**EARTHSCAPE HORTICULTURAL SERVICES**
Arboricultural, Horticultural and Landscape Consultants

**ABN 36 082 126 027**

# ARBORICULTURAL IMPACT ASSESSMENT REPORT

# PROPOSED ALTERATIONS AND ADDITIONS

## 12A RODBOROUGH ROAD, FRENCHS FOREST

## June 2024

**Prepared for:** The Olive and The Bee Pty Ltd
c/- McCullum Ashby Architects
1st Floor, 1-5 Railway Avenue
WAHROONGA NSW 2076

Ph:- 02 9487 4033

**Prepared by:** Andrew Morton
Dip. (Arboriculture) [AQF Level 5]
B. App. Sci. (Horticulture)
A. Dip. App. Sci. (Landscape)

EARTHSCAPE HORTICULTURAL SERVICES
Ph: - 0402 947 296

*Member of Arboriculture Australia*
*Member International Society of Arboriculture - Australian Chapter (ISAAC)*

PO Box 364, BEROWRA NSW 2081
Ph: (02) 9456 4787 Mobile: 0402 947 296 Fax: (02) 9456 5757
Email: earthscape@iinet.net.au

## TABLE OF CONTENTS

## 1 INTRODUCTION

1.1.1 This report was commissioned by McCullum Ashby Architects on behalf of The Olive and The Bee Pty Ltd to assess the health and condition of nine (9) trees located within or immediately adjacent to 12A Rodborough Road, Frenchs Forest. The report has been prepared to aid in the assessment of a Development Application (DA) for the demolition of the minor external structures, addition of a new car parking space and covered shelter and minor alterations and additions to the existing commercial building within the property. The report has been limited to the trees located within five (5) metres of the development as stipulated by Council.

1.1.2 The purpose of this report is to assess the potential impact of the proposed development on the subject trees, together with recommendations for amendments to the design or construction methodology where necessary to minimise any adverse impact. The report also provides recommended tree protection measures (Tree Protection Plan and Specification) to ensure the long-term preservation of the trees to be retained where appropriate.

1.1.3 This report has been prepared in accordance with the Northern Beaches Council's *Guidelines for Arborists Reports* as outlined on Council's website, Section 2.4.1 & 2.4.2 of Appendix 9 and Appendix 19 of the *Pittwater 21 Development Control Plan 2015* (PDCP) and Sections 2.3.2 - 2.3.5 of the *Australian Standard for Protection of Trees on Development Sites* (AS 4970:2009).

## 2 THE SITE

2.1.1 The subject property is a commercial allotment known as Lot 1 in DP 855673, being 12A Rodborough Road, Frenchs Forest. For the purposes of this report, the subject allotment will be referred to as 'the site'. The total area of the site is approximately 8,725 m². The site is zoned Enterprise [SP4] under the *Warringah Local Environmental Plan 2011* (WLEP).

2.1.2 The site contains an existing multi-storey commercial building located in the north-western portion of the lot, together with an on-grade asphalt car park on the eastern and north-eastern side of the building. The site has a moderate south-easterly gradient with established lawns and gardens, typical of the surrounding commercial properties. The site contains a number of mature and semi-mature trees. These include a variety of non-local native and exotic (introduced) species.

2.1.3 The soils of this area have been substantially disturbed and altered for urban development. The original soils of this area are typical of the Lucas Heights Soil Landscape Group (as classified in the *Soil Landscapes of the Sydney 1:100,000 Sheet*), consisting of "moderately deep (500-1500 mm) hardsetting *Yellow Podzolic and Yellow Soloth soils and Yellow Earths"* on the outer edges of crests.[1] The site is located within the transition between Wianamatta Shale and Hawkesbury Sandstone. The landscape of the area is typically gently undulating terrain with level to gently inclined slopes of less than 10% grade.

2.1.4 The original vegetation of this area consisted of tall open forest typical of shale/sandstone transitional areas (Turpentine-Ironbark Forest) which was progressively cleared in the mid to late 19th century for timber getting, then for agriculture (mainly orchards and market gardens) in the early 20th century, then later for urban development.[2] The dominant locally-indigenous tree species found in this area include *Angophora costata* (Sydney Red Gum), *Eucalyptus pilularis* (Blackbutt) and *Syncarpia glomulifera* (Turpentine). Other species occurring in this vegetation community may include *Eucalyptus resinifera* (Red Mahogany), *Eucalyptus paniculata* (Grey Ironbark), *Eucalyptus globoidea* (White Stringybark) and *Allocasuarina torulosa* (Forest Oak).

## 3 SUBJECT TREES

3.1.1 The subject trees were inspected by Earthscape Horticultural Services (EHS) on the 13th June 2024. Each tree has been provided with an identification number for reference purposes denoted on the attached Tree Location Plan (**Appendix 5**), based on the survey prepared by SurveyPlus, Dwg. Ref No. 22896_DET_1A [A] dated 30/10/2023. The numbers used on this plan correlate with the Tree Assessment Schedule (**Appendix 3**). Tree No. T1 was not shown on the original survey and has been plotted on the drawing in its approximate position by taking offsets from existing features.

## 4 HEALTH AND CONDITION ASSESSMENT

### 4.1 Methodology

4.1.1 An assessment of each tree was made using the Visual Tree Assessment (VTA) procedure.[3] All of the trees were assessed in view from the ground. No aerial inspection or diagnostic testing has been undertaken as part of this assessment.

4.1.2 The following information was collected for each tree:-

- **Tree Species** (Botanical & Common Name);
- **Approximate height**;
- **Canopy spread** (measured using laser distance measurer in four directions and an average taken);
- **Trunk diameter** (measured with a diameter tape at 1.4 metres from ground level);
- **Live Crown Size** (measured by subtracting the total height of the tree from the lowest point of the crown and multiplying by the average crown spread to give a value in square metres);
- **Maturity Class -** the Maturity Class for each tree has been divided into the following categories:-
  - **OM** Over-mature – greater than 80% of the life expectancy for the species;
  - **M** Mature – 50-80% of the life expectancy for the species;
  - **SM** Semi-mature – 20-50% of the life expectancy for the species;
  - **I** Immature – less than 20% of the life expectancy for the species.
- **Health & vigour** (using foliage size, colour, extension growth, presence of disease or pest infestation, canopy density, presence of deadwood, dieback and epicormic growth as indicators),
- **Condition** (using visible evidence of structural defects, instability, evidence of previous pruning and physical damage as indicators); and
- **Suitability** of the tree to the site and its existing location (in consideration of damage or potential damage to services or structures, available space for future development and nuisance issues).

4.1.3 This information is presented in a tabulated form in **Appendix 3**.

### 4.2 Safe Useful Life Expectancy (SULE)

4.2.1 The remaining Safe Useful Life Expectancy[4] of the 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 the tree has been further modified where necessary in consideration of its current health and vigour, condition and suitability to the site. The estimated SULE of each tree is shown in **Appendix 3.**

4.2.2 The following ranges have been allocated to each tree:-

- Greater than 40 years (Long)
- Between 15 and 40 years (Medium)

- Between 5 and 15 years (Short)
- Less than 5 years (Transient)
- Dead or immediately hazardous (defective or unstable)

4.2.1 SULE ratings are intended to provide a general overview of the long-term sustainability of the trees within the site in consideration of these factors. The allocated ranges are not intended to be absolute. This information is useful in guiding future planning by highlighting the probable lifespan of individual trees, for which a clear pattern may emerge. This information may be helpful in forecasting likely tree senescence and planning for replacement planting to ensure continuity in tree canopy across the site. It should be noted that SULEs *may* be extended or reduced depending on the way trees are managed. Intervention and remedial works may extend the SULE of some trees.

## 5 LANDSCAPE SIGNIFICANCE

### 5.1 Methodology for Determining Landscape Significance

5.1.1 The significance of a tree in the landscape is a combination of its environmental, heritage and amenity values. Whilst these values may be fairly subjective and difficult to assess consistently, some measure is necessary to assist in determining the retention value of each tree. To ensure a consistent approach, the assessment criteria shown in **Appendix 1** have been used in this assessment.

