

JOHN PALMER PUBLIC SCHOOL

CIVIL ENGINEERING FLOOD STUDY REPORT



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ISSUE AUTHORISATION

PROJECT: John Palmer Public School
 Project No: 6372

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A	13/01/22	DRAFT	NKK	KEH	KEH
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Executive Summary

enstruct have been engaged by School Infrastructure NSW to provide civil engineering flooding advice for the proposed development at John Palmer Public School (hereafter GHS) in The Ponds. This report relates to the flooding characteristics relevant to the proposed building that is proposed in the northeast portion of the school site and other modifications across the campus and aims to satisfy the requirements of *Item 15: Flooding* of the Secretary's Environmental Assessment Requirements (SEARs) for State Significant Development Application (SSD - 23330227) for the John Palmer Public School Upgrade.

This report identifies flood depths in and around the proposed works during the Probable Maximum Flood (PMF) storm event and outlines any flood risks associated with these depths. The flood heights, depths, and risks have been identified through the preparation and analysis of a TUFLOW stormwater model.

The TUFLOW model indicates that the proposed new building location is susceptible to minimal flood inundation during the PMF storm event. Flood depths in this area and across the campus are around 100mm in depth.

The school site is designated as a Low Hazard Risk area due to the extents of the PMF flood. Since the development site is in an elevated position in comparison to the 1% AEP flood height contained in the Second Ponds creek channel, the proposed development meets the requirement in line Council's Flood Planning requirements. It is noted that the PMF 100mm depth through the site is not relevant to Flood Planning. Further, the overland flow paths, flood extents, neighbouring properties, existing assets, and infrastructure will not be impacted post construction due to the new development works from a Flood Planning perspective.

A freeboard of 0.5m above the 1% AEP flood level nearest to the site is required when setting Finished Floor Levels (FFL) and Flood Planning Levels (FPL) for building entrances. The proposed FFL of the new building is RL58.75m AHD which is sufficiently above the 1% AEP and PMF flood height in Second Ponds Creek.

The design has sufficient controls and redundancy to cope with additional water because of inundation in rare storm events without impacting the proposed or existing buildings on the school campus.

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1 Introduction

enstruct have been engaged by Schools Infrastructure NSW to provide civil engineering design to achieve development approval for the John Palmer Public School (hereafter JPPS).

This civil engineering flood report accompanies an Environmental Impact Statement (EIS) pursuant to Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act) in support of a State Significant Development Application (SSD - 23330227).

The development is for upgrading works comprising of alterations and additions to John Palmer Public School at 85 The Ponds Boulevard, The Ponds. The site is legally described as Lot 1 DP 1131340.

The site is roughly rectangular in shape, with a total area of 29,830m² and street frontages to Pebble Crescent to the west, Jetty Street to the south, and The Ponds Boulevard to the east. The Ponds Shopping Centre adjoins the northern property boundary of the school.

This report addresses stormwater flooding items relevant to the site and addresses the relevant Secretary's Environmental Assessment Requirements (SEARs), specifically, Item 15 below.

Item 15

- Provide a Flood Risk Management Report, or address in a stormwater civil report that:
 - identifies any flood risk on site in consultation with Council and having regard to the most recent flood studies for the development area and the potential effects of climate change, sea level rise, and an increase in rainfall intensity (**Section 4.10** of this report),
 - assess the impacts of the development, including any changes to flood risk on site or off site, and detail design solutions to mitigate flood risk where required (**Section 4.9.2** of this report), and
 - address Clause 5.21 of the Blacktown LEP 2015.

This report also addresses the flooding requirements set out by NSW Flood Plain Development Manual (2005), Blacktown City Council publication (WSUD developer handbook MUSIC modelling and design guide 2020) and in response to the submission from the Environment, Energy and Science Group (EES) within the NSW Department of Planning, Industry and Environment (dated 08/11/2021).

This report should read in conjunction with enstruct statements issued on 22/11/2021 and 06/12/2021 which are provided in **Appendix C**. Where there is conflict, this report is to be relied upon for the most up to date advice.

1.1 The Proposal

The proposed development seeks to upgrade John Palmer Public School. The upgrade consists of the following alterations and additions:

- Construction of a new three storey building facing The Ponds Boulevard which will accommodate 29 Permanent Learning Spaces and 1 new staff room,
- Construction of a one storey new library building,
- Relocation of service access to staff car park off The Ponds Boulevard, including alterations to the existing car park to accommodate service vehicle,
- One-storey extension to and refurbishment of existing School Hall building. The School Hall extension will accommodate ancillary spaces for Out of Hours School Care,
- Building Block D will be re-purposed from an existing library to special program spaces and administration,
- Refurbishment of Building F to provide 1 new support unit,
- Minor additions and internal refurbishments to Building A,
- Removal of all 20 existing demountable classroom buildings once alterations and additions have been completed, and
- Ancillary works to support the alterations and additions including landscaping and service provision.



Figure 1: Site Plan (Source: PTW Architects)



Figure 2: Main Building (Source: PTW Architects)

1.2 The Site

John Palmer Public School is located at 85 The Ponds Boulevard, The Ponds, within the Blacktown City Council Local Government Area (LGA). The overall site is approximately 29,830m² in area. The site is bounded by Pebble Crescent on the west, Jetty Street to the south, The Ponds Boulevard on the east, and The Ponds Shopping Centre at the northern boundary. The site generally grades northwest and southwest down from a crest which runs through the middle of the site, parallel to Jetty Street (**Figure 3**). The land is approximately RL 58.00m along The Ponds Boulevard, and approximately RL 55.00m along Pebble Crescent.



Figure 3: Site Location (Source: Google Maps)

2 Existing Site

The existing site consists of several single storey buildings, a 37 space on grade carpark, an asphalt waste collection and service vehicle area, and grassed sports oval areas. Of the existing buildings on site, 21 of them are demountable, alongside 7 permanent brick buildings with metal roofs. Existing buildings are shown in **Figure 4** and in site survey provided in **Appendix A**.



Figure 4: Existing Site Features (Source: Six Maps)

The site is constrained by existing services such as water, communications, and electricity, along The Ponds Boulevard, Jetty Street, and Pebble Crescent.

2.1 Existing Stormwater

Existing stormwater throughout the site consists of stormwater lines collecting to downpipes for most of the buildings, and surface pits to collect stormwater overland flow in external areas. This system discharges the site stormwater to kerb inlet pits in Pebble Crescent. The northern grassed oval falls to the northwest corner of the site whilst the southern grassed area falls to the southwest and directs stormwater as overland flow away from buildings on the site. There are no existing detention systems on the current school site.

The site is located within the precinct of the Blacktown City Council LGA, with detention located downstream of the site. Natural vegetated landscape detention areas are located as shown in **Figure 3** and cater for detaining stormwater and potential treatment of stormwater.

Council kerb inlet pits and in-ground stormwater pipes are located on all three adjacent streets.

3 Flooding

As per the Blacktown City Council Online Flood Mapping platform, the site is not identified as flood prone (**Figure 5**). The closest major flooding extent in the 1% AEP flood event is located approximately 1km to the northwest of the site.

Similarly, The Rouse Hill Flood Study indicated that the proposed development site is around 5m above the 1% AEP flood height in Second Ponds Creek which is approximately 50m to the west of the development site and does not identify the site as Flood Liable land. The NSW Flood Plain Development Manual (DIPNR 2005) indicates that the site is not classed as being in a high or medium risk flood precinct.

4 Hydraulic Modelling

To confirm the development site's susceptibility to flooding and assess the potential for flooding impacts affecting the site, a TUFLOW flood model was developed by enstruct using publicly available Digital Terrain Models (DTMs) from LIDAR survey data for the catchment area surrounding the site. The DTM represents the bare ground surface without any elevated objects, such as trees, cars, and items of a similar nature.

4.1 TUFLOW Model Setup

DTM surface levels and terrain data was retrieved from the ICSM Elvis Elevation and Depth – Foundation Spatial Data website for the area surrounding the site, ensuring the upstream stormwater catchment area that would drain towards the school site was included. The DEMs were provided in grid sizes of 2m. This contour data was then imported into QGIS, an open source Geographic Information System, whereby an accurate catchment plan could be produced for site. Refer to **Figure 6** for the development catchment extent.

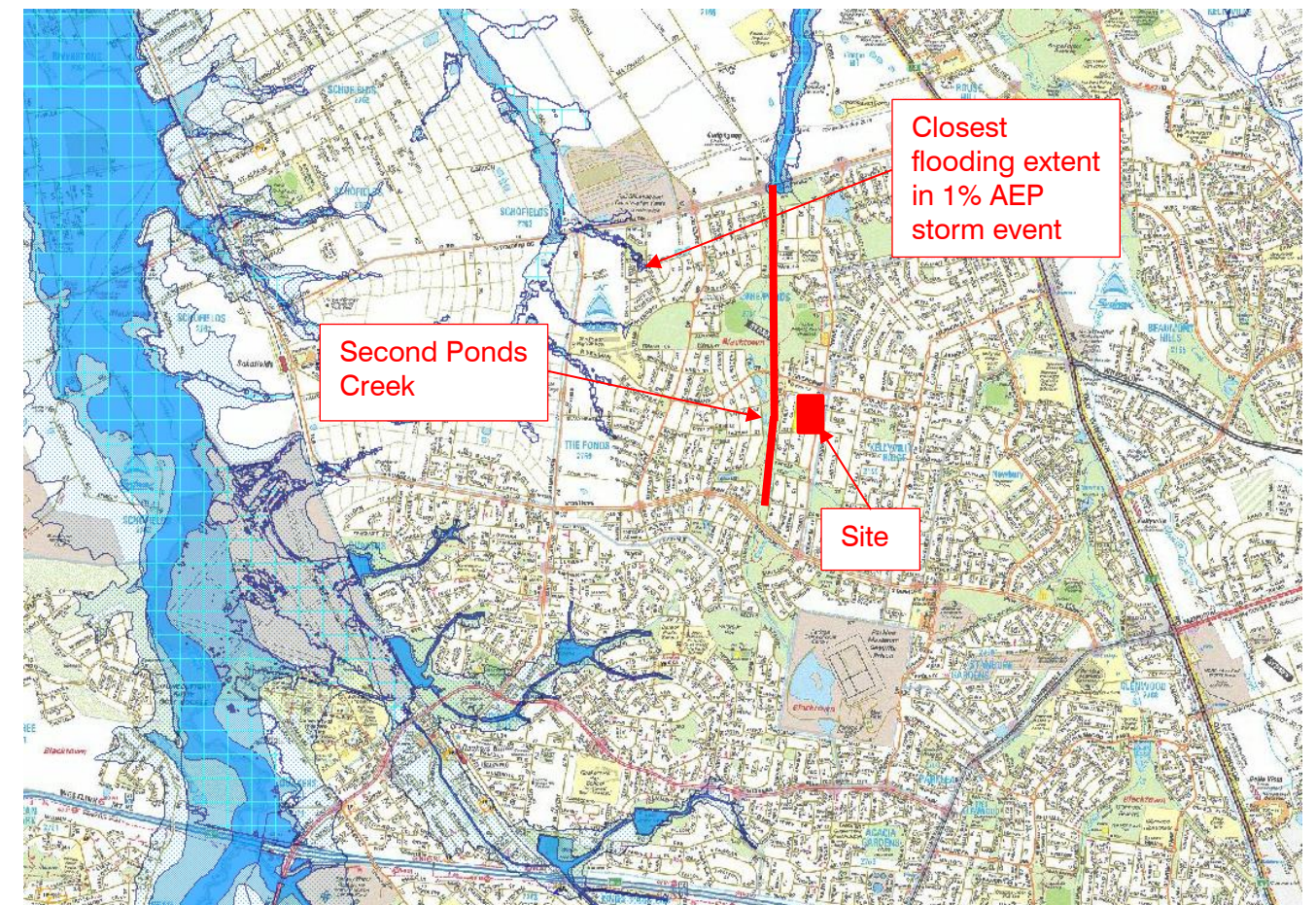


Figure 5: Blacktown Flooding (Source: Blacktown City Council Flood Map)

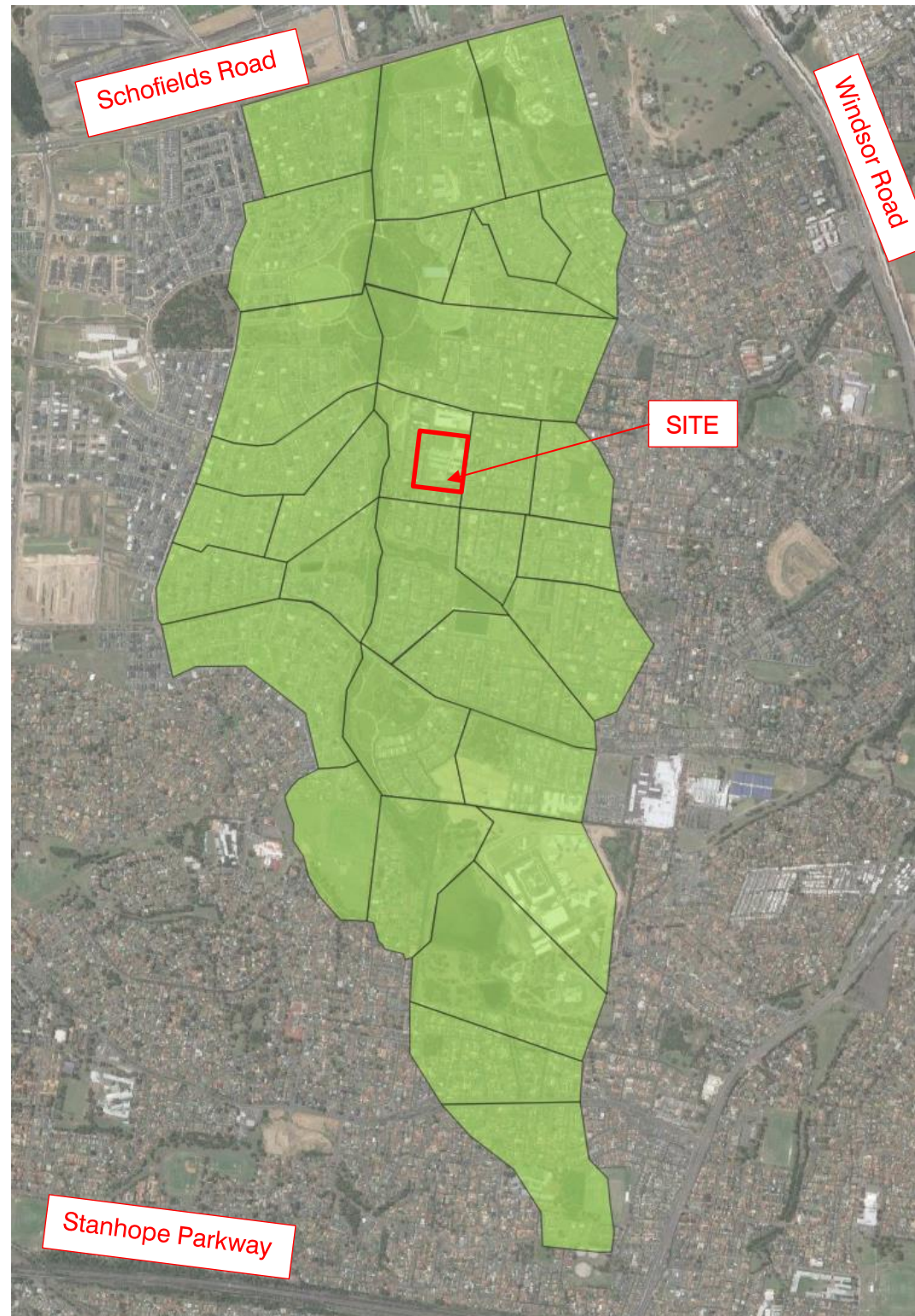


Figure 6: Stormwater catchment plan surrounding school site

4.2 Model Extent

The TUFLOW Model boundary is also shown in **Figure 6**. The catchment area extends to the north of Stanhope Parkway in the south, Schofields Road in the north, and approximately 500m to the east and west of the Seconds Ponds Creek. The model is comprised of a 2D domain of the study area ground surface reflecting the catchment topography, with varying roughness as dictated by land use.

4.3 Model Topography

The model topography is based on a 2m DTM derived from LiDAR data. The model has a 2m regular grid which is considered adequate to represent flood behaviour for this flood assessment as the channels in the vicinity of the site are 20m and 30m wide. These are well defined by a 2m grid. As the LiDAR data has a 2m resolution, so there is no benefit in preparing a flood model with a grid finer than 2m, as required by Chapter 15 of the BCC WSUD Developer Handbook.

4.4 Surface Hydraulic Roughness

Manning’s ‘n’ values were applied to represent the roughness of the various land uses in the model domain. The aerial photographs were used to define spatial extent and type of land use in the study area. Adopted Manning’s n values in the TUFLOW model are summarised in **Table 1**. Buildings within the floodplain have been modelled as full obstructions. A Manning’s ‘n’ of 0.05 has been applied to residential lots to capture various flow obstructions such as fences, garden beds and the like, as required by Chapter 15 of the BCC WSUD Developer Handbook.

Table 1: Materials in catchment area

Material Number	Manning’s Value ‘n’	Surface Type
1	0.100	Heavy Vegetation
2	0.070	Medium Vegetation
3	0.050	Residential
4	0.025	Roadways
5	0.025	Pavement
6	0.04	Light Vegetation
7	0.070	Waterway/Channels
8	0.050	Residential High Density

4.5 Boundary Conditions

A downstream boundary condition was set at Schofields Road which is located to the north of the development site to better inform the realistic flow of flood water through the catchment area. A flood level of RL49.50m AHD was set at the road which was adopted from Area 20 Precinct Rouse Hill Water Cycle Management Strategy Report Incorporating Water Sensitive Urban Design Techniques. This boundary condition is set 1200m downstream of Riverbank Drive and is expected to have a negligible impact on flood levels at the site.

