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ARBORICULTURE
PLANT PATHOLOGY

ARBORICULTURAL IMPACT ASSESSMENT
&
TREE PROTECTION SPECIFICATION

REF: L&Co24004 | 10 March 2025 | v2.4
SITE ADDRESS | Cammeray Public School
PREPARED FOR | Department of Education (DoE)
PREPARED BY |

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1.0 EXECUTIVE SUMMARY |

1.1 This Arboricultural Impact Assessment and Tree Protection Specification Report has been prepared to support a Review of Environmental Factors (REF) for the Department of Education (DoE) for the upgrade of the Cammeray Public School (CPS) (the activity).

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

1.3 The proposed activity is for upgrades to the existing CPS at 68 Palmer Street, Cammeray NSW 2062 (the site). This report has determined the impact of the proposed works on the trees at Cammeray Public School and neighbouring properties and where appropriate, has provided tree sensitive construction methods to minimise negative impacts to the trees.

1.4 A total of twenty-five (25) trees were assessed that were a mix of Australian native and exotic species.

1.5 The supplied plans show no works are proposed within the TPZs of Trees 14, 15, 29, 31, 33, 34, 68, 69, 74, 175, 181, 182, 186 & LC8. However, the tree protection measures outlined in this report should be implemented to avoid indirect impacts.

1.6 The supplied plans show the demolition of existing demountables is within the TPZs of trees 1-4, 68, 69 & 74 and represents a considerable risk of indirect negative impacts. Therefore, the tree protection recommended in this report must be installed prior to the start of demolition works. Further, the proposed asphalt or synthetic turf must be installed at or above existing grade and be constructed of permeable material to allow water infiltration. The final design must be reviewed by Project Arborist or equivalent.

1.7 The proposed works represent a *Minor Encroachment* (as defined by AS4970) on Trees 32 & 16. However, a minor encroachment is considered acceptable by the standard when it is compensated for elsewhere and contiguous within the TPZ, as in the current cases. Further, the tree protection measures outlined in this report will reduce the likelihood of negative impacts on Trees 32 & 16.

1.8 The proposed works are within the TPZ of Trees 35 & 13 and represents a *Major Encroachment* (as defined by AS4970). However, the proposed encroachment is beyond an existing retaining wall and negative impacts can be avoided if the tree sensitive construction methods and protection measures outlined in this report are implemented and be acceptable under the Australian Standard AS4970, Clause 3.3.4. Although the retaining wall should have restricted root growth into the area of encroachment, there was some evidence of roots lifting the asphalt in the TPZ. Therefore, root mapping should be considered to understand the impacts on the long term physiological and structural condition on the Tree 13. The root mapping location is provided. Trees 35 & 13 will also need to be pruned for building clearance and a Pruning Specification is provided. Only a single first order branch is required for building clearance and will not impact the long-term viability of the tree.

1.9 The proposed building works represent *Major Encroachment* on Trees 26, 27 & 28 and will need to be removed as the TPZ encroachment is too large for their long-term viability, based on a consideration of the health, structure and the size of the encroachment. Further, a large first order branch on Tree 27 would need to be pruned for building clearance. A wound of this size is highly unlikely to occlude and could lead to decay in the trunk in the medium term. Tree 27 was assigned a High Landscape Significance Value.

2.0 INTRODUCTION |

2.1 Background

2.1.1 This Arboricultural Impact Assessment and Tree Protection Specification Report was prepared for Department of Education (DoE) in relation to the proposed upgrade of Cammeray Public School. This report has determined the impact of the proposed works on the trees at Cammeray Public School and neighbouring properties and where appropriate, has provided tree sensitive construction methods to minimise negative impacts to the trees. This report has been prepared to have been prepared to provide Arboricultural advice for a Review of Environmental Factors (REF) for an activity that requires approval under Part 5 of the EP&A Act.

2.1.2 In preparing this report, the author is aware of and has considered the objectives of the North Sydney Council's *North Sydney Development Control Plan Section 16: Tree and Vegetation Management (2013), North Sydney Local Environmental Plan (2013), North Sydney Council Urban Forest Strategy (2019); North Sydney Council Street Tree Strategy (2016), Australian Standard 4970 Protection of Trees on Development Sites (2009), Australian Standard 4373 Pruning of Amenity Trees (2007) and Safe Work Australia Guide for Managing Risks of Tree Trimming and Removal Work (2016).*

2.1.3 Further methodology used in the preparation of this report is detailed in Appendix 1.

2.1.4 This Arboricultural Impact Assessment was based on an assessment of the following supplied documentation/plans only (Appendix 4):

- External Works Plan Prepared by Fulton Trotter Architects. Dated 28.02.2025
- Electrical Services Site Plan Prepared by NDY. Dated 21.02.2025
- Bulk Earthworks Plan Prepared by Meinhardt. Dated 25.02.2025
- Civil Siteworks Plan Prepared by Meinhardt. Dated 25.02.2025
- Proposed Site Plan Prepared by Fulton Trotter Architects. Dated 11.02.2025
- Construction Management Strategy Prepared by Fulton Trotter Architects. Dated 21.02.2025
- Hydraulic Services Proposed Site Plan Prepared by ACOR. Dated 03.03.2025
- Demolition Site Plan Prepared by Fulton Trotter Architects. Dated 21.02.2025
- Detail and Level Survey. Issue B. Prepared by SDG Pty Ltd. Dated 21.05.2024

2.2 The Proposal

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

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

2.2.2 The intent of the activity is to provide 4 permanent teaching spaces (PTS) plus 2 practical activity areas (PAA) across a two-storey addition, adjoining Building E. This will result in CPS retaining the capacity of a 'large' school (553-1,000 students) under EFSG (SINSW Education Facilities Standards and Guidelines).

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

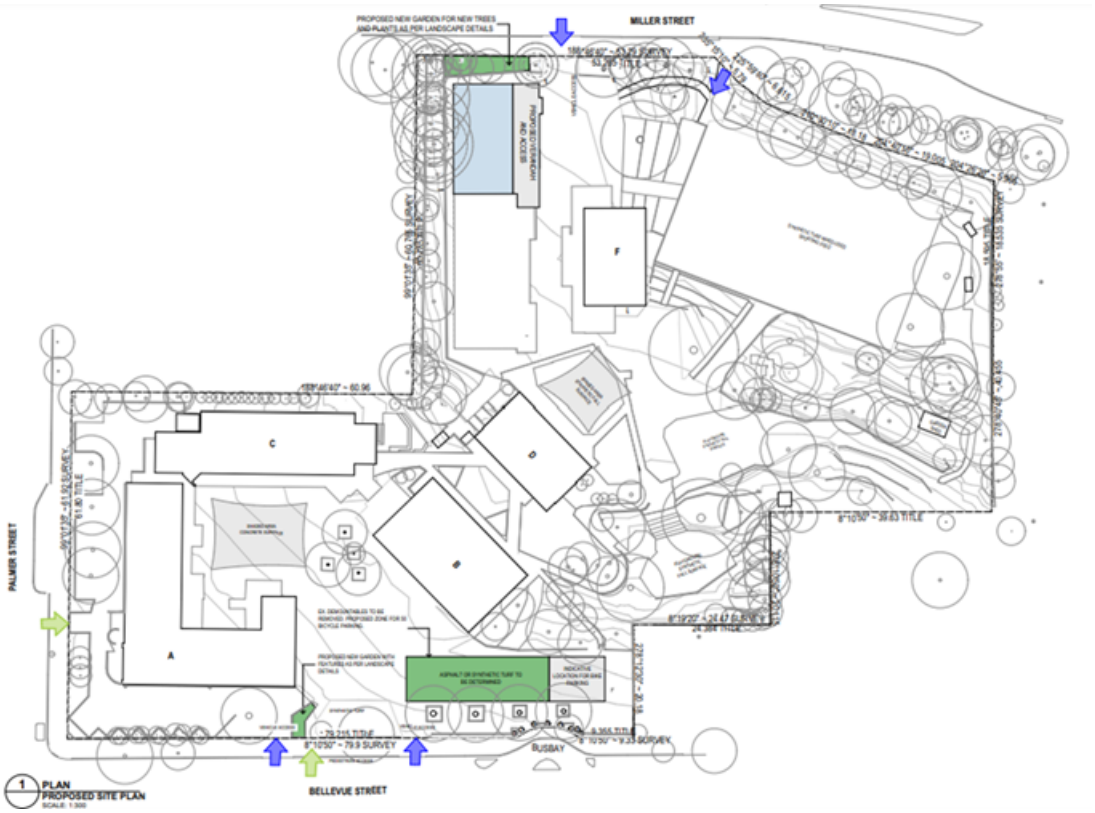

Figure 2 Proposed Scope of Works (Source: Fulton Trotter Architects, Proposed Site Plan (Rev 6))

3.0 RESULTS |

3.1 The Site

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

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

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

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

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

Bellevue Street and in close proximity to locally heritage listed items.

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

3.2 The Trees

3.2.1 A Visual Tree Assessment (VTA) (Mattheck & Breloer, 2003) has been undertaken on trees growing within the site to determine their health and structural condition (Appendix 2). A full VTA of trees located outside of the site boundaries was not undertaken due to limited access. The species and trunk diameter were recorded for the purposes of determining Tree Protection Zone (TPZ) and Structural Root Zone (SRZ) calculations only. The distance of each tree from the site boundary is an approximation due to limited access.

3.2.1 The Australian Standard 4970: *Protection of Trees on Development Sites* (2009) Clause 2.3.2, requires the allocation of a Tree Retention Value. This value is based on the Useful Life Expectancy (ULE) and Landscape Significance, which considers the tree's health, structural condition and site suitability. The Retention Value does not consider any proposed development works and is not a schedule for tree retention or removal. The trees have been allocated one of the following Retention Values:

- Priority for Retention
- Consider for Retention
- Consider for Removal
- Priority for Removal

3.2.2 The Australian Standard 4970: *Protection of Trees on Development Sites* (2009) also requires the calculation of the Tree Protection Zone (TPZ) and Structural Root Zone (SRZ) for each tree (Appendix 1).

3.2.3 A total of twenty-five (25) trees and group trees were assessed which were a mix of Australian native and exotic species. Not all trees were surveyed due to site access restrictions, specifically in the northwest corner. These trees were grouped and assigned High Landscape Significance values based on their size and species.

3.2.4 A search of the BioNet Atlas of NSW Wildlife Database was undertaken in March 2025. No individual threatened tree species that were listed within this database for the area were identified during the current field investigations of the site. *The* ecological significance and habitat value of the trees has not been assessed and is beyond the scope of this report.

3.2.5 All trees were within the site boundary and covered by the Council's tree management controls.

4.0 ARBORICULTURAL IMPACT ASSESSMENT |

4.1 Trees 14, 15, 29, 31, 33, 34, 68, 69, 74, 175, 181, 182, 186 & LC8

4.1.1 The supplied plans show no works are proposed within the TPZ of Trees 14, 15, 29, 31, 33, 34, 68, 69, 74, 175, 181, 182, 186 & LC8. However, the following tree protection should be installed to avoid indirect impacts.

4.1.2 TPZ fencing should be installed prior to any site works (including demolition) and remain in place for the duration of the demolition and construction processes.

4.1.3 The area within the TPZ fencing should be mulched to a depth of 50mm with a non-toxic product (i.e. woodchips) with no fines.

4.1.4 Coir logs should be installed on the perimeter of the TPZ fencing to prevent runoff from the building works into the TPZ.

4.1.5 Materials, waste storage and temporary services should not be located within the TPZ fenced area. If works are required within the TPZ fenced area, then they should be supervised by the Project Arborist.

4.1.6 The tree protection measures must be inspected by the Project Arborist prior to the start prior of site works, including demolition.

4.1.7 Refer to AS4970 and Appendices 5, 6, 7 & 8 for further details for further details.

4.2 Trees 1-4, 68, 69 & 74

4.2.1 The supplied plans show the demolition of existing demountables is within the TPZs of Trees 1-4, 68, 69 & 74 and represents a considerable risk of indirect negative impacts. Therefore, the tree protection recommended in this report must be installed prior to the start of demolition works.

4.2.2 TPZ fencing should be installed prior to any site works (including demolition) and remain in place for the duration of the demolition and construction processes.

4.2.3 The area within the TPZ fencing should be mulched to a depth of 50mm with a non-toxic product (i.e. woodchips) with no fines.

4.2.4 Coir logs should be installed on the perimeter of the TPZ fencing to prevent runoff from the building works into the TPZ.

4.2.5 Materials, waste storage and temporary services should not be located within the TPZ fenced area. If works are required within the TPZ fenced area, then they should be supervised by the Project Arborist.

4.2.6 The tree protection measures must be inspected by the Project Arborist prior to the start prior of site works, including demolition.

4.2.7 Refer to AS4970 and Appendices 5, 6, 7 & 8 for further details for further details

4.2.8 Further, the proposed asphalt or synthetic turf must be installed at or above existing grade and be constructed of permeable material to allow water infiltration. The final design must be reviewed by Project Arborist or equivalent.

4.3 Tree 26

4.3.1 Tree 26 was identified as *Eucalyptus botryoides* (Bangalay) and was allocated a Moderate Landscape Significance Value and a Retention Value of *Consider for Retention*.

4.3.2 The supplied plans show that the proposed building extension is within the TPZ of Tree 26. The TPZ encroachment is approximately 13.2% and represents a *Major Encroachment* as defined by AS-4970. A *Major Encroachment* is considered acceptable by the standard when it is compensated for elsewhere and contiguous within the TPZ, as is in the current case. However, 20% of the crown will need to be pruned to accommodate the proposal. The tree is also likely to experience significant indirect impacts and given the Fair physiological condition, removal and replacement should be considered.

4.3.3 Removal and replacement with a healthy advanced size specimen would replace the loss of amenity within a short to medium timeframe.

4.3.4 Refer to AS4970 and Appendices 5, 6 & 7 for further details.

4.4 Tree 27

4.4.1 Tree 27 was identified as *Eucalyptus saligna* (Sydney Blue Gum) and was allocated a High Landscape Significance Value and a Retention Value of *Priority for Retention*. Tree 27 was assigned a Fair physiological condition due to reduced crown density.

4.4.2 The supplied plans show the proposed building extension is within the SRZ of Tree 27. Works within the SRZ represent a *Major Encroachment* as defined by AS-4970 as root severance within the SRZ can lead to the destabilisation of the tree. The overall TPZ encroachment was estimated to be 31.8% and also represents a *Major Encroachment* as defined by AS-4970.

4.4.3 There was no existing structure to prevent root growth into the encroachment area and there was evidence of roots growing under the existing asphalt (Appendix 9 Plates). The crown will also be impacted by the

proposal and a large diameter first order branch would need to be removed. Given the size, the pruning wound is unlikely to occlude and would be a source of decay in the future.

4.4.4 Given the size and location of the encroachment, the long term structural and physiological viability of Tree 27 is highly likely to be compromised by the proposed encroachment and the tree will need to be removed to accommodate the works.

4.4.5 Removal and replacement with a healthy advanced size specimen would replace the loss of amenity within a medium to long timeframe.

4.4.6 Refer to AS4970 and Appendices 5, 6 & 7 for further details.

4.5 Tree 28

4.5.1 Tree 28 was identified as *Corymbia maculata* (Spotted Gum) and was allocated a Moderate Landscape Significance Value and a Retention Value of *Consider for Retention*.

4.5.2 The supplied plans show that the proposed building extension is within the SRZ of Tree 28. Works within the SRZ represent a *Major Encroachment* as defined by AS-4970 as root severance within the SRZ can lead to the destabilisation of the tree. The overall TPZ encroachment was estimated to be 16.7% and also represents a *Major Encroachment* as defined by AS-4970.

4.5.3 Given the size and location of the encroachment, the long term structural and physiological viability of Tree 28 is highly likely to be compromised by the proposed encroachment and the tree will need to be removed to accommodate the works.

4.5.4 Removal and replacement with a healthy advanced size specimen would replace the loss of amenity within a short to medium, long timeframe.

4.5.5 Refer to AS4970 and Appendices 5, 6 & 7 for further details.

4.6 Trees 32 & 16

4.6.1 Tree 32 was identified as *Corymbia maculata* (Spotted Gum). Tree 16 was identified as *Casuarina glauca (Swamp She Oak)* and were allocated High and Moderate Landscape Significance Values and Retention Values of *Priority for Retention* and *Consider for Retention* respectively.

4.6.2 The supplied plans show that the proposed building extension is within the TPZs of Trees 32 & 68. The TPZ encroachments are approximately 5.5% and 9.3%, respectively, and represent *Minor Encroachments* as defined by AS-4970. A *Minor Encroachmen*t is considered acceptable by the standard when it is compensated for elsewhere and contiguous within the TPZ, as is in the current cases.

4.6.3 Given the good physiological condition of the trees and the size of the encroachment, the proposed development can be accommodated without affecting the long term structural and physiological viability of Trees 32 & 35 if the following tree sensitive construction methods and protection measures are carefully implemented under the supervision of the Project Arborist.

4.6.4 TPZ fencing should be installed prior to any site works (including demolition) and remain in place for the duration of the demolition and construction processes.

4.6.5 The area within the TPZ fencing should be mulched to a depth of 50mm with a non-toxic product (i.e. woodchips) with no fines.

4.6.6 Coir logs should be installed on the perimeter of the TPZ fencing to prevent runoff from the building works into the TPZ.

4.6.7 Materials, waste storage and temporary services should not be located within the TPZ fenced area. If works are required within the TPZ fenced area, then they should be supervised by the Project Arborist.

4.6.8 The tree protection measures must be inspected by the Project Arborist prior to the start prior of site works, including demolition.

4.6.9 Refer to AS4970 and Appendices 5, 6, 7 & 8 for further details for further details.

4.7 Trees 29, 31, 33, 34, 14 & 15

4.7.1 The supplied plans show no works are proposed within the TPZs of Trees 29, 31, 33, 34, 14 & 15. However, the following tree protection should be installed to avoid indirect impacts.

4.7.2 TPZ fencing should be installed prior to any site works (including demolition) and remain in place for the duration of the demolition and construction processes.

4.7.3 The area within the TPZ fencing should be mulched to a depth of 50mm with a non-toxic product (i.e. woodchips) with no fines.

4.7.4 Coir logs should be installed on the perimeter of the TPZ fencing to prevent runoff from the building works into the TPZ.

4.7.5 Materials, waste storage and temporary services should not be located within the TPZ fenced area. If works are required within the TPZ fenced area, then they should be supervised by the Project Arborist.

4.7.6 The tree protection measures must be inspected by the Project Arborist prior to the start prior of site works, including demolition.

4.7.7 Refer to AS4970 and Appendices 5, 6, 7 & 8 for further details for further details.

4.7.8 The trees require pruning for building clearance and a Pruning Specification is provided in Appendix 10. Only a single first order branch is required for building clearance and will not impact the long-term viability of the trees.

4.8 Tree 35

4.8.1 Tree 35 was identified as *Corymbia maculata* (Spotted Gum) and was allocated a High Landscape Significance Value and a Retention Value of *Priority for Retention*.

4.8.2 The supplied plans show the proposed development is within the TPZ of Tree 35. The TPZ encroachment is approximately 11.4% and represents a *Major Encroachment* as defined by AS-4970. However, Clause 3.3.4 of AS-4970 does allow for *Major Encroachments* if design factors (e.g. tree sensitive construction methods) are used to minimise negative impacts, or existing or past structures are likely to have been obstacles to root growth into the area of encroachment.

4.8.3 The proposed encroachment is beyond an existing retaining wall and negative impacts can be avoided if the tree sensitive construction methods and protection measures outlined in this report are implemented and be acceptable under the Australian Standard AS4970, Clause 3.3.4.

4.8.4 TPZ fencing should be installed prior to any site works (including demolition) and remain in place for the duration of the demolition and construction processes.

4.8.5 The area within the TPZ fencing should be mulched to a depth of 50mm with a non-toxic product (i.e. woodchips) with no fines.

4.8.6 Coir logs should be installed on the perimeter of the TPZ fencing to prevent runoff from the building works into the TPZ.

4.8.7 Materials, waste storage and temporary services should not be located within the TPZ fenced area. If works are required within the TPZ fenced area, then they should be supervised by the Project Arborist.

4.8.8 The tree protection measures must be inspected by the Project Arborist prior to the start prior of site works, including demolition.

4.8.9 Refer to AS4970 and Appendices 5, 6, 7 & 8 for further details for further details.

4.9 Tree 13

4.9.1 Tree 13 was identified as *Corymbia maculata* (Spotted Gum) and was allocated a High Landscape Significance Value and a Retention Value of *Priority for Retention*.

4.9.2 The supplied plans show the proposed development is within the TPZ of Tree 13. The TPZ encroachment is approximately 24.4% and represents a *Major Encroachment* as defined by AS-4970. However, Clause 3.3.4 of AS-4970 does allow for *Major Encroachments* if design factors (e.g. tree sensitive construction methods) are used to minimise negative impacts, or existing or past structures are likely to have been obstacles to root growth into the area of encroachment.

