



ARBORICULTURAL IMPACT ASSESSMENT

Mount Druitt Hospital – Additional Beds Project
75 Railway Street,
Mount Druitt NSW 2770

Project No: H460
Date: 30 October 2025
Revision: A

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1 EXECUTIVE SUMMARY

This Arboricultural Impact Assessment (AIA) forms part of a Review of Environmental Factors (REF) for the Additional Beds Project at Mount Druitt Hospital located at 75 Railway Street, Mount Druitt.

The report relates to one hundred and seventy-five (175) trees / tree groups located on the subject site.

A summary of those trees identified has been provided in **Table 1** below along with a description of their retention values and nominated retention/removal status under the proposal.

Table 1 – Tree assessment summary

Retain / Remove	Identified Retention Values			Number of Trees / Tree Groups
	High	Medium	Low	
Remove	28 Trees Trees 17, 22, 29, 35, 40, 41, 61, 64, 65, 67, 69, 74, 79, 87, 91, 107, 114, 192, 193, 210, 211, 213, 214, 216, 223, 227, 235 & 238	22 Trees Trees 1, 6, 15, 18, 25, 31, 33, 48, 56, 58, 62, 92, 98, 101, 105, 106, 119, 222, 459, 476, 486 & 487	17 Trees Trees 16, 34, 43, 49, 50, 76, 80, 89, 122, 126, 127, 138, 145, 171, 201, 230 & 251	67 Trees
Partially Remove	-	2 Tree Groups Trees 417 & 418 (approximately 58 trees/shrubs)	-	2 Tree Groups (approximately 58 trees/shrubs)
Retain & Protect	45 Trees Trees 5, 9, 14, 24, 27, 32, 84, 217, 219, 220, 400, 403, 404, 406, 408, 409, 410, 411, 412, 415, 421, 422, 423, 424, 425, 426, 429, 431, 434, 435, 439, 440, 441, 442, 443, 444, 447, 450, 451, 463, 464, 466, 467, 478 & 481	31 Trees Trees 72, 334, 401, 402, 413, 416, 427, 428, 433, 438, 445, 446, 452, 455, 456, 460, 461, 462, 468, 473, 474, 475, 480, 483, 484, 485, 488, 489, 490, 491 & 492 2 Tree Groups Trees 419 & 420	28 Trees Trees 81, 123, 161, 175, 191, 243, 291, 405, 407, 414, 430, 432, 436, 437, 448, 449, 453, 454, 457, 458, 465, 469, 470, 471, 472, 477, 479 & 482	104 Trees 2 Tree Groups
Total				175 Trees / Tree Groups

Based on the plans supplied and should the proposed works proceed in their current form, it is recommended that:

- Sixty-seven (67) trees (**Trees 1, 6, 15-18, 22, 25, 29, 31, 33-35, 40-41, 43, 48-50, 56, 58, 61-62, 64-65, 67, 69, 74, 76, 79-80, 87, 89, 91-92, 98, 101, 105-107, 114, 119, 122, 126-127, 138, 145, 171, 192-193, 201, 210-211, 213-214, 216, 222-223, 227, 230, 235, 238, 251, 459, 476 & 486-487**) be removed; and
- Two tree groups (**Trees 417 & 418**) (including approximately 58 trees/shrubs) be partially removed; and
- One hundred and six (106) trees / tree groups be retained and protected (**Trees 5, 9, 14, 24, 27, 32, 72, 81, 84, 123, 161, 175, 191, 217, 219-220, 243, 291, 334, 400-416, 419-458, 460-475, 477-485 & 488-492**).

Specific recommendations as per **Section 7** will need to be adopted to ensure root sensitive construction techniques and methodology are employed which mitigate any potential negative impacts to retained trees.

2 INTRODUCTION

2.1 Background

This Arboricultural Impact Assessment (AIA) was commissioned by NSW Health Infrastructure on the 7th of July 2025 and relates to the proposed Additional Beds Project at Mount Druitt Hospital located at 75 Railway Street, Mount Druitt (refer to **Figure 1**). This AIA will evaluate the potential impacts that proposed development works will have on existing trees located on the subject site.

NSW Health Infrastructure (HI) proposes to provide 30 additional beds at Mount Druitt Hospital at 75 Railway Street, Mount Druitt as part of their delivery of infrastructure solutions and services to support the healthcare needs of the NSW communities.

To facilitate the provision of the additional beds the following works are proposed:

Extension of the existing main hospital building across two levels at its southern-most extent:

Level 1 – extension to existing building

- Relocation and Expansion of Outpatient Department (OPD) accommodating 23 separate rooms or points of care as well as ancillary rooms and spaces of about 833m².
- New enclosed lobby of about 75m².
- Future expansion zone (assumed as cold shell for future clinical or non-clinical purposes) of about 235m².

Level 2 – extension to existing building

- New 20 bed with ensuite in-patient unit (IPU) and support spaces of about 1,085m² in area with external fire / access stairs to Level 1 / ground.
- The 20 beds are set out in a 10 x 1-bedroom; 3 x 2-bedroom; and 1 x 4-bedroom configuration.

The works will also involve the following ancillary or supplementary works:

- Selected tree removal to accommodate the proposed development and its ancillary works, as further set out below.
- Demolition of the existing decommissioned helipad and make-good works.
- Civil and flood mitigation works to manage overland flow paths in the vicinity of the proposed extension and car park.
- Extension of the existing at-grade car park P1.
- New oxygen compound adjacent to the existing oxygen compound.
- Augmentation of the existing fire hydrant ring main adjacent to the western edge of the main hospital building and relocation and partial upgrade of the existing hydrant booster.
- Offset planting and new landscaping.

Accordingly, the purpose of this report is to assess the potential impact of the proposed development on the subject trees, as well as provide recommendations for further amendments to the design or construction methodology where necessary to minimise any adverse impact. The report also provides recommended tree protection measures to ensure the long-term preservation of the trees to be retained where appropriate.

2.2 Objectives

This report has been prepared to assess the level of impact development works are likely to cause to existing trees and make a determination as to whether trees will be adversely affected. The report will provide guidance as to those trees requiring removal, retention or protection in accordance with the provisions of *AS4970-2025 Protection of trees on development sites*. Where necessary, it will also provide recommendations for design modifications and any replacement planting. As such, the objectives of this report are as follows:

- Assess the current site and growing conditions of trees;
- Assess the current health, condition, lifespan & significance of the trees within the site;
- Identify relative retention values of trees within the site;
- Calculate anticipated encroachment levels resulting from proposed works;
- Determine the likely impact as a result of the calculated encroachments;
- Assess potential for retention and protection of trees where possible;
- Advise any design modifications necessary to retain important trees;
- Recommend tree and root sensitive design and construction methodologies to mitigate impacts to trees to be retained;
- Inform of any tree removal necessary due to unsustainable impacts;

No aerial inspection, root mapping or internal diagnostic testing have been carried out as part of this report. Additionally, no cation exchange capacity testing or plant tissue analysis has been undertaken.

2.3 Legislation & Regulating Documents

This Arboricultural Impact Assessment has considered the following regulatory documents:

- *State Environmental Planning Policy (Biodiversity and Conservation) 2021*
- *Blacktown Local Environmental Plan (LEP) 2015*
- *Blacktown Development Control Plan (DCP) 2015*
- *Greater Sydney Regional Strategic Weed Management Plan 2023-2027*

2.4 Documentation Received

The following documents were received and have been relied upon for this Assessment:

Table 2 – Documentation received and reviewed as part of the Arboricultural Impact Assessment

Document Description	Author	Revision No. / Date
Existing and Demolition Site Plan – Oxygen Pad	Jacobs	B / 23 October 2025
Landscape Plans	Site Image	C / 29 October 2025
Fire Services Site Plan	ARUP	2 / not dated (shared by Mostyn Copper 29 October 2025)
Siteworks and Stormwater Management Plan	ACOR Consultants Pty Ltd	C / 23 October 2025
Detail Survey	RPS	B / 21 August 2025
Detail Survey	Cardno	00 / 8 April 2016

Note: care has been taken to obtain all current information from reliable sources; however, the author makes no representations, guarantees or warranties as to the accuracy of information provided by others. No other information has been reviewed, should future revisions become available impacts may be subject to change.

2.5 The Site

The Mount Druitt Hospital located on the corner of Railway Street, and Luxford Road, Mount Druitt. The subject site comprises a total area of 12.85ha and is legally described as Lot 11 in DP 1268736. The site currently contains Mount Druitt Hospital which offers 24-hour emergency care, and a district-wide role in the provision of planned surgery, with a high proportion of general, orthopaedic and breast surgery, paediatric and palliative care services.



Figure 1 - Aerial image indicating subject site (outlined green).

Source: Landchecker – 7 September 2025

2.6 Proposed Construction Works

The proposed development is for the construction of a two-storey extension to southern-most part of the main hospital building, new car parking extension, oxygen compound and fire services. Associated works include tree removal, relocation of existing fixtures and furniture and new or relocated utilities and services (refer to **Figures 2-4** below). Specifically, those works considered likely to impact the existing trees on the subject site include the new building footprint, car park extension, pathways, fire services, stormwater infrastructure and flood channel.

2.7 Limitations

Trees are living organisms whose health and condition can change rapidly. The conclusions and recommendations in this report are valid for one (1) year only from the date of the report, unless otherwise stated. Any changes to the site as it stands at present, for example building extensions,

excavation works, importing of soils, extreme weather events etc. will invalidate this report. Any reproduction of this report must be in full colour using the report in its entirety.

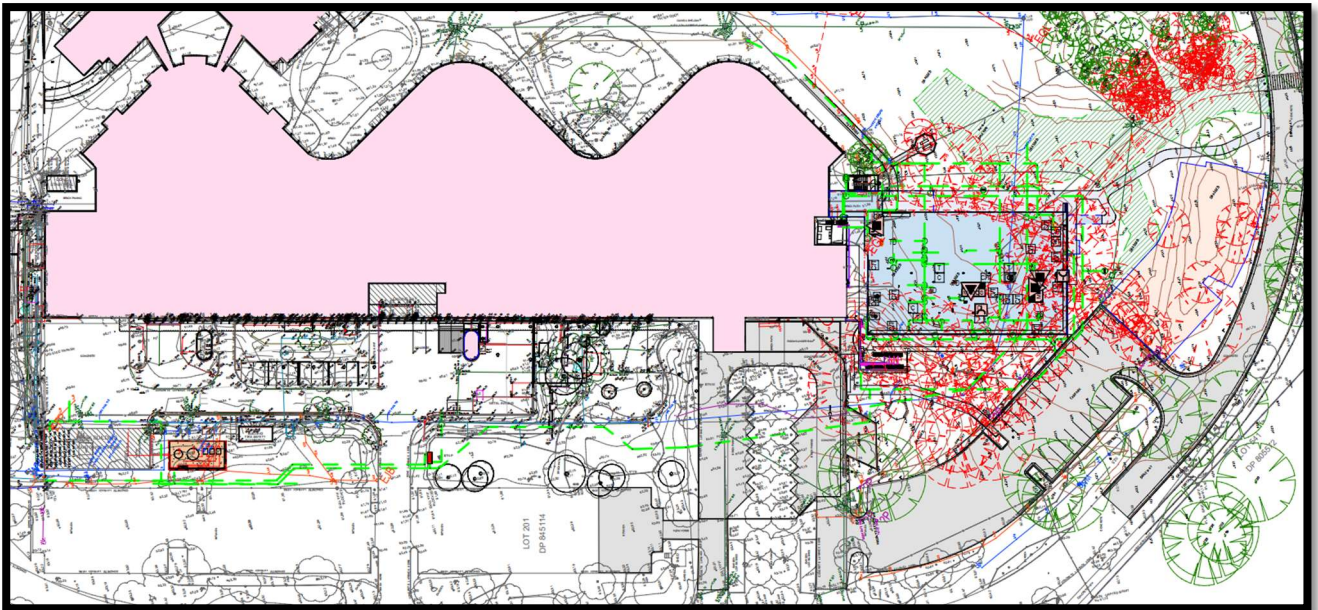


Figure 2 – Existing and Demolition Site Plan extract showing the layout of the proposed development
Source: Jacobs –23 October 2025

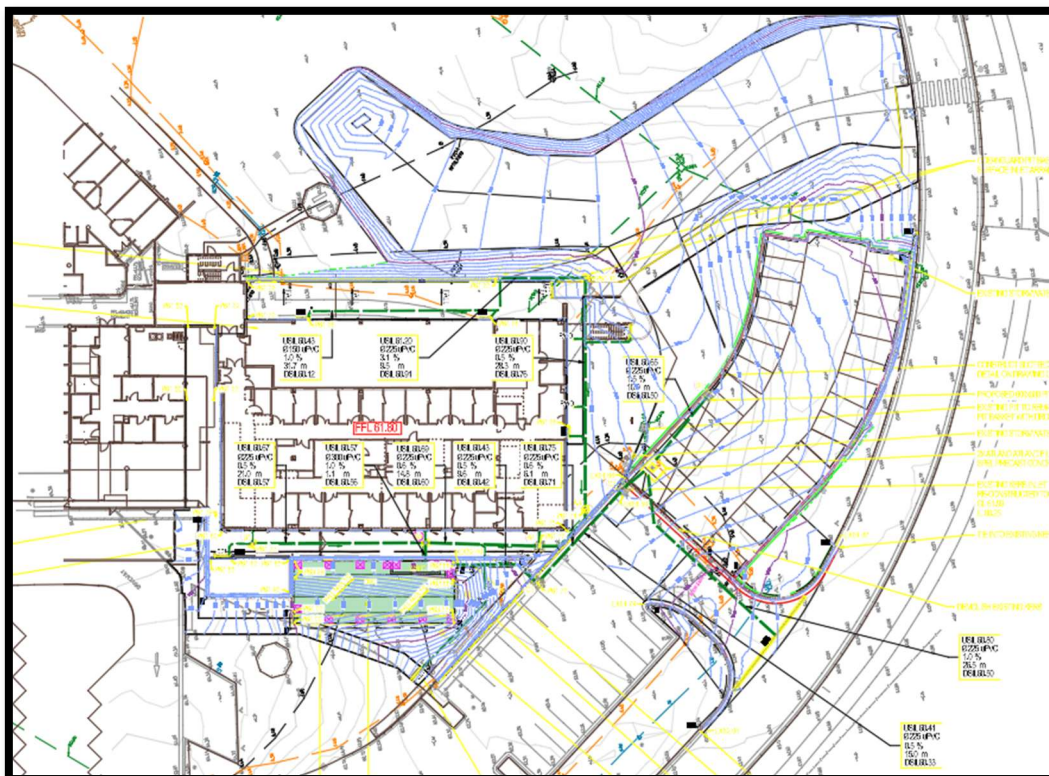


Figure 3 – Siteworks and Stormwater Management Plan extract showing the proposed layout of stormwater infrastructure and flood channel
Source: ACOR Consultants Pty Ltd – 23 October 2025



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3 METHOD

3.1 Method

3.1.1 Site Inspection

A site inspection was carried out by the author with the subject trees and the general growing environment evaluated on the 25th of August 2025 and 24th of September 2025. The weather at the time of inspections was sunny and dry with good visibility.

Trees were inspected from ground level utilising an adaptation of the Visual Tree Assessment (VTA) methods described by Mattheck and Breloer (Mattheck & Breloer, 1994) with the following information recorded and provided in tabulated form at **Appendix 1**:

- Tree Species (Botanical & Common Name);
- Approximate height;
- Approximate canopy spread;
- Trunk Diameter (measured at 1.4 metres from ground level);
- Trunk Diameter at base (above root crown);
- Age class;
- Health & vigour; using foliage size, colour, extension growth, presence of disease or pest infestation, canopy density, presence of deadwood, dieback and epicormic growth as indicators;
- Condition; using visible evidence of structural defects, instability, evidence of previous pruning and physical damage as indicators;
- Suitability of the tree to the site and its existing location;
- Useful Life Expectancy (ULE).

3.1.2 Tree Location and Identification

Where provided, the location of assessed trees has been informed by the Detail Surveys prepared by RPS dated 21 August 2025 and Cardno dated 8 April 2016. Where trees were not formally surveyed, their locations have been obtained onsite using a Trimble TDC600 GNSS Receiver delivering sub-metre accuracy.

3.1.3 Useful Life Expectancy (ULE)

The remaining Useful Life Expectancy of a tree is an estimate of the sustainability of the tree in the landscape, calculated based on an estimate of the average age of the species in an urban area, less its estimated current age. The life expectancy of each tree has been further modified where necessary in consideration of its current health, vigour, condition and suitability to the site. The estimated ULE of each tree is shown in **Appendix 1**.