4.6 Hydrological Modelling

A DRAINS model was set up to prepare the rainfall data specific to the site for the Probable Maximum Flood (PMF) storm event. The Probable Maximum Precipitation (PMP) rainfall profile for the site was estimated using the Commonwealth Bureau of Meteorology Estimation of Probable Maximum Precipitation in Australia: Generalised Short-Duration Method (GSDM). This allowed analysis of the PMF storm event to assess the sensitivity of the site to an increase in rainfall intensity and flood producing rainfall events due to climate change. PMP rainfall calculations for the site can be seen in **Appendix B**.

4.6.1 Hydrological Model Parameters

An initial and continuing loss model was utilised in the DRAINS model to represent rainfall losses during storm events such as depression storage and soil infiltration. Initial and continuing loss values are consistent with losses adopted when using ARR 1987. While ARR 2016 has proposed revised default losses, these are subject to uncertainty. Retaining the 1987 values provides appropriately conservative estimates for flood levels for design purposes. The following loss values were adopted:

PMF storm event:

- Pervious areas: 0mm initial loss mm, 0mm continuing loss mm/hr
- Impervious areas: 0mm initial loss mm, 1mm continuing loss mm/hr.

4.6.2 Design Flood Events

The PMF event was analysed at storm durations of 15, 30, 45, 60, 90, 120, 150, 180, 240, 300, and 360 minutes. The hydrological model was run with the temporal pattern outlined in the GSDM. The results were exported for use in the TUFLOW model.

4.7 TUFLOW Model Flood Depths and Levels Results

The PMF storm event is defined as ‘the greatest depth of precipitation for a given duration meteorologically possible for a given size storm area at a particular location at a particular time of year’ by the World Meteorological Organisation. The risk of it happening in any 1 year is extremely rare and is considered to be between a 1 in 10,000 to 1 in 10,000,000 chance. The TUFLOW model indicates that the school site is minimally affected in the PMF storm event as per **Figure 7** around 100mm depth of water.

4.8 Proposed Development Implications from Flooding

4.8.1 Implications on the Proposed Development

Other than the PMF flood event, the proposed works are not impacted by flooding and no additional floods are required to limit flood impacts.

4.8.2 Implications to Adjacent Buildings

As the site is flood free, except for the PMF, there will be no change to the flood impacts on adjacent properties because of the proposed works.

4.8.3 Flood Planning Levels and Finished Floor levels

It is not a concern that the proposed development and school campus is inundated in the PMF as the depth of water is around 100mm and, as noted in **Section 4.7**, the PMF is a rare event that is unlikely to occur in this building’s design life

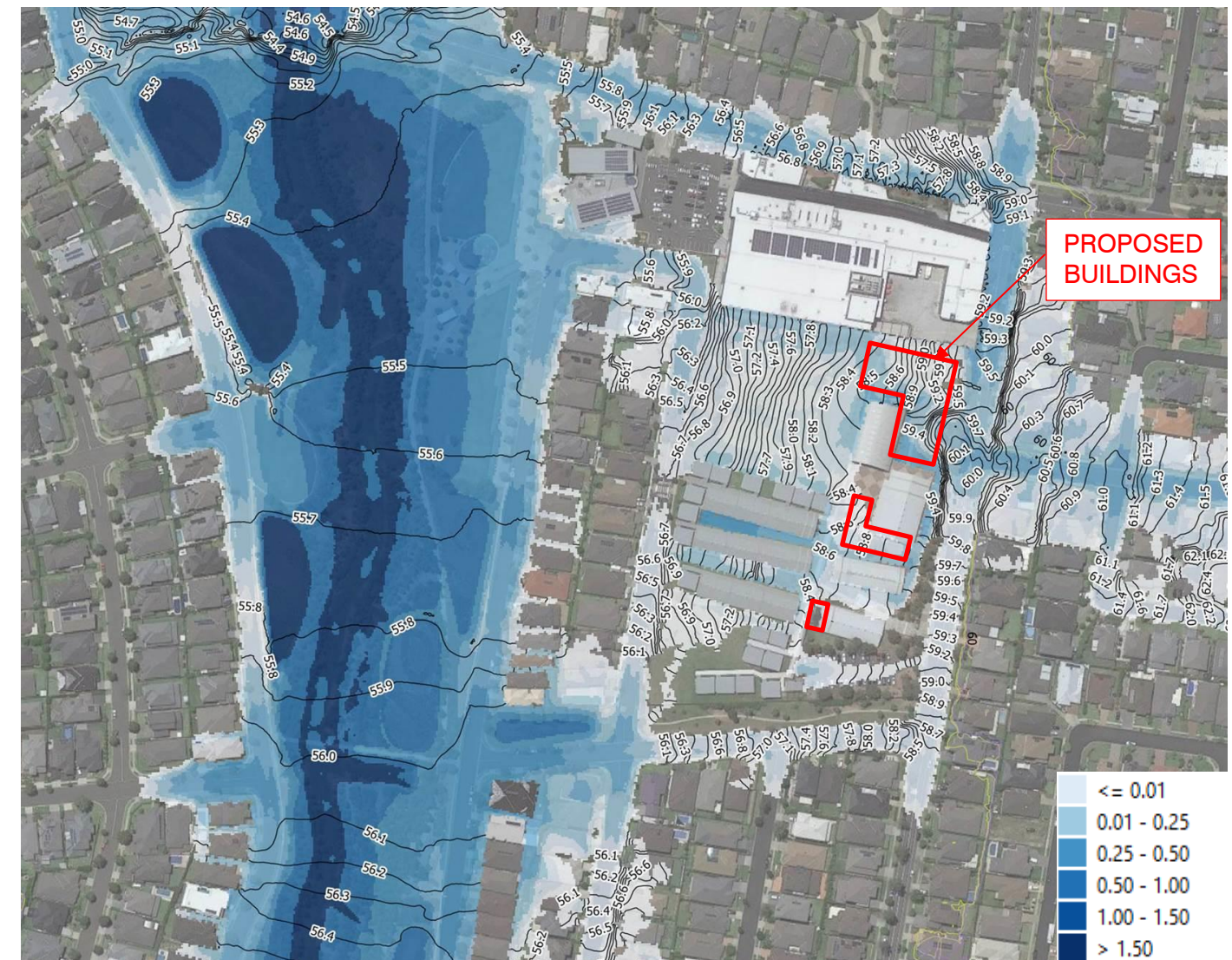


Figure 7: PMF Storm Event Flood Levels

4.9 Climate Change

With an increase in frequency of storm events and rainfall intensity due to climate change, it is unlikely to have a material effect on the operation of the proposed development. The school campus is inundated by 100mm of water in the rare PMF events. Increase in the volume of water will be dealt with via the proposed and existing overland flow paths towards Second Ponds Creek.

4.10 Refuge

The main access to the school is via The Ponds Boulevard which is located on the eastern side of the school. In the unlikely event that flood water from Second Ponds Creek will significantly impact the school, residential houses, and streets on the western side of the school campus will be affected first, giving advanced notification. Noting that due to the surrounding topography, the school site will not become a flood island. In addition, prior to flood water impacting the residential houses adjacent to Second Ponds Creek, Riverbank Drive will give more advanced warning as this road will be cut when the water reaches 2m or more in depth as the bridge height is around RL55.00 (2m above the creek bed invert of around RL53.00). Riverbank Drive is about 5m lower than the proposed development level.

In case of an unprecedented PMF flood emergency, personnel and students on the site are to seek refuge within the site and shelter-in place at a level above the PMF flood height (Section 15.3.1 of the BCC WSUD Developer Handbook). Leaving the site and access to Pebble Crescent and the Ponds Boulevard will be unsafe and as such, remaining in the building above the flood levels is the desired option of refuge in this event. Alternatively, leaving the school site towards Jetty Street if prior flood warning is provided may be possible well in advance of PMF flood waters encroaching on the site.

5 Conclusion

The TUFLOW model indicates that the proposed development on the school site is minimally affected by flood water in the PMF storm event, around 100mm in depth. As the PMF storm is unlikely to occur during the design life of the proposed works, the effects are negligible.

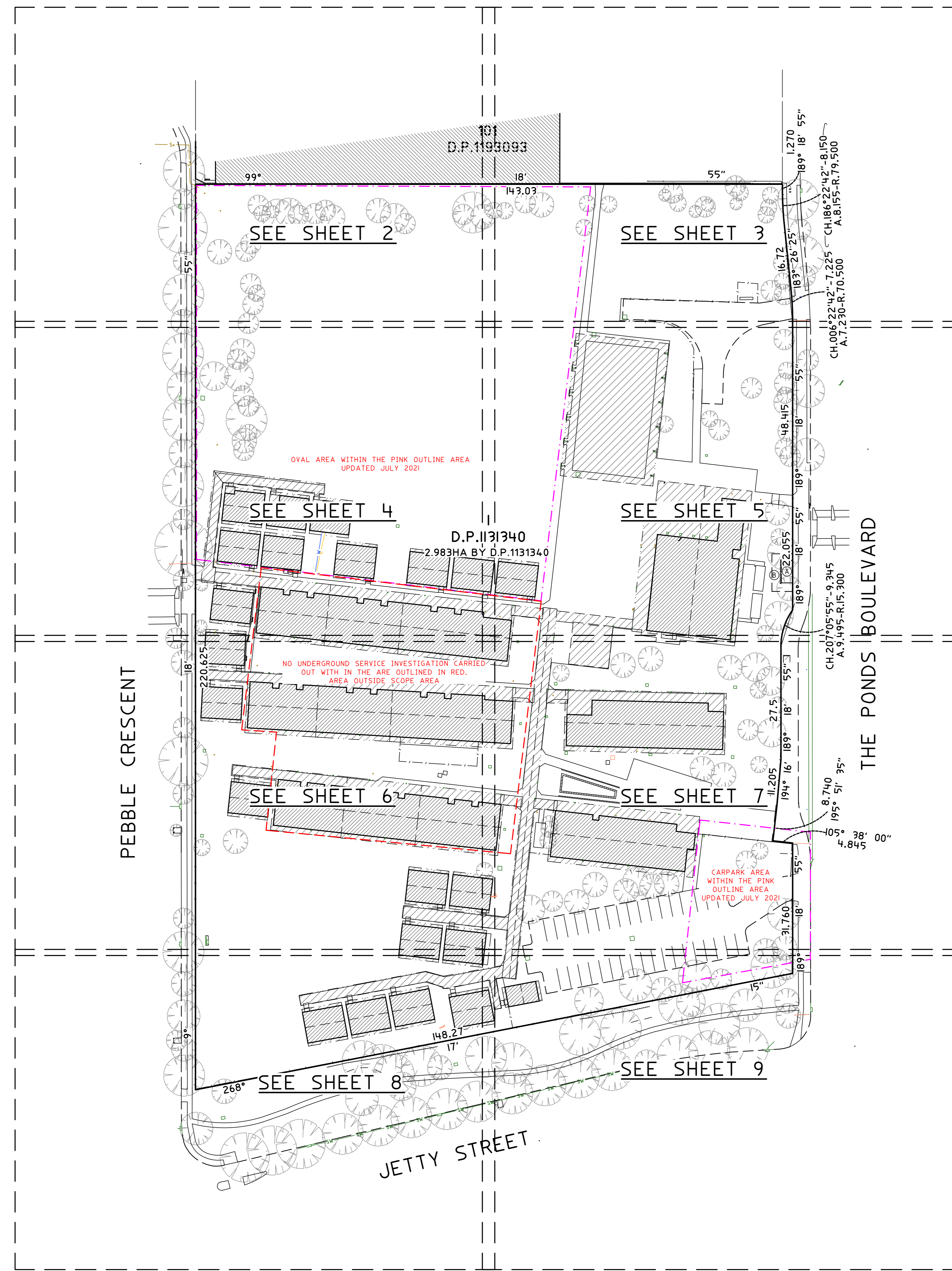
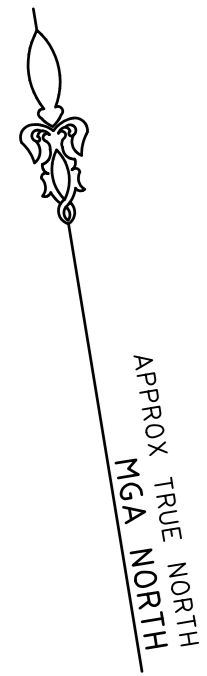
The site is nominated as a Low Risk area in its north-eastern portion, and H2 hazard level in accordance with Figure 6.7.9 Combined Flood Hazard Curves in the Australian Rainfall and Runoff (2019) A Guide to Flood Estimation.

Further, no flood waters will be adversely diverted when the proposed works are constructed. Likewise, no increase in flow velocity will be caused as the stormwater flow is not being diverted, compensating a downstream system.

The proposed FFL of the new lowest building is at RL58.75m AHD is sufficiently above the required Flood Planning Level, and as such this meets the minimum freeboard requirement. The proposed development will largely be unaffected by flooding, even with an increase in flood depths due to climate change, except in rare flood events which are beyond the development's design life.

A shelter-in-place refuge approach is recommended for the site in a rare/large storm events where departure from the site onto The Ponds Boulevard and Pebble Crescent can be unsafe.

APPENDIX A - SITE SURVEY



CODE	DIPT
106.78	SSL 8 1.31 0.18 EOT
RL	LOCATION DEPTH NOTE
C	COMMUNICATIONS LINES (UNDERGROUND)
E	ELECTRICITY LINE (UNDERGROUND)
S	SEWER LINE (UNDERGROUND)
SW	STORMWATER LINE (UNDERGROUND)
T	TELEPHONE LINES (UNDERGROUND)
U	UNKNOWN SERVICE (UNDERGROUND)
W	WATER LINE (UNDERGROUND)

LEGEND: (SEE NOTES 1)

NOTES 1

- THE PURPOSE OF THIS PLAN IS FOR DESIGN ONLY. CURRENT PLANS ISSUED BY SERVICE PROVIDERS THROUGH 'DIAL BEFORE YOU DIG' ARE STILL REQUIRED. CONTRACTORS AND SUBCONTRACTORS WILL NEED TO EXERCISE THEIR OWN 'DUTY OF CARE' AND SHOULD MAKE THEIR OWN DIAL BEFORE YOU DIG ENQUIRY BEFORE EXCAVATION/CONSTRUCTION. YOU MUST KNOW 'DIAL BEFORE YOU DIG' ARE CURRENT AS THEY HAVE VARYING EXPIRATION DATES, AND MAY REQUIRE RE-ISSUE OTHERWISE THE INFORMATION ON THIS PLAN MAY NO LONGER BE CURRENT.
- WARNING: UNKNOWN SERVICES MAY EXIST THAT COULD NOT BE ELECTRONICALLY DETECTED. THE DIAGRAMS OF THE SERVICE PROVIDER MAY NOT REFLECT ALL ASSETS WITHIN THEIR NETWORK AND SERVICE PROVIDERS MAY SHARE CONDUITS AND/OR TRENCHES AT THIS LOCATION.
- WARNING: SINGLE MARKED LINES MAY REPRESENT MULTIPLE CONDUITS, PIPES, FIBRE OPTIC CABLES AT THIS LOCATION. THE RECORDING OF DEPTHS AND POSITION OF UTILITIES CANNOT BE GUARANTEED AS CORRECT. WE RECOMMEND NON DESTRUCTIVE DIGGING/PITTING TO EXPOSE SERVICES FOR ACCURATE IDENTIFICATION AND DEPTH.
- CAUTION: SURVEYORS HAVE SURVEYED AND MARKED OUT EXISTING SERVICES IN THE AREA SPECIFIED BY THE CLIENT. THESE SERVICES LINES HAVE BEEN LOCATED BY ABOVE GROUND SERVICE TRACING METHODS AND HAVE NOT BEEN SIGHTED. OUR SURVEYORS HAVE 'DIAL BEFORE YOU DIG' LOCATED THE LINE MARKS. WE SURVEY THE LOCATION OF THESE MARKED SERVICES ARE APPROXIMATE ONLY. THE POSITION OF THE MARKED SERVICES LINES HAS BEEN MADE WITH REFERENCE TO THE RELEVANT SERVICE AUTHORITY DIAGRAMS. ALL SERVICES MAY NOT HAVE BEEN SHOWN AND UTILITY DEPTHS HAVE BEEN TAKEN FROM UTILITY PROVIDED DIAGRAMS WHERE AVAILABLE. WE RECOMMEND NON DESTRUCTIVE DIGGING/PITTING TO EXPOSE MARKED SERVICES TO IDENTIFY AND SHOW EXACT DEPTH AND LOCATION OF SERVICES PRIOR TO CARPENTERS COMMENCEMENT. UTILITIES PLOTTED ON THE PLAN THAT TERMINATE IN THE SPECIFIED AREA MAY GO TO FEATURES THAT HAVE NOT BEEN SHOWN IN THE BACKGROUND DETAIL SURVEY PROVIDED BY CLIENT. THE RISER REMAINS WITH THE CLIENT AND/OR SUB CONTRACTOR AND THEIR RESPONSIBILITY TO EXERCISE CAUTION AT ALL TIMES.

SUBSURFACE UTILITY INFORMATION

QLD IS THE LOWEST OF THE FOUR QUALITY LEVELS STIPULATED IN ASS488. IT IS AN INDICATIVE POSITION COMPILED FROM EXISTING RECORDS, CURSORY SITE INSPECTION, ANECDOTAL EVIDENCE.