4.9.3 All of the proposed TPZ encroachment is beyond an existing retaining wall, which is likely to have created an inhospitable environment for root growth, and consequently, is likely to have reduced root growth in the area of the proposed works. However, there was evidence of root growth under the asphalt within the TPZ (see Appendix 9). Non-destructive root mapping should be undertaken to determine the location of structural roots (>25mm ∅). Refer to Appendix 5 plans for root mapping trench location.

4.9.4 The crown of Tree 13 will be impacted by the new building and a Pruning Specification is provided in Appendix 10. Only a single first order branch is required for building clearance and will not impact the long-term viability of the tree.

4.9.5 TPZ fencing should be installed prior to any site works (including demolition) and remain in place for the duration of the construction. Materials, waste storage and temporary services should not be located within the TPZ fenced area. If works are required within the TPZ fenced area, then they should be supervised by the Project Arborist.

4.9.6 The tree protection measures must be inspected by the Project Arborist prior to the start of site works, including demolition.

4.9.7 No over-excavation, battering, or benching should be undertaken beyond the footprint of any structure unless approved by the Project Arborist. Hand excavation and root pruning along the excavation line should be completed prior to the commencement of mechanical excavation to prevent tearing and shattering damage to the roots.

4.9.8 Refer to AS4970 and Appendices 5, 6 & 7 for further details.

4.10 Pruning, Removal & Replacement Planting

4.10.1 Pruning/removal works should be carried out by a practising arborist. The practising arborist should hold a minimum qualification equivalent (using Australian Qualifications Framework) of Level 3 or above in arboriculture or its recognised equivalent. The practising arborist should have a minimum of 3 years of practical experience. Pruning/removal works should be undertaken in accordance with the Australian Standard 4373: Pruning of Amenity Trees (2007), Safe Work Australia Guide for Managing Risks of Tree Trimming and Removal Work (2016) and other applicable legislation and codes.

4.10.2 Replacement tree planting should be provided when trees are removed. Replacement trees should be supplied as advanced size stock to help offset the loss of amenity resultant from the tree removals.

4.10.3 Replacement planting should be supplied in accordance with Australian Standard 2303: Tree Stock for Landscape Use (2015).

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5.0 REFERENCES |

Mattheck & Breloer (2003), *The Body Language of Trees – A Handbook for Failure Analysis*.

NSW Office of Environment and Heritage's Atlas of NSW Wildlife (2011), *BioNet Atlas of NSW Wildlife*.

Standards Australia (2009) Protection of Trees on Development Sites AS4970.

Standards Australia (2007) Pruning of Amenity Trees AS4373.

Standards Australia (2015) Tree Stock for Landscape Use AS2303.

6.0 APPENDIX 1 | METHODOLOGY

6.1 This report was based on data from a site inspection conducted on the 29.8.23 & 15.8.24. The recommendations in this report are based on and limited to observations from these site inspections.

6.2 The subject tree(s) was assessed using the Visual Tree Assessment methodology described in *The Body Language of Trees – A Handbook for Failure Analysis* (Mattheck et al., 2003). Subject trees were assessed from the ground only to provide an Arboricultural Impact Assessment and Tree Protection Specification report. No internal diagnostic testing was undertaken as part of this assessment. Trees outside the subject site were assessed from the property boundaries only.

6.3 The dimensions of the subject tree(s) are an approximation only.

6.4 The location of the subject tree(s) was determined from the location plan provided. Trees not shown on this plan have been plotted in their approximate location only.

6.5 Tree Protection Zones & Structural Root Zones for the subject tree(s) was based on methods outlined in Australian Standard 4970: *Protection of Trees on Development Sites* (2009).

6.6 The health of the subject tree(s) was determined by assessing:

- Foliage size and colour
- Pest and disease infestation
- Extension growth
- Crown density
- Deadwood size and volume
- Presence of epicormic growth

6.7 The structural condition of the subject tree(s) was assessed by:

- Visible evidence of structural defects or instability
- Evidence of previous pruning or physical damage

6.8 The Useful Life Expectancy (ULE) is used to estimate a tree's longevity in its growing environment. The ULE is based on a tree's species, health, structural condition and site suitability. The tree(s) has been allocated one of the following ULE categories (modified from Barrell, 2001):

- 40 years +
- 15-40 years
- 5-15 years
- Less than 5 years

6.9 The Landscape Significance is based on a qualitative assessment of a tree's cultural, environmental and aesthetic value. This provides a relative measure of a tree's Landscape Significance and can be used to determine its Retention Value. Trees are rated under the following categories:

- Very High
- High
- Moderate
- Low
- Insignificant

LANDSCAPE SIGNIFICANCE	DESCRIPTION
VERY HIGH	The subject tree is listed as a Heritage Item under the Local Environmental Plan with a local or state level of significance.
	The subject tree is listed on Council's Significant Tree Register.
	The subject tree is a remnant tree.
HIGH	The subject tree creates a 'sense of place' or is considered 'landmark' tree.
	The subject tree is of local, cultural or historical importance or is widely known.
	The subject tree has been identified by a suitably qualified professional as a species scheduled as a Threatened or Vulnerable Species or forms part of an Endangered Ecological Community associated with the subject site, as defined under the provisions of the Threatened Species Conservation Act 1995 (NSW) or the Environmental Protection and Biodiversity Conservation Act 1999.
	The subject tree is known to provide habitat to a threatened species.
	The subject tree is an excellent representative of the species in terms of aesthetic value.
	The subject tree is of significant size, scale or makes a significant contribution to the canopy cover of the locality.
	The subject tree forms part of the curtilage of a heritage item with a known or documented association with that item.
MODERATE	The subject tree makes a positive contribution to the visual character or amenity of the area.
	The subject tree provides a specific function such as screening or minimising the scale of a building.
	The subject tree has a known habitat value.
	The subject tree is a good representative of the species in terms of aesthetic value.
LOW	The subject tree is an environmental pest species or is exempt under the provisions of the local Council's Tree Management Controls.
	The subject tree makes little or no contribution to the amenity of the locality.
	The subject tree is a poor representative of the species in terms of aesthetic value.
INSIGNIFICANT	The subject tree is declared a Noxious Weed under the Noxious Weeds Act.

The above table was provided by Anna Hopwood of TreeIQ™ and was modified from the Earthscape Criteria for Assessment of Landscape Significance.

6.10 The Retention Value is based on a tree's ULE and Landscape Significance. The subject tree(s) has been allocated one of the following Retention Values:

- Priority for Retention
- Consider for Retention
- Consider for Removal
- Priority for Removal

<table>
<tr><th rowspan="2">ULE</th><th colspan="5">LANDSCAPE SIGNIFICANCE</th></tr>
<tr><th>VERY HIGH</th><th>HIGH</th><th>MODERATE</th><th>LOW</th><th>INSIGNIFICANT</th></tr>
<tr><td>40 years +</td><td rowspan="2">Priority for Retention</td><td colspan="2">Priority for Retention</td><td rowspan="3">Consider for Removal</td><td rowspan="3">Priority for Removal</td></tr>
<tr><td>15-40 years</td><td>Priority for Retention</td><td>Consider for Retention</td></tr>
<tr><td>5-15 years</td><td colspan="3">Consider for Retention</td></tr>
<tr><td>Less than 5 years</td><td>Consider for Removal</td><td colspan="3">Priority for Removal</td></tr>
</table>

The above table was provided by Anna Hopwood of TreeIQ™

6.11 The Tree Protection Zone (TPZ) is the area above and below ground required to preserve the vigour and long-term viability of the tree. The TPZ is based on scientific research and is generally considered by the arboricultural industry as the area required to provide adequate tree protection during construction. The TPZ is the primary means of protecting trees on development sites (Australian Standard 4970:*Protection of Trees on Development Sites*, 2009).

6.12 Works within the TPZ should be avoided. However, *Minor Encroachments,* defined in AS4970 as less than 10% of the TPZ area, are considered acceptable when it is compensated for elsewhere and contiguous within the TPZ. A *Major Encroachment*, defined in AS4970 as greater than 10% of the TPZ area or within the Structural Root Zone (SRZ), may require root investigations by non-destructive methods and tree sensitive construction methods.

6.13 The TPZ is the area within a circle that is centred on the trunk. The radius of the TPZ is calculated by the following formula:

TPZ= DBH x 12

where

DBH= Diameter at Breast Height (1.4m)

6.14 The SRZ is the minimum area around the base of the tree required for the tree's stability. The SRZ only relates to tree stability and not the vigour and long-term viability of the tree.

6.15 The SRZ is the area within a circle that is centred on the trunk. The radius of the SRZ is calculated by the following formula:

$$SRZ = (Dx50)^{0.42} \times 0.64$$

where

D= Trunk diameter (m) above the root buttress

6.16 Encroachment into SRZ (i.e. severance of structural roots >25mmØ) may lead to the destabilisation of the tree and the long-term viability must be demonstrated in such cases. This may require root investigations by non-destructive methods.

6.17 For further details on the TPZ and SRZ please refer to Australian Standard 4970: *Protection of Trees on Development Sites* (2009).

7.0 APPENDIX 2 | TREE ASSESSMENT SCHEDULE

Tree No.	Species	Height (m)	Radial Crown Spread (m)	DBH comb. (mm)	Radial TPZ (m)	TPZ Area (m^2)	Radial SRZ (m)	Health Rating	Structural Rating	Age Class	ULE (years)	L/Sign	Retention Value	Comments	TPZ Encroachment (%)
26	*Eucalyptus botryoides* (Bangalay)	12	4	350	4	55	2.2	Fair	Good	Late Mature	5-15	Moderate	*Consider for Retention*	Crown density 25-50%. Small (<25mmø) deadwood in moderate volumes. Small (<25mmø) epicormic growth in moderate volumes. Structures within SRZ. Pavement over roots.	13.2%
27	*Eucalyptus saligna* (Sydney Blue Gum)	23	10	650	8	191	2.9	Fair	Good	Late Mature	15-40	High	*Priority for Retention*	Crown density 50-75%. Small (<25mmø) & medium (25-75mmø) deadwood in moderate volumes. Small (<25mmø) & medium (25-75mmø) epicormic growth in moderate volumes. Structures within SRZ.	31.8% (Within SRZ)
28	*Corymbia maculata* (Spotted Gum)	16	8	300	4	41	2.1	Fair	Good	Semi-mature	5-15	Moderate	*Consider for Retention*	Reduced crown density	16.7%
29	*Acacia mearnsii* (Black Wattle)	4	3	200	2	18	1.8	Poor	Poor	Senescent	<5	Low	*Priority for Removal*	Crown density 0-25%. Wound(s) with fungal brackets. Trunk cavity(s), major. Borer.	No Encroachment
31	*Phoenix canariensis* (Canary Island Date Palm)	5	4	400	5	72	2.3	Good	Good	Mature	<5	Low	*Priority for Removal*		No Encroachment
32	*Corymbia maculata* (Spotted Gum)	18	7	500	6	113	2.6	Good	Good	Mature	15-40	High	*Priority for Retention*	Wound(s), early signs of decay. Trunk cavity(s), minor. Borer.	6.2%

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Tree No.	Species	Height (m)	Radial Crown Spread (m)	DBH comb. (mm)	Radial TPZ (m)	TPZ Area (m^2)	Radial SRZ (m)	Health Rating	Structural Rating	Age Class	ULE (years)	L/Sign	Retention Value	Comments	TPZ Encroachment (%)
33	*Corymbia maculata* (Spotted Gum)	18	7	300	4	41	2.1	Good	Good	Mature	15-40	High	*Priority for Retention*		No Encroachment
35	*Corymbia maculata* (Spotted Gum)	18	7	450	5	92	2.5	Good	Good	Mature	15-40	High	*Priority for Retention*		10.4%
13	*Corymbia maculata* (Spotted Gum)	18	7	310	7	163	2.8	Good	Good	Mature	15-40	High	*Priority for Retention*	Small (<25mmø) & medium (25-75mmø) deadwood in low volumes. Wound(s), no visible sign of decay. Structures within SRZ.	39.79%
34	*Casuarina glauca* (Swamp She Oak)	7	4	225	3	23	1.8	Good	Good	Mature	15-40	Moderate	*Consider for Retention*		No Encroachment
14	*Casuarina glauca* (Swamp She Oak)	12	4	300	4	41	2.1	Good	Good	Mature	15-40	Moderate	*Consider for Retention*		No Encroachment
15	*Casuarina glauca* (Swamp She Oak)	12	4	300	4	41	2.1	Good	Good	Mature	15-40	Moderate	*Consider for Retention*		No Encroachment
16	*Casuarina glauca* (Swamp She Oak)	12	4	300	4	41	2.1	Good	Good	Mature	15-40	Moderate	*Consider for Retention*		3.8%
175	*Jacaranda mimosifolia (Jacaranda)*	7	5	192	2.3	16.7	1.7	Dormant. No rating.	Fair	Semi-mature	5-15	Low	Consider for Removal	Co-dominant inclusions, major. Limited crown clearance. Structures within SRZ.	No Encroachment
LC8	*Casuarina glauca (Swamp She Oak)*	15	5	200	2.4	18.1	1.8	Good	No access to base. No rating.	Mature	15-40	Moderate	Consider for Retention	Structures within SRZ.	No Encroachment

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Tree No.	Species	Height (m)	Radial Crown Spread (m)	DBH comb. (mm)	Radial TPZ (m)	TPZ Area (m^2)	Radial SRZ (m)	Health Rating	Structural Rating	Age Class	ULE (years)	L/Sign	Retention Value	Comments	TPZ Encroachment (%)
181	*Casuarina glauca (Swamp She Oak)*	15	5	200	2.4	18.1	1.8	Good	No access to base. No rating.	Mature	15-40	Moderate	Consider for Retention		No Encroachment
182	*Casuarina glauca (Swamp She Oak)*	15	5	340	4.1	52.3	2.2	Good	No access to base. No rating.	Mature	15-40	Moderate	Consider for Retention	Bark inclusion(s), minor.	No Encroachment
186	*Lophostemon confertus (Brush Box)*	14	7	750	9.0	254.5	3.1	Fair	Good	Mature	5-15	High	Consider for Retention	Crossing branches. Crown density 50-75%. Small (<25mmø) deadwood in moderate volumes. Previously crown lifted. Wound(s), no visible sign of decay. Structures within SRZ.	No Encroachment
1	*Lophostemon confertus (Brush Box)*	18	8	900	10.8	366.4	3.3	Fair	Good	Late Mature	5-15	High	Consider for Retention	Crown density 50-75%. Small (<25mmø) & medium (25-75mmø) deadwood in moderate volumes. Flush cuts. Wound(s), early signs of decay. Pavement over roots.	Indirect Only.
2	*Lophostemon confertus (Brush Box)*	15	8	800	9.6	289.5	3.1	Poor	Good	Senescent	5-15	Moderate	Consider for Retention	Lcd Crown density 0-25%. Small (<25mmø) & medium (25-75mmø) deadwood in high volumes. Pavement over roots.	Indirect Only.
3	*Lophostemon confertus (Brush Box)*	12	9	475	5.7	102.1	2.5	Good	Good	Mature	15-40	Moderate	Consider for Retention	Pavement over roots.	Indirect Only.

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Tree No.	Species	Height (m)	Radial Crown Spread (m)	DBH comb. (mm)	Radial TPZ (m)	TPZ Area (m^2)	Radial SRZ (m)	Health Rating	Structural Rating	Age Class	ULE (years)	L/Sign	Retention Value	Comments	TPZ Encroachment (%)
4	*Lophostemon confertus (Brush Box)*	10	8	500	6.0	113.1	2.6	Good	Fair	Late Mature	5-15	Moderate	Consider for Retention	Lost central leader. Crown density 75-95%. Small (<25mmø) deadwood in low volumes. Wound(s), advanced stages of decay. Trunk cavity(s), major. Pavement over roots.	Indirect Only.
74	*Callistemon viminalis (Weeping Bottlebrush)*	5	3	200	2.4	18.1	1.8	Good	Fair	Mature	5-15	Low	Consider for Removal	G4 Co-dominant inclusions, major. Structures within SRZ.	Indirect Only.
69	*Viburnum sp. (Viburnum)*	10	5	200	2.4	18.1	1.8	Good	Good	Mature	5-15	Moderate	Consider for Retention	Small (<25mmø) & medium (25-75mmø) epicormic growth in moderate volumes. Limited crown clearance. Structures within SRZ.	Indirect Only.
68	*Liquidamber styraciflua (Liquidamber)*	12	6	300	3.6	40.7	2.1	Dormant. No rating.	Good	Mature	5-15	Moderate	Consider for Retention	Exposed structural roots Bark inclusion(s), minor. Structures within SRZ.	Indirect Only.

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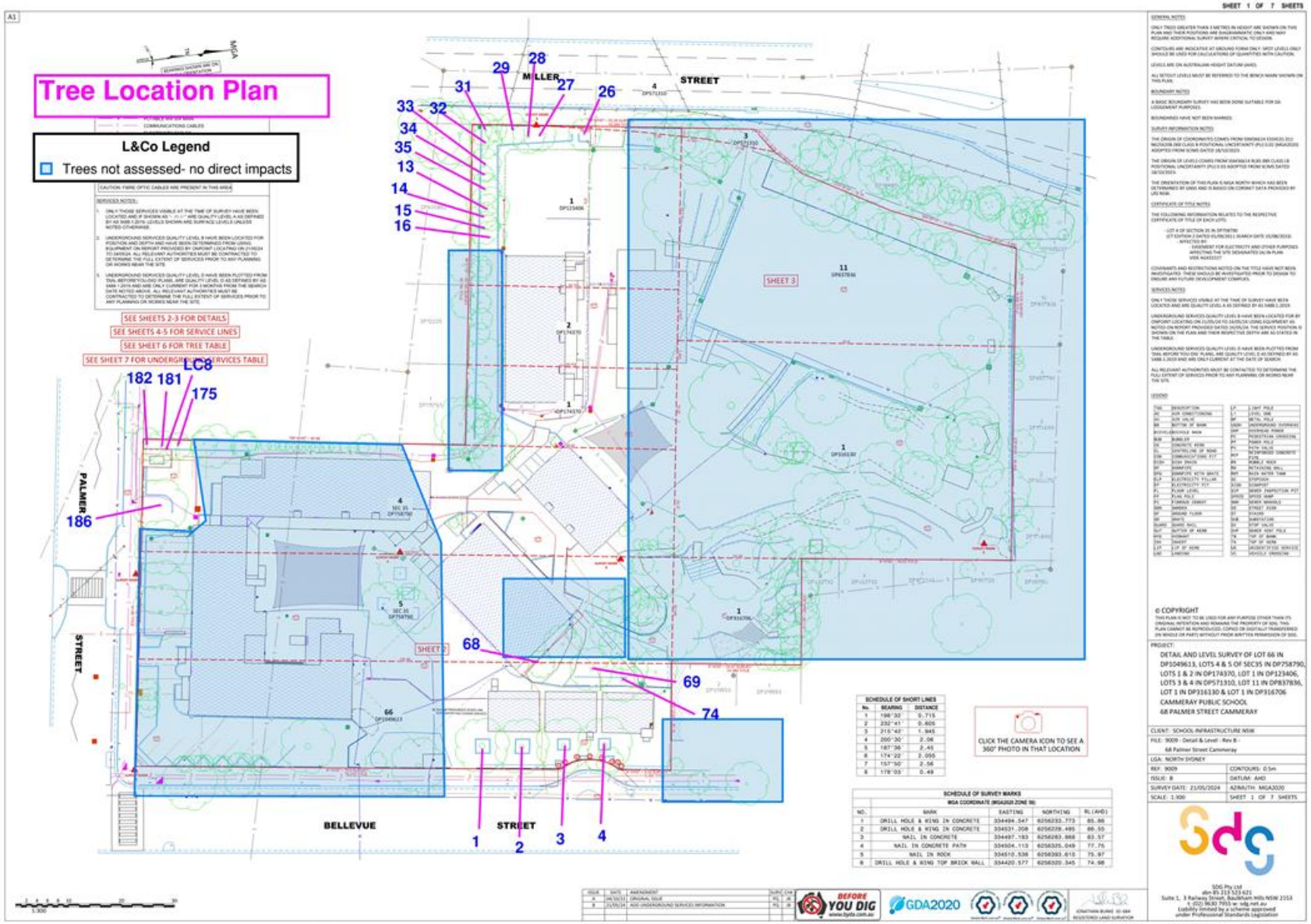
8.0 APPENDIX 3 | TREE LOCATION PLAN