The following ranges have been allocated to each tree:

- Long ULE: Trees that appear to be retainable for > 40 years.
- Medium ULE: Trees that appear to be retainable for 15 to 40 years.
- Short ULE: Trees that appear to be retainable for 5–15 years.
- Remove: Trees that would need removing within the next 5 years.
- Small, Young or Regularly Pruned.

3.1.4 Landscape Significance

The landscape significance of a tree is an essential criterion to establish the importance that a particular tree may have on a site. Several factors contribute towards the assessment of a tree's significance including but not limited to condition and vigour, form, visual prominence, heritage status, indigeneity, legislative protection, cultural sentiment and future growth potential.

For the purposes of this report the Australian Institute of Consulting Arborists (IACA) Significance of a Tree, Assessment Rating System (STARS)® has been utilised. The system uses a scale of High, Medium and Low significance in the landscape. Once the landscape significance of an individual tree has been defined, the retention value can be determined.

Appendix 3 provides a full outline of assessment criteria for each significance rating as per IACA STARS (2010).

3.1.5 Retention Value

Retention values have been determined for each tree on site to establish a hierarchy for tree retention. Retention values are based on estimated life spans and their associated landscape significance rating in accordance with the Tree Retention Value Priority Matrix. This matrix established the following retention values and can be found at **Appendix 3** with attributed retention values found within **Appendix 1**:

- Priority for Retention (High)
- Consider for Retention (Medium)
- Consider for Removal (Low)
- Priority for Removal

3.1.6 AS4970-2025 Protection of Trees on Development Sites

The Australian Standard, AS4970-2025- '*Protection of trees on development sites*', has been used as a guide to provide recommendations for the assessed trees. The Standard provides guidance on the principles for protecting trees on land subject to development as well as principles for determining viability of tree retention. Terminology and recommended methods are consistent with AS4970-2025.

3.1.7 Notional Root Zones

The assessed trees have been allocated Notional Root Zones (NRZ). The Australian Standard, AS4970-2025- '*Protection of trees on development sites*', has been used as a guide in the allocation of NRZs for the assessed trees. The NRZ is calculated based on trunk (stem) diameter at standard height (DSH), measured at 1.4 metres above ground level. The radius of the NRZ is calculated by multiplying the trees DSH by 12. The method provides a NRZ that addresses health and growing requirements of a tree as well as the trees stability. NRZ distances are measured as a radius from the centre of the trunk at (or near) ground level. The maximum NRZ should be no more than 15m radius and the minimum NRZ should be no less than 2m radius.

An extract of the AS4970-2025 for calculating NRZ has been provided at **Appendix 4** for reference.

3.1.8 Structural Root Zone

The assessed trees have been allocated Structural Root Zones (SRZ). The Australian Standard, AS4970-2025 - '*Protection of trees on development sites*', has been used as a guide in the allocation of SRZ's for the assessed trees. The SRZ is a notional area extending outwards from the centre of the trunk required for tree stability and is calculated as follows:

$$\text{SRZ (Radius)} = (D \times 50)^{0.42} \times 0.64$$

4 OBSERVATIONS

4.1 General

The site area subject to this assessment was observed as highly disturbed with historical clearing, introduction of exotic grasses and vegetation, and native vegetation planting. Species observed varied including exotic, Australian native and locally indigenous species. Health, vigour and condition was also highly varied across the trees forming part of the assessment. Root zones of assessed trees were generally observed as modified groundcover within deep soil areas.

4.2 Tree Preservation Order

Part A, Section 4.3 – *Tree Preservation* of the Blacktown Development Control Plan 2015 applies to all trees and native vegetation within the Blacktown City Council Local Government Area. The provisions included within the DCP generally protect any vegetation that corresponds with the following criteria:

(a) *A perennial plant with a self-supporting stem which:*

- *Has a height of more than 3 metres; and/or*
- *Has a trunk diameter of more than 200mm or more measured 1.0 metre above ground level.*

4.3 The Trees

A total of one hundred and seventy-five (175) trees / tree groups observed within the subject site have been included in this assessment.

Where provided, the location of assessed trees has been informed by the Detail Surveys prepared by RPS dated 21 August 2025 and Cardno dated 8 April 2016. Where trees were not formally surveyed, their locations have been obtained onsite using a Trimble TDC600 GNSS Receiver delivering sub-metre accuracy.

Four (4) isolated areas of native bushland were grouped together for the purposes of this assessment. Vegetation within these four (4) groups (**Trees 417, 418, 419 & 420**) consisted primarily of semi-mature *Acacia sp.*, *Eucalyptus sp.*, *Melaleuca sp.*, *Casuarina sp.*, and variety of shrub species. Vegetation was observed generally in 'average' health and condition with typical height of 3m, spread of 2m and DSH of 100mm.

All tree data recorded on site has been tabulated and is contained at **Appendix 1**. Each tree has been provided with an identification number for reference purposes and is denoted on the attached Tree Location Plan at **Appendix 2**.

5 DISCUSSION

5.1 Impact Assessment

The impact assessment is to calculate the incursions to the root zones and canopies as a result of the proposed construction works and evaluate the likely impact of the proposed works on the subject trees. A summary of the impacts anticipated is contained within the Tree Schedule at **Appendix 1**. Additionally, plans demonstrating the level of incursion and conflict to NRZ's and SRZ's can be found at **Appendix 2**. As part of the assessment the following criteria have been considered:

- Existing Relative Levels (R.L.);
- Proposed Relative Levels;
- Notional Root Zones (NRZ);
- Structural Root Zones (SRZ);
- Footprint of the proposed development;
- Incursions to the NRZ & SRZ;
- Incursions to the tree canopy from vehicles and equipment;
- Pruning necessary for clearance;
- Remediation works for soil contaminants;
- Species tolerance to disturbance; and
- Assessment of the likely impact of the works on existing trees.

5.2 Trees Recommended for Removal

Should the proposed works proceed in their current form, it is recommended that sixty-seven (67) trees be removed. This includes **Trees 1, 6, 15-18, 22, 25, 29, 31, 33-35, 40-41, 43, 48-50, 56, 58, 61-62, 64-65, 67, 69, 74, 76, 79-80, 87, 89, 91-92, 98, 101, 105-107, 114, 119, 122, 126-127, 138, 145, 171, 192-193, 201, 210-211, 213-214, 216, 222-223, 227, 230, 235, 238, 251, 459, 476 & 486-487**. Removals have been recommended based upon;

- Tree locations being in direct conflict with the proposed building extension footprint, car park extension footprint, grading extents, stormwater infrastructure or pathways; or
- 'Major' encroachment (as per AS4970-2025 *Protection of trees on development sites*) from proposed grading extents, stormwater infrastructure and/or pathways.

Table 3 below provides a summary of impacts to be sustained as part of the proposed works and subsequent reasoning for removal.

Refer to **Appendix 2** for a plan indicating the location of the tree that will require removal (dashed red).

Table 3 – Trees recommended for removal

Reason for Removal	Trees Recommended for Removal			
	High Retention Value	Medium Retention Value	Low Retention Value	Total
Full encroachment - within the footprint of the proposed building extension.	2 Trees: Trees 41 & 64	6 Trees: Trees 18, 33, 101, 105, 106 & 119	4 Trees: Trees 34, 50, 80 & 230	12 Trees
Full encroachment - within the footprint of the proposed car park extension.	4 Trees: Trees 17, 65, 87 & 91	5 Trees: Trees 6, 25, 56, 58 & 62	4 Trees: Trees 76, 122, 145 & 201	13 Trees
Full encroachment - within the footprint of proposed pathways	6 Trees: Trees 61, 79, 211, 214, 216 & 223	2 Trees: Trees 92 & 98	1 Tree: Tree 138	9 Trees
Full encroachment - within the footprint of proposed stormwater infrastructure.	6 Trees: Trees 53, 69, 74, 107, 227 & 235	2 Trees: Trees 31 & 48	4 Trees: Trees 43, 49, 126 & 171	12 Trees
Full encroachment - within the footprint of the proposed grading extents	3 Trees: Trees 29, 114 & 213	1 Tree: Tree 1	1 Tree: Tree 89	5 Trees
Full encroachment - within the proposed hydrant main alignment.	2 Trees: Trees 192 & 193	-	-	2 Trees
'Major' encroachment (10-76% NRZ + 0-48% SRZ) from proposed grading extents, stormwater infrastructure, hydrant alignment, building extension footprint and/or pathways	5 Trees: Trees 22, 40, 67, 210 & 238	6 Trees: Trees 15, 222, 459, 476, 486 & 487	3 Trees: Trees 16, 127 & 251	14 Trees
Total				67 Trees

5.3 Trees Recommended for Partial Removal

Should the proposed works proceed in their current form, it is recommended that two (2) tree groups be partially removed. This includes 231m² of vegetation from **Trees 417 & 418**. Removals have been recommended based upon;

- Vegetation being in direct conflict with the proposed grading extents

Table 3 below provides a summary of impacts to be sustained as part of the proposed works and subsequent reasoning for removal.

Refer to **Appendix 2** for a plan indicating the location of the partial tree groups that will require removal (dashed red).

Table 3 – Trees recommended for removal

Reason for Removal	Tree Groups Recommended for Partial Removal			
	High Retention Value	Medium Retention Value	Low Retention Value	Total
Partial encroachment - within the footprint of the proposed swale grading extents	-	2 Partial Tree Groups: Tree group 417 - 99m ² (approximately 28 trees/shrubs) Tree group 418 - 132m ² (approximately 30 trees/shrubs)	-	231m² (approximately 58 trees/shrubs)
Total				2 Partial Tree Groups 231m² (approximately 58 trees/shrubs)

5.4 Recommended for Retention & Protection

Should the proposed works proceed in their current form, it is recommended that one hundred and six (106) trees (**Trees 5, 9, 14, 24, 27, 32, 72, 81, 84, 123, 161, 175, 191, 217, 219-220, 243, 291, 334, 400-416, 419-458, 460-475, 477-485 & 488-492**) be retained and protected. Impacts from the proposed works are likely to be sustainable with minimal impact to health and condition subject to the implementation of tree protection measures as per **Section 7**.

Refer to **Appendix 2** for a plan indicating the location of trees that are to be retained and protected (shaded green).

Table 4 – Trees recommended for retention & protection

Works Within the Notional Root Zone (NRZ)	Trees Recommended for Retention & Protection			
	High Retention Value	Medium Retention Value	Low Retention Value	Total
Minor, sustainable <1-8% NRZ encroachment (as per AS4970-2025) as a result of the proposed hydrant main alignment.	2 Trees: Trees 463 & 478	3 Trees: Trees 460, 461 & 474	1 Tree: Tree 191	6 Trees
Moderate, sustainable 19% NRZ encroachment (as per AS4970-2025) as a result of the proposed hydrant main alignment.	-	1 Tree: Tree 468	-	1 Tree
No works proposed within the NRZ.	43 Trees: Trees 5, 9, 14, 24, 27, 32, 84, 217, 219, 220, 400, 403, 404, 406, 408, 409, 410, 411, 412, 415, 421, 422, 423, 424, 425, 426, 429, 431, 434, 435, 439, 440, 441, 442, 443, 444, 447, 450, 451, 464, 466, 467 & 481	27 Trees: Trees 72, 334, 401, 402, 413, 416, 427, 428, 433, 438, 445, 446, 452, 455, 456, 462, 473, 475, 480, 483, 484, 485, 488, 489, 490, 491 & 492 2 Tree Groups: Trees 419 & 420,	27 Trees: Trees 81, 123, 161, 175, 243, 291, 405, 407, 414, 430, 432, 436, 437, 448, 449, 453, 454, 457, 458, 465, 469, 470, 471, 472, 477, 479 & 482	97 Trees 2 Tree Groups
Total				106 Trees / Tree Groups

5.4.1 'Moderate/' Impacts

As per AS4970-2025 *Protection of trees on development sites*, the proposed hydrant main alignment will result in 'moderate' (19% NRZ) encroachment of **Tree 468**.

With regard to the level of encroachment set to be imposed upon this tree, it is considered that the impacts are capable of being tolerated as this tree were observed in good health and vigour and will maintain access to extended areas of contiguous deep soil which is expected to suitably offset the proposed impact and allow for compensatory root establishment.

5.5 Ancillary Construction Related Impacts

Vehicles, machinery and equipment requiring access to the site have potential to result in inadvertent impacts to those trees being retained including compaction of the root zone, soil disturbance, physical damage to roots, trunk damage etc. and as such will require management.

Furthermore, storage and stockpiling of material may result in similar impacts and will require management. In this regard, protection for those trees to be retained is to be carried out in accordance with **Appendix 5**.

6 CONCLUSION

6.1 Proposed Development Impact

Based on the plans and information supplied, the proposal would result in the following impacts to existing trees on site:

Removal of sixty-seven (67) trees, including:

- Fifty-three (53) trees (**Trees 1, 6, 17, 18, 25, 29, 31, 33, 34, 35, 41, 43, 48, 49, 50, 56, 58, 61, 62, 64, 65, 69, 74, 76, 79, 80, 87, 89, 91, 92, 98, 101, 105, 106, 107, 114, 119, 122, 126, 138, 145, 171, 192, 193, 201, 211, 213, 214, 216, 223, 227, 230 & 235**) due to falling directly within the proposed building extension footprint, car park extension, grading extents, stormwater infrastructure, hydrant main alignment or pathways;
- Fourteen (14) trees (**Trees 15, 16, 22, 40, 67, 127, 210, 222, 238, 251, 459, 476, 486 & 487**) due to 'Major' encroachment (as per AS4970-2025 Protection of trees on development sites) from proposed building extension, grading extents, stormwater infrastructure, hydrant alignment and/or pathways;

Partial Removal of two (2) tree groups, including:

- 231m² of vegetation from **Trees 417 & 418** (approximately 58 trees/shrubs) due to being partially within the footprint of the proposed swale grading extents;

Retention and protection of one hundred and six (106) trees, including:

- One (1) tree (**Tree 468**) which is to be subjected to 'moderate' (19% NRZ) but sustainable encroachment as a result of the proposed hydrant main alignment. Impacts being considered tolerable as tree was observed in good health and vigour with access to extended areas of contiguous deep soil which is expected to suitably offset the proposed impact;
- Six (6) trees (**Trees 191, 460, 461, 463, 474 & 478**) which are to be subjected to sustainable and 'minor' (<1-8%) encroachment to the NRZ as a result of the proposed hydrant main alignment;
- Ninety-nine (99) trees (**Trees 5, 9, 14, 24, 27, 32, 72, 81, 84, 123, 161, 175, 217, 219, 220, 243, 291, 334, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 462, 464, 465, 466, 467, 469, 470, 471, 472, 473, 475, 477, 479, 480, 481, 482, 483, 484, 485, 488, 489, 490, 491 & 492**) that are unlikely to be impacted due to no works being proposed within their respective NRZs.

Impacts are unlikely to result in decline to health and viability of trees nominated for retention pending implementation of tree protection measures and Project Arborist supervision. Any significant departures from the protection measures may result in a reduced Useful Life Expectancy and/or tree removal.

Specific recommendations as per **Section 7** will need to be adopted to ensure potential negative impacts to trees nominated for retention are mitigated.

7 RECOMMENDATIONS

7.1 Tree Removal

Remove **Trees 1, 6, 15-18, 22, 25, 29, 31, 33-35, 40-41, 43, 48-50, 56, 58, 61-62, 64-65, 67, 69, 74, 76, 79-80, 87, 89, 91-92, 98, 101, 105-107, 114, 119, 122, 126-127, 138, 145, 171, 192-193, 201, 210-211, 213-214, 216, 222-223, 227, 230, 235, 238, 251, 459, 476 & 486-487** (67 trees) in accordance with the Tree Location Plan held at **Appendix 2** to facilitate the proposed development works.

7.1.1 Partial Tree Removal

Remove part of **Tree group 417** and of part of **Tree group 418** (approximately 58 trees/shrubs) in accordance with the Tree Location Plan held at **Appendix 2** to facilitate the proposed development works.

All tree removal work is to be carried out by an experienced Arborist with minimum AQF Level 3 qualifications in accordance with AS4373-2007 - *Pruning of Amenity Trees*, Safe Work Australia Guide for Managing Risks of Tree Trimming and Removal Work (2016) and other applicable legislation.

7.2 Tree Retention & Protection

Retain and protect **Trees 5, 9, 14, 24, 27, 32, 72, 81, 84, 123, 161, 175, 191, 217, 219-220, 243, 291, 334, 400-416, 419-458, 460-475, 477-485 & 488-492** (106 trees/tree groups) in accordance with the Tree Location Plan & Tree Protection Specifications held at **Appendices 2 & 5**, AS497-2025 *Protection of trees on development sites* and the specific recommendations below:

7.2.1 Project Arborist Engagement

A Project Arborist experienced in tree protection on construction sites should be engaged prior to the commencement of any works on site. The Project Arborist shall monitor and report regularly to the Principal Certifying Authority (PCA) and the Applicant on the condition and protection of the retained trees during the works. The Project Arborist is to supervise and monitor any excavation, machine trenching or compacted fill placement within the NRZ of retained trees throughout construction.

