



Monaro Cluster – Jindabyne Site
Arboricultural Impact Assessment

NSW Department of Education

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Template 2.8.1

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Abbreviations

Abbreviation	Description
AQF	Australian Qualifications Framework
AS	Australian Standards
DBH	Diameter at Breast Height
ELA	Eco Logical Australia
m	Metre
mm	Millimetre
NDE	Non-Destructive Excavation
NO	Number
NSW	New South Wales
SP	Species
SRZ	Structural Root Zone
TPZ	Tree Protection Zone
VTA	Visual Tree Assessment

1. Introduction

This Arboricultural Impact Assessment (AIA) accompanies an Environmental Impact Statement (EIS) pursuant to Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) in support of an application for a State Significant Development (SSD No 15788005). The SSDA is for a new education campus at Jindabyne, comprising of a new primary and high school, located at the Jindabyne Sport and Recreation Centre (JSRC).

This report addresses the Secretary's Environmental Assessment Requirements (SEARs) for part of item 3. *Trees and Landscaping - provide where relevant, an arboricultural impact assessment prepared by a Level 5 (Australian Qualifications Framework) Arborist, which details the number, location and condition of trees to be removed and retained, includes detailed justification for each tree to be removed and details the existing canopy coverage on-site.*

1.1 Proposal

The proposed development is for the construction of a new education campus comprising a new primary school and a new high school at Jindabyne (the proposal). The proposal will occupy the western extent of the JSRC site at 207 Barry Way (the site) and will accommodate approximately 900 students with capacity for future expansion.

The primary school will be situated in the northern portion of the site, with the high school situated to the south. Centrally located between the two schools will be a common visitor entry point and co-located school administration facility. While the schools are inherently separate identities, with separate student entries, opportunities for integration are provided in a central shared plaza, as identified in Figure 1 below. This outdoor learning space is activated by the school canteen (shared) and separate core facilities including the primary school hall and library, and the high school gym and library, and provides opportunities for shared community use.

The new primary school will provide for a Core 21 school. This will include 20 home base units and 2 support learning units, administration and staff facilities, covered outdoor learning area (COLA), hall, staff and student amenities, out of school care facilities, library and special programs. Landscaped areas include active and passive open space play areas, and a games court.

The new high school will provide for a stream 2 high school. This will incorporate general/specialised learning spaces and support learning units, administration and staff facilities, covered outdoor learning area (COLA), hall, staff and student amenities, library, an agricultural learning unit. Landscaped areas include active and passive open space play areas, a sports field and multipurpose games courts.

A new access driveway is proposed off Barry Way along the western boundary of the site and includes car parking, bus and private vehicle drop-off zones, and delivery zones.

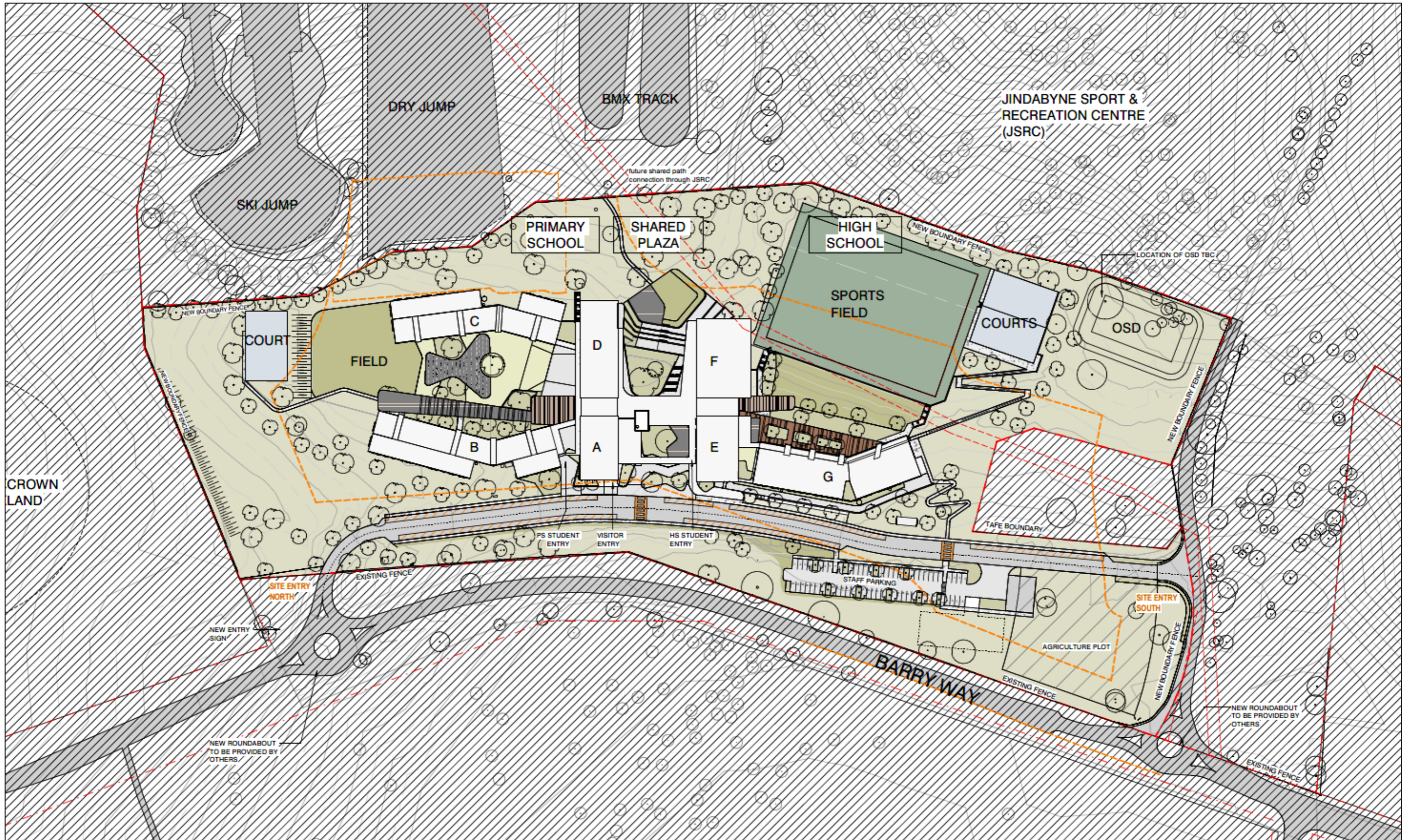


Figure 1: Proposed site plan (DJRD Architects 2021)



Figure 2: Preliminary landscape plan (Site Image Landscape Architects 2021)

1.2 Site description

The site of the proposed new education campus at Jindabyne is located within the western extent of the existing JSRC at 207 Barry Way (101 DP1019527) (Figure 3). The site is located within the Snowy Monaro Regional Council local government area and is approximately 2.2km south of the Jindabyne town.

The site is approximately 9.5 ha in size, containing a former golf course and three existing workers cottages which were occupied during the construction of the Snowy Hydro Scheme. The site is undeveloped and contains scattered trees. Much of the surrounding land comprises remnant grassland, woodland and agricultural land.

As identified above, the site is within the existing JSRC which is a high performance and community sport centre located directly east of the site. The JSRC has a range of sporting facilities including a synthetic running track, cycling track, netball and tennis courts, fitness and indoor sports centres, and sporting ovals, as well as other services and accommodation facilities. The newly constructed BMX track is located directly east of the site with the new ski jump currently under construction to the northeast.

The surrounding locality is generally rural in character with other land uses also including the Jindabyne Aero Club located to the west of the site on Tinworth Drive, an industrial area to the southwest and the Jindabyne Community recycling centre is located east of the JSRC.

Features of the subject site are tabulated below.

Table 1: Development site

Criteria	Description
Street address	207 Barry Way, Jindabyne NSW 2627
Lot and DP	Lot 101 DP1019527
Local Government Area	Snowy Monaro Regional Council
General land use	RU1 Rural Zone, Primary Production
Overview of vegetation (e.g. planted, remnant)	Trees within the site include endemic eucalyptus species and exotic species

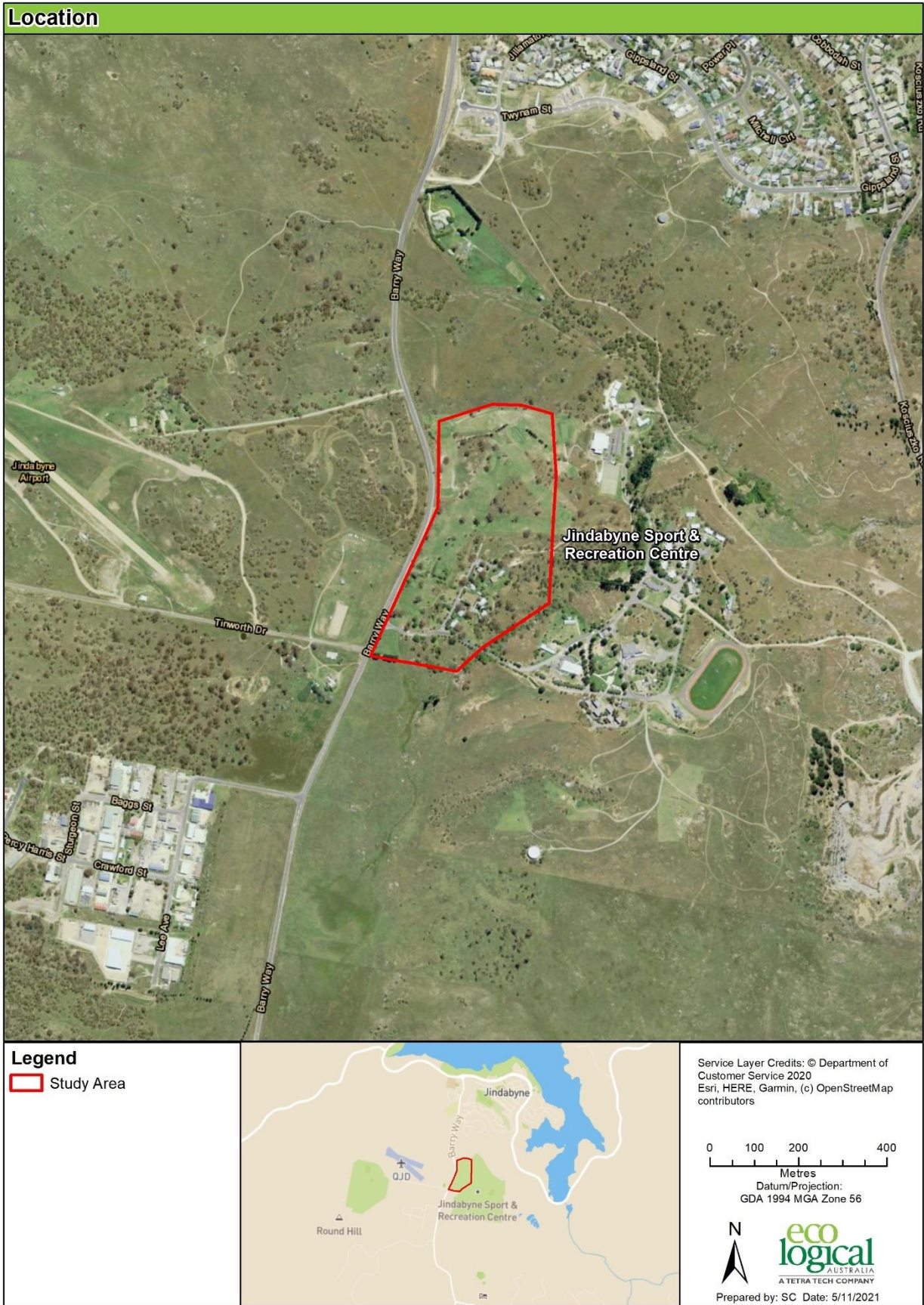


Figure 3: Location of study area

1.3 Purpose of report

The purpose of this report is to:

- identify the trees within the site that are likely to be affected by the proposed works
- undertake a visual tree assessment of the subject trees
- assess the current overall health and condition of the subject trees
- evaluate the retention value of the subject trees
- identify trees to be removed, retained or transplanted
- determine the likely impacts on trees to be retained
- recommend tree protection measures to minimise adverse impacts.

The description of the proposed activity in

Table 2 is based on information available at the time of preparing this report, including the development footprint identified on the *Proposed Site Plan, drawing SSDA.0102 Revision J, prepared by djrd architects and dated 12 October 2021* (Figure 1) and the engineering plans provided by Cardno and included in Appendices G and H .

Table 2: Proposed activity

Activities that can impact trees	Description of proposed activities
Clearing vegetation	Yes, there are 134 trees proposed to be cleared
Pruning vegetation	No
Cut and fill earthworks	Yes, cut/fill earthworks are proposed to be complete over majority of the site (see Appendix G)
Architectural works	Yes, earthworks will be required to facilitate construction of the proposed buildings, sports field, roads, pedestrian/cycling paths and civil batters including the new roundabout and driveway. This report does not assess impacts from the earthworks associated with electrical infrastructure therefore, it is recommended that this AIA be updated at the detailed design phase to assess these proposed works if they are located outside of the impact area assessed (illustrated in Appendix C).
Landscaping	Yes, the proposed landscaping will retain some existing trees as shown in Site Images Landscape Plan (2021) (Figure 2). If any landscaping is proposed within TPZs, then further advice from an AQF5 Consulting Arborist will be required.
Stormwater management	Yes, changes to stormwater management have been assessed in accordance with Cardno's Stormwater Drainage Plan (2021) (see Appendix H)
Compaction	Construction vehicle access routes, parking stockpiling of fill and storage of materials can all lead to compaction. Construction vehicle access routes have not been assessed in this report. If any access, parking or stockpiling is proposed within Tree Protection Zones (TPZ), then further impact assessment and approval will be required.
Refuelling and chemical use (e.g. herbicides)	No
Erection of scaffolding	Yes, scaffolding will be restricted to the impact area shown.
Vehicle movements	Yes

2. Method

2.1 Definition of a tree

A tree is defined under the Australian Standard, *AS 4970-2009, Protection of Trees on Development Sites* as a long lived woody perennial plant greater than (or usually greater than) 3 m in height with one or relatively few main stems or trunks.

Snowy Monaro Regional Council DCP (2013) defines a tree as:

“A native tree which satisfies any of the following criteria:

- *a height greater than four (4) metre.*
- *for a single trunk tree species, a trunk diameter equal to or exceeding one (1) metre or 60 centimetres for Eucalypt species at a height of one (1.3) metres from ground level.*
- *for a multi trunk tree species, a combined trunk circumference (measured around the outer girth of the group of trunks) equal to or exceeding one (1) metre at a height of one (1) metre above ground level.*
- *Tree works on Poplars in Bredbo zone RU5 Village greater than 10 metres in height.*
- *Tree works to any native tree or clearing of any native vegetation located on land”*

2.2 Visual tree assessment

The subject trees were assessed in accordance with a stage one visual tree assessment (VTA) as formulated by Mattheck and Breloer (1994) and practices consistent with modern arboriculture.

A total of **210 trees** were assessed and tagged within the assessment site. 66 trees were assessed in October 2020 by AQF Level 5 Consulting Arborist, David Bidwell and a further 144 trees were assessed in April 2021 by AQF Level 5 Consulting Arborist, Roger Uebe.

The following limitations apply to this methodology:

- Trees were inspected from ground level, without the use of any invasive or diagnostic tools and testing.
- Trees were inspected within limits of site access.
- The locations of the subject trees were recorded using hand-held GPS units.
- Following field assessment, the GPS locations of trees were updated using spatial data provided by the client. ELA understands that these tree locations were determined by a partial survey of the site and additional trees were located using SIX maps imagery. Should a full site survey be undertaken on the site, ELA recommends that this report be updated with the surveyed tree locations matched to ELA’s tree identification numbers.
- No aerial inspections or root mapping were undertaken.
- Tree heights, canopy spread and diameter at breast height (DBH) were estimated, unless otherwise stated.
- Tree identification was based on broad taxonomical features present and visible from ground level at the time of inspection.

- Each tree assessed was assigned an identification number. Trees numbers 1 to 56 were assessed in the field in October 2020 but have been excluded from this assessment report as they are located outside the current study area. A total of 10 trees (Trees 57-61, 64, 68, 71-74, 76, 77, 78, 80, 81, 82, 152, 153 & 221) were not included in this assessed as they did not meet Council's definition of a tree. Identification numbers 140 and 150 were skipped during data collection and therefore do not exist in the tabulated results in Appendix D.

2.3 Retention value

The retention value or importance of a tree or group of trees, is determined in accordance with the Institute of Australian Consulting Arborists (IACA) Significance of a Tree Assessment Rating System (STARS®), which is summarised in Appendix A. The method considers the Useful Life Expectancy (ULE) and landscape significance of a tree. Trees are provided one of the following ratings:

- **High - priority for retention.** These trees are considered important and should be retained and protected. Design modification or re-location of building/s should be considered to accommodate the setbacks as prescribed by Australian Standard *AS 4970–2009 Protection of trees on development sites*.
- **Medium - consider for retention.** These trees are moderately important for retention. Their removal should only be considered if adversely affected by the proposed works and all other alternatives have been considered and exhausted.
- **Low - consider for removal.** These trees are not considered important for retention, nor require special works or design modification to be implemented for their retention.
- **Priority for removal:** These trees are considered hazardous, or in irreversible decline, or weeds and should be removed irrespective of development.

2.4 Protection zones

2.4.1 Tree protection zone (TPZ)

The TPZ is a specific radius area above and below ground and at a distance from the trunk set aside for the protection of a tree's roots and crown to provide for the viability and stability of a tree to be retained where it is potentially subject to damage by the development. The TPZ (as defined by AS 4970-2009) requires restriction of access during the development process. Groups of trees with overlapping TPZs may be included within a single protection area. Tree sensitive measures must be implemented if works are to proceed within the TPZ. The TPZ radius is determined by multiplying its DBH by 12.

2.4.2 Structural root zone (SRZ)

The SRZ is the area of the root system (as defined by AS 4970-2009) used for stability, mechanical support and anchorage of the tree. It is critical for the support and stability of trees. Severance of roots within the SRZ is not recommended as it may lead to the destabilisation and/or decline of the tree.

Figure 4 provides a visual representation of the TPZ and SRZ, as described above.

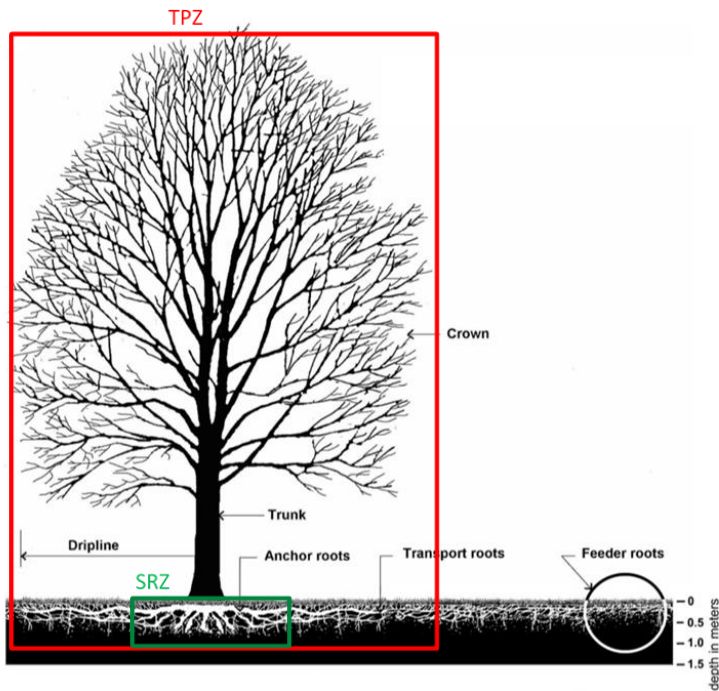


Figure 4: Representative tree structure and indicative TPZ and SRZ

2.5 Potential impacts

Trees may be impacted by physical or chemical damage to roots or above tree parts. Examples include impacts associated with site grading, soil compaction, excavation, stock piling within TPZ as well as changes in site hydrology, changes in soil level and site contamination. The extent of encroachment to the TPZ and SRZ determines the level of potential impact. AS 4970-2009 defines types of encroachment as follows and as illustrated in Appendix B:

- **Major encroachment** - If the proposed encroachment is greater than 10% of the TPZ or inside the SRZ, the project arborist must demonstrate that the tree(s) would remain viable. The location and distribution of roots may be determined through non-destructive excavation (NDE) methods such as hydro-vacuum excavation (sucker truck), Air Spade or manual extraction. The area lost to this encroachment should be compensated for elsewhere and contiguous with the TPZ.
- **Minor encroachment** – If the proposed encroachment is less than 10% of the TPZ, and outside of the SRZ, detailed root investigations should not be required. The area lost to this encroachment should be compensated for elsewhere and contiguous with the TPZ.

For the purposes of this Arboricultural Impact Assessment, impacts are defined as follows:

- **High impact:** The SRZ is directly affected or the proposed encroachment is greater than 20% of the TPZ. Trees may not remain viable if they are subject to high impact. These trees cannot be retained unless the proposal is changed.