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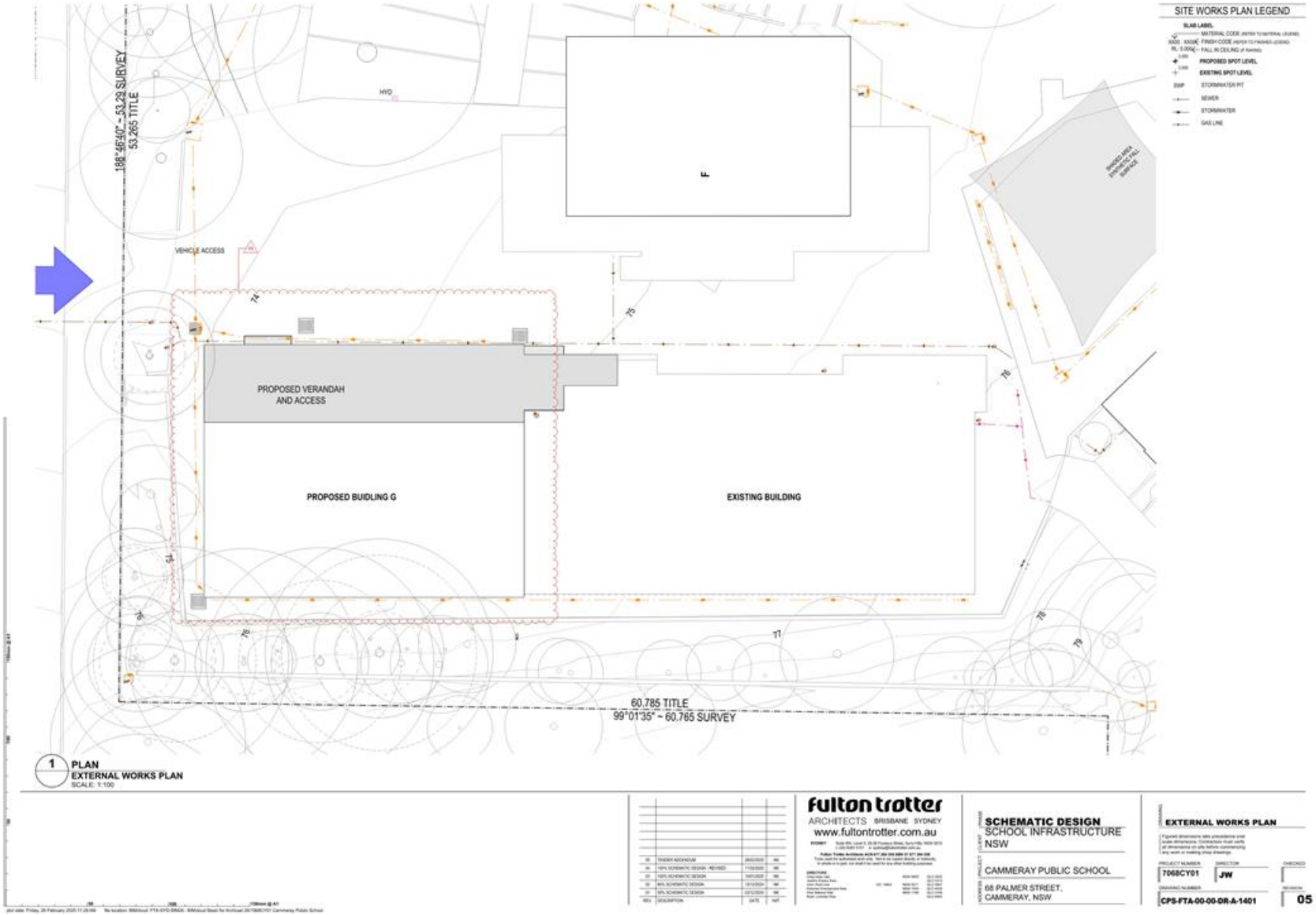
9.0 APPENDIX 4 | PROPOSED DEVELOPMENT PLANS



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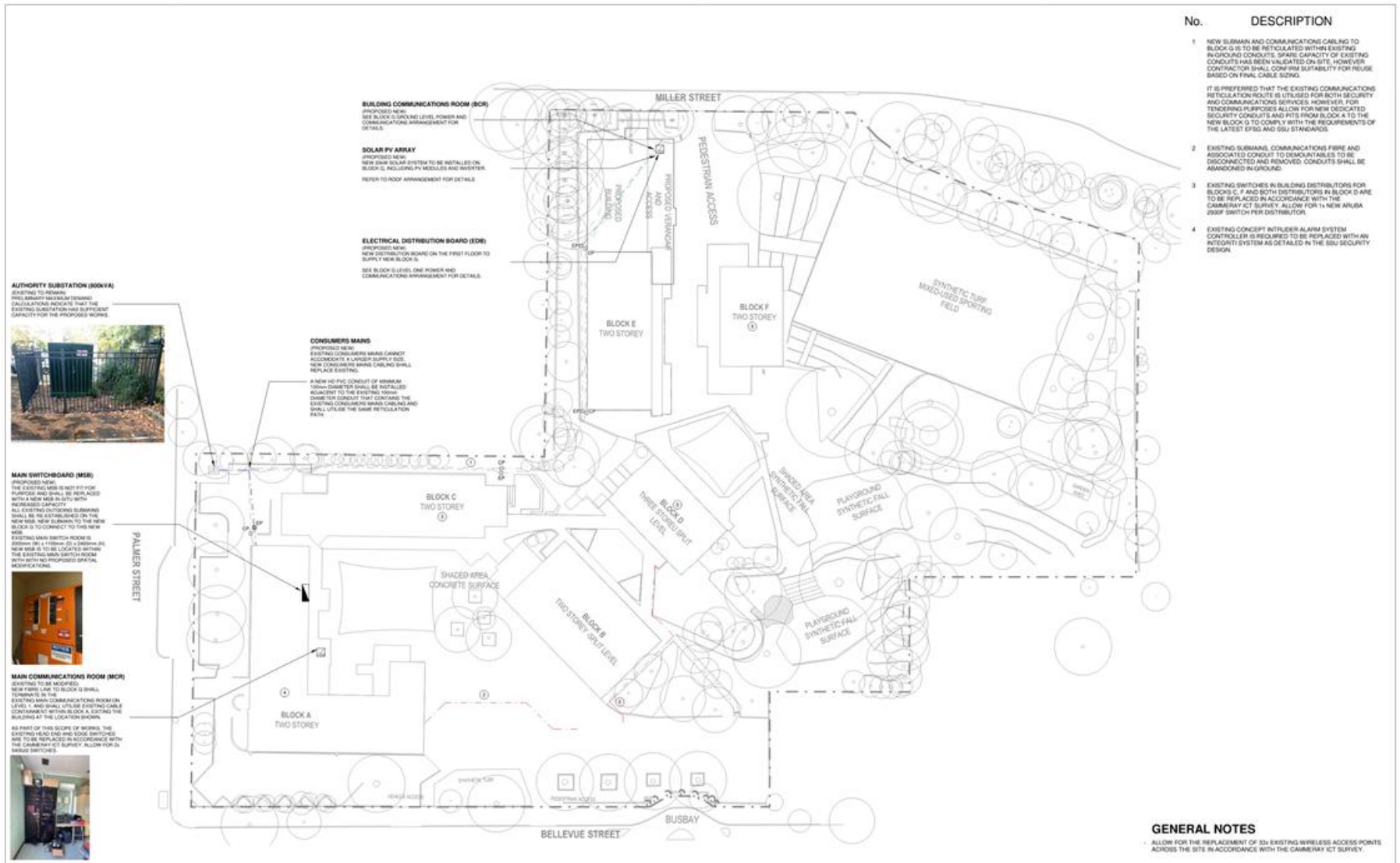
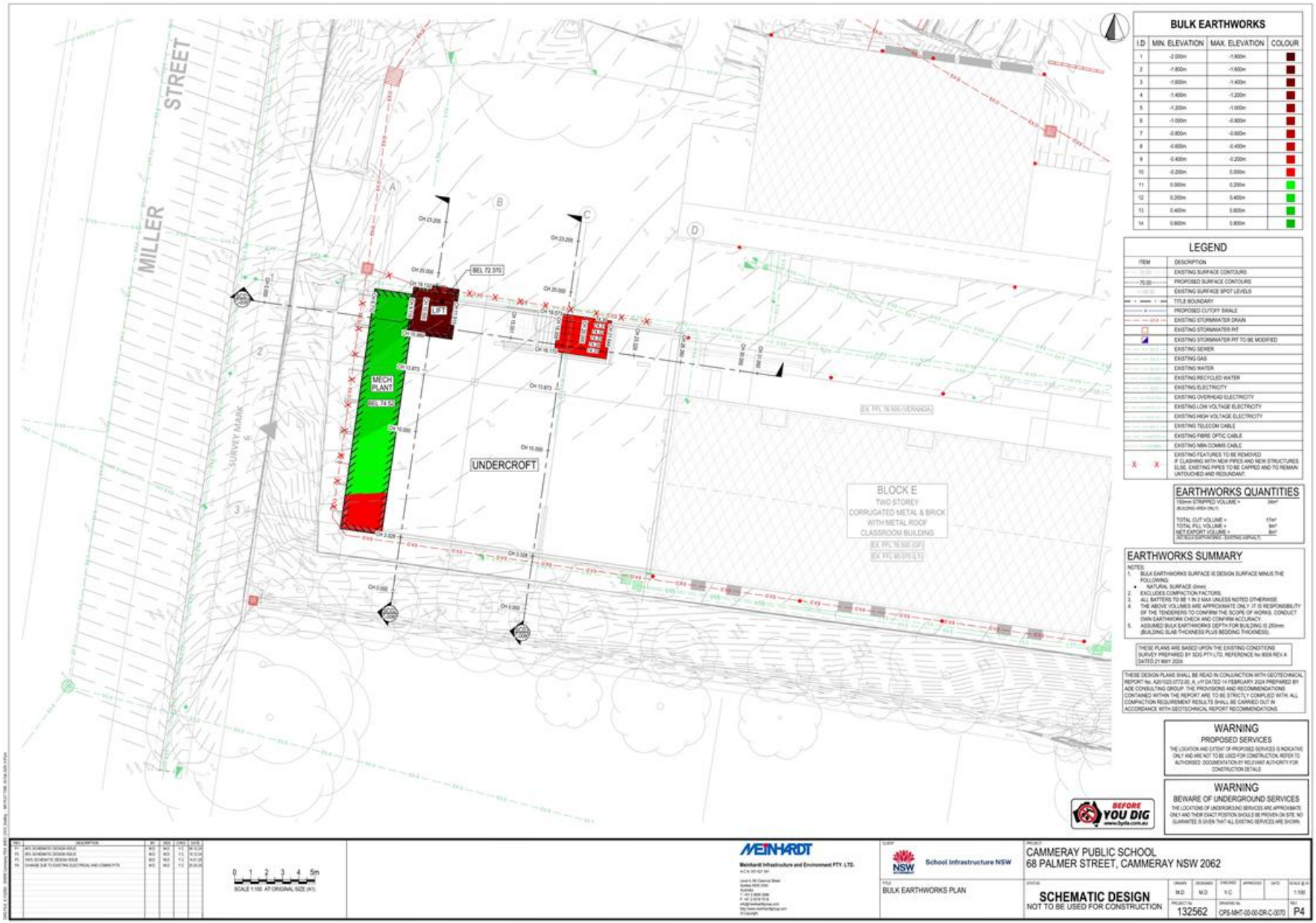
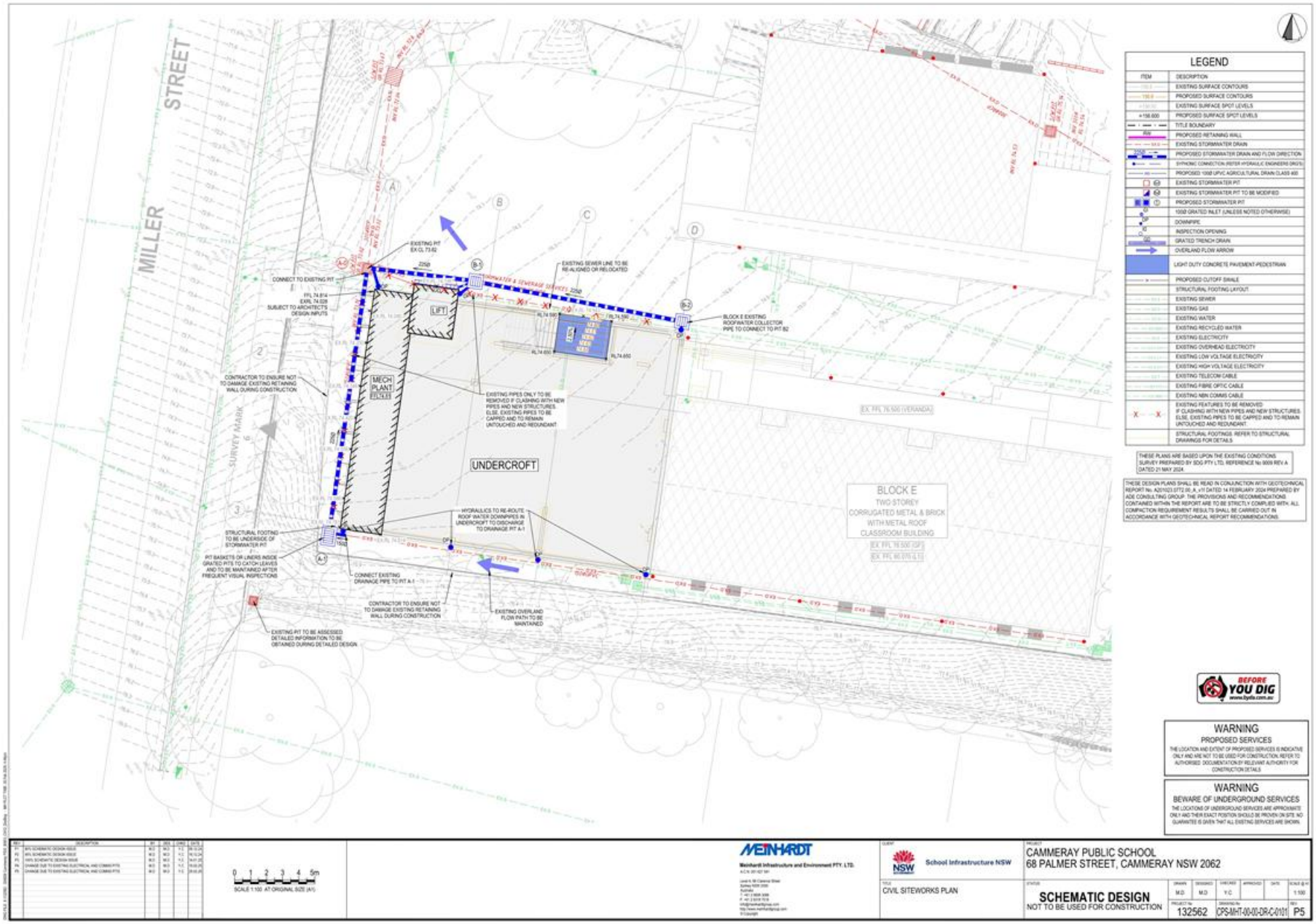

No. DESCRIPTION
1 NEW SUBMAIN AND COMMUNICATIONS CABLING TO BLOCK G IS TO BE RETICULATED WITHIN EXISTING IN-GROUND CONDUITS. SPARE CAPACITY OF EXISTING CONDUITS HAS BEEN VALIDATED ON-SITE, HOWEVER CONTRACTOR SHALL CONFIRM SUITABILITY FOR REUSE BASED ON FINAL CABLE SIZING.
IT IS PREFERRED THAT THE EXISTING COMMUNICATIONS RETICULATION ROUTE IS UTILISED FOR BOTH SECURITY AND COMMUNICATIONS SERVICES. HOWEVER, FOR TENDERING PURPOSES ALLOW FOR NEW DEDICATED SECURITY CONDUITS AND PITS FROM BLOCK A TO THE NEW BLOCK G TO COMPLY WITH THE REQUIREMENTS OF THE LATEST EFSG AND SSU STANDARDS.
2 EXISTING SUBMAINS, COMMUNICATIONS FIBRE AND ASSOCIATED CONDUIT TO DEMOUNTABLES TO BE DISCONNECTED AND REMOVED. CONDUITS SHALL BE ABANDONED IN-GROUND.
3 EXISTING SWITCHES IN BUILDING DISTRIBUTORS FOR BLOCKS C, F AND BOTH DISTRIBUTORS IN BLOCK D ARE TO BE REPLACED IN ACCORDANCE WITH THE CAMMERAY ICT SURVEY. ALLOW FOR 1x NEW ARUBA 2930F SWITCH PER DISTRIBUTOR.
4 EXISTING CONCEPT INTRUDER ALARM SYSTEM CONTROLLER IS REQUIRED TO BE REPLACED WITH AN INTEGRITI SYSTEM AS DETAILED IN THE SSU SECURITY DESIGN.
BUILDING COMMUNICATIONS ROOM (BCR)
(PROPOSED NEW)
SEE BLOCK G GROUND LEVEL POWER AND COMMUNICATIONS ARRANGEMENT FOR DETAILS.
SOLAR PV ARRAY
(PROPOSED NEW)
NEW 20kW SOLAR SYSTEM TO BE INSTALLED ON BLOCK G, INCLUDING PV MODULES AND INVERTER.
REFER TO ROOF ARRANGEMENT FOR DETAILS
ELECTRICAL DISTRIBUTION BOARD (EDB)
(PROPOSED NEW)
NEW DISTRIBUTION BOARD ON THE FIRST FLOOR TO SUPPLY NEW BLOCK G.
SEE BLOCK G LEVEL ONE POWER AND COMMUNICATIONS ARRANGEMENT FOR DETAILS.
AUTHORITY SUBSTATION (500KVA)
(EXISTING TO REMAIN)
PRELIMINARY MAXIMUM DEMAND CALCULATIONS INDICATE THAT THE EXISTING SUBSTATION HAS SUFFICIENT CAPACITY FOR THE PROPOSED WORKS.
CONSUMERS MAINS
(PROPOSED NEW)
EXISTING CONSUMERS MAINS CANNOT ACCOMODATE A LARGER SUPPLY SIZE. NEW CONSUMERS MAINS CABLING SHALL REPLACE EXISTING.
A NEW HD PVC CONDUIT OF MINIMUM 100mm DIAMETER SHALL BE INSTALLED ADJACENT TO THE EXISTING 100mm DIAMETER CONDUIT THAT CONTAINS THE EXISTING CONSUMERS MAINS CABLING AND SHALL UTILISE THE SAME RETICULATION PATH.
MAIN SWITCHBOARD (MSB)
(PROPOSED NEW)
THE EXISTING MSB IS NOT FIT FOR PURPOSE AND SHALL BE REPLACED WITH A NEW MSB IN-SITU WITH INCREASED CAPACITY.
ALL EXISTING OUTGOING SUBMAINS SHALL BE RE-ESTABLISHED ON THE NEW MSB. NEW SUBMAIN TO THE NEW BLOCK G TO CONNECT TO THIS NEW MSB.
EXISTING MAIN SWITCH ROOM IS 2900mm (W) x 1100mm (D) x 2400mm (H). NEW MSB IS TO BE LOCATED WITHIN THE EXISTING MAIN SWITCH ROOM WITH BOTH NO PROPOSED SPATIAL MODIFICATIONS.
MAIN COMMUNICATIONS ROOM (MCR)
(EXISTING TO BE MODIFIED)
NEW FIBRE LINK TO BLOCK G SHALL TERMINATE IN THE EXISTING MAIN COMMUNICATIONS ROOM ON LEVEL 1, AND SHALL UTILISE EXISTING CABLE CONTAINMENT WITHIN BLOCK A, EXITING THE BUILDING AT THE LOCATION SHOWN.
AS PART OF THIS SCOPE OF WORKS, THE EXISTING HEAD END AND EDGE SWITCHES ARE TO BE REPLACED IN ACCORDANCE WITH THE CAMMERAY ICT SURVEY. ALLOW FOR 2x 14XGIG SWITCHES.
MILLER STREET
PEDESTRIAN ACCESS
PROPOSED BUILDING
PROPOSED VERANDAH AND ACCESS
BLOCK E TWO STOREY
BLOCK F TWO STOREY
SYNTHETIC TURF MIXED-USE SPORTING FIELD
BLOCK C TWO STOREY
BLOCK D THREE STOREY SPLIT LEVEL
SHADED AREA SYNTHETIC FALL SURFACE
PLAYGROUND SYNTHETIC FALL SURFACE
SHADED AREA CONCRETE SURFACE
BLOCK B TWO STOREY SPLIT LEVEL
PLAYGROUND SYNTHETIC FALL SURFACE
BLOCK A TWO STOREY
PALMER STREET
BELLEVUE STREET
BUSBAY
GENERAL NOTES
- ALLOW FOR THE REPLACEMENT OF 33x EXISTING WIRELESS ACCESS POINTS ACROSS THE SITE IN ACCORDANCE WITH THE CAMMERAY ICT SURVEY.
Education
School Infrastructure
NDY
fulton trotter
RP INFRASTRUCTURE
PROJECT NAME
SNSW - CAMMERAY PUBLIC SCHOOL UPGRADE
PALMER ST, CAMMERAY NSW 2062
BLOCK G
DRAWING TITLE
ELECTRICAL SERVICES
SITE PLAN
PROJECT NO
758-0120.0041150.0001
STATUS
SCHEMATIC DESIGN
DRN BC | CHK DH | APP SS | DATE 21.02.2025 | SCALE 1 : 300 @A1
DRAWING NO
CPS-NDY-00-00-DR-E-001011
REV
5


