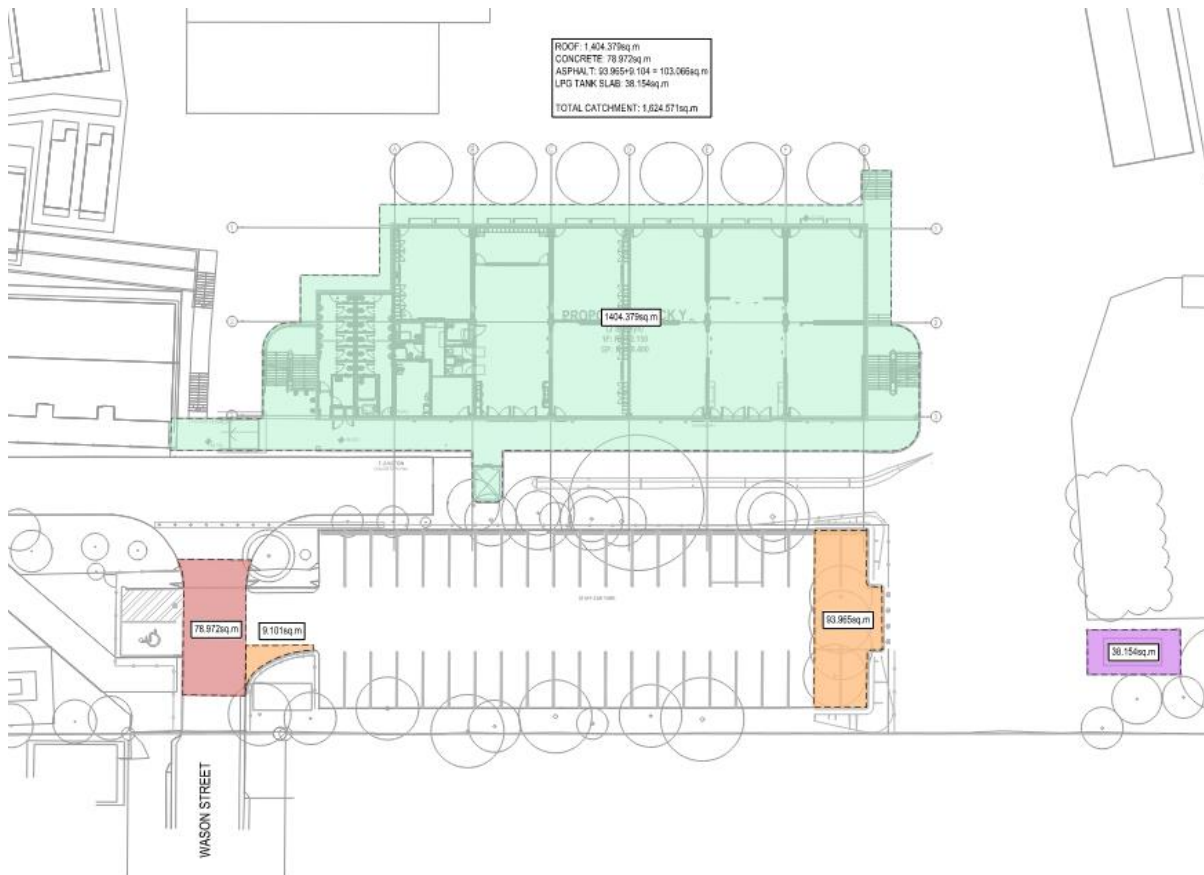


Figure 4. Site Catchment Plan (indicative plan)

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.