- **Medium impact:** If the proposed encroachment is greater than 10% of the TPZ (but less than 20% of the TPZ) and outside of the SRZ, the project arborist may require detailed root investigation to demonstrate that the tree(s) would remain viable. These trees may be retained subject to further investigation and mitigation measures.
- **Low impact:** If the proposed encroachment is less than 10% (total area) of the TPZ, and outside of the SRZ, detailed root investigations should not be required. These trees can be retained.
- **No impact:** No likely or foreseeable encroachment within the TPZ. These trees can be retained.

Impacts are calculated using geographic information systems techniques.

2.6 Proposed action

The proposed actions to either retain or remove each tree are determined by the impact from the proposed design footprint, conversations of intent with the client and corresponding mitigation measures. Proposed actions are defined as follows:

- **Remove:** Trees that are to be impacted by the proposed development to the extent whereby retention is not suitable and / or incompatible if the current plans are approved. All tree removal must comply with guidelines specified in section 4 of this report and subject to regulatory approval.
- **Retain:** Trees that are suitable for retention granted they follow the specific mitigation measures discussed in section 3 and / or the tree protection measures outlined in section 4 and / or the tree protection guidelines outlined in Appendix E.
- **Retain with mitigation measures:** The project arborist will need to confirm the viability of tree retention depending on proposed construction methods.

3. Results and discussion

Results of the arboricultural assessment are summarised in Table 3. Detailed results are included in Appendices C and D. The tree protection plan is outlined in section 4 of this report and tree protection guidelines are provided in Appendix E.

Site photos are provided in Appendix F, the cut/fill earthworks plan is provided in Appendix G and stormwater drainage plan in Appendix H.

It is recommended that this AIA be updated at the detailed design phase.

Table 3: Summary of tree retention values and proposed action

Retention value	Remove	Retain	Retain with mitigation measures	Total
Priority for retention (High)	46	17	2	65
Consider for retention (Medium)	52	29	1	82
Consider for removal (Low)	36	26	1	63
Total	134	72	4	210

TREES PROPOSED FOR REMOVAL (HIGH IMPACT)

A total of **134 trees** are proposed for removal as they will be highly affected (>20 % TPZ encroachment or SRZ encroachment) by the proposed development based on the current site plan. These trees and their retention values are as follows:

- **High retention:** a total of **46 high retention value trees** will be subject to high impact. These trees are considered important and should be prioritised for retention and protection. Their tree numbers are as follows:
 - Trees 62, 67, 83, 85, 86, 93, 96, 97, 100, 102, 103, 104, 105, 107, 120, 122, 125, 133, 134, 137, 150, 158, 177, 179, 183, 184, 185, 198, 199, 200, 202, 203, 220, 227, 230, 262, 264, 265, 274, 275, 277, 278, 279, 283, 290 and 293.
- **Medium retention:** a total of **52 medium retention value trees** will be subject to high impact. These trees are moderately important for retention. Their tree numbers are as follows:
 - Trees 84, 88, 89, 94, 98, 99, 106, 111, 113, 116, 132, 136, 139.1, 154, 160, 161, 173, 174, 175, 176, 178, 180, 182, 201, 209, 218, 219, 229, 253, 255, 257, 258, 259, 260, 263, 266, 267, 268, 269, 270, 271, 272, 273, 276, 280, 281, 282, 286, 288, 289, 291 and 298.
- **Low retention:** a total of **36 low retention value trees** will be subject to high impact. These trees are not considered important for retention, nor require special works or design modification to be implemented for their retention. Their tree numbers are as follows:
 - Trees 87, 90, 91, 92, 95, 101, 108, 109, 110, 112, 117, 118, 119, 138, 155, 168, 169, 172, 181, 194, 195, 196, 204, 222, 256, 261, 284, 285, 287, 292, 294, 295, 296, 297, 299 and 300.

Any loss of trees should be offset with replacement planting in accordance with the relevant offset policy.

TREES PROPOSED TO BE RETAINED (LOW & NO IMPACT)

A total of **72 trees** are proposed to be retained. Of these, eight trees will be subject to low impact (<10% TPZ encroachment) and 61 trees will be subject to no impact (0% TPZ encroachment) from the proposed development. Their retention values are as follows:

Low impact (<10% TPZ encroachment)

- **High retention:** a total of **five high retention value trees** will be subject to low impact. Their tree numbers are as follows:
 - Trees 63, 65, 69, 127 and 170.
- **Medium retention:** a total of **three medium retention value trees** will be subject to low impact. Their tree numbers are as follows:
 - Trees 66, 167 and 237.

No Impact (0% TPZ encroachment)

A total of **64 trees** will be subject to no impact from the proposed development. These trees can be retained as there is no foreseeable encroachment within the trees' TPZs. Tree retention values are outlined below, and their tree numbers are outlined in Appendices C and D:

- **High retention:** a total of **12 high retention value trees** will be subject to low impact. Their tree numbers are as follows:
 - Trees 70, 129, 130, 131, 135, 139, 157, 164, 188, 190, 236 and 238.
- **Medium retention:** a total of **26 medium retention value trees** will be subject to low impact. Their tree numbers are as follows:
 - Trees 124, 126, 156, 159, 162, 163, 166, 186, 189, 192, 205, 206, 208, 210, 216, 223, 228, 232, 233, 234, 235, 239, 243, 248, 251 and 252.
- **Low retention:** a total of **26 low retention value trees** will be subject to low impact. Their tree numbers are as follows:
 - Trees 75, 114, 115, 121, 151, 165, 171, 187, 191, 193, 207, 211, 212, 213, 214, 215, 217, 231, 240, 241, 242, 245, 246, 247, 249 and 250.

TREES REQUIRING FURTHER INVESTIGATION IN ORDER TO RETAIN (MEDIUM IMPACT)

A total of **four trees** are proposed to be retained with mitigation measures. These trees will be subject to medium impact (>10% TPZ encroachment and <20% TPZ encroachment) by the proposed development and require further investigation (i.e., root mapping) and mitigation measures which are to be in consultation with the Project Arborist. These trees and their retention values are as follows:

- **High retention:** **two** high retention value trees (Trees 123 and 128)
- **Medium retention:** **one** medium retention values tree (Tree 244)
- **Low retention value:** **one** low retention value tree (Tree 254)

MANAGING RISK AND FUTURE USE

Many trees, including some of which are of high retention value are of considerable size, featuring evidence of decay, termite activity, hollows, and large dead branches. These attributes are often considered defects and a hazard when the surrounding land use changes and is frequently associated

with a subsequent change in the risk of harm to people and property from falling trees and branches. However, trees with these features may also be important for their historic value, visual amenity, provision of fauna habitat, carbon sequestration and opportunity for environmental education.

Therefore, it is recommended that remnant high retention value trees to be retained (*Eucalyptus sp.*) with notable defects are incorporated in lower occupancy parts of the proposed school. It is also recommended that that tree management measures are implemented to manage the risk. In areas where occupancy is expected to be high, an annual tree risk assessment by an arborist qualified to AQF level 5 is recommended. All tree work (e.g., deadwooding) should be by an arborist qualified to AQF level 3 where these trees are to be retained.

4. Tree protection plan

- All tree work must be in accordance with Australian Standard *AS 4373-2007, Pruning of Amenity Trees* and the NSW WorkCover Code of Practice for the Amenity Tree Industry (1998).
- Permission must be granted from the relevant consent authority prior to removing or pruning of any of the subject trees. Approved tree works should not be carried out before the installation of tree protection measures.
- Any additional construction activities within the TPZ of the subject trees must be assessed and approved by the project arborist and must comply with *AS 4970-2009 - Protection of trees on development sites*.

Tree protection measures are summarised in Table 4 and further information is in Appendix E.

Table 4: Summary of tree protection measures

Type	More details	Comment
Signage	Appendix E1	Prominently sign posted with 300 mm x 450 mm boards stating, "NO ACCESS - TREE PROTECTION ZONE".
Tree protection fencing	Appendix E1	Protective cyclone chain wire link fence to be erected around the TPZ to protect and isolate retained trees from the construction works. Existing boundary fencing may be used.
Crown protection	Appendix E2	Where required, crown protection may include the installation of a physical barrier, pruning selected branches to establish clearance, or the tying/bracing of branches.
Trunk and branch protection	Appendix E3	When fencing is not practical or prior to any activities within the TPZ, trunk protection is required and consist of a layer geotextile fabric or similar followed by 1.8 m lengths of softwood timbers spaced evenly around the trunk and secured with a galvanised hoop strap.
Ground protection	Appendix E4	Install and maintain 100mm thick layer of mulch around tree in TPZ. For machine or vehicle access within TPZ geotextile fabric beneath crushed rock or rumble boards may be required.
Soil moisture		Soil moisture levels should be regularly monitored by the project arborist. Temporary irrigation or watering may be required within TPZ.
Root protection and investigation	Appendix E5	If incursions/excavation within the TPZ are unavoidable, root investigation may be needed to determine the extent and location of roots within the area of construction activity using non-destructive excavation (NDE) methods.
Underground services	Appendix E6	All underground services should be routed outside of the TPZ. If underground services need to be installed within the TPZ, they should be installed using horizontal directional drilling (HDD), non-destructive excavation (NDE) methods such as hydro-vacuum, Air Spade or manually excavated trenches.

5. Hold points, inspection and certification

An AQF Level 5 Consulting Arborist needs to be engaged to supervise work within the TPZ, provide advice regarding tree protection and monitor compliance. Once each stage (preconstruction, during construction and post-construction) is reached, the work will be inspected and certified by the project arborist and the next stage may commence. Alterations to this schedule may be required due to necessity, however, this shall be through consultation with the project arborist only.

A copy of this report must be available on-site prior to the commencement of works, and throughout the entirety of the project. Hold points have been specified in the schedule of works below to ensure trees are adequately protected during construction. It is the responsibility of the principal contractor to complete each of the tasks.

Pre-construction

Detailed design: The proposed construction method for the cut and fill earthworks and development encroaching the TPZs of Trees 123, 128, 244 and 254 is to be undertaken in consultation with the Project Arborist (AQF Level 5 Consulting Arborist) to determine if the trees can remain viable.

Post approval: Prior to any construction, an onsite meeting should be conducted with, but not limited to, the project arborist (AQF Level 5 Consulting Arborist), site manager and construction personnel team to confirm the tree protection requirements. All trees approved for removal are to be clearly marked with spray paint on trunks.

During construction

Monthly inspection of trees by the project arborist (or other timing as agreed with the project arborist). Notification to be given prior to the commencement of work within the TPZ, with supervision by the project arborist of any work undertaken in this zone.

Post-construction

Final inspection of trees by project arborist after all major construction has ceased and following the removal of tree protection measures.

6. References

6.1 General references

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Standards Australia 2007. *Australian Standard: Pruning of amenity trees, AS 4373 (2007)*, Standards Australia, Sydney.

Standards Australia 2009. *Australian Standard: Protection of trees on development sites, AS 4970 (2009)*. Standards Australia, Sydney.

6.2 Project specific references

Cardno 2021. *Cut/Fill Earthworks Plan, Civil Engineering Services 207 Barry Way, Jindabyne 2627 NSW*. Revision 5, dwg no. 80820348-05-CI-1141 dated 27/10/2021
 Cardno 2021. *Retaining Walls Layout Plan, Civil Engineering Services 207 Barry Way, Jindabyne 2627 NSW*. Revision 5, dwg no. 80820348-05-CI-1301-1303, sheets 1-3 dated 27/10/2021

Cardno 2021. *Site Sections, Civil Engineering Services 207 Barry Way, Jindabyne 2627 NSW*. Revision 5, dwg no. 80820348-05-CI-1504-1505, sheet 3 dated 27/10/2021

Cardno 2021. *Stormwater Drainage Plan, Civil Engineering Services 207 Barry Way, Jindabyne 2627 NSW*. Revision 5, dwg no. 80820348-05-CI-1504-1505, sheets 1-2 dated 27/10/2021

DJRD Architects 2021. *Schematic Design, Proposed Site Plan, Jindabyne Education Campus*. Proj no. 20415, dwg no. SSDA.0101, revision L dated 4 November 2021

Site Image Landscape Architects 2021. *Jindabyne Education Campus, Landscape Plan*. Job no. SS20-4530, issue 1, sheet 001, dated 19 March 2021.

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Appendix A Tree retention assessment method

A1 Tree Significance Assessment Criteria - STARS©

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

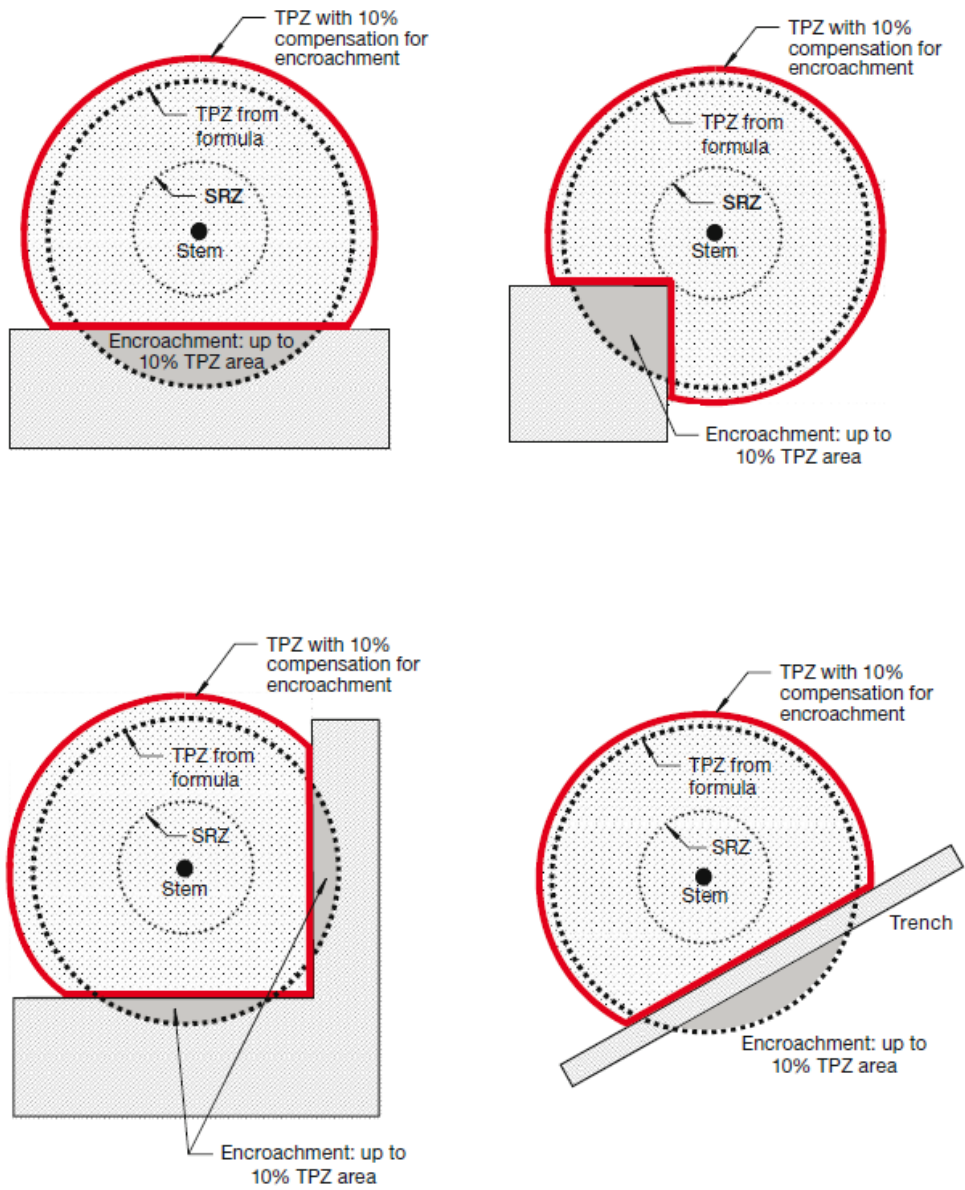
Low	Medium	High
<p>The tree is in fair-poor condition and good or low vigour.</p> <p>The tree has form atypical of the species</p> <p>The tree is not visible or is partly visible from the surrounding properties or obstructed by other vegetation or buildings</p> <p>The tree provides a minor contribution or has a negative impact on the visual character and amenity of the local area</p> <p>The tree is a young specimen which may or may not have reached dimensions to be protected by local Tree Preservation Orders or similar protection mechanisms and can easily be replaced with a suitable specimen</p> <p>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</p> <p>The tree is listed as exempt under the provisions of the local Council Tree Preservation Order or similar protection mechanisms</p> <p>The tree has a wound or defect that has the potential to become structurally unsound.</p> <p>Environmental Pest / Noxious Weed</p> <p>The tree is an environmental pest species due to its invasiveness or poisonous/allergenic properties. The tree is a declared noxious weed by legislation.</p> <p>Hazardous /Irreversible Decline</p> <p>The tree is structurally unsound and / or unstable and is considered potentially dangerous.</p> <p>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.</p>	<p>The tree is in fair to good condition and good or low vigour</p> <p>The tree has form typical or atypical of the species</p> <p>The tree is a planted locally indigenous or a common species with its taxa commonly planted in the local area</p> <p>The tree is visible from surrounding properties, although not visually prominent as partially obstructed by other vegetation or buildings when viewed from the street</p> <p>The tree provides a fair contribution to the visual character and amenity of the local area</p> <p>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</p>	<p>The tree is in good condition and good vigour</p> <p>The tree has a form typical for the species</p> <p>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.</p> <p>The tree is listed as a heritage item, threatened species or part of an endangered ecological community or listed on Council's significant tree register</p> <p>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.</p> <p>The tree supports social and cultural sentiments or spiritual associations, reflected by the broader population or community group or has commemorative values.</p> <p>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.</p>

A2 Matrix assessment - STARS©

		Tree significance				
		High	Medium	Low		
		Significance in Landscape	Significance in Landscape	Significance in Landscape	Environmental Pest/Noxious Weed Species	Hazardous/Irreversible Decline
Useful Life Expectancy	Long >40 years					
	Medium 15-40 years					
	Short <1-15 years					
	Dead					