QLD- IS THE NEXT LEVEL UP FROM QLD. ASS488 STATES THAT QLD- IS A SURFACE FEATURE CORRELATION OR AN INTERPRETATION OF THE APPROPRIATE LOCATIONS AND ATTRIBUTES OF A SURFACE FEATURE USING A COMBINATION OF EXISTING RECORDS (ANECDOTAL EVIDENCE) SONIC BOOM TECHNIQUES AND A SITE SURVEY OF VISIBLE EVIDENCE.

QLD- ELECTRONICALLY TRACED AS PER ASS488 (DIRECT CONNECTION, INDUCTION, FLEXTRAC/SONDE, FLEXPROD/SONDE) WITH AN ESTIMATED POSITIONAL TOLERANCE OF +/-300MM IN PLAN, +/-500MM IN DEPTH (HIGH CONFIDENCE LEVEL).

QLD- IS THE HIGHEST QUALITY LEVEL AS PER ASS488 AND CONSISTS OF THE POSITIVE IDENTIFICATION OF THE ATTRIBUTE AND LOCATION OF A SUBSURFACE UTILITY AT A POINT TO AN ABSOLUTE SPATIAL POSITION IN THREE DIMENSIONS. THIS CAN BE ACHIEVED AT OPENED PITS AND IN THE POTHOLES WHERE THE UTILITY IS EXPOSED.

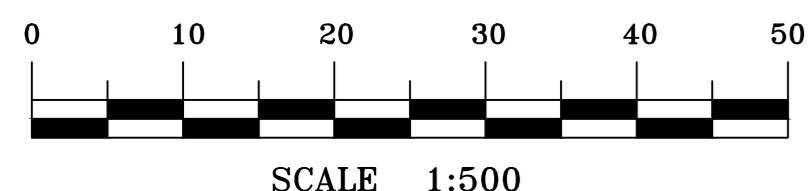
HORIZONTAL AND VERTICAL TOLERANCE +/- 50MM.

NOTES:

- A BASIC BOUNDARY SURVEY HAS BEEN UNDERTAKEN SUITABLE FOR COUNCIL DA SUBMISSION (TITLE DIMENSIONS ONLY).
- THIS PLAN HAS BEEN PREPARED UNDER THE SUPERVISION OF A REGISTERED SURVEYOR.
- IF CONSTRUCTION ON OR NEAR BOUNDARIES IS REQUIRED IT IS RECOMMENDED THAT THE BOUNDARIES OF THE LAND BE MARKED.
- AREA IS APPROPRIATE ONLY AND HAS BEEN CALCULATED BY TITLE DIMENSIONS. ALL TITLE DIMENSIONS OF THE LAND HAVE NOT BEEN COVERED BY SURVEY. IF AREAS ARE CRITICAL, WE RECOMMEND A BOUNDARY SURVEY FOR PUBLIC RECORD.
- THIS SURVEY IS FOR DESIGN PURPOSES OF THE SUBJECT LAND ONLY. THIS PLAN MUST NOT BE USED FOR ANY OTHER MATTER, PURPOSE OR CONSTRUCTION REFERENCE.
- TREE SIZES ARE ESTIMATES ONLY.
- THIS PLAN HAS BEEN PREPARED FOR THE EXCLUSIVE USE OF SCHOOLS INFRASTRUCTURE NSW DEPARTMENT OF EDUCATION.
- RELATIONSHIP OF IMPROVEMENTS TO BOUNDARIES IS DIAGRAMMATIC ONLY. WHERE OFFSETS ARE CRITICAL, THEY SHOULD BE CONFIRMED BY FURTHER SURVEY.
- EXCEPT WHERE SHOWN BY DIMENSION LOCATION OF DETAIL WITH RESPECT TO BOUNDARIES IS INDICATIVE ONLY.
- UNDERGROUND SERVICES HAVE ONLY BEEN INVESTIGATED ON PART OF THE SITE. INVESTIGATION AREA HAS BEEN OUTLINED IN RED.
- SEWER MAIN PLOTTED FROM SYDNEY WATER SEWER DIAGRAM. LOCATION SHOULD BE MARKED ON SITE IF CRITICAL.
- CRITICAL SPOT LEVELS SHOULD BE CONFIRMED WITH SURVEYOR.
- CONTOURS SHOWN DEPICT THE TOPOGRAPHY. THEY DO NOT REPRESENT THE EXACT LEVEL AT ANY PARTICULAR POINT. SPOT LEVELS SHOULD BE USED FOR CALCULATIONS OF QUANTITIES WITH CAUTION.
- CONTOUR INTERVAL - 0.5 metre - SPOT LEVELS SHOULD BE ADOPTED.
- POSITION OF RIDGE LINES ARE DIAGRAMMATIC ONLY (NOT TO SCALE). THE INFORMATION IS ONLY TO BE USED AT A SCALE ACCURACY OF 1:500.
- DO NOT SCALE OFF THIS PLAN / FIGURED DIMENSIONS TO BE TAKEN IN PREFERENCE TO SCALED READINGS.
- COPYRIGHT © C.M.S. SURVEYORS 2021.
- NO PART OF THIS SURVEY MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM OR TRANSMITTED IN ANY FORM WITHOUT THE WRITTEN PERMISSION OF THE COPYRIGHT OWNER EXCEPT AS PERMITTED BY THE COPYRIGHT ACT 1968.
- ANY PERMITTED DOWNLOADING, ELECTRONIC STORAGE, DISPLAY, PRINT, COPY OR REPRODUCTION OF THIS SURVEY SHOULD CONTAIN NO ALTERATION OR ADDITION TO THE ORIGINAL SURVEY.
- THIS NOTICE MUST NOT BE ERASED.

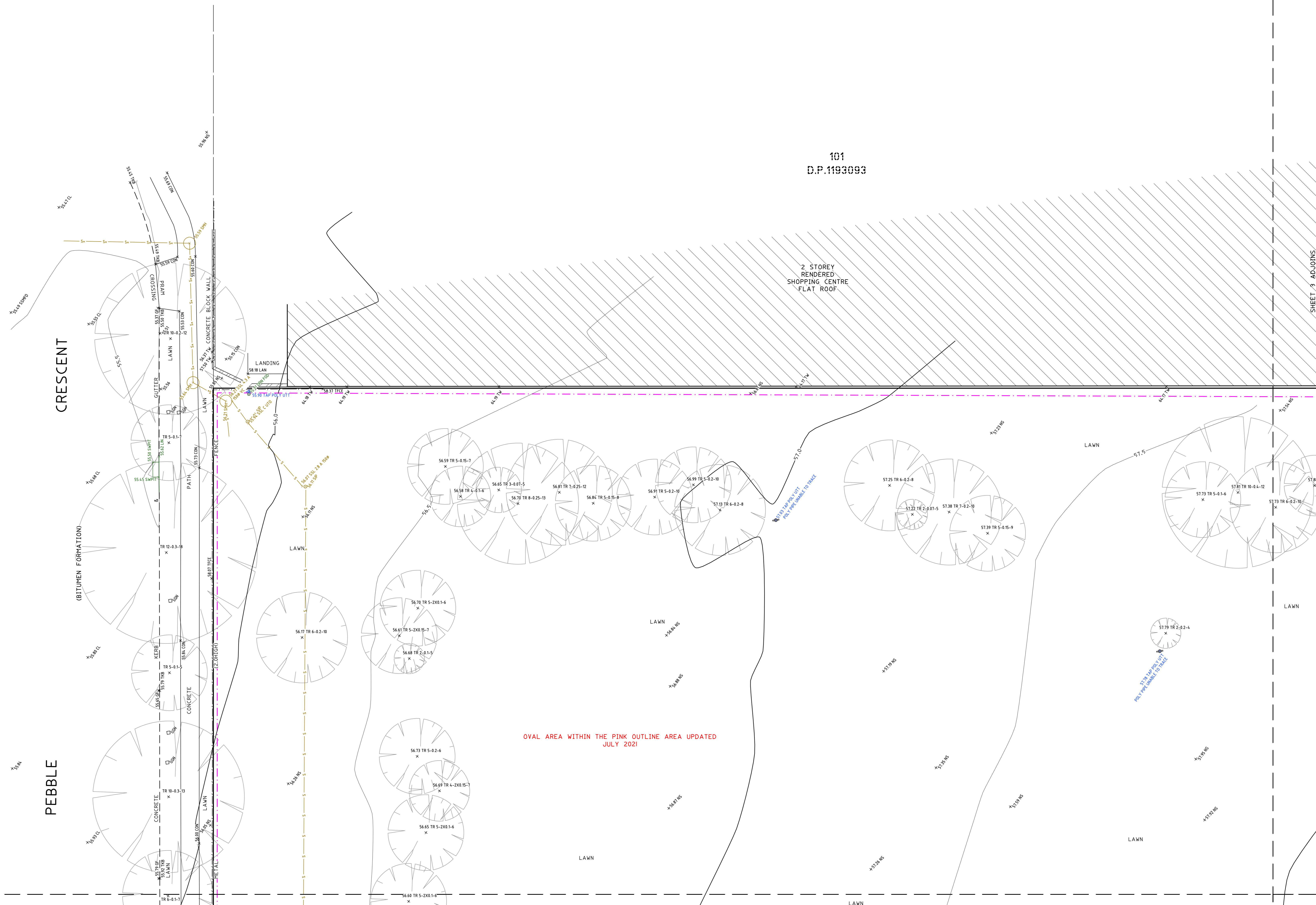
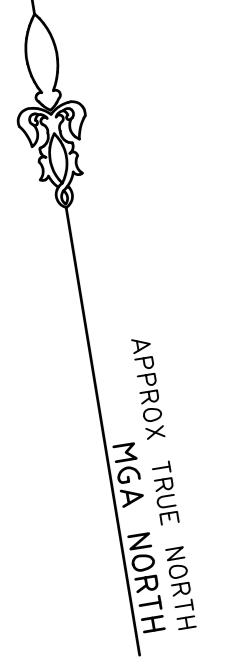
TITLE INDICATES THAT LOT IN D.P.1131340 SUBJECT TO:

- DP00115 RESTRICTIONS) ON THE USE OF LAND -(NOT INVESTIGATED)
- DP027393 RESTRICTIONS) ON THE USE OF LAND AS REFERRED TO AND NUMBERED (3) IN THE SECTION 888 INSTRUMENT -(NOT INVESTIGATED)
- DP080818 RESTRICTIONS) ON THE USE OF LAND -(NOT INVESTIGATED)
- DP082818 RESTRICTIONS) ON THE USE OF LAND AS REFERRED TO AND NUMBERED (1) IN THE SECTION 888 INSTRUMENT -(NOT INVESTIGATED)
- DP082818 RESTRICTIONS) ON THE USE OF LAND AS REFERRED TO AND NUMBERED (2) IN THE SECTION 888 INSTRUMENT -(NOT INVESTIGATED)
- DP088021 RESTRICTIONS) ON THE USE OF LAND -(NOT INVESTIGATED)
- DP091941 RESTRICTIONS) ON THE USE OF LAND -(NOT INVESTIGATED)
- DP1131340 EASEMENT FOR PADMOUNT SUBSTATION 2.75 METRES) WIDE AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
- DP1131340 RESTRICTIONS) ON THE USE OF LAND
- A1198257 LEASE TO AXIOM EDUCATION NSW NO.2 PTY LIMITED OF JOHN PALMER PUBLIC SCHOOL, THE BOULEVARD, THE PONDS. EXPIRES: 30/12/2035.
- A1198258 LEASE OF LEASE A1198257 TO MINISTER FOR EDUCATION OF JOHN PALMER PUBLIC SCHOOL, THE BOULEVARD, THE PONDS. EXPIRES: 30/12/2035.



SCALE 1:500

HORIZONTAL DATUM: CO-ORDINATE SYSTEM: MGA (GDA2020) MARKS ADOPTED: SSM 146487, SSM 164459		VERTICAL DATUM: DATUM: AUSTRALIAN HEIGHT DATUM (AHD) B.M. ADOPTED: SSM 146487 R.L. 59.453 (CLASS LD) SOURCE: S.C.I.H.S. (06/07/2020)		CLIENT: SCHOOLS INFRASTRUCTURE NSW DEPARTMENT OF EDUCATION C/- JACOBS, LEVEL 5, 177 PACIFIC HIGHWAY NORTH SYDNEY, NSW, 2060		SURVEY PLAN SHOWING DETAIL, LEVELS & UNDERGROUND SERVICES OVER LOT 1 IN DP1131340 JOHN PALMER PUBLIC SCHOOL 85 THE PONDS BOULEVARD THE PONDS, NSW, 2769		C.M.S. Surveyors Pty Limited ACN: 096 240 201 PO Box 463 Dee Why NSW 2099 2/99A South Creek Road, Dee Why NSW 2099 Telephone: (02) 9971 4802 Facsimile: (02) 9971 4822 E-mail: info@cmsurveyors.com.au		<table border="1"> <tr> <th>SURVEYED</th> <th>DRAWN</th> <th>CHECKED</th> <th>APPROVED</th> </tr> <tr> <td>HC</td> <td>ABS/GP</td> <td>HC</td> <td>AF/ZDR</td> </tr> <tr> <td>SURVEY INSTRUCTION</td> <td>SCALE</td> <td>DATE</td> <td>DATE OF SURVEY</td> </tr> <tr> <td>1952HA</td> <td>1:500 1B AD</td> <td>20.21/07/2020</td> <td>02/07/2020</td> </tr> <tr> <td colspan="2">DRAWING NAME</td> <td colspan="2">SHEET</td> </tr> <tr> <td colspan="2">1952HAdetail</td> <td colspan="2">1 of 9</td> </tr> <tr> <td colspan="2">CAD FILE</td> <td colspan="2">ISSUE</td> </tr> <tr> <td colspan="2">1952HAdetail 2.dwg</td> <td colspan="2">2</td> </tr> </table>		SURVEYED	DRAWN	CHECKED	APPROVED	HC	ABS/GP	HC	AF/ZDR	SURVEY INSTRUCTION	SCALE	DATE	DATE OF SURVEY	1952HA	1:500 1B AD	20.21/07/2020	02/07/2020	DRAWING NAME		SHEET		1952HAdetail		1 of 9		CAD FILE		ISSUE		1952HAdetail 2.dwg		2	
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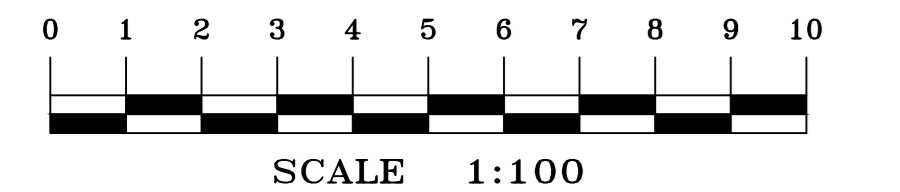
NO UNDERGROUND SERVICE INVESTIGATION CARRIED OUT WITH IN THE ARE OUTLINED IN RED AREA OUTSIDE SCOPE AREA

LEGEND: (SEE NOTES 1)

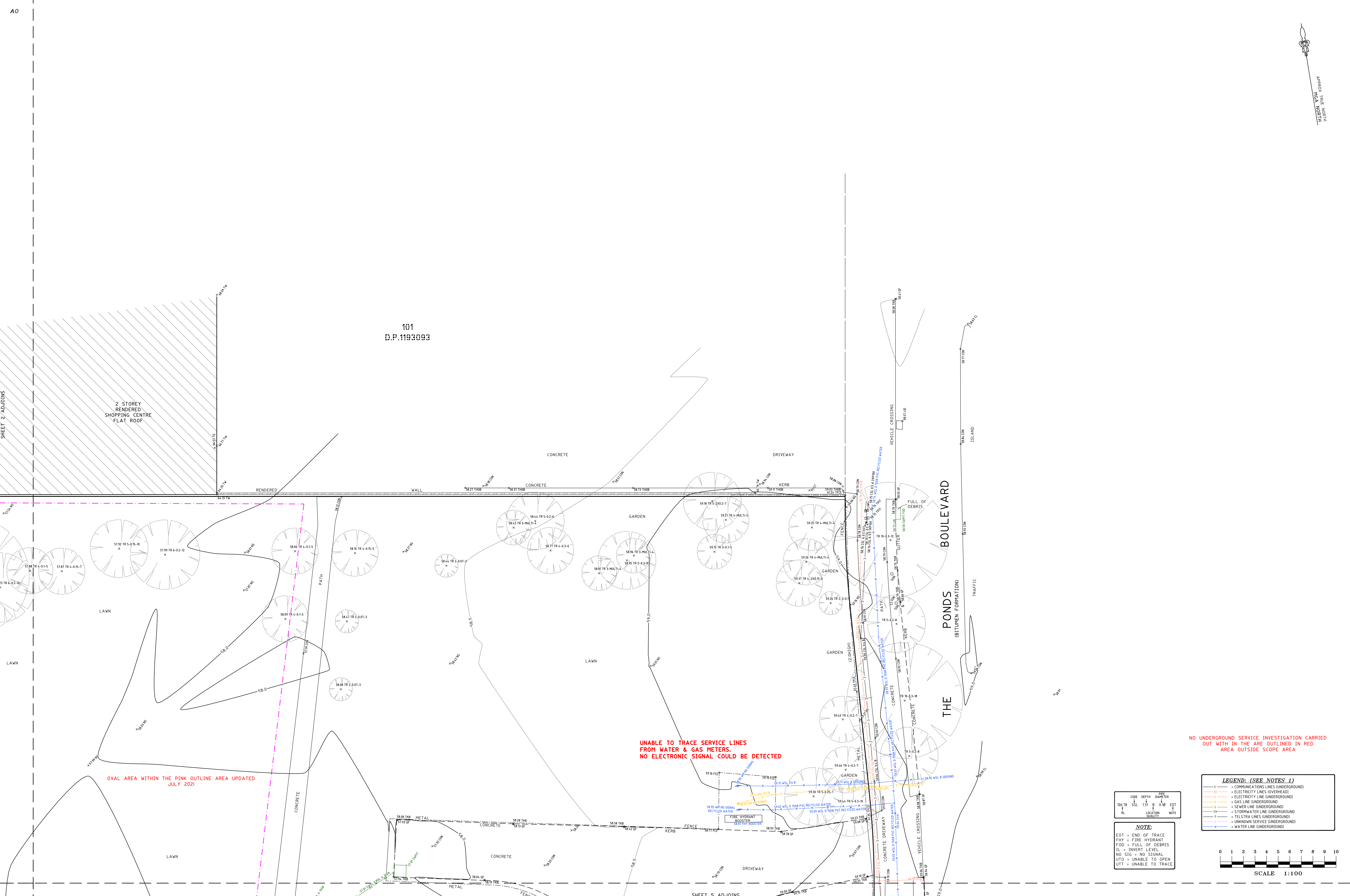
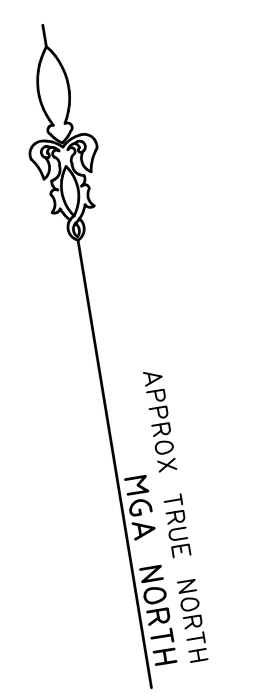
- C = COMMUNICATIONS LINES (UNDERGROUND)
- E = ELECTRICITY LINES (OVERHEAD)
- E = ELECTRICITY LINE (UNDERGROUND)
- G = GAS LINE (UNDERGROUND)
- S = SEWER LINE (UNDERGROUND)
- SW = STORMWATER LINE (UNDERGROUND)
- T = TELSTRA LINES (UNDERGROUND)
- U = UNKNOWN SERVICE (UNDERGROUND)
- W = WATER LINE (UNDERGROUND)

