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ARBORICULTURAL IMPACT ASSESSMENT

Bonnyrigg Living Communities Project
Subdivision Stages 1 & 2. Bonnyrigg NSW 2177

Prepared for: Paul Parfenow
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LGA: Fairfield City Council
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QTRA Registered User

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APPENDICIES

1 EXECUTIVE SUMMARY

This Arboricultural Impact Assessment was commissioned by Paul Parfenow of Land & Housing Corporation on the 7th of August 2020. The report relates to four-hundred and sixty-one (461) trees located on and adjacent to land associated with a new residential subdivision within the suburb of Bonnyrigg. The report provides an evaluation of the likely impact to existing trees as a result of proposed demolition, site regrading, roadway & footpath reconfiguration and services infrastructure works associated with subdivision stages 1-2 of the Bonnyrigg Living Communities Project.

Should the development proceed in its current form, the following is recommended:

Removal of three-hundred and twenty-three (323) trees, including:

- Seventy (70) trees of '***High***' retention value due to falling within the footprint of proposed roadway corridors, footpaths, retaining walls and trunk drainage lines or for unsustainable levels of incursion to the TPZ as a result of the proposed works;

- One-hundred and nineteen (119) trees of '***Medium***' retention value due to falling within the footprint of proposed roadway corridors, footpaths, retaining walls and trunk drainage lines or for unsustainable levels of incursion to the TPZ as a result of the proposed works;

- One-hundred and twenty-four (124) trees of '***Low***' retention value due to falling within the footprint of proposed roadway corridors, footpaths, retaining walls and trunk drainage lines or for unsustainable levels of incursion to the TPZ as a result of the proposed works, and;

- Ten (10) trees which are dead or in severe decline which have marked as '***Consider Removal***'.

Retention and protection of one-hundred and thirty-eight (138) trees, including:

- Eleven (11) trees of '***Low***', '***Medium***' and '***High***' retention value which are to be subject to minor (<10%) and sustainable levels of incursion to the TPZ;

- Eighteen (18) trees of '***Low***', '***Medium***' and '***High***' retention value which are to be subject to major (>10%) levels of incursion to the TPZ – requiring further consideration at the detail design stage of the project, and;

- One-hundred and nine (109) trees of '***Low***', '***Medium***' and '***High***' retention value which are located away from the proposed works and are unlikely to be to subject any incursion to the TPZ;

Tree protection measures in accordance with ***Appendix 5*** will be required for those trees outside of the development area which are to be retained to ensure no inadvertent impacts are sustained from construction related activities.

Replacement planting as per ***Section 7.3*** should be considered to compensate for any loss of amenity or impact to landscape character resulting from the proposed tree removal.

2 INTRODUCTION

2.1 Background

This Arboricultural Impact Assessment (AIA) was commissioned by Paul Parfenow of Land & Housing Corporation on the 7th of August 2020 to evaluate the potential impacts that proposed redevelopment works will have on existing trees located on and adjacent to land associated with a new residential subdivision within the suburb of Bonnyrigg, NSW (refer to ***Figure 1***).

Accordingly, the purpose of this report is to assess the potential impact of the proposed site redevelopment 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 as well as replacement planting to compensate for any tree removals.

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 aim to provide guidance as to those trees requiring removal, retention or protection in accordance with the provisions of *AS4970-2009 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;
- Provide guidance and recommendations for any replacement planting necessary.

No aerial inspection, root mapping or internal diagnostic testing has 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

The Arboricultural Impact Assessment Report has considered the following regulatory documents:

- *State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017*
- *Fairfield Local Environmental Plan 2013 (FLEP 2013)*
- *Fairfield Development Control Plan 2013 (FDCP 2013)*
- *Greater Sydney Regional Strategic Weed Management Plan 2017-2022 (GSRSWMP)*

2.4 Documentation Received

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

Document Description	Author	Revision No. / Date
Detail Survey	Premise	No date
Subdivision Plans	Premise	S / 17.08.2020
Civil Engineering Plans	J. Wyndham Prince	A / 28.08.2020
Water & Sewer Concept Plans	ADW Johnson	A / 27.08.2020
Electrical Concept Plans	Power Solutions	C / 26.08.2020
Telecommunications Concept Plans	Design IT Telco	B.01 / 20.08.2020

Care has been taken to obtain all 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 this become available impacts may be subject to change.

2.5 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.

It is noted that a number of shrub species were observed on site however have not been considered as part of this assessment due to their size or significance not being considered to fall within the definition of a 'tree'.

2.6 The Site

The site area subject to this assessment is approximately 13.58-hectares in size and consists of a mix of existing private and publicly owned residential dwellings within an existing public housing estate in Bonnyrigg NSW. The site is defined by a series of roadway corridors and is bound by Edensor Road to the North, Humphries Road to the East and Cabramatta Road to the South. A series of recently completed subdivision stages are located to the sites West (refer to ***Figure 1*** below).

2.7 Proposed Development

The proposed development is for the demolition of the majority of the publicly owned dwellings and establishment of a new subdivision representing Stages 1-2 of the Bonnyrigg Living Communities Project. In addition to the demolition of existing site structures, the proposed works will include extensive site regrading, roadway & footpath reconfiguration and services infrastructure works (refer to ***Figure 2*** below).

Figure 1 *- Aerial image indicating subject site (highlighted yellow)*

Figure 2 *– Proposed Subdivision Plan extract showing the proposed layout of new roadways, allotments and open space areas.*

3 METHODOLOGY

3.1 Methodology

3.1.1 Site Inspection

Site inspections were carried out by the author with the subject trees and the general growing environment evaluated on the 11th and 12th of August 2020. The weather at the time of inspections was sunny/overcast and mostly dry with good visibility.

The subject trees were inspected visually from ground level 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);
- 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;
- Structure & 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;
- Safe Useful Life Expectancy (SULE).

3.1.2 Safe Useful Life Expectancy (SULE)

The remaining Safe 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 SULE of each tree is shown in ***Appendix 1***.

The following ranges have been allocated to each tree:

- Long SULE: Trees that appear to be retainable with an acceptable level of risk for > 40 years.
- Medium SULE: Trees that appear to be retainable with an acceptable level of risk for 15 to 40 years.
- Short SULE: Trees that appear to be retainable with an acceptable level of risk for 5–15 years.
- Remove: Trees with a high level of risk that would need removing within the next 5 years.
- Small, Young or Regularly Pruned.

3.1.3 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).

3.1.4 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

3.1.5 AS4970-2009 Protection of Trees on Development Sites

The Australian Standard, *AS4970-2009-'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 *AS4970-2009*.

3.1.6 Tree Protection Zones

The assessed trees have been allocated Tree Protection Zones (TPZ). The Australian Standard, *AS4970-2009-'Protection of trees on development sites'*, has been used as a guide in the allocation of TPZs for the assessed trees. The TPZ is calculated based on trunk (stem) diameter at breast height (DBH), measured at 1.4 metres above ground level. The radius of the TPZ is calculated by multiplying the trees DBH by 12. The method provides a TPZ that addresses health and growing requirements of a tree as well as the trees stability. TPZ distances are measured as a radius from the centre of the trunk at (or near) ground level. The maximum TPZ should be no more than 15m radius and the minimum TPZ should be no less than 2m radius.

An extract of the *AS4970-2009* for calculating TPZ has been provided at ***Appendix 4*** for reference.

4 OBSERVATIONS

4.1 General

The site area subject to this assessment was observed as highly disturbed with no understorey species present. Species observed varied including exotic, native and locally indigenous species. Trees varied from juvenile saplings to mature and over-mature age classes with health, vigour and condition also wide-ranging. Root zones of assessed trees were generally observed as modified groundcover within deep soil areas.

4.2 Tree Preservation Order

Chapter 3.2 – *Preservation of Trees or Vegetation* of the Fairfield Development Control Plan (DCP) 2013 applies to all land within the Fairfield City Council Local Government Area. The provisions included within the DCP generally protect any tree or that corresponds with the following criteria:

A perennial plant with a self-supporting stem, which:

a) has a height of more than 4 metres if located on land other than land shown on the Fairfield LEP 2013 Riparian land and Waterways Map or 1 metre if located on such land; or
b) has a spread of more than 3 metres if located on land other than land shown on the Fairfield LEP 2013 Riparian land and Waterways Map or 0.5 metres if located on such land; or
c) has a trunk diameter of more than 75mm measured 1 metre above ground level if located on land other than land shown on the Fairfield LEP 2013 Riparian land and Waterways Map or 20mm if located on such land, and is also of a species which has a mature height of more than 4m; or
d) is listed in Council's Significant Tree Register but excludes any tree declared under the *Biosecurity Act* 2015.

4.3 The Trees

A total of four-hundred and sixty-one (461) trees were observed within the area surveyed as part of this assessment. A breakdown of the species identified as been provided within ***Figure 3*** whilst ***Figure 4*** provides a visual representation of the proportion of Retention Values of those tress assessed. 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***.

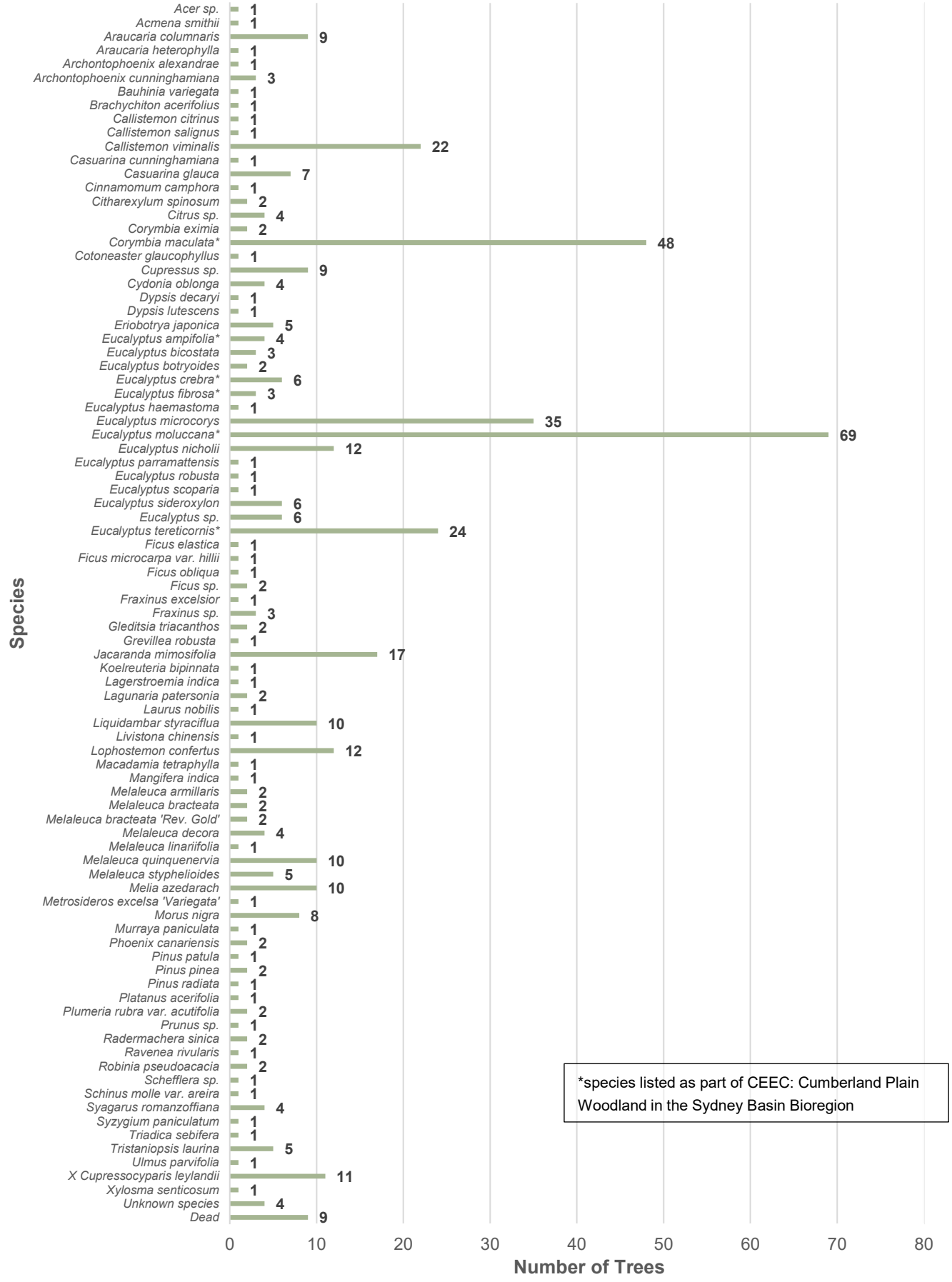

Figure 3 *– Tree species & number identified*

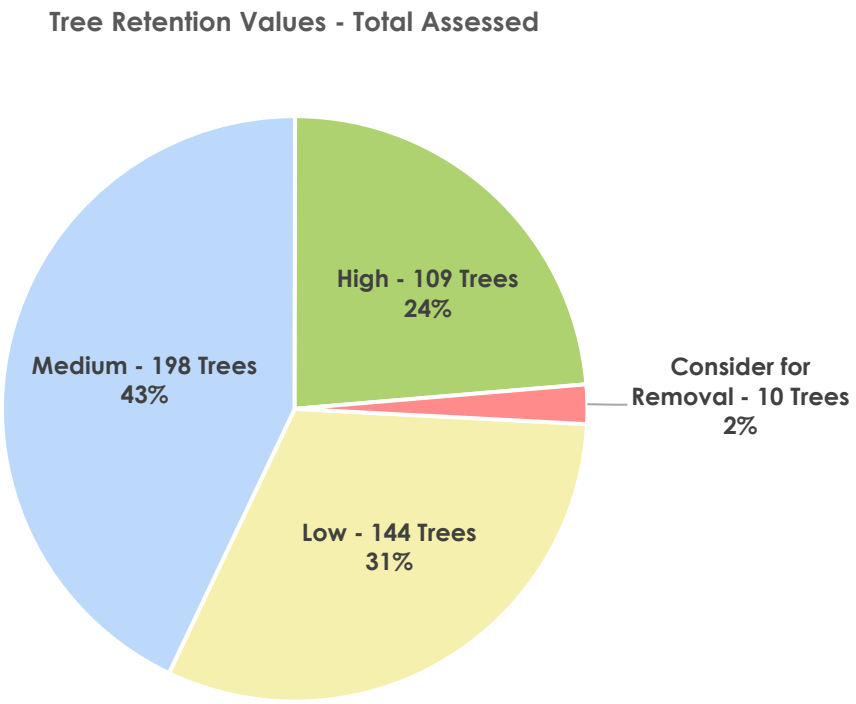

Figure 4 *– Breakdown of retention values for those trees assessed*

4.4 Threatened Species & Ecological Communities

It is noted that a number of the trees identified as part of this survey are of a species consistent with the locally relevant Critically Endangered Ecological Community (CEEC): *Cumberland Plain Woodland in the Sydney Basin Bioregion*. This community being listed under the provisions of the *Threatened Species Conservation Act 1995* (NSW) and the *Environmental Protection and Biodiversity Conservation Act 1999*.

Whilst acknowledging that CPS are not qualified in the field of Ecology, it is estimated that the majority of the trees assessed as part of this survey are planted specimens and are unlikely to form part of any remnant vegetation. This estimation has been based open the regularity of tree locations adjacent to established roadways and property boundaries as well as the generally reduced size of tree specimens observed.

4.5 Tree Ownership

The position of trees assessed fell within setbacks of public housing allotments, private properties, roadway verges and public open spaces. Facilitation of the proposed works would necessitate removal of trees within all of the above locations and would require co-operation of all land owners as well as the Fairfield City Council. The implications of non-cooperation would require legal interpretation and are beyond the scope of this report.

5 DISCUSSION

5.1 Impact Assessment

The impact assessment is to estimate the incursions to the root zones as a result of the proposed demolition and construction works and evaluate the likely impact of the proposed works on the subject trees. A summary of the impacts anticipated are contained within the Tree Schedule at ***Appendix 1***. Additionally, plans indicating those trees to be removed and retained as part of the proposal 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;
- Tree Protection Zones (TPZ);
- Footprint of the proposed development (incl. stormwater and services) and temporary structures (scaffolding, hoardings etc.);
- Incursions to the TPZ, including estimated cut & fill;
- Species tolerance to disturbance; and
- Assessment of the likely impact of the works on existing trees.

5.2 Trees Recommended for Removal

Based on the plans supplied, should the proposed works proceed in their current form it is recommended that three-hundred and twenty-three (323) trees be removed.

Removals have been recommended based upon locations within the footprint of the proposed roadway corridors, footpaths, retaining walls and trunk drainage lines as well as unsustainable levels of incursion to the TPZ from ground level modifications as detailed below in **Table 1**.

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

Table 1 *- Documentation received and reviewed as part of Arboricultural Impact Assessment:*

Development Impact	Trees Recommended for Removal				
	High Retention Value	Medium Retention Value	Low Retention Value	Consider Removal	Total Number of Trees
Within footprint of proposed roadway / footpath	123, 200, 245, 261	143, 149, 150, 166, 167, 168, 192, 193, 198, 231, 242, 243, 244, 246, 258, 260, 364, 381	134, 135, 141, 142, 144, 148, 164, 165, 170, 171, 173, 174, 221, 262, 263, 365, 366, 367, 368, 369, 371, 372, 373, 374, 375, 376, 380, 382	-	**50**
Within footprint of proposed retaining wall / trunk drainage line	122, 446	56, 75, 95, 313	157, 188, 215, 255, 284, 285, 315	-	**13**

Development Impact	Trees Recommended for Removal				
	High Retention Value	Medium Retention Value	Low Retention Value	Consider Removal	Total Number of Trees
Major TPZ incursion from proposed regrading works	26, 31, 32, 33, 48, 71, 77, 89, 90, 99, 100, 101, 106, 108, 118, 120, 121, 128, 132, 146, 172, 186, 224, 225, 226, 227, 228, 229, 230, 251, 252, 254, 264, 267, 287, 290, 292, 300, 301, 302, 305, 306, 307, 308, 309, 363, 385, 395, 411, 430	20, 24, 25, 30, 40, 41, 43, 44, 45, 46, 50, 52, 58, 59, 61, 63, 64, 65, 66, 67, 69, 70, 73, 74, 76, 79, 88, 91, 96, 97, 103, 105, 107, 109, 113, 114, 119, 133, 136, 139, 145, 147, 155, 156, 158, 159, 160, 161, 162, 180, 181, 187, 191, 195, 196, 197, 199, 204, 205, 209, 216, 220, 234, 235, 248, 249, 256, 257, 259, 289, 293, 294, 312, 314, 361, 362, 370, 377, 378, 383, 384, 386, 389, 390, 391, 392, 396, 397, 398, 399, 409, 410, 460	27, 28, 29, 34, 35, 36, 37, 38, 39, 42, 47, 49, 51, 53, 54, 57, 60, 68, 72, 78, 80, 85, 86, 87, 92, 93, 94, 98, 102, 104, 115, 116, 117, 137, 138, 140, 176, 182, 183, 184, 185, 194, 202, 203, 211, 212, 217, 219, 222, 223, 232, 233, 250, 261, 265, 266, 277, 278, 279, 280, 281, 286, 288, 291, 295, 296, 297, 298, 299, 310, 321, 393, 400, 424, 426, 459	-	**219**
Major TPZ incursion from proposed roadway	124, 247	379	-	-	**3**
Major TPZ incursion from proposed retaining wall / trunk drainage line	81, 125, 127, 131, 152, 153, 154, 268, 282, 283, 303, 304,	22, 23, 130, 169, 236, 269, 340, 341	129, 177, 238, 240, 241, 311, 337	151	**28**
Major TPZ incursion from proposed substation	-	-	163	-	**1**

Development Impact	Trees Recommended for Removal				
	High Retention Value	Medium Retention Value	Low Retention Value	Consider Removal	Total Number of Trees
Nil – Dead Tree	-	-	-	112, 253, 324, 327, 387, 388, 425, 427, 428	**9**

5.2.1 Trees Recommended for Removal - Retention Values

The proposed development works will necessitate the removal of seventy (70) trees of '***High***' retention value, one-hundred and nineteen (119) trees of '***Medium***' retention value, one-hundred and twenty-four (124) trees of '***Low***' retention value and ten (10) trees marked as '***Consider Removal***'. The removal of these trees is expected to result in a moderate impact to the amenity of the surrounding landscape setting however this is considered capable of being offset pending implementation of the replacement planting as part of future site redevelopment works and as per the recommendations provided within ***Section 7***.

5.3 Trees Recommended for Retention & Protection

Should the proposed works proceed in their current form, it is recommended that one-hundred and twenty (120) trees be retained and protected given the proposed works are unlikely to result in any significant impact to their long-term health and viability. A further eighteen (18) trees have been noted as having a possibility for retention pending further detailed design associated with utility infrastructure and site regrading works.

Refer to ***Appendix 2*** for a plan indicating the location of trees that are to be retained and protected (marked green) and trees that have a possibility for retention (marked orange).

5.3.1 Minor Impact – Retention Recommended

As per *AS4970-2009 Protection of trees on development sites*, the proposed development works will impose 'Minor' (<10%) incursions to the TPZ of eleven (11) trees as a result of proposed retaining walls, utility infrastructure and regrading works. This includes **Trees 8, 9, 14, 16, 17, 126, 210, 330, 343, 345** & **431**. Retention of these trees is considered achievable subject to installation of protection measures as outlined within ***Appendix 5***.

5.3.2 Major Impact – Retention Possible

As per *AS4970-2009 Protection of trees on development sites*, the proposed development works will also result in 'Major' (>10%) incursions to the TPZ of an additional eighteen (18) trees as a result of proposed utility infrastructure and regrading works. This includes **Trees 4, 11, 55, 62, 84, 175 189, 190, 201, 270, 271, 272, 274, 275, 276, 326, 334** & **342**. Retention of these trees is considered possible in the interim however this will need to be revisited during future design development for construction once more detailed information becomes available.