7.2.2 Specific Tree Protection Measures

Tree Protection Fencing should be installed as shown on the Tree Location Plan held at **Appendix 2** and in accordance with Section 4.3 of AS4970-2025 and **Appendix 6**. TPZ Signage (see **Appendix 3**) shall be erected in accordance with Section 4.4 of AS4970-2025. Tree protection must not be removed or altered without prior approval of the Project Arborist

8 REFERENCES

- Barrell, J. 2001. SULE: Its Use and Status into the New Millennium. Retrieved from www.treeAZ.com
- Blacktown City Council. Blacktown Development Control Plan 2015: Part A, Section 4.3 – *Tree Preservation*
- Council of Standards Australia. 2025 AS 4970 – 2025 – *Protection of Trees on Development Sites* Standards Australia, Sydney.
- Council of Standards Australia. 2007 AS 4373 – 2007 – *Pruning of Amenity Trees* Standards Australia, Sydney.
- Google Australia. 2025. *Google Maps*. [ONLINE] Available at: google.com.au/maps. [Accessed October 2025].
- Mattheck, C., & Breloer, H. 1994. *The Body Language of Trees – A Handbook for Failure Analysis*. London: The Stationary Office.
- Mattheck, C 2007, *Updated Field Guide for Visual Tree Assessment*, 1st Ed., Forschungszentrum Karlsruhe, Germany
- Landchecker. 2025. [ONLINE] Available at: landchecker.com.au [Accessed October 2025].
- NSW Government – Local Land Services. Greater Sydney Regional Strategic Weed Management Plan 2023-2027

APPENDIX 1: TREE ASSESSMENT DATA SCHEDULE

Tree No.	Genus & species	Common Name	Height (m)	Crown Spread (m)	DSH (mm)	DGL (mm)	NRZ Radius (m)	SRZ Radius (m)	Age Class	Health / Vitality	Structure/ Condition	ULE Rating	Landscape Significance	Retention Value	Development Impact	Retain / Remove	Comments
1	Melaleuca bracteata	Black Tea-Tree	10	9	300, 200, 200	450	4.95	2.37	M	Average	Average	Medium 15-40 years	Medium	Medium	Within proposed grading extents	Remove	Pruned - crown lift
5	Eucalyptus tereticornis	Forest Red Gum	16	12	350	400	4.20	2.25	M	Average	Average	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Slender form
6	Melaleuca bracteata	Black Tea-Tree	9	9	200, 200, 200	500	4.16	2.47	M	Average	Average	Medium 15-40 years	Medium	Medium	Within proposed car park extension footprint	Remove	Pruned - crown lift
9	Eucalyptus moluccana	Grey Box	18	13	450	550	5.40	2.57	M	Average	Average	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Nil
14	Eucalyptus crebra	Narrow-leaved Ironbark	18	13	550	600	6.60	2.67	M	Average	Good	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Minor branch dieback
15	Casuarina glauca	Swamp Oak	15	8	650	750	7.80	2.93	M	Fair	Fair	Medium 15-40 years	Medium	Medium	Major 54% NRZ and 28% SRZ encroachment from proposed grading extents and stormwater infrastructure	Remove	Basal epicormic growth. Sparse foliage density
16	Pistacia chinensis	Chinese Pistachio	11	9	250	300	3.00	2.00	M	Average	Average	Medium 15-40 years	Low	Low	Major 29% NRZ and 31% SRZ encroachment from proposed pathway and stormwater infrastructure	Remove	Defoliated during inspection. Past pruning. Canopy bias east
17	Eucalyptus paniculata	Grey Ironbark	16	9	350	450	4.20	2.37	M	Average	Average	Long 40 years +	Medium	High	Within proposed car park extension footprint	Remove	Nil
18	Casuarina cunninghamiana	River Sheoak	18	7	400	500	4.80	2.47	M	Average	Fair	Medium 15-40 years	Medium	Medium	Within proposed building extension footprint	Remove	Slender form
22	Eucalyptus moluccana	Grey Box	16	9	350, 250	450	5.16	2.37	M	Average	Average	Long 40 years +	Medium	High	Major 21% NRZ encroachment from proposed pathways	Remove	Minor branch dieback
24	Eucalyptus moluccana	Grey Box	19	10	400	450	4.80	2.37	M	Average	Average	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Nil
25	Melaleuca bracteata	Black Tea-Tree	10	9	250, 200, 200	450	4.53	2.37	M	Fair	Average	Medium 15-40 years	Medium	Medium	Within proposed car park extension footprint	Remove	Sparse foliage density
27	Eucalyptus paniculata	Grey Ironbark	17	8	400	450	4.80	2.37	M	Average	Average	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Minor lean and canopy bias north west
29	Eucalyptus moluccana	Grey Box	17	9	450, 200, 200	550	6.38	2.57	M	Average	Average	Long 40 years +	Medium	High	Within proposed grading extents	Remove	Nil
31	Casuarina glauca	Swamp Oak	16	12	600	600	7.20	2.67	M	Average	Fair	Medium 15-40 years	Medium	Medium	Within proposed stormwater infrastructure	Remove	Basal epicormic growth. Multiple branch failures. Past pruning
32	Eucalyptus moluccana	Grey Box	18	7	300	350	3.60	2.13	M	Average	Fair	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Slender form
33	Casuarina cunninghamiana	River Sheoak	12	7	300	400	3.60	2.25	M	Average	Average	Medium 15-40 years	Medium	Medium	Within proposed building extension footprint	Remove	Nil
34	Casuarina cunninghamiana	River Sheoak	18	8	400	500	4.80	2.47	OM	Fair	Fair	Short 5-15 years	Medium	Low	Within proposed building extension footprint	Remove	Branch dieback. Sparse foliage density. Minor lean south west
35	Corymbia eximia	Yellow Bloodwood	11	5	200, 150	300	3.00	2.00	SM	Average	Average	Long 40 years +	Medium	High	Within proposed stormwater infrastructure	Remove	Twin trunk. Basal swelling
40	Eucalyptus crebra	Narrow-leaved Ironbark	17	9	350	450	4.20	2.37	M	Average	Average	Long 40 years +	Medium	High	Major 41% NRZ and 10% SRZ encroachment from proposed grading extents and stormwater infrastructure	Remove	Lower branch dieback
41	Eucalyptus crebra	Narrow-leaved Ironbark	17	7	350	450	4.20	2.37	M	Average	Average	Long 40 years +	Medium	High	Within proposed building extension footprint	Remove	Nil
43	Eucalyptus crebra	Narrow-leaved Ironbark	13	5	250	300	3.00	2.00	M	Fair	Fair	Short 5-15 years	Low	Low	Within proposed stormwater infrastructure	Remove	Severe branch dieback. Epicormic growth

Tree No.	Genus & species	Common Name	Height (m)	Crown Spread (m)	DSH (mm)	DGL (mm)	NRZ Radius (m)	SRZ Radius (m)	Age Class	Health / Vitality	Structure/ Condition	ULE Rating	Landscape Significance	Retention Value	Development Impact	Retain / Remove	Comments
48	Melaleuca salicina	Willow Bottlebrush	9	6	200, 150, 150	500	3.50	2.47	M	Average	Fair	Medium 15-40 years	Medium	Medium	Within proposed stormwater infrastructure	Remove	Past pruning. Co-dominant stems failure
49	Corymbia maculata	Spotted Gum	17	5	300	350	3.60	2.13	M	Fair	Fair	Short 5-15 years	Low	Low	Within proposed stormwater infrastructure	Remove	Severe branch dieback and epicormic growth
50	Casuarina glauca	Swamp Oak	16	6	350	400	4.20	2.25	OM	Poor	Poor	Very Short < 5 years	Low	Low	Within proposed building extension footprint	Remove	Defoliated / necrotic foliage.
56	Melaleuca bracteata	Black Tea-Tree	10	9	250, 200, 100	400	4.02	2.25	M	Average	Average	Medium 15-40 years	Medium	Medium	Within proposed car park extension footprint	Remove	Pruned - crown lift
58	Melaleuca bracteata	Black Tea-Tree	10	9	250, 200, 150	400	4.24	2.25	M	Fair	Average	Medium 15-40 years	Medium	Medium	Within proposed car park extension footprint	Remove	Pruned - crown lift. Sparse foliage density
61	Eucalyptus moluccana	Grey Box	11	8	250	350	3.00	2.13	SM	Average	Average	Long 40 years +	Medium	High	Within proposed pathway	Remove	Minor lean south
62	Eucalyptus paniculata	Grey Ironbark	13	8	300	350	3.60	2.13	M	Fair	Average	Medium 15-40 years	Medium	Medium	Within proposed car park extension footprint	Remove	Branch dieback
64	Eucalyptus fibrosa	Red Ironbark	9	7	200, 150	300	3.00	2.00	SM	Average	Average	Long 40 years +	Medium	High	Within proposed building extension footprint	Remove	Past pruning.
65	Eucalyptus paniculata	Grey Ironbark	11	5	200	250	2.40	1.85	SM	Average	Average	Long 40 years +	Medium	High	Within proposed car park extension footprint	Remove	Nil
67	Eucalyptus moluccana	Grey Box	14	6	250	300	3.00	2.00	M	Average	Average	Long 40 years +	Medium	High	Major 23% NRZ and 29% SRZ encroachment from proposed pathway	Remove	Nil
69	Eucalyptus moluccana	Grey Box	18	8	350	450	4.20	2.37	M	Average	Average	Long 40 years +	Medium	High	Within proposed stormwater infrastructure	Remove	Nil
72	Casuarina cunninghamiana	River Sheoak	15	5	250	350	3.00	2.13	M	Average	Fair	Medium 15-40 years	Medium	Medium	No works proposed within NRZ	Retain	Swollen base. Suppressed form
74	Eucalyptus paniculata	Grey Ironbark	13	7	200	250	2.40	1.85	SM	Good	Average	Long 40 years +	Medium	High	Within proposed stormwater infrastructure	Remove	Nil
76	Melaleuca bracteata	Black Tea-Tree	9	9	200, 200	500	3.39	2.47	M	Poor	Poor	Very Short < 5 years	Low	Low	Within proposed car park extension footprint	Remove	Whole co-dominant stems necrotic. Past pruning
79	Eucalyptus moluccana	Grey Box	16	8	300	350	3.60	2.13	M	Average	Average	Long 40 years +	Medium	High	Within proposed pathway	Remove	Minor branch dieback
80	Casuarina cunninghamiana	River Sheoak	12	6	150, 100	250	2.16	1.85	M	Fair	Average	Short 5-15 years	Medium	Low	Within proposed building extension footprint	Remove	Sparse foliage density. Branch dieback
81	Eucalyptus tereticornis	Forest Red Gum	20	7	450	500	5.40	2.47	OM	Poor	Poor	Short 5-15 years	Low	Low	No works proposed within NRZ	Retain	Severe branch dieback. Epicormic growth
84	Eucalyptus crebra	Narrow-leaved Ironbark	12	8	250	300	3.00	2.00	SM	Average	Average	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Nil
87	Eucalyptus paniculata	Grey Ironbark	17	6	300	350	3.60	2.13	M	Average	Average	Long 40 years +	Medium	High	Within proposed car park extension footprint	Remove	Slender form
89	Callistemon viminalis	Weeping Bottlebrush	7	5	150, 100	300	2.16	2.00	M	Fair	Average	Medium 15-40 years	Low	Low	Within proposed grading extents	Remove	Sparse foliage density
91	Eucalyptus paniculata	Grey Ironbark	12	8	250	350	3.00	2.13	M	Average	Average	Long 40 years +	Medium	High	Within proposed car park extension footprint	Remove	Canopy bias south from adjoining vegetation
92	Casuarina glauca	Swamp Oak	13	6	300	350	3.60	2.13	SM	Average	Average	Medium 15-40 years	Medium	Medium	Within proposed pathway	Remove	Minor lean west from competing adjoining vegetation
98	Eucalyptus paniculata	Grey Ironbark	12	6	250	300	3.00	2.00	SM	Fair	Fair	Medium 15-40 years	Medium	Medium	Within proposed pathway	Remove	Branch dieback. Canopy bias south east

Tree No.	Genus & species	Common Name	Height (m)	Crown Spread (m)	DSH (mm)	DGL (mm)	NRZ Radius (m)	SRZ Radius (m)	Age Class	Health / Vitality	Structure/ Condition	ULE Rating	Landscape Significance	Retention Value	Development Impact	Retain / Remove	Comments
101	Casuarina cunninghamiana	River Sheoak	14	4	200	250	2.40	1.85	SM	Fair	Fair	Medium 15-40 years	Medium	Medium	Within proposed building extension footprint	Remove	Past pruning. Epicormic growth
105	Eucalyptus crebra	Narrow-leaved Ironbark	16	5	300	350	3.60	2.13	M	Fair	Fair	Medium 15-40 years	Medium	Medium	Within proposed building extension footprint	Remove	Branch dieback. Epicormic growth
106	Casuarina cunninghamiana	River Sheoak	18	10	350	450	4.20	2.37	M	Average	Average	Medium 15-40 years	Medium	Medium	Within proposed building extension footprint	Remove	Swelling and bark delaminated/canker in co-dominant stems
107	Eucalyptus tereticornis	Forest Red Gum	12	4	150	200	2.00	1.68	SM	Average	Average	Long 40 years +	Medium	High	Within proposed stormwater infrastructure	Remove	Past pruning near base
114	Eucalyptus fibrosa	Red Ironbark	13	12	350	400	4.20	2.25	M	Good	Good	Long 40 years +	Medium	High	Within proposed grading extents	Remove	Tree adjacent recently removed
119	Casuarina cunninghamiana	River Sheoak	12	5	200	300	2.40	2.00	M	Fair	Average	Medium 15-40 years	Medium	Medium	Within proposed building extension footprint	Remove	Sparse foliage density
122	Callistemon viminalis	Weeping Bottlebrush	6	3	100	200	2.00	1.68	SM	Average	Average	Medium 15-40 years	Low	Low	Within proposed car park extension footprint	Remove	Past pruning. Epicormic regrowth
123	Callistemon viminalis	Weeping Bottlebrush	4	2	100, 50	150	2.00	1.50	SM	Average	Average	Medium 15-40 years	Low	Low	No works proposed within NRZ	Retain	Nil
126	Casuarina glauca	Swamp Oak	10	4	150	200	2.00	1.68	SM	Average	Average	Medium 15-40 years	Low	Low	Within proposed stormwater infrastructure	Remove	Basal epicormic growth
127	Callistemon viminalis	Weeping Bottlebrush	9	7	200, 150, 100	350	3.23	2.13	M	Average	Fair	Medium 15-40 years	Low	Low	Major 12% NRZ + 12% SRZ encroachment from proposed pathway and stormwater infrastructure	Remove	Canopy bias north
138	Eucalyptus paniculata	Grey Ironbark	10	5	200	250	2.40	1.85	SM	Fair	Fair	Short 5-15 years	Low	Low	Within proposed pathway	Remove	Branch dieback. Sparse foliage density
145	Callistemon viminalis	Weeping Bottlebrush	5	3	100	150	2.00	1.50	SM	Average	Average	Medium 15-40 years	Low	Low	Within proposed car park extension footprint	Remove	Nil
161	Callistemon salignus	Willow Bottlebrush	7	3	150	250	2.00	1.85	OM	Poor	Poor	Short 5-15 years	Low	Low	No works proposed within NRZ	Retain	Co-dominant stem failure. Sparse canopy
171	Corymbia eximia	Yellow Bloodwood	11	3	100	150	2.00	1.50	SM	Fair	Fair	Medium 15-40 years	Low	Low	Within proposed stormwater infrastructure	Remove	Slender form. Branch dieback
175	Casuarina glauca	Swamp Oak	7	3	50, 50, 50, 50	100	2.00	1.50	SM	Average	Fair	Medium 15-40 years	Low	Low	No works proposed within NRZ	Retain	Approx 20x stems from ground level
191	Melaleuca styphelioides	Prickly-leaved Paperbark	1	1	50	50	2.00	1.50	J	Average	Average	Medium 15-40 years	Low	Low	Minor 8% NRZ encroachment from proposed hydrant line	Retain	Nil
192	Eucalyptus tereticornis	Forest Red Gum	17	17	800	800	9.60	3.01	M	Average	Average	Long 40 years +	Medium	High	Within proposed hydrant alignment	Remove	Pruned - crown lift
193	Eucalyptus microcorys	Tallowood	16	18	550	600	6.60	2.67	M	Good	Average	Long 40 years +	Medium	High	Within proposed hydrant alignment	Remove	Nil
201	Callistemon viminalis	Weeping Bottlebrush	6	3	100	150	2.00	1.50	SM	Average	Average	Medium 15-40 years	Low	Low	Within proposed car park extension footprint	Remove	Pruned - driveway clearance
210	Eucalyptus moluccana	Grey Box	15	7	350	400	4.20	2.25	M	Average	Average	Long 40 years +	Medium	High	Major 10% NRZ and 2% SRZ encroachment from proposed pathway	Remove	Minor branch dieback
211	Corymbia citriodora	Lemon-scented Gum	20	18	600	650	7.20	2.76	M	Good	Good	Long 40 years +	Medium	High	Within proposed pathway	Remove	Nil
213	Eucalyptus fibrosa	Red Ironbark	18	15	650	700	7.80	2.85	M	Average	Average	Long 40 years +	Medium	High	Within proposed grading extents	Remove	Minor lean and canopy bias north.
214	Eucalyptus fibrosa	Red Ironbark	18	16	750	750	9.00	2.93	M	Good	Good	Long 40 years +	Medium	High	Within proposed pathway	Remove	Past pruning - crown lift