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

Appendix B Encroachment into tree protection zones - AS 4970-2009



Appendix C Maps

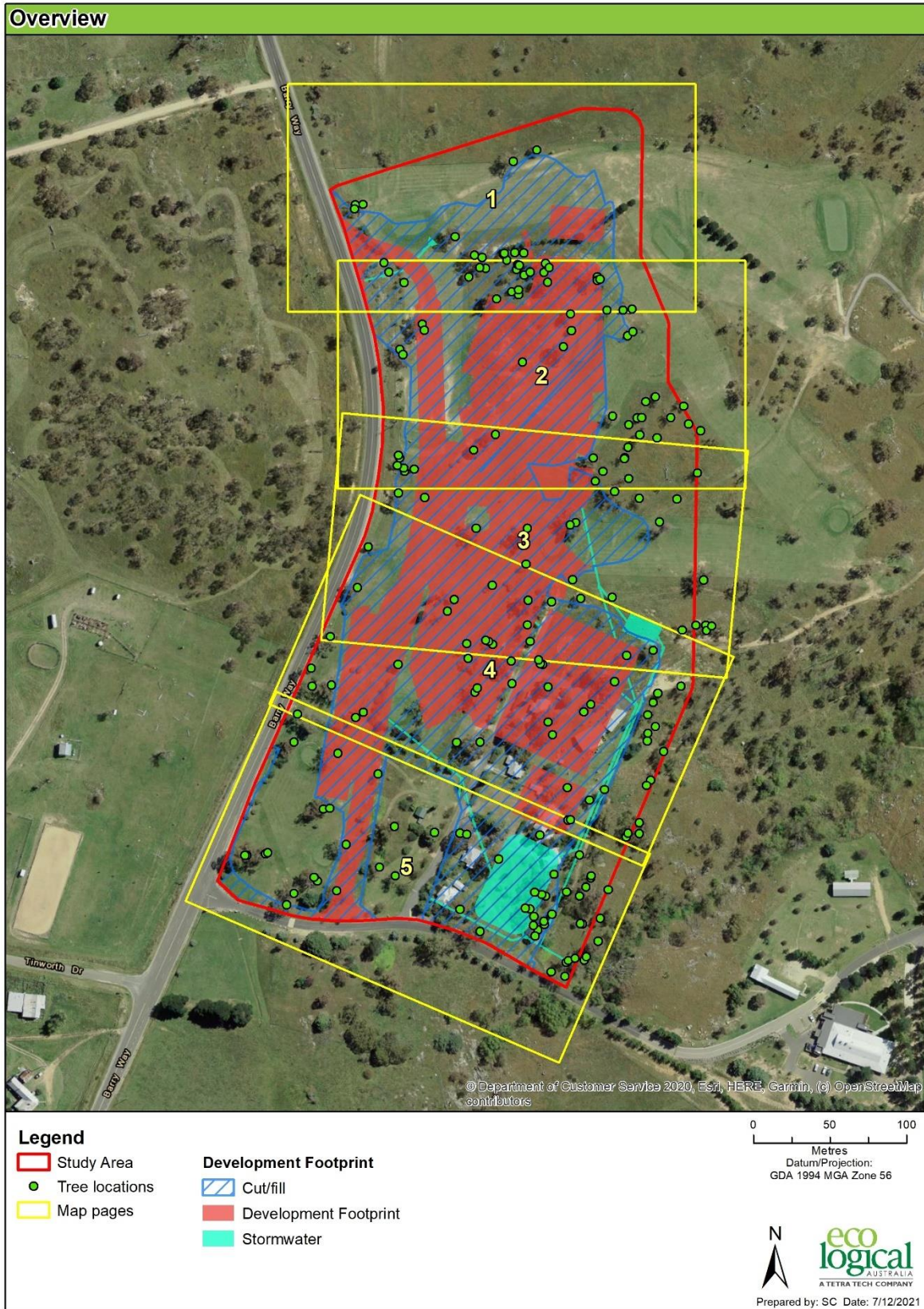


Figure 5: Overview map



Figure 6: Tree locations, page 1

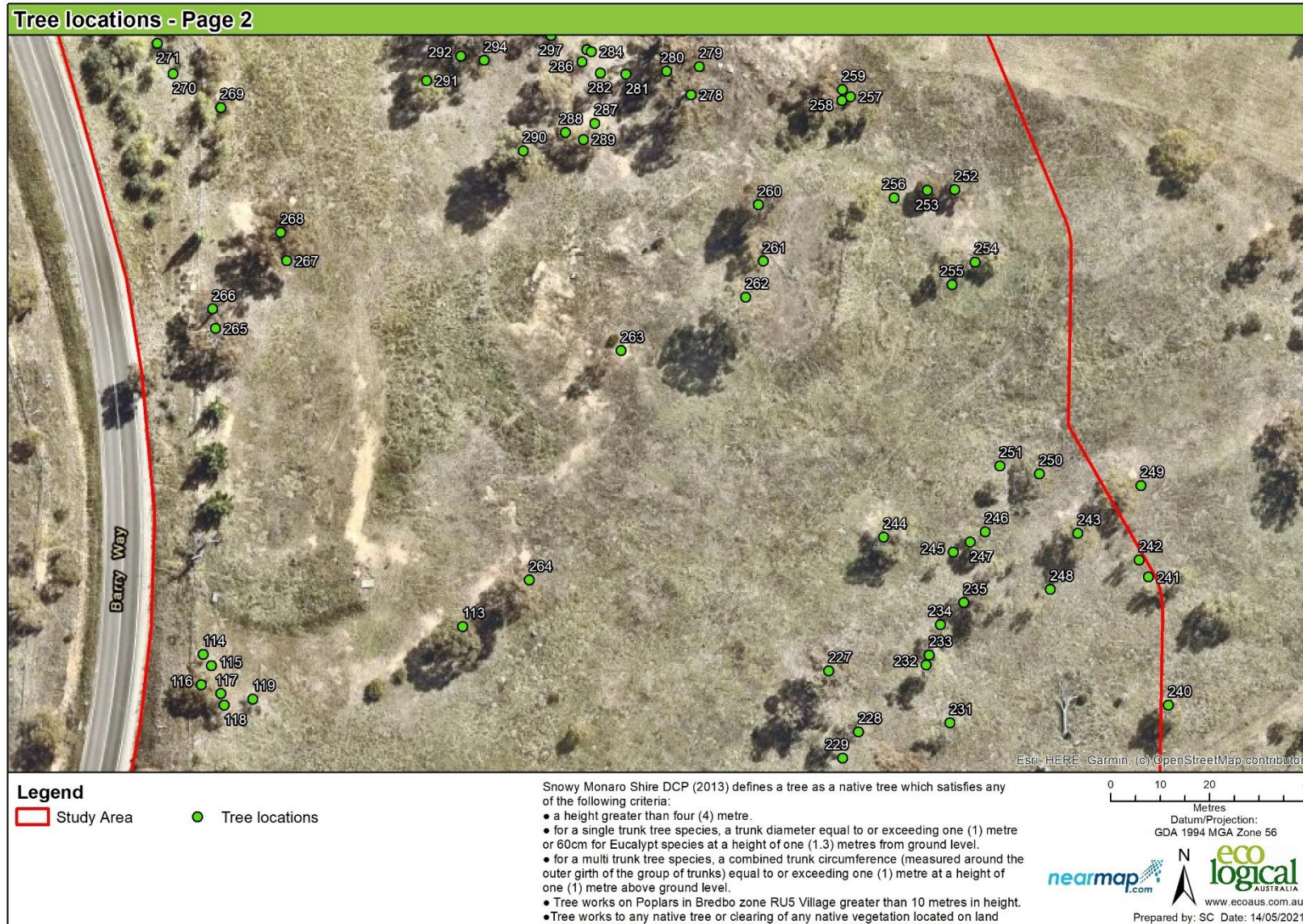


Figure 7: Tree locations, page 2



Figure 8: Tree locations, page 3

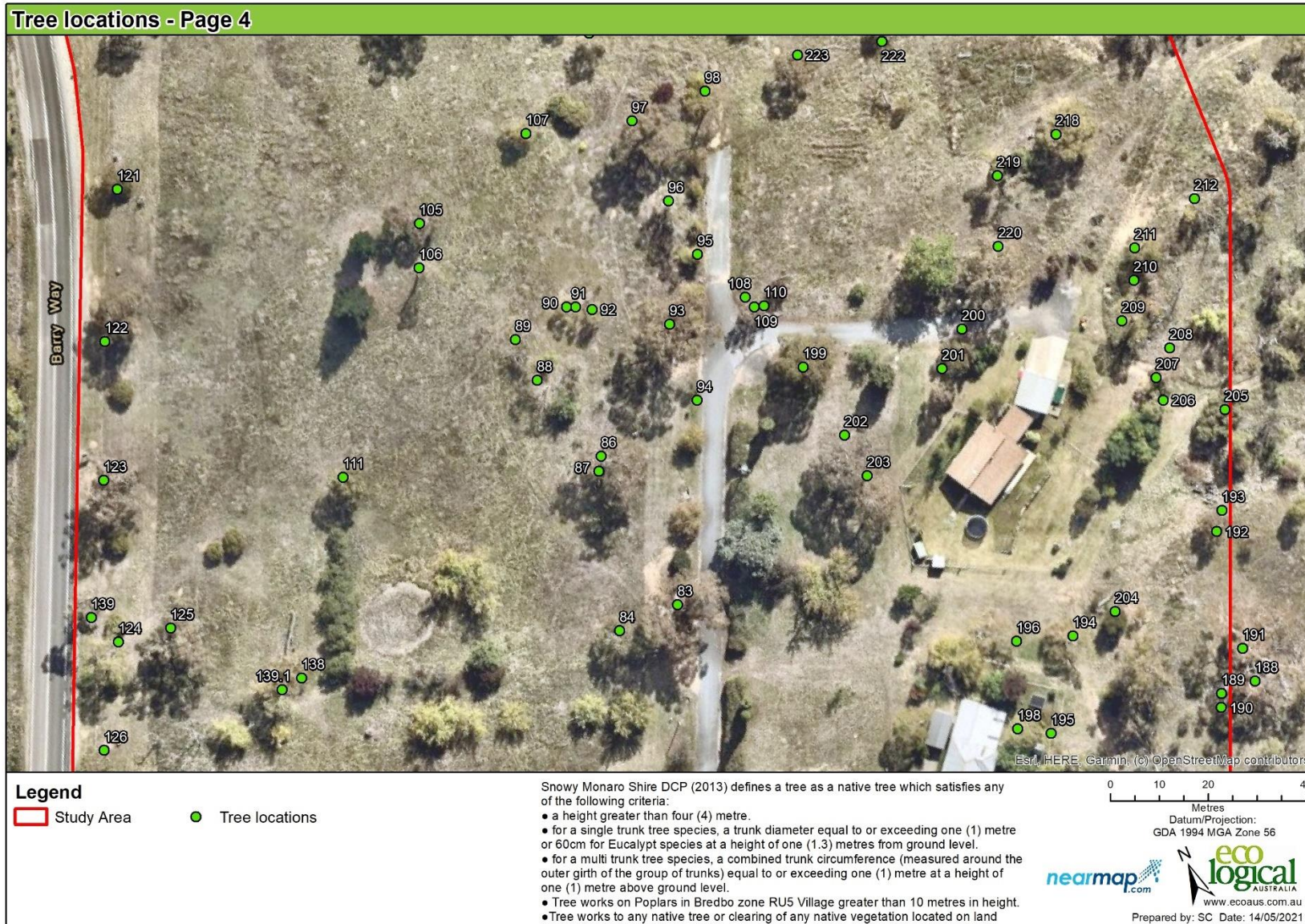


Figure 9: Tree locations, page 4

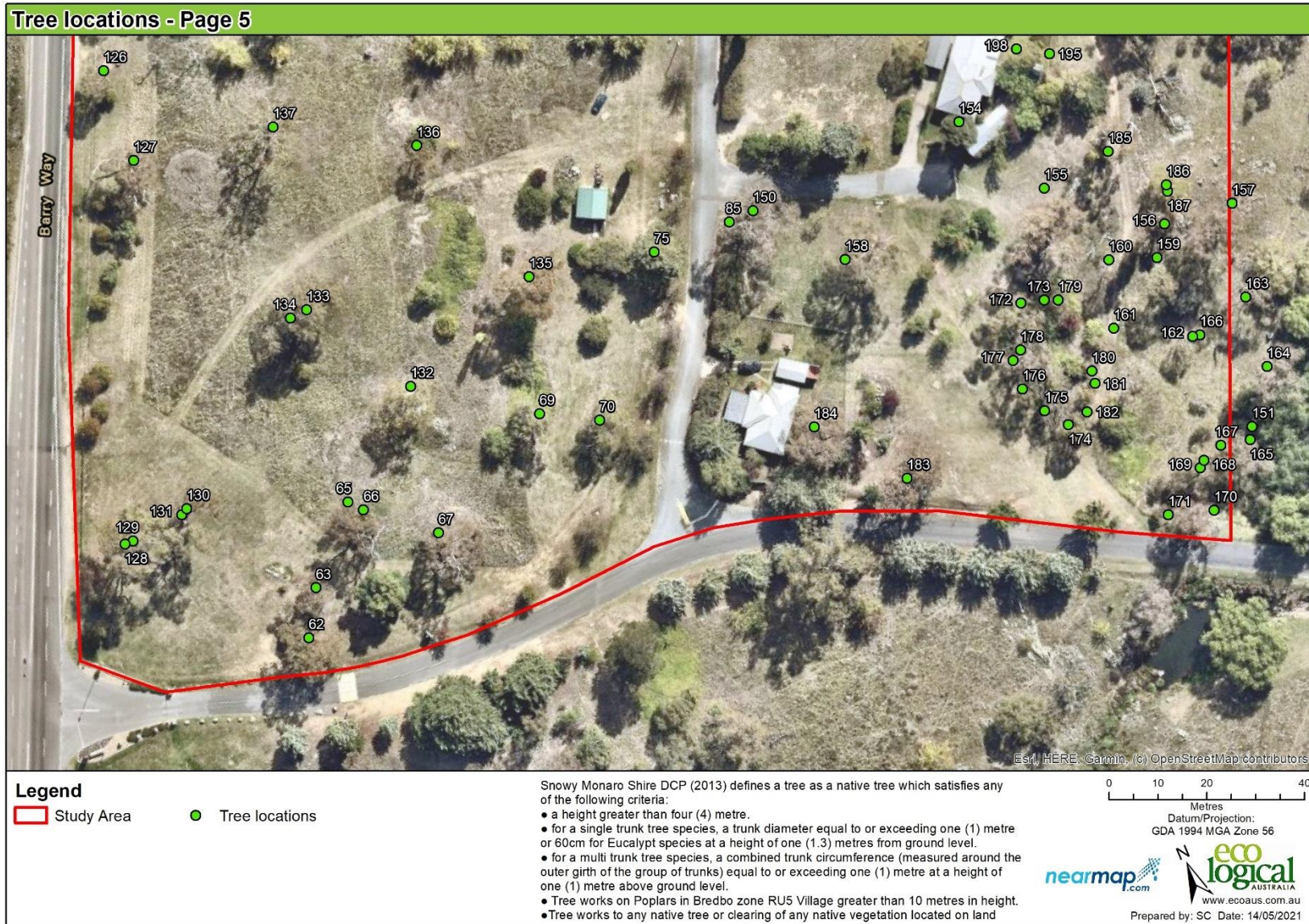


Figure 10: Tree locations, page 5

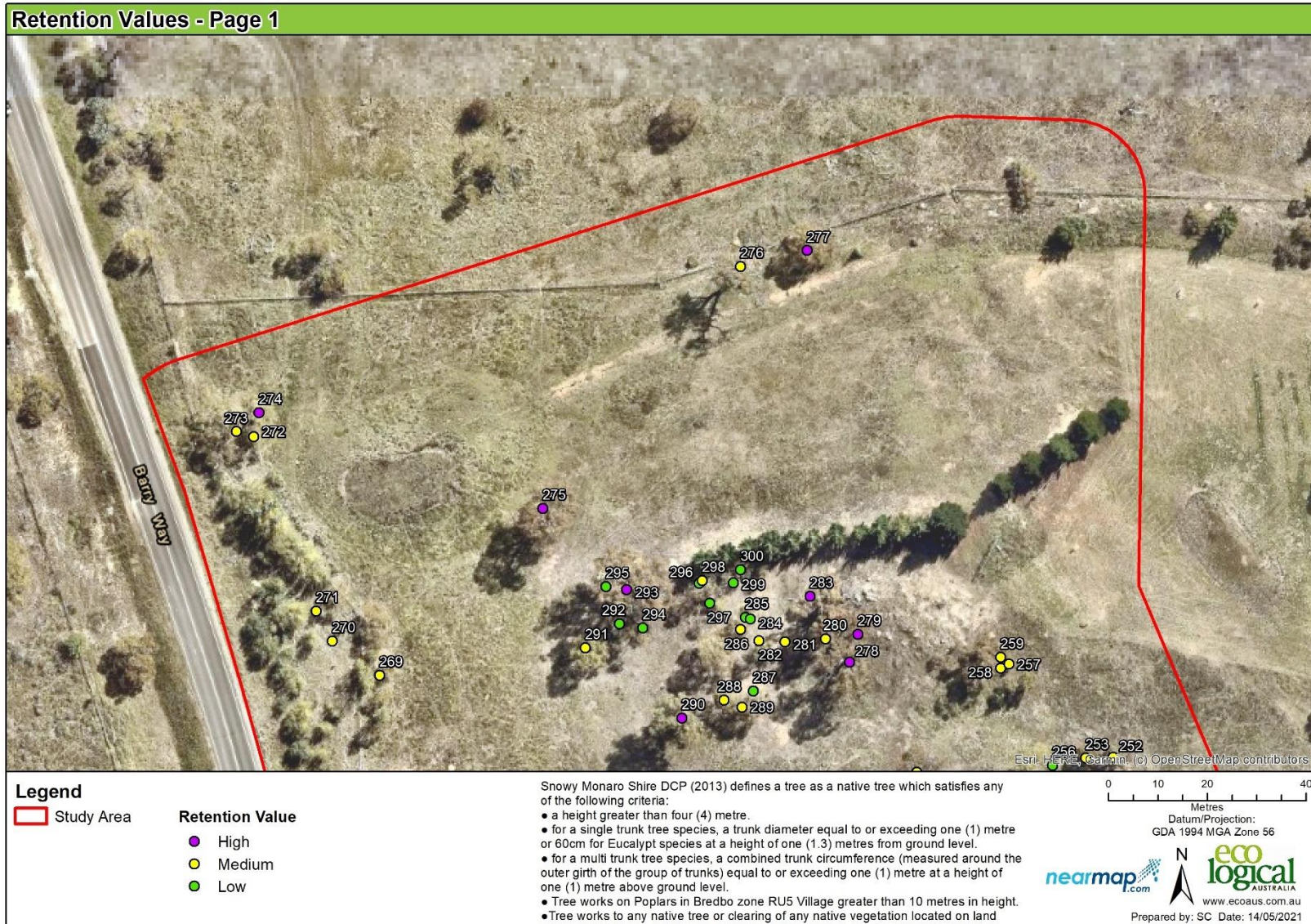


Figure 11: Retention value, page 1

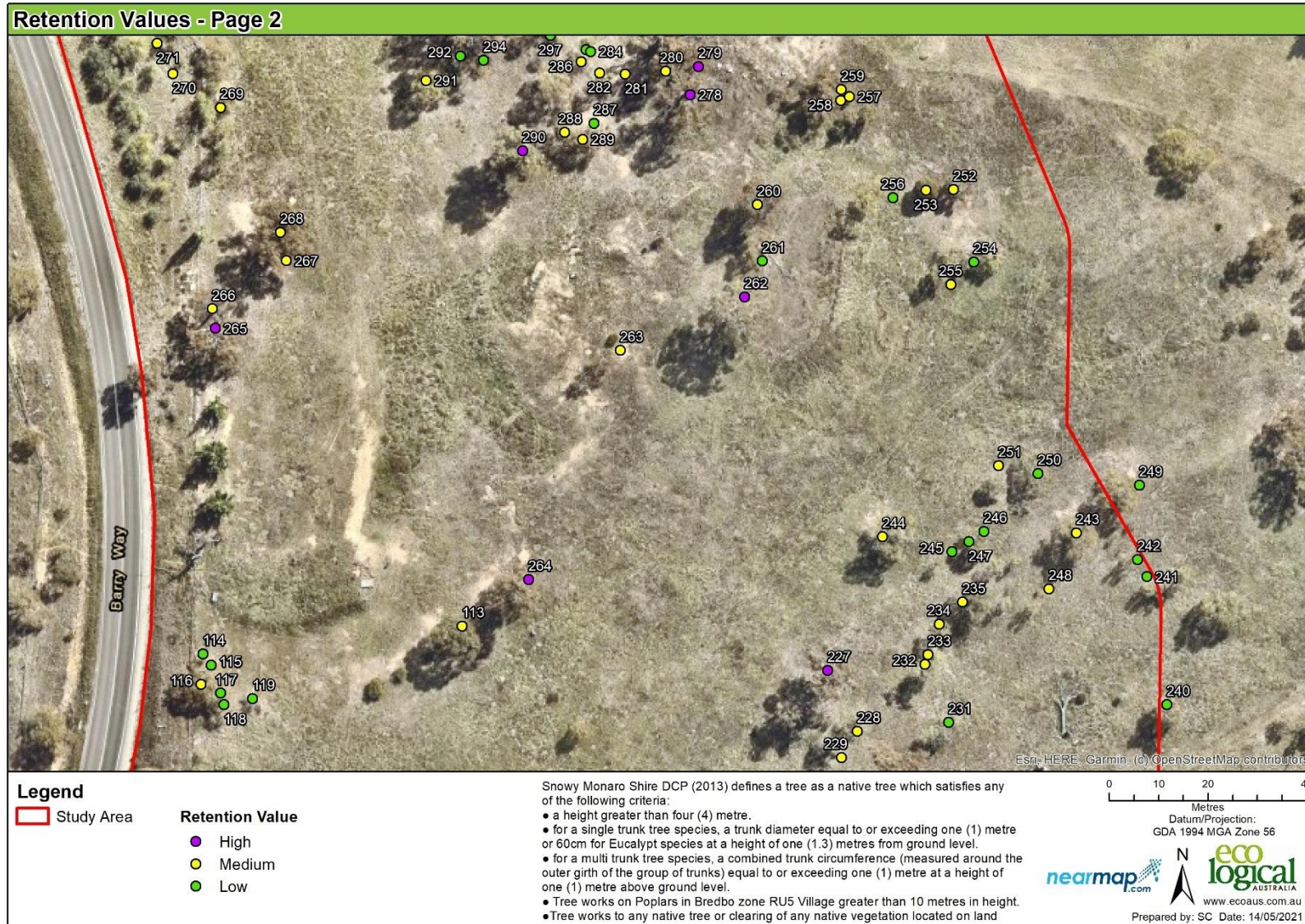


Figure 12: Retention value, page 2

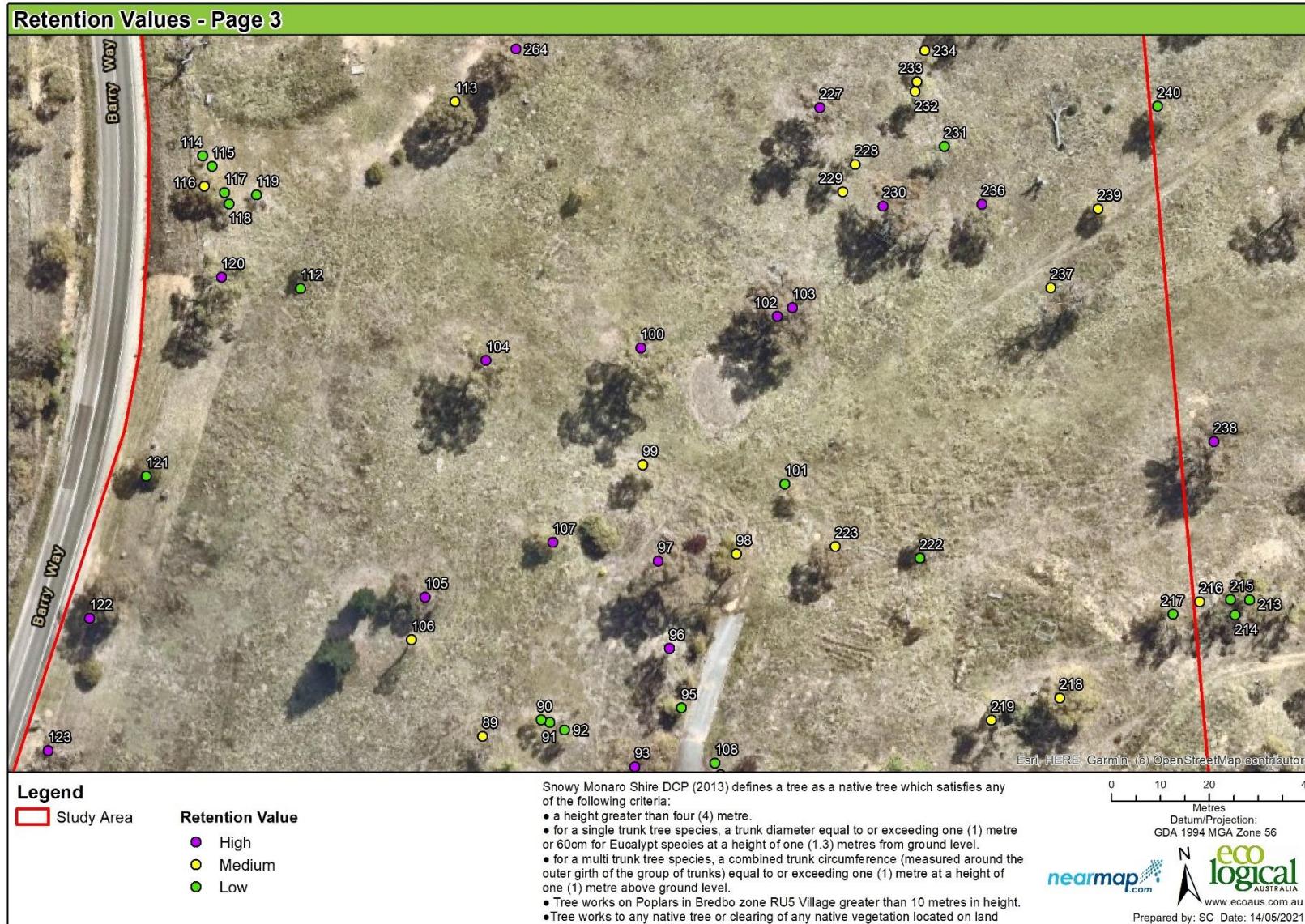


Figure 13: Retention value, page 3



Figure 14: Retention value, page 4

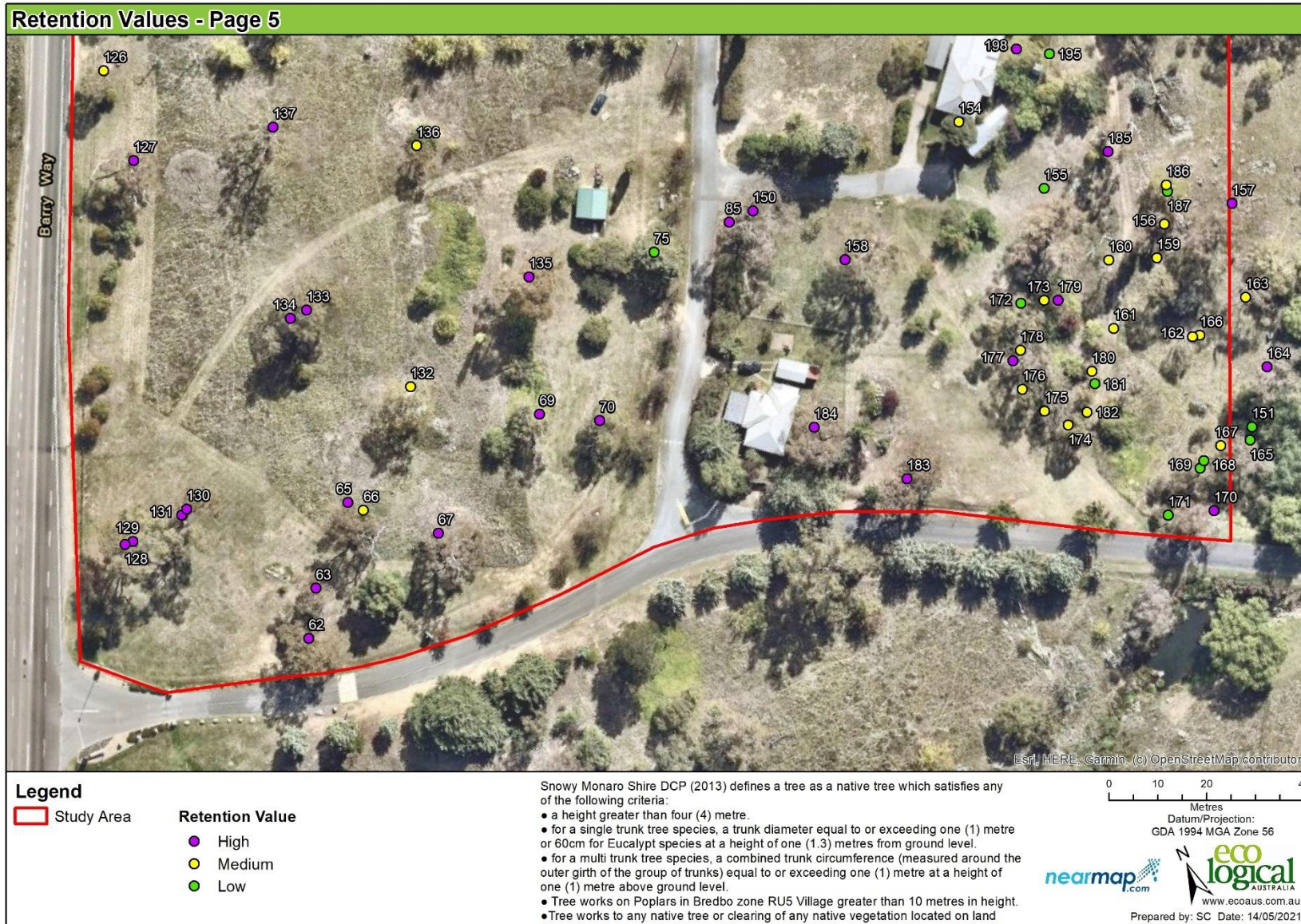


Figure 15: Retention value, page 5

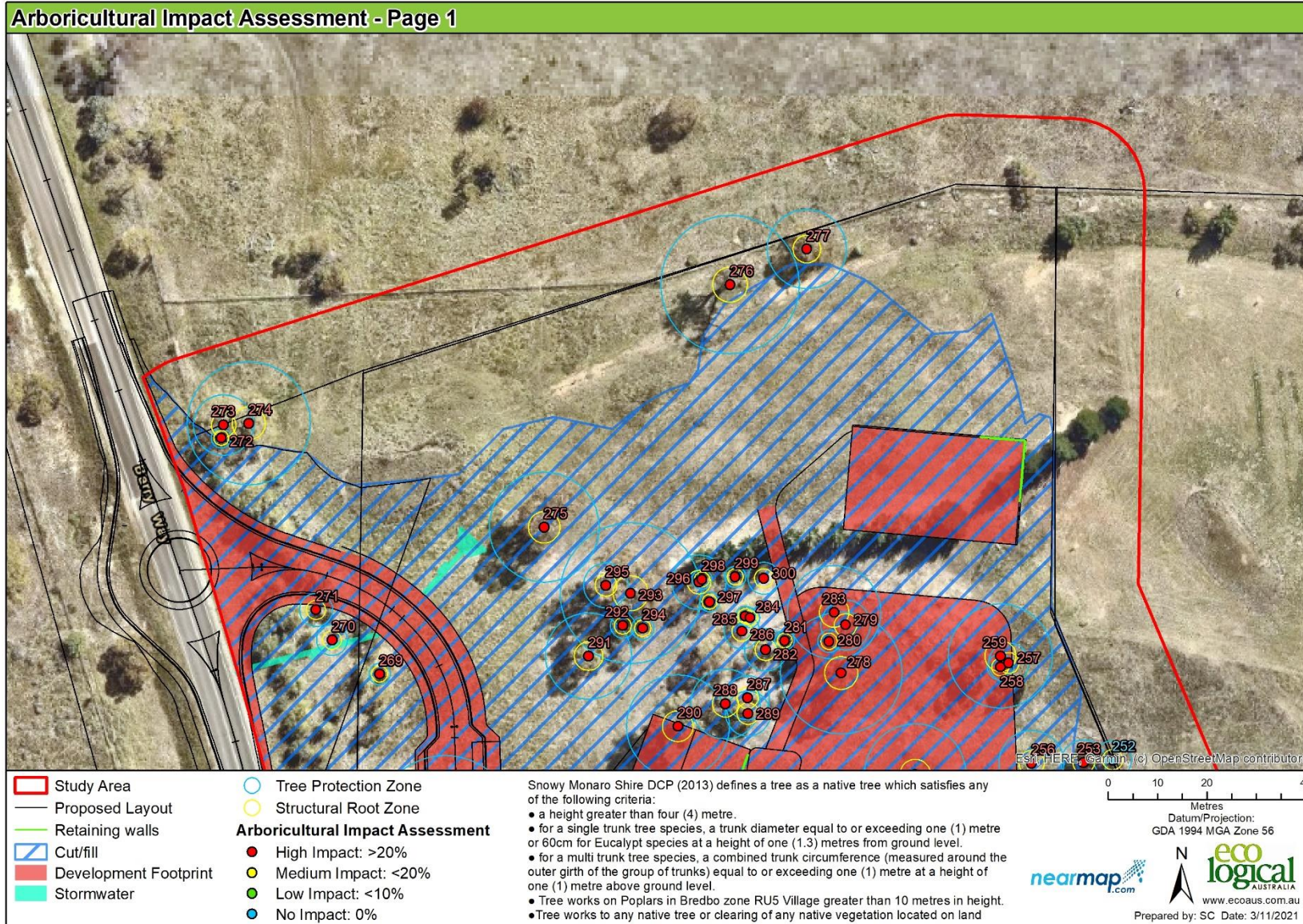


Figure 16: Arboricultural impact assessment, page 1

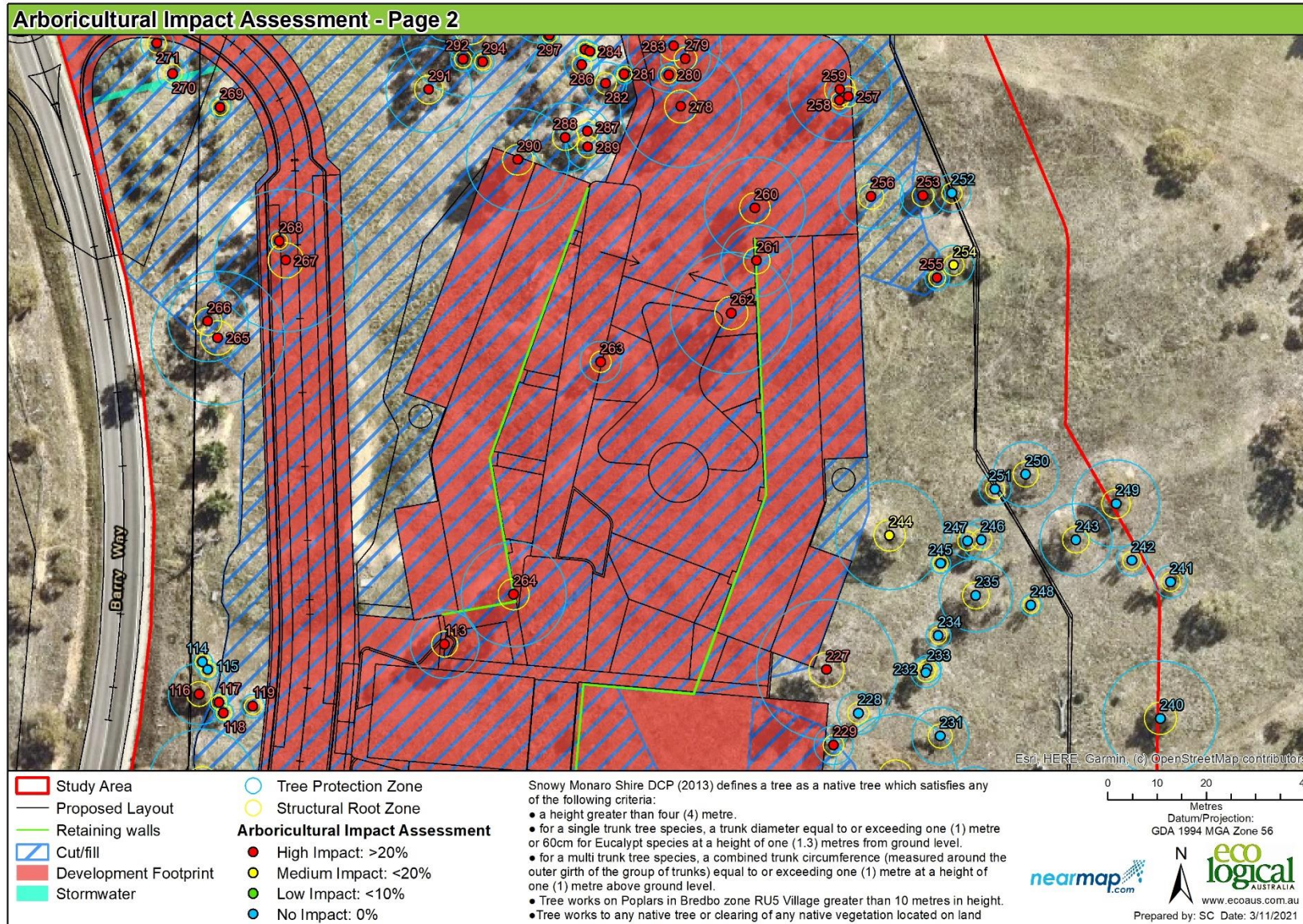


Figure 17: Arboricultural impact assessment, page 2

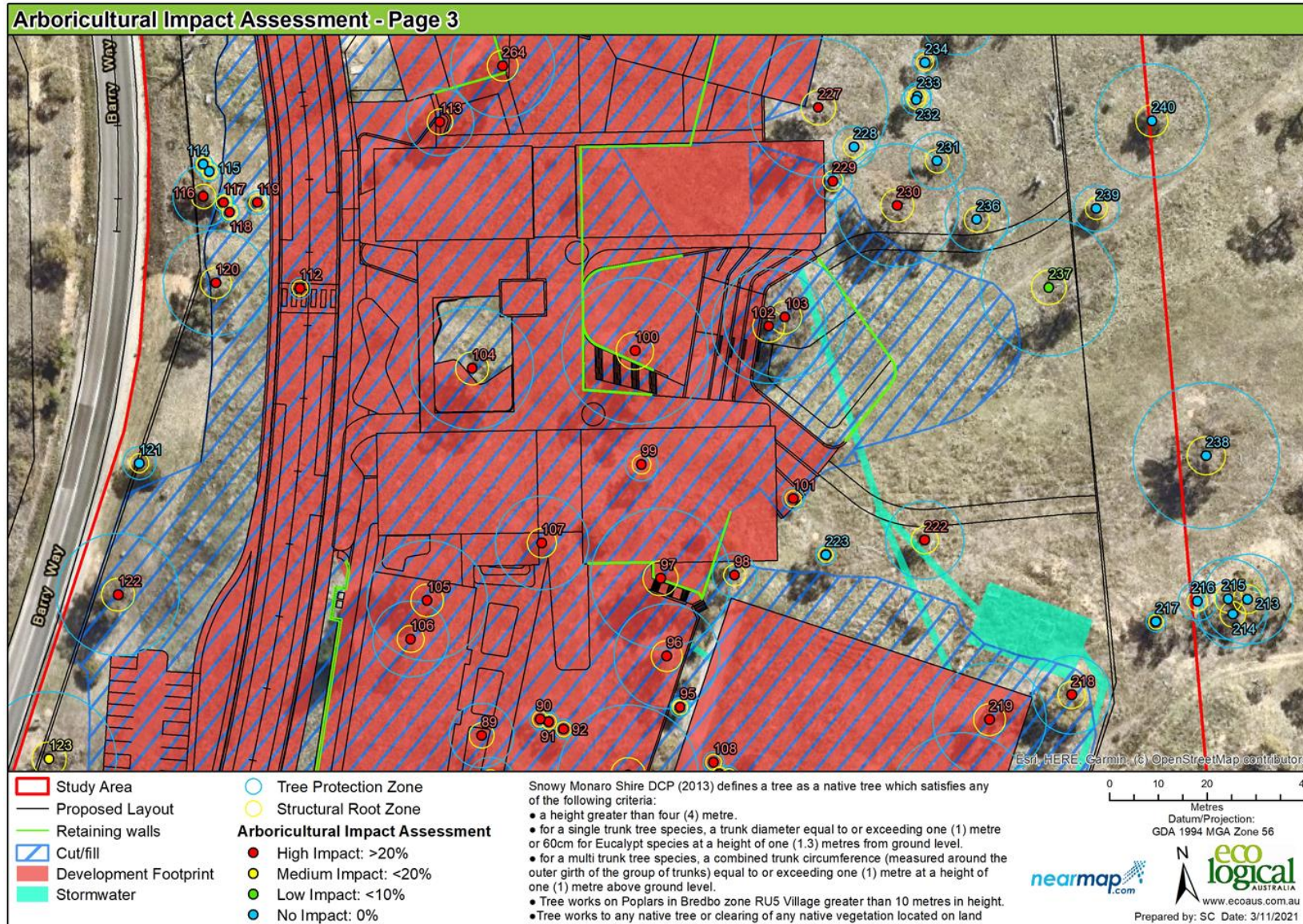


Figure 18: Arboricultural impact assessment, page 3

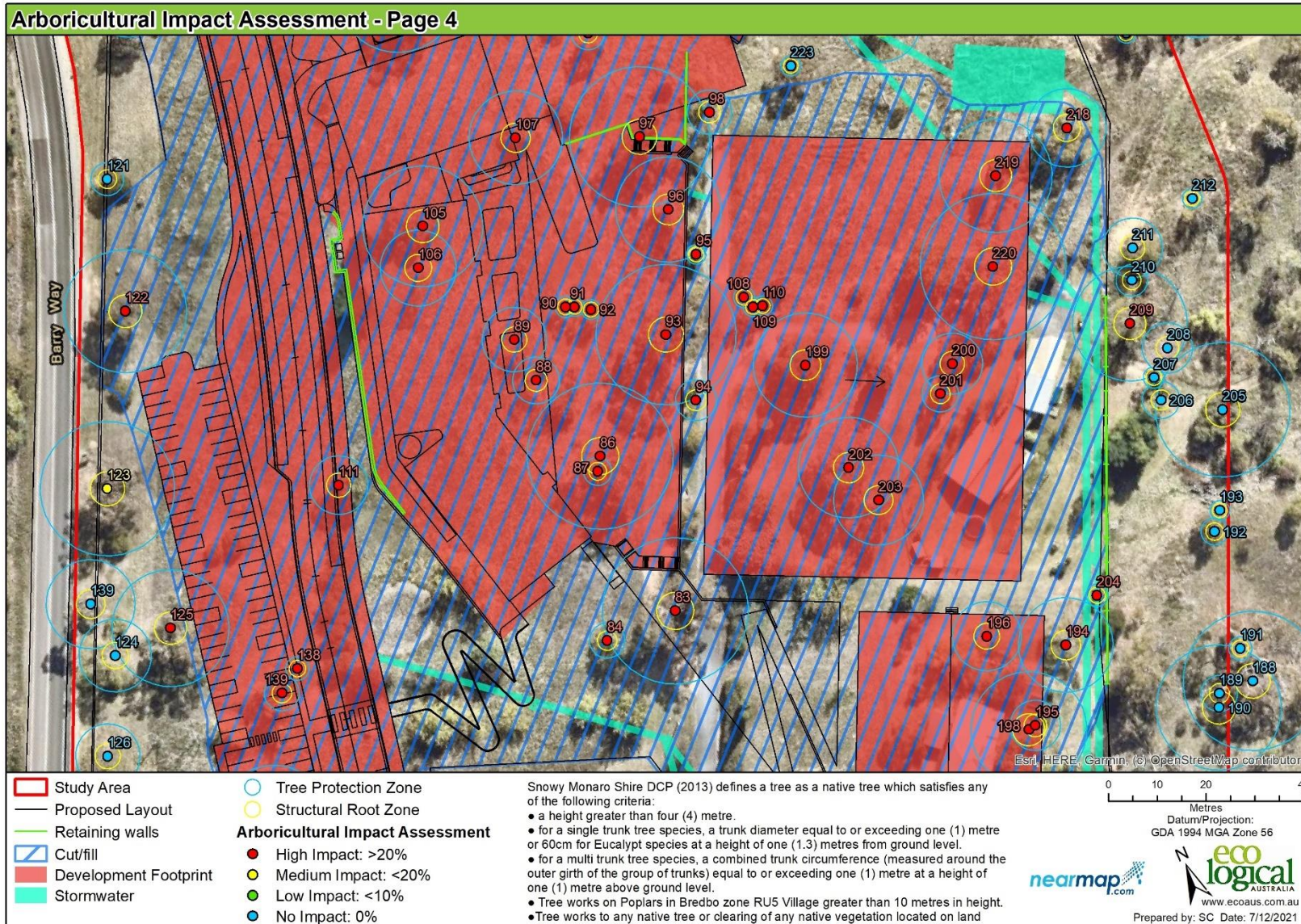


Figure 19: Arboricultural impact assessment, page 4



Figure 20: Arboricultural impact assessment, page 5

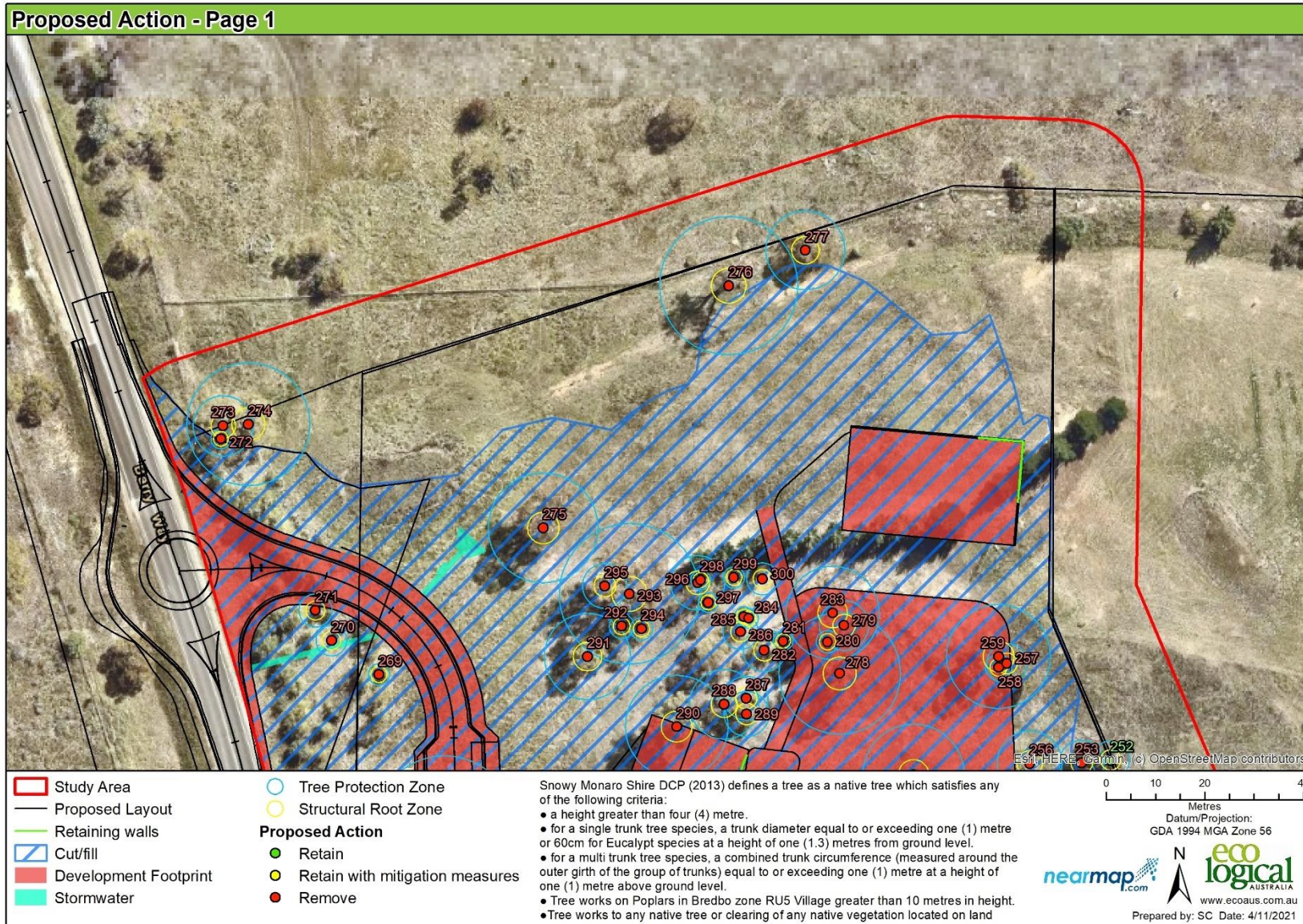


Figure 21: Proposed action, page 1



Figure 22: Proposed action, page 2

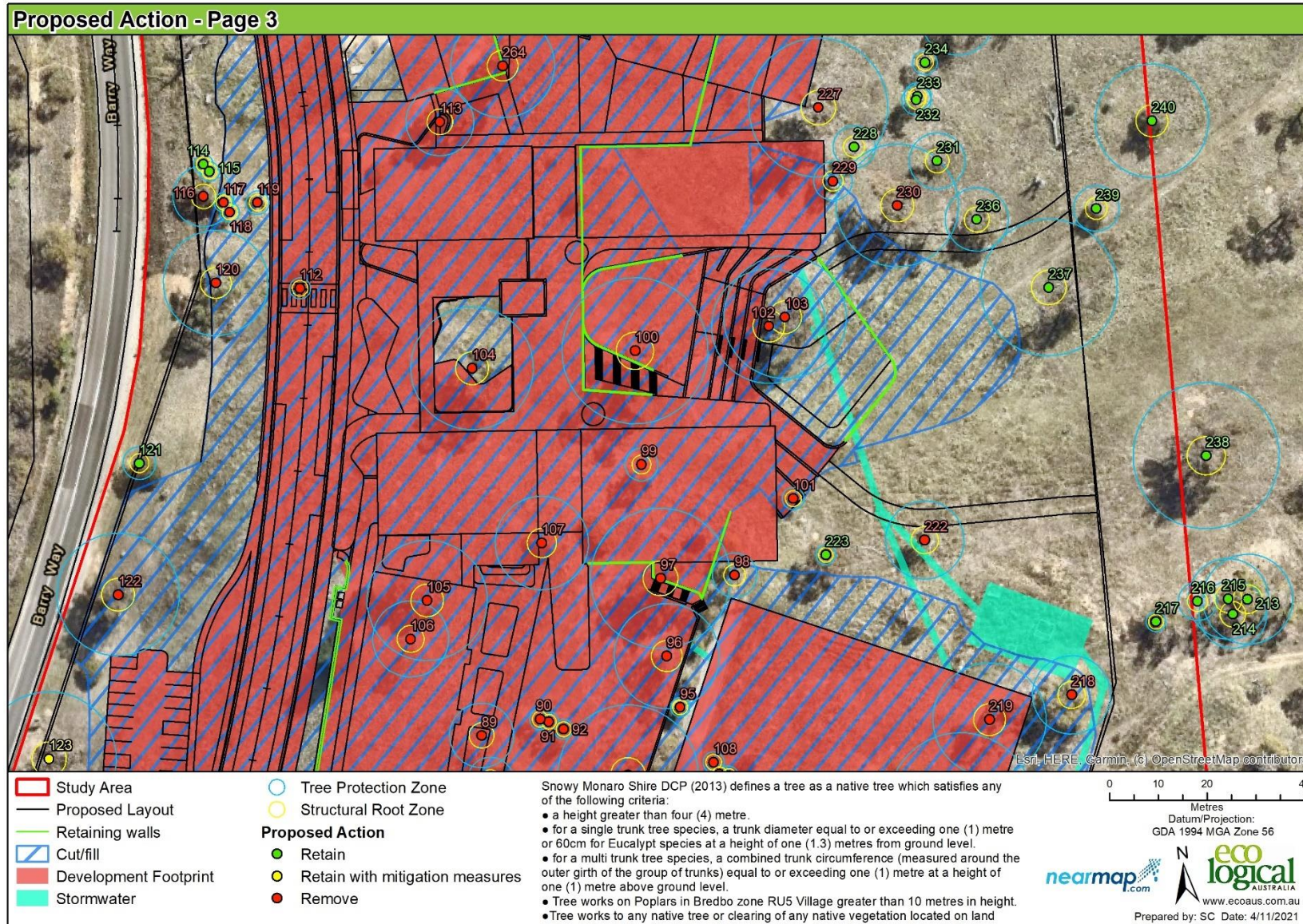


Figure 23: Proposed action, page 3

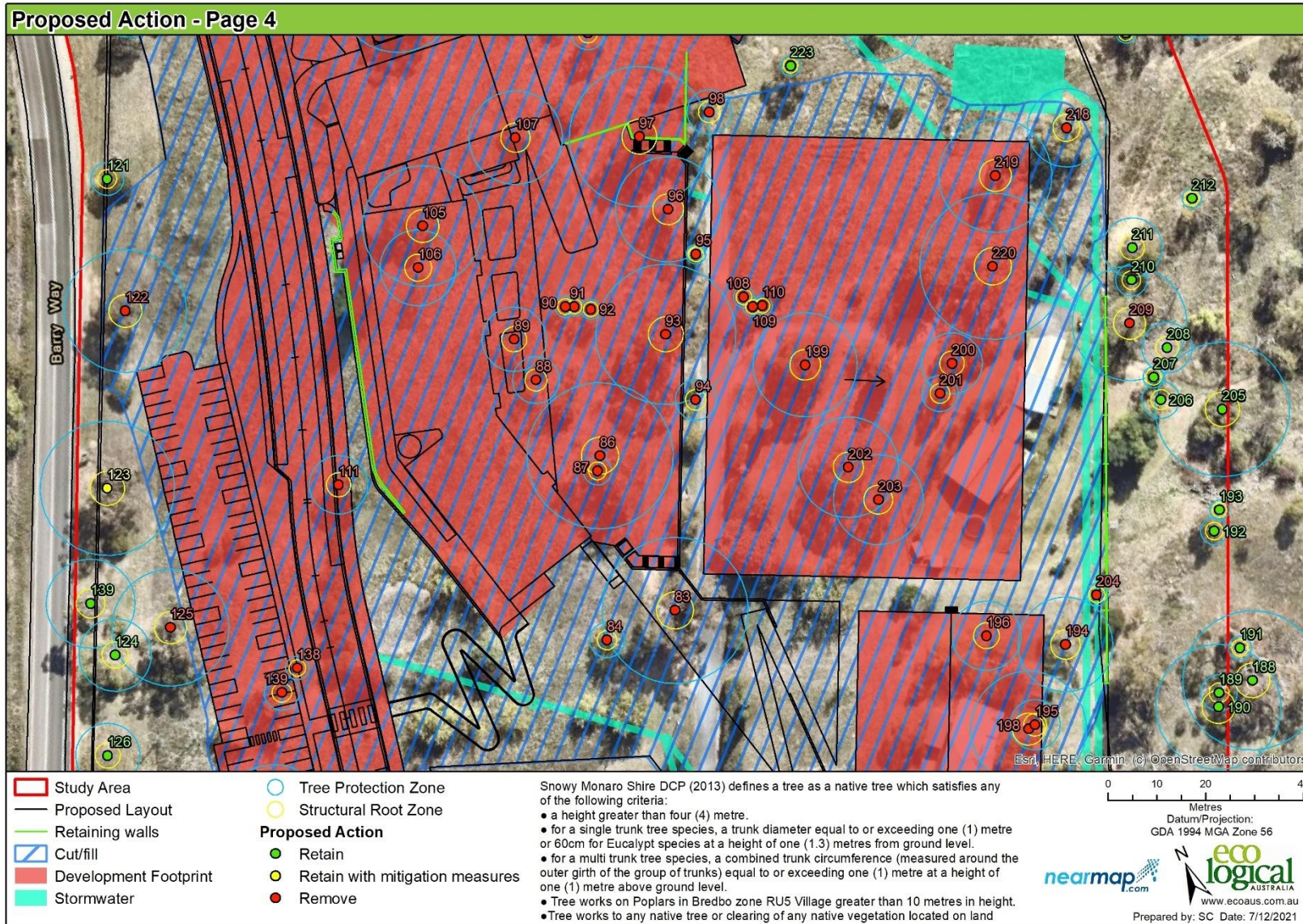


Figure 24: Proposed action, page 4



Figure 25: Proposed action, page 5

Appendix D Tabulated results of arboricultural assessment

Tree	Botanical name	Surveyed location	Height (m)	Spread (m)	DBH (mm)	Health	Structure	ULE	Landscape significance	TPZ (m)	SRZ (m)	Retention value	Impact	Proposed action	AQF Level 5 Consulting Arborist	Notes
62	<i>Eucalyptus dalrympleana</i>	Yes	14	14	980	Fair	Fair	Medium (15-40 years)	High	11.76	3.28	High	High Impact: >20%	Remove	David Bidwell	
63	<i>Eucalyptus rubida</i>	No	12	12	870	Poor	Poor	Short (5-15 years)	High	10.44	3.12	High	Low Impact: <10%	Retain	David Bidwell	Habitat value
65	<i>Eucalyptus rubida</i>	No	13	14	900	Poor	Fair	Medium (15-40 years)	High	10.80	3.17	High	Low Impact: <10%	Retain	David Bidwell	
66	Dead tree	No	15	8	550	Poor	Poor	Short (5-15 years)	Medium	6.60	2.57	Medium	Low Impact: <10%	Retain	David Bidwell	Dead tree. Habitat value
67	<i>Eucalyptus rubida</i>	Yes	16	18	950	Poor	Poor	Short (5-15 years)	High	11.40	3.24	High	High Impact: >20%	Remove	David Bidwell	Tree almost dead. Multiple features, twin stems. Mistletoe, hollows.
69	<i>Eucalyptus pauciflora</i>	No	13	14	820	Poor	Poor	Short (5-15 years)	High	9.84	3.04	High	Low Impact: <10%	Retain	David Bidwell	Tree is dying. Multiple features hollows decay, Significant crack in trunk