MILLER STREET
SURVEY MARK
LIFT
MECH PLANT
UNDERCROFT
BLOCK E
TWO STOREY
CORRUGATED METAL & BRICK
WITH METAL ROOF
CLASSROOM BUILDING
BEFORE YOU DIG
www.byda.com.au
BULK EARTHWORKS
I.D | MIN. ELEVATION | MAX. ELEVATION | COLOUR
1 | -2.000m | -1.800m
2 | -1.800m | -1.600m
3 | -1.600m | -1.400m
4 | -1.400m | -1.200m
5 | -1.200m | -1.000m
6 | -1.000m | -0.800m
7 | -0.800m | -0.600m
8 | -0.600m | -0.400m
9 | -0.400m | -0.200m
10 | -0.200m | 0.000m
11 | 0.000m | 0.200m
12 | 0.200m | 0.400m
13 | 0.400m | 0.600m
14 | 0.600m | 0.800m
LEGEND
ITEM | DESCRIPTION
EXISTING SURFACE CONTOURS
PROPOSED SURFACE CONTOURS
EXISTING SURFACE SPOT LEVELS
TITLE BOUNDARY
PROPOSED CUTOFF SWALE
EXISTING STORMWATER DRAIN
EXISTING STORMWATER PIT
EXISTING STORMWATER PIT TO BE MODIFIED
EXISTING SEWER
EXISTING GAS
EXISTING WATER
EXISTING RECYCLED WATER
EXISTING ELECTRICITY
EXISTING OVERHEAD ELECTRICITY
EXISTING LOW VOLTAGE ELECTRICITY
EXISTING HIGH VOLTAGE ELECTRICITY
EXISTING TELECOM CABLE
EXISTING FIBRE OPTIC CABLE
EXISTING NBN COMMS CABLE
EXISTING FEATURES TO BE REMOVED
IF CLASHING WITH NEW PIPES AND NEW STRUCTURES.
ELSE, EXISTING PIPES TO BE CAPPED AND TO REMAIN UNTOUCHED AND REDUNDANT
EARTHWORKS QUANTITIES
150mm STRIPPED VOLUME +
(BUILDING AREA ONLY)
TOTAL CUT VOLUME +
TOTAL FILL VOLUME +
NET EXPORT VOLUME +
(NO BULK EARTHWORKS - EXISTING ASPHALT)
EARTHWORKS SUMMARY
NOTES:
1. BULK EARTHWORKS SURFACE IS DESIGN SURFACE MINUS THE FOLLOWING:
• NATURAL SURFACE (0mm)
2. EXCLUDES COMPACTION FACTORS.
3. ALL BATTERS TO BE 1 IN 2 MAX UNLESS NOTED OTHERWISE.
4. THE ABOVE VOLUMES ARE APPROXIMATE ONLY. IT IS RESPONSIBILITY OF THE TENDERERS TO CONFIRM THE SCOPE OF WORKS, CONDUCT OWN EARTHWORK CHECK AND CONFIRM ACCURACY.
5. ASSUMED BULK EARTHWORKS DEPTH FOR BUILDING IS 250mm (BUILDING SLAB THICKNESS PLUS BEDDING THICKNESS).
THESE PLANS ARE BASED UPON THE EXISTING CONDITIONS SURVEY PREPARED BY SDG PTY LTD, REFERENCE No 9608 REV A DATED 21 MAY 2024
THESE DESIGN PLANS SHALL BE READ IN CONJUNCTION WITH GEOTECHNICAL REPORT No. 420102S.0772.00, A, vY DATED 14 FEBRUARY 2024 PREPARED BY ADE CONSULTING GROUP. THE PROVISIONS AND RECOMMENDATIONS CONTAINED WITHIN THE REPORT ARE TO BE STRICTLY COMPLIED WITH. ALL COMPACTION REQUIREMENT RESULTS SHALL BE CARRIED OUT IN ACCORDANCE WITH GEOTECHNICAL REPORT RECOMMENDATIONS
WARNING
PROPOSED SERVICES
THE LOCATION AND EXTENT OF PROPOSED SERVICES IS INDICATIVE ONLY AND ARE NOT TO BE USED FOR CONSTRUCTION. REFER TO AUTHORISED DOCUMENTATION BY RELEVANT AUTHORITY FOR CONSTRUCTION DETAILS
WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.
0 1 2 3 4 5m
SCALE 1:100 AT ORIGINAL SIZE (A1)
MEINHARDT
Meinhardt Infrastructure and Environment PTY. LTD.
School Infrastructure NSW
CAMMERAY PUBLIC SCHOOL
68 PALMER STREET, CAMMERAY NSW 2062
BULK EARTHWORKS PLAN
SCHEMATIC DESIGN
NOT TO BE USED FOR CONSTRUCTION
132562
CPS-MMT-00-00-DR-C-0070
P4


MILLER STREET
LIFT
MECH PLANT
UNDERCROFT
BLOCK E
TWO STOREY
CORRUGATED METAL & BRICK
WITH METAL ROOF
CLASSROOM BUILDING
EXISTING PIT EX CL 73.62
CONNECT TO EXISTING PIT
FFL 74.874 EXIST. 74.028
SUBJECT TO ARCHITECTS DESIGN INPUTS
EXISTING SEWER LINE TO BE RE-ALIGNED OR RELOCATED
BLOCK E EXISTING ROOFWATER COLLECTOR PIPE TO CONNECT TO PIT B2
CONTRACTOR TO ENSURE NOT TO DAMAGE EXISTING RETAINING WALL DURING CONSTRUCTION
EXISTING PIPES ONLY TO BE REMOVED IF CLASHING WITH NEW PIPES AND NEW STRUCTURES. ELSE, EXISTING PIPES TO BE CAPPED AND TO REMAIN UNTOUCHED AND REDUNDANT
EX. FFL 76.500 (VERANDA)
HYDRAULICS TO RE-ROUTE ROOF WATER DOWNPIPES IN UNDERCROFT TO DISCHARGE TO DRAINAGE PIT A-1
STRUCTURAL FOOTING TO BE UNDERSIDE OF STORMWATER PIT
PIT BASKETS OR LINERS INSIDE GRATED PITS TO CATCH LEAVES AND TO BE MAINTAINED AFTER FREQUENT VISUAL INSPECTIONS
CONNECT EXISTING DRAINAGE PIPE TO PIT A-1
CONTRACTOR TO ENSURE NOT TO DAMAGE EXISTING RETAINING WALL DURING CONSTRUCTION
EXISTING OVERLAND FLOW PATH TO BE MAINTAINED
EXISTING PIT TO BE ASSESSED DETAILED INFORMATION TO BE OBTAINED DURING DETAILED DESIGN
SURVEY MARK
LEGEND
ITEM
DESCRIPTION
EXISTING SURFACE CONTOURS
PROPOSED SURFACE CONTOURS
EXISTING SURFACE SPOT LEVELS
PROPOSED SURFACE SPOT LEVELS
TITLE BOUNDARY
PROPOSED RETAINING WALL
EXISTING STORMWATER DRAIN
PROPOSED STORMWATER DRAIN AND FLOW DIRECTION
SYPHONIC CONNECTION (REFER HYDRAULIC ENGINEERS DRGTS)
PROPOSED 100Ø UPVC AGRICULTURAL DRAIN CLASS 400
EXISTING STORMWATER PIT
EXISTING STORMWATER PIT TO BE MODIFIED
PROPOSED STORMWATER PIT
100Ø GRATED INLET (UNLESS NOTED OTHERWISE)
DOWNPIPE
INSPECTION OPENING
GRATED TRENCH DRAIN
OVERLAND FLOW ARROW
LIGHT DUTY CONCRETE PAVEMENT-PEDESTRIAN
PROPOSED CUTOFF SWALE
STRUCTURAL FOOTING LAYOUT
EXISTING SEWER
EXISTING GAS
EXISTING WATER
EXISTING RECYCLED WATER
EXISTING ELECTRICITY
EXISTING OVERHEAD ELECTRICITY
EXISTING LOW VOLTAGE ELECTRICITY
EXISTING HIGH VOLTAGE ELECTRICITY
EXISTING TELECOM CABLE
EXISTING FIBRE OPTIC CABLE
EXISTING NBN COMMS CABLE
EXISTING FEATURES TO BE REMOVED. IF CLASHING WITH NEW PIPES AND NEW STRUCTURES. ELSE, EXISTING PIPES TO BE CAPPED AND TO REMAIN UNTOUCHED AND REDUNDANT.
STRUCTURAL FOOTINGS. REFER TO STRUCTURAL DRAWINGS FOR DETAILS
THESE PLANS ARE BASED UPON THE EXISTING CONDITIONS SURVEY PREPARED BY SDG PTY LTD, REFERENCE No 9009 REV A DATED 21 MAY 2024.
THESE DESIGN PLANS SHALL BE READ IN CONJUNCTION WITH GEOTECHNICAL REPORT No. A251023.GT2.00_A_v1 DATED 14 FEBRUARY 2024 PREPARED BY ADE CONSULTING GROUP. THE PROVISIONS AND RECOMMENDATIONS CONTAINED WITHIN THE REPORT ARE TO BE STRICTLY COMPLIED WITH. ALL COMPACTION REQUIREMENT RESULTS SHALL BE CARRIED OUT IN ACCORDANCE WITH GEOTECHNICAL REPORT RECOMMENDATIONS.
BEFORE YOU DIG
WARNING
PROPOSED SERVICES
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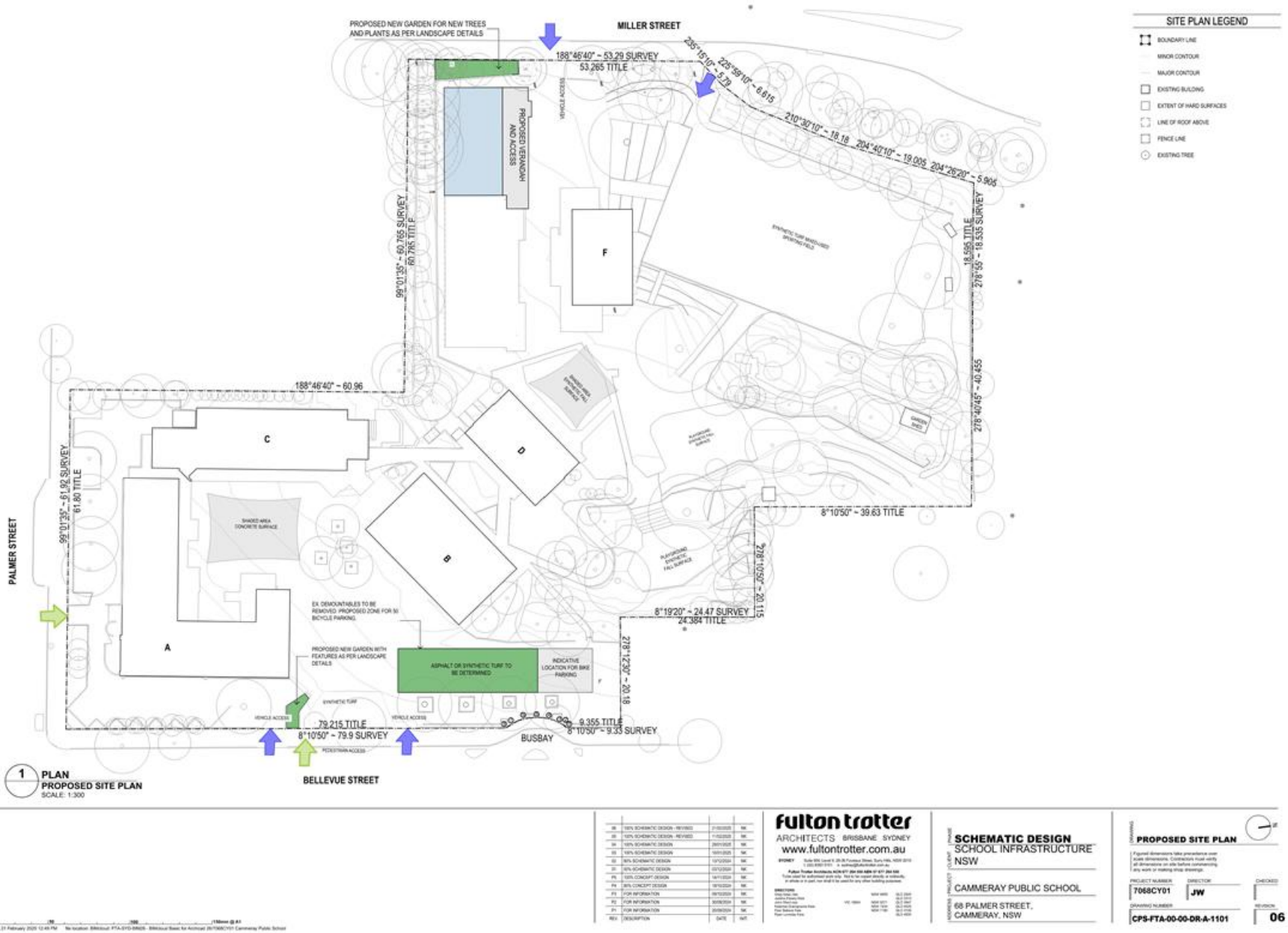
0 1 2 3 4 5m
SCALE 1:100 AT ORIGINAL SIZE (A1)
MEINHARDT
Meinhardt Infrastructure and Environment PTY. LTD.
School Infrastructure NSW
CAMMERAY PUBLIC SCHOOL
68 PALMER STREET, CAMMERAY NSW 2062
CIVIL SITEWORKS PLAN
SCHEMATIC DESIGN
NOT TO BE USED FOR CONSTRUCTION
DRAWN M.D
DESIGNED M.D
CHECKED Y.C
APPROVED
DATE
SCALE @ A1 1:100
PROJECT No 132562
DRAWING No CPS-MHT-00-00-DR-C-0101
REV P5



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04	100% SCHEMATIC DESIGN	29/01/2025	MK
03	100% SCHEMATIC DESIGN	10/01/2025	MK
02	90% SCHEMATIC DESIGN	13/12/2024	MK
01	60% SCHEMATIC DESIGN	22/11/2024	MK
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P4	90% CONCEPT DESIGN	18/10/2024	MK
P3	FOR INFORMATION	09/10/2024	MK
P2	FOR INFORMATION	30/09/2024	MK
P1	FOR INFORMATION	20/09/2024	MK
REV	DESCRIPTION	DATE	INIT.

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SCHEMATIC DESIGN
SCHOOL INFRASTRUCTURE NSW

CAMMERAY PUBLIC SCHOOL

68 PALMER STREET, CAMMERAY, NSW

PROPOSED SITE PLAN

PROJECT NUMBER: 7068CY01
DIRECTOR: JW
CHECKED:
DRAWING NUMBER: CPS-FTA-00-00-DR-A-1101
REVISION: 06

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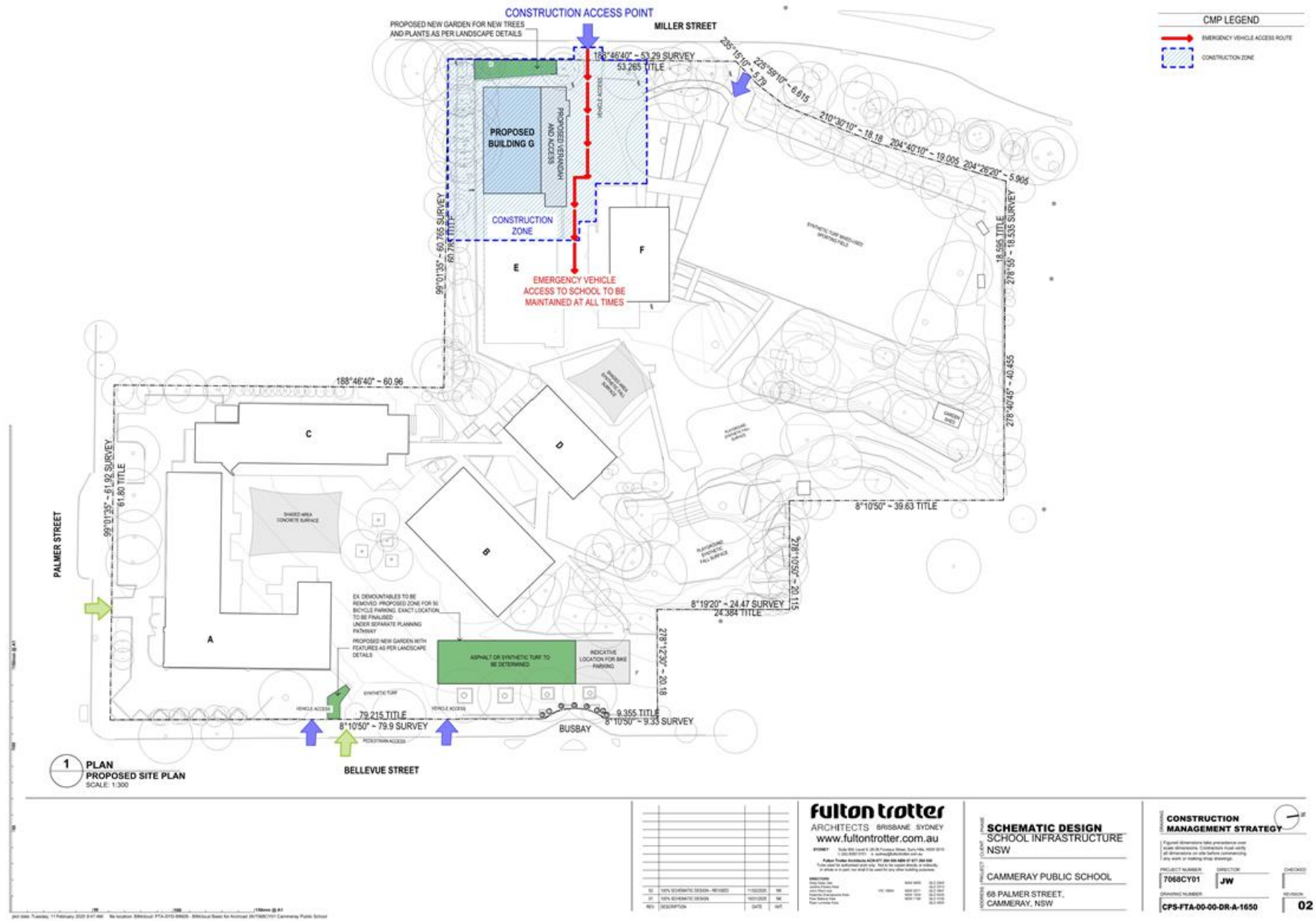
ACN: 625 300 530



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02	100% SCHEMATIC DESIGN - REVISED	11/02/2025	MK
01	100% SCHEMATIC DESIGN	10/01/2025	MK

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PHASE: SCHEMATIC DESIGN
CLIENT: SCHOOL INFRASTRUCTURE NSW
PROJECT: CAMMERAY PUBLIC SCHOOL
ADDRESS: 68 PALMER STREET, CAMMERAY, NSW

DRAWING: CONSTRUCTION MANAGEMENT STRATEGY
PROJECT NUMBER: 7068CY01
DRAWN: JW
CHECKED:
DRAWING NUMBER: CPS-FTA-00-00-DR-A-1650
REVISION: 02