5.3.3 Trees Unaffected by the Proposed Development

Based on the plans supplied and referenced above, the proposed works are unlikely to result in any impact to one-hundred and nine (109) trees which are located on non-developed lots and within road verge areas to the perimeter of the site. This includes **Trees 1, 2, 3, 5-10, 12, 13, 15, 18, 19, 21, 82, 83, 110, 111, 178, 179, 206, 207, 208, 213, 214, 218, 237, 239, 273, 316-320, 322, 323, 325, 328, 329, 331, 332, 333, 335, 336, 338, 339, 344, 346-360, 394, 401-408, 412-423, 429, 432-445,** & **447-458.** Retention of these trees is considered achievable subject to installation of protection measures as outlined within ***Appendix 5***.

5.4 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 and supervision as part of the construction process.

6 CONCLUSION

6.1 Proposed Development Impact

Based on the plans and information supplied, should the development proceed in its current form the proposal would result in the following impacts to existing trees on site:

Removal of three-hundred and twenty-three (323) trees, including:

- Seventy (70) trees of '***High***' retention value due to falling within the footprint of proposed roadway corridors, footpaths, retaining walls and trunk drainage lines or for unsustainable levels of incursion to the TPZ as a result of the proposed works;

- One-hundred and nineteen (119) trees of '***Medium***' retention value due to falling within the footprint of proposed roadway corridors, footpaths, retaining walls and trunk drainage lines or for unsustainable levels of incursion to the TPZ as a result of the proposed works;

- One-hundred and twenty-four (124) trees of '***Low***' retention value due to falling within the footprint of proposed roadway corridors, footpaths, retaining walls and trunk drainage lines or for unsustainable levels of incursion to the TPZ as a result of the proposed works, and;

- Ten (10) trees which are dead or in severe decline which have marked as '***Consider Removal***'.

Retention and protection of one-hundred and thirty-eight (138) trees, including:

- Eleven (11) trees of '***Low***', '***Medium***' and '***High***' retention value which are to be subject to minor and sustainable levels of incursion to the TPZ;

- Eighteen (18) trees of '***Low***', '***Medium***' and '***High***' retention value which are to be subject to major levels of incursion to the TPZ – requiring further consideration at the detail design stage of the project, and;

- One-hundred and nine (109) trees of '***Low***', '***Medium***' and '***High***' retention value which are located away from the proposed works and are unlikely to be to subject any incursion to the TPZ;

Tree protection measures in accordance with ***Appendix 5*** will be required for those trees outside of the development area which are to be retained to ensure no inadvertent impacts are sustained from construction related activities.

Replacement planting as per ***Section 7.3*** should be considered to compensate for any loss of amenity or impact to landscape character resulting from the proposed tree removal.

7 RECOMMENDATIONS

7.1 Tree Removals

Remove **Trees 20, 22-54, 56-61, 63-81, 85-109, 112-125, 127-174, 176, 177, 180-188, 191-200, 202-205, 209, 211, 212, 215, 216, 217, 219-236, 238, 240-269, 277-315, 321, 324, 327, 337, 340, 341, 361-393, 395, 395-400, 409, 410, 411, 424-428, 430, 446, 459, 460** & **461** (323 trees) to facilitate the proposed development works.

Development consent and relevant approvals must be obtained from Fairfield City Council prior to the removal or pruning of any tree protected under *Chapter 3.2 – Preservation of Trees or Vegetation* of the Fairfield Development Control Plan 2013.

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 1-19, 21, 55, 62, 82, 83, 84, 110, 111, 126, 175, 178, 179, 189, 190, 201, 206, 207, 208, 210, 213, 214, 218, 237, 239, 270-276, 316-320, 322, 323, 325, 326, 328-336, 338, 339, 342-360, 394, 401-408, 412-423, 429, 431-445,** & **447-458** (138 trees) in accordance with the Tree Location Plan & Tree Protection Specification held at ***Appendix 2 & 5***, *AS497-2009 Protection of trees on development sites*.

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 demolition or construction 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 tree during construction works. The Project Arborist is to supervise and monitor any excavation, machine trenching or compacted fill placement within the TPZ of throughout construction.

7.3 Review of Tree Retention

The suitability of retaining **Trees 4, 11, 55, 62, 84, 175, 189, 190, 201, 270, 271, 272, 274, 275, 276, 326, 334** & **342** should be reviewed as part of the design development stage as more detailed information becomes available to interpret and assess the anticipated level of impact. Assessment of tree retention suitability should be carried out by an Arborist with AQF Level 5 qualifications. Should retention not be achievable, consent from Council may be required prior to any tree removals taking place.

7.4 Replacement Planting

In order to compensate for loss of amenity resulting from the removal of trees, replacement planting should be provided at a ratio of 1:1. This will ensure there is no incremental loss of canopy cover within the developed area and the value of the landscaped setting is maintained in the long term.

Accordingly, three-hundred and twenty-three (323) large growing (15m+), locally endemic compensatory canopy tree plantings should be provided within the open space and street verge areas associated with the development. Proposed plantings should be indicated within the landscape documentation to be prepared as part of the development works with specimens provided at a minimum 300mm pot size. The following species should be considered for replacement planting:

- *Eucalyptus eugenioides* (Thin-leaved Stringybark)

- *Eucalyptus crebra* (Narrow-leaved Ironbark)

- *Eucalyptus fibrosa* (Red Ironbark)

- *Eucalyptus moluccana* (Grey Box)

- *Eucalyptus tereticornis* (Forest Red Gum)

Should you have any queries in relation to the information presented in this Assessment, please do not hesitate to contact me.

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B.LArch (Hons)
4th November 2020

Registered User

8 REFERENCES

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APPENDIX 1: TREE ASSESSMENT DATA - Bonnyrigg Subdivision Stages 1 & 2

Overall Tree No.	*Genus & species* Common Name	Height (m)	Crown Spread (m)	DBH (mm)	TPZ Radius (m)	Age Class	Health / Vitality	Structure/ Condition	SULE Rating	Landscape Significance	Retention Value	Development Impact	Retain / Remove	Comments
1	***Jacaranda mimosifolia*** Jacaranda	4	4	2 x 100	2.00	SM	Average	Poor	Short 5-15yrs	Low	Low	No additonal incursion to TPZ	Retain & Protect	Street tree
2	***Jacaranda mimosifolia*** Jacaranda	3	2	2 x 50	2.00	SM	Fair	Poor	Short 5-15yrs	Low	Low	No additonal incursion to TPZ	Retain & Protect	Street tree
3	***Jacaranda mimosifolia*** Jacaranda	4	3	150, 50	2.00	SM	Fair	Fair	Short 5-15yrs	Low	Low	No additonal incursion to TPZ	Retain & Protect	Street tree
4	***Eucalyptus moluccana*** Grey Box	18	10	1300	15.00	M	Average	Poor	Medium 15-40yrs	High	High	Major TPZ incursion from utility & regrading works	Possibility for Retention	Street tree. Mulitple included, co-dominant stems. Large cavity north side with internal decay
5	***Eucalyptus fibrosa*** Red Ironbark	8	5	200, 100	2.64	SM	Average	Average	Medium 15-40yrs	Low	Medium	No additonal incursion to TPZ	Retain & Protect	Street tree
6	***Eucalyptus amplifolia*** Cabbage Gum	7	6	150, 100	2.16	SM	Fair	Poor	Short 5-15yrs	Low	Medium	No additonal incursion to TPZ	Retain & Protect	Street tree. Co-dominant stems included stems @ 1m. Mechanical damage
7	***Eucalyptus microcorys*** Tallowwood	8	6	200	2.40	SM	Fair	Good	Long 40yrs +	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Street tree
8	***Corymbia maculata*** Spotted Gum	15	9	450	5.40	M	Good	Good	Long 40yrs +	High	High	Minor TPZ incursion from utility & regrading works	Retain & Protect	Street tree
9	***Eucalyptus microcorys*** Tallowwood	12	80	380	4.56	M	Average	Average	Medium 15-40yrs	Medium	Medium	Minor TPZ incursion from utility installation works	Retain & Protect	Street tree
10	***Eucalyptus fibrosa*** Red Ironbark	11	5	300	3.60	M	Fair	Average	Medium 15-40yrs	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Street tree
11	***Eucalyptus moluccana*** Grey Box	16	12	1600	15.00	M	Fair	Fair	Long 40yrs +	High	High	Major TPZ incursion from utility & regrading works	Possibility for Retention	Street tree. Multiple cankers around main stem + past pruning events for road clearance
12	***Eucalyptus fibrosa*** Red Ironbark	8	4	180	2.16	SM	Average	Good	Long 40yrs +	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Street tree
13	***Eucalyptus microcorys*** Tallowwood	8	7	250	3.00	M	Average	Average	Long 40yrs +	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Street tree
14	***Eucalyptus moluccana*** Grey Box	18	8	420, 180	5.52	M	Average	Average	Long 40yrs +	Medium	Medium	Minor TPZ incursion from utility & regrading works	Retain & Protect	Street tree. Included co-dominant stems. Mistletoe failed stem at base
15	***Eucalyptus amplifolia*** Cabbage Gum	7	4	2 x 90	2.00	SM	Fair	Fair	Medium 15-40yrs	Low	Medium	No additonal incursion to TPZ	Retain & Protect	Street tree. Included stems at 1m
16	***Corymbia maculata*** Spotted Gum	16	8	470	5.64	M	Good	Average	Long 40yrs +	High	High	Minor TPZ incursion from utility installation works	Retain & Protect	Street tree
17	***Eucalyptus tereticornis*** Forest Red Gum	16	12	490	5.88	M	Average	Good	Long 40yrs +	High	High	Minor TPZ incursion from utility installation works	Retain & Protect	Street tree
18	***Eucalyptus tereticornis*** Forest Red Gum	10	4	180	2.16	SM	Good	Fair	Medium 15-40yrs	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Street tree. Impacted by Tree 17
19	***Eucalyptus tereticornis*** Forest Red Gum	9	5	280	3.36	SM	Good	Good	Long 40yrs +	Medium	High	No additonal incursion to TPZ	Retain & Protect	Street tree

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20	***Eucalyptus amplifolia*** Cabbage Gum	7	5	2 x 200	3.36	SM	Poor	Fair	Short 5-15yrs	Low	Medium	Major TPZ incursion from regrading works	Remove	Street tree
21	***Eucalyptus nicholii*** Narrow-leaved Peppermint	8	7	450	5.40	M	Average	Average	Medium 15-40yrs	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Street tree. Multiple past pruning events for road clearance
22	***Eucalyptus nicholii*** Narrow-leaved Peppermint	9	7	420	5.04	M	Fair	Fair	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from proposed trunk drainage line	Remove	Street tree. Multiple past pruning events for road clearance
23	***Eucalyptus nicholii*** Narrow-leaved Peppermint	9	6	550	6.60	M	Poor	Fair	Short 5-15yrs	Medium	Medium	Major TPZ incursion from proposed trunk drainage line	Remove	Street tree. Multiple past pruning events for road clearance
24	***Eucalyptus nicholii*** Narrow-leaved Peppermint	9	6	400	4.80	M	Fair	Fair	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
25	***Eucalyptus nicholii*** Narrow-leaved Peppermint	9	8	420	5.04	M	Average	Fair	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
26	***Eucalyptus scoparia*** Wallangarra White Gum	14	10	550	6.60	M	Average	Good	Long 40yrs +	Medium	High	Major TPZ incursion from regrading works	Remove	-
27	***Melaleuca armillaris*** Bracelet Honey-myrtle	7	7	100, 100, 80	2.00	M	Fair	Poor	Short 5-15yrs	Low	Low	Major TPZ incursion from regrading works	Remove	Heavy lean to north. Included stems from base
28	***Callistemon citrinus*** Crimson Bottlebrush	4	6	250	3.00	M	Good	Fair	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	-
29	***Radermachera sinica*** China Doll	8	5	100, 150	2.16	M	Good	Average	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	-
30	***Unknown species***	8	8	2 x 250	4.20	M	Average	Poor	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	Co-dominant included stems from 0.2m
31	***Eucalyptus tereticornis*** Forest Red Gum	18	10	950	11.40	M	Average	Fair	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Remove	Large wound with decay north side
32	***Corymbia maculata*** Spotted Gum	14	8	360	4.32	M	Good	Average	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Remove	-
33	***Corymbia maculata*** Spotted Gum	12	8	250, 350	5.16	M	Good	Average	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Remove	Co-dominant stems from base
34	***Eriobotrya japonica*** Loquat	7	5	300	3.60	M	Good	Average	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	-
35	***Cupressus sp.*** Cypress	7	2	100	2.00	M	Good	Good	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	-
36	***Cupressus sp.*** Cypress	5	1	120	2.00	M	Good	Good	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	-
37	***Cupressus sp.*** Cypress	6	1	150	2.00	M	Good	Good	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	-
38	***Ravenea rivularis*** Majestic Palm	3	3	250	3.00	SM	Fair	Good	Long 40yrs +	Low	Low	Major TPZ incursion from regrading works	Remove	-
39	***Cupressus sp.*** Cypress	8	3	Multi 40 - 80	2.00	M	Good	Fair	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	-

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40	***Melaleuca bracteata*** Black Tea-Tree	10	8	250, 350	5.16	M	Fair	Fair	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	Included co-dominant stems from 0.2m
41	***Liquidambar styraciflua*** Sweetgum	10	8	400	4.80	M	Good	Good	Long 40yrs +	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
42	***Archontophoenix cunninghamiana*** Bangalow Palm	9	3	150	2.00	M	Good	Good	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	-
43	***Unknown species***	8	10	1200	14.40	M	Good	Average	Long 40yrs +	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
44	***Platanus acerifolia*** London Plane Tree	9	6	250, 200	3.84	M	Fair	Fair	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
45	***Jacaranda mimosifolia*** Jacaranda	12	9	600	7.20	M	Average	Average	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
46	***Liquidambar styraciflua*** Sweetgum	12	10	650	7.80	M	Average	Average	Long 40yrs +	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
47	***Eucalyptus sp.*** Eucalyptus	7	5	250	3.00	S	Poor	Poor	Very Short <5yrs	Low	Low	Major TPZ incursion from regrading works	Remove	In severe decline
48	***Araucaria columnaris*** Cook Pine	16	5	470	5.64	M	Good	Good	Long 40yrs +	Medium	High	Major TPZ incursion from regrading works	Remove	-
49	***Koelreuteria bipinnata*** Golden Rain Tree	8	6	150	2.00	M	Fair	Average	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	-
50	***Melia azedarach*** White Cedar	9	9	Multi 150 - 400	5.16	M	Average	Average	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
51	***Melia azedarach*** White Cedar	8	5	Multi 100 - 200	2.64	M	Average	Fair	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	-
52	***Liquidambar styraciflua*** Sweetgum	10	7	250	3.00	M	Average	Average	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
53	***Eucalyptus robusta*** Swamp Mahogany	8	7	Multi 100 - 300	3.84	SM	Poor	Poor	Short 5-15yrs	Medium	Low	Major TPZ incursion from regrading works	Remove	Lopped. High level epicormic growth
54	***Melia azedarach*** White Cedar	8	7	200, 250	3.84	M	Average	Average	Medium 15-40yrs	Medium	Low	Major TPZ incursion from regrading works	Remove	-
55	***Eucalyptus nicholii*** Narrow-leaved Peppermint	12	9	550	6.60	M	Good	Fair	Medium 15-40yrs	High	High	Major TPZ incursion from utility works	Possibility for Retention	Street tree
56	***Eucalyptus haemastoma*** Scribbly Gum	15	13	700	8.40	M	Average	Fair	Long 40yrs +	Medium	Medium	Within footprint of proposed trunk drainage line	Remove	-
57	***Melaleuca linariifolia*** Narrow-Leaved Paperbark	3	3	100	2.00	M	Fair	Poor	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	-
58	***Melaleuca quinquenervia*** Broad-leaved Paperbark	7	6	250, 300	4.68	M	Fair	Fair	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
59	***Callistemon salignus*** Willow Bottlebrush	6	8	4 x 200	4.80	M	Fair	Fair	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	-

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60	***Melia azedarach*** White Cedar	5	4	200, 300	4.32	M	Fair	Poor	Short 5-15yrs	Low	Low	Major TPZ incursion from regrading works	Remove	High level decay and deadwood
61	***Eucalyptus parramattensis*** Parramatta Red Gum	8	5	400	4.80	M	Average	Good	Long 40yrs +	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
62	***Eucalyptus moluccana*** Grey Box	14	12	600, 400	8.64	M	Good	Average	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Possibility for Retention	Street tree
63	***Casuarina glauca*** Swamp Oak	17	10	500	6.00	OM	Fair	Poor	Short 5-15yrs	High	Medium	Major TPZ incursion from regrading works	Remove	High level crown dieback. Major included stems from ground level
64	***Eucalyptus microcorys*** Tallowwood	14	7	450	5.40	M	Average	Poor	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	Failed central ladder @ 6m
65	***Jacaranda mimosifolia*** Jacaranda	8	7	2 x 250	4.20	M	Fair	Fair	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	Crown bias to west
66	***Fraxinus sp.*** Flowering Ash	6	5	200	2.40	M	Average	Fair	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	Street tree. High level epicormic growth from ground level
67	***Fraxinus sp.*** Flowering Ash	6	5	250	3.00	M	Average	Fair	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	Street tree
68	***Pinus patula*** Mexican Weeping Pine	6	6	400	4.80	M	Fair	Poor	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	Extensive past pruning events
69	***Pinus pinea*** Stone Pine	10	9	550	6.60	M	Good	Average	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
70	***Robinia pseudoacacia*** Black Locust	6	4	350	4.20	M	Average	Average	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
71	***Casuarina glauca*** Swamp Oak	19	5	600	7.20	M	Good	Average	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Remove	-
72	***Fraxinus sp.*** Flowering Ash	5	3	250	3.00	M	Fair	Fair	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	-
73	***Melia azedarach*** White Cedar	8	6	400	4.80	M	Average	Fair	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
74	***Melia azedarach*** White Cedar	7	5	350	4.20	M	Average	Fair	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	Mulitple branch failures
75	***Melia azedarach*** White Cedar	5	6	4 x 150	3.60	M	Average	Poor	Medium 15-40yrs	Medium	Medium	Within footprint of proposed trunk drainage line	Remove	Street tree. Multi-stemmed habit from ground level
76	***Eucalyptus tereticornis*** Forest Red Gum	10	8	550	6.60	M	Good	Fair	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	Street tree. Multi-stemmed habit from 2m
77	***Eucalyptus microcorys*** Tallowwood	16	10	600	7.20	M	Average	Average	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Remove	-
78	***Eucalyptus nicholii*** Narrow-leaved Peppermint	6	4	200, 150	3.00	OM	Poor	Poor	Short 5-15yrs	Low	Low	Major TPZ incursion from regrading works	Remove	Street tree. Co-dominant stems from ground level
79	***Triadica sebifera*** Chinese Tallow	7	5	300	3.60	M	Average	Fair	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	High level epicormic growth from ground level

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80	***Acer sp.*** Maple	6	5	300	3.60	OM	Fair	Poor	Short 5-15yrs	Low	Low	Major TPZ incursion from regrading works	Remove	High level deadwood and decay
81	***Eucalyptus moluccana*** Grey Box	16	14	700	8.40	M	Average	Average	Long 40yrs +	High	High	Major TPZ incursion from proposed trunk drainage line	Remove	Street tree. Small cavity south side @ 3m
82	***Liquidambar styraciflua*** Sweetgum	8	4	350	4.20	SM	Good	Good	Long 40yrs +	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	-
83	***Araucaria columnaris*** Cook Pine	14	5	400	4.80	M	Good	Good	Long 40yrs +	Medium	High	No additonal incursion to TPZ	Retain & Protect	-
84	***Syagrus romanzoffiana*** Cocos Palm	6	5	300	3.60	M	Good	Average	Long 40yrs +	Low	Low	Major TPZ incursion from regrading works	Possibility for Retention	Street tree
85	***Dypsis lutescens*** Golden Cane Palm	3	2	2 x 80	2.00	M	Fair	Fair	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	-
86	***Archontophoenix cunninghamiana*** Bangalow Palm	8	4	2 x 150	2.52	M	Fair	Fair	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	-
87	***Morus nigra*** Mulberry	5	4	300	3.60	M	Average	Poor	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	Multi-stemmed from ground level
88	***Melaleuca decora*** White Feather Honeymyrtle	8	5	350	4.20	M	Fair	Fair	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
89	***Melaleuca decora*** White Feather Honeymyrtle	9	6	450	5.40	M	Good	Average	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Remove	Crown dieback & medium level deadwood
90	***Eucalyptus sideroxylon*** Red Ironbark	11	9	450	5.40	M	Good	Average	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Remove	-
91	***Xylosma senticosum*** Shiny Xylsoma	8	5	400	4.80	M	Good	Fair	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	Lean to west
92	***Eucalyptus tereticornis*** Forest Red Gum	8	3	350	4.20	OM	Poor	Poor	Short 5-15yrs	Low	Low	Major TPZ incursion from regrading works	Remove	High level deadwood, crown dieback
93	***Cinnamomum camphora*** Camphor Laurel	7	6	3 x 150	3.12	M	Poor	Poor	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	Lopped @ 2m - epicormic regrowth
94	***Cotoneaster glaucophyllus*** Cotoneaster	3	3	5 x 100	2.40	M	Poor	Poor	Short 5-15yrs	Low	Low	Major TPZ incursion from regrading works	Remove	Street tree
95	***Pinus pinea*** Stone Pine	8	5	400	4.80	M	Good	Fair	Long 40yrs +	Medium	Medium	Within footprint of proposed trunk drainage line	Remove	Bifurcated stems @ 2m
96	***Metrosideros excelsa 'Variegata'*** New Zealand Christmas Bush	8	4	350	4.20	M	Fair	Fair	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
97	***Callistemon viminalis*** Weeping Bottlebrush	6	5	4 x 200	4.80	M	Good	Good	Long 40yrs +	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
98	***Robinia pseudoacacia*** Black Locust	7	3	2 x 150	2.52	M	Fair	Poor	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	Included stems from 0.5m
99	***Eucalyptus moluccana*** Grey Box	15	11	700	8.40	M	Good	Good	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Remove	-