70	<i>Eucalyptus pauciflora</i>	No	14	12	1000	Poor	Poor	Medium (15-40 years)	High	12.00	3.31	High	No Impact: 0%	Retain	David Bidwell	Multiple features. Hollows, large dead branches.
75	Dead tree	Yes	12	14	700	Poor	Poor	Remove (<5 years)	Low	8.40	2.85	Low	No Impact: 0%	Retain	David Bidwell	Has low retention value for habitat
83	<i>Eucalyptus rubida</i>	Yes	27	20	1400	Good	Fair	Long (>40 years)	High	15.00	3.81	High	High Impact: >20%	Remove	David Bidwell	Multiple features, hollows, large dead branches. Ground compaction from recent Roadway
84	<i>Eucalyptus rubida</i>	No	9	10	300	Fair	Fair	Medium (15-40 years)	Medium	3.60	2.00	Medium	High Impact: >20%	Remove	David Bidwell	Regrowth from old stump
85	<i>Eucalyptus rubida</i>	Yes	18	18	1000	Poor	Poor	Medium (15-40 years)	High	12.00	3.31	High	High Impact: >20%	Remove	David Bidwell	Multiple features. Large dead branches, hollows, Sparse canopy
86	<i>Eucalyptus pauciflora</i>	Yes	24	18	1400	Fair	Fair	Long (>40 years)	High	15.00	3.81	High	High Impact: >20%	Remove	David Bidwell	Multiple features, hollows, large dead branches
87	<i>Eucalyptus pauciflora</i>	Yes	6	5	240	Good	Fair	Long (>40 years)	Low	2.88	1.82	Low	High Impact: >20%	Remove	David Bidwell	

Tree	Botanical name	Surveyed location	Height (m)	Spread (m)	DBH (mm)	Health	Structure	ULE	Landscape significance	TPZ (m)	SRZ (m)	Retention value	Impact	Proposed action	AQF Level 5 Consulting Arborist	Notes
88	<i>Eucalyptus pauciflora</i>	No	8	8	400	Fair	Fair	Long (>40 years)	Medium	4.80	2.25	Medium	High Impact: >20%	Remove	David Bidwell	
89	<i>Eucalyptus pauciflora</i>	No	8	8	550	Poor	Poor	Medium (15-40 years)	Medium	6.60	2.57	Medium	High Impact: >20%	Remove	David Bidwell	Large dead limbs
90	<i>Eucalyptus pauciflora</i>	No	4	5	180	Good	Good	Long (>40 years)	Low	2.16	1.61	Low	High Impact: >20%	Remove	David Bidwell	
91	<i>Eucalyptus pauciflora</i>	No	5	3	120	Fair	Fair	Medium (15-40 years)	Low	2.00	1.50	Low	High Impact: >20%	Remove	David Bidwell	
92	<i>Eucalyptus pauciflora</i>	Yes	5	4	160	Good	Fair	Long (>40 years)	Low	2.00	1.53	Low	High Impact: >20%	Remove	David Bidwell	
93	<i>Eucalyptus rubida</i>	No	22	18	1200	Fair	Fair	Long (>40 years)	High	14.40	3.57	High	High Impact: >20%	Remove	David Bidwell	Termites Otherwise no significant defects
94	<i>Eucalyptus pauciflora</i>	No	5	7	350	Good	Fair	Medium (15-40 years)	Medium	4.20	2.13	Medium	High Impact: >20%	Remove	David Bidwell	Old stump regrowth
95	<i>Eucalyptus pauciflora</i>	No	9	4	160	Fair	Fair	Medium (15-40 years)	Low	2.00	1.53	Low	High Impact: >20%	Remove	David Bidwell	
96	<i>Eucalyptus pauciflora</i>	Yes	12	14	900	Fair	Fair	Long (>40 years)	High	10.80	3.17	High	High Impact: >20%	Remove	David Bidwell	Large dead branches
97	<i>Eucalyptus rubida</i>	No	15	15	1200	Good	Fair	Long (>40 years)	High	14.40	3.57	High	High Impact: >20%	Remove	David Bidwell	Hollows
98	<i>Eucalyptus rubida</i>	No	15	6	380	Fair	Fair	Medium (15-40 years)	Medium	4.56	2.20	Medium	High Impact: >20%	Remove	David Bidwell	