Tree No.	Genus & species	Common Name	Height (m)	Crown Spread (m)	DSH (mm)	DGL (mm)	NRZ Radius (m)	SRZ Radius (m)	Age Class	Health / Vitality	Structure/ Condition	ULE Rating	Landscape Significance	Retention Value	Development Impact	Retain / Remove	Comments
216	<i>Eucalyptus moluccana</i>	Grey Box	19	15	600	600	7.20	2.67	M	Good	Average	Long 40 years +	Medium	High	Within proposed pathway	Remove	Past pruning - crown lift
217	<i>Corymbia maculata</i>	Spotted Gum	22	17	650	700	7.80	2.85	M	Average	Average	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Nil
219	<i>Eucalyptus moluccana</i>	Grey Box	15	13	250, 250	550	4.24	2.57	M	Average	Average	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Twin trunk
220	<i>Eucalyptus moluccana</i>	Grey Box	17	11	450	500	5.40	2.47	M	Average	Average	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Burls
222	<i>Casuarina glauca</i>	Swamp Oak	16	12	500	600	6.00	2.67	M	Fair	Fair	Medium 15-40 years	Medium	Medium	Major 76% NRZ + 48% SRZ encroachment from proposed swale extents, stormwater infrastructure, pathway and extension footprint	Remove	Canopy bias north west. Past pruning. Sparse foliage density
223	<i>Eucalyptus moluccana</i>	Grey Box	19	10	400, 300	550	6.00	2.57	M	Good	Average	Long 40 years +	Medium	High	Within proposed pathway	Remove	Stem injection
227	<i>Corymbia citriodora</i>	Lemon-scented Gum	16	10	250, 200	450	3.84	2.37	SM	Average	Average	Long 40 years +	Medium	High	Within proposed stormwater infrastructure	Remove	Twin trunk
230	<i>Casuarina cunninghamiana</i>	River Sheoak	16	13	350	400	4.20	2.25	OM	Fair	Fair	Short 5-15 years	Low	Low	Within proposed building extension footprint	Remove	Sparse foliage density. Branch dieback
235	<i>Eucalyptus moluccana</i>	Grey Box	18	10	400	500	4.80	2.47	M	Average	Average	Long 40 years +	Medium	High	Within proposed stormwater infrastructure	Remove	Basal pruning. Stem injections? Drill holes siliconed
238	<i>Eucalyptus moluccana</i>	Grey Box	17	11	400	500	4.80	2.47	M	Average	Good	Long 40 years +	Medium	High	Major 44% NRZ + 38% SRZ encroachment from proposed car park extension footprint	Remove	Nil
243	<i>Callistemon viminalis</i>	Weeping Bottlebrush	4	2	100, 50	150	2.00	1.50	SM	Average	Average	Medium 15-40 years	Low	Low	No works proposed within NRZ	Retain	Nil
251	<i>Callistemon viminalis</i>	Weeping Bottlebrush	4	2	100, 50	150	2.00	1.50	SM	Average	Average	Medium 15-40 years	Low	Low	Major 20% NRZ and 11% SRZ encroachment from proposed pathway	Remove	Nil
291	<i>Callistemon viminalis</i>	Weeping Bottlebrush	4	2	100, 50	150	2.00	1.50	SM	Average	Average	Medium 15-40 years	Low	Low	No works proposed within NRZ	Retain	Nil
334	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	16	10	400	450	4.80	2.37	M	Average	Fair	Medium 15-40 years	Medium	Medium	No works proposed within NRZ	Retain	Trunk delaminated in sections
400	<i>Eucalyptus microcorys</i>	Tallowwood	17	15	450, 300	600	6.49	2.67	M	Average	Average	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Pruned - crown lift
401	<i>Corymbia eximia</i>	Yellow Bloodwood	17	11	550	600	6.60	2.67	M	Fair	Average	Medium 15-40 years	Medium	Medium	No works proposed within NRZ	Retain	Branch dieback. Sparse canopy
402	<i>Eucalyptus moluccana</i>	Grey Box	11	7	200	250	2.40	1.85	SM	Average	Average	Long 40 years +	Low	Medium	No works proposed within NRZ	Retain	Nil
403	<i>Eucalyptus moluccana</i>	Grey Box	17	14	500	550	6.00	2.57	M	Average	Average	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Lean east
404	<i>Eucalyptus moluccana</i>	Grey Box	15	10	300	350	3.60	2.13	M	Average	Average	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Nil
405	<i>Eucalyptus moluccana</i>	Grey Box	12	5	200	250	2.40	1.85	SM	Average	Fair	Medium 15-40 years	Low	Low	No works proposed within NRZ	Retain	Lean east. Trunk delaminated
406	<i>Eucalyptus moluccana</i>	Grey Box	18	12	500	550	6.00	2.57	M	Average	Average	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Nil
407	<i>Eucalyptus paniculata</i>	Grey Ironbark	12	5	200	250	2.40	1.85	SM	Fair	Fair	Medium 15-40 years	Low	Low	No works proposed within NRZ	Retain	Sparse canopy. Branch dieback
408	<i>Eucalyptus moluccana</i>	Grey Box	16	7	350	400	4.20	2.25	M	Average	Average	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Nil

Tree No.	Genus & species	Common Name	Height (m)	Crown Spread (m)	DSH (mm)	DGL (mm)	NRZ Radius (m)	SRZ Radius (m)	Age Class	Health / Vitality	Structure/ Condition	ULE Rating	Landscape Significance	Retention Value	Development Impact	Retain / Remove	Comments
409	<i>Eucalyptus paniculata</i>	Grey Ironbark	13	9	300	350	3.60	2.13	SM	Average	Average	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Nil
410	<i>Eucalyptus paniculata</i>	Grey Ironbark	13	9	300	350	3.60	2.13	SM	Average	Average	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Nil
411	<i>Eucalyptus paniculata</i>	Grey Ironbark	15	12	400	450	4.80	2.37	M	Average	Average	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Nil
412	<i>Eucalyptus paniculata</i>	Grey Ironbark	17	12	300	350	3.60	2.13	M	Average	Average	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Nil
413	<i>Eucalyptus paniculata</i>	Grey Ironbark	14	10	250	300	3.00	2.00	SM	Fair	Average	Medium 15-40 years	Medium	Medium	No works proposed within NRZ	Retain	Sparse canopy
414	<i>Callistemon viminalis</i>	Weeping Bottlebrush	6	3	100	150	2.00	1.50	SM	Average	Average	Medium 15-40 years	Low	Low	No works proposed within NRZ	Retain	Shrub habit
415	<i>Eucalyptus moluccana</i>	Grey Box	18	10	400	450	4.80	2.37	M	Average	Average	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Nil
416	<i>Corymbia eximia</i>	Yellow Bloodwood	10	4	150	200	2.00	1.68	SM	Average	Average	Long 40 years +	Low	Medium	No works proposed within NRZ	Retain	Basal burl
417	Mixed species	-	4	2	100	150	2.00	1.50	SM	Average	Average	Medium 15-40 years	Medium	Medium	99m2 of native vegetation to be encroached from proposed swale grading extents	Partially Remove	Newly planted patch of native vegetarian consisting primarily of semi-mature Acacia sp., Eucalyptus sp., Melaleuca sp., Casuarina sp. and under storey. Approximately 100-200 specimens
418	Mixed species	-	4	2	100	150	2.00	1.50	SM	Average	Average	Medium 15-40 years	Medium	Medium	132m2 of native vegetation to be encroached from proposed swale grading extents	Partially Remove	Newly planted patch of native vegetarian consisting primarily of semi-mature Acacia sp., Eucalyptus sp. and under storey. Approximately 50 specimens
419	Mixed species	-	4	2	100	150	2.00	1.50	SM	Average	Average	Medium 15-40 years	Medium	Medium	No works proposed within NRZ	Retain	Newly planted patch of native vegetarian consisting primarily of semi-mature Acacia sp., Eucalyptus sp. and under storey. Approximately 50-100 specimens
420	Mixed species	-	4	2	100	150	2.00	1.50	SM	Average	Average	Medium 15-40 years	Medium	Medium	No works proposed within NRZ	Retain	Newly planted patch of native vegetarian consisting primarily of semi-mature Acacia sp., Eucalyptus sp., Melaleuca sp., and under storey. Approximately 100-200 specimens
421	<i>Corymbia maculata</i>	Spotted Gum	20	16	500, 150, 150	600	6.52	2.67	M	Good	Good	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Nil
422	<i>Corymbia maculata</i>	Spotted Gum	22	15	550	600	6.60	2.67	M	Good	Good	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Nil
423	<i>Corymbia maculata</i>	Spotted Gum	17	13	350	400	4.20	2.25	M	Average	Average	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Nil
424	<i>Corymbia maculata</i>	Spotted Gum	18	11	400	450	4.80	2.37	M	Average	Average	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Branch dieback
425	<i>Corymbia maculata</i>	Spotted Gum	19	13	450	500	5.40	2.47	M	Good	Average	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Nil
426	<i>Corymbia maculata</i>	Spotted Gum	19	14	400	450	4.80	2.37	M	Good	Average	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Nil
427	<i>Corymbia maculata</i>	Spotted Gum	17	13	350	400	4.20	2.25	M	Fair	Fair	Medium 15-40 years	Medium	Medium	No works proposed within NRZ	Retain	Lean east. Branch dieback
428	<i>Eucalyptus moluccana</i>	Grey Box	15	8	250, 200	350	3.84	2.13	M	Fair	Fair	Medium 15-40 years	Medium	Medium	No works proposed within NRZ	Retain	Sparse canopy. Branch dieback
429	<i>Eucalyptus moluccana</i>	Grey Box	19	9	300, 200	400	4.33	2.25	M	Average	Average	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Slender

Tree No.	Genus & species	Common Name	Height (m)	Crown Spread (m)	DSH (mm)	DGL (mm)	NRZ Radius (m)	SRZ Radius (m)	Age Class	Health / Vitality	Structure/ Condition	ULE Rating	Landscape Significance	Retention Value	Development Impact	Retain / Remove	Comments
430	Casuarina cunninghamiana	River Sheoak	7	4	150	200	2.00	1.68	SM	Average	Average	Medium 15-40 years	Low	Low	No works proposed within NRZ	Retain	Nil
431	Eucalyptus crebra	Narrow-leaved Ironbark	13	9	200	250	2.40	1.85	SM	Average	Average	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Nil
432	Eucalyptus moluccana	Grey Box	18	12	350, 250	550	5.16	2.57	OM	Fair	Fair	Short 5-15 years	Low	Low	No works proposed within NRZ	Retain	Sparse canopy. Discoloured bark
433	Casuarina cunninghamiana	River Sheoak	16	7	200	300	2.40	2.00	M	Average	Average	Medium 15-40 years	Medium	Medium	No works proposed within NRZ	Retain	Nil
434	Eucalyptus tereticornis	Forest Red Gum	20	9	350	500	4.20	2.47	M	Average	Fair	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Slender. Past removal of co-dominant stem at base
435	Eucalyptus moluccana	Grey Box	20	8	250	300	3.00	2.00	M	Average	Fair	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Slender
436	Corymbia maculata	Spotted Gum	14	8	300	350	3.60	2.13	M	Fair	Fair	Short 5-15 years	Medium	Low	No works proposed within NRZ	Retain	Branch dieback. Epicormic growth
437	Eucalyptus crebra	Narrow-leaved Ironbark	15	11	350	450	4.20	2.37	OM	Fair	Fair	Short 5-15 years	Medium	Low	No works proposed within NRZ	Retain	Southern half of crown dieback
438	Corymbia maculata	Spotted Gum	17	13	350	450	4.20	2.37	M	Fair	Fair	Medium 15-40 years	Medium	Medium	No works proposed within NRZ	Retain	Branch dieback
439	Eucalyptus crebra	Narrow-leaved Ironbark	21	15	450	500	5.40	2.47	M	Good	Average	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Included branch attachments
440	Eucalyptus crebra	Narrow-leaved Ironbark	16	10	250	300	3.00	2.00	M	Average	Average	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Nil
441	Eucalyptus crebra	Narrow-leaved Ironbark	21	14	350, 250	550	5.16	2.57	M	Average	Average	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Nil
442	Eucalyptus moluccana	Grey Box	17	9	250	300	3.00	2.00	M	Average	Average	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Lean north
443	Eucalyptus tereticornis	Forest Red Gum	16	7	300	300	3.60	2.00	M	Average	Average	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Nil
444	Eucalyptus moluccana	Grey Box	17	8	300	400	3.60	2.25	M	Average	Average	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Nil
445	Casuarina cunninghamiana	River Sheoak	22	8	350	400	4.20	2.25	M	Average	Average	Medium 15-40 years	Medium	Medium	No works proposed within NRZ	Retain	Nil
446	Casuarina cunninghamiana	River Sheoak	22	7	300	450	3.60	2.37	M	Average	Fair	Medium 15-40 years	Medium	Medium	No works proposed within NRZ	Retain	Past removal of co-dominant stem at base
447	Corymbia citriodora	Lemon-scented Gum	16	15	500	600	6.00	2.67	M	Average	Average	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Included main branch union appears stable
448	Callistemon viminalis	Weeping Bottlebrush	5	4	100	150	2.00	1.50	SM	Average	Fair	Medium 15-40 years	Low	Low	No works proposed within NRZ	Retain	Pruned. Basal column decay
449	Callistemon viminalis	Weeping Bottlebrush	5	3	50, 50, 50	150	2.00	1.50	SM	Average	Average	Medium 15-40 years	Low	Low	No works proposed within NRZ	Retain	Nil
450	Corymbia citriodora	Lemon-scented Gum	14	11	350	400	4.20	2.25	M	Fair	Average	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Sparse canopy. Branch tear out
451	Corymbia citriodora	Lemon-scented Gum	14	9	300	350	3.60	2.13	M	Average	Average	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Pruned - crown lift
452	Corymbia citriodora	Lemon-scented Gum	6	2	50	100	2.00	1.50	SM	Average	Fair	Long 40 years +	Low	Medium	No works proposed within NRZ	Retain	Exposed and severed surface root