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100	***Eucalyptus tereticornis*** Forest Red Gum	16	5	550	6.60	M	Average	Average	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Remove	-
101	***Eucalyptus moluccana*** Grey Box	17	10	650	7.80	M	Good	Fair	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Remove	-
102	***Jacaranda mimosifolia*** Jacaranda	5	3	250	3.00	M	Poor	Poor	Short 5-15yrs	Low	Low	Major TPZ incursion from regrading works	Remove	Lopped. High level epicormic growth
103	***Araucaria columnaris*** Cook Pine	9	2	300	3.60	SM	Good	Good	Long 40yrs +	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
104	***Eucalyptus nicholii*** Narrow-leaved Peppermint	8	6	400	4.80	OM	Poor	Poor	Short 5-15yrs	Low	Low	Major TPZ incursion from regrading works	Remove	Street tree. High level deadwood
105	***Eucalyptus bicostata*** Southern Blue Gum	9	7	500	6.00	M	Fair	Fair	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
106	***Melaleuca quinquenervia*** Broad-leaved Paperbark	10	70	700	8.40	M	Good	Fair	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Remove	-
107	***Callistemon viminalis*** Weeping Bottlebrush	7	5	2 x 300	5.04	M	Average	Poor	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
108	***Corymbia maculata*** Spotted Gum	13	7	400	4.80	M	Average	Average	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Remove	-
109	***Callistemon viminalis*** Weeping Bottlebrush	7	5	4 x 150	2.00	M	Average	Average	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
110	***Lophostemon confertus*** Brush Box	5	3	150	2.00	SM	Good	Good	Long 40yrs +	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	-
111	***Lophostemon confertus*** Brush Box	5	2	150	2.00	SM	Good	Good	Long 40yrs +	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	-
112	***Dead tree***	18	15	-	-	-	-	-	-	-	Consider Removal	-	Remove	Dead
113	***Corymbia eximia*** Yellow Bloodwood	9	6	2 x 350	5.88	M	Good	Fair	Long 40yrs +	Medium	Medium	Major TPZ incursion from regrading works	Remove	Street tree. Included stems from ground level
114	***Corymbia eximia*** Yellow Bloodwood	8	4	300	3.60	M	Average	Fair	Long 40yrs +	Medium	Medium	Major TPZ incursion from regrading works	Remove	Street tree
115	***Gleditsia triacanthos*** Honey Locust	7	5	450	5.40	OM	Fair	Poor	Short 5-15yrs	Low	Low	Major TPZ incursion from regrading works	Remove	Outer crown dieback
116	***Eucalyptus sp.*** Eucalyptus	6	4	300	3.60	OM	Poor	Poor	Short 5-15yrs	Low	Low	Major TPZ incursion from regrading works	Remove	In severe decline. Mistletoe, multiple failures
117	***Eucalyptus tereticornis*** Forest Red Gum	6	4	300	3.60	M	Fair	Poor	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	Under stree, crown dieback. Severe pest attack
118	***Eucalyptus microcorys*** Tallowwood	16	6	500	6.00	M	Good	Good	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Remove	-
119	***Eucalyptus microcorys*** Tallowwood	10	6	350	4.20	M	Average	Average	Long 40yrs +	Medium	Medium	Major TPZ incursion from regrading works	Remove	Street tree

Overall Tree No.	*Genus & species* Common Name	Height (m)	Crown Spread (m)	DBH (mm)	TPZ Radius (m)	Age Class	Health / Vitality	Structure/ Condition	SULE Rating	Landscape Significance	Retention Value	Development Impact	Retain / Remove	Comments
120	***Eucalyptus moluccana*** Grey Box	18	10	600	7.20	M	Good	Average	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Remove	-
121	***Eucalyptus moluccana*** Grey Box	18	10	600	7.20	M	Good	Good	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Remove	-
122	***Eucalyptus moluccana*** Grey Box	19	14	600	7.20	M	Average	Good	Long 40yrs +	High	High	Within footprint of proposed trunk drainage line	Remove	-
123	***Eucalyptus moluccana*** Grey Box	18	12	750, 300	9.72	M	Good	Fair	Long 40yrs +	High	High	Within footprint of proposed roadway	Remove	Park tree. Twin trunks from ground level
124	***Eucalyptus moluccana*** Grey Box	18	12	650	7.80	M	Good	Fair	Long 40yrs +	High	High	Major TPZ incursion from proposed roadway	Remove	Park tree
125	***Eucalyptus moluccana*** Grey Box	14	3	300	3.60	M	Good	Fair	Long 40yrs +	High	High	Major TPZ incursion from proposed retaining wall	Remove	Park tree
126	***Eucalyptus moluccana*** Grey Box	18	4	400	4.80	M	Good	Average	Long 40yrs +	High	High	Minor TPZ incursion from proposed retaining wall	Retain & Protect	Park tree
127	***Eucalyptus moluccana*** Grey Box	20	10	700	8.40	M	Good	Average	Long 40yrs +	High	High	Major TPZ incursion from proposed retaining wall	Remove	Park tree
128	***Eucalyptus tereticornis*** Forest Red Gum	18	11	600	7.20	M	Average	Fair	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Remove	-
129	***Morus nigra*** Mulberry	5	4	150	2.00	M	Good	Average	Medium 15-40yrs	Low	Low	Major TPZ incursion from proposed retaining wall	Remove	-
130	***Acmena smithii*** Lilly Pilly	8	5	3 x 100	2.00	M	Good	Fair	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from proposed retaining wall	Remove	-
131	***Melaleuca styphelioides*** Prickly-leaved Paperbark	6	5	2 x 250	4.20	M	Good	Average	Long 40yrs +	High	High	Major TPZ incursion from proposed retaining wall	Remove	Park tree
132	***Melaleuca styphelioides*** Prickly-leaved Paperbark	7	5	400	4.80	M	Good	Average	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Remove	Park tree
133	***Melaleuca decora*** White Feather Honeymyrtle	6	5	450	5.40	M	Good	Average	Long 40yrs +	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
134	***Grevillea robusta*** Silky Oak	8	6	400	4.80	OM	Fair	Poor	Short 5-15yrs	Low	Low	Within footprint of proposed roadway	Remove	Crown dieback + deadwood + failures. Major inclusion @ 2m
135	***Gleditsia triacanthos*** Honey Locust	5	3	200	2.40	M	Fair	Fair	Medium 15-40yrs	Low	Low	Within footprint of proposed roadway	Remove	Major lean to east. High level epicormic growth
136	***Jacaranda mimosifolia*** Jacaranda	7	4	200	2.40	SM	Fair	Fair	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
137	***Citharexylum spinosum*** Fiddlewood	5	4	200	2.40	M	Fair	Average	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	-
138	***Citharexylum spinosum*** Fiddlewood	5	4	200	2.40	M	Fair	Average	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	-
139	***Melaleuca styphelioides*** Prickly-leaved Paperbark	5	4	250	3.00	M	Average	Fair	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	Park tree

Overall Tree No.	*Genus & species* Common Name	Height (m)	Crown Spread (m)	DBH (mm)	TPZ Radius (m)	Age Class	Health / Vitality	Structure/ Condition	SULE Rating	Landscape Significance	Retention Value	Development Impact	Retain / Remove	Comments
140	***Jacaranda mimosifolia*** Jacaranda	5	2	150	2.00	SM	Fair	Poor	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	Park tree
141	***Jacaranda mimosifolia*** Jacaranda	7	6	300	3.60	M	Fair	Poor	Medium 15-40yrs	Low	Low	Within footprint of proposed roadway	Remove	Failed central leader. High level epicormic growth
142	***Ficus sp.*** Fig	7	8	400	4.80	M	Good	Fair	Medium 15-40yrs	Low	Low	Within footprint of proposed roadway	Remove	-
143	***Callistemon viminalis*** Weeping Bottlebrush	4	6	3 x 200	4.20	M	Fair	Fair	Medium 15-40yrs	Medium	Medium	Within footprint of proposed roadway	Remove	Mulit-stemmed from ground level
144	***Fraxinus excelsior*** European Ash	3	2	100	2.00	SM	Average	Average	Long 40yrs +	Low	Low	Within footprint of proposed footpath	Remove	-
145	***Tristaniopsis laurina*** Water Gum	5	3	150	2.00	SM	Good	Good	Long 40yrs +	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
146	***Eucalyptus tereticornis*** Forest Red Gum	20	14	1050	12.60	M	Good	Average	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Remove	-
147	***Eucalyptus bicostata*** Southern Blue Gum	8	7	420	5.04	M	Fair	Fair	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	High level deadwood
148	***Morus nigra*** Mulberry	4	4	120	2.00	M	Good	Poor	Medium 15-40yrs	Low	Low	Within footprint of proposed roadway	Remove	Kinked stem. Girdling roots
149	***Lophostemon confertus*** Brush Box	8	5	220	2.64	M	Average	Average	Medium 15-40yrs	Medium	Medium	Within footprint of proposed roadway	Remove	Street tree
150	***Lophostemon confertus*** Brush Box	8	5	2 x 150	2.52	M	Good	Fair	Medium 15-40yrs	Medium	Medium	Within footprint of proposed roadway	Remove	Street tree
151	***Eucalyptus moluccana*** Grey Box	16	7	580	6.96	S	Poor	Poor	Very Short <5yrs	Medium	Consider Removal	Major TPZ incursion from proposed retaining wall	Remove	In severe decline. High level mistletoe. <10% live crown
152	***Eucalyptus moluccana*** Grey Box	18	9	600	7.20	M	Good	Average	Long 40yrs +	High	High	Major TPZ incursion from proposed retaining wall	Remove	-
153	***Eucalyptus moluccana*** Grey Box	14	8	450	5.40	M	Average	Average	Long 40yrs +	Medium	High	Major TPZ incursion from proposed retaining wall	Remove	NOTE: ON NON-DEVELOPED LOT
154	***Eucalyptus moluccana*** Grey Box	14	6	350	4.20	M	Average	Average	Long 40yrs +	Medium	High	Major TPZ incursion from proposed retaining wall	Remove	NOTE: ON NON-DEVELOPED LOT
155	***Callistemon viminalis*** Weeping Bottlebrush	7	6	100, 80, 200	2.88	M	Good	Fair	Medium 15-40yrs	Low	Medium	Major TPZ incursion from regrading works	Remove	-
156	***Lophostemon confertus*** Brush Box	9	7	200, 300	4.32	M	Good	Good	Long 40yrs +	Medium	Medium	Major TPZ incursion from regrading works	Remove	Street tree
157	***Corymbia maculata*** Spotted Gum	12	10	400	4.80	S	Poor	Poor	Short 5-15yrs	Medium	Low	Within footprint of proposed trunk drainage line	Remove	In decline. 40% live crown. Failed stem north side
158	***Melaleuca decora*** White Feather Honeymyrtle	8	7	350	4.20	M	Average	Fair	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
159	***Eucalyptus botryoides*** Bangalay	10	60	3 x 200	4.20	M	Good	Poor	Short 5-15yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	High level mechanical damage to main stems - assume by owner

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160	***Eucalyptus microcorys*** Tallowwood	11	9	300	3.60	M	Good	Good	Long 40yrs +	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
161	***Jacaranda mimosifolia*** Jacaranda	9	8	200, 250	3.84	M	Good	Average	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
162	***Eucalyptus bicostata*** Southern Blue Gum	13	10	700	8.40	M	Fair	Fair	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
163	***Morus nigra*** Mulberry	6	5	80, 100	2.00	M	Fair	Fair	Medium 15-40yrs	Low	Low	Major TPZ incursion from proposed substation footprint	Remove	-
164	***Radermachera sinica*** China Doll	8	2	150	2.00	M	Average	Fair	Medium 15-40yrs	Low	Low	Within footprint of proposed roadway	Remove	-
165	***Archontophoenix cunninghamiana*** Bangalow Palm	6	3	120	2.00	SM	Average	Average	Medium 15-40yrs	Low	Low	Within footprint of proposed roadway	Remove	-
166	***Melaleuca bracteata*** Black Tea-Tree	9	6	2 x 180	3.00	M	Fair	Fair	Medium 15-40yrs	Medium	Medium	Within footprint of proposed roadway	Remove	-
167	***Eucalyptus tereticornis*** Forest Red Gum	9	5	200	2.40	SM	Good	Fair	Long 40yrs +	Medium	Medium	Within footprint of proposed roadway	Remove	Street tree. Cavity west side @ 0.5m
168	***Eucalyptus tereticornis*** Forest Red Gum	8	4	160	2.00	SM	Good	Good	Long 40yrs +	Medium	Medium	Within footprint of proposed roadway	Remove	Street tree. Past stem injuries west side
169	***Lophostemon confertus*** Brush Box	8	7	250	3.00	M	Average	Average	Long 40yrs +	Medium	Medium	Major TPZ incursion from proposed retaining wall	Remove	Street tree
170	***Melaleuca bracteata 'Rev. Gold'*** Honey Myrtle	7	5	200	2.40	M	Average	Poor	Medium 15-40yrs	Low	Low	Within footprint of proposed footpath	Remove	Street tree. Canopy heavily impacted by T172 above
171	***Melaleuca bracteata 'Rev. Gold'*** Honey Myrtle	8	5	100, 150	2.00	M	Average	Poor	Medium 15-40yrs	Medium	Low	Within footprint of proposed footpath	Remove	Street tree. Canopy heavily impacted by T172 above. Co-dominant stems from base
172	***Casuarina cunninghamiana*** River Sheoak	16	10	700	8.40	M	Good	Good	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Remove	-
173	***Schinus molle var. areira*** Pepper Tree	7	8	250, 300	4.68	M	Fair	Average	Long 40yrs +	Medium	Low	Within footprint of proposed footpath	Remove	Street tree
174	***Liquidambar styraciflua*** Sweetgum	6	3	150	2.00	SM	Average	Average	Medium 15-40yrs	Low	Low	Within footprint of proposed footpath	Remove	Street tree
175	***Eucalyptus moluccana*** Grey Box	14	10	550	6.60	M	Fair	Average	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Possibility for Retention	Street tree
176	***Callistemon viminalis*** Weeping Bottlebrush	6	7	Multi 80 - 100	2.00	M	Fair	Poor	Short 5-15yrs	Low	Low	Major TPZ incursion from regrading works	Remove	Heavy lean to north. Failed stem
177	***Mangifera indica*** Mango	5	5	Multi 50 - 100	2.00	M	Good	Fair	Medium 15-40yrs	Low	Low	Major TPZ incursion from proposed retaining wall	Remove	NOTE: ON NON-DEVELOPED LOT
178	***Araucaria columnaris*** Cook Pine	16	5	450	5.40	M	Good	Good	Long 40yrs +	High	High	No additonal incursion to TPZ	Retain & Protect	-
179	***Ficus obliqua*** Small-leaved Fig	6	7	Multi 40 - 100	2.00	SM	Good	Good	Long 40yrs +	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	-

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180	***Pinus radiata*** Radiata Pine	9	7	400	4.80	M	Good	Average	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
181	***Araucaria heterophylla*** Norfolk Island Pine	10	4	150	2.00	SM	Good	Fair	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
182	***Callistemon viminalis*** Weeping Bottlebrush	7	2	100	2.00	SM	Fair	Fair	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	-
183	***Morus nigra*** Mulberry	5	3	Multi 20 - 60	2.00	M	Good	Average	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	-
184	***Melia azedarach*** White Cedar	7	5	150	2.00	M	Good	Good	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	-
185	***Archontophoenix alexandrae*** Alexander Palm	9	2	150	2.00	M	Good	Good	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	-
186	***Eucalyptus microcorys*** Tallowwood	16	10	900	10.80	M	Average	Average	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Remove	-
187	***Melaleuca styphelioides*** Prickly-leaved Paperbark	8	6	250, 250, 100	4.44	M	Average	Fair	Long 40yrs +	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
188	***Jacaranda mimosifolia*** Jacaranda	5	4	120	2.00	SM	Good	Fair	Medium 15-40yrs	Low	Low	Within footprint of proposed trunk drainage line	Remove	-
189	***Cupressus sp.*** Cypress	6	3	180	2.16	M	Fair	Average	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Possibility for Retention	NOTE: ON NON-DEVELOPED LOT
190	***Callistemon viminalis*** Weeping Bottlebrush	9	7	Multi 100 - 300	3.84	M	Good	Fair	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from proposed retaining wall	Possibility for Retention	NOTE: ON NON-DEVELOPED LOT
191	***Melaleuca styphelioides*** Prickly-leaved Paperbark	9	8	400, 300	6.00	M	Good	Average	Long 40yrs +	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
192	***Callistemon viminalis*** Weeping Bottlebrush	8	6	Multi 60 - 120	2.00	M	Average	Average	Medium 15-40yrs	Medium	Medium	Within footprint of proposed roadway	Remove	-
193	***Casuarina glauca*** Swamp Oak	12	5	400	4.80	M	Average	Average	Long 40yrs +	Medium	Medium	Within footprint of proposed roadway	Remove	-
194	***Plumeria rubra var. acutifolia*** Frangipani	4	2	2 x 100	2.00	M	Average	Average	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	-
195	***Araucaria columnaris*** Cook Pine	12	4	350	4.20	M	Average	Good	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
196	***Lophostemon confertus*** Brush Box	9	6	380	4.56	M	Average	Average	Long 40yrs +	Medium	Medium	Major TPZ incursion from regrading works	Remove	Street tree
197	***Liquidambar styraciflua*** Sweetgum	9	7	410	4.92	M	Average	Average	Long 40yrs +	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
198	***Callistemon viminalis*** Weeping Bottlebrush	8	8	Multi 50 -150	2.00	M	Good	Fair	Medium 15-40yrs	Medium	Medium	Within footprint of proposed roadway	Remove	-
199	***Lophostemon confertus*** Brush Box	8	7	Multi 100 - 150	2.00	M	Average	Good	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	Street tree

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200	***Eucalyptus sp.*** Eucalyptus	14	10	800	9.60	M	Good	Average	Long 40yrs +	High	High	Within footprint of proposed roadway	Remove	-
201	***X Cupressocyparis leylandii*** Leyland Cypress	8	5	200	2.40	M	Fair	Fair	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Possibility for Retention	NOTE: ON NON-DEVELOPED LOT
202	***Eriobotrya japonica*** Loquat	6	5	Multi 80 -150	2.00	M	Average	Fair	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	-
203	***Unknown species***	9	6	300	3.60	M	Poor	Poor	Very Short <5yrs	Low	Low	Major TPZ incursion from regrading works	Remove	Heavily impacted by vine
204	***Jacaranda mimosifolia*** Jacaranda	10	10	380	4.56	M	Good	Good	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
205	***Callistemon viminalis*** Weeping Bottlebrush	8	9	3 x 200, 150	4.56	M	Good	Average	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
206	***Citrus sp.*** Citrus	5	3	Multi 50 - 80	2.00	M	Fair	Average	Medium 15-40yrs	Low	Low	No additonal incursion to TPZ	Retain & Protect	-
207	***Lophostemon confertus*** Brush Box	8	5	220	2.64	M	Average	Average	Long 40yrs +	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Street tree
208	***Tristaniopsis laurina*** Water Gum	1	1	-	2.00	J	Good	Good	Long 40yrs +	Low	Low	No additonal incursion to TPZ	Retain & Protect	Street tree - recently planted
209	***Jacaranda mimosifolia*** Jacaranda	9	8	330	3.96	M	Good	Fair	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
210	***Eucalyptus nicholii*** Narrow-leaved Peppermint	10	8	520	6.24	M	Average	Good	Long 40yrs +	Medium	High	Minor TPZ incursion from regrading works	Retain & Protect	Street tree
211	***Liquidambar styraciflua*** Sweetgum	8	3	250	3.00	M	Fair	Average	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	-
212	***Callistemon viminalis*** Weeping Bottlebrush	7	4	2 x 150	2.52	M	Average	Average	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	-
213	***Tristaniopsis laurina*** Water Gum	1	1	-	2.00	J	Good	Good	Long 40yrs +	Low	Low	No additonal incursion to TPZ	Retain & Protect	Street tree - recently planted
214	***Tristaniopsis laurina*** Water Gum	1	1	-	2.00	J	Good	Good	Long 40yrs +	Low	Low	No additonal incursion to TPZ	Retain & Protect	Street tree - recently planted
215	***Tristaniopsis laurina*** Water Gum	1	1	-	2.00	J	Good	Good	Long 40yrs +	Low	Low	Within footprint of proposed trunk drainage line	Remove	Street tree - recently planted
216	***Phoenix canariensis*** Canary Island Date Palm	10	6	500	6.00	M	Good	Good	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
217	***Morus nigra*** Mulberry	9	4	Multi 40 - 80	2.00	M	Average	Average	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	-
218	***Lophostemon confertus*** Brush Box	6	3	2 x 60	2.00	M	Average	Average	Medium 15-40yrs	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	-
219	***Melaleuca armillaris*** Bracelet Honey-myrtle	7	3	Multi 40 -100	2.00	M	Average	Average	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	-