99	<i>Eucalyptus rubida</i>	No	7	7	280	Poor	Fair	Medium (15-40 years)	Medium	3.36	1.94	Medium	High Impact: >20%	Remove	David Bidwell	Stump regrowth
100	<i>Eucalyptus rubida</i>	Yes	24	16	1420	Fair	Poor	Long (>40 years)	High	15.00	3.83	High	High Impact: >20%	Remove	David Bidwell	Multiple features decay, hollows, previous major failure, large dead limbs
101	<i>Eucalyptus pauciflora</i>	No	5	5	189	Good	Good	Long (>40 years)	Low	2.27	1.64	Low	High Impact: >20%	Remove	David Bidwell	

Tree	Botanical name	Surveyed location	Height (m)	Spread (m)	DBH (mm)	Health	Structure	ULE	Landscape significance	TPZ (m)	SRZ (m)	Retention value	Impact	Proposed action	AQF Level 5 Consulting Arborist	Notes
102	<i>Eucalyptus rubida</i>	Yes	18	10	980	Fair	Poor	Medium (15-40 years)	High	11.76	3.28	High	High Impact: >20%	Remove	David Bidwell	Multiple features. Hollows, large dead limbs.
103	<i>Eucalyptus rubida</i>	Yes	22	16	1050	Fair	Fair	Long (>40 years)	High	12.60	3.38	High	High Impact: >20%	Remove	David Bidwell	Termites, otherwise no significant defects.
104	<i>Eucalyptus rubida</i>	No	22	18	1050	Good	Fair	Long (>40 years)	High	12.60	3.38	High	High Impact: >20%	Remove	David Bidwell	Multiple features, large dead limbs, decay, hollows
105	<i>Eucalyptus rubida</i>	Yes	10	8	1030	Fair	Poor	Long (>40 years)	High	12.36	3.35	High	High Impact: >20%	Remove	David Bidwell	Large termite Colony, hollows, large dead limbs
106	<i>Eucalyptus pauciflora</i>	Yes	12	5	650	Fair	Poor	Short (5-15 years)	Medium	7.80	2.76	Medium	High Impact: >20%	Remove	David Bidwell	Significant hollow in trunk, And scaffold
107	<i>Eucalyptus pauciflora</i>	No	6	10	800	Fair	Fair	Medium (15-40 years)	High	9.60	3.01	High	High Impact: >20%	Remove	David Bidwell	Significant hollow in trunk
108	<i>Eucalyptus rubida</i>	No	9	4	180	Fair	Fair	Medium (15-40 years)	Low	2.16	1.61	Low	High Impact: >20%	Remove	David Bidwell	
109	<i>Eucalyptus rubida</i>	No	5	4	150	Fair	Fair	Medium (15-40 years)	Low	2.00	1.50	Low	High Impact: >20%	Remove	David Bidwell	
110	<i>Eucalyptus rubida</i>	No	7	3	130	Fair	Fair	Medium (15-40 years)	Low	2.00	1.50	Low	High Impact: >20%	Remove	David Bidwell	
111	<i>Eucalyptus sp.</i>	No	12	10	500	Good	Fair	Long (>40 years)	Medium	6.00	2.47	Medium	High Impact: >20%	Remove	David Bidwell	Same species as 113, 136
112	<i>Eucalyptus sideroxylon</i>	No	6	4	180	Fair	Fair	Medium (15-40 years)	Low	2.16	1.61	Low	High Impact: >20%	Remove	David Bidwell	
113	<i>Eucalyptus sp.</i>	No	10	8	580	Fair	Fair	Long (>40 years)	Medium	6.96	2.63	Medium	High Impact: >20%	Remove	David Bidwell	Same species as 111, 136
114	<i>Eucalyptus pauciflora</i>	Yes	6	3	120	Fair	Fair	Long (>40 years)	Low	2.00	1.50	Low	No Impact: 0%	Retain	David Bidwell	
115	<i>Eucalyptus pauciflora</i>	Yes	6	3	140	Fair	Fair	Long (>40 years)	Low	2.00	1.50	Low	No Impact: 0%	Retain	David Bidwell	