5.1.2 A rating has been applied to each tree to give an understanding of the relative significance of each tree in the landscape and to assist in determining priorities for retention, in accordance with the following categories:-

1. **Significant**
2. **Very High**
3. **High**
4. **Moderate**
5. **Low**
6. **Very Low**
7. **Insignificant**

### 5.2 Environmental Significance

*5.2.1 Tree Management Controls*

Prescribed Trees within the Northern Beaches (former Warringah) Local Government Area (LGA) are protected under the provisions of Part E1 of the *Warringah Development Control Plan* 2011 (WDCP), made pursuant to Part 3, Clause 9 of the *State Environmental Planning Policy (Vegetation in Non-rural Areas) 2017* (Vegetation SEPP), now superseded by Chapter 2, Part 2.3 of the *State Environmental Planning Policy (Biodiversity and Conservation) 2021* (Biodiversity SEPP). The WDCP generally protects all trees with a height of greater than five (5) metres, all trees that are or form part of Heritage Items, all trees within designated Heritage Conservation Areas (regardless of dimensions) and other Prescribed Vegetation (mapped on the DCP as Threatened and High Conservation Habitat, Wildlife Corridors or Native Vegetation) or within areas known or having potential habitat for threatened species, populations or ecological communities. Some exemptions apply. The following trees are exempt (not protected) under the provisions of the WDCP 2011:-

| Tree No. | Species | Exemption |
|---|---|---|
| **T5, T7, T8 & T9** | *Washingtonia robusta* (Washington Palm) | Palm tree other than *Livistona australis* (Cabbage Tree Palm) |

The remainder of the trees are protected under Council's Tree Management Controls.

*5.2.2 Wildlife Habitat*

All of the trees are exotic (introduced) or non-local native species that would be of some benefit to native wildlife. However, none of the trees contain cavities that would be suitable as nesting hollows for arboreal mammals or birds. There were no other visible signs of wildlife habitation.

The site is *not* located within a defined 'Wildlife Corridor' as indicated on Council's *Wildlife Corridors Map* forming part of the WDCP 2011.

*5.2.3 Noxious Plants & Environmental Weeds*

None of the subject trees are scheduled as a potential 'Biosecurity Risk' ('Priority Weed' – formerly 'Noxious Weed') within NSW under the provisions of the *Biosecurity Act 2015*.

*5.2.4 Threatened Species & Ecological Communities*

None of the subject trees are listed as Threatened or Vulnerable Species or form part of Endangered Ecological Communities (EECs) under the provisions of the *Biodiversity Conservation Act 2016* (NSW) or the *Environment Protection and Biodiversity Conservation Act 1999*.

The site does not contain any 'Native Vegetation' as indicated on Council's *Native Vegetation Map* forming part of the WDCP 2011.

The site is *not* identified as containing any 'Threatened High Conservation Habitat' as indicated on Council's *Threatened High Conservation Habitat Map* forming part of the WDCP 2011.

*5.2.5 Biodiversity, Bushfire & Riparian Lands*

The site does *not* contain any 'Biodiversity Certified Land' as indicated on Council's *Biodiversity Certified Land Map*.

The NSW Office of Environment and Heritage (OEH) *Biodiversity Values Map and Threshold Tool* (refer https://www.lmbc.nsw.gov.au/Maps/index.html?viewer=BOSETMap), indicates that the native vegetation along the south-eastern boundary is subject to the Biodiversity Offset Scheme (BOS).

The site does *not* contain any Bushfire Prone Land as indicated on the Warringah Bush Fire Prone Land Map (2016).

The site is *not* within a 'Designated Bush Fire Prone Area' as defined by the NSW Rural Fire Service (RFS). The site is *not* within a 'Designated 10/50 Vegetation Clearing Entitlement Area' as defined by the NSW RFS.

The site does *not* contain any 'Riparian Land' as indicated on Council's *Waterways and Riparian Lands Map* forming part of the WDCP 2011.

## 5.3 Heritage Significance

*5.3.1 Heritage Items*

The subject property is *not* listed as an item of Environmental Heritage under Schedule 5, Part 1 of the *Warringah Local Environmental Plan 2011* (WLEP).

*5.3.2 Heritage Conservation Area*

The site is *not* located within a Heritage Conservation Area under Schedule 5, Part 2 of the WLEP 2011.

*5.3.3 Significant Tree Register*

Northern Beaches Council does *not* currently maintain a Register of Significant Trees.

*5.3.4 General*

The 1943 Aerial Photograph of Sydney (SIX Maps) indicates that site had been partially cleared of native vegetation at this time but still contained some native bushland. The area to the north of the site appears to have been developed as a quarry.

Based on analysis of Historical Imagery of the site (NSW Spatial Services), the 1955 aerial image indicates that the majority of the site had been cleared by this time with some scattered trees remaining. By 1965, some commercial and industrial buildings are evident surrounding the site. By 1989, the present commercial building and car park had been constructed and the site had been totally cleared of all vegetation. Most of the present trees appear to have been planted c. 1990-1995, following construction of the building. None of the subject trees have any known or suspected heritage significance.

## 5.4 Amenity Value

5.4.1 Criteria for the assessment of amenity values are incorporated into **Appendix 1**. The amenity value of a tree is a measure of its live crown size, visual appearance (form, habit, crown density), visibility and position in the landscape and contribution to the visual character of an area. Generally the larger and more prominently located the tree, and the better its form and habit, the higher its amenity value.

# 6 TREE RETENTION VALUES

6.1.1 The Retention Values shown in **Appendix 3** and **Appendix 5** have been determined on the basis of the estimated longevity of the trees and their landscape significance rating, in accordance with **Table 1**. Together with guidelines contained in **Section 7** (Tree Protection Zones) this information should be used to determine the most appropriate position of building footprints and other infrastructure within the site, with due consideration to other site constraints, to minimise the impact on trees considered worthy of preservation.

**TABLE 1 – TREE RETENTION VALUES – ASSESSMENT METHODOLOGY**

| | **Landscape Significance Rating** | | | | | | |
|---|---|---|---|---|---|---|---|
| **Estimated Life Expectancy** | **1** | **2** | **3** | **4** | **5** | **6** | **7** |
| Long - Greater than 40 Years | High Retention Value | | | | | | |
| Medium- 15 to 40 Years | | | Moderate Retention Value | | | | |
| Short - 5 to 15 years | | | | Low Ret. Value | | | |
| Transient - Less than 5 Years | | | | Very Low Retention Value | | | |
| Dead or Potentially Hazardous | | | | | | | |

6.1.2 The following table describes the implications of the retention values on site layout and design.

**TABLE 2 – TREE RETENTION PRIORITES.**

| RETENTION VALUE | RECOMMENDED ACTION |
|---|---|
| **"High"** | These trees considered worthy of preservation; as such careful consideration should be given to their retention as a priority.<br>Proposed site design and placement of buildings and infrastructure should consider the recommended setbacks as discussed in the following section to avoid any adverse impact on these trees (refer also **Appendix 2** for examples of acceptable encroachments)<br>In addition to Tree Protection Zones, the extent of the canopy (canopy drip-line) should also be considered, particularly in relation to multi-storey developments. Significant canopy pruning of the trees to accommodate the building envelope or temporary scaffolding is generally not acceptable. |
| **"Moderate"** | The retention of these trees is desirable, but not essential.<br>These trees should be retained as part of any proposed development if possible. However, these trees are considered less critical for retention.<br>If these trees must be removed, replacement planting should be considered in accordance with Council's Tree Replenishment Policy to compensate for loss of amenity (refer also **Section 11**). |
| **"Low"** | These trees are not considered to worthy of any special measures to ensure their preservation, due to current health, condition or suitability. They do not have any special ecological, heritage or amenity value, or these values are substantially diminished due to their SULE.<br>These trees should not be considered as a constraint to the future development of the site. |
| **"Very Low"** | These trees are considered potentially hazardous or very poor specimens, or may be environmental or noxious weeds. The removal of these trees is therefore recommended regardless of the implications of any proposed development. |

## 7 TREE PROTECTION ZONES

7.1.1 The Tree Protection Zone (TPZ) is a radial distance measured from the centre of the trunk of the tree as specified in **Appendix 4**. These have been calculated in accordance with AS 4970-2009 (Protection of Trees on Development Sites).[5]

7.1.2 The intention of the TPZ is to ensure protection of the root system and canopy from the potential damage from construction works and ensure the long-term health and stability of each tree to be retained. Incursions to the root zone may occur due to excavations, changes in ground levels, (either lowering or raising the grade), trenching or other forms or soil disturbance such as ripping, grading or inverting the soil profile. Such works may cause damage or loss of part of the root system, leading to an adverse impact on the tree.

### 7.2 Structural Root Zone (SRZ)

7.2.1 The Structural Root Zone (SRZ) provides the bulk of mechanical support and anchorage for a tree. This is also a radial distance measured from the centre of the trunk as specified in **Appendix 4**. The SRZ has been calculated in accordance with AS 4970-2009 (Protection of Trees on Development Sites).

7.2.2 Incursions within the SRZ are not recommended as they are likely to result in the severance of woody roots which may compromise the stability of the tree or lead to its decline and demise.

### 7.3 Acceptable Encroachments to the Tree Protection Zone.

7.3.1 Where encroachment to the TPZ is unavoidable, an incursion to the TPZ of not exceeding 10% of the area of the TPZ and outside the SRZ may be acceptable. Examples of acceptable incursions are shown in **Appendix 2**. Greater incursions to the TPZ may result in an adverse impact on the tree.