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220	***Brachychiton acerifolius*** Illawarra Flame Tree	9	5	300	3.60	M	Good	Average	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
221	***Callistemon viminalis*** Weeping Bottlebrush	4	4	80, 120	2.00	M	Average	Fair	Medium 15-40yrs	Low	Low	Within footprint of proposed roadway	Remove	-
222	***Prunus sp.*** Ornamental Cherry	3	5	300	3.60	M	Poor	Poor	Short 5-15yrs	Low	Low	Major TPZ incursion from regrading works	Remove	Multiple past failures
223	***X Cupressocyparis leylandii*** Leyland Cypress	9	6	300, 400	6.00	M	Average	Good	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	-
224	***Eucalyptus moluccana*** Grey Box	20	12	700	8.40	M	Good	Good	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Remove	Park tree
225	***Eucalyptus moluccana*** Grey Box	19	10	2 x 500	8.52	M	Good	Fair	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Remove	Park tree. Included stems from ground level. Decay of western stem branch union @ 3m
226	***Eucalyptus moluccana*** Grey Box	19	8	450	5.40	M	Good	Average	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Remove	Park tree
227	***Eucalyptus moluccana*** Grey Box	19	10	400, 500, 550	10.08	M	Good	Fair	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Remove	Park tree. Trifurcated included stems from ground level. Basal decay south side
228	***Eucalyptus moluccana*** Grey Box	18	8	550	6.60	M	Good	Average	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Remove	Park tree. Bifurcated stems from 4m
229	***Eucalyptus moluccana*** Grey Box	18	10	600	7.20	M	Average	Average	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Remove	Park tree. Bifurcated, included stems from 3m
230	***Eucalyptus moluccana*** Grey Box	16	8	500	6.00	M	Good	Average	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Remove	Park tree. Bifurcated stems from 3m
231	***Eucalyptus sideroxylon*** Red Ironbark	8	4	300	3.60	M	Average	Fair	Medium 15-40yrs	Medium	Medium	Within footprint of proposed roadway	Remove	Park tree. Wound south side @ 1m
232	***Lagerstroemia indica*** Crepe Myrtle	5	3	5 x 100	2.64	M	Fair	Fair	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	
233	***Eucalyptus microcorys*** Tallowwood	11	7	450	5.40	OM	Poor	Poor	Short 5-15yrs	Low	Low	Major TPZ incursion from regrading works	Remove	In severe decline
234	***Eucalyptus sideroxylon*** Red Ironbark	11	8	400	4.80	M	Fair	Fair	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	Reduced crown density
235	***Araucaria columnaris*** Cook Pine	15	4	400	4.80	M	Good	Good	Long 40yrs +	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
236	***Jacaranda mimosifolia*** Jacaranda	6	6	400	4.80	M	Good	Poor	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from proposed retaining wall	Remove	Lopped at 1m. All regrowth epicormic
237	***Eucalyptus nicholii*** Narrow-leaved Peppermint	10	7	450	5.40	M	Fair	Fair	Medium 15-40yrs	High	Medium	No additonal incursion to TPZ	Retain & Protect	Street tree. High level deadwood
238	***Liquidambar styraciflua*** Sweetgum	8	5	350	4.20	M	Average	Fair	Medium 15-40yrs	Medium	Low	Major TPZ incursion from proposed retaining wall	Remove	-
239	***Eucalyptus nicholii*** Narrow-leaved Peppermint	12	8	450	5.40	OM	Poor	Fair	Short 5-15yrs	High	Medium	No additonal incursion to TPZ	Retain & Protect	Street tree. Reduced crown density. High level deadwood

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240	***Liquidambar styraciflua*** Sweetgum	7	4	250	3.00	M	Average	Fair	Medium 15-40yrs	Medium	Low	Major TPZ incursion from proposed retaining wall	Remove	-
241	***Liquidambar styraciflua*** Sweetgum	7	5	300	3.60	M	Average	Fair	Medium 15-40yrs	Medium	Low	Major TPZ incursion from proposed retaining wall	Remove	-
242	***Lophostemon confertus*** Brush Box	12	5	3 x 250	5.16	M	Good	Fair	Long 40yrs +	Medium	Medium	Within footprint of proposed roadway	Remove	Multi-stemmed habit from 1m
243	***Melaleuca quinquenervia*** Broad-leaved Paperbark	7	5	3 x 200	4.20	M	Good	Fair	Long 40yrs +	Medium	Medium	Within footprint of proposed roadway	Remove	Street tree. Trifurcated stems from 0.5m
244	***Melaleuca quinquenervia*** Broad-leaved Paperbark	8	5	350	4.20	M	Good	Good	Long 40yrs +	Medium	Medium	Within footprint of proposed roadway	Remove	Street tree
245	***Eucalyptus moluccana*** Grey Box	18	12	450	5.40	M	Good	Average	Long 40yrs +	High	High	Within footprint of proposed roadway	Remove	-
246	***Eucalyptus moluccana*** Grey Box	18	12	500	6.00	M	Good	Good	Long 40yrs +	Medium	Medium	Within footprint of proposed roadway	Remove	-
247	***Eucalyptus moluccana*** Grey Box	19	12	550	6.60	M	Good	Good	Long 40yrs +	High	High	Major TPZ incursion from proposed roadway	Remove	-
248	***Eucalyptus microcorys*** Tallowwood	8	3	4 x 150	3.60	SM	Good	Poor	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	Park tree. Multiple included stems from ground level
249	***Eucalyptus microcorys*** Tallowwood	8	4	2 x 250	4.20	SM	Average	Fair	Long 40yrs +	Medium	Medium	Major TPZ incursion from regrading works	Remove	Park tree. Included bifurcated stems from 1m
250	***Eucalyptus microcorys*** Tallowwood	5	3	150	2.00	SM	Fair	Poor	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	Park tree. Failed secondary stem
251	***Eucalyptus sideroxylon*** Red Ironbark	11	6	400	4.80	M	Good	Average	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Remove	Park tree
252	***Eucalyptus microcorys*** Tallowwood	12	8	2 x 350	5.88	M	Good	Fair	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Remove	Park tree
253	***Dead tree***	-	-	-	-	-	-	-	-	-	Consider Removal	-	Remove	Park tree
254	***Eucalyptus sideroxylon*** Red Ironbark	10	7	3 x 250	5.16	M	Good	Fair	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Remove	Park tree. Failed secondary stem from 1m
255	***Cydonia oblonga*** Quince	4	4	5 x 100	2.64	M	Good	Fair	Medium 15-40yrs	Low	Low	Within footprint of proposed trunk drainage line	Remove	-
256	***Casuarina glauca*** Swamp Oak	15	6	400	4.80	M	Fair	Average	Long 40yrs +	Medium	Medium	Major TPZ incursion from regrading works	Remove	Park tree
257	***Casuarina glauca*** Swamp Oak	10	4	200	2.40	SM	Good	Average	Long 40yrs +	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
258	***Casuarina glauca*** Swamp Oak	12	7	2 x 300	5.04	M	Good	Fair	Long 40yrs +	Medium	Medium	Within footprint of proposed footpath	Remove	Street tree. Bifurcated stems from 1m
259	***Eucalyptus sideroxylon*** Red Ironbark	10	6	300	3.60	M	Fair	Poor	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	-

Overall Tree No.	*Genus & species* Common Name	Height (m)	Crown Spread (m)	DBH (mm)	TPZ Radius (m)	Age Class	Health / Vitality	Structure/ Condition	SULE Rating	Landscape Significance	Retention Value	Development Impact	Retain / Remove	Comments
260	***Lophostemon confertus*** Brush Box	6	4	2 x 150	2.52	M	Fair	Poor	Medium 15-40yrs	Medium	Medium	Within footprint of proposed footpath	Remove	Street tree. Poor development - suppressed
261	***Lagunaria patersonia*** Norfolk Island Hibiscus	6	3	3 x 150	3.12	M	Good	Fair	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	-
262	***Ficus microcarpa var. hillii*** Hills Weeping Fig	5	4	250	3.00	SM	Average	Average	Long 40yrs +	Low	Low	Within footprint of proposed roadway	Remove	Street tree
263	***Livistona chinensis*** Chinese Fan Palm	5	2	300	3.60	M	Average	Average	Long 40yrs +	Low	Low	Within footprint of proposed roadway	Remove	Street tree
264	***Eucalyptus crebra*** Narrow-leaved Ironbark	14	43	450	5.40	M	Good	Good	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Remove	-
265	***Lagunaria patersonia*** Norfolk Island Hibiscus	8	4	2 x 300	5.04	M	Good	Poor	Long 40yrs +	Low	Low	Major TPZ incursion from regrading works	Remove	Major included stem from ground level
266	***Cupressus sp.*** Cypress	7	4	4 x 100	2.40	M	Fair	Fair	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	-
267	***Eucalyptus tereticornis*** Forest Red Gum	12	7	450	5.40	M	Average	Fair	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Remove	-
268	***Eucalyptus tereticornis*** Forest Red Gum	13	6	350	4.20	M	Fair	Fair	Long 40yrs +	High	High	Major TPZ incursion from proposed retaining wall	Remove	-
269	***Unknown species***	8	7	350	4.20	M	Average	Average	Long 40yrs +	Medium	Medium	Major TPZ incursion from proposed trunk drainage line	Remove	-
270	***Syagrus romanzoffiana*** Cocos Palm	6	4	200	2.40	M	Average	Average	Long 40yrs +	Low	Low	Major TPZ incursion from regrading works	Possibility for Retention	Street tree
271	***Syagrus romanzoffiana*** Cocos Palm	5	2	150	2.00	M	Average	Average	Long 40yrs +	Low	Low	Major TPZ incursion from regrading works	Possibility for Retention	Street tree
272	***Syagrus romanzoffiana*** Cocos Palm	5	3	200	2.40	M	Good	Average	Long 40yrs +	Low	Low	Major TPZ incursion from regrading works	Possibility for Retention	Street tree
273	***Macadamia tetraphylla*** Rough-shelled Macadamia	6	4	150, 100, 100	2.52	M	Good	Average	Medium 15-40yrs	Low	Low	No additonal incursion to TPZ	Retain & Protect	-
274	***Callistemon viminalis*** Weeping Bottlebrush	5	4	200, 150	3.00	M	Good	Fair	Medium 15-40yrs	Low	Medium	Major TPZ incursion from regrading works	Possibility for Retention	Street tree
275	***Callistemon viminalis*** Weeping Bottlebrush	5	2	2 x 150	2.52	M	Average	Fair	Medium 15-40yrs	Low	Medium	Major TPZ incursion from regrading works	Possibility for Retention	Street tree
276	***Callistemon viminalis*** Weeping Bottlebrush	5	2	2 x 100	2.00	M	Fair	Fair	Medium 15-40yrs	Low	Medium	Major TPZ incursion from regrading works	Possibility for Retention	Street tree
277	***Citrus sp.*** Citrus	4	3	2 x 80	2.00	M	Fair	Good	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	-
278	***Eriobotrya japonica*** Loquat	3	3	Multi 40 - 60	2.00	M	Average	Average	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	-
279	***X Cupressocyparis leylandii*** Leyland Cypress	8	4	2 x 200	3.36	M	Average	Fair	Medium 15-40yrs	Medium	Low	Major TPZ incursion from regrading works	Remove	-

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280	***Ficus elastica*** Rubber Fig	7	7	Multi 60 - 120	2.00	M	Good	Average	Long 40yrs +	Medium	Low	Major TPZ incursion from regrading works	Remove	-
281	***Morus nigra*** Mulberry	4	2	60, 80	2.00	SM	Fair	Fair	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	-
282	***Corymbia maculata*** Spotted Gum	12	7	400	4.80	M	Good	Good	Long 40yrs +	High	High	Major TPZ incursion from proposed retaining wall	Remove	-
283	***Corymbia maculata*** Spotted Gum	10	8	420	5.04	M	Average	Average	Long 40yrs +	High	High	Major TPZ incursion from proposed retaining wall	Remove	-
284	***Cupressus sp.*** Cypress	11	2	250	3.00	M	Good	Average	Medium 15-40yrs	Medium	Low	Within footprint of proposed retaining wall	Remove	-
285	***Citrus sp.*** Citrus	5	4	Multi 30 - 80	2.00	M	Good	Good	Medium 15-40yrs	Low	Low	Within footprint of proposed retaining wall	Remove	-
286	***Jacaranda mimosifolia*** Jacaranda	4	4	Multi 40 - 80	2.00	SM	Good	Poor	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	Included stems from base
287	***Eucalyptus tereticornis*** Forest Red Gum	15	9	500	6.00	M	Fair	Average	Medium 15-40yrs	High	High	Major TPZ incursion from regrading works	Remove	-
288	***Melia azedarach*** White Cedar	7	4	150	2.00	SM	Average	Good	Medium 15-40yrs	Medium	Low	Major TPZ incursion from regrading works	Remove	-
289	***Eucalyptus amplifolia*** Cabbage Gum	12	5	240	2.88	SM	Good	Average	Long 40yrs +	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
290	***Corymbia maculata*** Spotted Gum	16	10	510	6.12	M	Good	Good	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Remove	-
291	***Cupressus sp.*** Cypress	6	2	120	2.00	SM	Good	Good	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	-
292	***Corymbia maculata*** Spotted Gum	12	8	420, 100	5.16	M	Good	Fair	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Remove	-
293	***Eucalyptus tereticornis*** Forest Red Gum	12	7	380	4.56	M	Average	Average	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
294	***Araucaria columnaris*** Cook Pine	12	4	450	5.40	M	Good	Good	Long 40yrs +	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
295	***Bauhinia variegata*** Orchid Tree	4	3	100	2.00	SM	Average	Poor	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	Large cavity west side
296	***Jacaranda mimosifolia*** Jacaranda	6	5	Multi 20 - 90	2.00	SM	Average	Fair	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	-
297	***X Cupressocyparis leylandii*** Leyland Cypress	4	2	Multi 20 - 50	2.00	SM	Good	Good	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	-
298	***X Cupressocyparis leylandii*** Leyland Cypress	3	2	Multi 20 - 50	2.00	SM	Fair	Average	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	-
299	***Morus nigra*** Mulberry	5	6	150, 180	2.76	M	Good	Poor	Short 5-15yrs	Medium	Low	Major TPZ incursion from regrading works	Remove	Included co-dominant stems from 1m

Overall Tree No.	*Genus & species* Common Name	Height (m)	Crown Spread (m)	DBH (mm)	TPZ Radius (m)	Age Class	Health / Vitality	Structure/ Condition	SULE Rating	Landscape Significance	Retention Value	Development Impact	Retain / Remove	Comments
300	***Eucalyptus tereticornis*** Forest Red Gum	16	12	720	8.64	M	Good	Average	Long 40yrs +	Medium	High	Major TPZ incursion from regrading works	Remove	-
301	***Eucalyptus tereticornis*** Forest Red Gum	16	10	650	7.80	M	Good	Fair	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Remove	-
302	***Eucalyptus moluccana*** Grey Box	15	9	250, 600	7.80	M	Good	Fair	Long 40yrs +	Medium	High	Major TPZ incursion from regrading works	Remove	-
303	***Eucalyptus tereticornis*** Forest Red Gum	18	10	500	6.00	M	Fair	Average	Long 40yrs +	High	High	Major TPZ incursion from proposed retaining wall	Remove	-
304	***Eucalyptus moluccana*** Grey Box	16	8	450	5.40	M	Average	Good	Long 40yrs +	High	High	Major TPZ incursion from proposed retaining wall	Remove	-
305	***Eucalyptus moluccana*** Grey Box	16	8	400	4.80	M	Average	Good	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Remove	-
306	***Eucalyptus tereticornis*** Forest Red Gum	14	8	550	6.60	M	Average	Average	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Remove	-
307	***Eucalyptus moluccana*** Grey Box	18	12	600	7.20	M	Good	Good	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Remove	-
308	***Eucalyptus moluccana*** Grey Box	18	12	1200	14.40	M	Good	Fair	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Remove	Co-dominant stems included @ 1.8m
309	***Eucalyptus tereticornis*** Forest Red Gum	14	10	450	5.40	M	Good	Good	Long 40yrs +	Medium	High	Major TPZ incursion from regrading works	Remove	-
310	***Schefflera sp.*** Umbrella	6	5	Multi 20 - 100	2.00	M	Good	Good	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	-
311	***Plumeria rubra var. acutifolia*** Frangipani	7	4	Multi 60 - 100	2.00	M	Good	Average	Medium 15-40yrs	Low	Low	Major TPZ incursion from proposed retaining wall	Remove	-
312	***Araucaria columnaris*** Cook Pine	16	4	450	5.40	M	Good	Average	Long 40yrs +	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
313	***Jacaranda mimosifolia*** Jacaranda	9	10	100, 180	2.52	M	Fair	Average	Medium 15-40yrs	Medium	Medium	Within footprint of proposed retaining wall	Remove	-
314	***Syzygium paniculatum*** Magenta Cherry	9	7	350	4.20	M	Average	Fair	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
315	***Melia azedarach*** White Cedar	6	7	180	2.16	M	Average	Poor	Medium 15-40yrs	Low	Low	Within footprint of proposed retaining wall	Remove	Heavy 45° lean to south
316	***Eucalyptus moluccana*** Grey Box	12	4	260	3.12	M	Fair	Poor	Medium 15-40yrs	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Park tree. Included co-dominant stems at 2.5m
317	***Eucalyptus crebra*** Narrow-leaved Ironbark	8	4	150	2.00	SM	Good	Good	Long 40yrs +	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Park tree
318	***Eucalyptus moluccana*** Grey Box	13	6	300	3.60	M	Fair	Fair	Long 40yrs +	Medium	High	No additonal incursion to TPZ	Retain & Protect	Park tree
319	***Corymbia maculata*** Spotted Gum	8	5	150, 90	2.04	SM	Good	Fair	Long 40yrs +	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Park tree

Overall Tree No.	*Genus & species* Common Name	Height (m)	Crown Spread (m)	DBH (mm)	TPZ Radius (m)	Age Class	Health / Vitality	Structure/ Condition	SULE Rating	Landscape Significance	Retention Value	Development Impact	Retain / Remove	Comments
320	***Eucalyptus moluccana*** Grey Box	9	5	230	2.76	SM	Fair	Poor	Short 5-15yrs	Medium	Low	No additonal incursion to TPZ	Retain & Protect	Park tree. High level deadwood, sparse canopy
321	***Laurus nobilis*** Bay Tree	7	4	Multi 30 - 80	2.00	M	Good	Good	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	Park tree
322	***Corymbia maculata*** Spotted Gum	14	9	500	6.00	M	Good	Good	Long 40yrs +	High	High	No additonal incursion to TPZ	Retain & Protect	Park tree
323	***Eucalyptus tereticornis*** Forest Red Gum	9	3	100	2.00	SM	Average	Good	Long 40yrs +	Low	Medium	No additonal incursion to TPZ	Retain & Protect	Park tree
324	***Dead tree***	-	-	-	-	-	-	-	-	-	Consider Removal	-	Remove	Park tree
325	***Corymbia maculata*** Spotted Gum	12	8	350	4.20	M	Good	Average	Long 40yrs +	High	High	No additonal incursion to TPZ	Retain & Protect	Park tree
326	***Corymbia maculata*** Spotted Gum	12	7	400, 100	4.92	M	Good	Fair	Long 40yrs +	High	High	Major TPZ incursion from proposed retaining wall	Possibility for Retention	Park tree
327	***Dead tree***	-	-	-	-	-	-	-	-	-	Consider Removal	-	Remove	Park tree
328	***Eucalyptus moluccana*** Grey Box	14	12	600, 430, 460	10.44	M	Average	Good	Long 40yrs +	High	High	No additonal incursion to TPZ	Retain & Protect	Street tree. Multi-stemmed from ground level
329	***Corymbia maculata*** Spotted Gum	9	3	100	2.00	SM	Average	Good	Long 40yrs +	Low	Medium	No additonal incursion to TPZ	Retain & Protect	Park tree
330	***Eucalyptus sp.*** Eucalyptus	8	5	100 - 200	2.64	S	Poor	Poor	Very Short <5yrs	Low	Low	Minor TPZ incursion from proposed retaining wall	Retain & Protect	Park tree. In severe decline
331	***Eucalyptus microcorys*** Tallowwood	8	3	180	2.16	SM	Average	Fair	Medium 15-40yrs	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Park tree
332	***Eucalyptus microcorys*** Tallowwood	8	4	140	2.00	SM	Fair	Fair	Medium 15-40yrs	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Park tree
333	***Eucalyptus microcorys*** Tallowwood	8	3	140	2.00	SM	Average	Fair	Medium 15-40yrs	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Park tree
334	***Corymbia maculata*** Spotted Gum	15	9	480	5.76	M	Average	Good	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Possibility for Retention	Park tree
335	***Eucalyptus moluccana*** Grey Box	15	12	750	9.00	M	Average	Fair	Long 40yrs +	High	High	No additonal incursion to TPZ	Retain & Protect	Street tree. Included co-dominant stems @ 3m
336	***Eucalyptus microcorys*** Tallowwood	9	4	150	2.00	SM	Average	Good	Medium 15-40yrs	Low	Medium	No additonal incursion to TPZ	Retain & Protect	Park tree
337	***Callistemon viminalis*** Weeping Bottlebrush	5	3	120	2.00	SM	Fair	Poor	Short 5-15yrs	Low	Low	Major TPZ incursion from proposed retaining wall	Remove	Low foliage density
338	***Eucalyptus moluccana*** Grey Box	11	4	200	2.40	SM	Fair	Good	Long 40yrs +	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Park tree
339	***Eucalyptus crebra*** Narrow-leaved Ironbark	11	4	250	3.00	SM	Good	Average	Long 40yrs +	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Park tree