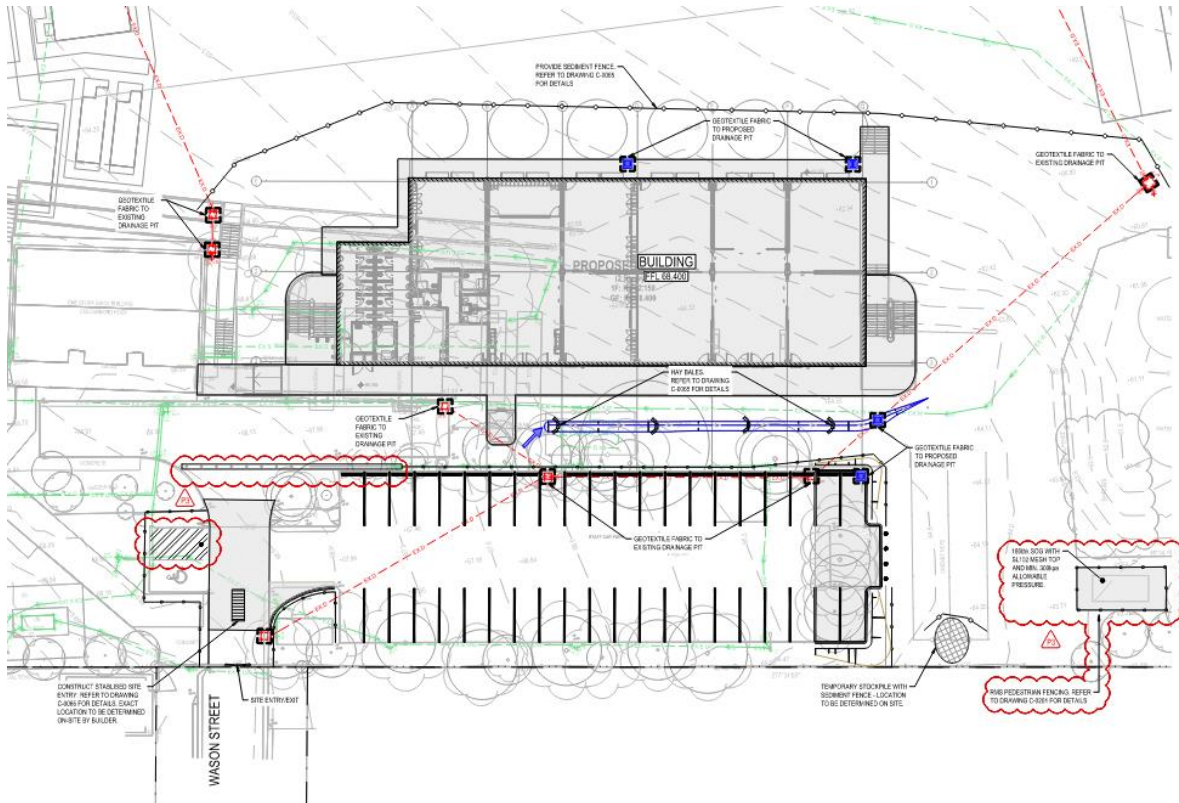
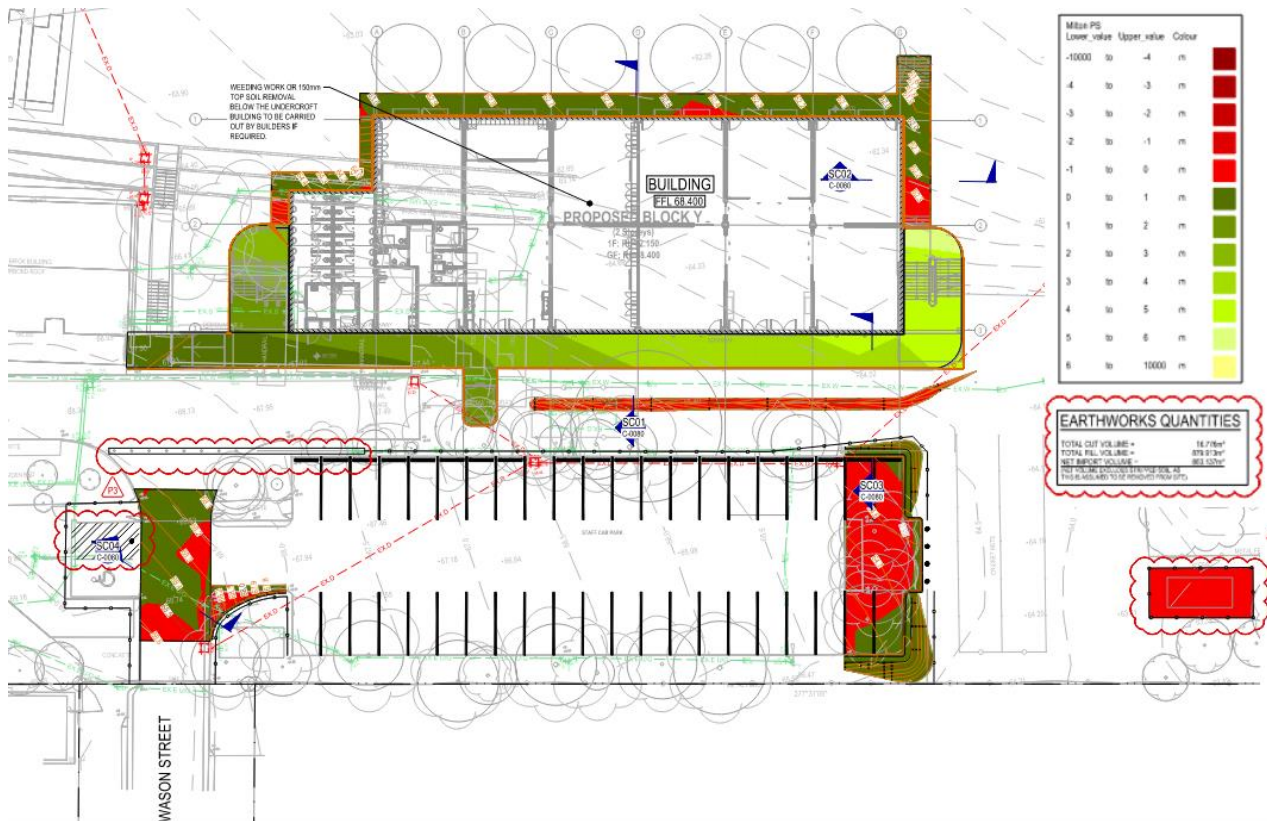