7.3.2 Where incursions greater than 10% of the TPZ are unavoidable, exploratory excavation using non-destructive methods may be required to evaluate the extent of the root system affected and determine whether or not the tree can remain viable

### 7.4 Acceptable Encroachments to the Canopy

7.4.1 The removal of a small portion of the crown (foliage and branches) is generally tolerable provided that the extent of pruning required is less than 10% of the total foliage volume of the tree and the removal of branches does not create large wounds or disfigure the natural form and habit of the tree. All pruning cuts must be undertaken in accordance with AS 4373:2007. This generally involves reduction of the affected branches back to the nearest branch collar at the junction with the parent branch, rather than at an intermediate point. The latter is referred to as "lopping" and is no longer an acceptable arboricultural practice. Generally speaking, the minimum pruning as required to accommodate any proposed works is desirable. Extensive pruning can result in a detrimental impact on tree health and may lead to exposure of remaining branches to wind forces that they were previously sheltered from, leading to a greater risk of branch failure.

7.4.2 Clearance to between the building line and canopy should take into account any projecting structures, such as balconies, awnings and the roofline and any requirement for temporary scaffolding to be erected during construction (typically 1-1.5 metres wide). High structures should preferably be located outside the canopy dripline (as shown indicatively on the attached plans) in order to avoid or minimise canopy pruning.

### 7.5 Legal Protection

7.5.1 Notwithstanding the above recommendations, Council may require a greater setback from certain types of structures to ensure the on-going legal protection of the tree (i.e. its legal status under Council's Tree Management Controls). In the Northern Beaches (former Warringah) LGA, a tree located within two (2) metres of the wall of an approved building (*not* including decks, pergolas, sheds, patios or the like, even if they are attached to an approved building) is *not* protected Council's Tree Management Controls (i.e. may be removed without consent). The measurement is taken from the building [wall] to the face of the trunk at ground level. As such, if a tree is considered worthy of preservation, Council is unlikely to approve the construction of a dwelling or other habitable building (flat building, townhouse, secondary dwelling etc) within two (2) metres of the tree (regardless of whether this can be undertaken without having an adverse impact on its health or longevity). It should be noted that this does not apply to other types of ancillary structures (for example, decks, pergolas, sheds, patios etc).

## 8 PROPOSED DEVELOPMENT

8.1.1 The proposed development includes the demolition of the minor external structures, addition of a new car parking space and covered shelter and minor alterations and additions to the existing commercial building within the property.

## 9 IMPACT ASSESSMENT

9.1.1 The intention of this assessment is to determine the incursions to the root zones and canopies created by the proposed development and evaluate the likely impact of the proposed works on the subject trees. Details shown on the following plans were used in this assessment:-

| Title | Author | Dwg No. [Rev.] | Date |
|---|---|---|---|
| *Existing Site Plan* | McCullum Ashby Architects | 2404 DA04 [B] | 24/05/2024 |
| *Proposed Site Plan* | McCullum Ashby Architects | 2404 DA05 [B] | 24/05/2024 |
| *Existing Ground Floor Plan (+ Demolition)* | McCullum Ashby Architects | 2404 DA06 [B] | 24/05/2024 |
| *Proposed Ground Floor Plan* | McCullum Ashby Architects | 2404 DA07 [C] | 24/05/2024 |
| *Proposed Lobby Cafe* | McCullum Ashby Architects | 2404 DA08 [B] | 24/05/2024 |
| *Sections 1 & 2* | McCullum Ashby Architects | 2404 DA09 [B] | 24/05/2024 |
| *Elevations 1 & 2* | McCullum Ashby Architects | 2404 DA10 [A] | 24/05/2024 |

9.1.2 A summary of the impact of the proposed development on each tree within the site is shown in **Appendix 4**. The following criteria have been examined as part of this assessment:-

- Existing Relative Levels (R.L.);
- Tree Protection Zone (TPZ);
- Structural Root Zone (SRZ);
- Footprint and envelope of the proposed development and temporary structures (scaffolding, hoardings etc);
- Incursions to the TPZ & SRZ, including estimated cut & fill beyond the building footprint;
- Incursions to the tree canopy from the building envelope and temporary structures; and
- Assessment of the likely impact of the works on existing trees.

9.1.3 The proposed development will necessitate the removal of one (1) tree of low retention value, being T5 (Washington Palm). This tree is not considered significant or worthy of special measures to ensure its preservation. The removal of this tree to accommodate the proposed development is therefore considered warranted in this instance. It should be noted that T5 is exempt from Council's Tree Management Controls.

9.1.4 The proposed development will also necessitate the removal of one (1) tree of moderate retention value, being T2 (Swamp Oak). This tree is not considered significant, but is in good health and condition and makes a fair contribution to the amenity of the site and surrounding properties. It should be noted that the tree is presently growing atop an existing crib-lock retaining wall and close to the existing car park and therefore has a short SULE. In order to compensate for loss of amenity resulting from the removal of this tree to accommodate the proposed development, consideration should be given to replacement planting with a new tree elsewhere within the site with a new tree in accordance with **Section 11**.

9.1.5 No other trees will be adversely affected by the proposed development.

# 10 RECOMMENDED TREE PROTECTION MEASURES

## 10.1 Tree Protection Plan

10.1.1 The following Tree Protection Measures should be read in accordance with the Tree Protection Plan (**Appendix 6**). The Tree Protection Plan (TPP) indicates the position of tree protection devices and other recommended measures to ensure the protection of trees within the site to be retained as part of the proposed development.

## 10.2 Prohibited Activities

10.2.1 The following activities should be avoided within specified Tree Protection Zones (refer **Appendix 4 & 6** for extent of the TPZ for each tree):-

- Excavations and trenching (with exception of the approved remediation works, underground services, building foundations or pavement sub-grade);
- Soil disturbance, surface grading, compaction, tyning, ripping or cultivation of soil;
- Mechanical removal of vegetation, including extraction of tree stumps;
- Soil level changes including the placement of fill material (excluding imported validated fill for remediation works or placement of fill for approved works)
- Movement and storage of plant, equipment & vehicles (except within defined temporary haul roads, where ground protection has been installed, or within the footprint of existing floor slabs or paved areas);
- Erection of site sheds (except where approved by the site arborist);
- Affixing of signage, barricades or hoardings to trees;
- Storage of building materials, waste and waste receptacles;
- Stockpiling of spoil or fill;
- Stockpiling of bulk materials, such as soil, sand, gravel, roadbase or the like;
- Stockpiling of demolition waste;
- Disposal of waste materials and chemicals including paint, solvents, cement slurry, fuel, oil and other toxic liquids;
- Other physical damage to the trunk or root system; and
- Any other activity likely to cause damage to the tree.

## 10.3 Tree Damage

10.3.1 Care shall be taken when operating cranes, drilling rigs and similar equipment near trees to avoid damage to tree canopies (foliage and branches). Under no circumstances shall branches be torn-off by construction equipment. Where there is potential conflict between tree canopy and construction activities, the advice of the Site Arborist must be sought.

10.3.2 In the event of any tree becoming damaged for any reason during the construction period a consulting arborist [Australian Qualification Framework Level 5] shall be engaged to inspect and provide advice on any remedial action to minimise any adverse impact. Such remedial action shall be implemented as soon as practicable and certified by the arborist.

## 10.4 Tree Removal

10.4.1 The removal of Trees [**T2 & T5**] shall be carried out by an experienced tree surgeon in accordance with the NSW WorkCover Code of Practice for the Amenity Tree Industry (1998). Care shall be taken to avoid damage to other trees during the felling operation.

10.4.2 Stumps located within the TPZs of trees to be retained shall be grubbed-out where required using a mechanical stump grinder (or by hand where less than 150mm in diameter) without damage to the root system of other trees. Where trees to be removed are within the SRZ of any trees to be

retained, consideration should be given to cutting the stump close to ground level and retaining the root crown intact. Stumps within the Tree Protection Zone of other trees to be retained shall **not** be pulled out using excavation equipment or similar.

### 10.5 Tree Protection Fencing

10.5.1 Trees [**T4 & T6**] shall be protected prior to and during construction from all activities that may result in detrimental impact by erecting a suitable protective fence in the positions as indicated on the Tree Protection Plan (**Appendix 6**). As a minimum, the fence shall consist of temporary chain wire panels of 1.8 metres in height, supported by steel stakes as required and fastened together and supported to prevent sideways movement using corner braces where required. The fence shall be erected prior to the commencement of any work on-site and shall be maintained in good condition for the duration of construction. Where tree protection zones merge together a single fence encompassing the area is deemed to be adequate. Existing site boundary fences may form part of the enclosure.