Tree	Botanical name	Surveyed location	Height (m)	Spread (m)	DBH (mm)	Health	Structure	ULE	Landscape significance	TPZ (m)	SRZ (m)	Retention value	Impact	Proposed action	AQF Level 5 Consulting Arborist	Notes
116	<i>Eucalyptus pauciflora</i>	Yes	9	12	520	Fair	Fair	Medium (15-40 years)	Medium	6.24	2.51	Medium	High Impact: >20%	Remove	David Bidwell	Decay in bass
117	<i>Eucalyptus pauciflora</i>	Yes	5	4	160	Fair	Fair	Long (>40 years)	Low	2.00	1.53	Low	High Impact: >20%	Remove	David Bidwell	
118	<i>Eucalyptus pauciflora</i>	Yes	6	5	160	Fair	Fair	Long (>40 years)	Low	2.00	1.53	Low	High Impact: >20%	Remove	David Bidwell	
119	<i>Eucalyptus pauciflora</i>	Yes	5	5	200	Poor	Poor	Short (5-15 years)	Low	2.40	1.68	Low	High Impact: >20%	Remove	David Bidwell	Dying back
120	<i>Eucalyptus rubida</i>	Yes	20	16	900	Fair	Fair	Long (>40 years)	High	10.80	3.17	High	High Impact: >20%	Remove	David Bidwell	Multiple features. Decay in base previous major failure and scaffold
121	<i>Eucalyptus pauciflora</i>	Yes	5	6	280	Fair	Fair	Medium (15-40 years)	Low	3.36	1.94	Low	No Impact: 0%	Retain	David Bidwell	
122	<i>Eucalyptus rubida</i>	Yes	16	18	1050	Fair	Fair	Long (>40 years)	High	12.60	3.38	High	High Impact: >20%	Remove	David Bidwell	Contorted growth in canopy
123	<i>Eucalyptus rubida</i>	No	18	17	1150	Fair	Fair	Long (>40 years)	High	13.80	3.51	High	Medium Impact: <20%	Retain with mitigation measures	David Bidwell	Multiple features. Significant decay in one stem but appears to be compartmentalised well.
124	<i>Eucalyptus pauciflora</i>	Yes	11	12	620	Fair	Good	Medium (15-40 years)	Medium	7.44	2.71	Medium	No Impact: 0%	Retain	David Bidwell	Some dieback in canopy
125	<i>Eucalyptus rubida</i>	Yes	15	18	1000	Fair	Fair	Long (>40 years)	High	12.00	3.31	High	High Impact: >20%	Remove	David Bidwell	I launch dead branches but no significant defects
126	<i>Eucalyptus rubida</i>	Yes	10	12	550	Good	Fair	Long (>40 years)	Medium	6.60	2.57	Medium	No Impact: 0%	Retain	David Bidwell	Significant lean but appears stable
127	<i>Eucalyptus rubida</i>	Yes	15	18	1100	Fair	Fair	Long (>40 years)	High	13.20	3.44	High	Low Impact: <10%	Retain	David Bidwell	Significant wounding at base, large dead limbs
128	<i>Eucalyptus rubida</i>	Yes	22	16	1200	Good	Good	Long (>40 years)	High	14.40	3.57	High	Medium Impact: <20%	Retain with mitigation measures	David Bidwell	No significant defects. Hollows in scaffolds
129	<i>Eucalyptus rubida</i>	Yes	14	12	760	Good	Fair	Long (>40 years)	High	9.12	2.95	High	No Impact: 0%	Retain	David Bidwell	Hollows in scaffolds. Significant lean appears stable

Tree	Botanical name	Surveyed location	Height (m)	Spread (m)	DBH (mm)	Health	Structure	ULE	Landscape significance	TPZ (m)	SRZ (m)	Retention value	Impact	Proposed action	AQF Level 5 Consulting Arborist	Notes
130	<i>Eucalyptus rubida</i>	Yes	22	10	650	Poor	Poor	Medium (15-40 years)	High	7.80	2.76	High	No Impact: 0%	Retain	David Bidwell	Decay in trunk
131	<i>Eucalyptus rubida</i>	Yes	20	10	650	Fair	Fair	Long (>40 years)	High	7.80	2.76	High	No Impact: 0%	Retain	David Bidwell	Large wound on upper trunk
132	<i>Eucalyptus pauciflora</i>	Yes	12	15	750	Poor	Fair	Short (5-15 years)	Medium	9.00	2.93	Medium	High Impact: >20%	Remove	David Bidwell	Sparse canopy, Minor decay in base, Crown dieback
133	<i>Eucalyptus rubida</i>	Yes	15	12	1100	Good	Fair	Medium (15-40 years)	High	13.20	3.44	High	High Impact: >20%	Remove	David Bidwell	Decay in trunk
134	<i>Eucalyptus rubida</i>	Yes	12	10	900	Fair	Fair	Medium (15-40 years)	High	10.80	3.17	High	High Impact: >20%	Remove	David Bidwell	Significant decay in trunk, Large dead branches
135	<i>Eucalyptus rubida</i>	Yes	20	15	950	Fair	Fair	Long (>40 years)	High	11.40	3.24	High	No Impact: 0%	Retain	David Bidwell	Large wound in upper canopy
136	<i>Eucalyptus sp.</i>	Yes	8	7	280	Fair	Fair	Long (>40 years)	Medium	3.36	1.94	Medium	High Impact: >20%	Remove	David Bidwell	Same species as 111, 113
137	<i>Eucalyptus rubida</i>	Yes	11	11	940	Fair	Fair	Long (>40 years)	High	11.28	3.22	High	High Impact: >20%	Remove	David Bidwell	Significant hollows and wounding. Tree has lost its top
138	<i>Eucalyptus pauciflora</i>	No	7	4	200	Poor	Fair	Medium (15-40 years)	Low	2.40	1.68	Low	High Impact: >20%	Remove	David Bidwell	
139	<i>Eucalyptus rubida</i>	Yes	14	10	760	Fair	Fair	Long (>40 years)	High	9.12	2.95	High	No Impact: 0%	Retain	David Bidwell	On road side outside fence
139.1	<i>Eucalyptus pauciflora</i>	No	7	10	300	Fair	Fair	Medium (15-40 years)	Medium	3.60	2.00	Medium	High Impact: >20%	Remove	David Bidwell	Seven stems growing together as one tree. One stem is dead
150	<i>Eucalyptus viminalis</i>	No	17	12	1160	Fair	Good	Long (>40 years)	High	13.92	3.52	High	High Impact: >20%	Remove	Roger Uebe	Decayed stubs from poor trimming
151	<i>Eucalyptus viminalis</i>	No	7	7	190	Good	Fair	Long (>40 years)	Low	2.28	1.65	Low	No Impact: 0%	Retain	Roger Uebe	Juvenile
154	<i>Acacia sp.</i>	No	11	10	550	Good	Fair	Medium (15-40 years)	Medium	6.60	2.57	Medium	High Impact: >20%	Remove	Roger Uebe	

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155	<i>Eucalyptus viminalis</i>	No	17	17	1100	Poor	Fair	Remove (<5 years)	Low	13.20	3.44	Low	High Impact: >20%	Remove	Roger Uebe	Tree is dead
156	<i>Eucalyptus sp.</i>	Yes	13	12	630	Fair	Fair	Medium (15-40 years)	Medium	7.56	2.73	Medium	No Impact: 0%	Retain	Roger Uebe	Significant deadwood
157	<i>Eucalyptus viminalis</i>	No	17	19	880	Good	Good	Long (>40 years)	High	10.56	3.14	High	No Impact: 0%	Retain	Roger Uebe	Dead stubs should be removed
158	<i>Eucalyptus viminalis</i>	Yes	17	16	1050	Fair	Good	Long (>40 years)	High	12.60	3.38	High	High Impact: >20%	Remove	Roger Uebe	Significant deadwood
159	<i>Eucalyptus sp.</i>	Yes	9	10	30	Good	Fair	Long (>40 years)	Medium	2.00	1.50	Medium	No Impact: 0%	Retain	Roger Uebe	Leaning
160	<i>Eucalyptus viminalis</i>	No	10	6	330	Good	Fair	Long (>40 years)	Medium	3.96	2.08	Medium	High Impact: >20%	Remove	Roger Uebe	Leaning
161	<i>Eucalyptus sp.</i>	No	9	8	320	Good	Good	Long (>40 years)	Medium	3.84	2.05	Medium	High Impact: >20%	Remove	Roger Uebe	
162	<i>Eucalyptus viminalis</i>	Yes	6	7	290	Good	Good	Long (>40 years)	Medium	3.48	1.97	Medium	No Impact: 0%	Retain	Roger Uebe	
163	<i>Eucalyptus viminalis</i>	Yes	9	8	400	Good	Fair	Long (>40 years)	Medium	4.80	2.25	Medium	No Impact: 0%	Retain	Roger Uebe	Leaning
164	<i>Eucalyptus viminalis</i>	No	16	14	1060	Good	Good	Long (>40 years)	High	12.72	3.39	High	No Impact: 0%	Retain	Roger Uebe	Some deadwood
165	<i>Eucalyptus viminalis</i>	No	7	7	190	Good	Poor	Long (>40 years)	Low	2.28	1.65	Low	No Impact: 0%	Retain	Roger Uebe	Juvenile
166	<i>Eucalyptus viminalis</i>	Yes	9	14	870	Fair	Fair	Long (>40 years)	High	10.44	3.12	Medium	No Impact: 0%	Retain	Roger Uebe	Significant deadwood. Some decay in trunk. Large dead branches
167	<i>Eucalyptus viminalis</i>	No	10	8	440	Good	Fair	Medium (15-40 years)	Medium	5.28	2.34	Medium	Low Impact: <10%	Retain	Roger Uebe	Leaning
168	<i>Eucalyptus viminalis</i>	No	9	7	400	Good	Fair	Medium (15-40 years)	Low	4.80	2.25	Low	High Impact: >20%	Remove	Roger Uebe	Juvenile

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169	<i>Eucalyptus viminalis</i>	No	7	7	190	Good	Good	Long (>40 years)	Low	2.28	1.65	Low	High Impact: >20%	Remove	Roger Uebe	Juvenile
170	<i>Eucalyptus viminalis</i>	No	14	14	920	Good	Good	Long (>40 years)	High	11.04	3.20	High	Low Impact: <10%	Retain	Roger Uebe	Large dead branch and other deadwood in canopy
171	<i>Eucalyptus viminalis</i>	Yes	6	6	480	Fair	Poor	Medium (15-40 years)	Medium	5.76	2.43	Low	No Impact: 0%	Retain	Roger Uebe	Decayed trunk lean
172	<i>Eucalyptus viminalis</i>	No	11	9	420	Poor	Poor	Remove (<5 years)	Low	5.04	2.30	Low	High Impact: >20%	Remove	Roger Uebe	Dead tree
173	<i>Eucalyptus viminalis</i>	No	11	12	636	Good	Fair	Long (>40 years)	Medium	7.63	2.74	Medium	High Impact: >20%	Remove	Roger Uebe	One dead branch needs removing
174	<i>Eucalyptus viminalis</i>	No	9	6	400	Good	Good	Long (>40 years)	Medium	4.80	2.25	Medium	High Impact: >20%	Remove	Roger Uebe	
175	<i>Eucalyptus viminalis</i>	No	6	7	530	Poor	Fair	Medium (15-40 years)	Medium	6.36	2.53	Medium	High Impact: >20%	Remove	Roger Uebe	Significant deadwood
176	<i>Eucalyptus viminalis</i>	No	9	8	360	Fair	Fair	Long (>40 years)	Medium	4.32	2.15	Medium	High Impact: >20%	Remove	Roger Uebe	
177	<i>Eucalyptus viminalis</i>	No	9	6	500	Fair	Fair	Medium (15-40 years)	High	6.00	2.47	High	High Impact: >20%	Remove	Roger Uebe	Dead branch with decay
178	<i>Eucalyptus viminalis</i>	No	10	10	660	Poor	Good	Medium (15-40 years)	Medium	7.92	2.78	Medium	High Impact: >20%	Remove	Roger Uebe	Dieback in upper canopy
179	<i>Eucalyptus viminalis</i>	No	6	10	320	Good	Good	Long (>40 years)	High	3.84	2.05	High	High Impact: >20%	Remove	Roger Uebe	
180	<i>Eucalyptus viminalis</i>	No	7	5	250	Good	Fair	Long (>40 years)	Medium	3.00	1.85	Medium	High Impact: >20%	Remove	Roger Uebe	
181	<i>Eucalyptus viminalis</i>	No	8	7	290	Fair	Fair	Short (5-15 years)	Low	3.48	1.97	Low	High Impact: >20%	Remove	Roger Uebe	Decay in trunk
182	<i>Eucalyptus viminalis</i>	No	9	7	480	Good	Fair	Long (>40 years)	Medium	5.76	2.43	Medium	High Impact: >20%	Remove	Roger Uebe	Multiple trunks

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183	<i>Eucalyptus viminalis</i>	No	17	18	1040	Fair	Good	Long (>40 years)	High	12.48	3.36	High	High Impact: >20%	Remove	Roger Uebe	Some deadwood. Large dead branch should be removed
184	<i>Eucalyptus viminalis</i>	No	16	18	1100	Fair	Good	Long (>40 years)	High	13.20	3.44	High	High Impact: >20%	Remove	Roger Uebe	Some small deadwood and stubs and steel pole embedded in branch
185	<i>Eucalyptus viminalis</i>	No	11	10	600	Good	Good	Long (>40 years)	High	7.20	2.67	High	High Impact: >20%	Remove	Roger Uebe	
186	<i>Eucalyptus viminalis</i>	No	8	7	370	Good	Poor	Long (>40 years)	Medium	4.44	2.18	Medium	No Impact: 0%	Retain	Roger Uebe	
187	<i>Eucalyptus viminalis</i>	No	10	6	300	Good	Poor	Long (>40 years)	Medium	3.60	2.00	Low	No Impact: 0%	Retain	Roger Uebe	Decay in base
188	<i>Eucalyptus viminalis</i>	No	15	25	1190	Fair	Good	Long (>40 years)	High	14.28	3.56	High	No Impact: 0%	Retain	Roger Uebe	Deadwood removal
189	<i>Eucalyptus viminalis</i>	No	6	310	310	Good	Good	Long (>40 years)	Medium	3.72	2.02	Medium	No Impact: 0%	Retain	Roger Uebe	
190	<i>Eucalyptus viminalis</i>	No	19	21	1070	Fair	Good	Long (>40 years)	High	12.84	3.40	High	No Impact: 0%	Retain	Roger Uebe	Large dead branches require trimming off may have been hit by lightning in past side of trunk no cam
191	<i>Eucalyptus viminalis</i>	No	7	6	200	Good	Good	Medium (15-40 years)	Low	2.40	1.68	Low	No Impact: 0%	Retain	Roger Uebe	Juvenile suppressed under large tree
192	<i>Eucalyptus viminalis</i>	No	9	5	230	Good	Good	Long (>40 years)	Low	2.76	1.79	Medium	No Impact: 0%	Retain	Roger Uebe	
193	<i>Eucalyptus viminalis</i>	No	7	5	22	Good	Good	Long (>40 years)	Low	2.00	1.50	Low	No Impact: 0%	Retain	Roger Uebe	
194	<i>Eucalyptus viminalis</i>	No	11	9	810	Fair	Poor	Medium (15-40 years)	Medium	9.72	3.03	Low	High Impact: >20%	Remove	Roger Uebe	Significant decay in trunk
195	<i>Eucalyptus viminalis</i>	No	11	6	430	Poor	Fair	Short (5-15 years)	Low	5.16	2.32	Low	High Impact: >20%	Remove	Roger Uebe	Significant deadwood
196	<i>Eucalyptus viminalis</i>	No	11	8	590	Fair	Poor	Short (5-15 years)	Medium	7.08	2.65	Low	High Impact: >20%	Remove	Roger Uebe	Decay in trunk unsafe

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198	<i>Eucalyptus viminalis</i>	No	8	8	990	Good	Fair	Medium (15-40 years)	Medium	11.88	3.30	High	High Impact: >20%	Remove	Roger Uebe	Codominant stem has been removed some decay in trunk
199	<i>Eucalyptus viminalis</i>	No	15	17	890	Good	Good	Long (>40 years)	High	10.68	3.15	High	High Impact: >20%	Remove	Roger Uebe	
200	<i>Eucalyptus sp.</i>	No	9	11	520	Good	Good	Long (>40 years)	High	6.24	2.51	High	High Impact: >20%	Remove	Roger Uebe	Ironbark check sp.
201	<i>Corymbia citriodora</i>	No	9	8	310	Good	Good	Long (>40 years)	Medium	3.72	2.02	Medium	High Impact: >20%	Remove	Roger Uebe	Semi mature
202	<i>Eucalyptus viminalis</i>	No	13	20	860	Good	Good	Long (>40 years)	High	10.32	3.11	High	High Impact: >20%	Remove	Roger Uebe	Minor deadwood
203	<i>Eucalyptus viminalis</i>	No	16	15	770	Good	Good	Long (>40 years)	High	9.24	2.97	High	High Impact: >20%	Remove	Roger Uebe	Natural lean and minor deadwood
204	<i>Eucalyptus viminalis</i>	Yes	6	4	190	Good	Good	Long (>40 years)	Low	2.28	1.65	Low	High Impact: >20%	Remove	Roger Uebe	Juvenile
205	<i>Eucalyptus sp.</i>	No	5	14	1150	Fair	Poor	Medium (15-40 years)	Medium	13.80	3.51	Medium	No Impact: 0%	Retain	Roger Uebe	Check species multi stem
206	<i>Eucalyptus viminalis</i>	No	11	7	320	Good	Good	Long (>40 years)	Medium	3.84	2.05	Medium	No Impact: 0%	Retain	Roger Uebe	Semi mature
207	<i>Eucalyptus viminalis</i>	No	9	4	180	Good	Good	Long (>40 years)	Low	2.16	1.61	Low	No Impact: 0%	Retain	Roger Uebe	Juvenile
208	<i>Eucalyptus viminalis</i>	No	10	10	430	Good	Fair	Long (>40 years)	Medium	5.16	2.32	Medium	No Impact: 0%	Retain	Roger Uebe	Semi mature natural lean
209	<i>Eucalyptus viminalis</i>	Yes	12	12	980	Poor	Good	Medium (15-40 years)	Medium	11.76	3.28	Medium	High Impact: >20%	Remove	Roger Uebe	Large dead limb, senescent, good habitat value
210	<i>Eucalyptus viminalis</i>	No	8	5	270	Good	Good	Long (>40 years)	Medium	3.24	1.91	Medium	No Impact: 0%	Retain	Roger Uebe	Semi mature
211	<i>Eucalyptus viminalis</i>	Yes	6	7	510	Good	Poor	Long (>40 years)	Low	6.12	2.49	Low	No Impact: 0%	Retain	Roger Uebe	Multi stem decay in both leaders

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212	<i>Eucalyptus viminalis</i>	Yes	5	7	52	Good	Fair	Medium (15-40 years)	Medium	2.00	1.50	Low	No Impact: 0%	Retain	Roger Uebe	Multiple trunks
213	<i>Eucalyptus viminalis</i>	Yes	11	16	770	Fair	Poor	Medium (15-40 years)	High	9.24	2.97	Low	No Impact: 0%	Retain	Roger Uebe	Significant Decay in main leader Some minor deadwood
214	<i>Eucalyptus viminalis</i>	No	8	5	580	Poor	Poor	Short (5-15 years)	Medium	6.96	2.63	Low	No Impact: 0%	Retain	Roger Uebe	Decay in trunk and in decline
215	<i>Eucalyptus viminalis</i>	No	8	7	690	Poor	Poor	Short (5-15 years)	Medium	8.28	2.83	Low	No Impact: 0%	Retain	Roger Uebe	In decline hollow leader
216	<i>Eucalyptus viminalis</i>	No	7	7	330	Good	Good	Long (>40 years)	Medium	3.96	2.08	Medium	No Impact: 0%	Retain	Roger Uebe	Multi trunked
217	<i>Eucalyptus viminalis</i>	Yes	7	9	94	Fair	Poor	Medium (15-40 years)	Medium	2.00	1.50	Low	No Impact: 0%	Retain	Roger Uebe	Significant decay in main leader. Good habitat value though
218	<i>Eucalyptus viminalis</i>	Yes	10	14	670	Good	Fair	Long (>40 years)	Medium	8.04	2.80	Medium	High Impact: >20%	Remove	Roger Uebe	Decay in one main branch. Should trim this branch back to collar
219	<i>Eucalyptus viminalis</i>	No	9	12	970	Good	Fair	Long (>40 years)	Medium	11.64	3.27	Medium	High Impact: >20%	Remove	Roger Uebe	Multi trunked
220	<i>Eucalyptus viminalis</i>	No	18	20	1400	Good	Good	Long (>40 years)	High	15.00	3.81	High	High Impact: >20%	Remove	Roger Uebe	Minor deadwood
222	<i>Eucalyptus viminalis</i>	Yes	10	8	670	Poor	Poor	Remove (<5 years)	Low	8.04	2.80	Low	High Impact: >20%	Remove	Roger Uebe	Almost dead hollow trunk
223	<i>Eucalyptus viminalis</i>	No	10	9	105	Good	Fair	Long (>40 years)	Medium	2.00	1.50	Medium	No Impact: 0%	Retain	Roger Uebe	Multi trunked
227	<i>Eucalyptus viminalis</i>	Yes	15	20	1190	Fair	Good	Long (>40 years)	High	14.28	3.56	High	High Impact: >20%	Remove	Roger Uebe	Lots of deadwood
228	<i>Eucalyptus viminalis</i>	No	8	7	360	Good	Good	Long (>40 years)	Medium	4.32	2.15	Medium	No Impact: 0%	Retain	Roger Uebe	Semi mature
229	<i>Eucalyptus viminalis</i>	No	6	6	330	Good	Good	Long (>40 years)	Low	3.96	2.08	Medium	High Impact: >20%	Remove	Roger Uebe	Juvenile