Figure 5. Sediment and erosion control

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).



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>		For Mitigation Measure	Section of
<i>Construction(C)</i>			Report
<i>Operation (O)</i>			
D / O	Stormwater Quality Treatment – Treatment measures are not expected. to significantly impact the surrounding receivers and are predicted to comply with design criteria.	To improve water quality to meet the council requirements.	Section 9
C / O	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.	To mitigate sediment and erosion during work stage.	Section 10
C	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.	To minimize the impact of construction activities on the subject site.	Section 11

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

Astrea

JOB REFERENCE : A4065	I/D 7453
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



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**
- WM — WM
- RECYCLED WATER MAIN**
- WR — WR
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- GS — GS
- SEWER MAIN**
- SW — SW
- STORMWATER PIPE**
- SP — SP
- OVERHEAD ELECTRICITY**
- OE — OE

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 - 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.

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- LP - UP OF GLITTER
- PO - PRAM RAMP
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- FP - FOOTPATH
- TW - TOP OF WALL

SCALE 1:200

GDA 2020

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Astrea

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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REV	AMENDMENTS	DATE



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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.

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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
PW-HY - HYDRANT
PWSV - STOP VALVE
PQUL - GULLY PIT
PPGM - GAS MARKER
POTF - 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

GDA 2020

ORIGIN SS14194
E 266758 984 N 6088996.644
ORIENTATION SS14194-AA153069
AHD ORIGIN SS14194 RL80.856

DIAL BEFORE YOU DIG
www.1100.com.au

GENERAL SURVEY NOTES:

- THIS TITLER/LOOK 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.