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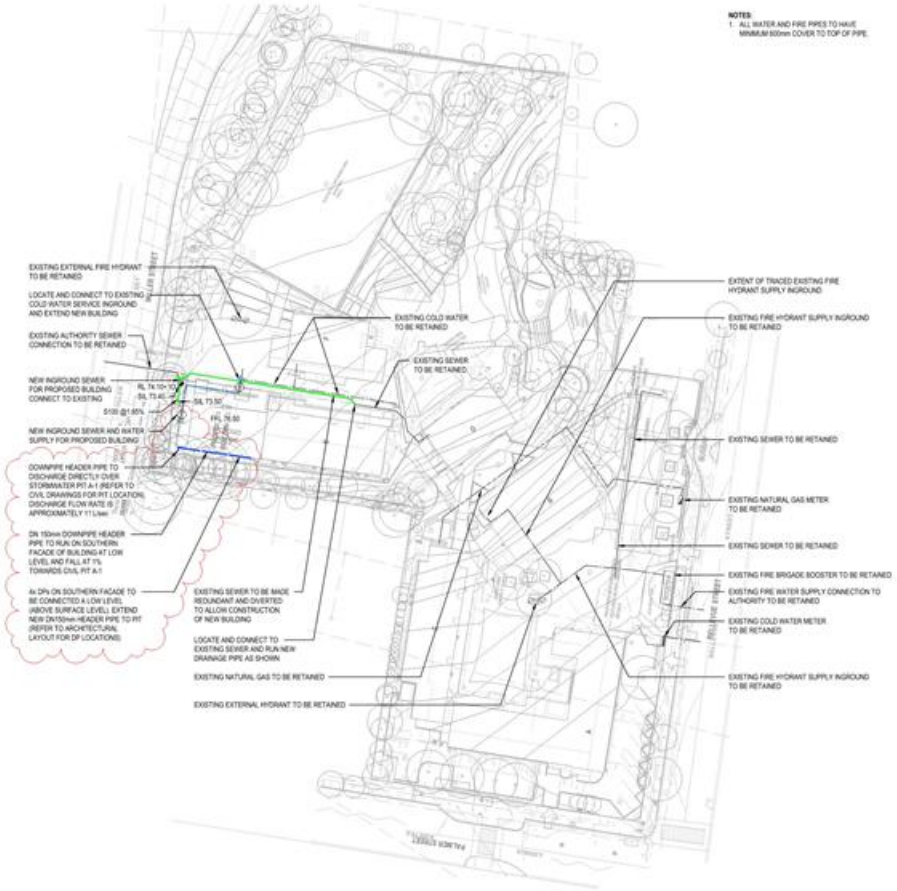
ACN: 625 300 530



Issue	Description	Date	Drawn	Approved
E	ISSUE FOR TENDER (REVISED AS CLOSED)	04.03.25	GB	RE
D	ISSUE FOR TENDER	19.02.25	GB	RE
C	100% SCHEME DESIGN (PHASE 3)	19.12.24	GB	RE
B	90% SCHEME DESIGN (PHASE 3)	12.12.24	GB	RE
A	50% SCHEME DESIGN (PHASE 3)	26.10.24	GB	RE

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Architect: FULTON TROTTER ARCHITECTS
SUITE 904, LEVEL 9, 28-36 FOVEAUX STREET
SURRY HILLS NSW 2010
T: 02 8383 5151 E: sydney@fultontrotter.com.au

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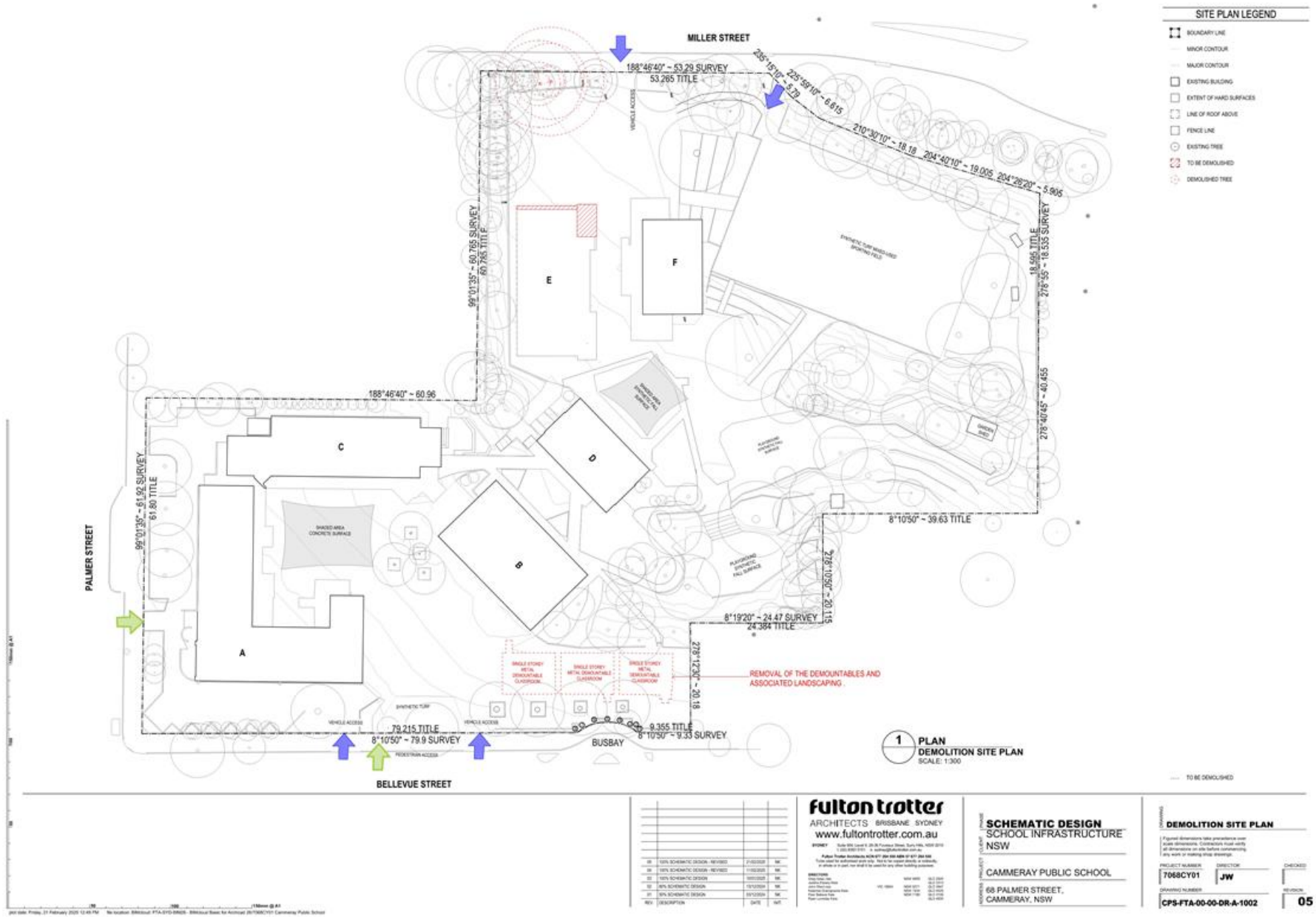
Project: UPGRADES TO CAMMERAY PUBLIC SCHOOL
66 PALMER STREET, CAMMERAY NSW

TENDER ISSUE
NOT FOR CONSTRUCTION

Drawing Title: HYDRAULIC SERVICES PROPOSED SITE PLAN

Drawn	Designed	QA Check	QA Date	Scale @ A1
GB	RE	RE	03.03.25	1 : 500

Project No.: NA232021
Drawing No.: CPS-ACOR-00-00-DR-H-1200
Issue: E



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SCHEMATIC DESIGN
SCHOOL INFRASTRUCTURE NSW

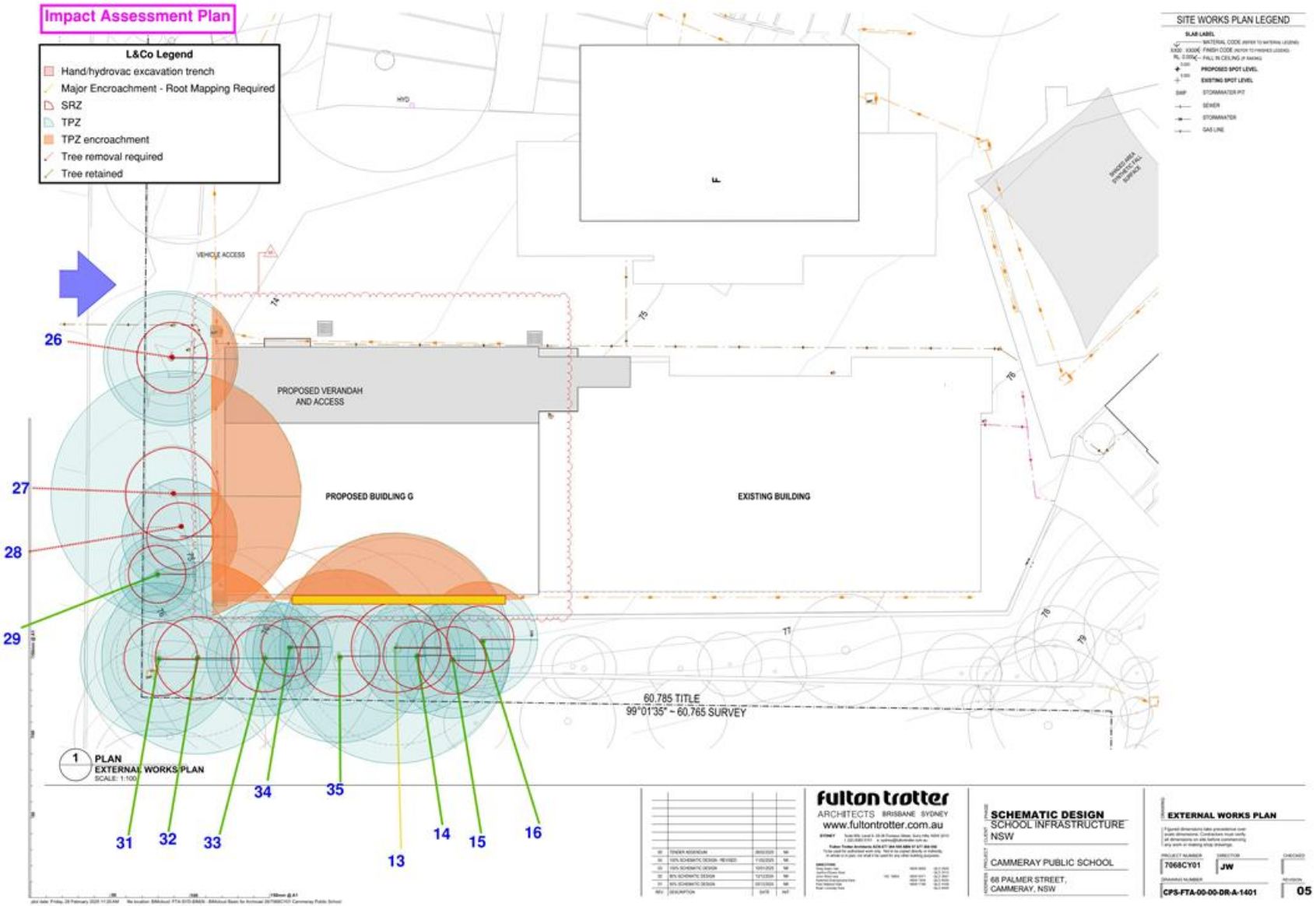
CAMMERAY PUBLIC SCHOOL

68 PALMER STREET, CAMMERAY, NSW

DEMOLITION SITE PLAN

PROJECT NUMBER: 7068CY01
DIRECTOR: JW
CHECKED:
DRAWING NUMBER: CPS-FTA-00-00-DR-A-1002
REVISION: 05

10.0 APPENDIX 5 | ARBORICULTURAL IMPACT ASSESSMENT PLANS



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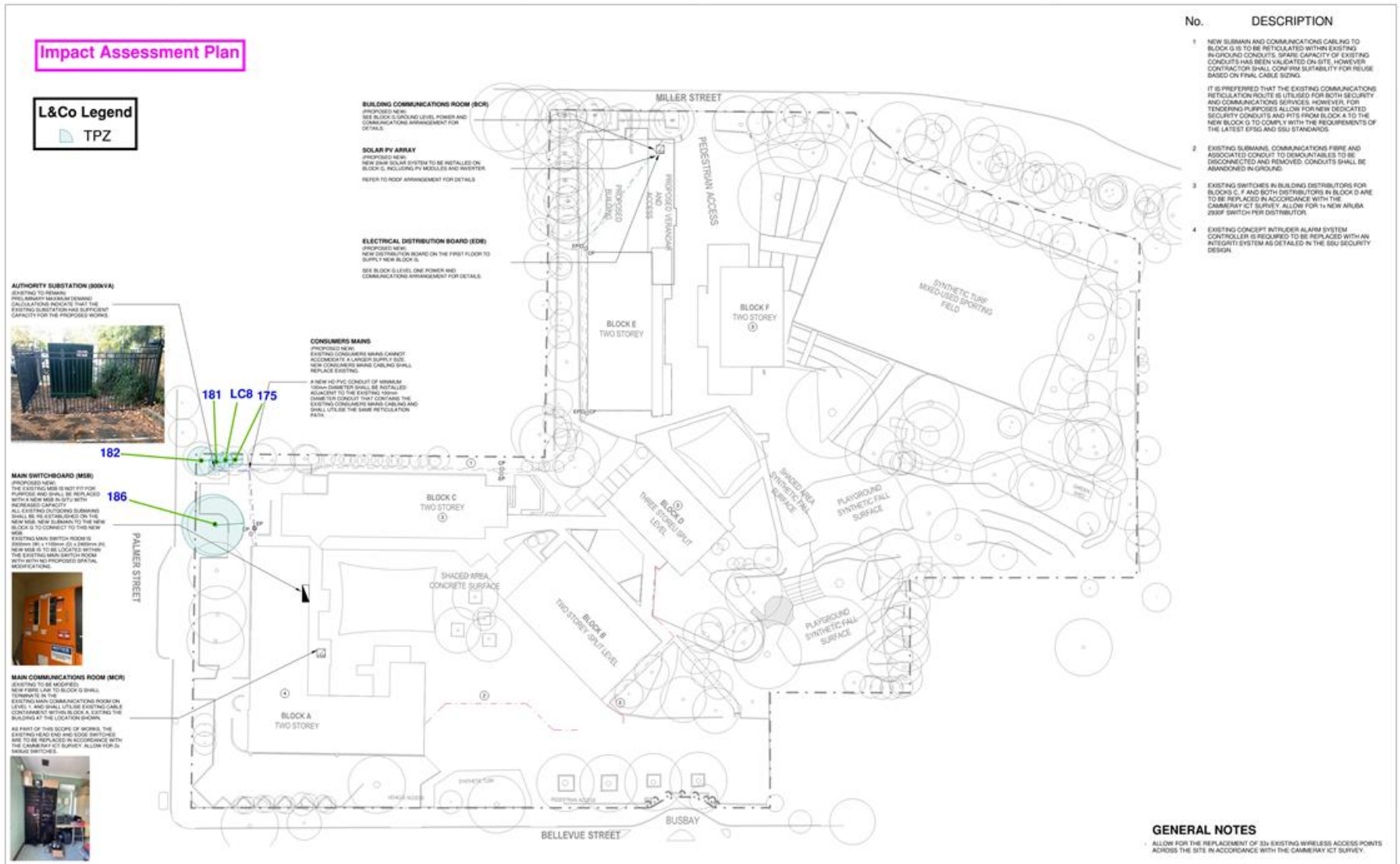
ACN: 625 300 530



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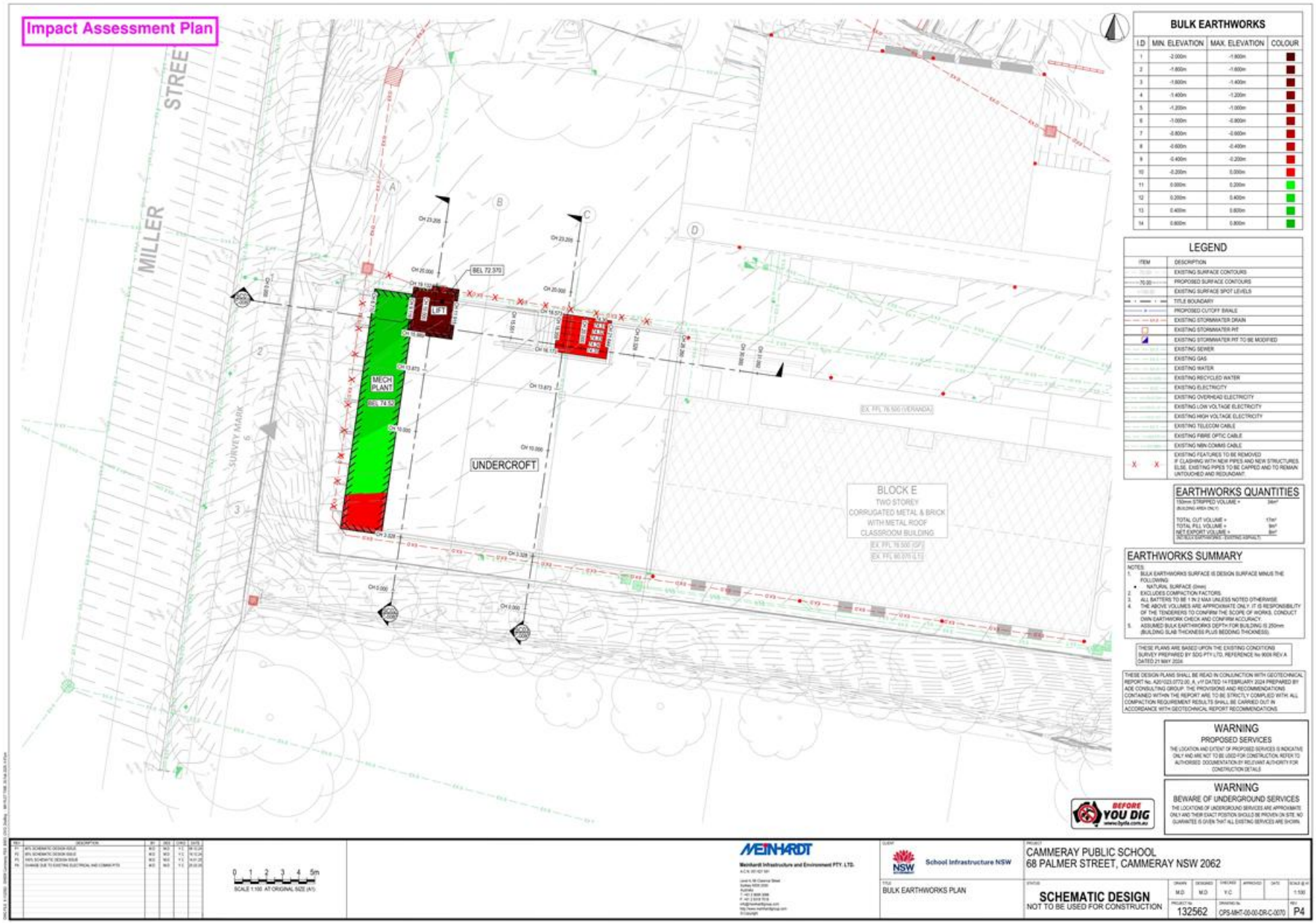