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230	<i>Eucalyptus viminalis</i>	Yes	15	16	1050	Fair	Good	Long (>40 years)	High	12.60	3.38	High	High Impact: >20%	Remove	Roger Uebe	Some dead branches need trimming
231	<i>Eucalyptus viminalis</i>	No	10	10	480	Poor	Good	Short (5-15 years)	Medium	5.76	2.43	Low	No Impact: 0%	Retain	Roger Uebe	Lots of deadwood.
232	<i>Eucalyptus viminalis</i>	No	9	6	250	Good	Good	Long (>40 years)	Low	3.00	1.85	Medium	No Impact: 0%	Retain	Roger Uebe	Juvenile
233	<i>Eucalyptus viminalis</i>	No	9	4	230	Good	Good	Medium (15-40 years)	Low	2.76	1.79	Medium	No Impact: 0%	Retain	Roger Uebe	
234	<i>Eucalyptus viminalis</i>	No	7	4	210	Good	Good	Medium (15-40 years)	Low	2.52	1.72	Medium	No Impact: 0%	Retain	Roger Uebe	
235	<i>Eucalyptus viminalis</i>	No	7	8	620	Fair	Poor	Medium (15-40 years)	Medium	7.44	2.71	Medium	No Impact: 0%	Retain	Roger Uebe	Decay in crown however good responsive growth
236	<i>Eucalyptus viminalis</i>	No	7	11	540	Good	Good	Long (>40 years)	High	6.48	2.55	High	No Impact: 0%	Retain	Roger Uebe	
237	<i>Eucalyptus viminalis</i>	Yes	11	11	1170	Good	Fair	Medium (15-40 years)	Medium	14.04	3.53	Medium	Low Impact: <10%	Retain	Roger Uebe	Has had crown removed lots of epicormic growth
238	<i>Eucalyptus viminalis</i>	No	14	16	1500	Fair	Good	Medium (15-40 years)	High	15.00	3.92	High	No Impact: 0%	Retain	Roger Uebe	Large tree has had significant crown reduction
239	<i>Eucalyptus viminalis</i>	No	8	7	390	Good	Good	Long (>40 years)	Medium	4.68	2.23	Medium	No Impact: 0%	Retain	Roger Uebe	
240	<i>Eucalyptus viminalis</i>	Yes	9	6	970	Fair	Poor	Short (5-15 years)	Medium	11.64	3.27	Low	No Impact: 0%	Retain	Roger Uebe	Decay in trunk deadwood in canopy
241	<i>Eucalyptus viminalis</i>	No	5	4	270	Good	Fair	Long (>40 years)	Low	3.24	1.91	Low	No Impact: 0%	Retain	Roger Uebe	Juvenile
242	<i>Eucalyptus viminalis</i>	No	7	4	260	Good	Fair	Long (>40 years)	Low	3.12	1.88	Low	No Impact: 0%	Retain	Roger Uebe	Juvenile
243	<i>Eucalyptus viminalis</i>	No	8	9	610	Good	Fair	Medium (15-40 years)	Medium	7.32	2.69	Medium	No Impact: 0%	Retain	Roger Uebe	Multiple trunks

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244	<i>Eucalyptus viminalis</i>	Yes	11	14	920	Fair	Fair	Medium (15-40 years)	Medium	11.04	3.20	Medium	Medium Impact: <20%	Retain with mitigation measures	Roger Uebe	Dead branches in crown
245	<i>Eucalyptus viminalis</i>	No	6	4	130	Good	Good	Long (>40 years)	Low	2.00	1.50	Low	No Impact: 0%	Retain	Roger Uebe	Juvenile
246	<i>Eucalyptus viminalis</i>	No	6	5	340	Good	Fair	Long (>40 years)	Low	4.08	2.10	Low	No Impact: 0%	Retain	Roger Uebe	Juvenile
247	<i>Eucalyptus viminalis</i>	No	6	5	290	Good	Fair	Medium (15-40 years)	Medium	3.48	1.97	Low	No Impact: 0%	Retain	Roger Uebe	
248	<i>Eucalyptus viminalis</i>	No	6	6	180	Good	Good	Long (>40 years)	Low	2.16	1.61	Medium	No Impact: 0%	Retain	Roger Uebe	Juvenile
249	<i>Eucalyptus viminalis</i>	No	7	10	740	Good	Good	Long (>40 years)	Medium	8.88	2.92	Low	No Impact: 0%	Retain	Roger Uebe	Significant decay in main leader
250	<i>Eucalyptus viminalis</i>	No	7	8	550	Fair	Poor	Remove (<5 years)	Low	6.60	2.57	Low	No Impact: 0%	Retain	Roger Uebe	Badly damaged trunk
251	<i>Eucalyptus viminalis</i>	No	5	6	270	Good	Good	Long (>40 years)	Low	3.24	1.91	Medium	No Impact: 0%	Retain	Roger Uebe	
252	<i>Eucalyptus viminalis</i>	No	6	7	320	Good	Good	Long (>40 years)	Low	3.84	2.05	Medium	No Impact: 0%	Retain	Roger Uebe	
253	<i>Eucalyptus sp.</i>	No	7	6	380	Good	Good	Long (>40 years)	Medium	4.56	2.20	Medium	High Impact: >20%	Remove	Roger Uebe	
254	<i>Eucalyptus viminalis</i>	Yes	5	7	340	Good	Poor	Short (5-15 years)	Low	4.08	2.10	Low	Medium Impact: <20%	Retain with mitigation measures	Roger Uebe	Epicormic shoots from dead stump
255	<i>Eucalyptus viminalis</i>	Yes	7	3	210	Good	Good	Medium (15-40 years)	Low	2.52	1.72	Medium	High Impact: >20%	Remove	Roger Uebe	
256	<i>Eucalyptus viminalis</i>	Yes	10	7	550	Good	Poor	Short (5-15 years)	Low	6.60	2.57	Low	High Impact: >20%	Remove	Roger Uebe	Significant trunk decay
257	<i>Eucalyptus viminalis</i>	No	6	5	340	Good	Good	Long (>40 years)	Medium	4.08	2.10	Medium	High Impact: >20%	Remove	Roger Uebe	

Tree	Botanical name	Surveyed location	Height (m)	Spread (m)	DBH (mm)	Health	Structure	ULE	Landscape significance	TPZ (m)	SRZ (m)	Retention value	Impact	Proposed action	AQF Level 5 Consulting Arborist	Notes
258	<i>Eucalyptus viminalis</i>	No	8	4	220	Good	Good	Long (>40 years)	Low	2.64	1.75	Medium	High Impact: >20%	Remove	Roger Uebe	
259	<i>Eucalyptus viminalis</i>	No	10	22	880	Fair	Fair	Medium (15-40 years)	High	10.56	3.14	Medium	High Impact: >20%	Remove	Roger Uebe	Deadwood. decay in base of trunk
260	<i>Eucalyptus viminalis</i>	No	12	12	860	Poor	Good	Medium (15-40 years)	Medium	10.32	3.11	Medium	High Impact: >20%	Remove	Roger Uebe	Significant deadwood
261	<i>Eucalyptus viminalis</i>	No	6	9	610	Good	Fair	Medium (15-40 years)	Medium	7.32	2.69	Low	High Impact: >20%	Remove	Roger Uebe	Multi trunked
262	<i>Eucalyptus viminalis</i>	No	14	21	1030	Good	Good	Long (>40 years)	High	12.36	3.35	High	High Impact: >20%	Remove	Roger Uebe	
263	<i>Eucalyptus viminalis</i>	No	7	5	350	Good	Good	Long (>40 years)	Medium	4.20	2.13	Medium	High Impact: >20%	Remove	Roger Uebe	
264	<i>Eucalyptus viminalis</i>	No	14	12	890	Fair	Good	Medium (15-40 years)	High	10.68	3.15	High	High Impact: >20%	Remove	Roger Uebe	Significant deadwood
265	<i>Eucalyptus viminalis</i>	Yes	10	16	1130	Fair	Good	Medium (15-40 years)	High	13.56	3.48	High	High Impact: >20%	Remove	Roger Uebe	Deadwood
266	<i>Eucalyptus viminalis</i>	Yes	13	11	680	Poor	Poor	Short (5-15 years)	Medium	8.16	2.81	Medium	High Impact: >20%	Remove	Roger Uebe	Significant deadwood
267	<i>Eucalyptus viminalis</i>	Yes	13	15	1210	Poor	Good	Short (5-15 years)	High	14.52	3.59	Medium	High Impact: >20%	Remove	Roger Uebe	Significant deadwood
268	<i>Eucalyptus viminalis</i>	Yes	5	4	180	Good	Fair	Medium (15-40 years)	Low	2.16	1.61	Medium	High Impact: >20%	Remove	Roger Uebe	
269	<i>Eucalyptus viminalis</i>	No	4	4	180	Good	Fair	Medium (15-40 years)	Low	2.16	1.61	Medium	High Impact: >20%	Remove	Roger Uebe	Leaning
270	<i>Eucalyptus viminalis</i>	Yes	4	4	260	Good	Fair	Medium (15-40 years)	Low	3.12	1.88	Medium	High Impact: >20%	Remove	Roger Uebe	Multiple trunks
271	<i>Eucalyptus viminalis</i>	Yes	5	5	280	Good	Fair	Medium (15-40 years)	Low	3.36	1.94	Medium	High Impact: >20%	Remove	Roger Uebe	Multiple trunks

Tree	Botanical name	Surveyed location	Height (m)	Spread (m)	DBH (mm)	Health	Structure	ULE	Landscape significance	TPZ (m)	SRZ (m)	Retention value	Impact	Proposed action	AQF Level 5 Consulting Arborist	Notes
272	<i>Eucalyptus viminalis</i>	No	6	7	75	Good	Fair	Medium (15-40 years)	Medium	2.00	1.50	Medium	High Impact: >20%	Remove	Roger Uebe	Multiple trunks
273	<i>Eucalyptus viminalis</i>	No	6	5	510	Good	Fair	Medium (15-40 years)	Low	6.12	2.49	Medium	High Impact: >20%	Remove	Roger Uebe	Suppressed
274	<i>Eucalyptus viminalis</i>	No	8	12	1040	Good	Good	Long (>40 years)	High	12.48	3.36	High	High Impact: >20%	Remove	Roger Uebe	
275	<i>Eucalyptus viminalis</i>	No	14	18	930	Good	Good	Long (>40 years)	High	11.16	3.21	High	High Impact: >20%	Remove	Roger Uebe	Some Deadwood
276	<i>Eucalyptus viminalis</i>	No	13	10	1170	Poor	Fair	Short (5-15 years)	Medium	14.04	3.53	Medium	High Impact: >20%	Remove	Roger Uebe	Significant habitat value Deadwood. Termite activity
277	<i>Eucalyptus viminalis</i>	No	7	12	670	Good	Fair	Long (>40 years)	Medium	8.04	2.80	High	High Impact: >20%	Remove	Roger Uebe	
278	<i>Eucalyptus viminalis</i>	No	11	17	1030	Fair	Good	Long (>40 years)	High	12.36	3.35	High	High Impact: >20%	Remove	Roger Uebe	Dead branches
279	<i>Eucalyptus viminalis</i>	No	7	11	420	Good	Fair	Long (>40 years)	High	5.04	2.30	High	High Impact: >20%	Remove	Roger Uebe	Minor deadwood
280	<i>Eucalyptus viminalis</i>	No	7	5	190	Good	Fair	Long (>40 years)	Medium	2.28	1.65	Medium	High Impact: >20%	Remove	Roger Uebe	Leaning
281	<i>Eucalyptus viminalis</i>	No	7	3	150	Good	Good	Long (>40 years)	Low	2.00	1.50	Medium	High Impact: >20%	Remove	Roger Uebe	Juvenile
282	<i>Eucalyptus viminalis</i>	No	6	5	360	Good	Fair	Long (>40 years)	Low	4.32	2.15	Medium	High Impact: >20%	Remove	Roger Uebe	Juvenile
283	<i>Eucalyptus viminalis</i>	No	11	17	790	Fair	Poor	Medium (15-40 years)	High	9.48	3.00	High	High Impact: >20%	Remove	Roger Uebe	Significant deadwood
284	<i>Eucalyptus viminalis</i>	No	7	2	140	Good	Fair	Medium (15-40 years)	Low	2.00	1.50	Low	High Impact: >20%	Remove	Roger Uebe	Suppressed canopy
285	<i>Eucalyptus viminalis</i>	No	7	3	150	Good	Fair	Medium (15-40 years)	Low	2.00	1.50	Low	High Impact: >20%	Remove	Roger Uebe	

Tree	Botanical name	Surveyed location	Height (m)	Spread (m)	DBH (mm)	Health	Structure	ULE	Landscape significance	TPZ (m)	SRZ (m)	Retention value	Impact	Proposed action	AQF Level 5 Consulting Arborist	Notes
286	<i>Eucalyptus viminalis</i>	No	7	5	300	Good	Fair	Medium (15-40 years)	Low	3.60	2.00	Medium	High Impact: >20%	Remove	Roger Uebe	
287	<i>Eucalyptus viminalis</i>	No	4	6	370	Fair	Poor	Medium (15-40 years)	Low	4.44	2.18	Low	High Impact: >20%	Remove	Roger Uebe	Multi trunked
288	<i>Eucalyptus viminalis</i>	No	7	5	590	Good	Fair	Medium (15-40 years)	Medium	7.08	2.65	Medium	High Impact: >20%	Remove	Roger Uebe	Multiple trunks
289	<i>Eucalyptus viminalis</i>	No	5	5	380	Good	Fair	Medium (15-40 years)	Medium	4.56	2.20	Medium	High Impact: >20%	Remove	Roger Uebe	Multi trunked
290	<i>Eucalyptus viminalis</i>	No	15	13	870	Fair	Good	Long (>40 years)	High	10.44	3.12	High	High Impact: >20%	Remove	Roger Uebe	Significant deadwood
291	<i>Eucalyptus viminalis</i>	No	7	6	730	Good	Fair	Long (>40 years)	Medium	8.76	2.90	Medium	High Impact: >20%	Remove	Roger Uebe	Multiple trunks
292	<i>Eucalyptus viminalis</i>	No	6	3	210	Good	Poor	Short (5-15 years)	Low	2.52	1.72	Low	High Impact: >20%	Remove	Roger Uebe	Suppressed by larger tree
293	<i>Eucalyptus viminalis</i>	No	14	16	1190	Good	Good	Long (>40 years)	High	14.28	3.56	High	High Impact: >20%	Remove	Roger Uebe	Needs deadwood clean up
294	<i>Eucalyptus viminalis</i>	No	6	3	190	Good	Poor	Short (5-15 years)	Low	2.28	1.65	Low	High Impact: >20%	Remove	Roger Uebe	Suppressed by larder tree leaning
295	<i>Eucalyptus viminalis</i>	Yes	7	4	380	Poor	Poor	Remove (<5 years)	Low	4.56	2.20	Low	High Impact: >20%	Remove	Roger Uebe	Juvenile Damage to trunk by stock multi trunk
296	<i>Eucalyptus viminalis</i>	Yes	8	4	460	Poor	Poor	Remove (<5 years)	Low	5.52	2.39	Low	High Impact: >20%	Remove	Roger Uebe	Almost dead
297	<i>Eucalyptus viminalis</i>	No	7	3	150	Good	Good	Medium (15-40 years)	Low	2.00	1.50	Low	High Impact: >20%	Remove	Roger Uebe	
298	<i>Eucalyptus viminalis</i>	No	8	3	160	Good	Fair	Medium (15-40 years)	Low	2.00	1.53	Medium	High Impact: >20%	Remove	Roger Uebe	
299	<i>Eucalyptus viminalis</i>	No	8	2	180	Good	Fair	Medium (15-40 years)	Low	2.16	1.61	Low	High Impact: >20%	Remove	Roger Uebe	

Tree	Botanical name	Surveyed location	Height (m)	Spread (m)	DBH (mm)	Health	Structure	ULE	Landscape significance	TPZ (m)	SRZ (m)	Retention value	Impact	Proposed action	AQF Level 5 Consulting Arborist	Notes
300	<i>Eucalyptus viminalis</i>	No	5	4	270	Good	Poor	Short (5-15 years)	Low	3.24	1.91	Low	High Impact: >20%	Remove	Roger Uebe	Multiple trunks

Appendix E Tree protection guidelines

The following tree protection guidelines must be implemented during the construction period if no tree-specific recommendations are detailed.

E1 Tree protection fencing

The TPZ is a restricted area delineated by protective fencing or the use of an existing structure (such as a wall or fence).

Trees that are to be retained must have protective fencing erected around the TPZ (or as specified in the body of the report) to protect and isolate it from the construction works. Fencing must comply with the Australian Standard, AS 4687-2007, Temporary fencing and hoardings.

Tree protection fencing must be installed prior to site establishment and remain intact until completion of works. Once erected, protective fencing must not be removed or altered without the approval of the project arborist.

If the protective fencing requires temporary removal, trunk, branch and ground protection must be installed and must comply with AS 4970-2009, *Protection of Trees on Development Sites*.

Tree protection fencing shall be:

- Enclosed to the full extent of the TPZ (or as specified in the Recommendations and Tree Protection Plan).
- Cyclone chain wire link fence or similar, with lockable access gates.
- Certified and Inspected by the Project Arborist.
- Installed prior to any machinery or material are brought to site and before the commencement of works.
- Prominently sign posted with 300 mm x 450 mm boards stating, “NO ACCESS - TREE PROTECTION ZONE”.

E2 Crown protection

Tree crowns/canopy may be injured or damaged by machinery such as; excavators, drilling rigs, trucks, cranes, plant and vehicles. Where crown protection is required, it will usually be located at least one meter outside the perimeter of the crown.

Crown protection may include the installation of a physical barrier, pruning selected branches to establish clearance, or the tying/bracing of branches.

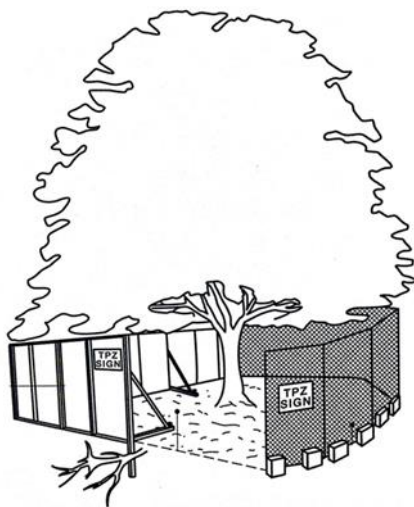
E3 Trunk protection

Where provision of tree protection fencing is impractical or must be temporarily removed, trunk protection shall be installed for the nominated trees to avoid accidental mechanical damage.

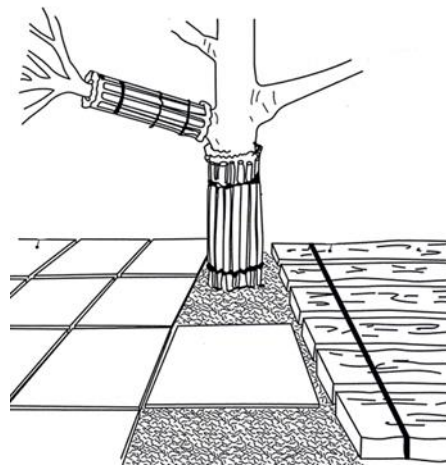
The removal of bark or branches allows the potential ingress of micro-organisms which may cause decay. Furthermore, the removal of bark restricts the trees' ability to distribute water, mineral ions (solutes), and glucose.

Trunk protection shall consist of a layer of either carpet underfelt, geotextile fabric or similar wrapped around the trunk, followed by 1.8 m lengths of softwood timbers aligned vertically and spaced evenly around the trunk (with an approx. 50 mm gap between the timbers).

The timbers must be secured using galvanised hoop strap (aluminium strapping). The timbers shall be wrapped around the trunk but not fixed to the tree, as this will cause injury/damage to the tree.



Tree protection fencing



Trunk protection fencing

E4 Ground protection

Tree roots are essential for the uptake/absorption of water, oxygen and mineral ions (solutes). It is essential to prevent the disturbance of the soil beneath the dripline and within the TPZ of trees that are to be retained. Soil compaction within the TPZ will adversely affect the ability of roots to function correctly.