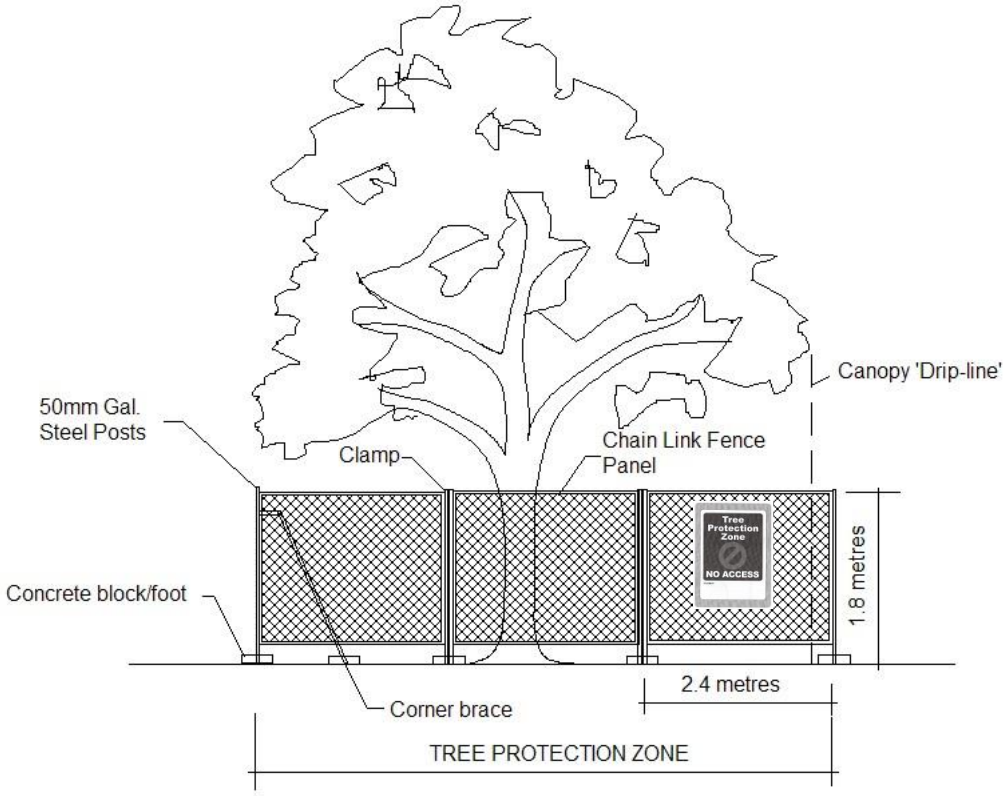
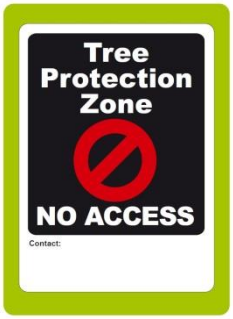



**Figure 1 – Detail of Tree Protection Fence**

### 10.6 Tree Protection Signs

10.6.1 Signs shall be installed on the Tree Protection Fence to prevent unauthorised movement of plant and equipment or entry to the Tree Protection Zone. The signs shall be securely attached to the fence using cable ties or equivalent. Signs shall be placed at minimum 10 metre intervals. The wording and layout of the sign shall comply with AS 4970-2009 as shown in **Figure 2**.




. **Figure 2 – Detail of Tree Protection Sign**

## 10.7 Ground Protection

10.7.1 Construction haul routes shall be confined to existing paved areas wherever possible. Where this is not feasible and construction haul routes or access for plant and equipment must traverse soft landscape areas within TPZs of [**any tree nominated for retention**], 20mm thick marine ply sheets or truck mats (such as Envirex Versadeck® access mats) (refer **Figure 4** shall be placed over the top of the ground surface to minimise compaction and disturbance of the underlying soil profile and root zone.

**Figure 4** – Showing typical detail for truck mats.

10.7.2 Ground protection shall be installed prior to any site works and maintained in good condition for the duration of the construction period. On completion of the works, ground protection shall be removed without damage or disturbance to the underlying soil profile.

## 10.8 Demolition Works within Tree Protection Zones

*10.8.1 Existing Turfgrass*

No mechanical soil cultivation (using ripping tynes, rotary hoes or the like) is permitted within Tree Protection Zones (TPZs). Where existing turfgrass is proposed to be removed (demolished) within the TPZs of Trees [**any tree nominated for retention**], the turfgrass shall be first treated with a non-selective herbicide with the active constituent Glyphosate (Round-up ® or equivalent) at the manufacturers recommended rate and allowed to dehisce. Once the turfgrass in the effected area is completely dead, any high grass may be slashed/mown close to ground level.

Any residual vegetation (dead grass etc) may then be carefully scraped-off the surface using a small rubber tracked excavator with a broad sand bucket (i.e. without tynes/teeth), taking care to remove the minimum topsoil necessary (no more than 20mm deep) (refer to **Figure 5**). An observer shall be used to ensure that no woody surface roots of any trees are damaged during this process.

**Figure 5** – Showing method for removal of residual surface vegetation from Tree Protection Zones following herbicide treatment and slashing.

*10.8.2 Structures & Retaining Walls*

Demolition of existing walls, kerbs and other structures within the TPZ of trees [**T1 & T4**] shall be undertaken under the supervision of a qualified Arborist [AQF level 5]. The structures shall be demolished using equipment on stationed outside the TPZ where possible or within the footprint of existing hardstand areas.

Care shall be taken to avoid the root systems, trunks and lower branches of trees in the vicinity of the structures during demolition works, with special attention required during demolition of the footings and other sub-surface members to avoid damage to woody roots. An observer ('spotter') shall be employed to assist the plant operator in order to detect and avoid damage to underlying woody roots during demolition. Trunk and/or branch protection shall be installed where there is a potential risk of damage to trees in proximity or overhead of the work.

## 10.9 Excavations within Tree Protection Zones

10.9.1 Prior to any mechanical excavations for building foundations or pavement sub-grade within the TPZs of Trees [**T1, T4 & T6**] exploratory excavation using non-destructive techniques shall be taken along the perimeter of the structure or pavement within the TPZ. Non-destructive excavation techniques may include the use of hand-held implements, air pressure (using an Air-spade® device) or water pressure (hydro-excavation in combination with a vacuum extraction unit). The exploratory excavation shall be undertaken along the perimeter of the foundation or pavement (within the TPZ) to the depth of the foundation or to a maximum of 800mm from surface levels, to locate and expose any woody roots prior to any mechanical excavation.

10.9.2 All care shall be undertaken to preserve woody roots intact and undamaged during exploratory excavation. Any roots encountered of less than 40mm in diameter may be cleanly severed with clean sharp pruning implements at the face of the excavation. The root zone in the vicinity of the excavation shall be kept moist following excavation for the duration of construction to minimise moisture stress on the tree. Where large woody roots (greater than 40mm diameter) are encountered during exploratory excavations, further advice from a qualified arborist shall be sought prior to severance.

## 10.10 Alternative Construction Methods

10.10.1 Where necessary, (to avoid severing large woody roots) consideration should be given to the installation of an elevated structure (e.g. pier and beam footing, suspended slab or floor supported on piers, cantilevered slab, up-turned edge beam etc) in preference to structures requiring a deep edge beam or continuous perimeter strip footing. The beam section of any pier and beam footing should be placed **above** grade to avoid excavation within the SRZ. Pier footings intersecting large woody roots should be slightly offset where necessary to avoid root severance.

10.10.2 For masonry walls or fences it may be acceptable to delete continuous concrete strip footings and replace with suspended in-fill panels (e.g. steel or timber pickets, lattice etc) fixed to pillars. For retaining walls, consideration should be given to eliminating continuous strip footings and substituting with pier and beam footings, pier footings (using a post and caisson type wall) or mass wall such as gabions or mass stone that can be placed without a structural footing.

10.10.3 For paved areas, consideration should be given to raising the proposed pavement level and using a porous fill material in preference to excavation where large woody roots are found within the sub-base.

## 10.11 Underground Services

10.11.1 All proposed stormwater lines and other underground services should be located outside TPZs of trees proposed to be retained wherever possible or installed by alternative measures. Alternative measures include suspending pipelines beneath the floor of a building or structure (to avoid excavation with the TPZ), non-destructive excavation methods or Horizontal Directional Drilling (HDD). Where the installation of service lines within TPZs is unavoidable, the pipelines or conduits should be installed as follows.

10.11.2 Trenching for underground services and stormwater pipes within the TPZs of Trees [**any tree nominated for retention**], shall be undertaken using non-destructive excavation in accordance with **Section 10.9**. Where large woody roots are encountered during excavation or trenching (root diameter greater than 40mm), these shall be retained intact wherever possible (e.g. by tunnelling beneath roots and inserting the pipeline or conduit beneath or re-routing the service etc). Where this is not practical and root pruning is the only alternative, proposed root pruning should be assessed by a qualified arborist [AQF 5] to evaluate the potential impact on the health and stability of the subject tree.