Overall Tree No.	*Genus & species* Common Name	Height (m)	Crown Spread (m)	DBH (mm)	TPZ Radius (m)	Age Class	Health / Vitality	Structure/ Condition	SULE Rating	Landscape Significance	Retention Value	Development Impact	Retain / Remove	Comments
340	***Callistemon viminalis*** Weeping Bottlebrush	7	5	Multi 60 - 100	2.00	M	Fair	Average	Medium 15-40yrs	Low	Medium	Major TPZ incursion from proposed retaining wall	Remove	-
341	***Callistemon viminalis*** Weeping Bottlebrush	6	3	2 x 80	2.00	M	Fair	Average	Medium 15-40yrs	Low	Medium	Major TPZ incursion from proposed retaining wall	Remove	-
342	***Corymbia maculata*** Spotted Gum	10	6	380	4.56	S	Poor	Poor	Very Short <5yrs	Low	Low	Major TPZ incursion from regrading works	Possibility for Retention	Park tree. In severe decline. High level epicormic growth & deadwood
343	***Eucalyptus microcorys*** Tallowwood	10	7	320	3.84	M	Fair	Fair	Medium 15-40yrs	Medium	Medium	Minor TPZ incursion from regrading works	Retain & Protect	Park tree
344	***Eucalyptus microcorys*** Tallowwood	6	4	100	2.00	SM	Good	Fair	Medium 15-40yrs	Low	Medium	No additonal incursion to TPZ	Retain & Protect	Park tree
345	***Eucalyptus microcorys*** Tallowwood	8	6	250, 120	3.36	M	Good	Average	Medium 15-40yrs	Medium	Medium	Minor TPZ incursion from regrading works	Retain & Protect	Park tree
346	***Corymbia maculata*** Spotted Gum	9	4	90, 60, 80	2.00	SM	Good	Poor	Medium 15-40yrs	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Park tree. Included co-dominant stems from base with 1 x failure
347	***Corymbia maculata*** Spotted Gum	18	14	550, 500	8.88	M	Good	Fair	Long 40yrs +	High	High	No additonal incursion to TPZ	Retain & Protect	Street tree
348	***Eucalyptus moluccana*** Grey Box	10	6	250	3.00	M	Good	Fair	Medium 15-40yrs	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Street tree
349	***Eucalyptus moluccana*** Grey Box	9	7	180, 300	4.20	SM	Fair	Poor	Medium 15-40yrs	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Street tree. Poor form. Heavily restricted canopy
350	***Eucalyptus moluccana*** Grey Box	11	8	200, 450	5.88	M	Good	Fair	Medium 15-40yrs	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Street tree
351	***Eucalyptus tereticornis*** Forest Red Gum	16	10	350, 280	5.40	M	Average	Poor	Long 40yrs +	High	High	No additonal incursion to TPZ	Retain & Protect	Street tree. Included co-dominant stems from 0.5m
352	***Corymbia maculata*** Spotted Gum	8	6	200	2.40	SM	Average	Fair	Medium 15-40yrs	Low	Medium	No additonal incursion to TPZ	Retain & Protect	Street tree
353	***Eucalyptus microcorys*** Tallowwood	9	5	150, 100	2.16	SM	Good	Fair	Medium 15-40yrs	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Park tree
354	***Eucalyptus moluccana*** Grey Box	15	10	200, 350	4.80	M	Good	Average	Long 40yrs +	High	High	No additonal incursion to TPZ	Retain & Protect	Street tree
355	***Eucalyptus moluccana*** Grey Box	14	6	380	4.56	M	Average	Average	Long 40yrs +	High	High	No additonal incursion to TPZ	Retain & Protect	Street tree
356	***Eucalyptus moluccana*** Grey Box	8	5	150	2.00	SM	Average	Fair	Medium 15-40yrs	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Street tree
357	***Corymbia maculata*** Spotted Gum	14	8	400	4.80	M	Fair	Poor	Medium 15-40yrs	Medium	High	No additonal incursion to TPZ	Retain & Protect	Street tree. Large cambial wounds north side with significant decay & borer persent. Occluding
358	***Corymbia maculata*** Spotted Gum	16	10	650, 400	9.12	M	Good	Poor	Medium 15-40yrs	Medium	High	No additonal incursion to TPZ	Retain & Protect	Street tree. Large cambial wounds north side with significant decay & borer persent. Occluding
359	***Eucalyptus moluccana*** Grey Box	12	6	350, 100	4.32	M	Fair	Poor	Short 5-15yrs	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Park tree. Moderate cambial wounds west side with significant decay & borer persent

Overall Tree No.	*Genus & species* Common Name	Height (m)	Crown Spread (m)	DBH (mm)	TPZ Radius (m)	Age Class	Health / Vitality	Structure/ Condition	SULE Rating	Landscape Significance	Retention Value	Development Impact	Retain / Remove	Comments
360	***Eucalyptus microcorys*** Tallowwood	8	5	3 x 100	2.04	SM	Good	Fair	Medium 15-40yrs	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Park tree
361	***Eucalyptus microcorys*** Tallowwood	8	5	150, 50	2.00	SM	Good	Average	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	Park tree
362	***Corymbia maculata*** Spotted Gum	10	4	80, 150	2.00	SM	Good	Poor	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	Park tree. Included co-dominant stems west with mechanical damage at base
363	***Corymbia maculata*** Spotted Gum	16	14	950	11.40	M	Good	Good	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Remove	Park tree
364	***Corymbia maculata*** Spotted Gum	9	6	90, 150	2.04	SM	Good	Poor	Medium 15-40yrs	Medium	Medium	Within footprint of proposed roadway	Remove	Park tree. Included co-dominant stems west with mechanical damage at base
365	***Citrus sp.*** Citrus	5	4	Multi 40 - 80	2.00	M	Good	Good	Medium 15-40yrs	Low	Low	Within footprint of proposed roadway	Remove	-
366	***Eriobotrya japonica*** Loquat	7	5	150	2.00	M	Average	Good	Medium 15-40yrs	Low	Low	Within footprint of proposed footpath	Remove	-
367	***Cydonia oblonga*** Quince	5	5	150	2.00	M	Good	Good	Medium 15-40yrs	Low	Low	Within footprint of proposed footpath	Remove	-
368	***Cydonia oblonga*** Quince	3	2	80	2.00	SM	Fair	Fair	Medium 15-40yrs	Low	Low	Within footprint of proposed roadway	Remove	-
369	***Cydonia oblonga*** Quince	3	3	90	2.00	SM	Fair	Fair	Medium 15-40yrs	Low	Low	Within footprint of proposed roadway	Remove	-
370	***Ficus sp.*** Fig	8	8	Multi 100 - 150	2.16	M	Good	Good	Long 40yrs +	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
371	***X Cupressocyparis leylandii*** Leyland Cypress	5	2	Multi 20 - 100	2.00	SM	Average	Average	Medium 15-40yrs	Low	Low	Within footprint of proposed footpath	Remove	-
372	***X Cupressocyparis leylandii*** Leyland Cypress	5	2	Multi 20 - 100	2.00	SM	Average	Average	Medium 15-40yrs	Low	Low	Within footprint of proposed roadway	Remove	-
373	***X Cupressocyparis leylandii*** Leyland Cypress	5	2	Multi 20 - 100	2.00	SM	Average	Average	Medium 15-40yrs	Low	Low	Within footprint of proposed roadway	Remove	-
374	***X Cupressocyparis leylandii*** Leyland Cypress	5	2	Multi 20 - 100	2.00	SM	Average	Average	Medium 15-40yrs	Low	Low	Within footprint of proposed roadway	Remove	-
375	***X Cupressocyparis leylandii*** Leyland Cypress	5	2	Multi 20 - 100	2.00	SM	Average	Average	Medium 15-40yrs	Low	Low	Within footprint of proposed roadway	Remove	-
376	***X Cupressocyparis leylandii*** Leyland Cypress	5	2	Multi 20 - 100	2.00	SM	Average	Average	Medium 15-40yrs	Low	Low	Within footprint of proposed roadway	Remove	-
377	***Callistemon viminalis*** Weeping Bottlebrush	7	5	3 x 100	2.04	M	Fair	Fair	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	Street tree
378	***Callistemon viminalis*** Weeping Bottlebrush	7	4	4 x 100	2.40	M	Average	Average	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	Street tree
379	***Callistemon viminalis*** Weeping Bottlebrush	7	5	3 x 150	3.12	M	Average	Average	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from proposed roadway	Remove	Street tree

Overall Tree No.	*Genus & species* Common Name	Height (m)	Crown Spread (m)	DBH (mm)	TPZ Radius (m)	Age Class	Health / Vitality	Structure/ Condition	SULE Rating	Landscape Significance	Retention Value	Development Impact	Retain / Remove	Comments
380	***Eucalyptus sp.*** Eucalyptus	4	2	90	2.00	J	Good	Average	Long 40yrs +	Low	Low	Within footprint of proposed roadway	Remove	Street tree
381	***Melaleuca quinquenervia*** Broad-leaved Paperbark	10	6	500, 350	7.32	M	Fair	Good	Medium 15-40yrs	Medium	Medium	Within footprint of proposed roadway	Remove	Minor borer damage
382	***Dypsis decaryi*** Triangle Palm	6	4	400	4.80	M	Fair	Good	Medium 15-40yrs	Low	Low	Within footprint of proposed footpath	Remove	-
383	***Melaleuca quinquenervia*** Broad-leaved Paperbark	10	6	2 x 400	6.84	M	Average	Fair	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
384	***Melaleuca quinquenervia*** Broad-leaved Paperbark	9	5	200, 300	4.32	M	Poor	Fair	Short 5-15yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	Sparse canopy. High level epicormic growth
385	***Eucalyptus microcorys*** Tallowwood	12	10	600	7.20	M	Good	Good	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Remove	-
386	***Melaleuca quinquenervia*** Broad-leaved Paperbark	9	4	Multi 100 - 150	2.16	M	Fair	Fair	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
387	***Dead tree***	-	-	-	-	-	-	-	-	-	Consider Removal	-	Remove	-
388	***Dead tree***	-	-	-	-	-	-	-	-	-	Consider Removal	-	Remove	-
389	***Phoenix canariensis*** Canary Island Date Palm	10	6	900	4.00	M	Average	Good	Long 40yrs +	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
390	***Melaleuca quinquenervia*** Broad-leaved Paperbark	9	4	300, 400	6.00	M	Average	Average	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
391	***Ulmus parvifolia*** Chinese Elm	12	10	300, 400	6.00	M	Fair	Average	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
392	***Eucalyptus nicholii*** Narrow-leaved Peppermint	9	7	300	3.60	M	Average	Average	Medium 15-40yrs	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
393	***Eriobotrya japonica*** Loquat	7	3	Multi 50 - 100	2.00	M	Fair	Fair	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	-
394	***Murraya paniculata*** Orange Jessamine	4	4	Multi 20 - 80	2.00	M	Good	Good	Medium 15-40yrs	Low	Low	No additonal incursion to TPZ	Retain & Protect	-
395	***Eucalyptus sp.*** Eucalyptus	15	12	450	5.40	M	Fair	Good	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Remove	-
396	***Eucalyptus moluccana*** Grey Box	15	5	300	3.60	m	Good	Average	Long 40yrs +	Medium	Medium	Major TPZ incursion from regrading works	Remove	Park tree
397	***Eucalyptus microcorys*** Tallowwood	8	5	200	2.40	SM	Good	Average	Long 40yrs +	Medium	Medium	Major TPZ incursion from regrading works	Remove	Park tree
398	***Eucalyptus microcorys*** Tallowwood	7	4	150	2.00	SM	Good	Average	Long 40yrs +	Medium	Medium	Major TPZ incursion from regrading works	Remove	Park tree
399	***Eucalyptus microcorys*** Tallowwood	6	4	150	2.00	SM	Good	Average	Long 40yrs +	Medium	Medium	Major TPZ incursion from regrading works	Remove	Park tree

Overall Tree No.	*Genus & species* Common Name	Height (m)	Crown Spread (m)	DBH (mm)	TPZ Radius (m)	Age Class	Health / Vitality	Structure/ Condition	SULE Rating	Landscape Significance	Retention Value	Development Impact	Retain / Remove	Comments
400	***Eucalyptus microcorys*** Tallowwood	4	3	2 x 50	2.00	SM	Fair	Poor	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	Park tree
401	***Corymbia maculata*** Spotted Gum	11	5	250	3.00	M	Good	Good	Long 40yrs +	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Park tree
402	***Eucalyptus tereticornis*** Forest Red Gum	15	8	400, 200	5.40	M	Good	Good	Long 40yrs +	High	High	No additonal incursion to TPZ	Retain & Protect	Park tree
403	***Eucalyptus moluccana*** Grey Box	10	4	2 x 150	2.52	SM	Good	Good	Long 40yrs +	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Street tree
404	***Eucalyptus moluccana*** Grey Box	17	8	350	4.20	M	Average	Average	Long 40yrs +	High	High	No additonal incursion to TPZ	Retain & Protect	Street tree
405	***Eucalyptus moluccana*** Grey Box	8	3	200	2.40	SM	Good	Good	Long 40yrs +	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Street tree
406	***Eucalyptus moluccana*** Grey Box	8	2	200	2.40	SM	Fair	Poor	Medium 15-40yrs	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Street tree. Poor development - supressed
407	***Eucalyptus moluccana*** Grey Box	15	6	350	4.20	M	Good	Good	Long 40yrs +	High	High	No additonal incursion to TPZ	Retain & Protect	Street tree
408	***Eucalyptus moluccana*** Grey Box	9	4	250	3.00	M	Average	Fair	Medium 15-40yrs	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Street tree
409	***Corymbia maculata*** Spotted Gum	5	3	150	2.00	SM	Good	Average	Long 40yrs +	Low	Medium	Major TPZ incursion from regrading works	Remove	Park tree
410	***Corymbia maculata*** Spotted Gum	5	2	100	2.00	SM	Fair	Fair	Long 40yrs +	Low	Medium	Major TPZ incursion from regrading works	Remove	Park tree
411	***Corymbia maculata*** Spotted Gum	18	11	350	4.20	M	Average	Good	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Remove	Park tree
412	***Eucalyptus moluccana*** Grey Box	16	4	300	3.60	M	Average	Fair	Long 40yrs +	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Park tree
413	***Eucalyptus moluccana*** Grey Box	8	1	100	2.00	SM	Fair	Poor	Medium 15-40yrs	Low	Medium	No additonal incursion to TPZ	Retain & Protect	Street tree
414	***Eucalyptus moluccana*** Grey Box	17	6	400, 150	5.16	M	Average	Average	Long 40yrs +	High	High	No additonal incursion to TPZ	Retain & Protect	Street tree. Bifurcated stems from ground level
415	***Eucalyptus moluccana*** Grey Box	16	2	200	2.40	M	Fair	Poor	Medium 15-40yrs	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Park tree
416	***Eucalyptus moluccana*** Grey Box	17	6	400	4.80	OM	Poor	Poor	Short 5-15yrs	Low	Low	No additonal incursion to TPZ	Retain & Protect	Park tree. In severe decline, active borer observed
417	***Eucalyptus moluccana*** Grey Box	3	2	100	2.00	SM	Poor	Poor	Short 5-15yrs	Low	Low	No additonal incursion to TPZ	Retain & Protect	Park tree. In severe decline
418	***Eucalyptus moluccana*** Grey Box	10	4	300	3.60	M	Average	Fair	Long 40yrs +	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Park tree. Twin stems from ground level
419	***Eucalyptus moluccana*** Grey Box	17	5	300, 150	4.08	M	Average	Average	Long 40yrs +	High	High	No additonal incursion to TPZ	Retain & Protect	Street tree

Overall Tree No.	*Genus & species* Common Name	Height (m)	Crown Spread (m)	DBH (mm)	TPZ Radius (m)	Age Class	Health / Vitality	Structure/ Condition	SULE Rating	Landscape Significance	Retention Value	Development Impact	Retain / Remove	Comments
420	***Eucalyptus moluccana*** Grey Box	17	3	250	3.00	M	Average	Average	Long 40yrs +	High	High	No additonal incursion to TPZ	Retain & Protect	Street tree
421	***Eucalyptus moluccana*** Grey Box	18	8	550	6.60	M	Good	Average	Long 40yrs +	High	High	No additonal incursion to TPZ	Retain & Protect	Park tree
422	***Corymbia maculata*** Spotted Gum	6	5	250	3.00	M	Good	Poor	Medium 15-40yrs	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Street tree. Severe lean and crown dominance to north
423	***Eucalyptus moluccana*** Grey Box	5	3	150	2.00	J	Good	Average	Long 40yrs +	Medium	Low	No additonal incursion to TPZ	Retain & Protect	Street tree
424	***Eucalyptus crebra*** Narrow-leaved Ironbark	6	2	100	2.00	J	Fair	Poor	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	Park tree. Poor development
425	***Dead tree***	-	-	-	-	-	-	-	-	-	Consider Removal	-	Remove	-
426	***Eucalyptus microcorys*** Tallowwood	5	4	200	2.40	SM	Fair	Poor	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	Park tree. Poor development + partial windthrow
427	***Dead tree***	-	-	-	-	-	-	-	-	-	Consider Removal	-	Remove	-
428	***Dead tree***	-	-	-	-	-	-	-	-	-	Consider Removal	-	Remove	-
429	***Eucalyptus moluccana*** Grey Box	9	7	300	3.60	M	Good	Average	Long 40yrs +	High	High	No additonal incursion to TPZ	Retain & Protect	Street tree
430	***Eucalyptus crebra*** Narrow-leaved Ironbark	10	7	300	3.60	M	Fair	Average	Long 40yrs +	High	High	Major TPZ incursion from regrading works	Remove	Park tree
431	***Corymbia maculata*** Spotted Gum	13	6	250	3.00	M	Good	Poor	Medium 15-40yrs	Medium	Medium	Minor TPZ incursion from regrading works	Retain & Protect	Park tree. Failed central stem, secondary epicormc growth
432	***Eucalyptus moluccana*** Grey Box	15	8	350	4.20	M	Good	Average	Long 40yrs +	High	High	No additonal incursion to TPZ	Retain & Protect	Street tree
433	***Eucalyptus moluccana*** Grey Box	12	8	400	4.80	M	Good	Fair	Long 40yrs +	High	High	No additonal incursion to TPZ	Retain & Protect	Street tree. Crown dominance to east
434	***Corymbia maculata*** Spotted Gum	12	3	200	2.40	M	Average	Poor	Medium 15-40yrs	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Park tree. Wound @ basal flare north side to 1.5m. Borer evident
435	***Corymbia maculata*** Spotted Gum	9	5	200	2.40	SM	Good	Good	Long 40yrs +	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Park tree
436	***Corymbia maculata*** Spotted Gum	5	2	70	2.00	J	Average	Fair	Long 40yrs +	Low	Low	No additonal incursion to TPZ	Retain & Protect	Park tree
437	***Corymbia maculata*** Spotted Gum	6	3	2 x 100	2.00	SM	Average	Poor	Long 40yrs +	Low	Low	No additonal incursion to TPZ	Retain & Protect	Park tee. Bifurcated stems from 1m
438	***Corymbia maculata*** Spotted Gum	10	6	300	3.60	M	Good	Good	Long 40yrs +	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Park tree
439	***Corymbia maculata*** Spotted Gum	11	3	150	2.00	M	Average	Average	Long 40yrs +	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Park tree

Overall Tree No.	*Genus & species* Common Name	Height (m)	Crown Spread (m)	DBH (mm)	TPZ Radius (m)	Age Class	Health / Vitality	Structure/ Condition	SULE Rating	Landscape Significance	Retention Value	Development Impact	Retain / Remove	Comments
440	***Casuarina glauca*** Swamp Oak	9	4	300	3.60	M	Fair	Fair	Medium 15-40yrs	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Park tree. Crown dieback
441	***Corymbia maculata*** Spotted Gum	11	6	300	3.60	M	Good	Average	Long 40yrs +	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Park tree
442	***Corymbia maculata*** Spotted Gum	9	3	200	2.40	M	Average	Fair	Medium 15-40yrs	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Park tree
443	***Corymbia maculata*** Spotted Gum	15	10	450	5.40	M	Good	Good	Long 40yrs +	High	High	No additonal incursion to TPZ	Retain & Protect	Street tree
444	***Corymbia maculata*** Spotted Gum	10	5	200	2.40	M	Good	Good	Long 40yrs +	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Park tree
445	***Corymbia maculata*** Spotted Gum	7	2	3 x 100	2.04	SM	Fair	Poor	Medium 15-40yrs	Low	Low	No additonal incursion to TPZ	Retain & Protect	Park tree. Epicormic regrowth from ground level
446	***Eucalyptus botryoides*** Bangalay	14	9	450	5.40	M	Good	Fair	Long 40yrs +	High	High	Within footprint of proposed retaining wall	Remove	Crown bias to north
447	***Corymbia maculata*** Spotted Gum	9	3	150	2.00	SM	Average	Fair	Long 40yrs +	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Park tree
448	***Corymbia maculata*** Spotted Gum	10	3	250	3.00	M	Average	Average	Long 40yrs +	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Park tree
449	***Corymbia maculata*** Spotted Gum	14	10	300	3.60	M	Good	Good	Long 40yrs +	High	High	No additonal incursion to TPZ	Retain & Protect	Park tree
450	***Eucalyptus crebra*** Narrow-leaved Ironbark	7	4	350	4.20	OM	Poor	Poor	Short 5-15yrs	Low	Low	No additonal incursion to TPZ	Retain & Protect	Park tree. In decline
451	***Corymbia maculata*** Spotted Gum	10	4	200	2.40	SM	Fair	Fair	Medium 15-40yrs	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Park tree
452	***Corymbia maculata*** Spotted Gum	11	8	300	3.60	M	Good	Good	Long 40yrs +	High	High	No additonal incursion to TPZ	Retain & Protect	Park tree
453	***Eucalyptus microcorys*** Tallowwood	6	3	100	2.00	SM	Fair	Fair	Medium 15-40yrs	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Park tree
454	***Eucalyptus microcorys*** Tallowwood	7	4	200	2.40	SM	Average	Fair	Medium 15-40yrs	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Park tree
455	***Eucalyptus microcorys*** Tallowwood	8	4	200	2.40	SM	Average	Fair	Medium 15-40yrs	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Park tree
456	***Corymbia maculata*** Spotted Gum	11	4	250	3.00	M	Fair	Fair	Long 40yrs +	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Park tree
457	***Eucalyptus microcorys*** Tallowwood	7	5	200	2.40	SM	Good	Average	Long 40yrs +	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Park tree
458	***Eucalyptus microcorys*** Tallowwood	7	5	200	2.40	SM	Good	Average	Long 40yrs +	Medium	Medium	No additonal incursion to TPZ	Retain & Protect	Park tree
459	***Cupressus sp.*** Cypress	8	5	4 x 150	3.60	M	Average	Fair	Medium 15-40yrs	Low	Low	Major TPZ incursion from regrading works	Remove	-

Overall Tree No.	*Genus & species* Common Name	Height (m)	Crown Spread (m)	DBH (mm)	TPZ Radius (m)	Age Class	Health / Vitality	Structure/ Condition	SULE Rating	Landscape Significance	Retention Value	Development Impact	Retain / Remove	Comments
460	***Araucaria columnaris*** Cook Pine	12	4	300	3.60	M	Good	Good	Long 40yrs +	Medium	Medium	Major TPZ incursion from regrading works	Remove	-
461	***Melaleuca quinquenervia*** Broad-leaved Paperbark	11	5	300	3.60	M	Good	Average	Long 40yrs +	High	High	Within footprint of proposed roadway	Remove	Street tree

Tree Inspection Data Notes & Terminology

Tree No. (Tree Number)
The tree number associated to each tree located on or adjacent to the subject site. Relates to the Tree Location Plan held at Appendix 2.

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 DBH
- The trees height and crown spread is recorded in metres (m);
- The tree DBH is recorded in millimetres (mm). DBH is an abbreviation of Diameter (of the trunk) measured at Breast Height (or 1.4m from the base of the trunk). If more than one trunk is present the DBH is calculated in accordance with AS4970-2009 Protection of Trees on Development Sites

Age Class
The age class of each tree is estimated as either:
IM – Immature refers to well established but juvenile 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 – 2009 Protection of Trees on Development Sites): (D x 50)0.42 x 0.64

TPZ (Tree Protection Zone)
The TPZ is a radial area measured by multiplying the DBH 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 TPZ is used to identify the minimum area required for the safe retention of a given tree. This calculation is derived from the Australian Standard 4970-2009 Protection of Trees in Development Sites. An incursion up to 10% within the TPZ is potentially acceptable if no other option is available. A major encroachment (in excess of 10%) 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 SULE, [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.
Consider Removal - These trees are considered hazardous, or in irreversible decline, or weeds and should be removed irrespective of development.