CODE	DEPTH	Diameter
106 TO 131	1.5m	150mm
132 TO 147	2.0m	150mm
148 TO 163	2.5m	150mm
164 TO 179	3.0m	150mm
180 TO 195	3.5m	150mm
196 TO 211	4.0m	150mm
212 TO 227	4.5m	150mm
228 TO 243	5.0m	150mm
244 TO 259	5.5m	150mm
260 TO 275	6.0m	150mm
276 TO 291	6.5m	150mm
292 TO 307	7.0m	150mm
308 TO 323	7.5m	150mm
324 TO 339	8.0m	150mm
340 TO 355	8.5m	150mm
356 TO 371	9.0m	150mm
372 TO 387	9.5m	150mm
388 TO 403	10.0m	150mm

NOTE:
 EOT = END OF TRACE
 FHY = FIRE HYDRANT
 FOD = FULL OF DEBRIS
 IL = INVERT LEVEL
 NO SIG = NO SIGNAL
 UTO = UNABLE TO OPEN
 UTT = UNABLE TO TRACE



HORIZONTAL DATUM: CO-ORDINATE SYSTEM: MGA (GDA2020) MARKS ADOPTED: SSM 144687, SSM 164459		VERTICAL DATUM: DATUM: AUSTRALIAN HEIGHT DATUM (AHD) B.M. ADOPTED: SSM 144687 R.L. 59.453 (CLASS LD) SOURCE: S.C.I.M.S. (16/07/2020)		CLIENT: SCHOOLS INFRASTRUCTURE NSW DEPARTMENT OF EDUCATION C/- JACOBS, LEVEL 5, 177 PACIFIC HIGHWAY NORTH SYDNEY, NSW, 2060		SURVEY PLAN SHOWING DETAIL, LEVELS & UNDERGROUND SERVICES OVER LOT 1 IN DP1131340 JOHN PALMER PUBLIC SCHOOL 85 THE PONDS BOULEVARD THE PONDS, NSW, 2769		C.M.S. Surveyors Pty Limited ACN: 096 240 201 PO Box 463 Dee Why NSW 2099 2/99A South Creek Road, Dee Why NSW 2099 Telephone: (02) 9971 4802 Facsimile: (02) 9971 4822 E-mail: info@cmsurveyors.com.au		<table border="1"> <tr> <th>SURVEYED</th> <th>DRAWN</th> <th>CHECKED</th> <th>APPROVED</th> </tr> <tr> <td>HC</td> <td>ABS/GP</td> <td>HC</td> <td>AF/ZDR</td> </tr> <tr> <td colspan="2">SURVEY INSTRUCTION</td> <td>SCALE</td> <td>DATE OF SURVEY</td> </tr> <tr> <td colspan="2">19524A</td> <td>1:500 B AD</td> <td>20-21/07/2020</td> </tr> <tr> <td colspan="2">DRAWING NAME</td> <td>HC</td> <td>DATE OF ISSUE</td> </tr> <tr> <td colspan="2">19524Adetail</td> <td>HC</td> <td>02/07/2020</td> </tr> <tr> <td colspan="2">CAD FILE</td> <td>SHEET</td> <td>ISSUE</td> </tr> <tr> <td colspan="2">19524Adetail 2.dwg</td> <td>2 of 9</td> <td>2</td> </tr> </table>		SURVEYED	DRAWN	CHECKED	APPROVED	HC	ABS/GP	HC	AF/ZDR	SURVEY INSTRUCTION		SCALE	DATE OF SURVEY	19524A		1:500 B AD	20-21/07/2020	DRAWING NAME		HC	DATE OF ISSUE	19524Adetail		HC	02/07/2020	CAD FILE		SHEET	ISSUE	19524Adetail 2.dwg		2 of 9	2
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NO UNDERGROUND SERVICE INVESTIGATION CARRIED OUT WITH IN THE AREA OUTLINED IN RED AREA OUTSIDE SCOPE AREA

LEGEND: (SEE NOTES 1)

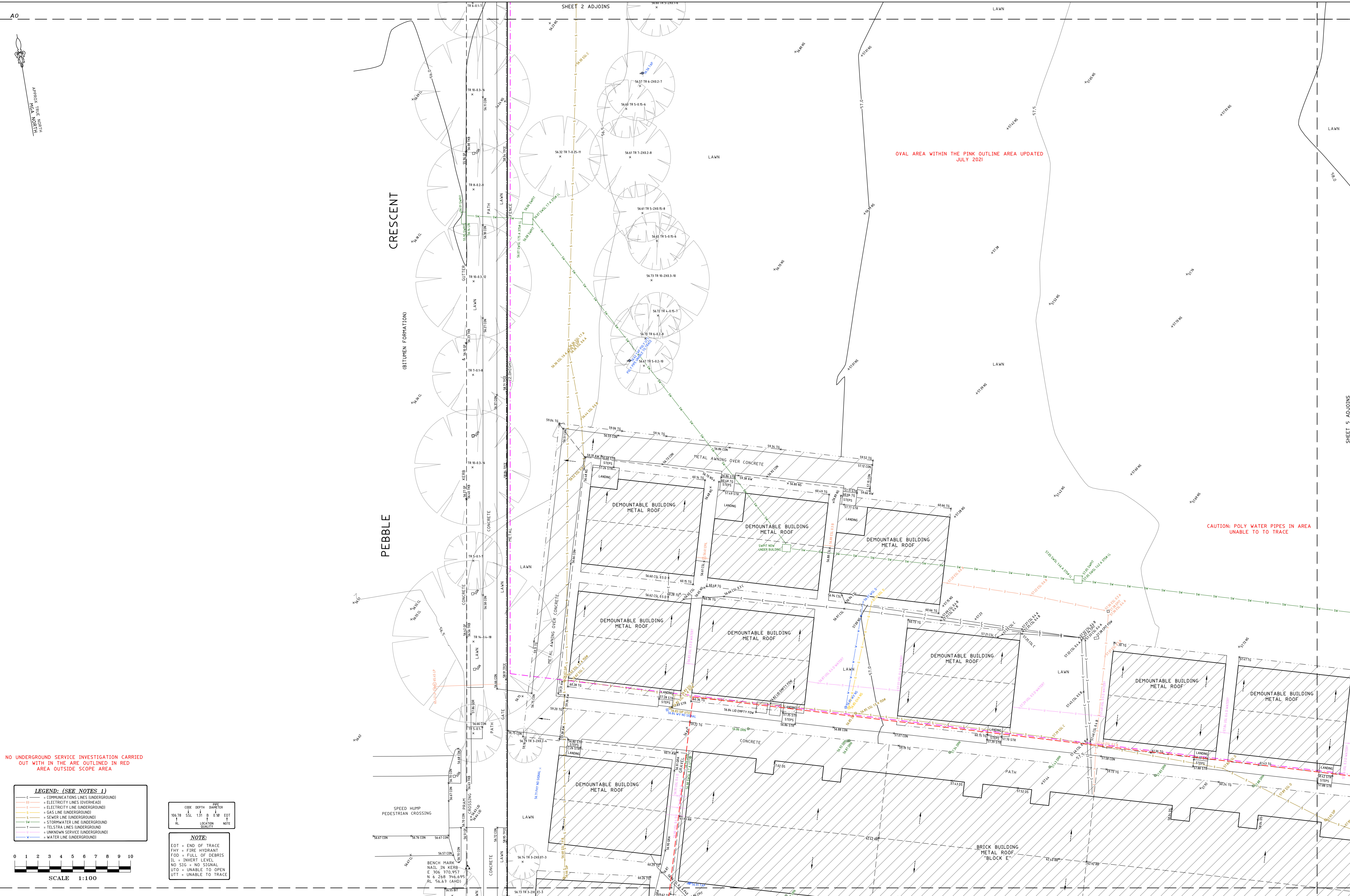
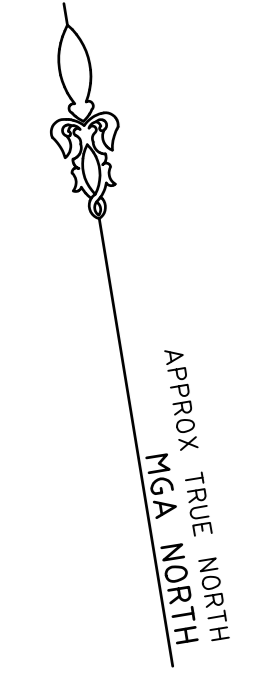
—C—	COMMUNICATIONS LINES (UNDERGROUND)
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—SW—	STORMWATER LINE (UNDERGROUND)
—T—	TELSTRA LINES (UNDERGROUND)
—U—	UNKNOWN SERVICE (UNDERGROUND)
—W—	WATER LINE (UNDERGROUND)

CODE	DEPTH	OPER
106.78	SSL	131 B
RL		0.10 EDI
		QUALITY
		NOTE

NOTE:
 EDT = END OF TRACE
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 FOD = FULL OF DEBRIS
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HORIZONTAL DATUM: CO-ORDINATE SYSTEM: MGA (GDA2020) MARKS ADOPTED: SSM 144687, SSM 164459 L.G.A. BLACKTOWN		VERTICAL DATUM: DATUM: AUSTRALIAN HEIGHT DATUM (AHD) B.M. ADOPTED: SSM 144687 R.L. 59.453 (CLASS LD) SOURCE: S.C.I.M.S. (16/07/2020)		CLIENT: SCHOOLS INFRASTRUCTURE NSW DEPARTMENT OF EDUCATION C/- JACOBS, LEVEL 5, 177 PACIFIC HIGHWAY NORTH SYDNEY, NSW, 2060		SURVEY PLAN SHOWING DETAIL, LEVELS & UNDERGROUND SERVICES OVER LOT 1 IN DP1131340 JOHN PALMER PUBLIC SCHOOL 85 THE PONDS BOULEVARD THE PONDS, NSW, 2769		C.M.S. Surveyors Pty Limited ACN: 096 240 201 PO Box 463 Dee Why NSW 2099 2/99A South Creek Road, Dee Why NSW 2099 Telephone: (02) 9971 4802 Facsimile: (02) 9971 4822 E-mail: info@cmsurveyors.com.au		<table border="1"> <tr><th>SURVEYED</th><th>DRAWN</th><th>CHECKED</th><th>APPROVED</th></tr> <tr><td>HC</td><td>ABS/GP</td><td>HC</td><td>AF/ZDR</td></tr> <tr><td colspan="2">SURVEY INSTRUCTION</td><td>SCALE</td><td>DATE OF SURVEY</td></tr> <tr><td colspan="2">19524A</td><td>1:100 D AD</td><td>20.2/07/2020</td></tr> <tr><td colspan="2">DRAWING NAME</td><td>CAD FILE</td><td>SHEET</td></tr> <tr><td colspan="2">19524Adetail</td><td>19524Adetail 2.dwg</td><td>3 OF 9</td></tr> <tr><td colspan="2"></td><td></td><td>ISSUE</td></tr> <tr><td colspan="2"></td><td></td><td>2</td></tr> </table>		SURVEYED	DRAWN	CHECKED	APPROVED	HC	ABS/GP	HC	AF/ZDR	SURVEY INSTRUCTION		SCALE	DATE OF SURVEY	19524A		1:100 D AD	20.2/07/2020	DRAWING NAME		CAD FILE	SHEET	19524Adetail		19524Adetail 2.dwg	3 OF 9				ISSUE				2
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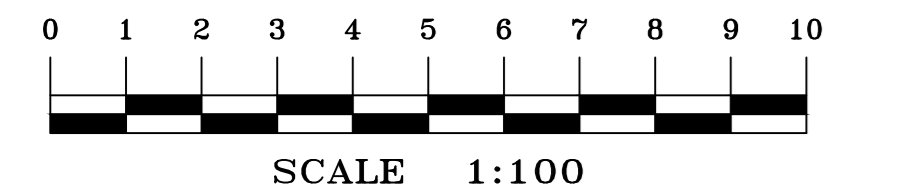


NO UNDERGROUND SERVICE INVESTIGATION CARRIED OUT WITH IN THE AREA OUTLINED IN RED AREA OUTSIDE SCOPE AREA

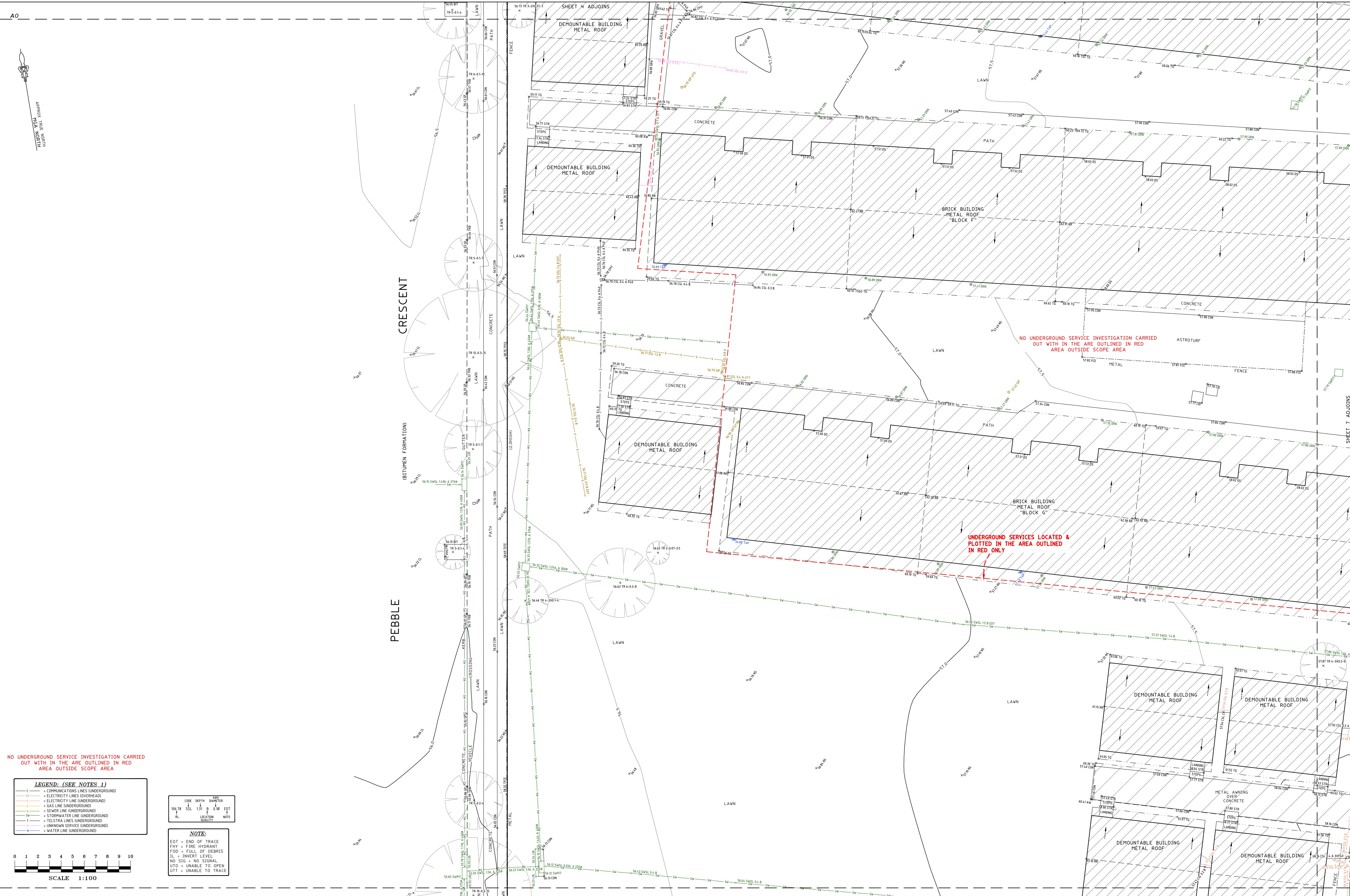
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CODE	DEPTH	SIZE	NOTE
AL			LOCATION
Q			QUALITY