10.11.3 Installation of underground services and stormwater pipes within the SRZs of Trees [**any tree nominated for retention**], shall only be undertaken by Horizontal Directional Drilling (HDD) (also referred to as sub-surface boring or Micro-tunnelling for large diameter pipes). The Invert Level of the pipe, plus the pipe diameter, must be lower than the estimated root zone depth as specified. At this site a minimum depth of 1 metre to the invert level of the pipe is specified.

## 10.12 Root Pruning

10.12.1 Where root pruning of [**any tree nominated for retention**] is required to facilitate construction, roots shall be severed with clean, sharp pruning implements and retained in a moist condition during the construction phase using Hessian material or mulch where practical. Severed roots shall be treated with a suitable root growth hormone containing the active constituents Indol-3-yl-Butric Acid (IBA) and 1-Naphthylacetic Acid (NAA) to stimulate rapid regeneration of the root system.

10.12.2 Any required root pruning shall be carried out in accordance with Australian Standard 4373-2007 – *Pruning of Amenity Trees* by a qualified and experienced arborist or tree surgeon [Australian Qualification Framework Level 3] in accordance with the NSW WorkCover Code of Practice for

the Amenity Tree Industry (1998). No roots of greater than 40mm in diameter should be removed or pruned without further advice from a Consulting Arborist [Australian Qualification Framework Level 5].

## 11 REPLACEMENT PLANTING

11.1.1 In order to compensate for loss of amenity resulting from the removal of any trees to accommodate the proposed development, an equivalent number of new trees capable of attaining a height of at least twelve (12) metres at maturity should be planted within the site.

11.1.2 Replacement trees should preferably include some locally indigenous species. These will be most appropriate to the site conditions and be most valuable in terms of preserving the landscape character and wildlife habitat of the area. The following species are appropriate to the site conditions and could be considered for replacement planting:-

Locally-indigenous species:-

- *Angophora costata* (Sydney Red Gum)
- *Syncarpia glomulifera* (Turpentine)
- *Elaeocarpus reticulatus* (Blueberry Ash)
- *Eucalyptus paniculata* (Grey Ironbark)
- *Eucalyptus resinifera* (Red Mahogany)
- *Eucalyptus pilularis* (Blackbutt)

Non-local native species:-

- *Acmena smithii* (Lillypilly)
- *Glochidion ferdinandi* (Cheese Tree)
- *Tristaniopsis laurina* (Water Gum)
- *Waterhousea floribunda* (Weeping Lillypilly).
- *Syzygium paniculatum* (Magenta Cherry)
- *Syzygium luehmannii* (Small-leaf Lillypilly)
- *Melaleuca stypheliodes* (Prickly Paperbark)

Exotic (introduced) species:-

- *Jacaranda mimosifolia* (Jacaranda)
- *Magnolia grandiflora* (Bullbay Magnolia)
- *Nyssa sylvatica* (Tupelo)
- *Liriodendron tulipifera* (Tulip Tree)
- *Acer rubrum* (Red Maple)
- *Parrotia persica* (Persian Witch Hazel)
- *Acer buergerianum* (Trident Maple)
- *Fraxinus Raywood* (Claret Ash)
- *Ginko biloba* (Maidenhair tree)

**Andrew Morton**
EARTHSCAPE HORTICULTURAL SERVICES
17th June 2024

## REFERENCES

[1] GA Chapman & CL Murphy (1989)
**Soil Landscapes of the Sydney 1:100,000 Sheet**
Soil Conservation Service of NSW. Sydney

[2] Benson, Doug & Howell, Jocelyn (1990)
**Taken for Granted: the Bushland of Sydney and its Suburbs.**
Kangaroo Press & The Royal Botanic Gardens, Sydney, NSW

[3] Mattheck, Dr. Claus & Breloer, Helge (1994) – Sixth Edition (2001)
**The Body Language of Trees – A Handbook for Failure Analysis**
The Stationery Office, London, England

[4] Barrell, Jeremy (1996)
**Pre-development Tree Assessment**
Proceedings of the International Conference on Trees and Building Sites (Chicago)
International Society of arboriculture, Illinois, USA

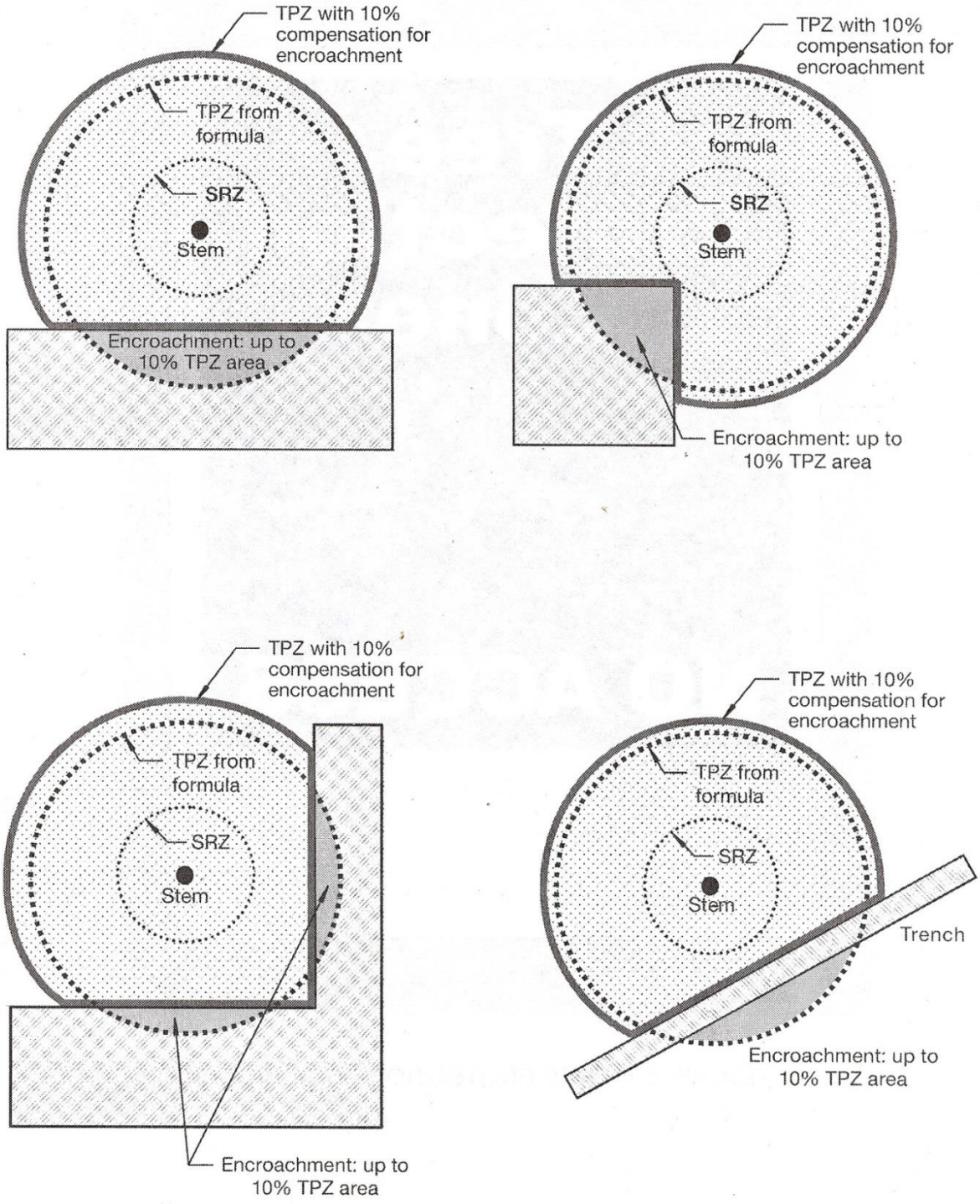
[5] Council of Standards Australia (August 2009)
**AS 4970 – 2009 – Protection of Trees on Development Sites**
Standards Australia, Sydney