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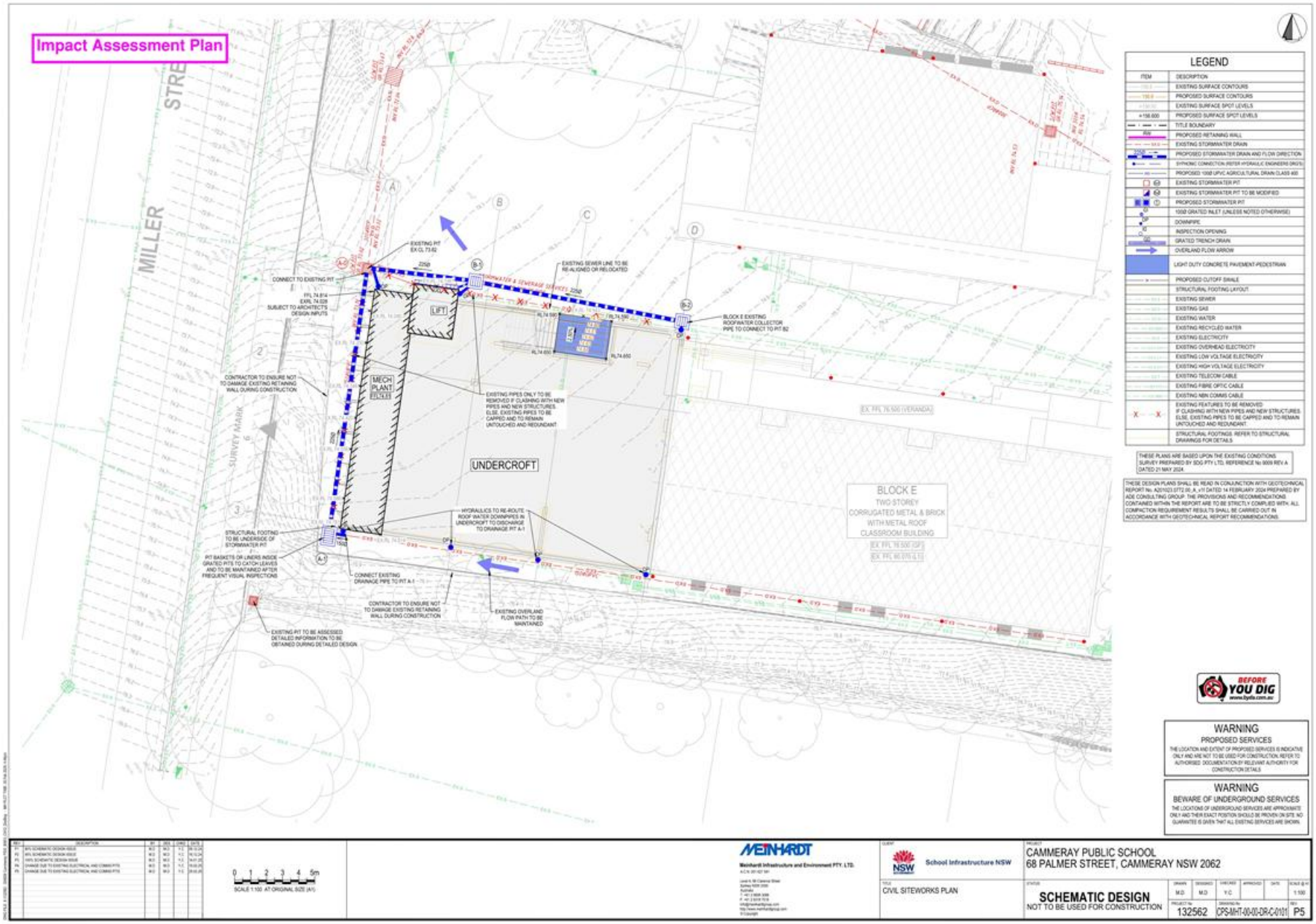
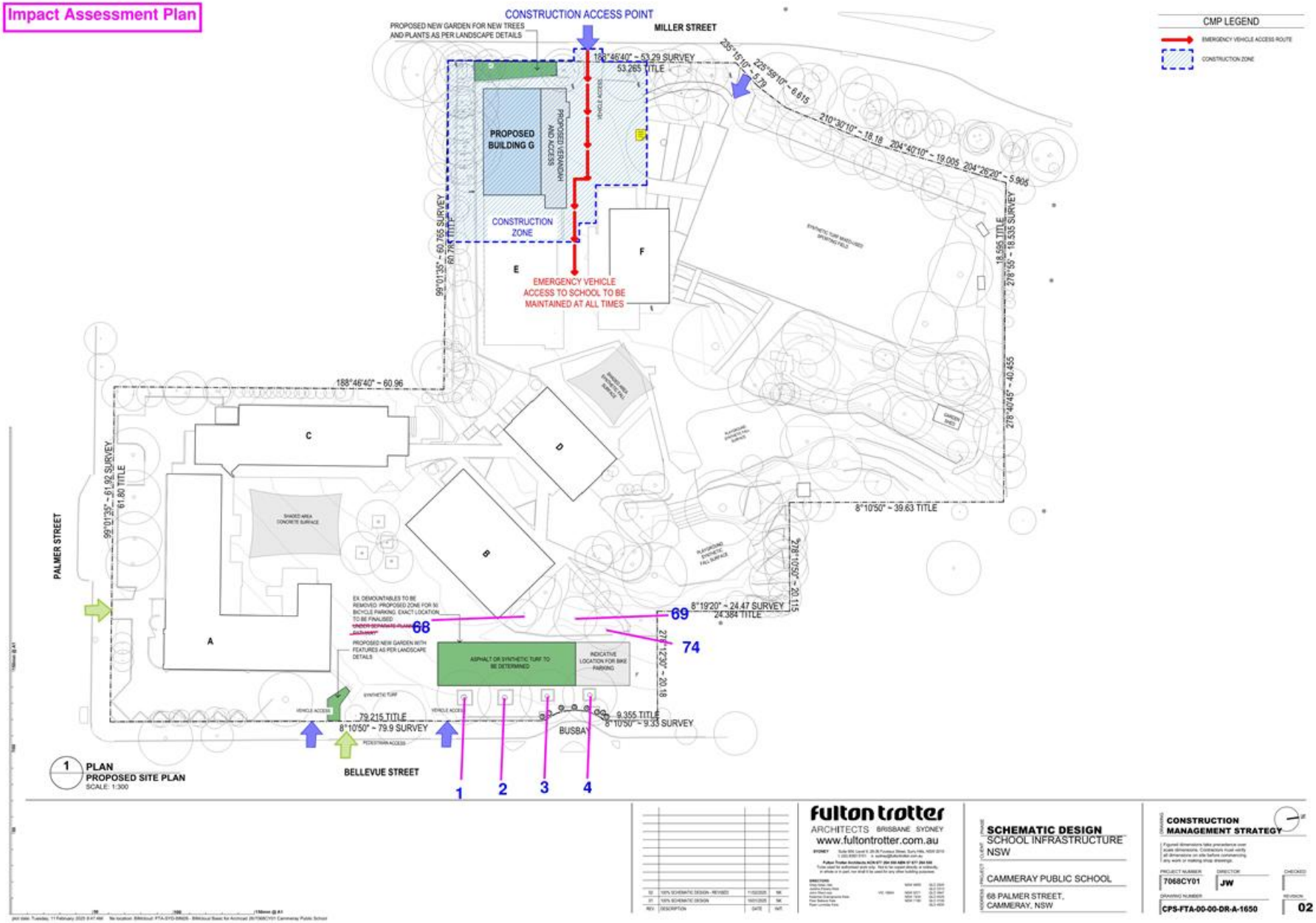

Impact Assessment Plan
MILLER STREET
LIFT
MECH PLANT
UNDERCROFT
BLOCK E
TWO STOREY
CORRUGATED METAL & BRICK
WITH METAL ROOF
CLASSROOM BUILDING
LEGEND
EXISTING SURFACE CONTOURS
PROPOSED SURFACE CONTOURS
EXISTING SURFACE SPOT LEVELS
PROPOSED SURFACE SPOT LEVELS
TITLE BOUNDARY
PROPOSED RETAINING WALL
EXISTING STORMWATER DRAIN
PROPOSED STORMWATER DRAIN AND FLOW DIRECTION
SYPHONIC CONNECTION (REFER HYDRAULIC ENGINEERS DRGTS)
PROPOSED 100Ø UPVC AGRICULTURAL DRAIN CLASS 400
EXISTING STORMWATER PIT
EXISTING STORMWATER PIT TO BE MODIFIED
PROPOSED STORMWATER PIT
100Ø GRATED INLET (UNLESS NOTED OTHERWISE)
DOWNPIPE
INSPECTION OPENING
GRATED TRENCH DRAIN
OVERLAND FLOW ARROW
LIGHT DUTY CONCRETE PAVEMENT-PEDESTRIAN
PROPOSED CUTOFF SWALE
STRUCTURAL FOOTING LAYOUT
EXISTING SEWER
EXISTING GAS
EXISTING WATER
EXISTING RECYCLED WATER
EXISTING ELECTRICITY
EXISTING OVERHEAD ELECTRICITY
EXISTING LOW VOLTAGE ELECTRICITY
EXISTING HIGH VOLTAGE ELECTRICITY
EXISTING TELECOM CABLE
EXISTING FIBRE OPTIC CABLE
EXISTING NBN COMMS CABLE
EXISTING FEATURES TO BE REMOVED
IF CLASHING WITH NEW PIPES AND NEW STRUCTURES. ELSE, EXISTING PIPES TO BE CAPPED AND TO REMAIN UNTOUCHED AND REDUNDANT.
STRUCTURAL FOOTINGS. REFER TO STRUCTURAL DRAWINGS FOR DETAILS
THESE PLANS ARE BASED UPON THE EXISTING CONDITIONS SURVEY PREPARED BY SDG PTY LTD, REFERENCE No 9009 REV A DATED 21 MAY 2024.
THESE DESIGN PLANS SHALL BE READ IN CONJUNCTION WITH GEOTECHNICAL REPORT No. A251023.GT2.00_A_v1 DATED 14 FEBRUARY 2024 PREPARED BY ADE CONSULTING GROUP. THE PROVISIONS AND RECOMMENDATIONS CONTAINED WITHIN THE REPORT ARE TO BE STRICTLY COMPLIED WITH. ALL COMPACTION REQUIREMENT RESULTS SHALL BE CARRIED OUT IN ACCORDANCE WITH GEOTECHNICAL REPORT RECOMMENDATIONS.
BEFORE YOU DIG
WARNING
PROPOSED SERVICES
THE LOCATION AND EXTENT OF PROPOSED SERVICES IS INDICATIVE ONLY AND ARE NOT TO BE USED FOR CONSTRUCTION. REFER TO AUTHORISED DOCUMENTATION BY RELEVANT AUTHORITY FOR CONSTRUCTION DETAILS
WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.
SCALE 1:100 AT ORIGINAL SIZE (A1)
MEINHARDT
Meinhardt Infrastructure and Environment PTY. LTD.
School Infrastructure NSW
CAMMERAY PUBLIC SCHOOL
68 PALMER STREET, CAMMERAY NSW 2062
CIVIL SITEWORKS PLAN
SCHEMATIC DESIGN
NOT TO BE USED FOR CONSTRUCTION
132562
CPS-MHT-00-00-DR-C-0101
P5

Impact Assessment Plan



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01	100% SCHEMATIC DESIGN	16/01/2025	MK
REV	DESCRIPTION	DATE	INIT.

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SCHEMATIC DESIGN
SCHOOL INFRASTRUCTURE NSW

CAMMERAY PUBLIC SCHOOL

68 PALMER STREET, CAMMERAY, NSW

CONSTRUCTION MANAGEMENT STRATEGY

PROJECT NUMBER: 7068CY01
DIRECTOR: JW
CHECKED:
DRAWING NUMBER: CPS-FTA-00-00-DR-A-1650
REVISION: 02

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Clovelly, NSW 2031
info@laurenceco.com.au
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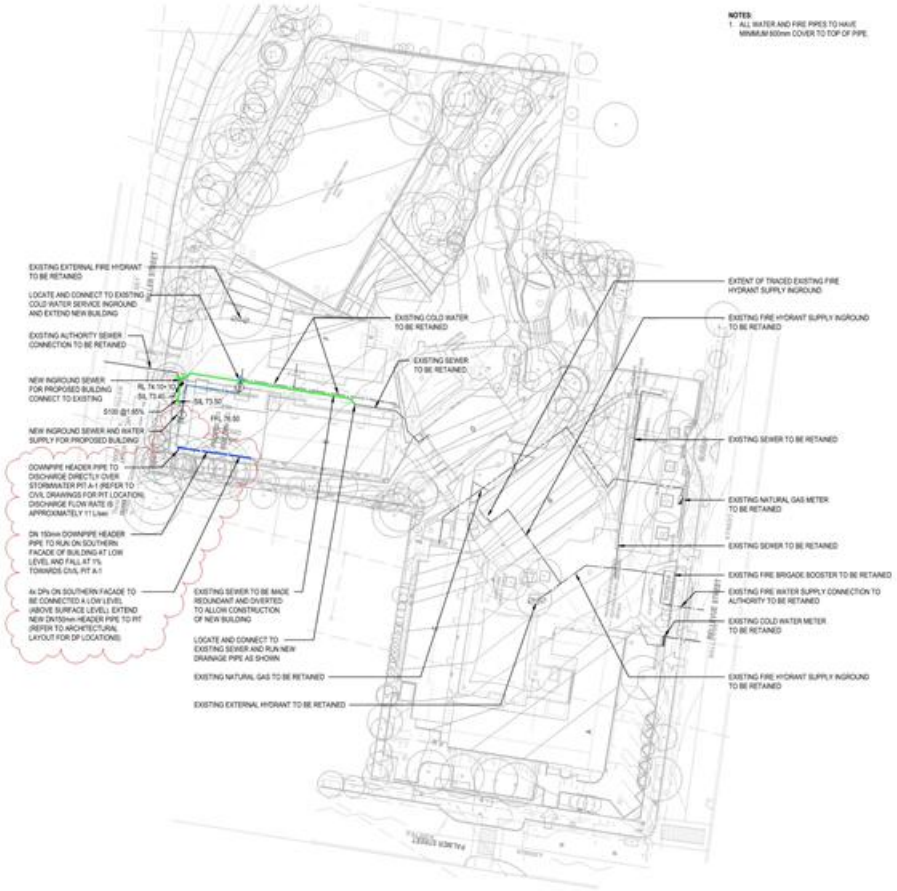
ACN: 625 300 530

Impact Assessment Plan



Issue	Description	Date	Drawn	Approved
E	ISSUE FOR TENDER (REVISED AS CLOSED)	04.03.25	GB	RE
D	ISSUE FOR TENDER	19.02.25	GB	RE
C	100% SCHEME DESIGN (PHASE 3)	19.12.24	GB	RE
B	90% SCHEME DESIGN (PHASE 3)	12.12.24	GB	RE
A	50% SCHEME DESIGN (PHASE 3)	26.12.24	GB	RE

North: N

Scale: 1:500 @ A1 / 1:1000 @ A3 — 0 5 10 15 20 25m

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Client:

Architect: FULTON TROTTER ARCHITECTS
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SURRY HILLS NSW 2010
T: 02 8383 5151 E: sydney@fultontrotter.com.au

ACOR CONSULTANTS

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Project: UPGRADES TO CAMMERAY PUBLIC SCHOOL
66 PALMER STREET, CAMMERAY NSW

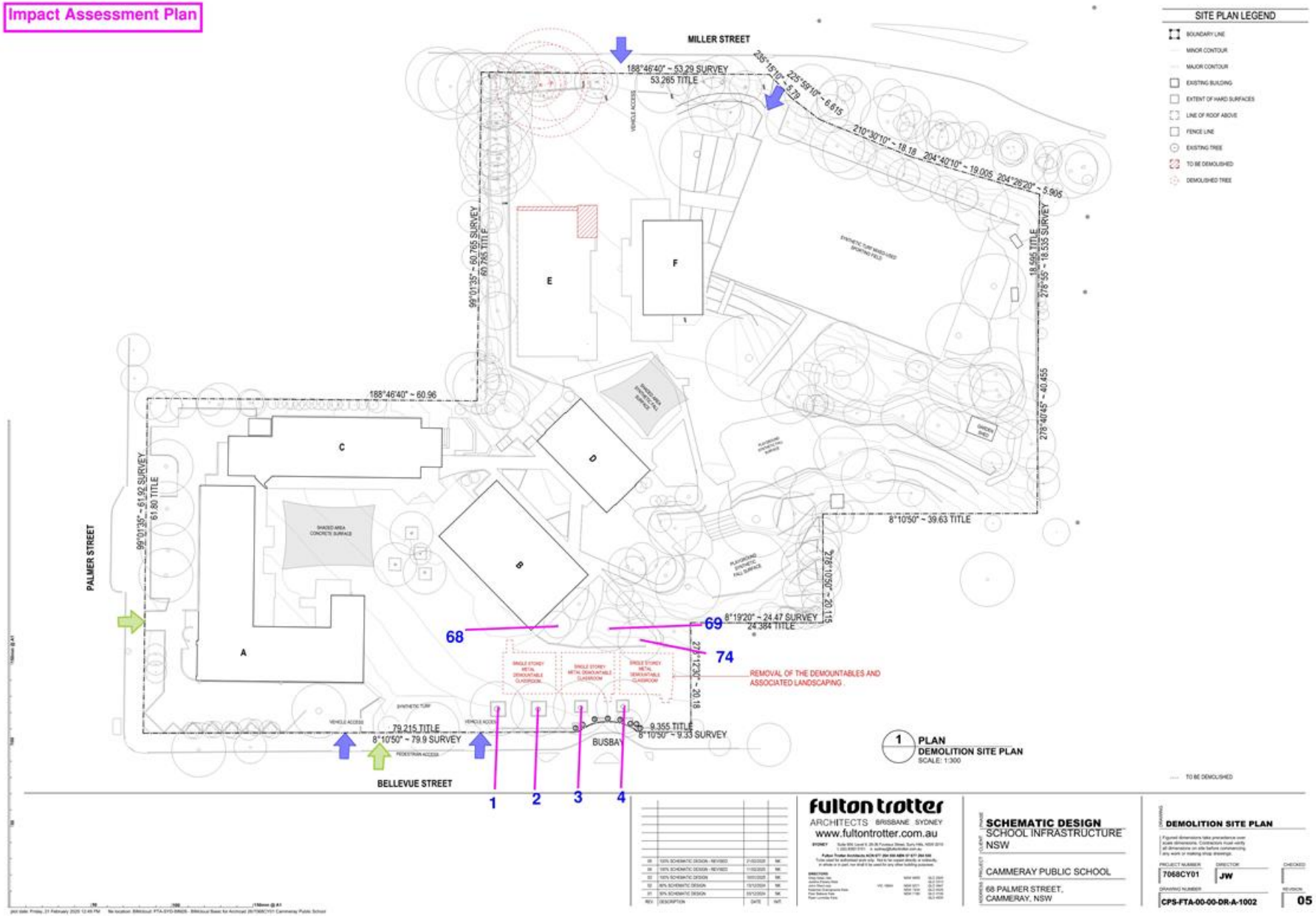
TENDER ISSUE
NOT FOR CONSTRUCTION

Drawing Title: HYDRAULIC SERVICES PROPOSED SITE PLAN

Drawn	Designed	QA Check	QA Date	Scale @ A1
GB	RE	RE	03.03.25	1 : 500

Project No.: NA232021
Drawing No.: CPS-ACOR-00-00-DR-H-1200
Issue: E

Impact Assessment Plan



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Clovelly, NSW 2031
info@laurenceco.com.au
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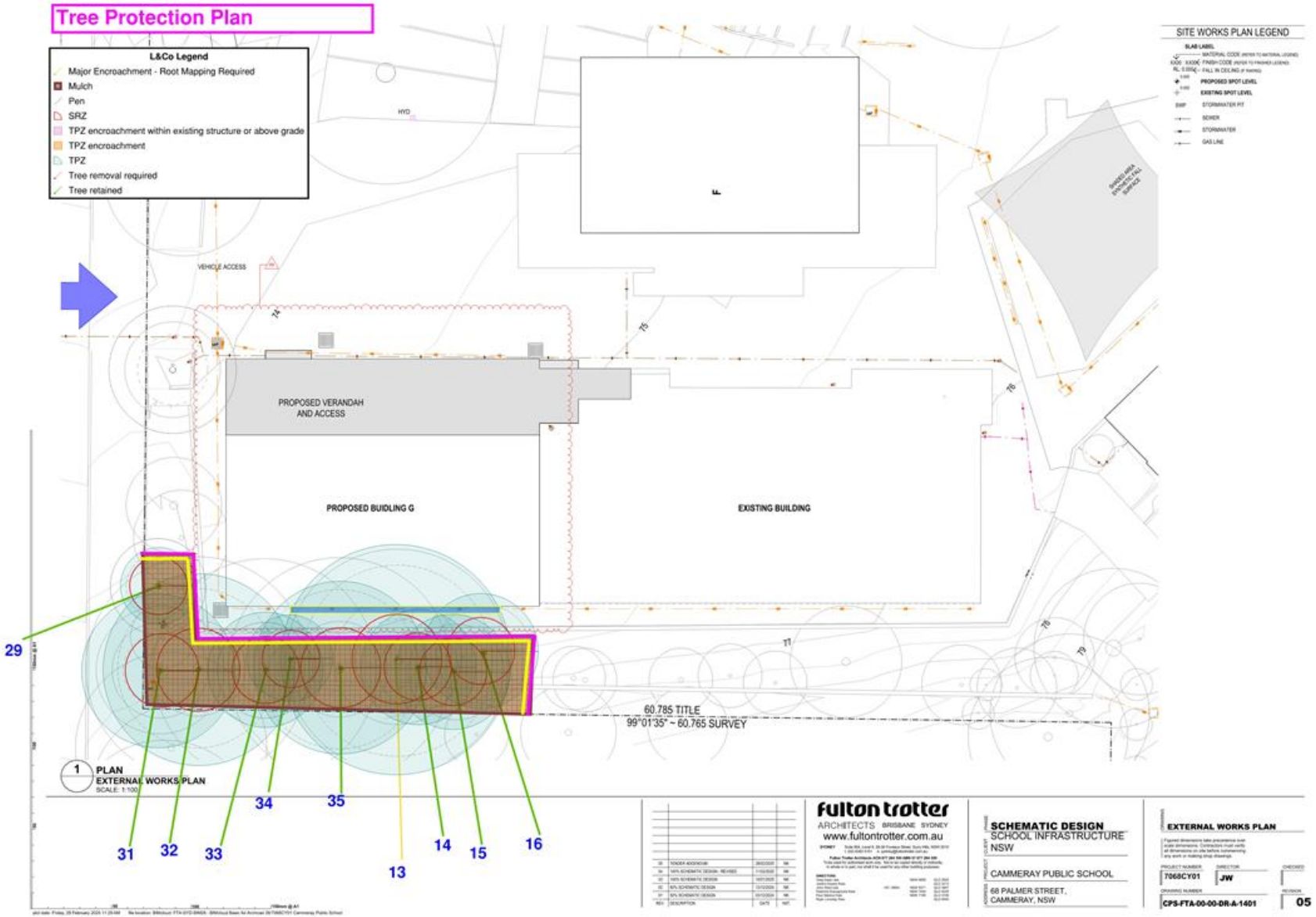
ACN: 625 300 530