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LEGEND: (SEE NOTES 1)

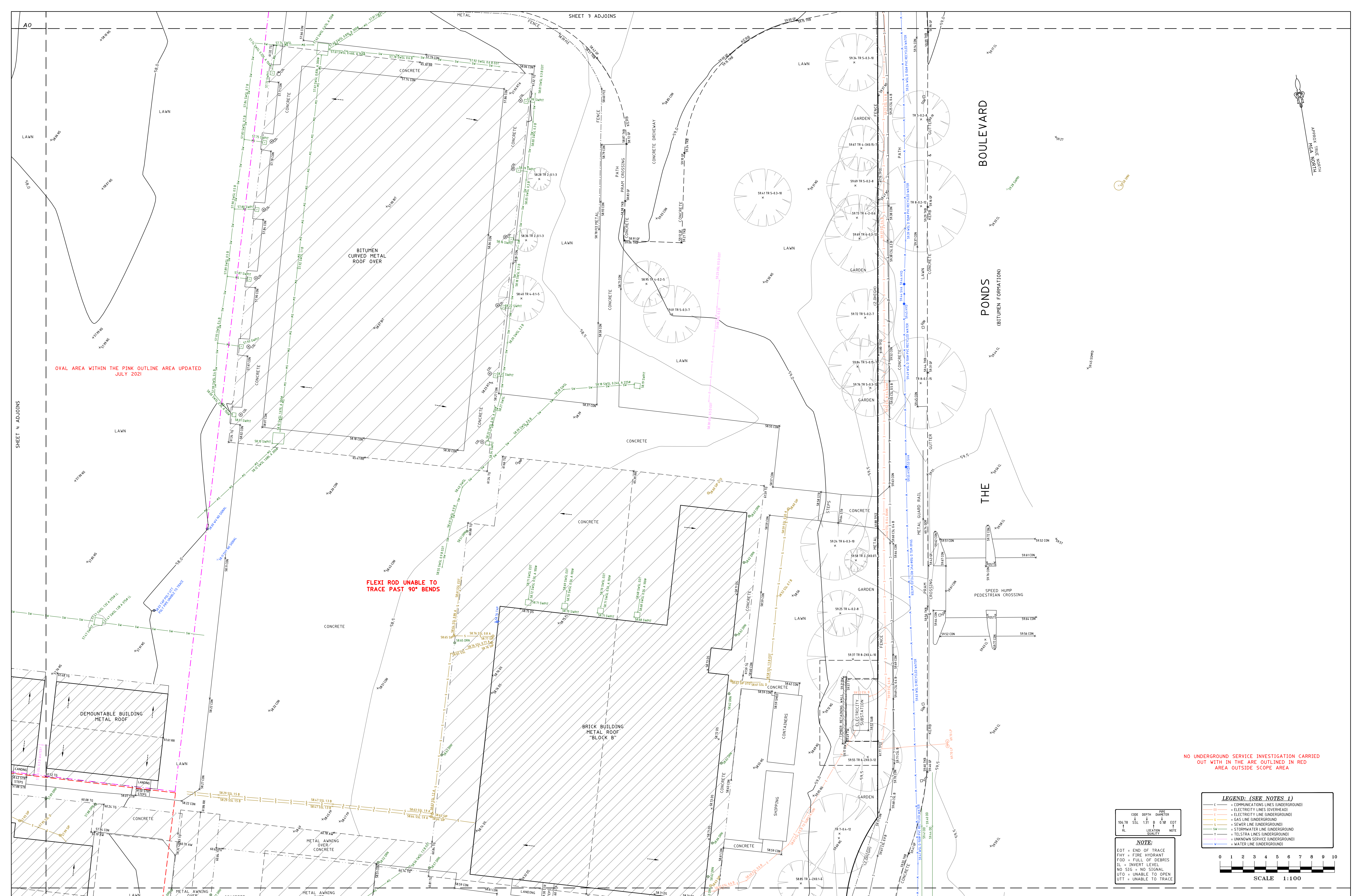
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SCALE 1:100

HORIZONTAL DATUM: CO-ORDINATE SYSTEM: MGA (GDA2020) MARKS ADOPTED: SSM 14687, SSM 164459		VERTICAL DATUM: DATUM: AUSTRALIAN HEIGHT DATUM (AHD) B.M. ADOPTED: SSM 14687 R.L. 59.453 (CLASS LD) SOURCE: S.C.I.M.S. (06/07/2020)		CLIENT: SCHOOLS INFRASTRUCTURE NSW DEPARTMENT OF EDUCATION C/- JACOBS, LEVEL 5, 177 PACIFIC HIGHWAY NORTH SYDNEY, NSW, 2060		SURVEY PLAN SHOWING DETAIL, LEVELS & UNDERGROUND SERVICES OVER LOT 1 IN DP1131340 JOHN PALMER PUBLIC SCHOOL 85 THE PONDS BOULEVARD THE PONDS, NSW, 2769		C.M.S. Surveyors Pty Limited ACN: 096 240 201 PO Box 463 Dee Why NSW 2099 2/99A South Creek Road, Dee Why NSW 2099 Telephone: (02) 9971 4802 Facsimile: (02) 9971 4822 E-mail: info@cmsurveyors.com.au		<table border="1"> <tr> <th>SURVEYED</th> <th>DRAWN</th> <th>CHECKED</th> <th>APPROVED</th> </tr> <tr> <td>HC</td> <td>ABS/GP</td> <td>HC</td> <td>AF/ZDR</td> </tr> <tr> <td colspan="2">SURVEY INSTRUCTION</td> <td>SCALE</td> <td>DATE OF SURVEY</td> </tr> <tr> <td colspan="2">1952NA</td> <td>1:100 00 AD</td> <td>20.2/07/2020</td> </tr> <tr> <td colspan="2">DRAWING NAME</td> <td>DATE OF ISSUE</td> <td>SHEET</td> </tr> <tr> <td colspan="2">19524Adetail</td> <td>1952NA</td> <td>6 of 9</td> </tr> <tr> <td colspan="2">CAD FILE</td> <td>SCALE</td> <td>ISSUE</td> </tr> <tr> <td colspan="2">19524Adetail</td> <td>2.4wg</td> <td>2</td> </tr> </table>		SURVEYED	DRAWN	CHECKED	APPROVED	HC	ABS/GP	HC	AF/ZDR	SURVEY INSTRUCTION		SCALE	DATE OF SURVEY	1952NA		1:100 00 AD	20.2/07/2020	DRAWING NAME		DATE OF ISSUE	SHEET	19524Adetail		1952NA	6 of 9	CAD FILE		SCALE	ISSUE	19524Adetail		2.4wg	2
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OMAL AREA WITHIN THE PINK OUTLINE AREA UPDATED JULY 2021

FLEXI ROD UNABLE TO TRACE PAST 90° BENDS

NO UNDERGROUND SERVICE INVESTIGATION CARRIED OUT WITHIN THE AREA OUTLINED IN RED AREA OUTSIDE SCOPE AREA

CODE	DEPTH	DIAMETER
106.78	SSL	131 B 010 EOT
RL	LOCATION	NOTE
	QUALITY	

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LEGEND: (SEE NOTES 1)

C	COMMUNICATIONS LINES (UNDERGROUND)
E	ELECTRICITY LINES (OVERHEAD)
E	ELECTRICITY LINE (UNDERGROUND)
G	GAS LINE (UNDERGROUND)
S	SEWER LINE (UNDERGROUND)
SW	STORMWATER LINE (UNDERGROUND)
T	TELESTRAL LINES (UNDERGROUND)
U	UNKNOWN SERVICE (UNDERGROUND)
W	WATER LINE (UNDERGROUND)



NO.	DESCRIPTION	DATE
1	DETAIL UPDATED- AREAS UPDATED OUTLINE IN PINK ON THE PLAN	06/07/2021
1	FIRST ISSUE	07/08/2020

HORIZONTAL DATUM:
 CO-ORDINATE SYSTEM: MGA (GDA2020)
 MARKS ADOPTED: SSM 164687, SSM 164459
 L.G.A. BLACKTOWN

VERTICAL DATUM:
 DATUM: AUSTRALIAN HEIGHT DATUM (AHD)
 B.M. ADOPTED: SSM 1644687
 R.L. 59.453 (CLASS LD)
 SOURCE: S.C.I.M.S. (16/07/2020)

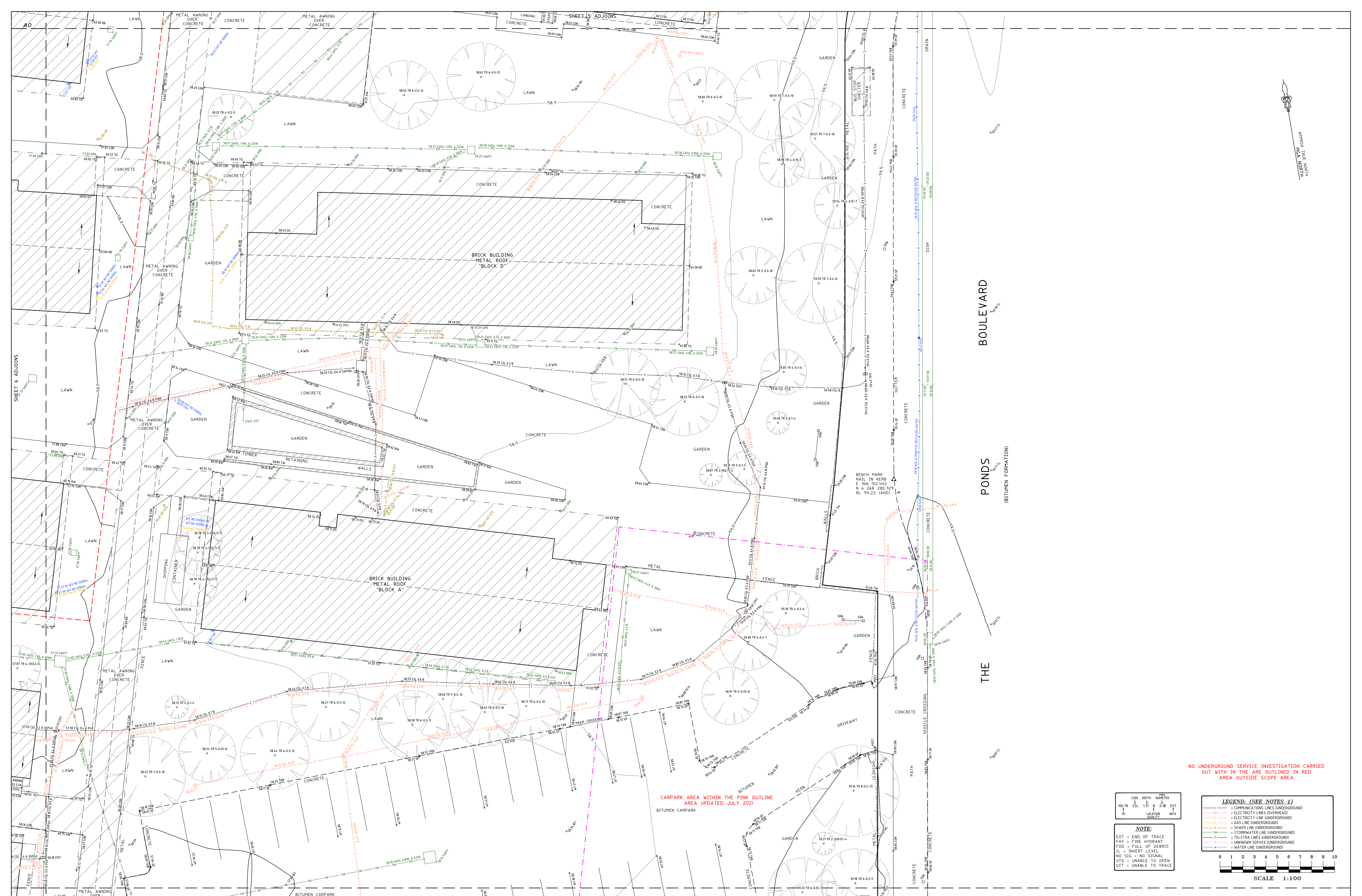
CLIENT:
 SCHOOLS INFRASTRUCTURE NSW DEPARTMENT OF EDUCATION
 C/- JACOBS, LEVEL 5, 177 PACIFIC HIGHWAY
 NORTH SYDNEY, NSW, 2060

**SURVEY PLAN SHOWING
 DETAIL, LEVELS & UNDERGROUND SERVICES
 OVER LOT 1 IN DP1131340
 JOHN PALMER PUBLIC SCHOOL
 85 THE PONDS BOULEVARD
 THE PONDS, NSW, 2769**

C.M.S. Surveyors Pty Limited
 ACN: 096 240 201
 PO Box 463 Dee Why NSW 2099
 2/99A South Creek Road, Dee Why NSW 2099
 Telephone: (02) 9971 4802 Facsimile: (02) 9971 4822
 E-mail: info@cmsurveyors.com.au

SURVEYED	DRAWN	CHECKED	APPROVED
HC	ABS/JP	HC	AF/ZDR

DRAWING NAME: 19524Adetail
SCALE: 1:100
DATE OF SURVEY: 20.21/07/2020
DATE OF ISSUE: 02/07/2021
SHEET: 5 of 9
ISSUE: 2



NO UNDERGROUND SERVICE INVESTIGATION CARRIED OUT WITH IN THE AREA OUTLINED IN RED AREA OUTSIDE SCOPE AREA

CARPARK AREA WITHIN THE PINK OUTLINE AREA UPDATED JULY 2021

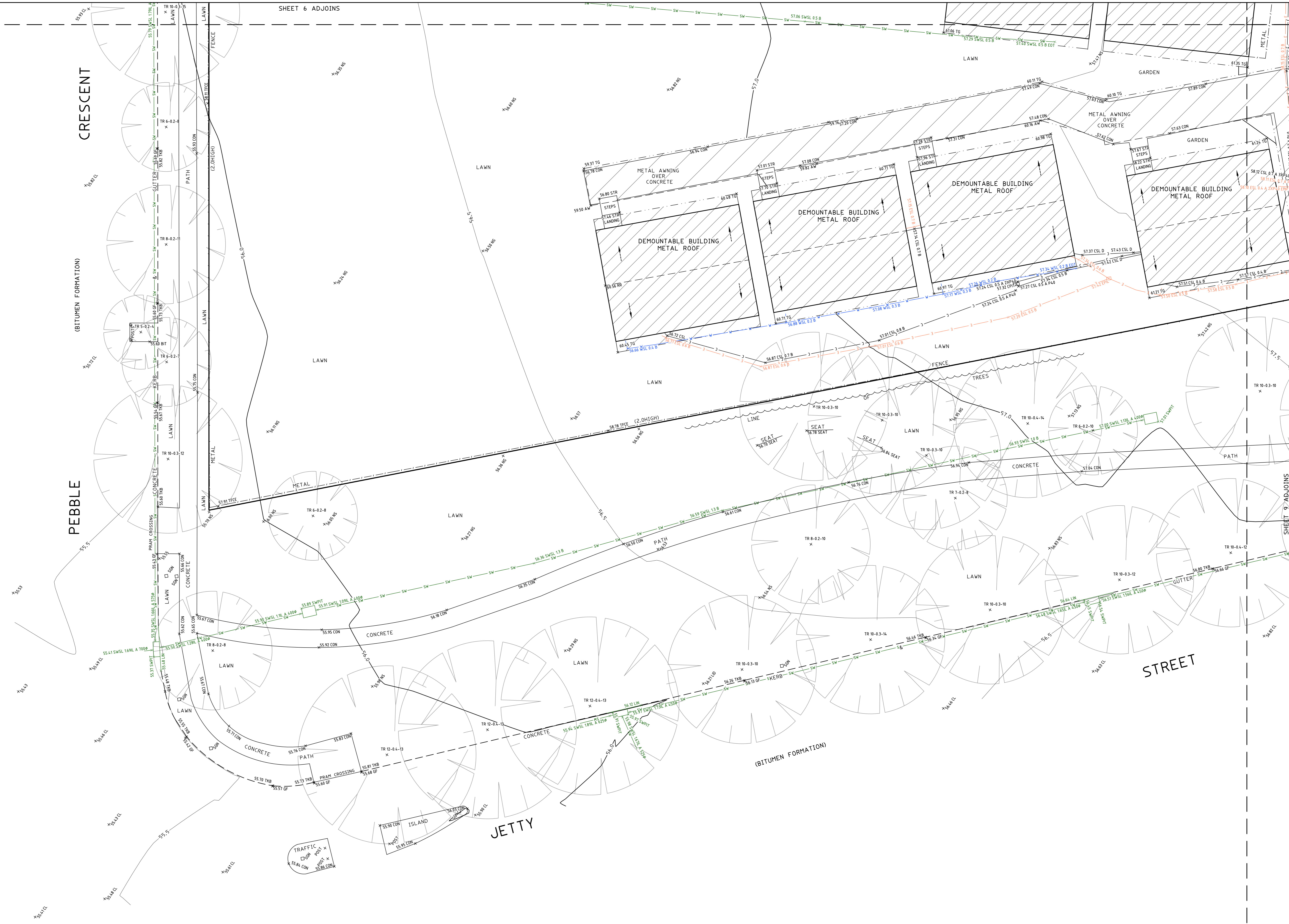
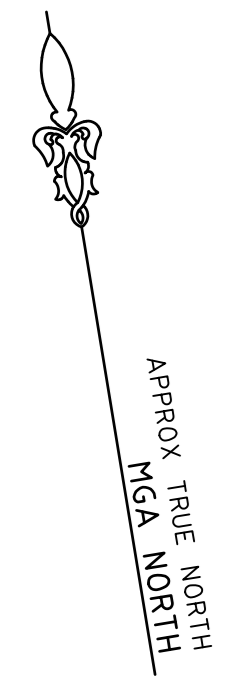
CODE	DEPTH	DIRE
105 TR	SSL	1.31 B 0.10 EDT
RL		LOCATION QUALITY NOTE