## APPENDIX 1 - CRITERIA FOR ASSESSMENT OF LANDSCAPE SIGNIFICANCE

| RATING | HERITAGE VALUE | ECOLOGICAL VALUE | AMENITY VALUE |
|---|---|---|---|
| **1. SIGNIFICANT** | The subject tree is listed as a Heritage Item under the Local Environment Plan (LEP) with a local, state or national level of significance or is listed on Council's Significant Tree Register | The subject tree is scheduled as a Threatened or Vulnerable Species as defined under the provisions of the *Biodiversity Conservation Act 2016* (NSW) or the *Environment Protection and Biodiversity Conservation Act 1999*. | The subject tree has a very large live crown size exceeding 300m² with normal to dense foliage cover, is located in a visually prominent position in the landscape, exhibits very good form and habit typical of the species |
| | The subject tree forms part of the curtilage of a Heritage Item (building /structure /artefact as defined under the LEP) and has a known or documented association with that item | The tree is a locally indigenous species, representative of the original vegetation of the area and is known as an important food, shelter or nesting tree for endangered or threatened fauna species | The subject tree makes a significant contribution to the amenity and visual character of the area by creating a sense of place or creating a sense of identity |
| | The subject tree is a Commemorative Planting having been planted by an important historical person (s) or to commemorate an important historical event | The subject tree is a Remnant Tree, being a tree in existence prior to development of the area | The tree is visually prominent in view from surrounding areas, being a landmark or visible from a considerable distance. |
| **2. VERY HIGH** | The tree has a strong historical association with a heritage item (building/structure/artefact/garden etc) within or adjacent the property and/or exemplifies a particular era or style of landscape design associated with the original development of the site. | The tree is a locally-indigenous species, representative of the original vegetation of the area and is a dominant or associated canopy species of an Endangered Ecological Community (EEC) formerly occurring in the area occupied by the site. | The subject tree has a very large live crown size exceeding 200m²; a crown density exceeding 70% (normal-dense), is a very good representative of the species in terms of its form and branching habit or is aesthetically distinctive and makes a positive contribution to the visual character and the amenity of the area |
| **3. HIGH** | The tree has a suspected historical association with a heritage item or landscape supported by anecdotal or visual evidence | The tree is a locally-indigenous species and representative of the original vegetation of the area and the tree is located within a defined Vegetation Link / Wildlife Corridor or has known wildlife habitat value | The subject tree has a large live crown size exceeding 100m²; The tree is a good representative of the species in terms of its form and branching habit with minor deviations from normal (e.g. crown distortion/suppression) with a crown density of at least 70% (normal); The subject tree is visible from the street and surrounding properties and makes a positive contribution to the visual character and the amenity of the area |
| **4. MODERATE** | The tree has no known or suspected historical association, but does not detract or diminish the value of the item and is sympathetic to the original era of planting. | The subject tree is a non-local native or exotic species that is protected under the provisions of the local or state planning controls (Development Control Plan etc). | The subject tree has a medium live crown size exceeding 40m²; the tree is a fair representative of the species, exhibiting moderate deviations from typical form (distortion/suppression etc) with a crown density of more than 50% (thinning to normal); and |
| | | | The tree is visible from surrounding properties, but is not visually prominent – view may be partially obscured by other vegetation or built forms. The tree makes a fair contribution to the visual character and amenity of the area. |
| **5. LOW** | The subject tree detracts from heritage values or diminishes the value of a heritage item | The subject tree is scheduled as exempt (not protected) under the provisions of the local or state planning controls (DCP etc) due to its species, nuisance or position relative to buildings or other structures. | The subject tree has a small live crown size of less than 40m² and can be replaced within the short term (5-10 years) with new tree planting |
| **6. VERY LOW** | The subject tree is causing significant damage to a heritage Item. | The subject tree is listed as an Environment Weed Species in the relevant Local Government Area, being invasive, or is a known nuisance species. | The subject tree is not visible from surrounding properties (visibility obscured) and makes a negligible contribution or has a negative impact on the amenity and visual character of the area. The tree is a poor representative of the species, showing significant deviations from the typical form and branching habit with a crown density of less than 50% (sparse). |
| **7. INSIGNIFICANT** | The tree is completely dead and has no known heritage value (or any habitat value) | The tree is scheduled as a potential 'Biosecurity Risk' ('Priority Weed' – formerly 'Noxious Weed') within NSW or within the relevant Local Government Area under the provisions of the *Biosecurity Act 2015* | The tree is completely dead and represents a potential hazard. |

Ref:- Morton, A (2006) **Determining the Retention Value of Trees on Development Sites**
TreeNet - Proceedings of the 7th National Street Tree Symposium 2006 Government of South Australia Department for Transport, Energy and Infrastructure

## APPENDIX 2 – ACCEPTABLE INCURSIONS TO THE TREE PROTECTION ZONE (TPZ)




NOTE: Less than 10% TPZ area and outside SRZ. Any loss of TPZ compensated for elsewhere.

REF:- Council of Standards Australia (August 2009)
**AS 4970 – 2009 – Protection of Trees on Development Sites**
Standards Australia, Sydney

## APPENDIX 3 - TREE HEALTH AND CONDITION ASSESSMENT SCHEDULE

| Tree Identification No. | Species | Height (m) | Spread (m) | Trunk Diameter (mm) at 1.4 metres | Live Crown Size ($m^2$) | Maturity Class | Condition | Previous Pruning | Health | | Remaining Safe Useful Life Expectancy (SULE) | Landscape Significance Rating | Retention Value | Location |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Vigour | Pest & Disease | | | | |
| 1 | ***Casuarina glauca*** (Swamp Oak) | 12 | 7 | 250 | 84 | SM | Appears stable with fair branching structure. Crown suppressed on the south side due to crowding. Prominent lean to the north. Main leader distorted. Growing out of toe of crib-lock retaining wall. | No evidence | Good | No Evidence | Medium 15-40 Years | 4 | **Moderate** | Adjoining property |
| 2 | ***Casuarina glauca*** (Swamp Oak) | 18 | 8 | 400 | 144 | M | Appears stable with fair branching structure. Exhibits a moderate axial wound at 1-2 metres due suspected canker infection. Moderate wound/ broken PL branch stub at 8-9 metres due previous branch loss (storm damage). Growing atop crib-lock retaining wall. | Selectively pruned. | Good | Suspected Canker infection | Short 5-15 Years | 3 | **Moderate** | Adjoining property |
| 3 | ***Eucalyptus microcorys*** (Tallowwood) | 23 | 13 | 650 | 221 | M | Appears stable with fair branching structure. Exhibits a high bark inclusion at junction of co-dominent PLs at 3 metres. | Crown lifted to 8 metres south side to clear overhead powerlines. | Good | No Evidence | Medium 15-40 Years | 2 | **High** | Adjoining property |
| 4 | ***Callistemon viminalis*** (Weeping Bottlebrush) | 5 | 5 | 100x6 | 20 | SM | Appears stable with fair branching structure. | Selectively pruned. | Good | Moderate vine infestation (Star Jasmine) | Medium 15-40 Years | 5 | **Low** | On-site |
| 5 | ***Washingtonia robusta*** (Washington Palm) | 16 | 3.5 | 420 | 14 | M | Appears stable with sound branching structure. Located close to existing commercial building and driveway ramp. | No evidence | Good | No Evidence | Medium 15-40 Years | 6 | **Low** | On-site |
| 6 | ***Ulmus glabra* 'Lutescens'** (Golden Elm) | 5 | 5 | 159 | 15 | SM | Appears stable with sound branching structure. | Crown lifted to 1.5 metres. | Good | No Evidence | Medium 15-40 Years | 5 | **Low** | On-site |
| 7 | ***Washingtonia robusta*** (Washington Palm) | 12 | 3.5 | 320 | 14 | M | Appears stable with sound branching structure. | No evidence | Good | No Evidence | Long - more than 40 years | 6 | **Low** | On-site |
| 8 | ***Washingtonia robusta*** (Washington Palm) | 11 | 4 | 290 | 12 | M | Appears stable with sound branching structure. | No evidence | Good | No Evidence | Long - more than 40 years | 6 | **Low** | On-site |
| 9 | ***Washingtonia robusta*** (Washington Palm) | 8 | 4 | 260 | 12 | SM | Appears stable with sound branching structure. | No evidence | Good | No Evidence | Long - more than 40 years | 6 | **Low** | On-site |