S.U.L.E. Categories
Safe Useful Life Expectancy (after *Barrell* 1996, modified by the author). A trees S.U.L.E. category is the life expectancy of the tree modified first by its age, health, condition, safety and location. S.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 with an acceptable degree of risk assuming reasonable maintenance.
Medium - Appear to be retainable at the time of assessment for 15 to 40 years with an acceptable degree of risk assuming reasonable maintenance.
Short - Trees appear to be retainable at the time of assessment for 5 to15 years with an acceptable degree of risk 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 Standards 'Protection of Trees on Development Sites' AS 4970 – 2009 with reference to the Tree Protection Zone (TPZ): being a combination of the root and crown area requiring protection. The TPZ takes into consideration the Structural Root Zone (SRZ): The area required for tree stability. Determined by AS4970 - 2009 Figure 1,Table of determining the SRZ, section 3.3.5 of the standards. The standard states where a greater than 10% encroachment occurs the arborist is to take into consideration the schedule of determining impacts as set within AS4970 s. 3.3.4. Encroachments are referred to within this report as major or minor encroachments (AS4970 s. 3.3.2 & 3.3.3). Below is the terminology used for estimated percentage of development incursion used within this report. To retain specific trees and ensure their viability, development must take into consideration protection of the TPZ radius. The extent of inclusion within the TPZ radius has been categorised within this report as follows:

<10% - negligible incursion
>10 - <15% - low to moderate level of incursion
>15 - <20% - moderate level of incursion
>20 - <25% - moderate to high level of incursion
>25 - <35% - high level of incursion
>35% - significant incursion within the TPZ

APPENDIX 2 - TREE LOCATION PLAN

NOTE: MUST BE READ IN CONJUNCTION WITH ARBORICULTURAL IMPACT ASSESSMENT

LEGEND:

- EXTENT OF WORKS
- SHEET BOUNDARY

CPS
CREATIVEPLANNINGSOLUTIONS

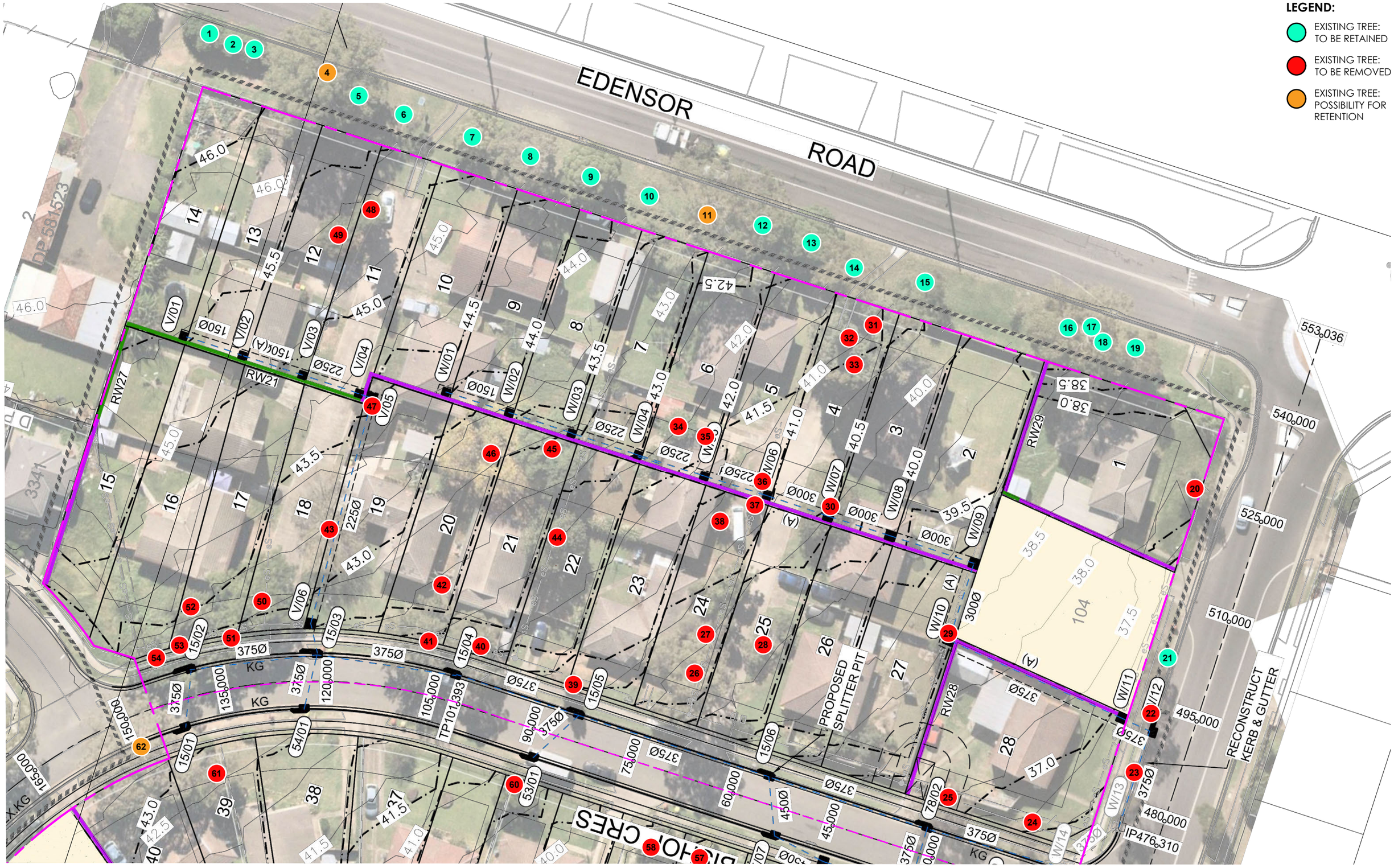
PROJECT:
BONNYRIGG SUBDIVISION - STAGES 1-2

DRAWING TITLE:
TREE LOCATION PLAN - KEY

CLIENT:
NSW GOVERNMENT Land & Housing Corporation

SCALE 1:2000 @ A3
0 20 40 60 80 100 metres

SHEET NUMBER	REVISION	DATE
D786_TLP_000	A	04.11.2020



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A	CA	FOR APPROVAL	TP	GT	04.11.20

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

PROJECT
BONNYRIGG SUBDIVISION
STAGES 1-2

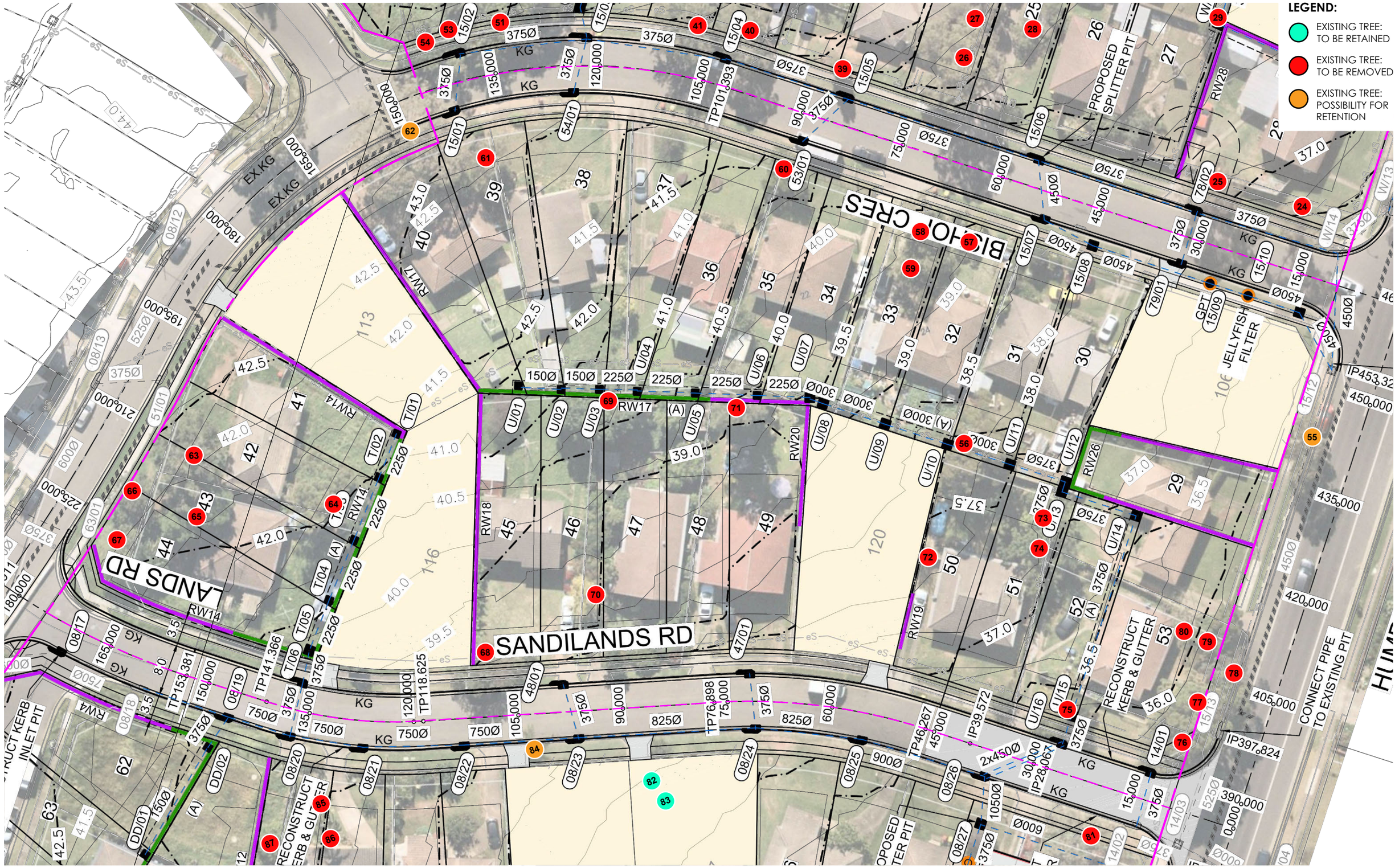
DRAWING TITLE
TREE LOCATION PLAN
SHEET: **001**

CLIENT
NSW GOVERNMENT Land & Housing Corporation

Drawn : TP
Designed : GT
Project No. : D786
Bar Scale
0 2.5 5 7.5 10 12.5 metres
1:500 @ A3

SHEET NUMBER
D786_TLP_001

REVISION
A



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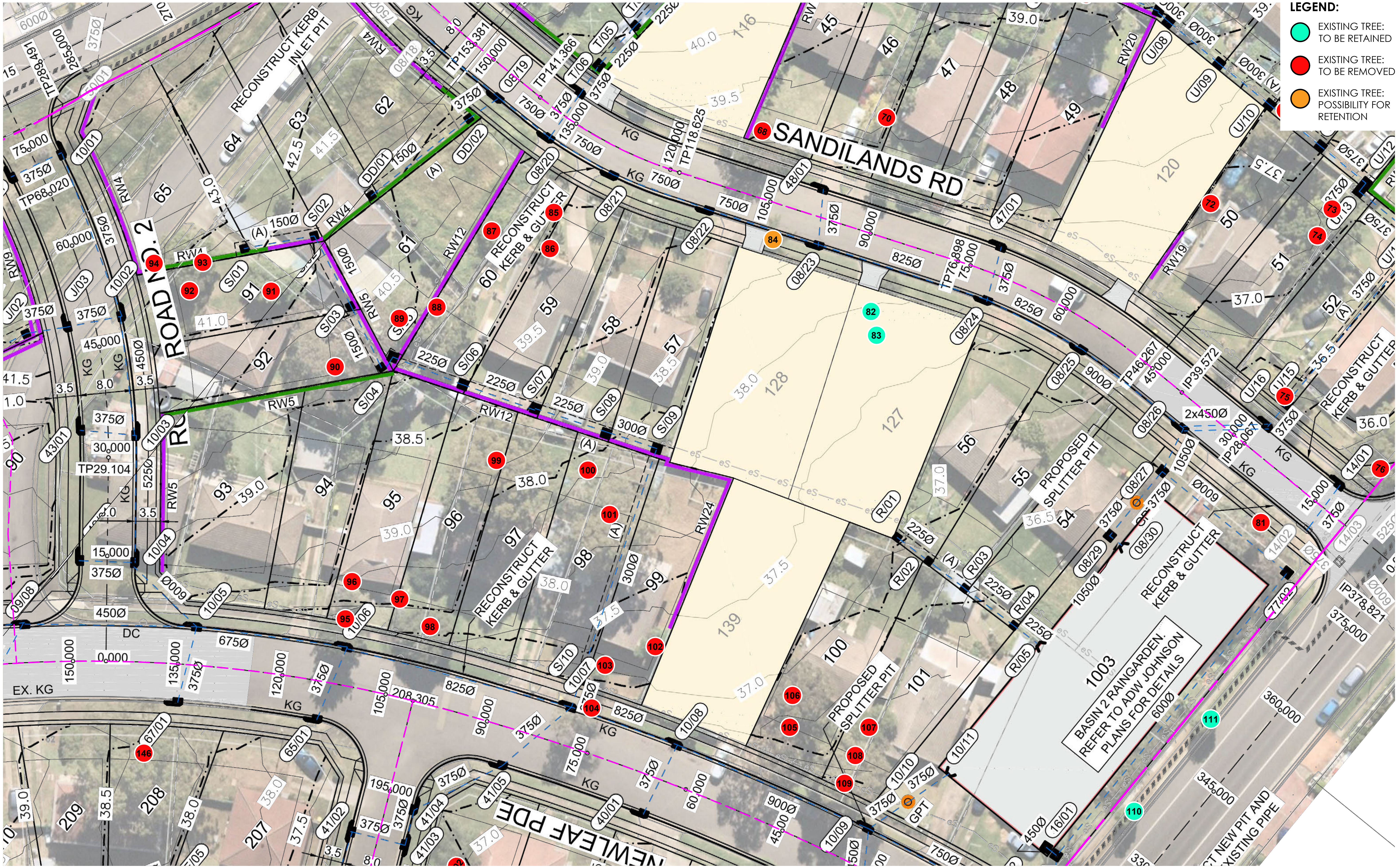
PROJECT
BONNYRIGG SUBDIVISION
STAGES 1-2

DRAWING TITLE
TREE LOCATION PLAN
SHEET: **002**

CLIENT
NSW GOVERNMENT Land & Housing Corporation

Drawn : TP
Designed : GT
Project No. : D786
Bar Scale
0 2.5 5 7.5 10 12.5 metres
1:500 @ A3

SHEET NUMBER D786_TLP_002
REVISION A



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PROJECT
BONNYRIGG SUBDIVISION
STAGES 1-2

DRAWING TITLE
TREE LOCATION PLAN
SHEET: **003**

CLIENT
NSW GOVERNMENT Land & Housing Corporation

Drawn : TP
Designed : GT
Project No. : D786
Bar Scale
0 2.5 5 7.5 10 12.5 metres
1:500 @ A3

SHEET NUMBER D786_TLP_003
REVISION A

- DETAILS.

- CLARITY. REFER TO
N & ARBORISTS REPORT

- R PITS AND PIPES THAT DO NOT
POSED STORMWATER SYSTEM IS
ND DISPOSED OF.

IENT BASIN AT LOTS 65, 255 & 280 TO BE

).

LEGEND:

- EXISTING TREE: TO BE RETAINED
- EXISTING TREE: TO BE REMOVED
- EXISTING TREE: POSSIBILITY FOR RETENTION

DEMOLISH EXISTING CAP AND CONNECT NEW PIPE TO EXISTING

CONNECT PIPE TO EXISTING STORMWATER.

DP 118241

RECONSTRUCT KERB & GUTTER

BISHOP CRES

NEWLEAF PDE

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PROJECT

BONNYRIGG SUBDIVISION
STAGES 1-2

DRAWING TITLE

TREE LOCATION PLAN
SHEET: **004**

CLIENT

NSW GOVERNMENT Land & Housing Corporation

Drawn : TP
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Project No. : D786
Bar Scale

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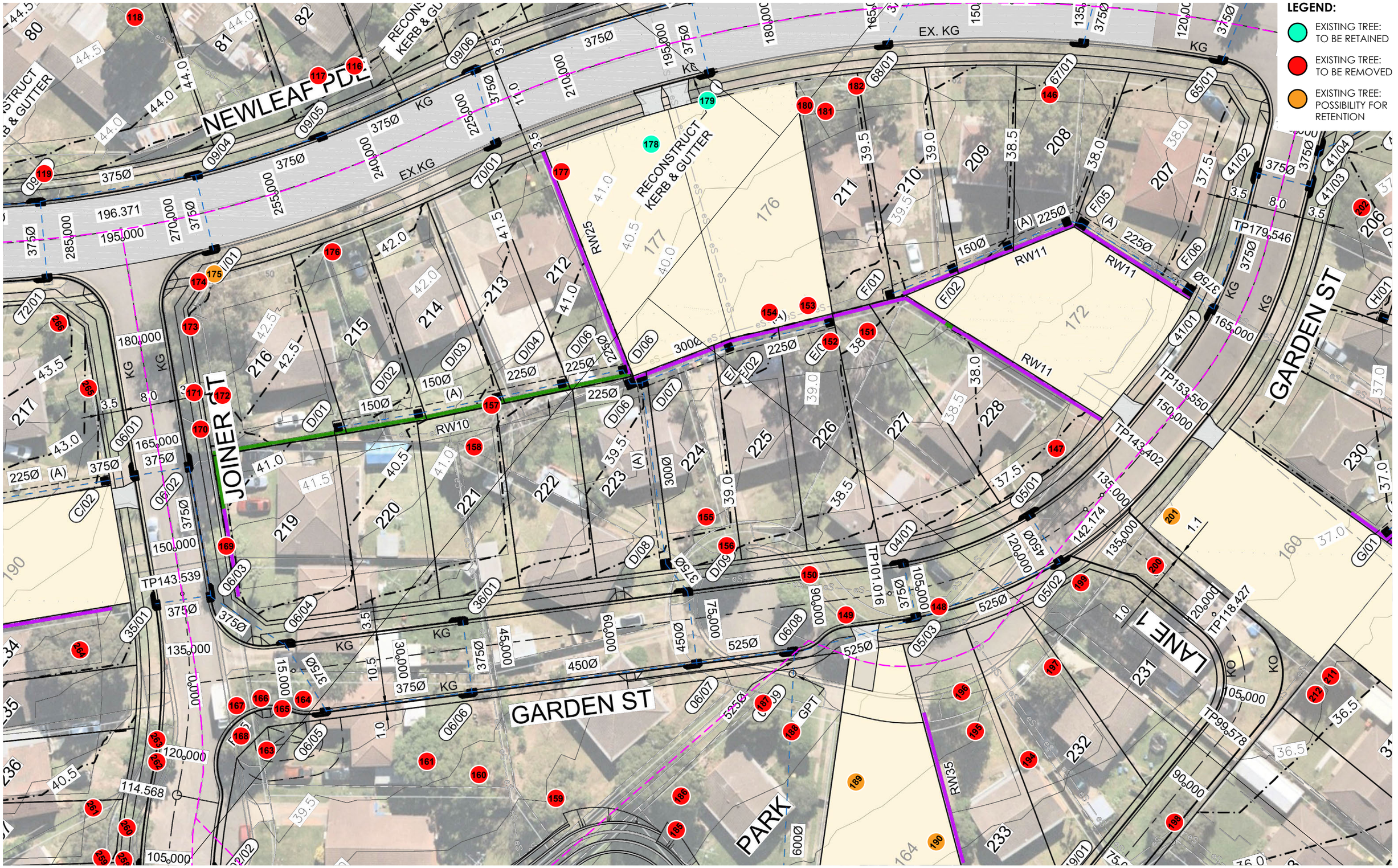
1:500 @ A3

SHEET NUMBER D786_TLP_004
REVISION A



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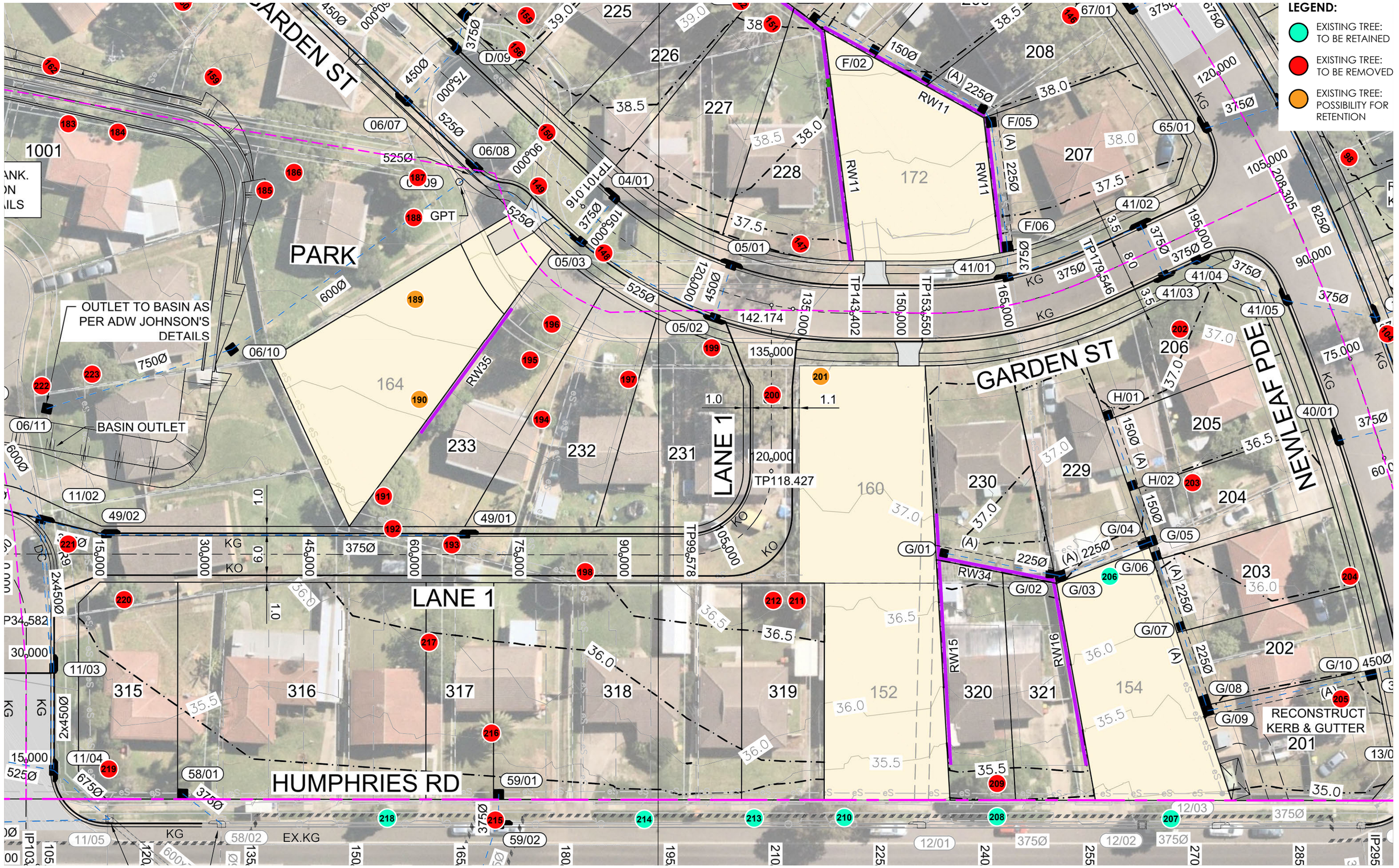
PROJECT
BONNYRIGG SUBDIVISION
STAGES 1-2