NOTE:
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LEGEND: (SEE NOTES 1)	
(Symbol)	COMMUNICATIONS LINES (UNDERGROUND)
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(Symbol)	UNKNOWN SERVICE (UNDERGROUND)
(Symbol)	WATER LINE (UNDERGROUND)



HORIZONTAL DATUM: CO-ORDINATE SYSTEM: MGA (GDA2020) MARKS ADOPTED: SSM 146487, SSM 164459 06/07/2020 07/08/2020 L.G.A. BLACKTOWN		VERTICAL DATUM: DATUM: AUSTRALIAN HEIGHT DATUM (AHD) B.M. ADOPTED: SSM 146487 R.L. 59.453 (CLASS LD) SOURCE: S.C.I.M.S. (16/07/2020)		CLIENT: SCHOOLS INFRASTRUCTURE NSW DEPARTMENT OF EDUCATION C/- JACOBS, LEVEL 5, 177 PACIFIC HIGHWAY NORTH SYDNEY, NSW, 2060		SURVEY PLAN SHOWING DETAIL, LEVELS & UNDERGROUND SERVICES OVER LOT 1 IN DP1131340 JOHN PALMER PUBLIC SCHOOL 85 THE PONDS BOULEVARD THE PONDS, NSW, 2769		C.M.S. Surveyors Pty Limited ACN: 096 240 201 PO Box 463 Dee Why NSW 2099 2/99A South Creek Road, Dee Why NSW 2099 Telephone: (02) 9971 4802 Facsimile: (02) 9971 4822 E-mail: info@cmsurveyors.com.au		<table border="1"> <tr> <td>SURVEYED</td> <td>DRAWN</td> <td>CHECKED</td> <td>APPROVED</td> </tr> <tr> <td>HC</td> <td>ABS/GP</td> <td>HC</td> <td>AF/ZDR</td> </tr> <tr> <td colspan="2">SURVEY INSTRUCTION</td> <td>SCALE</td> <td>DATE OF SURVEY</td> </tr> <tr> <td colspan="2">19524A</td> <td>1:100 B AD</td> <td>20-21/07/2020</td> </tr> <tr> <td colspan="2">DRAWING NAME</td> <td>HC</td> <td>ISSUE</td> </tr> <tr> <td colspan="2">19524Adetail</td> <td>19524Adetail</td> <td>2</td> </tr> <tr> <td colspan="2">19524Adetail</td> <td>2.dwg</td> <td></td> </tr> </table>		SURVEYED	DRAWN	CHECKED	APPROVED	HC	ABS/GP	HC	AF/ZDR	SURVEY INSTRUCTION		SCALE	DATE OF SURVEY	19524A		1:100 B AD	20-21/07/2020	DRAWING NAME		HC	ISSUE	19524Adetail		19524Adetail	2	19524Adetail		2.dwg	
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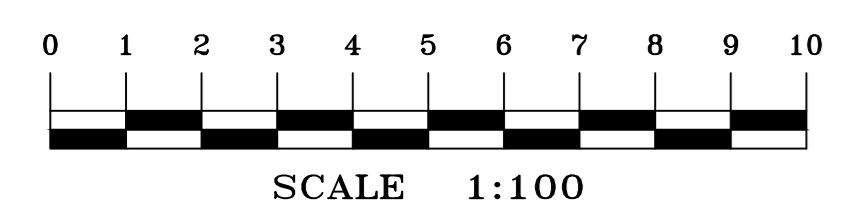
NO UNDERGROUND SERVICE INVESTIGATION CARRIED OUT WITH IN THE ARE OUTLINED IN RED AREA OUTSIDE SCOPE AREA

LEGEND: (SEE NOTES 1)

—C—	= COMMUNICATIONS LINES (UNDERGROUND)
—E—	= ELECTRICITY LINES (OVERHEAD)
—E—	= ELECTRICITY LINE (UNDERGROUND)
—G—	= GAS LINE (UNDERGROUND)
—S—	= SEWER LINE (UNDERGROUND)
—SW—	= STORMWATER LINE (UNDERGROUND)
—T—	= TEL STRA LINES (UNDERGROUND)
—U—	= UNKNOWN SERVICE (UNDERGROUND)
—W—	= WATER LINE (UNDERGROUND)

CODE	DEPTH	PIPE
106.78	SSL	131 B 0'10" EDT
RL	LOCATION	NOTE
	QUALITY	

NOTE:
 EDT = END OF TRACE
 FHV = FIRE HYDRANT
 FOD = FULL OF DEBRIS
 IL = INVERT LEVEL
 NO SIG = NO SIGNAL
 UTO = UNABLE TO OPEN
 UTT = UNABLE TO TRACE



HORIZONTAL DATUM: CO-ORDINATE SYSTEM: MGA (GDA2020) MARKS ADOPTED: SSM 144687, SSM 164459		VERTICAL DATUM: DATUM: AUSTRALIAN HEIGHT DATUM (AHD) B.M. ADOPTED: SSM 144687 R.L. 59.453 (CLASS LD) SOURCE: S.C.I.M.S. (16/07/2020)		CLIENT: SCHOOLS INFRASTRUCTURE NSW DEPARTMENT OF EDUCATION C/- JACOBS, LEVEL 5, 177 PACIFIC HIGHWAY NORTH SYDNEY, NSW, 2060		SURVEY PLAN SHOWING DETAIL, LEVELS & UNDERGROUND SERVICES OVER LOT 1 IN DP1131340 JOHN PALMER PUBLIC SCHOOL 85 THE PONDS BOULEVARD THE PONDS, NSW, 2769		C.M.S. Surveyors Pty Limited ACN: 096 240 201 PO Box 463 Deo Why NSW 2099 2/99A South Creek Road, Deo Why NSW 2099 Telephone: (02) 9971 4802 Facsimile: (02) 9971 4822 E-mail: info@cmsurveyors.com.au		<table border="1"> <tr><th>SURVEYED</th><th>DRAWN</th><th>CHECKED</th><th>APPROVED</th></tr> <tr><td>HC</td><td>ABS/GP</td><td>HC</td><td>AF/ZDR</td></tr> <tr><td colspan="2">SURVEY INSTRUCTION: 19524A</td><td>SCALE: 1:100 @ A0</td><td>DATE OF SURVEY: 20-21/07/2020</td></tr> <tr><td colspan="2">DRAWING NAME: 19524Adetail</td><td>SHEET: 8 OF 9</td><td>ISSUE: 2</td></tr> <tr><td colspan="2">CAD FILE: 19524Adetail_2.dwg</td><td colspan="2">The Essential First Step</td></tr> </table>		SURVEYED	DRAWN	CHECKED	APPROVED	HC	ABS/GP	HC	AF/ZDR	SURVEY INSTRUCTION: 19524A		SCALE: 1:100 @ A0	DATE OF SURVEY: 20-21/07/2020	DRAWING NAME: 19524Adetail		SHEET: 8 OF 9	ISSUE: 2	CAD FILE: 19524Adetail_2.dwg		The Essential First Step	
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DETAIL UPDATED- AREAS UPDATED OUTLINE IN PINK ON THE PLAN 06/07/2021		FIRST ISSUE 07/08/2020		L.G.A. BLACKTOWN																											

APPENDIX B - PMP CALCULATION

PMF ESTIMATION CALCULATION WORKSHEET

Refer to Commonwealth Bureau of Meteorology The Estimation of Probable Maximum Precipitation in Australia: Generalised Short-Duration Method Report for complete method.

PROJECT: 6372
 MODELLER: KEH
 DATE: 14/01/2022
 Site Area: 1 km² m²
 Type of generalised method: GSAM Coastal Zone Refer Figure 1
 Duration Limit: 6 Refer Figure 2
 Terrain Category: Rough
 Elevation Adjustment Factor: 1 Elevation <= 1500m
 Moisture Adjustment Factor: 0.7 Refer Figure 3

Where:
 S = smooth % of catchment area
 Ds = initial rainfall depth for the smooth terrain categories
 R = rough % of catchment area
 Dr = initial rainfall depth for the rough terrain categories
 MAF = moisture adjustment factor
 EAF = Elevation adjustment factor

Storm Event	PMP
0.25hr	171.5
0.5hr	245
0.75hr	308
1hr	357
1.5hr	458.5
2hr	539
2.5hr	595
3hr	656.6
4hr	745.5
5hr	823.9
6hr	870.1

Figure 1:

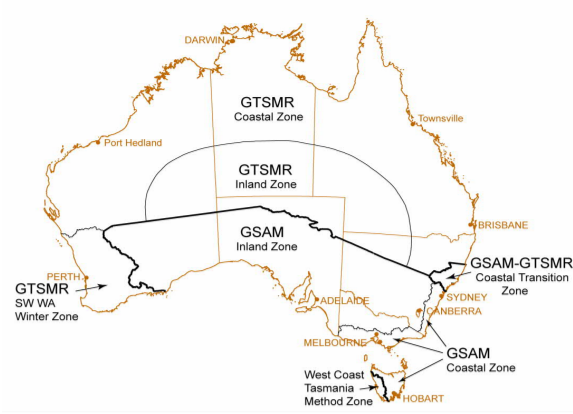


Figure 2:

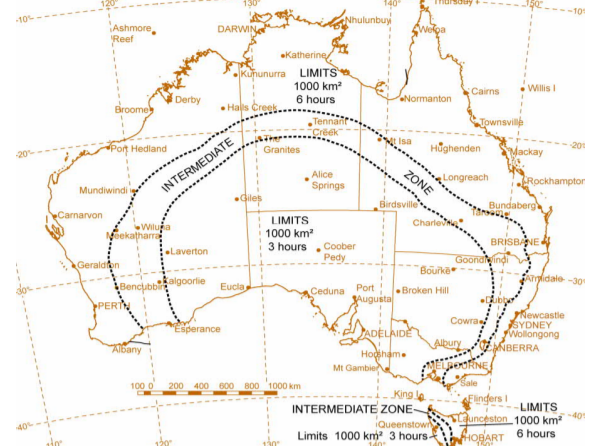
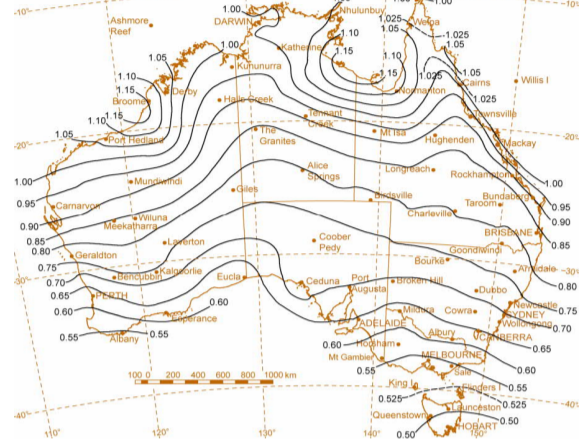


Figure 3:



Depth Duration Area Curve

Refer to Figure 4 in BOM PMP Report

Storm Event	R	S	units
0.25hr	245	245	mm
0.5hr	350	350	mm
0.75hr	440	440	mm
1hr	510	510	mm
1.5hr	655	570	mm
2hr	770	647	mm
2.5hr	850	690	mm
3hr	938	727	mm
4hr	1065	793	mm
5hr	1177	855	mm
6hr	1243	900	mm

PMP Value

Storm Event	PMP	Nearest 10mm
0.25hr	171.5	170
0.5hr	245	250
0.75hr	308	310
1hr	357	360
1.5hr	458.5	460
2hr	539	540
2.5hr	595	600
3hr	656.6	660
4hr	745.5	750
5hr	823.9	820
6hr	870.1	870

RAINFALL PER STORM EVENT

15 MIN STORM EVENT			30 MIN STORM EVENT			45 MIN STORM EVENT			1HR STORM EVENT			1.5HR STORM EVENT			2HR STORM EVENT			2.5HR STORM EVENT			3HR STORM EVENT			
0.25hr	0.5hr	0.75hr	0.25hr	0.5hr	0.75hr	0.25hr	0.5hr	0.75hr	0.25hr	0.5hr	0.75hr	0.25hr	0.5hr	0.75hr	0.25hr	0.5hr	0.75hr	0.25hr	0.5hr	0.75hr	0.25hr	0.5hr	0.75hr	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0.75	4	4	6.8	544	1.5	4	4	10	400	2.25	4	4	12.4	330.6667	3	4	4	14.4	288	4.5	952	4.5	800	
1.5	10	6	10.2	816	3	10	6	15	600	4.5	10	6	18.6	496	6	10	6	21.6	432	6	816	6	700	
2.25	18	8	13.6	1088	4.5	18	8	20	800	6.75	18	8	24.8	661.3333	9	18	8	28.8	576	7.5	680	7.5	700	
3	25	7	11.9	952	6	25	7	17.5	700	9	25	7	21.7	578.6667	12	25	7	25.2	504	9	680	9	600	
3.75	32	7	11.9	952	7.5	32	7	17.5	700	11.25	32	7	21.7	578.6667	15	32	7	25.2	504	10.5	680	10.5	500	
4.5	39	7	11.9	952	9	39	7	17.5	700	13.5	39	7	21.7	578.6667	18	39	7	25.2	504	12	408	12	600	
5.25	46	7	11.9	952	10.5	46	7	17.5	700	15.75	46	7	21.7	578.6667	21	46	7	25.2	504	13.5	272	13.5	700	
6	52	6	10.2	816	12	52	6	15	600	18	52	6	18.6	496	24	52	6	21.6	432	15	136	15	500	
6.75	59	7	11.9	952	13.5	59	7	17.5	700	20.25	59	7	21.7	578.6667	27	59	7	25.2	504	16.5	600	16.5	500	
7.5	64	5	8.5	680	15	64	5	12.5	500	22.5	64	5	15.5	413.3333	30	64	5	18	360	18	500	18	500	
8.25	70	6	10.2	816	16.5	70	6	15	600	24.75	70	6	18.6	496	33	70	6	21.6	432	19.5	500	19.5	500	
9	75	5	8.5	680	18	75	5	12.5	500	27	75	5	15.5	413.3333	36	75	5	18	360	21	500	21	500	
9.75	80	5	8.5	680	19.5	80	5	12.5	500	29.25	80	5	15.5	413.3333	39	80	5	18	360	22.5	400	22.5	400	
10.5	85	5	8.5	680	21	85	5	12.5	500	31.5	85	5	15.5	413.3333	42	85	5	18	360	24	300	24	300	
11.25	89	4	6.8	544	22.5	89	4	10	400	33.75	89	4	12.4	330.6667	45	89	4	14.4	288	25.5	300	25.5	300	
12	92	3	5.1	408	24	92	3	7.5	300	36	92	3	9.3	248	48	92	3	10.8	216	27	200	27	200	
12.75	95	3	5.1	408	25.5	95	3	7.5	300	38.25	95	3	9.3	248	51	95	3	10.8	216	28.5	200	28.5	200	
13.5	97	2	3.4	272	27	97	2	2	5	200	40.5	97	2	6.2	165.3333	54	97	2	7.2	144	30	100	30	100
14.25	99	2	3.4	272	28.5	99	2	5	200	42.75	99	2	6.2	165.3333	57	99	2	7.2	144	31.5	100	31.5	100	
15	100	1	1.7	136	30	100	1	2.5	100	45	100	1	3.1	82.66667	60	100	1	3.6	72	42	75	42	75	