11.0 APPENDIX 6 | TREE PROTECTION PLAN



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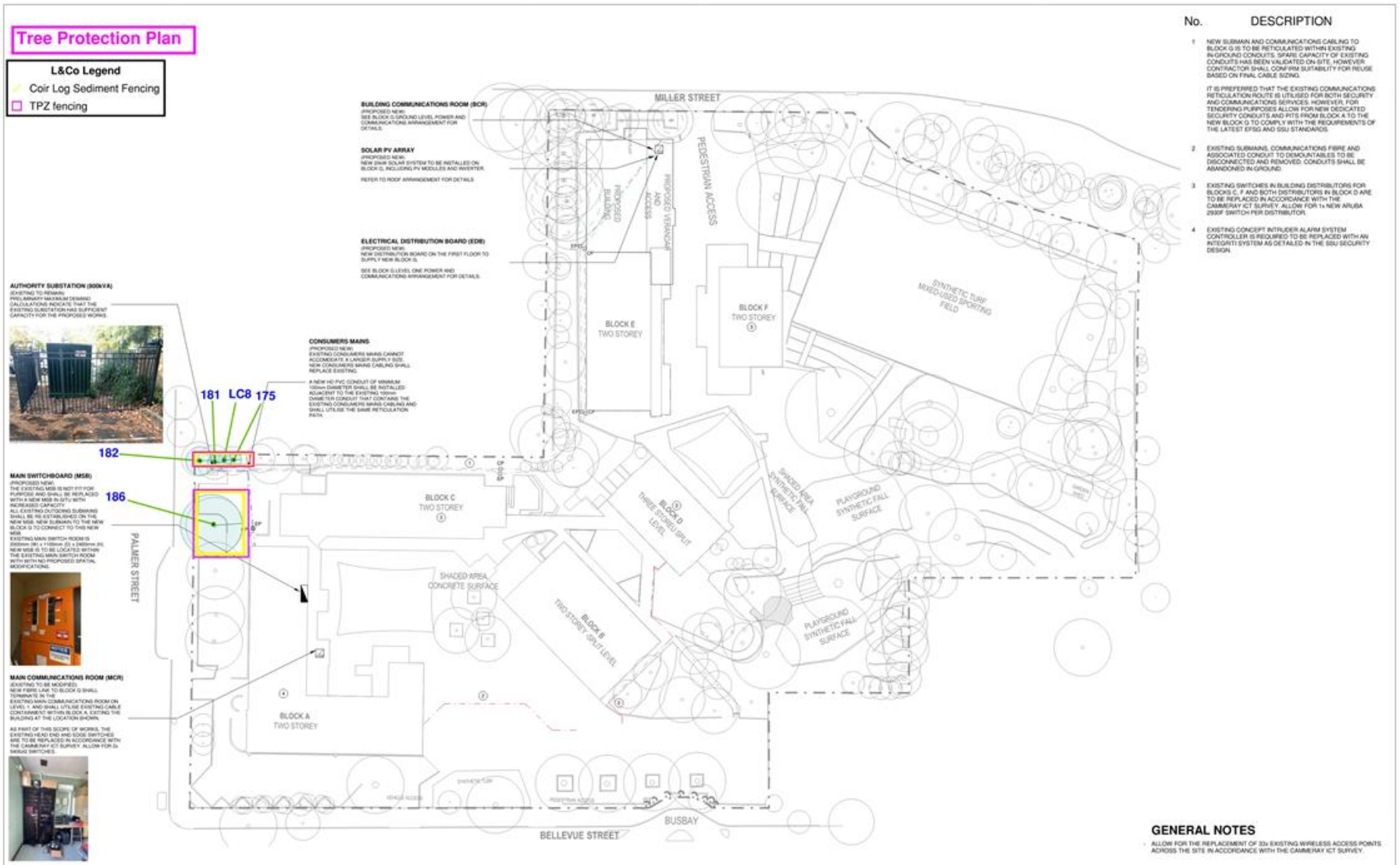
Tree Protection Plan
L&Co Legend
Coir Log Sediment Fencing
TPZ fencing
No.
DESCRIPTION
1 NEW SUBMAIN AND COMMUNICATIONS CABLING TO BLOCK G IS TO BE RETICULATED WITHIN EXISTING IN-GROUND CONDUITS. SPARE CAPACITY OF EXISTING CONDUITS HAS BEEN VALIDATED ON-SITE, HOWEVER CONTRACTOR SHALL CONFIRM SUITABILITY FOR REUSE BASED ON FINAL CABLE SIZING.
IT IS PREFERRED THAT THE EXISTING COMMUNICATIONS RETICULATION ROUTE IS UTILISED FOR BOTH SECURITY AND COMMUNICATIONS SERVICES. HOWEVER, FOR TENDERING PURPOSES ALLOW FOR NEW DEDICATED SECURITY CONDUITS AND PITS FROM BLOCK A TO THE NEW BLOCK G TO COMPLY WITH THE REQUIREMENTS OF THE LATEST EFSG AND SSU STANDARDS.
2 EXISTING SUBMAINS, COMMUNICATIONS FIBRE AND ASSOCIATED CONDUIT TO DEMOUNTABLES TO BE DISCONNECTED AND REMOVED. CONDUITS SHALL BE ABANDONED IN-GROUND.
3 EXISTING SWITCHES IN BUILDING DISTRIBUTORS FOR BLOCKS C, F AND BOTH DISTRIBUTORS IN BLOCK D ARE TO BE REPLACED IN ACCORDANCE WITH THE CAMMERAY ICT SURVEY. ALLOW FOR 1x NEW ARUBA 2930F SWITCH PER DISTRIBUTOR.
4 EXISTING CONCEPT INTRUDER ALARM SYSTEM CONTROLLER IS REQUIRED TO BE REPLACED WITH AN INTEGRITI SYSTEM AS DETAILED IN THE SSU SECURITY DESIGN.
BUILDING COMMUNICATIONS ROOM (BCR)
(PROPOSED NEW)
SEE BLOCK G GROUND LEVEL POWER AND COMMUNICATIONS ARRANGEMENT FOR DETAILS.
SOLAR PV ARRAY
(PROPOSED NEW)
NEW 20kW SOLAR SYSTEM TO BE INSTALLED ON BLOCK G, INCLUDING PV MODULES AND INVERTER.
REFER TO ROOF ARRANGEMENT FOR DETAILS
ELECTRICAL DISTRIBUTION BOARD (EDB)
(PROPOSED NEW)
NEW DISTRIBUTION BOARD ON THE FIRST FLOOR TO SUPPLY NEW BLOCK G.
SEE BLOCK G LEVEL ONE POWER AND COMMUNICATIONS ARRANGEMENT FOR DETAILS.
AUTHORITY SUBSTATION (500KVA)
(EXISTING TO REMAIN)
PRELIMINARY MAXIMUM DEMAND CALCULATIONS INDICATE THAT THE EXISTING SUBSTATION HAS SUFFICIENT CAPACITY FOR THE PROPOSED WORKS.
CONSUMERS MAINS
(PROPOSED NEW)
EXISTING CONSUMERS MAINS CANNOT ACCOMODATE A LARGER SUPPLY SIZE. NEW CONSUMERS MAINS CABLING SHALL REPLACE EXISTING.
A NEW HD PVC CONDUIT OF MINIMUM 100mm DIAMETER SHALL BE INSTALLED ADJACENT TO THE EXISTING 100mm DIAMETER CONDUIT THAT CONTAINS THE EXISTING CONSUMERS MAINS CABLING AND SHALL UTILISE THE SAME RETICULATION PATH.
MAIN SWITCHBOARD (MSB)
(PROPOSED NEW)
THE EXISTING MSB IS NOT FIT FOR PURPOSE AND SHALL BE REPLACED WITH A NEW MSB IN-SITU WITH INCREASED CAPACITY.
ALL EXISTING OUTGOING SUBMAINS SHALL BE RE-ESTABLISHED ON THE NEW MSB. NEW SUBMAIN TO THE NEW BLOCK G TO CONNECT TO THIS NEW MSB.
EXISTING MAIN SWITCH ROOM IS 2900mm (W) x 1100mm (D) x 2400mm (H). NEW MSB IS TO BE LOCATED WITHIN THE EXISTING MAIN SWITCH ROOM WITH BOTH NO PROPOSED SPATIAL MODIFICATIONS.
MAIN COMMUNICATIONS ROOM (MCR)
(EXISTING TO BE MODIFIED)
NEW FIBRE LINK TO BLOCK G SHALL TERMINATE IN THE EXISTING MAIN COMMUNICATIONS ROOM ON LEVEL 1, AND SHALL UTILISE EXISTING CABLE CONTAINMENT WITHIN BLOCK A, EXITING THE BUILDING AT THE LOCATION SHOWN.
AS PART OF THIS SCOPE OF WORKS, THE EXISTING HEAD END AND EDGE SWITCHES ARE TO BE REPLACED IN ACCORDANCE WITH THE CAMMERAY ICT SURVEY. ALLOW FOR 2x 14XGIG SWITCHES.
181
LC8
175
182
186
MILLER STREET
PEDESTRIAN ACCESS
PROPOSED BUILDING
PROPOSED VERANDAH AND ACCESS
BLOCK E TWO STOREY
BLOCK F TWO STOREY
SYNTHETIC TURF MIXED-USE SPORTING FIELD
BLOCK C TWO STOREY
BLOCK D THREE STOREY SPLIT LEVEL
SHADED AREA SYNTHETIC FALL SURFACE
PLAYGROUND SYNTHETIC FALL SURFACE
PALMER STREET
SHADED AREA CONCRETE SURFACE
BLOCK B TWO STOREY SPLIT LEVEL
PLAYGROUND SYNTHETIC FALL SURFACE
BLOCK A TWO STOREY
BUSBAY
BELLEVUE STREET
GENERAL NOTES
- ALLOW FOR THE REPLACEMENT OF 33x EXISTING WIRELESS ACCESS POINTS ACROSS THE SITE IN ACCORDANCE WITH THE CAMMERAY ICT SURVEY.
Education
School Infrastructure
NDY
fulton trotter
RP INFRASTRUCTURE
PROJECT NAME
SINSW - CAMMERAY PUBLIC SCHOOL UPGRADE
PALMER ST, CAMMERAY NSW 2062
BLOCK G
DRAWING TITLE
ELECTRICAL SERVICES
SITE PLAN
PROJECT NO
758-0120.0041150.0001
STATUS
SCHEMATIC DESIGN
DRN BC | CHK DH | APP SS | DATE 21.02.2025 | SCALE 1 : 300 @A1
DRAWING NO
CPS-NDY-00-00-DR-E-001011
REV
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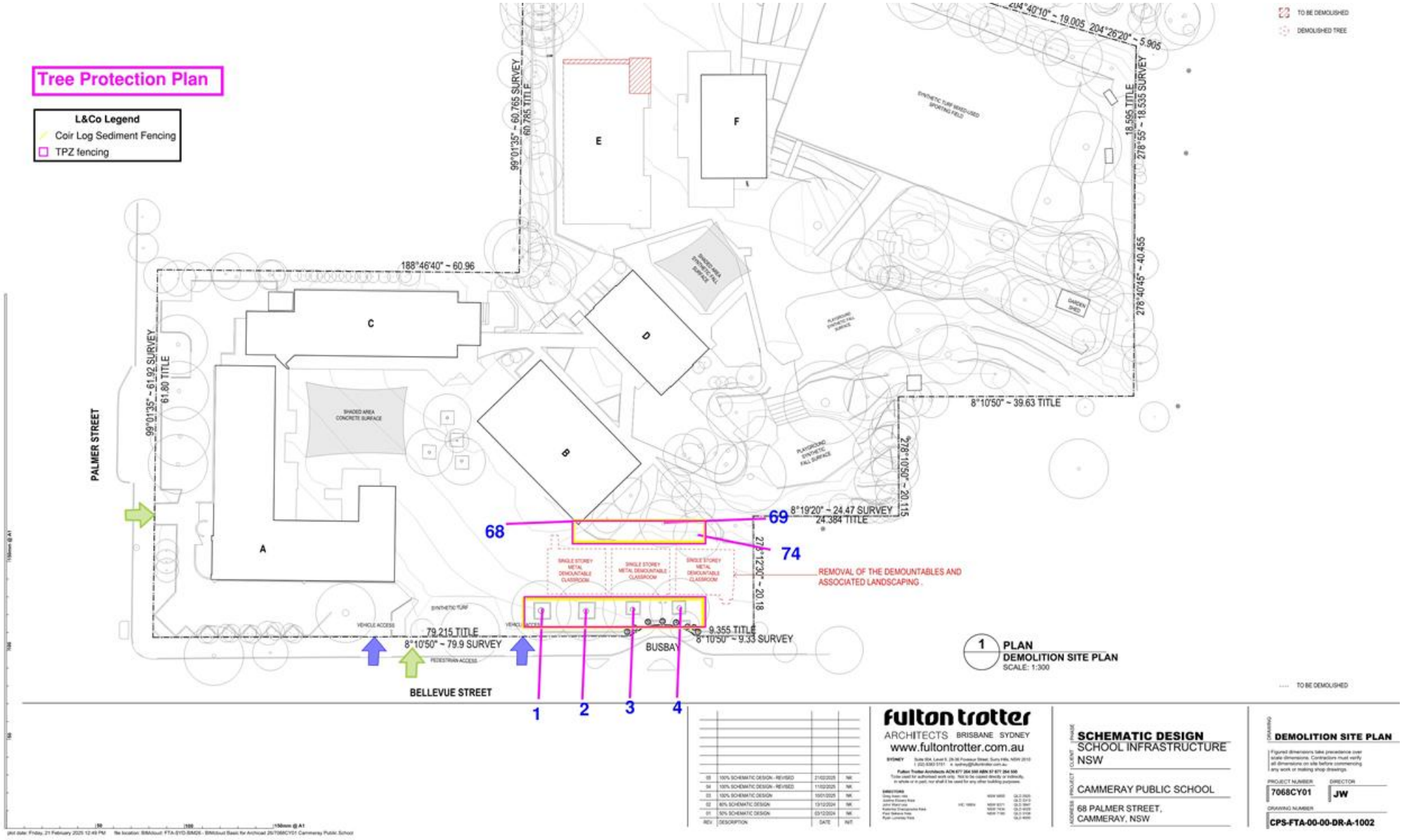
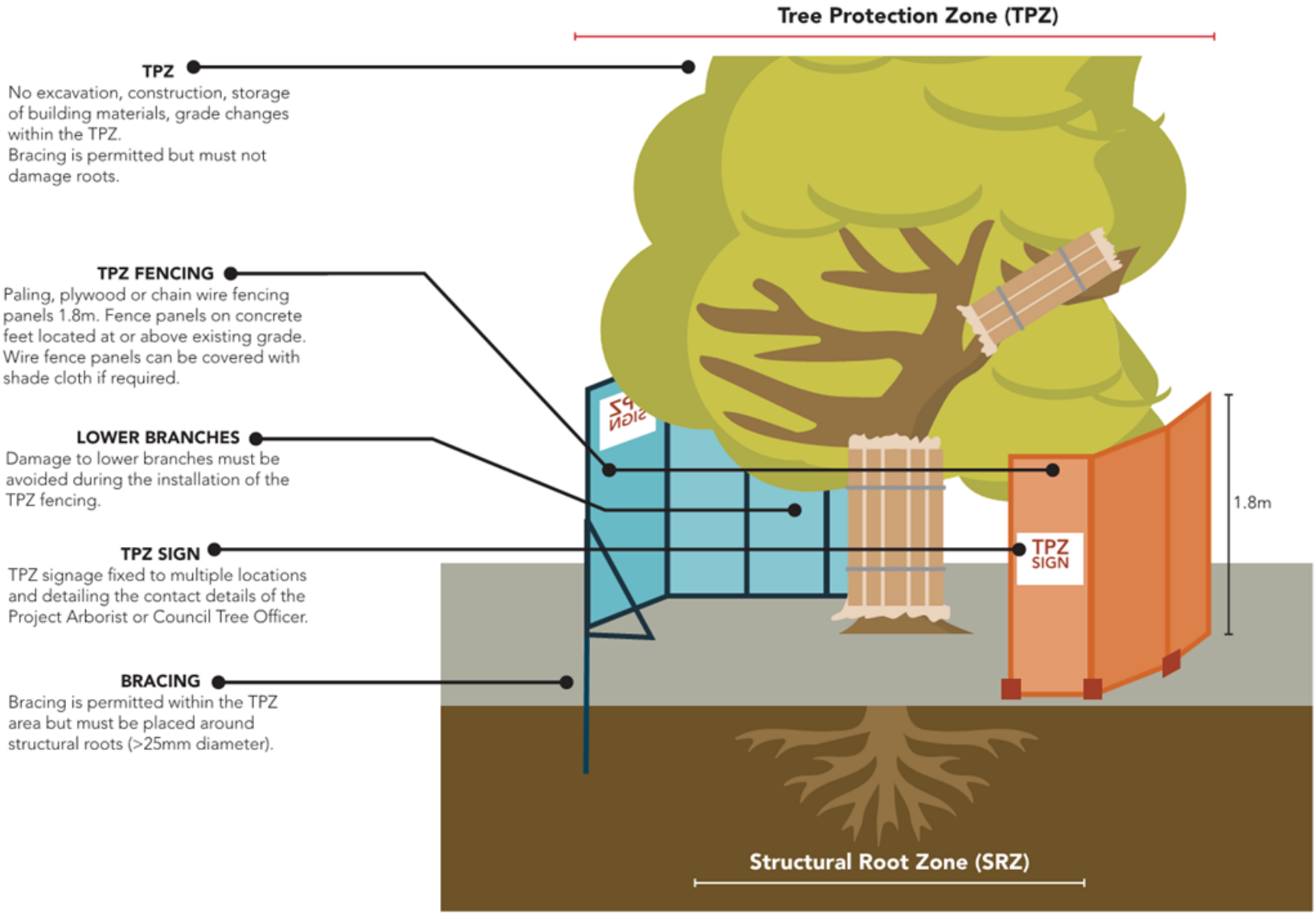

Tree Protection Plan
L&Co Legend
Coir Log Sediment Fencing
TPZ fencing
TO BE DEMOLISHED
DEMOLISHED TREE
PALMER STREET
BELLEVUE STREET
188°46'40" ~ 60.96
99°01'35" ~ 61.92 SURVEY
61.80 TITLE
99°01'35" ~ 60.765 SURVEY
60.785 TITLE
204°40'10" ~ 19.005
204°26'20" ~ 5.905
18.595 TITLE
278°55' ~ 18.535 SURVEY
278°40'45" ~ 40.455
8°10'50" ~ 39.63 TITLE
278°10'50" ~ 20.115
8°19'20" ~ 24.47 SURVEY
24.384 TITLE
278°12'30" ~ 20.18
79.215 TITLE
8°10'50" ~ 79.9 SURVEY
9.355 TITLE
8°10'50" ~ 9.33 SURVEY
68
69
74
REMOVAL OF THE DEMOUNTABLES AND ASSOCIATED LANDSCAPING.
1
2
3
4
A
B
C
D
E
F
SHADED AREA CONCRETE SURFACE
SHADED AREA SYNTHETIC FALL SURFACE
PLAYGROUND SYNTHETIC FALL SURFACE
SYNTHETIC TURF REMODELLED SPORTING FIELD
GARDEN SHED
SINGLE STOREY METAL DEMOUNTABLE CLASSROOM
SYNTHETIC TURF
VEHICLE ACCESS
PEDESTRIAN ACCESS
BUSBAY
1 PLAN
DEMOLITION SITE PLAN
SCALE: 1:300
TO BE DEMOLISHED
fulton trotter
ARCHITECTS BRISBANE SYDNEY
www.fultontrotter.com.au
SCHEMATIC DESIGN
SCHOOL INFRASTRUCTURE
NSW
CAMMERAY PUBLIC SCHOOL
68 PALMER STREET,
CAMMERAY, NSW
DEMOLITION SITE PLAN
PROJECT NUMBER
7068CY01
DIRECTOR
JW
DRAWING NUMBER
CPS-FTA-00-00-DR-A-1002