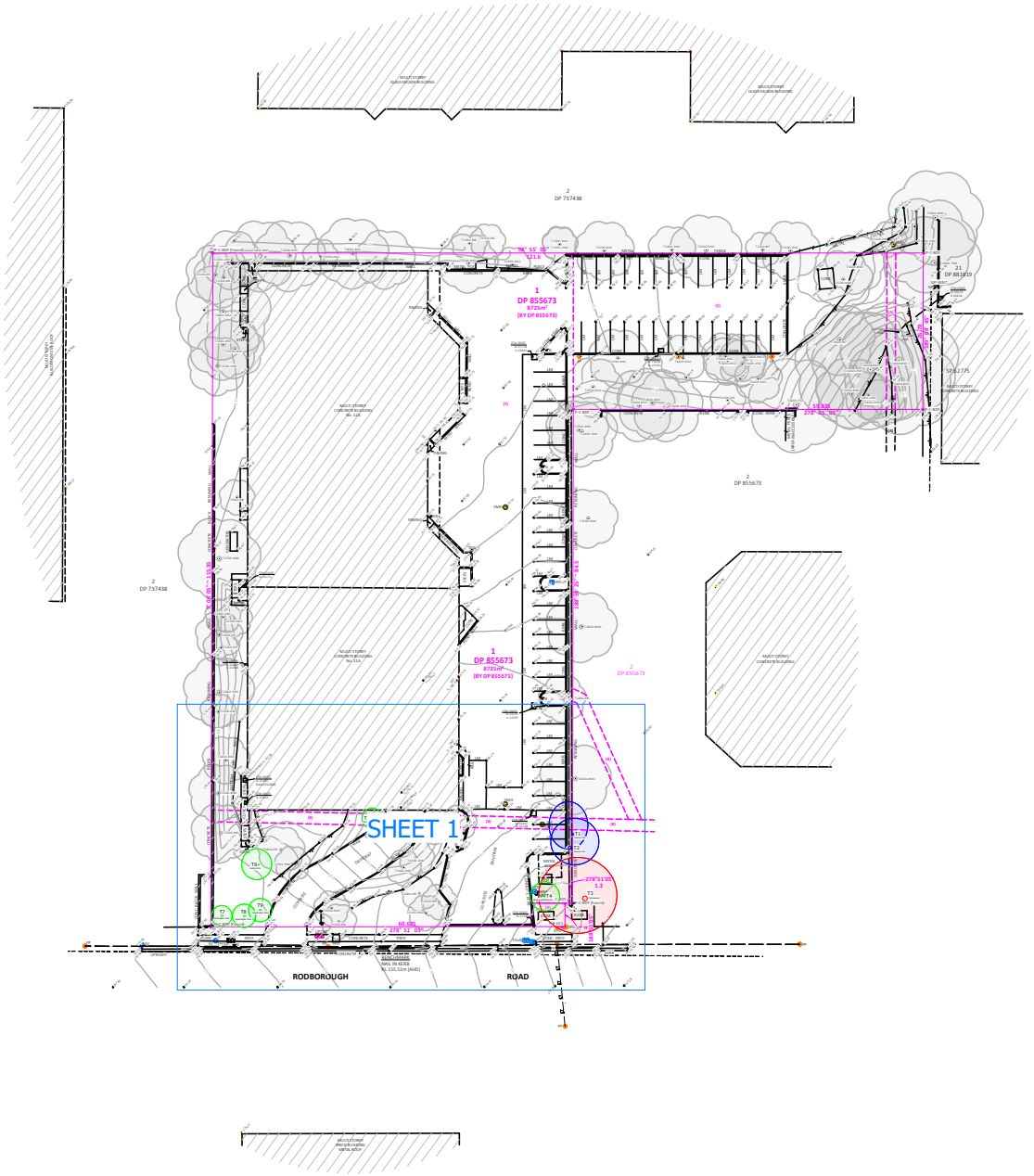
PL = Primary Limb; SL = Secondary Limb;
TL = Tertiary Limb. GL = Ground Level

## APPENDIX 4 - IMPACT ASSESSMENT SCHEDULE

| Tree Identification No. | Species | Construction Tolerance | Tree Protection Zone (m R) | Structural Root Zone (m R) | Minimum Setback Distance (tangent to root plate) | TPZ ($m^2$) | Incursions To Root Zone &/or Canopy | Likely Impact | Recommendation |
|---|---|---|---|---|---|---|---|---|---|
| 1 | ***Casuarina glauca*** (Swamp Oak) | M | 4.0 | 1.9 | 2.7 | 50.2 | Existing kerb offset 3.5 metres south-west to be demolished within TPZ. Proposed new car space offset 3.5 metres south-west at RL? (assumed close to existing grade). Excavations for pavement sub-grade within TPZ (beyond existing retaining wall). Minor encroachment to TPZ (<5%). | No adverse impact. | To be retained - no special tree protection measures required. |
| 2 | ***Casuarina glauca*** (Swamp Oak) | M | 4.8 | 2.4 | 3.3 | 72.3 | Existing kerb offset 3.5 metres south-west and shelter with concrete floor slab offset 1.8 metes south-west to be demolished within TPZ. Proposed new car space offset 1.1 metres south-west at RL? (assumed close to existing grade). Excavations for pavement sub-grade & associated kerb footing within TPZ/SRZ. Increase in encroachment from 39% (present) to 41%. | Excavations for new kerb footings may result in severance and damage to woody roots, leading to a significant adverse impact given limited root zone. | Remove tree. Undertake replacement planting with a new tree elsewhere within the site to compensate for loss of amenity in accordance with Section 11. |
| 3 | ***Eucalyptus microcorys*** (Tallowwood) | P | 7.8 | 3.0 | 5.3 | 191.0 | Existing shelter with concrete floor slab offset 5.4 metes north-west to be demolished within TPZ. Proposed new car space offset 5.8 metres north-west at RL? (assumed close to existing grade). Excavations for pavement sub-grade & associated kerb footing within TPZ (beyond existing retaining wall. Encroachment to TPZ = 2% (less than present situation). | Extent of encroachment to the root zone is less than 10% of the TPZ, which is considered to be within acceptable limits under AS4970:2009. No adverse impact. | To be retained - no special tree protection measures required. |
| 4 | ***Callistemon viminalis*** (Weeping Bottlebrush) | M | 3.0 | 2.0 | 2.0 | 28.3 | Existing shelter with concrete floor slab offset 3.2 metres north to be demolished. No encroachment to TPZ. | No adverse impact. | Retain in accordance with recommended Tree Protection Measures (Section 10). Install Tree Protection Fence in accordance with Section 10.5. Demolish existing shelter and floor slab in accordance with Section 10.8. |

## APPENDIX 4 - IMPACT ASSESSMENT SCHEDULE

| Tree Identification No. | Species | Construction Tolerance | Tree Protection Zone (m R) | Structural Root Zone (m R) | Minimum Setback Distance (tangent to root plate) | TPZ ($m^2$) | Incursions To Root Zone &/or Canopy | Likely Impact | Recommendation |
|---|---|---|---|---|---|---|---|---|---|
| **5** | ***Washingtonia robusta*** (Washington Palm) | G | 3.0 | N/A | 2.0 | 28.3 | Proposed new stair and landing offset 1.1 metres west at RL 155.51 (approx. 1.5 metres above grade - suspended/cantilevered off existing terrace). No actual incursion to root zone. | No adverse impact. Proposed to be removed. | Remove tree (Exempt from Council's Tree Management Controls). |
| **6** | ***Ulmus glabra* 'Lutescens'** (Golden Elm) | M | 3.0 | 1.6 | 2.0 | 28.3 | Proposed new covered seating area (concrete floor slab with roof cover supported by post footings) offset 3.5 metres south-west at FFL156.89 (close to existing grade). No encroachment to TPZ. | No adverse impact. | Retain in accordance with recommended Tree Protection Measures (Section 10). Install Tree Protection Fence in accordance with Section 10.5. |
| **7** | ***Washingtonia robusta*** (Washington Palm) | G | 3.0 | N/A | 2.0 | 28.3 | Proposed new covered seating area (concrete floor slab with roof cover supported by post footings) offset 4.0 metres north at FFL156.89 (close to existing grade). No encroachment to TPZ. | No adverse impact. | To be retained - no special tree protection measures required (exempt from Council's Tree Management Controls). |
| **8** | ***Washingtonia robusta*** (Washington Palm) | G | 3.0 | N/A | 2.0 | 28.3 | Proposed new covered seating area (concrete floor slab with roof cover supported by post footings) offset 4.1 metres north-west at FFL156.89 (close to existing grade). No encroachment to TPZ. | No adverse impact. | To be retained - no special tree protection measures required (exempt from Council's Tree Management Controls). |
| **9** | ***Washingtonia robusta*** (Washington Palm) | G | 3.0 | N/A | 2.0 | 28.3 | Proposed new covered seating area (concrete floor slab with roof cover supported by post footings) offset 4.6 metres north-west at FFL156.89 (close to existing grade). No encroachment to TPZ. | No adverse impact. | To be retained - no special tree protection measures required (exempt from Council's Tree Management Controls). |