1.5HR STORM EVENT			2HR STORM EVENT			2.5HR STORM EVENT			3HR STORM EVENT			4HR STORM EVENT			5HR STORM EVENT			6HR STORM EVENT					
1.5hr	2hr	2.5hr	1.5hr	2hr	2.5hr	1.5hr	2hr	2.5hr	1.5hr	2hr	2.5hr	1.5hr	2hr	2.5hr	1.5hr	2hr	2.5hr	1.5hr	2hr	2.5hr			
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4.5	4	4	18.4	245.3333	6	4	4	21.6	216	7.5	4	4	24	192	9	4	4	26.4	176	9	10	9	10
9	10	6	27.6	368	12	10	6	32.4	324	15	10	6	36	288	18	10	6	39.6	264	18	10	6	39.6
13.5	18	8	36.8	490.6667	18	18	8	43.2	432	22.5	18	8	48	384	27	18	8	52.8	352	27	18	8	52.8
18	25	7	32.2	429.3333	24	25	7	37.8	378	30	25	7	42	336	36	25	7	46.2	308	36	25	7	46.2
22.5	32	7	32.2	429.3333	30	32	7	37.8	378	37.5	32	7	42	336	45	32	7	46.2	308	45	32	7	46.2
27	39	7	32.2	429.3333	36	39	7	37.8	378	45	39	7	42	336	54	39	7	46.2	308	54	39	7	46.2
31.5	46	7	32.2	429.3333	42	46	7	37.8	378	52.5	46	7	42	336	63	46	7	46.2	308	63	46	7	46.2
36	52	8	36.8	490.6667	48	52	8	43.2	432	60	52	8	48	384	72	52	8	52.8	352	72	52	8	52.8
40.5	59	7	32.2	429.3333	54	59	7	37.8	378	67.5	59	7	42	336	81	59	7	46.2	308	81	59	7	46.2
45	64	5	23	306.6667	60	64	5	27	270	75	64	5	30	240	90	64	5	33	220	90	64	5	33
49.5	70	6	27.6	368	66	70	6	32.4	324	82.5	70	6	36	288	99	70	6	39.6	264	99	70	6	39.6
54	75	5	23	306.6667	72	75	5	27	270	90	75	5	30	240	108	75	5	33	220	108	75	5	33
58.5	80	5	23	306.6667	78	80	5	27	270	97.5	80	5	30	240	117	80	5	33	220	108	108	5	33
63	85	5	23	306.6667	84	85	5	27	270	105	85	5	30	240	126	85	5	33	220	114	108	5	33
67.5	89	4	18.4	245.3333	90	89	4	21.6	216	112.5	89	4	24	192	135	89	4	26.4	176	135	89	4	26.4
72	92	3	13.8	184	96	92	3	16.2	162	120	92	3	18	144	144	92	3	19.8	132	144	92	3	19.8
76.5	95	3	13.8	184	102	95	3	16.2	162	127.5	95	3	18	144	153	95	3	19.8	132	153	95	3	19.8
81	97	2	9.2	122.6667	108	97	2	10.8	108	135	97	2	12	96	162	97	2	13.2	88	162	97	2	13.2
85.5	99	2	9.2	122.6667	114	99	2	10.8	108	142.5	99	2	12	96	171	99	2	13.2	88	171	99	2	13.2
90	100	1	4.6	61.33333	120	100	1	5.4	54	150	100	1	6	48	180	100	1	6.6	44	180	100	1	6.6

4HR STORM EVENT			5HR STORM EVENT			6HR STORM EVENT			15 MIN STORM EVENT			30 MIN STORM EVENT			45 MIN STORM EVENT			1HR STORM EVENT			1.5HR STORM EVENT			2HR STORM EVENT			2.5HR STORM EVENT			3HR STORM EVENT		
4hr	5hr	6hr	4hr	5hr	6hr	4hr	5hr	6hr	0.25hr	0.5hr	0.75hr	0.25hr	0.5hr	0.75hr	0.25hr	0.5hr	0.75hr	0.25hr	0.5hr	0.75hr	0.25hr	0.5hr	0.75hr	0.25hr	0.5hr	0.75hr	0.25hr	0.5hr	0.75hr			
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
12	4	4	30	150	15	4	4	32.8	131.2	18	4	4	32.8	131.2	18	4	4	32.8	131.2	18	4	4	32.8	131.2	18	4	4	32.8	131.2			
24	10	6	45	225	30	10	6	49.2	196.8	36	10	6	52.2	174	36	10	6	52.2	174	36	10	6	52.2	174	36	10	6	52.2	174			
36	18	8	60	300	40	18	8	65.6	262.4	54	18	8	69.6	232	48	18	8	73.6	208	48	18	8	73.6	208	48	18	8	73.6	208			
48	25	7	82.5	362.5	60	25	7	87.4	309.6	72	25	7	91.4	272	60	25	7	95.4	236	60	25	7	95.4	236	60	25	7	95.4	236			
60	32	7	105	450	80	32	7	111.8	427.2	90	32	7	115.8	324	80	32	7	119.8	272	80	32	7	119.8	272	80	32	7	119.8	272			
72	39	7	135	525	100	39	7	143.8	547.2	108	39	7	147.8	396	100	39	7	151.8	324	100	39	7	151.8	324	100	39	7	151.8	324			
84	46	7	180	675	120	46	7	192.8	729.6	126	46	7	196.8	468	120	46	7	200.8	396	120	46	7	200.8	396	120	46	7	200.8	396			
96	52	6	240	900	140	52	6	256.8	984	144	52	6	260.8	54																		

APPENDIX C – CORRESPONDENCE

22/11/2021

Job Number: 6372

enstruct group pty ltd

4 Parramatta Square
12 Darcy Street
Parramatta NSW 2150

ABN 32 094 570 671
Tel: +61 2 8904 1444
www.enstruct.com.au
Level 4, 2 Glen Street,
Milsons Point,
NSW, 2061,
Australia

For the attention of: - Lucinda Craig

Dear Lucinda,

John Palmer Public School
Response to EES Letter DOC21/916284

In response to the flooding/floodplain risk management comments contained in your letter DOC21/916284, the following reasonings are presented:

enstruct has received a Planning Certificate Section 10.7(2&5) from Blacktown City Council which is contained in **Appendix A**. Section 7a - *Flood related development controls information* indicates that "there are currently no mainstream or backwater flood related development controls adopted by Council that apply to the land subject to this Certificate". The 1% Annual Exceedance Probability (AEP) flood extent can also be seen in the flood map contained within the Rouse Hill Flood Study Report (**Appendix B**). The flood extent is contained within the Second Ponds Creek and embankment area to the west of the development site. The top flood level is at approximately RL54.50m AHD nearest to the site. Since the school site is in an elevated position at approximately RL59.50m AHD, there is a significant 5m height difference to the top of the flood water. From this information, the site is not flood affected despite its location in the Second Ponds Creek catchment area and reference to Blacktown City Council Flood Mapping is no longer necessary.

This map also assists in addressing Item 15 of the SEARs. Due to the site being in an elevated position approximately 5m above the top flood water level in the 1% AEP storm event contained in the Second Ponds Creek zone, it is not proposed that the school site will be affected by climate change or an increase in rainfall intensity inundating the site. In addition, the site is also setback 100m from the flood extent in this 1% AEP event, separated by two residential blocks.

Since the development site is not identified as flood prone by Blacktown City Council, a preliminary flood impact and risk assessment (FIRA) should not be required. Furthermore, as per Item 15 of the SEARs, impacts of the development in relation to flooding are not provided as it is proposed that there will be no changes to flood risk onsite or offsite as the site location is not subject to flood related impacts.

Yours Sincerely,



for
enstruct group pty ltd
Kelvin Holey
Civil and Environmental Engineer
CPEng RPEQ

APPENDIX A
BLACKTOWN CITY COUNCIL PLANNING
CERTIFICATE 10.7 (2&5)

Applicant Details

Your reference 20784A - SE

DFP PLANNING PTY LTD
11 DARTFORD ROAD
THORNLEIGH NSW 2120

Certificate Details

Certificate no.	PL2020/03682	Fee: \$133.00
Date issued	19 March 2020	Urgency fee: \$81.00
Receipt no.	ePay Ref 76225	

Property information

Property ID	353930	Land ID	353930
Legal description	LOT 1 DP 1131340		
Address	85 THE PONDS BOULEVARD THE PONDS NSW 2769		
County	CUMBERLAND	Parish	GIDLEY

PLANNING CERTIFICATE (Section 10.7(2 & 5))

Blacktown City Council prepared this Planning Certificate under Section 10.7 of the *Environmental Planning and Assessment Act 1979*. The form and content of the Certificate is consistent with *Environmental Planning and Assessment Regulation 2000*.

Disclaimer

Blacktown City Council gives notice and points out to all users of the information supplied herein, that the information herein has been compiled by Council from sources outside of Council's control. While the information herein is provided with all due care and in good faith, it is provided on the basis that Council will not accept any responsibility for and will not be liable for its contents or for any consequence arising from its use, and every user of such information is advised to make all necessary enquiries from the appropriate organisations, institutions and the like. Blacktown City Council also gives notice to all users of the information supplied herein, wherever any particular enquiry herein remains unanswered or has not been elaborated upon, such silence should not be interpreted as meaning or inferring either a negative or a positive response as the case may be.

Section 10.7(2)

The following information is provided under Section 10.7(2) of the *Environmental Planning and Assessment Act 1979*. The information relates to the subject land at the date of this Certificate.

1. Names of relevant planning instruments and development control plans

1.1 Environmental Planning Instrument

Blacktown Local Environmental Plan 2015 applies to the subject land.

1.2 Proposed Local Environmental Plans

Not applicable.

1.3 Other Applicable State Environmental Planning Policies

Attachment 1 contains a list of State Environmental Planning Policies that may apply to the carrying out of development on the subject land.

1.4 Proposed State Environmental Planning Policies

Council is not aware of any proposed State Environmental Planning Policy that is or has been the subject of community consultation or on public exhibition under the Act, applying to the subject land.

1.5 Development control plans

Blacktown Development Control Plan 2015 applies to the subject land.

2. Zoning and land use under relevant environmental planning instruments

The following information will assist in determining how the subject land may be developed. It is recommended that you read this section in conjunction with a full copy of any relevant environmental planning instrument as there may be additional provisions that affect how the land may be developed.

2.1 Zoning

Under *Blacktown Local Environmental Plan 2015*, the land is zoned:

Zone SP2 Infrastructure

The following is an extract from Blacktown Local Environmental Plan 2015 outlining the types of development that may or may not be carried out in the above zone

1 Objectives of zone

- *To provide for infrastructure and related uses.*
- *To prevent development that is not compatible with or that may detract from the provision of infrastructure.*
- *To ensure that development does not have an adverse impact on the form and scale of the surrounding neighbourhood.*

2 Permitted without consent

Environmental protection works; Flood mitigation works

3 Permitted with consent

Aquaculture; Roads; Signage; The purpose shown on the Land Zoning Map, including any development that is ordinarily incidental or ancillary to development for that purpose

4 Prohibited

Any development not specified in item 2 or 3

The SP2 Infrastructure zone applicable to this site is for the purposes of:
SP2 - Infrastructure-Educational Establishment

2.2 Minimum land dimensions for the erection of a dwelling house

Not applicable

2.3 Critical habitat

The land does not include or comprise a critical habitat.

Note: Critical habitat registers are kept by the National Parks and Wildlife Service under the *Threatened Species Conservation Act 1995* and the Department of Fisheries under the *Fisheries Management Act 1994*.

2.4 Conservation areas

The land is not within a conservation area.

2.5 Environmental Heritage

The land does not contain an item of environmental heritage under the protection of Blacktown Local Environmental Plan 2015

3. Complying development

Complying development may or may not be carried out on the subject land under an Environmental Planning Policy. Council does not have sufficient information to determine the extent to which specific complying development may or may not be carried out.

4. Coastal protection

The subject land is not affected by the operation of Sections 38 or 39 of the *Coastal Protection Act, 1979*.

5. Mine subsidence

The subject land has not been proclaimed to be a mine subsidence district within the meaning of Section 15 of the *Mine Subsidence Compensation Act 1961*.

6. Road widening and road realignment

The subject land is not affected by road widening or road realignment under an environmental planning instrument.

7. Council and other public authority policies on hazard risk restrictions

7.1 Contaminated Lands Policy and Asbestos Policy Schedule 6

Council has adopted a Contaminated Lands Policy and an Asbestos Policy which may restrict development on the subject land.

The Land Contamination Policy applies when zoning or land use changes are proposed on land which has previously been used for certain purposes or has the potential to be affected by such purposes undertaken on nearby lands. The Asbestos Policy applies where land contains, or is likely to have contained in the past, buildings or structures that were erected prior to the banning of asbestos. Both policies should be considered in the context of relevant State legislation and guidelines.

Council's records may not be sufficient to determine all previous uses on the land, or determine activities that may have taken place on this land.

7.2 Other policies on hazard risk restrictions

Council has not adopted any other policies to restrict the development of the subject land by reason of the likelihood of landslip, bushfire, tidal inundation, subsidence or the occurrence of acid sulphate soils.

Note: Although Council has not adopted a specific policy to restrict development bushfire prone land, it is bound by state-wide bushfire legislation that may restrict development on the subject land. Additional information relating to bushfire prone land is provided at point 11 below.

7a. Flood related development controls information

There are currently no mainstream or backwater flood-related development controls adopted by Council that apply to the land subject to this Certificate

8. Land reserved for acquisition

Blacktown Local Environmental Plan 2015 makes provision for land included on the Land Reservation Acquisition Map to be acquired by a public authority.

9. Contributions plans

Council currently levies contributions under Section 7.11 of the *Environmental Planning & Assessment Act 1979* for facilities and services. The further development of the subject land may incur such contributions.

Contributions Plan No. 1 - 1980s Release Areas applies to the subject land.

Contributions Plan No. 5 - Parklea Release Area applies to the subject land.

9a. Biodiversity certified land

The land is not biodiversity certified land as defined by Part 7AA of the *Threatened Species Conservation Act 1995*.

10. Biobanking agreements

The land is not subject to any biobanking agreement under Part 7A of the *Threatened Species Conservation Act 1995*.

11. Bushfire prone land

The Rural Fires and Environmental Assessment Legislation Amendment Act 2002, which came into force on 1 August 2002, introduced development provisions for bush fire prone land as shown on a Bush Fire Prone Land Map. "Bush fire prone land" is land that has been designated by the Commissioner of the NSW Rural Fire Service as being bush fire prone due to characteristics of vegetation and topography. The land the subject of this certificate has been identified on Council's Bush Fire Prone Land Map as being:

Clear of any bush fire prone land

On land that is bush fire prone, certain development may require further consideration under Section 4.14 or Section 4.46 of the *Environmental Planning & Assessment Act 1979* and under Section 100B of the *Rural Fires Act 1997*.

12. Property vegetation plans

The subject land is not affected by a property vegetation plan under the *Native Vegetation Act 2003*. The Blacktown local government area is excluded from the operation of the *Native Vegetation Act 2003* (refer Schedule 1 Part 3 of that Act).

13. Orders under *Trees (Disputes Between Neighbours) Act 2006*

No. Council has not been notified of any order made under the *Trees (Disputes Between Neighbours) Act 2006* in relation to the subject land.

14. Site compatibility certificates and conditions for seniors housing

Land to which this Certificate applies is not subject to the above.

15. Site compatibility certificates for infrastructure

Land to which this Certificate applies is not subject to the above.

16. Site compatibility certificates and conditions for affordable rental housing

Land to which this Certificate applies is not subject to the above.

17. Paper subdivision information

Not applicable

18. Site verification certificates

Council is not aware of any site verification certificate applying to the subject land.

Under the *Contaminated Land Management Act 1997* and *Contaminated Land Management Amendment Act 2008*

- (a) The land to which this certificate relates has not been declared to be significantly contaminated land at the date when the certificate was issued
- (b) The land to which the certificate relates is not subject to a management order at the date when the certificate was issued
- (c) The land to which this certificate relates is not the subject of an approved voluntary management proposal at the date when the certificate was issued
- (d) The land to which this certificate relates is not subject to an ongoing maintenance order as at the date when the certificate was issued
- (e) The land to which this certificate relates is not the subject of a site audit statement provided to the Council.

19. Affected building notices and building product rectification orders**19.1 Affected building notices**

Council is not aware of any affected building notice in force for the subject land.

19.2 Building product rectification orders

- (a) Council is not aware of any building product rectification order in force for the subject land.
- (b) Council is not aware of any notice of intention to make a building product rectification order being given for the subject land.

Section 10.7(5)

The following information is provided under Section 10.7(5) of the *Environmental Planning & Assessment Act 1979*. As per section 10.7(6) of the Act, Council shall not incur any liability in respect of any advice provided in good faith under section 10.7(5). The absence of any reference to any matter affecting the land shall not imply that the land is not affected by any matter not referred to in this Certificate.

Planning Instruments and Covenants

The provisions of any covenant, agreement or instrument applying to this land that restrict or prohibit certain development may be inconsistent with the provisions of an environmental planning instrument. In such cases, the provisions of any such covenant, agreement or instrument may be overridden.

Loose-filled Asbestos Insulation

Some residential homes located in the Blacktown Local Government Area may potentially contain loose-fill asbestos insulation, for example in the roof space. NSW Fair Trading maintains a Register of homes that are affected by loose-fill asbestos insulation.

You should make your own enquiries as to the age of the buildings on the land to which this certificate relates and, if it contains a building constructed prior to 1980, the council strongly recommends that any potential purchaser obtain advice from a licensed asbestos assessor to determine whether loose-fill asbestos is present in any building on the land and, if so, the health risks (if any) this may pose for the building's occupants.

Contact NSW Fair Trading for further information

Biodiversity and Threatened Species Conservation

The land is affected by a tree preservation control under Clause 5.9 of the Blacktown Local Environmental Plan 2015. A person shall not ringbark, cut down, lop, top, remove, injure or wilfully destroy any tree, or cause any tree to be ringbarked, cut down, topped, lopped, injured or wilfully destroyed, except with the consent of the Council.

The provisions of any covenant, agreement or instrument applying to this land purporting to restrict or prohibit certain development may be inconsistent with the provisions of a Regional Environmental Plan, State Environmental Planning Policy or Blacktown Local Environmental Plan 2015, in which case the provisions of any such covenant, agreement or instrument may be overridden.

The *Threatened Species Conservation Act 1995* provides for the conservation of threatened species, populations and ecological communities of animals and plants.