If temporary access for machinery is required within the TPZ ground protection measures will be required. The purpose of ground protection is to prevent root damage and soil compaction within the TPZ. Maintain a thick layer of mulch around all retained trees to a depth of 100 mm using coarse pine bark or wood chip material that complies with AS 4454. Where the existing landscape within the TPZ is to remain unaltered (e.g. garden beds or turf) mulch may not be required.

For heavy vehicle access within TPZ, ground protection may include a permeable membrane such as geotextile fabric beneath a layer of crushed rock or rumble boards.

If the grade is to be raised within the TPZ, the material should be coarser or more porous than the underlying material.

E5 Root protection and investigation

If incursions/excavation within the TPZ are unavoidable, root investigation may be needed to determine the extent and location of roots within the area of construction activity. The location and distribution of roots are found through non-destructive excavation (NDE) methods such as hydro-vacuum excavation (sucker truck), air spade and manual excavation. Root investigation does not guarantee the retention of the tree.

If the project arborist identifies conflicting roots that requiring pruning, they must be pruned with a sharp implement such as; secateurs, pruners, handsaws or a chainsaw back to undamaged tissue. The final cut must be a clean cut.

E6 Underground services

All underground services should be routed outside of the TPZ. If underground services need to be installed within the TPZ, they should be installed using horizontal directional drilling (HDD), non-destructive excavation (NDE) methods such as hydro-vacuum, Air Spade or manually excavated trenches. The horizontal drilling/boring must be at minimum depth of 600 mm below grade. Trenching for services is to be regarded as “excavation”. The project arborist should assess the likely impacts of boring and bore pits on retained trees.

Appendix F Site photos



Figure 26: Tree 62



Figure 27: Tree 63



Figure 28: Tree 65



Figure 29: Tree 67



Figure 30: Tree 69



Figure 31: Tree 70



Figure 32: Tree 83



Figure 33: Tree 85



Figure 34: Tree 86



Figure 35: Tree 93



Figure 36: Tree 96



Figure 37: Tree 97



Figure 38: Tree 100



Figure 39: Tree 102



Figure 40: Tree 103



Figure 41: Tree 104



Figure 42: Tree 105



Figure 43: Tree 107



Figure 44: Tree 120



Figure 45: Tree 122



Figure 46: Tree 123



Figure 47: Tree 125



Figure 48: Tree 127



Figure 49: Tree 128 and 129



Figure 50: Tree 130 and 131



Figure 51: Tree 133



Figure 52: Tree 134



Figure 53: Tree 135



Figure 54: Tree 137



Figure 55: Tree 139.1



Figure 56: Tree 150



Figure 57: Tree 151



Figure 58: Tree 155



Figure 59: Tree 158



Figure 60: Tree 162



Figure 61: Tree 166



Figure 62: Tree 169



Figure 63: Tree 170



Figure 64: Tree 173



Figure 65: Tree 177



Figure 66: Tree 182



Figure 67: Tree 185



Figure 68: Tree 190



Figure 69: Tree 194



Figure 70: Tree 199



Figure 71: Tree 200



Figure 72: Tree 207



Figure 73: Tree 210



Figure 74: Tree 214



Figure 75: Tree 217



Figure 76: Tree 220



Figure 77: Tree 227



Figure 78: Tree 233



Figure 79: Tree 236



Figure 80: Tree 242



Figure 81: Tree 245



Figure 82: Tree 248



Figure 83: Tree 251



Figure 84: Tree 257



Figure 85: Tree 262



Figure 86: Tree 268



Figure 87: Tree 273



Figure 88: Tree 277



Figure 89: Tree 282



Figure 90: Tree 290



Figure 91: Tree 293

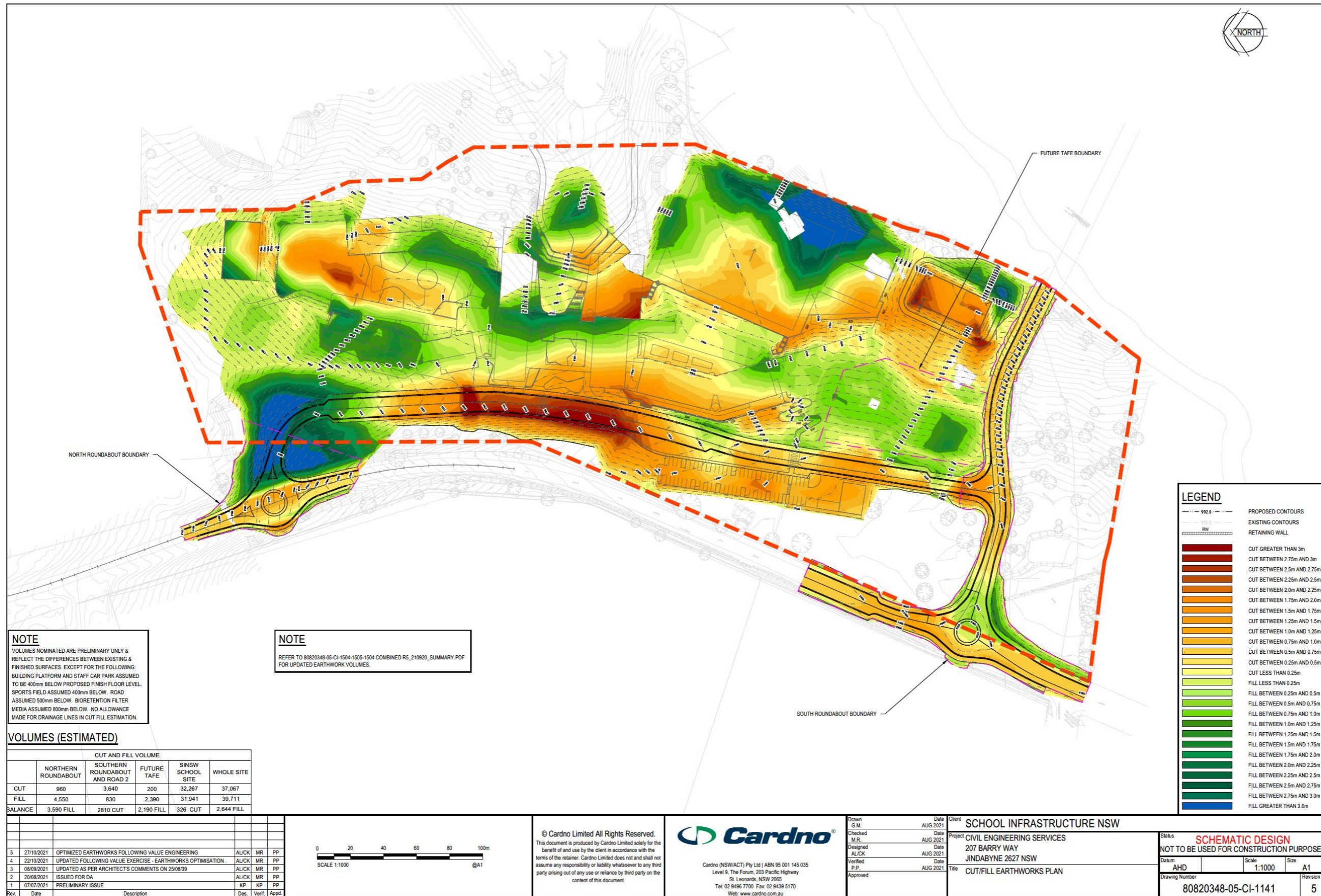


Figure 92: Tree 296

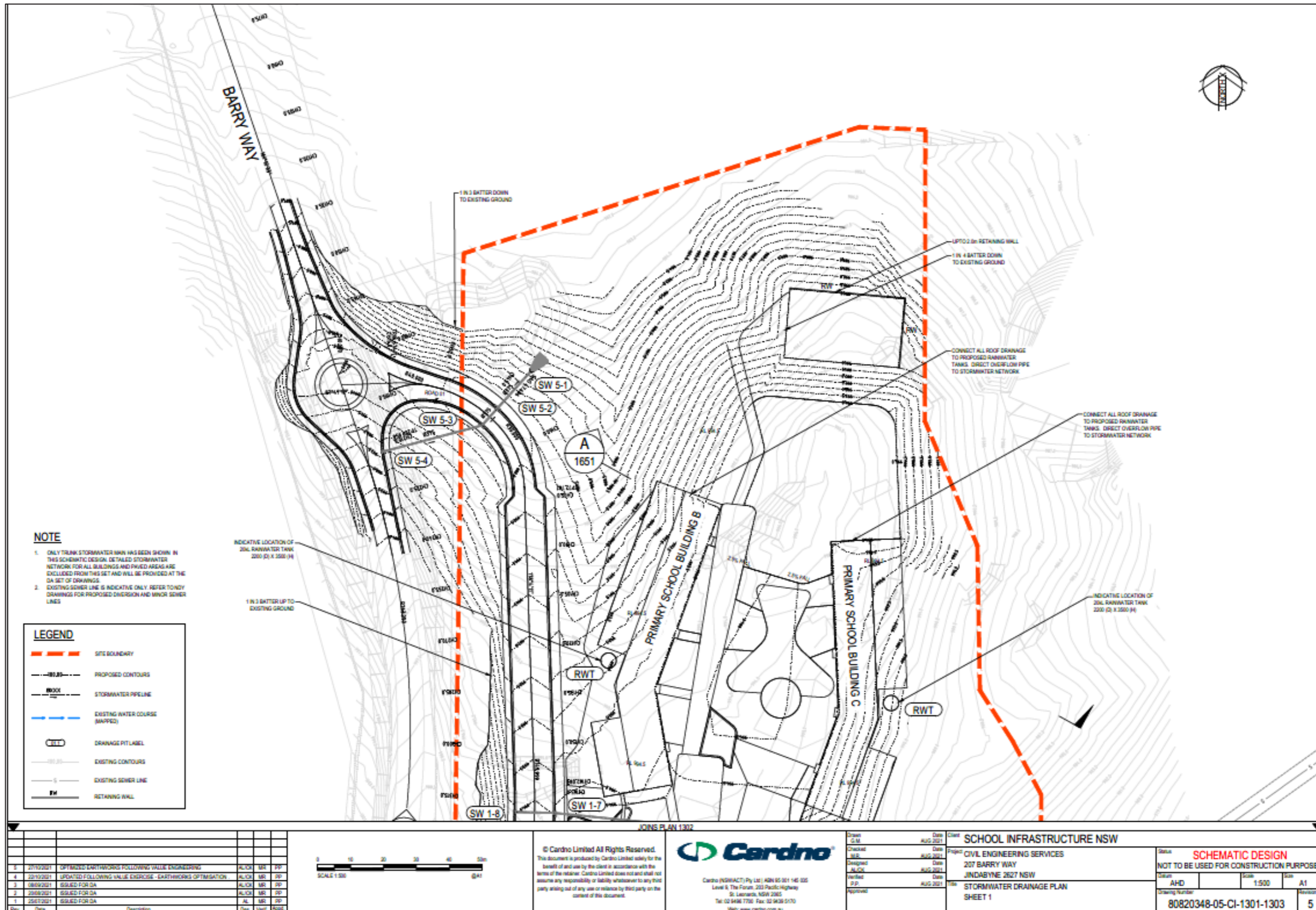


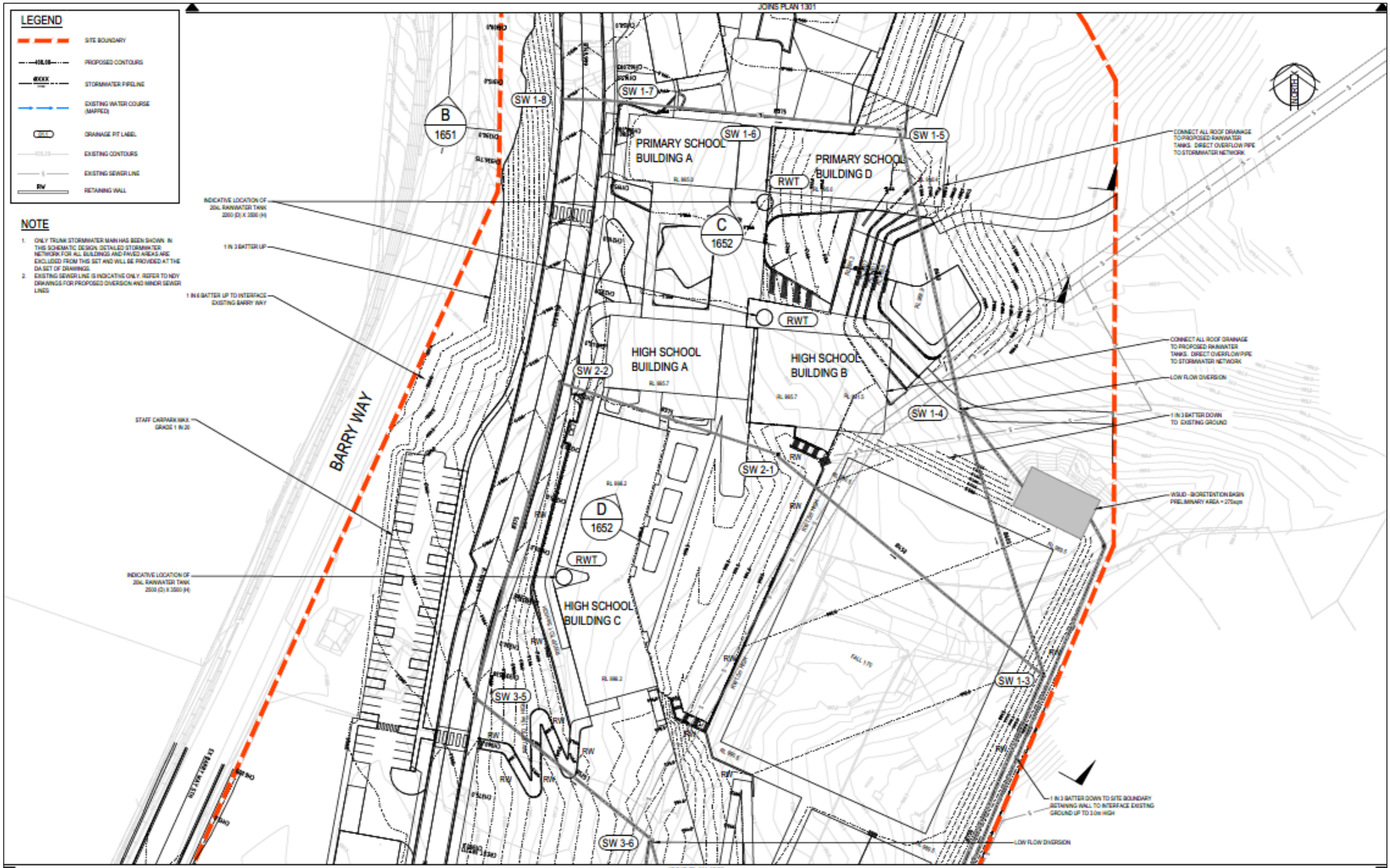
Figure 93: Tree 298

Appendix G Cut/Fill Earthworks Plan (Cardno 2021)



Appendix H Stormwater Drainage Plan (Cardno 2021)





LEGEND

- SITE BOUNDARY
- - - - PROPOSED CONTOURS
- STORMWATER PIPELINE
- EXISTING WATER COURSE (MAPPED)
- DRAINAGE PIT LABEL
- EXISTING CONTOURS
- EXISTING SEWER LINE
- RETAINING WALL

NOTE

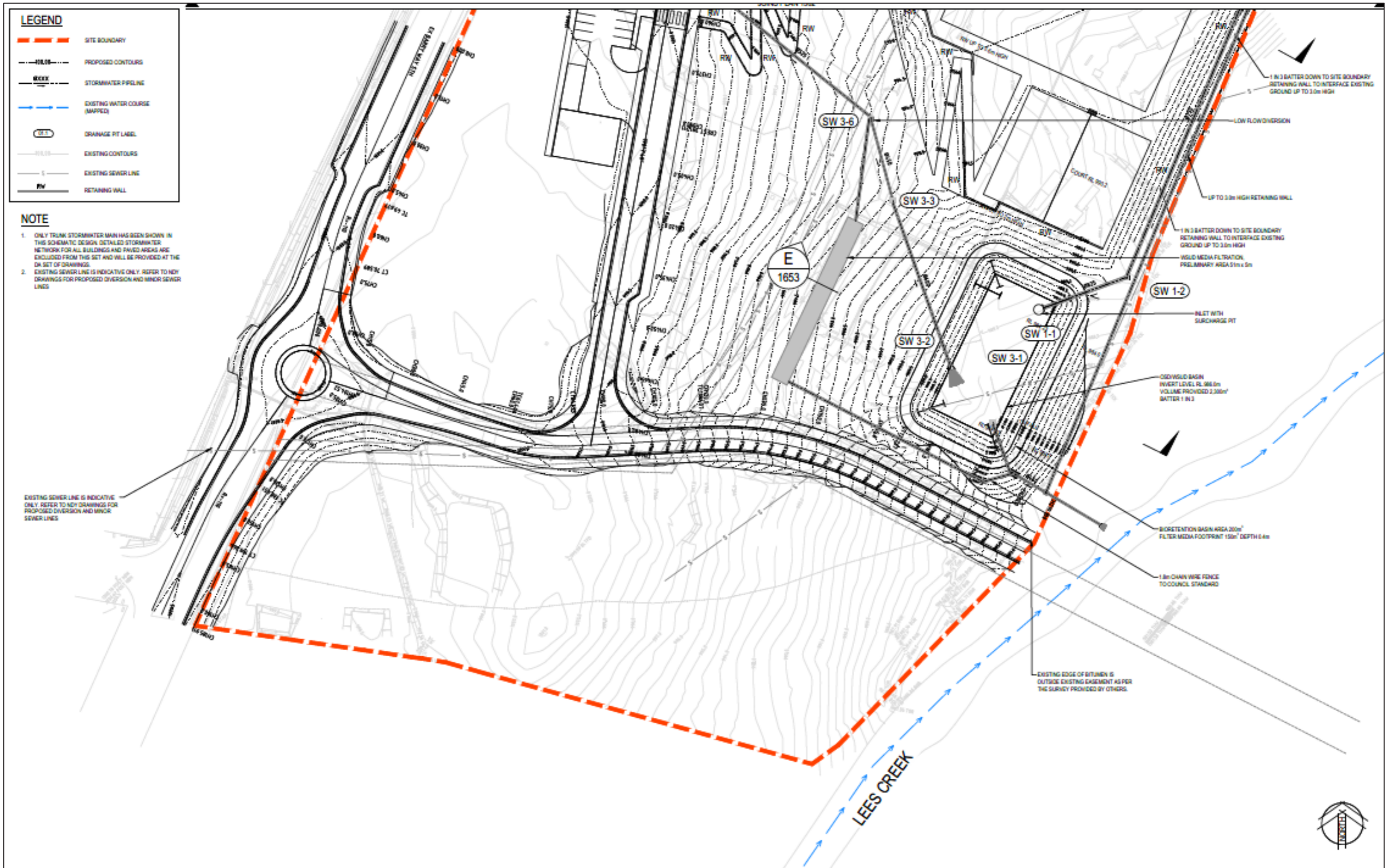
- ONLY TRUNK STORMWATER MAIN HAS BEEN SHOWN IN THIS SCHEMATIC DESIGN. DETAILED STORMWATER NETWORK FOR ALL BUILDINGS AND PAVED AREAS ARE EXCLUDED FROM THIS SET AND WILL BE PROVIDED AT THE DA SET OF DRAWINGS.
- EXISTING SEWER LINE IS INDICATIVE ONLY. REFER TO HDY DRAWINGS FOR PROPOSED OVERFLOW AND MINOR SEWER LINES.



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Checked: M.S.	Date: AUG 2021	Project: CIVIL ENGINEERING SERVICES	NOT TO BE USED FOR CONSTRUCTION PURPOSES
Designed: A.L.C.	Date: AUG 2021	207 BARRY WAY	Author: AHD
Verified: P.P.	Date: AUG 2021	JINDABYNE 2627 NSW	Scale: 1:500
Approved:		STORMWATER DRAINAGE PLAN	Size: A1
		SHEET 2	Revision: 5
			Drawing Number: 80820348-05-CI-1301-1303



No.	Date	Description	Des.	Utd.	PRG
5	20/10/2021	OPTIMISED EARTHWORKS FOLLOWING VALVE ENGINEERING	AL/CA	MR	DP
4	22/10/2021	UPDATED FOLLOWING VALUE ENGINEERING - EARTHWORKS OPTIMISATION	AL/CA	MR	DP
3	08/09/2021	ISSUED FOR DA	AL/CA	MR	DP
2	29/08/2021	ISSUED FOR DA	AL/CA	MR	DP
1	25/07/2021	ISSUED FOR DA	AL	MR	DP



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Designed	AL/CA	Date	AUG 2021
Verified	PP	Date	AUG 2021
Approved			

Client: SCHOOL INFRASTRUCTURE NSW
Project: CIVIL ENGINEERING SERVICES
207 BARRY WAY
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SHEET 3

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Drawn	AHD	Scale	1:500
Sheet		Size	A1
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Revision	5		