Tree No.	Genus & species	Common Name	Height (m)	Crown Spread (m)	DSH (mm)	DGL (mm)	NRZ Radius (m)	SRZ Radius (m)	Age Class	Health / Vitality	Structure/ Condition	ULE Rating	Landscape Significance	Retention Value	Development Impact	Retain / Remove	Comments
453	<i>Eucalyptus sp.</i>	Eucalyptus	2	2	50, 50	50	2.00	1.50	J	Average	Average	Medium 15-40 years	Low	Low	No works proposed within NRZ	Retain	Epicormic growth emerging from former tree location
454	<i>Erythrina x sykesii</i>	Coral Tree	2	2	50, 50	50	2.00	1.50	J	Average	Average	Medium 15-40 years	Low	Low	No works proposed within NRZ	Retain	Epicormic growth emerging from former tree location
455	<i>Pyrus calleryana</i>	Callery Pear	8	8	150, 100	200	2.16	1.68	M	Average	Average	Medium 15-40 years	Medium	Medium	No works proposed within NRZ	Retain	Southern portion of canopy pruned
456	<i>Eucalyptus moluccana</i>	Grey Box	10	6	150, 150, 150, 100	250	3.34	1.85	SM	Average	Fair	Medium 15-40 years	Medium	Medium	No works proposed within NRZ	Retain	Regrowth of multiple epicormic stems from stump
457	<i>Fraxinus griffithii</i>	Evergreen Ash	8	6	100, 100, 50, 50	200	2.00	1.68	M	Average	Average	Medium 15-40 years	Low	Low	No works proposed within NRZ	Retain	Nil
458	<i>Fraxinus griffithii</i>	Evergreen Ash	4	4	50, 50, 50, 50	100	2.00	1.50	SM	Average	Average	Medium 15-40 years	Low	Low	No works proposed within NRZ	Retain	Nil
459	<i>Callistemon salignus</i>	Willow Bottlebrush	9	5	150, 150, 100, 100	350	3.06	2.13	M	Average	Average	Medium 15-40 years	Medium	Medium	Major 15% NRZ and 4% SRZ encroachment from proposed hydrant line	Remove	Nil
460	<i>Callistemon salignus</i>	Willow Bottlebrush	7	4	150, 100	250	2.47	1.85	M	Average	Average	Medium 15-40 years	Medium	Medium	Minor 3% NRZ encroachment from proposed hydrant line	Retain	Bird nest in canopy
461	<i>Eucalyptus paniculata</i>	Grey Ironbark	12	11	300	350	3.60	2.13	M	Fair	Average	Medium 15-40 years	Medium	Medium	Minor 5% NRZ encroachment from proposed hydrant line	Retain	Shrub habit
462	<i>Callistemon salignus</i>	Willow Bottlebrush	7	5	200	250	2.40	1.85	M	Average	Average	Medium 15-40 years	Medium	Medium	No works proposed within NRZ	Retain	Nil
463	<i>Eucalyptus moluccana</i>	Grey Box	16	13	450, 350	700	6.84	2.85	M	Good	Average	Long 40 years +	Medium	High	Minor <1% NRZ encroachment from proposed hydrant line	Retain	Co-dominant canopy with adjoining tree. Bird nest in canopy
464	<i>Mixed species</i>	Grey Box	19	14	450	550	5.40	2.57	M	Average	Average	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Co-dominant canopy with adjoining tree
465	<i>Mixed species</i>	White Cedar	3	6	50, 50, 50, 50	200	2.00	1.68	SM	Average	Average	Medium 15-40 years	Low	Low	No works proposed within NRZ	Retain	Squat spreading habit
466	<i>Mixed species</i>	Forest Red Gum	15	10	250, 250	600	4.24	2.67	M	Average	Average	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Twin trunk
467	<i>Mixed species</i>	Grey Box	20	16	600	700	7.20	2.85	M	Good	Average	Long 40 years +	High	High	No works proposed within NRZ	Retain	Bird nest in canopy
468	<i>Melia azedarach</i>	White Cedar	9	12	400	450	4.80	2.37	M	Good	Average	Medium 15-40 years	Medium	Medium	Moderate 19% NRZ encroachment from proposed hydrant line	Retain	Squat spreading habit
469	<i>Fraxinus pennsylvanica</i>	Green Ash	7	5	200	250	2.40	1.85	M	Average	Average	Medium 15-40 years	Low	Low	No works proposed within NRZ	Retain	Nil
470	<i>Fraxinus griffithii</i>	Evergreen Ash	2	2	50, 50, 50, 50	150	2.00	1.50	M	Average	Average	Medium 15-40 years	Low	Low	No works proposed within NRZ	Retain	Nil
471	<i>Fraxinus griffithii</i>	Evergreen Ash	2	2	50, 50, 50, 50	150	2.00	1.50	M	Fair	Fair	Short 5-15 years	Low	Low	No works proposed within NRZ	Retain	Branch dieback. Sparse canopy
472	<i>Hymenosporum flavum</i>	Native Frangipani	3	2	50	100	2.00	1.50	SM	Fair	Fair	Short 5-15 years	Low	Low	No works proposed within NRZ	Retain	Branch dieback. Sparse canopy
473	<i>Pistacia chinensis</i>	Chinese Pistachio	9	8	200	250	2.40	1.85	M	Average	Average	Medium 15-40 years	Medium	Medium	No works proposed within NRZ	Retain	Nil
474	<i>Eucalyptus paniculata</i>	Grey Ironbark	15	12	500	500	6.00	2.47	M	Fair	Average	Medium 15-40 years	Medium	Medium	Minor 1% NRZ encroachment from proposed hydrant line	Retain	Branch dieback. Sparse foliage
475	<i>Podocarpus elatus</i>	Illawarra Plum	10	5	200	250	2.40	1.85	M	Average	Average	Medium 15-40 years	Medium	Medium	No works proposed within NRZ	Retain	Nil

Tree No.	Genus & species	Common Name	Height (m)	Crown Spread (m)	DSH (mm)	DGL (mm)	NRZ Radius (m)	SRZ Radius (m)	Age Class	Health / Vitality	Structure/ Condition	ULE Rating	Landscape Significance	Retention Value	Development Impact	Retain / Remove	Comments
476	<i>Podocarpus elatus</i>	Illawarra Plum	10	5	200	250	2.40	1.85	M	Average	Average	Medium 15-40 years	Medium	Medium	Major 23% NRZ and 16% SRZ encroachment from proposed hydrant line	Remove	Nil
477	<i>Grevillea sp.</i>	Grevillea	3	3	50, 50, 50, 50	100	2.00	1.50	M	Average	Average	Medium 15-40 years	Low	Low	No works proposed within NRZ	Retain	Shrub
478	<i>Eucalyptus tereticornis</i>	Forest Red Gum	20	14	500	550	6.00	2.57	M	Good	Average	Long 40 years +	Medium	High	Minor 1% NRZ encroachment from proposed hydrant line	Retain	Nil
479	<i>Duranta repens</i>	Geisha Girl	4	4	100, 100, 100	150	2.08	1.50	M	Average	Average	Medium 15-40 years	Low	Low	No works proposed within NRZ	Retain	3x specimens forming shrub
480	<i>Eucalyptus paniculata</i>	Grey Ironbark	10	6	300	350	3.60	2.13	M	Fair	Fair	Medium 15-40 years	Medium	Medium	No works proposed within NRZ	Retain	Canopy bias west. Supressed
481	<i>Eucalyptus melliodora</i>	Yellow Box	18	13	550	650	6.60	2.76	M	Good	Average	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Nil
482	<i>Hymenosporum flavum</i>	Native Frangipani	4	2	50	100	2.00	1.50	M	Average	Average	Medium 15-40 years	Low	Low	No works proposed within NRZ	Retain	Nil
483	<i>Lagerstroemia indica</i>	Crepe Myrtle	5	5	100	150	2.00	1.50	M	Average	Average	Medium 15-40 years	Medium	Medium	No works proposed within NRZ	Retain	Nil
484	<i>Lagerstroemia indica</i>	Crepe Myrtle	6	6	100, 100	200	2.00	1.68	M	Average	Average	Medium 15-40 years	Medium	Medium	No works proposed within NRZ	Retain	Nil
485	<i>Lagerstroemia indica</i>	Crepe Myrtle	6	6	100, 100	200	2.00	1.68	M	Average	Average	Medium 15-40 years	Medium	Medium	No works proposed within NRZ	Retain	Nil
486	<i>Lagerstroemia indica</i>	Crepe Myrtle	6	6	150	200	2.00	1.68	M	Average	Average	Medium 15-40 years	Medium	Medium	Major 10% NRZ and 11% SRZ encroachment from proposed hydrant line	Remove	Nil
487	<i>Lagerstroemia indica</i>	Crepe Myrtle	6	6	150	200	2.00	1.68	M	Average	Average	Medium 15-40 years	Medium	Medium	Major 38% NRZ and 36% SRZ encroachment from proposed hydrant line	Remove	Nil
488	<i>Lagerstroemia indica</i>	Crepe Myrtle	6	6	150	200	2.00	1.68	M	Average	Average	Medium 15-40 years	Medium	Medium	No works proposed within NRZ	Retain	Nil
489	<i>Lagerstroemia indica</i>	Crepe Myrtle	6	6	150	200	2.00	1.68	M	Average	Average	Medium 15-40 years	Medium	Medium	No works proposed within NRZ	Retain	Nil
490	<i>Lagerstroemia indica</i>	Crepe Myrtle	6	6	100, 100	200	2.00	1.68	M	Average	Average	Medium 15-40 years	Medium	Medium	No works proposed within NRZ	Retain	Nil
491	<i>Lagerstroemia indica</i>	Crepe Myrtle	5	4	100	150	2.00	1.50	M	Average	Average	Medium 15-40 years	Medium	Medium	No works proposed within NRZ	Retain	Nil
492	<i>Lagerstroemia indica</i>	Crepe Myrtle	5	4	100	150	2.00	1.50	M	Average	Average	Medium 15-40 years	Medium	Medium	No works proposed within NRZ	Retain	Nil

Tree Inspection Data Notes & Terminology

Tree No. (Tree Number)
The tree number associated to each tree located on or adjacent to the subject site.

Botanical Name and Common Name
The botanical and common name of each tree is identified and recorded. Occasionally the exact species name is unknown; sp. is recorded to indicate this.

Height, Crown Width and DSH

- The trees height and crown spread is recorded in metres (m);
- The tree DSH is recorded in millimetres (mm). DSH is an abbreviation of Diameter (of the trunk) measured at Standard Height (or 1.4m from the base of the trunk). If more than one trunk is present the DSH is calculated in accordance with AS4970-2025 Protection of Trees on Development Sites

Age Class
The age class of each tree is estimated as either:
J – Juvenile refers to a well established but young tree
SM – Semi Mature, a tree that has not grown to mature size
M – Mature, a tree that has reached mature size and will slowly increase in size over time
OM – Over Mature, a tree that has been mature for a long period and is beginning to display signs of decline, e.g. large dead branches
S – Senescent, an over mature tree that is now in decline

Health & Condition
The trees health and vigour is recorded as a measurement of:
Good - the tree does not appear to appear stressed with no excessive dieback, insect infestation, decay, deadwood or epicormic shoots
Average - the tree appears stressed and has some crown dieback, and /or a few epicormic shoots, and/or some deadwood in the crown and some new growth at branch tips. These trees may benefit from remediation of the growing environment to reduce stress and return it to good health
Fair - the tree may have areas of crown dieback, and/or epicormic shoots, and/or areas of decay, and/or reduced new growth at branch tips. These trees have been stressed for a short period of time, remediation of the growing environment may improve trees health
Poor - the tree may have large areas of crown dieback, and/or many epicormic shoots, and/or reduced new growth at branch tips. These trees have been stressed for a long period of time, remediation of the growing environment would not return the tree to good health.

SRZ (Structural Root Zone)
The SRZ is a radial area extending outwards from the centre of the trunk. This area contains the majority of the structural woody roots. This area is responsible primarily for stability. Root damage or root loss within this zone greatly increases the opportunity for decay fungi to ingress into the heartwood, causing internal decay in addition to destabilising the trees structural integrity. The SRZ is calculated as follows (This calculation is taken from the Australian Standard 4970 – 2025 Protection of Trees on Development Sites): (D x 50)/0.42 x 0.64

NRZ (Notional Root Zone)
The NRZ is a radial area measured by multiplying the DSH by twelve (12) or a circular area the size of the trees drip line, whichever is greater. This area contains the majority of the structural and feeder roots responsible for stability, gaseous exchange and water and nutrient uptake. Excavation, back filling, compaction or other disturbance should not occur in this area. The NRZ is used to identify the minimum area required for the safe retention of a given tree. This calculation is derived from the Australian Standard 4970-2025 Protection of Trees in Development Sites. NRZ encroachment is potentially acceptable if no other option is available and is classified under AS4970-2025 as Minor (<10%), Moderate (>10%&20%) or Major (>20%). A major encroachment (in excess of 20%) is required to be clearly justified by the Project Arborist and compensated for elsewhere. Justification methodology may vary depending on site or individual tree's health, vigour and ability to withstand disturbance and may require root investigation.

Landscape Significance
The landscape significance of a tree or group of trees is determined using a combination of health/vigour/condition, amenity, heritage and ecological values in accordance with IACA Significance of a Tree, Assessment Rating System (STARS)© (IACA 2010)©.
1. High Significance in Landscape
2. Medium Significance in Landscape
3. Low Significance in Landscape

Retention Value (RV)
Determined by [1] tree free of visual defects and viable for retention, [2] viable for retention with minor faults which may reduce ULE, [3] trees which should not restrict development applications containing faults that are likely to become problematic in the short term, [4] trees to be considered for removal due to average condition.
High Retention - These trees are considered important for retention and should be retained and protected. Design modification or re-location of building/s should be considered to accommodate the setbacks as prescribed by the Australian Standard AS4970 Protection of trees on development sites. Tree sensitive construction measures must be implemented e.g. pier and beam etc. if works are to proceed within the Tree Protection Zone.
Medium Retention - These trees may be retained and protected. These are considered less critical; however their retention should remain priority with removal considered only if adversely affecting the proposed building/works and all other alternatives have been considered and exhausted.
Low Retention - These trees are not considered important for retention, nor require special works or design modification to be implemented for their retention.
Priority for Removal - These trees are considered hazardous, or in irreversible decline, or weeds and should be removed irrespective of development.

U.L.E. Categories
Useful Life Expectancy (after Barrel 1996, modified by the author). A trees U.L.E. category is the life expectancy of the tree modified first by its age, health, condition and location. U.L.E. assessments may be modified as dictated by changes in trees health and environment.
Long - Appear retainable at the time of assessment for over 40 years assuming reasonable maintenance.
Medium - Appear to be retainable at the time of assessment for 15 to 40 years assuming reasonable maintenance.
Short - Trees appear to be retainable at the time of assessment for 5 to 15 years assuming reasonable maintenance.
Very Short - Removal - Trees which should be scheduled for removal within the very short term or as specified within this report.
Small, Young or Regularly Pruned – Trees under 5m in height that can be easily moved or replaced, includes screen plantings or hedge lines.

Development Impact
Brief outline of the impact of the proposed development works or ancillary construction related activities likely to impact the tree.

Retain/Remove
The proposed removal or retention recommendation in light of the proposed development related impacts.

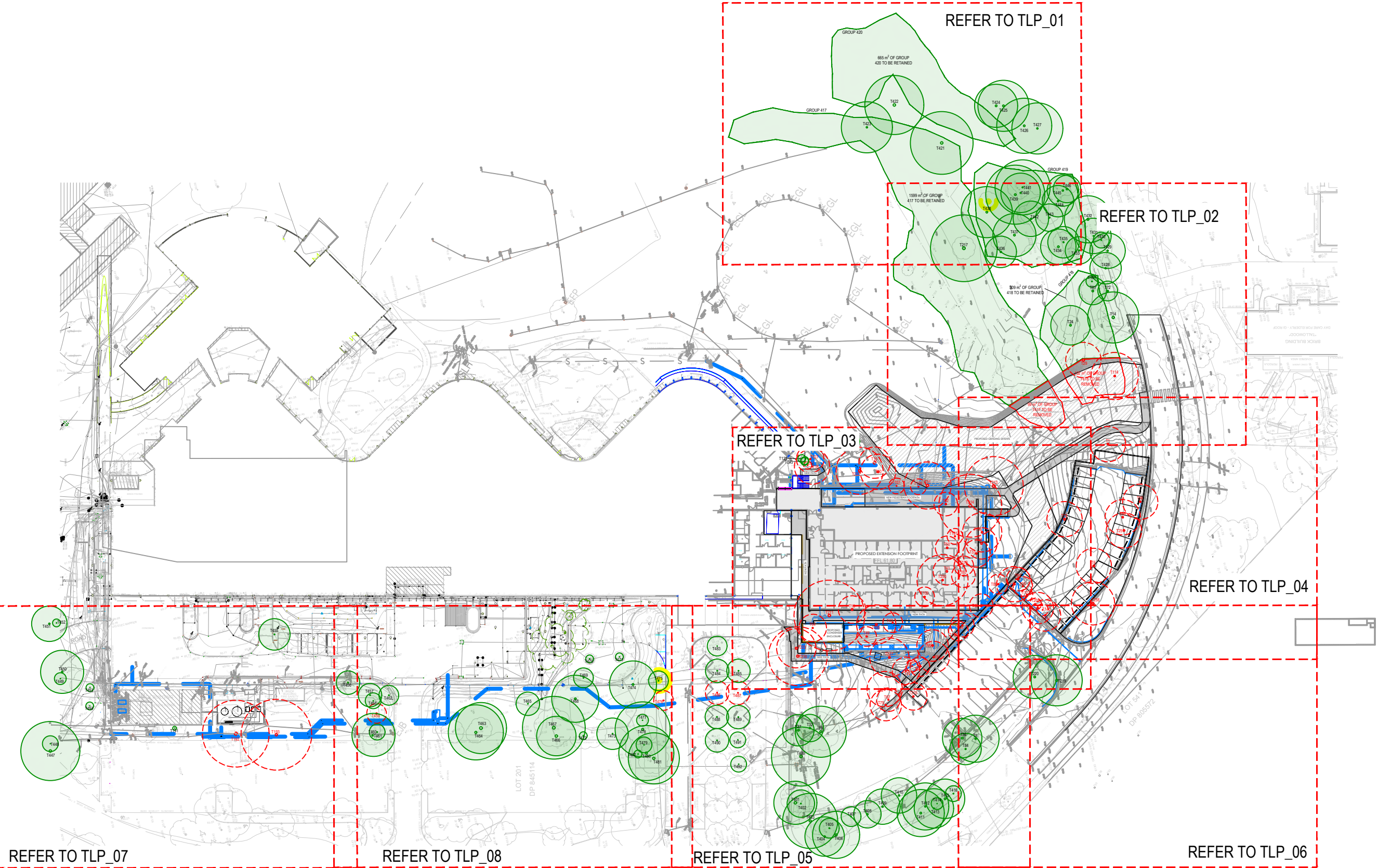
NOTES: This report acknowledges the current Australian Standard 'Protection of Trees on Development Sites' AS 4970 – 2025 with reference to the Notional Root Zone (NRZ); being a combination of the root and crown area requiring protection. The NRZ takes into consideration the Structural Root Zone (SRZ); The area required for tree stability. The standard states where a greater than 20% encroachment occurs the arborist is to take into consideration the schedule of determining impacts as set within AS4970 s. 3.3.2. Encroachments are referred to within this report as major or minor encroachments (AS4970 s. 3.3.2 & 3.3.3). To retain specific trees and ensure their viability, development must take into consideration protection of the NRZ radius.