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



ELECTRICITY	— EU — EU —
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	— OHP — OHP — OHP —

2. A utility investigation was undertaken by Atmos Pty Ltd. (the plan is to be read in conjunction with the attached map).

3. Positions are based on Astrea C&S B point surface indicator(s) located during field survey. Confirmation of each position should be made to the relevant authority prior to any excavation or other ground investigation work.

4. This plan shows a representation of the dwg model. This model should be viewed in a cad environment to interpret this information.

5. This model is valid for 24 days from the date of the issue of the as underground utility files are often updated.

6. Electricity cables are not necessarily enclosed in conduits and are not necessarily covered with markers, tape or other indicators of their presence. All services are assumed to be electrified and are to be treated as such for all diagnostic purposes only. Depths shown are approximate only and should be verified to work.

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 competent authorities. It is not intended to be a statement of the preparation of this plan of survey, we cannot guarantee that the plan is without 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 obtained and then place an appropriate amount of reliance on the information. Project related to this information is:

CLASS A: Information is the highest possible level of accuracy and is obtained by exposing the underground utility using a non-destructive excavation (pot holing) technique. The vertical location is determined by measuring the depth of the excavation from the located surface. 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, sonar or flow-track, ground penetrating radar and acoustic pulse excitation. This is the most common form of utility location and although an X, Y and Z axis can be established it is always subject to some degree of error. The use of electromagnetic fields, soil conditions and marker banks of cables affecting the location signal.

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

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

DP - DRAINAGE PIT
 PDM - DRAINAGE JUNCTION MANHOLE
 PSM - SEWER MANHOLE
 PWHY - HYDRANT
 PWSV - STOP VALVE
 PGL - GULLY PIT
 PGM - GAS MARKER
 PGP - GAS TEST POINT
 PRPL - POWER POLE
 PTSP - TELSTRA PIT
 TK - TRUNK
 PC - PRAM RAMP
 FP - FOOTPATH
 TW - TOP OF WALL

SERVICE TIE
 SERVICE TIE TO QUALITY LINED PIPE MATERIAL
 TNA A100
 33.15
 SERVICE LOCATION
 LOCATION OF CENTER OF PIPE
 LEAD AT THE TOP OF PIPE

DIAL BEFORE YOU DIG
 www.1100.com.au

* 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 SITE NOTATIONS

* BOUNDARIES HAVE BEEN DEFINED BY SURVEY

* CONTOURS ARE INDICATIVE OF LAND FORM. SPOT LEVELS TAKE PRECEDENCE.

SCALE: 1:200

0 5 10 15 20

GDA 2020

ORIGIN	SS14194 E 266758 984 N 608699.6
ORIENTATION	SS14194-AA153069
AHD ORIGIN	SS14194 RL80 856

SHEET 04 OF 05

Astrea

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SCOTT DEVERIDGE
REGISTERED LAND SURVEYOR
UNDER THE SURVEYING AND
SPATIAL INFORMATION ACT, 2008

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 —
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 Astrea 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 cad 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.

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
PWHY - HYDRANT
PWSV - STOP VALVE
PQUL - GULLY PIT
PPGM - GAS TEST POINT
PPPL - POWER POLE
PTSP - TELSTRA PIT
TK - TOP OF KERB LP - UP 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 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
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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	
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	
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 05 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

Astrea

JOB REFERENCE : A4065	I/D 7453
DWG No. A4065-TOPO&UTIL	
SURVEYOR: BD	SCOTT DEVERIDGE
DATE OF SURVEY: OCT 2023	REGISTERED LAND SURVEYOR UNDER THE SURVEYING AND SPATIAL INFORMATION ACT, 2002
UTILITY LOCATOR: LB	
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REV	AMENDMENTS
	DATE