DRAWING TITLE
TREE LOCATION PLAN
SHEET: **005**

CLIENT
NSW GOVERNMENT Land & Housing Corporation

Drawn : TP
Designed : GT
Project No. : D786
Bar Scale
0 2.5 5 7.5 10 12.5 metres
1:500 @ A3

SHEET NUMBER D786_TLP_005
REVISION A



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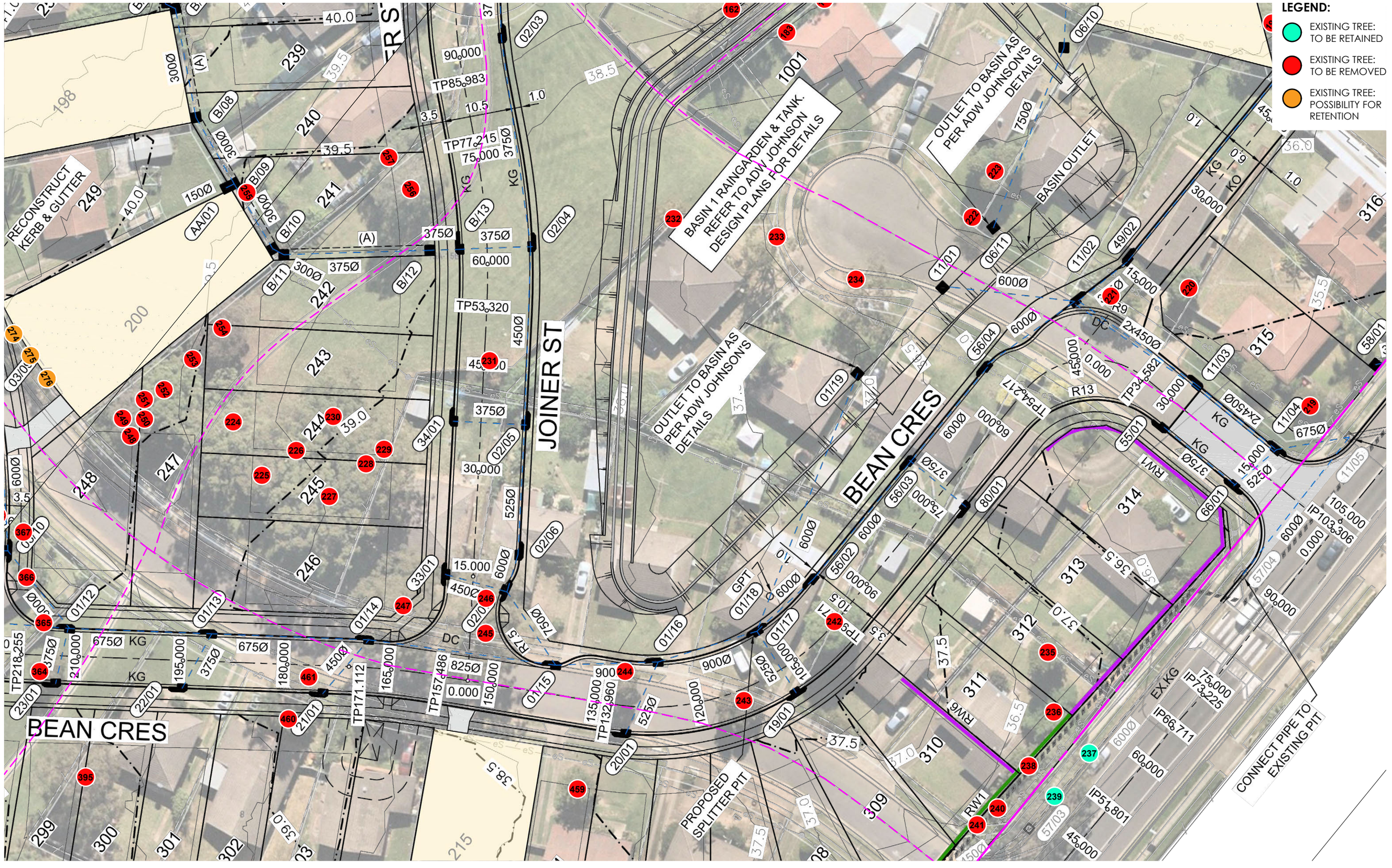
PROJECT
BONNYRIGG SUBDIVISION
STAGES 1-2

DRAWING TITLE
TREE LOCATION PLAN
SHEET: **006**

CLIENT
NSW GOVERNMENT Land & Housing Corporation

Drawn : TP
Designed : GT
Project No. : D786
Bar Scale
1:500 @ A3

SHEET NUMBER D786_TLP_006
REVISION A



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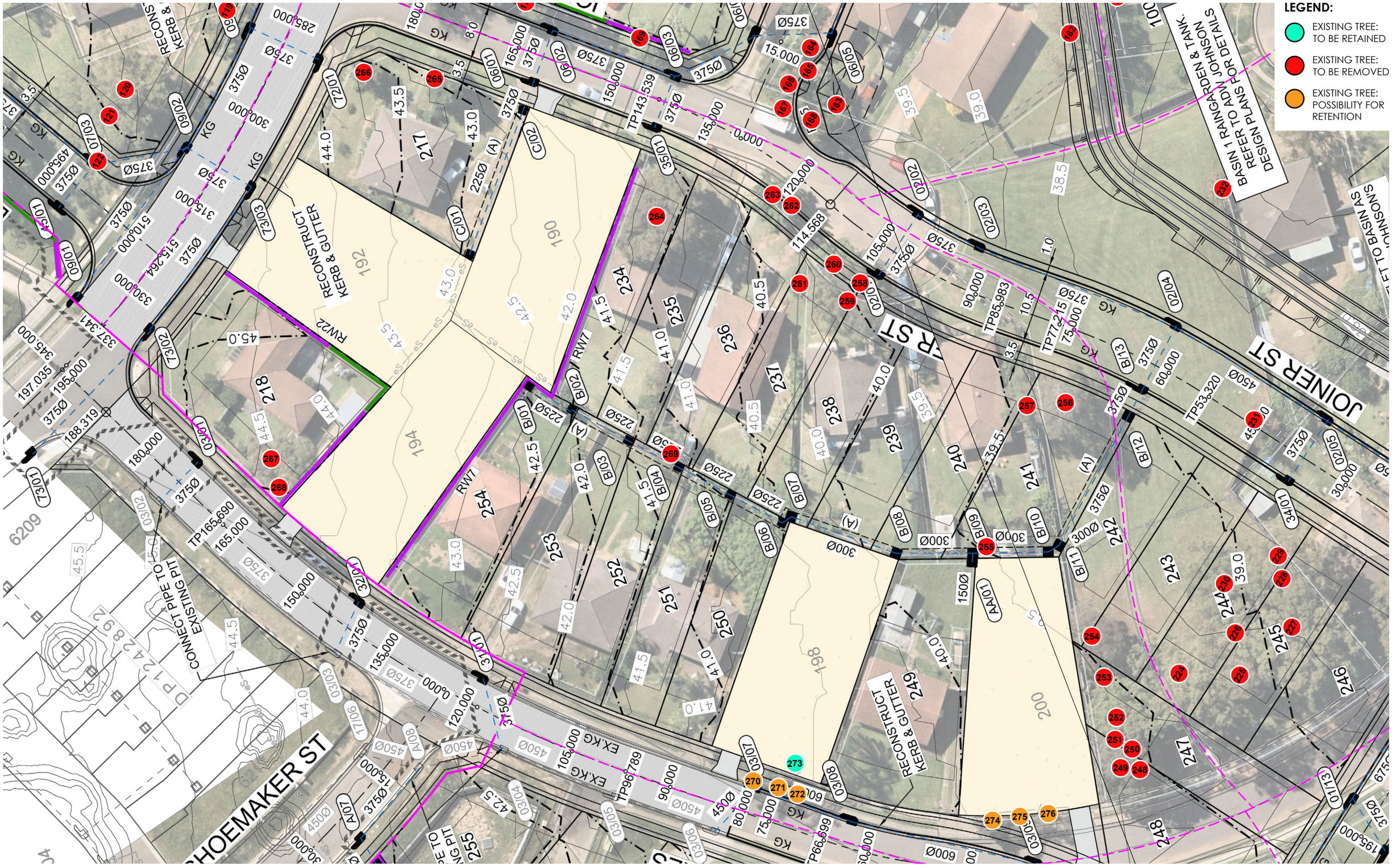
PROJECT
BONNYRIGG SUBDIVISION
STAGES 1-2

DRAWING TITLE
TREE LOCATION PLAN
SHEET: **007**

CLIENT
NSW GOVERNMENT Land & Housing Corporation

Drawn : TP
Designed : GT
Project No. : D786
Bar Scale
0 2.5 5 7.5 10 12.5 metres
1:500 @ A3

SHEET NUMBER D786_TLP_007
REVISION A



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PROJECT
BONNYRIGG SUBDIVISION
STAGES 1-2

DRAWING TITLE
TREE LOCATION PLAN
SHEET: **008**

CLIENT
NSW GOVERNMENT Land & Housing Corporation

Drawn : TP
Designed : GT
Project No. : D786
Bar Scale
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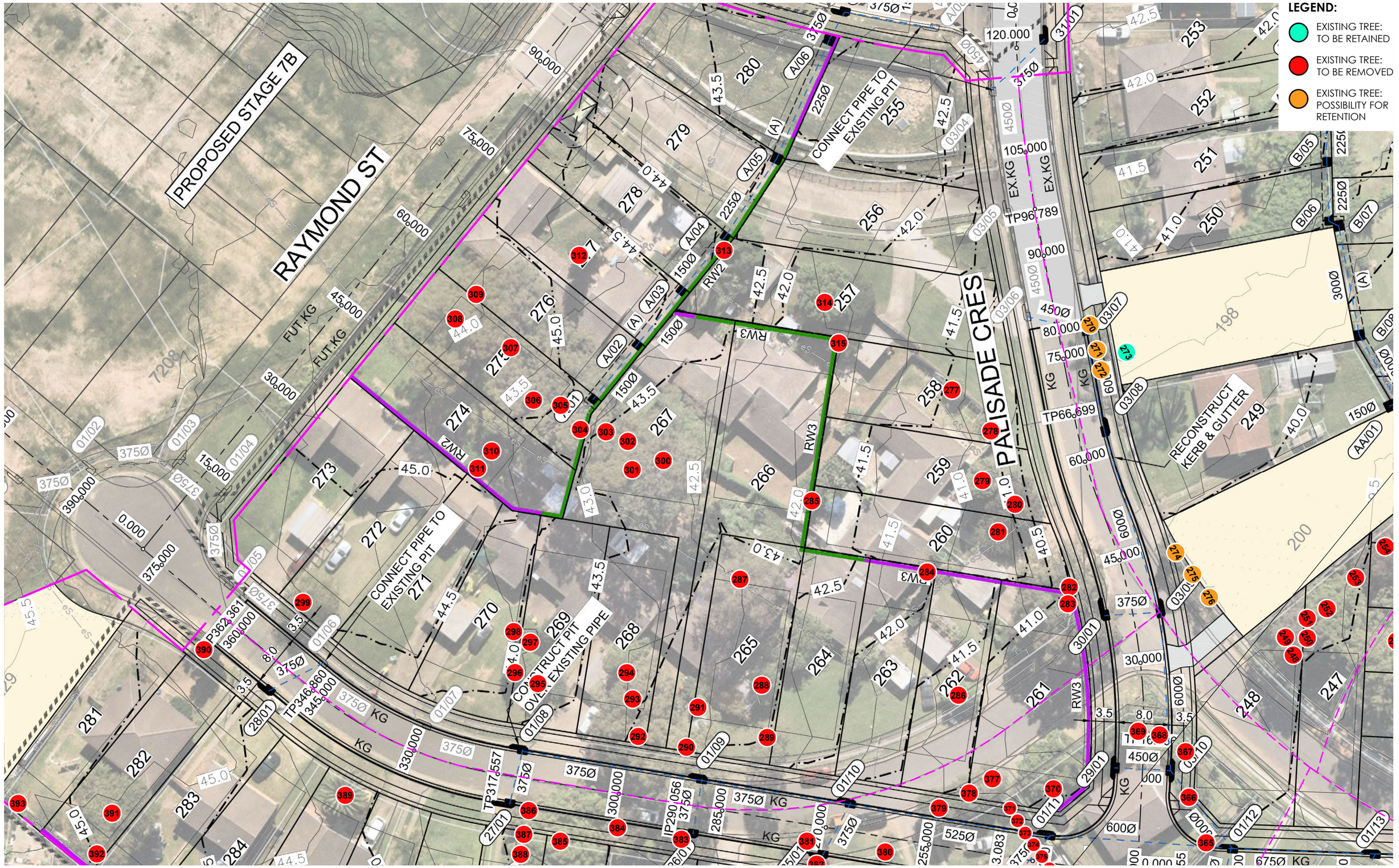
1:500 @ A3

SHEET NUMBER D786_TLP_008
REVISION A



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PROJECT
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STAGES 1-2

DRAWING TITLE
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SHEET: **009**

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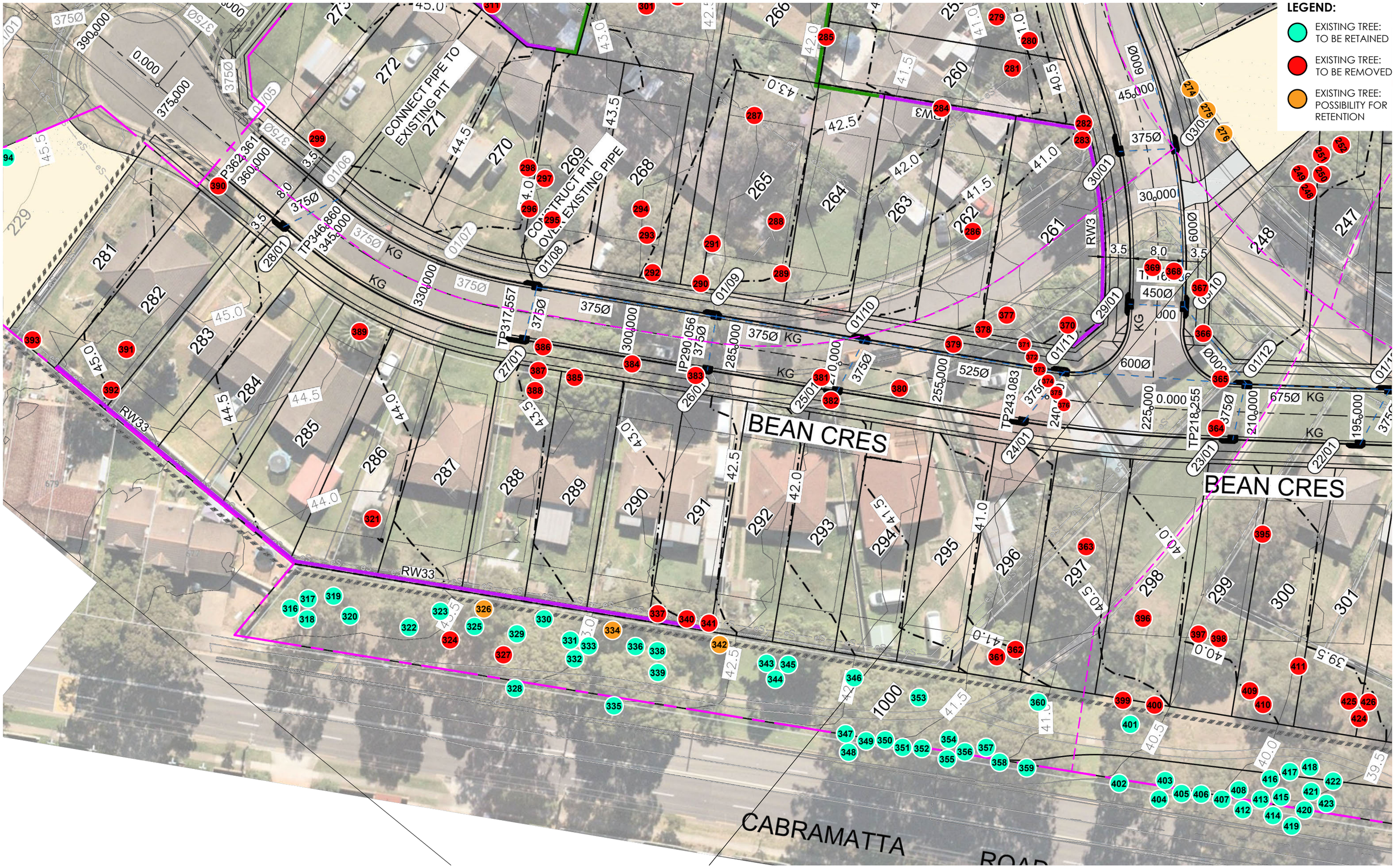

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PROJECT
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STAGES 1-2

DRAWING TITLE
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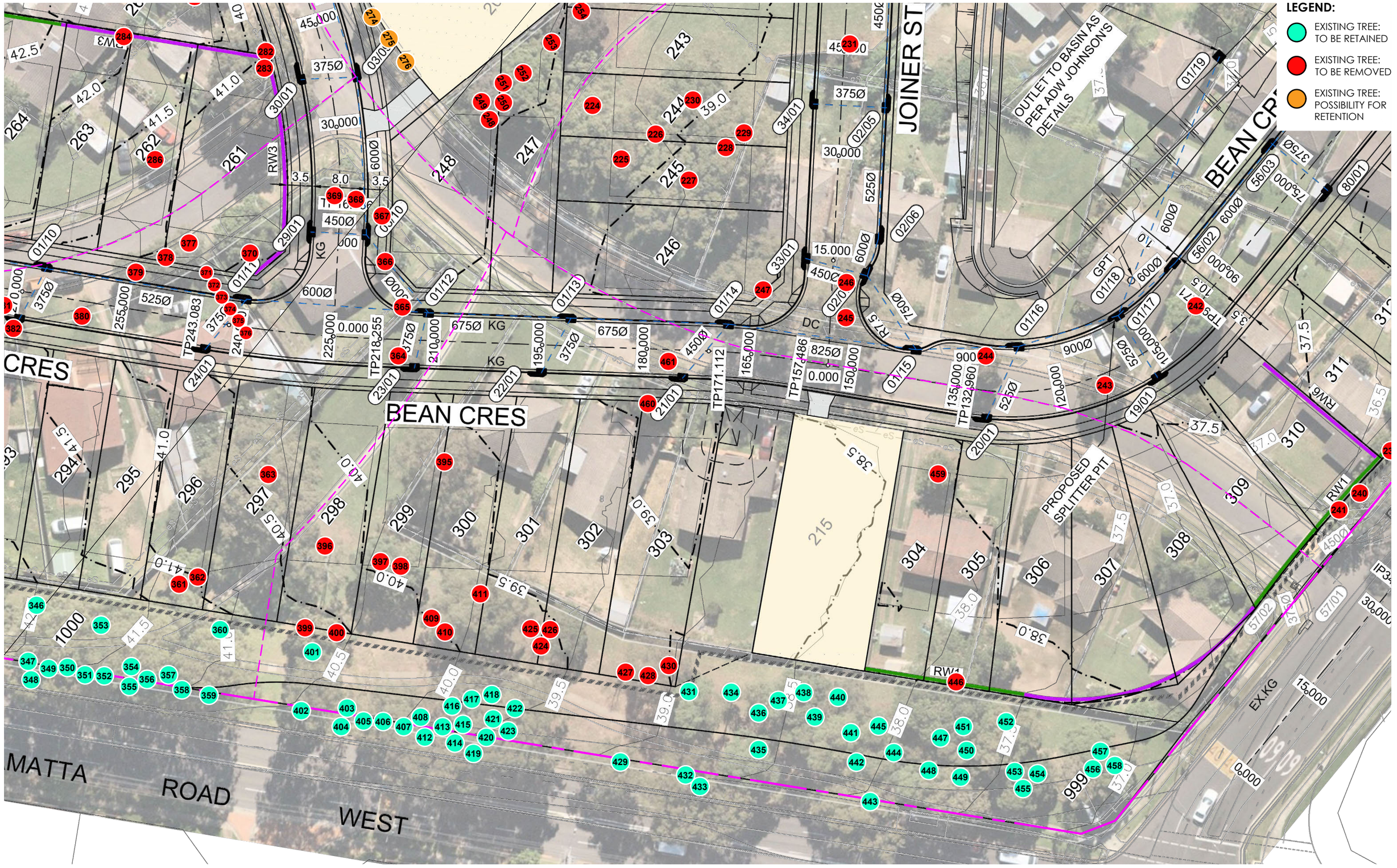

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PROJECT

BONNYRIGG SUBDIVISION
STAGES 1-2

DRAWING TITLE

TREE LOCATION PLAN
SHEET: **011**

CLIENT

NSW GOVERNMENT Land & Housing Corporation

Drawn : TP
Designed : GT
Project No. : D786
Bar Scale
0 2.5 5 7.5 10 12.5 metres
1:500 @ A3

SHEET NUMBER D786_TLP_011
REVISION A

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 – 2009 Protection of Trees on Development Sites): (D x 50)0.42 x 0.64

TPZ (Tree Protection Zone)

The TPZ is a radial area measured by multiplying the DBH 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 TPZ is used to identify the minimum area required for the safe retention of a given tree. This calculation is derived from the Australian Standard 4970-2009 Protection of Trees in Development Sites. An incursion up to 10% within the TPZ is potentially acceptable if no other option is available. A major encroachment (in excess of 10%) 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 SULE, [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.