APPENDIX 2 - TREE LOCATION PLAN

NOTE: TO BE READ IN CONJUNCTION WITH ARBORICULTURAL IMPACT ASSESSMENT

LEVEL 3
397 RILEY STREET
SURRY HILLS NSW 2010
PO BOX 1074 BROADWAY NSW 2007
TEL: + (61) 2 8039 7461
INFO@CPSPLANNING.COM.AU
CPSPLANNING.COM.AU

DIMENSIONS :
All dimensions are in millimetres unless otherwise noted. Do not scale from this drawing.
Verify all dimensions on site prior to construction.
CIVIL, STRUCTURAL, HYDRAULIC, ELECTRICAL AND SPECIALIST WATER FEATURE WORKS :
Refer to specialist and consultant's drawings for all information contained within these documents relating to and nominated as specialist and consultant work. Specialist and consultant drawing information contained in the landscape documents are indicative only and not for construction or certification purposes.



Issue	Code	Issue Description	By	Chk	Date
C	CA	FOR APPROVAL	JHG	GT	30.10.25
B	CA	FOR APPROVAL	SZ	GT	27.10.25
A	CA	FOR APPROVAL	SZ	GT	01.10.25

PRE - Preliminary CA - Council Approval T - Tender CON - Construction

PROJECT
MOUNT DRUITT HOSPITAL

DRAWING TITLE
**TREE LOCATION PLAN
SITE CONTEXT PLAN**

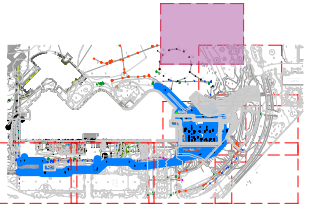
CLIENT
**NSW Health
GOVERNMENT Infrastructure**

Drawn : SZ
Designed :
Project No. : H460
Bar Scale

1:1000 @ A3
SHEET NUMBER
H460_TLP_00
REVISION
C

APPENDIX 2 - TREE LOCATION PLAN

NOTE: MUST BE READ IN CONJUNCTION WITH ARBORICULTURAL IMPACT ASSESSMENT



- LEGEND
- EXISTING TREE TO BE RETAINED
 - NOTIONAL ROOT ZONE (NRZ)
 - STRUCTURAL ROOT ZONE (SRZ)
 - EXISTING TREE TO BE REMOVED
 - NRZ ENCROACHMENT ZONE
 - RETAINING WALL
 - TREE PROTECTION FENCING (AS PER APPENDIX 6)
 - STORMWATER INFRASTRUCTURE

Issue	Code	Issue Description	By	Chk	Date
C	CA	FOR APPROVAL	JHG	GT	30.10.25
B	CA	FOR APPROVAL	SZ	GT	27.10.25
A	CA	FOR APPROVAL	SZ	GT	01.10.25

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PRE - Preliminary CA - Council Approval T - Tender CON - Construction

PROJECT

MOUNT DRUITT HOSPITAL

DRAWING TITLE

TREE LOCATION PLAN 01

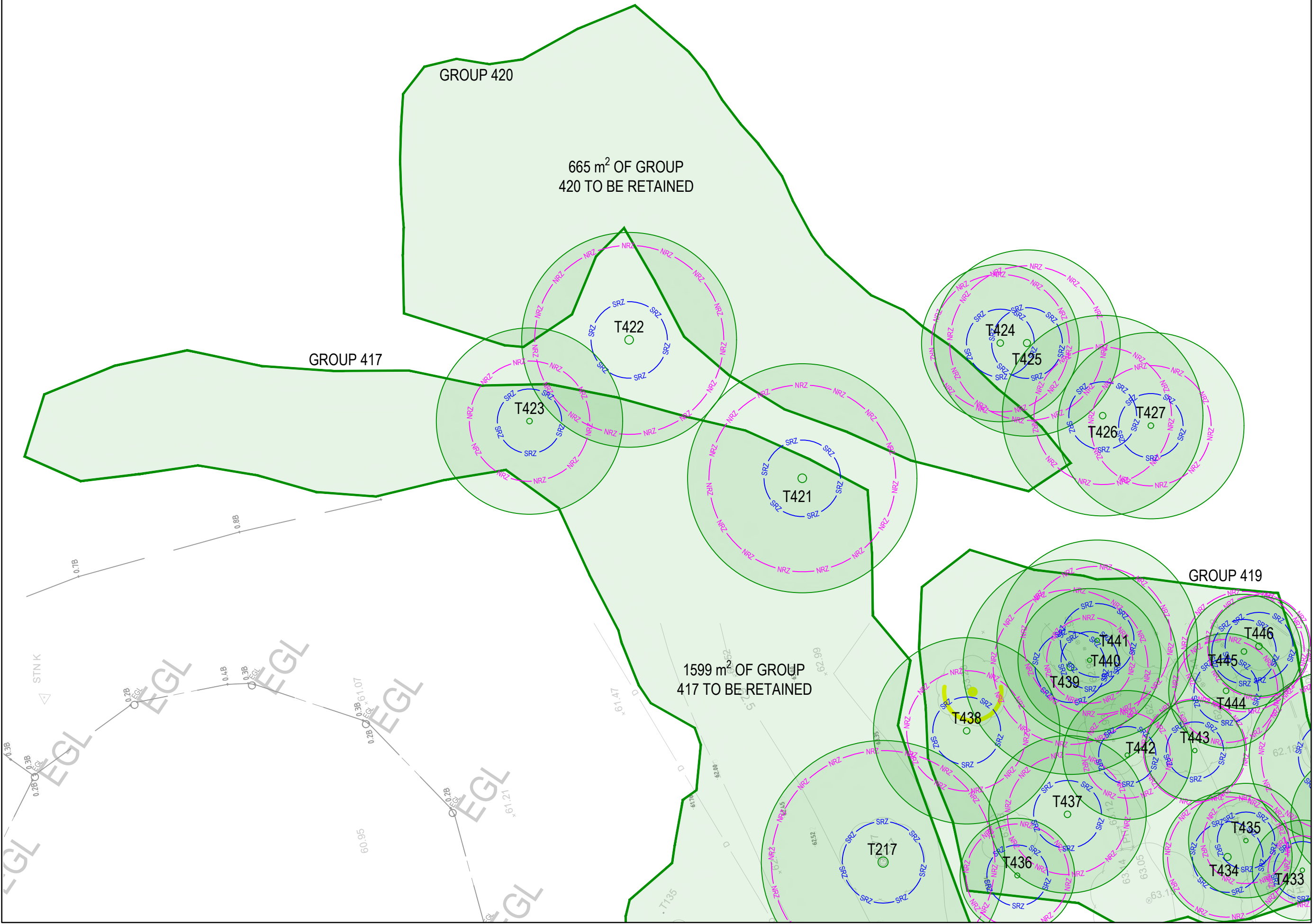
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Designed :
Project No. : H460
Bar Scale
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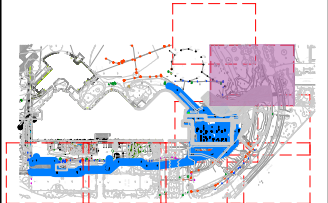
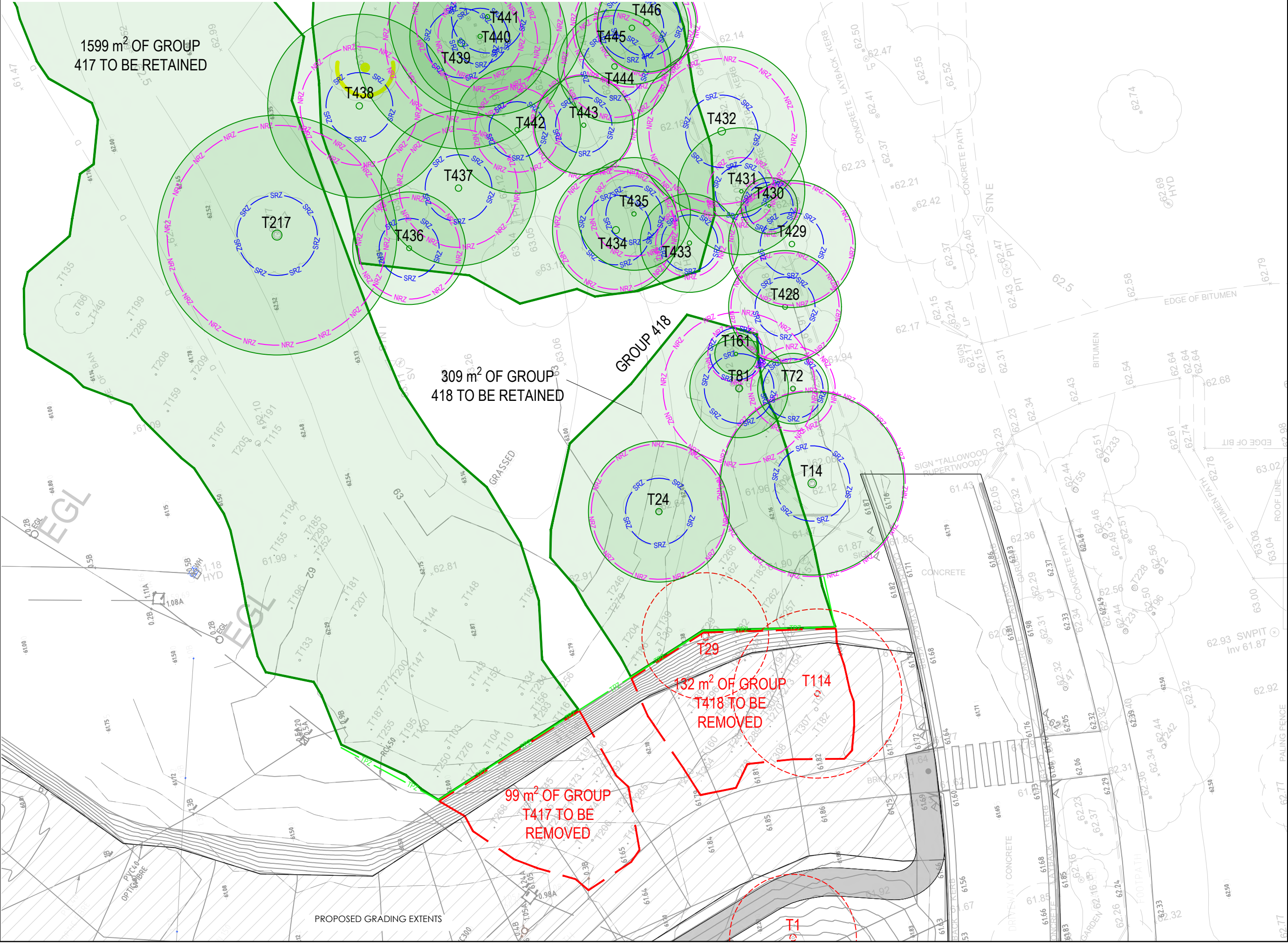
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REVISION
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APPENDIX 2 - TREE LOCATION PLAN

NOTE: MUST BE READ IN CONJUNCTION WITH ARBORICULTURAL IMPACT ASSESSMENT



LEGEND

- EXISTING TREE TO BE RETAINED
- NOTIONAL ROOT ZONE (NRZ)
- STRUCTURAL ROOT ZONE (SRZ)
- EXISTING TREE TO BE REMOVED
- NRZ ENCROACHMENT ZONE
- RETAINING WALL
- TREE PROTECTION FENCING (AS PER APPENDIX 6)
- STORMWATER INFRASTRUCTURE

Issue Code	Issue Description	By	Chk	Date
C CA	FOR APPROVAL	JHG	GT	30.10.25
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A CA	FOR APPROVAL	SZ	GT	01.10.25

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PROJECT

MOUNT DRUITT HOSPITAL

DRAWING TITLE

TREE LOCATION PLAN 02

CLIENT



Drawn : SZ
Designed :
Project No. : H460
Bar Scale
1:250 @ A3
SHEET NUMBER
H460_TLP_02
REVISION
C

NOTE: MUST BE READ IN CONJUNCTION WITH ARBORICULTURAL IMPACT ASSESSMENT

PROPOSED GRADING EXTENTS

CREATIVE**PLANNING**SOLUTIONS

 EXISTING TREE TO BE RETAINED
 NOTIONAL ROOT ZONE (NRZ)
 STRUCTURAL ROOT ZONE (SRZ)
 EXISTING TREE TO BE REMOVED
 NRZ ENCROACHMENT ZONE
 RETAINING WALL
 TREE PROTECTION FENCING
(AS PER APPENDIX 6)
 STORMWATER INFRASTRUCTURE

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**MOUNT DRUITT
HOSPITAL**

04

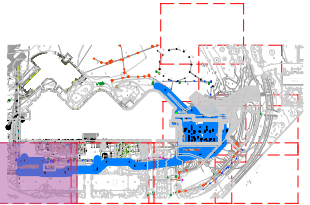


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SHEET NUMBER	REVISION
H460_TLP_04	C

APPENDIX 2 - TREE LOCATION PLAN

NOTE: MUST BE READ IN CONJUNCTION WITH ARBORICULTURAL IMPACT ASSESSMENT



LEGEND

- EXISTING TREE TO BE RETAINED
- NOTIONAL ROOT ZONE (NRZ)
- STRUCTURAL ROOT ZONE (SRZ)
- EXISTING TREE TO BE REMOVED
- NRZ ENCROACHMENT ZONE
- RETAINING WALL
- TREE PROTECTION FENCING (AS PER APPENDIX 6)
- STORMWATER INFRASTRUCTURE

Issue Code	Issue Description	By	Chk	Date
C CA	FOR APPROVAL	JHG	GT	30.10.25
B CA	FOR APPROVAL	SZ	GT	27.10.25
A CA	FOR APPROVAL	SZ	GT	01.10.25