APPENDIX 5
TREE LOCATION PLAN SHOWING
TREE RETENTION VALUES

12A Rodborough Road, FRENCHS FOREST, NSW

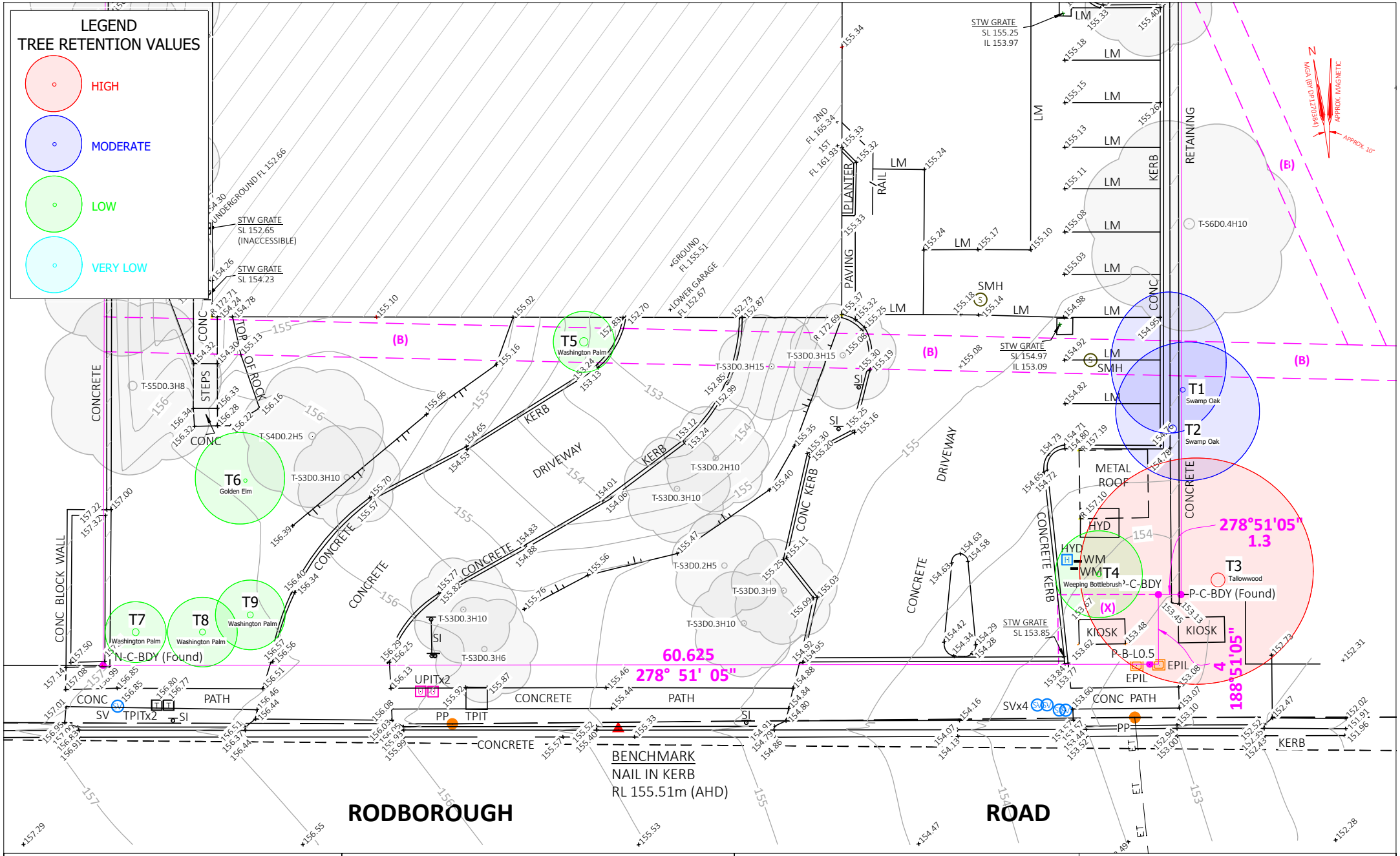
Earthscape Horticultural Services
Arboricultural and Horticultural Consultants
PO Box 364
BEROWRA NSW 2081
Ph: 02 9456 4787
Fax: 02 9456 5757 e: earthscape@iinet.net.au

Based on the Survey Drawing
prepared by SurveyPlus
Dwg Ref No. 22896_DET_1A [A]
Dated 30/10/2024

DWG No. T24-0617/01 [A]

KEY PLAN

DATE: 17/06/2024




APPENDIX 5
TREE LOCATION PLAN SHOWING
TREE RETENTION VALUES

12A Rodborough Road, FRENCHS FOREST, NSW

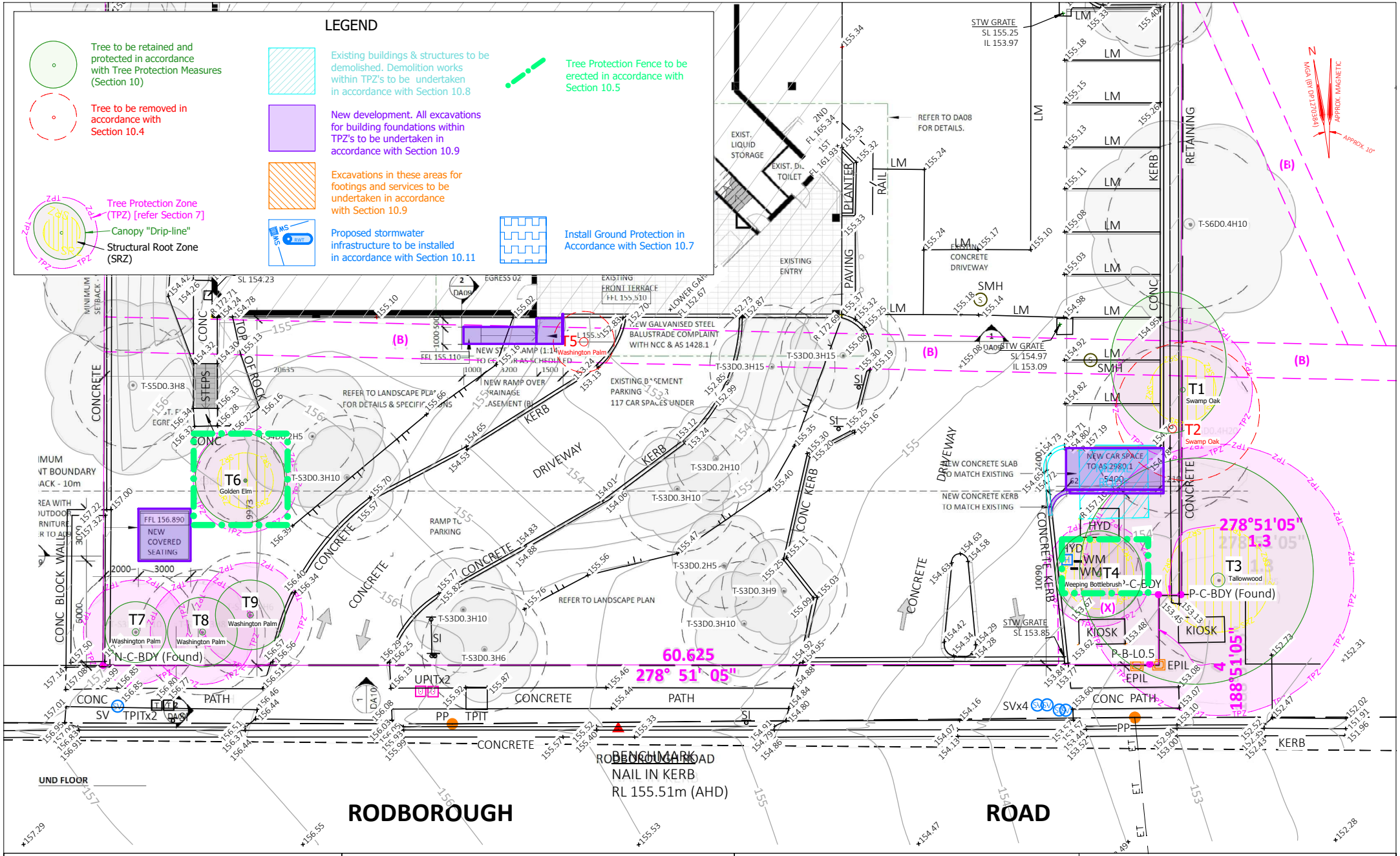

Earthscape Horticultural Services
Arboricultural and Horticultural Consultants
PO Box 364
BEROWRA NSW 2081
Ph: 02 9456 4787
Fax: 02 9456 5757 e: earthscape@iinet.net.au


Based on the Survey Drawing
prepared by SurveyPlus
Dwg Ref No. 22896_DET_1A [A]
Dated 30/10/2024

DWG No. T24-0617/01 [A]

SHEET 1

DATE: 17/06/2024




APPENDIX 6
TREE PROTECTION PLAN

12A Rodborough Road, FRENCHS FOREST, NSW


Earthscape Horticultural Services
Arboricultural and Horticultural Consultants
PO Box 364
BEROWRA NSW 2081
Ph: 02 9456 4787
Fax: 02 9456 5757 e: earthscape@iinet.net.au


Based on the Survey Drawing
prepared by SurveyPlus
Dwg Ref No. 22896_DET_1A [A]
Dated 30/10/2024

DWG No. T24-0617/02 [A]

SHEET 1

DATE: 17/06/2024