Consider Removal - These trees are considered hazardous, or in irreversible decline, or weeds and should be removed irrespective of development.

S.U.L.E. Categories

Safe Useful Life Expectancy (after *Barrell* 1996, modified by the author). A trees S.U.L.E. category is the life expectancy of the tree modified first by its age, health, condition, safety and location. S.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 with an acceptable degree of risk assuming reasonable maintenance.

Medium - Appear to be retainable at the time of assessment for 15 to 40 years with an acceptable degree of risk assuming reasonable maintenance.

Short - Trees appear to be retainable at the time of assessment for 5 to15 years with an acceptable degree of risk 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 Standards 'Protection of Trees on Development Sites' AS 4970 – 2009 with reference to the Tree Protection Zone (TPZ): being a combination of the root and crown area requiring protection. The TPZ takes into consideration the Structural Root Zone (SRZ): The area required for tree stability. Determined by AS4970 - 2009 Figure 1,Table of determining the SRZ, section 3.3.5 of the standards. The standard states where a greater than 10% encroachment occurs the arborist is to take into consideration the schedule of determining impacts as set within AS4970 s. 3.3.4. Encroachments are referred to within this report as major or minor encroachments (AS4970 s. 3.3.2 & 3.3.3). Below is the terminology used for estimated percentage of development incursion used within this report. To retain specific trees and ensure their viability, development must take into consideration protection of the TPZ radius. The extent of inclusion within the TPZ radius has been categorised within this report as follows:

<10% - negligible incursion
>10 - <15% - low to moderate level of incursion
>15 - <20% - moderate level of incursion
>20 - <25% - moderate to high level of incursion
>25 - <35% - high level of incursion
>35% - significant incursion within the TPZ

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.

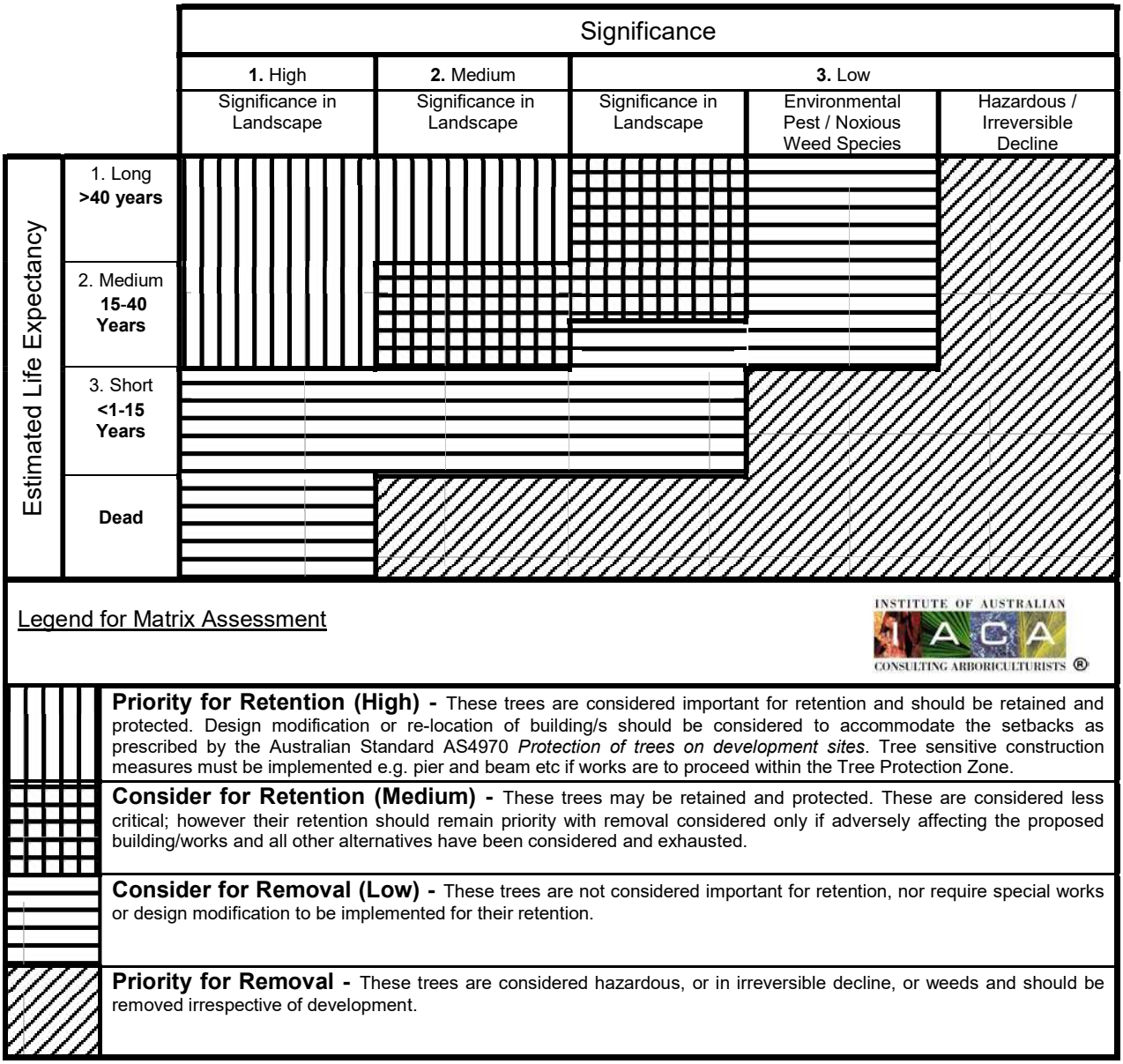
Hazardous/Irreversible Decline

- 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.



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

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 from 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 2009 PROTECTION OF TREES ON DEVELOPMENT SITES

Section 3, Determining the tree protection zones of the selected trees

3.1 Tree protection zone (TPZ)

"The tree protection zone (TPZ) is the principal means of protecting trees on development sites. The TPZ is a combination of the root area and crown area requiring protection. It is an area isolated from construction disturbance, so that the tree remains viable.

The TPZ incorporates the structural root zone (SRZ) (refer to Clause 3.3.5)."

3.2 Determining the TPZ

The radius of the TPZ is calculated for each tree by multiplying its DBH x 12.

TPZ = DBH x 12

where

DBH = trunk diameter measured at 1.4 m above ground

Radius is measured from the centre of the stem at ground level.

3.3.5 Structural root zone (SRZ)

"The SRZ is the area required for street stability. A larger area is required to maintain a viable tree. The SRZ only needs to be calculated when a major encroachment into a TPZ is proposed. Root investigation may provide more information on the extent of these roots."

Determining the SRZ

The radius of the TPZ is calculated for each tree by multiplying its DBH x 12.

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

where

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

Note: The SRZ for trees less than 0.15 m will be 1.5 m (see Figure 1).

The curve can be expressed by the following formula:

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

NOTES:

1 R_{SRZ} is the structural root zone radius.

2 D is the stem diameter measured immediately above root buttress.

3 The SRZ for trees less than 0.15 m diameter is 1.5 m.

4 The SRZ formula and graph do not apply to palms, other monocots, cycads and tree ferns.

5 This does not apply to trees with an asymmetrical root plate.

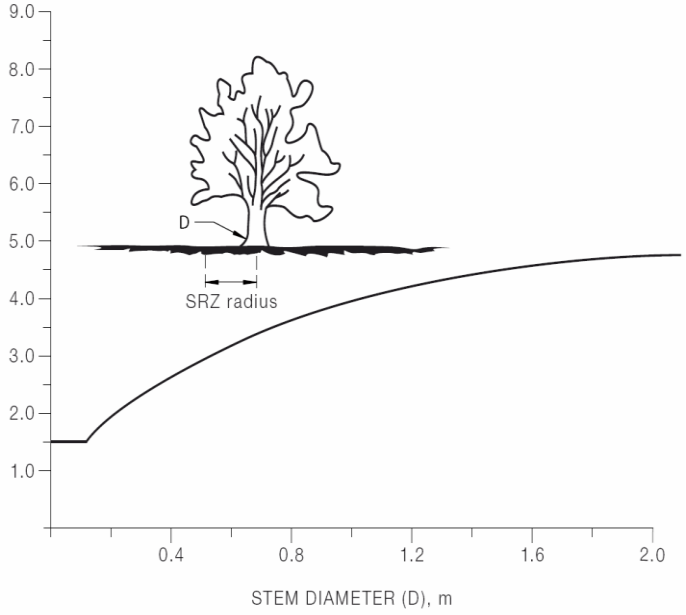


FIGURE 1 STRUCTURAL ROOT ZONE

APPENDIX 5 – GENERAL TREE PROTECTION SPECIFICATION

General tree protection provisions as detailed below should be implemented to mitigate impacts of any construction works to trees nominated for retention. These requirements should be carried out in the event no specific Tree Protection Plan or Specification is prepared for the subject development. In addition, tree protection must comply with *Section 4* of *AS4940-2009 Protection of trees on development sites*.

1.0 Appointment of Project Arborist

A Project Arborist shall be engaged prior the commencement of work on-site and monitor compliance with the protection measures. The Project Arborist shall inspect the tree protection measures and Compliance Certification shall be prepared by the Project Arborist for review by the Principal Certifying Authority prior to the release of the Compliance Certificate.

The Project Arborist shall have a minimum qualification equivalent (using the Australian Qualifications Framework) of Level 5 or above in Arboriculture.

2.0 Schedule of Works and Responsibilities

HOLD POINT	TASK	RESPONSIBILITY	CERTIFICATION	TIMING OF INSPECTION
1	Indicate clearly (with spray paint on trunks) trees approved for removal only	Principal Contractor	Project Arborist (AQF5)	Prior to demolition or site establishment
2	Install tree protection fencing, and additional root, trunk and/or branch protection	Principal Contractor	Project Arborist (AQF5)	Prior to demolition or site establishment
3	Supervise all excavation works proposed within the TPZ	Principal Contractor	Project Arborist (AQF5)	As required prior to works proceeding within TPZ
4	Inspection of trees by Project Arborist	Principal Contractor	Project Arborist (AQF5)	Monthly during construction
5	Final Inspection of trees by Project Arborist	Principal Contractor	Project Arborist (AQF5)	Following removal of tree protection measures prior to Occupation Certificate

3.0 Compliance

Contractors and site workers shall receive a copy of these specifications a minimum of 3 working days prior to commencing work on-site. Contractors and site workers undertaking works within the Tree Protection Zone shall sign the site log confirming they have read and understand these specifications, prior to undertaking works on-site.

The Project Arborist shall undertake regular site inspections and certify that the works are being undertaken in accordance with this specification.

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 recommended management strategies implemented as required.

4.0 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)*. Tree and vegetation removal shall not damage the trees to be retained.

5.0 Tree Protection Zone

The trees to be retained shall be protected prior and during construction from activities that may result in an adverse effect on their health or structural condition. The area within the Tree Protection Zone (TPZ} shall exclude the following activities, unless otherwise stated:-

- Modification of existing soil levels, excavations and trenching
- Mechanical removal of vegetation
- Movement of natural rock
- Storage of materials, plant or equipment or erection of site sheds
- Affixing of signage or hoarding to the trees
- Preparation of building materials, refueling or disposal of waste materials and chemicals
- Lighting fires
- Movement of pedestrian or vehicular traffic
- Temporary or permanent location of services, or the works required for their installation
- Any other activities that may cause damage to the tree

6.0 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 and for the installation of pavements only where appropriate ground protection is installed and approved by the Project Arborist.

As a minimum, the Tree Protection Fence shall consist of 1.8m high wire mesh panels supported by concrete feet. Panels shall be fastened together and supported to prevent sideways movement. The tree shall not be damaged during the installation of the Tree Protection Fencing. Refer to Typical Tree Protection Details (***Appendix 6***).

7.0 Site Management

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

8.0 Scaffolding

Where possible, scaffolding shall not be located within the TPZ. Scaffolding shall not be in contact with the tree. As necessary, this shall be achieved by erecting scaffolding around branches. Branches shall be tied back and protected as deemed necessary by the Project Arborist. Refer to Typical Tree Protection Details (***Appendix 6***).

9.0 Works within the Tree Protection Zones

In some cases works within the TPZ may be authorized by the determining authority. These works shall be supervised by the Project Arborist. When undertaking works within the TPZ, care should be taken to avoid damage to the tree's root system, trunks and lower branches.

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

Drilling/piling machinery shall be of a suitable size to not damage the tree's roots, trunk, branches and crown. No clearance pruning is permitted to allow for machinery access. Machinery shall work in conjunction with an observer to ensure that adequate clearance from trees is maintained at all times.

10.0 Ground Protection

Where deemed necessary by the Project Arborist, machinery movements shall be restricted to areas of existing pavement or from areas of temporary ground protection such as ground mats or steel road plates. Refer to Typical Tree Protection Details (***Appendix 6***)

11.0 Trunk Protection

Where required by the Project Arborist, trunk protection shall be installed. Trunk protection shall be installed by wrapping padding (either carpet underlay or 10mm thick jute geotextile mat) 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***).

12.0 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 (refer to Section 9.0). Machinery should not contact the tree's roots, trunk, branches and crown.

The existing pavement shall be carefully lifted to minimise damage to the underlying soil profile (or sub-base materials) and to prevent damage to tree roots. Wherever possible, 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. Wherever possible, footings or elements below grade shall be retained to minimise disturbance to the tree's roots.

Where deemed necessary by the Project Arborist, the structures shall be shattered prior to removal with a hand-operated pneumatic/electric breaker.

If roots (>25mmØ) are encountered during the demolition works, these roots must be retained in an undamaged condition and advice sought from the Project Arborist. Where the Project Arborist determines that the tree is using underground elements (i.e footings, pipes, rocks etc.) for support, these elements shall be left in-situ.

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.

13.0 Underground Services

Underground service installation within the TPZ shall be supervised by the Project Arborist.

The installation of underground services shall be located outside of the TPZ. Where this is not possible, they shall be installed using either hydrovac or hand excavation methods with the services installed around/below roots (>25mm¢, or as determined by the Project Arborist).

Alternatively, boring methods may be used for underground service installation where the installation depth is greater than 800mm below existing grade. Excavations for starting and receiving pits for boring equipment shall be located outside of the TPZ or located to avoid roots (>25mm¢, or as determined by the Project Arborist).

14.0 Excavations, Root Protection & Root Pruning

Excavations and root pruning within the TPZ shall be supervised by the Project Arborist. Excavations within the TPZ shall be avoided wherever possible.

Excavations within the TPZ shall be undertaken by hand or using hydro vacuum excavation methods (or similar approved device) to protect tree roots. If there is any delay between excavation works and backfilling, exposed roots shall be protected from direct sunlight, drying out and extremes of temperature by covering with a 10mm thick jute mat. The mat shall be kept in a damp condition at all times.

Hand excavation and root pruning shall be undertaken along the excavation line prior to the commencement of mechanical excavation to prevent tearing and shattering damage to the roots from excavation equipment. Roots (>25mm¢) shall be pruned by the Project Arborist only. Roots (<25mm¢) may be pruned by the Principal Contractor. Root pruning shall be undertaken with clean, sharp secateurs or a pruning saw to ensure a smooth wound face, free from tears.

No over-excavation, battering or benching shall be undertaken beyond the footprint of any structure unless approved by the Project Arborist.

Damaged roots shall be pruned behind the damaged tissues with the final cut made to an undamaged part of the root.

APPENDIX 6 - TYPICAL TREE PROTECTION DETAILS

Note:
No excavation, construction activity, grade changes, surface treatment or storage of materials of any kind is permitted within the TPZ.

Option 1 - Fencing
1.8m high chain wire mesh panels with shade cloth attached (if required), held in place with concrete feet.

Tree Protection Zone (TPZ) sign

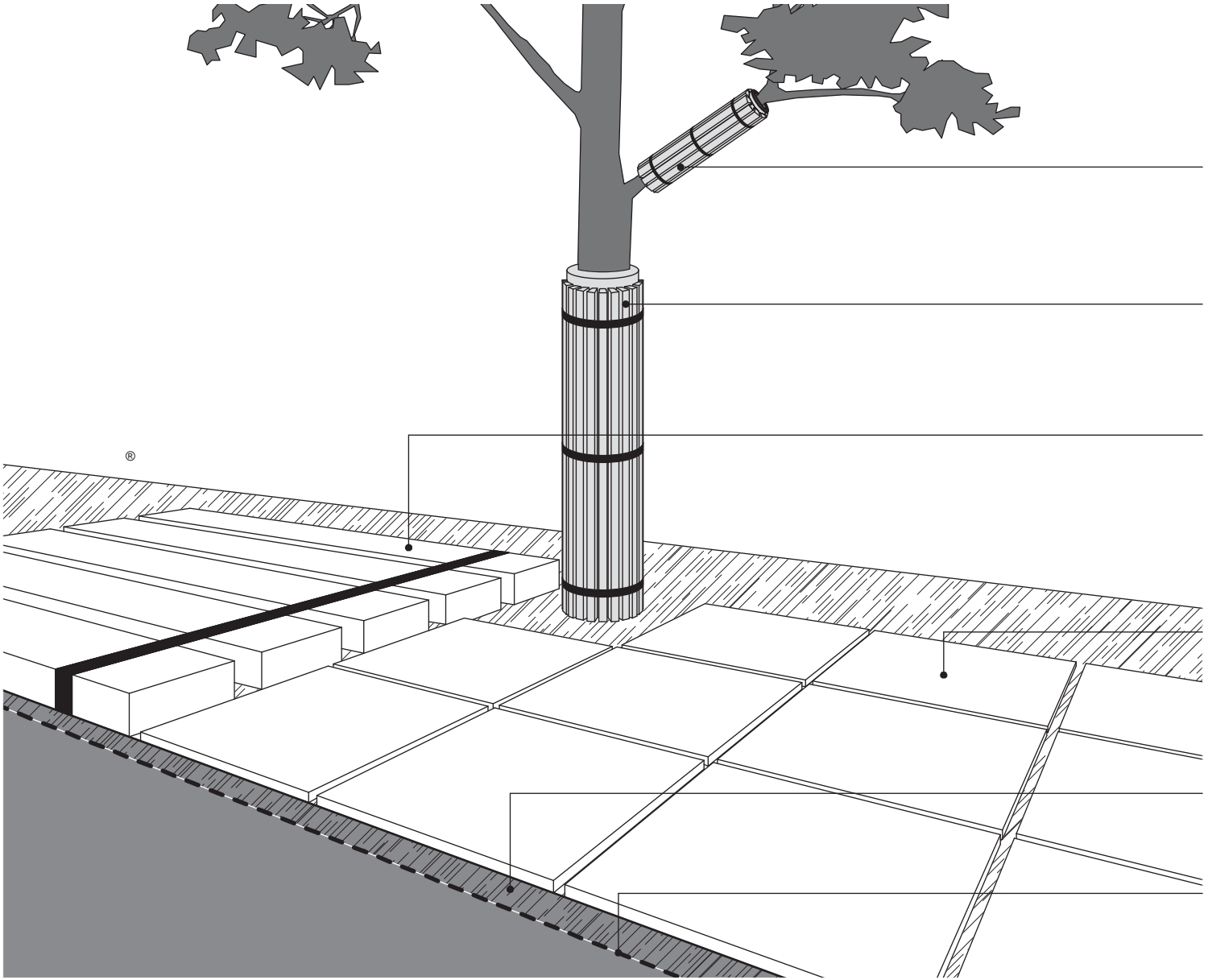
Option 2 - Fencing
Plywood or wooden panel paling fence. This type of fencing material also prevents building materials or soil entering the TPZ.

Installation of supports should avoid damaging roots.

Bracing is permissible within the TPZ.

Maximum 100mm and minimum 50mm depth mulch or aggregate layer installed across surface of TPZ.

01 Tree Protection Fencing



Branch Protection - use boards and padding to prevent damage to bark on branch. Boards are to be strapped, not screwed or nailed to the branch.

Trunk Protection - use boards and padding to prevent damage to bark (minimum 2m). Boards are to be strapped, not screwed or nailed to the trunk.

Ground Protection - use device strapped over mulch or aggregate layer. Ground protection device should be of a suitable thickness to prevent soil compaction and root damage.

Steel plates (or approved equivalent) with or without mulch or aggregate layer below.

Maximum 100mm and minimum 50mm depth mulch or aggregate layer.

Geotextile fabric underneath mulch or aggregate layer.

02 Examples of Branch, Trunk and Ground Protection

Branches may require pruning to erect scaffolding. Pruning may be subject to local regulations. Flexible branches should be tied back in preference to pruning.

Minimum 1.8m high hoarding. Temporary fencing may be incorporated into scaffolding as either containment screening or as hoarding.

Note:
If excavation is required for installation of support post for fencing, the Project Arborist should assess any pruning of roots greater than 20mm diameter.

Scaffold planks

Boards or plywood to be installed over mulch or aggregate layer for any areas requiring access within the TPZ.

Soleplate over geotextile. No excavation for soleplate within TPZ.

Maximum 100mm and minimum 50mm depth mulch or aggregate layer within TPZ.

Geotextile fabric

03 Indicative Scaffolding within a Tree Protection Zone (TPZ)