PRE - Preliminary CA - Council Approval T - Tender CON - Construction

PROJECT

MOUNT DRUITT HOSPITAL

DRAWING TITLE

TREE LOCATION PLAN 05

CLIENT

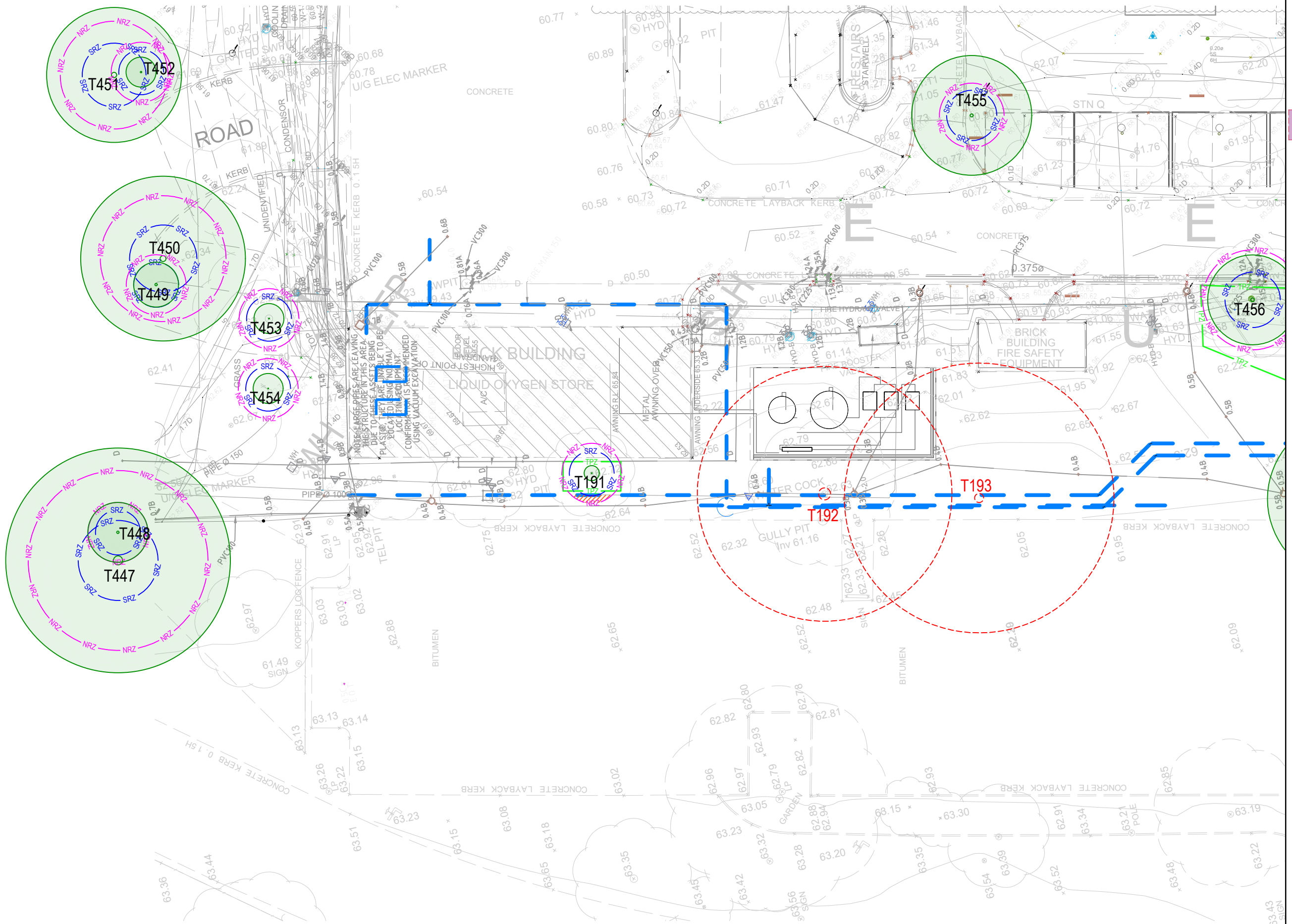


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Designed :
Project No. : H460
Bar Scale



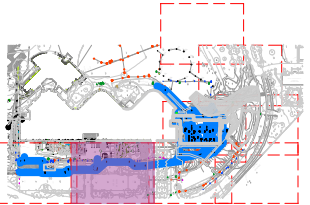
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SHEET NUMBER H460_TLP_05 REVISION C



APPENDIX 2 - TREE LOCATION PLAN

NOTE: MUST BE READ IN CONJUNCTION WITH ARBORICULTURAL IMPACT ASSESSMENT



LEGEND

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- STRUCTURAL ROOT ZONE (SRZ)
- EXISTING TREE TO BE REMOVED
- NRZ ENCROACHMENT ZONE
- RETAINING WALL
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- STORMWATER INFRASTRUCTURE

Issue Code	Issue Description	By	Chk	Date
C CA	FOR APPROVAL	JHG	GT	30.10.25
B CA	FOR APPROVAL	SZ	GT	27.10.25
A CA	FOR APPROVAL	SZ	GT	01.10.25

PRE - Preliminary CA - Council Approval T - Tender CON - Construction

PROJECT

MOUNT DRUITT HOSPITAL

DRAWING TITLE

TREE LOCATION PLAN
06

CLIENT

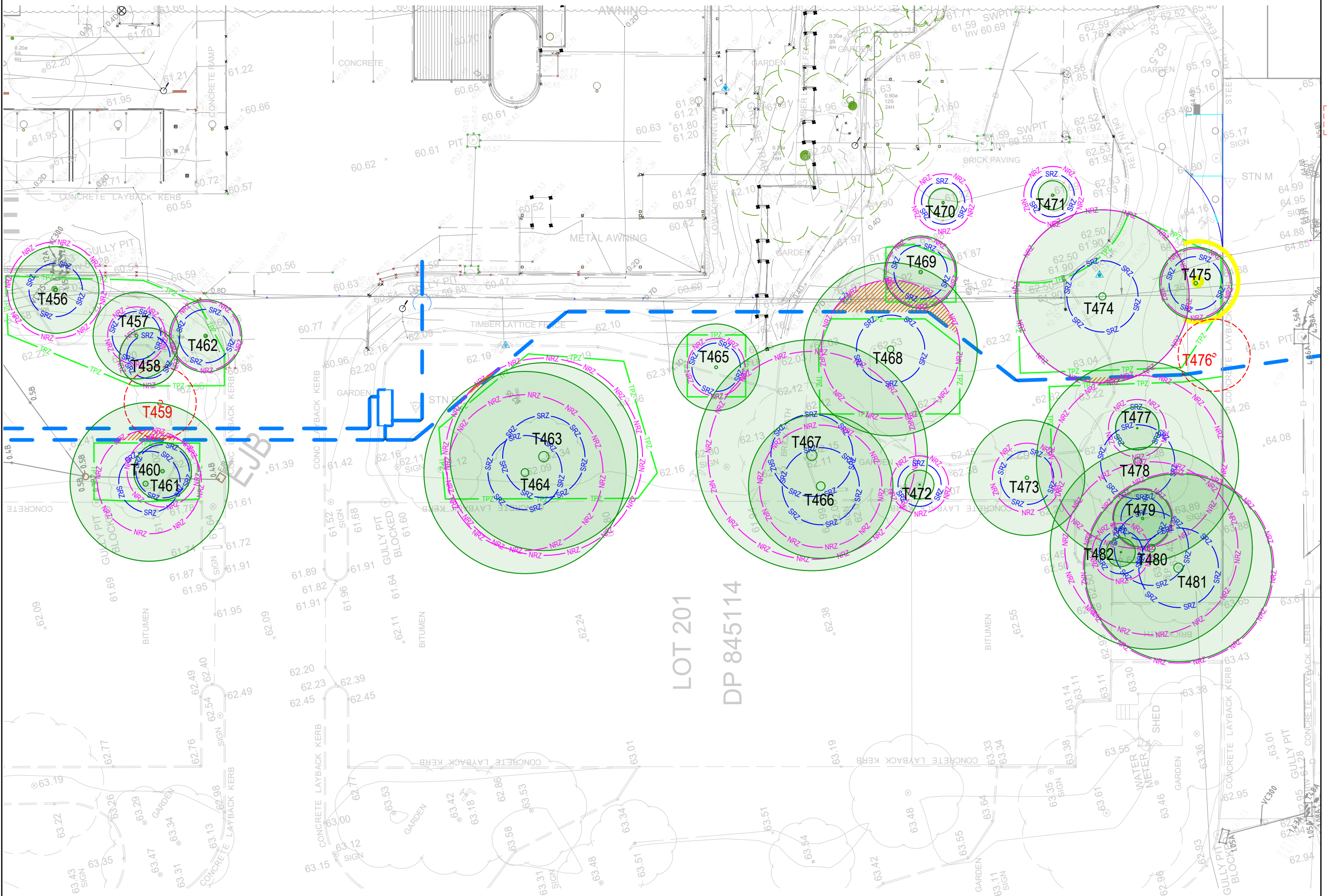


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Project No. : H460
Bar Scale

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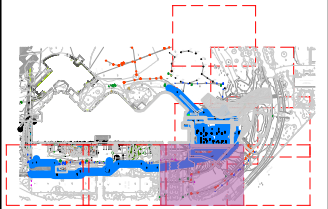
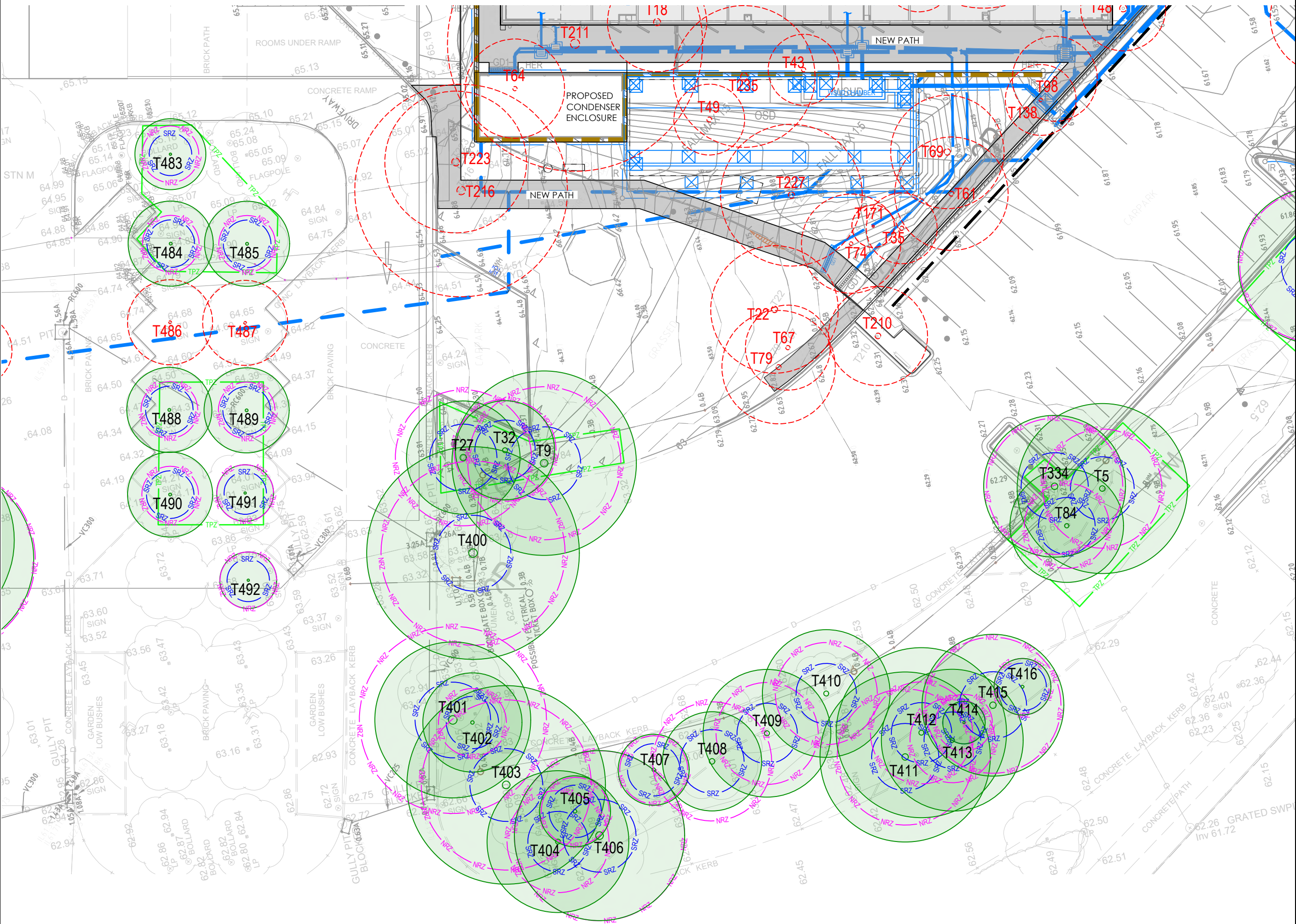
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H460_TLP_06

REVISION
C



APPENDIX 2 - TREE LOCATION PLAN

NOTE: MUST BE READ IN CONJUNCTION WITH ARBORICULTURAL IMPACT ASSESSMENT



- LEGEND
- EXISTING TREE TO BE RETAINED
 - NOTIONAL ROOT ZONE (NRZ)
 - STRUCTURAL ROOT ZONE (SRZ)
 - EXISTING TREE TO BE REMOVED
 - NRZ ENCROACHMENT ZONE
 - RETAINING WALL
 - TREE PROTECTION FENCING (AS PER APPENDIX 6)
 - STORMWATER INFRASTRUCTURE

Issue Code	Issue Description	By	Chk	Date
C CA	FOR APPROVAL	JHG	GT	30.10.25
B CA	FOR APPROVAL	SZ	GT	27.10.25
A CA	FOR APPROVAL	SZ	GT	01.10.25

PRE - Preliminary CA - Council Approval T - Tender CON - Construction
PROJECT

MOUNT DRUITT HOSPITAL

DRAWING TITLE
TREE LOCATION PLAN
07

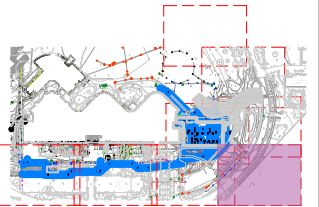
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Designed :
Project No. : H460
Bar Scale
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SHEET NUMBER
H460_TLP_07
REVISION
C

NOTE: MUST BE READ IN CONJUNCTION WITH ARBORICULTURAL IMPACT ASSESSMENT

NOTE: MUST BE READ IN CONJUNCTION WITH ARBORICULTURAL IMPACT ASSESSMENT



LEGEND

-
-  EXISTING TREE TO BE RETAINED
 NOTIONAL ROOT ZONE (NRZ)
 STRUCTURAL ROOT ZONE (SRZ)
 EXISTING TREE TO BE REMOVED
 NRZ ENCROACHMENT ZONE
 RETAINING WALL
 TREE PROTECTION FENCING
 (AS PER APPENDIX d)
 STORMWATER INFRASTRUCTURE

Issue	Code	Issue Description	By	Chk	Date
C	CA	FOR APPROVAL	JHG	GT	30.10.25
B	CA	FOR APPROVAL	SZ	GT	27.10.25
A	CA	FOR APPROVAL	SZ	GT	01.10.25

PRE - Preliminary CA - Council Approval T - Tender CON - Construction

PROJECT

**MOUNT DRUITT
HOSPITAL**

DRAFTING TITLE

TREE LOCATION PLAN
08

CLIENT



Drawn : SZ
Designed :
Project No. : H460
Bar Scale



1:250 @ A3

SHEET NUMBER
H460_TLP_08

REVISION C

APPENDIX 3

IACA Significance of a Tree, Assessment Rating System (STARS)© (IACA 2010)©

In the development of this document IACA acknowledges the contribution and original concept of the Footprint Green Tree Significance & Retention Value Matrix, developed by Footprint Green Pty Ltd in June 2001.

The landscape significance of a tree is an essential criterion to establish the importance that a particular tree may have on a site. However, rating the significance of a tree becomes subjective and difficult to ascertain in a consistent and repetitive fashion due to assessor bias. It is therefore necessary to have a rating system utilising structured qualitative criteria to assist in determining the retention value for a tree. To assist this process all definitions for terms used in the *Tree Significance - Assessment Criteria and Tree Retention Value - Priority Matrix*, are taken from the IACA Dictionary for Managing Trees in Urban Environments 2009.

This rating system will assist in the planning processes for proposed works, above and below ground where trees are to be retained on or adjacent a development site. The system uses a scale of *High*, *Medium* and *Low* significance in the landscape. Once the landscape significance of an individual tree has been defined, the retention value can be determined. An example of its use in an Arboricultural report is shown as Appendix A.

Tree Significance - Assessment Criteria



1. High Significance in landscape

- The tree is in good condition and good vigour;
- The tree has a form typical for the species;
- The tree is a remnant or is a planted locally indigenous specimen and/or is rare or uncommon in the local area or of botanical interest or of substantial age;
- The tree is listed as a Heritage Item, Threatened Species or part of an Endangered ecological community or listed on Councils significant Tree Register;
- The tree is visually prominent and visible from a considerable distance when viewed from most directions within the landscape due to its size and scale and makes a positive contribution to the local amenity;
- The tree supports social and cultural sentiments or spiritual associations, reflected by the broader population or community group or has commemorative values;
- The tree's growth is unrestricted by above and below ground influences, supporting its ability to reach dimensions typical for the taxa *in situ* - tree is appropriate to the site conditions.

2. Medium Significance in landscape

- The tree is in fair-good condition and good or low vigour;
- The tree has form typical or atypical of the species;
- The tree is a planted locally indigenous or a common species with its taxa commonly planted in the local area
- The tree is visible from surrounding properties, although not visually prominent as partially obstructed by other vegetation or buildings when viewed from the street,
- The tree provides a fair contribution to the visual character and amenity of the local area,
- The tree's growth is moderately restricted by above or below ground influences, reducing its ability to reach dimensions typical for the taxa *in situ*.

3. Low Significance in landscape

- The tree is in fair-poor condition and good or low vigour;
- The tree has form atypical of the species;
- The tree is not visible or is partly visible from surrounding properties as obstructed by other vegetation or buildings,
- The tree provides a minor contribution or has a negative impact on the visual character and amenity of the local area,
- The tree is a young specimen which may or may not have reached dimension to be protected by local Tree Preservation orders or similar protection mechanisms and can easily be replaced with a suitable specimen,
- The tree's growth is severely restricted by above or below ground influences, unlikely to reach dimensions typical for the taxa *in situ* - tree is inappropriate to the site conditions,
- The tree is listed as exempt under the provisions of the local Council Tree Preservation Order or similar protection mechanisms,
- The tree has a wound or defect that has potential to become structurally unsound.