The *Threatened Species Conservation Act 1995* amended the *Environmental Planning and Assessment Act 1979* to require, amongst other things, that:

- (a) A critical habitat (as defined in the *Threatened Species Conservation Act 1995*) be identified in environmental planning instruments, and
- (b) Consent authorities and determining authorities must, when considering proposed development or an activity, assess whether it is likely to significantly affect threatened species, populations and ecological communities, or their habitats, and, if a significant effect is likely, to require the preparation of a species impact statement in accordance with the requirements of the *Threatened Species Conservation Act 1995*, and
- (c) Consent authorities and determining authorities must, when considering proposed development or an activity, have regard to the relevant recovery plans and threat abatement plans.

The *Environment Protection and Biodiversity Conservation Act 1999* provides protection for items of national significance. Items of national environmental significance include nationally threatened animal and plant species and ecological communities.

The Act requires a separate Commonwealth approval to be obtained where an action is likely to have significant impacts on items of national environmental significance.

For further information on this matter, please contact the Australian Government's Department of the Environment.

Attachment 1 – State Environmental Planning Policies

In addition to the principal environmental planning instrument identified in section 2.1 of this Certificate, the following State Environmental Planning Policies may also affect development on the subject land.

SEPP (Affordable Rental Housing) 2009

This policy aims to facilitate the increased supply and diversity of affordable rental and social housing in NSW and covers housing types including in-fill affordable housing, along with secondary dwellings (granny flats), boarding houses, group homes, social housing and supportive accommodation. Part 3 of the policy provides for the retention of existing affordable rental housing stock. Development applications to demolish, alter or add, change the use of, or strata subdivide existing low cost rental dwellings may require a contribution towards the provision of alternative affordable housing.

SEPP (Building Sustainability Index: BASIX) 2004

This policy aims to ensure consistency in the implementation of the BASIX scheme throughout the State by overriding provisions of other environmental planning instruments and development control plans that would otherwise add to, subtract from or modify any obligations arising under the BASIX scheme.

SEPP (Exempt and Complying Development Codes) 2008

This policy is also known as the Codes SEPP and includes a number of Codes that allow for certain types of development to be undertaken without the need for council approval as either Exempt Development or approved under a fast track system known as Complying Development, if the relevant standards are met.

SEPP (Sydney Region Growth Centres) 2006

This policy provides for the coordinated release of land for residential, employment and other urban development in the North West Growth Centre, the South West Growth Centre and the Wilton Growth Area. It provides development controls to enable the establishment of vibrant, sustainable and liveable neighbourhoods that provide for community well-being and high quality local amenity.

SEPP (Housing for Seniors or People with a Disability) 2004

This policy is also known as Seniors Housing SEPP and encourages the development of high quality and well-designed housing for older people and people with disabilities, while ensuring that it is in keeping with neighbourhood character. In October 2018, an amendment was made to change some

rules for site compatibility certificates and to make the relevant planning panel the determining authority for site compatibility certificates issued under the Seniors Housing SEPP.

SEPP (Infrastructure) 2007

This policy assists the NSW Government, private infrastructure providers, local councils and the communities they support by simplifying the process for providing infrastructure like hospitals, roads, railways, emergency services, water supply and electricity delivery, while ensuring appropriate levels of environmental assessment and consultation are undertaken. Recent changes introduce new provisions for correctional services, emergency and police services facilities and bushfire hazard reduction, ports and roads infrastructure, including facilities for electric vehicles, and other operational and housekeeping improvements.

SEPP (Miscellaneous Consent Provisions) 2007

This policy contains provisions for the erection of temporary structures, subdivision, the demolition of a building or work, certain change of use and fire alarm communication links.

SEPP (State Significant Precincts) 2005

The purpose of this Policy is to facilitate the development, redevelopment or protection of important urban, coastal and regional sites of economic, environmental or social significance to the State so as to facilitate the orderly use, development or conservation of those State significant precincts for the benefit of the State. It also aims to facilitate service delivery outcomes for a range of public services and to provide for the development of major sites for a public purpose or redevelopment of major sites no longer appropriate or suitable for public purposes.

SEPP (Mining, Petroleum Production and Extractive Industries) 2007

This policy is also known as the Mining SEPP and governs the way that mining, petroleum production and extractive material resource proposals are assessed and developed in NSW.

SEPP No 1 - Development Standards

This policy provides flexibility in the application of development standards and allows Council to approve a development that does not comply with a development standard where it can be shown that the development standard is unreasonable or unnecessary.

SEPP No 19 - Bushland in Urban Areas

This policy protects and preserves bushland within urban areas because of its natural heritage, its aesthetic value and its value for recreational, educational or scientific purposes. The policy aims to protect bushland areas in public open space zones and reservations and ensures that bushland

preservation is given priority when local environmental plans are prepared.

SEPP No 21 - Caravan Parks

This policy applies to development for the purpose of caravan parks and camping grounds. The policy ensures that development consent is required for new caravan parks and camping grounds and for additional long term sites in existing caravan parks. It also requires that development consent be obtained from Council for the subdivision of land for lease purposes under the Local Government Act.

SEPP No. 30 - Intensive Agriculture

Requires development consent for cattle feedlots having a capacity of 50 or more cattle or piggeries having a capacity of 200 or more pigs. The policy sets out information and public notification requirements to ensure there are effective planning control over this export-driven rural industry. The policy does not alter if, and where, such development is permitted, or the functions of the consent authority.

SEPP No. 32 - Urban Consolidation

States the Government's intention to ensure that urban consolidation objectives are met in all urban areas throughout the State. The policy focuses on the redevelopment of urban land that is no longer required for the purpose it is currently zoned or used, and encourages local councils to pursue their own urban consolidation strategies to help implement the aims and objectives of the policy. Councils will continue to be responsible for the majority of rezonings. The policy sets out guidelines for the Minister to follow when considering whether to initiate a regional environmental plan (REP) to make particular sites available for consolidated urban redevelopment. Where a site is rezoned by an REP, the Minister will be the consent authority.

SEPP No 33 - Hazardous and Offensive Development

This policy applies to development defined as 'potentially hazardous industry' or 'potentially offensive industry'. The policy ensures that in determining whether a development is a hazardous or offensive industry, any measures proposed to be employed to reduce the impact of the development are taken into account.

SEPP No 55 - Remediation of Land

This policy promotes the remediation of contaminated land for the purpose of reducing risk of harm to human health. The policy includes considerations that are relevant in rezoning land and in determining development applications where remediation of land is required.

SEPP No. 62 - Sustainable Aquaculture

Encourages the sustainable expansion of the industry in NSW. The policy implements the regional strategies already developed by creating a simple approach to identify and categorise aquaculture development on the basis of its potential environmental impact. The SEPP also identifies aquaculture development as a designated development only where there are potential environmental risks.

SEPP No 64 - Advertising and Signage

This policy sets out planning controls for advertising and signage in NSW and requires signage to be compatible with the future character of an area, provide effective communication in suitable locations and be of high quality design and finish. The policy also bans advertisements on parked trailers on roads, road shoulders, footpaths and nature strips, excluding advertising associated with the primary use of the trailer.

SEPP No 65 - Design Quality of Residential Apartment Development

This policy aims to improve the design quality of residential apartment development through the application of 9 design quality principles. The policy also provides requirements for a constituted design review panel to provide independent expert advice to council on the merit of residential flat developments. A design review panel is not mandatory.

Sydney Regional Environmental Plan No 30 - St Marys

This plan provides the planning framework for the planning and development of land known as Australian Defence Industries (ADI) site at St Marys.

SEPP (Western Sydney Employment Area) 2009

This policy aims to protect and enhance land in the Western Sydney Employment Area for employment purposes and to promote economic development and the creations of employment opportunities in Western Sydney. The policy provides for a coordinated approach to the planning, development and rezoning of land within the Western Sydney Employment Area and includes controls to ensure that development occurs in a logical, environmentally sensitive and cost-effective manner.

SEPP (Western Sydney Parklands) 2009

This policy provides the framework to enable the Western Sydney Parklands Trust to develop the Western Parklands into a multi-use urban parkland to meet a range of community needs and interests, including those that promote health and well-being in the community for Western Sydney.

SEPP (Western Sydney Recreation Area)

This policy enables development to be carried out for recreational, sporting and cultural purposes within the Western Sydney Recreation Area, including the development of a recreation area of state significance.

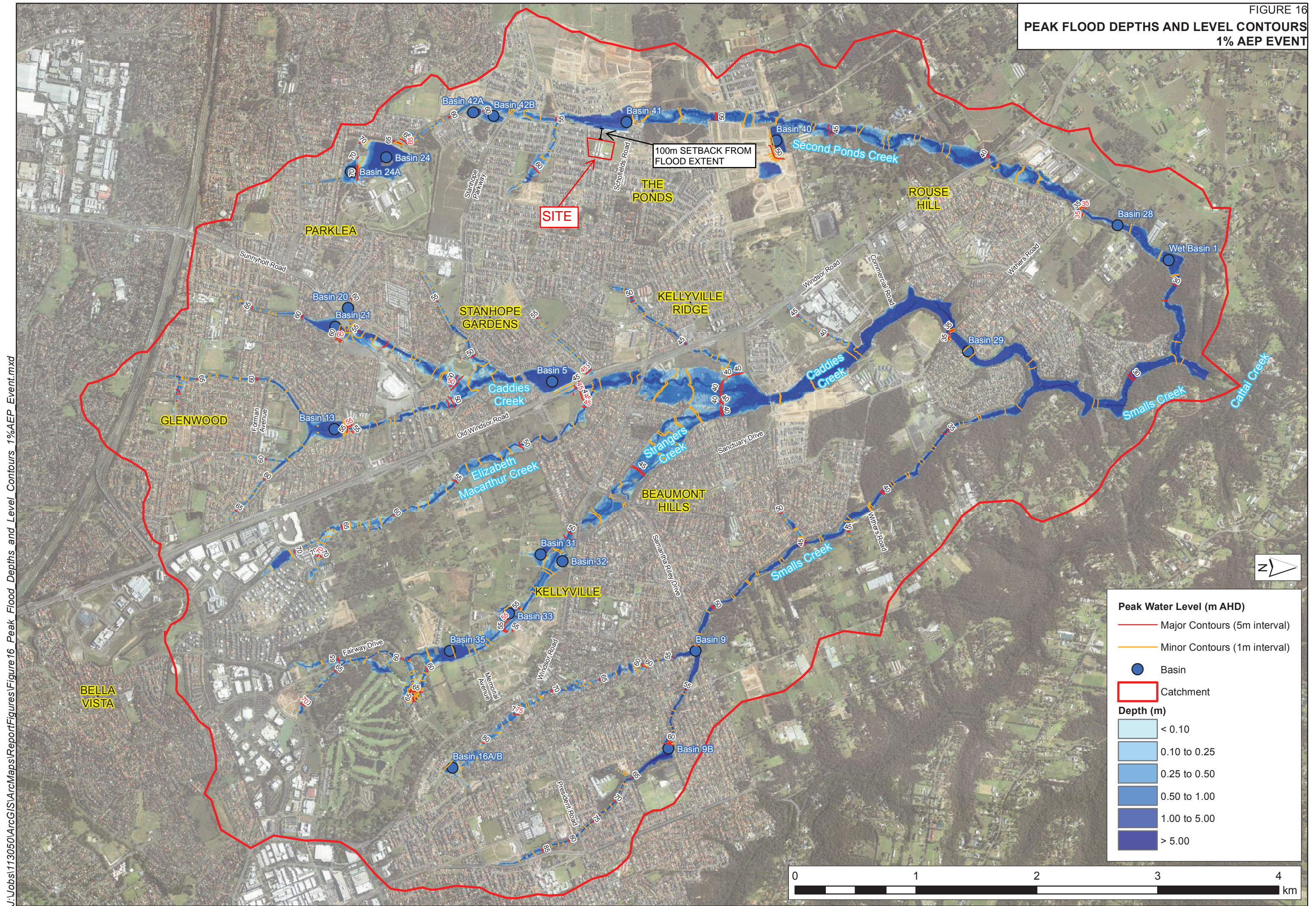
Authorised by Blacktown City Council
Proforma ID: 764735

End of Certificate

APPENDIX B

EXCERPT ROUSE HILL FLOOD STUDY - 1% AEP FLOOD EXTENT AND DEPTHS

FIGURE 16
PEAK FLOOD DEPTHS AND LEVEL CONTOURS
1% AEP EVENT



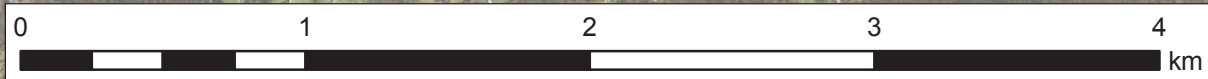
J:\Jobs\113050\ArcGIS\Map\Report\Report\Figure16 Peak Flood Depths and Level Contours 1% AEP Event.mxd

Peak Water Level (m AHD)

- Major Contours (5m interval)
- Minor Contours (1m interval)
- Basin
- Catchment

Depth (m)

- < 0.10
- 0.10 to 0.25
- 0.25 to 0.50
- 0.50 to 1.00
- 1.00 to 5.00
- > 5.00



06/12/2021

Job Number: 6372

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For the attention of: - Lucinda Craig

Dear Lucinda,

**John Palmer Public School
Response to EES Letter DOC21/916284**

This is a follow up to the email response from EES dated 01/12/2021 and is to be read in conjunction with enstruct's letter dated 22/11/2021.

EES flooding concerns have not been articulated except that rarer storm events above the 1% AEP should be modelled as the school is identified by EES as 'vulnerable' and that additional flood assessment of rarer storms is 'prudent'.

It is reiterated, as noted in the Rouse Hill Flood Study, that the proposed development site is around 5m above the 1% AEP flood height in Second Ponds Creek. Further, the school site is not designated as Flood Liable Land. Flood Liable Land would be inundated as a result of a standard flood.

The NSW Flood Plain Development Manual (DIPNR 2005) indicates that the site is not classed as being in a high or medium risk flood precinct. It is likely that the site is not located within a low risk flood precinct, as it is expected that the Probable Maximum Flood (PMF) extent does not include the school site, or proposed development area, nor would it include the adjacent shopping centre.

If the school site was within the PMF extent, there is no concern from a development approval perspective, noting that Blacktown City Council's Local Environmental Plan, Section 5.21 indicates:

(2) Development consent must not be granted to development on land the consent authority considers to be within the flood planning area unless the consent authority is satisfied the development—

- (a) is compatible with the flood function and behaviour on the land, and*
- (b) will not adversely affect flood behaviour in a way that results in detrimental increases in the potential flood affectation of other development or properties, and*
- (c) will not adversely affect the safe occupation and efficient evacuation of people or exceed the capacity of existing evacuation routes for the surrounding area in the event of a flood, and*
- (d) incorporates appropriate measures to manage risk to life in the event of a flood, and*
- (e) will not adversely affect the environment or cause avoidable erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses.*

The proposed development is compatible with the flood function of the land, will not impact flood behaviour, and will not adversely affect the safe occupation or evacuation of the site (including the overwhelming the adjacent streets with traffic); occupation or evacuation of the site during a rare flood event is noted below. Items D and E above are not applicable.

In addition, Blacktown City Council Development Control Plan (2015), Section 9.4.3 requires freeboard to of 500mm above the designated flood level for flood fringe properties. As we are not on the flood fringe, the floor levels for the proposed building being higher than the external ground levels, is acceptable.

However, if EES' concern for flooding and the proposed development is related to climate change or evacuation during a flood event, the following are applicable:

- climate change will contribute to an increase in storm intensity and storm frequency as identified by CSIRO climate change tools. As the school site is about 5m above the 1% AEP flood height in Second Ponds Creek, an increase in frequency or intensity is not an issue due to the Second Ponds Creek 1% AEP flood height being well below the development. In addition, the proposed development floor level is set above the existing ground levels and the inclusion of measure to ensure any increase in stormwater flow is conveyed away from proposed and existing buildings in appropriately sized pits, pipes, and overland flow paths. Flooding from the local streets as overland flow is unlikely as the development site is about 1m higher than corresponding existing road level on The Ponds Boulevard.
- The main access to the school is via The Ponds Boulevard which is located on the eastern side of the of school. In the unlikely event that flood water from Second Ponds Creek is able to impact the school, residential houses and streets on the western side of the school campus will be affected first, giving advanced notification. Noting that due to the surrounding topography, the school site will not become a flood island. In addition, prior to flood water impacting the residential houses adjacent to Second Ponds Creek, Riverbank Drive will give more advanced warning as this road will be cut when the water reaches 2m or more in depth as the bridge height is around RL55.00 (2m above the creek bed invert of around RL53.00). This road is about 5m lower than the proposed development level.

This letter has tried to anticipate EES flood concerns noting that the proposed development is not located within a flood zone nor on the flood fringe and there is opportunity for forewarning if Second Ponds Creek is in flood that can lead to safe and timely evacuation to the east of the site, away from Second Ponds Creek – should evacuation ever be required.

Lastly, a search of Blacktown City Council flood mapping system indicates that the site is not affected by local or mainstream flooding; as per the excerpt below, which has been provided for verification.

Parcel	
House Number	85
Road Name	The Ponds Boulevard
Suburb	The Ponds
Type	Torrens Title
Lot Number	1
Plan Type	Deposited Plan
Plan Number	1131340
Section	
Garbage Collection	Friday
LZN (Land Zoning)	BLEP2015:SP2-Infrastructure-Educational Establishment
Bushfire Zone	None
Mainstream Flooding	none
Local Flooding	none

I would be happy to meet with EES to understand their concerns and to specifically know what items not noted above or previously are still unresolved.

Yours Sincerely,

A handwritten signature in black ink, appearing to be 'KH' followed by a stylized flourish.

for
enstruct group Pty Ltd
Kelvin Holey
Civil and Environmental Engineer
CPEng RPEQ