12.0 APPENDIX 7 | TYPICAL TREE PROTECTION DETAIL

Tree Protection Detail - TPZ Fencing



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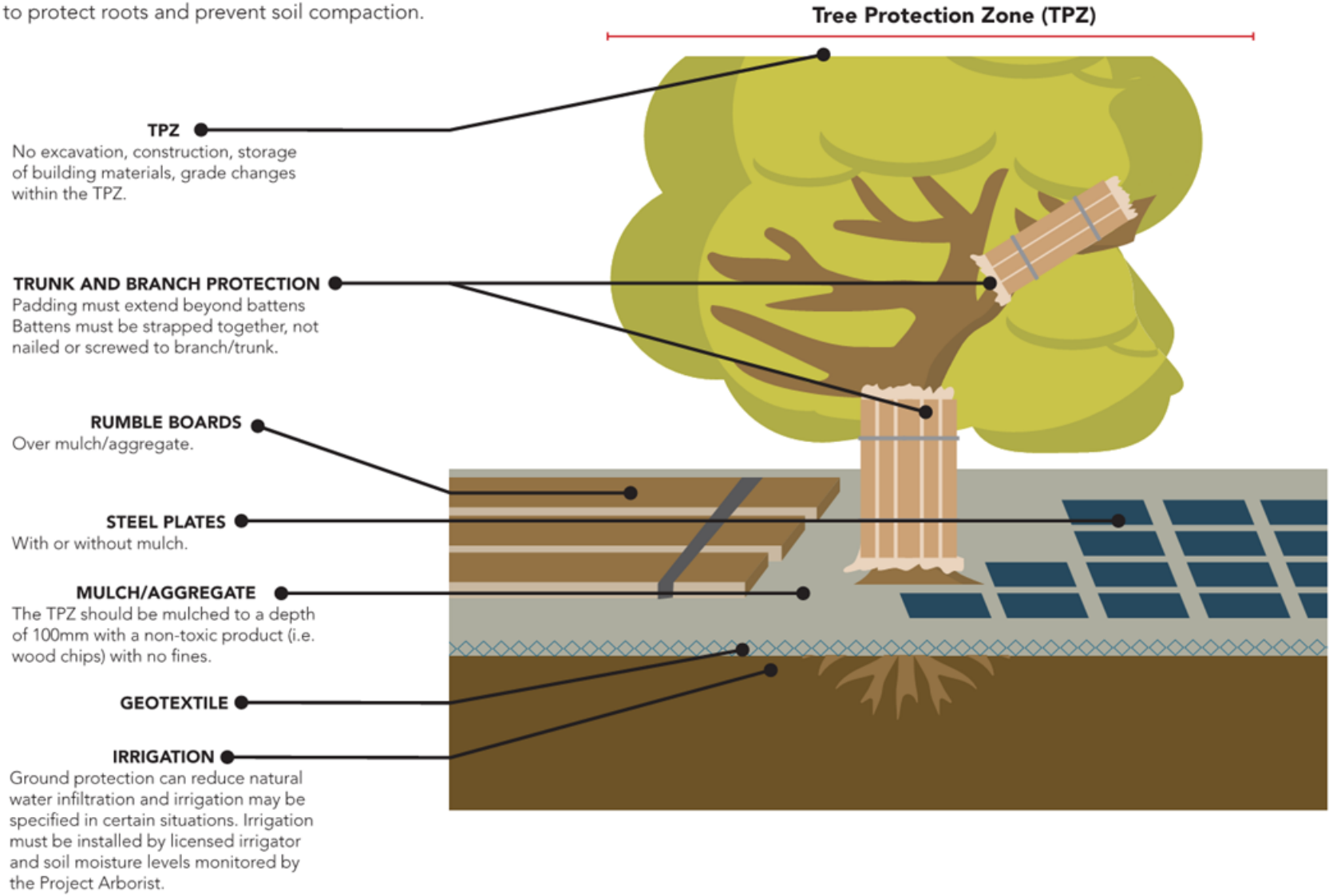
ACN: 625 300 530

Tree Protection Detail - Ground Protection

Required if temporary access for machinery is required within the TPZ to protect roots and prevent soil compaction.



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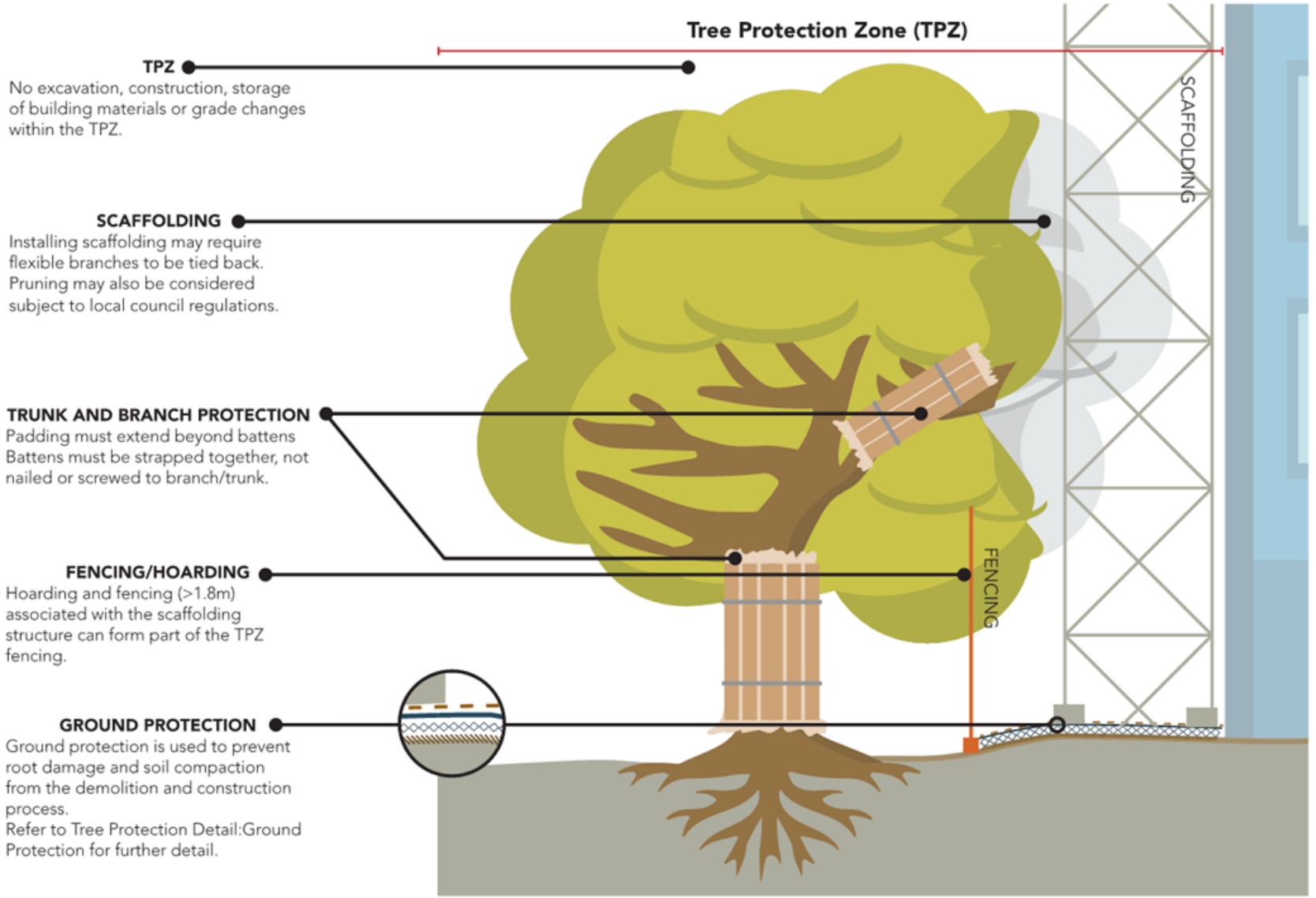
ACN: 625 300 530

Tree Protection Detail - Scaffolding within TPZ



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ACN: 625 300 530

13.0 APPENDIX 8 | TREE PROTECTION SPECIFICATION

13.1 Appointment of Project Arborist

13.1.1 Prior to commencement of works a Project Arborist should be engaged to monitor compliance with the protection measures. The Project Arborist will inspect tree protection measures and prepare a compliance certification for the principal certifying authority prior to the release of compliance certification. Contractors and site workers are to receive these specifications at least 3 days prior to commencing works. Contractors and site workers working within the TPZ should sign the site log confirming they have read and understood these specifications prior to commencing works.

13.2 Compliance

13.2.1 The Project Arborist will conduct regular site visits to certify the works are compliant with this specification. A compliance document will be prepared by the Project Arborist following each site inspection. The compliance document will include evidence of compliance with the tree protection measures detailed in this specification.

13.3 Tree & Vegetation Removal

13.3.1 Tree and vegetation removal will be undertaken prior to installation of tree protection measures. Tree removal works should be undertaken in accordance with the *Safe Work Australia Guide for Managing Risks of Tree Trimming and Removal Work* (2016).

13.3.2 Tree and vegetation removal must not damage trees to be retained.

13.4 Tree Protection Zone

13.4.1 Trees that are to be retained must be protected prior to and during construction from works that could negatively impact their health and structural integrity. The following works should not occur within the TPZ unless authorised by the Project Arborist:

- Modification of existing soil levels, excavations and trenching
- Mechanical removal of vegetation
- Movement of naturally occurring rock
- Storage of materials, plant/equipment and building of sheds
- No signage or hoarding shall be fixed to the trees
- Preparation of building materials, refuelling or disposal of waste materials and chemicals
- No lighting of fires
- No pedestrian or vehicular traffic
- Temporary or permanent location of services, or works required for their installation
- Any other activities that may damage the tree

13.6 Tree Protection Fencing

13.6.1 The TPZ fencing must be positioned at the perimeter of the TPZ and may be combined to form a single area where the TPZs of multiple trees overlap. The approximate location of the TPZ fencing is outlined in the Arboricultural Impact Assessment with the exact location determined by consultation between the Principal Contractor/Project Manager and the Project Arborist prior to the commencement of works. Fencing may be setback to allow for demolition/construction access and for the installation of pavements only where appropriate ground protection is installed and approved by the Project Arborist. The TPZ fencing must be at least 1.8m above grade and made of wire mesh panels that are supported by concrete feet and fastened together to prevent sideways movement. Tree damage, including any low branches, must be avoided during the installation of the tree protection fencing. The TPZ fencing must include signage to identify the TPZ fencing and include the Project Arborist contact details.

13.7 Site Management

13.7.1 Materials, waste storage and temporary services should not be located within the TPZ.

13.8 Works within the Tree Protection Zones

13.8.1 In certain situations, works within the TPZ may be authorised by the determining authority. These works must be supervised by the Project Arborist. When working within the TPZ, special care should be taken to avoid damage to the tree's root system, trunks and lower branches.

13.8.2 If roots (>25mm∅) are encountered during excavation, demolition and construction works, these roots must be retained undamaged and advice sought from the Project Arborist. The design and final levels must remain flexible to enable the retention of roots >25mm∅ where deemed necessary by the Project Arborist.

13.9 Ground Protection

13.9.1 The movement of machinery should be restricted to existing paved areas or in areas with temporary ground protection (i.e. steel road plates, ground mats) when deemed necessary by the Project Arborist.

13.9.2 Ground protection should be installed as per AS4970 and Appendix 7- *Typical Tree Protection Detail*.

13.9.3 If irrigation is considered necessary, it should be installed first and by a licensed irrigator under the supervision of the Project Arborist with no trenching.

13.9.4 The irrigation should be covered with a layer of geotextile and mulched to a depth of 100mm with a non-toxic product (i.e. woodchips) with no fines.

13.9.5 Once the irrigation, geotextile and mulch are in place then the ground protection boards (steel plates or rumble boards) can in be installed.

13.9.6 Boards should remain in place for the entire build.

13.10 Trunk & Branch Protection

13.10.1 If trunk protection is required it should be installed by wrapping the trunk and first order branching with padding (i.e. carpet underlay or 10mm thick geotextile) to a minimum height of 2m. Timber battens (90 x 45mm), spaced at 150mm centres should be strapped together and placed over the padding (Refer to AS4970 for further details).

13.10.2 Branch protection should be installed when considered necessary by the Project Arborist.

13.10.3 Branches should be wrapped with padding (i.e. Ableflex) to provide protection. Where possible, branches should be tied back and construction works to take place around branches (with appropriate branch protection installed as required). If pruning is unavoidable it should be in accordance with AS4373 and supervised by the Project Arborist.

13.11 Structure & Pavement Demolition

13.11.1 The Project Arborist should supervise the demolition of existing structures/pavement within the TPZ. Machinery is to be excluded from the TPZ unless operating from existing slabs, pavements or areas of ground protection. Machinery should not contact the tree's roots, trunks, branches and crown.

13.11.2 Existing pavement should be hand lifted to minimise disturbance to the existing sub-base and to prevent damage to tree roots. Wherever possible, the existing sub-base material should remain in situ.

13.11.3 When removing slab sections within the TPZ, machinery must work from the tree outwards to ensure the machinery always remains on the un-demolished section of slab. Wherever possible, footings or elements below grade should be retained to minimise disturbance to the tree's roots.

13.11.4 Structures must be shattered with hand-operated pneumatic/electric breaker before removal when considered necessary by the Project Arborist.

13.11.5 If roots (>25mm∅) are encountered during excavation, demolition and construction works these roots must be retained undamaged and advice sought from the Project Arborist. Exposed roots must be protected from direct sunlight, drying out and extremes of temperature by using 10mm thick jute geotextile fabric. This fabric should be kept moist at all times.

13.11.6 Where the Project Arborist determines that the tree is using underground elements (i.e. footings, pipes, rocks etc.) for support, these elements should be left *in situ*.

13.12 Pavement/Kerb Installation

13.12.1 Installation of pavements and sub-base within the TPZ must be supervised by the Project Arborist. New surfaces and sub-base materials should be placed above grade to minimise excavations and retain roots (unless prior root mapping has determined that there are no roots within the area of construction).

13.12.2 If roots (>25mm∅) are encountered during the installation of the new sub-base and surfaces these roots must be retained undamaged and advice sought from the Project Arborist. The design and final levels must remain flexible to enable the retention of roots >25mm∅ where deemed necessary by the Project Arborist.

13.12.3 Compaction of the ground prior to the installation of fill is not permitted.

13.12.4 New sub-base material should be a 20mm no-fines road base (i.e. Benedict Sand & Gravel- Product Code 20NF/RB or similar). Recycled concrete aggregates should not be used to avoid raising soil pH levels.

13.12.5 If required, bedding sand should be washed river sand (no crushed paving blends). The bedding sand should be consolidated with a pedestrian operated plate compactor only. If possible, pavement material should be permeable.

13.12.6 Kerbs within the TPZ should be modified to bridge roots (>25mm∅) unless root pruning is approved and undertaken by the Project Arborist.

13.13 Underground Services

13.13.1 The installation of underground services should be located outside of the TPZ. Where this is not possible they should be installed around or below roots (>25mm∅) using either hydrovac or hand excavation and supervised by the Project Arborist.

13.13.2 Boring methods may be used for the installation of services 800mm below grade. Excavations for starting and receiving pits for the boring equipment should be located outside of the TPZ or located to avoid roots (>25mm∅, or determined by the Project Arborist).

13.13.3 Excavations, Root Protection & Root Pruning

13.13.4 Excavations and root pruning within the TPZ must be supervised by the Project Arborist and should be avoided where possible.

13.13.5 No over-excavation, battering, or benching should be undertaken beyond the footprint of any structure unless approved by the Project Arborist. Hand excavation and root pruning along the excavation line should be completed prior to the commencement of mechanical excavation to prevent tearing and shattering damage to the roots.

13.13.6 Roots >25mm∅ should be pruned by the Project Arborist only. Roots <25mm∅ may be pruned by the Principal Contractor. Root pruning should be undertaken with clean, sharp secateurs or a pruning saw to ensure a smooth wound face, free from tears.

13.13.7 Damaged roots should be pruned behind the damaged tissues with the final cut made to the undamaged part of the root

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14.0 APPENDIX 9 | PLATES

a) Showing site of the proposed development. b-c) Showing the existing retaining wall and signs of roots uplifting the asphalt. d) Showing Tree 16. e) Showing Tree 26. f) Showing trees 27 & 28 with the large first order branch that would requiring for building clearance.

15.0 APPENDIX 10 | PRUNING SPECIFICATION

Tree No. 33	BRANCH Ø	BRANCH ORDER	AS4373 CODE	ORIENTATION	HEIGHT ABOVE GRADE (m)	Crown Encroachment (%)
Branch 1 (B1)	50	First	Reduction Pruning (R)	West	4m	1%

Tree No. 13	BRANCH Ø	BRANCH ORDER	AS4373 CODE	ORIENTATION	HEIGHT ABOVE GRADE (m)	Crown Encroachment (%)
Branch 1 (B1)	75	Third	Reduction Pruning (R)	North	10m	4%

Tree No. 15	BRANCH Ø	BRANCH ORDER	AS4373 CODE	ORIENTATION	HEIGHT ABOVE GRADE (m)	Crown Encroachment (%)
Branch 1 (B1)	50	First	Reduction Pruning (R)	North	3m	4%

16.0 APPENDIX 11 | MITIGATION MEASURES TABLE

Mitigation Number/ Name	When is Mitigation Measure to be complied with	Mitigation Measure	Reason for Mitigation Measure
Root Mapping	Prior to demolition	Root mapping T13 to determine if tree can be retained.	Determine if Tree 13 can be retained.
Pruning Trees 33, 13 & 15	Prior to demolition	Pruning works should be carried out by a practising arborist. The practising arborist should hold a minimum qualification equivalent (using Australian Qualifications Framework) of Level 3 or above in arboriculture or its recognised equivalent. The practising arborist should have a minimum of 3 years of practical experience. Pruning works should be undertaken in accordance with the Australian Standard 4373: Pruning of Amenity Trees (2007), Safe Work Australia Guide for Managing Risks of Tree Trimming and Removal Work (2016) and other applicable legislation and codes	Provide building clearance.
Tree Protection Fencing & sediment control	Prior to demolition	TPZ fencing should be installed prior to any site works (including demolition) and remain in place for the duration of the demolition and construction processes. The area within the TPZ fencing should be mulched to a depth of 50mm with a non-toxic product (i.e. woodchips) with no fines. Coir logs should be installed on the perimeter of the TPZ fencing to prevent runoff from the building works into the TPZ. Materials, waste storage and temporary services should not be located within the TPZ fenced area. If works are required within the TPZ fenced area, then they should be supervised by the Project Arborist. The tree protection measures must be inspected by the Project Arborist prior to the start prior of site works, including demolition. Refer to AS4970 and Appendices 5, 6, 7 & 8 for further details for further details	Retain trees and mitigate construction impacts.
Replacement Trees	Post construction	Replacement planting should be provided when trees are removed. Replacement trees should be supplied as advanced size stock to help offset the loss of amenity resultant from the tree removals. Replacement planting should be supplied in accordance with Australian Standard 2303: Tree Stock for Landscape Use (2015).	Replace the loss of amenity

17.0 APPENDIX 12 | LIMITATIONS & DISCLAIMERS

17.1 Subject trees were assessed from the ground only and for providing an Arboricultural Impact Assessment and Tree Protection Specification.

17.2 All recommendations in this Arboricultural Impact Assessment and Tree Protection Specification report are based on the observations made on the day of inspection (29.8.23 & 15.8.24). There is no warranty, expressed or implied, that problems or deficiencies relating to the subject trees, or the subject site may not arise in the future.

17.3 Laurence & Co Consultancy takes care to obtain information from reliable sources. However, Laurence & Co Consultancy can neither guarantee nor be responsible for the accuracy of information provided by others. Plans, diagrams, graphs and photographs in this Arboricultural Impact Assessment and Tree Protection Specification report are visual aids only and are not necessarily to scale. This report provides recommendations relating to tree management only. Advice should be sought from appropriately qualified consultants regarding design/construction/ecological/heritage etc. issues.

17.4 This report has been prepared for exclusive use by the client. This report should not be viewed by others or for any other reason outside its intended target or without the prior written consent of Laurence & Co Consultancy. Unauthorised alteration or separate use of any section of the report invalidates the report.

17.5 Many factors may contribute to tree failure and cannot always be predicted. Laurence & Co Consultancy takes care to accurately assess tree health and structural condition. However, a tree's internal structural condition may not always correlate to visible external indicators.

17.6 **Limitation of Liability**. Laurence & Co Consultancy shall be liable only for direct damages that result from negligence or wilful misconduct in the performance of its services. Under no circumstances shall Laurence & Co Consultancy be liable for indirect, consequential, special, or punitive damages, or for damages caused by the client's failure to perform its obligations under law or contract. Laurence & Co Consultancy shall not be liable for and Client shall indemnify Laurence & Co Consultancy from and against all claims, demands, liabilities and costs (including attorneys' and expert fees) arising out of or in any way related to our performance or non-performance of services, including all on-site activities except to the extent caused by Laurence & Co Consultancy's negligence or wilful misconduct. In no event shall Laurence & Co Consultancy's liability exceed the amount paid to Laurence & Co Consultancy by the Client for our professional services (net of reimbursable expenses) and Client specifically releases Laurence & Co Consultancy for any damages, claims, liabilities and costs in excess of that amount.

17.7 Reference should be made to any relevant legislation including Tree Management Controls. All recommendations contained within this report are subject to approval from the relevant Consent Authority.

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