Environmental Pest / Noxious Weed Species

- The tree is an Environmental Pest Species due to its invasiveness or poisonous/ allergenic properties,
- The tree is a declared noxious weed by legislation.

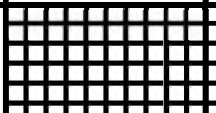
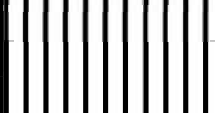
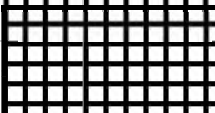
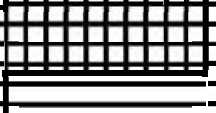
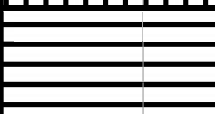
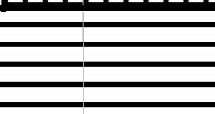
Hazardous/Irreversible Decline

- The tree is structurally unsound and/or unstable and is considered potentially dangerous,
- The tree is dead, or is in irreversible decline, or has the potential to fail or collapse in full or part in the immediate to short term.

The tree is to have a minimum of three (3) criteria in a category to be classified in that group.

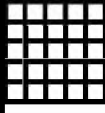
Note: The assessment criteria are for individual trees only, however, can be applied to a monocultural stand in its entirety e.g. hedge.

Table 1.0 Tree Retention Value - Priority Matrix.

		Significance				
		1. High	2. Medium	3. Low		
		Significance in Landscape	Significance in Landscape	Significance in Landscape	Environmental Pest / Noxious Weed Species	Hazardous / Irreversible Decline
Estimated Life Expectancy	1. Long >40 years					
	2. Medium 15-40 Years					
	3. Short <1-15 Years					
	Dead					

Legend for Matrix Assessment



	Priority for Retention (High) - These trees are considered important for retention and should be retained and protected. Design modification or re-location of building/s should be considered to accommodate the setbacks as prescribed by the Australian Standard AS4970 <i>Protection of trees on development sites</i> . Tree sensitive construction measures must be implemented e.g. pier and beam etc if works are to proceed within the Tree Protection Zone.
	Consider for Retention (Medium) - These trees may be retained and protected. These are considered less critical; however their retention should remain priority with removal considered only if adversely affecting the proposed building/works and all other alternatives have been considered and exhausted.
	Consider for Removal (Low) - These trees are not considered important for retention, nor require special works or design modification to be implemented for their retention.
	Priority for Removal - These trees are considered hazardous, or in irreversible decline, or weeds and should be removed irrespective of development.

USE OF THIS DOCUMENT AND REFERENCING

The IACA Significance of a Tree, Assessment Rating System (STARS) is free to use, but only in its entirety and must be cited as follows:

IACA, 2010, *IACA Significance of a Tree, Assessment Rating System (STARS)*, Institute of Australian Consulting Arboriculturists, Australia, www.iaca.org.au

REFERENCES

Australia ICOMOS Inc. 1999, *The Burra Charter – The Australian ICOMOS Charter for Places of Cultural Significance*, International Council of Monuments and Sites, www.icomos.org/australia

Draper BD and Richards PA 2009, *Dictionary for Managing Trees in Urban Environments*, Institute of Australian Consulting Arboriculturists (IACA), CSIRO Publishing, Collingwood, Victoria, Australia.

Footprint Green Pty Ltd 2001, *Footprint Green Tree Significance & Retention Value Matrix*, Avalon, NSW Australia, www.footprintgreen.com.au

IACA 2010, *IACA Significance of a Tree, Assessment Rating System (STARS)*, Institute of Australian Consulting Arboriculturists, www.iaca.org.au

The following example shows the IACA **Significance of a Tree, Assessment Rating System (STARS)** used in an Arboricultural report.

Tree Significance

Determined by using the Tree Significance - Assessment Criteria of the *IACA Significance of a Tree, Assessment Rating System (STARS)*© (IACA, 2010), Appendix B.

Trees 14, 16, 17/3, 19 and 20/4 are of high significance with the remaining majority of medium significance and a few of low significance. Tree 14 is significant as a prominent specimen and a food source for indigenous avian fauna. Tree 16 as a non-locally indigenous planting is of good form and prominent *in situ*; Tree 17/3 as a stand of 6 street trees along the Davey Street frontage screening views to and from the site and contiguous with trees in Victoria Park extending the aesthetic influence of the urban canopy to the site. Similarly for Trees 20/4 as street trees in Long Road and Tree 19 as an extant exotic planting as a senescent component of the original landscaping. The trees of low significance are recent plantings as fruit trees – Avocados, and 1 Cootamundra Wattle as a non-locally indigenous tree in irreversible decline and potentially structurally unsound.

Significance Scale

1 – High
2 – Medium
3 – Low

Significance Scale	1	2	3
Tree No. / Stand No.	14, 16, 17/3, 19, 20/4	1/1, 2, 4, 5, 6, 7, 8, 9, 10, 11, 12/2, 15, 18, 21/5	3, 13, 22

Tree Retention Value

Determined by using the Retention Value - Priority Matrix of the *IACA Significance of a Tree, Assessment Rating System (STARS)*© (IACA, 2010), Appendix B.

Retention Value

High – Priority for Retention
Medium – Consider for Retention
Low – Consider for Removal
Remove - Priority for Removal

Retention Value	High Priority for Retention	Medium Consider for Retention	Low Consider for Removal	Remove Priority for Removal
Tree No. / Stand No.	1/1, 5, 17/3*, 19	2, 4, 6, 7, 8, 9, 10, 11, 14, 15, 16, 18, 20/4*, 21/5	3, 12/2, 13,	22

* Trees located within the neighbouring property and should be retained and protected.

APPENDIX 4 - EXTRACT FROM AS4970-2025: PROTECTION OF TREES ON DEVELOPMENT SITES

Section 3 Determining protection zones

3.1 Tree Protection Zone (TPZ)

Establishing and maintaining a TPZ is the most important part of protecting trees during the onsite stages of work (e.g. site establishment, demolition, construction). The TPZ is the zone determined by the project arborist using the process set out below. It shall be shown on the TPP to be isolated or managed so that the tree remains viable.

The NRZ is the starting point for determining the TPZ, along with the considerations in [Clause 3.3.2](#). Alternatively, the TPZ may be specified by the consent authority.

3.2 Calculating the Notional Root Zone (NRZ)

The radius of the NRZ is calculated for each tree by multiplying its diameter at standard height (DSH) by 12.

$$\text{Radius of the NRZ} = \text{DSH} \times 12$$

where

DSH = trunk diameter measured at 1.4 m above ground

The radius of the NRZ is measured from the centre of the stem.

The NRZ for palms, cycads, tree ferns and the like, is not calculated but shall not be less than 2 m.

Any NRZ radius shall not be less than 2 m nor greater than 15 m. [Clause 3.3](#) details the methods to produce the TPZ based on the NRZ.

3.4 Structural Root Zone (SRZ)

The SRZ is a notional area required for tree stability. A larger area is required to maintain a viable tree.

The SRZ shall be calculated when major encroachment (greater than 20 %) into an NRZ is proposed. SRZ locations and dimensions may be included on arboriculture documentation.

Many factors affect the size of the SRZ (e.g. tree height, crown area, soil type, soil moisture). Natural or built structures, such as rocks and footings, can also influence the SRZ. An indicative SRZ radius can be determined from the trunk diameter measured immediately above the root buttress using the following formula or [Figure 2](#). Root investigation can provide more information on the extent of these roots.

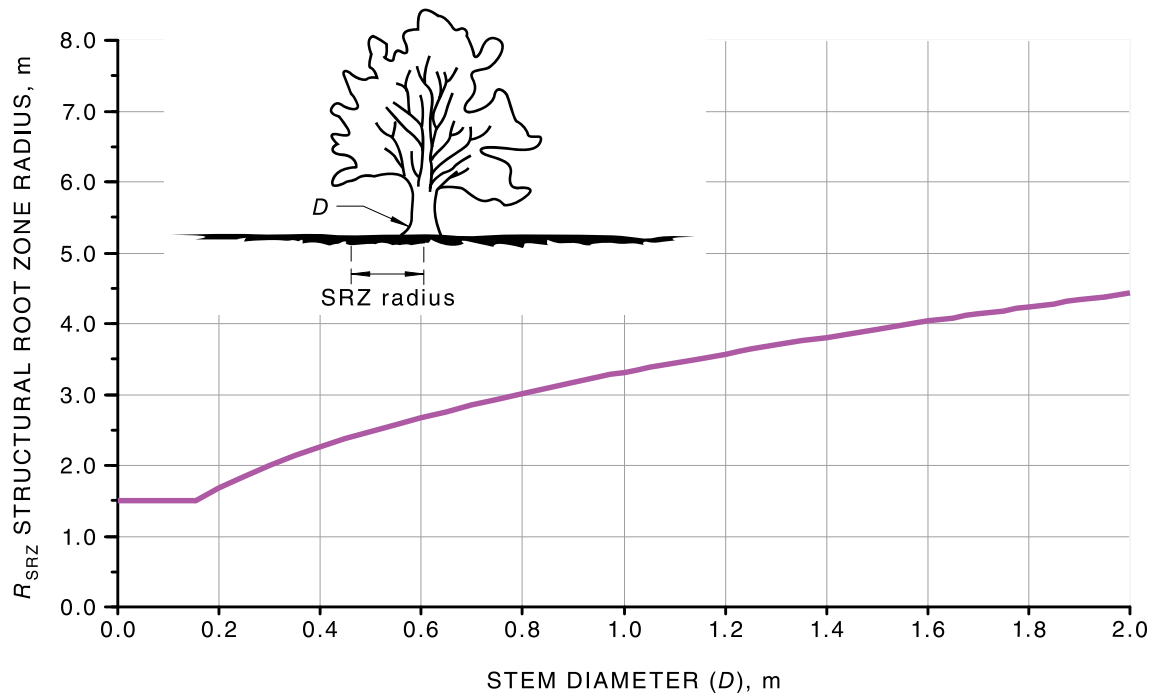
$$\text{SRZ radius} = (D \times 50)^{0.42} \times 0.64$$

where

D = trunk diameter, in m, measured above the root buttress flare.

Where the tree is multi-stemmed, the project arborist should determine if they will measure around all stems or work out the cross-sectional area, as noted in [Figure A.1](#), and provide their reasons for the method selected. The SRZ calculation does not apply to palms, cycads, tree ferns and the like.

NOTE The SRZ for trees with trunk diameters less than 0.15 m is 1.5 m, as shown in [Figure 2](#).



The curve can be expressed by the following formula:
 $R_{SRZ} = (D \times 50)^{0.42} \times 0.64$

Figure 2 — Structural Root Zone (SRZ) calculation

APPENDIX 5 – GENERAL TREE PROTECTION SPECIFICATION

1.0 Project Arborist

A Project Arborist with AQF Level 5 qualifications may be appointed prior to works commencing to ensure trees to be retained are appropriately monitored and protected throughout the proposed works. The Project Arborist shall review all tree protection measures, ensure compliance with requirements set out by the Principal Certifying Authority and provide compliance reports as per the schedule of works and responsibilities below.

Table 5 - Schedule of Works and Responsibilities

HOLD POINT	TASK	RESPONSIBILITY	CERTIFICATION	TIMING OF INSPECTION
1	Review & certification of all tree protection measures	Principal Contractor	Project Arborist (AQF5)	Prior to demolition or site establishment
2	Supervise all excavation works proposed within the TPZ	Principal Contractor	Project Arborist (AQF5)	As required prior to works proceeding within TPZ
3	Inspection of trees by Project Arborist	Principal Contractor	Project Arborist (AQF5)	Quarterly during construction
4	Final Inspection of trees by Project Arborist	Principal Contractor	Project Arborist (AQF5)	Following removal of tree protection measures prior to Occupation Certificate

2.0 Compliance

Compliance Documentation shall be prepared by the Project Arborist following each site inspection. The Compliance Documentation shall include documentary evidence of compliance with the tree protection measures and methods as outlined within this Specification. Upon the completion of the works, a final assessment of the trees shall be undertaken by the Project Arborist and future management strategies recommended.

3.0 Tree Removal

The trees to be removed shall be removed prior to the establishment of the tree protection measures. Tree removal works shall be undertaken in accordance with the *Workcover Code of Practice for the Amenity Tree Industry (1998)*. All tree removal work is to be carried out by an experienced Arborist with minimum AQF Level 3 qualifications in accordance with AS4373-2007 - Pruning of Amenity Trees, Safe Work Australia Guide for Managing Risks of Tree Trimming and Removal Work (2016) and other applicable legislation. Care should be taken to avoid damaging trees to be retained.

4.0 Tree Protection Zone

The Tree Protection Zone (TPZ) is a specified area above and below ground set aside for the protection of a tree. The TPZ should be protected to ensure development activities do not have an adverse effect on the viability and stability of trees to be retained. Activities restricted within the TPZ include:

- Soil cutting or filling, including excavation and trenching
- Soil compaction and modification
- Storage of materials and waste
- Parking of vehicles and plant
- Temporary or permanent installation of sheds, utilities and signs
- Cement or chemical preparation
- Refuelling
- Any other action leading to damage of the tree

5.0 Tree Protection Fencing

TPZ fencing shall be located at the perimeter of the TPZ. Where TPZ areas overlap, TPZ fencing may be combined to form a single larger TPZ area. The exact location of the fencing shall be confirmed through consultation between the Head Contractor/Project Manager and the Project Arborist prior to the commencement of works.

Fencing may be setback to allow for demolition/construction access only where appropriate ground protection is installed and approved by the Project Arborist.

Tree Protection Fencing shall consist of galvanised steel temporary fencing panels supported by concrete feet with panels coupled together. Care should be taken to avoid damaging the tree during the installation of the Tree Protection Fencing. Refer to Typical Tree Protection Details (**Appendix 6**).

6.0 Scaffolding

Scaffolding shall be erected outside of the TPZ. If scaffolding is deemed essential within the TPZ, the ground shall be protected, and branch removal minimised. Ground below scaffolding shall be protected by boarding placed over a layer of mulch to prevent soil compaction. Scaffolding shall be designed to avoid branches or branches tied back. Refer to Typical Tree Protection Details (**Appendix 6**).

7.0 Ground Protection

Where deemed necessary by the Project Arborist, temporary ground protection, such as ground mats or steel road plates placed over a mulch layer with geotextile fabric underneath, shall be utilised to prevent damage to tree roots during construction. Refer to Typical Tree Protection Details (**Appendix 6**).

8.0 Trunk Protection

Trunk protection shall be installed by wrapping padding around the trunk and first order branches to a minimum height of 2m. Timber battens (90 x 45mm) spaced at 150mm centres shall be strapped together and placed over the padding. Timber battens must not be fixed to the trees. Refer to Typical Tree Protection Details (**Appendix 6**).

9.0 Works within the Tree Protection Zones

The Principal Certifying Authority may approve works within Tree Protection Zones. The Project Arborist shall ensure compliance with the prescribed requirements as set out by the Principal Certifying Authority to ensure trees nominated for retention are adequately retained and protected throughout the works.

10.0 Structure & Pavement Demolition

Demolition of existing structures/pavement within the TPZ shall be supervised by the Project Arborist. Machinery is to be excluded from the TPZ unless operating from the existing slabs, pavements or areas of ground protection.

Pavement is to be shattered with a hand-operated pneumatic/electric breaker prior to removal taking place and carefully lifted to minimise damage to the underlying soil profile and tree roots. The underlying soil profile and existing sub-base materials shall remain in-situ.

When removing slab sections within TPZ, machinery shall work backwards out of the TPZ to ensure machinery remains on un-demolished sections of slab at all times. Machinery should not contact the tree's roots, trunk, branches and crown.

Exposed roots shall be irrigated by hand and covered with a 75-100mm layer of mulch as soon as possible after being exposed. The mulch must remain in place until new surfaces are put into place.

11.0 Underground Services

The installation of underground services shall be located outside of the TPZ. Where this is not possible, they shall be installed using in a root-sensitive manner utilising manual hand excavation methods or employ a pneumatic excavation device to ensure roots are maintained and undamaged under supervision of the Project Arborist. Services are to be threaded in between and/or under to preserve existing roots.

13.0 Excavations, Root Protection & Root Pruning

Excavation required within the TPZ shall be undertaken using non-motorised hand tools or a pneumatic excavation device under supervision of the Project Arborist. Excavation must be undertaken in a root sensitive manner to ensure roots are maintained and un-damaged. Should significant roots be identified (>25mmØ) during construction, works are to cease and direction sought from the Project Arborist with regards to root pruning, modification of construction methodology or design alteration.

APPENDIX 6 - TYPICAL TREE PROTECTION DETAILS

